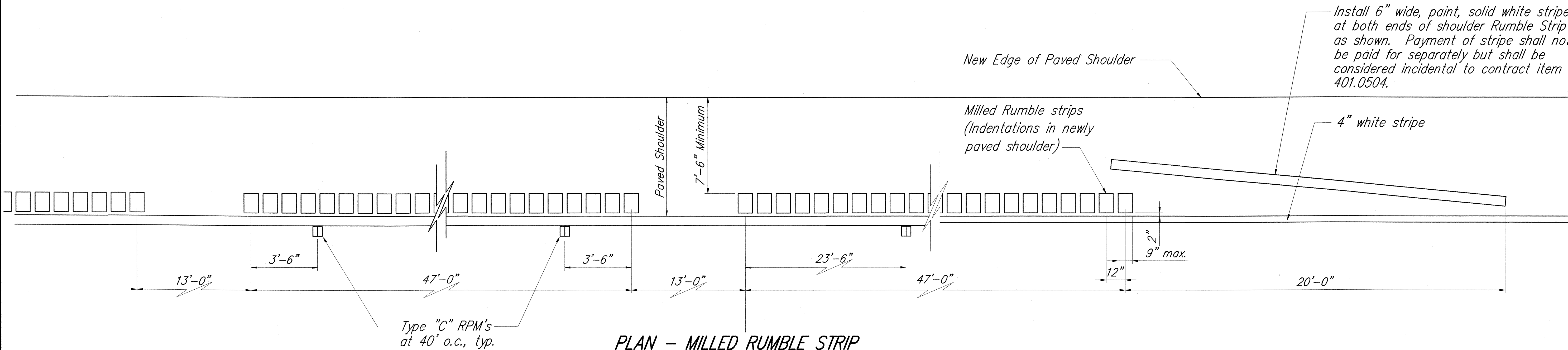


| FED. ROAD<br>DIST. NO. | STATE | FED. AID<br>PROJ. NO. | FISCAL<br>YEAR | SHEET<br>NO. | TOTAL<br>SHEETS |
|------------------------|-------|-----------------------|----------------|--------------|-----------------|
| HAWAII                 | HAW.  | NH-019-1(35)          | 2004           | 28           | 70              |

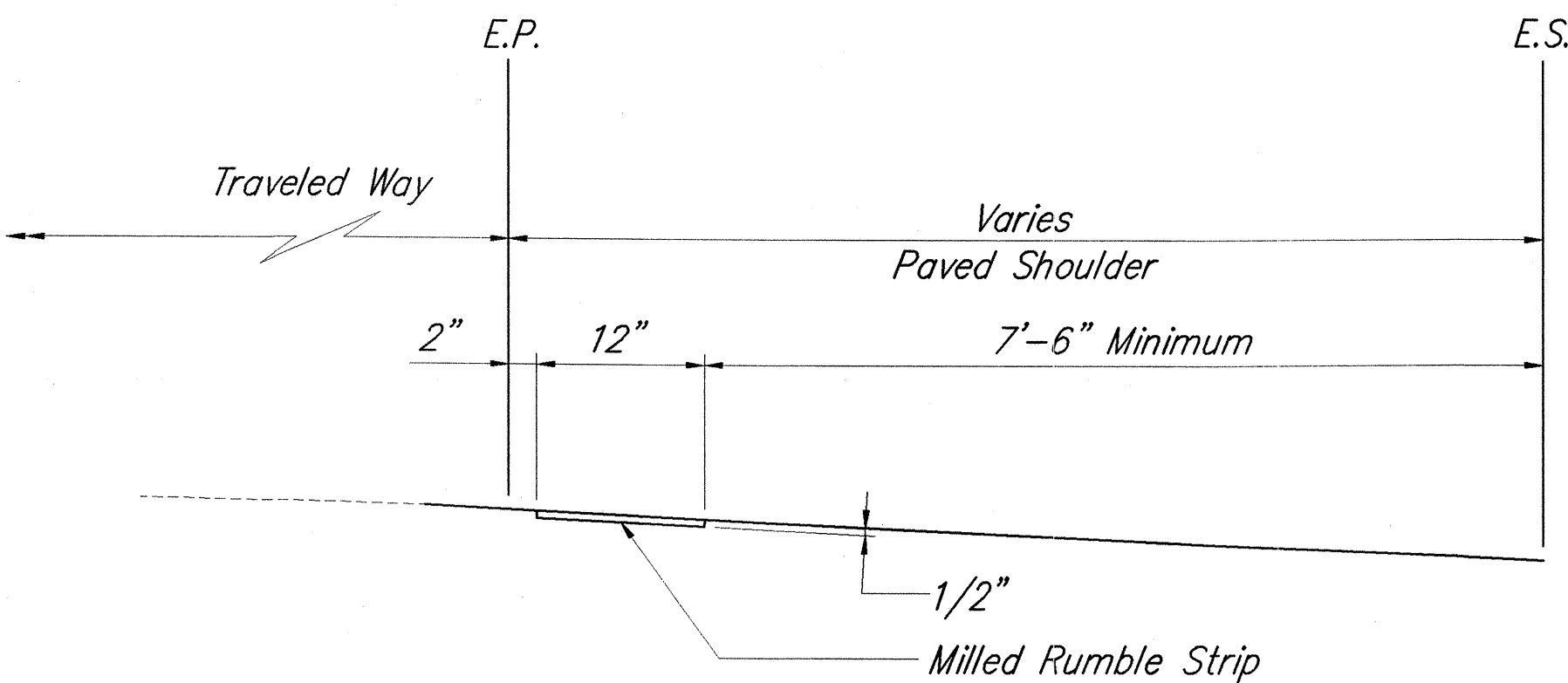


**PLAN – MILLED RUMBLE STRIP**

Scale: 3/8" = 1'-0"

**NOTES :**

1. The method of constructing the Milled Rumble Strip shall be submitted to the Engineer for acceptance prior to the actual work.
2. The construction of the the Milled Rumble Strip shall be paid for under Item No. 401.0504. The milling apparatus and 20 lf, 6" white stripe shall be considered incidental to Item No. 401.0504 and will not be paid for separately.
3. Rumble strips shall be installed along all shoulders, except at right turn deceleration and acceleration lanes, as noted on the plans.
4. Do not place Type "C" markers within 2 ft. of the 13 ft. Rumble Strip opening.
5. Rumble Strip will be paid for by linear foot. Included 13-foot gaps will be considered Rumble Strip and measured for payment. Any other gaps in the Rumble Strip (such as driveways, side roads, channelized intersections, etc.) will not be measured for payment.
6. Rumble Strips are to be installed after the edge of pavement stripe and before the installation of the Type "C" markers.

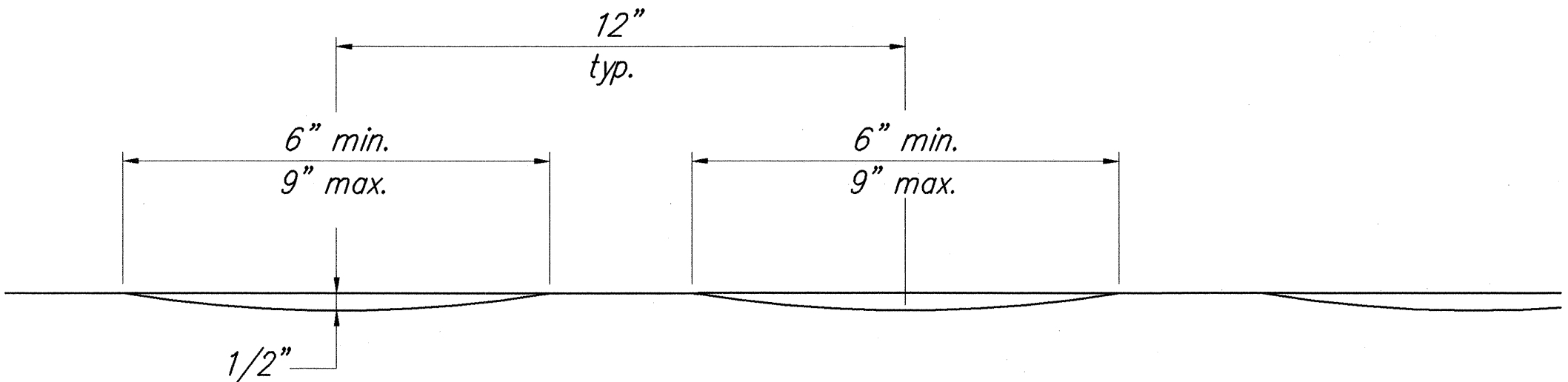


**LONGITUDINAL SECTION – MILLED RUMBLE STRIP**

Scale: 1"=1'-0"

**NOTE:**

Shoulder rumble strips should not be used unless 1.5 meters (5 feet) of clear shoulder width for bicycle use is available between the rumble strips and the outer edge of the paved shoulder.



**CROSS SECTION – MILLED RUMBLE STRIP**

Scale: 3"=1'-0"

|                  |                   |      |
|------------------|-------------------|------|
| ORIGINAL<br>PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK        | DRAWN BY          | 3/04 |
|                  | DESIGNED BY       | 3/04 |
|                  | CHECKED BY        | 3/04 |
|                  |                   | 3/04 |

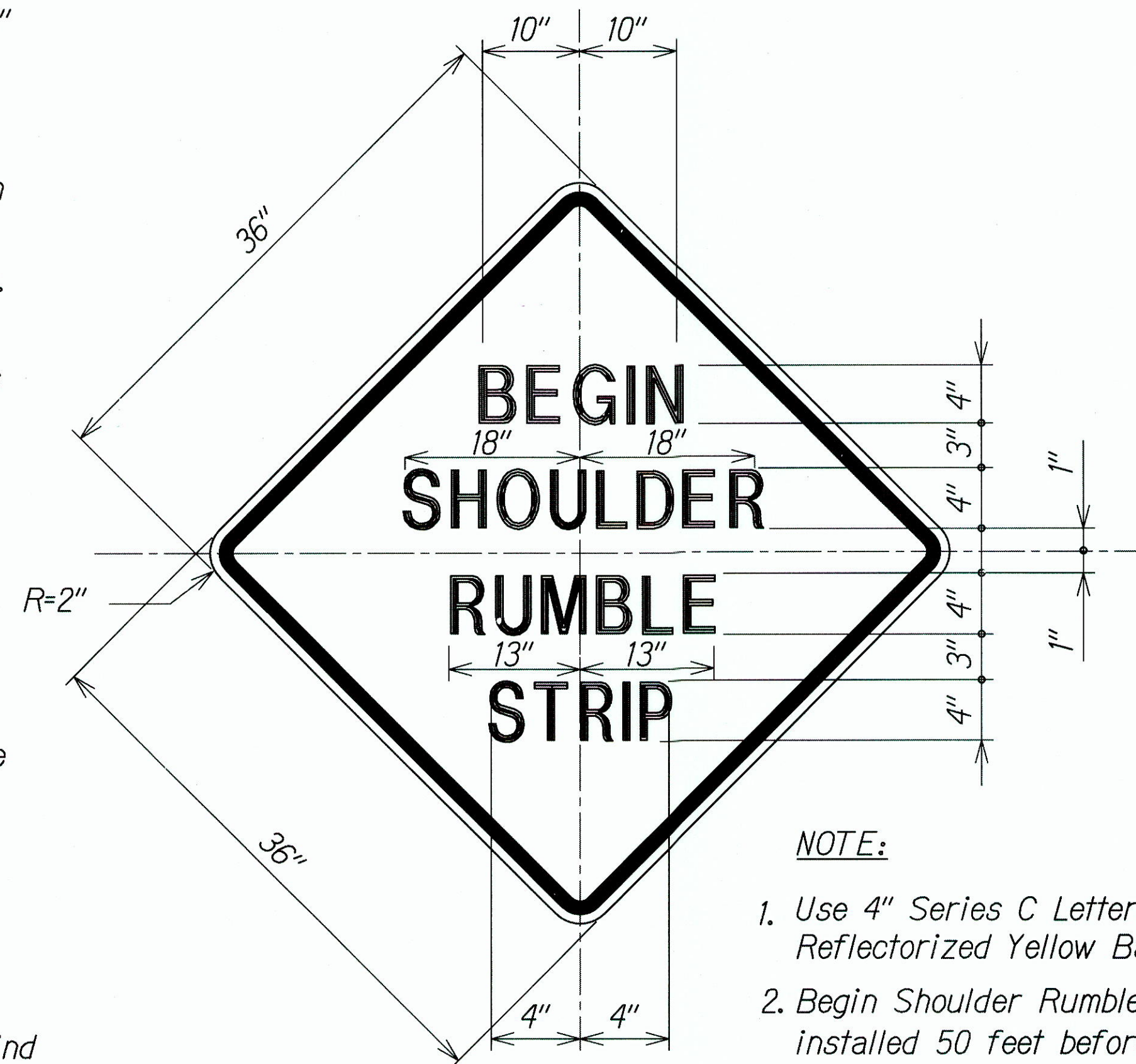
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SHOULDER RUMBLE STRIP**  
**DETAILS AND NOTES**  
**QUEEN KAAHUMANU HIGHWAY**  
**Resurfacing and Intersection Improvements**  
**Federal-Aid Project No. NH-019-1(35)**  
Scale: As Noted      Date: March 2004



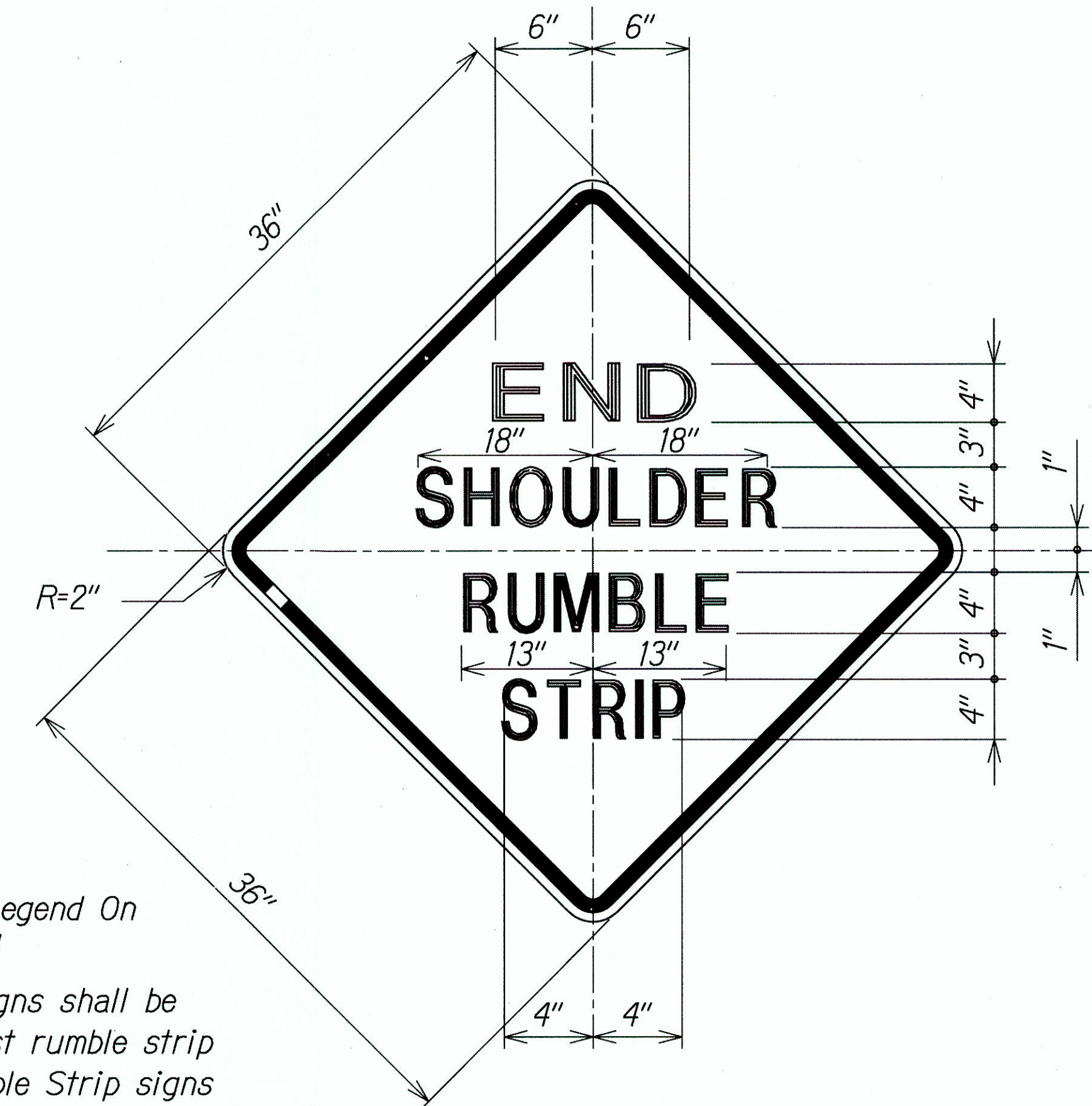
## SIGN NOTES

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. All panels shall be reflectorized in accordance with Section 712.20 of the Standard Specifications. Minimum width of panels shall be 2 ft. Abutting edges of panels shall be in only one direction if vertical abutting edges are used, No horizontal abutting edges shall be allowed and vice versa.
5. Backing for all new Regulatory and Warning Signs shall not be spliced.
6. Final locations of all signs shall be accepted by the Engineer prior to any installation work.
7. 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.
8. 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.
9. Removal of Existing Delineators and Posts shall be considered incidental to the various signing items.
10. All signs shall be installed on square tube posts, unless otherwise noted.
11. Sign posts shall be painted with yellow reflective paint, except where located behind guardrails. Such paint work shall be considered incidental to sign items.
12. Contractor shall mark the back of all signs using labels and equipment provided by the State. Payment to be incidental to various contract items.



NOTE:

1. Use 4" Series C Letters Black Legend On Reflectorized Yellow Background
2. Begin Shoulder Rumble Strip signs shall be installed 50 feet before the first rumble strip depression. End Shoulder Rumble Strip signs shall be installed 50 feet beyond the last rumble strip depression.



BEGIN SHOULDER RUMBLE STRIP SIGN

END SHOULDER RUMBLE STRIP SIGN

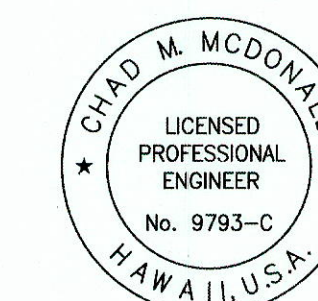
## SIGN REPLACEMENT, REMOVAL, AND INSTALLATION SCHEDULE

| STATION           | LEFT         | RIGHT | TYPE                                 | SIGN<br>TO<br>REMAIN | REMOVE         | INSTALL (10 SQ.<br>FT. OR LESS) |         |
|-------------------|--------------|-------|--------------------------------------|----------------------|----------------|---------------------------------|---------|
|                   |              |       |                                      |                      |                | W/POST                          | WO/POST |
| <del>258+00</del> | <del>●</del> |       | <del>END SHOULDER RUMBLE STRIP</del> |                      | <del>1</del>   | <del>1</del>                    |         |
| 258+00            | ●            |       | BEGIN SHOULDER RUMBLE STRIP          |                      | 1              | 1                               |         |
| 352+20            | ●            |       | BEGIN SHOULDER RUMBLE STRIP          |                      |                | 1                               |         |
| <del>380+70</del> | <del>●</del> |       | <del>END SHOULDER RUMBLE STRIP</del> |                      | <del>1</del>   | <del>1</del>                    |         |
| 792+50            | ●            |       | BEGIN SHOULDER RUMBLE STRIP          |                      |                | 1                               |         |
| 819+65            | ●            |       | END SHOULDER RUMBLE STRIP            |                      |                | 1                               |         |
|                   |              |       |                                      |                      |                |                                 |         |
|                   |              |       |                                      |                      |                |                                 |         |
|                   |              |       |                                      |                      |                |                                 |         |
|                   |              |       |                                      |                      |                |                                 |         |
|                   |              |       |                                      |                      |                |                                 |         |
|                   |              |       |                                      |                      |                |                                 |         |
|                   |              |       | TOTAL                                | --                   | <del>2</del> 0 | <del>6</del> 2                  |         |

NOTE:

Contract item number 621.5100



|                  |                                  |               |
|------------------|----------------------------------|---------------|
| ORIGINAL<br>PLAN | SURVEY PLOTTED BY _____          | DATE _____    |
|                  | DRAWN BY <u>G. LIN</u>           | • <u>3/64</u> |
|                  | TRACED BY _____                  | •             |
| NOTE BOOK        | DESIGNED BY <u>C. McDONALD</u>   | • <u>3/64</u> |
|                  | QUANTITIES BY <u>C. McDONALD</u> | • <u>3/64</u> |
| No. _____        | CHECKED BY <u>F. HODG</u>        | • <u>3/64</u> |



This work was prepared by  
me or under my supervision

*Chad M. McDermott*  
4/30/2010  
MITSUNAGA & ASSOCIATES, INC. EXP. DATE

NOTE: Contractor to check and verify dimensions at job before proceeding with work.

| <u>LEGEND FOR AS-BUILT POSTING</u>  |                                     |
|---|-------------------------------------|
|  | Squiggly line for as-built deletion |
|  | Double line for as-built deletion   |
| <b>Roadway</b>  | Text for as-built posting           |

## "AS-BUILT"

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

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SHOULDER RUMBLE STRIP**  
**SIGN DETAILS AND NOTES**

QUEEN KAAHUMANU HIGHWAY  
Resurfacing and Intersection Improvements  
Federal-Aid Project No. NH-019-1(35)

Scale: As Noted Date: March 2004

SHEET No. **C-27** OF **68** SHEETS