

72938

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 714	134B	CHRISTIAN	23	14
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SHEET NO. 1
OF 10 SHEETS

TOTAL BILL OF MATERIAL

Item	Unit	Quantity
Removal Of Existing Structures	Each	1
Structure Excavation	Cu. Yd.	392
Concrete Structures	Cu. Yd.	75.3
Reinforcement Bars	Pound	6385
Reinforcement Bars, Epoxy Coated	Pound	175
Steel Bridge Rail	Foot	103.6
Furnishing Steel Piles HP 10x42	Foot	738
Driving Steel Piles	Foot	738
Test Pile, Steel HP 10x42	Each	2
Name Plates	Each	1
Temporary Soil Retention System	Sq. Ft.	434
Bar Splicers	Each	24
Three Sided Precast Concrete Structures, 28' x 5'-10"	Foot	45.76

WATERWAY INFORMATION

Drainage Area = 2.84 Sq. Mi.	Ex. Low Grade Elev.	611.16 ft.	@ Sta.	433+50					
	Pr. Low Grade Elev.	611.16 ft.	@ Sta.	433+50					
Flood	Freq.	Q	Opening	Sq. Ft.	Natural	Head - ft.	Headwater	Elev.	
		C.F.S.	Exist.	Prop.	H.W.E.	Exist.	Prop.	Exist.	Prop.
	10	220	78	96	609.01	0.10	0.10	609.11	609.11
Design	50	331	83	96	609.31	0.53	0.58	609.84	609.89
Base	100	376	83	96	609.51	0.67	0.74	610.18	610.25
Overtopping	-	-	-	-	-	-	-	-	-
Max. Calc.	500	483	83	96	609.99	1.03	1.15	611.02	611.14

10 Year Velocity through Existing Bridge = N/A
10 Year Velocity through Proposed Bridge = 2.59 fps

GENERAL NOTES

Reinforcement bars shall conform to the requirements of AASHTO M31 or M322 Grade 60.
The option of using a precast footing is not allowed.
After the keyways have been grouted and cured, the joints on all three sides of the structure shall be externally sealed using 13" wide external sealing bands conforming to Article 1057.01. Cost included with Three-Sided Precast Concrete Structures.
All details shown were developed assuming the use of cast in place headwalls and wingwalls placed as shown. The Contractor has the option of using precast headwalls and wingwalls. If the precast option is used, details for the headwalls and wingwalls and revised footing details shall be submitted to the Engineer for approval.
The footing design is based on the following maximum reactions applied at the top of footing/pedestal walls:
Vertical 7.9 K/FT \pm 4.5 K/FT \pm .
Horizontal 5.4 K/FT \pm + 2.5 K/FT \pm .
The Contractor shall verify that the selected structure meets these design parameters. If the design parameters are exceeded, a complete footing design with calculations, details, and the required seals shall be submitted for review and approval.
All construction joints shall be bonded.
Excavate behind the existing culvert before Stage I Removal. Install temporary soil retention system as required. Saw cut the existing structure at the stage removal line.
The Contractor shall drive one (1) test pile in a permanent location at the East footing and the West footing as directed by the Engineer before ordering the remainder of the piles.

STA. 432+32.00
BUILT 200 BY
STATE OF ILLINOIS
F.A.P. RTE. 714 SECTION 134B
LOADING HS 20
STR. NO. 011-2505

NAME PLATE
(Standard 515001)

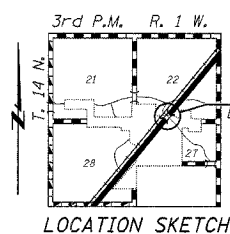
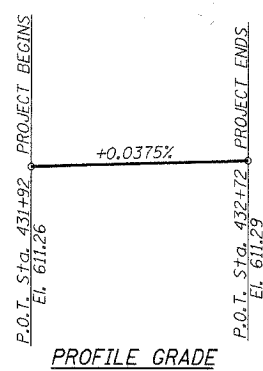
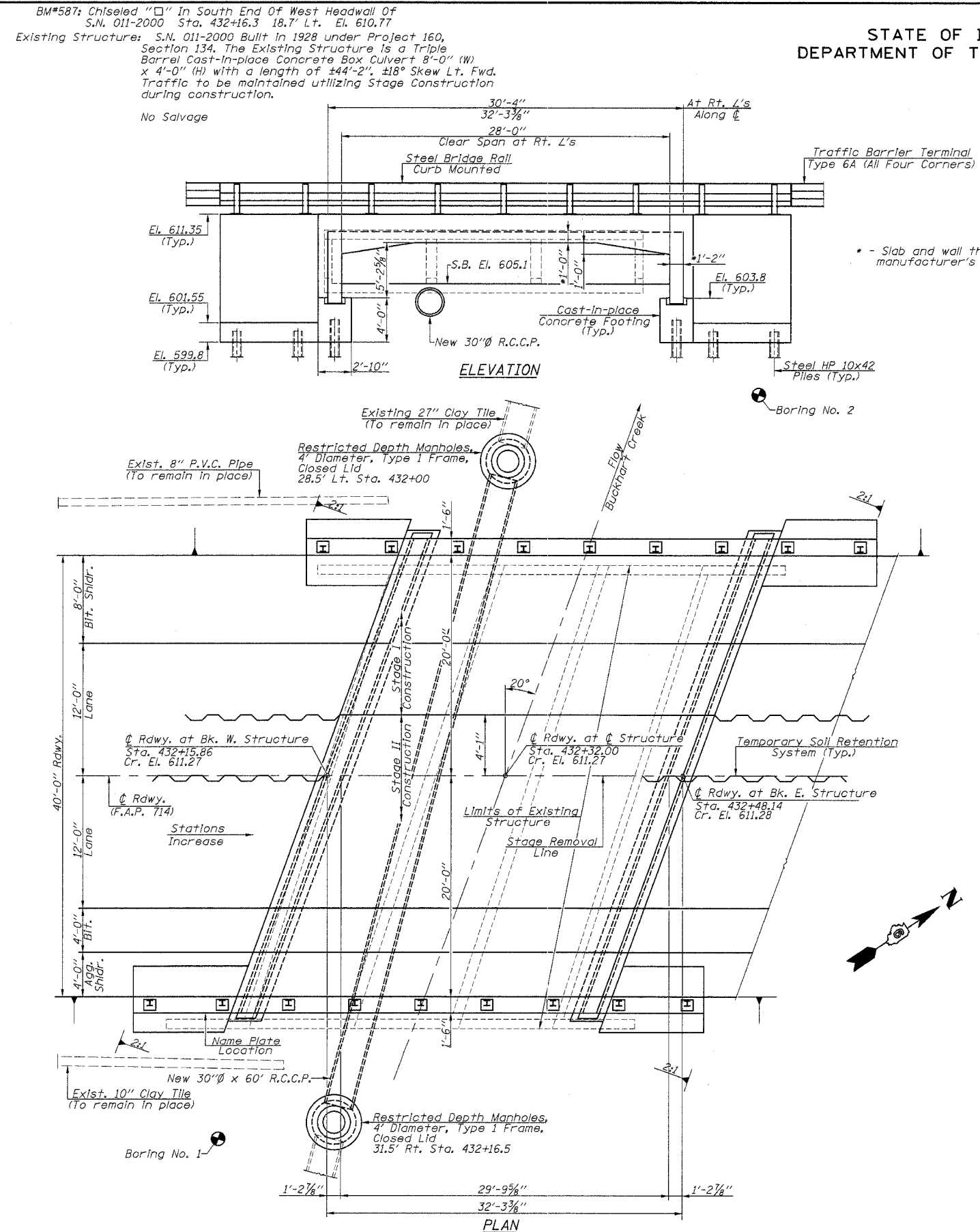
HIGHWAY CLASSIFICATION
F.A.P. Route 714 - IL. Route 48
Functional Class: Minor Arterial (Non-urban)
A.D.T. 4625(2003), 5346(2023)
D.H.V. 600(2021)
Design Speed: 35 mph
Posted Speed: 35 mph

LOADING HS 20
Allow 75*/Sq. Ft. for future wearing surface.

DESIGN SPECIFICATIONS
2002 A.A.S.H.T.O. Specifications with
2003 Interim Specifications.

DESIGN STRESSES
NEW CONSTRUCTION
FIELD UNITS
 $f_c = 3500$ p.s.i.
 $f_y = 60000$ p.s.i. (reinforcement)
PRECAST PRESTRESSED UNITS
 $f_c = 5000$ p.s.i.
 $f_y = 60000$ p.s.i. (reinforcement)
 $f_y = 65000$ p.s.i. (welded wire fabric)

SEISMIC DATA
Seismic Performance Category (SPC) = A
Site Coefficient(s) = 1.2
Bedrock Acceleration Coefficient (A) = 0.05g



APPROVED AND SEALED
FOR STRUCTURAL ADEQUACY ONLY

Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

MARK A. HENDERSON
Professional Engineer
STATE OF ILLINOIS
2/14/05
EXPIRATION DATE: 11/09/06

GENERAL PLAN & ELEVATION
IL. ROUTE 48 OVER BUCKHART CREEK
F.A.P. ROUTE 714 - SECTION 134B
CHRISTIAN COUNTY
STA. 432+32
S.N. 011-2505