

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-HI-1(211)	1989	5	53

GENERAL NOTES

- ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON PLANS SHALL BE PROTECTED AT ALL TIMES DURING CONSTRUCTION UNLESS OTHERWISE NOTED, AND ALL DAMAGED PORTIONS SHALL BE REPLACED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE AFFECTED UTILITY COMPANY. PERSONNEL INJURY RESULTING FROM CONTACT WITH THE EXISTING UTILITIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND CONSTRUCTION OF UTILITY FACILITIES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," DATED 1985 AS AMENDED, OF THE HAWAII HIGHWAYS DIVISION, DEPARTMENT OF TRANSPORTATION.
- THE CONTRACTOR SHALL VERIFY AND CHECK ALL DIMENSIONS AND DETAILS ON THE DRAWINGS BEFORE PROCEEDING WITH THE WORK. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION.
- THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ADEQUATE, SAFE, NON-SKID BRIDGING MATERIAL OVER THE TRENCH, INCLUDING SHORING, WHEN TRENCHING IN PAVEMENT AREAS TO HANDLE ALL TYPES OF VEHICULAR TRAFFIC.
- UTILITIES SHALL BE INSTALLED PURSUANT TO THE PROVISIONS OF ORDINANCE NO. 2875 AS AMENDED BY ORDINANCE NO. 3357 (UNDERGROUND UTILITIES).
- NO BLASTING SHALL BE ALLOWED ON THIS PROJECT.
- VERIFY AND CHECK ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWINGS PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION.
- THE CONTRACTOR SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH AND SAFETY AND ENVIRONMENTAL QUALITY.
- THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES, APPURTENANCES AND STRUCTURES AS SHOWN ON THE PLANS ARE BASED ON EXISTING RECORDS OF VARYING DEGREES OF ACCURACY AND COMPLETENESS. THEY ARE NOT GUARANTEED AS TO THE LOCATION SHOWN OR THAT OTHER OBSTACLES MAY NOT BE ENCOUNTERED IN THE COURSE OF WORK. THE CONTRACTOR SHALL ASSUME THAT UNDERGROUND UTILITIES MAY EXIST, ALTHOUGH NOT SHOWN.
- WHEN WORK IS TO BE DONE OUTSIDE THE STATE'S OR CITY'S R/W THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND LEASEHOLDERS FIVE (5) DAYS NOTICE BEFORE ENTERING INTO THEIR RESPECTIVE PROPERTIES.

TRAFFIC NOTES FOR WORK IN C&C HONOLULU STREETS OR HIGHWAYS:

- A PERMIT SHALL BE OBTAINED FROM THE DEPARTMENT OF TRANSPORTATION SERVICES BEFORE WORK ON ANY PORTION OF A PUBLIC STREET OR HIGHWAY MAY BEGIN.
- THE CONTRACTOR SHALL PROVIDE, INSTALL, AND MAINTAIN ALL NECESSARY SIGNS AND OTHER PROTECTIVE FACILITIES, WHICH SHALL CONFORM WITH THE HAWAII ADMINISTRATION RULES GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORK SITES ON OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS" ADOPTED BY THE DIRECTOR OF TRANSPORTATION AND THE CURRENT FEDERAL HIGHWAYS STREETS AND HIGHWAYS, "PART VI - TRAFFIC CONTROLS FOR STREET AND HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS."
- WORK ON ANY CITY STREET AREA MAY BE PERFORMED ONLY BETWEEN THE HOURS OF 8:30 A.M. TO 3:30 P.M., MONDAY THROUGH FRIDAY, UNLESS OTHERWISE PERMITTED BY THE DEPARTMENT OF TRANSPORTATION SERVICES.
- DURING WORKING HOURS, THE CONTRACTOR SHALL PROVIDE FOR THROUGH TRAFFIC. DURING NON-WORKING HOURS, ALL TRENCHES SHALL BE COVERED WITH A SAFE NON-SKID BRIDGING MATERIAL.
- DRIVEWAYS SHALL BE KEPT OPEN UNLESS THE OWNERS OF THE PROPERTY USING THESE RIGHTS-OF-WAY ARE OTHERWISE PROVIDED FOR SATISFACTORILY.
- WHERE PEDESTRIAN WALKWAYS EXIST, THEY SHALL BE MAINTAINED IN PASSABLE CONDITIONS OR OTHER FACILITIES FOR PEDESTRIANS SHALL BE PROVIDED. PASSAGE BETWEEN WALKWAYS AT INTERSECTIONS SHALL LIKEWISE BE PROVIDED.
- THE CONTRACTOR SHALL REFERENCE, TO THE APPROVAL OF THE DEPARTMENT OF TRANSPORTATION SERVICES, ALL EXISTING TRAFFIC SIGNS, POSTS AND PAVEMENT MARKINGS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL REPLACE OR REPAIR ALL TRAFFIC SIGNS, POSTS, AND PAVEMENT MARKINGS DISTURBED BY HIS ACTIVITIES.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF TRANSPORTATION SERVICES AT 523-4029 ONE WEEK PRIOR TO ANY SIGNING OR STRIPING WORK.
- THE CONTRACTOR SHALL NOTIFY MTL, KENNETH HONG AT 531-7066, TWO WEEKS PRIOR TO CONSTRUCTION, INFORMING HIM OF LOCATION, SCOPE OF WORK, PROPOSED CLOSURE OF ANY STREET OR TRAFFIC LANES, AND THE NEED TO RELOCATE ANY BUS STOP.

NOTES FOR CONSTRUCTION WITHIN STATE RIGHT-OF-WAY:

- THE CONTRACTOR SHALL OBTAIN A CONSTRUCTION PERMIT FROM THE STATE'S HIGHWAY DISTRICT ENGINEER AT 727 KAKOI STREET PRIOR TO COMMENCEMENT OF WORK WITHIN STATE HIGHWAY RIGHT-OF-WAY.
- CONSTRUCTION AND RESTORATION OF ALL EXISTING HIGHWAY FACILITIES WITHIN STATE RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE SECTIONS OF THE HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 1985, OF THE HAWAII HIGHWAYS DIVISION.
- ALL LANES SHALL BE OPENED TO TRAFFIC DURING THE MORNING PEAK HOURS FROM 6:00 A.M. TO 8:30 A.M. AND DURING THE AFTERNOON PEAK HOURS FROM 3:00 P.M. TO 6:00 P.M., AND DURING OFF-WORK HOURS. ONLY ONE LANE OF NIMITZ HIGHWAY, AOLELE STREET, PAIEA STREET, AND LAGOON DRIVE SHALL BE CLOSED AT ANY OTHER TIME.
- THE CONTRACTOR SHALL PROVIDE, INSTALL, AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES, AND OTHER PROTECTIVE FACILITIES AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION AND FOR THE CONVENIENCE AND SAFETY OF PUBLIC TRAFFIC. ALL SUCH PROTECTIVE FACILITIES AND PRECAUTIONS TO BE TAKEN SHALL CONFORM WITH THE "ADMINISTRATIVE RULES OF HAWAII GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORK SITES ON OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS" ADOPTED BY THE DIRECTOR OF TRANSPORTATION, AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, 1978, AS AMENDED, BY THE FEDERAL HIGHWAY ADMINISTRATION. IF LANE CLOSURES ARE REQUIRED DURING CONSTRUCTION, A TRAFFIC CONTROL PLAN SHALL BE INCORPORATED INTO THE CONSTRUCTION PLANS AND MUST BE APPROVED BY THE DIVISION PRIOR TO THE ISSUANCE OF THE PERMIT.
- THE MINIMUM PAVEMENT STRUCTURE SHALL CONSIST OF:
 - COMMERCIAL DRIVEWAYS, SIDEROADS AND UTILITY INSTALLATIONS ON MINOR HIGHWAYS.
 - 2-1/2" ASPHALT CONCRETE, 8" AGGREGATE BASE COURSE, AND 12" AGGREGATE SUBBASE; OR 2-1/2" ASPHALT CONCRETE AND 8" ASPHALT TREATED BASE COURSE OR ASPHALT CONCRETE.
 - 6" OF CLASS "A" CONCRETE REINFORCED WITH 6"x6" - 6/6 WIRE MESH ON 12" AGGREGATE SUBBASE IF DEEMED NECESSARY BY ENGINEER.
 - CHANNELIZED INTERSECTIONS AND UTILITY INSTALLATIONS ON MAJOR HIGHWAYS.
 - 4" ASPHALT CONCRETE, 8" AGGREGATE BASE COURSE AND 12" AGGREGATE SUBBASE, OR 4" ASPHALT CONCRETE AND 8" ASPHALT TREATED BASE COURSE OR ASPHALT CONCRETE, OR MATCH EXISTING PAVEMENT STRUCTURE, WHICHEVER IS GREATER.
- NO MATERIAL AND/OR EQUIPMENT SHALL BE STOCKPILED OR OTHERWISE STORED WITHIN HIGHWAY RIGHTS-OF-WAY EXCEPT AT LOCATIONS DESIGNATED IN WRITING AND APPROVED BY THE DISTRICT ENGINEER.
- PRIOR TO COMMENCING TRENCH EXCAVATION WORK, THE CONTRACTOR SHALL TAKE A PROFILE ALONG THE NEW CENTERLINE OF UTILITY TRENCH AND THAT SUCH INFORMATION SHALL BE USED IN THE VERIFICATION OF RESTORING THE ROADWAY TO ITS ORIGINAL CONDITION. A COPY OF THE PROFILE SHALL BE SUBMITTED TO THE DISTRICT ENGINEER.
- THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ADEQUATE, SAFE, NON-SKID BRIDGING MATERIAL OVER THE TRENCH, INCLUDING SHORING, WHEN TRENCHING IN PAVEMENT AREAS TO HANDLE ALL TYPES OF VEHICULAR TRAFFIC.
- NO TRENCH SHALL BE OPENED MORE THAN 150 FEET IN ADVANCE OF THE INSTALLED AND TESTED PIPE AND/OR DUCTLINE OR AS DIRECTED BY THE ENGINEER.
- LONGITUDINAL DRAINAGE ALONG THE HIGHWAY SHALL BE MAINTAINED.
- PAVEMENT STRIPING SHALL BE DONE BY CONTRACTOR.
- NOT APPLICABLE.
- ALL REGULATORY, GUIDE AND CONSTRUCTION SIGNS AND BARRICADES SHALL BE OF HIGH INTENSITY REFLECTIVE SHEETING.

ELECTRICAL & MAINTENANCE SERVICES DIVISION NOTES FOR CITY & COUNTY OF HONOLULU STREETS AND HIGHWAYS:

- STREET LIGHTING AND TRAFFIC SIGNALS SHALL BE KEPT OPERATIONAL DURING CONSTRUCTION. ANY RELOCATION REQUIRED SHALL BE APPROVED BY THE ELECTRICAL & MAINTENANCE SERVICES DIVISION, DEPARTMENT OF TRANSPORTATION SERVICES AND PAID FOR BY THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO EXISTING STREET LIGHTING AND TRAFFIC SIGNAL FACILITIES AND DAMAGES SHALL BE REPAIRED BY THE CONTRACTOR.

CONSTRUCTION NOTES FOR WORK IN CITY & COUNTY OF HONOLULU RIGHT-OF-WAY

- ALL CONSTRUCTION RESTORATION SHALL BE PERFORMED IN ACCORDANCE WITH THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION", AUGUST 1976, AS AMENDED, & THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION", MAY 1975, OF THE DEPARTMENT OF PUBLIC WORKS, CITY & COUNTY OF HONOLULU.
- WHEREVER CROSSINGS OF EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES PRIOR TO EXCAVATION OF THE MAIN TRENCHES TO VERIFY THEIR LOCATIONS AND DEPTHS.
- ALL EXISTING UTILITIES, WHETHER OR NOT SHOWN ON THE PLANS, SHALL BE PROTECTED AT ALL TIMES BY THE CONTRACTOR UNLESS SPECIFIED ON THE PLANS TO BE ABANDONED.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, DIVISION OF ENGINEERING, CONSTRUCTION BRANCH, SEVEN (7) DAYS PRIOR TO COMMENCING CONSTRUCTION.

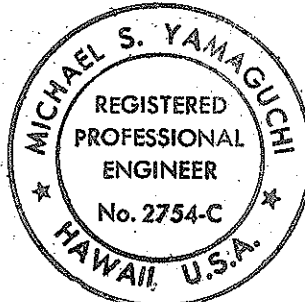
APPROVED:

Paul T. Kaula 12/9/88
DIRECTOR, DEPARTMENT OF TRANSPORTATION SERVICES, CITY AND COUNTY OF HONOLULU DATE

APPROVED:

(FOR CONSTRUCTION WITHIN CITY & COUNTY OF HONOLULU
ROADS ONLY)

M. Fukuyama 12/13/88
CHIEF, DIVISION OF ENGINEERING, DPW DATE



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

Michael S. Yamaguchi
Signature

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
CONSTRUCTION NOTES - 1	
H-1 NONPOTABLE WATER SYSTEM HALAWA INTERCHANGE TO KEEHI INTERCHANGE F.A.I. PROJ. NO. IR-HI-1 (211)	
SCALE: NONE	DATE: 11/23/88

SHEET No. 03 OF 48 SHEETS

ORIGINAL PLAN	DATE	SURVEY PLOTTED BY	_____
		DRAWN BY	_____
		DESIGNED BY	_____
		CHECKED BY	_____
NOTE BOOK	No.	_____	_____
		_____	_____

WATER NOTES:

- UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND CONSTRUCTION OF WATER SYSTEM FACILITIES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE CITY AND COUNTY OF HONOLULU BOARD OF WATER SUPPLY'S "WATER SYSTEM STANDARDS", VOLUME 1, DATED 1985, AND THE "APPROVED MATERIAL LIST AND STANDARD DETAILS FOR WATER SYSTEM CONSTRUCTION", VOLUME 2, DATED 1985, AND ALL SUBSEQUENT AMENDMENTS AND ADDITIONS.
- THE CONTRACTOR SHALL NOTIFY THE BOARD OF WATER SUPPLY, PLANNING AND ENGINEERING DIVISION, IN WRITING AT LEAST ONE WEEK PRIOR TO COMMENCING WORK ON THE WATER SYSTEM.
- CONTRACTOR SHALL NOTIFY THE BOARD OF WATER SUPPLY AT LEAST 48 HOURS IN ADVANCE OF EACH CONCRETE POUR.
- ALL FOOTINGS SHALL BEAR ON FIRM SOIL SUBJECT TO THE APPROVAL OF THE BOARD OF WATER SUPPLY AND THE ENGINEER.
- ALL PLANS APPROVED BY THE BOARD OF WATER SUPPLY ARE BASED SOLELY ON THE ADEQUACY OF THE WATER SUPPLY. ALL OTHER FEATURES OF THE WATER SYSTEM, SUCH AS LINES, GRADES, FITTINGS ETC., AND DRAINAGE AND OTHER FEATURES OF IMPROVEMENTS SHALL NOT BE THE RESPONSIBILITY OF THE BOARD OF WATER SUPPLY.
- UNLESS OTHERWISE SPECIFIED, CONNECTIONS TO AND/OR DISCONNECTING EXISTING WATER MAINS SHALL BE DONE BY THE CONTRACTOR, WITH THE BWS INSPECTOR COORDINATING THE WORK. FOR DETAILS CONTACT BWS PLANNING AND ENGINEERING DIVISION, ENGINEERING BRANCH, CONSTRUCTION SECTION.
- PRIOR TO START OF EXCAVATION, THE CONTRACTOR SHALL NOTIFY ALL AGENCIES AND HAVE THEM LOCATE THEIR RESPECTIVE LINES AFFECTED.
- PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL VERIFY IN THE FIELD THE LOCATION OF EXISTING WATER MAINS AND APPURTENANCES. WHERE OTHER LINES ARE TO CROSS OVER OR UNDER EXISTING WATER MAINS, THE CONTRACTOR SHALL EXPOSE THE EXISTING WATER MAINS PRIOR TO TRENCHING. EXCAVATION AROUND WATER MAINS SHALL BE BY HAND.
- UNLESS OTHERWISE SPECIFIED, EXCAVATION, BACKFILLING AND CONNECTION OF THE NEW 20" MAIN TO THE 20" STUBOUT AT RAMP "C" SHALL BE DONE BY THE CONTRACTOR WITH THE BOARD OF WATER SUPPLY INSPECTOR COORDINATING THE WORK. FOR DETAILS, THE CONTRACTOR SHALL CONTACT THE BOARD OF WATER SUPPLY, PLANNING AND ENGINEERING DIVISION, ENGINEERING BRANCH, CONSTRUCTION SECTION. ALL MATERIAL SHALL BE SUPPLIED BY THE CONTRACTOR.
- ALL CAST IRON (GRAY OR DUCTILE) PIPES, FITTINGS, AND VALVES SHALL BE ENCLOSED IN PLASTIC MATERIAL IN ACCORDANCE WITH ANSI SPECIFICATIONS A 21.5-1982 OR AWWA SPECIFICATIONS C105-82 "POLYETHYLENE ENCASEMENT FOR DUCTILE IRON PIPING FOR WATER AND OTHER LIQUIDS."
- ALL WATER MAIN TRENCHES SHALL BE BACKFILLED AS CALLED FOR IN THE SPECIFICATIONS. COMPACTION OF TRENCH BACKFILL SHALL MEET APPLICABLE REQUIREMENTS OF THE STATE OF HAWAII OR CITY AND COUNTY OF HONOLULU.
- NUTS AND BOLTS FOR FLANGED CONNECTIONS SHALL BE BRONZE OR STAINLESS STEEL EXCEPT AT COUPLING ADAPTORS WHERE "COR-TEN" (U.S. STEEL), "MAYARI" (BETHLEHEM STEEL) OR APPROVED EQUAL MAY BE USED.
- EXISTING UTILITIES CROSSING THE WATER MAIN ARE TO REMAIN IN SERVICE AND IN PLACE. IF RELOCATED FOR THE CONTRACTOR'S CONVENIENCE, INTERRUPTION OF SERVICE SHALL BE FOR A MINIMUM PERIOD OF TIME AND SHALL BE DONE AT THE CONTRACTOR'S EXPENSE AND ONLY WITH THE APPROVAL OF THE BOARD OF WATER SUPPLY.
- THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.
- WATER PIPELINE EASEMENTS SHALL BE GRANTED TO THE BOARD OF WATER SUPPLY FOR ALL LINES TO BE CONVEYED TO THE BWS WHICH ARE LOCATED WITHIN PRIVATE PROPERTY AND ROADWAYS THAT WILL NOT BE DEDICATED TO THE CITY.
- TEST PRESSURE SHALL BE 150 PSI. ALL MATERIAL, LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY FOR TEMPORARY TESTING OF WATERLINES BY THE CONTRACTOR SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS CONTRACT ITEMS IN THE PROPOSAL.
- AFTER INSTALLATION OF TAPPING SLEEVE AND VALVE, THE ASSEMBLY SHALL BE TESTED WITH PREVAILING LINE PRESSURE PRIOR TO ACTUAL TAPPING OPERATIONS.
- CONTRACTOR SHALL FURNISH AND INSTALL ADDITIONAL FITTINGS IF NECESSARY TO MEET FIELD CONDITIONS.
- NOT APPLICABLE.
- THERE SHALL BE A MINIMUM HORIZONTAL CLEARANCE OF 3 FEET, AND A MINIMUM VERTICAL CLEARANCE OF 6 INCHES BETWEEN WATER MAINS AND OTHER LINES.
- ITEMS INDICATED AS "RELOCATE" ON THE PLANS SHALL BE REMOVED, CLEANED, PAINTED AND REINSTALLED AT THE NEW LOCATION BY THE CONTRACTOR UNLESS OTHERWISE SPECIFIED.
- ANY ADJUSTMENT TO THE EXISTING WATER SYSTEM REQUIRED DURING CONSTRUCTION TO MEET REQUIREMENTS OF BWS STANDARDS, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE DONE BY THE CONTRACTOR AT NO COST TO THE BOARD.
- FURNISHING AND PLACING CRUSHED ROCK, ASPHALT FILLER, RUNGS, CORPORATION STOPS AND INCIDENTALS (FOR WATER MANHOLES) BY THE CONTRACTOR, SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS CONTRACT ITEMS IN THE PROPOSAL.
- DETAILS FOR TYPES B & C MANHOLES INCLUDING CORP. STOPS ARE SHOWN UNDER FIGURES 8, 9, 10, 11 AND 20 OF THE WATER SYSTEM STANDARDS DATED 1985.

- DETAILS FOR TYPE A MANHOLE INCLUDING CORP. STOPS ARE SHOWN UNDER FIGURES 2, 3, 4, 5, 6, 7, 8 AND 20 OF THE WATER SYSTEM STANDARDS DATED 1985.
- THE MEASUREMENT FROM METER DIAL TO BOTTOM OF METER BOX COVER SHALL BE 6 INCHES MINIMUM AND 12 INCHES MAXIMUM.
- CONTRACTOR SHALL CUT AND PLUG ALL EXISTING UNUSED LATERALS AT THE MAIN WHETHER OR NOT SHOWN ON THE PLANS. METER AND VALVE BOXES TO BE OR ALREADY ABANDONED SHALL BE DEMOLISHED OR REMOVED AND PROPERLY DISPOSED OF. C.I. FRAMES AND COVERS AND METERS SHALL BE CLEANED AND SALVAGED AND DELIVERED TO THE APPROPRIATE BWS CORPORATION YARD. THE DAMAGED AREA SHALL BE REPAIRED TO AN EQUAL OR BETTER CONDITION THAN THE IMMEDIATE AREA. ALL WORK SHALL BE DONE AT THE EXPENSE OF THE CONTRACTOR.
- FOR TURBINE METERS 3" AND LARGER, CONTRACTOR SHALL NOTIFY CUSTOMER SERVICE DIVISION IN WRITING AFTER THE PLAN IS APPROVED, NO LATER THAN 120 DAYS, PRIOR TO WITHDRAWING METER FROM BWS STOREYARD. SUCH NOTICE SHALL INDICATE NUMBER, SIZE AND TYPE OF METER AND APPROXIMATE MONTH AND YEAR METER IS ANTICIPATED TO BE DRAWN OUT. IF THE APPROVED PLAN IS ALLOWED TO LAPSE, THE 120-DAY NOTICE WILL BE VOIDED. THE CONTRACTOR SHALL PAY FOR AND INSTALL THE METERS.
- PRIOR TO INSTALLATION, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL BY BOARD OF WATER SUPPLY, THE MANUFACTURER'S CERTIFICATION THAT ALL CAST IRON (GRAY OR DUCTILE) FITTINGS FOR THE PROJECT CONFORM IN ALL RESPECTS TO THE WATER SYSTEM STANDARDS, DATED 1985.
- POLYGON SHAPE FOR MECHANICAL JOINT GLANDS AS DESCRIBED IN AWWA STANDARD C111 SHALL BE "STRAIGHT-SIDED" AND SHALL BE APPLICABLE TO BOTH CAST IRON AND DUCTILE IRON GLANDS.
- THE CONTRACTOR SHALL EXPOSE, VERIFY AND BACKFILL ALL EXISTING UNDERGROUND UTILITIES AND STRUCTURES AT CROSSINGS PRIOR TO EXCAVATION OF PIPELINE TRENCH AND/OR MANUFACTURING OF CONCRETE CYLINDER PIPE.

HAWAIIAN TELEPHONE CO. (HTCO) NOTES:

- THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN THE EXCAVATION AND CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF UNDERGROUND TELEPHONE FACILITIES AND, ALSO, SHALL MAINTAIN ADEQUATE CLEARANCE FOR HIS EQUIPMENT WHILE WORKING CLOSE TO AND/OR UNDER THE OVERHEAD CABLE FACILITIES. ANY DAMAGE TO THE EXISTING TELEPHONE CABLES SHALL BE REPAIRED BY THE TELEPHONE COMPANY AND PAID FOR BY THE CONTRACTOR. REPORT ALL DAMAGES TO HTCO. CABLE DISPATCH CENTER-PHONE 546-5965.
- SHOULD IT BECOME NECESSARY, ANY WORK REQUIRED TO RELOCATE THE UNDERGROUND OR AERIAL CABLES SHALL BE DONE BY HTCO AND PAID FOR BY THE CONTRACTOR.
- CONTACT HTCO. RECORD STATION AT 834-6215 AT MINIMUM OF 72 HOURS IN ADVANCE FOR VERIFYING THE LOCATION OF UNDERGROUND CABLES.
- FOR ASSISTANCE IN PROVIDING PROPER SUPPORT AND PROTECTION OF UNDERGROUND DUCTLINES AND POLE BRACINGS, CONTACT HTCO. INSPECTOR MR. JOE GILMAN AT 834-6382 A MINIMUM OF 72 HOURS IN ADVANCE.

NAVY CONSTRUCTION NOTES:

- THE CONTRACTOR SHALL TONE THE AREA TO LOCATE NAVY UTILITY LINES PRIOR TO PERFORMING ANY EXCAVATION. ALL EXCAVATION IN THE VICINITY OF THE NAVY UTILITY LINES SHALL BE DONE BY HAND.
- ANY DAMAGE TO NAVY UTILITY LINES SHALL BE IMMEDIATELY REPORTED TO THE NAVY PUBLIC WORKS CENTER, PEARL HARBOR, EMERGENCY SERVICE DESK, TELEPHONE 471-8486.
- A MINIMUM VERTICAL SEPARATION OF 12" SHALL BE PROVIDED BETWEEN THE NEW WATER MAIN AND THE EXISTING NAVY ELECTRICAL DUCTLINE.

HAWAII ELECTRIC COMPANY, INC. (HECO) NOTES:

- LOCATION OF HECO FACILITIES
THE LOCATION OF HECO'S UNDERGROUND FACILITIES SHOWN ON THE PLANS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AND ARE NOT GUARANTEED AS SHOWN. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF UNDERGROUND LINES AND SHALL MAINTAIN ADEQUATE CLEARANCE WHEN OPERATING EQUIPMENT WITHIN OR UNDER ANY OVERHEAD LINES.
- COMPLIANCE WITH DOSH
THE CONTRACTOR SHALL COMPLY WITH THE STATE OF HAWAII'S OCCUPATIONAL SAFETY AND HEALTH LAW (DOSH).
- EXCAVATION PERMIT
THE CONTRACTOR SHALL OBTAIN AN EXCAVATION PERMIT FROM HECO'S MAPPING AND RECORDS DIVISION LOCATED AT 820 WARD AVENUE, 4TH FLOOR, TWO WEEKS PRIOR TO STARTING CONSTRUCTION.
- UNDERGROUND LINES
FOR VERIFICATION OF UNDERGROUND LINES OR FOR ASSISTANCE IN SUPPORTING AND PROTECTING THESE LINES, THE CONTRACTOR SHALL CALL HECO'S UNDERGROUND DIVISION AT 548-7395 A MINIMUM OF 72 HOURS IN ADVANCE.
- EXCAVATIONS
WHEN TRENCH EXCAVATION IS ADJACENT TO OR BENEATH OUR EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR IS RESPONSIBLE FOR:
A. SHEETING AND BRACING THE EXCAVATION TO PREVENT SLIDES, CAVE-INS AND SETTLEMENTS.
B. PROTECTING EXISTING STRUCTURES OR FACILITIES WITH BEAMS, STRUTS, OR UNDER-PINNING.
- RELOCATION OF HECO FACILITIES
ANY WORK REQUIRED TO RELOCATE HECO FACILITIES SHALL BE DONE BY HECO AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION, AND FOR COSTS IF APPLICABLE.
- DAMAGE TO HECO FACILITIES
ANY DAMAGE TO HECO'S FACILITIES WILL BE REPORTED IMMEDIATELY TO HECO'S TROUBLE DISPATCHER AT PH. 548-7961.
- LIABILITY FOR DAMAGES
ALL HECO UNDERGROUND FACILITIES SHOWN ON THESE PLANS OR WHOSE APPROXIMATE LOCATIONS WITHIN THE PROJECT BOUNDARIES HAVE BEEN MADE KNOWN BY ANY REASONABLE MEANS AT ANY TIME TO THE CONTRACTOR SHALL BE PROTECTED AT ALL TIMES BY THE CONTRACTOR DURING CONSTRUCTION. COSTS FOR DAMAGES TO HECO FACILITIES MAY BE BORNE BY THE CONTRACTOR. THIS REPAIR WORK SHALL BE DONE BY HECO, OR BY THE CONTRACTOR UNDER HECO'S SUPERVISION.

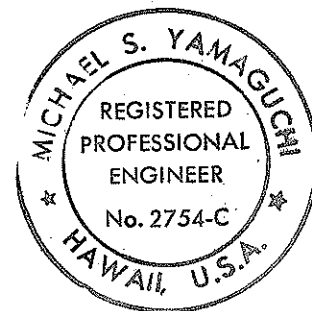
AT&T NOTES

- THE LOCATION OF AT&T'S UNDERGROUND FACILITIES AS SHOWN ON THE PLANS ARE FROM RECORDS OF VARYING DEGREES OF ACCURACY AND ARE NOT GUARANTEED AS SHOWN. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN THE EXCAVATION AND CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF UNDERGROUND FIBER OPTIC CABLE FACILITIES. ANY DAMAGE TO THE EXISTING UNDERGROUND FACILITIES SHALL BE REPAIRED AND PAID FOR BY THE CONTRACTOR.
- WHEN TRENCH EXCAVATION IS ADJACENT TO OR UNDER EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SHEETING AND BRACING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE FROM POSSIBLE SLIDES, CAVE-INS AND SETTLEMENT, AND FOR PROPERLY SUPPORTING EXISTING STRUCTURES AND FACILITIES WITH BEAMS, STRUTS OR UNDERPINNINGS TO FULLY PROTECT IT FROM DAMAGE.
- ANY WORK REQUIRED TO RELOCATE UNDERGROUND FACILITIES SHALL BE DONE BY AT&T CO. AND PAID FOR BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION.
- FOR VERIFYING THE LOCATION OF AT&T'S UNDERGROUND FACILITIES CALL 455-1010.

APPROVED:

CHIEF, PLANNING AND
ENGINEERING DIVISION, BWS

DATE



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

Signature

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-HI-1 (211)	1987	6	53
DATE		REVISION			
2/15/89		Added WATER NOTE No. 31, per Addendum No. 2.			

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
CONSTRUCTION NOTES-2	
H-1 NONPOTABLE WATER SYSTEM HALAWA INTERCHANGE TO KEEHI INTERCHANGE F.A.I. PROJ. NO. IR-HI-1 (211)	
SCALE: NONE	DATE: 11/23/88
SHEET No. 64 OF 48 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-HI-1 (211)	1989	7	53

CONSTRUCTION NOTES FOR 16" GAS TRANSMISSION LINE AND OTHER PRI GASCO, INC. GAS FACILITIES

- THE GASCO 16 INCH HIGH PRESSURE GAS TRANSMISSION LINE IS PLASTIC COATED AND CATHODICALLY PROTECTED. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR THE GAS PIPELINE.
- PRIOR WRITTEN CLEARANCE MUST BE OBTAINED FROM GASCO MAPS AND RECORDS, 515 KAMAKEE STREET, AT LEAST FIVE WORKING DAYS PRIOR TO THE START OF EXCAVATION NEAR ANY GASCO PIPELINE.
- SINCE PIPELINE LOCATIONS ON FIELD MAPS ARE APPROXIMATE, THE CONTRACTOR, AFTER OBTAINING WRITTEN CLEARANCE, SHALL CALL GASCO A MINIMUM OF 48 HOURS BEFORE STARTING EXCAVATION TO ARRANGE FOR FIELD LOCATION OF THE PIPELINE. THE TELEPHONE NUMBER IS 547-3575 DURING BUSINESS HOURS AND 526-0066 AFTER HOURS.
- THE CONTRACTOR SHALL EXCAVATE AND BACKFILL AROUND THE PIPELINE IN THE PRESENCE OF A GASCO REPRESENTATIVE. ALL BACKFILL WITHIN 12 INCHES OF THE PIPELINE SHALL BE SELECT CUSHION MATERIAL APPROVED BY GASCO.
- MINIMUM VERTICAL AND HORIZONTAL CLEARANCE BETWEEN THE 16 INCH PIPELINE AND OTHER CONDUITS, PIPELINES OR OTHER STRUCTURES SHALL BE 24 INCHES. ADEQUATE SUPPORT AND PROTECTION SHALL BE PROVIDED FOR ANY SECTION OF GAS PIPELINE EXPOSED TO THE TRENCH. SUCH SUPPORT AND PROTECTION SHALL BE APPROVED BY GASCO.
- THE CONTRACTOR SHALL WORK IN AN EXPEDITIOUS MANNER TO KEEP THE UNCOVERED GAS LINE EXPOSURE TO A MINIMUM.
- THE CONTRACTOR SHALL NOTIFY GASCO IMMEDIATELY AFTER DAMAGE HAS BEEN CAUSED TO ANY EXISTING PIPELINES, COATINGS, OR CATHODIC PROTECTION DEVICES. THE CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGES TO GASCO FACILITIES. REPAIR WORK ON THIS DAMAGE SHALL BE PERFORMED BY GASCO, WITH PAYMENT FOR THIS WORK TO BE BORNE BY THE CONTRACTOR.

PRI-HAWAIIAN INDEPENDENT REFINERY INC. (HIRI) OIL LINE NOTES:

- AN EXCAVATION PERMIT IS REQUIRED FOR ALL CONSTRUCTION OR INSTALLATIONS WITHIN 10 FEET OF THE HIRI PIPELINES.
- THE PERMIT FORM IS AVAILABLE AT THE OFFICE OF THE SUPERINTENDENT OF MAINTENANCE AND CONSTRUCTION, HIRI REFINERY AT CAMPBELL INDUSTRIAL PARK. TELEPHONE: 547-3900.
- THE SUPERINTENDENT OF MAINTENANCE AND CONSTRUCTION MUST BE NOTIFIED AT LEAST 48 HOURS PRIOR TO EXCAVATION* IN ORDER THAT A HIRI REPRESENTATIVE CAN LOCATE THE HIRI PIPELINES.
- THE CONTRACTOR SHALL BACKFILL ONLY IN THE PRESENCE OF A HIRI REPRESENTATIVE. BACKFILL CUSHION SHALL BE INORGANIC SAND CONSISTING OF AT LEAST A 6" DEPTH ENTIRELY AROUND THE PIPELINES.
- A COMPLETE SET OF FINAL CONSTRUCTION DRAWINGS COVERING THE INSTALLATION OR CONSTRUCTION MUST BE PRESENTED WHEN REQUESTING THE PERMIT FORM. THESE DRAWINGS WILL BE RETAINED UNTIL SUCH TIME THAT THE PROJECT "AS BUILT" DRAWINGS ARE MADE AVAILABLE.
- THE CONTRACTOR WILL REIMBURSE HIRI FOR ANY CONSULTING SERVICES STEMMING FROM THE PROPOSED WORK OR WORK METHODS IN CONNECTION WITH EXCAVATION* AND/OR CONSTRUCTION NEAR THE HIRI PIPELINES.

*NOTES: EXCAVATION INCLUDES GRADING AND GRUBBING OF THE PROJECT AREA ABOVE THE HIRI PIPELINES OR IN THE VICINITY OF HIRI SURFACE STRUCTURES SUCH AS VALVE VAULTS, VALVE CAGES AND CONTROL DEVICES.

CHEVRON U.S.A. INC. NOTES:

- CHEVRON PIPELINES ARE CATHODICALLY PROTECTED AGAINST CORROSION. IN THE EVENT THAT THE WORK CAUSES A DROP IN THE ELECTRICAL POTENTIAL OF CHEVRON'S PIPELINES, CHEVRON RESERVES THE RIGHT TO MAKE ANY MODIFICATIONS OR IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO BONDING OF THE TWO SYSTEMS, IN ORDER TO PRESERVE THE MINIMUM CORROSION PROTECTION REQUIRED FOR CHEVRON'S PIPELINES.
- GUIDELINES FOR WORK NEAR CHEVRON U.S.A. PIPELINES

CHEVRON U.S.A.'S HAWAIIAN REFINERY HAS ONE OR MORE PETROLEUM PRODUCT PIPELINES IN AN EASEMENT THAT RUNS THROUGH OR IMMEDIATELY ADJACENT TO THE PROJECT. THESE PIPELINES ARE USED FOR THE TRANSMISSION OF PETROLEUM PRODUCTS AT HIGH TEMPERATURES AND PRESSURES. THE PIPELINES ARE COATED AND CATHODICALLY PROTECTED. THEY REQUIRE FREQUENT INSPECTION AND MAINTENANCE.

IT IS ABSOLUTELY NECESSARY THAT CHEVRON BE PROVIDED ACCESS TO THESE BURIED PIPELINES AT ALL TIMES, 24 HOURS A DAY, SEVEN DAYS A WEEK. THEREFORE, CONSTRUCTION MUST ADHERE TO THE FOLLOWING GUIDELINES:

A. IF THE EASEMENT AREA IS FENCED OR WALLED IN, WE MUST HAVE A GATE KEY UNLESS THE AREA IS ATTENDED ON A 24-HOUR BASIS.

B. STORAGE OF MATERIAL ON THE EASEMENT SHOULD BE AVOIDED. THIS INCLUDES PARKING LOTS.

C. A MINIMUM OVERHEAD CLEARANCE OF 15 FEET MUST BE MAINTAINED WITHIN THE EASEMENT.

D. HEAVY LANDSCAPING (TREES, SHRUBS, SPRINKLERS, ETC.) SHOULD BE KEPT OFF THE EASEMENT.

E. HEAVY OBSTRUCTIONS SHOULD BE KEPT OFF THE EASEMENT (E.G. BUILDINGS, WALLS, EQUIPMENT PADS, ETC.).

F. NO TOP-TO-BOTTOM OBSTRUCTIONS WILL BE PERMITTED IN THE EASEMENT (E.G. POWER POLES, SEWER MANHOLES, SEWER CLEAN-OUTS, BRIDGE ABUTMENTS, ETC.).

G. LIGHT OBSTRUCTIONS (E.G. GRASS, PAVING (ASPHALTIC CONCRETE), CURB CROSSINGS, ETC.) ARE CONSIDERED REASONABLE. GRASSED AREAS MUST BE SUITABLE FOR ALL-WEATHER VEHICULAR TRAVEL.

H. OUR COMPANY REPRESENTATIVE WILL STAKE THE PIPELINES AT YOUR REQUEST. DETERMINATION OF PIPELINE ELEVATIONS SHALL BE YOUR RESPONSIBILITY AND AT YOUR EXPENSE.

I. THE PIPELINE EASEMENT ACCESS ROAD MUST BE KEPT OPEN AT ALL TIMES. AUTHORIZATION TO BLOCK ACCESS ROADS AT ANY TIME DURING YOUR CONSTRUCTION PERIOD MUST BE OBTAINED FROM CHEVRON U.S.A. INC.

J. AVOID RUNNING ANY SPRINKLER LINES, PIPELINES, ETC., WITHIN THE EASEMENT IN A PARALLEL OR NEAR PARALLEL ORIENTATION TO THE EASEMENT CENTERLINE. CROSSINGS ARE PERMITTED BUT MUST BE HELD TO A MINIMUM OF 45 DEGREES TO EASEMENT CENTERLINE.

K. CROSSING FACILITIES SHOULD BE AT LEAST 12 INCHES CLEAR BELOW OUR PIPELINES FOR THE FULL EASEMENT WIDTH. CROSSINGS ABOVE OUR PIPELINES ARE GENERALLY NOT PERMITTED.

L. REMOVAL OF FILL FROM THE EASEMENT SHOULD NOT RESULT IN THERE BEING LESS THAN 2 FEET MINIMUM COVER OVER THE LINES, EXCEPT AT OVERBENDS WHERE THERE SHOULD BE 3 FEET COVER.

M. TRENCHES ACROSS THE PIPELINES SHALL BE LIMITED TO A MAXIMUM WIDTH OF 5 FEET UNLESS THE LINES ARE SUPPORTED IN A MANNER ACCEPTED TO CHEVRON U.S.A. INC.

N. ALL EXCAVATIONS AND BACKFILLING OPERATIONS IN OUR EASEMENT MUST BE WITNESSED BY A CHEVRON U.S.A. INC. REPRESENTATIVE. ALL BACKFILL MATERIAL WITHIN 6 INCHES OF OUR PIPELINES MUST BE OF FINELY GRADED DIRT OR SAND. ALL EXCAVATIONS WITHIN 2 FEET OF OUR PIPELINES MUST BE ACCOMPLISHED BY HAND DIGGING. WORK SHALL BE HANDLED IN AN EXPEDITIOUS MANNER IN ORDER TO KEEP OUR PIPELINES UNCOVERED FOR AS SHORT A PERIOD AS POSSIBLE.

O. FILL ON THE EASEMENT SHOULD BE LIMITED TO 4 FEET MAXIMUM COVER OVER OUR PIPELINES. WE WILL STAKE THE PIPELINES UPON REQUEST SO THAT YOU CAN EXCAVATE TO DETERMINE THEIR DEPTH.

P. REGRADING OF ADJACENT PROPERTY SHOULD NOT ADVERSELY AFFECT DRAINAGE OF THE EASEMENT AREA OR POSE A HAZARD TO THE EASEMENT SUCH AS LAND SLIDES OR EROSION.

Q. THE SLOPE MUST BE KEPT REASONABLY LEVEL ACROSS THE EASEMENT. MAXIMUM SHOULD BE 5:1 TO PROVIDE FOR BACKHOE OPERATION.

ALL COSTS PERTAINING TO DAMAGE OF THE PIPELINES, THEIR COATINGS, OR THEIR CATHODIC PROTECTION DEVICES, OR DAMAGE OF PROPERTY AND INJURY TO PERSONS CAUSED DIRECTLY OR INDIRECTLY BY THIS WORK, WILL BE TO THE CONTRACTOR'S ACCOUNT. ANY REPAIR WORK ON THE LINES RESULTING FROM THIS PROJECT SHALL BE PERFORMED BY CHEVRON U.S.A. INC. AND BILLED TO THE CONTRACTOR.
- THE CONTRACTOR SHALL OBTAIN AND SIGN "A STATEMENT OF CONFORMANCE TO: GUIDELINES FOR WORK NEAR CHEVRON U.S.A. PIPELINES." CONTACT MR. KIM BEASLEY AT 682-5711.

HONOLULU FUELING FACILITIES (HFF) (LOCKHEED AIR TERMINAL, INC.) NOTES:

- CONSTRUCTION COORDINATION: LOCKHEED REQUIRES NOTIFICATION OF ALL WORK NEAR THE PIPELINES AT LEAST 48 HOURS IN ADVANCE. NOTIFICATION WILL BE IN WRITING DIRECTED TO LOCKHEED AIR TERMINAL, INC., 3071 AOLELE STREET, HONOLULU, HAWAII 96819, AND ATTENTION OF MR. STAN AMBO, OPERATIONS SUPERINTENDENT AND SHALL NOTIFY THE OPERATIONS OFFICE BY TELEPHONE 836-1381 TWO (2) HOURS IN ADVANCE OF LINE EXCAVATION CROSSING. LOCKHEED WILL PROVIDE A REPRESENTATIVE ON SITE DURING THE CONSTRUCTION PERIOD. EXCAVATION SHALL NOT COMMENCE UNTIL APPROVED BY THE LOCKHEED REPRESENTATIVE.
- CONSTRUCTION GUIDELINES:

A. PIPELINES ARE SHOWN AS ACCURATELY AS CAN BE DETERMINED.

B. CROSSINGS SHOULD CLEAR FUEL LINES EITHER BELOW OR ABOVE A MINIMUM OF 12 INCHES.

C. BACKFILL BETWEEN AND REPLACED BACKFILL SHALL BE SAND OR MANSAND WITH NO ROCKS OR GRAIN SIZES LARGER THAN 1/4".

D. THE CONTRACTOR SHALL HAND EXCAVATE WITHIN 3 FEET OF ACTIVE FUEL LINES.

E. ABANDONED PIPELINES: 1) GENERALLY LINES WERE ABANDONED USING WATER, HOWEVER, THEY MAY CONTAIN FUEL OR A FUEL/WATER MIXTURE. 2) CONTRACTOR SHALL NOT CUT LINES WITH A CUTTING TORCH. 3) LIQUIDS IF ANY SHALL NOT BE DRAINED INTO THE GROUND BUT MUST BE CAPTURED AND DISPOSED OF IN ACCORDANCE WITH HAZARD MATERIALS AND WASTE WATER DISPOSAL REGULATIONS. THE CONTRACTOR SHALL USE AN EPA LICENSED DISPOSAL FIRM AND SHALL FILE ALL REQUIRED DISPOSAL FORMS AND ACCOUNTS AND 4) ABANDONED LINES SHALL BE CAPPED AND REFILLED WITH WATER.

F. REPAIR OF DAMAGED PIPE PROTECTIVE COATINGS:

SECTION 15A

2.3 EXTERNAL COATING REPAIR:

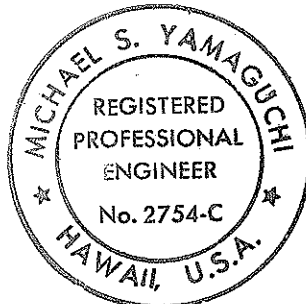
2.3.1 REQUIREMENTS: ALL DEFECTS AND DAMAGED COATING, PIPE WITHOUT PLASTICIZED ENAMEL COATING OR "X-THRU" COATING, WELDS, CONNECTIONS, FLANGES, AND FITTINGS, REGARDLESS OF SIZE, SHALL BE FIELD COATED AFTER PIPING SYSTEM IS INSTALLED AND TESTED.

2.3.2 MATERIAL: FIELD COATING MATERIAL SHALL BE "PLICOFLEX TAPE NO. 340", 25 MILS IN THICKNESS, OF PROPER WIDTH FOR THE DIAMETER OF PIPE TO BE WRAPPED. ADHESIVE FOR "PLICOFLEX" TAPE APPLICATION SHALL BE "PLICOFLEX NO. 104" ADHESIVE PRIMER.

2.3.3 APPLICATION: WRAPPING SHALL NOT BE APPLIED DURING RAINY OR FOGGY WEATHER. IMMEDIATELY PRIOR TO APPLICATION OF ADHESIVE, PIPE SURFACE SHALL BE WIRE-BRUSHED FREE OF OIL, GREASE, LOOSE MILL SCALE, DIRT, AND MOISTURE. LOOSE DUST SHALL BE WIPED FROM PIPE SURFACE AHEAD OF PRIMING. PIPE SURFACE SHALL THEN BE PRIMED WITH "PLICOFLEX NO. 104" ADHESIVE PRIOR, STRICTLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. PIPE JOINTS SHALL BE WRAPPED DIRECTLY AFTER APPLICATION OF PRIMER. TAPE SHALL BE APPLIED WITH CARE TO ASSURE BOND WITH PRIMED PIPE AND WITH A UNIFORM OVERLAP OF 1/2-INCH MINIMUM. DURING WRAPPING, PRIMED SURFACE SHALL NOT BE PERMITTED TO BECOME CONTAMINATED WITH FOREIGN MATERIAL BY PERMITTING PIPE TO CONTACT GROUND, OR OTHERWISE. SHOULD PRIMED PIPE REMAIN UNWRAPPED FOR AN EXCESSIVE PERIOD, OR SHOULD PIPE BECOME WET BEFORE OR DURING PRIMING, OR SPATTERED WITH MUD BEFORE OR AFTER PRIMING, PIPE SHALL BE RECLEANED THEN PRIMED. SHOULD PRIMED PIPE LOSE ITS "TACKY" CHARACTERISTIC BY ACCUMULATION OF LIGHT DUST, PIPE SHALL BE REPRIMED BEFORE WRAPPING. EACH JOINT SHALL BE WRAPPED TWICE, WITH PRIMER APPLIED FOR SECOND WRAPPING. WRAPPING SHALL EXTEND A MINIMUM OF 1/2 PIPE DIAMETER ONTO FIRM, CLEANED AND PRIMED "SOMATIC" OR "X-TRU" COATING. SECOND WRAPPING OVERLAP SHALL NOT BE PLACED DIRECTLY OVER FIRST WRAPPING OVERLAPS. SHRINK WRAPPING SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

2.3.4 EXTERNAL COATING TEST: ALL SHOP APPLIED PIPE COATING AND FIELD APPLIED PIPE COATING SHALL BE TESTED WITH AN ELECTRONIC HOLIDAY DETECTOR OF AN APPROVED DESIGN WITH ADJUSTABLE RANGE OF APPROXIMATELY UP TO 12,000 VOLTS TO BE FURNISHED AND OPERATED BY THE CONTRACTOR.

ORIGINAL PLAN	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	
NO.	



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.
Michael S. Yamaguchi
Signature

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
CONSTRUCTION NOTES-3	
HI NONPOTABLE WATER SYSTEM HALAWA INTERCHANGE TO KEEHI INTERCHANGE F.A.I. PROJ. NO. IR-HI-1 (211)	
SCALE: NONE	DATE: 11/23/88
SHEET NO. 5 OF 48 SHEETS	