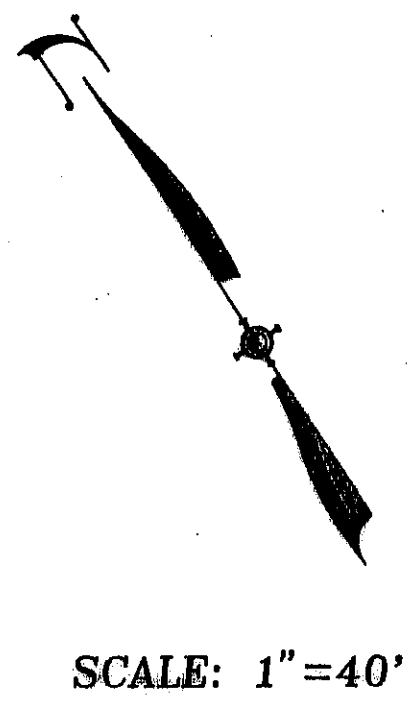


**SANITARY SEWER LEGEND**

- SS- SANITARY SEWER LINE W/SIZE & FLOW
- SANITARY SEWER MANHOLE W/NUMBER
- SANITARY SEWER CLEANOUT
- └ SANITARY SEWER SERVICE LATERAL
- FM- FORCE MAIN



SCALE: 1" = 40'

**SUMMIT**  
ENGINEERING CORPORATION  
CONSULTING ENGINEERS AND SURVEYORS  
115 WEST BAY AVENUE, SUITE 211, LOS ANGELES, CALIFORNIA 90012  
PHONE: (781) 781-8800

DESIGNED BY: ASM  
DRAWN BY: KKA  
CHECKED BY: JTA  
DATE: SEPTEMBER 1994

EXISTING SEWER PLAN-REMOVAL  
PORTOBELLO  
KAHALA DEVELOPMENT

**On-Site Sewer Quantities**

| DESCRIPTION            | AMOUNT | UNIT |
|------------------------|--------|------|
| 10" PVC SDR 35 SS      | 998    | LF   |
| 8" PVC SDR 35 SS       | 3000   | LF   |
| 4" SS LATERAL          | 202    | EA   |
| 2" FORCE MAIN          | 561    | LF   |
| 8" SSO                 | 10     | EA   |
| 48" SSMH               | 25     | EA   |
| DUPLEX SS LIFT STATION | 1      | EA   |

**Off-Site Sewer Quantities**

| DESCRIPTION      | AMOUNT | UNIT |
|------------------|--------|------|
| 8" PVC SDR 35 SS | 873    | LF   |
| 48" SSMH         | 4      | EA   |

**LIFT STATION NOTES:**

- CONTRACTOR TO FURNISH AND INSTALL DUPLEX HOG - HOR IN FIBERGLASS SUMP PUMP STATION WITH PUMP UNITS TO BE OF IDENTICAL PERFORMANCE AND DIMENSIONS. EACH RATED AS FOLLOWS:  
FLOW: 49 GPM  
TDH: 34 FT.  
SPEED: 1750 RPM  
HP: 5"  
IMPELLER: 7.5"  
POWER: 240 VOLT, 3 PHASE  
HYDROMATIC MODEL 5000 300 SUBMERSIBLE PUMP.  
HYDRO-GRIND  
SUMP: HYDROMATIC 60" FIBERGLASS  
CONTROL PANEL: PEDESTAL MOUNT
- CONTRACTOR TO USE MANUFACTURER'S APPROVED, CERTIFIED SHOP DRAWINGS TO FINALIZE LIFT STATION ARRANGEMENT.
- ALL BACKFILL SHALL BE SELECTED BACKFILL OR AS APPROVED BY ENGINEER AND SHALL BE COMPACTED TO 90 PERCENT RELATIVE COMPACTION.
- CONTRACTOR TO PROVIDE HASP FOR LOCKS ON LIFT STATION ACCESS PANELS AND ELECTRICAL CONTROL BOXES. OWNER WILL FURNISH LOCKS AND KEYS.
- ALL ELECTRICAL WORK SHALL BE IN STRICT COMPLIANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE POWER FOR THE LIFT STATION SHALL BE PROVIDED AS A SINGLE POINT SOURCE.
- CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 P.S.I. REINFORCING BARS SHALL CONFORM TO ASTM SPECIFICATIONS A615 GRADE 60 STEEL.
- CONTRACTOR CAN UTILIZE AN ALTERNATIVE PACKAGE PUMPING STATION
- ALARM AND FLEA PEDESTAL TO BE ATTACHED TO GUARD BLDGS. AS SHOWN ON THE ARCH. PLANS.

**SEWER MANHOLE DATA**

| MANHOLE NO. | INVERT IN (ft) | INVERT OUT (ft) | RIM ELEVATION (ft) |
|-------------|----------------|-----------------|--------------------|
| 1           | 467.80         | 467.60          | 474.00             |
| 2           | 468.20         | 468.10          | 473.70             |
| 3           | 468.59         | 468.49          | 474.51             |
| 4           | 469.54         | 469.44          | 474.39             |
| 5           | 469.78         | 469.68          | 474.78             |
| 6           | 470.15         | 470.05          | 475.00             |
| 7           | 470.52         | 470.42          | 475.10             |
| 8           | 470.61         | 470.51          | 475.04             |
| 9           | 470.85         | 470.75          | 475.44             |
| 10          | 471.18         | 471.08          | 475.91             |
| 11          | 471.56         | 471.46          | 476.42             |
| 12          | 471.46         | 471.36          | 476.80             |
| 13          | 472.00         | 471.90          | 477.90             |
| 14          | 472.23         | 472.13          | 478.10             |
| 15          | 472.51         | 472.51          | 478.50             |
| 16          | 472.99         | 472.89          | 478.99             |
| 17          | 468.44         | 468.34          | 475.56             |
| 18          | 468.91         | 468.81          | 476.15             |
| 19          | 468.91         | 468.81          | 476.29             |
| 20          | 468.02         | 467.92          | 475.96             |
| 21          | 472.81         | 472.81          | 478.00             |
| 22          | 460.78         | 460.68          | 471.04             |
| 23          | 462.51         | 462.41          | 472.84             |
| 24          | 462.15         | 462.15          | 472.57             |
| 25          | 465.38         | 465.28          | 471.78             |
| 26          | 466.71         | 466.61          | 471.68             |

**SANITARY SEWER CLEANOUT DATA**

| SSCO NO. | INVERT OUT (ft) | RIM ELEVATION |
|----------|-----------------|---------------|
| 1        | 468.81          | 474.11        |
| 2        | 470.49          | 476.73        |
| 3        | 470.90          | 475.09        |
| 4        | 471.52          | 476.54        |
| 5        | 471.89          | 476.73        |
| 6        | 472.95          | 476.80        |
| 7        | 472.32          | 476.99        |
| 8        | 469.39          | 475.12        |
| 9        | 467.07          | 472.05        |
| 10       | 467.03          | 471.03        |

**4" SS LATERALS STATION**

| BUILDING # | STATION            | INVERT | RIM    |
|------------|--------------------|--------|--------|
| 67         | "WEST BEACH" 0+42  | 471.56 | 476.42 |
| 68         | "WEST BEACH" 0+57  | 471.56 | 476.42 |
| 69         | "WEST BEACH" 0+76  | 471.56 | 476.42 |
| 70         | "WEST BEACH" 0+90  | 471.56 | 476.42 |
| 71         | "WEST BEACH" 1+00  | 471.56 | 476.42 |
| 72         | "WEST BEACH" 1+16  | 471.56 | 476.42 |
| 73         | "WEST BEACH" 1+27  | 471.56 | 476.42 |
| 74         | "WEST BEACH" 1+36  | 471.56 | 476.42 |
| 75         | "WEST BEACH" 1+49  | 471.56 | 476.42 |
| 76         | "WEST BEACH" 1+62  | 471.56 | 476.42 |
| 77         | "WEST BEACH" 1+79  | 471.56 | 476.42 |
| 78         | "WEST BEACH" 1+94  | 471.56 | 476.42 |
| 79         | "WEST BEACH" 2+02  | 471.56 | 476.42 |
| 80         | "WEST BEACH" 2+17  | 471.56 | 476.42 |
| 81         | "WEST BEACH" 2+36  | 471.56 | 476.42 |
| 82         | "WEST BEACH" 2+46  | 471.56 | 476.42 |
| 83         | "WEST BEACH" 2+61  | 471.56 | 476.42 |
| 84         | "WEST BEACH" 2+82  | 471.56 | 476.42 |
| 85         | "WEST BEACH" 3+01  | 471.56 | 476.42 |
| 86         | "WEST BEACH" 3+26  | 471.56 | 476.42 |
| 87         | "WEST BEACH" 3+43  | 471.56 | 476.42 |
| 88         | "WEST BEACH" 3+79  | 471.56 | 476.42 |
| 89         | "WEST BEACH" 4+01  | 471.56 | 476.42 |
| 90         | "WEST BEACH" 4+21  | 471.56 | 476.42 |
| 91         | "WEST BEACH" 4+51  | 471.56 | 476.42 |
| 92         | "WEST BEACH" 4+81  | 471.56 | 476.42 |
| 93         | "WEST BEACH" 5+08  | 471.56 | 476.42 |
| 94         | "WEST BEACH" 5+41  | 471.56 | 476.42 |
| 95         | "WEST BEACH" 5+79  | 471.56 | 476.42 |
| 96         | "WEST BEACH" 6+15  | 471.56 | 476.42 |
| 97         | "WEST BEACH" 6+54  | 471.56 | 476.42 |
| 98         | "WEST BEACH" 6+71  | 471.56 | 476.42 |
| 99         | "WEST BEACH" 7+07  | 471.56 | 476.42 |
| 100        | "WEST BEACH" 7+33  | 471.56 | 476.42 |
| 101        | "WEST BEACH" 7+73  | 471.56 | 476.42 |
| 102        | "WEST BEACH" 8+07  | 471.56 | 476.42 |
| 103        | "WEST BEACH" 8+40  | 471.56 | 476.42 |
| 104        | "WEST BEACH" 8+90  | 471.56 | 476.42 |
| 105        | "WEST BEACH" 9+46  | 471.56 | 476.42 |
| 106        | "WEST BEACH" 9+26  | 471.56 | 476.42 |
| 107        | "WEST BEACH" 9+86  | 471.56 | 476.42 |
| 108        | "WEST BEACH" 10+10 | 471.56 | 476.42 |

**BUILDING STATION**

| BUILDING | STATION       | INVERT | RIM    |
|----------|---------------|--------|--------|
| 10+35    | "BEACH" 10+35 | 471.56 | 476.42 |
| 10+41    | "BEACH" 10+41 | 471.56 | 476.42 |
| 10+47    | "BEACH" 10+47 | 471.56 | 476.42 |
| 10+53    | "BEACH" 10+53 | 471.56 | 476.42 |
| 10+59    | "BEACH" 10+59 | 471.56 | 476.42 |
| 10+65    | "BEACH" 10+65 | 471.56 | 476.42 |
| 10+71    | "BEACH" 10+71 | 471.56 | 476.42 |
| 10+77    | "BEACH" 10+77 | 471.56 | 476.42 |
| 10+83    | "BEACH" 10+83 | 471.56 | 476.42 |
| 10+89    | "BEACH" 10+89 | 471.56 | 476.42 |
| 10+95    | "BEACH" 10+95 | 471.56 | 476.42 |
| 11+01    | "BEACH" 11+01 | 471.56 | 476.42 |
| 11+07    | "BEACH" 11+07 | 471.56 | 476.42 |
| 11+13    | "BEACH" 11+13 | 471.56 | 476.42 |
| 11+19    | "BEACH" 11+19 | 471.56 | 476.42 |
| 11+25    | "BEACH" 11+25 | 471.56 | 476.42 |
| 11+31    | "BEACH" 11+31 | 471.56 | 476.42 |
| 11+37    | "BEACH" 11+37 | 471.56 | 476.42 |
| 11+43    | "BEACH" 11+43 | 471.56 | 476.42 |
| 11+49    | "BEACH" 11+49 | 471.56 | 476.42 |
| 11+55    | "BEACH" 11+55 | 471.56 | 476.42 |
| 11+61    | "BEACH" 11+61 | 471.56 | 476.42 |
| 11+67    | "BEACH" 11+67 | 471.56 | 476.42 |
| 11+73    | "BEACH" 11+73 | 471.56 | 476.42 |
| 11+79    | "BEACH" 11+79 | 471.56 | 476.42 |
| 11+85    | "BEACH" 11+85 | 471.56 | 476.42 |
| 11+91    | "BEACH" 11+91 | 471.56 | 476.42 |
| 11+97    | "BEACH" 11+97 | 471.56 | 476.42 |
| 12+03    | "BEACH" 12+03 | 471.56 | 476.42 |
| 12+09    | "BEACH" 12+09 | 471.56 | 476.42 |
| 12+15    | "BEACH" 12+15 | 471.56 | 476.42 |
| 12+21    | "BEACH" 12+21 | 471.56 | 476.42 |
| 12+27    | "BEACH" 12+27 | 471.56 | 476.42 |
| 12+33    | "BEACH" 12+33 | 471.56 | 476.42 |
| 12+39    | "BEACH" 12+39 | 471.56 | 476.42 |
| 12+45    | "BEACH" 12+45 | 471.56 | 476.42 |
| 12+51    | "BEACH" 12+51 | 471.56 | 476.42 |
| 12+57    | "BEACH" 12+57 | 471.56 | 476.42 |
| 12+63    | "BEACH" 12+63 | 471.56 | 476.42 |
| 12+69    | "BEACH" 12+69 | 471.56 | 476.42 |
| 12+75    | "BEACH" 12+75 | 471.56 | 476.42 |
| 12+81    | "BEACH" 12+81 | 471.56 | 476.42 |
| 12+87    | "BEACH" 12+87 | 471.56 | 476.42 |
| 12+93    | "BEACH" 12+93 | 471.56 | 476.42 |
| 12+99    | "BEACH" 12+99 | 471.56 | 476.42 |
| 13+05    | "BEACH" 13+05 | 471.56 | 476.42 |
| 13+11    | "BEACH" 13+11 | 471.56 | 476.42 |
| 13+17    | "BEACH" 13+17 | 471.56 | 476.42 |
| 13+23    | "BEACH" 13+23 | 471.56 | 476.42 |
| 13+29    | "BEACH" 13+29 | 471.56 | 476.42 |
| 13+35    | "BEACH" 13+35 | 471.56 | 476.42 |
| 13+41    | "BEACH" 13+41 | 471.56 | 476.42 |
| 13+47    | "BEACH" 13+47 | 471.56 | 476.42 |
| 13+53    | "BEACH" 13+53 | 471.56 | 476.42 |
| 13+59    | "BEACH" 13+59 | 471.56 | 476.42 |
| 13+65    | "BEACH" 13+65 | 471.56 | 476.42 |
| 13+71    | "BEACH" 13+71 | 471.56 | 476.42 |
| 13+77    | "BEACH" 13+77 | 471.56 | 476.42 |
| 13+83    | "BEACH" 13+83 | 471.56 | 476.42 |
| 13+89    | "BEACH" 13+89 | 471.56 | 476.42 |
| 13+95    | "BEACH" 13+95 | 471.56 | 476.42 |
| 14+01    | "BEACH" 14+01 | 471.56 | 476.42 |
| 14+07    | "BEACH" 14+07 | 471.56 | 476.42 |
| 14+13    | "BEACH" 14+13 | 471.56 | 476.42 |
| 14+19    | "BEACH" 14+19 | 471.56 | 476.42 |
| 14+25    | "BEACH" 14+25 | 471.56 | 476.42 |
| 14+31    | "BEACH" 14+31 | 471.56 | 476.42 |
| 14+37    | "BEACH" 14+37 | 471.56 | 476.42 |
| 14+43    | "BEACH" 14+43 | 471.56 | 476.42 |
| 14+49    | "BEACH" 14+49 | 471.56 | 476.42 |
| 14+55    | "BEACH" 14+55 | 471.56 | 476.42 |
| 14+61    | "BEACH" 14+61 | 471.56 | 476.42 |
| 14+67    | "BEACH" 14+67 | 471.56 | 476.42 |
| 14+73    | "BEACH" 14+73 | 471.56 | 476.42 |
| 14+79    | "BEACH" 14+79 | 471.56 | 476.42 |
| 14+85    | "BEACH" 14+85 | 471.56 | 476.42 |
| 14+91    | "BEACH" 14+91 | 471.56 | 476.42 |
| 14+97    | "BEACH" 14+97 | 471.56 | 476.42 |
| 15+03    | "BEACH" 15+03 | 471.56 | 476.42 |
| 15+09    | "BEACH" 15+09 | 471.56 | 476.42 |
| 15+15    | "BEACH" 15+15 | 471.56 | 476.42 |
| 15+21    | "BEACH" 15+21 | 471.56 | 476.42 |
| 15+27    | "BEACH" 15+27 | 471.56 | 476.42 |
| 15+33    | "BEACH" 15+33 | 471.56 | 476.42 |
| 15+39    | "BEACH" 15+39 | 471.56 | 476.42 |
| 15+45    | "BEACH" 15+45 | 471.56 | 476.42 |
| 15+51    | "BEACH" 15+51 | 471.56 | 476.42 |
| 15+57    | "BEACH" 15+57 | 471.56 | 476.42 |
| 15+63    | "BEACH" 15+63 | 471.56 | 476.42 |
| 15+69    | "BEACH" 15+69 | 471.56 | 476.42 |
| 15+75    | "BEACH" 15+75 | 471.56 | 476.42 |
| 15+81    | "BEACH" 15+81 | 471.56 | 476.42 |
| 15+87    | "BEACH" 15+87 | 471.56 | 476.42 |
| 15+93    | "BEACH" 15+93 | 471.56 | 476.42 |
| 15+99    | "BEACH" 15+99 | 471.56 | 476.42 |
| 16+05    | "BEACH" 16+05 | 471.56 | 476.42 |
| 16+11    | "BEACH" 16+11 | 471.56 | 476.42 |
| 16+17    | "BEACH" 16+17 | 471.56 | 476.42 |
| 16+23    | "BEACH" 16+23 | 471.56 | 476.42 |
| 16+29    | "BEACH" 16+29 | 471.56 | 476.42 |
| 16+35    | "BEACH" 16+35 | 471.56 | 476.42 |
| 16+41    | "BEACH" 16+41 | 471.56 | 476.42 |
| 16+47    | "BEACH" 16+47 | 471.56 | 476.42 |
| 16+53    | "BEACH" 16+53 | 471.56 | 476.42 |
| 16+59    | "BEACH" 16+59 | 471.56 | 476.42 |
| 16+65    | "BEACH" 16+65 | 471.56 | 476.42 |
| 16+71    | "BEACH" 16+71 | 471.56 | 476.42 |
| 16+77    | "BEACH" 16+77 | 471.56 | 476.42 |
| 16+83    | "BEACH" 16+83 | 471.56 | 476.42 |
| 16+89    | "BEACH" 16+89 | 471.56 | 476.42 |
| 16+95    | "BEACH" 16+95 | 471.56 | 476.42 |
| 17+01    | "BEACH" 17+01 | 471.56 | 476.42 |
| 17+07    | "BEACH" 17+07 | 471.56 | 476.42 |
| 17+13    | "BEACH" 17+13 | 471.56 | 476.42 |
| 17+19    | "BEACH" 17+19 | 471.56 | 476.42 |
| 17+25    | "BEACH" 17+25 | 471.56 | 476.42 |
| 17+31    | "BEACH" 17+31 | 471.56 | 476.42 |
| 17+37    | "BEACH" 17+37 | 471.56 | 476.42 |
| 17+43    | "BEACH" 17+43 | 471.56 | 476.42 |
| 17+49    | "BEACH" 17+49 | 471.56 | 476.42 |
| 17+55    | "BEACH" 17+55 | 471.56 | 476.42 |
| 17+61    | "BEACH" 17+61 | 471.56 | 476.42 |
| 17+67    | "BEACH" 17+67 | 471.56 | 476.42 |
| 17+73    | "BEACH" 17+73 | 471.56 | 476.42 |
| 17+79    | "BEACH" 17+79 | 471.56 | 476.42 |
| 17+85    | "BEACH" 17+85 | 471.56 | 476.42 |
| 17+91    | "BEACH" 17+91 | 471.56 | 476.42 |
| 17+97    | "BEACH" 17+97 | 471.56 | 476.42 |
| 18+03    | "BEACH" 18+03 | 471.56 | 476.42 |

**4" SS LATERALS STATION (TYPICAL)**

| BUILDING # | STATION       | INVERT | RIM    |
|------------|---------------|--------|--------|
| 82         | "MARINA" 3+81 | 471.56 | 476.42 |
| 83         | "MARINA" 4+01 | 471.56 | 476.42 |
| 84         | "MARINA" 4+21 | 471.56 | 476.42 |
| 85         | "MARINA" 4+41 |        |        |