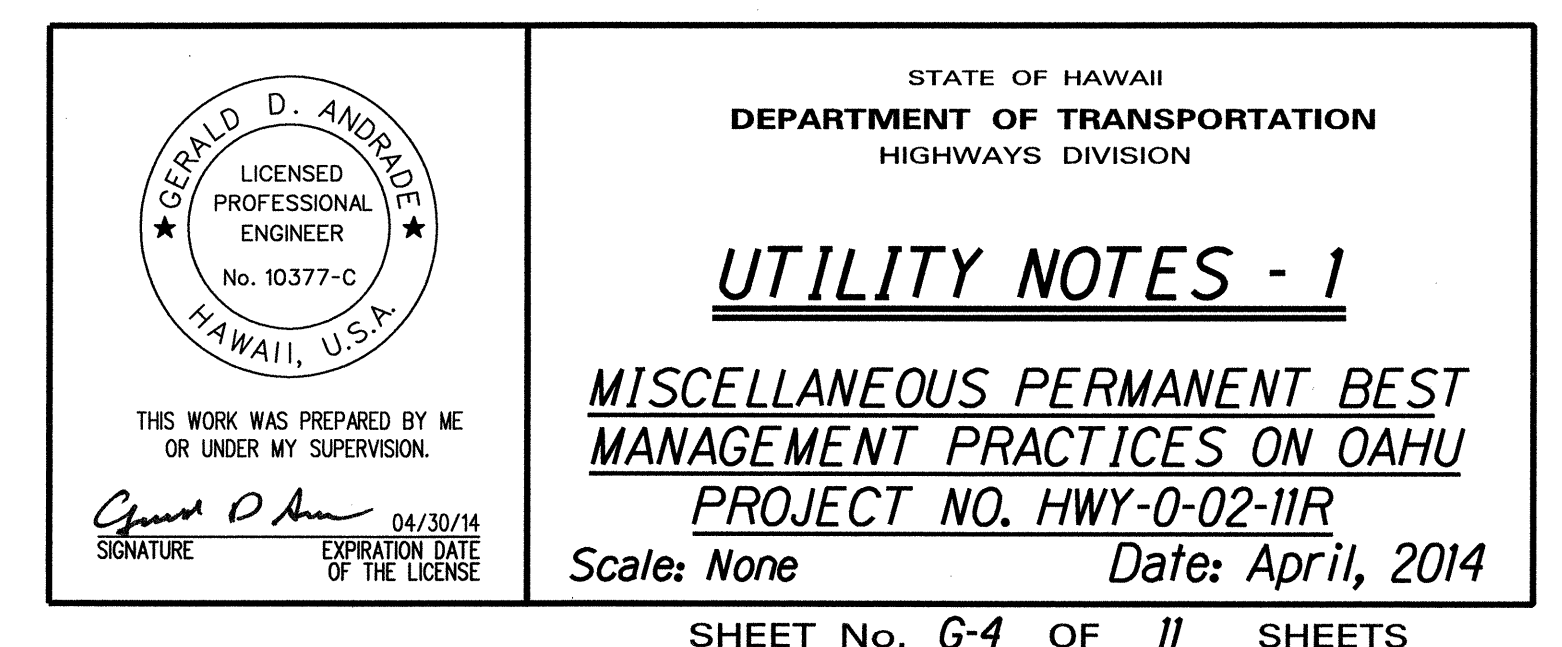
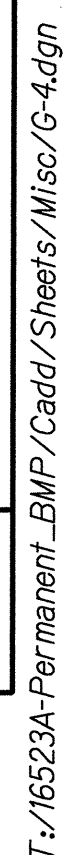


1. The Contractor shall procure and pay for all licenses and permits and shall give all notices necessary and incident to the due and lawful prosecution of the work.
2. The Contractor shall obtain an excavation permit and toning request from Hawaiian Telcom's Excavation Permit Section, located at 1177 Bishop Street, two weeks prior to the start of construction. Hours of business are 8:00 a.m. to 11:00 a.m. and 12:00 p.m. to 3:00 p.m. Monday through Friday, except holidays.
3. Prior to the excavation of the ductline, the Contractor shall request Hawaiian Telcom to locate existing ductline wherever required. For underground cable locating and marking, five (5) working days advance notice is required. Three (3) working days advance notice is required for any inspection by a designated representative.
4. The locations of existing utilities are approximate only. The Contractor shall exercise extreme caution and shall maintain proper clearances whenever construction crosses or is in close proximity of Hawaiian Telcom facilities. The Contractor shall verify their locations and shall be liable for any damages to Hawaiian Telcom facilities. Any damages shall be reported immediately to Hawaiian Telcom's Repair Section at #611 (24 hours) or to the Excavation Permit Section at 546-7746 (normal working hours, Monday through Friday, except holidays). As a result of his operations, adjustments to the new ductline alignment, if required, shall be made to provide the required clearances.
5. The Contractor shall take necessary precaution not to damage existing cables or ducts. A Hawaiian Telcom inspector or designated representative is required to be at any job site whenever there will be a breakage into or entry into any structure that contain Hawaiian Telcom facilities. Temporary cable and duct supports shall be provided wherever necessary.
6. The Contractor shall notify Hawaiian Telcom's inspector or designated representative a minimum of 72 hours prior to excavation, bracing, or backfilling of Hawaiian Telcom's structures or facilities.
7. All applicable construction work shall be done in accordance with the "Hawaiian Telcom Standard Specifications for Placing Telephone Systems" dated January 2007, all subsequent amendments and additions, and all other pertinent standards for telephone construction. Contractor shall familiarize his personnel by obtaining applicable specifications.
8. When excavation is adjacent to or beneath Hawaiian Telcom's existing structures or facilities, the Contractor shall:
 - a) Sheet and/or brace the excavation to prevent slides, cave-ins, or settlements to ensure no movement to Hawaiian Telcom's structures or facilities.
 - b) Protect existing structures and/or facilities with beams, struts, or underpinning while excavating beneath them to ensure no movement to Hawaiian Telcom's structures or facilities.
9. The Contractor shall brace all poles or light standards near the new ductline, manhole, or handhole during his operations.
10. The Contractor shall saw-cut A.C. pavement and concrete gutter wherever new manholes, handholes, or ductlines are to be placed and shall restore to existing condition or better.
11. The Contractor shall comply with the policy adopted by the Department of Planning and Permitting, City and County of Honolulu, concerning the replacement of concrete sidewalks after excavation work.

12. 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 locations and depths 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.
13. Wherever connections to 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.
14. The Contractor, at his own expense, shall keep the project and surrounding area free from dust nuisance. The cost for supplementary measures, which will be required by the City and County, shall be borne by the Contractor.
15. The Contractor shall pump all manholes dry during final inspection.
16. The Contractor shall notify Hawaiian Telcom inspector 24 hours prior to the pouring of concrete or backfilling.
17. When connecting to manhole walls, all existing reinforcing bars shall be left intact. Ducts shall be adjusted in the field in order to clear reinforcing.
18. The Contractor shall be responsible for laying out all required lines and grades and shall preserve all bench marks and working points necessary to lay out the work correctly. The new ductline shall be adjusted by the Contractor to suit the existing conditions and the details as described in the plans.
19. Minimum concrete strength shall be:
For ductline 2500 psi at 28 days
For manhole 3000 psi at 28 days or as specified in design notes
20. Bends in the duct alignment, due to changes in grade shall have a minimum radius of 25 feet. All 90 degree C-bends at a pole or at the building floor slab penetration, shall have a bend radius of ten times the diameter of the duct or greater.
21. After ductline has been completed, a mandrel with a square front not less than 12" long and having a diameter of $\frac{1}{4}$ " less than the inside diameter of the duct, shall be pulled through each duct after which a brush with stiff bristles shall be pulled through to make certain that no particles of earth, sand, or gravel have been left inside. Ducts shall be completely dry and clean.
22. All ducts and conduits shall have an 1800* polyester mule-tape (NEPTCO, WP1800P, Hawaiian Telcom Material Code No. 571154) installed throughout its entire length. All ducts shall be capped to prevent entry of foreign material during construction and at the completion of installation.

1. *Unless otherwise specified, all materials and construction of water system facilities and appurtenances shall be in accordance with the STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, dated 1994, as amended, of the Hawaii Highways Division, Department of Transportation, and the City and County of Honolulu Board of Water Supply's "WATER SYSTEM STANDARDS", DATED 2002, THE "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3, DATED 1991, and all subsequent amendments and additions.*
2. *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, drainage, etc., and other features of improvements shall not be the responsibility of the Board of Water Supply.*

3. The Contractor shall notify BWS Capital Projects Division, Construction Section in writing one week prior to commencing work on the water system.
4. The existence and location of underground utilities and structures as shown on the plans are from the latest available data but is not guaranteed as to the accuracy or the encountering of other obstacles during the course of the work. The Contractor shall be responsible and pay for all damages to existing utilities. The Contractor shall not assume that where no utilities are shown, that none exist.
5. Re-approval shall be required if this project is not under construction within a period of two years.
6. The Contractor shall be responsible for the protection of all water lines during construction. The Contractor shall be especially careful when excavating behind water lines, tees, and bends wherever there is a possibility of water line movement due to the removal of the supporting earth beyond the existing reaction blocks. The Contractor shall take whatever measure necessary to protect the water lines, such as constructing special reaction blocks (with BWS approval) and/or modifying his construction methods.
7. Prior to any excavating, the Contractor shall verify in the field the location of existing water mains and appurtenances.
8. The project shall pay the applicable water system facilities and/or one-time service charge and for the meter which will be furnished by BWS and installed by the Contractor when the lateral is installed.
9. 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. 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.
10. Board of Water Supply approval of these plans does not constitute a water commitment. Availability of water will be determined when building permit is presented to the Department. Water commitment will depend upon the status of the water system at that time. Should water service be made available, the water commitment will be effective when the project receives an approved building permit from the Building Department. All water commitments will be canceled in the event the building permit is canceled.
11. The project shall be subject to the Board of Water Supply's Cross-Connection Control requirements prior to issuance of the Building Permit.
12. The installation, chlorination and testing of the water main facilities after the meter shall not be the responsibility of the Board of Water Supply.




13. Install 4 mil thick, non-metallic, blue colored, 6 inches wide warning tape over centerline of the pipe and below the base course along the entire length of trench. Tape should be marked "CAUTION WATER LINE BURIED BELOW".

- HECO NOTES: (Rev. 01/09/09)

- Should the Contractor anticipate that his work will result in the need to encroach within the minimum required clearance at any time, the Contractor shall notify HECO at least four (4) weeks prior to the planned encroachment so that, if feasible, the necessary protections (e.g. relocate or de-energize HECO lines) can be investigated. HECO may also be able to blanket its distribution (12kV and below) lines to provide a visual aid in preventing accidental contact. HECO's cost of safeguarding or identifying its lines will be charged to the Contractor.*

HECO NOTES: (CONT.)

 <p>GERALD D. ANDRADE ★ LICENSED PROFESSIONAL ENGINEER ★ No. 10377-C HAWAII, U.S.A.</p>	<p>STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION</p> <p><u>UTILITY NOTES - 2</u></p> <p><u>MISCELLANEOUS PERMANENT BEST</u> <u>MANAGEMENT PRACTICES ON OAHU</u> <u>PROJECT NO. HWY-0-02-11R</u></p>
<p>THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.</p> <p><i>Gerald D. Andrade</i> 04/30/14 SIGNATURE EXPIRATION DATE OF THE LICENSE</p>	<p>Scale: None Date: April, 2014</p> <p>SHEET No. 6-5 OF 11 SHEETS</p>

HECO NOTES: (CONT.) (Rev. 01/09/09)

14. Clearances

The following clearances shall be maintained between HECO's ductline and all adjacent structures (charted and uncharted) in the trench:

MINIMUM SEPARATION CLEARANCES TO EXISTING UNDERGROUND DUCTLINES HORIZONTAL (PARALLEL)				
Utility Being Installed	Existing Direct Buried Cable	Existing Direct Buried in Conduit (no concrete encasement)	Existing 3" Concrete Encasement	Applicable Notes:
HECO DB Conduits	12"	3"	0"	
HECO 3" Encasement	0"	0"	0"	
Telephone/ CATV DB	12"	12"	6"	
Telephone/ CATV DB Ducts	12"	12"	6"	
Telephone/ CATV 3" Encasement	0"	0"	0"	5
Traffic Signal	12"	12"	12"	
Water DB	36"	36"	36"	1, 4
Water Service Laterals	12"	12"	12"	
Water (Concrete Jacketed)	36"	36"	36"	1, 4
Gas DB	12"	12"	12"	1
Gas (Concrete Jacketed)	12"	12"	12"	1
Sewer DB	36"	36"	36"	1, 2
Sewer (Concrete Jacketed)	36"	36"	36"	1, 2
Drain	12"	12"	12"	1
Fuel Pipeline	48"	48"	48"	3

Notes:

- Where space is available, parallel clearance to other utilities, of foreign structures other than communications or traffic signal shall be 36".
- If 36" clearance cannot be met:
 - If clearance is less than 12", jacket sewer line with reinforced concrete (per HECO's std. 30-1030) for a distance of 5" plus pipe diameter.
 - If clearance is between 12" and 36", jacket sewer line with plain concrete.
- Electrical conduit crossings of fuel lines should be kept a minimum of 48" clear below fuel line for the full easement width. If the 48" clearance cannot be met but there is a minimum of 24", the fuel line must be encased with 6" of concrete.
- 5 feet clear to water mains 16" and larger.
- For situations with 0" minimum separation, a 6" separation is recommended
- Clearances measured from outer edges of diameters of utilities.

15. Indemnity

The Contractor shall indemnify, defend and hold harmless HECO from and against all losses, damages, claims, and actions, including but not limited to reasonable attorney's fees and costs based upon or arising out of damage to property or injuries to persons, or other tortuous acts caused or contributed to by Contractor or anyone acting under its direction or control or on its behalf; provided Contractor's indemnity shall not be applicable to any liability based upon the sole negligence of HECO.

MINIMUM SEPARATION CLEARANCES TO EXISTING UNDERGROUND DUCTLINES
VERTICAL (CROSSING)

Utility Being Installed	Existing Direct Buried Cable	Existing Direct Buried in Conduit (no concrete encasement)	Existing 3" Concrete Encasement	Applicable Notes:
HECO DB Conduits	6"	3"	0"	
HECO 3" Encasement	0"	0"	0"	
Telephone/ CATV DB	12"		6"	
Telephone/ CATV DB Ducts	12"	12"	6"	
Telephone/ CATV 3" Encasement	0"	0"	0"	5
Traffic Signal	12"	12"	6"	
Water Service Laterals	6"	6"	6"	
Water DB	6"	6"	6"	2
Water (Concrete Jacketed)	6"	6"	6"	2
Gas DB	12"	12"	12"	
Gas (Concrete Jacketed)	12"	12"	12"	
Sewer DB	24"	24"	24"	1
Sewer (Concrete Jacketed)	24"	24"	24"	1
Drain	12"	12"	12"	
Fuel Pipeline	48"	48"	48"	3

Notes:

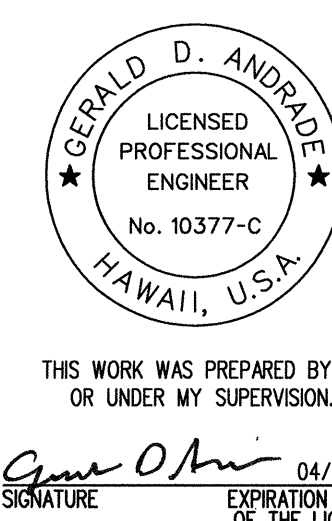
- If clearance cannot be met:
 - If clearance is less than 12", jacket sewer line with reinforced concrete (per HECO's std. 30-1030) for a distance of 5" plus pipe diameter.
 - If clearance is between 12" and 24", jacket sewer line with plain concrete.
- 12" vertical clearance for pipe diameters greater than 16"
- Electrical conduit crossings of fuel lines should be kept a minimum of 48" clear below fuel line for the full easement width. If the 48" clearance cannot be met but there is a minimum of 24", the fuel line must be encased with 6" of concrete.
- 5 feet clear to water mains 16" and larger.
- For situations with 0" minimum separation, a 6" separation is recommended
- Clearances measured from outer edges of diameters of utilities.

The Contractor shall notify the Construction Manager and HECO of any heat sources (power cable duct bank, steamline, etc.) encountered that are not properly identified on the drawings.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-02-11R	2014	7	43

DATE	_____
DESIGNED BY	_____
TRACED BY	_____
NOTED BY	_____
CHECKED BY	_____
IN CHARGE	_____

T-165234-Permanent BMP/Cadd/Sheets/Misc/G-6.dgn



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

UTILITY NOTES - 3

MISCELLANEOUS PERMANENT BEST
MANAGEMENT PRACTICES ON OAHU

PROJECT NO. HWY-0-02-11R

Scale: None Date: April, 2014

SHEET No. G-6 OF 11 SHEETS

MECHANICAL/ELECTRICAL DESIGN AND
ENGINEERING DIVISION NOTES:

1. The Contractor shall notify the Joint Pole Committee two (2) weeks in advance of any relocation of utility pole(s) that may be necessary.
2. The Contractor shall notify the Mechanical/Electrical Design and Engineering Division, Department of Design and Construction, three (3) working days prior to commencing work on the street lighting system (Phone: 768-8431).
3. The street lighting system shall be kept operational during construction. Any relocation required shall be approved by the Mechanical/Electrical Design and Engineering Division, Department of Design and Construction and paid for by the Contractor.
4. The Contractor shall be responsible for any damages to existing street lighting, traffic signal, and fiber optic facilities, including the traffic signal interconnect system, and any and all damages to these facilities shall be repaired by the Contractor at his cost in accordance with the requirements of the City and County of Honolulu.

DTS NOTE:

The Contractor shall notify Oahu Transit Services, Inc. (OTS), Ed Sniffen (848-4571) or Lowell Tom (848-4578), two weeks prior to construction, informing them of location, scope of work, proposed closure of any street or traffic lanes, and the need to relocate any bus stop.

PUBLIC HEALTH, SAFETY, AND CONVENIENCE:

1. 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.
2. The Contractor at his own expense, shall keep the project and its surrounding areas free from dust nuisance. The work shall be in conformance with the Air Pollution Standards and Regulations of the State Department of Health. The City may require supplementary measures as necessary.
3. 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, convenience, and safety of the public.

DEPARTMENT OF PLANNING AND PERMITTING
SEWER NOTES:

1. All sewer construction shall be performed in accordance with the City's Standard Specifications, Sept. 1986, the Department of Public Works Standard Details, Sept. 1984, current City Practices and Revised Ordinances of Honolulu, as Amended, and the Design Standards of the Department of Wastewater Management Vol. 1, July 1993.
2. The Contractor shall notify the Construction Management Branch, Wastewater Division, DDC, at 768-8788 or 768-8770 to arrange for inspection services and submit four sets of approved construction plans seven days prior to commencement of sewer work. The Contractor shall pay for all inspection costs.
3. The underground pipes, cables, or ductlines known to exist by the Engineer from his research of records are indicated on the plans. The Contractor shall verify the location and depth of the facilities, including and affecting sewer lines, in the presence of the Wastewater Inspector and exercise proper care in excavating the area. The Contractor shall be responsible and shall pay for all damaged utilities.

3. The underground pipes, cables, or ductlines known to exist by the Engineer from his research of records are indicated on the plans. The Contractor shall verify the location and depth of the facilities, including and affecting sewer lines, in the presence of the Wastewater Inspector and exercise proper care in excavating the area. The Contractor shall be responsible and shall pay for all damaged utilities.
4. The Contractor shall be responsible for maintaining continuous sewer service to all affected areas during construction.
5. The Contractor shall be responsible for any sewage spills caused during construction. The Contractor shall notify the State Department of Health and utilize appropriate sampling and analyzing procedures. The Contractor shall be responsible for all public notification and press releases.
6. Maintain 3'-0" min. horizontal clear separation between all sewer systems and nearest street lighting ductlines, pullboxes, and handholes paralleling the sewer system.
7. Maintain 5'-0" min. horizontal clear separation between street lighting standards (including any modular units) and nearest sewer line system. Contractor shall field verify for conflicts at each street lighting standard location. Where conflicts occur, the Contractor shall coordinate with Project Engineer to revise the street light standard to provide the required clearances.
8. At electrical/signal ductline sewer crossings, adjust all electrical/signal ductline elevations to maintain 24" vertical clear separation from all sewer lines.
9. For sewer manhole (SMH) adjustments upward less than 3", See Std. Detail S-25. For SMH adjustments upward greater than 3" or for any adjustments downward, reconstruct the SMH top from below the cone section.
10. Confined Space
For entry by City personnel, including inspectors, into a permit required confined space as defined in 29 CFR part 1910.146(b), the Contractor shall be responsible for providing:
 1. All safety equipment required by the confined space regulations applicable to all parties other than the construction industry, to include, but not limited to, the following:
 - a. Full body harness for up to two personnel
 - b. Lifeline and associated clips
 - c. Ingress/egress and fall protection equipment
 - d. Two-way radios (walkie-talkies) if out of line-of-sight
 - e. Emergency (escape) respirator (10 minute duration)
 - f. Cellular telephone to call for emergency assistance
 - g. Continuous gas detector (calibrated) to measure oxygen, hydrogen sulfide, carbon monoxide and flammables (capable of monitoring at a distance of at least 20-feet away).
 - h. Personal multi-gas detector to be carried by inspector.
 2. Continuous forced air ventilation adequate to provide safe entry conditions.
 3. One attendant/rescue personnel topside (two, if conditions warrant it).

11. If Contractor encounters flow monitoring devices such as special sewer manhole cover embedded with solar panels; notify C&C of Honolulu, ENV-CSM at 768-7272 to coordinate temporary removal.
12. Contractor shall maintain visibility and maintenance access to live sewer manhole locations at all times, including during non-work hours and paving operations.
13. Contractor shall use manhole debris catching device when performing manhole height adjustment work and remove any construction debris that has fallen into the manhole. Disposal of construction debris in the sewer system is strictly prohibited.

DEPARTMENT OF DESIGN AND CONSTRUCTION
COLLECTION SYSTEM MAINTENANCE NOTE:

1. The Contractor shall be responsible for the protection of all sewer facilities. The Contractor shall immediately report any damages to Albert Kim, CSM, at 768-7253 (phone) or 351-3603 (cellular). All costs for damages to sewer facilities shall be borne by the Contractor.

ADJUSTMENT TO EXISTING UTILITIES NOTE:

1. Adjust all utility valve box frames & covers, water meter boxes, manhole frames & covers, street monument covers, etc., to new finish grade. Coordinate with private companies and City agencies for work on each respective utility.

U.S. ARMY NOTE:

1. The Contractor shall contact Dale Hironaka at 656-3514 or dale.hironaka@us.army.mil if access to any locked U.S. Army Signal Corps manhole is required. The Contractor shall be held liable for any damages incurred to the existing facilities as a result of his operations.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-02-IIR	2014	8	43

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	TRACED BY	
	DESIGNED BY	
	CHECKED BY	

T:\16523A-Permanent BMP/Cadd/Sheets/Misc/G-7.dgn

<div><div>GERALD D. ANDRADE</div><div>LICENSED PROFESSIONAL ENGINEER</div><div>No. 10377-C</div><div>HAWAII, U.S.A.</div></div> <div>THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.</div> <div><div>Signature</div><div>04/30/14</div><div>EXPIRATION DATE OF THE LICENSE</div></div>	<div>STATE OF HAWAII</div> <div>DEPARTMENT OF TRANSPORTATION</div> <div>HIGHWAYS DIVISION</div> <div>UTILITY NOTES - 4</div> <div>MISCELLANEOUS PERMANENT BEST MANAGEMENT PRACTICES ON OAHU</div> <div>PROJECT NO. HWY-0-02-IIR</div> <div>Scale: None Date: April, 2014</div>
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