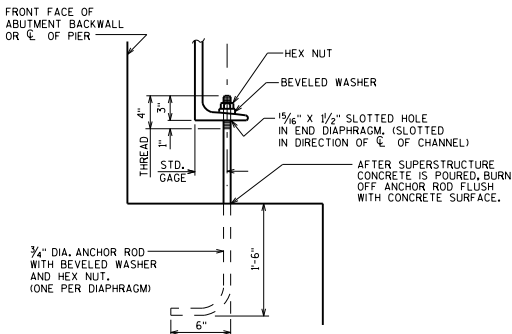
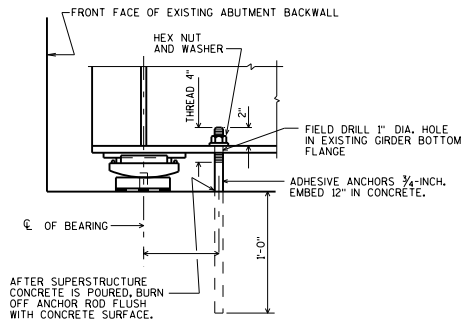


WHEN REQUIRED, HOLD DOWN DEVICES SHALL BE PLACED SYMMETRICALLY ABOUT LONGITUDINAL  $\phi$  OF FRAMING PLAN. MAXIMUM SPACING OF HOLD DOWNS SHALL BE AT ALTERNATE GIRDERS. HOLD DOWN DEVICE TO BE DESIGNED FOR MINIMUM UPLIFT CAPACITY OF 20 KIPS.



**ELEVATION - NEW CONSTRUCTION**

TEMPORARY HOLD DOWN DEVICES SHALL BE PLACED AT THAT END OF ALL CONTINUOUS STEEL GIRDER UNITS WHERE THE SLAB POUR TERMINATES, EXCEPT WHERE PERMANENT HOLD DOWN DEVICES ARE PLACED AT THIS LOCATION. LOCATE 1'-6" (NORMAL) OFF  $\phi$  OF GIRDER. TO BE PAID FOR AS "STRUCTURAL CARBON STEEL".



**ELEVATION - DECK REPLACEMENT**

PLACE ONE ANCHOR ROD PER GIRDER AT ABUTMENT WHERE SLAB POUR TERMINATES. LOCATE 4" (NORMAL) OFF  $\phi$  OF GIRDER. ANCHOR ROD, NUT, WASHER, AND DRILLED HOLE IN GIRDER FLANGE SHALL BE PAID FOR AS "ADHESIVE ANCHORS 3/4\"/>

**NOTES (PERMANENT HOLD DOWN DEVICE)**

- ALL STRUCTURAL STEEL PLATES SHALL BE FLAT ROLLED STEEL PLATES WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL.
- ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS
- ANCHOR BOLTS SHALL BE THREADED 3". PROVIDE ONE STANDARD WROUGHT WASHER AND ONE HEX NUT PER BOLT. CHAMFER TOP OF ANCHOR BOLTS PRIOR TO THREADING.
- ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153, CLASS C.
- THE MATERIAL FOR THE HOLD-DOWN PLATES SHALL CONFORM TO ASTM A709 GRADE 50W.
- ALL MATERIAL WELDED TO THE GIRDERS, WHICH INCLUDES BEARING STIFFENERS, STIFFENER PLATE, AND PIN BEARING PLATE, SHALL MATCH THE STEEL REQUIREMENTS OF THE WEB AT THAT LOCATION.
- ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM F1554 GRADE 50 OR MATERIAL OF EQUIVALENT YIELD STRENGTH AND ELONGATION.
- ALL MATERIAL IN HOLD DOWN DEVICES, WHICH INCLUDES HOLD-DOWN PLATES, HIGH TENSILE STRENGTH BOLTS, PINS AND ANCHOR BOLTS, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR "BEARING ASSEMBLIES EXPANSION B-1".
- ALL MATERIAL WELDED TO THE GIRDERS, WHICH INCLUDES BEARING STIFFENERS, STIFFENER PLATE, AND PIN BEARING PLATE, SHALL BE INCLUDED IN THE BID ITEM USED FOR THE STEEL GIRDER QUANTITIES.
- ★ FOR REPLACEMENT BEARINGS, ANCHOR BOLTS SHALL BE 1/2" DIAMETER X 3'-0" LONG AND FULLY THREADED ADHESIVE ANCHORS. ANCHOR BOLTS SHALL BE PAID FOR AS "ADHESIVE ANCHORS 1 1/2-INCH", EMBED IN CONCRETE AS DETAILED.
- ▲ SHOP DRILL HOLES IN HOLD-DOWN PLATE ATTACHED TO PLATE "D". FIELD DRILL HOLES IN UPPER HOLD-DOWN PLATE AFTER ALIGNING IN THE FIELD.
- SEE STANDARD 24.02 FOR TABLE OF FILLET WELD SIZES.
- ▣ SEE STANDARD 24.02 FOR WELD DETAILS SHOWING BEARING STIFFENER CONNECTION TO WEB AND FLANGE.
- ◆ PROJECT ANCHOR BOLTS, PLATE "D" THICKNESS + 2/4", ABOVE TOP OF CONCRETE.
- ⊕ HOLES FOR PIN IN HOLD-DOWN PLATES AND PLATE WASHERS SHALL BE AS STATED IN STANDARD SPECIFICATION 506.3.17.

**TEMPORARY HOLD DOWN DEVICE**

<b>HOLD DOWN DEVICES</b>	
	<b>BUREAU OF STRUCTURES</b>
APPROVED: <u>Bill Oliva</u>	DATE: 1-21