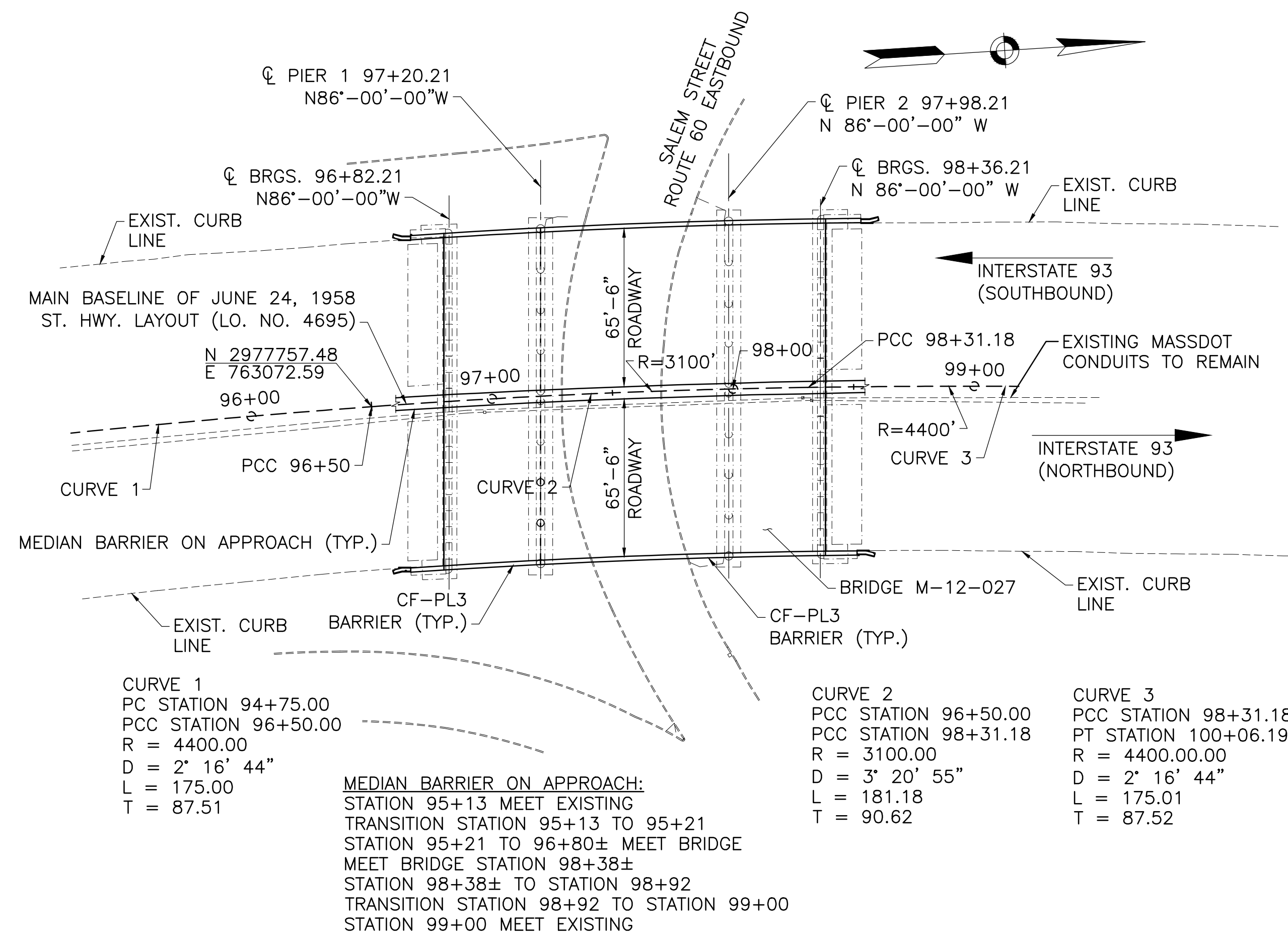
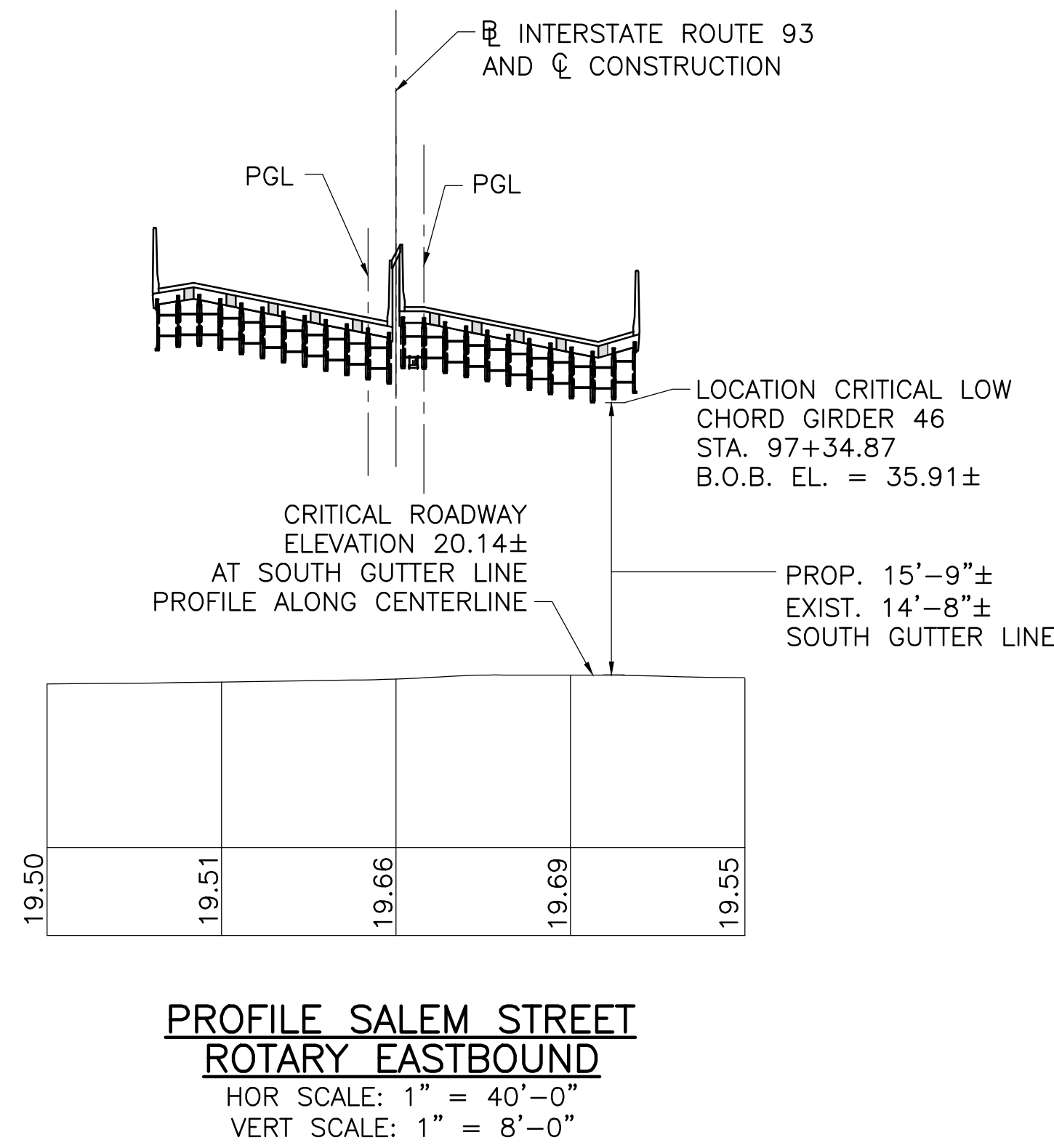


|                         |                              |           |              |
|-------------------------|------------------------------|-----------|--------------|
| STATE                   | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
| MASS.                   | BRI-093-1 (524)<br>STP 093-1 | 32        | 60           |
| PROJECT FILE NO. 606255 |                              |           |              |

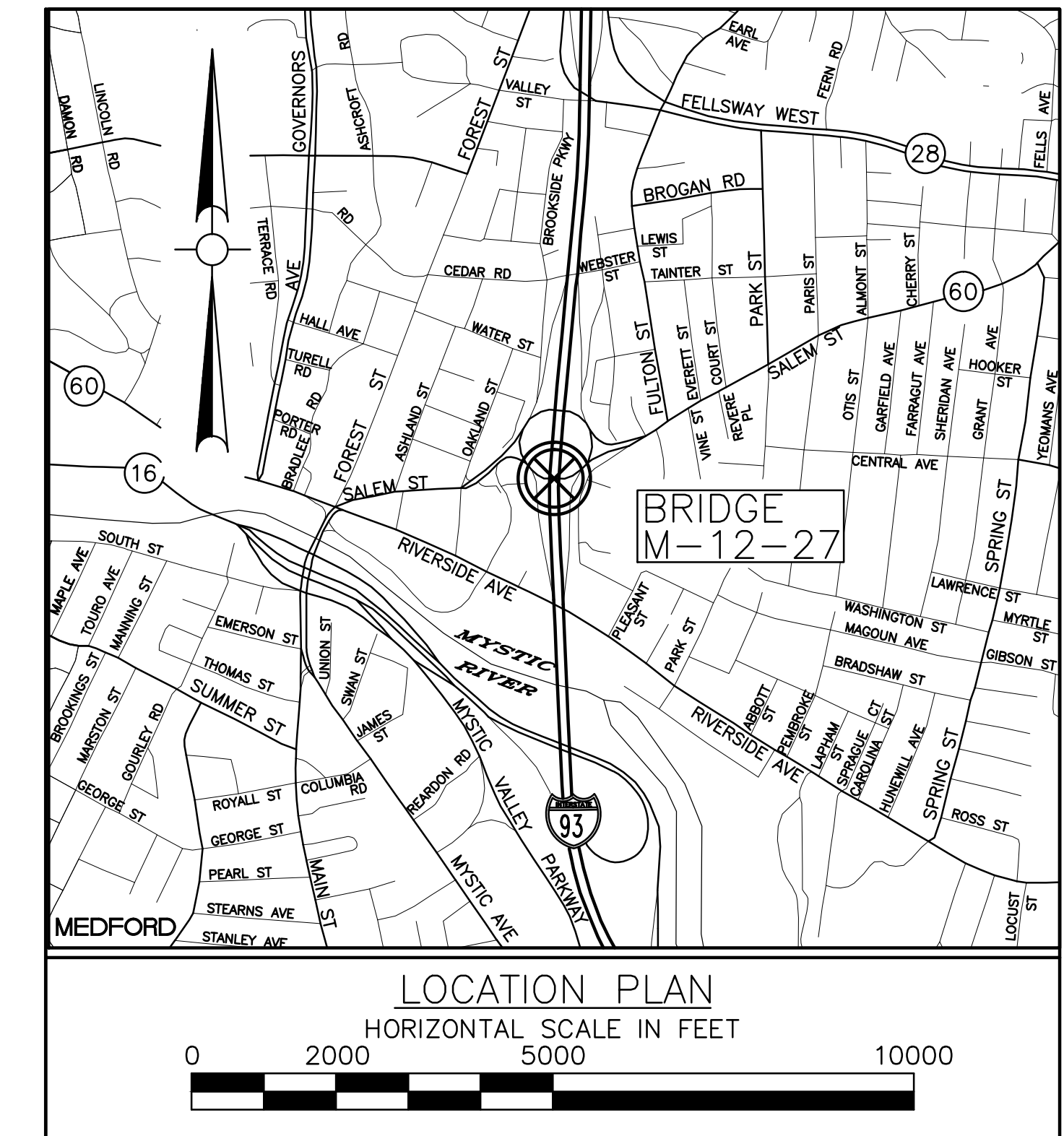
TITLE SHEET



KEY PLAN  
SCALE: 1" = 40'-0"

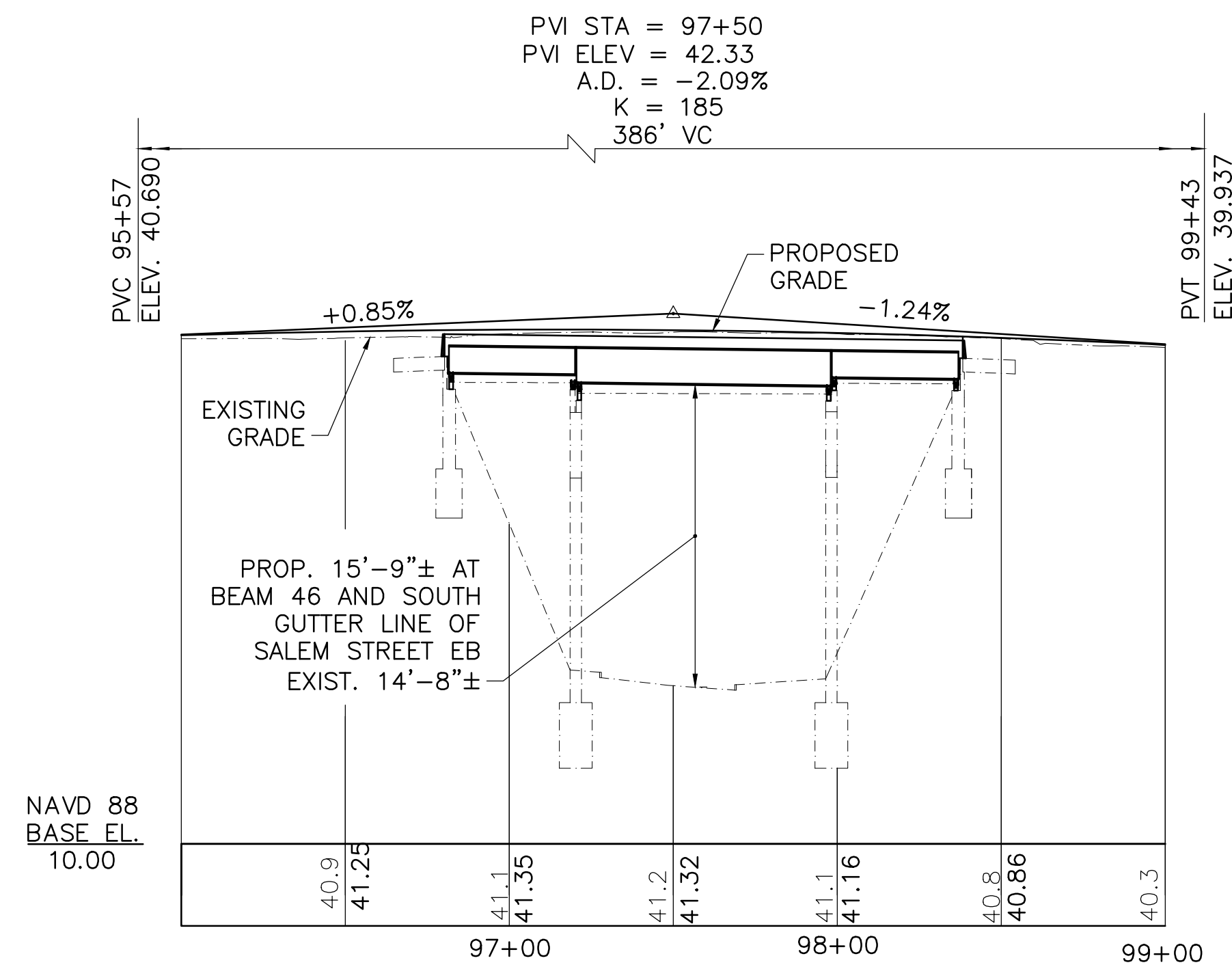


PROFILE SALEM STREET  
ROTARY EASTBOUND  
HOR SCALE: 1" = 40'-0"  
VERT SCALE: 1" = 8'-0"

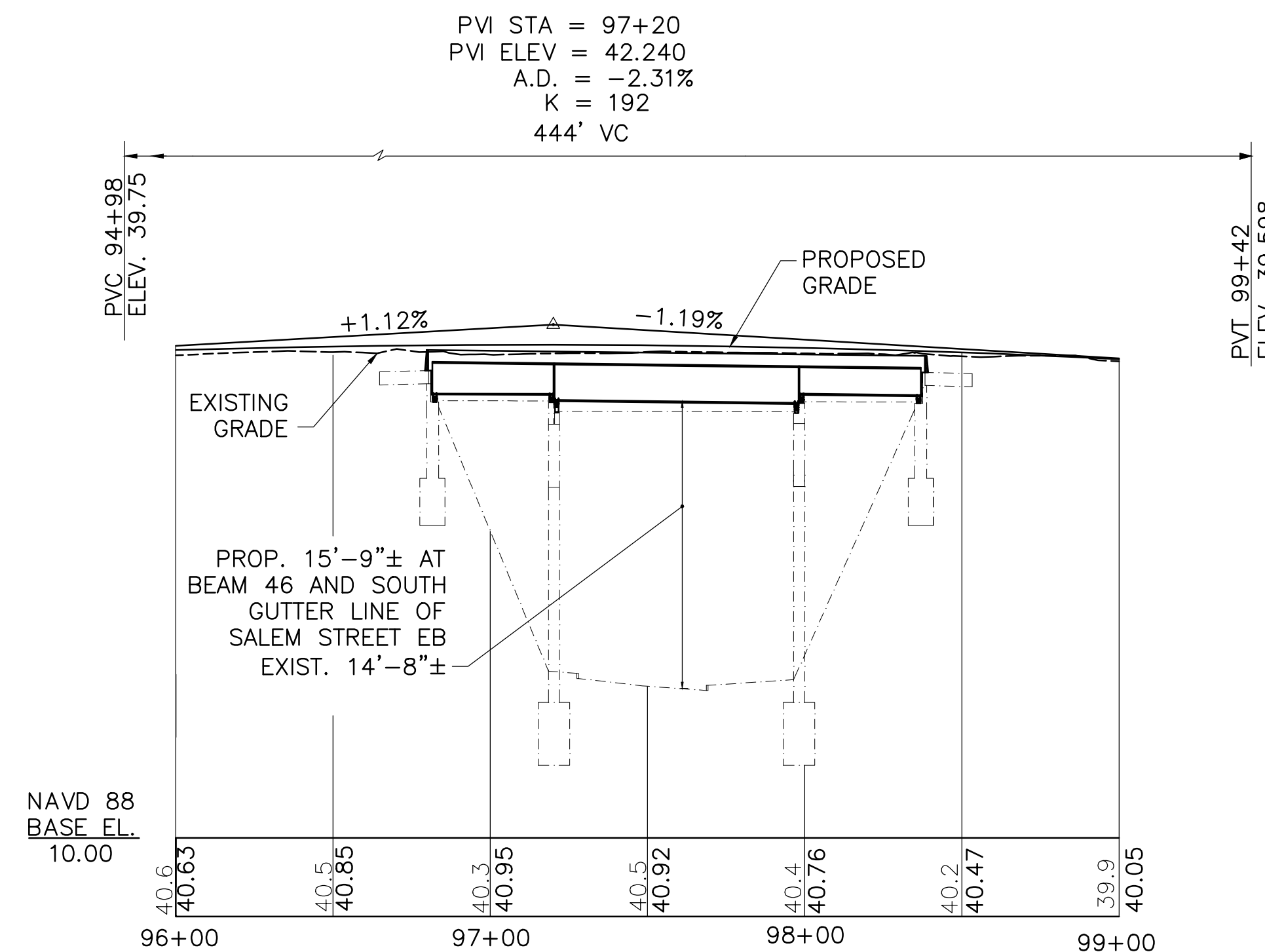


INDEX OF DRAWINGS

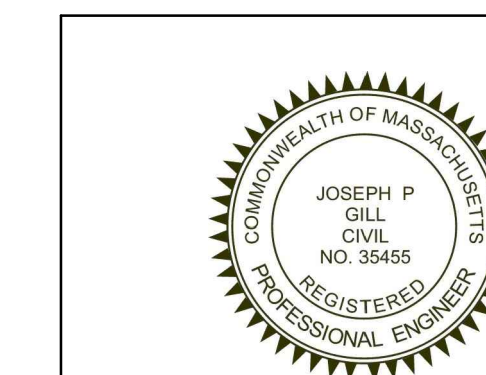
- TITLE SHEET
- GENERAL NOTES
- PLAN AND ELEVATION
- CROSS SECTIONS
- STAGED CONSTRUCTION
- SOUTH ABUTMENT
- SOUTH PIER
- NORTH PIER
- NORTH ABUTMENT
- SUBSTRUCTURE DETAILS
- SUBSTRUCTURE DETAILS
- WINGWALL ELEVATIONS
- SUBSTRUCTURE REPAIRS
- FRAMING PLAN
- STEEL DETAILS
- CAMBER TABLE
- BEARING DETAILS
- MODULAR UNIT LAYOUT
- TOP OF FORM AND DECK DETAILS
- END OF DECK DETAILS
- DECK DETAILS
- DECK DETAILS
- MODULAR LIFTING DETAILS
- HIGHWAY GUARDRAIL TRANSITION
- MEDIAN BARRIER ON APPROACH



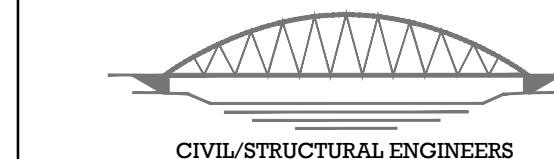
PROFILE ALONG INTERSTATE ROUTE 93 NORTHBOUND  
HORIZ. SCALE: 1" = 40'-0"  
VERT. SCALE: 1" = 8'-0"



PROFILE ALONG INTERSTATE ROUTE 93 SOUTHBOUND  
HORIZ. SCALE: 1" = 40'-0"  
VERT. SCALE: 1" = 8'-0"



GILL ENGINEERING ASSOCIATES



200 HIGHLAND AVE., 4TH FLOOR, NEEDHAM, MA 02494

MAY 18, 2011 ISSUED FOR CONSTRUCTION



PROPOSED SUPERSTRUCTURE REPLACEMENT

MEDFORD

INTERSTATE ROUTE 93  
OVER SALEM STREET ROTARY EASTBOUND  
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION  
HIGHWAY DIVISION  
10 PARK PLAZA BOSTON, MASS

TITLE: CHIEF ENGINEER

## GENERAL NOTES

| STATE            | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------------|-----------|--------------|
| MASS.            | BRI-093-1 (524)<br>SIP 093-1 | 33        | 60           |
| PROJECT FILE NO. |                              | 606255    |              |

### GENERAL NOTES

#### DESIGN

IN ACCORDANCE WITH THE 2010 SPECIFICATIONS OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRFD BRIDGE DESIGN SPECIFICATIONS WITH CURRENT INTERIMS FOR HL-93 LOADING.

#### SURVEY AND BENCH MARK

ALL ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988. EXISTING CONDITIONS INFORMATION TAKEN FROM SURVEY PERFORMED BY: SMC SURVEYING AND MAPPING CONSULTANTS, 325 WOOD ROAD, SUITE 109, BRAINTREE, MA 02184.

DATE OF SURVEY: NOVEMBER 2010

#### BENCH MARKS:

STATION #35 PKNAIL N 2977905.11 E 763047.94 EL= 19.65 SET IN SIDEWALK UNDER BRIDGE  
STATION #37 PKNAIL N 2977827.82 E 763102.39 EL= 20.67 SET IN SIDEWALK UNDER BRIDGE

THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING BEAM SEAT ELEVATIONS CONTAINED IN THESE PLANS AS PART OF THE CONSTRUCTION OF THE NEW BEAM SEATS.

#### PLANS

PLANS FOR EXISTING BRIDGE MAY BE SEEN AT THE OFFICE OF THE BRIDGE ENGINEER, MASSACHUSETTS DEPARTMENT OF TRANSPORTATION, 10 PARK PLAZA, BOSTON, MASSACHUSETTS.

#### TRAFFIC

BRIDGE M-12-027 (3B6) PROPOSED SUPERSTRUCTURE REPLACEMENT SHALL BE CONSTRUCTED IN 2 STAGES. TRAFFIC MANAGEMENT SHALL BE IN ACCORDANCE WITH THE APPROVED TEMPORARY TRAFFIC CONTROL PLAN.

#### EXISTING CONDITIONS

DIMENSIONS SHOWN ARE TAKEN FROM ORIGINAL DESIGN DRAWINGS AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL DETERMINE AND ESTABLISH ALL DIMENSIONS AND DETAILS NECESSARY FOR COMPLETION OF ALL WORK BY FIELD MEASUREMENT AND SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE AND NOT ORDER ANY MATERIAL OR COMMENCE ANY FABRICATION UNTIL HE HAS MADE THE REQUIRED MEASUREMENTS ON THE ACTUAL STRUCTURE AND THE EXTENT OF THE PROPOSED WORK HAS BEEN APPROVED BY THE ENGINEER.

#### DATE

TO BE PLACED ON THE INSIDE FACE OF THE NORTHWEST AND SOUTHEAST INDEPENDENT HIGHWAY GUARDRAIL TRANSITIONS. A SHEET SHOWING SIZE AND CHARACTER OF NUMERALS WILL BE FURNISHED. THE DATE USED SHALL BE THE LATEST YEAR OF THE CONTRACT COMPLETION AS OF THE DATE THE FIRST END POST IS CONSTRUCTED. ALL END POSTS SHALL FEATURE THE SAME DATE.

#### REINFORCEMENT

REINFORCING STEEL SHALL BE EPOXY COATED UNLESS NOTED AS "BLACK BAR" AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M31 GRADE 60 (ASTM A615). ALL CONTACT LAP SPLICES SHALL BE AASHTO CLASS C, UNLESS LAP LENGTHS ARE NOTED ON THE PLANS OR LISTED AS FOLLOWS:

| MODIFICATION CONDITION                             | #4 BARS | #5 BARS |
|--|---------|---------|
| 1. NONE  | 21"     | 26"     |
| 2. 12 INCHES OF CONCRETE BELOW BAR                 | 29"     | 36"     |
| 3. COATED BARS, COVER <3db, OR CLEAR SPACING < 6db | 31"     | 39"     |
| 4. COATED BARS, ALL OTHER CASES                    | 25"     | 31"     |
| 5. CONDITION 2 AND 3                               | 35"     | 44"     |
| 6. CONDITION 2 AND 4                               | 34"     | 43"     |

IF THE ABOVE BARS ARE SPACED 6 INCHES OR MORE ON CENTER, THE LAP LENGTH SHALL BE 80% OF THE LAP LENGTH GIVEN ABOVE.

#### DOWEL BAR SPLICERS

IF LAPPING REINFORCEMENT ACROSS STAGE CONSTRUCTION JOINTS IS NOT FEASIBLE, REINFORCING BARS SHALL BE MADE CONTINUOUS CONSTRUCTION JOINTS BY DOWEL BAR SPLICERS. DOWEL BAR SPLICERS SHALL HAVE THE SAME COATINGS AS THE REINFORCING BARS THEY ARE SPLICING.

#### CONCRETE MIXES

THE FOLLOWING CONCRETE MIXES ARE TO BE USED:

4000 PSI, 3/8 IN, 660 CEMENT CONCRETE: CONCRETE PEDESTALS; TRANSVERSE SHEAR KEYS; BEAM SEAT EXTENSIONS; SUBSTRUCTURE REPAIRS

4000 PSI, 3/4 IN, 610 CEMENT CONCRETE: PROPOSED WINGWALL CAPS

4000 PSI, 3/4 IN, 585 HP CEMENT CONCRETE: DECKZ

E SECTIONS ON MODULAR UNITS

5000 PSI, 3/4 IN, 685 HP CEMENT CONCRETE: CF-PL3 BARRIERS

4000 PSI, 1 1/2", 565 CEMENT CONCRETE : INDEPENDENT HIGHWAY GUARDRAIL TRANSITION BASES

HIGH EARLY STRENGTH CEMENT CONCRETE: CLOSURE POURS

#### DRILLING AND GROUTING DOWELS

IT IS ASSUMED THAT THE GROUT TO BE USED FOR DRILLING AND GROUTING DOWELS INTO THE EXISTING SUBSTRUCTURE AND WINGWALLS IS A CEMENTITIOUS GROUT LISTED ON THE MASSDOT QUALIFIED CONSTRUCTION MATERIALS LIST. HILTI HIT-HY 150 MAX SD OR HILTI HIT-RE 500-SD ARE ACCEPTABLE STRUCTURAL EPOXY SUBSTITUTIONS CONSISTENT WITH THE REQUIREMENTS OF MASSDOT'S ENGINEERING DIRECTIVE E-10-001. THE DEPTH OF DRILLED HOLES SHALL REMAIN THE SAME AS SHOWN ON THESE PLANS, HOWEVER THE DIAMETER OF THE DRILLED HOLE SHALL BE 1/8" LARGER THAN THE BAR.

#### UTILITIES

THE CONTRACTOR SHALL LOCATE AND PROTECT FROM DAMAGE ALL EXISTING UTILITIES.

#### SCALES

SCALES AS NOTED ON PLANS ARE NOT APPLICABLE TO REDUCED SIZE PRINTS. FOR 1/2 SIZE PRINTS DIVIDE SCALE BY TWO.

#### SEISMIC GROUND SHAKING HAZARD

SEISMIC GROUND SHAKING HAZARD IN ACCORDANCE WITH THE 2009 AASHTO GUIDE SPECIFICATIONS FOR LRFD SEISMIC BRIDGE DESIGN:

#### DESIGN SPECTRA:

As = 0.076  
Sds = 0.154  
Sd1 = 0.039

SITE CLASS = E

SEISMIC DESIGN CATEGORY (SDC) = A

#### STRUCTURAL STEEL

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W UNLESS NOTED OTHERWISE HEREIN.

#### ESTIMATED QUANTITIES

(NOT GUARANTEED)

| ITEM                                       | QUANTITY |
|--|----------|
| ALTERATION TO BRIDGE STRUCTURE NO M-12-027 | 1 LS     |

#### SUGGESTED CONSTRUCTION SEQUENCE

##### WORK PRIOR TO WEEKEND CLOSURES:

- INSTALL TEMPORARY PRECAST CONCRETE BARRIER IN SHOULDERS ACROSS THE BRIDGE DECK, CREATING A SAFE WORK ZONE AT THE FASCIA AND MEDIAN.
- REMOVE FASCIA AND MEDIAN BARRIERS.
- REMOVE AND RECONSTRUCT PORTIONS OF WINGWALLS.
- RECONSTRUCT BEAM SEATS WHERE REQUIRED, SUPPORT AND ALTERATION OF THE EXISTING BEAMS MAY BE NECESSARY.
- DEMOLISH ALL EXISTING ABANDONED UTILITIES AND CONDUIT WHICH ARE TO BE REMOVED AND NOT PART OF THE PERMANENT STRUCTURE. PRIOR TO ANY OF THIS WORK COMMENCING ALL UTILITIES SHALL BE CLEARLY IDENTIFIED.
- PRIOR TO THE DEMOLITION OF THE NORTHBOUND ROADWAY TEMPORARILY RELOCATE THE UTILITIES TO BE RETAINED TO THE SOUTHBOUND STRUCTURE AND PROTECT THEM FROM DAMAGE DURING DEMOLITION AND CONSTRUCTION.
- REPAIR SUBSTRUCTURES, NOTE THAT MUCH OF THIS WORK CAN OCCUR AT ANYTIME DURING THE PROJECT.

##### WORK DURING THE WEEKEND CLOSURE:

- ESTABLISH TRAFFIC MANAGEMENT PLAN ON LOCAL STREET (IF APPLICABLE).
- MOBILIZE EQUIPMENT AND MATERIALS THAT ARE TO BE USED BELOW THE BRIDGE, INCLUDING TIMBER MATS, STEEL PLATES OR GRAVEL USED TO PROTECT THE EXISTING ROADWAY BELOW.
- ESTABLISH TRAFFIC MANAGEMENT PLAN ON I-93 AND DETOUR TRAFFIC OFF OF THE BRIDGE.
- DEMOLISH EXISTING DECK AND STEEL BEAM SUPERSTRUCTURE, TAKING CARE NOT TO DAMAGE ANY SUBSTRUCTURE ELEMENTS OR COMPONENTS THAT ARE TO REMAIN AND BE INCORPORATED INTO THE FINAL STRUCTURE.
- EXCAVATE DOWN TO APPROACH SLAB AT ABUTMENT JOINTS.
- PLACE MODULAR UNITS.
- FORM CLOSURE POUR AREAS.
- PLACE CLOSURE POUR CONCRETE IN BOTH LONGITUDINAL AND TRANSVERSE JOINTS.
- REMOVE FORMS AT END OF SLAB AT ABUTMENTS ONCE CONCRETE HAS SET.
- INSTALL TEMPORARY PRECAST CONCRETE BARRIERS IN SHOULDERS ACROSS THE BRIDGE DECK, CREATING A SAFE WORK ZONE AT THE FASCIA AND MEDIAN.
- DEMOLIBLIZE CONSTRUCTION EQUIPMENT, CLEAN UP AND PREPARE WORK ZONE FOR TRAFFIC.
- RE-ESTABLISH NORMAL TRAFFIC PATTERN AND OPEN BRIDGE TO TRAFFIC.

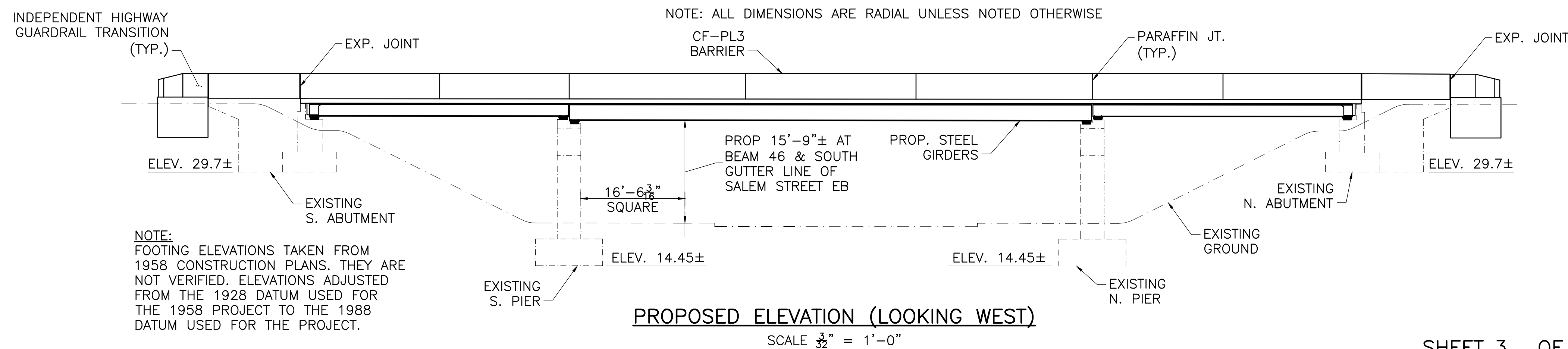
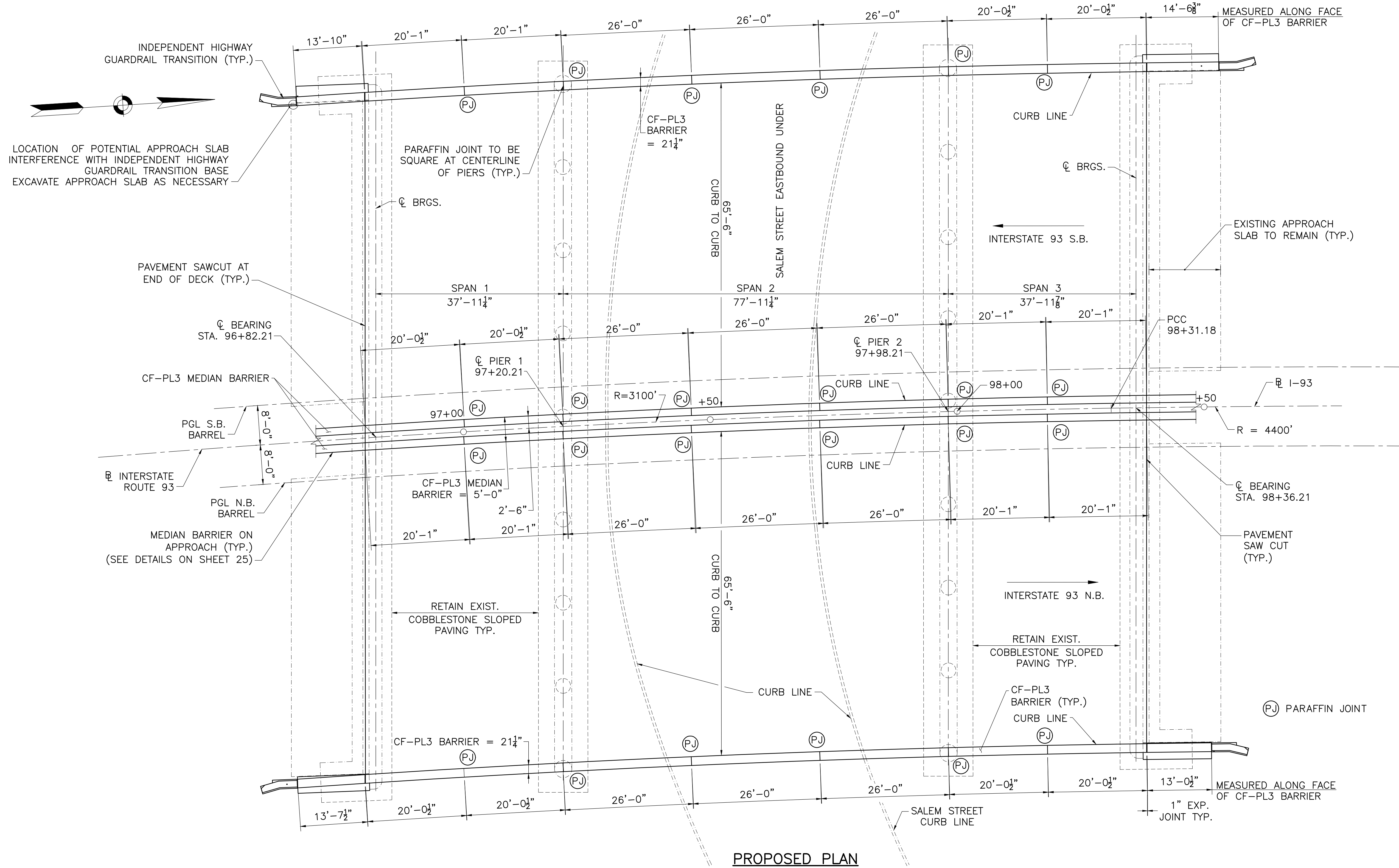
##### WORK AFTER WEEKEND CLOSURES:

- INSTALL BRIDGE BARRIERS AND MEDIAN AND FASCIA WITHIN WORK ZONE CREATED USING TEMPORARY PRECAST CONCRETE BARRIERS.
- COMPLETE WINGWALL MODIFICATIONS INCLUDING INDEPENDENT HIGHWAY GUARD TRANSITIONS.
- INSTALL CONCRETE TRANSVERSE SHEAR KEYS ON STRUCTURES.
- INSTALL MEMBRANE WATERPROOFING SYSTEM AND PAVEMENT OVERLAYS (USING NIGHTTIME LANE CLOSURES OR ON SUBSEQUENT WEEKENDS).
- INSTALL BRIDGE JOINTS AT ABUTMENTS.
- COMPLETE REPAIRS TO SUBSTRUCTURES.

|              |                                |
|--------------|--------------------------------|
| MAY 18, 2011 | ISSUED FOR CONSTRUCTION        |
| DATE         | DESCRIPTION                    |
|              | USE ONLY PRINTS OF LATEST DATE |

|                         |                              |           |              |
|-------------------------|------------------------------|-----------|--------------|
| STATE                   | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
| MASS.                   | BRI-093-1 (524)<br>STP 093-1 | 34        | 60           |
| PROJECT FILE NO. 606255 |                              |           |              |

BRIDGE PLAN AND ELEVATION

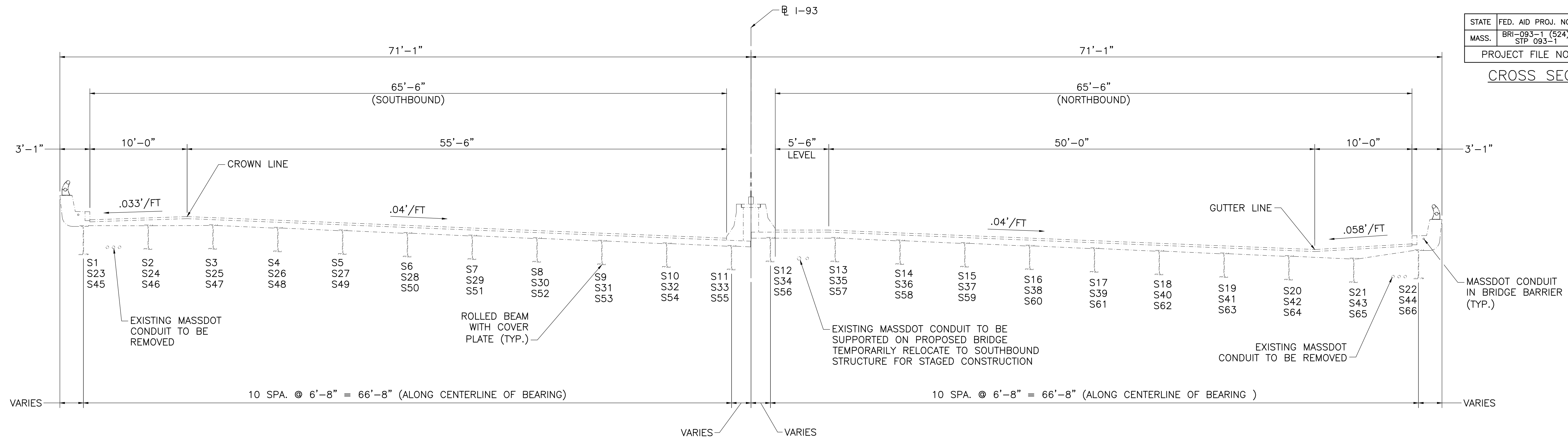


NOTE:  
FOOTING ELEVATIONS TAKEN FROM 1958 CONSTRUCTION PLANS. THEY ARE NOT VERIFIED. ELEVATIONS ADJUSTED FROM THE 1928 DATUM USED FOR THE 1958 PROJECT TO THE 1988 DATUM USED FOR THE PROJECT.

|                                |                         |
|--------------------------------|-------------------------|
| MAY 18, 2011                   | ISSUED FOR CONSTRUCTION |
| DATE                           | DESCRIPTION             |
| USE ONLY PRINTS OF LATEST DATE |                         |

|                         |                              |           |              |
|-------------------------|------------------------------|-----------|--------------|
| STATE                   | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
| MASS.                   | BRI-093-1 (524)<br>SIP 093-1 | 35        | 60           |
| PROJECT FILE NO. 606255 |                              |           |              |

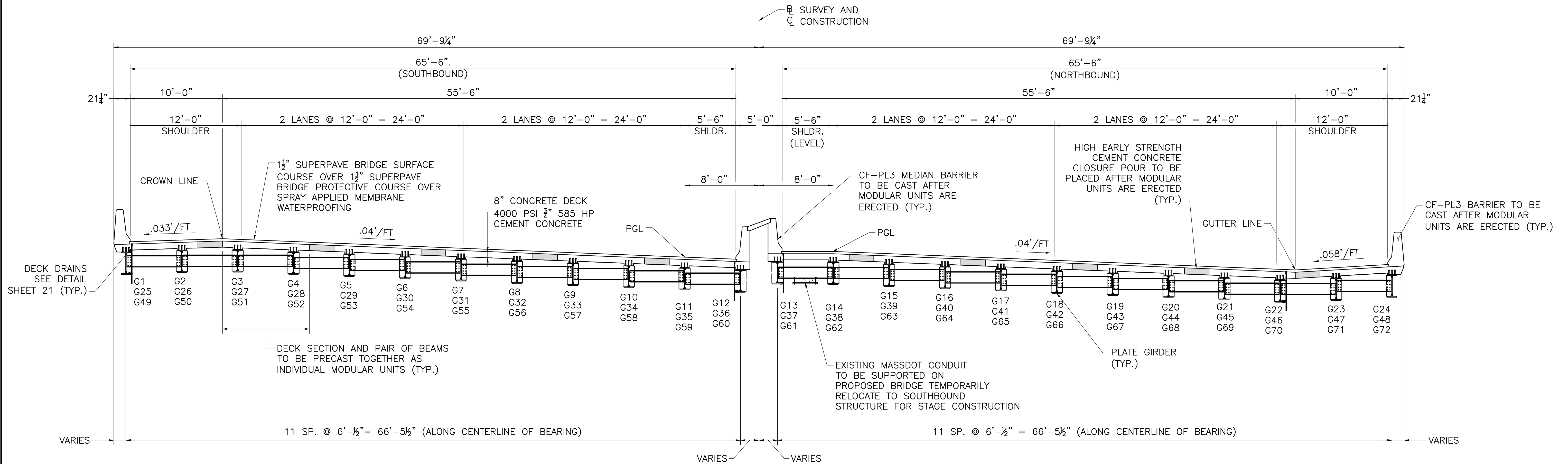
CROSS SECTIONS



EXISTING SECTION - LOOKING NORTH

SCALE: 3/16" = 1'-0"

NOTE: ALL DIMENSIONS ARE RADIAL UNLESS NOTED OTHERWISE



PROPOSED SECTION - LOOKING NORTH

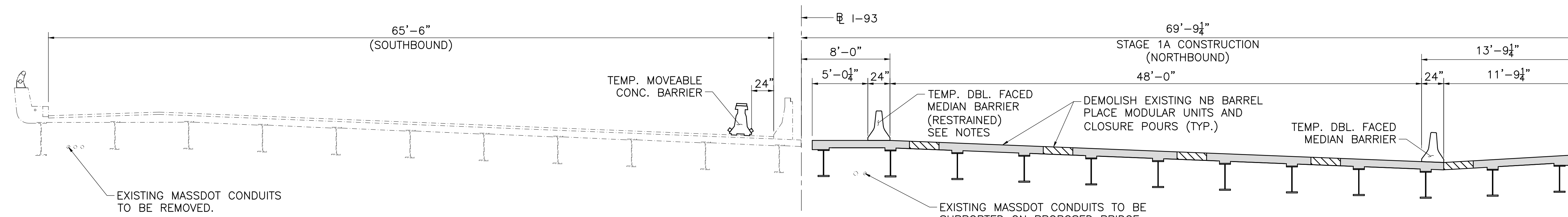
SCALE: 3/16" = 1'-0"

NOTE: ALL DIMENSIONS AND SLOPES ARE RADIAL UNLESS NOTED OTHERWISE

|              |                                |
|--------------|--------------------------------|
| MAY 18, 2011 | ISSUED FOR CONSTRUCTION        |
| DATE         | DESCRIPTION                    |
|              | USE ONLY PRINTS OF LATEST DATE |

|                         |                              |           |              |
|-------------------------|------------------------------|-----------|--------------|
| STATE                   | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
| MASS.                   | BRI-093-1 (524)<br>SIP 093-1 | 36        | 60           |
| PROJECT FILE NO. 606255 |                              |           |              |

STAGE CONSTRUCTION



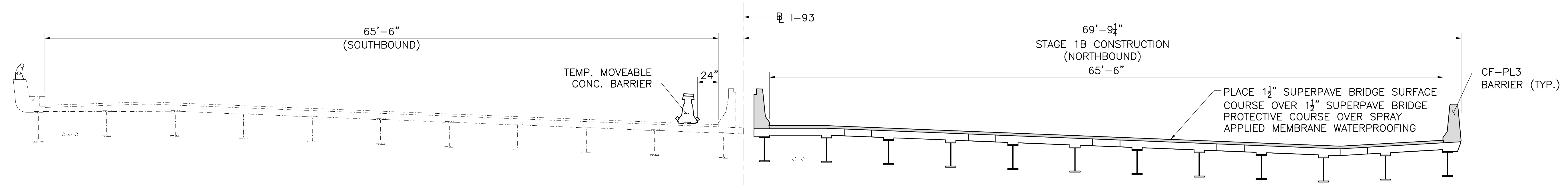
**STAGE 1A CONSTRUCTION**

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

NOTE: ALL DIMENSIONS ARE RADIAL UNLESS NOTED OTHERWISE

**NOTES:**

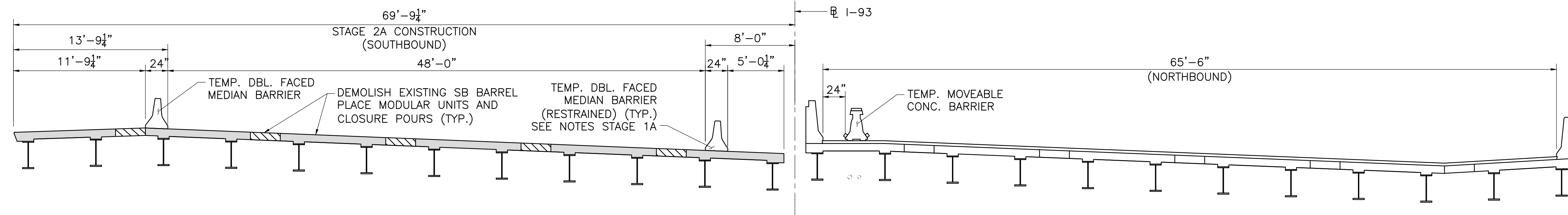
1. TEMPORARY BARRIER SHALL BE CAPABLE OF WITHSTANDING A TL-3 LEVEL CRASH TEST.
2. MAXIMUM DYNAMIC DEFLECTION SHALL BE LESS THAN OR EQUAL TO 26"
3. SHOP DRAWINGS FOR THE ACTUAL BARRIER TO BE UTILIZED SHALL BE SUBMITTED.



**STAGE 1B CONSTRUCTION**

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

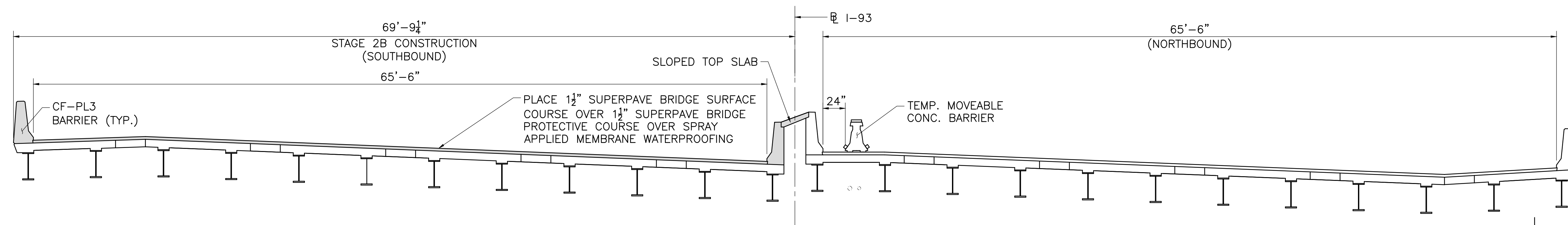
NOTE: ALL DIMENSIONS ARE RADIAL UNLESS NOTED OTHERWISE



**STAGE 2A CONSTRUCTION**

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

NOTE: ALL DIMENSIONS ARE RADIAL UNLESS NOTED OTHERWISE



**STAGE 2B CONSTRUCTION**

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

NOTE: ALL DIMENSIONS ARE RADIAL UNLESS NOTED OTHERWISE

|                                |                         |
|--------------------------------|-------------------------|
| MAY 18, 2011                   | ISSUED FOR CONSTRUCTION |
| DATE                           | DESCRIPTION             |
| USE ONLY PRINTS OF LATEST DATE |                         |

|                                 |       | SOUTH ABUTMENT - BEAM SEAT ELEVATIONS |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| BEAM NO.                        | UNITS | G1                                    | G2    | G3    | G4    | G5    | G6    | G7    | G8    | G9    | G10   | G11   | G12   | G13   | G14   | G15   | G16   | G17   | G18   | G19   | G20   | G21   | G22   | G23   | G24   |
| PROPOSED BOT OF BM              | FT    | 39.78                                 | 39.98 | 40.05 | 39.80 | 39.56 | 39.32 | 39.08 | 38.84 | 38.59 | 38.35 | 38.11 | 37.87 | 38.50 | 38.50 | 38.26 | 38.02 | 37.77 | 37.53 | 37.29 | 37.05 | 36.81 | 36.57 | 36.75 | 37.10 |
| EXISTING BEAM SEAT              | FT    | 38.16                                 | 38.81 | 38.81 | 38.54 | 38.30 | 38.30 | 38.00 | 37.73 | 37.50 | 37.19 | 36.95 | 36.68 | 37.57 | 37.55 | 37.30 | 37.02 | 36.73 | 36.73 | 36.49 | 36.20 | 36.00 | 35.75 | 35.46 | 35.72 |
| STEEL SOLE PLATES               | IN    | 1.50                                  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  |
| STEEL SHIM PLATES, DIM. X       | IN    | 0.50                                  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  |
| BEARING HEIGHT                  | IN    | 2.31                                  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  |
| PEDESTAL HEIGHT, DIM. Y         | IN    | 15.11                                 | 9.69  | 10.51 | 10.85 | 10.83 | 7.92  | 8.62  | 8.96  | 8.82  | 9.64  | 9.63  | 9.95  | 6.91  | 7.14  | 7.19  | 7.65  | 8.23  | 5.32  | 5.30  | 5.88  | 5.37  | 5.47  | 11.18 | 12.25 |
| REMOVAL OF EXIST. CONC., DIM. E | IN    | 0.00                                  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| PROP. BEAM SEAT ELEV.           | FT    | 39.42                                 | 39.62 | 39.69 | 39.44 | 39.20 | 38.96 | 38.72 | 38.48 | 38.23 | 37.99 | 37.75 | 37.51 | 38.15 | 38.14 | 37.90 | 37.66 | 37.42 | 37.17 | 36.93 | 36.69 | 36.45 | 36.21 | 36.39 | 36.74 |

|                         |                              |           |              |
|-------------------------|------------------------------|-----------|--------------|
| STATE                   | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
| MASS.                   | BRI-093-1 (524)<br>SIP 093-1 | 37        | 60           |
| PROJECT FILE NO. 606255 |                              |           |              |

**SOUTH ABUTMENT**

**TABLE NOTES:**

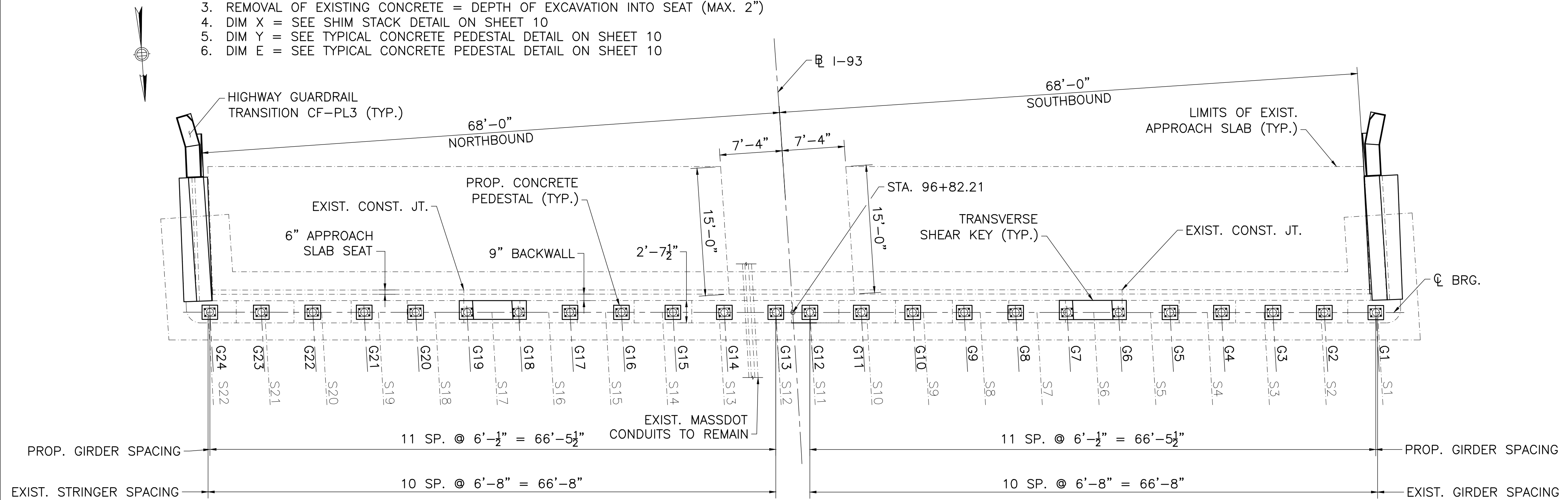
- SEE NOTES ON BEAM SEAT ELEVATIONS THIS SHEET.
- PEDESTAL HEIGHT = PEDESTAL DIMENSION ABOVE BEAM SEAT.
- REMOVAL OF EXISTING CONCRETE = DEPTH OF EXCAVATION INTO SEAT (MAX. 2")
- DIM X = SEE SHIM STACK DETAIL ON SHEET 10
- DIM Y = SEE TYPICAL CONCRETE PEDESTAL DETAIL ON SHEET 10
- DIM E = SEE TYPICAL CONCRETE PEDESTAL DETAIL ON SHEET 10

**NOTES ON BEAM SEAT ELEVATIONS:**

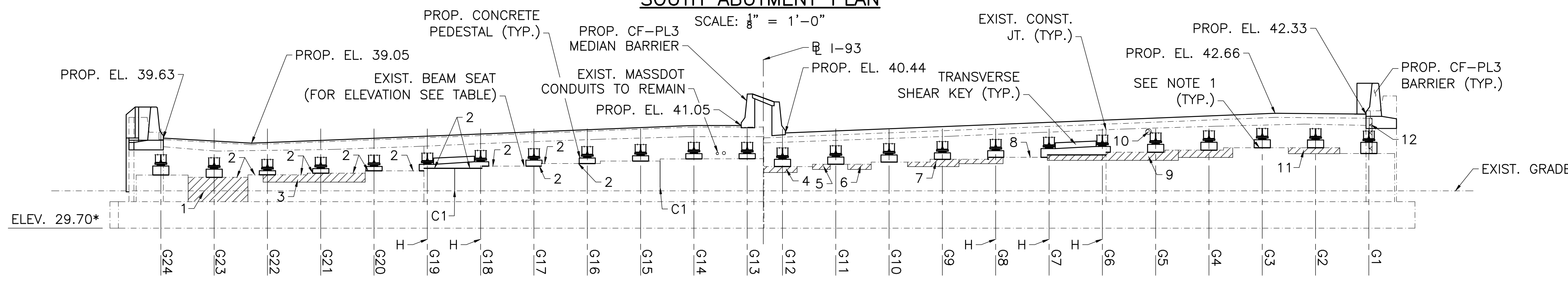
- CONCRETE PEDESTALS ARE BEING PROVIDED AT ALL BUT FOUR BEAM SEAT LOCATIONS FOR ALL SUBSTRUCTURE UNITS.
- BOTTOM OF BEAM ELEVATION PROVIDED TO ESTABLISH MODULAR UNIT GEOMETRY FOR DECK CASTING AND FOR SETTING MODULAR UNITS IN THE FIELD.
- EXISTING BEAM SEAT IS THE EXISTING ELEVATION AT THE CENTERLINE OF BEARING FOUND BY SURVEY.
- TOP OF PEDESTAL ELEVATION IS THE BOTTOM OF BEAM ELEVATION LESS THE PROPOSED BEARING THICKNESS, THE 1 1/2 INCH THICK SOLE PLATE (OR THE 1 INCH THICK SOLE PLATE AND THE TAPERED PLATE THICKNESS AT THE CENTERLINE OF BEARING) AND A 1/2 INCH THICK SHIM PLATE.
- GIRDERS ARE TO COME TO THE FIELD WITH SOLE PLATES WELDED TO THE BOTTOM FLANGE.
- ELASTOMERIC BEARINGS ARE TO BE SET DIRECTLY ON THE BEAM SEAT OR PEDESTAL CONCRETE AND SUFFICIENT SHIMS SHALL BE USED TO MAKE UP THE DIFFERENCE.
- DIM. X IS THE ANTICIPATED TOTAL THICKNESS OF SHIMS REQUIRED TO SET THE BEARING ON THE EXISTING SEAT AND PLACE THE BOTTOM OF BEAM SEAT AT THE PROPER ELEVATION. FIELD VERIFY PROPOSED BEAM SEAT ELEVATION AND ADJUST SHIM THICKNESS ACCORDINGLY. MINIMUM SHIM THICKNESS SHALL BE 1/8".

**NOTES ON BEAMS SEAT CONSTRUCTION:**

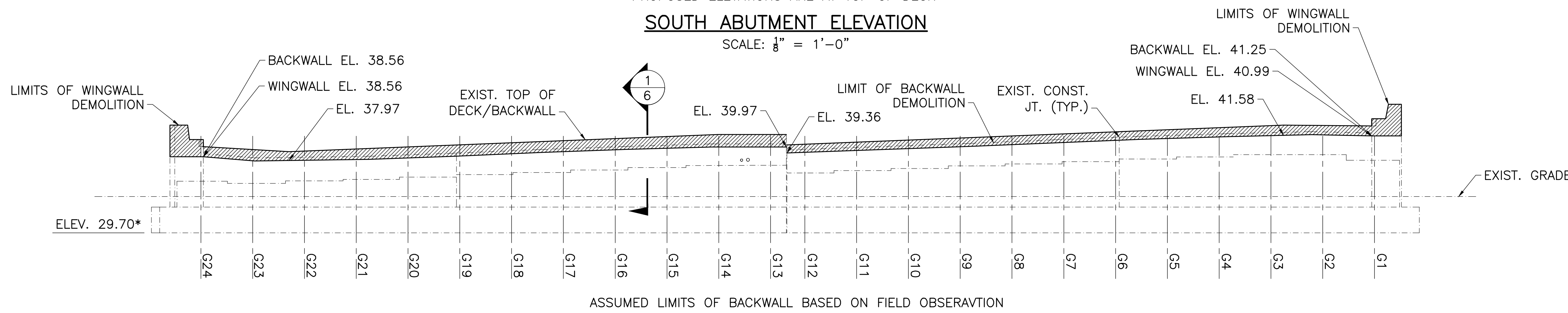
- CLEAN AND ROUGHEN EXISTING BEAM SEAT UNDER PEDESTALS AND SHEAR KEYS.
- H - DUE TO PROXIMITY OF EXISTING BEAM SEAT STEP, THE ELEVATION OF THE HIGHER BEAM SEAT WAS USED.
- S# - EXIST. STRINGER
- G# - PROP. GIRDER
- PROPOSED TOP OF DECK IS TOP OF DECK CONCRETE AT BACK FACE OF BACKWALL
- WHERE EXISTING PEDESTALS MUST BE REMOVED DUE TO INTERFERENCE WITH PROPOSED WORK:
  - EXISTING PEDESTALS TO BE REMOVED SHALL BE CUTOFF FLUSH TO THE TOP OF THE EXISTING BEAM SEAT.
  - REMAINING EXPOSED REINFORCEMENT AND ANCHOR BOLTS THAT ARE NOT BEING ENCASED BY ANY PROPOSED CONCRETE SHALL BE REPAIRED BY EXCAVATING DOWN AND CUTTING OFF THE VERTICAL STEEL EXTENDING INTO THE PEDESTAL A MINIMUM OF 2" BELOW THE TOP FACE OF EXISTING CONCRETE. THE EXCAVATED HOLE SHALL BE PATCHED USING CEMENTITIOUS MORTAR.
  - THE TOP SURFACE OF THE CONCRETE TO REMAIN BEYOND THE PROPOSED WORK SHALL BE MADE TROWEL SMOOTH BY APPLICATION OF A THIN LAYER OF CEMENTITIOUS MORTAR FOR PATCHING.



**SOUTH ABUTMENT PLAN**



**SOUTH ABUTMENT ELEVATION**



**BACKWALL DEMO ELEVATION**

**LEGEND**

BASED UPON FIELD SURVEY PERFORMED ON 3/1/11 THROUGH 3/3/11

- = SPALLED CONCRETE - SEE SHEET 13 FOR SIZE BY REFERENCE NUMBER
- = DELAMINATED CONCRETE - SEE SHEET 13 FOR SIZE BY REFERENCE NUMBER
- = CRACK
- ALL CRACKS ARE HAIRLINE (HL) X FULL HEIGHT (F.H.) UNLESS NOTED OTHERWISE
- C1 - 1/8" X F.H.

\*FOOTING ELEVATIONS TAKEN FROM 1958 CONSTRUCTION PLANS AND HAVE NOT BEEN VERIFIED. ELEVATIONS HAVE BEEN ADJUSTED FROM THE 1920 DATUM USED FOR THE 1958 PROJECT TO THE 1988 DATUM USED FOR THIS PROJECT.

|                                |                         |
|--------------------------------|-------------------------|
| MAY 18, 2011                   | ISSUED FOR CONSTRUCTION |
| DATE                           | DESCRIPTION             |
| USE ONLY PRINTS OF LATEST DATE |                         |

|                                 |       | SOUTH PIER 1 - BEAM SEAT ELEVATIONS |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| BEAM NO.                        | UNITS | G25                                 | G26   | G27   | G28   | G29   | G30   | G31   | G32   | G33   | G34   | G35   | G36   | G37   | G38   | G39   | G40   | G41   | G42   | G43   | G44   | G45   | G46   | G47   | G48   |
| PROPOSED BOT OF BM              | FT    | 39.11                               | 39.31 | 39.38 | 39.14 | 38.90 | 38.66 | 38.42 | 38.18 | 37.94 | 37.69 | 37.45 | 37.21 | 37.85 | 37.85 | 37.61 | 37.37 | 37.13 | 36.89 | 36.64 | 36.40 | 36.16 | 35.92 | 36.11 | 36.46 |
| EXISTING BEAM SEAT              | FT    | 37.23                               | 37.12 | 37.00 | 36.89 | 36.78 | 36.67 | 36.56 | 36.44 | 36.33 | 36.22 | 36.11 | 36.00 | 35.93 | 35.81 | 35.70 | 35.58 | 35.47 | 35.36 | 35.24 | 35.13 | 35.02 | 34.90 | 34.79 | 34.68 |
| STEEL SOLE PLATES               | IN    | 1.50                                | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  |
| STEEL SHIM PLATES, DIM. X       | IN    | 0.50                                | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  |
| BEARING HEIGHT                  | IN    | 3.25                                | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  |
| PEDESTAL HEIGHT, DIM. Y         | IN    | 17.38                               | 21.11 | 23.29 | 21.74 | 20.19 | 18.64 | 17.09 | 15.54 | 14.00 | 12.45 | 10.91 | 9.35  | 17.89 | 19.26 | 17.68 | 16.15 | 14.62 | 13.09 | 11.56 | 10.02 | 8.49  | 6.96  | 10.57 | 16.13 |
| REMOVAL OF EXIST. CONC., DIM. E | IN    | 0.00                                | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| PROP. BEAM SEAT ELEV.           | FT    | 38.68                               | 38.88 | 38.94 | 38.70 | 38.46 | 38.22 | 37.98 | 37.74 | 37.50 | 37.26 | 37.02 | 36.77 | 37.42 | 37.42 | 37.17 | 36.93 | 36.69 | 36.45 | 36.21 | 35.97 | 35.72 | 35.48 | 35.67 | 36.02 |

|                         |                              |           |              |
|-------------------------|------------------------------|-----------|--------------|
| STATE                   | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
| MASS.                   | BRI-093-1 (524)<br>SIP 093-1 | 38        | 60           |
| PROJECT FILE NO. 606255 |                              |           |              |

SOUTH PIER

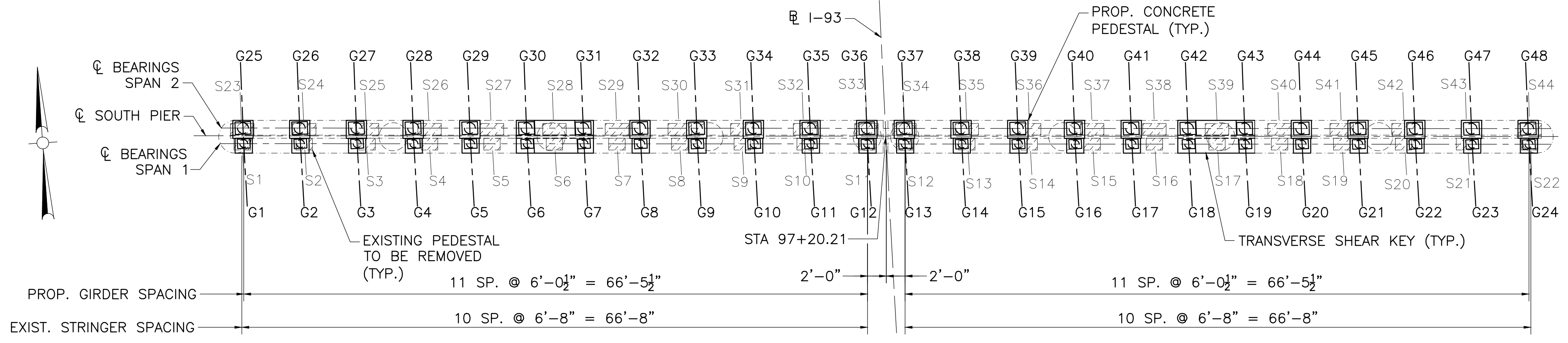
|                                 |       | SOUTH PIER 1 - BEAM SEAT ELEVATIONS |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| BEAM NO.                        | UNITS | G1                                  | G2    | G3    | G4    | G5    | G6    | G7    | G8    | G9    | G10   | G11   | G12   | G13   | G14   | G15   | G16   | G17   | G18   | G19   | G20   | G21   | G22   | G23   | G24   |
| PROPOSED BOT OF BM              | FT    | 39.79                               | 39.99 | 40.06 | 39.82 | 39.58 | 39.34 | 39.10 | 38.86 | 38.62 | 38.37 | 38.14 | 37.89 | 38.53 | 38.53 | 38.29 | 38.05 | 37.80 | 37.56 | 37.32 | 37.08 | 36.84 | 36.60 | 36.79 | 37.13 |
| EXISTING BEAM SEAT              | FT    | 37.23                               | 37.11 | 37.00 | 36.89 | 36.78 | 36.67 | 36.55 | 36.44 | 36.33 | 36.22 | 36.11 | 35.99 | 35.92 | 35.81 | 35.70 | 35.58 | 35.47 | 35.35 | 35.24 | 35.13 | 35.01 | 34.90 | 34.78 | 34.67 |
| STEEL SOLE PLATES               | IN    | 1.50                                | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  |
| STEEL SHIM PLATES, DIM. X       | IN    | 0.50                                | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  |
| BEARING HEIGHT                  | IN    | 2.31                                | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  |
| PEDESTAL HEIGHT, DIM. Y         | IN    | 26.50                               | 30.23 | 32.41 | 30.86 | 29.31 | 27.76 | 26.21 | 24.66 | 23.12 | 21.57 | 20.03 | 18.47 | 26.98 | 28.35 | 26.78 | 25.25 | 23.72 | 22.19 | 20.67 | 19.14 | 17.61 | 16.08 | 19.69 | 25.25 |
| REMOVAL OF EXIST. CONC., DIM. E | IN    | 0.00                                | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| PROP. BEAM SEAT ELEV.           | FT    | 39.44                               | 39.63 | 39.70 | 39.46 | 39.22 | 38.98 | 38.74 | 38.50 | 38.26 | 38.02 | 37.78 | 37.53 | 38.17 | 38.17 | 37.93 | 37.69 | 37.44 | 37.20 | 36.96 | 36.72 | 36.48 | 36.24 | 36.43 | 36.78 |

TABLE NOTES:

- SEE NOTES ON BEAM SEAT ELEVATIONS ON SHEET 6.
- PEDESTAL HEIGHT = PEDESTAL DIMENSION ABOVE BEAM SEAT.
- REMOVAL OF EXISTING CONCRETE = DEPTH OF EXCAVATION INTO SEAT (MAX. 2")
- DIM X = SEE SHIM STACK DETAIL ON SHEET 10
- DIM Y = SEE TYPICAL CONCRETE PEDESTAL DETAIL ON SHEET 10
- DIM E = SEE TYPICAL CONCRETE PEDESTAL DETAIL ON SHEET 10

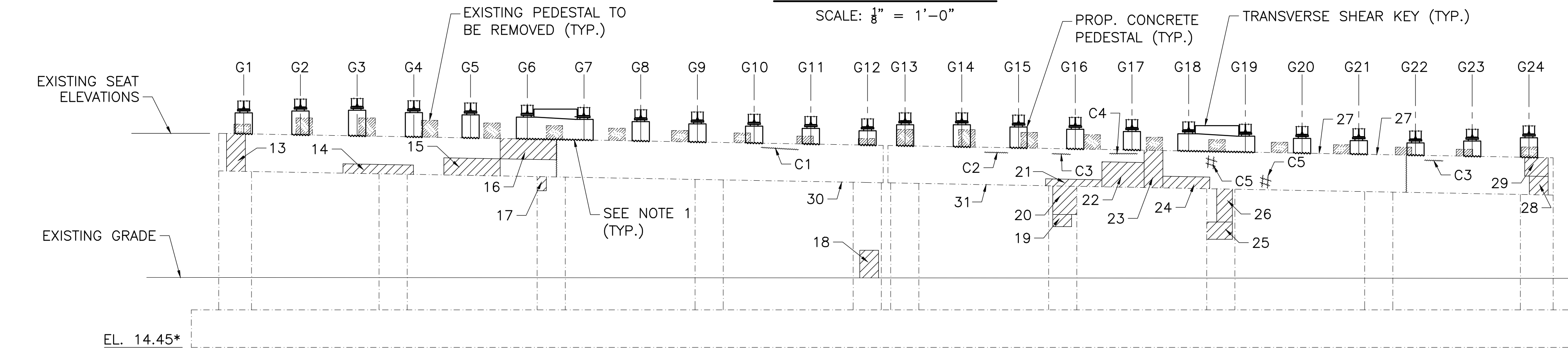
NOTES ON BEAMS SEAT CONSTRUCTION:

- CLEAN AND ROUGHEN EXISTING BEAM SEAT UNDER PEDESTALS AND SHEAR KEYS.
- S# - EXIST. STRINGER
- G# - PROP. GIRDER
- PROPOSED TOP OF DECK IS TOP OF DECK CONCRETE AT BACK FACE OF BACKWALL
- WHERE EXISTING PEDESTALS MUST BE REMOVED DUE TO INTERFERENCE WITH PROPOSED WORK:
  - EXISTING PEDESTALS TO BE REMOVED SHALL BE CUTOFF FLUSH TO THE TOP OF THE EXISTING BEAM SEAT.
  - REMAINING EXPOSED REINFORCEMENT AND ANCHOR BOLTS THAT ARE NOT BEING ENCASED BY ANY PROPOSED CONCRETE SHALL BE REPAIRED BY EXCAVATING DOWN AND CUTTING OFF THE VERTICAL STEEL EXTENDING INTO THE PEDESTAL A MINIMUM OF 2" BELOW THE TOP FACE OF EXISTING CONCRETE. THE EXCAVATED HOLE SHALL BE PATCHED USING CEMENTITIOUS MORTAR.
  - THE TOP SURFACE OF THE CONCRETE TO REMAIN BEYOND THE PROPOSED WORK SHALL BE MADE TROWEL SMOOTH BY APPLICATION OF A THIN LAYER OF CEMENTITIOUS MORTAR FOR PATCHING.



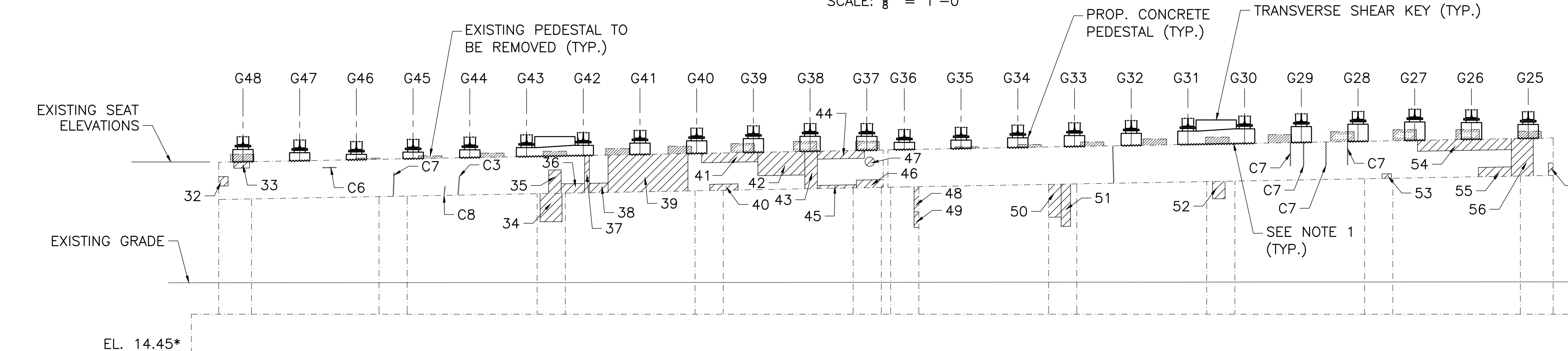
SOUTH PIER 1 PLAN

SCALE: 1/8" = 1'-0"



SOUTH PIER 1 ELEVATION (LOOKING NORTH)

SCALE: 1/8" = 1'-0"



SOUTH PIER 1 ELEVATION (LOOKING SOUTH)

SCALE: 1/8" = 1'-0"

LEGEND

BASED UPON FIELD SURVEY PERFORMED ON 3/1/11 THROUGH 3/3/11

- = SPALLED CONCRETE - SEE SHEET 13 FOR SIZE BY REFERENCE NUMBER
- = DELAMINATED CONCRETE - SEE SHEET 13 FOR SIZE BY REFERENCE NUMBER
- = CRACK

- ALL CRACKS ARE HAIRLINE (HL) X FULL HEIGHT (F.H.) UNLESS NOTED OTHERWISE.
- |                   |                  |
|-------------------|------------------|
| C1 - HL X 4'L     | C5 - HL MAP CR'S |
| C2 - 1/4" X 2.5'L | C6 - HL X 1.5'L  |
| C3 - HL X 2'L     | C7 - HL X 2.5'L  |
| C4 - HL X 3'L     | C8 - HL X 1'L    |

\*FOOTING ELEVATIONS TAKEN FROM 1958 CONSTRUCTION PLANS AND HAVE NOT BEEN VERIFIED. ELEVATIONS HAVE BEEN ADJUSTED FROM THE 1920 DATUM USED FOR THE 1958 PROJECT TO THE 1988 DATUM USED FOR THIS PROJECT.

|                                |                         |
|--------------------------------|-------------------------|
| MAY 18, 2011                   | ISSUED FOR CONSTRUCTION |
| DATE                           | DESCRIPTION             |
| USE ONLY PRINTS OF LATEST DATE |                         |

NORTH PIER 2 - BEAM SEAT ELEVATIONS

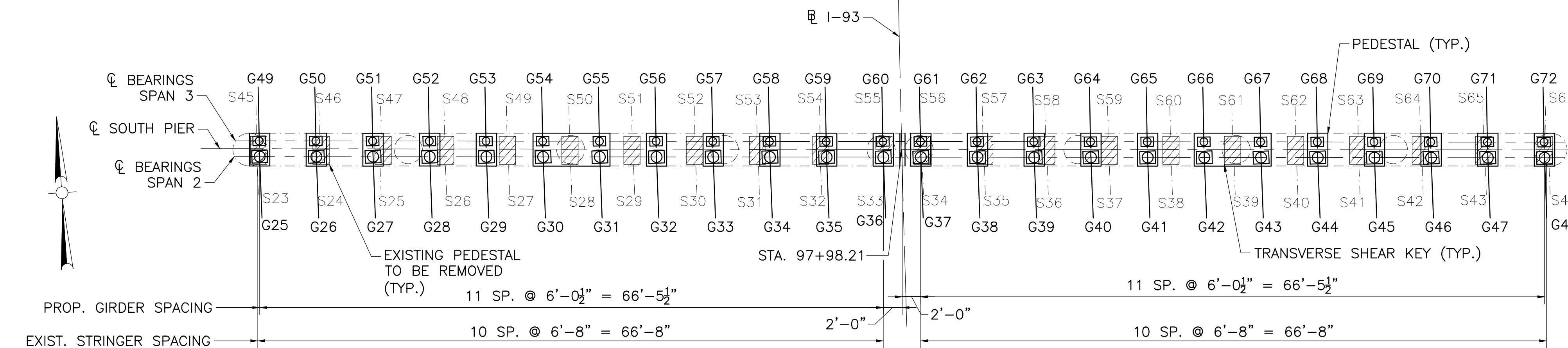
| BEAM NO.                        | UNITS | G49   | G50   | G51   | G52   | G53   | G54   | G55   | G56   | G57   | G58   | G59   | G60   | G61   | G62   | G63   | G64   | G65   | G66   | G67   | G68   | G69   | G70   | G71   | G72   |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PROPOSED BOT OF BM              | FT    | 39.60 | 39.80 | 39.87 | 39.63 | 39.39 | 39.15 | 38.90 | 38.66 | 38.42 | 38.18 | 37.94 | 37.70 | 38.33 | 38.34 | 38.09 | 37.85 | 37.61 | 37.37 | 37.13 | 36.89 | 36.65 | 36.41 | 36.60 | 36.95 |
| EXISTING BEAM SEAT              | FT    | 37.25 | 37.14 | 37.03 | 36.92 | 36.81 | 36.70 | 36.59 | 36.48 | 36.37 | 36.26 | 36.15 | 36.04 | 35.94 | 35.83 | 35.71 | 35.60 | 35.48 | 35.37 | 35.25 | 35.14 | 35.02 | 34.90 | 34.79 | 34.67 |
| STEEL SOLE PLATES               | IN    | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  |
| STEEL SHIM PLATES, DIM. X       | IN    | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  |
| BEARING HEIGHT                  | IN    | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  |
| PEDESTAL HEIGHT, DIM. Y         | IN    | 23.81 | 27.53 | 29.69 | 28.12 | 26.56 | 24.99 | 23.43 | 21.86 | 20.30 | 18.73 | 17.18 | 15.60 | 24.37 | 25.77 | 24.24 | 22.73 | 21.23 | 19.73 | 18.23 | 16.73 | 15.23 | 13.73 | 17.37 | 22.97 |
| REMOVAL OF EXIST. CONC., DIM. E | IN    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| PROP. BEAM SEAT ELEV.           | FT    | 39.24 | 39.44 | 39.51 | 39.27 | 39.03 | 38.79 | 38.55 | 38.30 | 38.06 | 37.82 | 37.58 | 37.34 | 37.98 | 37.98 | 37.73 | 37.49 | 37.25 | 37.01 | 36.77 | 36.53 | 36.29 | 36.05 | 36.24 | 36.59 |

| STATE | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
|-------|------------------------------|-----------|--------------|
| MASS. | BRI-093-1 (524)<br>SIP 093-1 | 39        | 60           |

PROJECT FILE NO. 606255

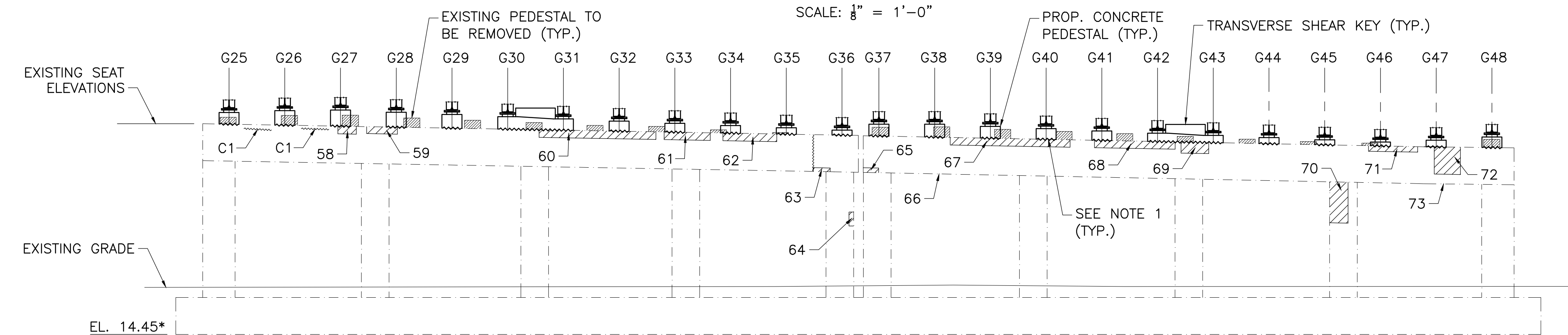
NORTH PIER

| BEAM NO.                        | UNITS | G25   | G26   | G27   | G28   | G29   | G30   | G31   | G32   | G33   | G34   | G35   | G36   | G37   | G38   | G39   | G40   | G41   | G42   | G43   | G44   | G45   | G46   | G47   | G48   |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PROPOSED BOT OF BM              | FT    | 38.93 | 39.13 | 39.19 | 38.95 | 38.71 | 38.47 | 38.23 | 37.99 | 37.75 | 37.51 | 37.27 | 37.03 | 37.66 | 37.67 | 37.42 | 37.18 | 36.94 | 36.70 | 36.46 | 36.22 | 35.98 | 35.74 | 35.93 | 36.28 |
| EXISTING BEAM SEAT              | FT    | 37.25 | 37.14 | 37.03 | 36.92 | 36.81 | 36.70 | 36.59 | 36.48 | 36.37 | 36.26 | 36.15 | 36.04 | 35.95 | 35.83 | 35.72 | 35.60 | 35.49 | 35.37 | 35.26 | 35.14 | 35.02 | 34.91 | 34.79 | 34.68 |
| STEEL SOLE PLATES               | IN    | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  |
| STEEL SHIM PLATES, DIM. X       | IN    | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  |
| BEARING HEIGHT                  | IN    | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  | 3.25  |
| PEDESTAL HEIGHT, DIM. Y         | IN    | 14.80 | 18.52 | 20.68 | 19.12 | 17.55 | 15.99 | 14.42 | 12.86 | 11.29 | 9.73  | 8.18  | 6.60  | 15.35 | 16.74 | 15.20 | 13.70 | 12.20 | 10.70 | 9.20  | 7.70  | 6.20  | 4.71  | 8.35  | 13.94 |
| REMOVAL OF EXIST. CONC., DIM. E | IN    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| PROP. BEAM SEAT ELEV.           | FT    | 38.49 | 38.69 | 38.76 | 38.52 | 38.28 | 38.04 | 37.80 | 37.55 | 37.31 | 37.07 | 36.83 | 36.59 | 37.23 | 37.23 | 36.98 | 36.74 | 36.50 | 36.26 | 36.02 | 35.78 | 35.54 | 35.30 | 35.49 | 35.84 |



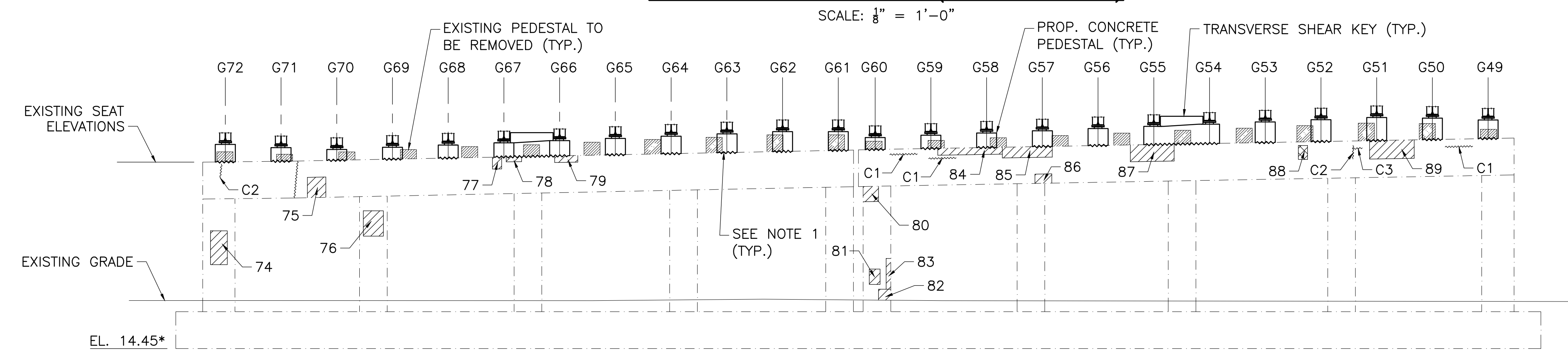
NORTH PIER 2 PLAN

SCALE: 1/8" = 1'-0"



NORTH PIER 2 ELEVATION (LOOKING NORTH)

SCALE: 1/8" = 1'-0"



NORTH PIER 2 ELEVATION (LOOKING SOUTH)

SCALE: 1/8" = 1'-0"

\*FOOTING ELEVATIONS TAKEN FROM 1958 CONSTRUCTION PLANS AND HAVE NOT BEEN VERIFIED. ELEVATIONS HAVE BEEN ADJUSTED FROM THE 1920 DATUM USED FOR THE 1958 PROJECT TO THE 1988 DATUM USED FOR THIS PROJECT.

TABLE NOTES:

- SEE NOTES ON BEAM SEAT ELEVATIONS ON SHEET 6.
- PEDESTAL HEIGHT = PEDESTAL DIMENSION ABOVE BEAM SEAT.
- REMOVAL OF EXISTING CONCRETE = DEPTH OF EXCAVATION INTO SEAT (MAX. 2")
- DIM X = SEE SHIM STACK DETAIL ON SHEET 10
- DIM Y = SEE TYPICAL CONCRETE PEDESTAL DETAIL ON SHEET 10
- DIM E = SEE TYPICAL CONCRETE PEDESTAL DETAIL ON SHEET 10

NOTES ON BEAMS SEAT CONSTRUCTION:

- CLEAN AND ROUGHEN EXISTING BEAM SEAT UNDER PEDESTALS AND SHEAR KEYS.
- S# - EXIST. STRINGER
- G# - PROP. GIRDER
- PROPOSED TOP OF DECK IS TOP OF DECK CONCRETE AT BACK FACE OF BACKWALL
- WHERE EXISTING PEDESTALS MUST BE REMOVED DUE TO INTERFERENCE WITH PROPOSED WORK:
  - EXISTING PEDESTALS TO BE REMOVED SHALL BE CUTOFF FLUSH TO THE TOP OF THE EXISTING BEAM SEAT.
  - REMAINING EXPOSED REINFORCEMENT AND ANCHOR BOLTS THAT ARE NOT BEING ENCASED BY ANY PROPOSED CONCRETE SHALL BE REPAIRED BY EXCAVATING DOWN AND CUTTING OFF THE VERTICAL STEEL EXTENDING INTO THE PEDESTAL A MINIMUM OF 2" BELOW THE TOP FACE OF EXISTING CONCRETE. THE EXCAVATED HOLE SHALL BE PATCHED USING CEMENTITIOUS MORTAR.
  - THE TOP SURFACE OF THE CONCRETE TO REMAIN BEYOND THE PROPOSED WORK SHALL BE MADE TROWEL SMOOTH BY APPLICATION OF A THIN LAYER OF CEMENTITIOUS MORTAR FOR PATCHING.

LEGEND

BASED UPON FIELD SURVEY PERFORMED ON 3/1/11 THROUGH 3/3/11

- = SPALLED CONCRETE - SEE SHEET 13 FOR SIZE BY REFERENCE NUMBER
- = DELAMINATED CONCRETE - SEE SHEET 13 FOR SIZE BY REFERENCE NUMBER
- = CRACK  
ALL CRACKS ARE HAIRLINE (HL) X FULL HEIGHT (F.H.) UNLESS NOTED OTHERWISE
- C1 - HL X 3'L
- C2 - HL X 1.5'L
- C3 - HL X 1'L

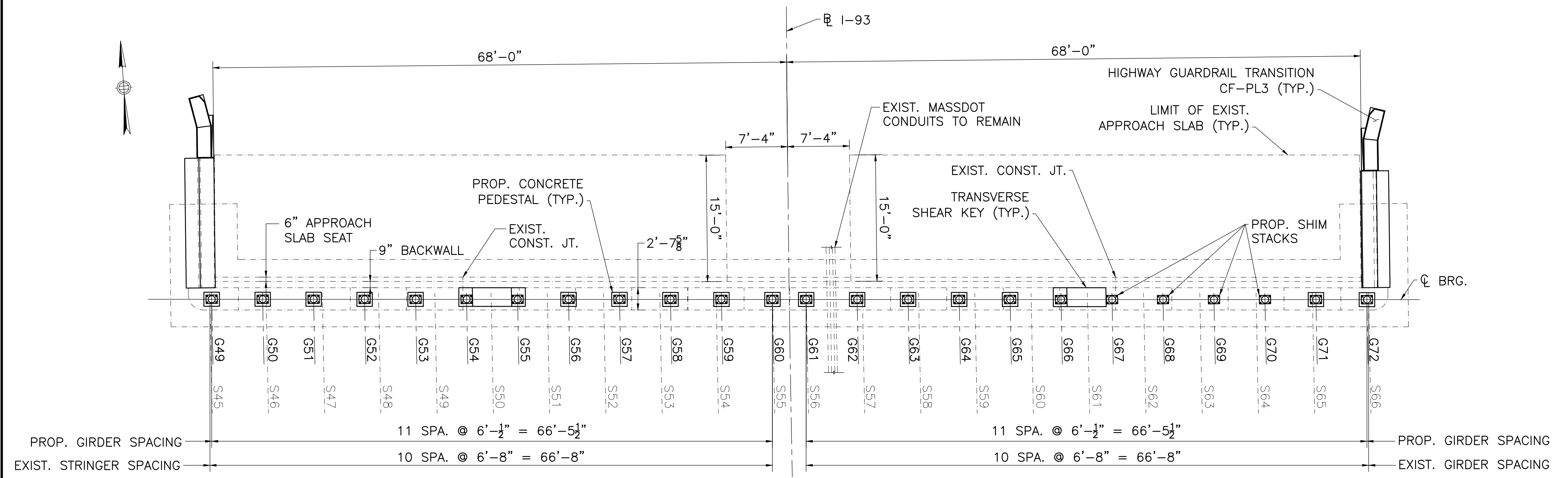
| DATE         | DESCRIPTION                    |
|--------------|--------------------------------|
| MAY 18, 2011 | ISSUED FOR CONSTRUCTION        |
|              | USE ONLY PRINTS OF LATEST DATE |



|                                 |       | NORTH ABUTMENT - BEAM SEAT ELEVATIONS |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| BEAM NO.                        | UNITS | G49                                   | G50   | G51   | G52   | G53   | G54   | G55   | G56   | G57   | G58   | G59   | G60   | G61   | G62   | G63   | G64   | G65   | G66   | G67*  | G68   | G69   | G70   | G71   | G72   |
| PROPOSED BOT OF BM              | FT    | 39.40                                 | 39.60 | 39.67 | 39.43 | 39.19 | 38.94 | 38.70 | 38.46 | 38.22 | 37.98 | 37.74 | 37.50 | 38.13 | 38.13 | 37.88 | 37.64 | 37.40 | 37.16 | 36.92 | 36.68 | 36.44 | 36.20 | 36.38 | 36.73 |
| EXISTING BEAM SEAT              | FT    | 38.06                                 | 38.76 | 38.76 | 38.48 | 38.19 | 37.90 | 37.90 | 37.66 | 37.37 | 37.16 | 36.87 | 36.61 | 37.50 | 37.48 | 37.20 | 36.93 | 36.66 | 36.41 | 36.41 | 36.15 | 35.90 | 35.64 | 35.39 | 35.64 |
| STEEL SOLE PLATES               | IN    | 1.50                                  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  | 1.50  |
| STEEL SHIM PLATES, DIM. X       | IN    | 0.50                                  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 0.50  | 2.25  | 2.50  | 2.63  | 2.88  | 0.50  | 0.50  |
| BEARING HEIGHT                  | IN    | 2.31                                  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  | 2.31  |
| PEDESTAL HEIGHT, DIM. Y         | IN    | 11.74                                 | 5.73  | 6.57  | 7.04  | 7.63  | 8.22  | 5.33  | 5.33  | 5.92  | 5.48  | 6.16  | 6.37  | 3.19  | 3.43  | 3.88  | 4.22  | 4.57  | 4.68  | 0.00  | 0.00  | 0.00  | 0.00  | 7.62  | 8.82  |
| REMOVAL OF EXIST. CONC., DIM. E | IN    | 0.00                                  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.81  | 0.57  | 0.12  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| PROP. BEAM SEAT ELEV.           | FT    | 39.04                                 | 39.24 | 39.31 | 39.07 | 38.83 | 38.59 | 38.34 | 38.10 | 37.86 | 37.62 | 37.38 | 37.14 | 37.77 | 37.77 | 37.52 | 37.28 | 37.04 | 36.80 | 36.41 | 36.15 | 35.90 | 35.64 | 36.02 | 36.38 |

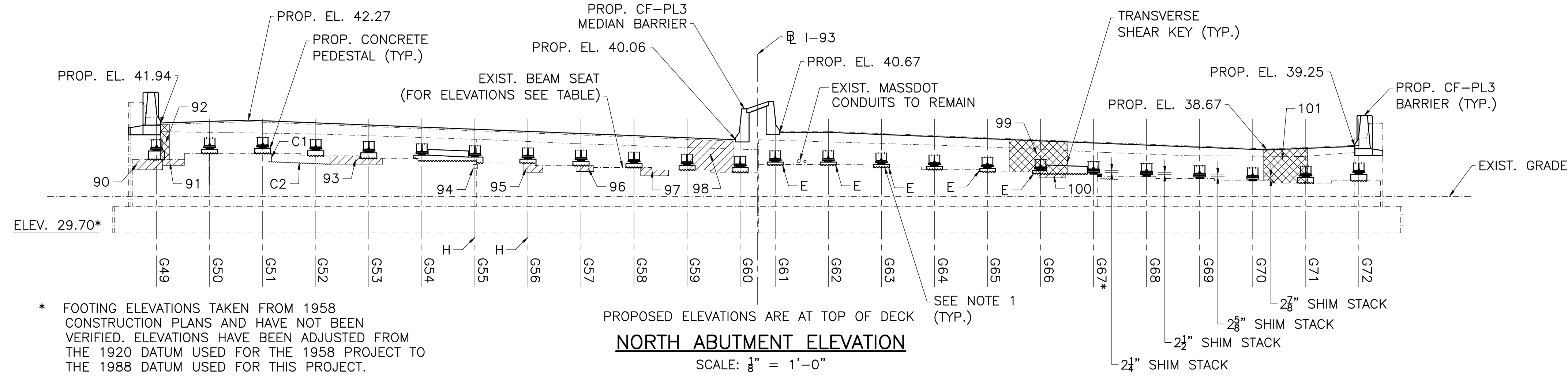
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|-------------------------|------------------------------|-----------|--------------|
| STATE                   | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
| MASS.                   | BRI-093-1 (524)<br>SIP 093-1 | 40        | 60           |
| PROJECT FILE NO. 606255 |                              |           |              |

NORTH ABUTMENT



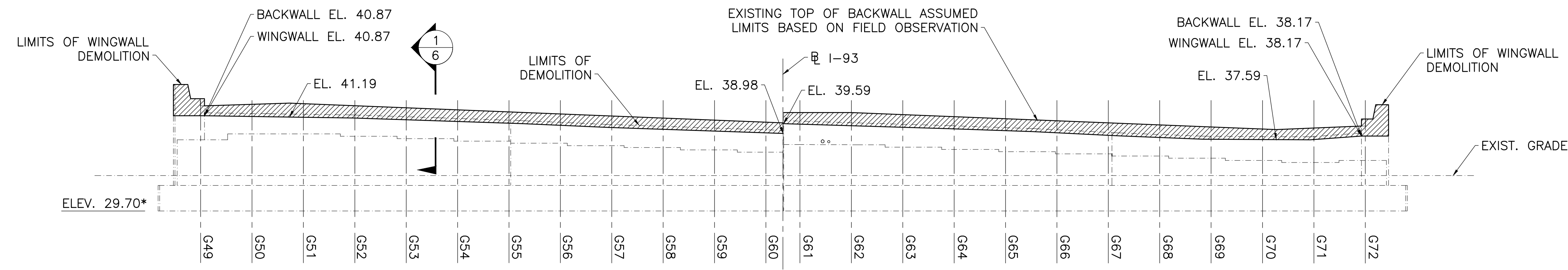
NORTH ABUTMENT PLAN

SCALE: 1/8" = 1'-0"



NORTH ABUTMENT ELEVATION

SCALE: 1/8" = 1'-0"



BACKWALL DEMO ELEVATION

SCALE: 1/8" = 1'-0"

TABLE NOTES:

- SEE NOTES ON BEAM SEAT ELEVATIONS ON SHEET 6.
- PEDESTAL HEIGHT = PEDESTAL DIMENSION ABOVE BEAM SEAT.
- REMOVAL OF EXISTING CONCRETE = DEPTH OF EXCAVATION INTO SEAT (MAX. 2")
- DIM X = SEE SHIM STACK DETAIL ON SHEET 10
- DIM Y = SEE TYPICAL CONCRETE PEDESTAL DETAIL ON SHEET 10
- DIM E = SEE TYPICAL CONCRETE PEDESTAL DETAIL ON SHEET 10
- G67\* - EXISTING BEAM SEAT AT G32 TO BE MODIFIED AS SHOWN ON SHEET 10
- G65 & G66 - PARTIAL EXCAVATION OF ADJACENT STEP REQUIRED

NOTES ON BEAMS SEAT CONSTRUCTION:

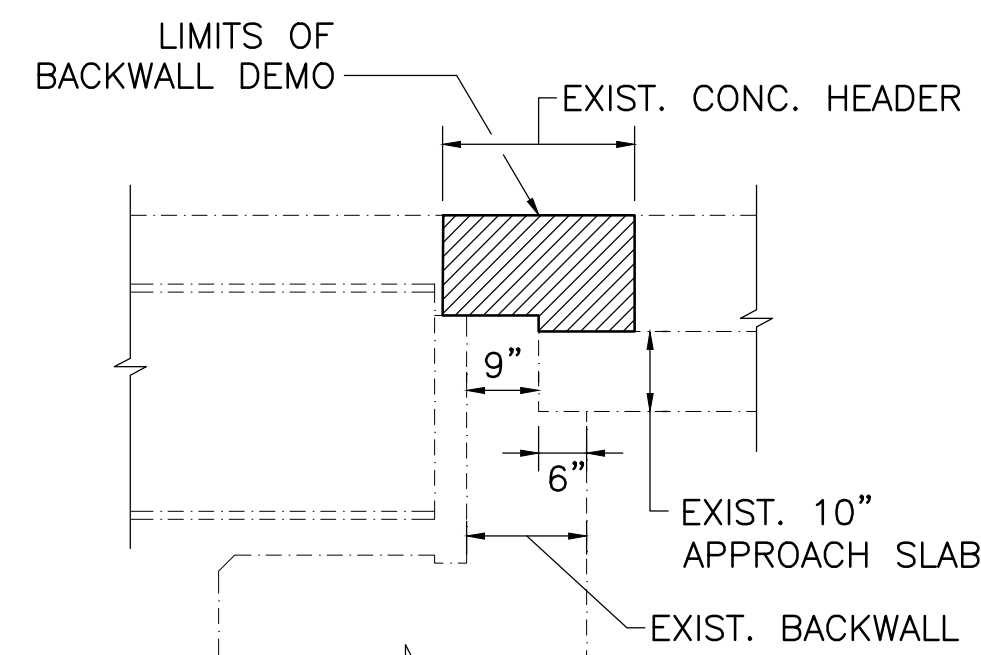
- CLEAN AND ROUGHEN EXISTING BEAM SEAT UNDER PEDESTALS AND SHEAR KEYS.
- E - REMOVAL OF EXISTING CONCRETE, EXCAVATE BEAM SEAT TO PROVIDE MIN. 4" PEDESTAL.
- H - DUE TO PROXIMITY OF EXISTING BEAM SEAT STEP, THE ELEVATION OF THE HIGHER BEAM SEAT WAS USED.
- S# - EXIST. STRINGER
- G# - PROP. GIRDER
- PROPOSED TOP OF DECK IS TOP OF DECK CONCRETE AT BACK FACE OF BACKWALL
- WHERE EXISTING PEDESTALS MUST BE REMOVED DUE TO INTERFERENCE WITH PROPOSED WORK:
  - EXISTING PEDESTALS TO BE REMOVED SHALL BE CUTOFF FLUSH TO THE TOP OF THE EXISTING BEAM SEAT.
  - REMAINING EXPOSED REINFORCEMENT AND ANCHOR BOLTS THAT ARE NOT BEING ENCASED BY ANY PROPOSED CONCRETE SHALL BE REPAIRED BY EXCAVATING DOWN AND CUTTING OFF THE VERTICAL STEEL EXTENDING INTO THE PEDESTAL A MINIMUM OF 2" BELOW THE TOP FACE OF EXISTING CONCRETE. THE EXCAVATED HOLE SHALL BE PATCHED USING CEMENTITIOUS MORTAR.
  - THE TOP SURFACE OF THE CONCRETE TO REMAIN BEYOND THE PROPOSED WORK SHALL BE MADE TROWEL SMOOTH BY APPLICATION OF A THIN LAYER OF CEMENTITIOUS MORTAR FOR PATCHING.

LEGEND

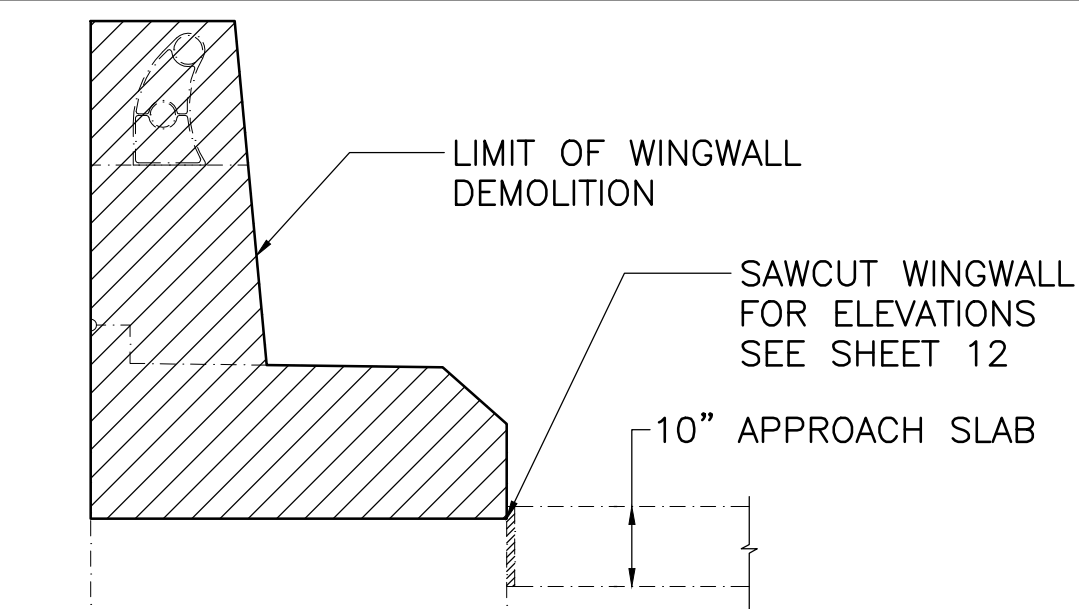
BASED UPON FIELD SURVEY PERFORMED ON 3/1/11 THROUGH 3/3/11

- [Symbol] = SPALLED CONCRETE - SEE SHEET 13 FOR SIZE BY REFERENCE NUMBER
- [Symbol] = DELAMINATED CONCRETE - SEE SHEET 13 FOR SIZE BY REFERENCE NUMBER
- [Symbol] = CRACK
- ALL CRACKS ARE HAIRLINE (HL) X FULL HEIGHT (F.H.) UNLESS NOTED OTHERWISE
- C1 - 1/4" X 1'L
- C2 - 3/8" X 7'L
- C3 - 3/8" X 2'L

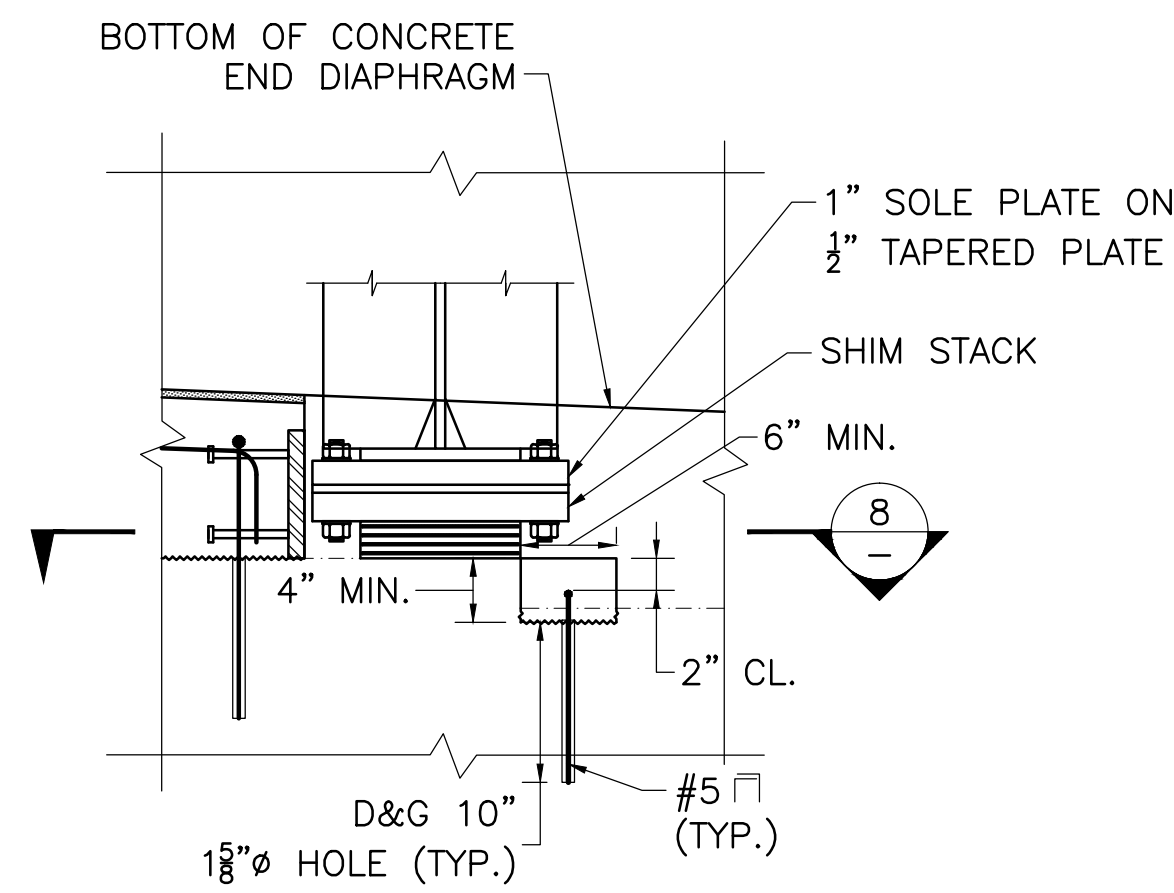
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|--------------------------------|-------------------------|
| MAY 18, 2011                   | ISSUED FOR CONSTRUCTION |
| DATE                           | DESCRIPTION             |
| USE ONLY PRINTS OF LATEST DATE |                         |



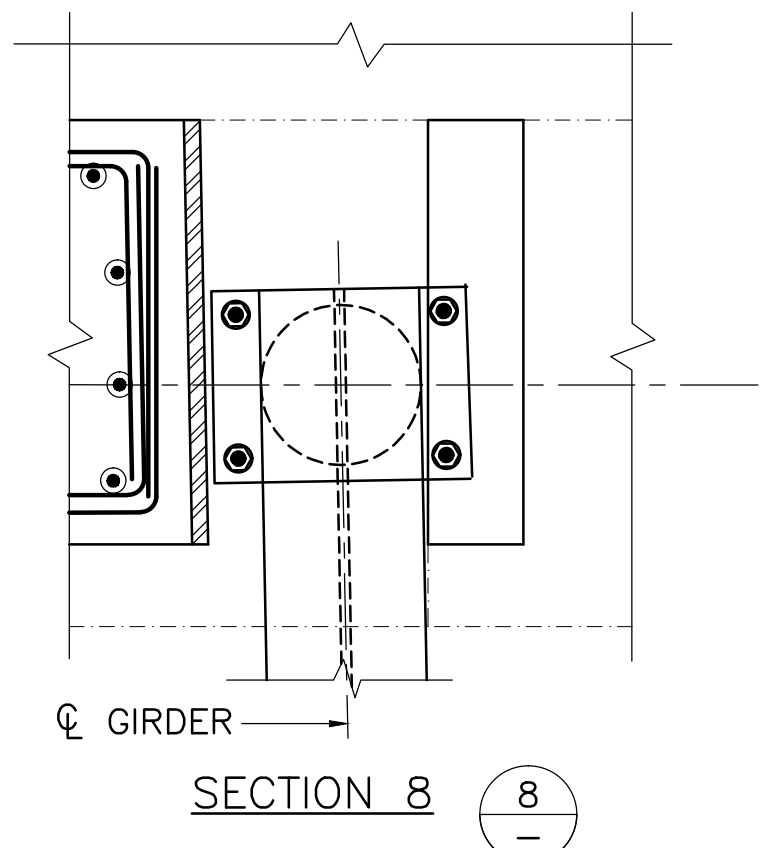
**DEMO SECTION**  
SCALE: 1/2" = 1'-0"



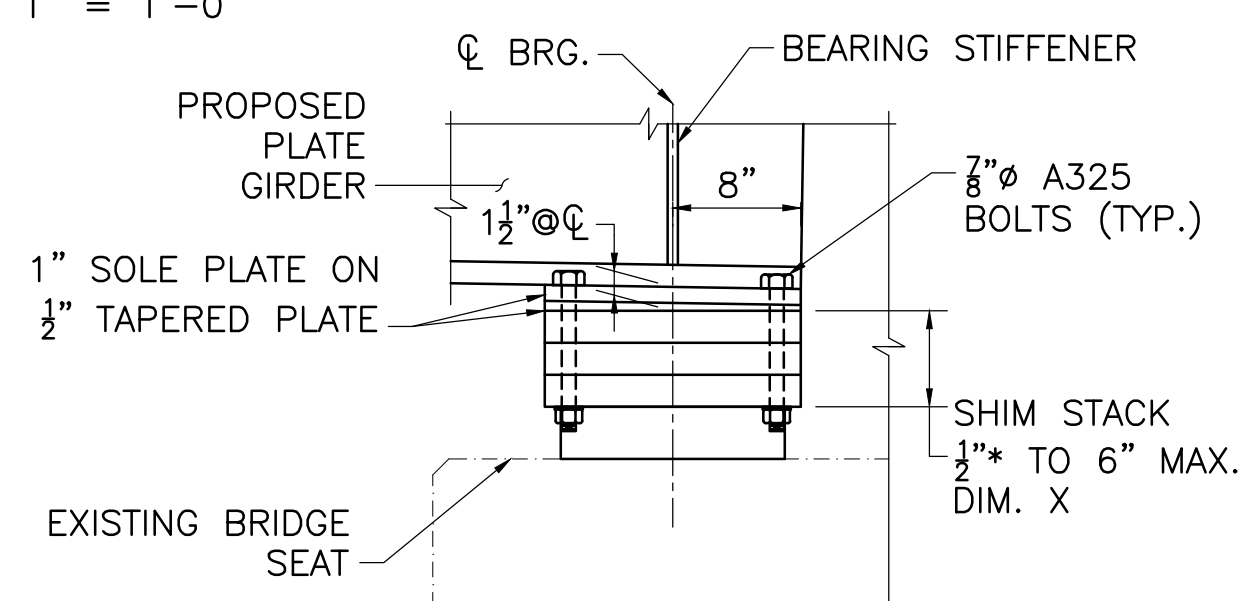
**WINGWALL DEMO SECTION**  
SCALE: 1/2" = 1'-0"



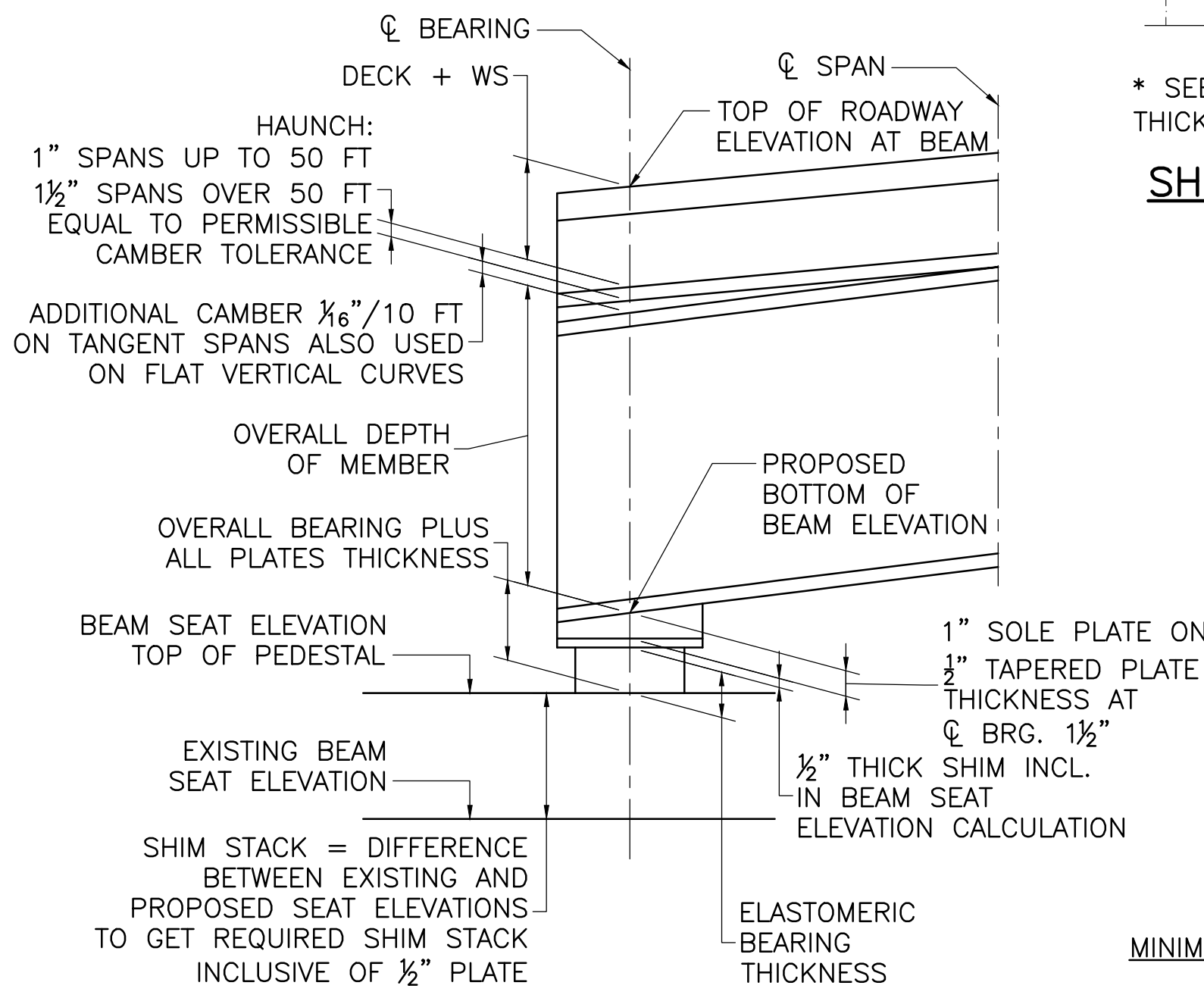
**G67 BEAM SEAT MODIFICATION AT NORTH ABUTMENT DETAIL**  
SCALE 1" = 1'-0"



**SECTION 8**

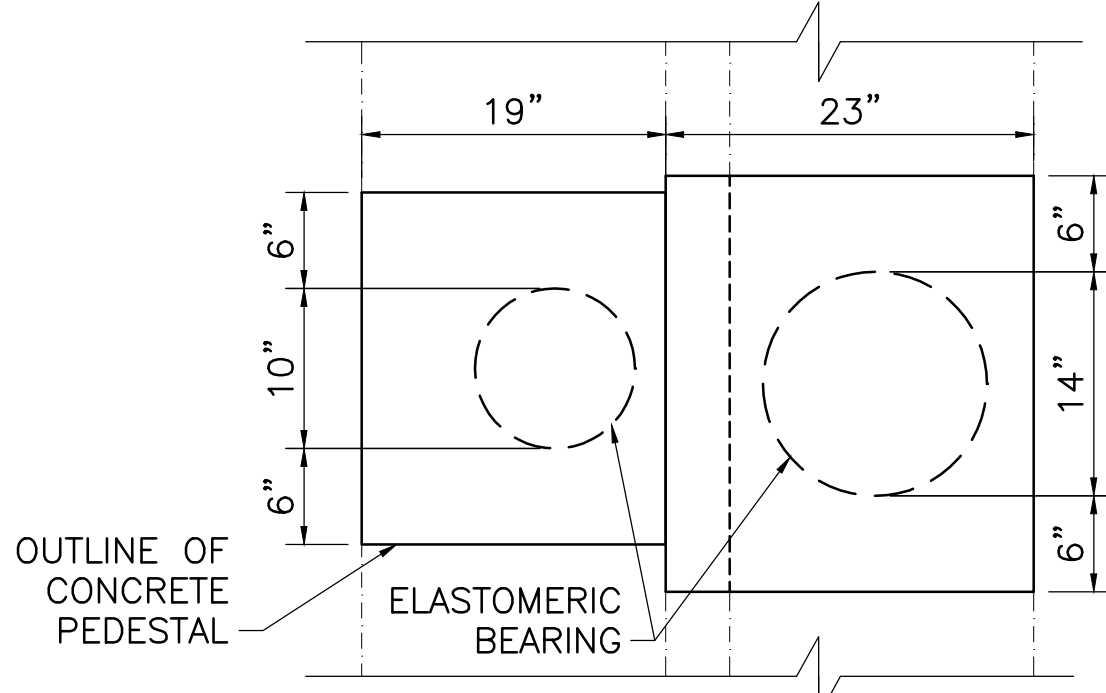


**SHIM STACK DETAIL**  
SCALE 1" = 1'-0"

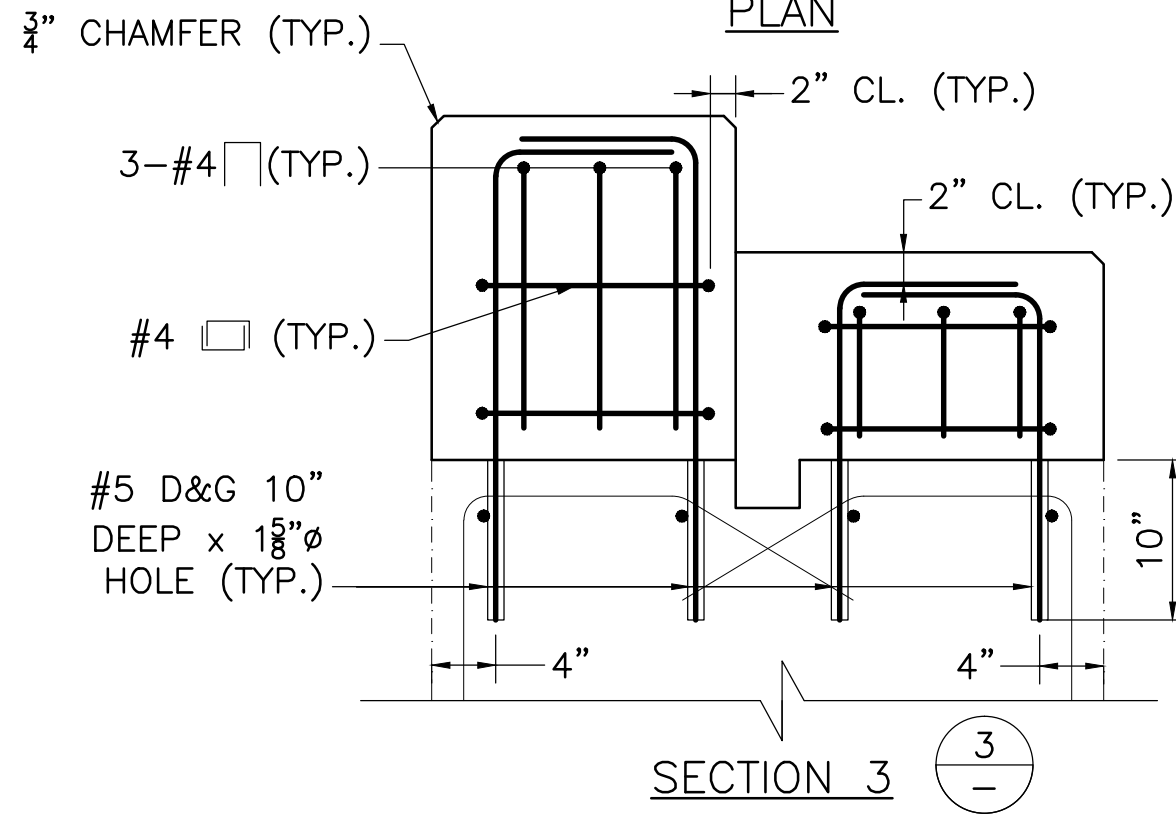


**CALCULATION OF BEAM SEAT ELEVATIONS**  
NO SCALE

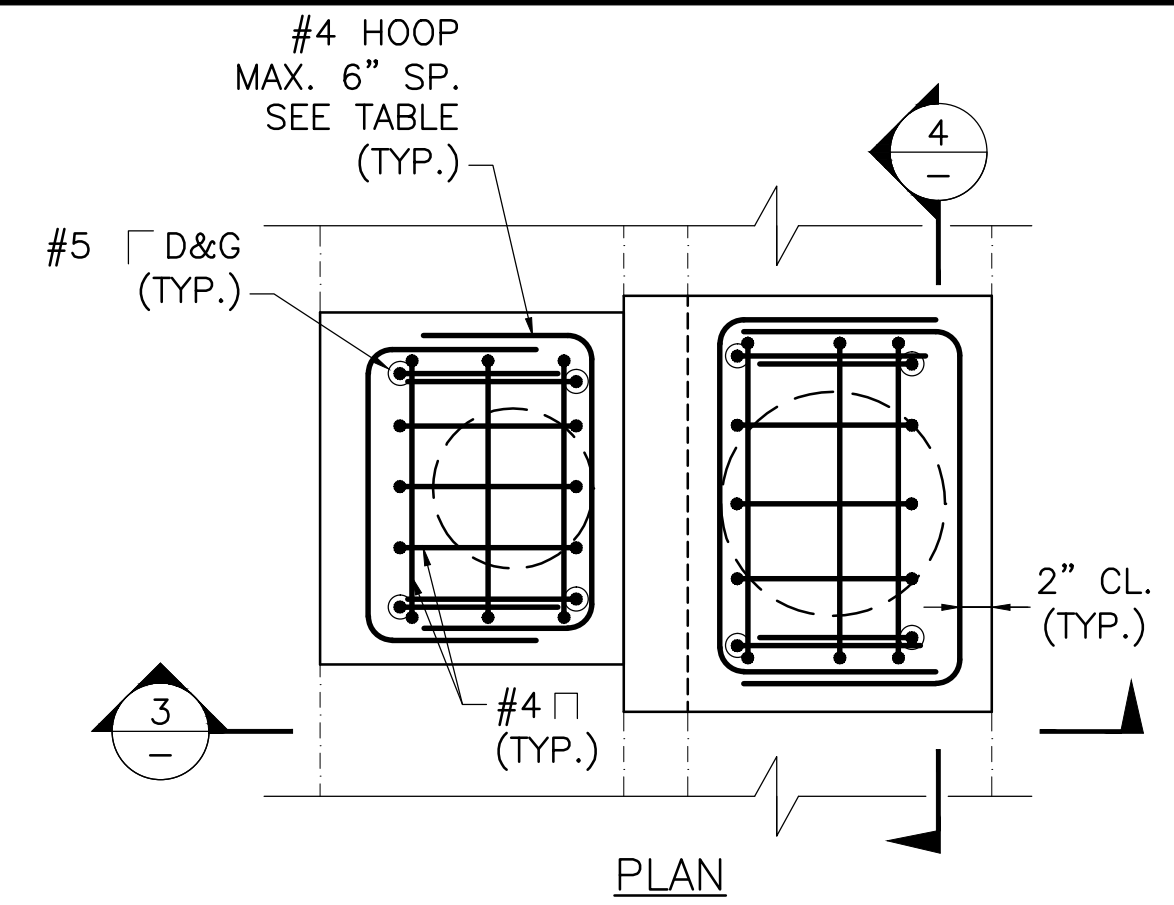
**MINIMUM SHIM PLATE THICKNESS NOTE:**  
MINIMUM SHIM THICKNESS OF 3/8" IS ALLOWED IN THE EVENT THAT FIELD VERIFICATION OF THE NEW PEDESTALS REQUIRES LESS THAN THE TYPICAL 1/2" SHIM PLATE.



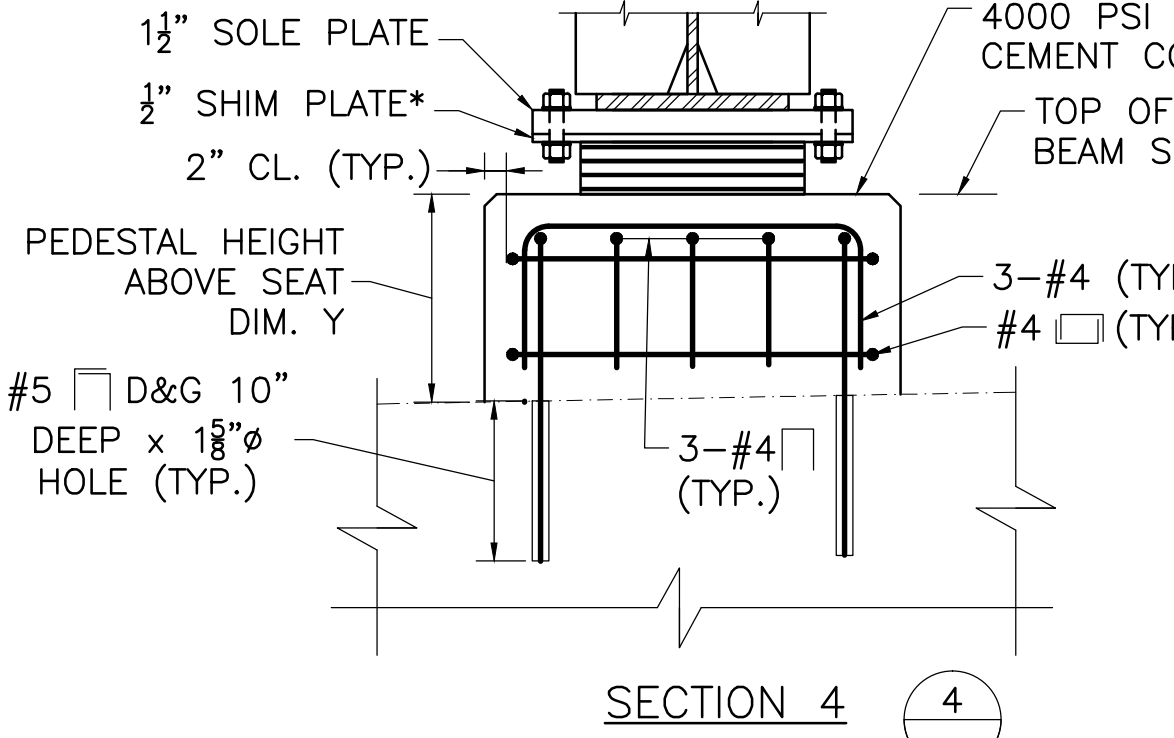
REINFORCEMENT NOT SHOWN FOR CLARITY PLAN



**SECTION 3**



PLAN



**SECTION 4**

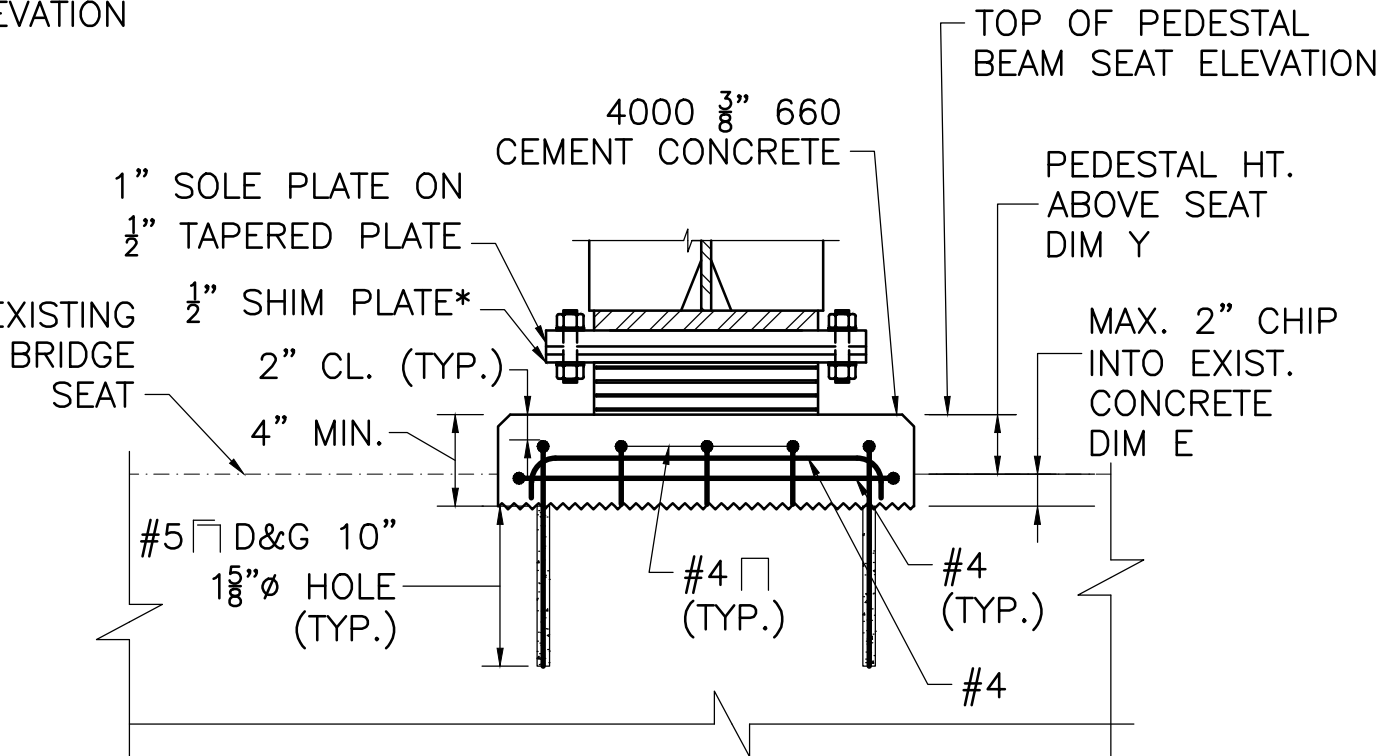
**SOUTH PIER PEDESTAL DETAILS**  
SCALE: 1" = 1'-0"

\* SEE MINIMUM SHIM PLATE THICKNESS NOTE (THIS SHEET)

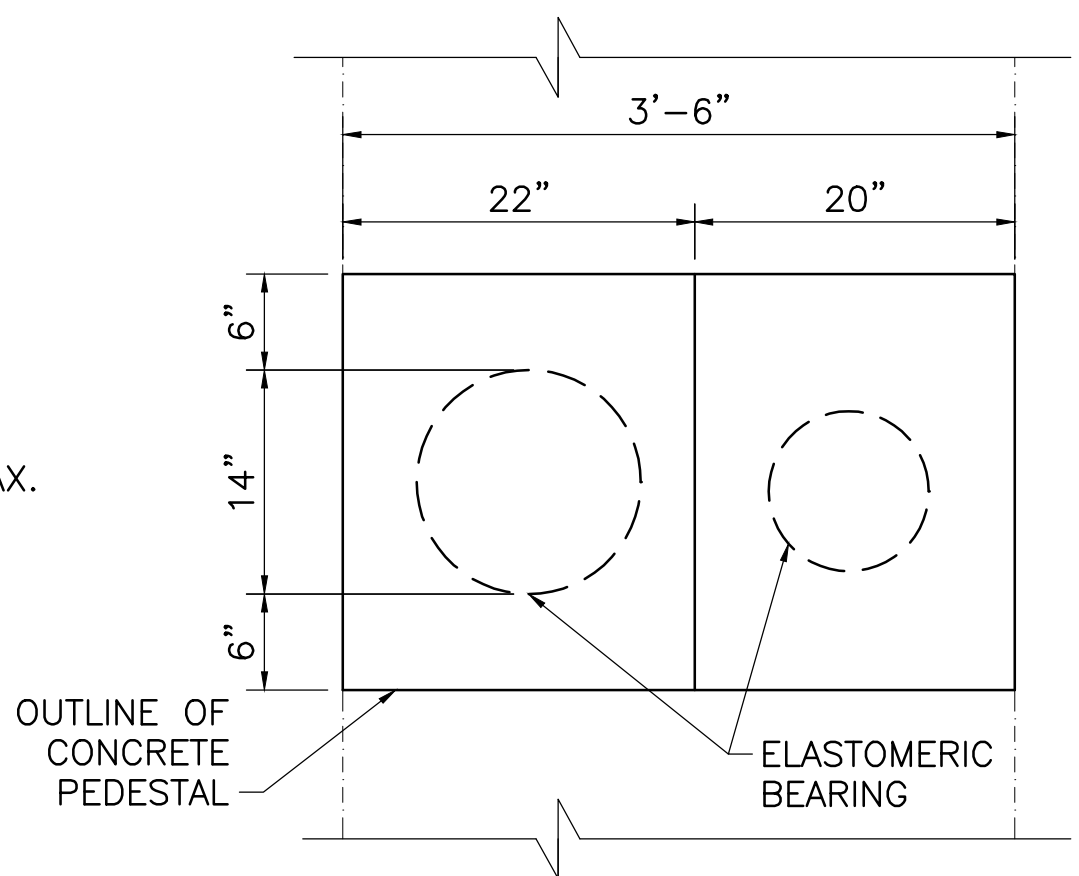
| PEDESTAL HT. (IN.) | NO. OF #4 HOOPS |
|--------------------|-----------------|
| 0-8                | 1               |
| 8-14               | 2               |
| 14-20              | 3               |
| 20-26              | 4               |
| 26-32              | 5               |
| 32-38              | 6               |

HOOPS SET AT MAX. 6" VERT. SPACING MIN. 1 1/2" CL. AROUND FOR CONCRETE PLACEMENT

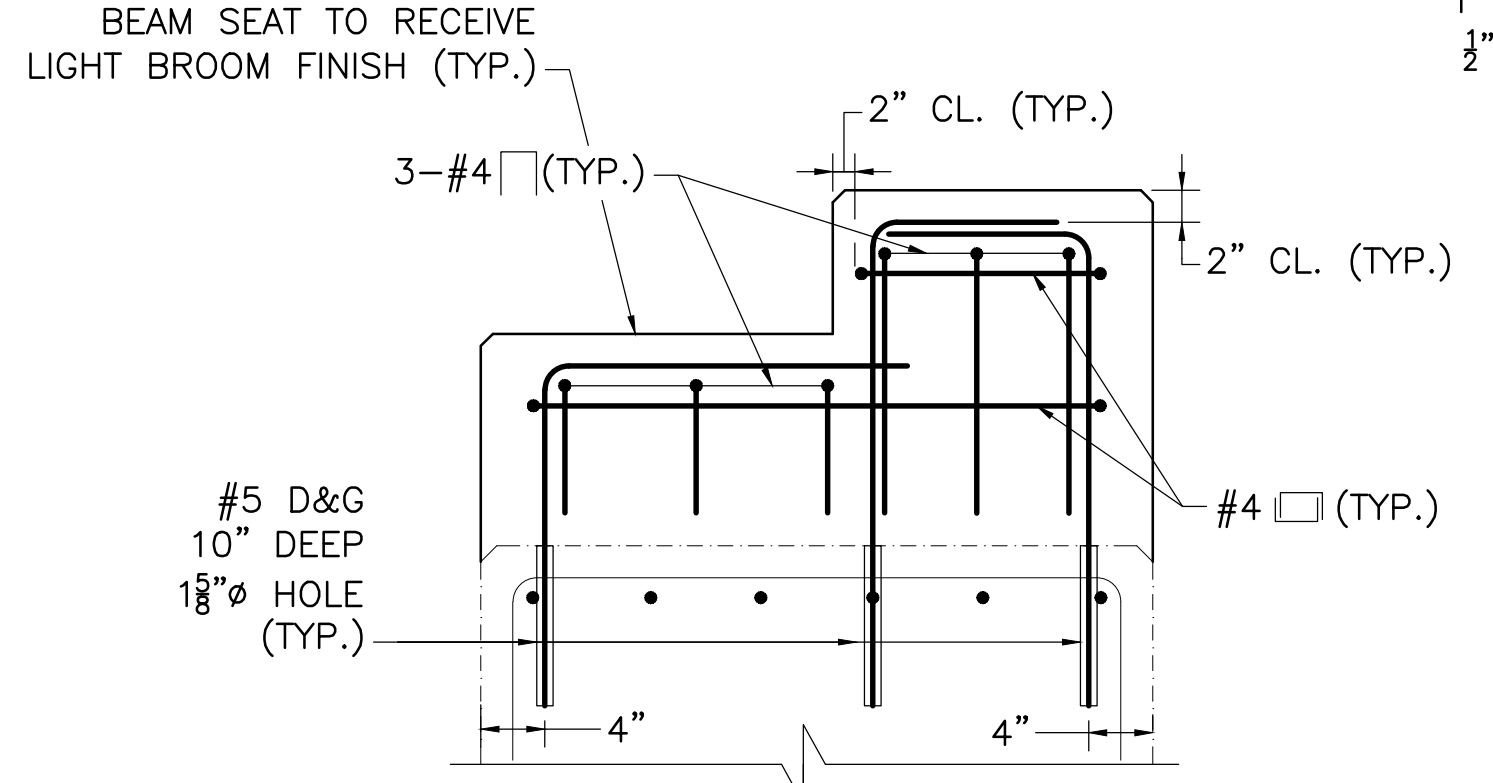
THE MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE PEDESTALS BEFORE DEAD AND LIVE LOAD MAY BE PERMITTED ON THE BRIDGE SHALL BE FOUND TO EXCEED:  
FOR 14" DIAMETER BEARINGS f'c = 1584 PSI  
FOR 10" DIAMETER BEARINGS f'c = 1908 PSI



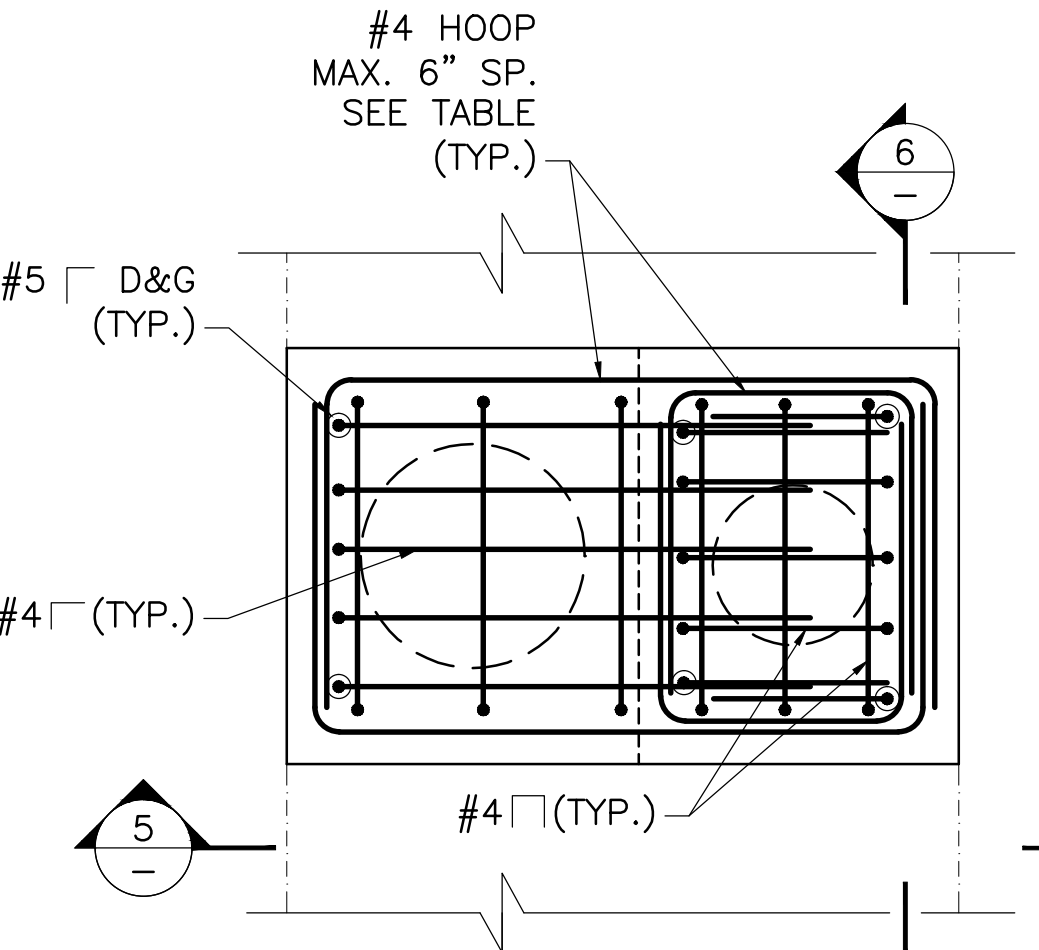
**SECTION 7**



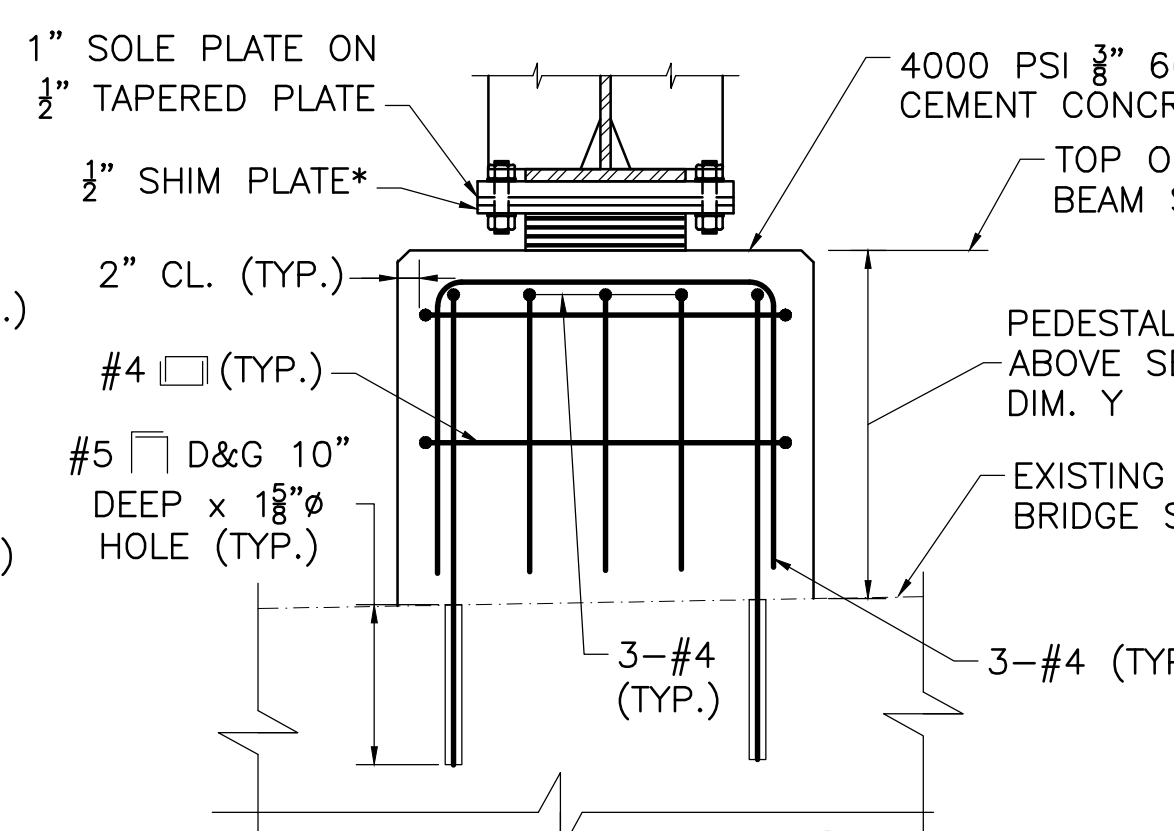
REINFORCEMENT NOT SHOWN FOR CLARITY PLAN



**SECTION 5**



PLAN

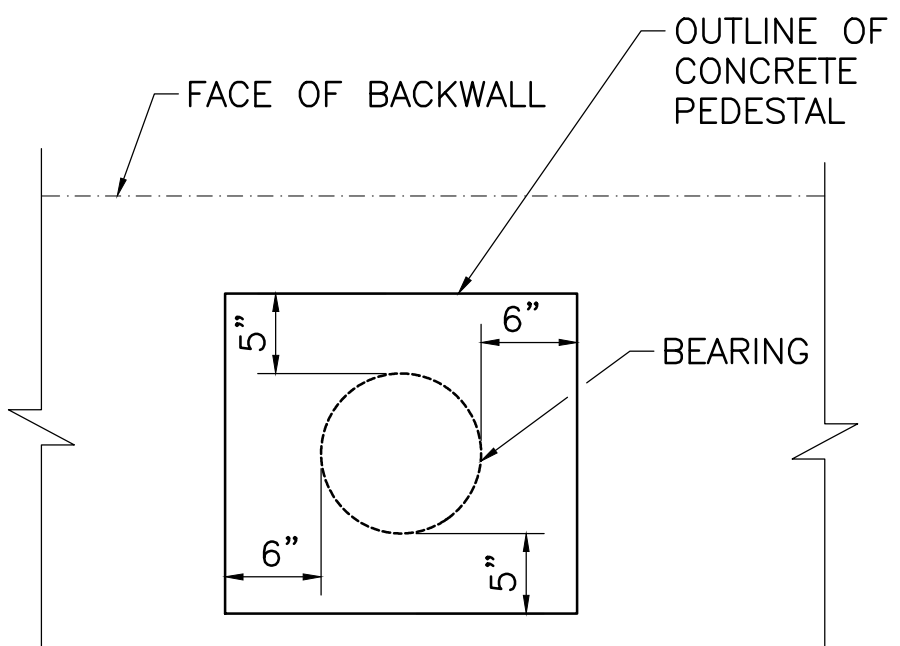


**SECTION 6**

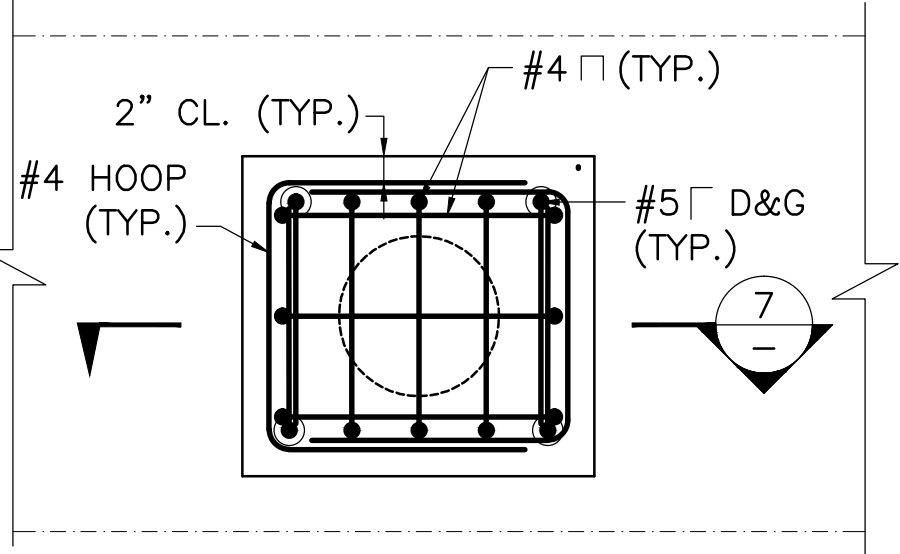
**NORTH PIER PEDESTAL DETAILS**  
SCALE: 1" = 1'-0"

\* SEE MINIMUM SHIM PLATE THICKNESS NOTE (THIS SHEET)

SEE SHEET 2 FOR DRILLING AND GROUTING NOTES



REINFORCEMENT NOT SHOWN FOR CLARITY PLAN



PLAN

**CONCRETE PEDESTAL AT ABUTMENTS**  
SCALE: 1" = 1'-0"

| STATE | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
|-------|------------------------------|-----------|--------------|
| MASS. | BRI-093-1 (524)<br>SIP 093-1 | 41        | 60           |

PROJECT FILE NO. 606255  
**SUBSTRUCTURE DETAILS**

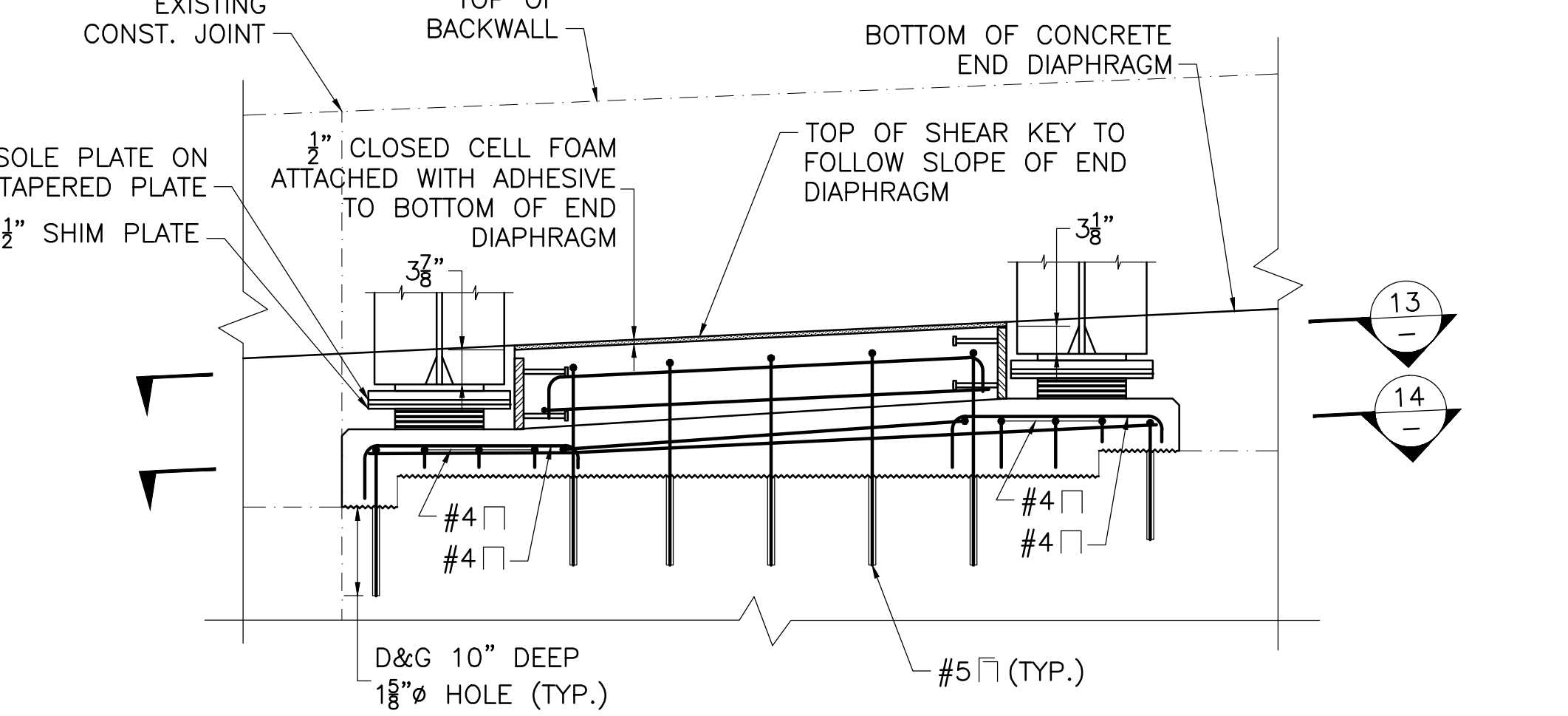
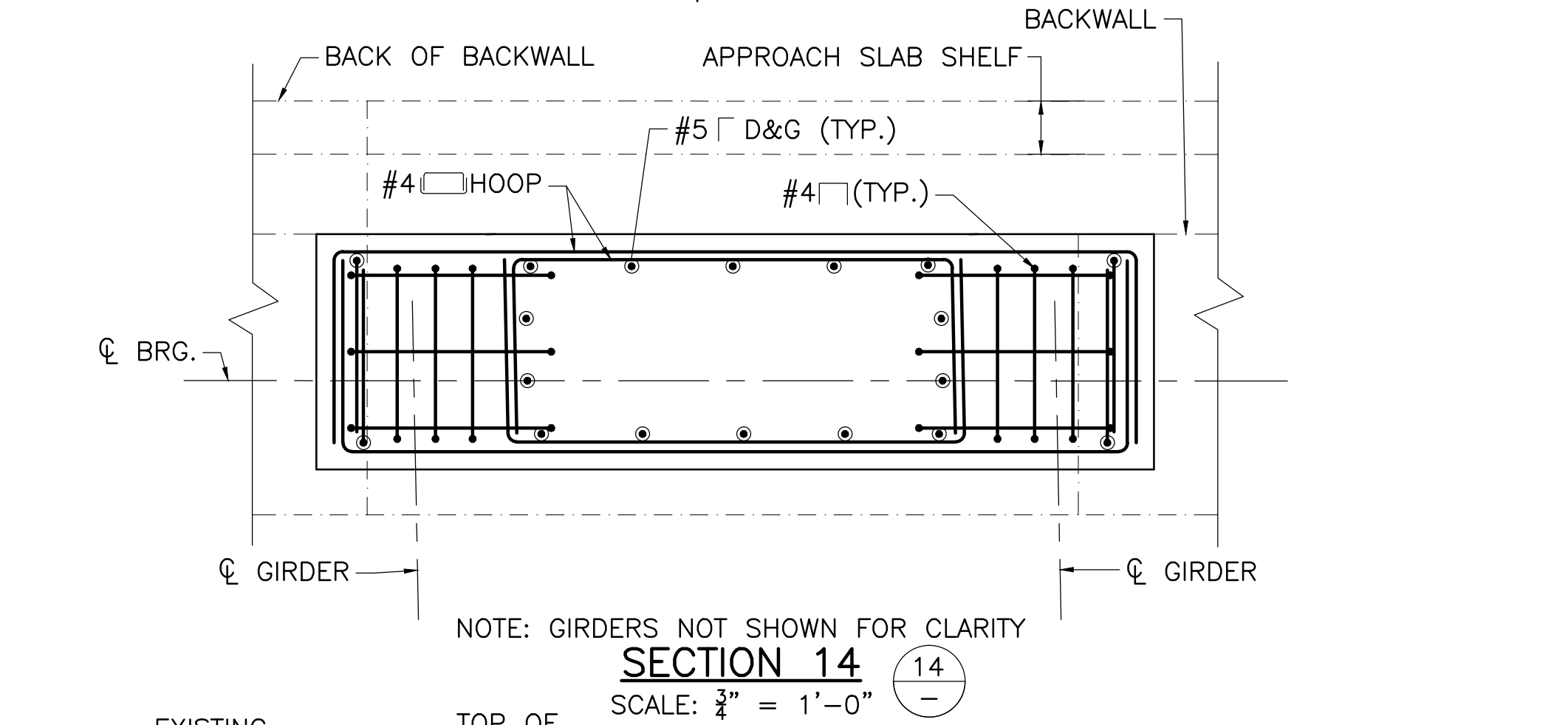
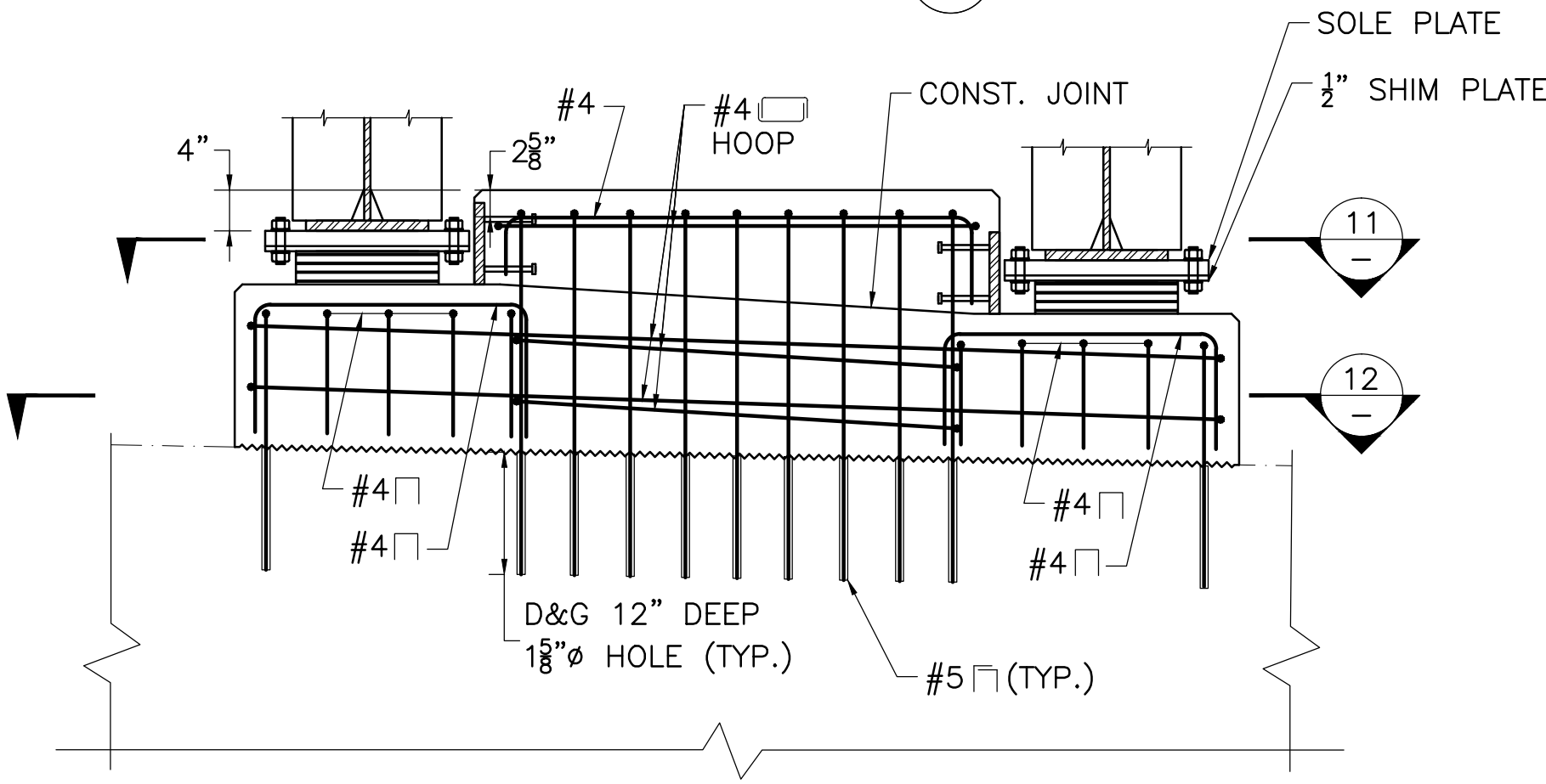
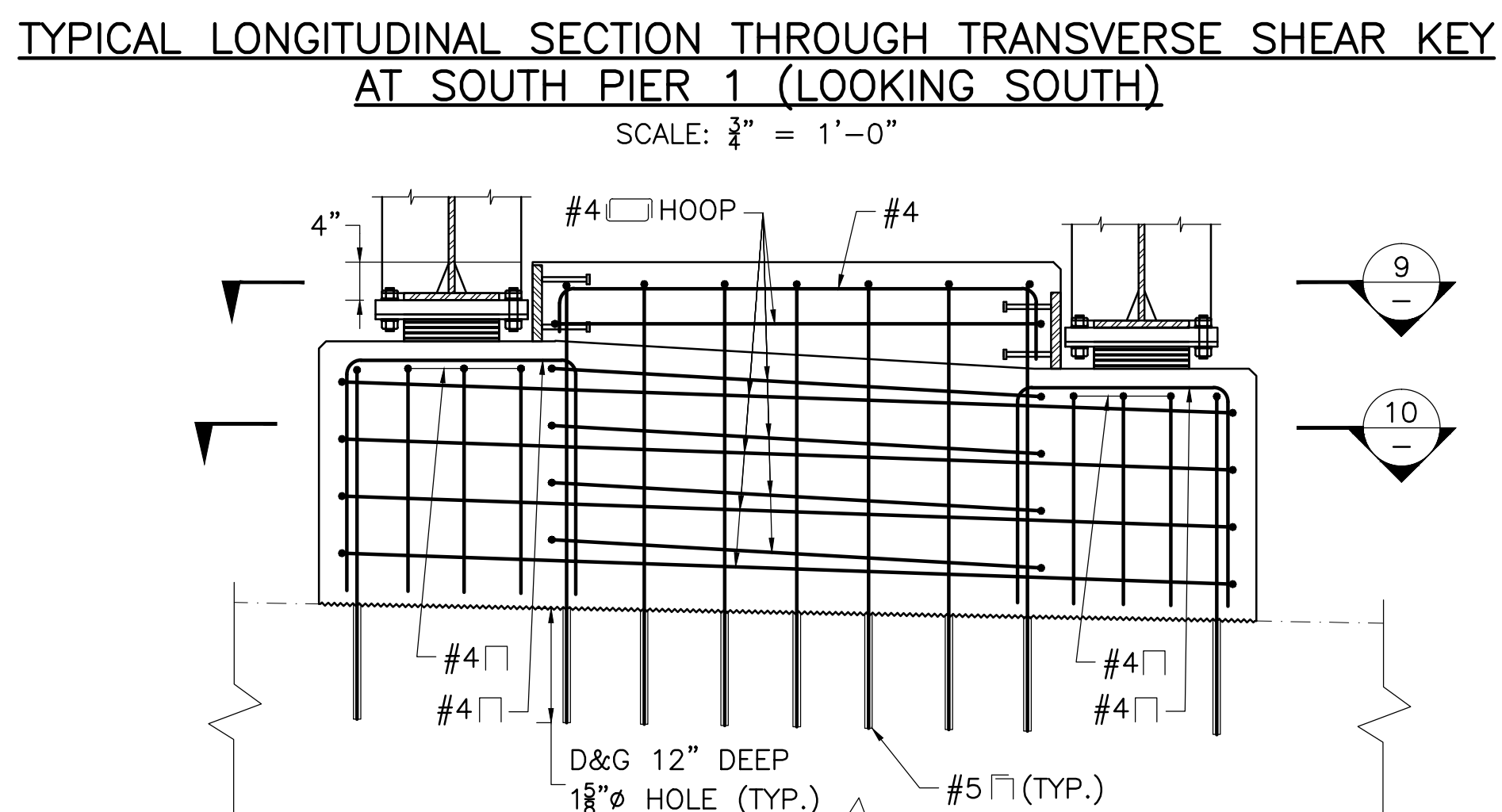
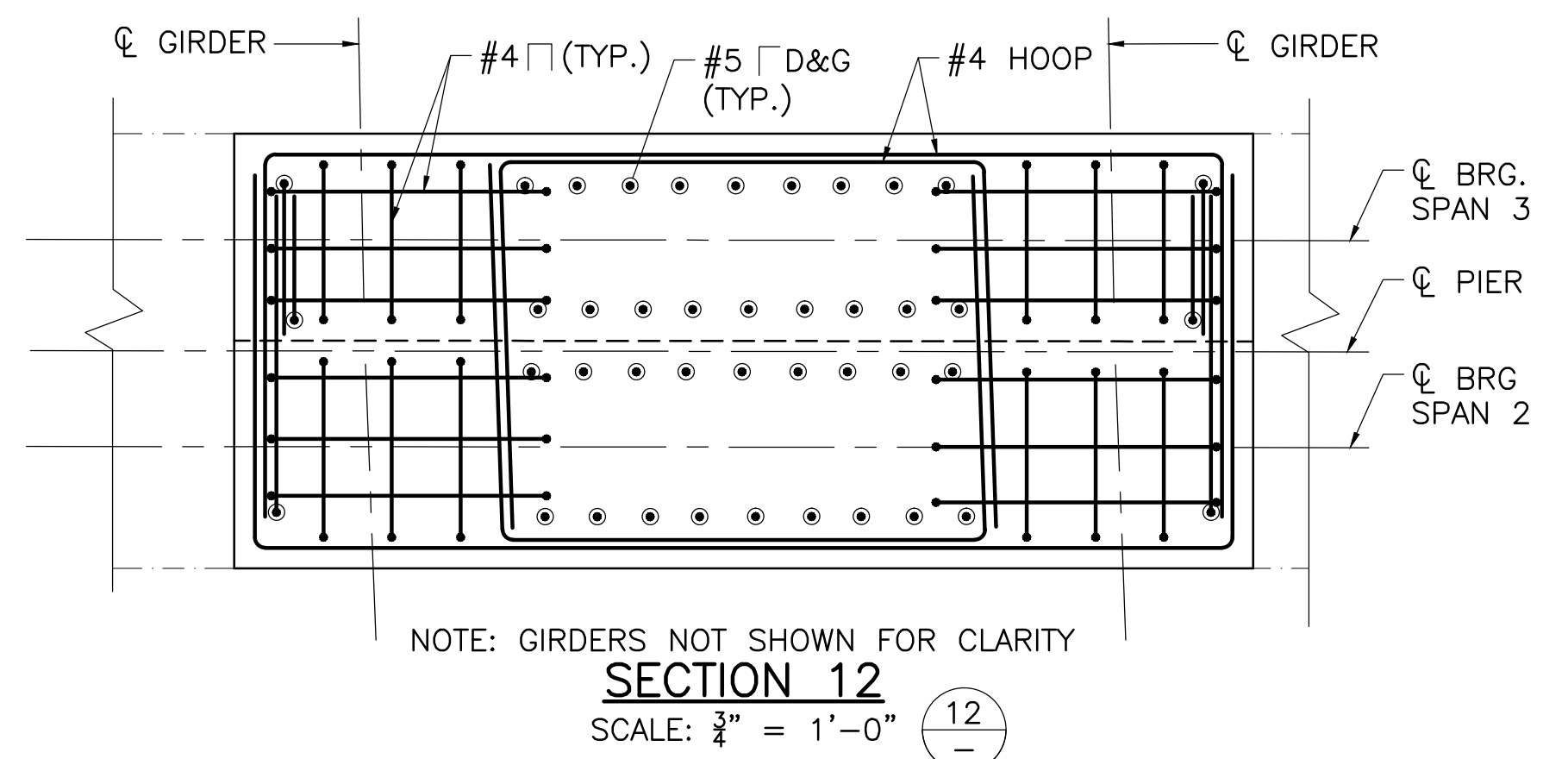
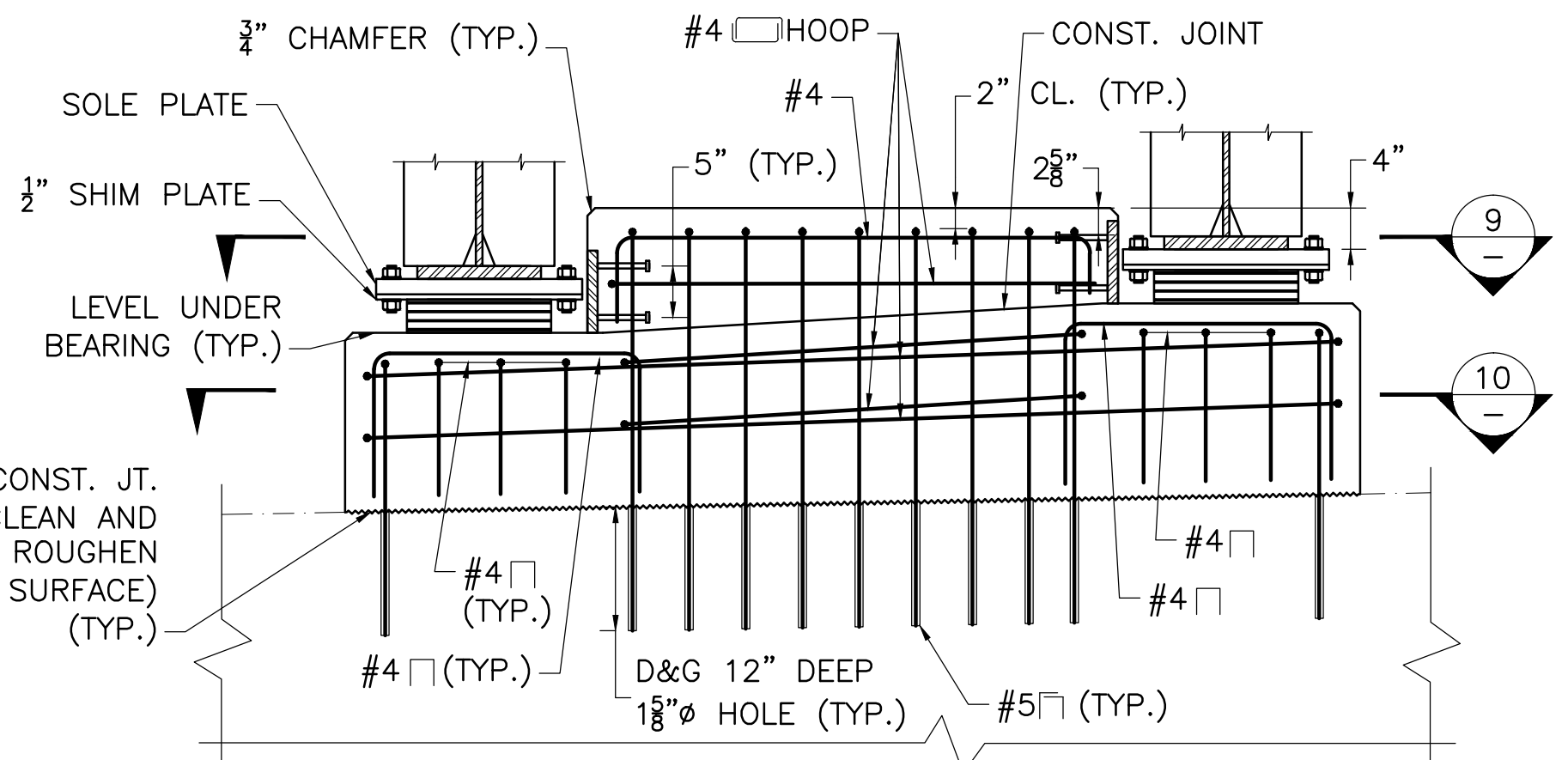
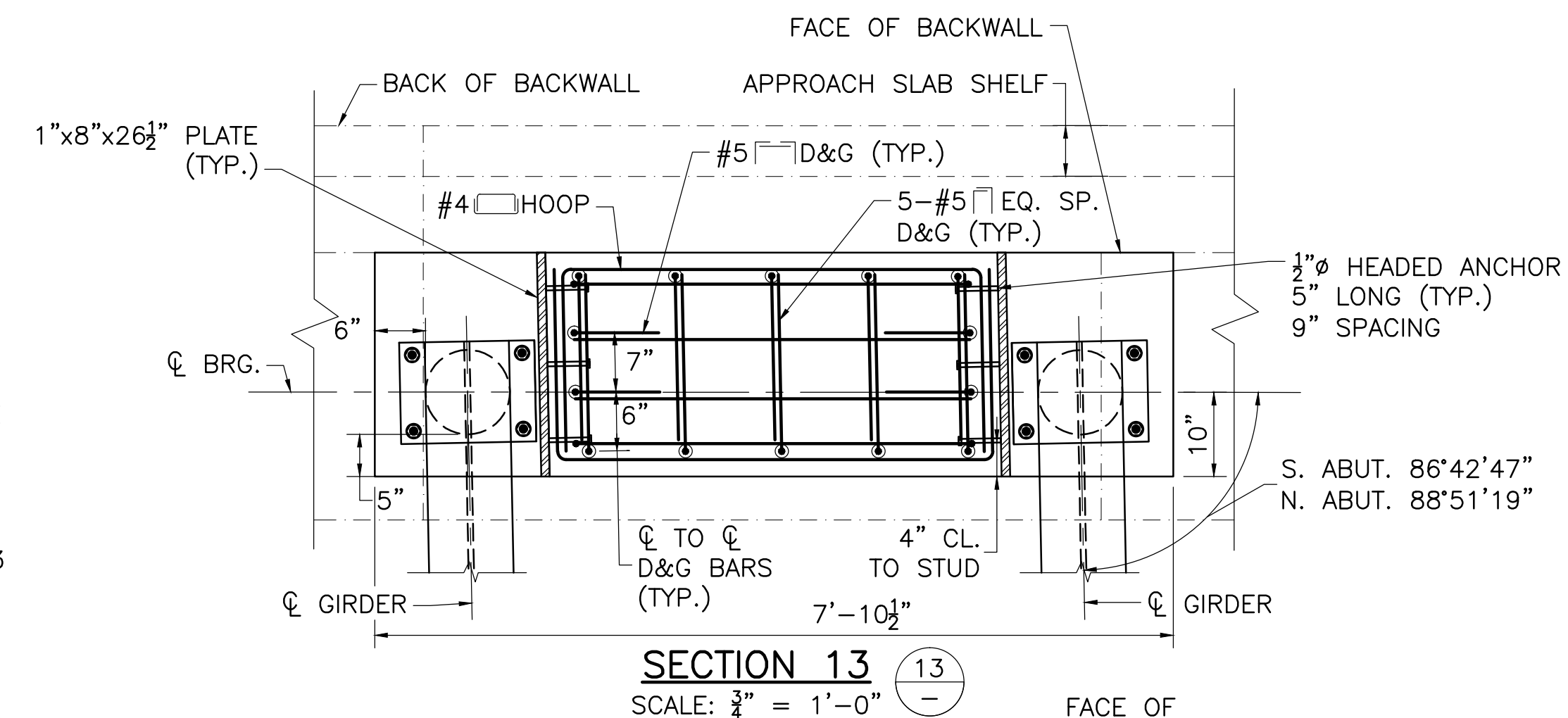
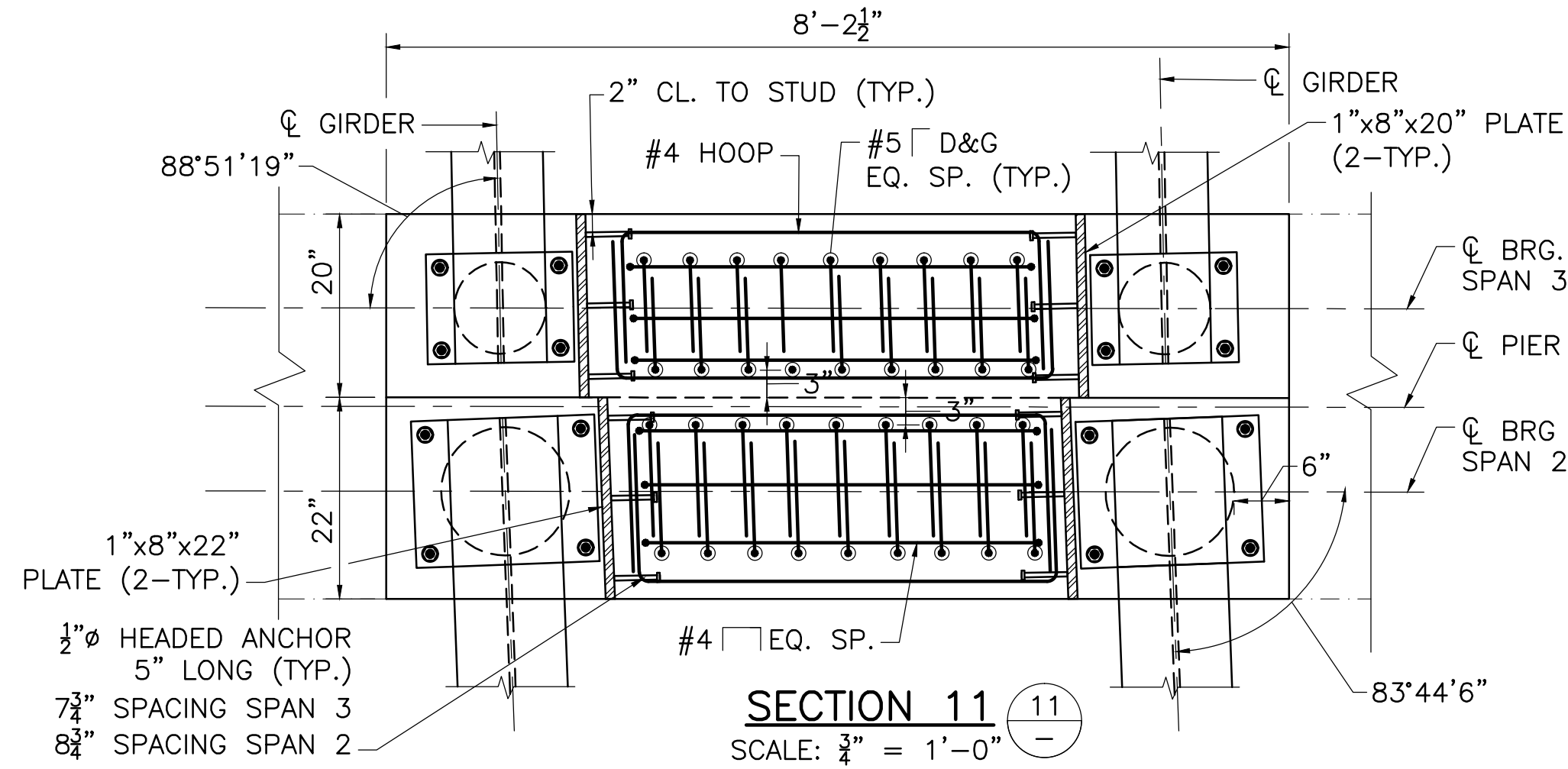
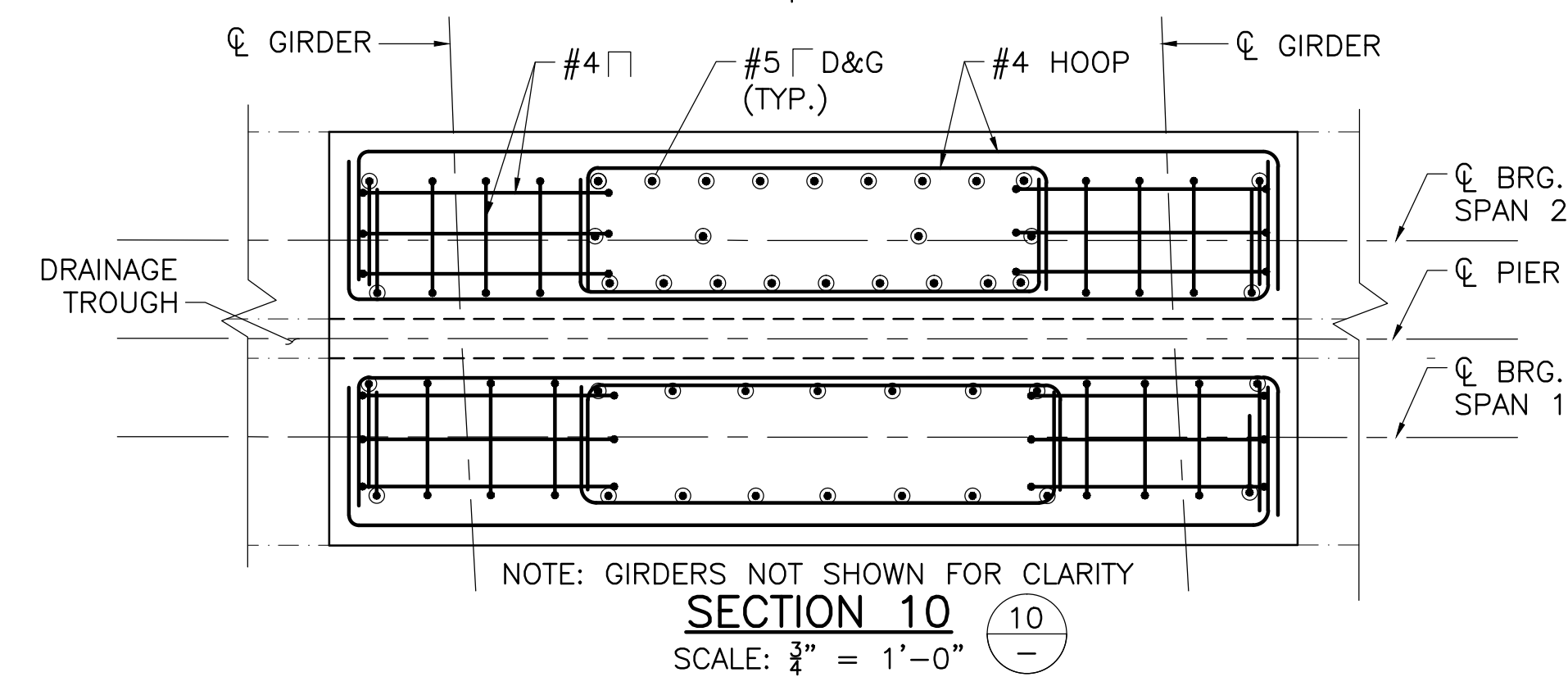
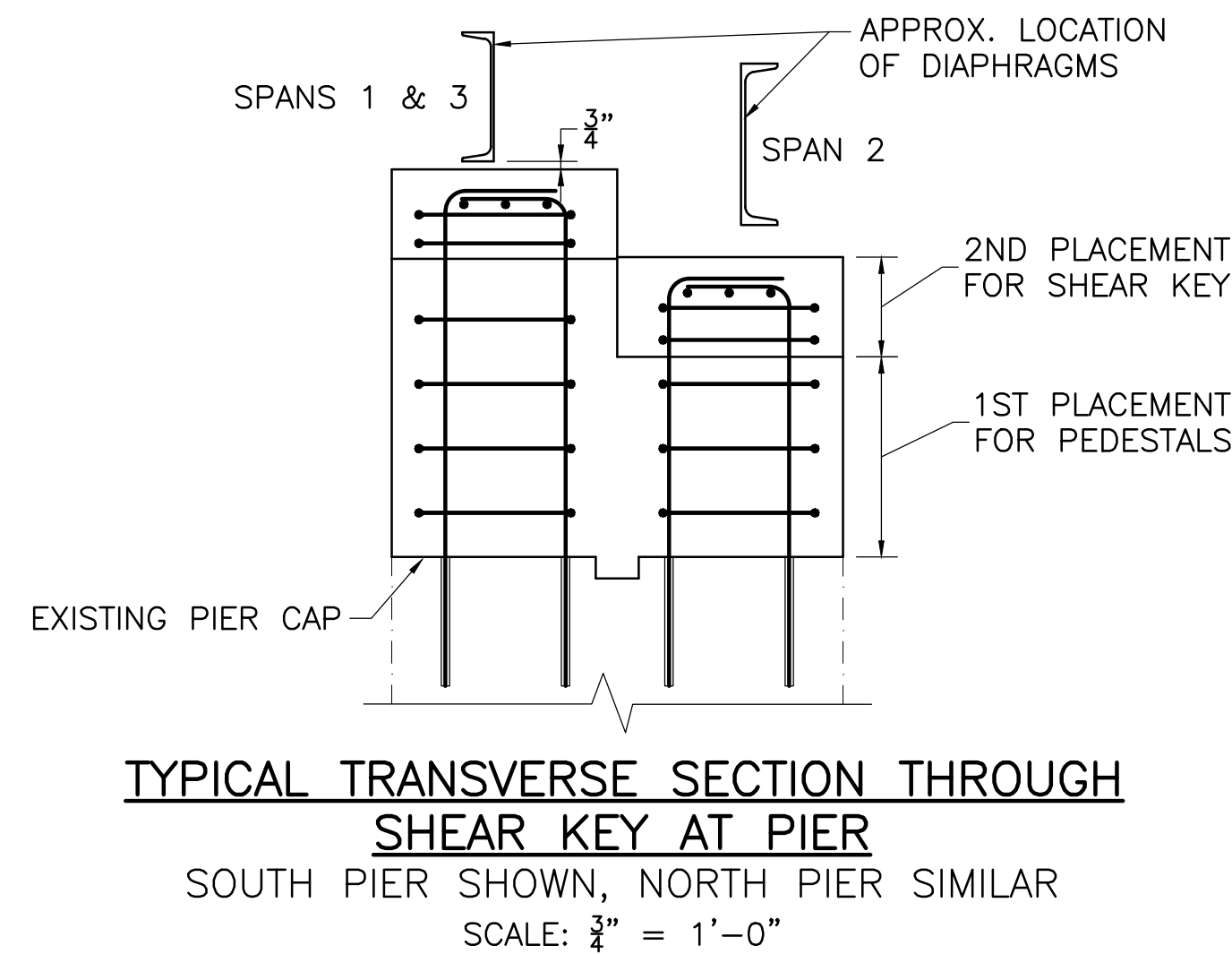
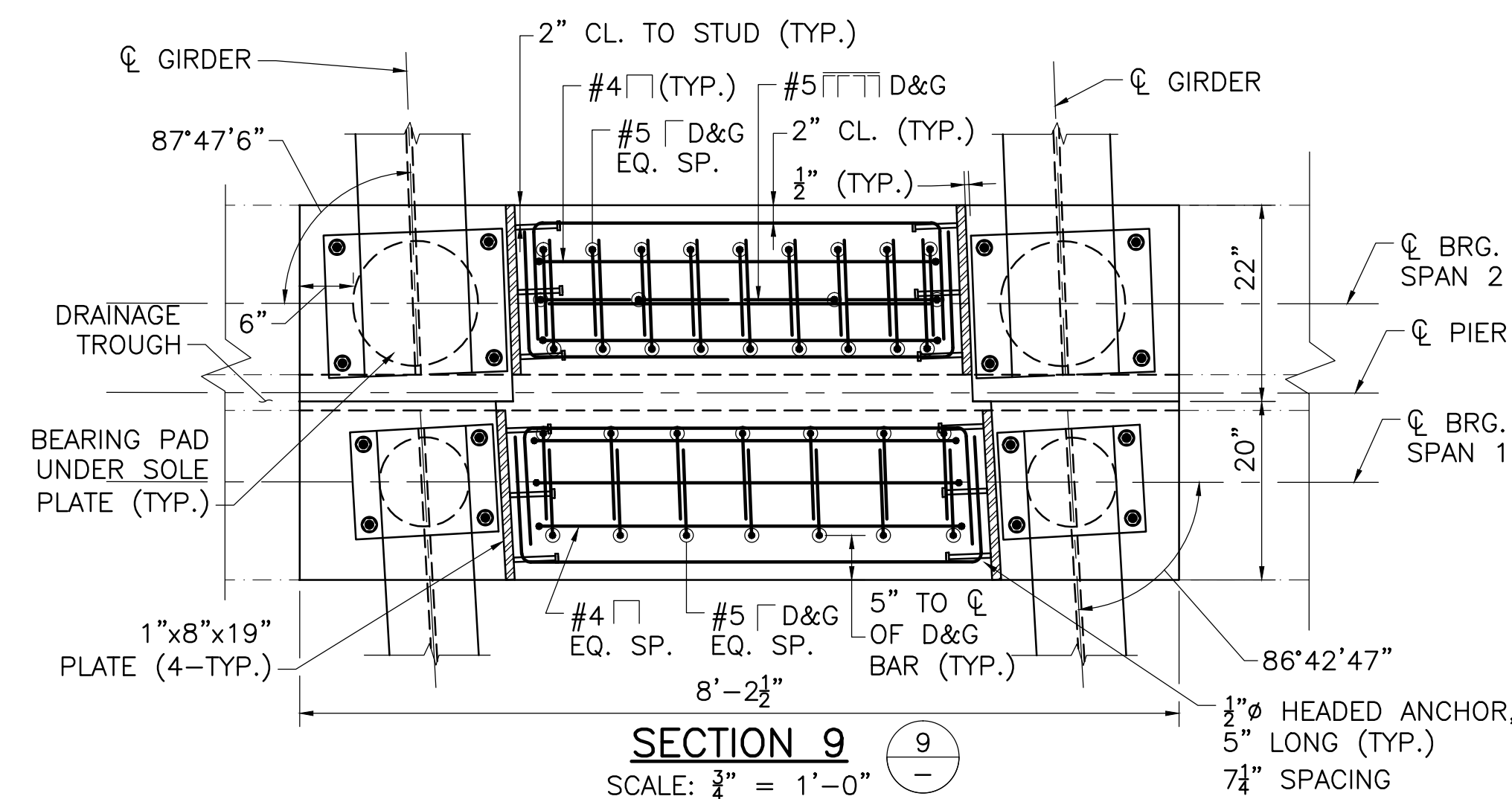
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| MAY 18, 2011                   | ISSUED FOR CONSTRUCTION |
| DATE                           | DESCRIPTION             |
| USE ONLY PRINTS OF LATEST DATE |                         |

|                         |                              |           |              |
|-------------------------|------------------------------|-----------|--------------|
| STATE                   | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
| MASS.                   | BRI-093-1 (524)<br>STP 093-1 | 42        | 60           |
| PROJECT FILE NO. 606255 |                              |           |              |

**SUBSTRUCTURE  
DETAILS**

**NOTES:**

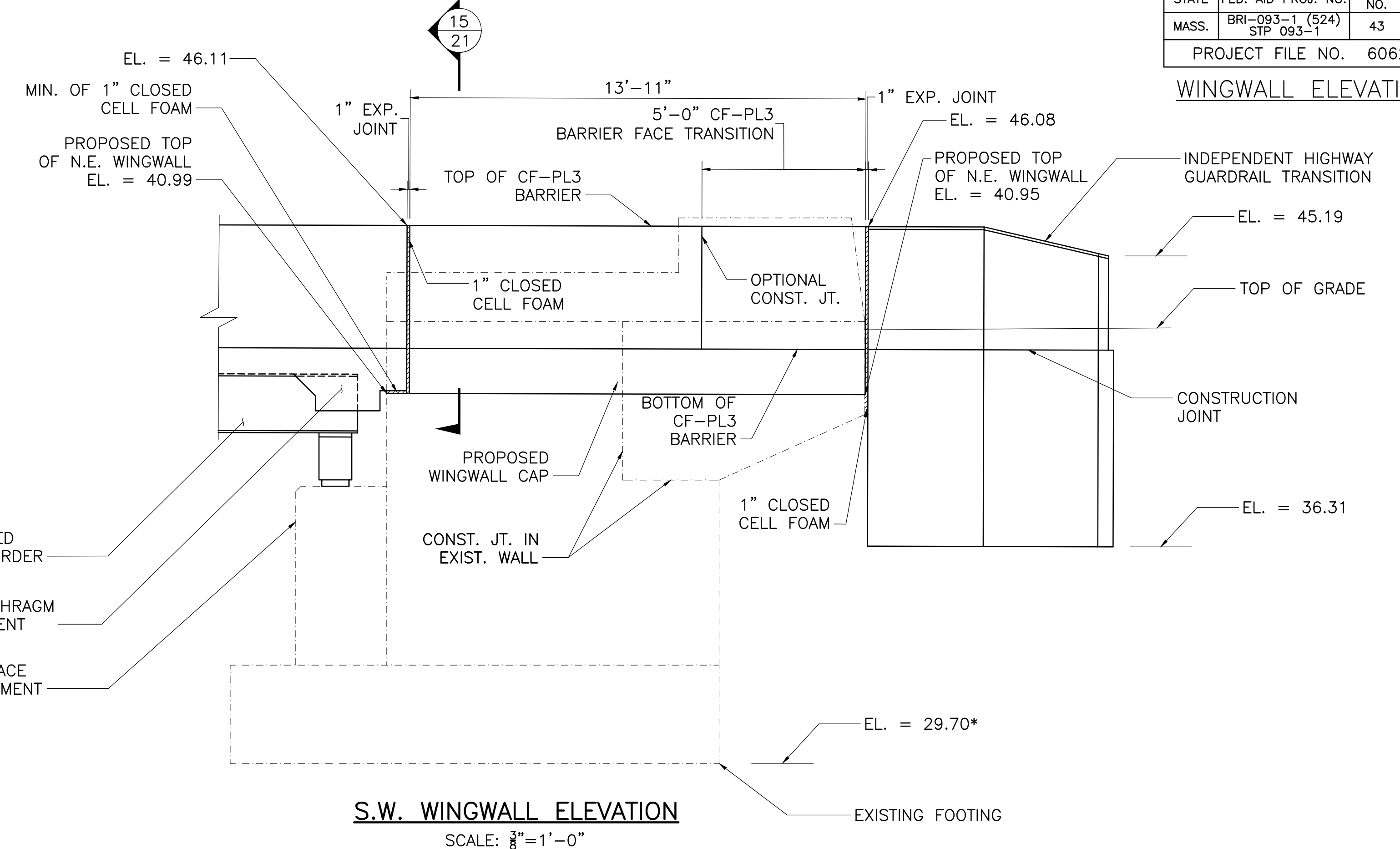
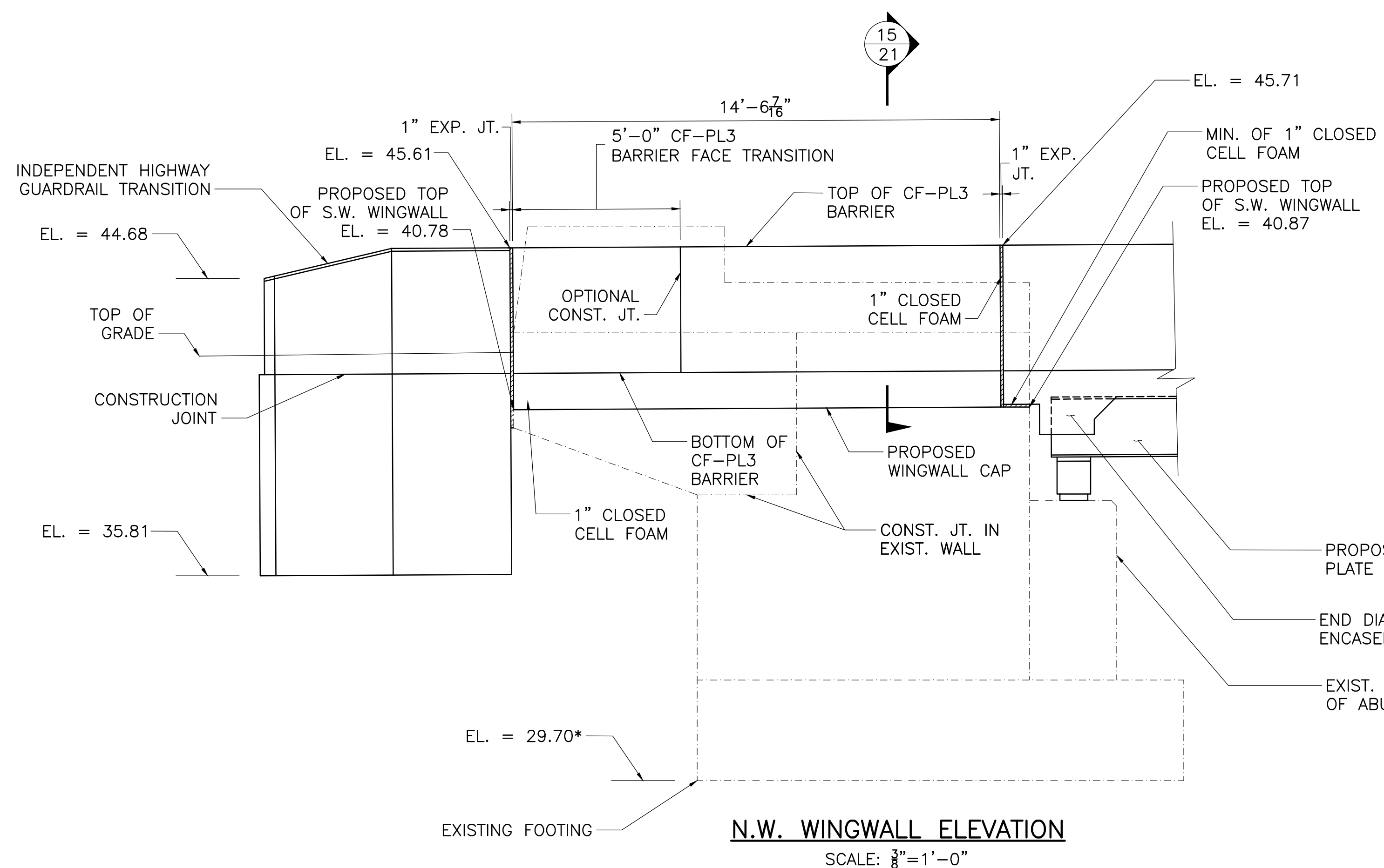
1. TRANSVERSE SHEAR KEY SHALL BE CAST AFTER MODULAR UNITS ARE INSTALLED.
2. TOP OF TRANSVERSE SHEAR KEY SHALL BE SCREEDED LEVEL AT PIERS.
3. SHEAR KEYS AND PEDESTALS TO BE 4000 PSI 3/8" 660 CEMENT CONCRETE.
4. SEE SHEET 2 FOR DRILLING AND GROUTING NOTES
5. STEEL PLATES EMBEDDED IN SHEAR KEY SHALL BE HOT-DIP GALVANIZED GRADE 36.



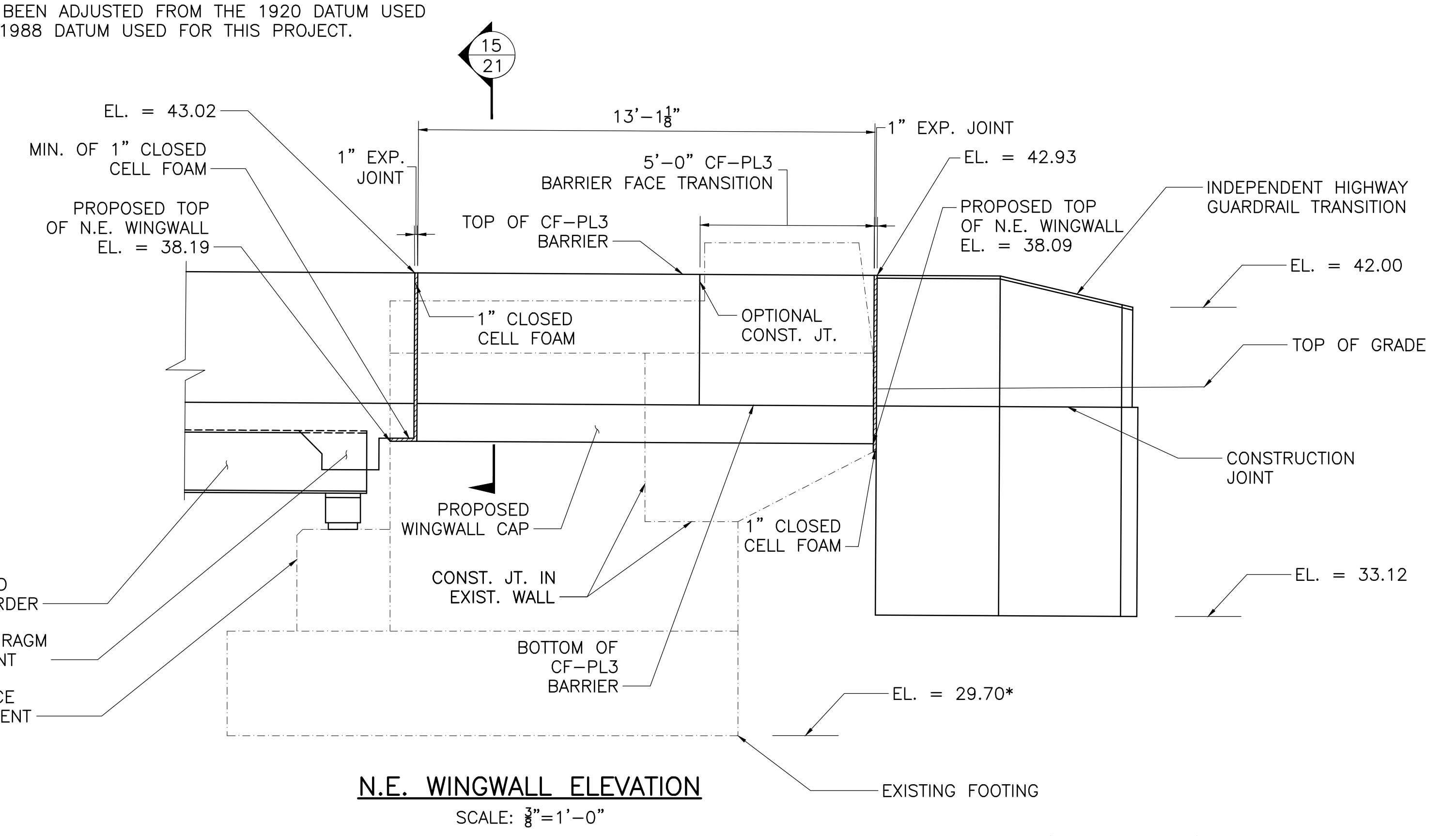
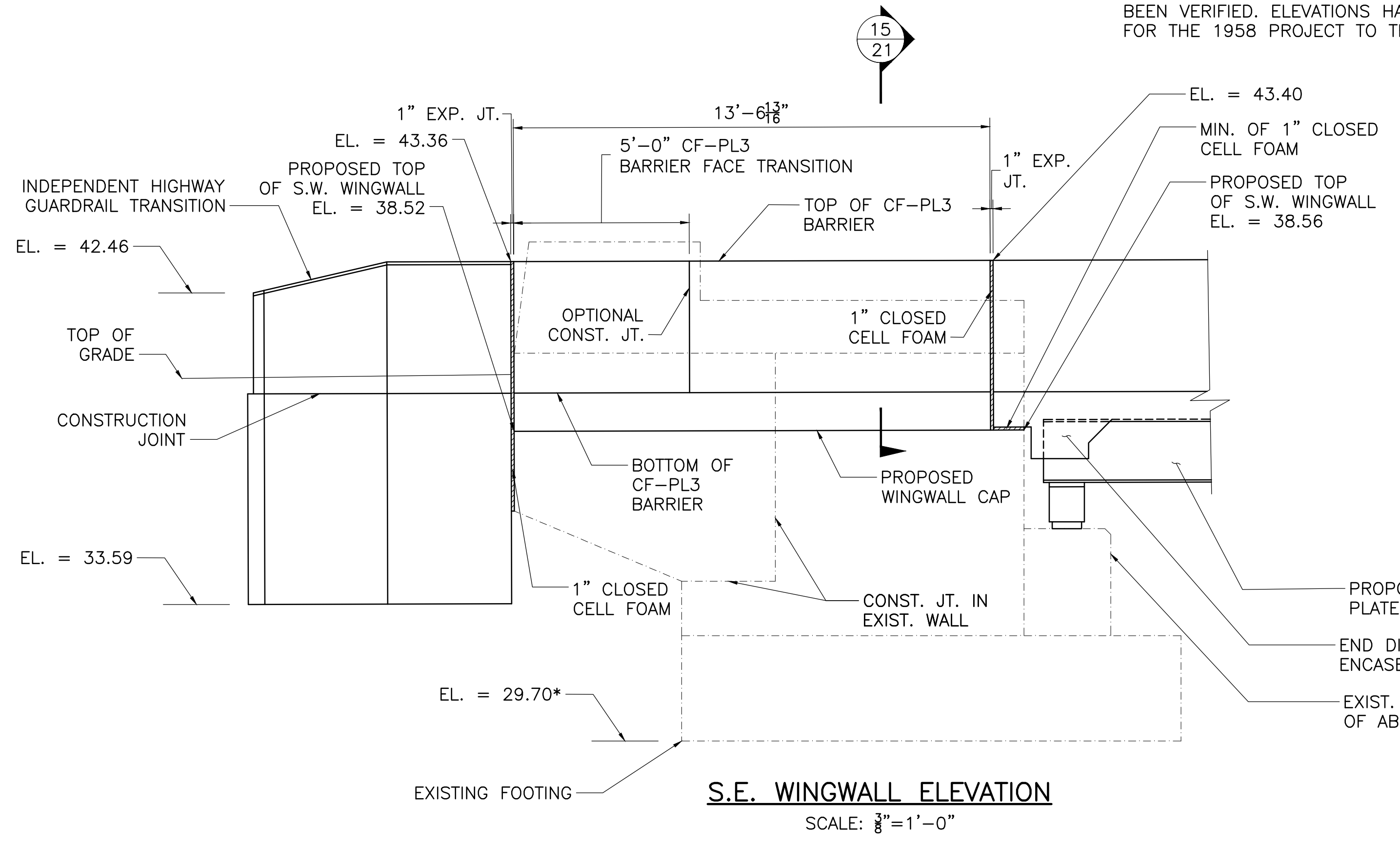
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| MAY 18, 2011                   | ISSUED FOR CONSTRUCTION |
| DATE                           | DESCRIPTION             |
| USE ONLY PRINTS OF LATEST DATE |                         |

| STATE                   | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
|-------------------------|------------------------------|-----------|--------------|
| MASS.                   | BRI-093-1 (524)<br>STP 093-1 | 43        | 60           |
| PROJECT FILE NO. 606255 |                              |           |              |

**WINGWALL ELEVATIONS**



\*FOOTING ELEVATIONS TAKEN FROM 1958 CONSTRUCTION PLANS AND HAVE NOT BEEN VERIFIED. ELEVATIONS HAVE BEEN ADJUSTED FROM THE 1920 DATUM USED FOR THE 1958 PROJECT TO THE 1988 DATUM USED FOR THIS PROJECT.



|              |                                |
|--------------|--------------------------------|
| MAY 18, 2011 | ISSUED FOR CONSTRUCTION        |
| DATE         | DESCRIPTION                    |
|              | USE ONLY PRINTS OF LATEST DATE |

**NOTED REPAIR LOCATIONS**

**S. ABUTMENT NOTES**

1. FH x 6'-8"
2. 1/2" SCALING x FW x FD ON SEAT
3. VARIABLE HEIGHT x 11'-7"
4. 8" x 3'-9"
5. 7" x 2'
6. 7" x 2'-8"
7. VARIABLE HEIGHT x 10'-10"
8. 1" SCALING x FW x FD ON SEAT
9. VARIABLE HEIGHT x 21'
10. 1'-6"Ø SP.L
11. 8" x 5'-7"
12. FH x 8" SP.

**S. PIER SOUTH FACE NOTES**

13. FH x 2'
14. 1' x 7'-6"
15. 1'-10" x 6'
16. 2'-6" x 6'
17. 1'-6" x 1'
18. 3' x 2'
19. 1'-4" x 2'
20. 3' x 3'
21. 9" x 6'
22. 2'-8" x 4'-6"
23. FH x 2'
24. 1'-3" x 5'
25. 1'-10" x 2'-9"
26. 3'-6" x 1'-8"
27. TOP CAP ERODED 2' WIDE x FL
28. 2' x 2'
29. 2' x 2'-6"
30. 1"Ø SP. ON BOT.
31. FW x 2' DELAM. ON BOT.

**S. PIER NORTH FACE NOTES**

32. 1' x 1'
33. 8" x 1'-8"
34. 3' x 2'-4"
35. 2'-6" x 1'-4"
36. 1' x 2'-6"
37. FH x 6"
38. 1' x 2'
39. FH x 8'-6"
40. 8" x 3'
41. 1' x 6'
42. 2'-6" x 5'
43. FH x 1'-4"
44. 10" x 5'
45. 4" x 4'-2"
46. 10" x 3'
47. 1"Ø
48. 2'-8" x 2'
49. 1'-8" x 1'-6"
50. 3'-6" x 1'-4"
51. 4'-6" x 1'
52. 1'-10" x 1'-4"
53. 6" x 1'
54. 1'-2" x 10"
55. 1" x 3'-6"
56. FH x 2'-4"
57. 1'-4" x 6"

**N. PIER SOUTH FACE NOTES**

58. 10" x 2'
59. 9" x 3'-4"
60. 10" x 12'-8"
61. 10" x 5'
62. 10" x 5'-10"
63. 5" x 1'-10"
64. 1'-6" x 1'-6"
65. 6" x 1'-8"
66. 2'-2" x 1'-2" DELAM. ON BOT.
67. 10" x 13'
68. 10" x 8'-9"
69. 1'-3" x 3'
70. 4'-6" x 2'
71. 8" x 5'-4"
72. 3' x 2'-10"
73. 3' x 2' DELAM. ON BOT.

**N. PIER NORTH FACE NOTES**

74. 3'-8" x 1'-10"
75. 2'-2" x 2'
76. 2'-9" x 2'-2"
77. 1'-4" x 1'
78. 7" x 1'-8"
79. 9" x 2'-6"
80. 1'-8" x 1'-8"
81. 1'-8" x 1'-2"
82. 1'-4" x 1'-4"
83. 3'-4" x 1'-8"
84. 9" x 7"
85. 1'-2" x 5'-5"
86. 1' x 1'-10"
87. 1'-10" x 4'-9"
88. 1'-6" x 1'
89. 2' x 4'-10"

**N. ABUTMENT NOTES**

90. 1'-2" x 3'-6"
91. 8" x 2'-6"
92. FH x 1'
93. VARIABLE HEIGHT x 6'
94. 6" x 6" SP.
95. VARIABLE HEIGHT x 2'-2"
96. 8" x 2'
97. VARIABLE HEIGHT x 3'-2"
98. FH x 5'-4"
99. FH x 6'-8"
100. 5" x 3'
101. FH x 5'

**SURFACE PREPARATION FOR CONCRETE REPAIRS**

1. EXTENT, LOCATION AND TYPE OF ALL CONCRETE REPAIRS TO BE FIELD VERIFIED AND APPROVED BY THE ENGINEER AFTER CONTRACTOR HAS SOUNDED AND MARKED OUT ALL REPAIR AREAS. REPAIR CONFIGURATIONS SHOULD BE KEPT AS SIMPLE AS POSSIBLE, PREFERABLY WITH SQUARE CORNERS.
2. SAW CUT ALONG NEAT LINES AROUND REPAIR AREA PRIOR TO CONCRETE EXCAVATION. USE SAW CUT DEPTH OF 1/2" OR LESS AS REQUIRED TO AVOID CUTTING REINFORCING STEEL (REFER TO SPECIAL PROVISIONS)
3. REMOVE DETERIORATED AND DELAMINATED CONCRETE. UNDERCUT EXPOSED REINFORCING STEEL TO PROVIDE MINIMUM CLEARANCE AROUND BARS, REMOVE ADDITIONAL CONCRETE AS REQUIRED TO PROVIDE MINIMUM REQUIRED THICKNESS OF REPAIR MATERIAL.
4. IF REINFORCING STEEL IS EXPOSED THEN CLEAN BY MECHANICAL CLEANING AND THEN HIGH PRESSURE WASHING WITH WATER THAT CONTAINS NO DETERGENTS OR BOND INHIBITING CHEMICALS. WHERE ACTIVE CORROSION HAS OCCURRED THAT WOULD INHIBIT BONDING, SANDBLAST STEEL TO WHITE METAL FINISH.
5. AFTER REMOVAL AND EDGE PREPARATIONS ARE COMPLETE, REMOVE BOND INHIBITING MATERIALS (DIRT, GREASE, LOOSELY BONDED AGGREGATE) BY ABRASION BLASTING OR HIGH PRESSURE WATER BLASTING WITH WATER THAT CONTAINS NO DETERGENTS OR BOND INHIBITING CHEMICALS. CHECK THE CONCRETE SURFACES AFTER CLEANING TO ENSURE THAT SURFACE IS FREE FROM ADDITIONAL LOOSE AGGREGATE OR THAT ADDITIONAL DELAMINATIONS ARE NOT PRESENT.

6. WET CONCRETE REPAIR AREA SO THAT SUBSTRATE IS SATURATED SURFACE DRY WITH NO STANDING WATER.

7. APPLY BONDING COMPOUND TO EXISTING CONCRETE AND REINFORCING STEEL PRIOR TO PLACEMENT OF 4000 PSI, 3/8 IN, 660 CEMENT CONCRETE REPAIR MATERIAL.

8. PLACE APPROPRIATE REPAIR MATERIAL FOR SPECIFIC REPAIR TYPE. PLACEMENT AND SUBSEQUENT CURING SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND THE SPECIAL PROVISIONS.

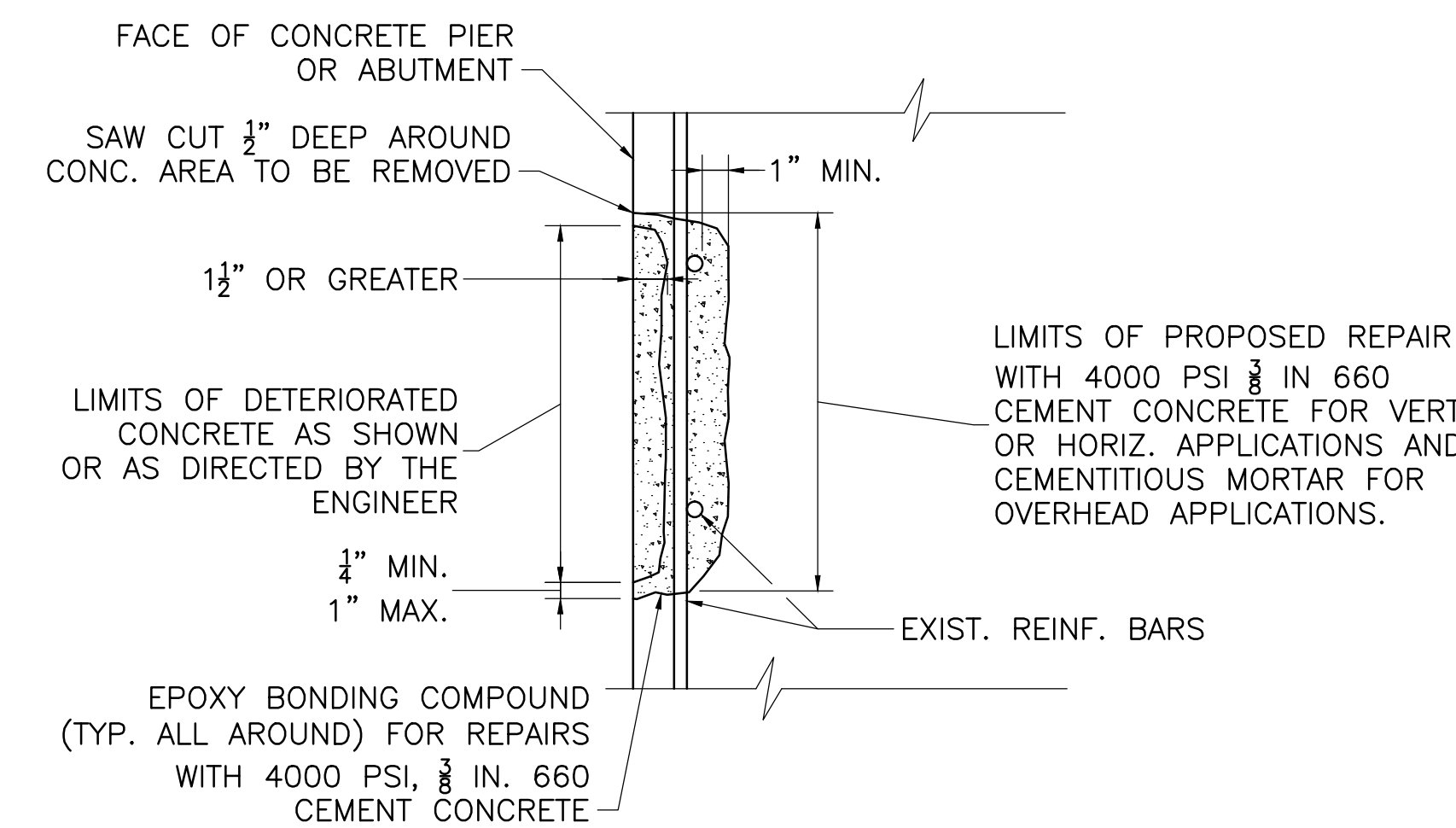
**SEQUENCE OF CONSTRUCTION FOR COLUMN REPAIRS WITHOUT TEMPORARY PIER SUPPORTS**

1. REMOVE CONCRETE FROM FIRST PATCH AREA TO BE PATCHED ONLY, SEE ROUND COLUMN SECTION DETAIL
2. CLEAN EXISTING REINFORCING STEEL AND CONCRETE (NEWLY EXPOSED). MISSING OR DETERIORATED REINFORCING STEEL SHALL BE REPLACED AS DIRECTED BY THE ENGINEER (SEE CONCRETE REPAIR NOTES).
3. APPLY EPOXY BONDING COMPOUND TO ALL EXISTING REINFORCING STEEL AND CONCRETE (NEWLY EXPOSED) IMMEDIATELY PRIOR TO PLACING CONCRETE.
4. FORM AND PATCH SURFACE.
5. A MINIMUM OF 72 HOURS SHALL ELAPSE BETWEEN PLACING OF CONCRETE AND START OF NEXT PATCH.
6. REMOVE CONCRETE FROM SECOND PATCH AREA.
7. REPEAT STEPS 2 THRU 5.
8. REPAIR REMAINING SIDES IN A SIMILAR MANNER.
9. ALL WELDED WIRE FABRIC SHALL BE EPOXY COATED.
10. ALL CONCRETE SHALL BE 4000 PSI - 3/8 IN - 660 CEMENT CONCRETE.
11. ALL SURFACED SHALL BE RUBBED TO PRODUCE A SMOOTH FINISH.

12. THE CONTRACTOR MAY SUBMIT AN ALTERNATE PIER COLUMN REPAIR PROCEDURE SUBJECT TO APPROVAL BY THE ENGINEER WHEN TEMPORARY PIER SUPPORTS ARE UTILIZED DURING REPAIRS.

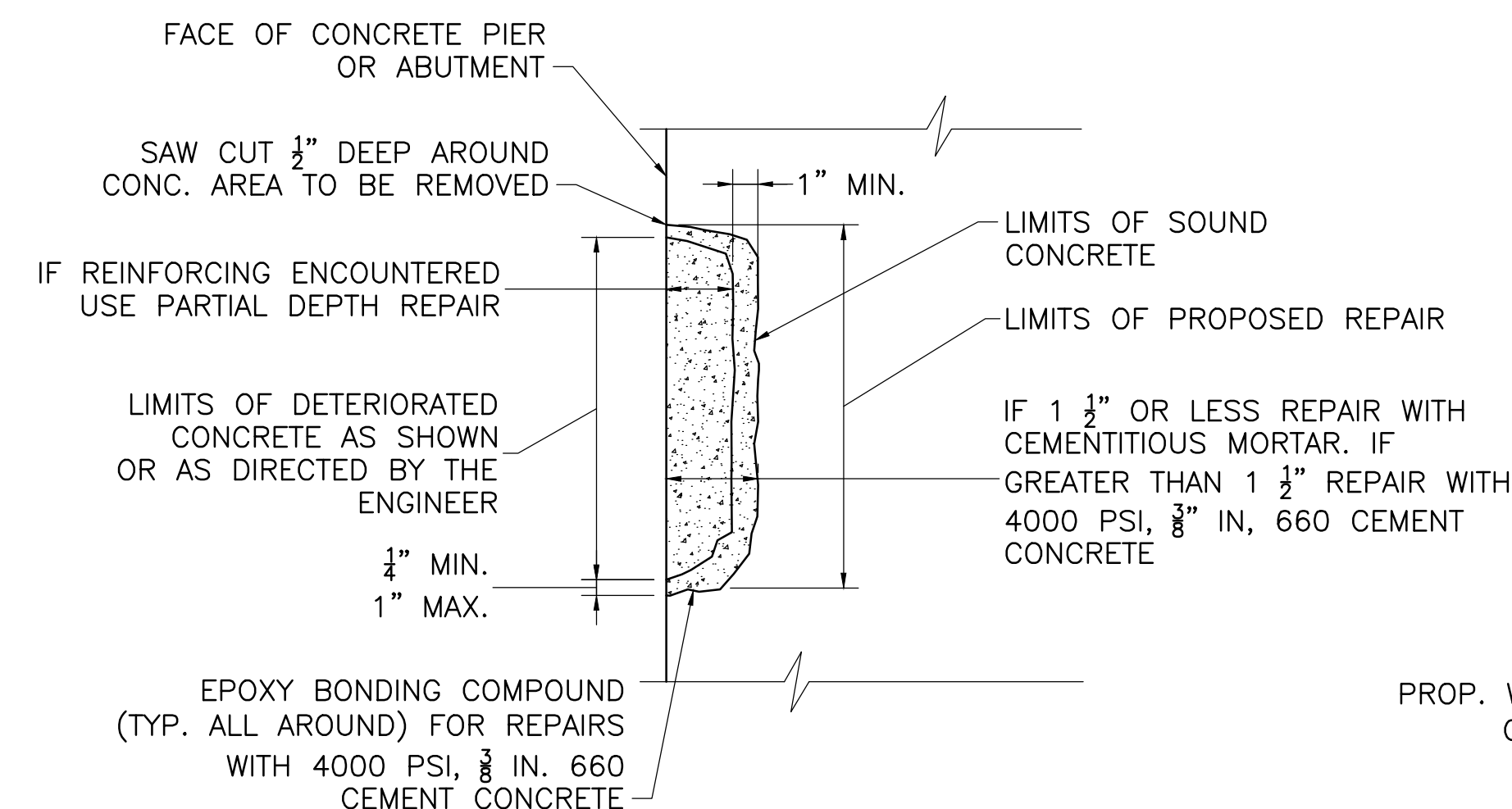
**PIER CAP REPAIR NOTES**

1. THE CONTRACTOR SHALL PHASE PIER CAP REPAIRS SUCH THAT NO MORE THAN 50% OF ANY TWO FACES OF THE PIER CAP SHALL BE REPAIRED AT ANY ONE TIME. THE CONTRACTOR SHALL PROVIDE A SHORING SYSTEM TO SUPPORT THE CAP DEAD LOAD AND LIVE LOADS IF MORE THAN 50% OF ANY TWO FACES ARE TO BE REPAIRED AT ANY ONE TIME OR IF SO DIRECTED BY THE ENGINEER.



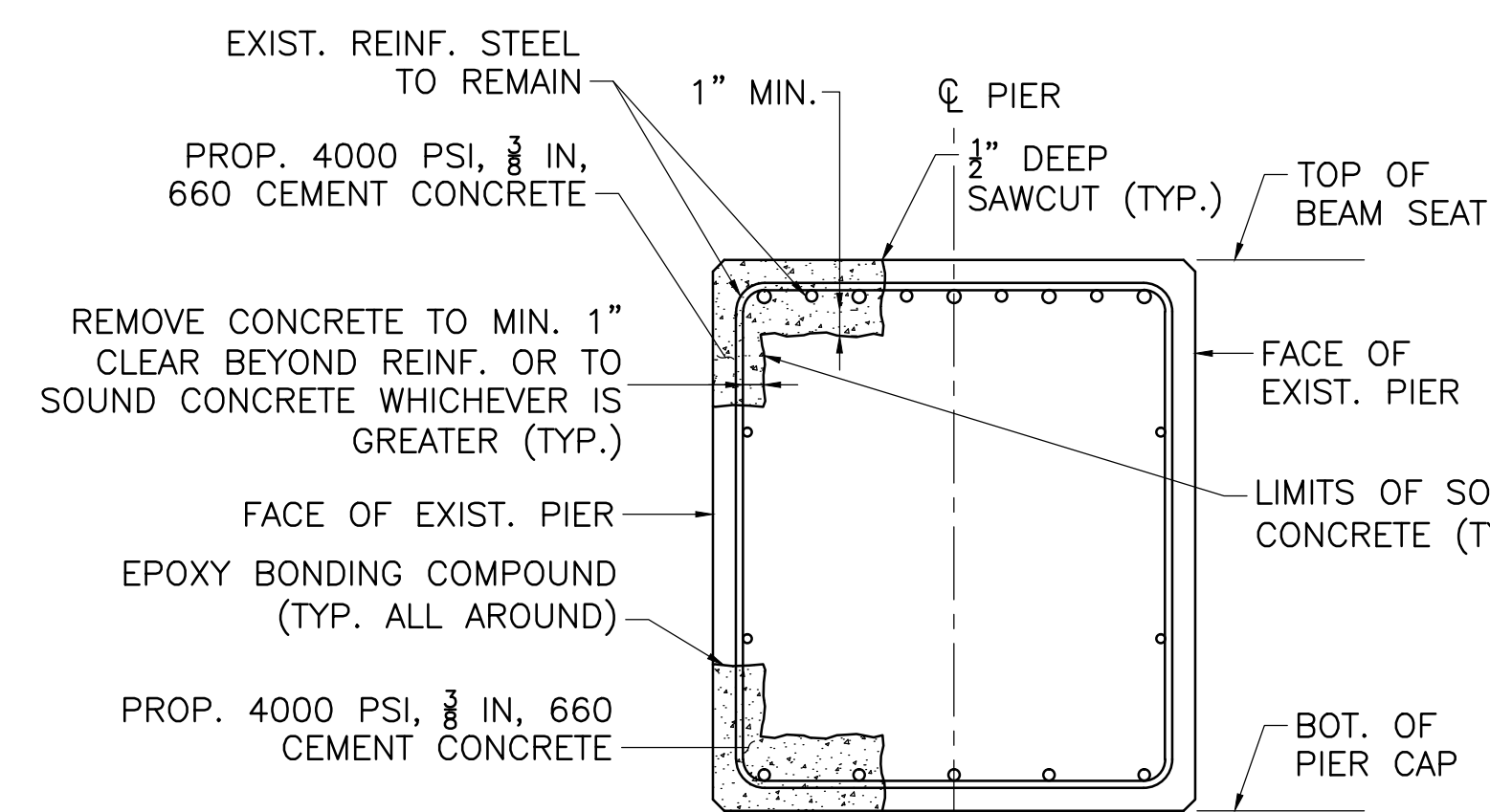
**PARTIAL DEPTH REPAIR**

SCALE: 1 1/2" = 1'-0"



**SHALLOW DEPTH REPAIR DETAIL**

SCALE: 1 1/2" = 1'-0"

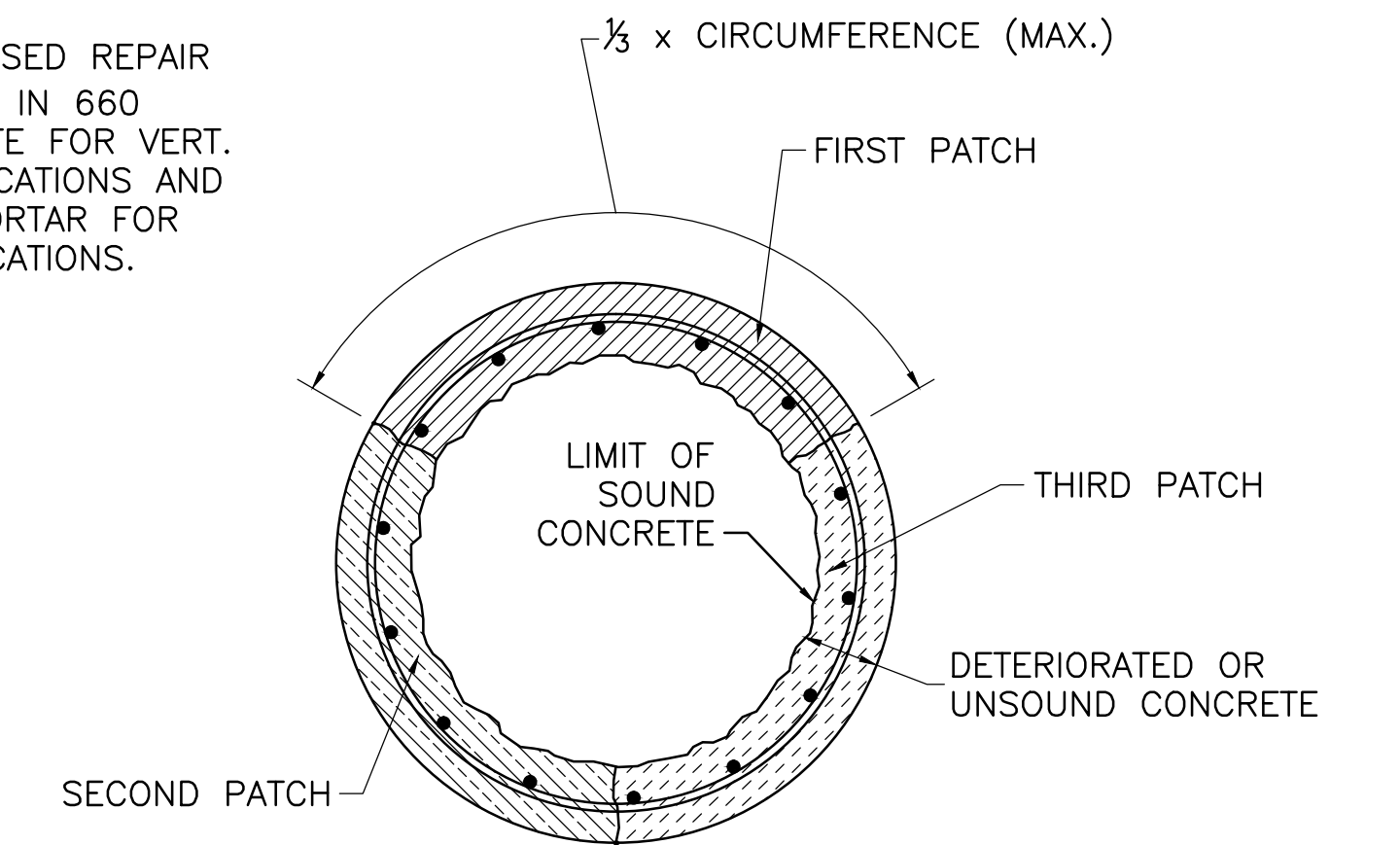


**PIER CAP CONCRETE REPAIR DETAIL**

SCALE: 3/4" = 1'-0"

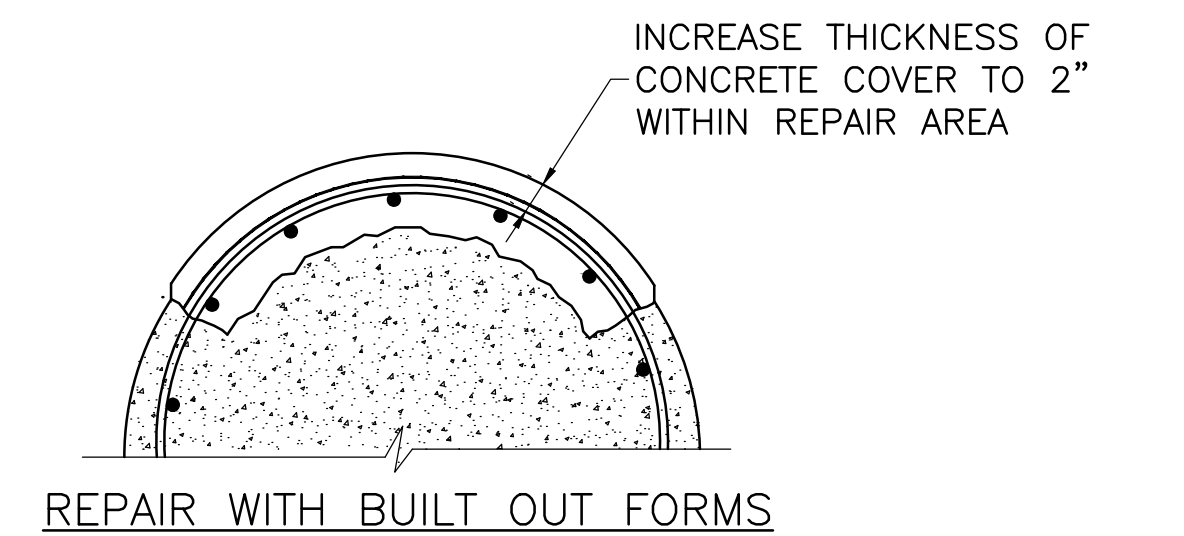
|                         |                              |           |              |
|-------------------------|------------------------------|-----------|--------------|
| STATE                   | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
| MASS.                   | BRI-093-1 (524)<br>SIP 093-1 | 44        | 60           |
| PROJECT FILE NO. 606255 |                              |           |              |

**SUBSTRUCTURE REPAIR**

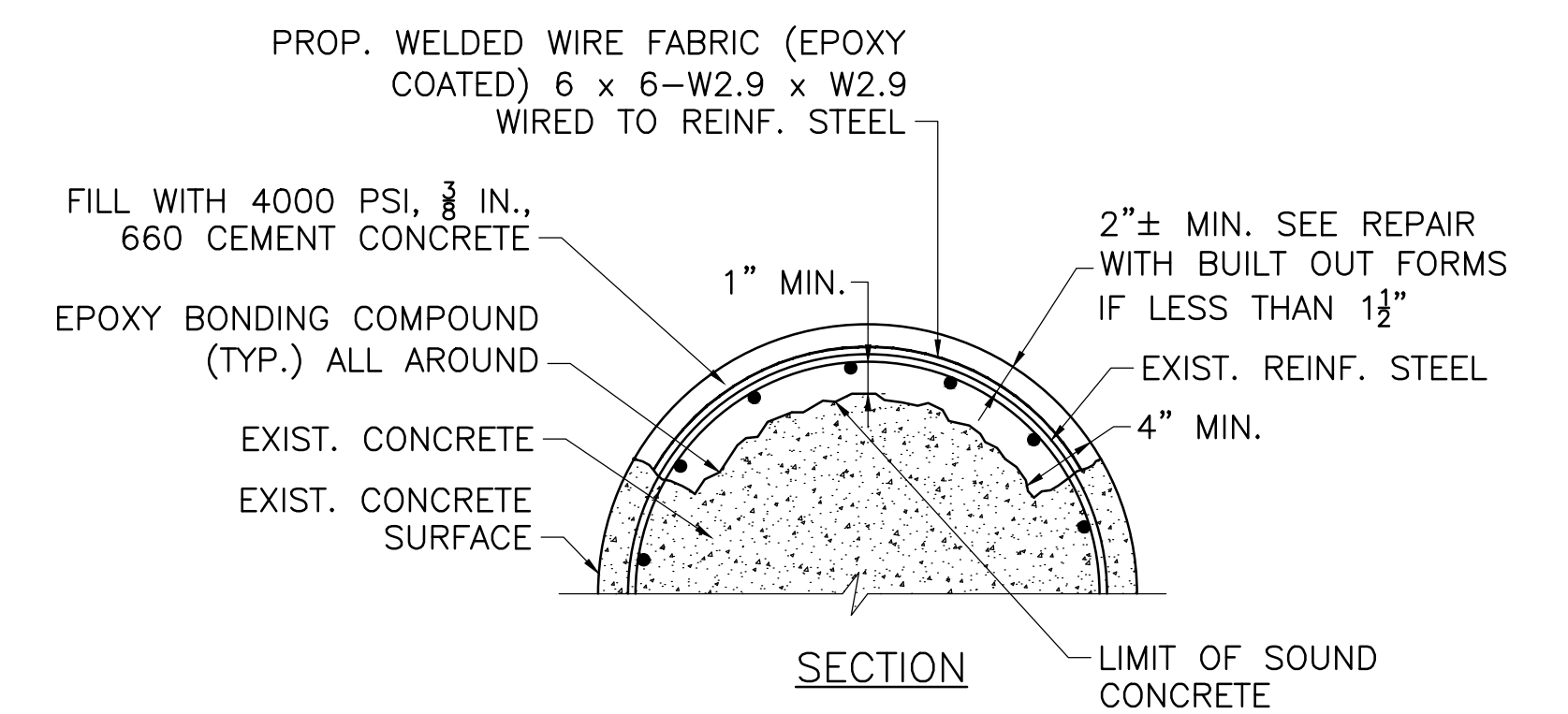


**ROUND COLUMN SECTION**

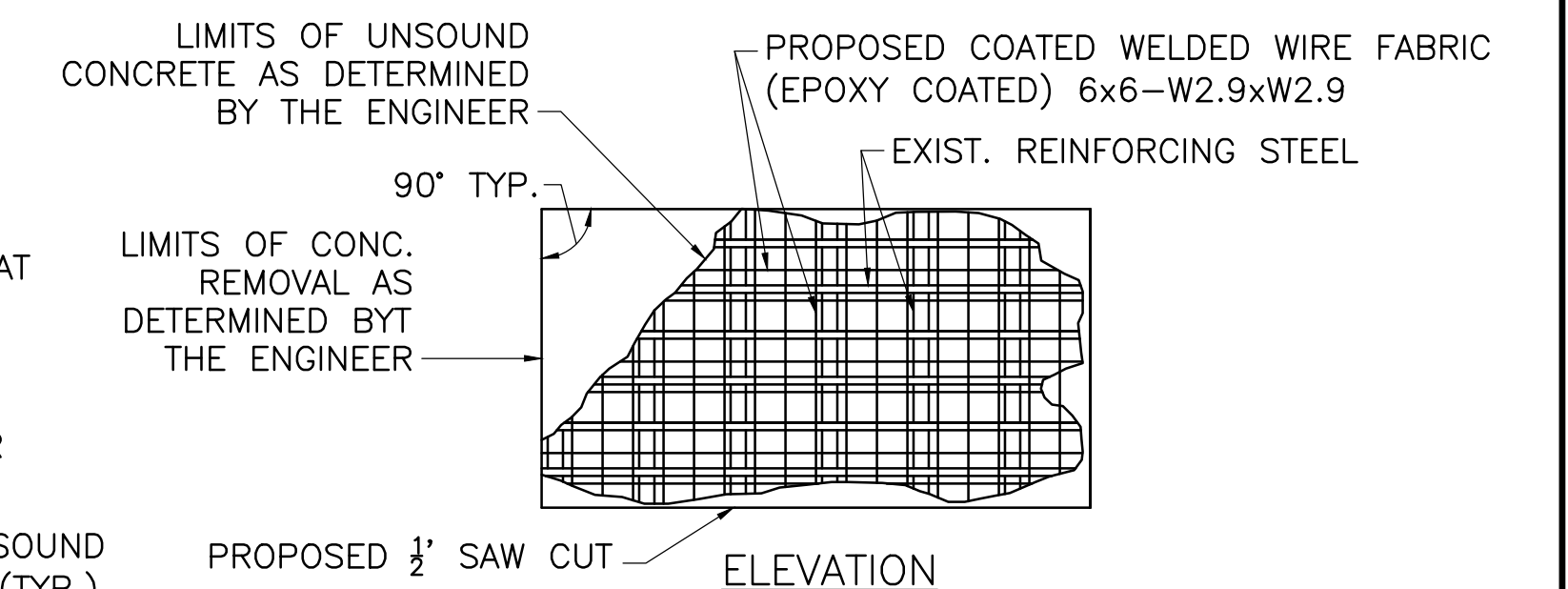
SCALE: 1" = 1'-0"



**REPAIR WITH BUILT OUT FORMS**



**SECTION**



**DEEP PATCH COLUMN REPAIR**

SCALE: 1" = 1'-0"

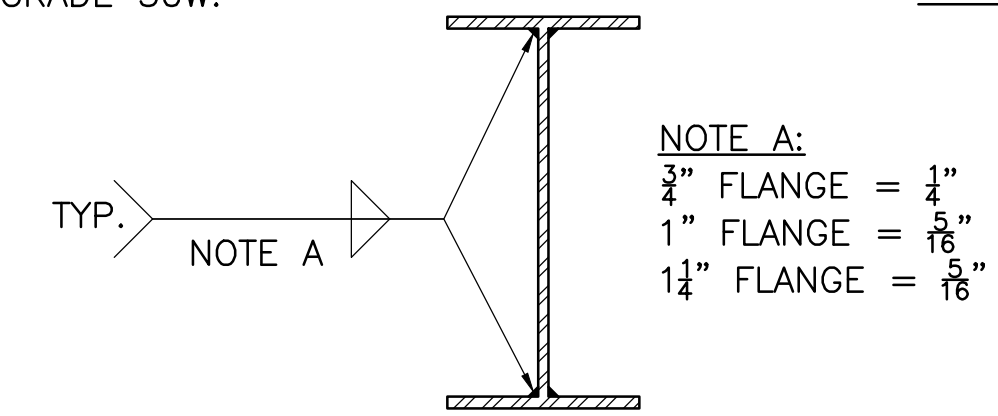
|                                |                         |
|--------------------------------|-------------------------|
| MAY 18, 2011                   | ISSUED FOR CONSTRUCTION |
| DATE                           | DESCRIPTION             |
| USE ONLY PRINTS OF LATEST DATE |                         |

|                         |                              |           |              |
|-------------------------|------------------------------|-----------|--------------|
| STATE                   | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
| MASS.                   | BRI-093-1 (524)<br>SP# 093-1 | 45        | 60           |
| PROJECT FILE NO. 606255 |                              |           |              |

FRAMING PLAN  
AND SHEAR STUD

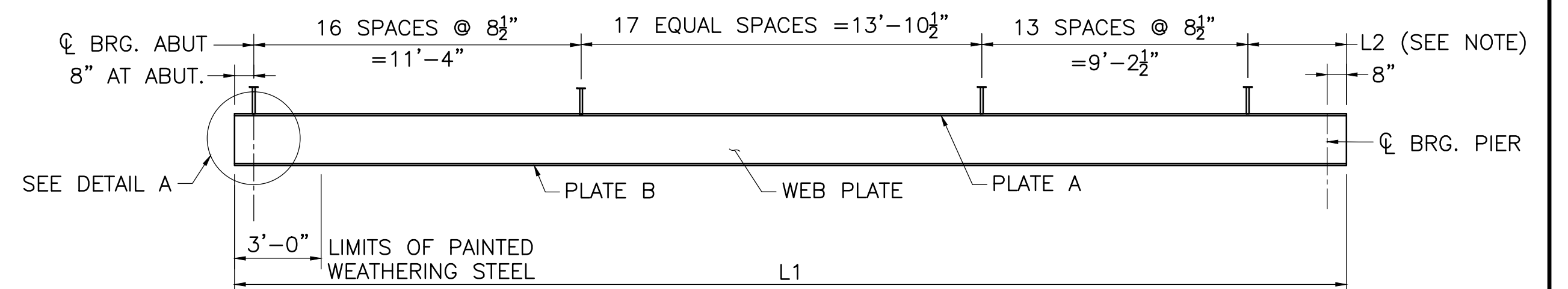
FRAMING PLAN NOTES:

- D1 = TYPICAL END DIAPHRAGM  
D2,D4 = INTERMEDIATE DIAPHRAGM - MODULAR UNIT  
D3,D5 = INTERMEDIATE DIAPHRAGM - CLOSURE POUR TYPE 1  
D6 = INTERMEDIATE DIAPHRAGM - CLOSURE POUR TYPE 2
- U1 = TYPICAL UTILITY SUPPORT BETWEEN INTERMEDIATE DIAPHRAGMS
- SEE STEEL DETAILS FOR DIAPHRAGM AND UTILITY SUPPORT DETAILS.
- SEE PLATE GIRDER SCHEDULE FOR MAIN LOAD CARRYING MEMBERS.
- ALL STEEL SHALL CONFORM TO AASHTO M270 GRADE 50W.



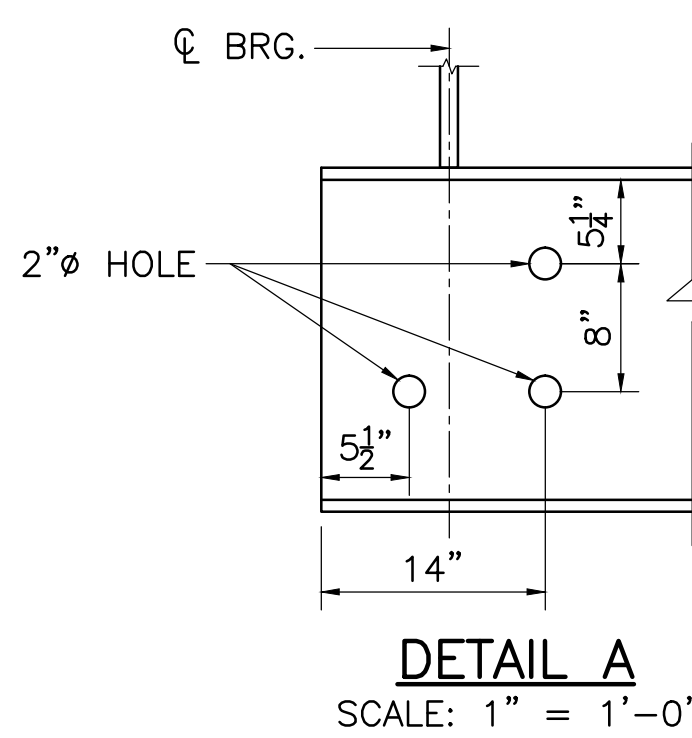
WEB TO FLANGE WELD DETAIL  
SCALE: 1" = 1'-0"

| PLATE GIRDER SCHEDULE |                  |                             |                |                |               |              |            |
|-----------------------|------------------|-----------------------------|----------------|----------------|---------------|--------------|------------|
| SPAN NO.              | GIRDER NUMBER    | LENGTH<br>"C-C"<br>BEARINGS | LENGTH<br>"L1" | LENGTH<br>"L2" | FLANGE PLATES |              | WEB PLATE  |
|                       |                  |                             |                |                | PLATE "A"     | PLATE "B"    |            |
| 1                     | G1, G24          | 37'-2"                      | 38'-6"         | 3'-5"          | 10" x 3/4"    | 10" x 3/4"   | 20" x 5/8" |
| 1                     | G2-G11, G14-G23  | 37'-2"                      | 38'-6"         | 3'-5"          | 10" x 3/4"    | 10" x 3/4"   | 20" x 5/8" |
| 1                     | G12, G13         | 37'-2"                      | 38'-6"         | 3'-5"          | 10" x 3/4"    | 10" x 3/4"   | 20" x 5/8" |
| 2                     | G25, G48         | 76'-4"                      | 77'-8"         | 6'-6"          | 12" x 1"      | 12" x 1 1/4" | 27" x 5/8" |
| 2                     | G26-G35, G38-G47 | 76'-4"                      | 77'-8"         | 6'-6"          | 12" x 1"      | 12" x 1 1/4" | 27" x 5/8" |
| 2                     | G36, G37         | 76'-4"                      | 77'-8"         | 6'-6"          | 12" x 1"      | 12" x 1 1/4" | 27" x 5/8" |
| 3                     | G49, G72         | 37'-2"                      | 38'-6"         | 3'-5"          | 10" x 3/4"    | 10" x 3/4"   | 20" x 5/8" |
| 3                     | G50-G59, G62-G71 | 37'-2"                      | 38'-6"         | 3'-5"          | 10" x 3/4"    | 10" x 3/4"   | 20" x 5/8" |
| 3                     | G60, G61         | 37'-2"                      | 38'-6"         | 3'-5"          | 10" x 3/4"    | 10" x 3/4"   | 20" x 5/8" |

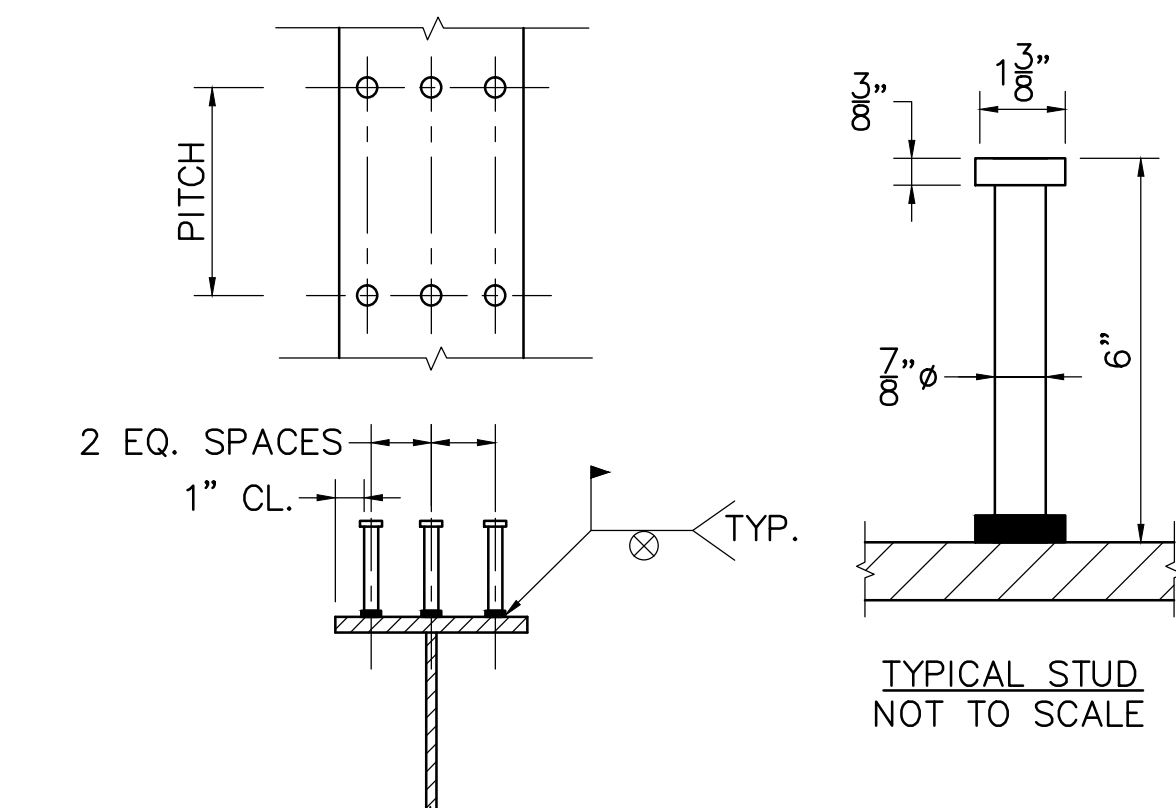


DIAPHRAGM CONNECTION PLATES NOT SHOWN  
NOTE: SHEAR CONNECTORS TO BE OMITTED IN THIS REGION

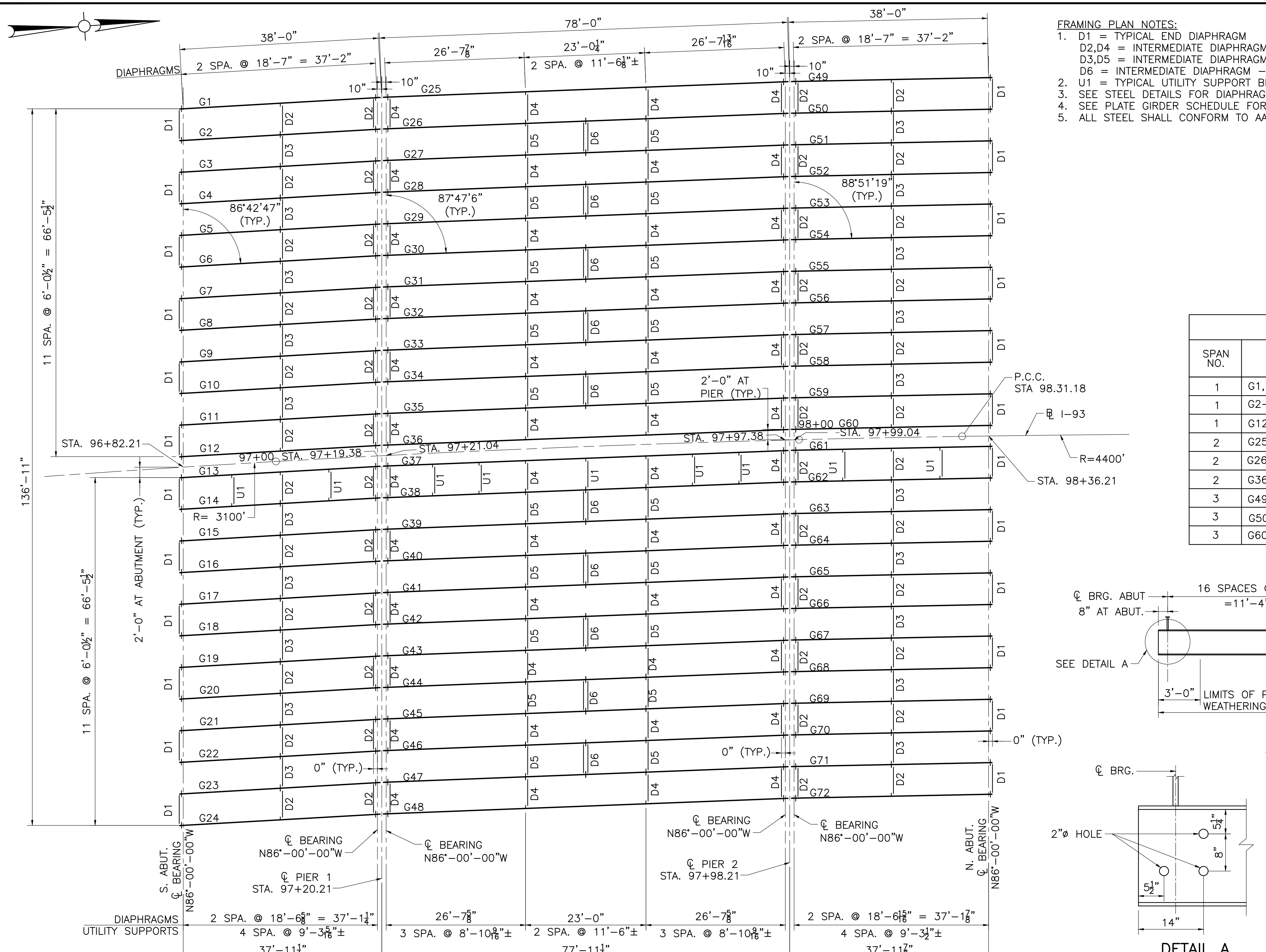
GIRDER ELEVATION (SPANS 1 & 3)  
SCALE: 1/4" = 1'-0"



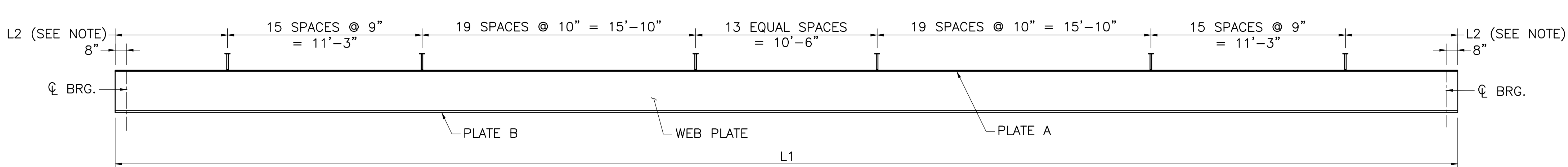
DETAIL A  
SCALE: 1" = 1'-0"



SHEAR STUD CONNECTORS DETAILS  
SCALE: 1" = 1'-0"



FRAMING PLAN  
SCALE: 3/32" = 1'-0"

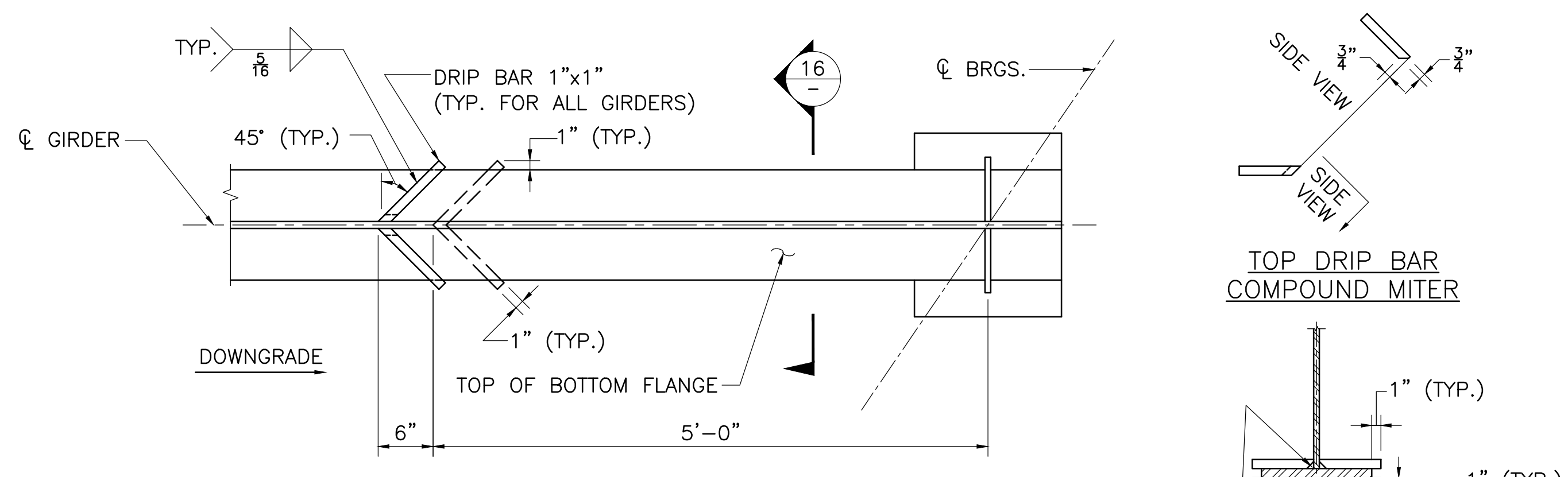


DIAPHRAGM CONNECTION PLATES NOT SHOWN  
NOTE: SHEAR CONNECTORS TO BE OMITTED IN THIS REGION

GIRDER ELEVATION (SPAN 2)  
SCALE: 1/4" = 1'-0"

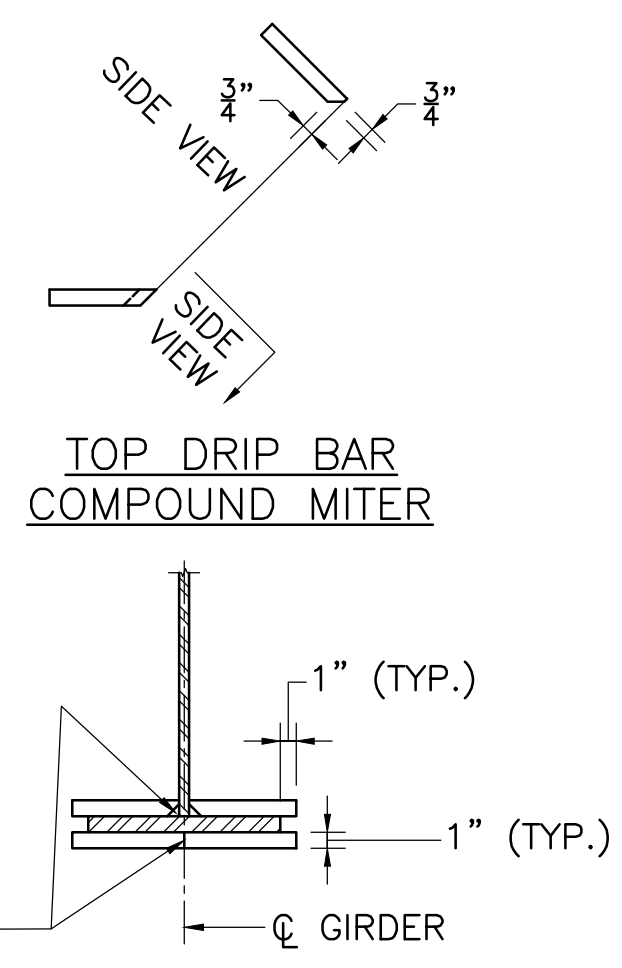
|                                |                         |
|--------------------------------|-------------------------|
| MAY 18, 2011                   | ISSUED FOR CONSTRUCTION |
| DATE                           | DESCRIPTION             |
| USE ONLY PRINTS OF LATEST DATE |                         |

STEEL DETAILS

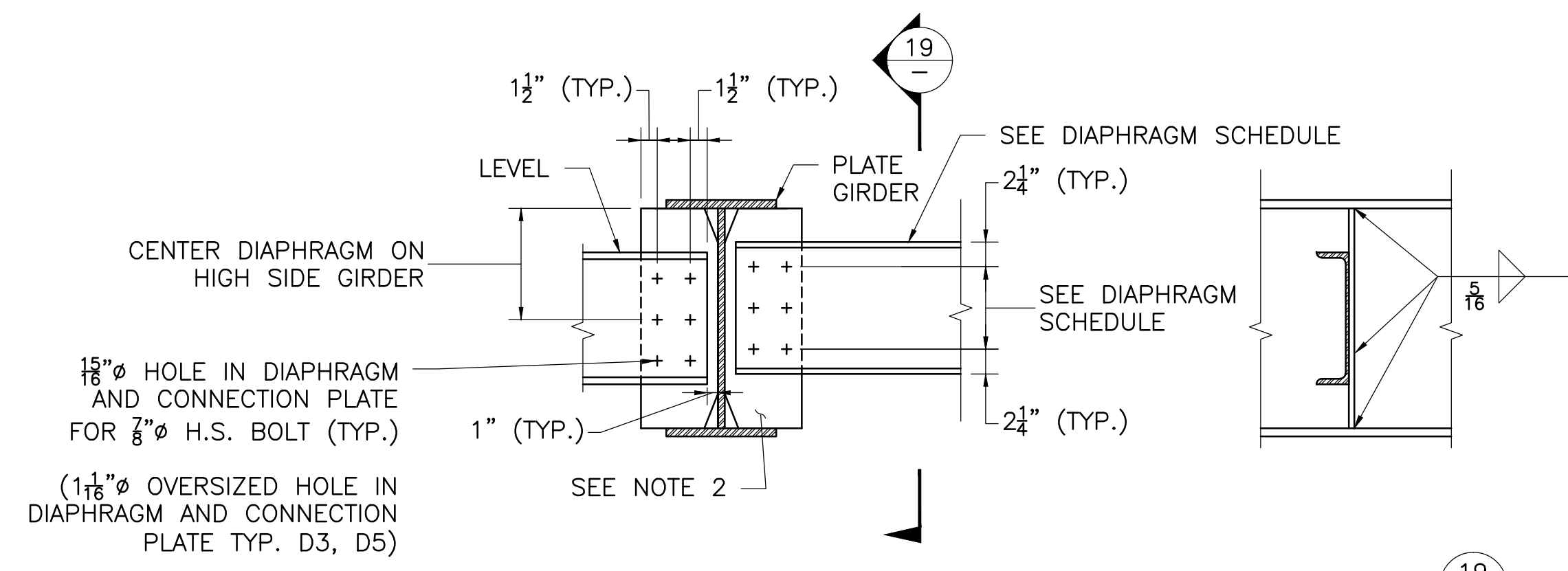


NOTE:  
DRIP BARS SHALL BE LOCATED ON THE LOW END OF EACH SPAN FOR ALL GIRDERS

**DRIP BAR DETAIL**  
SCALE: 1" = 1'-0"



**SECTION 16**  
SCALE: 1" = 1'-0"

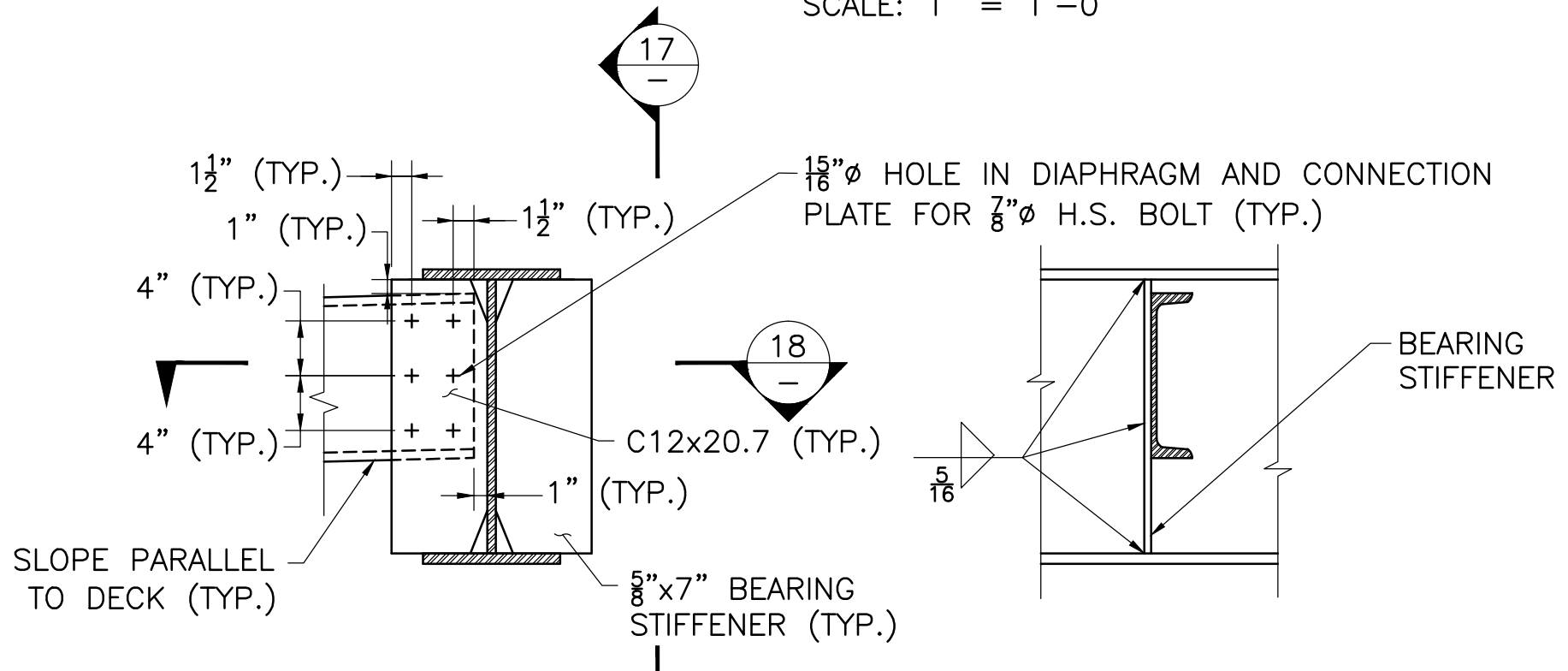


NOTES  
1. SEE CLIP DETAIL THIS SHEET  
2. USE 7" x 5/8" BEARING STIFFENER AT CENTERLINE OF BEARINGS  
USE 7" x 1/2" CONNECTION PLATE AT ALL OTHER LOCATIONS  
3. BEARING STIFFENER PLATE AT BOTTOM FLANGE SHALL BE MILLED FOR TIGHT FIT AND WELDED WITH 5/16" FILLET WELDS BOTH SIDES OF PLATE.

**INTERMEDIATE DIAPHRAGM DETAILS**  
SCALE: 1" = 1'-0"

SHOWN AS D2 & D4 EXCEPT AS NOTED

| DIAPHRAGM SCHEDULE |           |                       |                |
|--------------------|-----------|-----------------------|----------------|
| DESIGNATION        | DIAPHRAGM | # OF H.S. BOLTS/CONN. | BOLT SPACING   |
| D2,D3              | C12x20.7  | 6                     | 2 SP. @ 3 3/4" |
| D4,D5              | C15x33.9  | 8                     | 3 SP. @ 3 1/2" |

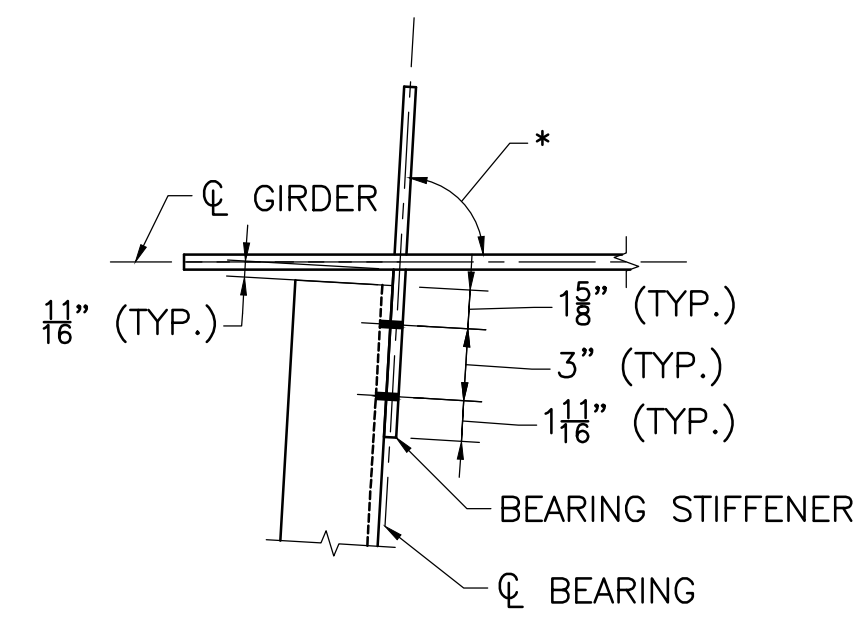


**ELEVATION VIEW**  
SCALE: 1" = 1'-0"

**SECTION 17**  
SCALE: 1" = 1'-0"

NOTES  
1. SEE CLIP DETAIL THIS SHEET  
2. BEARING STIFFENER PLATE AT BOTTOM FLANGE SHALL BE MILLED FOR TIGHT FIT AND WELDED WITH 5/16" FILLET WELDS BOTH SIDES OF PLATE.

**D1 END DIAPHRAGM DETAILS**

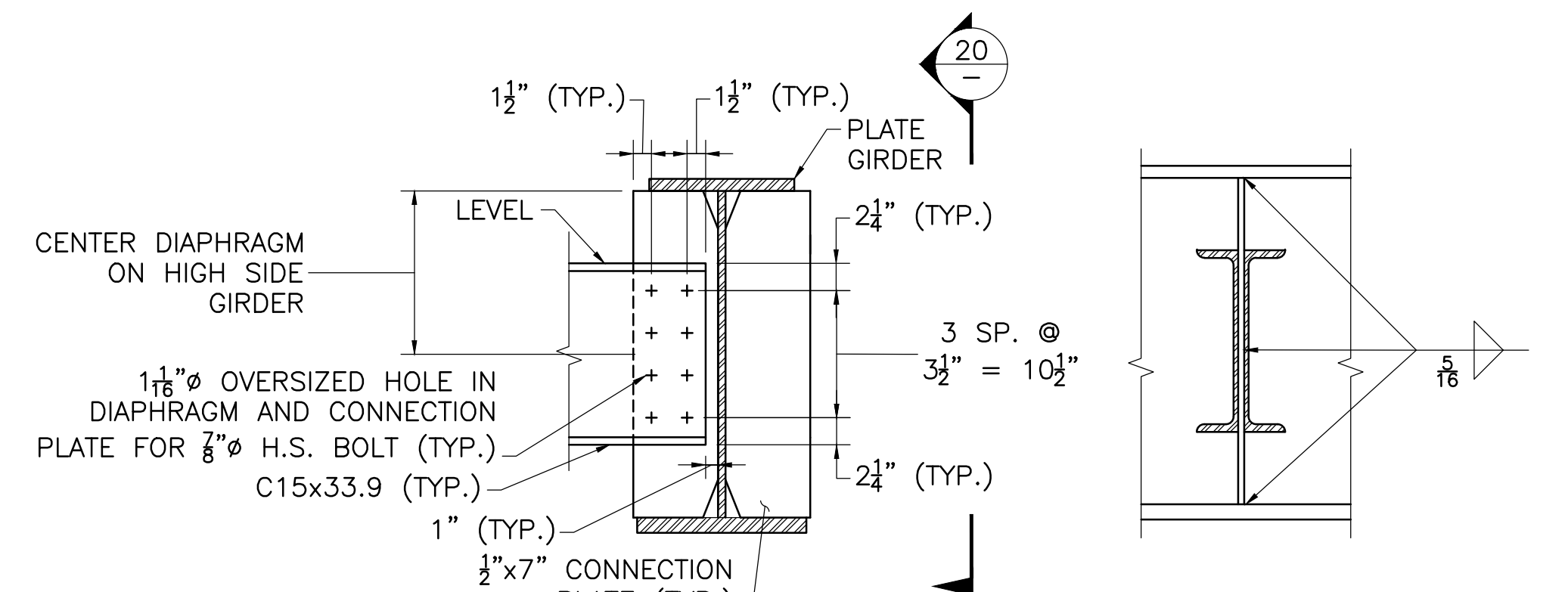


**SECTION 18**  
SCALE: 1 1/2" = 1'-0"

\* 86'42'47" (SPAN 1), 87'47'6" (SPAN 2), 88'51'19" (SPAN 3)

NOTE:  
FOR DISCONTINUOUS DIAPHRAGM AT BEAM PROVIDE ADDITIONAL CONNECTOR PLATE OPPOSITE WEB EXCEPT AT FASCIA BEAMS

**DISCONTINUOUS DIAPHRAGM CONNECTION**  
SCALE: 1" = 1'-0"

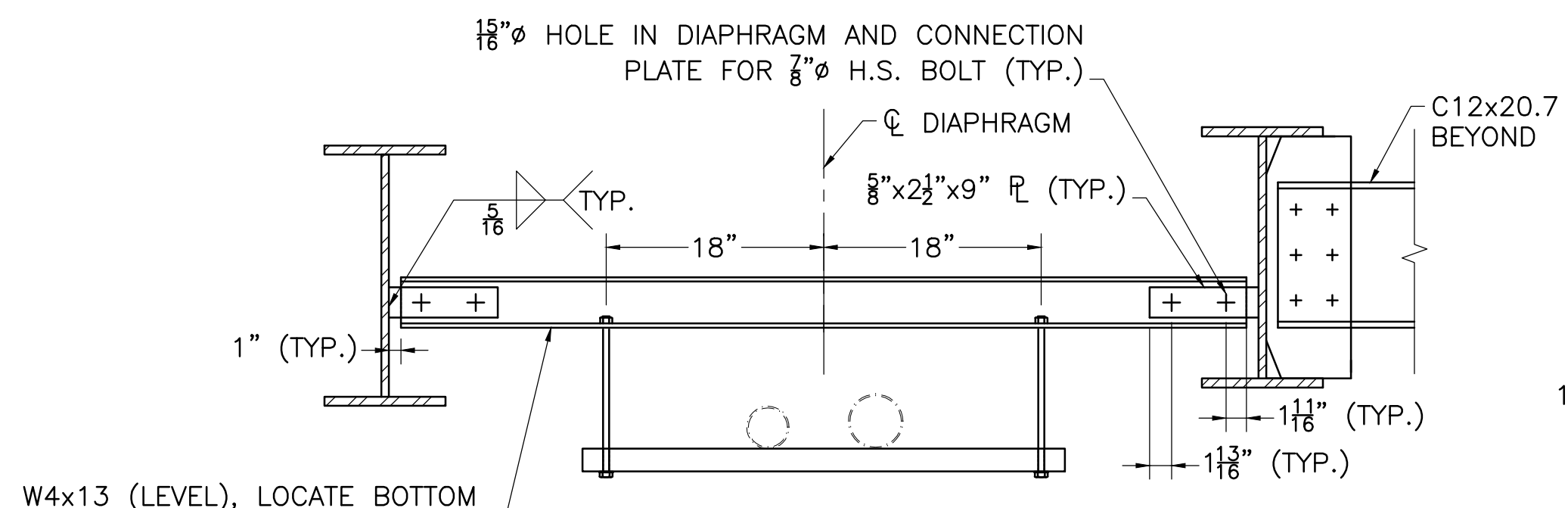


**ELEVATION VIEW**

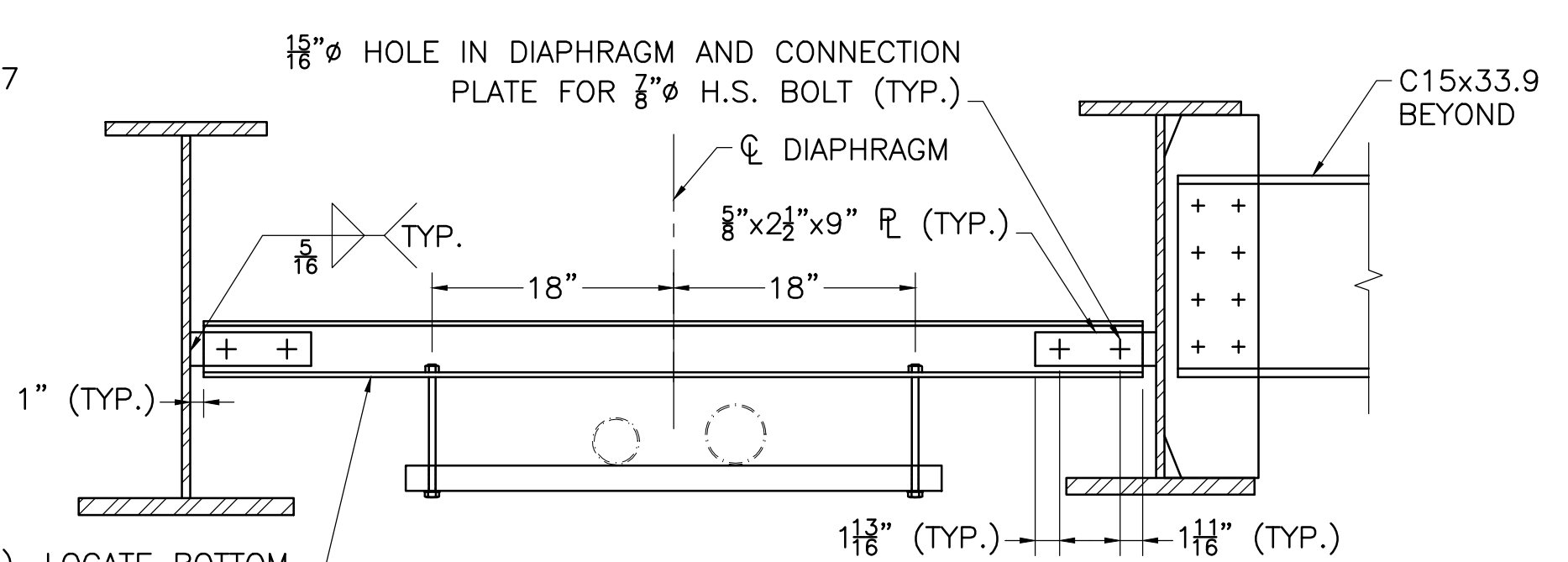
**SECTION 20**

SEE CLIP DETAIL THIS SHEET

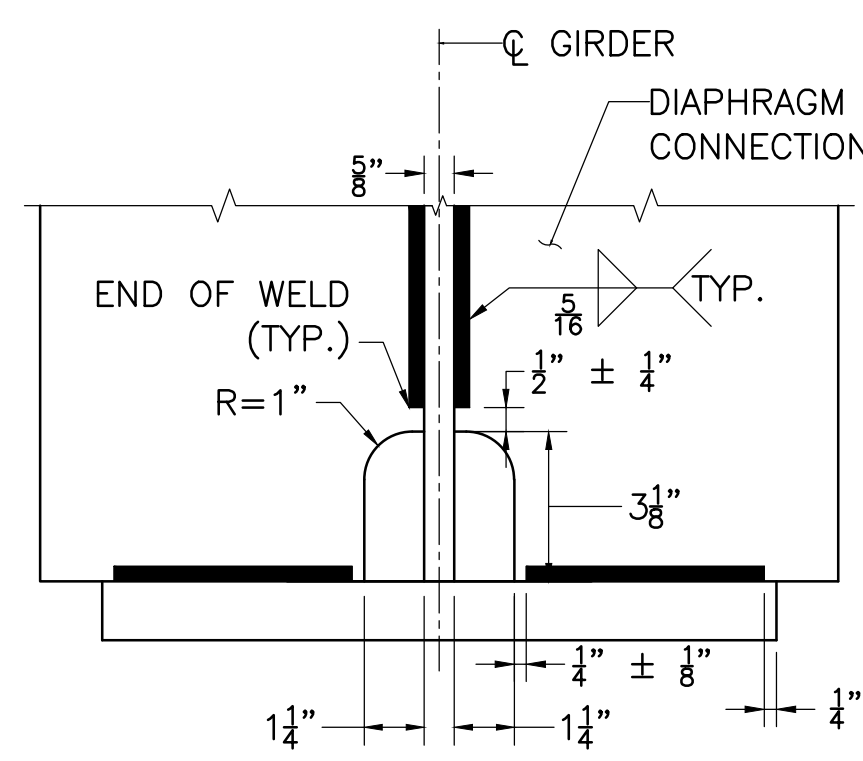
**D6 INTERMEDIATE DIAPHRAGM DETAILS**  
SCALE: 1" = 1'-0"



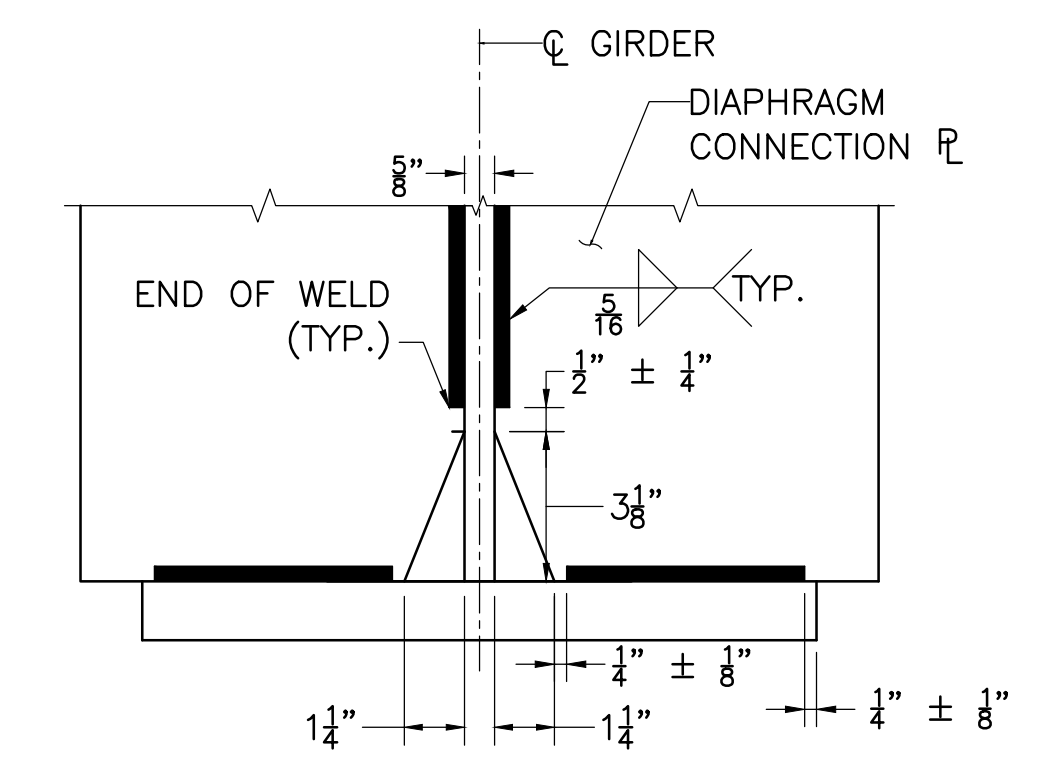
**UTILITY DIAPHRAGM - U1**  
SPANS 1 & 3  
SCALE: 1" = 1'-0"



**UTILITY DIAPHRAGM - U1**  
SPAN 2  
SCALE: 1" = 1'-0"

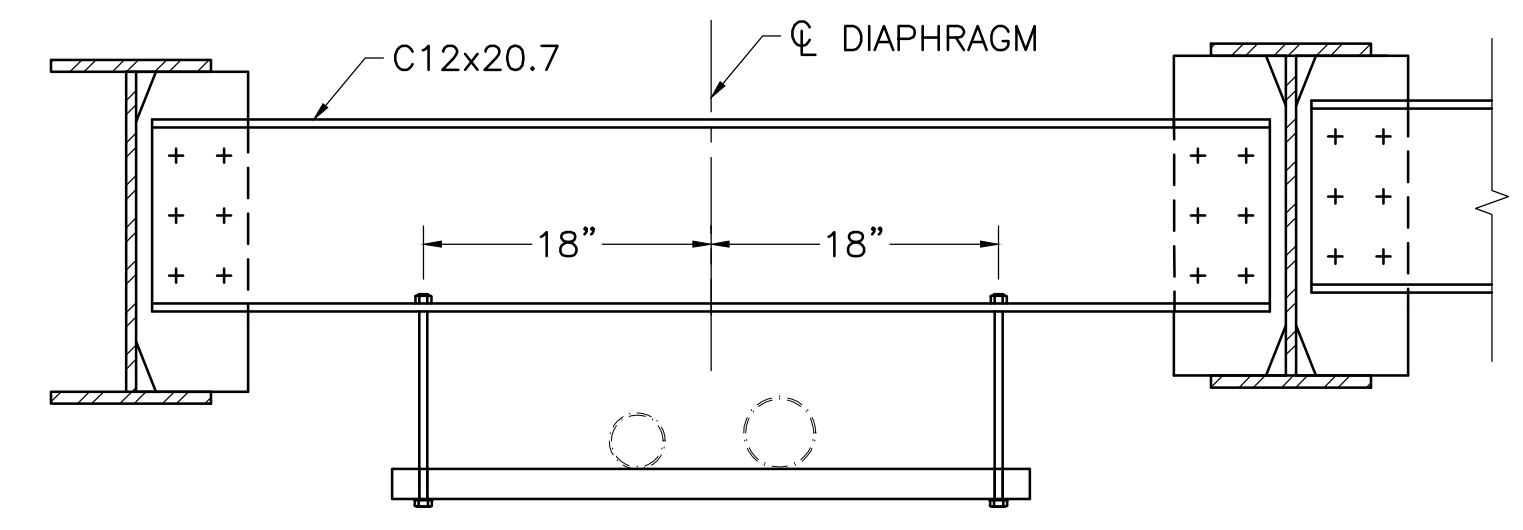


**ALTERNATE COPE DETAIL**  
NOT TO SCALE

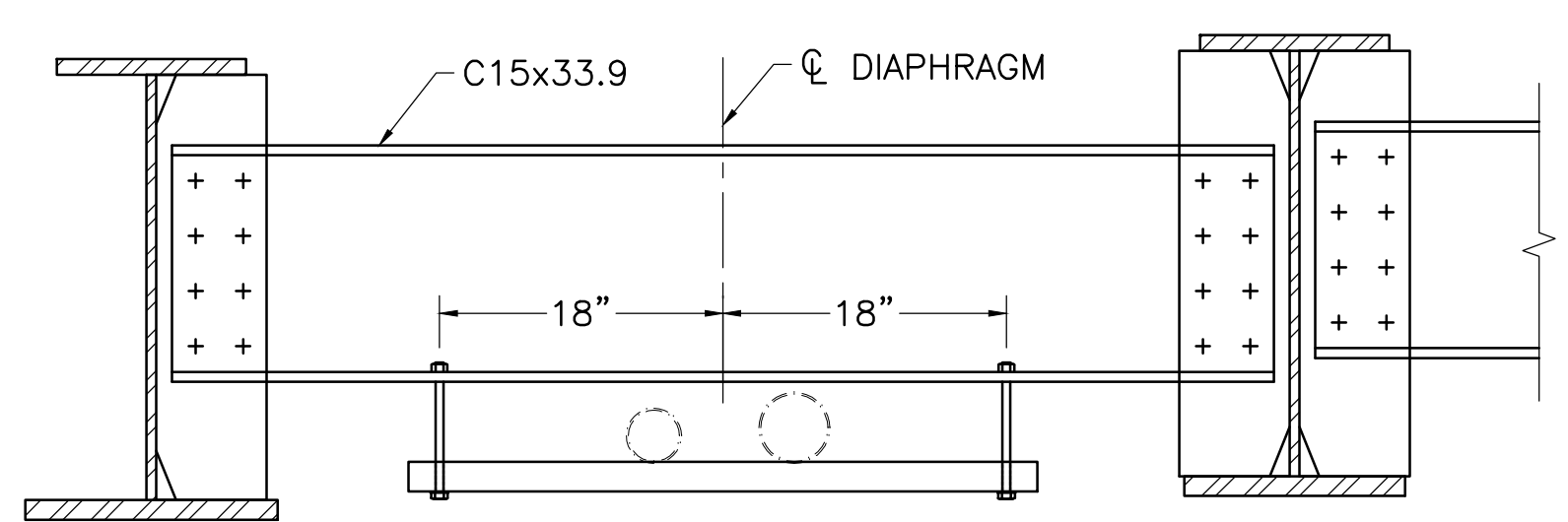


**CLIP DETAIL**  
NOT TO SCALE

NOTE: ALTERNATE COPE DETAIL MAY BE SUBSTITUTED FOR THE CLIP DETAIL SHOWN. HOWEVER CLIP SHALL BE USED IF NECESSARY TO ENSURE MINIMUM REQUIRED EDGE DISTANCES FOR BOLTING.



**DIAPHRAGM D2 AT UTILITY**  
SPANS 1 & 3  
SCALE: 1" = 1'-0"



**DIAPHRAGM D4 AT UTILITY**  
SPAN 2  
SCALE: 1" = 1'-0"

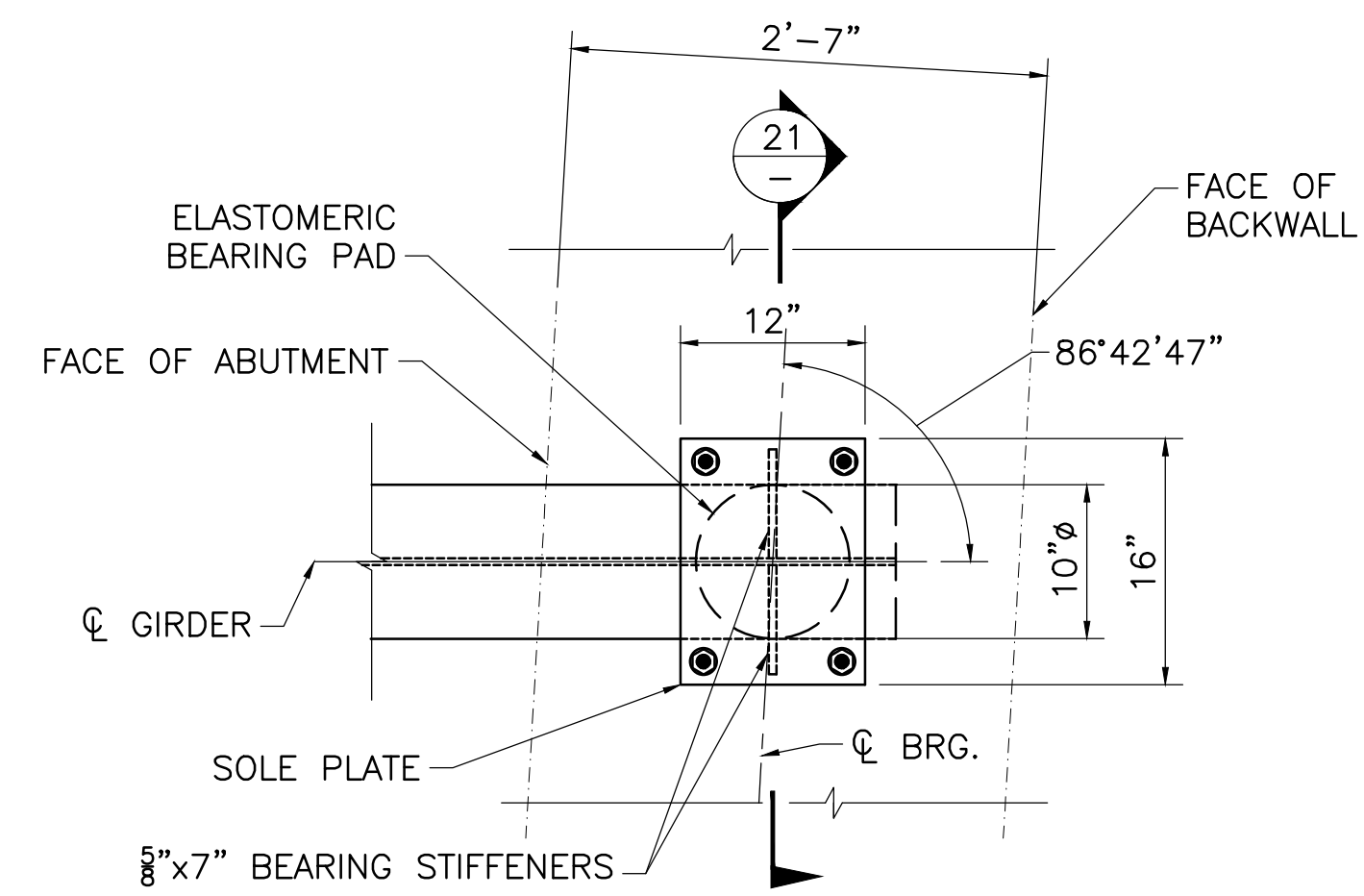
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| DATE         | DESCRIPTION                    |
|              | USE ONLY PRINTS OF LATEST DATE |



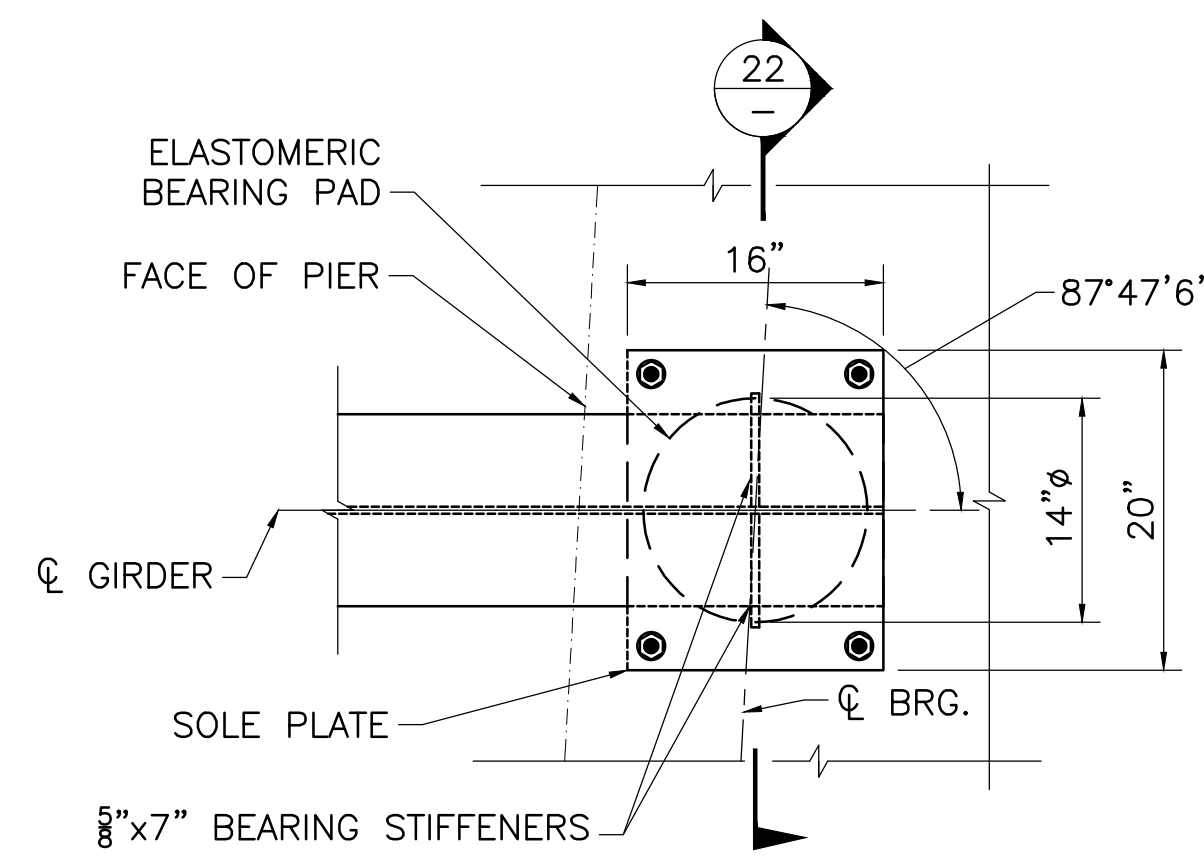


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|-------------------------|------------------------------|-----------|--------------|
| STATE                   | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
| MASS.                   | BRI-093-1 (524)<br>STP 093-1 | 48        | 60           |
| PROJECT FILE NO. 606255 |                              |           |              |

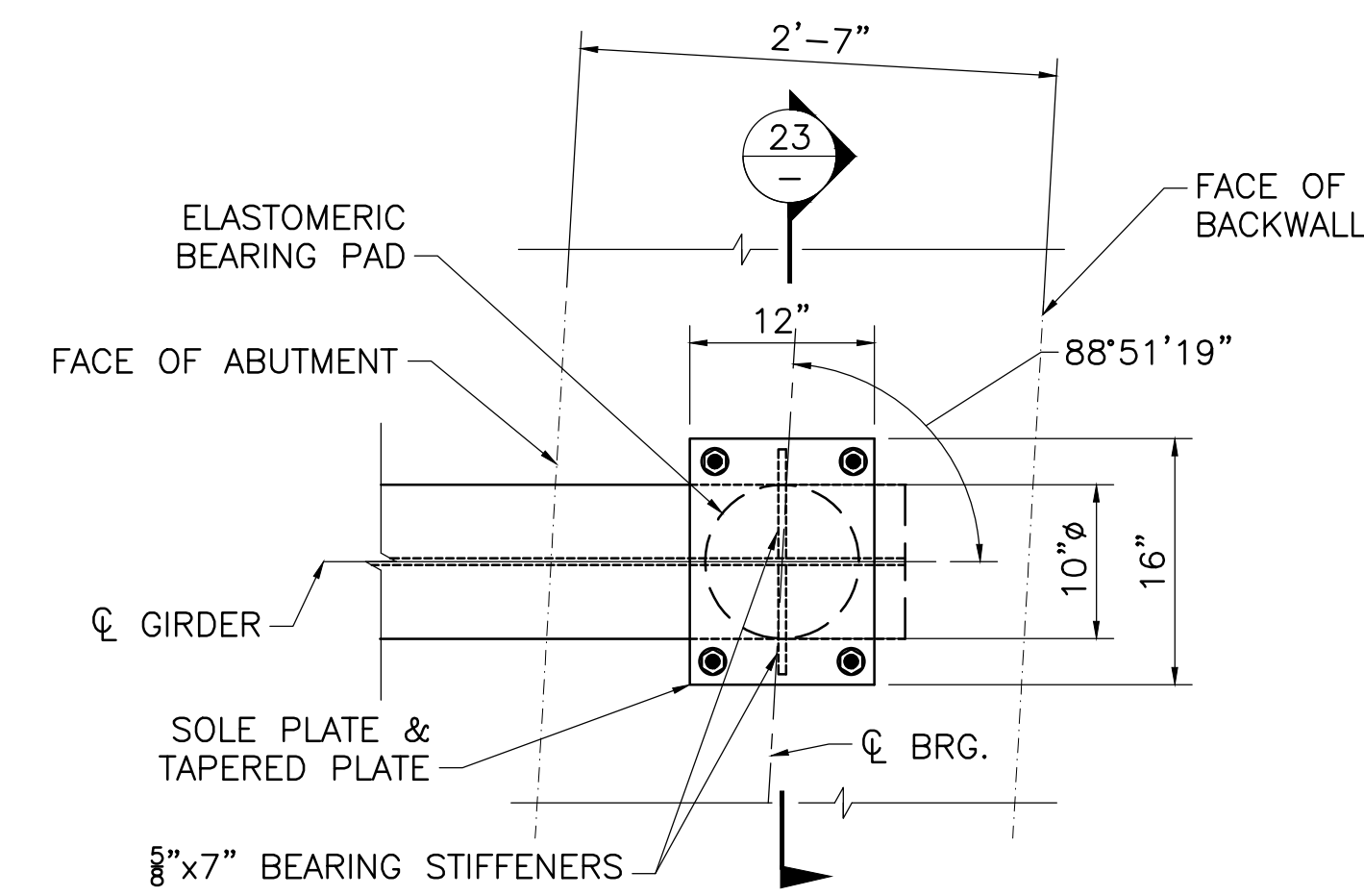
**BEARING DETAILS**



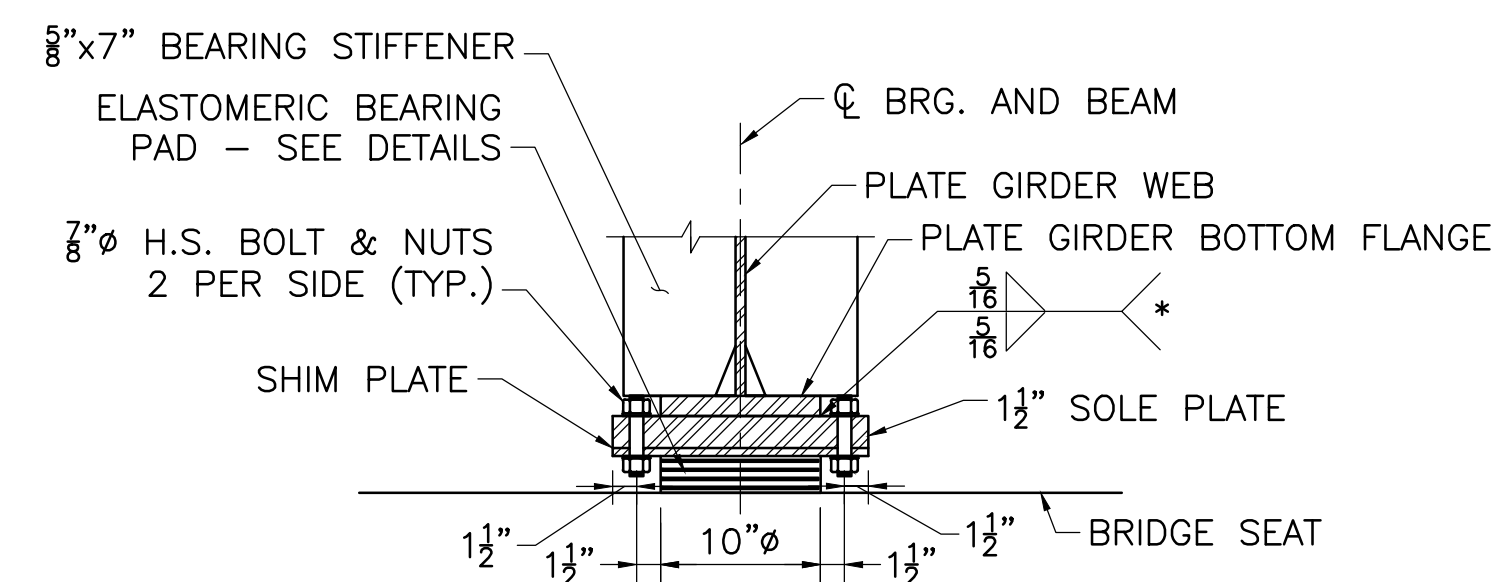
PLAN



PLAN

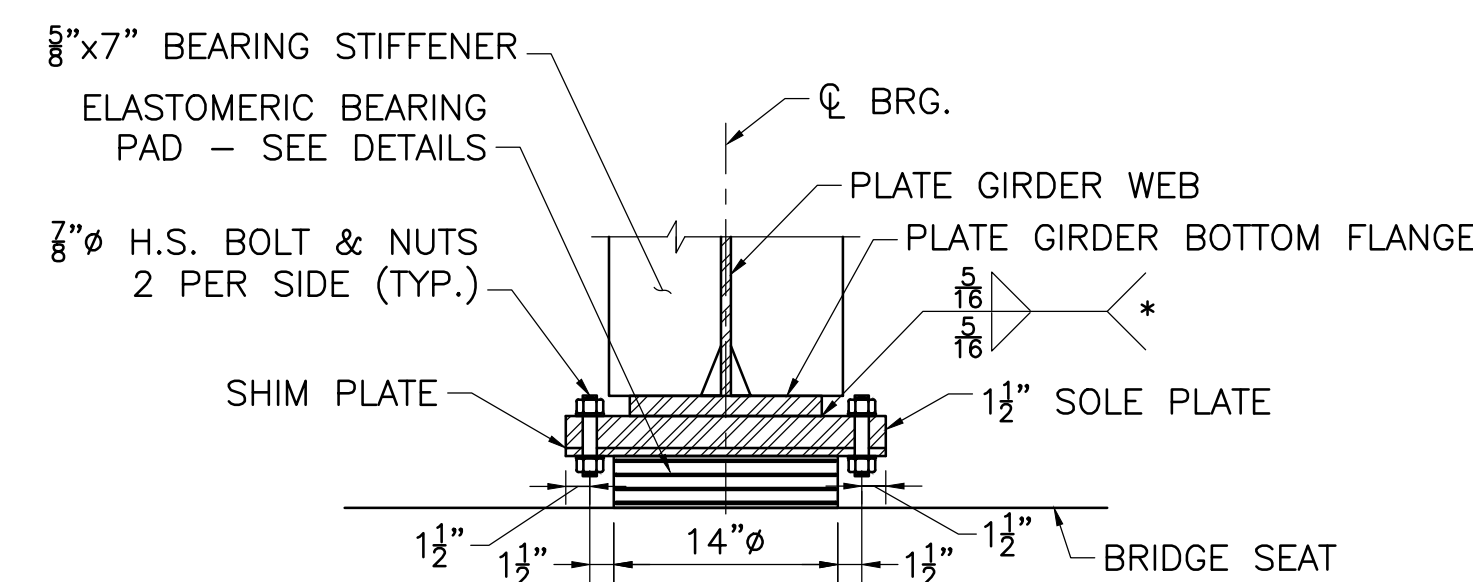


PLAN



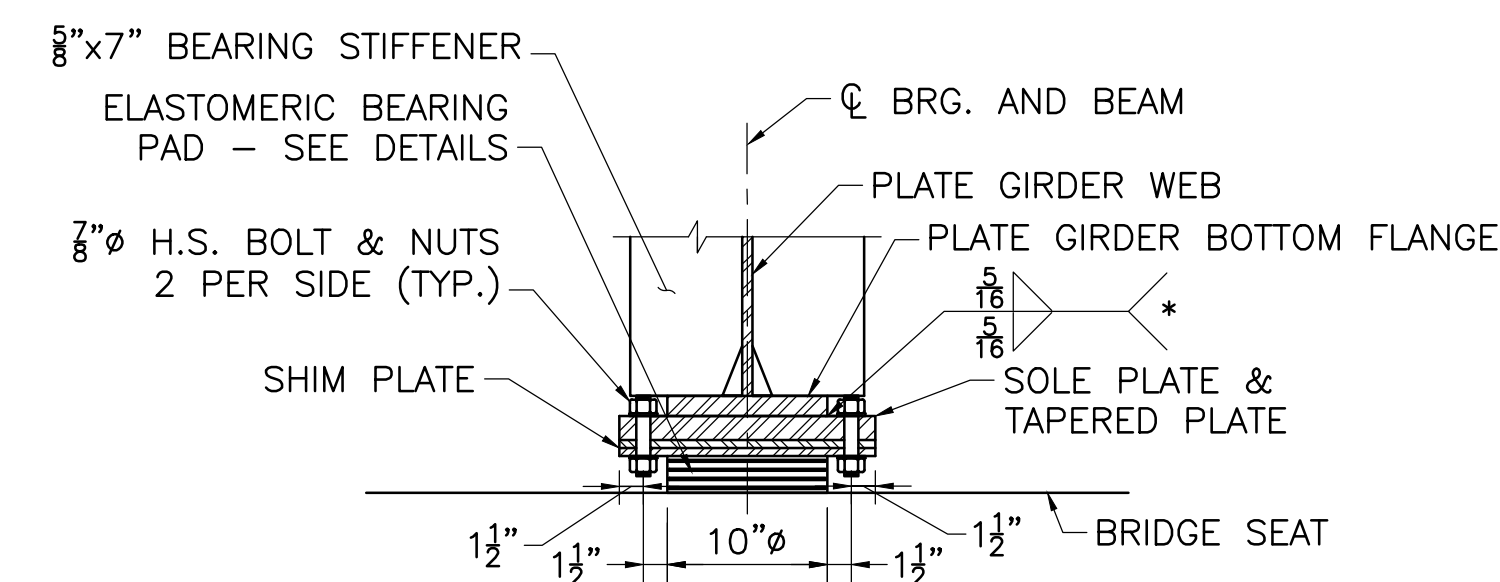
(\* - WELDS SHALL TERMINATE 1/4" FROM EDGE OF PLATE.)

SECTION 21 (21)



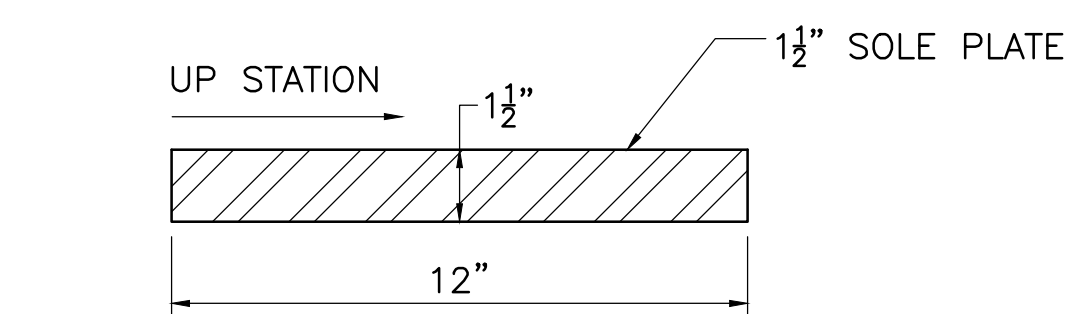
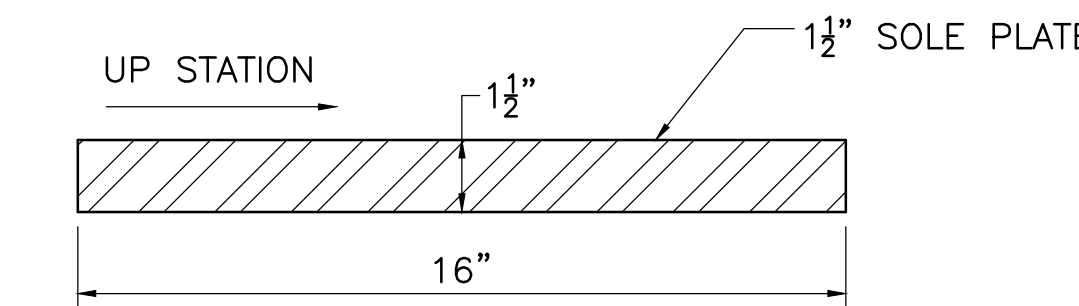
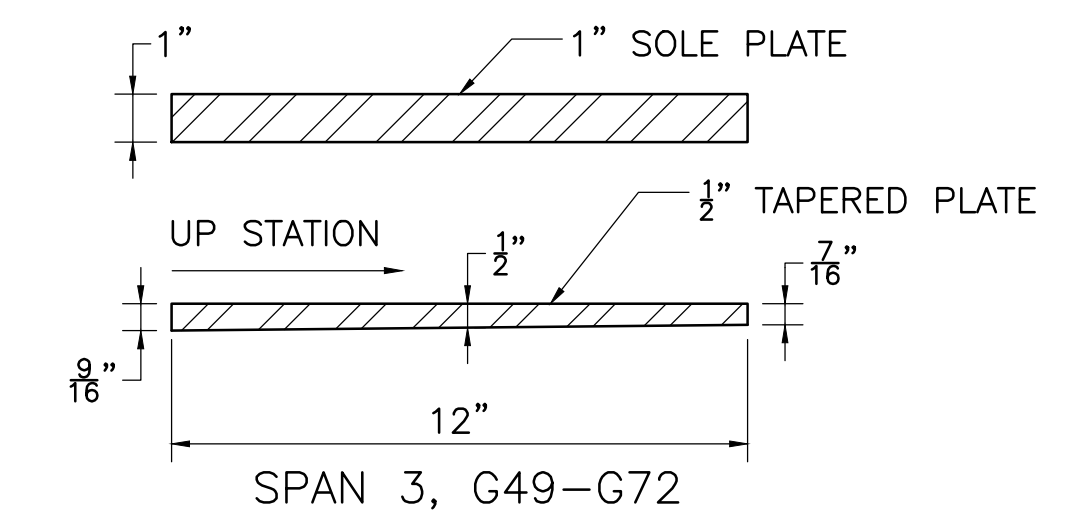
(\* - WELDS SHALL TERMINATE 1/4" FROM EDGE OF PLATE.)

SECTION 22 (22)

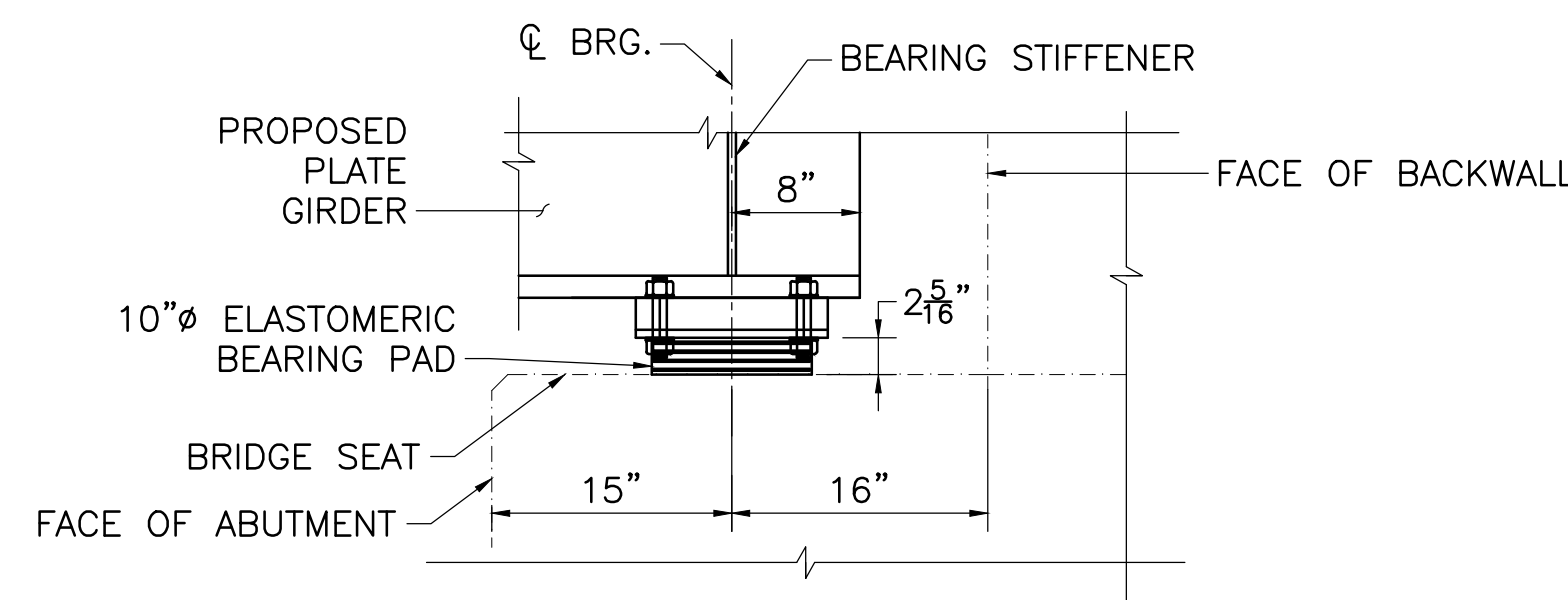


(\* - WELDS SHALL TERMINATE 1/4" FROM EDGE OF PLATE.)

SECTION 23 (23)

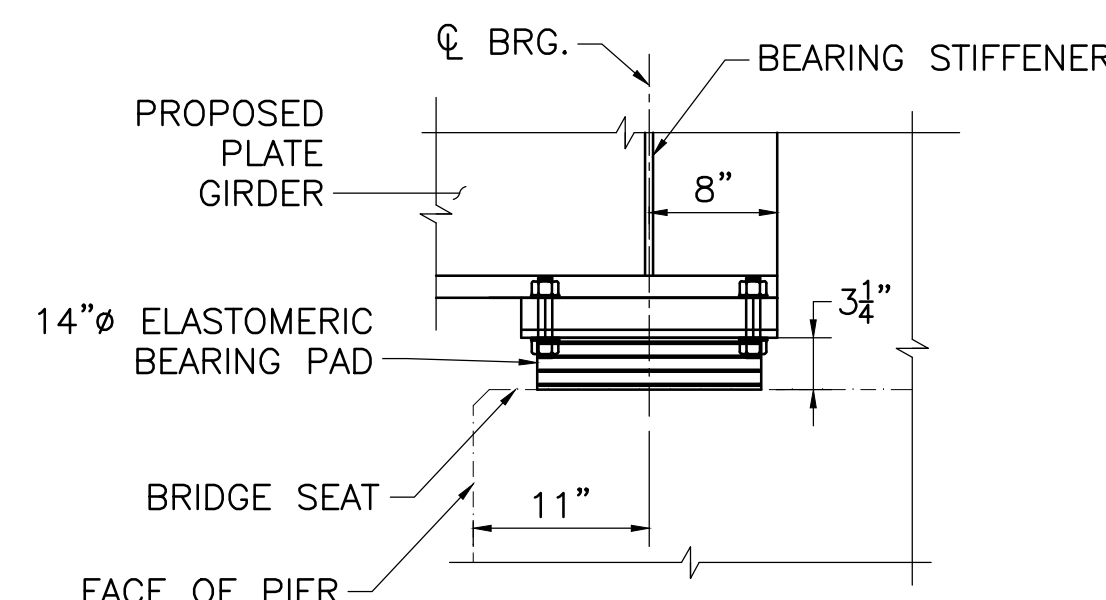


**SOLE PLATE**  
SCALE: 3" = 1'-0"



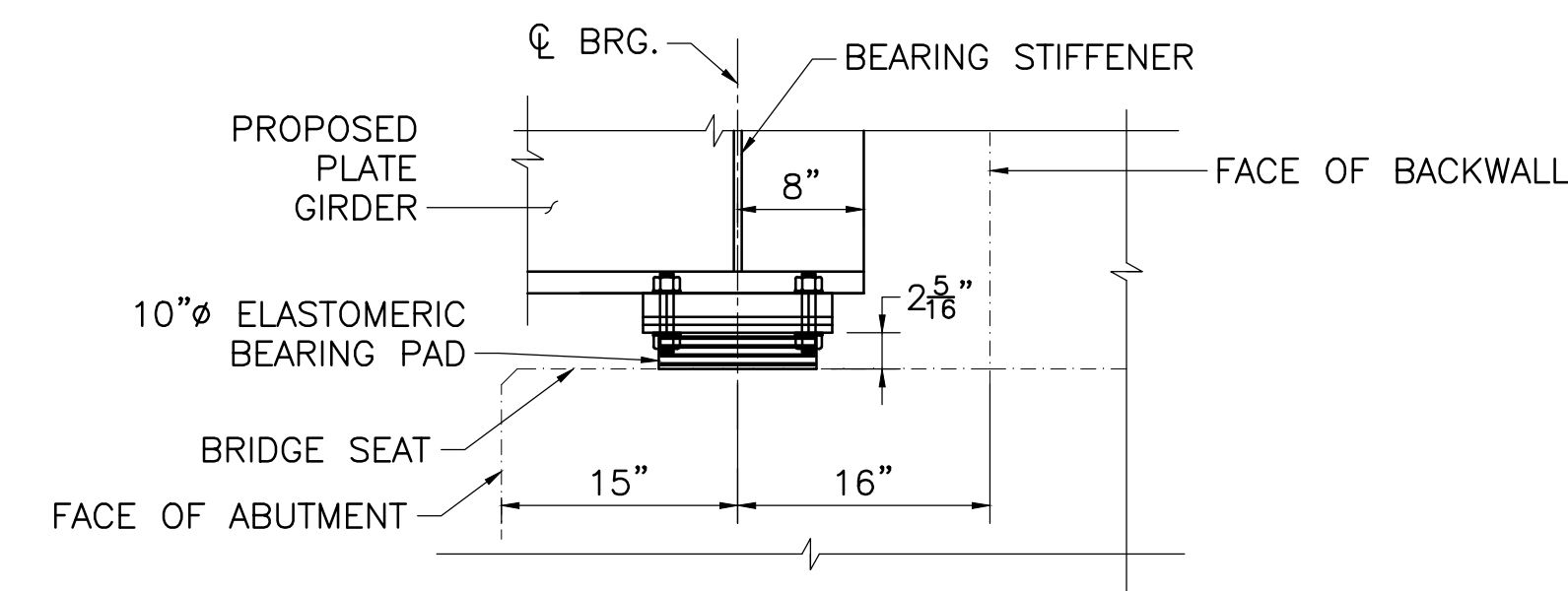
ELEVATION

**SPAN 1**  
SCALE: 1" = 1'-0"



ELEVATION

**SPAN 2**  
SCALE: 1" = 1'-0"

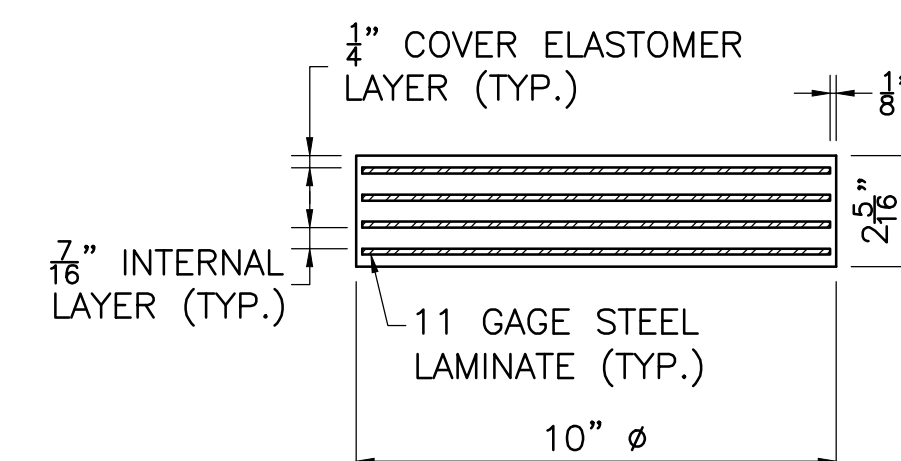


ELEVATION

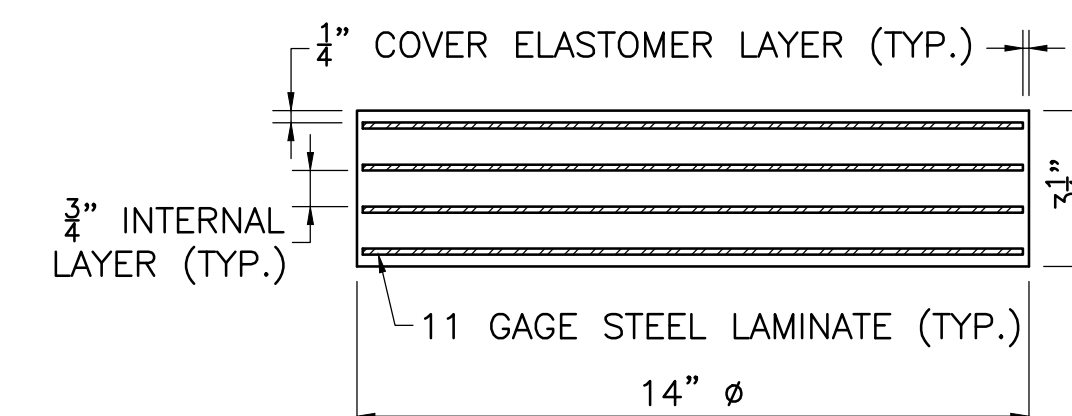
**SPAN 3**  
SCALE: 1" = 1'-0"

**BEARING NOTES:**

- ELASTOMER SHALL HAVE A HARDNESS OF 60 DUROMETER.
- STEEL LAMINATES SHALL CONFORM TO ASTM A 1011 GRADE 36
- THE COMPRESSIVE DESIGN LOAD ON THE BEARING PAD IS 72 KIPS FOR SPANS 1&3, AND 106 KIPS FOR SPAN 2.
- THE COMPRESSIVE DESIGN STRESS IS THE RESULT OF DIVIDING THE COMPRESSIVE DESIGN LOAD BY THE AREA OF THE PAD AND IS EQUAL TO 0.916 KSI FOR SPANS 1&3, AND 0.687 KSI FOR SPAN 2.
- ELASTOMERIC BEARING PAD SHALL NOT BE VULCANIZED TO THE SOLE PLATE.
- STEEL SOLE PLATE SHALL CONFORM TO AASHTO M270 GRADE 36 AND SHALL BE HOT-DIP GALVANIZED.
- CENTER THE ELASTOMERIC PAD UNDER THE SOLE PLATE DURING ERECTION.
- BEAMS SHALL BE ERECTED WHEN THE AMBIENT TEMPERATURE IS BETWEEN 50°F AND 100°F.
- ALL BEARINGS SHALL BE MARKED PRIOR TO SHIPPING. THE MARKS SHALL INCLUDE THE BEARING LOCATION ON THE BRIDGE, AND A 1/2" DEEP DIRECTION ARROW THAT POINTS UP-STATION. ALL MARKS SHALL BE PERMANENT AND VISIBLE AFTER THE BEARING IS INSTALLED.



**SPANS 1 & 3**



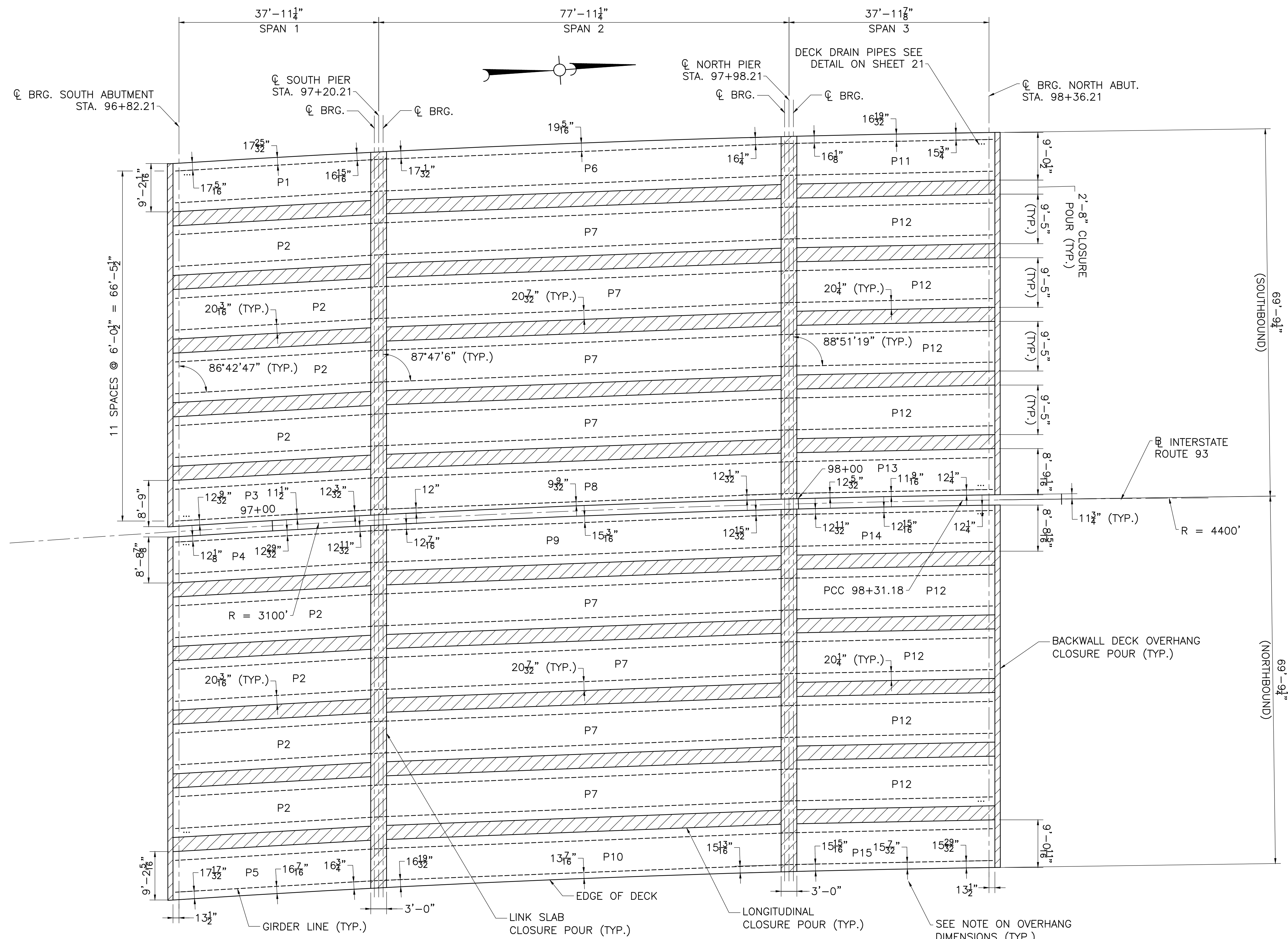
**SPAN 2**

**ELASTOMERIC BEARING PAD**

SCALE 3" = 1'-0"

|              |                                |
|--------------|--------------------------------|
| MAY 18, 2011 | ISSUED FOR CONSTRUCTION        |
| DATE         | DESCRIPTION                    |
|              | USE ONLY PRINTS OF LATEST DATE |

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| STATE                   | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
| MASS.                   | BRI-093-1 (524)<br>STP 093-1 | 49        | 60           |
| PROJECT FILE NO. 606255 |                              |           |              |
| MODULAR UNIT LAYOUT     |                              |           |              |



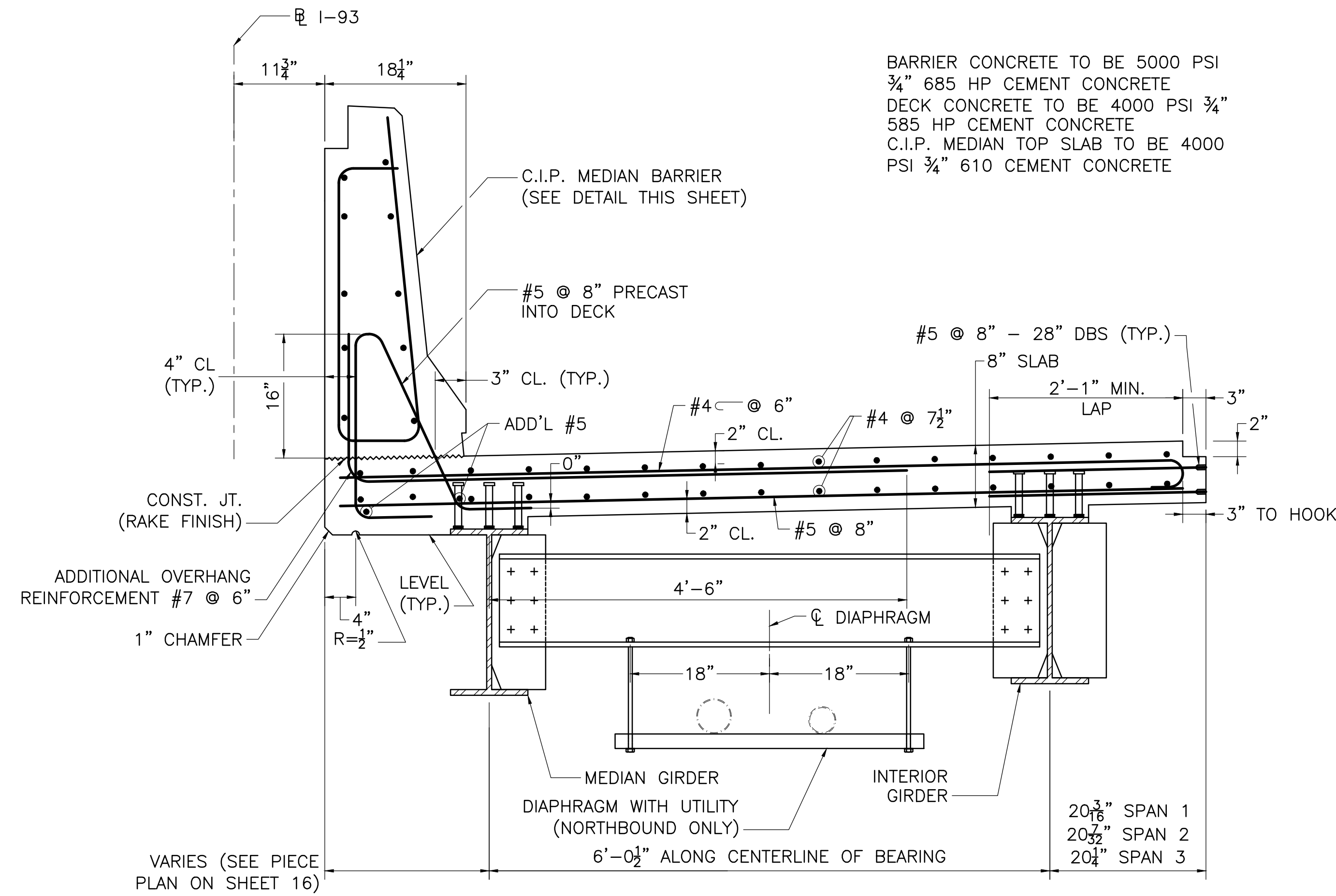
NOTE:  
OVERHANG DIMENSIONS MEASURED AT  
MIDDLE AND BOTH ENDS OF EACH SPAN

**MODULAR UNIT PIECE LAYOUT**  
SCALE 3/32" = 1'-0"

|              |                                |
|--------------|--------------------------------|
| MAY 18, 2011 | ISSUED FOR CONSTRUCTION        |
| DATE         | DESCRIPTION                    |
|              | USE ONLY PRINTS OF LATEST DATE |

|                         |                              |           |              |
|-------------------------|------------------------------|-----------|--------------|
| STATE                   | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
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| PROJECT FILE NO. 606255 |                              |           |              |

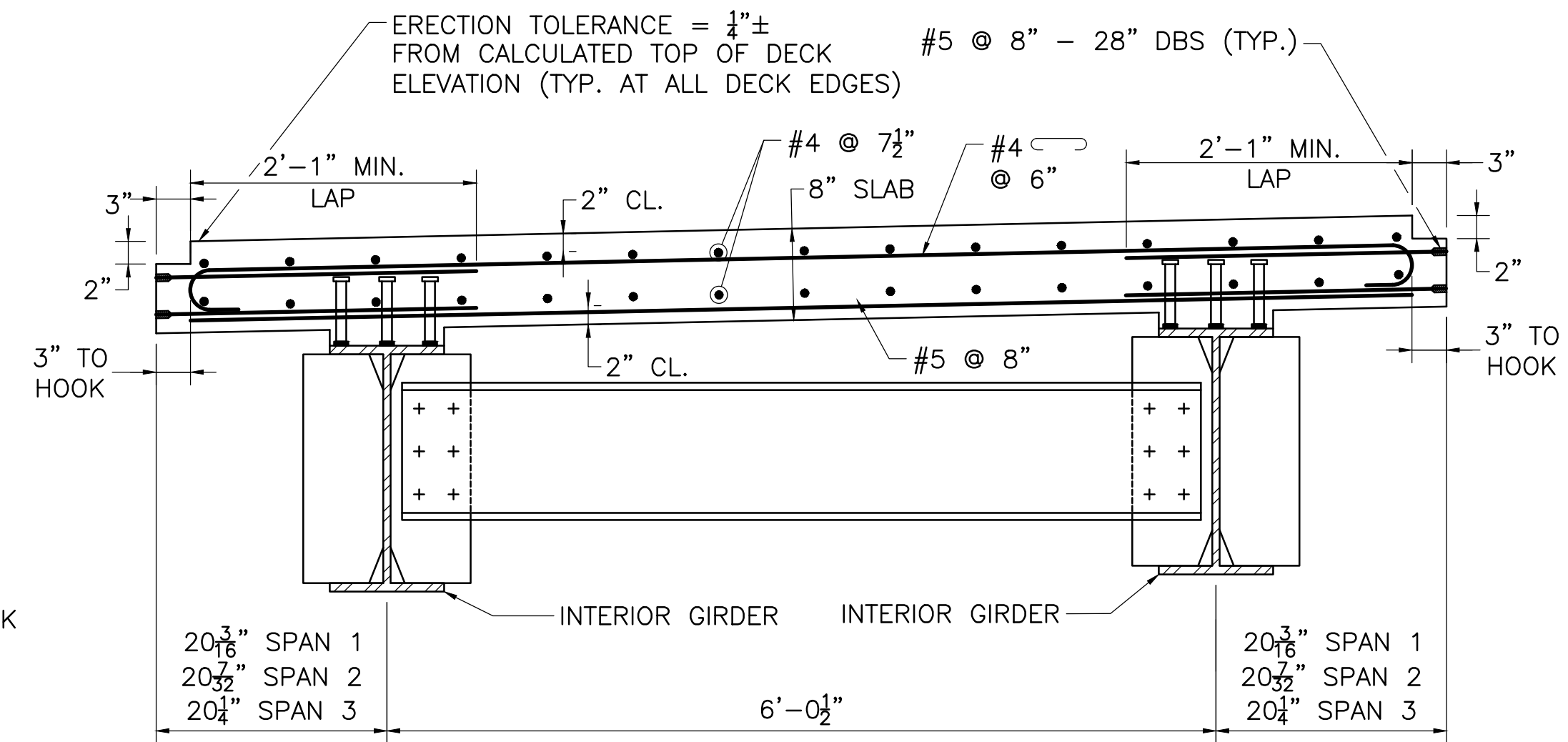
**DECK DETAILS**



NORTHBOUND SHOWN, SOUTHBOUND SIMILAR EXCEPT AS NOTED

**MEDIAN MODULAR SECTION**

SCALE: 1"=1'-0"



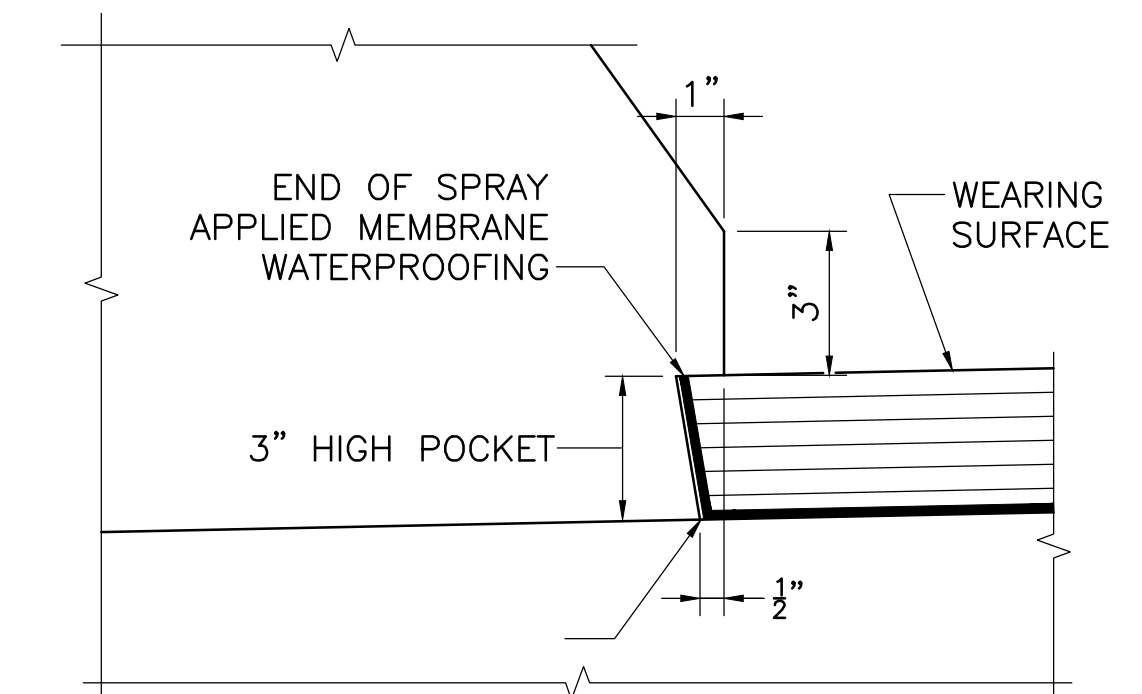
**INTERIOR MODULAR SECTION**

(LOOKING NORTH)

SCALE: 1"=1'-0"

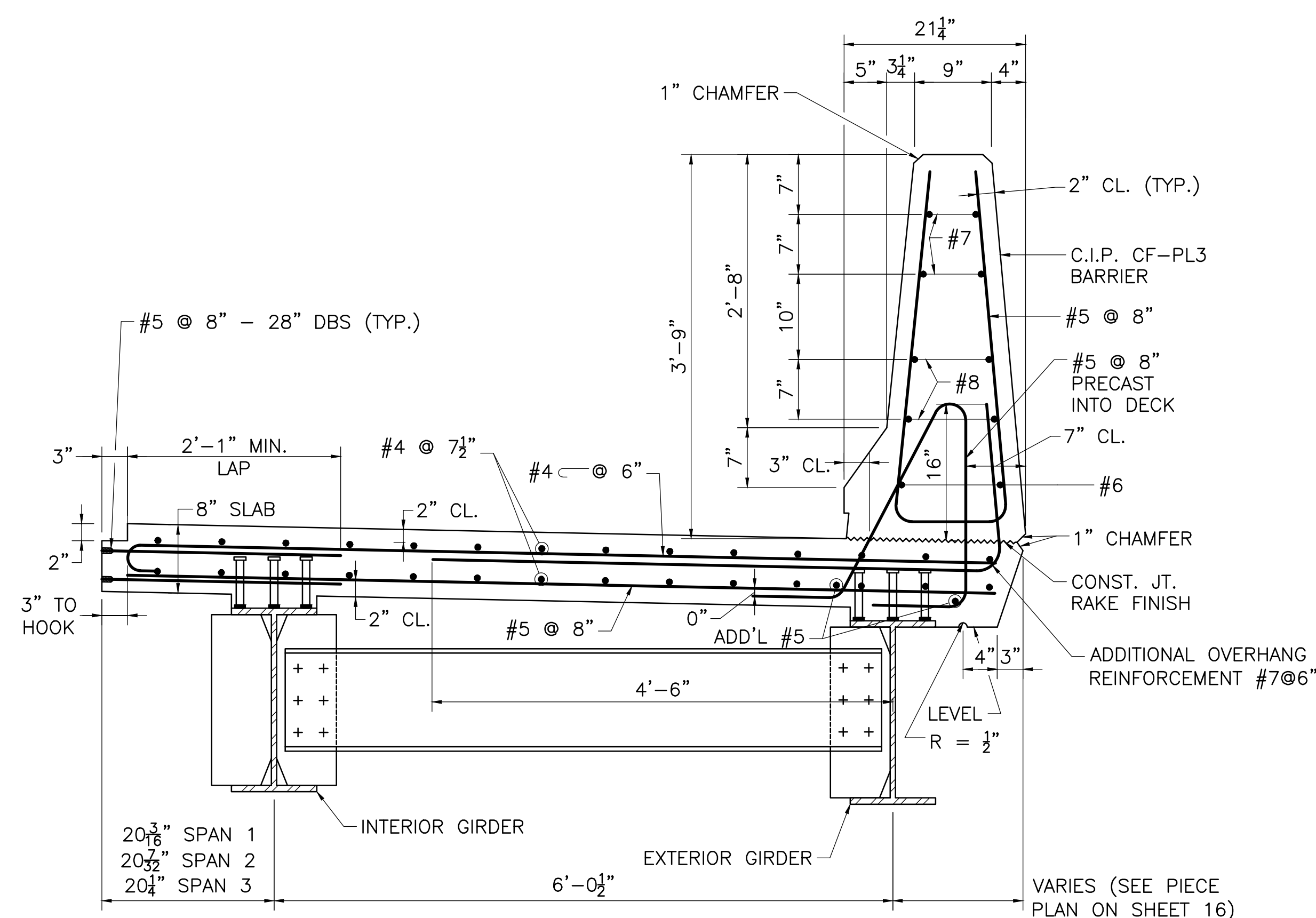
**NOTES:**

- ROADWAY DECK SLAB SHALL BE 4000 PSI, 3/4 IN, 585 HP CEMENT CONCRETE.
- LONGITUDINAL REINFORCEMENT SHALL BE PLACED PARALLEL TO THE CL OF CONSTRUCTION. TRANSVERSE (PRIMARY) REINFORCEMENT SHALL BE PLACED PERPENDICULAR TO THE CL OF CONSTRUCTION.
- ALL REINFORCEMENT AND SUPPORT DEVICES SHALL BE COATED
- THE FINISHED SURFACE OF BRIDGE DECK SHALL BE A MAG FLOAT FINISH AND WITHOUT ANY PROJECTIONS THAT COULD PUNCTURE THE MEMBRANE WATERPROOFING OR DEPRESSIONS THAT COULD RETAIN WATER.



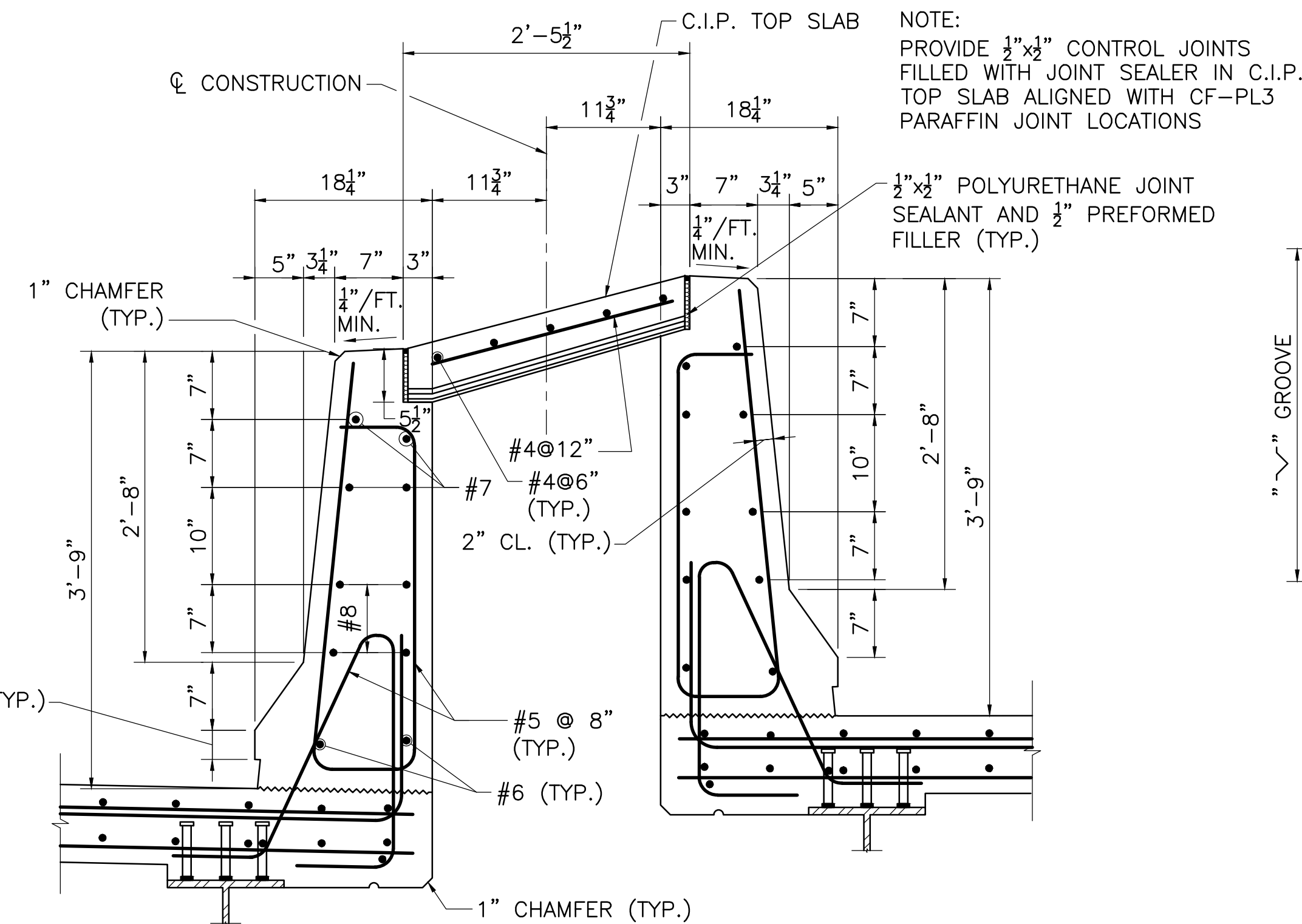
**FACE OF CURB DETAILS**

SCALE: 3" = 1'-0"



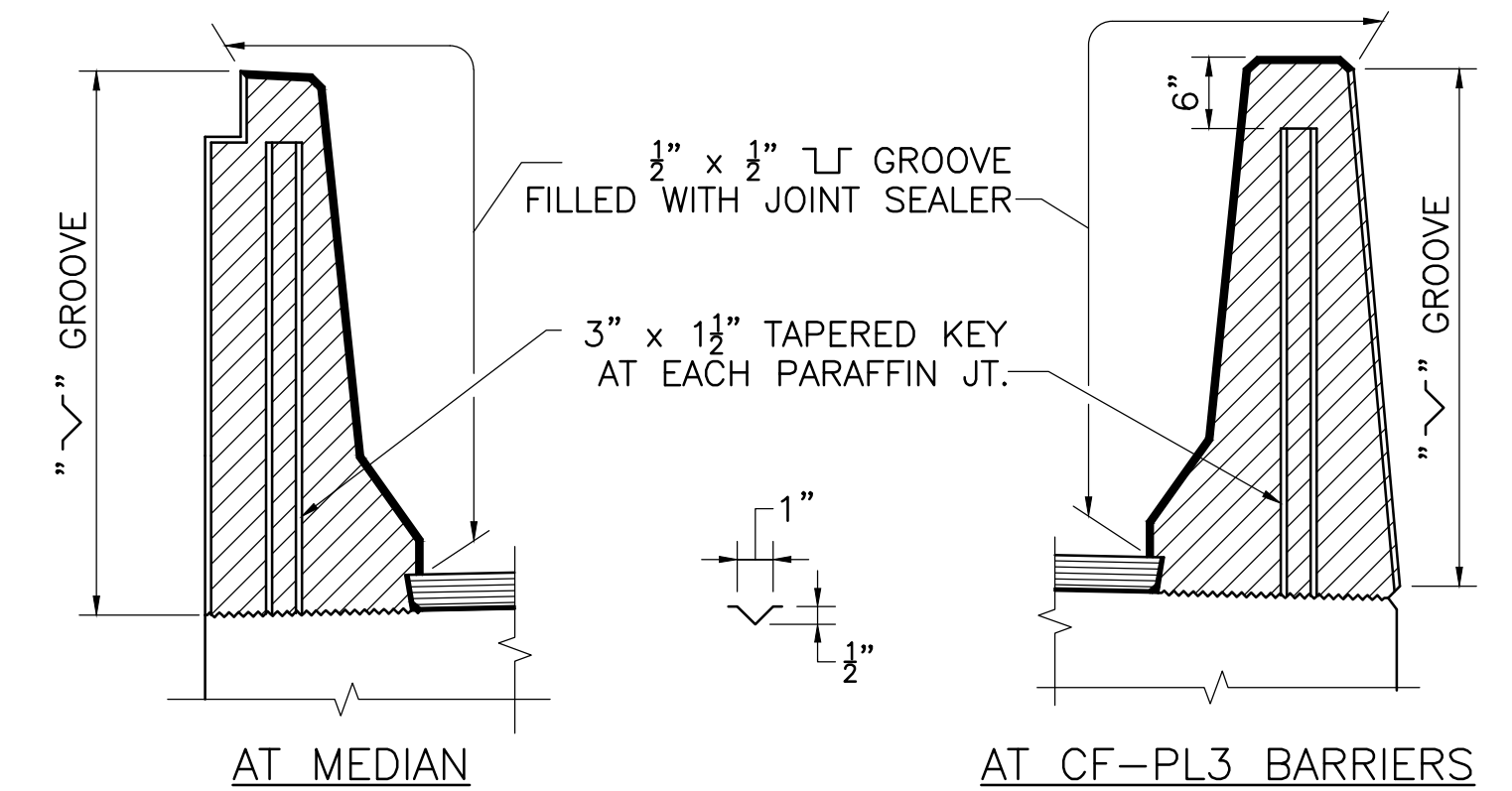
**FASCIA MODULAR SECTION**

SCALE: 1" = 1'-0"



**MEDIAN BARRIER DETAIL**

SCALE: 1"=1'-0"



AT MEDIAN

AT CF-PL3 BARRIERS

**NOTES:**

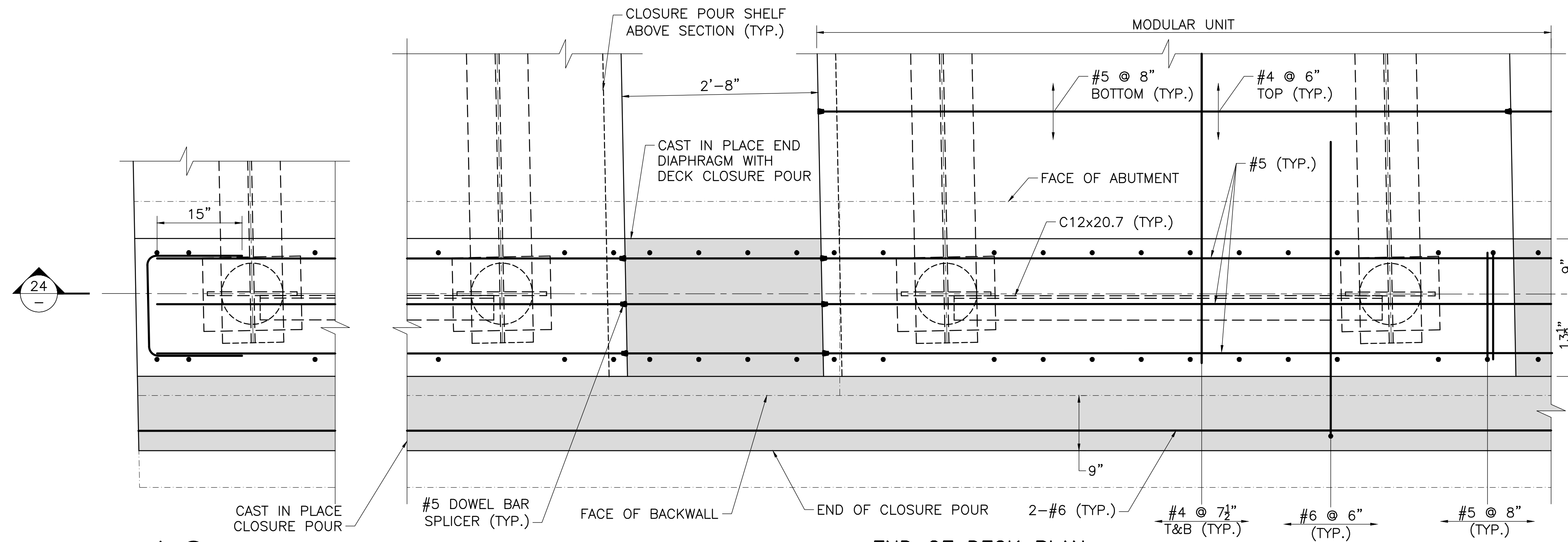
- ALL CONCRETE ABOVE SLAB SHALL BE POURED IN ALTERNATING SECTIONS WITH NOT LESS THAN 3 DAYS BETWEEN POURS.
- DO NOT CARRY LONGITUDINAL BARS THROUGH THE PARAFFIN JOINTS. END THE REINFORCEMENT 2" CLEAR OF JOINT.
- JOINT SHALL BE SQUARE TO FACE OF CURB.

**PARAFFIN JOINT DETAILS**

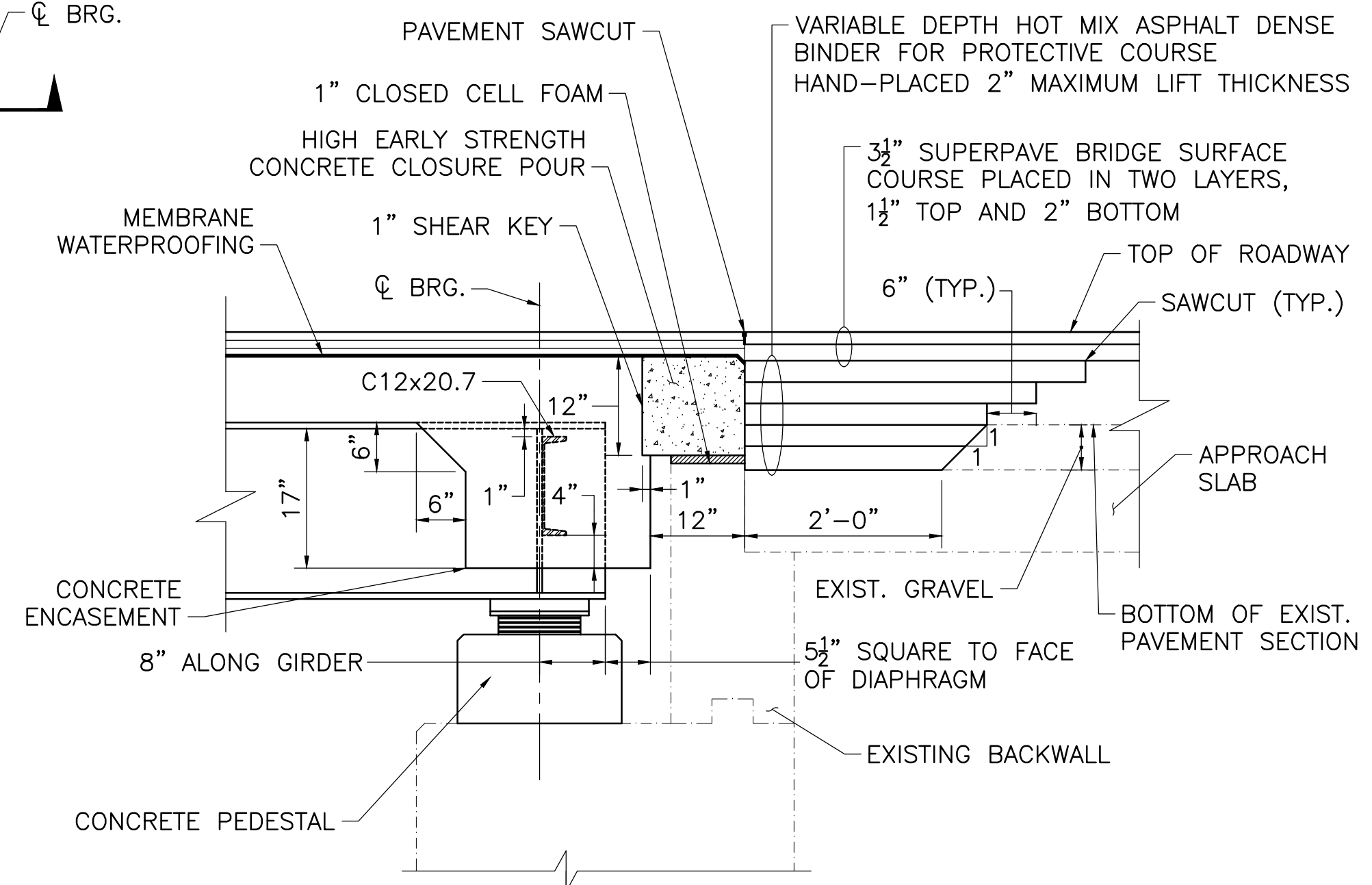
SCALE: 3/4" = 1'-0"

|                                |                         |
|--------------------------------|-------------------------|
| MAY 18, 2011                   | ISSUED FOR CONSTRUCTION |
| DATE                           | DESCRIPTION             |
| USE ONLY PRINTS OF LATEST DATE |                         |

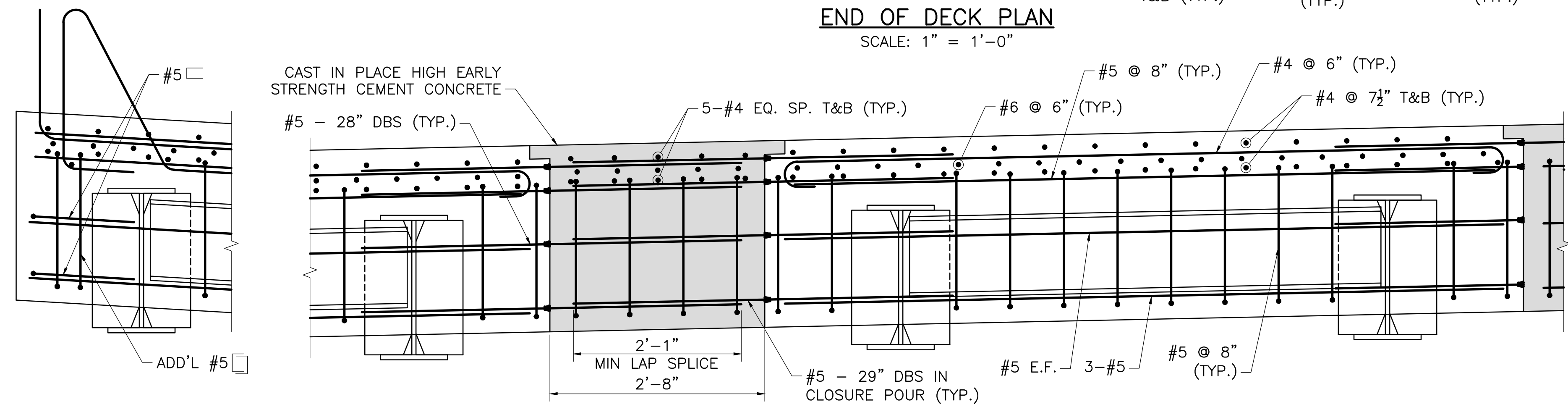
|                         |                              |           |              |
|-------------------------|------------------------------|-----------|--------------|
| STATE                   | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
| MASS.                   | BRI-093-1 (524)<br>STP 093-1 | 51        | 60           |
| PROJECT FILE NO. 606255 |                              |           |              |
| END OF DECK DETAILS     |                              |           |              |



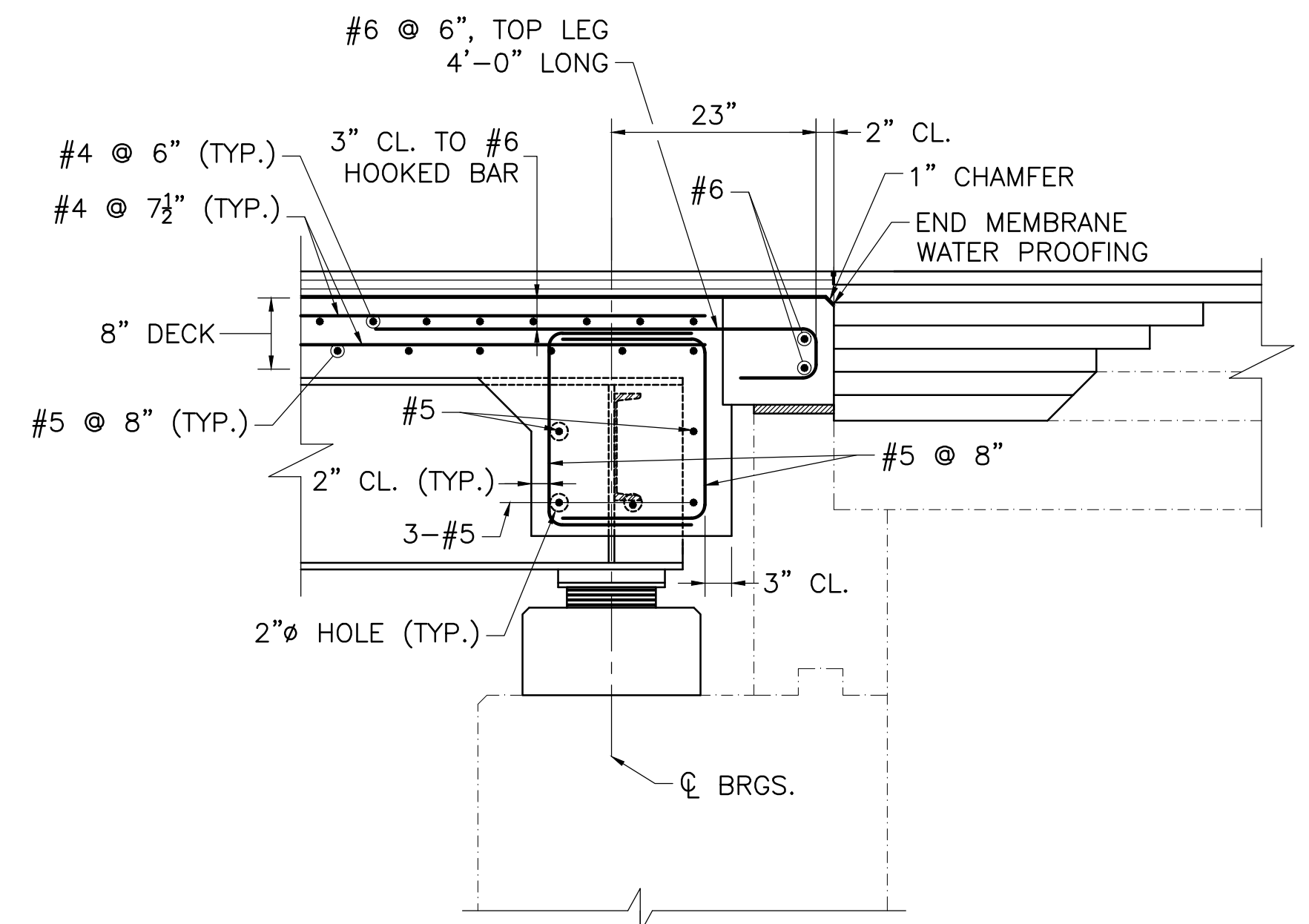
**END OF DECK PLAN**  
SCALE: 1" = 1'-0"



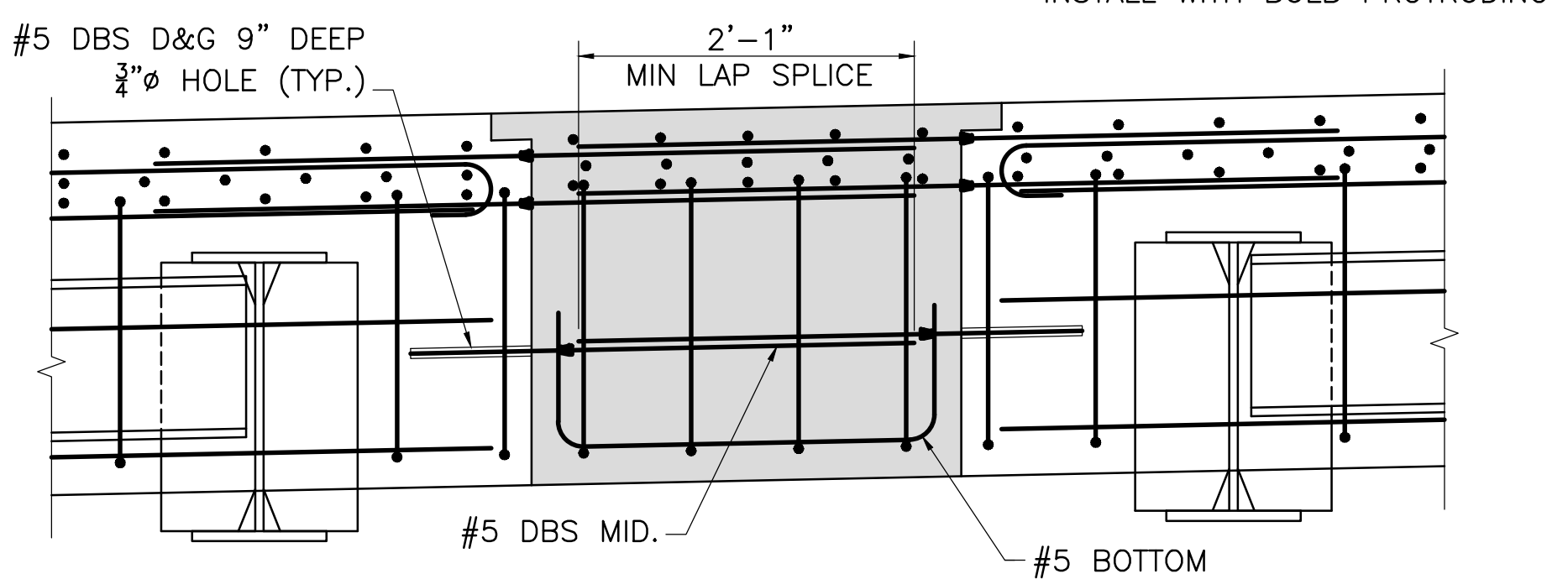
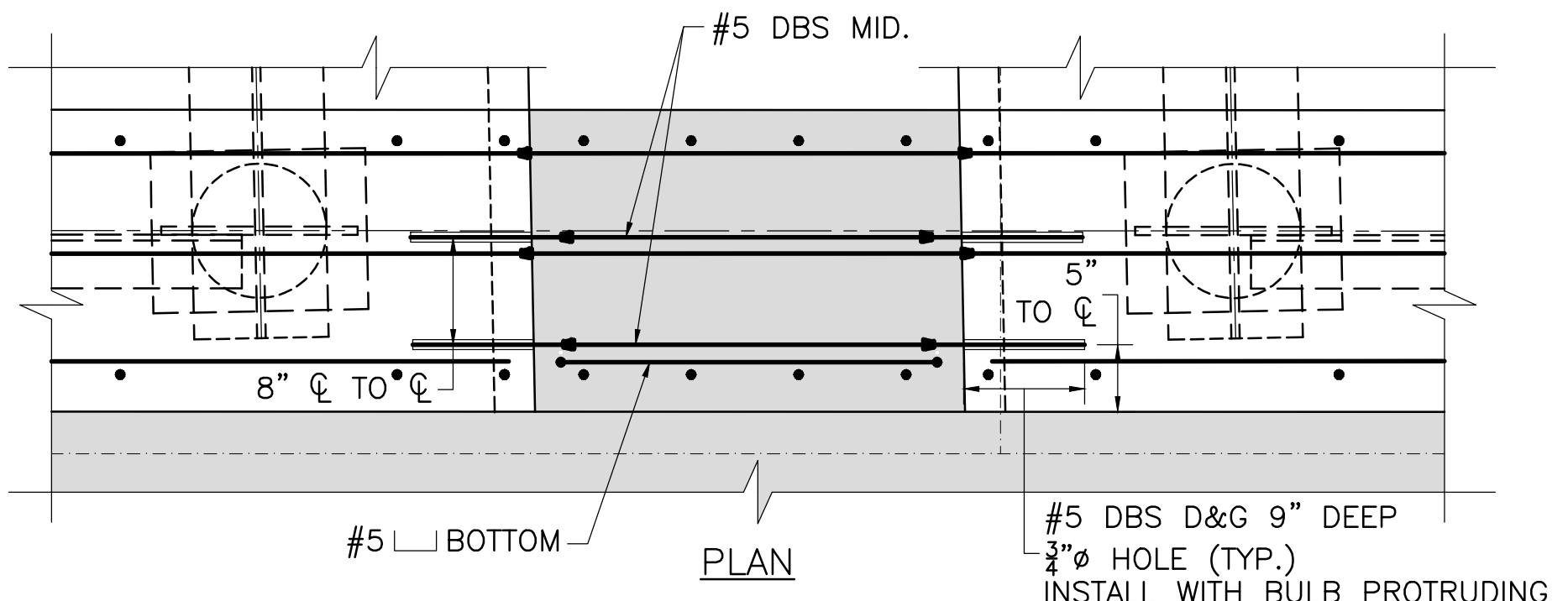
NOTE:  
REINFORCEMENT NOT SHOWN FOR CLARITY  
**TYPICAL SECTION AT ABUTMENT**  
(SECTION TAKEN SQUARE TO ABUTMENT FACE)  
SCALE: 3/4" = 1'-0"



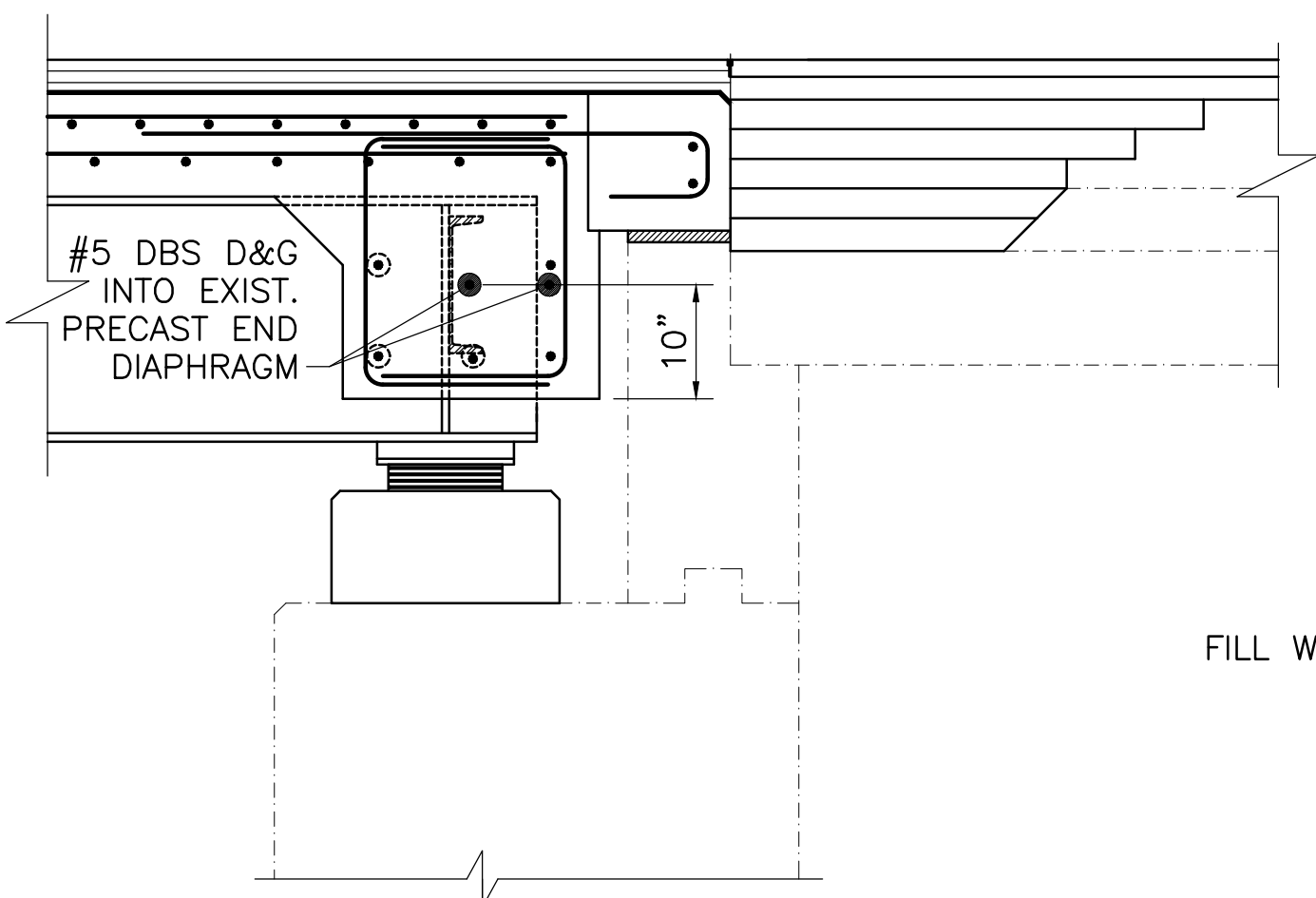
**SOUTHBOUND CAST IN PLACE END DIAPHRAGM WITH CLOSURE POUR SECTION 24**  
SCALE: 1" = 1'-0"



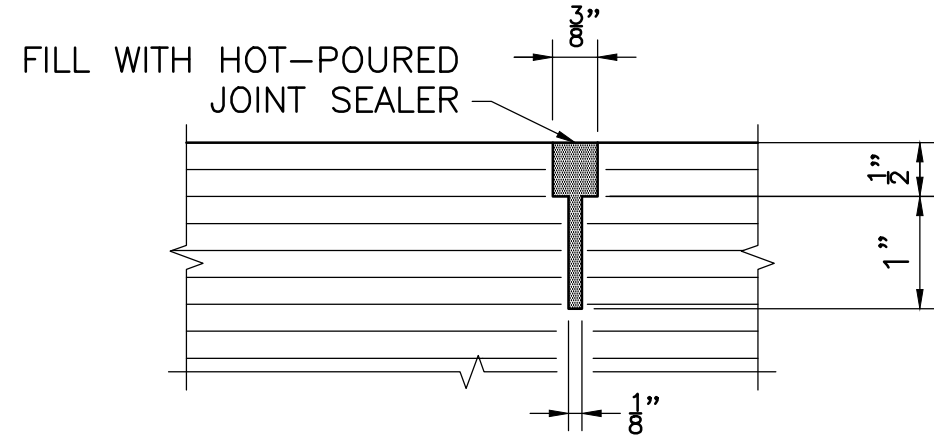
**TYPICAL SECTION AT ABUTMENT**  
(SECTION TAKEN SQUARE TO ABUTMENT FACE)  
SCALE: 3/4" = 1'-0"



**NORTHBOUND CAST IN PLACE END DIAPHRAGM RETROFIT**  
(FOR REINFORCEMENT DETAILS NOT SHOWN SEE TYPICAL SOUTHBOUND DETAILS ABOVE)  
SCALE: 1" = 1'-0"



**NORTHBOUND CAST IN PLACE END DIAPHRAGM RETROFIT**  
(FOR REINFORCEMENT DETAILS NOT SHOWN SEE TYPICAL SECTION AT ABUTMENT)  
SCALE: 3/4" = 1'-0"



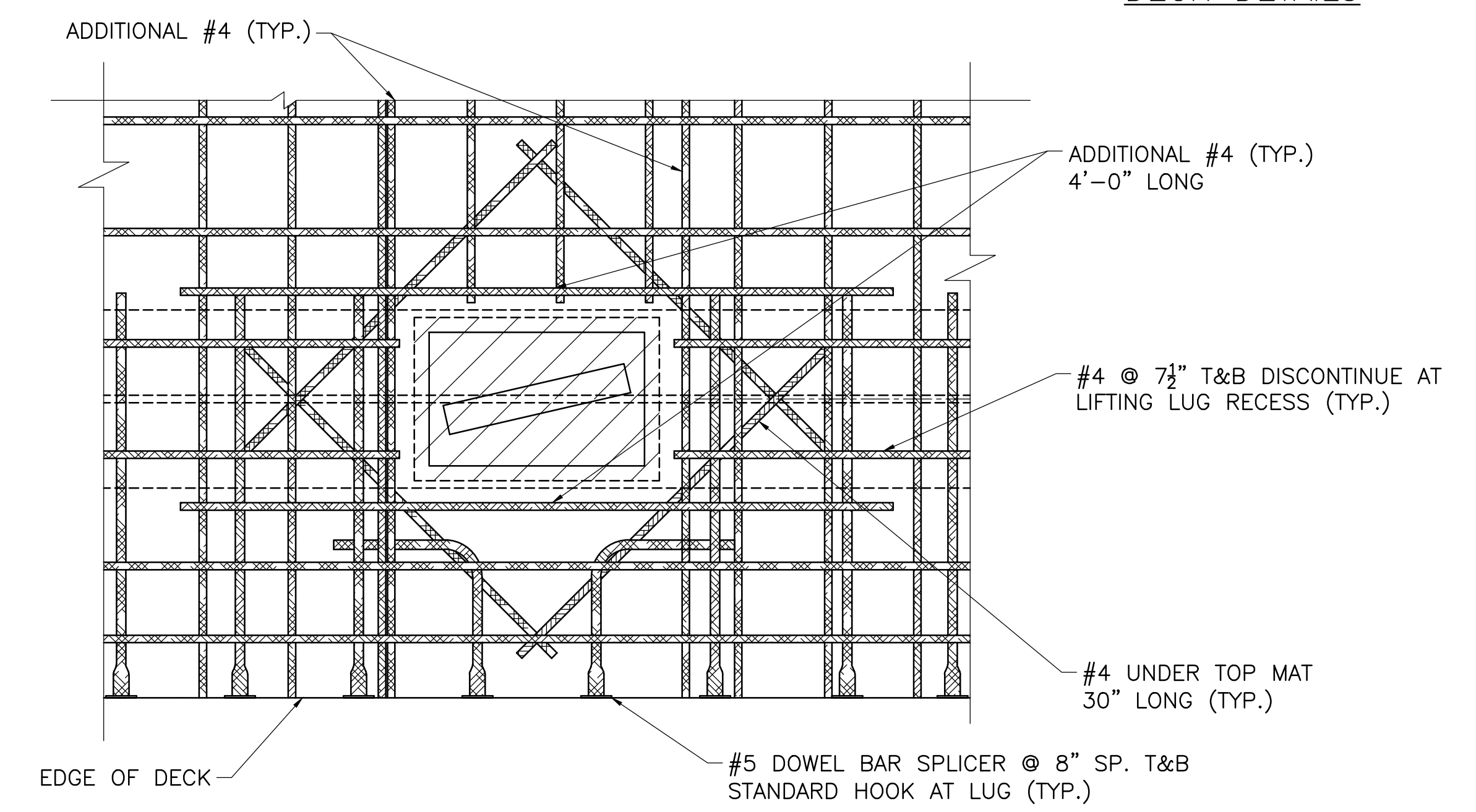
**PAVEMENT SAWCUT DETAIL**  
NOT TO SCALE

|              |                                |
|--------------|--------------------------------|
| MAY 18, 2011 | ISSUED FOR CONSTRUCTION        |
| DATE         | DESCRIPTION                    |
|              | USE ONLY PRINTS OF LATEST DATE |



|                         |                              |           |              |
|-------------------------|------------------------------|-----------|--------------|
| STATE                   | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
| MASS.                   | BRI-093-1 (524)<br>STP 093-1 | 53        | 60           |
| PROJECT FILE NO. 606255 |                              |           |              |

**DECK DETAILS**



NOTE:  
TYPICAL MODULAR UNIT SHOWN. ADJUST DECK OVERHANG AND BARRIER REINFORCEMENT SIMILARLY AT FASCIA AND MEDIAN UNITS.  
BOTTOM REINFORCEMENT NOT SHOWN FOR CLARITY BUT SHALL BE TREATED SIMILARLY

**REINFORCEMENT AT LIFTING LUG PLAN**

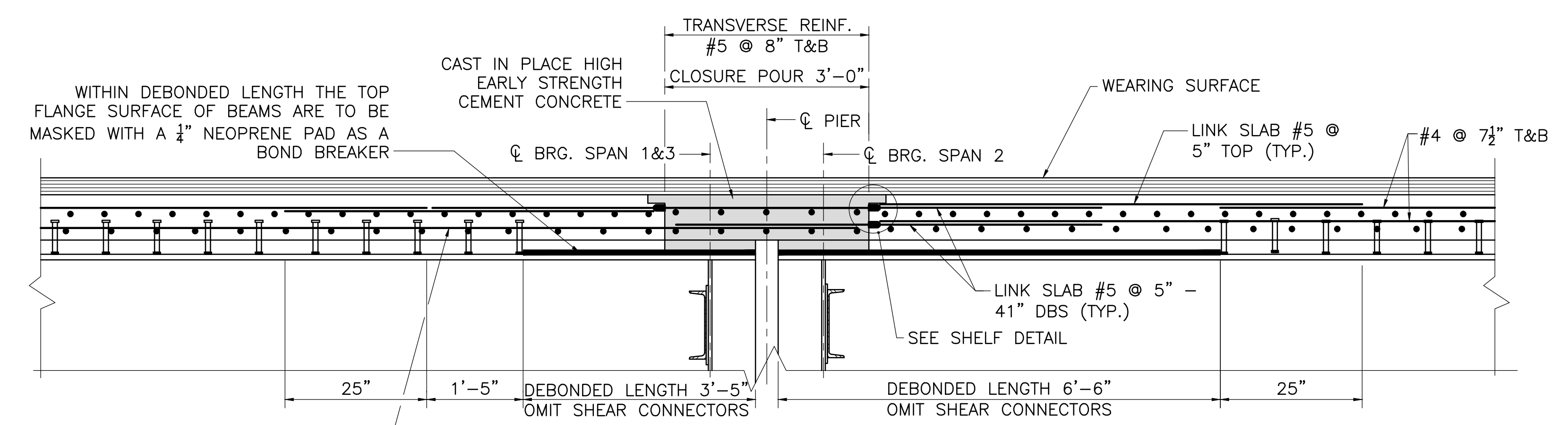
SCALE: 1/2" = 1'-0"

**RECESS AT LIFTING LUG PLAN**

SCALE: 1/2" = 1'-0"

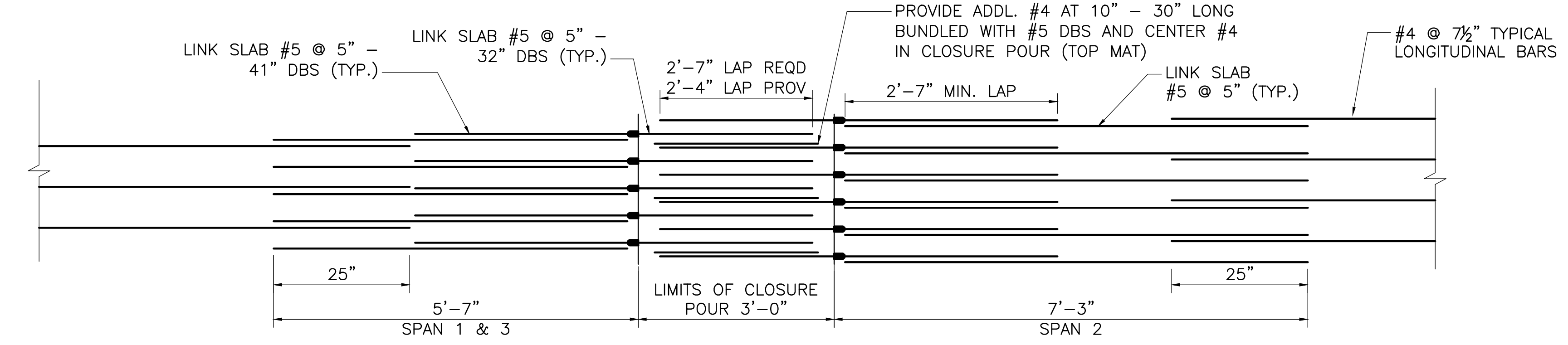
**RECESS AT LIFTING LUG SIDE VIEW**

SCALE: 1/2" = 1'-0"



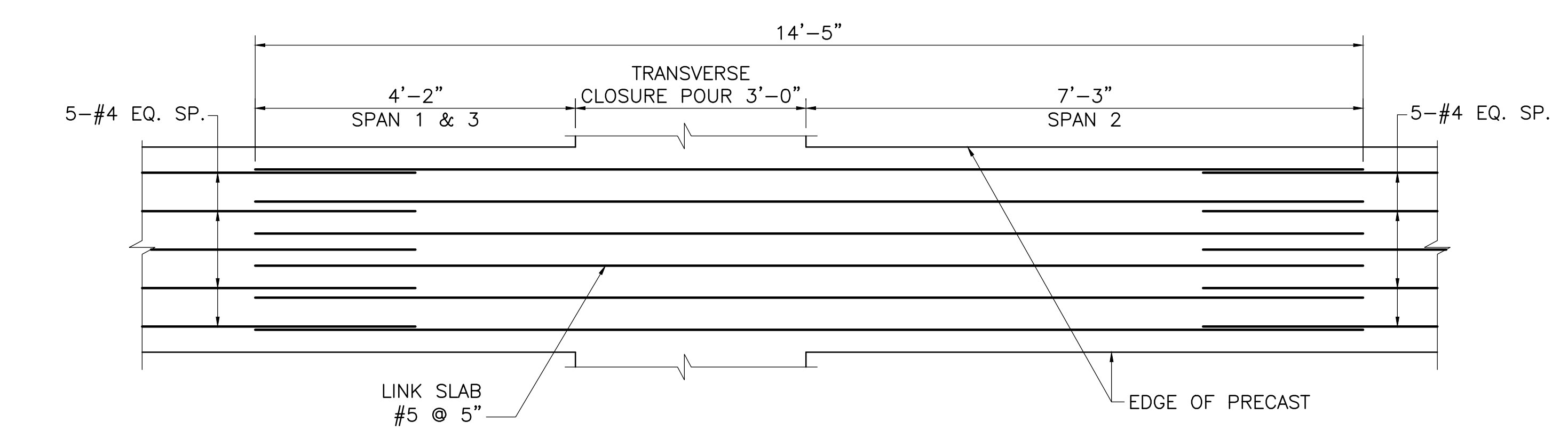
**SECTION - LINK SLAB DETAILS**

SCALE: 3/4" = 1'-0"



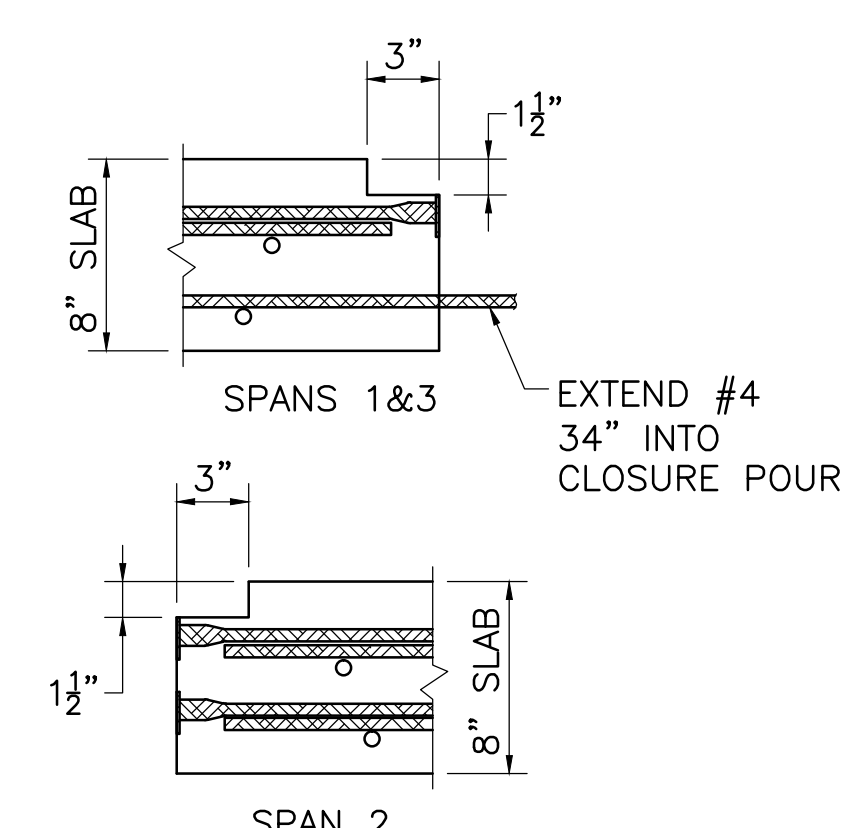
**PLAN - LINK SLAB REINFORCEMENT AND LAPPING AT PIER**

SCALE: 3/4" = 1'-0"  
NOTE: TRANSVERSE SLAB REINF. NOT SHOWN FOR CLARITY



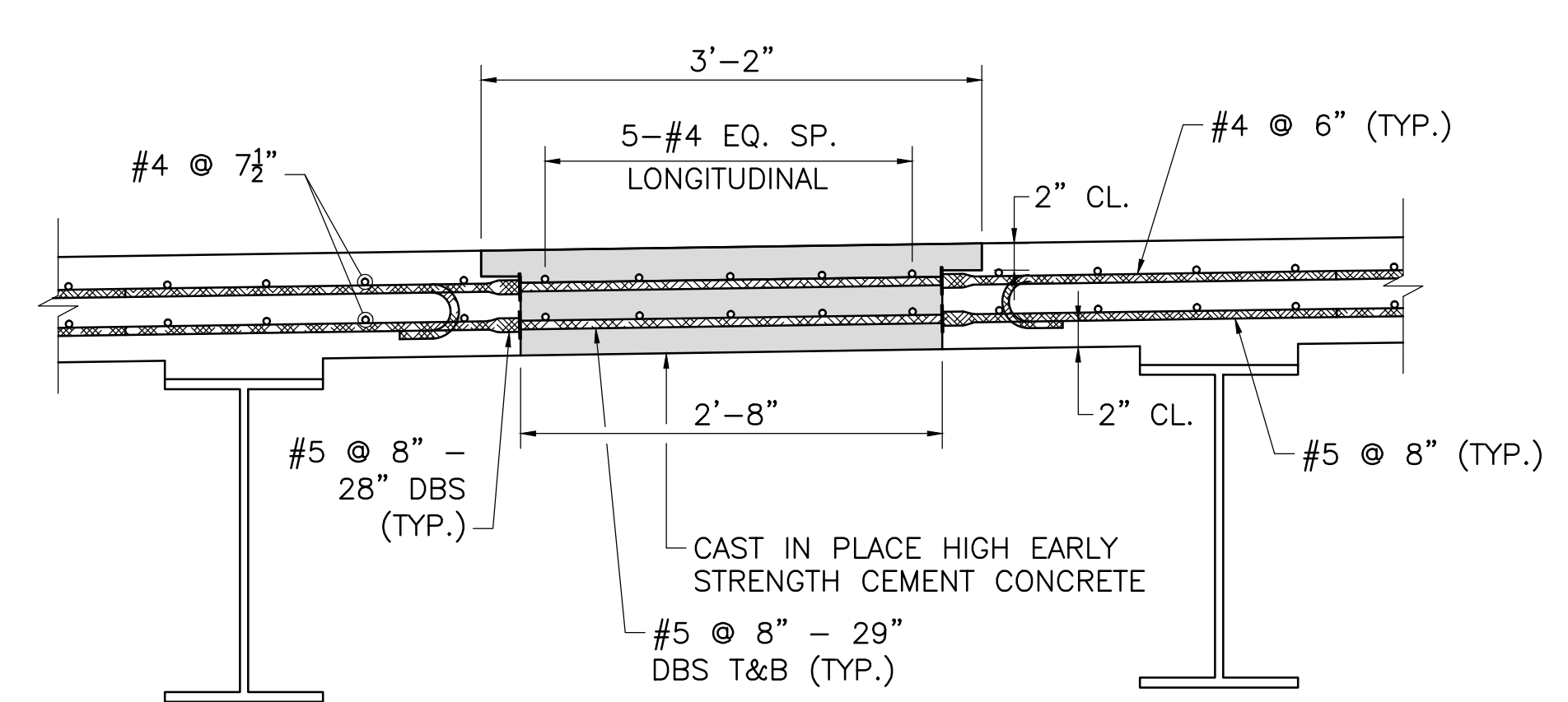
**PLAN - CLOSURE POUR AT LINK SLAB REINFORCEMENT**

SCALE: 3/4" = 1'-0"  
NOTE: TRANSVERSE SLAB REINF. NOT SHOWN FOR CLARITY



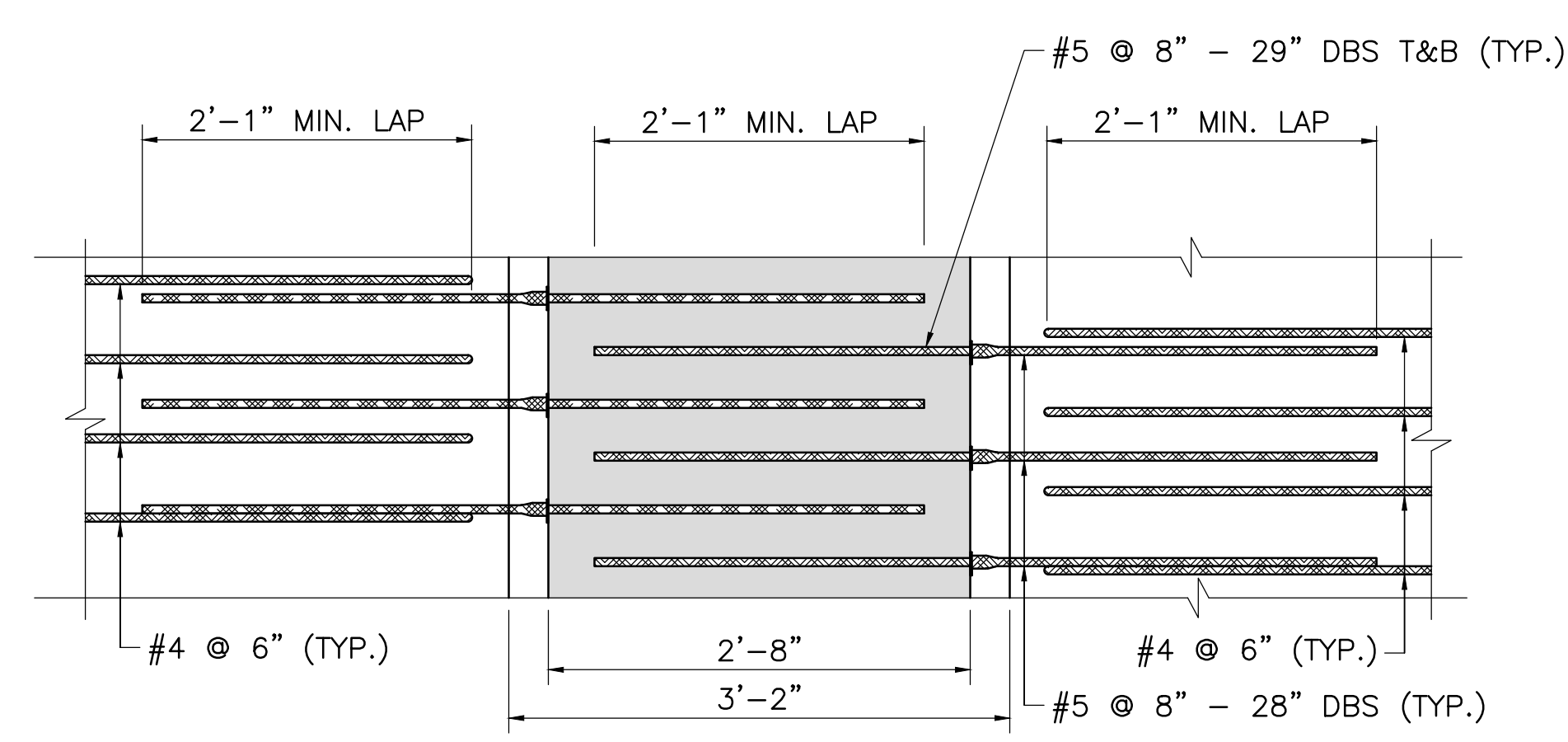
**SHELF DETAIL AT EDGE OF PRECAST**

SCALE: 1 1/2" = 1'-0"



**TYPICAL LONGITUDINAL CLOSURE POUR SECTION**

SCALE 1" = 1'-0"



NOTE: LONGITUDINAL SLAB REINF. AND BOTTOM TRANSVERSE REINF. NOT SHOWN FOR CLARITY

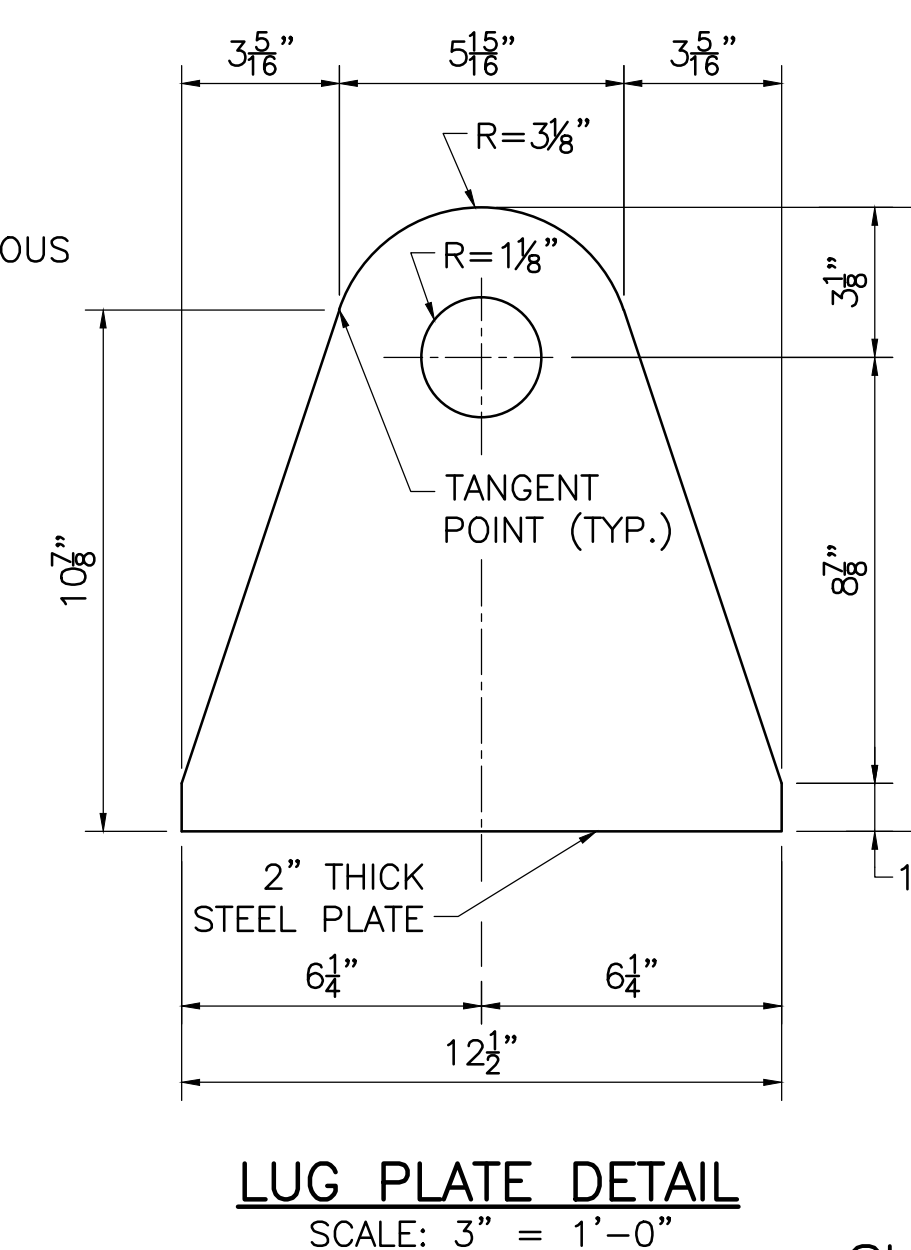
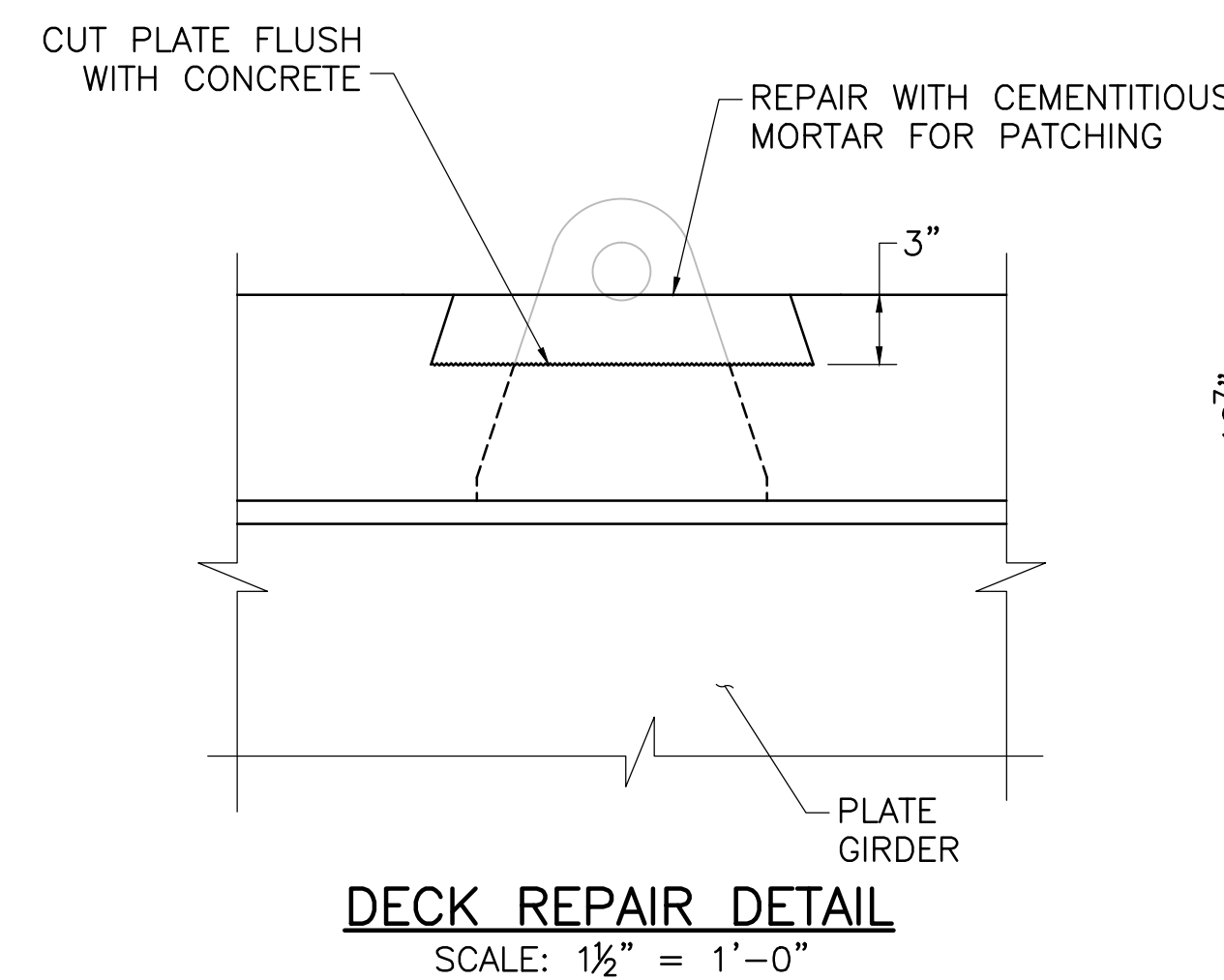
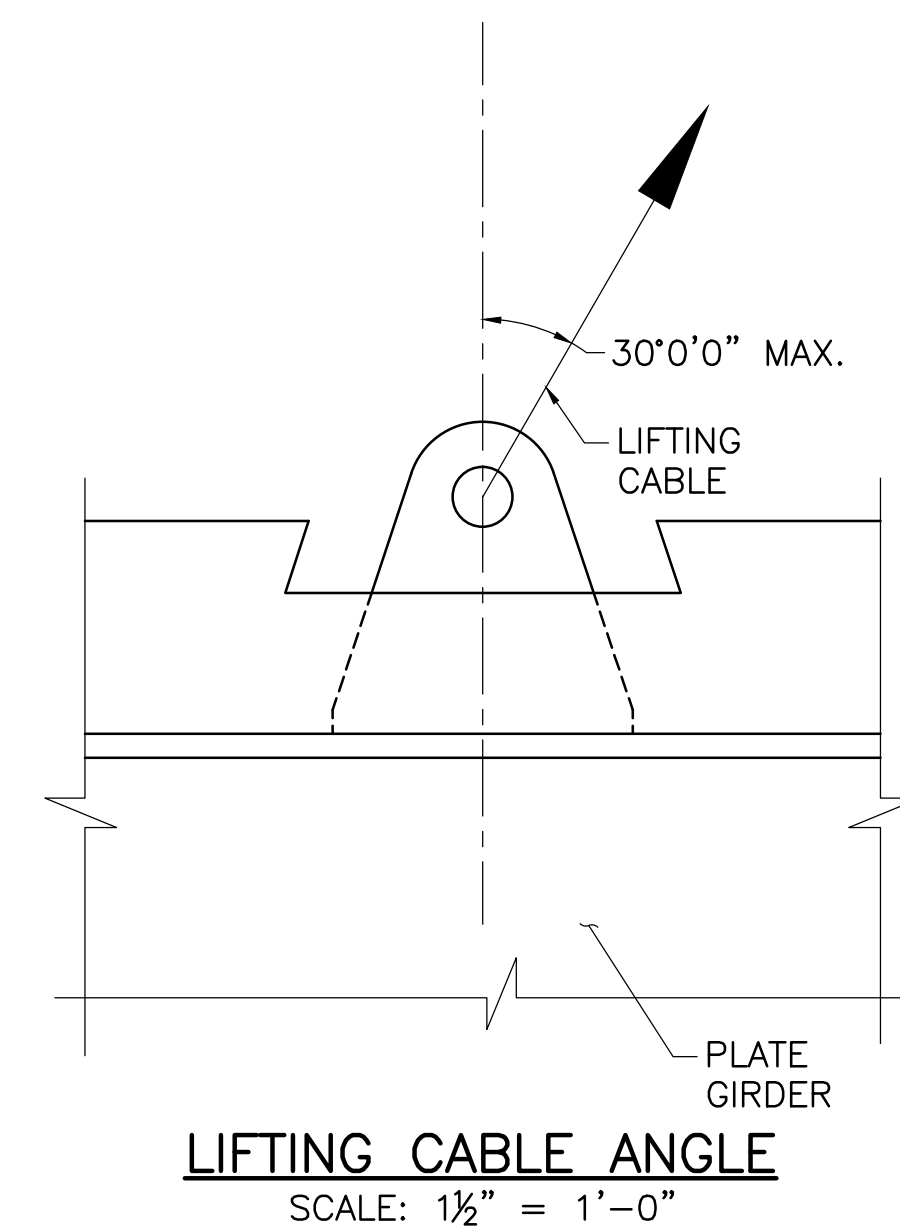
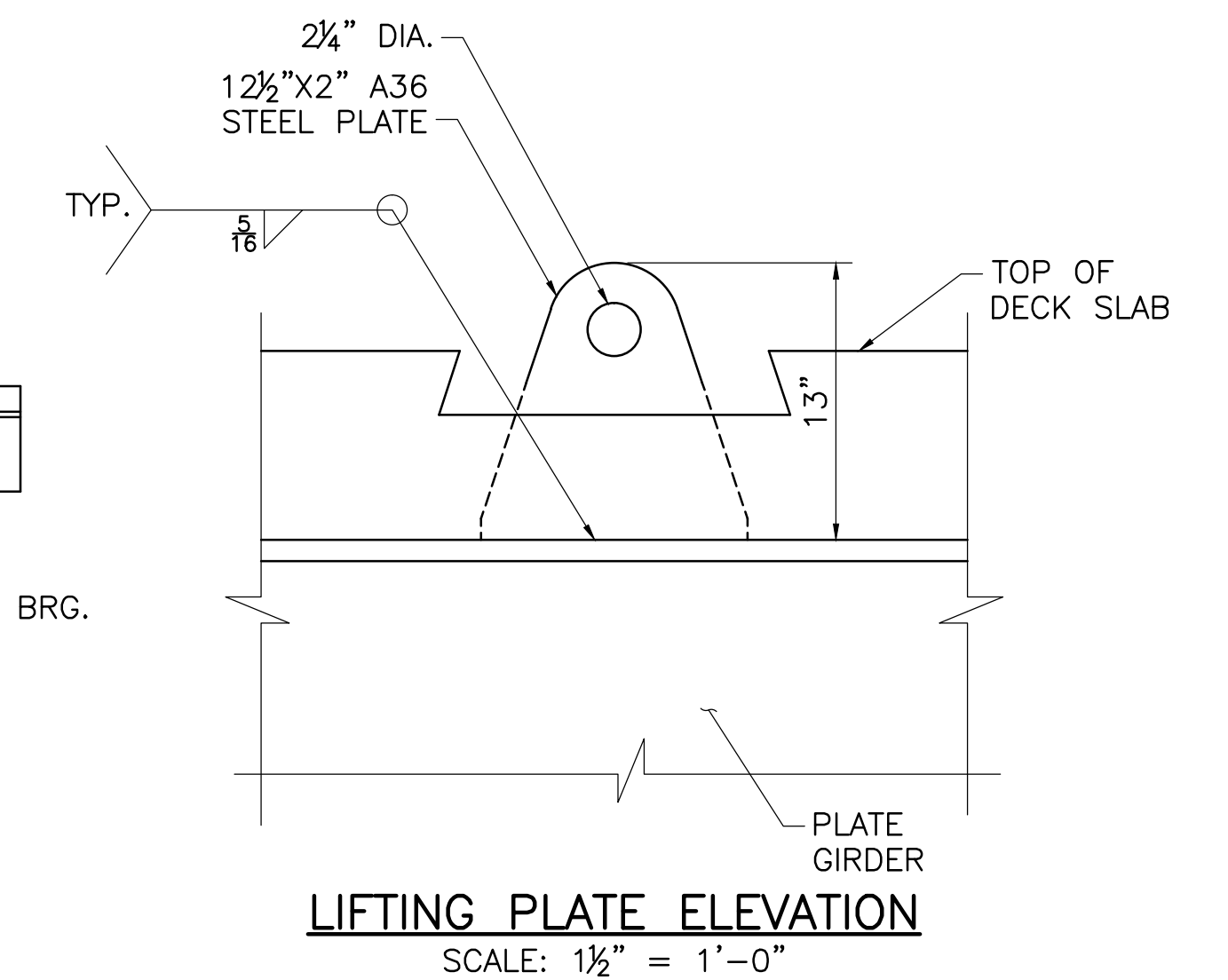
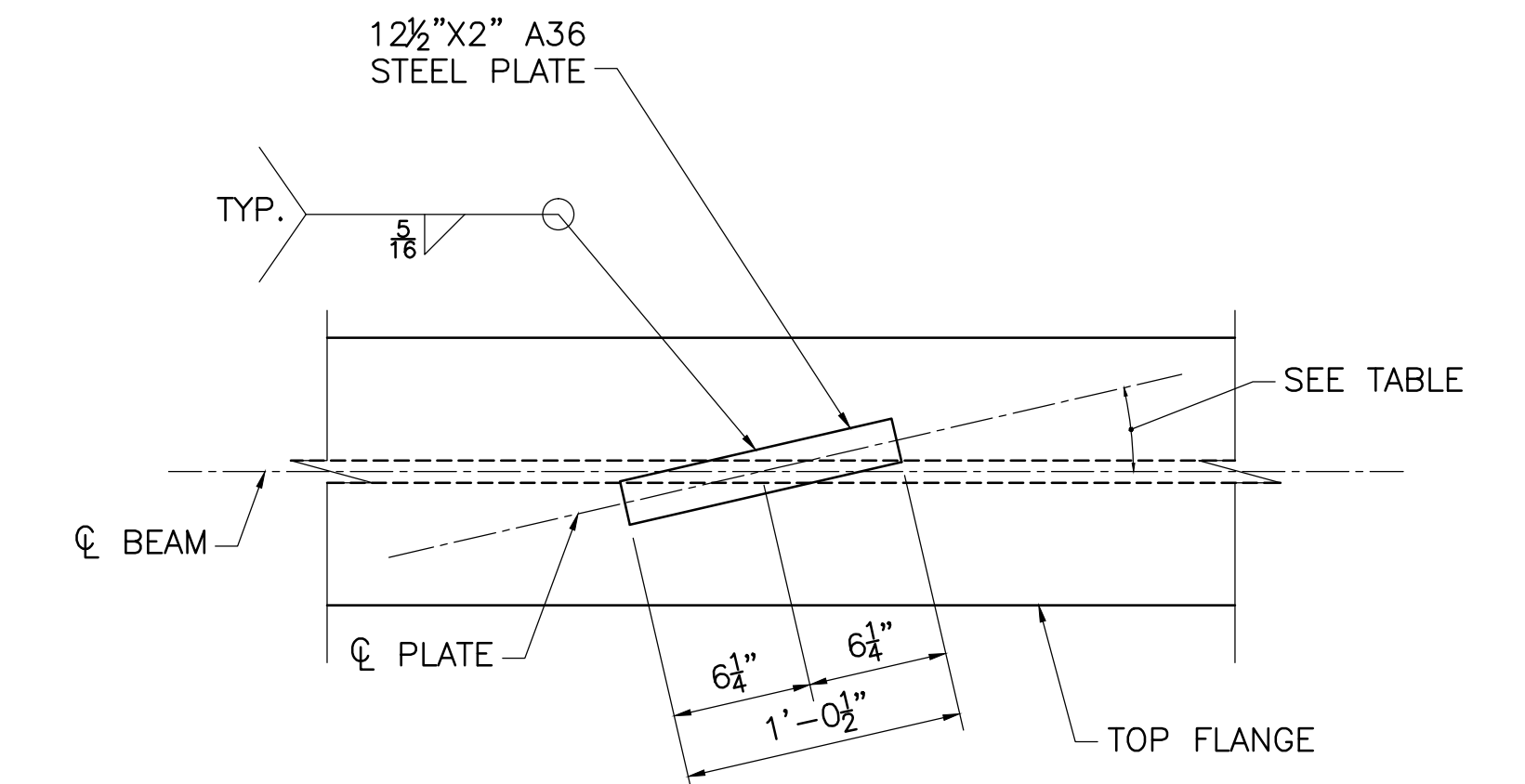
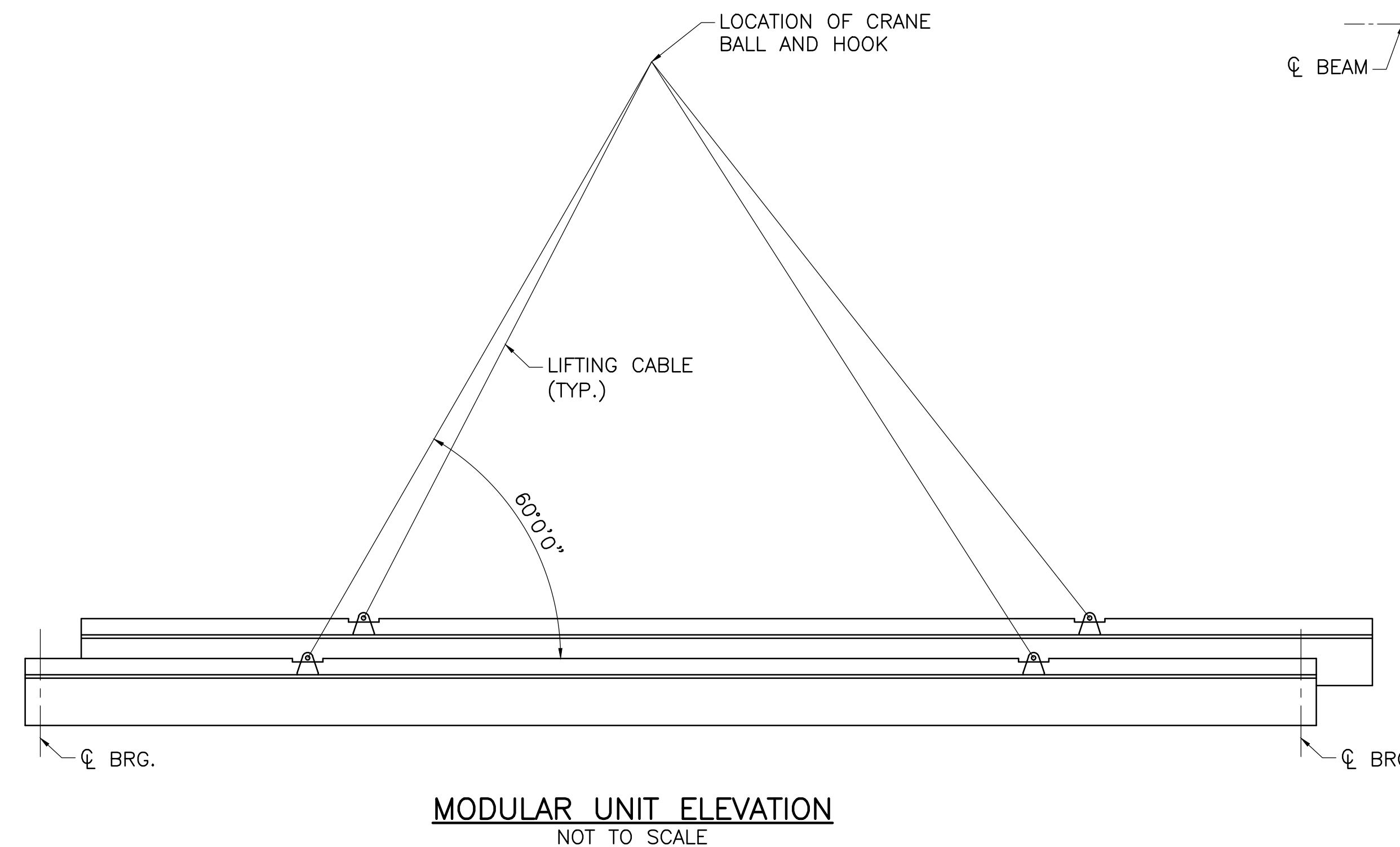
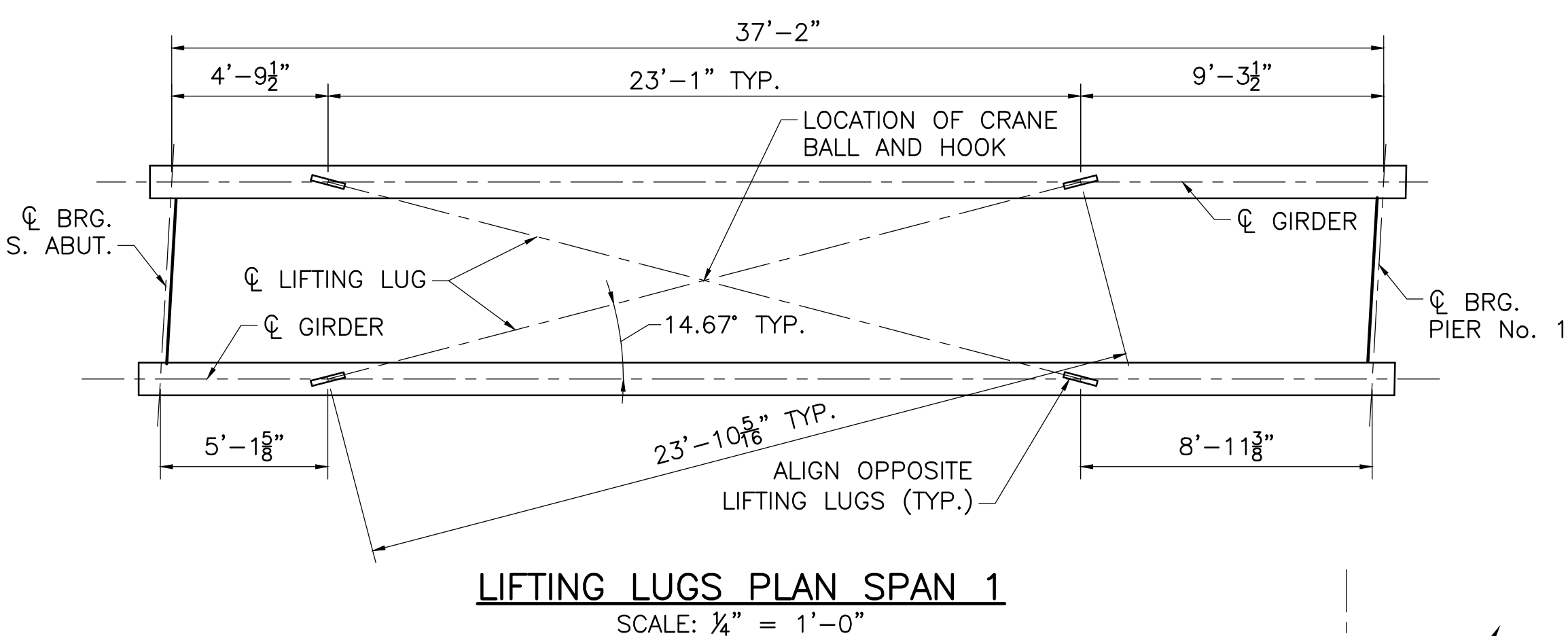
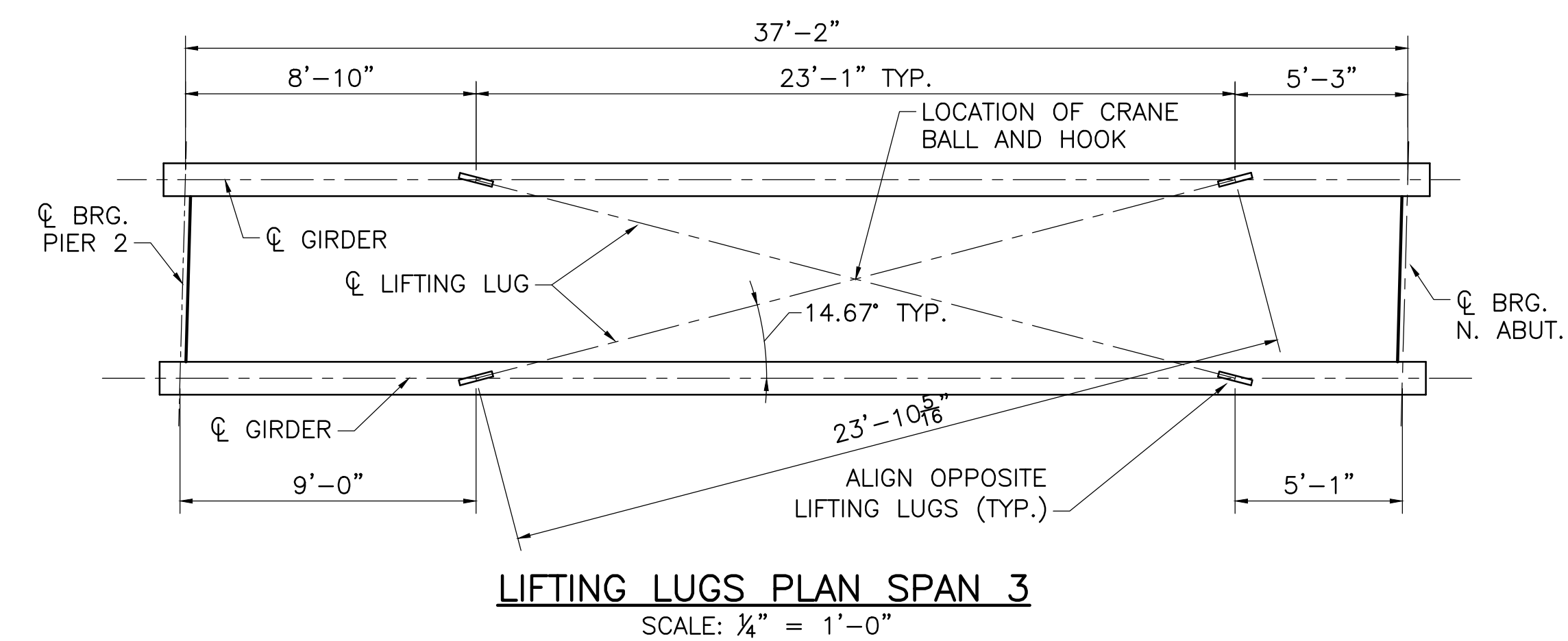
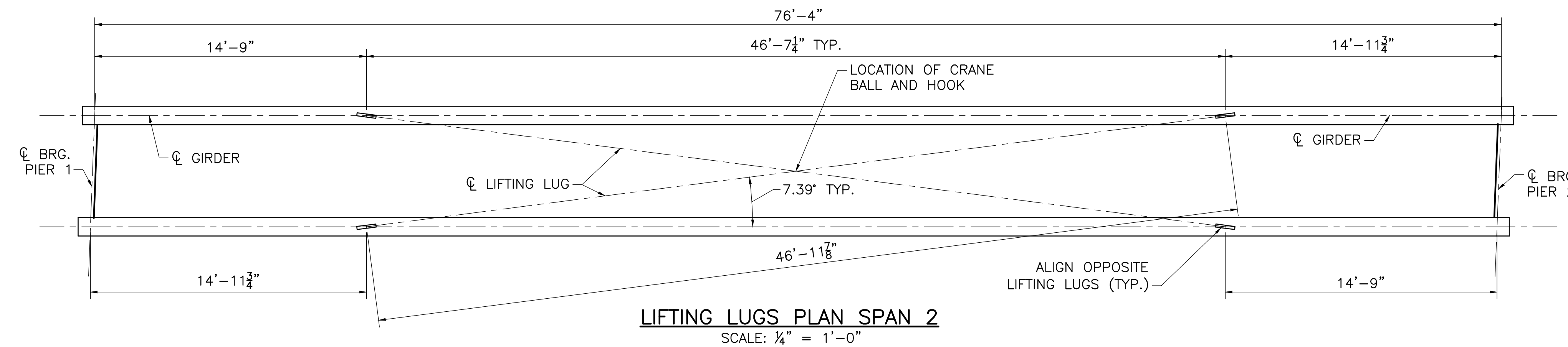
**PLAN: TYPICAL LONGITUDINAL CLOSURE POUR**

SCALE 1" = 1'-0"

|              |                                |
|--------------|--------------------------------|
| MAY 18, 2011 | ISSUED FOR CONSTRUCTION        |
| DATE         | DESCRIPTION                    |
|              | USE ONLY PRINTS OF LATEST DATE |

|                         |                              |           |              |
|-------------------------|------------------------------|-----------|--------------|
| STATE                   | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
| MASS.                   | BRI-093-1 (524)<br>STP 093-1 | 54        | 60           |
| PROJECT FILE NO. 606255 |                              |           |              |

**MODULAR LIFTING  
DETAILS**



**LIFTING LUGS PARAMETERS**

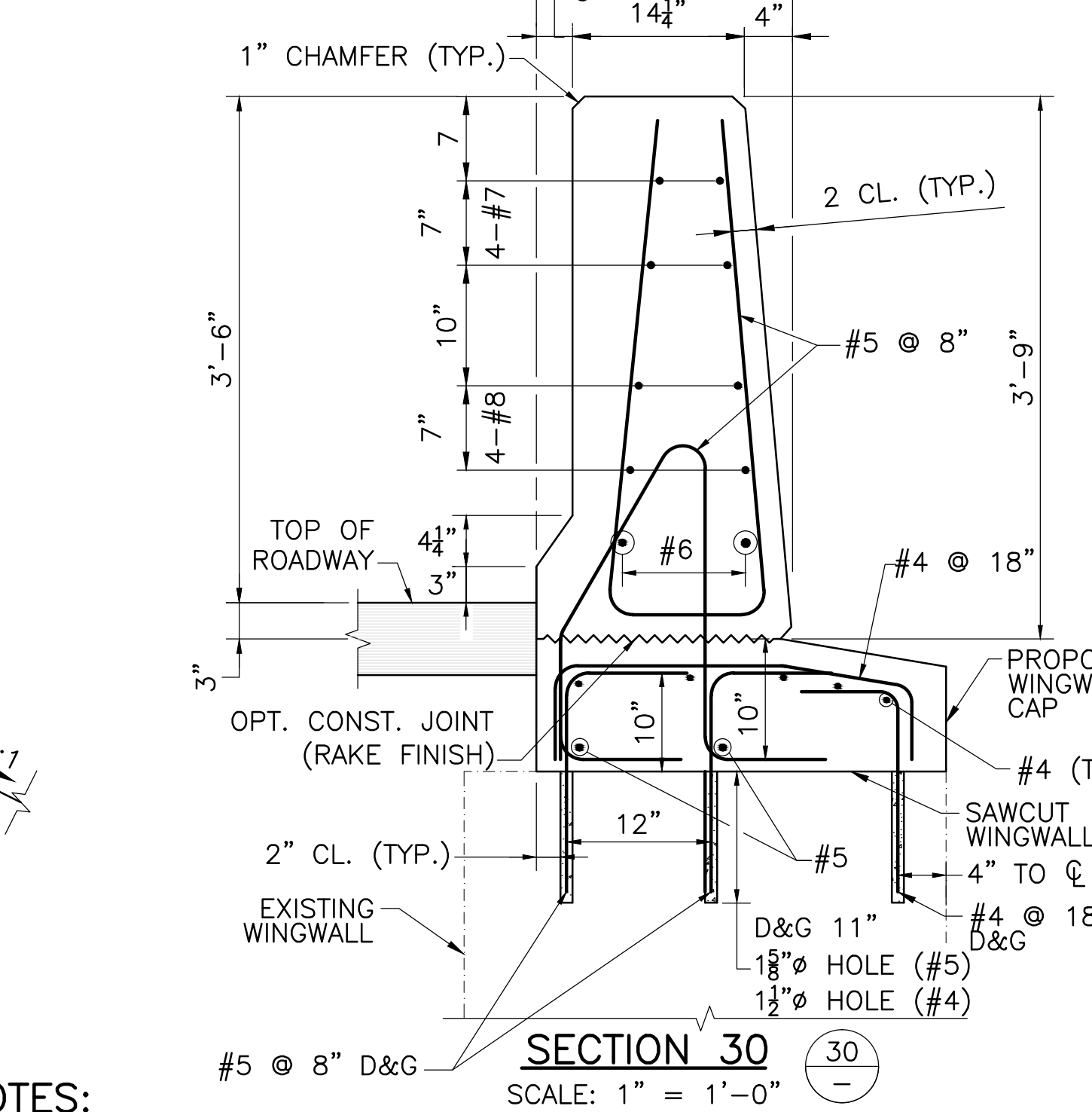
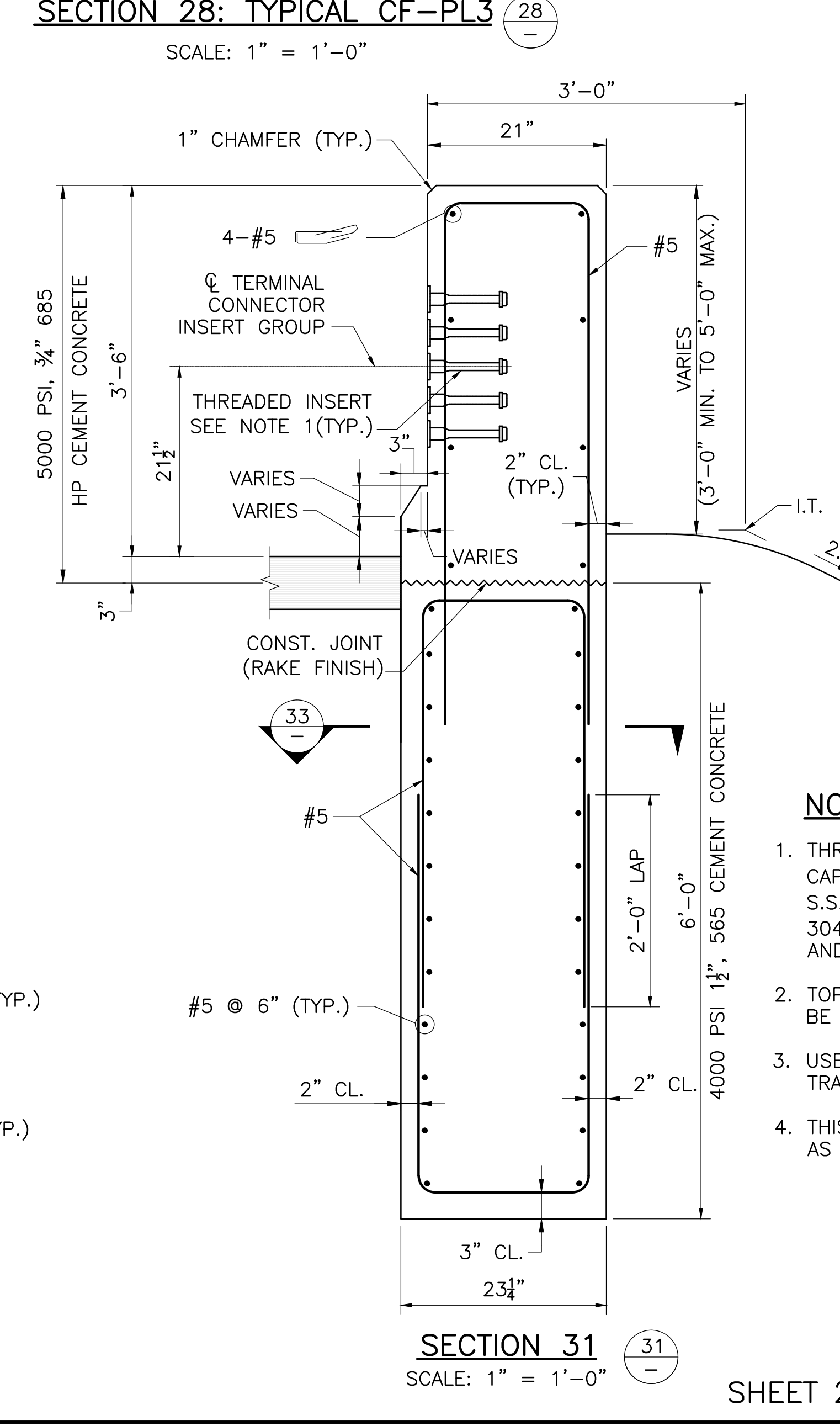
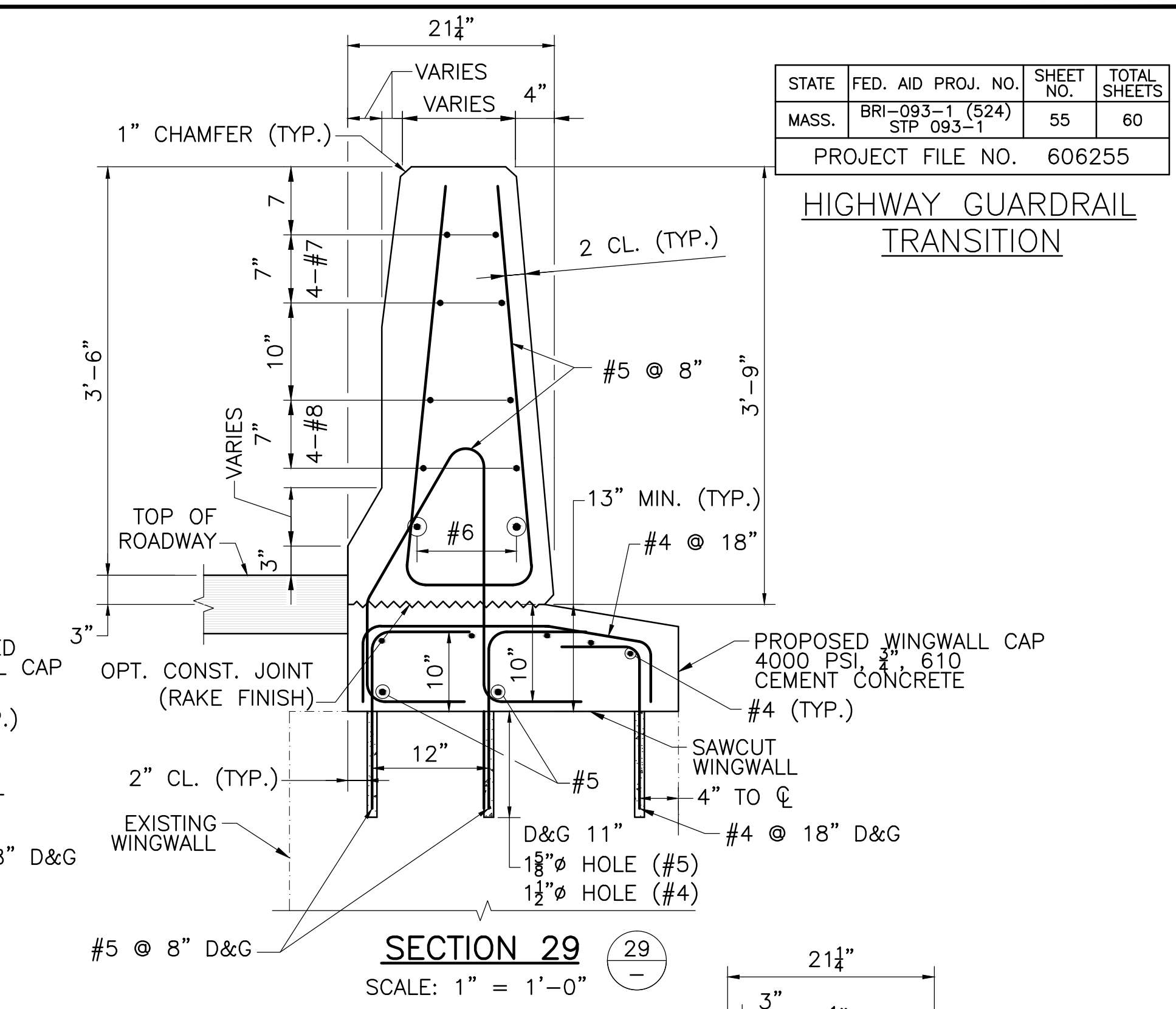
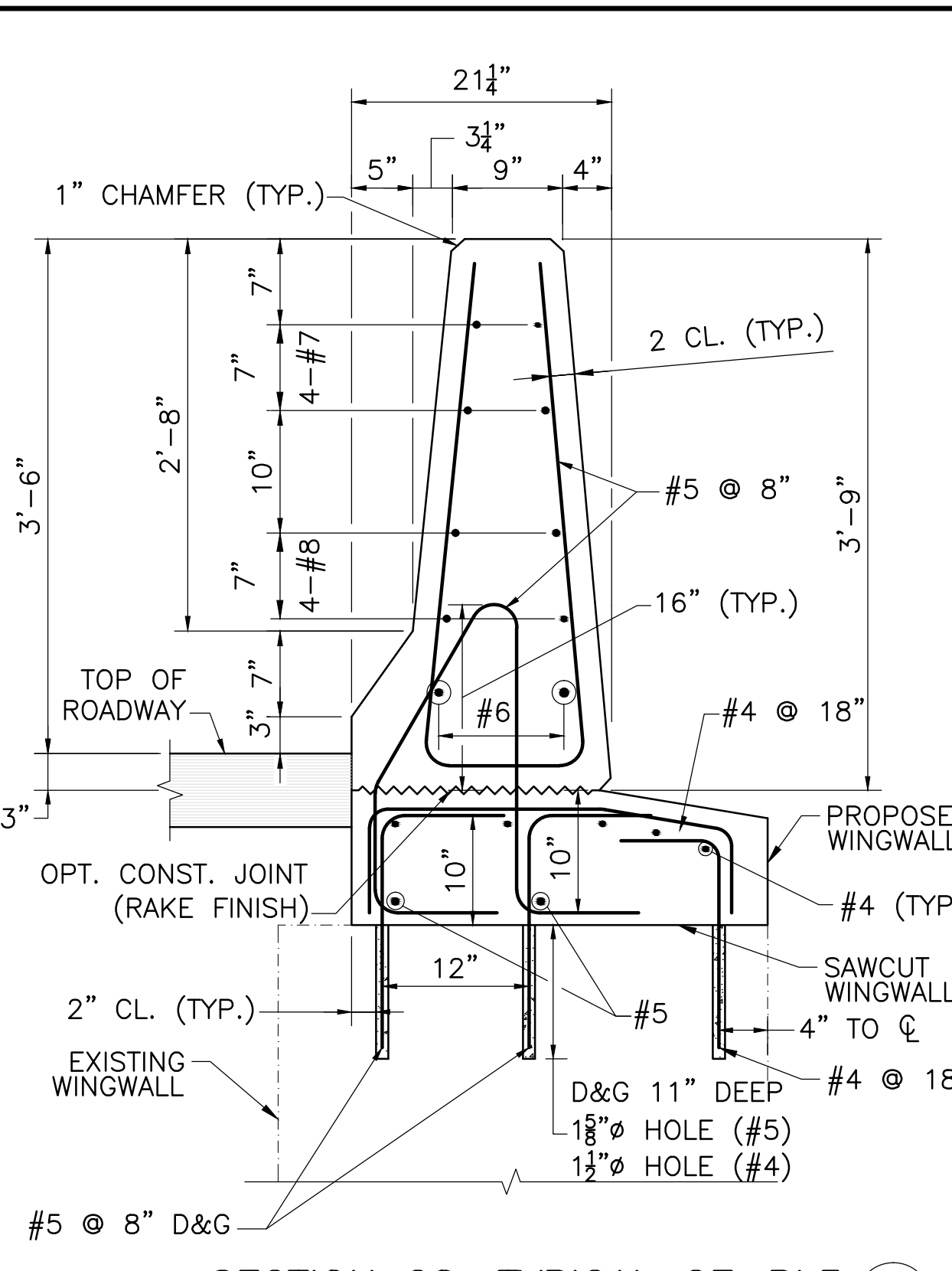
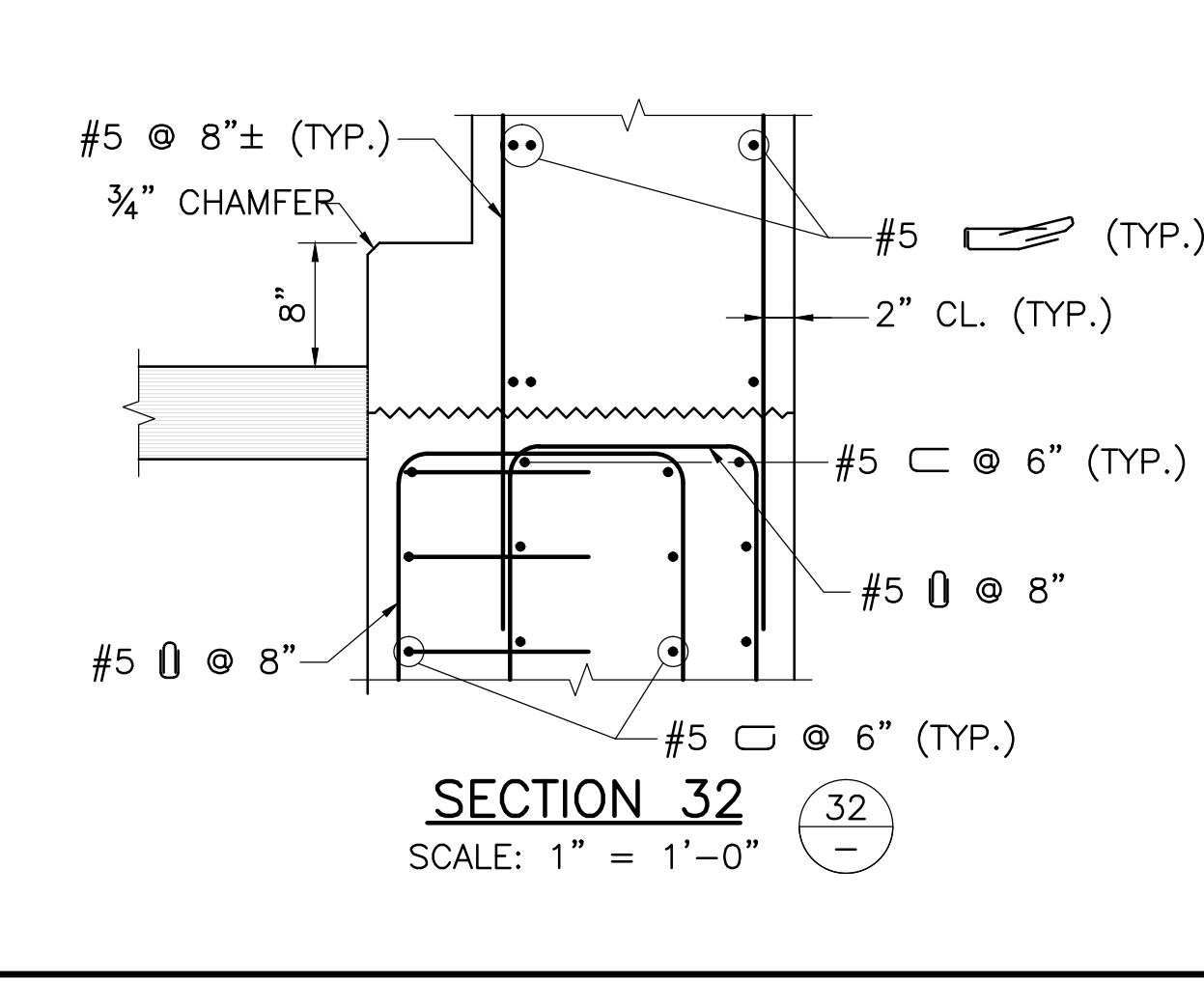
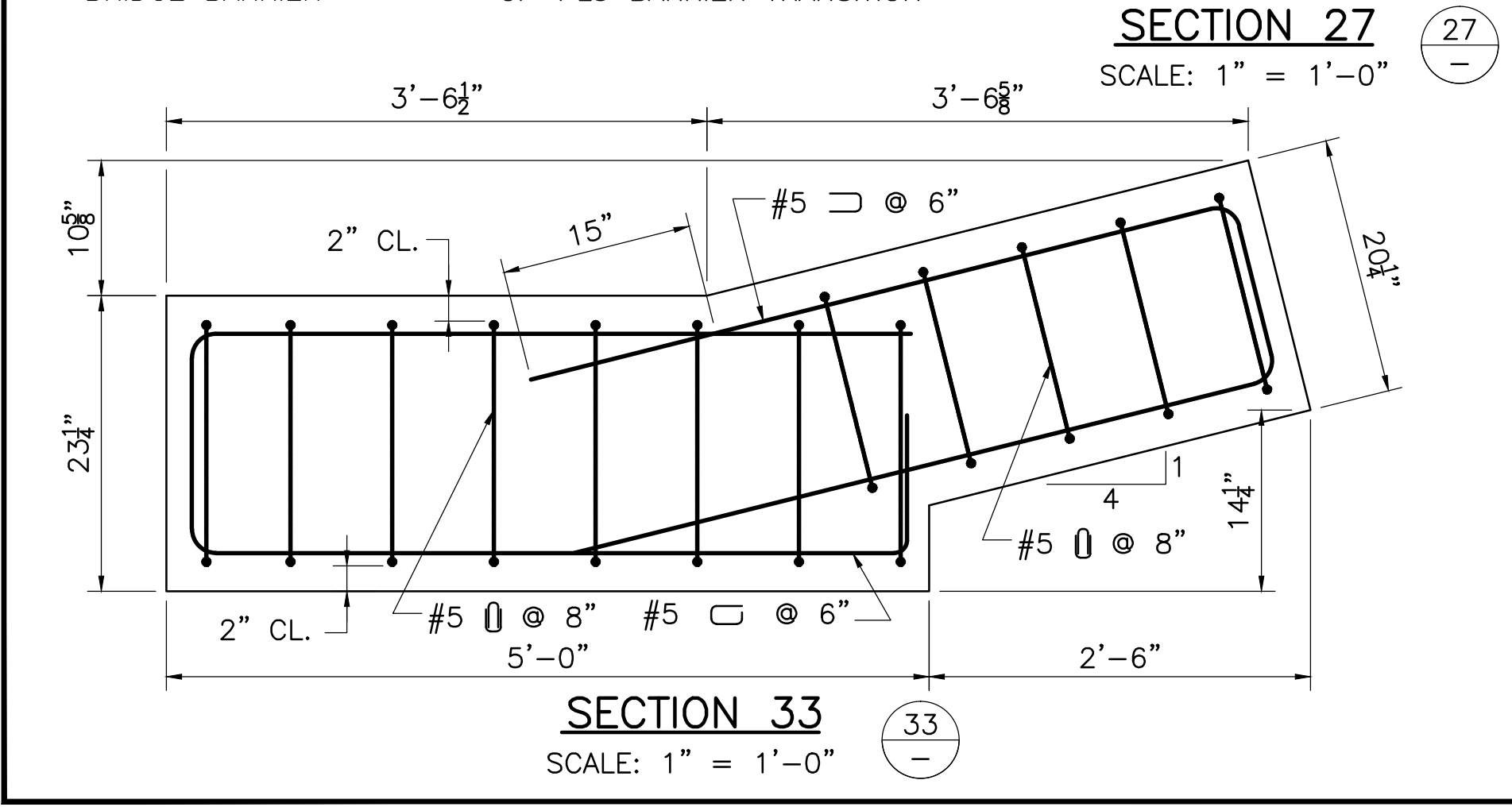
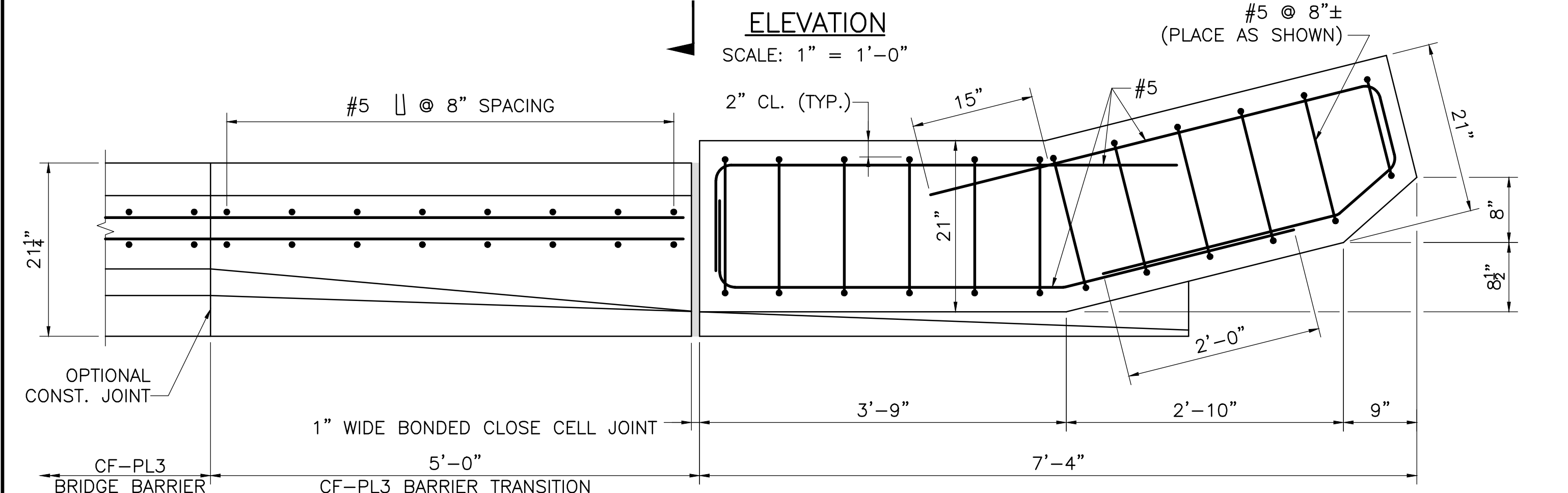
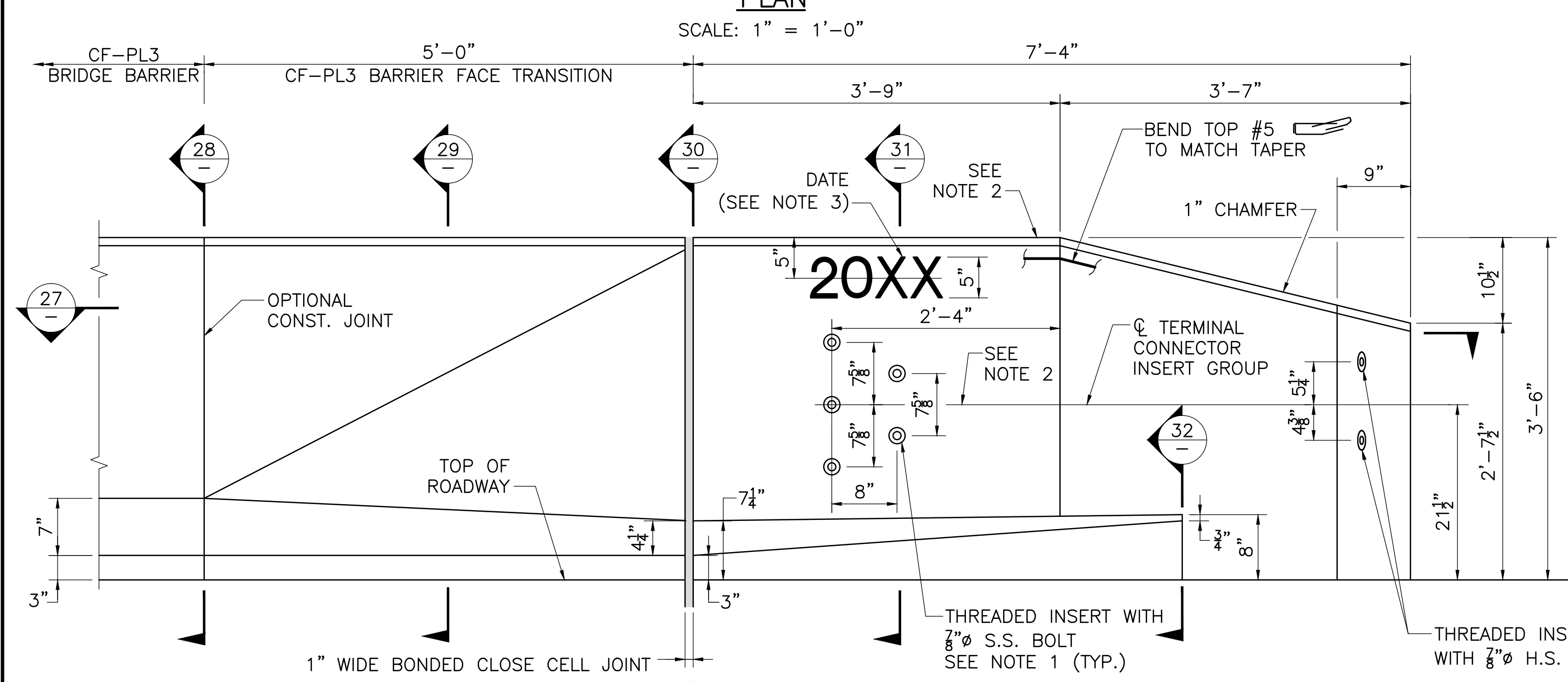
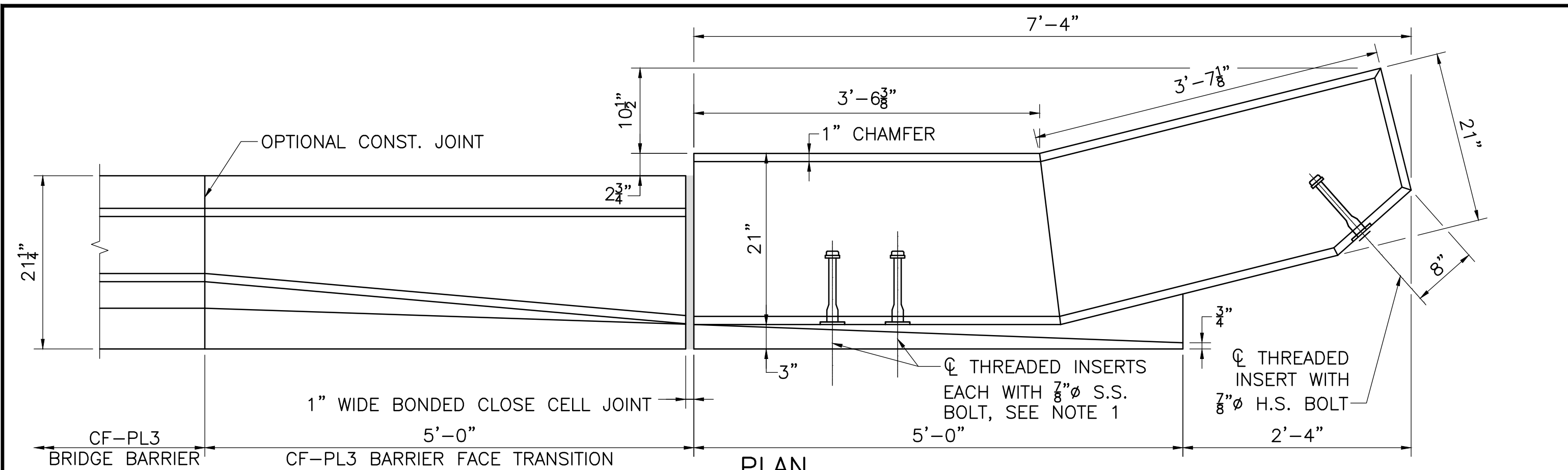
- LIFTING LUGS ARE DESIGNED FOR 150% OF PICK WEIGHT.
- MINIMUM ANGLE FOR RIGGING IS 60 DEGREES FROM HORIZONTAL.
- LIFTING LUGS TO BE ATTACHED DURING GIRDER FABRICATION IN THE SHOP.
- ADJUST SHEAR STUDS AROUND LUGS.
- LIFTING LUGS SHALL BE FABRICATED FROM STEEL MEETING THE REQUIREMENTS OF ASTM A 36.

SEE REINFORCEMENT DETAILS ON SHEET 22

|              |                                |
|--------------|--------------------------------|
| MAY 18, 2011 | ISSUED FOR CONSTRUCTION        |
| DATE         | DESCRIPTION                    |
|              | USE ONLY PRINTS OF LATEST DATE |

|                         |                             |           |              |
|-------------------------|-----------------------------|-----------|--------------|
| STATE                   | FED. AID PROJ. NO.          | SHEET NO. | TOTAL SHEETS |
| MASS.                   | BRI-093-1 (524)<br>SP 093-1 | 55        | 60           |
| PROJECT FILE NO. 606255 |                             |           |              |

**HIGHWAY GUARDRAIL TRANSITION**



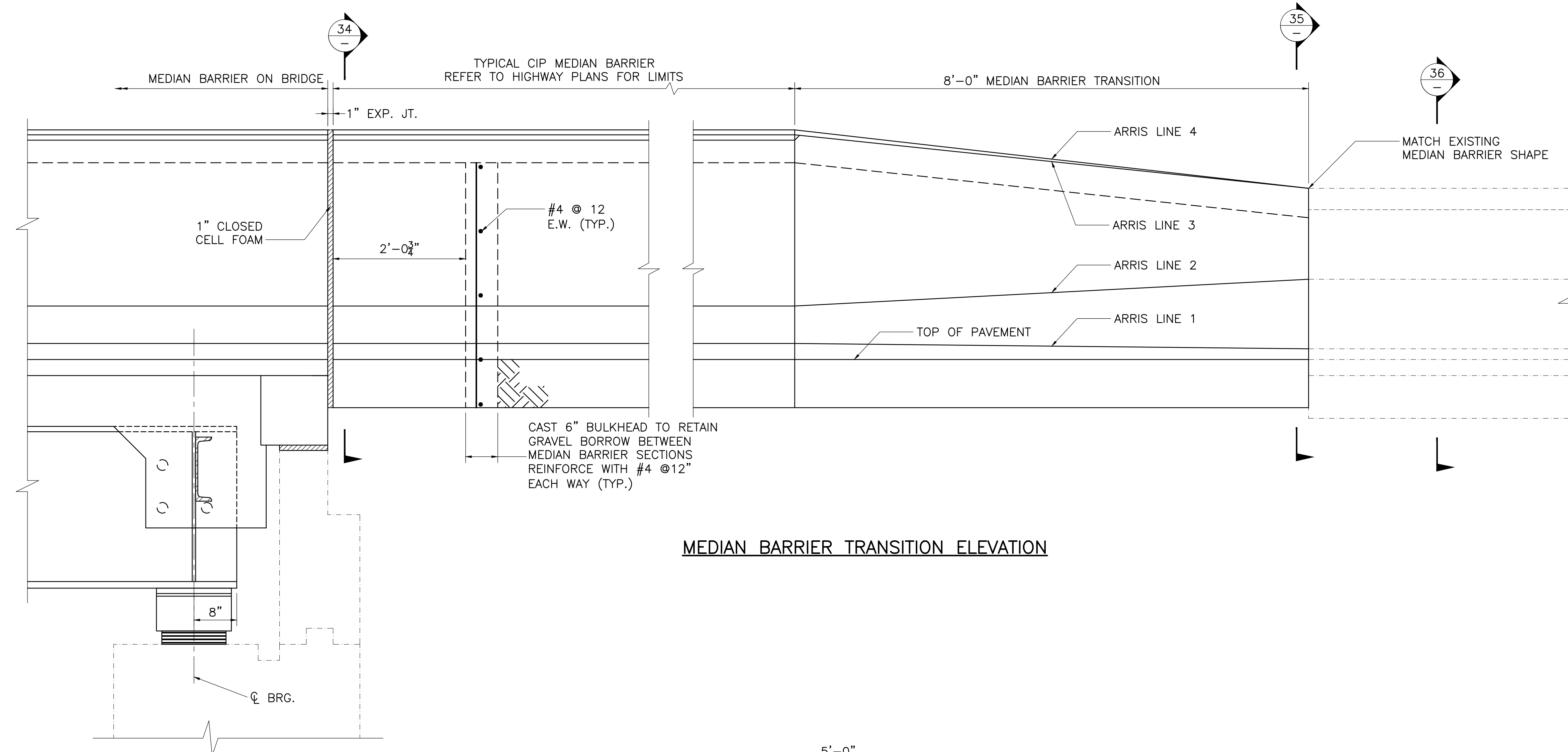
- NOTES:**
1. THREADED INSERTS SHALL BE PREQUALIFIED BY THE MANUFACTURER AS BEING CAPABLE OF DEVELOPING AN ULTIMATE SHEAR CAPACITY OF 20 KIPS PER  $\frac{7}{8}$ " S.S. BOLT. S.S. BOLTS SHALL BE  $\frac{7}{8}$ " x  $1\frac{1}{2}$ " LONG FULLY THREADED AISI TYPE 304N STAINLESS STEEL. INSERTS FOR  $\frac{7}{8}$ " S.S. BOLTS SHALL BE CAST-IN-PLACE AND GALVANIZED.
  2. TOP OF GUARDRAIL TRANSITION AND TERMINAL CONNECTOR INSERT GROUP SHALL BE SLOPED TO MATCH THE PROFILE GRADE.
  3. USE LATEST CONTRACT COMPLETION DATE IN EFFECT WHEN THE FIRST GUARDRAIL TRANSITION IS CAST. USE THIS DATE FOR ALL GUARDRAIL TRANSITIONS.
  4. THIS ENTIRE UNIT, OR SELECTED COMPONENTS OF THE UNIT, MAY BE FURNISHED AS PRECAST AS AN ALTERNATIVE TO CAST-IN-PLACE.

|                                |                         |
|--------------------------------|-------------------------|
| MAY 18, 2011                   | ISSUED FOR CONSTRUCTION |
| DATE                           | DESCRIPTION             |
| USE ONLY PRINTS OF LATEST DATE |                         |

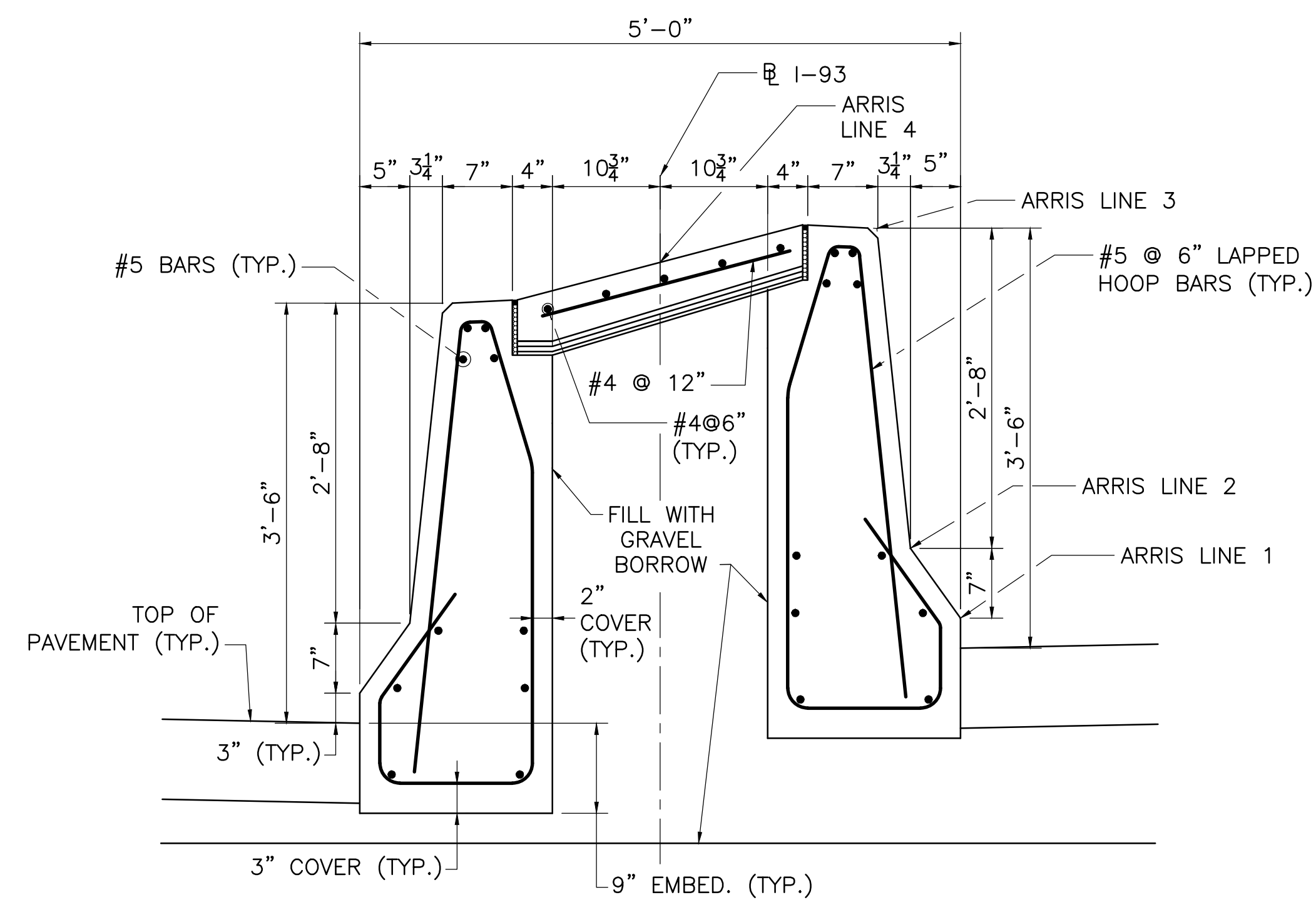


|                         |                              |           |              |
|-------------------------|------------------------------|-----------|--------------|
| STATE                   | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
| MASS.                   | BRI-093-1 (524)<br>SIP 093-1 | 56        | 60           |
| PROJECT FILE NO. 606255 |                              |           |              |

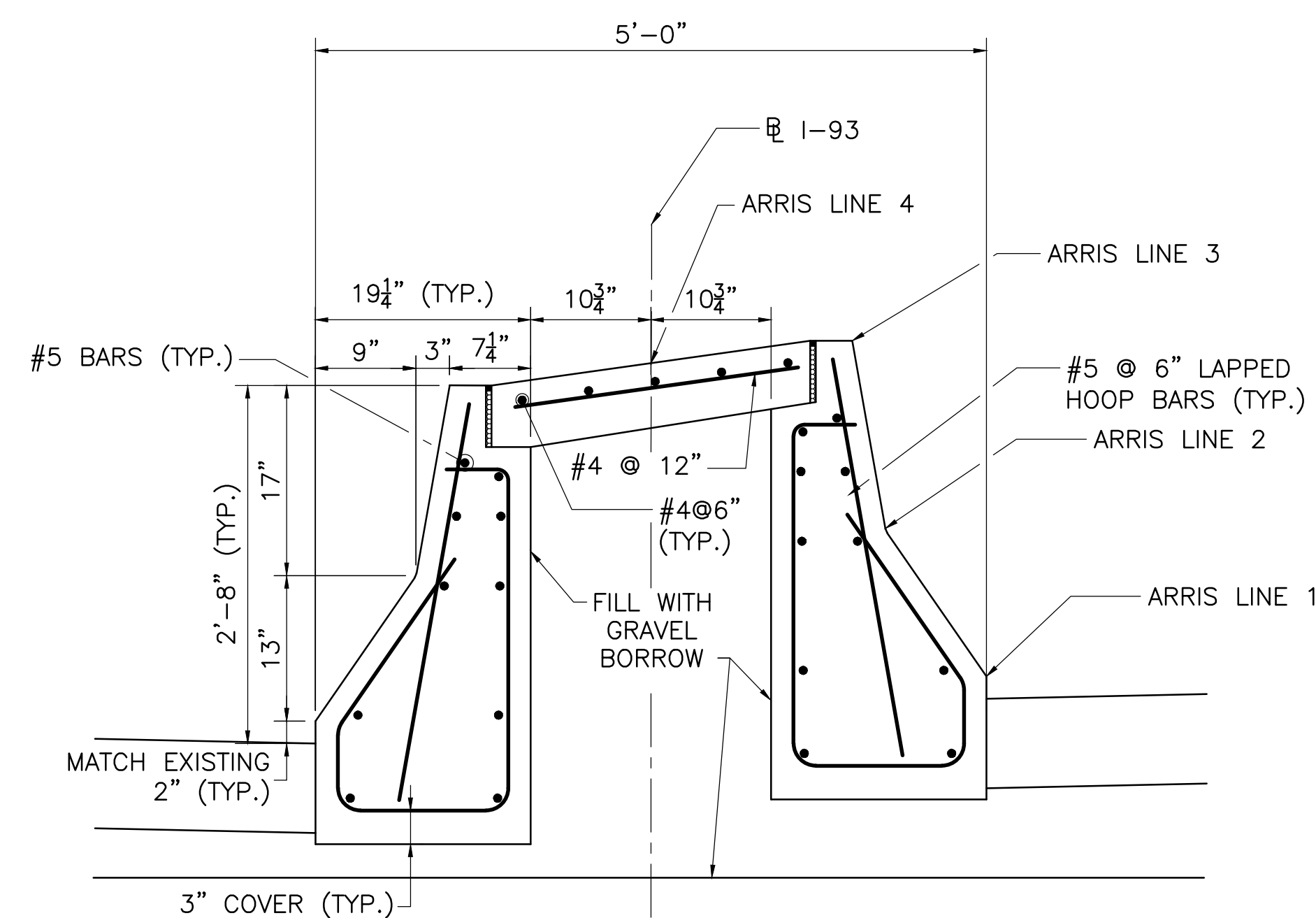
MEDIAN BARRIER ON APPROACH



MEDIAN BARRIER TRANSITION ELEVATION



MEDIAN BARRIER DETAIL 34

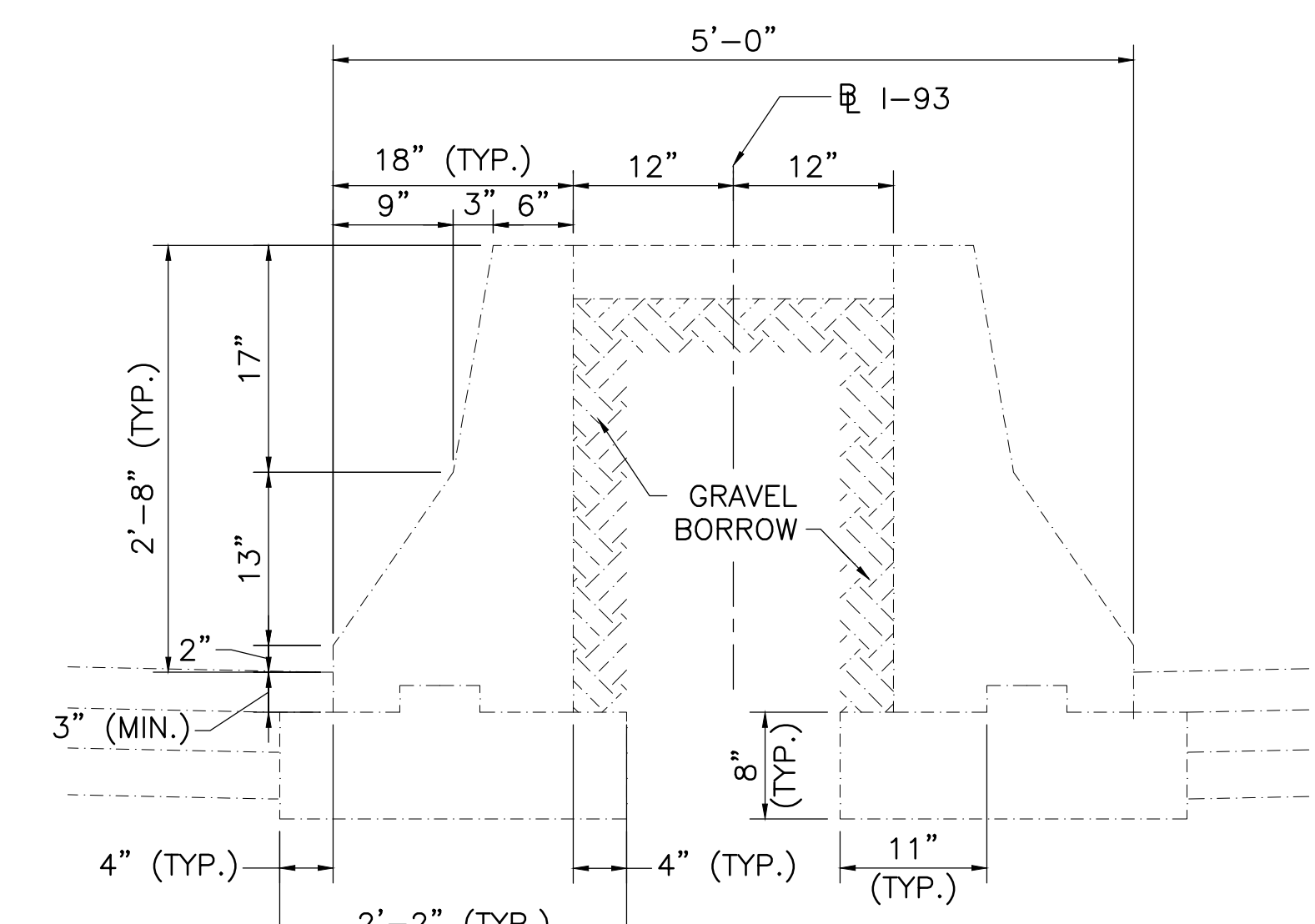


MEDIAN BARRIER TRANSITION DETAIL 35

NOTE: FOR DETAILS NOT SHOWN SEE CONSTRUCTION STANDARD PLATES 402.20.0, 402.21.0, 402.22.0

MEDIAN BARRIER ON APPROACH

SCALE: 1"=1'-0"



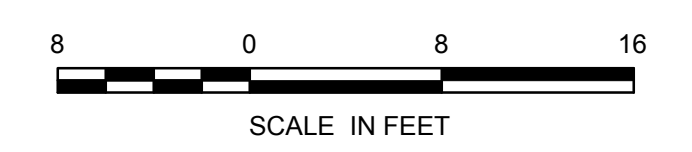
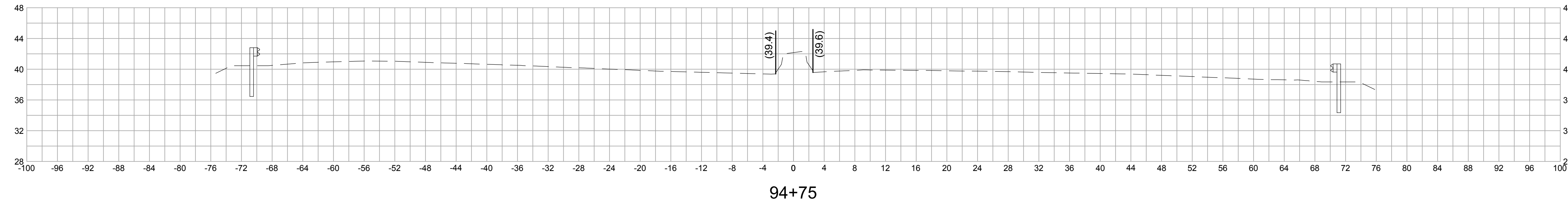
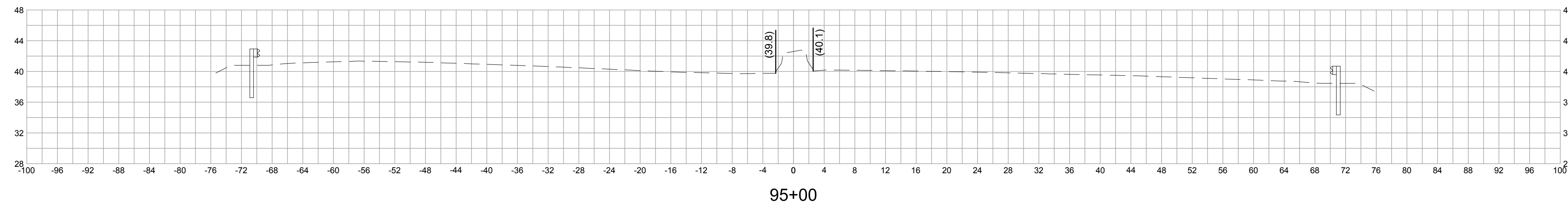
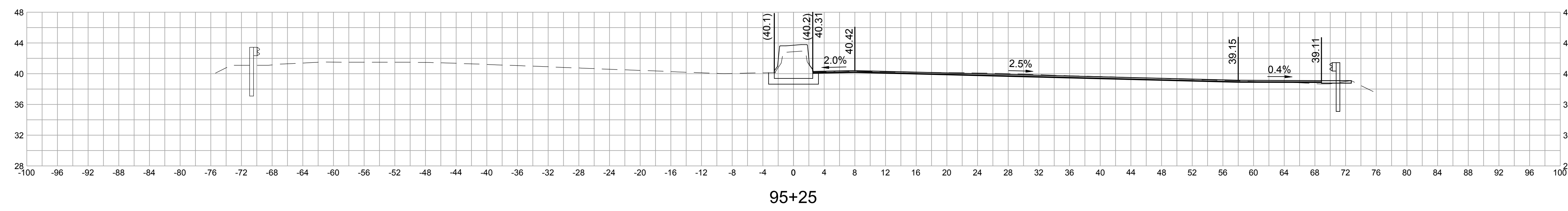
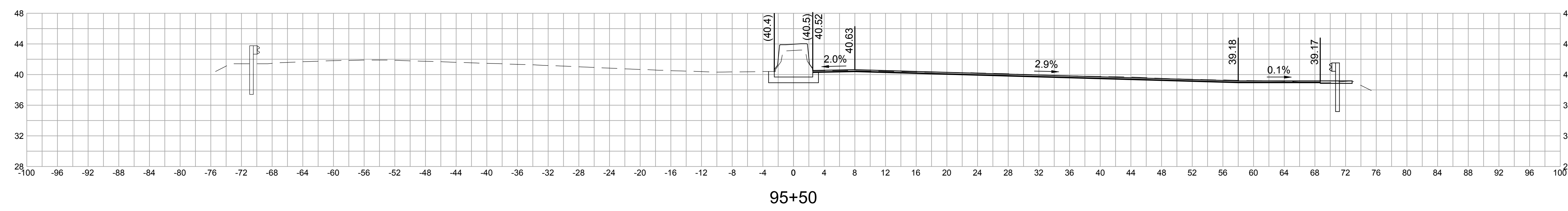
EXISTING MEDIAN BARRIER DETAIL 36

|                                |                         |
|--------------------------------|-------------------------|
| MAY 18, 2011                   | ISSUED FOR CONSTRUCTION |
| DATE                           | DESCRIPTION             |
| USE ONLY PRINTS OF LATEST DATE |                         |

**MEDFORD  
I-93 OVER SALEM STREET EB**

| SHEET | TOTAL | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
|-------|-------|------------------------------|-----------|--------------|
| MASS. |       | BRI-093-1 (524)<br>STP 093-1 | 57        | 60           |
|       |       | PROJECT FILE NO.             | 606255    |              |

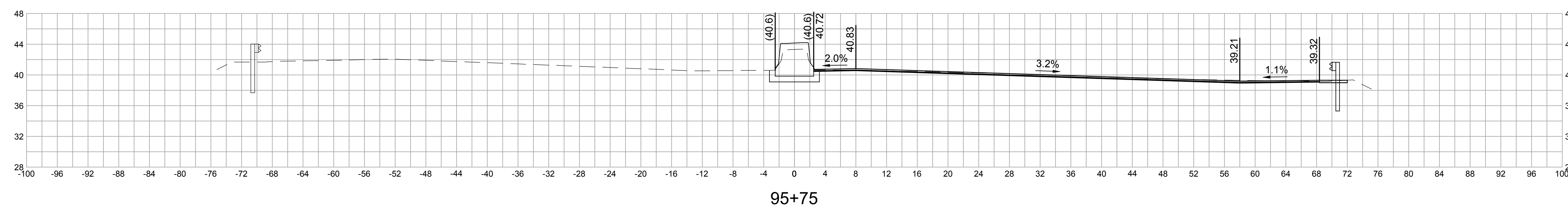
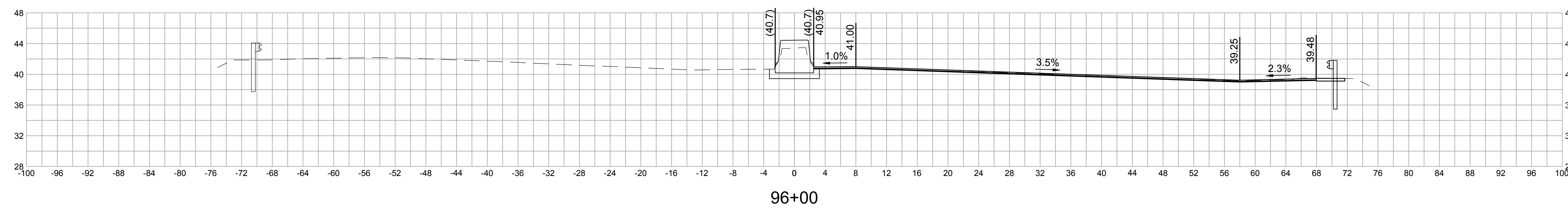
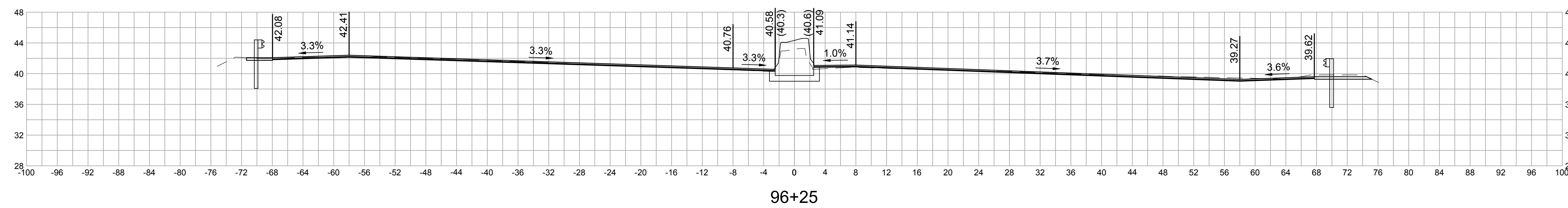
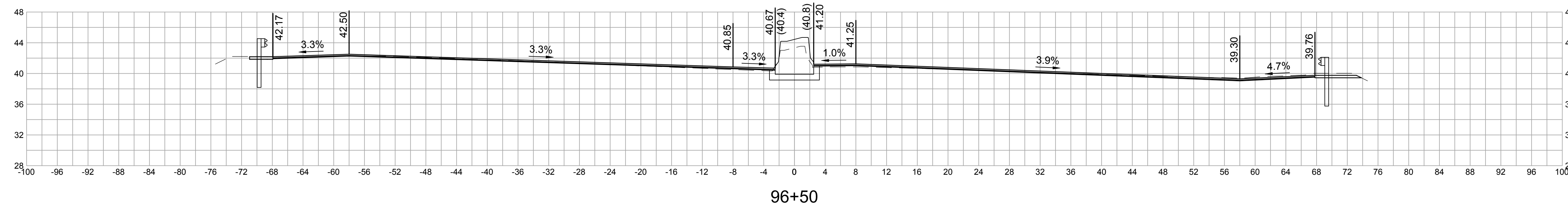
**CROSS SECTIONS**



**MEDFORD  
I-93 OVER SALEM STREET EB**

| SHEET | TOTAL | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|-------|-------|--------------------|-----------|--------------|
|       |       | BRI-093-1 (524)    | 58        | 60           |
|       |       | STP 093-1          |           |              |
|       |       | PROJECT FILE NO.   | 606255    |              |

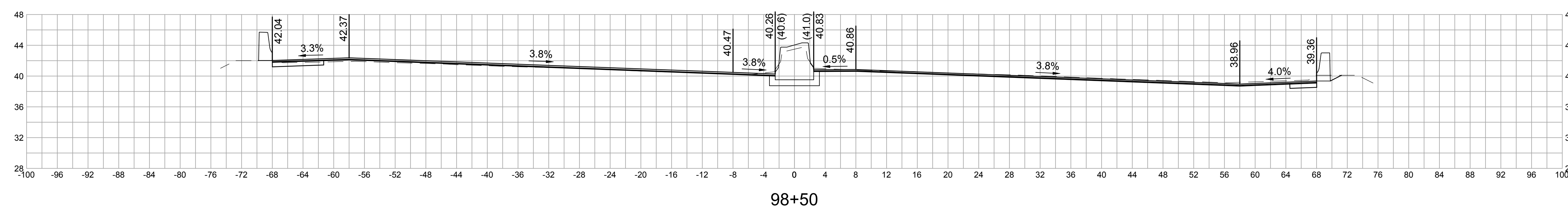
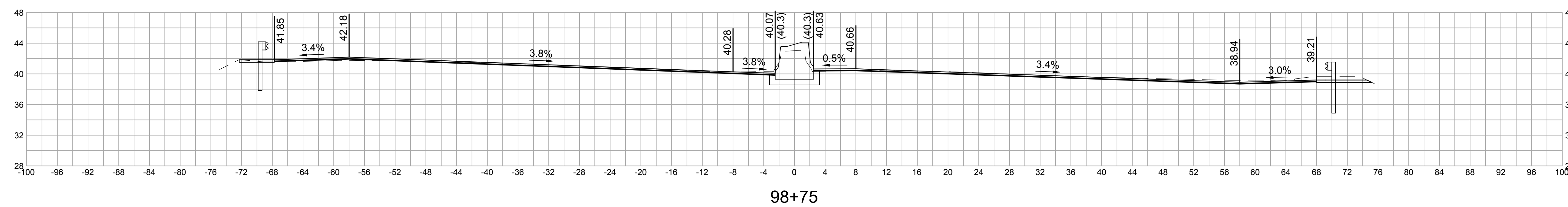
**CROSS SECTIONS**



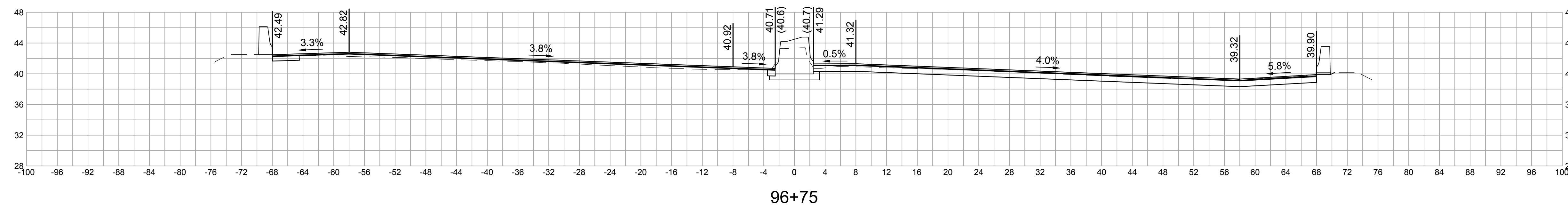
**MEDFORD**  
**I-93 OVER SALEM STREET EB**

| SHEET            | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|------------------|--------------------|-----------|--------------|
|                  | BRI-093-1 (524)    | 59        | 60           |
| PROJECT FILE NO. |                    | 606255    |              |

**CROSS SECTIONS**



STA 97+00 TO 98+25  
SEE BRIDGE PLANS



**MEDFORD  
I-93 OVER SALEM STREET EB**

| STATE            | FED. AID PROJ. NO.           | SHEET NO. | TOTAL SHEETS |
|------------------|------------------------------|-----------|--------------|
| MASS.            | BRI-093-1 (524)<br>STP 093-1 | 60        | 60           |
| PROJECT FILE NO. |                              | 606255    |              |

**CROSS SECTIONS**

