

GENERAL NOTES:

1. The project includes construction to mitigate storm water runoff near Hakalau Bridge on Hawaii Belt Road. The work shall consist of clearing and grubbing, excavating, backfilling, grading, rock scaling, constructing a grouted rip rap channel, grated inlet structures, AC paved swales, storm drain manhole, 30-inch drain line, concrete chute, grouted rubble paving and traffic control.
2. The Contractor's attention is directed to the following Sections of the Standard Specifications: Subsection 104.11 – Utilities And Services; Subsection 107.06 – Contractor Duty Regarding Public Convenience; and Section 645 – WorkZone Traffic Control.
3. At the end of each day's work, the Contractor shall remove all equipment and other obstructions to permit free and safe passage of public traffic.
4. Longitudinal drainage along the highway shall be maintained.
5. The Contractor shall be required to attend weekly meetings with the State and other Contractors to discuss construction coordination issues. All costs associated with the coordination meetings shall be considered incidental to the various contract items, and will not be paid for separately.
6. The Contractor shall be solely responsible for the protection of adjacent properties, utilities, and existing structures from damage due to construction. Repairing any damage shall be at the Contractor's own expense, to the satisfaction of the Engineer.
7. Removal and disposal of any debris shall be considered incidental to their respective bid items. The Contractor shall clean and remove any accumulation of aggregates and debris along the roadside within 10 feet of the edge of pavement. This work shall be considered incidental to the various contract items and will not be paid for separately.
8. The existence and location of underground utilities, manholes, monuments and structures as shown on the plans are from the latest available data but the accuracy is not guaranteed. The encountering of other obstacles during the course of work is possible. The Contractor shall be held liable for any damages incurred to the existing facilities and/or improvements as a result of his operations.
9. With the exception of electrical work shown on the plans, no work or equipment shall be located or take place within 10' of any overhead wires of any HECO utility pole. No excavation shall take place within 5' of any HECO utility pole.
10. The Contractor will immediately report to the Engineer and utility companies damage discovered or caused by his work to any utilities.

11. Prior to pavement surfacing operations, the Contractor shall be responsible for locating, preserving and marking all utility and highway facilities that will require adjustments to the new finished pavement grade. Additionally, the Contractor shall submit to the Engineer a list of all items, including water, drainage, sewer, electrical, telephone and cable utilities to be adjusted to the new finished grade. All coordination work with the utility companies and the costs to adjust facilities to the new finished grade shall be considered incidental to the various contract items.
12. All work specified in the contract but not listed separately in the proposal schedule shall be considered incidental to other various contract items and shall not be paid for separately.
13. Smooth riding connections shall be constructed at all limits of surfacing.
14. All saw cutting work shall be considered incidental to the various contract items.
15. Trimming and dressing of shoulder shall consist of clearing, grubbing, grading, reshaping, compacting, and hydromulching (where applicable), the unpaved shoulders with suitable material as shown on the plans and/or as directed by the Engineer. Suitable materials shall include materials from roadway excavation, including topsoil and cold-planed asphalt concrete therefrom. This work shall be considered incidental to various contract items.
16. On-site volcanic ash material shall not be used for embankment construction, trench backfill or shoulder dressing. Contractor shall dispose such excavated material at no cost to the State.
17. Earth swales shall be graded to drain with acceptable erosion control measures. This work shall be considered incidental to the various contract items.
18. After completion of surfacing, the Contractor and the Engineer will test for, and determine ponding areas (i.e. low spots within the surfaced area). It shall be the responsibility of the Contractor to correct and resurface and/or repair all such ponding areas.
19. Hard rock will likely be encountered and hoe-ramming will likely be required for excavation.
20. Blasting will not be allowed on this project.
21. One lane shall be opened to traffic during morning peak hours from 6:30am to 8:30am, afternoon peak hours from 3:30pm to 5:30pm, off-work hours, and as directed by the Engineer. Only one lane of the highway shall be permitted to be closed during work hours.
22. Unprotected pavement drop offs greater than 2" shall not be permitted during non-working hours, except when approved by the Engineer in writing.
23. Bridging material and shoring over trenches shall be able to handle all types of vehicular traffic. Contractor shall submit drawings, stamped by a licensed structural engineer, for approval prior to use. Smooth riding tapers and advanced warning signs shall be provided. Bridging material shall be non-skid.

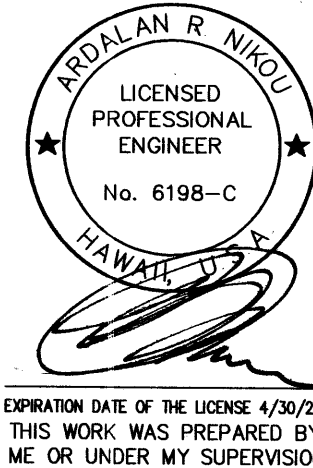
PUBLIC HEALTH, SAFETY, AND CONVENIENCE:

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.

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	STP-019-2(60)	2010	3	36

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
DESIGNED BY	DRAWN BY	
CHECKED BY	TRACED BY	
NO.	NOTED BY	

AECOM



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

GENERAL NOTES

HAWAII BELT ROAD DRAINAGE  
IMPROVEMENTS, HAKALAU BRIDGE  
FEDERAL-AID PROJECT NO. STP-019-2(60)

Scale: As Noted      Date: July 2010

SHEET No. 1 OF 2 SHEETS

GENERAL ROCKFALL MITIGATION AND SLOPE SCALING NOTES:

1. The scope of work is to remove loose rocks, hazardous out crops and debris that may dislodge during construction activities. It is anticipated that hoe-ramping and rock excavation with an excavator will be necessary to install the drainage improvements. Also included in this work is the cutting, removal, and disposal of trees and shrubs.

2. 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.

3. The Contractor shall examine the site for rock scaling thoroughly prior to placing a bid.

4. Contractor shall exercise care when performing work in or adjacent to exist structures. All exposed surfaces of the structures shall be protected from damage by rock scaling operation. All damages shall be repaired immediately by the contractor to satisfaction of engineer at no additional cost to the owner.

5. Indemnity:  
The contractor shall indemnify, defend and hold harmless AECOM Technical Services, Inc. and the State of Hawaii from and against all losses, damages, claims and actions, all expenses incidental to such losses, damages, claims or action, based upon or arising out of damage to property or injuries to persons, or other tortuous acts caused or contributed to by the contractor or anyone acting under its direction or control or on its behalf.

6. The contractor shall exercise care when performing work in or adjacent to the project site. Damages to the existing facilities shall be immediately reported to the engineer. The repair work shall be done at the contractor's expense.

7. Contractor shall have in their employment a qualified person as "spotter" full time during scaling operation. The spotter shall be a geologist trained in field work or someone experienced in rockfall mitigation Procedures. The spotter shall have no other responsibility except for continually monitoring the upper slopes and for sounding of an alarm in case of possible rockfall during rock scaling operations.

8. Contractor shall submit a work plan for review by the engineer prior to commencing rock scaling work. Contractor shall not begin work prior to approval of the work plan.

9. Slope scaling work shall begin only after the public protection measures are put in place at the beginning of each slope scaling shift. The contractor shall protect the public from any rockfall hazards at all times during the contractor's activities.

10. Start all slope scaling at the top of the slope and proceed down slope, removing loose rock and other debris as the work progresses. All material on the slope face that is loose, hanging or creates a safety hazard to the public must be removed or stabilized, to the engineer's satisfaction, during or on completion of the section of slope.

11. The contractor shall exercise extra care in the slope scaling work and shall avoid over-steepening the slope face that may cause instability of the slope face. If during the slope scaling work, the contractor encounters unsafe slope conditions that may constitute a potential slide, immediately notify the Engineer.

12. Blocks of rock or debris that hang up loosely on the slope during scaling operation shall be removed upon completion of the first pass of the slope scaling regardless of size and without additional cost to the State. The Contractor shall continue scaling of the slopes until the slope scaling has been completed to the satisfaction of the Engineer.

13. All shrubs and trees shall be removed from the cliff slopes.

14. The contractor shall clear the area of rocks and debris at the end of each slope scaling shift.

15. Removed rocks and debris shall be the property of the contractor and shall be disposed of out side of the state property in an authorized location.
- ABBREVIATIONS
- |          |                                     |       |   |
|----------|-------------------------------------|-------|---|
| A.C.     | ASPHALTIC CONCRETE                  | MP    | MILE POST                                       |
| APPROX.  | APPROXIMATE, APPROXIMATELY          | MPH   | MILES PER HOUR                                  |
| @        | AT                                  | MIN   | MINIMUM   |
| B        | BASELINE                            | N     | NORTH   |
| BC       | BOTTOM OF CURB                      | NPDES | NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM |
| C        | CENTERLINE                          | NTS   | NOT TO SCALE                                    |
| CLSM     | CONTROLLED LOW STRENGTH MATERIAL    | NO    | NUMBER  |
| CONC.    | CONCRETE                            | O/S   | OFFSET  |
| CONN.    | CONNECT, CONNECTION                 | OC    | ON CENTER                                       |
| CONST.   | CONSTRUCT                           | OD    | OUTSIDE DIAMETER                                |
| CONT.    | CONTINUE, CONTINUOUS                | PAV'T | PAVEMENT  |
| CY       | CUBIC YARD                          | R     | RADIUS  |
| DET      | DETAIL                              | RPM   | RAISED PAVEMENT MARKERS                         |
| DIA, Ø   | DIAMETER                            | REQ'D | REQUIRED  |
| DWG      | DRAWING                             | REV   | REVISION, REVISED                               |
| DBL      | DOUBLE                              | RT, R | RIGHT   |
| EA       | EACH                                | ROW   | RIGHT OF WAY                                    |
| E        | EAST                                | SHT   | SHEET   |
| EP       | EDGE OF PAVEMENT                    | SIGMH | SIGNAL MANHOLE                                  |
| ES       | EDGE OF SHOULDER                    | S     | SOUTH, SLOPE, SEWER                             |
| ELEV, EL | ELEVATION                           | SF    | SQUARE FOOT                                     |
| EMB      | EMBANKMENT                          | SY    | SQUARE YARD                                     |
| EXC      | EXCAVATE                            | STD   | STANDARD  |
| EXIST    | EXISTING                            | STA   | STATION   |
| EQ       | EQUAL                               | TG    | TOP OF GRATE                                    |
| F        | FLOW LINE                           | THW   | TOP OF HEADWALL                                 |
| FT       | FOOT, FEET                          | TYP   | TYPICAL   |
| GDI      | GRATED DROP INLET                   | UP    | UTILITY POLE                                    |
| GRP      | GROUTED RUBBLE PAVING               | VERT  | VERTICAL  |
| HAW      | HAWAII                              | W/    | WITH  |
| HDOT     | HAWAII DEPARTMENT OF TRANSPORTATION |       |   |
| HWY      | HIGHWAY                             |       |   |
| HORIZ    | HORIZONTAL                          |       |   |
| INV      | INVERT                              |       |   |
| LT       | LEFT                                |       |   |
| LF       | LINEAR FOOT                         |       |   |
| MAX      | MAXIMUM                             |       |   |
| MSL      | MEAN SEA LEVEL                      |       |   |
- |                     |        |                         |             |           |              |
|---------------------|--------|-------------------------|-------------|-----------|--------------|
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- ORIGINAL PLAN

DATE

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SHEET No. 2 OF 2 SHEETS
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