

W:\CIVIL 3D PROJECTS\2012_153.000_KEAAU-PAHOA RD. IMPR RTE130\ROUNDABOUT DESIGN\01 CIVIL DRAWINGS\01 AINALOA\03 GEN NOTES.DWG 7/19/2019 7:38 AM RITO

GENERAL CONSTRUCTION NOTES:

FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0130(27)	2020	3	50

1. The scope of work for this project consists of constructing a new roundabout at Keaaau-Pahoa Road and Ainaloa Boulevard Intersection. Project improvements include new shoulder with bolt down curb and delineators, marked crosswalks, bus pullouts, traffic signs, pavement markings, utility adjustments and drainage infrastructure.

2. All construction work shall be in accordance with the "Standard Plans," dated 2008, "Hawaii Standard Specifications for Road and Bridge Construction," 2005 edition, and the latest specifications for "Installation of Miscellaneous Improvements within State Highways," of the State of Hawaii, Highways Division, Department of Transportation.

3. The Contractor's attention is directed to the following Sections of the Special Provisions: Subsection 104.11 - Utilities and Services, Section 107 - Legal Relations and Responsibility to Public.

4. The Contractor shall notify the State in writing, two (2) weeks prior to starting construction operations.

5. At the end of each day's work, the Contractor shall maintain at least one paved shoulder free and clear of debris and remove all equipment and other obstructions to permit free and safe passage of pedestrian and bicycle traffic.

6. 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 the work is possible. The Contractor shall tone for the exact locations and depths of all underground facilities, either shown on or omitted from the plans, in areas where work, such as the placement of sign posts, electrical posts, drainage structures and pipes, etc. may affect these properties. Toning shall be considered incidental to the various contract items and will not be paid for separately.

7. The Contractor shall exercise extreme caution whenever construction crosses or is in close proximity of underground facilities and shall maintain adequate clearance when operating equipment within or under overhead facilities. The Contractor shall be held liable for any damages incurred to the existing facilities and/or improvements as a result of its operations.

8. 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 under-pinning to fully protect them from damage. This work shall be considered incidental to various contract items.

9. When excavating near utility poles, the Contractor shall protect, support, secure and take all other precautions to prevent damage to or leaning of these poles. The Contractor is responsible for all costs associated to repair and/or straighten pole.

10. Temporary cold mix trench patches will be permitted in any given area for a maximum duration of two weeks, and shall be a minimum of 2 inches thick. All temporary patches shall be placed over properly placed and compacted backfill and base course layers. Contractor shall be responsible for maintaining all temporary patches and to make repairs to unsatisfactory patches within 24 hours.

11. All excavation work called for on the plans and not itemized in the proposal and all excavation work not called for but required for the construction of this project shall be considered incidental to the various contract items.

12. The Contractor shall indemnify and be solely responsible for the protection of adjacent properties, utilities and existing structures from damages due to construction. Repairing any damage shall be at the Contractor's own expense, to the satisfaction of the Engineer.

13. Existing drainage system will be functional at all times during construction. Contractor is to furnish materials, equipment, labor, tools and incidentals necessary to maintain flow. This work shall be considered incidental to the various contract items and will not be paid for separately.

14. Earth swale shall be graded to drain. This work shall be considered incidental to various contract items and will not be paid for separately.

15. Smooth riding connections shall be constructed at all limits of project, including the beginning and end of project, connecting approaches, side streets, walkways and driveways as shown on the plans and/or as directed by the Engineer. This work shall be considered incidental to various contract items and will note be paid for separately.

16. The Contractor shall clean and remove any accumulation of aggregates along the roadside within 10 feet of the edge of pavement. This work shall be considered incidental to various contract items and will not be paid for separately.

17. Removal and disposal of existing asphalt concrete pavement, thermoplastic line markings, traffic tapes, pavement markers, epoxy adhesives and any debris shall be considered incidental to their respective bid items.

18. All saw cutting work shall be considered incidental to Item No. 401.0100 - Hot Mix Asphalt Pavement, Mix No. IV, and will not be paid for separately.

19. Prior to placement of new aggregate base course, the existing base shall be compacted to a relative compaction greater than or equal to 95%.

20. Contractor shall provide and maintain access to and from existing side streets and driveways at all times. This work shall be considered incidental to various contract items and will not be paid for separately.

21. The Contractor shall remove and dispose of all existing raised pavement markers, thermoplastic line markings, traffic tapes, and epoxy adhesives prior to the overlaying of Asphalt Concrete. This work shall be considered incidental to the various pavement marking items.

22. Preformed Pavement Marking Tape shall be removed prior to resurfacing. Removal shall be by scraping, grinding or other method approved by the Engineer. Payment shall be incidental to the various pavement marking items.

23. No material and or equipments shall be stockpiled or otherwise stored within the highway right-of-way except at locations designed in writing approved by the District Engineer.

24. The exact locations and limits or areas to be filled with leveling course, reconstructed and cold planed shall be determined in the field by the Engineer.

25. The Contractor will be allowed to pave one lane of the roadway on a single day with the adjacent shoulder being paved the next day. The adjacent lane shall be paved no later than the third day.

26. Cold planing of adjacent travel ways shall be completed on the same day. Temporary pavement markings shall be installed prior to the end of each work day.

27. Paving shall not commence on the same day as the cold-planing.

28. Temporary striping on cold planed surfaces shall be with paint (tape will not be allowed). Temporary striping on final overlay shall be with temporary tape.

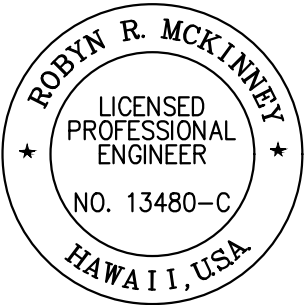
29. Permanent pavement striping shall be done with alkyd-based thermoplastic.

30. The Contractor shall survey and stake and install all appurtenances associated with the project within the State right-of-way or construction parcels as shown in the plans.

31. The Contractors is advised that in addition to other Contractors working in the same areas, various utility companies (or their Contractors) may be performing work within the project area. The Contractor is to coordinate all work with other Contractors in the area and to coordinate the design. In case of unreasonable conflict among Contractors regarding access or work sites, the Engineer will make the final determination of priorities.

32. The Term "Engineer for the Utility Companies" shall also mean its delegated Representative and/or the Utilities' Inspectors of record.

33. The Contractor at its own expense, shall keep the project area and surrounding area free from dust nuisance. The work shall be in conformance with the air pollution control standards and regulations of the State Department of Health.

34. Contractor shall adjust all existing manholes, valve boxes, street monuments, frames and covers, etc., as necessary. Adjustments shall not be measured for payment but shall be considered incidental to various items of work in the proposal.
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THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Robyn R. McKinney 04/30/20
SIGNATURE EXPIRATION DATE OF THE LICENSE
- STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES

**KEAAU-PAHOA ROAD
INTERSECTION IMPROVEMENTS
at Ainaloa Boulevard
Federal-Aid Project No. STP-0130(27)**

Scale: N/A Date: July, 2019

SHEET No. 1 OF 6 SHEETS
- 3

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GENERAL CONSTRUCTION NOTES (CONT'D):

35. After completion of paving, the Contractor and the Engineer will test for, and determine ponding areas (i.e. low spots within paved area). It shall be the responsibility of the Contractor to correct and resurface and/or repair all such ponding areas.
36. Work may be performed only between the hours of 8:30 a.m. and 3:00 p.m., Monday through Friday, except State holidays, and Department of Transportation furlough days unless when otherwise approved in writing by the Director of the Department of Transportation.

During work hours, only one lane of traffic shall be closed, unless otherwise approved in writing by the District Engineer.

At certain locations, "No Lane Closure" will be allowed during the "Back to School Jam", Thanksgiving weekend, Christmas/New Year period and at other times as directed by Highways Division.
37. Public Notice is required for lane closures. Contractor shall submit notice to the Engineer for approval a minimum of three weeks prior to publication. Pre-approval of notice, with dates left blank, is permissible.
38. Lane closures or detours that slow down traffic shall not occur during peak hours (6:30 am to 8:30 am and 3:00 pm to 6:00 pm). Night work will be permitted, except during the seabird fledging period of September 15 through December 15 of each year. If the Contractor elects to perform work at night, a noise variance permit shall be obtained at his cost with no additional time.
39. If night work is approved, the Contractor shall stop all work and contact the U.S. Fish and Wildlife Service (1-800-344-9453) if bats or birds are seen flying around the work area at night.
40. The Contractor shall provide, install, and maintain all necessary signs, lights, flares, barricades, markers, cones, and other protective facilities, and shall take necessary precautions for the protection, 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 Street and Highways", adopted by the Director of Transportation, the current U.S. Federal Highway Administration "Manual on Uniform Traffic Control Devices for Streets and Highways, Part VI - Temporary Traffic Control", and AASHTO "Manual for Assessing Safety Hardware", 2016 edition.
41. The Contractor shall be required to provide adequate, safe, non-skid bridging material over any trench, including shoring, when trenching in pavement areas to handle all types of vehicular traffic. The use of steel plates shall not be used in the freeway travelway.
42. All pavement drop offs shall not be allowed during non-working hours, unless a taper is provided. Use slopes of 6:1 for longitudinal taper transitions and 48:1 for transverse tapered transitions.
43. All regulatory, guide and construction signs and barricades shall be high intensity reflective background.
44. All signs, pavement markings, striping, etc. removed or damaged by the Contractor shall be replaced by the Contractor at no additional cost to the State.

45. 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 direction.
46. No Contractor shall perform any construction activity so as to cause falling rock, soil or debris in any form to fall, slide or flow onto adjoining properties, streets or natural water courses. Should such violations occur, the costs incurred for any remedial action shall be payable by the Contractor.
47. The Contractor shall be responsible for conformance with the applicable provisions of Chapter 54, Water Quality Standards, and Chapter 55, Water Pollution Control, of Title 11, Administrative Rules of the State Department of Health.
48. Prior to the start of construction, the Contractor shall contact the Hawaii One Call Center to have respective utility companies have and mark where their underground facilities are located. The Contractor shall coordinate all work.
49. The Contractor shall restore to their original condition or better, 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 to the various contract items.
50. All grading and subgrade preparation shall be as recommended in the "Geotechnical Investigation Keaau Pahoa Road Improvements - Route 130, Keaau to Pahoa, Hawaii" by Hirata & Associates, Inc. dated December 7, 2018.

For Fire Hydrant Relocation only:

51. Before removing the existing fire hydrant and concrete block, the existing gate valve shall be restrained.
52. Concrete slab for fire hydrant shall be constructed with 4-inch concrete over 4-inch bed course. Slope concrete slab 2% away from hydrant. This work shall be considered incidental to the relocation of fire hydrant and will not be paid for separately.

CONSTRUCTION SCHEDULE NOTES:

1. Construction implementation shall employ phasing and scheduling of work in such a manner as to ensure strict adherence to the following requirements. Any work adversely affected by these requirements shall be accommodated accordingly and shall not be cause for contract time extension or additional compensation by the State.

a. The Contractor shall not cut, clear or adversely affect existing trees that are greater than 15 feet in height in conjunction with this project between June 1st and September 15th due to the Hawaiian hoary bat pupping season.

b. Schedule clearing of brush and trees on the site between October through February to avoid Hawaiian hawk breeding season. Should clearing be required during March through September, Contractor shall secure the services of a qualified biologist or ornithologist to conduct biological survey to determine if Hawaiian hawk nests be performed in accordance with U.S. Fish and Wildlife Service or other approved methodology. Submit one copy of the completed survey to the Director prior to proceeding with construction work. Should Hawaiian hawk nest be discovered within 100 yards of the construction area, consultation with U.S. Fish and Wildlife Service is required before construction can begin.

c. No nighttime work will be allowed during the seabird fledging season, which runs from September 15th to December 15th.
2. In the unlikely event that significant archeological resources or human remains are uncovered during construction operations, the Contractor shall immediately suspend work in the area and notify the Director, and the State Department of Land and Natural Resources Historic Preservation Division (692-8015).

RODIN R. MCKINNEY

LICENSED PROFESSIONAL ENGINEER

NO. 13480-C

HAWAII, USA

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature

04/30/20

EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

GENERAL NOTES

KEAAU-PAHOA ROAD

INTERSECTION IMPROVEMENTS

at Ainaloa Boulevard

Federal-Aid Project No. STP-0130(27)

Scale: N/A

Date: July, 2019

SHEET No. 2 OF 6 SHEETS

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FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0130(27)	2020	5	50

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 as amended, and "Standard Details for Public Works Construction," dated September 1984 and as amended.

2. The Contractor shall verify the location of all existing utilities, whether shown on the plan or not, shall be responsible for the repair or replacement of same in the event of damages due to its construction practices. The Contractor shall coordinate its 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 DPW.

4. The Contractor shall notify the DPW 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 relocation shall be laid out in the field prior to the conducting of the field review by the DPW.

6. Field adjustments shall be made as directed by the DPW 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 DPW 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 8:30 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 DPW.

11. A temporary cold mix patch shall be applied immediately upon completion of the backfilling operation or upon plating of trench and shall be maintained by the Contractor until a permanent patch is authorized by the DPW.

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 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 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 by the utility line installation shall be repainted or reconstructed as directed by the DPW.

16. No trenching shall be left open for more than five (5) working days.

17. The Contractor shall maintain, to the satisfaction of the DPW, the area worked within the government right-of-way including any repairs to pavement and shoulder damaged as a result of the installation work, for a period of one (1) year from the date of acceptance as noted by the DPW. The Contractor shall undertake repairs expeditiously, whenever directed by the DPW during the maintenance period.

18. A licensed surveyor shall submit a letter to the DPW certifying that the monument stakeout and installation is correct.

19. The existing improvements in the project limits and in adjacent areas that are not to be removed shall be preserved and protected. Any and all damages resulting from the Contractor's construction operations shall be replaced and repaired to the original or better condition to the satisfaction of the owner and paid for by the Contractor. The Contractor shall obtain a written approval from each affected property owner to be submitted to the Engineer.

20. The Contractor shall be responsible for conformance with the applicable provisions of the Water Quality and Water Pollution Control Standards contained in Hawaii Administrative Rules, Title 11, Chapter 54, "Water Quality Standards" and Title 11, Chapter 55, "Water Pollution Control", as well as Chapter 14 of the Revised Ordinances of Honolulu, as amended. Best Management Practices shall be employed at all times during construction.

21. Pursuant to Chapter 6E, HRS, in the event any artifacts or human remains are uncovered during construction operations, the Contractor shall immediately suspend work in the area and notify the Engineer, the County of Hawaii Police Department, the State Department of Land and Natural Resources Historic Preservation Division (692-8015) and the Department of Public Works (961-8321).

22. No Contractor shall perform any construction operation as to cause falling rocks, soil or debris in any form to fall, slide or flow into existing drainage systems, or adjoining properties, streets or natural watercourses. Should such violations occur, the Contractor may be cited and the Contractor shall immediately make all remedial actions necessary at its own cost.

23. The Contractor shall submit a noise pollution control plan when applying for a permit to work within County right-of-way.

24. 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 traveling public. all such protective facilities and precautions 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 current U.S. Federal Highways Administration "Manual on Uniform Traffic Control Devices for Streets and Highways, Part VI - Temporary Traffic Control", and AASHTO

- "Manual for Assessing Safety Hardware," 2016 Edition.

If lane closures are required during construction, a traffic control plan shall be incorporated into the construction plans and must be approved by the Engineer prior to the issuance of the permit.
25. 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. Smooth riding tapers shall be provided for pavement transitions and advance warning signs shall be posted. Prior to installing such bridging material, the Contractor shall submit to the Engineer for acceptance, drawings stamped by a licensed Structural Engineer.

26. No work within the County right-of-way shall be done on Saturdays, Sunday and holidays anytime without prior approval from the Department of Public Works. Right-of-way work on normal working days shall be limited between the hours of 7:00 a.m. to 3:30 p.m.

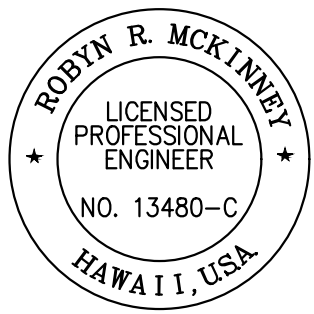
27. All regulatory, guide, and construction signs and barricades shall be of high-intensity reflective sheeting.

28. Unprotected pavement drop offs greater shall not be allowed during non-working hours, except where approved by the Engineer in writing.

29. No open trenches shall be permitted within the clear zone, defined by the current edition of the "AASHTO Roadside Design Guide", except where specified in the approved traffic control plan, or as approved by the Engineer in writing.

30. Free flow of traffic shall be maintained in both directions at all times. Temporary stoppages require advance approval in writing from the Engineer and a "Notice to Motorists" may be required. Submit the notice to the Engineer for review and acceptance a minimum of 6 weeks prior to publication.

31. Clear shoulder areas shall be maintained for bicyclists and pedestrian traffic at all times. If the shoulder is to be closed, appropriate signs shall be posted directing bicyclists and pedestrians to use alternate shoulder areas.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Robyn McKinney

SIGNATURE

04/30/20

EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES

KEAAU-PAHOA ROAD
INTERSECTION IMPROVEMENTS
at Ainaloa Boulevard
Federal-Aid Project No. STP-0130(27)

Scale: N/A Date: July, 2019

SHEET No. 3 OF 6 SHEETS

w:_civil_3d_projects\2012_153,000_KEAAU-PAHOA RD IMPR RTE130\GROUNDABOUT DESIGN\01 CIVIL DRAWINGS\01 AINALOA\05_07 GEN NOTES.DWG 7/19/2019 11:44 AM KSAW

STANDARD TRAFFIC NOTES (FOR WORK WITHIN THE COUNTY RIGHT-OF-WAY):

FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0130(27)	2020	6	50

1. All traffic signs and pavement markings shall conform to the latest amended editions of the "Manual on Uniform Traffic Control Devices", applicable sections of Part 5 of the "Standard Details for Public Works Construction", dated September, 1984, and the "2005 Hawaii Standard Specifications for Road and Bridge Construction", unless otherwise indicated on the plans, specifications, or 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 "2005 Hawaii Standard Specifications for Road and Bridge Construction", and as amended. To ensure proper lane widths and the safe flow of traffic, temporary striping shall be installed as closely as possible to the final striping plan but not in a manner that would obstruct permanent striping layout operations.

The Contractor shall provide and install all traffic signs and markings for all project-related temporary traffic control plans. 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 laid out using marking paint or other approved methods. Field adjustments shall be made as directed by the Inspector before the final markings are applied.

5. All pavement markings that become inapplicable shall be removed by the Contractor at its own expense. Removal shall be by eradication or by other methods approved by the Inspector before the new pavement markings are applied. Excessive gouging of the pavement shall be repaired at the Contractor's expense.

6. All pavement striping shall be with alkyd-based reflective thermoplastic compound pavement marking as specified in Section(s) 629 and 755.05 of the Hawaii 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 material to be used meet the current AASHTO M-247 (for glass beads) and AASHTO M-249 (for striping) specifications.

For crosswalks and stop lines, the contractor shall apply high skid-resistant white corundum or approved equal.

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 shall be used for all bike lane symbols and legends per Traffic Standard Detail TR-111, and may be used for crosswalks, stoplines, pavement arrows, alphabets, and symbols in lieu of thermoplastic compound.

Heat applied pre-formed thermoplastic pavement marking tape for bike lane symbols and legends per Traffic Standard Detail TR-111, crosswalks and stop lines shall be made of a durable, high skid-resistant material.

9. Reflectorized raised pavement markers (RPMs) shall be the regular sized markers with approximate dimensions of 4"x4"x0.7". The Contractor shall
- submit Certificate of Compliance certifying that the RPMs to be used meet or exceeds the current State of Hawaii, Department of Transportation specifications.

10. All traffic signs & posts shall meet the requirements of the County of Hawaii 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. Sign posts shall be 2" square telespar tubing No. 20 F 12 or equivalent with 2 1/4" square telespar anchor post.

For all County-dedicated streets, the Contractor shall place a Traffic Division maintenance sticker on the back of each single-sided sign. Stickers are to be acquired at the Traffic Division.

11. All traffic signs shall be High Intensity Retroreflective Sheeting, with Type IV for regulatory, warning, and directional signs and Type IX (fluorescent yellow green sheeting) for pedestrian, school, and bicycle crossing signs.

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 restripe all pavement markings within and in the vicinity of the construction area as approved by the Traffic Division and 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 the project is accepted by the County of Hawaii.

All traffic signs and posts within and in the vicinity of the construction area 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 Hawaii.

Unless otherwise approved by the Traffic Division, all street name signs shall have an uppercase first letter/lower case format and the proper Hawaiian spelling for the street names as approved by the County of Hawaii Planning Department.

Prior to street name sign fabrication, street name sign submittals shall be reviewed and approved by the Traffic Division.

15. Install "Private Road" signs 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 & markings for private roadways shall be maintained by the private owners.
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- THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Robyn McKinney 04/30/20
SIGNATURE (EXPIRATION DATE OF THE LICENSE)
- STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES

KEAAU-PAHOA ROAD
INTERSECTION IMPROVEMENTS
at Ainaloa Boulevard
Federal-Aid Project No. STP-0130(27)

Scale: N/A Date: July, 2019

SHEET No. 4 OF 6 SHEETS
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FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0130(27)	2020	7	50

WATERLINE NOTES:

1. All work shall be done according to the Water System Standards, State of Hawaii, dated 2002, as amended.

2. The Contractor shall inform the Department of Water Supply (DWS) Engineer 72 hours prior to the beginning of any waterline work and two weeks prior to any connection, chlorination, shut-off, or relocation work.

3. The Contractor shall pay for all work, equipment and materials furnished by the DWS.

4. All existing waterlines, 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 and shall bear all costs for damages done during the construction period.

5. All connections to existing waterlines shall be done by or under the DWS supervision. The Contractor shall perform all excavation, backfill, road repair, traffic control, and provide equipment necessary to complete the connection.

6. Where water shut-off of more than 3 hours becomes necessary, the Contractor, at its own expense, shall provide a temporary by-pass line, size of which shall be determined by the DWS Engineer. The DWS Engineer also reserves the right to require bypass lines, regardless of the water shut-off period, if it is deemed necessary.

7. 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" provided concrete jackets are used, and 18" if no concrete jackets are used. In all applicable instances the waterlines shall be at a grade higher than other utilities.

8. All fittings (Class 250) and all gate valves (Class 200) shall be ductile iron, with mechanical joints unless otherwise specified. Butterfly valves shall be Class 250, with mechanical joints, epoxy-coated interior, and rubber seats mounted on the valve body unless otherwise specified.

9. All pipelines, 4" and larger in diameter, shall be ductile iron, mechanical joint Class 52, and all pipelines smaller than 4" in diameter shall be soft copper, Type K, unless otherwise specified.

10. The waterline shall be tested at a minimum of 225 psi or one and a half times the static pressure at the low point, whichever is greater, under DWS supervision just prior to paving.

11. The Contractor shall be responsible for the chlorination of the water system and shall bear all costs. The persons engaged to do the chlorination work must have the appropriate license to perform the work in the State of Hawaii and approved by the Department of Health.

12. Existing valves, FH units, valve boxes, frames and covers designated "remove and salvage" shall be cleaned of all dirt, scabs, and concrete and delivered to the respective DWS baseyard. This work shall be considered incidental to the various bid items, unless specified otherwise.
13. Existing waterlines, valves, fittings and appurtenances not designated "remove and salvage" shall be abandoned in place subject to the approval of DWS, or as otherwise noted on the construction plans. All exposed valve boxes, valves, pipes and appurtenances shall be removed and disposed of properly at no cost to the DWS.

14. When compaction test(s) are required, the Contractor shall be responsible to provide the DWS with proctor results of materials to be used for that portion of work requiring compaction. These results shall be certified and shall be furnished to DWS one week prior to commencement of work. Cost for compaction tests shall be incidental to pipeline installation.

15. Water service laterals and customer piping shall be adjusted when water meter box adjustment greater than 1 inch is required. The cost of such adjustment shall be incidental to water meter box adjustment. This shall include necessary excavation, backfill and piping modifications. All work shall be per DWS standards.

16. Pipe cushion for copper pipes shall be No. 4 fine, manufactured sand.

17. Solder & flux shall contain not more than 0.2 percent lead.

18. Service lateral(s) shall be flushed by the Contractor under DWS supervision.

19. Existing service laterals to be removed shall be cut and plugged at the main.

20. Relocation of existing meters shall be done by or under DWS supervision. Relocation of customer service lines to relocated meters shall be copper and done by the Contractor. Materials used to connect customer lines to relocated meters shall be 3/4" copper Type K. All work and materials required shall be provided by the Contractor and considered incidental to the various bid items. Existing meter boxes damaged by the Contractor shall be replaced at the Contractor's cost. If applicable, a dielectric union shall be used to connect the copper pipe to the customer's galvanized iron pipe.

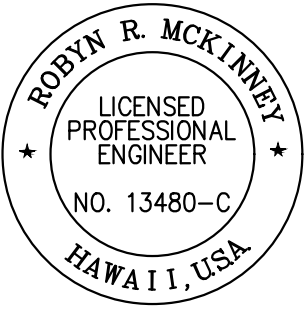
21. It is the intent of the DWS to utilize the existing corporation stop in locations where only the service laterals will be replaced. The Contractor shall perform all necessary work required to cut off existing and connect new pipe to the existing corporation stop. In locations where new taps are required, the Contractor will make arrangements with DWS 24 hours in advance for a new tap. On new pipeline, the Contractor will make their own taps.

22. Contractor shall inform the customer 24 hours in advance of water shut-off to complete new service connection to customer's line.

23. Water service lateral and meter relocation: provide DWS approved 2" PVC, schedule 40 sleeve through wall. Fill space with an approved asphalt filler as required. Also, relocate existing water valve, valve box & cover, all incidental.

24. Coordinate with DWS regarding scheduling and DWS requirements of concrete jacket installation, shoring and waterline relocation/adjustment at drywell/drainage system locations. Waterline adjustment/relocation, concrete jacket, shoring shall be incidental to the various contract items.
25. Relocate existing water meter box and service lateral to front of property, per DWS Std. Det. 17, 18, and 19. This work shall be incidental to the other contract items, typical.

26. DWS box adjustment: Contractor to submit detailed adjustment drawings to DWS for approval prior to doing work (typical).



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION AND
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
Robyn McKinney 04/30/20
SIGNATURE (EXPIRATION DATE
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES

KEAAU-PAHOA ROAD
INTERSECTION IMPROVEMENTS
at Ainaloa Boulevard
Federal-Aid Project No. STP-0130(27)

Scale: N/A Date: July, 2019

SHEET No. 5 OF 6 SHEETS

w:_CIVIL 3D PROJECTS\2012_153,000_KEAAU-PAHOA RD. IMPR RTE130\GROUNDABOUT DESIGN\01 CIVIL DRAWINGS\01 AINALOA\05_07 GEN NOTES.DWG 7/19/2019 11:18 AM KSAW

w:_CIVIL 3D PROJECTS\2012_153,000 KEAAU-PAHOA RD IMPR RTE130\GROUNDABOUT DESIGN\01 CIVIL DRAWINGS\01 AINALOA\08 LEGEND AND ABBREVI.DWG 12/22/2019 5:29 PM RTO

LEGEND:

	Existing Overhead Electrical Line
	Existing Joint Pole
	Existing Utility Pole
	Existing Power Pole
	Existing Power Guy Pole
	Existing Guy Wire
	Existing Street Light Pole
	New Street Light Pole
	Existing Telephone Pole
	Existing Telephone Guy Pole
	Existing 12" Water Line
	New 12" Water Line
	Existing Water Manhole
	Adjusted Water MH Frame/Cover
	Existing Water Valve Box
	Adjusted Water Valve Box
	Existing Water Meter
	Adjusted Water Meter
	Existing Fire Hydrant
	New Fire Hydrant
	Existing Monument
	Adjusted Monument
	New Monument
	Existing 6" Drain Line
	New 18" Drain Line
	Existing Drain Inlet (Drywell)
	New Shallow Drywell
	New Grated Drop Inlet
	Existing Single Metal Guardrail
	Existing Fence
	Existing Mailbox
	Existing Right-of-Way
	No Vehicular Access
	Existing Contour Line
	Proposed Contour Line
	Flow Arrow
	Filter Socks
	Inlet Protection
	New Gradewall

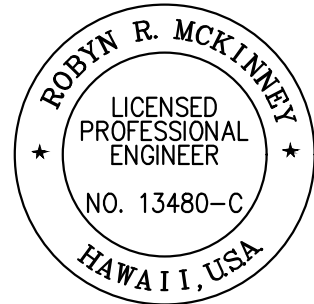
	Cold Planing
	Full Depth Pavement Removal
	Clear and Grub Area
	Portland Cement Concrete Pavement
	AC Pavement Reconstruction Area
	Resurfacing Limits
	4" Stamped Textured Concrete
	8" Stamped Textured Concrete
	Grassed Area
	Limits of Grading
	Curve ID
	Line ID
	Point ID
	Bolt Down Curb w/ Delineator
	AC Curb
SYMBOLS AND ABBREVIATION LIST:	
Δ	Deflection Angle
$^{\circ}$	Degree
$\#$	Baseline
Φ	Centerline
$\varnothing, D, Dia.$	Diameter
%	Percent
AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act
AC	Asphalt Concrete
Add'l	Additional
ADT	Average Daily (Two-Way) Traffic Volume
AH	Ahead
Approx	Approximate
Az	South Azimuth
BC	Bottom of Curb
BK	Back
Blvd	Boulevard
BMP	Best Management Practices
C	Chord Length
CFR	Code of Federal Regulations
Clr	Clear
Conc	Concrete
Cont'd	Continued
CY	Cubic Yard
D	(in Design Designation) Directional distribution of traffic during the design hour. It is the one-way volume in the predominant direction of travel expressed as a percentage of DHV
	(utility) Drainline
Det	Detail
DHV	Design Hourly Volume. It is normally the estimated 30th highest hour two-way traffic volume for the design year selected
DI	Ductile Iron

Dir	Director
Dist	District
DOH	Department of Health
DPW	Department of Public Works
DWS	Department of Water Supply
Dwy	Driveway
e, SE	Superelevation Rate
E	Easting
Elev	Elevation
Emb	Embankment
EP	Edge of Pavement
EPA	Environmental Protection Agency
EQ	Equation
ES	Edge of Shoulder
EW	Each Way
Exc	Excavation
Exist	Existing
FAP	Federal Aid Project
Fed	Federal
FG	Finish Grade
FH	Fire Hydrant
FHWA	Federal Highway Administration
FL	Flow Line
GDI	Grated Drop Inlet
GV	Gate Valve
GW	Guy Wire
Haw	Hawaii
HDOT	Hawaii Department of Transportation
HMA	Hot Mix Asphalt
Horiz	Horizontal
HP	High Point
HRS	Hawaii Revised Statutes
HSS	Hawaii Standard Specifications
Inc	Incorporated
Inv	Invert
JP	Joint Pole
K	(in Design Designation) Ratio of DHV to ADT, expressed as a percent
	Length
L	Pounds
LB	Length of Curve
Lc	Low Point
LP	Left
Lt	Left
Max	Maximum
MB	Mailbox
Min	Minimum
MJ	Mechanical Joint
ML	Match Line
Mod	Modified
Mon	Monument
MPH	Miles Per Hour
MUTCD	Manual on Uniform Traffic Control Devices
N	Nothing
N/A	Not Applicable
No, #	Number
NPDES	National Pollutant Discharge Elimination System
	Not to Scale
NTS	On Center
oc	Offset
o/s	Offset
Pav't	Pavement
PC	Point of Curvature
PCC	Point of Compound Curve
PGP	Power Guy Pole
PI	Point of Intersection

PMA	Polymer Modified Asphalt
PP	Power Pole
PRC	Point of Reverse Curvature
Proj	Project
psi	Pounds per Square Inch
PT	Point of Tangency
PVI	Point of Vertical Intersection
PVC	Polyvinyl Chloride
R	Radius
RCP	Reinforced Concrete Pipe
Rd	Road
RPM	Raised Pavement Marker
R/W	Right-of-Way
Rt	Right
S	Slope
SDW, DW	Shallow Drywell
Shldr	Shoulder
Sht	Sheet
SL	Street Light
Spec	Specifications
Sta	Station
Std	Standard
SWPPP	Storm Water Pollution Prevention Plan
T	(in Design Designation) The proportion of trucks, exclusive of light delivery trucks, expressed as a percentage of DHV
	(in Curve Data) External Tangent Length
	Percent Trucks
T24	Top of Curb
TC	Tax Map Key
TMK	Telephone Pole
TP	Telephone Guy Pole
TGP	Transition
Trans	Traverse
Trav	Typical
Typ	Utility Pole
UP	United States
US	Design Speed
V	Varies
Var	Valve Box
VB	Vertical Curve
VC	Vertical
Vert	Verify in Field
VIF	Width
W	With
w/	Water Meter
WM	Water Manhole
WMH	Water Valve
WV	

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Robyn R. McKinney 04/30/20
SIGNATURE EXPIRATION DATE OF THE LICENSE



FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0130(27)	2020	ADD.8	50

12/16/19	Revised FH Legend; Added Symbol
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
LEGEND AND ABBREVIATIONS	
KEAAU-PAHOA ROAD INTERSECTION IMPROVEMENTS at Ainaloa Boulevard Federal-Aid Project No. STP-0130(27)	
Scale: N/A	Date: July, 2019
SHEET No. 5 OF 6 SHEETS	