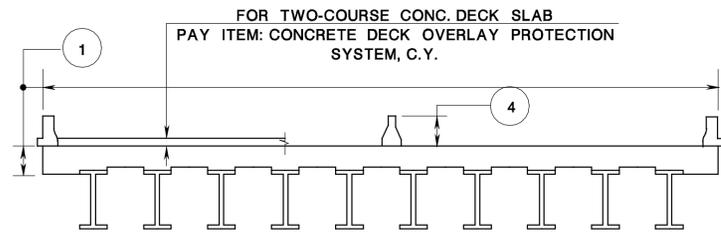


INDEX FOR STANDARD BRIDGE CONSTRUCTION DETAILS

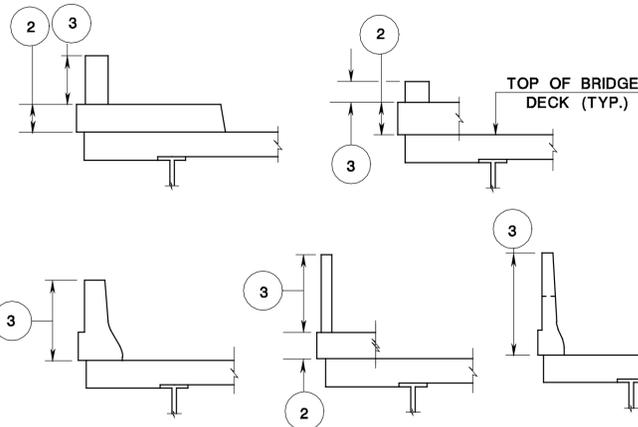
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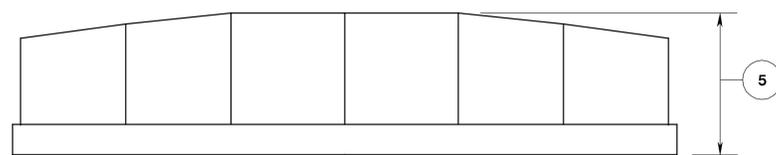
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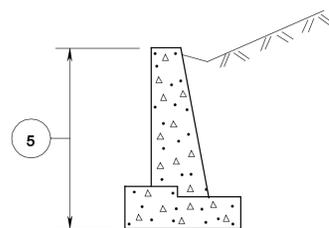
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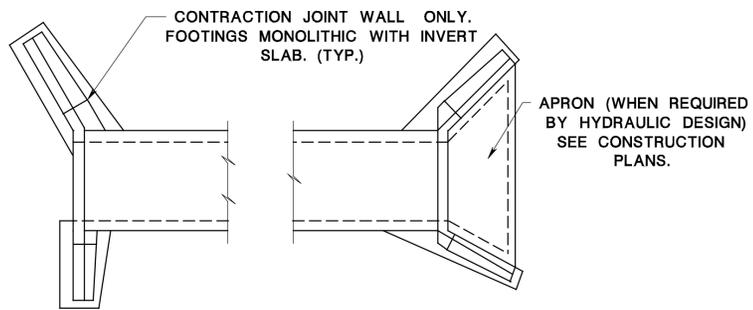
TYPICAL SECTION - BRIDGE PARAPETS



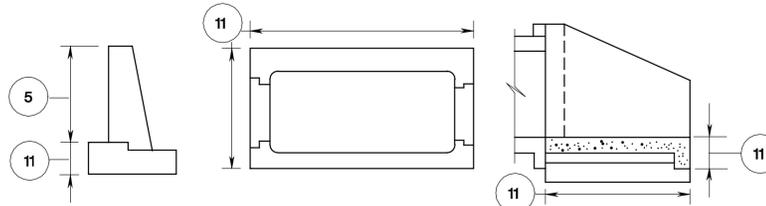
TYPICAL ELEVATION - RETAINING WALL



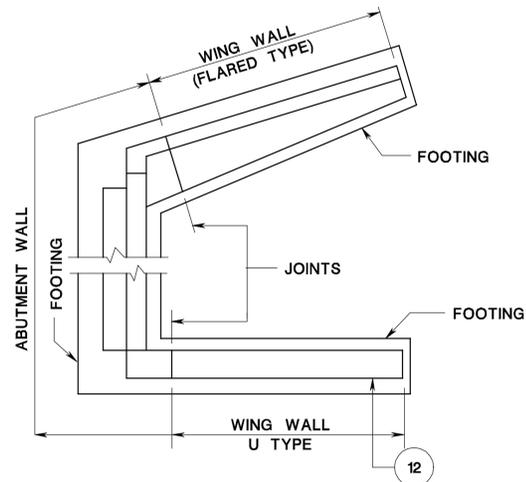
TYPICAL SECTION - RETAINING WALL



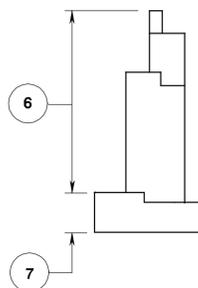
TYPICAL PLAN - CULVERT AND HEADWALLS



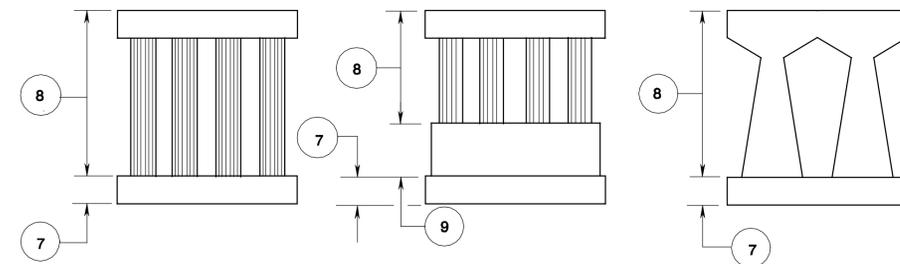
TYPICAL SECTION - CULVERT AND HEADWALLS



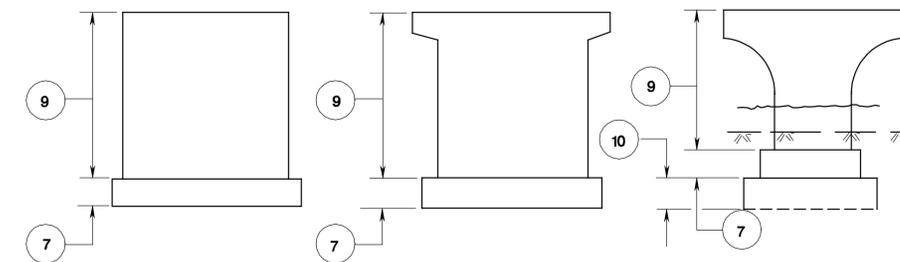
TYPICAL PLAN - ABUTMENTS



TYPICAL SECTION



TYPICAL RIGID FRAME TYPE PIER - ELEVATIONS



TYPICAL SOLID SHAFT TYPE PIER - ELEVATIONS

ITEM	CONCRETE CLASS	PAY ITEM	UNIT
1	A	CONCRETE DECK	C.Y.
2	A	CONCRETE BRIDGE SIDEWALK	C.Y.
3	A	CONCRETE BRIDGE PARAPET	L.F.
4	B	___" X ___" CONCRETE BARRIER CURB	L.F.
5	B	RETAINING WALL, LOCATION NO. _____	C.Y.
6	B	CONCRETE ABUTMENT WALL	C.Y.
7	B	CONCRETE FOOTING	C.Y.
8	A	CONCRETE PIER COLUMNS AND CAP	C.Y.
9	B	CONCRETE PIER SHAFT	C.Y.
10	B	PERMAMENT COFFERDAM	C.Y.
11	A	PRECAST CONCRETE CULVERT	C.Y.
12	B	CONCRETE WINGWALL	C.Y.

CONCRETE CLASSES AND PAY ITEMS

N.T.S.

BCD-504-1
NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

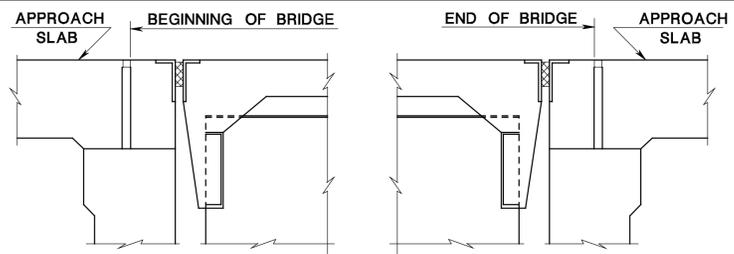
BRIDGE CONSTRUCTION DETAILS

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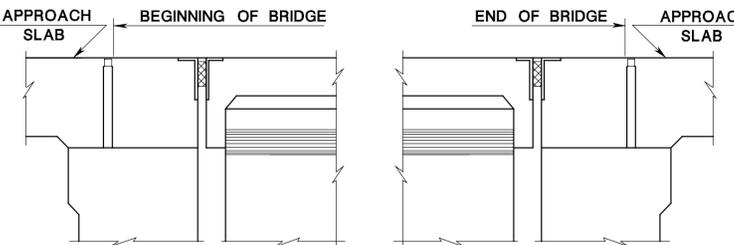
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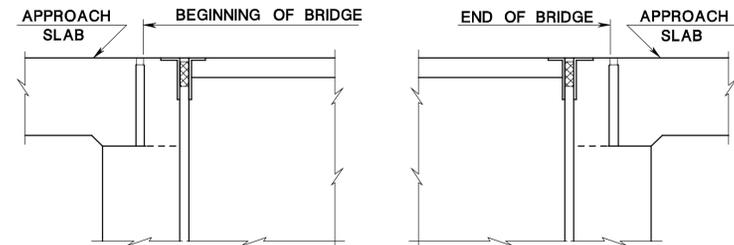
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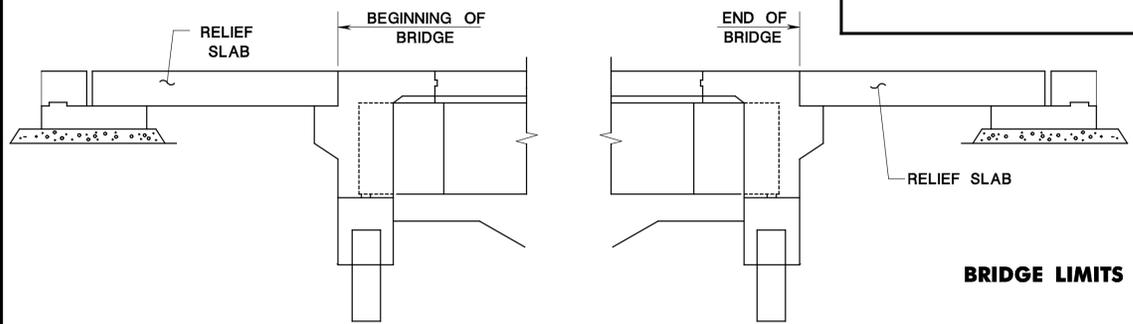
STEEL STRINGERS



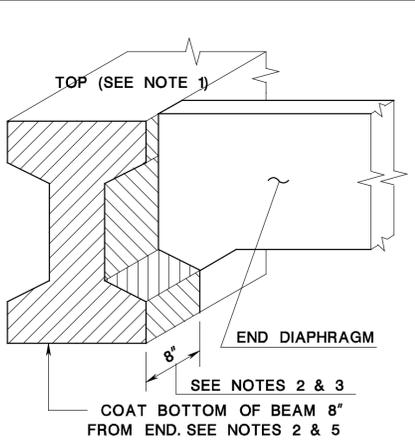
P.C.I. BEAMS



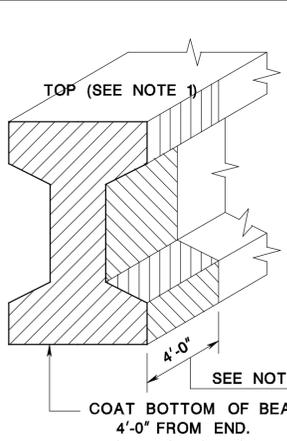
P.C. SLAB AND BOX BEAMS



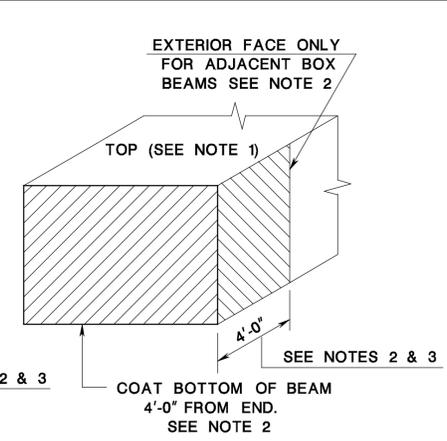
INTEGRAL ABUTMENT



INTERIOR FACE OF BEAMS



EXTERIOR FACE OF FASCIA BEAMS



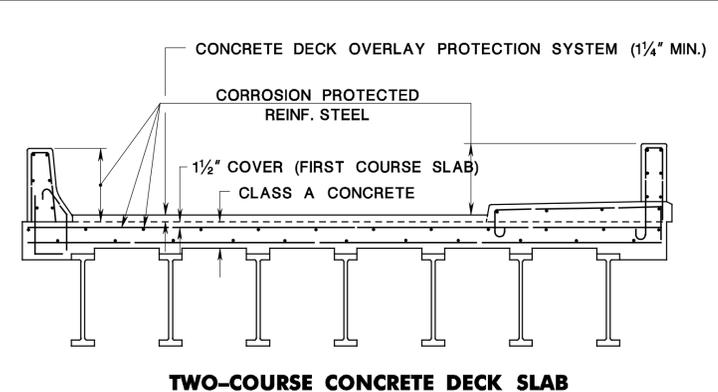
EXTERIOR FACE OF FASCIA BOX BEAMS

NOTES:

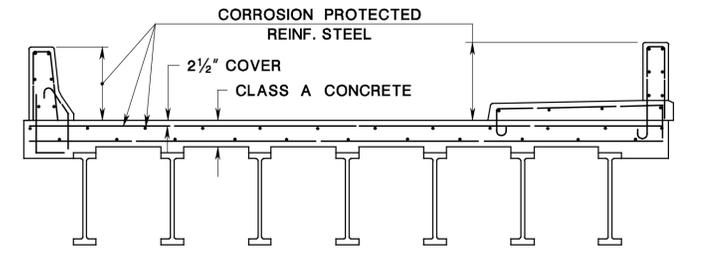
- 1 NO SEALER SHALL BE APPLIED TO THE TOP SURFACE OF ANY BEAM.
- 2 SEALER SHALL BE APPLIED TO THE ENDS, BOTTOMS AND EXTERIOR SIDES OF FASCIA BEAMS FOR ALL ADJACENT BOX BEAMS. SIDES OF INTERIOR BOX BEAMS SHALL NOT BE COATED. SEALER SHALL BE APPLIED TO THE ENDS, SIDES AND BOTTOMS OF ALL I-BEAMS.
- 3 THE SEAL COAT SHALL ONLY BE APPLIED TO BEAM ENDS UNDER DECK JOINTS.
- 4 VOIDED SLAB BEAMS SIMILAR TO BOX BEAM DETAILS FOR EPOXY WATERPROOFING LIMITS.
- 5 EPOXY WATERPROOFING SEAL COAT SHALL BE OMITTED FROM THE BEARING CONTACT AREAS FOR VARIOUS TYPES OF BEARINGS, CHECK BEARING MANUFACTURER'S RECOMMENDATIONS.

PRESTRESSED CONCRETE I-BEAMS, VOIDED SLAB AND BOX BEAMS EPOXY WATERPROOFING WITH GRIT LIMITS

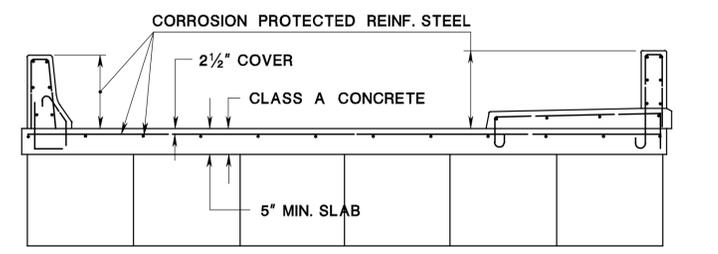
BCD-504-2.2



TWO-COURSE CONCRETE DECK SLAB



ONE-COURSE CONCRETE DECK SLAB



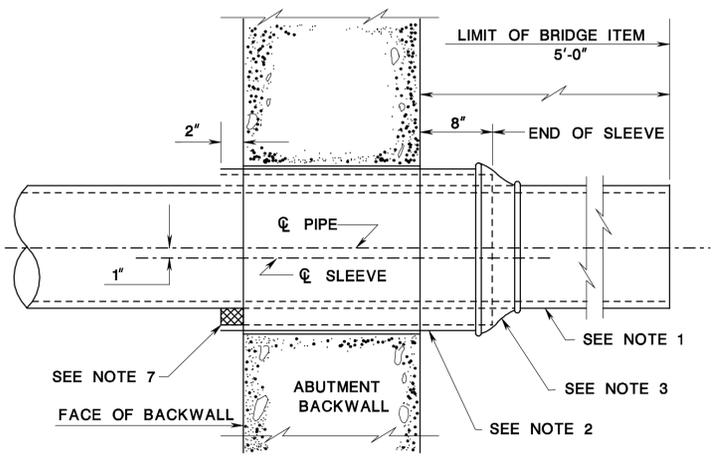
CONCRETE OVERLAY SLAB ON PRESTRESSED CONCRETE VOIDED SLAB OR BOX BEAMS

NOTE:

ALL REINFORCEMENT STEEL IN PARAPETS AND SIDEWALKS SHALL BE CORROSION PROTECTED.

BRIDGE DECK CONSTRUCTION PROTECTIVE SYSTEMS (NEW BRIDGE DECKS)

BCD-504-2.3



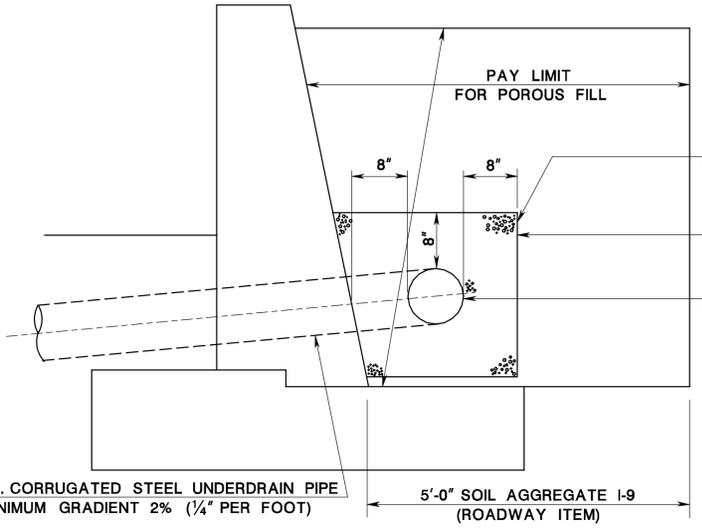
SLEEVE DETAIL FOR STEEL GAS MAINS

NOTES:

- 1 GAS MAIN FURNISHED AND INSTALLED BY UTILITY COMPANY.
- 2 GALVANIZED SLEEVE FURNISHED AND INSTALLED BY CONTRACTOR.
- 3 CASING SEAL FURNISHED AND INSTALLED BY UTILITY COMPANY.
- 4 ENDS OF SLEEVE SHALL BE CUT SQUARE AND FREE FROM BURRS.
- 5 GRADE (SLOPE) OF SLEEVE SHALL BE SAME AS GRADE OF GAS MAIN.
- 6 ϕ OF GAS MAIN SHALL BE INSTALLED 1" HIGHER THAN ϕ OF SLEEVE.
- 7 BLOCK INSTALLED TO INITIALLY POSITION THE PIPE AND SHALL BE REMOVED AFTER GAS MAIN APPROACH ROAD HAS BEEN CONNECTED AND BACKFILLED AND COMPACTED FOR BOTTOM HALF OF THE PIPE.
- 8 PIPE AND SLEEVE SHALL BE TEMPORARILY PLUGGED.
- 9 THE OPENING BETWEEN THE PIPE AND THE SLEEVE SHALL BE PACKED WITH HEMP, JUTE OR SIMILAR MATERIAL TO PREVENT LEAKAGE THROUGH THE BACKWALL.

BRIDGE LIMITS

BCD-504-2.1



DRAINAGE BACK OF WALL

BCD-504-2.4

- 2'-0" X 2'-0" BROKEN STONE (3/4")
- GEOTEXTILE AROUND STONE POCKET (SEE NOTE 2)
- 8" DIA. PERFORATED CORRUGATED STEEL UNDERDRAIN PIPE MINIMUM GRADIENT 1% (1/8" PER FOOT)

NOTE:

- 1 DRAINAGE FOR ABUTMENT WALL STEMS ARE SIMILAR.
- 2 THE COST OF GEOTEXTILE AND STONE POCKET SHALL BE INCLUDED IN THE PAYMENT FOR 8" DIA. PERFORATED UNDERDRAIN.

MISCELLANEOUS BRIDGE ITEMS

N.T.S.

BCD-504-2

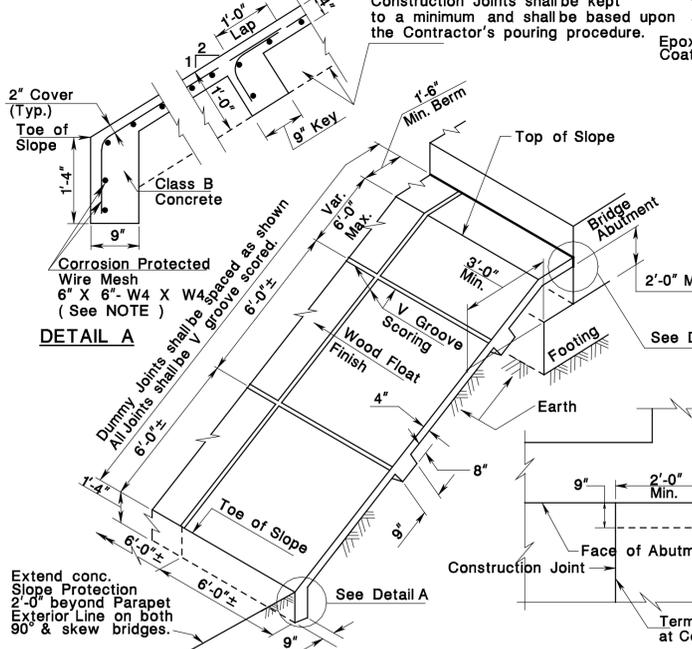
NEW JERSEY DEPARTMENT OF TRANSPORTATION BUREAU OF STRUCTURAL ENGINEERING

BRIDGE CONSTRUCTION DETAILS

BCD-504-2.5

Welded wire fabric shall pass through construction joints. Splices where necessary, shall overlap a minimum of 1'-0". Reinforcement shall not pass through expansion and contraction joints and a minimum of 2" concrete end cover shall be provided.

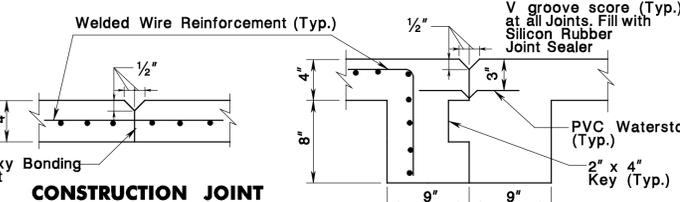
Edge Beams required at Slope Protection limits & on both sides of Contraction and Expansion Joints. Expansion Joints required at 90'-0" intervals. Contraction Joints required at 30'-0" intervals. The number of Construction Joints shall be kept to a minimum and shall be based upon the Contractor's pouring procedure.



ISOMETRIC SLOPE SKETCH

DETAILS OF CONCRETE SLOPE PROTECTION

Extend conc. Slope Protection 2'-0" beyond Parapet Exterior Line on both 90° & skew bridges.

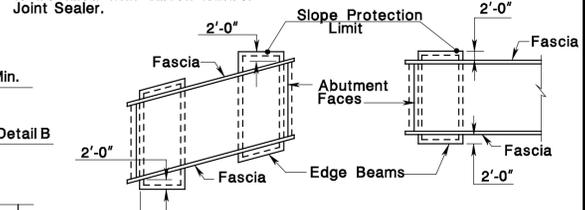


CONSTRUCTION JOINT SECTION

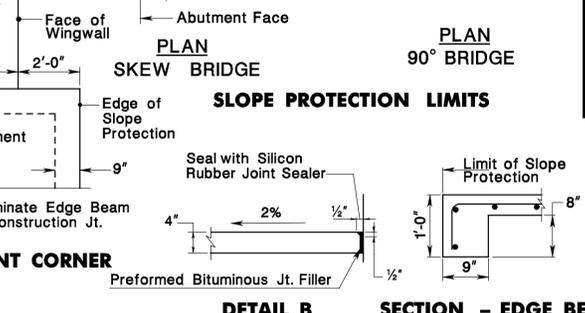
For Expansion Joints use 1/2" Preformed Bituminous Joint Filler, Contraction Joints Paraffin coated. Upper 1/2" to be filled with Silicon Rubber Joint Sealer.

For Construction Joints V Groove to be filled with Silicon Rubber Joint Sealer.

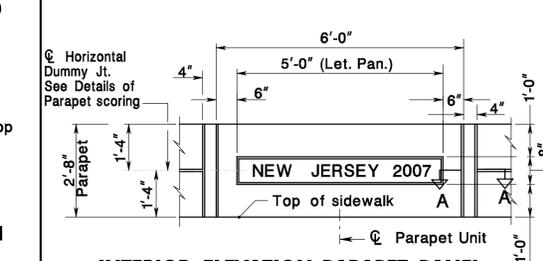
EXPANSION AND CONTRACTION JOINT SECTION



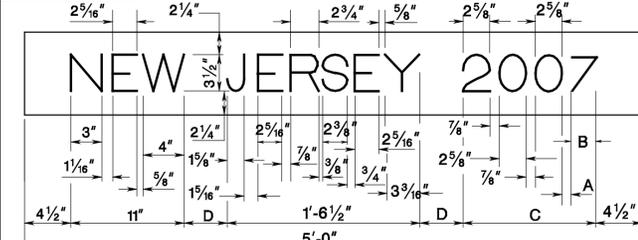
SLOPE PROTECTION LIMITS



SECTION - EDGE BEAM

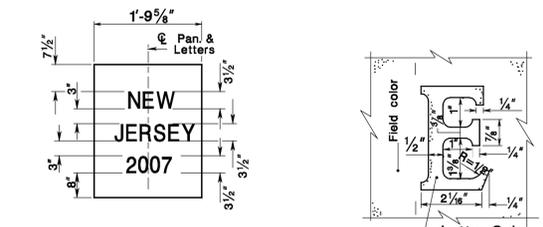


INTERIOR ELEVATION-PARAPET PANEL



DETAIL - C.S. LET. PANEL (5'-0")

All Dimensions shown are in inches



DETAIL-C.S. LET. PANEL (1'-9 5/8")

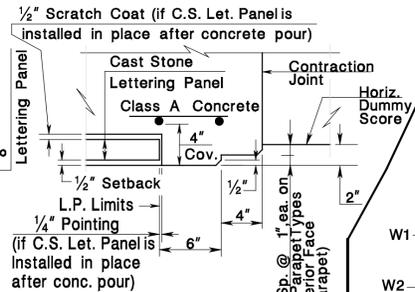
All Dimensions shown are in inches (Note: Panel Date shall be year of Bridge completion.)

LETTERING PANEL NOTES:

Lettering panels shall be precast reinforced concrete in one piece with the exposed aggregate as per Specifications. Surface Finish for the Field shall be a medium feature exposed aggregate with a reddish-brown coloration. Surface Finish for Letters and Numbers shall be a light green crushed quartz. Samples showing desired coloration, aggregate and textures may be examined in the office of the Engineer. Care shall be used to prevent mortar discoloration of exposed surfaces of the panel. Cost of panel shall be included in price bid for concrete containing it.

DATE PANEL

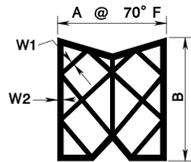
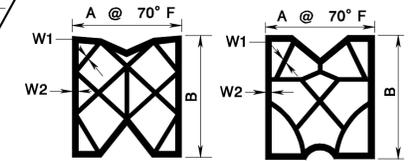
BCD-504-3.2



SECTION A-A

LEGEND				
YEAR	A (IN.)	B (IN.)	C (IN.)	D (IN.)
2004	7/8	2 3/8	13 3/8	4 5/8
2005	7/8	2 1/2	13	3 3/4
2007	7/8	2 1/2	13	4 3/4
2008	7/8	2 1/2	13	3 3/4
2009	7/8	2 3/8	13 1/2	3 3/4

Panel to be approved by the Engineer, before incorporating panel in the work.



A = Compressed width of sealer at 70° F.
B = Compressed height of sealer at 70° F.
W1 = Interior membrane minimum thickness.
W2 = Exterior membrane minimum thickness.

PREFOR. ELASTOMERIC COMPRESSION SEALER NOMINAL SIZE (IN.)	A (IN.)	B (IN.)	W1 (min.) (IN.)	W2 (min.) (IN.)
1 3/4" X 1 3/4" (1)	1	(2)	1/16	3/32
2 1/2" X 2 1/2" (1)	1 1/2	(2)	3/32	3/16
4" X 4" (1)	2 3/8	(2)	3/16	1/4

Notes:

- The nominal height of compression seals may vary based on manufacturers specifications. The height may exceed the nominal manufacturers sealer height by not more than 1/4".
- Dimension "B" varies depending on the joint manufacturer. The depth of embedment of the compression seal in the joint shall be set by the fabricator and is equal to the compressed seal height plus 1/2" (± 1/8").
- All preformed elastomeric compression seals shall conform to the material requirements of the NJDOT Standard Specifications for Road and Bridge Construction with current Supplemental Specifications, as modified by the Special Provisions.

* The note should be modified to reflect applicable year and updated Specifications.

DETAILS OF PREFORMED ELASTOMERIC JOINT SEALER

BCD-504-3.5

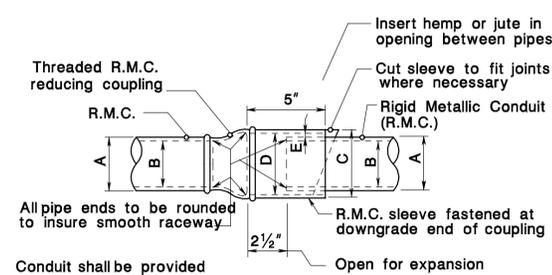
TYPICAL DETAILS NO. 1

N.T.S.

BCD-504-3

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

BRIDGE CONSTRUCTION DETAILS



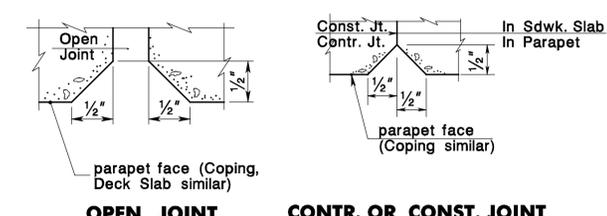
ELEVATION

R. M. C.			SLEEVE			Nominal Reducing Coupling	Clearance E
Nom. Dia.	Ext. Dia. A	Int. Dia. B	Nom. Dia.	Ext. Dia. C	Int. Dia. D		
1 1/2"	1.900	1.610	2 1/2"	2.875	2.469	2 1/2" to 1 1/2"	3/32"
2"	2.375	2.067	3"	3.500	3.068	3" to 2"	11/32"
3"	3.500	3.068	4"	4.500	4.026	4" to 3"	1/4"
4"	4.500	4.026	5"	5.563	5.047	5" to 4"	1/4"

Expansion sleeves shall be installed at all Fixed and Expansion joints and elsewhere as shown or approved. R.M.C. and all fittings shall be hot-dip galvanized.

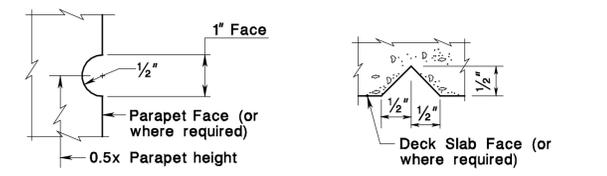
DETAILS OF R.M.C. EXPANSION SLEEVE

BCD-504-3.3



OPEN JOINT

CONTR. OR CONST. JOINT (Contraction joint paraffin coated)



HORIZONTAL DUMMY JOINT

VERTICAL DUMMY JOINT

DETAILS OF PARAPET SCORING

BCD-504-3.4

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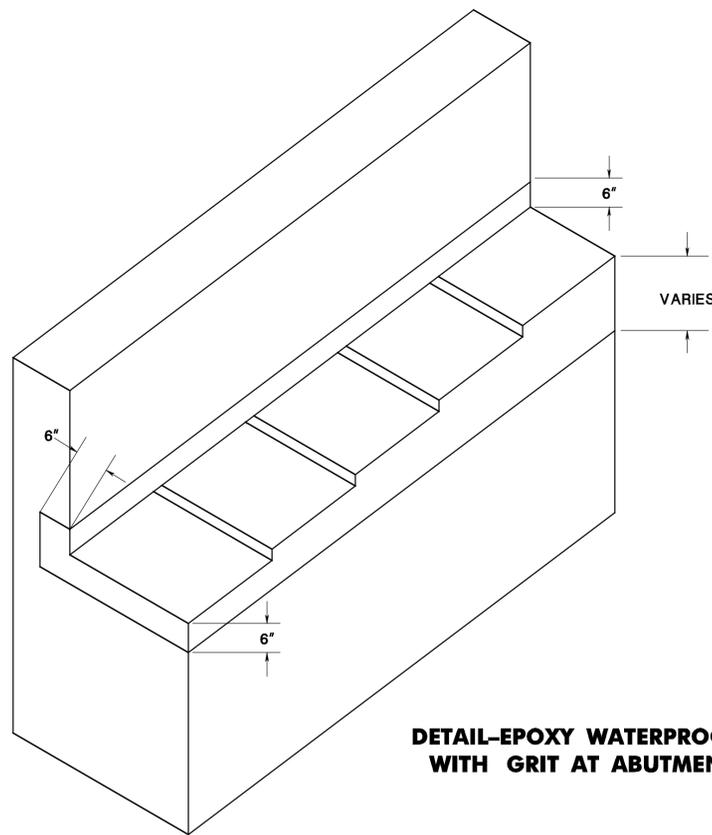
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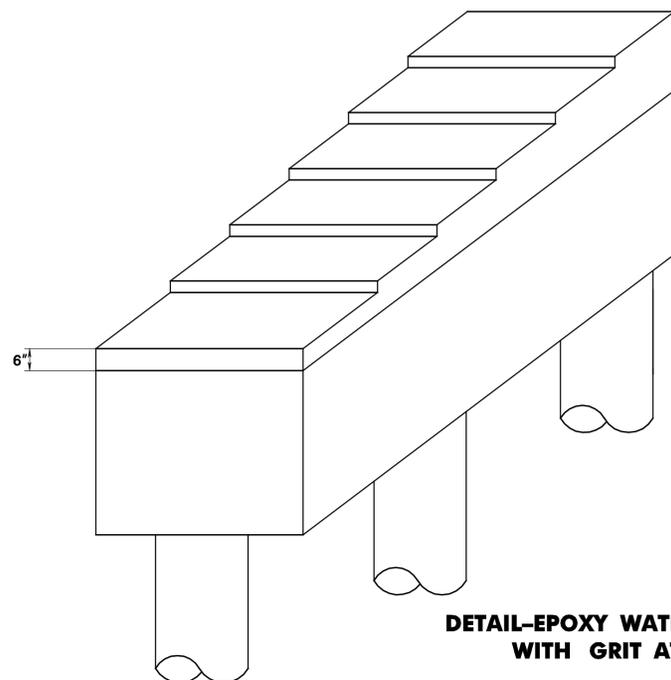
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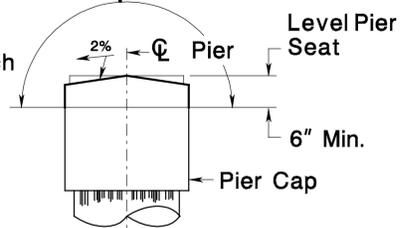


DETAIL-EPOXY WATERPROOFING WITH GRIT AT ABUTMENTS

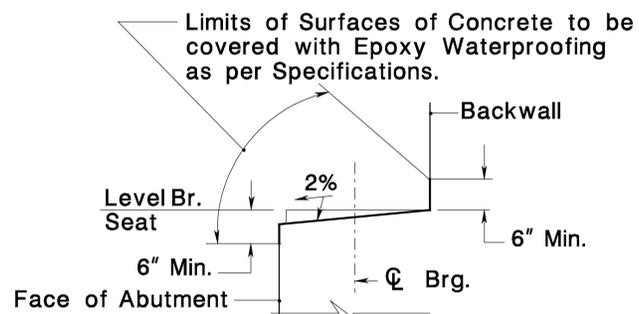


DETAIL-EPOXY WATERPROOFING WITH GRIT AT PIERS

Epoxy Limits
 1. Full length for Simple Span.
 2. From end of Pier Cap to 2'-0" inside the centerline of each Fascia Stringer for continuous deck.

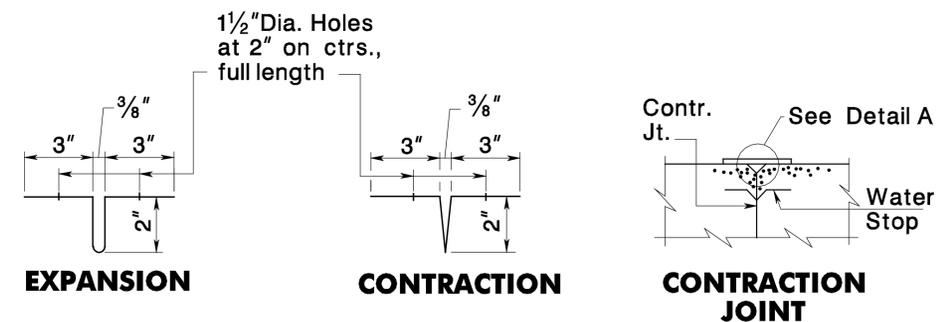


LIMITS AT PIER



LIMITS AT ABUTMENT

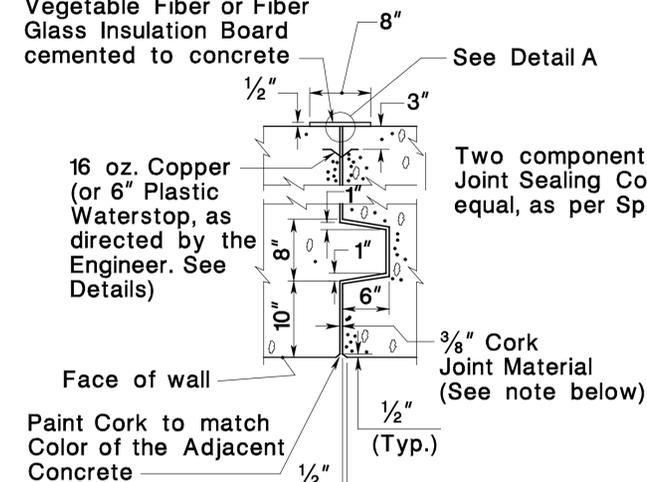
BCD-504-4.1



16 OZ. COPPER WATERSTOP-10" WIDE

BCD-504-4.2

Vegetable Fiber or Fiber Glass Insulation Board cemented to concrete

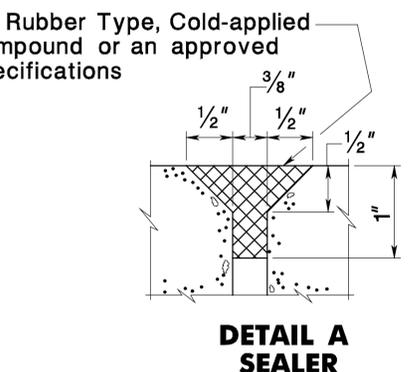


SECTION - WALL JOINT

Cork Joint Material: conforming to AASHTO Specifications, Designation M153, Type 2, where joint is noted as Expansion Joint. Contraction Joints shall be tight and shall be paraffin coated.

DETAILS OF WATERSTOP

BCD-504-4.3



DETAIL A SEALER



DETAIL 6" PLASTIC WATERSTOP

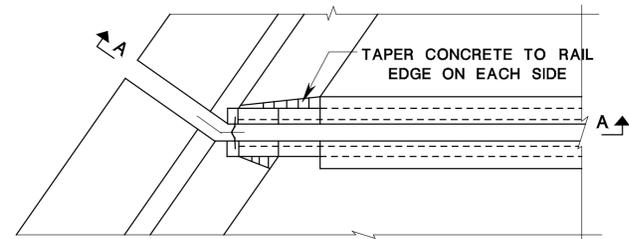
TYPICAL DETAILS NO. 2

N.T.S.

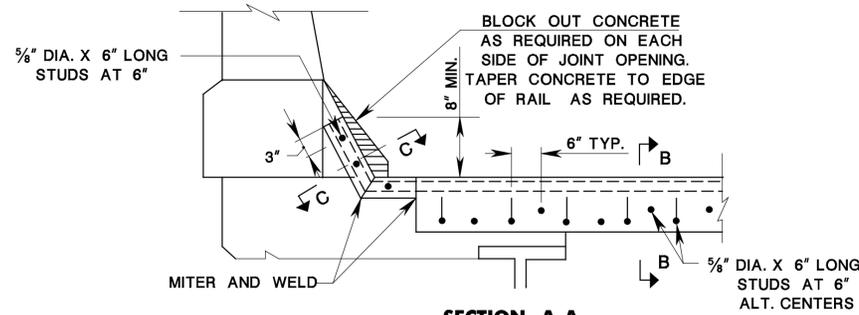
BCD-504-4

NEW JERSEY DEPARTMENT OF TRANSPORTATION
 BUREAU OF STRUCTURAL ENGINEERING

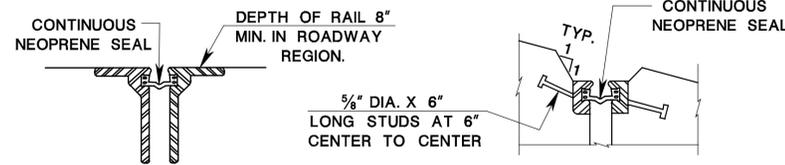
BRIDGE CONSTRUCTION DETAILS



PARAPET PLAN FOR SKEWS $\geq 30^\circ$



SECTION A-A



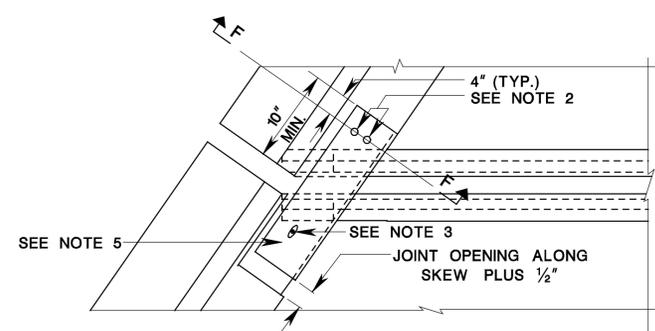
SECTION B-B

SECTION C-C

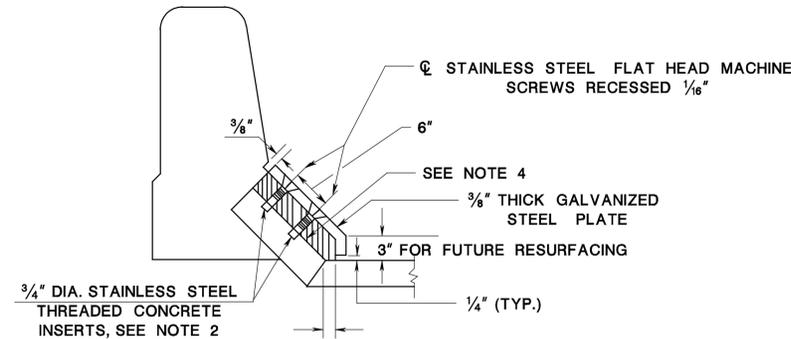
NOTES:

- 1 THE DETAIL ABOVE IS INTENDED AS A GENERAL GUIDE TO A TYPICAL GLANDULAR TYPE STRIP SEAL SYSTEM. VARIATIONS TO THE GLAND SHAPE, RAIL SHAPE, STUD ARRANGEMENT, AND SUPPORT DETAILS SHALL BE SUBMITTED ACCORDING TO THE NJDOT WORKING DRAWING SPECIFICATIONS.
- 2 DETAILS FOR MEDIAN BARRIER ARE SIMILAR.
- 3 THE JOINT OPENING IN THE PARAPET SHALL BE PARALLEL TO THE SKEW FOR SKEWS LESS THAN 30 DEGREES.

BCD-507-1.1



PARAPET PLAN

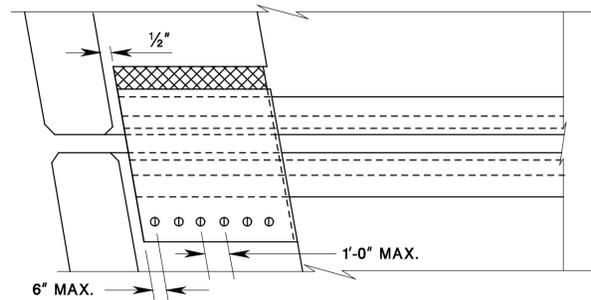


SECTION F-F

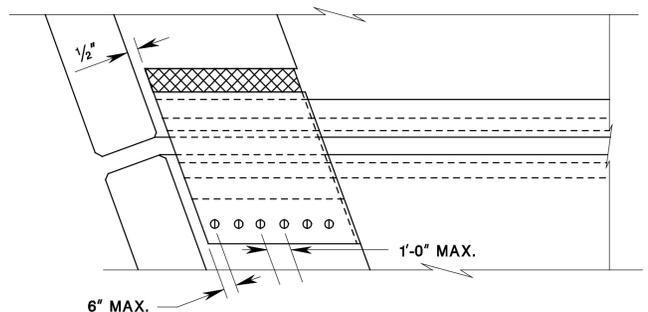
NOTES:

- 1 THE DETAIL ABOVE IS INTENDED AS A GENERAL GUIDE TO A TYPICAL GLANDULAR TYPE STRIP SEAL SYSTEM. VARIATIONS TO THE GLAND SHAPE, RAIL SHAPE, STUD ARRANGEMENT, AND SUPPORT DETAILS SHALL BE SUBMITTED ACCORDING TO THE NJDOT WORKING DRAWING SPECIFICATIONS.
- 2 2 - 3/4" DIA. X 1 1/2" STAINLESS STEEL FLAT HEAD MACHINE SCREWS WITH 2 - 3/4" DIA. CAST-IN-PLACE STAINLESS STEEL THREADED CONCRETE INSERTS. RECESS 1/16" BELOW PLATE SURFACE.
- 3 1" X 5" SLOTTED HOLE FOR SKEWS TO 45°; 1" X 6" SLOTTED HOLE FOR SKEWS OVER 45°. HOLE SLOTTED PARALLEL TO DIRECTION OF MOVEMENT WITH 1 - 3/4" X 1 1/2" STAINLESS STEEL FLAT HEAD MACHINE SCREW RECESSED 1/16" BELOW PLATE SURFACE IN 3/4" CAST-IN-PLACE STAINLESS STEEL THREADED CONCRETE INSERT. DO NOT OVER TIGHTEN MACHINE SCREWS.
- 4 BLOCK OUT CONCRETE AS REQUIRED ABOVE JOINT OPENING.
- 5 3/8" THICK BY 1'-2" WIDE X (2'-0" LONG FOR SKEWS TO 45° AND 3'-0" LONG FOR SKEWS LARGER THAN 45°) GRADE 36 GALVANIZED STEEL PLATE BENT TO FOLLOW CURB WITH HOLES AS SHOWN.

BCD-507-1.2

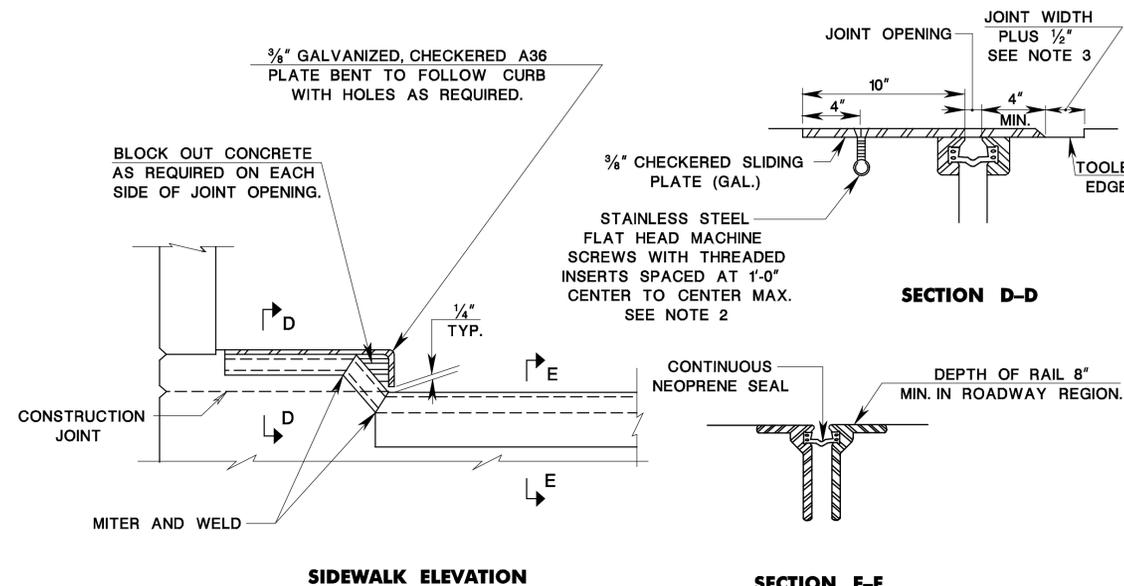


SIDEWALK PLAN SKEW $< 15^\circ$



SIDEWALK PLAN SKEW $\geq 15^\circ$

BCD-507-1.4



SIDEWALK ELEVATION

SECTION D-D

NOTES:

- 1 THE DETAIL SHOWN HERE IS INTENDED AS A GENERAL GUIDE TO A TYPICAL GLANDULAR TYPE STRIP SEAL SYSTEM. VARIATIONS TO THE GLAND SHAPE, RAIL SHAPE, STUD ARRANGEMENT, AND SUPPORT DETAILS SHALL BE SUBMITTED ACCORDING TO THE NJDOT WORKING DRAWING SPECIFICATIONS.
- 2 3/4" DIA. X 1 1/2" STAINLESS STEEL FLAT HEAD MACHINE SCREWS WITH 3/4" DIA. CAST-IN-PLACE STAINLESS STEEL THREADED CONCRETE INSERTS. RECESS 1/16" BELOW PLATE SURFACE.
- 3 UPON COMPLETION, FILL JOINT OPENING WITH A LOW MODULUS SILICON RUBBER JOINT SEALER CONFORMING TO ASTM D 5893 WITH A MIN. ULTIMATE ELONGATION OF 1200 PERCENT. THE JOINT FILLER SHALL MATCH THE COLOR OF THE CONCRETE.

STRIP SEAL DECK JOINTS

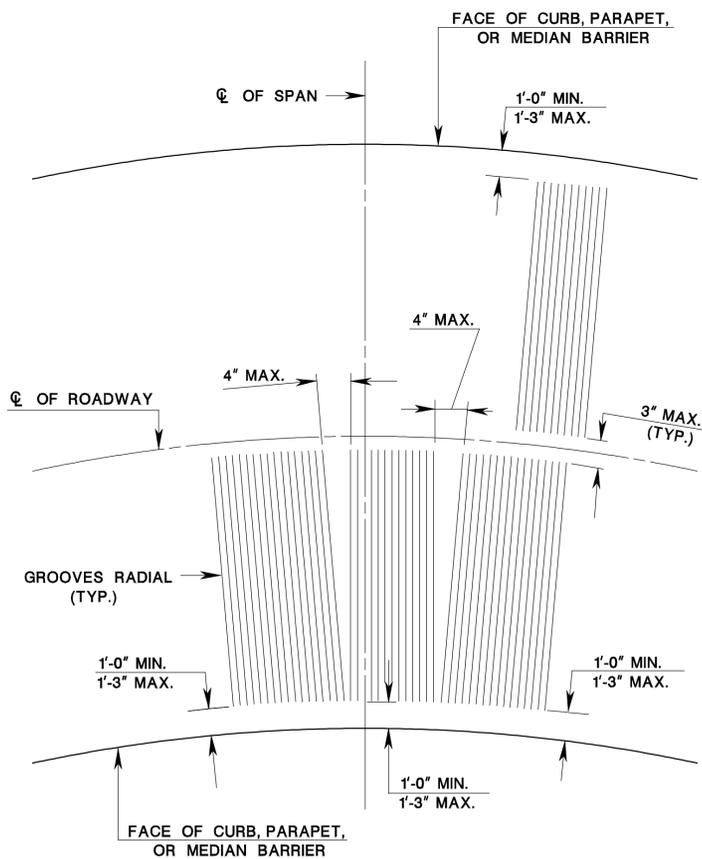
N.T.S.

BCD-507-1

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

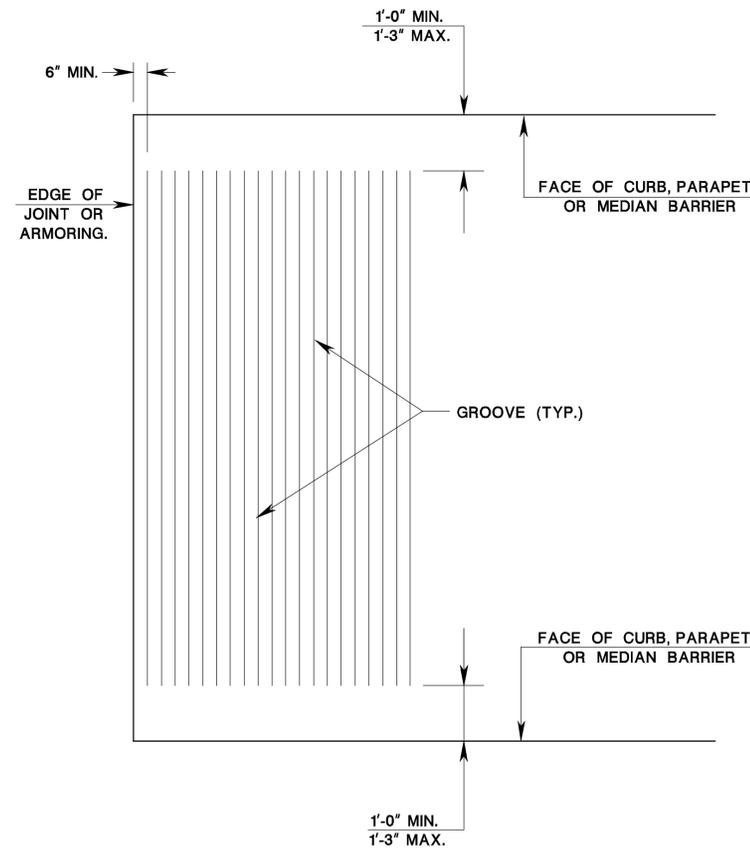
BRIDGE CONSTRUCTION DETAILS

BCD-507-1.5



SAWCUT GROOVING FOR BRIDGE DECKS ON CURVED ALIGNMENT

BCD-507-3.1

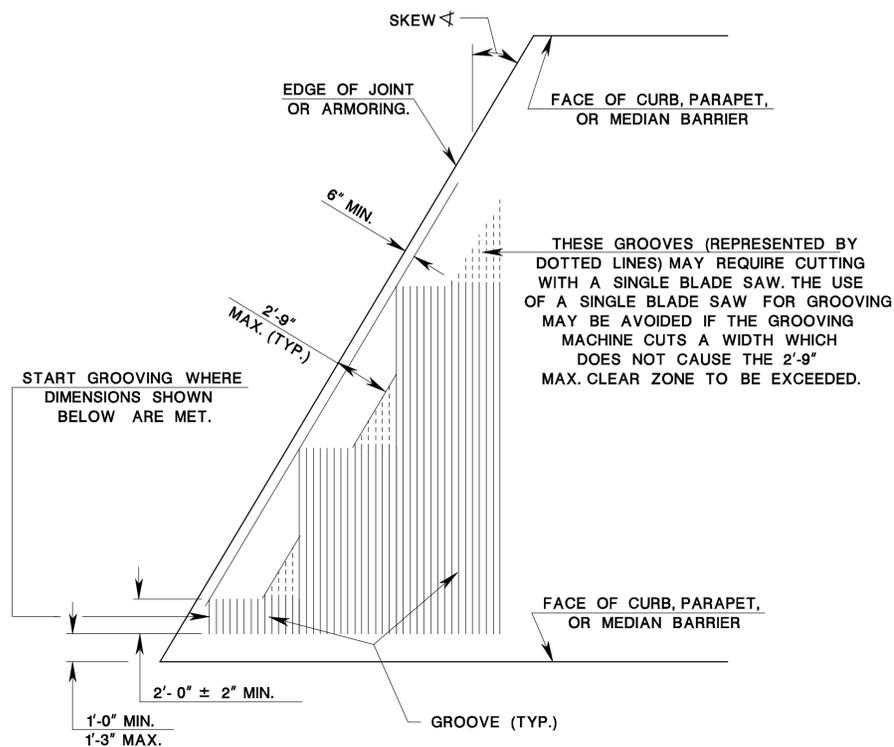


SAWCUT GROOVING FOR BRIDGE DECKS

BCD-507-3.2

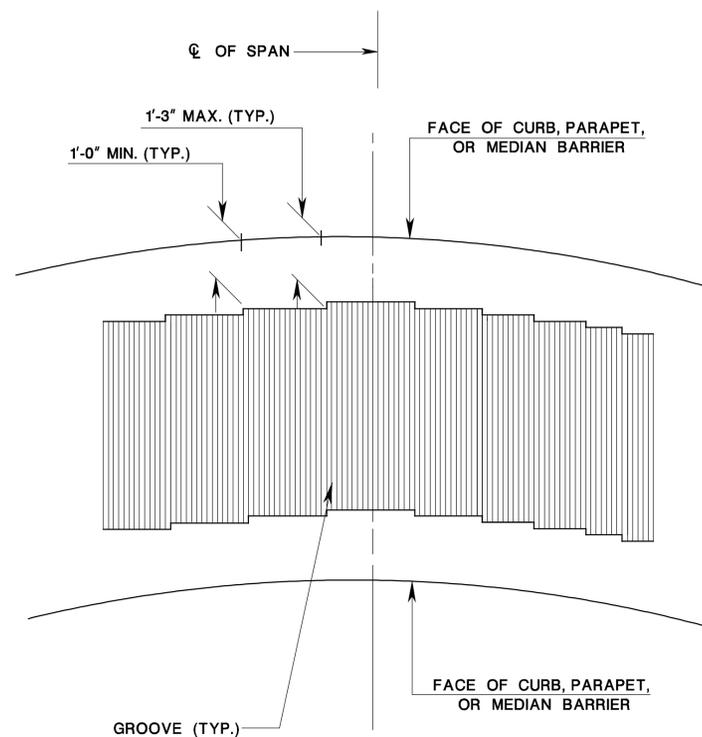
NOTES:

SAWCUT GROOVES SHALL BE RECTANGULAR IN CROSS SECTION.



SAWCUT GROOVING FOR SKEWED BRIDGE DECKS

BCD-507-3.3



SAWCUT GROOVING FOR BRIDGE DECKS ON TIGHT CURVED ALIGNMENT

BCD-507-3.4

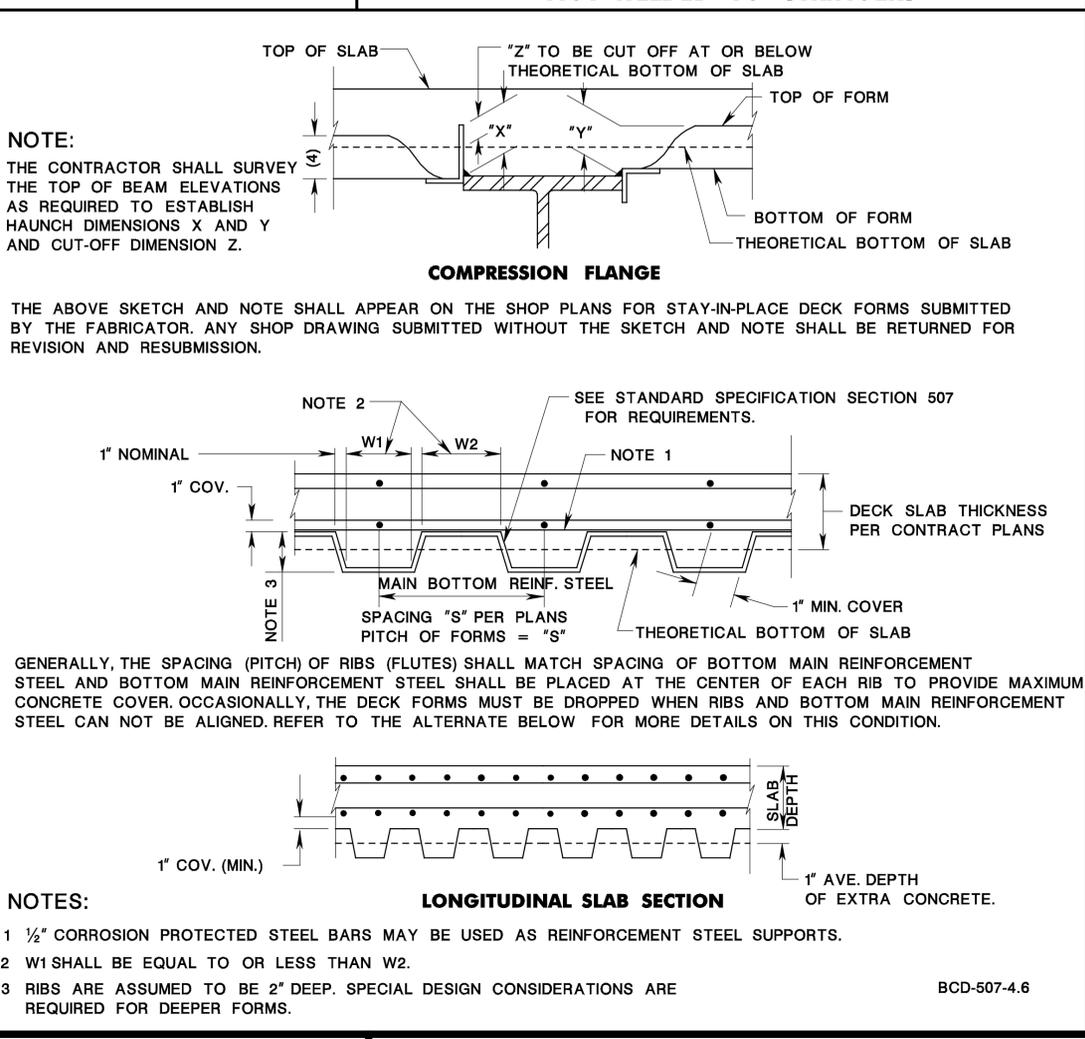
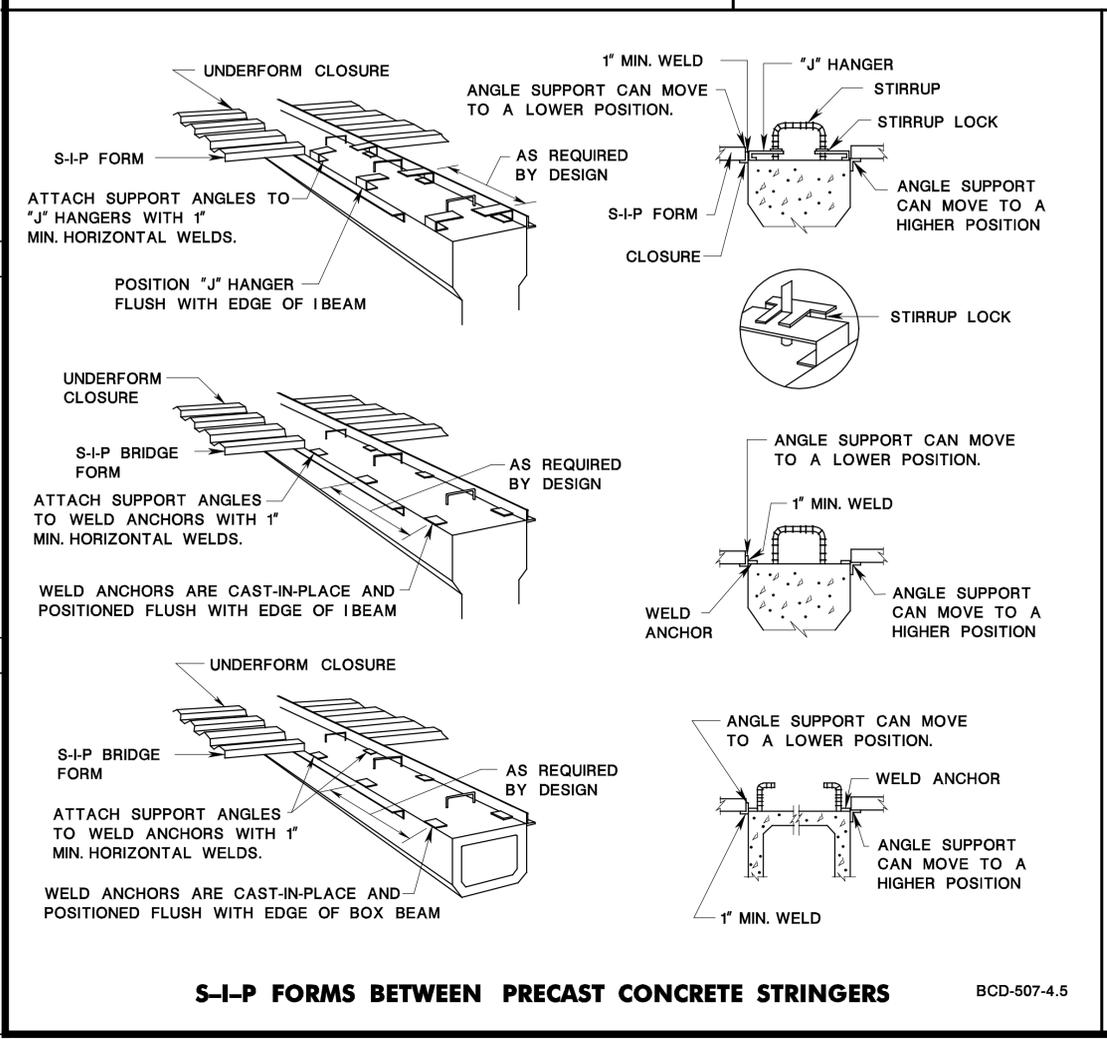
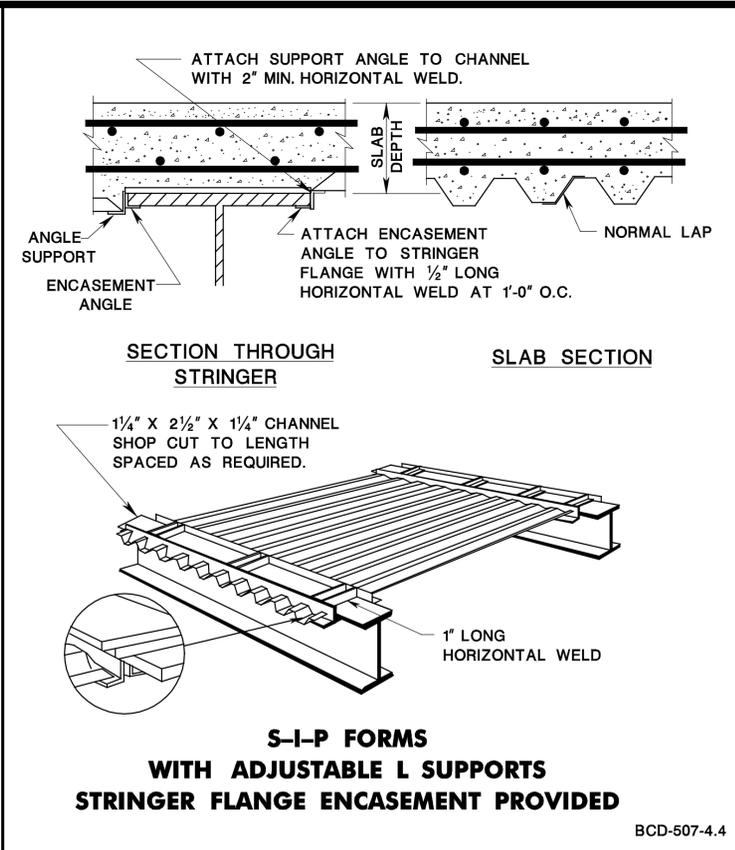
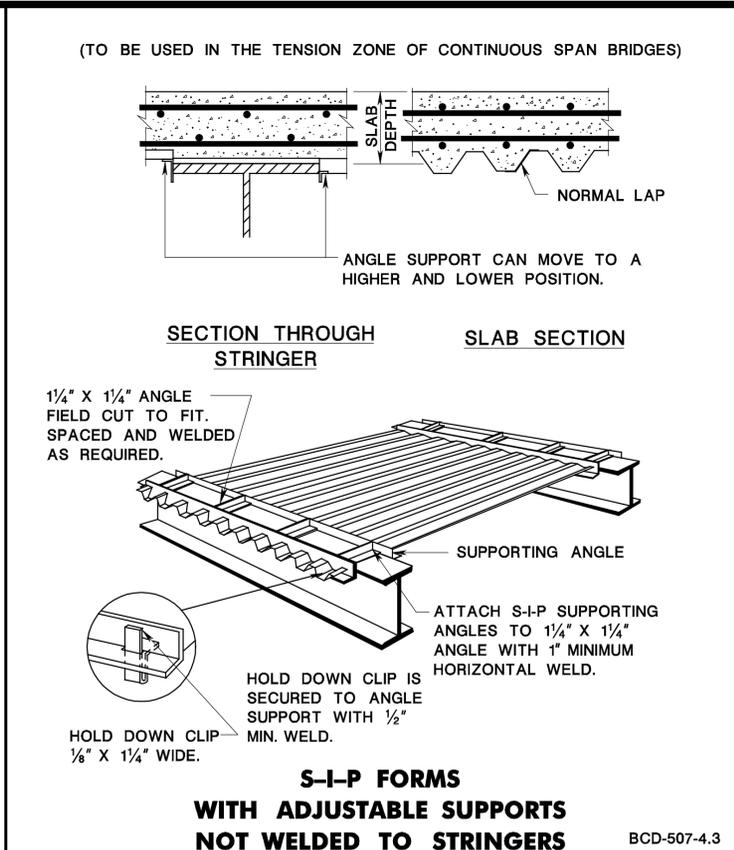
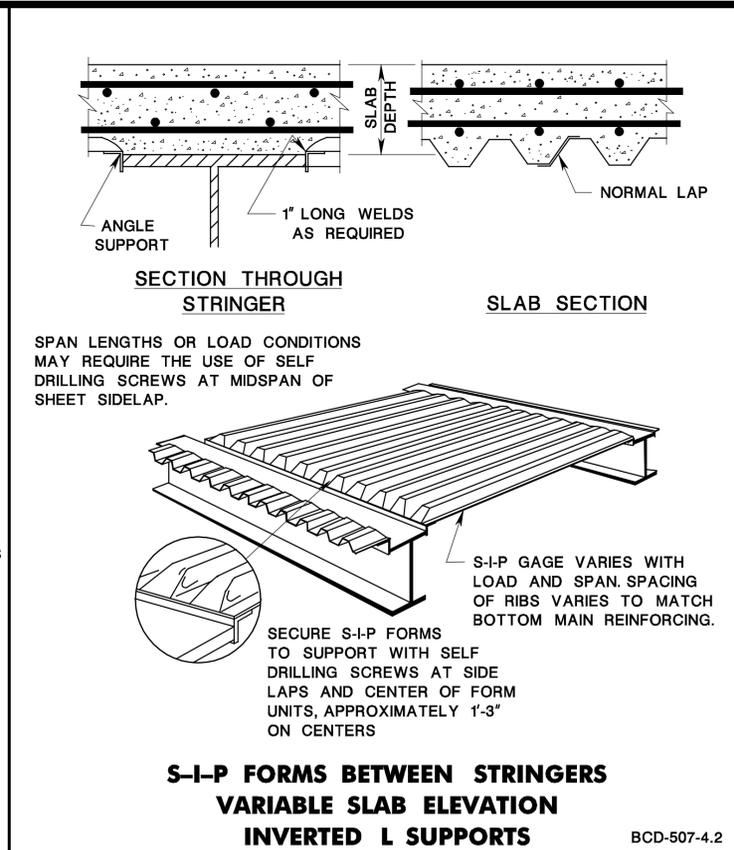
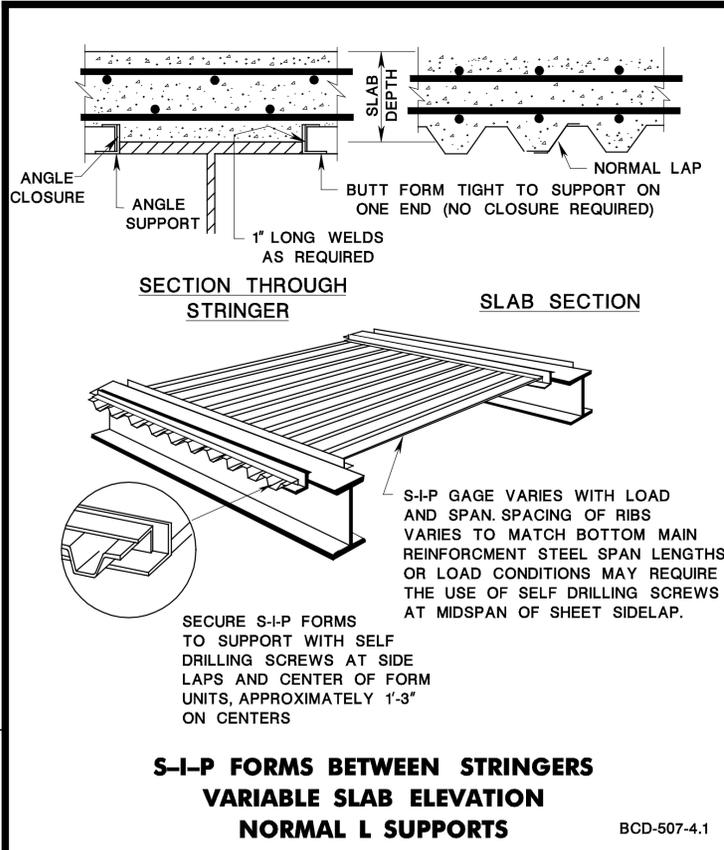
SAWCUT GROOVING FOR BRIDGE DECKS

N.T.S.

BCD-507-3

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

BRIDGE CONSTRUCTION DETAILS



GENERAL NOTE:

1. THE DETAILS SHOWN ARE GENERAL. WORKING DRAWINGS ACCORDING TO THE NJDOT SPECIFICATIONS SHALL BE SUBMITTED FOR ACTUAL DETAILS.
2. LAP S.I.P. FORM PLACEMENT IN DIRECTION OF CONCRETE POUR.

STAY-IN-PLACE FORMS
N.T.S.

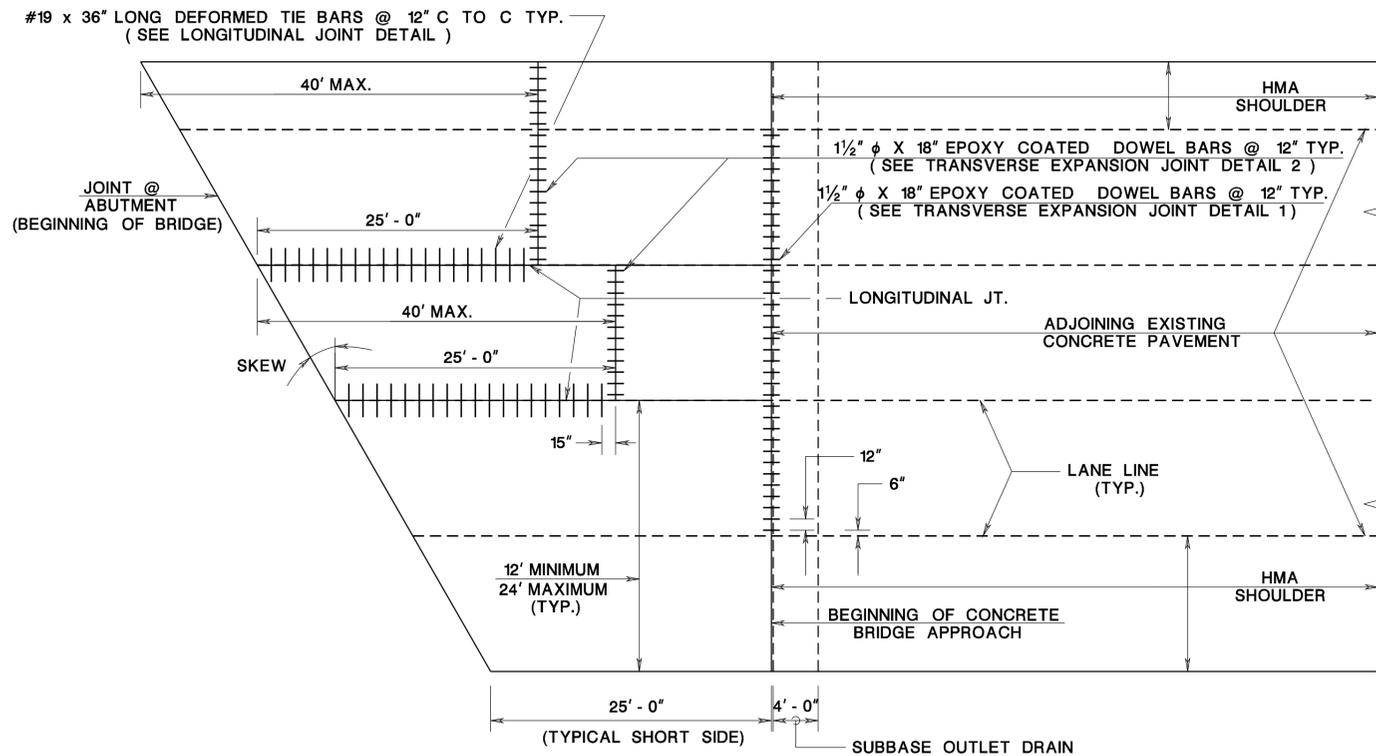
NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

BRIDGE CONSTRUCTION DETAILS

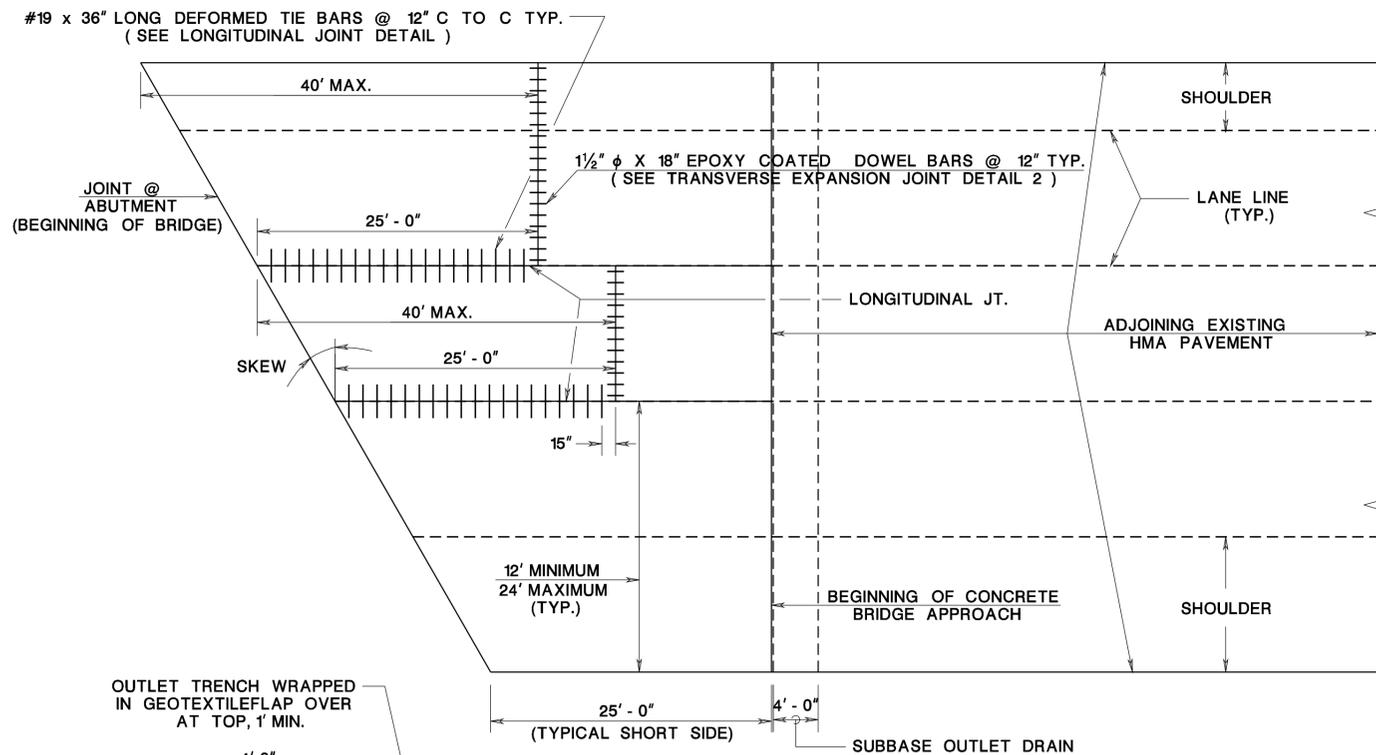
BCD-507-4

131
146

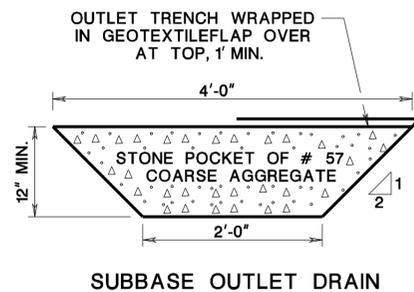
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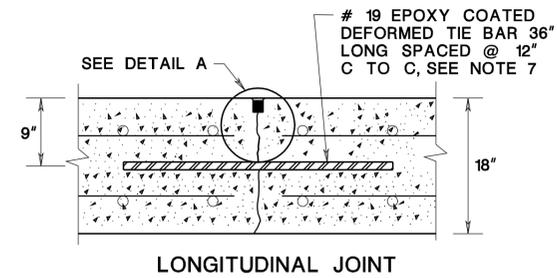
CONCRETE BRIDGE APPROACH ADJOINING CONCRETE PAVEMENT



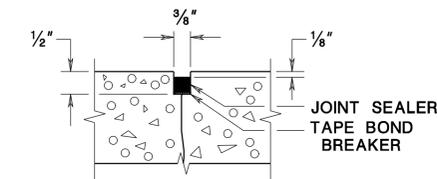
CONCRETE BRIDGE APPROACH ADJOINING HMA PAVEMENT



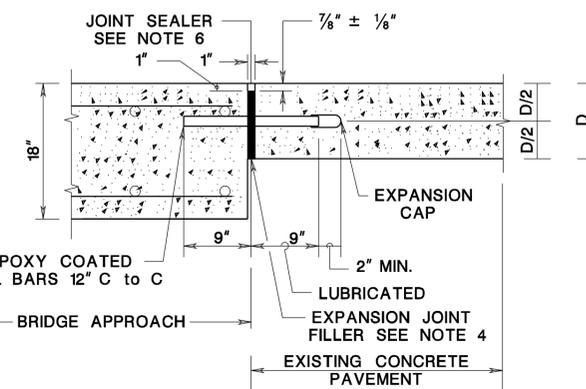
SUBBASE OUTLET DRAIN



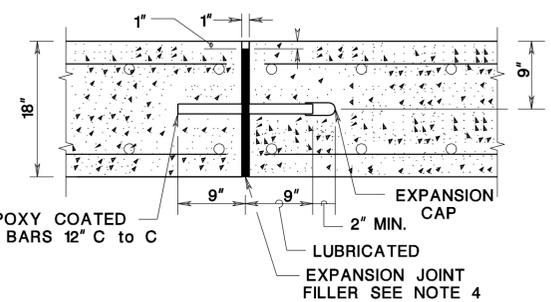
LONGITUDINAL JOINT



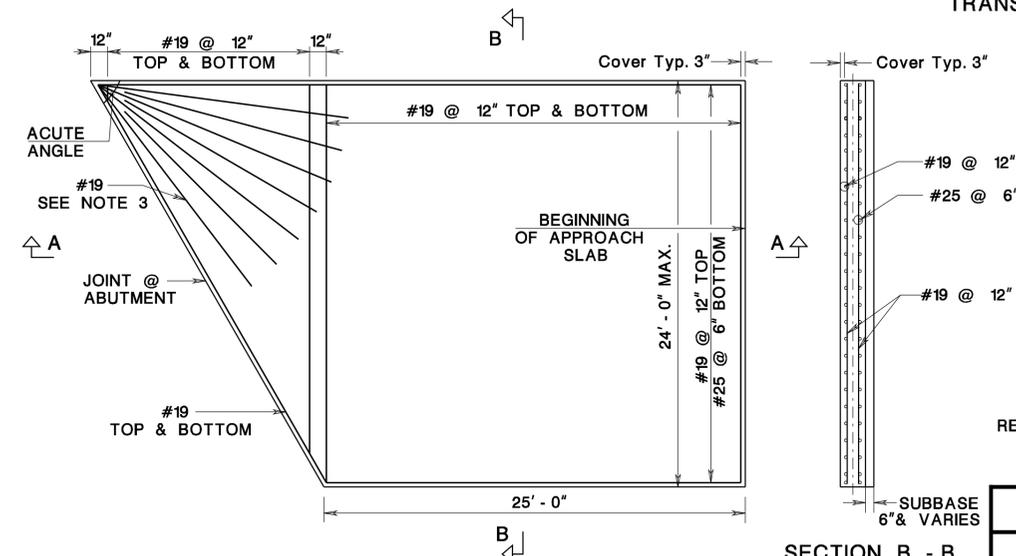
DETAIL A
HOT-POURED JOINT SEALER



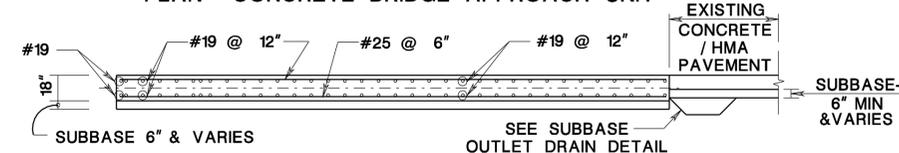
TRANSVERSE EXPANSION JOINT DETAIL 1



TRANSVERSE EXPANSION JOINT DETAIL 2



PLAN - CONCRETE BRIDGE APPROACH UNIT



SECTION A - A

SECTION B - B

CONCRETE BRIDGE APPROACH
N.T.S.

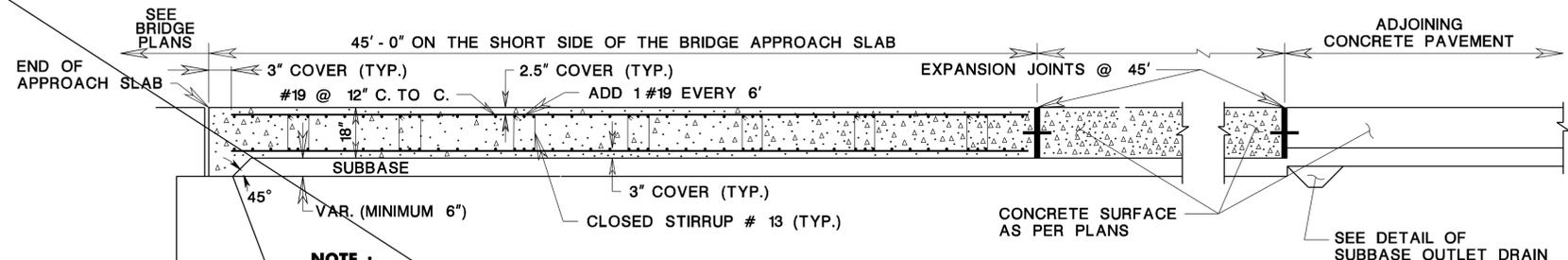
REINFORCEMENT STEEL IS DESIGNATED IN METRIC UNITS.

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

BRIDGE CONSTRUCTION DETAILS

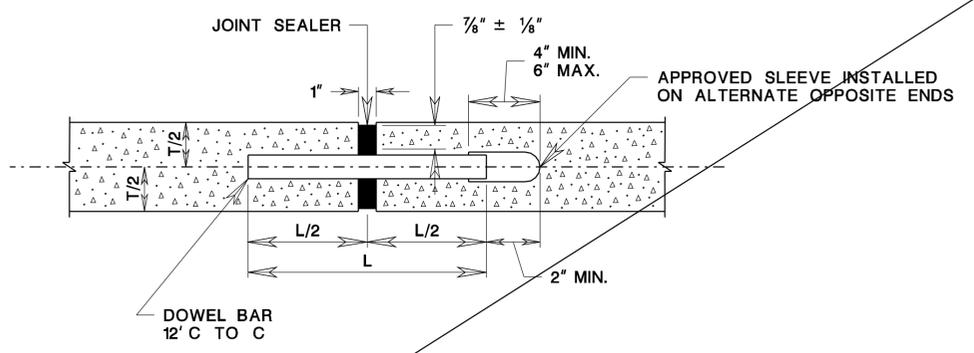
NOTES:

1. CONSTRUCT LONGITUDINAL JOINTS IN THE CONCRETE BRIDGE APPROACH ALONG THE LANE AND SHOULDER LINES. THIS MAY REQUIRE USING COUPLERS FOR THE STAGE CONSTRUCTION. INCLUDE COST OF COUPLERS IN THE ITEM, " CONCRETE BRIDGE APPROACH " .
2. ALL REINFORCEMENT STEEL TO BE CORROSION PROTECTED.
3. FOR APPROACH SLAB CORNER WITH AN ACUTE ANGLE LESS THAN 65 DEGREE, PROVIDE 7 # 19 BARS, 15' LONG DIRECTLY UNDER THE TOP LAYER OF BARS IN A FANNED ARRANGEMENT.
4. CUT EXPANSION JOINT FILLER MATERIAL IN STRIPS EQUAL TO THE WIDTH OF APPROACH SLAB. MAKE THE TOP SURFACE SMOOTH AND HAVE HOLES FOR THE DOWEL BARS.
5. PLACE CLOSED-END EXPANSION CAP OVER THE LUBRICATED END OF ALL PLAIN DOWEL BARS AND PROVIDE 2" CLEARANCE POCKET ASSURED BY MEANS OF A POSITIVE SPACING DEVICE.
6. INSTALL TOP OF THE JOINT SEALING MATERIAL $\frac{1}{4}'' \pm \frac{1}{8}''$ BELOW THE SURFACE OF THE PAVEMENT.
7. PLACE DEFORMED BAR PERPENDICULAR TO AND CENTERED OVER THE LONGITUDINAL JOINT.
8. THE QUANTITY OF APPROXIMATELY 4.67 LBS / CU. FT. DEVELOP ORDER LENGTHS OF REINFORCEMENT BARS IN ACCORDANCE WITH DETAILS SHOWN HERE AND THE JOINT LAY OUT DETAILS SHOWN ON THE CONTRACT PLANS.
9. FOR LAYOUT OF LONGITUDINAL JOINTS AND TRANSVERSE JOINTS REFER TO CONTRACT PLANS.

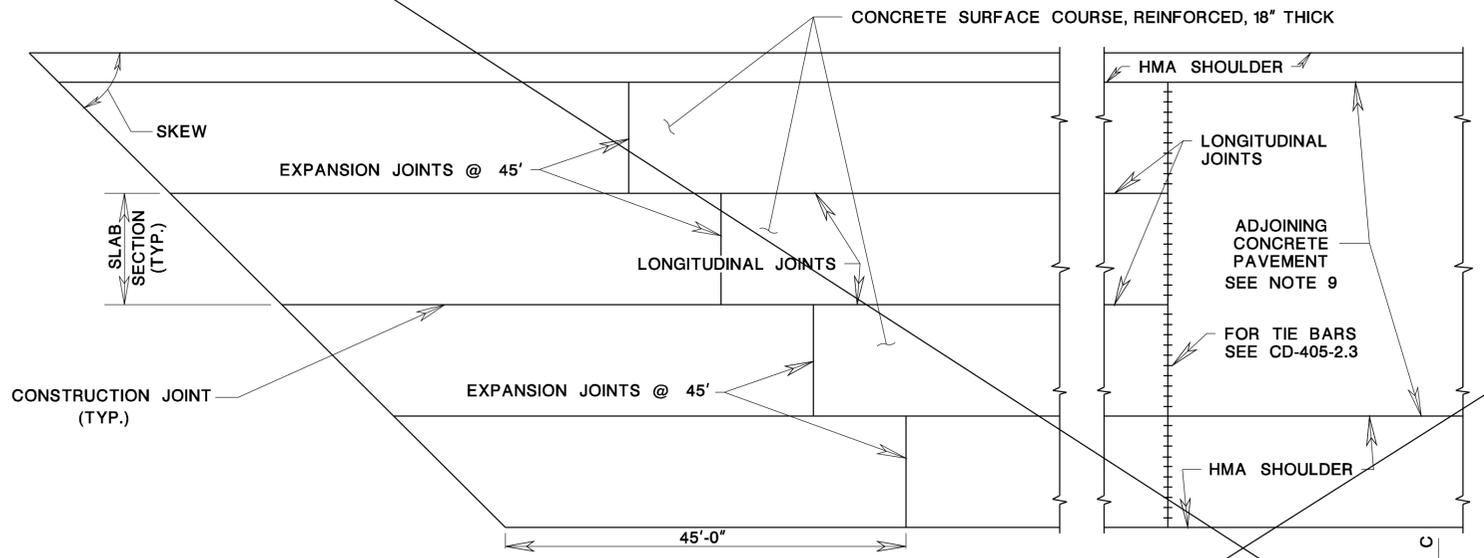


NOTE :
ALL LONGITUDINAL AND TRANSVERSE REINFORCEMENT STEEL TO BE SECURELY WIRED TOGETHER.

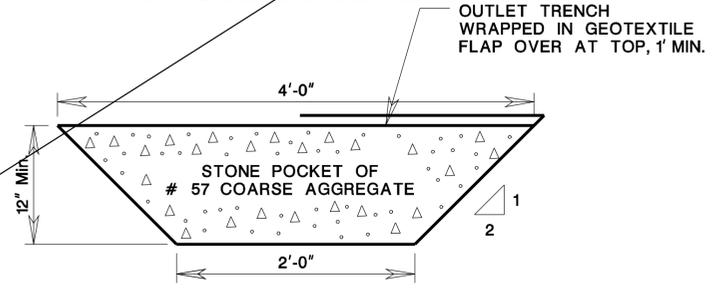
SECTION OF BRIDGE APPROACH SLABS



EXPANSION JOINT DETAIL-REFER TO CD-405-1.4 FOR DOWEL SPECIFICATIONS



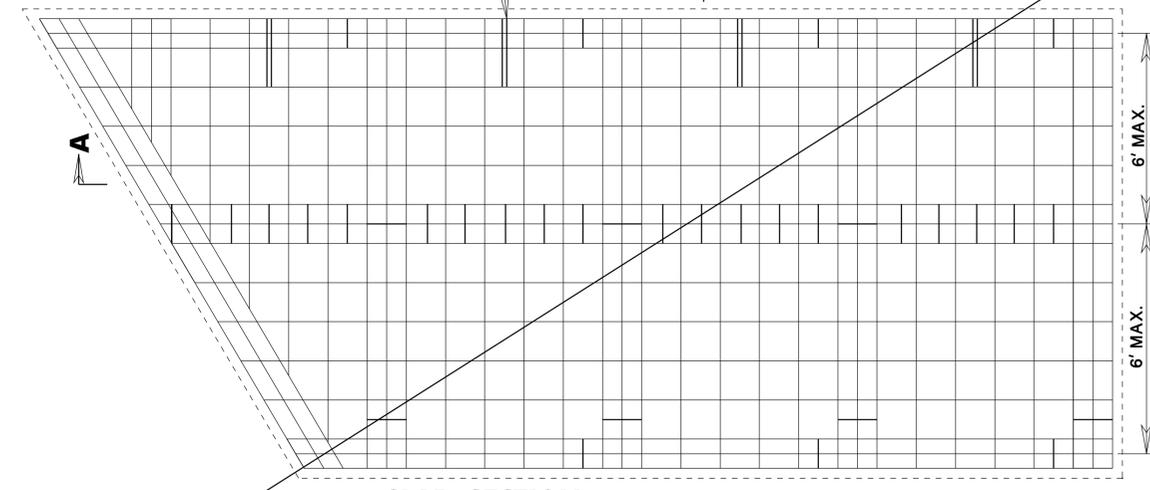
PLAN OF BRIDGE APPROACH SLABS



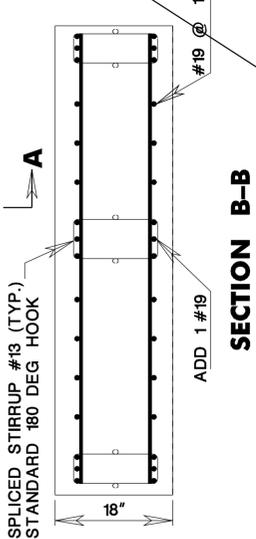
SUBBASE OUTLET DRAIN

NOTES:

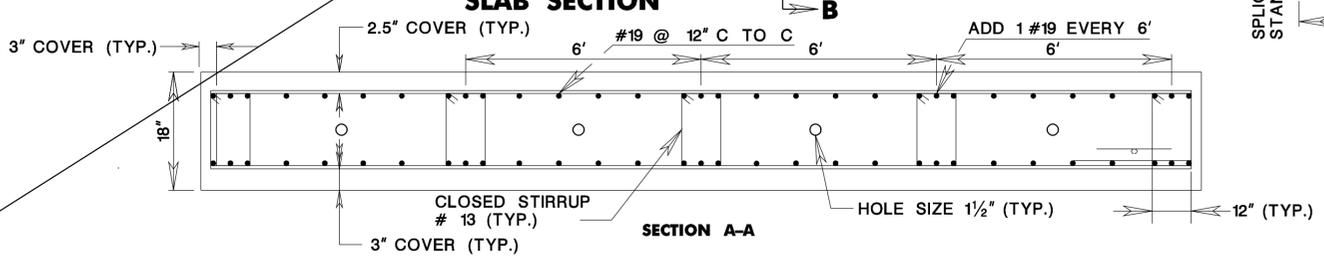
- EXTRA REINFORCEMENT STEEL FOR EMBEDDED BEAM (EB) PATTERN TO BE SPACED NOT MORE THAN 6'-0" ON CENTERS.
- INSTALL REINFORCEMENT STEEL CHAIRS TO SEPARATE TOP AND BOTTOM MATS (AS SHOWN).
- WIDER/LONGER SLABS MAY BE CONSTRUCTED PROVIDED THE C TO C SPACING OF EB EXTRA REINFORCEMENT STEEL IS NOT MORE THAN 6 FEET.
- ALTERNATE DESIGN WITH STIRRUPS:
CLOSED STIRRUPS SUBSTITUTED FOR REINFORCEMENT STEEL CHAIRS.
SPACING NOT MORE THAN 3 FEET C TO C.
STIRRUP MUST ENCLOSE TOP 3 AND BOTTOM 3 BARS.
- ALL REINFORCEMENT STEEL TO BE CORROSION PROTECTED.
- CONSTRUCT APPROACH SLABS WITH CLASS A CONCRETE. BASIS OF PAYMENT SHALL BE CUBIC YARDS. THE DEPARTMENT WILL MAKE PAYMENT FOR REINFORCEMENT STEEL UNDER APPROPRIATE STEEL, EPOXY COATED OR REINFORCEMENT STEEL, GALVANIZED. APPROPRIATE PAY ITEM AS SPECIFIED IN THE STANDARD SPECIFICATION SHOULD BE USED.
- THE APPROACH SLAB SHALL BE SAWCUT GROOVED FINISHED. THE METHODS USED SHALL BE ACCORDING TO THE REQUIREMENTS SPECIFIED IN THE NJDOT STANDARD SPECIFICATIONS FOR CONCRETE DECK SLABS.
- FOR STIRRUP DETAILS SEE BCD-507-5.1.
- PAVEMENT SLABS SHALL BE 23'-7" LONG WITH STANDARD REINFORCEMENT. SLAB JOINTS SHALL BE DOWELLED TOGETHER. JOINT FILLER SHALL BE PREFORMED BITUMINOUS FIBER, 1" THICK.



SLAB SECTION



SECTION B-B



SECTION A-A

**BRIDGE APPROACH SLABS
ADJOINING CONCRETE PAVEMENT**
N.T.S.

OBSOLETE PER BDC10D-01

NOTES:

REINFORCEMENT STEEL IS DESIGNATED IN METRIC UNITS.
HMA = HOT MIX ASPHALT

BRIDGE CONSTRUCTION DETAILS

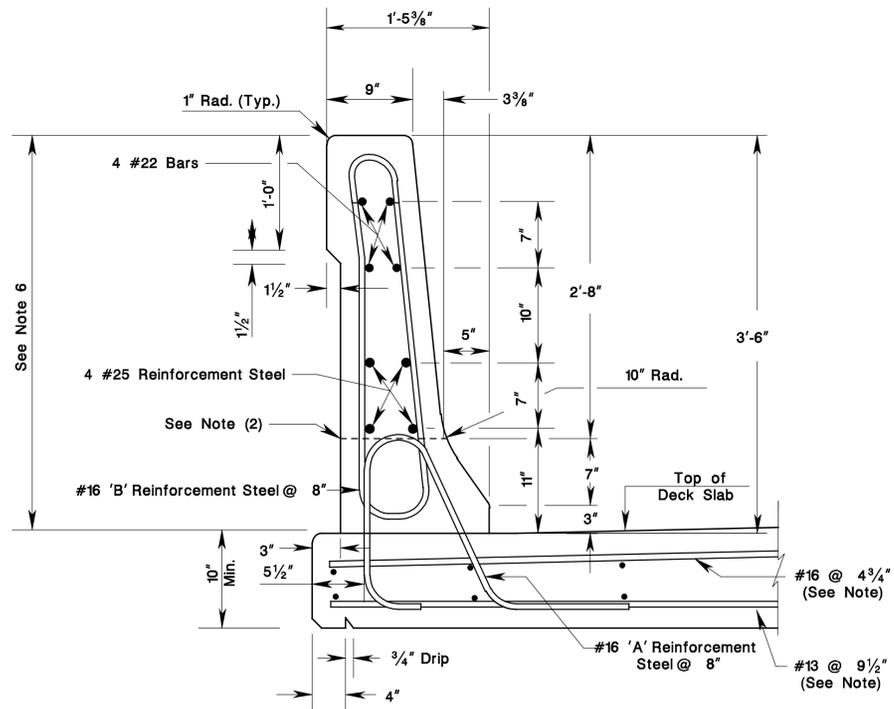
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BCD-507-6.1

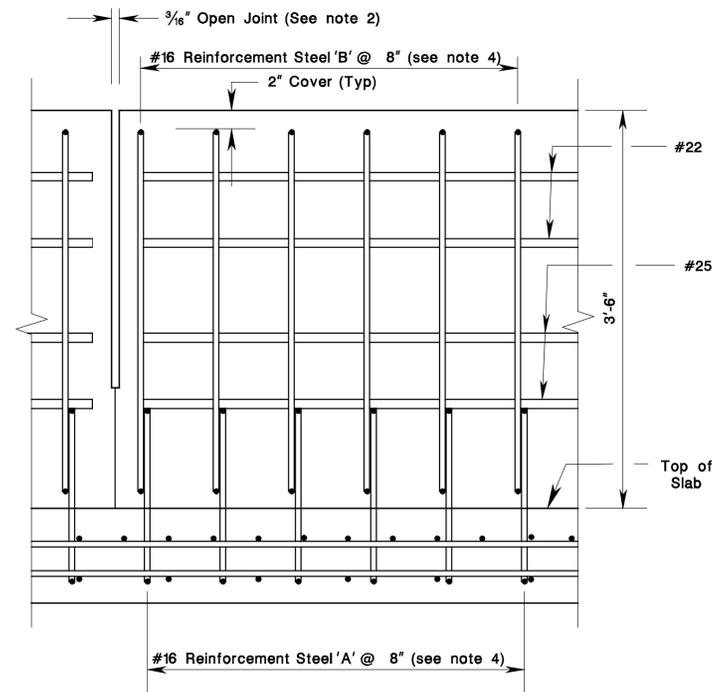
BCD-507-6

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

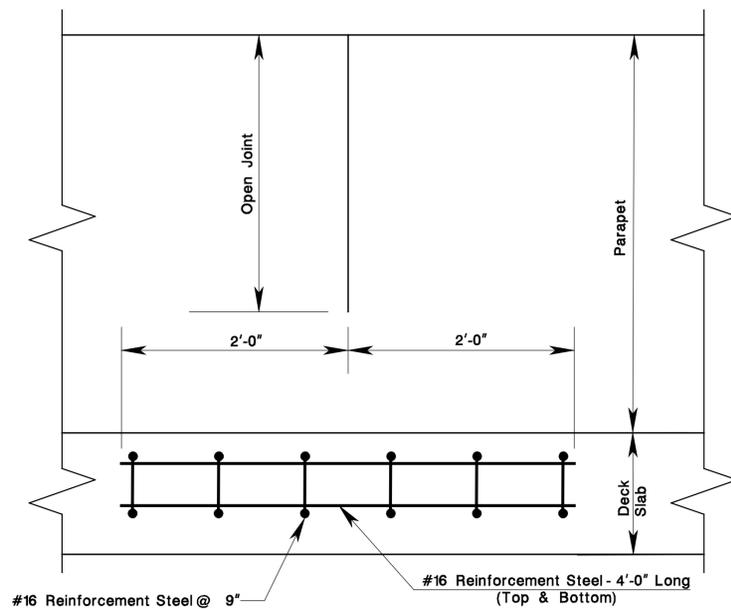
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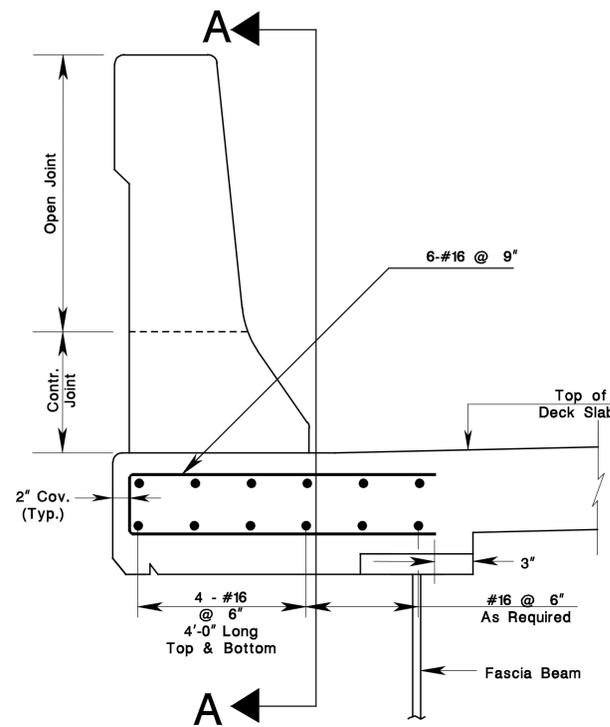
3'-6" HIGH F-SHAPE PARAPET



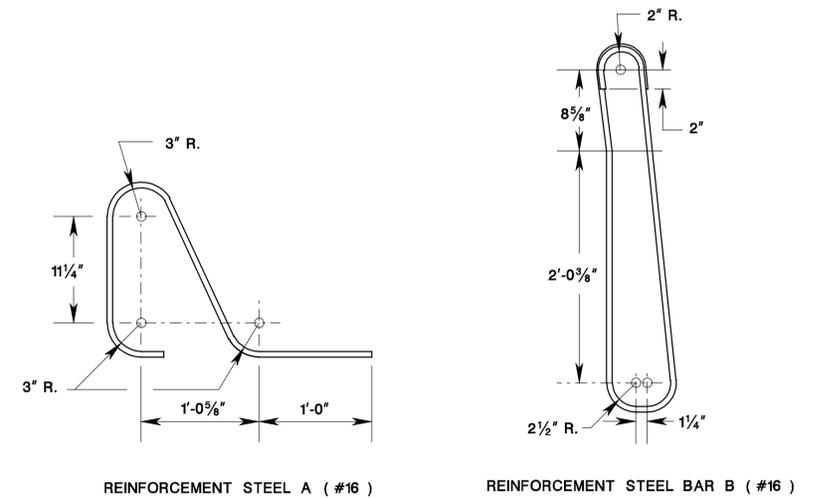
ELEVATION
(Showing Reinforcement steel)



SECTION A-A



DETAIL 1
DECK REINFORCEMENT STEEL AT PARAPET JOINTS



REINFORCEMENT STEEL BENDING DETAILS

3'-6" HIGH F-SHAPE PARAPET DETAILS
N.T.S.

GENERAL NOTES:

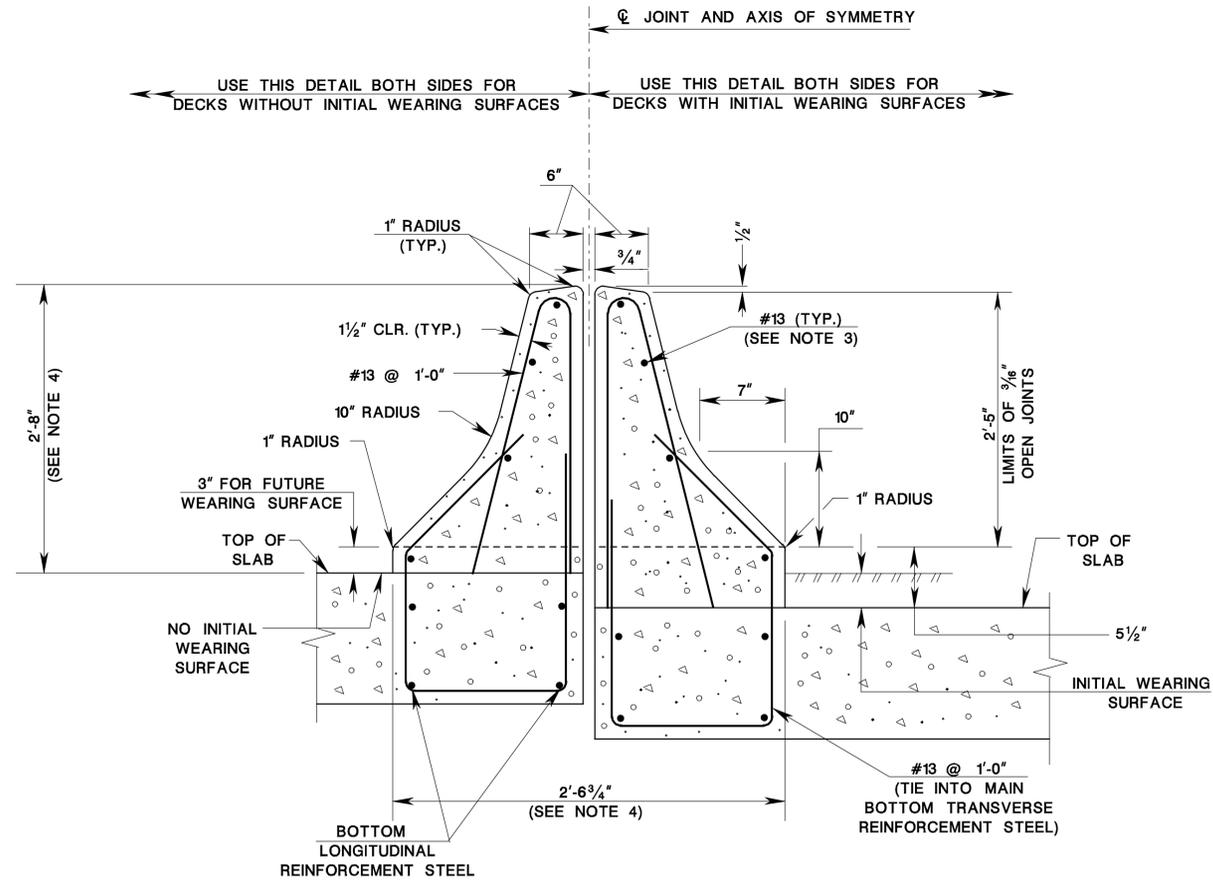
1. $\frac{3}{16}$ " open deflection joint shall be provided in parapets at intervals not exceeding 20'-0" and contraction joints shall be provided at the midpoint between the open joints.
2. The $\frac{3}{16}$ " open joint shall stop at the line indicated and a contraction joint shall be provided below that line.
3. Full depth joints shall be provided at location of transverse deck joints. The full depth joint opening width shall equal the transverse deck joint opening width.
4. All reinforcement steel in parapet shall be corrosion protected.
5. Permanent metal stay-in-place forms not permitted in the deck overhang area.
6. Fascia rustication and configuration as per Specifications.
7. For additional reinforcement steel that is required in the vicinity of parapet joints to prevent concrete cracking in the overhang portions of the deck slab see Detail 1.

BCD-507-8
NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

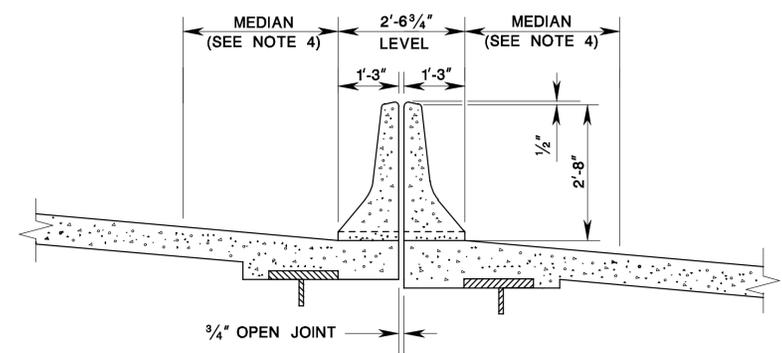
BRIDGE CONSTRUCTION DETAILS

BCD-507-8.1

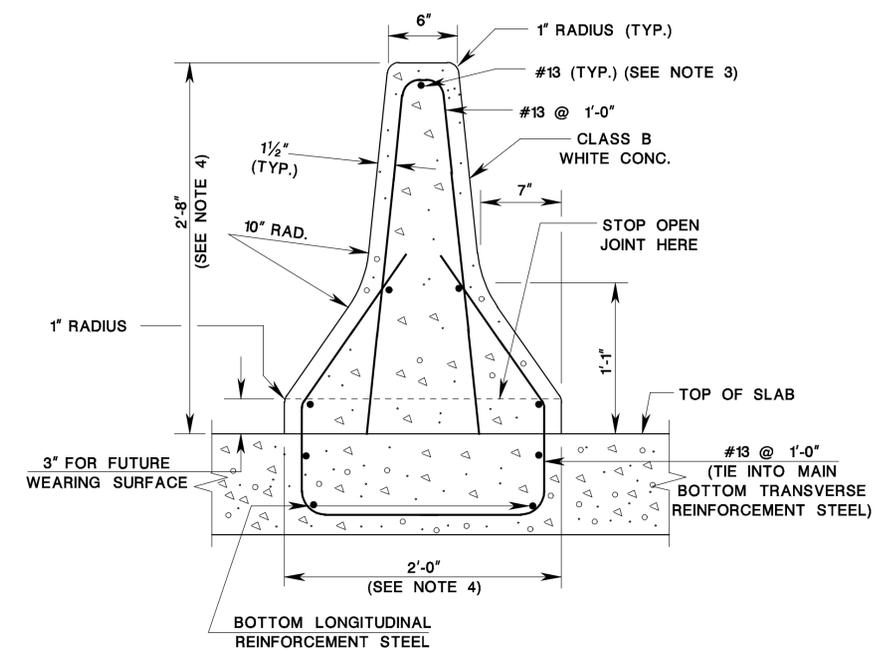
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TYPICAL SECTION



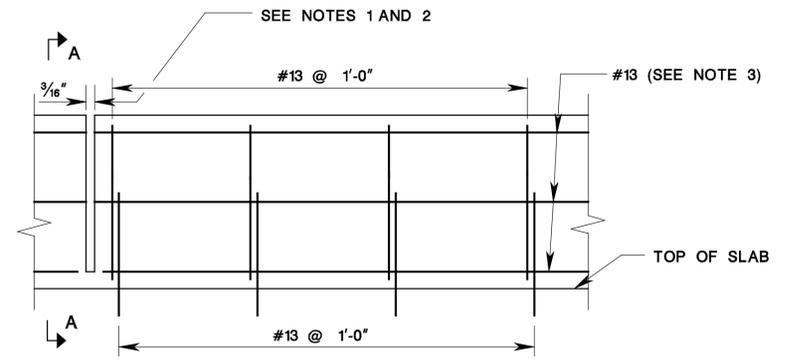
CROSS SECTION
2'-8" HIGH SPLIT MEDIAN BARRIER ON BRIDGE



SECTION A-A
2'-8" HIGH MEDIAN BARRIER ON BRIDGE

NOTES:

- 1 3/16" OPEN DEFLECTION JOINT SHALL BE PROVIDED AT INTERVALS NOT EXCEEDING 15'-0". THERE SHALL BE NO CONTRACTION JOINTS BETWEEN THE OPEN JOINTS AND NO CONTRACTION JOINTS LOCATED BELOW THE OPEN DEFLECTION JOINTS.
- 2 FULL DEPTH JOINTS SHALL BE PROVIDED AT LOCATION OF TRANSVERSE DECK JOINTS. THE FULL DEPTH JOINT OPENING WIDTH SHALL EQUAL THE TRANSVERSE DECK JOINT OPENING WIDTH.
- 3 ALL REINFORCEMENT STEEL IN MEDIAN BARRIER IS DESIGNATED IN METRIC UNITS AND SHALL BE CORROSION PROTECTED.
- 4 WIDTH AND HEIGHT TO BE DETERMINED BY ROADWAY APPROACH BARRIER. REINFORCEMENT STEEL MUST BE ADJUSTED ACCORDINGLY.
- 5 IF CONDUITS ARE USED WITHIN THE MEDIAN BARRIER, PROVIDE A SLEEVE OF SUFFICIENT LENGTH TO ACCOMMODATE MAXIMUM EXPANSION OF THE EXPANSION JOINT. (REFER TO STANDARD ELECTRICAL DETAILS FOR CONDUIT EXPANSION FITTINGS.)



ELEVATION

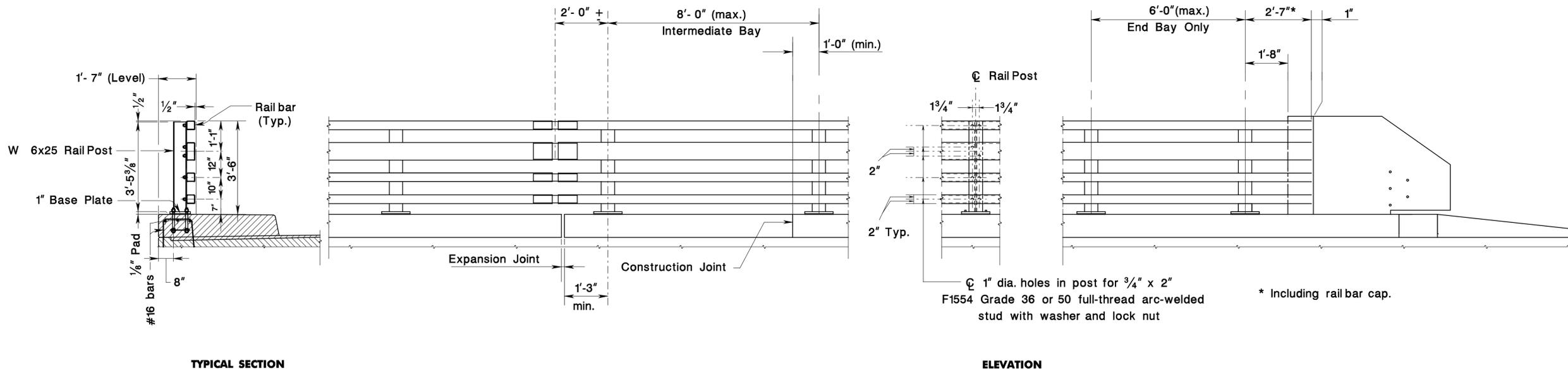
BRIDGE MEDIAN BARRIER
N.T.S.

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

BRIDGE CONSTRUCTION DETAILS

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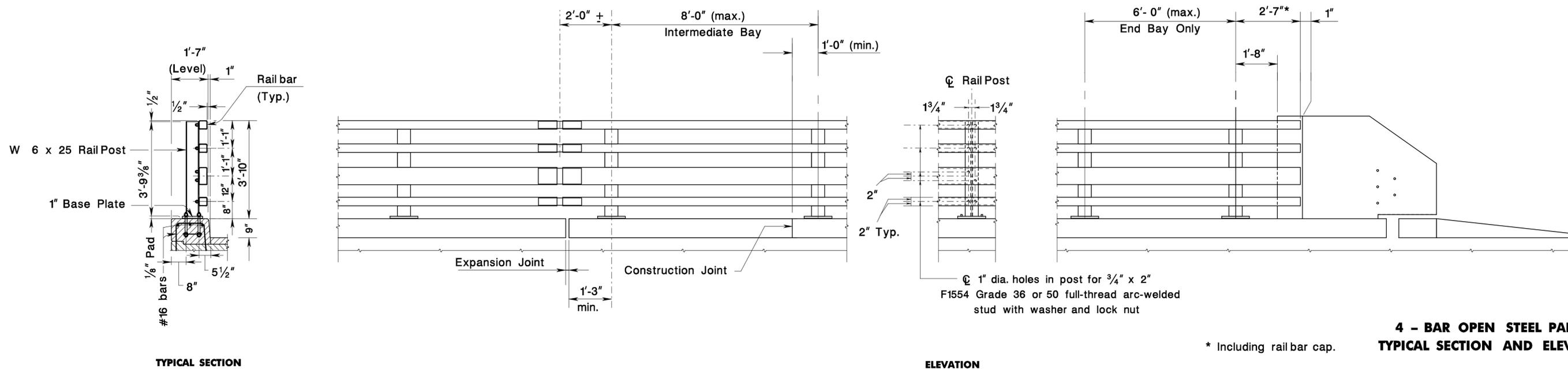
BCD-507-01-ORIGINAL SHEET



Vehicular Traffic/Pedestrian Traffic Configuration

- Rail Bars
 TS 8 x 4 x 5/16" (1)
 TS 4 x 4 x 1/4" (3)

BCD-507-10.1



Vehicular Traffic/Bicycle Traffic Configuration

4 - BAR OPEN STEEL PARAPET TYPICAL SECTION AND ELEVATIONS

* Including rail bar cap.

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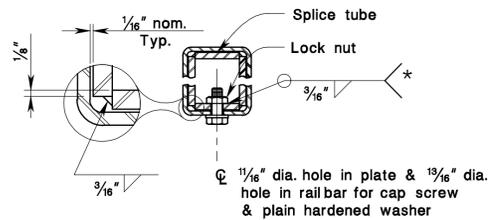
BRIDGE CONSTRUCTION DETAILS

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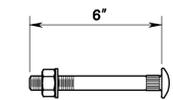
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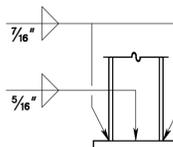


* Weld nuts to plate before assembling splice tube

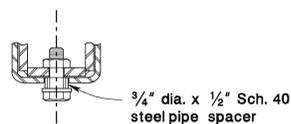
RAIL BAR SPICE SECTION



RIBBED NECK BOLT
(with washer & lock nut)
(See Note No. 9)



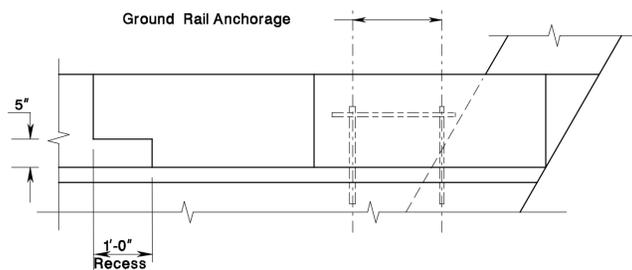
BASE WELD DETAIL



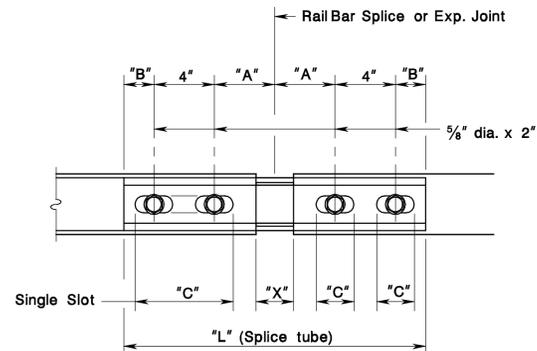
3/4" dia. x 1/2" Sch. 40 steel pipe spacer
1/16" dia. hole in plate & 1/8" x "C" slot in rail bar for cap screw & plain hardened washer

EXPANSION JOINT SECTION

For details not shown, see "Rail Bar Splice Section"



TRANSITION BARRIER PLAN
(Typical all transition barrier types)

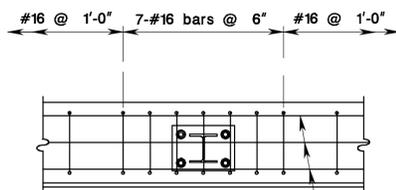


RAIL BAR SPICE & EXPANSION JOINT DETAIL
(Bottom View)

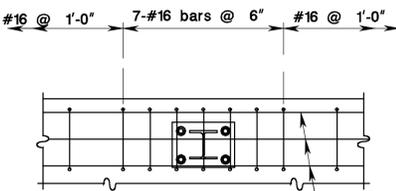
SPICE TUBE DIMENSIONS			
	TS 8" X 4"	TS 4" X 4"	
Top & Bot. Plates	2 1/2" X 3/8" "L"	2 5/8" X 3/8" "L"	
Side Plates	6 3/4" X 3/8" "L"	2 7/8" X 3/8" "L"	

SPICE & EXPANSION JOINT TABLE					
"T"	"A"	"B"	"C"	"L"	"X"
Splice	4"	2"	--	1'-8"	3/4"
≤ 4"	4"	2"	2 1/2"	1'-8"	2 1/2"
> 4" ≤ 6 1/2"	5 1/2"	2 1/2"	3 1/2"	2'-0"	3 3/4"
> 6 1/2" ≤ 9"	6 1/2"	3 1/2"	9" *	2'-4"	5"
> 9" ≤ 13"	8 1/2"	4 1/2"	11" *	2'-10"	7"

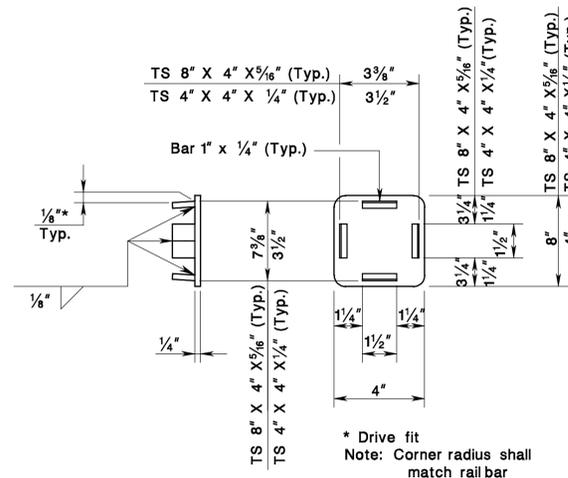
T = Total Movement * = Single Slot



CURB REINFORCEMENT STEEL PLAN

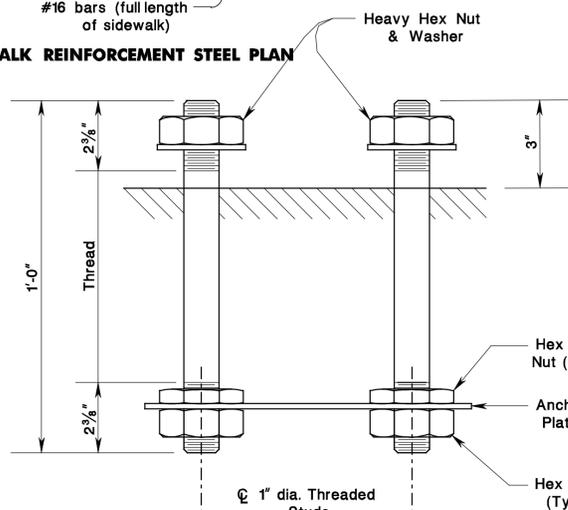


SIDEWALK REINFORCEMENT STEEL PLAN



RAIL BAR CAP

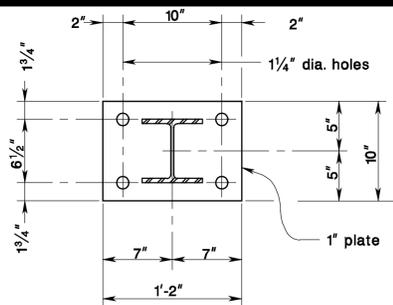
* Drive fit
Note: Corner radius shall match rail bar



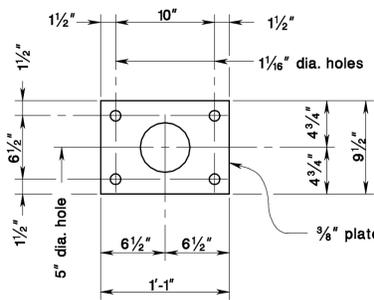
RAIL POST ANCHORAGE

MATERIALS:

- Rail bars ----- ASTM A500, Grade B
- Rail posts ----- AASHTO M223 (ASTM A572), Grade 50
- All other shapes & plates ----- AASHTO M270 (ASTM A709), Grade 36
- Anchor studs, washers & exposed nuts ---- ASTM F1554, Grade 55
- All other bolts & nuts (unless noted) ----- ASTM F1554, Grade 36 or 50



POST & BASE PLATE PLAN



ANCHOR PLATE PLAN

NOTES:

- All work and materials shall conform to the provisions of the Standard Specifications for Road and Bridge Construction.
- Twenty five percent of the post-to-base welds in a production lot shall be tested by the Magnetic Particle Method. If rejectable discontinuities are found, another twenty five percent of that production lot shall be tested. If rejectable discontinuities are found in the second twenty five percent, all post-to-base welds in that lot shall be tested. Acceptance criteria shall be in accordance with the latest edition of the AWS D1.5, Bridge Welding Code.
- All exposed cut or sheared edges shall be rounded and free of burrs. The inside weld flash of tubing shall be removed at splices and expansion joints.
- Rail posts shall be set normal to grade unless otherwise shown.
- Lengths of rail bar shall be attached to a minimum of two rail posts and to at least four posts whenever possible.
- Rail bar expansion joints shall be provided in any rail bay spanning a superstructure expansion joint. Expansion joint width shall be "X" at 45° F and will be adjusted in the field by the RE. Refer to detail and table for dimension "X".
- All parts shall be galvanized after fabrication in accordance with AASHTO M11, except that hardware shall meet the requirements of either ASTM A153 or ASTM B695, Class 50, Type 1. Parts except hardware shall be blast-cleaned prior to galvanizing in accordance with SSPC - SP6.
- Anchor bolts or anchor bolt sleeves shall be set with a template and shall be securely placed in their final position prior to the placement of the embedding concrete. Post anchor assemblies shall be installed to within 3/16 inch of theoretical horizontal and vertical location. Post bearing areas shall be dressed smooth and true to grade. Prior to post erection, each rail post location shall be finished to the theoretical elevation determined from profile grade, cross slope and curb height and will not be acceptable until it is within 3/16 inch of theoretical elevation, as measured at the top of concrete. Preformed pads shall be used to adjust the rail posts for height and alignment. The number of preformed pads supplied shall be 10 % in excess of the theoretical minimum number required. Nuts securing the post base plate shall be tightened to a snug fit and given an additional 1/8 turn. After erection of the railing, the contractor shall clean the whole assembly, to present a neat and uniform appearance.
- Rail bars shall alternatively be attached to posts using 5/8" dia. - ASTM F1554, Grade 36 or 50 bolts (5/8" dia. - ASTM A325 bolts may be substituted) inserted through the face of the rail bar. Bolts shall be round or dome head and may be rib neck, slotted, wrench head or tension control (TC or twist-off). Holes in posts shall be 1/16" larger than the diameter of the bolt. Holes in rail bars shall be drilled to size as follows:

Slotted, wrench head or TC bolts ----- 1/16" larger than bolt diameter
Rib neck bolts ----- size appropriate to accommodate an interference fit

All bolts for fastening the rail bars to the posts shall be 6" in length and shall include a flat washer under the nut.
- Holes in rail bars shall be field - drilled and shall be coated with an approved zinc-rich paint prior to erection.
- Bolts in expansion joints shall be tightened only to a point that will allow rail movement.
- If there is a conflict between these Standard Details and the Working Drawings, the Contractor shall notify the RE immediately.
- 1/8" pads under post base plate shall be fabric pads conforming to the Standard Specifications.

4 - BAR OPEN STEEL PARAPET DETAILS

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURAL ENGINEERING

BRIDGE CONSTRUCTION DETAILS

BCD-507-11.1

BCD-507-11

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BCD-507-01-ORIGINAL SHEET

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1/2" Sq. Rails (Top & Brace)

2" SQ. POSTS

AT 2" POST

NOTE: ALL POSTS SHALL BE SET PLUMB.

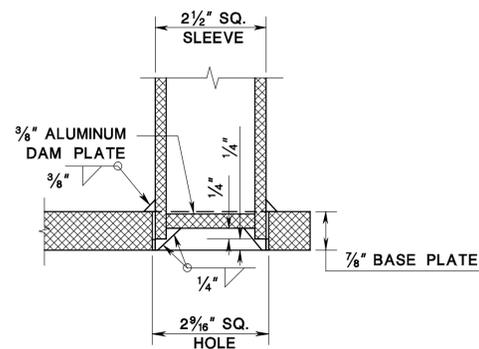
3/8" DIA. CARRIAGE BOLTS, HEX. NUTS AND 1/2" I.D. WASHERS FOR ALL RAIL AND POST CASTINGS. ALL NUTS SHALL BE ON EXTERIOR FACE OF CASTINGS. AFTER NUTS ARE TIGHTENED, THE BOLTS SHALL NOT PROJECT MORE THAN 1/4" THRU THE NUT. (TYP.)

INSERT SHIM MATERIAL BETWEEN SLEEVE & POST (IF REQUIRED BY ENGINEER) & SEAL WITH AN APPROVED CAULKING COMPOUND

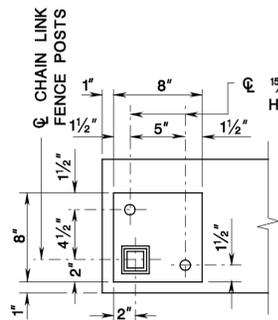
STAKE EACH ANCHOR BOLT.

AFTER NUTS ARE TIGHTENED THE BOLTS SHALL NOT PROJECT MORE THAN 3/8" ABOVE THE NUT.

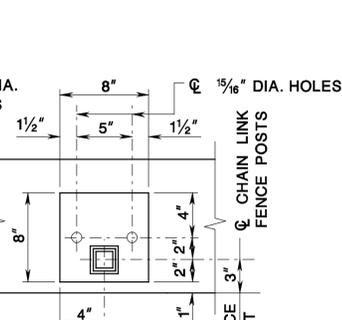
TYPICAL SECTION



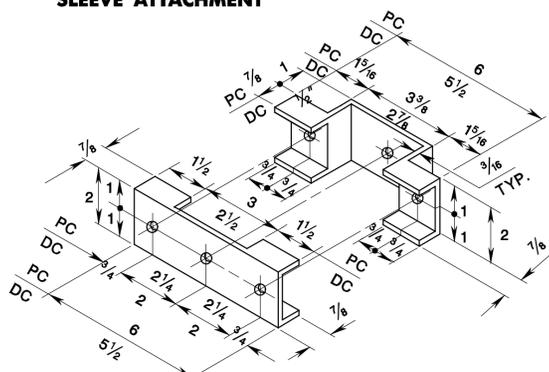
DETAIL OF SLEEVE ATTACHMENT



END POST BASE PLATE

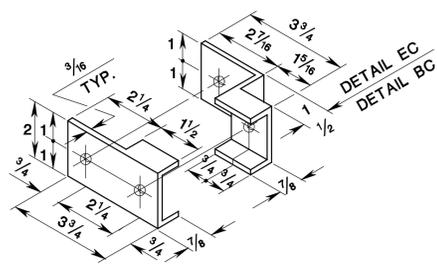


INTERMEDIATE POST BASE PLATE



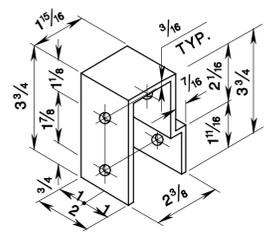
ALL DIMENSIONS ARE IN INCHES

DETAIL PC & DETAIL DC



ALL DIMENSIONS ARE IN INCHES

DETAIL EC & DETAIL BC



ALL DIMENSIONS ARE IN INCHES

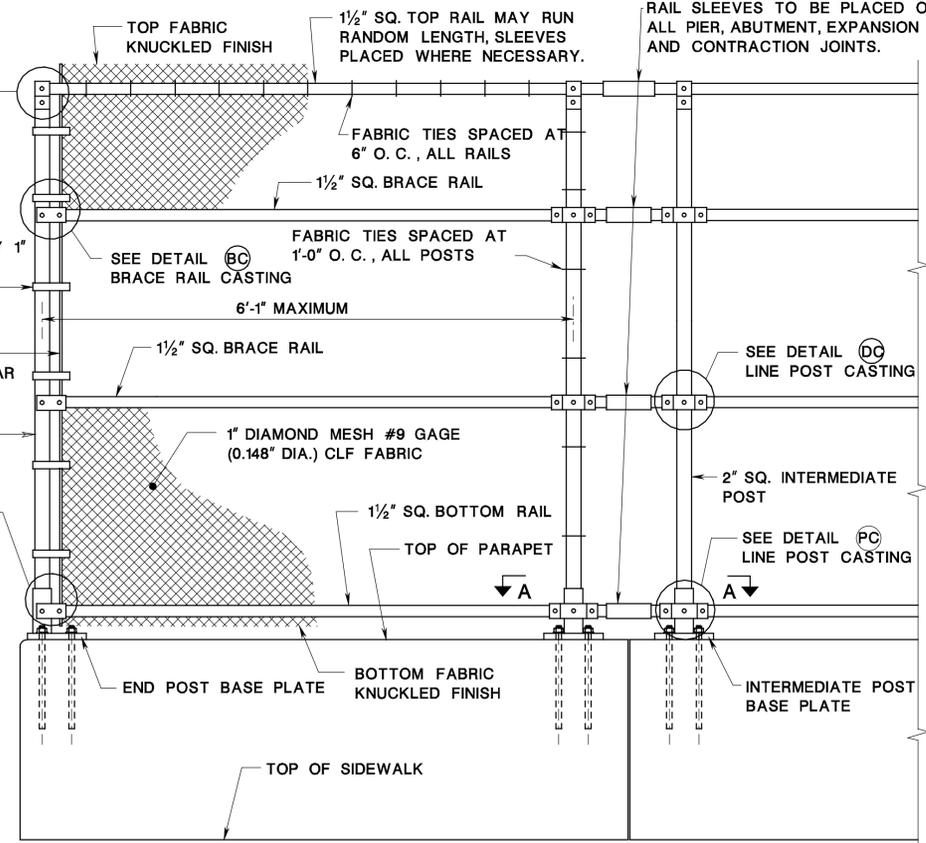
DETAIL TC

SEE DETAIL (TC) POST TOP CASTING

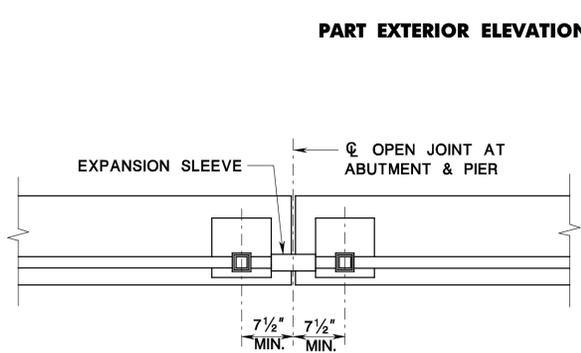
STRETCHER BAR BAND 1/8" BY 1" @ 1'-0" O.C. WITH 3/16" DIA. CARRIAGE BOLT

1/4" BY 3/8" STRETCHER BAR

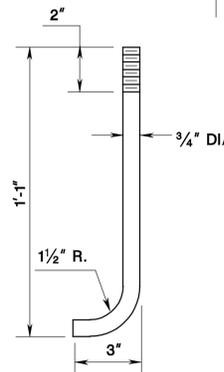
SEE DETAIL (EC) END POST CASTING



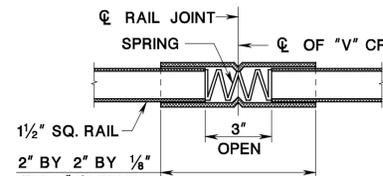
PART EXTERIOR ELEVATION



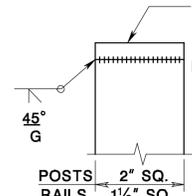
SECTION A-A



ANCHOR BOLT



RAIL SLEEVE



DAM PLATE

GENERAL NOTES:

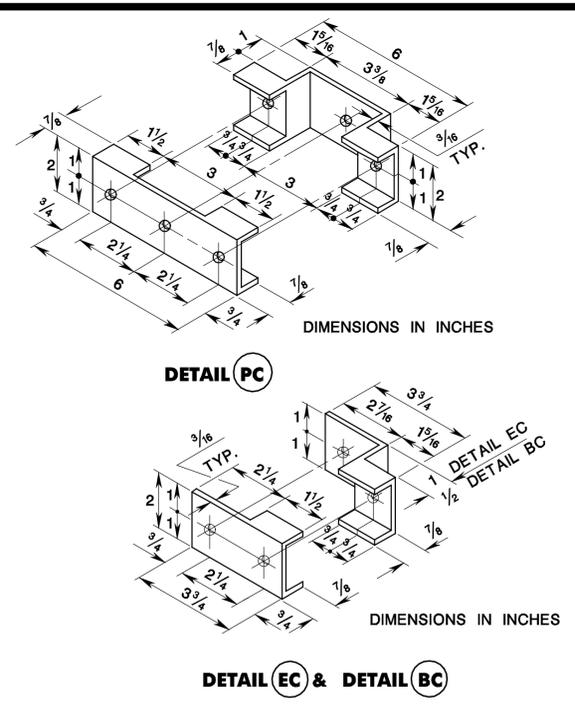
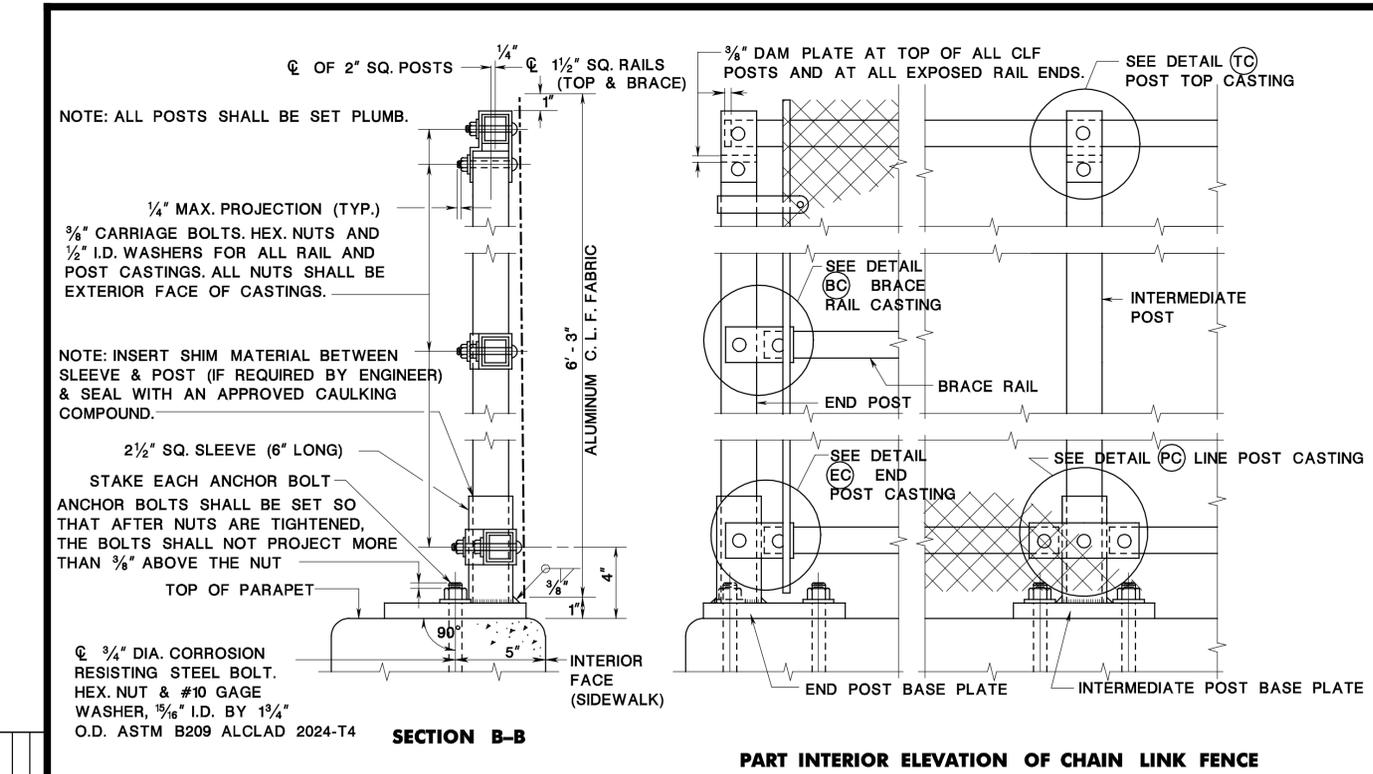
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2 MAXIMUM DESIGN WIND VELOCITY: 80 MPH.
3 FENCING FABRIC SHALL CONFORM TO AASHTO M181, TYPE 3.
4 WIND PRESSURE DRAG COEFFICIENT FOR MESH FROM FIG. 1-13, "WIND LOAD ON SCREENS", NAVDOCKS DM-2; DESIGN MANUAL, STRUCTURAL ENGINEERING.
5 THE COMPONENT PARTS OF THE CHAIN LINK FENCING SHALL CONFORM TO THE MATERIAL REQUIREMENTS OF THE SPECIFICATIONS.
6 ANCHOR BOLTS SHALL BE ASTM A 276, TYPE 302. ANCHOR BOLTS SHALL BE SET BY THE CONTRACTOR WITH 2" OF CLEAR CONTACT, SET CLEAN.
ALUMINUM SURFACES PLACED IN CONTACT WITH CONCRETE SHALL BE GIVEN A HEAVY COAT OF NON ALUMINUM EPOXY MASTIC PRIMER.
7 BASE PLATES FOR ALL CLF SHALL BE AS SHOWN, 7/8" THICK. (ALUMINUM ALLOY 6061-T6)
8 FILLET WELD MATERIAL SHALL BE FILLER ALLOY ER 5356 OR ER 5556.
9 POST SLEEVES SHALL BE 2 1/2" SQ., 7/32" WALL THICKNESS, ASTM B 221, AND SHALL BE WELDED TO BASE PLATE. (ALUMINUM ALLOY 6061-T6)
10 POSTS SHALL BE 2" SQ., 1/4" WALL THICKNESS, ASTM B 221, TO BE SET PLUMB AND SPACED AS SHOWN ON PLANS FOR EACH STRUCTURE. (ALUMINUM ALLOY 6061-T6)
11 SHIM MATERIAL SHALL BE USED WHERE NECESSARY FOR POST ALIGNMENT, ASTM B 209. (ALUMINUM ALLOY 1100-0)
12 ALL HORIZONTAL RAILS (TOP, BOTTOM, BRACE) SHALL BE 1/2" SQ., 1/8" WALL THICKNESS. (ALUMINUM ALLOY 6061-T6)
13 DAM PLATES, 3/8" THICK, WELDED TO CLOSE ALL EXPOSED ENDS OF RAIL TUBES AND TOP OF CHAIN LINK FENCE POSTS. (ALUMINUM ALLOY 6061-T6)
14 BRACE RAILS SHALL BE INSTALLED AT END UNITS WHERE CLF FABRIC IS TENSIONED.
15 RAILING EXPANSION SLEEVES SHALL BE 2" SQ. X 7" LONG, WITH HOT-DIP GALVANIZED SPRING IN SLEEVE, SPRING NOT TO EXCEED 1/2" FULLY COMPRESSED. RAIL ENDS TO BE 3" APART IN SLEEVE AT 2" SLEEVE "V" CRIMP, (ALUMINUM ALLOY 6061-T6) ASTM B 221.
16 STRETCHER BARS TO BE 1/4" BY 3/8". (ALUMINUM ALLOY 6061-T6)
17 STRETCHER BAR BANDS TO BE 1/8" X 1" BEVELLED EDGES. (ALUMINUM ALLOY 6063-T6)
18 FABRIC TIES SHALL BE #9 GAGE (0.148" DIA.). A MINIMUM OF ONE (1) COMPLETE TURN IS REQUIRED AT ENDS OF ALL TIES. (ALUMINUM ALLOY 6061-T6)
19 CLF FABRIC SHALL BE #9 GAGE (0.148" DIA.) HAVING A 1" DIAMOND MESH, TOP AND BOTTOM SELVAGE TO BE KNUCKLED. FABRIC SHALL BE CONTINUOUS ACROSS ALL JOINTS.
20 STRETCHER BAR BAND FASTENERS TO BE 5/16" DIA. BY 1/4" CARRIAGE BOLTS. (ALUMINUM ALLOY 2024-T4)
21 STAKE EACH ANCHOR BOLT AT ONE (1) POINT ONLY.
22 ALL HOLES IN CASTINGS SHALL BE 7/16" DIA. CASTINGS SHALL BE ALUMINUM TENZALOY ALLOY ZC81A, CONDITION T5. ALL CASTINGS SHALL BE DESIGNED TO ACCOMMODATE RAILS AT GRADES AS REQUIRED.
23 AFTER ERECTION, ALL ANCHOR BOLT HOLES & SPACES BETWEEN BASE PLATES & CONCRETE SHALL BE THOROUGHLY CAULKED WITH AN ALUMINUM IMPREGNATED CAULKING COMPOUND CONFORMING TO FEDERAL SPECIFICATIONS TT-C-598B(2).
24 AFTER ERECTION OF POSTS, DRILL 3/8" DIA. HOLE THROUGH POST SLEEVE AND POST, 1/2" ABOVE BASE PLATE FOR DRAINAGE. LOCATE HOLE PARALLEL TO FENCING.
25 THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS IN THE FIELD.
26 WORKING DRAWINGS SHALL BE SUBMITTED ACCORDING TO THE NJDOT STANDARD SPECIFICATIONS.

BRIDGE CHAIN LINK FENCE (CURVED TOP) N.T.S.

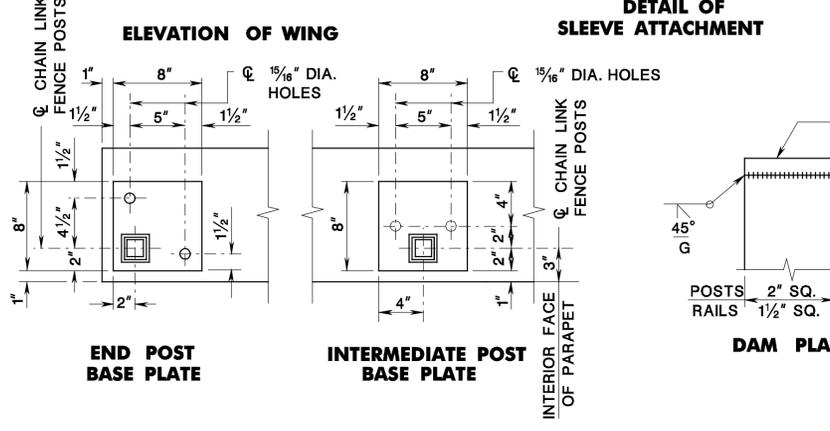
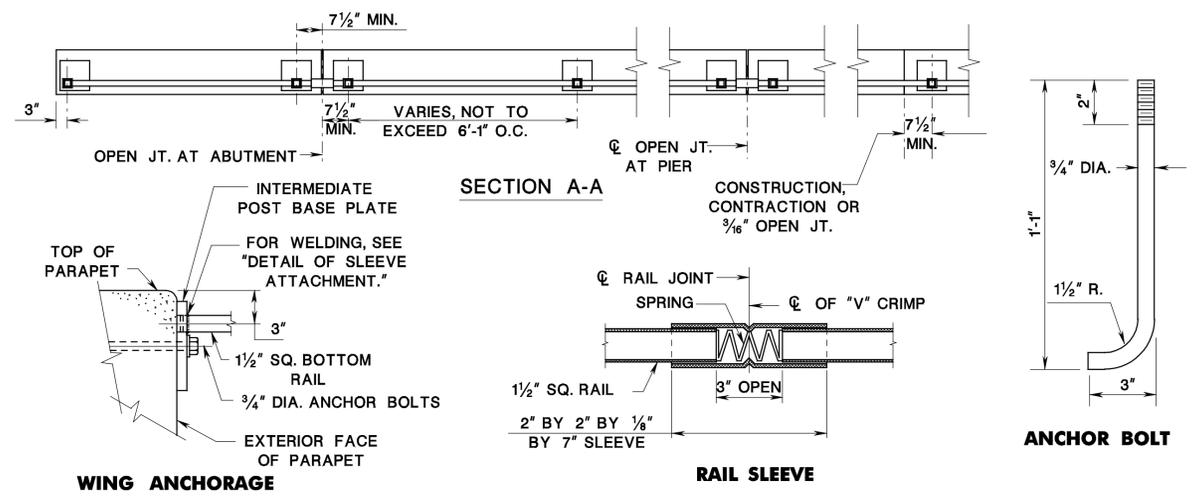
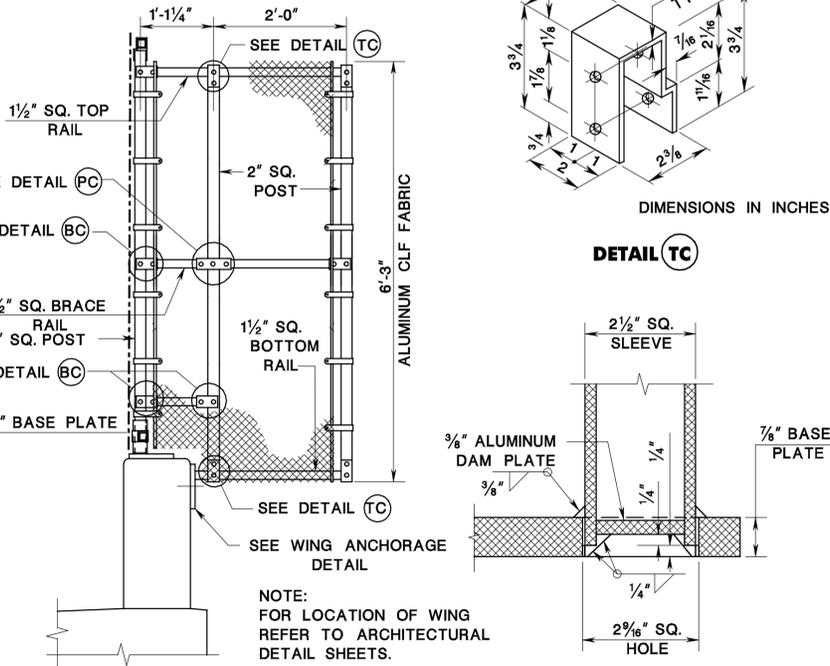
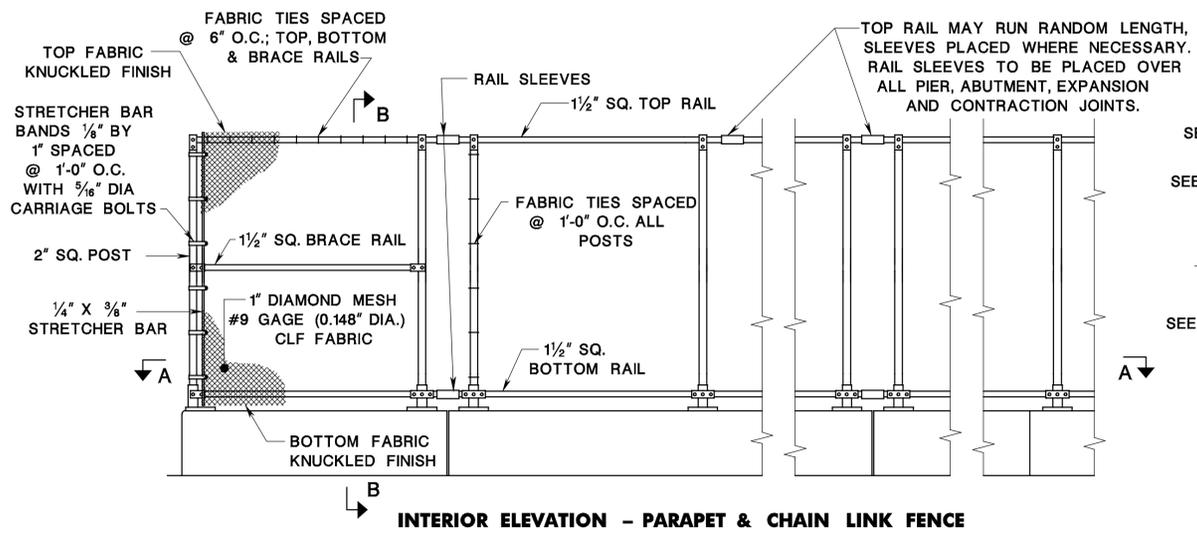
NEW JERSEY DEPARTMENT OF TRANSPORTATION BUREAU OF STRUCTURAL ENGINEERING

BRIDGE CONSTRUCTION DETAILS

BCD-509-1.1



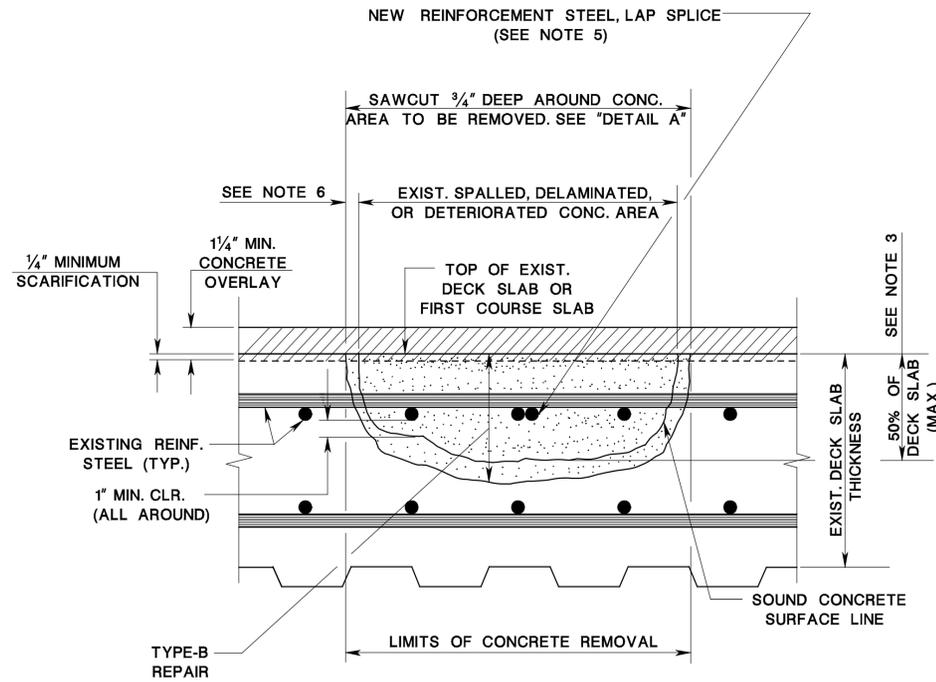
- GENERAL NOTES:**
- DESIGN CRITERIA: AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.
 - MAXIMUM DESIGN WIND VELOCITY: 80 MPH.
 - WIND PRESSURE DRAG COEFFICIENT FOR MESH FROM FIG. 1-13, "WIND LOAD ON SCREENS", NAVDOCKS DM-2; DESIGN MANUAL, STRUCTURAL ENGINEERING.
 - THE COMPONENT PARTS OF THE CHAIN LINK FENCING SHALL CONFORM TO THE MATERIAL REQUIREMENTS OF THE SPECIFICATIONS.
 - ANCHOR BOLTS SHALL BE ASTM A 276, TYPE 302. ANCHOR BOLTS SHALL BE SET BY THE CONTRACTOR WITH 2" OF CLEAR THREADS, SET CLEAN.
 - ALUMINUM SURFACES PLACED IN CONTACT WITH CONCRETE SHALL BE GIVEN A HEAVY COAT OF NON ALUMINUM EPOXY MASTIC PRIMER.
 - BASE PLATES FOR ALL CLF SHALL BE AS SHOWN, 7/8" THICK. (ALUMINUM ALLOY 6061-T6)
 - FILLET WELD MATERIAL SHALL BE FILLER ALLOY ER 5356 OR ER 5556.
 - POST SLEEVES SHALL BE 2 1/2" SQ., 7/32" WALL THICKNESS, ASTM B 221, AND SHALL BE WELDED TO BASE PLATE. (ALUMINUM ALLOY 6061-T6)
 - POSTS SHALL BE 2" SQ., 1/4" WALL THICKNESS, ASTM B 221, TO BE SET PLUMB AND SPACED AS SHOWN ON PLANS FOR EACH STRUCTURE. (ALUMINUM ALLOY 6061-T6)
 - SHIM MATERIAL SHALL BE USED WHERE NECESSARY FOR POST ALIGNMENT, ASTM B 209. (ALUMINUM ALLOY 1100-0)
 - ALL HORIZONTAL RAILS (TOP, BOTTOM, BRACE) SHALL BE 1/2" SQ., 1/8" WALL THICKNESS. (ALUMINUM ALLOY 6061-T6)
 - DAM PLATES, 3/8" THICK, WELDED TO CLOSE ALL EXPOSED ENDS OF RAIL TUBES AND TOP OF CHAIN LINK FENCE POSTS. (ALUMINUM ALLOY 6061-T6)
 - BRACE RAILS SHALL BE INSTALLED AT END UNITS WHERE CLF FABRIC IS TENSIONED.
 - RAILING EXPANSION SLEEVES SHALL BE 2" SQ. X 7" LONG, WITH HOT-DIP GALVANIZED SPRING IN SLEEVE, SPRING NOT TO EXCEED 1 1/2" FULLY COMPRESSED. RAIL ENDS TO BE 3" APART IN SLEEVE AT Q SLEEVE "V" CRIMP, (ALUMINUM ALLOY 6061-T6) ASTM B 221.
 - STRETCHER BARS TO BE 1/4" BY 3/8". (ALUMINUM ALLOY 6061-T6)
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 - STAKE EACH ANCHOR BOLT AT ONE (1) POINT ONLY.
 - ALL HOLES IN CASTINGS SHALL BE 7/16" DIA. CASTINGS SHALL BE ALUMINUM TENZALOY ALLOY ZC81A, CONDITION T5. ALL CASTINGS SHALL BE DESIGNED TO ACCOMMODATE RAILS AT GRADES AS REQUIRED.
 - AFTER ERECTION, ALL ANCHOR BOLT HOLES & SPACES BETWEEN BASE PLATES & CONCRETE SHALL BE THOROUGHLY CAULKED WITH AN ALUMINUM IMPREGNATED CAULKING COMPOUND CONFORMING TO FEDERAL SPECIFICATIONS TT-C-598B(2).
 - AFTER ERECTION OF POSTS, DRILL 3/8" DIA. HOLE THROUGH POST SLEEVE AND POST, 1/2" ABOVE BASE PLATE FOR DRAINAGE. LOCATE HOLE PARALLEL TO FENCING.
 - THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS & CONDITIONS IN THE FIELD.
 - WORKING DRAWINGS SHALL BE SUBMITTED ACCORDING TO THE NJDOT STANDARD SPECIFICATIONS.



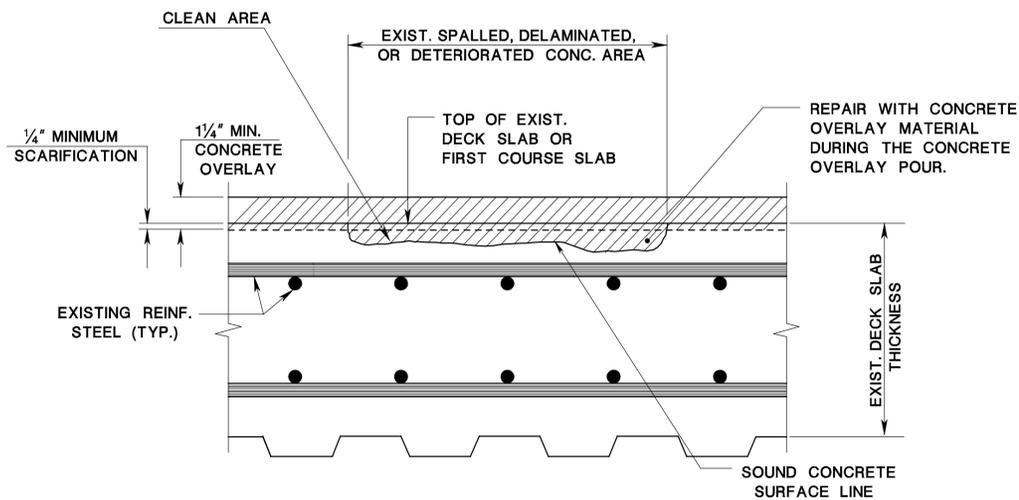
BRIDGE CHAIN LINK FENCE (6'-3" HIGH) N.T.S.

NEW JERSEY DEPARTMENT OF TRANSPORTATION
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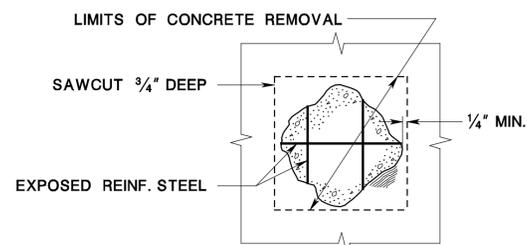
BRIDGE CONSTRUCTION DETAILS



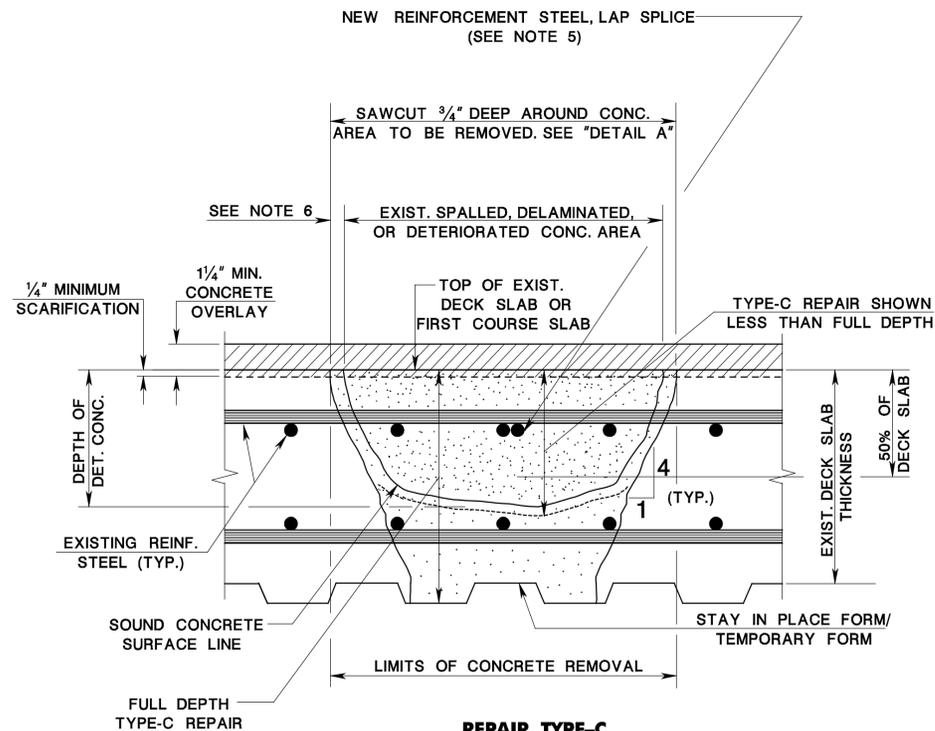
REPAIR TYPE-B
(SEE NOTE 2)



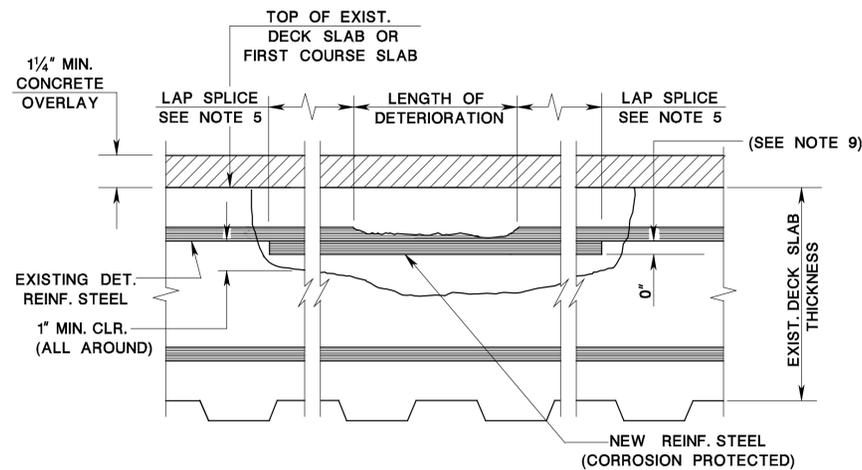
TYPICAL REPAIR DETAIL FOR MINOR SPALLED AREAS
(SEE NOTE 1)



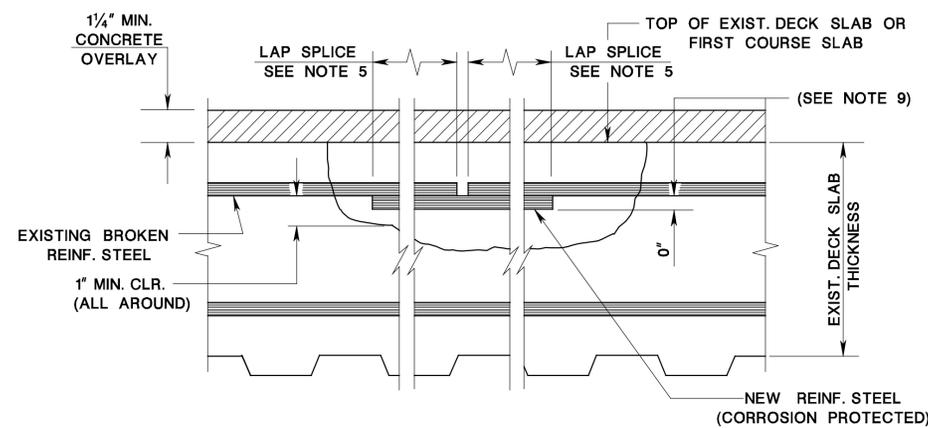
LIMITS OF REPAIR AREA (PLAN VIEW)
(SEE NOTE 7)



REPAIR TYPE-C
(SEE NOTE 3)



DETERIORATED REINFORCEMENT STEEL REPAIR



BROKEN REINFORCEMENT STEEL REPAIR

GENERAL NOTES:

- 1 SPALLED, DELAMINATED, AND DETERIORATED CONCRETE AREAS SHALL BE CLEANED AND REPAIRED WITH THE CONCRETE OVERLAY TYPE THAT IS TO BE USED FOR THE OVERLAY PLACEMENT, OR CLASS A CONCRETE MAY BE USED.
- 2 REPAIR TYPE-B:
ALL DETERIORATED AND DELAMINATED CONCRETE SHALL BE REMOVED TO A MINIMUM DEPTH OF 1" BELOW THE BOTTOM OF THE TOP LAYER OF EXISTING REINFORCEMENT STEEL TO A MAXIMUM OF 50% OF THE THICKNESS OF THE EXISTING CONCRETE DECK.
- 3 REPAIR TYPE-C:
ALL DETERIORATED AND DELAMINATED CONCRETE SHALL BE REMOVED, AND IF THE SOUND CONCRETE SURFACE IS LOCATED AT A DEPTH GREATER THAN 50% OF THE DECK THICKNESS WHEN MEASURED FROM THE TOP OF THE DECK, PERFORM TYPE-C REPAIR UPON APPROVAL OF THE RE, AS SHOWN IN THE DETAIL "REPAIR TYPE-C". IF THE BOTTOM MAT OF THE DECK REINFORCEMENT STEEL IS EXPOSED, THE DECK SLAB SHALL BE REPLACED TO FULL DEPTH IN THIS AREA OF EXPOSURE.
- 4 THE TOP SURFACE OF THE CONCRETE FOR TYPE-B AND TYPE-C REPAIRS SHALL BE EVEN WITH THE ADJACENT TOP OF EXISTING DECK SLAB AND SHALL MAINTAIN THE EXISTING GRADES AND CROSS SLOPES.
- 5 NEW CORROSION PROTECTED REINFORCEMENT STEEL SHALL BE PLACED TO SUPPLEMENT AN EXISTING REINFORCEMENT STEEL WHEN AN EXISTING ONE HAS A SECTION LOSS OF 25% OR MORE OF THE ORIGINAL CROSS SECTION, AS DETERMINED BY THE RE, OR THE EXISTING REINFORCEMENT STEEL IS BROKEN. THE NEW ONE SHALL EXTEND 30 BAR DIAMETERS IN EACH DIRECTION FROM WHERE THE SECTION LOSS OR BREAK ENDS. MODIFY THE LIMITS OF THE REPAIR AREA TO MEET THE REINFORCEMENT STEEL SPLICE LAP REQUIREMENTS.
- 6 FOR REPAIR TYPE-B AND TYPE-C SOUND CONCRETE SHALL BE REMOVED TO A DEPTH OF 1/4" MINIMUM TO 1" MAXIMUM IN ALL DIRECTIONS, EXCEPT THAT THE MAXIMUM LIMIT MAY BE MODIFIED UPON APPROVAL OF THE RE.
- 7 UPON APPROVAL OF THE RE, MODIFY THE LIMITS OF CONCRETE REMOVAL AS SHOWN IN THE "LIMITS OF REPAIR AREA (PLAN VIEW)" WHEN SUPPLEMENTARY REINFORCEMENT STEEL IS REQUIRED.
- 8 DECK REINFORCEMENT STEEL DETAILS SHOWN ARE GENERAL. ACTUAL REINFORCEMENT STEEL SPACINGS AND LOCATIONS WILL VARY FROM BRIDGE TO BRIDGE.
- 9 NEW REINFORCEMENT STEEL SHALL BE PLACED AT THE SAME LEVEL ALONGSIDE THE EXISTING DETERIORATED OR BROKEN REINFORCEMENT STEEL.
- 10 BEFORE PLACEMENT OF THE OVERLAY, ALL PREVIOUSLY PATCHED AREAS SHALL BE COMPLETELY REMOVED.

BRIDGE DECK REHABILITATION WITH CONCRETE OVERLAY

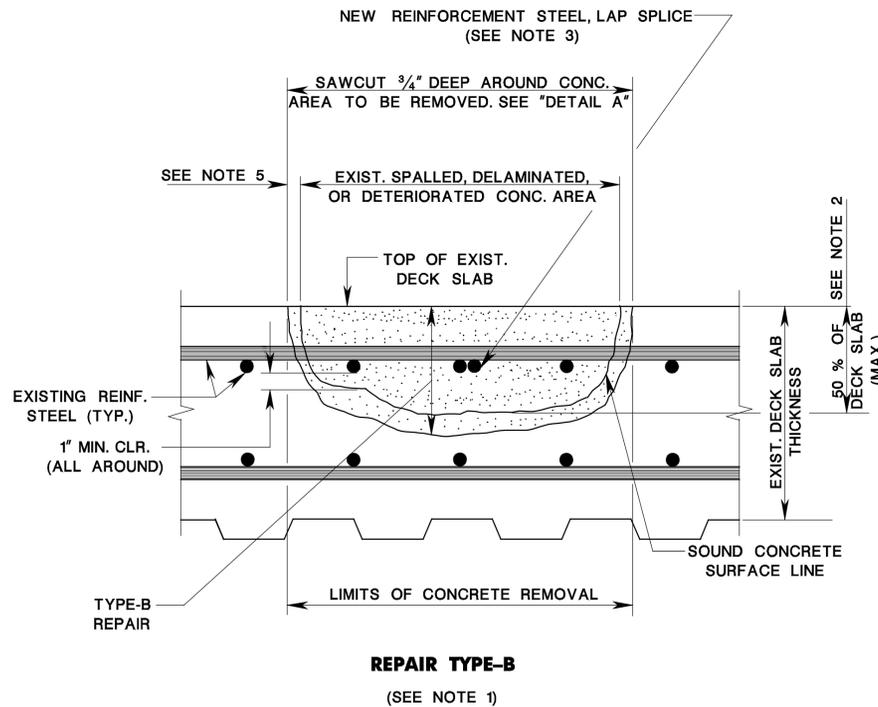
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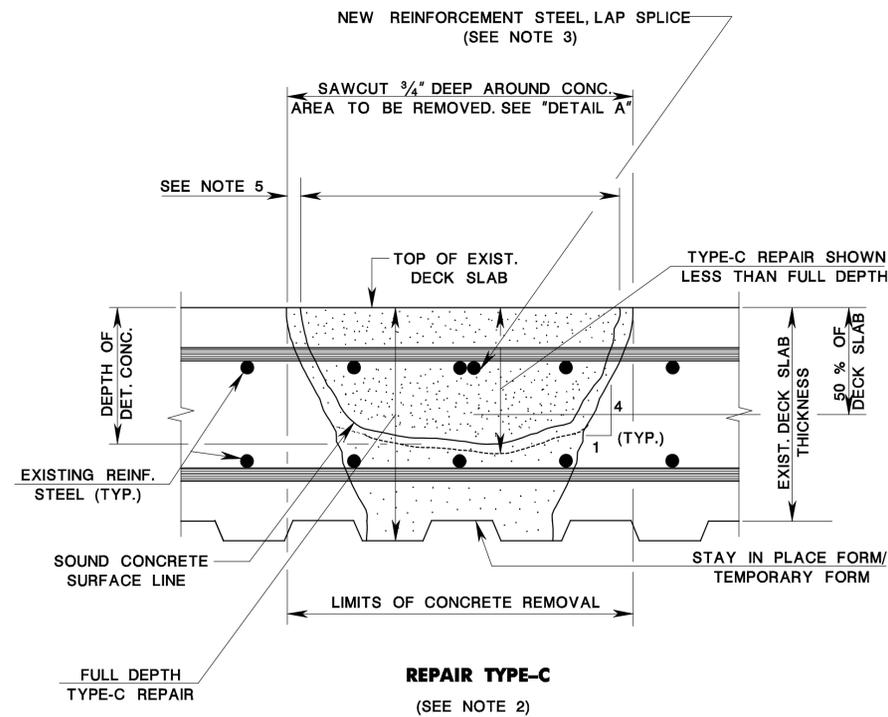
BRIDGE CONSTRUCTION DETAILS

BCD-551-1

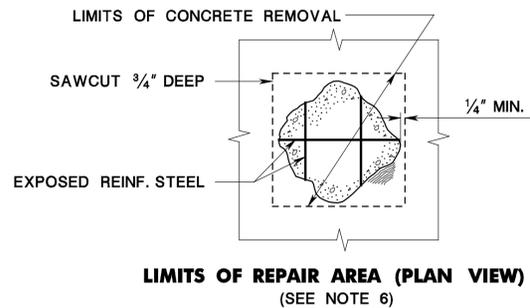
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REPAIR TYPE-B
(SEE NOTE 1)



REPAIR TYPE-C
(SEE NOTE 2)



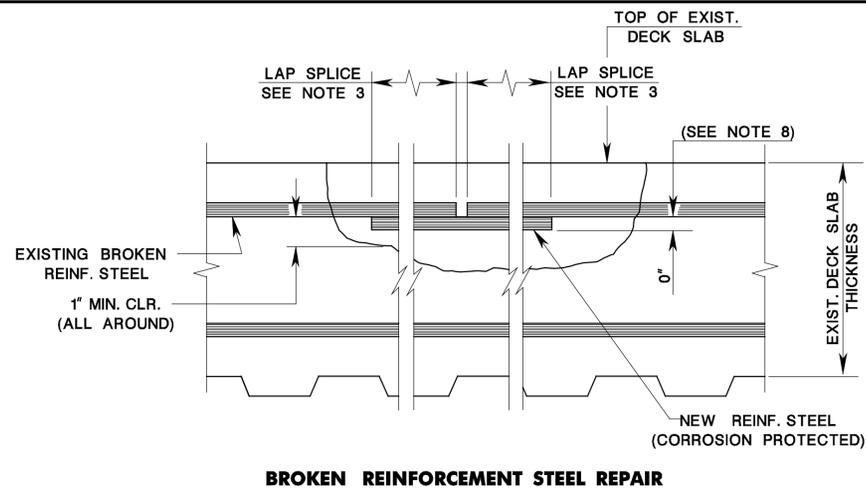
LIMITS OF REPAIR AREA (PLAN VIEW)
(SEE NOTE 6)

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GENERAL NOTES

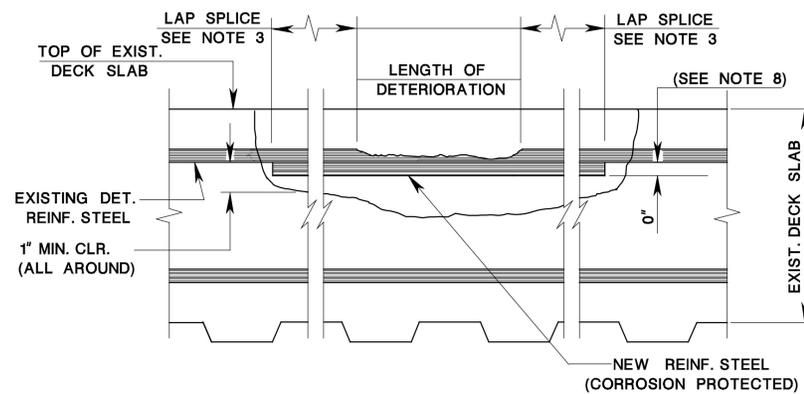
- 1 REPAIR TYPE-B:
ALL DETERIORATED AND DELAMINATED CONCRETE SHALL BE REMOVED TO A MINIMUM DEPTH OF 1" BELOW THE BOTTOM OF THE TOP LAYER OF EXISTING REINFORCEMENT STEEL OR UP TO A MAXIMUM OF 50% OF THE THICKNESS OF THE EXISTING CONCRETE DECK.
- 2 REPAIR TYPE-C:
ALL DETERIORATED AND DELAMINATED CONCRETE SHALL BE REMOVED. IF THE SOUND CONCRETE SURFACE IS LOCATED AT A DEPTH GREATER THAN 50% OF THE DECK THICKNESS WHEN MEASURED FROM THE TOP OF THE DECK, PERFORM TYPE-C REPAIR UPON APPROVAL OF THE RE, AS SHOWN IN THE DETAIL "REPAIR TYPE-C". IF THE BOTTOM MAT OF THE DECK REINFORCEMENT STEEL IS EXPOSED, THE DECK SLAB SHALL BE REPLACED TO FULL DEPTH IN THIS AREA OF EXPOSURE.
- 3 NEW CORROSION PROTECTED REINFORCEMENT STEEL SHALL BE PLACED TO SUPPLEMENT AN EXISTING REINFORCEMENT STEEL WHEN AN EXISTING ONE HAS A SECTION LOSS OF 25% OR MORE OF THE ORIGINAL CROSS SECTION, AS DETERMINED BY THE RE, OR THE EXISTING REINFORCEMENT STEEL IS BROKEN. THE NEW ONE SHALL EXTEND 30 BAR DIAMETERS IN EACH DIRECTION FROM WHERE THE SECTION LOSS OR BREAK ENDS. MODIFY THE LIMITS OF THE REPAIR AREA TO MEET THE REINFORCEMENT STEEL SPLICE LAP REQUIREMENTS.
- 4 THE TOP SURFACE OF THE CONCRETE FOR TYPE-B AND TYPE-C REPAIRS SHALL BE EVEN WITH THE ADJACENT TOP OF EXISTING DECK SLAB AND SHALL MAINTAIN THE EXISTING GRADES AND CROSS SLOPES.
- 5 FOR REPAIR TYPE-B AND TYPE-C SOUND CONCRETE SHALL BE REMOVED TO A DEPTH OF 1/4" MINIMUM TO 1" MAXIMUM IN ALL DIRECTIONS, EXCEPT THAT THE MAXIMUM LIMIT MAY BE MODIFIED UPON APPROVAL OF THE RE.
- 6 UPON APPROVAL OF THE RE, MODIFY THE LIMITS OF CONCRETE REMOVAL AS SHOWN IN THE "LIMITS OF REPAIR AREA (PLAN VIEW)" WHEN SUPPLEMENTARY REINFORCEMENT STEEL ARE REQUIRED.
- 7 DECK REINFORCEMENT STEEL DETAILS SHOWN ARE GENERAL. ACTUAL REINFORCEMENT STEEL SPACINGS AND LOCATIONS WILL VARY FROM BRIDGE TO BRIDGE.
- 8 THE NEW REINFORCEMENT STEEL SHALL BE PLACED AT THE SAME LEVEL ALONGSIDE THE EXISTING DETERIORATED OR BROKEN REINFORCEMENT STEEL.
- 9 REFER TO THE NJDOT STANDARD SPECIFICATIONS FOR GUIDANCE AS TO THE SELECTION OF A QUICK-SETTING PATCH MATERIAL PRODUCT.

BCD-551-2.2



BROKEN REINFORCEMENT STEEL REPAIR

BCD-551-2.3



DETERIORATED REINFORCEMENT STEEL REPAIR

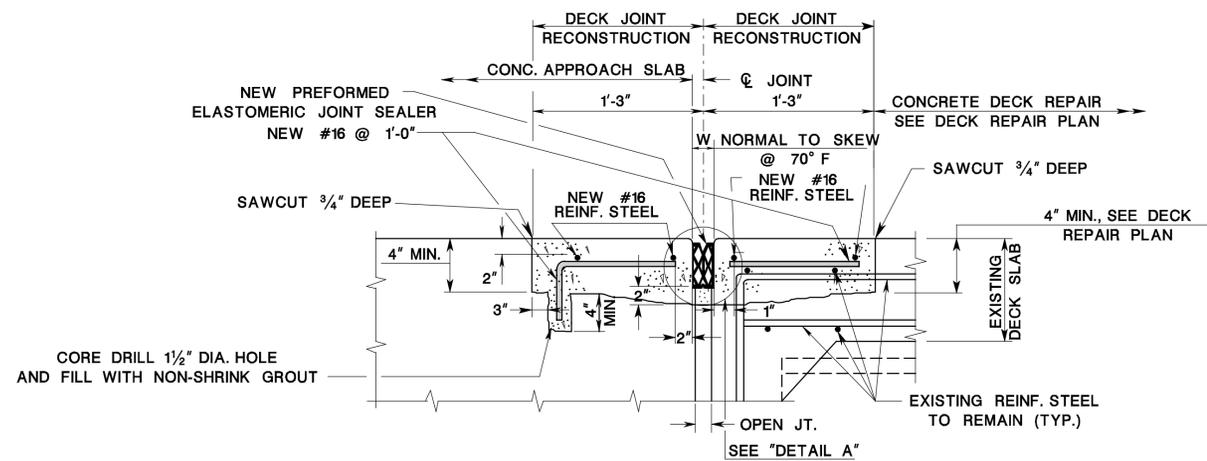
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**BRIDGE DECK REHABILITATION
WITHOUT CONCRETE OVERLAY**
N.T.S.

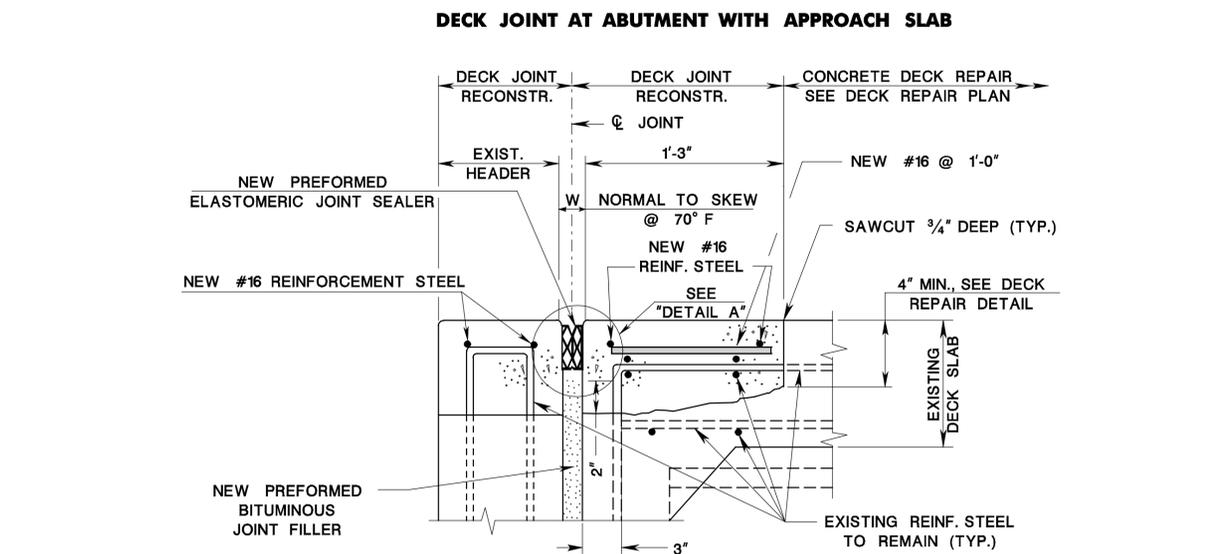
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BRIDGE CONSTRUCTION DETAILS

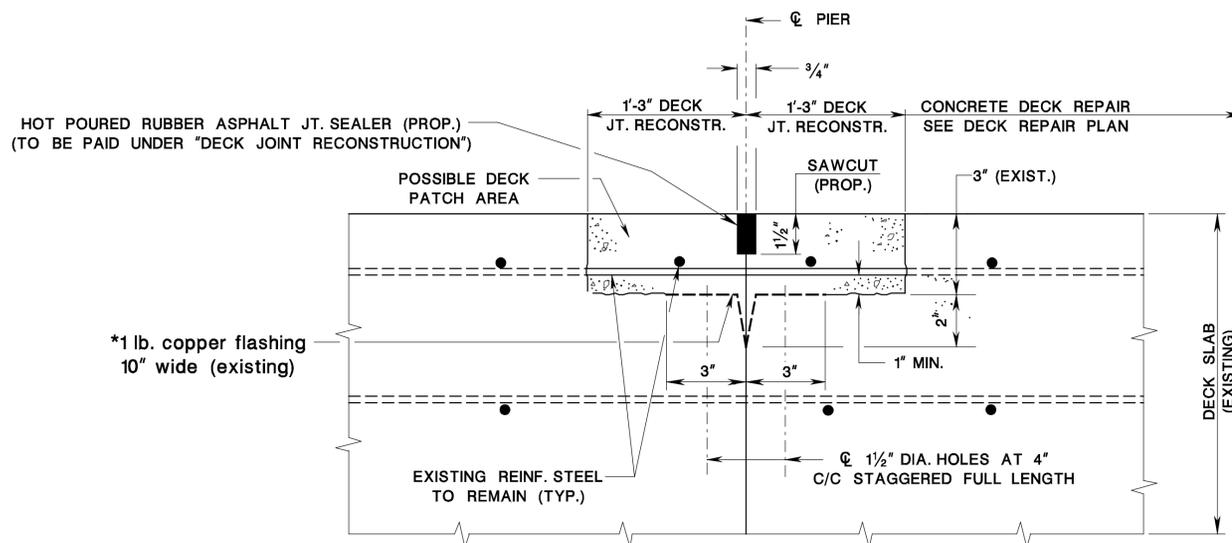
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DECK JOINT AT ABUTMENT WITH APPROACH SLAB

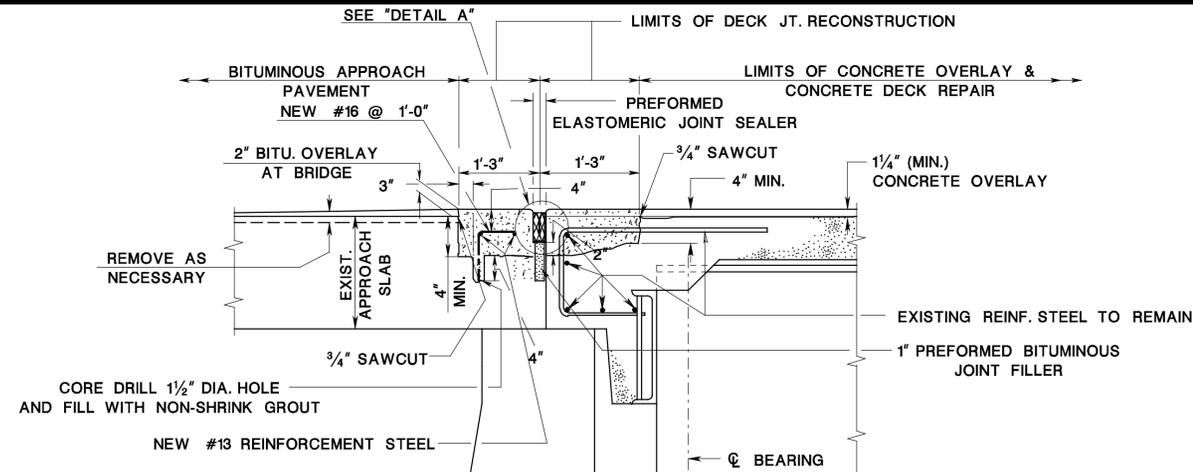


DECK JOINT AT ABUTMENT WITH HEADER

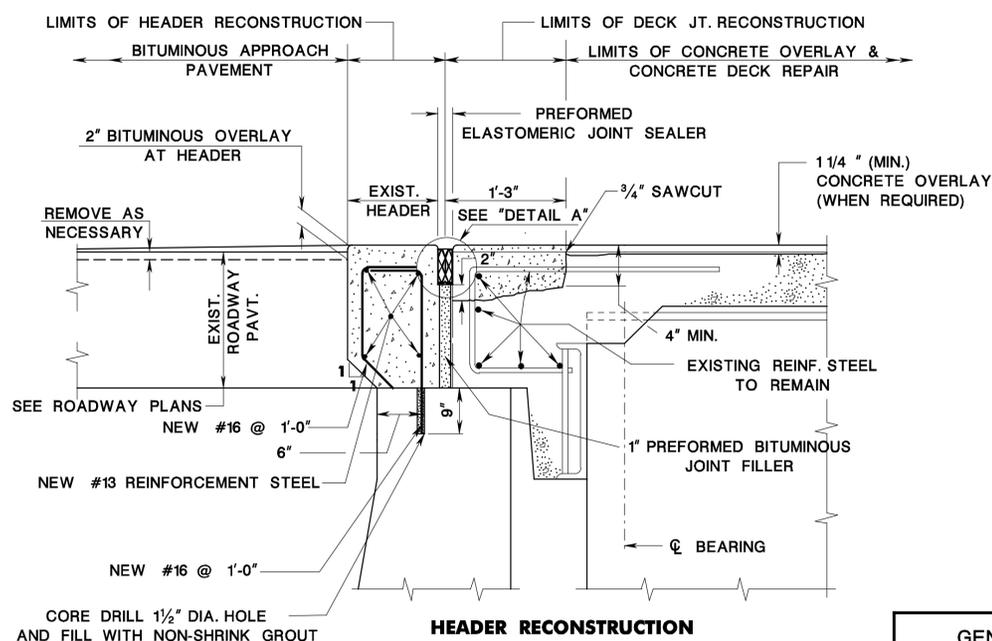


FIXED DECK JOINT AT PIER

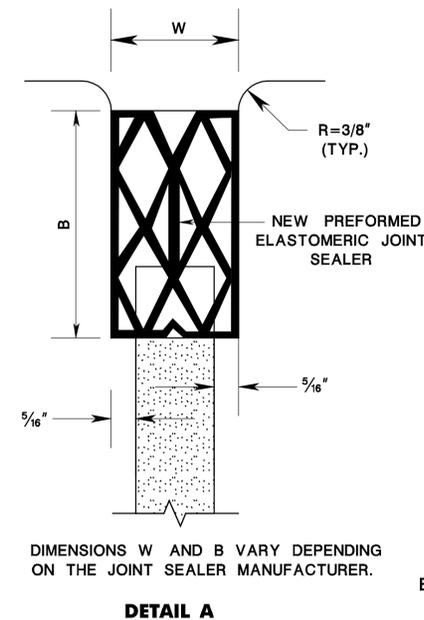
*THE CONTRACTOR SHALL REPLACE THE EXISTING COPPER FLASHING DURING DECK JOINT RECONSTRUCTION ONLY IF THE AREA OF REPAIR WARRANTS IT BELOW COPPER FLASHING, OR IF EXISTING REINFORCEMENT STEEL IS LESS THAN 1" ABOVE TOP OF FLASHING. PAY UNDER ITEM "DECK JOINT RECONSTRUCTION".



DECK JOINT AT ABUTMENT (WITH APPROACH SLAB AND CONCRETE OVERLAY)



HEADER RECONSTRUCTION



DETAIL A

DIMENSIONS W AND B VARY DEPENDING ON THE JOINT SEALER MANUFACTURER.

GENERAL NOTES:

- 1 ALL NEW REINFORCEMENT STEEL IS DESIGNATED IN METRIC UNITS AND SHALL BE CORROSION PROTECTED.
- 2 MECHANICAL COUPLERS MAY BE NECESSARY IF CONSTRUCTION IS STAGED.
- 3 PROVIDE AS REQUIRED ARMORED JOINT.

**BRIDGE DECK REHABILITATION
DECK JOINT REPAIR (SHEET 1 OF 2)
N.T.S.**

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BRIDGE CONSTRUCTION DETAILS

BCD-551-3

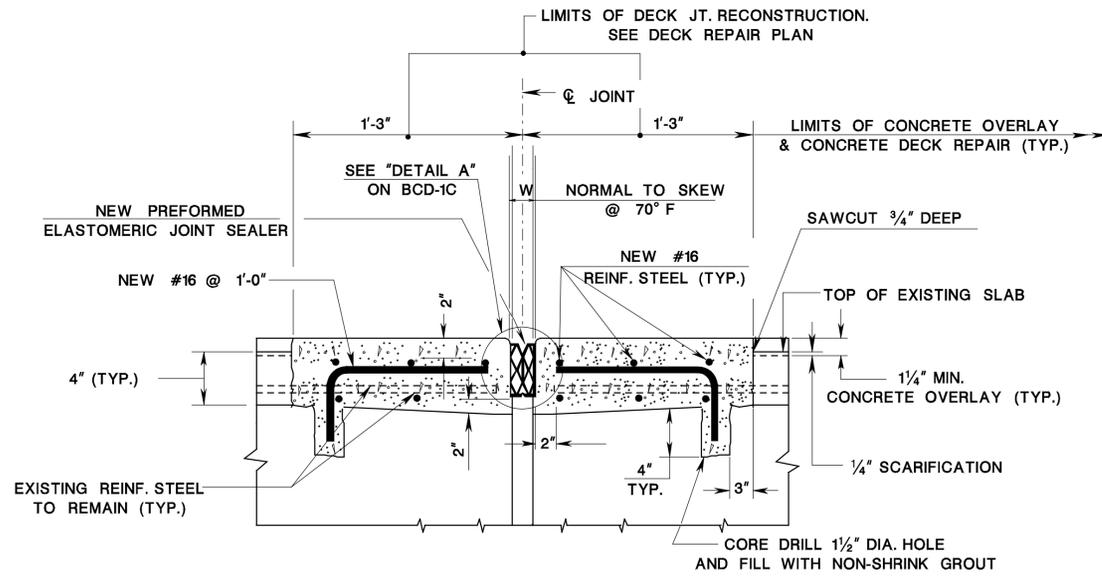
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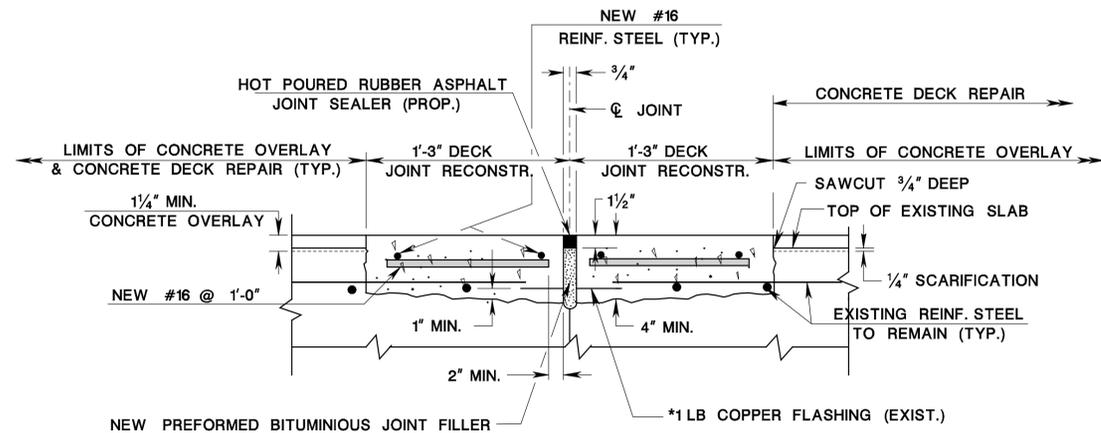
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EXPANSION DECK JOINT AT PIER WITH CONCRETE OVERLAY

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FIXED JOINT AT PIER WITH CONCRETE OVERLAY.

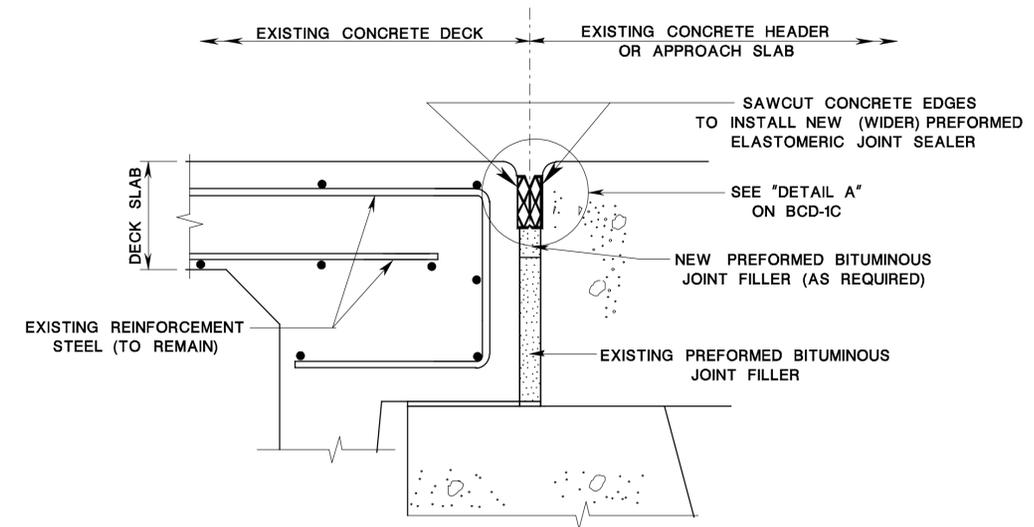
BCD-551-4.2

*THE CONTRACTOR SHALL REPLACE THE EXISTING COPPER FLASHING DURING DECK JOINT RECONSTRUCTION ONLY IF THE CONCRETE BELOW COPPER FLASHING IS DETERIORATED OR IF EXISTING REINFORCEMENT STEEL IS LESS THAN 1" ABOVE TOP OF FLASHING. PAY UNDER ITEM "DECK JOINT RECONSTRUCTION".

GENERAL NOTES:

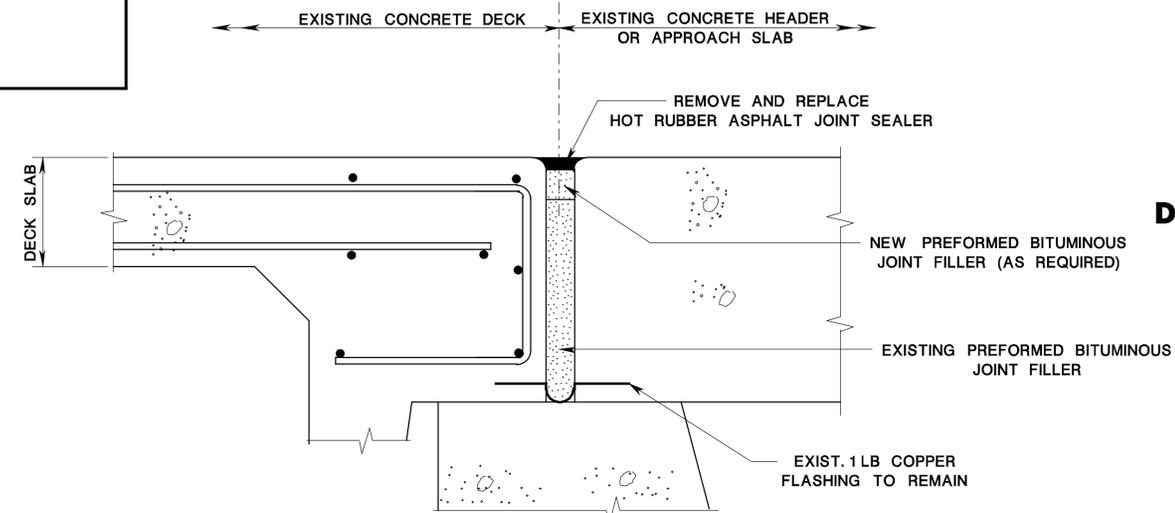
- ALL NEW REINFORCEMENT STEEL IS DESIGNATED IN METRIC UNITS AND SHALL BE CORROSION PROTECTED.
- "DECK JOINT RECONSTRUCTION" AND "HEADER RECONSTRUCTION" SHALL INCLUDE:
 - 3/4" SAWCUT AS SHOWN IN JOINT DETAILS.
 - REMOVE CONCRETE AND DISPOSE OF MATERIALS TO LIMITS SHOWN AND REPLACE WITH CONCRETE.
 - REMOVE PREFORMED BITUMINOUS JOINT FILLER (IF ANY) TO DEPTH SHOWN OR AS DIRECTED BY THE RE.
 - BLOCKING FOR PROPOSED PREFORMED ELASTOMERIC JOINT SEALER.
 - REPLACEMENT OF CORROSION PROTECTED REINFORCEMENT STEEL.
 - PROPOSED PREFORMED BITUMINOUS JOINT FILLER WHERE REQUIRED.
 - DRILL AND FILL HOLES WITH NON-SHRINK GROUT.
 - SAWCUTTING THE CURB AND SIDEWALK TO INSTALL THE SEALER.
- EPOXY BONDING COMPOUND SHALL BE USED BETWEEN NEW AND EXISTING CONCRETE. REFER TO NJDOT STANDARD SPECIFICATIONS CRITERIA .
- PROVIDE AS REQUIRED ARMORED JOINT.

BCD-551-4.3



SAWCUT JOINT RECONSTRUCTION AT ABUTMENT

BCD-551-4.4



DECK JOINT RE-SEAL AT ABUTMENT

BCD-551-4.5

**BRIDGE DECK REHABILITATION
DECK JOINT REPAIR (SHEET 2 OF 2)**

N.T.S.

BCD-551-4

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BRIDGE CONSTRUCTION DETAILS

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