FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	114	173

INDEX TO STRUCTURAL DRAWINGS

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

NOTE BOOK | No.

DRAWING NAME: Z:\OD ONGOING\12-033_HFL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\06-19-14 BID\HFL-MS001.DWG PLOT TIME: 06-18-14, 6:54 PM)

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David K. Fujiwara 4-30-16

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

INDEX TO
STRUCTURAL DRAWINGS

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: None Date: Jun. 20, 2014

SHEET No. S0.1 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	115	173

STRUCTURAL GENERAL NOTES

1. General Specifications: Hawaii State Department of Transportation (HDOT), Hawaii Standard Specifications for Road and Bridge Construction, 2005, together with Special Provisions prepared for this contract.

2. Design Specifications:

   (A) AASHTO 2010 LRFD Bridge Design Specifications (Fifth Edition) and its subsequent interim specifications with interim supplements and modifications by the HDOT Highways Division.

   (B) HDOT Document dated March 1, 2013 with subject title "Design Criteria for Bridges and Structures"

3. Loads:

   (A) Live Load: AASHTO HL-93 Truck Loading

4. Materials:

   (A) All concrete strengths shall be as noted below:

Item No.	Structural Parts	Minimum Compressive Strength f'c (28 Days)	Maximum Water/Cement (W/C)
(1)	Cast-in-Place PCCP See Note 4.(F)	Section 411 fr = 650 psi (14 days)	0.40
(2)	Jointed Precast Panels See Note 4.(C)	6000 psi	0.40
(3)	Precast Prestressed Panels See Note 4.(C)	6000 psi	0.40
(4)	Closure Pour Around Manhole See Note 4.(C) and 4.(F)	6000 psi	0.40
(5)	Barrier Wall and Footing See Note 4.(C) and 4.(F)	4500 psi	0.45
(6)	Except as noted otherwise, all others	4500 psi	0.45

   (B) The use of any calcium chloride in any concrete is prohibited.

   (C) The concrete mix for Item Nos. (2), (3), (4) and (5) under Note 4.(A) shall contain a minimum of 128 oz. of shrinkage reducing admixture such as Eclipse or Masterlife SRA 20 or approved equal.

   (D) All reinforcing steel shall be deformed ~~epoxy-coated~~ bars ASTM A775 Grade 60 unless otherwise noted. Non-epoxy coated is allowed.

   (E) All concrete shall be cured for a minimum of seven consecutive days immediately after pouring by the use of wet Burlap, Fog Spraying, Curing Compound, or other approved methods.

4. Materials:

   (F) Reinforce panels with 12 lbs./cy of structural alkali resistant glass fiber or accepted equal. Cast-in-place panel to be reinforced with fibers shall be as follows, unless otherwise noted:

   (1) Odd-shaped panels

   (2) Panels with openings

   (3) Panel opening closure pours

   (4) Panels with mismatched joints

   (5) PCCP-AC transverse trasition panels

   (6) Sidewalk extension

   (G) Non-shrink grout for lightpole transformer bases shall contain 1 oz. of migrating amine-carboxylate corrosion inhibiting admixture per 1 cubic foot of grout.

5. Reinforcement (Cont.):

   (A) The covering measured from the surface of the concrete to the face of any reinforcing bars shall be as follows, except as otherwise shown:

   (1) Concrete cast against and permanently exposed to earth = 3"

   (2) All others unless otherwise noted = 2".

   (B) Reinforcing bars shall be detailed in accordance with the latest edition of the A.C.I. Detailing Manual unless otherwise noted.

   (C) Minimum clear spacing between parallel bars shall be 1-1/2 times the diameter of bars (for non-bundled bars). In no case shall the clear distance between the bars be less than 1-1/2 times the maximum size of the coarse aggregate or 1 1/2" whichever is greater.

   (D) All dimensions relating to reinforcing bars are to centers of bars unless otherwise noted.

   (E) Reinforcing bars shall be securely tied at all intersections and lap splices except where the spacing of intersections is less than one foot in each direction, in which case alternate intersections shall be tied.

   (F) For Glass Fiber Reinforced Polymer (GFRP) Rebar requirements see Specification Section 670.

6. Construction Notes:

   (A) Except as otherwise noted, all vertical dimensions are measured plumb.

   (B) Unless otherwise noted, all exposed concrete edges shall be chamfered 3/4" x 3/4".

7. Portland Cement Concrete Pavement (PCCP) and Jointing Notes:

   A. Details and information for pavement width, pavement thickness, pavement boundaries, pavement layout (plans and profiles), cross slope, roadway sections, and pavement sections are shown in the Civil drawings.

   B. For other requirements, see Section 411 - Portland Cement Concrete Pavement and sheets S1.1 to S1.6.

   C. Provide shop drawings for all joint layouts a minimum of 2-weeks prior to work for approval by the Engineer. Include added trim bar reinforcing where obstructions such as manholes and blockouts are encountered and termination of concrete with triangular or odd-shaped panels, panels with openings, panel opening closure pours, panels with mismatched joints, at PCCP-AC transverse transition panels, and sidewalk extension.

   D. For locations of longitudinal joints, see pavement jointing plans on sheets S1.7 to S1.10. Locate longitudinal joints along lane lines as much as practical.

   E. For locations of transverse joints, see pavement jointing plans on sheets S1.7 to S1.10. Locate transverse construction joints at planned transverse contraction joint as shown on the pavement jointing plans.

   F. Where a monolithic curb is specified, the transverse joint in the curb shall coincide with pavement joints and may be formed by any means approved by the Engineer.

   G. Unless otherwise noted use isolation joints to isolate the new PCCP from a structure or another paved area. Isolation joints shall be provided at intersections, and around in-pavement structures such as drainage inlets and manholes.

   H. Reinforce with #5 @ 12" top and bottom, each way at odd shaped panels and panels with mismatched joints. Odd shaped panels are panels with length-to-width ratios greater than 1.25, triangular, and other non-square shaped panels. See sheets S1.2 to S1.6 for additional locations for rebar reinforced sections.

   J. Triangular shapes are not allowed unless otherwise shown on the plans. Trim bars are required for corner angles <80° and for pavement sections opposite mismatched joint.

   K. 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 and deformed bars shall be replaced at no cost to the State. Repair of epoxy coating as approved by the Engineer shall meet ASTM A775.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
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	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

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HIGHWAYS DIVISION

STRUCTURAL GENERAL NOTES

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: None Date: Jun. 20, 2014

SHEET No. S0.2 OF 4 SHEETS

DRAWING NAME: Z:\00 ONGOING\12-033.1-HFL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\06-19-14 BID\HFL-MS002.DWG PLOT TIME: 06-18-14, 6:53 PM)

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	116	173

STRUCTURAL GENERAL NOTES (CONT.)

8. Jointed Precast Concrete Pavement (JPCP) Notes:

A. Details and information for pavement width, pavement thickness, pavement boundaries, pavement layout (plans and profiles), cross slope, roadway sections, and pavement sections are shown in the Civil drawings.

B. For other requirements, see Section 416 - Jointed Precast Concrete Pavement (JPCP) and sheets S2.1 to S2.7.

C. Provide shop drawings for all joint layouts a minimum of 2-weeks prior to work for approval by the Engineer. Include reinforcing where obstructions such as manholes are encountered, termination of concrete with triangular or odd shaped panels and at JPCP-AC transition panel. Include JPCP layout at curves.

D. Use isolation joints to isolate the new JPCP panels from a structure or another paved area, or an immovable object. Isolation joints shall be provided around in-pavement structures such as drainage inlets and manholes.

E. 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 and deformed bars shall be replaced at no cost to the State. Repair of epoxy coating as approved by the Engineer shall meet ASTM A775.

9. Precast Prestressed Concrete Pavement (PPCP) and Jointing Notes:

A. Details and information for pavement width, pavement thickness, pavement boundaries, pavement layout (plans and profiles), cross slope, roadway sections, and pavement sections are shown in the Civil drawings.

B. For other requirements, see Section 417 - Precast Prestressed Concrete Pavement (PPCP) and sheets S3.1 to S3.4.

C. Provide shop drawings for all joint layouts a minimum of 2-weeks prior to work for approval by the Engineer. Include reinforcing where obstructions such as manholes are encountered, and termination of concrete with triangular or odd shaped slabs. Include Pretensioning, Post-Tensioning, and Construction Sequence.

D. Use isolation joints to isolate the new PPCP panels from a structure or another paved area, or an immovable object. Isolation joints shall be provided around in-pavement structures such as drainage inlets and manholes.

E. Pretensioning:

(1) Concrete compressive strength at time of pretensioning strand release fci = 3500 psi.

(2) Pretensioned strands shall be ASTM A416 Grade 270 0.5" Diameter Low Relaxation.

(3) Strand release sequence shall not induce any lateral deflection of the panel.

(4) During curing and storage, care shall be taken to avoid any lateral deflection of the panel due to improper orientation. Steam curing may be used to accelerate strength gain.

(5) The working force for each strand shall be 25.2 kips.

9. Precast Prestressed Concrete Pavement (PPCP) and Jointing Notes (Cont.):

E. Pretensioning:

(1) Concrete compressive strength at time of pretensioning strand release fci = 3500 psi.

(2) Pretensioned strands shall be ASTM A416 Grade 270 0.5" Diameter Low Relaxation.

(3) Strand release sequence shall not induce any lateral deflection of the panel.

(4) During curing and storage, care shall be taken to avoid any lateral deflection of the panel due to improper orientation. Steam curing may be used to accelerate strength gain.

(5) The working force for each strand shall be 25.2 kips.

F. Post-Tensioning:

(1) Post-tensioning strands shall be ASTM A416 Grade 270 0.6" diameter low relaxation. Ducts shall be galvanized metal.

(2) After post-tensioning, ducts shall be pressure grouted with Masterflow 1205 Cable Grout, SIKA Grout 300 PT, or approved equal. Ducts shall have grouting vents at anchorage and at each high point along the tendon profile.

(3) Ducts shall be secured to prevent misalignment or leakage during concrete pour.

(4) A minimum concrete compressive strength of 6000 psi shall be attained before the application of post-tensioning.

(5) Prevent ducts, at all times, from getting plugged or damaged. Ducts shall be checked to show that ducts are clear and contain no obstructions prior to installing prestressing steel and stressing the member.

(6) The post-tensioning design assumptions are as follows:

Wobble friction coefficient..... 0.0002/ft.
Anchor set..... 3/8"

(7) The jacking force for each tendon shall be 44.0^{k} times the number of strands in each tendon.

(8) Post-tensioning shall comply with HDOT Specifications and AASHTO LFRD Bridge Construction Specifications including the latest interim revisions.

(9) Prior to grouting and within two days after installing strands, a corrosion inhibitor amine carboxylate powder (Cortec MCI-309 or accepted equal) shall be blown into the ducts in accordance with manufacturer's recommendations.

(10) After completion of stressing and grouting of PPCP, fill the anchor head blockouts with fill material. Coat blockout and anchor head with bonding agent before filling blockout. Finish flush to end of panel. See Special Provision Section 417 for material requirements.

ORIGINAL PLAN | NOTE BOOK No. | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGN BY | QUANTITIES BY | CHECKED BY | DATE

DRAWING NAME: Z:\DB ONGOING\12-033 1-MFL MIDDLE STREET RECONSTRUCTION-SOPA\CAD\06-19-14 BIO\MFL-MS002.DWG PLOT TIME: 06-18-14, 6:54 PM

DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

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David K. Fujiwara 4-30-16
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STRUCTURAL GENERAL NOTES

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: None Date: Jun. 20, 2014

SHEET No. S0.3 OF 4 SHEETS

SYMBOLS AND ABBREVIATIONS

∉	And
@	At
ø	Diameter
≥	Greater Than or Equal to
≤	Less Than or Equal to
#	Number
Abbr.	Abbreviation
Add.	Additional
Alt.	Alternate
AB	Anchor Bolt
AC	Asphaltic Concrete
Approx.	Approximate
ASB	Asphalt Stabilized Base
Az.	Azimuth
Bk.	Back
Bal.	Balance
℄	Baseline
Bm.	Beam
Brg., Brgs.	Bearing, Bearings
BVC	Beginning of Vertical Curve
Bet.	Between
BF	Both Faces
BW	Both Ways
BFE	Bottom of Footing Elevation
Bot., Bott., B	Bottom
BOF	Bottom of Footing
Blt.	Bolt
Cant.	Cantilever
CIP	Cast Iron Pipe Cast-In-Place
℄	Center line
cc	Center to Center
CG	Center of Gravity
CFCW	Continuous Flashing Compound Waterproofing
Cl.	Class
Clr.	Clearance
CO	Clean Out
Col.	Column
Conc.	Concrete
CBW	Concrete Barrier Wall
Conn.	Connection
Const.	Construction
CJ	Construction Joint
Cntl. Jt.	Control Joint
CLSM	Controlled Low Strength Material
Cont.	Continuous
CF	Cubic Feet
CY, Cu. Yd.	Cubic Yard
Demo.	Demolish, Demolition
Det.	Detail
Dia.	Diameter
Diaph.	Diaphragm
Dim.	Dimension
Dist.	Distance
DO	Ditto
Dwls.	Dowels
Dn.	Down
Dbl.	Double
DI	Drain Inlet, Ductile Iron
Dwg., Dwgs.	Drawing, Drawings
DS	Drilled Shaft
E	East
EA, Ea., ea.	Each
EF	Each Face
EFH	Each Face Horizontal
EFV	Each Face Vertical
EW	Each Way
EPE	Existing Edge of Pavement
EPS	Expanded Polystyrene
ES	Edge of Shoulder
Elec.	Electrical
EMH	Electrical Manhole
El., Elev.	Elevation
Emb.	Embankment
EVC	End of Vertical Curve
Eq.	Equal
Est.	Estimated
Exc.	Excavation
Excl.	Excluding
Exist., Ex.	Existing
Exp., (E)	Expansion
EJ	Expansion Joint
Ext.	Exterior
(F)	Fixed
FA	Force account
FB	Flat Bar
FC	Compression Stresses
f'c	Specified Compressive Strength of Concrete at 28 days
f'ci	Specified Compressive Strength of Concrete at Time of Initial Prestress
FF	Far Face, Front Face
Fig.	Figure
Fin. Gr.	Finish Grade
fr	Modulus of Rupture
FRP	Fiberglass Reinforced Plastic
FT	Tensile Stresses
Ftg.	Footing
Ft.	Feet, Foot
Ga.	Gage, Gauge
Galv.	Galvanized
GDI	Grated Drain Inlet
GFRP	Glass Fiber Reinforced Polymer Rebar
Gr.	Grade
Grd.	Ground
GRP	Grouted Rubble Pavement
Ht.	Height
(H)	Hinge
Horiz., H	Horizontal
HDOT	State of Hawaii Department of Transportation
HDPE	High Density Polyethylene
HS	High strength
HECO	Hawaiian Electric Company
HMA	Hot Mix Asphalt
IB	Inbound
In.	Inch
ID	Inside Diameter
IF	Inside Face
Int.	Interior
Inv.	Invert
Jt.	Joint
JPCP	Jointed Precast Concrete Pavement
K	Kips
KF	Kip Foot
KSF	Kips Per Square Foot
KSI	Kips Per Square Inch
KLF	Kips Per Linear Foot
L	Length
lb., lbs., LBS.	Pound, Pounds
Ltg. Std.	Lighting Standard
LF, Lin. Ft.	Linear Feet/Foot
LS	Lump Sum
Longit.	Longitudinal
M	Modified
MH	Manhole
Max.	Maximum
Mech.	Mechanical
Min.	Minimum
Misc.	Miscellaneous
MPH	Miles Per Hour
NF	Near Face
N	North
NB	Northbound
NIC	Not in Contract
No.	Number
NTS	Not to Scale
NWIM	Nanocrete Weigh-In-Motion
O/S	Offset
oc	On Center
Opn'g	Opening
OB	Outbound
OD	Outside Diameter
Perf.	Perforated
PL	Plate
PCCP	Portland Cement Concrete Pavement
PC	Point of Curvature
PCF	Pounds per Cubic Foot
P(e)	Effective Prestress Force After All Losses
PSF	Pounds per Square Foot
PSI, psi	Pounds per Square Inch
PLF	Pounds per Linear Foot
PI	Point of Intersection of Tangents
PIVC	Point of Intersection of Vertical Curve
PT	Point of Tangency
Pt., Pts.	Point, Points
PRC	Point of Reverse Curvature
PVC	Polyvinyl Chloride
PPCP	Precast Prestressed Concrete Pavement
Prestr.	Prestressed
P/S	Prestressed Strands
PB	Pull Box
Rad., R	Radius
RF	Rear Face
Rebar	Reinforcing Bar
Ref.	Reference
Reinf.	Reinforced, Reinforcing, Reinforcement
Req'd.	Required
Ret.	Retaining
ROW	Right of Way
Rdwy.	Roadway
Sect.	Section
Sht.	Sheet
Sim.	Similar
Sl.	Slope
S	South
SB	Southbound
Spc., Spg.	Spaces, Spacing
Sprd.	Spread
Spec.	Specification
SF	Square Feet
SY	Square Yard
SS	Stainless Steel
Std.	Standard
Sta.	Station
Stiff.	Stiffener
Stirr.	Stirrup
Stl.	Steel
Str.	Straight
Struct.	Structure
SE	Super Elevation
Symm.	Symmetrical
Tan.	Tangent
TC	Continuity Tendons
Temp.	Temporary
TD	Deck Tendon
Thk.	Thick
T	Top
T∉B	Top and Bottom
TCE	Top of Column (and Bent Cap Soffit) Elevation
TOD	Top of Deck
TOP	Top of Pier
TFE	Top of Footing Elevation
Tot.	Total
Transv.	Transverse
TS	Structural Tubing
Typ.	Typical
Undergrd.	Underground
UTPB	Untreated Permeable Base
Var.	Varies
Vert., V	Vertical
VC	Vertical Curve
W/C	Water/Cement
w/	With
W	West
WIM	Weigh-In-Motion
WWF	Welded Wire Fabric
WP	Work Point, Working Point
WS	Water Surface
Yr.	Year

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	117	173

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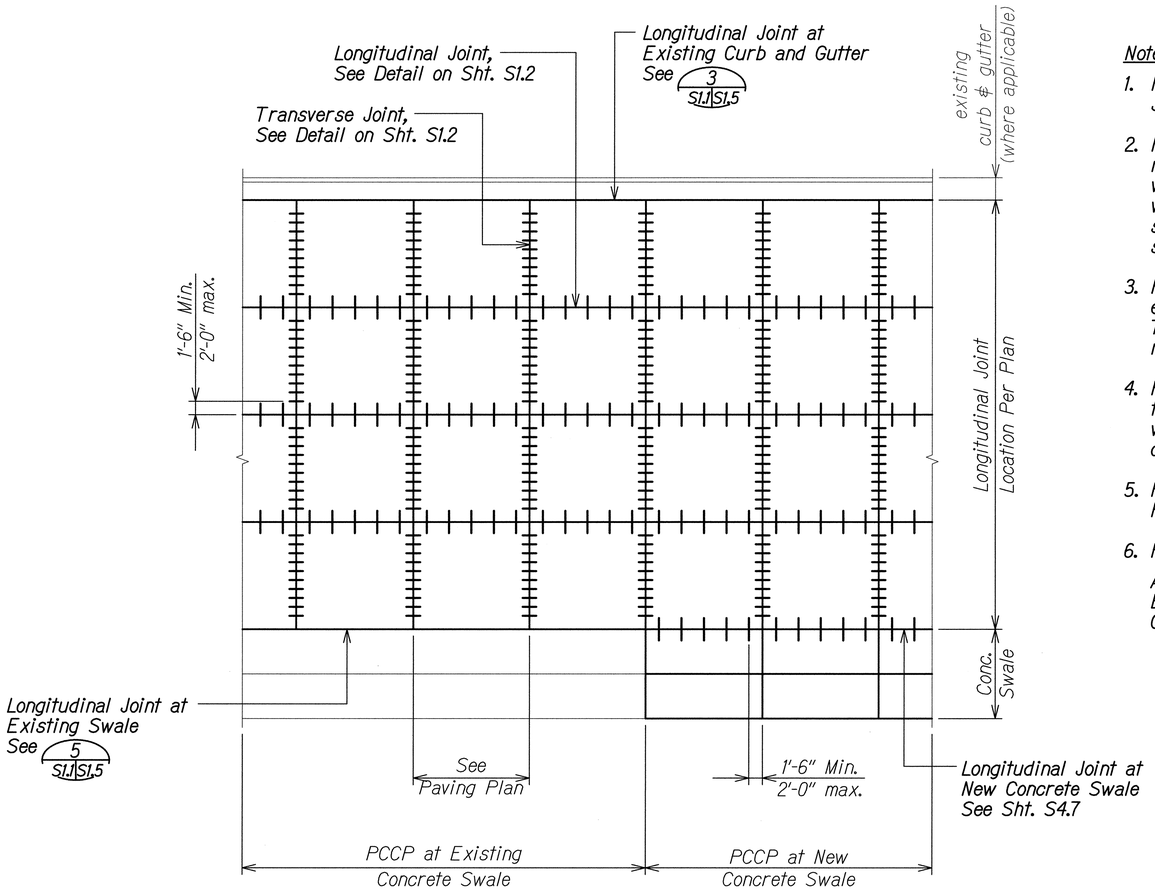
SYMBOLS & ABBREVIATIONS

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: None Date: Jun. 20, 2014

SHEET No. S0.4 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	118	173



TYPICAL JOINT LOCATION AND LAYOUT PLAN FOR CONSTANT PCCP

Scale: 1/8" = 1'-0"

A S1.1 S1.1

Notes:

1. For locations of longitudinal and transverse joints, See Pavement Jointing Plan, sheets S1.7 and S1.10.
2. For travel way lanes, reinforce odd shaped panels and panels with mismatched joints (odd shaped panels are panels with length-to-width ratios greater than 1.25), and other non-square shaped panels with added trim bar as shown on sheets S1.3 and S1.4. Triangular shaped and non-square shaped panels are also considered odd-shaped panels.
3. For the shoulder, rebar reinforcing is not required for panels that exceed the length to width ratio of 1.25 unless otherwise noted. Triangular shaped panels shall have added rebar and trim bar reinforcing.
4. Provide shop drawings for all joint layouts a minimum of 2-weeks prior to work. Shop drawings shall include but not limited to reinforcing where obstructions such as manholes are encountered, termination of concrete with triangular or odd shaped panels, and at intersections.
5. For other joint requirements, See Special Provision Section 411 - Portland Cement Concrete Pavement and sheets S1.2 to S1.10.
6. For transition at PCCP Edges where abutting pavements:
   A. Asphalt Concrete, See 7/S1.2
   B. PCCP to JPCP, See 5/S1.2.
   C. PCCP to PPCP, See 5/S1.2.

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DRAWING NAME: Z:\00 ONGOING\12-033.1-HFL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\06-19-14 BID\VFL-MS101 TO MS106.DWG PLOT TIME 06-18-14 6:49 PM

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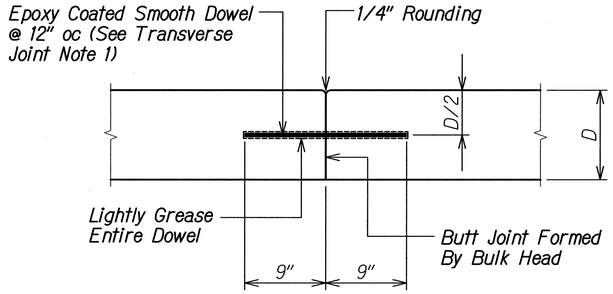
TYPICAL PCCP JOINT LOCATION PLAN

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S1.1 OF 10 SHEETS

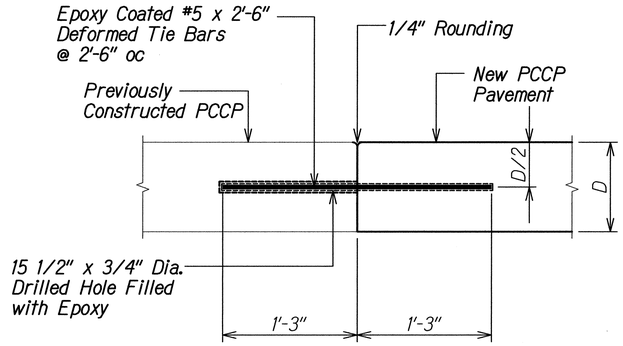
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	119	173



TRANSVERSE CONSTRUCTION JOINT

Not to Scale

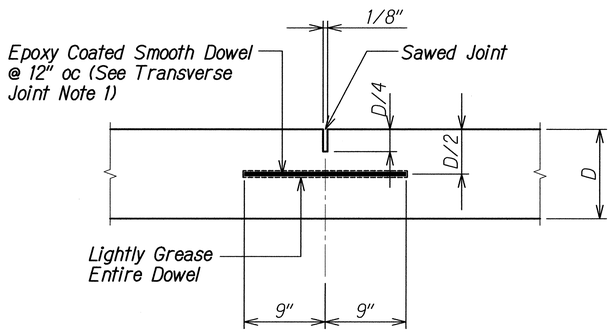
1 — S1.8 | S1.2 — S1.9, S3.12



LONGITUDINAL CONSTRUCTION JOINT AT HARDENED PCCP

Not to Scale

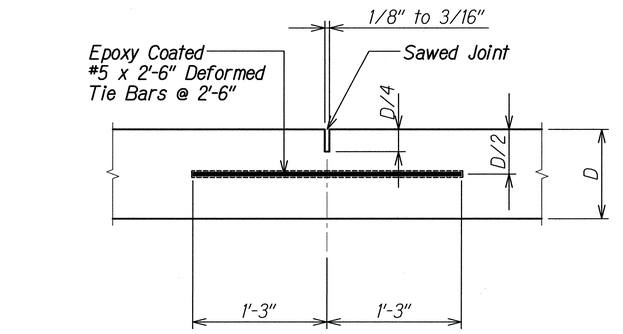
2 — S1.2 | S1.2



TRANSVERSE CONTRACTION JOINT

Not to Scale

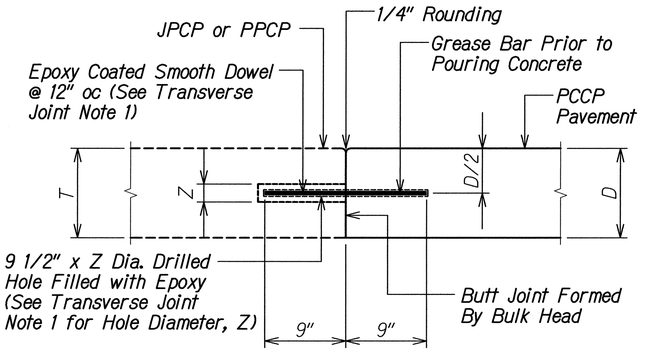
3 — S1.2 | S1.2



LONGITUDINAL CONTRACTION JOINT

Not to Scale

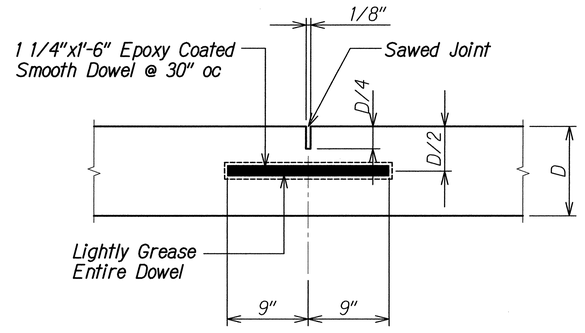
4 — S1.2 | S1.2



TRANSVERSE CONSTRUCTION JOINT AT EXISTING JPCP OR PPCP

Not to Scale

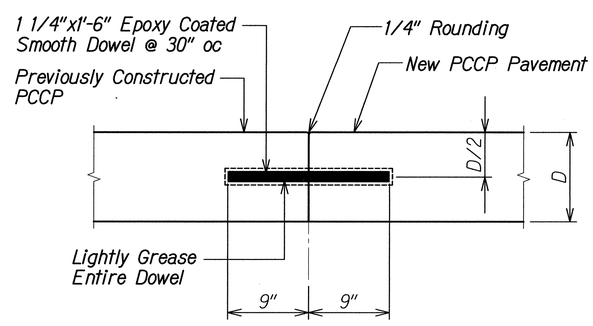
5 — S1.7 | S1.2 — S1.8, S1.10, S2.8, S2.9, S2.10



LONGITUDINAL CONTRACTION JOINT WITH SMOOTH DOWEL

Not to Scale

6 — S1.2 | S1.2



LONGITUDINAL CONSTRUCTION JOINT WITH SMOOTH DOWEL

Not to Scale

7 — S1.2 | S1.2

Longitudinal Joint Notes:

1. Epoxy-Coated deformed tie bars shall conform to ASTM A775 Grade 60.
2. Tiebars are to be located a minimum distance of 18 inches from a transverse joint. Tiebars closer to the transverse joint may interface with joint movement.
3. The Contractor shall not damage the epoxy coating on the deformed bars in any way during shipment, handling, placement or rebending. Damaged epoxy-coated deformed bars shall be replaced at no cost to the State. Repair of epoxy coating as approved by the Engineer shall meet ASTM A775.
4. For joint seal details see 4/S1.5.

Transverse Joint Notes:

1. Epoxy-Coated dowels shall conform to ASTM A775 Grade 60. For pavements with D < 10", use 1 1/4" Dia. x 1'-6" long dowels. For pavements with D ≥ 10", use 1 1/2" Dia. x 1'-6" long dowels. Hole shall be drilled at a diameter, Z, equal to 1/8" larger than the diameter of the dowel.
2. Locate transverse construction joints at the nearest planned transverse contraction joint as shown on the jointing plans. Joint shall be perpendicular to paving lane.
3. It is critical that dowels be positioned in place parallel to the pavement surface and paving lane direction to avoid future cracks in the PCCP. The ends of the dowels shall not deviate more than 0.012' from the parallel in 9" length.
4. The Contractor shall not damage the epoxy coating on the dowel in any way during shipment, handling or placement. Damaged epoxy-coated dowels or rebar shall be replaced at no cost to the State. Repair of epoxy coating as approved by the Engineer shall meet ASTM A775.
5. For joint seal details see 4/S1.5.

For Dimension D, See Pavement Detail on Sheets T-1 and T-2. Dimension T = Existing Pavement Thickness

ORIGINAL PLAN | NOTE BOOK | No. | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

DRAWING NAME: Z:\00 ONGOING\12-0331-HFL MIDDLE STREET RECONSTRUCTION-DOTA\CAD\06-19-14 BID\HFL-MS101 TO MS106.DWG PLOT TIME: 06-18-14, 6:42 PM

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DAVID K. FUJIWARA — LICENSED PROFESSIONAL ENGINEER — NO. 8104-S — HAWAII, U.S.A.

David K. Fujiwara — 4-30-16
SIGNATURE — EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

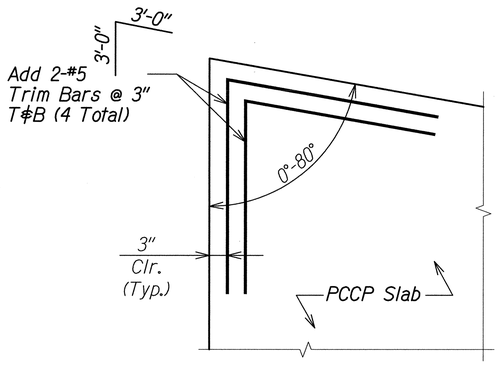
TYPICAL PCCP JOINT DETAILS

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted — Date: Jun. 20, 2014

SHEET No. S1.2 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	120	173

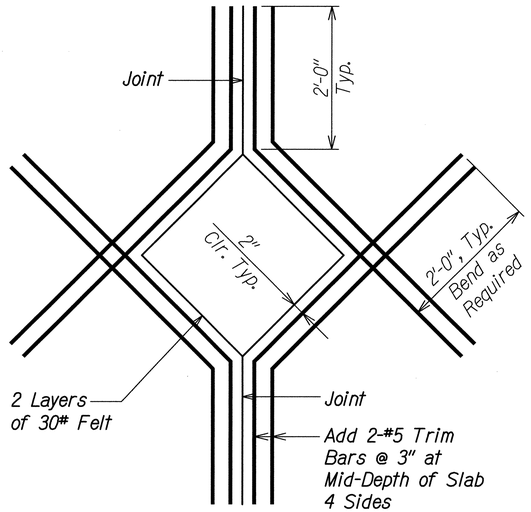


Notes:

1. Concrete for odd shaped panels shall be reinforced with fibers and added rebar. See General Notes 4.(F) and 7.(H) on sheet S0.2.
2. For standard shaped (not odd shaped or with mismatched joints) panels with openings, only fibers with added trim bars are required. See General Note 4.(F) on sheet S0.2.

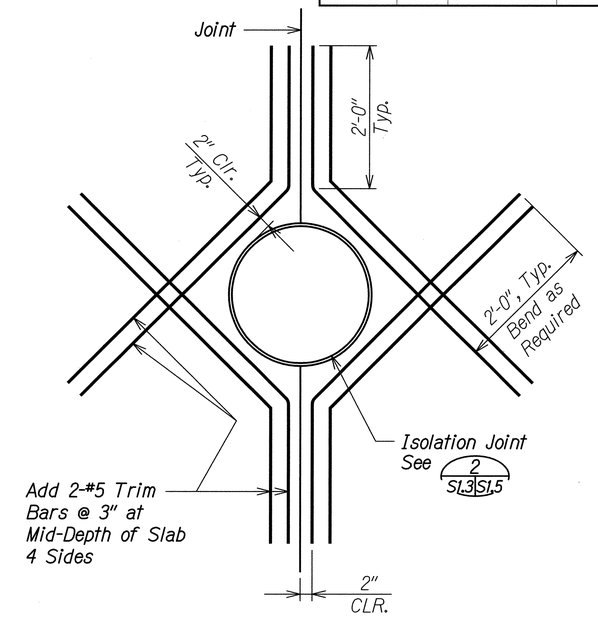
ADDED REINFORCEMENT AT ODD-SHAPED PCCP POURS AND FOR 0° - 80° PCCP EDGE

Not to Scale — 1 / S1.3 | S1.3



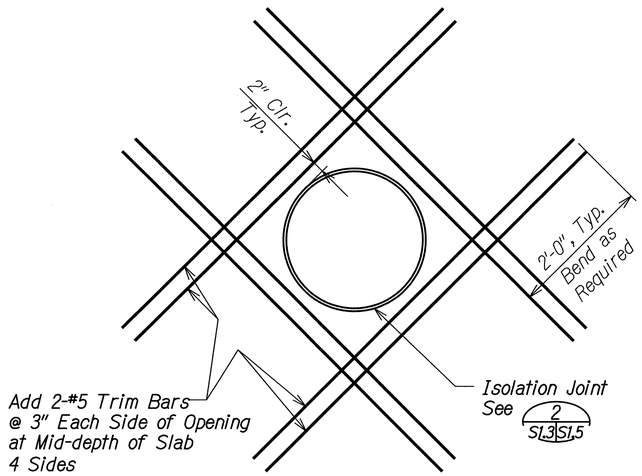
OPENING W/ CORNERS-CORNERS AT A JOINT DETAIL

Not to Scale — 2 / S1.3 | S1.3



ADDED REINFORCEMENT AT ODD-SHAPED PCCP POURS FOR CURVED PCCP EDGE

Not to Scale — 3 / S1.3 | S1.3



CIRCULAR OPENING DETAIL

Not to Scale — 4 / S1.3 | S1.3

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
No.	CHECKED BY	

DRAWING NAME: Z:\OD ONGOING\12-0331-HFL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\06-19-14 BID\HFL-MS101 TO MS106.DWG PLOT TIME: 06-18-14, 6:51 PM)

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David K. Fujiwara — 4-30-16
SIGNATURE — EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

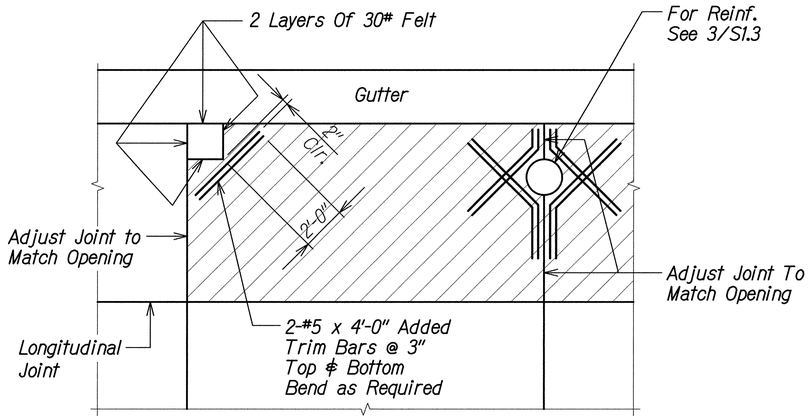
TYPICAL PCCP JOINT DETAILS

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted — Date: Jun. 20, 2014

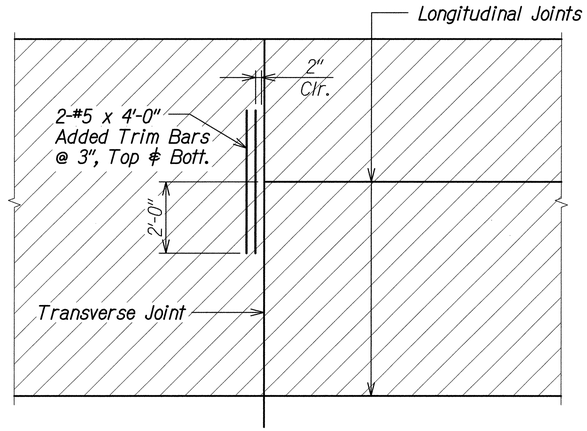
SHEET No. S1.3 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	121	173



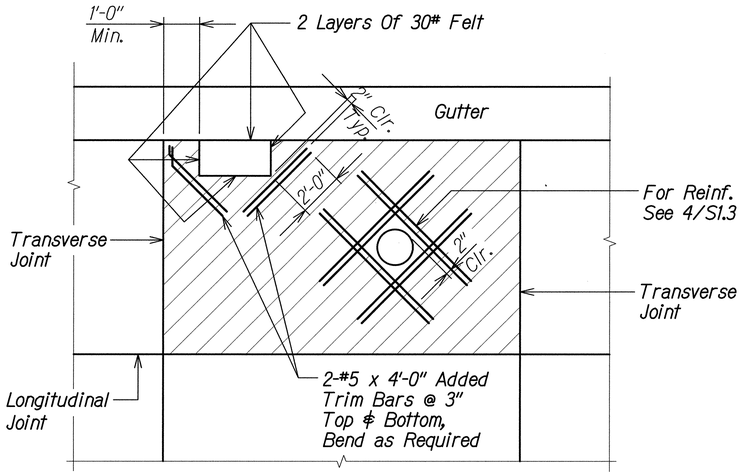
OPENING NEAR JOINTS DETAIL (1 S1.4 | S1.4)

Not to Scale



MISMATCHED JOINT DETAIL (2 S1.4 | S1.4)

Not to Scale



OPENING AWAY FROM JOINTS DETAIL (3 S1.4 | S1.4)

Not to Scale

LEGEND:

Panels to receive fibers and rebar reinforcing
For panel fiber and rebar reinforcing see General Notes 4.(F) and 7.(H) on sheet S0.2. For added trim bar reinforcing see sheets S1.3 to S1.6.

ORIGINAL PLAN | NOTE BOOK | No.

SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

DRAWING NAME: Z:\OD ONGOING\12-0331-HFL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\06-19-14 BID\HFL-MS101 TO MS106.DWG PLOT TIME: 06-19-14, 8:21 AM

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

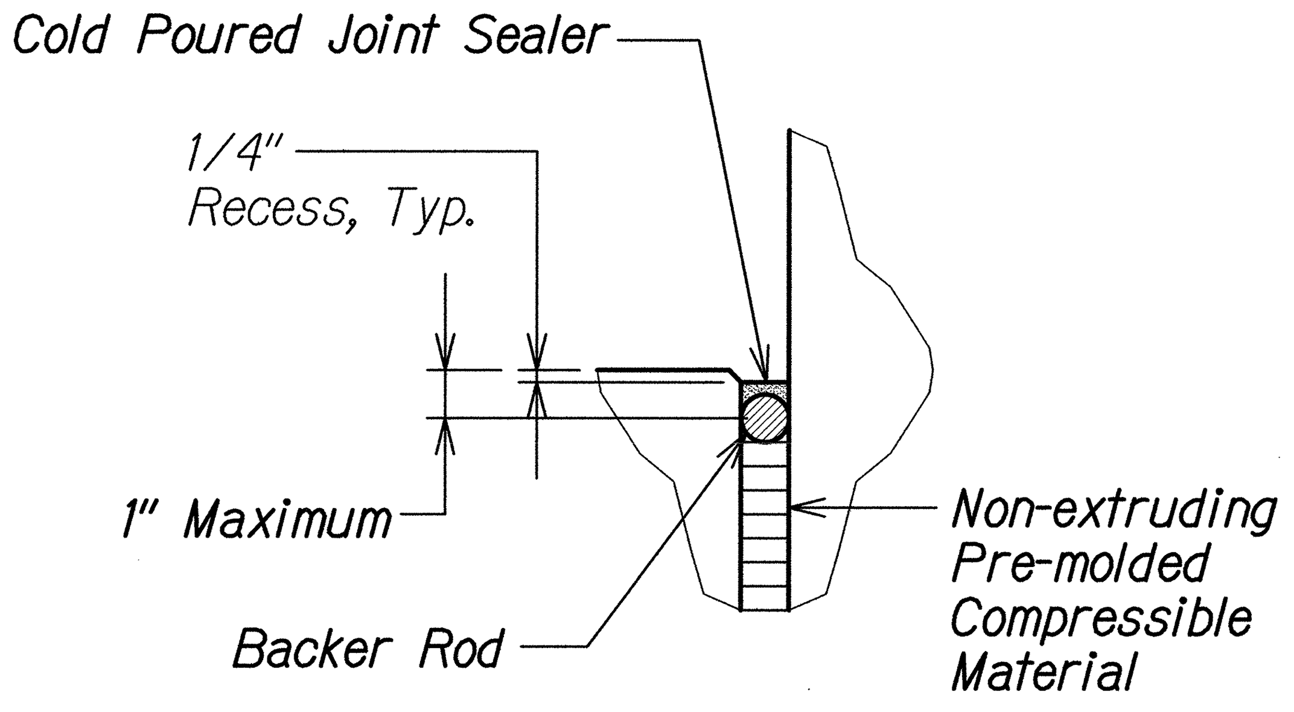
TYPICAL PCCP JOINT DETAILS

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

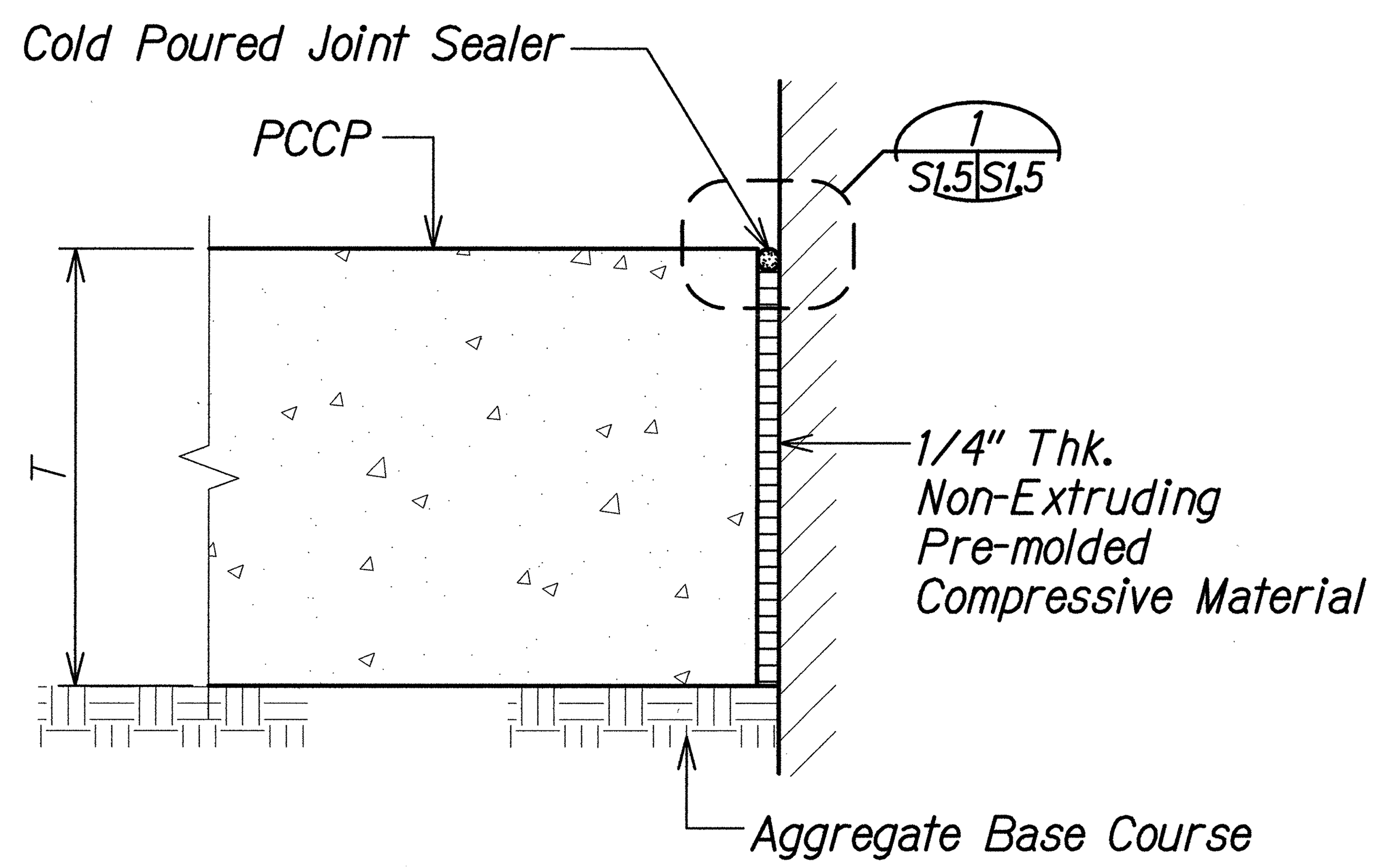
Scale: As Noted Date: Jun. 20, 2014

SHEET No. S1.4 OF 10 SHEETS

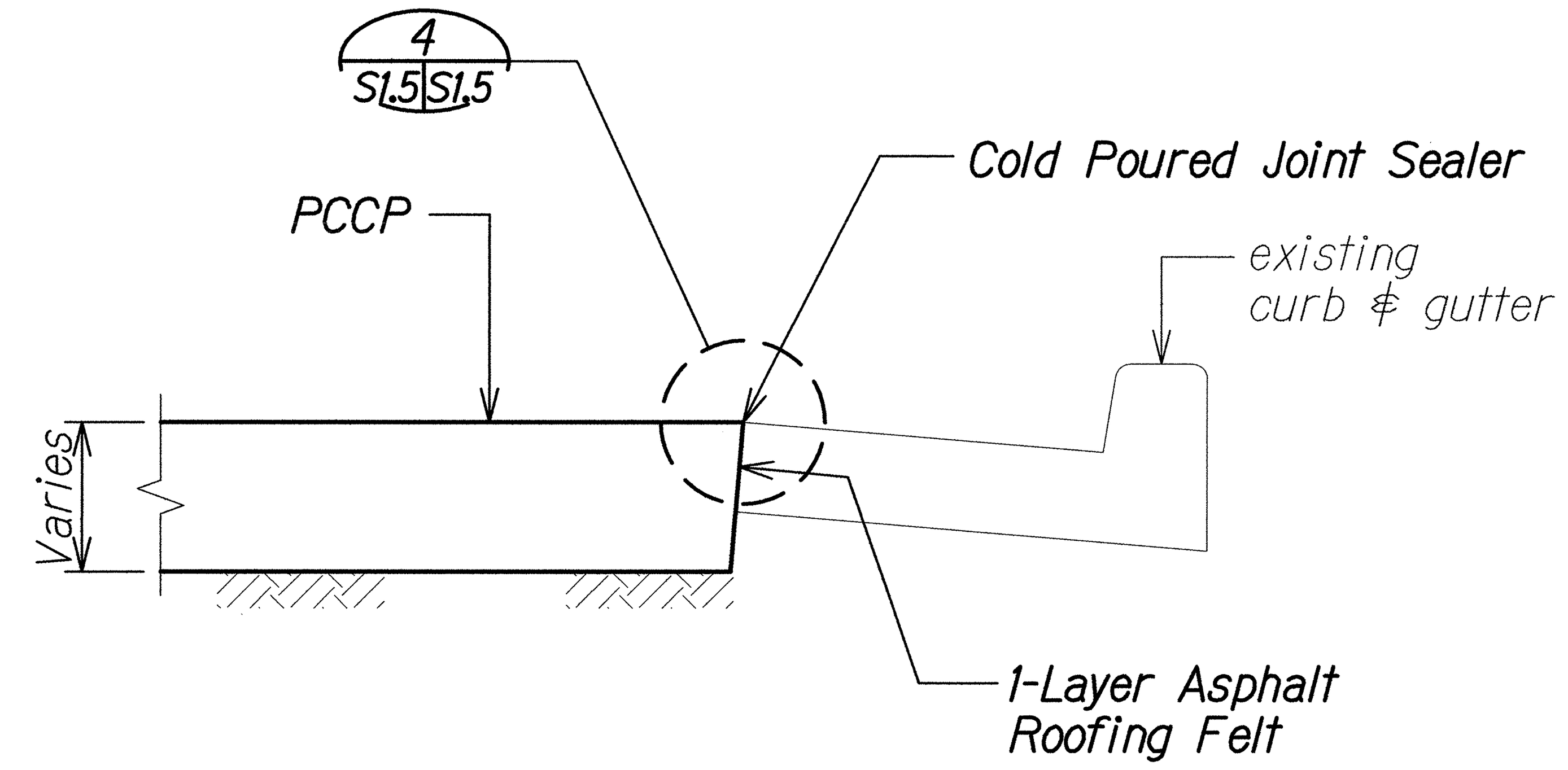
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	122	173



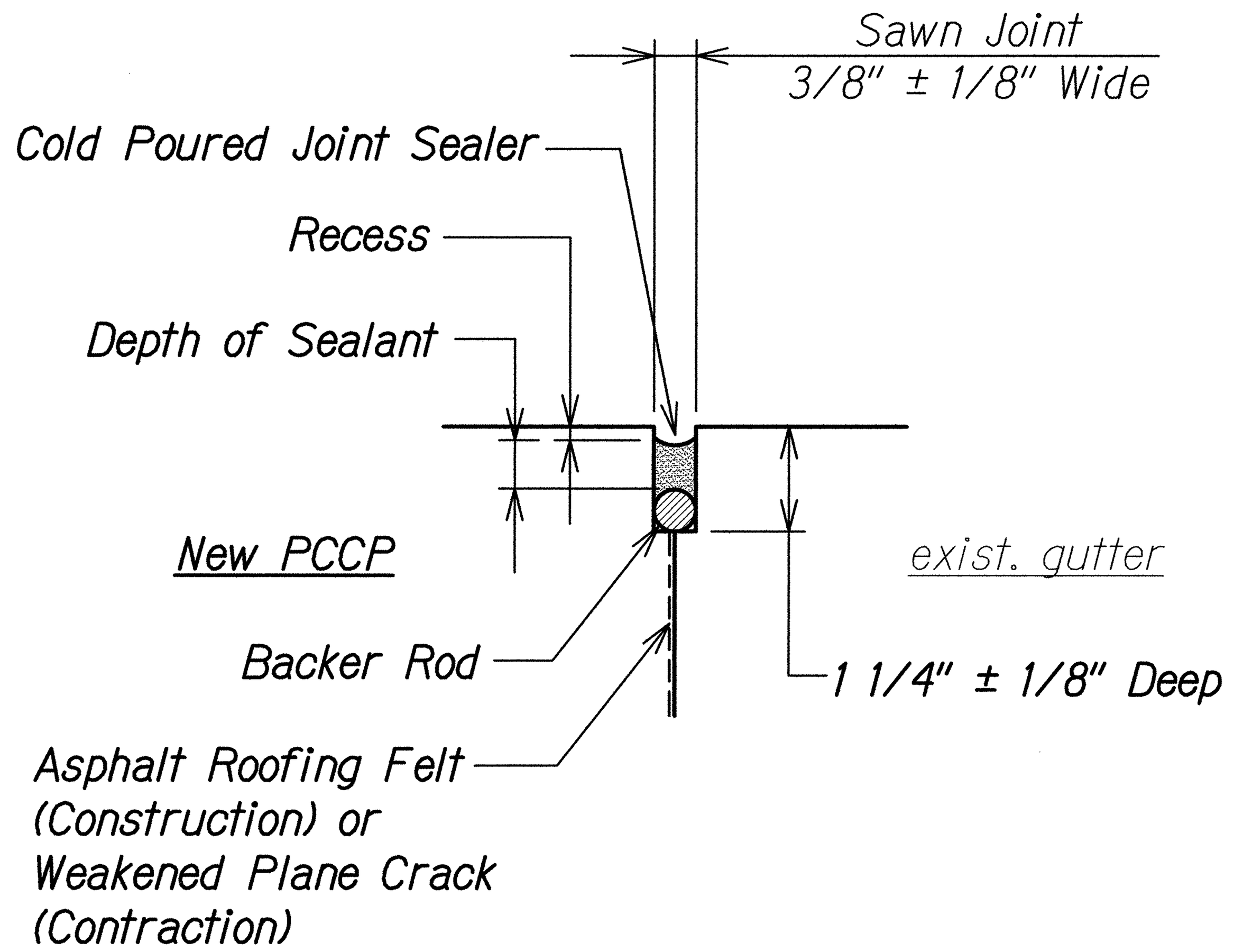
ISOLATION JOINT (1 — S1.5 | S1.5)
Not to Scale



ISOLATION JOINT (2 — S1.3 | S1.5)
Not to Scale
S1.6

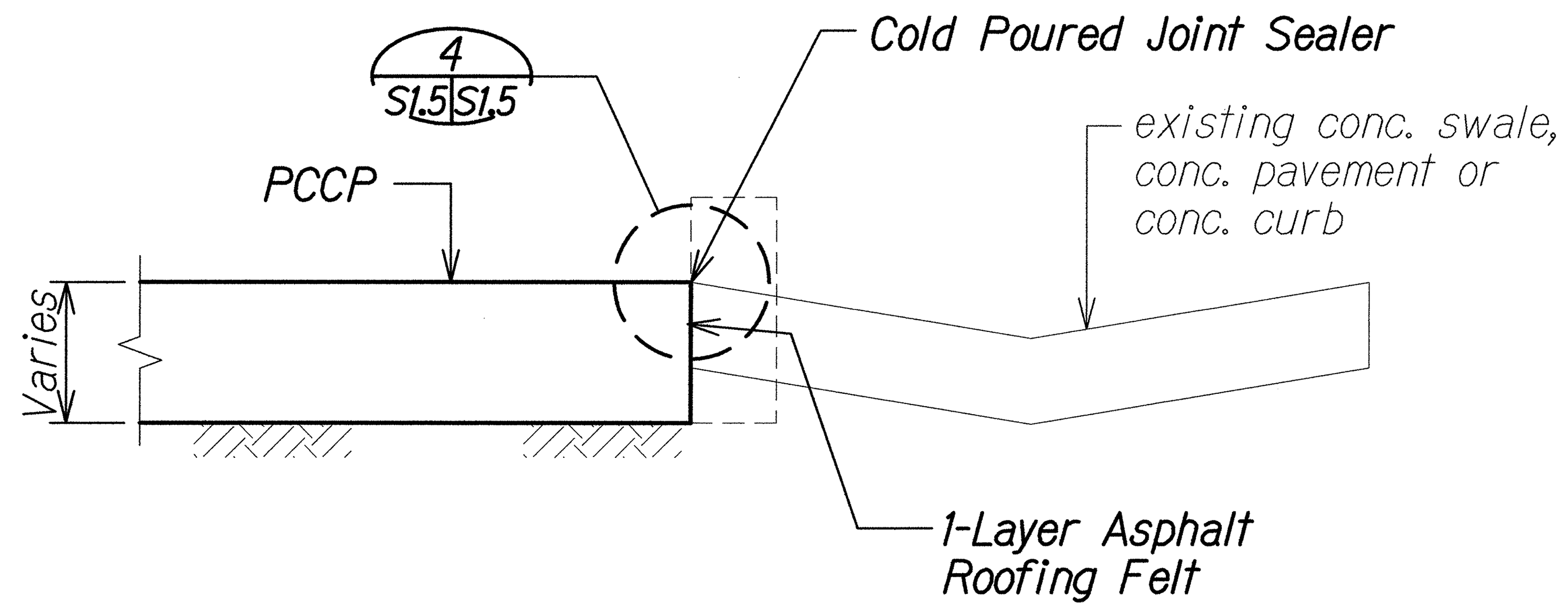


PCCP AT EXISTING GUTTER (3 — S1.1 | S1.5)
Scale: 1" = 1'-0"
S1.7, S1.8, S1.9, S1.10, S2.9, S2.10, S3.12

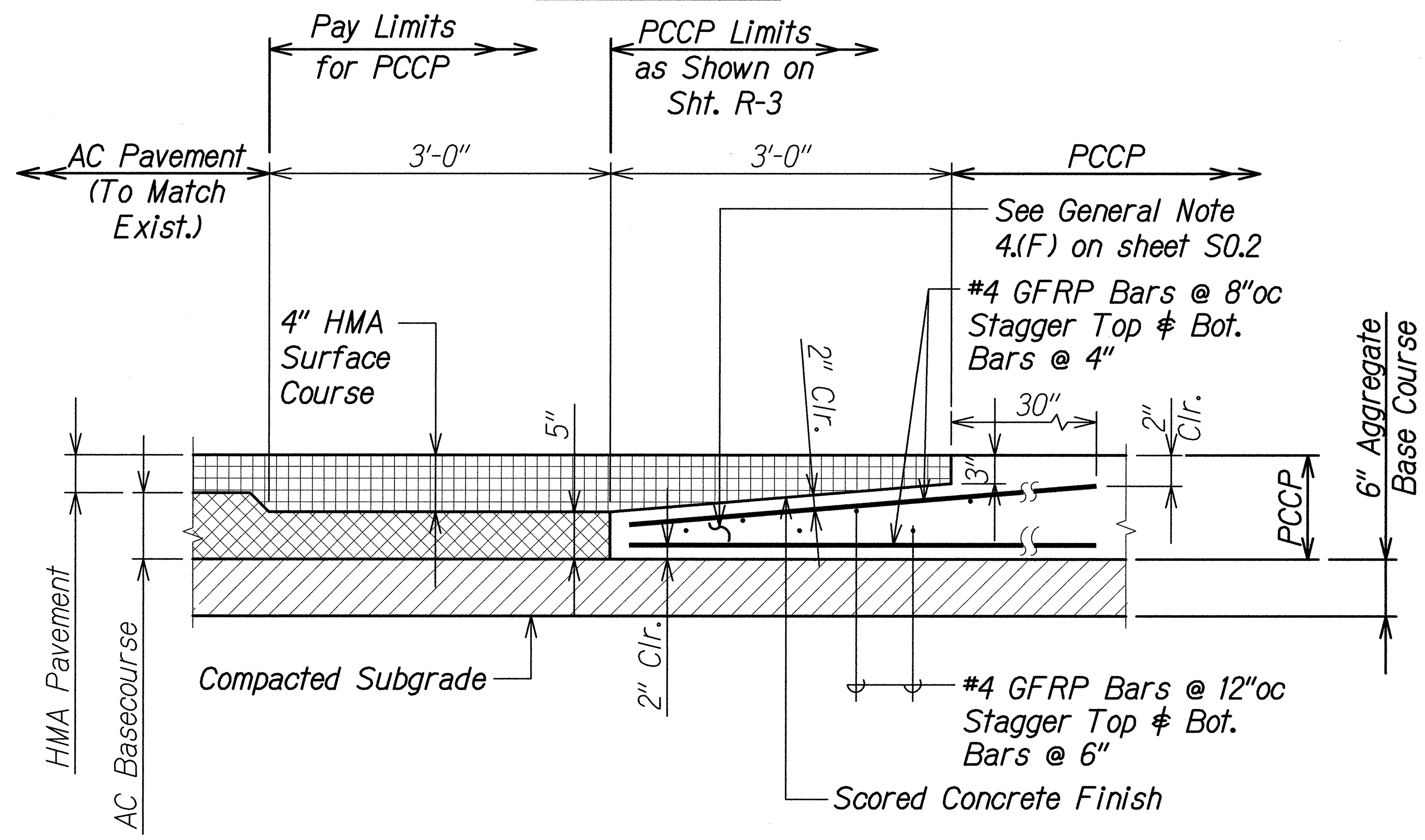


Note:
Follow sealant manufacturer's recommendation for recess and depth of sealant for joint width.

CONTRACTION / CONSTRUCTION JOINT SEAL (4 — S1.5 | S1.5)
Not to Scale
S1.6, S4.7



PCCP AT EXISTING CONCRETE STRUCTURE (5 — S1.1 | S1.5)
Scale: 1" = 1'-0"
S1.7, S1.8, S1.9, S2.8, S3.12



PCCP-AC TRANSVERSE TRANSITION DETAIL (6 — S1.5 | S1.5)
Not to Scale

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL PCCP JOINT DETAILS

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

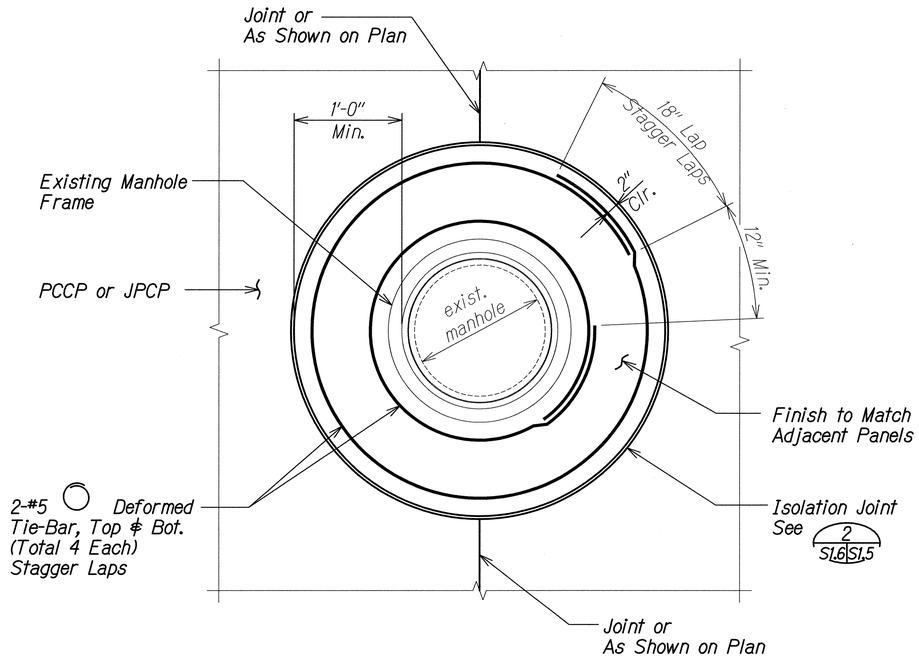
Scale: As Noted — Date: Jun. 20, 2014

SHEET No. S1.5 OF 10 SHEETS

ORIGINAL PLAN / NOTE BOOK No. — SURVEY PLOTTED BY / DRAWN BY / TRACED BY / DESIGNED BY / QUANTITIES BY / CHECKED BY — DATE

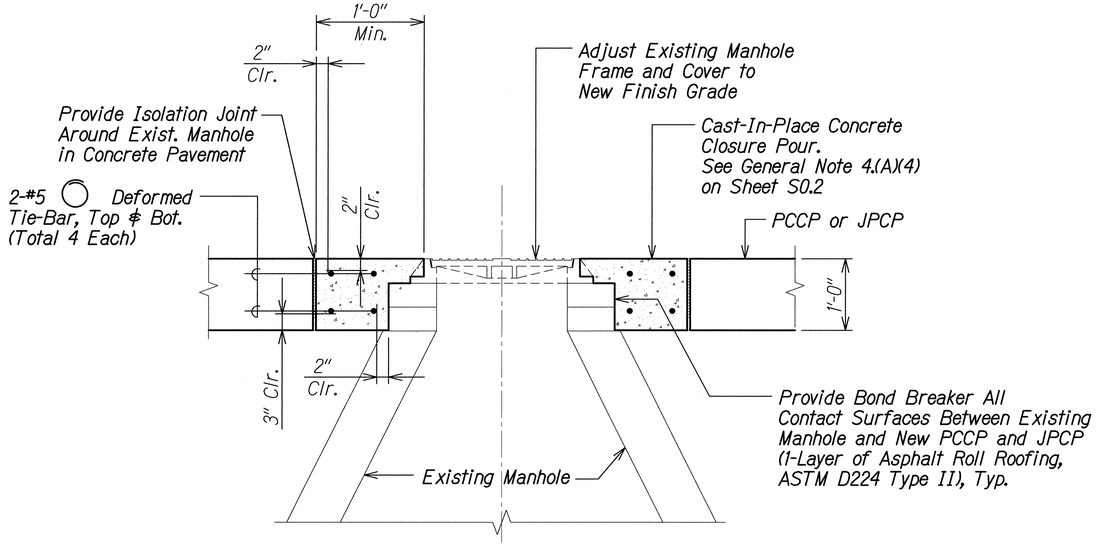
DRAWING NAME: Z:\00 ONGOING\12-033.1-HFL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\06-19-14 BID\HFL-MS101 TO MS106.DWG PLOT TIME: 06-18-14, 6:51 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	123	173



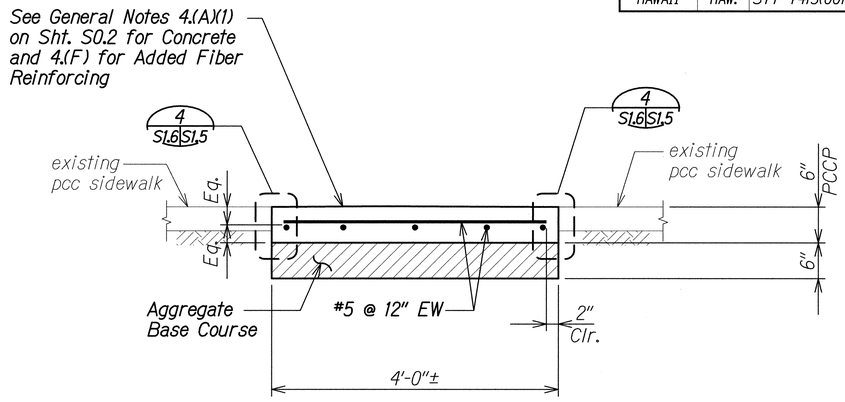
CONCRETE CLOSURE POUR - PLAN (A, S1.6 | S1.6)

Scale: 1" = 1'-0"



CONCRETE CLOSURE POUR - SECTION (B, S1.6 | S1.6)

Scale: 1" = 1'-0"



SIDEWALK EXTENSION SECTION (C, S1.6 | S1.6)

Scale: 1" = 1'-0"

ORIGINAL PLAN | NOTE BOOK | No.

SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

DRAWING NAME: Z:\OD_ONGOING\12-033.1-HFL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\06-19-14 BID\HFL-MS101 TO MS106.DWG PLOT TIME: 06-19-14, 8:24 AM

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HAWAII, U.S.A.

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

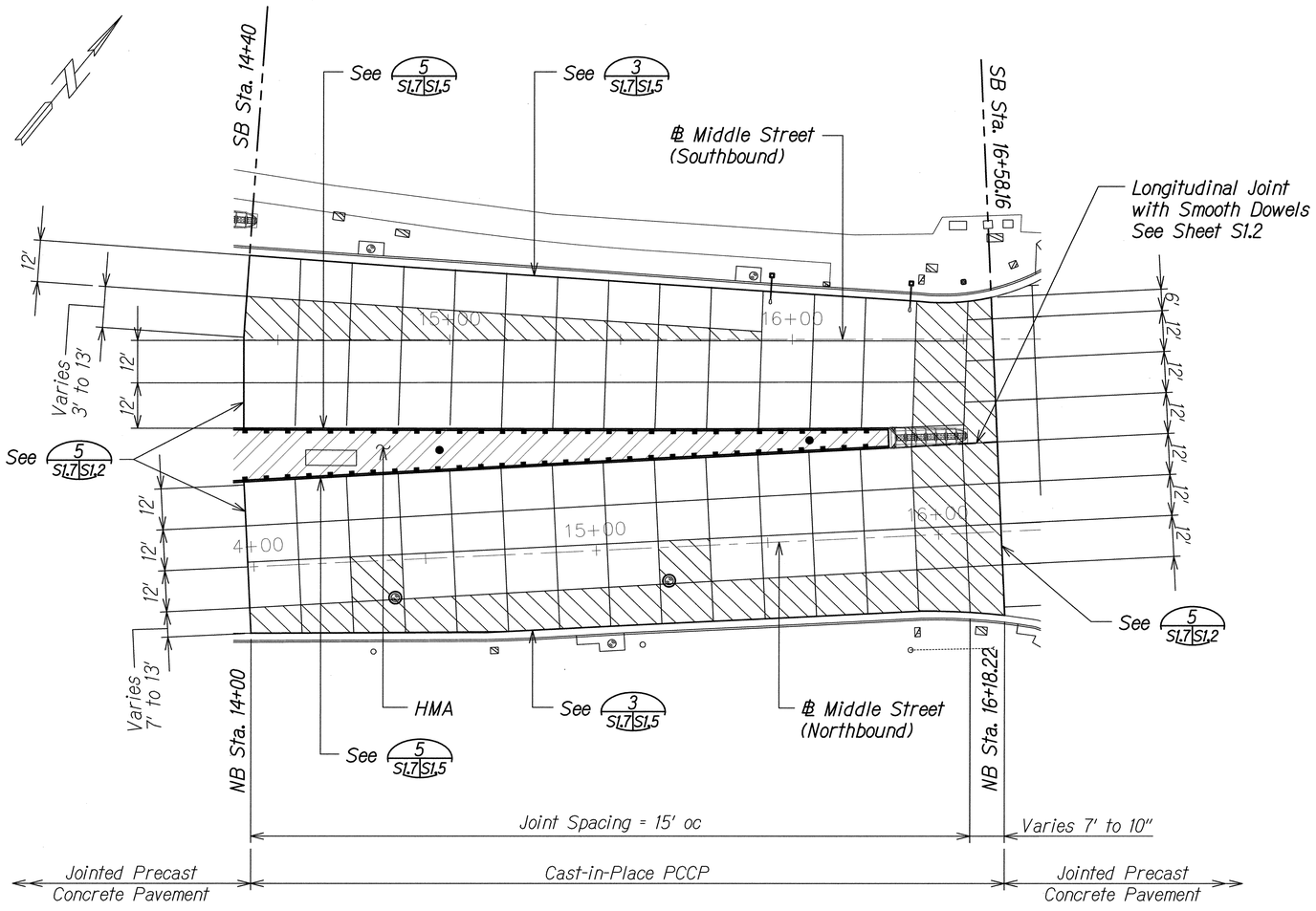
TYPICAL CONCRETE CLOSURE POUR PLAN AND SECTION

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted | Date: Jun. 20, 2014

SHEET No. S1.6 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	124	173



PCCP JOINTING PLAN

Scale: 1" = 20'-0"

Legend:

Odd Shaped Sections
See General Notes 4.(F) and 7. (H) on Sheet S0.2.

ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY DATE
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY

DRAWING NAME: Z:\OD ONGOING\12-033.1-HFL MIDDLE STREET RECONSTRUCTION-DOTA\CAD\06-19-14 BID\AFL-MS107 TO MS110 - MS208 TO MS210 - MS312.DWG PLOT TIME: 06-19-14, 8:04 AM

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DEPARTMENT OF TRANSPORTATION
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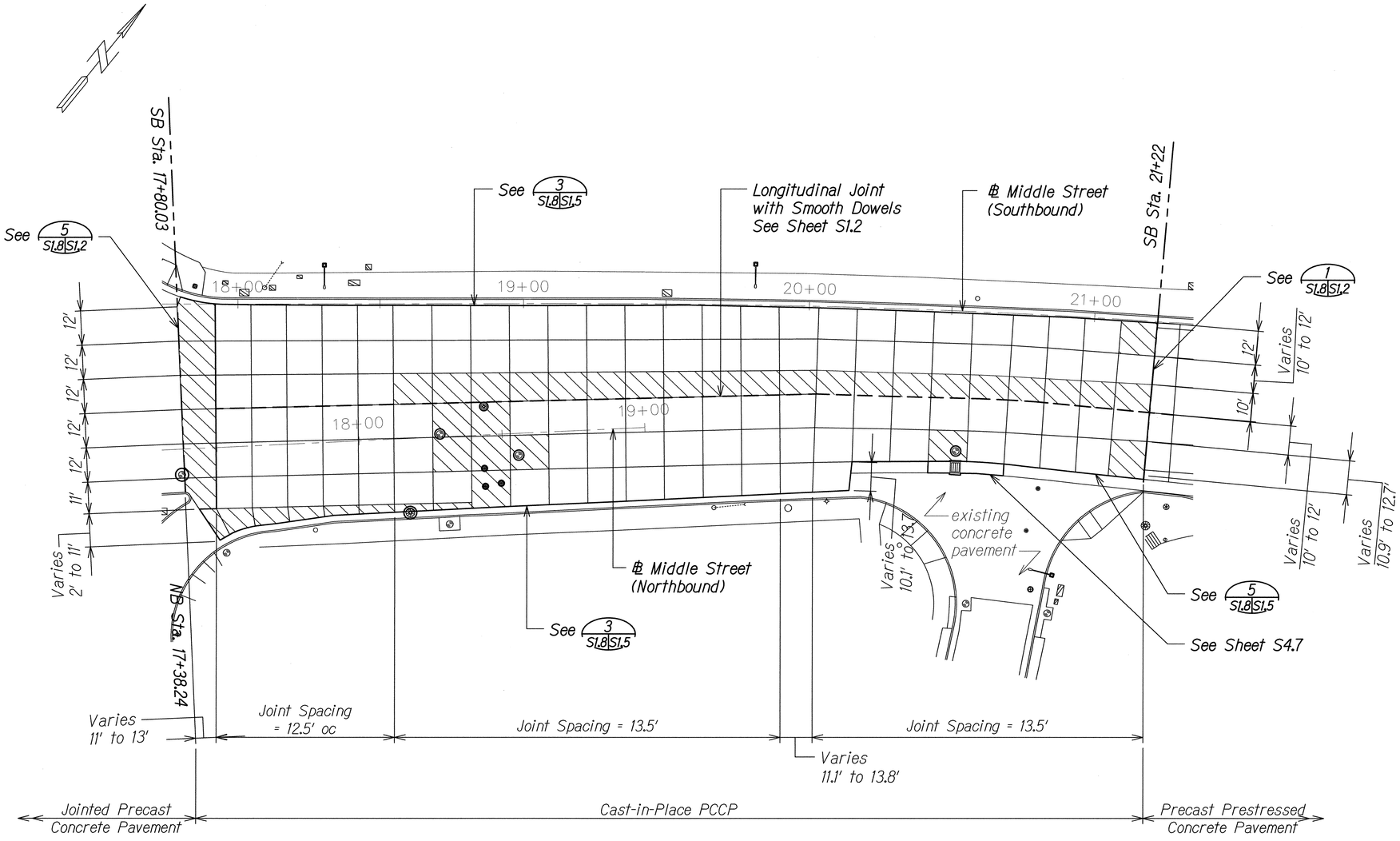
PCCP JOINTING PLAN

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S1.7 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	125	173



PCCP JOINTING PLAN

Scale: 1" = 20'-0"

Legend:

Odd Shaped Sections
See General Notes 4.(F) and 7.(H) on Sheet S0.2.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
No.	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\OD ONGONG\12-033-1-HFL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\06-19-14 BID\HFL-MS107 TO MS110 - MS208 TO MS210 - MS312.DWG PLOT TIME: 06-19-14, 9:04 AM)

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

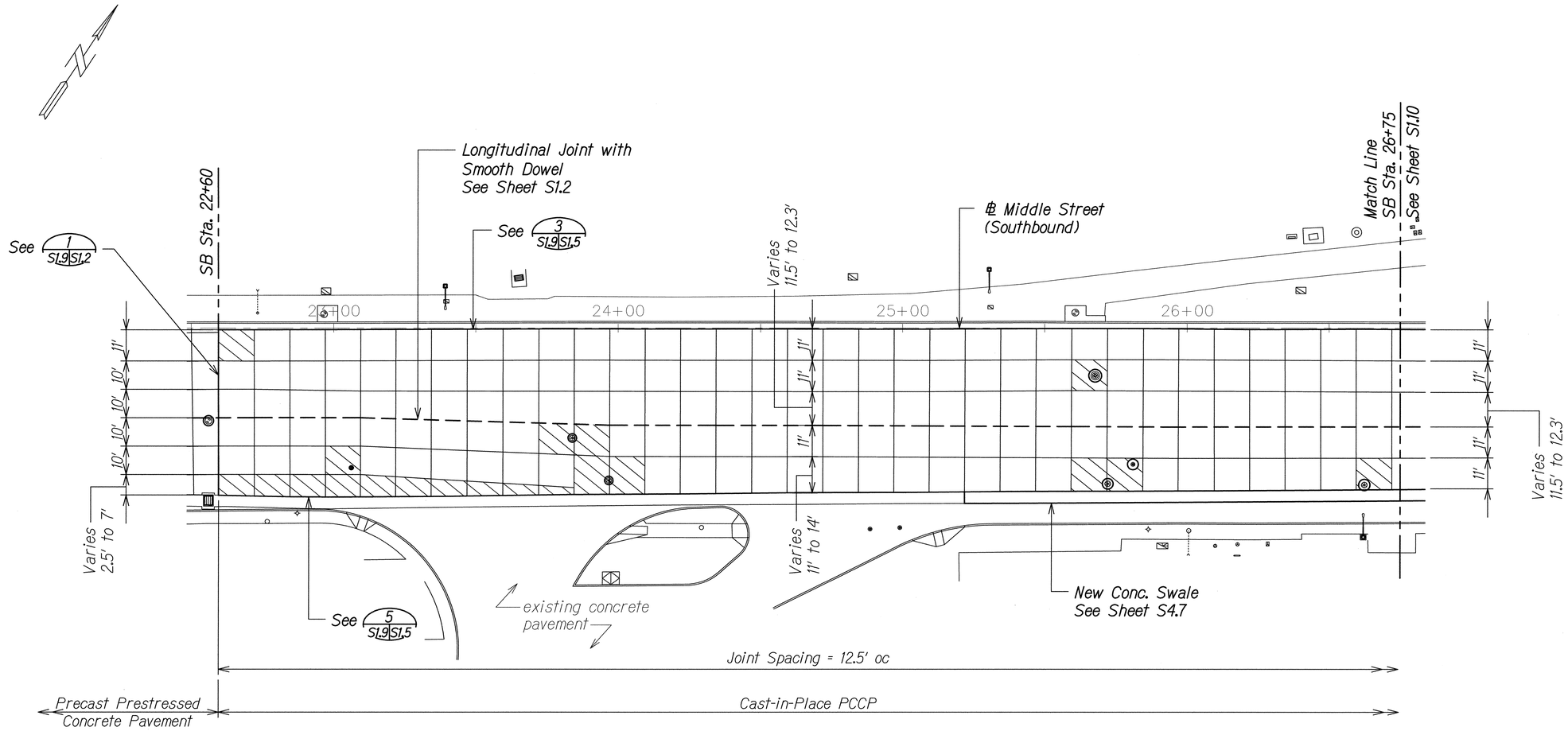
PCCP JOINTING PLAN

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S1.8 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	126	173



PCCP JOINTING PLAN

Scale: 1" = 20'-0"

Legend:

Odd Shaped Sections
See General Notes 4.(F) and 7.(H) on Sheet S0.2.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
No.	CHECKED BY	

DRAWING NAME: Z:\OD ONGOING\12-033\1-HFL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\06-19-14 BID\HFL-MS107 TO MS110 - MS208 TO MS210 - MS312.DWG PLOT TIME: 06-19-14, 9:09 AM

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

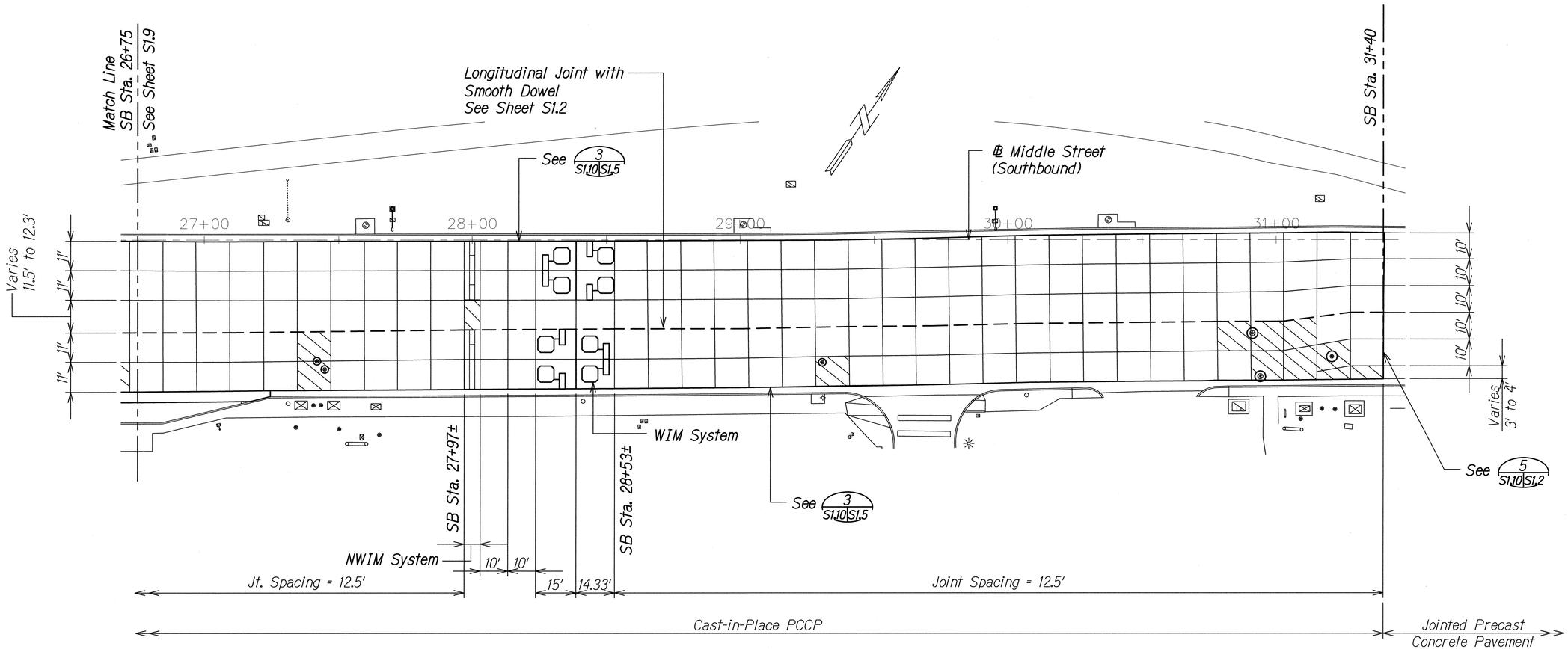
PCCP JOINTING PLAN

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S1.9 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	127	173



PCCP JOINTING PLAN

Scale: 1" = 20'-0"

Legend:

Odd Shaped Sections
See General Notes 4.(F) and 7.(H)
on Sheet S0.2.

ORIGINAL PLAN
NOTE BOOK No.

SURVEY PLOTTED BY DATE
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY

DRAWING NAME: Z:\OD ONGONGA\12-033.1-HFL MIDDLE STREET RECONSTRUCTION-EOTA\CADD\06-19-14 BIDVFL-MS107 TO MS110 - MS208 TO MS210 - MS312.DWG PLOT TIME: 06-19-14, 9:09 AM

DAVID K. FUJIWARA
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NO. 8104-S
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

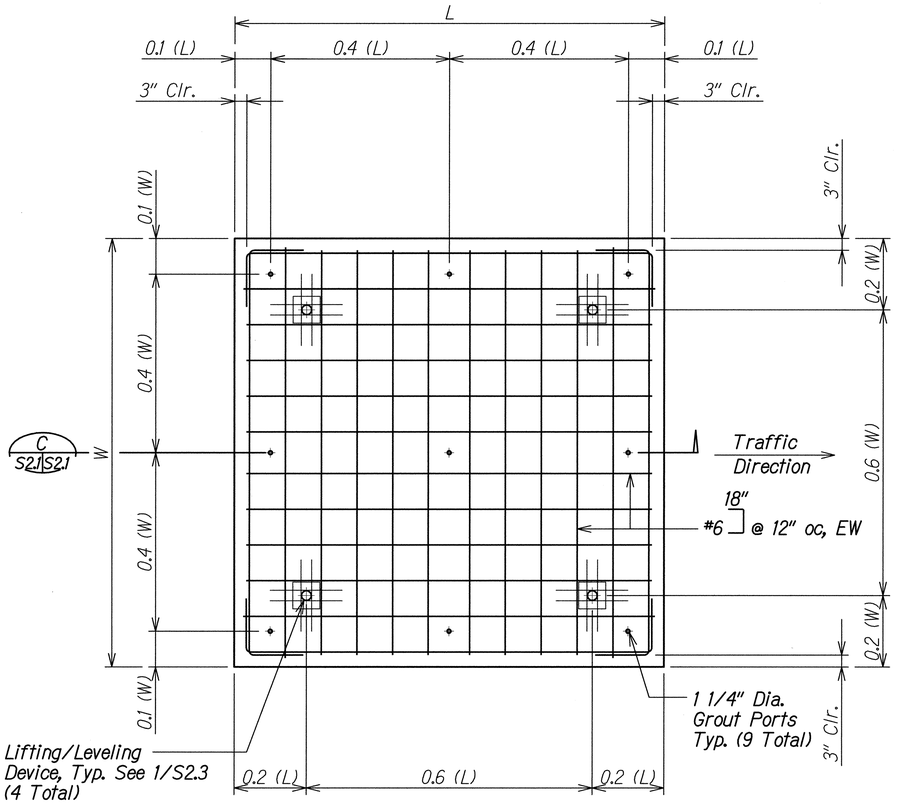
PCCP JOINTING PLAN

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

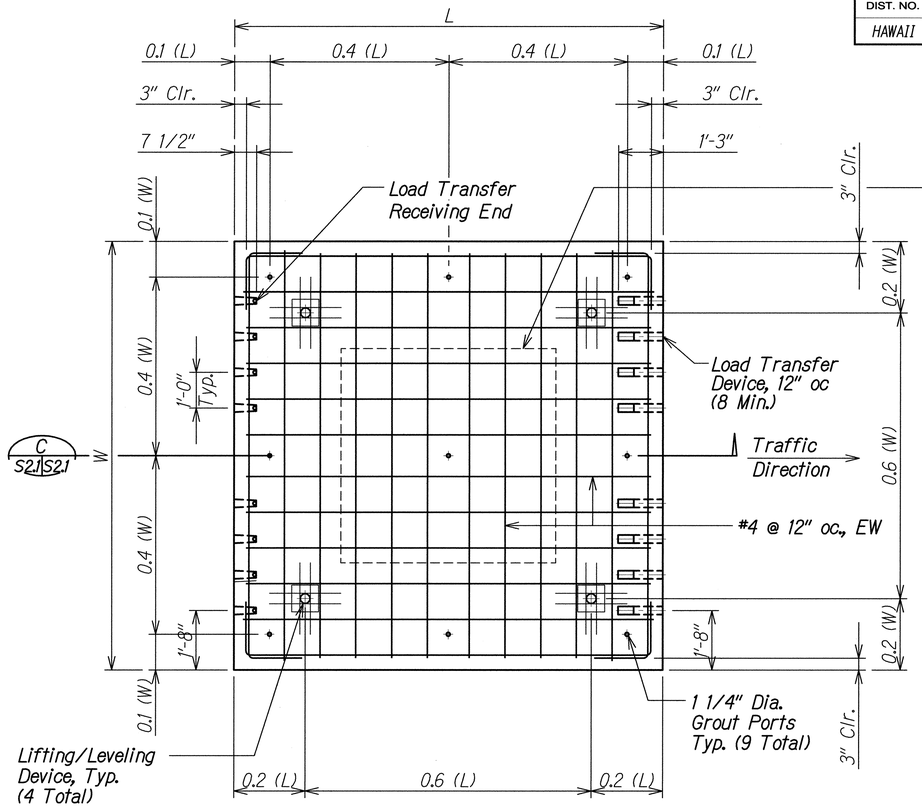
SHEET No. S1.10 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	128	173



REBAR MAT (BOTTOM LAYER) A S2.1 S2.1

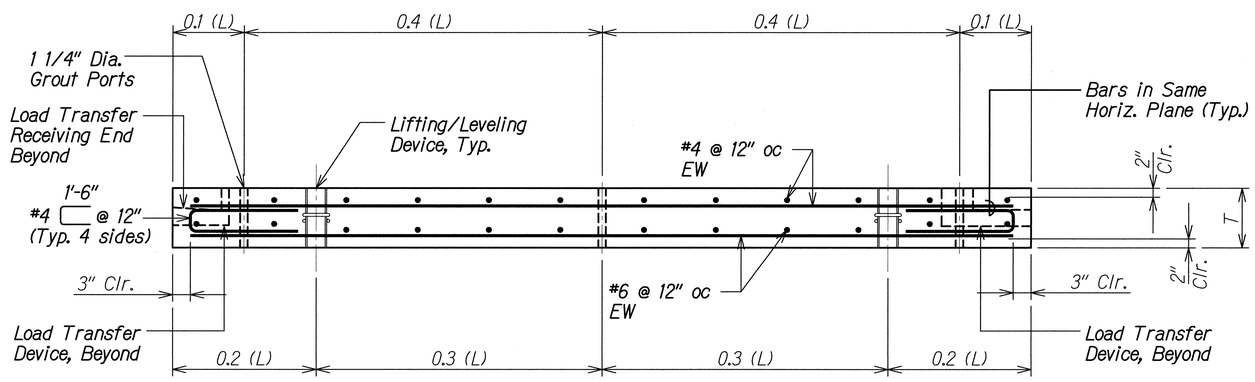
Scale: 1/2" = 1'-0"



Adjust Top Mat of Reinforcing as Required to Provide 2" Clearance in All Directions to the Vehicle Detector Loop. In all cases vehicle detector loops shall be Placed Above Reinforcing

REBAR MAT (TOP LAYER) B S2.1 S2.1

Scale: 1/2" = 1'-0"



PRECAST CONCRETE PANEL (JPCP) C S2.1 S2.1

Scale: 1" = 1'-0"

Notes:

1. 1 1/2" Diameter x 1'-2" Long, Epoxy Coated Smooth dowel bars shall be used.
2. For dowel bar placement detail and Foam core insert, see sheet S2.3.
3. For grout port details and joint details, see sheet S2.3.
4. Adjust reinforcement bars to accommodate dowel bars and dowel bar slots.
5. See Sheets T-1 and T-2 for panel thickness.

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE
NOTE BOOK | No.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

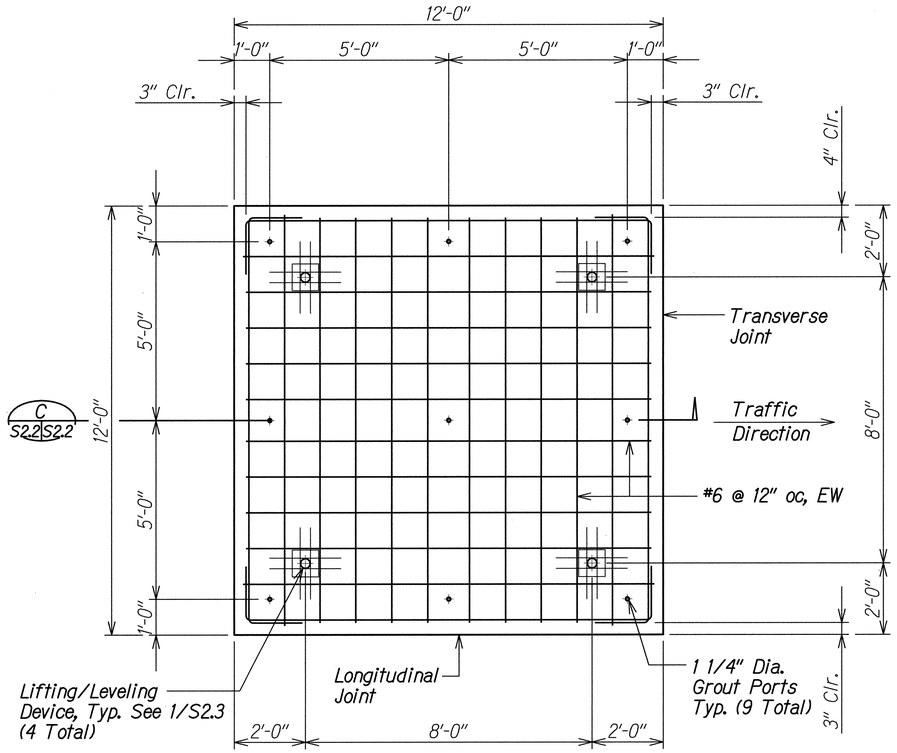
TYPICAL JPCP PANEL DETAILS

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted — Date: Jun. 20, 2014

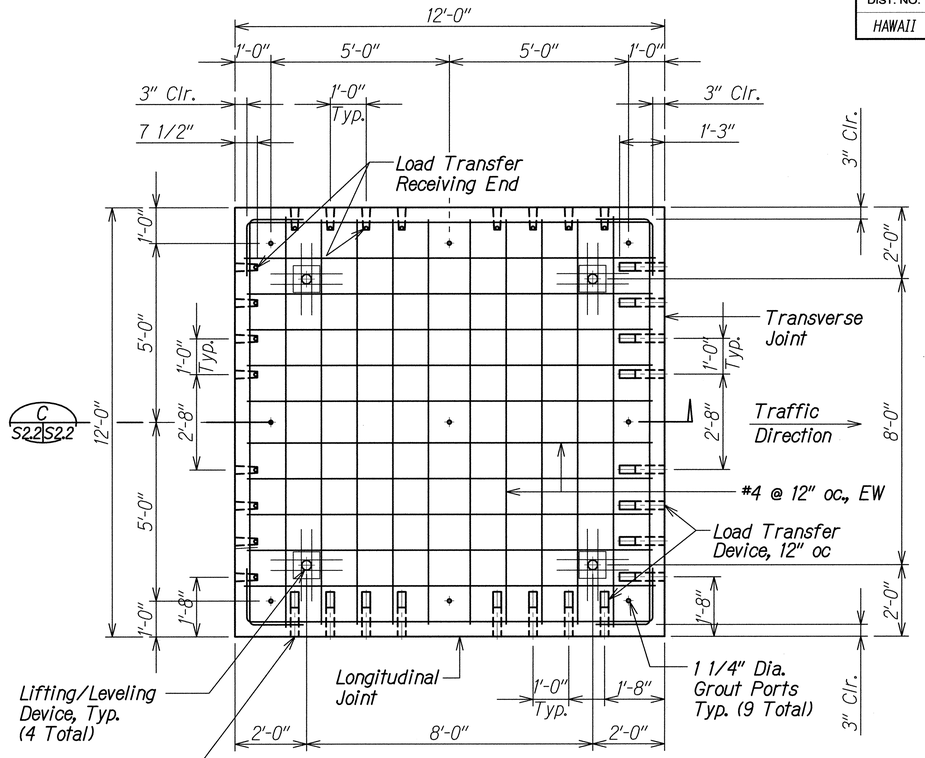
SHEET No. S2.1 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	129	173



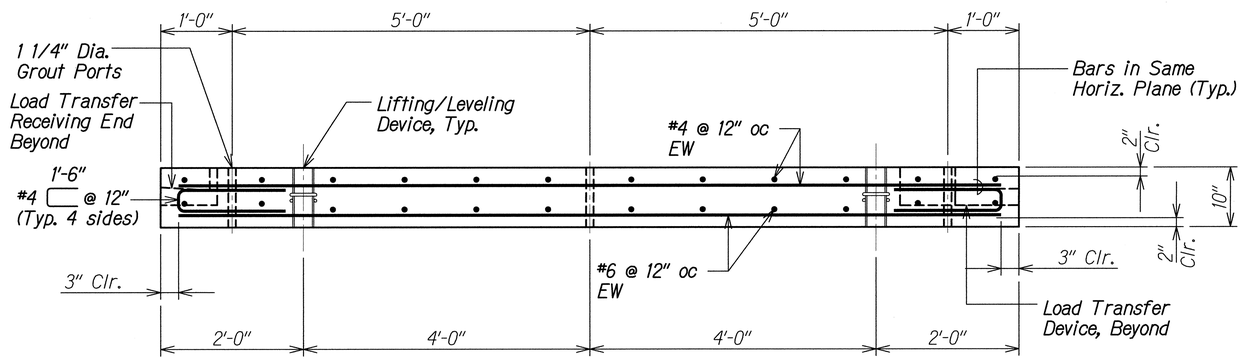
REBAR MAT (BOTTOM LAYER) A S2.2 S2.2

Scale: 1/2" = 1'-0"



REBAR MAT (TOP LAYER) B S2.2 S2.2

Scale: 1/2" = 1'-0"



PRECAST CONCRETE PANEL (JPCP) C S2.2 S2.2

Scale: 1" = 1'-0"

Notes:

1. 1 1/2" Diameter x 1'-2" Long, Epoxy Coated Smooth dowel bars shall be used for transverse joints.
2. 1 1/4" Diameter x 1'-2" Long, Epoxy Coated Smooth dowels shall be used for longitudinal joints.
3. For dowel bar placement detail and Foam core insert, see sheet S2.3.
4. For grout port details and joint details, see sheet S2.3.
5. Adjust reinforcement bars to accommodate dowel bars and dowel bar slots.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	" "
No.	TRACED BY	" "
	DESIGNED BY	" "
	QUANTITIES BY	
	CHECKED BY	

DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

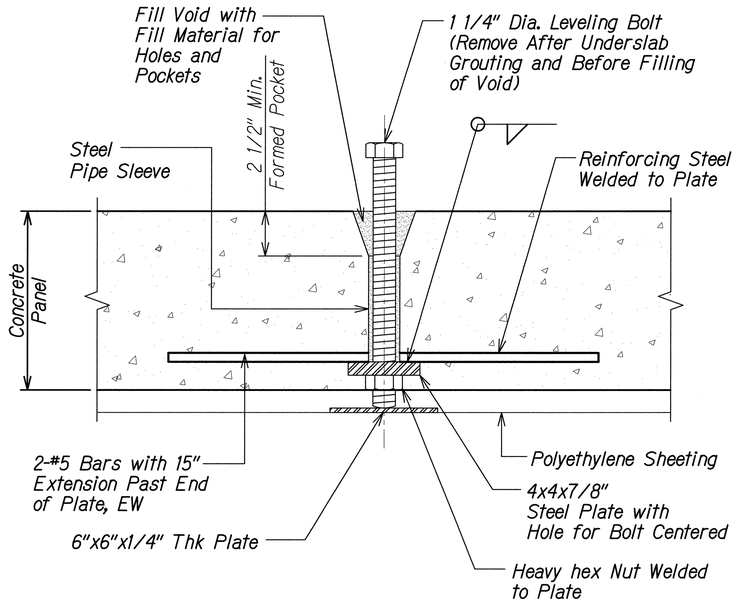
TYPICAL JPCP PANEL DETAILS AT TRANSFER STATION

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S2.2 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	130	173

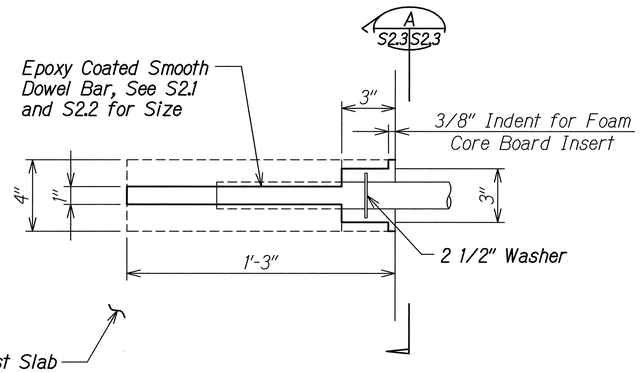


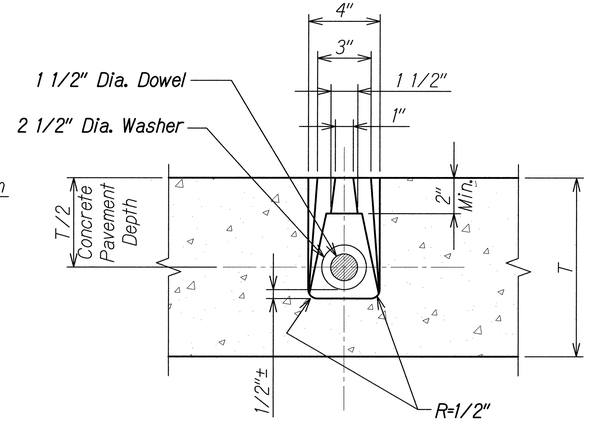
LIFTING/LEVELING DEVICE DETAIL

Scale: 3" = 1'-0"

1 S3.1 | S2.3 — S3.2

Note:
Structural Steel ASTM A36 and Reinforcing Steel ASTM A 615 Grade 60 to be Hot-Dip Galvanized ASTM A123.





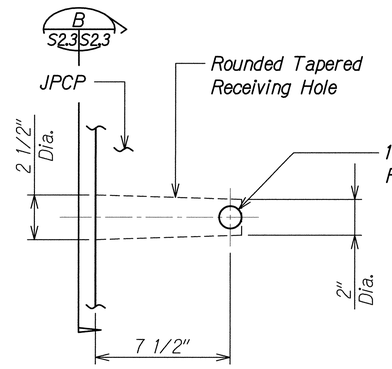
PARTIAL PLAN LOAD TRANSFER DEVICE

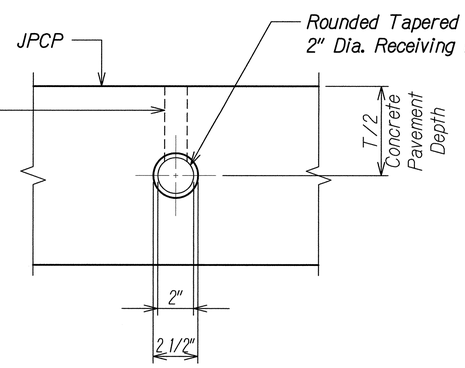
Scale: 3" = 1'-0"

2 S2.3 | S2.3

SECTION A

Scale: 3" = 1'-0" S2.3 | S2.3





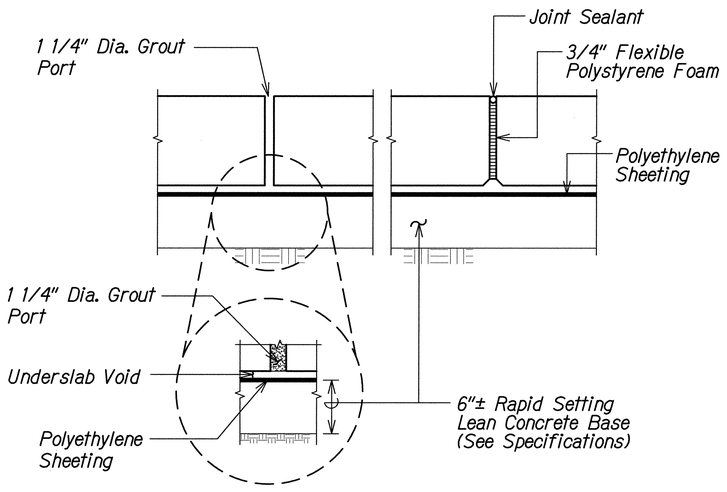
PARTIAL PLAN

PARITAL END VIEW B S2.3 | S2.3

RECEIVING END LOAD TRANSFER DEVICE

Scale: 3" = 1'-0"

4 S2.3 | S2.3



GROUT PORT UNDERSLAB VOID, AND POLYETHYLENE SHEETING

Not to Scale

3 S3.3 | S2.3

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
No.	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\DD ONGOING\12-033.1-HFL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\08-19-14 BID\HFL-MS203 - MS204.DWG PLOT TIME: 08-19-14, 7:14 PM)

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

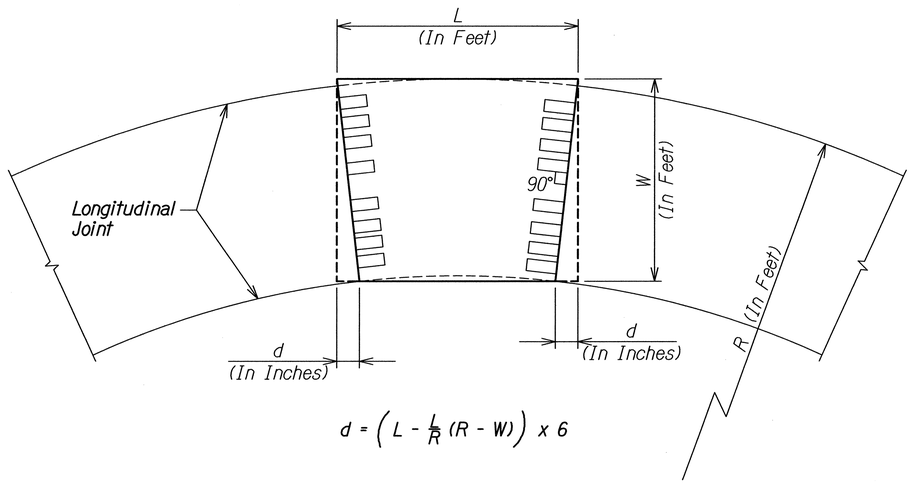
TYPICAL LIFTING/LEVELING DEVICE DETAILS

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S2.3 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	131	173



PRECAST REPLACEMENT PANEL ON A CURVE

CURVE INSTALLATION

Not to Scale

A
S2.4 | S2.4

Legend:

L Length of Panel at Curve Radius (Transverse Joint Spacing)

W Width of Panel (Longitudinal Joint Spacing Measured Along Curve Radius)

R Curve Radius

d Offset Distance for Inside Length of Panel

Note:

See Special Provision Section 416.03(A)(7) for submittal requirements of panel layout and fabrication.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
No.	CHECKED BY	

DRAWING NAME: Z:\OD ONGOING\12-033.1-HFL MIDDLE STREET RECONSTRUCTION-BOTH\CAD\06-18-14 BID\HFL-MS203 - MS204.DWG PLOT TIME: 06-18-14, 7:15 PM)

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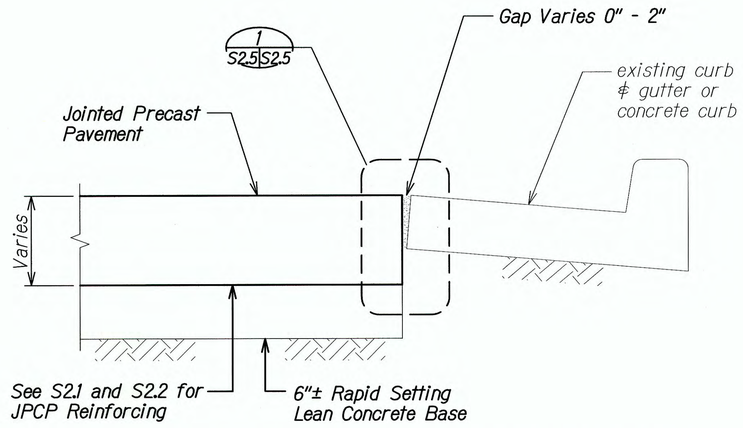
PRECAST PANEL INSTALLATION ON A CURVE

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S2.4 OF 10 SHEETS

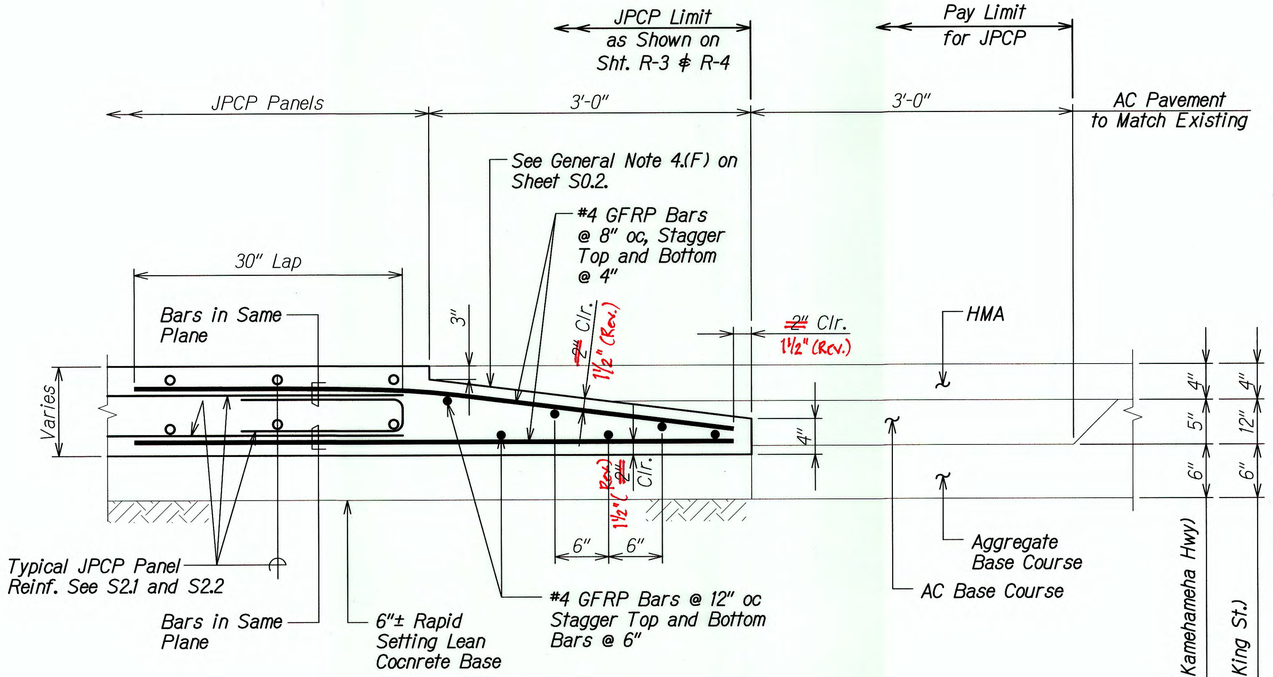
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	132	173



JPCP AT EXISTING GUTTER SECTION

Scale: 1 1/2" = 1'-0"

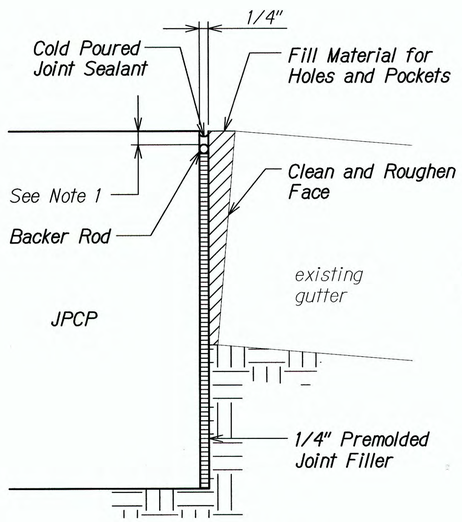
A S2.8 S2.5 S2.10



JPCP TRANSITION PANEL AT EXISTING AC

Scale: 1 1/2" = 1'-0"

B S2.5 S2.5



JPCP JOINT DETAIL AT GUTTER

Not to Scale

1 S2.5 S2.5

Note:

1. Follow Sealant Manufacturer's recommendation for recess from top of pavement and sealant depth for actual joint width.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: 7\100 ONGOING\12-033.1-HFL MIDDLE STREET RECONSTRUCTION-DOT\CAD\06-19-14 BID\HFL-MS205.DWG PLOT TIME: 06-18-14, 7:18 PM)

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STATE OF HAWAII
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JPCP AT EXISTING PAVEMENT SECTIONS

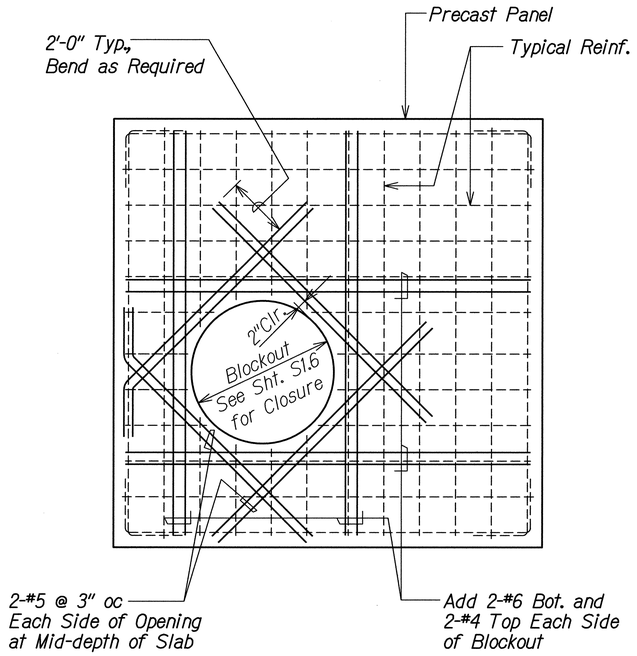
MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S2.5 OF 10 SHEETS

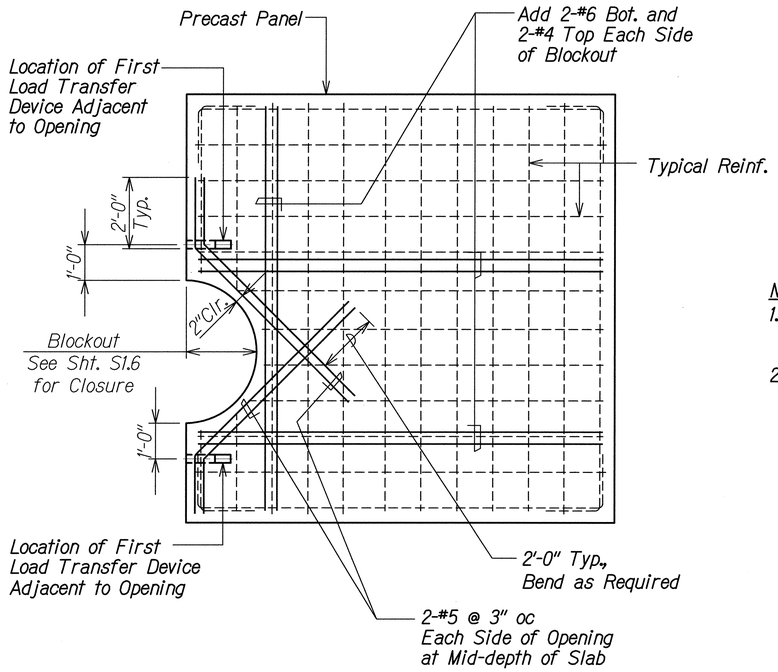
"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	133	173



CIRCULAR BLOCKOUT (A)

Scale: 1/2" = 1'-0"



CIRCULAR BLOCKOUT AT JOINT (B)

Scale: 1/2" = 1'-0"

Notes:

1. Typical load transfer devices not shown for clarity. See S2.1 and S2.2 for location and spacing.
2. All JCPC panels with blocks shall also be reinforced with fiber. See General Notes 4.(F) on sheet S0.2.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	"
No.	TRACED BY	"
	DESIGNED BY	"
	QUANTITIES BY	"
	CHECKED BY	"

DRAWING NAME: Z:\OD_ONGOING\12-033.1-HFL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\08-19-14 BID\HFL-MS006.DWG PLOT TIME: 08-19-14, 9:55 AM

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

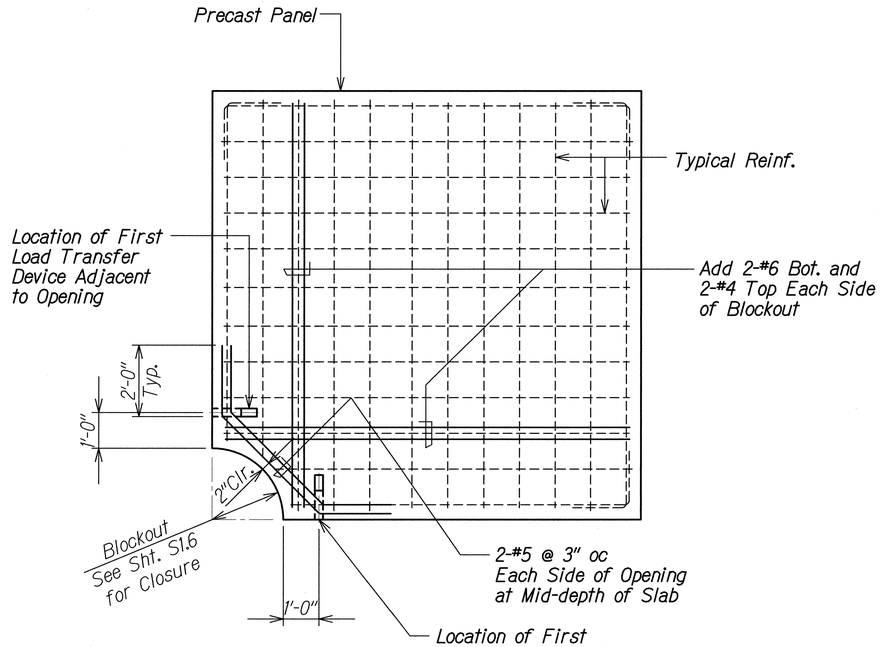
CIRCULAR BLOCKOUT DETAILS

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S2.6 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	134	173



CIRCULAR BLOCKOUT AT JOINT

Scale: 1/2" = 1'-0"

A S2.7 | S2.7

Notes:

1. Typical load transfer devices not shown for clarity. See S2.1 and S2.2 for location and spacing.
2. All JCPC panels with blocks shall also be reinforced with fiber. See General Notes 4.(F) on sheet S0.2.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
No.	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\DOT ONGOING\12-033.1-HFL MIDDLE STREET RECONSTRUCTION-DOT\CAD\06-19-14 BIDS\HFL-MS206.DWG PLOT TIME: 06-19-14, 9:56 AM

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

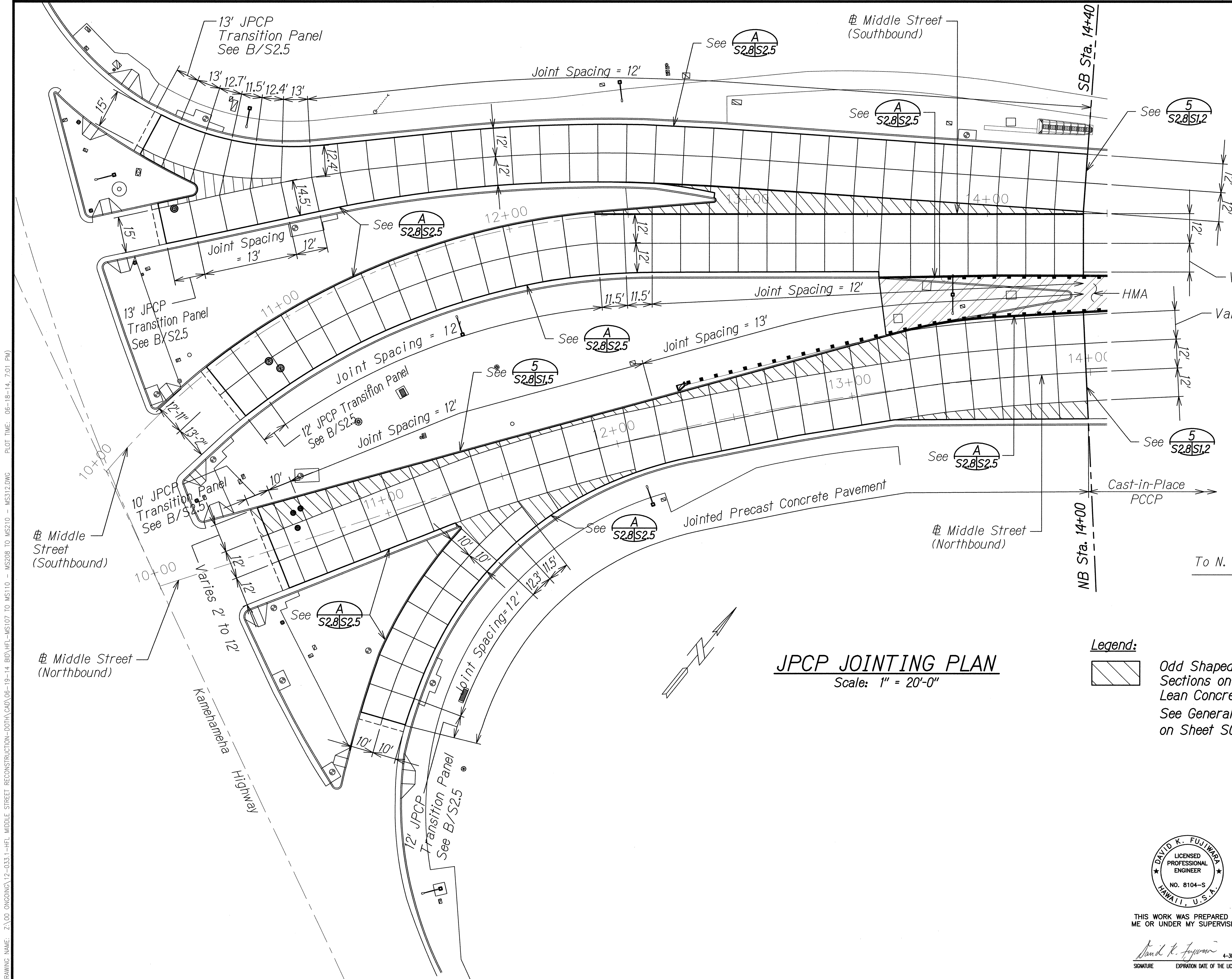
CIRCULAR BLOCKOUT DETAIL

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S2.7 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	135	173



JPCP JOINTING PLAN

Scale: 1" = 20'-0"

Legend:

Odd Shaped / Cast-in-Place Sections on 6" Rapid Setting Lean Concrete Base

See General Notes 4.(F) and 7. (H) on Sheet S0.2.

DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

JPCP JOINTING PLAN

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

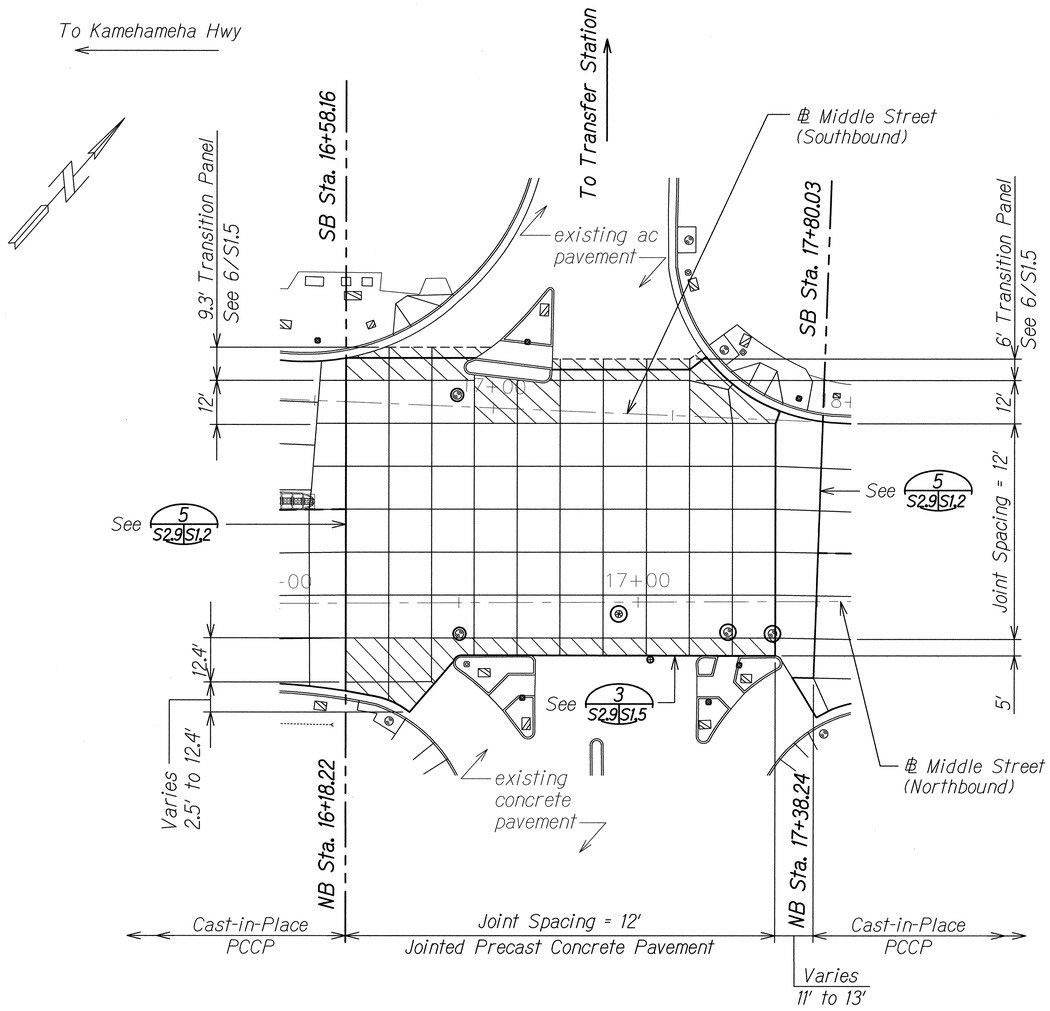
Scale: As Noted Date: Jun. 20, 2014

SHEET No. S2.8 OF 10 SHEETS

ORIGINAL PLAN | NOTE BOOK | No. | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

DRAWING NAME Z:\OC ONGOING\12-033.1-HFL MIDDLE STREET RECONSTRUCTION-DOT\CAD\06-19-14 BID\HFL-MS107 TO MS110 - MS208 TO MS210 - MS312.DWG PLOT TIME: 06-18-14, 7:01 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	136	173



JPCP JOINTING PLAN

Scale: 1" = 20'-0"

Legend:

Odd Shaped / Cast-in-Place Sections on 6" Rapid Setting Lean Concrete Base

See General Notes 4.(F) and 7. (H) on Sheet S0.2.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

PLOT TIME: 06-18-14, 7:01 PM)

DRAWING NAME: Z:\OD ONGOING\12-033.1-HTL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\06-19-14 BID\MTL-MS107 TO MS110 - MS208 TO MS210 - MS312.DWG

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

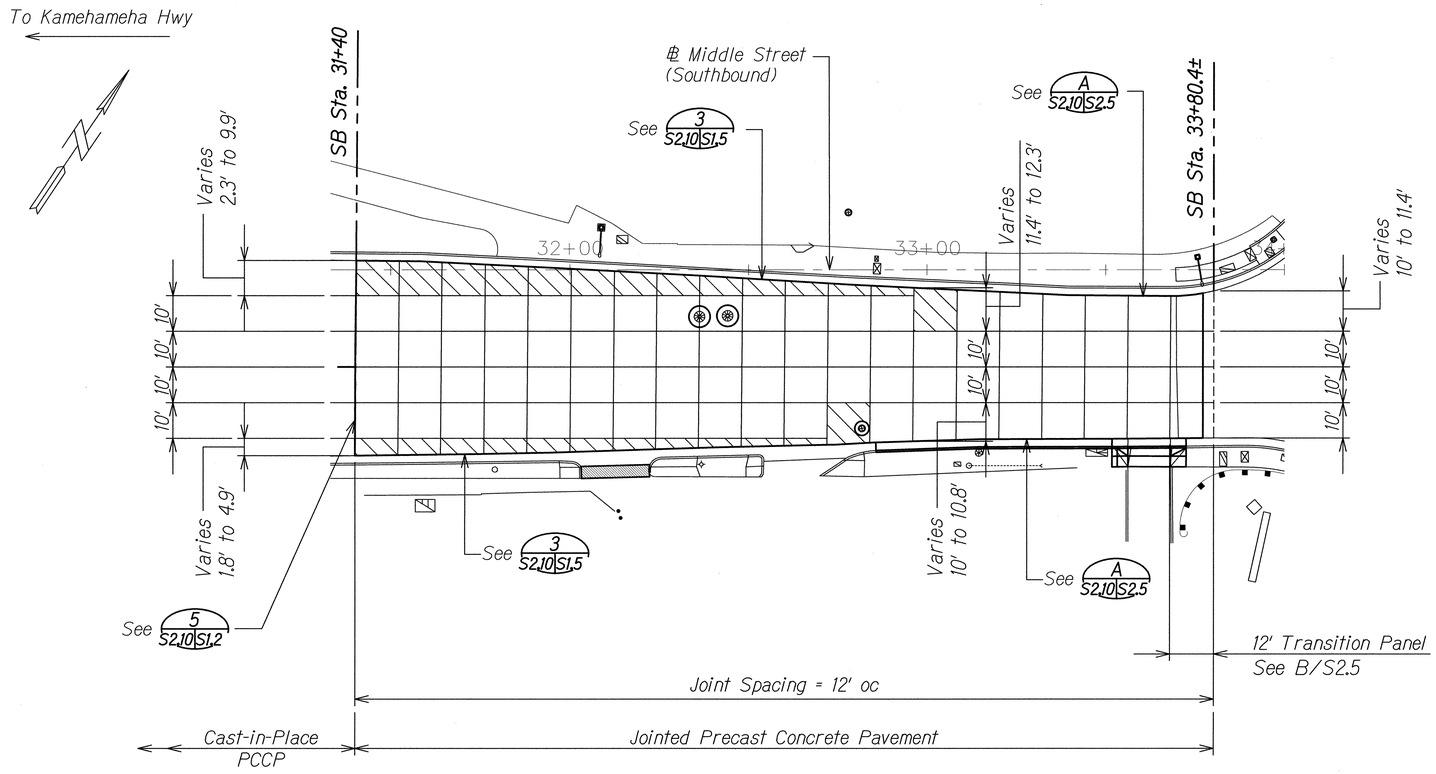
JPCP JOINTING PLAN

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S2.9 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	137	173



JPCP JOINTING PLAN

Scale: 1" = 20'-0"

Legend:

Odd Shaped / Cast-in-Place Sections on 6" Rapid Setting Lean Concrete Base

See General Notes 4.(F) and 7. (H) on Sheet S0.2.

ORIGINAL PLAN | NOTE BOOK No. | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE

DRAWING NAME: Z:\00 ONGOING\12-033.1-HFL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\08-19-14 BID\HFL-MS107 TO MS110 - MS208 TO MS210 - MS312.DWG PLOT TIME: 08-19-14, 10:57 AM)

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

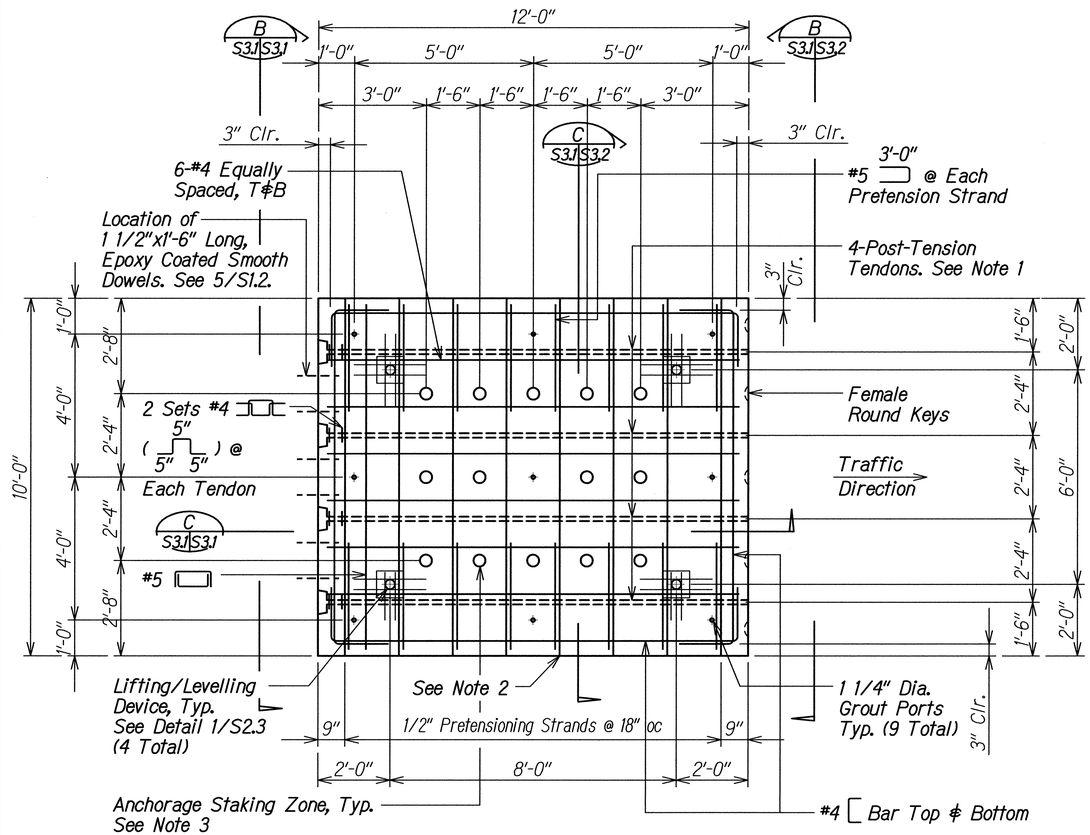
JPCP JOINTING PLAN

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S2.10 OF 10 SHEETS

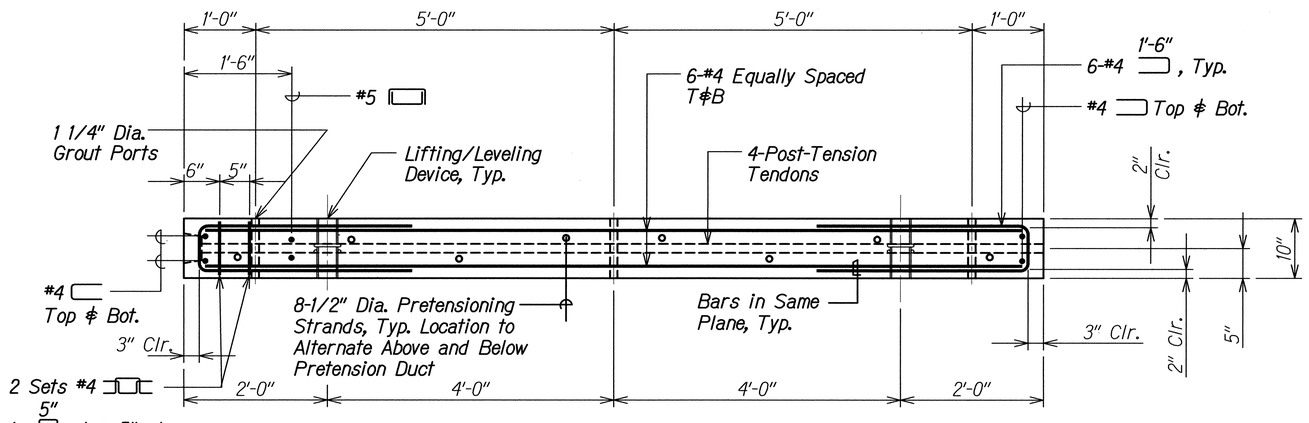
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	138	173



REBAR MAT (TOP & BOTTOM LAYER)

A S3.1 S3.1

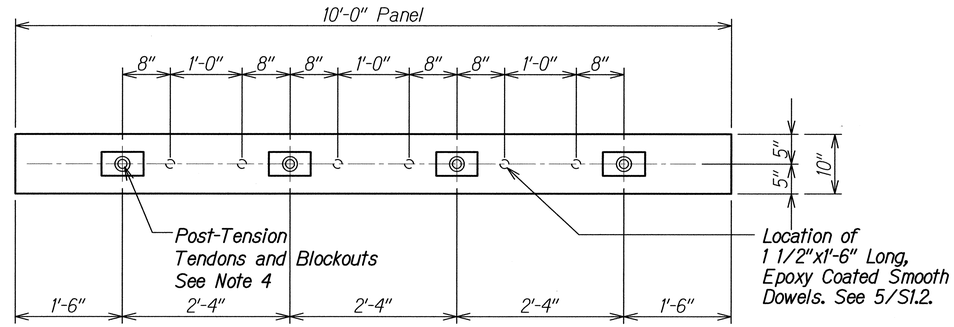
Scale: 1/2" = 1'-0"



PRECAST CONCRETE PANEL (PPCP)

C S3.1 S3.1

Scale: 1" = 1'-0"



POST-TENSION BLOCKOUT ELEVATION

B S3.1 S3.1

Scale: 1" = 1'-0"

Notes:

1. Each Post-Tension Tendon shall contain two (2) - 0.6" Dia. Strands. Design Jacking force at end of each 2x0.6 tendon = 88^k
2. Release pretensioning symetrically starting with middle strands and work outward.
3. Contractor to determine location and number of stakes to be used. Anchorage stakes shall have sufficient capacity to prevent any movement of the panels during post-tensioning.
4. Size of blockout shall be per anchorage system manufacturer's recommendation.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
No.	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\OD ONGOING\12-033.1-HFL MIDDLE STREET RECONSTRUCTION-BOTH\CAD\06-19-14 BID\HFL-MS01.DWG PLOT TIME: 06-18-14, 7:22 PM

DAVID K. FUJIMARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

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David K. Fujimara 4-30-16

SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

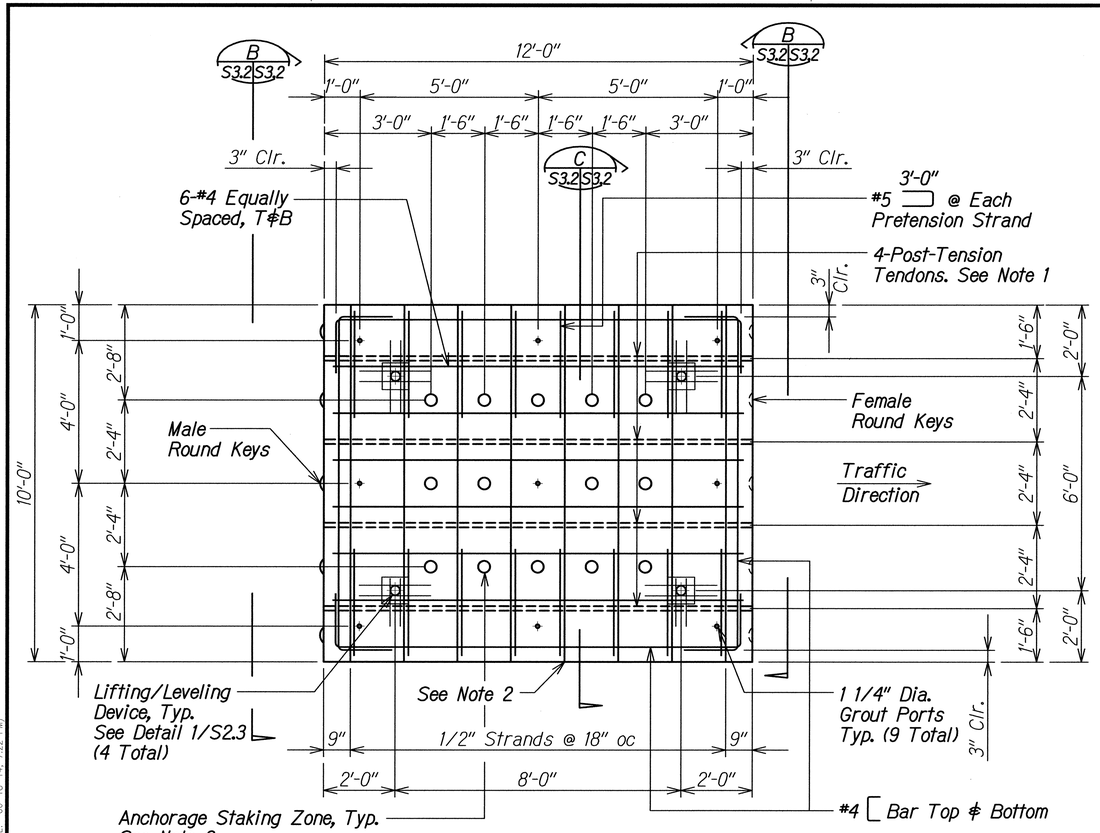
TYPICAL PPCP END PANEL DETAILS

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S3.1 OF 12 SHEETS

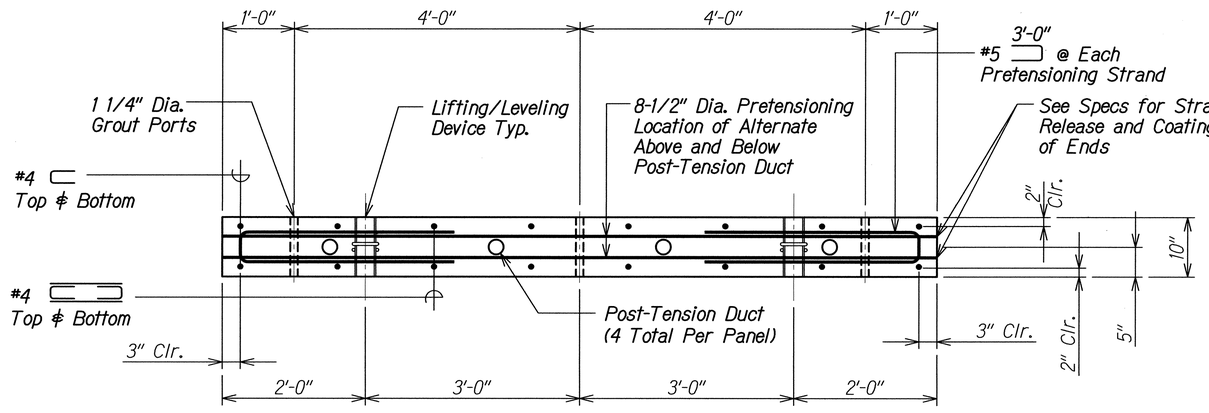
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	139	173



REBAR MAT (TOP & BOTTOM LAYER)

Scale: 1/2" = 1'-0"

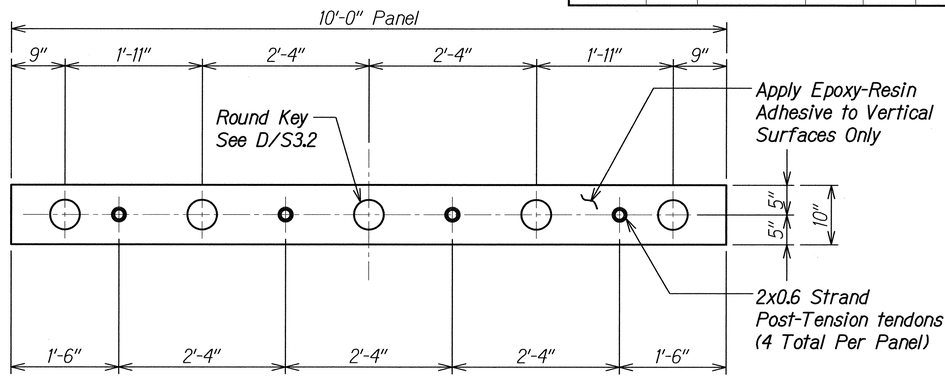
A S3.1 S3.1



PRECAST CONCRETE PANEL (PPCP)

Scale: 1" = 1'-0"

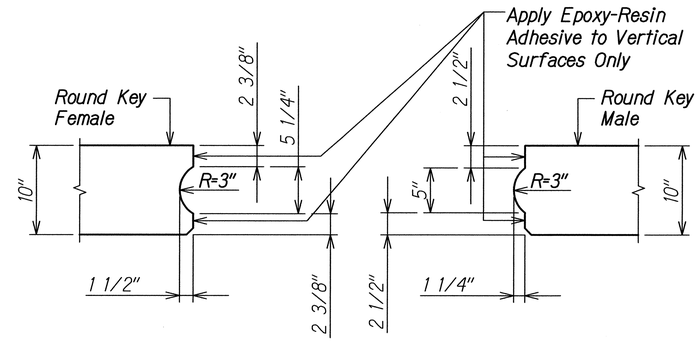
C S3.1 S3.2 S3.2



ROUND KEYS JOINT ELEVATION

Scale: 1" = 1'-0"

B S3.1 S3.2 S3.2



ROUND KEY JOINT DETAILS

Scale: 1 1/2" = 1'-0"

D S3.2 S3.2

Notes:

1. Each Post-Tension Tendon shall contain two (2) - 0.6" Dia. Strands. Design Jacking force at end of each 2x0.6 tendon = 88
2. Release pretensioning symetrically starting with middle strands and work outward.
3. Contractor to determine location and number of stakes to be used. Anchorage stakes shall have sufficient capacity to prevent any movement of the panels during post-tensioning.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL PPCP INTERIOR PANEL DETAILS

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

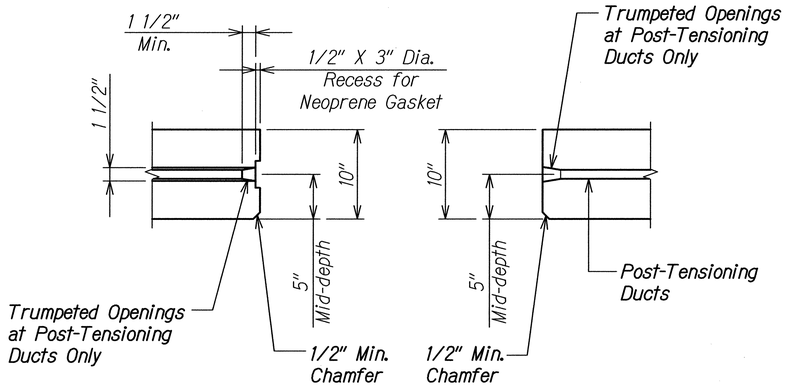
Scale: As Noted Date: Jun. 20, 2014

SHEET No. S3.2 OF 12 SHEETS

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE
NOTE BOOK | No.

DRAWING NAME: Z:\00 ONGOING\12-033.1-HFL MIDDLE STREET RECONSTRUCTION-OOTH\CAD\06-19-14 BID\HFL-MS301.DWG PLOT TIME: 06-18-14, 7:22 PM

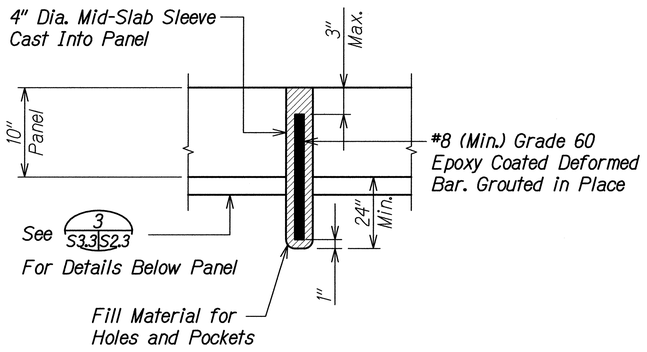
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	140	173



POST-TENSIONING DUCTS AT PANEL JOINTS

Not to Scale

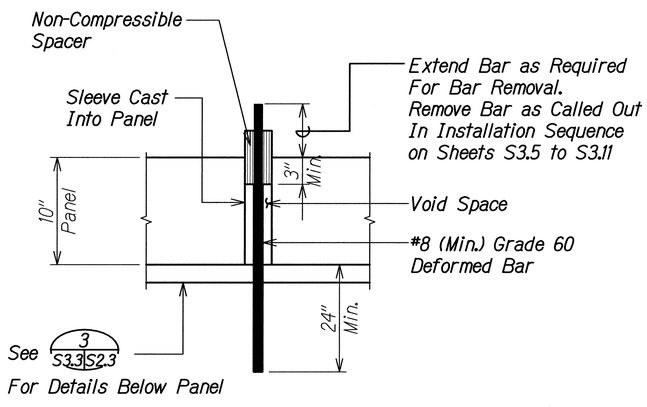
1 S3.3 | S3.3



FINAL ANCHOR STAKING DETAIL

Not to Scale

2 S3.3 | S3.3



TEMPORARY ANCHOR STAKING DETAIL

Not to Scale

3 S3.3 | S3.3

ORIGINAL PLAN | NOTE BOOK No.

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

DRAWING NAME: Z:\OD ONGONGA\12-0331-HFL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\06-19-14 BID\HFL-MS303.DWG PLOT TIME: 06-18-14, 7:23 PM

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STATE OF HAWAII
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HIGHWAYS DIVISION

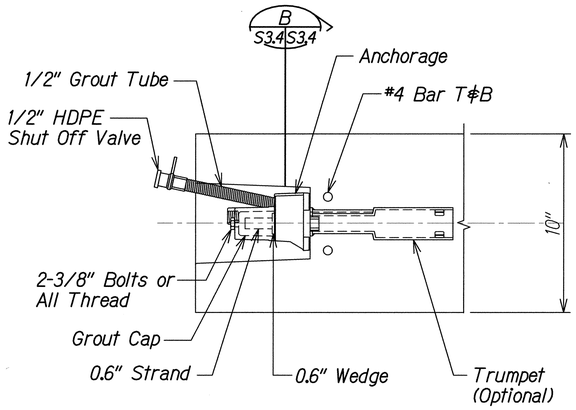
TYPICAL PPCP DETAILS

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

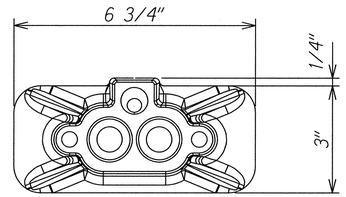
SHEET No. S3.3 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	141	173



SECTION - 2 x 0.6" ANCHORAGE SYSTEM (A S3.4 | S3.4)

Not to Scale



SECTION - 2 x 0.6" ANCHORAGE SYSTEM (B S3.4 | S3.4)

Not to Scale

Notes:

1. Anchorage system is for illustrative purposed only. Contractor shall submit proposed anchorage system for 2 x 0.6" strand tendon for approval.

2. See Note 9.(F)(10) on sheet S0.3 for anchorage protection and blockout fill material.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	"
	TRACED BY	"
	DESIGNED BY	"
	QUANTITIES BY	"
No.	CHECKED BY	"

DRAWING NAME: Z:\OD ONGOING\12-033-1-HFL MIDDLE STREET RECONSTRUCTION-DOT\H\CAD\08-19-14 BID\HFL-MS303.DWG PLOT TIME: 08-19-14, 9:56 AM

DAVID K. FUJIWARA
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

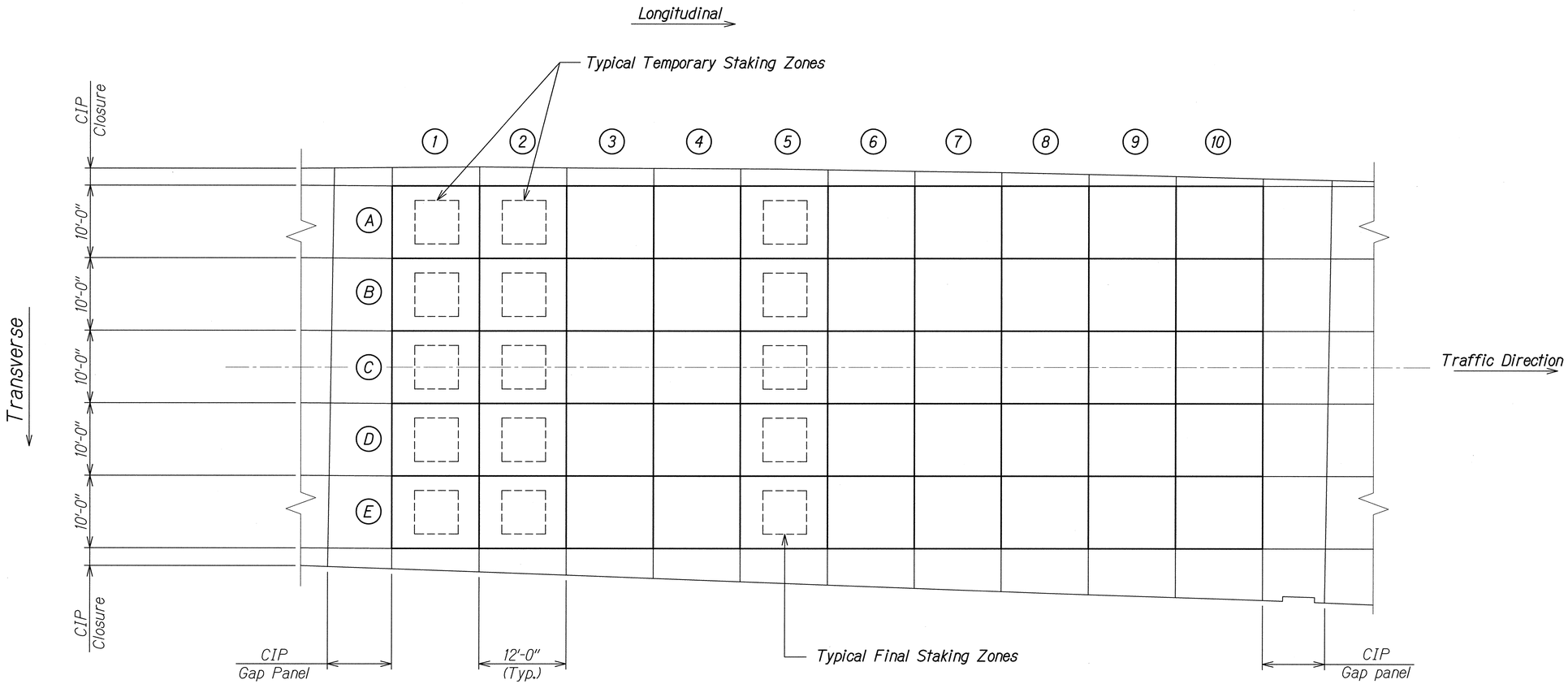
TYPICAL PPCP ANCHORAGE SYSTEM DETAILS

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S3.4 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	142	173



Legend:

(1) Column Designations

(A) Row Designations

TYPICAL POST-TENSION SEGMENT LAYOUT PLAN

Scale: 1/8" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	"
NOTE BOOK	TRACED BY	"
	DESIGNED BY	"
No.	QUANTITIES BY	"
	CHECKED BY	"

DRAWING NAME: Z:\OD OKGONG\12-0331-HFL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\06-18-14 BID\HFL-MS305 TO MS311.DWG PLOT TIME: 06-19-14, 8:28 AM)

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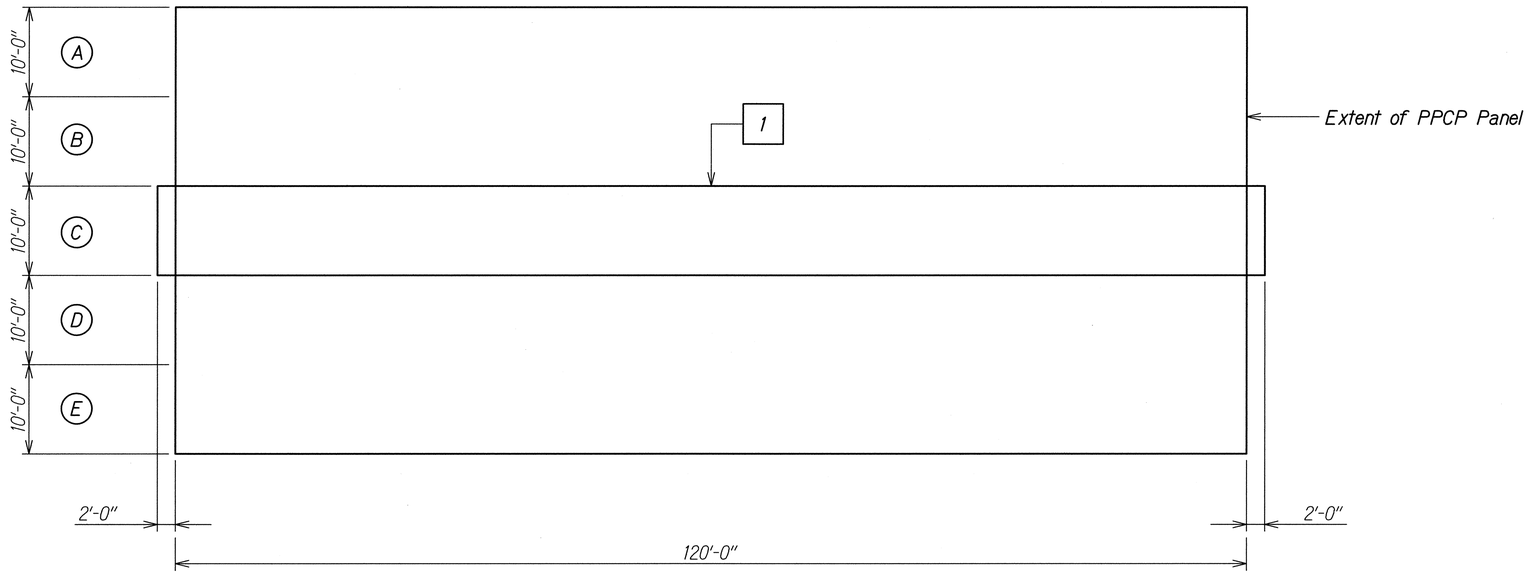
TYPICAL PPCP PANEL LAYOUT PLAN

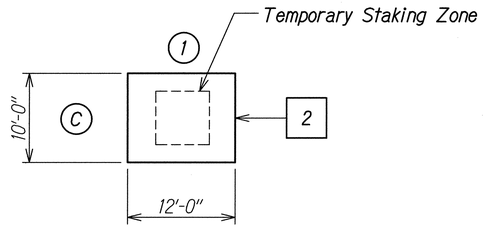
MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

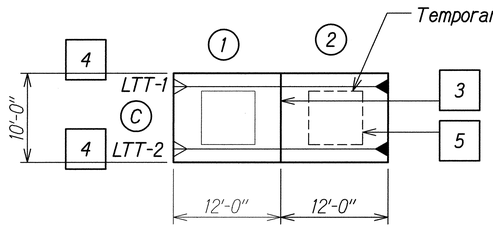
Scale: As Noted — Date: Jun. 20, 2014

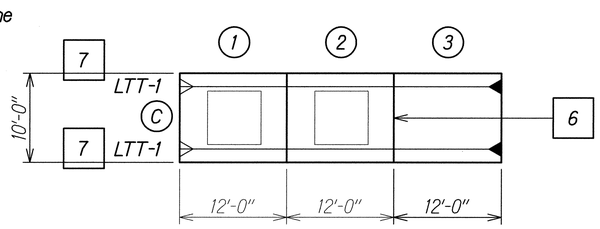
SHEET No. S3.5 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	143	173









1 — Saw Cut Existing Pavement at Row (C) Plus an Additional 2'-0" on Each End for Jacking. Remove Existing Pavement. Prepare subgrade. Pour 6" Rapid Setting Lean Concrete Base.

2 — Set Panel C-1, Adjust to Elevations Shown in Civil Drawings. Stake within Temporary Staking Zone.

3 — Set Panel C-2
Apply Epoxy to Transverse Joints
Between Columns (1) and (2)

4 — Stress LTT-1 and LTT-2 Concurrently as Required to Close Gap in Panels. Adjust Panel Height as Required.

5 — Stake Panel C-2 within Temporary Staking Zone.

6 — Set Panel C-3
Apply Epoxy to Transverse Joints
Between Columns (2) and (3)

7 — Stress LTT-1 And LTT-2 Concurrently as Required to Close Gap in Panels. Adjust Panel Height as Required.

8 — Repeat Sequence 6 To 7 For Panels C-4 To C-10.

Legend:

(1) Column Designation

(A) Row Designation

LTT-# Longitudinal Temporary Tendon

LPT-# Longitudinal Permanent Tendon

▷— Jacking Ends

▶— Dead Ends

INSTALLATION SEQUENCE

Scale: 1/8" = 1'-0"

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE
NOTE BOOK | No.

DRAWING NAME: Z:\DOING\12-053-HFL MIDDLE STREET RECONSTRUCTION-DOT\CAD\06-19-14 BIDS\HFL-MS305 TO MS311.DWG PLOT TIME: 06-19-14, 9:57 AM

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NO. 8104-S
HAWAII, U.S.A.

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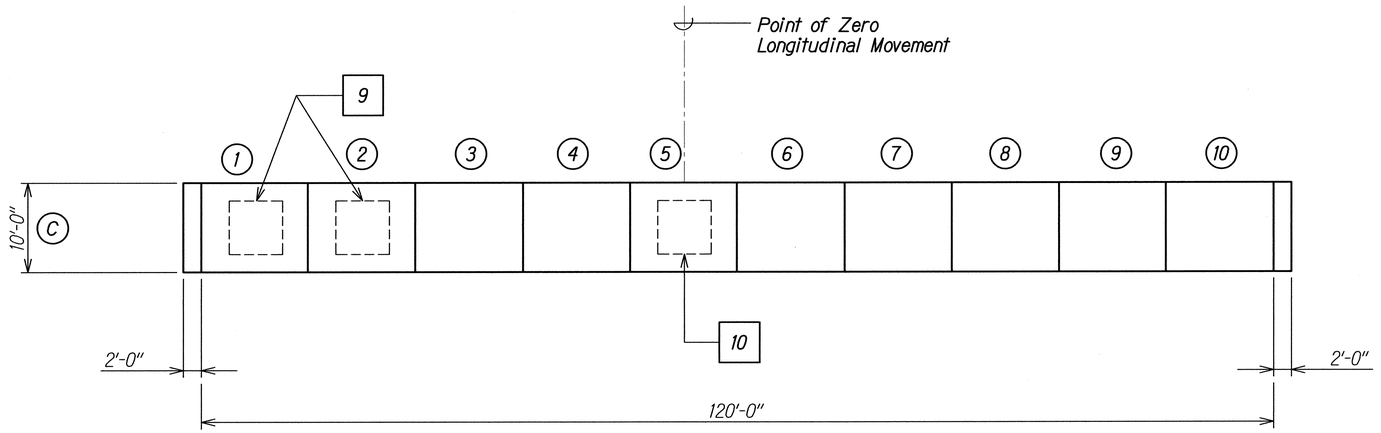
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

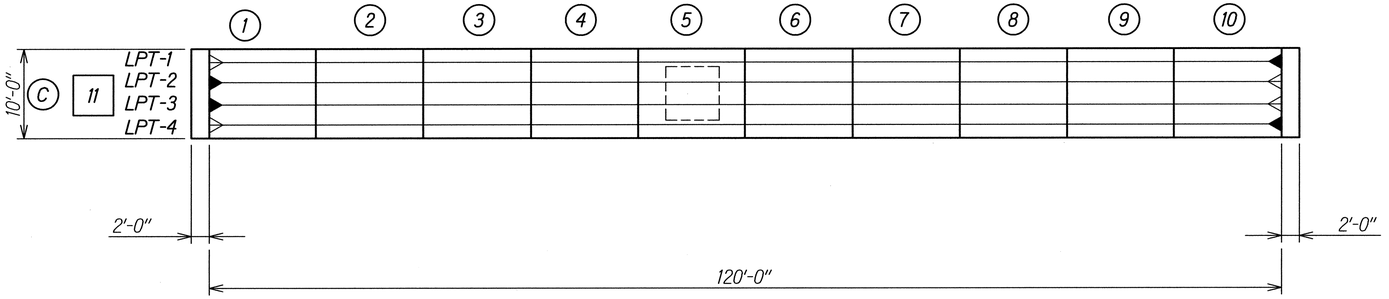
PPCP LAYOUT PANEL
INSTALLATION SEQUENCE
MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S3.6 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	144	173





9 Remove Temporary Stakes From Panels C-1 and C-2.

10 Stake Panels C-5 Within Final Staking Zone

11 Stress Longitudinal Permanent Tendons
- A. Stress LPT-2 and LPT-3 Concurrently to 100% of PJack (See General Note 9.F. (7) on sheet S0.3)
- B. Stress LPT-1 and LPT-4 Concurrently to 100% of PJack

12 Blow Amine Carboxylate Powder into Ducts.

13 Grout all Tendons.
Grout all Voids Beneath Panels.

14 Remove Leveling Bolts. Fill Holes Vents, and Pockets with fill material for holes and pockets. Fill Blockouts for anchor heads with anchor head blockout fill material.

INSTALLATION SEQUENCE

Scale: 1/8" = 1'-0"

Legend:

(1) Column Designation

(A) Row Designation

LTT-# Longitudinal Temporary Tendon

LPT-# Longitudinal Permanent Tendon

▷— Jacking Ends

▶— Dead Ends

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE
NOTE BOOK | No.

DRAWING NAME: Z:\00 ONGOING\12-033 I-HFL MIDDLE STREET RECONSTRUCTION-DOT\HCAD\08-19-14 BID\HFL-MS305 TO MS311.DWG PLOT TIME: 08-18-14, 7:25 PM

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STATE OF HAWAII
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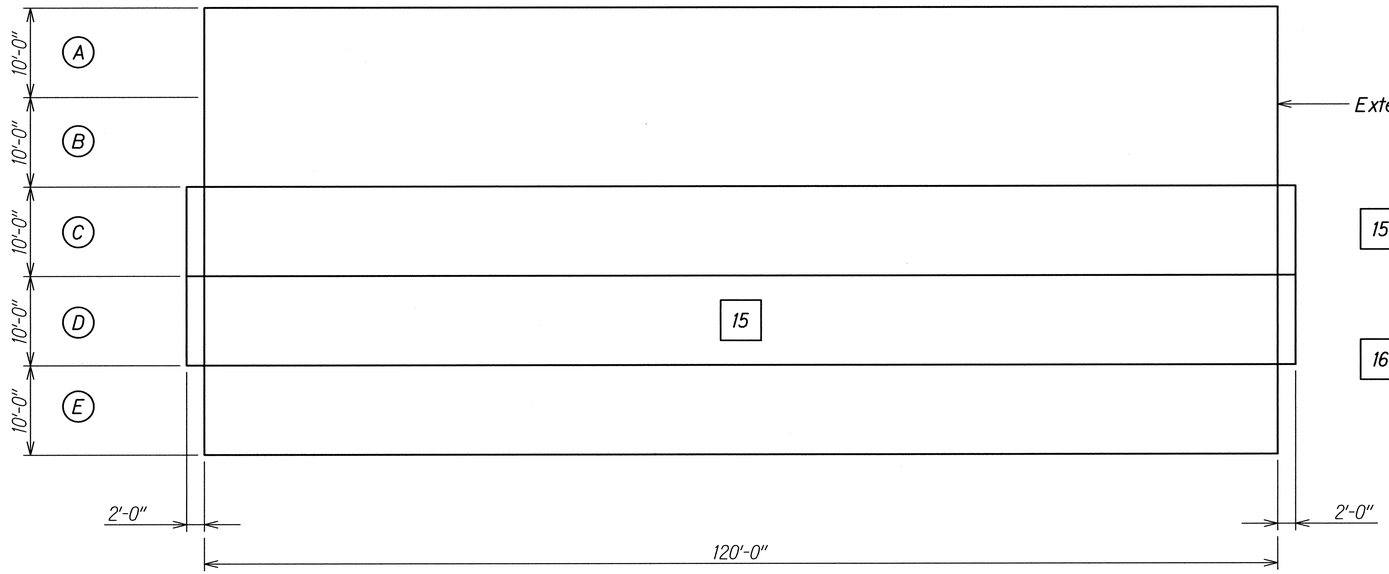
HIGHWAYS DIVISION

PPCP LAYOUT PANEL
INSTALLATION SEQUENCE
MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S3.7 OF 12 SHEETS

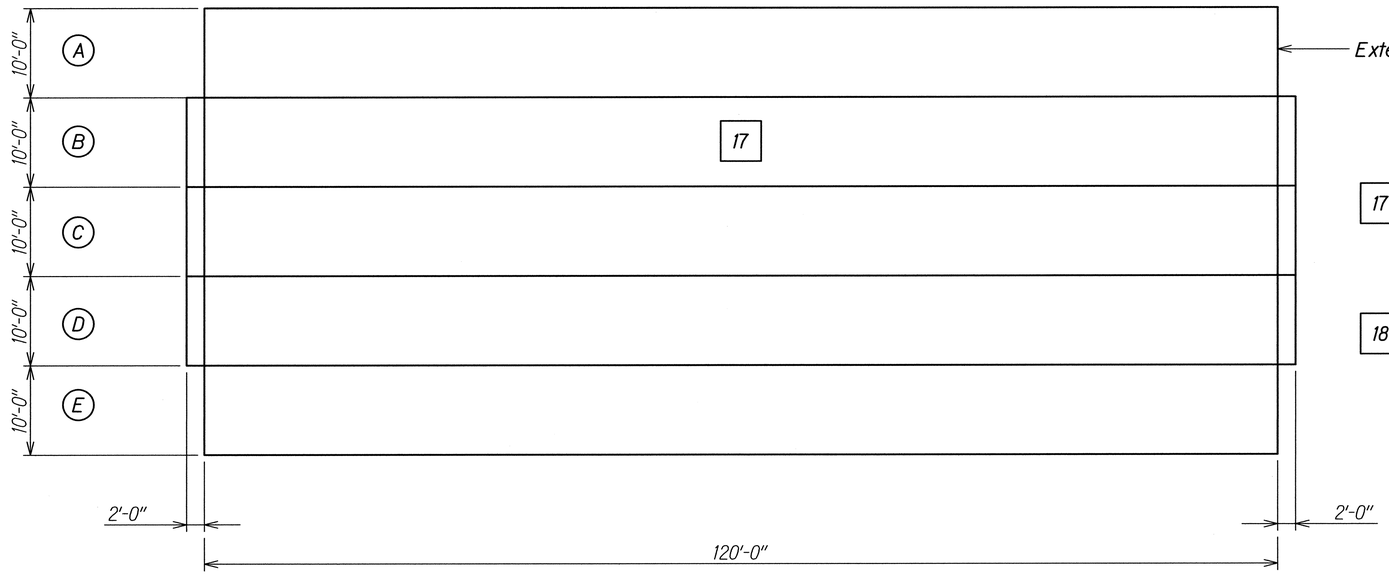
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	145	173



Extent of PPCP Panels

15 Saw Cut Existing Pavement at Row (D) Plus an Additional 2'-0" on Each End for Jacking. Remove Existing Pavement. Prepare subgrade. Pour 6" Rapid Setting Lean Concrete Base.

16 Repeat Sequence 2 to 14 for Panels D-1 to D-10.



Extent of PPCP Panels

17 Saw Cut Existing Pavement at Row (B) Plus an Additional 2'-0" on Each End for Jacking. Remove Existing Pavement. Prepare subgrade. Pour 6" Rapid Setting Lean Concrete Base.

18 Repeat Sequence 2 to 14 for Panels B-1 to B-10.

INSTALLATION SEQUENCE

Scale: 1/8" = 1'-0"

Legend:

(1) Column Designation

(A) Row Designation

LTT-# Longitudinal Temporary Tendon

LPT-# Longitudinal Permanent Tendon

▷— Jacking Ends

▶— Dead Ends

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
No.	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\DO ONGOING\12-033.1-HPL MIDDLE STREET RECONSTRUCTION-BOTH\CAD\06-19-14 BID\HPL-MS305 TO MS311.DWG PLOT TIME: 06-18-14, 7:25 PM

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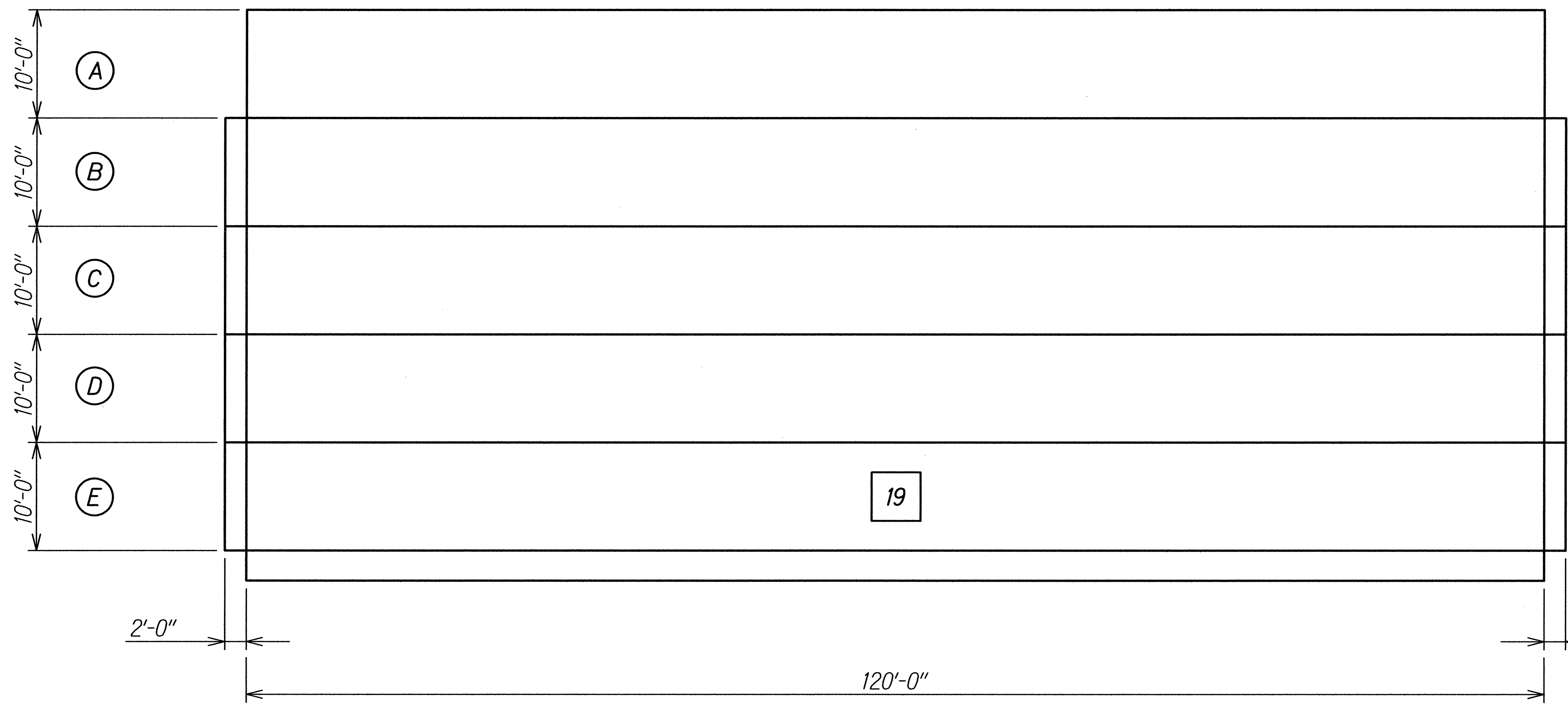
INSTALLATION SEQUENCE
MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S3.8 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	146	173

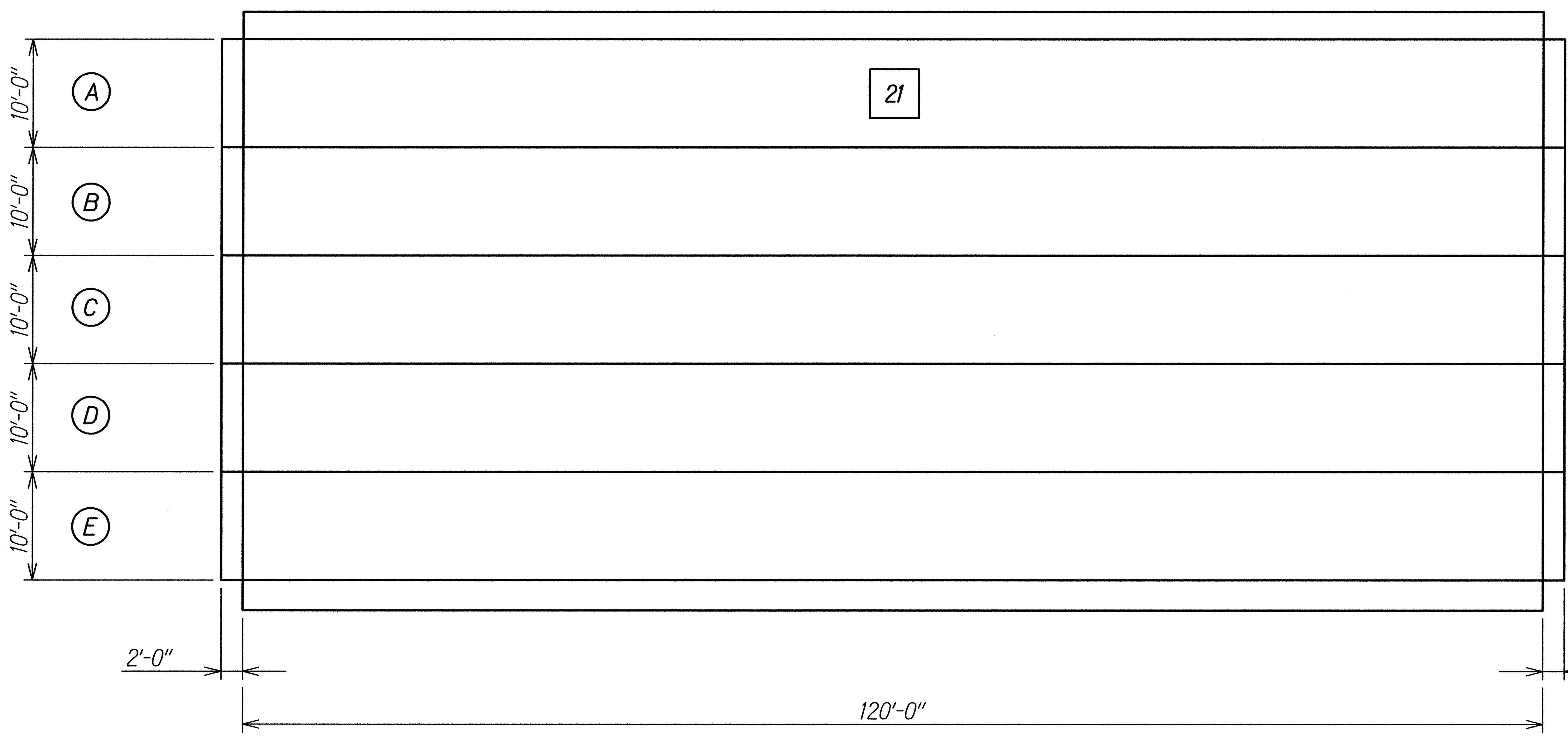


19 Saw Cut Existing Pavement at Row (E) Plus an Additional 2'-0" on Each End for Jacking. Remove Existing Pavement. Prepare subgrade. Pour 6" Rapid Setting Lean Concrete Base.

20 Repeat Sequence [2] to [14] for Panels E-1 to E-10.

<u>Legend:</u>

(1)	Column Designation
(A)	Row Designation
LTT-#	Longitudinal Temporary Tendon
LPT-#	Longitudinal Permanent Tendon
▷—	Jacking Ends
▶—	Dead Ends



21 Saw Cut Existing Pavement at Row (A) Plus an Additional 2'-0" on Each End for Jacking. Remove Existing Pavement. Prepare subgrade. Pour 6" Rapid Setting Lean Concrete Base.

22 Repeat Sequence [2] to [14] for Panels A-1 to A-10.

INSTALLATION SEQUENCE

Scale: 1/8" = 1'-0"

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PPCP LAYOUT PANEL
INSTALLATION SEQUENCE

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

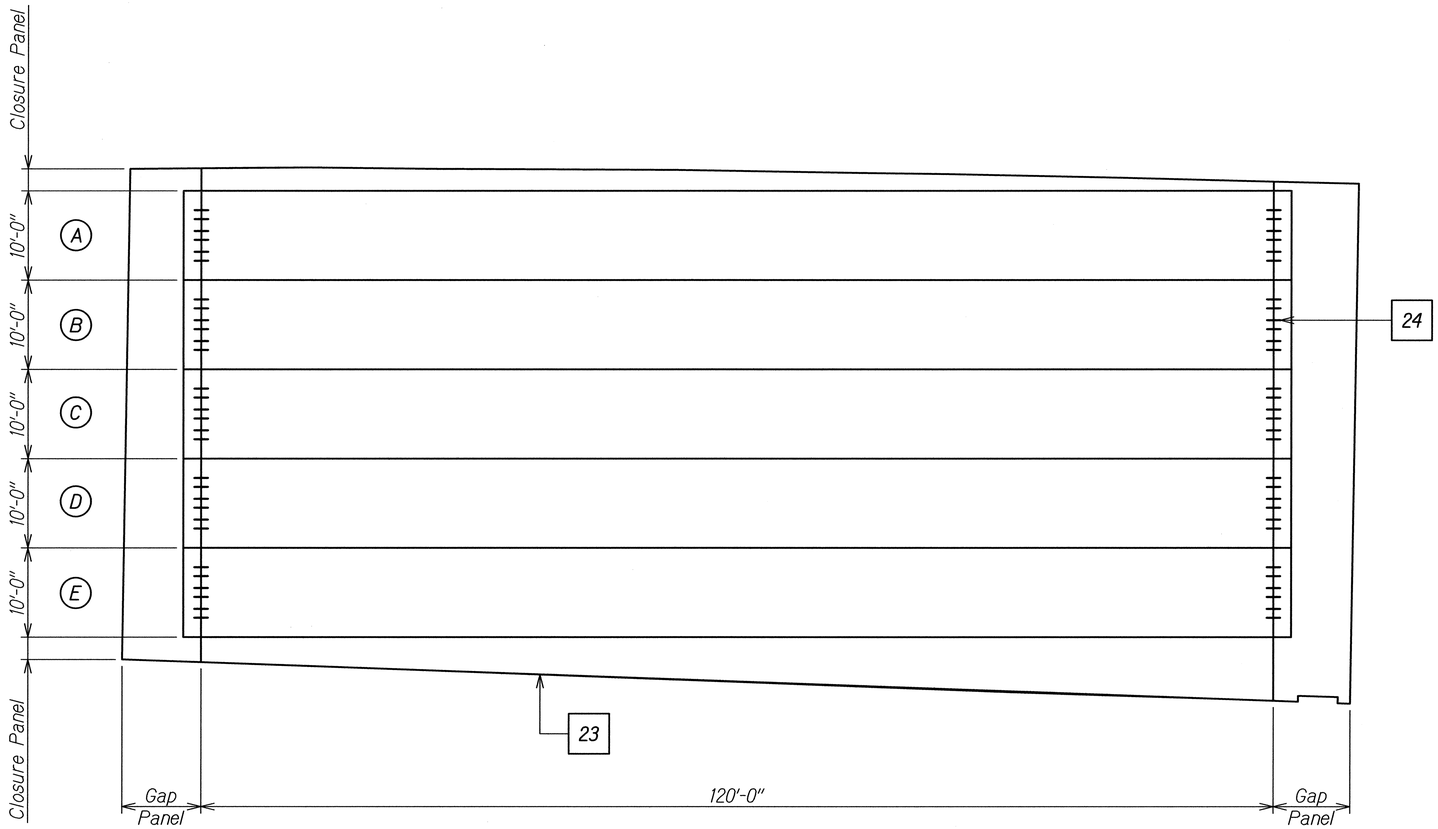
Scale: As Noted Date: Jun. 20, 2014

SHEET No. S3.9 OF 12 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY ... DATE ...
	DRAWN BY ...
	TRACED BY ...
NOTE BOOK	DESIGNED BY ...
	QUANTITIES BY ...
No.	CHECKED BY ...

DRAWING NAME: Z:\00 ONGOING\12-033.1-HFL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\06-19-14 BID\HFL-MS305 TO MS311.DWG PLOT TIME: 06-18-14, 7:26 PM

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	147	173



23 Saw Cut Existing Pavement For Gap Panels And Closure Panels. Remove Existing Pavement. Prepare subgrade. Pour 6" Rapid Setting Lean Concrete Base.

24 Install Epoxy Coated Smooth Dowels at Gap Panel. See 5/S1.2.

Note:
Construction of gap panels and closure panels, Sequence 23 to 26 may be phased and need not occur concurrently.

INSTALLATION SEQUENCE

Scale: 1/8" = 1'-0"

Legend:

(1) Column Designation

(A) Row Designation

LTT-# Longitudinal Temporary Tendon

LPT-# Longitudinal Permanent Tendon

Jacking Ends

Dead Ends

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\00 ONGOING\12-033-1-HFL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\06-19-14 BID\HFL-MS305 TO MS311.DWG PLOT TIME: 06-18-14, 7:26 PM)

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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David K. Fujiwara 4-30-16
SIGNATURE EXPIRATION DATE OF THE LICENSE

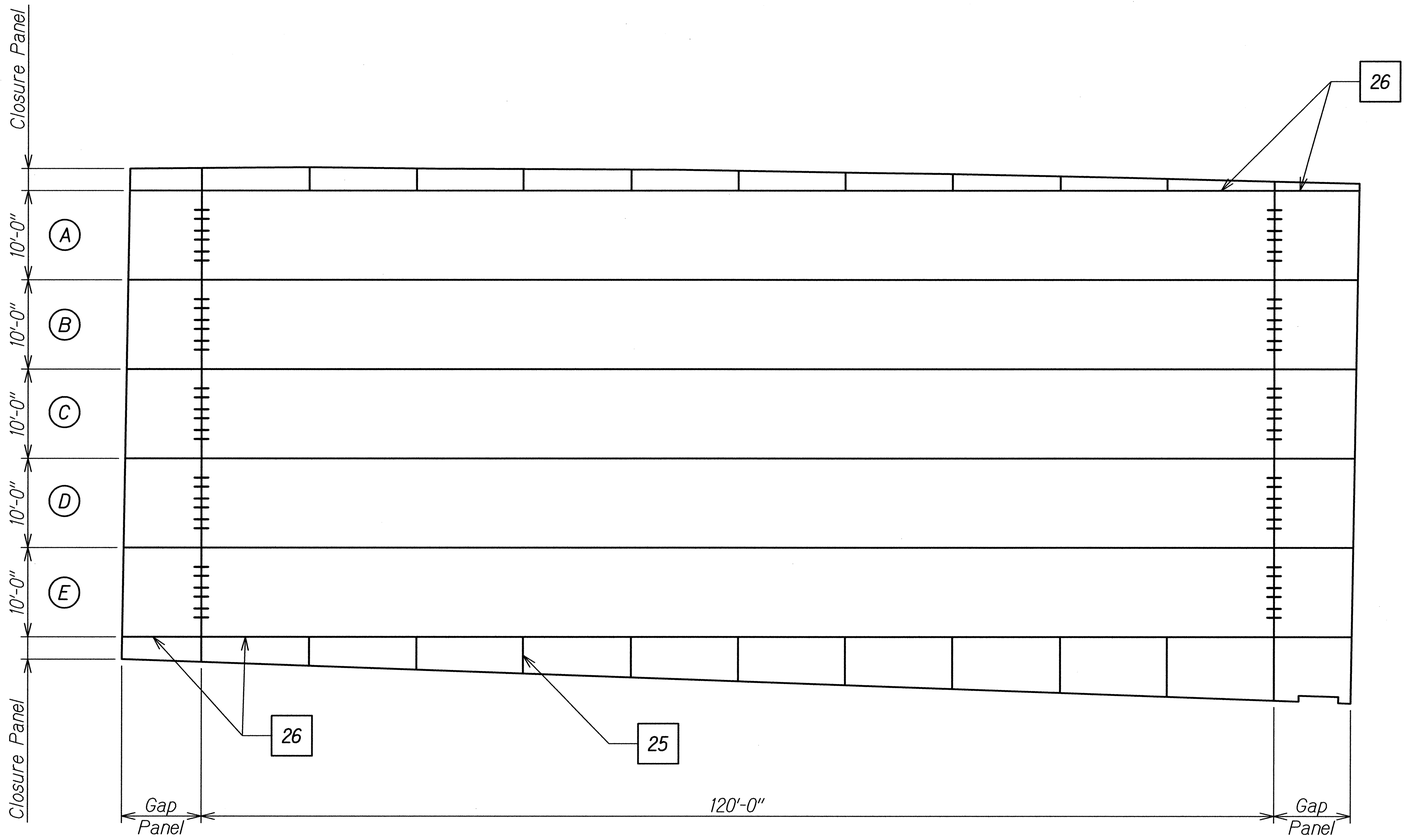
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PPCP LAYOUT PANEL
INSTALLATION SEQUENCE
MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S310 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	148	173



Legend:

(1)	Column Designation
(A)	Row Designation
LTT-#	Longitudinal Temporary Tendon
LPT-#	Longitudinal Permanent Tendon
▷—	Jacking Ends
▶—	Dead Ends

25 Install Epoxy Coated Smooth Dowels And Epoxy Coated #5 Deformed Bars As Required In Gap Panels And Closure Panels. See Sheet S1.2.

26 Pour Gap Panels And Closure Panels.

Note:
Construction of gap panels, Sequence 23 to 26 and closure panels may be phased and need not occur concurrently.

INSTALLATION SEQUENCE

Scale: 1/8" = 1'-0"

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE
NOTE BOOK | No.

DRAWING NAME: Z:\JOB ONGOING\12-033.1-HFL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\06-18-14 BID\HFL-MS305 TO MS311.DWG PLOT TIME: 06-18-14, 7:26 PM)

DAVID K. FUJIWARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

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David K. Fujiwara 4-30-16
SIGNATURE EXPIRATION DATE OF THE LICENSE

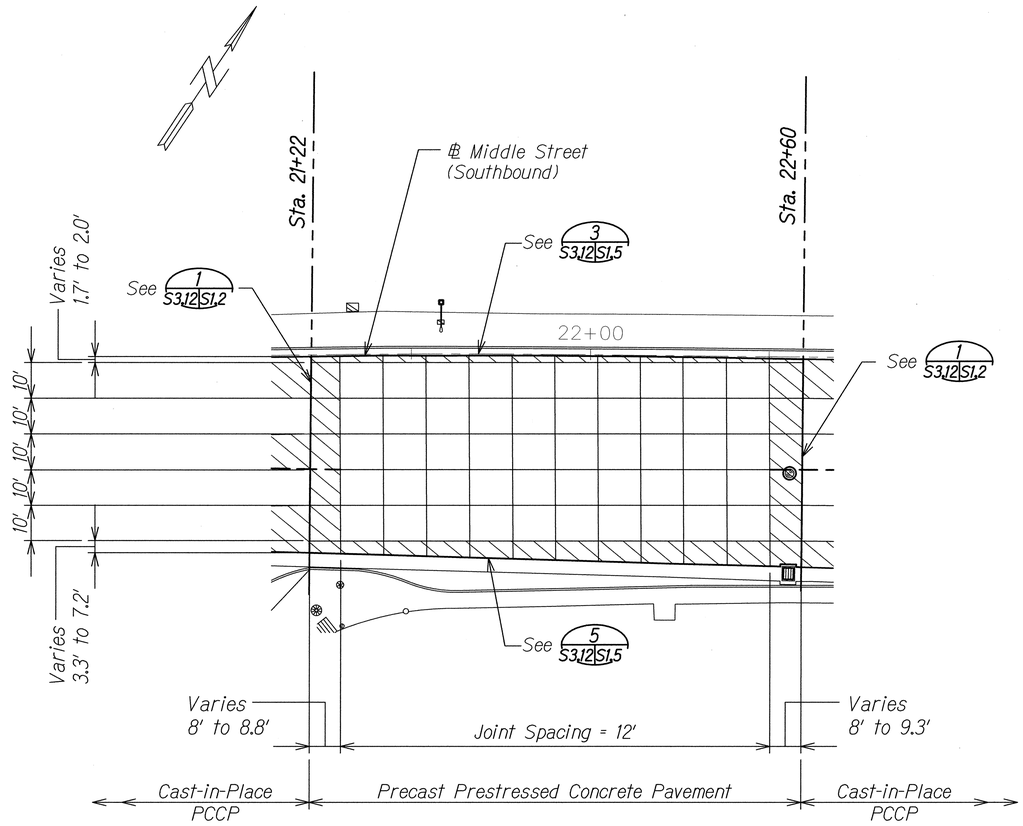
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PPCP LAYOUT PANEL
INSTALLATION SEQUENCE
MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S3.11 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	149	173



PPCP JOINTING PLAN

Scale: 1" = 20'-0"

Legend:

Odd Shaped / Cast-in-Place Sections on 6" Rapid Setting Lean Concrete Base

See General Notes 4.(F) and 7. (H) on Sheet S0.2.

ORIGINAL PLAN

NOTE BOOK No.

SURVEY PLOTTED BY DATE
DRAWN BY "
TRACED BY "
DESIGNED BY "
QUANTITIES BY "
CHECKED BY "

DRAWING NAME: Z:\OD ONGOING\12-033.1-HFL MIDDLE STREET RECONSTRUCTION-DOTH\CADD\06-19-14 BID\HFL-MS107 TO MS110 - MS208 TO MS210 - MS312.DWG PLOT TIME: 06-19-14, 9:11 AM)

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

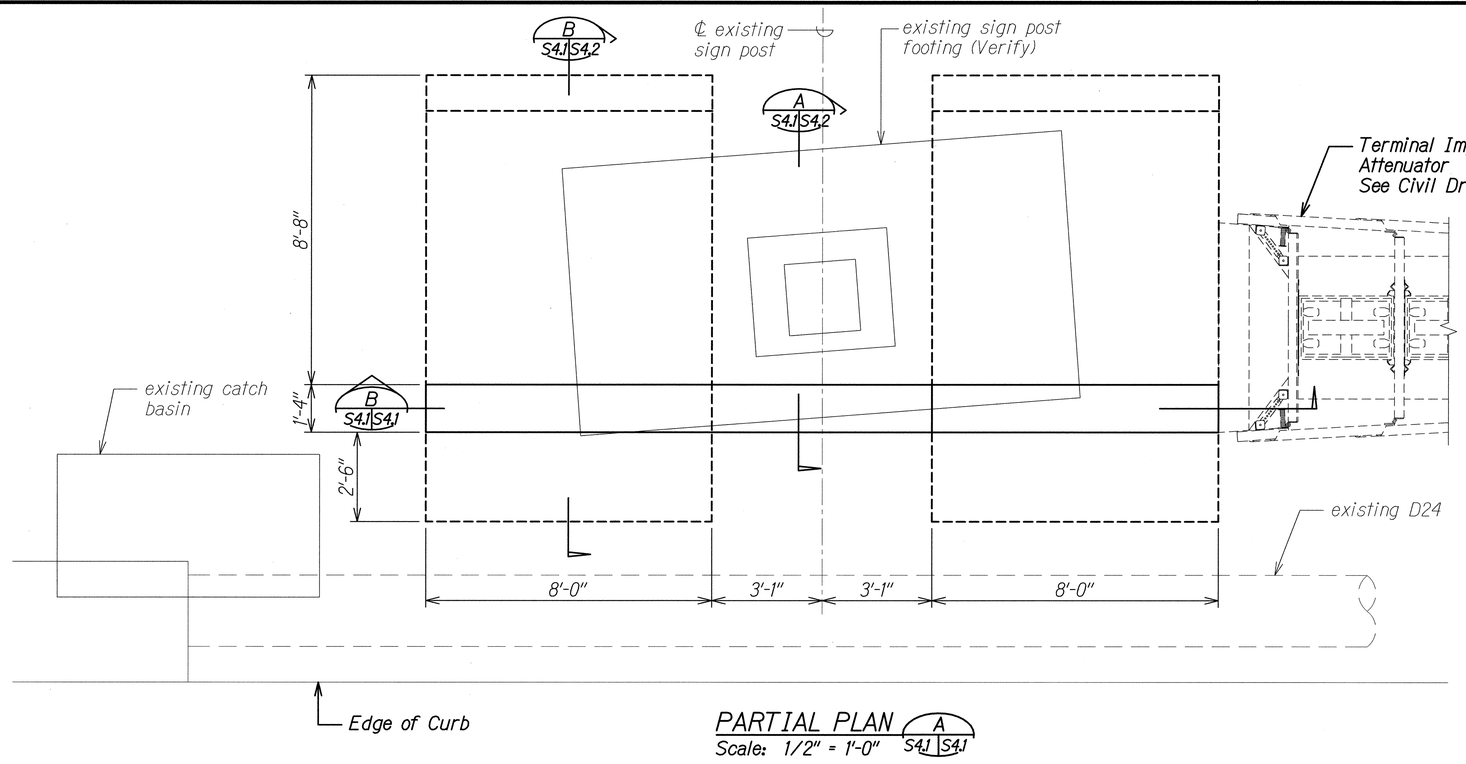
PPCP JOINTING PLAN

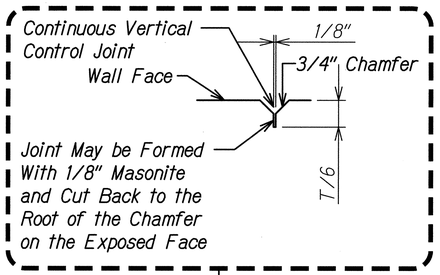
MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

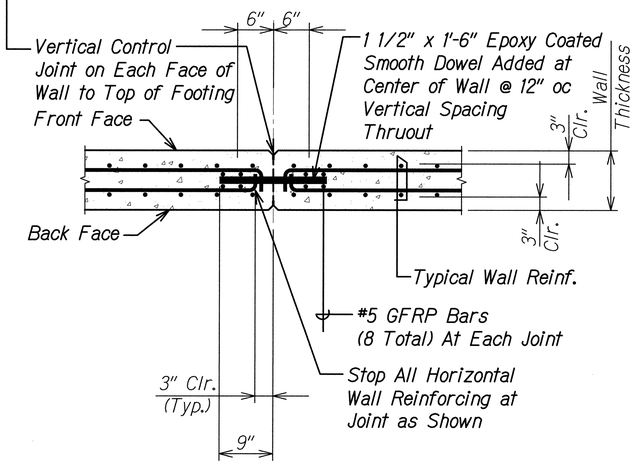
Scale: As Noted Date: Jun. 20, 2014

SHEET No. S3.12 OF 12 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	150	173

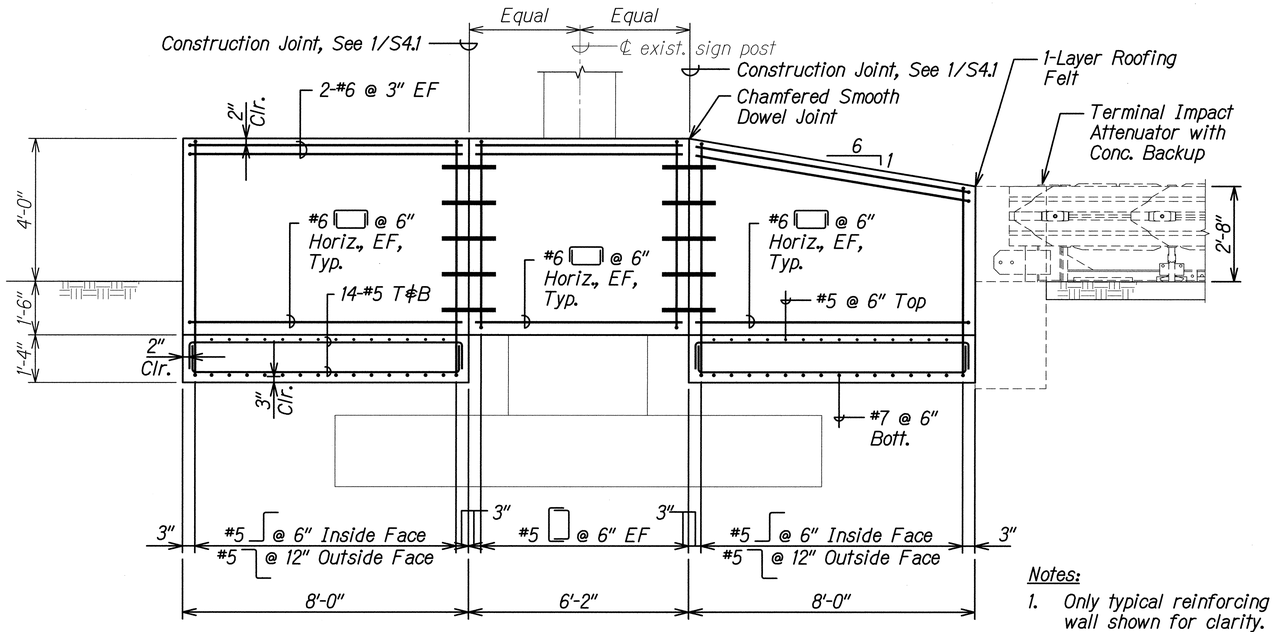






TYPICAL WALL VERTICAL CONSTRUCTION JOINT DETAIL 1 S4.1 S4.1
Scale: 1/2" = 1'-0"

PARTIAL PLAN A S4.1 S4.1
Scale: 1/2" = 1'-0"



WALL ELEVATION B S4.1 S4.1
Scale: 1/2" = 1'-0"

Notes:
1. Only typical reinforcing steel in wall shown for clarity.
2. For location see sheets RD-1.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONCRETE BARRIER AT SIGN POST

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

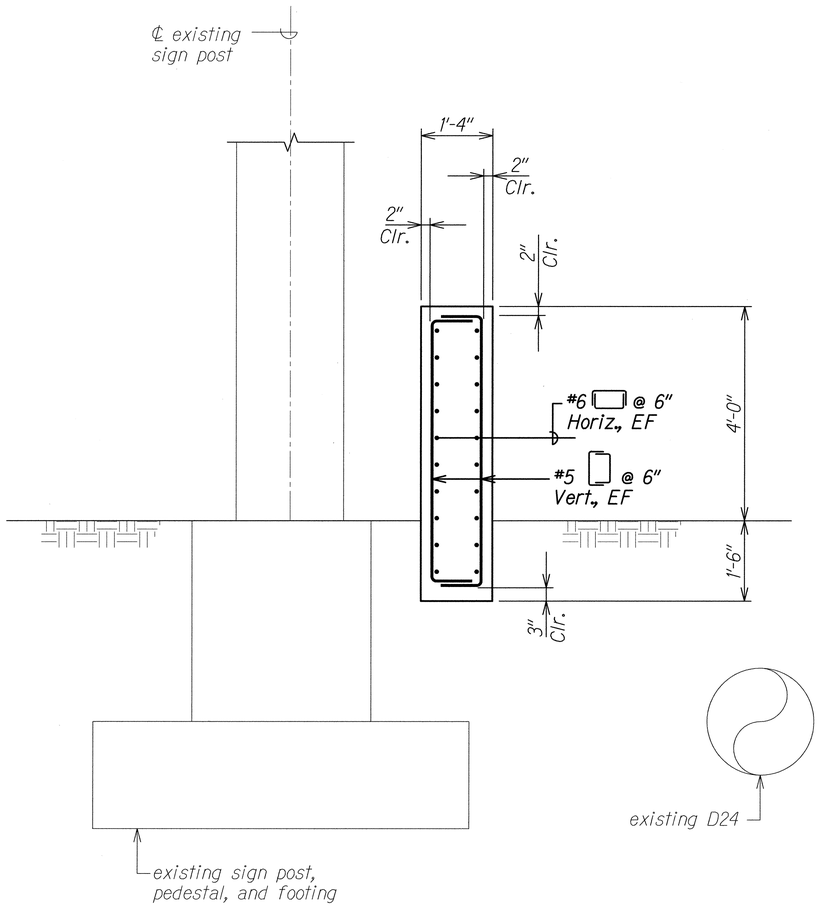
Scale: As Noted Date: Jun. 20, 2014

SHEET No. S4.1 OF 7 SHEETS

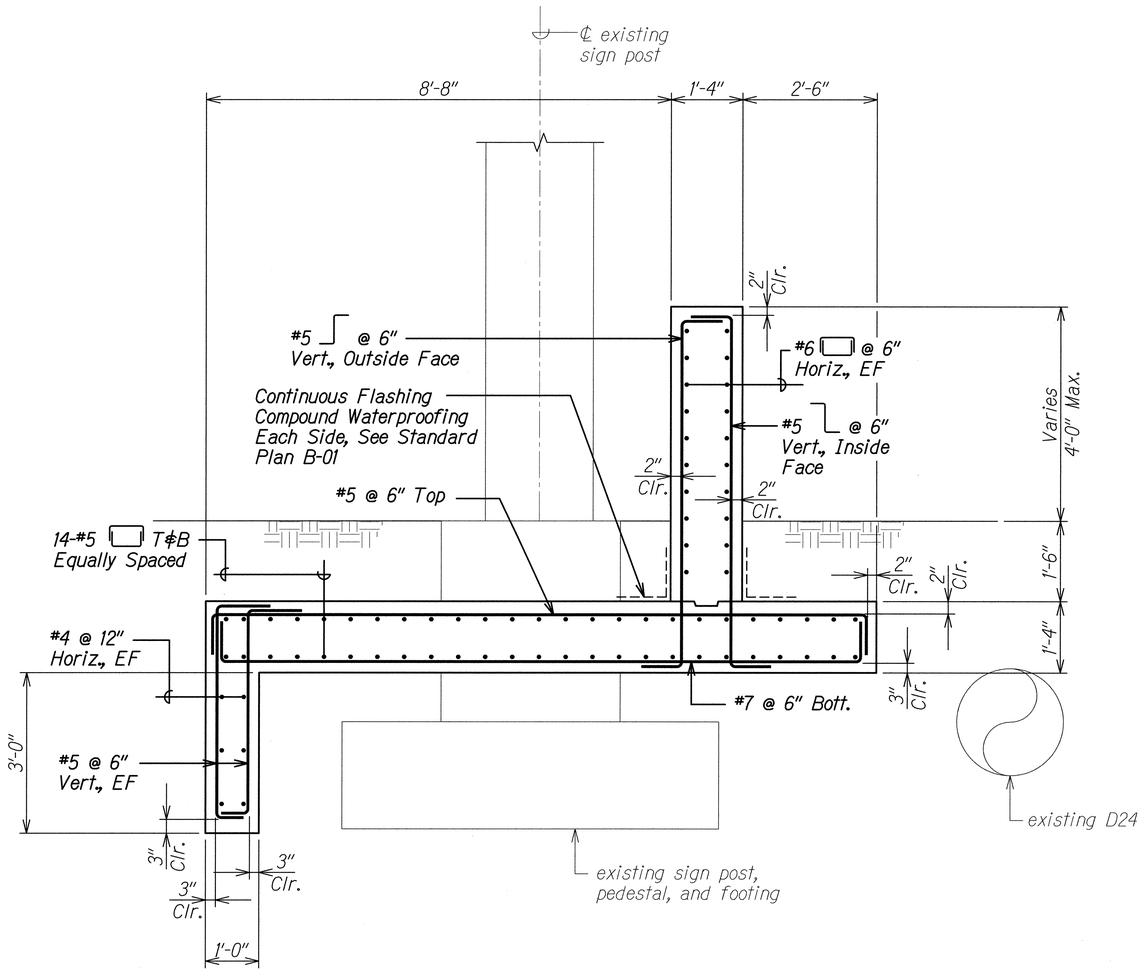
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	"
NOTE BOOK	TRACED BY	"
No.	DESIGNED BY	"
	QUANTITIES BY	"
	CHECKED BY	"

DRAWING NAME: Z:\OD ONGOING\12-0331-1-HFL MIDDLE STREET RECONSTRUCTION-DOTA\CAD\06-19-14 BID\HFL-MS401.DWG PLOT TIME: 06-19-14, 11:06 AM)

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	151	173



WALL SECTION A
Scale: 3/4" = 1'-0"
S4.1 | S4.2



WALL SECTION B
Scale: 3/4" = 1'-0"
S4.1 | S4.2

ORIGINAL PLAN
NOTE BOOK
No.

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

DRAWING NAME: Z:\OD ONGOING\12-033_1-HFL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\06-19-14 BID\HFL-MS401.DWG PLOT TIME: 06-19-14, 11:06 AM

DAVID K. FUJIWARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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David K. Fujiwara 4-30-16
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

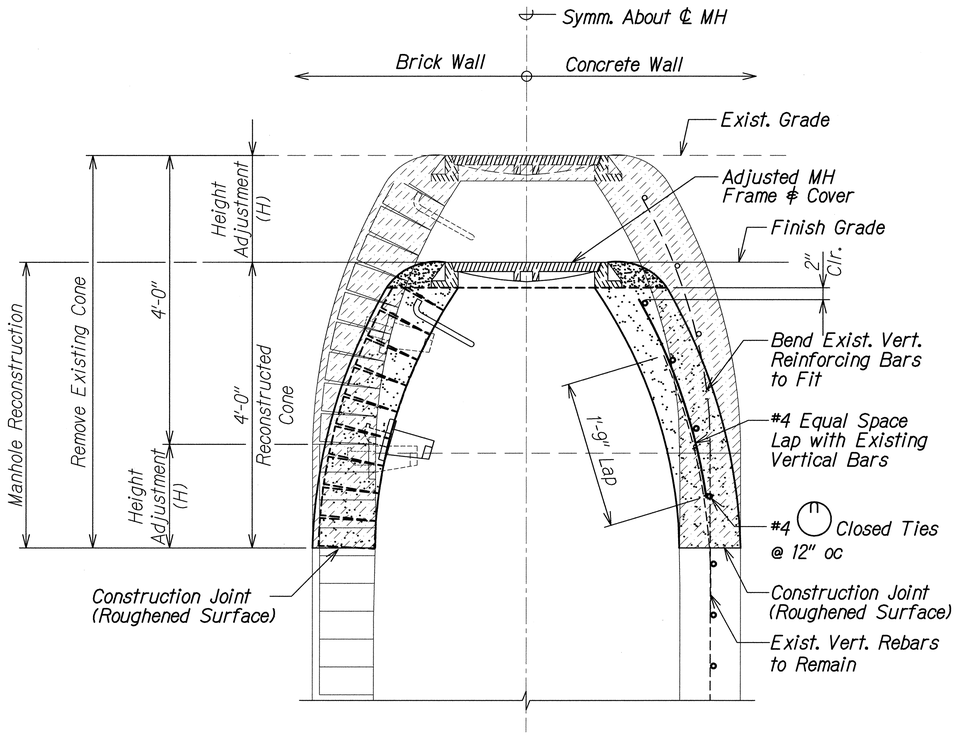
CONCRETE BARRIER AT SIGN POST SECTIONS

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

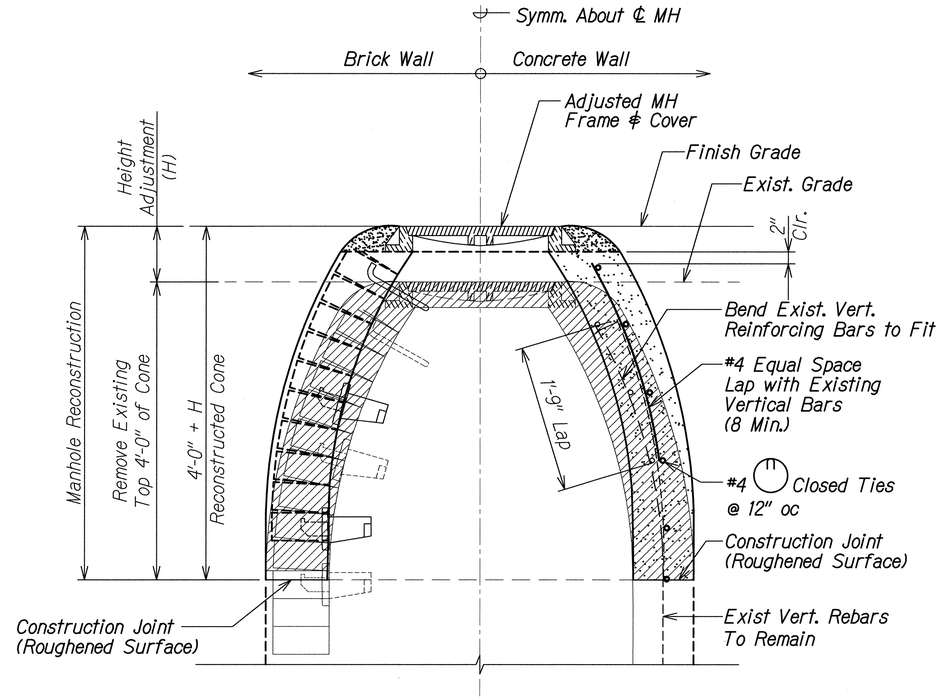
Scale: As Noted Date: Jun. 20, 2014

SHEET No. S4.2 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	152	173



LOWERING



RAISING

ADJUSTMENT / RECONSTRUCTION OF EXISTING MANHOLE COVER - CONICAL

Scale: 1" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	"
NOTE BOOK	TRACED BY	"
	DESIGNED BY	"
	QUANTITIES BY	"
No.	CHECKED BY	"

DRAWING NAME: Z:\OD ONGOING\12-033.1-HFL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\06-19-14 BID\HFL-MS403.DWG PLOT TIME: 06-18-14, 8:12 PM)

DAVID K. FUJIMARA
LICENSED PROFESSIONAL ENGINEER
NO. 8104-S
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY CONSTRUCTION DETAILS

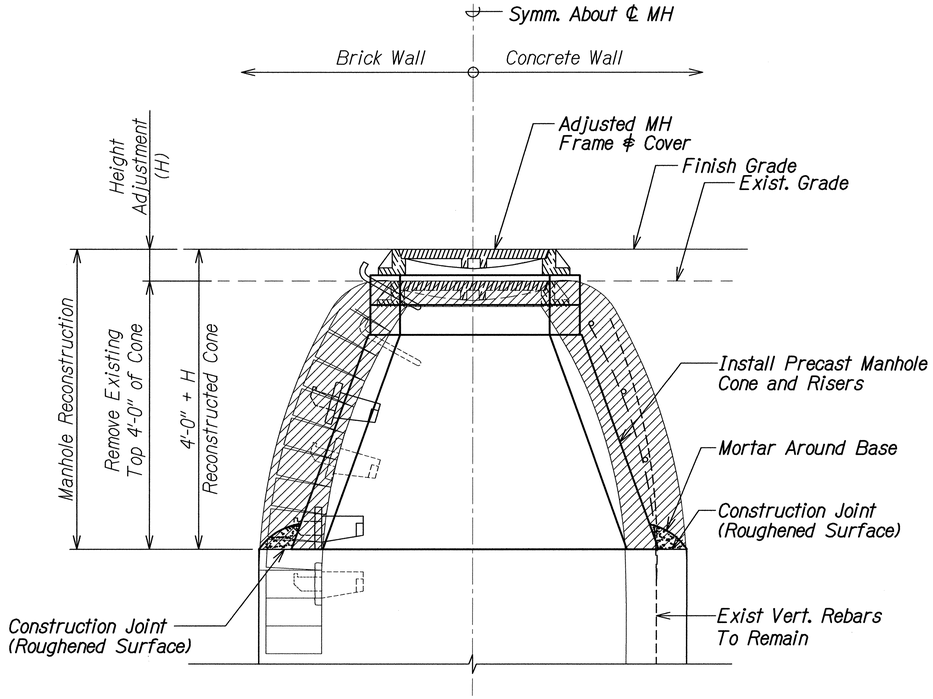
MANHOLE ADJUSTMENT/RECONSTRUCTION DETAILS

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S4.3 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	153	173



OPTIONAL ADJUSTMENT / RECONSTRUCTION OF EXISTING MANHOLE COVER - CONICAL

Scale: 1" = 1'-0"

ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY DATE
DRAWN BY "
TRACED BY "
DESIGNED BY "
QUANTITIES BY "
CHECKED BY "

DRAWING NAME: Z:\OD ONGOING\12-0331-HFL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\06-19-14 BID\HFL-MS403.DWG PLOT TIME: 06-18-14, 8:13 PM)

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David K. Fujiwara 4-30-16
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY CONSTRUCTION DETAILS

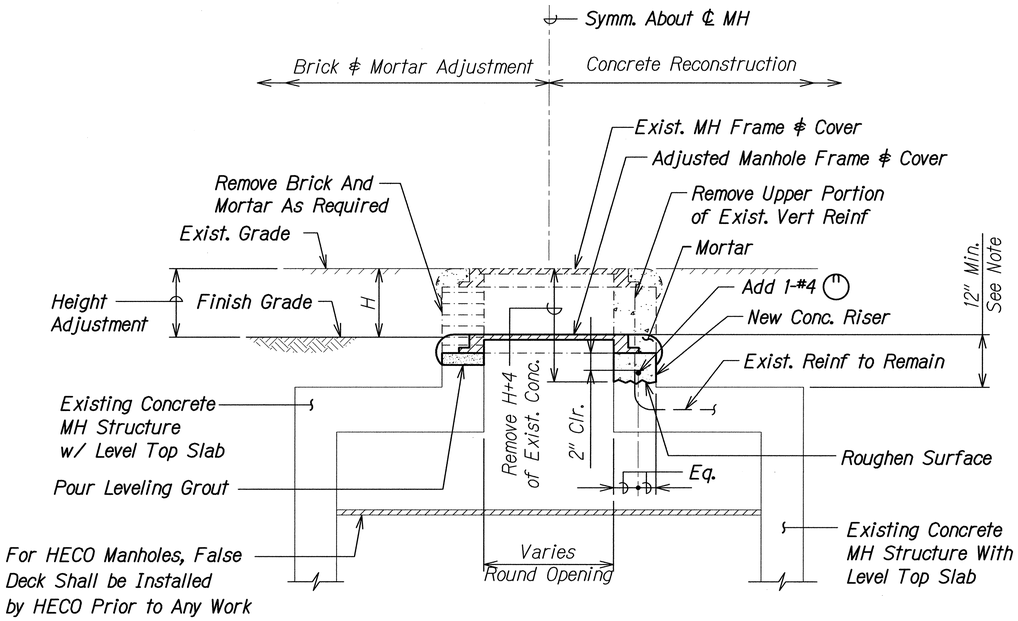
MANHOLE ADJUSTMENT/RECONSTRUCTION DETAILS

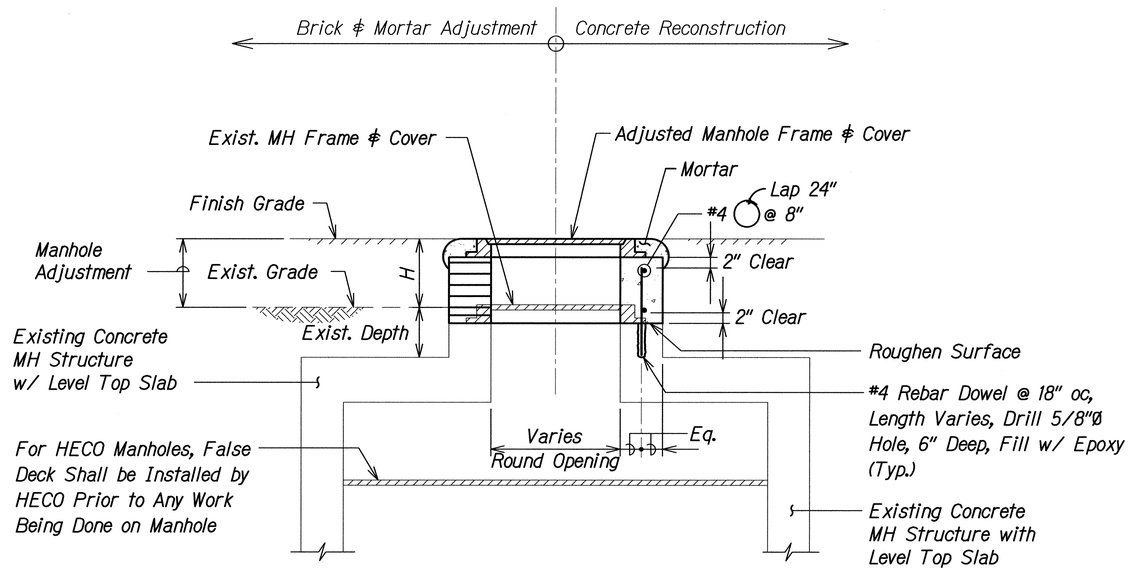
MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S4.4 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	154	173





Note:
If top of manhole is less than 12", Contractor shall notify the Engineer immediately.

LOWERING

RAISING

ADJUSTMENT/RECONSTRUCTION OF EXISTING MANHOLE COVER - LEVEL TOP SLAB WITH RISER

Not to Scale

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
No.	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

DRAWING NAME: Z:\OD ONCONC\12-033.1-HFL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\08-19-14 BID\HFL-MS403.DWG PLOT TIME: 08-18-14, 8:13 PM)

DAVID K. FUJIWARA ★ LICENSED PROFESSIONAL ENGINEER ★ NO. 8104-S ★ HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY CONSTRUCTION DETAILS

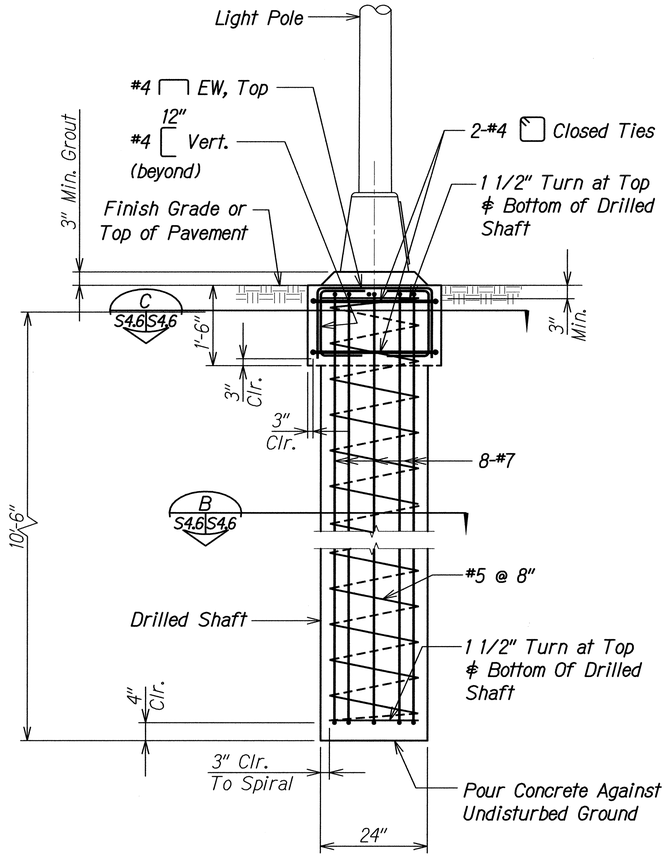
MANHOLE ADJUSTMENT/RECONSTRUCTION DETAILS

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S4.5 OF 7 SHEETS

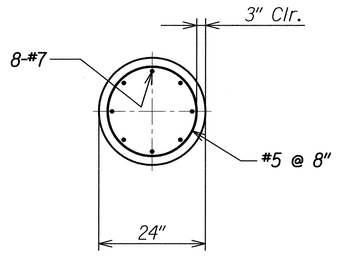
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	155	173



TYPICAL LIGHT POLE FOUNDATION

Scale: 3/4" = 1'-0"

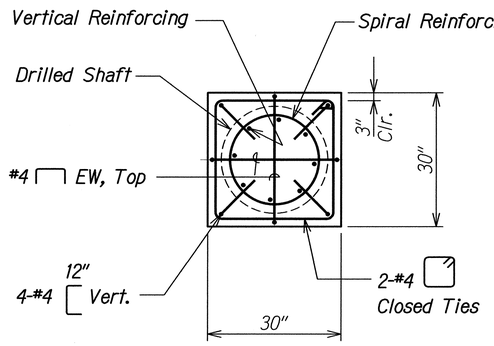
A S4.6 S4.6



SECTION

Scale: 3/4" = 1'-0"

B S4.6 S4.6



SECTION

Scale: 3/4" = 1'-0"

C S4.6 S4.6

Note:

See electrical drawings for additional details.

ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY DATE
DRAWN BY "
TRACED BY "
DESIGNED BY "
QUANTITIES BY "
CHECKED BY "

DRAWING NAME: Z:\OD ONCONO\12-033-1-HFL MIDDLE STREET RECONSTRUCTION-DOTH\CAD\08-19-14 BID\HFL-MS406.DWG PLOT TIME: 08-18-14, 7:31 PM)

DAVID K. FUJIMARA LICENSED PROFESSIONAL ENGINEER NO. 8104-S HAWAII, U.S.A.

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SIGNATURE 4-30-16 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

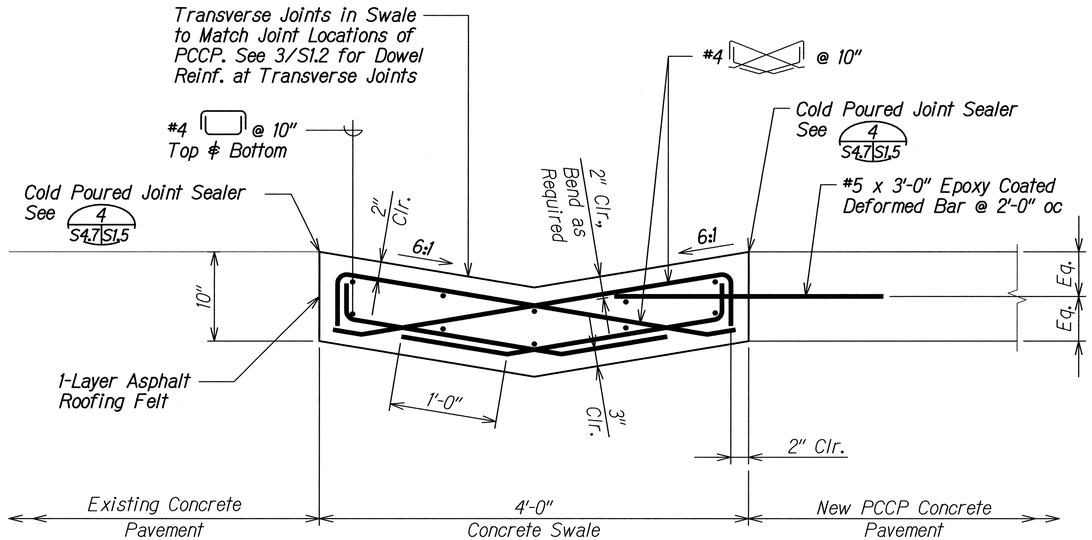
LIGHT POLE FOUNDATION

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

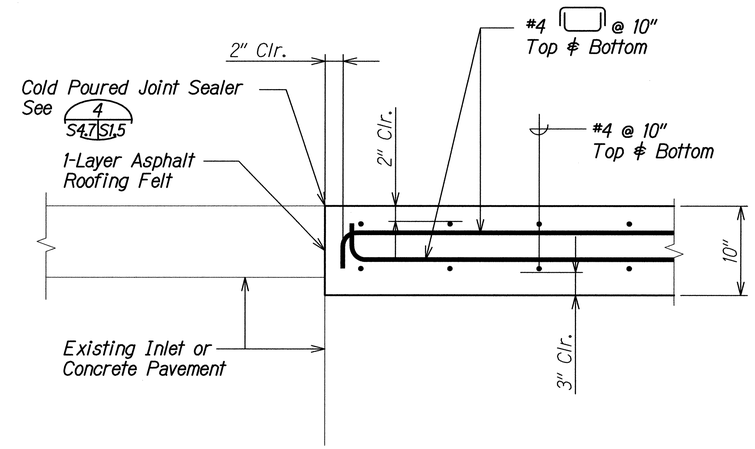
SHEET No. S4.6 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-7415(001)	2014	156	173



SECTION AT SWALE (A S4.7 | S4.7)

Scale: 1 1/2" = 1'-0"



SWALE AT EXISTING STRUCTURE (A S4.7 | S4.7)

Scale: 1 1/2" = 1'-0"

Note:

Begin and end of concrete swale repair to match nearest transverse joint.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
No.	CHECKED BY	

DRAWING NAME: Z:\DD ONGOING\12-033.1-HFL MIDDLE STREET RECONSTRUCTION-BOTH\CAD\06-19-14 BID\HFL-MS407.DWG PLOT TIME: 06-18-14, 7:32 PM

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David K. Fujiwara 4-30-16

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONCRETE SWALE SECTIONS

MIDDLE STREET PAVEMENT RECONSTRUCTION
North King Street to Kamehameha Highway
FAP NO. STP-7415(001)

Scale: As Noted Date: Jun. 20, 2014

SHEET No. S4.7 OF 7 SHEETS