FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0130(27)	2021	3	116

GENERAL CONSTRUCTION NOTES:

1. The scope of work for this project consists of constructing new roundabouts along Keaau-Pahoa Road at Orchidland Drive and Makuu Drive intersections. Project improvements include new shoulder with bolt down curb and delineators, marked crosswalks, bus bays, traffic signs, pavement markings, new street lights, 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. 401.0200 - Polymer Modified Asphalt, PMA 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 Contractor 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.

ROBYN 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.

Robyn McKinney 04/30/22
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES

KEAAU-PAHOA ROAD
INTERSECTION IMPROVEMENTS
at Orchidland Drive & Makuu Drive
Federal-Aid Project No. STP-0130(27)

Scale: N/A Date: Sept, 2020

SHEET No. 1 OF 4 SHEETS

C:_CIVIL 3D PROJECTS\2012_153.000 KEAAU-PAHOA RD IMPR RTE130\ROUNDABOUT DESIGN\01 CIVIL DRAWINGS\02 ORCH AND MAKUU\03 GEN NOTES.DWG 8/3/2020 7:54 PM SRODELAS

FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0130(27)	2021	4	116

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.

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 to the tee with threaded uni-rods.

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. 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).

ROBYN R. MCKINNEY
LICENSED PROFESSIONAL ENGINEER
NO. 13480-C
HAWAII, USA

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Robyn McKinney 04/30/22
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES

KEAAU-PAHOA ROAD
INTERSECTION IMPROVEMENTS
at Orchidland Drive & Makuu Drive
Federal-Aid Project No. STP-0130(27)

Scale: N/A Date: Sept, 2020

SHEET No. 2 OF 4 SHEETS

C:_CIVIL 3D PROJECTS\2012_153.000 KEAAU-PAHOA RD IMPR RTE130\ROUNDABOUT DESIGN\01 CIVIL DRAWINGS\02 ORCH AND MAKUU\04 GEN NOTES.DWG 8/6/2020 4:24 PM SRODELAS

FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0130(27)	2021	5	116

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. L7, L8, and L9. 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).
27. If existing water meter to be relocated has a backflow device, Contractor shall relocate both water meter and backflow preventer adhering to Department of Water Supply Standards. Device shall be above ground, within 5 feet of the meter on private property, per DWS Water System Standard Detail V-9. No taps or connections are allowed between the meter and the approved backflow preventer. If the distance between the meter and the backflow preventer is greater than 5' then the line between them shall be concrete encased.

ROBYN R. MCKINNEY
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Robyn McKinney 04/30/22
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES

KEAAU-PAHOA ROAD
INTERSECTION IMPROVEMENTS
at Orchidland Drive & Makuu Drive
Federal-Aid Project No. STP-0130(27)

Scale: N/A Date: Sept, 2020

SHEET No. 3 OF 4 SHEETS

C:_CIVIL 3D PROJECTS\2012_153.000 KEAAU-PAHOA RD IMPR RTE130\ROUNDABOUT DESIGN\01 CIVIL DRAWINGS\02 ORCH AND MAKUU\05 GEN NOTES.DWG 8/3/2020 7:57 PM SRODELAS

FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-0130(27)	2021	6	X

LEGEND:

o/h	Existing Overhead Electrical Line
O/H	Relocated Overhead Electrical Line
up	Existing Utility Pole
jp	Existing Joint Pole
JP	Relocated Joint Pole
pp	Existing Power Pole
pgp	Existing Power Guy Pole
gw	Existing Guy Wire
sl	Existing Street Light Pole
	New Street Light Pole & Pullbox
tp	Existing Telephone Pole
TP	Relocated Telephone Pole
tgp	Existing Telephone Guy Pole
w12	Existing 12" Water Line
W12	New 12" Water Line
wmh	Existing Water Manhole
WMH	Adjusted Water MH Frame/Cover
wv	Existing Water Valve & Valve Box
WV	Adjusted Water Valve & Valve Box
WV	New Water Valve & Valve Box
AV	New Water Air Release Valve & Valve Box
wm	Existing Water Meter
WM	Adjusted Water Meter
WM	New Water Meter
fh	Existing Fire Hydrant
FH	New Fire Hydrant
mon.	Existing Monument
MON.	Adjusted Monument
MON.	New Monument
d24	Existing 24" Drain Line
d.i.	Existing Drain Inlet
	New Shallow Drywell
	Existing Single Metal Guardrail
x x x	Existing Fence
	New Fence
mb	Existing Mailbox
r/w	Existing Right-of-Way
R/W	New Right-of-Way
	New Easement

	New Construction Parcel
	No Vehicular Access
480	Major Contour Line
478	Minor Contour Line
	Flow Arrow
	Install Filter Socks
	Inlet Protection
	Cold Planing
	Full AC Pavement Removal
	Clear and Grub Area
	Stabilized Construction Entrance
	Portland Cement Concrete Pavement
	New AC & Full Reconstruction Area
	Partial AC Reconstruction Area
	Resurfacing Limits
	4" Stamped Textured Concrete
	8" Stamped Textured Concrete
	Hydro-mulch Seeding
	Limits of Grading
	Slope
B10	Boring Location
1	Curve ID
L1	Line ID
P1	Point ID
	Bolt Down Curb w/ Delineator
	AC Curb

SYMBOLS AND ABBREVIATION LIST:

△	Deflection Angle
°	Degree
℄	Baseline
℄	Centerline
ø, D, Dia.	Diameter
%	Percent
AASHTO	American Association of State Highway and Transportation Officials
AC	Asphalt Concrete
ADA	Americans with Disabilities Act
Add'l	Additional
Adj	Adjusted
ADT	Average Daily (Two-Way) Traffic Volume
Agg	Aggregate
AH	Ahead
Approx	Approximate
ARV, AV	Air Release Valve
AWG	American Wire Gauge
Az	South Azimuth
BC	Bottom of Curb
BK	Back
BL	Brass Linguini
Blk	Block
Blvd	Boulevard
BMP	Best Management Practices
BV	Butterfly Valve
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
	(pavement) Depth
	(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
ef	Each Face
Elev	Elevation
Emb	Embankment
EP	Edge of Pavement
EPA	Environmental Protection Agency
EQ	Equation, Equal
ES	Edge of Shoulder
Esmt	Easement
EVC	Enhanced Vehicle Classification
ew	Each Way
Exc	Excavation
Exist	Existing
FAP	Federal Aid Project
Fed	Federal
FG	Finish Grade
FH	Fire Hydrant
FHWA	Federal Highway Administration
Fin	Finish
FL	Flow Line
Galv	Galvanized
Gr	Grade
GV	Gate Valve
GW	Guy Wire
Haw	Hawaii
HDOT	Hawaii Department of Transportation
HMA	Hot Mix Asphalt
HMAB	Hot Mix Asphalt Concrete Base
Horiz	Horizontal
HP	High Point
HPPOA	Hawaiian Paradise Park Owners Association
HRS	Hawaii Revised Statutes
HSS	Hawaii Standard Specifications
IMSA	International Municipal Signal Association
Inc	Incorporated
Inv	Invert
JP	Joint Pole
K	(in Design Designation) Ratio of DHV to ADT, expressed as a percent
ksi	kilopound per square inch
L	Length
LB	Pounds
Lc	Length of Curve
LF	Linear Foot
LP	Low Point
Lt	Left
Lvl	Level
Max	Maximum
MASH	Manual for Assessing Safety Hardware
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	Northing
N/A	Not Applicable
No, #	Number
NPDES	National Pollutant Discharge Elimination System
NTS	Not to Scale
oc	On Center
OM	Object Marker
o/h	Overhead
o/s	Offset
Pav't	Pavement
PC	Point of Curvature
PCC	Point of Compound Curve
PE	Project Engineer
PGP	Power Guy Pole
PI	Point of Intersection
PMA	Polymer Modified Asphalt
PP	Power Pole

See Sht. 9 for Continuation

ROBYN R. MCKINNEY
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Robyn R McKinney — 04/30/22
SIGNATURE — EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LEGEND AND ABBREVIATIONS

KEAAU-PAHOA ROAD
INTERSECTION IMPROVEMENTS
at Orchidland Drive & Makuu Drive
Federal-Aid Project No. STP-0130(27)

Scale: N/A — Date: June, 2020

SHEET No. 4 OF 4 SHEETS

W:_CIVIL 3D PROJECTS\2012_153.000 KEAAU-PAHOA RD IMPR RTE130\ROUNDABOUT DESIGN\01 CIVIL DRAWINGS\02 ORCH AND MAKUU\06 LEGEND AND ABBREV.DWG 8/27/2020 5:19 PM SRODELAS