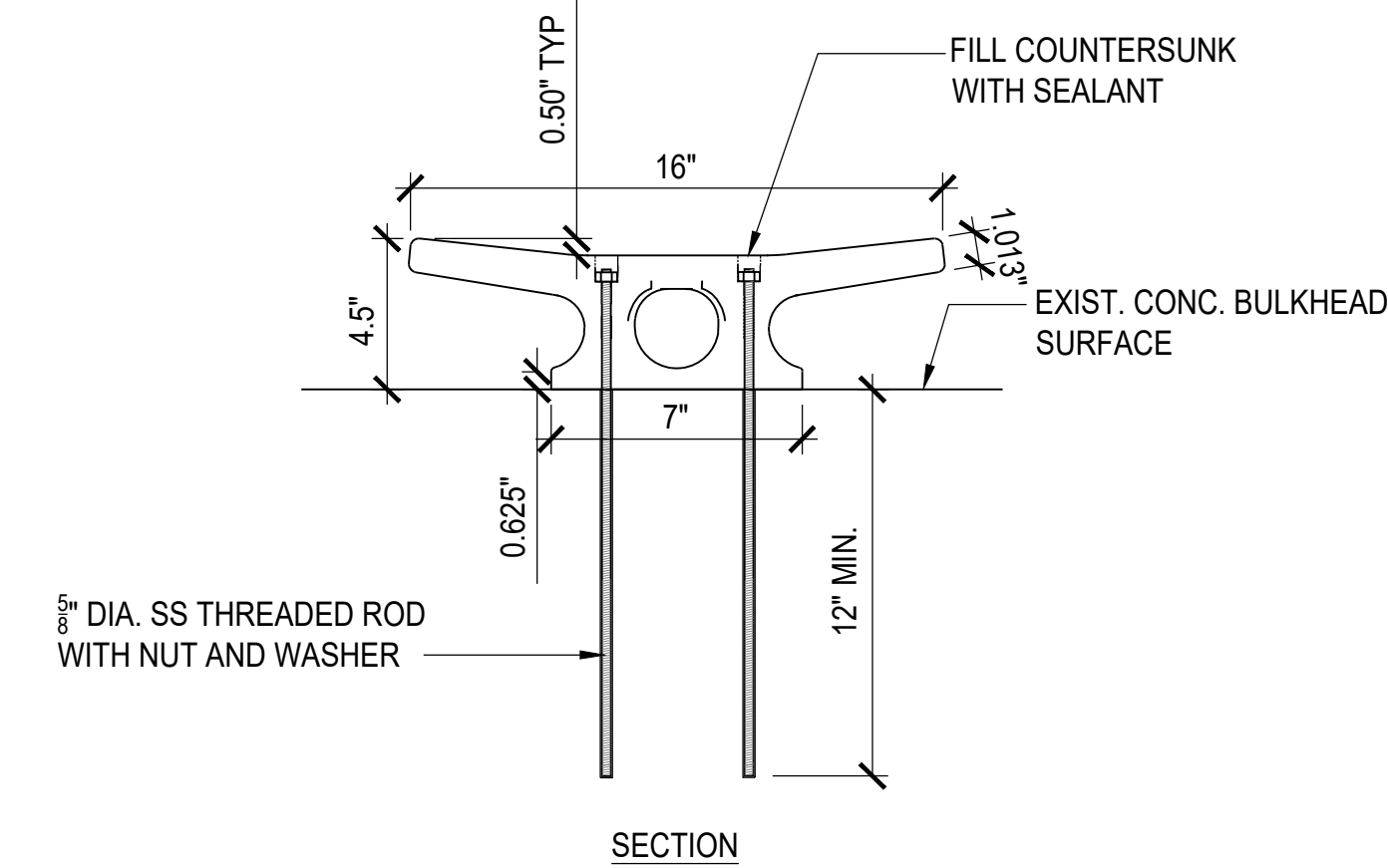
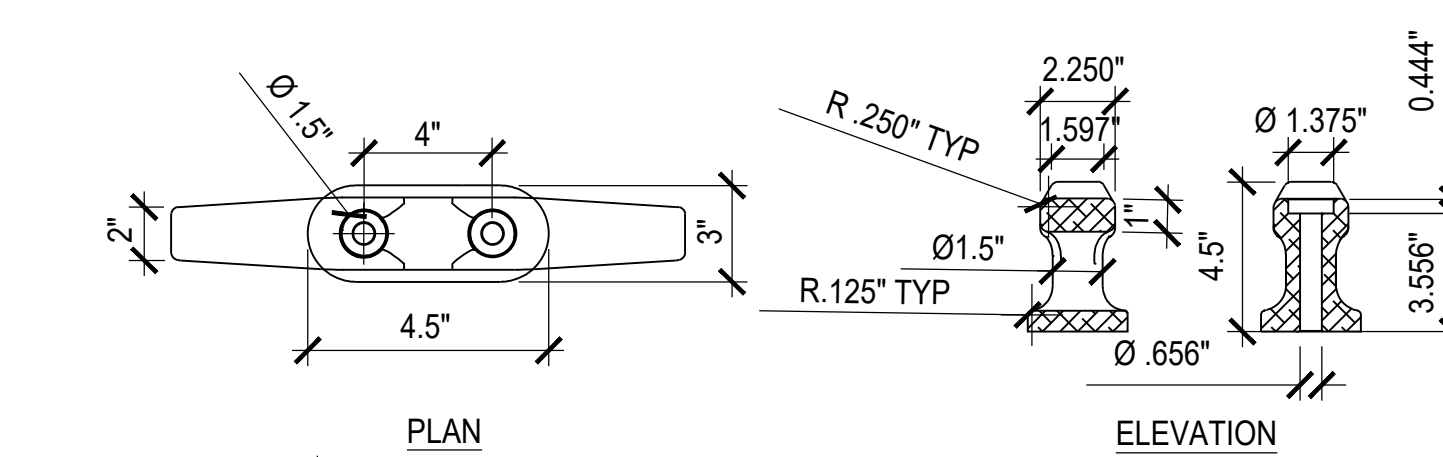
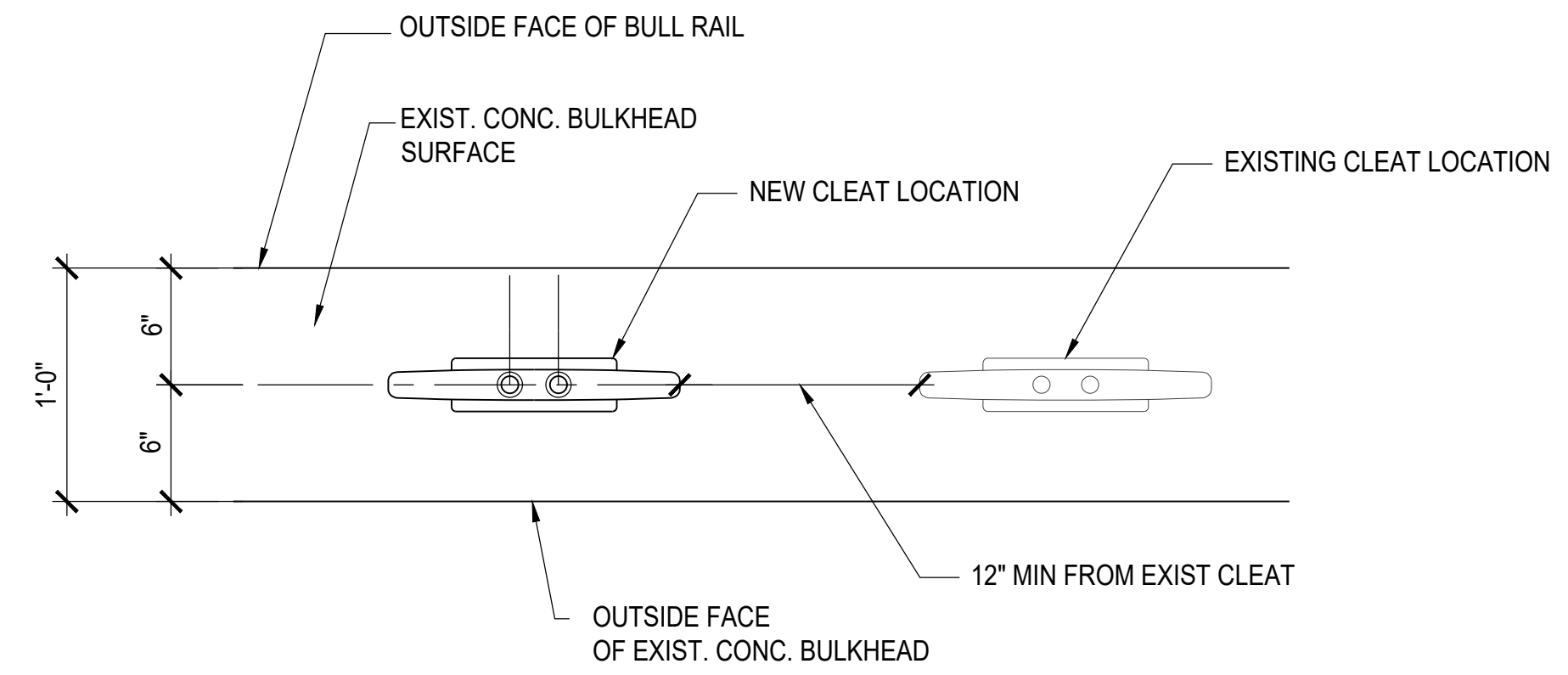


NOTE:  
SEE DETAIL 2/C-07 FOR PLAN AND ELEVATION VIEW.

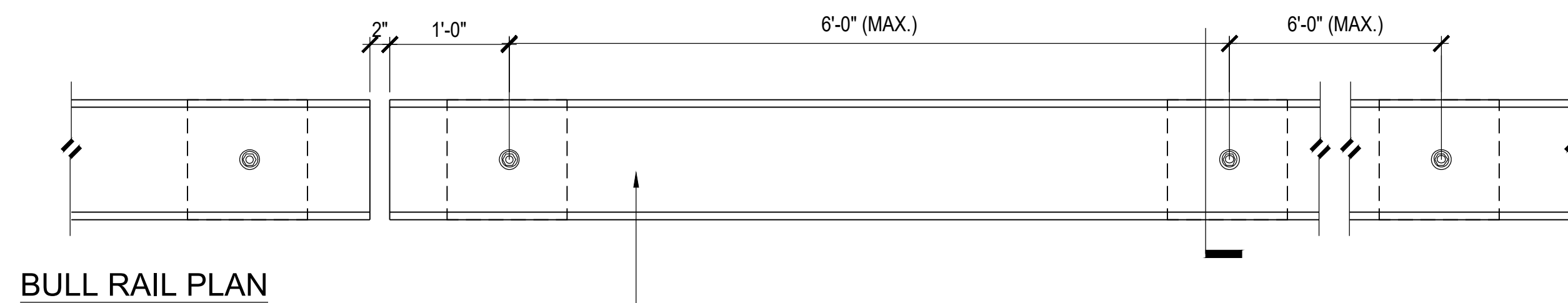
**1 BULL RAIL DETAIL**  
SCALE: 1" = 1'-0"



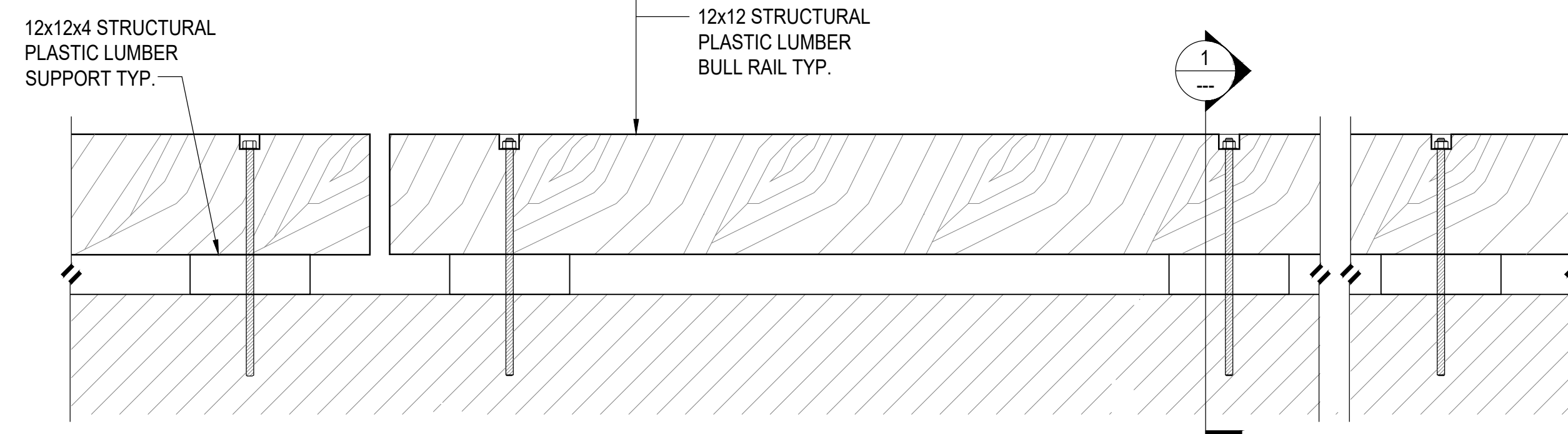
NOTE:

- CLEATS SHALL BE 16" ALUMINUM CLEATS BY BLUEWATER MARINE & DOCK SPECIALTIES, INC., OR APPROVED EQUAL.
- INSTALL NEW CLEATS LATERALLY ADJACENT TO EXISTING CLEAT LOCATIONS. LOCATE NEW ANCHORS A MINIMUM OF 12 INCHES FROM EXISTING/ABANDONED ANCHOR BOLT LOCATIONS (TYP.), UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL FIELD VERIFY EXISTING CONCRETE THICKNESS, EDGE DISTANCES, AND SUBSTRATE CONDITIONS PRIOR TO DRILLING. ANCHORS SHALL BE INSTALLED ONLY WHERE THE REQUIRED MINIMUM EMBEDMENT AND EDGE DISTANCES CAN BE ACHIEVED IN SOUND EXISTING CONCRETE. WHERE THE REQUIRED 12-INCH MINIMUM EMBEDMENT FOR CLEATS OR REQUIRED EDGE DISTANCES CANNOT BE ACHIEVED DUE TO EXISTING CONDITIONS, CONTRACTOR SHALL NOT PROCEED AND SHALL NOTIFY THE ENGINEER FOR DIRECTION PRIOR TO INSTALLATION.
- PROVIDE UHMW POLYETHYLENE WASHERS, BRUSHING, SEPARATORS, OR ISOLATION PADDING BETWEEN CLEATS AND STAINLESS STEEL ANCHORAGE HARDWARE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- APPLY MARINE-GRADE CORROSION PROTECTION COATING TO CLEAT ANCHOR BOLTS AND ASSOCIATED HARDWARE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

**3 CLEAT DETAIL**  
SCALE: NOT TO SCALE



**BULL RAIL PLAN**



**BULL RAIL ELEVATION**

**2 BULL RAIL PLAN AND ELEVATION**  
SCALE: 1" = 1'-0"

NOTE:

- PROVIDE BULL RAIL IN SECTIONS NOT EXCEEDING 20' IN LENGTH WITH A 2" GAP BETWEEN ADJACENT SECTIONS.
- PLASTIC LUMBER BULL RAIL AND PLASTIC LUMBER SUPPORT COLOR: YELLOW

REVISION NO.	DESCRIPTION	DATE
1	ADDENDUM NO. 1	05/22/2026

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION  
*Donald K. Rely*  
EXPIRATION DATE OF THE LICENSE  
4/30/2028

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF BOATING AND OCEAN RECREATION

HIEIA KEA SMALL BOAT HARBOR BULKHEAD FENDER REPAIRS  
KANEHOE, OAHU, HAWAII  
JOB NO. B78C071A

SHEET TITLE  
BULL RAIL AND CLEAT DETAILS

DESIGNED BY: SQ, DR	SUBMITTED: 4/21/2026
DRAWN BY: GP, SQ	DATE: 4/21/2026
CHECKED BY: DR	SCALE: -

DRAWING NO.  
**C-07**