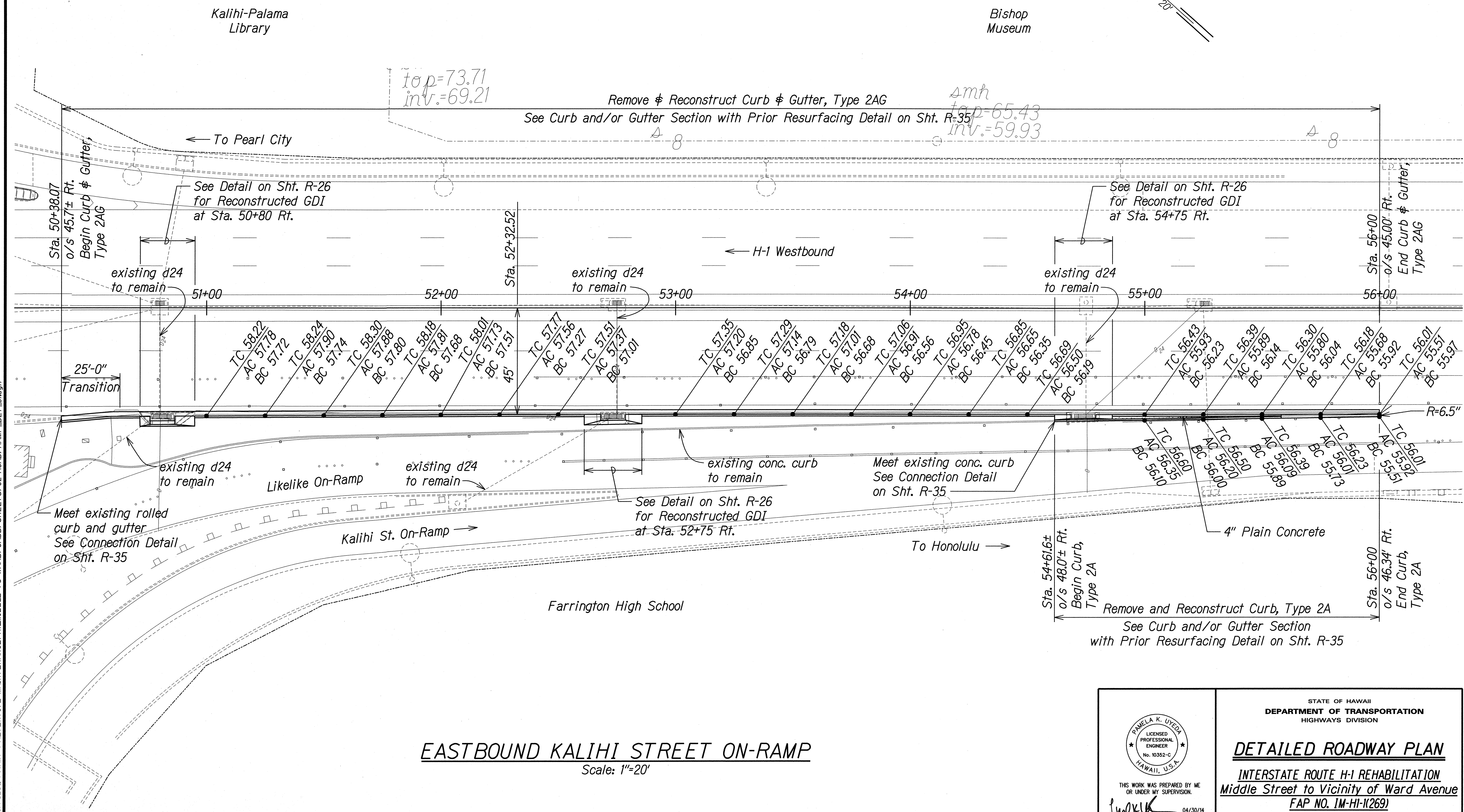
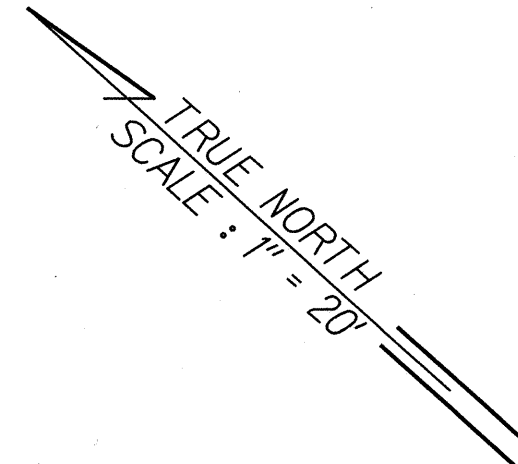


FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(269)	2013	44	382



ORIGINAL PLAN	DATE
NOTED BY	DATE
DESIGNED BY	DATE
CHECKED BY	DATE

T-16459A IDIQ PAVT PREVENTIVE MAINTENANCE/HI MIDDLE TO WARD/CADD/SHEETS/02 ROAD/RAMP DET.Dldgn

EASTBOUND KALIHI STREET ON-RAMP

Scale: 1"=20'

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

P. Uyeda

04/30/14
EXPIRATION DATE OF THE LICENSE

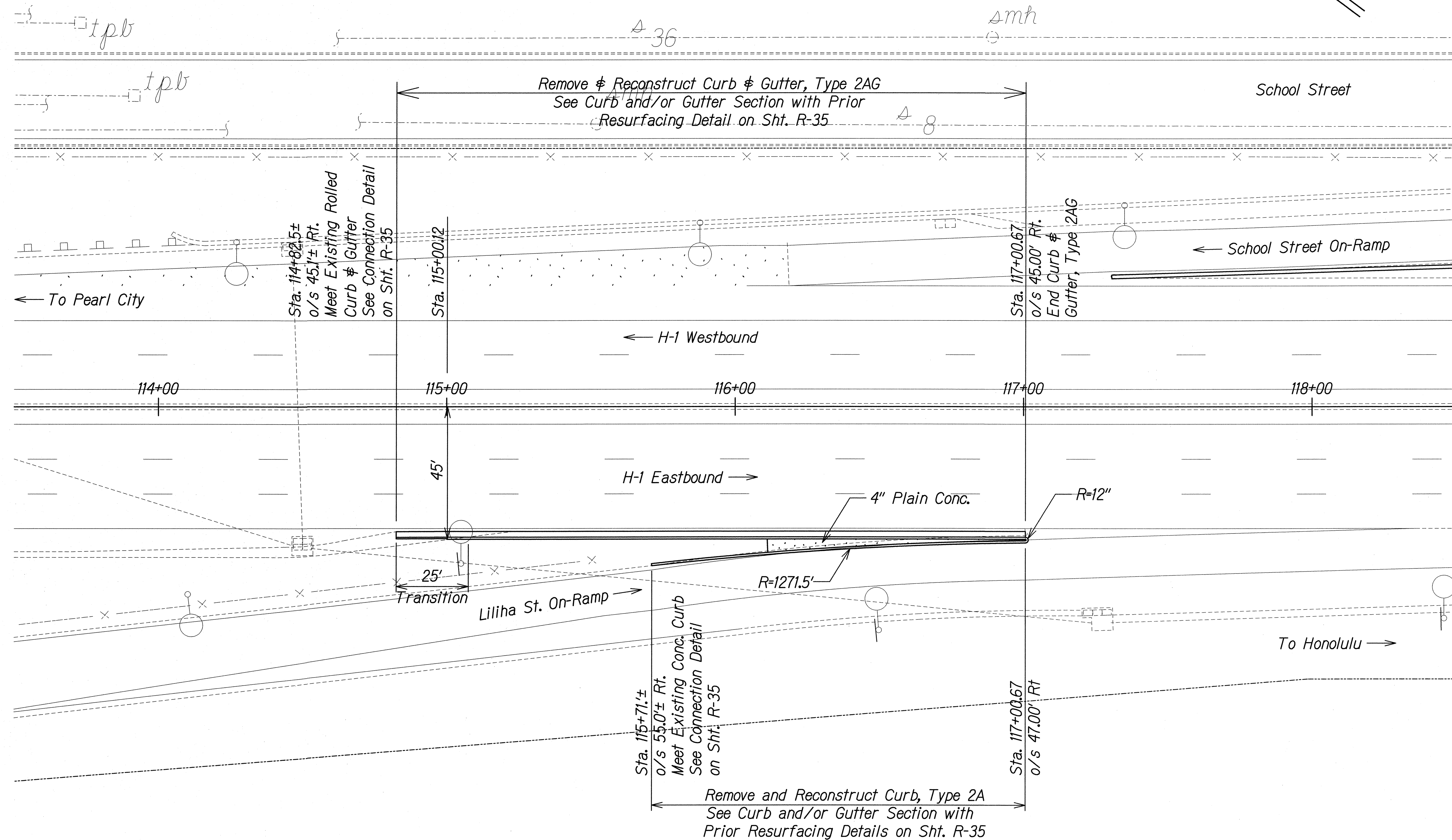
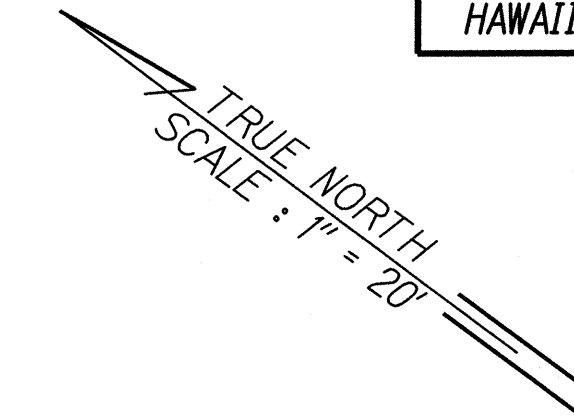
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETAILED ROADWAY PLAN

INTERSTATE ROUTE H-1 REHABILITATION
Middle Street to Vicinity of Ward Avenue
FAP NO. 1M-HI-1(269)

Scale: 1"=20' Date: Apr. 26, 2013

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(269)	2013	46	382



**EASTBOUND LILIHA
STREET ON-RAMP**
Scale: 1"=20'

SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	

T:\16459A\101Q PAVMT PREVENTIVE MAINTENANCE\HI-MIDDLE TO WARD\CADD\SHEETS\02 ROAD RAMP_DET_02B.dgn

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OR UNDER MY SUPERVISION.

SIGNATURE: *[Signature]* EXPIRATION DATE: 04/30/14
OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

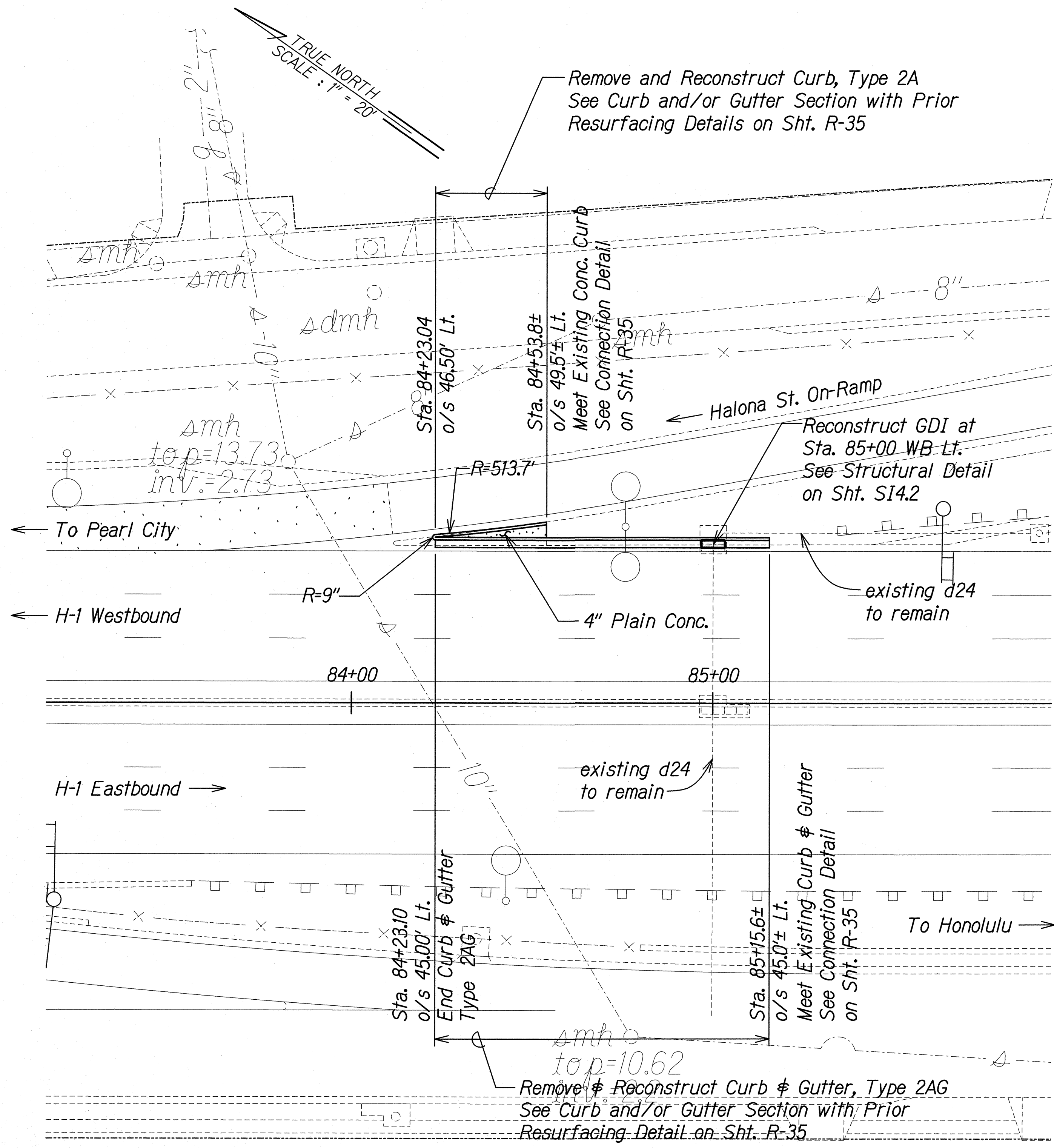
DETAILED ROADWAY PLAN

INTERSTATE ROUTE H-1 REHABILITATION
Middle Street to Vicinity of Ward Avenue
FAP NO. IM-HI-1(269)

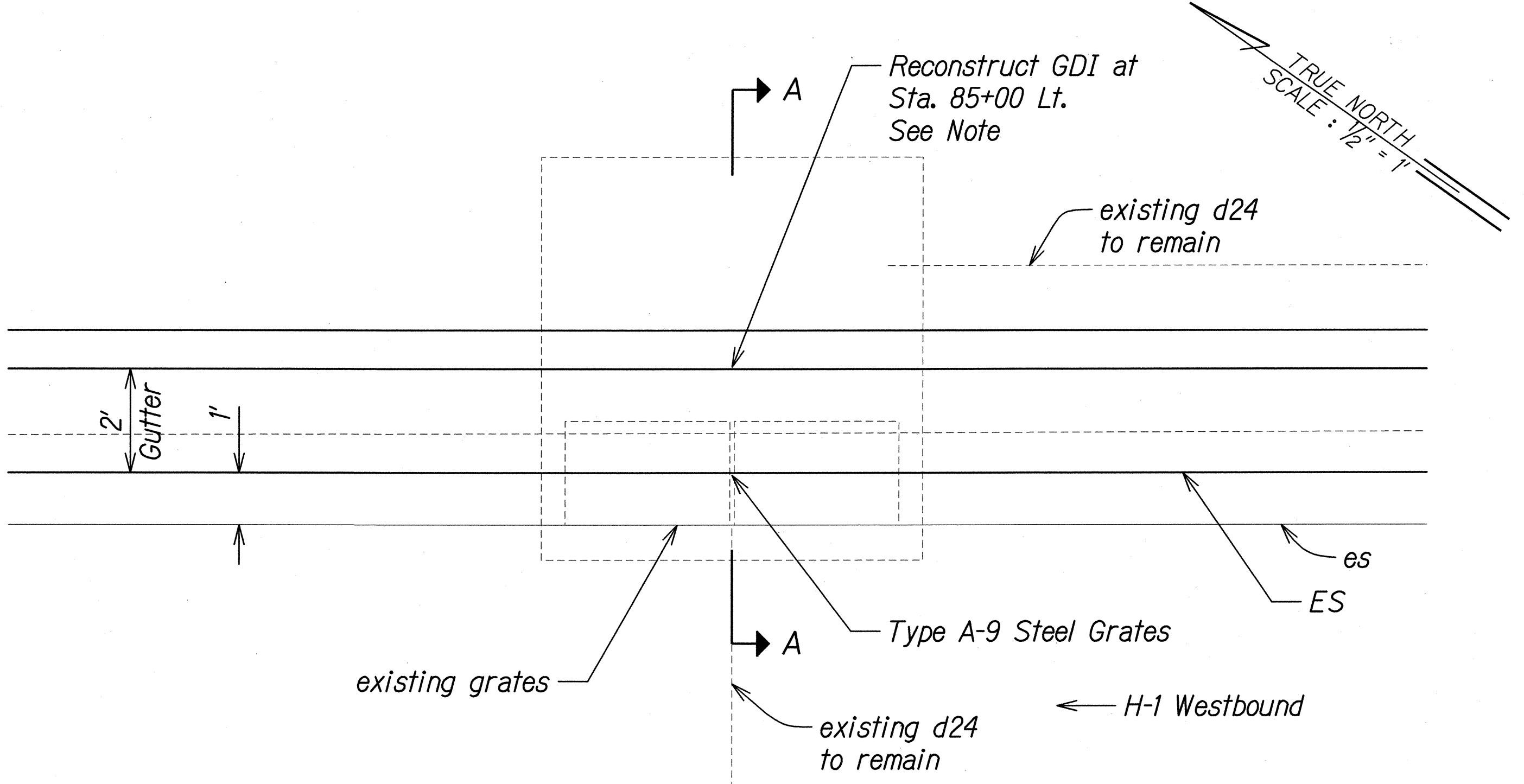
Scale: 1"=20' Date: Apr. 26, 2013

SHEET NO. R-27 OF 43 SHEETS

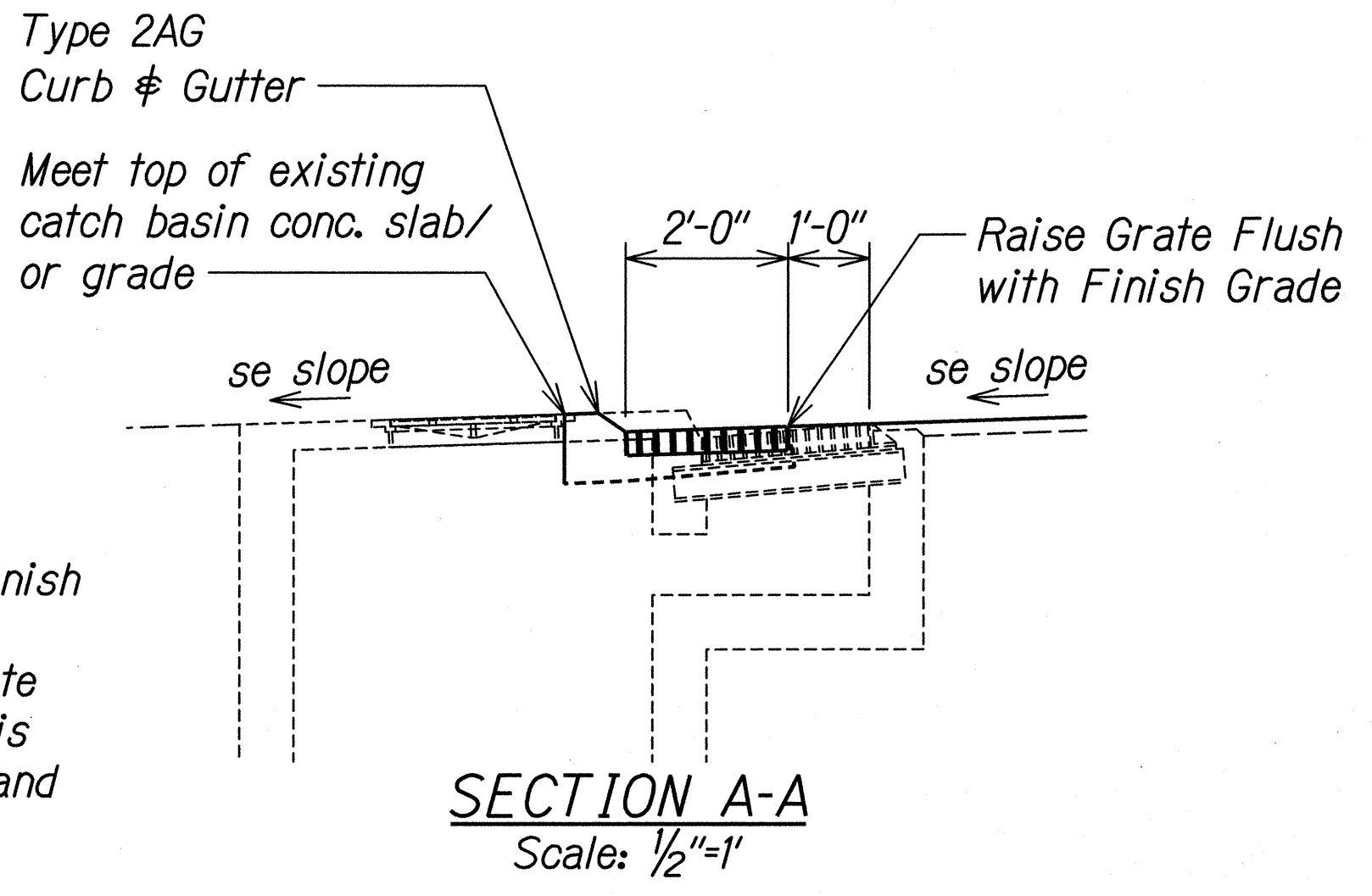
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(269)	2013	47	382



WESTBOUND HALONA STREET ON-RAMP
 Scale: 1"=20'



GDI @ STA. 85+00 LT. DETAIL
 Scale: 1/2"=1'



NOTES:
 Contractor shall verify finish grade elevation prior to construction. Adjust grate accordingly to ensure it is flush with finish grade and roadway drains to grate.

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NOTED BY	
DATE	

T:\16459A IDIQ PAVT PREVENTIVE MAINTENANCE\HI MIDDLE TO WARD\CADD\SHEETS\02 ROAD RAMP_DET_02A.dgn

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SIGNATURE: *[Signature]* EXPIRATION DATE OF THE LICENSE: 04/30/14

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

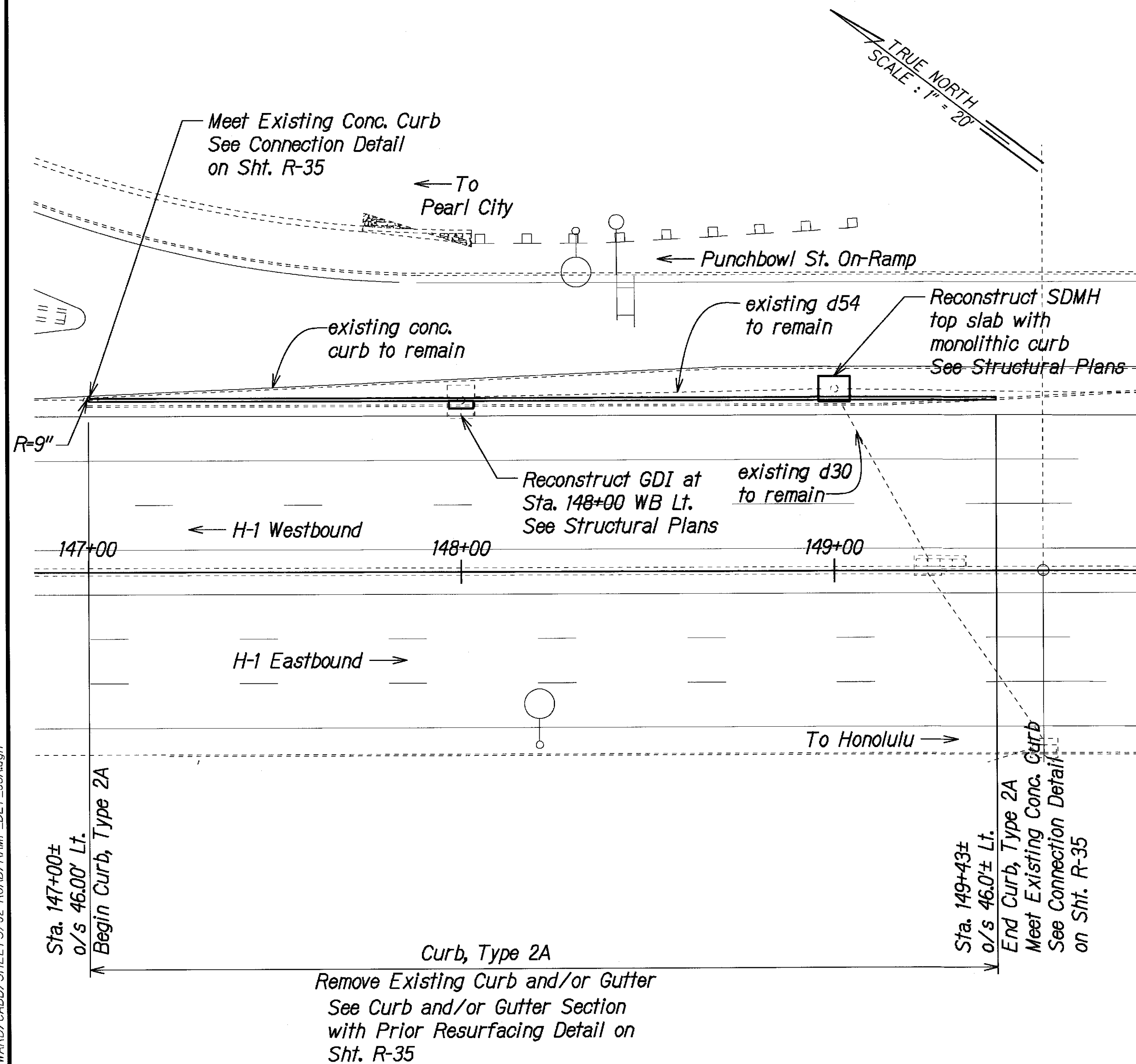
DETAILED ROADWAY PLAN

INTERSTATE ROUTE H-1 REHABILITATION
 Middle Street to Vicinity of Ward Avenue
 FAP NO. IM-HI-1(269)

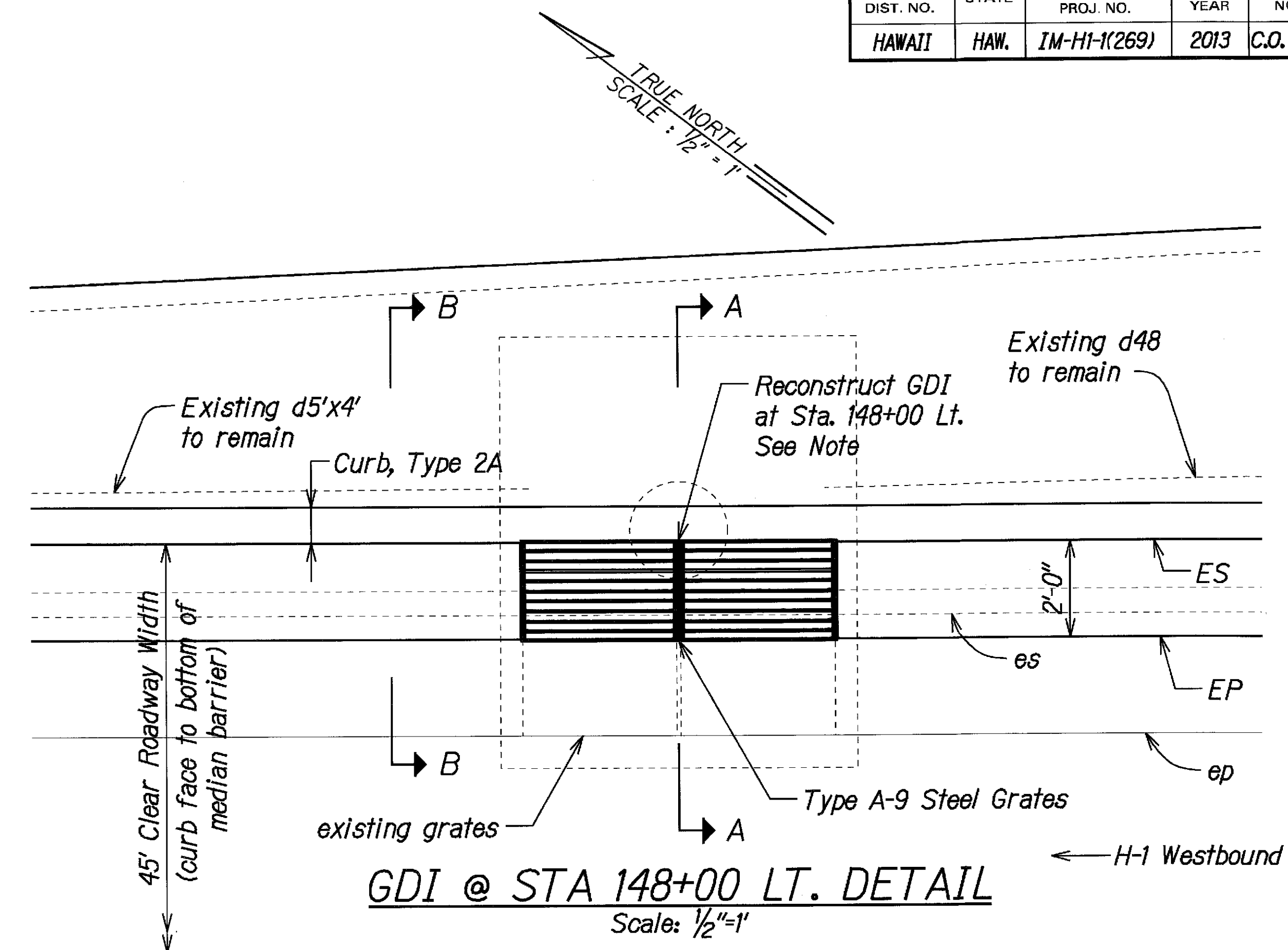
Scale: 1"=20' Date: Apr. 26, 2013

SHEET No. R-28 OF 43 SHEETS

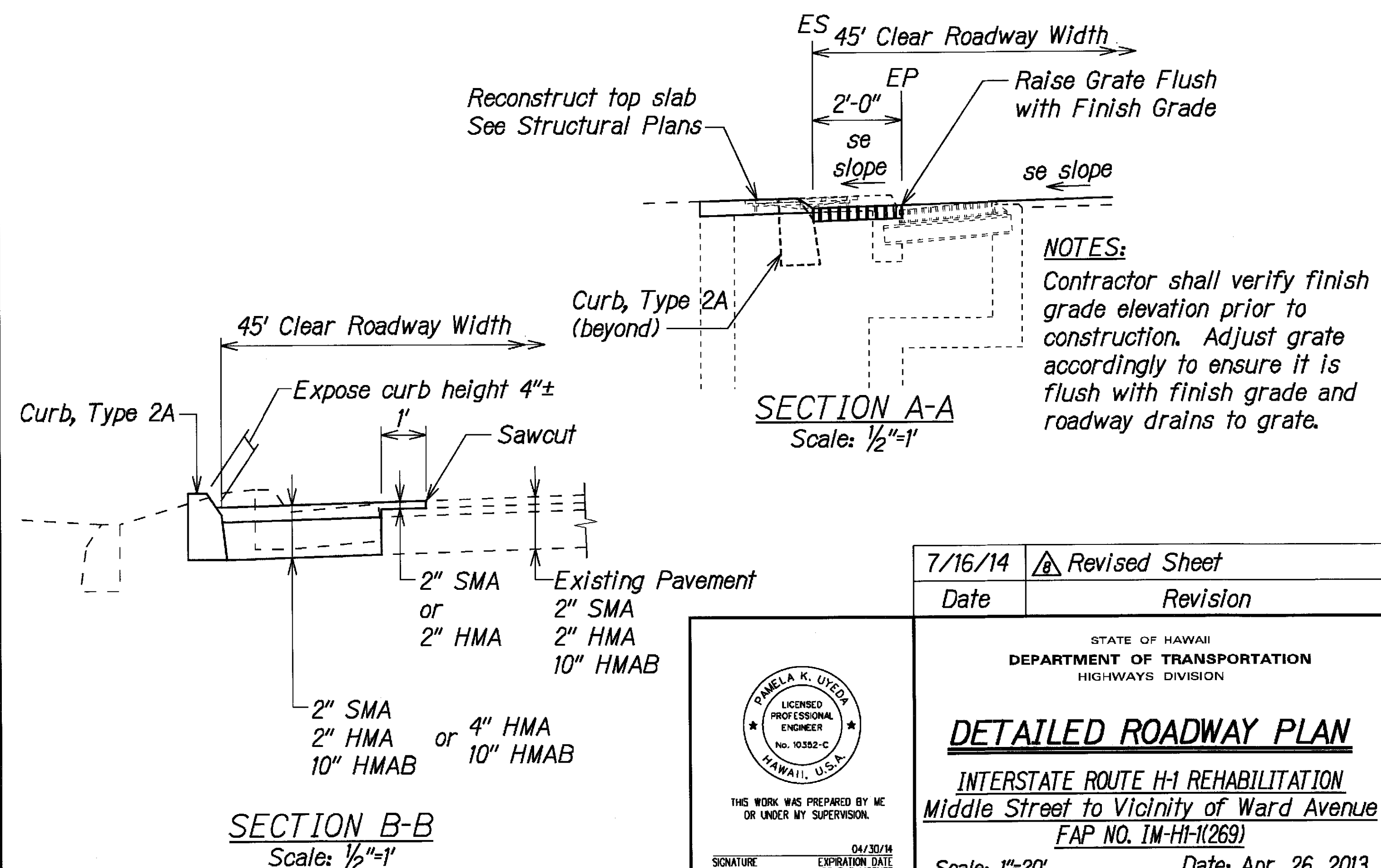
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(269)	2013	C.O. 48	382



WESTBOUND PUNCHBOWL STREET ON-RAMP
Scale: 1"=20'

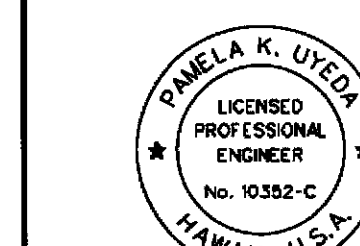


GDI @ STA 148+00 LT. DETAIL
Scale: 1/2"=1'



NOTES:
Contractor shall verify finish grade elevation prior to construction. Adjust grate accordingly to ensure it is flush with finish grade and roadway drains to grate.

7/16/14	 Revised Sheet
Date	Revision



THIS WORK WAS PREPARED BY M
OR UNDER MY SUPERVISION.

04/30

SIGNATURE EXPIRATION DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETAILED ROADWAY PLAN

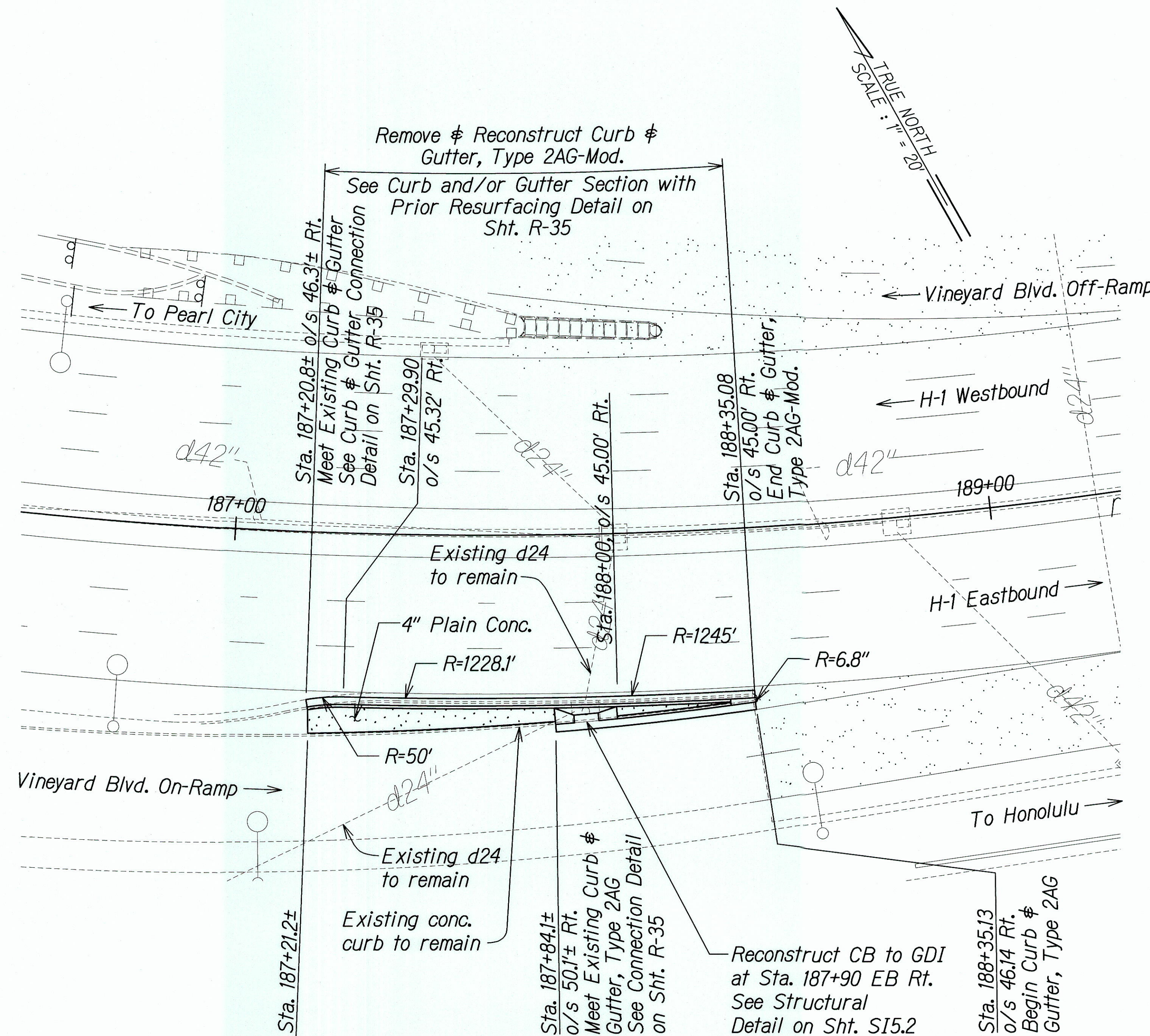
INTERSTATE ROUTE H-1 REHABILITATION
Middle Street to Vicinity of Ward Avenue
FAP NO. IM-HI-1(269)

Scale: 1"=20' Date: Apr. 26, 2013

SHEET No. *R-29* OF *43* SHEETS

164591 IDIQ PAVMT PREVENTIVE MAINTENANCE/HI MIDDLE TO WARD/CADD/SHEETS/02 ROAD/RAMP DET_03A.dgn

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1M-HI-1(269)	2013	49	382



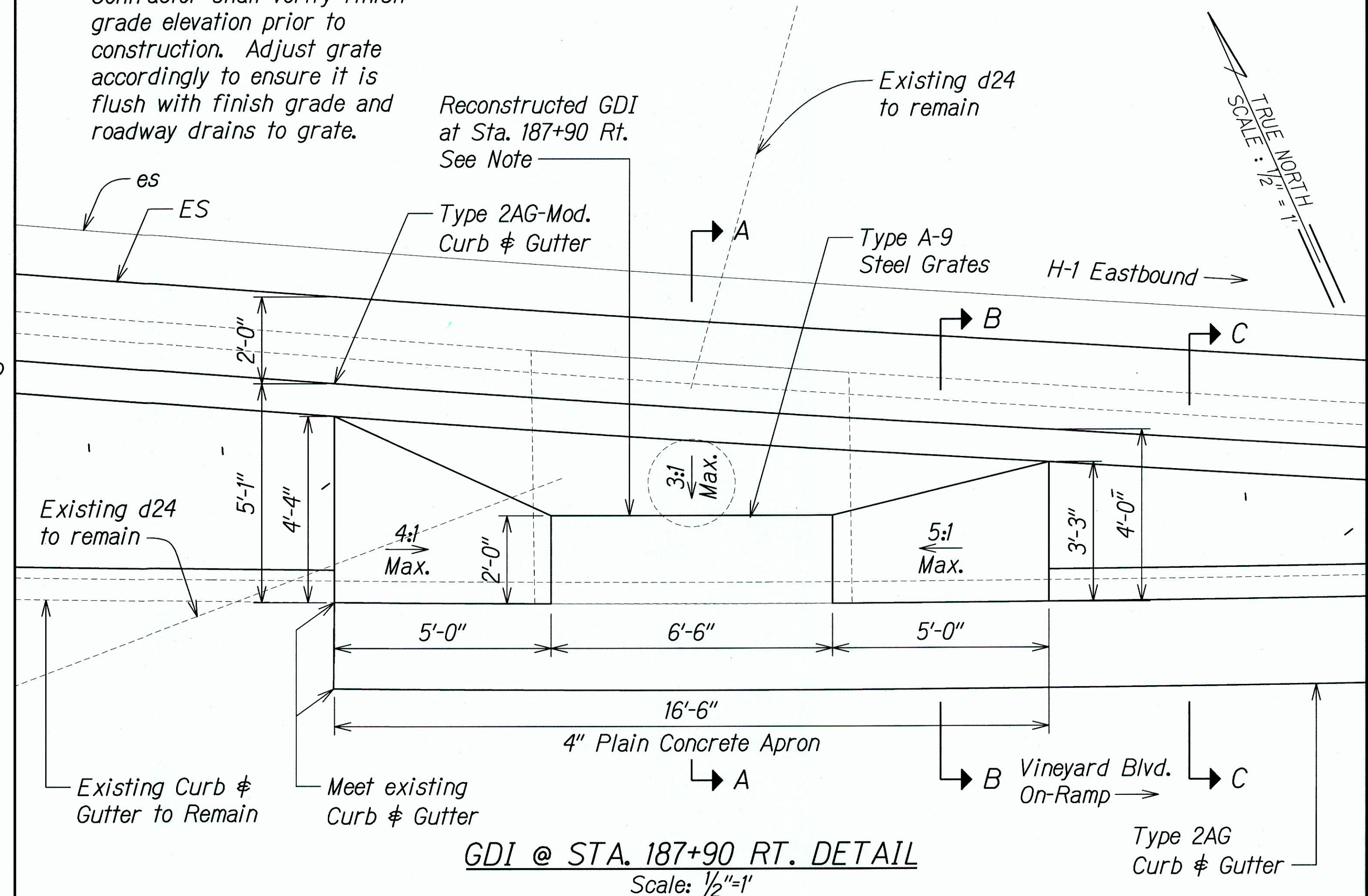
EASTBOUND VINEYARD BLVD. ON-RAMP
Scale: 1"=20'

Reconstruction of the Curb & Gutter began at Sta. 187+84.1 o/s 45.00' and ended at Sta. 188+35.08 o/s 45.00'. (See RFI 57A for more info)

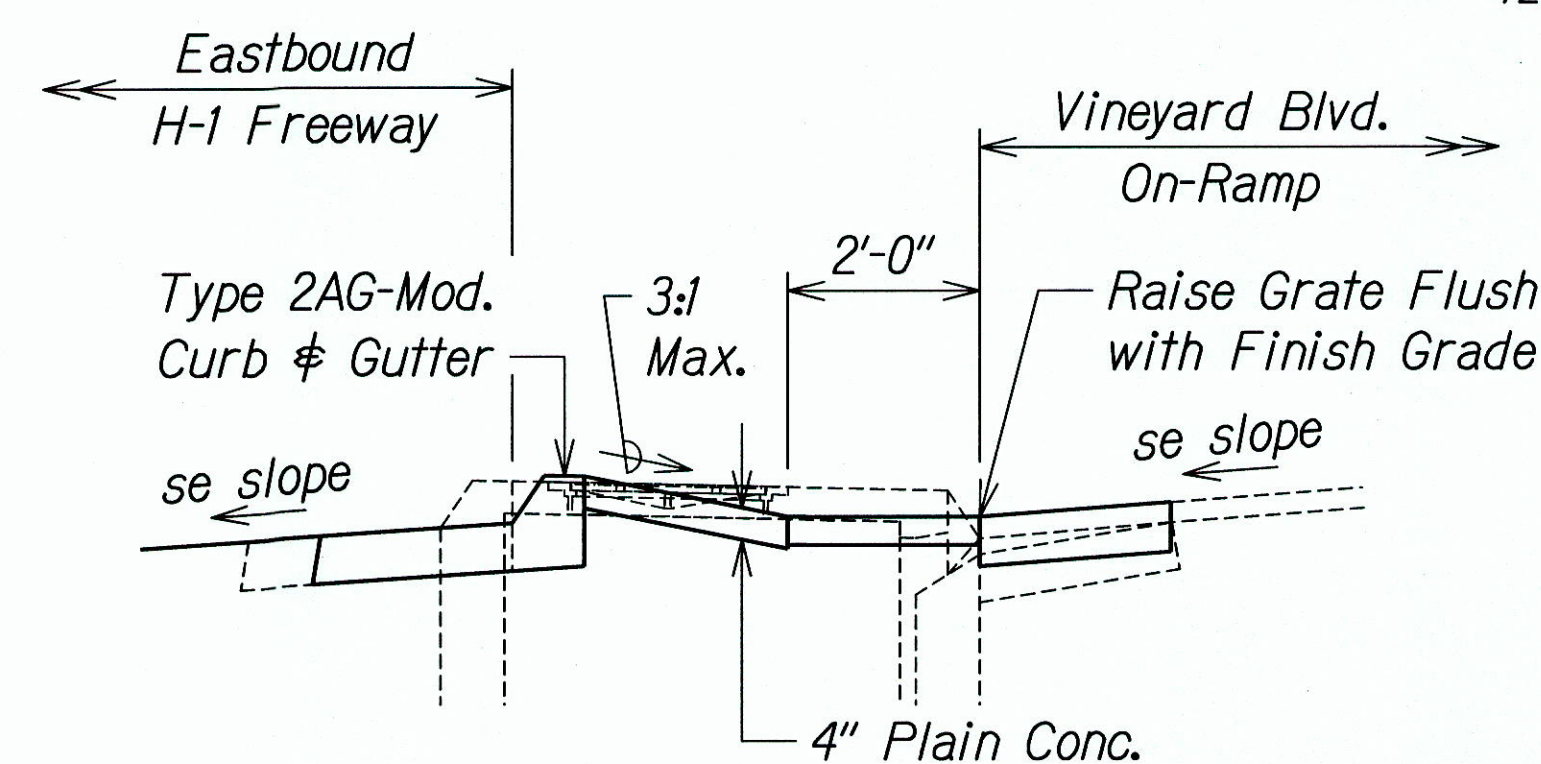
NOTES:

Contractor shall verify finish grade elevation prior to construction. Adjust grate accordingly to ensure it is flush with finish grade and roadway drains to grate.

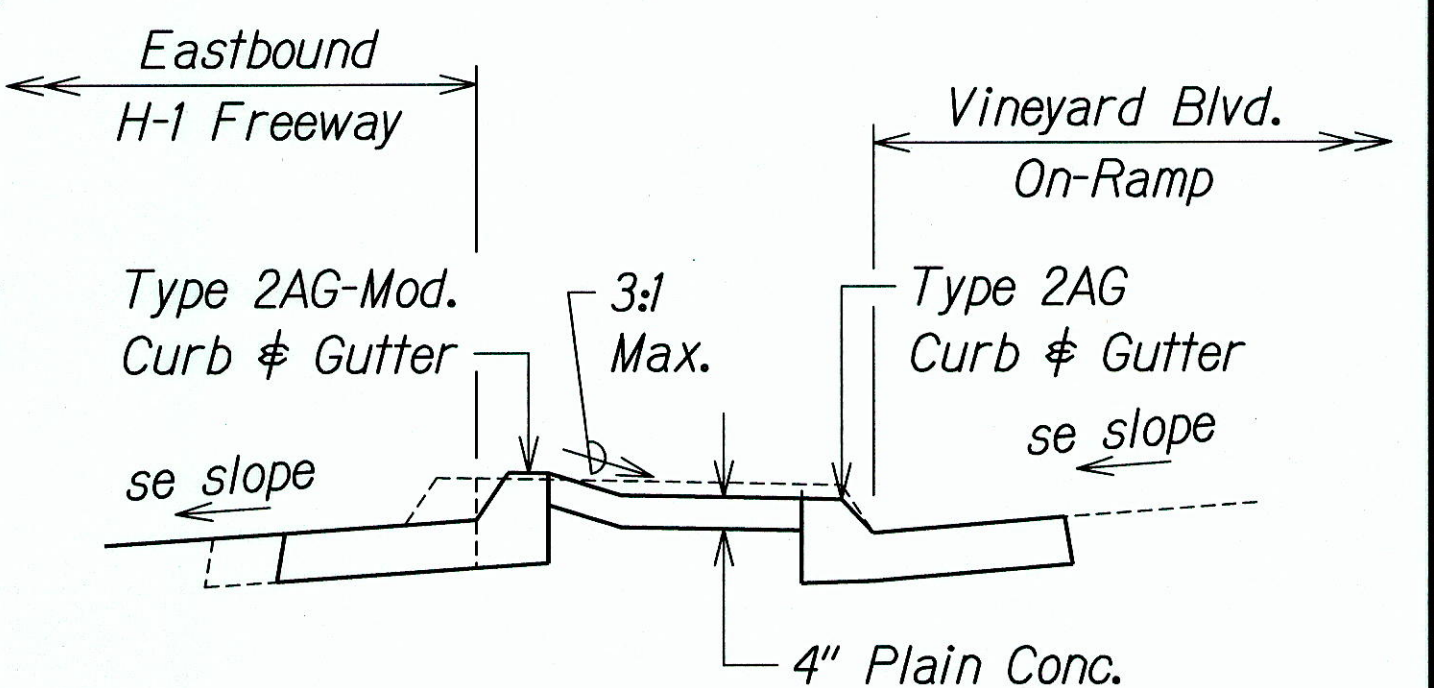
Reconstructed GDI at Sta. 187+90 Rt. See Note



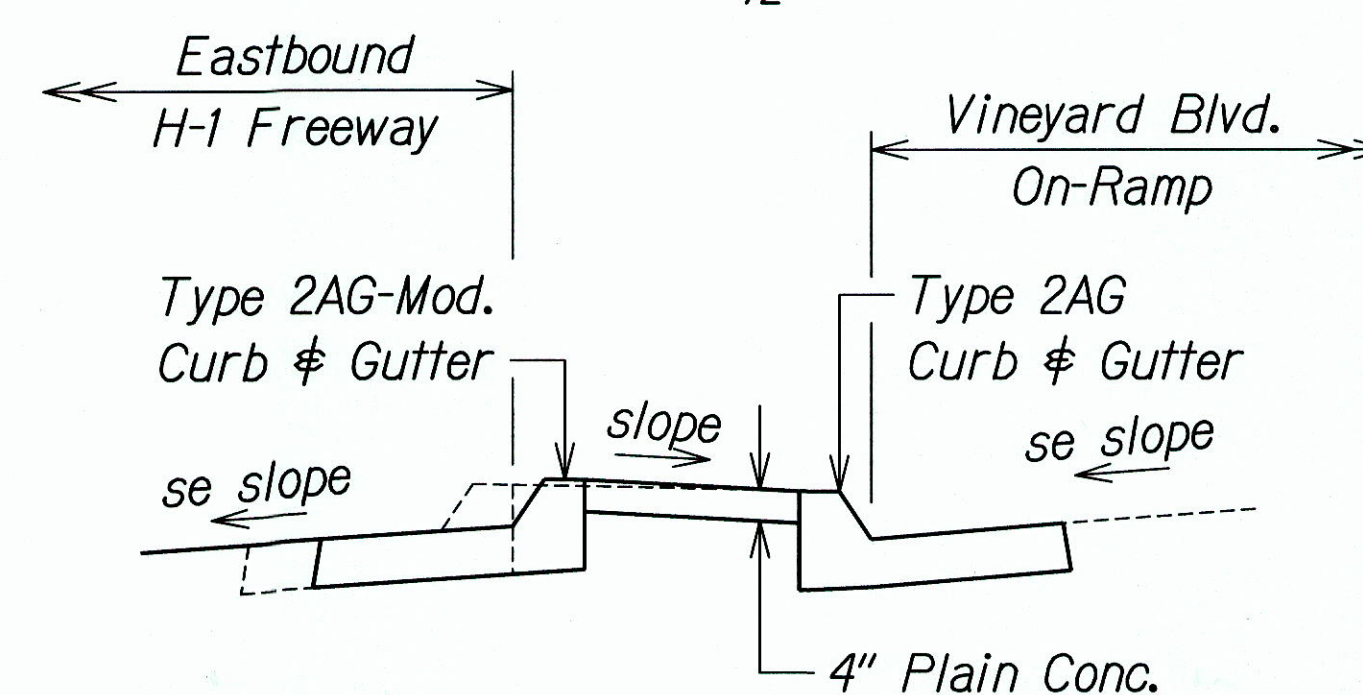
GDI @ STA. 187+90 RT. DETAIL
Scale: 1/2"=1'



SECTION A-A
Scale: 1/2"=1'



SECTION B-B
Scale: 1/2"=1'



SECTION C-C
Scale: 1/2"=1'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETAILED ROADWAY PLAN

INTERSTATE ROUTE H-1 REHABILITATION
Middle Street to Vicinity of Ward Avenue
FAP NO. 1M-HI-1(269)

Scale: 1"=20' Date: Apr. 26, 2013

SHEET No. R-30 OF 43 SHEETS

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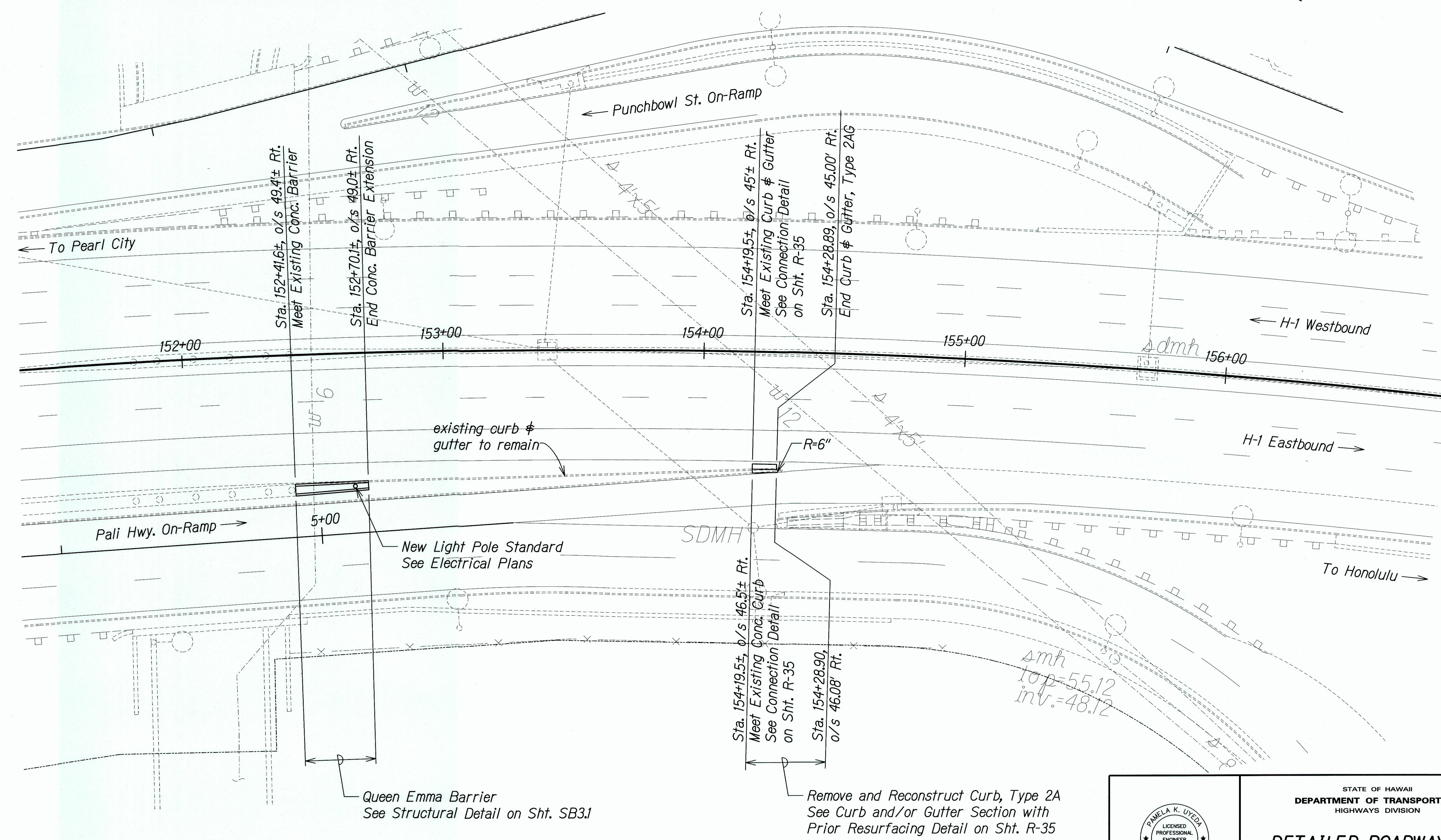
04/30/14
EXPIRATION DATE OF THE LICENSE

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1M-HI-1(269)	2013	50	382

Existing Curb & Gutter were Demolished and Replaced with AC Pavement and Rounded off at Sta. 154+10.39 to ensure 45' o/s. (Per RFI 071)

TRUE NORTH
SCALE: 1" = 20'



EASTBOUND PALI HWY ON-RAMP
Scale: 1"=20'

ORIGINAL PLAN	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	

T:\16459A IDIQ PAVMT PREVENTIVE MAINTENANCE\H1\MIDDLE TO WARD\CADD\SHEETS\02 ROAD\RAMP\DET_04.dgn

PAMELA K. UYEDA
LICENSED PROFESSIONAL ENGINEER
No. 10352-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Signature: *[Signature]* Date: 04/30/14
EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

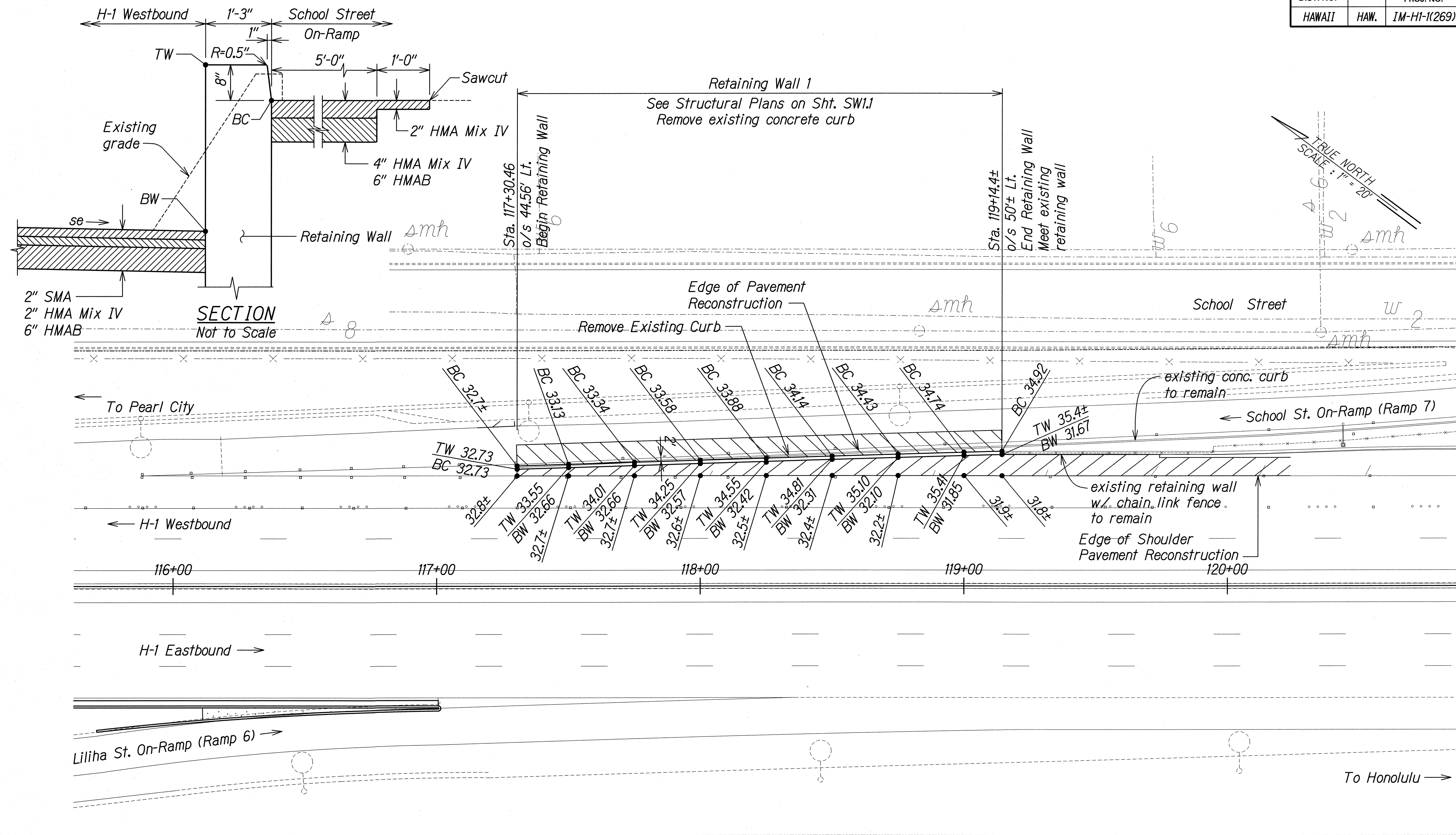
DETAILED ROADWAY PLAN

INTERSTATE ROUTE H-1 REHABILITATION
Middle Street to Vicinity of Ward Avenue
FAP NO. 1M-HI-1(269)

Scale: 1"=20' Date: Apr. 26, 2013

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(269)	2013	51	382



WESTBOUND SCHOOL STREET ON-RAMP
Scale: 1"=20'

ORIGINAL PLAN	DATE
NOTED BY	
CHECKED BY	
DATE	

T:\16459A\1010 PAVMT PREVENTIVE MAINTENANCE\HI MIDDLE TO WARD\CADD\SHEETS\02 ROAD\RAMP_DET_06.dgn

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SIGNATURE: *P. Uyeda* EXPIRATION DATE OF THE LICENSE: 04/30/14

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETAILED ROADWAY PLAN

INTERSTATE ROUTE H-1 REHABILITATION
Middle Street to Vicinity of Ward Avenue
FAP NO. IM-HI-1(269)

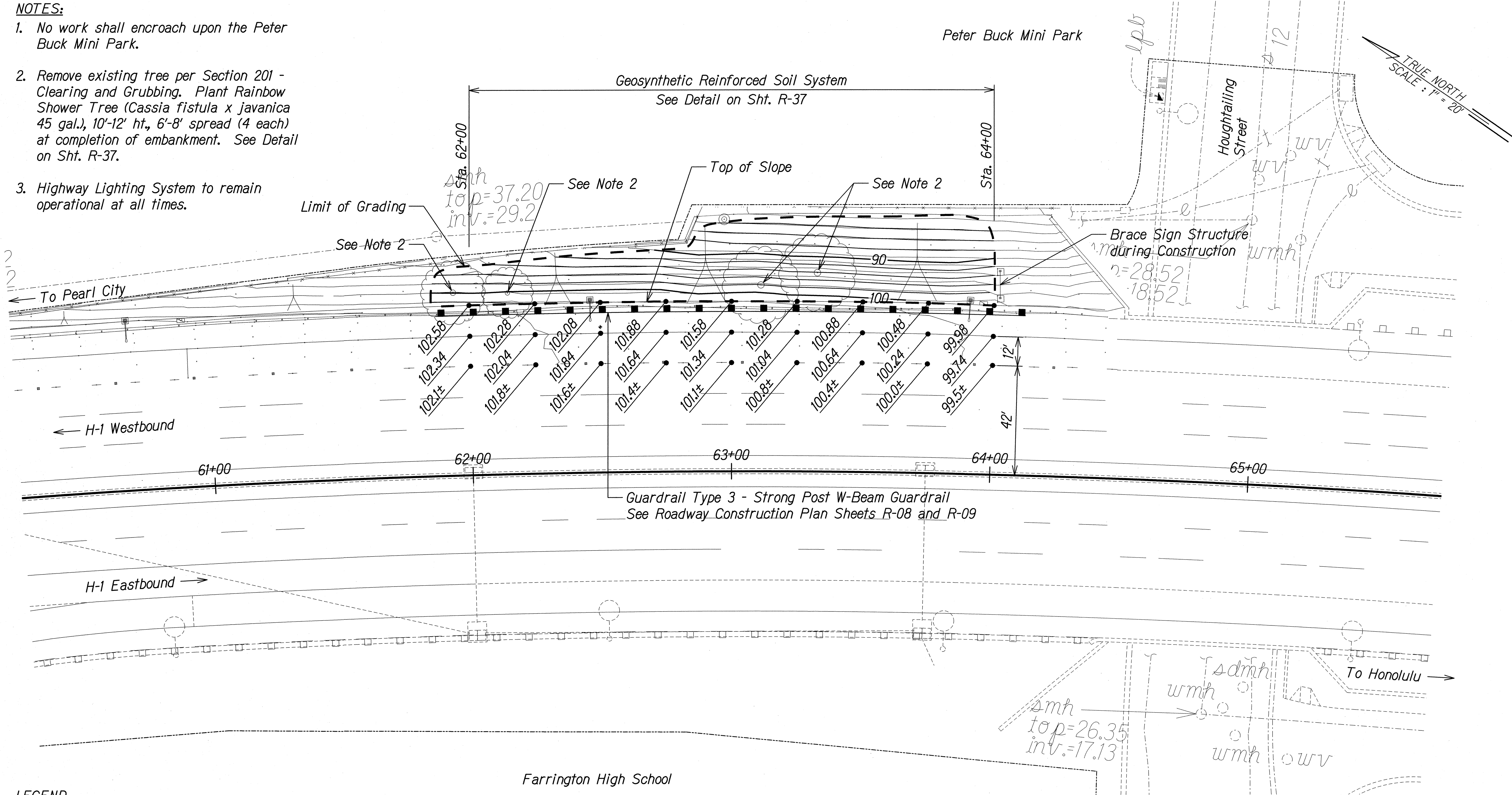
Scale: 1"=20' Date: Apr. 26, 2013

SHEET No. R-32 OF 43 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(269)	2013	52	382

NOTES:

- No work shall encroach upon the Peter Buck Mini Park.
- Remove existing tree per Section 201 - Clearing and Grubbing. Plant Rainbow Shower Tree (*Cassia fistula* x *javanica* 45 gal.), 10'-12' ht., 6'-8' spread (4 each) at completion of embankment. See Detail on Sht. R-37.
- Highway Lighting System to remain operational at all times.



LEGEND:

- Pavement Finish Grade
- Limit of Grading
- Finish Contour

GEOSYNTHETIC REINFORCED SOIL SYSTEM
Scale: 1"=20'

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SIGNATURE: *[Signature]* EXPIRATION DATE OF THE LICENSE: 04/30/14

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETAILED ROADWAY PLAN

INTERSTATE ROUTE H-1 REHABILITATION
Middle Street to Vicinity of Ward Avenue
FAP NO. IM-HI-1(269)

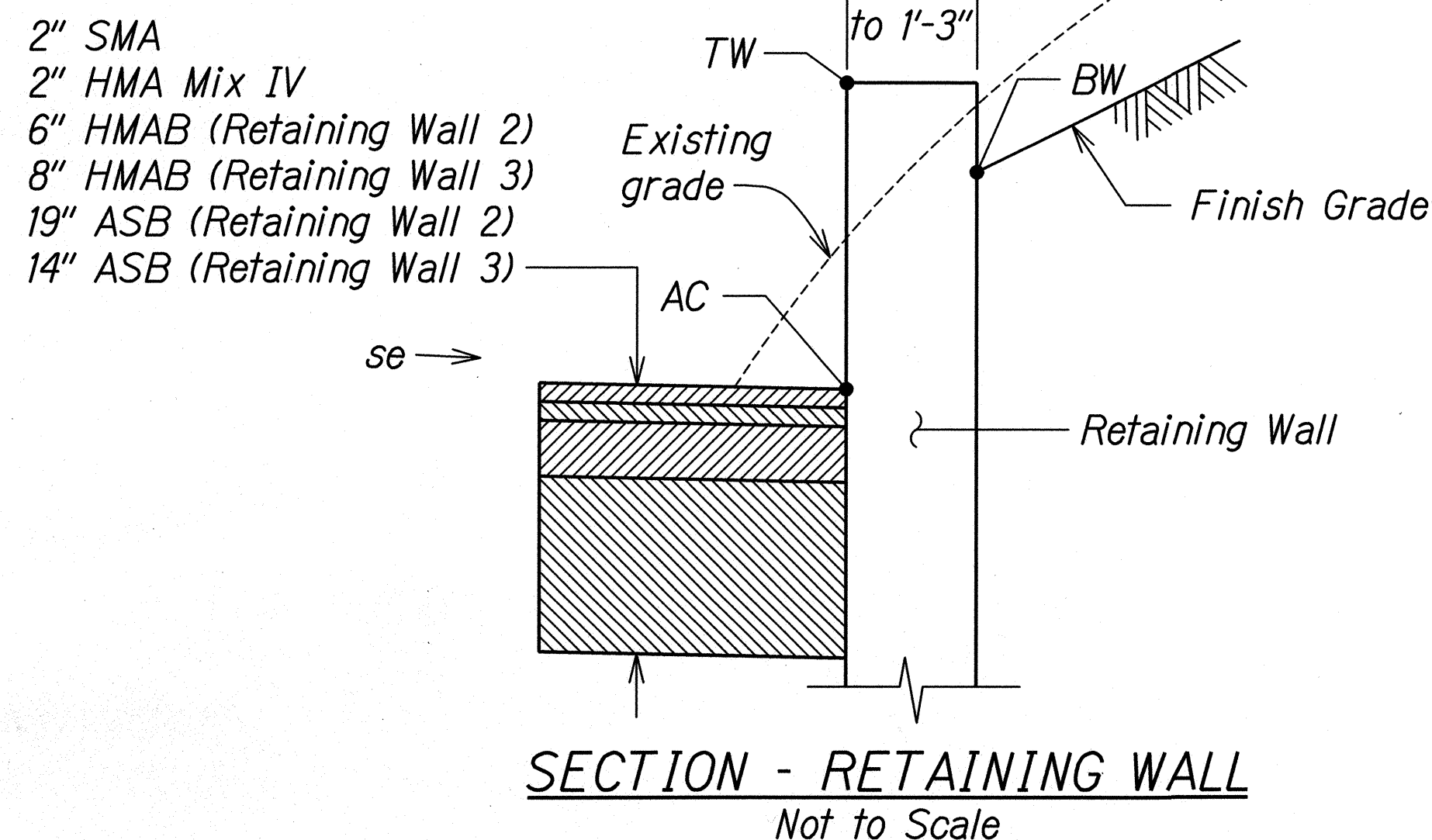
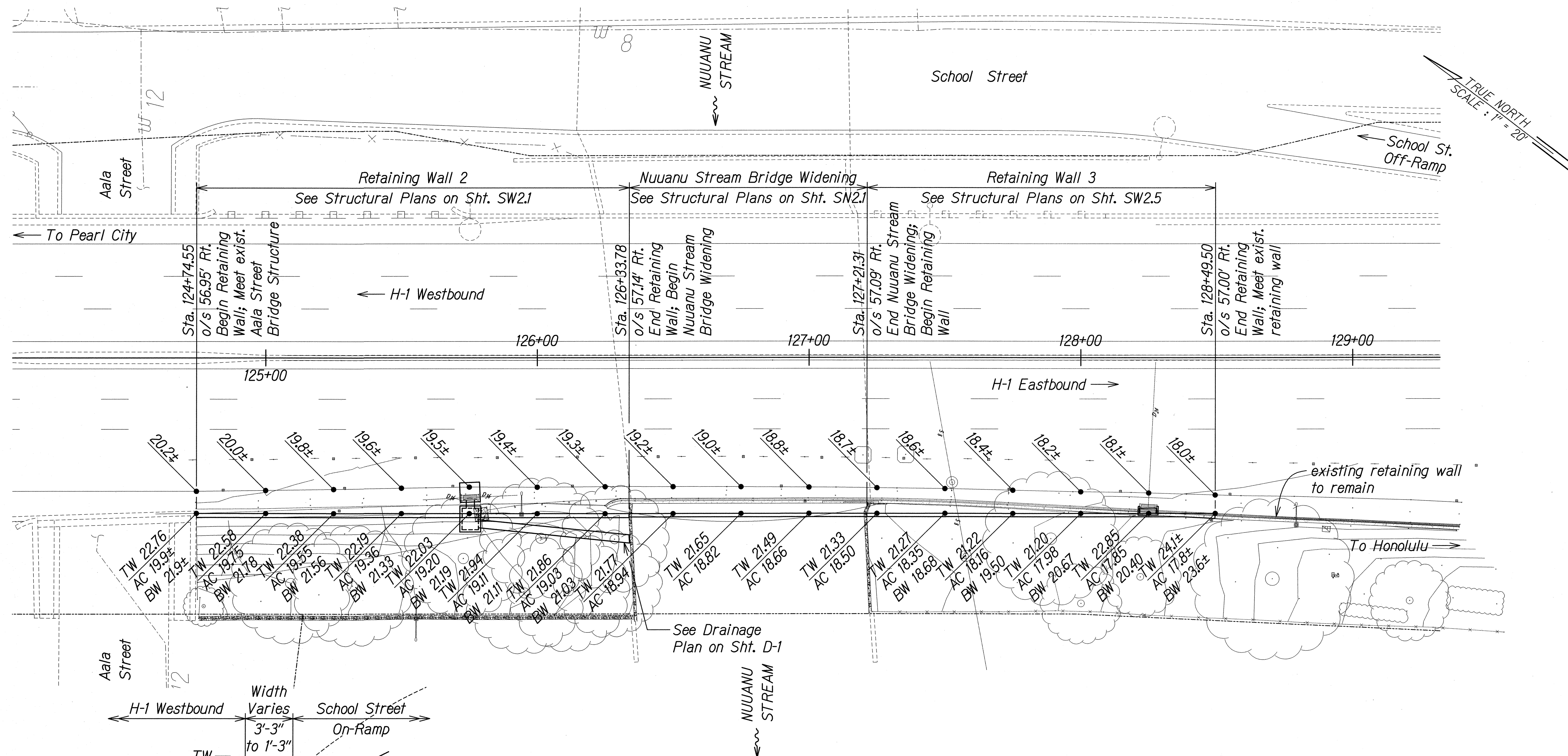
Scale: 1"=20' Date: Apr. 26, 2013

SHEET No. R-33 OF 43 SHEETS

GENERAL PLAN	DATE
NOTED BY	DESIGNED BY
CHECKED BY	QUANTITIES BY

T:\164659A\1010 PAVT PREVENTIVE MAINTENANCE\HI MIDDLE TO WARD\CADD\SHEETS\02 ROAD/RAMP_DET_05.dgn

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(269)	2013	53	382



EASTBOUND NUUANU STREAM BRIDGE

Scale: 1"=20'

SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	

T:\16459A IDIQ PAVIT PREVENTIVE MAINTENANCE\HI MIDDLE TO WARD\CADD\SHEETS\02 ROAD/RAMP_DET_07.dgn

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SIGNATURE: *[Signature]* EXPIRATION DATE OF THE LICENSE: 04/30/14

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

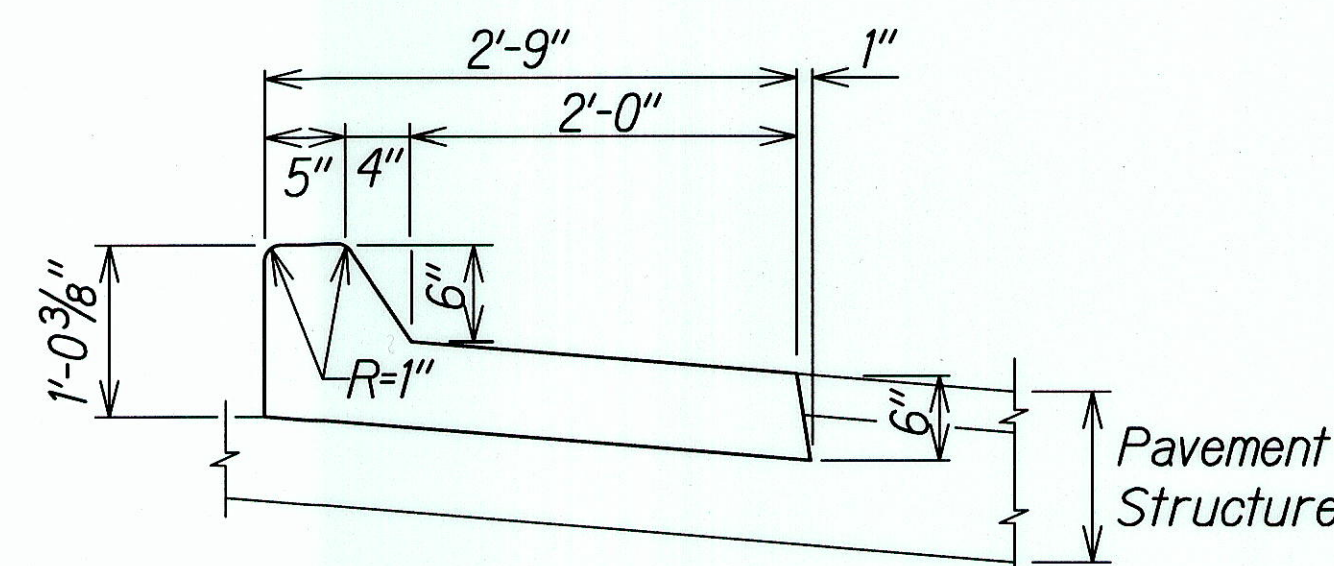
DETAILED ROADWAY PLAN

INTERSTATE ROUTE H-1 REHABILITATION
Middle Street to Vicinity of Ward Avenue
FAP NO. IM-HI-1(269)

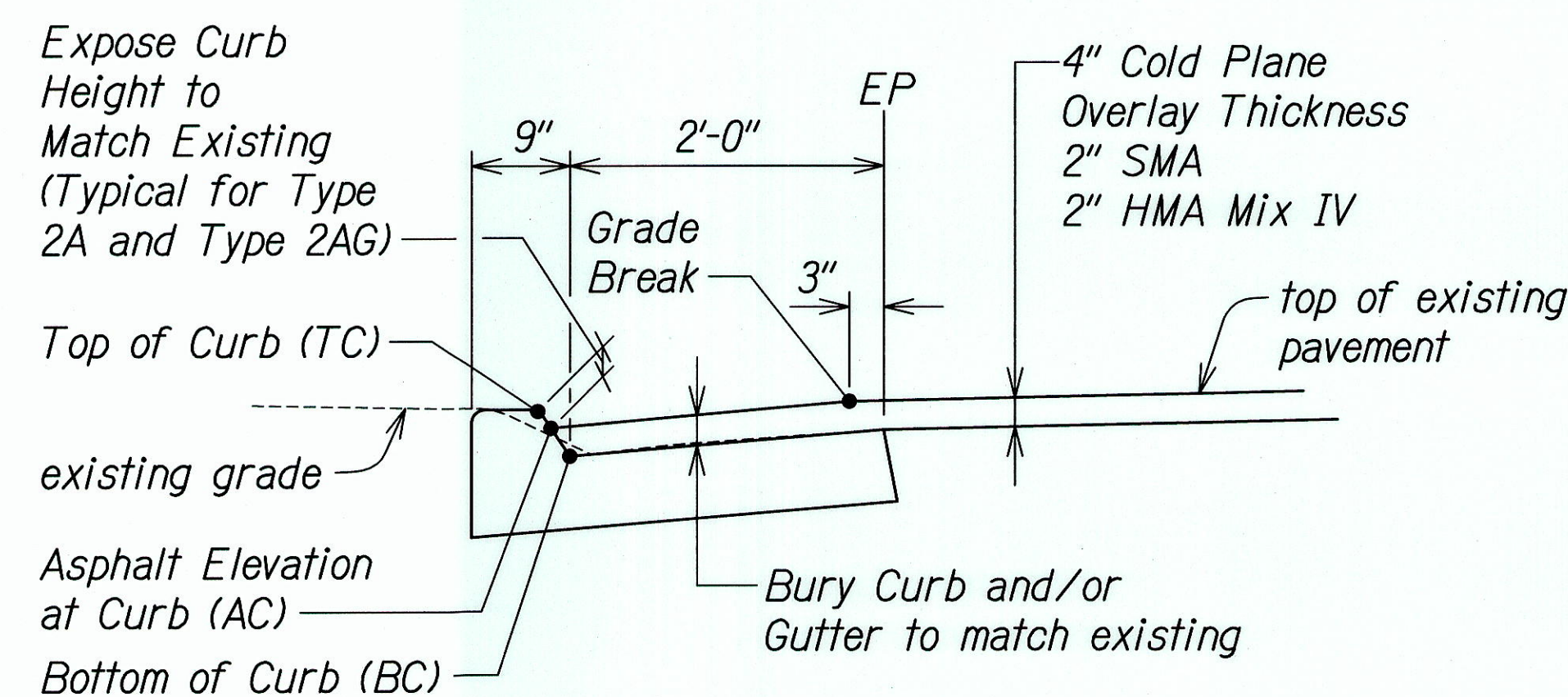
Scale: 1"=20' Date: Apr. 26, 2013

SHEET No. R-34 OF 43 SHEETS

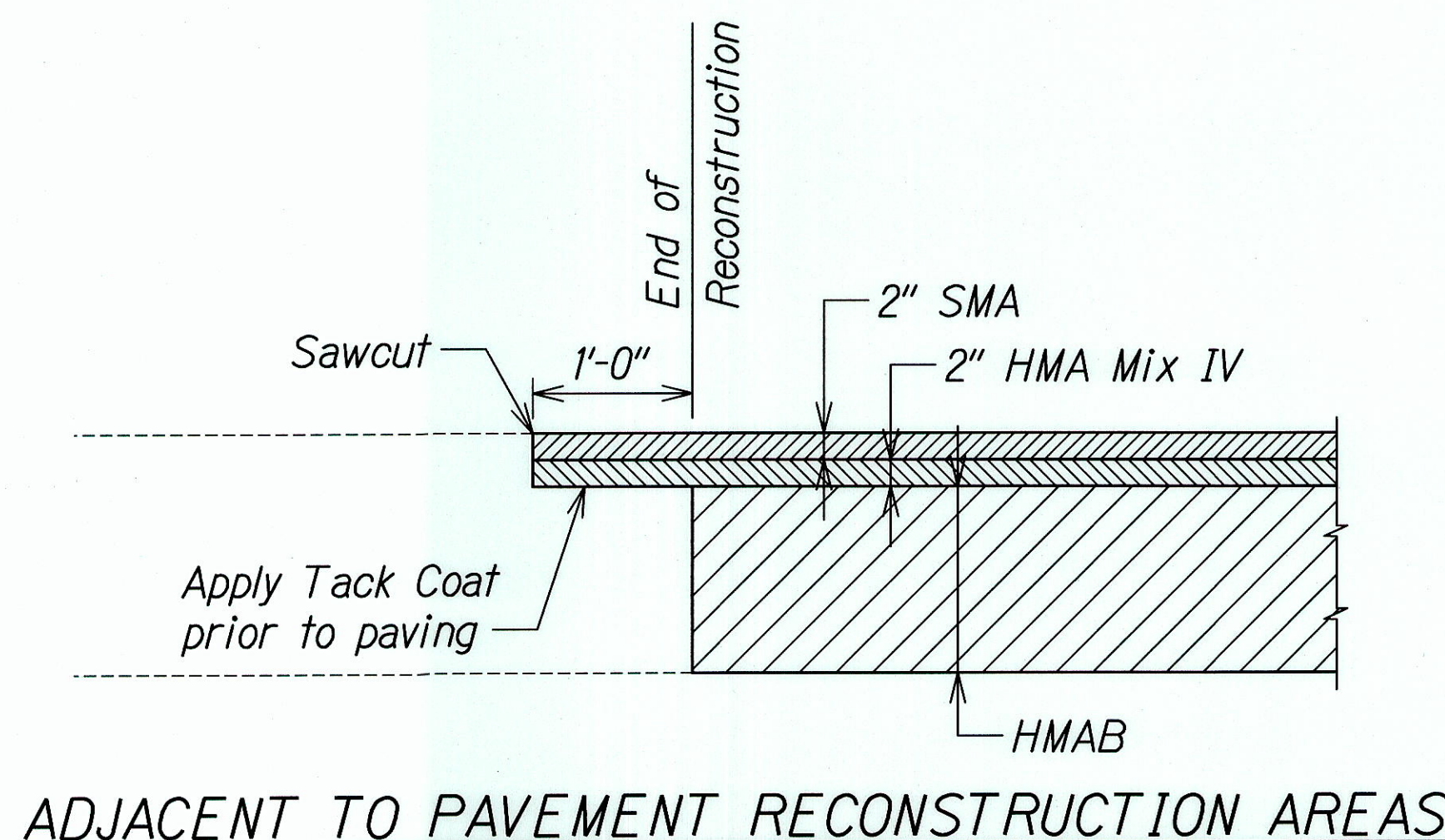
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1M-H1-1(269)	2013	54	382



CURB & GUTTER, TYPE 2AG-MOD
Scale: NTS

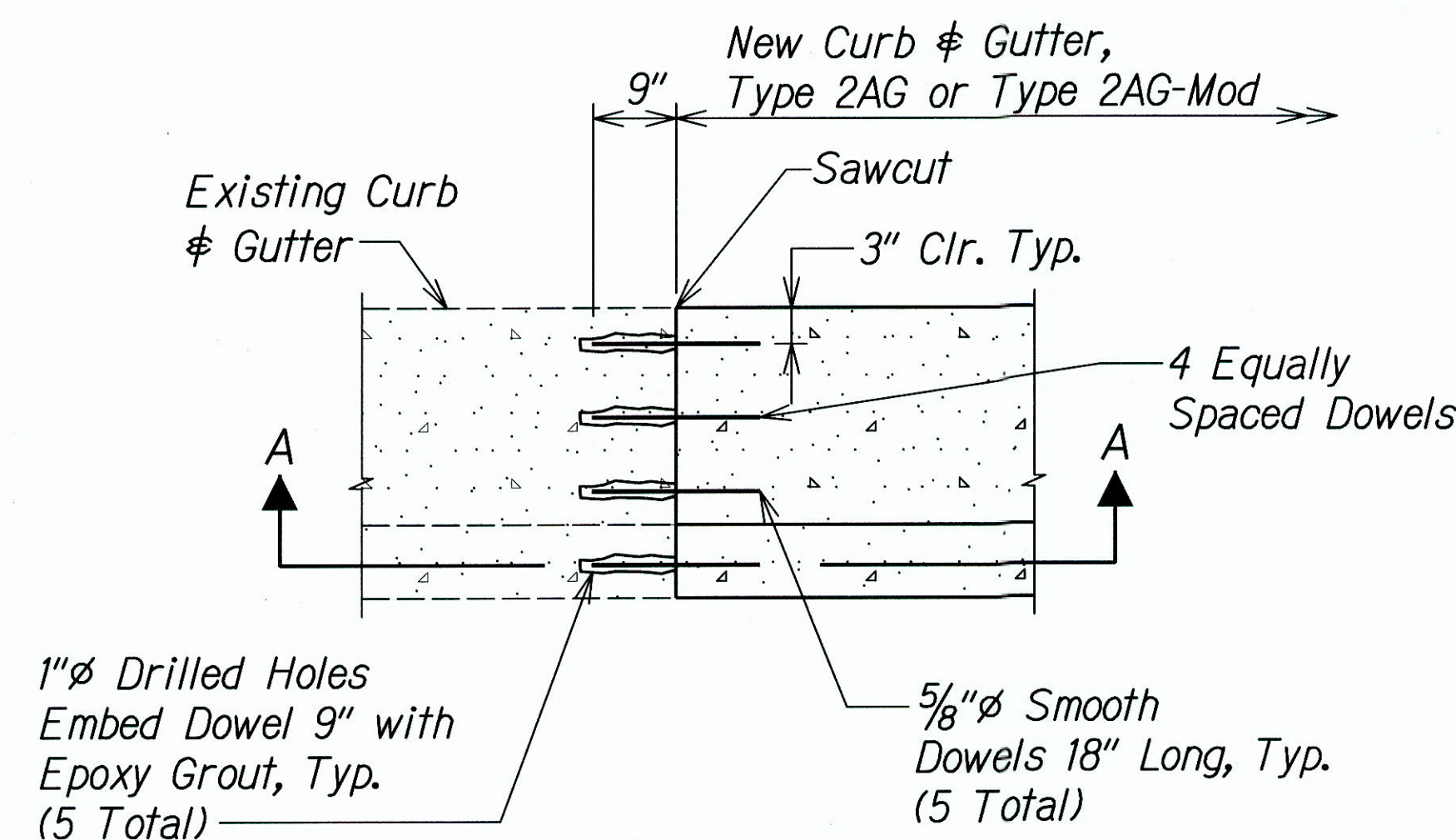


CURB AND/OR GUTTER SECTION WITH PRIOR RESURFACING
Scale: NTS

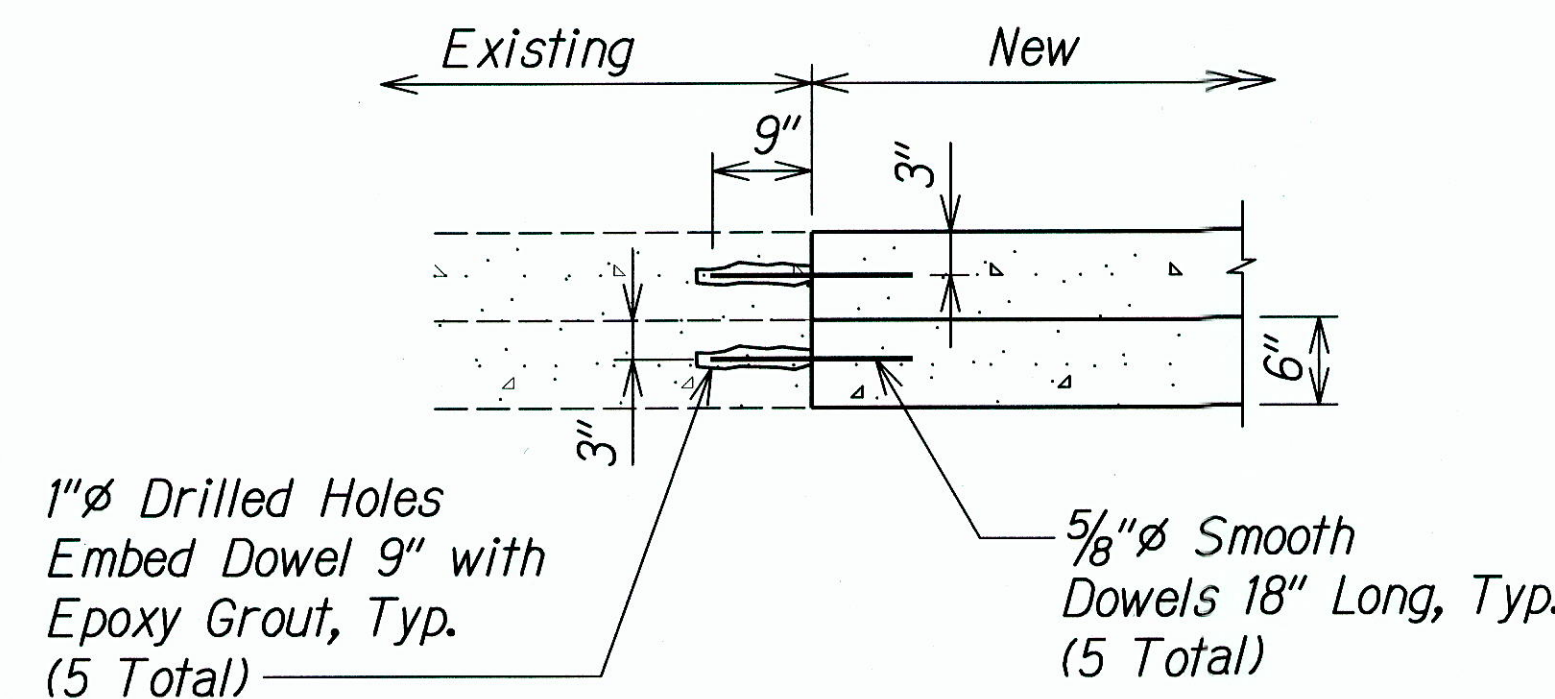


ADJACENT TO PAVEMENT RECONSTRUCTION AREAS

SMOOTH RIDING CONNECTION DETAIL
Scale: NTS



PLAN
Scale: NTS

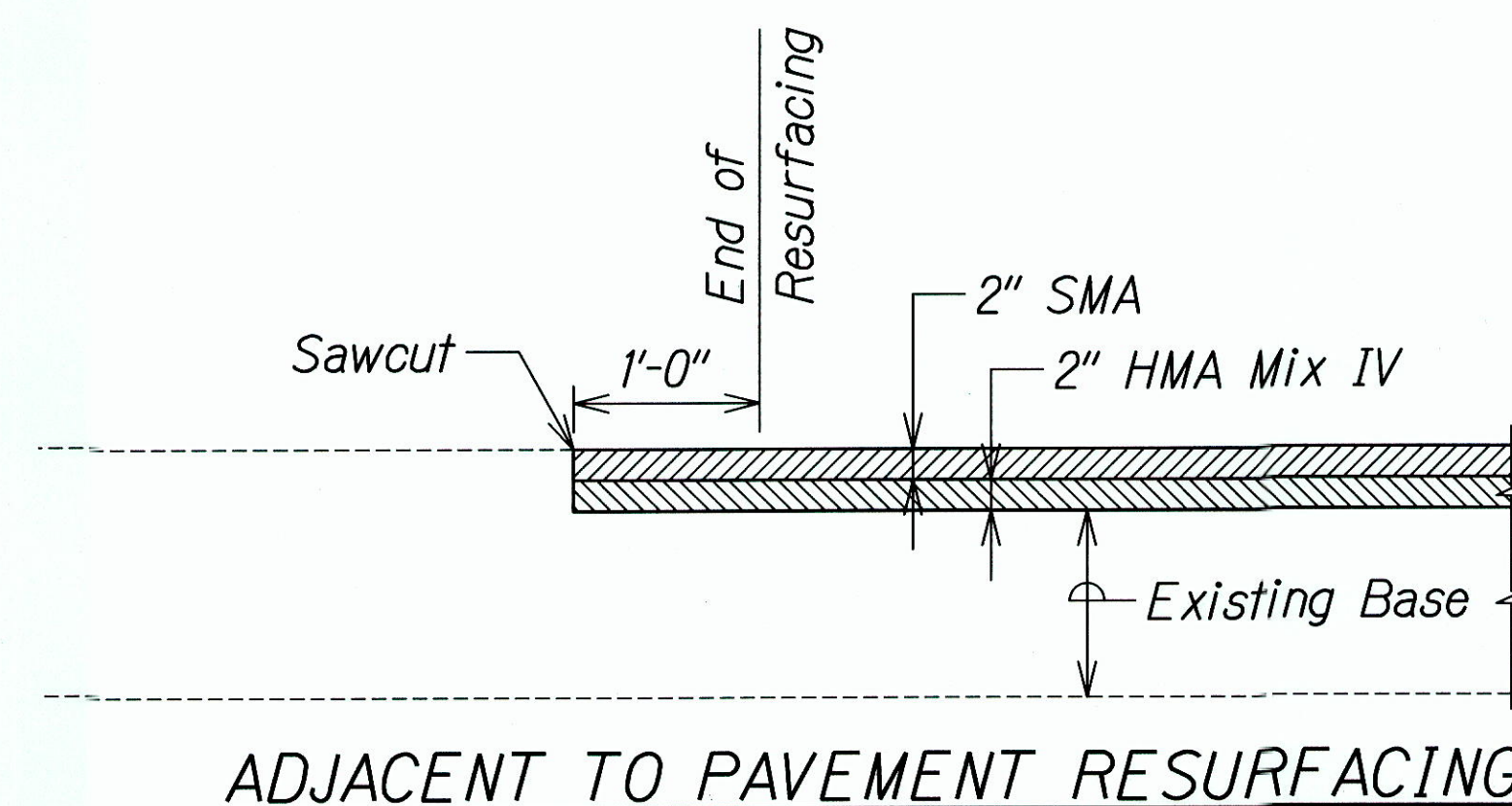


SECTION A-A
Scale: NTS

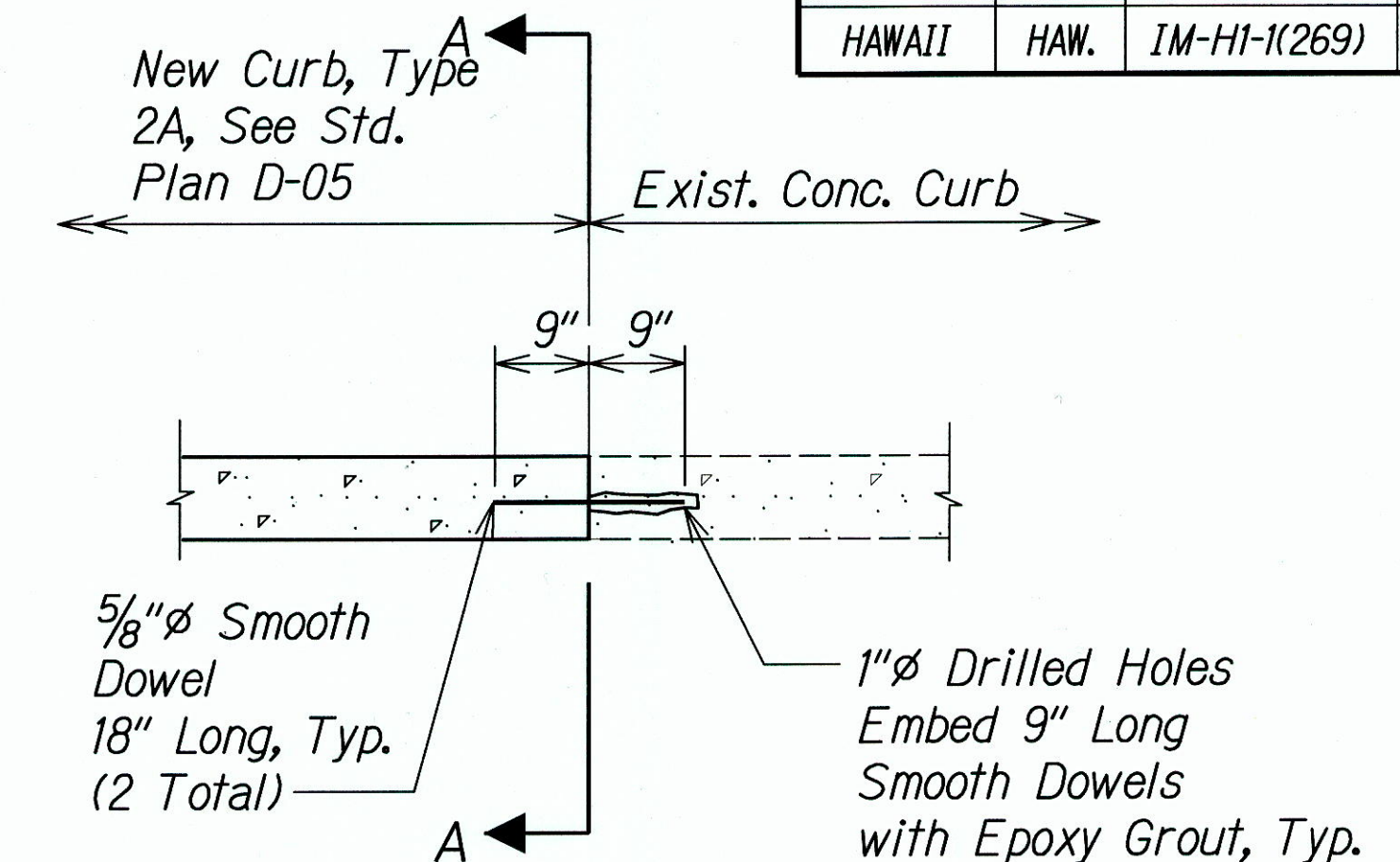
NOTE:

1. Dowels shall be positioned in place parallel to the Gutter surface prior to pouring, and the ends of the dowels shall not deviate more than 0.04' from the parallel.

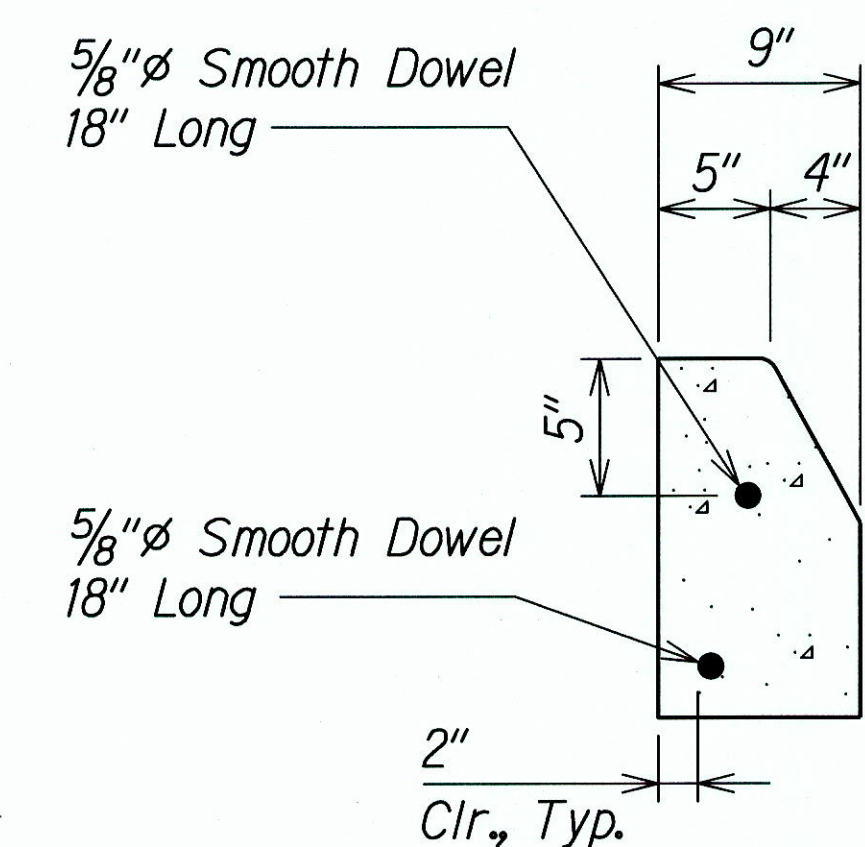
CURB & GUTTER CONNECTION DETAIL (CURB & GUTTER TYPE 2AG, 2AG-MOD)
Scale: NTS



ADJACENT TO PAVEMENT RESURFACING



PLAN
Scale: NTS



SECTION A-A
Scale: NTS

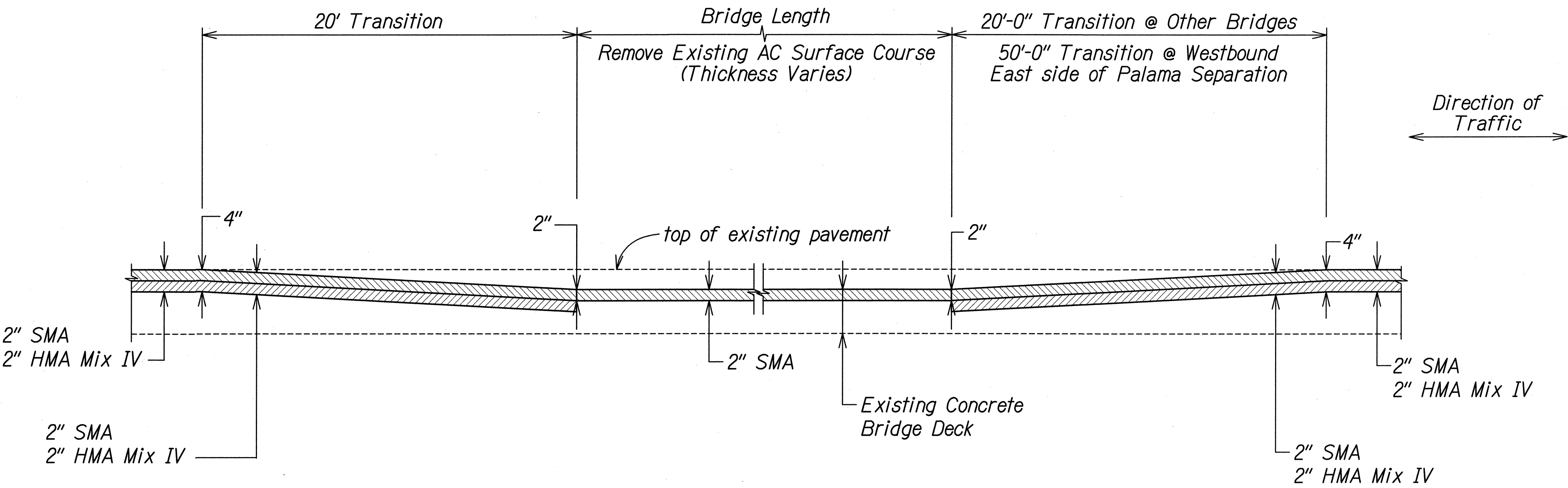
CURB CONNECTION DETAIL (CURB TYPE 2A)
Scale: NTS

CONNECTION DETAIL NOTES:

1. For Epoxy Grout, See Std. Specifications 712.04(B) Epoxy Grout.
2. Payment for all work associated with the connection details will not be paid separately and will be considered incidental to the appropriate curb or curb and gutter type.

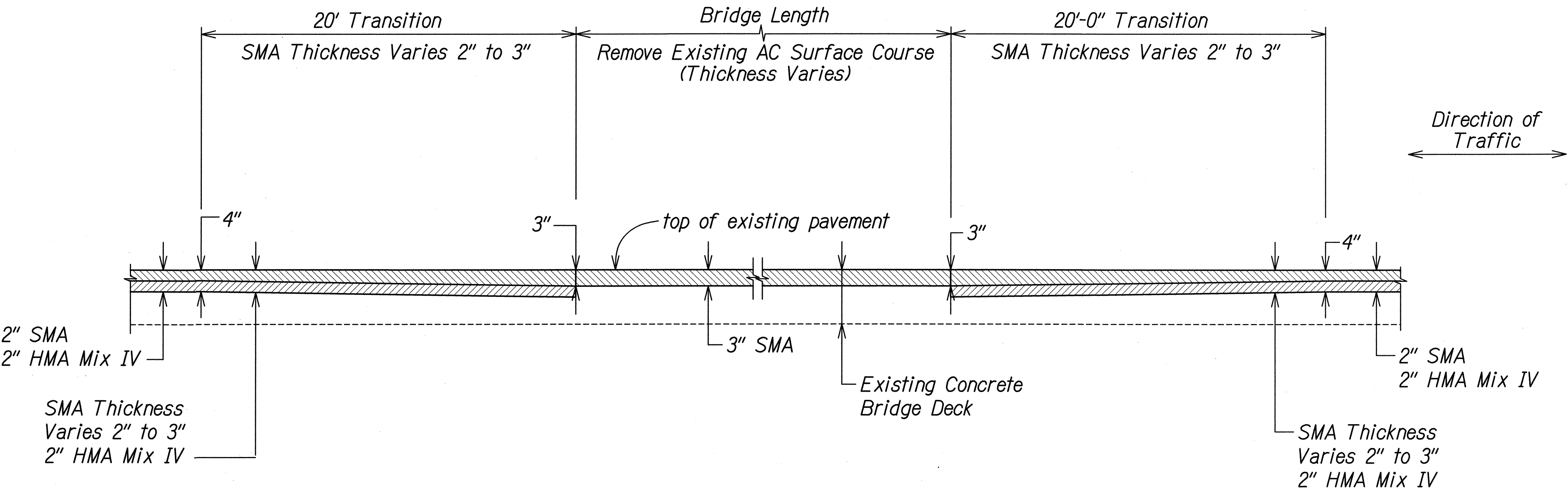
	STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION ROADWAY CONSTRUCTION DETAILS INTERSTATE ROUTE H-1 REHABILITATION Middle Street to Vicinity of Ward Avenue FAP NO. 1M-H1-1(269)
	Scale: NTS Date: Apr. 26, 2013

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(269)	2013	55	382



**TYPICAL TRANSITION DETAILS
AT BRIDGE STRUCTURES**

Scale: NTS



**TYPICAL TRANSITION DETAILS
AT KAPALAMA CANAL BRIDGE**

Scale: NTS

ORIGINAL PLAN	DATE
DRAWN BY	
TRACED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

T:\16459A IDIQ PAVT PREVENTIVE MAINTENANCE\HI MIDDLE TO WARD\CADD\SHEETS\02 ROAD\RDWY_DET_02.dgn

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OR UNDER MY SUPERVISION.

SIGNATURE: *P. Uyeda* EXPIRATION DATE: 04/30/14 OF THE LICENSE

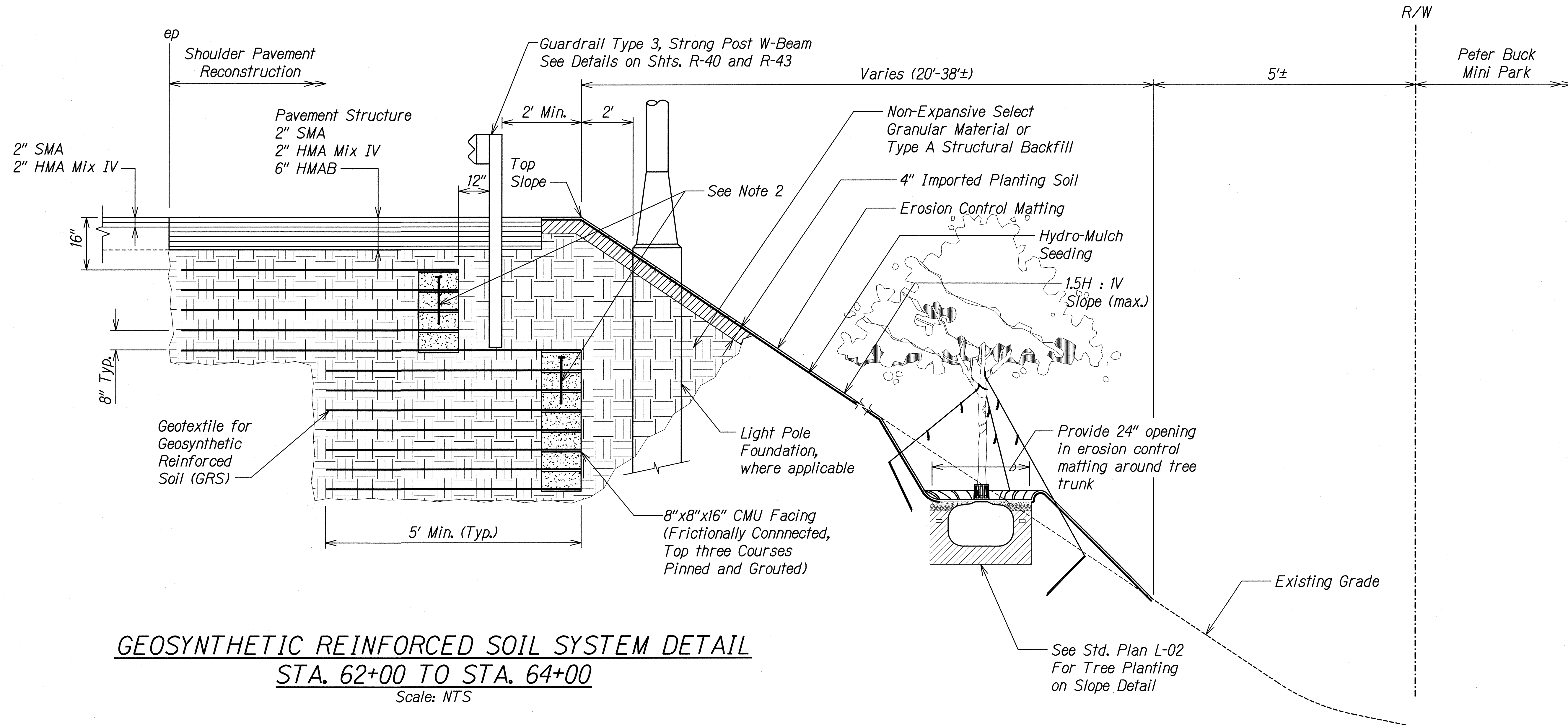
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**ROADWAY CONSTRUCTION
DETAILS**

INTERSTATE ROUTE H-1 REHABILITATION
Middle Street to Vicinity of Ward Avenue
FAP NO. IM-HI-1(269)

Scale: NTS Date: Apr. 26, 2013

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(269)	2013	56	382



GEOSYNTHETIC REINFORCED SOIL SYSTEM DETAIL
STA. 62+00 TO STA. 64+00
 Scale: NTS

NOTES:

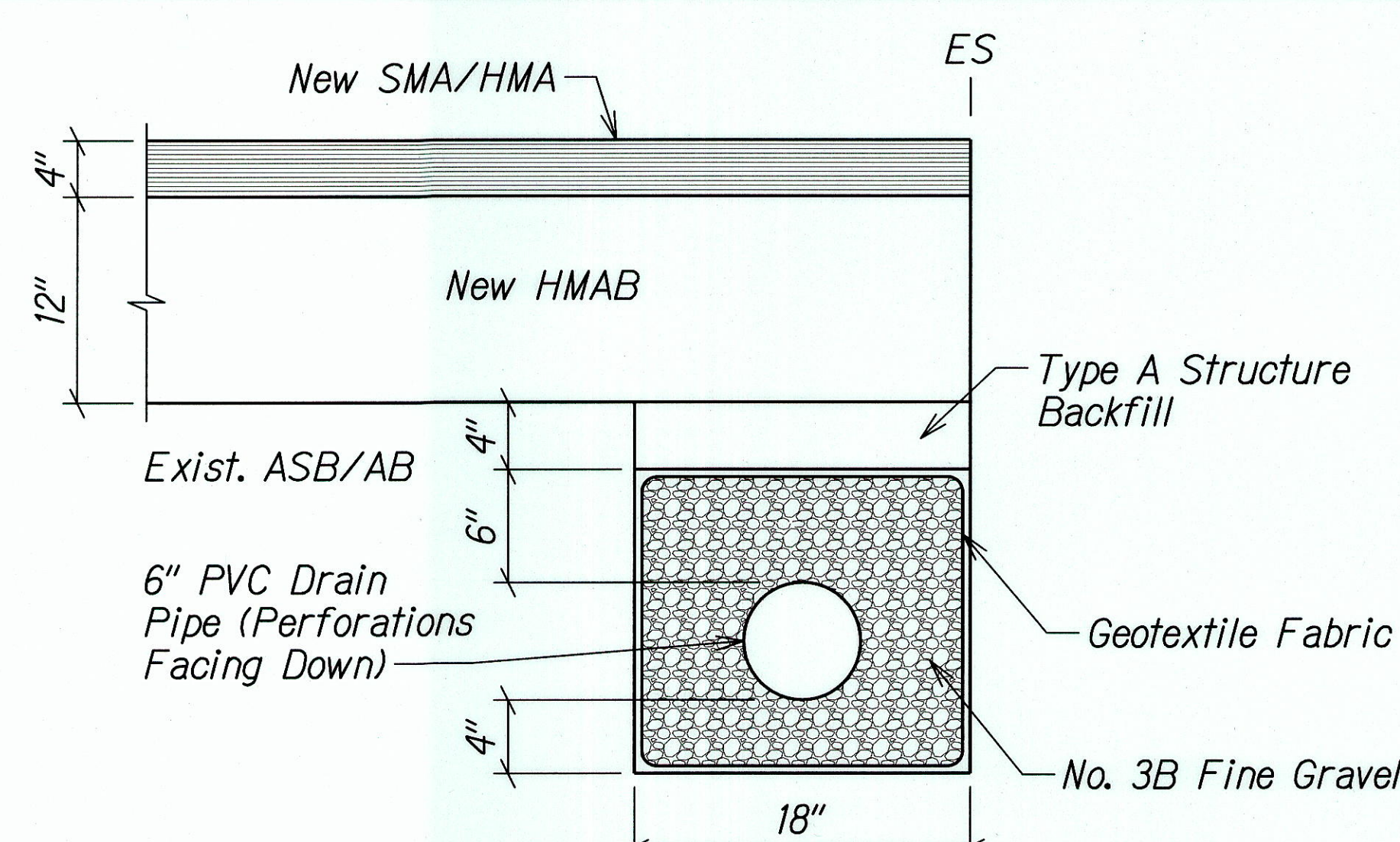
1. No work shall encroach upon the Peter Buck Mini Park.
2. Pin top three CMU blocks with 20-inch long #4 Epoxy Coated Rebar in each cell. Provide minimum 2" cover to surface of top CMU block. Grout all CMU cells.

ORIGINAL PLAN	DATE
DESIGNED BY	
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
DATE	

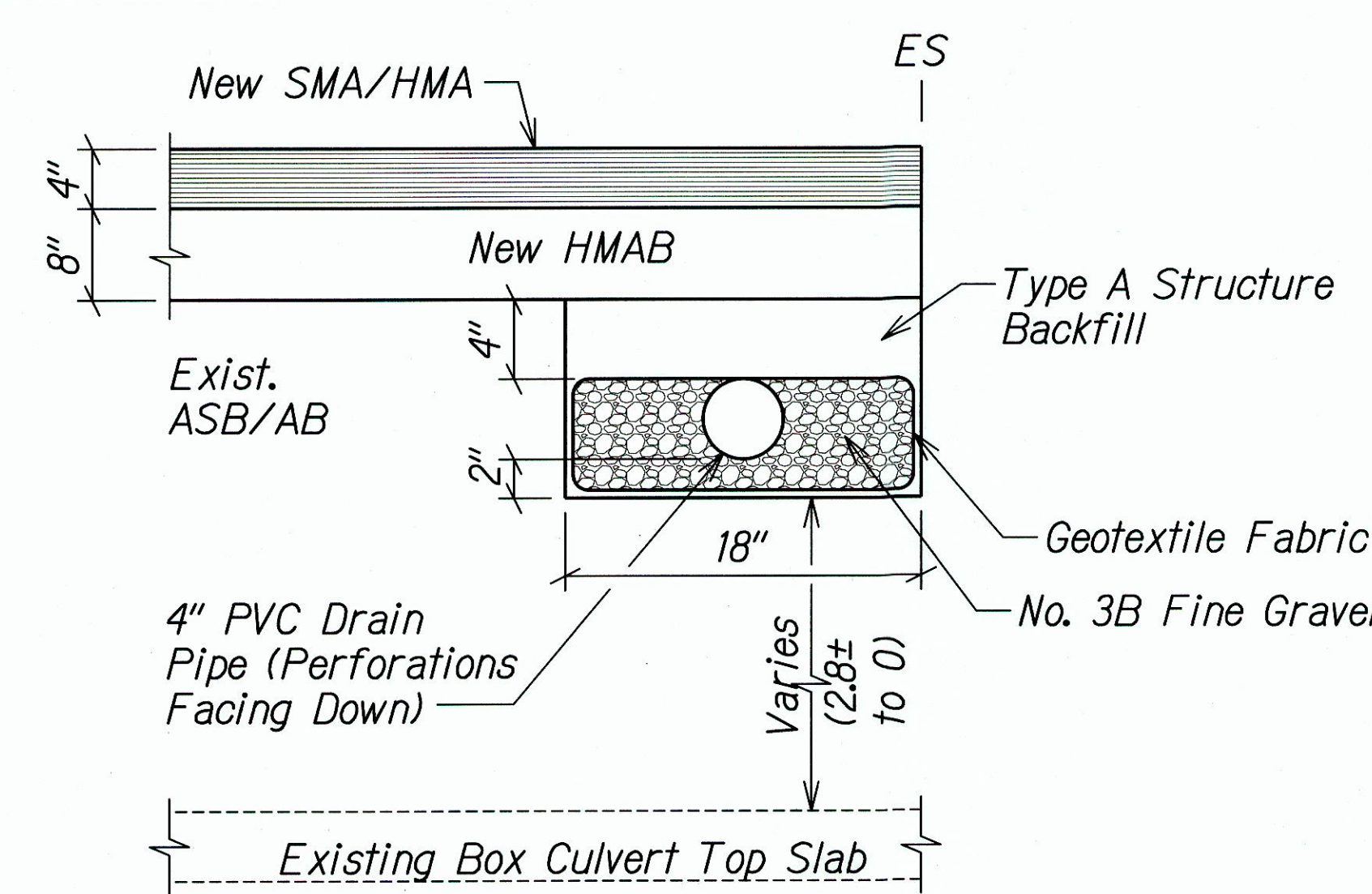
T-16459A IDIQ PAVMT PREVENTIVE MAINTENANCE/HI MIDDLE TO WARD/CADD/SHEETS/02 ROAD/DETAIL-01.dgn

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION ROADWAY CONSTRUCTION DETAILS INTERSTATE ROUTE H-1 REHABILITATION Middle Street to Vicinity of Ward Avenue FAP NO. 1M-HI-1(269) Scale: NTS Date: Apr. 26, 2013 SHEET No. R-37 OF 43 SHEETS		CLAYTON S. MINIRA LICENSED PROFESSIONAL ENGINEER No. 4178-C HAWAII, U.S.A. THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. Signature: <i>[Signature]</i> Date: 04/30/14 EXPIRATION DATE OF THE LICENSE	PAMELA K. UYEDA LICENSED PROFESSIONAL ENGINEER No. 10352-C HAWAII, U.S.A. THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. Signature: <i>[Signature]</i> Date: 04/30/14 EXPIRATION DATE OF THE LICENSE
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FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(269)	2013	57	382



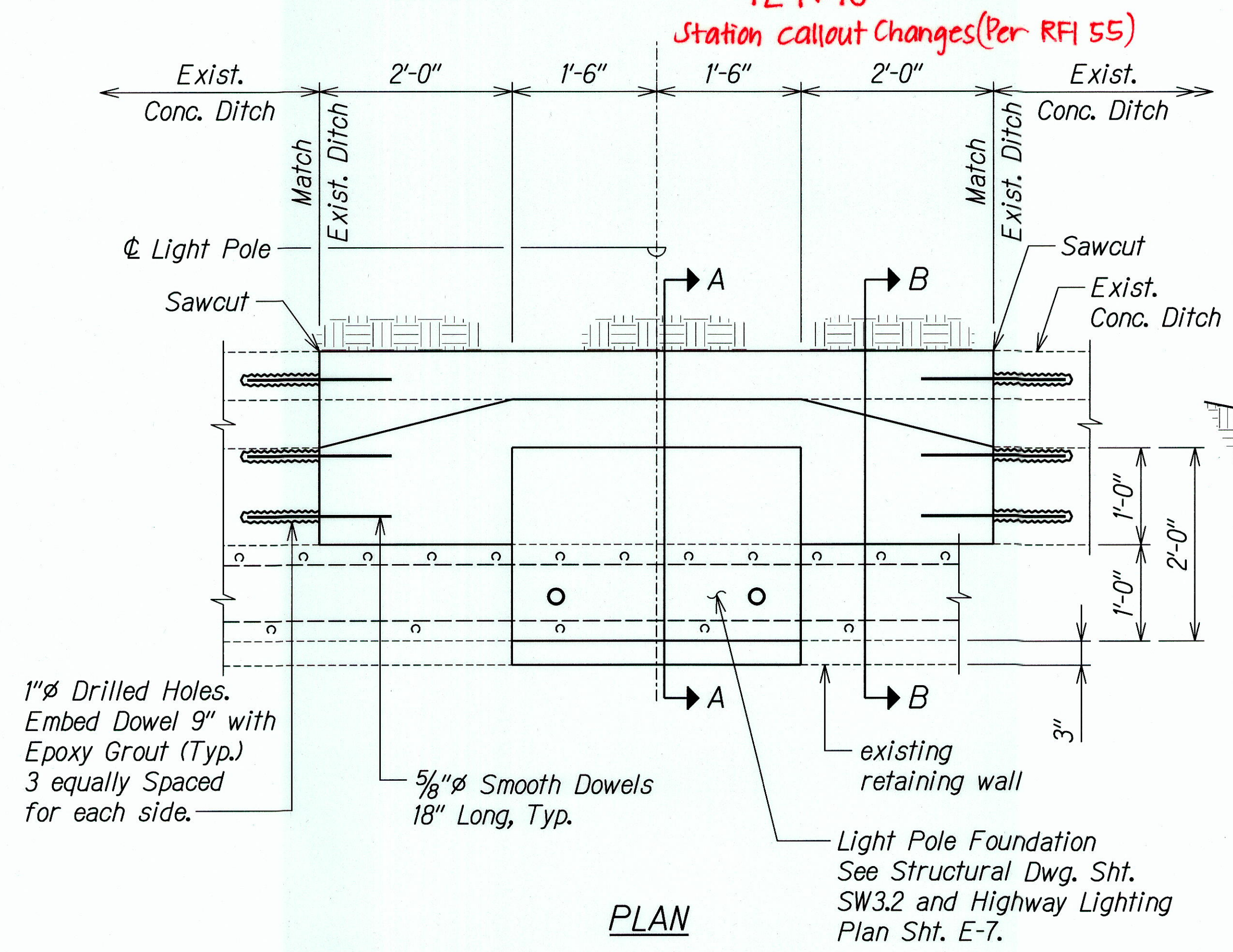
EASTBOUND (STA. 127+15± TO STA. 137+20±)
WESTBOUND (STA. 127+15± TO STA. 149+55±)
 Scale: NTS



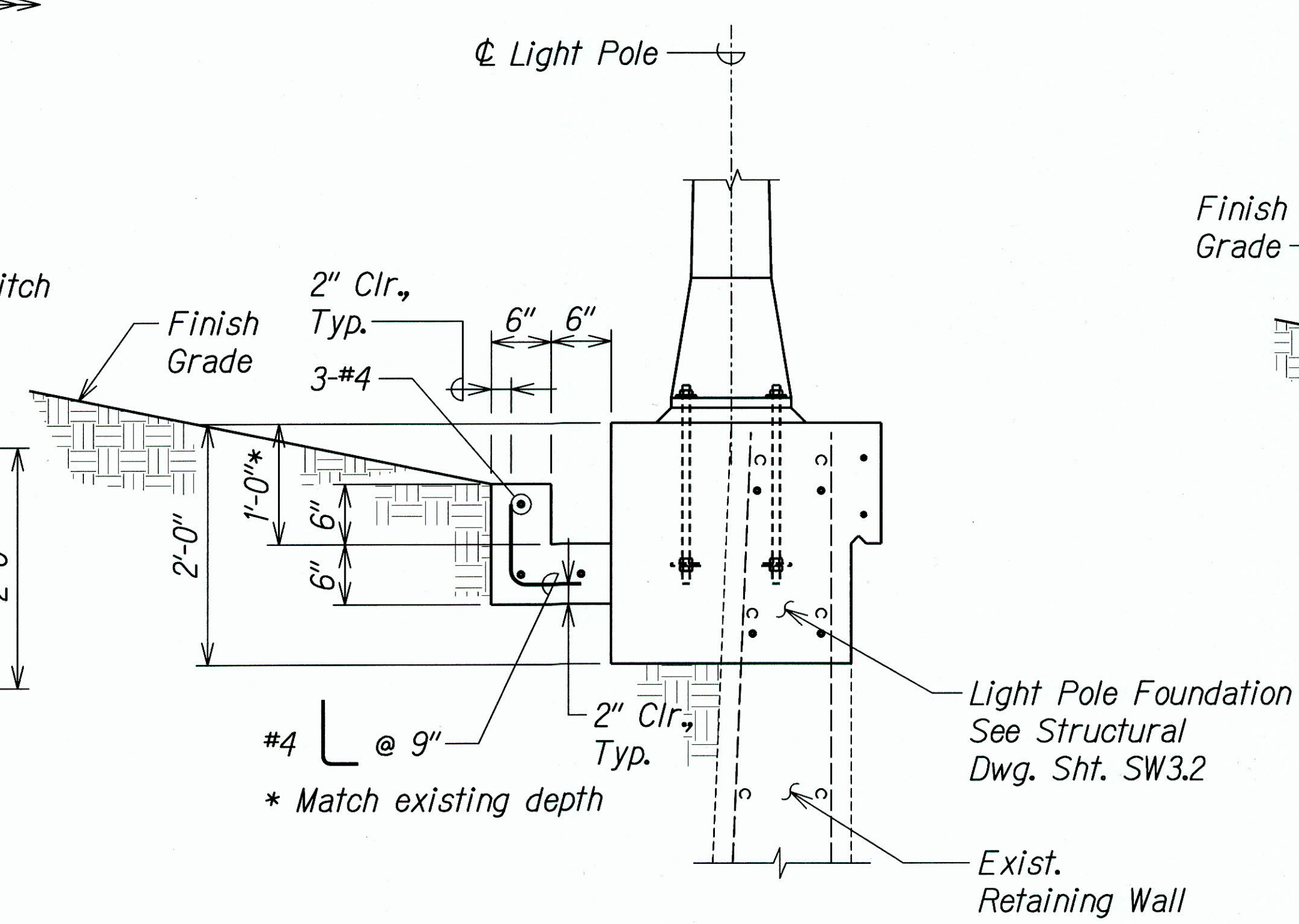
WESTBOUND (STA. 129+70 TO STA. 147+00)
 Scale: NTS

The 95% Compaction was Waived for the 4' Type A Backfill Layer (Per RFI 13)

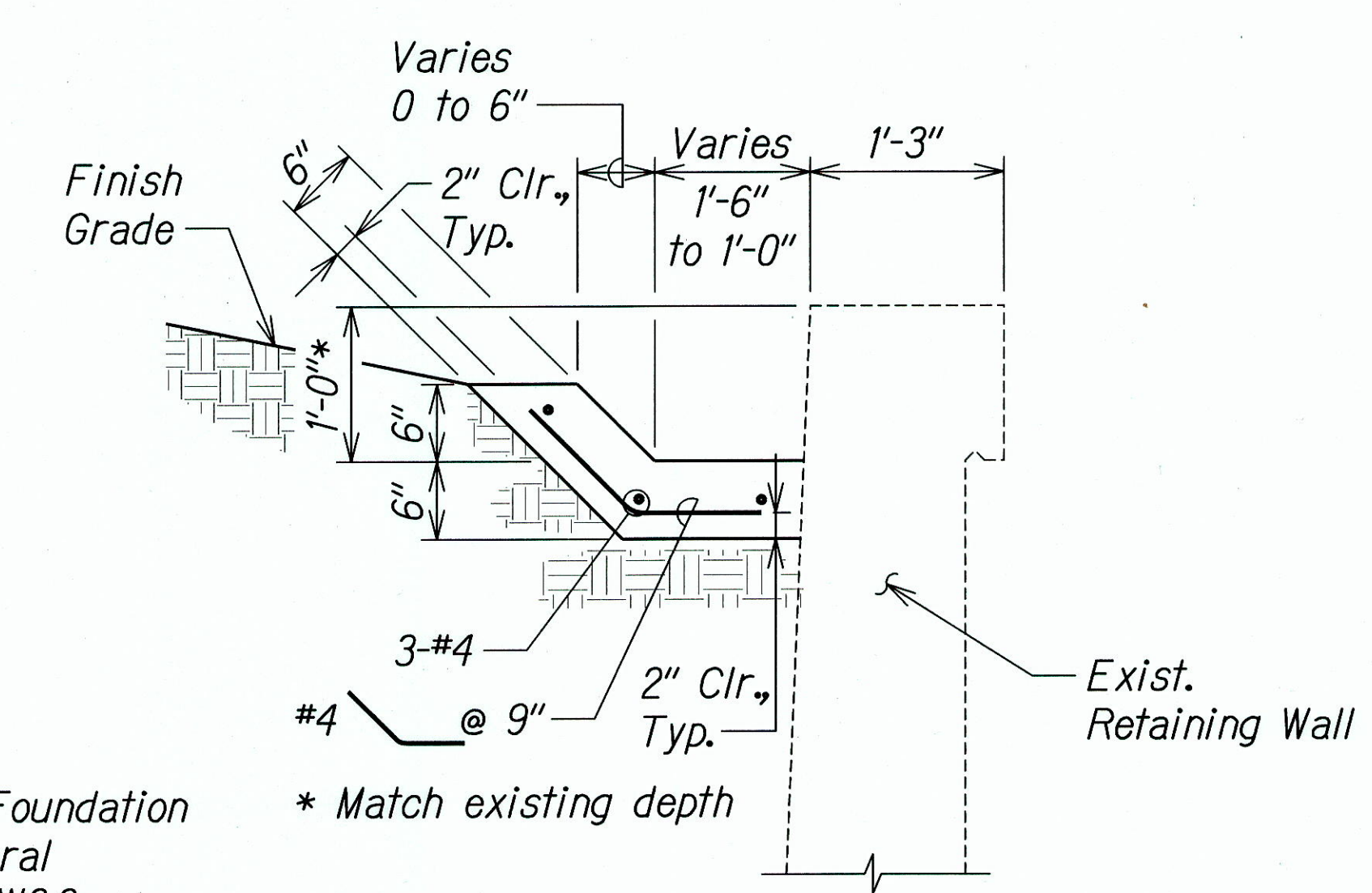
- NOTES:**
1. Dowels shall be positioned in place parallel to the gutter prior to pouring, and the ends of the dowels shall not deviate more than 0.04' from the parallel.
 2. For Epoxy Grout, See Std. Specifications 712.04(B) Epoxy Grout.
 3. Payment for all work associated with the connection to existing will not be paid for separately and shall be considered incidental to Pay Item 640.1000 Lined Drainage Ditch.
 4. Light Pole Concrete Ditch shall be paid under Pay Item 640.1000 Lined Drainage Ditch.



PLAN



SECTION A



SECTION B

LIGHT POLE CONCRETE DITCH
 Scale: 1"=1'-0"

ORIGINAL PLAN	DATE
DRAWN BY	DATE
DESIGNED BY	DATE
CHECKED BY	DATE

T-16459A IDIQ PAVT PREVENTIVE MAINTENANCE/HI MIDDLE TO WARD/CADD/SHEETS/02 ROAD/DETAIL-02.dgn

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Signature: *Pamela K. Uyeda* Date: 04/30/14

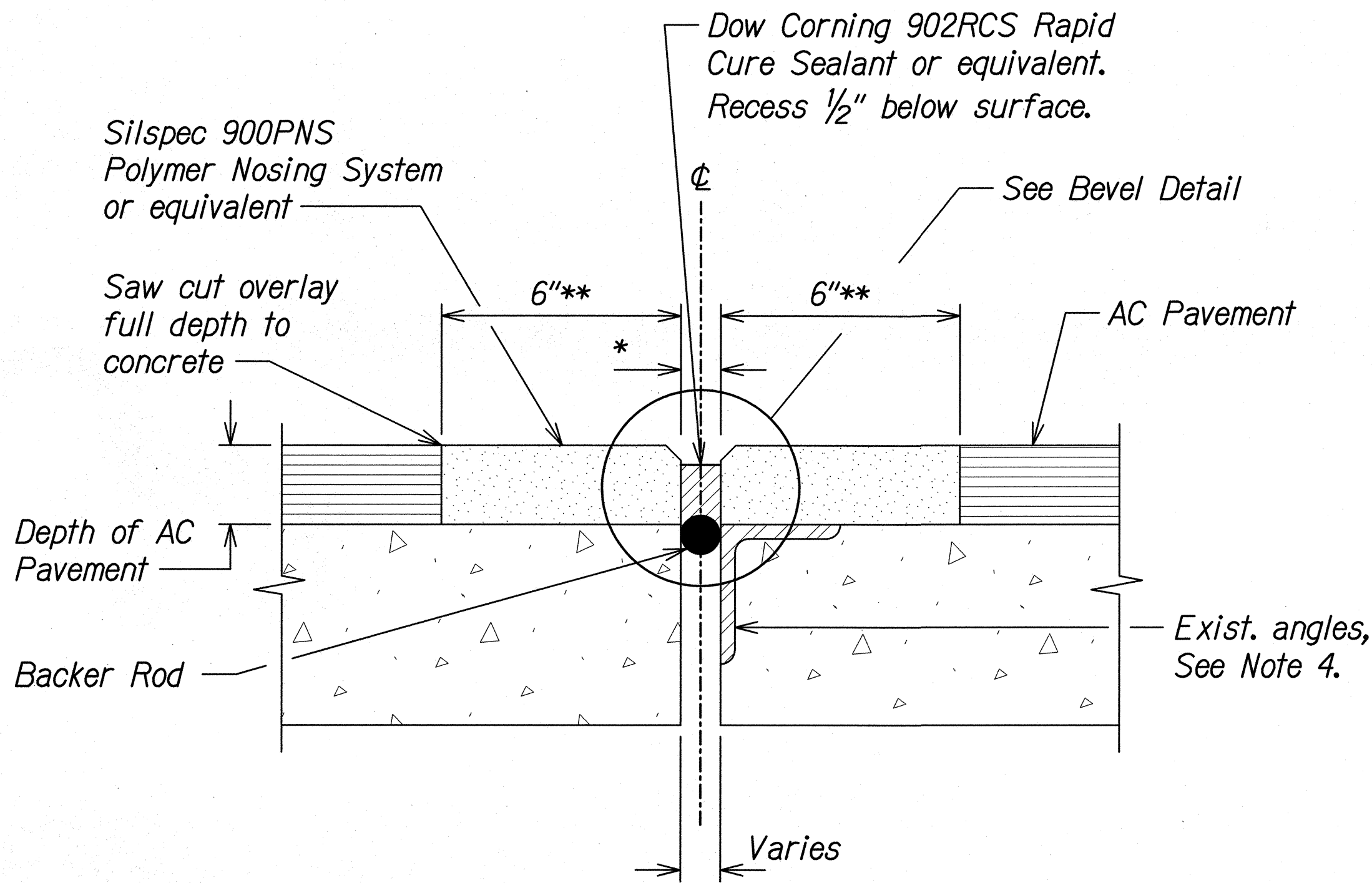
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

ROADWAY CONSTRUCTION DETAILS

INTERSTATE ROUTE H-1 REHABILITATION
 Middle Street to Vicinity of Ward Avenue
 FAP NO. IM-HI-1(269)

Scale: NTS Date: Apr. 26, 2013

"AS-BUILT"

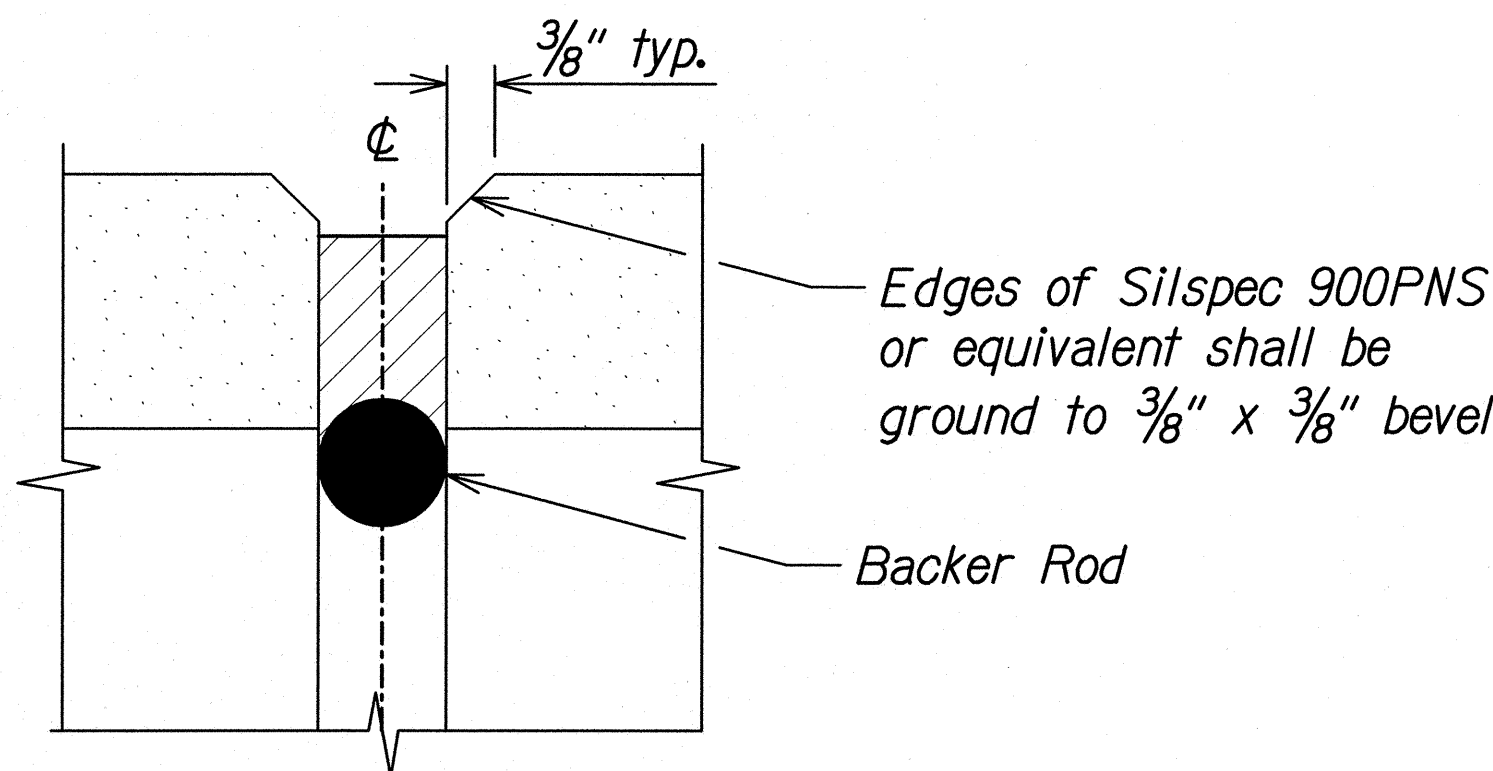


JOINT DETAIL AT BRIDGE DECK

Scale: 3"=1'

* - Width of joint opening. Opening in nosing shall match existing joint opening unless directed otherwise by Project Engineer.

** - Minimum width of nosing shall be 6". If the overlay exceeds 3" in depth, the installer shall use a 2 to 1 width to depth ratio.

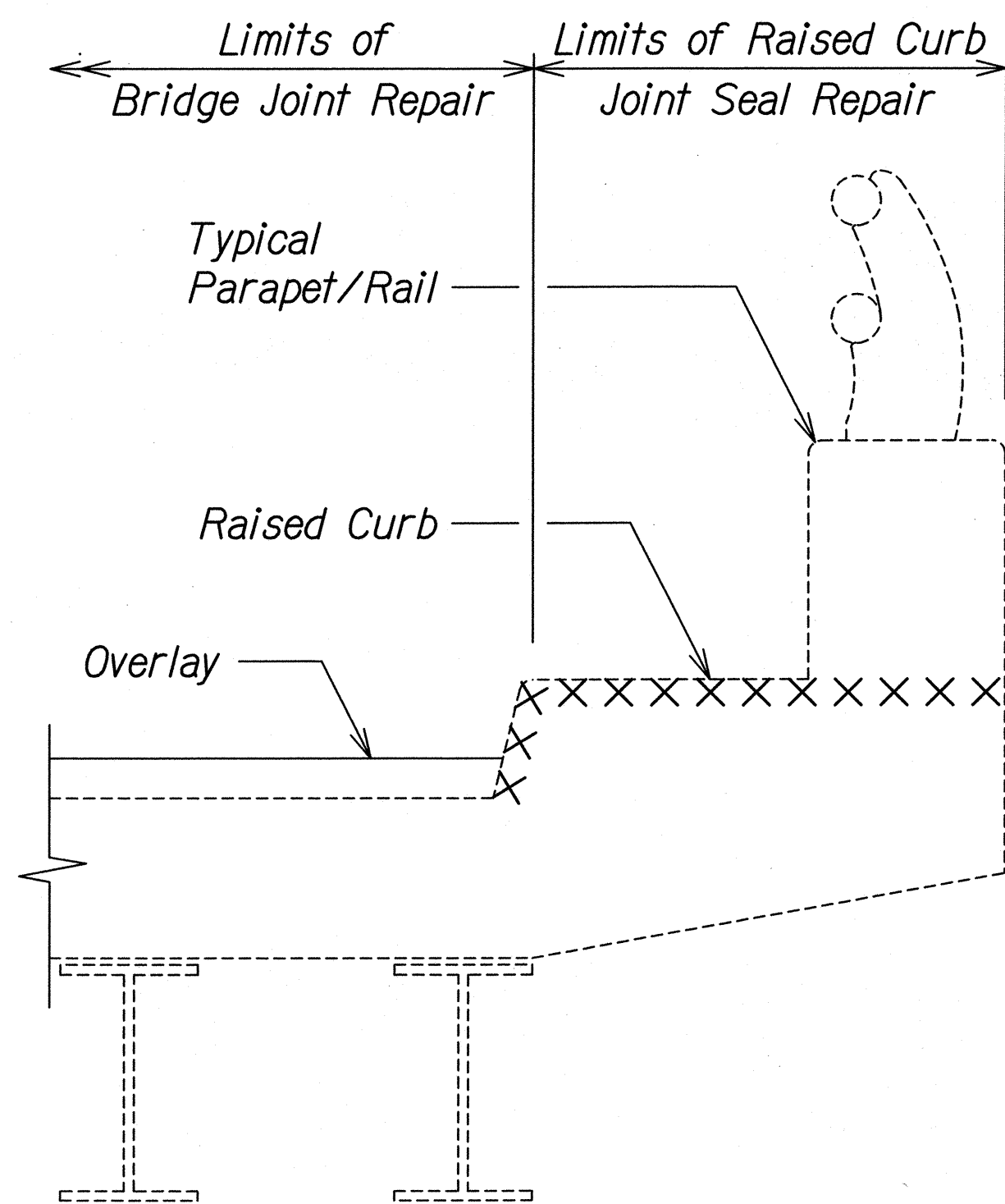


BEVEL DETAIL

Scale: 1 1/2"=1'

NOTES FOR JOINT DETAILS AT BRIDGE DECK:

- Plans of the existing structures are available for review from the Highways Design Branch located at the State Department of Transportation, Highways Division, Kakuhihewa Building, 601 Kamokila Boulevard, Room 609, Kapolei, HI 96707 (Phone number 692-7586).
- Measure actual joint gaps prior to ordering of material.
- Remove asphalt concrete overlay and clean block-out per manufacturer's published procedures.
- Remove any cracked or weakened concrete sections exposed after the asphalt concrete overlay has been removed using methods as approved by the Engineer.
- If existing angle irons are present on the deck surface, inspect angle irons for any defects, especially for soundness of underlying concrete. If accepted by the Engineer as sound, the angle irons may remain in place. Otherwise, remove angle irons and any underlying damaged concrete using methods as accepted by the Engineer. Repair work shall be done on a force account basis with payment under pay item 503.0500 Concrete for Spall Repair.
- Use caution to avoid cutting any reinforcing steel. If any reinforcing steel is accidentally cut, immediately report the incident to the Engineer.
- Repair all chipped, spalled, or damaged concrete in joint areas using methods as accepted by the Engineer. Repair work shall be done on a force account basis with payment under pay item 503.0500 Concrete for Spall Repair.
- Install Silspec 900 Polymer Nosing or equivalent and Dow Corning 902 Rapid Cure Sealant or equivalent per manufacturers' recommendations.
- A representative of the Polymer Nosing manufacturer shall be present at the start of work to demonstrate proper cleaning and installation techniques.
- Clean up and remove all debris accumulated on bridge members located directly below the joints to the satisfaction of the Engineer.
- All work necessary for the complete installation of each joint system, including but not limited to ordering of materials, preparation of joints, installation of Silspec 900 Polymer Nosing System or equivalent, installation of Dow Corning 902 Rapid Cure Sealant or equivalent, installation of backer rod, clean up, disposal of debris, and furnishing of all materials, equipment, and labor (including expenses for manufacturer's representative) shall be paid under pay item 520.1000 Bridge Joint Repair.
- Seal all bridge joints on the following bridges:
 - Palama Separation
 - Pali Highway Eastbound On-Ramp Overpass (Ramp H)
 - Kapalama Canal Bridge



NOTES FOR RAISED CURB JOINT SEAL REPAIR:

- Detail is for both sides of Bridge.
- Prepare raised curb and sidewalk area per sealant manufacturer's recommendation. Install sealant according to manufacturer's recommendation.
- Clean up and remove all debris accumulated on bridge members located directly below raised curb joints to the satisfaction of the Engineer.
- All work necessary for the preparation, installation, clean up and debris removal called for above, including furnishing all materials, equipment, and labor; shall be paid under pay item 520.1000 Bridge Joint Repair.

RAISED CURB JOINT SEAL REPAIR DETAIL

Scale: NTS

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. SIGNATURE: <i>P. Uyeda</i> EXPIRATION DATE OF THE LICENSE: 04/30/14	STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION BRIDGE JOINT REPAIR DETAILS INTERSTATE ROUTE H-1 REHABILITATION Middle Street to Vicinity of Ward Avenue FAP NO. IM-HI-1(269) Scale: As shown Date: Apr. 26, 2013
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FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(269)	2013	59	382

GENERAL NOTES

- All hardware, posts and fasteners shall be hot-dip zinc coated galvanized after fabrication. No punching, drilling or cutting will be permitted after galvanizing.
- Where conditions require, special post lengths in increments of 6 inches may be specified.
- All fasteners, posts, and rail elements (i.e. FBB03, PWE01, RWM02b, etc.) shall conform to the latest edition and amendments of "A Guide to Standardized Highway Barrier Rail Hardware", a report prepared and approved by the AASHTO-AGC-ARTBA Joint Cooperative Committee, Subcommittee On New Highway Materials, Task Force 13 Report. Dimensions of fasteners, posts and rail elements have been converted from metric units into their present form.
- The Recycled Plastic Block or Offset Block shall be accepted by the State.
- All new guardrail systems (system consists of total length of guardrail including both end treatments) shall include the Additional Paved Area. All costs associated with Additional Paved Area shall not be paid for separately but shall be considered incidental to the various guardrail items.
- After the guardrail posts are installed in the paved area, the Contractor shall fill/seal around each guardrail post and all cracks in the paved area caused during the guardrail post installation. If required by the Inspector/Engineer, the Contractor shall tamp the paved area around the guardrail post prior to filling/sealing. All costs associated with this work shall not be paid for separately, but shall be considered incidental to the various guardrail items.
- When standards for the fill slope area cannot be met, a site specific, engineer approved design may be used.
- New A.C. pavement at guardrails shall extend 6 feet longitudinally beyond terminal ends.
- Reflector Markers (RM-5) mounted on guardrails shall be spaced every 25 feet. RM-5's shall not be installed on Terminal Sections. Furnishing and installing of each RM-5 shall be considered incidental to the adjacent guardrail system.

GUARDRAIL TYPE 3	DIMENSION	
	H	A
Strong Post W-Beam	1'-9 ⁵ / ₈ "	1'-6"
Strong Post Rubrail (W-Beam)	2'-0"	1'-6"
Modified or Strong Post Thrie Beam	2'-0"	2'-0"

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE: *[Signature]* DATE: 04/30/14

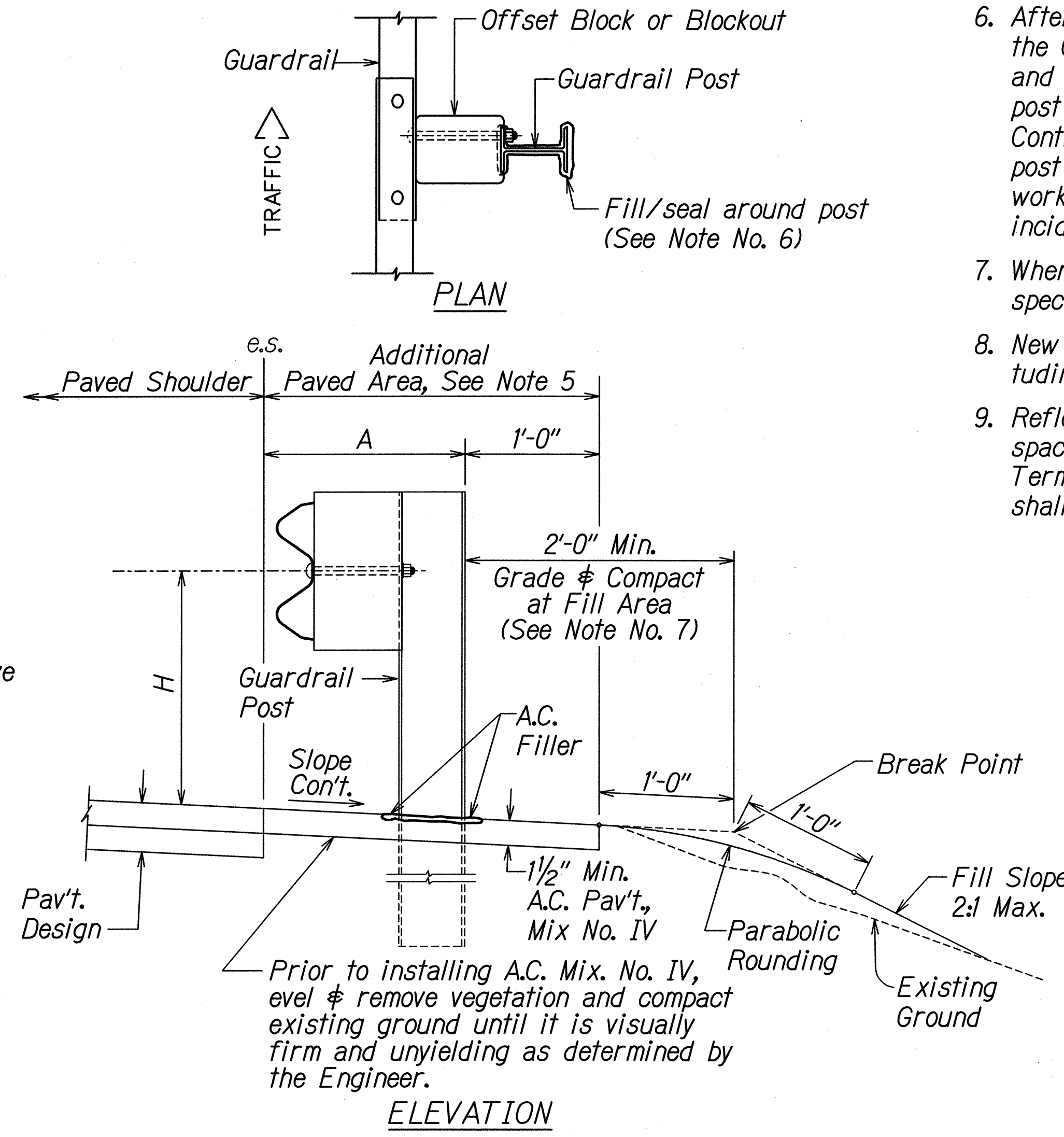
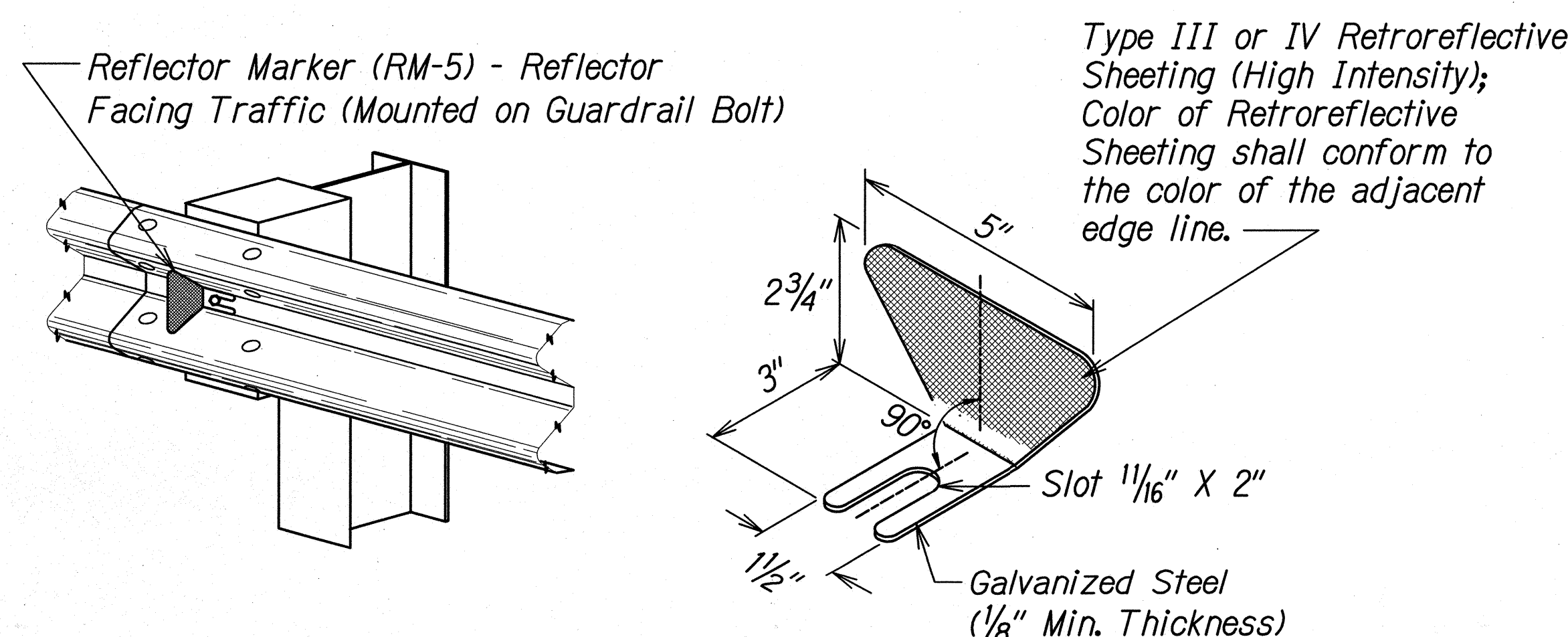
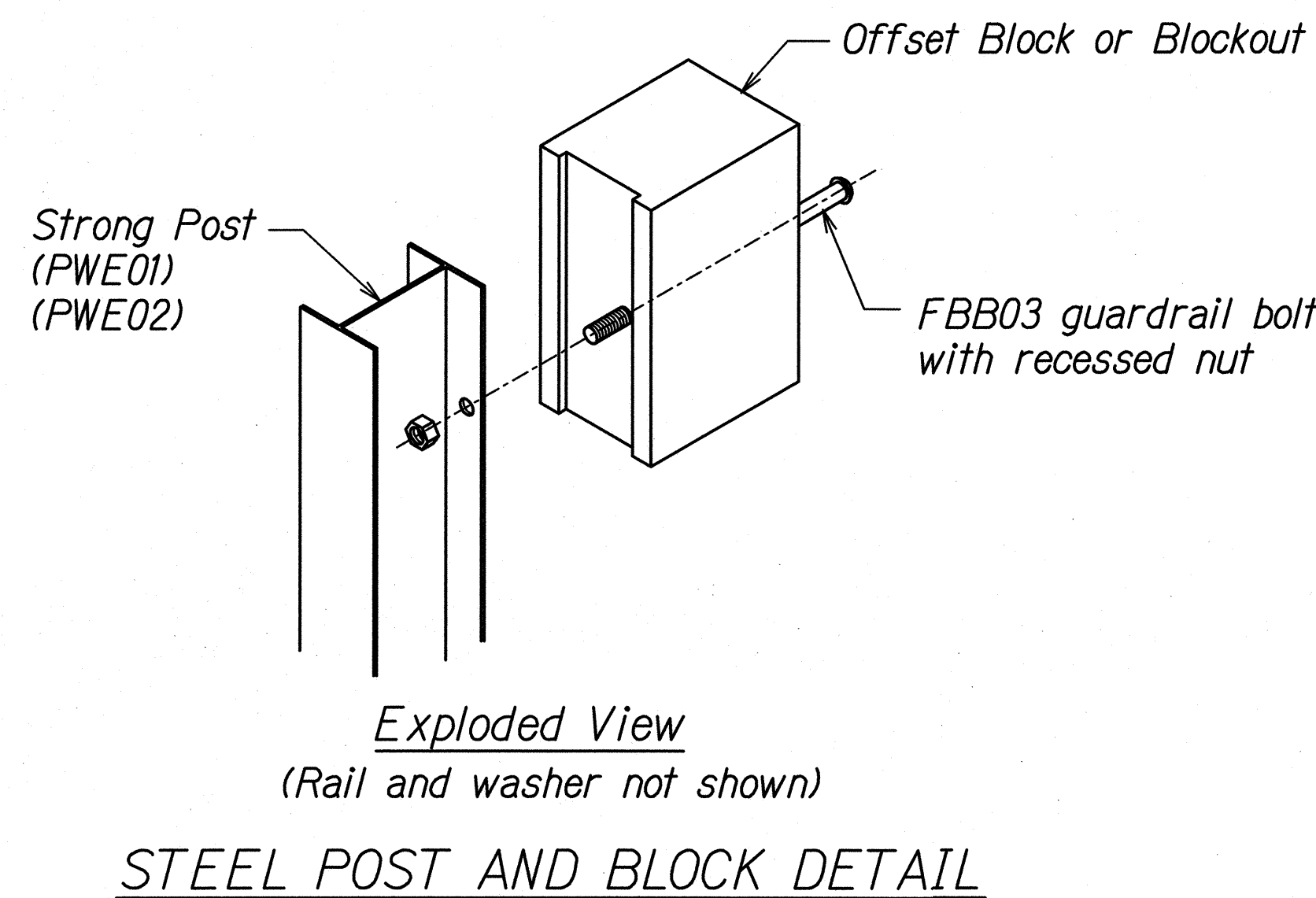
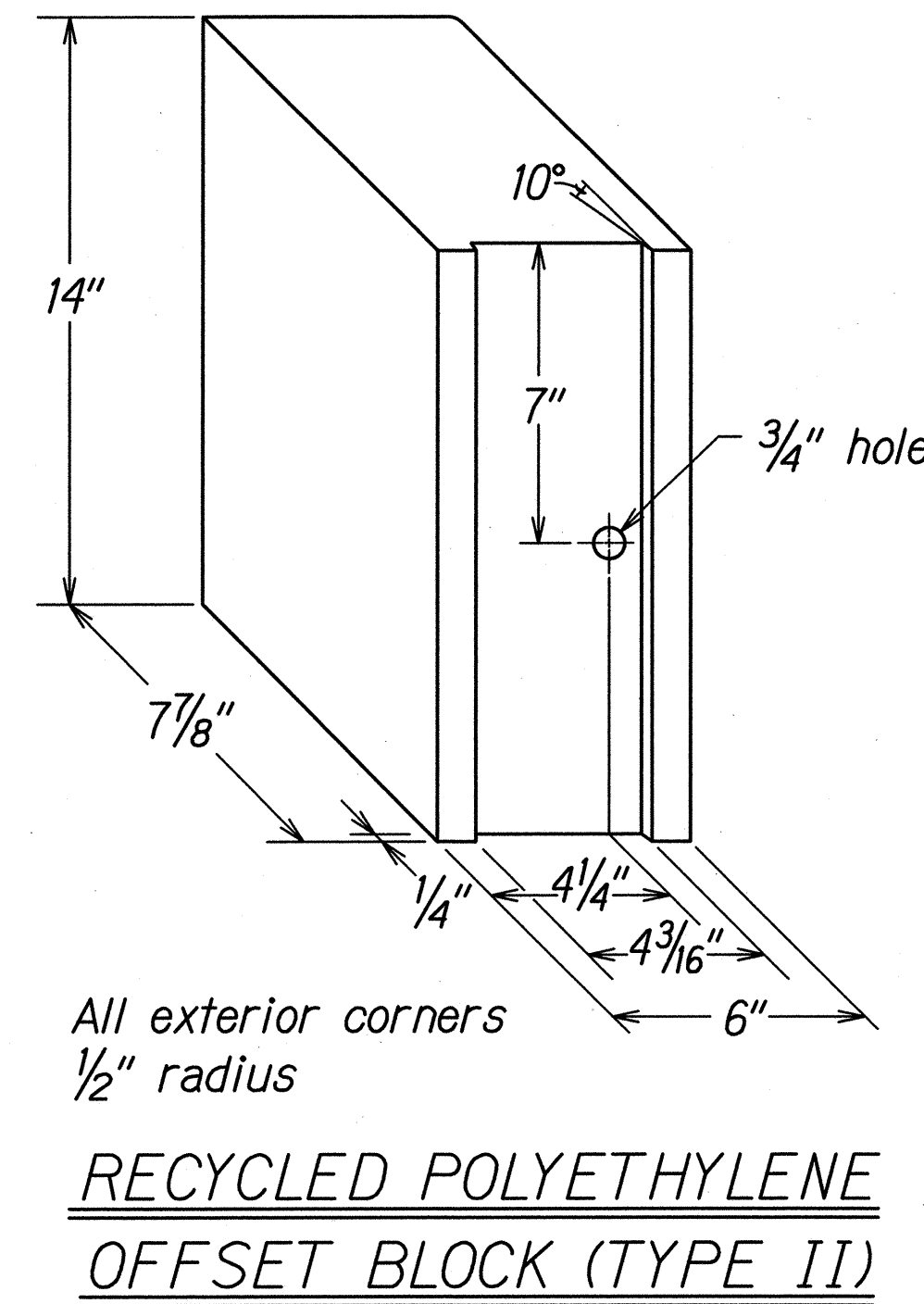
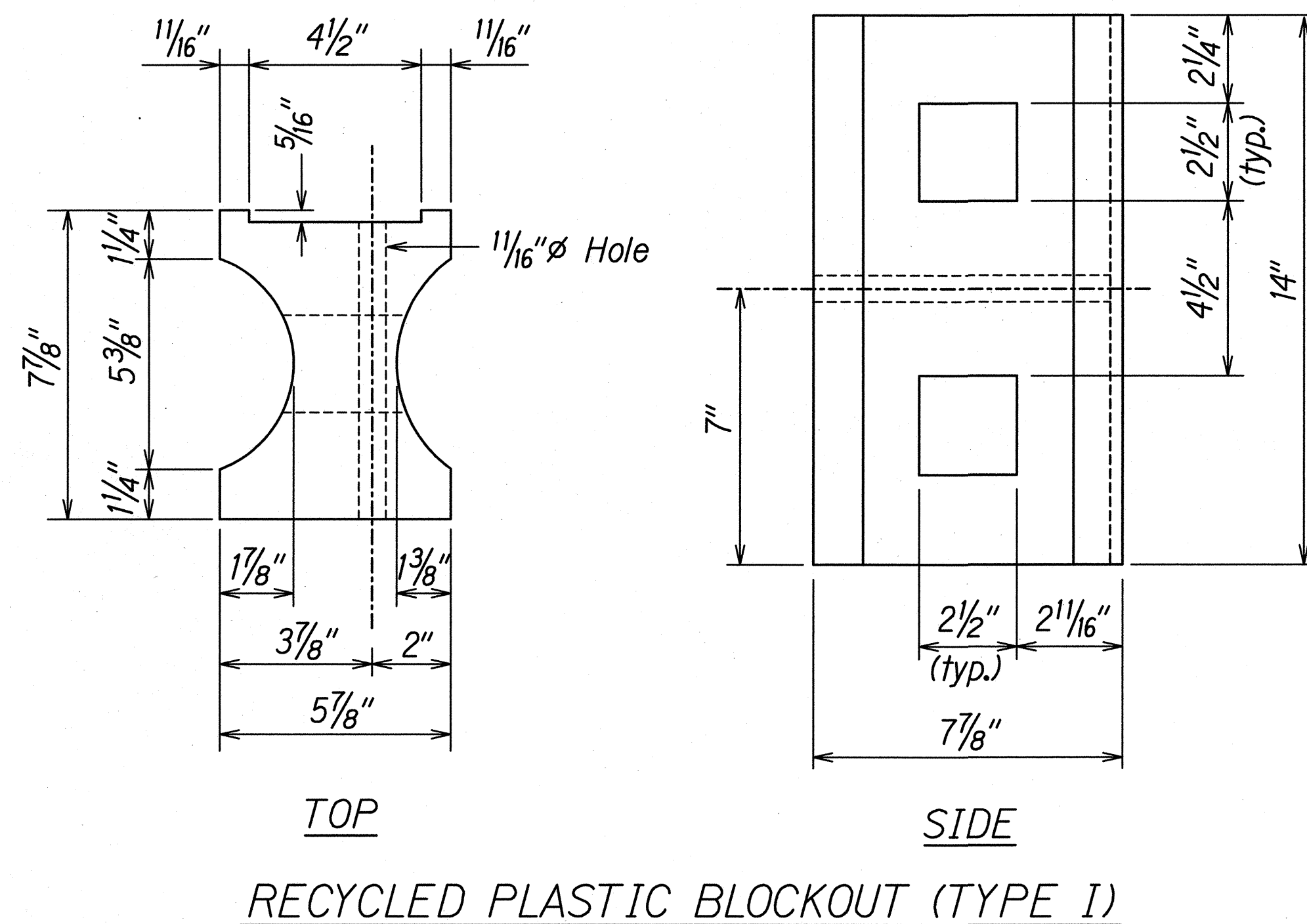
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL DETAIL & NOTES

INTERSTATE ROUTE H-1 REHABILITATION
Middle Street to Vicinity of Ward Avenue
FAP NO. IM-HI-1(269)

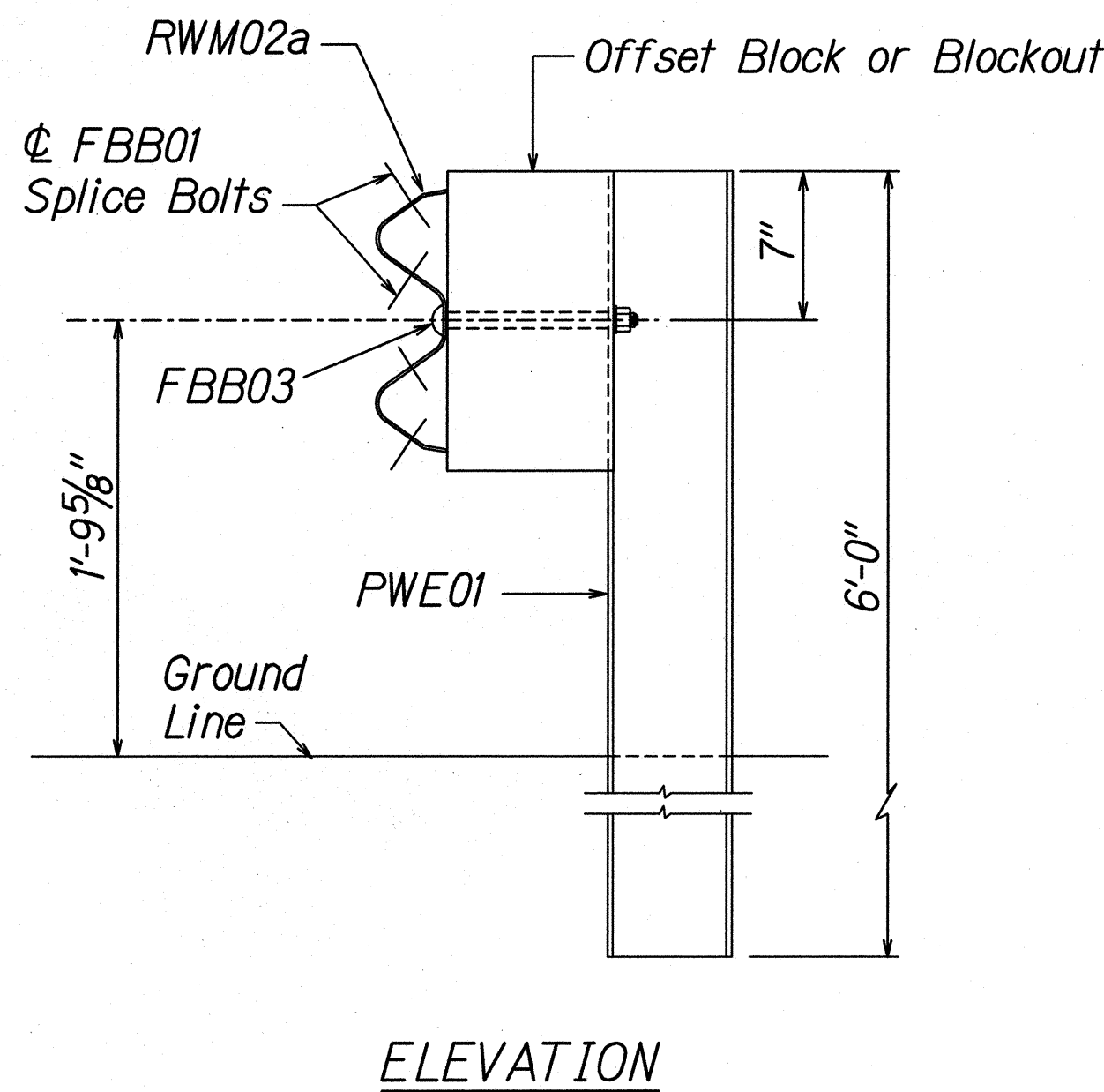
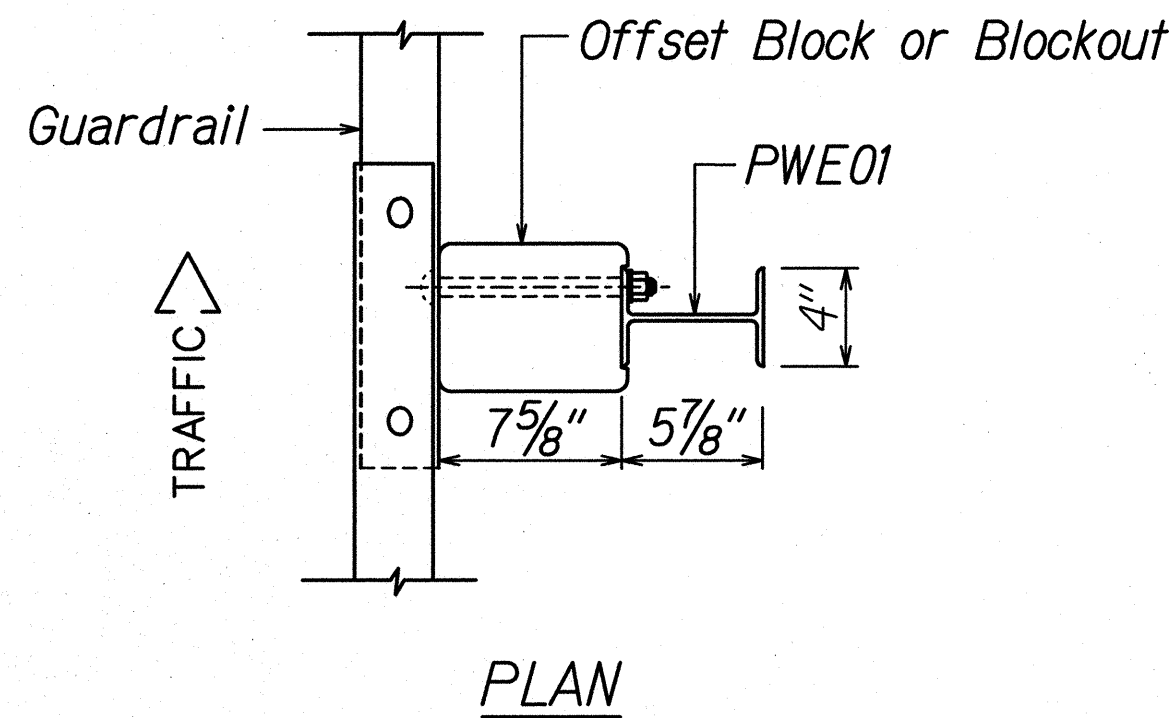
Scale: NTS Date: Apr. 26, 2013

SHEET No. R-40 OF 43 SHEETS

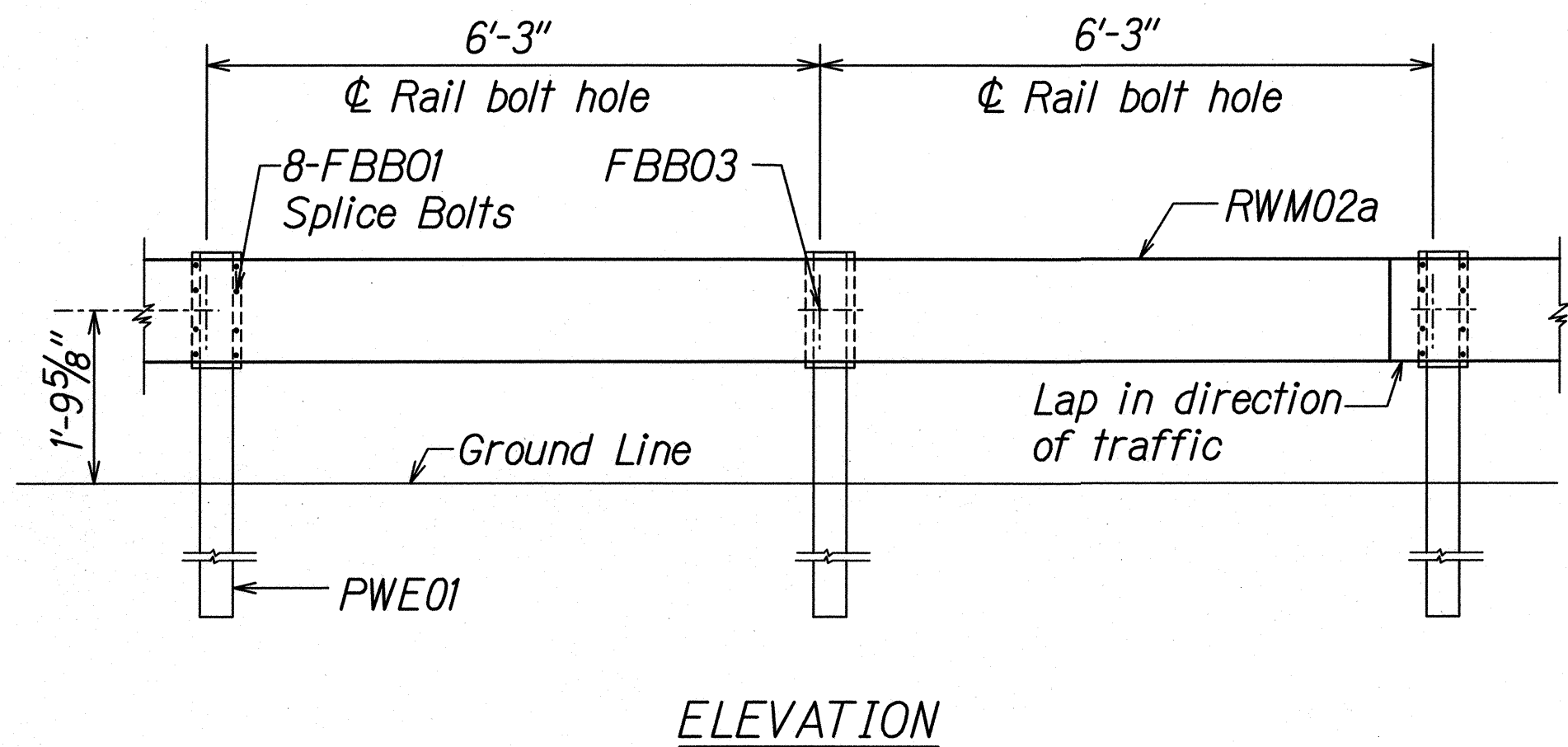


DATE	12/31/03
DESIGNED BY	td.ruby/guardrail/tes09w.dgn
CHECKED BY	
QUANTITIES BY	
NOTED BY	
DRAWN BY	
PLANNED BY	
ORIGINAL PLAN	

12/31/03 td.ruby/guardrail/tes09w.dgn (standard plan TE-50 089/01/00)

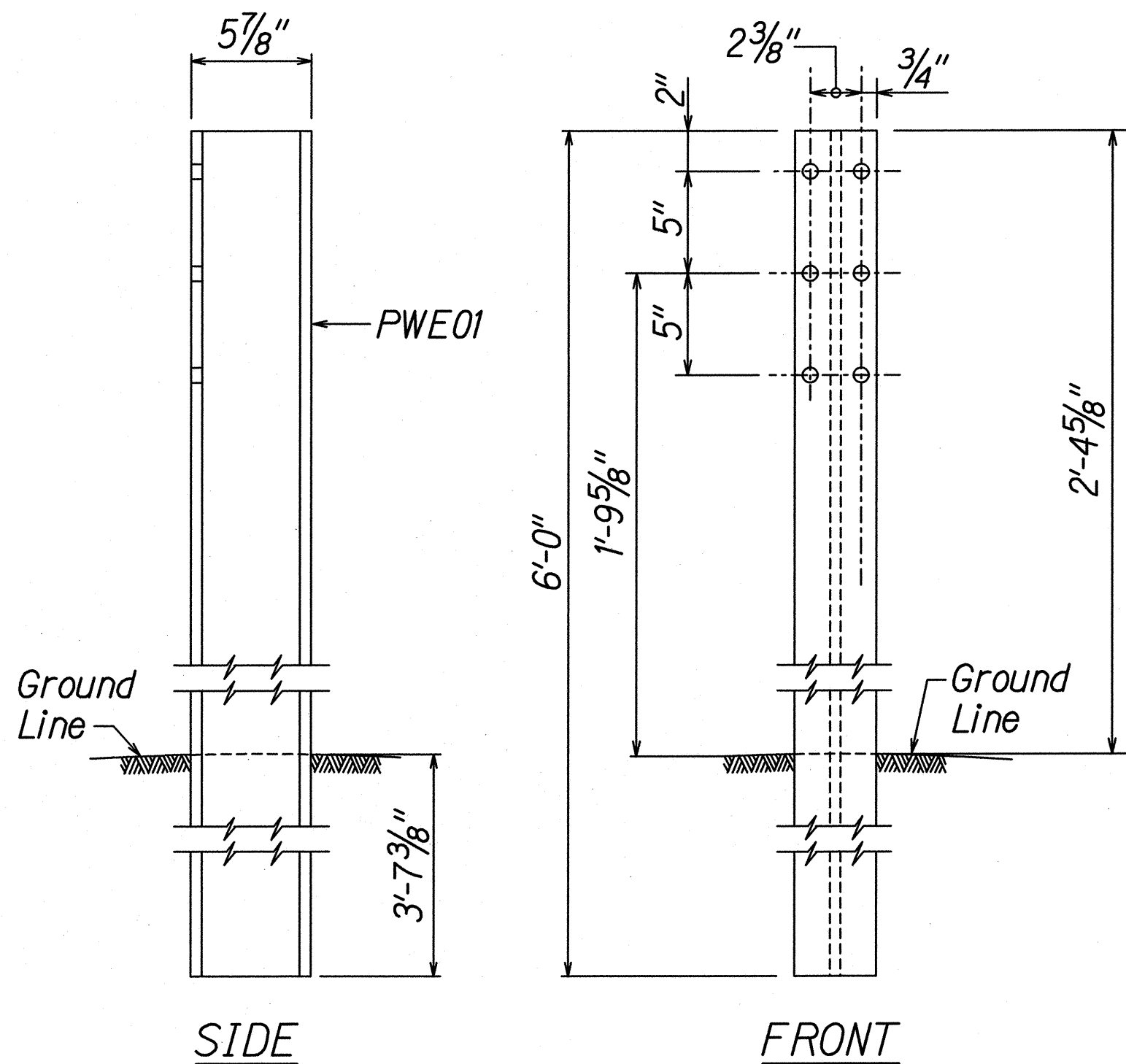


STRONG POST W-BEAM GUARDRAIL
(SGR04a)

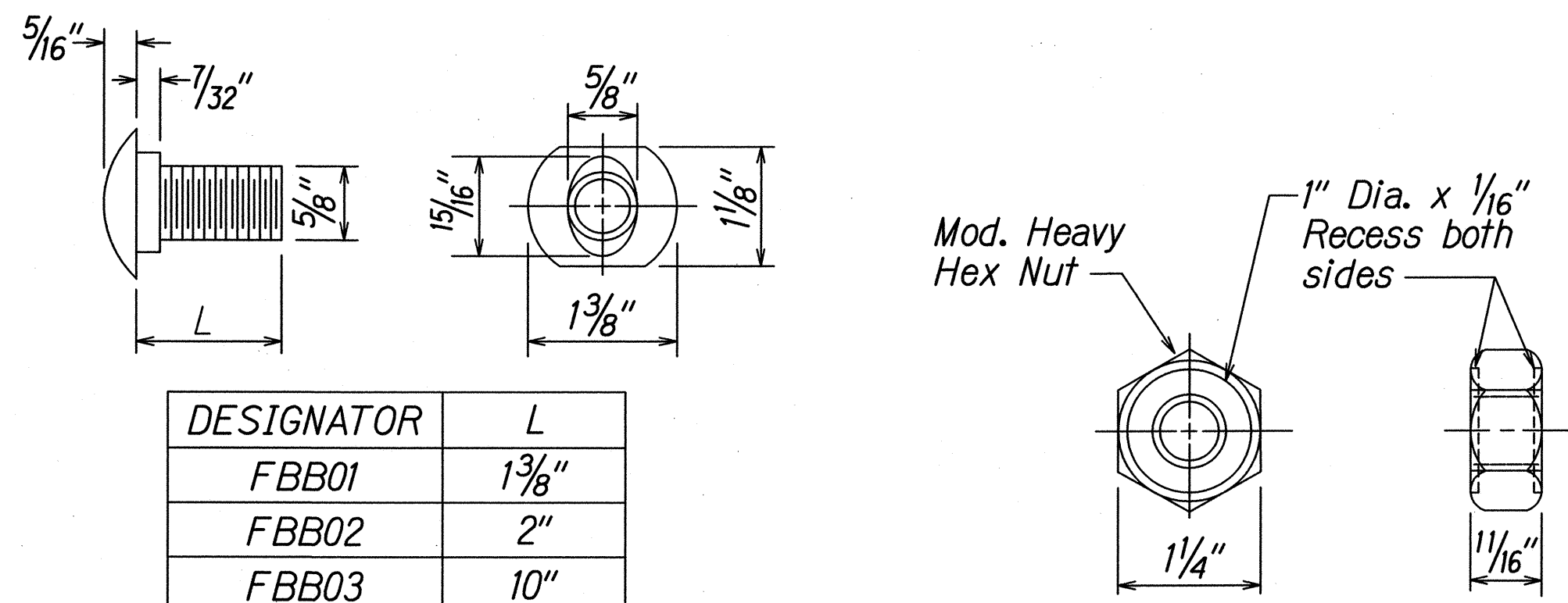


STRONG POST W-BEAM GUARDRAIL WITH RECYCLED OFFSET BLOCK OR PLASTIC BLOCKOUT

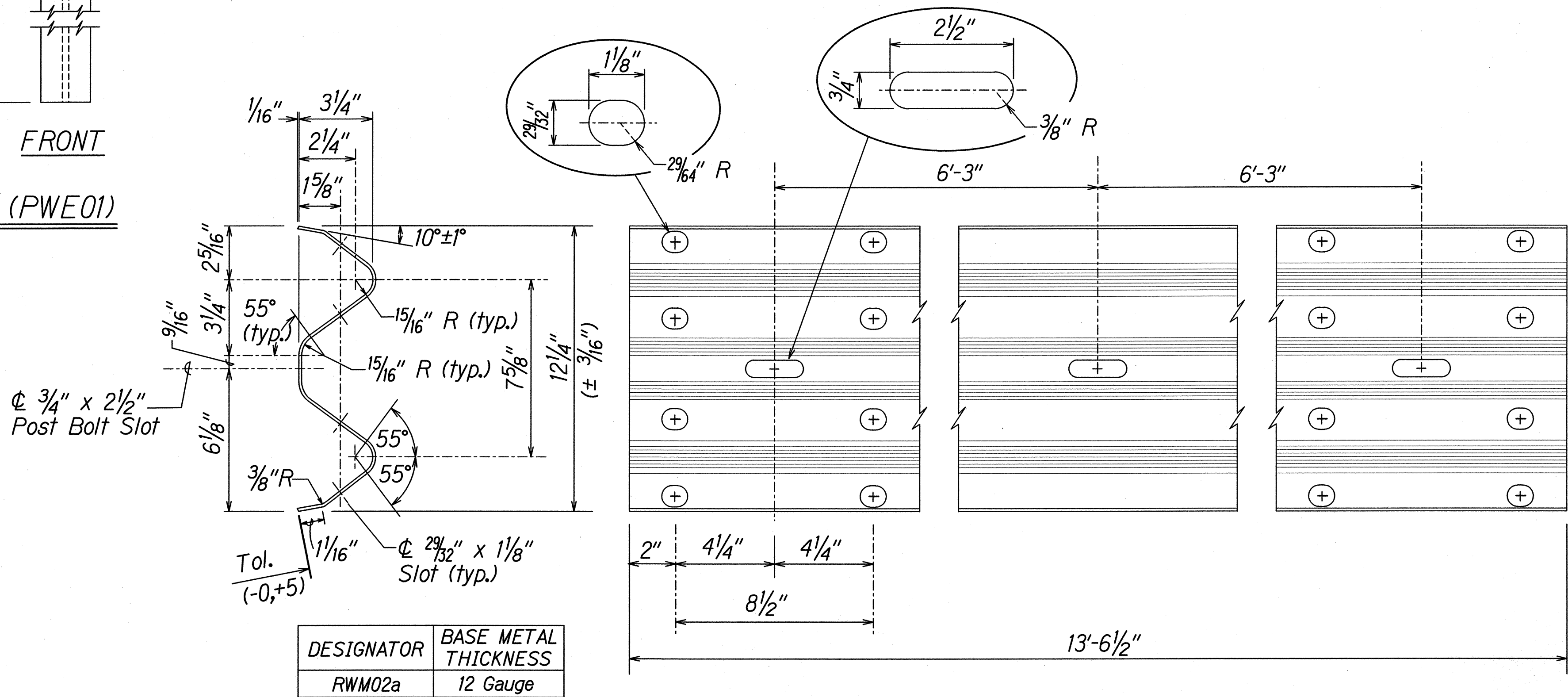
NOTE:
All Holes are
3/4" Dia.



W-BEAM STRONG POST (PWE01)



GUARDRAIL BOLTS AND RECESSED NUT



2 SPACE W-BEAM GUARDRAIL (RWM02a)

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
IN CHARGE	

rd/01/05 tdr/cub/guardrail/wbeams.dgn (standard plan TE-50 R03/06/07)

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Signature: *[Signature]* Date: 04/30/14

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

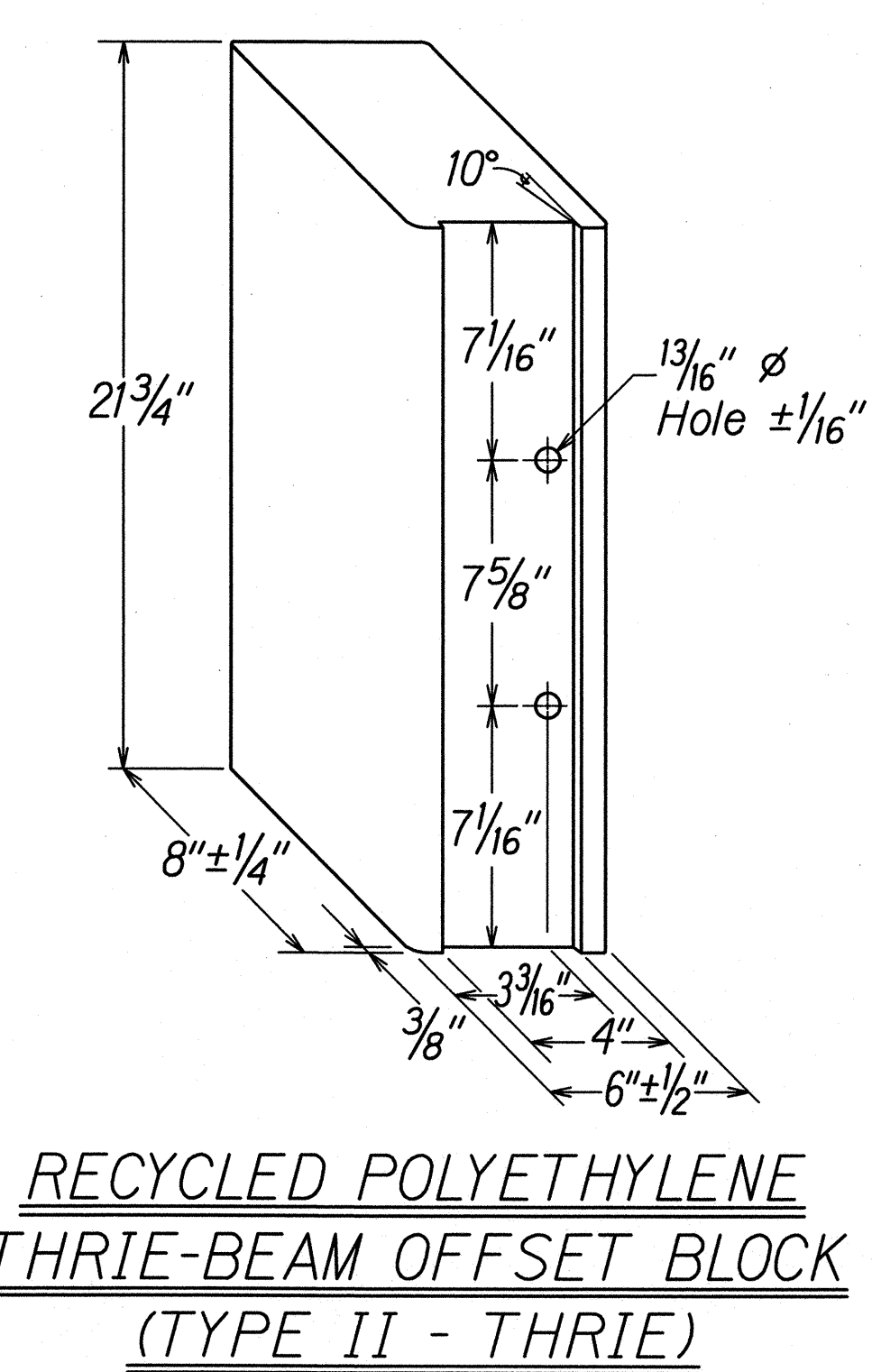
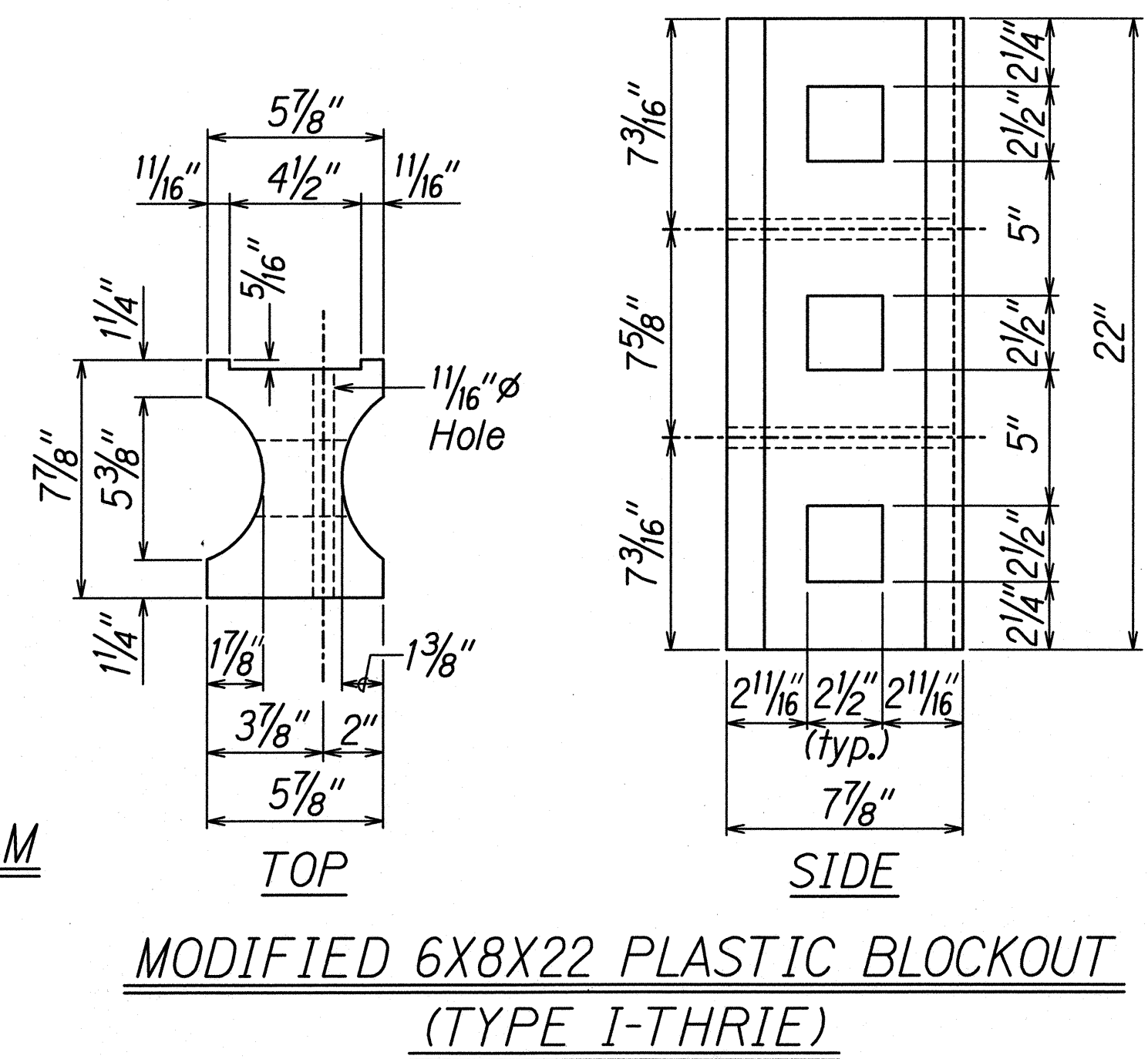
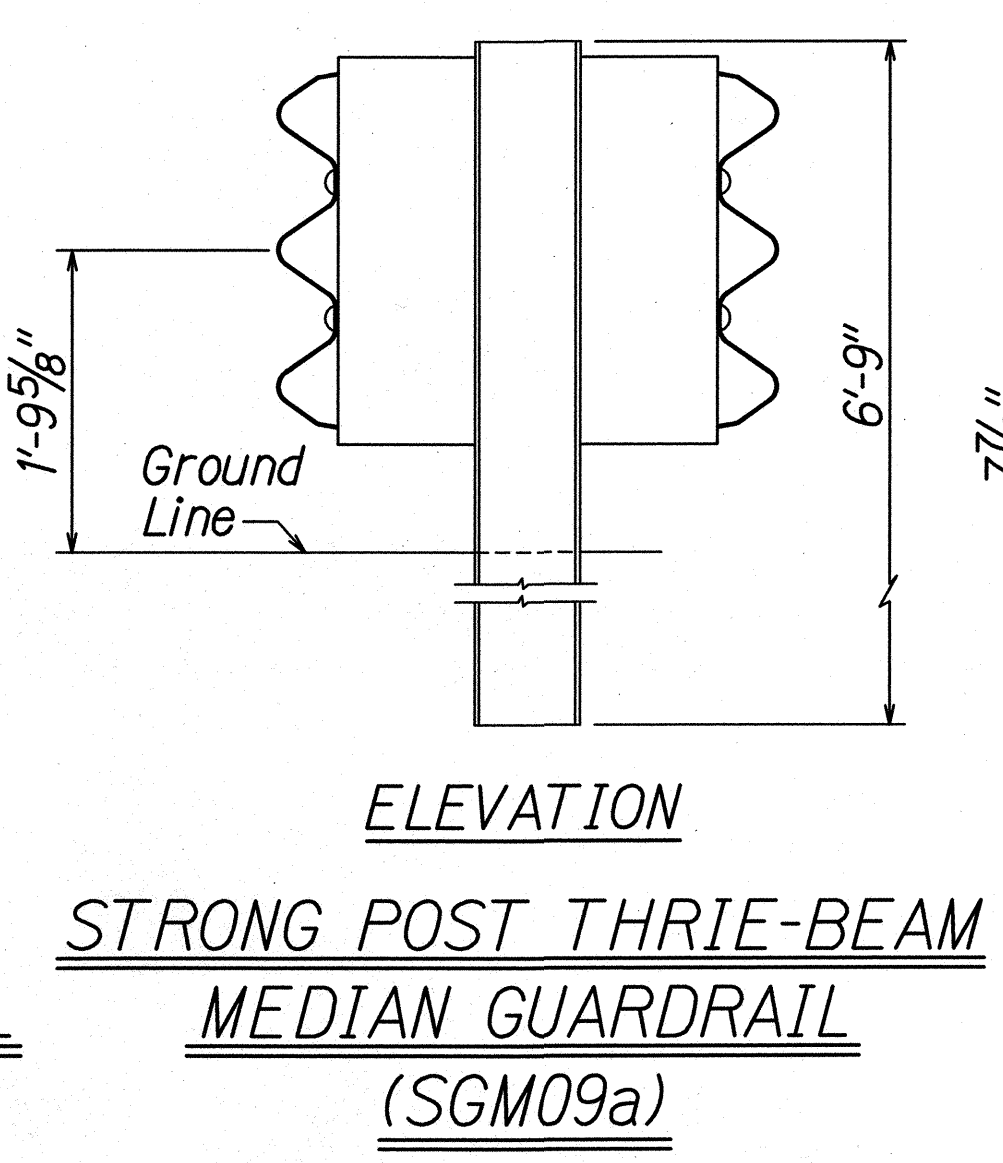
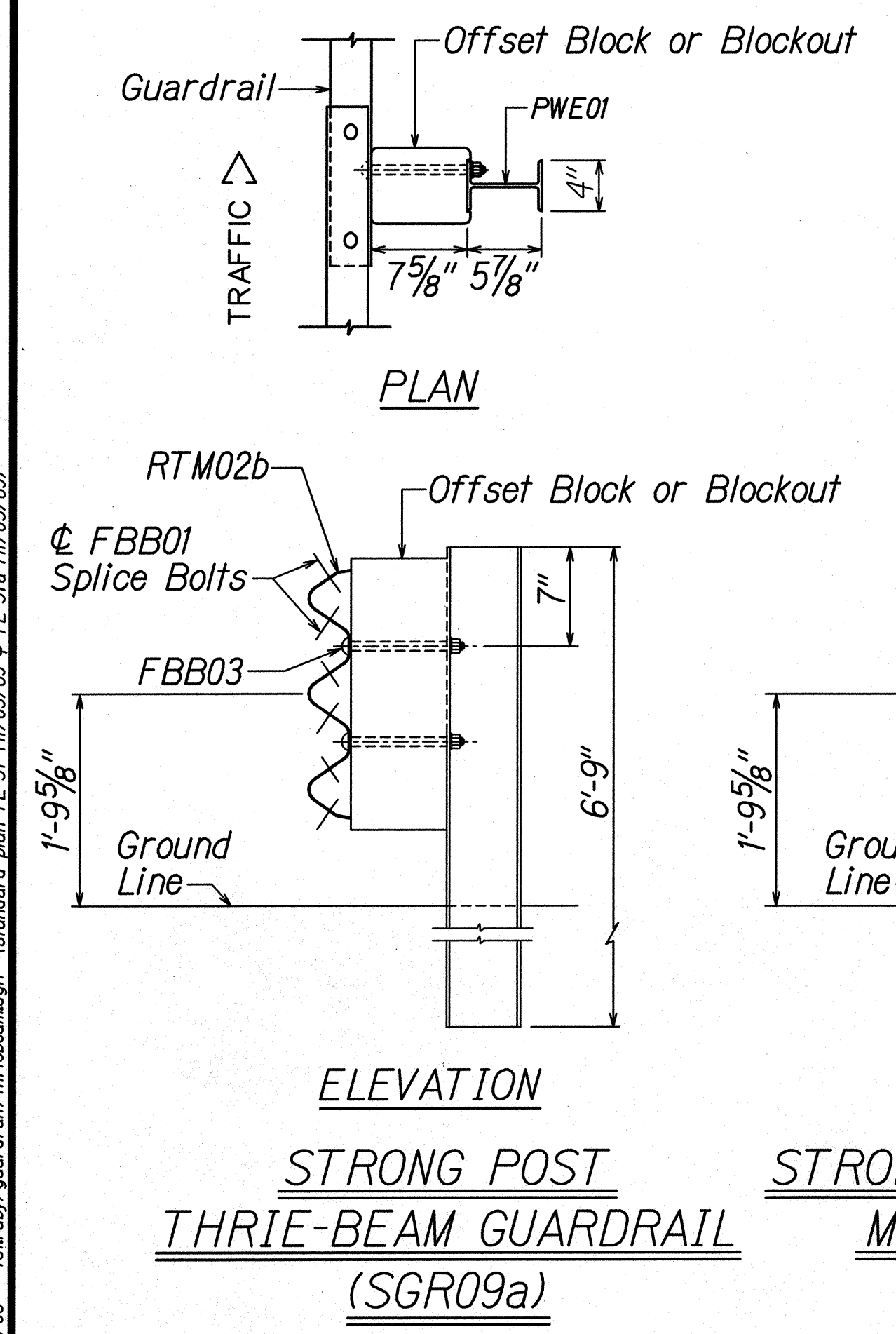
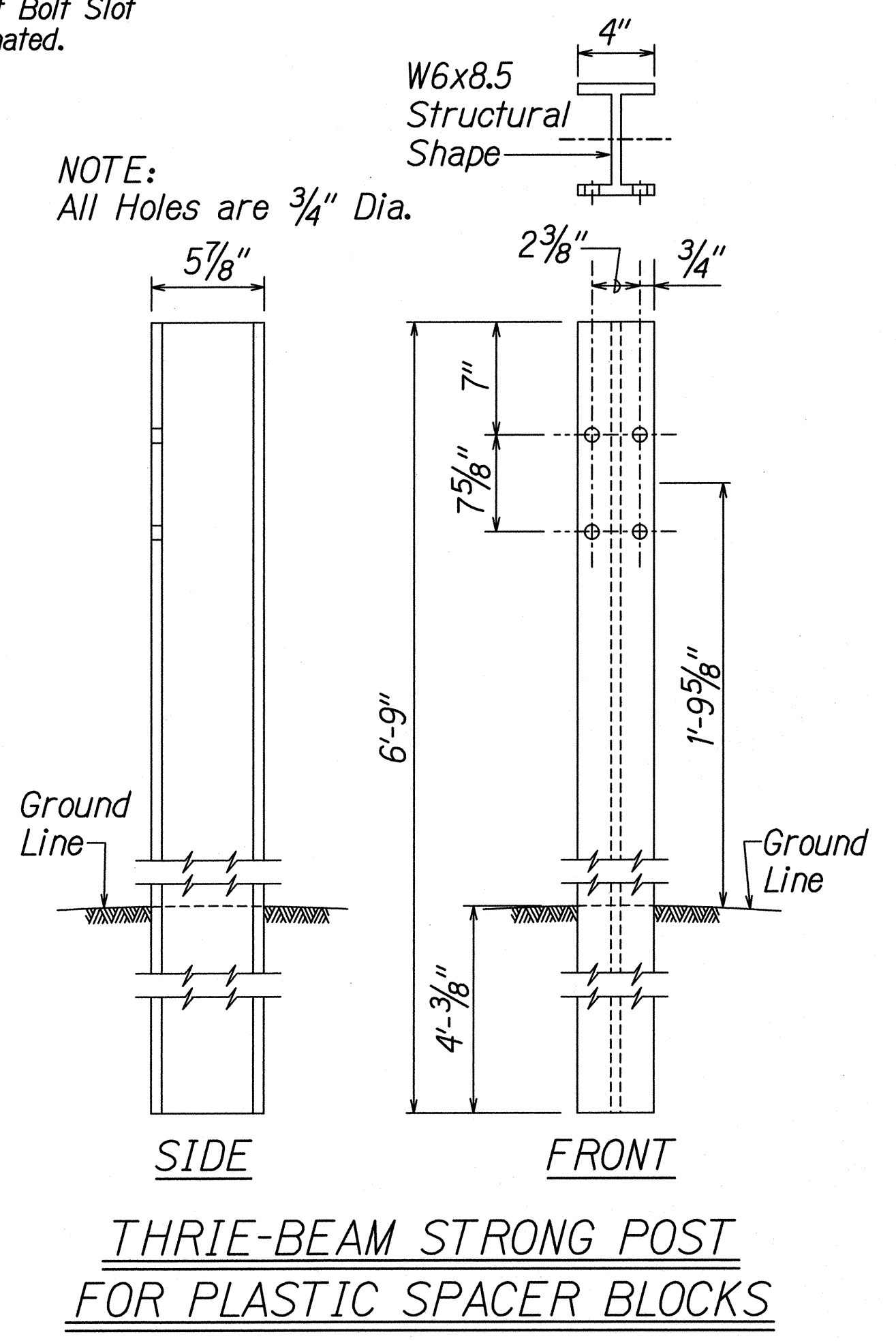
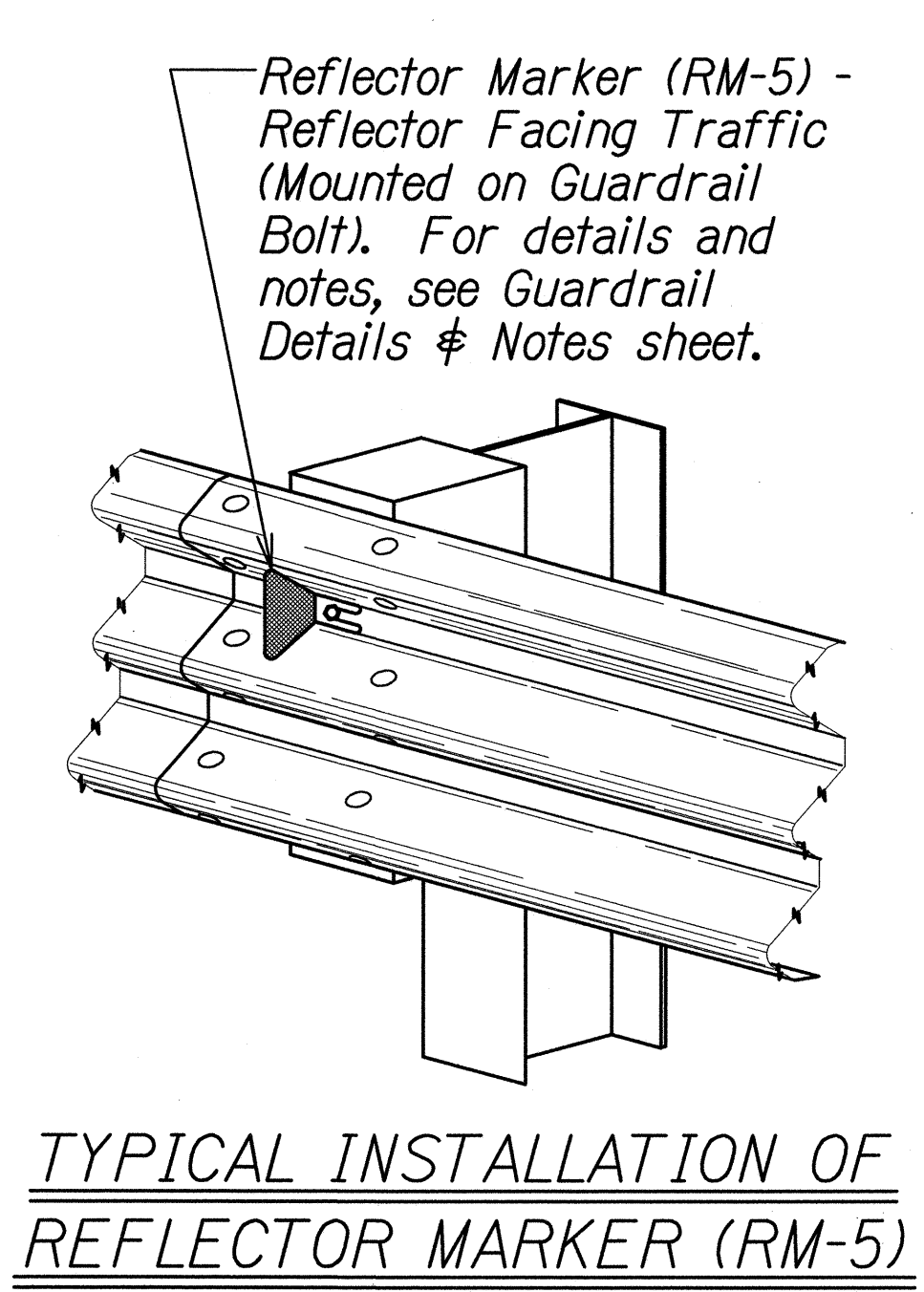
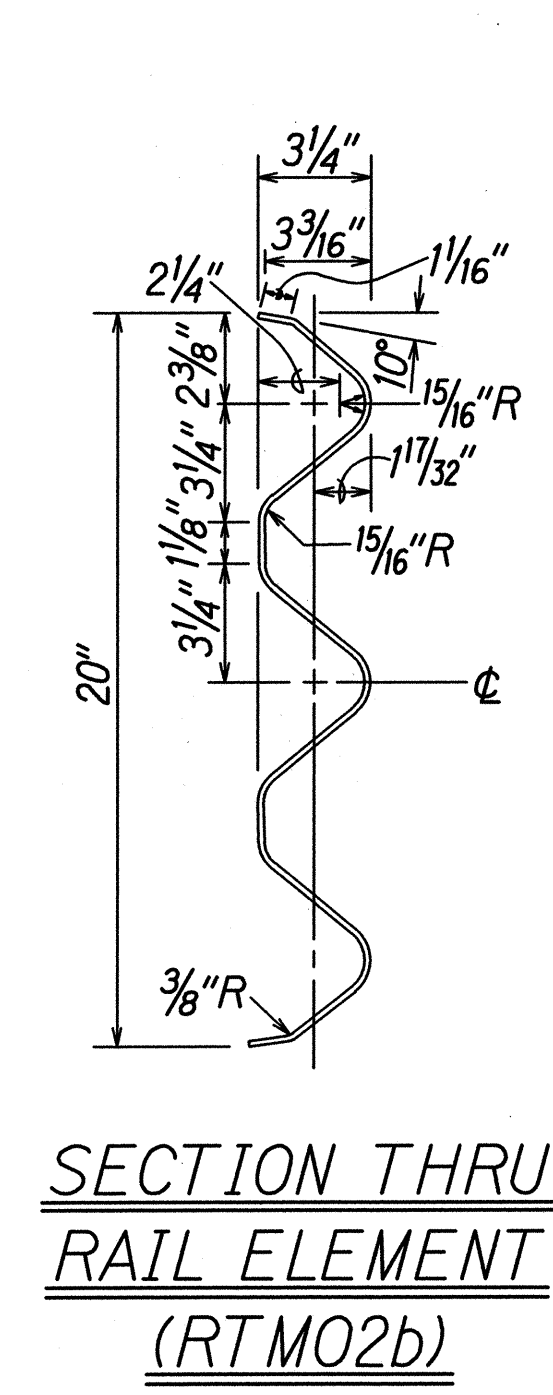
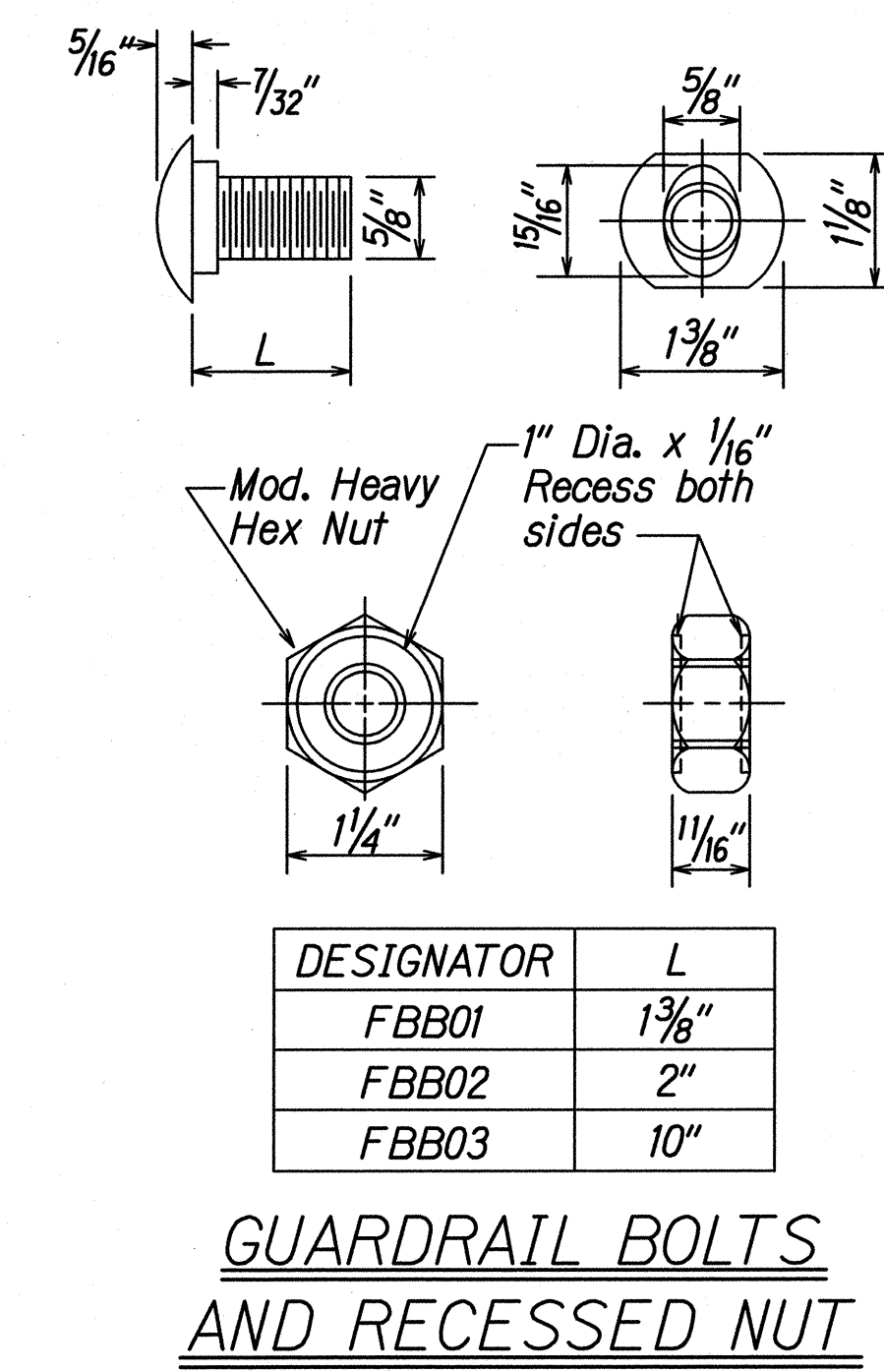
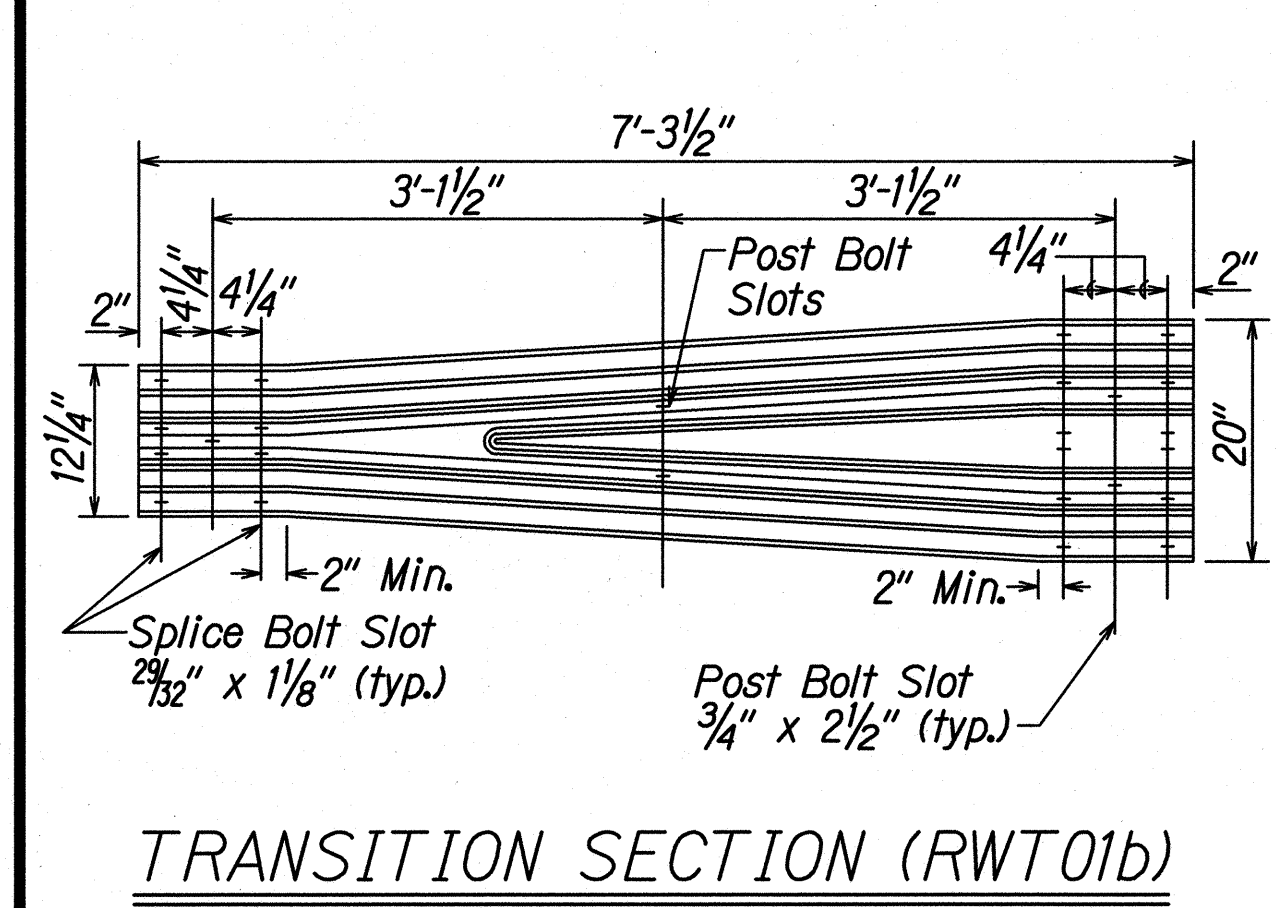
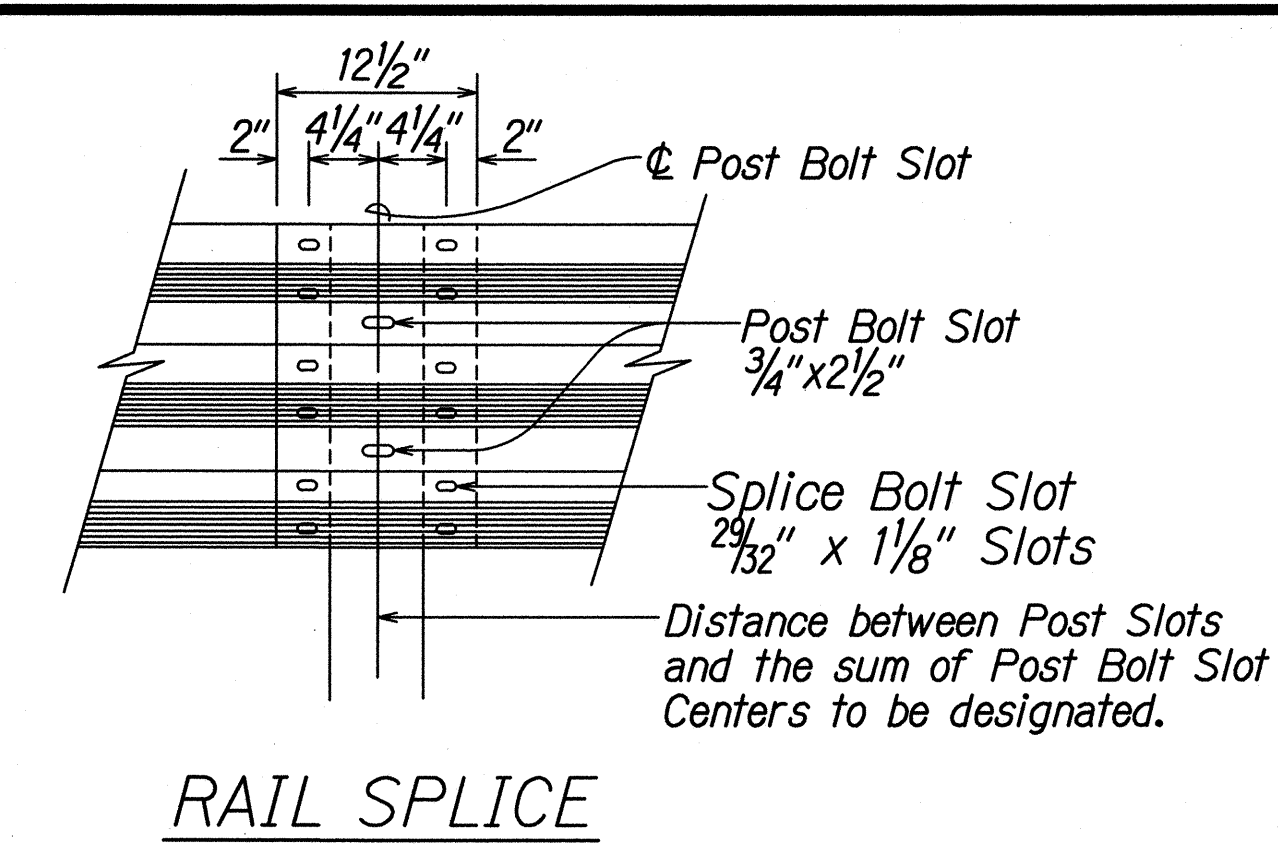
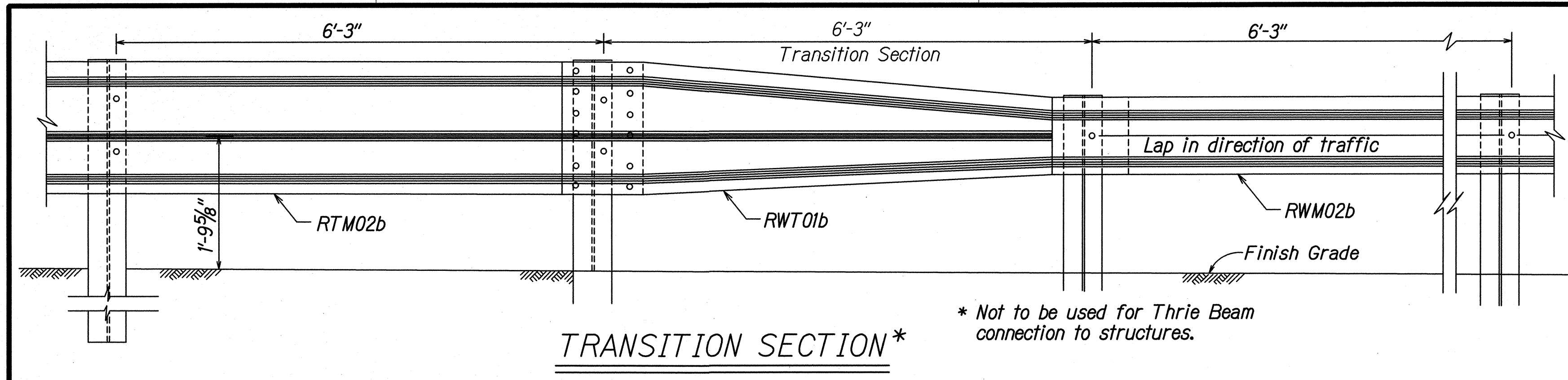
STRONG POST W-BEAM GUARDRAIL

INTERSTATE ROUTE H-1 REHABILITATION
Middle Street to Vicinity of Ward Avenue
FAP NO. IM-HI-1(269)

Scale: NTS Date: Apr. 26, 2013

SHEET No. R-41 OF 43 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IM-HI-1(269)	2013	62	382



DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
IN CHARGE	

11/01/05 tdt/rub/guardrail/thriebeam.dgn (standard plan TE-57 r1/03/08 & TE-57a r1/03/08)

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE: *Pamela K. Uyeda* EXPIRATION DATE OF THE LICENSE: 04/30/14

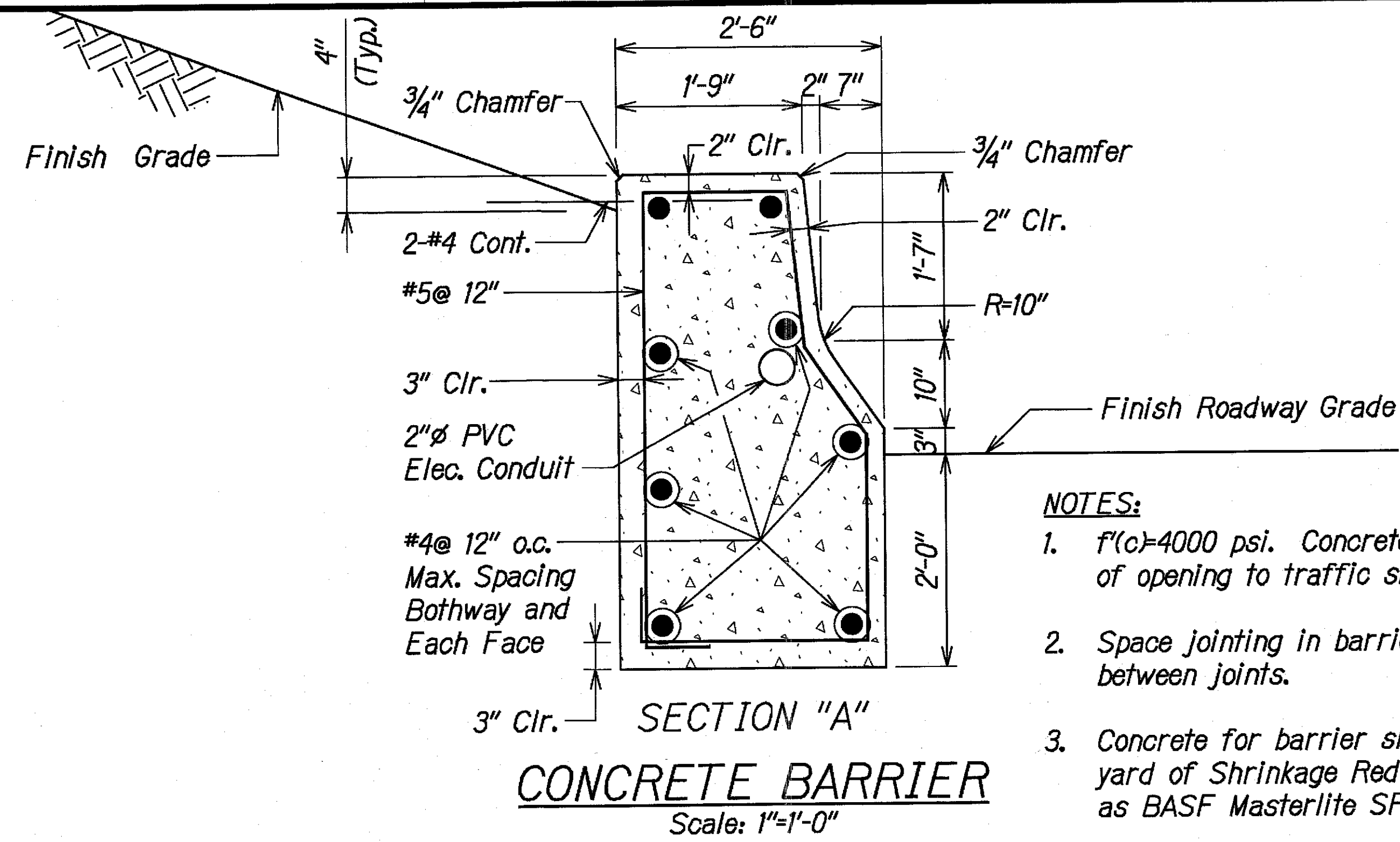
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**STRONG POST
THRIE-BEAM GUARDRAIL**
INTERSTATE ROUTE H-1 REHABILITATION
Middle Street to Vicinity of Ward Avenue
FAP NO. IM-HI-1(269)

Scale: NTS Date: Apr. 26, 2013

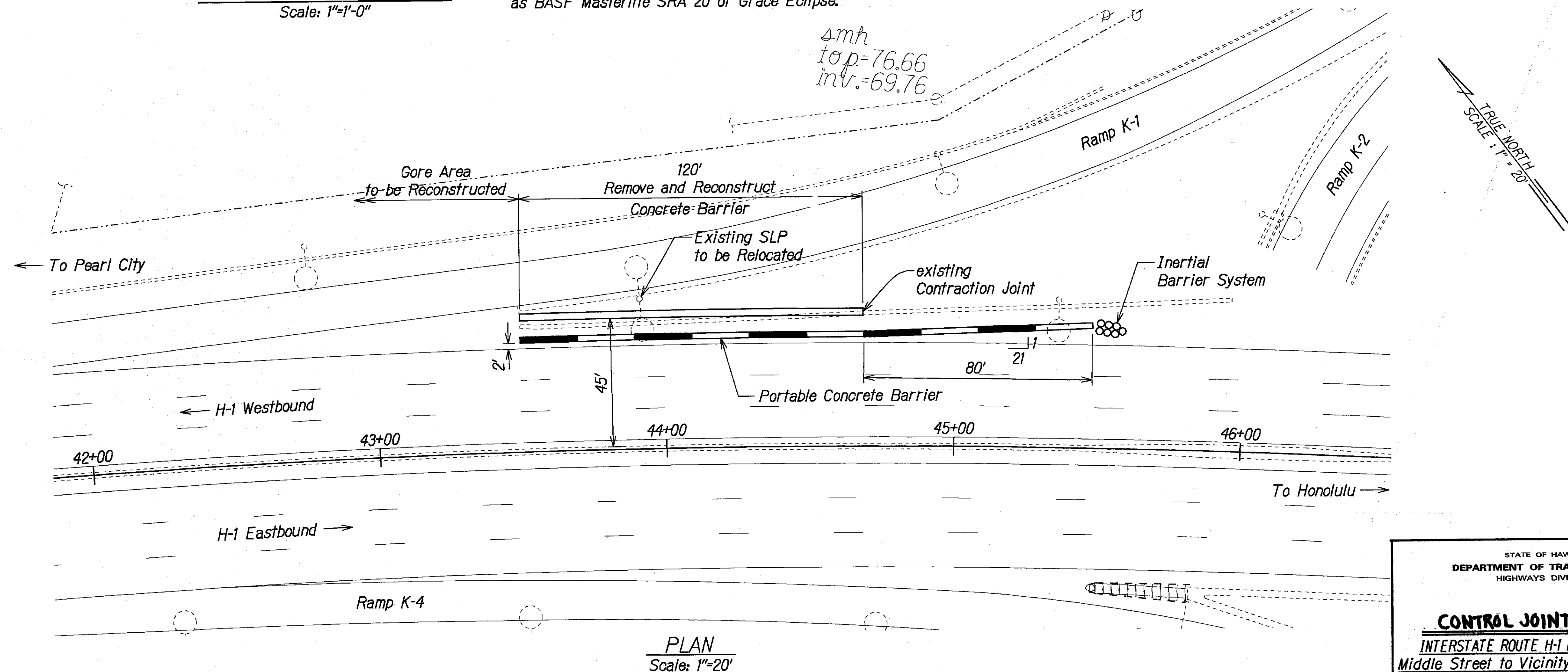
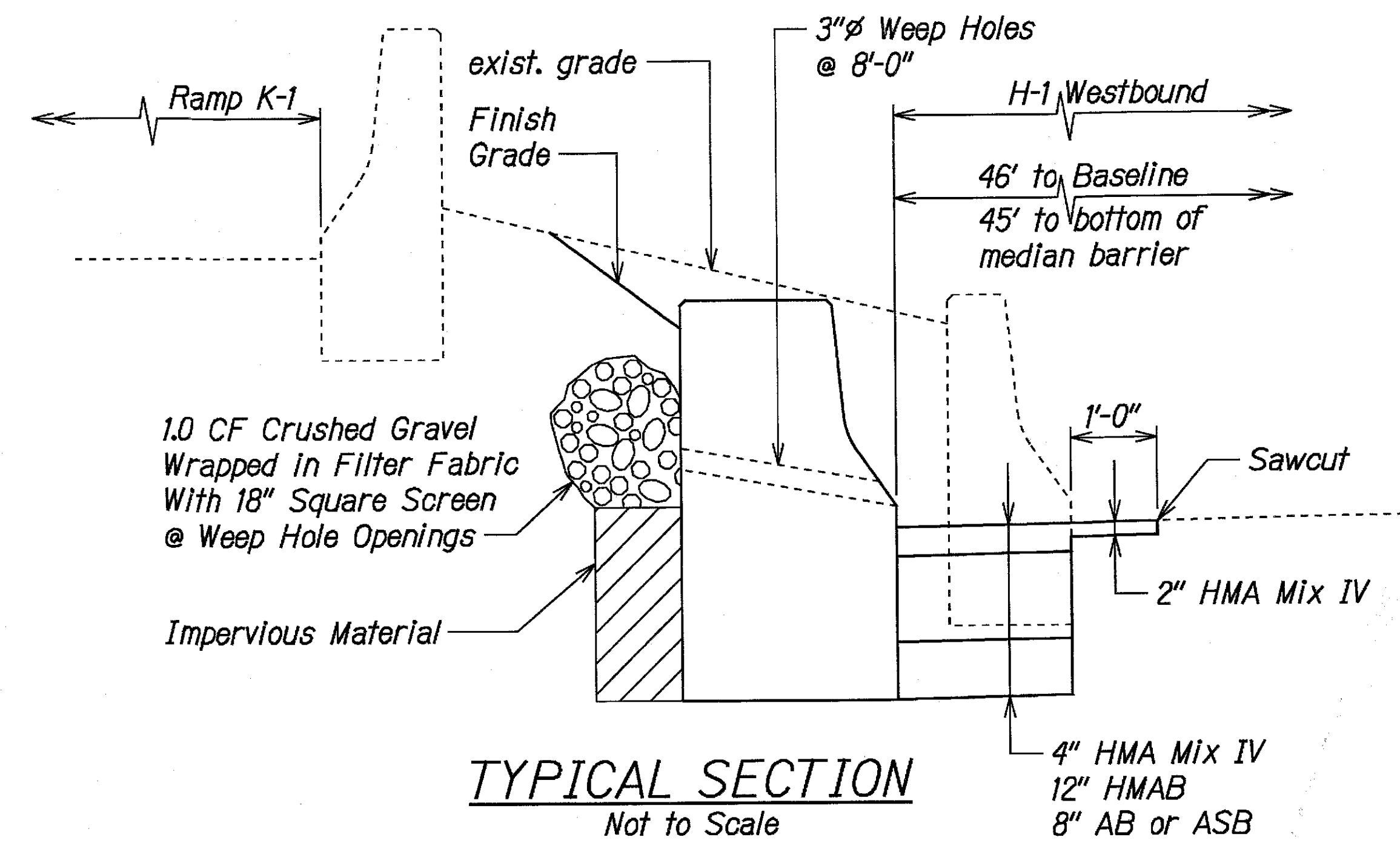
SHEET No. R-43 OF 43 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1M-HI-1(269)	2013	6251	382



NOTES:

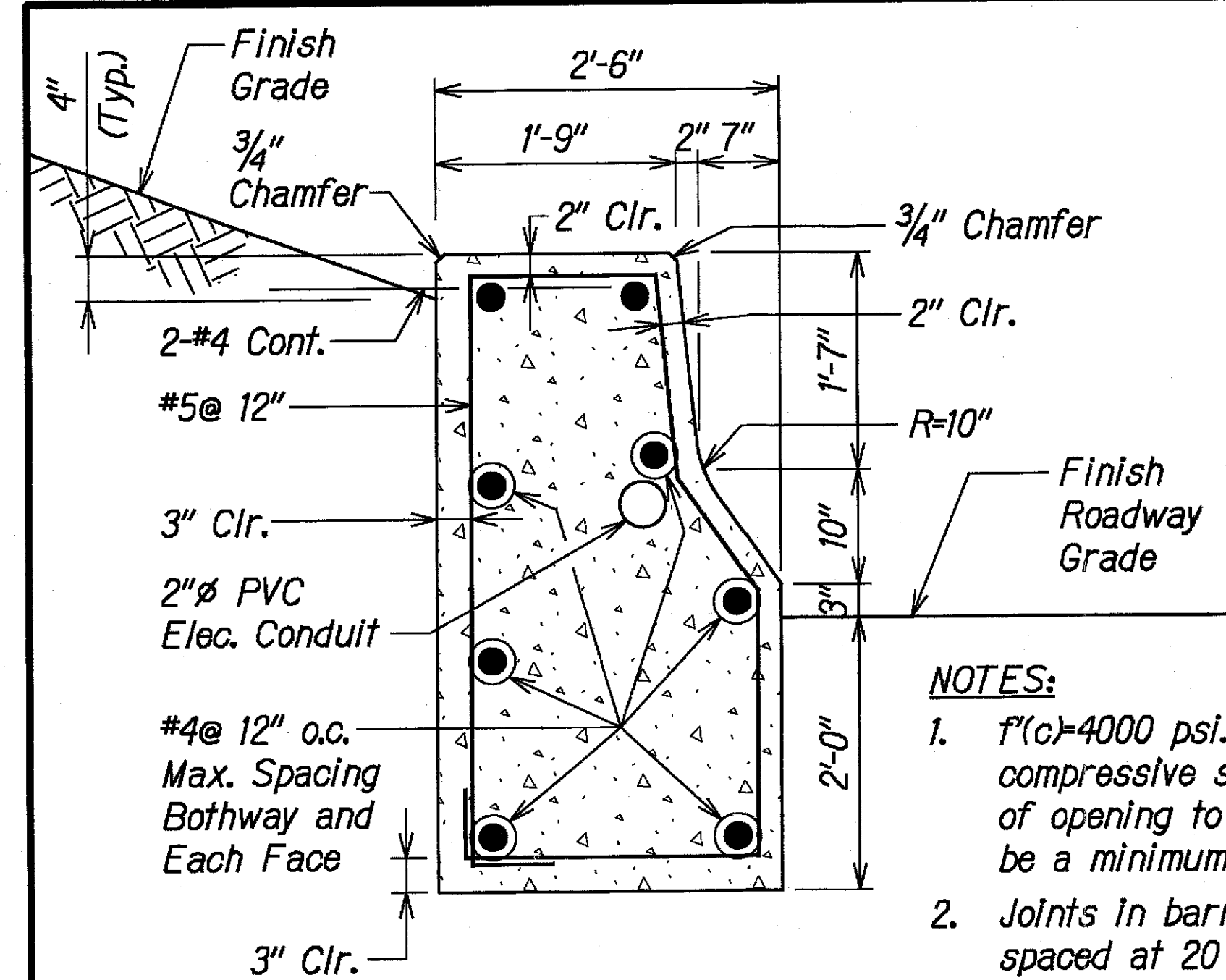
1. $f'(c) \geq 4000$ psi. Concrete compressive strength at time of opening to traffic shall be a minimum of 3000 psi.
2. Space jointing in barrier shall be 20 feet maximum between joints.
3. Concrete for barrier shall contain 128 oz. per cubic yard of Shrinkage Reducing Admixture (SRA) such as BASF Masterlite SRA 20 of Grace Eclipse.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

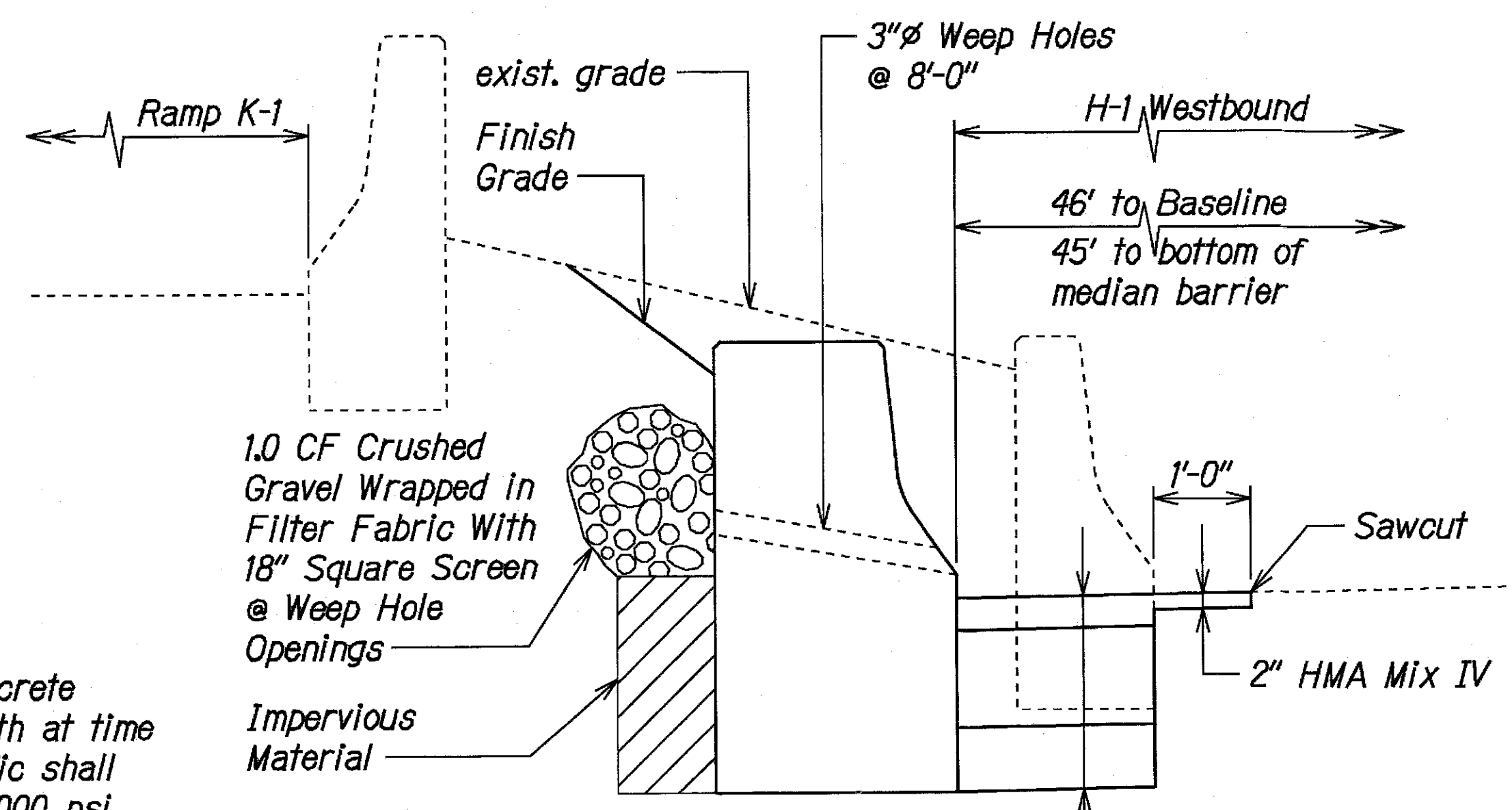
CONTROL JOINT DETAIL
INTERSTATE ROUTE H-1 REHABILITATION
Middle Street to Vicinity of Ward Avenue
FAP NO. 1M-HI-1(269)
Scale: NTS Date: Apr. 26, 2013
SHEET No. R-434 OF 43 SHEETS

HAWAII	FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HI	1M-HI-1(269)	2013	6232	382		

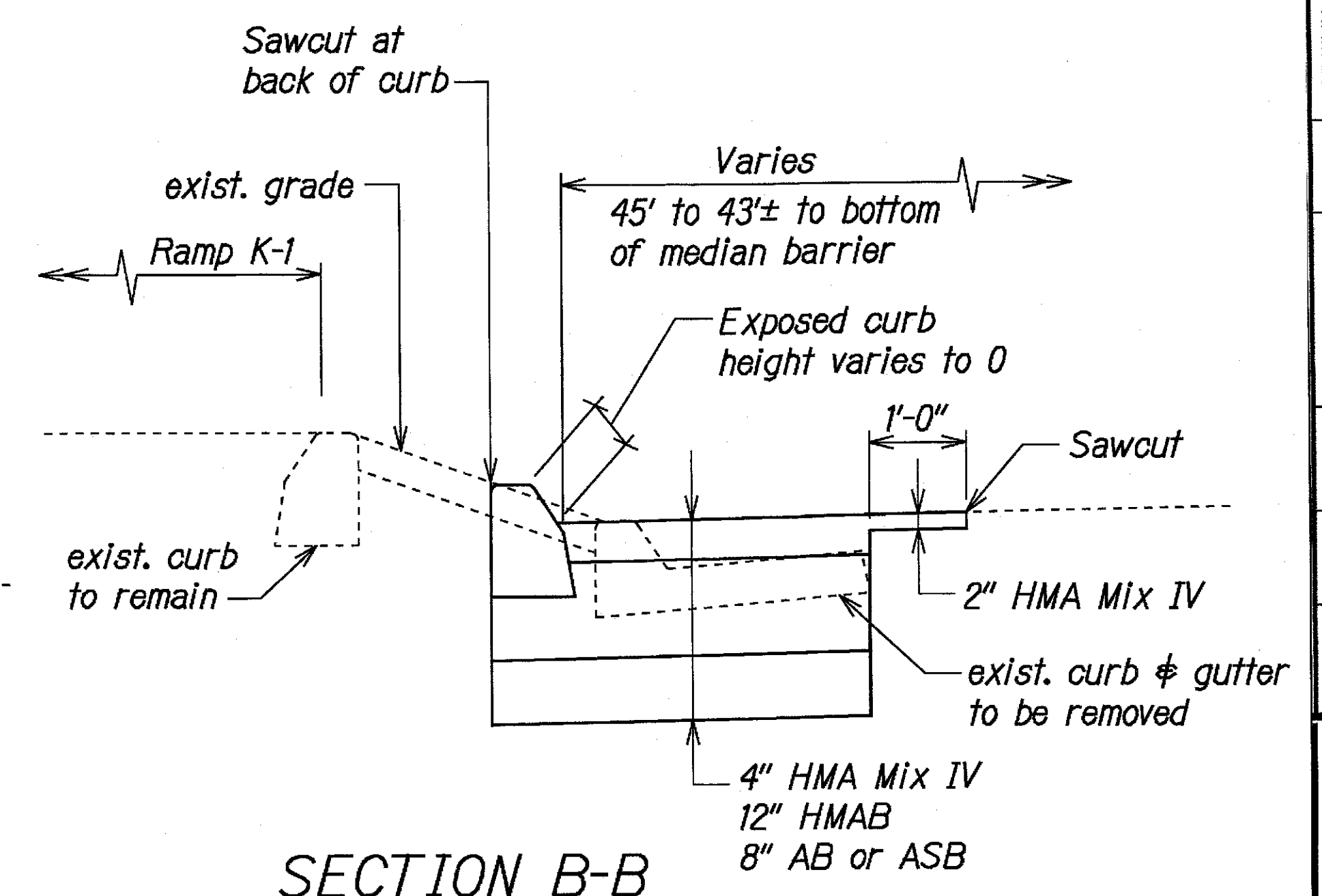


CONCRETE BARRIER
Scale: 1"=1'-0"

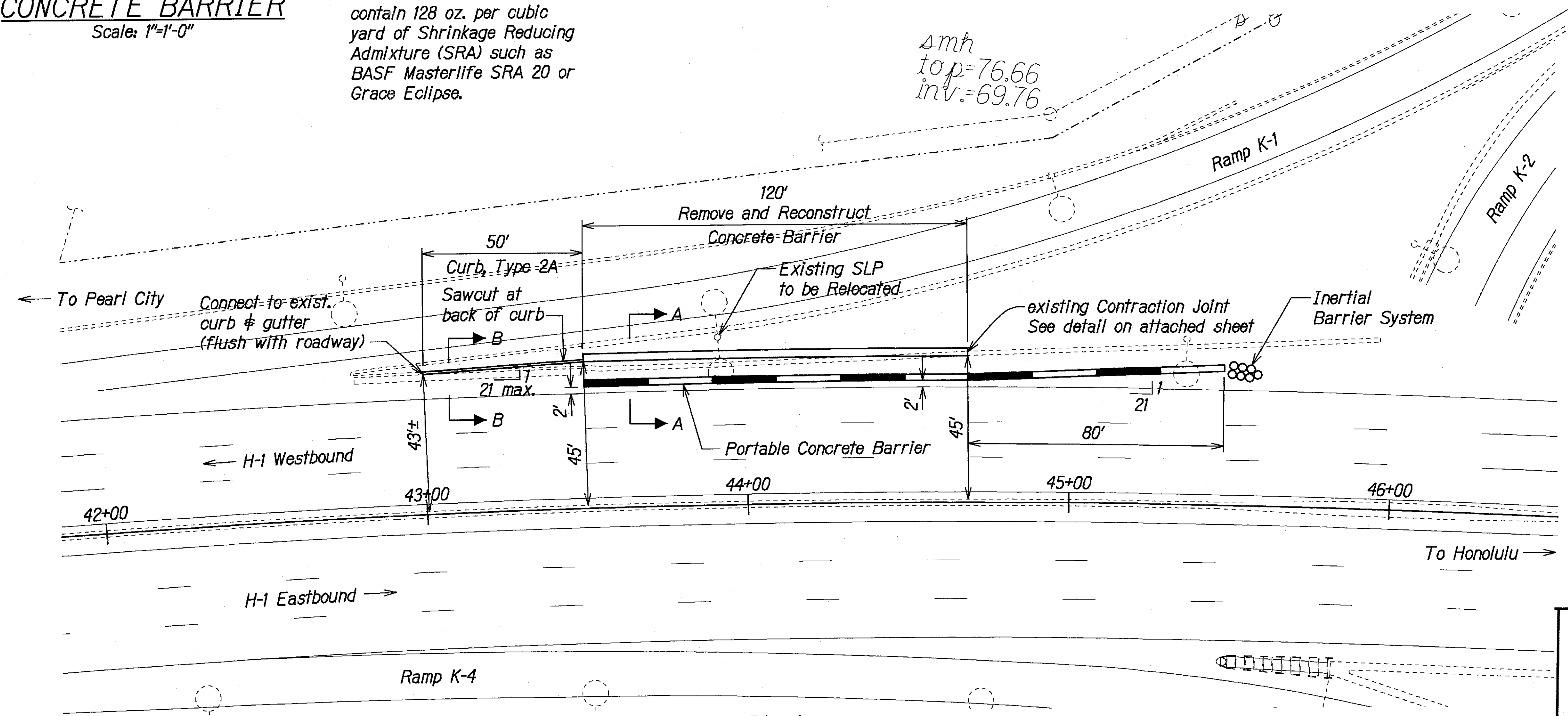
- NOTES:**
1. $f'(c)$ 4000 psi. Concrete compressive strength at time of opening to traffic shall be a minimum of 3000 psi.
 2. Joints in barrier shall be spaced at 20 feet maximum.
 3. Concrete for barrier shall contain 128 oz. per cubic yard of Shrinkage Reducing Admixture (SRA) such as BASF Masterlife SRA 20 or Grace Eclipse.



SECTION A-A
Not to Scale



SECTION B-B
Not to Scale



PLAN
Scale: 1"=20'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONTROL JOINT DETAIL
INTERSTATE ROUTE H-1 REHABILITATION
Middle Street to Vicinity of Ward Avenue
FAP NO. 1M-HI-1(269)
Scale: NTS
Date: Apr. 26, 2013

SHEET No. R-43B OF 43 SHEETS