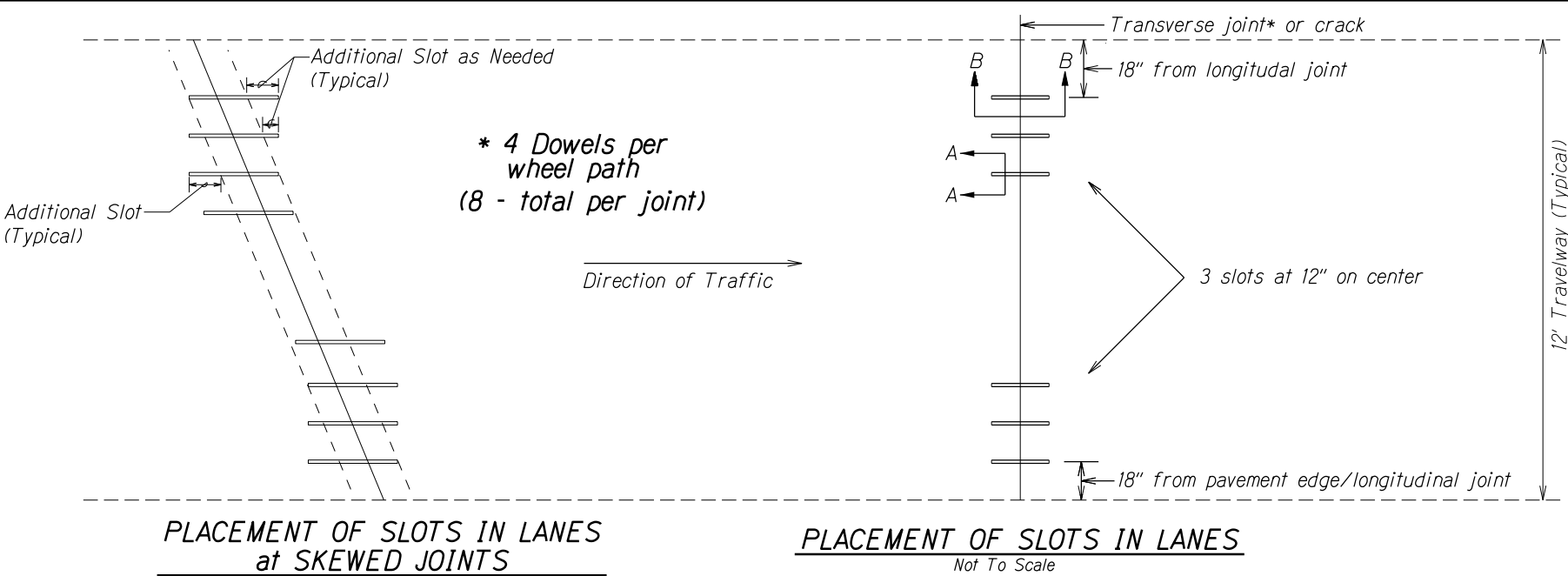
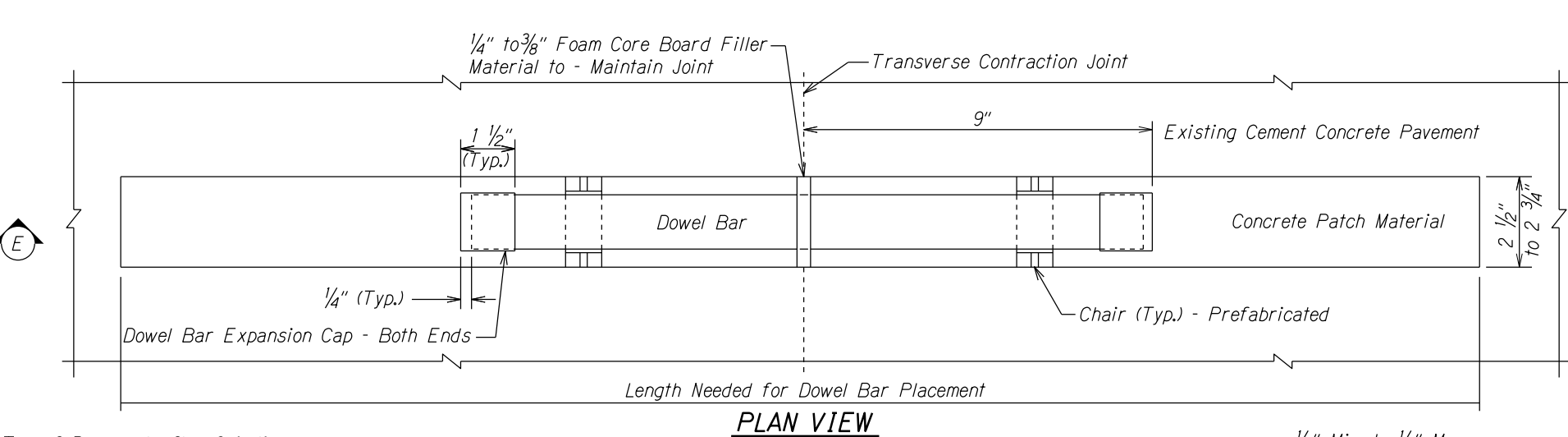


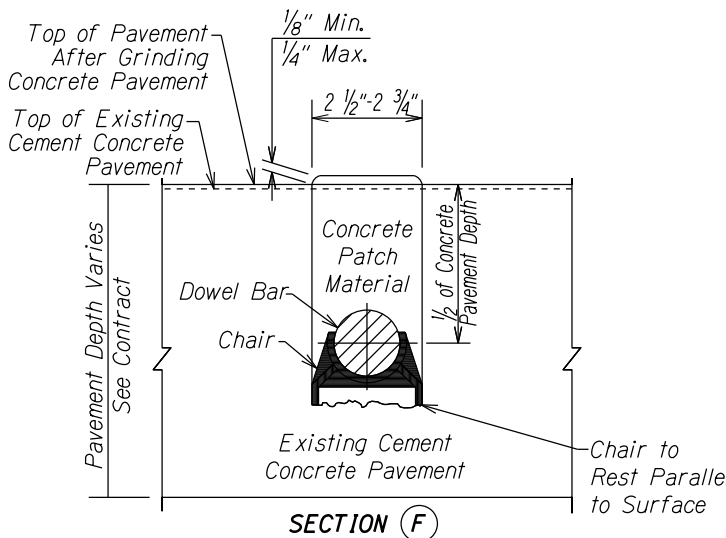
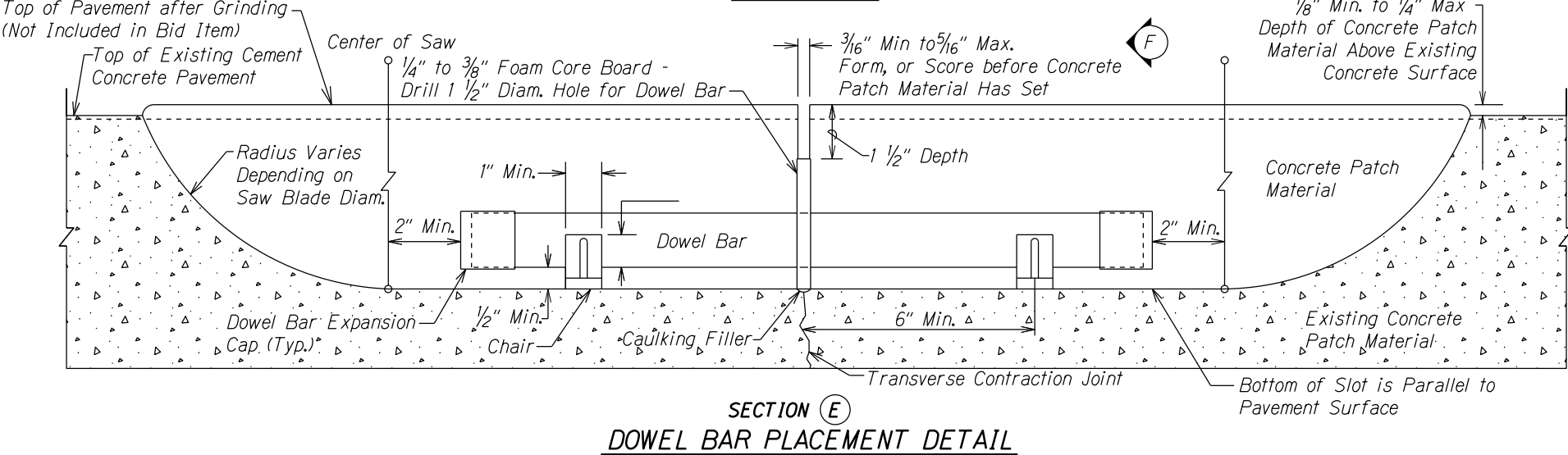
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ARR-HI-K(262)	2009	6	43



- *Note:**
- Work Area ①
Transverse or Skewed Joints are spaced approximately every 13.'
 - Work Area ②
Transverse or Skewed Joints are spaced approximately every 15.'
 - Work Areas ① and ②
Uncontrolled mid slab shrinkage cracks: As specified in General Note 15, the State will determine which uncontrolled mid slab shrinkage cracks to be dowel bar retrofitted based on the Contractor's map submittal.
 - Slots may be offset 3 inches along the joint or shrinkage crack as needed to avoid other existing cracks or conditions that would affect dowel bar retrofit.
 - Cracks that are not coincidental with the construction joints (Volunteer cracks) near saw cut joints: Engineer has the option to retrofit either the saw cut joint or volunteer crack.



- NOTE:**
- Direction and Angle of Skewed Joints May Not be as Shown.
 - Due to existing conditions (cracks, spalls, etc.), placement of the slot may be adjusted by the Engineer.
- NOTE:**
- Width of foam core board to match existing transverse joint (width varies).



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL SECTION

INTERSTATE ROUTE H-1 CONCRETE
PAVEMENT PRESERVATION (DOWEL RETROFIT)

M.P. 2.40 to M.P. 3.46 and M.P. 24.90 to M.P. 26.40

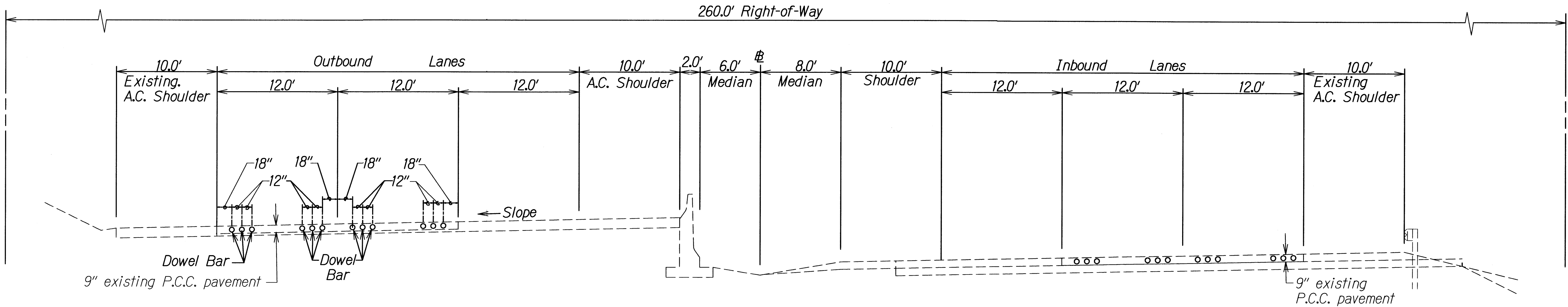
Federal-Aid Project No. ARR-HI-K(262)

Not to Scale Date: Jan., 2009

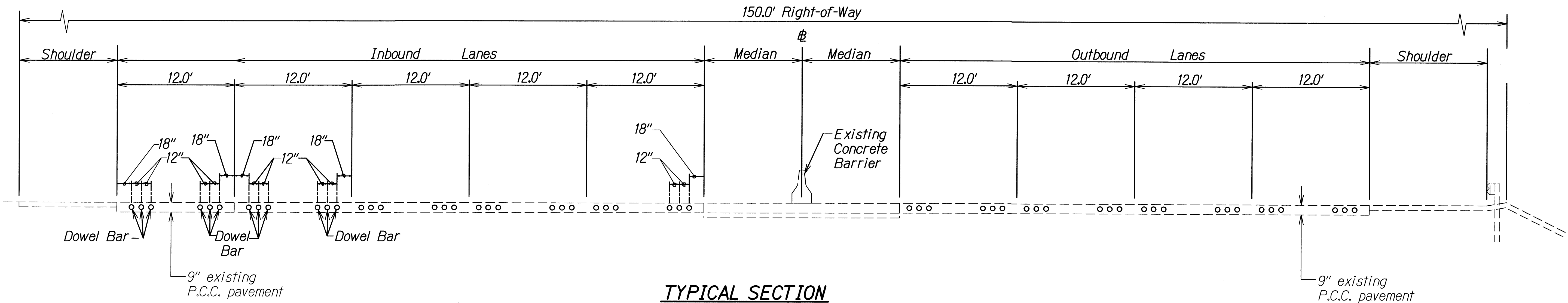
SHEET No. 1 OF 3 SHEETS

DATE	DESIGNED BY	CHECKED BY
NOTE BOOK	DESIGNED BY	CHECKED BY
QUANTITIES BY	DESIGNED BY	CHECKED BY
DATE	DESIGNED BY	CHECKED BY

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ARR-H1-1(262)	2009	7	43



TYPICAL SECTION
Sta. 165+52± (M.P. 2.40±) TO Sta. 207+76± (M.P. 3.20) (Palailai)
Scale: 3/16" = 1'0"



TYPICAL SECTION
Sta. 61+13± (M.P. 25.00±) TO Sta. 68+30± (M.P. 25.14) (Kaimuki)
Scale: 3/16" = 1'0"

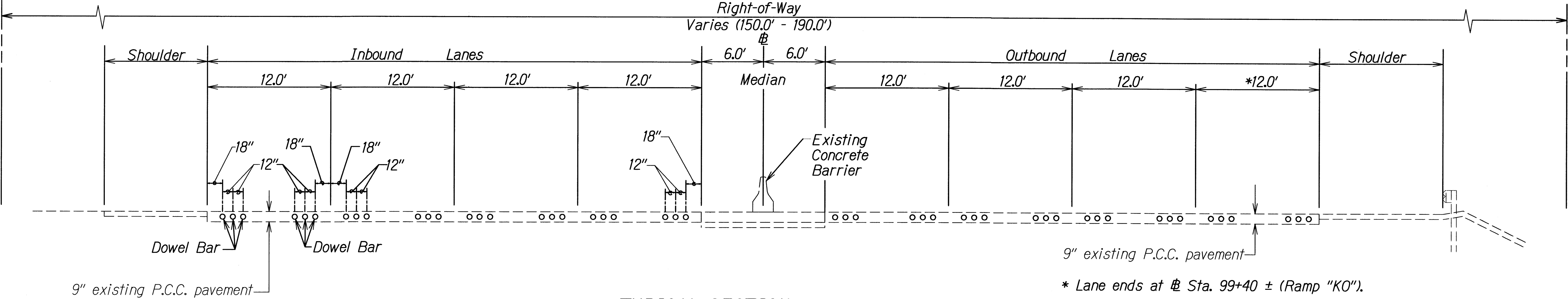
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

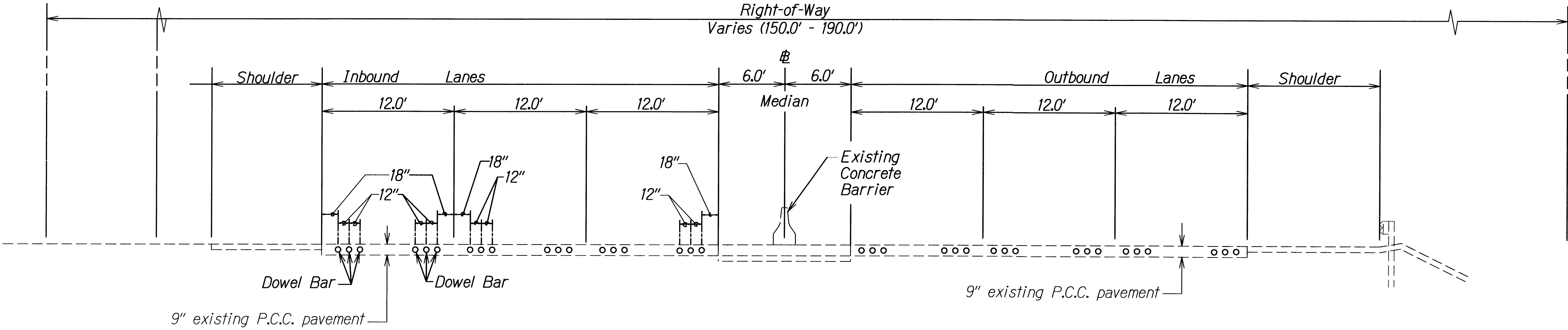
TYPICAL ROADWAY SECTIONS
INTERSTATE ROUTE H-1 CONCRETE
PAVEMENT PRESERVATION (DOWEL RETROFIT)
M.P. 2.40 to 3.46 and M.P. 24.90 to 26.40
Federal-Aid Project No. ARR-H1-1(262)
Scale: 3/16" = 1'-0" Date: Jan, 2009

SHEET No. 2 OF 3 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ARR-HI-1(262)	2009	8	43



TYPICAL SECTION
Sta. 68+30± (M.P. 25.14) to Sta. 95+25± (M.P. 25.65±) (Kaimuki)
Scale: 3/16" = 1'0"



TYPICAL SECTION
Sta. 95+25± (M.P. 25.65) to Sta. 135+05± (M.P. 26.40±) (Kaimuki)
Scale: 3/16" = 1'0"

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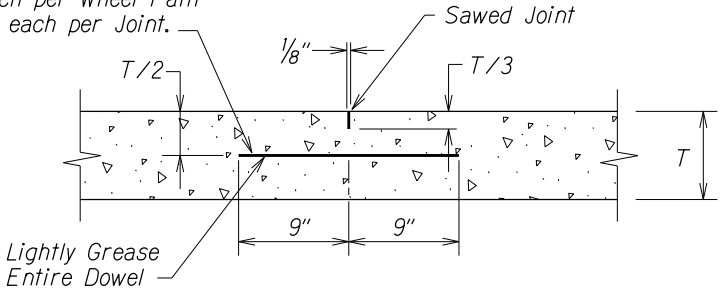
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL ROADWAY SECTIONS
INTERSTATE ROUTE H-1 CONCRETE
PAVEMENT PRESERVATION (DOWEL RETROFIT)
M.P. 2.40 to 3.20 and M.P. 25.00 to 26.40
Federal-Aid Project No. ARR-HI-1(262)
Scale: 3/16" = 1'-0" Date: Jan., 2009

SHEET No. 3 OF 3 SHEETS

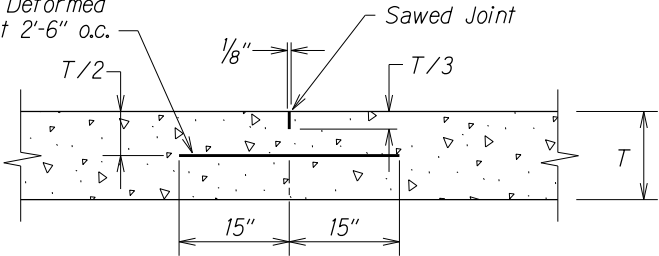
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HAWAII	HAW.	ARR-HI-1(262)	2009	9	43

1/4" Ø Epoxy Coated Smooth Dowell at 12" o.c.
4 each per Wheel Path or 8 each per Joint.

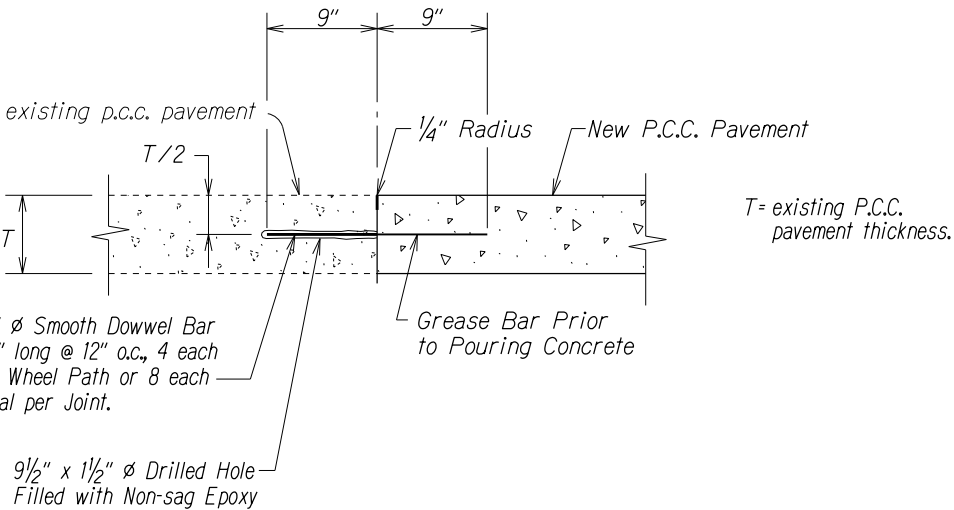


TRANSVERSE CONTRACTION JOINT (D-1)
Not to Scale

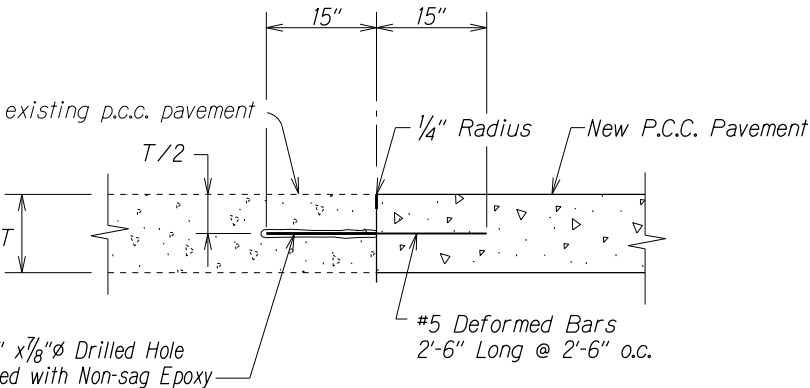
#5 X 2'-6" Epoxy Coated Deformed Bars at 2'-6" o.c.



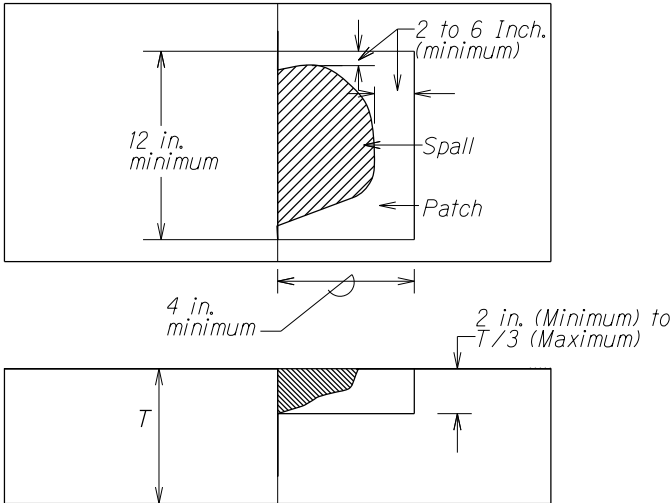
LONGITUDINAL CONTRACTION JOINT (D-2)
Not to Scale



TRANSVERSE CONSTRUCTION JOINT AT EXISTING P.C.C. PAVEMENT (D-3)
Not to Scale



LONGITUDINAL CONSTRUCTION JOINT AT EXISTING P.C.C. PAVEMENT (D-4)
Not to Scale



PARTIAL DEPTH SPALL REPAIR DETAILS
Not to Scale

NOTES:

- Epoxy Coated Dowels and Deformed Bars shall Conform to AASHTO M284/M 284/M-95 Grade or 60.
- Transverse Construction Joints shall be located at a Minimum Distance of 10 Feet from the Nearest Transverse Contraction Joint.
- The dowels shall be positioned parallel to centerline direction of traffic and within the plane of the roadway surface. The ends of the dowels shall not deviate more than 0.25' from the parallel in 9" length.
- The Contractor shall not damage the epoxy coating on the dowels and deformed bars in any way during shipment, handling, or placement. Damaged epoxy coated dowels shall be replaced at no cost to the State.
- Distance dowels and deformed bars are to be located from a Longitudinal or Transverse Joint is 18 inches. Deformed Bars closer than 15 inches to the Transverse Joint can interfere with Joint Movement.
- The Contractor shall stake out the P.C.C. Slab to be removed to the nearest transverse joint and verify location with the Engineer.
- The Contractor shall saw cut the existing joint prior to excavation.
- A. H-3:
Areas of broken PCC on H-3 (Halawa to Likelike:
1) Saw-cut and remove existing broken 9.5" PCC.
2) Recompact disturbed exposed Permeable base with jumping jack compactors.
3) Install tie bars and dowel bars.
4) Pour 9.5-inch thick PCC reinforced with structural fibers.
- B. H-2:
Areas with broken AC over settled PCC at H-2 (between Waipio Gentry and H-1/H-2 Interchange - Inbound and Outbound: "Jointed Precast Panel Pavement Repair"
1) Cold plane existing AC to top of PCC.
2) Pave AC to desired grade to match adjacent PCC to the right and front and back.
3) Saw-cut and remove individual 9" thick PCC and underlying 4" thick CTB. Since the PCC has varying AC thickness over it due to the previous settlement, the thickness would be 13" plus the AC thickness over it.
4) Recompact disturbed exposed Aggregate Subbase with jumping jack compactors.
5) Place 3" or more as-needed CTB.

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STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
ROADWAY CONSTRUCTION	
JOINT DETAILS	
INTERSTATE ROUTE H-1 CONCRETE PAVEMENT PERSERVATION (DOWEL-RETROFIT)	
M.P. 2.40 to M.P. 3.46 and M.P. 24.90 to M.P. 26.40	
Federal-Aid Project No. ARR-HI-1(262)	
Scale: As Shown	Date: Sept., 2009
SHEET No. 1 OF 2 SHEETS	

Notes: (Continued)

- 6) Install individual precast reinforced PCC panels of 10" thick. All precast PCC panels shall be custom made for each panel. This means in all 3 dimensions for varying superelevation and vertical curves (parallelogram cross-section), and for varying horizontal curves (plan view shape).
- 7) Install tie bars and dowel bars.
- 8) Place bedding grout and dowel grout.

C. H-1:

Areas with broken AC over settled PCC at H-1 (near Makakilo Off-Ramp - Outbound) also at Makakilo On-Ramp - Inbound, also near Kunia Road/Ft. Weaver Road Overpass on Ewa side - Inbound and Outbound: "Jointed Precast Panel Pavement Repair"

- 1) Cold plane existing AC to top of PCC.
- 2) Pave AC to desired grade to match adjacent PCC to the right and front and back.
- 3) Saw-cut and remove individual 9" thick PCC and underlying 4" thick CTB. Since the PCC has varying AC thickness over it due to the previous settlement, the thickness would be 13" plus the AC thickness over it.
- 4) Recompact disturbed exposed Aggregate Subbase with jumping jack compactors.
- 5) Place 3" or more as-needed CTB.
- 6) Install individual precast reinforced PCC panels of 10" thick. All precast PCC panels shall be custom made for each panel. This means in all 3 dimensions for varying superelevation and vertical curves (parallelogram cross-section), and for varying horizontal curves (plan view shape).
- 7) Install tie bars and dowel bars.
- 8) Place bedding grout and dowel grout.

D. Areas of broken PCC on H-1 (small isolated areas

Ewa to Kapolei): Same repair for H-2 (small isolated areas from H-1/H-2 interchange to Wahiawa)

- 1) Saw-cut and remove existing broken 9" PCC and underlying 4" CTB.
- 2) Recompact disturbed exposed Aggregate Subbase with jumping jack compactors.
- 3) Install tie bars and dowel bars.
- 4) Pour 13-inch thick PCC.

E. Areas that are currently AC on H-1 (such as Inbound right shoulder across Sears Distribution Center):

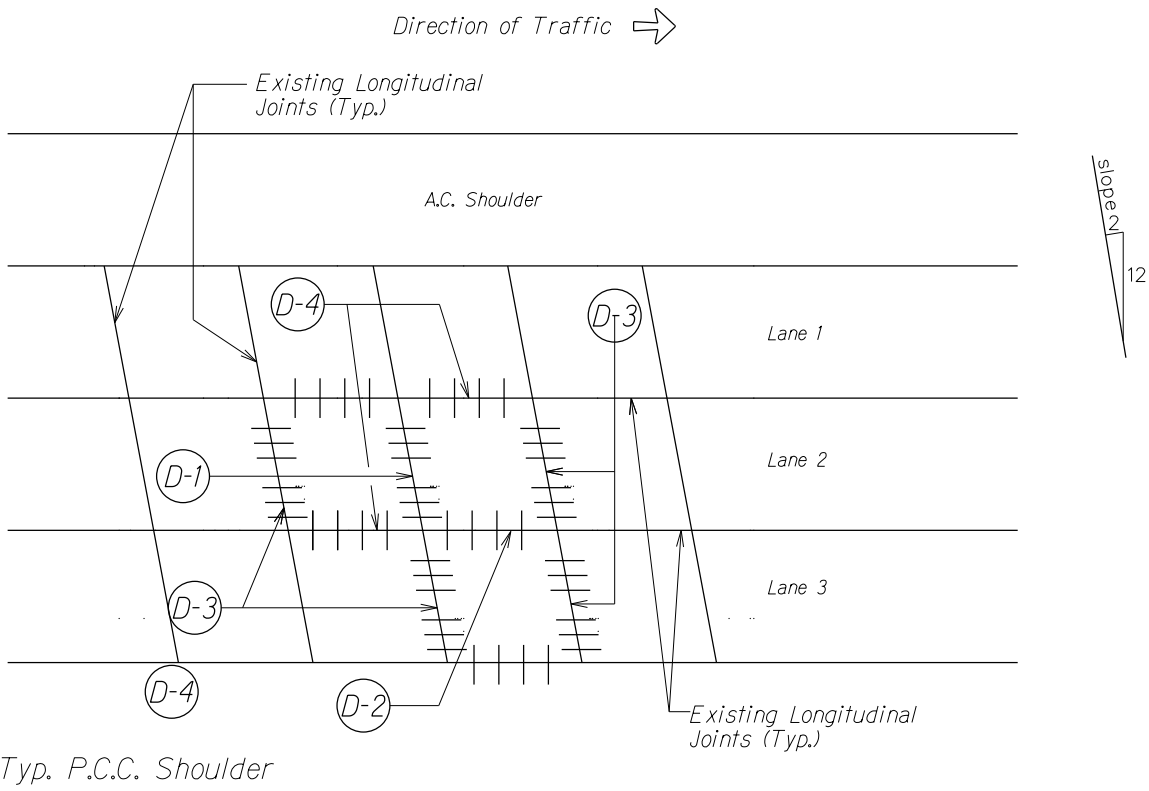
- 1) Cold plane 11 inches.
- 2) Recompact disturbed exposed Aggregate Subbase with jumping jack compactors.
- 3) Pour 13-inch thick PCC.

F. Areas that are currently UTW on H-1 (like off-ramp to Halawa Valley outbound and Aloha Stadium loop ramp inbound):

- 1) Saw cut 10 inches deep at the distressed UTW.
- 2) Recompact disturbed exposed Aggregate Subbase with jumping jack compactors.
- 3) Pour 10-inch thick PCC.

G. Middle Street:

- 1) Redo curb and gutters for entire length.
- 2) Remove and replace bad PCC.
- 3) Diamond grind entire pavement to achieve a smoother pavement.



AREA 1 FULL DEPTH SLAB RECONSTRUCTION

Not at Scale

(Note: A.C. Shoulder - Form is Required and isolate (no tie-bars); Also, see notes for quantity of dowels, and tie bars required per joint.)

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HAWAII	HAW.	ARR-HI-1(262)	2009	10	43

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION ROADWAY CONSTRUCTION JOINT DETAILS INTERSTATE ROUTE H-1 CONCRETE PAVEMENT PERSERVATION (DOWEL-RETROFIT) M.P. 2.40 to M.P. 3.46 and M.P. 24.90 to M.P. 26.40 Federal-Aid Project No. ARR-HI-1(262) Scale: As Shown Date: Sept., 2009 SHEET No. 2 OF 2 SHEETS
