STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS

ADDENDUM NO. 2
FOR
INTERSTATE ROUTE H-1 RESURFACING, MILLER PEDESTRIAN OVERPASS TO KAPIOLANI INTERCHANGE
DISTRICT OF HONOLULU
ISLAND OF OAHU

FEDERAL-AID PROJECT NO. NH-H1-1(279)R

February 5, 2025

This Addendum shall make the following amendment(s) to the Solicitation:

A. SPECIAL PROVISIONS

1. Delete **SECTION 202 – REMOVAL OF STRUCTURES AND OBSTRUCTIONS** dated 8/13/24 in its entirety and replace with attached **SECTION 202 – REMOVAL OF STRUCTURES AND OBSTRUCTIONS** dated r2/5/2025**.**

2. Delete **SECTION 401 – HOT MIX ASPHALT (HMA) PAVEMENT** dated 10/20/22 in its entirety and replace with attached **SECTION 401 – HOT MIX ASPHALT (HMA) PAVEMENT** dated r2/5/2025.

3. Delete **SECTION 629 – PAVEMENT MARKINGS** dated 12/12/24 in its entirety and replace with attached **SECTION 629 – PAVEMENT MARKINGS** dated r2/5/2025.

4. Delete **SECTION 630 – TRAFFIC CONTROL GUIDE SIGNS** dated 4/6/24 in its entirety and replace with attached **SECTION 630 – TRAFFIC CONTROL GUIDE SIGNS** dated r2/5/2025.

B. PROPOSAL SCHEDULE

1. Delete **PROPOSAL SCHEDULE** pages P-8 through P-20 dated 12/12/24 and replace with attached **PROPOSAL SCHEDULE** pages P-8 through P-20 dated r2/5/2025.

C. FEDERAL WAGE RATES

1. Delete **FEDERAL WAGE RATES** dated 11/15/2024 in its entirety and replace with attached **FEDERAL WAGE RATES** dated 01/31/2025.

D. PLANS

1. Delete **PLAN SHEET NO. 26 DEMOLITION AND EROSION CONTROL** and replace with attached **PLAN SHEET NO. ADD. 26 DEMOLITION AND EROSION CONTROL.**

2. Delete **PLAN SHEET NO. 38 RAMP TYPICAL SECTIONS** and replace with attached **PLAN SHEET NO. ADD. 38 RAMP TYPICAL SECTIONS.**

3. Delete **PLAN SHEET NO. 39 RAMP TYPICAL SECTIONS** and replace with attached **PLAN SHEET NO. ADD. 39 RAMP TYPICAL SECTIONS.**

4. Delete **PLAN SHEET NO. 41 RAMP TYPICAL SECTIONS** and replace with attached **PLAN SHEET NO. ADD. 41 RAMP TYPICAL SECTIONS.**

5. Delete **PLAN SHEET NO. 42 RAMP TYPICAL SECTIONS** and replace with attached **PLAN SHEET NO. ADD. 42 RAMP TYPICAL SECTIONS.**

6. Delete **PLAN SHEET NO. 43 LUNALILO ST. TYPICAL SECTIONS** and replace with attached **PLAN SHEET NO. ADD. 43 LUNALILO ST. TYPICAL SECTIONS.**

7. Delete **PLAN SHEET NO. 64 ROADWAY PLAN** and replace with attached **PLAN SHEET NO. ADD. 64 ROADWAY PLAN.**

8. Delete **PLAN SHEET NO. 65 ROADWAY PLAN** and replace with attached **PLAN SHEET NO. ADD. 65 ROADWAY PLAN.**

9. Delete **PLAN SHEET NO. 76 ROADWAY PLAN** and replace with attached **PLAN SHEET NO. ADD. 76 ROADWAY PLAN.**

10. Delete **PLAN SHEET NO. 90 GUARDRAIL SCHEDULE** and replace with attached **PLAN SHEET NO. ADD. 90 GUARDRAIL SCHEDULE.**

11. Delete **PLAN SHEET NO. 95 GUARDRAIL SCHEDULE** and replace with attached **PLAN SHEET NO. ADD. 95 GUARDRAIL SCHEDULE.**

12. Delete **PLAN SHEET NO. 102 STIFFENED MGS HALF POST SPACING** and replace with attached **PLAN SHEET NO. ADD. 102 STIFFENED MGS HALF POST SPACING.**

13. Delete **PLAN SHEET NO. 133 TRAFFIC COUNTING STATION PLAN AT MILEPOST 22.10** and replace with attached **PLAN SHEET NO. ADD. 133 TRAFFIC COUNTING STATION PLAN AT MILEPOST 22.10.**

14. Delete **PLAN SHEET NO. 182 PAVEMENT MARKING & SIGNING PLAN** and replace with attached **PLAN SHEET NO. ADD. 182 PAVEMENT MARKING & SIGNING PLAN.**

15. Delete **PLAN SHEET NO. 186 PAVEMENT MARKING & SIGNING PLAN** and replace with attached **PLAN SHEET NO. ADD. 186 PAVEMENT MARKING & SIGNING PLAN.**

16. Delete **PLAN SHEET NO. 189 PAVEMENT MARKING & SIGNING PLAN** and replace with attached **PLAN SHEET NO. ADD. 189 PAVEMENT MARKING & SIGNING PLAN.**

17. Delete **PLAN SHEET NO. 190 PAVEMENT MARKING & SIGNING PLAN** and replace with attached **PLAN SHEET NO. ADD. 190 PAVEMENT MARKING & SIGNING PLAN.**

18. Delete **PLAN SHEET NO. 191 PAVEMENT MARKING & SIGNING PLAN** and replace with attached **PLAN SHEET NO. ADD. 191 PAVEMENT MARKING & SIGNING PLAN.**

19. Delete **PLAN SHEET NO. 192 PAVEMENT MARKING & SIGNING PLAN** and replace with attached **PLAN SHEET NO. ADD. 192 PAVEMENT MARKING & SIGNING PLAN.**

20. Delete **PLAN SHEET NO. 195 PAVEMENT MARKING & SIGNING PLAN** and replace with attached **PLAN SHEET NO. ADD. 195 PAVEMENT MARKING & SIGNING PLAN.**

21. Delete **PLAN SHEET NO. 196 PAVEMENT MARKING & SIGNING PLAN** and replace with attached **PLAN SHEET NO. ADD. 196 PAVEMENT MARKING & SIGNING PLAN.**

The following is provided for information.

E. PRE-BID MEETING MINUTES

The attached PRE-BID MEETING MINUTES is provided for your information.

F. RESPONSES TO REQUEST FOR INFORMATION (RFI'S/QUESTIONS)

The attached RESPONSES to REQUEST FOR INFORMATION are provided for your information.

Please acknowledge receipt of this **Addendum No. 2** by recording the date of its receipt in the space provided on **PAGE P-4** of the Proposal.

Henry Kennedy

HENRY KENNEDY
Engineering Program Manager

SECTION 202 – REMOVAL OF STRUCTURES AND OBSTRUCTIONS

Make the following amendments to said Section:

(I) Amend **202.04 – Measurement** by revising lines 119 to 120 to read as follows:

"**202.04 Measurement.** Removal of structures and obstructions will be measured per linear foot, square yard or each as shown in the contract documents."

(II) Amend **202.05 – Payment** by revising lines 122 to 131 to read as follows:

"**202.05 Payment.** If the proposal does not show a contract item for the removal of structures and obstructions, the Engineer will not pay for the removal of structures and obstructions separately. The Contractor shall consider them incidental to the various contract items.

The Engineer will pay for specific items stipulated for removal and disposal at the contract price bid per linear foot, square yard or each as specified in the proposal. The price shall be full compensation for removal and disposal of that items, excavation, backfill, salvage of materials removed. Salvaging of materials removed includes their custody, preservation, storage on the right-of-way. Also, the price shall be full compensation for equipment, tools, labor materials and incidentals necessary to complete the work.

The Engineer will pay for the following pay item when included in the proposal schedule.

Pay Item	Pay Unit
Removal of Concrete Curb	Linear Foot
Removal of Concrete Curb and Gutter	Linear Foot
Removal of Bridge Railing - Concrete	Linear Foot
Removal of Bridge Railing - Metal	Linear Foot
Removal of Guardrail, End Terminals and Attenuators	Linear Foot
Removal of Signs and Single Post	Each
Removal of Signs and Double Post	Each
Removal of Signs	Each

Removal of 4-Foot Chain Link Fence	Linear Foot
Removal of Flexible Delineators	Linear Foot
Removal of Steel Reflector Posts	Each
Removal of Survey Monuments	Each
Removal of Existing Geotextile Fabric	Square Yard”

END OF SECTION 202

Amend Section 401- HOT MIX ASPHALT (HMA) PAVEMENT to read as follows:

"SECTION 401 – HOT MIX ASPHALT (HMA) PAVEMENT

401.01 Description. This section describes furnishing and placing dense graded HMA pavement (herein referred to as HMA) on a prepared surface.

401.02 Materials.

Asphalt Cement (PG 64-16)	702.01(A)

Use for non-surface mixes, unless otherwise specified in the project documents.

Asphalt Cement (PG 64E-22)	702.01(B)

Use for all surface mixes, except for on Lanai and Molokai, and unless otherwise specified in the project documents. Polymer modified asphalt (PMA) pavement refers to asphalt mix using PG 64E-22, unless otherwise indicated.

Emulsified Asphalt	702.04
Warm Mix Asphalt Additive	702.06
Aggregate for Hot Mix Asphalt Pavement	703.09
Filler	703.15
Hydrated Lime or a liquid anti-strip approved by the engineer	712.03

(A) General. HMA pavement shall be plant mixed and shall include mixture of aggregate and asphalt binder and may include reclaimed asphalt pavement (RAP) or filler, or both.

The manufacture of HMA may include warm mix asphalt (WMA) processes in accordance with these specifications. WMA processes include combinations of organic additives, chemical additives, and foaming.

HMA pavement shall include surface course and may include one or more binder courses, depending on HMA pavement thickness indicated in the contract documents.

RAP is defined as removed or reprocessed pavement materials containing asphalt and aggregates. Process RAP by crushing until 100 percent of RAP passes 3/4-inch sieve. Size, grade uniformly, and combine materials such that blend of RAP and aggregate material conforms to grading requirements of Subsection 703.09 - Aggregate for Hot Mix Asphalt

Pavement.

In surface and binder courses, aggregate for HMA may include RAP quantities up to 20 percent of total mix weight.

Quantity of filler material to correct deficiencies in aggregate gradation passing the No. 200 sieve shall not exceed 3 percent by weight of fine aggregates.

(B) Job-Mix Formula and Tests. Design job-mix formula in accordance with procedures contained in current edition of Asphalt Institute's *Mix Design Methods for Asphalt Concrete and Other Hot Mix Types,* Manual Series No. 2 (MS-2) for either Marshall Method or Hveem Method of Mix Design.

Limit compacted lift thickness and asphalt content of job-mix formula as specified in Table 401.02-1 - Limits of Compacted Lift Thickness and Asphalt Content.

TABLE 401.02-1 - LIMITS OF COMPACTED LIFT THICKNESS AND ASPHALT CONTENT

MIX NO.	II	III	IV	V
Minimum to Maximum Compacted Thickness for Individual Lifts (Inches)	2-1/4 to 3	2 to 3	1-1/2 to 3	1-1/4 to 3
Asphalt Content Limits (Percent of Total Weight of Mix)	3.8 to 6.1	4.3 to 6.1	4.3 to 6.5	4.8 to 7.0

Asphalt content limits for porous aggregate may be exceeded only if it is requested ahead of placement and is reviewed then accepted in writing by the Engineer.

Meet job-mix formula design criteria specified in Table 401.02-2 - Job-Mix Formula Design Criteria.

TABLE 401.02-2 - JOB-MIX FORMULA DESIGN CRITERIA	
Hveem Method Mix Criteria (AASHTO T 246 and AASHTO T 247)	
Stability, minimum	37
Air Voids (percent)[1]	3 - 5
Marshall Method Mix Criteria (AASHTO T 245)	
Compaction (number of blows each end of specimen)	75
Stability, minimum (pounds)	1,800
Flow (x 0.01 inch)	8 - 16
Air Voids (percent)[1]	3 - 5
Notes: 1. Air Voids: AASHTO T 166 or AASHTO T 275; AASHTO T 209, AASHTO T 269.	

Minimum percent voids in mineral aggregates (VMA) of job-mix formula shall be as specified in Table 401.02-3 - Minimum Percent Voids in Mineral Aggregates (VMA).

TABLE 401.02-3 - MINIMUM PERCENT VOIDS IN MINERAL AGGREGATES (VMA)					
Nominal Maximum Particle Size, (Inches)	1-1/2	1	3/4	1/2	3/8
VMA, (percent)[1]	11.0	12.0	13.0	14.0	15.0
Notes: 1. VMA: See Asphalt Institute Manual MS-2					

(C) Submittals. Establish and submit job-mix formula for each type of HMA pavement mix indicated in the contract documents a minimum of 30 days before paving production. Job mix shall include the following applicable information:

(1) Design percent of aggregate passing each required sieve size.

(2) Design percent of asphalt binder material (type determined by type of mix) added to the aggregate (expressed as % by weight of total mix),

(3) Design proportion of processed RAP.

(4) Design temperature of mixture at point of discharge at paver.

(5) Source of aggregate.

(6) Grade of asphalt binder.

(7) Test data used to develop job-mix formula.

Except for item (4) in this subsection, if design requirements are modified after the Engineer accepts job-mix formula, submit new job-mix formula before using HMA produced from modified mix design. Submit any changes to the design temperature of mixture at point of discharge for acceptance by the Engineer.

Submit a certificate of compliance for the asphalt binder, accompanied by substantiating test data from a certified testing laboratory.

(D) Range of Tolerances for HMA. Provide HMA within allowable tolerances of accepted job mix formula as specified in Table 401.02-4 - Range of Tolerances HMA. These tolerances are not to be used for the design of the job mix, they are solely to be used during the testing of the production field sample of the HMA mix.

TABLE 401.02-4 - RANGE OF TOLERANCES HMA	
Passing No. 4 and larger sieves (percent)	± 7.0
Passing No. 8 to No. 100 sieves (inclusive) (percent)	± 4.0
Passing No. 200 sieve (percent)	± 3.0
Asphalt Content (percent)	± 0.4
Mixture Temperature (degrees F)	± 20

The tolerances shown are the allowable variance between the physical characteristics of laboratory job mix submitted mix design and the production or operational mix, i.e., field samples.

401.03 Construction.

(A) Weather Limitations. Placement of HMA shall not be allowed under the following conditions:

(1) On wet surfaces, e.g., surface with ponding or running water, surface that has aggregate or surface that appears beyond surface saturated dry, as determined by the Engineer.

(2) When air temperature is below 50 degrees F and falling. HMA may be applied when air temperature is above 40 degrees F and rising. Air temperature will be measured in shade and away from artificial heat.

(3) When weather conditions prevent proper method of construction.

(B) Equipment.

(1) Mixing Plant. Use mixing plants that conform to AASHTO M 156, supplemented as follows:

(a) All Plants.

1. Automated Controls. Control proportioning, mixing, and mix discharging automatically. When RAP is incorporated into mixture, provide positive controls for proportioning processed RAP.

2. Dust Collector. AASHTO M 156, Requirements for All Plants, Emission Controls is amended as follows:

Equip plant with dust collector. Dispose of collected material. In the case of baghouse dust collectors, dispose of collected material or return collected material uniformly.

3. Modifications for Processing RAP. When RAP is incorporated into mixture, modify mixing plant in accordance with plant manufacturer's recommendations to process RAP.

(b) Drum Dryer-Mixer Plants.

1. Bins. Provide separate bin in cold aggregate feeder for each individual aggregate stockpile in mix. Use bins of sufficient size to keep plant in continuous operation and of proper design to prevent overflow of material from one bin to another.

2. Stockpiling Procedures. Separate aggregate for Mix II, Mix III and Mix IV into at least three stockpiles with different gradations as follows: coarse, intermediate, and fine. Separate aggregates for Mix V into at least two stockpiles. Stockpile RAP separately from virgin aggregates.

3. Checking Aggregate Stockpile. Check condition of the aggregate stockpile often enough to ensure that the aggregate is in optimal condition.

(c) Batch and Continuous Mix Plants.

1. Hot Aggregate Bin. Provide bin with three or more separate compartments for storage of screened aggregate fractions to be combined for mix. Make partitions between compartments tight and of sufficient height to prevent spillage of aggregate from one compartment into another.

2. Load Cells. Calibrated load cells may be used in batch plants instead of scales.

(2) Hauling Equipment. Use trucks that have tight, clean, smooth metal beds for hauling HMA.

Thinly coat truck beds with a minimum quantity of non-stripping release agent to prevent mixture from adhering to beds. Diesel or petroleum-based liquid release agents, except for paraffin oil, shall not be used. Drain excess release agent from truck bed before loading with HMA.

Provide a designated clean up area for the haul trucks.

Equip each truck with a tarpaulin conforming to the following:

(a) In good condition, without tears and holes.

(b) Large enough to be stretched tightly over truck bed, completely covering mix. The tarpaulin shall be secured in such a manner that it remains stretched tightly over truck bed and HMA mix until the bed is about to be raised up in preparation for discharge.

(3) Asphalt Pavers. Use asphalt pavers that are:

(a) Self-contained, power-propelled units.

(b) Equipped with activated screed or strike-off assembly, heated if necessary.

(c) Capable of spreading and finishing courses of HMA mixtures in lane widths applicable to typical section and thicknesses indicated in the contract documents.

(d) Equipped with receiving hopper having sufficient capacity for uniform spreading operation.

(e) Equipped with automatic feed controls to maintain uniform depth of material ahead of screed.

(f) Equipped with automatic screed controls with sensors capable of sensing grade from outside reference line, sensing transverse slope of screed, and providing automatic signals to control screed grade and transverse slope.

(g) Capable of operating at constant forward speeds consistent with satisfactory laying of mixture.

(h) Equipped with a means of preventing the segregation of the coarse aggregate particles from the remainder of the bituminous plant mix when that mix is carried from the paver hopper back to the paver augers. The means and methods used shall be approved by the paver manufacturer and may consist of chain curtains, deflector plates, or other such devices and any combination of these.

The following specific requirements shall apply to the identified bituminous pavers:

1. **Blaw-Knox Bituminous Pavers.** Blaw-Knox bituminous pavers shall be equipped with the Blaw-Knox Materials Management Kit (MMK).

2. **Cedarapids Bituminous Pavers.** Cedarapids bituminous pavers shall be those that were manufactured in 1989 or later.

3. Barber-Green/Caterpillar Bituminous Pavers. Barber-Green/Caterpillar bituminous pavers shall be equipped with deflector plates as identified in the December 2000 Service Magazine entitled "New Asphalt Deflector Kit {6630, 6631, 6640}".

Bituminous pavers not listed above shall have similar attachments or designs that shall make them equivalent to the bituminous pavers listed above. The Engineer will solely decide if it is equal to or better that the setups described for the equipment listed above.

Submit for review and acceptance, prior to the start of using the paver for the placing of plant mix, a full description in writing of the means and methods that will be used to prevent the bituminous paver from having both aggregate and temperature segregation. Use of any paver that has not been accepted is prohibited until acceptance of the paver is received from the Engineer. Any pavement placed with an unaccepted paver will be regarded as not compliant work and may not be paid for and may require removal.

Supply a Certificate of Compliance that verifies that the manufacturer's approved means and methods used to prevent bituminous paver from having both aggregate and temperature segregation have been implemented on all pavers used on the project and are working in accordance with the manufacturer's requirements and Contract Documents.

(4) Rollers. Rollers shall be self-propelled, steel-tired tandem, pneumatic-tired, or vibratory-type rollers capable of reversing without shoving or tearing the just placed HMA mixture. Provide sufficient number, sequencing, type, and rollers of sufficient weight to compact the mixture to required density while mixture is still in workable condition. Equipment shall not excessively crush aggregate. Operate rollers in accordance with manufacturer's recommendations and Contract Documents. The use of intelligent compaction is encouraged and may be required elsewhere in the Contract Documents.

(a) Steel-Tired Tandem Rollers. Steel-tired tandem rollers used for initial breakdown or intermediate roller passes shall have minimum gross weight of 12 tons and shall provide minimum 250-pound weight per linear inch of width on drive wheel.

Steel-tired tandem rollers used for finish roller passes shall have minimum total gross weight of 3 tons.

Do not use roller with grooved or pitted rolling drum or worn scrapers or wetting pads. Replace excessively worn scrapers and wetting pads before use.

(b) Pneumatic-Tired Rollers. Pneumatic-tired rollers shall be oscillating-type, equipped with smooth-tread pneumatic tires of equal size and diameter. Maintain tire pressure within 5 pounds per square inch of designated operational pressure when hot. Space tires so that gaps between adjacent tires are covered by following set of tires.

Pneumatic-tired rollers used for breakdown or intermediate roller passes shall have a ballast capable of establishing an operating weight per tire of not less than 3,000 pounds. Equip rollers with tires having minimum 20-inch wheel diameter with tires inflated to 70 to 75 pounds per square inch pressure when cold and 90 pounds per square inch when hot. Equip rollers with skirt-type devices to maintain temperature of tires during rolling operations.

Pneumatic-tired rollers used for kneading finished asphalt surfaces shall have a ballast capable of establishing an operating weight per tire of not less than 1,500 pounds. Equip rollers with tires having minimum 15-inch wheel diameter with tires inflated to 50 to 60 pounds per square inch pressure. If required, equip rollers with skirt-type devices to maintain temperature of tires during rolling operations.

(c) Vibratory Rollers. Vibratory rollers shall be steel-tired tandem rollers having minimum total weight of 3 tons. Equip vibratory rollers with amplitude and frequency controls and speedometer. Operate vibratory roller in accordance with manufacturer's recommendations. For very thin lifts, 1 inch or less in thickness, vibratory rollers shall not be used in the vibratory mode. Instead, operate the unit in the static mode.

(5) Hand Tools. Keep hand tools used in production, hauling, and placement of HMA clean and free of contaminants. Diesel or mineral spirits or other cleaning material that is potentially deleterious to HMA may be used to clean hand tools providing:

(a) It does not contaminate HMA with cleaning material.

(b) Clean hand tools over catch pan with capacity to hold all the cleaning material.

(c) Remove all diesel or mineral spirits or other cleaning material that is potentially deleterious to HMA from hand tools before using with HMA.

(d) Hand tools used shall be in a condition such that it meets the requirements that it was manufactured for, e.g., a straightedge shall meet the straightness requirement of the manufacturer.

(6) Material Transfer Vehicle (MTV).

(a) Usage. MTV usage applies to surface courses of paving projects on all Islands except Lanai, unless otherwise indicated. When placing HMA surface course use MTV to independently deliver mixtures from hauling equipment to paving equipment. MTV usage will not be required for the following:

1. Projects with less than 1,000 tons of HMA.

2. Temporary pavements.

3. Bridge deck approaches.

4. Shoulders.

5. Tapers.

6. Turning lanes.

7. Driveways.

8. Areas with low overhead clearances.

(b) Equipment. When using MTV, install minimum 10-ton-capacity hopper insert in conventional paver hopper. Provide the following equipment:

1. High-capacity truck unloading system in MTV capable of receiving HMA from hauling equipment.

2. MTV storage bin with minimum 15-ton capacity.

3. An auger mixing system in one of the following: the MTV storage bin, or paver hopper insert, or paver hopper to continuously mix HMA prior to discharging to the paver's conveyor system.

Avoid stop-and-go operations by coordinating plant production rate, number of haul units, and MTV and paver speeds to provide a continuous, uniform, segregation-free material flow and smooth HMA pavement. Maintain uniform paver speed to produce smooth pavements.

(c) Performance Evaluation. Evaluate the performance of MTV and mixing equipment by measuring mat temperature profile immediately behind paver screed on first day of paving and when it feels the need to do so due to perceived changes in performance or as directed by the Engineer.

Use a hand-held temperature device that has been calibrated within the past 12 months. It shall be an infrared temperature gun is capable of measuring in one degree or finer increments between the temperatures of 80 degrees to 400 degrees F with a laser to indicate where the temperature reading is being taken. Six temperature profile measurements shall be taken of mat surface using infrared temperature gun at 50-foot intervals behind paver. Each temperature profile shall consist of three surface temperature measurements taken transversely across the mat in approximately a straight line from screed while paver is operating. For each profile, temperatures shall be measured approximately 1 foot from each edge and in middle of mat. The difference between maximum and minimum temperature measurements for each temperature profile shall not exceed 10 degrees F. If any two or more temperature profiles exceeds the allowable 10-degree F temperature differential, halt paving operation and adjust MTV or mixing equipment to ensure that material placed by paver meets specified temperature requirements. Redo the measuring of mat temperature profile until adjustment of the MTV or mixing equipment is adequate. Submit all temperature profiles to the Engineer by next business day. Information on the report shall show location and temperature readings and time test was performed. Enough information shall be given, so the Engineer will be able to easily locate the test site of the individual measurement.

When requested temperature profile measurements shall be done in the presence of the Engineer.

Once adjustments are made, repeat measurement procedure for the next two placements to verify that material placed by paver meets specified temperature requirements. Terminate paving if temperature profile requirements are not met during repeated measurement procedure. If equipment fails to meet requirements after measurement procedure is repeated once, replace equipment before conducting any further temperature profile measurements

The Engineer may perform surface temperature profile measurements at any time during project. The Engineer may in lieu of a hand-held infrared temperature device use an infrared camera or device that is capable of measuring temperatures to locate cold spots. If such cold spots exist, the Engineer may require adjustments to the MTV.

If bleeding or fat spots occur in the pavement adjust means and methods to eliminate such pavement defects and perform remedial repair to pavement acceptable to the Engineer. Bleeding is defined as excess binder occurring on the surface of the pavement. It may create a shiny, glass-like, reflective appearance and may be tacky to the touch. Fat spots are localized bleeding.

(d) Transport.

1. Trailered MTV. Transport MTV by means of truck-tractor/trailer combination in accordance with Chapter 104 of Title 19, Department of Transportation, entitled “The Movement by Permit of Oversize and Overweight Vehicles on State Highways”.

2. Crossing Bridges for Self-Powered MTV. When self-powered MTV exceeds legal axle or total weight limits for vehicles under the HRS, Chapter 291, conform to the following when crossing bridges within project limits unless otherwise indicated in the Contract Documents:

a. Completely remove mix from MTV.

b. Move MTV at relatively constant speed not exceeding 5 miles per hour. MTV will not be allowed to stop on bridge.

c. No other vehicle or equipment will be allowed on bridge.

d. The MTV shall not attempt to cross a bridge where the posted load limit is less than or equal to the weight of the MTV empty. Permission to cross the bridge shall be obtained from the Engineer and Highways Division, Bridge Design Section (HWY-DB) in writing.

(C) Preparation of Surface. Clean existing pavement in accordance with Section 310 - Brooming Off. Apply tack coat in accordance with Section 407 - Tack Coat. Tack coat shall not be applied to surfaces to receive an application of joint adhesive.

Where indicated in the Contract Documents, bring irregular surfaces to uniform grade and cross section by furnishing and placing one or more leveling courses of HMA Mix V. Spread leveling course in variable thicknesses to eliminate irregularities in existing surface. Place leveling course such that maximum depth of each course, when thoroughly compacted, does not exceed 3 inches.

In multiple-lift leveling course construction, spread subsequent lifts beyond edges of previously spread lifts in accordance with procedures contained in current edition of the Asphalt Institute's *Construction of Hot Mix Asphalt Pavements,* Manual Series No. 22 (MS-22) for leveling wedges.

Notify the Engineer of existing surfaces that may not be in a condition that will have enough strength to be a good bonding surface or foundation and should be removed or have remedial repairs done before new pavement placement.

(D) Plant Operation.

(1) Preparation of Asphalt Binder. Uniformly heat asphalt binder and provide continuous supply of heated asphalt cement from storage to mixer. Do not heat asphalt binder above the recommendation of the supplier for modified binders or above 350 degrees F for neat binders.

(2) Preparation of Aggregate. Dry and heat aggregate material at temperature sufficient to produce design temperature of job-mix formula. Do not exceed 350 degrees F. Adjust heat source used for drying and heating to avoid damage to and contamination of aggregate. When dry, aggregate shall not contain more than 1 percent moisture by weight.

For batch plants, screen aggregates immediately after heating and drying into three or more fractions. Convey aggregates into separate compartments ready for batching and mixing with asphalt binder.

(3) Mixing. Measure aggregate and asphalt; or aggregate, RAP, and asphalt into mixer in accordance with an accepted job-mix formula. Mix until components are completely mixed and adequately coated with asphalt binder in accordance with AASHTO M 156. Percent of coated particles shall be 95 percent when tested in accordance with AASHTO T 195.

(4) Plant Inspection. For control and acceptance testing during periods of production, provide a testing laboratory that meets the requirements of AASHTO M 156. Provide space, utilities, and equipment required for performing specified tests.

(E) Spreading and Finishing. Prior to each day's paving operation, check screed or strike-off assembly surface with straight edge to ensure straight alignment and there is no damage or wear to the machine that will affect performance. Provide screed or strike-off assembly that produces finished surface without tearing, shoving, and gouging HMA. Discontinue using spreading equipment that leaves ridges, indentations, or other marks, or combination thereof in surface that cannot be eliminated by rolling or affects the final smoothness of the pavement or be prevented by adjustment in operation.

Maintain HMA at minimum 250 degrees F temperature at discharge to paver. The Engineer shall observe the contractor measuring the temperature of mix in hauling vehicle just before depositing into spreader or paver or MTV.

Deposit HMA in a manner that minimizes segregation. Raise truck beds with tailgates closed before discharging HMA.

Lay, spread, and strike off HMA upon prepared surface. Where practical, use asphalt pavers to distribute mixture.

Where practical, control horizontal alignment using automatic grade and slope controls from reference line, slope control device. Existing pavements or features shall not be used for grade control alone.

Obtain sensor grade reference, horizontal alignment by using established grade and slope controls. For subsequent passes, substitution of one ski with joint-matching shoe riding on finished adjacent pavement is acceptable. Use of a comparable non-contact mobile reference system and joint matching shoe is acceptable.

Avoid stop-and-go operation. Maintain a constant forward speed of paver during paving operation and minimize other methods that impact smoothness.

Offset longitudinal joint in successive lifts by approximately 6 inches. Incorporate into paving method an overlap of material of 1-inch +/- 0.5 inches at the longitudinal joint. The HMA overlap material shall be left alone when initially placed and shall not be bumped back or pushed back with a lute or any other hand-held device. If the overlap exceeds the maximum amount, remove the excess with a flat shovel, allowing recommended amount of overlap HMA material to remain in place to be compacted. Do not throw the removed excess HMA material on to the paving mat. The longitudinal joint in a surface course when total roadway width is comprised of two lanes shall be near the centerline of pavement or near lane lines when roadway is more than two lanes in width. The longitudinal joint shall not be constructed in the wheel path or under the longitudinal lane lines. Make a paving plan drawing showing how the longitudinal joint will not be located in these areas.

Control the horizontal alignment of the longitudinal edge of the HMA mat being installed so that the edge is parallel to the centerline or has a uniform alignment, e.g., the edge of the mat is straight line or uniform curve, no wavy edge, etc. to have a consistent amount of HMA material at the joint.

Check the compaction of the longitudinal joint during paving often enough to ensure that it will meet the compaction requirements.

If nuclear gauges and ground penetrating radar are used as the contractor's quality control method, they shall be properly calibrated and periodically checked by comparison to cores taken from the pavement. The use of sand as an aid in properly seating the gauge may also be considered for improving the accuracy of the gauge.

In areas where irregularities or unavoidable obstacles make use of mechanical spreading and finishing equipment impracticable, spread, rake, and lute mixture by hand tools. For such areas, deposit, spread evenly, and screed mixture to required compacted thickness.

Demonstrate competence of personnel operating grade and crown control device before placing surface courses. If automatic control system becomes inoperative during the day's work, the Engineer will permit the Contractor to finish day's work using manual controls. The Engineer may also allow additional HMA to be ordered and placed using manual controls if it will provide a safer work site for the public to travel through. Do not resume work until automatic control system is made operative. The Engineer may waive requirement for electronic screed control device when paving gores,

shoulders, transitions, and miscellaneous reconstruction areas where the use of the devices is not practical.

When production of HMA can be maintained and when practicable, use pavers in echelon shall be used to place surface course in adjacent lanes.

At the end of each workday, HMA pavement that is open to traffic shall not extend beyond the panel of the adjacent new lane pavement by more than the distance normally placed in one workday. At end of each day's production, construct tapered transitions along all longitudinal and transverse pavement drop-offs; this shall apply to areas where existing pavement is to meet newly placed pavement. Use slopes of 6:1 for longitudinal taper transitions and 48:1 for transverse tapered transitions. Maximum drop-off height along the joints shall be 2 inches. Also, using a 48:1 slope provides a taper around any protruding object, e.g., manholes, drain boxes, survey monuments, inlets, etc., that may be above pavement surface when opened to the public. If the object is below the surface of the pavement then fill the depression until it is level with the surrounding pavement or raise depressed objects to the finish grade of the placed pavement. Remove and dispose of all transition tapers before placing adjoining panel or next layer of HMA. Notify traveling public of pavement drop-offs or raised objects with signs placed in every direction of traffic that may use and encounter pavement drop-offs or protruding objects or holes.

Use the same taper rates for areas where there is a difference in elevation due to construction work.

At end of each workweek, complete full width of the roadway's pavement, including shoulders, to same elevation with no drop-offs.

(F) Compaction. Immediately after spreading and striking off HMA and adjusting surface irregularities, uniformly compact mixture by rolling.

Initiate compaction at highest mix temperature allowing compaction without excessive horizontal movement. Temperature shall not be less than 220 degrees F.

Finish rolling using tandem roller while HMA temperature is at or above 175 degrees F.

On superelevated curves, begin rolling at lower edge and progress to higher edge by overlapping of longitudinal trips parallel to centerline.

If necessary, repair damage immediately using rakes and fresh mix. Do not displace line and grade of HMA edges during rolling.

Keep roller wheels properly moistened with water or water mixed with small quantities of detergent. Use of excess liquid, diesel, and petroleum-based liquids will not be allowed on rollers.

Along forms, curbs, headers, walls and other places not accessible to rollers, compact mixture with hot hand tampers, smoothing irons, or mechanical tampers. On depressed areas, trench roller or cleated compression strips under roller may be used to transmit compression.

Before the start of compaction or during compaction or both remove pavement that is loose, broken, or contaminated, or combination thereof; pavement that shows an excess or deficiency in asphalt binder content; and pavement that is defective in any way. Replace with fresh HMA pavement of same type, and compact. Remove and replace defective pavement and compact at no increase in contract price or contract time.

Operate rollers at slow and uniform speed with no sudden stops. The drive wheels shall be nearest to the paver. Continue rolling to attain specified density and until roller marks are eliminated.

Rollers shall not be parked on the pavement placed that day or shift.

(1) HMA Pavement Courses One and a Half Inches Thick or Greater. Where HMA pavement compacted thickness indicated in the Contract Documents is 1-1/2 inches or greater, compact to not less than 93.0 percent nor greater than 97.0 percent of the maximum specific gravity determined in accordance with AASHTO T 209, modified by deletion of Supplemental Procedure for Mixtures Containing Porous Aggregate.

Place HMA pavement in individual lifts that are within minimum and maximum allowable compacted thickness for various types of mixture as specified in Table 401.02-1 - Limits of Compacted Lift Thickness and Asphalt Content.

(2) HMA Pavement Courses Less Than One and a Half Inches Thick. Where HMA pavement compacted thickness indicated in the contract documents is less than 1-1/2 inches, compaction to a specified density will not be required.

Use only non-vibratory, steel-tired, tandem roller. Roll entire surface with minimum of two roller passes. A roller pass is defined as one trip of the roller in one direction over any one spot.

For intermediate rolling, roll entire surface with minimum of four passes of roller.

Finish rolling using steel-tired, tandem roller. Continue rolling until entire surface has been compacted with minimum of three passes of roller, and roller marks have been eliminated.

Do not use rollers that will excessively crush aggregate.

(3) HMA Pavement Courses One and a Half Inches Thick or Greater In Special Areas Not Designated For Vehicular Traffic. For areas such as bikeways that are not part of roadway and other areas not subjected to vehicular traffic, compact to not less than 90.0 percent of maximum specific gravity determined in accordance with AASHTO T 209, modified by deletion of Supplemental Procedure for Mixtures Containing Porous Aggregate. Increase asphalt content by at least 0.5 percent above that used for HMA pavements designed for vehicular traffic. Paved shoulders shall be compacted in the same manner as pavements designed for vehicular traffic.

(G) Joints, Trimming Edges and Utility Marking. At HMA pavement connections to existing pavements, make joints vertical to depth of new pavement. Saw cut existing pavement and cold plane in accordance with Section 415 - Cold Planing of Existing Pavement to depth equal to thickness of surface course or as indicated in the Contract Documents.

At HMA connections to previously placed lifts, form transverse joints by cutting back on previous run to expose full depth of course. Dispose of material trimmed from edges. Protect end of freshly laid mixture from rollers.

Before and after paving, identify and mark location of existing utility manholes, valves, and handholes on finished surface. Adjust existing frames and covers and valve boxes to final pavement finish grade in accordance with Section 604 - Manholes, Inlets and Catch Basins and Section 626 - Manholes and Valve Boxes for Water and Sewer Systems.

(1) Longitudinal joints. Submit for review the means and methods that will be used to install longitudinal joints at the required compaction and density. Compact longitudinal joints to be not less than 91.0 percent of the maximum specific gravity determined in accordance with AASHTO T 209, modified by deletion of Supplemental Procedure for Mixtures Containing Porous Aggregate. Verify the compaction of the longitudinal joints meets requirements by using non-destructive testing methods during paving and submit the results on the daily quality control test reports.

Test for compaction and density regardless of layer thickness. Compaction and density of the longitudinal joint shall be determined by using six-inch diameter cores. For longitudinal joints made using butt joints cores shall be taken over the joint with half of the core being on each side of the joint. For longitudinal joints using notch wedge joints, center core over the center of the wedge so that 50 percent of the material is from the most recently paved material and the remaining 50 percent of the core is from the material used to pave the previous layer. One core shall be taken at a maximum frequency of every 1,500 lineal feet (LF) of the second side of the longitudinal joint and any fraction of that length for each day of paving with a minimum of one core taken for each longitudinal joint per day. Cores taken for the testing of the longitudinal joint may be used to determine pavement thickness.

When the longitudinal joints are found to have less than 91.0 percent of the maximum specific gravity, overband all longitudinal joints within the entire lot represented by the non-compliant core, PG binder seal coat, or other type of joint enrichment accepted by the Engineer. The overband shall not decrease the skid resistance of the pavement under any ambient weather condition. Submit overband material's catalog cuts, test results and application procedure for review and acceptance by the Engineer before use. Center the overband over the longitudinal joint. The overband shall be placed in a uniform width and horizontal alignment. The overband shall have no holidays or streaking in its placement. The width of the overband shall be based on how the longitudinal joint was constructed or as directed by the Engineer. If a notch joint is used, the overband width shall be a minimum of 12-inches. For butt wedge or wedge joints the overband width shall be the width of the wedge plus an additional six-inches minimum. Replace any pavement markings damaged or soiled by the overband remedial repair process.

For longitudinal joints that have a compaction of less than 89 percent of the maximum specific gravity; removal may be required by the Engineer instead of overbanding the non-compliant joint.

Persistent low compaction results may be cause to suspend work and remove non-conforming work. During the suspension of paving, revise means and methods used in constructing longitudinal joints and submit to the Engineer for review and acceptance. Suspension may occur when:

(1) Two or more longitudinal joints tests fail to meet the minimum compaction

(2) One sample reveals that the joint compaction is 89 percent or less.

(H) HMA Pavement Samples. Obtain test samples from compacted HMA pavement within 72 hours of lay down. Provide minimum 4-inch diameter cores consisting of undisturbed, full-depth portion of compacted mixture taken at locations designated by the Engineer in accordance with the "Sampling and Testing Guide for Acceptance and Verification" in Hawaii DOT Highways Division, *Quality Assurance Manual for Materials*, Appendix 3. Cores shall be taken in the presence of the Engineer. Turn cores over to Engineer immediately after cores have been taken.

For pavement samples for longitudinal joints provide 6-inch diameter cores minimum. For pavement samples for other than longitudinal joints 4-inch diameter cores minimum shall be taken. All cores shall consist of undisturbed, full-depth of the lift of the compacted mixture taken at locations designated by the Engineer in accordance with the "Sampling and Testing Guide for Acceptance and Verification" in Hawaii DOT Highways Division, *Quality Assurance Manual for Materials*, appendix 3. Coring of longitudinal joints shall use a modified HDOT Sampling and Testing Guide as required by the Contract Documents.

Cores that separate shall indicate to the Engineer that there is insufficient bonding of layers. Modify the previously used paving means and methods to prevent future debonding of layers. Debonding of a core sample after adjustment of the Contractor's methods will be an indication of continued non-conforming work and the Engineer may direct removal of the layer at no additional cost or contract time.

Restore HMA pavement immediately after obtaining samples. Clean core hole and walls of all deleterious material that will prevent the complete filling of the core hole and the bonding of the new HMA to the existing. Apply tack coat to vertical faces of sample holes. Fill sampled area with new HMA pavement of same type as that removed. If hand compaction is used; fill in layers not exceeding the minimum thickness stated in Table 401.02-1 - Limits of Compacted Lift Thickness And Asphalt Content. Compact each layer to compaction requirements. If Mechanical Compaction methods are used, then layers may be the maximum layer thickness stated in Table 401.02-1 - Limits of Compacted Lift Thickness And Asphalt Content. Using tires or hand tamping to compact the HMA material to restore the pavement shall not be considered as mechanical compaction.

Only sample and test leveling course if 1-1/2 inches or greater. No compaction requirements for less than 1-1/2 inches.

(I) HMA Pavement Thickness Tolerances.

Thickness of finished HMA pavement shall be within 0.25 inch of thickness indicated in the Contract Documents. Pavement not meeting the

thickness requirements of the Contract Documents may be required by the Engineer to be removed and replaced.

Corrective methods taken on pavement exceeding specified tolerances, e.g., insufficient thickness by methods accepted by the Engineer, including removal and replacement, shall be at no increase in contract price or contract time.

The checking of pavement thickness shall be done after all remedial repairs, e.g., smoothness compliance repairs, compaction, have been completed, reviewed, and accepted by the Engineer.

(J) Quality Control Using New Technology. The Engineer and MTRB reserves the right to utilize new technology and methods to improve the detection of noncompliant work on the project. The technology or method may be used to locate defects in the work, e.g., ground penetrating radar to locate delaminations, moisture damage, thin sections, voids, non-compliant compaction, other non-destructive testing to locate flaws. The defect will be verified by the methods stated in the Contract Documents or by other established conventional means. If the technology or method has already been accepted elsewhere or has standardized testing procedures the results may be judged acceptable by the Engineer and no further testing will be required. These new technologies and methods may be used for the selection of sampling locations.

(K) Protection of HMA Pavement. Except for construction equipment directly connected with paving operations, keep traffic off HMA pavement.

Protect HMA pavement from damage until it has cooled and set.

Do not refuel equipment or clean equipment or hand tools over paved surfaces unless catch pan or device that will contain spilled fuel and other products is provided. After completion of refueling or cleaning, remove catch pan or device without spilling any of the collected content.

Do not park roller or other paving equipment on HMA pavement paved within 24 hours of laydown.

(L) Pavement Joint Adhesive

(1) Pavement Joint Adhesive on Joints. Use on all asphalt pavement construction where joints are formed at such locations but not limited to the following:

(a) Adjacent asphalt pavements, e.g., trafficked lanes, shoulders, etc.

(b) Asphalt pavement and adjacent concrete pavement or curb and gutter or any other surface where the bonding of the asphalt pavement and concrete surface is desired,

(c) Transverse joints between asphalt pavements not placed at the same time or if the pavement's temperature on one side of the joint is below the minimum temperature the mix can be at, during asphalt pavement compaction or installation.

(d) Cut face of an existing pavement where it will have new HMA pavement placed against it, e.g., utility trenches, partial or full depth repairs, etc.

Pavement joint adhesive is not required on a longitudinal construction joint between adjacent hot mix asphalt pavements formed by echelon paving. Echelon paving is defined as paving multiple lanes side-by-side with adjacent pavers slightly offset at the same time.

A longitudinal construction joint between one shift's work and another shall have pavement joint adhesive applied at the joint. Any longitudinal construction joint formed, with the temperature on one side of the joint that is below the minimum temperature the mix can be when compacted to contract requirements during asphalt pavement installation, shall have pavement joint adhesive applied at the joint.

(2) Material requirements. Asphalt joint adhesive shall meet requirements as specified in Table 401.03-1 - Asphalt Joint Adhesive Specifications.

TABLE 401.03-1 – ASPHALT JOINT ADHESIVE SPECIFICATIONS

TEST		SPECIFICATION
Brookfield Viscosity, 204 °C [400 °F]	ASTM D 3236	4,000-10,000 cp
Cone Penetration, 25 °C [77 °F]	ASTM D 5329	60-100 dmm
Resilience, 25 °C [77 °F]	ASTM D 5329	30% minimum
Ductility, 25 °C [77 °F]	ASTM D 113	30 cm minimum
Ductility, 4 °C [39.2 °F]	ASTM D 113	30 cm minimum
Tensile Adhesion, 25 °C [77 °F]	ASTM D 5329	500% minimum
Softening Point	ASTM D 36	77 °C [170 °F] min.
Asphalt Compatibility	ASTM D 5329	Pass

(3) Construction Requirements for Asphalt Joint Adhesive

(a) Equipment Requirements. Use a jacketed double boiler type melting unit, with both agitation and recirculation systems. Provide a pressure feed wand application system.

(b) Material Handling. Submit a copy of the manufacturer's recommendations for heating, re-heating, and applying the joint adhesive material. Follow manufacturer's recommendations. Do not remove the joint adhesive from the package until immediately before it is placed in the melter. Joint adhesive boxes must be clearly marked with the name of the manufacturer, the trade name of the adhesive, the manufacturer's batch and lot number, the application/pour temperature, and the safe heating temperature. Feed additional material into the melter at a rate equal to the rate of material used.

Verify the pouring temperature of the joint adhesive at least once per hour at the point of discharge. Stop production if the adhesive falls below the recommended application/pour temperature. When the temperature of the adhesive exceeds the maximum safe heating temperature, stop production, empty the melter, and dispose of that adhesive in an environmentally safe method. No payment will be made for this material or its disposal.

Do not blend or mix different manufacturer's brands or different types of adhesives.

(c) Joint Adhesive Application: The face of the joint that the new asphalt pavement will bind to shall be clean and dry before the joint adhesive is applied. Apply the pavement joint adhesive material to the entire face of the surface where HMA pavement shall be installed. The thickness of the asphalt adhesive application shall be approximately 1/8 inch. Use an application shoe attached to the end of application wand. Do not overlap the joint by greater than 1/2-inch at the top of the joint or two-inches at the bottom of the joint. Apply the joint adhesive immediately in front of the paving operation. If the adhesive is tracked by construction vehicles, repair the damaged area, and restrict traffic from driving on the adhesive.

(d) Field Sampling. Take a sample from the application wand during the first 20 minutes of placing sealant. One sample should be taken per manufacturer's batch or minimum of every 6 months on the Project in the presence of the Engineer.

Each sample shall consist of one quart in an aluminum or steel sample container. The sampling container shall be labeled with Contractor's name; project name and number; date and time sample taken; location of where material was used at, e.g., from where to where it was used at in stations; manufacturer and lot number of the sealant. Turn over samples to Engineer without Engineer losing sight of the sample. The Engineer reserves the right to conduct supplementary sampling and testing of the sealant material.

(M) Pavement Smoothness Rideability Test. Perform surface profile tests frequently to ensure that the means and methods being used produces pavement that is compliant with the surface profile smoothness requirement. Test the pavement surface for smoothness with High-Speed Inertial Profiler to determine the International Roughness Index (IRI) of the pavement. For the locations determined by the Engineer, a 10-foot straightedge shall be used to measure smoothness.

All smoothness testing must be performed with the presence of the Engineer. The High-Speed Inertial Profiler operator shall be a certified operator by MTRB or the manufacturer.

The High-Speed Inertial Profiler operator's certification shall be no older than five years old at the date of the Notice to Proceed and at the day of the pavement profile measurement.

The finished pavement shall comply to all the following requirements:

(a) Smoothness Test using 10-Foot Straightedge (Manual or rolling) The 10-foot straightedge is used to identify the locations that vary more than 3/16 inch from the lower edge when the 10-foot straightedge is laid on finished pavement on the direction parallel with the centerline or perpendicular to centerline. Remove the high points that cause the surface to exceed that 3/16 inch tolerance by grinding.

The Contractor shall use a 10-foot straightedge for the following locations:

1. Longitudinal profiling parallel to centerline, when within 15 feet of a bridge approach or existing pavement which is being joined.

2. Transverse profiling of cross slopes, approaches, and as otherwise directed. Lay the straightedge in a direction perpendicular to the centerline.

3. When pavement abuts bridge approaches or pavement not under this Contract, ensure that the longitudinal slope deviations of the finished pavement comply with Contract Document's requirements.

4. Short pavement sections up to 600 feet long, including both mainline and non-mainline sections on tangent sections and on horizontal curves with a centerline radius of curve less than 1,000 feet.

5. Within a superelevation transition on horizontal curves having centerline curve radius less than 1,000 feet, e.g., curves, turn lanes, ramps, tapers, and other non-mainline pavements.

6. Within 15 feet of transverse joint that separates pavement from existing pavement not constructed under the contract, or from bridge deck or approach slab for longitudinal profiling.

7. At miscellaneous areas of improvement where width is less than 11 feet, such as medians, gore areas, and shoulders.

8. As otherwise directed by the Engineer. The Engineer may confine the checking of through traffic lanes with the straightedge to joints and obvious irregularities or choose to use it at locations not specifically stated in this Section.

(b) High-Speed Inertial Profiler

There shall be a minimum 3 profile runs per lane, for each wheel path (left and right) which is approximately three feet from edge lane line. The segment length shall be 0.1 mi. The final segments in a lane that are less than 0.1 mi shall be evaluated as an independent segment and pay adjustments will be prorated for length. The profiles shall be taken in the direction of traffic only.

The latest version of FHWA ProVAL software shall be used to conduct

profile analysis to determine IRI and areas of localized roughness. The IRI values shall be reported in units of in/mi.

Areas of localized roughness will be identified by using ProVAL's "Smoothness Assurance" analysis, calculating IRI with a continuous short interval of 25 feet and the 250-mm filter applied.

Additional runs may be required by the Engineer if the data indicate a lack of repeatability of results. A 92% agreement is required for repeatability and IRI values shall have at minimum a 95% confidence level.

(N) Required Pavement Smoothness

The IRI for the left and right wheel paths in an individual lane will be computed and then averaged to determine the Mean Roughness Index (MRI) values. The MRI will be used to determine acceptance and pay adjustment. Each lane shall be tested and evaluated separately.

There are three (3) categories of target MRI values:

TABLE 401.03-2 – PAVEMENT SMOOTHNESS CATEGORIES

Category	Description	MRI
Type A	Three or more opportunities for improving ride	Shall not exceed 60 in/mi
Type B	Two opportunities for improving ride	Shall not exceed 70 in/mi
Type C	One opportunity for improving ride	Shall not exceed 75 in/mi

An opportunity for improving ride is considered as one (1) lift of asphalt pavement, including but not limited to HMAB, HMA, PMA, and SMA.

For the location where a 10-foot manual straightedge is required, the surface shall not vary more than 3/16 inch from the lower edge of a straightedge.

No pre-final inspection, final inspection, and substantial completion granted will be made until the pavement meets smoothness requirement and all required profile reports are submitted to the Engineer and MTRB and are accepted.

(O) Request for Profile Testing by the Department.

For Type C, prior to pavement activities, the Engineer will measure the smoothness of the existing pavement.

The Contractor shall submit a written request to the Engineer to perform all required profile tests.

The request shall be made at least 30 days before desired testing date and shall include an approximate acceptance profile testing date, a plan view drawing of the area to be tested with the limits of the test area highlighted.

The Contractor shall reimburse HDOT for any incurred cost related to any Contractor-caused cancellation or a deduction to the monthly payment will be made.

(P) Department Requirements for Profile Testing. When a request for testing is made, the requested area to be tested shall be 100% of the total area indicated to be paved in the Contract Documents unless the requirement is waived by the Engineer and MTRB.

Department acceptance surface tests will not be performed earlier than 14 days after HMA placement.

Clean debris and clear obstructions from area to be tested, as well as a minimum of 100 feet before and beyond the area to be tested before testing starts for use as staging areas. Provide traffic control for all profile testing.

The Engineer or MTRB or both may cancel the profile testing if the test area is not sufficiently clean, traffic control is unsatisfactory, or the area is not a safe work environment or test area does not meet Contract Document requirements. This canceled profile test will count as one profile test.

(Q) Cost of Acceptance Profile Testing by The Department. The Engineer, MTRB, or State's Third-Party Consultant will perform one initial profile test, at no cost to the Contractor for each area to be tested.

The Department's High-Speed Inertial Profiler pavement profile will be used to determine if the pavement's profile, i.e., smoothness is acceptable.

If the profile of the pavement does not meet the requirements of the Contract Documents, the Contractor shall perform remedial work, i.e. corrective work then retest the area to ensure that the area has the required MRI, i.e., smoothness, before requesting another profile test by the Engineer.

(1) Additional testing. Additional testing, by the Department beyond the initial test will be performed at cost to the Contractor as follows:

(a) $2,500 per test will be required when Department personnel or State's Third-Party Consultant is used.

(R) Remedial Work for Pavements.

(1) Corrective work shall be required for any 25 ft interval with a localized roughness in excess of 160 in/ mi. The Engineer may waive localized roughness requirements for deficiencies resulting from manholes or other similar appurtenances. Adjust manholes or other similar appurtenances so that using a 10-ft. straightedge the area around that manhole or other similar appurtenance shall not have more than 3/16-in. variation between any 2 contacts on the straightedge.

If corrective action is not successful, the Engineer may require continued corrective action, or apply a payment adjustment of $250 per occurrence.

(2) Corrective work shall also be required for any 0.1 mile interval with an average MRI above 95.0 in/mi for Types A and B. For Type A, correct the deficient section to an MRI of 60 in/mi or less. For Type B, correct the deficient section to an MRI of 70 in/mi or less. For Type C, corrective work may be required by the Engineer for 0.1 mile intervals that have an average MRI above the threshold shown in Tables 401.03-4 (Smoothness Pay Disincentives with MRI) and 5 (Smoothness Pay Disincentives for Percent Improvement) as applicable.

If corrective action does not produce the required improvement, the Engineer may require continued corrective action, or apply payment adjustment as shown in Tables 401.03-4 (Smoothness Pay Disincentives with MRI) and 5 (Smoothness Pay Disincentives for Percent Improvement).

(3) The Contractor shall notify the Engineer at least 24 hours prior to commencement of the corrective work. The Contractor shall not commence corrective work until the methods and procedure have been approved in writing by the Engineer.

(4) All smoothness corrective work for areas of localized roughness shall be for the entire lane width. Pavement cross slope shall be maintained through corrective areas.

(5) The remedial repair areas shall be neat, rectangular areas having a uniform surface appearance.

(6) If grinding is used on HMA pavement, the surface shall have nearly invisible grinding marks to passing motorist.

(7) Other methods may include milling and overlaying HMA pavement. The length, depth of the milling and the replacement material will be solely decided by the Engineer.

(8) The finished repaired pavement surface shall leave no ridges or valleys or fins of pavement other than those allowed below.

(9) Remedial repairs shall not leave any drainage structures' inlets higher than the surrounding pavement or alter the Contract Document's drainage pattern.

(10) For items in the pavement other than drainage structures, e.g., manhole frame and covers, survey monuments, expansion joints etc., the finish pavement, ground or not, shall not be more than 1/4 inch in elevation difference. Submit to the Engineer remedial repair method to correct these conditions for acceptance.

(11) Pick up immediately grinding operation residue by using a vacuum attached to grinding machine or other method acceptable to the Engineer.

(a) Any remaining residue shall be picked up before the end of shift or before the area is open to traffic, whichever is earlier.

(b) Prevent residue from flowing across pavement or from being left on pavement surface or both.

(c) Residue shall not be allowed to enter the drainage system.

(d) The residue shall not be allowed to dry or remain on the pavement.

(e) Dispose of all material that is the result of the remedial repair operation, e.g., HMA residue, wastewater, and dust at a legal facility.

(12) Complete corrective work before determining pavement thickness for HMA pavements in accordance with Subsection 401.03(l) – HMA Pavement Thickness Tolerances.

(13) All HMA wearing surface areas that have been ground shall receive a coating, e.g., a coating material that will restore any lost

impermeability of the HMA due to the grinding of the surface. The coating used shall not be picked up or tracked by passing vehicles or be degraded after a short period of time has passed, i.e., it shall have a service life equal to or greater than the HMA pavement. The coating shall not decrease the pavement's friction value. The coating's limits shall be the full width of the lane regardless how small. If the remedial repair area extends into the next lane, then the repair area will be full lane width also. Extend the length of coating areas in order for the coating area to look like the rest of the road and does not have patches on it, i.e., make the road look uniform in color. The coating shall be of a color that matches the surrounding pavement. The areas receiving the coating shall not be open to traffic until it has cured enough so that it cannot be picked up or tracked by passing vehicles or degrade. Submit means and methods of the coating and type of coating to the Engineer or MTRB for review and acceptance. Do not proceed with the coating without acceptance from the Engineer.

(14) Recompacting cold HMA, i.e., HMA that has reached ambient temperature is not an acceptable remedial repair method.

(15) Replace all pavement markings damaged or discolored by remedial repairs.

(16) Reprofile the corrected area and provide the Engineer the results that show the corrective action, i.e., remedial repairs were successful.

(S) Pavement Smoothness and Acceptance.

(1) Price and payment in various paving sections, e.g., 401 (Hot Mix Asphalt Pavement), shall be full compensation for all work and materials specified in the various paving sections and this section, including but not limited to furnishing all labor, materials, tools, equipment, testing, incidentals and for doing all work involved in micro milling, milling (cold planing), grinding existing or new pavement, removing residue, cleaning the pavement, necessary disposal of residue, furnishing of any water or air used in cleaning the pavement and any other related ancillary work or material or services. Also, it includes any remedial work, e.g., re-paving, surface grinding, application of a coating, curing compound, and replacement of damaged pavement markings.

(2) The contract price in those sections may be adjusted for pavement smoothness by the Engineer. The pavement smoothness contract unit price adjustments and work acceptance will be made in accordance with the following schedules.

TABLE 401.03-3 –SMOOTHNESS PAY INCENTIVES		
Category	**MRI (in/mi)**	**Pay Adjustment $ per 0.1 mi**
Type A	<30.0	$580
	30.0- less than 35.0	$480
	35.0- less than 40.0	$380
	40.0- less than 45.0	$280
	45.0- less than 50.0	$180
	50.0- less than 55.0	$80
	55.0- less than 60.0	$0
Type B	<35.0	$420
	35.0- less than 40.0	$360
	40.0- less than 45.0	$300
	45.0- less than 50.0	$240
	50.0- less than 55.0	$180
	55.0- less than 60.0	$120
	60.0- less than 65.0	$60
	65.0- less than 70.0	$0
Type C	<40.0	$280
	40.0- less than 45.0	$240
	45.0- less than 50.0	$200
	50.0- less than 55.0	$160
	55.0- less than 60.0	$120
	60.0- less than 65.0	$80
	65.0- less than 70.0	$40
	70.0- less than 75.0	$0

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(3) Pay Pavement Smoothness Adjustment will be based on the initial measured MRI for both left and right wheel path, prior to any corrective work for the 0.10-mile section, except for sections that the Contractor has chosen to remove and replace. For sections that are replaced, assessments will be based on the MRI determined after replacement.

(a) The Pavement Smoothness Adjustment will be computed using the plan surface area of pavement shown in the Contract Documents. This Pavement Smoothness Adjustment will apply to the total area of the 0.10-mile section for the lane width represented by MRI for the same lane. It does not include any other price adjustments specified in the Contract Documents. Those price adjustments will be, for each adjustment, calculated separately using the original contract price to determine the amount of adjustment to be made to the contract price. Sections shorter than 0.1 mile and longer than 50 feet shall be prorated.

(b) For 0.1 mile intervals with an average MRI above the threshold shown in Table 401.03-3 (Smoothness Pay Incentives), the Engineer shall apply a disincentive payment adjustment up to the limit shown.

i. For Types A and B, payment adjustments shall be applied up to an MRI of 95.0 per Table 401.03-4 (Smoothness Pay Disincentives with MRI).

ii. For Type C, the payment adjustment shall be dependent on the average MRI of the pavement prior to paving activities
    1. If the MRI of the pavement prior to paving activities is 125.0 in/mi or less, the payment adjustment shall be per Table 401.03-4 (Smoothness Pay Disincentives with MRI).
    2. If the MRI of the pavement prior to paving activities is more than 125.0 in/mi, the disincentive payment adjustment shall be per Table 401.03-5 (Smoothness Pay Disincentives for Percent Improvement), and based on the percent improvement using the following formula:

% Improvement = (Initial segment MRI – Final segment MRI) x 100 / (Initial Segment MRI)

TABLE 401.03-4 –SMOOTHNESS PAY DISINCENTIVES WITH MRI		
Category	**MRI (in/mi)**	**Pay Adjustment $ per 0.1 mi**
Type A	60.0- less than 70.0	-$100
	70.0- less than 75.0	-$250
	75.0- less than 80.0	-$350
	80.0- less than 85.0	-$450
	85.0- less than 95.0	-$550
	> 95.0	Corrective Work
Type B	70.0- less than 75.0	-$100
	75.0- less than 80.0	-$200
	80.0- less than 85.0	-$300
	85.0- less than 95.0	-$400
	> 95.0	Corrective Work
Type C (pre-paving MRI < 125)	75.0- less than 80.0	-$50
	80.0- less than 85.0	-$100
	85.0- less than 90.0	-$150
	90.0- less than 100.0	-$200
	>100.0	-$250

TABLE 401.03-5 –SMOOTHNESS PAY DISINCENTIVES FOR PERCENT IMPROVEMENT		
Category	**Percent Improvement %**	**Pay Adjustment $ per 0.1 mi**
Type C (pre-paving MRI > 125)	≥ 40	$0
	20.0- less than 40.0	-$100
	< 20	-$200

(c) Incentives will not apply to areas where payment deductions or remedial repairs has been made for non-compliant work, e.g., low compaction, thin pavement, thermal segregation, low compressive or flexural strength, non-compliant alignment. Incentives will also not apply to areas where corrective work was required to meet contract

smoothness requirements, unless the pavement section was replaced. All areas where corrective work was performed shall be tested again to ensure the smoothness requirements are met.

(d) There will be no incentive price adjustments to the contract prices regardless of the pavement meeting the Contract Documents' requirements for incentive contract price adjustment, when 25% of the total area paved of that particular type of pavement on the project has failed to meet any of the Contract document requirements, e.g., smoothness, thickness, unit weight, asphalt content, pavement defects, compaction, flexural or compressive strength. Areas exempt from the smoothness requirements may not be included in the total area calculation unless it is non-compliant.

(e) For contracts using lump sum the method described in Subsection 104.06 Methods of Price Adjustment paragraph (3), will be used to calculated proportionate unit price, i.e., the Engineer's calculated theoretical unit price. This calculated proportionate unit price will be used to calculate the unit price adjustment.

401.04 Measurement.

(A) The Engineer will measure HMA and PMA pavement per ton in accordance with the Contract Documents.

(B) The Engineer will measure Pavement Smoothness Incentive from an allowance.

(C) Engineer will measure additional State pavement profiling work when applicable on a cost-plus basis as specified in this section and as ordered by Engineer. The Engineer will issue a billing for the pavement profile work done for the time period with the invoices and receipts that the billing was based on attached to the Contractor for each contract item. The Contractor's pavement profile work required in this section will not be measured and will be considered incidental to the various paving items unless stated otherwise.

401.05 Payment. The Engineer will pay for the accepted HMA and PMA pavement at the contract price per pay unit, as shown in the proposal schedule. Payment will be full compensation for the work prescribed in this section and the contract documents.

(A) Price and payment in Section 401 – Hot Mix Asphalt (HMA) Pavement will be full compensation for all work and materials specified in this Section

including furnishing all labor, materials, tools, equipment, testing, pavement profiles and incidentals and for doing all work involved in grinding existing or new pavement, removing residue, and cleaning the pavement, including necessary disposal of residue and furnishing any water or air used in cleaning the pavement and remedial work needed to conform to the requirements of the Contract Documents.

(B) No payment for the Contractor's pavement profile work required in this section will be made. The Contractor's pavement profile work shall be considered incidental to the various paving items unless stated otherwise.

(C) Engineer will pay or deduct for the following pay items when included in proposal schedule:

Pay Item	**Pay Unit**
Pavement Smoothness Incentive	Allowance
HMA Pavement, Mix No. IV	Ton
HMA Pavement, Mix No. V	Ton
PMA Pavement, Mix No. IV with PG 64E-22	Ton

(1) 70% of the contract unit price or the theoretical calculated unit price upon completion of submitting a job-mix formula acceptable to the Engineer; preparing the surface, spreading, and finishing the mixture; and compacting the mixture.

(2) 20% of the contract unit price or the theoretical calculated unit price upon completion of cutting samples from the compacted pavement for testing; placing and compacting the sampled area with new material conforming to the surrounding area; protecting the pavement; and compaction acceptance. Maintain temporary pavement markings and other temporary work zone items, maintain a clean work site.

(3) 10% of the contract unit price or calculate the unit price when the final configuration of the pavement markings is in place.

Emulsified Asphalt – Low Tracking Bond Coat (LTBC)	Square Yard

The Engineer will pay for adjusting existing frames and covers and valve boxes in accordance with and under Section 604 – Manholes, Inlets and Catch Basins. Adjustments for existing street survey monument frames and covers will be paid for as if each were a valve box frame and cover.

The Engineer may, at his sole discretion, use the sliding scale factor as specified in Table 401.05-1 – Sliding Scale Pay Factor for Compaction to accept HMA pavements compacted between 90.0 percent and 98.0 percent. If the sliding scale factor is used, the Engineer will make payment for the material in that production day at a reduced price by multiplying the contract unit price by the pay factor. The Engineer is not obligated to allow non-compliant work to remain in place and may choose to require removal of the pavement that is less than 93.0 percent or greater than 97.0 percent.

Removal of non-compliant pavement shall be in accordance with Subsection 105.12 Removal of Non-Conforming and Unauthorized Work.

Table 401.05-1 – Sliding Scale Pay Factor for Compaction

Percent Compaction	Percent of Quantity Paid
> 98.0	Removal
>97.0 - 98.0	95
93.0- 97.0	100
90.0 - <93.0	80
<90.0	Removal

END OF SECTION 401”

Amend Section 629 – Pavement Markings to read as follows:

"SECTION 629 - PAVEMENT MARKINGS

629.01 Description. This section describes furnishing, installing, and removing pavement markings.

629.02 Materials.

White and Yellow Traffic Paint	755.01
Pavement Markers	755.02
Adhesives for Pavement Markers	755.03
Preformed Pavement Marking Tape	755.04
Retroreflective Thermoplastic Compound Pavement Markings	755.05

Pavement markers shall be of uniform composition, free from surface irregularities, and free from other physical damage or defects that affect appearance or performance, or both.

629.03 Construction.

(A) General. Pavement markings shall conform to most recent edition of MUTCD, and as amended; and shall be applied as indicated in the contract documents.

Establish control points and layout pavement markings.

Remove surface moisture and other materials that may adversely affect bonding before applying pavement markings.

If bituminous adhesive is used, apply pavement markers not less than 7 days after completing pavement. If epoxy adhesive is used, apply markers not less than 14 days after completing pavement.

Do not allow more than 1-inch deviation from intended alignment of longitudinal pavement markings on tangents and curves with radii greater than 5,000 feet. Do not allow more than 2-inch deviation from intended alignment of longitudinal pavement markings on curves with radii of 5,000 feet or less. Correct misalignments by removing and reinstalling misaligned portion(s), plus an additional 25-foot segment from each end, within one working day after notification of misalignment by the Engineer.

(B) Temporary Pavement Markings. Install temporary pavement markings by end of work day in accordance with Table 629.03-1 - Temporary Pavement Markings when the following conditions exist:

(1) Permanent pavement markings are not installed after completion of each day's final paving.

(2) Additional guidance through area is required.

(3) Markings for special traffic patterns are warranted.

Install temporary, solid, 6-inch pavement marking tapes on edges of traveled way for newly paved, scarified, or cold-planed surfaces, reconstructed areas, and unmarked areas. Where curbs are present at edges of traveled way, 6-inch pavement marking tapes may be eliminated.

Maintain and replace temporary pavement markings, flexible delineators, and barricades.

Remove temporary markings before installing permanent pavement markings.

Cover or temporarily remove signs that conflict with temporary pavement markings.

When pavement markings are not installed by the completion of construction operations for each day, the Engineer will suspend work and progress payment in accordance with Subsection 105.01(A) - Authority of the Engineer.

TABLE 629.03-1 TEMPORARY PAVEMENT MARKINGS

TYPE	PAVEMENT MARKINGS
Passing Permitted - Both Sides	Single 4-inch yellow stripe 5 feet in length spaced 20 feet on center with Type D markers spaced 40 feet on center and located on center of 5-foot length of stripe.
Passing Prohibited - Both Sides	Double solid 4-inch yellow stripes with Type D markers placed 20 feet on center on one of 4-inch yellow stripes selected by the Engineer.
Passing Permitted - One Side Only	Single continuous 4-inch yellow stripe with Type D markers placed on stripe 20 feet on center on no-passing

	side and single 4-inch yellow stripes 5 feet in length spaced 20 feet on center on passing side.
Lane Lines - Lane Changing Permitted	Single 4-inch yellow or white stripe 5 feet in length spaced 20 feet on center with Type C or Type D markers spaced 40 feet on center.
Lane Lines - Lane Changing Prohibited	Double solid 4-inch white stripes with Type C markers placed 20 feet on center on one of the 4-inch white stripes selected by the Engineer.
Crosswalk	Two 12-inch white transverse lines spaced 8 feet on center or as ordered by the Engineer.
Stop Line	Single 12-inch white transverse line.
Note: Paint may be used for temporary markings in areas where final paving is not complete."	

(C) Permanent Pavement Markings.

(1) Permanent Pavement Markers. Provide pavement markers conforming to shapes, dimensions, tolerances, types, uses, and layout as indicated in the contract documents.

Submit samples of pavement markers and adhesives for testing and acceptance 10 days before usage. The Engineer will sample and test pavement markers in accordance with Subsection 755.02 – Pavement Markers.

Use bituminous adhesive or standard set type epoxy adhesive to bond pavement markers to pavement.

Heat and dispense bituminous adhesive from equipment that can maintain required temperature.

When using epoxy adhesive, mix components by employing two-component type automatic mixing and extruding apparatus. Automatic mixing equipment shall use positive displacement pumps and shall properly meter components in ratio of 1:1, ± 5 percent by volume. Check ratio in presence of the Engineer at beginning of each day or as ordered by the Engineer.

Mix only standard set type adhesive manually, and do not mix more than 1 quart.

Place pavement markers within 60 seconds after mixing and extruding adhesive. No further movement of placed marker will be

allowed. Use completely each mixed batch of adhesive within 5 minutes after start of mixing. Place adhesive on pavement surface or on bottom of marker, covering entire area of contact, without voids and with uniform thickness, to produce slight excess after pressing marker in place. Place marker in position and apply pressure with slight twisting motion until firm contact is made with pavement. If adhesive cannot be readily extruded from under marker when pressure is applied, discard remaining batch of adhesive. Immediately remove excess adhesive around edge of marker, on surrounding pavement, and on exposed surfaces of markers.

Remove adhesive from exposed faces of markers, using soft rags moistened with mineral spirits conforming to MIL-PRF-680A(1) or kerosene. Other solvents will not be allowed.

Where bituminous adhesive is used, protect marker against impact until adhesive has hardened to the degree designated by the Engineer. Where epoxy adhesive is used, protect pavement markers against impact until adhesive has hardened in accordance with Table 629.03-2 – Adhesive Set Time For Epoxy Pavement Markers:

TABLE 629.03-2 - ADHESIVE SET TIME FOR EPOXY PAVEMENT MARKERS

Temperature* (Degrees F)	Standard Set Type (Hours)	Rapid Set Type (Minutes)
100	1.5	15
90	2	20
80	3	25
70	4	30
60	5	35
50	7	45
40	No application below 50 degrees F	65
30		85
20		No application

10		below 30 degrees F
*Either pavement surface temperature or ambient air temperature, whichever is lower.		

Do not use hardness of epoxy rim around marker as an indication of degree of cure.

Remove and replace pavement markers that do not meet set time requirements indicated in Table 629.03-2 - Adhesive Set Time For Epoxy Pavement Markers.

Do not install pavement markers when relative humidity is greater than 80 percent, or when pavement surface is not dry.

When using Types A and J pavement markers for delineating 10-foot lane stripes, install markers in sets of four, with no fractional sets allowed. Adjust lengths of each 10-foot stripe and each 30-foot gap for skip striping ± 1 foot, to present uniform and balanced pattern.

Do not install pavement markers over longitudinal or transverse joints of pavement surface, pavement marking tape, and thermoplastic extrusion markings.

(2) Traffic Paint. Use wheeled, manually or motor-propelled applicator machine to apply traffic paint at nominal thickness of 0.015 inch or at rate of 300 linear feet of single 4-inch stripe for 1 gallon paint. Use applicator having appropriate shields around nozzles to permit sharp stripe definition, and separate nozzle to direct air stream immediately ahead of paint application for clearing debris, dust, and other foreign matter. Immediately remove misted, dripped, and spattered paint from pavements.

Protect freshly painted pavement markings from traffic until paint will not transfer to tires or other devices.

Repair or correct pavement markings damaged by traffic and paint marks on pavement caused by traffic crossing wet paint.

(3) Thermoplastic Extrusion Pavement Marking.

(a) Equipment. Apply material to pavement by extrusion method. One side of shaping die shall be pavement surface and other three sides shall be contained by, or shall be part of

equipment for heating and controlling flow of material.

Equipment shall provide continuous mixing and agitation of material. Conveying parts of equipment shall be constructed to prevent accumulation and clogging.

Mixing and conveying parts, including shaping die, shall maintain material at plastic temperature.

Equipment shall produce continuously uniform stripe dimensions.

Applicator shall cleanly and squarely cut off stripe ends. Pans, aprons, or similar appliances that the die overruns will not be allowed.

Apply beads to entire surface of completed stripe by automatic bead dispenser attached to liner.

Equip bead dispenser with automatic cutoff control synchronized with cutoff of thermoplastic material.

Use equipment that provides for varying die widths to produce varying widths of traffic markings.

Provide kettle for melting and heating composition. Equip kettle with automatic thermoplastic control device so that heating can be done by controlled heat transfer liquid rather than direct flame.

Equip and arrange applicator and kettle in accordance with National Fire Underwriters requirements.

Use mobile and maneuverable applicator that is capable of following straight lines and making curves in true arcs.

Use applicator capable of containing minimum of 125 pounds of molten material.

(b) Application. Clean off dirt, blaze, paint, tape, and grease. Apply thermoplastic extrusion pavement marking only when pavement surface is dry.

Use equipment that can apply material in variable widths from 2 inches to 12 inches. Apply material for full width of stripe in one application or pass.

On concrete pavements, on HMA pavements more than seven days old, and on HMA pavements paved within seven days containing less than 6 percent bituminous asphalt, pre-stripe application area with binder material, primer, or prime seal coat recommended by pavement marker manufacturer.

Line thickness, as viewed from lateral cross section, shall measure not less than 90 mils at edges, and not less than 125 mils in center.

Take measurements as average throughout 36-inch sections of line. Two thousand pounds of thermoplastic materials supplied in granular or block form shall yield approximately 6,600 feet of 4-inch striping with 90-mil thickness.

Where required by the contract documents to apply new markings over existing markings, bond new line over old line so that no splitting or separation takes place during its useful life.

Provide finished lines with well-defined edges, free of waviness.

(c) Profiled marking. Profiled thermoplastic markings shall be produced in one continuous integral process consisting of an extruded base line with raised ribs positioned at regular and predetermined intervals. The product shall be available in standard widths and standard colors of white and yellow.

The base line shall consist of thermoplastic materials extruded to a thickness of not less than 100 mils nor more than 125 mils. The width of the line shall be in accordance with the plans. The edges of the lines shall be well defined and free from waviness.

The raised ribs shall be positioned at regular 36 inch intervals when measure center to center. The general shape of the ribs approximates a trapezoid when viewed from a profile aspect. The raised rib shall stand a minimum of 265 mils above the extruded base line. The length of the raised rib shall be a minimum of 2.5 inches measured at the widest portion of the crown of the rib. In addition, the ribs shall be approximately rectangular in shape.

(4) Preformed Pavement Marking Tape. Apply temporary or permanent preformed pavement marking tape manually or with tape applicators, in accordance with tape manufacturer's recommendations and the contract documents. Install preformed pavement marking tape only when pavement surface is dry.

Do not apply preformed pavement marking tape over other markings. Remove existing pavement markings and prepare surface for tape application in accordance with Subsection 629.03(A) - General.

Apply preformed pavement marking tape only when ambient air temperature is at least 60 degrees F and rising, and roadway surface temperature is at least 70 degrees F and rising. Application of preformed pavement marking tape will not be allowed when roadway surface temperature exceeds 150 degrees F.

Before applying preformed pavement marking tape, prime existing roadway surfaces with primer in accordance with tape manufacturer's recommendations.

Use tapes of specified width or use tapes of different widths to form specified stripe width. The Engineer will pay for specified width of stripe when different tape widths are used to form specified width.

Use butt splices only. Tape material shall not be overlapped.

Areas marked with preformed pavement marking tape shall be ready for traffic immediately after application.

(5) Thermoplastic Hot Spray Pavement Marking.

(a) Equipment. Use equipment constructed for preparation and application of thermoplastic hot spray pavement marking.

Equipment shall provide continuous mixing and agitation of material. Conveying parts of equipment shall be constructed to prevent accumulation and clogging.

Use applicator capable of containing minimum of 125 pounds of molten material.

Provide kettle for melting and heating composition. Equip kettle with automatic thermostat control device so that

heating can be done by controlled heat transfer liquid rather than direct flame.

Equip and arrange applicator and kettle in accordance with National Fire Underwriters requirements.

Mixing and conveying parts, including the spray gun, shall maintain material at molten temperature.

Apply beads to entire surface of completed stripe by automatic bead dispenser attached to hot spray applicator.

Equip bead dispenser with automatic cutoff control synchronized with cutoff of thermoplastic material.

Use equipment that provides for varying spray widths to produce varying widths of traffic markings.

Use mobile and maneuverable applicator that is capable of following straight lines and making curves in true arcs.

(b) Application. Clean off dirt, debris, blaze, paint, tape, and grease. Apply thermoplastic hot spray pavement marking only when pavement surface is dry.

Use equipment that can apply material in variable widths from 2 inches to 12 inches. Apply material for full width of stripe in one application or pass.

On concrete pavements, or on HMA pavements more than seven days old, or on HMA pavements paved within seven days containing less than 6 percent bituminous asphalt, pre-stripe application area with binder material, primer, or prime seal coat recommended by pavement marker's manufacturer and accepted by the Engineer.

Line thickness, as viewed from lateral cross section, shall measure not less than 90 mils at edges, and not less than 125 mils in center.

Where required by the contract documents to apply new markings over existing markings, bond new line over old line so that no splitting or separation takes place during its useful life.

Provide finished lines with well-defined edges, free of waviness.

(D) Removal of Existing Pavement Markings. Remove and dispose of existing pavement markings before performing the following activities: applying temporary or permanent traffic paint, thermoplastic extrusion pavement marking, or preformed pavement marking tape; and making changes in traffic pattern. Dispose of material in accordance with Subsection 201.03(F) - Removal and Disposal of Material. Use one of the following removal methods:

(1) Grinding. Feather edges of grinding to make smooth transition to existing roadway surface. Limit feathering to 3 inches beyond edge of existing striping to be removed. Vary feathered edges to differentiate them from traffic stripes. Coat ground asphalt pavement with rapid-setting slurry.

(2) Burning. Burn off existing painted pavement markings using excess oxygen method.

(3) Sandblasting. As work progresses, immediately remove sand and other material deposited on pavement.

(4) Other. Remove preformed pavement marking tape by methods recommended by manufacturers. Eradication of existing markings by painting over them will not be allowed.

Areas where pavement markings, temporary or permanent, have been removed, must match existing pavement, be matt, no depressions and should not look like a pavement marking when wet or the sun is low in the sky. The removal area must have the approximate appearance and friction of the existing pavement and have no trace of the previous pavement markings.

629.04 Measurement.

(A) The Engineer will measure thermoplastic and preformed pavement marking tape per linear foot in accordance with the contract documents. The longitudinal pavement markings will be measured per linear foot as a single stripe for the width specified in the contract and in the proposal. The Engineer will include the longitudinal gaps for skip striping, up to thirty (30) feet long, in the measurement.

The Engineer will measure the transverse markings by the linear foot or per each according to the contract.

The Engineer will measure crosswalk markings per lane according to the contract.

The Engineer will measure pavement arrows (single and multiple heads), symbols, and words per each according to the contract.

The Engineer will not measure temporary pavement markings including flexible delineator posts with reflector makers or Type I Barricades and temporary signs installed for the longitudinal guidance of public traffic over reconstructed areas, cold planed surfaces, newly paved surfaces or other unmarked or scarified areas for payment.

The Engineer will measure the temporary pavement markings and temporary signs installed as ordered by the Engineer for special temporary traffic patterns on a force account basis per Subsection 109.06 – Force Account Provisions and Compensation, if the contract specifies payment in the proposal.

The Contractor shall consider the work required for the removal of pavement markings incidental to the various contract items, except as provided in the proposal or elsewhere in the contract. If the contract stipulates that the Engineer will make payment for the removal of pavement markings, the Engineer will measure the removal of pavement markings.

(B) The Engineer will measure the pavement markers per each for the types shown in the proposal.

(C) The Engineer will measure the painted stripes that are twelve (12) inches wide or less as a single stripe. The Engineer will measure the painted stripes over twelve (12) inches wide as two (2) stripes. The Engineer will measure the double stripes that are twelve (12) inches or less in total width including the transverse space between the stripes as a single stripe.

The Engineer will measure the longitudinal pavement markings by the linear foot according to the contract. Longitudinal gaps for skip striping that are 30 feet or less will be included in the measurement.

629.05 Payment.

(A) The Engineer will pay for thermoplastic and preformed pavement marking tape at the contract price per linear foot according to the contract, complete in place, including primers.

The Engineer will pay for double four (4) inch striping with a four (4) inch space between stripes at the contract price per linear foot basis according to the contract.

The Engineer will pay for crosswalk markings at the contract price of per lane basis according to the contract.

The Engineer will pay for profiled thermoplastic striping at the contract price of per each basis according to the contract.

The Engineer will pay for pavement arrows (single and multiple heads), symbols, and words at the contract price per each according to the contract.

The contract unit price paid shall be full compensation for furnishing labors, materials, tools, equipment and incidentals and for doing the work involved in furnishing and installing pavement markings complete in place according to the contract.

The Engineer will not pay for the temporary pavement markings including flexible delineator posts with reflector markers or Type I Barricades and temporary signs installed for the longitudinal guidance of public traffic over reconstructed areas, cold planed surfaces, newly paved surfaces or other unmarked or scarified areas for payment if not shown in the proposal separately. The Engineer will consider them incidental to the various contract items.

If the contract specifies payment for temporary pavement markings installed as ordered by the Engineer for special temporary traffic patterns, the Engineer will pay from an allowance for "Temporary Construction Zone Markings".

The Engineer will compute the actual amount paid to the Contractor for force account work according to Subsection 109.06 – Force Account Provisions and Compensation.

If the contact specifies payment for removal of pavement markings under unit price pay items, the Engineer will pay for the accepted quantities at the contract unit prices bid. The prices shall be full compensation for removing such items according to the contract.

(B) The Engineer will pay for the various types of pavement markers at the contract price per each according to the contract, complete in place, including adhesives.

The Engineer will pay for the following pay items when included in the proposal schedule:

Pay Item	Pay Unit
Single 4-Inch White Pavement Striping (Thermoplastic Extrusion)	Linear Foot
Single 4-Inch Yellow Pavement Striping (Thermoplastic Extrusion) (Bike Lane)	Linear Foot
Single 4-Inch White Guide Line (Thermoplastic Extrusion)	Linear Foot
Double 4-Inch White Pavement Striping (Thermoplastic Extrusion)	Linear Foot
Double 4-Inch Yellow Pavement Striping (Thermoplastic Extrusion)	Linear Foot
Double 4-Inch Yellow Dashed Pavement Striping (Thermoplastic Extrusion)	Linear Foot
Single 6-Inch White Pavement Striping (Thermoplastic Extrusion)	Linear Foot
Single 6-Inch Yellow Pavement Striping (Thermoplastic Extrusion)	Linear Foot
Single 8-Inch White Pavement Striping (Thermoplastic Extrusion)	Linear Foot
Single 8-Inch White Lane Drop Marking (Thermoplastic Extrusion)	Linear Foot
Single 12-Inch White Pavement Striping (Thermoplastic Extrusion)	Linear Foot
Single 12-Inch Yellow Pavement Striping (Thermoplastic Extrusion)	Linear Foot
24-Inch Green Bicycle Crossing	Linear Foot
24-Inch Crosswalk Marking	Lane
Profiled Thermoplastic Striping (White)	Each
Profiled Thermoplastic Striping (Rumble Strip)	Each
Type C Pavement Marker	Each

Type D Pavement Marker	Each
Type F Pavement Marker (BWS Fire Hydrant Marker)	Each
Type H Pavement Marker	Each
Pavement Arrow (Thermoplastic Extrusion)	Each
Pavement Word Marking (Thermoplastic Extrusion)	Each
Pavement Symbol (Thermoplastic Extrusion) (Yield Ahead)	Each
Pavement Symbol (Thermoplastic Extrusion) (Bike Lane)	Each
Yield Line Marking	Each”

END OF SECTION 629

SECTION 630 – TRAFFIC CONTROL GUIDE SIGNS

Make the following amendment to said Section:

(I) Amend **Section 630.02 - Materials**, by replacing lines 28 to 29 to read:

"Retroreflective sheeting shall conform to criteria listed in ASTM D 4956 for the applicable type and class, or as amended in accordance with Subsection 750.01 - Signs."

(II) Amend **Section 630.04 - Measurement**, by replacing lines 204 to 221 to read:

"**630.04 Measurement.** The Engineer will measure destination and guide sign panels by the square foot of sign face.

The Engineer will measure destination and guide signs per each as indicated in the contract documents.

The Engineer will measure reinstalling existing street name signs per each as indicated in the contract documents.

When the Engineer accepts an alternative design, the method of measurement for the various contract items affected by the design shall be identical with the various original contract items shown in the contract. The Engineer will not measure the additional items that the Contractor requires for the alternate design.

The Engineer will not measure removal and disposal and storing of existing and temporary signs and markers that the Contractor will not incorporate in the completed highway for payment."

(III) Amend **630.05 – Payment** by revising lines 223 to 303 to read as follows:

"**630.05 Payment.** The Engineer will pay for destination and guide sign panels at the contract price per square foot for the type specified complete in place. Payment will be full compensation for the work prescribed in this section and the contract documents.

The Engineer will pay for destination and guide signs per each as indicated in the contract documents. Payment will be full compensation for the work prescribed in this section and the contract documents.

The Engineer will measure reinstalling existing street name signs per each as indicated in the contract documents. Payment will be full compensation for the work prescribed in this section and the contract documents.

The Engineer will not pay for removing and disposing or storing of existing and temporary signs that the Contractor will not incorporate in the completed highway separately. The Engineer will consider them incidental to the various contract items.

The Engineer will pay for the following pay items when included in the proposal schedule:

Pay Item	**Pay Unit**
Replacement of Existing Sign Panel with New Destination and Guide Sign Panels (Extruded Aluminum Panels)	Square Feet
Replacement of Existing Sign Panel with New Destination and Guide Sign Panels (Sheet Aluminum)	Square Feet
Destination Sign (10 Sq. Feet or Less) with Post	Each
Destination Sign (10 Sq. Feet or Less) without Post	Each
Destination Sign (more than 10 Sq. Feet) without Post	Each
Guide Sign – Conventional Road (10 Sq. Feet or Less) with Post	Each
Guide Sign – Conventional Road (10 Sq. Feet or Less) without Post	Each
Reinstall Existing Street Name Signs to New Post	Each

When the Engineer accepts an alternate design, the total amount paid shall be full compensation for furnishing and installing materials and furnishing equipment, tools, labors, and incidentals necessary to complete the work. The Engineer will not make payment for additional materials, equipment, tools, labor and other incidentals that might become necessary to complete the installation due to the alternate design.

END OF SECTION 630

"General Decision Number: HI20250001 01/31/2025

Superseded General Decision Number: HI20240001

State: Hawaii

Construction Types: Building, Heavy (Heavy and Dredging), Highway and Residential

Counties: Hawaii Statewide.

BUILDING CONSTRUCTION PROJECTS; RESIDENTIAL CONSTRUCTION PROJECTS (consisting of single family homes and apartments up to and including 4 stories); HEAVY AND HIGHWAY CONSTRUCTION PROJECTS AND DREDGING

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $17.75 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2025.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2025
1	01/24/2025
2	01/31/2025

ASBE0132-001 09/01/2024

	Rates	Fringes
Asbestos Workers/Insulator Includes application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems. Also the application of firestopping material for wall openings and penetrations in walls, floors, ceilings and curtain walls	$ 45.80	30.35

BOIL0627-005 01/01/2021

	Rates	Fringes
BOILERMAKER	$ 37.25	31.25

BRHI0001-001 09/05/2023

	Rates	Fringes
BRICKLAYER		
Bricklayers and Stonemasons	$ 48.03	32.23
Pointers, Caulkers and Weatherproofers	$ 48.28	32.23

BRHI0001-002 09/05/2023

	Rates	Fringes
Tile, Marble & Terrazzo Worker		
Terrazzo Base Grinders	$ 44.69	33.00
Terrazzo Floor Grinders and Tenders	$ 43.14	33.00
Tile, Marble and Terrazzo Workers	$ 46.50	33.00

CARP0745-001 10/01/2021

	Rates	Fringes
Carpenters:		
Carpenters; Hardwood Floor Layers; Patent Scaffold Erectors (14 ft. and over); Piledrivers; Pneumatic Nailers; Wood Shinglers and Transit and/or Layout Man	$ 51.25	24.84
Millwrights and Machine		

Erectors	$ 51.50	24.84
Power Saw Operators (2 h.p. and over)	$ 51.40	24.84

CARP0745-002 09/04/2023

	Rates	Fringes
Drywall and Acoustical Workers and Lathers	$ 53.00	27.74

ELEC1186-001 08/25/2024

	Rates	Fringes
Electricians:		
Cable Splicers	$ 62.77	32.46
Electricians	$ 55.55	32.25
Telecommunication worker	$ 40.00	15.50

ELEC1186-002 08/25/2024

	Rates	Fringes
Line Construction:		
Cable Splicers	$ 62.77	32.46
Groundmen/Truck Drivers	$ 41.66	26.50
Heavy Equipment Operators	$ 50.00	29.90
Linemen	$ 55.55	32.25
Telecommunication worker	$ 40.00	15.50

ELEV0126-001 01/01/2024

	Rates	Fringes
ELEVATOR MECHANIC	$ 70.90	37.885+a+b

a. VACATION: Employer contributes 8% of basic hourly rate for 5 years service and 6% of basic hourly rate for 6 months to 5 years service as vacation pay credit.

b. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, the Friday after Thanksgiving Day and Christmas Day.

ENGI0003-002 09/02/2024

	Rates	Fringes
Diver (Aqua Lung) (Scuba))		
Diver (Aqua Lung) (Scuba) (over a depth of 30 feet)	$ 78.96	36.825
Diver (Aqua Lung) (Scuba) (up to a depth of 30 feet)	$ 69.59	36.825
Stand-by Diver (Aqua Lung) (Scuba)	$ 60.21	36.825
Diver (Other than Aqua Lung)		
Diver (Other than Aqua Lung)	$ 78.96	36.825
Diver Tender (Other than Aqua Lung)	$ 57.18	36.825
Stand-by Diver (Other than Aqua Lung)	$ 60.21	36.825

Helicopter Work		
Airborne Hoist Operator for Helicopter	$ 58.76	36.825
Co-Pilot of Helicopter	$ 58.90	36.825
Pilot of Helicopter	$ 59.07	36.825
Power equipment operator - tunnel work		
GROUP 1	$ 55.20	36.825
GROUP 2	$ 55.31	36.825
GROUP 3	$ 55.48	36.825
GROUP 4	$ 55.75	36.825
GROUP 5	$ 56.06	36.825
GROUP 6	$ 56.71	36.825
GROUP 7	$ 57.03	36.825
GROUP 8	$ 57.14	36.825
GROUP 9	$ 57.25	36.825
GROUP 9A	$ 57.48	36.825
GROUP 10	$ 57.54	36.825
GROUP 10A	$ 57.69	36.825
GROUP 11	$ 57.84	36.825
GROUP 12	$ 58.20	36.825
GROUP 12A	$ 58.56	36.825
Power equipment operators:		
GROUP 1	$ 54.90	36.825
GROUP 2	$ 55.01	36.825
GROUP 3	$ 55.18	36.825
GROUP 4	$ 55.45	36.825
GROUP 5	$ 55.76	36.825
GROUP 6	$ 56.41	36.825
GROUP 7	$ 56.73	36.825
GROUP 8	$ 56.84	36.825
GROUP 9	$ 56.95	36.825
GROUP 9A	$ 57.18	36.825
GROUP 10	$ 57.24	36.825
GROUP 10A	$ 57.39	36.825
GROUP 11	$ 57.54	36.825
GROUP 12	$ 57.90	36.825
GROUP 12A	$ 58.26	36.825
GROUP 13	$ 55.18	36.825
GROUP 13A	$ 55.45	36.825
GROUP 13B	$ 55.76	36.825
GROUP 13C	$ 56.41	36.825
GROUP 13D	$ 56.73	36.825
GROUP 13E	$ 56.84	36.825

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Fork Lift (up to and including 10 tons); Partsman (heavy duty repair shop parts room when needed).

GROUP 2: Conveyor Operator (Handling building material); Hydraulic Monitor; Mixer Box Operator (Concrete Plant).

GROUP 3: Brakeman; Deckhand; Fireman; Oiler; Oiler/Gradechecker; Signalman; Switchman; Highline Cableway Signalman; Bargeman; Bunkerman; Concrete Curing Machine (self-propelled, automatically applied unit on streets, highways, airports and canals); Leveeman; Roller (5 tons and under); Tugger Hoist.

GROUP 4: Boom Truck or dual purpose ""A"" Frame Truck (5 tons or less); Concrete Placing Boom (Building Construction); Dinky Operator; Elevator Operator; Hoist and/or Winch (one drum); Straddle Truck (Ross Carrier, Hyster and similar).

GROUP 5: Asphalt Plant Fireman; Compressors, Pumps, Generators and Welding Machines (""Bank"" of 9 or more, individually or collectively); Concrete Pumps or Pumpcrete Guns; Lubrication and Service Engineer (Grease Rack); Screedman.

GROUP 6: Boom Truck or Dual Purpose ""A""Frame Truck (over 5 tons); Combination Loader/Backhoe (up to and including 3/4 cu. yd.); Concrete Batch Plants (wet or dry); Concrete Cutter, Groover and/or Grinder (self-propelled unit on streets, highways, airports, and canals); Conveyor or Concrete Pump (Truck or Equipment Mounted); Drilling Machinery (not to apply to waterliners, wagon drills or jack hammers); Fork Lift (over 10 tons); Loader (up to and including 3 and 1/2 cu. yds); Lull High Lift (under 40 feet); Lubrication and Service Engineer (Mobile); Maginnis Internal Full Slab Vibrator (on airports, highways, canals and warehouses); Man or Material Hoist; Mechanical Concrete Finisher (Large Clary, Johnson Bidwell, Bridge Deck and similar); Mobile Truck Crane Driver; Portable Shotblast Concrete Cleaning Machine; Portable Boring Machine (under streets, highways, etc.); Portable Crusher; Power Jumbo Operator (setting slip forms, etc., in tunnels); Rollers (over 5 tons); Self-propelled Compactor (single engine); Self-propelled Pavement Breaker; Skidsteer Loader with attachments; Slip Form Pumps (Power driven by hydraulic, electric, air, gas, etc., lifting device for concrete forms); Small Rubber Tired Tractors; Trencher (up to and including 6 feet); Underbridge Personnel Aerial Platform (50 feet of platform or less).

GROUP 7: Crusher Plant Engineer, Dozer (D-4, Case 450, John Deere 450, and similar); Dual Drum Mixer, Extend Lift; Hoist and/or Winch (2 drums); Loader (over 3 and 1/2 cu. yds. up to and including 6 yards.); Mechanical Finisher or Spreader Machine (asphalt), (Barber Greene and similar) (Screedman required); Mine or Shaft Hoist; Mobile Concrete Mixer (over 5 tons); Pipe Bending Machine (pipelines only); Pipe Cleaning Machine (tractor propelled and supported); Pipe Wrapping Machine (tractor propelled and supported); Roller Operator (Asphalt); Self-Propelled Elevating Grade Plane; Slusher Operator; Tractor (with boom) (D-6, or similar); Trencher (over 6 feet and less than 200 h.p.); Water Tanker (pulled by Euclids, T-Pulls, DW-10, 20 or 21, or similar); Winchman (Stern Winch on Dredge).

GROUP 8: Asphalt Plant Operator; Barge Mate (Seagoing); Cast-in-Place Pipe Laying Machine; Concrete Batch Plant (multiple units); Conveyor Operator (tunnel); Deckmate; Dozer (D-6 and similar); Finishing Machine Operator (airports and highways); Gradesetter; Kolman Loader (and similar); Mucking Machine (Crawler-type); Mucking Machine (Conveyor-type); No-Joint Pipe Laying Machine; Portable Crushing and Screening Plant; Power Blade Operator (under 12); Saurman Type Dragline (up to and including 5 yds.); Stationary Pipe Wrapping, Cleaning and Bending Machine; Surface Heater and Planer Operator, Tractor (D-6 and similar); Tri-Batch Paver; Tunnel Badger; Tunnel Mole and/or Boring Machine Operator Underbridge Personnel Aerial Platform (over 50 feet of platform).

GROUP 9: Combination Mixer and Compressor (gunite); Do-Mor Loaderand Adams Elegrader; Dozer (D-7 or equal); Wheel

and/or Ladder Trencher (over 6 feet and 200 to 749 h.p.).

GROUP 9A: Dozer (D-8 and similar); Gradesetter (when required by the Contractor to work from drawings, plans or specifications without the direct supervision of a foreman or superintendent); Push Cat; Scrapers (up to and including 20 cu. yds); Self-propelled Compactor with Dozer; Self-Propelled, Rubber-Tired Earthmoving Equipment (up to and including 20 cu. yds) (621 Band and similar); Sheep's Foot; Tractor (D-8 and similar); Tractors with boom (larger than D-6, and similar).

GROUP 10: Chicago Boom; Cold Planers; Heavy Duty Repairman or Welder; Hoist and/or Winch (3 drums); Hydraulic Skooper (Koehring and similar); Loader (over 6 cu. yds. up to and including 12 cu. yds.); Saurman type Dragline (over 5 cu. yds.); Self-propelled, rubber-tired Earthmoving Equipment (over 20 cu. yds. up to and including 31 cu. yds.) (637D and similar); Soil Stabilizer (P & H or equal); Sub-Grader (Gurries or other automatic type); Tractors (D-9 or equivalent, all attachments); Tractor (Tandem Scraper); Watch Engineer.

GROUP 10A: Boat Operator; Cable-operated Crawler Crane (up to and including 25 tons); Cable-operated Power Shovel, Clamshell, Dragline and Backhoe (up to and including 1 cu. yd.); Dozer D9-L; Dozer (D-10, HD41 and similar) (all attachments); Gradall (up to and including 1 cu. yd.); Hydraulic Backhoe (over 3/4 cu. yds. up to and including 2 cu. yds.); Mobile Truck Crane Operator (up to and including 25 tons) (Mobile Truck Crane Driver Required); Self-propelled Boom Type Lifting Device (Center Mount) (up to and including 25 tons) (Grove, Drott, P&H, Pettibone and similar; Trencher (over 6 feet and 750 h.p. or more); Watch Engineer (steam or electric).

GROUP 11: Automatic Slip Form Paver (concrete or asphalt); Band Wagon (in conjunction with Wheel Excavator); Cable-operated Crawler Cranes (over 25 tons but less than 50 tons); Cable-operated Power Shovel, Clamshell, Dragline and Backhoe (over 1 cu. yd. up to 7 cu. yds.); Gradall (over 1 cu. yds. up to 7 cu. yds.); DW-10, 20, etc. (Tandem); Earthmoving Machines (multiple propulsion power units and 2 or more Scrapers) (up to and including 35 cu. yds.,"" struck"" m.r.c.); Highline Cableway; Hydraulic Backhoe (over 2 cu. yds. up to and including 4 cu. yds.); Leverman; Lift Slab Machine; Loader (over 12 cu. yds); Master Boat Operator; Mobile Truck Crane Operator (over 25 tons but less than 50 tons); (Mobile Truck Crane Driver required); Pre-stress Wire Wrapping Machine; Self-propelled Boom-type Lifting Device (Center Mount) (over 25 tons m.r.c); Self-propelled Compactor (with multiple-propulsion power units); Single Engine Rubber Tired Earthmoving Machine (with Tandem Scraper); Tandem Cats; Trencher (pulling attached shield).

GROUP 12: Clamshell or Dipper Operator; Derricks; Drill Rigs; Multi-Propulsion Earthmoving Machines (2 or more Scrapers) (over 35 cu. yds ""struck""m.r.c.); Operators (Derricks, Piledrivers and Cranes); Power Shovels and Draglines (7 cu. yds. m.r.c. and over); Self-propelled rubber-tired Earthmoving equipment (over 31 cu. yds.) (657B and similar); Wheel Excavator (up to and including 750 cu. yds. per hour); Wheel Excavator (over 750 cu. yds. per hour).

GROUP 12A: Dozer (D-11 or similar or larger); Hydraulic Excavators (over 4 cu. yds.); Lifting cranes (50 tons and over); Pioneering Dozer/Backhoe (initial clearing and excavation for the purpose of providing access for other equipment where the terrain worked involves 1-to-1 slopes that are 50 feet in height or depth, the scope of this work does not include normal clearing and grubbing on usual hilly terrain nor the excavation work once the access is provided); Power Blade Operator (Cat 12 or equivalent or over); Straddle Lifts (over 50 tons); Tower Crane, Mobile; Traveling Truss Cranes; Universal, Liebher, Linden, and similar types of Tower Cranes (in the erection, dismantling, and moving of equipment there shall be an additional Operating Engineer or Heavy Duty Repairman); Yo-Yo Cat or Dozer.

GROUP 13: Truck Driver (Utility, Flatbed, etc.)

GROUP 13A: Dump Truck, 8 cu.yds. and under (water level); Water Truck (up to and including 2,000 gallons).

GROUP 13B: Water Truck (over 2,000 gallons); Tandem Dump Truck, over 8 cu. yds. (water level).

GROUP 13C: Truck Driver (Semi-trailer. Rock Cans, Semi-Dump or Roll-Offs).

GROUP 13D: Truck Driver (Slip-In or Pup).

GROUP 13E: End Dumps, Unlicensed (Euclid, Mack, Caterpillar or similar); Tractor Trailer (Hauling Equipment); Tandem Trucks hooked up to Trailer (Hauling Equipment)

BOOMS AND/OR LEADS (HOURLY PREMIUMS):

The Operator of a crane (under 50 tons) with a boom of 80 feet or more (including jib), or of a crane (under 50 tons) with leads of 100 feet or more, shall receive a per hour premium for each hour worked on said crane (under 50 tons) in accordance with the following schedule:

Booms of 80 feet up to but not including 130 feet or Leads of 100 feet up to but not including 130 feet	0.50
Booms and/or Leads of 130 feet up to but not including 180 feet	0.75
Booms and/or Leads of 180 feet up to and including 250 feet	1.15
Booms and/or Leads over 250 feet	1.50

The Operator of a crane (50 tons and over) with a boom of 180 feet or more (including jib) shall receive a per hour premium for each hour worked on said crane (50 tons and over) in accordance with the following schedule:

Booms of 180 feet up to and including 250 feet	1.25
Booms over 250 feet	1.75

	Rates	Fringes
Dredging: (Boat Operators)		
Boat Deckhand	$ 55.18	36.70
Boat Operator	$ 57.39	36.70
Master Boat Operator	$ 57.54	36.70
Dredging: (Clamshell or Dipper Dredging)		
GROUP 1	$ 57.90	36.70
GROUP 2	$ 57.24	36.70
GROUP 3	$ 56.84	36.70
GROUP 4	$ 55.18	36.70
Dredging: (Derricks)		
GROUP 1	$ 57.90	36.70
GROUP 2	$ 57.24	36.70
GROUP 3	$ 56.84	36.70
GROUP 4	$ 55.18	36.70
Dredging: (Hydraulic Suction Dredges)		
GROUP 1	$ 57.54	36.70
GROUP 2	$ 57.39	36.70
GROUP 3	$ 57.24	36.70
GROUP 4	$ 57.18	36.70
GROUP 5	$ 37.88	26.76
Group 5	$ 56.84	36.70
GROUP 6	$ 37.77	26.76
Group 6	$ 56.73	36.70
GROUP 7	$ 36.22	26.76
Group 7	$ 55.18	36.70

CLAMSHELL OR DIPPER DREDGING CLASSIFICATIONS

GROUP 1: Clamshell or Dipper Operator.
GROUP 2: Mechanic or Welder; Watch Engineer.
GROUP 3: Barge Mate; Deckmate.
GROUP 4: Bargeman; Deckhand; Fireman; Oiler.

HYDRAULIC SUCTION DREDGING CLASSIFICATIONS

GROUP 1: Leverman.
GROUP 2: Watch Engineer (steam or electric).
GROUP 3: Mechanic or Welder.
GROUP 4: Dozer Operator.
GROUP 5: Deckmate.
GROUP 6: Winchman (Stern Winch on Dredge)
GROUP 7: Deckhand (can operate anchor scow under direction of Deckmate); Fireman; Leveeman; Oiler.

DERRICK CLASSIFICATIONS

GROUP 1: Operators (Derricks, Piledrivers and Cranes).
GROUP 2: Saurman Type Dragline (over 5 cubic yards).
GROUP 3: Deckmate; Saurman Type Dragline (up to and including 5 yards).
GROUP 4: Deckhand, Fireman, Oiler.

ENGI0003-044 09/02/2024

	Rates	Fringes
Power Equipment Operators (PAVING)		

Asphalt Concrete Material Transfer	$ 55.88	37.32
Asphalt Plant Operator	$ 56.31	37.32
Asphalt Raker	$ 54.92	37.32
Asphalt Spreader Operator	$ 56.40	37.32
Cold Planer	$ 56.71	37.32
Combination Loader/Backhoe (over 3/4 cu.yd.)	$ 54.92	37.32
Combination Loader/Backhoe (up to 3/4 cu.yd.)	$ 53.94	37.32
Concrete Saws and/or Grinder (self-propelled unit on streets, highways, airports and canals)	$ 55.88	37.32
Grader	$ 56.71	37.32
Laborer, Hand Roller	$ 54.42	37.32
Loader (2 1/2 cu. yds. and under)	$ 55.88	37.32
Loader (over 2 1/2 cu. yds. to and including 5 cu. yds.)	$ 56.20	37.32
Roller Operator (five tons and under)	$ 54.65	37.32
Roller Operator (over five tons)	$ 56.08	37.32
Screed Person	$ 55.88	37.32
Soil Stabilizer	$ 56.71	37.32

IRON0625-001 09/01/2024

	Rates	Fringes
Ironworkers:	$ 48.00	41.86

a. Employees will be paid $.50 per hour more while working in tunnels and coffer dams; $1.00 per hour more when required to work under or are covered with water (submerged) and when they are required to work on the summit of Mauna Kea, Mauna Loa or Haleakala.

LABO0368-001 09/02/2024

	Rates	Fringes
Laborers:		
Driller	$ 44.75	25.96
Final Clean Up	$ 31.40	21.37
Gunite/Shotcrete Operator and High Scaler	$ 42.25	25.96
Laborer I	$ 41.75	25.96
Laborer II	$ 39.15	25.96
Mason Tender/Hod Carrier	$ 42.25	25.96
Powderman	$ 42.75	25.96
Window Washer (bosun chair)	$ 41.25	25.96

LABORERS CLASSIFICATIONS

Laborer I: Air Blasting run by electric or pneumatic compressor; Asphalt Laborer, Ironer, Raker, Luteman, and Handroller, and all types of Asphalt Spreader Boxes; Asphalt Shoveler; Assembly and Installation of Multiplates, Liner Plates, Rings, Mesh, Mats; Batching Plant (portable and temporary); Boring Machine Operator (under streets and sidewalks); Buggymobile; Burning and Welding; Chainsaw, Faller, Logloader, and Bucker; Compactors (Jackson Jumping

Jack and similar); Concrete Bucket Dumpman; Concrete Chipping; Concrete Chuteman/Hoseman (pouring concrete) (the handling of the chute from ready-mix trucks for such jobs as walls, slabs, decks, floors, foundations, footings, curbs, gutters, and sidewalks); Concrete Core Cutter (Walls, Floors, and Ceiling); Concrete Grinding or Sanding; Concrete: Hooking on, signaling, dumping of concrete for treme work over water on caissons, pilings, abutments, etc.; Concrete: Mixing, handling, conveying, pouring, vibrating, otherwise placing of concrete or aggregates or by any other process; Concrete: Operation of motorized wheelbarrows or buggies or machines of similar character, whether run by gas, diesel, or electric power; Concrete Placement Machine Operator: operation of Somero Hammerhead, Copperheads, or similar machines; Concrete Pump Machine (laying, coupling, uncoupling of all connections and cleaning of equipment); Concrete and/or Asphalt Saw (Walking or Handtype) (cutting walls or flatwork) (scoring old or new concrete and/or asphalt) (cutting for expansion joints) (streets and ways for laying of pipe, cable or conduit for all purposes); Concrete Shovelers/Laborers (Wet or Dry); Concrete Screeding for Rough Strike-Off: Rodding or striking-off, by hand or mechanical means prior to finishing; Concrete Vibrator Operator; Coring Holes: Walls, footings, piers or other obstructions for passage of pipes or conduits for any purpose and the pouring of concrete to secure the hole; Cribbers, Shorer, Lagging, Sheeting, and Trench Jacking and Bracing, Hand-Guided Lagging Hammer Whaling Bracing; Curbing (Concrete and Asphalt); Curing of Concrete (impervious membrane and form oiler) mortar and other materials by any mode or method; Cut Granite Curb Setter (setting, leveling and grouting of all precast concrete or stone curbs); Cutting and Burning Torch (demolition); Dri Pak-It Machine; Environmental Abatement: removal of asbestos, lead, and bio hazardous materials (EPA and/or OSHA certified); Falling, bucking, yarding, loading or burning of all trees or timber on construction site; Forklift (9 ft. and under); Gas, Pneumatic, and Electric tools; Grating and Grill work for drains or other purposes; Green Cutter of concrete or aggregate in any form, by hand, mechanical means, grindstone or air and/or water; Grout: Spreading for any purpose; Guinea Chaser (Grade Checker) for general utility trenches, sitework, and excavation; Headerboard Man (Asphalt or Concrete); Heat Welder of Plastic (Laborers' AGC certified workers) (when work involves waterproofing for waterponds, artificial lakes and reservoir) heat welding for sewer pipes and fusion of HDPE pipes; Heavy Highway Laborer (Rigging, signaling, handling, and installation of pre-cast catch basins, manholes, curbs and gutters); High Pressure Nozzleman - Hydraulic Monitor (over 100# pressure); Jackhammer Operator; Jacking of slip forms: All semi and unskilled work connected therewithin; Laying of all multi-cell conduit or multi-purpose pipe; Magnesite and Mastic Workers (Wet or Dry)(including mixer operator);Mortar Man; Mortar Mixer (Block, Brick, Masonry, and Plastering); Nozzleman (Sandblasting and/or Water Blasting): handling, placing and operation of nozzle; Operation, Manual or Hydraulic jacking of shields and the use of such other mechanical equipment as may be necessary; Pavement Breakers; Paving, curbing and surfacing of streets, ways, courts, under and overpasses, bridges, approaches, slope walls, and all other labor connected therewith; Pilecutters; Pipe Accessment in place, bolting and lining up of sectional metal or other pipe including

corrugated pipe; Pipelayer performing all services in the laying and installation of pipe from the point of receiving pipe in the ditch until completion of operation, including any and all forms of tubular material, whether pipe, HDPE, metallic or non-metallic, conduit, and any other stationary-type of tubular device used for conveying of any substance or element, whether water, sewage, solid, gas, air, or other product whatsoever and without regard to the nature of material from which tubular material is fabricated; No-joint pipe and stripping of same, Pipewrapper, Caulker, Bander, Kettlemen, and men applying asphalt, Laykold, treating Creosote and similar-type materials (6-inch) pipe and over); Piping: resurfacing and paving of all ditches in preparation for laying of all pipes; Pipe laying of lateral sewer pipe from main or side sewer to buildings or structure (except Contactor may direct work be done under proper supervision); Pipe laying, leveling and marking of the joint used for main or side sewers and storm sewers; Laying of all clay, terra cotta, ironstone, vitrified concrete, HDPE or other pipe for drainage; Placing and setting of water mains, gas mains and all pipe including removal of skids; Plaster Mortar Mixer/Pump; Pneumatic Impact Wrench; Portable Sawmill Operation: Choker setters, off bearers, and lumber handlers connected with clearing; Posthole Digger (Hand Held, Gas, Air and Electric); Powderman's Tender; Power Broom Sweepers (Small); Preparation and Compaction of roadbeds for railroad track laying, highway construction, and the preparation of trenches, footings, etc., for cross-country transmission by pipelines, electrical transmission or underground lines or cables (by mechanical means); Raising of structure by manual or hydraulic jacks or other methods and resetting of structure in new locations, including all concrete work; Ramming or compaction; Rigging in connection with Laborers' work (except demolition), Signaling (including the use of walkie talkie) Choke Setting, tag line usage; Tagging and Signaling of building materials into high rise units; Riprap, Stonepaver, and Rock Slinger (includes placement of stacked concrete, wet or dry and loading, unloading, signaling, slinging and setting of other similar materials); Rotary Scarifier (including multiple head concrete chipping Scarifier); Salamander Heater, Drying of plaster, concrete mortar or other aggregate; Scaffold Erector Leadman; Scaffolds: (Swing and hanging) including maintenance thereof; Scaler; Septic Tank/Cesspool and Drain Fields Digger and Installer; Shredder/Chipper (tree branches, brush, etc.); Stripping and Setting Forms; Stripping of Forms: Other than panel forms which are to be re-used in their original form, and stripping of forms on all flat arch work; Tampers (Barko, Wacker, and similar type); Tank Scaler and Cleaners; Tarman; Tree Climbers and Trimmers; Trencher (includes hand-held, Davis T-66 and similar type); Trucks (flatbed up to and including 2 1/2 tons when used in connection with on-site Laborers'work; Trucks (Refuse and Garbage Disposal) (from job site to dump); Vibra-Screed (Bull Float in connection with Laborers' work); Well Points, Installation of or any other dewatering system.

Laborer II: Asphalt Plant Laborer; Boring Machine Tender; Bridge Laborer; Burning of all debris (crates, boxes, packaging waste materials); Chainman, Rodmen, and Grade Markers; Cleaning, clearing, grading and/or removal for streets, highways, roadways, aprons, runways, sidewalks,

parking areas, airports, approaches, and other similar installations; Cleaning or reconditioning of streets, ways, sewers and waterlines, all maintenance work and work of an unskilled and semi-skilled nature; Concrete Bucket Tender (Groundman) hooking and unhooking of bucket; Concrete Forms; moving, cleaning, oiling and carrying to the next point of erection of all forms; Concrete Products Plant Laborers; Conveyor Tender (conveying of building materials); Crushed Stone Yards and Gravel and Sand Pit Laborers and all other similar plants; Demolition, Wrecking and Salvage Laborers: Wrecking and dismantling of buildings and all structures, with use of cutting or wrecking tools, breaking away, cleaning and removal of all fixtures, All hooking, unhooking, signaling of materials for salvage or scrap removed by crane or derrick; Digging under streets, roadways, aprons or other paved surfaces; Driller's Tender; Chuck Tender, Outside Nipper; Dry-packing of concrete (plugging and filling of she-bolt holes); Fence and/or Guardrail Erector: Dismantling and/or re-installation of all fence; Finegrader; Firewatcher; Flagman (Coning, preparing, stablishing and removing portable roadway barricade devices); Signal Men on all construction work defined herein, including Traffic Control Signal Men at construction site; General Excavation; Backfilling, Grading and all other labor connected therewith; Digging of trenches, ditches and manholes and the leveling, grading and other preparation prior to laying pipe or conduit for any purpose; Excavations and foundations for buildings, piers, foundations and holes, and all other construction. Preparation of street ways and bridges; General Laborer: Cleaning and Clearing of all debris and surplus material. Clean-up of right-of-way. Clearing and slashing of brush or trees by hand or mechanical cutting. General Clean up: sweeping, cleaning, wash-down, wiping of construction facility and equipment (other than ""Light Clean up (Janitorial) Laborer. Garbage and Debris Handlers and Cleaners. Appliance Handling (job site) (after delivery unlading in storage area); Ground and Soil Treatment Work (Pest Control); Gunite/Shotcrete Operator Tender; Junk Yard Laborers (same as Salvage Yard); Laser Beam ""Target Man"" in connection with Laborers' work; Layout Person for Plastic (when work involves waterproofing for waterponds, artificial lakes and reservoirs); Limbers, Brush Loaders, and Pilers; Loading, Unloading, carrying, distributing and handling of all rods and material for use in reinforcing concrete construction (except when a derrick or outrigger operated by other than hand power is used); Loading, unloading, sorting, stockpiling, handling and distribution of water mains, gas mains and all pipes; Loading and unloading of all materials, fixtures, furnishings and appliances from point of delivery to stockpile to point of installation; hooking and signaling from truck, conveyance or stockpile; Material Yard Laborers; Pipelayer Tender; Pipewrapper, Caulker, Bander, Kettlemen, and men applying asphalt, Laykold, Creosote, and similar-type materials (pipe under 6 inches); Plasterer Laborer; Preparation, construction and maintenance of roadbeds and sub-grade for all paving, including excavation, dumping, and spreading of sub-grade material; Prestressed or precast concrete slabs, walls, or sections: all loading, unloading, stockpiling, hooking on of such slabs, walls or sections; Quarry Laborers; Railroad, Streetcar, and Rail Transit Maintenance and Repair; Roustabout; Rubbish Trucks in connection with Building Construction Projects (excluding clearing,

grubbing, and excavating); Salvage Yard: All work connected with cutting, cleaning, storing, stockpiling or handling of materials, all cleanup, removal of debris, burning, back-filling and landscaping of the site; Sandblasting Tender (Pot Tender): Hoses and pots or markers; Scaffolds: Erection, planking and removal of all scaffolds used for support for lathers, plasters, brick layers, masons, and other construction trades crafts; Scaffolds: (Specially designed by carpenters) laborers shall tend said carpenter on erection and dismantling thereof, preparation for foundation or mudsills, maintenance; Scraping of floors; Screeds: Handling of all screeds to be reused; handling, dismantling and conveyance of screeds; Setting, leveling and securing or bracing of metal or other road forms and expansion joints; Sheeting Piling/trench shoring (handling and placing of skip sheet or wood plank trench shoring); Ship Scalers; Shipwright Tender; Sign Erector (subdivision traffic, regulatory, and street-name signs); Sloper; Slurry Seal Crews (Mixer Operator, Applicator, Squeegee Man, Shuttle Man, Top Man); Snapping of wall ties and removal of tie rods; Soil Test operations of semi and unskilled labor such as filling sand bags; Striper (Asphalt, Concrete or other Paved Surfaces); Tool Room Attendant (Job Site); Traffic Delineating Device Applicator; Underpinning, lagging, bracing, propping and shoring, loading, signaling, right-of-way clearance along the route of movement, The clearance of new site, excavation of foundation when moving a house or structure from old site to new site; Utilities employees; Water Man; Waterscape/Hardscape Laborers; Wire Mesh Pulling (all concrete pouring operations); Wrecking, stripping, dismantling and handling concrete forms an false work.

LABO0368-002 09/03/2024

	Rates	Fringes
Landscape & Irrigation Laborers		
GROUP 1	$ 28.40	17.15
GROUP 2	$ 29.40	17.15
GROUP 3	$ 23.00	17.15

LABORERS CLASSIFICATIONS

GROUP 1: Installation of non-potable permanent or temporary irrigation water systems performed for the purposes of Landscaping and Irrigation architectural horticultural work; the installation of drinking fountains and permanent or temporary irrigation systems using potable water for Landscaping and Irrigation architectural horticultural purposes only. This work includes (a) the installation of all heads, risers, valves, valve boxes, vacuum breakers (pressure and non-pressure), low voltage electrical lines and, provided such work involves electrical wiring that will carry 24 volts or less, the installation of sensors, master control panels, display boards, junction boxes, conductors, including all other components for controllers, (b) and metallic (copper, brass, galvanized, or similar) pipe, as well as PVC or other plastic pipe including all work incidental thereto, i.e., unloading, handling and distribution of all pipes fittings, tools, materials and equipment, (c) all soldering work in connection with the

above whether done by torch, soldering iron, or other means; (d) tie-in to main lines, thrust blocks (both precast and poured in place), pipe hangers and supports incidental to installation of the entire irrigation system, (e) making of pressure tests, start-up testing, flushing, purging, water balancing, placing into operation all irrigation equipment, fixtures and appurtenances installed under this agreement, and (f) the fabrication, replacement, repair and servicing oflandscaping and irrigation systems. Operation of hand-held gas, air, electric, or self-powered tools and equipment used in the performance of Landscape and Irrigation work in connection with architectural horticulture; Choke-setting, signaling, and rigging for equipment operators on job-site in the performance of such Landscaping and Irrigation work; Concrete work (wet or dry) performed in connection with such Landscaping and Irrigation work. This work shall also include the setting of rock, stone, or riprap in connection with such Landscape, Waterscape, Rockscape, and Irrigation work; Grubbing, pick and shovel excavation, and hand rolling or tamping in connection with the performance of such Landscaping and Irrigation work; Sprigging, handseeding, and planting of trees, shrubs, ground covers, and other plantings and the performance of all types of gardening and horticultural work relating to said planting; Operation of flat bed trucks (up to and including 2 1/2 tons).:

GROUP 2. Layout of irrigation and other non-potable irrigation water systems and the layout of drinking fountains and other potable irrigation water systems in connection with such Landscaping and Irrigation work. This includes the layout of all heads, risers, valves, valve boxes, vacuum breakers, low voltage electrical lines, hydraulic and electrical controllers, and metallic (coppers, brass, galvanized, or similar) pipe, as well as PVC or other plastic pipe. This work also includes the reading and interpretation of plans and specifications in connection with the layout of Landscaping, Rockscape, Waterscape, and Irrigation work; Operation of Hydro-Mulching machines (sprayman and driver), Drillers, Trenchers (riding type, Davis T-66, and similar) and fork lifts used in connection with the performance of such Landscaping and Irrigation work; Tree climbers and chain saw tree trimmers, Sporadic operation (when used in connection with Landscaping, Rockscape, Waterscape, and Irrigation work) of Skid-Steer Loaders (Bobcat and similar), Cranes (Bantam, Grove, and similar), Hoptos, Backhoes, Loaders, Rollers, and Dozers (Case, John Deere, and similar), Water Trucks, Trucks requiring a State of Hawaii Public Utilities Commission Type 5 and/or type 7 license, sit-down type and ""gang"" mowers, and other self-propelled, sit-down operated machines not listed under Landscape & Irrigation Maintenance Laborer; Chemical spraying using self-propelled power spraying equipment (200 gallon capacity or more).

GROUP 3: Maintenance of trees, shrubs, ground covers, lawns and other planted areas, including the replanting of trees, shrubs, ground covers, and other plantings that did not ""take"" or which are damaged; provided, however, that re-planting that requires the use of equipment, machinery, or power tools shall be paid for at the rate of pay specified under Landscape and Irrigation Laborer, Group 1; Raking, mowing, trimming, and runing, including the use of

""weed eaters"", hedge trimmers, vacuums, blowers, and other hand-held gas, air, electric, or self-powered tools, and the operation of lawn mowers (Note: The operation of sit-down type and ""gang"" mowers shall be paid for at the rate of pay specified under Landscape & Irrigation Laborer, Group 2); Guywiring, staking, propping, and supporting trees; Fertilizing, Chemical spraying using spray equipment with less than 200 gallon capacity, Maintaining irrigation and sprinkler systems, including the staking, clamping, and adjustment of risers, and the adjustment and/or replacement of sprinkler heads, (Note: the cleaning and gluing of pipe and fittings shall be paid for at the rate of pay specified under Landscape & Irrigation Laborer(Group 1); Watering by hand or sprinkler system and the peformance of other types of gardening, yardman, and horticultural-related work.

LABO0368-003 09/05/2023

	Rates	Fringes
Underground Laborer		
GROUP 1	$ 41.25	24.96
GROUP 2	$ 42.75	24.96
GROUP 3	$ 43.25	24.96
GROUP 4	$ 44.25	24.96
GROUP 5	$ 44.50	24.96
GROUP 6	$ 44.60	24.96
GROUP 7	$ 44.85	24.96

GROUP 1: Watchmen; Change House Attendant.

GROUP 2: Swamper; Brakeman; Bull Gang-Muckers, Trackmen; Dumpmen (any method); Concrete Crew (includes rodding and spreading); Grout Crew; Reboundmen

GROUP 3: Chucktenders and Cabletenders; Powderman (Prime House); Vibratorman, Pavement Breakers

GROUP 4: Miners - Tunnel (including top and bottom man on shaft and raise work); Timberman, Retimberman (wood or steel or substitute materials thereof); Blasters, Drillers, Powderman (in heading); Microtunnel Laborer; Headman; Cherry Pickerman (where car is lifted); Nipper; Grout Gunmen; Grout Pumpman & Potman; Gunite, Shotcrete Gunmen & Potmen; Concrete Finisher (in tunnel); Concrete Screed Man; Bit Grinder; Steel Form Raisers & Setters; High Pressure Nozzleman; Nozzleman (on slick line); Sandblaster-Potman (combination work assignment interchangeable); Tugger

GROUP 5: Shaft Work & Raise (below actual or excavated ground level); Diamond Driller; Gunite or Shotcrete Nozzleman; Rodman; Groundman

GROUP 6: Shifter

GROUP 7: Shifter (Shaft Work & Raiser)

PAIN1791-001 01/01/2025

	Rates	Fringes
Painters:		

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     Brush.....................$ 43.40            30.05
     Sandblaster; Spray.......$ 43.40            30.05
----------------------------------------------------------------
 PAIN1889-001 07/01/2024

                                 Rates          Fringes

Glaziers.....................$ 46.00            39.70
----------------------------------------------------------------
 PAIN1926-001 03/05/2023

                                 Rates          Fringes

Soft Floor Layers............$ 39.77            33.80
----------------------------------------------------------------
 PAIN1944-001 01/07/2024

                                 Rates          Fringes

Taper........................$ 45.20            31.40
----------------------------------------------------------------
 PLAS0630-001 09/04/2023

                                 Rates          Fringes

PLASTERER....................$ 46.12            34.53
----------------------------------------------------------------
 PLAS0630-002 09/04/2023

                                 Rates          Fringes

Cement Masons:
     Cement Masons............$ 44.12            33.63
     Trowel Machine Operators....$ 44.27            33.63
----------------------------------------------------------------
 PLUM0675-001 01/05/2025

                                 Rates          Fringes

Plumber, Pipefitter,
Steamfitter & Sprinkler Fitter...$ 53.33            32.00
----------------------------------------------------------------
 ROOF0221-001 11/06/2022

                                 Rates          Fringes

Roofers (Including Built Up,
Composition and Single Ply)......$ 43.15            21.21
----------------------------------------------------------------
 SHEE0293-001 03/05/2023

                                 Rates          Fringes

Sheet metal worker...........$ 47.37            31.71
----------------------------------------------------------------
*  SUHI1997-002 09/15/1997

                                 Rates          Fringes

Drapery Installer............$ 13.60 **          1.20

FENCE ERECTOR (Chain Link
Fence).......................$  9.33 **          1.65
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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 ($17.75) or 13658 ($13.30). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated

rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

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END OF GENERAL DECISION"

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
201.0100	Clearing and Grubbing	5,100	S.Y.	$_____	$_____
202.0100	Removal of Concrete Curb	3,010	L.F.	$_____	$_____
202.0200	Removal of Concrete Curb and Gutter	690	L.F.	$_____	$_____
202.0300	Removal of Bridge Railing - Concrete	161	L.F.	$_____	$_____
202.0400	Removal of Bridge Railing - Metal	570	L.F.	$_____	$_____
202.0500	Removal of Guardrail, End Terminals and Attenuators	11,650	L.F.	$_____	$_____
202.0600	Removal of Signs and Single Posts	204	EA	$_____	$_____
202.0700	Removal of Signs and Double Posts	45	EA	$_____	$_____
202.0800	Removal of Signs	171	EA	$_____	$_____
202.0900	Removal of 4-Foot Chain Link Fence	60	L.F.	$_____	$_____
202.1000	Removal of Flexible Delineators	1,300	L.F.	$_____	$_____
202.1100	Removal of Steel Reflector Posts	1,600	L.F.	$_____	$_____
202.1200	Removal of Survey Monuments	23	EA	$_____	$_____
202.1000	Removal of Existing Geotextile Fabric	4,750	S.Y.	$_____	$_____
203.0100	Roadway Excavation	810	C.Y.	$_____	$_____
204.0100	Trench Excavation for Traffic Counting Station Systems	45	C.Y.	$_____	$_____
204.0200	Trench Backfill for Traffic Counting Station Systems	45	C.Y.	$_____	$_____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
209.0100	Installation, Maintenance, Monitoring, and Removal of BMP	L.S.	L.S.	L.S.	$
209.0200	Additional Water Pollution, Dust, and Erosion Control	F.A.	F.A.	F.A.	$ 100,000.00
219.0100	Hazardous Waste Remediation	F.A.	F.A.	F.A.	$ 150,000.00
301.0100	Hot Mix Asphalt Base Course	910	TON	$	$
301.0200	Hot Mix Asphalt Base Course with Polymer Modified Asphalt (PG 64E-22)	1,266	TON	$	$
314.0100	CLSM	350	C.Y.	$	$
401.0100	Pavement Smoothness Incentive	Allowance	Allowance	Allowance	$ 145,000.00
401.0200	HMA Pavement, Mix No. IV	405	TON	$	$
401.0300	HMA Pavement, Mix No. V	76	TON	$	$
401.0400	PMA Pavement, Mix No. IV with PG 64E-22	10,500	TON	$	$
401.0500	Emulsified Asphalt - Low Tracking Bond Coat (LTBC)	2,300	S.Y.	$	$
406.0100	Stone Matrix Asphalt (SMA) Pavement	190	TON	$	$
411.0100	11-inch Concrete Pavement	14	C.Y.	$	$
414.0100	Excavation of Weakened Pavement Areas	190	C.Y.	$	$
414.0200	Furnishing and Installing Geogrid (GlassGrid 8511TF)	3,300	S.Y.	$	$
414.0300	Furnishing and Installing Geogrid (PG100)	7,700	S.Y.	$	$
415.0100	Cold Planing	61,000	S.Y.	$	$

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
503.0100	Retaining Wall (Traffic Counting Station Cabinet), Max Height 5.0'	30	L.F.	$_____	$_____
503.0200	34" Type KAT Transition	32	EA	$_____	$_____
503.0300	Modified 34" Type KAT Concrete Transition	370	L.F.	$_____	$_____
503.0400	Concrete Patch on Existing Guardrail End Posts	26	EA	$_____	$_____
503.0500	34" Tall Aesthetic Concrete Bridge Rail	920	L.F.	$_____	$_____
503.0600	Type D2 End Post	3	EA	$_____	$_____
507.0100	Metal Bridge Railing	570	L.F.	$_____	$_____
507.0200	Concrete Bridge Railing	220	L.F.	$_____	$_____
512.0100	Concrete Rehabiliation of Cracks	49	L.F.	$_____	$_____
512.0200	Concrete Rehabilitation of Spalls	200	S.F.	$_____	$_____
520.0100	Bridge Joint Repair	1,110	L.F.	$_____	$_____
602.0100	Replace Reinforcing Steel	F.A.	F.A.	F.A.	$ 50,000.00
603.0100	Adjusting Storm Drain Manhole Frame and Cover	20	EA	$_____	$_____
603.0200	Clean Existing Culverts	F.A.	F.A.	F.A.	$ 75,000.00
604.0100	Cast Iron Grate 8 ¼"x1'-11 ¾"x1" (Viaduct Deck Scuppers)	5	EA	$_____	$_____
606.0100	Midwest Guardrail System, MGS	7,200	L.F.	$_____	$_____
606.0200	Midwest Guardrail System on 2:1 Fill Slope (9ft Posts)	432	L.F.	$_____	$_____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
606.0300	Thrie Beam Connection with Transition to Midwest Guardrail (25 LF Railing Replacement only)	6	EA	$_____	$_____
606.0400	Transition Section, Thrie Beam to Strong Post	1	EA	$_____	$_____
606.0500	MGS Transition to Strong Post Guardrail	10	EA	$_____	$_____
606.0600	W-Beam Guardrail (Railing only, existing posts to remain, omitted post, nested)	670	L.F.	$_____	$_____
606.0700	Thrie Beam Guardrail, Type 3 (Railing only, existing posts to remain)	650	L.F.	$_____	$_____
606.0800	Thrie Beam with 18 3/4" Post Spacing	26	L.F.	$_____	$_____
606.0900	Thrie Beam Terminal Connector	1	EA	$_____	$_____
606.1000	Thrie Beam Rounded End Section	1	EA	$_____	$_____
606.1100	W-Beam Rounded End Section	5	EA	$_____	$_____
606.1200	MSKT - SP - MGS (TL-3) End Treatment	10	EA	$_____	$_____
606.1300	RubRail	25	LF	$_____	$_____
606.1400	MGS with 18 3/4" Post Spacing	38	LF	$_____	$_____
606.1500	HSS 8x8x3/16 Block Replacement	38	LF	$_____	$_____
606.1600	Trailing-End Anchorage System	13	EA	$_____	$_____
606.1700	MAX-Tension TL-2	1	EA	$_____	$_____
606.1800	Asymmetrical Transition Section (Left) (37 1/2" Post Spacing)	4	EA	$_____	$_____
606.1900	Asymmetrical Transition Section (Right) (37 1/2" Post Spacing)	4	EA	$_____	$_____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
606.2000	MGS Long Span LSC-2	2	EA	$_____	$_____
606.2100	Guardrail Type 3 MASH Transition	32	EA	$_____	$_____
606.2200	Retro-Rail System	116	LF	$_____	$_____
606.2300	Modified Hawaii Thrie Beam Approach Guardrail Transition	3	EA	$_____	$_____
606.2400	12.5 LF Thrie Beam Guardrail	1	EA	$_____	$_____
606.2500	12.5 LF Nested Thrie Beam Guardrail	1	EA	$_____	$_____
606.2600	6.25 LF Transition Section Thrie Beam to Strong Post (Railing only, existing posts to remain)	1	EA	$_____	$_____
607.0100	6-Foot Chain Link Fence, without Toprail	45	L.F.	$_____	$_____
612.0100	Grouted Rubble Paving Type 1 (GRP1)	4,975	S.F.	$_____	$_____
612.0200	Grouted Rubble Paving Type 2 (GRP2)	3,075	S.F.	$_____	$_____
612.0300	4-inch Layer 2.5-inch Dia. Recycled Crushed Concrete or Basalt Gravel	3,770	S.F.	$_____	$_____
613.0100	Reconstructing Centerline and Reference Survey Monuments	23	EA	$_____	$_____
613.0200	Adjusting Centerline and Reference Survey Monuments	1	EA	$_____	$_____
616.0100	Temporary Irrigation System	L.S.	L.S.	L.S.	$_____
616.0200	Relocation of Sprinkler System	F.A.	F.A.	F.A.	$ 20,000.00
617.0100	Imported Planting Soil	L.S.	L.S.	L.S.	$_____
619.0100	Wilhelmina Tenney Rainbow Shower Trees	2	EA	$_____	$_____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
619.0200	Beach Naupaka Shrubs	74	EA	$_____	$_____
619.0300	Pohinahina Shrubs	5	EA	$_____	$_____
619.0400	Yellow Allamanda Shrubs	45	EA	$_____	$_____
619.0500	Hydroseed Buffel Grass	21,480	S.F.	$_____	$_____
619.0600	Wood Chip Mulch	2,500	S.F.	$_____	$_____
622.0100	Roadway Lighting System	L.S.	L.S.	L.S.	$_____
622.0200	Relocation of Highway Lighting	F.A.	F.A.	F.A.	$ 50,000.00
622.0300	Adjust Electrical Manhole	3	EA	$_____	$_____
622.0400	Adjust Hawaiian Telcom Manhole	7	EA	$_____	$_____
623.0100	Traffic Signal System	L.S.	L.S.	L.S.	$_____
626.0100	Adjusting Water Manhole Frame and Cover	26	EA	$_____	$_____
626.0200	Adjusting Water Standard Valve Box	49	EA	$_____	$_____
626.0300	Adjusting Sewer Manhole Frame and Cover	29	EA	$_____	$_____
627.0100	EVC Traffic Counting Systems	23	EA	$_____	$_____
627.0200	Restore EVC Traffic Counting Systems	3	EA	$_____	$_____
629.0100	Single 4-Inch White Pavement Striping (Thermoplastic Extrusion)	950	L.F.	$_____	$_____
629.0200	Single 4-Inch Yellow Pavement Striping (Thermoplastic Extrusion) (Bike Lane)	50	L.F.	$_____	$_____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
629.0300	Single 4-Inch White Guide Line (Thermoplastic Extrusion)	850	L.F.	$_____	$_____
629.0400	Double 4-Inch White Pavement Striping (Thermoplastic Extrusion)	100	L.F.	$_____	$_____
629.0500	Double 4-Inch Yellow Pavement Striping (Thermoplastic Extrusion)	3,100	L.F.	$_____	$_____
629.0600	Double 4-Inch Yellow Dashed Pavement Striping (Thermoplastic Extrusion)	150	L.F.	$_____	$_____
629.0700	Single 6-Inch White Pavement Striping (Thermoplastic Extrusion)	13,000	L.F.	$_____	$_____
629.0800	Single 6-Inch Yellow Pavement Striping (Thermoplastic Extrusion)	12,750	L.F.	$_____	$_____
629.0900	Single 8-Inch White Pavement Striping (Thermoplastic Extrusion)	8,400	L.F.	$_____	$_____
629.1000	Single 8-Inch White Lane Drop Marking (Thermoplastic Extrusion)	400	L.F.	$_____	$_____
629.1100	Single 12-Inch White Pavement Striping (Thermoplastic Extrusion)	1,900	L.F.	$_____	$_____
629.1200	Single 12-Inch Yellow Pavement Striping (Thermoplastic Extrusion)	100	L.F.	$_____	$_____
629.1300	24-Inch Green Bicycle Crossing	110	L.F.	$_____	$_____
629.1400	24-Inch Crosswalk Marking	85	LANE	$_____	$_____
629.1500	Profiled Thermoplastic Striping (White)	250	EA	$_____	$_____
629.1600	Profiled Thermoplastic Striping (Rumble Strip)	50	EA	$_____	$_____
629.1700	Type C Pavement Marker	1,050	EA	$_____	$_____
629.1800	Type D Pavement Marker	150	EA	$_____	$_____
629.1900	Type F Pavement Marker (BWS Fire Hydrant Marker)	40	EA	$_____	$_____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
629.2000	Type H Pavement Marker	400	EA	$_____	$_____
629.2100	Pavement Arrow (Thermoplastic Extrusion)	48	EA	$_____	$_____
629.2200	Pavement Word Marking (Thermoplastic Extrusion)	13	EA	$_____	$_____
629.2300	Pavement Symbol (Thermoplastic Extrusion) (Yield Ahead)	1	EA	$_____	$_____
629.2400	Pavement Symbol (Thermoplastic Extrusion) (Bike Lane)	4	EA	$_____	$_____
629.2500	Yield Line Marking	70	L.F.	$_____	$_____
630.0100	Replacement of Existing Sign Panel with New Destination and Guide Sign Panels (Extruded Aluminum Panels)	3,000	S.F.	$_____	$_____
630.0200	Replacement of Existing Sign Panel with New Destination and Guide Sign Panels (Sheet Aluminum)	600	S.F.	$_____	$_____
630.0300	Destination Sign (10 Sq. Feet or less) with Post	4	EA	$_____	$_____
630.0400	Destination Sign (10 Sq. Feet or less) without Post	7	EA	$_____	$_____
630.0500	Destination Sign (more than 10 Sq. Feet) without Post	10	EA	$_____	$_____
630.0600	Guide Sign - Conventional Rd. (10 Sq. Feet or less) with Post	9	EA	$_____	$_____
630.0700	Guide Sign - Conventional Rd. (10 Sq. Feet or less) without Post	26	EA	$_____	$_____
630.0800	Reinstall Existing Street Name Signs to new posts	15	EA	$_____	$_____
631.0100	Regulatory Sign (10 Sq. Feet or less) with Post	137	EA	$_____	$_____
631.0200	Regulatory Sign (10 Sq. Feet or less) without Post	209	EA	$_____	$_____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
631.0300	Regulatory Sign (more than 10 Sq. Feet) with Post	13	EA	$_____	$_____
631.0400	Regulatory Sign (more than 10 Sq. Feet) without Post	23	EA	$_____	$_____
631.0500	Warning Sign (10 Sq. Feet or less) with Post	31	EA	$_____	$_____
631.0600	Warning Sign (10 Sq. Feet or less) without Post	18	EA	$_____	$_____
631.0700	Warning Sign (more than 10 Sq. Feet) with Post	22	EA	$_____	$_____
631.0800	Warning Sign (more than 10 Sq. Feet) without Post	15	EA	$_____	$_____
631.0900	School Sign (10 Sq. Feet or less) with Post	1	EA	$_____	$_____
631.1000	School Sign (10 Sq. Feet or less) without Post	1	EA	$_____	$_____
631.1100	Miscellaneous Sign (10 Sq. Feet or less) with Post	3	EA	$_____	$_____
631.1200	Miscellaneous Sign (10 Sq. Feet or less) without Post	5	EA	$_____	$_____
631.1300	Miscellaneous Sign (more than 10 Sq. Feet) with Post	3	EA	$_____	$_____
631.1400	Miscellaneous Sign (more than 10 Sq. Feet) without Post	6	EA	$_____	$_____
632.0100	Reflector Marker RM-2 (with Flexible Post)	151	EA	$_____	$_____
632.0200	Reflector Marker RM-2 (without Post)	271	EA	$_____	$_____
632.0300	Type III Object Marker (OM1-1) without Post	27	EA	$_____	$_____
632.0400	Type III Object Marker (OM1-1) with Post	3	EA	$_____	$_____
632.0500	Type III Object Marker (OM2-2V) without Post	18	EA	$_____	$_____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
632.0600	Type III Object Marker (OM3-1L) without Post	1	EA	$_____	$_____
632.0700	Type III Object Marker (OM3-1R) with Post	7	EA	$_____	$_____
632.0800	Type III Object Marker (OM3-1R) without Post	4	EA	$_____	$_____
632.0900	Mile Post Marker (with Post)	6	EA	$_____	$_____
632.1000	Mile Post Marker (without Post)	4	EA	$_____	$_____
632.1100	Mile Post Marker with Post (Bi-directional)	1	EA	$_____	$_____
634.0100	Portland Cement Concrete Sidewalk	12	C.Y.	$_____	$_____
636.0100	Additional E-Construction Programs, additional licenses or additional equipment	F.A.	F.A.	F.A.	$ 10,000.00
638.0100	Curb, Type 2D	790	L.F.	$_____	$_____
638.0200	Concrete Gutter	356	LF	$_____	$_____
638.0300	2" Concrete Curb	74	L.F.	$_____	$_____
638.0400	HDOT Driveway Curb	440	L.F.	$_____	$_____
638.0500	HDOT Driveway Curb and Gutter	338	L.F.	$_____	$_____
638.0600	4" Curb and Gutter	15	L.F.	$_____	$_____
638.0700	0" to 4" Curb Height Transition	58	L.F.	$_____	$_____
638.0800	0" to 6" Curb Height Transition	76	L.F.	$_____	$_____
638.0900	2" Curb to 6" Curb Height Transition	70	L.F.	$_____	$_____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
638.1000	4" Curb to HDOT Driveway Curb Transition	46	L.F.	$	$
638.1100	6" Curb to HDOT Driveway Curb Transition	90	L.F.	$	$
638.1200	3" Curb and Gutter to HDOT Driveway Curb and Gutter Transition	20	L.F.	$	$
638.1300	6" Curb and Gutter to HDOT Driveway Curb and Gutter Transition	60	L.F.	$	$
638.1400	Type E Curb to HDOT Driveway Curb Transition	20	L.F.	$	$
638.1500	Type E Curb and Gutter to HDOT Driveway Curb and Gutter Transition	30	L.F.	$	$
642.0100	Plant Maintenance	14	Month	$	$
642.0200	Irrigation Maintenance	14	Month	$	$
645.0100	Traffic Control	L.S.	L.S.	L.S.	$
645.0200	Additional Police Officers, Additional Traffic Control Devices, And Advertisement	F.A.	F.A.	F.A.	$ 500,000.00
648.0100	Field-Posted Drawings	L.S.	L.S.	L.S.	$
676.0100	Repair for Concrete Deck	770	S.F.	$	$
692.0100	Voluntary Partnering	F.A.	F.A.	F.A.	$ 25,000.00
693.0100	Quadguard Elite M10 Wide (with Tension Strut Backup), TL-3	7	EA	$	$
693.0200	Transition, QUAD M10 to Thrie-Beam (37 1/2" Post Spacing)	10	EA	$	$
693.0300	Quadguard M10 TL-2	4	EA	$	$
693.0400	Transition, QUAD-W,610,QG,L,G	2	EA	$	$

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
693.0500	Transition, QUAD-W,610,QG,R,G	1	EA	$_____	$_____
694.0100	Longitudinal Channelizing Curb System	780	L.F.	$_____	$_____
694.0200	Yellow Surface Mounted Delineators	310	L.F.	$_____	$_____
695.0100	Inertial Barrier Module, 200 Pounds	8	EA	$_____	$_____
695.0200	Inertial Barrier Module, 400 Pounds	21	EA	$_____	$_____
695.0300	Inertial Barrier Module, 700 Pounds	47	EA	$_____	$_____
695.0400	Inertial Barrier Module, 1400 Pounds	20	EA	$_____	$_____
695.0500	Inertial Barrier Module, 2100 Pounds	21	EA	$_____	$_____
696.0100	Field Office Trailer (Not to Exceed $32,000.00)	L.S.	L.S.	L.S.	$_____
696.0200	Maintenance of Trailers	F.A.	F.A.	F.A.	$ 40,000.00
697.0100	Additional Public Educational Materials or Services	F.A.	F.A.	F.A.	$ 250,000.00
699.0100	Mobilization (Not to exceed 6 percent of the sum of all items excluding bid price of this item)	L.S.	L.S.	L.S.	$_____

SUMMARY FOR PROPOSAL SCHEDULES

a. TOTAL AMOUNT FOR COMPARISON OF BIDS ..... $_____

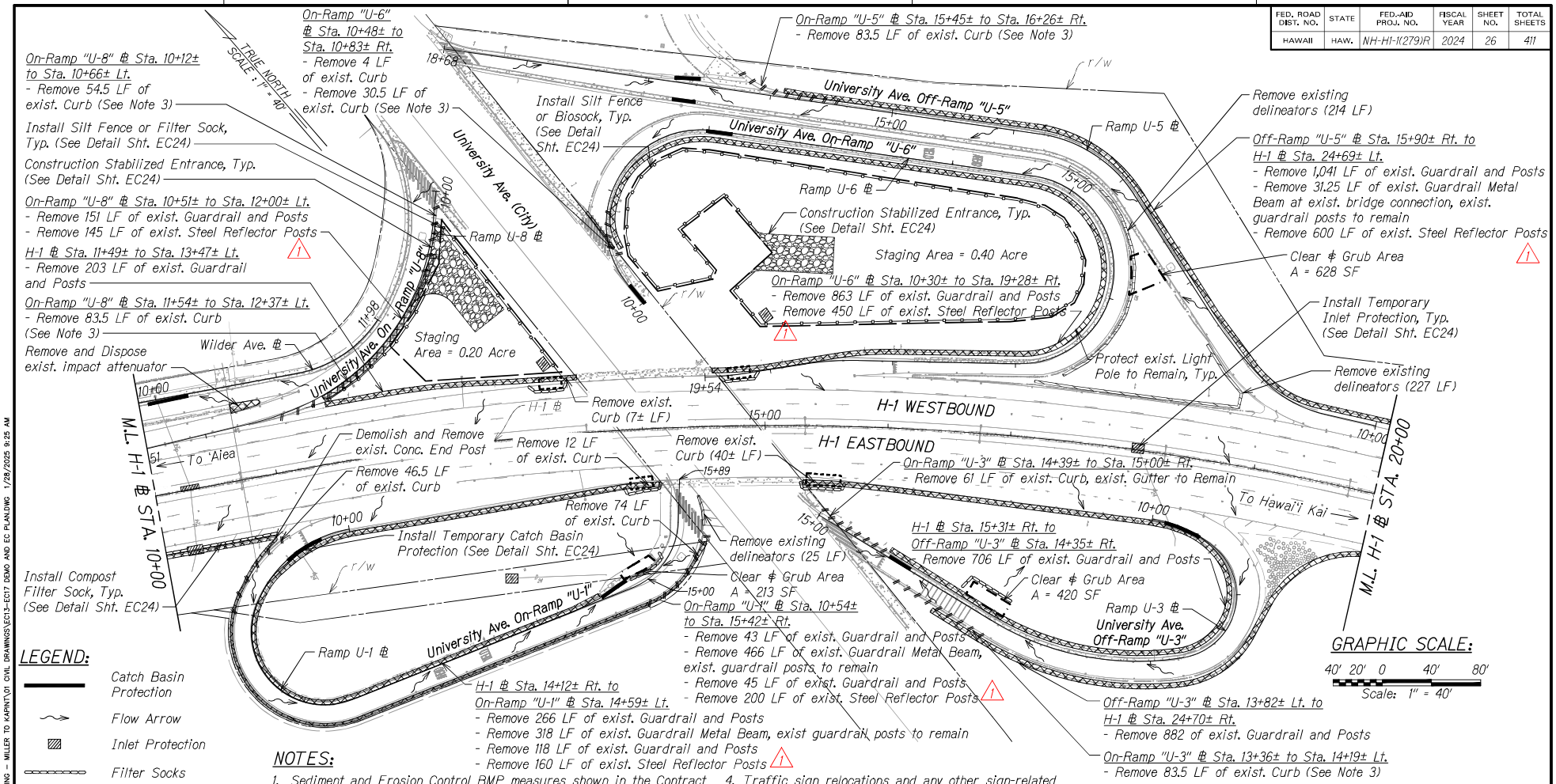
NOTES:

1. Bids shall include all Federal, State, County and other applicable taxes and fees.
2. The TOTAL AMOUNT FOR COMPARISON OF BIDS shall be used to determine the lowest responsible bidder.
3. Bidders shall complete all unit prices and amounts. Failure to do so shall be grounds for rejection of bid.
4. If a discrepancy occurs between the unit bid price and the bid price, the unit bid price shall govern.

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
	5. **Bidders shall submit and upload the complete proposal to HIePRO prior to the bid opening date and time. Proposals received after said due date and time shall not be considered. Any additional support documents explicitly designated as confidential and/or proprietary shall be uploaded as a separate file to HIePRO. Bidders shall not include confidential and/or proprietary documents with the proposal. The record of each bidder and respective bid shall be open to public inspection.** Original (wet ink, hard copy) proposal documents are not required to be submitted. **Contract award shall be based on evaluation of proposals submitted and uploaded to HIePRO. FAILURE TO UPLOAD THE COMPLETE PROPOSAL TO HIePRO SHALL BE GROUNDS FOR REJECTION OF THE BID.** If there is a conflict between the specification document and the HIePRO solicitation, the specifications shall govern and control, unless otherwise specified.				

FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(279)R	2024	26	411



LEGEND:

- Catch Basin Protection
- Flow Arrow
- Inlet Protection
- Filter Socks
- Remove Exist. Guardrail or Impact Attenuator
- Silt Fence
- Limits of Clear ℄ Grub
- Remove Exist. Delineators
- Demolish Exist. Curb or Fence
- Limits of Excavation for Concrete Barrier Footing

GRAPHIC SCALE:

40' 20' 0 40' 80'

Scale: 1" = 40'

NOTES:

1. Sediment and Erosion Control BMP measures shown in the Contract Documents are minimum BMPs requirements and do not constitute an acceptable and/or complete Sediment and Erosion Control Plan. The Contractor shall incorporate additional BMPs based upon their means and methods considering site conditions and construction sequence in accordance with the Contract Documents including applicable permit document requirements. Cost shall be included in Pay Item 209.0100, Installation, Maintenance, Monitoring, and Removal of BMP.
2. The Contractor shall take proper precautions and make necessary℄ measures to ensure compliance to all applicable but not limited to Federal, State, and HDOT guidelines.
3. Limits of milling, new roadway pavement and curb/curb and gutter reconstruction are shown in Roadway Plans R1 to R26.
4. Traffic sign relocations and any other sign-related works resulting from the proposed improvements are shown in the Pavement Marking and Signing Plans M3 - M25.
5. The Contractor shall only remove existing bushes and vegetation that may hinder construction work for this project related activities/phases and within the right-of-way. The Contractor shall be responsible to protect all open bare areas during all phases of construction to prevent erosion. Best Management Practices shall not be removed until final stabilization is complete for that phase. Bushes and vegetation shall be restored to pre-construction condition prior to final acceptance.

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Robyn McKinney 04/30/26

SIGNATURE EXPIRATION DATE OF THE LICENSE

DATE	REVISION
2/5/25	1 Added Removal of Steel Reflector Posts.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DEMOLITION AND EROSION CONTROL

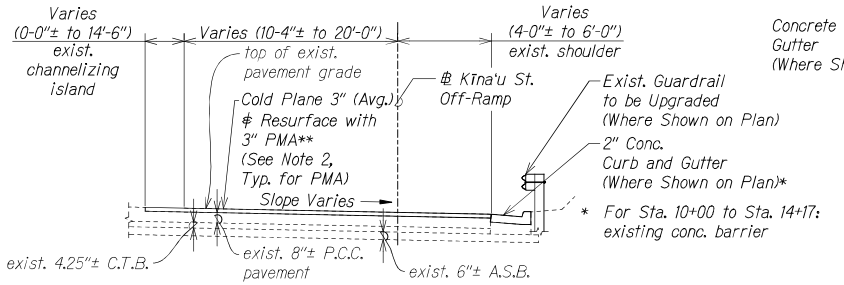
INTERSTATE ROUTE H-1 RESURFACING
Miller Pedestrian Overpass to Kapiolani Interchange
Federal-Aid Project No. NH-H1-1(279)R

Scale: 1" = 40' Date: February 2025

SHEET No. EC13 OF 24 SHEETS

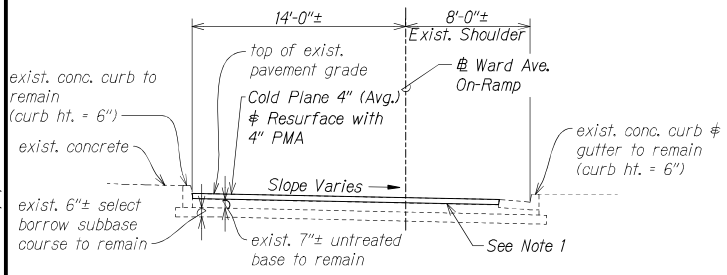
W:_CIVIL 3D PROJECTS\2016_202.000 DOT-HWYS H1 RESURFACING - MILLER TO KAPIOLANI\01 CIVIL DRAWINGS\EC13-EC17 DEMO AND EC PLAN.DWG 1/28/2025 9:25 AM

FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(279)R	2024	38	411

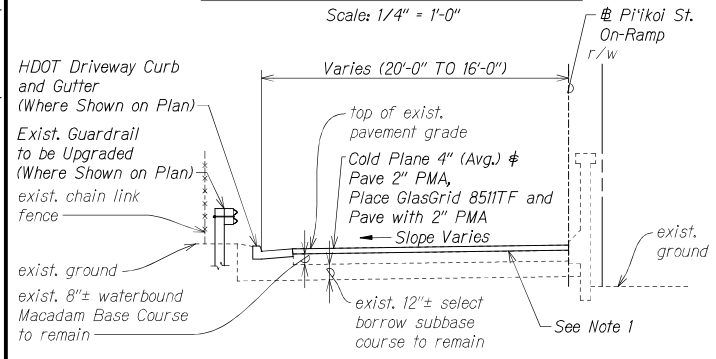


** Place Tensar Rapid Repair PG100 under PMA

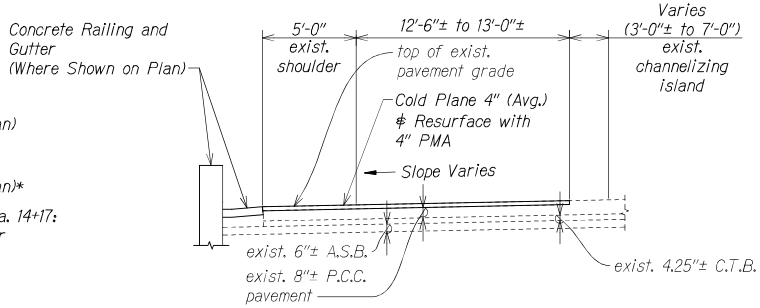
(STA. 10+00± TO STA. 16+85±)
EB KĪNA'U ST. OFF-RAMP
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"



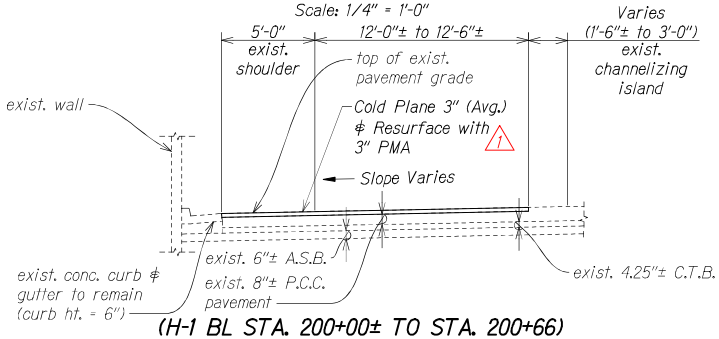
(STA. 10+26± TO STA. 13+71±)
EB WARD AVE. ON-RAMP
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"



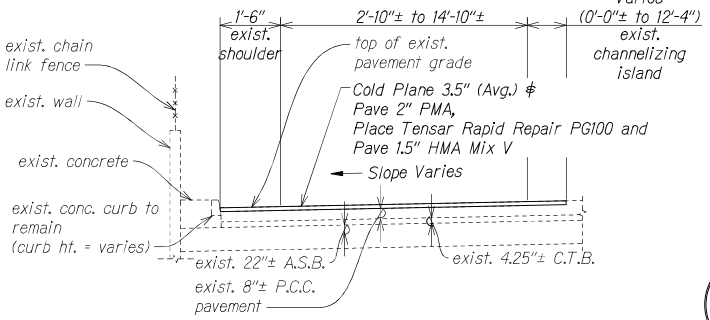
(STA. 10+15± TO STA. 17+35±)
EB PI'IKOI ST. ON-RAMP
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"



(H-1 BL STA. 200+66 TO STA. 202+68±)
WB LUNALILO ST. ON-RAMP
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"



(H-1 BL STA. 200+00± TO STA. 200+66)
WB LUNALILO ST. ON-RAMP
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"



(H-1 BL STA. 225+12± TO STA. 228+38±)
WB LUNALILO ST. OFF-RAMP
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"

NOTES:

1. Apply Tack Coat in between exist. and new A.C. Pavement.
2. PMA refers to Mix No. IV with PG 64E-22.

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Robyn McKinney 04/30/26
SIGNATURE EXPIRATION DATE OF THE LICENSE

DATE	REVISION
2/5/25	1 Revised Pavement Section.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RAMP TYPICAL SECTIONS

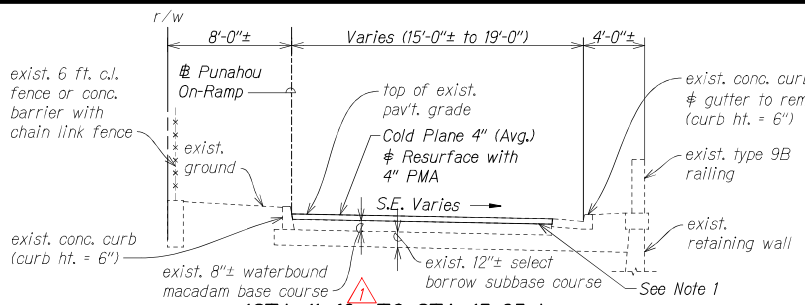
INTERSTATE ROUTE H-1 RESURFACING
Miller Pedestrian Overpass to Kapiolani Interchange
Federal-Aid Project No. NH-H1-1(279)R

Scale: As Shown Date: February 2025

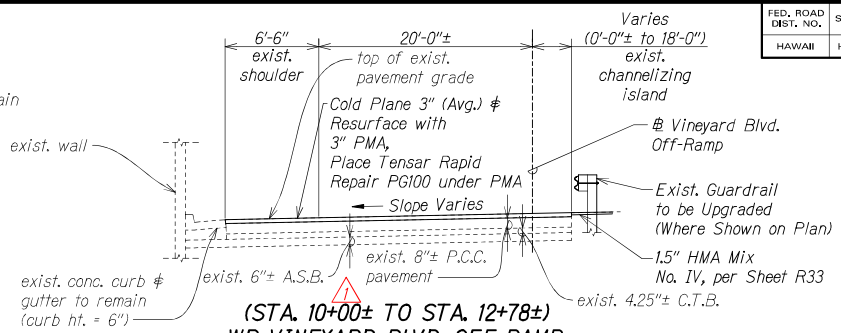
SHEET No. C1 OF 19 SHEETS

W:_CIVIL 3D PROJECTS\2016_202.000 DOT-HWYS H1 RESURFACING - MILLER TO KAPIOLANI\01 CIVIL DRAWINGS\C1 RAMP TYPICAL SECTIONS.DWG 7/24/2024 7:22 AM

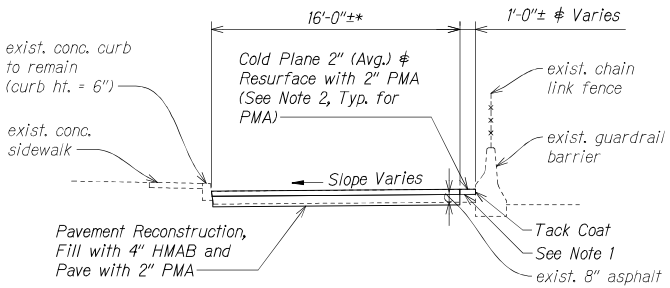
FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(279)R	2024	39	411



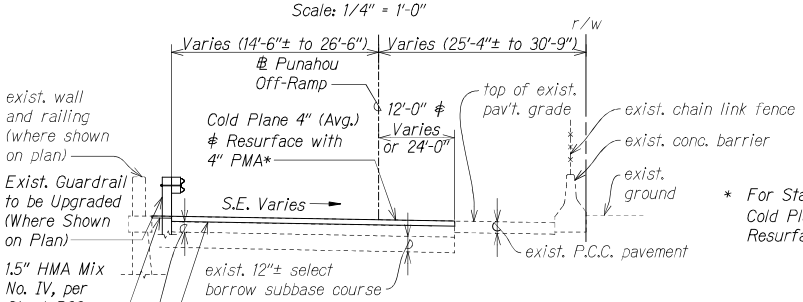
(STA. 11+40± TO STA. 15+95±)
WB PUNAHOU ST. ON-RAMP
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"



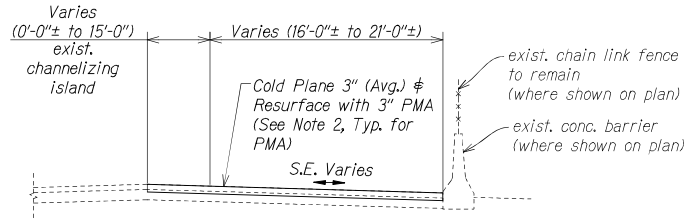
(STA. 10+00± TO STA. 12+78±)
WB VINEYARD BLVD. OFF-RAMP
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"



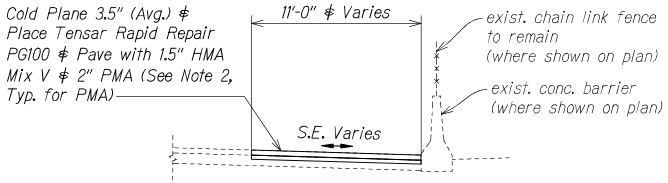
(STA. 0+00± TO STA. 9+08±)
WB METCALF ST. ON-RAMP
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"



(STA. 12+03± TO STA. 17+75±)
EB PUNAHOU ST. OFF-RAMP
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"



(H-1 BL STA. 1+00± TO STA. 2+37±)
WB WILDER AVE. OFF-RAMP
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"



(H-1 BL STA. 266+38± TO STA. 268+94±)
EB BINGHAM ST. OFF-RAMP
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"

NOTES:

1. Apply Tack Coat in between exist. and new A.C. Pavement.
2. PMA refers to Mix No. IV with PG 64E-22.

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Robyn McKinney 04/30/26
SIGNATURE EXPIRATION DATE OF THE LICENSE

DATE	REVISION
2/5/25	1 Revised Start Station.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RAMP TYPICAL SECTIONS

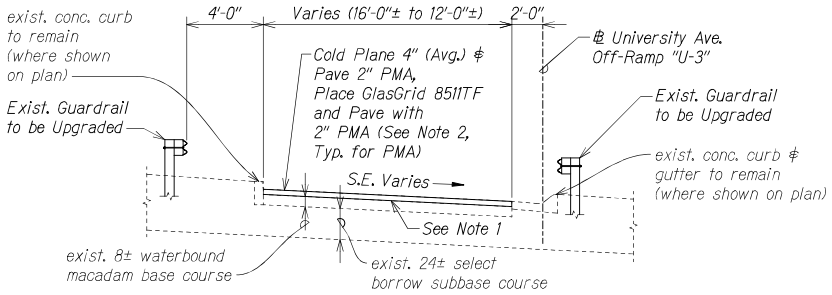
INTERSTATE ROUTE H-1 RESURFACING
Miller Pedestrian Overpass to Kapiolani Interchange
Federal-Aid Project No. NH-H1-1(279)R

Scale: As Shown Date: February 2025

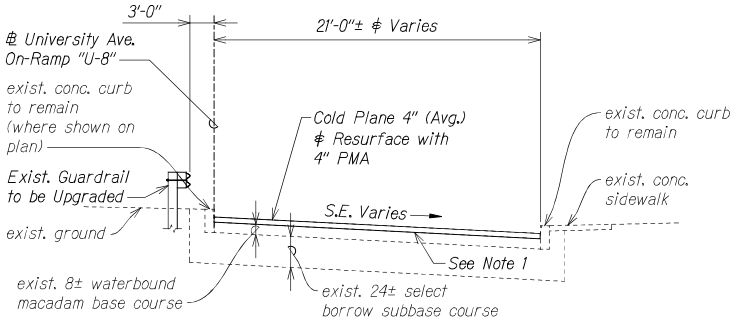
SHEET No. C2 OF 19 SHEETS

W:_CIVIL 3D PROJECTS\2016_202.000 DOT-HWYS H1 RESURFACING - MILLER TO KAPIOLANI\01 CIVIL DRAWINGS\C2 RAMP TYPICAL SECTIONS.DWG 7/24/2024 8:00 AM

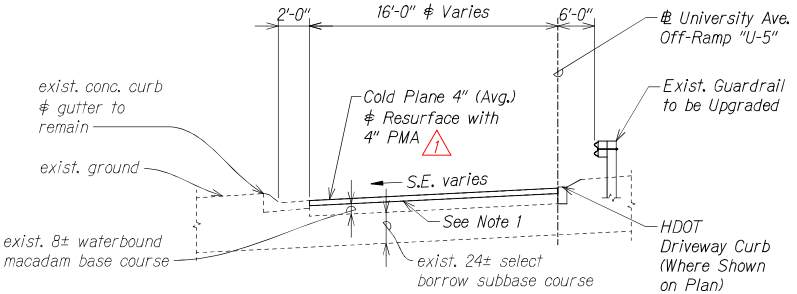
FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(279)R	2024	41	411



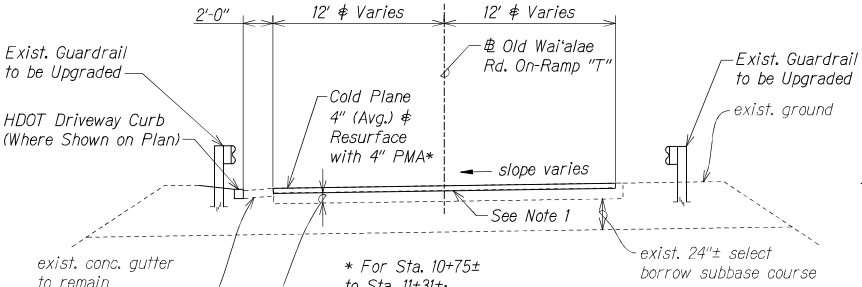
(STA. 10+49± TO STA. 14+97±)
EB UNIVERSITY AVE. OFF-RAMP "U-3"
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"



(STA. 10+00 TO STA. 12+77±)
WB UNIVERSITY AVE. ON-RAMP "U-8"
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"



(STA. 10+86± TO STA. 18+68±)
WB UNIVERSITY AVE. OFF-RAMP "U-5"
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"

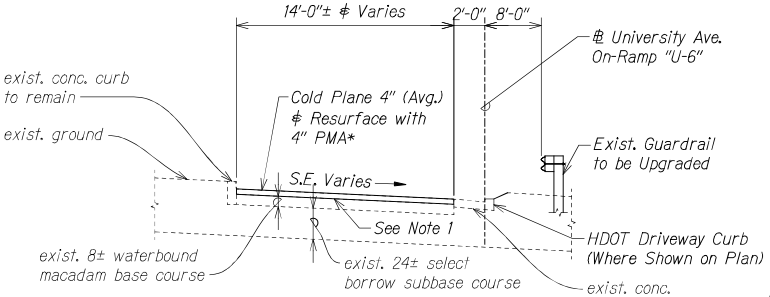


* For Sta. 10+75± to Sta. 11+31±: Cold Plane 3" (Avg.) ∉ Resurface with 3" PMA

(STA. 10+75± TO STA. 17+55±)
WB OLD WAI'ALAE RD. ON-RAMP "T"
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"

NOTE:
Existing Type A-1 Curb from Sta. 11+64± to Sta. 13+40± (Rt.) not shown.

1



* For Ramp "U-6" Sta. 17+27 to Sta. 19+11±: Cold Plane 3" (Avg.) ∉ Resurface with 3" PMA

(STA. 10+45± TO STA. 19+11±)
WB UNIVERSITY AVE. ON-RAMP "U-6"
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"

NOTES:
1. Apply Tack Coat in between exist. and new A.C. Pavement.
2. PMA refers to Mix No. IV with PG 64E-22.

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Robyn McKinney 04/30/26
SIGNATURE EXPIRATION DATE OF THE LICENSE

DATE	REVISION
2/5/25	1 Removed Pavement Note.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RAMP TYPICAL SECTIONS

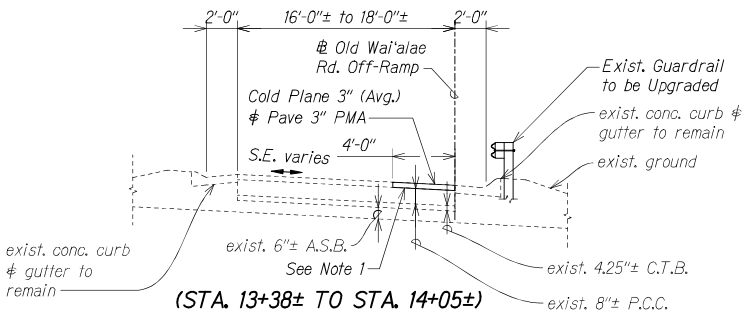
INTERSTATE ROUTE H-1 RESURFACING
Miller Pedestrian Overpass to Kapiolani Interchange
Federal-Aid Project No. NH-H1-1(279)R

Scale: As Shown Date: February 2025

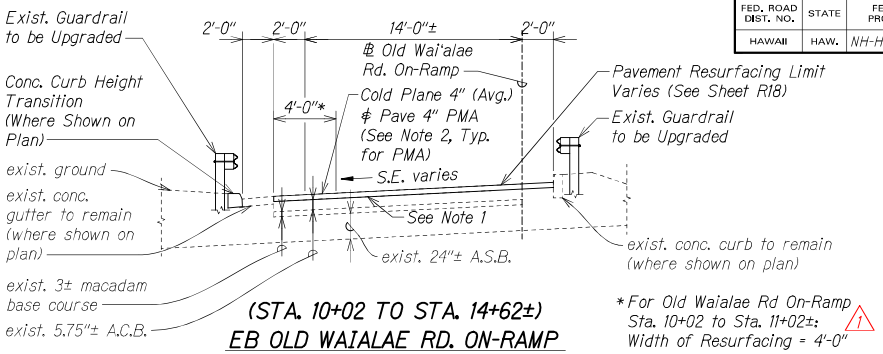
SHEET No. C4 OF 19 SHEETS

W:_CIVIL 3D PROJECTS\2016_202.000 DOT-HWYS H1 RESURFACING - MILLER TO KAPIOLANI\01 CIVIL DRAWINGS\C4 RAMP TYPICAL SECTIONS.DWG 1/23/2025 8:40 AM

FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(279)R	2024	42	411

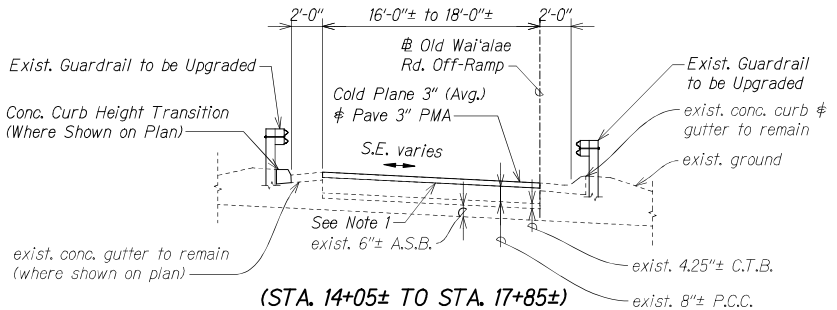


(STA. 13+38± TO STA. 14+05±)
WB OLD WAIALAE RD. OFF-RAMP
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"

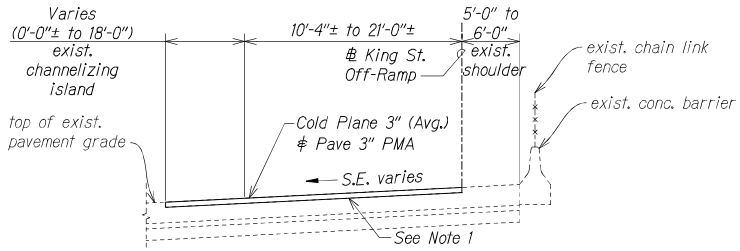


(STA. 10+02 TO STA. 14+62±)
EB OLD WAIALAE RD. ON-RAMP
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"

*For Old Waialae Rd On-Ramp Sta. 10+02 to Sta. 11+02±: Width of Resurfacing = 4'-0" 1



(STA. 14+05± TO STA. 17+85±)
WB OLD WAIALAE RD. OFF-RAMP
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"



(H-1 BL STA. 29+51± TO STA. 8+15±)
EB KING ST. OFF-RAMP
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"

NOTES:

1. Apply Tack Coat in between exist. and new A.C. Pavement.
2. PMA refers to Mix No. IV with PG 64E-22.

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Robyn McKinney 04/30/26
SIGNATURE EXPIRATION DATE OF THE LICENSE

DATE	REVISION
2/5/25	1 Revised End Station.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RAMP TYPICAL SECTIONS

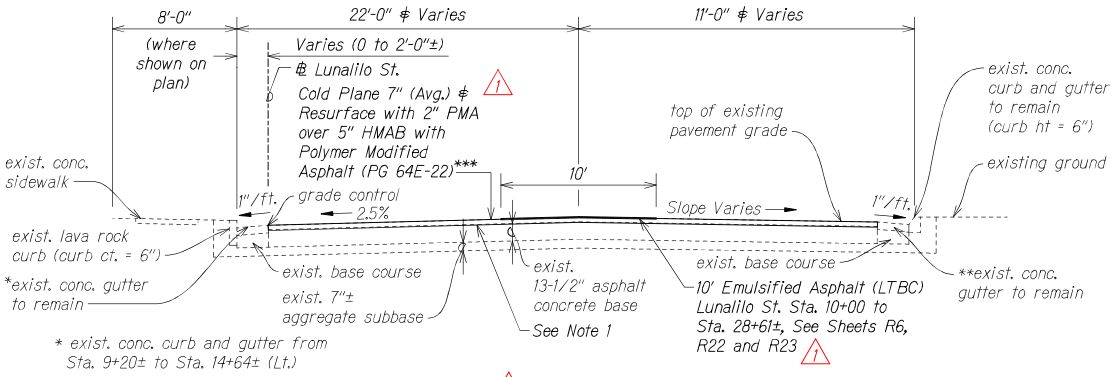
INTERSTATE ROUTE H-1 RESURFACING
Miller Pedestrian Overpass to Kapiolani Interchange
Federal-Aid Project No. NH-H1-1(279)R

Scale: As Shown Date: February 2025

SHEET No. C5 OF 19 SHEETS

W:_CIVIL 3D PROJECTS\2016_202.000 DOT-HWYS H1 RESURFACING - MILLER TO KAPIANI\01 CIVIL DRAWINGS\C5 RAMP TYPICAL SECTIONS.DWG 7/24/2024 8:48 AM

FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(279)R	2024	43	411

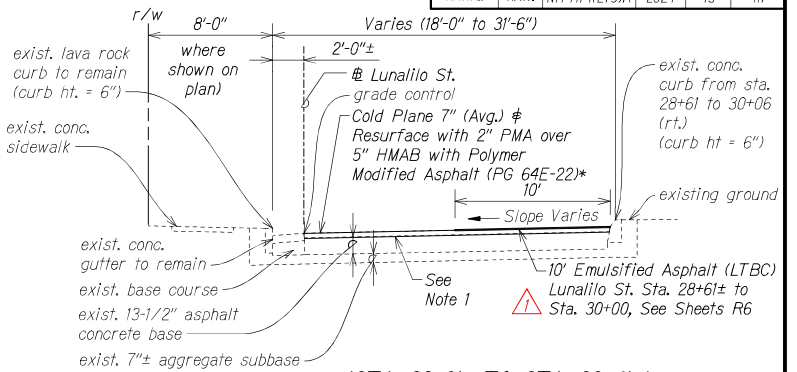


* exist. conc. curb and gutter from Sta. 9+20± to Sta. 14+64± (Lt.)

** exist. conc. curb from Sta. 10+00 to Sta. 11+00 (Rt.) ∉ 26+63 to Sta. 28+61 (Rt.)

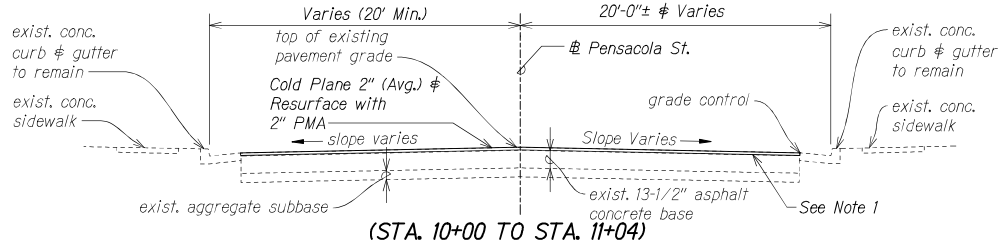
*** For Lunalilo St. Sta. 14+64 to Sta. 28+61±: Cold Plane 4" (Avg.) ∉ Resurface with 4" PMA 1

(STA. 9+20 TO STA. 28+61±)
LUNALILO STREET
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"

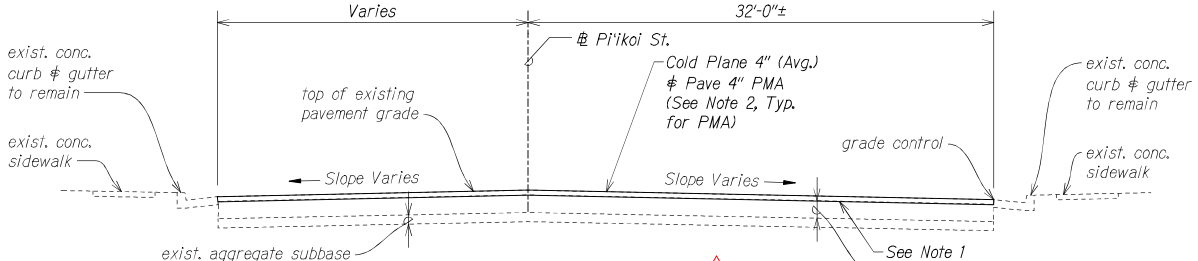


* For Lunalilo St. Sta. 36+32 to Sta. 39+41±: Cold Plane 4" (Avg.) ∉ Resurface with 4" PMA

(STA. 28+61± TO STA. 39+41±)
LUNALILO STREET
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"



(STA. 10+00 TO STA. 11+04)
(STA. 11+49 TO STA. 12+79)
PENSACOLA STREET
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"



(STA. 10+00 TO STA. 12+56) 1
PI'IKOI STREET
PAVEMENT RESURFACING SECTION
Scale: 1/4" = 1'-0"

NOTES:

1. Apply Tack Coat in between exist. and new A.C. Pavement
2. PMA refers to Mix No. IV with PG 64E-22.

DATE	REVISION
2/5/25	1 Added Station Range, Revised End Station and Pavement Section Notes.

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

SIGNATURE 04/30/26 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LUNALILO ST. TYPICAL SECTIONS

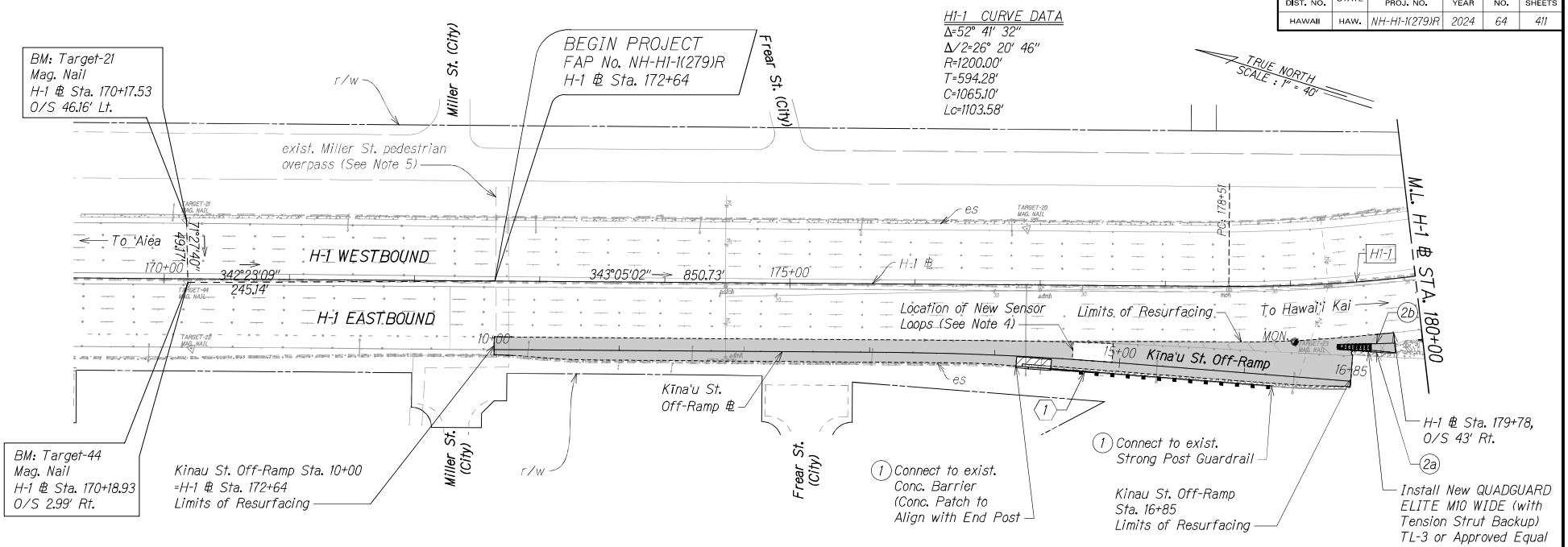
INTERSTATE ROUTE H-1 RESURFACING
Miller Pedestrian Overpass to Kapiolani Interchange
Federal-Aid Project No. NH-H1-1(279)R

Scale: As Shown Date: February 2025

SHEET No. C6 OF 19 SHEETS

W:_CIVIL 3D PROJECTS\2016_202.000 DOT-HWYS H1 RESURFACING - MILLER TO KAPIOLANI\01 CIVIL DRAWINGS\C6 LUNALILO ST. TYPICAL SECTIONS.DWG 1/24/2025 7:31 AM

FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(279)R	2024	64	411



(1) Kinau St. Off-Ramp ℄ Sta. 14+23±, 8'± Rt. to Sta. 14+80±, 9'± Rt.
- 38 LF Conc. Gutter (Connect to exist. Gutter at Both Ends)
- 10 LF 2" Conc. Curb (with exist. Gutter)
- 10 LF 2" Conc. Curb to exist. 6" Curb Transition (with exist. Gutter)
Connect to exist. Curb
(See Sheets C14 and C17)

(1) Kinau St. Off-Ramp ℄ Sta. 14+17±, 8'± Rt. to Sta. 16+23±, 9'± Rt.
(See Note 2)
- 10 LF Modified 34" Type KAT Conc. Transition (Condition 1)
- 34" Type KAT Transition
- Guardrail Type 3 MASH Transition (Reverse)
- 125 LF Midwest Guardrail System
- MGS Transition to Strong Post Guardrail

(2a) H-1 ℄ Sta. 179+59±, 57'± Rt. to Sta. 179+77±, 60'± Rt.
(See Notes 2 and 6)
- 19 LF Transition, QUADGUARD (TL-3) to Thrie Beam or Approved Equal

(2b) H-1 ℄ Sta. 179+60±, 50'± Rt. to Sta. 179+78±, 51'± Rt.
(See Notes 2 and 6)
- 19 LF Transition, QUADGUARD (TL-3) to Thrie Beam or Approved Equal

GRAPHIC SCALE:

40' 20' 0 40' 80'
Scale: 1" = 40'

LEGEND:

Resurfacing Limits:
3" Cold Plane
3" Mix No. IV with PG 64E-22
(1) (Place Tensar Rapid Repair PG100 Under AC Mix No. IV)

Pavt. Recon. Limits (Ramp):
3" Mix No. IV with PG 64E-22
CLSM (Thickness varies to meet Exist. Pavt. Grade, 21" Min.)

MON. Monument to be Reinstalled (See Notes 50 and 64 on Sheet G5)

NOTES:

1. The Contractor shall inspect and clean all drain culverts within the project limits and shall be paid under Item No. 603.0200 Clean Existing Culverts, as directed by the Engineer.
2. For Schedule of Existing Guardrail Upgrade, See Sheets R27 to R32. For Details, See Sheets R33 to R61.
3. The Contractor shall survey and stake out the roadway work in accordance with Section 105.10 Construction Stakes, Lines and Grades from the HDOT Standard Specifications.
4. For Traffic Counting Station Plan and Pavement Section at Sensor Loops on Kinau Street Off-Ramp, See Sheet TC1.
5. For work on Miller Street Pedestrian Overpass, See Structural Sheet SM-1.
6. The impact attenuator transition assembly shall include all metal beam panels, posts, blockouts, bolts and other necessary parts.

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Robyn McKinney 04/30/26
SIGNATURE EXPIRATION DATE OF THE LICENSE

DATE	REVISION
2/5/25	1 Revised to include PG100.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN

INTERSTATE ROUTE H-1 RESURFACING
Miller Pedestrian Overpass to Kapiolani Interchange
Federal-Aid Project No. NH-H1-1(279)R

Scale: 1" = 40' Date: February 2025

SHEET No. R1 OF 68 SHEETS

W:_CIVIL 3D PROJECTS\2016_202.000 DOT-HWYS H1 RESURFACING - MILLER TO KAPIOLANI\01 CIVIL DRAWINGS\R1-R4 ROADWAY PLAN.DWG 1/22/2025 3:40 PM

FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(279)R	2024	65	411

(3) H-1 ℄ Sta. 181+09±, 56'± Lt. to Sta. 183+25±, 62'± Lt.
(See Note 2)
- 5.5 LF Modified 34" Type KAT Conc. Transition (Condition 1)
- 34" Type KAT Transition
- Guardrail Type 3 MASH Transition
- 53 LF Midwest Guardrail System
- 37.5 LF MGS with 37 ½" Post Spacing
(1) - 37.5 LF HSS8x8x3/16 Block Replacement
- 23.5 LG Midwest Guardrail System
- Modified Hawaii Thrie Beam Approach Guardrail Transition
- Type D2 End Post

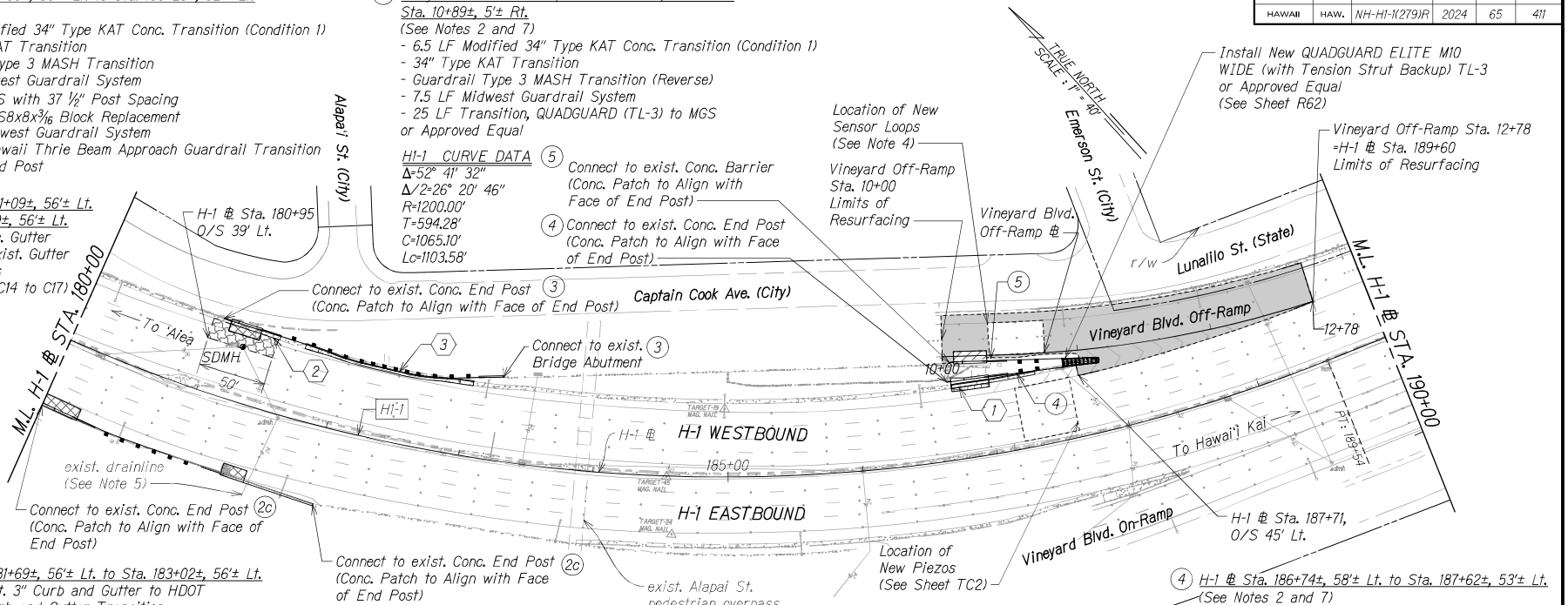
(2) H-1 ℄ Sta. 181+09±, 56'± Lt. to Sta. 181+49±, 56'± Lt.
- 38 LF Conc. Gutter
Connect to exist. Gutter at Both Ends
(See Sheets C14 to C17)

(5) Vineyard Blvd. Off-Ramp ℄ Sta. 10+08±, 4'± Rt. to Sta. 10+89±, 5'± Rt.
(See Notes 2 and 7)
- 6.5 LF Modified 34" Type KAT Conc. Transition (Condition 1)
- 34" Type KAT Transition
- Guardrail Type 3 MASH Transition (Reverse)
- 7.5 LF Midwest Guardrail System
- 25 LF Transition, QUADGUARD (TL-3) to MGS or Approved Equal

H1-1 CURVE DATA
Δ=52° 41' 32"
Δ/2=26° 20' 46"
R=1200.00'
T=594.28'
C=1065.10'
Lc=1103.58'

(5) Connect to exist. Conc. Barrier (Conc. Patch to Align with Face of End Post)

(4) Connect to exist. Conc. End Post (Conc. Patch to Align with Face of End Post)



(3) H-1 ℄ Sta. 181+69±, 56'± Lt. to Sta. 183+02±, 56'± Lt.
- 10 LF exist. 3" Curb and Gutter to HDOT Driveway Curb and Gutter Transition
- 108 LF HDOT Driveway Curb and Gutter
- 10 LF HDOT Driveway Curb and Gutter to exist. 3" Curb and Gutter Transition
Connect to exist. Curb and Gutter at Both Ends
(See Sheets C14 and C16)

(2c) H-1 ℄ Sta. 180+00±, 51'± Rt. to Sta. 182+04±, 57'± Rt.
(See Note 2)
- 10 LF Modified 34" Type KAT Conc. Transition (Condition 1)
- 34" Type KAT Transition
- Guardrail Type 3 MASH Transition (Reverse)
- 65 LF Midwest Guardrail System
- Guardrail Type 3 MASH Transition
- 34" Type KAT Transition
- 54 LF Modified 34" Type KAT Conc. Transition (Condition 2)

(1) H-1 ℄ Sta. 186+74±, 55'± Lt. to Sta. 187+39±, 55'± Lt.
- 10 LF exist. 6" Curb and Gutter to HDOT Driveway Curb and Gutter Transition
- 42.5 LF HDOT Driveway Curb and Gutter
- 10 LF HDOT Driveway Curb and Gutter to exist. 6" Curb and Gutter Transition
Connect to exist. Curb and Gutter at Both Ends
(See Sheets C14 and C16)

(4) H-1 ℄ Sta. 186+74±, 58'± Lt. to Sta. 187+62±, 53'± Lt.
(See Notes 2 and 7)
- 10 LF Modified 34" Type KAT Conc. Transition (Condition 1)
- 34" Type KAT Transition
- Guardrail Type 3 MASH Transition
- 7.5 LF Midwest Guardrail System
- 25 LF Transition, QUADGUARD (TL-3) to MGS or Approved Equal

LEGEND:

Resurfacing Limits:
7.25" Cold Plane
2" SMA
2" HMA
3.25" HMAB

Resurfacing Limits:
3" Cold Plane
3" Mix No. IV with PG 64E-22

Pavt. Recon. Limits (H-1):
2" SMA
2" HMA
CLSM (Thickness varies to meet Exist. Pavt. Grade, 20" Min.)

Pavt. Recon. Limits (Ramp):
3" Mix No. IV with PG 64E-22
CLSM (Thickness varies to meet Exist. Pavt. Grade, 21" Min.)

NOTES:

1. The Contractor shall inspect and clean all drain culverts within the project limits and shall be paid under Item No. 603.0200 Clean Existing Culverts, as directed by the Engineer.
2. For Full Guardrail System Upgrade Description, See Sheets R27 to R32. For Details, See Sheets R33 to R61.
3. The Contractor shall survey and stake out the roadway work in accordance with Section 105.10 Construction Stakes, Lines and Grades from the HDOT Standard Specifications.
4. For Typical Pavement Section at Sensor Loops on Side Street/Ramps, See Sheet TC3. For Traffic Counting Station Plan, see Sheet TC2.
5. Verify location and depth of existing drainlines and other existing utilities crossing the guardrails prior to excavation. Contractor to clear guardrail posts from existing utilities.
6. For work on Alapai Street Pedestrian Overpass, See Structural Sheet SA-2.
7. The impact attenuator transition assembly shall include all metal beam panels, posts, blockouts, bolts and other necessary parts.

GRAPHIC SCALE:

40' 20' 0 40' 80'
Scale: 1" = 40'

DATE	REVISION
2/5/25	(1) Revised guardrail lengths.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN

INTERSTATE ROUTE H-1 RESURFACING
Miller Pedestrian Overpass to Kapiolani Interchange
Federal-Aid Project No. NH-H1-1(279)R

Scale: 1" = 40' Date: February 2025

SHEET No. R2 OF 68 SHEETS

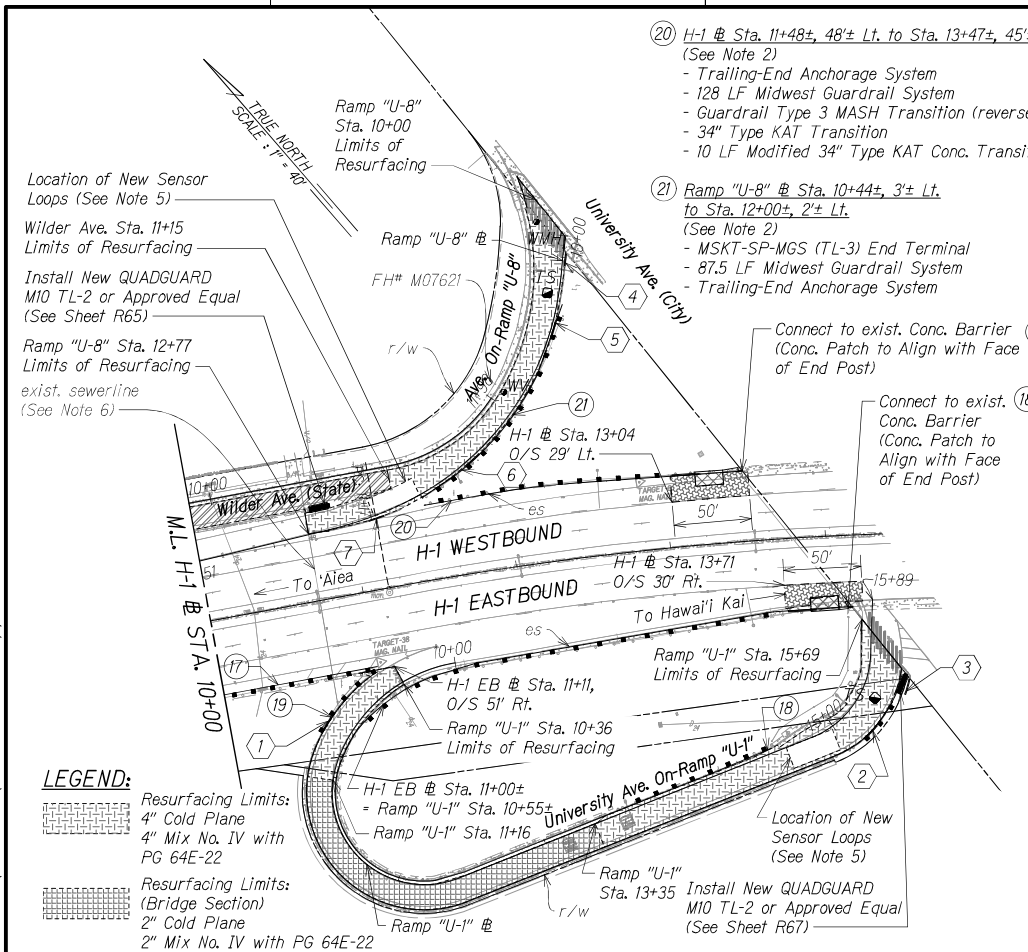
ROBYN R. MCKINNEY
LICENSED PROFESSIONAL ENGINEER
NO. 13480-C
HAWAII, USA

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

SIGNATURE 04/30/26 EXPIRATION DATE OF THE LICENSE

W:_CIVIL 3D PROJECTS\2016_202.000 DOT-HWYS H1 RESURFACING - MILLER TO KAPIOLANI\01 CIVIL DRAWINGS\R1-R4 ROADWAY PLAN.DWG 1/23/2025 10:18 AM

FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(279)R	2024	76	411



LEGEND:

Resurfacing Limits:
4" Cold Plane
4" Mix No. IV with PG 64E-22

Resurfacing Limits:
(Bridge Section)
2" Cold Plane
2" Mix No. IV with PG 64E-22
(Place Tensar Rapid Repair PG100 Under AC Mix No. IV)

Resurfacing Limits:
2" Cold Plane
2" Mix No. IV with PG 64E-22

Pavt. Recon. Limits (H-1):
2" SMA
2" HMA
CLSM (Thickness varies to meet Exist. Pavt. Grade, 20" Min.)

Resurfacing Limits:
8" Cold Plane
2" SMA
2" HMA
4" HMAB

(1) Ramp "U-1" ℄ Sta. 10+82±, 16'± Rt. to Sta. 10+90±, 16'± Rt.
- 10 LF 0" to exist. 6" Curb Transition
Connect to exist. Curb at the End of Transition
(See Sheets C14 and C15)

(2) Ramp "U-1" ℄ Sta. 15+10±, 19'± Rt. to Sta. 15+17±, 20'± Rt.
- 10 LF exist. 6" Curb to 0" Transition
Connect to exist. Curb at the Start of Transition
(See Sheets C14 and C15)

(3) Ramp "U-1" ℄ Sta. 15+37±, 27'± Rt. to Sta. 15+43±, 27'± Rt.
- 10 LF exist. 6" Curb to 0" Transition
Connect to exist. Curb at the Start of Transition
(See Sheets C14 and C15)

(4) Ramp "U-8" ℄ Sta. 10+12±, 2'± Lt. to Sta. 10+19±, 2'± Lt.
- 7.5 LF exist. 4" Curb to 0" Transition
Connect to exist. Curb at the Start of Transition
(See Sheets C14 and C15)

(5) Ramp "U-8" ℄ Sta. 10+56±, 1'± Lt. to Sta. 10+66±, 2'± Lt.
- 10 LF 0" to exist. 4" Curb Transition
Connect to exist. Curb at the End of Transition
(See Sheets C14 and C15)

(6) Ramp "U-8" ℄ Sta. 11+54±, 2'± Lt. to Sta. 11+64±, 2'± Lt.
- 10 LF exist. 4" Curb to 0" Transition
Connect to exist. Curb at the Start of Transition
(See Sheets C14 and C15)

(7) Ramp "U-8" ℄ Sta. 12+27±, 2'± Lt. to Sta. 12+37±, 2'± Lt.
- 10 LF 0" to exist. 4" Curb Transition
Connect to exist. Curb at the End of Transition
(See Sheets C14 and C15)

(18) H-1 ℄ Sta. 14+13±, 46'± Rt. to Ramp "U-1" ℄ Sta. 14+58±, 4'± Lt.
(See Note 2)
- 6 LF Modified 34" Type KAT Conc. Transition (Condition 2)
- 34" Type KAT Transition
- Guardrail Type 3 MASH Transition
- 194 LF Midwest Guardrail System
- MGS Transition to Strong Post Guardrail
- 66 LF Retro-Rail System
- 66 LF W-Beam (Use exist. Guardrail Posts)
- Thrie Beam Connection to exist. Railing (Reverse)
- 227 LF Thrie Beam (Use exist. Guardrail Posts)
- Thrie Beam Connection to exist. Railing
- MGS Transition to Strong Post Guardrail
- 17 LF Midwest Guardrail System
- MSKT-SP-MGS (TL-3) End Terminal

(19) Ramp "U-1" ℄ Sta. 10+46±, 15'± Rt. to Sta. 15+37±, 21'± Rt.
(See Notes 2 and 7)
- Trailing-End Anchorage System
- MGS Transition to Strong Post Guardrail
- Thrie Beam Connection to exist. Railing (Use exist. Guardrail Posts)
- 417 LF Thrie Beam (Use exist. Guardrail Posts)
- Thrie Beam Connection to exist. Railing (Reverse) (Use exist. Guardrail Posts)
- MGS Transition to Strong Post Guardrail
- 8 LF Transition, QUADGUARD (TL-2) to MGS or Approved Equal

(20) H-1 ℄ Sta. 11+48±, 48'± Lt. to Sta. 13+47±, 45'± Lt.
(See Note 2)
- Trailing-End Anchorage System
- 128 LF Midwest Guardrail System
- Guardrail Type 3 MASH Transition (reverse)
- 34" Type KAT Transition
- 10 LF Modified 34" Type KAT Conc. Transition (Condition 2)

(21) Ramp "U-8" ℄ Sta. 10+44±, 3'± Lt. to Sta. 12+00±, 2'± Lt.
(See Note 2)
- MSKT-SP-MGS (TL-3) End Terminal
- 87.5 LF Midwest Guardrail System
- Trailing-End Anchorage System

NOTES:

1. The Contractor shall inspect and clean all drain culverts within the project limits and shall be paid under Item No. 603.0200 Clean Existing Culverts, as directed by the Engineer.
2. For Full Guardrail System Upgrade Description, See Sheets R27 to R32. For Details, See Sheets R33 to R61.
3. For Pavement Elevations, See Sheet GR1 to GR21.
4. The Contractor shall survey and stake out the roadway work in accordance with Section 105.10 Construction Stakes, Lines and Grades from the HDOT Standard Specifications.
5. For Typical Pavement Section at Sensor Loops on Side Street and Ramps, see Sheet TC3. For Traffic Counting Station Plan, see Sheet TC11.
6. Verify location and depth of existing drainlines and other existing utilities crossing the guardrails prior to excavation. Contractor to clear guardrail posts from existing utilities.
7. The impact attenuator transition assembly shall include all metal beam panels, posts, blockouts, bolts and other necessary parts.

GRAPHIC SCALE:

40' 20' 0 40' 80'
Scale: 1" = 40'

APPROVED:

MANAGER AND CHIEF ENGINEER, BWS DATE
(For Work Affecting BWS Facilities in City/State R/W and BWS Easements Only)

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

SIGNATURE 04/30/26 EXPIRATION DATE OF THE LICENSE

DATE	REVISION
2/5/25	1 Revised to include PG100.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY PLAN

INTERSTATE ROUTE H-1 RESURFACING
Miller Pedestrian Overpass to Kapiolani Interchange
Federal-Aid Project No. NH-H1-1(279)R

Scale: 1" = 40' Date: February 2025

SHEET No. R13 OF 68 SHEETS

W:_CIVIL 3D PROJECTS\2016_202.000 DOT-HWYS H1 RESURFACING - MILLER TO KAPIOLANI\01 CIVIL DRAWINGS\R13-R15 ROADWAY PLAN.DWG 8/2/2024 9:58 AM

FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(279)R	2024	90	411

INDEX OF GUARDRAIL DETAILS

DRAWING NO.	DESCRIPTION
R33	Guardrail Details and Notes
R34	31" W-Beam Guardrail With Standard Offset Block (Midwest Guardrail System)
R35	MGS with Curb and Omitted Post
R36	MGS on a 2:1 Fill Slope
R37 to R38	MGS Long Span LSC-2
R39	Stiffened MGS Half Post Spacing (MGS with 37 1/2" Post Spacing)
R40	Guardrail Terminal Connectors and End Sections
R41	MGS Transition to Strong Post Guardrail
R42	Modified 34" Type KAT Concrete Transition and Concrete Patch Detail
R43	Trailing-End Anchorage System
R44	MSKT-SP-MGS Terminal (8" Blocks) Test Level 3 (MSKT-SP-MGS (TL-3) End Terminal)
R45	MAX-Tension TL-2 Guardrail End Terminal
R46	Standard Bridge Railings and Transitions General Notes and Symbols and Abbreviations
R47 to R48	Standard Bridge Railings and Transitions Metal Guardrail Type 3 Thrie Beam
R49 to R50	Solid Bridge Railing with Recessed Rectangular Aesthetic Panels
R51	34" Type KAT Transition and Guardrail Type 3 MASH Transition
R52	Typical 34" Type KAT Transition Sections and Detail
R53	Thie Beam Connection to Existing Railing
R54	Strong Post Modified Thrie-Beam Guardrail (MASH)
R55	Retro Rail System
R56 to R58	HDOT 34 Inches Tall Aesthetic Concrete Bridge Rail
R59 to R60	Modified Hawaii Thrie Beam Approach Guardrail Transition
R61	Type D-2 End Post

SCHEDULE - EXISTING GUARDRAIL UPGRADE

DRAWING NO.		DESCRIPTION	FROM	TO	DISTANCE (Feet)	GUARDRAIL UPGRADE (Feet)
R1	1	Kinau St. Off-Ramp (Rt.)	--	--	--	- Conc. Patch
			℄ 14+17±	℄ 14+27±	10	- Modified 34" Type KAT Conc. Transition (Condition 1)
			℄ 14+27±	℄ 14+46±	--	- 34" Type KAT Transition
			℄ 14+45±	℄ 14+70±	--	- Guardrail Type 3 MASH Transition (reverse)
			℄ 14+70±	℄ 15+95±	125	- Midwest Guardrail System
			℄ 15+95±	℄ 16+23±	--	- MGS Transition to Strong Post Guardrail
R1 to R2	2a	H-1 EB Shoulder	℄ 179+59±	℄ 179+77±	--	- 19 LF Transition, QUADGUARD (TL-3) to Thrie-Beam or Approved Equal
	2b	H-1 EB Shoulder	℄ 179+60±	℄ 179+78±	--	- 19 LF Transition, QUADGUARD (TL-3) to Thrie-Beam or Approved Equal
	2c	H-1 EB Shoulder	--	--	--	- Conc. Patch
			℄ 180+00±	℄ 180+09±	10	- Modified 34" Type KAT Conc. Transition (Condition 1)
			℄ 180+09±	℄ 180+27±	--	- 34" Type KAT Transition
			℄ 180+26±	℄ 180+50±	--	- Guardrail Type 3 MASH Transition (reverse)
			℄ 180+50±	℄ 181+12±	65	- Midwest Guardrail System
			℄ 181+12±	℄ 181+36±	--	- Guardrail Type 3 MASH Transition
			℄ 181+35±	℄ 181+52±	--	- 34" Type KAT Transition
			℄ 181+52±	℄ 182+04±	54	- Modified 34" Type KAT Conc. Transition (Condition 2)
			--	--	--	- Conc. Patch

SCHEDULE - EXISTING GUARDRAIL UPGRADE

DRAWING NO.		DESCRIPTION	FROM	TO	DISTANCE (Feet)	GUARDRAIL UPGRADE (Feet)
R2	3	H-1 WB Shoulder	--	--	--	- Conc. Patch
			℄ 181+09±	℄ 181+14±	5.5	- Modified 34" Type KAT Conc. Transition (Condition 1)
			℄ 181+14±	℄ 181+33±	--	- 34" Type KAT Transition
			℄ 181+33±	℄ 181+59±	--	- Guardrail Type 3 MASH Transition
			℄ 181+59±	℄ 182+14±	53	- Midwest Guardrail System
			℄ 182+14±	℄ 182+53±	37.5 /1	- MGS with 37 1/2" Post Spacing
			℄ 182+14±	℄ 182+53±	/1 37.5	- HSS8x8x3/16 Block Replacement
			℄ 182+53±	℄ 182+78±	23.5 /1	- Midwest Guardrail System
			℄ 182+78±	℄ 183+06±	--	- Modified Hawaii Thrie Beam Approach Guardrail Transition
			℄ 183+06±	℄ 183+25±	--	- Type D2 End Post
R2	4	H-1 WB Shoulder	--	--	--	- Conc. Patch
			℄ 186+74±	℄ 186+84±	10	- Modified 34" Type KAT Conc. Transition (Condition 1)
			℄ 186+84±	℄ 187+03±	--	- 34" Type KAT Transition
			℄ 187+02±	℄ 187+29±	--	- Guardrail Type 3 MASH Transition
			℄ 187+29±	℄ 187+36±	7.5	- Midwest Guardrail System
			℄ 187+36±	℄ 187+62±	--	- 25 LF Transition, QUADGUARD (TL-3) to MGS or Approved Equal
R2	5	Vineyard Blvd Off-Ramp (Rt.)	--	--	--	- Conc. Patch
			℄ 10+08±	℄ 10+15±	6.5	- Modified 34" Type KAT Conc. Transition (Condition 1)
			℄ 10+15±	℄ 10+33±	--	- 34" Type KAT Transition
			℄ 10+32±	℄ 10+57±	--	- Guardrail Type 3 MASH Transition (reverse)
			℄ 10+57±	℄ 10+64±	7.5	- Midwest Guardrail System
			℄ 10+64±	℄ 10+89±	--	- 25 LF Transition, QUADGUARD (TL-3) to MGS or Approved Equal
R2 to R3	6	H-1 EB Shoulder	℄ 189+93±	℄ 190+40±	--	- MSKT-SP-MGS (TL-3) End Terminal
			℄ 190+40±	℄ 190+69±	--	- Modified Hawaii Thrie Beam Approach Guardrail Transition
			℄ 190+65±	℄ 190+83±	--	- Type D2 End Post
			℄ 190+83±	℄ 190+88±	5	- Modified 34" Type KAT Conc. Transition (Condition 2)
			--	--	--	- Conc. Patch
R3	7	Ward Ave. On-Ramp (Lt.)	--	--	--	- Conc. Patch
			℄ 13+31±	℄ 13+49±	--	- 34" Type KAT Transition
			℄ 13+49±	℄ 13+74±	--	- Guardrail Type 3 MASH Transition
			℄ 13+74±	℄ 13+86±	12.5	- Midwest Guardrail System
			--	--	--	- W-Beam End Section (Rounded RWE03a)

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Robyn McKinney 04/30/26
SIGNATURE EXPIRATION DATE OF THE LICENSE

DATE	REVISION
2/5/25	/1 Revised Quantity.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL SCHEDULE

INTERSTATE ROUTE H-1 RESURFACING
Miller Pedestrian Overpass to Kapiolani Interchange
Federal-Aid Project No. NH-H1-1(279)R

Scale: N/A Date: February 2025

SHEET No. R27 OF 68 SHEETS

ADD.90

W:_CIVIL 3D PROJECTS\2016_202.000 DOT-HWYS H1 RESURFACING - MILLER TO KAPIOLANI\01 CIVIL DRAWINGS\R27_A32 GUARDRAIL SCHEDULE.DWG 1/28/2025 9:24 AM

FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(279)R	2024	95	411

SUMMARY - EXISTING GUARDRAIL UPGRADE	
DESCRIPTION	**QTY**
Midwest Guardrail System	7180.5 LF 1
MSKT-SP-MGS (TL-3) End Terminal	10 EA
Trailing-End Anchorage System	13 EA
MGS Transition to Strong Post Guardrail	10 EA
MGS on a 2:1 Fill Slope	432 LF
MGS Long Span LSC-2	3 EA
MAX-Tension TL-2	1 EA
Guardrail Type 3 MASH Transition	17 EA
Guardrail Type 3 MASH Transition (reverse)	15 EA
34" Type KAT Transition	32 EA
Modified 34" Type KAT Conc. Transition (Condition 1)	171.5 LF
Modified 34" Type KAT Conc. Transition (Condition 2)	193.75 LF
Conc. Patch	26 EA
Retro-Rail System	116 LF
HDOT 34" Tall Aesthetic Conc. Bridge Rail	903 LF
W-Beam End Section (Rounded RWE03a)	5 EA
Modified Hawaii Thrie Beam Approach Guardrail Transition	4 EA
Type D2 End Post	4 EA
W-Beam (use exist. guardrail posts)	141 LF
W-Beam (One Post Omitted)	225 LF
Nested W-Beam Guardrail	262.5 LF
RubRail	25 LF
MGS with 37 1/2" Post Spacing	37.5 LF 1
HSS8x8x3/16 Block Replacement 1	37.5 LF
Thrie Beam (use exist. guardrail posts)	644 LF
Thrie Beam Connection to exist. Railing	2 EA
Thrie Beam Connection to exist. Railing (reverse)	1 EA
Thrie Beam Connection to exist. Railing (use exist. guardrail posts)	1 EA
Thrie Beam Connection to exist. Railing (reverse) (use exist. guardrail posts)	2 EA
6.25 LF Transition Section Thrie Beam to Strong Post (use exist. guardrail posts)	1 EA
12.5 LF Thrie Beam Guardrail (use exist. guardrail posts)	1 EA
12.5 LF Nested Thrie Beam Guardrail (use exist. guardrail posts)	1 EA
Thrie Beam Connector	1 EA
Thrie-Beam End Section (Rounded RTE03b)	1 EA
Crash Attenuators	
Quadguard Elite M10 Wide (with Tension Strut Backup) TL-3	7 EA
19 LF Transition, QUADGUARD (TL-3) to Thrie-Beam or Approved Equal	2 EA
25 LF Transition, QUADGUARD (TL-3) to MGS or Approved Equal	8 EA
Quadguard M10 TL-2	3 EA
8 LF Transition, QUADGUARD (TL-2) to MGS or Approved Equal	3 EA

NOTE:

Refer to Sheet R27 for Index of Guardrail Details.

DATE	REVISION
2/5/25	1 Revised Quantity.

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Robyn McKinney 04/30/26
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL SCHEDULE

INTERSTATE ROUTE H-1 RESURFACING
Miller Pedestrian Overpass to Kapiolani Interchange
Federal-Aid Project No. NH-H1-1(279)R

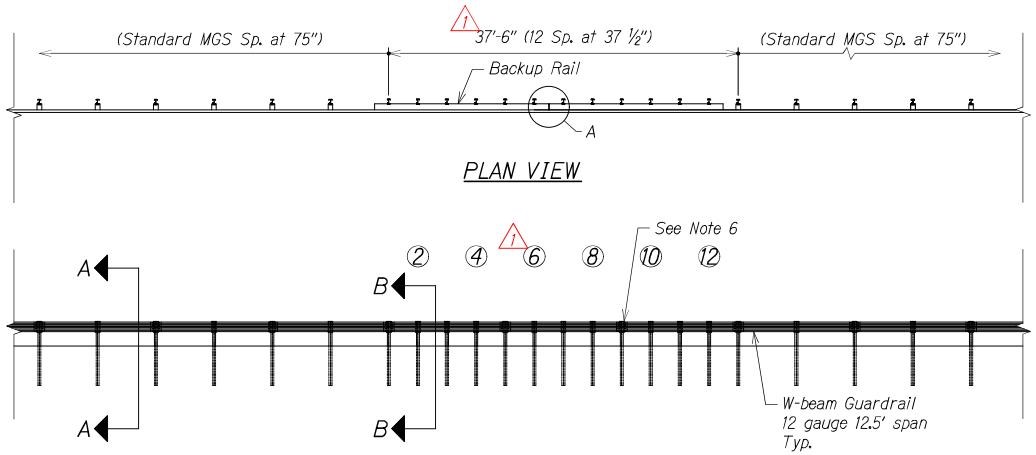
Scale: N/A Date: February 2025

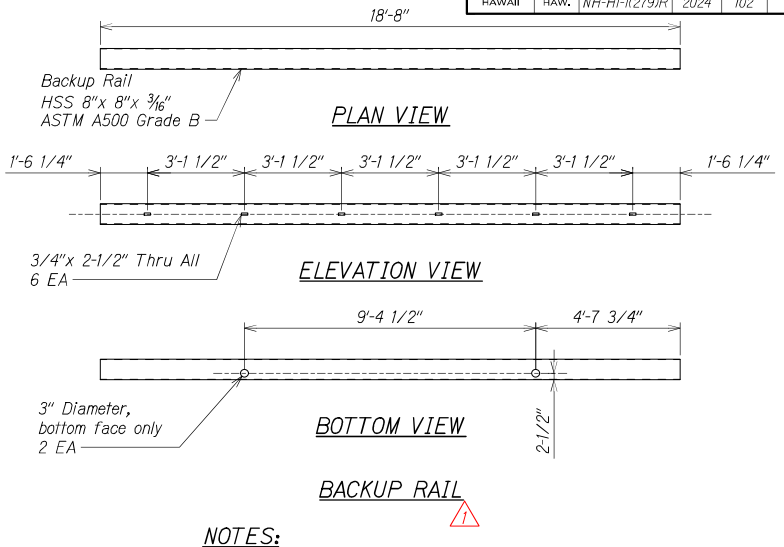
SHEET No. R32 OF 68 SHEETS

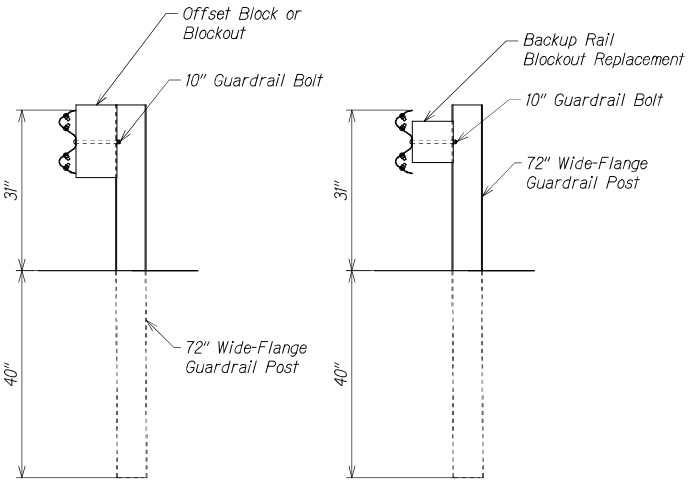
ADD.95

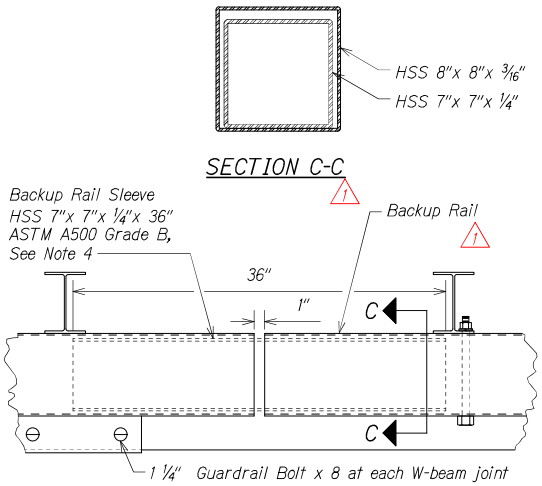
W:_CIVIL 3D PROJECTS\2016_202.000 DOT-HWYS H1 RESURFACING - MILLER TO KAPIINT\01 CIVIL DRAWINGS\R27_A32 GUARDRAIL SCHEDULE.DWG 1/24/2025 10:37 AM

FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(279)R	2024	102	411









NOTES:

1. Drill ø24"post holes and backfill with Type D grade 1 crushed concrete road base, compacted according to Geotechnical Report.
2. Recessed Guardrail Nut on all 5/8" Bolts (Button-head Guardrail Bolts and hex head).
3. All steel parts shall be galvanized.
4. Backup Rail Sleeve has no holes, welds, etc, and is not detailed on following sheets.
5. ø3" holes in the bottom of the Backup Rails are for access to 5/8"x 2" (or similar length) bolts used to temporarily secure Backup Rails to Posts for easier W-beam installation. These bolts will be removed and replaced with 10" Guardrail Bolts after placing W-beam rail sections.
6. No guardrail bolts at Posts 6 and 10. 1

DATE	REVISION
2/5/25	1 Revised labels and additional details.

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Robyn McKinney 04/30/26
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STIFFENED MGS HALF POST SPACING

INTERSTATE ROUTE H-1 RESURFACING
Miller Pedestrian Overpass to Kapiolani Interchange
Federal-Aid Project No. NH-H1-1(279)R

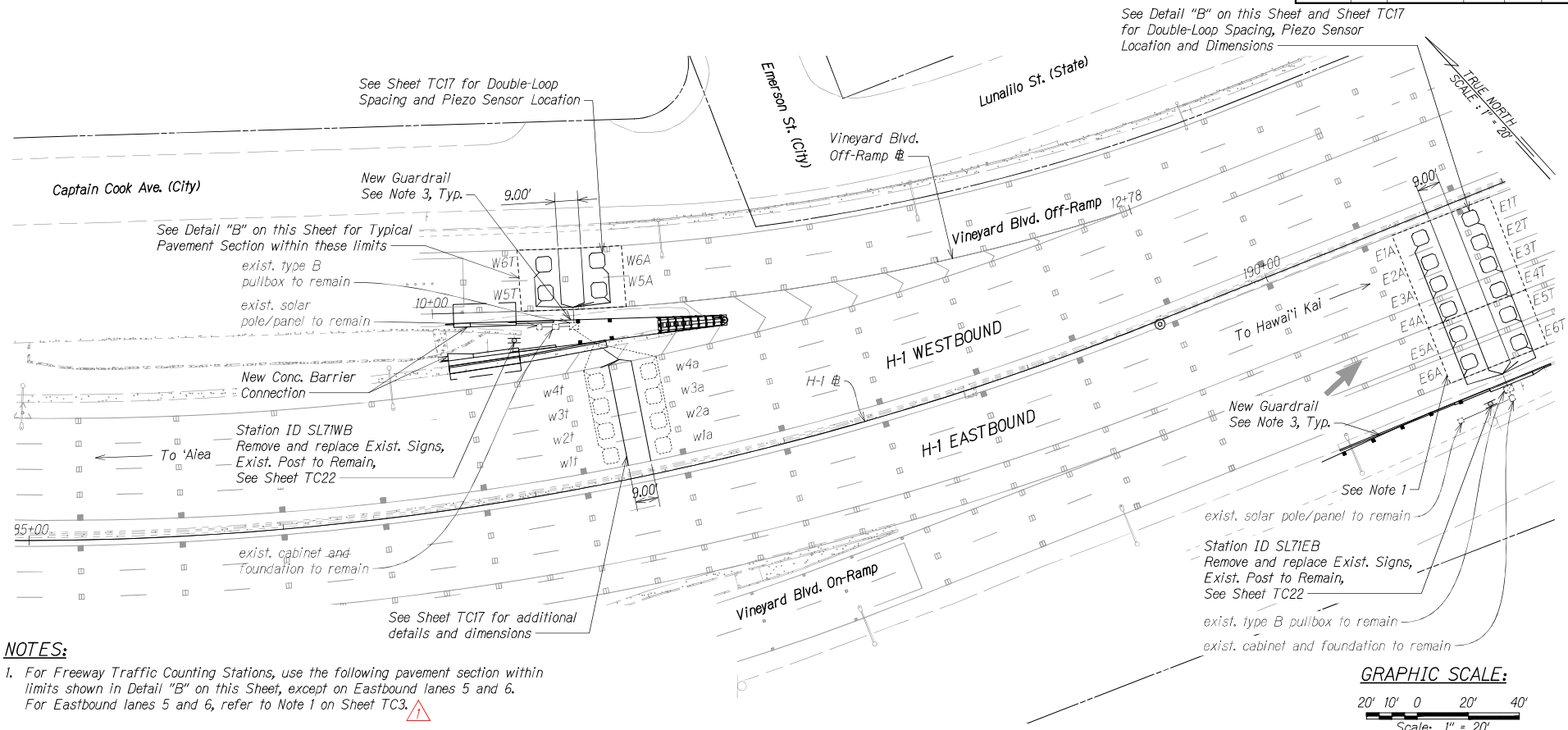
Scale: NTS Date: February 2025

SHEET No. R39 OF 68 SHEETS

ADD.102

W:_CIVIL 3D PROJECTS\2016_202.000 DOT-HWYS H1 RESURFACING - MILLER TO KAPIOLANI\01 CIVIL DRAWINGS\R39 STIFFENED MGS QUARTER POST SPACING.DWG 1/22/2025 2:47 PM

FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(279)R	2024	133	411



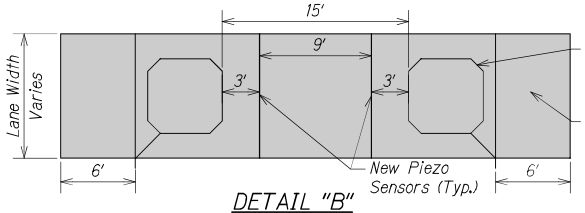
NOTES:

1. For Freeway Traffic Counting Stations, use the following pavement section within limits shown in Detail "B" on this Sheet, except on Eastbound lanes 5 and 6. For Eastbound lanes 5 and 6, refer to Note 1 on Sheet TC3. ⚠1

   2" SMA
   GlasGrid 8511TF
   2" Mix No. IV with PG 64E-22
   GlasGrid 8511TF
   4" HMAB

2. Locations for traffic counting station equipment shown on plan are approximate. Final location of equipment to be determined in the field. The Contractor shall submit the final equipment location plan including the Loops, Piezo and Road temperature sensors for approval prior to installation.

3. The Contractor shall coordinate and install conduits clear from guardrail posts.



DETAIL "B"

TYPICAL FREEWAY EVC SENSOR SPACING AND DIMENSIONS
Not to Scale

GRAPHIC SCALE:
20' 10' 0 20' 40'
Scale: 1" = 20'

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Robyn McKinney 04/30/26
SIGNATURE EXPIRATION DATE OF THE LICENSE

DATE	REVISION
2/5/25	⚠1 Revised Note 1.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

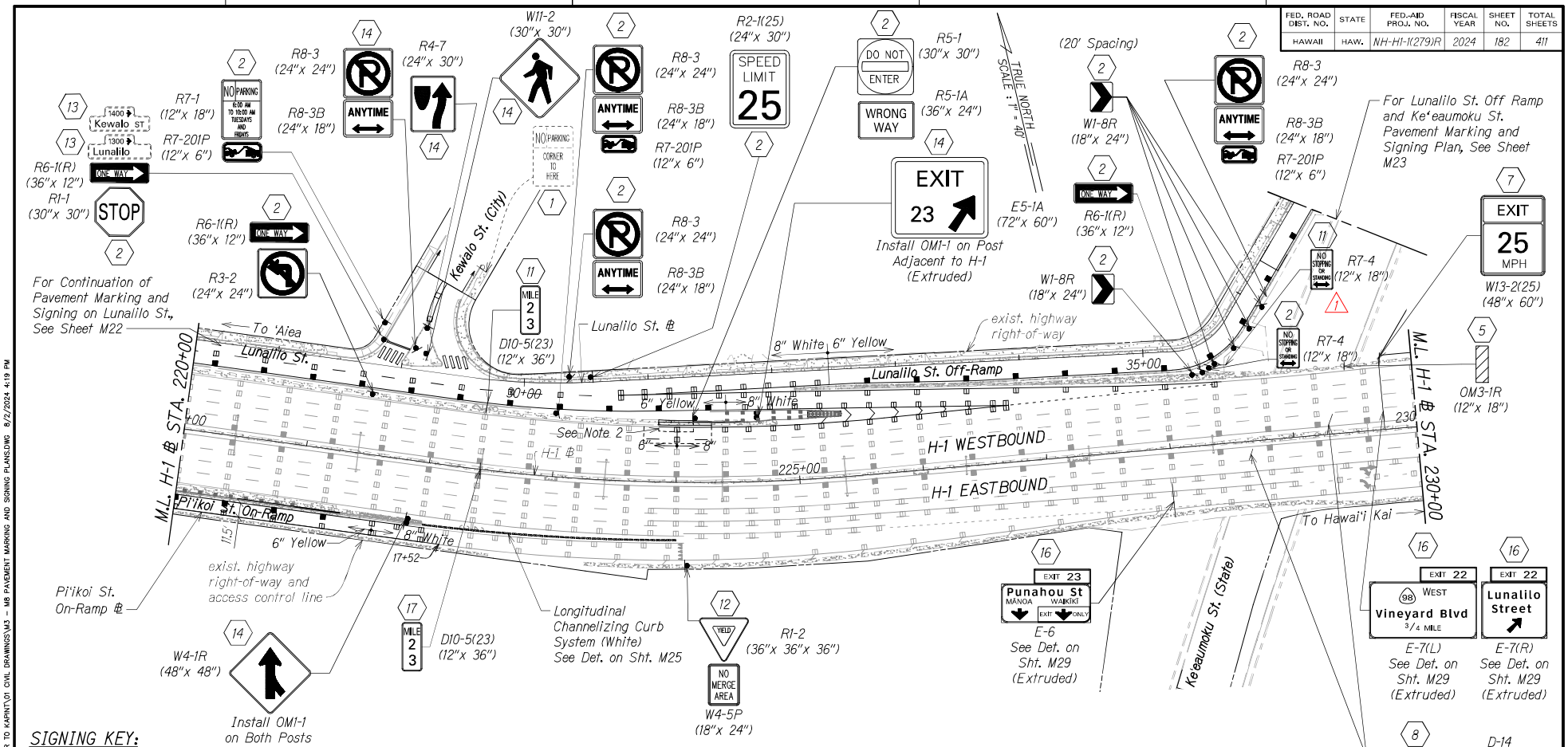
TRAFFIC COUNTING STATION PLAN AT MILEPOST 22.10

INTERSTATE ROUTE H-1 RESURFACING
Miller Pedestrian Overpass to Kaplolani Interchange
Federal-Aid Project No. NH-H1-1(279)R

Scale: 1" = 20' Date: February 2025

SHEET No. TC2 OF 22 SHEETS

W:_CIVIL 3D PROJECTS\2016_202.000 DOT-HWYS H1 RESURFACING - MILLER TO KAPIOLANI\01 CIVIL DRAWINGS\TC1-TC4 TRAFFIC COUNTING STATION PLAN 1.DWG 1/24/2025 8:25 AM



FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(279)R	2024	182	411

SIGNING KEY:

(1) Exist. Sign(s) & Post(s) to Remain

(2) Remove Exist. Sign(s) w/ Post(s) & Install New Sign(s) w/ Post(s).

(5) Remove Exist. Sign(s) & Install New Sign(s) on Bridge Column

(7) Remove Exist. Sign(s) & Install New Sign(s) on Exist. Column Sign Post

(8) Remove Exist. Sign(s) & Install New Sign Mounted on Overpass (Bridge) Fascia

(11) Remove Exist. Sign(s) & Install New Sign(s) on Exist. Street Light Post(s)

(12) Remove Exist. Sign(s) & Install New Sign(s) on Exist. Concrete Barrier Mounted Posts

(13) Reinstall Exist. Sign(s) to New Post

(14) Remove Exist. Sign(s) w/Post(s) & Install New Sign(s) w/ Post(s). Install Type I Object Marker (OM1-1) on New Posts.

(16) Remove Exist. Sign(s) & Install New Sign(s) on Exist. Overhead Sign Frame.

(17) Install New Sign(s) on Exist. Street Light Post.

NOTES:

1. For pavement marking and signing legend, see Sheets M1 to M2.
2. For limits of pavement reconstruction and resurfacing at locations of Concrete Barrier Transition footing, see Sheets R1 to R22.

GRAPHIC SCALE:

40' 20' 0 40' 80'

Scale: 1" = 40'

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

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Robyn McKinney 04/30/26

SIGNATURE EXPIRATION DATE OF THE LICENSE

DATE	REVISION
2/5/25	1 Revised signing key.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING & SIGNING PLAN

INTERSTATE ROUTE H-1 RESURFACING
Miller Pedestrian Overpass to Kapiolani Interchange
Federal-Aid Project No. NH-H1-1(279)R

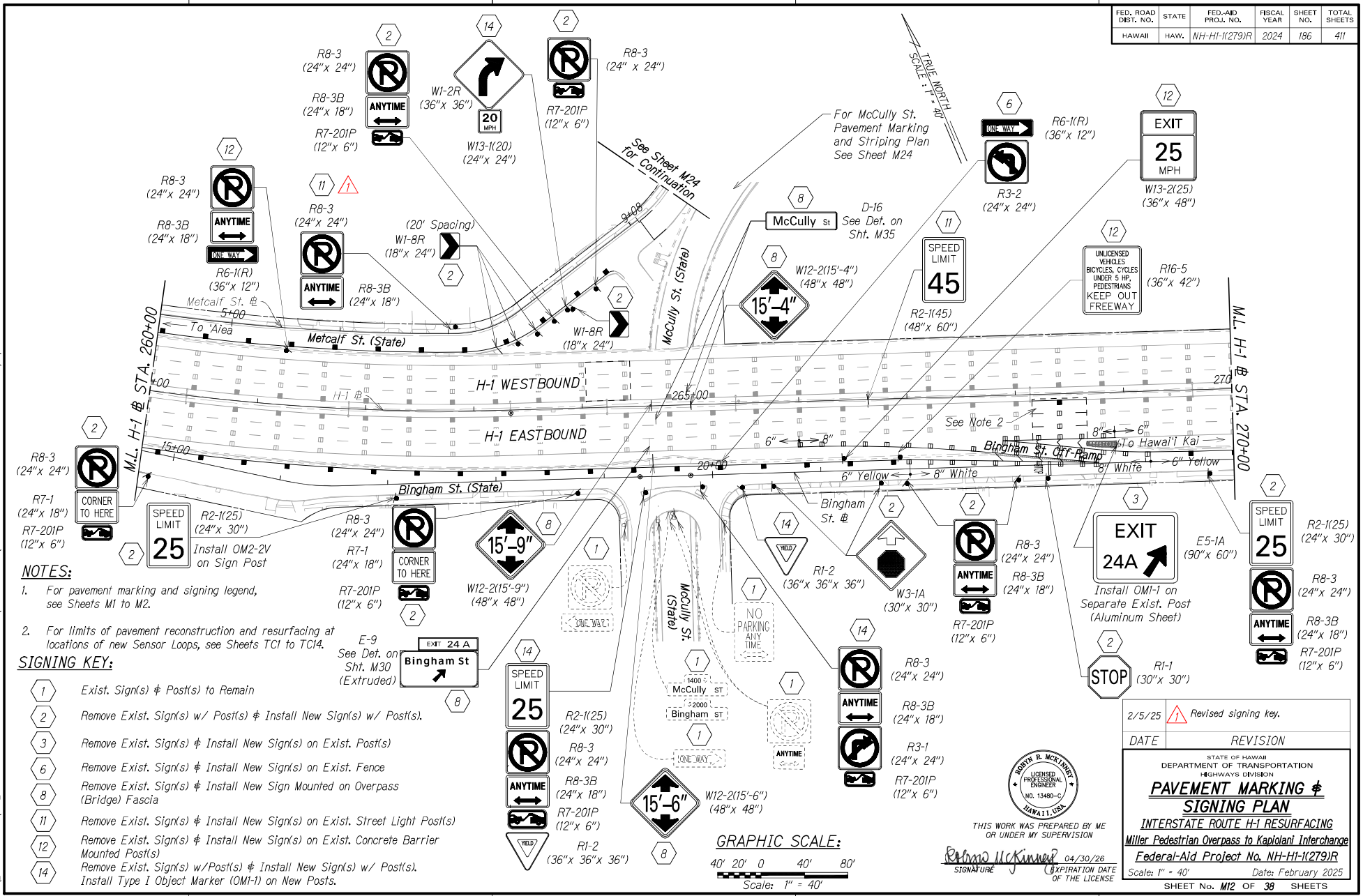
Scale: 1" = 40' Date: February 2025

SHEET No. M8 OF 38 SHEETS

ADD.182

W:_CIVIL 3D PROJECTS\2016_202.000 DOT-HWYS H1 RESURFACING - MILLER TO KAPIO\01 CIVIL DRAWINGS\M3 - M8 PAVEMENT MARKING AND SIGNING PLANS.DWG 8/2/2024 4:19 PM

FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(279)R	2024	186	411



NOTES:

1. For pavement marking and signing legend, see Sheets M1 to M2.
2. For limits of pavement reconstruction and resurfacing at locations of new Sensor Loops, see Sheets TC1 to TC14.

SIGNING KEY:

1	Exist. Sign(s) & Post(s) to Remain
2	Remove Exist. Sign(s) w/ Post(s) & Install New Sign(s) w/ Post(s).
3	Remove Exist. Sign(s) & Install New Sign(s) on Exist. Post(s)
6	Remove Exist. Sign(s) & Install New Sign(s) on Exist. Fence
8	Remove Exist. Sign(s) & Install New Sign Mounted on Overpass (Bridge) Fascia
11	Remove Exist. Sign(s) & Install New Sign(s) on Exist. Street Light Post(s)
12	Remove Exist. Sign(s) & Install New Sign(s) on Exist. Concrete Barrier Mounted Post(s)
14	Remove Exist. Sign(s) w/Post(s) & Install New Sign(s) w/ Post(s). Install Type I Object Marker (OM1-1) on New Posts.

GRAPHIC SCALE:
40' 20' 0 40' 80'
Scale: 1" = 40'

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

SIGNATURE 04/30/26 EXPIRATION DATE OF THE LICENSE

DATE	REVISION
2/5/25	1 Revised signing key.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

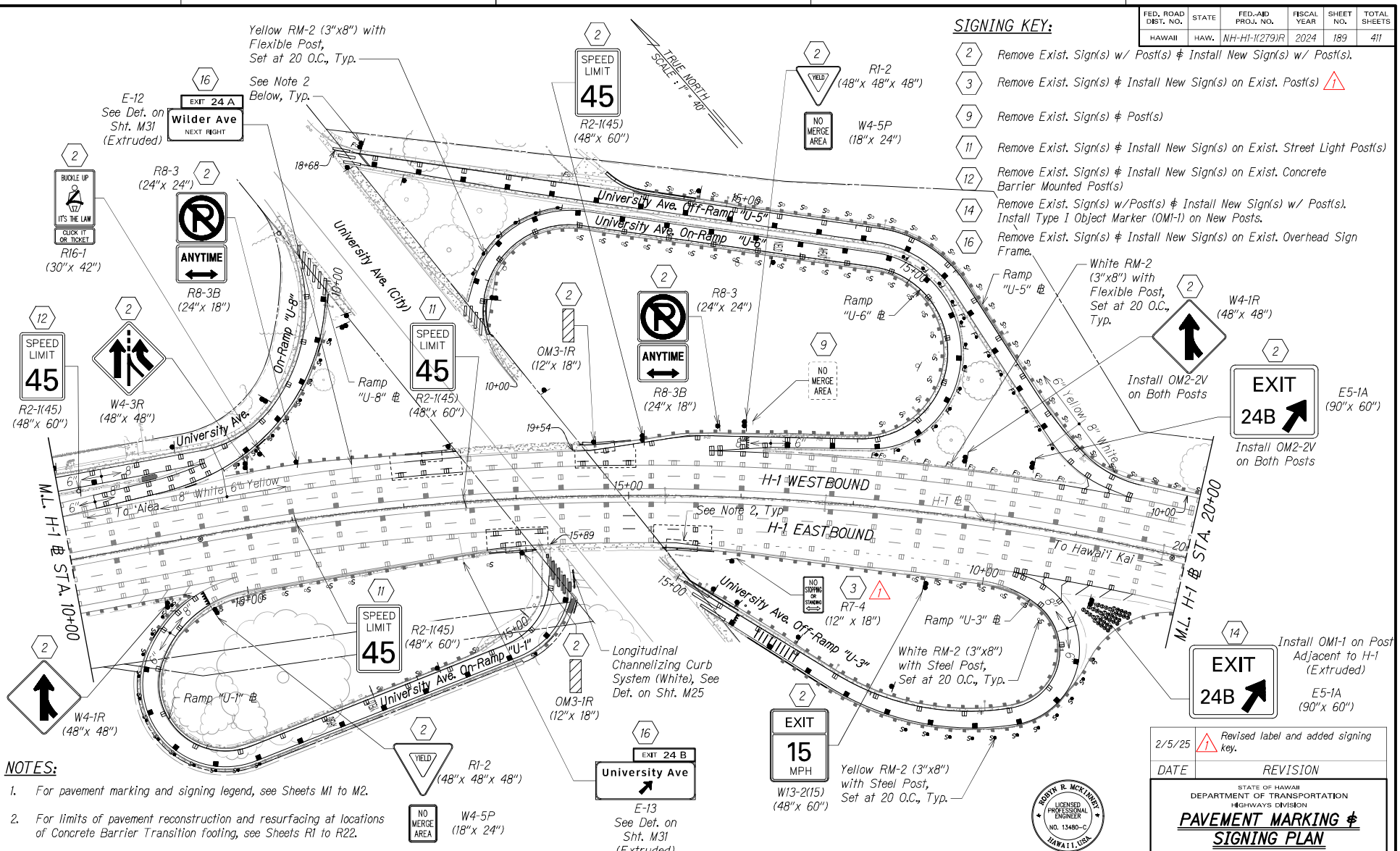
PAVEMENT MARKING & SIGNING PLAN

INTERSTATE ROUTE H-1 RESURFACING
Miller Pedestrian Overpass to Kapiolani Interchange
Federal-Aid Project No. NH-H1-1(279)R

Scale: 1" = 40' Date: February 2025

SHEET No. M12 OF 38 SHEETS

W:_CIVIL 3D PROJECTS\2016_202.000 DOT-HWYS H1 RESURFACING - MILLER TO KAPIOLANI\01 CIVIL DRAWINGS\M9 - M14 PAVEMENT MARKING AND SIGNING PLANS.DWG 8/30/2024 2:27 PM



SIGNING KEY:

2	Remove Exist. Sign(s) w/ Post(s) & Install New Sign(s) w/ Post(s).
3	Remove Exist. Sign(s) & Install New Sign(s) on Exist. Post(s) 1
9	Remove Exist. Sign(s) & Post(s)
11	Remove Exist. Sign(s) & Install New Sign(s) on Exist. Street Light Post(s)
12	Remove Exist. Sign(s) & Install New Sign(s) on Exist. Concrete Barrier Mounted Post(s)
14	Remove Exist. Sign(s) w/Post(s) & Install New Sign(s) w/ Post(s). Install Type I Object Marker (OM1-1) on New Posts.
16	Remove Exist. Sign(s) & Install New Sign(s) on Exist. Overhead Sign Frame.

NOTES:

1. For pavement marking and signing legend, see Sheets M1 to M2.
2. For limits of pavement reconstruction and resurfacing at locations of Concrete Barrier Transition footing, see Sheets R1 to R22.
3. For the new signs along University Ave. On and Off-Ramps, see sheet M16.
4. The Contractor shall install Rumble Strips clear from traffic counting station loops.

GRAPHIC SCALE:

40' 20' 0 40' 80'

Scale: 1" = 40'

FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(279)R	2024	189	411

DATE	REVISION
2/5/25	1 Revised label and added signing key.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING & SIGNING PLAN

INTERSTATE ROUTE H-1 RESURFACING
Miller Pedestrian Overpass to Kaplolani Interchange
Federal-Aid Project No. NH-H1-1(279)R

Scale: 1" = 40' Date: February 2025

SHEET No. M15 OF 38 SHEETS

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

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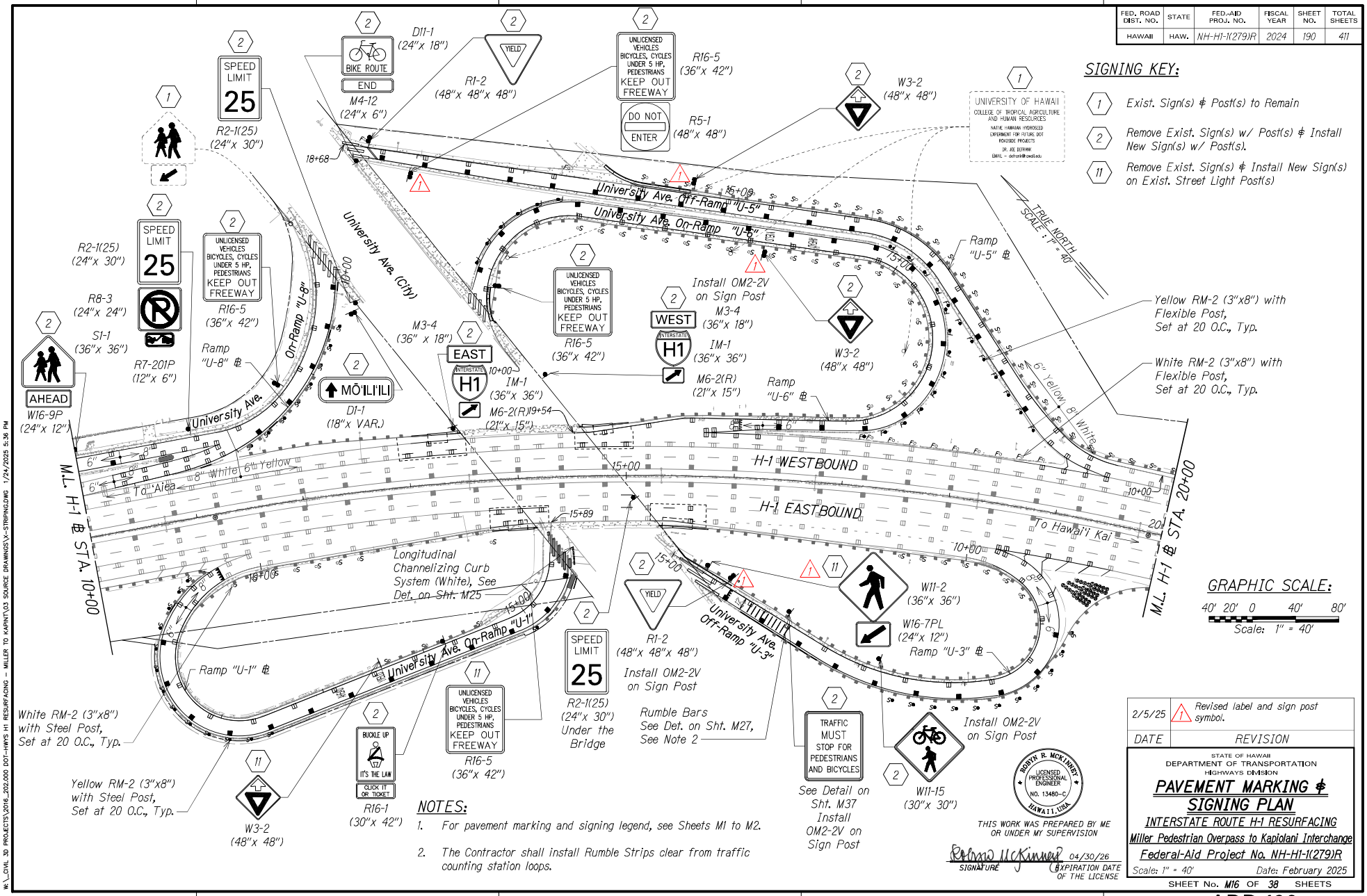
W:_CIVIL 3D PROJECTS\2016_202.000 DOT-HWYS H1 RESURFACING - MILLER TO KAPIOLANI\01 CIVIL DRAWINGS\M15 - M19 PAVEMENT MARKING AND SIGNING PLANS.DWG 1/24/2025 5:30 PM



FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(279)R	2024	190	411

NOTES:

1. For pavement marking and signing legend, see Sheets M1 to M2.
2. The Contractor shall install Rumble Strips clear from traffic counting station loops.

DATE	REVISION
2/5/25	1 Revised label and sign post symbol.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING & SIGNING PLAN

INTERSTATE ROUTE H-1 RESURFACING
Miller Pedestrian Overpass to Kapiolani Interchange
Federal-Aid Project No. NH-H1-1(279)R

Scale: 1" = 40' Date: February 2025

SHEET No. M16 OF 38 SHEETS

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

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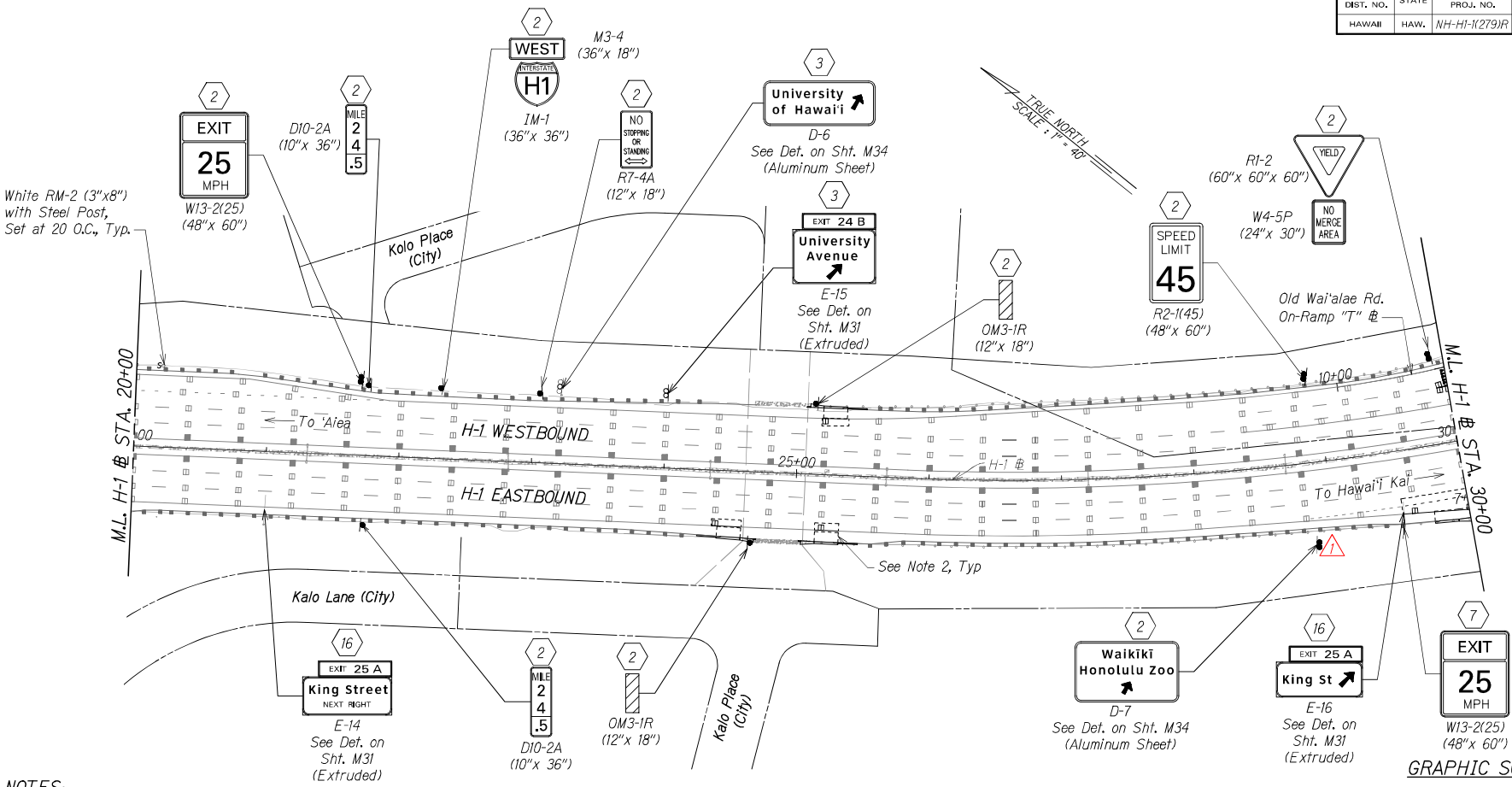
SIGNATURE 04/30/26 EXPIRATION DATE OF THE LICENSE

W:_CIVIL 3D PROJECTS\2016_202.000 DOT-HWYS H1 RESURFACING - MILLER TO KAPIOLANI\03 SOURCE DRAWINGS\X-STRIPING.DWG 1/24/2025 5:38 PM

FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(279)R	2024	191	411



NOTES:

1. For pavement marking and signing legend, see Sheets M1 to M2.
2. For limits of pavement reconstruction and resurfacing at locations of Concrete Barrier Transition footing, see Sheets R1 to R22.

SIGNING KEY:

2	Remove Exist. Sign(s) w/ Post(s) & Install New Sign(s) w/ Post(s).
3	Remove Exist. Sign(s) & Install New Sign(s) on Exist. Post(s)
7	Remove Exist. Sign(s) & Install New Sign(s) on Exist. Column Sign Post
16	Remove Exist. Sign(s) & Install New Sign(s) on Exist. Overhead Sign Frame.

GRAPHIC SCALE:

40' 20' 0 40' 80'

Scale: 1" = 40'

DATE	REVISION
2/5/25	1 Revised sign post symbol.

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Robyn McKinney 04/30/26

SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING & SIGNING PLAN

INTERSTATE ROUTE H-1 RESURFACING
Miller Pedestrian Overpass to Kapiolani Interchange
Federal-Aid Project No. NH-H1-1(279)R

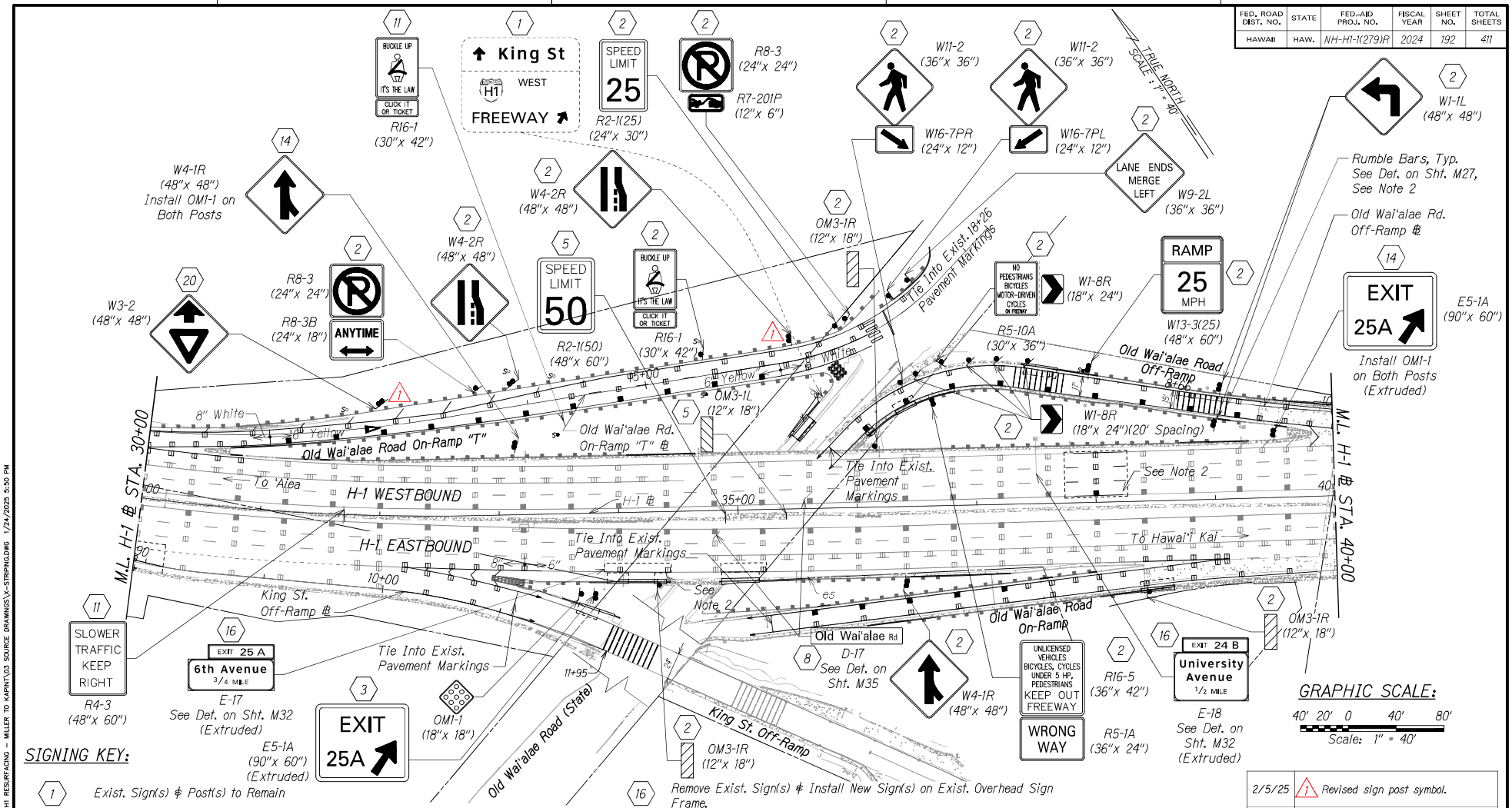
Scale: 1" = 40' Date: February 2025

SHEET No. M17 OF 38 SHEETS

ADD.191

W:_CIVIL 3D PROJECTS\2016_202.000 DOT-HWYS H1 RESURFACING - MILLER TO KAPIINT\03 SOURCE DRAWINGS\X-STRIPING.DWG 1/24/2025 5:45 PM

FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(279)R	2024	192	411



SIGNING KEY:

1. Exist. Sign(s) ⊄ Post(s) to Remain
2. Remove Exist. Sign(s) w/ Post(s) ⊄ Install New Sign(s) w/ Post(s).
3. Remove Exist. Sign(s) ⊄ Install New Sign(s) on Exist. Post(s)
5. Remove Exist. Sign(s) ⊄ Install New Sign(s) on Bridge Column
8. Remove Exist. Sign(s) ⊄ Install New Sign Mounted on Overpass (Bridge) Fascia
11. Remove Exist. Sign(s) ⊄ Install New Sign(s) on Exist. Street Light Post(s)
14. Remove Exist. Sign(s) w/Post(s) ⊄ Install New Sign(s) w/ Post(s). Install Type I Object Marker (OM1-1) on New Posts.
16. Remove Exist. Sign(s) ⊄ Install New Sign(s) on Exist. Overhead Sign Frame.
20. Install New Sign(s) ⊄ Post(s)

NOTES:

1. For pavement marking and signing legend, see Sheets M1 to M2.
2. For limits of pavement reconstruction and resurfacing at locations of new Sensor Loops and Concrete Barrier Transition footing, see Sheets TC1 to TC14 and Sheets R1 to R22 respectively.
3. The Contractor shall install Rumble Strips clear from traffic counting station loops.

GRAPHIC SCALE:

40' 20' 0 40' 80'
Scale: 1" = 40'

DATE	REVISION
2/5/25	1 Revised sign post symbol.

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

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Robyn McKinney 04/30/26
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING ⊄ SIGNING PLAN

INTERSTATE ROUTE H-1 RESURFACING
Miller Pedestrian Overpass to Kapiolani Interchange
Federal-Aid Project No. NH-H1-1(279)R

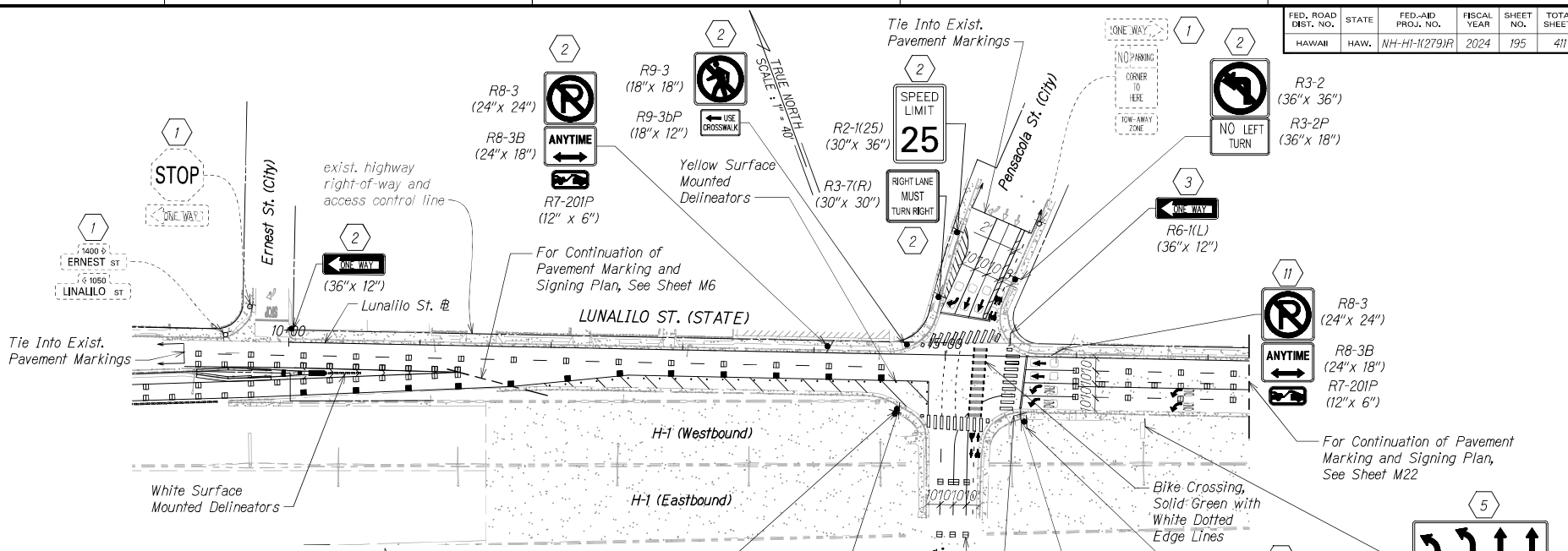
Scale: 1" = 40' Date: February 2025

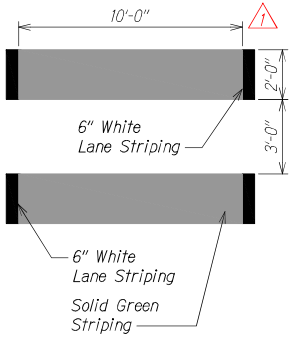
SHEET No. M18 OF 38 SHEETS

W:_CIVIL 3D PROJECTS\2016_202.000 DOT-HWYS H1 RESURFACING - MILLER TO KAPIOLANI\03 SOURCE DRAWINGS\X-STRIPING.DWG 1/24/2025 5:50 PM

ADD.192

FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(279)R	2024	195	411





BIKE CROSSING MARKINGS
Not to Scale

BIKE LANE MARKINGS
Not to Scale

NOTE:

For pavement marking and signing legend, see Sheets M1 and M2.

SIGNING KEY:

1. Exist. Sign(s) & Post(s) to Remain
2. Remove Exist. Sign(s) w/ Post(s) & Install New Sign(s) w/ Post(s).
3. Remove Exist. Sign(s) & Install New Sign(s) on Exist. Post(s)
5. Remove Exist. Sign(s) & Install New Sign(s) on Bridge Column
11. Remove Exist. Sign(s) & Install New Sign(s) on Exist. Street Light Post(s)

GRAPHIC SCALE:
40' 20' 0 40' 80'
Scale: 1" = 40'

DATE	REVISION
2/5/25	1 Revised label and dimension.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING & SIGNING PLAN

INTERSTATE ROUTE H-1 RESURFACING
Miller Pedestrian Overpass to Kapiolani Interchange
Federal-Aid Project No. NH-H1-1(279)R

Scale: 1" = 40' Date: February 2025

SHEET No. M21 OF 38 SHEETS

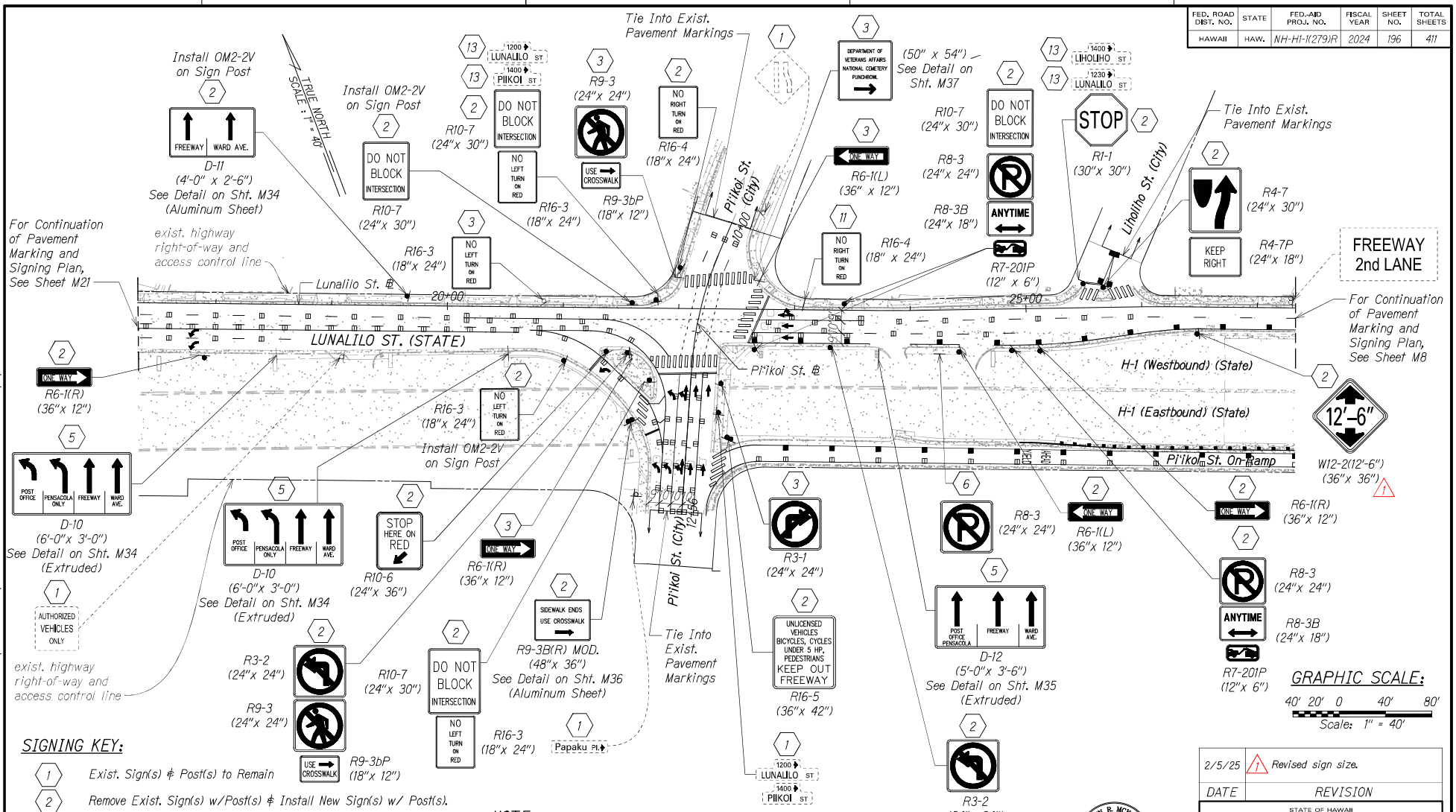
ROBYN R. MCKINNEY
LICENSED PROFESSIONAL ENGINEER
NO. 13480-C
HAWAII, USA

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

SIGNATURE 04/30/26 EXPIRATION DATE OF THE LICENSE

W:_CIVIL 3D PROJECTS\2016_202.000 DOT-HWYS H1 RESURFACING - MILLER TO KAPIOLANI\01 CIVIL DRAWINGS\M20 - M25 PAVEMENT MARKING AND SIGNING PLANS.DWG 1/24/2025 5:34 PM

FED. ROAD DIST. NO.	STATE	FED.-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-H1-1(279)R	2024	196	411



SIGNING KEY:

1	Exist. Sign(s) ∉ Post(s) to Remain
2	Remove Exist. Sign(s) w/Post(s) ∉ Install New Sign(s) w/ Post(s).
3	Remove Exist. Sign(s) ∉ Install New Sign(s) on Exist. Post(s)
5	Remove Exist. Sign(s) ∉ Install New Sign(s) on Bridge Column
6	Remove Exist. Sign(s) ∉ Install New Sign(s) on Exist. Fence
11	Remove Exist. Sign(s) ∉ Install New Sign(s) on Exist. Street Light Post(s)
13	Reinstall Exist. Sign(s) to New Post

NOTE:

For pavement marking and signing legend, see Sheets M1 and M2.

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

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Robyn McKinney 04/30/26
SIGNATURE EXPIRATION DATE OF THE LICENSE

DATE	REVISION
2/5/25	1 Revised sign size.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PAVEMENT MARKING & SIGNING PLAN

INTERSTATE ROUTE H-1 RESURFACING
Miller Pedestrian Overpass to Kapiolani Interchange
Federal-Aid Project No. NH-H1-1(279)R

Scale: 1" = 40' Date: February 2025

SHEET No. M22 OF 38 SHEETS

W:_CIVIL 3D PROJECTS\2016_202.000 DOT-HWYS H1 RESURFACING - MILLER TO KAPIOLANI\01 CIVIL DRAWINGS\M20 - M25 PAVEMENT MARKING AND SIGNING PLANS.DWG 1/24/2025 5:23 PM

INTERSTATE ROUTE H-1 RESURFACING, MILLER PEDESTRIAN OVERPASS TO KAPIOLANI INTERCHANGE

FEDERAL-AID PROJECT NO. NH-H1-1(279)R

PRE-BID MEETING NOTES
January 9, 2025

The following notes are from the Hawaii Department of Transportation (HDOT) pre-bid meeting with prospective bidders for the Interstate Route H-1 Resurfacing, Miller Pedestrian Overpass to Kapiolani Interchange project.

The meeting was conducted virtually via Microsoft Teams at 9:00 am.

All attendees were notified of the following:

- Scope of work consists of resurfacing, repair and reconstruction of weakened pavement, upgrading of existing guardrails, pavement marking and signage, freeway lighting upgrades, landscaping and other site improvements.

- Please refer to Special Provisions Section 102 for bid security amounts to be submitted.

- The bid opening date is still set for January 31, 2025 at 2:00pm.

- Please submit all RFIs via HIePRO by January 17, 2025 at 2:00pm.

- Submit all required DBE forms by February 5, 2025 at 4:30pm. Failure to submit these documents will be cause for bid/proposal rejection.

Attendance List:
HDOT
SSFM
OCR
Grace Pacific
Jas W. Glover

The meeting ended at 9:25 am.

All items discussed at this meeting are for clarification only. The bid documents shall govern over anything said at the meeting and discrepancies shall be clarified in Addendum No. 1.

Questions for solicitation: B25001289

INTERSTATE ROUTE H-1 RESURFACING,

MILLER PEDESTRIAN OVERPASS TO KAPIOLANI INTERCHANGE

DISTRICT OF HONOLULU

ISLAND OF OAHU

FEDERAL-AID PROJECT NO. NH-H1-1(279)R

2/5/2025

1. **Will there be an opportunity to propose equivalent substitutions to the roadway LED luminaires listed?**

Response: Equivalent substitutions need to be compatible with the current lighting system and can be proposed after bid award.

2. **Request for additional line item for sign and post removal?**

Response: Line item existed but has been updated and split between single post and double posts.

3. **Item: 606.1500 HSS 8x8x3/16 Block Replacement - 35 LF would you provide more detailed drawing for clarity?**

Response: Elevation view, section view, and dimensions added for this Hollow Steel Tube

4. **Item: 606.2200 Retro-Rail System - 116 LF would you provide more detailed drawing for clarification.**

Response: Retro-Rail System is a proprietary product; please check with manufacturer for product information.

5. **Request for additional line item solely for the implementation of the street name signs found on M35?**

Response: These are destinations signs paid for under Item 630.

6. **Please check the PROPOSAL SCHEDULE....Item numbers 507.0100, 507.0200, and 638.0100 already have unit price $ amounts. Should these unit prices on the schedule be left blank so that the bidders can enter their own unit prices?**

Response: Removed unit price for these line items in the Proposal Schedule.

7. **Reference Drawing ET-19, shows a Solar Pole that's Embedded into the Concrete Foundation. Prior EVC Counting Station Sites with Solar have used a Solar Pole with Base Plate and Anchor Bolts so that it can be replaced in case of a Knock Down. Can we provide a Solar Pole with Base Plate and Anchor Bolts, or must we provide a Solar Pole with Embedded Base?**

Response: Breakaway posts to be used at Lunalilo On-Ramp (TC4), On Ramp U-1 (TC11), in between On-Ramp U-6 and Off-Ramp U-5 (TC12) and Eastbound Old Waialae On-Ramp (TC14). All others shall follow detail.

8. **Request for additional information/details on sheet no R39 of 68 (page 102) - Stiffened MGS Half Post Spacing. Please provide a detailed drawing of the the HSS 8x8x3/16 Block and the Backup Rail Sleeve.**

Response: Elevation view, section view, and dimensions added for this Hollow Steel Tube

9. **Request for additional information/details on sheet no R55 of 68 (page 118) - Retro Rail System. Please provide more details on the cable, length, etc and the brackets.**

Response: Retro-Rail System is a proprietary product; please check with manufacturer for product information.

10. **Item 607.0100 6-Foot Chain Link Fence, without Toprail - can you please confirm if this is being spliced in or at a terminal?**

Response: The whole length of the existing fence, including posts, will be removed. A new chain-link fence will be installed. Therefore, there is no need to splice fence fabric.

11. • **Due to Size of the project, DBE participation requirements, and scheduling conflicts with other agencies' bid dates, we request to extend bid due date for at least 3 week from current bid date. This will encourage more DBE contractors to participate in the bid and allow all bidders to prepare competitive pricing and government will receive best value.**

Response: Bid date was extended in previous Addendum No. 1.

12. **Drawing Sheet No. M16 (page 190) indicates Yield Markings (detail on Sheet No. M1, page 175) on University Ave. On-Ramp "U-1" and University Ave. Off-Ramp "U-3" which are not reflected in the bid proposal. Please provide the bid item number for these items.**

Response: A line item was added for quantity and cost of new Yield Line Markings.

13. **Drawing Sheet No. M21 (Page 195) indicates Bike Crossing Markings and Bike Lane Markings at the intersection of Pensacola Street and Lunalilo Street which are not reflected in the bid proposal. Please provide the bid item number for these items.**

Response: White bike lane markings have been accounted for on 629.06 Single 6-inch White Pavement Striping Pay Item. A separate line item was added for the Bike Symbol. A line item was also added for the quantity and cost of new Yellow Bike Lane Striping and Bike Lane Crossing (Green).

14. **Some of the Typical Sections on Plan Sheet 38 to 50 do not match the hatching description on the roadway plans. For example, hatching on Sheet 67 for WB Lunalilo St On-Ramp at H-1 BL Sta. 200+00 does not match typical section on Sheet 38. Hatching on Sheet 85 for Lunalilo St Sta. 9+00 to 10+00 does not match typical section on Sheet 43. WB University Off-Ramp U-5 Sta. 10+70 to 10+87 is not hatched on Sheet 77 compared to the detail note on Sheet 41. Please clarify if the Roadway Plans on Sheet 64 to 89 should be followed when there are discrepancies between the Roadway Plans and Typical Sections.**

Response: See revised plans.

15. **Please clarify Note 1 on Drawing TC2 regarding the pavement section. Note states "except on Eastbound lanes 5 and 6," please clarify if the intent is for the Westbound Vineyard Off-Ramp Lanes 5 and 6 to use pavement section "2 inch Mix No. IV with PG 64E-22 over 6 inch HMAB."**

Response: Yes. Eastbound lanes 5 and 6 will follow Typical Ramp Pavement Section indicated in Note 1 on Sheet TC3. Note 1 was revised on Sheet TC2 to clarify.

16. **Please confirm if the "pavement sections" as described in Note 1 on Drawing TC1 to TC15 for the traffic counting stations will be paid for under the 203 series and 301 series to 415 series bid items.**

Response: The pavement sections are to be paid for under their respective sections

17. **If the traffic counting stations pavement sections are to be paid for under the 301 series to 415 series bid items, it seems that Bid Item 414.0200 approx. qty. might be low. There seems to be a layer of the GlassGrid 8511TF at the traffic counting stations that might not be accounted for in the approx. qty.**

Response: The quantity for 414.02 has been verified. There is GlassGrid shown on both roadway sheets and Traffic Counting Station sheets.

18. **If the traffic counting stations pavement sections are to be paid for under the 301 series to 415 series bid items, it seems that Bid Item 401.0200 approx. qty. might be high while Bid Item 401.0400 might be low. Please confirm approx. qty. for Bid Item 401.0200 and 401.0400 as there doesn't seem to be 405 Ton of "HMA Pavement, Mix No. IV" from the "resurfacing" and "pavt. recon" work.**

Response: The quantities for 401.0200 and 401.0400 have been verified. There is HMA Mix IV shown on roadway sheets, both 2" thickness and 1.5" thickness. There is Mix No. IV with PG 64E-22 shown on roadway sheets and Traffic Counting Station sheets.

19. **Please clarify which specific work as described on the plans will be paid for under Bid item 203.0100 Roadway Excavation.**

Response: Roadway excavation is for installation of the concrete transitions (e.g. Type KAT Transitions)