

ORIGINAL  
PLAN

NOTE BOOK  
No.

SURVEY PLOTTED BY

DRAWN BY

DESIGNED BY

QUANTITIES BY

CHECKED BY

DATE

PIILANI HIGHWAY F.A.P. PROJECT F-030-1(18) DRAINAGE SUMMARY

|                        |       |                       |                |              |                 |
|------------------------|-------|-----------------------|----------------|--------------|-----------------|
| FED. ROAD<br>DIST. NO. | STATE | FED. AID<br>PROJ. NO. | FISCAL<br>YEAR | SHEET<br>NO. | TOTAL<br>SHEETS |
| HAWAII                 | HAW.  | F-031-I(3)            | 1987           | 16           | 69              |

| TYPE<br>OF<br>STRUCTURE | ITEM NO.                                   | 206.<br>2000                                   | 206.<br>7100                                         | 206.<br>8200                      | 207.<br>0100                    | 503.<br>0000                              | 602.<br>1000                               | 603.<br>0010                        | 603.<br>3020                                                                                                                                                                   | 603.<br>3022                                                                                                                                                                   | 603.<br>7203                                                                                                                                                     | 603.<br>7321                                                                                                                                                     | 603.<br>7439                                                                                                                                                     | 603.<br>7539                                                                                                                                                                                           | 603.<br>7560                                                                                                                                                     | 603.<br>7590                                                                                                                                | 603.<br>9010                                                                                                                                              | 603.<br>9030                                                                                                                                          | 604.<br>2150              | 604.<br>2160              | 604.<br>2170              | 640.<br>0110                | 640.<br>1010                | 604.<br>0100                           |
|-------------------------|--------------------------------------------|------------------------------------------------|------------------------------------------------------|-----------------------------------|---------------------------------|-------------------------------------------|--------------------------------------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------|---------------------------|-----------------------------|-----------------------------|----------------------------------------|
|                         | UNIT USED                                  | C.Y.                                           | C.Y.                                                 | C.Y.                              | C.Y.                            | C.Y.                                      | LB.                                        | C.Y.                                | L.F.                                                                                                                                                                           | L.F.                                                                                                                                                                           | L.F.                                                                                                                                                             | L.F.                                                                                                                                                             | L.F.                                                                                                                                                             | L.F.                                                                                                                                                                                                   | L.F.                                                                                                                                                             | L.F.                                                                                                                                        | EA.                                                                                                                                                       | EA.                                                                                                                                                   | EA.                       | EA.                       | EA.                       | L.F.                        | L.F.                        | L.F.                                   |
|                         | STATION<br>(FROM - TO)                     | STRUCTURAL EXCAVATION<br>OTHER THAN AT BRIDGES | STRUCTURAL BACKFILL FOR<br>STRUCTURAL PLATE CULVERTS | FILTER MATERIAL<br>FOR STRUCTURES | DITCH AND CHANNEL<br>EXCAVATION | CLASS A CONCRETE OTHER<br>THAN IN BRIDGES | REINFORCING STEEL OTHER<br>THAN IN BRIDGES | BED COURSE MATERIAL FOR<br>CULVERTS | 114" CORR. STEEL PIPE,<br>t = 0.109", OR<br>114" STEEL PLATE PIPE,<br>t = 0.109", OR<br>114" CORR. ALUMINUM PIPE,<br>t = 0.164", OR<br>114" ALUMINUM PLATE PIPE,<br>t = 0.100" | 120" CORR. STEEL PIPE,<br>t = 0.109", OR<br>120" STEEL PIPE PLATE,<br>t = 0.109", OR<br>120" CORR. ALUMINUM PIPE,<br>t = 0.164", OR<br>120" ALUMINUM PLATE PIPE,<br>t = 0.100" | 24" CSP, t = 0.079", OR<br>24" CAP, t = 0.075", OR<br>24" SPIRAL STEEL PIPE,<br>t = 0.079", OR<br>24" SPIRAL ALUM. PIPE,<br>t = 0.075", OR<br>24" RCP, CLASS III | 30" CSP, t = 0.079", OR<br>30" CAP, t = 0.075", OR<br>30" SPIRAL STEEL PIPE,<br>t = 0.079", OR<br>30" SPIRAL ALUM. PIPE,<br>t = 0.075", OR<br>30" RCP, CLASS III | 36" CSP, t = 0.079", OR<br>36" CAP, t = 0.075", OR<br>36" SPIRAL STEEL PIPE,<br>t = 0.079", OR<br>36" SPIRAL ALUM. PIPE,<br>t = 0.075", OR<br>36" RCP, CLASS III | 42" CORR. STEEL PIPE,<br>t = 0.079", OR<br>42" CORR. ALUMINUM PIPE,<br>t = 0.075", OR<br>42" SPIRAL STEEL PIPE,<br>t = 0.079", OR<br>42" SPIRAL ALUMINUM PIPE,<br>t = 0.075", OR<br>42" RCP, CLASS III | 48" CSP, t = 0.079", OR<br>48" CAP, t = 0.075", OR<br>48" SPIRAL STEEL PIPE,<br>t = 0.079", OR<br>48" SPIRAL ALUM. PIPE,<br>t = 0.075", OR<br>48" RCP, CLASS III | 84" CSP, t = 0.079", OR<br>84" CAP, t = 0.105", OR<br>84" STRUCT. STEEL PIPE,<br>t = 0.109", OR<br>84" STRUCT. ALUMINUM PIPE,<br>t = 0.100" | 24" CORR. STEEL FLARED END<br>SECTION, t = 0.079", OR<br>24" CORR. ALUM. FLARED END<br>SECTION, t = 0.075", OR<br>24" PRECAST CONC. FLARED<br>END SECTION | 36" CORR. STEEL FLARED END<br>SECT., t = 0.079", OR<br>36" CORR. ALUM. FLARED END<br>SECT., t = 0.075", OR<br>36" PRECAST CONC. FLARED<br>END SECTION | TYPE A CI FRAME AND COVER | TYPE B CI FRAME AND COVER | TYPE P CI FRAME AND COVER | TYPE A LINED DRAINAGE DITCH | TYPE B LINED DRAINAGE DITCH | BRICK WALL FOR STORM DRAIN<br>MANHOLES |
| OUTLET STRUCTURE        | STA 89 + 06 O/S RT                         | 31                                             |                                                      | 2                                 |                                 | 7                                         | 840                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| 2 - 42" CULVERT         | STA 89 + 15                                | 469                                            |                                                      |                                   |                                 |                                           |                                            | 53                                  |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  | 164                                                                                                                                                                                                    |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| INLET STRUCTURE         | STA 89 + 27 O/S LT                         | 31                                             |                                                      |                                   |                                 | 7                                         | 840                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| OUTLET STRUCTURE        | STA 91 + 50 O/S RT                         | 4                                              |                                                      | 1                                 |                                 | 2                                         | 240                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| 30" CULVERT             | STA 91 + 50                                | 158                                            |                                                      |                                   |                                 |                                           |                                            | 25                                  |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  | 102                                                                                                                                                              |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| INLET STRUCTURE         | STA 91 + 51 O/S LT                         | 4                                              |                                                      | 1                                 |                                 | 3                                         | 360                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| OUTLET STRUCTURE        | STA 93 + 42 O/S RT                         | 58                                             |                                                      | 3                                 |                                 | 25                                        | 3000                                       |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| 84" CULVERT             | STA 94 + 20                                | 680                                            | 327                                                  |                                   |                                 |                                           |                                            | 91                                  |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  | 184                                                                                                                                         |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| INLET STRUCTURE         | STA 94 + 86 O/S LT                         | 100                                            |                                                      | 2                                 |                                 | 22                                        | 2640                                       |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
|                         |                                            |                                                |                                                      |                                   |                                 |                                           |                                            |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| 24" CULVERT             | STA 93 + 95 O/S RT<br>STA 95 + 28 O/S RT   | 237                                            |                                                      |                                   |                                 |                                           |                                            | 24                                  |                                                                                                                                                                                |                                                                                                                                                                                | 136                                                                                                                                                              |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| TYPE 'A' CB             | STA 95 + 28 O/S RT                         | 26                                             |                                                      |                                   |                                 | 7                                         | 840                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           | 1                         |                           |                             |                             |                                        |
| 24" CULVERT             | STA 95 + 28 O/S RT<br>STA 96 + 00 O/S LT   | 141                                            |                                                      |                                   |                                 |                                           |                                            | 14                                  |                                                                                                                                                                                |                                                                                                                                                                                | 81                                                                                                                                                               |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| TYPE A1 CB              | STA 96 + 00 O/S LT                         | 29                                             |                                                      |                                   |                                 | 9                                         | 960                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           | 1                         |                           |                             |                             |                                        |
| INLET STRUCTURE         | STA 113 + 70 O/S LT                        | 300                                            |                                                      | 4                                 |                                 | 59                                        | 6970                                       |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| 4 - 114" CULVERTS       | STA 114 + 23                               | 4720                                           | 2780                                                 |                                   |                                 |                                           |                                            | 580                                 | 728                                                                                                                                                                            |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| OUTLET STRUCTURE        | STA 114 + 94 O/S RT                        | 145                                            |                                                      |                                   |                                 | 58                                        | 7010                                       |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| OUTLET STRUCTURE        | STA 116 + 42 O/S RT                        | 371                                            |                                                      | 5                                 |                                 | 44                                        | 5280                                       |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| 120" CULVERT            | STA 116 + 86                               | 736                                            | 217                                                  |                                   |                                 |                                           |                                            | 103                                 |                                                                                                                                                                                | 134                                                                                                                                                                            |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| INLET STRUCTURE         | STA 117 + 19 O/S LT                        | 372                                            |                                                      | 7                                 |                                 | 119                                       | 14070                                      |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| 24" FLARED END SECT.    | STA 117 + 70 O/S RT                        | 2                                              |                                                      |                                   |                                 |                                           |                                            |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             | 1                                                                                                                                                         |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| 24" CULVERT             | STA 117 + 70 O/S RT<br>STA 118 + 20 O/S RT | 49                                             |                                                      |                                   |                                 |                                           |                                            | 10                                  |                                                                                                                                                                                |                                                                                                                                                                                | 61                                                                                                                                                               |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| TYPE D CB               | STA 118 + 15 O/S LT                        | 16                                             |                                                      |                                   |                                 | 4                                         | 480                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           | 1                         |                           |                             |                             |                                        |
| 24" CULVERT             | STA 118 + 15 O/S LT<br>STA 118 + 20 O/S RT | 53                                             |                                                      |                                   |                                 |                                           |                                            | 9                                   |                                                                                                                                                                                |                                                                                                                                                                                | 50                                                                                                                                                               |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| TYPE D1 CB              | STA 118 + 20 O/S RT                        | 20                                             |                                                      |                                   |                                 | 6                                         | 600                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           | 1                         |                           |                             |                             |                                        |
| 24" CULVERT             | STA 118 + 20 O/S RT<br>STA 119 + 55 O/S RT | 185                                            |                                                      |                                   |                                 |                                           |                                            | 23                                  |                                                                                                                                                                                |                                                                                                                                                                                | 135                                                                                                                                                              |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| TYPE B1 CB              | STA 119 + 55 O/S RT                        | 24                                             |                                                      |                                   |                                 | 7                                         | 840                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           | 1                         |                           |                             |                             |                                        |
| 24" CULVERT             | STA 119 + 55 O/S RT<br>STA 119 + 90 O/S LT | 138                                            |                                                      |                                   |                                 |                                           |                                            | 12                                  |                                                                                                                                                                                |                                                                                                                                                                                | 69                                                                                                                                                               |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| TYPE D CB               | STA 119 + 90 O/S LT                        | 18                                             |                                                      |                                   |                                 | 4                                         | 480                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           | 1                         |                             |                             |                                        |
| 24" CULVERT             | STA 119 + 90 O/S LT<br>STA 121 + 00 O/S LT | 199                                            |                                                      |                                   |                                 |                                           |                                            | 18                                  |                                                                                                                                                                                |                                                                                                                                                                                | 110                                                                                                                                                              |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| TYPE D CB               | STA 121 + 00 O/S LT                        | 16                                             |                                                      |                                   |                                 | 5                                         | 600                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                | 62                                                                                                                                                               |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           | 1                         |                             |                             |                                        |
| TYPE D CB               | STA 121 + 00 O/S RT                        | 20                                             |                                                      |                                   |                                 | 6                                         | 720                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| TYPE D CB               | STA 122 + 48 O/S LT                        | 18                                             |                                                      |                                   |                                 | 4                                         | 480                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           | 1                         |                             |                             |                                        |
| 24" CULVERT             | STA 122 + 48 O/S LT<br>STA 123 + 31 O/S LT | 454                                            |                                                      |                                   |                                 |                                           |                                            | 14                                  |                                                                                                                                                                                |                                                                                                                                                                                | 83                                                                                                                                                               |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| TYPE D CB               | STA 123 + 31 O/S LT                        | 19                                             |                                                      |                                   |                                 | 5                                         | 600                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           | 1                         |                             |                             |                                        |
| 24" CULVERT             | STA 123 + 31 O/S LT<br>STA 123 + 82 O/S RT | 384                                            |                                                      |                                   |                                 |                                           |                                            | 14                                  |                                                                                                                                                                                |                                                                                                                                                                                | 86                                                                                                                                                               |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| 24" CULVERT             | STA 123 + 82 O/S RT<br>STA 124 + 03 O/S RT | 176                                            |                                                      |                                   |                                 |                                           |                                            | 7                                   |                                                                                                                                                                                |                                                                                                                                                                                | 40                                                                                                                                                               |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| 24" CULVERT             | STA 121 + 00 O/S RT<br>STA 121 + 00 O/S LT | 123                                            |                                                      |                                   |                                 |                                           |                                            | 10                                  |                                                                                                                                                                                |                                                                                                                                                                                | 45                                                                                                                                                               |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| TOTAL THIS SHEET        |                                            | 10525                                          | 3324                                                 | 26                                |                                 | 403                                       | 47850                                      | 1007                                | 728                                                                                                                                                                            | 134                                                                                                                                                                            | 968                                                                                                                                                              | 102                                                                                                                                                              |                                                                                                                                                                  | 164                                                                                                                                                                                                    |                                                                                                                                                                  | 184                                                                                                                                         | 1                                                                                                                                                         |                                                                                                                                                       | 3                         | 6                         |                           |                             |                             |                                        |

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| HAWAII                 | HAW.  | F-031-(13)            | 1987           | 17           | 69              |

PIILANI HIGHWAY F.A.P. PROJECT F-030-1(18) DRAINAGE SUMMARY

| TYPE<br>OF<br>STRUCTURE | ITEM NO.                                   | 206.<br>000                                    | 206.<br>7100                                         | 206.<br>8200                      | 207.<br>0100                    | 503.<br>0000                              | 602.<br>1000                               | 603.<br>0010                        | 603.<br>3020                                                                                                                                                                   | 603.<br>3022                                                                                                                                                                   | 603.<br>7203                                                                                                                                                     | 603.<br>7321                                                                                                                                                     | 603.<br>7439                                                                                                                                                     | 603.<br>7539                                                                                                                                                                                           | 603.<br>7560                                                                                                                                                     | 603.<br>7590                                                                                                                                | 603.<br>9010                                                                                                                                              | 603.<br>9030                                                                                                                                          | 604.<br>2150              | 604.<br>2160              | 604.<br>2170              | 640.<br>0110                | 640.<br>1010                | 604.<br>0100                           |
|-------------------------|--------------------------------------------|------------------------------------------------|------------------------------------------------------|-----------------------------------|---------------------------------|-------------------------------------------|--------------------------------------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------|---------------------------|-----------------------------|-----------------------------|----------------------------------------|
|                         | UNIT USED                                  | C.Y.                                           | C.Y.                                                 | C.Y.                              | C.Y.                            | C.Y.                                      | LB.                                        | C.Y.                                | L.F.                                                                                                                                                                           | L.F.                                                                                                                                                                           | L.F.                                                                                                                                                             | L.F.                                                                                                                                                             | L.F.                                                                                                                                                             | L.F.                                                                                                                                                                                                   | L.F.                                                                                                                                                             | L.F.                                                                                                                                        | EA.                                                                                                                                                       | EA.                                                                                                                                                   | EA.                       | EA.                       | EA.                       | L.F.                        | L.F.                        | L.F.                                   |
|                         | STATION<br>(FROM - TO)                     | STRUCTURAL EXCAVATION<br>OTHER THAN AT BRIDGES | STRUCTURAL BACKFILL FOR<br>STRUCTURAL PLATE CULVERTS | FILTER MATERIAL<br>FOR STRUCTURES | DITCH AND CHANNEL<br>EXCAVATION | CLASS A CONCRETE OTHER<br>THAN IN BRIDGES | REINFORCING STEEL OTHER<br>THAN IN BRIDGES | BED COURSE MATERIAL FOR<br>CULVERTS | 114" CORR. STEEL PIPE,<br>t = 0.109", OR<br>114" STEEL PLATE PIPE,<br>t = 0.109", OR<br>114" CORR. ALUMINUM PIPE,<br>t = 0.164", OR<br>114" ALUMINUM PLATE PIPE,<br>t = 0.100" | 120" CORR. STEEL PIPE,<br>t = 0.109", OR<br>120" STEEL PIPE PLATE,<br>t = 0.109", OR<br>120" CORR. ALUMINUM PIPE,<br>t = 0.164", OR<br>120" ALUMINUM PLATE PIPE,<br>t = 0.100" | 24" CSP, t = 0.079", OR<br>24" CAP, t = 0.075", OR<br>24" SPIRAL STEEL PIPE,<br>t = 0.079", OR<br>24" SPIRAL ALUM. PIPE,<br>t = 0.075", OR<br>24" RCP, CLASS III | 30" CSP, t = 0.079", OR<br>30" CAP, t = 0.075", OR<br>30" SPIRAL STEEL PIPE,<br>t = 0.079", OR<br>30" SPIRAL ALUM. PIPE,<br>t = 0.075", OR<br>30" RCP, CLASS III | 36" CSP, t = 0.079", OR<br>36" CAP, t = 0.075", OR<br>36" SPIRAL STEEL PIPE,<br>t = 0.079", OR<br>36" SPIRAL ALUM. PIPE,<br>t = 0.075", OR<br>36" RCP, CLASS III | 42" CORR. STEEL PIPE,<br>t = 0.079", OR<br>42" CORR. ALUMINUM PIPE,<br>t = 0.075", OR<br>42" SPIRAL STEEL PIPE,<br>t = 0.079", OR<br>42" SPIRAL ALUMINUM PIPE,<br>t = 0.075", OR<br>42" RCP, CLASS III | 48" CSP, t = 0.079", OR<br>48" CAP, t = 0.075", OR<br>48" SPIRAL STEEL PIPE,<br>t = 0.079", OR<br>48" SPIRAL ALUM. PIPE,<br>t = 0.075", OR<br>48" RCP, CLASS III | 84" CSP, t = 0.079", OR<br>84" CAP, t = 0.105", OR<br>84" STRUCT. STEEL PIPE,<br>t = 0.109", OR<br>84" STRUCT. ALUMINUM PIPE,<br>t = 0.100" | 24" CORR. STEEL FLARED END<br>SECTION, t = 0.079", OR<br>24" CORR. ALUM. FLARED END<br>SECTION, t = 0.075", OR<br>24" PRECAST CONC. FLARED<br>END SECTION | 36" CORR. STEEL FLARED END<br>SECT., t = 0.079", OR<br>36" CORR. ALUM. FLARED END<br>SECT., t = 0.075", OR<br>36" PRECAST CONC. FLARED<br>END SECTION | TYPE A CI FRAME AND COVER | TYPE B CI FRAME AND COVER | TYPE P CI FRAME AND COVER | TYPE A LINED DRAINAGE DITCH | TYPE B LINED DRAINAGE DITCH | BRICK WALL FOR STORM DRAIN<br>MANHOLES |
| TYPE D CB               | STA 123 + 82 O/S RT                        | 24                                             |                                                      |                                   |                                 | 6                                         | 720                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| CONCRETE HEADWALL       | STA 124 + 03 O/S RT                        |                                                |                                                      |                                   |                                 | 3                                         |                                            |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| OUTLET STRUCTURE        | STA 124 + 30 O/S RT                        | 608                                            |                                                      | 1                                 |                                 |                                           | 1320                                       |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| TYPE B SDMH             | STA 124 + 48 O/S RT                        | 9                                              |                                                      | 11                                |                                 | 6                                         | 720                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           | 1                           |                             |                                        |
| DROP INTAKE             | STA 124 + 73 O/S LT                        | 321                                            |                                                      |                                   |                                 | 28                                        | 3360                                       |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| DROP SPILLWAY           | STA 124 + 93 O/S LT                        | 284                                            |                                                      |                                   |                                 | 77                                        | 9240                                       |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| 3 - 48" CULVERTS        | STA 124 + 50                               | 1061                                           |                                                      |                                   |                                 |                                           |                                            | 102                                 |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        | 288                                                                                                                                                              |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| INLET STRUCTURE         | STA 125 + 32 O/S LT                        | 13                                             |                                                      |                                   |                                 | 3                                         | 360                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| 30" CULVERT             | STA 124 + 87 O/S LT<br>STA 125 + 32 O/S LT | 109                                            |                                                      |                                   |                                 |                                           |                                            | 9                                   |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  | 45                                                                                                                                                               |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| 24" CULVERT             | STA 124 + 48 O/S RT<br>STA 126 + 53 O/S RT | 432                                            |                                                      |                                   |                                 |                                           |                                            | 34                                  |                                                                                                                                                                                |                                                                                                                                                                                | 206                                                                                                                                                              |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| TYPE E OR F SDMH        | STA 126 + 53 O/S RT                        | 16                                             |                                                      |                                   |                                 | 5                                         |                                            |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           | 1                         |                           |                             |                             |                                        |
| 24" CULVERT             | STA 126 + 53 O/S RT<br>STA 126 + 53 O/S LT | 89                                             |                                                      |                                   |                                 |                                           |                                            | 10                                  |                                                                                                                                                                                |                                                                                                                                                                                | 56                                                                                                                                                               |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| TYPE A1 CB              | STA 126 + 53 O/S LT                        | 25                                             |                                                      |                                   |                                 | 8                                         | 840                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           | 1                         |                           |                             |                             |                                        |
| 24" CULVERT             | STA 126 + 53 O/S RT<br>STA 129 + 76 O/S RT | 250                                            | 178                                                  |                                   |                                 |                                           |                                            | 42                                  |                                                                                                                                                                                |                                                                                                                                                                                | 323                                                                                                                                                              |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| TYPE A1 CB              | STA 129 + 76 O/S RT                        | 25                                             |                                                      |                                   |                                 | 8                                         | 840                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           | 1                         |                           |                             |                             |                                        |
| INLET STRUCTURE         | STA 143 + 55 O/S LT                        | 159                                            |                                                      | 3                                 |                                 | 39                                        | 4680                                       |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| 2 - 120" CULVERTS       | STA 143 + 55                               | 2119                                           | 939                                                  |                                   |                                 |                                           |                                            | 272                                 |                                                                                                                                                                                | 292                                                                                                                                                                            |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| OUTLET STRUCTURE        | STA 143 + 55 O/S RT                        | 243                                            |                                                      | 4                                 |                                 | 39                                        | 4680                                       |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| 36" FLARED END SECT.    | STA 143 + 90 O/S RT                        | 5                                              |                                                      |                                   |                                 |                                           |                                            |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           | 1                                                                                                                                                     |                           |                           |                           |                             |                             |                                        |
| 36" CULVERT             | STA 143 + 90 O/S RT<br>STA 144 + 56 O/S RT | 124                                            |                                                      |                                   |                                 |                                           |                                            | 16                                  |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  | 75                                                                                                                                                               |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| TYPE E OR F SDMH        | STA 144 + 56 O/S RT                        | 14                                             |                                                      |                                   |                                 | 4                                         | 480                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           | 1                         |                           |                             |                             |                                        |
| 36" CULVERT             | STA 144 + 56 O/S RT<br>STA 147 + 00 O/S RT | 466                                            |                                                      |                                   |                                 |                                           |                                            | 50                                  |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  | 244                                                                                                                                                              |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| TYPE D OR E SDMH        | STA 147 + 00 O/S RT                        | 13                                             |                                                      |                                   |                                 | 4                                         | 480                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           | 1                         |                           |                             |                             |                                        |
| 36" CULVERT             | STA 147 + 00 O/S RT<br>STA 148 + 80 O/S RT | 600                                            |                                                      |                                   |                                 |                                           |                                            | 39                                  |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  | 188                                                                                                                                                              |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| TYPE E OR F SDMH        | STA 148 + 80 O/S RT                        | 18                                             |                                                      |                                   |                                 | 2                                         | 240                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           | 1                           |                             | 9                                      |
| 24" CULVERT             | STA 148 + 80 O/S RT<br>STA 148 + 92 O/S LT | 97                                             |                                                      |                                   |                                 |                                           |                                            | 10                                  |                                                                                                                                                                                |                                                                                                                                                                                | 60                                                                                                                                                               |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| TYPE D CB               | STA 148 + 92 O/S LT                        | 20                                             |                                                      |                                   |                                 | 5                                         | 600                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           | 1                         |                           |                             |                             |                                        |
| 24" CULVERT             | STA 148 + 80 O/S RT<br>STA 151 + 09 O/S RT | 403                                            |                                                      |                                   |                                 |                                           |                                            | 38                                  |                                                                                                                                                                                |                                                                                                                                                                                | 229                                                                                                                                                              |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| TYPE D CB               | STA 151 + 09 O/S RT                        | 19                                             |                                                      |                                   |                                 | 5                                         | 600                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| DROP INTAKE BOX         | STA 160 + 25 O/S LT                        | 12                                             |                                                      |                                   |                                 | 3                                         | 360                                        |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| 36" CULVERT             | STA 160 + 90                               | 358                                            |                                                      |                                   |                                 |                                           |                                            | 51                                  |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  | 184                                                                                                                                                              |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| 36" FLARED END SECT.    | STA 161 + 66 O/S RT                        | 5                                              |                                                      |                                   |                                 |                                           |                                            |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           | 1                                                                                                                                                     |                           |                           |                           |                             |                             |                                        |
| INLET STRUCTURE         | STA 162 + 04 O/S LT                        | 61                                             |                                                      | 3                                 |                                 | 26                                        | 3120                                       |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| 2 - 84" CULVERTS        | STA 162 + 20                               | 1186                                           | 593                                                  |                                   |                                 |                                           |                                            | 158                                 |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             | 280                                                                                                                                                       |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| OUTLET STRUCTURE        | STA 162 + 40 O/S RT                        | 64                                             |                                                      | 2                                 |                                 | 23                                        | 2760                                       |                                     |                                                                                                                                                                                |                                                                                                                                                                                |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                  |                                                                                                                                                                                                        |                                                                                                                                                                  |                                                                                                                                             |                                                                                                                                                           |                                                                                                                                                       |                           |                           |                           |                             |                             |                                        |
| TOTAL THIS SHEET        |                                            | 2430                                           | 1532                                                 | 24                                |                                 | 305                                       | 35400                                      | 831                                 |                                                                                                                                                                                | 202                                                                                                                                                                            | 874                                                                                                                                                              | 45                                                                                                                                                               | 691                                                                                                                                                              |                                                                                                                                                                                                        | 288                                                                                                                                                              | 280                                                                                                                                         |                                                                                                                                                           | 2                                                                                                                                                     | 5                         | 4                         | 2                         |                             |                             | 9                                      |

ORIGINAL PLAN

SURVEY PLOTTED BY

DATE

No.

DESIGNED BY

CHECKED BY

NOTE BOOK

QUANTITIES BY

PIILANI HIGHWAY F.A.P. PROJECT F-030-1(18) DRAINAGE SUMMARY

|                     |       |                    |             |           |              |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII              | HAW.  | F-031-I(3)         | 1987        | 18        | 69           |

| TYPE OF STRUCTURE     | ITEM NO.                                   | 206. 2000                                   | 206. 7100                                         | 206. 8200                      | 207. 0100                    | 503. 0000                              | 602. 1000                               | 603. 0010                        | 603. 3020                                                                                                                                                 | 603. 3022                                                                                                                                                 | 603. 7203                                                                                                                                      | 603. 7321                                                                                                                                      | 603. 7439                                                                                                                                      | 603. 7539                                                                                                                                                                     | 603. 7560                                                                                                                                      | 603. 7590                                                                                                                    | 603. 9010                                                                                                                                  | 603. 9030                                                                                                                              | 604. 2150                 | 604. 2160                 | 604. 2170                 | 640. 0110                   | 640. 1010                   | 604. 0100                           |
|-----------------------|--------------------------------------------|---------------------------------------------|---------------------------------------------------|--------------------------------|------------------------------|----------------------------------------|-----------------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------|---------------------------|-----------------------------|-----------------------------|-------------------------------------|
|                       | UNIT USED                                  | C.Y.                                        | C.Y.                                              | C.Y.                           | C.Y.                         | C.Y.                                   | LB.                                     | C.Y.                             | L.F.                                                                                                                                                      | L.F.                                                                                                                                                      | L.F.                                                                                                                                           | L.F.                                                                                                                                           | L.F.                                                                                                                                           | L.F.                                                                                                                                                                          | L.F.                                                                                                                                           | L.F.                                                                                                                         | EA.                                                                                                                                        | EA.                                                                                                                                    | EA.                       | EA.                       | EA.                       | L.F.                        | L.F.                        | L.F.                                |
|                       | STATION (FROM - TO)                        | STRUCTURAL EXCAVATION OTHER THAN AT BRIDGES | STRUCTURAL BACKFILL FOR STRUCTURAL PLATE CULVERTS | FILTER MATERIAL FOR STRUCTURES | DITCH AND CHANNEL EXCAVATION | CLASS A CONCRETE OTHER THAN IN BRIDGES | REINFORCING STEEL OTHER THAN IN BRIDGES | BED COURSE MATERIAL FOR CULVERTS | 114" CORR. STEEL PIPE, t = 0.109", OR 114" STEEL PLATE PIPE, t = 0.109", OR 114" CORR. ALUMINUM PIPE, t = 0.164", OR 114" ALUMINUM PLATE PIPE, t = 0.100" | 120" CORR. STEEL PIPE, t = 0.109", OR 120" STEEL PIPE PLATE, t = 0.109", OR 120" CORR. ALUMINUM PIPE, t = 0.164", OR 120" ALUMINUM PLATE PIPE, t = 0.100" | 24" CSP, t = 0.079", OR 24" CAP, t = 0.075", OR 24" SPIRAL STEEL PIPE, t = 0.079", OR 24" SPIRAL ALUM. PIPE, t = 0.075", OR 24" RCP, CLASS III | 30" CSP, t = 0.079", OR 30" CAP, t = 0.075", OR 30" SPIRAL STEEL PIPE, t = 0.079", OR 30" SPIRAL ALUM. PIPE, t = 0.075", OR 30" RCP, CLASS III | 36" CSP, t = 0.079", OR 36" CAP, t = 0.075", OR 36" SPIRAL STEEL PIPE, t = 0.079", OR 36" SPIRAL ALUM. PIPE, t = 0.075", OR 36" RCP, CLASS III | 42" CORR. STEEL PIPE, t = 0.079", OR 42" CORR ALUMINUM PIPE, t = 0.075", OR 42" SPIRAL STEEL PIPE, t = 0.079", OR 42" SPIRAL ALUMINUM PIPE, t = 0.075", OR 42" RCP, CLASS III | 48" CSP, t = 0.079", OR 48" CAP, t = 0.075", OR 48" SPIRAL STEEL PIPE, t = 0.079", OR 48" SPIRAL ALUM. PIPE, t = 0.075", OR 48" RCP, CLASS III | 84" CSP, t = 0.079", OR 84" CAP, t = 0.105", OR 84" STRUCT. STEEL PIPE, t = 0.109", OR 84" STRUCT. ALUMINUM PIPE, t = 0.100" | 24" CORR. STEEL FLARED END SECTION, t = 0.079", OR 24" CORR. ALUM. FLARED END SECTION, t = 0.075", OR 24" PRECAST CONC. FLARED END SECTION | 36" CORR. STEEL FLARED END SECT., t = 0.079", OR 36" CORR. ALUM. FLARED END SECT., t = 0.075", OR 36" PRECAST CONC. FLARED END SECTION | TYPE A CI FRAME AND COVER | TYPE B CI FRAME AND COVER | TYPE P CI FRAME AND COVER | TYPE A LINED DRAINAGE DITCH | TYPE B LINED DRAINAGE DITCH | BRICK WALL FOR STORM DRAIN MANHOLES |
| INTERCEPTOR DITCH 1-A | STA 105 + 20 O/S LT<br>STA 102 + 20 O/S LT |                                             |                                                   |                                | 262                          |                                        |                                         |                                  |                                                                                                                                                           |                                                                                                                                                           |                                                                                                                                                |                                                                                                                                                |                                                                                                                                                |                                                                                                                                                                               |                                                                                                                                                |                                                                                                                              |                                                                                                                                            |                                                                                                                                        |                           |                           |                           | 270                         | 418                         |                                     |
| INTERCEPTOR DITCH 1-B | STA 102 + 20 O/S LT<br>STA 113 + 31 O/S LT |                                             |                                                   |                                | 338                          |                                        |                                         |                                  |                                                                                                                                                           |                                                                                                                                                           |                                                                                                                                                |                                                                                                                                                |                                                                                                                                                |                                                                                                                                                                               |                                                                                                                                                |                                                                                                                              |                                                                                                                                            |                                                                                                                                        |                           |                           |                           | 731                         | 384                         |                                     |
| INTERCEPTOR DITCH 2-A | STA 118 + 00 O/S LT<br>STA 122 + 15 O/S LT |                                             |                                                   |                                | 83                           |                                        |                                         |                                  |                                                                                                                                                           |                                                                                                                                                           |                                                                                                                                                |                                                                                                                                                |                                                                                                                                                |                                                                                                                                                                               |                                                                                                                                                |                                                                                                                              |                                                                                                                                            |                                                                                                                                        |                           |                           |                           | 415                         |                             |                                     |
| INTERCEPTOR DITCH 3-A | STA 125 + 36 O/S LT<br>STA 129 + 00 O/S LT |                                             |                                                   |                                | 182                          |                                        |                                         |                                  |                                                                                                                                                           |                                                                                                                                                           |                                                                                                                                                |                                                                                                                                                |                                                                                                                                                |                                                                                                                                                                               |                                                                                                                                                |                                                                                                                              |                                                                                                                                            |                                                                                                                                        |                           |                           |                           |                             | 364                         |                                     |
| INTERCEPTOR DITCH 3-B | STA 132 + 50 O/S LT<br>STA 143 + 25 O/S LT |                                             |                                                   |                                | 437                          |                                        |                                         |                                  |                                                                                                                                                           |                                                                                                                                                           |                                                                                                                                                |                                                                                                                                                |                                                                                                                                                |                                                                                                                                                                               |                                                                                                                                                |                                                                                                                              |                                                                                                                                            |                                                                                                                                        |                           |                           |                           | 350                         | 734                         |                                     |
| INTERCEPTOR DITCH 4-A | STA 149 + 50 O/S LT<br>STA 152 + 00 O/S LT |                                             |                                                   |                                | 50                           |                                        |                                         |                                  |                                                                                                                                                           |                                                                                                                                                           |                                                                                                                                                |                                                                                                                                                |                                                                                                                                                |                                                                                                                                                                               |                                                                                                                                                |                                                                                                                              |                                                                                                                                            |                                                                                                                                        |                           |                           |                           | 250                         |                             |                                     |
| TOTAL THIS SHEET      |                                            |                                             |                                                   |                                | 1352                         |                                        |                                         |                                  |                                                                                                                                                           |                                                                                                                                                           |                                                                                                                                                |                                                                                                                                                |                                                                                                                                                |                                                                                                                                                                               |                                                                                                                                                |                                                                                                                              |                                                                                                                                            |                                                                                                                                        |                           |                           |                           | 2016                        | 1900                        |                                     |
| TOTAL ALL SHEETS      |                                            | 12255                                       | 4856                                              | 50                             | 1352                         | 708                                    | 83250                                   | 1838                             | 728                                                                                                                                                       | 426                                                                                                                                                       | 1832                                                                                                                                           | 147                                                                                                                                            | 691                                                                                                                                            | 164                                                                                                                                                                           | 288                                                                                                                                            | 464                                                                                                                          | 1                                                                                                                                          | 2                                                                                                                                      | 8                         | 10                        | 2                         | 2016                        | 1900                        | 9                                   |