

GENERAL CONSTRUCTION NOTES:

1. Locations of existing underground structures and utilities such as pipelines, conduits, cables, manholes, monuments, and structures shown on the Plans are approximate only. It is not the intent of these Plans to show the exact location of all underground utilities and structures. It is the responsibility of the Contractor to verify the locations of all existing utilities with the respective owners. Existing utilities damaged by the Contractor shall be repaired by the Contractor at his own cost.
2. The Contractor shall verify and check all dimensions and details shown on the drawings prior to the start of construction. Any discrepancy shall be immediately brought to the attention of the Engineer for clarification.
3. The Contractor shall notify all agencies to verify the actual location of all utilities in the project area prior to excavating. The Contractor shall coordinate all work.
4. The Contractor shall tone and locate existing utilities prior to excavation.
5. When trench excavation is adjacent to or under existing structures or facilities, the Contractor shall be 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 underpinning to fully protect them from damage.
6. Backfill under existing structures or facilities shall be sandy and granular material completely placed as soon as the ducts are laid. The backfill material shall be rammed with proper tools until compacted to 90-95% of its maximum density.
7. All work called for on the plans and not itemized in the proposal and all work not called for but required for the construction of this project shall be considered incidental to trench excavation.
8. The Contractor shall restore to their original condition all improvements damaged as a result of the construction, including pavements, embankments, curbs, signs, landscaping, structures, utilities, walls, fences, etc. unless provided for specifically in the proposal. Demolition and restoration of existing items shall be incidental and included within the amount paid for trench excavation.
9. The Contractor shall observe and comply with the administrative rules of The Department of Health regarding noise control of Hawai'i.
10. No section of incomplete guardrail, footing and/or excavation shall be left unshielded at the end of each work day. Intermediate concrete barriers and crash cushion end treatments used for shielding shall meet current SOH DOT standards and guidelines along with manufacturer's specifications. All shielding used during construction shall be considered incidental to various guardrail items.

11. The locations of the new traffic signal standards, traffic signal standards with mast-arms, pedestrian push buttons, traffic controller, pullboxes, conduits and loop detectors shall be staked out in the field by the Contractor and approval of the locations shall be obtained from the Engineer prior to construction and installation.
12. All traffic signal work shall conform to the requirements of the "Manual on Uniform Traffic Control Devices for Streets and Highways," Federal Highway Administration (FHWA) dated 2009 and amendments.
13. Locations of new pavement striping, markers, and markings (pavement arrow, stop lines, crosswalk, etc.) shown on plans shall be verified with the Engineer prior to the installation of the traffic signal system.
14. Maintenance of traffic through the construction area shall be in accordance with Part VI of the "Manual on Uniform Traffic Control Devices for Streets and Highways," FHWA (2009) and as specified in the Special Provisions. The Contractor shall furnish and maintain adequate barriers, blinkers, construction signs, etc., for the safety of the motoring public.
15. The Contractor shall remove all silt and debris resulting from his work and deposited in drainage facilities, roadways, and other areas on a daily basis. The costs incurred for any necessary remedial action by the Engineer shall be payable by the Contractor.
16. The Contractor, at his own expense, shall keep the project area and surrounding area from dust nuisance. The work shall be in conformance with the Air Pollution Control Standards and Regulations of the State Department of Health.
17. No material and/or equipment shall be stockpiled or otherwise stored within roadway right-of-way except of locations designated and approved in writing by the Engineer.
18. There may be other contractors working in the project site on other projects. The Contractor shall coordinate his work with these contractors.
19. All construction work shall be done in accordance with these plans; all applicable sections of the "Standard Specifications for Road and Bridge Construction," dated 2005 as amended, of the State Highways Division, Department of Transportation; and the project's Special Provisions, unless otherwise specified.
20. Full compensation for all additional materials and labor, not specifically shown or called for which are necessary to complete the construction of the project, shall be considered incidental to the various contract items in the Proposal and no additional compensation will be allowed therefore.
21. Removal of existing signs shall also include the removal of posts and foundations unless otherwise noted. Cost for removal and temporary installation of signs, posts, and foundations shall be considered incidental to other items of work.

22. The contractor shall compact the existing aggregate base in accordance with Section 304 - Aggregate Base Course prior to laying the new Glassphalt Base Course. This preparation work shall be considered incidental to the new Glassphalt Base Course, and will not be paid for separately.
23. The vertical pavement drop-off shall not exceed 2-inches. If a vertical pavement drop-off exists at the end of each day's cold planing and paving, the Contractor shall provide a wedge with a 48:1 minimum transition taper for traverse drop-off and no steeper than 12:1 for longitudinal drop-off, as approved by the Engineer. This work shall be considered incidental to Asphalt Hot-Mix Pavement.

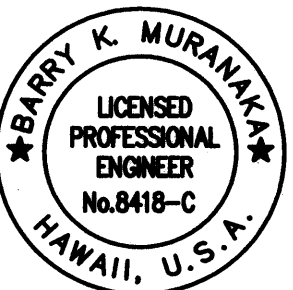
NOTES FOR WORK WITHIN THE COUNTY RIGHT-OF-WAY:

1. All work shall be done in accordance with the County of Hawaii, Department of Public Works (DPW), "Standard Specifications For Public Works Construction," dated September 1986 and "Standard Details For Public Works Construction," dated September 1984.
2. The Contractor shall verify the location of all existing utilities, whether shown on the plan or not, and shall be responsible for the repair or replacement of same in the event of damages due to his construction practices. The Contractor shall coordinate his work with the respective utility companies.
3. The Contractor shall provide and install all traffic control devices in conformance with the current edition of the "Manual On Uniform Traffic Control Devices For Streets And Highways," and as directed by the Department of Public Works.
4. The Contractor shall notify the Department of Public Works 48 hours before the commencement of any utility line work to schedule a field review and secure approval of the proposed utility line location within the County right-of-way.
5. The proposed utility line location shall be laid out in the field prior to the conducting of the field review by the Department of Public Works.
6. Field adjustments shall be made as directed by the Department of Public Works prior to the commencement of any utility line work.
7. The required permit, under Chapter 22, Article 4, Division 1 of the Hawaii County code, shall be obtained from the Department of Public Works by the Contractor for work within the County right-of-way.
8. The Contractor shall provide at least one (1) lane for traffic movement at all times. Two (2) lanes for traffic movement shall be provided between the hours of 3:30 P.M. to 8:00 A.M.

9. The existing pavement shall be saw-cut before commencement of trenching work.
10. Any pavement outside the contract zone limits damaged as a result of construction operations shall be restored to its original condition, or better, as directed by the Department of Public Works (DPW) at the Contractor's expense.
11. A temporary cold mix patch shall be applied immediately upon completion of the backfilling operation and shall be maintained by the Contractor until a permanent patch is authorized by the Department of Public Works.
12. No material, except the trench excavated material, shall be stockpiled closer than six (6) feet from the existing edge of pavement.
13. No construction equipment shall be parked within the road right-of-way in such a manner that the equipment will obstruct the normal movement and sight distance of the driving motorist, except during actual working hours.
14. Except during actual working hours, all signs that do not pertain to the construction activity, such as "men working" and "flagman ahead" shall be covered or laid down. However, all signs necessary for the safety of the public shall be maintained.
15. Any pavement markings, structures, and appurtenances (within or outside of the contract zone limits) damaged and/or worn away under the permit shall be repainted or reconstructed as directed by the Department of Public Works.
16. No trenching shall be left open for more than five (5) working days.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HS-STP-011-2(38)	2010	4	141

ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	



LICENSE EXPIRES 4/30/12  
THIS WORK WAS PREPARED BY  
ME OR UNDER MY SUPERVISION

*[Signature]*

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**CONSTRUCTION NOTES**  
**Volcano Road Intersection and  
Drainage Improvements**  
**Federal-Aid Project No. HS-STP-011-2(38)**

Scale: None      Date: November 2010

SHEET No. 1 OF 3 SHEETS



PILOT DATE: November 30, 2010 @ 11:53:55 am

- LAST UPDATE: November 29, 2010 @ 01:21:34 pm

ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
	DRAWN BY _____	" _____
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	DESIGNED BY _____	" _____
	QUANTITIES BY _____	" _____
	CHECKED BY _____	" _____
No. _____		

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1. All traffic signs and pavement markings shall conform to the latest edition of the "Manual on Uniform Traffic Control Devices", as amended, and applicable sections of Part V of the "Standard Details for Public Works Construction," dated September, 1984, and the "Hawai'i Standard Specifications for Road and Bridge Construction, 2005 Edition", and as amended, unless otherwise specified on the plans, specifications, or the Standard Traffic Notes.
2. The Contractor shall install permanent or temporary pavement markers, striping and markings as required by Section(s) 629 and 755.05 of the "Hawai'i Standard Specifications for Road and Bridge Construction, 2005 Edition", and as amended. The temporary striping must be installed as close as possible to the final location to ensure proper lane widths and safe flow of traffic, but not in the way of pavement marking layout operations. The Contractor shall coordinate and hire special duty police officer(s) as needed to provide traffic control while working within the County Right of Way.
3. The Contractor shall inform the Traffic Division at least six (6) working days prior to any work on pavement markings operations and/or sign installations to schedule a review and approval of the striping and/or signing plans.
4. The approved striping plan shall be layed out using thinned-out paint or other approved methods. Field adjustments shall be made as directed by the Engineer before the final markings are applied.
5. All pavement markings that become inapplicable shall be removed by the Contractor at his own expense. Removal shall be by eradication or by other methods approved by the Engineer before the new pavement markings are applied. Excessive gouging of the pavement is not acceptable and shall be repaired at the Contractor's expense.
6. All pavement striping shall be with alkyl based reflective Thermoplastic Compound Pavement Marking as specified in Section(s) 629 and 755.05 of the "Hawai'i Standard Specifications for Road and Bridge Construction, 2005 Edition", and as amended, on all roadways. The Contractor shall submit Certificate of Compliance certifying that the thermoplastic materials to be used meet the current AASHTO M-247 and AASHTO M-249 specifications.
7. On concrete pavements, pre-stripe application area with binder material, primer, or prime seal coat recommended by pavement marker manufacturer.
8. Heat applied pre-formed thermoplastic pavement marking tape with visible temperature indicators, or an equal pavement marking tape that is approved by the Traffic Division may be used for crosswalks, stop lines, pavement arrows, alphabets, and symbols in lieu of Thermoplastic Compound.
9. ReflectORIZED raised pavement markers shall be the regular sized markers with approximate dimensions of 4"x4"x0.7". The Contractor shall submit Certificate of Compliance certifying that the raised pavement markers to be used meets and/or exceeds the current State of Hawai'i, Department of Transportation specifications.
10. All traffic signs and posts shall meet the requirements of the County of Hawai'i Standard Detail T-1 except that flanged channel posts and octagonal posts will not be acceptable. Signs shall be on aluminum sheeting of 0.080-inch minimum thickness. Signpost shall be 2" square telespar tubing No. 20 F12 or equivalent with 2 1/4" square telespar anchor post.
11. All traffic signs shall be completely reflectORIZED with Type III or Type IV High Intensity Retroreflective Sheeting. Overhead Street Name signs shall be High Intensity.
12. The 2 1/4" square anchor post for signs shall be driven into the ground, AC pavement or concrete sidewalk in accordance with the plans. All damages to the surrounding area shall be repaired to its original condition or better. Before driving into concrete, a neat hole of approximately 3 inch diameter shall be drilled through the concrete prior to the installation of the anchor post. If driving into the concrete or AC pavement is not possible without damage to the surrounding concrete or AC pavement, a 12" by 12" square shall be saw-cut and removed prior to the installation of the anchor post and then patched, with hot mix to match the existing AC pavement, or concrete to match the existing concrete sidewalk.
13. Upon completion of all construction work, including; but not limited to the final paving of the entire project area and off-site construction, the contractor shall re-stripe all pavement markings within the construction area and adjacent roadway pavements up to 300 feet beyond the construction limits in accordance with item 6 of the current Standard Traffic Notes. The contractor shall maintain all temporary pavement markings, permanent pavement markings and all traffic signs and posts until such time the project is accepted by the County of Hawai'i. All traffic signs and posts within the construction limits and adjacent areas that have been damaged, removed, or adversely affected by the construction work shall be replaced by the contractor according to item(s) 10, 11 and 12 of the current standard traffic notes at no cost to the County.
14. All dedicated streets must have Street Names which have been approved by resolution before acceptance of the street by the County of Hawai'i.
15. Install Private Road sign(s) on all private road(s). Sign shall be on 18" wide by 12" high aluminum plate with 4" black lettering on white reflectORIZED sheeting with border.
16. All signs and markings for private roadways shall be maintained by the private owners.

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1. *In the event that an archaeological or historical structure within the work area is inadvertently damaged during construction, cease work in the vicinity of the site and notify the Engineer and the State Historic Preservation Division (SHPD) of the Department of Land and Natural Resources of the damage. SHPD will determine the appropriate mitigation measures.*
2. *In the event that a previously unknown archaeological feature is exposed by construction, cease work in the vicinity of the new feature and notify the Engineer, the SHPD, and the Hawaii County Planning Department of the new discovery.*
3. *In the event that previously unknown human remains are exposed by construction, cease all work in the area of the remains, and protect the area with an appropriate material. Notify DOT and the SHPD.*

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 control standards and regulations of the State Department of Health. The County may require supplementary measures as necessary.*
3. *No Contractor shall perform any trenching operation so as to cause falling rocks, soil or debris in any form to fall, slide or flow onto adjoining properties, streets or natural water-courses. Should such violations occur, the cost incurred for any remedial action by the Director, D.O.T. shall be payable by the Contractor.*
4. *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, convenience, and safety of the public. The Contractor shall apply for a construction permit with a noise pollution control plan.*



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THIS WORK WAS PREPARED BY  
ME OR UNDER MY SUPERVISION

By L. yue

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

### CONSTRUCTION NOTES

Volcano Road Intersection and  
Drainage Improvements  
Federal-Aid Project No. HS-STP-011-2(38)

Scale: None Date: November 2010

SHEET No. 2 OF 3 SHEETS



WATER NOTES:

1. All work shall conform to the State of Hawaii "Water System Standards" dated 2002, as amended.
2. All existing waterline, waterline appurtenances and other utility locations shown on the plans are obtained from latest reliable sources. The contractor shall be responsible to verify the exact location of all utilities in the field whether shown on the plans or not, and shall bear all costs for damages done during the contract period.
3. Whenever connection to existing mains are shown on the plans, the contractor shall expose the existing main by hand excavation prior to excavating trenches for new mains.
4. The Contractor shall inform the Department of Water Supply (D.W.S.) Engineer 72 hours prior to the beginning of any waterline work and one week prior to any connection, chlorination, shut-off or relocation.
5. All meter boxes and covers shall be furnished and installed, in place complete by the contractor, in accordance with County of Hawaii, Dept. of Water Supply, "Water System Standards - 2002", unless otherwise noted.
6. All fittings (Class 250) and gate valves (Class 200) shall be ductile iron, mechanical joint, unless otherwise specified. Butterfly valves shall be Class 250 with epoxy coated interior unless otherwise specified.
7. All pipelines 4" and larger in diameter shall be ductile iron (Class 52) with push on joint Class 52, and all pipelines smaller than 4" in diameter shall be soft copper, Type K, unless otherwise specified.
8. All work and materials furnished by the Department of Water Supply shall be paid for by the Contractor.
9. The contractor shall be responsible for the chlorination of the water system and shall bear all cost. The persons engaged to do the chlorination work must have the appropriate license to perform the work in the State of Hawaii.
10. The water system shall be tested in the presence of a D.W.S. representative. The water line shall be tested at a minimum of 225 p.s.i. or one and a half times the static pressure at the low point, under D.W.S. supervision just prior to paving the roadways.
11. All connection to existing mains shall be supervised by the Department of Water Supply and paid for by the contractor. The contractor shall do all excavation, backfill, furnish all materials, construct reaction blocks and valve boxes, pavement repair, provide flagmen when necessary, and all necessary equipment to make hook-up.
12. The D.W.S. will not assume ownership of nor grant any water service until the water system being connected to is dedicated to the D.W.S. along with all necessary easements and documents.

13. Where water shut-off of more than 3-hours becomes necessary, the contractor, at his own cost, shall provide a temporary bypass line, size of which shall be determined by the D.W.S. Engineer. The D.W.S. Engineer, also reserves the right to require bypass lines, regardless of the water shut-off period, if it is deemed necessary.
14. The Department of Water Supply shall not be held responsible for any waterline work downstream of the meter. The adequacy and installation of the consumer pipelines shall be the responsibility of the subdivider or owner.
15. All meters shall be 5/8" meters unless otherwise noted.
16. Pipe cushion for copper pipes shall be No. 4 fine, manufactured sand.
17. The service lateral installation shall be done by a general contractor or plumber licensed in the State of Hawaii to do such work.
18. The service lateral shall be flushed by the Contractor under the supervision of the Department of Water Supply.
19. All service laterals shall be soft copper, Type "K", with brass fittings.
20. Minimum horizontal clearance between waterlines and other utilities shall be 8 feet unless otherwise specified. Minimum vertical clearance between waterlines and other utilities shall be 12 inches provided concrete jackets are used and 18 inches if no concrete jackets are used. In all instances, the waterline shall be at a grade higher than other utilities unless otherwise specified.
21. Service lateral taps onto the waterline shall be separated by 18 inches minimum.
22. Solder and flux shall contain not more than 0.2% lead.
23. 4'x4'x4" reinforced concrete slab for fire hydrant shall be reinforced with 6x6-10/10 welded wire fabric.
24. Existing waterline, valves, fittings and appurtenances not designated "remove" shall be abandoned in place. All exposed valve boxes, valves, pipes and appurtenances shall be removed and disposed of properly at no cost to the D.W.S.
25. Install Department of Water Supply approved reduced pressure principle type of backflow prevention assembly (above ground) after meter per Department of Water Supply standard detail V.9. No taps or connections are allowed between the meter and the approved backflow prevention assembly. Testing requirements 1 per year.
26. The owner shall make provisions for those times when the backflow prevention assembly is being tested, repaired or maintained.

27. Contractor shall remove existing and/or abandoned waterline as necessary to complete work. Removal will be incidental to various contract items unless piping is hazardous. Hazardous pipe removal shall be paid under Force Account 688.0100-Asbestos Abatement.

GRADING NOTES FOR WORK WITHIN THE COUNTY RIGHT-OF-WAY:

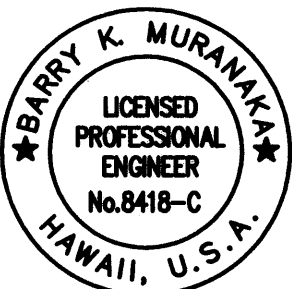
1. All grading work shall conform to Chapter 10 of the Hawaii County Code. Should a grading permit be required, no work shall commence until the Department of Public Works (DPW) approves a grading permit.
2. The Contractor shall remove all silt and debris deposited in drainage facilities, roadways and other areas resulting from his work. The costs incurred for any necessary remedial action by the DPW shall be payable by the Contractor.
3. The Contractor, at his own expense, shall keep the project and surrounding areas free from dust nuisances. The work shall be in conformance with the Air Pollution Control rules of the State Department of Health, HAR 11-60.1, Fugitive Dust.
4. All grading operations shall be performed in conformance with the applicable provisions of the Hawaii Administrative Rules, Title 11, Chapter 55, Water Pollution Control and Chapter 54, Water Quality Standards, and to the Erosion and Sedimentation Control Standards and Guidelines of the Department of Public Works, County of Hawaii.
5. The Contractor shall sod or plant all slopes and exposed areas immediately after the grading work has been completed.
6. Fills on slopes steeper than 5:1 shall be keyed.
7. The Contractor shall inform the DPW of the location of the disposal and/or borrow site(s) required for this project when an application for a grading permit is made. The disposal and/or borrow site(s) must also fulfill the requirements of the grading ordinance.
8. No grading work shall be done on Saturdays, Sundays and holidays anytime without prior approval from the Department of Public Works. Grading work on normal working days shall be between the hours of 7:00 a.m. to 3:30 p.m.
9. Fills shall be compacted to 90 percent (90%) of maximum density per ASTM D-1557 test.
10. The Contractor shall remove all vegetation before placing fills on natural ground surface.

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EARTHWORK QUANTITIES AREA WITHIN COUNTY RIGHT-OF-WAY:

Graded - 0.31 Acres  
Excavation - 250 CY  
Embankment - 59 CY

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



LICENSE EXPIRES 4/30/12

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

*[Signature]*

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
<b>CONSTRUCTION NOTES</b>	
<b>Volcano Road Intersection and Drainage Improvements</b>	
<b>Federal-Aid Project No. HS-STP-011-2(38)</b>	
Scale: None	Date: November 2010
SHEET No. 3 OF 3 SHEETS	