

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
**PLANS FOR PROPOSED
BRIDGE REPLACEMENT
TOWNSHIP BRIDGE PROGRAM**

INDEX OF SHEETS

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- 2 GENERAL NOTES AND COMMITMENTS
- 3 ALIGNMENT, TIES, BENCHMARKS & ENTRANCE DETAILS
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- 8 SCHEDULE OF QUANTITIES
- 9 PLAN AND PROFILE
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STANDARDS (IN PROPOSAL)

- 000001-07 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 001001-02 AREAS OF REINFORCEMENT BARS
- 001006 DECIMAL OF AN INCH AND OF A FOOT
- 280001-07 TEMPORARY EROSION CONTROL SYSTEMS
- 515001-04 NAME PLATE FOR BRIDGES
- 542401-03 METAL FLARED END SECTION FOR PIPE CULVERTS
- 701901-08 TRAFFIC CONTROL DEVICES
- 725001-01 OBJECT AND TERMINAL MARKERS
- BLR 21-9 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

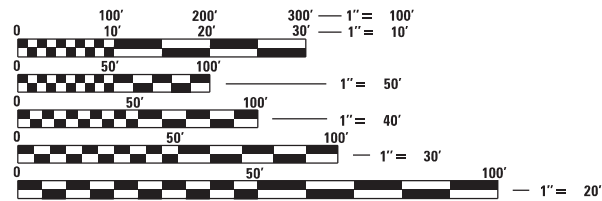
**TR 251 (800 N. RD.) OVER TWO MILE SLOUGH
TOLONO TOWNSHIP
SECTION 19-29081-00-BR
CHAMPAIGN COUNTY**



LOCATION OF SECTION INDICATED THUS: - ■ -

FUNCTIONAL CLASSIFICATION – LOCAL ROAD

ADT = 100
ADTT = 15
DESIGN SPEED = 30 MPH



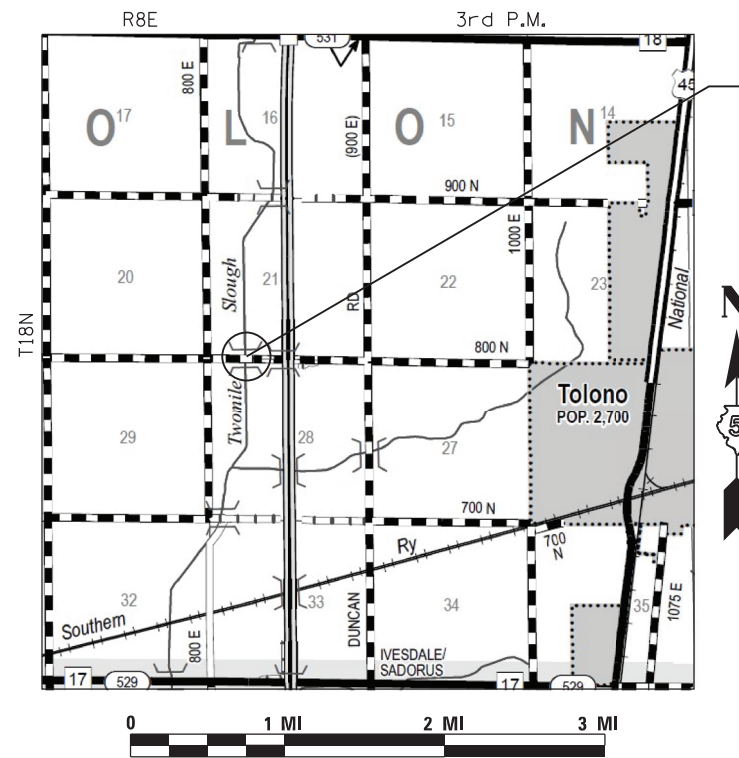
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

UTILITY COMPANIES:

EASTERN ILLINI ELECTRIC COOPERATIVE
330 W. OTTAWA
PO BOX 96
PAXTON, IL 60957
CONTACT: BRIAN J. RONNA

***UTILITIES NEED VERIFIED

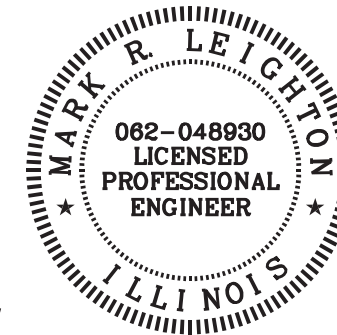


PROPOSED SECTION 19-29081-00-BR
BEGINS STA. 7 + 30.00
ENDS STA. 12 + 70.00
EXIST. SN 010-4084
PROP. SN 010-4590

LOCATION MAP

TOTAL LENGTH = 540 FEET (0.102 MI)
NET LENGTH = 540 FEET (0.102 MI)

THE WORK CONSISTS OF REMOVING THE EXISTING BRIDGE (S.N. 011-4084) AND CONSTRUCTING A NEW STRUCTURE (S.N. 011-4590) AT STA. 10+00.00 WITH A SINGLE-SPAN PRESS BREAK TUB GIRDER BRIDGE, 0° SKEW, VARIABLE WIDTH TRANSITION APPROACHES AND OTHER COLLATERAL WORK.



Expires: 11/30/2021

PROJECT MANAGER: MARK R. LEIGHTON, P.E., P.L.S.



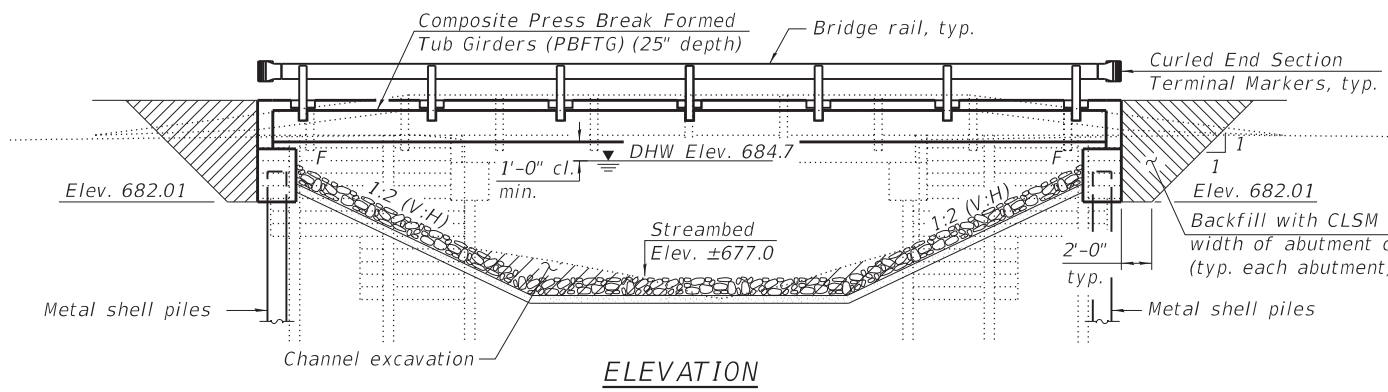
APPROVED _____	20 _____
_____ COUNTY ENGINEER	
PASSED _____	20 _____
_____ DISTRICT FIVE ENGINEER OF LOCAL ROADS AND STREETS	
Released For Bid Based on Limited Review _____	20 _____
_____ REGION THREE ENGINEER	
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	

LAST SAVED DATE: 5/15/2020 10:10:10 AM

Benchmark: BM #1 RR spike set in south face of 8" wooden power pole 43.3' N.W. of center of project bridge - Sta. 9+76.41, 37.09' Lt., Elev. 688.96

Existing Structure: SN 010-4084 is a single-span precast slab bridge on concrete abutments with timber lagging and wings 31'-5" back-to-back of abutments, 0 deg skew and the out-to-out bridge width is 26'-3". Structure is to be removed and replaced. Road is to be closed during construction.

Salvage: No salvage.



INDEX OF SHEETS

1. General Plan & Elevation
2. General Data
3. Abutment Details
4. Metal Shell Piles
5. Soil Borings

DESIGN SPECIFICATIONS

2017 AASHTO LRFD Bridge Design Specifications
 8th Edition

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

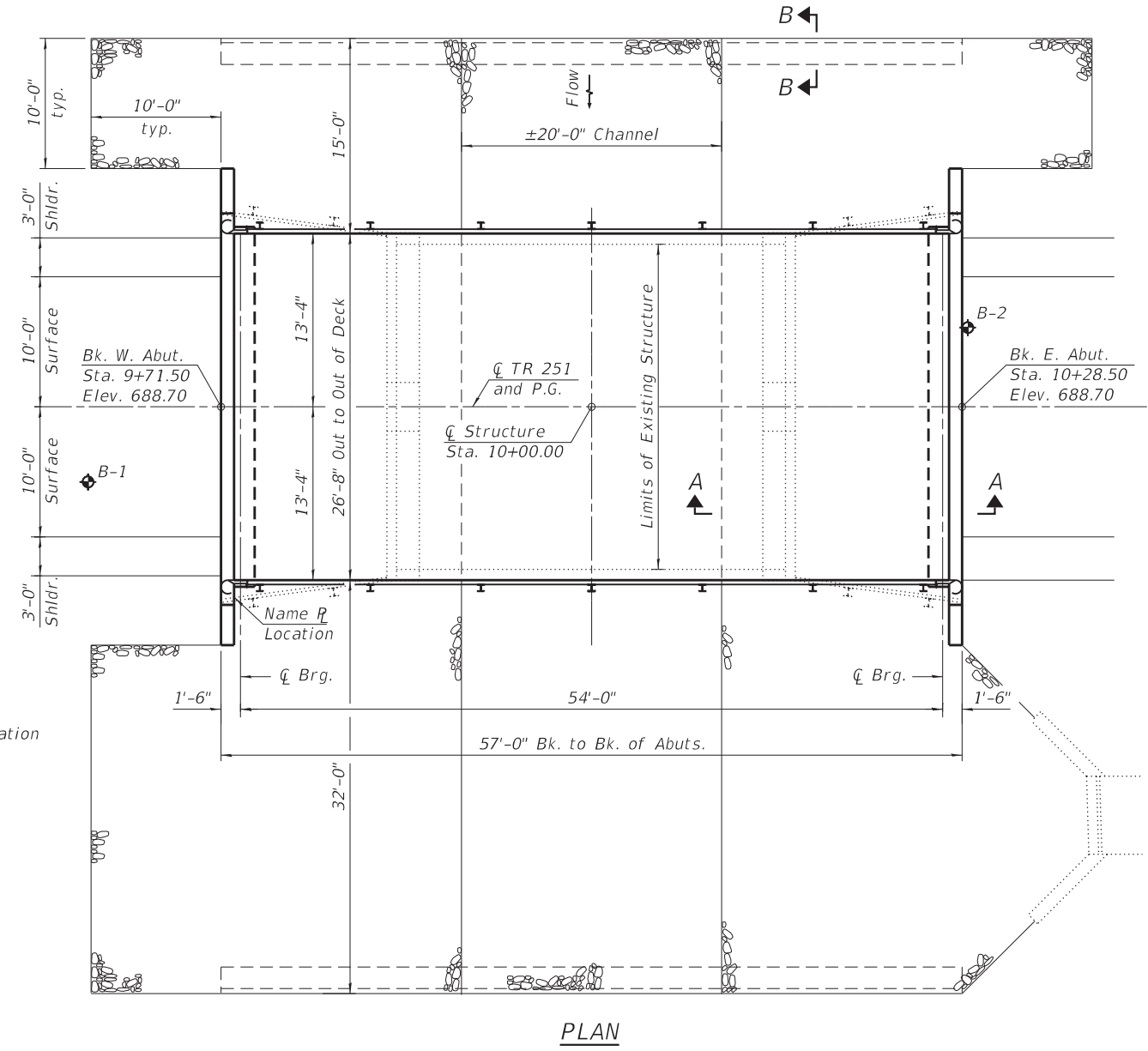
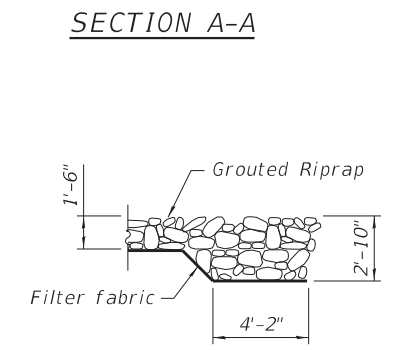
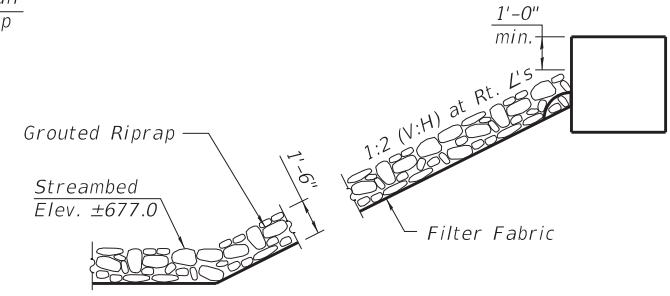
DESIGN STRESSES

SUBSTRUCTURE FIELD UNITS

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
 Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.102g
 Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.191g
 Soil Site Class = C



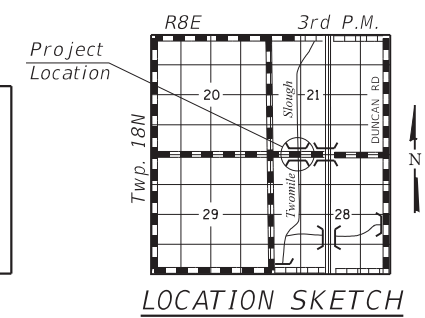
Expires: 11/30/2020

I certify that to the best of knowledge, information and belief, this Bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current AASHTO LRFD Bridge Design Specifications.

GENERAL PLAN AND ELEVATION
TR 251 OVER TWO MILE SLOUGH
SECTION 19-29081-00-BR
CHAMPAIGN COUNTY
STATION 10+00
STRUCTURE NO. 010-4590

NAME PLATE
 See Std. 515001

TWO MILE SLOUGH
 BUILT 20 BY
 CHAMPAIGN COUNTY
 SEC. 19-29081-00-BR
 STA. 10+00
 STR. NO. 010-4590 LOADING HL93



LEGEND

Soil Boring Location



DESIGN FIRM no. 184001036	USER NAME = dtheberling	DESIGNED - BJJ	REVISED
FILE NAME = 010-4590.dgn	CHECKED - CEH	CHECKED -	REVISED
PLOT SCALE = 0.2" = 1' / in.	DRAWN - DLH	DRAWN -	REVISED
PLOT DATE = 5/15/2020	CHECKED -	CHECKED -	REVISED

Champaign County Highway Department

STRUCTURE NO. 010-4590

SHEET NO. 1 OF 5 SHEETS

TR RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
251	19-29081-00-BR	CHAMPAIGN	33	10
CONTRACT NO.				

ILLINOIS FED. AID PROJECT

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.		260	260
Removal of Existing Structures	Each			1
Structure Excavation	Cu. Yd.		78	78
Concrete Structures	Cu. Yd.		25.0	25.0
Reinforcement Bars, Epoxy Coated	Pound		3030	3030
Furnishing Metal Shell Piles 12" x 0.250"	Foot		280	280
Driving Piles	Foot		280	280
Test Pile Metal Shells	Each		2	2
Name Plates	Each		1	1
Geocomposite Wall Drain	Sq. Yd.		40.1	40.1
Controlled Low-Strength Material	Cu. Yd.		56.7	56.7
Bridge Deck Thin Polymer Overlay 3/8"	Sq. Yd.	169		169
Pipe Underdrains for Structures 4"	Foot		109	109
Grouted Riprap	Sq. Yd.		560	560
Erecting Superstructure	L. Sum	1		1
Furnishing Superstructure	L. Sum	1		1

GENERAL NOTES

- All work shall be completed in accordance with the applicable sections of the Illinois Department of Transportation (IDOT) Standard Specifications for Road and Bridge Construction except as mentioned herein.
- Within 30 calendar days of awarding the contract, the Contractor shall supply the Engineer a list of all subcontractors that will be performing work for Furnishing Superstructure and Erecting Superstructure. This list shall be accompanied by an estimated schedule for submittals, fabricating the PBFTG, galvanizing, construction of the precast concrete elements, shipping, erecting, casting the closure pour material, and applying the overlay.
- The profile grade elevations shown are applicable to the top of the bridge deck prior to placement of the thin polymer overlay.
- Reinforcement bars designated (E) shall be epoxy coated.
- Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
- Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 in. (0.01 ft). Adjustments shall be made either by grinding the surface or by shimming the bearings.
- The abutment design is based on the beam reactions indicated on Sheet 3 of 5 applied to the top of the abutment. The reactions were determined considering the superstructure configuration shown herein and shall be evaluated by the Contractor's SE. See Furnishing Superstructure Special Provision for additional details.
- The bearing height indicated herein reflects the dimension used in establishing substructure elevations. If the bearing height is changed, the Contractor's SE will be required to revise substructure details accordingly. The indicated anchor bolt diameter, length, and material grade are minimums and may be increased as determined necessary by the Contractor's SE. See Furnishing Superstructure Special Provision for addition details.
- The bridge rail details shown are conceptual and shall be specified by the Contractor's SE. See Furnishing Superstructure Special Provision for additional details.
- PJF shall conform to the material specifications of Article 1051.09 except the pressure indicated in Section 1051.09(a)(1) is limited to 15 psi max. The PJF along the abutment cap may be made up of layers of multiple thicknesses and should be lightly compressed by the backwall after the superstructure is set in place.
- Controlled low strength material shall not be placed behind the abutments until the superstructure is in place.

WATERWAY INFORMATION TABLE

Drainage Area 5.56 sq. mi.		Existing Low Grade Elevation: 685.44 ft. @ Sta. 8+20		Proposed Low Grade Elevation: 685.46 ft. @ Sta. 7+30		
Flood	Freq. Year	Q cfs	Opening sq. ft.		Head (ft.)	Headwater Elev.
			Existing	Proposed	Existing	Proposed
Design	15	980	195	295	684.7	684.8
Base	100	1600	195	348	686.8	687.4
Scour Chec	200	1840	195	348	687.5	688.1
Max. Calc.	500	2170	195	348	688.0	688.6

DESIGN SCOUR ELEVATION TABLE

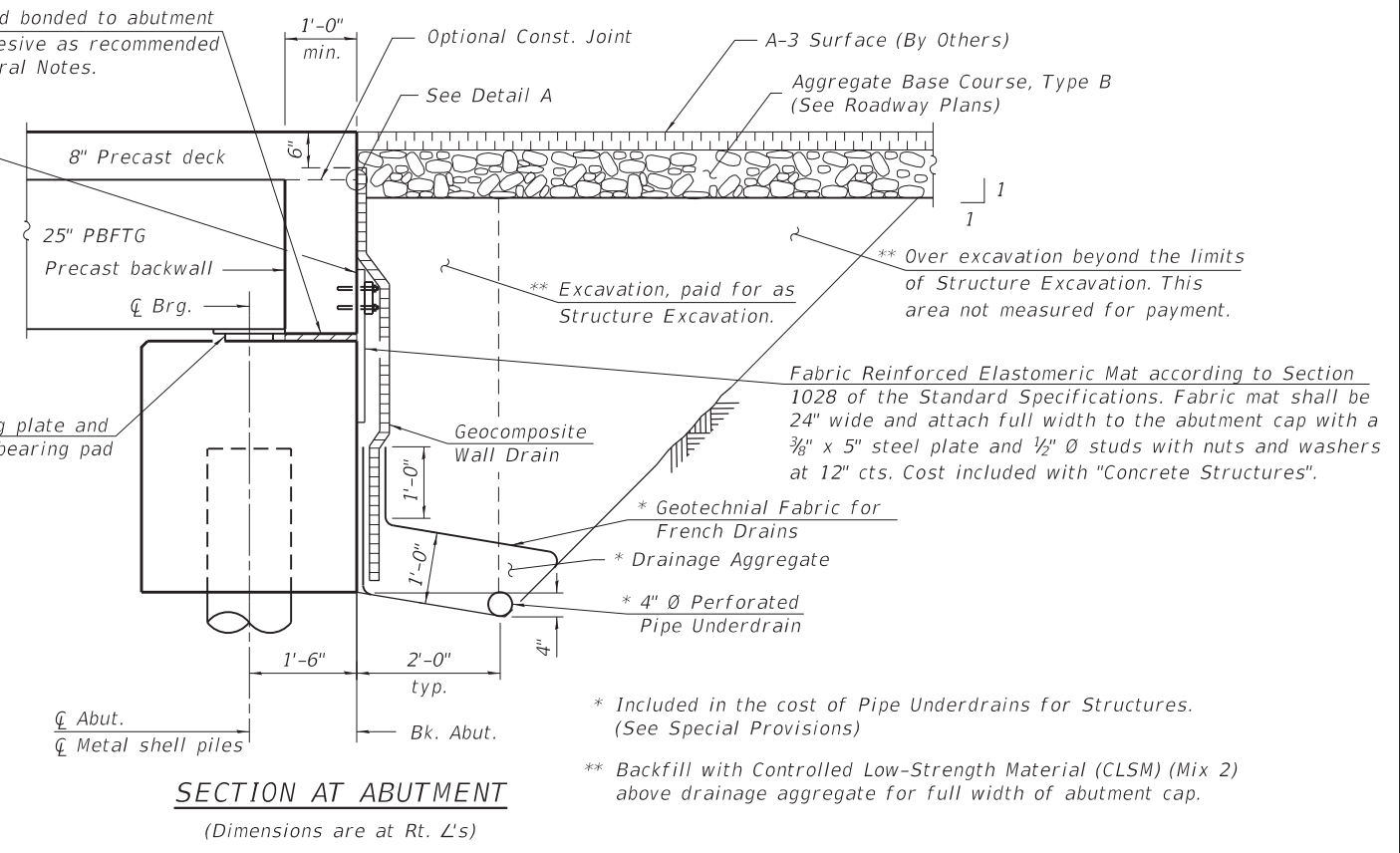
Event / Limit State	Design Scour Elev. (ft.)		Item 113
	W. Abut.	E. Abut.	
Q100	-	-	8
Q200	-	-	
Design	682.0	682.0	
Check	682.0	682.0	

1 1/2" PJF full width and bonded to abutment cap with suitable adhesive as recommended by supplier. See General Notes.

Apply flexible waterproofing sealant between backwall and top of mat for full width of abutment cap. The sealant shall be suitable for use below grade and be approved by the Engineer. Cost included with Concrete Structures.

Note: All drainage system components shall extend to 2'-0" from end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

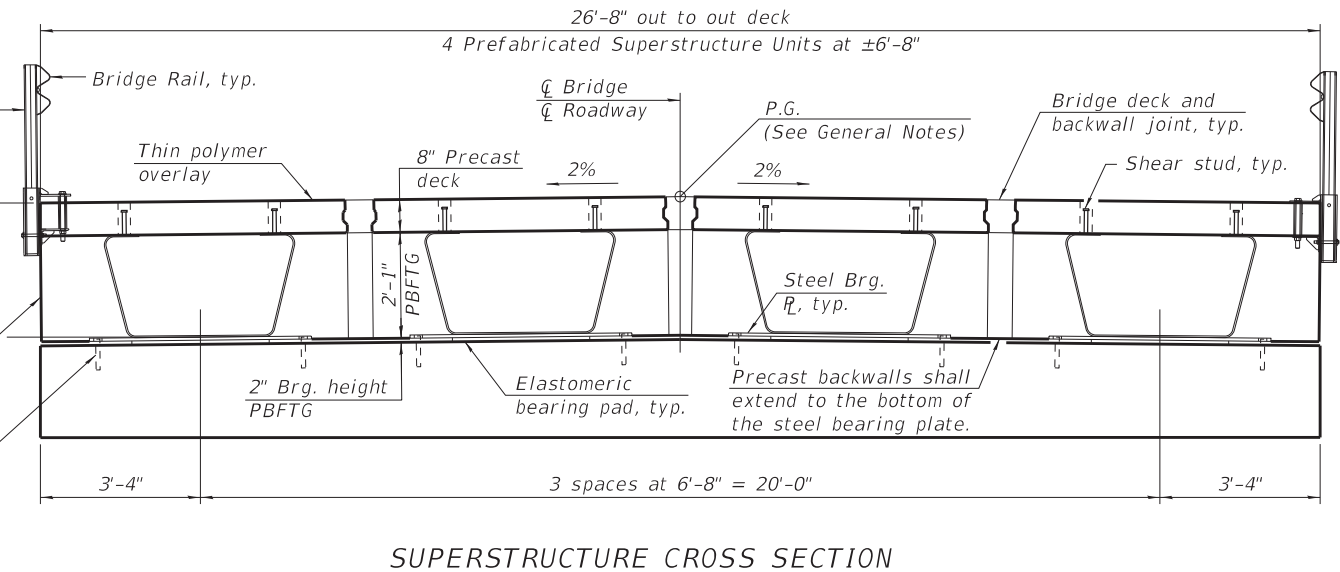
Steel bearing plate and elastomeric bearing pad



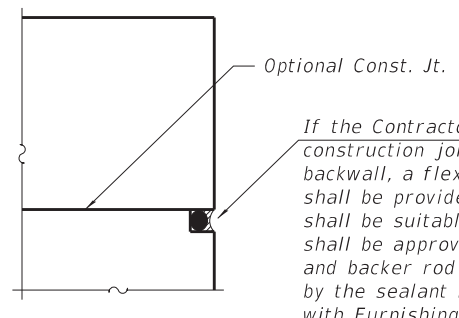
Bridge rail post shall be located outside of the bridge deck

Precast backwalls shall be flush with outside edge of deck

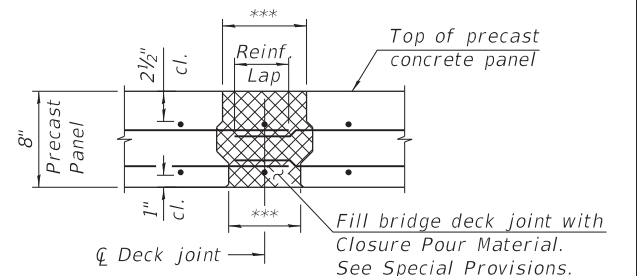
1" Ø x 12" A307 Grade C anchor bolt with 3/16" x 2 1/4" x 2 1/4" R washers, typ. each side of PBFTG



SUPERSTRUCTURE CROSS SECTION



DETAIL A



BRIDGE DECK JOINT DETAIL

(Through centerline of bridge deck joint, typical. Backwall joint details similar)

*** Joint dimensions to be determined by Contractor. See Special Provisions.

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