

WATER NOTES

(revised January 9, 2012)

- Unless otherwise specified, all materials and construction of water facilities and appurtenances shall be in accordance with the "Water System Standards", 2002, as adopted by the Department of Water, County of Kauai, including all subsequent amendments and additions.
- The Contractor shall arrange a pre-construction conference at least 10 days before construction and shall notify the Department of Water at least 3 working days prior to the start of construction.
- The Contractor shall submit the name and telephone number of its authorized superintendent on the job, and the names and telephone numbers of at least three (3) persons to contact in case of emergency during non-working hours.
- The Contractor shall notify the Department of Water at least 24 hours prior to any trenching, pipe laying, backfilling, testing or chlorination to insure that inspectional services will be available.
- All materials (pipe, pipe lubricants, paints, sealants, form oil, concrete admixtures, etc.) in direct contact with the potable water shall have National Sanitation Foundation (NSF) approvals. The Contractor shall submit these approvals to the Department of Water for review and approval prior to its application.
- The location of existing water mains and appurtenances shown on the plans are approximate only. The Contractor shall verify the exact locations in the field. Excavation around any existing water main shall be done by hand.
- The Contractor shall provide unobstructed access to existing hydrants, valves and water meters at all times.
- The Contractor shall secure all excavations in accordance with OSHA regulations.
- There shall be no physical connection between a public or private potable water system and a non-potable water system, sewer, or appurtenance thereto which could permit the passage of any sewage or polluted water into the potable water supply.
- Trench excavation, backfilling in lifts, and repaving shall conform to the "Hawaii Standard Specifications for Road and Bridge Construction, 2005" or amended.
- Warning tape shall be in accordance with Division 200, Section 212.08 of the "Water System Standards". The warning tape shall be four mil thick, non-metallic, acid and alkali resistant polyethylene and 6-inches wide with minimum strength of 1,750 psi lengthwise and 1,500 psi crosswise. Tape color shall be "Safety Precaution Blue" and shall bear a continuous printed inscription "Caution Water Line Buried Below". Inscription shall be 2-inches high, black text.
- All hydrants shall receive a minimum SSPC SP3 surface preparation and coated in accordance with Division 200, Section 206.01 of the "Water System Standards".
- Unless otherwise directed, prior to the connection of any pipeline to the existing main, the pipeline installed shall be cleaned, pressure tested, chlorinated, flushed, and sampled in accordance with Division 300, Sections 302.27 to 302.29 of the "Water System Standards".

Water samples shall be analyzed by the MF method on m-ENDO Agar. In addition to the test for coliforms, a separate test for heterotrophic plate count (HPC) shall be conducted. The HPC count shall be less than 300 CFU/ML.
- Polyurethane foam "pigs" shall be "pushed" through the length of the installed pipeline using pressurized water.
- All connections shall be scheduled in coordination with the Department of Water.
 - An advance deposit is required for operating valves, flushing lines and notifying consumers affected by a water shutdown during connections. The Contractor will be charged the actual cost.
 - The Contractor shall place the deposit prior to scheduling the connection date.
 - Connections shall be scheduled on Tuesdays through Thursdays. No connections shall be scheduled on Mondays, Fridays, weekends and holidays.
 - All materials shall be on hand and approved by the Engineer prior to scheduling the connection date.
 - Pumps used to de-water the connection area shall be operated in the presence of the Engineer prior to scheduling the connection date.
 - All connections shall be performed in the presence of the Engineer.
- In order to prevent damage to the polyethylene encasement from excessive handling, the polywrap should be installed around the barrel of the ductile iron pipe at its final location along the trenchline. The polyethylene encased pipe shall be lifted using a fabric type sling or a suitably padded cable or chain to prevent damage to the polyethylene.
- The Contractor shall take all necessary compaction tests while the waterline trench is being backfilled and while the subbase/basecourse is being placed. If the test results indicate that additional compaction is required, the corrective work shall be completed before any additional trench excavation or placing of subbase/basecourse is allowed.

The Contractor shall retain the services of a registered geotechnical engineer for quality control. The compaction test results shall be certified by the Geotechnical Engineer and submitted to the Department of Water, State Highways Division (for work done within State R/W) and the Department of Public Works (for work done within County R/W). The Geotechnical Engineer shall certify that the compaction results meet the requirements of the current standard specifications for road and bridge construction.
- The Contractor shall connect all existing consumer piping to the new service laterals. The Department of Water will transfer the existing water meters only.
- All fittings shall be mechanical joint (MJ) at each end unless otherwise noted. "Megalu" retainer glands shall be used with all mechanical joint fittings and valves used in connecting new water mains to existing water mains unless otherwise noted.
- All water valves that will be abandoned in place shall be placed in the "closed" position. Remove top section of valve box and concrete settlement slab. Fill remainder of valve box with concrete. Place backfill and repair pavement section to applicable state or county standards. Backfill to finish grade in road shoulder area.
- The Contractor shall obtain all applicable Department of Health permits prior to the start of construction. Permits include, but are not limited to, National Pollution Discharge Elimination System (NPDES) permits for storm water, hydrostatic test, dewatering, and for construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area.

The Contractor shall be responsible for the proper disposal of storm water discharges and effluent associated with construction activities, including hydrotesting and disinfection operations, to safeguard public health and safety in accordance with applicable Department of Health requirements. All permits and licenses for storm water and construction water disposal, including all application, charges, fees, and taxes are the responsibility of the Contractor.
- The Contractor shall provide continuous water service to existing customers at all times. If required, temporary service shall be provided by the contractor at his expense. If service interruptions are unavoidable, the Contractor shall notify all affected property owners prior to shutting off water service. The Contractor shall coordinate his work with the Department of Water so that water service interruptions are minimized.

SPECIAL NOTES TO DEVELOPER/OWNER:

- Certificate of completion for these water system facilities will not be issued until:
- All water improvements are complete and dedicated to the Department of Water.
 - As-built tracings are submitted to the Department of Water.
 - Final Cost Breakdown for the water improvements are submitted and approved by the Department of Water. The Owner shall certify costs.
 - Roadway and pipeline easements are conveyed to the Department of Water (if applicable).
 - Payment of all applicable fees for the development (including but not limited to facilities reserve charges) have been received by the Department of Water.
 - Payment of all water fees shall be made immediately after approval of the tracings.
- * FRC credit will be allowed in accordance with the terms of the State of Hawaii, Department of Hawaiian Home Lands Water Credit Agreements No. 530 for the Anahola water system between the State of Hawaii, Department of Hawaiian Homelands and the County of Kauai, Department of Water. The effective date of the Water Credits Agreement is November 13, 2003

SEWER NOTES

(revised April 23, 2009)

- In the event that any changes in alignment or grade for the proposed sewer mains & laterals are required due to unforeseen conflicts, the Contractor shall notify the Owner's Representative who in turn will be responsible for the required changes.
- Minimum slope for all sewer laterals shall be 1.00 percent unless otherwise specified on the plans. As-built drawings showing lateral location, vertically & horizontally shall be provided.
- The Contractor shall verify the location and invert of all existing utilities whether shown or not shown as required.
- Pipeline inverts shall be installed at a constant slope and on a straight line connecting the invert elevations at manholes.
- Crushed rock cradle shall be required for all sewer lines, except in areas of unsuitable soils, the Owner's Representative will determine the pipe support required.
- For the construction and installation of sewer lines, sewer laterals, sewer manholes and sewer connections, the Contractor shall refer to the County of Kauai's Sewer Design Standards dated June 1973, Standard Details for Public Works Construction dated Sept. 1984 as amended of the Department of Public Works, City and County of Honolulu, and the Counties of Kauai, Maui and Hawaii, and the "Hawaii Standard Specifications for Road and Bridge Construction, 2005" and its amendments.
- Plastic sewer pipes and fittings shall be PVC (polyvinyl-chloride), extra strength bell and spigot, and conform to ASTM designation D3034.73 with an SDR of 35.
 - Bedding and the first lift of backfill from the bottom of the pipe to 6 inches above the pipe barrel shall be crushed rock ASTM Gradation No. 67. The minimum thickness of the bedding below the pipe shall be 4 inches. Bedding shall be compacted to a relative compaction of not less than 90 percent.
 - The trench shall be backfill only to a height of 6 inches above the crown of the pipe. Further backfilling of the trench will only be permitted after the alignment and grade of the pipe has been inspected and passed. The Contractor shall provide proper facilities for access and inspection, including clearing the pipe of all dirt, joint compound and superfluous or foreign material.
 - No base course for roadway shall be placed until sewer line within said roadway has been inspected and passed. The Contractor shall provide proper facilities for access and inspection, including clearing the pipe of all dirt, joint compound and superfluous or foreign material.
 - Maximum allowable vertical pipe deflection (reduction in vertical inside diameter) shall be 5 percent. Deflection shall be checked by the Contractor in the presence of the inspector by using an approved deflectometer, calibrated television, properly sized "GO, NO-GO" mandrel or sewer ball. For the purpose of deflection measures the base inside diameter without deflection are provided below:

SIZE	BASE I.D.
6"	5.89"
8"	7.92"
10"	9.90"
 - Locations with excessive deflection shall have the pipe replaced and retested.
 - PVC pipe connection to manholes shall be made with elastomeric water seal stop or seal.

GENERAL NOTES FOR TRAFFIC CONTROL PLAN

- The permittee shall make minor adjustments at intersections, driveways, bridges, structures, etc., to fit field conditions.
- Cones or delineators shall be extended to a point where they are visible to approaching traffic.
- Traffic control devices shall be installed such that the sign or device farthest from the work area shall be placed first. The others shall then be placed progressively toward the work area.
- Regulatory and warning signs within the construction zone that are in conflict with the Traffic Control Plans shall be removed or covered. All signs shall be restored upon completion of the work.
- Flaggers and/or police officers shall be in sight of each other or in direct communication at all times. Police officer shall be present at all times.
- When required by the issuing office, the permittee shall install a flashing arrow signal as shown on the Traffic Control Plans.
- Sign spacings (D), taper lengths (T) and spacings of cones or delineators shall be as shown in Table 1, unless otherwise noted on the Traffic Control Plans.
- All traffic lanes shall be a minimum of 10 feet wide.
- All construction warning signs shall be promptly removed or covered whenever the message is not applicable or not in use.
- The backs of all signs used for traffic control shall be appropriately covered to preclude the display of inapplicable sign messages (i.e., when signs have message on both faces), whenever the messages are not applicable or not in use.
- At the end of each day's work or as soon as the work is completed, the permittee shall remove all traffic control devices no longer needed to permit free and safe passage of public traffic. Removal shall be in the reverse order of installation.
- Replace permanent pavement markings and traffic signs upon completion of each phase of work.
- Police Officers/Flaggers shall be present at all times.
- All workers within the State R.O.W. & Hawaiian Home Roads who are exposed to either vehicles using the roadway or to construction equipment shall wear high visibility safety apparel that meets the performance class 2 or 3 requirements of ANSI/SEA 107-2004.

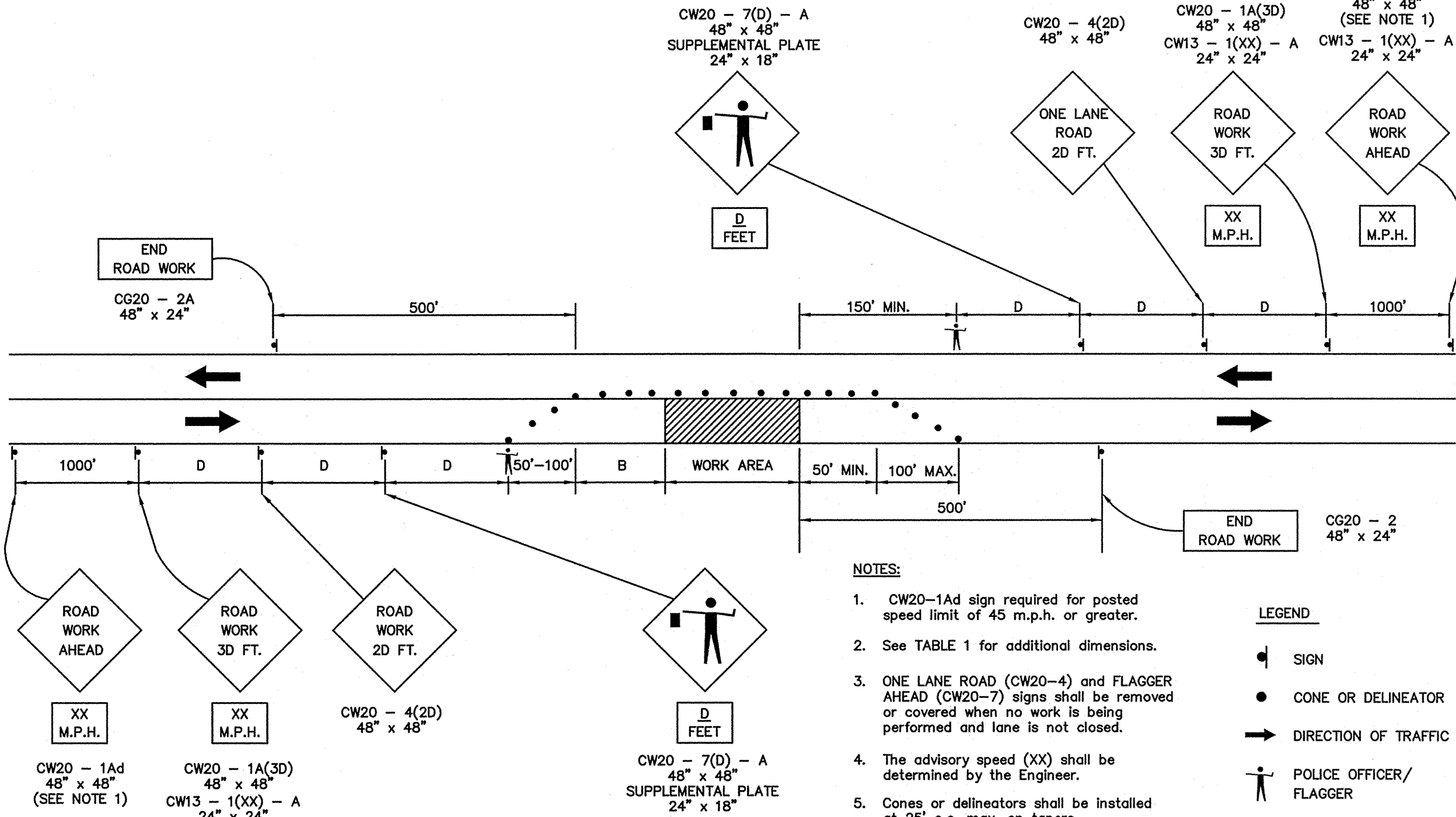
"Workers" is defined as people on foot whose duties place them within the State R.O.W. & Hawaiian Home Roads, such as but not limited to construction and maintenance forces, equipment operators, survey crew, utility crews, responders to incidents (eg, EMT, and firemen), and law enforcement personnel directing traffic, investigating accidents, handling lane closures and installing service connections & roadway improvements.

NOTES:

- Use advisory speeds when posted
- W = width of lane, shoulder, or offset
- not applicable for two-lane highways

TABLE 1 FOR TRAFFIC CONTROL PLAN

POSTED SPEED LIMIT (1) (M.P.H.)	SIGN SPACING (D) (FEET)	TAPER LENGTH (T) (FEET)		LONGITUDINAL BUFFER SPACE (B) (FEET)	SPACING OF CONES OR DELINEATORS (FEET) (3)		
		W = 12' OR LESS (2)	W = GREATER THAN 12' (2)		TAPER	TANGENT	WORK AREA
20	250	200	W X 17	35	20	20	10
25	250	200	W X 17	55	25	25	10
30	250	250	W X 20	85	30	30	10
35	250	250	W X 20	120	35	35	10
40	500	350	W X 30	170	40	40	10
45	500	550	W X 45	220	45	45	10
50	1000	600	W X 50	280	50	50	10
55	1000	700	W X 55	335	55	55	10



ONE-LANE, TWO-WAY TRAFFIC TAPER

FIGURE 1 - TRAFFIC CONTROL PLAN

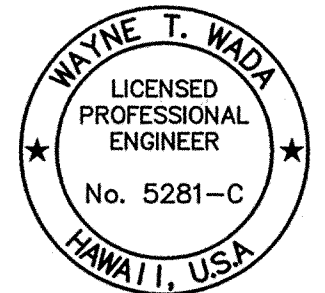
ESAKI SURVEYING AND MAPPING, INC.

1610 Halekuna Street
Lihue, Kauai, Hawaii 96766
Ph. (808) 246-0625 Fax (808) 246-0229

• CIVIL ENGINEERS • SURVEYORS • PLANNERS

REVISION	DATE	DESCRIPTION	BY	APPROVED
6-28-12		WATER NOTES REVISIONS	WW	
6-20-12		REVISED CONSTRUCTION NOTES	WW	

REVISIONS



THIS WORK WAS PREPARED
BY ME OR UNDER MY SUPERVISION

Wayne T. Wada
EXPIRES: APRIL 30, 2014

PILANI MAI KE KAI SUBDIVISION
PHASE II

Anahola, Kauai, Hawaii

Tax Map Key: (4) 4-8-16: 03
(4) 4-8-22: 89

Developer/Owner:

Department of Hawaiian Home Lands
91-5420 Kapolei Parkway
Kapolei, HI 96707

CONSTRUCTION
NOTES

APPROVED:

COUNTY ENGINEER, DEPT. OF PUBLIC WORKS, COUNTY OF KAUAI DATE

MANAGER & CHIEF ENGINEER, DEPT. OF WATER, COUNTY OF KAUAI DATE

DESIGNED BY: WW

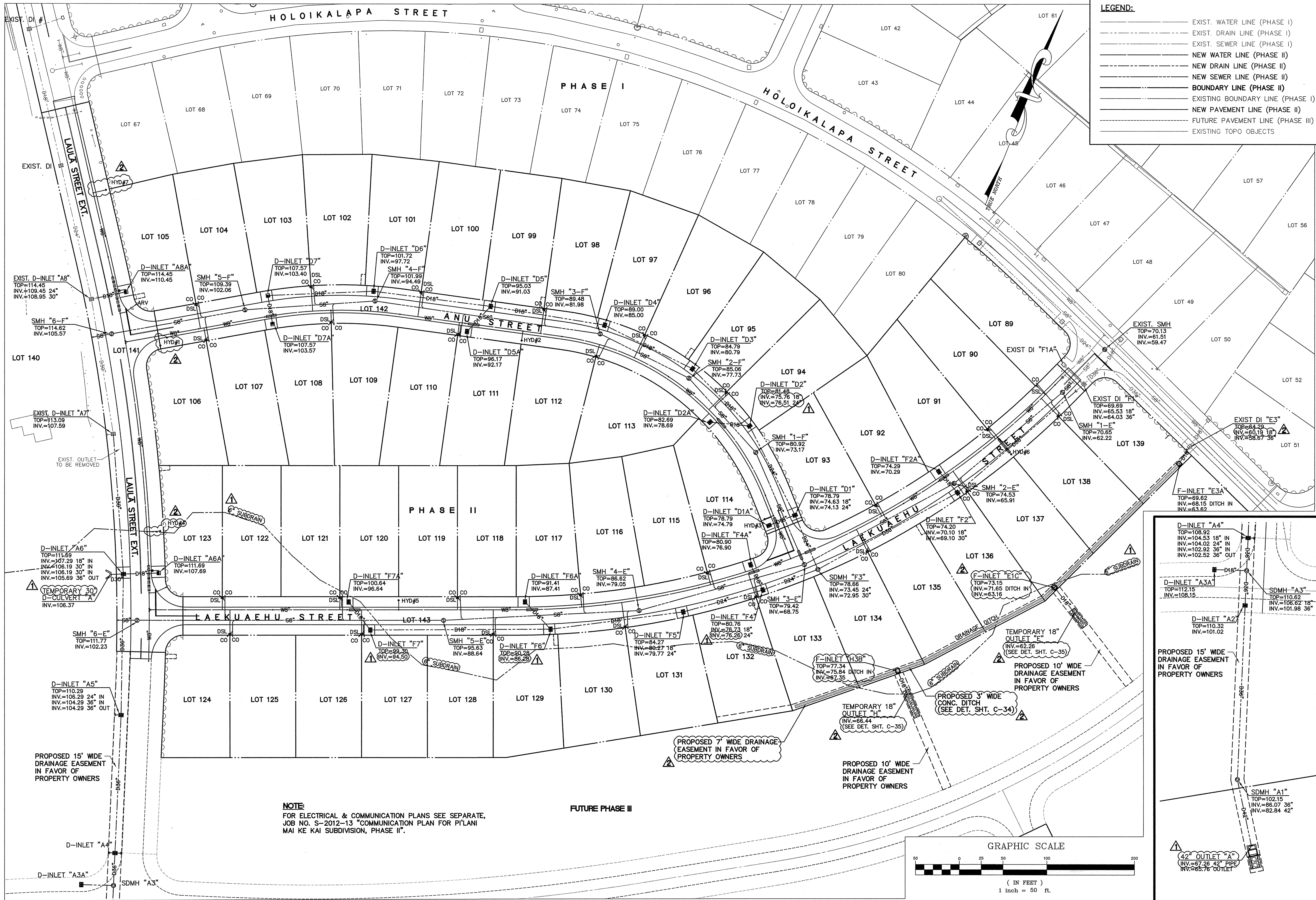
DRAWN BY: CG

DATE: 03/27/12

SHEET

C-4

4 OF 44 SHEETS



- LEGEND:**
- EXIST. WATER LINE (PHASE I)
 - EXIST. DRAIN LINE (PHASE I)
 - EXIST. SEWER LINE (PHASE I)
 - NEW WATER LINE (PHASE II)
 - NEW DRAIN LINE (PHASE II)
 - NEW SEWER LINE (PHASE II)
 - BOUNDARY LINE (PHASE II)
 - EXISTING BOUNDARY LINE (PHASE I)
 - NEW PAVEMENT LINE (PHASE II)
 - FUTURE PAVEMENT LINE (PHASE III)
 - EXISTING TOPO OBJECTS

ESAKI
URVEYING AND
APPING, INC.

1610 Halekuna Street
Lihue, Kauai, Hawaii 96766
Ph. (808) 246-0625 Fax (808) 246-0229

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REVISION	DATE	DESCRIPTION	BY	APPROVED
6-28-12		DEPARTMENT OF WATER REVISIONS HYDRANT RELOCATE HYDRANT ADDITION CONCRETE SWALE LOCATION REVISION INLET "E3A" REVISION INLET "E1C" REVISION D-OULET "F1" REVISION D-OULET "H3B" REVISION D-OULET "H1" REVISION DRAINAGE EASEMENT REVISION	WW	
6-20-12		REVISED UTILITY PLAN	WW	

REVISIONS

WAYNE T. WADA
LICENSED
PROFESSIONAL
ENGINEER
No. 5281-C
HAWAII, USA

THIS WORK WAS PREPARED
BY ME OR UNDER MY SUPERVISION

Wayne T. Wada
EXPIRES: APRIL 30, 2014

**PI'LANI MAI KE KAI SUBDIVISION
PHASE II**

Anahola, Kauai, Hawaii

Tax Map Key: (4) 4-8-16: 03
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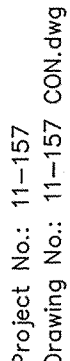
**OVERALL
UTILITY PLAN**

APPROVED:

COUNTY ENGINEER, DEPT. OF PUBLIC WORKS, COUNTY OF KAUAI DATE



MANAGER & CHIEF ENGINEER, DEPT. OF WATER, COUNTY OF KAUAI DATE

DESIGNED BY: WW SHEET
DRAWN BY: CG **C-6**
DATE: 3/27/12 6 OF 44 SHEETS

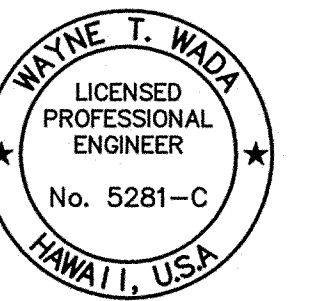


1610 Haleukana Street
Līhu'e, Kaua'i, Hawai'i 96766
Ph. (808) 246-0625 Fax (808) 246-0229

• CIVIL ENGINEERS • SURVEYORS • PLANNERS

	6-28-12	GRADING QUANTITIES REVISIONS	WW	
	6-20-12	REVISED GRADING PLAN		
REVISION	DATE	DESCRIPTION	BY	APPROVED

REVISIONS



THIS WORK WAS PREPARED
BY ME OR UNDER MY SUPERVISION

Wayne T. Wedel
EXPIRES: APRIL 30, 2014

**PILANI MAI KE KAI SUBDIVISION
PHASE II**

Anahola, Kaua'i, Hawai'i

Tax Map Key: (4) 4-8-16: 03
(4) 4-8-22: 89

Developer/Owner:

Department of Hawaiian Home Lands
91-5420 Kapolei Parkway
Kapolei, HI 96707

OVERALL GRADING PLAN

APPROVED:

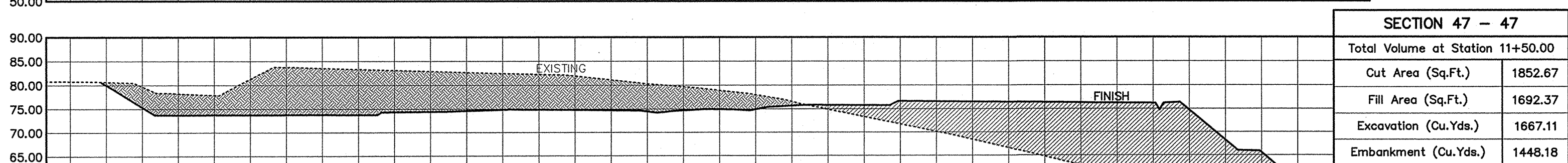
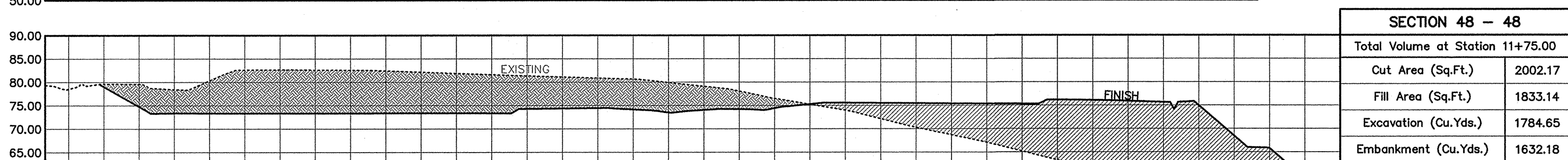
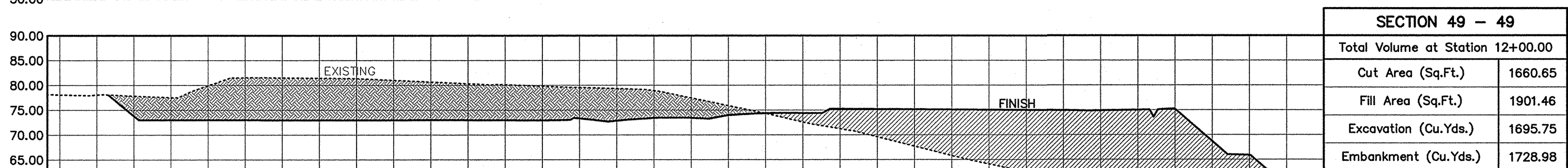
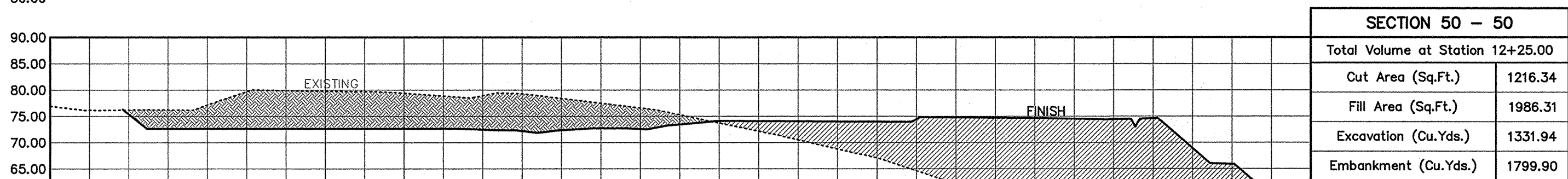
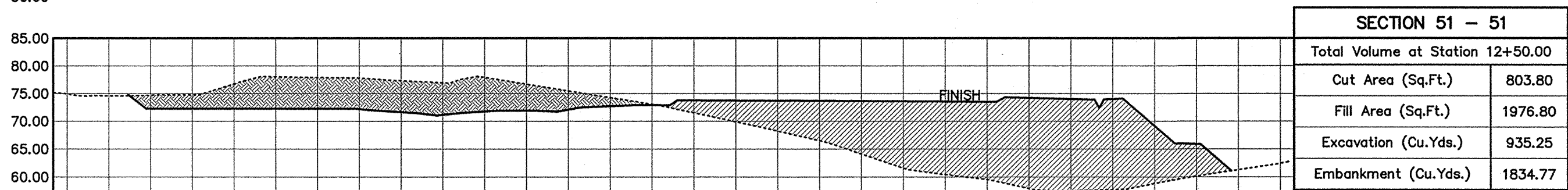
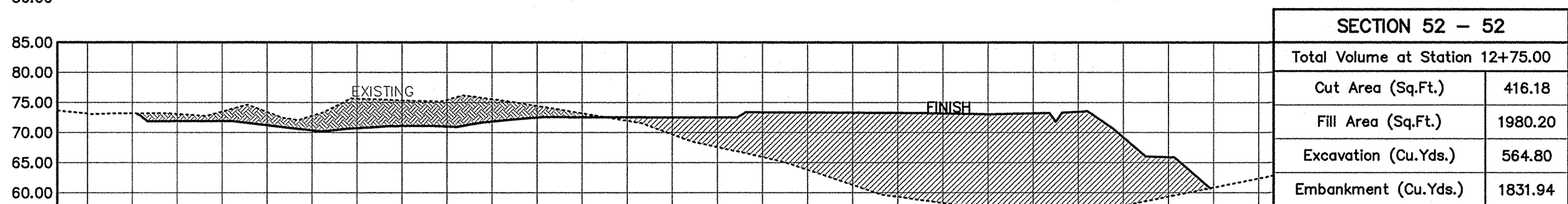
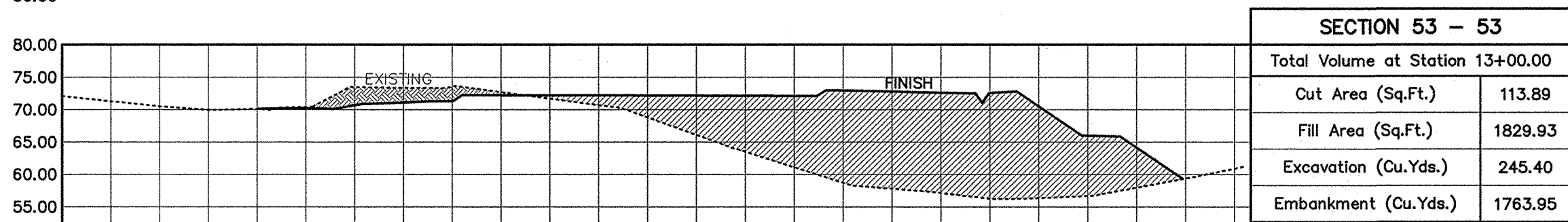
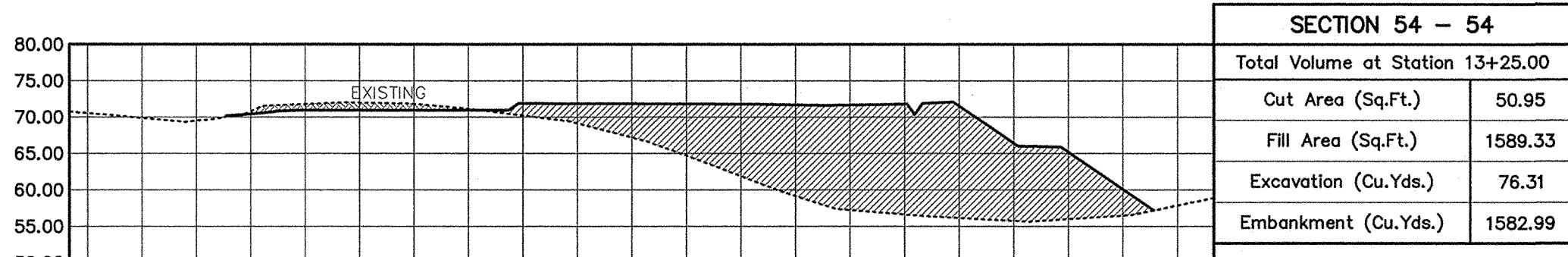
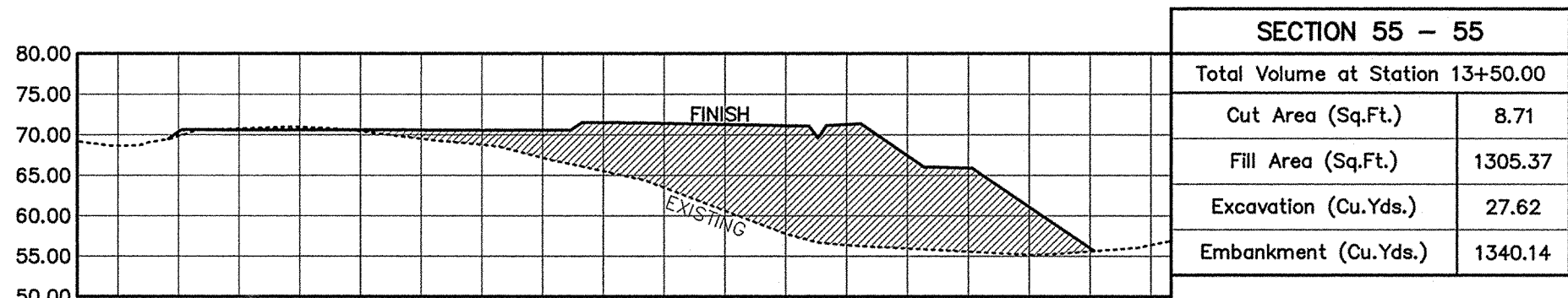
COUNTY ENGINEER, DEPT. OF PUBLIC WORKS, COUNTY OF KAUAI	DATE
N.A.	
MANAGER & CHIEF ENGINEER, DEPT. OF WATER, COUNTY OF KAUAI	DATE

DESIGNED BY: WW
DRAWN BY: CG
DATE: 3/27/12

SHEET
-7
44 SHEETS

LEGEND:

- FINISH GRADE LINE
- - - EXISTING GRADE LINE
FILL AREA SECTION
CUT AREA SECTION

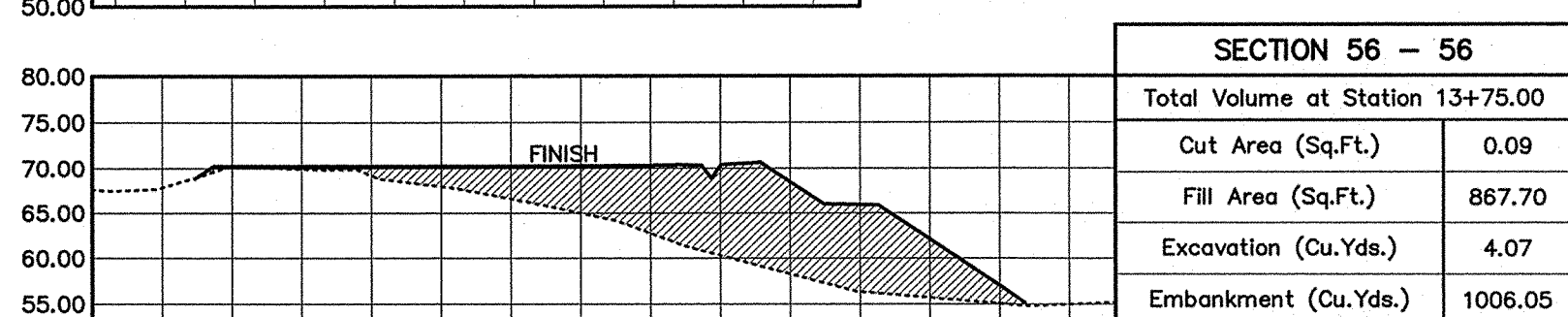
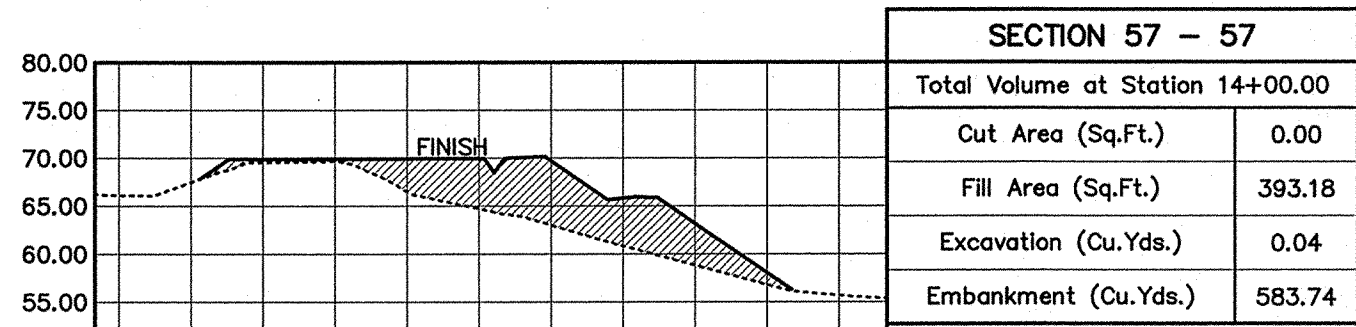
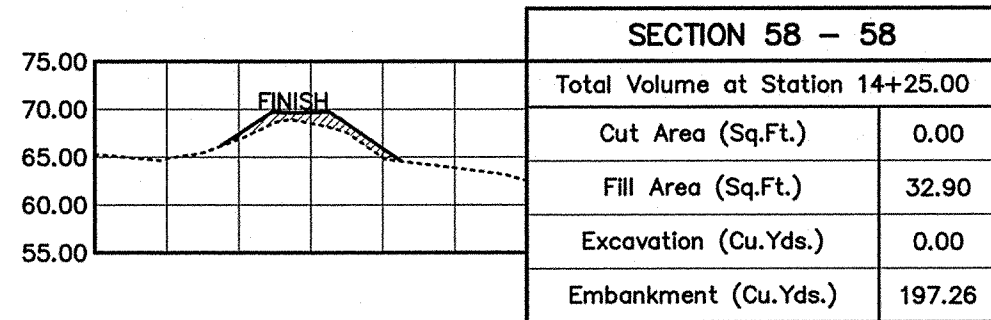
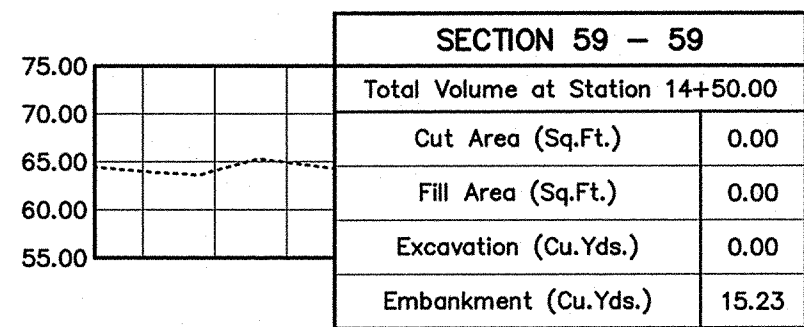


AREA 1 GRADING TOTALS			
GRADED AREA	EMBANKMENT	EXCAVATION	NET VOLUME
9.25 ACRES	43,310 CU.YDS.	64,392 CU.YDS.	21,082 CU.YDS. (CUT)

AREA 2 GRADING TOTALS			
GRADED AREA	EMBANKMENT	EXCAVATION	NET VOLUME
2.38 ACRES	19,931 CU.YDS.	2,981 CU.YDS.	16,950 CU.YDS. (FILL)

AREA 3 GRADING TOTALS			
GRADED AREA	EMBANKMENT	EXCAVATION	NET VOLUME
4.89 ACRES	19,574 CU.YDS.	12,017 CU.YDS.	7,557 CU.YDS. (FILL)

OVERALL GRADING TOTALS			
GRADED AREA	EMBANKMENT	EXCAVATION	NET VOLUME
16.52 ACRES	82,815 CU.YDS.	79,390 CU.YDS.	3,425 CU.YDS. (FILL)



Total Volume Table							
Section Number	Station	Fill Area (Sq.Ft.)	Cut Area (Sq.Ft.)	Embankment (Cu.Yds.)	Excavation (Cu.Yds.)	Cumulative Embankment (Cu.Yds.)	Cumulative Excavation (Cu.Yds.)
1 - 1	0+00.00	0.00	0.00	0.00	0.00	0.00	0.00
2 - 2	0+25.00	5.42	0.00	2.51	0.00	2.51	0.00
3 - 3	0+50.00	32.34	0.00	17.48	0.00	19.99	0.00
4 - 4	0+75.00	67.55	0.00	46.25	0.00	66.24	0.00
5 - 5	1+00.00	124.41	0.00	88.87	0.00	155.11	0.00
6 - 6	1+25.00	193.04	20.95	146.97	9.70	302.09	9.70
7 - 7	1+50.00	307.85	36.09	231.90	26.41	533.98	36.11
8 - 8	1+75.00	490.87	58.14	369.78	43.63	903.76	79.73
9 - 9	2+00.00	1329.30	246.26	842.67	140.93	1746.43	220.66
10 - 10	2+25.00	1789.12	365.61	1443.71	283.27	3190.14	503.93
11 - 11	2+50.00	2059.92	211.68	1781.96	267.26	4972.10	771.20
12 - 12	2+75.00	2601.64	162.57	2158.13	173.26	7130.23	944.46
13 - 13	3+00.00	3099.78	314.60	2639.55	220.91	9769.77	1165.37
14 - 14	3+25.00	3479.64	368.39	3046.03	316.20	12815.80	1481.57
15 - 15	3+50.00	3314.15	380.57	3145.27	346.74	15961.07	1828.31
16 - 16	3+75.00	3434.61	638.94	3124.43	471.99	19085.50	2300.31
17 - 17	4+00.00	3137.18	743.59	3042.49	640.06	22127.99	2940.37
18 - 18	4+25.00	2207.58	741.58	2474.42	687.58	24602.41	3627.94
19 - 19	4+50.00	2236.60	1078.92	2057.49	842.82	26659.90	4470.77
20 - 20	4+75.00	2223.83	1842.61	2065.01	1352.56	28724.92	5823.33
21 - 21	5+00.00	1905.08	1991.17	1911.53	1774.90	30636.45	7598.22
22 - 22	5+25.00	1934.42	2394.66	1777.54	2030.48	32413.99	9628.70
23 - 23	5+50.00	1909.36	2791.36	1779.53	2400.93	34193.52	12029.63
24 - 24	5+75.00	1517.44	2958.16	1586.48	2661.81	35780.00	14691.45
25 - 25	6+00.00	1585.71	3292.15	1436.64	2893.66	37216.64	17585.11
26 - 26	6+25.00	1757.31	3281.55	1547.69	3043.38	38764.34	20628.49
27 - 27	6+50.00	1659.36	2920.34	1581.79	2871.24	40346.13	23499.73
28 - 28	6+75.00	1722.50	3258.08	1565.68	2860.38	41911.81	26360.12
29 - 29	7+00.00	1784.81	3093.69	1623.75	2940.64	43535.56	29300.75
30 - 30	7+25.00	1641.43	3170.59	1586.22	2900.13	45121.78	32200.88
31 - 31	7+50.00	1683.29	3342.29	1539.22	3015.22	46661.01	35216.10
32 - 32	7+75.00	1752.66	3239.67	1590.72	3047.20	48251.73	38263.30
33 - 33	8+00.00	1705.86	3297.06	1601.17	3026.26	49852.89	41289.56
34 - 34	8+25.00	1561.44	3164.67	1512.64	2991.54	51365.53	44281.11
35 - 35	8+50.00	1631.73	3033.47	1478.32	2869.51	52843.86	47150.62
36 - 36	8+75.00	1648.11	3198.97	1518.45	2885.39	54362.30	50036.01
37 - 37	9+00.00	1345.97	2988.69	1386.15	2864.66	55748.45	52900.67
38 - 38	9+25.00	1326.94	2846.24	1237.46	2701.36	56985.91	55602.03
39 - 39	9+50.00	1331.44	2772.09	1230.73	2601.08	58216.65	58203.11
40 - 40	9+75.00	1209.99	2508.70	1176.59	2444.81	59393.24	60647.92
41 - 41	10+00.00	1163.08	2287.60	1098.64	2220.51	60491.88	62868.43
42 - 42	10+25.00	1194.27	1996.51	1091.36	1983.38	61583.24	64851.82
43 - 43	10+50.00	1109.00	1681.45	1066.33	1702.76	62649.57	66554.57
44 - 44	10+75.00	1151.23	1517.83	1046.40	1481.15	63695.97	68035.72
45 - 45	11+00.00	1248.13	1630.44	1110.81	1457.53	64806.79	69493.25
46 - 46	11+25.00	1435.70	1748.29	1242.51	1564.23	66049.30	71057.47
47 - 47	11+50.00	1692.37	1852.67	1448.18	1667.11	67497.48	72724.59
48 - 48	11+75.00	1833.14	2002.17	1632.18	1784.65	69129.67	74509.24
49 - 49	12+00.00	1901.46	1660.65	1728.98	1695.75	70858.65	76204.99
50 - 50	12+25.00	1986.31	1216.34	1799.90	1331.94	72658.55	77536.93
51 - 51	12+50.00	1976.80	803.80	1834.77	935.25	74493.32	78472.18
52 - 52	12+75.00	1980.20	416.18	1831.94	564.80	76325.26	79036.98
53 - 53	13+00.00	1829.93	113.89	1763.95	245.40	78089.21	79282.39
54 - 54	13+25.00	1589.33	50.95	1582.99	76.31	79672.20	79358.70
55 - 55	13+50.00	1305.37	8.71	1340.14	27.62	81012.34	79386.32
56 - 56	13+75.00	867.70	0.09	1006.05	4.07	82018.39	79390.39
57 - 57	14+00.00	393.18	0.00	583.74	0.04	82602.14	79390.43
58 - 58	14+25.00	32.90	0.00	197.28	0.00	82798.40	79390.43
59 - 59	14+50.00	0.00	0.00	15.23	0.00	82814.63	79390.43

SECTION VIEW
HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 20'

ESAKI
SURVEYING AND
MAPPING, INC.

1610 Haleukana Street
Lihue, Kauai, Hawaii 96766
Ph. (808) 246-0625 Fax (808) 246-0229

CIVIL ENGINEERS • SURVEYORS • PLANNERS

REVISION	DATE	DESCRIPTION	BY	APPROVED
6-28-12		GRADING QUANTITIES REVISIONS	WW	

REVISIONS



THIS WORK WAS PREPARED
BY ME OR UNDER MY SUPERVISION

Wayne T. Wada
EXPIRES: APRIL 30, 2014

PILANI MAI KE KAI SUBDIVISION
PHASE II

Anahola, Kaua'i, Hawai'i

Tax Map Key: (4) 4-8-16: 03
(4) 4-8-22: 89

Developer/Owner:
Department of Hawaiian Home Lands
91-5420 Kapele Parkway

GRADING
SECTIONS

APPROVED:

COUNTY ENGINEER, DEPT. OF PUBLIC WORKS,
COUNTY OF KAUAI

N.A.
MANAGER & CHIEF ENGINEER, DEPT. OF WATER,
COUNTY OF KAUAI

DESIGNED BY: WW

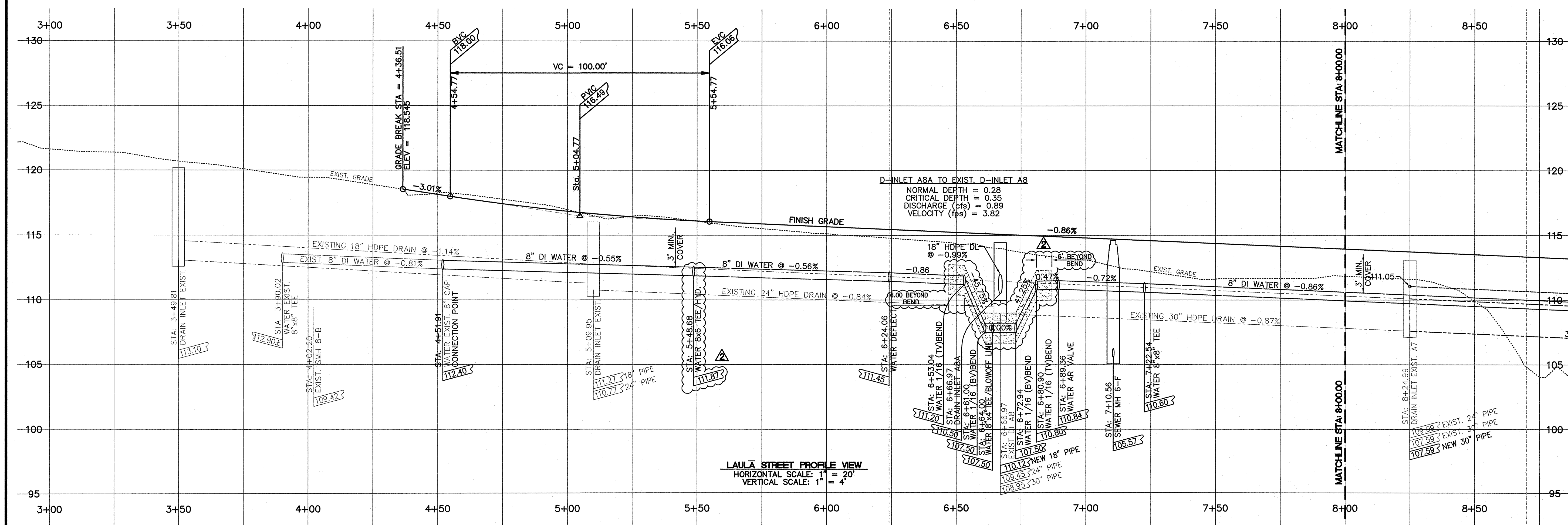
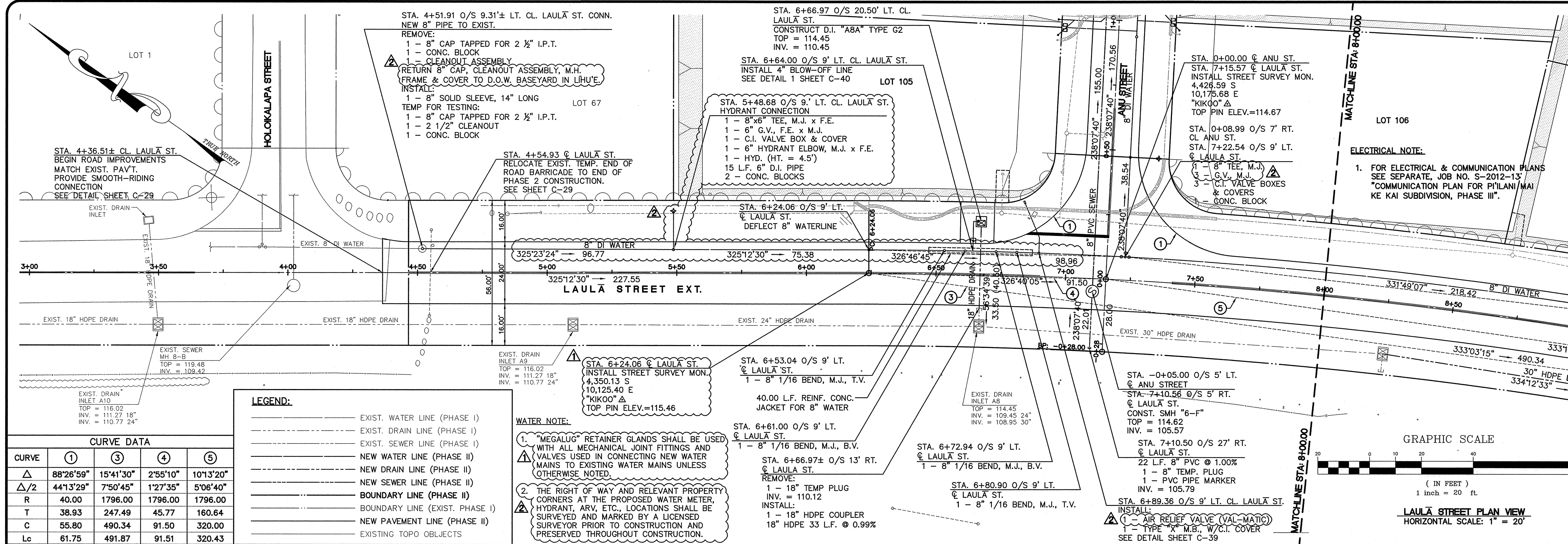
DRAWN BY: CG

DATE: 3/27/12

SHEET

C-16

16 OF 44 SHEETS



ESAKI SURVEYING AND MAPPING, INC.

1610 Halekuna Street
Lihue, Kauai, Hawaii 96766
Ph. (808) 246-0625 Fax (808) 246-0229

CIVIL ENGINEERS • SURVEYORS • PLANNERS

REVISION	DATE	DESCRIPTION	BY	APPROVED
6-28-12		DEPARTMENT OF WATER REVISIONS	WW	
6-20-12		PLAN & PROFILE REVISIONS	WW	

WAYNE T. WADA
LICENSED PROFESSIONAL ENGINEER
No. 5281-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Wayne T. Wada
EXPIRES: APRIL 30, 2014

PĪLANI MAI KE KAI SUBDIVISION PHASE II

Anahola, Kauai, Hawaii

Tax Map Key: (4) 4-8-16: 03
(4) 4-8-22: 89

Developer/Owner:
Department of Hawaiian Home Lands
91-5420 Kapolei Parkway
Kapolei, HI 96707

PLAN & PROFILE LAULĀ STREET

APPROVED:

COUNTY ENGINEER, DEPT. OF PUBLIC WORKS, COUNTY OF KAUAI	DATE
MANAGER & CHIEF ENGINEER, DEPT. OF WATER, COUNTY OF KAUAI	DATE

DESIGNED BY: WW	SHEET
DRAWN BY: CG	C-20
DATE: 03/27/12	20 OF 44 SHEETS

WATER NOTE:

- "MEGALUG" RETAINER GLANDS SHALL BE USED WITH ALL MECHANICAL JOINT FITTINGS AND VALVES USED IN CONNECTING NEW WATER MAINS TO EXISTING WATER MAINS UNLESS OTHERWISE NOTED.
- THE RIGHT OF WAY AND RELEVANT PROPERTY CORNERS AT THE PROPOSED WATER METER, HYDRANT, ARV, ETC. LOCATIONS SHALL BE SURVEYED AND MARKED BY A LICENSED SURVEYOR PRIOR TO CONSTRUCTION AND PRESERVED THROUGHOUT CONSTRUCTION.

LOT 106

LOT 123

LOT 124

STA. 9+40.00 O/S 9' LT. CL. LAULĀ ST.
HYDRANT CONNECTION
1 - 8"x6" TEE, M.J. x F.E.
1 - 6" G.V., F.E. x M.J.
1 - C.I. VALVE BOX & COVER
1 - 6" HYDRANT ELBOW, M.J. x F.E.
1 - HYD. (HT. = 4.5')
15 L.F. 6" D.I. PIPE
2 - CONC. BLOCKS

STA. 9+84.42 O/S 9' LT. CL. LAULĀ ST.
INSTALL 4" BLOW-OFF LINE
SEE DETAIL 2 SHEET C-40
STA. 9+81.43 O/S 9' LT. CL. LAULĀ ST.
DEFLECT 8" WATERLINE

STA. 0+08.99 O/S 7' LT. CL. LAULĀ ST.
1 - 8" TEE, M.J.
3 - G.V., M.J.
3 - C.I. VALVE BOXES & COVERS
& COVERS
1 - CONC. BLOCK

STA. 10+87.00 O/S 9' LT. CL. LAULĀ ST.
END 8" WATER
1 - 8" CAP TAPPED FOR 2 1/2" I.P.T.
1 - CONC. BLOCK
1 - CLEANOUT ASSEMBLY
SEE DETAIL SHT. C-38

STA. 0+00.00 CL. LAEKUAEHU ST.
STA. 10+36.00 CL. LAULĀ ST.
INSTALL STREET SURVEY MON.
4,712.31 S
10,319.77 E
TOP PIN ELEV.=111.91

STA. 10+84.60 CL. LAULĀ ST.
(END LAULĀ ST. PHASE II PAVEMENT)

STA. 10+87.60 CL. LAULĀ ST.
INSTALL END OF ROAD BARRICADE
(SEE DET. SHT. C-29)

STA. -0+00.01 O/S 5' RT. CL. LAEKUAEHU ST.
STA. 10+410.01 O/S 5' RT. CL. LAULĀ ST.
CONSTRUCT SMH "6-E"
TOP = 111.17
INV. = 102.23

STA. 11+50 O/S 20' RT. CL. LAULĀ ST.
CONSTRUCT D.I. "A5" TYPE G4
TOP = 110.29
INV. = 106.29 (24")
INV. = 104.29 (36" IN)
INV. = 104.29 (36" OUT)

STA. 11+50.01 O/S 27.00' RT. CL. LAULĀ ST.
INSTALL:
1 - 24" TEMP. PLUG.
INV. = 106.58

STA. 11+15.93 CL. LAULĀ ST.
FUTURE PHASE III STREET
SURVEY MON.
4,787.24 S
10,347.59 E
"KIKOO" Δ
TOP PIN ELEV.=111.22

STA. 10+09.79 O/S 9' LT. CL. LAULĀ ST.
INSTALL:
1 - AIR RELIEF VALVE (VAL-MATIC)
1 - TYPE "X" M.B. W.C.I. COVER
SEE DETAIL SHEET C-39

STA. 9+87.40 O/S 20' RT. CL. LAULĀ ST.
CONSTRUCT D.I. "A6" TYPE G4
TOP = 111.69
INV. = 107.29 (18" IN)
INV. = 106.19 (30" IN)
INV. = 105.69 (36" OUT)

STA. 9+87.40 O/S 35.25' RT. CL. LAULĀ ST.
INSTALL:
TEMP CRM DRAIN CULVERT A
INV. = 106.37
SEE DET. SHT. C-35

STA. 10+01.33 O/S 9' LT. CL. LAULĀ ST.
1 - 8" 1/16 BEND, M.J., T.V.

LAULĀ STREET PLAN VIEW
HORIZONTAL SCALE: 1" = 20'

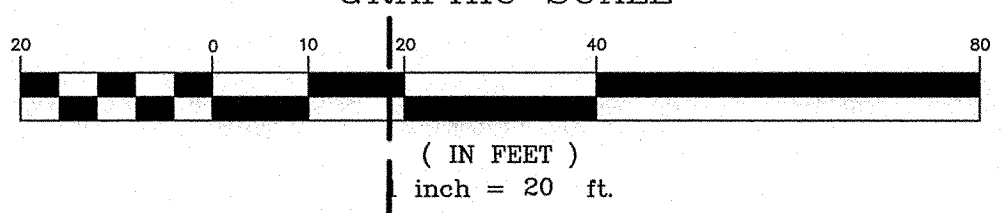
ELECTRICAL NOTE:

- FOR ELECTRICAL & COMMUNICATION PLANS SEE SEPARATE, JOB NO. S-2012-13 "COMMUNICATION PLAN FOR PILANI MAI KE KAI SUBDIVISION, PHASE III".

CURVE DATA

CURVE	②	③	⑤	⑥
Δ	88°26'59"	15°41'30"	10°13'20"	2°33'00"
Δ/2	44°13'29"	7°50'45"	5°06'40"	1°16'30"
R	40.00	1796.00	1796.00	1796.00
T	38.93	247.49	160.64	39.97
C	55.80	490.34	320.00	79.93
Lc	61.75	491.87	320.43	79.93

GRAPHIC SCALE



LEGEND:

- EXIST. WATER LINE (PHASE I)
- EXIST. DRAIN LINE (PHASE I)
- EXIST. SEWER LINE (PHASE I)
- NEW WATER LINE (PHASE II)
- NEW DRAIN LINE (PHASE II)
- NEW SEWER LINE (PHASE II)
- BOUNDARY LINE (PHASE II)
- NEW PAVEMENT LINE (PHASE II)
- FUTURE PAVEMENT LINE (PHASE III)
- EXISTING TOPO OBJECTS

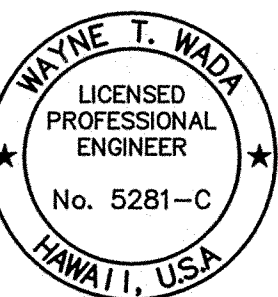
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6-20-12		PLAN & PROFILE REVISIONS	WW	

REVISIONS



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PLAN & PROFILE
LAULĀ STREET

APPROVED:

COUNTY ENGINEER, DEPT. OF PUBLIC WORKS,
COUNTY OF KAUAI

DATE

MANAGER & CHIEF ENGINEER, DEPT. OF WATER,
COUNTY OF KAUAI

DATE

DESIGNED BY: WW

SHEET

DRAWN BY: CG

C-21

DATE: 03/27/12

21 OF 44 SHEETS