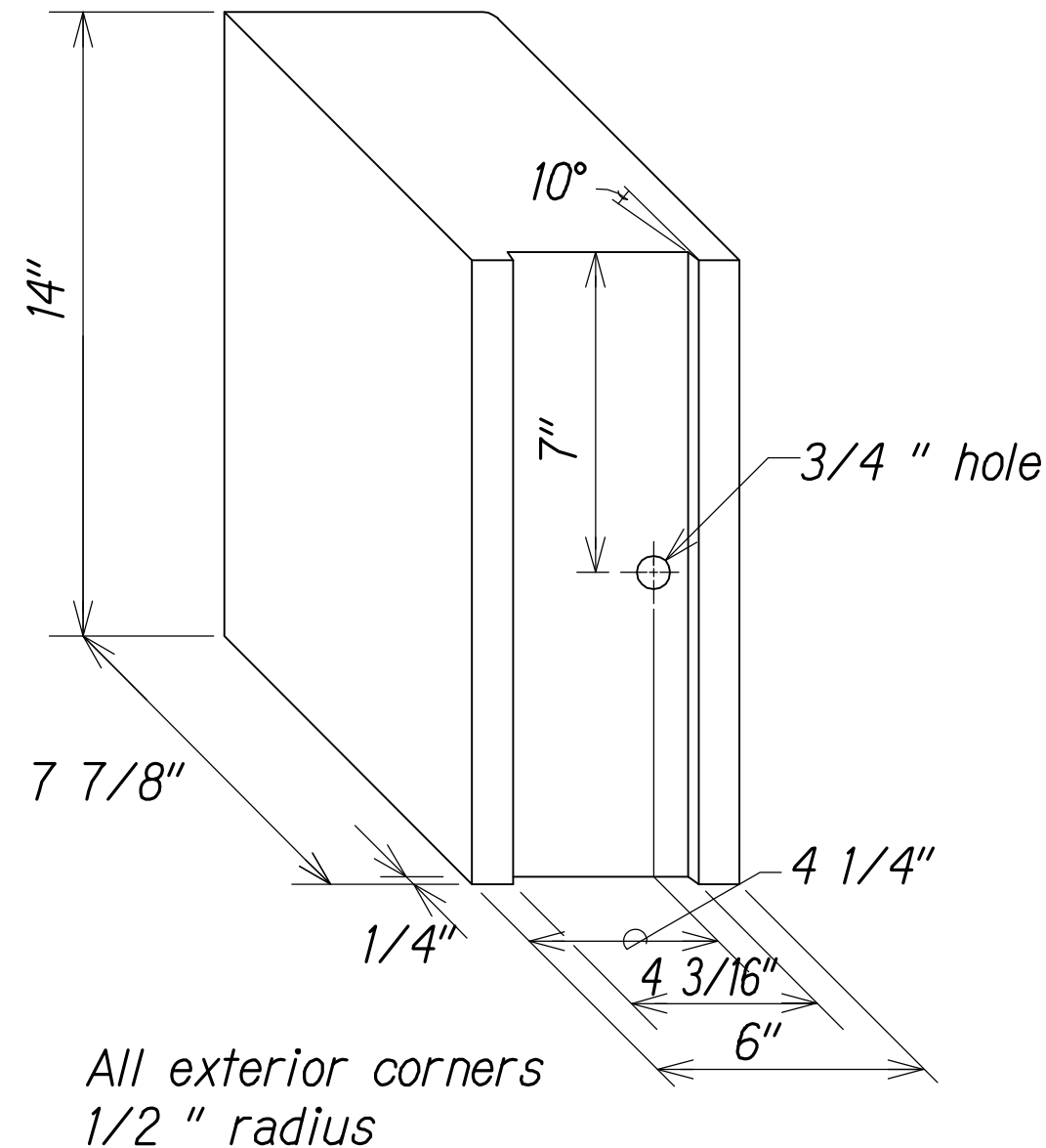
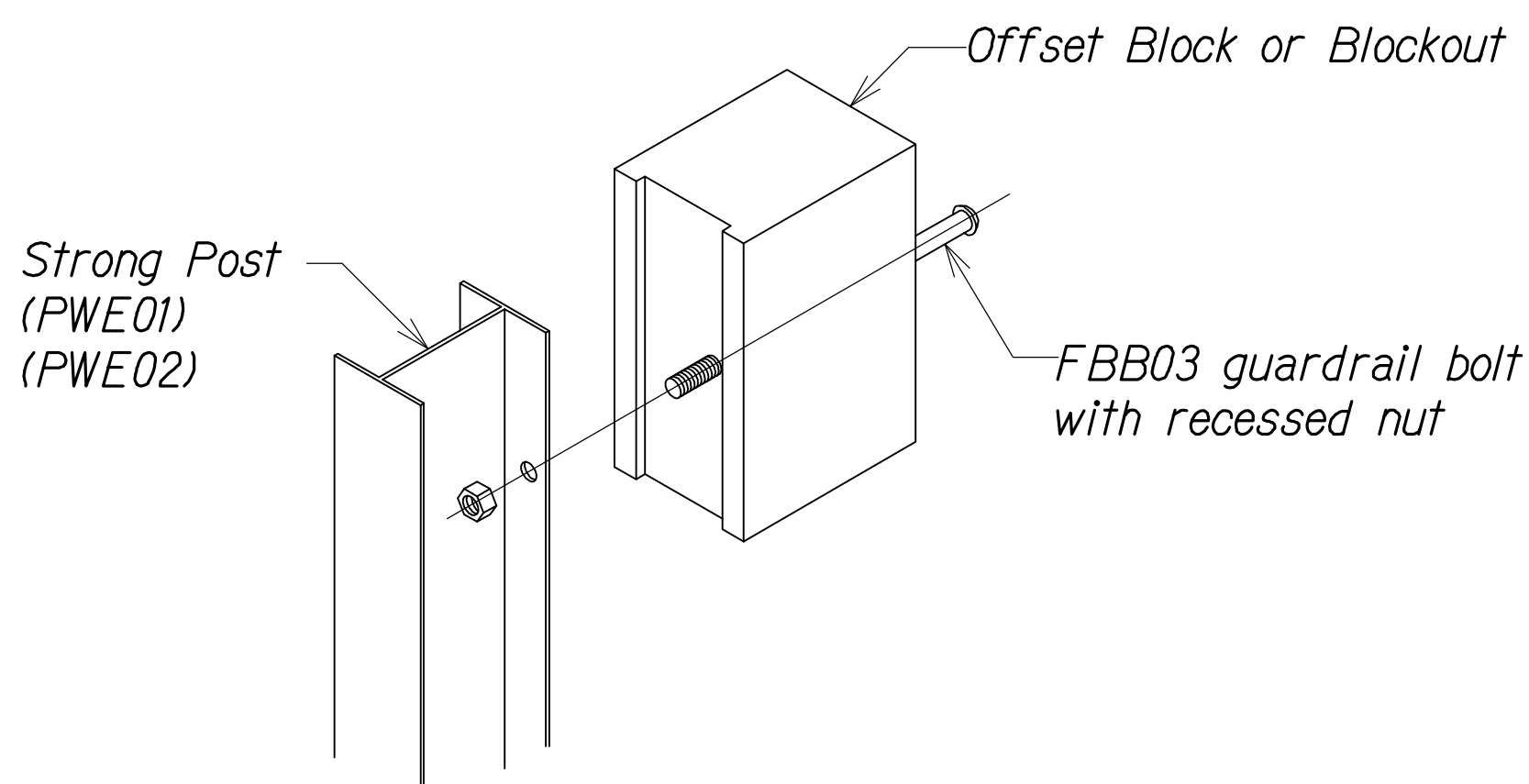


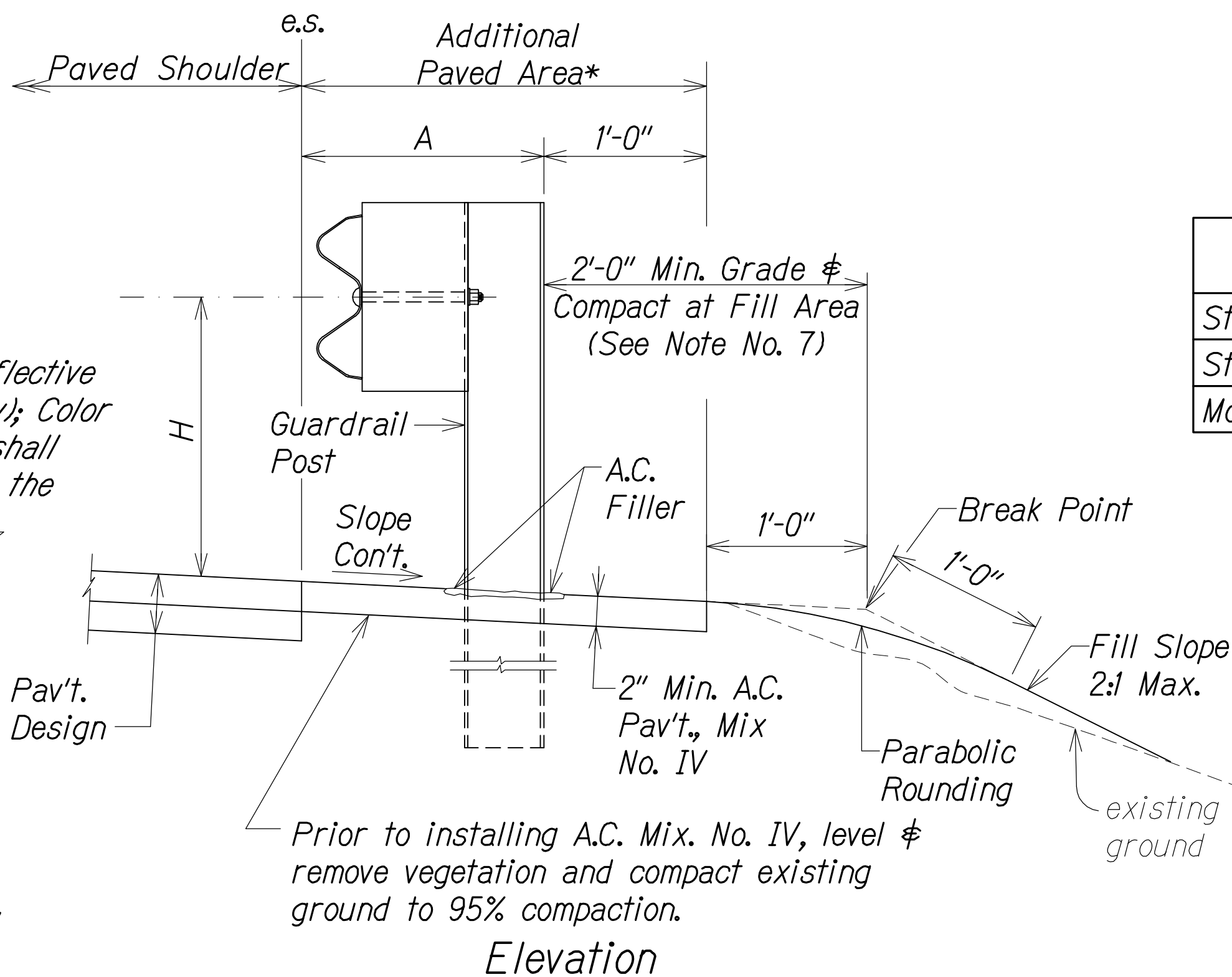
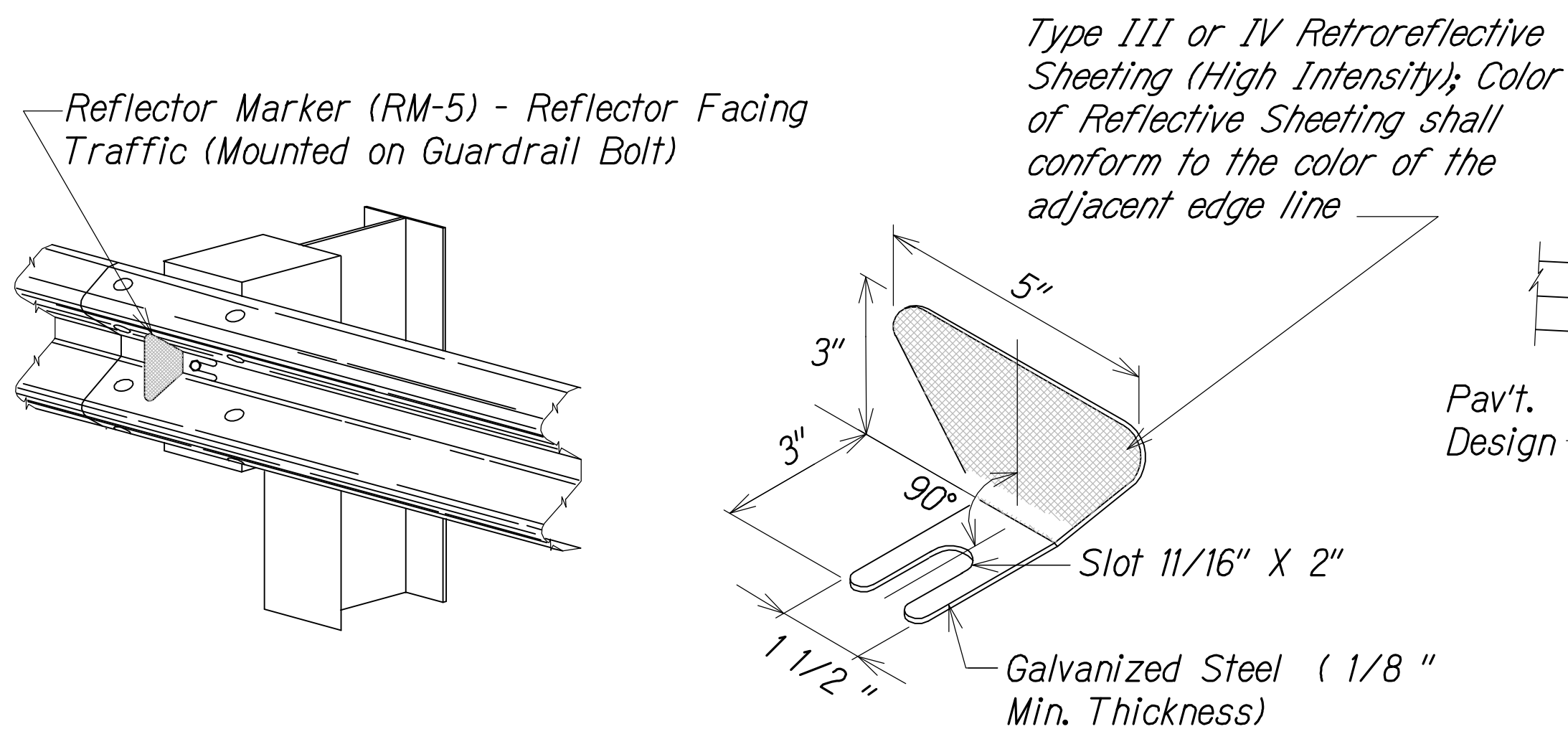
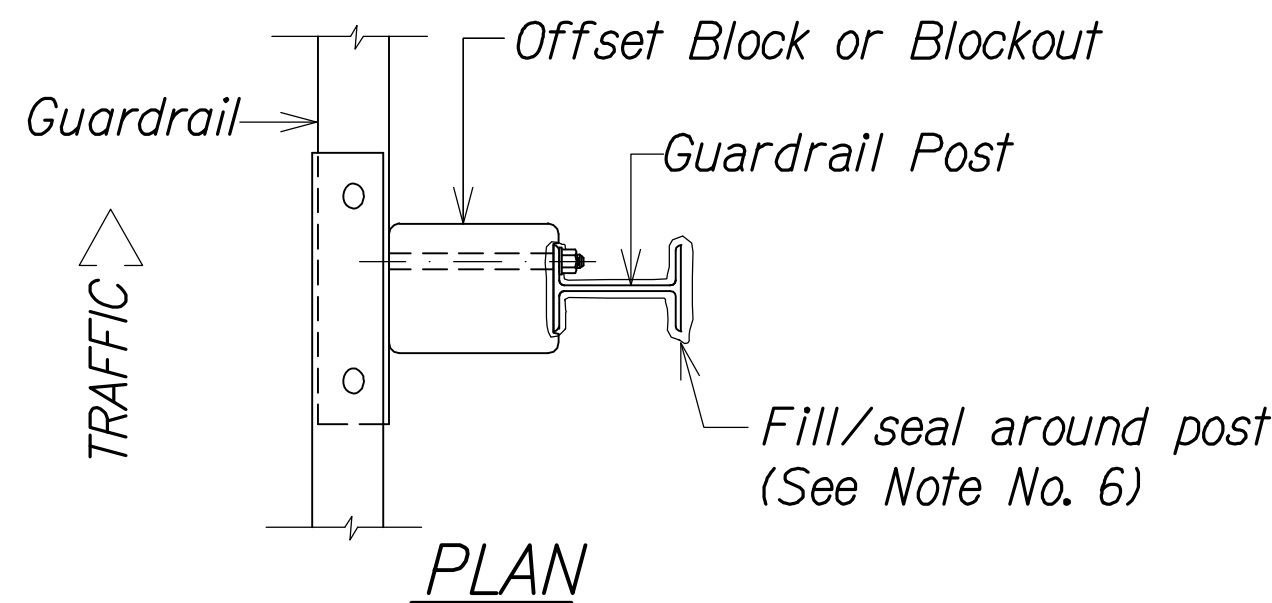
RECYCLED PLASTIC BLOCKOUT (TYPE I)



RECYCLED POLYETHYLENE OFFSET BLOCK (TYPE II)



STEEL POST AND BLOCK DETAIL

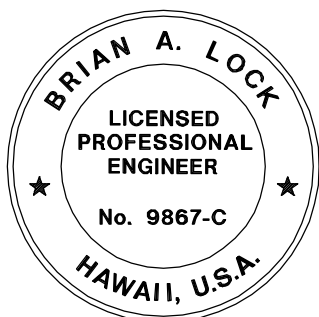


TYPICAL GUARDRAIL INSTALLATION

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 approved by the State.
- All new guardrail systems (system consists of total length of guardrail including both end treatments) shall include the Additional Paved Area.
- 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 tamper 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 longi-tudinally beyond terminal ends.
- Reflector Markers (RM-5) Bi-Directional (white/red) 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 Section 606 - Guardrail.

GUARDRAIL TYPE	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"



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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

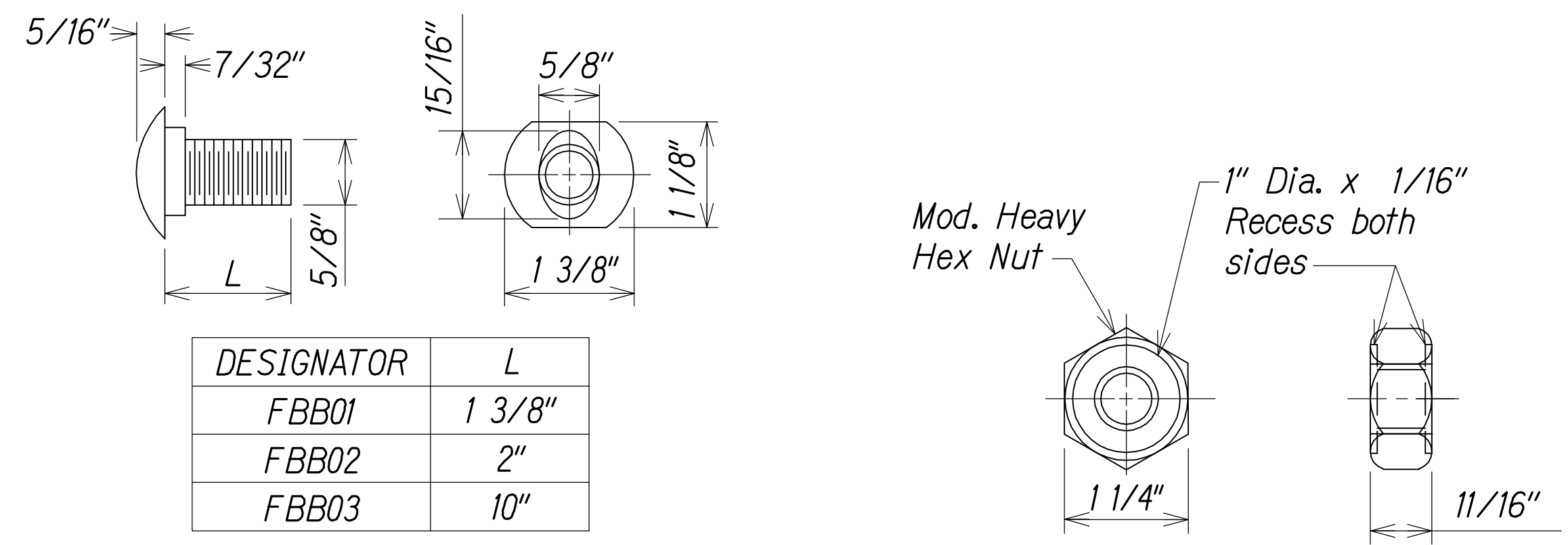
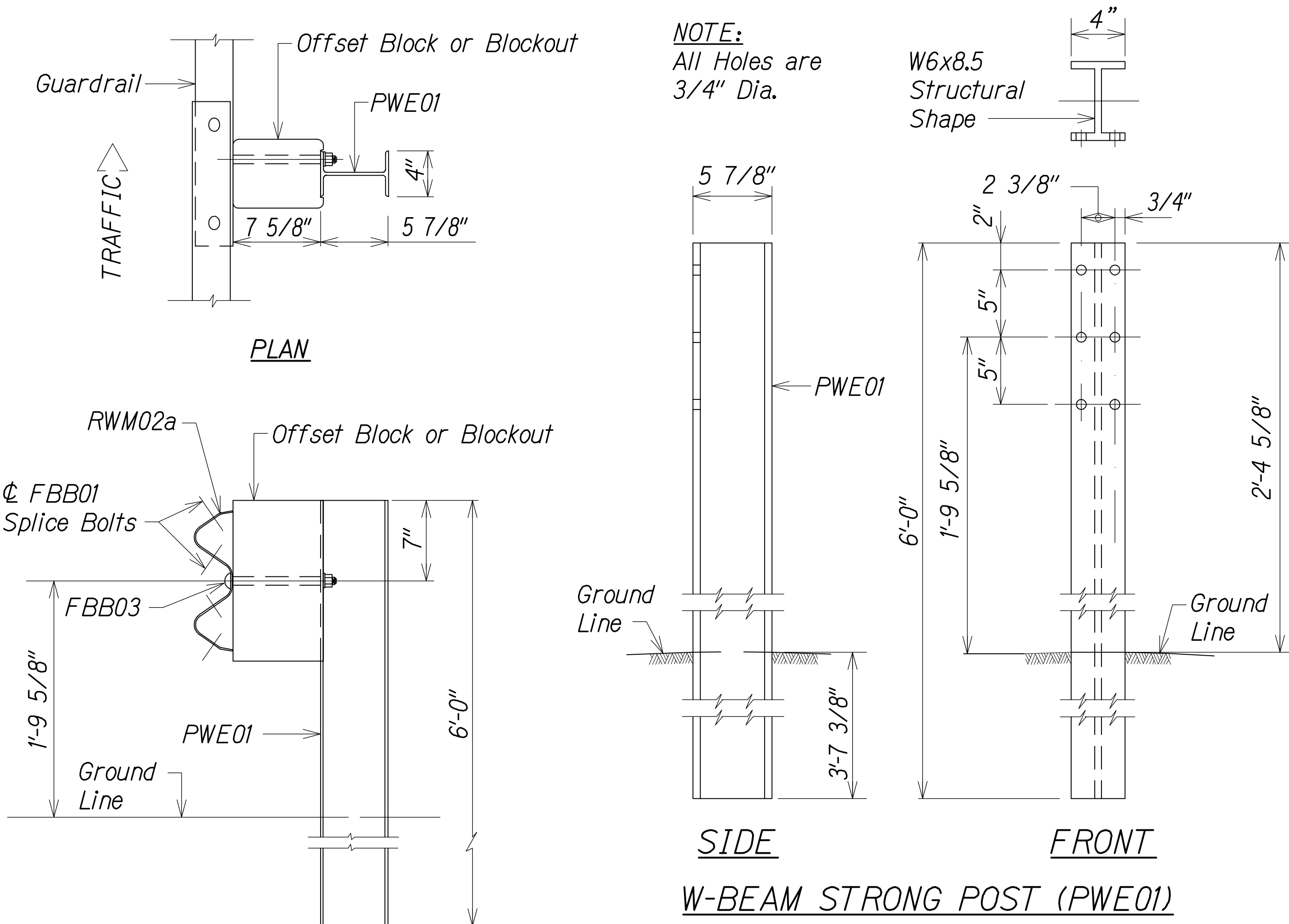
GUARDRAIL DETAILS & NOTES

KEAAU-PAHOA ROAD, SHOULDER LANE CONVERSION, PHASE 2

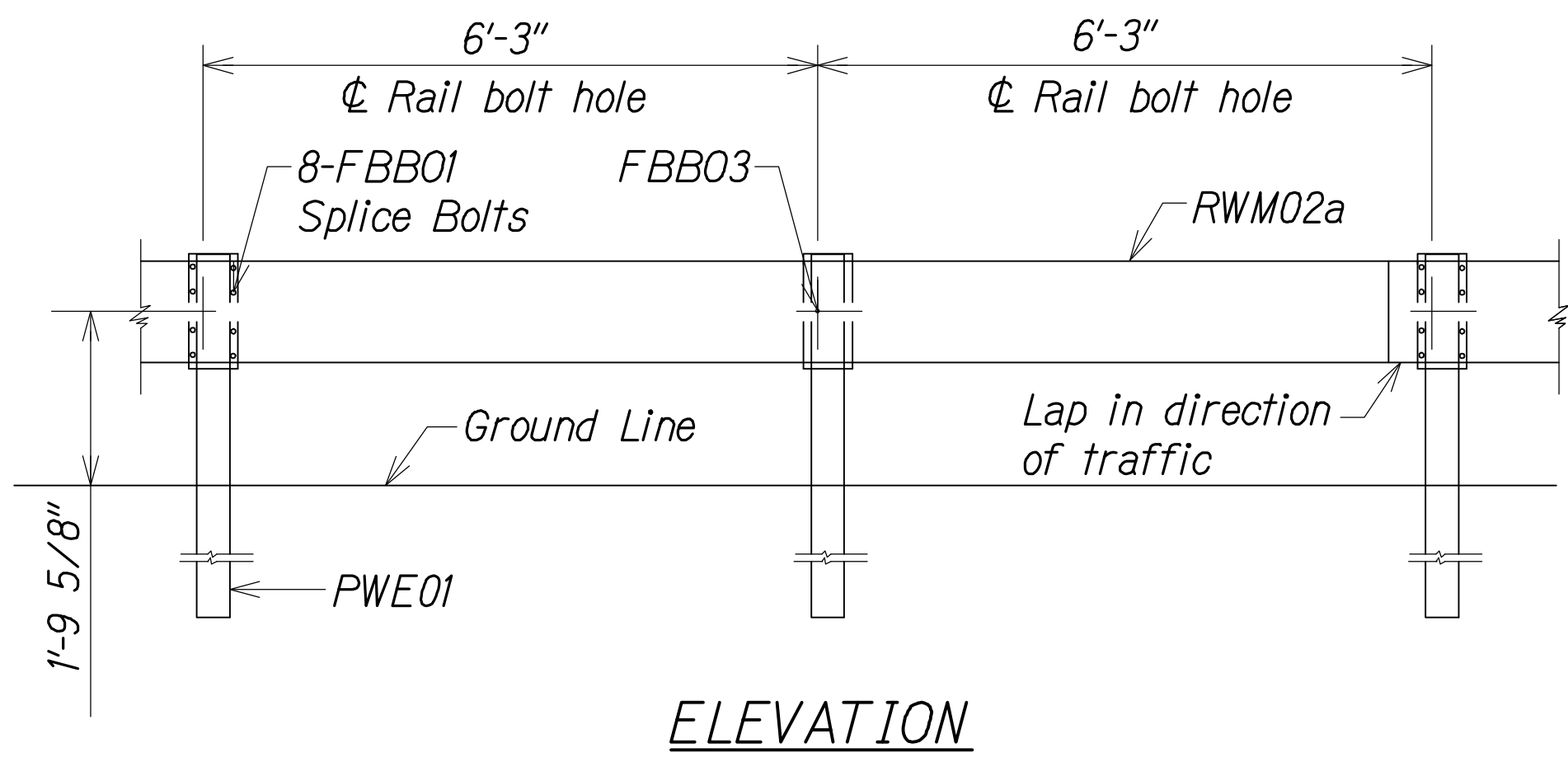
Showder Drive Intersection Improvements

Fed. Aid Proj. No. STP-0130(33)

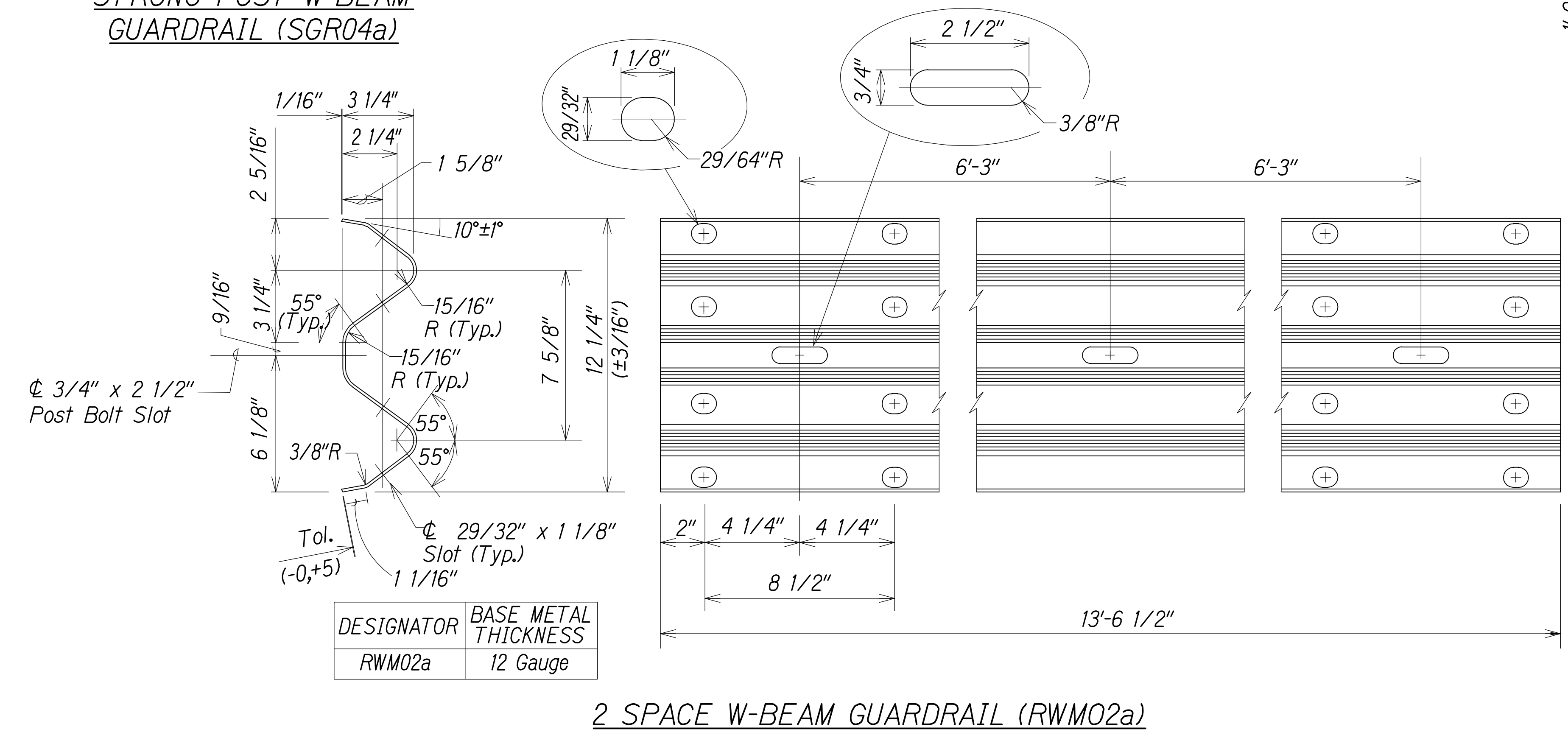
Scale: _____ Date: March 2016



GUARDRAIL BOLTS AND RECESSED NUT



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



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

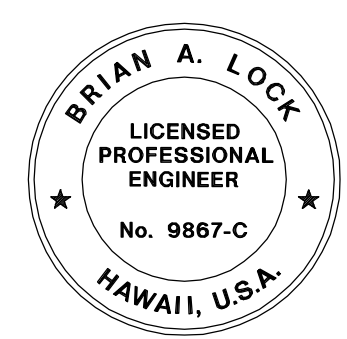
**STRONG POST W-BEAM GUARDRAIL**

KEAAU-PAHOA ROAD, SHOULDER LANE CONVERSION, PHASE 2

Show Drive Intersection Improvements

Fed. Aid Proj. No. STP-0130(33)

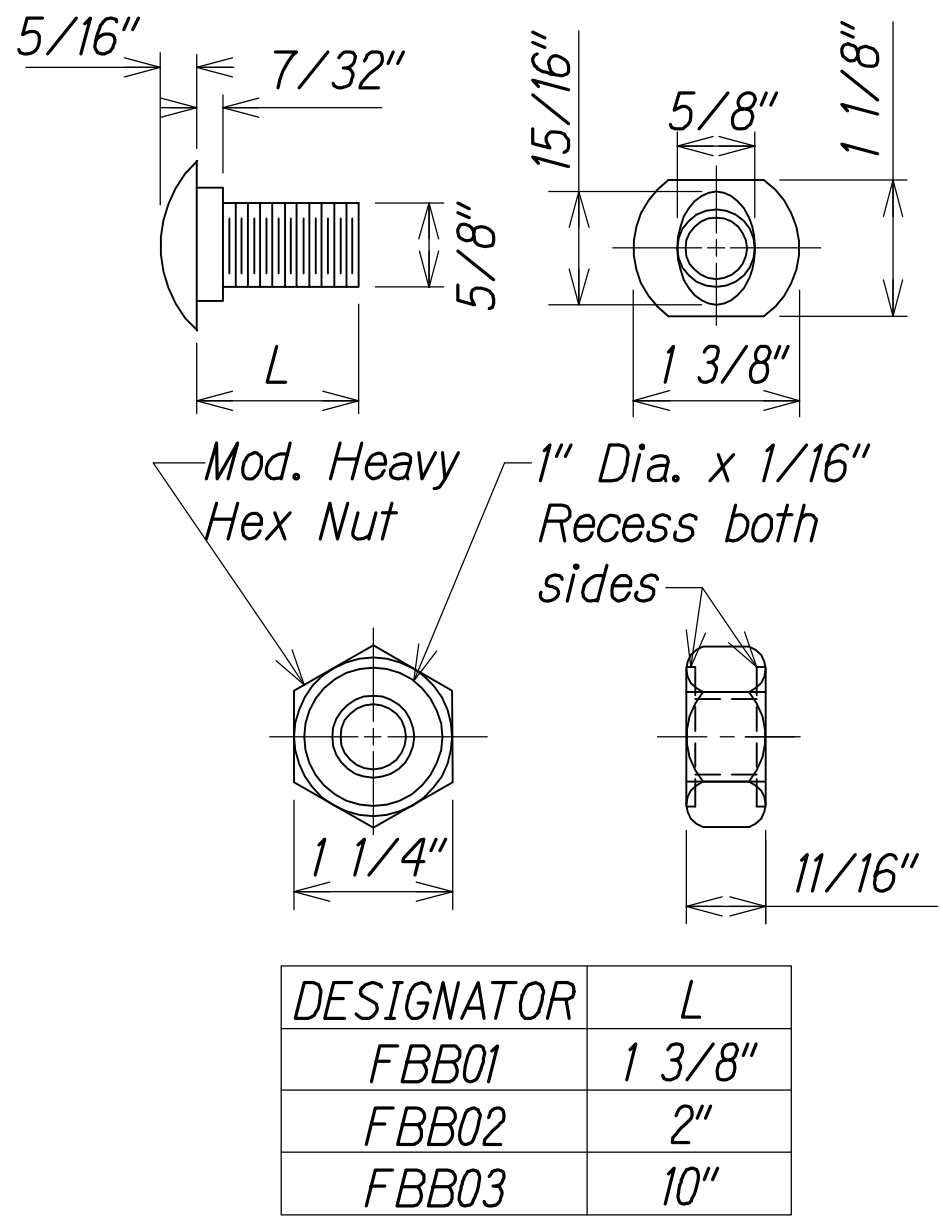
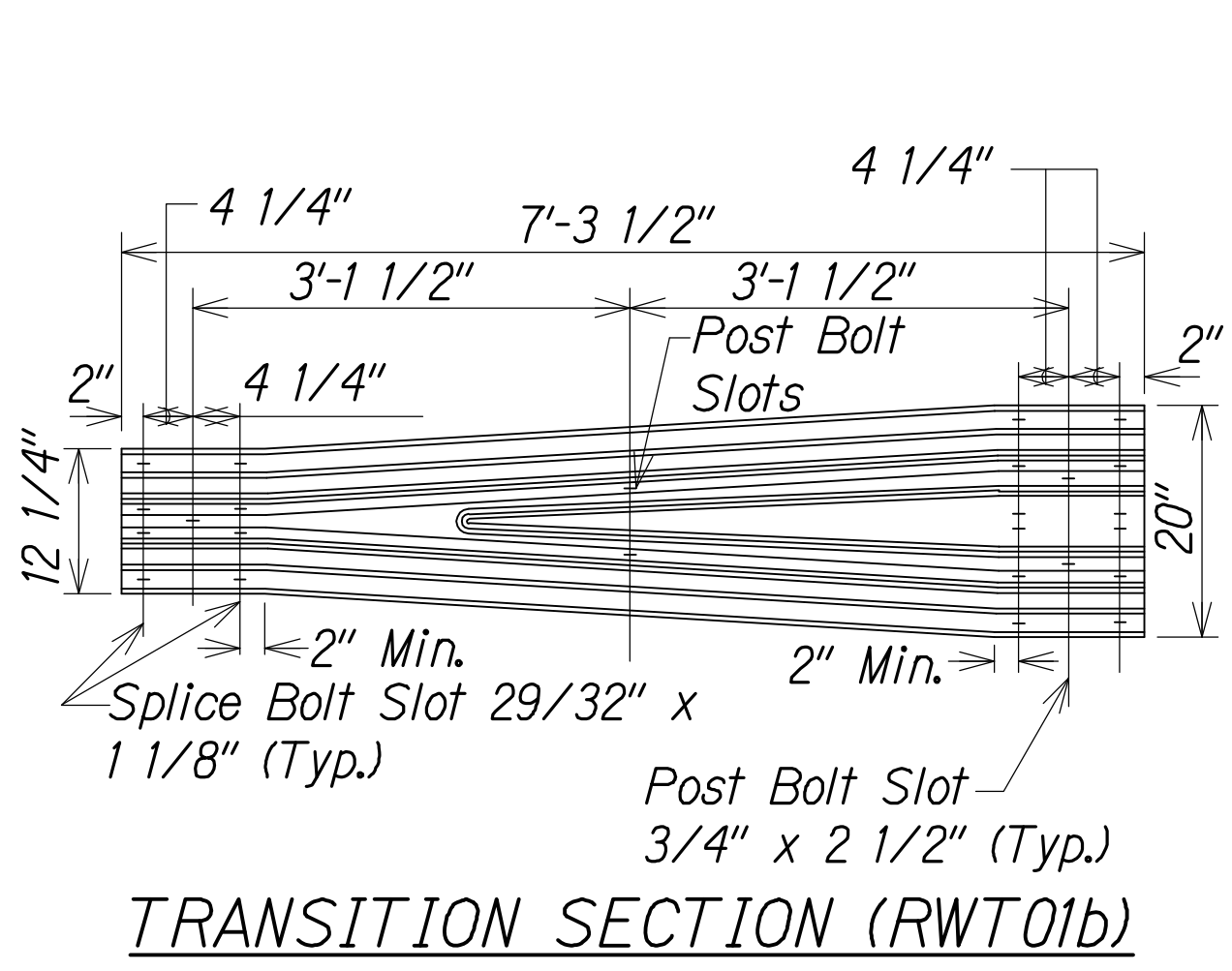
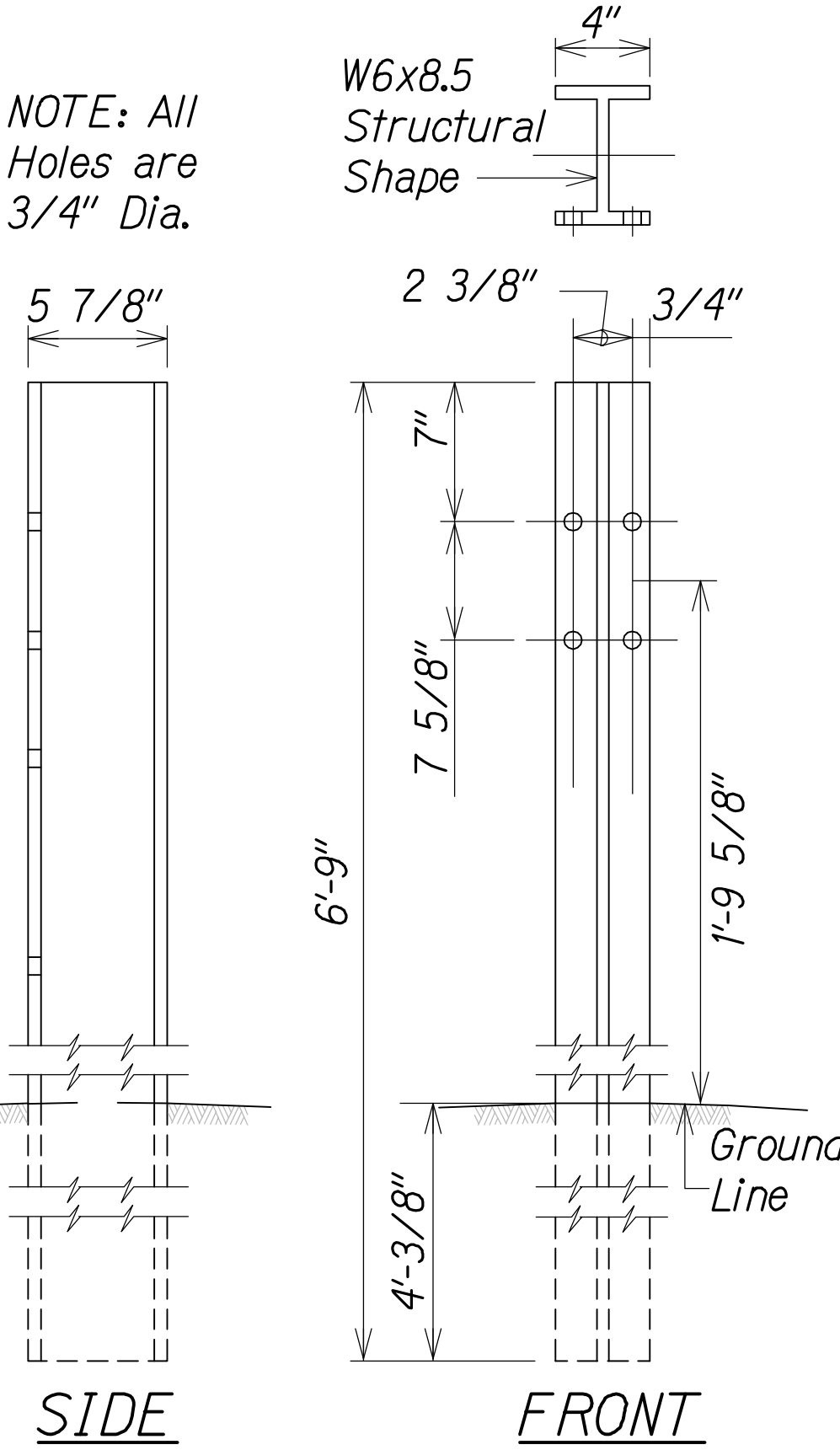
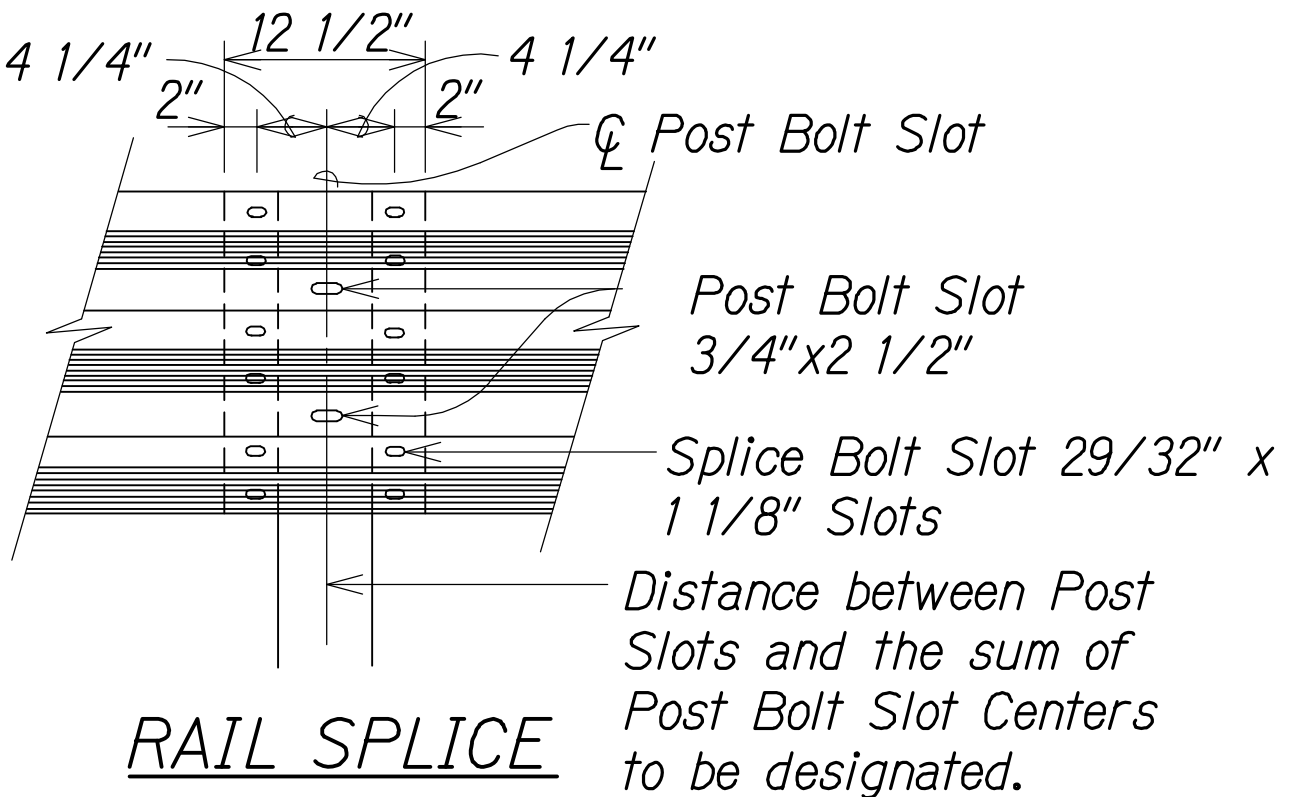
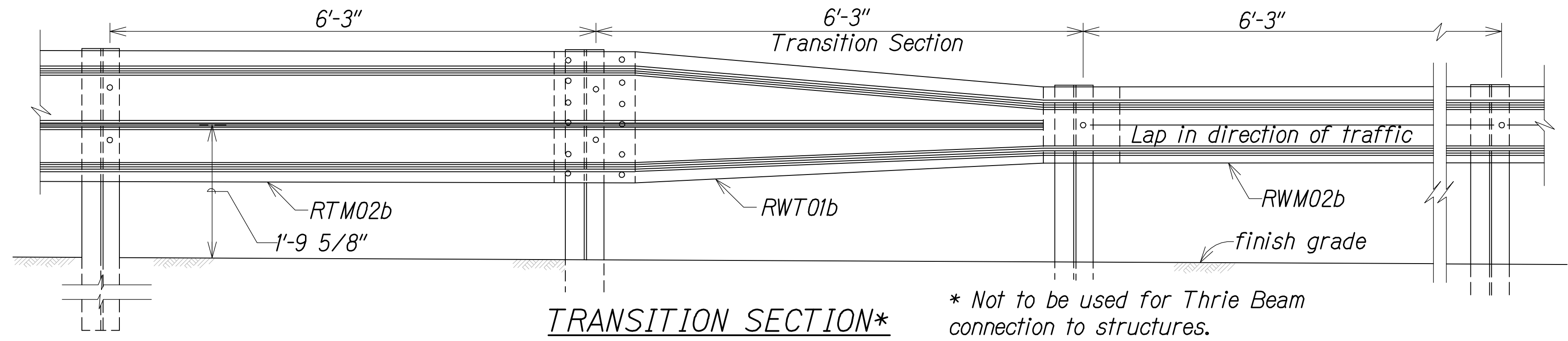
Scale: Date: March 2016



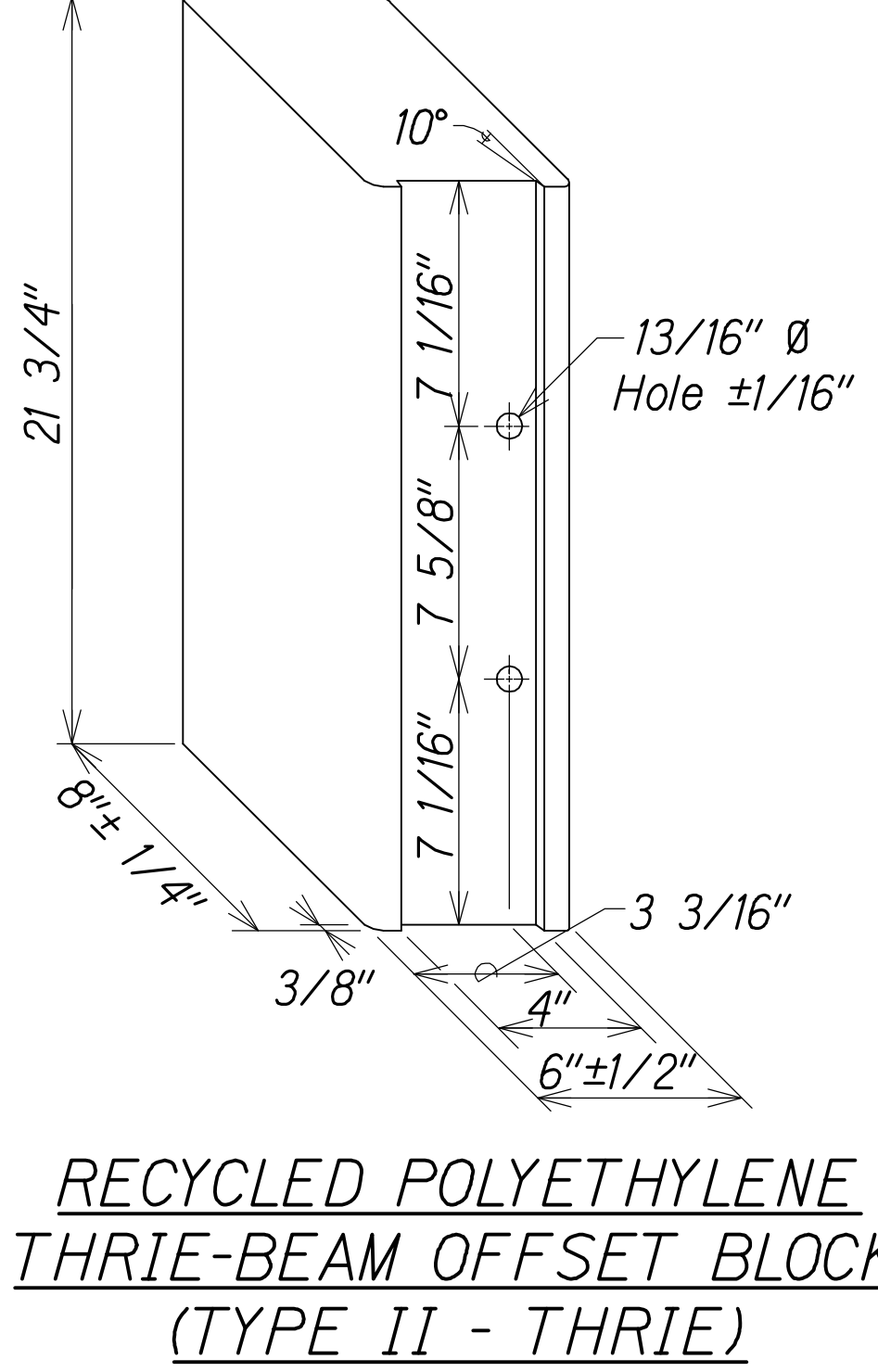
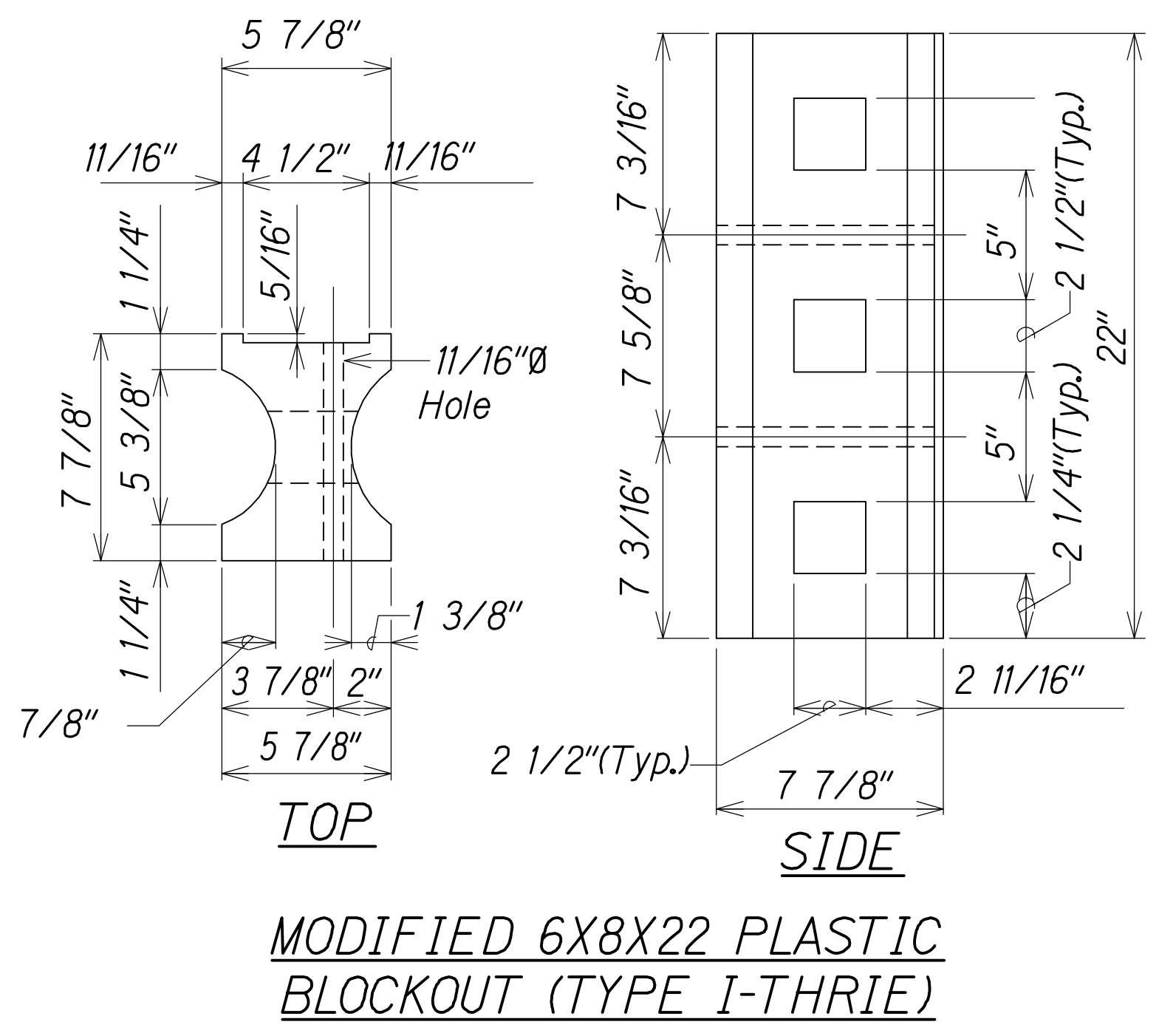
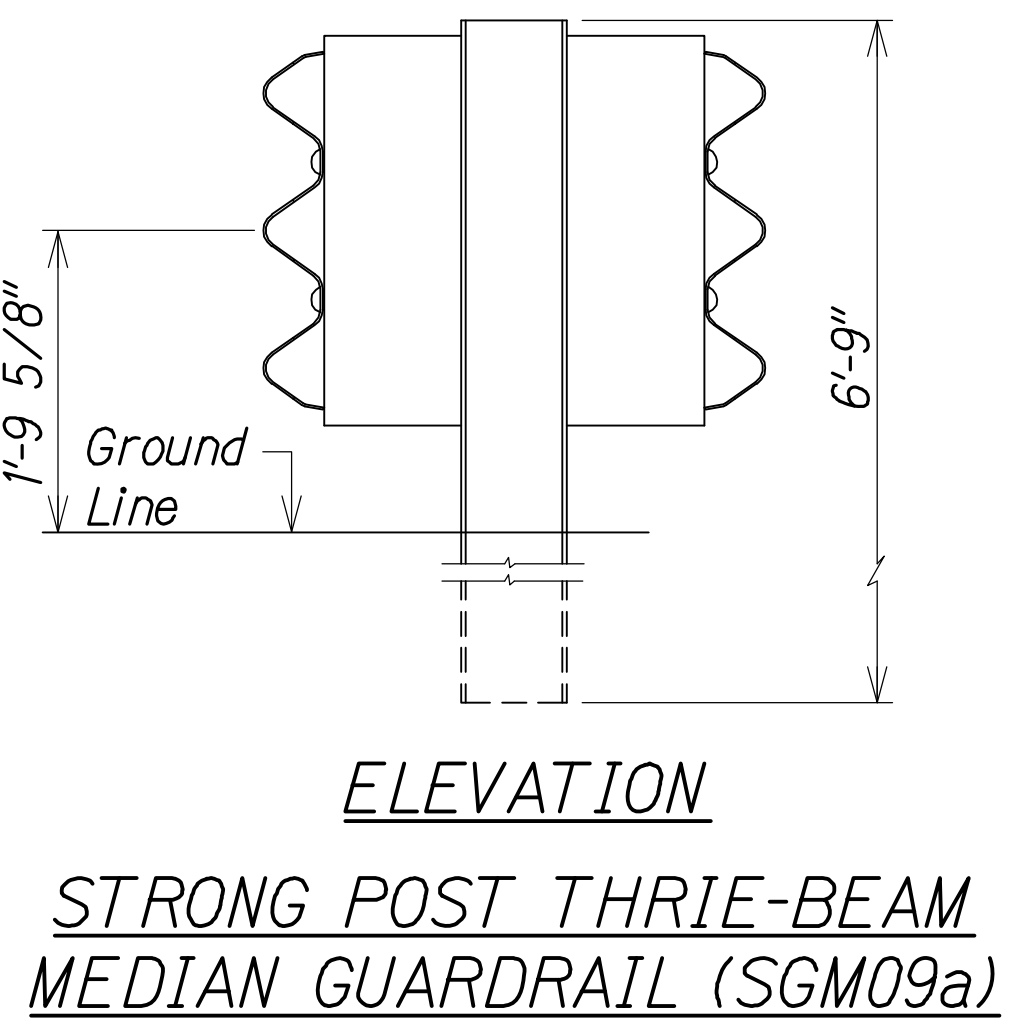
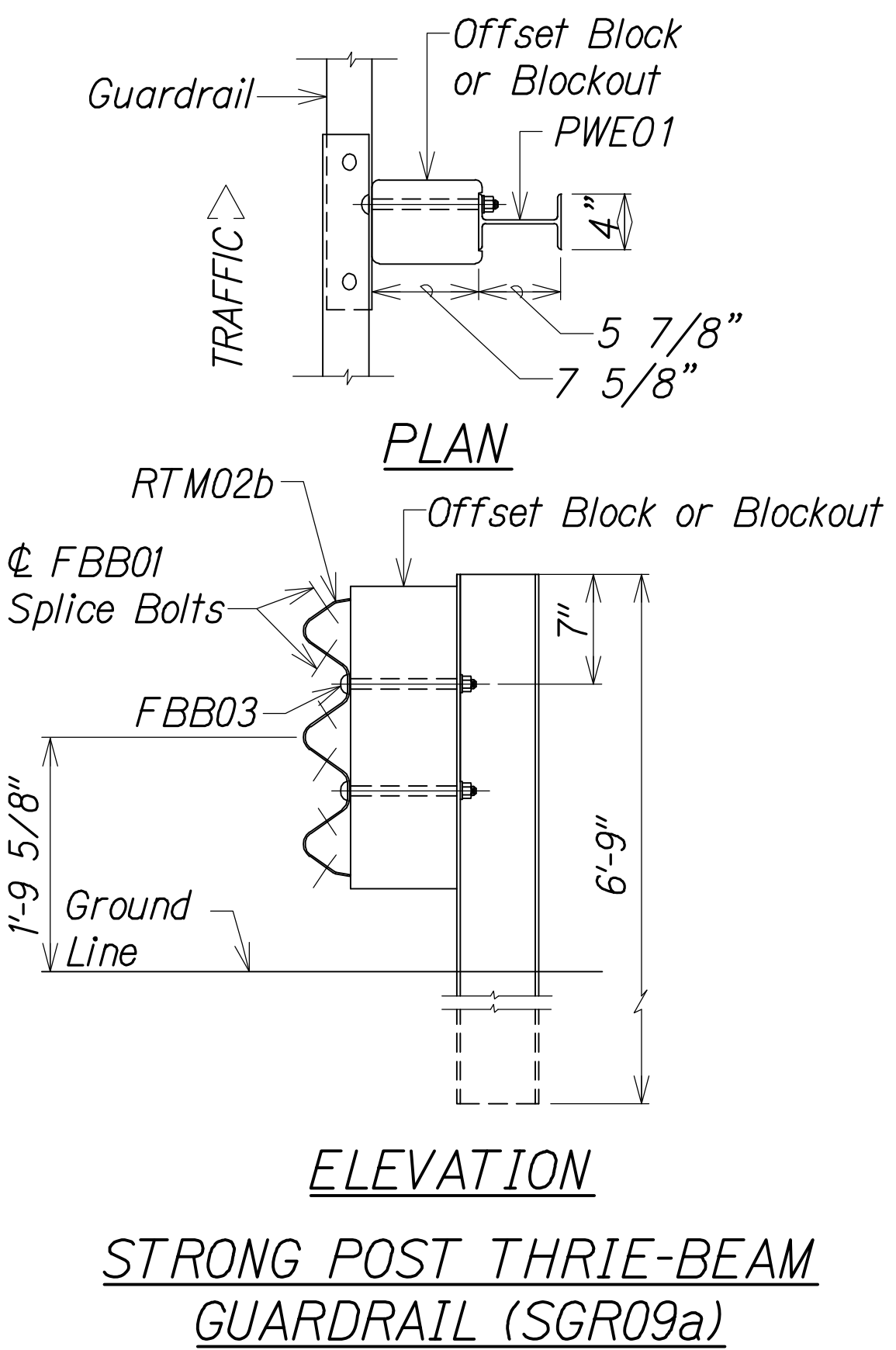
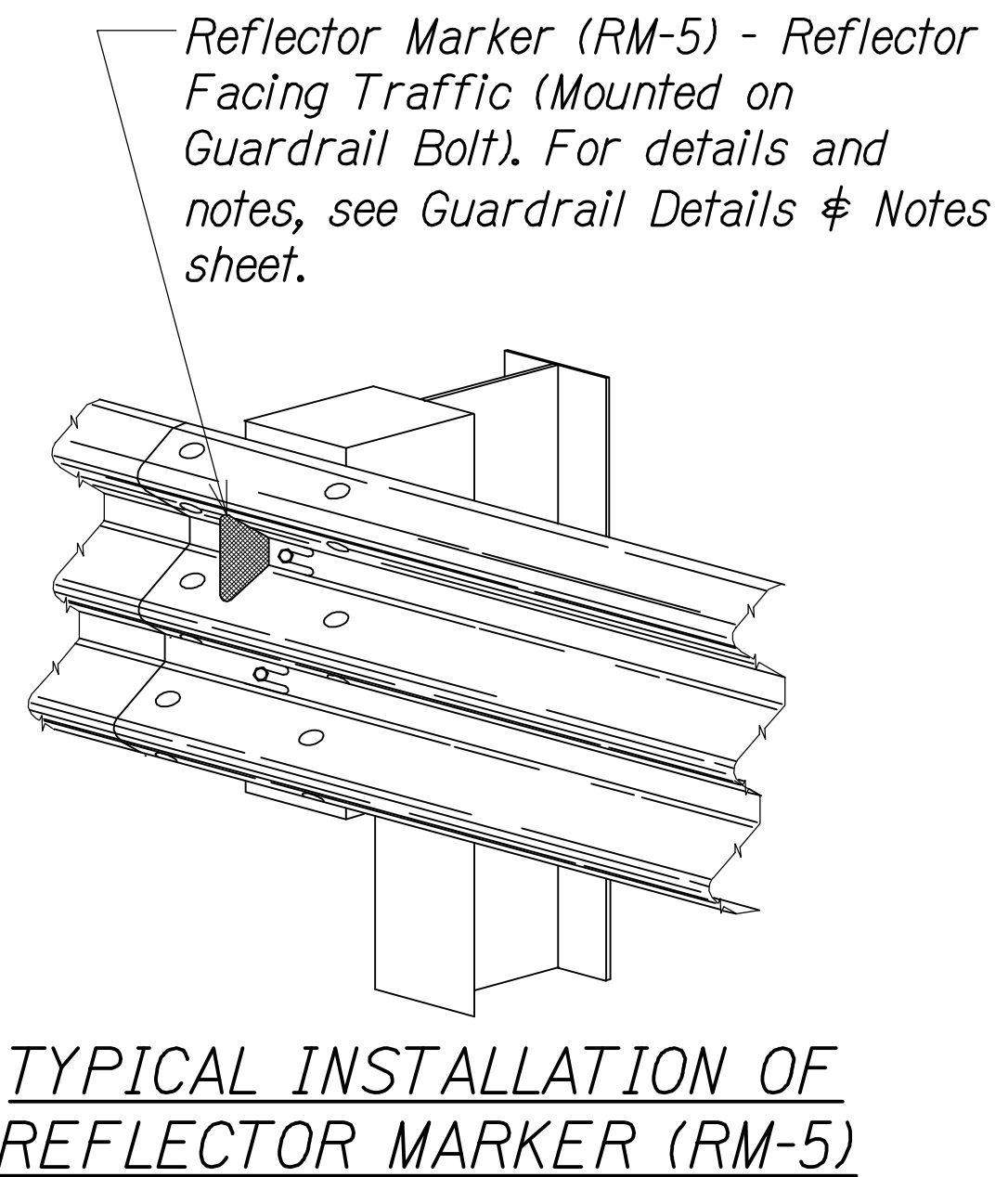
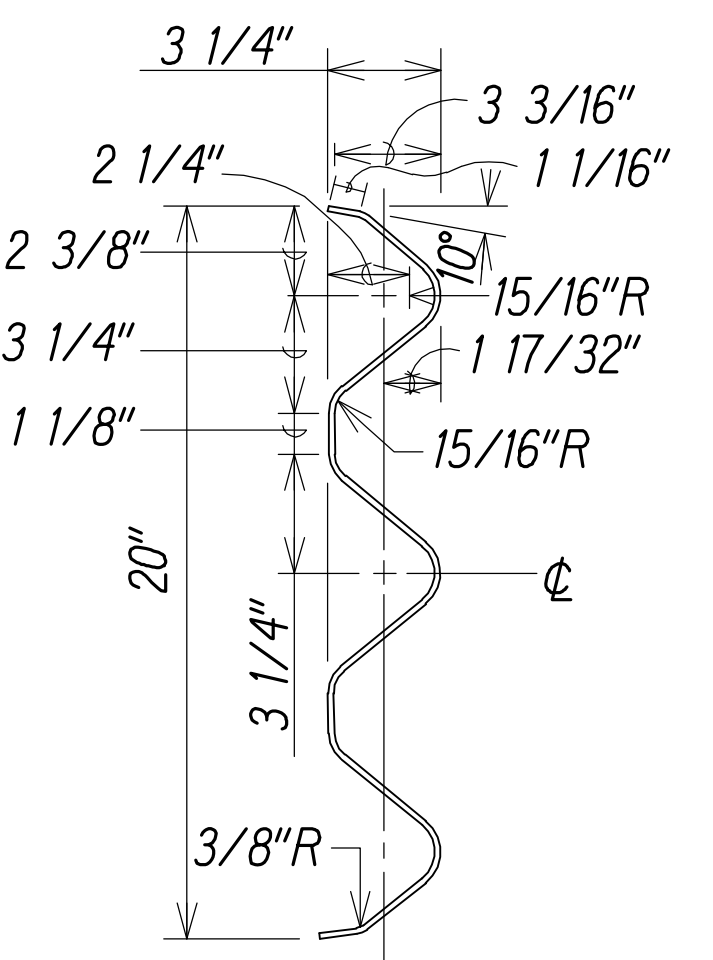
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WILSON OKAMOTO CORPORATION LIC. EXP. DATE

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | STP-0130(33)       | 2016        | 16        | 99           |



| DESIGNATOR | L      |
|------------|--------|
| FBB01      | 1 3/8" |
| FBB02      | 2"     |
| FBB03      | 10"    |

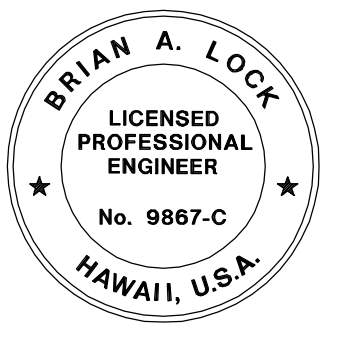


**LEGEND FOR AS-BUILT POSTINGS**

~~~~~ Squiggly line for as-built deletion

===== Double line for as-built deletion

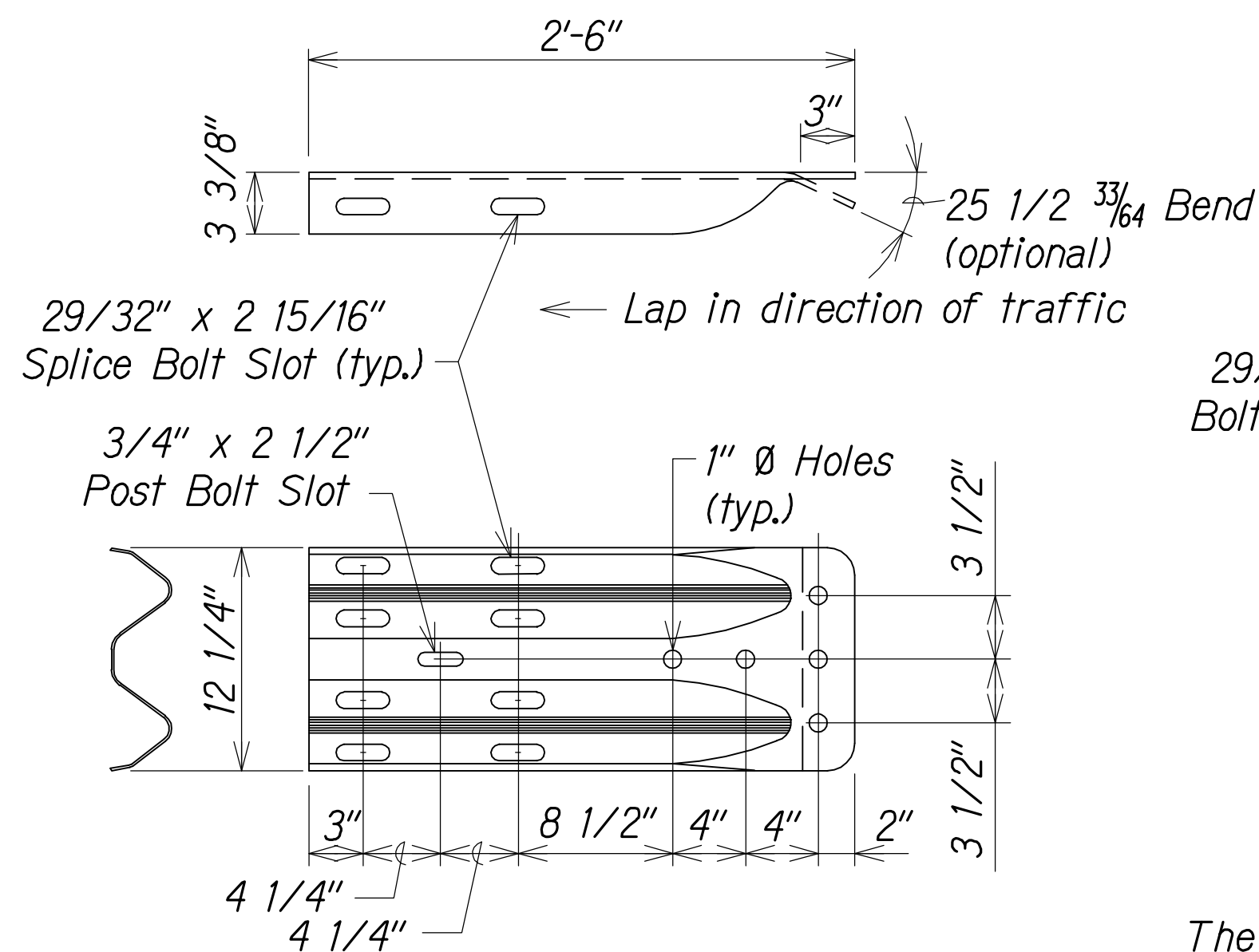
Roadway Text for as-built posting



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APRIL 30, 2018
WILSON OKAMOTO CORPORATION LIC. EXP. DATE

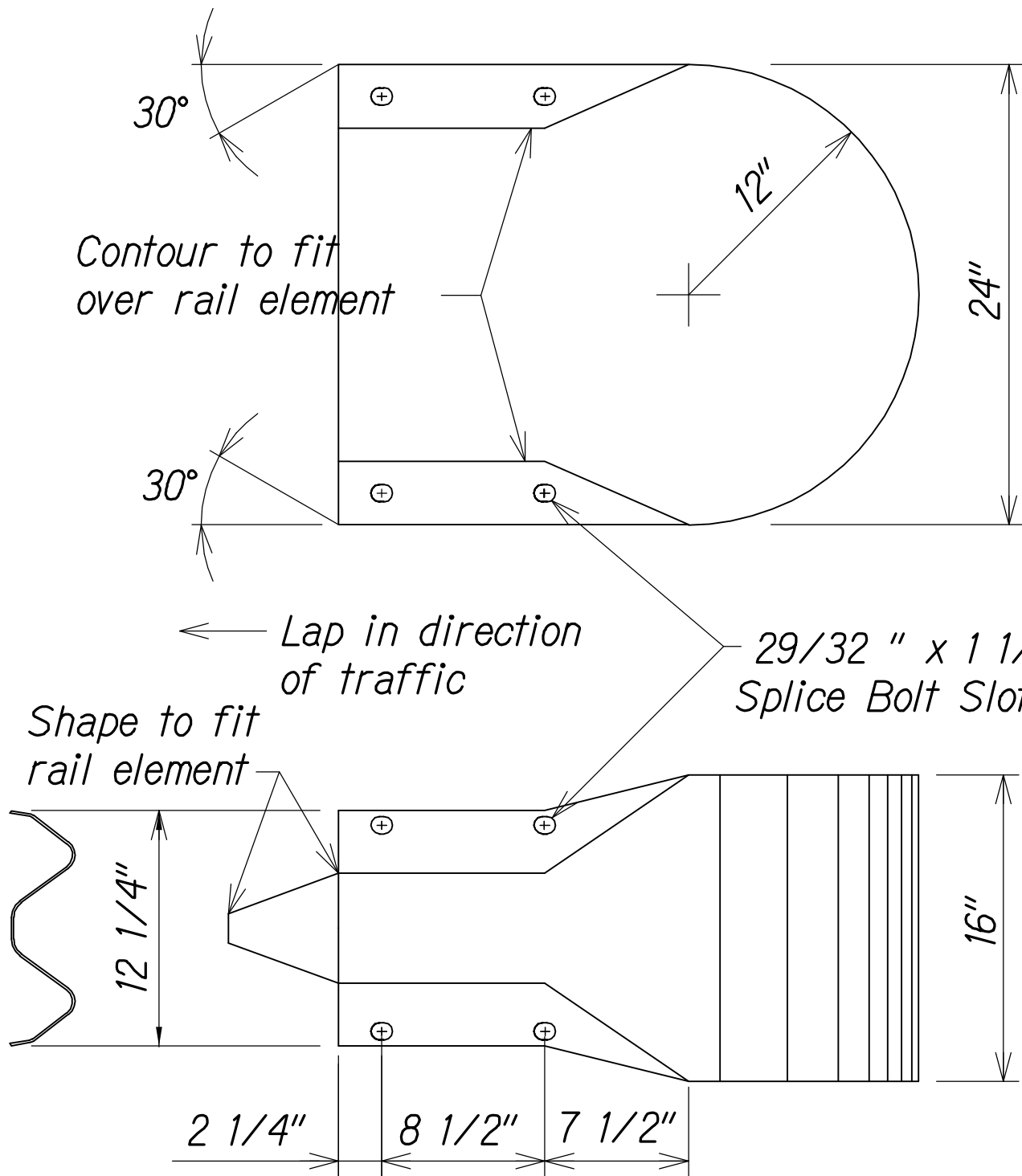
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STRONG POST THRIE-BEAM GUARDRAIL
KEAAU-PAHOA ROAD, SHOULDER LANE CONVERSION, PHASE 2
Shower Drive Intersection Improvements
Fed. Aid Proj. No. STP-0130(33)
Scale: Date: March 2016



The cross-sectional dimensions for this part are to fit over part RWM02a on the approach end and under part RWM02a on the trailing end.

| DESIGNATOR | BASE METAL THICKNESS |
|------------|----------------------|
| RWE02b | 10 Gauge |

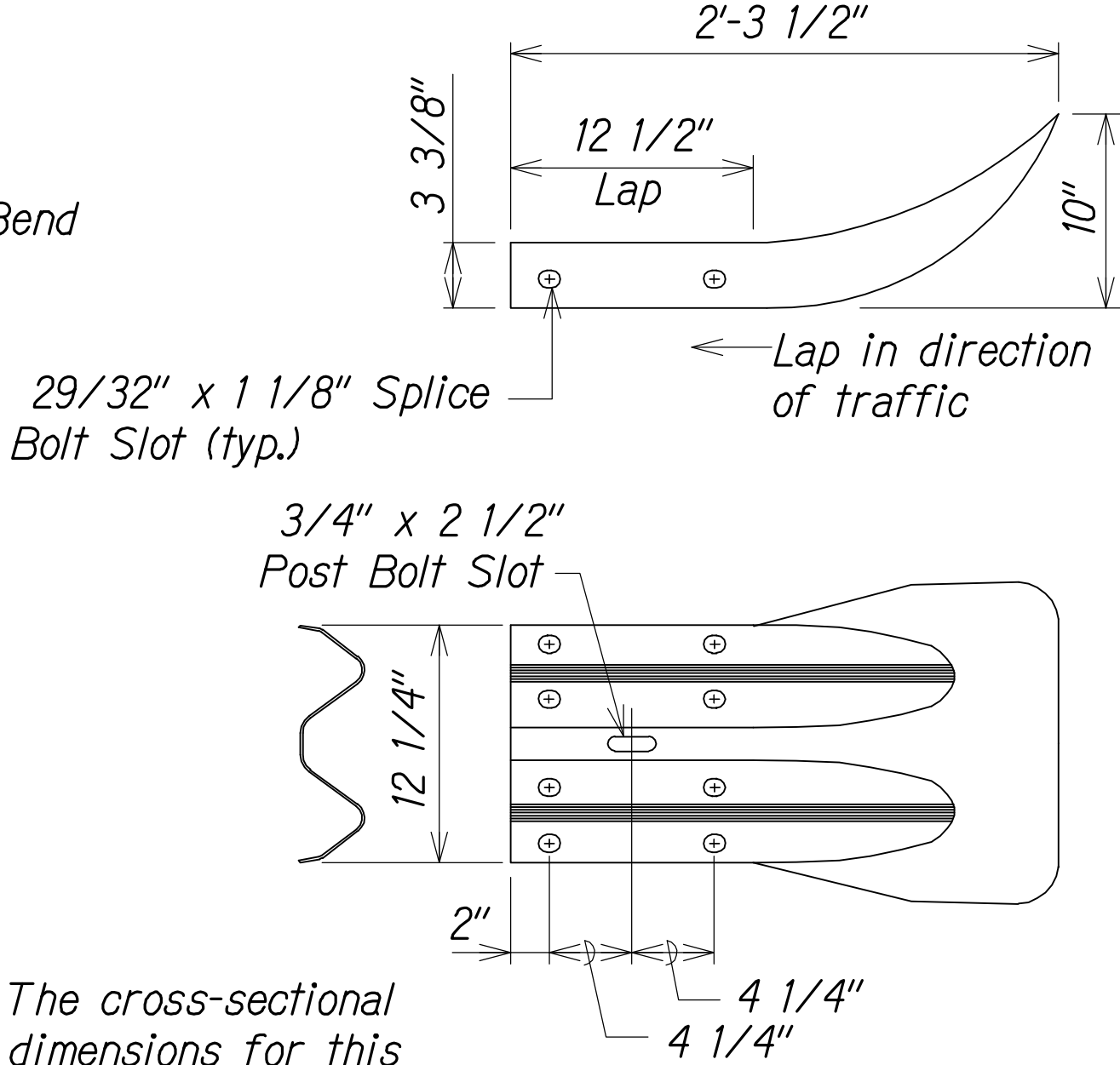
W-BEAM TERMINAL CONNECTOR (RWE02b)



The cross-sectional dimensions for this part are to fit over part RWM02a

| DESIGNATOR | BASE METAL THICKNESS |
|------------|----------------------|
| RWE06a | 12 Gauge |

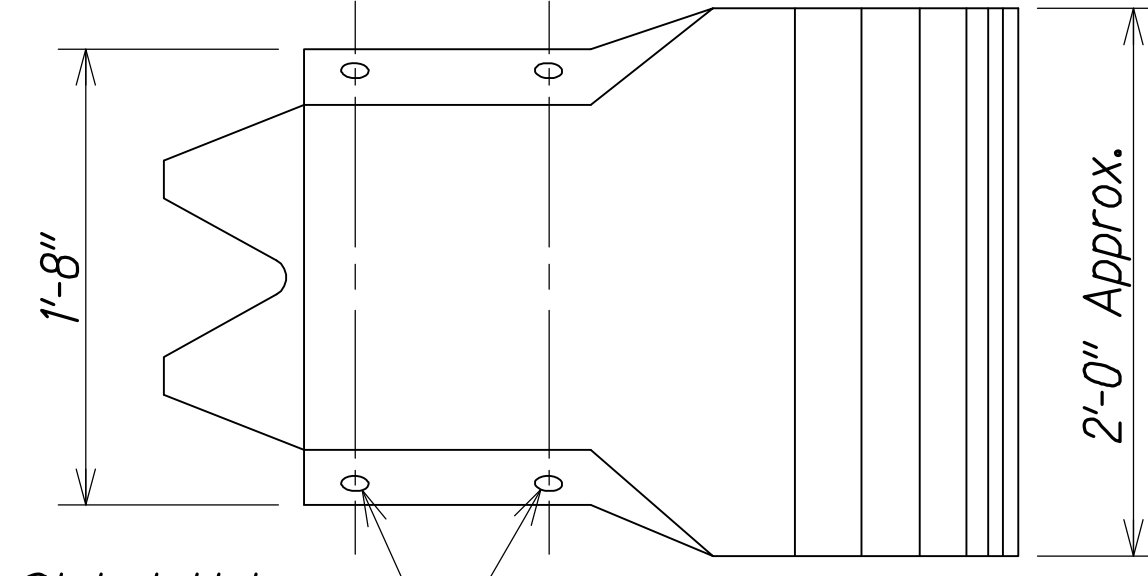
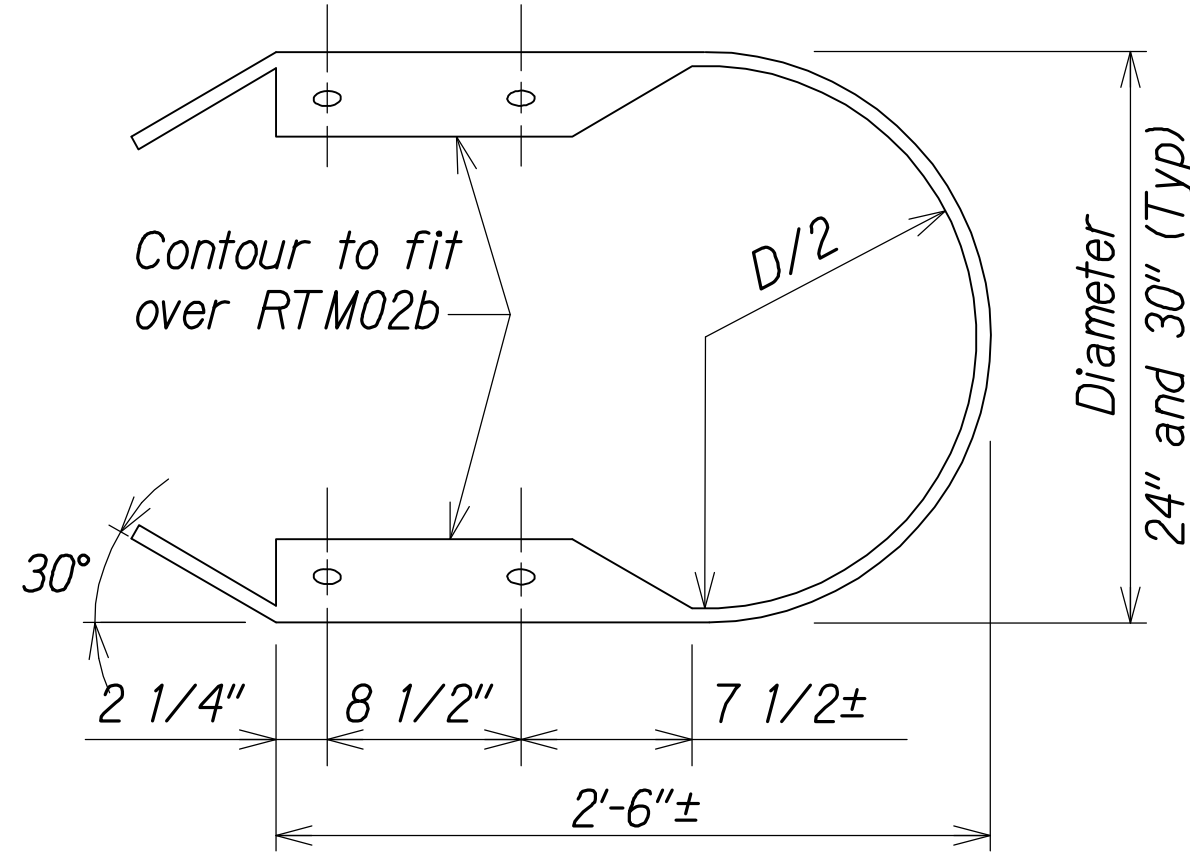
W-BEAM END SECTION (BUFFER RWE06a)



The cross-sectional dimensions for this part are to fit over part RWM02a on the approach end and under part RWM02a on the trailing end.

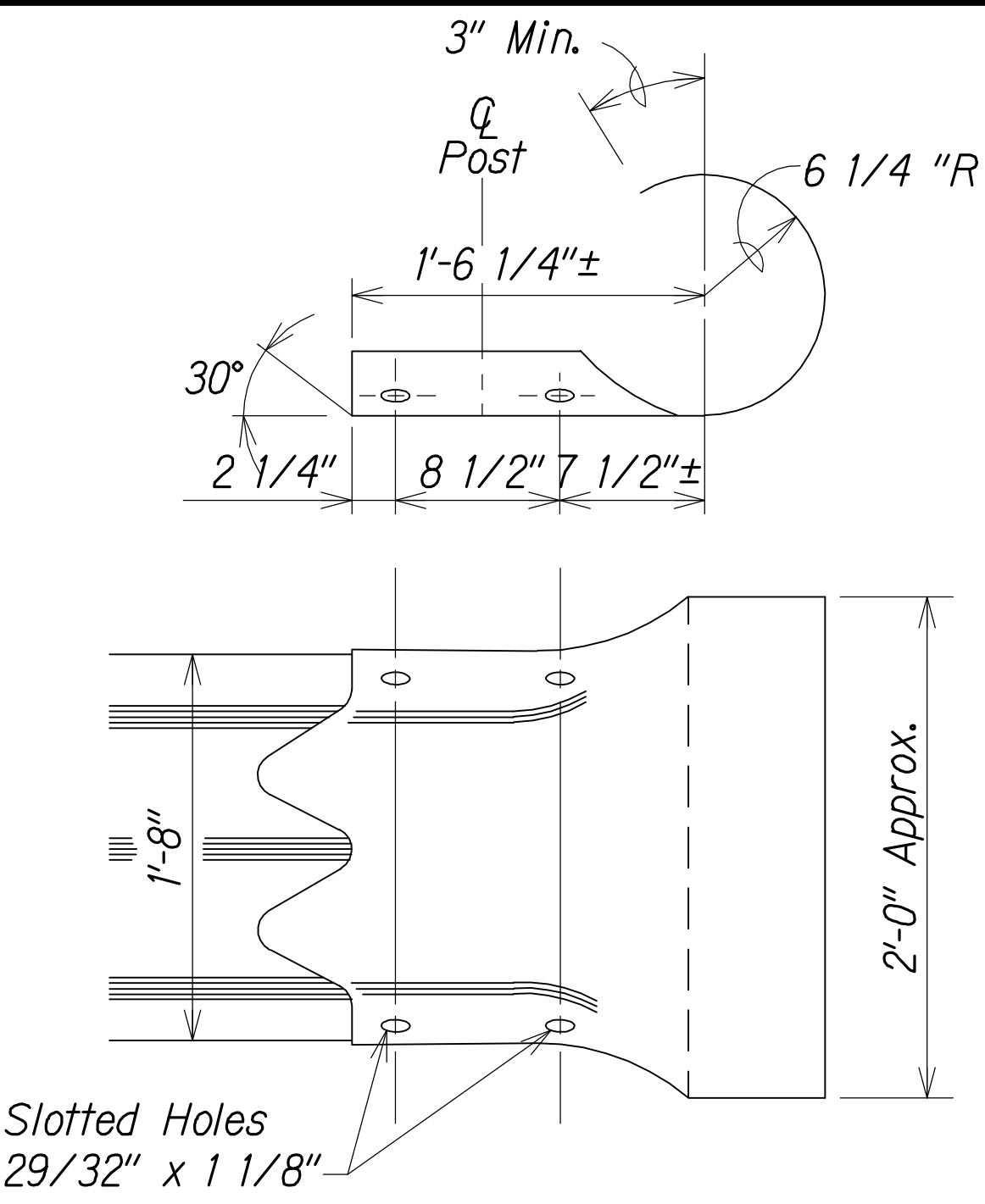
| DESIGNATOR | BASE METAL THICKNESS |
|------------|----------------------|
| RWE01a | 12 Gauge |

W-BEAM END SECTION (FLARED RWE01a)



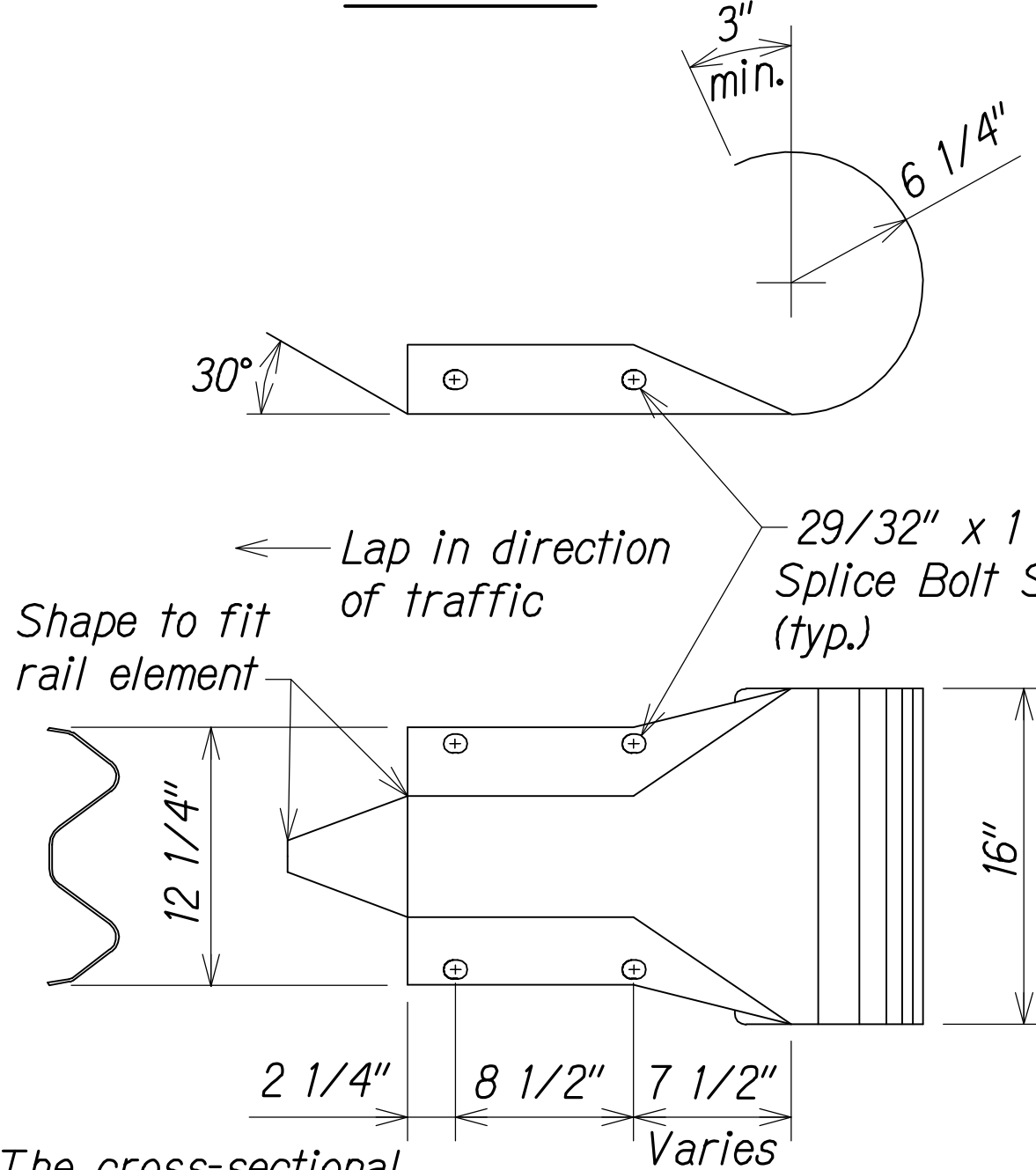
| DESIGNATOR | BASE METAL THICKNESS |
|-----------------|----------------------|
| RTE03b & RTE04b | 10 Gauge |

THRIE-BEAM END SECTION (BUFFER RTE03b or RTE04b)



| DESIGNATOR | BASE METAL THICKNESS |
|------------|----------------------|
| RWE02b | 10 Gauge |

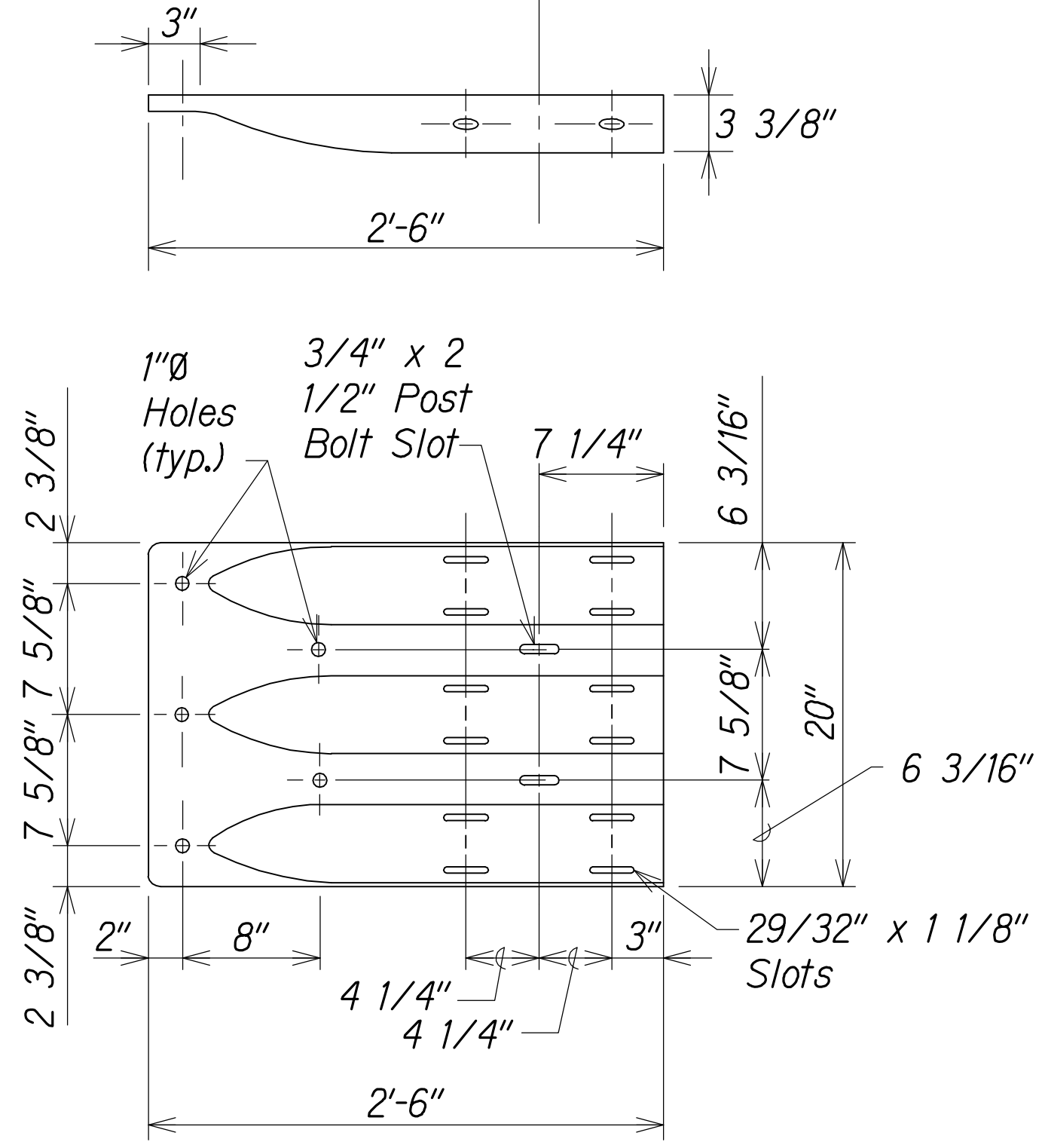
THRIE-BEAM SECTION (ROUNDED) (RTE02b)



The cross-sectional dimensions for this part are to fit over part RWM02a

| DESIGNATOR | BASE METAL THICKNESS |
|------------|----------------------|
| RWE03a | 12 Gauge |

W-BEAM END SECTION (ROUNDED RWE03a)



| DESIGNATOR | BASE METAL THICKNESS |
|------------|----------------------|
| RTE01b | 10 Gauge |

THRIE-BEAM TERMINAL CONNECTOR (RTE01b)

LEGEND FOR AS-BUILT POSTINGS

Squiggly line for as-built deletion

Double line for as-built deletion

Text for as-built posting

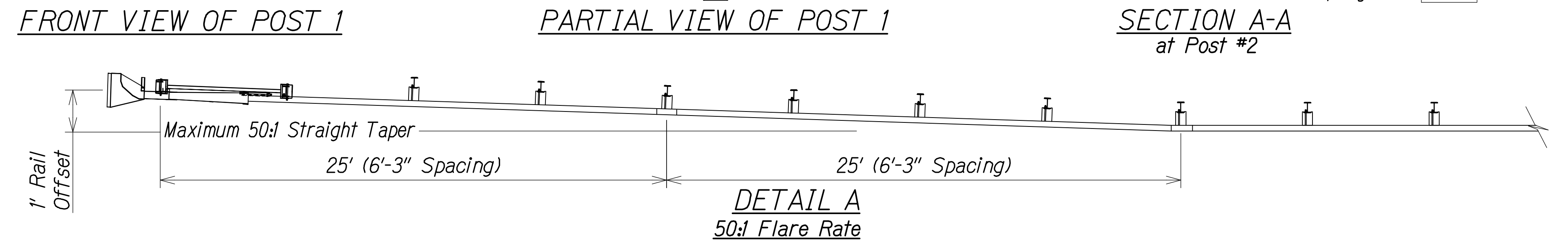
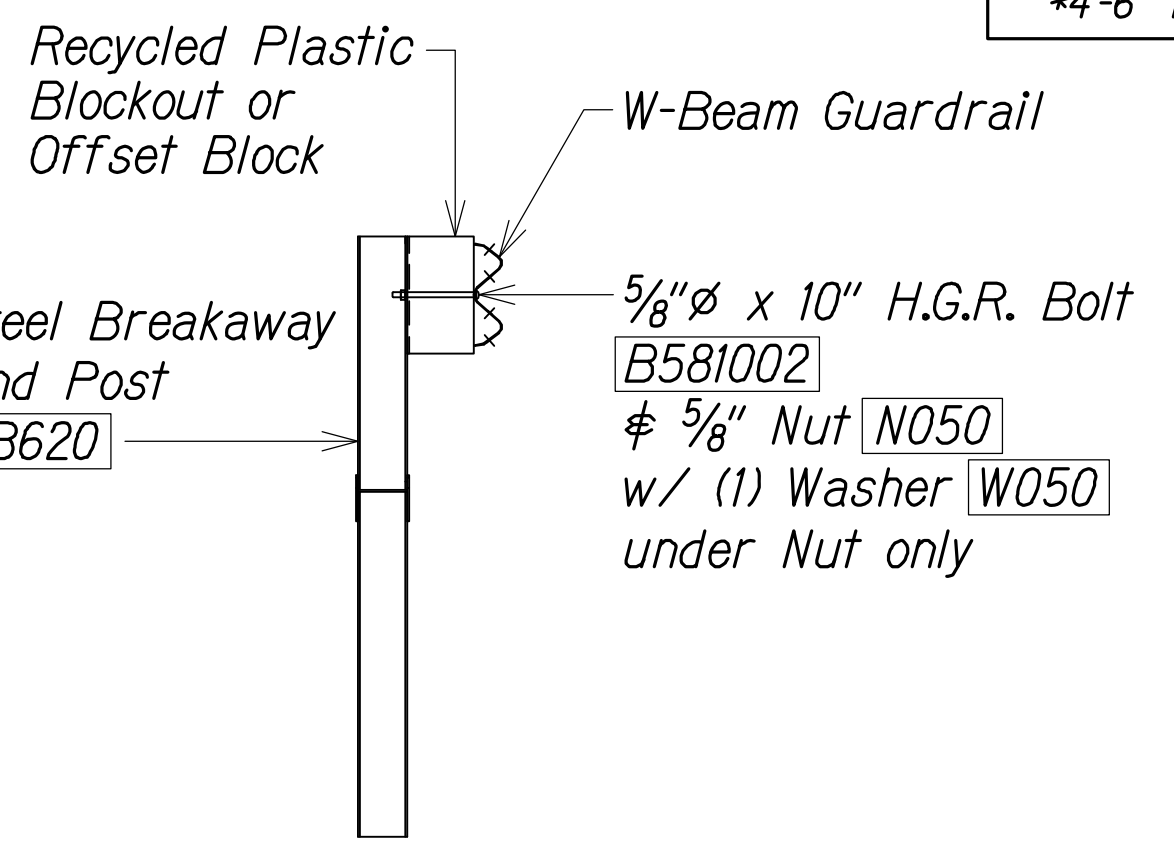
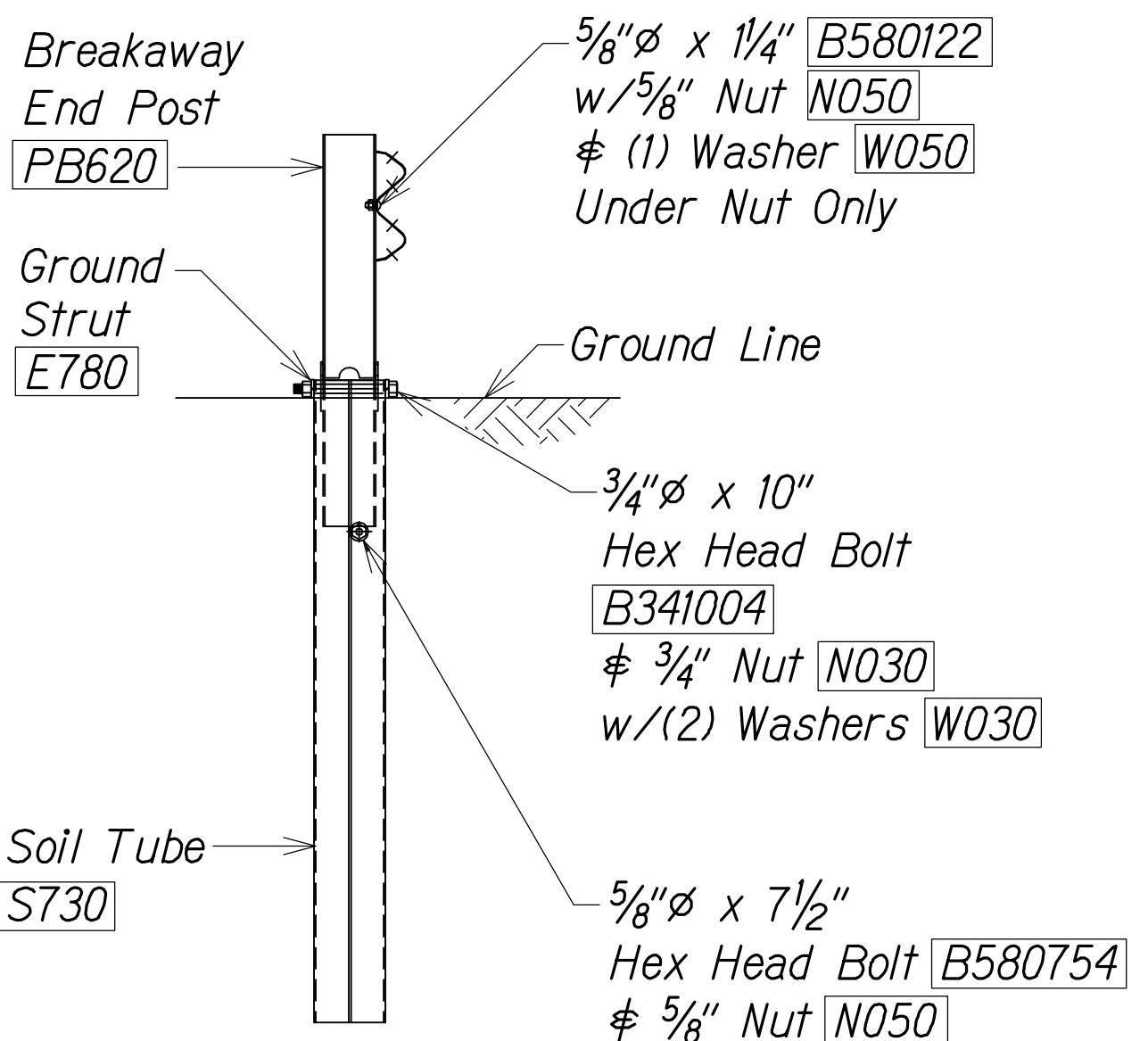
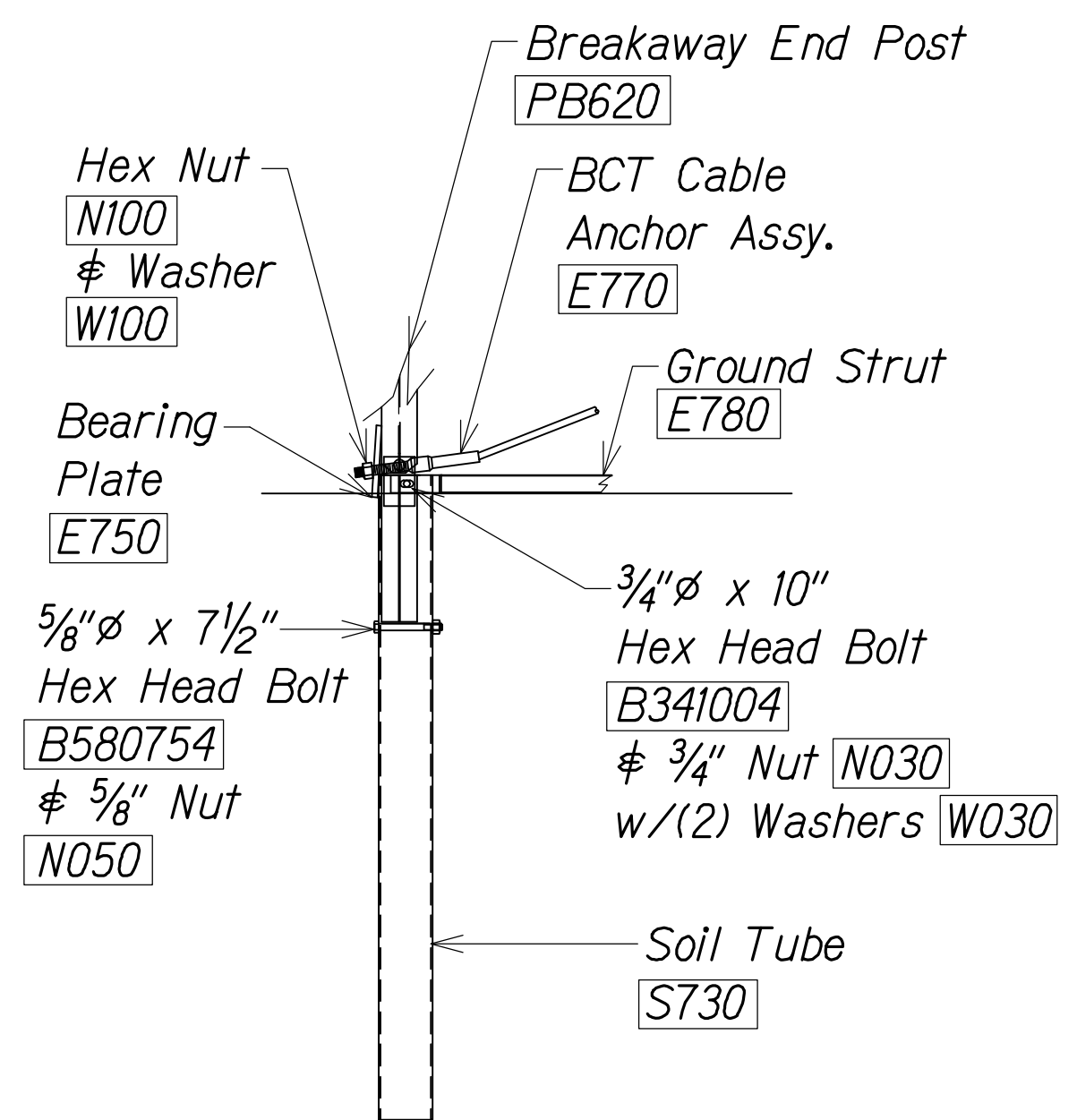
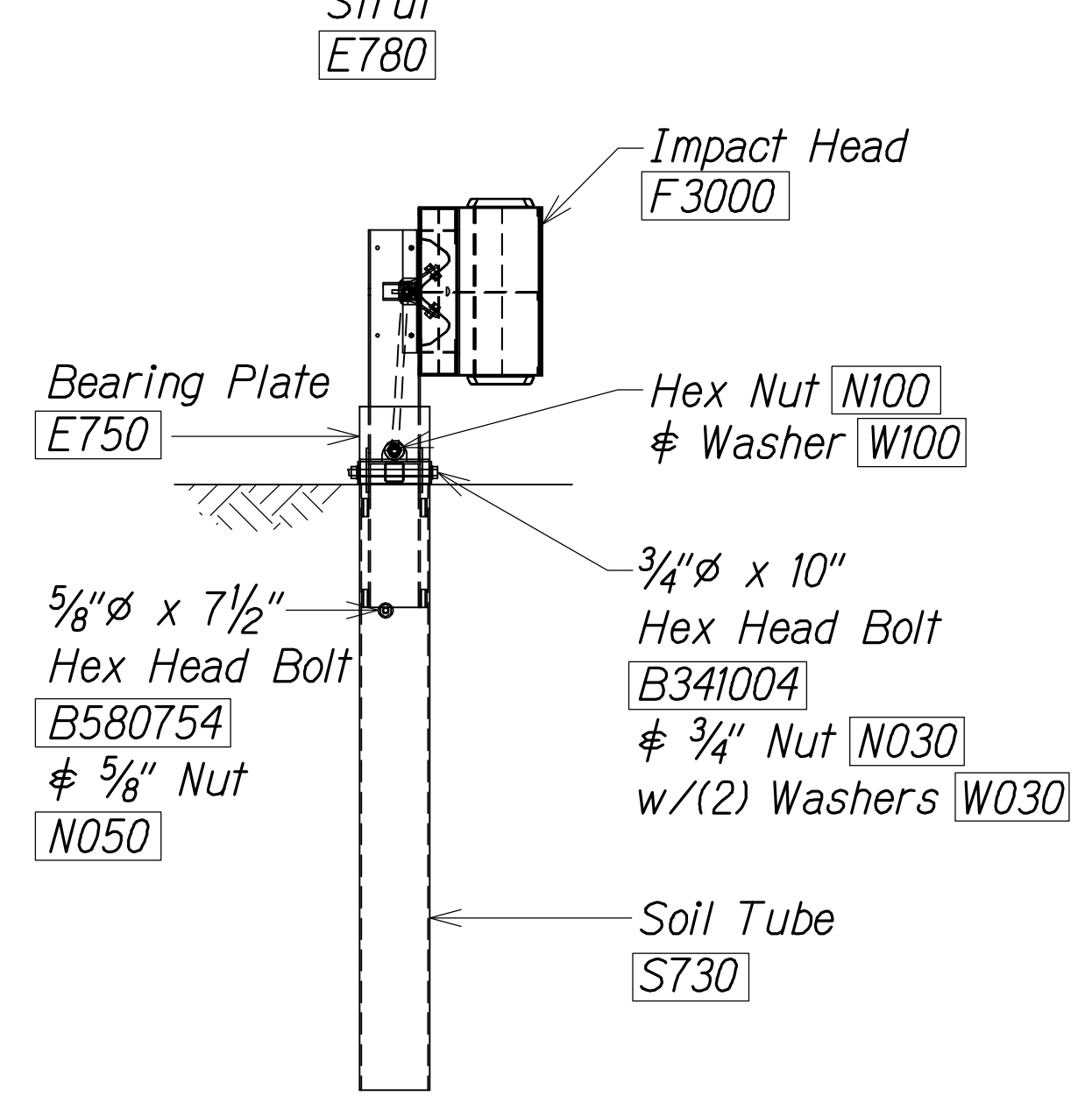
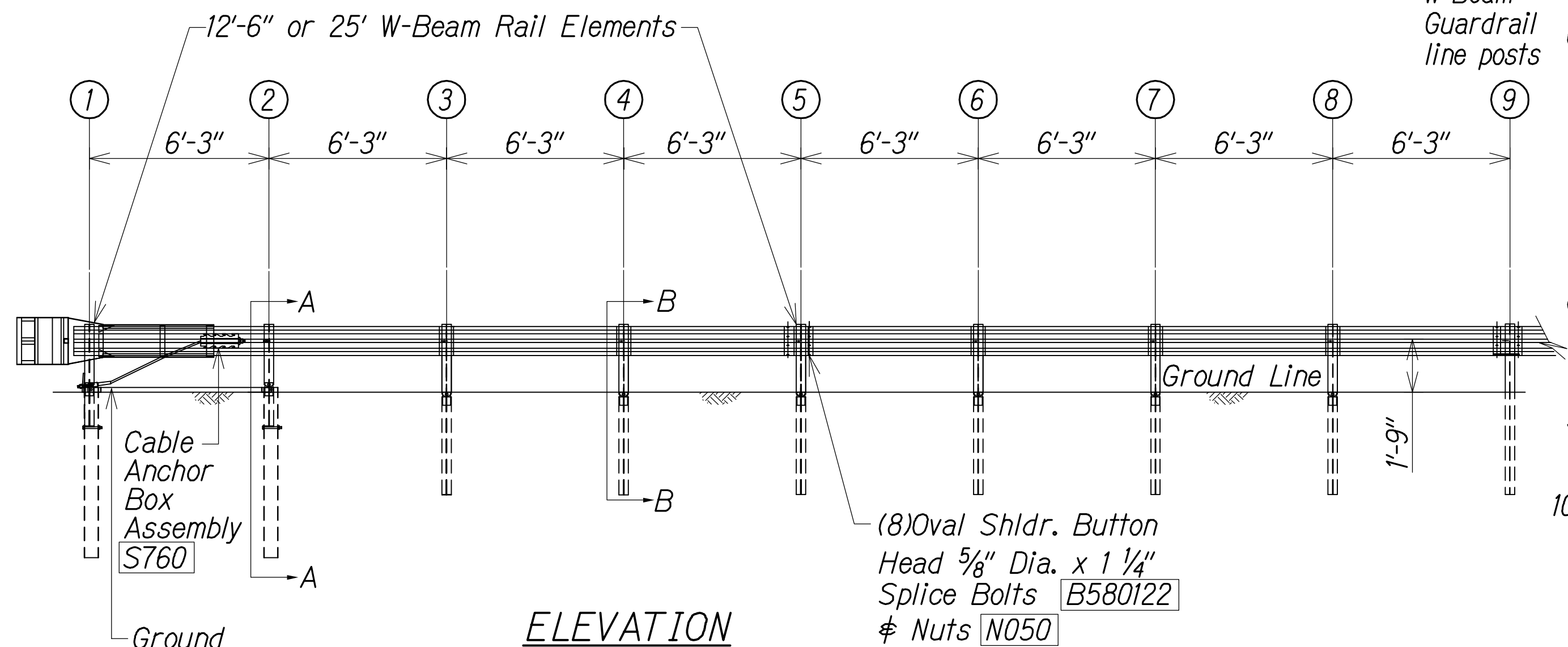
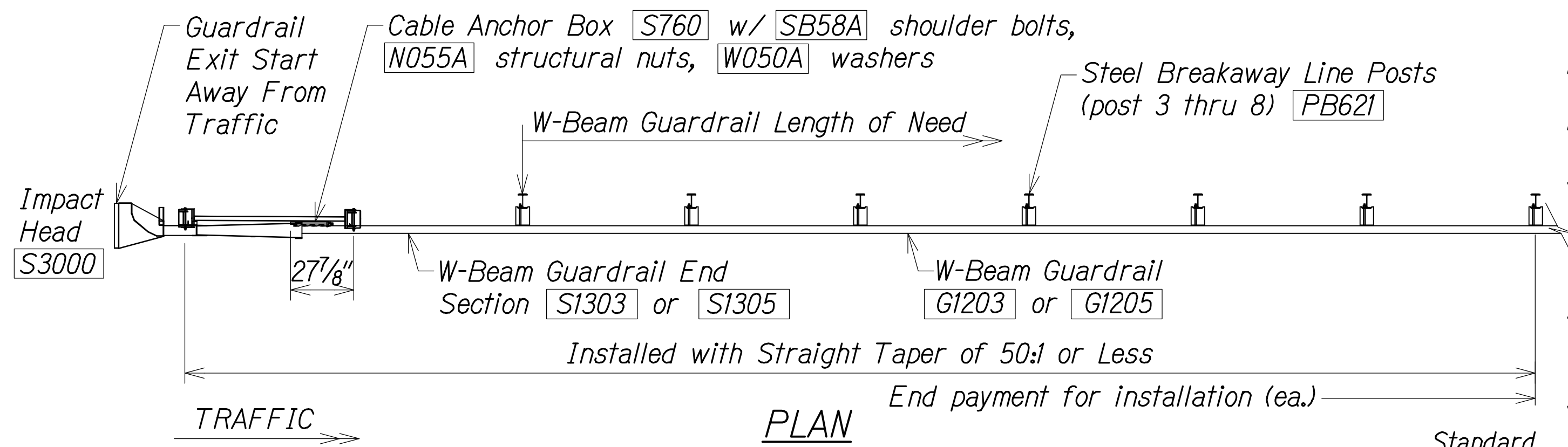


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APRIL 30, 2018
WILSON OKAMOTO CORPORATION LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
GUARDRAIL TERMINAL CONNECTORS AND END SECTIONS
KEAAU-PAHOA ROAD, SHOULDER LANE CONVERSION, PHASE 2
Shower Drive Intersection Improvements
Fed. Aid Proj. No. STP-0130(33)
Scale: Date: March 2016

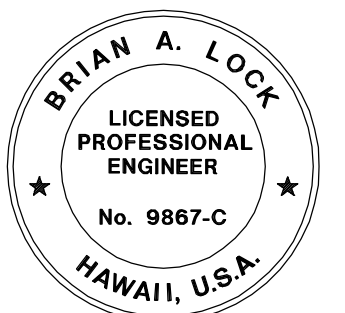
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII | HAW. | STP-0130(33) | 2016 | 19 | 99 |



- GENERAL NOTES:**
- Breakaway steel posts are required with the Sequential Kinking Terminal.
 - All bolts, nuts, cable assemblies, cable anchors and bearing plates shall be galvanized.
 - When the Sequential Kinking Terminal is selected as the end treatment for W-Beam Guardrail installation, the W-Beam Guardrail will be flared at a rate of 50:1 to prevent the impact head from encroaching on the shoulder. The flare is not required and may be decreased or eliminated for specific installations.
 - The soil tube shall not protrude more than 4" above ground (measured) along a 5' cord). Site grading may be necessary to meet this requirement.
 - The soil tubes may be driven with an approved driving head. They shall not be driven with the post in the tube. If the soil tubes are placed in drilled holes, the backfill material must be satisfactorily compacted to prevent settlement.
 - When rock is encountered during excavation, a 12" dia. post hole, 20" deep may be used if approved by the Engineer. Granular material will be placed in the bottom of the hole approx. 2 1/2" deep to provide drainage. The soil tubes will be field cut to length, placed in the hole and backfilled with adequately compacted material excavated from the hole.
 - The breakaway cable assembly must be taut. A locking device, (vice grips or channel lock pliers) should be used to prevent the cable from twisting when tightening nuts.
 - A special site evaluation should be considered prior to using the Sequential Kinking Terminal where there is less than 25' between the outlet side of the Sequential Kinking Terminal and any adjacent driving lane.
 - (R) or (L) indicates right or left Impact Head Reflector Marker (IHRM). Providing and installing of IHRM shall be considered incidental to end treatment.
 - The stripes for IHRM shall slope downward at an angle of 45° towards the side of the end treatment that traffic is to pass.

| ITEM NO. | QTY. | BILL OF MATERIALS |
|-------------|-------|--|
| S3000 | 1 | IMPACT HEAD |
| S1303/S1305 | 1 | W-BEAM GUARDRAIL END SECTION 12 GA. 12.5' or 25' |
| G1203/G1205 | 3/1 | W-BEAM GUARDRAIL, 12 GA., 12.5' or 25' |
| S730 | 2 | *FOUNDATION SOIL TUBE, 6" x 8" x 72" |
| E750 | 1 | BEARING PLATE |
| S760 | 1 | CABLE ANCHOR BOX |
| E770 | 1 | BCT CABLE ANCHOR ASSEMBLY |
| E780 | 1 | GROUND STRUT |
| PB620 | 2 | STEEL BREAKAWAY END POSTS |
| PB621 | 6 | STEEL BREAKAWAY LINE POSTS |
| | 6 | RECYCLED PLASTIC BLOCKOUTS OR OFFSET BLOCK |
| | 1 | IMPACT HEAD REFLECTOR MARKER - IHRM(R) OR (L) |
| | | HARDWARE |
| B580122 | 17/33 | 5/8" Dia. x 1 1/4" SPLICE BOLTS, POST #2 |
| B580754 | 2 | 5/8" Dia. x 7 1/2" HEX BOLTS |
| B341004 | 2 | 3/4" Dia. x 10" HEX BOLTS |
| B341002 | 6 | 5/8" Dia. x 10" H.G.R. BOLT (POST 2 ONLY) |
| B581802 | 6 | 5/8" Dia. x 18" H.G.R. BOLT (POST 3 THRU 8) |
| N050 | 26/42 | 5/8" Dia. H.G.R. NUT (SPLICE 17/33, SOIL TUBES 2, POST 2 THRU 8) |
| N030 | 2 | 3/4" Dia. HEX NUTS |
| W050 | 7 | H.G.R. WASHER |
| W030 | 4 | 3/4" ID WASHER |
| N100 | 2 | 1" ANCHOR CABLE HEX NUT |
| W100 | 2 | 1" ANCHOR CABLE WASHER |
| B140404 | 2 | 1/4" x 4" HEX BOLT |
| N014 | 2 | 1/4" HEX NUT |
| W014 | 4 | 1/4" WASHER |
| SB58A | 8 | CABLE ANCHOR BOX SHOULDER BOLTS |
| N055A | 8 | 1/2" A325 STRUCTURAL NUTS |
| W050A | 16 | 1/8" OD x 3/16" ID A325 STR. WASHER |

Foundation Tube Options For Posts 1 & 2
*6'-0" Split Foundation Tubes S730
*6'-0" Solid Foundation Tubes E731
*5'-0" Foundation Tubes S735 W/Soil Plates SP600
*4'-6" Foundation Tubes E735 W/Soil Plates SP600



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SECTION B-B
Typical @ Post 3 thru 8

LEGEND FOR AS-BUILT POSTINGS

~~~~~ Squiggly line for as-built deletion

== Double line for as-built deletion

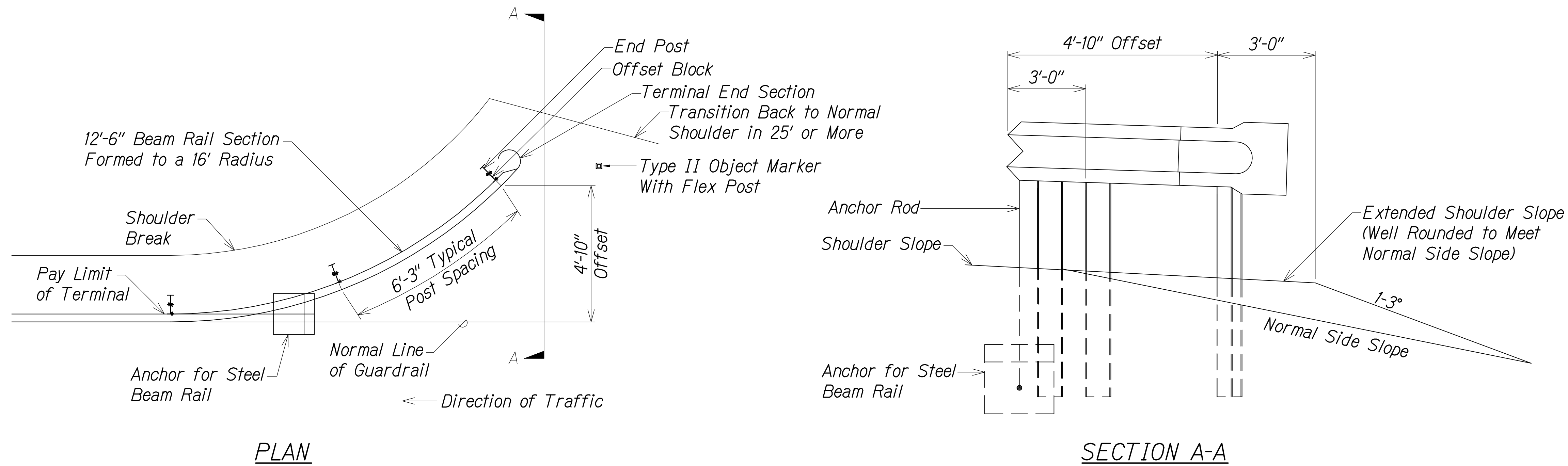
Roadway Text for as-built posting

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**SKT-350**  
**SEQUENTIAL KINKING TERMINAL**  
KEAAU-PAHOA ROAD, SHOULDER  
LANE CONVERSION, PHASE 2  
Shower Drive Intersection Improvements  
Fed. Aid Proj. No. STP-0130(33)  
Scale: Date: March 2016

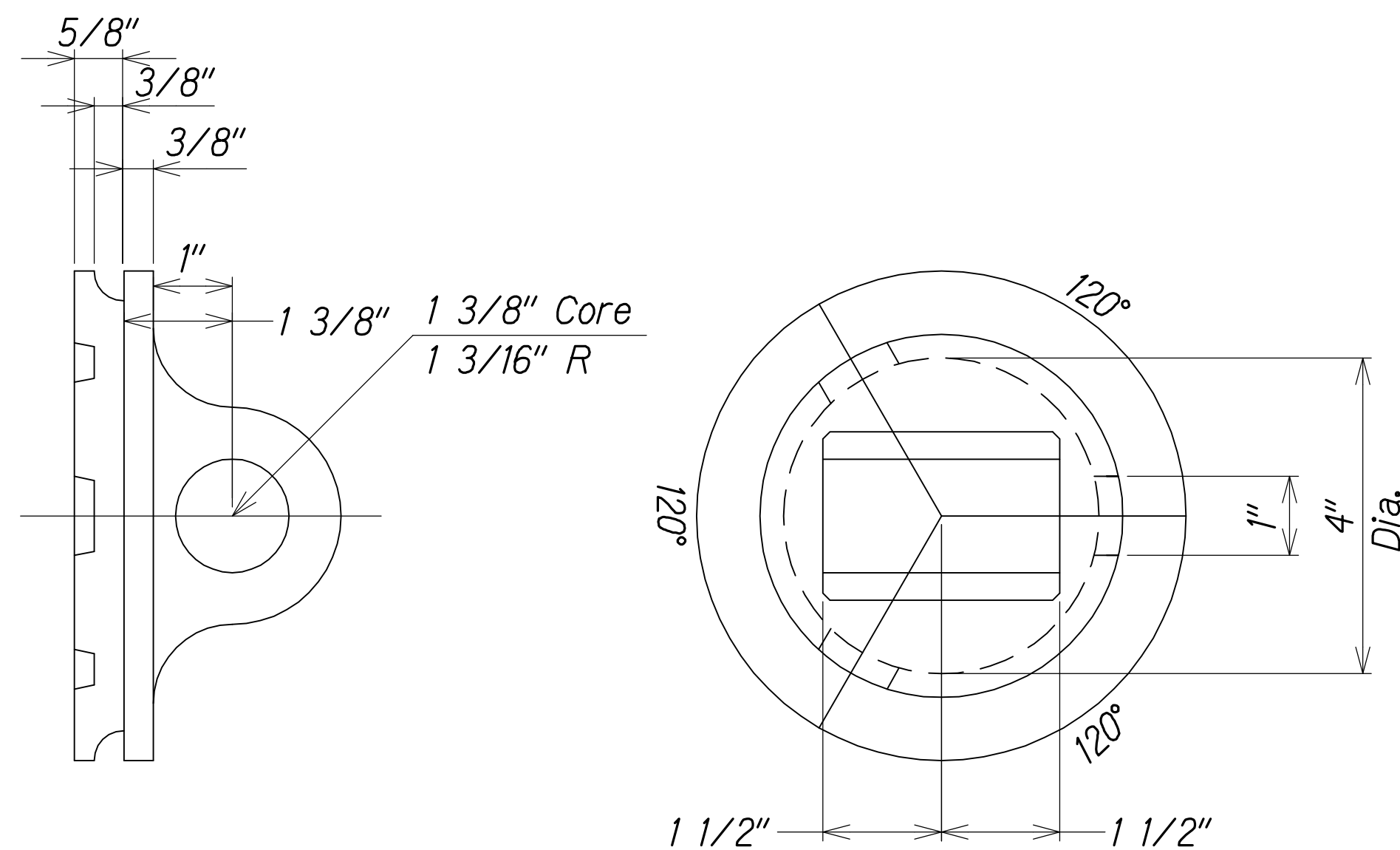




| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | STP-0130(33)       | 2016        | 21        | 99           |



APPROACH END DETAIL  
(APPROVED FOR USE WHERE  $V < 45$  MPH)



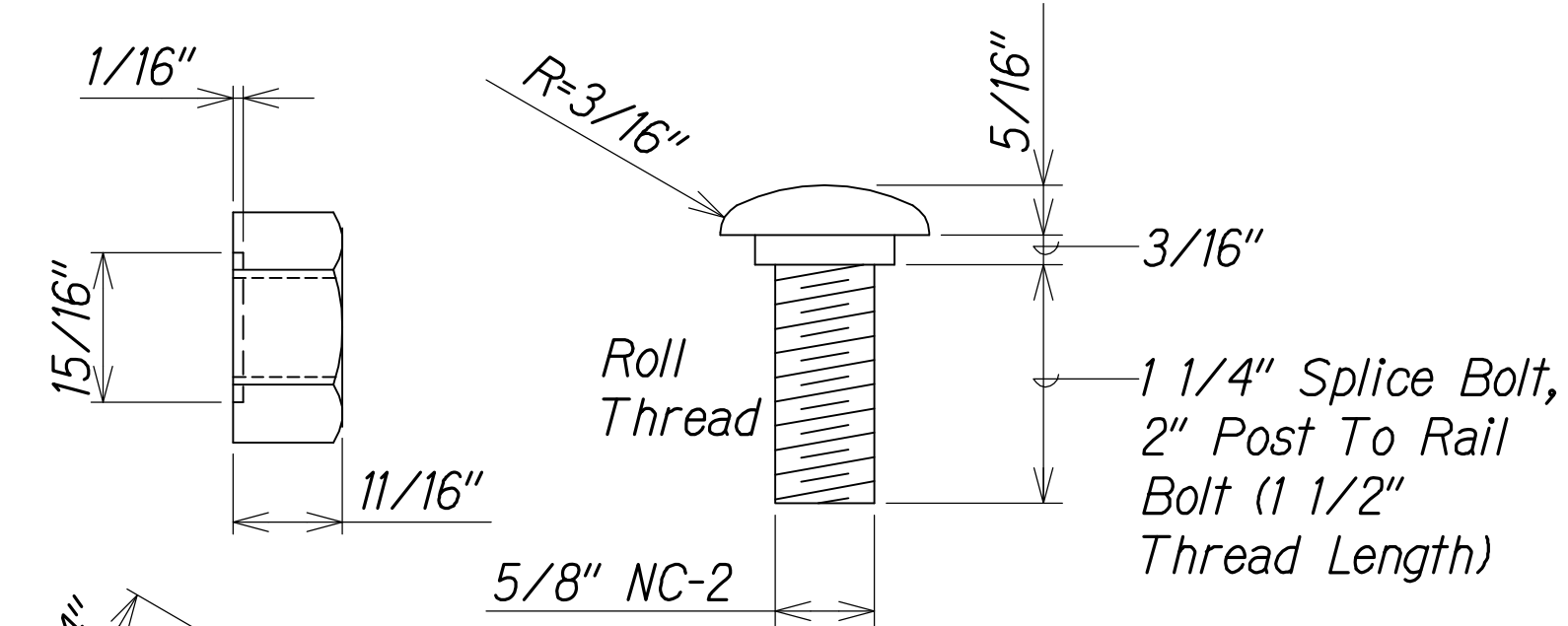
| LEGEND FOR AS-BUILT POSTINGS |                                     |
|------------------------------|-------------------------------------|
|                              | Squiggly line for as-built deletion |
|                              | Double line for as-built deletion   |
| Roadway       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

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

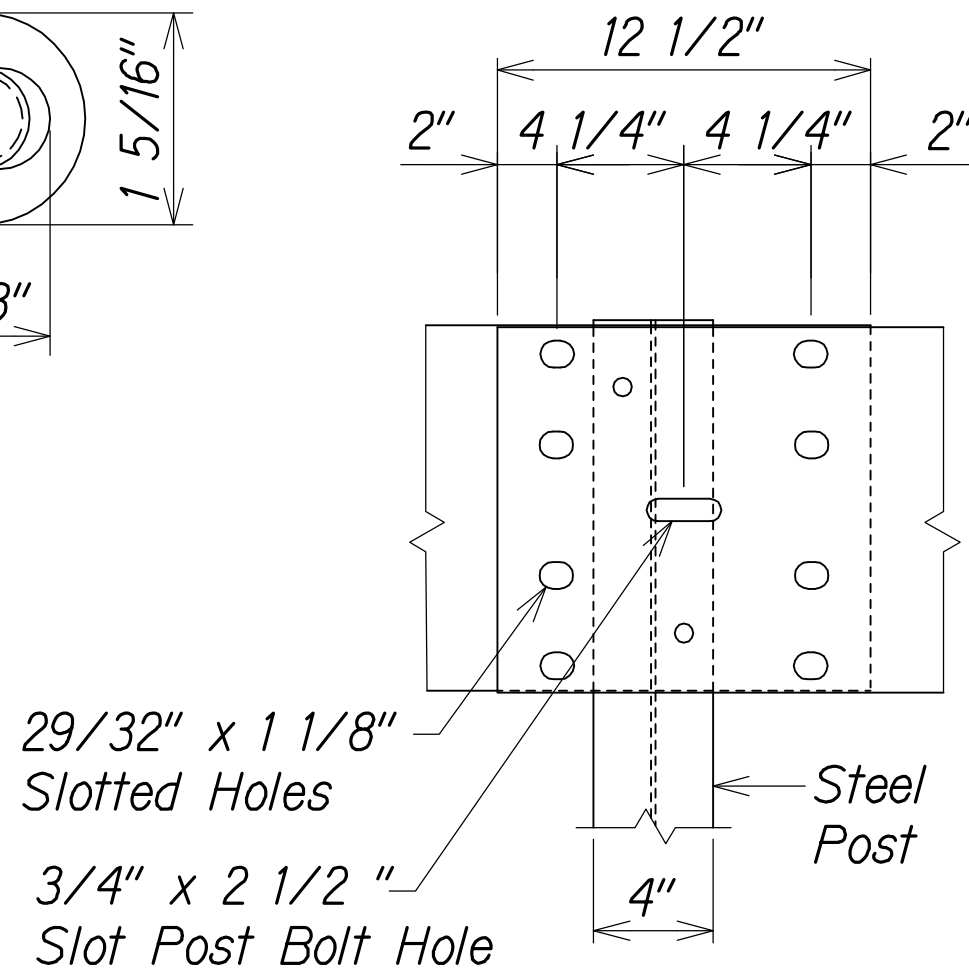
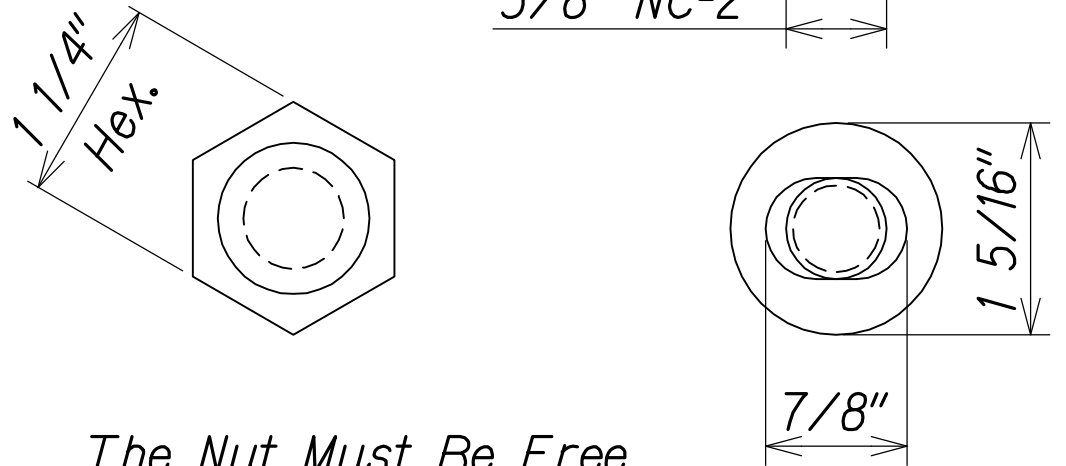
MODIFIED TYPE G TERMINAL END

KEAAU-PAHOA ROAD, SHOULDER  
LANE CONVERSION, PHASE 2  
Shower Drive Intersection Improvements  
Fed. Aid Proj. No. STP-0130(33)  
Scale: \_\_\_\_\_ Date: March 2016

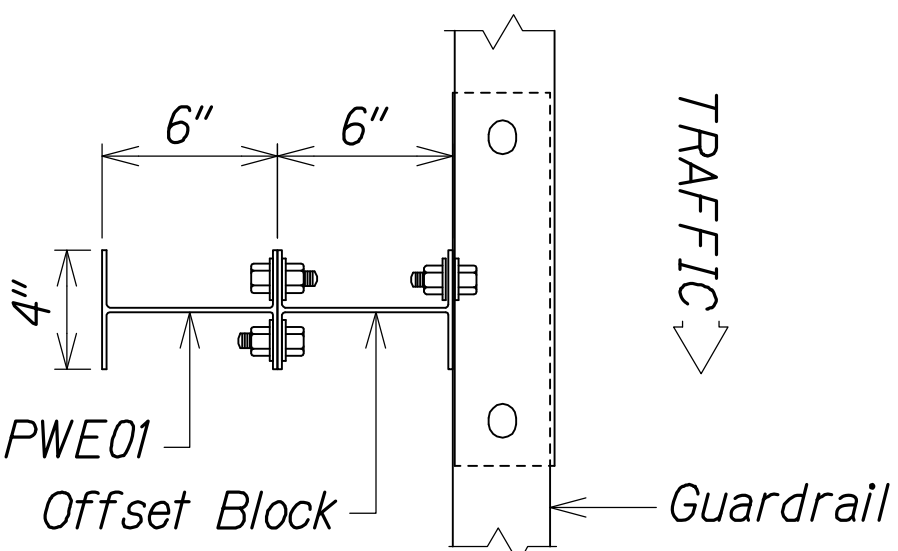




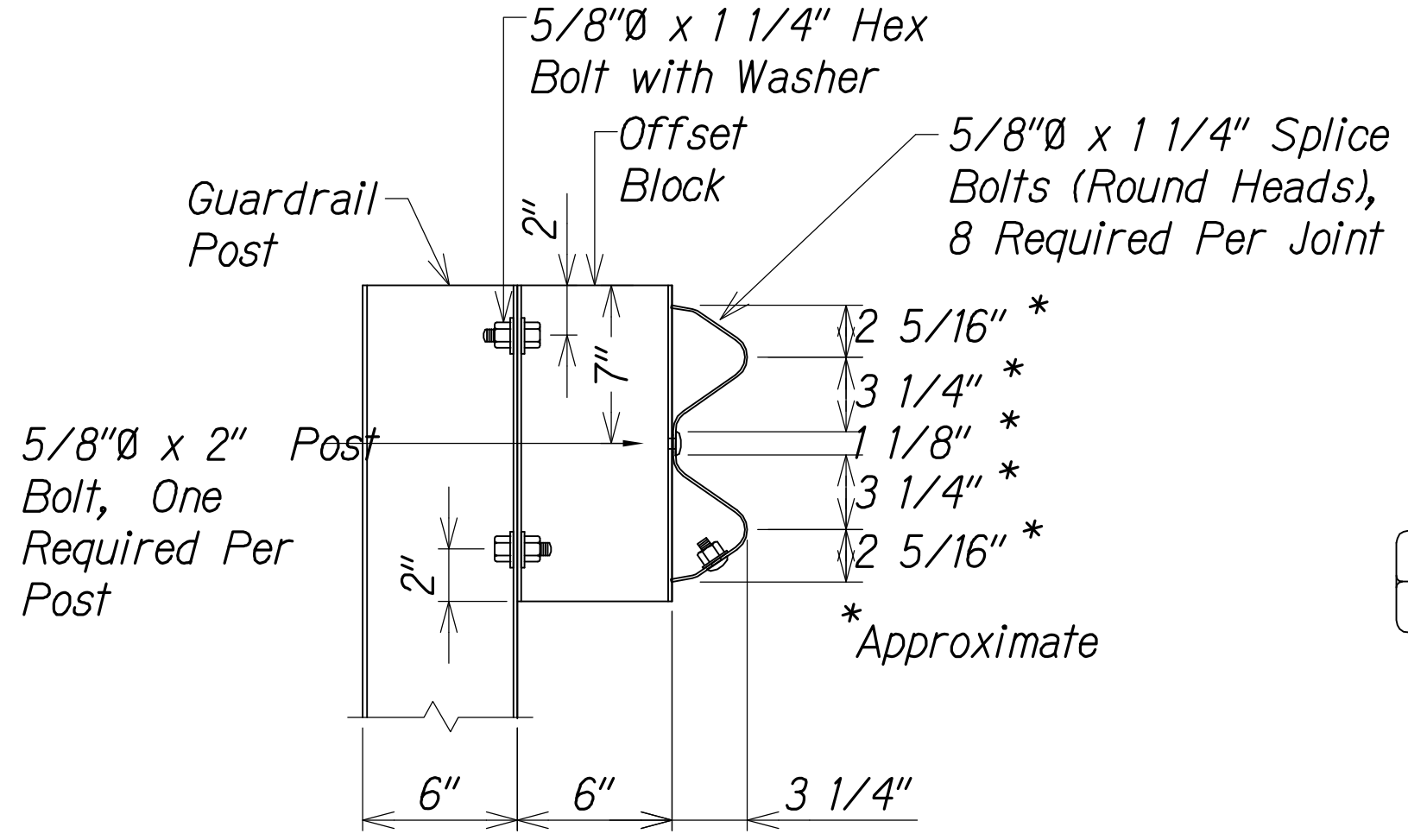
The Nut Must Be Free Running Fit On The Bolt After Galvanization.



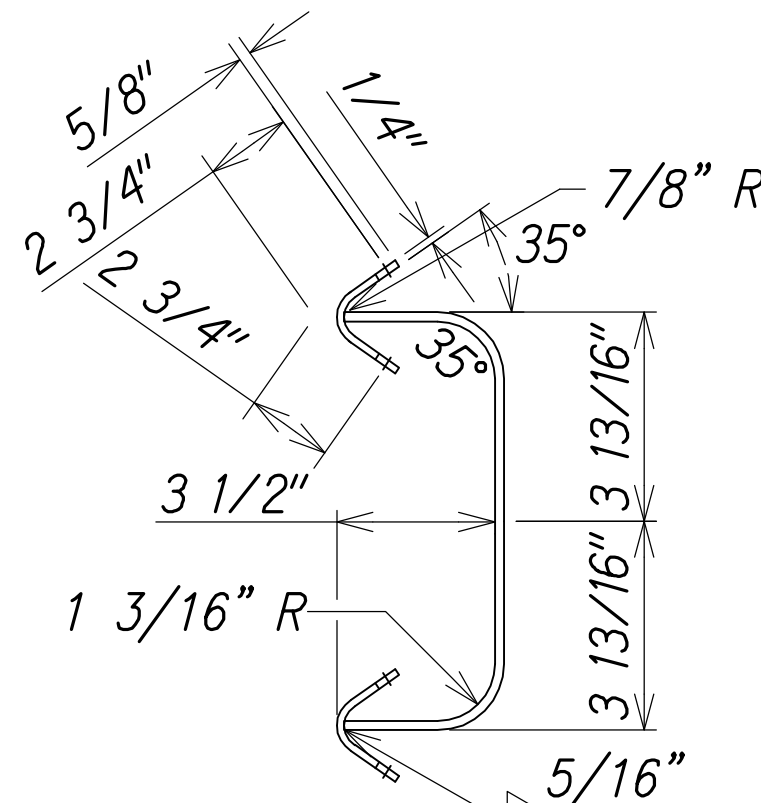
ELEVATION OF GUARDRAIL SPLICE AT POST



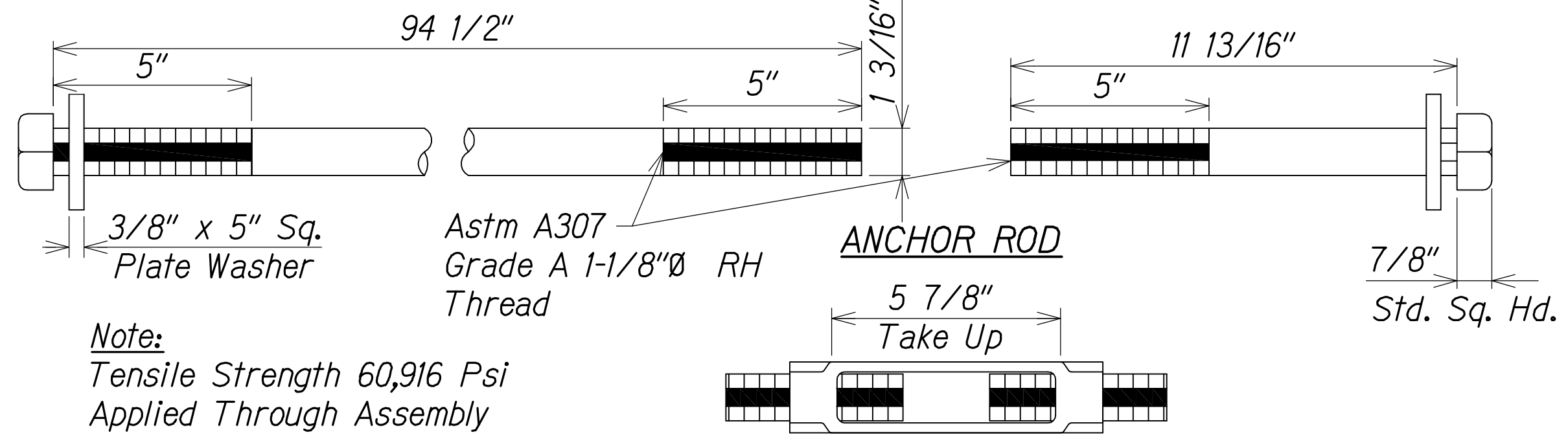
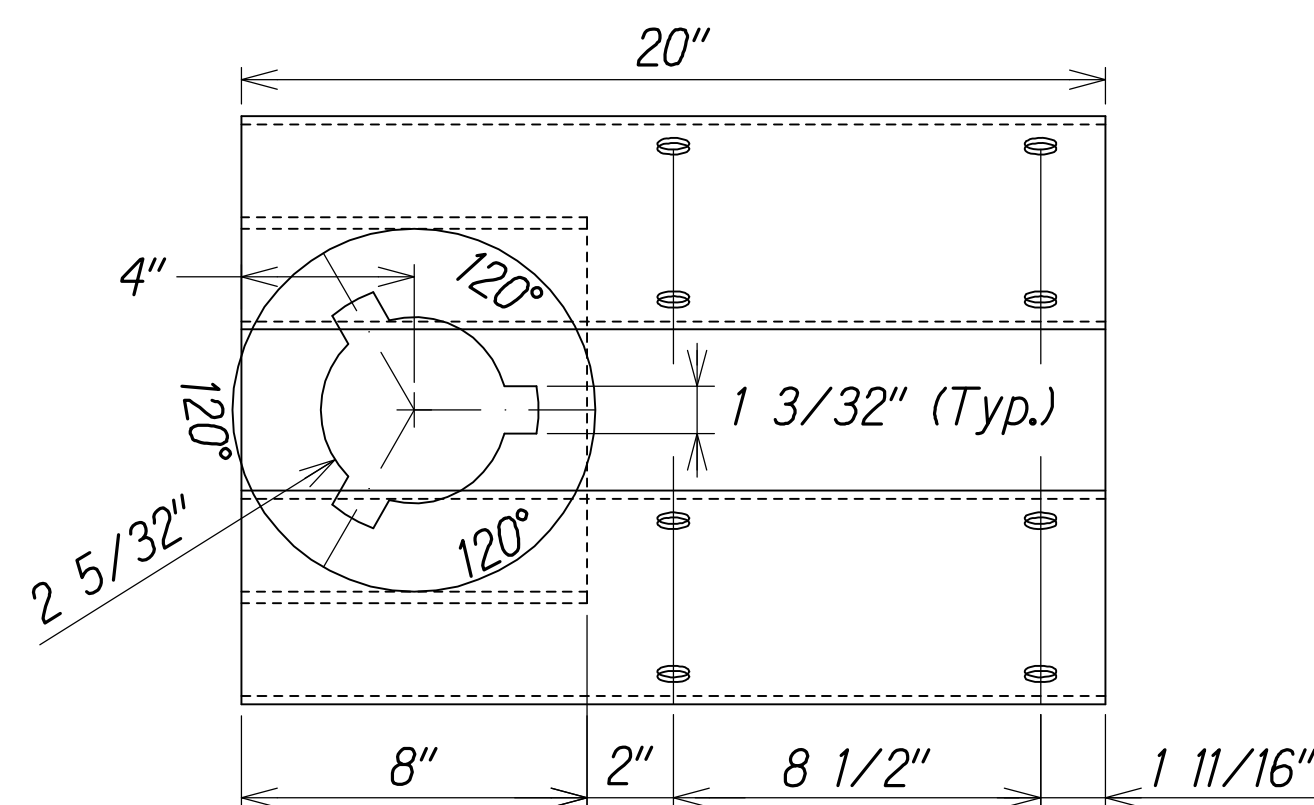
PLAN



CROSS SECTION GUARDRAIL SPLICE



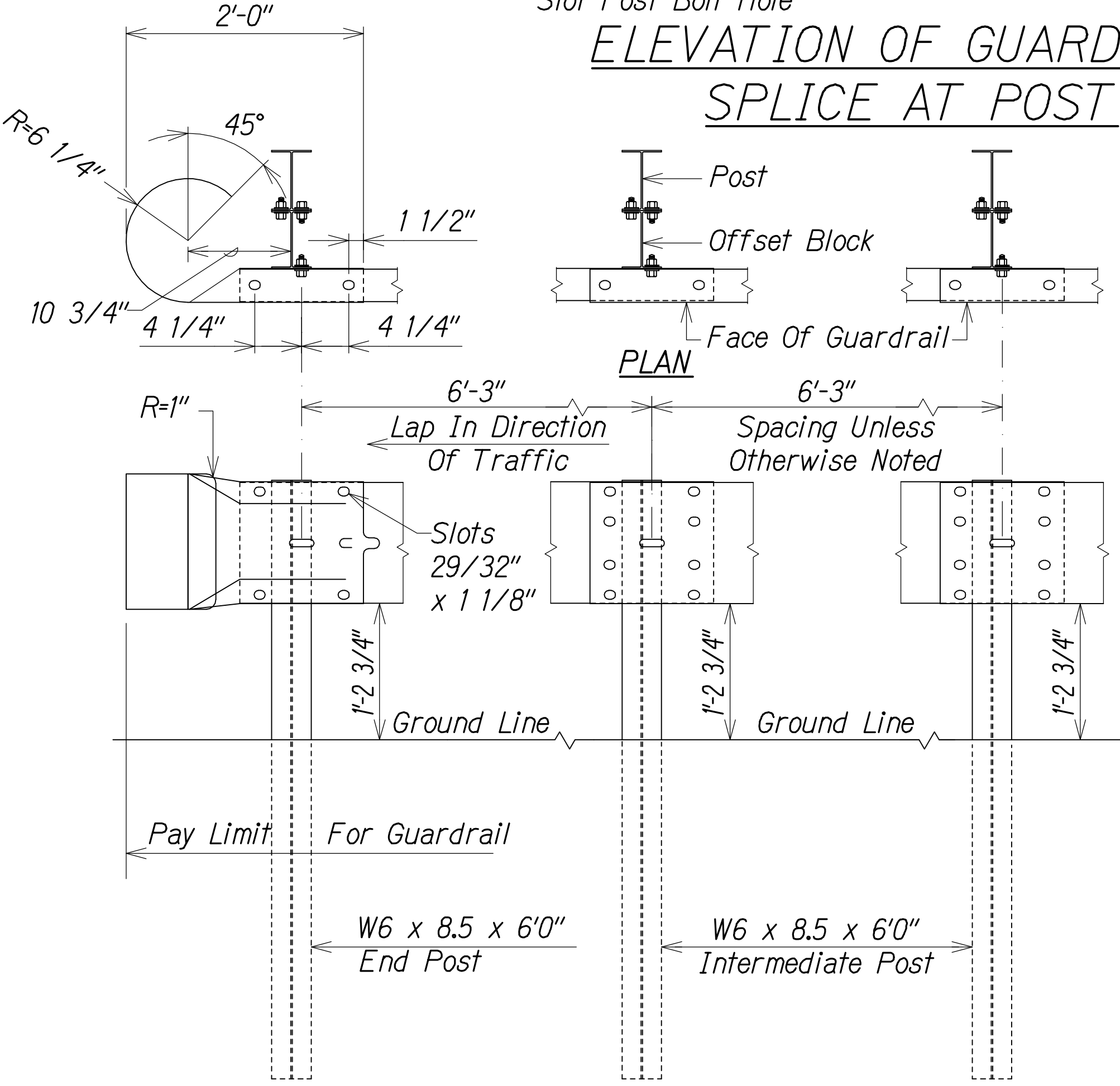
ANCHOR SPIDER (WELDMENT)



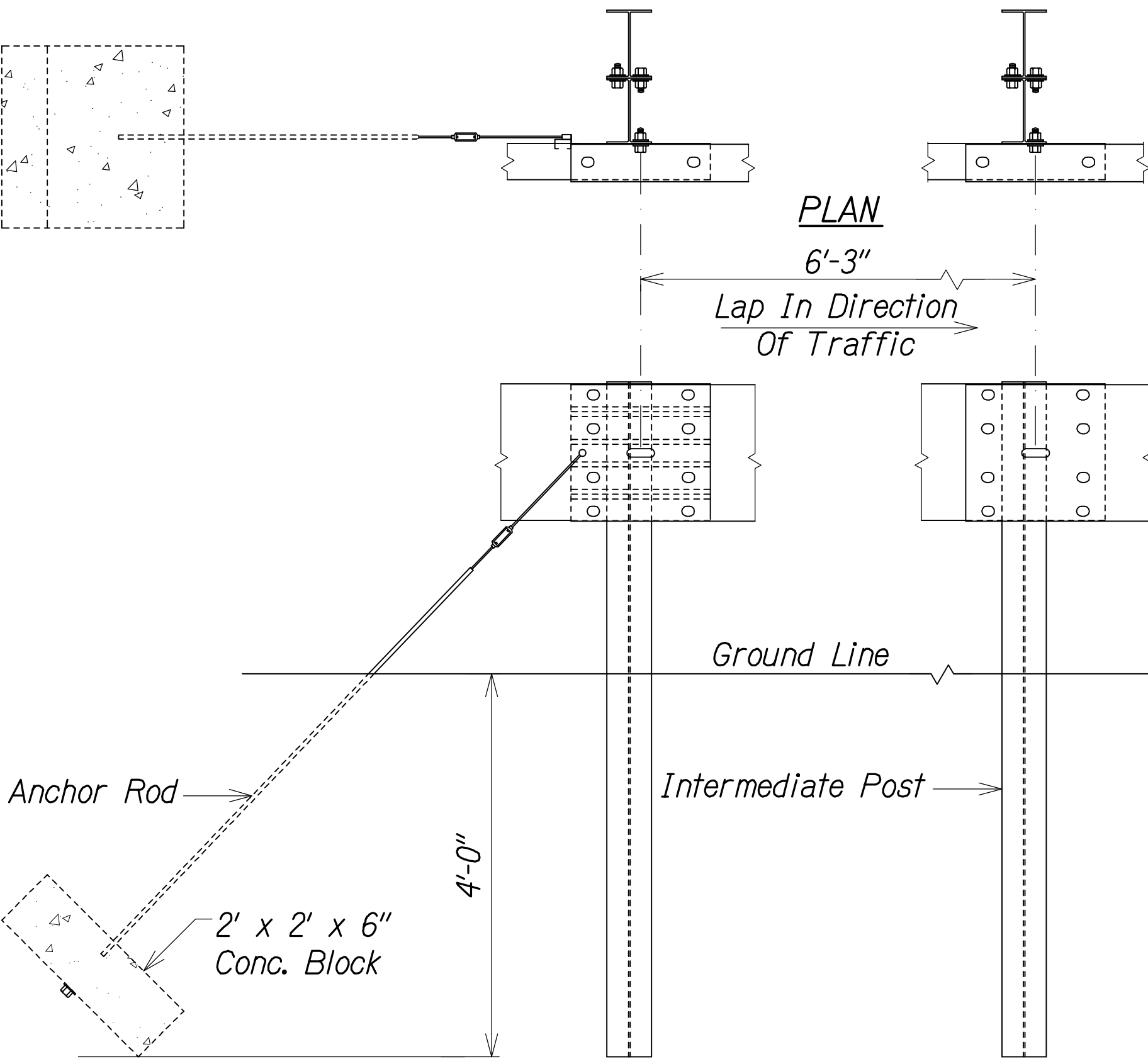
Note: Tensile Strength 60,916 Psi Applied Through Assembly

ANCHOR ROD

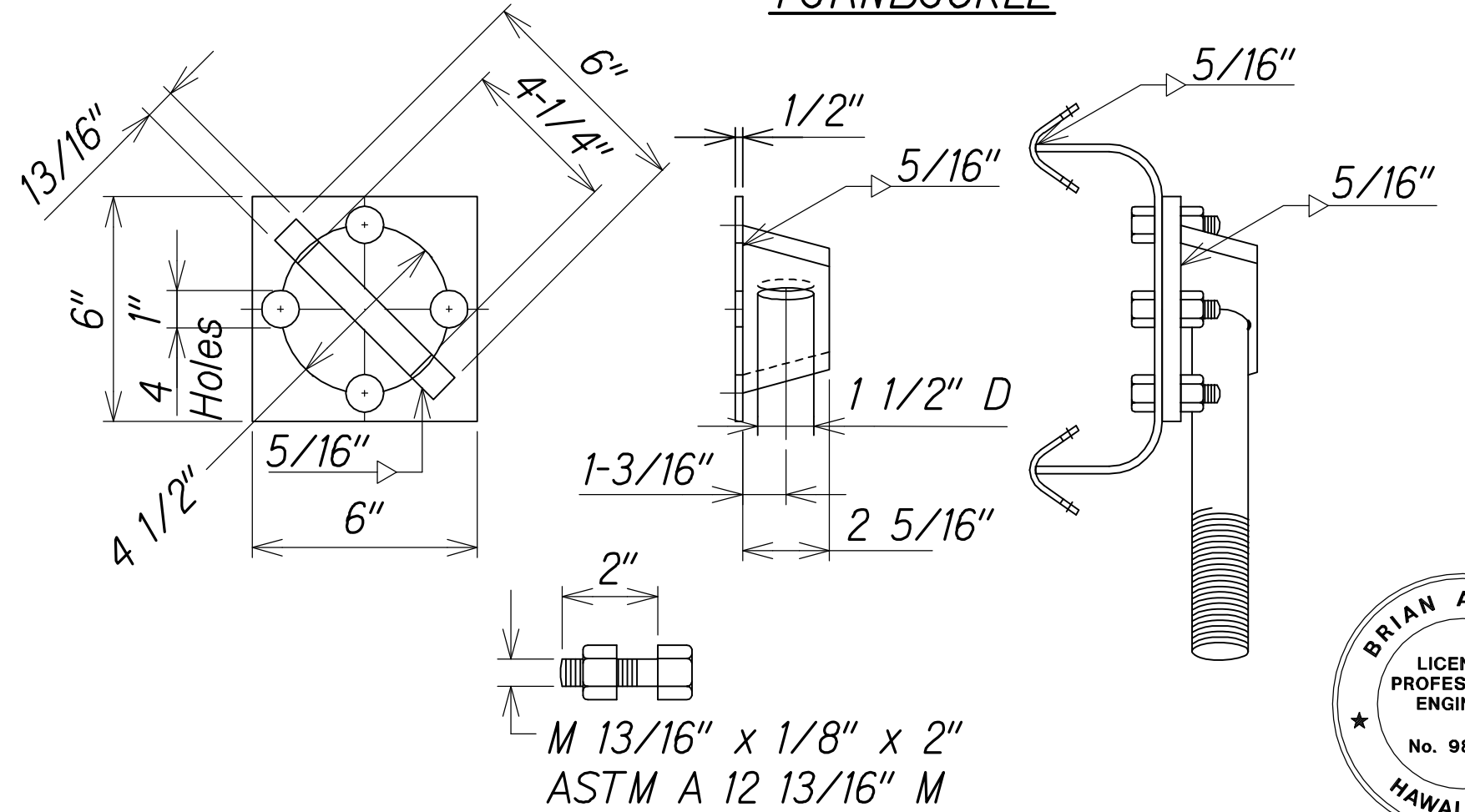
TURNBUCKLE



ASSEMBLY ELEVATION



ANCHOR FOR STEEL BEAM RAIL



ALTERNATE ANCHOR ROD CONNECTOR

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

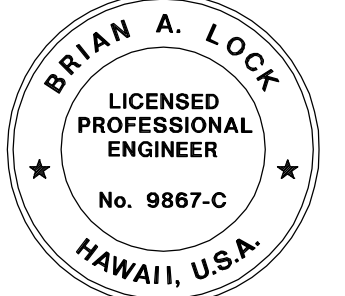
MODIFIED TYPE G TERMINAL END

KEAAU-PAHOA ROAD, SHOULDER LANE CONVERSION, PHASE 2

Showee Drive Intersection Improvements

Fed. Aid Proj. No. STP-0130(33)

Scale: Date: March 2016

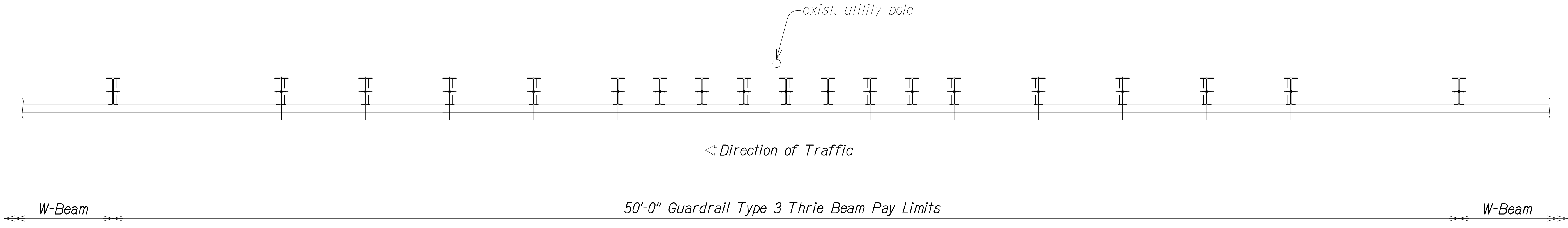


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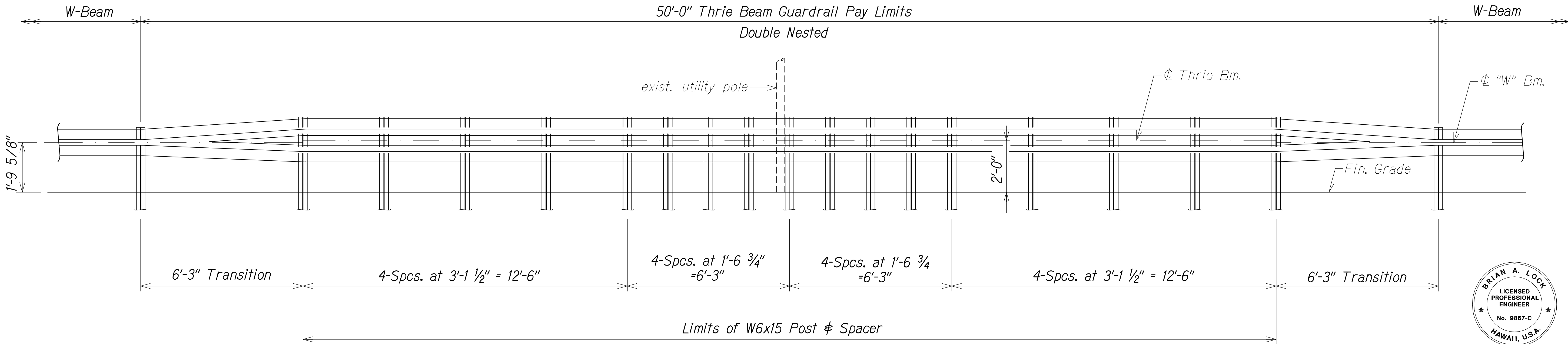
APRIL 30, 2018 WILSON OKAMOTO CORPORATION LIC. EXP. DATE

|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DRAWN BY          |      |
| TRACED 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.  | STP-0130(33)       | 2016        | 23        | 99           |



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



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

REDUCED POST SPACING FOR UTILITY POLE  
Scale: As Shown

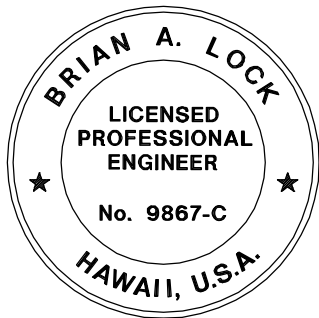
LEGEND FOR  
AS-BUILT POSTINGS

Squiggly line for as-built deletion

Double line for as-built deletion

Roadway

Text for as-built posting



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APRIL 30, 2018  
WILSON OKAMOTO CORPORATION LIC. EXP. DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

GUARDRAIL DETAILS  
REDUCED POST SPACING

KEAAU-PAHOA ROAD, SHOULDER  
LANE CONVERSION, PHASE 2

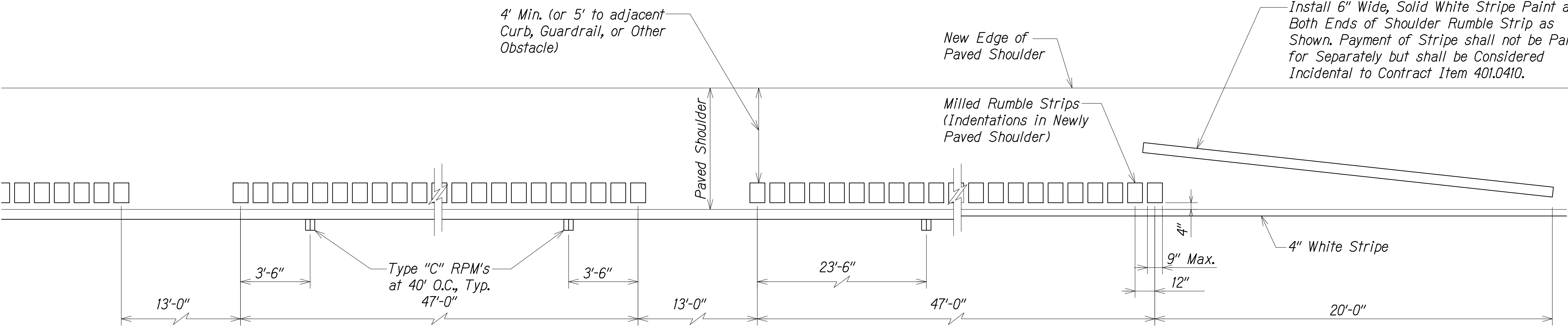
Show Drive Intersection Improvements

Fed. Aid Proj. No. STP-0130(33)

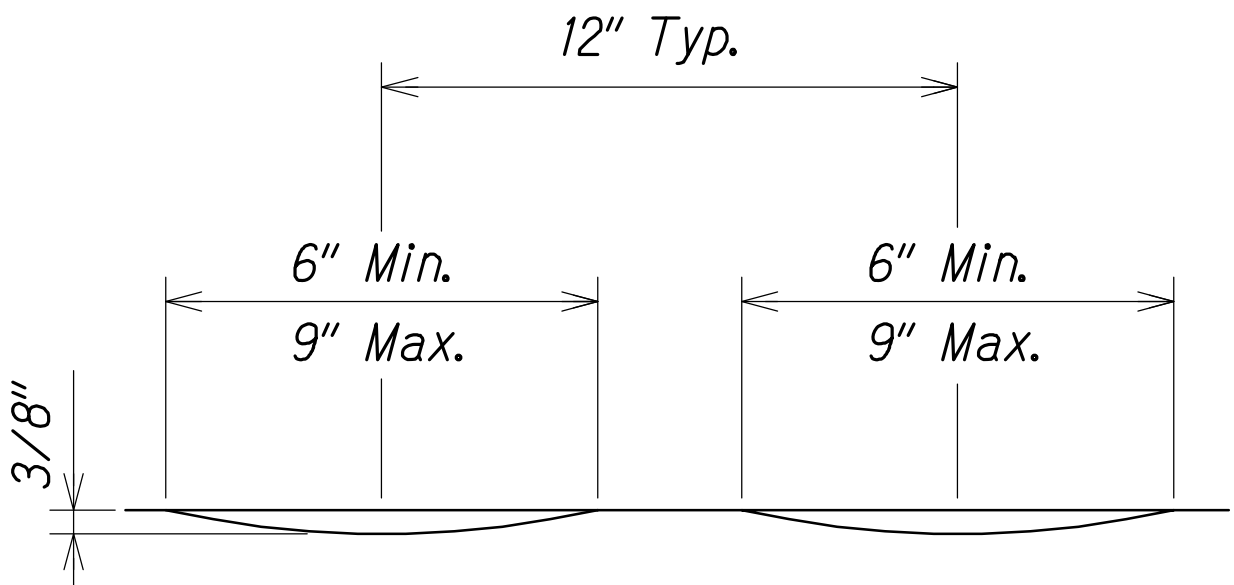
Scale: As Noted Date: March 2016

SHEET No. GR-10 OF 10 SHEETS

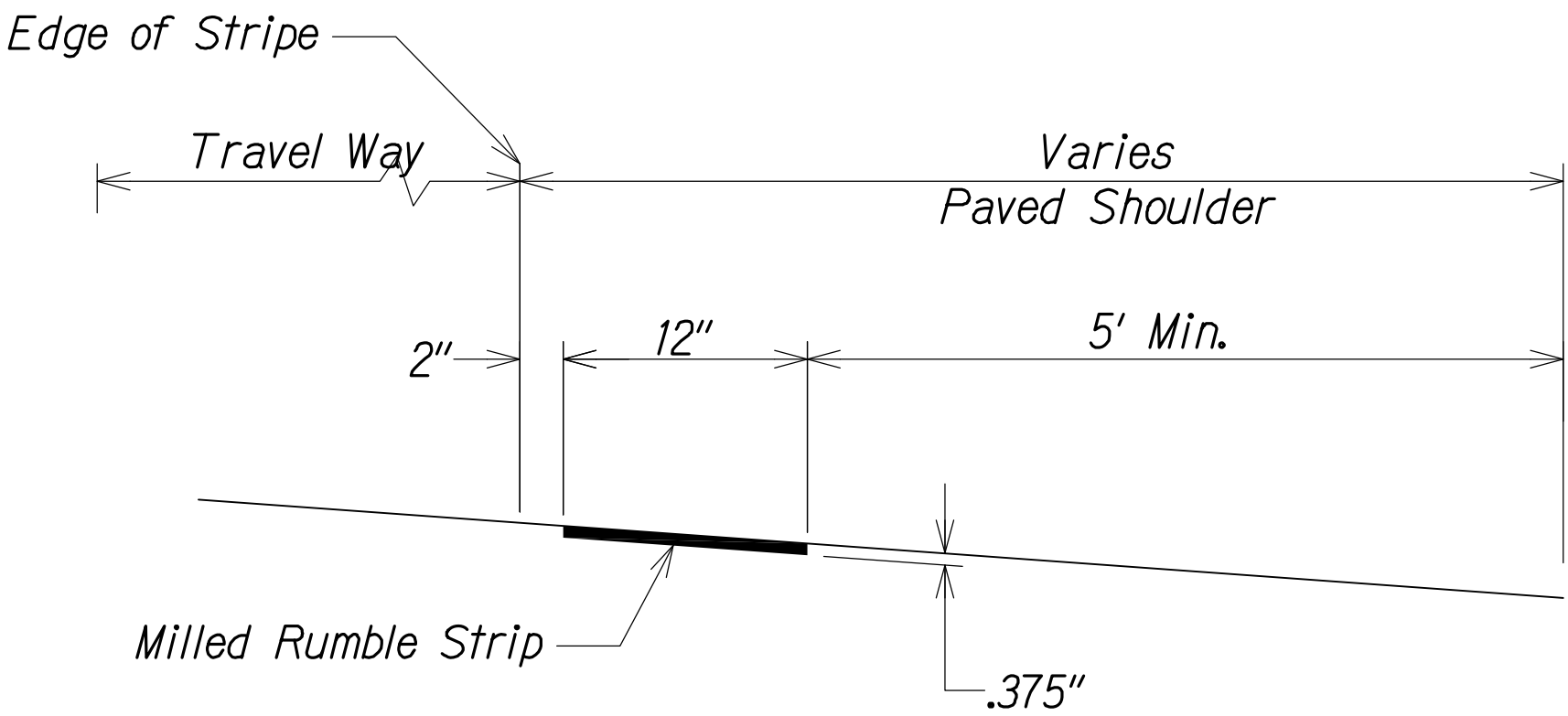
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | STP-0130(33)       | 2016        | C.O. 24   | 99           |



PLAN - MILLED RUMBLE STRIP  
Not to Scale



CROSS SECTION - MILLED RUMBLE STRIP  
Not to Scale

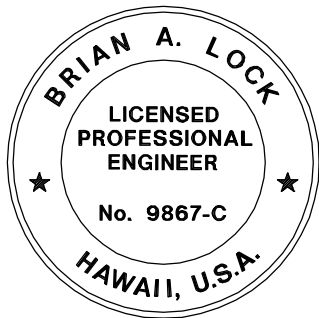


LONGITUDINAL SECTION - MILLED RUMBLE STRIP  
Not to Scale

Notes:

- The Method of Constructing the Milled Rumble Strip Shall be Submitted to the Engineer for Acceptance Prior to Actual Work.
- The Construction Of The Milled Rumble Strip Shall Be Considered Incidental to Item No. 401.0400 and Will Not Be Paid For Separately. The Milling Apparatus and 20 LF, 6" White Stripe Shall Be Considered Incidental To Item No. 401.0400 And Will Not Be Paid For Separately.
- Rumble Strips Shall Be Installed Along All Shoulders, Except at Right Turn Deceleration And Acceleration Lanes, As Noted On The Plans.
- Do Not Place Type "C" Markers Within 2 Ft. Of The 13 Ft. Rumble Strip Opening.
- Included 13-foot Gaps Will be Considered Rumble Strip and Not Measured For Payment. Any Other Gaps in the Rumble Strip (Such As Driveways, Side Roads, Channelized Intersections, Etc.) Will Not Be Measured For Payment
- Rumble Strips are to be Installed After the Edge of Pavement Stripe and Before the Installation of the Type "C" Markers.

| LEGEND FOR<br>AS-BUILT POSTINGS |                                     |
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|                                 | Squiggly line for as-built deletion |
|                                 | Double line for as-built deletion   |
|                                 | Text for as-built posting           |



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WILSON OKAMOTO CORPORATION LIC. EXP. DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**MILLED RUMBLE STRIP  
DETAILS AND NOTES**  
KEAAU-PAHOA ROAD, SHOULDER  
LANE CONVERSION, PHASE 2  
Shower Drive Intersection Improvements  
Fed. Aid Proj. No. STP-0130(33)  
Scale: N.T.S. Date: March 2016

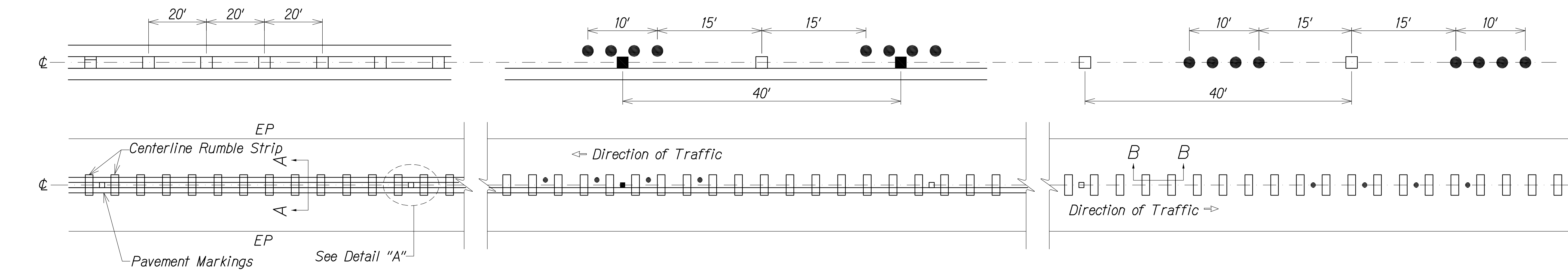
6/8/17 Revised Details

| DATE | REVISION |
|------|----------|
|------|----------|

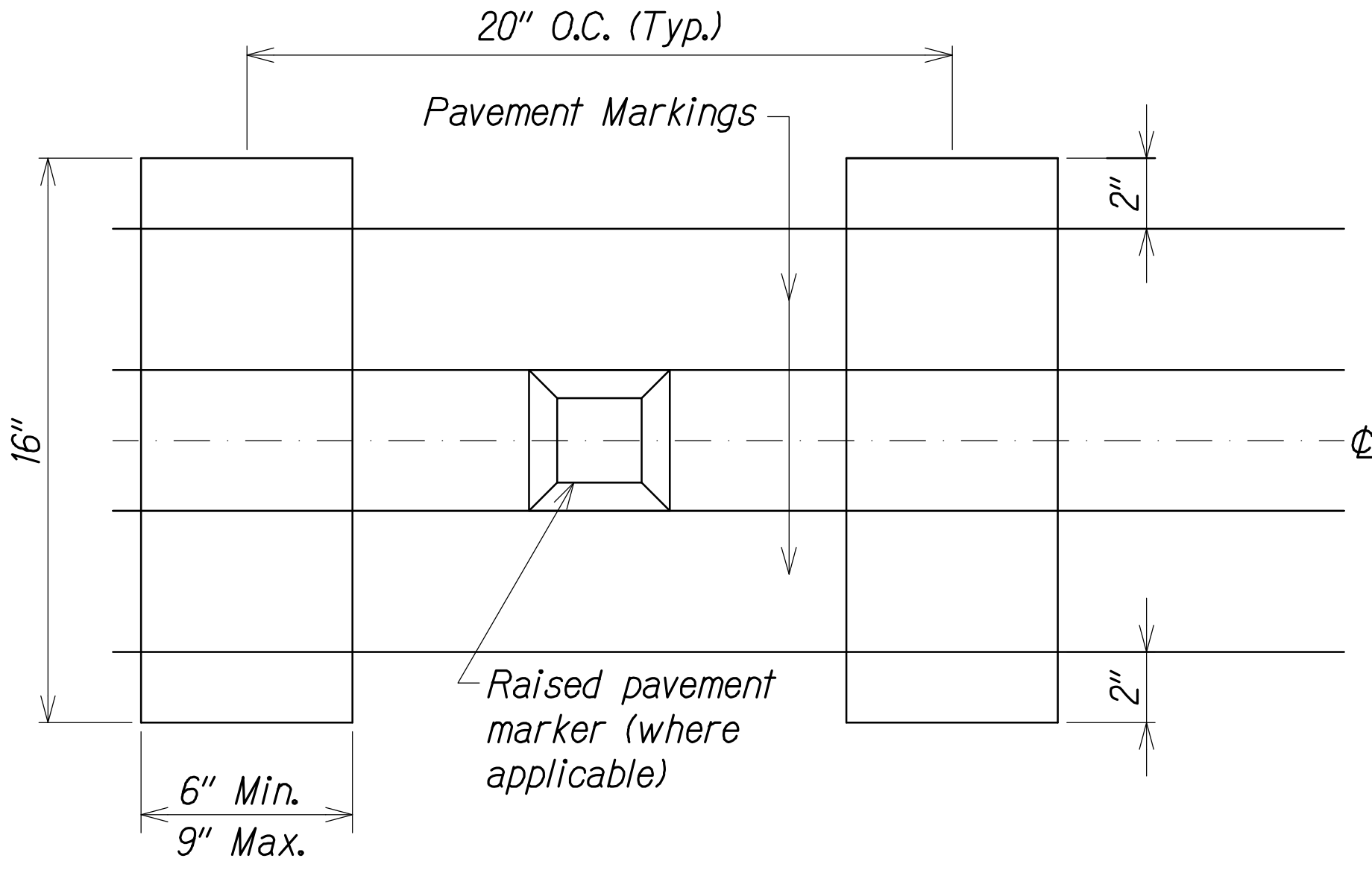
SHEET No. MD-1 OF 3 SHEETS



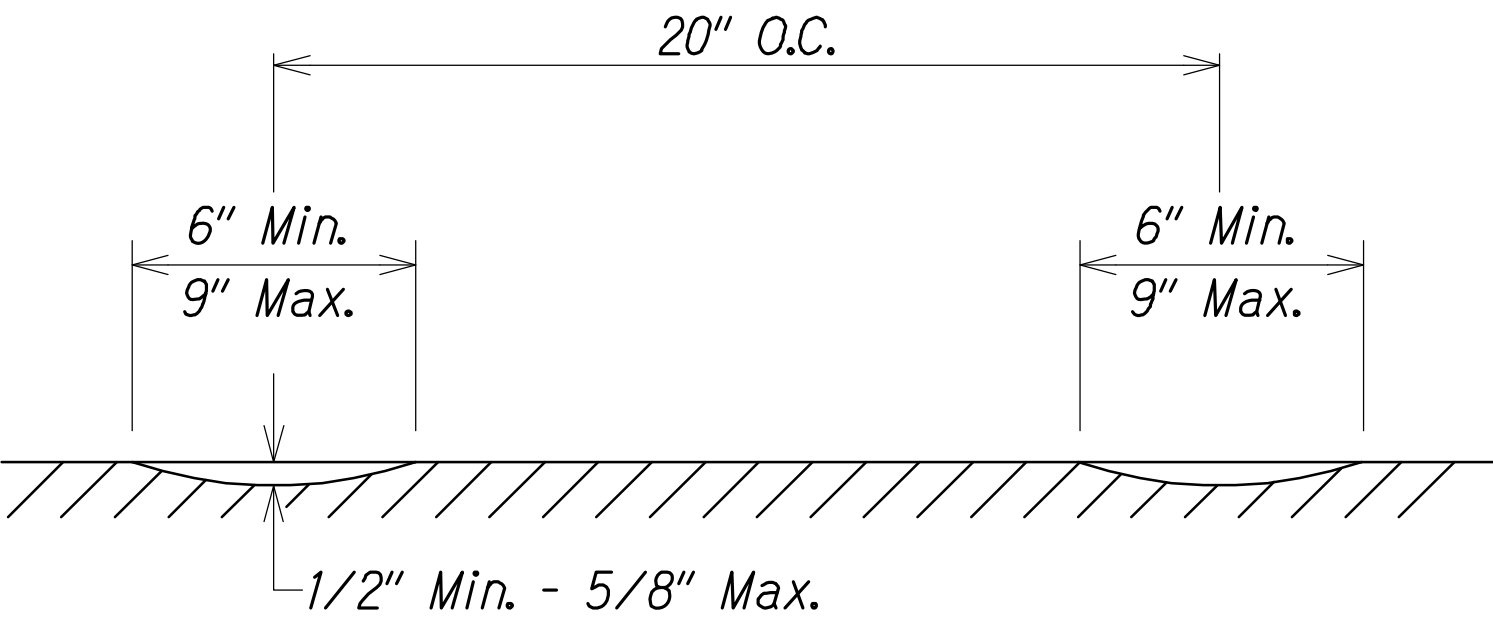
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | STP-0130(33)       | 2016        | 25        | 99           |



PLAN - CENTERLINE MILLED RUMBLE STRIP

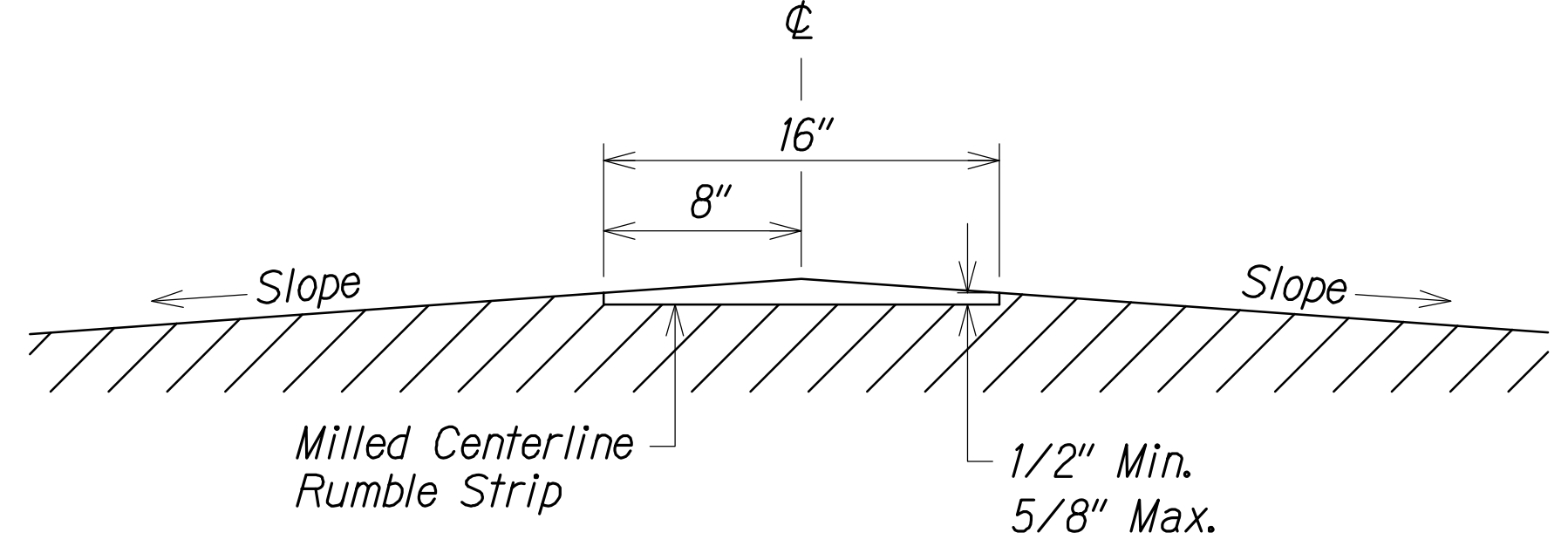


DETAIL "A"

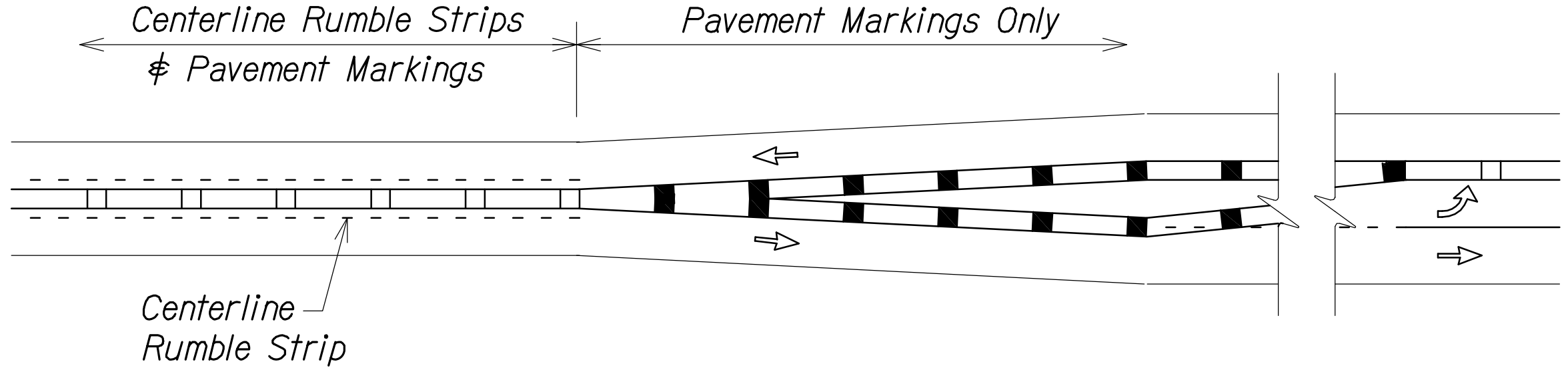


SECTION B-B - CENTERLINE MILLED RUMBLE STRIP

- NOTES:**
- The method of constructing the centerline milled rumble strip shall be submitted to the Engineer for acceptance prior to the actual work.
  - Dimensions shown are approximate. Adjust rumble strip spacing to coordinate with pavement markings prior to installation.
  - Raised pavement markers shall be installed on level surface between the rumble strips. Do not install raised pavement markers inside the milled area.
  - The construction of the centerline milled rumble strip shall be paid for under Item No. 615.1000 – Milled Rumble Strip, Centerline . The milling apparatus and removal of existing pavement markings will not be paid for separately and shall be considered incidental to Item 615.1000.
  - Do not install centerline rumble strips on bridge decks.
  - Where at-grade bridges are present, rumble strips shall end/begin 20 L.F. beyond the existing bridge deck joints/concrete approach slab.
  - Pre-formed pavement striping tape shall be used for solid line markings within the milled centerline rumble strip area.



SECTION A-A - CENTERLINE MILLED RUMBLE STRIP



CENTERLINE MILLED RUMBLE STRIP INSTALLATION LIMIT

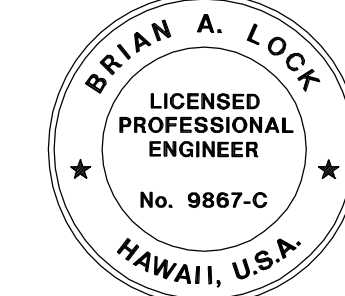
**LEGEND FOR AS-BUILT POSTINGS**

Squiggly line for as-built deletion

Double line for as-built deletion

Roadway

Text for as-built posting



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APRIL 30, 2018  
WILSON OKAMOTO CORPORATION LIC. EXP. DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**MILLED RUMBLE STRIP  
DETAILS AND NOTES**

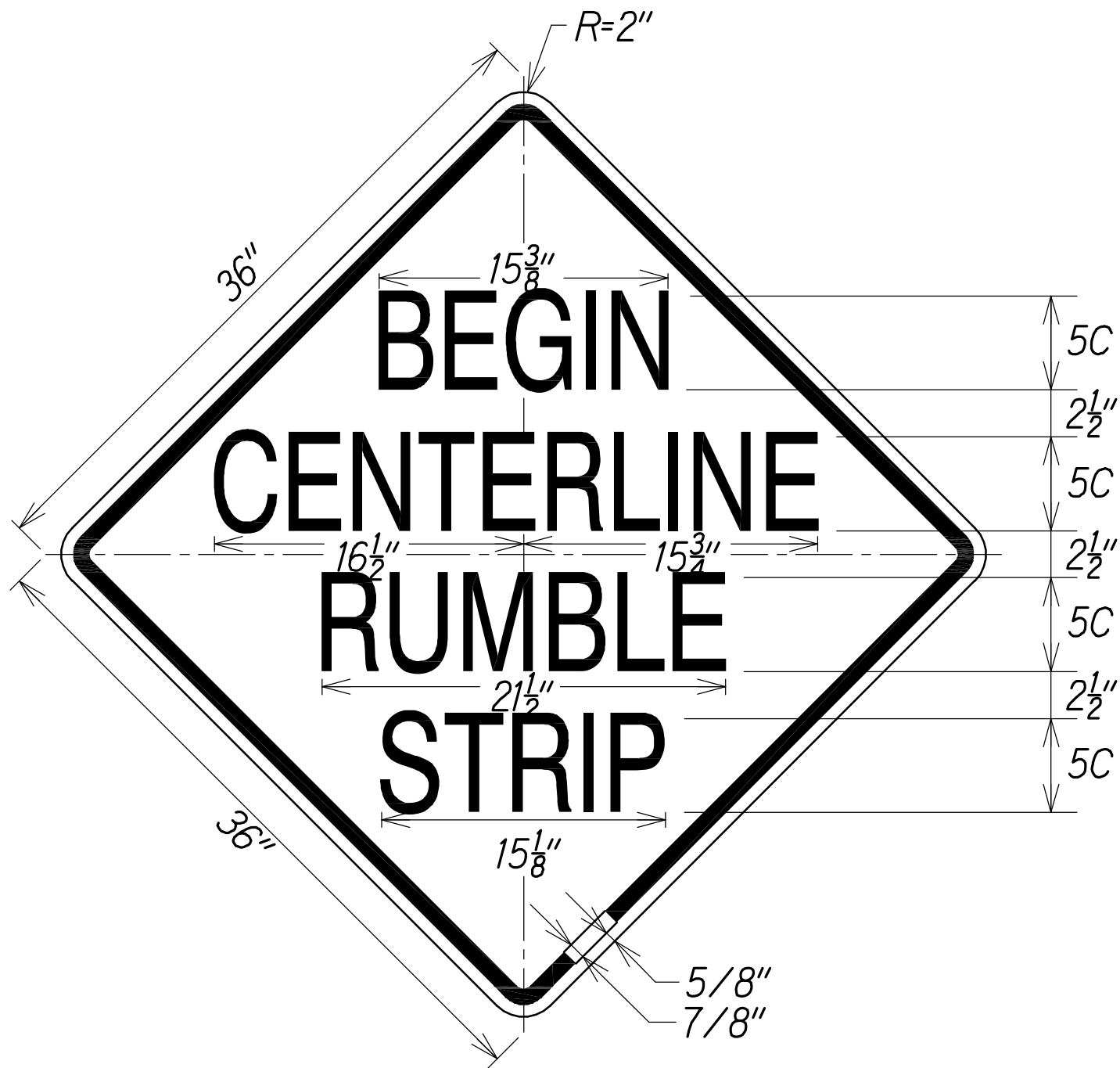
KEAAU-PAHOA ROAD, SHOULDER  
LANE CONVERSION, PHASE 2

Shower Drive Intersection Improvements

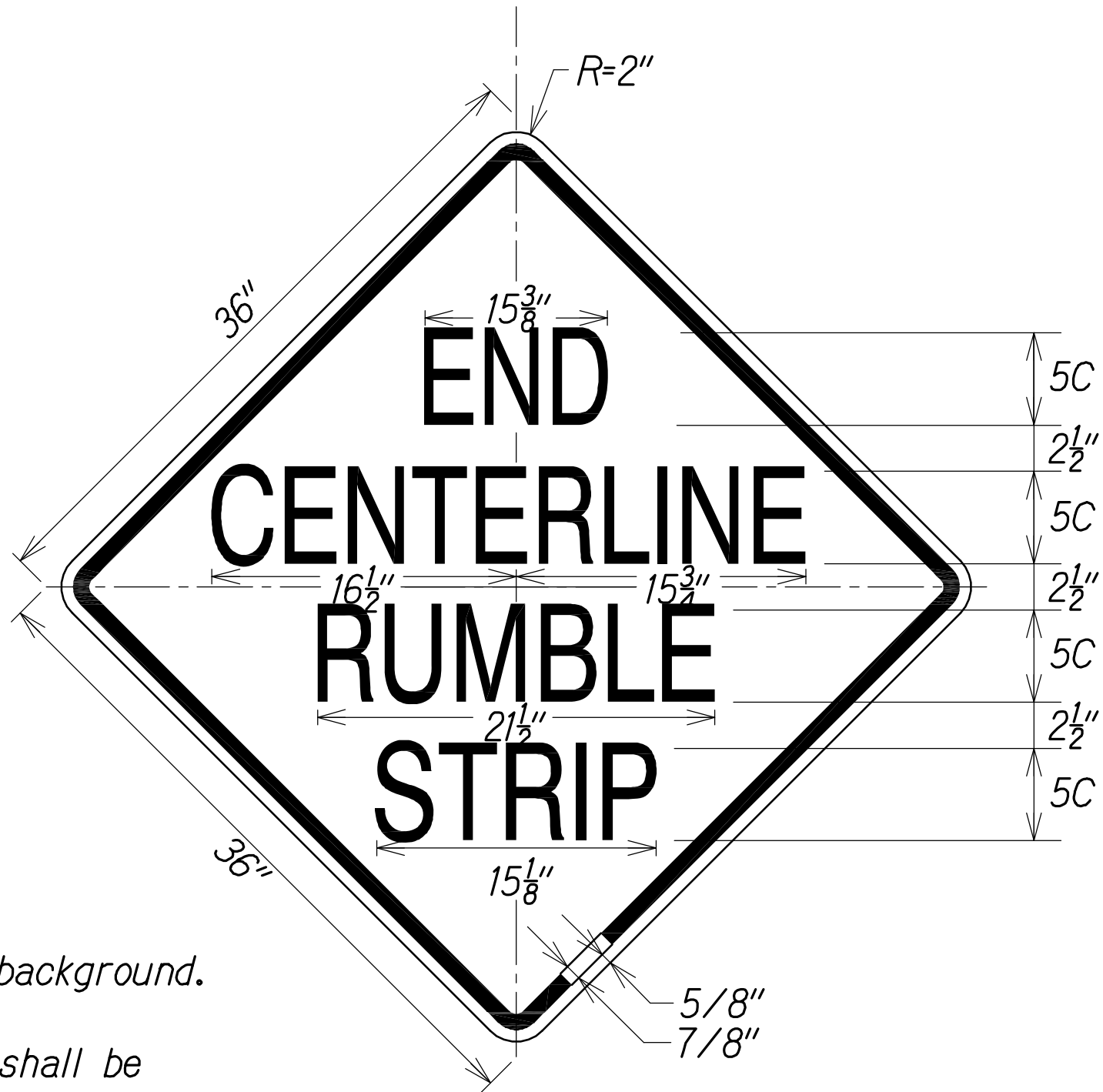
Fed. Aid Proj. No. STP-0130(33)

Scale: Date: March 2016

|                     |       |                    |             |           |              |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII              | HAW.  | STP-0130(33)       | 2016        | 26        | 99           |



W8-14a



W8-14b

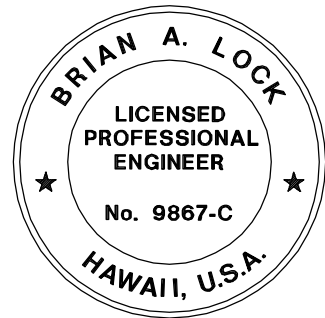
NOTES:

1. Black legend on reflectorized yellow background.
2. Begin Centerline Rumble Strip signs shall be installed 50 feet before the first rumble strip depression. End Centerline Rumble Strip signs shall be installed 50 feet beyond the last rumble strip depression.

SIGN NOTES

1. All signs shall conform to Section 621 of the Special Provisions and the latest editions and amendments of the following FHWA publications:
  - a. "Manual on Uniform Traffic Control Devices for Streets and Highways" (MUTCD)
  - b. "Standard Highway Signs"
  - c. "Standard Alphabets for Highway Signs"
2. Borders, messages, arrows, symbols and shield shall conform to details as shown on the plans and as specified in the MUTCD.
3. Sign messages shall be as indicated on the plan, or as directed by the Engineer.
4. Backing for all new Regulatory and Warning Signs shall not be spliced.
5. Final locations of all signs shall be accepted by the Engineer prior to any installation work.
6. Existing signs that are to be replaced, shall not be removed until new signs are installed as replacements, or the messages are no longer necessary.
7. Existing signs not shown on these plans shall remain as posted unless otherwise directed by the Engineer. Removal and disposal of existing signs and/or posts as designated on these plans shall be incidental to the various signing items.
8. All signs shall be installed on square tube posts, unless otherwise noted.
9. Sign posts shall be painted with yellow reflective paint, except where located behind guardrails. Such paint work shall be considered incidental to sign items.
10. Contractor shall mark the back of all signs using labels and equipment provided by the State. Payment to be incidental to various contract items.

|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DRAWN BY          |      |
| TRACED BY         |      |
| CHECKED BY        |      |
| NOTE BOOK         |      |
| No.               |      |



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APRIL 30, 2018  
WILSON OKAMOTO CORPORATION LIC. EXP. DATE

LEGEND FOR  
AS-BUILT POSTINGS

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

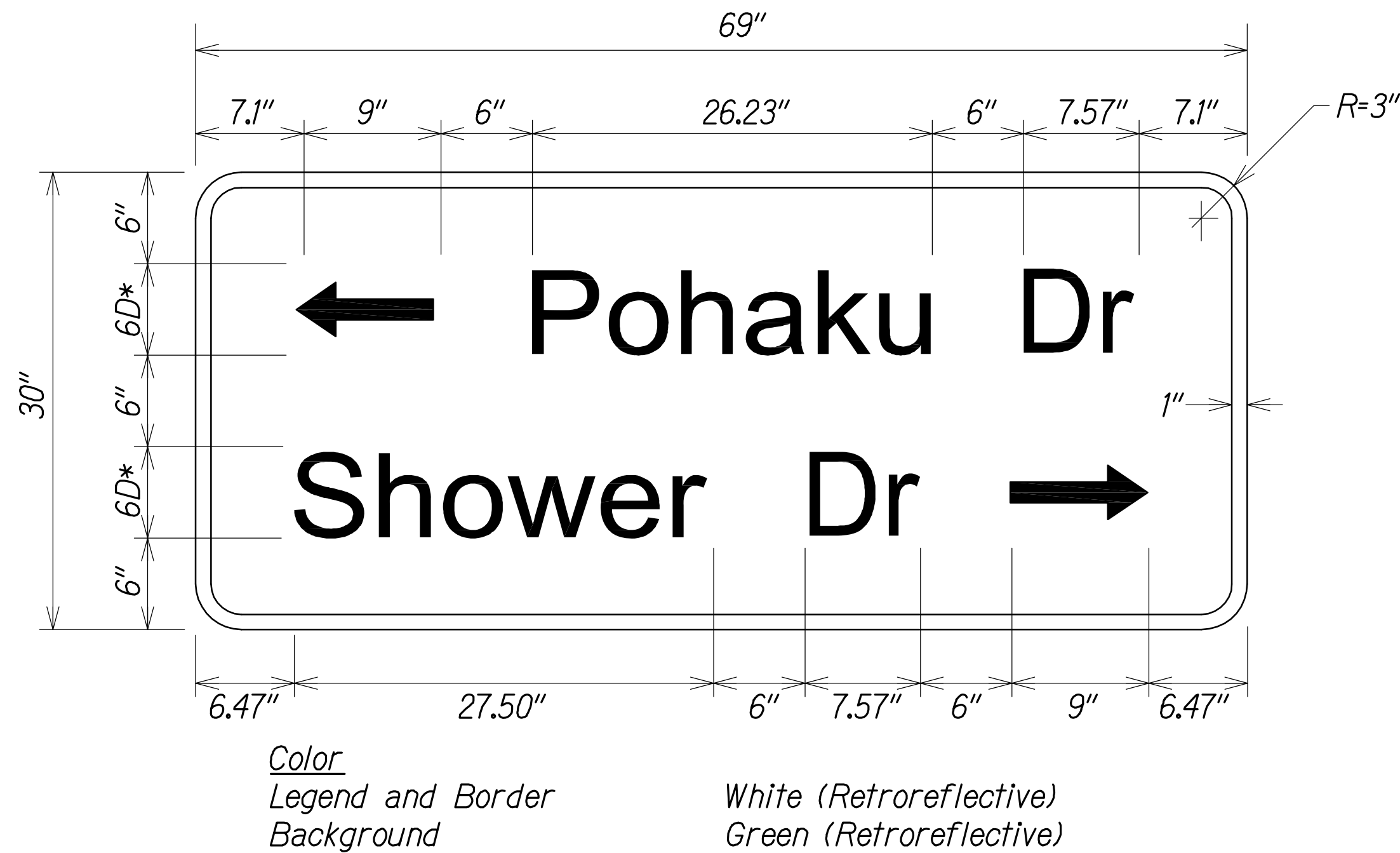
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**MILLED RUMBLE STRIP**  
**DETAILS AND NOTES**  
**KEAAU-PAHOA ROAD, SHOULDER**  
**LANE CONVERSION, PHASE 2**  
**Showar Drive Intersection Improvements**  
**Fed. Aid Proj. No. STP-0130(33)**  
Scale: Date: March 2016

SHEET No. MD-3 OF 3 SHEETS

"AS-BUILT"

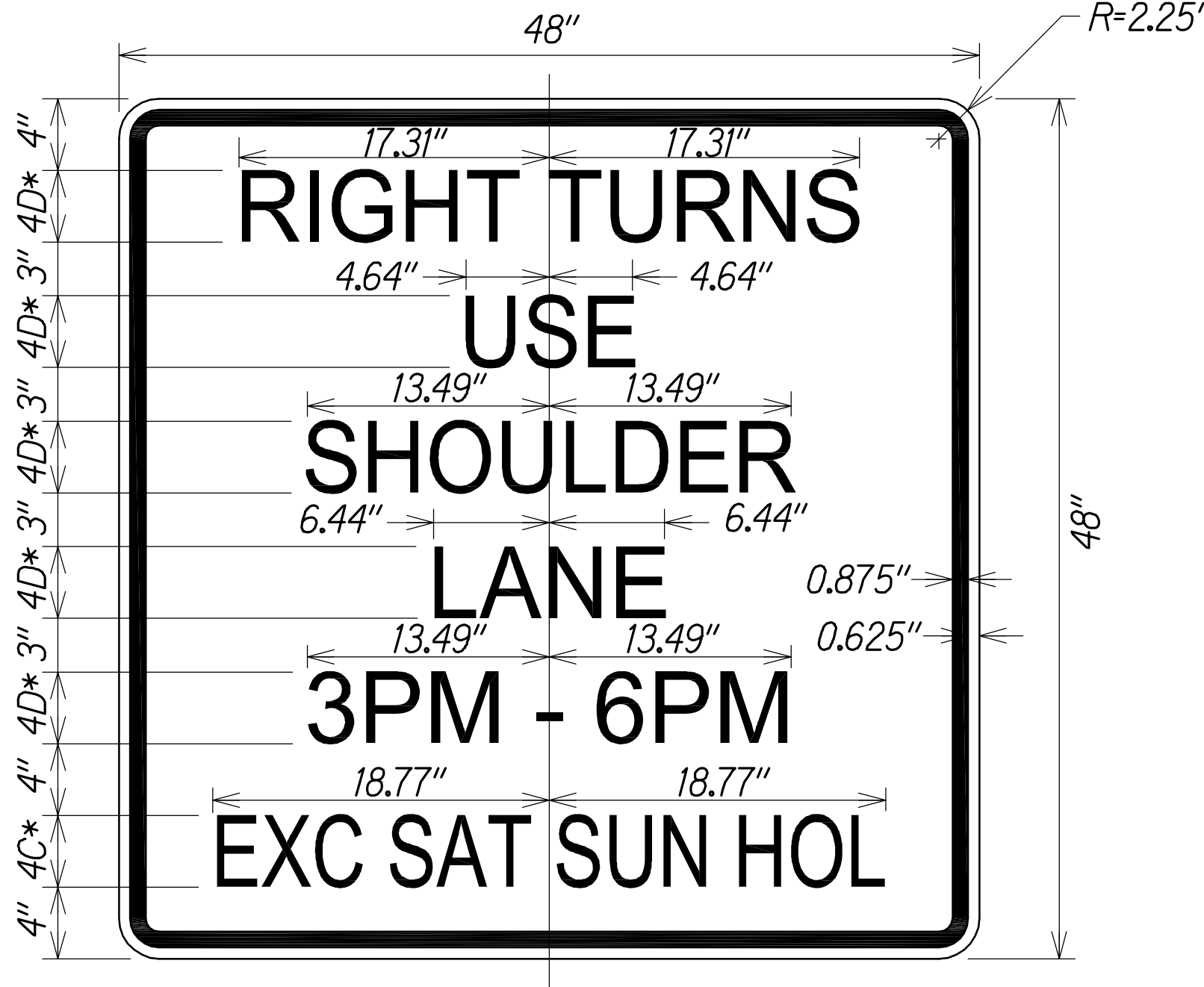
26

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | STP-0130(33)       | 2016        | 27        | 99           |



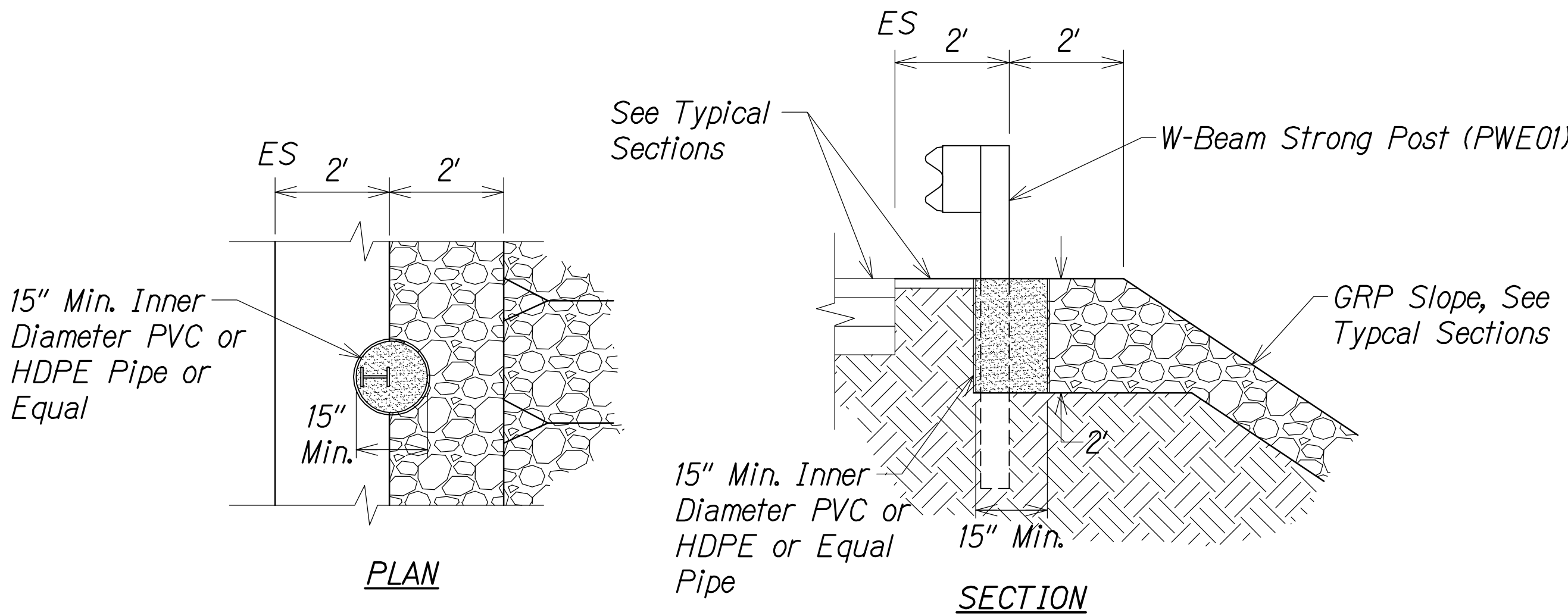
\*Series 2000 Standard Alphabets

D1-2 SIGN DETAIL  
SHOWER/POHAKU DRIVE  
Not to Scale



\*Series 2000 Standard Alphabets

CUSTOM R10 SIGN DETAIL  
Not to Scale

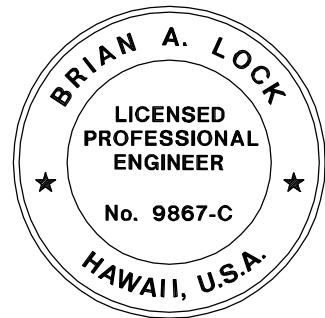


Soil GRP ASTM C33 Coarse Aggregate, Size No. 57

- NOTES:**
- Backfill of drilled holes shall be with compressible material, ASTM C33 Coarse Aggregate, Size No. 57.

STRONG POST W-BEAM GUARDRAIL LEAVE-OUT  
Not to Scale

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



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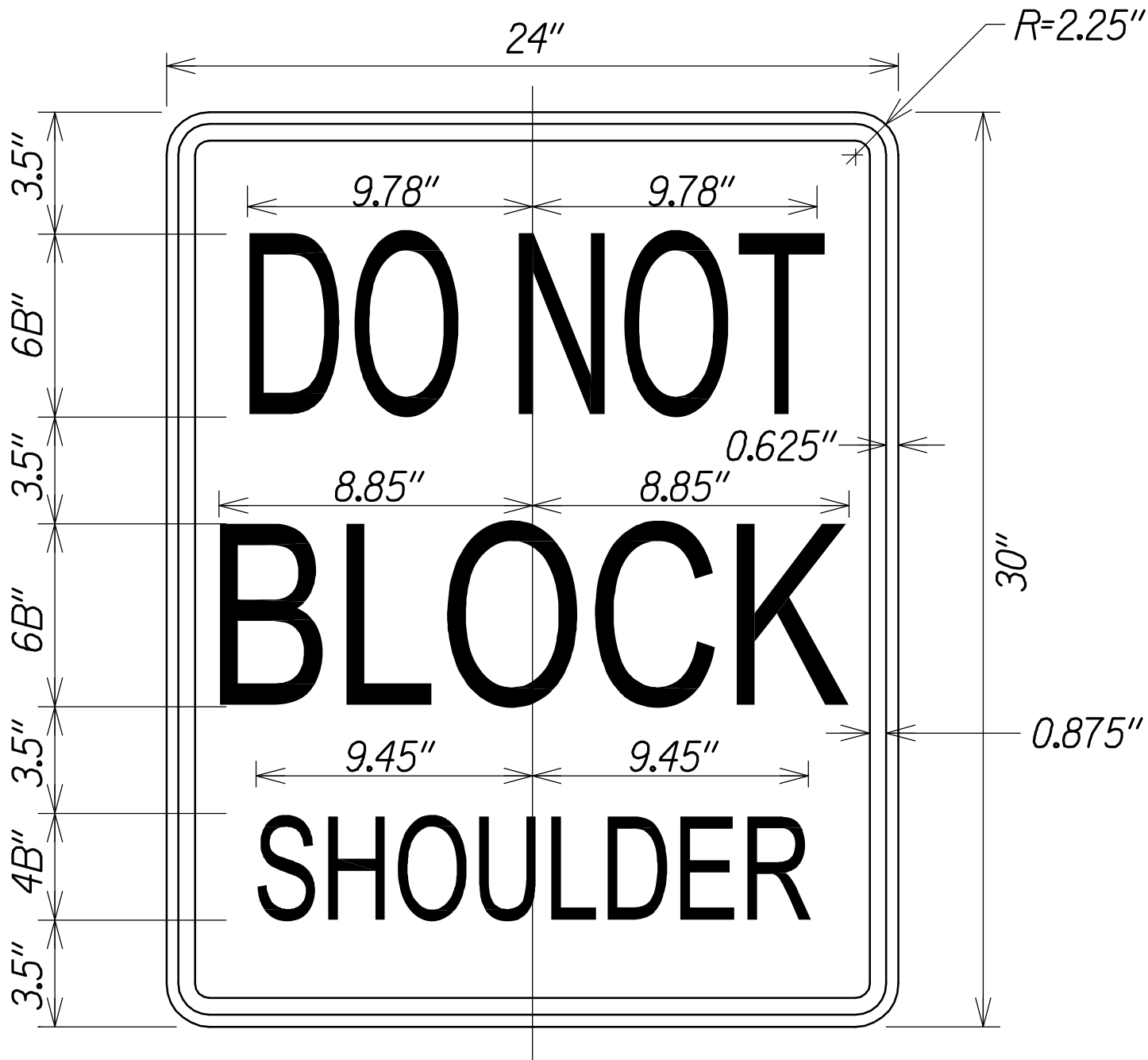
APRIL 30, 2018  
WILSON OKAMOTO CORPORATION LIC. EXP. DATE

| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION |                         |
|----------------------------------------------------------------------|-------------------------|
| MISCELLANEOUS DETAILS                                                |                         |
| <u>KEAAU-PAHOA ROAD, SHOULDER LANE CONVERSION, PHASE 2</u>           |                         |
| <u>Shower Drive Intersection Improvements</u>                        |                         |
| <u>Fed. Aid Proj. No. STP-0130(33)</u>                               |                         |
| Scale: <u>As Noted</u>                                               | Date: <u>March 2016</u> |

SHEET No. MSC-10F 1 SHEETS



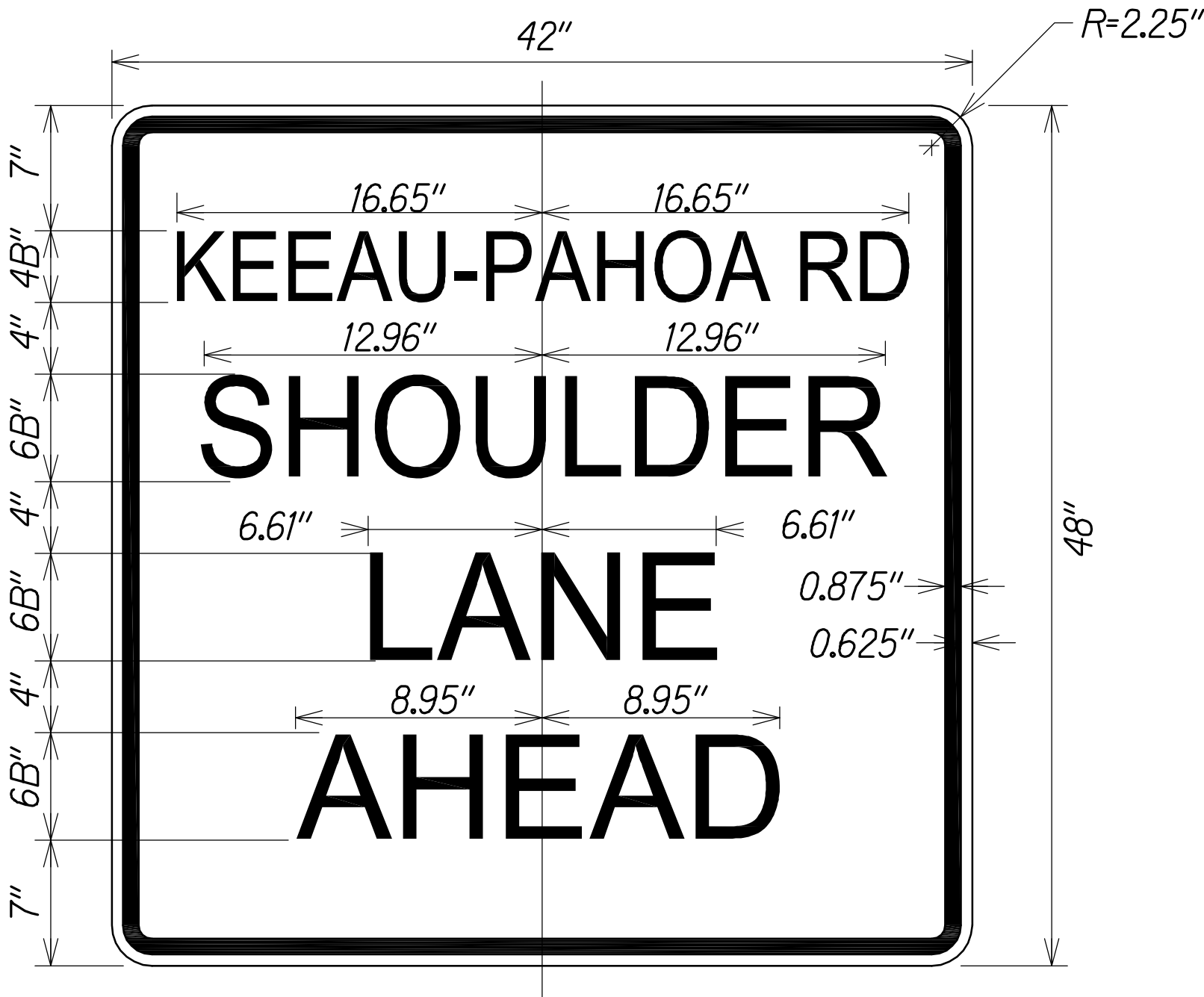
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | STP-0130(33)       | 2016        | 28        | 99           |



Color  
Legend and Border      Black  
Background      White (Retroreflective)

\*Series 2000 Standard Alphabets

CUSTOM R10 SIGN DETAIL  
Not to Scale

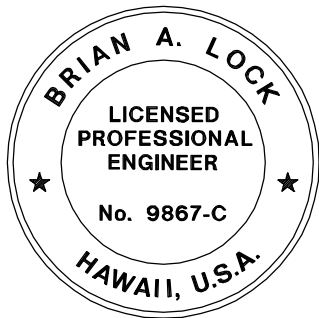


Color  
Legend and Border      Black  
Background      White (Retroreflective)

\*Series 2000 Standard Alphabets

CUSTOM R16 SIGN DETAIL  
Not to Scale

|                  |                   |      |
|------------------|-------------------|------|
| ORIGINAL<br>PLAN | SURVEY PLOTTED BY | DATE |
|                  | DRAWN BY          |      |
|                  | TRACED BY         |      |
|                  | NOTED BY          |      |
| NOTE BOOK<br>No. | QUANTITIES BY     |      |
|                  | CHECKED BY        |      |



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LEGEND FOR  
AS-BUILT POSTINGS

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

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
MISCELLANEOUS DETAILS  
KEEAU-PAHOA ROAD, SHOULDER  
LANE CONVERSION, PHASE 2  
Show Drive Intersection Improvements  
Fed. Aid Proj. No. STP-0130(33)  
Scale: As Noted      Date: March 2016

SHEET No. MSC-20F 1 SHEETS