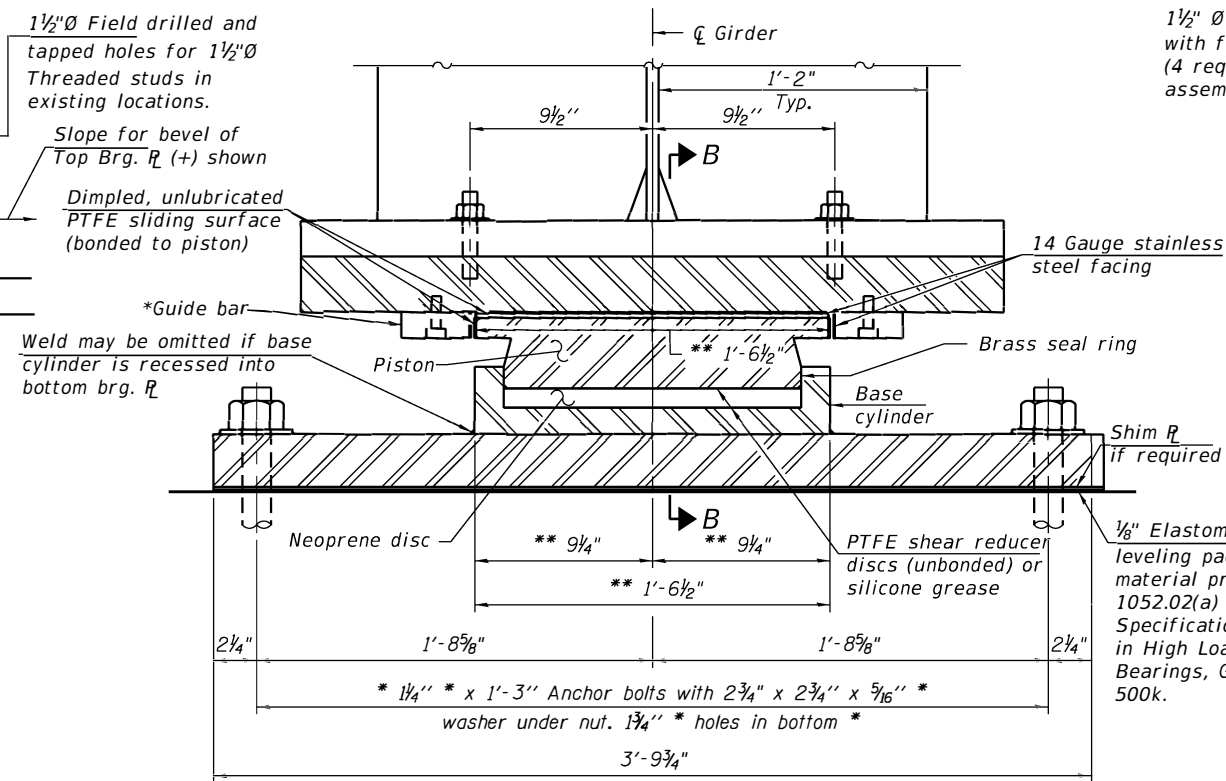
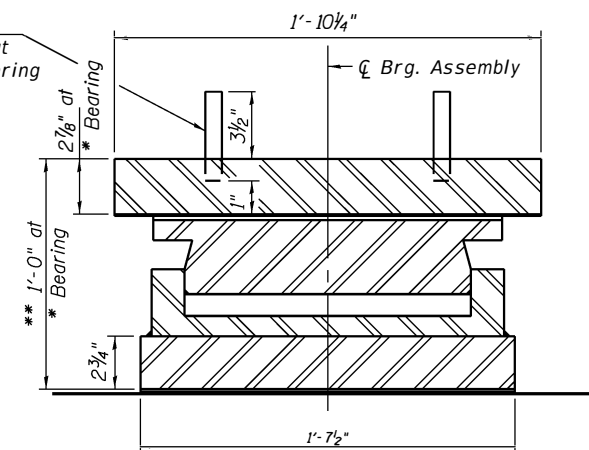


ELEVATION



SECTION A-A

1 1/2" Ø H.S. threaded studs with flat washer and hex nut (4 required) (included in bearing assembly)



SECTION B-B

(Guide bar and girder omitted for clarity)

Notes:

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M 270, Grade 50.

Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

Bearing dimensions and details shown are for a pot type HLMR bearing. Disc type HLMR bearing dimensions and details will vary.

Bearing Assembly height is estimated based on manufacturer data. Actual bearing height may differ from contract plans. The Contractor shall be responsible verifying bearing heights and adjusting concrete pedestal elevations, if required.

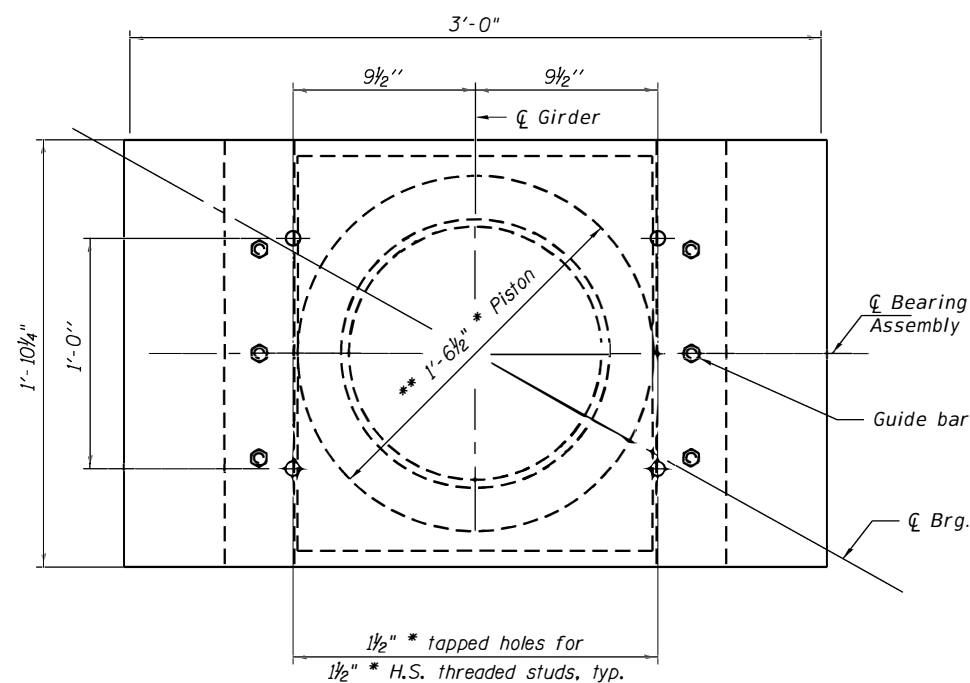
Modifications to the Bearing plates at abutments or piers shall consider the location of the backwall or concrete pedestal dimensions and required expansion length if exceeding the end of the girder.

** Dimensions may vary depending on Manufacturer's design.

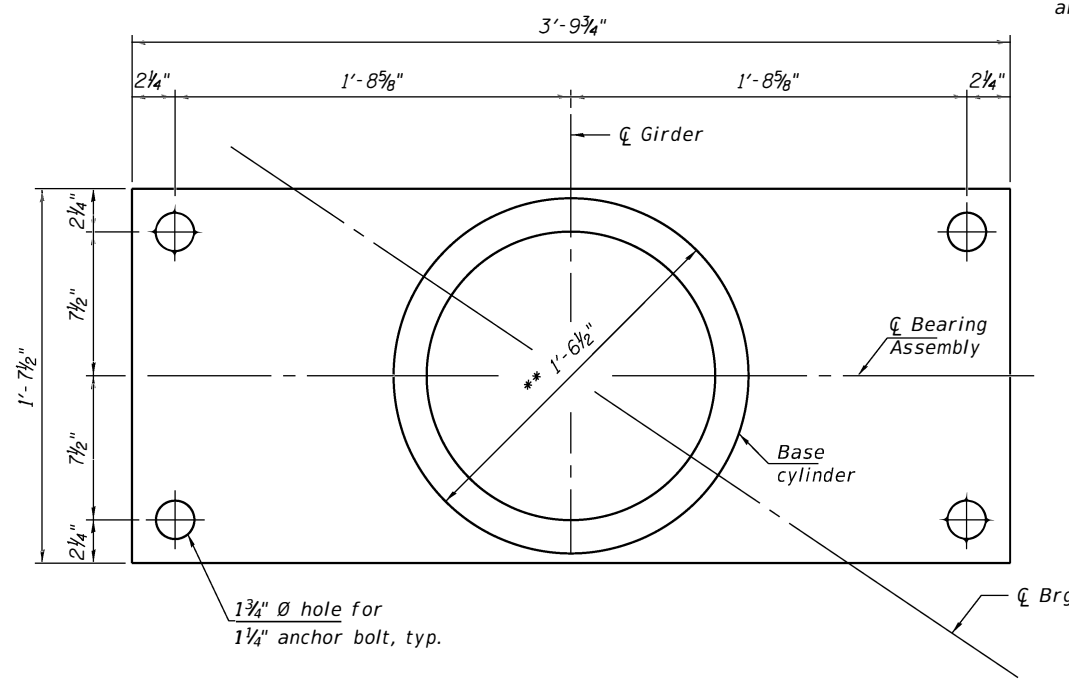
*** Rotation allowances for fabrication tolerances (0.005 rad) and installation uncertainties (0.005 rad) excluded.

* As alternates to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece. If bolted connection is used, maintain a minimum clearance of 3" from the centerline of the threaded stud to the bolts in the guide bar.

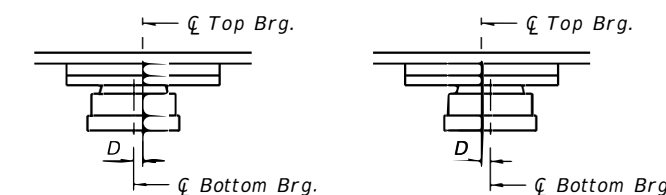
Min. Jack size required = 450 Tons



TOP BEARING PLATE AND PISTON PLAN



BOTTOM BEARING PLATE AND BASE CYLINDER PLAN



BELOW 50° F.
(Move bottom brg. away from fixed brg.)

ABOVE 50° F.
(Move bottom brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

D=1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50° F.

DESIGN DATA

| Data | W. Abut. |
|-------------------------------------|----------|
| Service Vertical Design Load (kips) | 632 |
| Horizontal Design Load (kips), Hu | 127 |
| Design Rotation (rad), θu *** | 0.0074 |
| Total Required Movement (in.) | 4 7/8 |
| Slope for Bevel of Top Brg. R (%) | +4.69 |

BILL OF MATERIAL

| Item | Unit | Total |
|---|------|-------|
| High Load Multi-Rotational Bearings, Guided Expansion, 650k | Each | 4 |
| Anchor Bolts, 1 1/4" | Each | 16 |

DESIGNED - AJR
CHECKED - JSB
DRAWN - Venkat Reddy
CHECKED - AJR JSB

EXAMINED - *Timothy A. ...*
PASSED - *Carl ...*

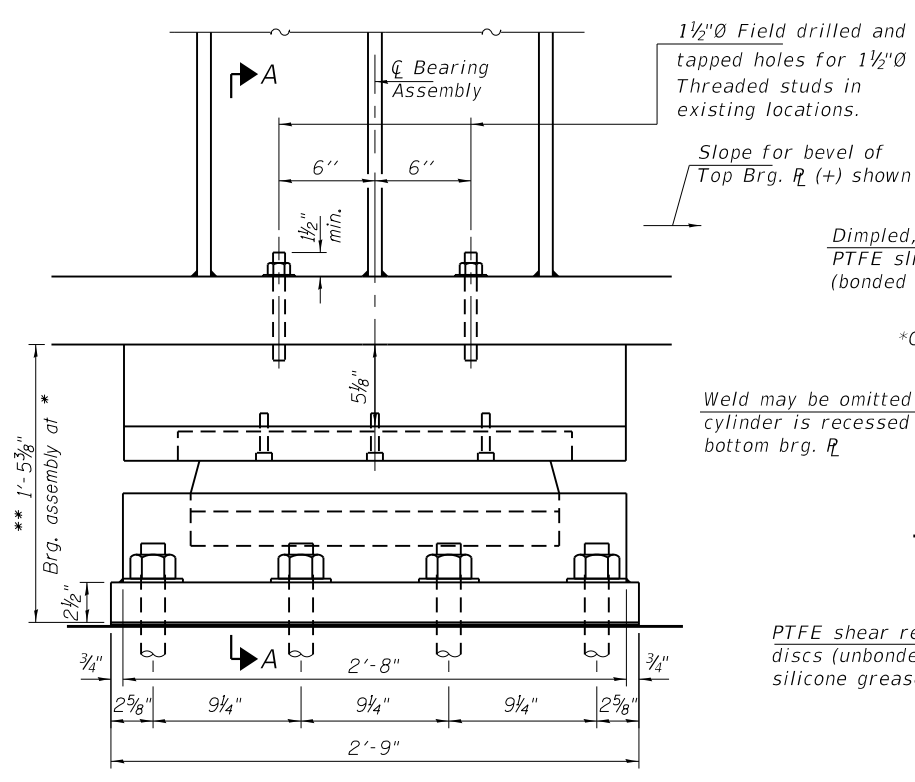
DATE - JUNE 23, 2020
REVISED - VHV 09/09/2020

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

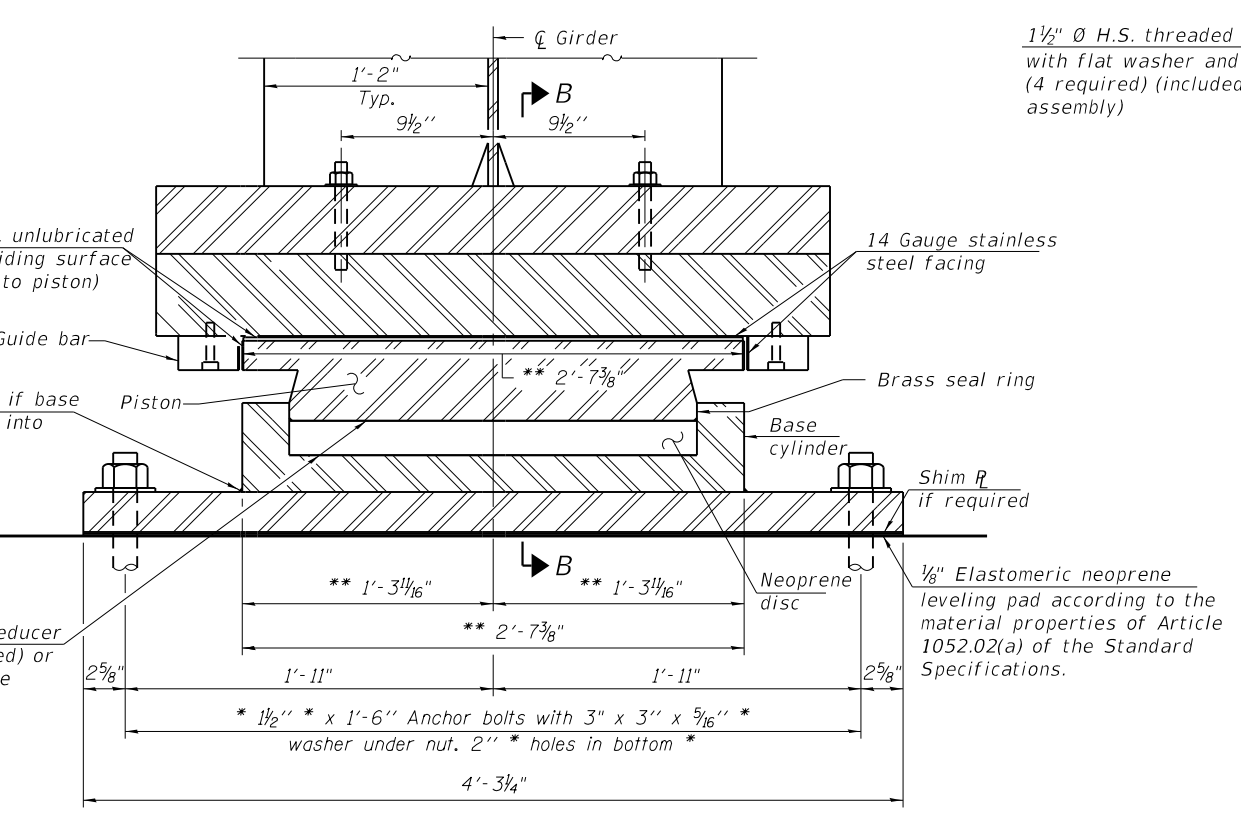
WEST ABUTMENT BEARING DETAILS
SN 090-0114

SHEET NO. 13 OF 23 SHEETS

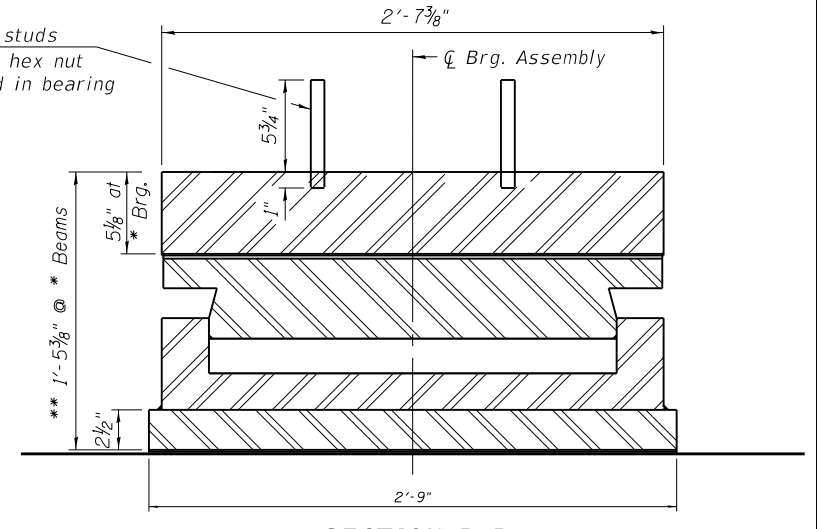
F.A.P. RTE. 693 SECTION (12B)BR,BDR,BJR COUNTY PEORIA TOTAL SHEETS 92 SHEET NO. 48 CONTRACT NO. 68E79 ILLINOIS FED. AID PROJECT



ELEVATION



SECTION A-A



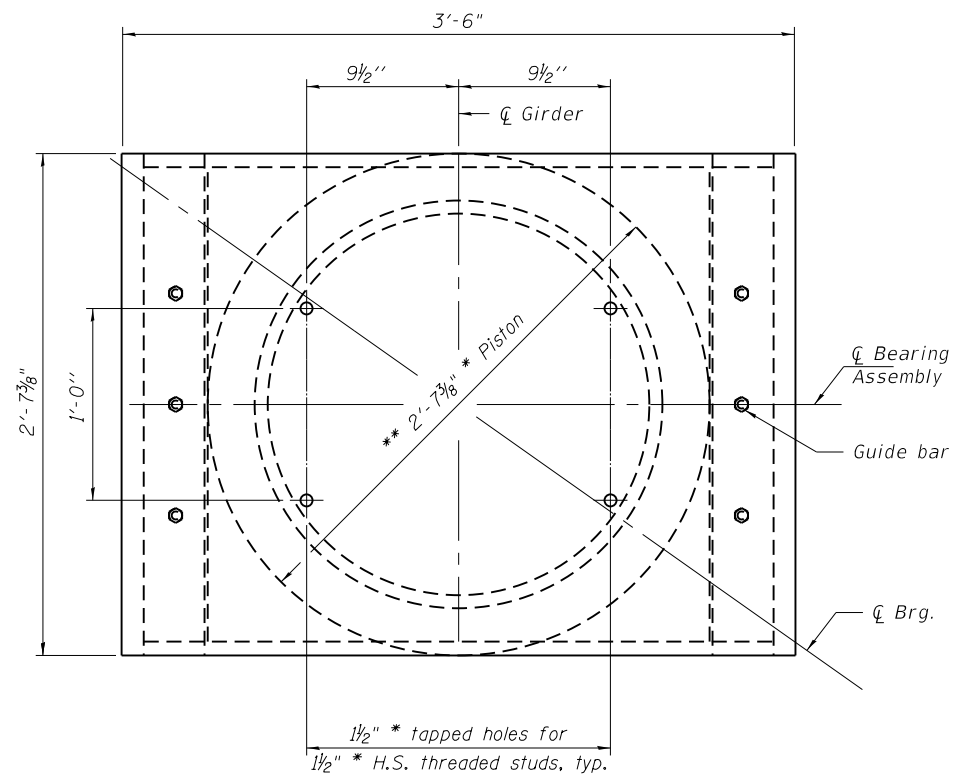
SECTION B-B
(Guide bar and girder omitted for clarity)

Notes:
 Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
 Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
 The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M 270, Grade 50.
 Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
 Bearing dimensions and details shown are for a pot type HLMR bearing. Disc type HLMR bearing dimensions and details will vary.
 Bearing Assembly height is estimated based on manufacturer data. Actual bearing height may differ from contract plans. The Contractor shall be responsible for verifying bearing heights and adjusting concrete pedestal elevations, if required.
 Modifications to the Bearing plates at abutments or piers shall consider the location of the backwall or concrete pedestal dimensions and required expansion length if exceeding the end of the girder.
 Provide a 2 1/8" x 4'-3 1/4" x 2'-9" fill plate at Girders 5 and 8.
 Provide a 1 1/2" x 4'-3 1/4" x 2'-9" fill plate at Girders 6 and 7.

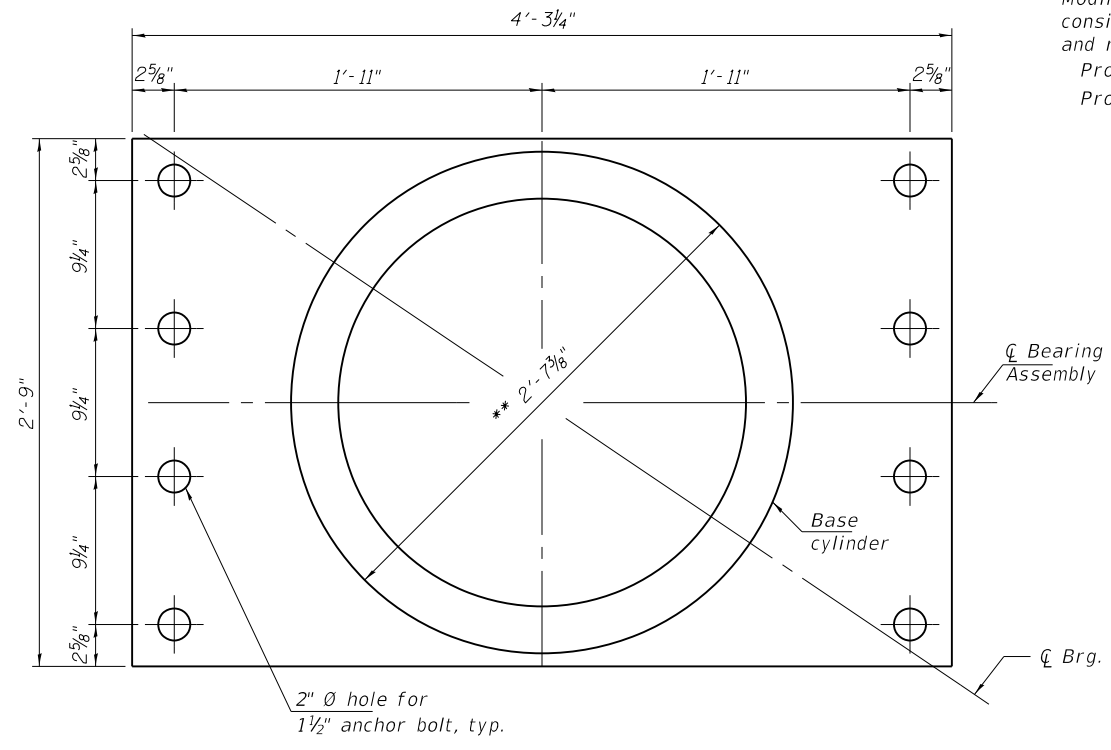
** Dimensions may vary depending on Manufacturer's design.
 *** Rotation allowances for fabrication tolerances (0.005 rad) and installation uncertainties (0.005 rad) excluded.

* As alternates to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece. If bolted connection is used, maintain a minimum clearance of 3" from the centerline of the threaded stud to the bolts in the guide bar.

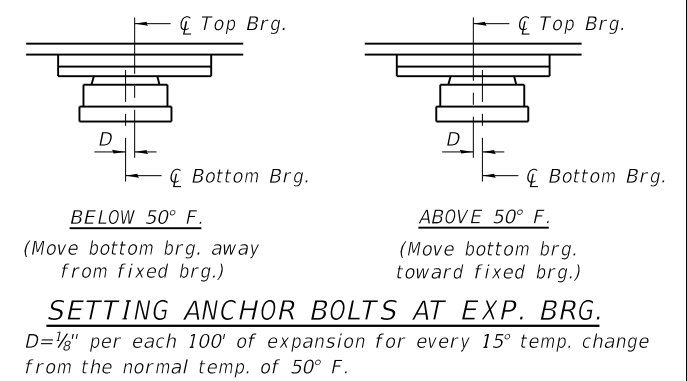
Min. Jack size required = 1330 Tons



TOP BEARING AND PISTON PLAN



BOTTOM BEARING AND BASE CYLINDER PLAN



DESIGN DATA

| Data | Pier 2 |
|---|--------|
| Service Vertical Design Load (kips) | 1858 |
| Horizontal Design Load (kips), Hu | 372 |
| Design Rotation (rad), θ_u *** | 0.0025 |
| Total Required Movement (in.) | 2.50 |
| Slope for Bevel of Top Brg. β (%) | +4.69 |

BILL OF MATERIAL

| Item | Unit | Total |
|--|------|-------|
| High Load Multi-Rotational Bearings, Guided Expansion, 1900k | Each | 4 |
| Anchor Bolts, 1 1/2" | Each | 32 |

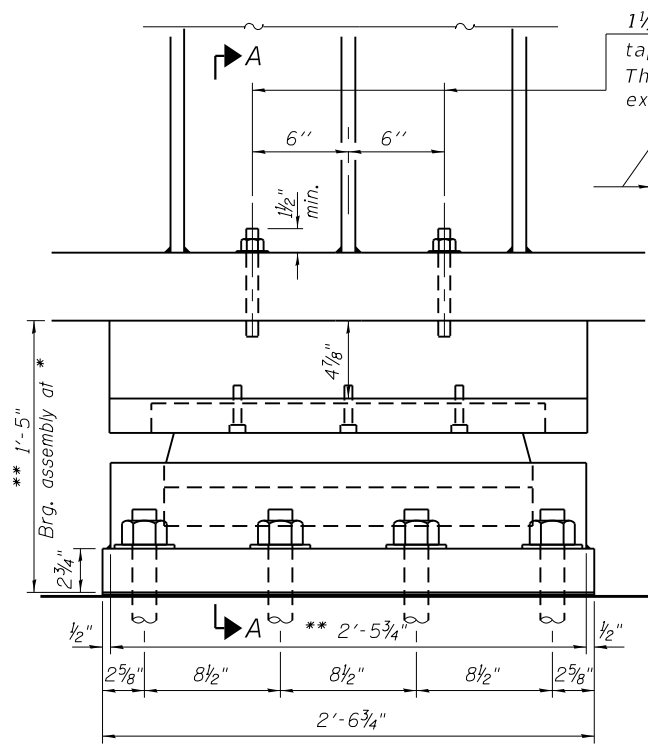
| | | |
|----------------------|--------------------------------------|--------------------------|
| DESIGNED - AJR | EXAMINED - <i>Timothy A. Daulton</i> | DATE - JUNE 23, 2020 |
| CHECKED - JSB | ENGINEER OF STRUCTURAL SERVICES | |
| DRAWN - Venkat Reddy | PASSED - <i>Carl Ringer</i> | REVISOR - VHV 09/09/2020 |
| CHECKED - AJR JSB | ENGINEER OF BRIDGES AND STRUCTURES | REVISIONS - |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 BEARING DETAILS
SN 090-0114

SHEET NO. 14 OF 23 SHEETS

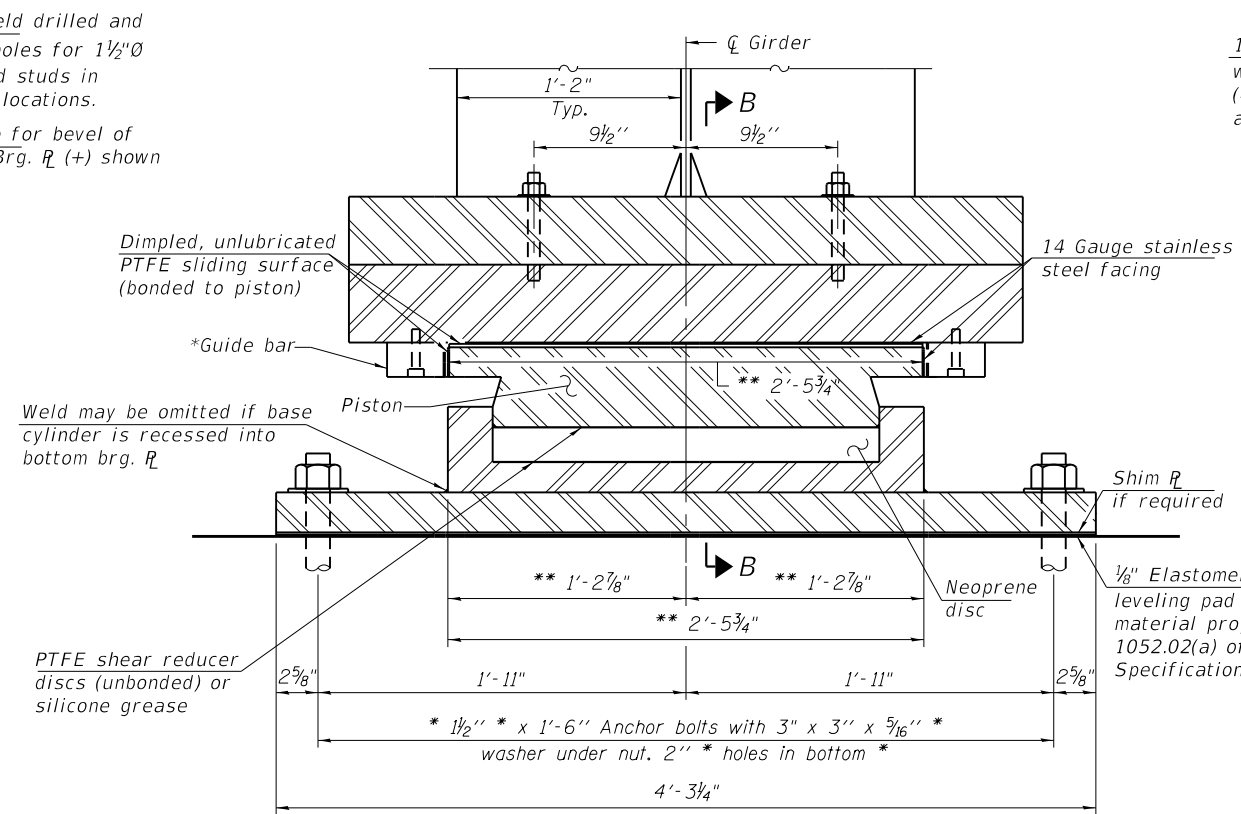
| | | | | |
|---------------------------|-----------------|--------|--------------|-----------|
| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 693 | (12B)BR,BDR,BJR | PEORIA | 92 | 49 |
| CONTRACT NO. 68E79 | | | | |
| ILLINOIS FED. AID PROJECT | | | | |



ELEVATION

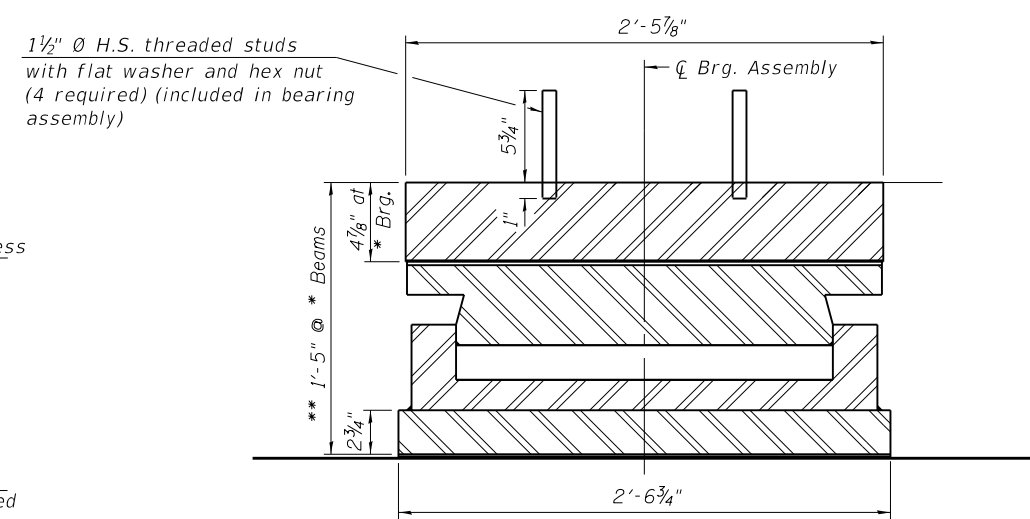
** Dimensions may vary depending on Manufacturer's design.
 *** Rotation allowances for fabrication tolerances (0.005 rad) and installation uncertainties (0.005 rad) excluded.

* As alternates to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece. If bolted connection is used, maintain a minimum clearance of 3" from the centerline of the threaded stud to the bolts in the guide bar.



SECTION A-A

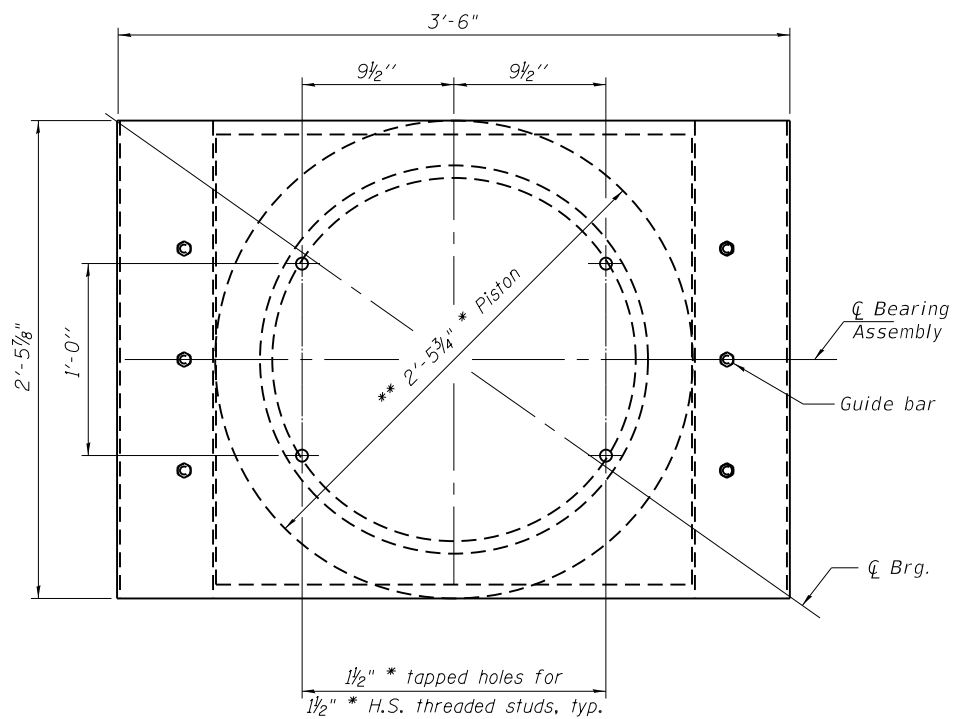
Min. Jack size required = 1200 Tons



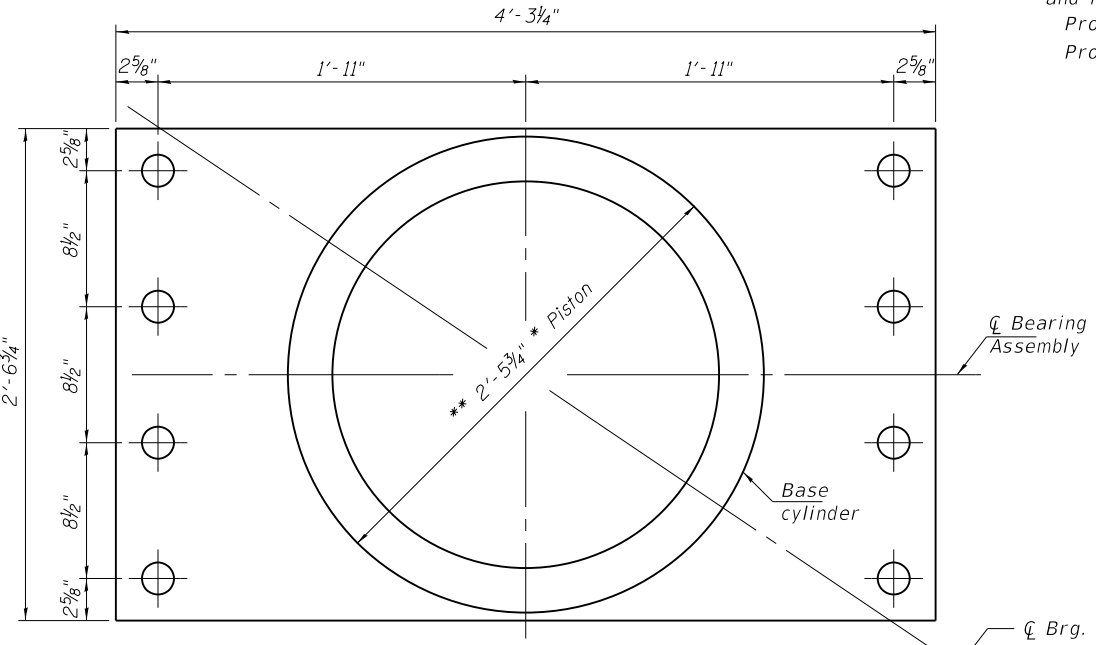
SECTION B-B

(Guide bar and girder omitted for clarity)

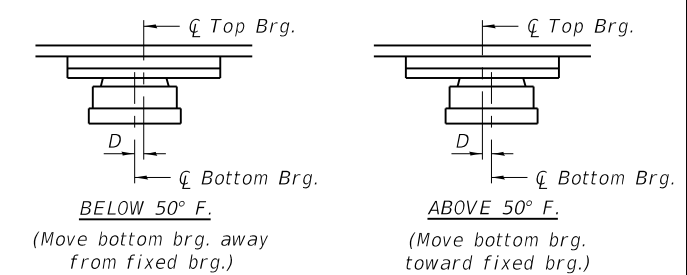
Notes:
 Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
 Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
 The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M 270, Grade 50.
 Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
 Bearing dimensions and details shown are for a pot type HLMR bearing. Disc type HLMR bearing dimensions and details will vary.
 Bearing Assembly height is estimated based on manufacturer data. Actual bearing height may differ from contract plans. The Contractor shall be responsible verifying bearing heights and adjusting concrete pedestal elevations, if required.
 Modifications to the Bearing plates at abutments or piers shall consider the location of the backwall or concrete pedestal dimensions and required expansion length if exceeding the end of the girder.
 Provide a 2'3 7/16" x 4'-3 1/4" x 2'-6 3/4" fill plate at Girders 5 and 8.
 Provide a 2'7 1/16" x 4'-3 1/4" x 2'-6 3/4" fill plate at Girders 6 and 7.



TOP BEARING P AND PISTON PLAN



BOTTOM BEARING P AND BASE CYLINDER PLAN



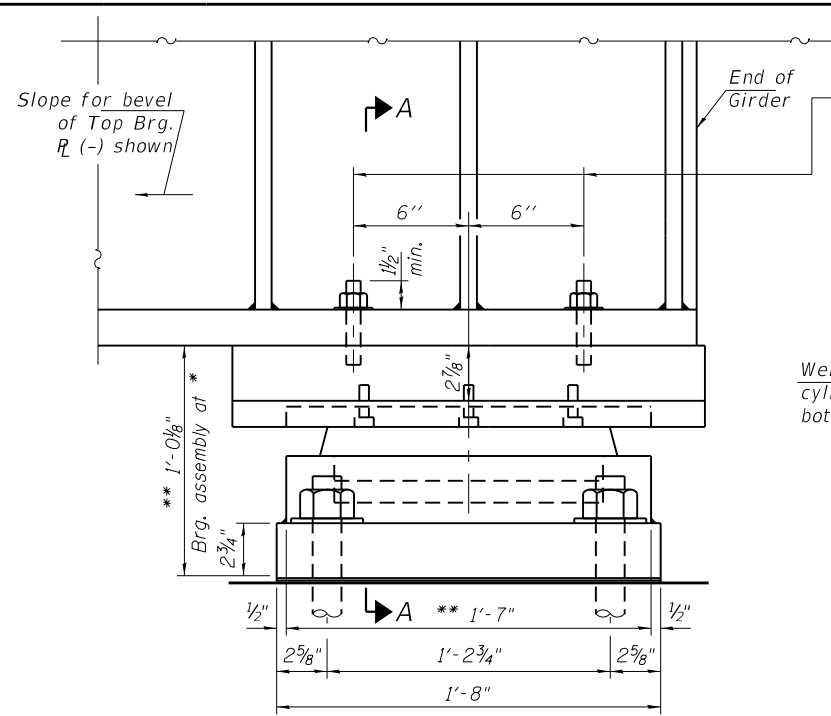
SETTING ANCHOR BOLTS AT EXP. BRG.
 $D = \frac{1}{8}$ " per each 100' of expansion for every 15° temp. change from the normal temp. of 50° F.

DESIGN DATA

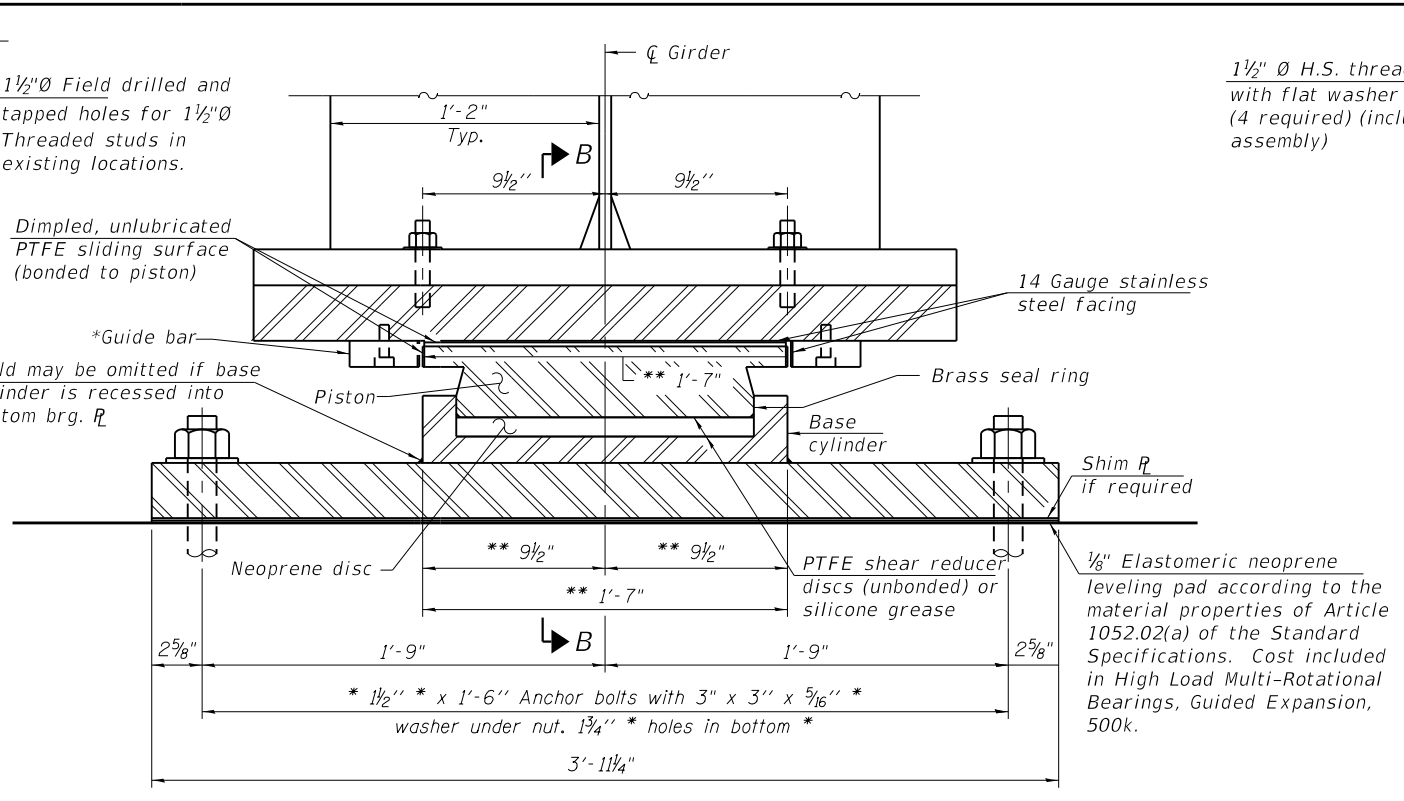
| Data | Pier 4 |
|---------------------------------------|--------|
| Service Vertical Design Load (kips) | 1679 |
| Horizontal Design Load (kips), H_u | 336 |
| Design Rotation (rad), θ_u *** | 0.0026 |
| Total Required Movement (in.) | 2.50 |
| Slope for Bevel of Top Brg. P (%) | +4.69 |

BILL OF MATERIAL

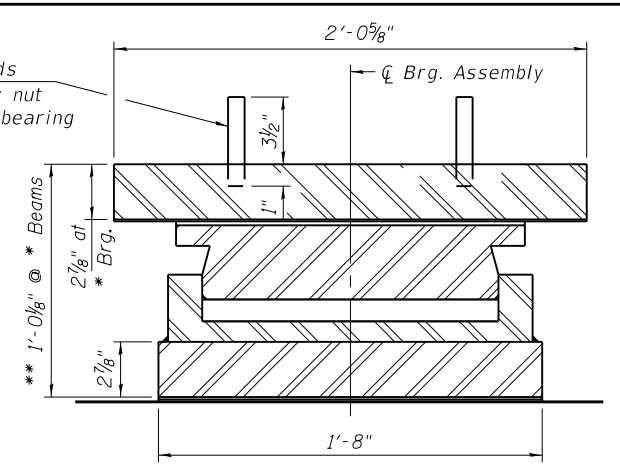
| Item | Unit | Total |
|--|------|-------|
| High Load Multi-Rotational Bearings, Guided Expansion, 1700k | Each | 4 |
| Anchor Bolts, 1 1/2" | Each | 32 |



ELEVATION



SECTION A-A



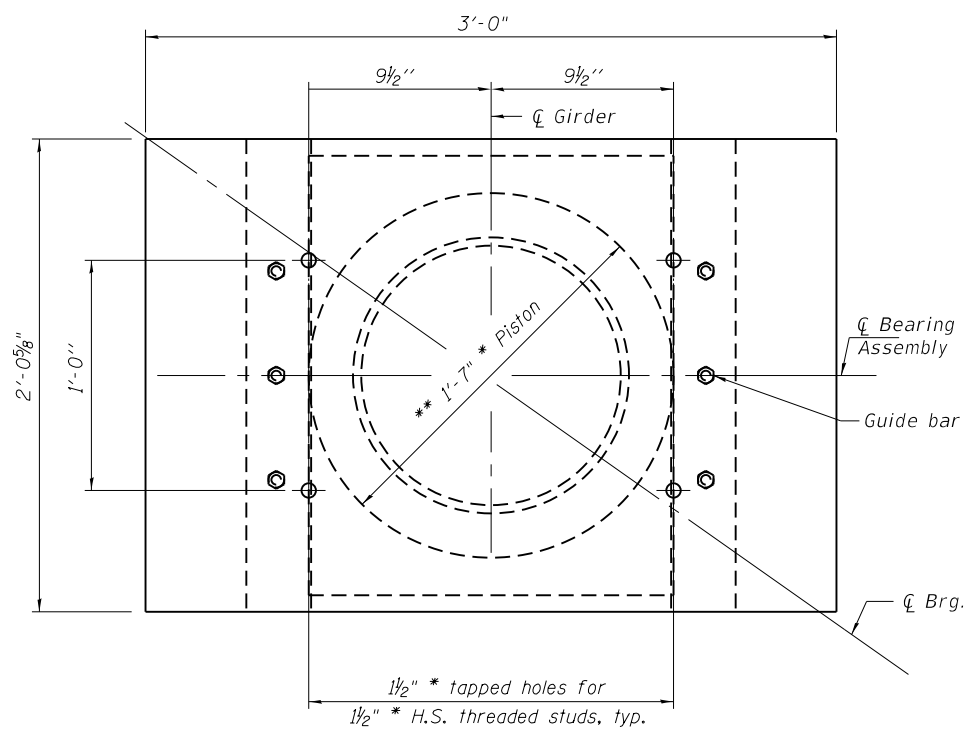
SECTION B-B
(Guide bar and girder omitted for clarity)

Notes:
 Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
 Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
 The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M 270, Grade 50.
 Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
 Bearing dimensions and details shown are for a pot type HLMR bearing. Disc type HLMR bearing dimensions and details will vary.
 Bearing Assembly height is estimated based on manufacturer data. Actual bearing height may differ from contract plans. The Contractor shall be responsible verifying bearing heights and adjusting concrete pedestal elevations, if required.
 Modifications to the Bearing plates at abutments or piers shall consider the location of the backwall or concrete pedestal dimensions and required expansion length if exceeding the end of the girder.

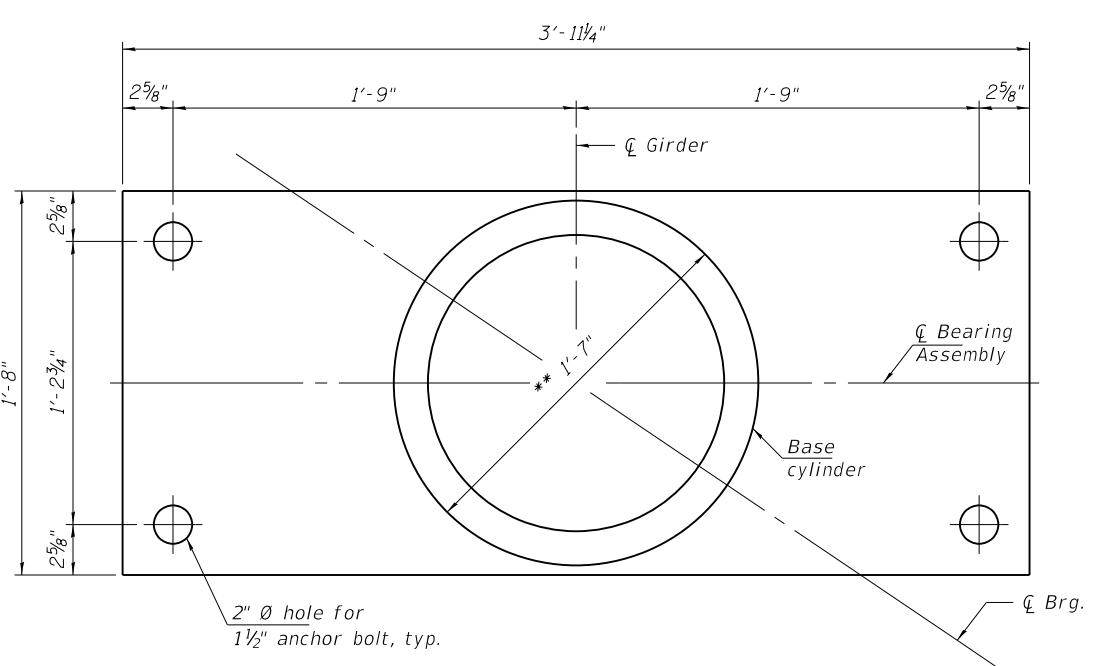
** Dimensions may vary depending on Manufacturer's design.
 *** Rotation allowances for fabrication tolerances (0.005 rad) and installation uncertainties (0.005 rad) excluded.

* As alternates to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece. If bolted connection is used, maintain a minimum clearance of 3" from the centerline of the threaded stud to the bolts in the guide bar.

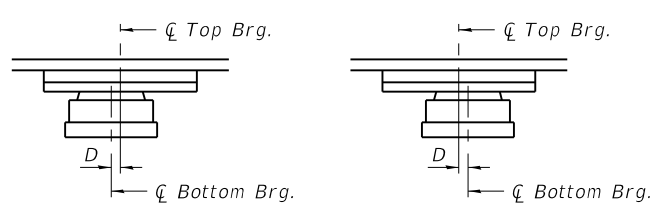
Min. Jack size required = 495 Tons



TOP BEARING P AND PISTON PLAN



BOTTOM BEARING P AND BASE CYLINDER PLAN



BELOW 50° F.
(Move bottom brg. away from fixed brg.)
 ABOVE 50° F.
(Move bottom brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.
 D=1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50° F.

DESIGN DATA

| Data | E. Abut. |
|---|----------|
| Service Vertical Design Load (kips) | 684 |
| Horizontal Design Load (kips), H _u | 137 |
| Design Rotation (rad), Θ _u *** | 0.0077 |
| Total Required Movement (in.) | 6 5/8 |
| Slope for Bevel of Top Brg. P (%) | -4.17 |

BILL OF MATERIAL

| Item | Unit | Total |
|---|------|-------|
| High Load Multi-Rotational Bearings, Guided Expansion, 700k | Each | 4 |
| Anchor Bolts, 1 1/2" | Each | 16 |

DESIGNED - AJR
 CHECKED - JSB
 DRAWN - Venkat Reddy
 CHECKED - AJR JSB

EXAMINED
 PASSED

DATE - JUNE 23, 2020
 REVISED - VHV 09/09/2020

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT BEARING DETAILS
 SN 090-0114

SHEET NO. 16 OF 23 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|-------------|-----------------|--------|--------------|-----------|
| 693 | (12B)BR,BDR,BJR | PEORIA | 92 | 51 |

CONTRACT NO. 68E79
 ILLINOIS FED. AID PROJECT