

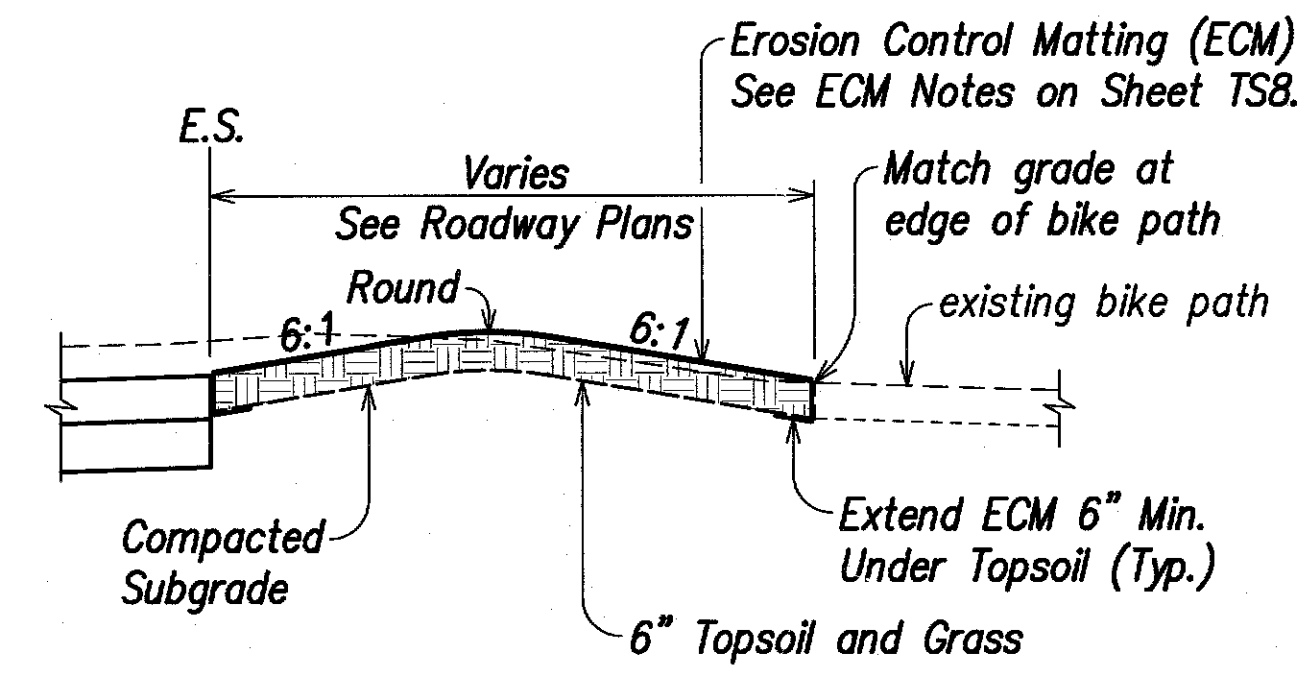
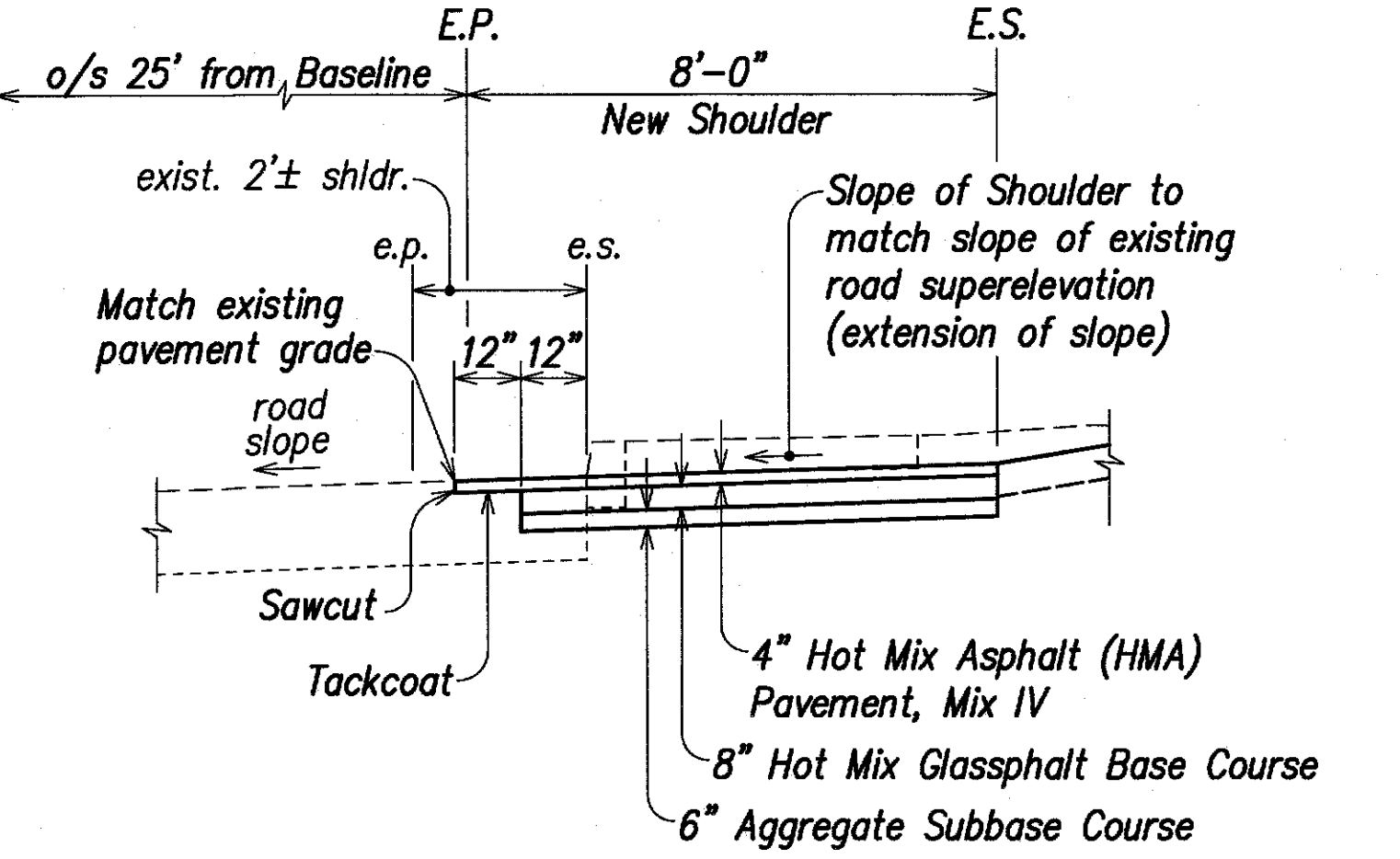
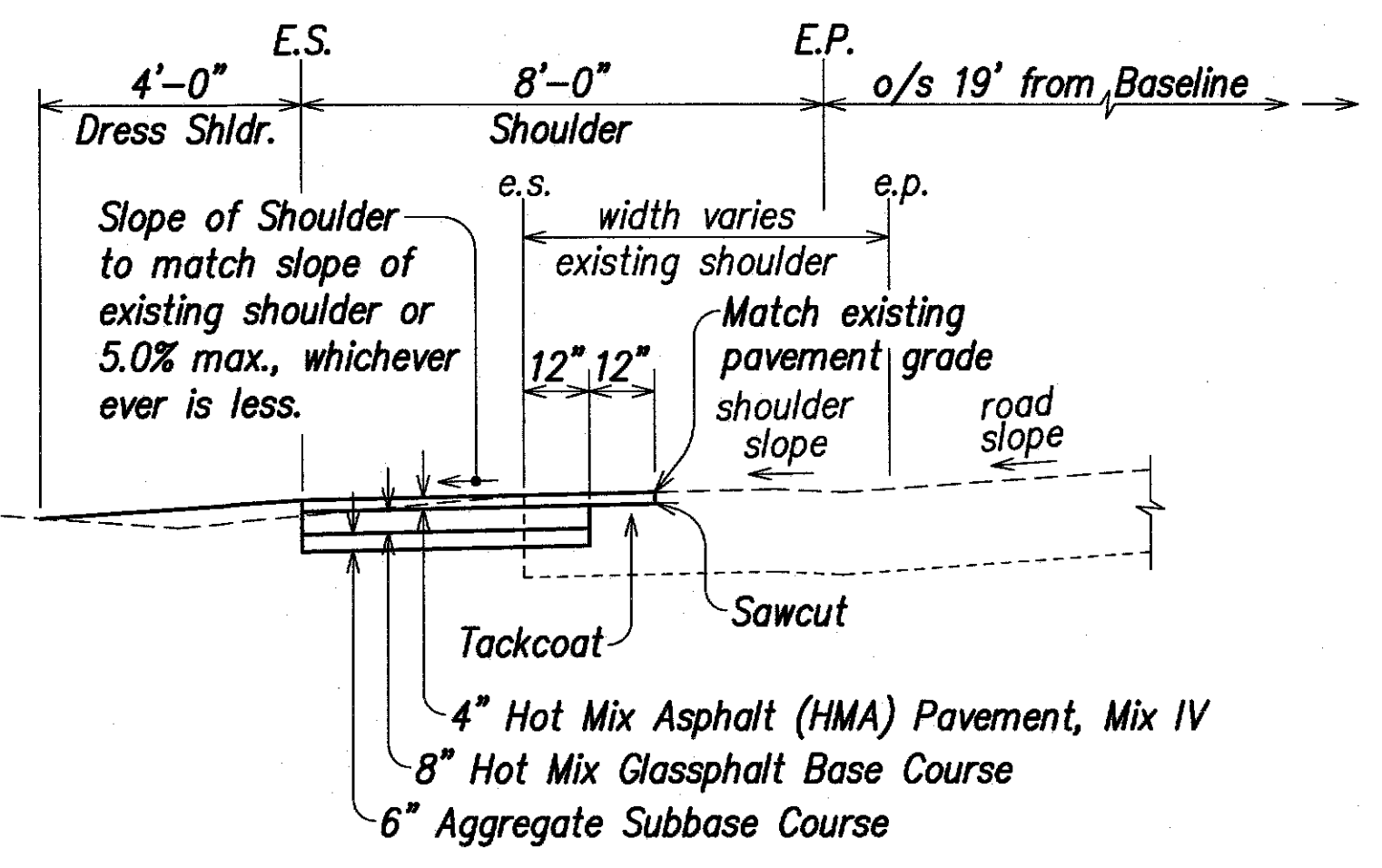
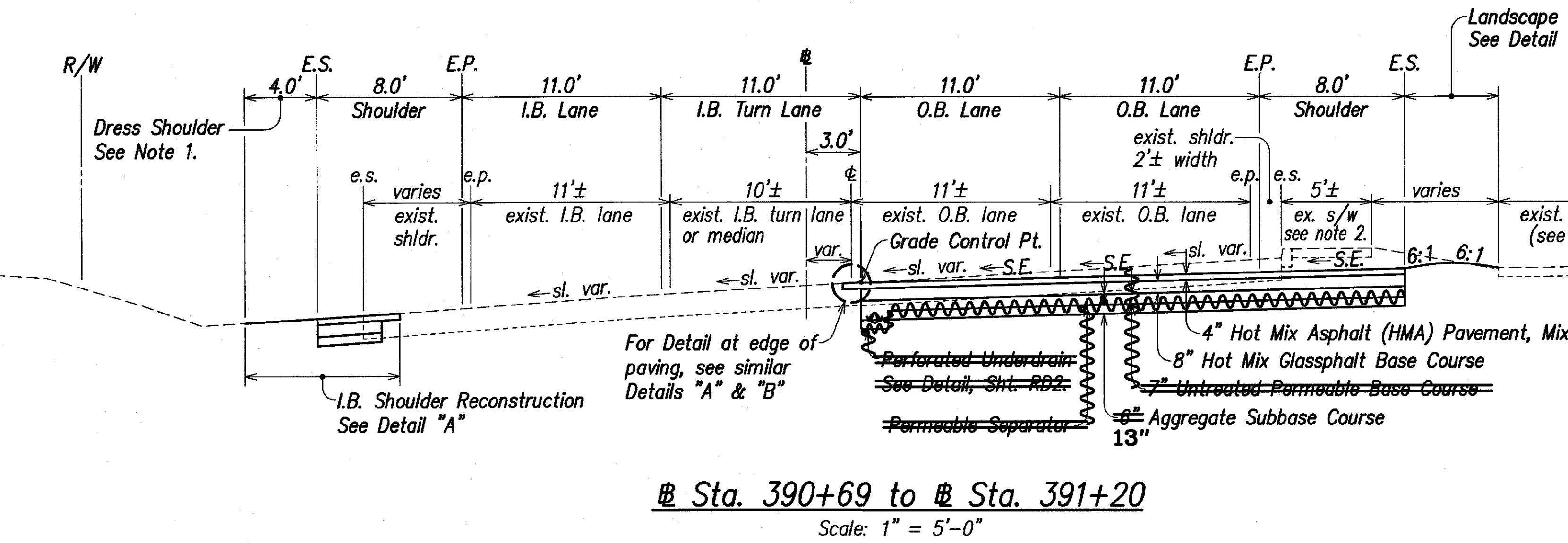
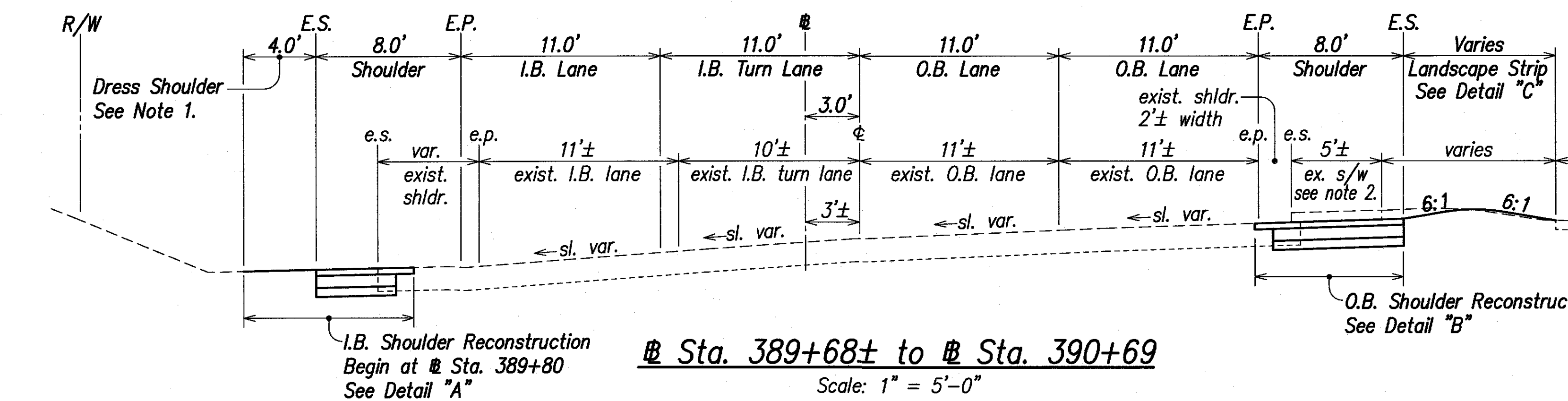
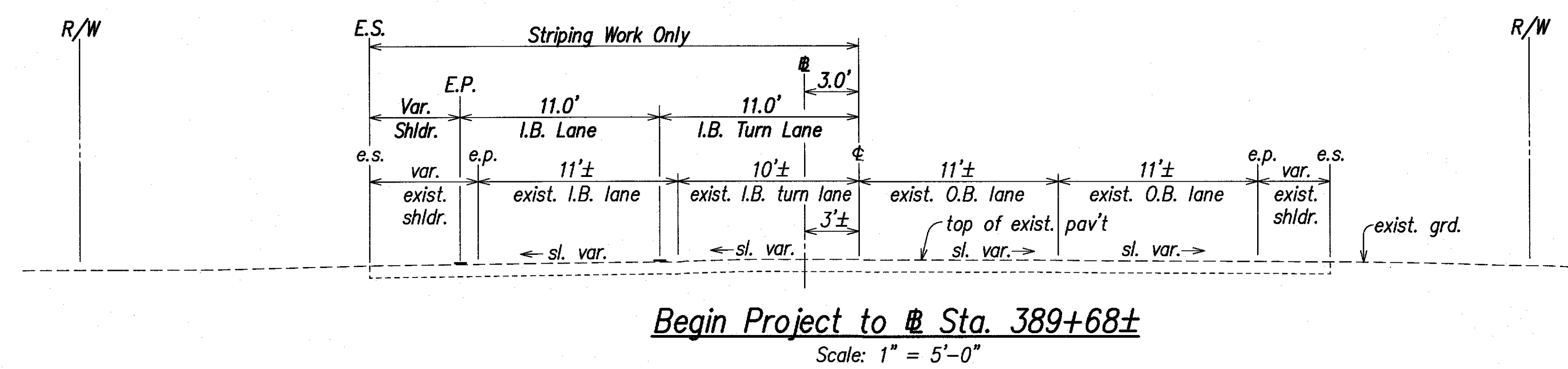
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	14	284

**LEGEND FOR AS-BUILT POSTINGS**

Squiggly line for as-built deletion

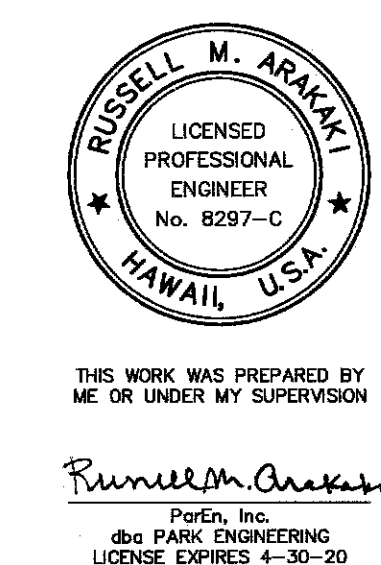
Double line for as-built deletion

Roadway Text for as-built posting



- Typical Section Notes:**
1. Dressing of shoulder shall consist of clearing, grubbing, grading, reshaping and compacting the unpaved shoulders with suitable material as shown on the plans and/or as directed by the Engineer. This work shall be considered incidental to the various contract items.
  2. Demolish and remove the existing concrete curb and concrete sidewalk, within the limits as shown on the Roadway Plan.
  3. The existing concrete bike path is to remain in place. Repair any damage to the bike path as a result of any construction activities at no additional cost to the State.

- Abbreviations:**
- E.P. Edge of New Pavement
  - E.S. Edge of New Shoulder
  - G.C. Grade Control
  - I.B. Inbound
  - O.B. Outbound
  - R/W Right-of-Way
  - S.E. Superelevation



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

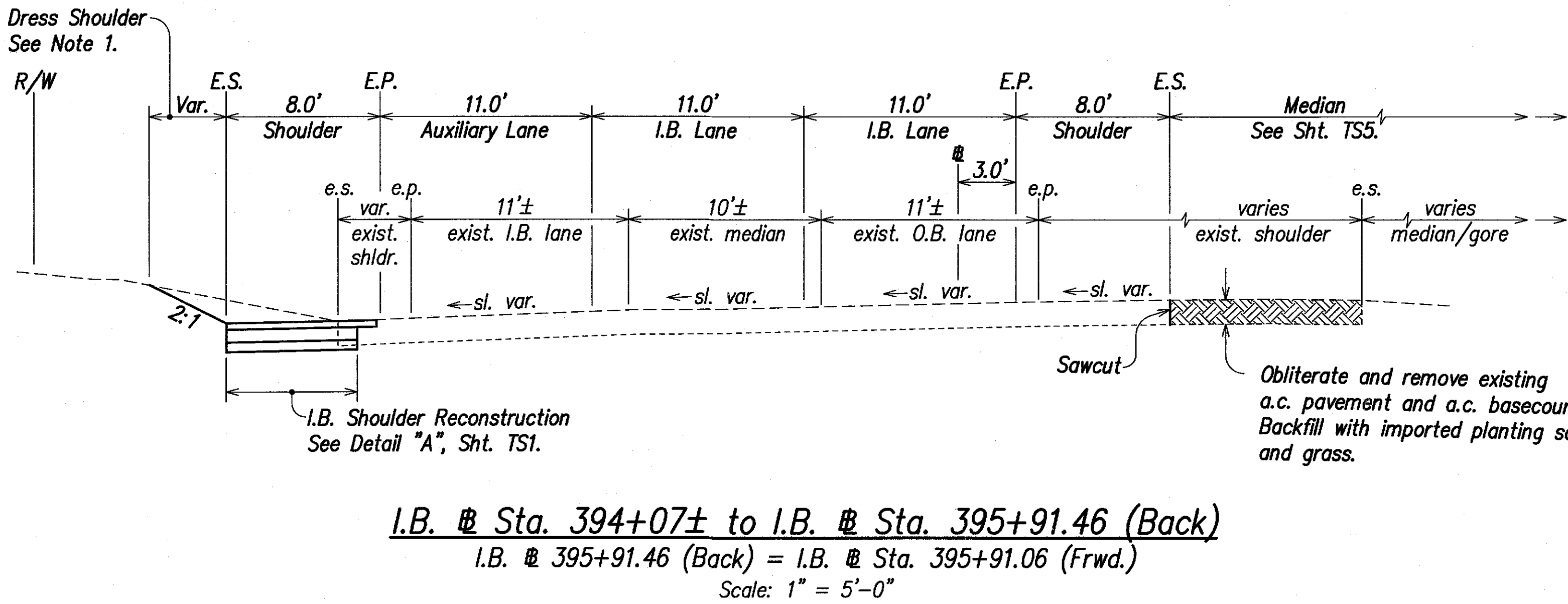
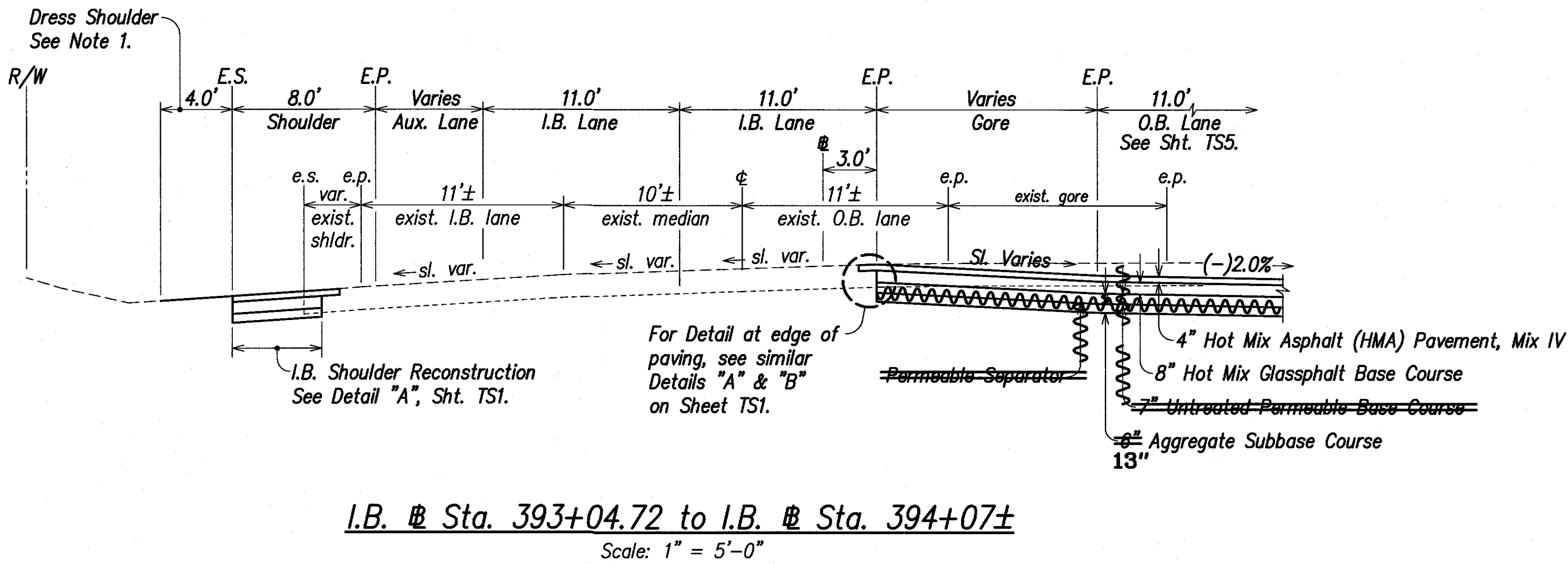
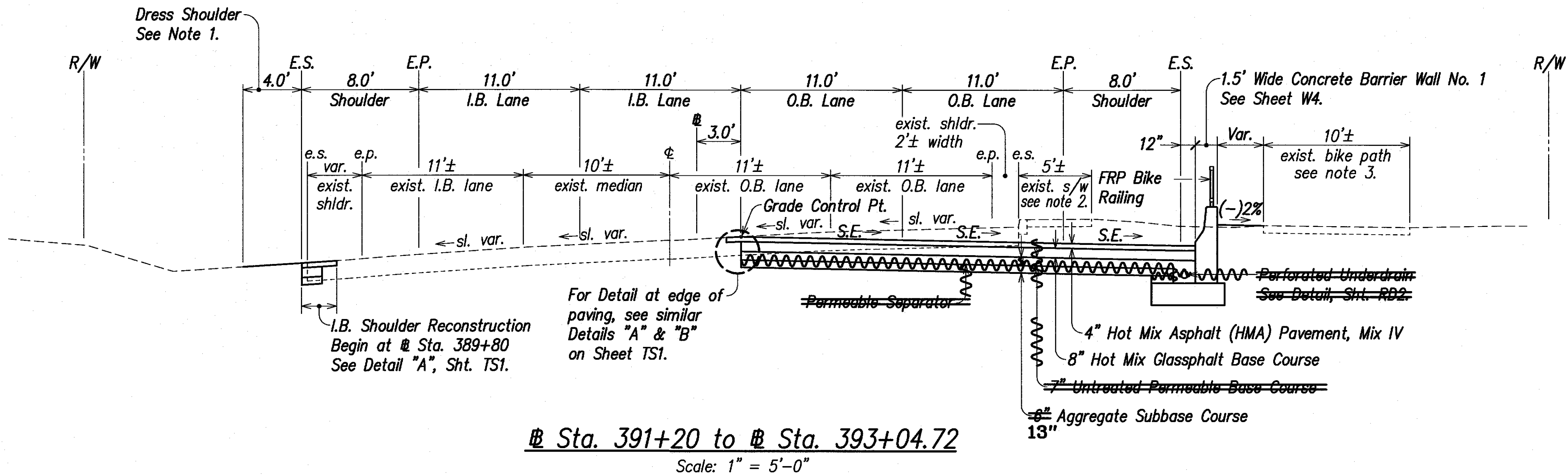
**TYPICAL SECTIONS**

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS  
Wailua Cane Haul Bridge Widening  
Fed. Aid Project No. BR-056-1(51)  
Scale: As Noted Date: MAY 2008  
SHEET No. TS1 OF TS8 SHEETS

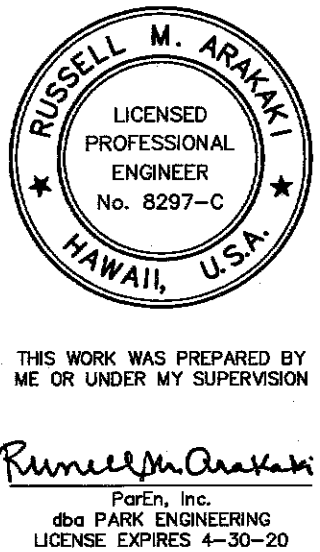
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	15	284

- Typical Section Notes:**
- Dressing of shoulder shall consist of clearing, grubbing, grading, reshaping and compacting the unpaved shoulders with suitable material as shown on the plans and/or as directed by the Engineer. This work shall be considered incidental to the various contract items.
  - Demolish and remove the existing concrete curb and concrete sidewalk, within the limits as shown on the Roadway Plan.
  - The existing concrete bike path is to remain in place. Repair any damage to the bike path as a result of any construction activities at no additional cost to the State.

- Abbreviations:**
- E.P. Edge of New Pavement
  - E.S. Edge of New Shoulder
  - G.C. Grade Control
  - I.B. Inbound
  - O.B. Outbound
  - R/W Right-of-Way
  - S.E. Superelevation



LEGEND FOR AS-BUILT POSTINGS	
	Squiggly line for as-built deletion
	Double line for as-built deletion
Roadway	Text for as-built posting



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

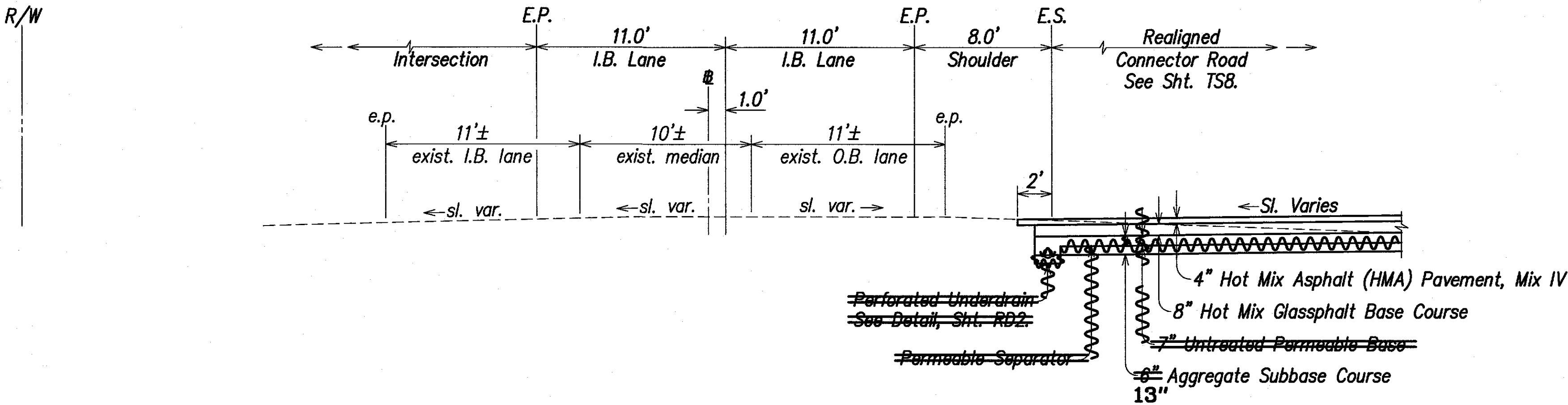
**TYPICAL SECTIONS**

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS  
Wailua Cane Haul Bridge Widening  
Fed. Aid Project No. BR-056-1(51)  
Scale: As Noted Date: MAY 2008  
SHEET No. TS2 OF TS8 SHEETS

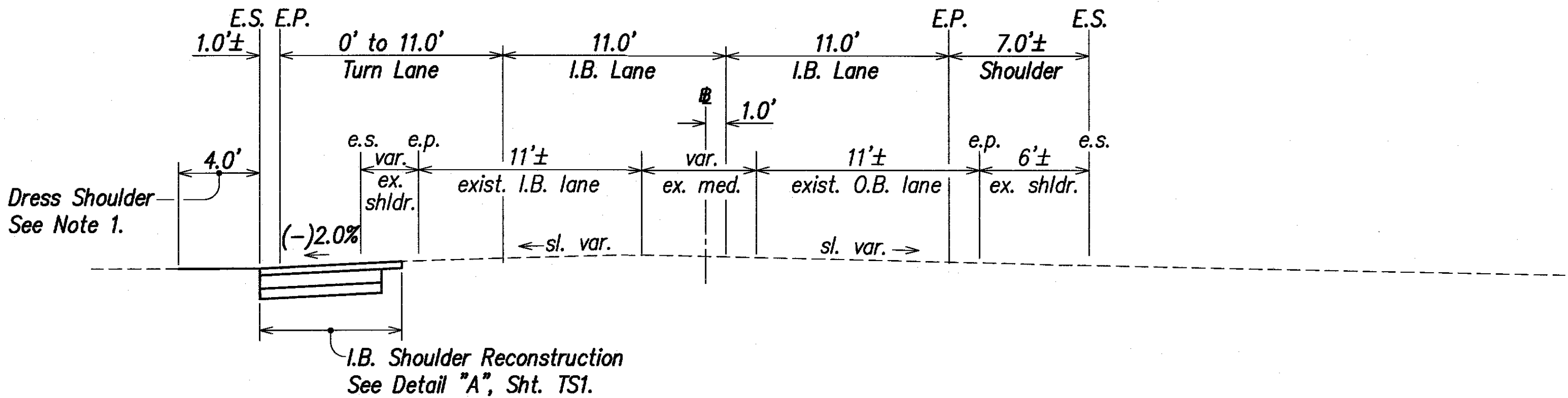
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	16	284

- Typical Section Notes:**
- Dressing of shoulder shall consist of clearing, grubbing, grading, reshaping and compacting the unpaved shoulders with suitable material as shown on the plans and/or as directed by the Engineer. This work shall be considered incidental to the various contract items.
  - The existing Wailua Bridge is shown for illustrative purposes only to indicate the approximate width of the roadway and bridge. The actual dimensions and appearance of the bridge may not be as shown.

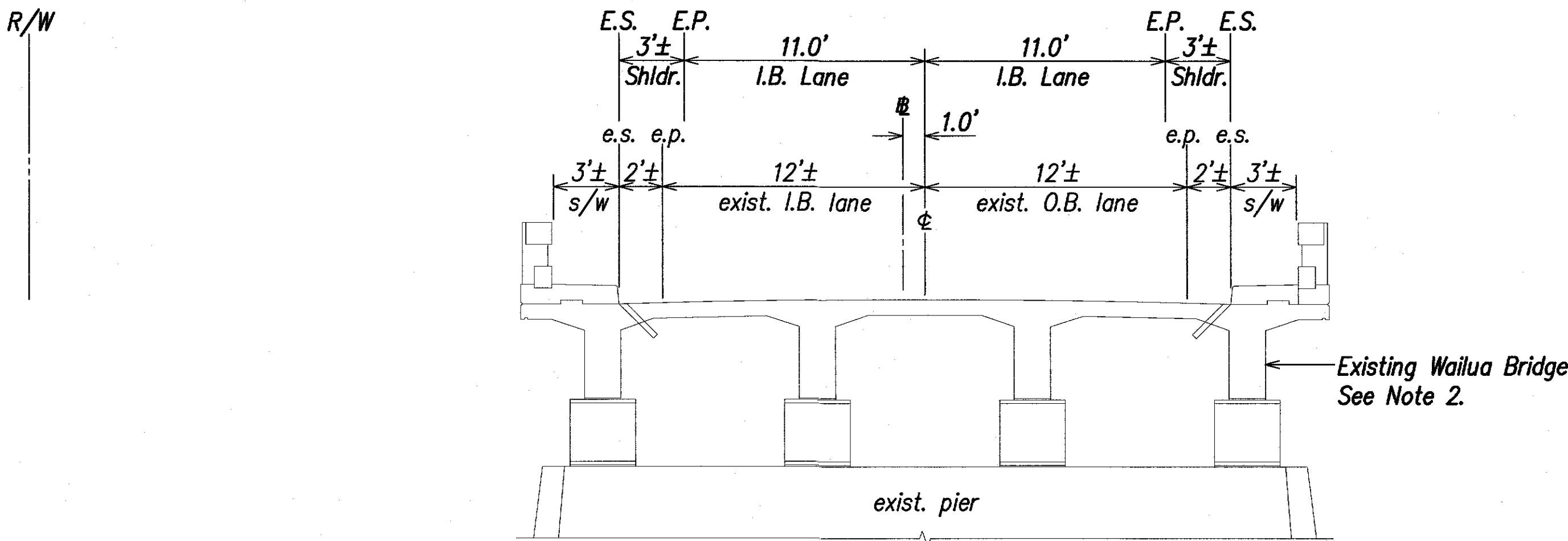
- Abbreviations:**
- E.P. Edge of New Pavement
  - E.S. Edge of New Shoulder
  - G.C. Grade Control
  - I.B. Inbound
  - O.B. Outbound
  - R/W Right-of-Way
  - S.E. Superelevation



**I.B. Sta. 395+91.06 (Frwd.) to I.B. Sta. 396+99.1**  
 I.B. Sta. 395+91.46 (Back) = I.B. Sta. 395+91.06 (Frwd.)  
 Scale: 1" = 5'-0"



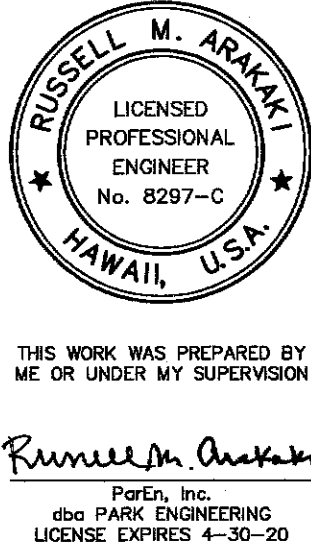
**I.B. Sta. 396+99.1 to I.B. Sta. 397+97±**  
 Scale: 1" = 5'-0"



**I.B. Sta. 397+97± to I.B. Sta. 402+19±**  
 Existing Wailua Bridge  
 Scale: 1" = 5'-0"

LEGEND FOR AS-BUILT POSTINGS	
	Squiggly line for as-built deletion
	Double line for as-built deletion
Roadway	Text for as-built posting

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

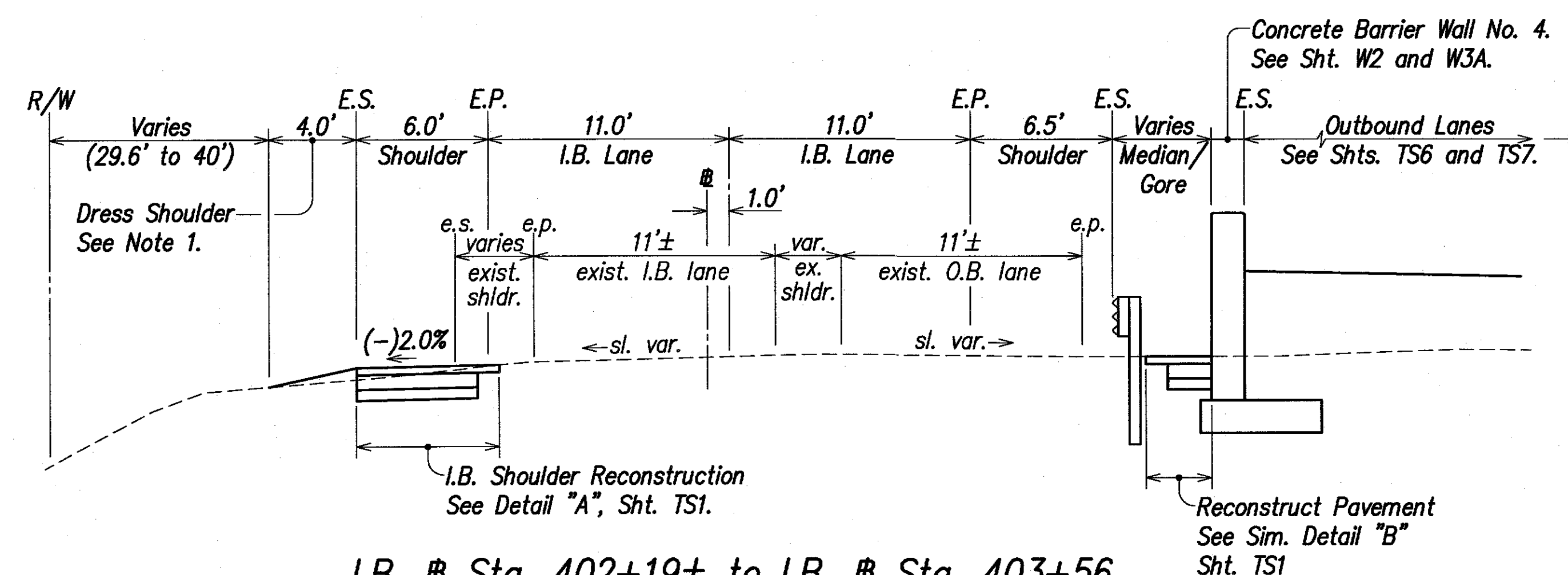


STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**TYPICAL SECTIONS**  
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS  
Wailua Cane Haul Bridge Widening  
Fed. Aid Project No. BR-056-1(51)  
Scale: As Noted      Date: MAY 2008  
SHEET No. TS3 OF TS8 SHEETS



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O.17	284



I.B. Sta. 402+19± to I.B. Sta. 403+56

Scale: 1" = 5'-0"

#### Typical Section Notes:

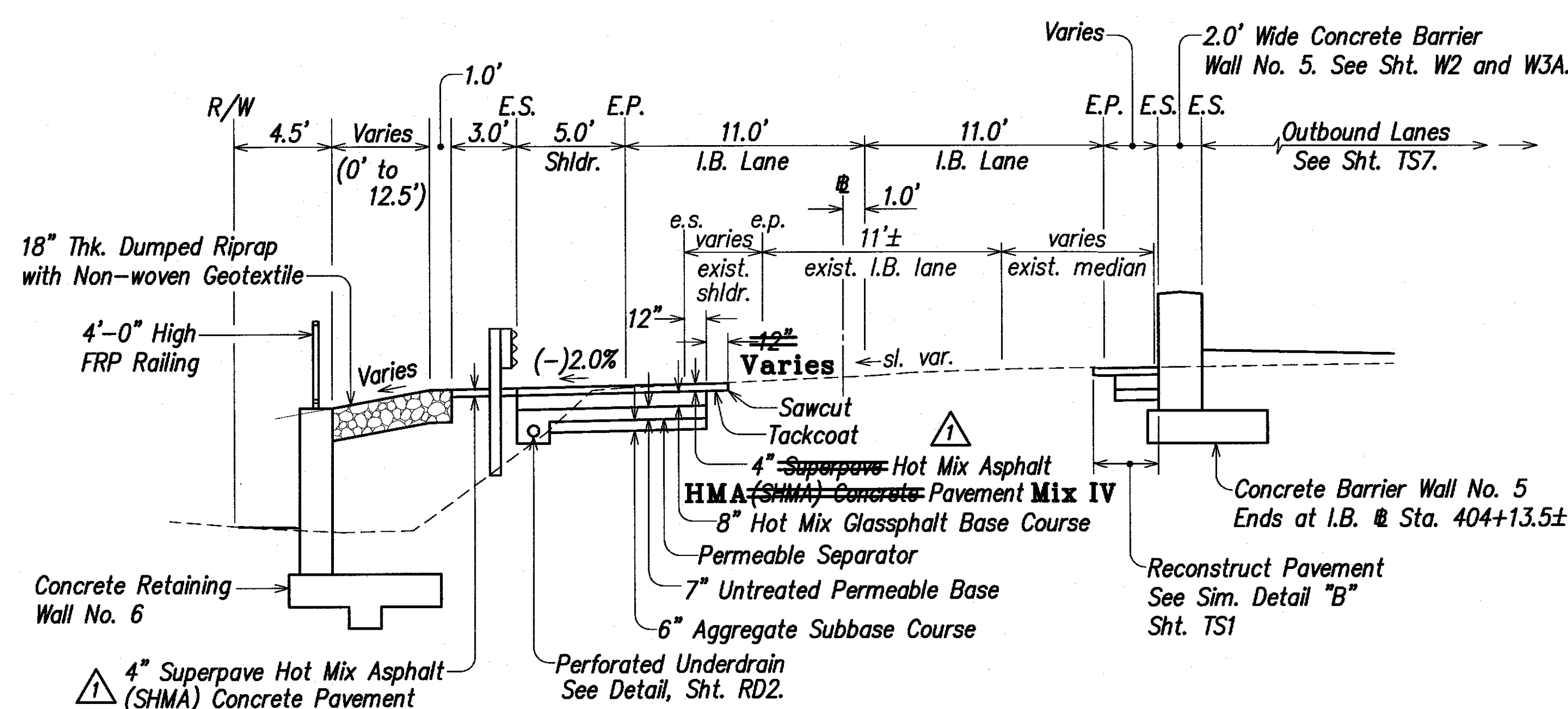
1. Dressing of shoulder shall consist of clearing, grubbing, grading, reshaping and compacting the unpaved shoulders with suitable material as shown on the plans and/or as directed by the Engineer. This work shall be considered incidental to the various contract items.
2. The outbound turn lane ends at Sta. 406+10±. See various plan sheets for limits of pavement construction.

#### Abbreviations:

E.P.	Edge of New Pavement
E.S.	Edge of New Shoulder
G.C.	Grade Control
I.B.	Inbound
O.B.	Outbound
R/W	Right-of-Way
S.E.	Superelevation

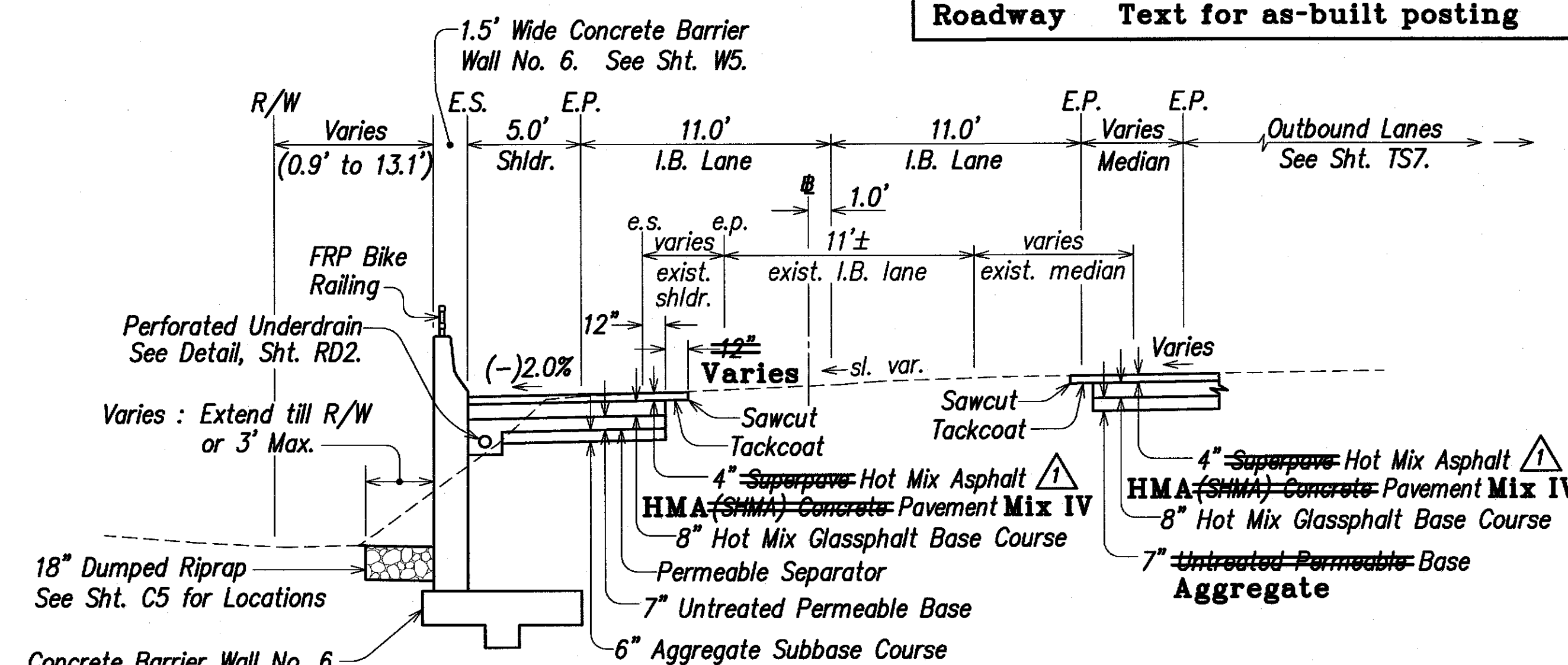
#### LEGEND FOR AS-BUILT POSTINGS

	Squiggly line for as-built deletion
	Double line for as-built deletion
Roadway	Text for as-built posting



I.B. Sta. 403+56 to I.B. Sta. 404+80.26

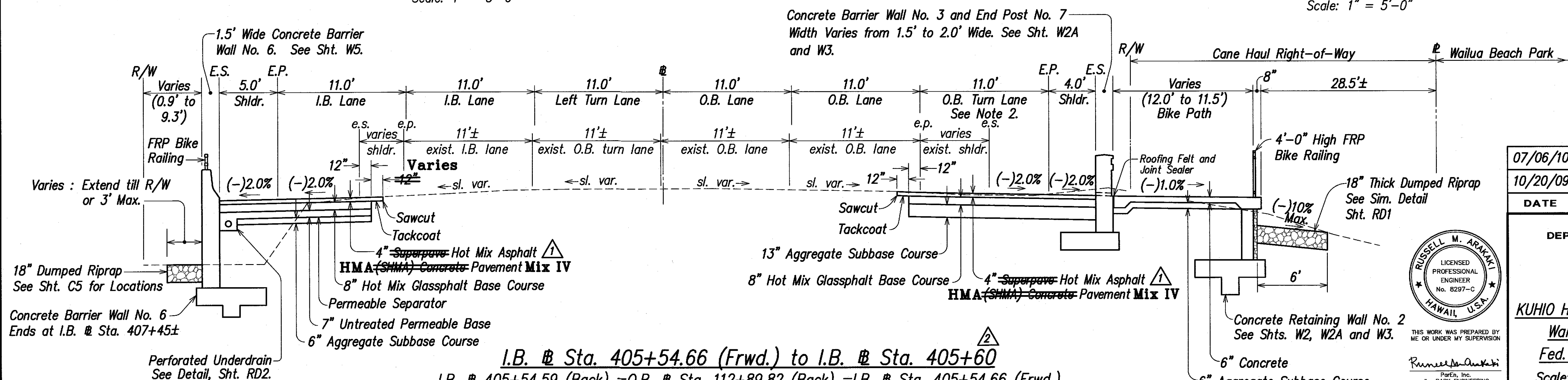
Scale: 1" = 5'-0"



I.B. Sta. 404+80.26 to I.B. Sta. 405+54.59 (Back)

I.B. Sta. 405+54.59 (Back) = I.B. Sta. 405+54.66 (Frwd.)

Scale: 1" = 5'-0"



I.B. Sta. 405+54.66 (Frwd.) to I.B. Sta. 405+60

I.B. Sta. 405+54.59 (Back) = O.B. Sta. 112+89.82 (Back) = I.B. Sta. 405+54.66 (Frwd.)

Scale: 1" = 5'-0"

07/06/10	2	Added Bike Path to Section
10/20/09	1	Revised (HMA) to (SHMA)
DATE	REVISION	

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

TYPICAL SECTIONS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENT

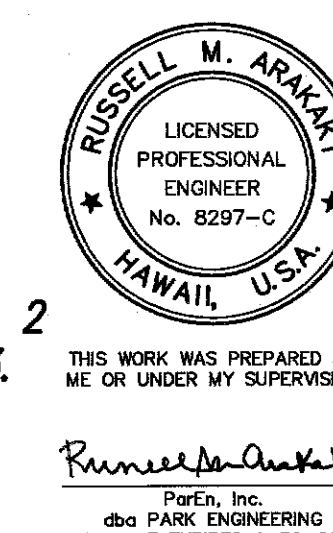
Wailua Cane Haul Bridge Widening

Fed. Aid Project No. BR-056-1(51)

Scale: As Noted

Date: MAY 2008

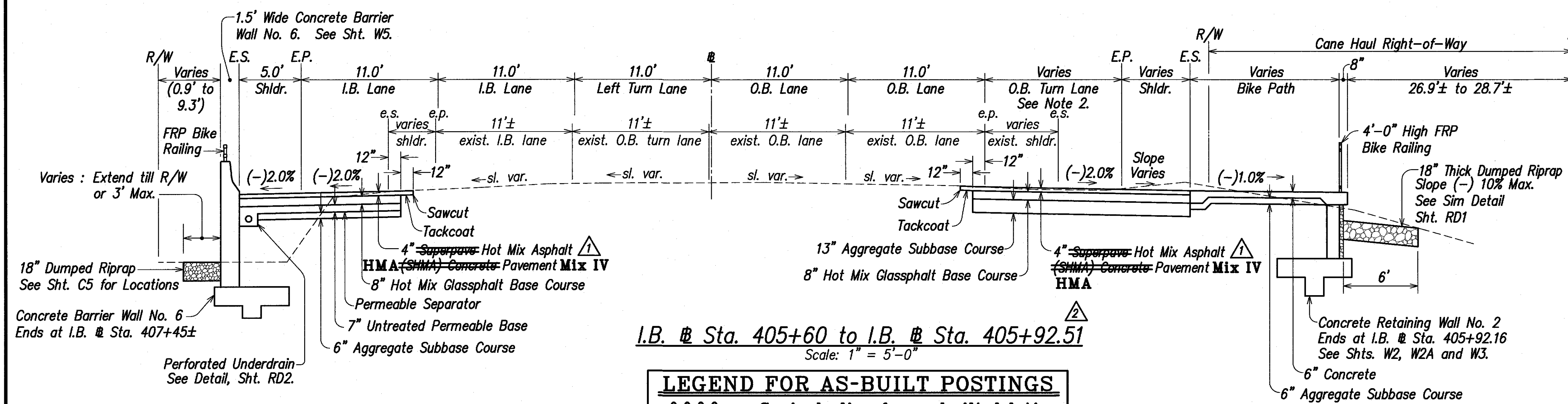
SHEET No. TS4 OF TS8 SHEETS



"AS-BUILT"

C.O. 17

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O. 17 S-1	284



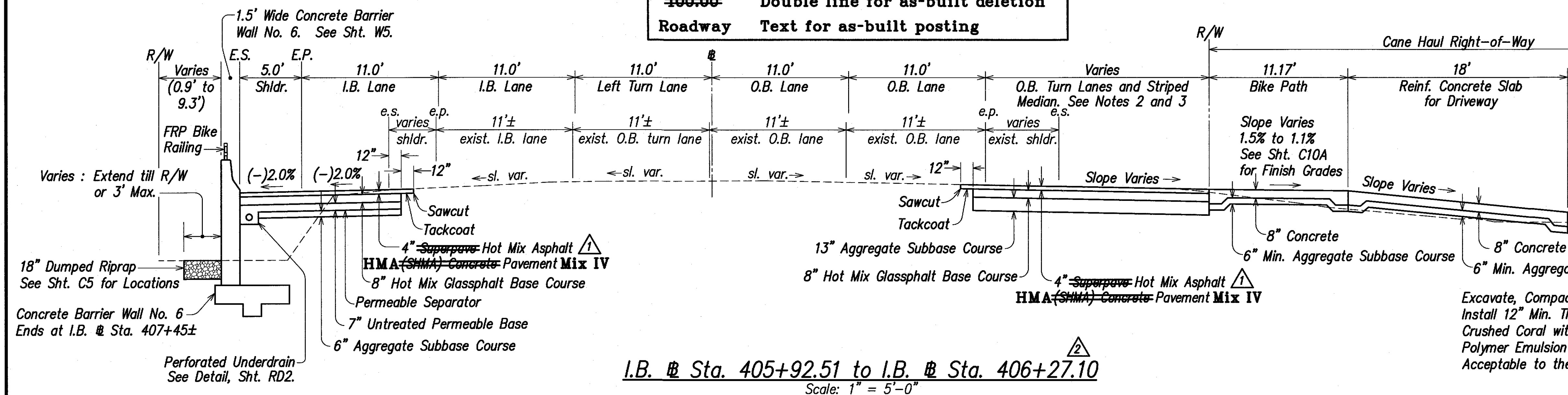
- Typical Section Notes:**  $\Delta$
1. Dressing of shoulder shall consist of clearing, grubbing, grading, reshaping and compacting the unpaved shoulders with suitable material as shown on the plans and/or as directed by the Engineer. This work shall be considered incidental to the various contract items.
  2. The outbound turn lane ends at Sta. 406+10±. See various plan sheets for limits of pavement construction.
  3. The outbound turn lane ends at Sta. 406+73.5±. See various plan sheets for limits of pavement construction.
  4. Remove all rock and boulders as required for construction of the bike path and as directed by the Engineer, including rocks and boulders that protrude into any part of the walls, footings, subbase course and concrete pavement. Backfill and compact the void created by the removal of rocks and boulders with onsite sand or imported crushed coral.

**LEGEND FOR AS-BUILT POSTINGS**

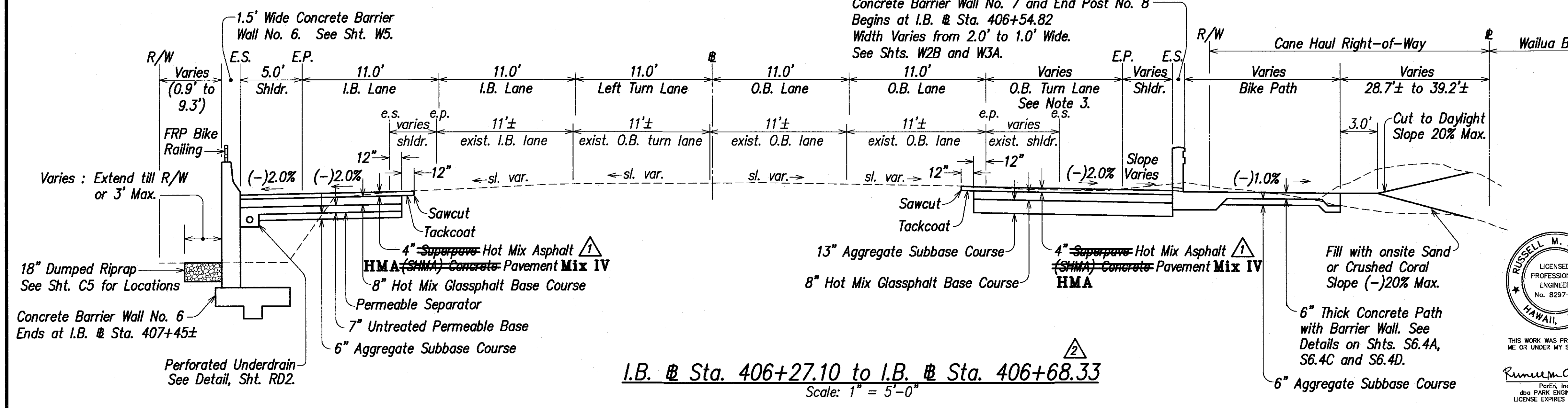
$\sim\sim\sim$  Squiggly line for as-built deletion

~~100.00~~ Double line for as-built deletion

Roadway Text for as-built posting



- Abbreviations:**
- E.P. Edge of New Pavement
  - E.S. Edge of New Shoulder
  - G.C. Grade Control
  - I.B. Inbound
  - O.B. Outbound
  - R/W Right-of-Way
  - S.E. Superelevation



07/06/10	$\Delta$ Added Typical Sections
10/20/09	$\Delta$ Revised (HMA) to (SHMA)
DATE	REVISION

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**TYPICAL SECTIONS**

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS  
Wailua Cane Haul Bridge Widening  
Fed. Aid Project No. BR-056-1(51)  
Scale: As Noted Date: MAY 2008

SHEET No. TS4A OF TS8 SHEETS





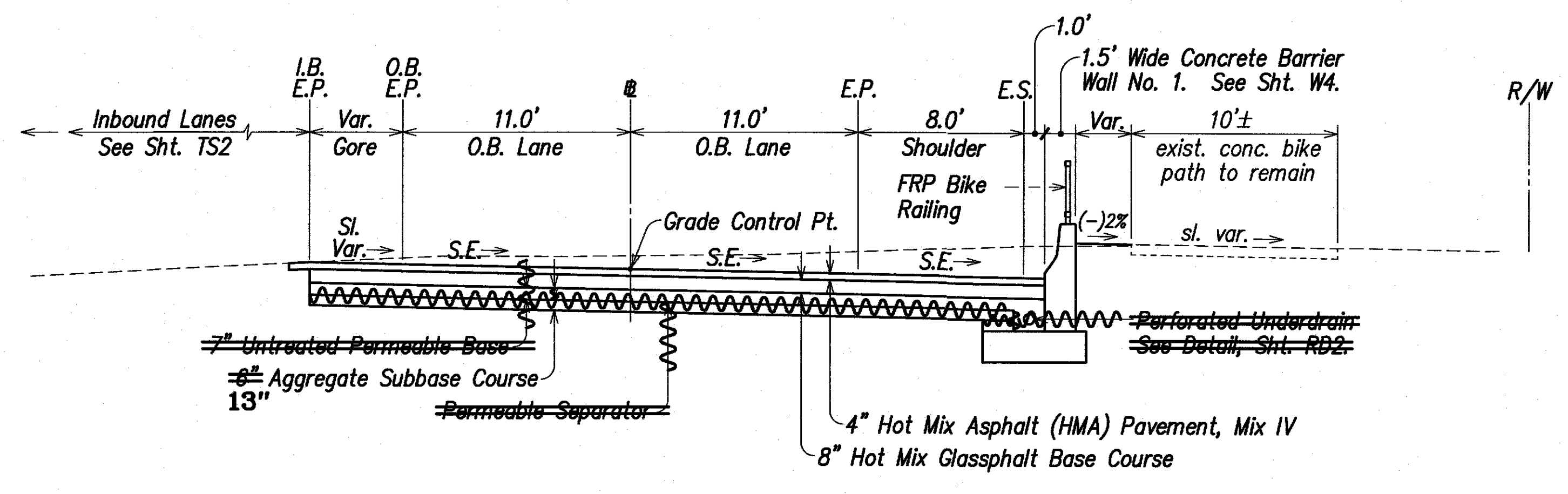
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	18	284

**LEGEND FOR AS-BUILT POSTINGS**

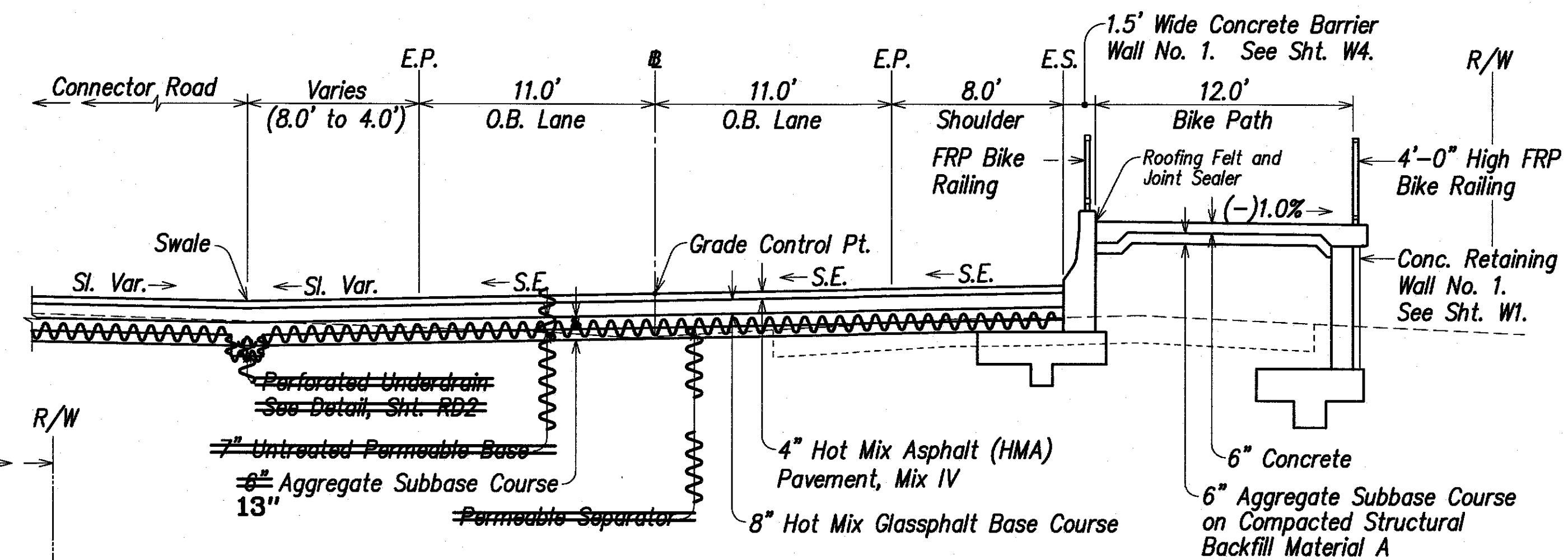
Squiggly line for as-built deletion

Double line for as-built deletion

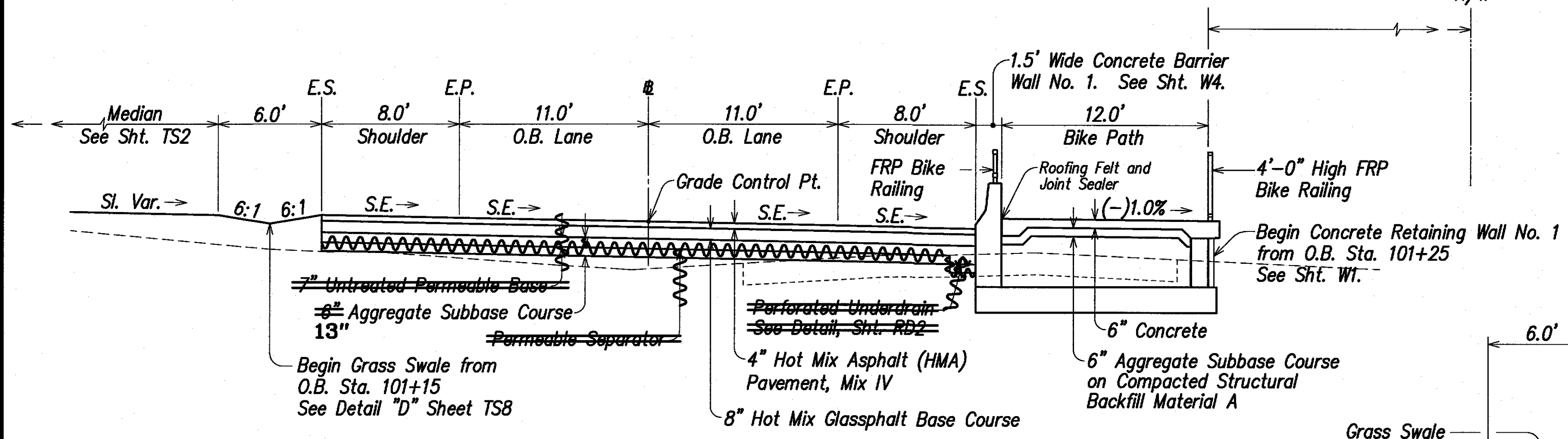
Roadway Text for as-built posting



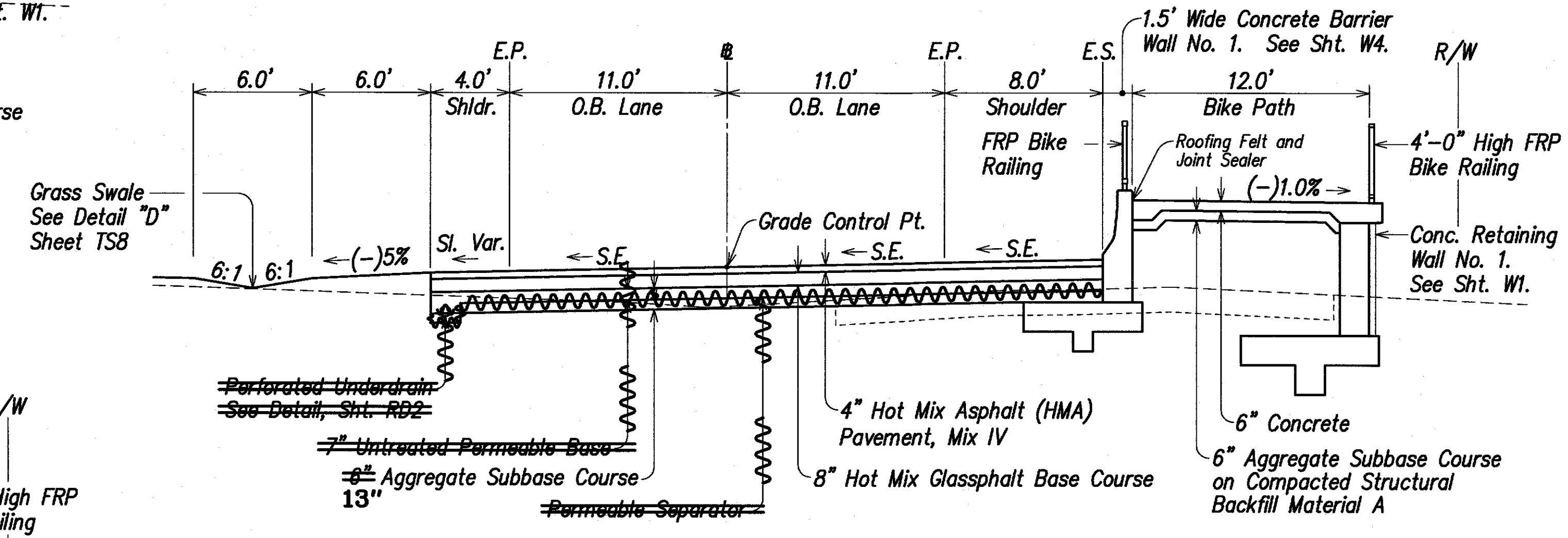
O.B. STA. 100+00.00 to O.B. STA. 101+00.00  
 P.O.C. 393+04.72 = O.B. Sta. 100+00.00  
 Scale: 1" = 5'-0"



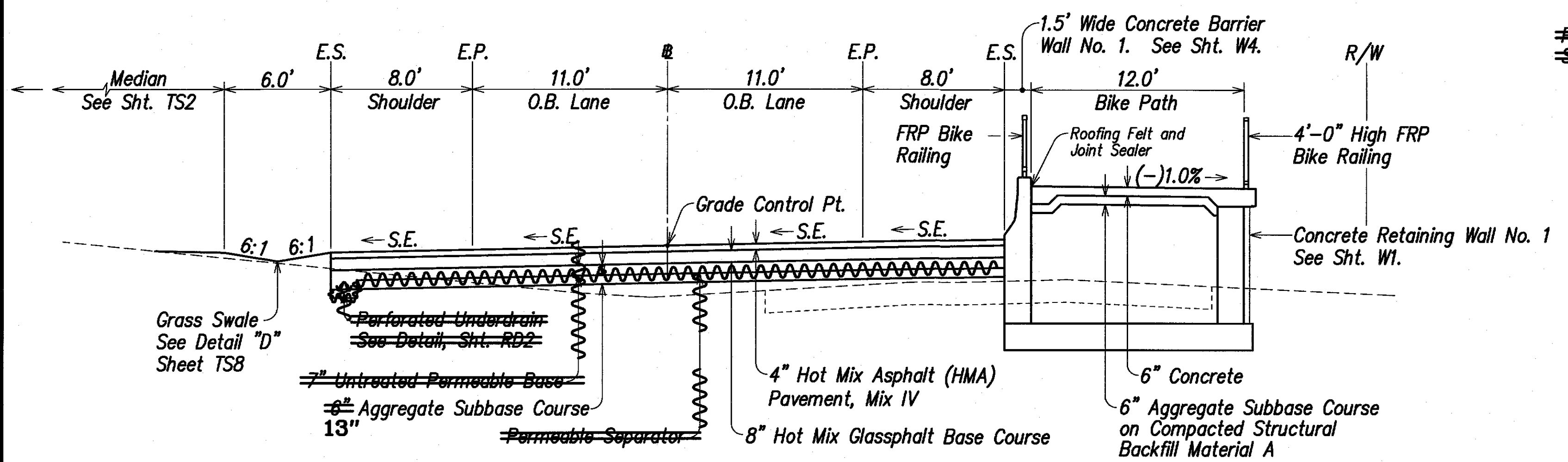
O.B. STA. 103+07.78 to O.B. STA. 103+96.52  
 Scale: 1" = 5'-0"



O.B. STA. 101+00 to O.B. STA. 102+00  
 Scale: 1" = 5'-0"



O.B. STA. 103+96.52 to O.B. STA. 104+27.50 (Back, Skewed)  
 Scale: 1" = 5'-0"



O.B. STA. 102+00 to O.B. STA. 103+07.78  
 Scale: 1" = 5'-0"

- Abbreviations:
- E.P. Edge of New Pavement
  - E.S. Edge of New Shoulder
  - G.C. Grade Control
  - I.B. Inbound
  - O.B. Outbound
  - R/W Right-of-Way
  - S.E. Superelevation

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Russell M. Araki

ParEn, Inc.  
 480 PARK ENGINEERING  
 LICENSE EXPIRES 4-30-20

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

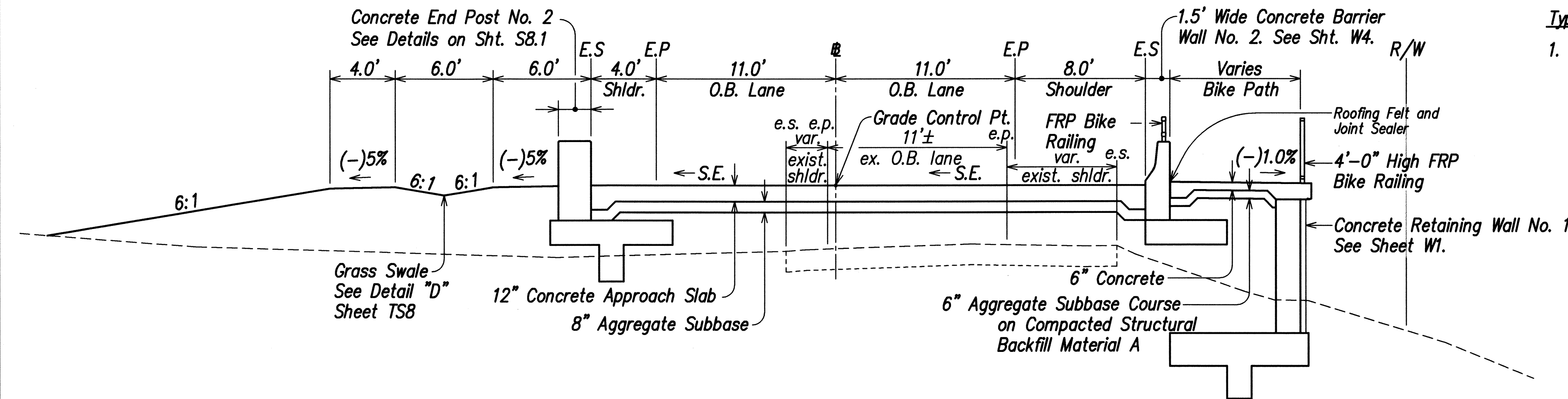
**TYPICAL SECTIONS**  
 KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS  
 Wailua Cane Haul Bridge Widening  
 Fed. Aid Project No. BR-056-1(51)  
 Scale: As Noted Date: MAY 2008  
 SHEET No. TS5 OF TS8 SHEETS

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

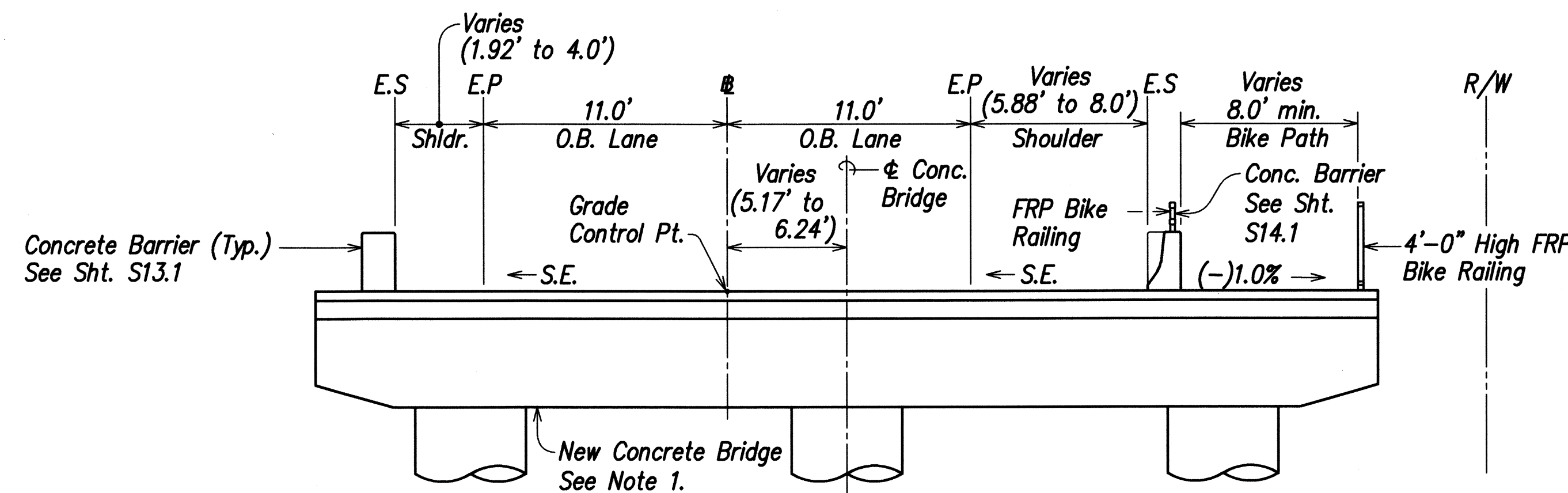
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	19	284

**Typical Section Notes:**

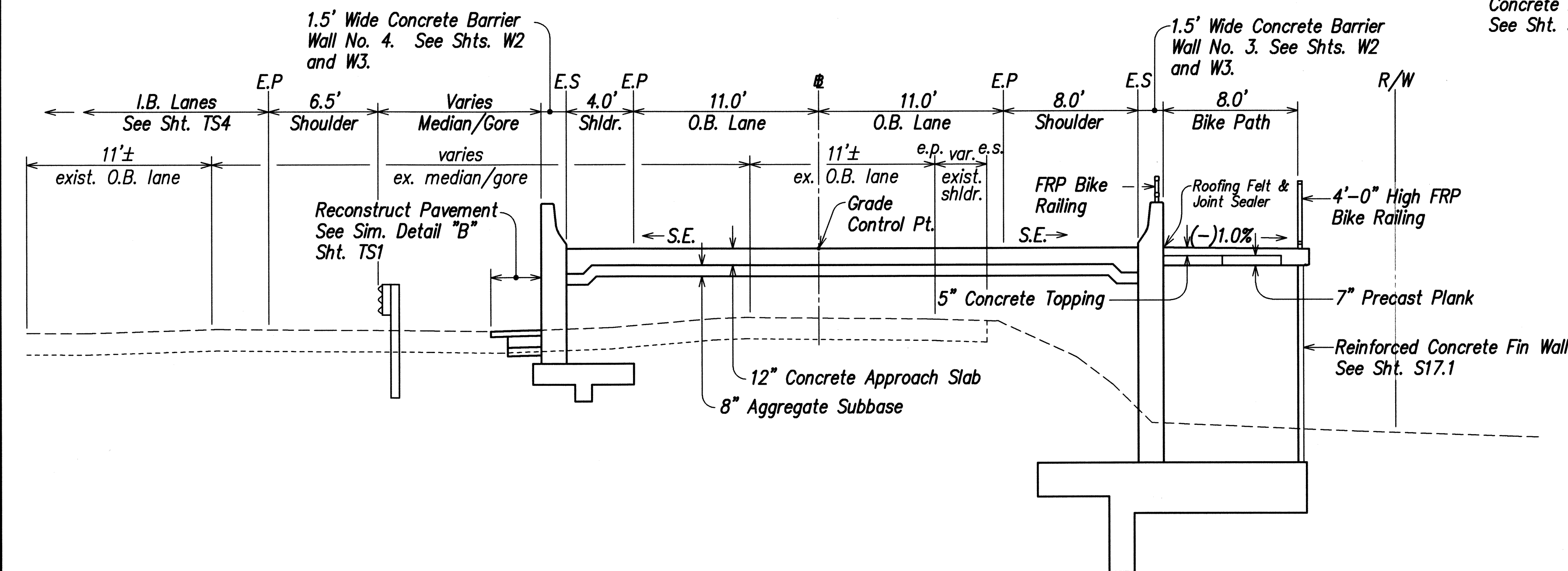
1. The bridge sections are shown for illustrative purposes only, to indicate the location of the lanes in relation to the bridge section. See the various Structural Plans for actual dimensions and details of the bridge.



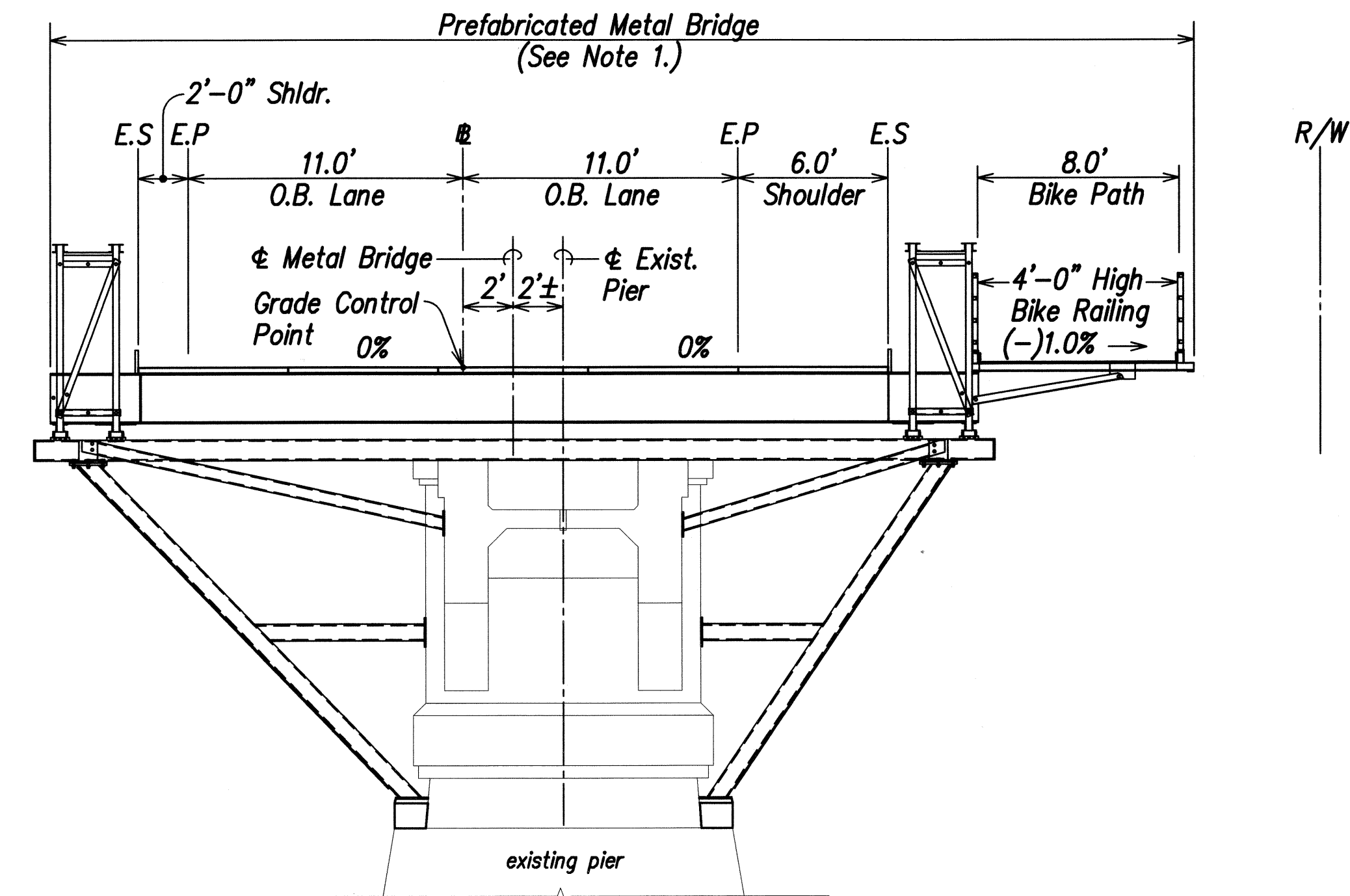
**O.B. Sta. 104+27.50 (Frwd.) to O.B. Sta. 104+47.62 (Back), Skewed**  
SCALE: 1" = 5'-0"



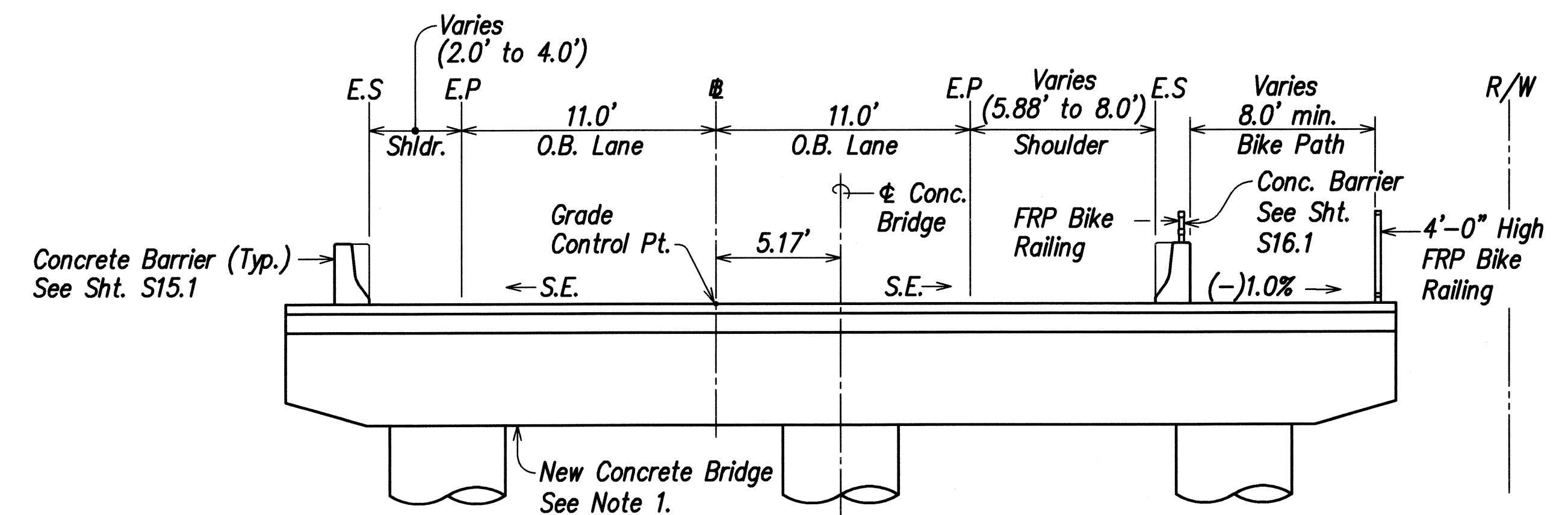
**Concrete Bridge**  
**O.B. Sta. 104+47.62 to O.B. Sta. 104+77.65**  
SCALE: 1" = 5'-0"



**O.B. Sta. 110+17.65 (Frwd.) to O.B. Sta. 110+37.65 (Back), Skewed**  
SCALE: 1" = 5'-0"



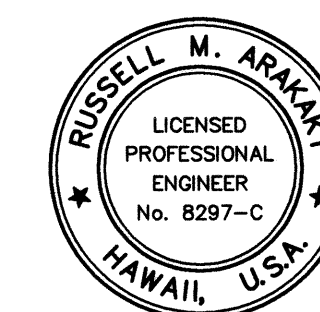
**Prefabricated Metal Bridge**  
**O.B. Sta. 104+77.65 to O.B. Sta. 109+87.65**  
SCALE: 1" = 5'-0"



**Concrete Bridge**  
**O.B. Sta. 109+87.65 to O.B. Sta. 110+17.65**  
SCALE: 1" = 5'-0"

**Abbreviations:**

- E.P. Edge of New Pavement  
E.S. Edge of New Shoulder  
G.C. Grade Control  
I.B. Inbound  
O.B. Outbound  
R/W Right-of-Way  
S.E. Superelevation



THIS WORK WAS PREPARED BY  
ME OR UNDER MY SUPERVISION  
RUSSELL M. ARAI  
RUSSELL M. ARAI, INC.  
480 PARK ENGINEERING  
LICENSE EXPIRES 4-30-10

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**TYPICAL SECTIONS**

KUHO HIGHWAY, SHORT TERM IMPROVEMENTS

Wailua Cane Haul Bridge Widening  
Fed. Aid Project No. BR-056-1(51)

Scale: As Noted Date: MAY 2008

SHEET No. TS6 OF TS8 SHEETS

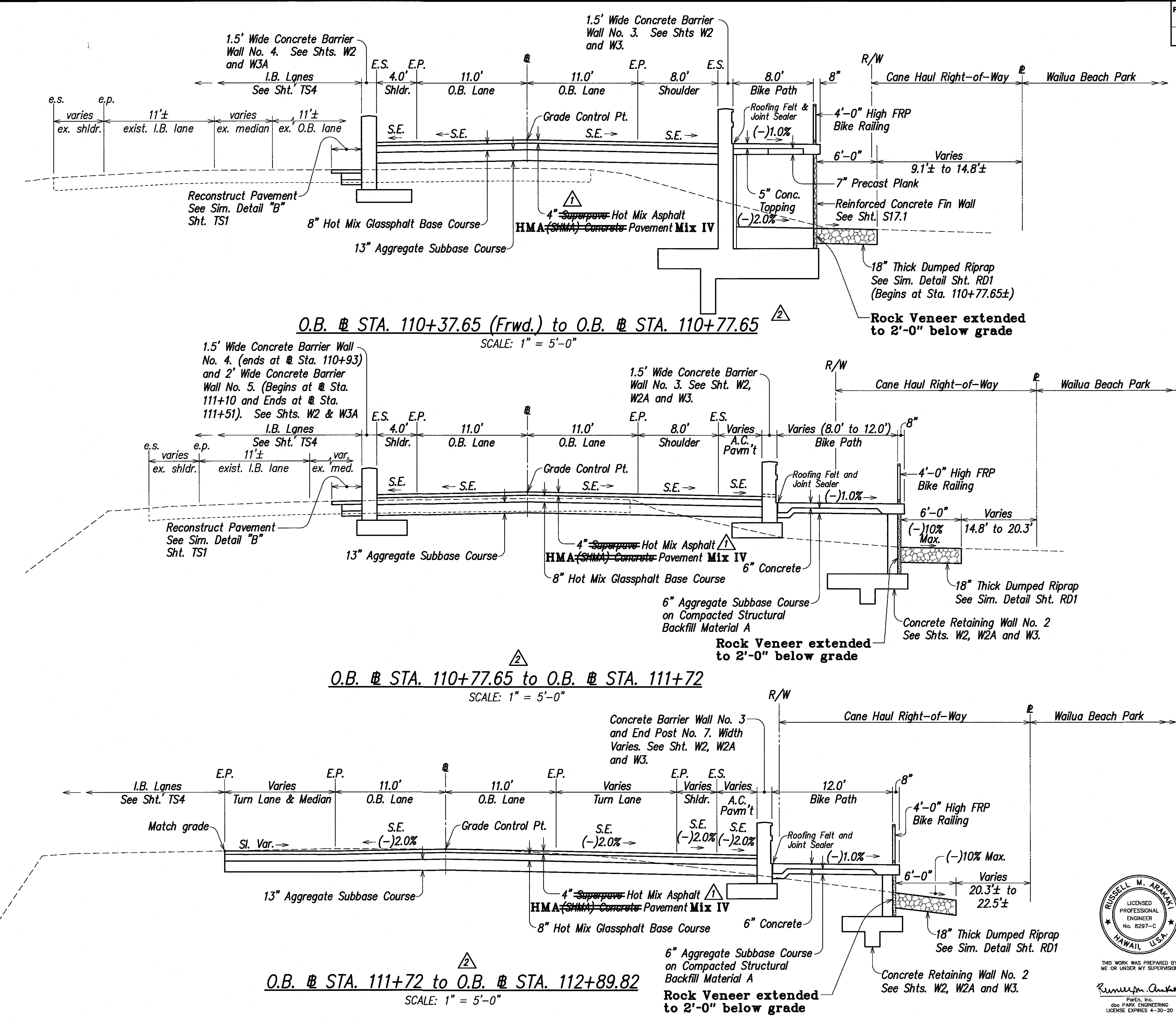
DATE	_____
SURVEY PLOTTED BY	_____
DRAWN BY	_____
DESIGNED BY	_____
QUANTITIES BY	_____
CHECKED BY	_____
ORIGINAL PLAN	_____
NOTE BOOK	_____
No.	_____



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O.20	284

**Abbreviations:**

E.P. Edge of New Pavement  
E.S. Edge of New Shoulder  
G.C. Grade Control  
I.B. Inbound  
O.B. Outbound  
R/W Right-of-Way  
S.E. Superelevation



LEGEND FOR AS-BUILT POSTINGS	
	Squiggly line for as-built deletion
	Double line for as-built deletion
	Text for as-built posting

07/06/10	2	Revised Section
10/20/09	1	Revised (HMA) to (SHMA)
DATE	REVISION	
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION		
<b>TYPICAL SECTIONS</b>		
KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS		
Wailua Cane Haul Bridge Widening		
Fed. Aid Project No. BR-056-1(51)		
Scale: As Noted	Date: MAY 2008	
SHEET No. TS7 OF TS8 SHEETS		

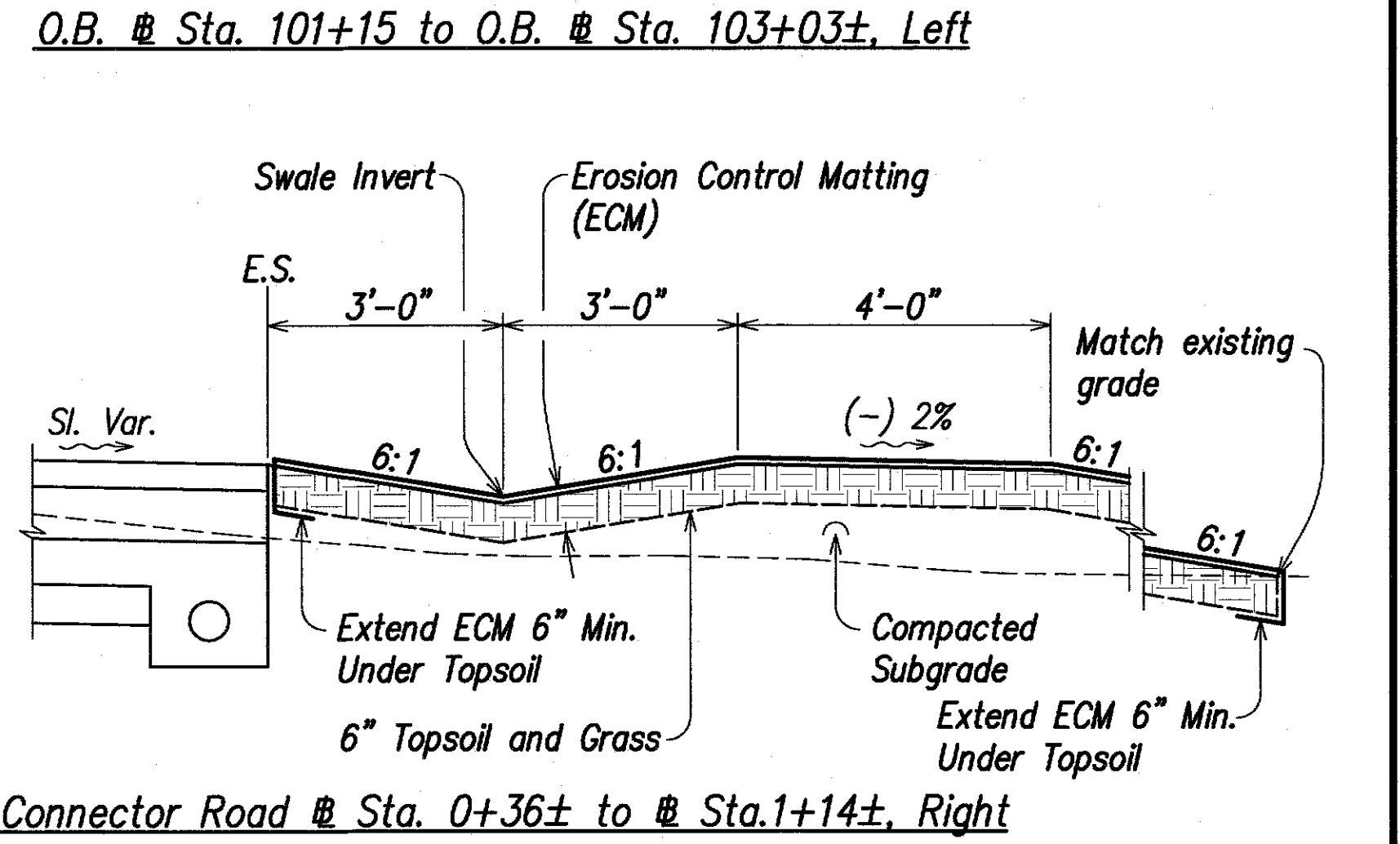
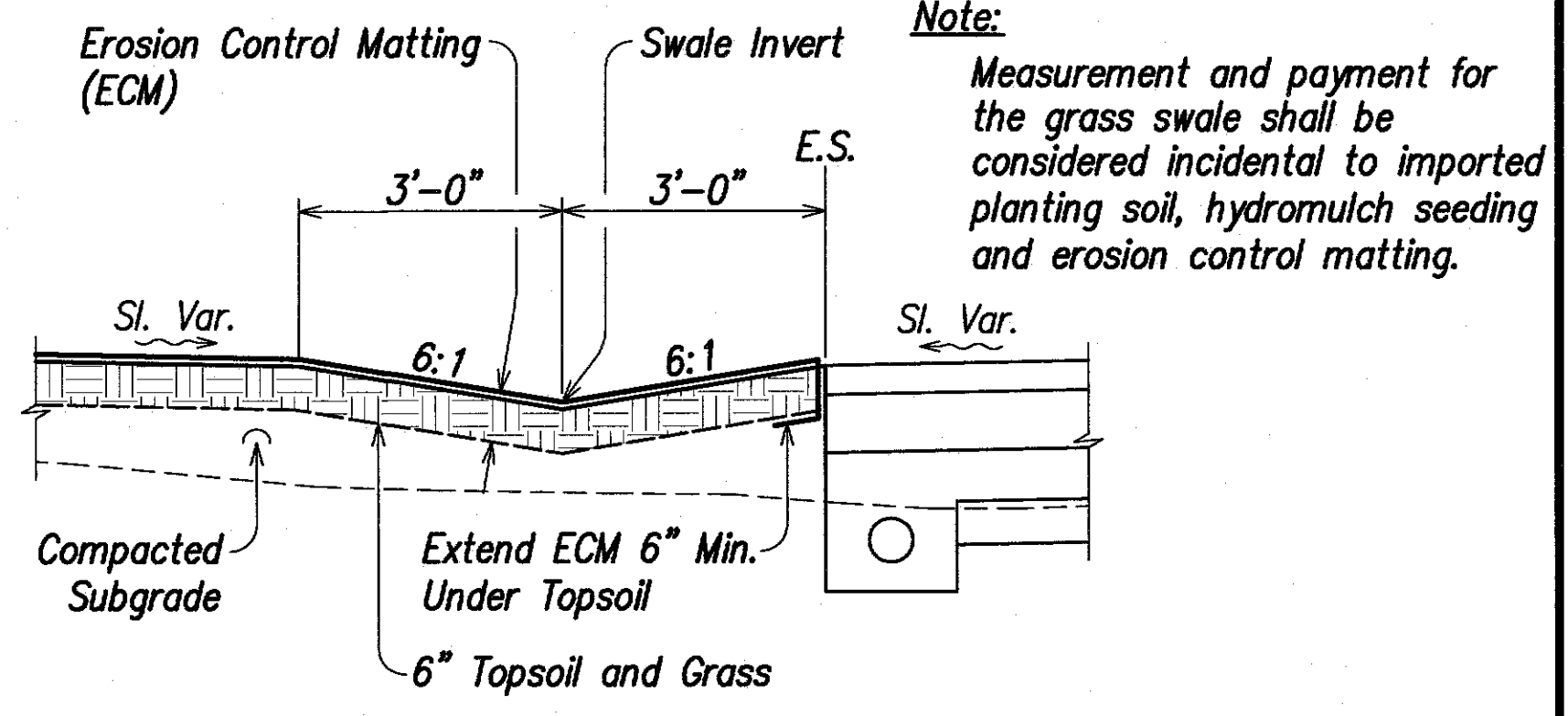
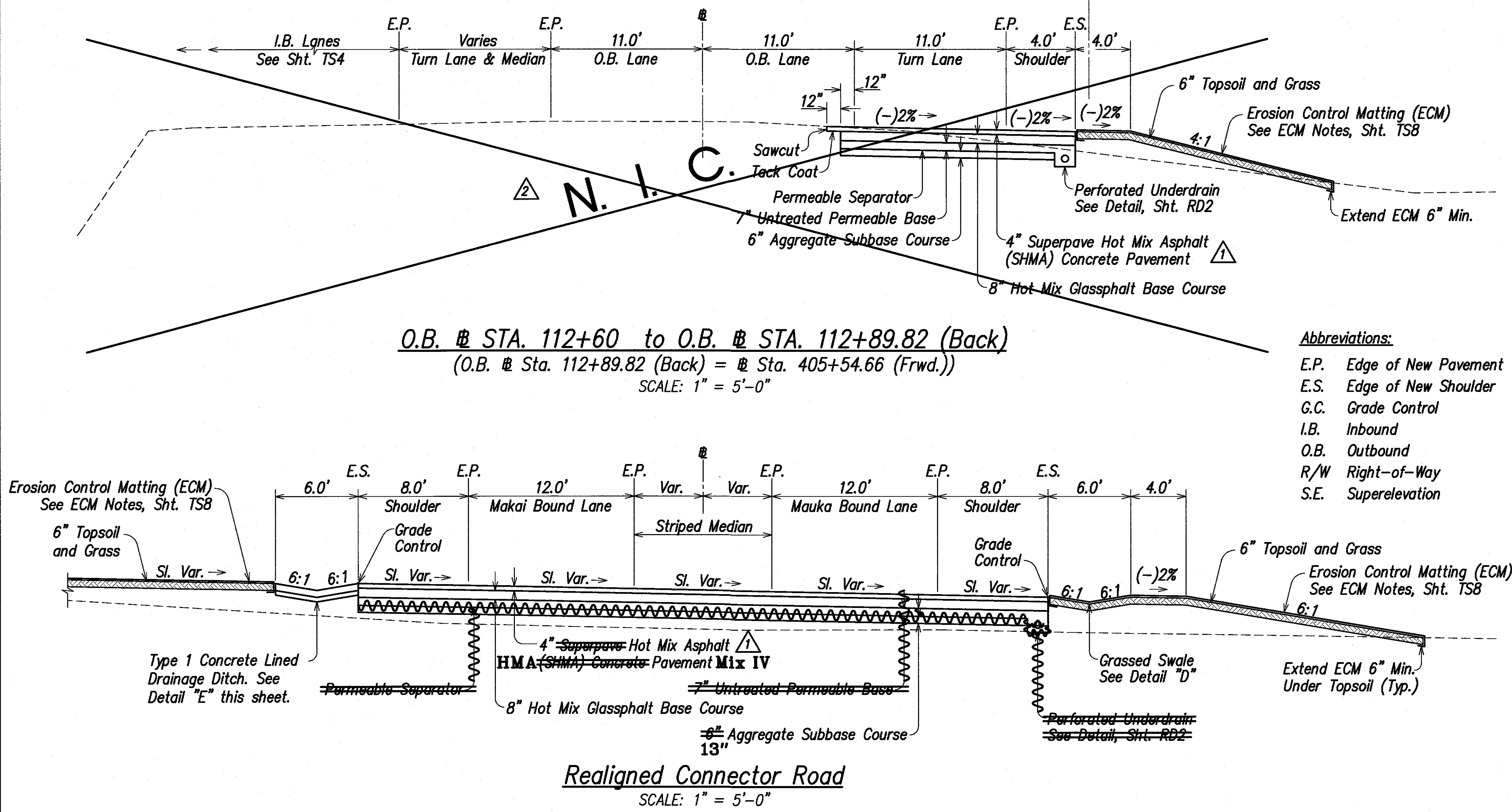
RUSSELL M. ARAKAWA  
LICENSED PROFESSIONAL ENGINEER  
No. 8297-C  
HAWAII, U.S.A.  
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION  
P&E, Inc.  
100 PARK ENGINEERING  
LICENSE EXPIRES 4-30-20

"AS-BUILT"

C.O. 20

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	C.O.21	284



- Erosion Control Matting (ECM) Notes:**
1. Install the ECM in accordance with the Manufacturer's recommendations, including placement, overlapping at seams, terminal ends and staking unless otherwise indicated.
  2. Metal (wire) staples will not be permitted. All stakes shall be made of treated wood to the length and shape as recommended by the Manufacturer of the ECM. Install 1.2 stakes (min.) per square yard.



# Detail "D" - Graded Swale

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

A circular professional engineer seal for Russell M. Arakawa. The outer ring contains the text "RUSSELL M. ARAKAWA" at the top and "HAWAII, U.S.A." at the bottom, separated by two stars. The inner circle contains the text "LICENSED PROFESSIONAL ENGINEER" and "No. 8297-C".

THIS WORK WAS PREPARED BY  
ME OR UNDER MY SUPERVISION

*Russell M. Arakawa*  
P.E., Inc.  
dba PARK ENGINEERING  
LICENSE EXPIRES 4-30-20

07/06/10		Deleted a Section
10/20/09		Revised (HMA) to (SHMA)
DATE		REVISION

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**TYPICAL SECTIONS**

**KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS**

**Wailua Cane Haul Bridge Widening**

**Fed. Aid Project No. BR-056-1(51)**

Scale: As Noted      Date: MAY 2008

**SHEET No. TS8 OF TS8 SHEETS**

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