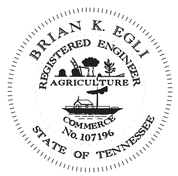


THIS DOCUMENT HAS BEGUN DIGITALLY SIGNED AND SEALED BY:

Brian Egli
2024.12.06 15:11:49 -06'00'

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED. THE SIGNATURE MUST BE VERIFIED ON THE ELECTRONIC DOCUMENTS.

TENNESSEE DEPARTMENT OF TRANSPORTATION
505 DEADERICK STREET, SUITE 1200
NASHVILLE, TN 37243
BRIAN K. EGLI, P.E. NO. 107196

THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE FOLLOWING SHEETS IN ACCORDANCE OF TENN. CODE ANN. §62-2-306.

LIST OF DRAWINGS

YEAR	PROJECT NO.	SHEET NO.
2025	ER-BR-STP-351(23)	STRUCTURE-SIGN1

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SIGNATURE SHEET

TENN.	YEAR	SHEET NO.
	2025	1
FED. AID PROJ. NO.	ER-BR-STP-351(23)	
STATE PROJ. NO.	30S351-S3-004	

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING

INDEX OF SHEETS

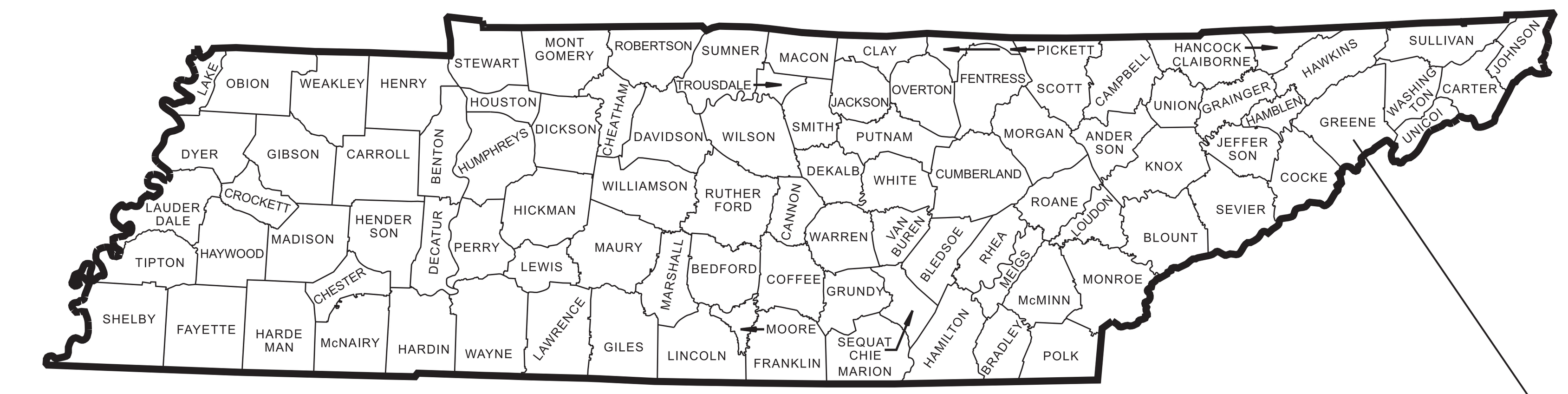
SEE SHEET 1-A FOR
INDEX AND STANDARD DRAWINGS

GREENE COUNTY

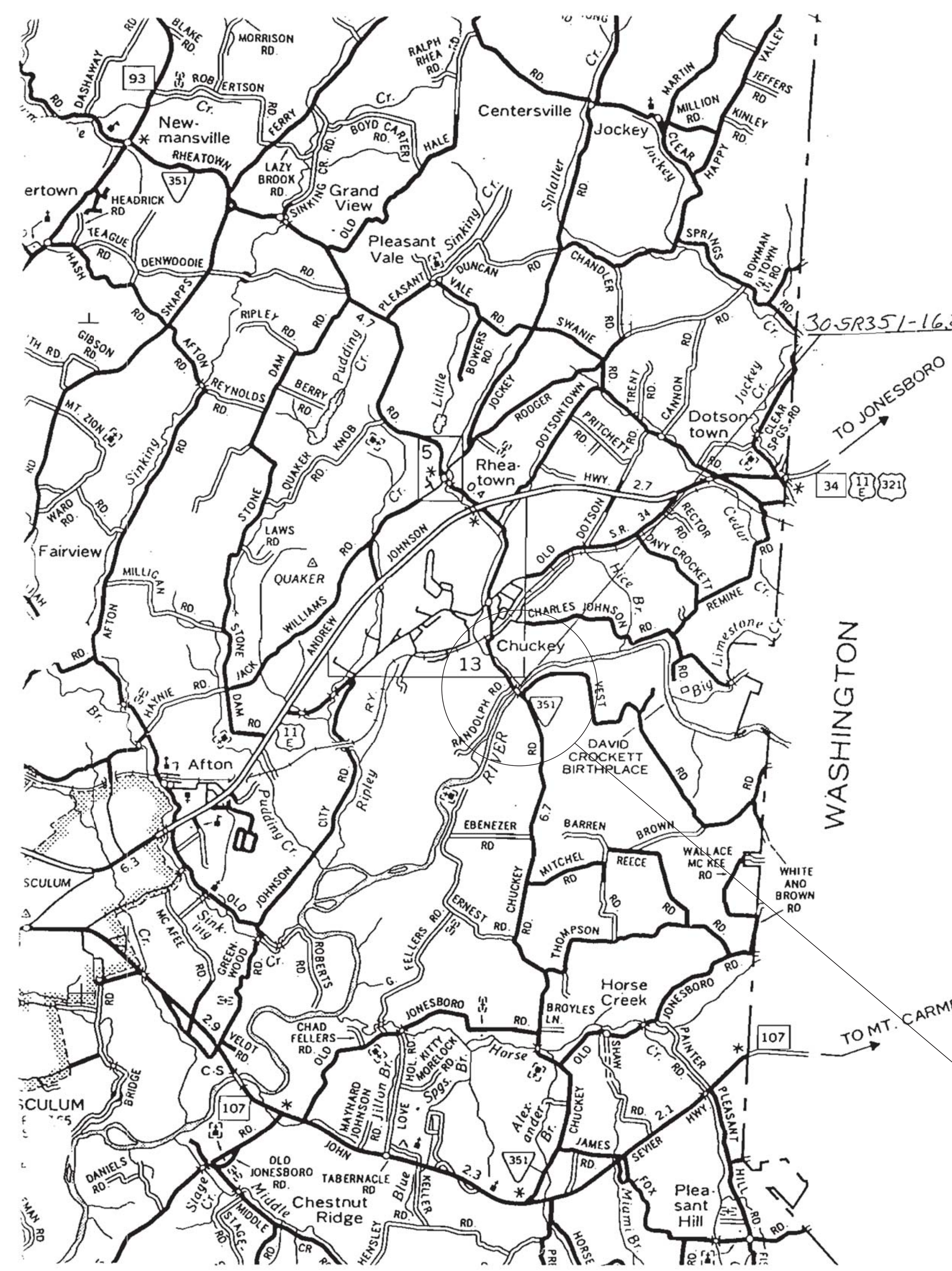
BRIDGE NO. 30-SR351-16.17
OVER NOLICHUCKY RIVER
PS&E

BRIDGE REPAIR

STATE HIGHWAY NO. 351 F.A.H.S. NO.



GREENE COUNTY
BRIDGE ID. # 30S23910003



TRAFFIC DATA	
ADT (2023)	1384
ADT (20)	
DHV (2023)	125
D	-
T (ADT)	4 %
T (DHV)	%
V	35 MPH

30-SR351-16.17
5 SPAN CONT. PPCIB ON
SR 351 OVER
NOLICHUCKY CREEK

FED, ID# 30S23910003

BRIAN K. EGLI
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 107196
STATE OF TENNESSEE
12/06/24

APPROVED: ____________________
WILL REID, CHIEF ENGINEER

DATE: ____________________

APPROVED: ____________________
HOWARD H. ELEY, COMMISSIONER

SPECIAL NOTES

PROPOSALS MAY BE REJECTED BY THE COMMISSIONER IF ANY OF THE UNIT PRICES CONTAINED THEREIN ARE OBVIOUSLY UNBALANCED, EITHER EXCESSIVE OR BELOW THE REASONABLE COST ANALYSIS VALUE.

THIS PROJECT TO BE CONSTRUCTED UNDER THE STANDARD SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION DATED JANUARY 1, 2021 AND ADDITIONAL SPECIFICATIONS AND SPECIAL PROVISIONS CONTAINED IN THE PLANS AND IN THE PROPOSAL CONTRACT.

TDOT PROJECT MANAGER: TED KNIAZEWYCZ
DESIGNED BY : ROCKY CHRISTY
DESIGNER : ROCKY CHRISTY CHECKED BY : BRIAN EGLI
P.E. NO. 30S351-M1-003
PIN NO. 135866.27

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE

12/6/2024 8:53:14 AM
P:\STRUCTURES\CADD_REGION_1\REGION 1 FLOOD EMERGENCY REPAIRS\GREENE\30S23910003 SR-351\30S23910003 TITLE SHEET.DGN

TYPE	YEAR	PROJECT NO.	SHEET NO.
PS&E	2025	ER-BR-STP-351(23)	1A
			000
			000

LIST OF BRIDGE REPAIR DRAWINGS

DRAWING	DRAWING NO.	REV. DATE
LAYOUT OF BRIDGE TO BE REPAIRED	BR-132-960	
GENERAL NOTES AND ESTIMATED BRIDGE QUANTITIES	BR-132-961	
SUPERSTRUCTURE DETAIL SHOWING LIMITS OF REPAIR	BR-132-962	
SUPERSTRUCTURE DETAILS TYPICAL SECTION	BR-132-963	

REFERENCE DRAWINGS

M-271-70 THROUGH M-271-81

STD-7-1 STANDARD CONCRETE RAIL (1987) (REV. 12-18-95)

S-GRC-1 GUARDRAIL CONNECTION TO BRIDGE ENDS OF BARRIER WALL (REV. 10-10-16)

STANDARD ROADWAY DRAWINGS

ROADWAY DESIGN

DRAWING	DRAWING NO.	REV. DATE
STANDARD ABBREVIATIONS (A THROUGH L)	RD-A-1	2-20-20
STANDARD ABBREVIATIONS (M THROUGH Z)	RD-A-1	2-20-20
STANDARD LEGEND	RD-L- 1	2-20-20
STANDARD LEGEND	RD-L-1A	

SAFETY DESIGN AND GUARDRAILS

DRAWING	DRAWING NO.	REV. DATE
SAFETY PLAN: SAFETY HARDWARE PLACEMENT ON OUTSIDE EDGE	S-PL-6	6-28-19
GUARDRAIL DETAILS	S-GR31-1	6-28-19
GUARDRAIL AND BLOCK-OUT DETAILS	S-GR31-1A	6-28-19
GUARDRAIL FASTENING HARDWARE	S-GR31-1B	
GUARDRAIL GENERAL NOTES AND POST DETAILS	S-GR31-1C	
SPECIAL CASE GUARDRAIL HEIGHT TRANSITION DETAIL	S-GRS-4	

DESIGN – TRAFFIC CONTROL

DRAWING	DRAWING NO.	REV. DATE
DETAILS OF PAVEMENT MARKINGS FOR CONVENTIONAL ROADS AND MARKING ABBRVIATIONS	T-M-1	6-28-19
INTERCONNECTED PORTABLE BARRER RAIL	T-WZ-PBR1	6-28-19
DETAILS FOR WORK ZONE CHANNELIZATION DEVICES	T-WZ-PBR2	2-28-20
TRAFFIC CONTROL PLAN SIGNAL LAYOUT FOR TRAFFIC SIGNAL AT TWO LANE BRIDGE RECONSTRUCTION SITE	T-WZ-32	11-30-20
TRAFFIC CONTROL PLAN FOR CLOSE INTERSECTION CONDITIONS USING TRAFFIC SIGNAL AT TWO LANE BRIDGE RECONSTRUCTION SITE	T-WZ-33	5-27-98
TRAFFIC CONTROL PLAN GENERAL NOTES FOR TRAFFIC SIGNAL AT TWO LANE BRIDGE RECONSTRUCTION SITE	T-WZ-34	9-1-05
TRAFFIC CONTROL PLAN PAY ITEM AND SIGN DETAILS FOR TRAFFIC SIGNAL AT TWO LANE BRIDGE RECONSTRUCTION SITE	T-WZ-35	4-2-12

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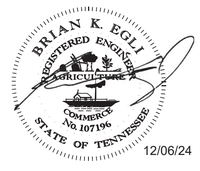

12/06/24

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

INDEX AND
STANDARD DRAWINGS

TYPE	YEAR	PROJECT NO.	SHEET NO.
PS&E	2025	ER-BR-STP-351(23)	1B
			000
			000

PROJECT COMMITMENTS

COMMITMENT ID	SOURCE DIVISION	DESCRIPTION	STA. / LOCATION
EDHZ001	ENVIRONMANTAL DIVISION, HAZARDOUS MATERIALS	AN ASBESTOS CONTAINING MATERIAL (ACM) SURVEY WAS COMPLETED ON BRIDGE NO. 30S23910003 SR-351 OVER NOLICHUCKY RIVER LM 16.17 (30-SR351-16.17).* NO ASBESTOS WAS DETECTED.* PLEASE SEE THE REPORT FOR FURTHER DETAILS AND PHOTOGRAPHS.* NO SPECIAL ACCOMMODATIONS FOR DEMOLITION AND WASTE DISPOSAL ARE ANTICIPATED FOR THESE STRUCTURES AND THE MATERIAL CAN BE DEPOSITED IN A C&D LANDFILL.* PRIOR TO THE DEMOLITION OR REHABILITATION OF ANY STRUCTURE (BRIDGE OR BUILDING), THE CONTRACTOR IS REQUIRED TO SUBMIT THE NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS STANDARD 10-DAY NOTICE OF DEMOLITION TO THE TDEC DIVISION OF AIR POLLUTION CONTROL (PER TDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (JANUARY 1, 2021) SECTIONS 107.08.D AND 202.03).	BRIDGE NO. 30S23910003, SR-351 OVER NOLICHUCKY RIVER AT L.M. 16.17 (30-SR351-16.17)

SEALED BY

BRIAN K. EGLI
REGISTERED ENGINEER
AGRICULTURE
COMMERCE
No. 107196
STATE OF TENNESSEE

12/06/24

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

PROJECT
COMMITMENT

12/6/2024 8:58:41 AM
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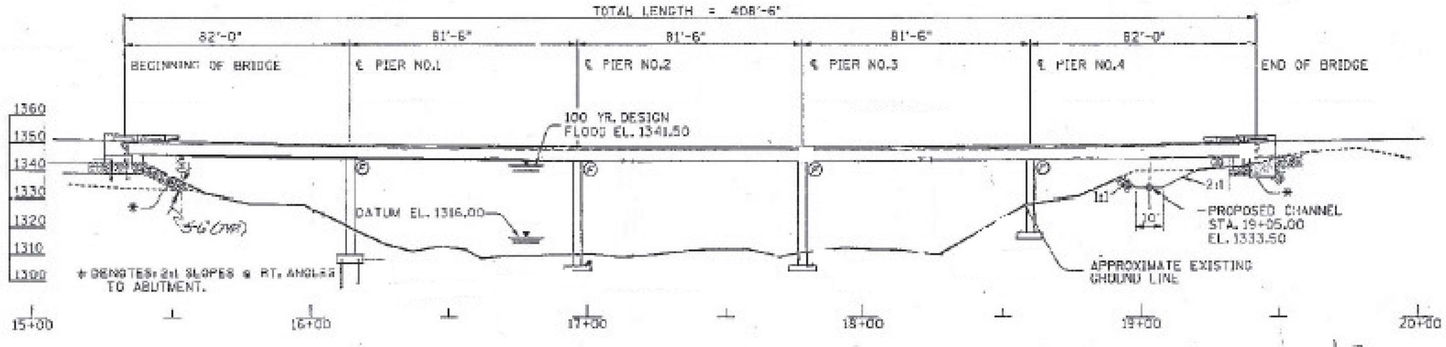
PS&E NO.: 30S351-S3-004

PROJECT NO.	YEAR	SHEET NO.
ER-BR-STP-351(23)	2025	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
	- -		
	- -		
	- -		
	- -		
	- -		



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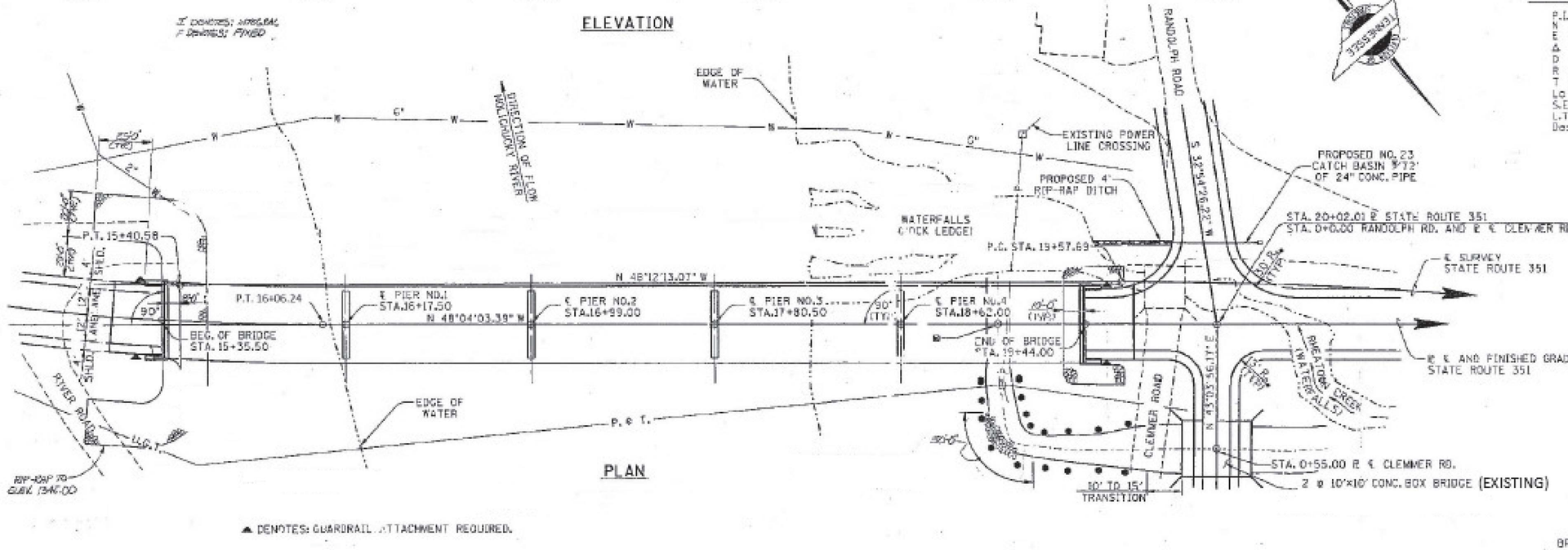

PLAN

▲ DENOTES: GUARDRAIL ATTACHMENT REQUIRED.

GRADE SKETCH
(STATE ROUTE 351)

℄ CURVE DATA

P.I. 14+55.44
N 697774.42
E 2947390.28
Δ 15°10'09" RT.
D 5°00'
R 1145.92'
T 152.59'
Lc 303.39'
S.E. +0.071 %
L.T. 220'
Design Speed = 50 m.p.h.

℄ SURVEY CURVE DATA

P.I. 13+88.44
N 697718.16
E 2947426.67
Δ 15°18'19.09" RT.
D 5°00'
R 1145.92'
T 153.97'
Lc 306.11'
S.E. +0.0 %
L.T. '
Design Speed = 40 m.p.h.

LIST OF DRAWINGS

DRAWING	DRAWING NO.	REV. DATE
SIGNATURE SHEETS	STRUCTURE-SIGN1	
TITLE SHEET	1	
INDEX AND STANDARD DRAWINGS	1A	
PROJECT COMMITMENTS	1B	
LAYOUT OF BRIDGE TO BE REPAIRED	BR-132-960	
GENERAL NOTES AND ESTIMATED BRIDGE QUANTITIES	BR-132-961	
SUPERSTRUCTURE DETAIL SHOWING LIMITS OF REPAIR	BR-132-962	
SUPERSTRUCTURE DETAILS TYPICAL SECTION	BR-132-963	

SCOPE OF WORK

REMOVE 250 '-0" OF DAMAGED SECTION OF BRIDGE RAIL (WEST SIDE OF THE BRIDGE ONLY).

REMOVE AND REPAIR DAMAGED AREA OF THE CANTILEVER SLAB.

WHEN POURING BACK THE DAMAGED CANTILEVER SLAB INSTALL PROJECTING BARS FOR THE NEW RAIL POSTS.

REPLACE DAMAGED BRIDGE RAIL AND POSTS (STD-7-1).

APPLY TYPE 1 THIN EPOXY OVERLAY (EPOXY-URETHANE) TO THE STRUCTURE.

TRAFFIC CONTROL MEASURES INCLUDING SIGNS, PORTABLE BARRIER RAIL, ATTENUATORS, AND THE TEMPORARY TRAFFIC SIGNAL CURRENTLY ON SITE TO BE REMOVED AND REPLACED WITH EQUIVALENT ITEMS. SEE T-WZ-32 THROUGH 35 FOR SIGN AND SIGNAL INFORMATION. COORDINATE THE EXISTING EQUIPMENT REMOVAL WITH THE FIELD ENGINEER.

SEALED BY

12/06/24

PIN NO.: 135866.27

DESIGN BY:	R. CHRISTY	DATE: 10 / 2024
DRAWN BY:	G. YOUNG	DATE: 10 / 2024
SUPERVISED BY:	B. EGLI	DATE: 10 / 2024
CHECKED BY:		DATE: 10 / 2024

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

LAYOUT OF BRIDGE TO BE REMOVED S.R. 351 OVER NOLICHUCKY RIVER BR. I.D. NO. 30S23910003 BRIDGE NO. 30-SR351-16.17 STATION 17+39.75 GREENE COUNTY 2025

BR-132-960

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GENERAL NOTES

SPECIFICATIONS & LOADING

CONSTRUCTION SPECIFICATIONS: STANDARD ROAD AND BRIDGE SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION (JANUARY 1, 2021 EDITION), AND THE 4TH EDITION (2017) AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS WITH INTERIMS.

DESIGN SPECIFICATIONS: 9TH EDITION (2020) AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS WITH INTERIMS, AND THE 2ND EDITION (2011) AASHTO GUIDE SPECIFICATIONS FOR LRFD SEISMIC BRIDGE DESIGN WITH INTERIMS

STEEL, CONCRETE, REINFORCING, AND FORMING

REINFORCING STEEL: SHALL BE ASTM A615 GRADE 60. STANDARD CRSI HOOK DETAILS APPLY UNLESS OTHERWISE NOTED ON BILL OF STEEL. SPACING DIMENSIONS ARE CENTER TO CENTER AND COVER DIMENSIONS ARE CLEAR DISTANCE UNLESS OTHERWISE NOTED. PLACING TOLERANCES ARE ± 1/2" FOR COVER. THE SUFFIX E FOR BARS SO MARKED, DENOTES EPOXY COATED REINFORCEMENT, SEE SPECIAL PROVISION 907A

NOTE: MECHANICAL BAR SPLICERS MUST BE ON THE TDOT QUALIFIED PRODUCTS LIST 27. THE BAR SPLICERS SHALL MEET AASHTO LRFD SPECIFICATIONS FOR MECHANICAL CONNECTION. WHEN EPOXY COATING IS REQUIRED, THE EXPOSED THREADS SHALL BE REPAIRED AFTER SPLICING ACCORDING TO SECTION 907 OF THE STANDARD SPECIFICATIONS. THE COST OF FURNISHING THE BAR SPLICERS, (AND EPOXY COATING WHEN REQUIRED) INCLUDING ALL LABOR AND MATERIALS NECESSARY FOR COMPLETE INSTALLATION, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE REINFORCING BARS, UNLESS NOTED OTHERWISE IN PLANS

CONCRETE: TO BE CLASS A (CAST-IN-PLACE) F'C = 3000 PSI EXCEPT AS NOTED OTHERWISE

CONCRETE CURING: ALL CONCRETE IN REPAIR AREAS SHALL BE CURED ACCORDING TO THE STANDARD SPECIFICATIONS.

BRIDGE DECKS: CLASS D CONCRETE FOR BRIDGE DECKS SHALL BE IN ACCORDANCE WITH SECTION 604 OF THE STANDARD SPECIFICATIONS

MISCELANEOUS GENERAL NOTES

DEMOLITION: THE CONTRACTOR SHALL TAKE SPECIAL CARE TO PROTECT ANY PARTS OF THE STRUCTURE THAT ARE NOT TO BE REMOVED SPECIFICALLY. FOR FULL DEPTH SLAB REMOVAL, EXCEPT OVER BEAMS, THE MAXIMUM HAMMER SIZE IS 90 POUND CLASS. FOR PARTIAL DEPTH SLAB REMOVAL AND ANY WORK OVER THE BEAMS, THE MAXIMUM HAMMER SIZE IS 60 POUND CLASS; CHIPPING HAMMERS OF THE 15 POUND CLASS SHALL BE USED TO REMOVE CONCRETE FROM BENEATH ANY REINFORCING STEEL. SAWING OR CUTTING OF THE CONCRETE IS ACCEPTABLE AS LONG AS ANY SPECIFIED PROJECTION OF THE EXISTING REINFORCING STEEL IS MAINTAINED.

THE CONTRACTOR IS NOT ALLOWED TO USE A HYDRAULIC RAM MOUNTED ON A BACKHOE (COMMONLY CALLED A HOE RAM), MINI EXCAVATOR, OR OTHER EQUIPMENT FOR ANY CONCRETE REMOVAL.

FINISHING CONCRETE SURFACES: CONCRETE FINISHING SHALL BE IN ACCORDANCE WITH SECTION 604.21 OF THE STANDARD SPECIFICATIONS. A CALSS I FINISH FOLLOWED BY AN APPLIED TEXTURE FINISH SHALL BE USED IN LIEU OF A CLASS II FINISH. NO TEXTURE FINISH SHALL BE APPLIED PRIOR TO COMPLETION OF PAVING AND HAULING OPERATIONS AT THE BRIDGE SITE. THE APPLIED TEXTURE FINISH SHALL BE MEASURED AND PAID FOR UNDER ITEM NO. 604-04.02.

SPECIAL NOTES

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING REPAIRS AND CONSTRUCTION.

FORMS AND FALSEWORK: ALL CONCRETE FORMS AND FALSEWORK SHALL BE REMOVED AFTER REPAIRS ARE COMPLETED. COST OF REMOVAL SHALL BE INCLUDED IN ITEMS BID ON. THIS WORK SHALL BE COMPLETED BEFORE FINAL PAYMENT IS APPROVED.

BRIDGE RAIL SYSTEM: BUILD BRIDGERAILS ACCORDING TO STANDARD DRAWING STD-7-1. (MATCH EXISTING RAIL HEIGHT).

TABULATED TRAFFIC CONTROL ITEMS

MUTC SIGN NO.	LEGEND	SIGN IN INCHES L x W	S.F.	TOTAL NUMBER REQUIRED	ITEM NO. 712-06 S.F.
W20-1	ROAD WORK 1/2 MILE	48" x 48"	16	2	32
W20-4	ONE LANE ROAD 1500 FEET	48" x 48"	16	2	32
W20-1	ROAD WORK AHEAD	48" x 48"	16	3	48
W3-3	SIGNAL AHEAD (SYMBOL)	36" x 36"	9	5	45
SPECIAL	BE PREPARED TO STOP	48" x 48"	16	2	32
R10-6	STOP HERE ON RED	36" x 24"	6	5	30
SPECIAL	MAINTAIN XX MPH SPEED	36" x 42"	10.5	2	21
R10-11A	NO TURN ON RED	36" x 42"	10.5	3	31.5
SPECIAL	MAXIMUMX MINUTE RED	48" x 42"	14	5	70
W1-4AR	LANE SHIFT SYMBOL	30" x 30"	6.25	1	6.25
G20-2	END ROAD WORK	36" x 18"	4.5	2	9
				TOTAL	356.75

PIN NO.: 135866.27
DESIGN BY: R. CHRISTY DATE: 10 / 2024
DRAWN BY: G. YOUNG DATE: 10 / 2024
SUPERVISED BY: B. EGLI DATE: 10 / 2024
CHECKED BY: DATE: 10 / 2024

THIN EPOXY OVERLAY NOTES

TYPE 1 THIN EPOXY OVERLAY SYSTEM – USE DECK PRETREATMENT/PRIMER PER MANUFACTURER'S RECOMMENDATION, AND 2 LIFTS OF AN EPOXY-URETHANE COPOLYMER AND AGGREGATE. TYPE 1 OVERLAY SHALL BE APPLIED MECHANICALLY USING METERED EQUIPMENT; HAND MIXING OF MATERIAL IS NOT PERMITTED. THIN OVERLAY SYSTEM SHALL BE FROM THE QUALIFIED PRODUCTS LIST 23.005 TYPE 1 THIN OVERLAY (EPOXY URETHANE). MINIMUM OVERLAY THICKNESS SHALL BE 3/8 INCH.

APPLICATION EQUIPMENT SHOULD :

A) BE CAPABLE OF METERING, MIXING AND DISTRIBUTING THE POLYMER AND PRETREATMENT TO MANUFACTURER'S RECOMMENDATION.
B) USE AN APPLICATION MACHINE THAT FEATURES POSITIVE DISPLACEMENT VOLUMETRIC METERING PUMPS CONTROLLED BY A HYDRAULIC POWER UNIT.
C) STORE COMPONENTS IN TEMPERATURE CONTROLLED RESERVOIRS CAPABLE OF MAINTAINING 100 DEGREES FAHRENHEIT (PLUS OR MINUS 10 DEGREES) TO INSURE OPTIMAL MIXING.
D) CHECK MIXING RATIO AT THE PUMP OUTLETS AS WELL AS CYCLE COUNTING CAPABILITIES TO MONITOR OUTPUT ON STANDARD FEATURES.
E) USE MOTIONLESS IN-LINE MIXING SO AS TO NOT OVERLY SHEAR THE MATERIAL TO ENTRAP AIR IN THE MIX.
F) MAXIMIZE MATERIAL WORKING TIME BY MIXING IT IMMEDIATELY BEFORE DISPENSING.

AGGREGATE SHALL BE ANGULAR, HAVING LESS THAN 0.2% MOISTURE AND FREE OF DIRT, CLAY, ASPHALT AND OTHER FOREIGN OR ORGANIC MATERIALS. AGGREGATE FOR ALL LAYERS SHALL BE BAUXITE OR FLINT ROCK PRODUCTS FLINT AND MEETS THE FOLLOWING GRADATION:

SIEVE SIZE	% PASSING
NO. 6	95-100
NO. 10	10-35
NO. 20	0-3

FULL AND PARTIAL DEPTH DECK REPAIR SHALL CURE A MINIMUM OF 28 DAYS BEFORE THE OVERLAY IS PLACED. THE 28 DAYS MAY BE WAIVED IF THE OVERLAY MANUFACTURER PROVIDES A METHOD OF TESTING THE REPAIRED AREAS AND APPROVES THE PLACEMENT BY LETTER. TRAFFIC SHALL BE ALLOWED TO USE THE BRIDGE DURING THE CURING PERIOD OF THE PATCHES BUT NOT AFTER SHOTBLASTING. MAGNESIUM PHOSPHATE BASED MATERIALS WILL NOT BE ALLOWED.

THE CONCRETE DECK SURFACE SHALL BE CLEANED BY SHOTBLASTING TO REMOVE ANY OIL, DIRT, RUBBER, TRAFFIC STRIPING, OR ANY OTHER POTENTIAL DETRIMENTAL MATERIAL SUCH AS CURING COMPOUND AND LAITANCES, WHICH THE MANUFACTURER AND ENGINEER'S OPINION WOULD PREVENT PROPER BONDING AND CURING OF THE MATERIAL. IN AREAS WHERE SHOTBLASTING EQUIPMENT CAN NOT REACH (I.E., ALONG CURBS AND BRIDGE RAILS) SANDBLASTING IS PERMITTED TO AN EXTENT TO THE ENGINEER'S AND MANUFACTURER'S APPROVAL. IMMEDIATELY BEFORE APPLICATION, ALL PREPARED SURFACES SHALL BE CLEANED WITH COMPRESSED AIR OR VACUUMED TO REMOVE DUST AND DEBRIS. THE CONTRACTOR IS TO PREVENT THE TRACKING OF TACK COAT AND CONSTRUCTION DEBRIS ACROSS THE BRIDGE DECK PRIOR TO APPLICATION OF THE THIN EPOXY OVERLAY. MILLING THE BRIDGE DECK WILL NOT BE AN OPTION FOR TACK COAT OR DEBRIS REMOVAL. REMOVAL SHALL BE AT THE CONTRACTOR'S EXPENSE.

ALL SURFACES THAT ARE TREATED SHALL BE DRY AT THE TIME OF APPLICATION. THE OVERLAY SHALL NOT BE APPLIED WHEN IT HAS RAINED 24 HOURS PRIOR TO, OR RAIN IS FORECAST WITHIN 8 HOURS AFTER, APPLICATION. THE MOISTURE CONTENT IN THE DECK SUBSTRATE SHALL BE TESTED. MOISTURE IS NOT TO EXCEED 4.5 PERCENT WHEN MEASURED BY ELECTRONIC METER. IF THE TEST SHOWS EXCESS MOISTURE, THE DECK SHALL CONTINUE TO DRY BEFORE APPLICATION PROCEEDS.

BLUSHING (A WAXY SURFACE COATING ON THE EPOXY) IS CAUSED BY THE REACTION OF MOISTURE WITH THE HARDENING AGENT. BLUSHING CREATES A SURFACE THAT MAKES FUTURE LAYERS DIFFICULT TO ADHERE. LIFTS THAT SHOW SIGNS OF BLUSHING SHALL BE REMOVED AND REPLACED PRIOR TO APPLICATION OF THE NEXT. THE COST TO REMOVE AND REPLACE THESE AREAS SHALL BE AT THE CONTRACTOR'S EXPENSE.

TRAFFIC, OTHER THAN APPLICATION EQUIPMENT, SHALL NOT BE ALLOWED ON ANY PORTION OF THE DECK THAT HAS BEEN SHOTBLASTED OR WHERE PART OF THE APPLICATION HAS BEEN PLACED.

SEE MANUFACTURER'S RECOMMENDATIONS FOR REQUIRED AMBIENT AND SURFACE TEMPERATURES AND HUMIDITY LIMITS FOR APPLICATION.

THE MANUFACTURER SHALL HAVE A REPRESENTATIVE ON THE JOB SITE AT ALL TIMES DURING APPLICATION AND CURE TIME. THE REPRESENTATIVE, ALONG WITH CONSULTATION WITH ENGINEER, MAY SUSPEND ANY ITEM OF WORK THAT IS SUSPECT AND DOES NOT MEET THE REQUIREMENTS OF THE SPECIFICATIONS. WORK SHALL NOT RESUME UNTIL THE ENGINEER AND REPRESENTATIVE ARE SATISFIED THAT APPROPRIATE REMEDIAL ACTION HAS BEEN TAKEN BY THE CONTRACTOR.

ALL COSTS FOR AGGREGATE, EPOXY FOR MINIMUM OF TWO LIFTS, SURFACE PREPARATION, LABOR AND ANY OTHER MISCELLANEOUS MATERIALS REQUIRED TO PLACE THIN OVERLAY SHALL BE INCLUDED IN ITEM NO. 617-04.01, TYPE 1 THIN EPOXY OVERLAY (EPOXY URETHANE), SY

THICKNESS VERIFICATION: THE PROJECT ENGINEER SHALL BE NOTIFIED OF THE NUMBER OF GALLONS USED ON THE PROJECT WITH NOTARIZED QUANTITY STATEMENTS FROM THE CONTRACTOR AND THE MANUFACTURER. THE CONTRACTOR SHALL VERIFY TO TDOT THAT THE OVERLAY IS AN AVERAGE OF AT LEAST 3/8 INCH THICK AT THREE RANDOM LOCATIONS AGREED UPON BY THE PROJECT ENGINEER AND THE MATERIAL MANUFACTURER REPRESENTATIVE. IF 3/8 INCH AVERAGE IN NOT ACHIEVED, A RETEST SHALL BE PERFORMED IN ADJOINING AREAS. THIN AREAS SHALL BE RE-COATED AS DESCRIBED ABOVE BY THE CONTRACTOR AND RE-VERIFIED AT NO ADDITIONAL COST TO TDOT. THIS VERIFICATION MAY CONSIST OF CORES, HOLES, ETC., BUT IN ALL CASES, ANY DESTRUCTIVE.Y TESTED AREAS SHALL BE REPAIRED BY THE CONTRACTOR BEFORE FINAL ACCEPTANCE BY THE PROJECT ENGINEER.

PS&E NO.: 30S351-S3-004

PROJECT NO.	YEAR	SHEET NO.
ER-BR-STP-351(23)	2025	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
	- -		
	- -		
	- -		
	- -		
	- -		

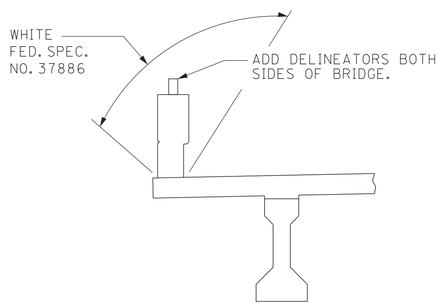
ESTIMATED QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	TOTAL
1	202-04.01	REMOVAL OF STRUCTURES	L.S.	1
6	604-02.03	EPOXY COATED REINFORCING STEEL	LB.	21,437
3	604-03.09	CLASS "D" (BRIDGE DECK)	C.Y.	24
	604-04.02	APPLIED TEXTURE FINISH (EXISTING STRUCTURES)	S.Y.	4,250
	617-04.01	TYPE 1 THIN EPOXY OVERLAY (EPOXY - URETHANE)	S.Y.	1,558
	620-06	CONCRETE RAILING (STD-7-1)	L.F.	250
	705-01.01	GUARDRAIL AT BRIDGE ENDS	L.F.	108
	712-01	TRAFFIC CONTROL	L.S.	1
	712-04.01	FLEXIBLE DRUMS (CHANNELIZING)	EACH	41
	712-06	SIGNS (CONSTRUCTION)	S.F.	357
4	712-02.02	INTERCONNECTED PORTABLE BARRIER	L.F.	410
4	712-02.60	TEMPORARY WORK ZONE CRASH CUSHION (MASH TL-3)	EACH	1
4	712-04.50	BARRIER RAIL DELINEATOR	EACH	68
2	712-09.04	REMOVABLE PAVEMENT MARKING (STOP LINE)	L.F.	60
	712-09.08	REMOVABLE PAVEMENT MARKING (6" LINE)	L.F.	2000
4	716-12.02	ENHANCED FLATLINE THERMO PVMT MRKING (6 IN LINE)	LM	0.284
5	717-01	MOBILIZATION	L.S.	1
7	730-40.02	TEMPORARY TRAFFIC SIGNAL SYSTEM	L.S.	1

ESTIMATED QUANTITIES NOTES

(1) INCLUDES COST OF ALL LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO REMOVE PORTIONS OF THE DECK OVERHANGS AND BRIDGE RAIL FOR THE LIMITS SHOWN IN THE PLANS
(2) BARRIER RAIL DELINEATORS TO BE INSTALLED ON BOTH SIDES OF THE BRIDGE.
(3) INCLUDES ALL COSTS ASSOCIATED TO FORMING AND CASTING NEW CANTILEVER.
(4) INCLUDES ALL THE COST FOR REMOVING THE EXISTING TRAFFIC CONTROL (SIGNS, TEMPORARY BARRIER, ATTENUATORS, AND SIGNAL) AND REPLACING IT WITH AN EQUIVALENT SYSTEM DURING MOBILIZATION.
(5) 500'-0" DOUBLE YELLOW LINE AND 1000'-0" SINGLE WHITE LINE FOR SHOULDER.
(6) INCLUDES THE COST OF MECHANICAL SPLICES QPL 27, REBAR ACCESSORIES AND LABOR FOR MECHANICAL COUPLER INSTALLATION.
(7) FIVE (5) SIGNALS ARE REQUIRED.

NOTE: SQUARE YARD FOR PAVEMENT AT BRIDGE ENDS SHALL BE MEASURED AS ROAD SURFACE AREA AND SHALL INCLUDE ALL CONCRETE, REINFORCING STEEL, JOINT MATERIAL, BRIDGE END DRAIN SYSTEM, SURFACE FINISH AS PER SP604 AND ANY OTHER INCIDENTALS NECESSARY FOR COMPLETE INSTALLATION. PRIOR TO CONSTRUCTION OF THE PAVEMENT AT BRIDGE ENDS, THE CONTRACTOR SHALL SUBMIT A PROPOSED BILL OF STEEL TO THE ENGINEER FOR APPROVAL.



APPLIED TEXTURE FINISH SKETCH

NOTE: INCLUDES ALL COSTS ASSOCIATED WITH APPLYING TEXTURE FINISH TO ALL FACES OF THE BRIDGE RAIL, INCLUDING INTERMITTENT POSTS AND THE UNDERSIDE FACE OF BRIDGE RAIL BETWEEN THE BRIDGE RAIL POSTS. ALSO INCLUDES COST OF SURFACE PREPARATION USING HIGH PRESSURE WATER WASH TO REMOVE ALL LOOSE COATINGS, DEBRIS, ETC., AS DIRECTED BY THE ENGINEER.

SEALED BY

12/06/24

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES AND ESTIMATED QUANTITIES
S.R. 351 OVER
NOLICHUCKY RIVER
BR. I.D. NO. 30S23910003
BRIDGE NO. 30-SR351-16.17
STATION 17+39.75
GREENE COUNTY
2025

BR-132-961

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PS&E NO.: 30S351-S3-004

PROJECT NO.	YEAR	SHEET NO.
ER-BR-STP-351(23)	2025	

REVISIONS

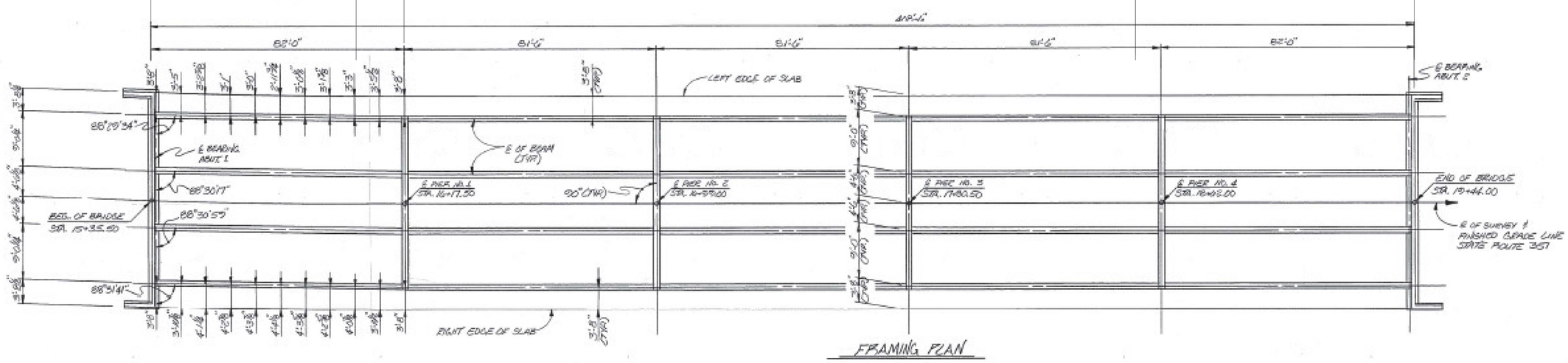
NO.	DATE	BY	BRIEF DESCRIPTION
	- -		
	- -		
	- -		
	- -		
	- -		

70'-0" (±) | 250'-0" (±) | 88'-6" (±)

LIMITS OF CANTILEVER AND BRIDGERAIL REPLACEMENT
(LEFT EDGE OF SLAB)

6'-0" | 238'-0" (SAW CUT REMOVAL LIMITS.) | 6'-0"

☒ DENOTES: CHIP BACK TO MAINTIAN LONGITUDINAL STEEL PROJECTIONS FOR SPLICING



FRAMING PLAN

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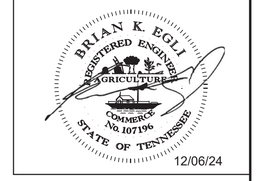

12/06/24

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAIL SHOWING LIMITS OF REPAIR S.R. 351 OVER NOLICHUCKY RIVER BR. I.D. NO. 30S23910003 BRIDGE NO. 30-SR351-16.17 STATION 17+39.75 GREENE COUNTY 2025

BR-132-962

PIN NO.: 135866.27
DESIGN BY: R. CHRISTY DATE: 10 / 2024
DRAWN BY: G. YOUNG DATE: 10 / 2024
SUPERVISED BY: B. EGLI DATE: 10 / 2024
CHECKED BY: DATE: 10 / 2024

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PS&E NO.: 30S351-S3-004

PROJECT NO.	YEAR	SHEET NO.
ER-BR-STP-351(23)	2025	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
	- -		
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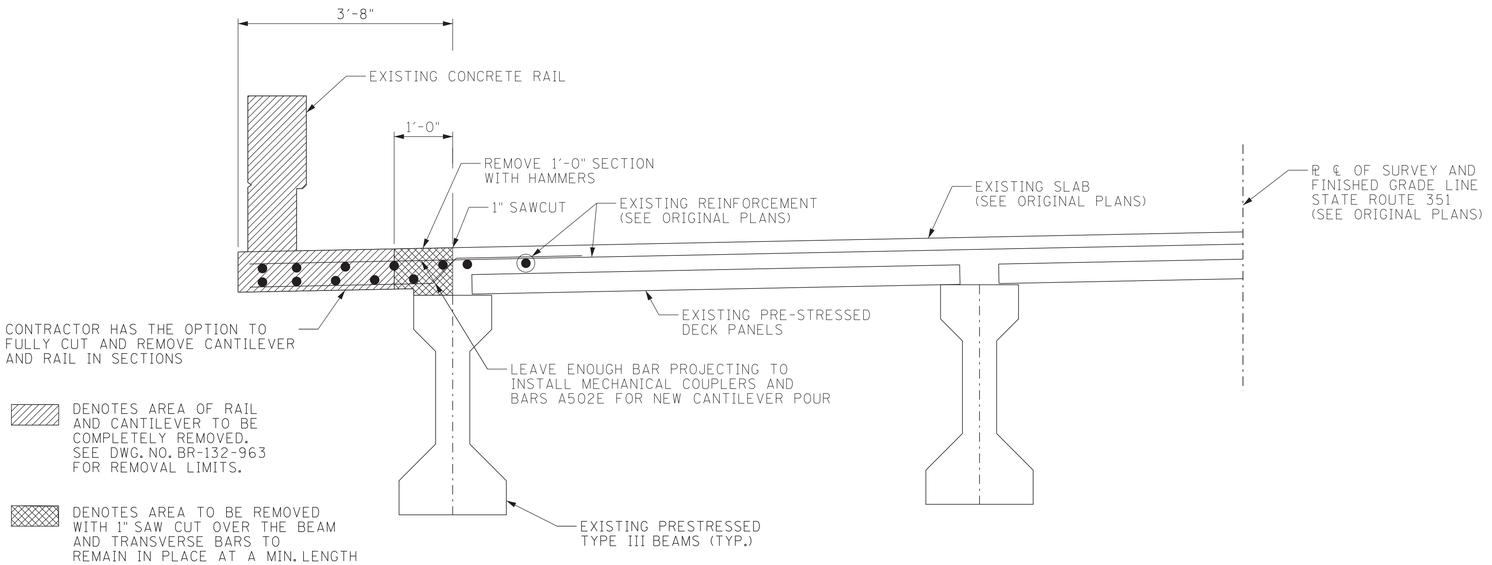


EXISTING TYPICAL SECTION

LOOKING FORWARD ON SURVEY
(SHOWING REMOVAL OF CANTILEVER AREAS)

BILL OF STEEL SUPERSTRUCTURE (EPOXY)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A501E	SLAB	5	28					60'-0"
*A502E	SLAB	5	1002					2'-6"
A503E	SLAB	5	28					5'-8"
A800E	SLAB	8	21					20'-8"
A803E	SLAB	8	6					50'-0"

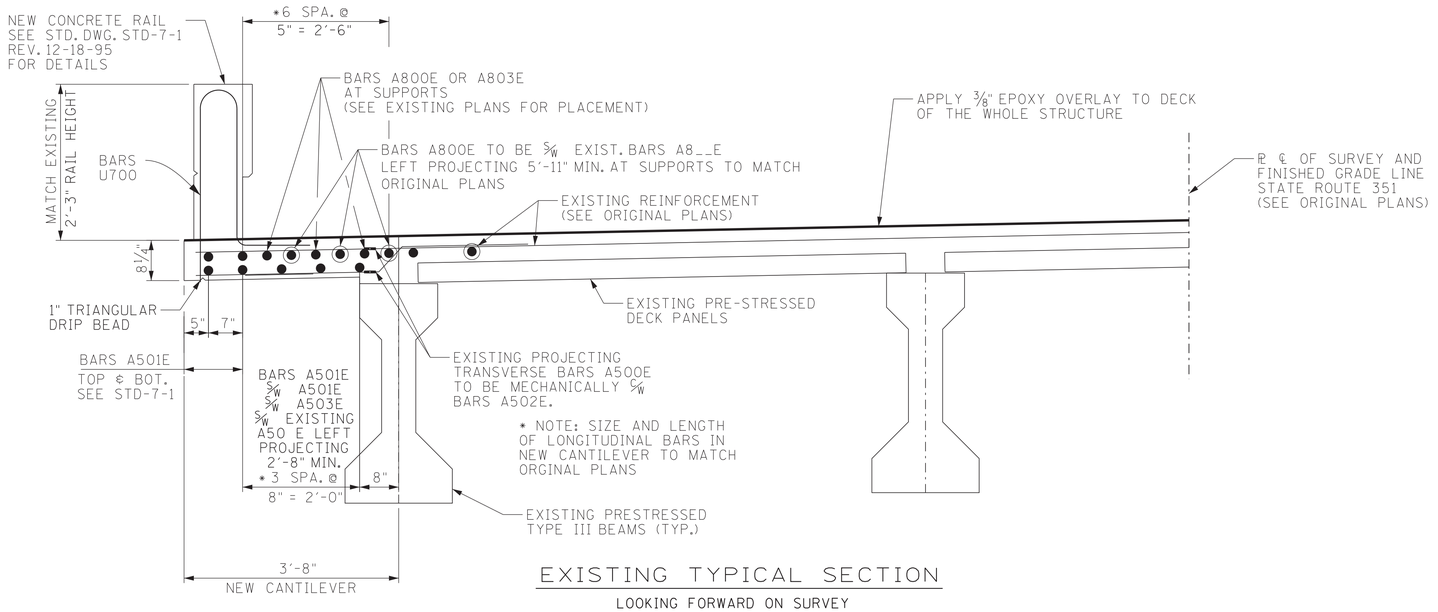
REINFORCING SHOWN SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM NO. 604-02.03 EPOXY COATED REINFORCING STEEL, LB.

* CONTRACTOR TO ADJUST BAR LENGTH BASED ON MECHANICAL COUPLER USED.

COST OF MECHANICAL COUPLERS ARE TO BE INCLUDED IN THE COST OF ITEM 604-02.03.

SUPERSTRUCTURE (REGULAR)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
U700	SLAB	7	208	6 1/2"	2'-4"	2'-0"		5'-1"



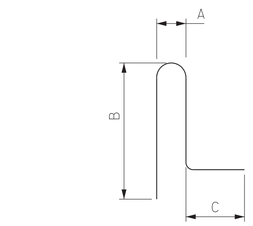
EXISTING TYPICAL SECTION

LOOKING FORWARD ON SURVEY
(SHOWING HALF TYPICAL SECTION FOR NEW CANTILEVER)

NOTE: NO PORTION OF THE BRIDGERAIL SHALL BE PLACED UNTIL THE DECK SLAB IS IN PLACE AND CURED.

WHEN PLACING SLAB, PROVISIONS SHALL BE MADE FOR SETTING REINFORCEMENT FOR THE BRIDGERAIL POSTS.

THE OUTSIDE EDGE OF SLAB AND BRIDGERAIL SHALL CONFORM TO HORIZONTAL CURVE.



BARS U700
(SEE REFERENCE DWG. STD-7-1 REV. 12-18-95)

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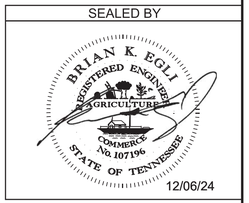

12/06/24

PIN NO.: 135866.27
DESIGN BY: R. CHRISTY DATE: 10 / 2024
DRAWN BY: G. YOUNG DATE: 10 / 2024
SUPERVISED BY: B. EGLI DATE: 10 / 2024
CHECKED BY: DATE: 10 / 2024

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
TYPICAL SECTION
S.R. 351 OVER
NOLICHUCKY RIVER
BR. I.D. NO. 30S23910003
BRIDGE NO. 30-SR351-16.17
STATION 17+39.75
GREENE COUNTY
2025

BR-132-963

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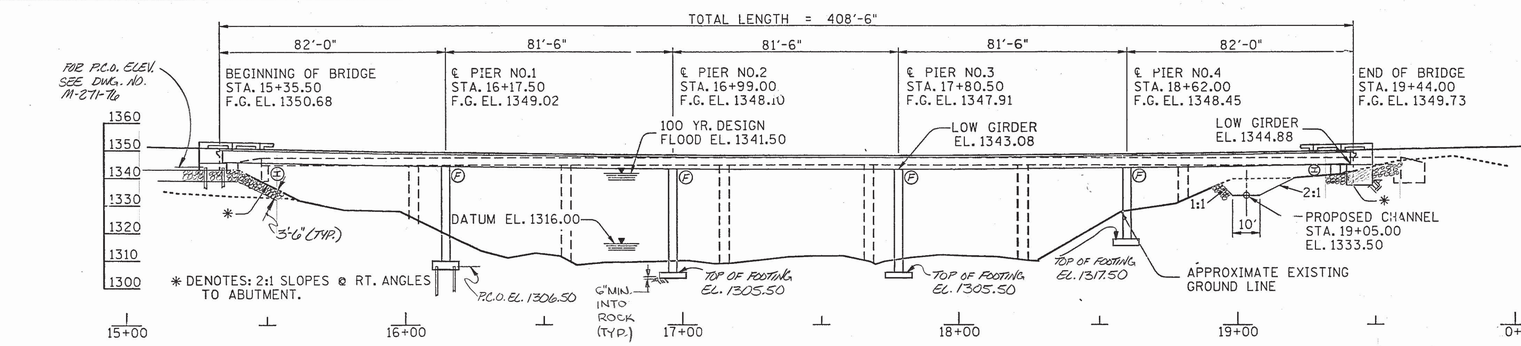
30S351APL.DGN



I DENOTES: INTEGRAL
F DENOTES: FIXED

ELEVATION
(SCALE: 1" = 25'-0")

HYDRAULIC DATA

DRAINAGE AREA = 1030 SQ. MILES.
DESIGN DISCHARGE (100 YR.) = 117,320 CFS.
WATER AREA PROVIDED BELOW EL. 1341.5 = 9,330 SQ. FT.
100 YEAR VELOCITY = 12.6 FT./SEC.
100 YR. BRIDGE BACKWATER = 0.38 FT.
ROADWAY OVERTOPPING ELEV. = 1348.0 .

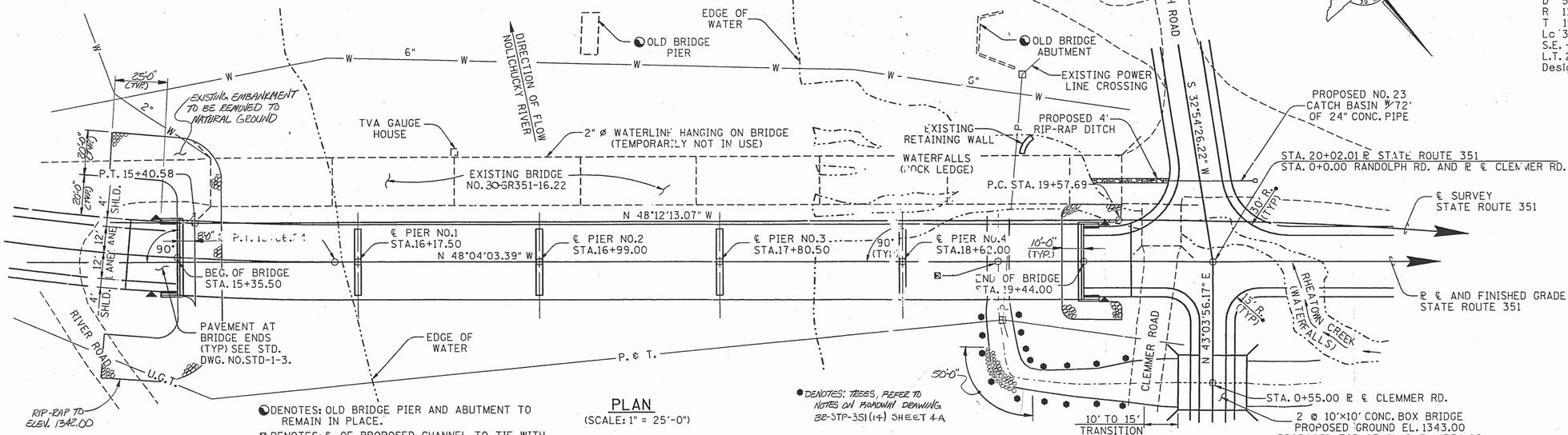
NOTE:- MAINTAIN TRAFFIC ON EXISTING STRUCTURE DURING CONSTRUCTION.

CONST. NO. 30016-3214-94

PROJECT NO.	YEAR	SHEET NO.
BR-STP-351(14)	1992	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



● DENOTES: TREES, REFER TO NOTES ON ROADWAY DRAWING BE-STP-351(14) SHEET 4-A

PLAN
(SCALE: 1" = 25'-0")

● DENOTES: OLD BRIDGE PIER AND ABUTMENT TO REMAIN IN PLACE.

℞ DENOTES: ℄ OF PROPOSED CHANNEL TO TIE WITH EXISTING ℄ STA. 19+05.00

▲ DENOTES: GUARDRAIL ATTACHMENT REQUIRED.

℞ CURVE DATA

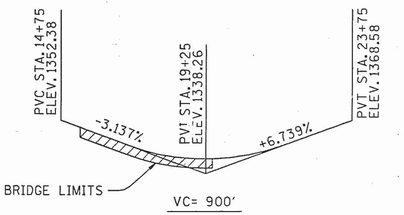
P.I. 14+55.44
N 697774.42
E 2947390.28
Δ 15°10'09" RT.
D 5°00'
R 1145.92'
T 152.59'
Lc 303.39'
S.E. +0.071 %
L.T. 220'
Design Speed = 50 m.p.h.

℄ SURVEY CURVE DATA

P.I. 13+88.44
N 697718.16
E 2947426.67
Δ 15°18'19.09" RT.
D 5°00'
R 1145.92'
T 153.97'
Lc 306.11'
S.E. +0.0 %
L.T.
Design Speed = 40 m.p.h.

EXISTING BRIDGE: (30-SR351-16.22)

EXISTING BRIDGE CONSISTS OF 8 SIMPLY SUPPORTED STEEL I-BEAM SPANS WITH CONCRETE DECK AND WEARING SURFACE. ALL SUBSTRUCTURES ARE CONCRETE. TOTAL BRIDGE LENGTH = 411'-0" AND BRIDGE WIDTH (OUT-TO-OUT) = 20'-5"



GRADE SKETCH
(STATE ROUTE 351)

LIST OF DRAWINGS

	DWG. NO.	LAST REV.
LAYOUT	M-271-70	
GENERAL NOTES & EST. QUANTS.	M-271-71	
FOUNDATION DATA	M-271-72	
SUPERSTRUCTURE	M-271-73	
SUPERSTRUCTURE DETAILS	M-271-74	
PRESTRESSED I-BEAM DETAILS	M-271-75	8-19-92
ABUTMENT NO. 1	M-271-76	
ABUTMENT NO. 2	M-271-77	
PIER NO. 1	M-271-78	
PIERS NO. 2, 3, & 4	M-271-79	
BILL OF STEEL	M-271-80	
BILL OF STEEL	M-271-81	

LIST OF STANDARD DWGS.

	DWG. NO.	LAST REV.
REINFORCED CONCRETE PAVEMENT AT BRIDGE ENDS	STD-1-3	12-16-91
STD. PRECAST, PRESTRESSED BRIDGE DECK PANELS DESIGN CRITERIA	STD-4-1	7-01-91
STD. PRECAST, PRESTRESSED BRIDGE DECK PANELS GENERAL DETAILS	STD-4-2	7-01-91
TENN. STD. PRECAST, PRESTRESSED DECK PANELS CONSTRUCTION DETAILS	STD-4-3	7-01-91
STD. PILE DETAILS	STD-5-1	7-01-91
STD. PILE DETAILS	STD-5-2	7-01-91
* STANDARD SEISMIC DETAILS	STD-6-1	3-30-92
* STD. CONCRETE BRIDGE RAIL	STD-7-1	3-30-92
REINF. BAR SUPPORT DETAILS FOR CONCRETE SLABS	STD-9-1	7-1-91
* MISC. ABUTMENT & DRAINAGE DETAILS	STD-10-1	5-11-92
GUARDRAIL ATTACHMENT & TRANSITION DETAILS	STD-12-1	7-1-91

LIST OF SPECIAL PROVISIONS

	PROV. NO.	LAST REV.
REVISIONS AND ADDITIONS TO STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION MARCH 1, 1981	100	5-11-92
APPROVAL OF SHOP DRAWINGS	105A	7-21-87
PRECAST PRESTRESSED BRIDGE DECK PANELS	604P	5-11-92
CONCRETE STRUCTURES	604	12-16-91
CONTRACTOR-MIX DESIGN AND TESTING STRUCTURAL CONCRETE	604CX	7-27-92
RIDEABILITY OF BRIDGE DECKS AND ROADWAY APPROACHES	604R	3-30-92
PRECAST PRESTRESSED CONCRETE BRIDGE MEMBERS	615	12-16-91
MACHINED RIP-RAP	709	5-04-87
EPOXY COATED REINFORCING STEEL	907A	3-25-85

* DENOTES: THESE STANDARDS ARE TO BE PRINTED WITH THE PLANS.

2012 ADT = 1,727
32'-0" ROADWAY W/STD-7-1 BRIDGERAIL
DESIGN SPEED = 50 MPH

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

LAYOUT

STATE ROUTE 351
OVER
NOLICHUCKY RIVER
BRIDGE ID NO. 30S23910003
STATION 17+39.75
GREENE COUNTY
1992

DESIGNED BY B. PATEL DATE 6-92
DRAWN BY M. SUEOAM DATE 6-92
SUPERVISED BY J. FIELDS & H. PATE DATE 6-92
CHECKED BY B. PATEL DATE 7-92

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-271-70

GN025F.DGN

CONST. NO. 30016-3214-94

PROJECT NO.	YEAR	SHEET NO.
BR-STP-351(14)	1992	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

GENERAL NOTES

SPECIFICATIONS: STANDARD ROAD AND BRIDGE SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION. (MARCH 1981 EDITION).

LOADING: HS20-44.

DESIGN SPECIFICATIONS: AASHTO 1989 EDITION WITH ADDENDA AND "GUIDE SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES" 1983 EDITION WITH ADDENDA. (SEISMIC PERFORMANCE CATEGORY "B" WITH ACCELERATION COEFFICIENT 0.10).

CONCRETE: TO BE CLASS "A" (CAST IN PLACE). f'c 3,000 PSI (EXCEPT BRIDGE DECK).

CLASS "D" CONCRETE FOR BRIDGE DECKS SHALL BE IN ACCORDANCE WITH SECTION 604 OF THE STANDARD SPECIFICATIONS EXCEPT AS MODIFIED BY SPECIAL PROVISION 604-CX.

BRIDGE DECK SURFACE FINISH: TO BE IN ACCORDANCE WITH NOTE C, SHEET 2, OF SPECIAL PROVISION 604.

BRIDGE DECK FORMS: BRIDGE DECK FORMS FOR CONCRETE DECKS SHALL BE CONSTRUCTED USING EITHER REMOVABLE FORMS OR PERMANENT FORMS. PERMANENT FORMS MAY BE EITHER REMAIN-IN-PLACE STEEL OR PRECAST, PRESTRESSED CONCRETE PANELS. IN EITHER CASE, FORMS SHALL BE ATTACHED BY MEANS OTHER THAN WELDING TO SUPPORT MEMBERS. THE CONTRACTOR SHALL TAKE STEPS TO ASSURE THE STABILITY OF THE EXTERIOR GIRDER AGAINST TWISTING OR OVERTURNING DURING SLAB POURING OPERATIONS. SEE STANDARD DRAWINGS STD-4-1, 2 AND 3 AND SPECIAL PROVISION 604P.

WHEN THE WIDTH OF THE OVERHANG EXCEEDS THE DEPTH OF THE EXTERIOR GIRDER, DETAILS AND DESIGN CALCULATIONS FOR THE CANTILEVER SUPPORT SYSTEM SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. IF THE USE OF PERMANENT DECK FORMS REQUIRES ADDITIONAL SLAB THICKNESS, THE CONTRACTOR WILL BE REQUIRED TO REDESIGN THE GIRDERS WHEN THE SLAB THICKNESS IS INCREASED MORE THAN 1½ INCHES. ALL CHANGES TO THE GIRDERS SHALL BE AT THE CONTRACTOR'S EXPENSE.

REINFORCING STEEL: TO BE ASTM A615 GRADE 60. STANDARD CRSI HOOK DETAILS APPLY UNLESS OTHERWISE NOTED ON BILL OF STEEL. SPACING DIMENSIONS ARE CENTER TO CENTER AND COVER DIMENSIONS ARE CLEAR DISTANCE UNLESS OTHERWISE NOTED. PLACING TOLERANCES ARE ±½" FOR SPACING AND -⅛" OR +⅜" FOR COVER. THE SUFFIX E, FOR BARS SO MARKED, DENOTES EPOXY COATED REINFORCEMENT. SEE SPECIAL PROVISION 907A.

SPECIAL NOTE FOR PIERS 2, 3 & 4:
FOOTINGS FOR PIERS: AFTER EXCAVATION TO ROCK FOR FOOTING HAS BEEN COMPLETED, HOLES 6' DEEP SHALL BE DRILLED AT POINTS DESIGNATED BY THE ENGINEER. FROM THE RESULTS OBTAINED, THE ENGINEER SHALL DETERMINE THE FINAL FOOTING ELEVATIONS. NO REINFORCING STEEL FOR PIER COLUMNS SHALL BE ORDERED UNTIL FINAL FOOTING ELEVATIONS HAVE BEEN DETERMINED.

SPECIAL NOTE: FOUNDATIONS FOR PIER 1 SHALL BE EXCAVATED TO THE BOTTOM OF FOOTING ELEVATIONS SHOWN; ROD SOUNDINGS SHALL THEN BE MADE AS DIRECTED BY THE ENGINEER. FROM THE RESULTS OBTAINED THE ENGINEER WILL DECIDE IF PILES WILL BE USED OR THE FOOTINGS CARRIED TO ROCK. COST OF ROD SOUNDINGS TO BE INCLUDED IN ITEMS BID ON. NO REINFORCING STEEL FOR BENT COLUMNS SHALL BE ORDERED UNTIL FINAL ELEVATIONS HAVE BEEN DETERMINED.

PILES: TO BE HP 10 x 42 DRIVEN TO REFUSAL ON ROCK OR A MINIMUM BEARING OF 55 TONS FOR ABUTMENT 1 & 55 TONS FOR PIER 1.

PILES SHALL BE EQUIPPED WITH CAST STEEL POINTS. CAST STEEL POINTS WITHOUT TEETH ARE ACCEPTABLE. STRUCTURAL STEEL FOR CAST POINTS SHALL CONFORM TO ASTM A-148 90/60 OR ASTM A-27 65/36. ATTACHMENT OF THE CAST STEEL POINTS SHALL BE BY WELDING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND ANSI/AASHTO/AWS D 1.5-88 SPECIFICATIONS. COST OF THE CAST STEEL POINTS SHALL INCLUDE FURNISHING AND INSTALLATION TO THE PILES.

FOUNDATION PREPARATION: ALL PIERS, THE LUMP SUM BID FOR FOUNDATION PREPARATION SHALL BE FULL COMPENSATION TO THE CONTRACTOR FOR THE PREPARATION OF FOUNDATIONS FOR ALL SUBSTRUCTURES PRIOR TO POURING CONCRETE FOR FOOTINGS. THE CONTRACTOR SHALL BE PAID FOR EXCAVATION IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND THE CONTRACT UNIT BID PRICE FOR EACH EXCAVATION ITEM, EXCEPT THAT NO PERCENT INCREASE WILL BE ALLOWED FOR EXTRA DEPTH EXCAVATION. IF COFFERDAMS ARE REQUIRED, THEY SHALL BE IN ACCORDANCE WITH SECTION 204.09 OF THE STANDARD SPECIFICATIONS. THE COST OF ANY COFFERDAMS, SHORING, PUMPING, OR SEAL CONCRETE REQUIRED TO ESTABLISH THE PLANS FOOTING IS TO BE INCLUDED IN THE LUMP SUM PRICE BID FOR FOUNDATION PREPERATION.

BRIDGE RAIL SYSTEM: BUILD BRIDGERAILS ACCORDING TO STANDARD DRAWING STD-7-1.

SPECIAL NOTE FOR UTILITIES: IT IS INTENDED THAT THE COST OF MATERIALS AND LABOR NECESSARY FOR THE COMPLETE INSTALLATION OF UTILITIES SHALL BE BORNE BY OTHERS AND SHALL NOT BE PAID FOR AS A PART OF THIS CONTRACT. THE CONTRACTOR SHALL COOPERATE WITH OTHERS IN THE INSTALLATION OF UTILITIES WITH NO ADDITIONAL COMPENSATION ALLOWED THE CONTRACTOR AS A RESULT.

SHOP DRAWINGS: SEE SPECIAL PROVISION NO. 105A.

RIP-RAP: MACHINED RIP-RAP SHALL BE CLASS "C" IN ACCORDANCE WITH SPECIAL PROVISION 709 AND SHALL BE PAID FOR UNDER ITEM 709-05.09.

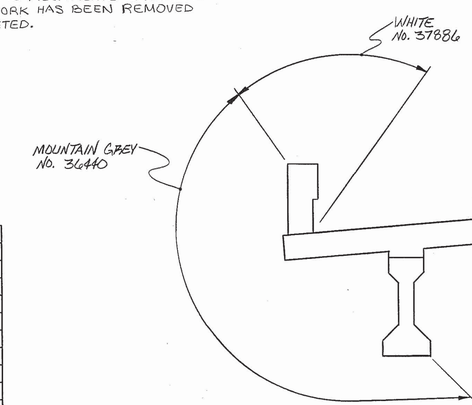
NON-PAY ITEMS: ONLY ITEMS SHOWN ON THE PROPOSAL AS PAY ITEMS WILL BE PAID FOR. COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND INCIDENTALS FOR THE ENTIRE CONTRACT SHALL BE INCLUDED IN THE PRICE BID FOR PAY ITEMS.

THE CONTRACTOR SHALL ERECT POSTING SIGNS AT EACH APPROACH TO THE EXISTING BRIDGE STATING THE LOAD LIMIT TO BE 10 TONS (2 AXLE) AND 18 TONS (3 OR MORE AXLES) ADDITIONALLY, THE CONTRACTOR SHALL MAINTAIN THE EXISTING STRUCTURE IN SUCH A CONDITION AS TO SAFELY PERMIT THE PASSAGE OF LOADS UP TO THE POSTED LIMIT. THE COST OF REQUIRED LABOR AND MATERIALS SHALL BE INCLUDED IN THE PRICE OF OTHER EXISTING ITEMS BID ON.

FINISHING CONCRETE SURFACES: CONCRETE FINISHING SHALL BE IN ACCORDANCE WITH SECTION 604.22 OF THE TENNESSEE STANDARD SPECIFICATION. AN APPLIED TEXTURE FINISH SHALL BE USED IN LIEU OF A CLASS II FINISH. THE COLOR OF THE FINISH SHALL BE SIMILAR TO MOUNTAIN GREY, FEDERAL SPECIFICATION NO. 36440, FEDERAL COLOR STANDARD NO. 595a, EXCEPT THAT THE INSIDE FACE AND THE TOP OF THE PARAPET (RAIL) SHALL BE WHITE, FEDERAL SPECIFICATION NO. 37886. A COLOR SAMPLE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. NO TEXTURE FINISH SHALL BE APPLIED PRIOR TO COMPLETION OF PAVING AND HAULING OPERATIONS AT THE BRIDGE SITE. PAYMENT FOR THE APPLIED TEXTURE FINISH SHALL BE UNDER ITEM 604-04.01.

NOTE: THE FILLS AT THE ENDS OF THE BRIDGE SHALL BE IN PLACE AND THOROUGHLY COMPACTED BEFORE ANY ABUTMENT PILES ARE DRIVEN.

NOTE: THE CONTRACTOR SHALL SUPPORT THE ABUTMENTS UNTIL THE SUPERSTRUCTURE IS IN PLACE, FALSEWORK HAS BEEN REMOVED AND BACKFILLING HAS BEEN COMPLETED.



APPLIED TEXTURE FINISH SKETCH

NOTE: IN ADDITION TO THE PORTIONS SHOWN IN THE SURFACE FINISH SKETCH, THE FOLLOWING EXPOSED CONCRETE IS TO RECEIVE AN APPLIED TEXTURE FINISH: ABUTMENT BEAM AND WINGS AND ENTIRE PIER TO FINISHED GROUND LINE OR DATUM LINE.

ESTIMATED QUANTITIES

	ITEM NO.	DESCRIPTION	UNIT	TOTAL	SUPERSTRUCTURE	ABUT. NO. 1	PIER NO. 1	PIER NO. 2	PIER NO. 3	PIER NO. 4	ABUT. NO. 2
(2)	202-04.01	REMOVAL OF STRUCTURES (EXIST. BRIDGE NO. 30-SR351-16.22)	L.S.	1							
(3)	204-02.01	DRY EXCAVATION (BRIDGES)	C.Y.	262		36	90			108	28
(3)	204-03.01	WET EXCAVATION (BRIDGES)	C.Y.	221			101	49	66	5	
(3)	204-04.01	ROCK EXCAVATION (BRIDGES)	C.Y.	74				27	23	15	9
	204-05	ROCK DRILLING (BRIDGES)	L.F.	54				12	12	12	18
(4)	204-10.01	FOUNDATION PREPARATION (PIER NO.1)(STA.16+17.50)	L.S.	1			1				
(4)	204-10.02	FOUNDATION PREPARATION (PIER NO.2)(STA.16+99.00)	L.S.	1				1			
(4)	204-10.03	FOUNDATION PREPARATION (PIER NO.3)(STA.17+80.50)	L.S.	1					1		
(4)	204-10.04	FOUNDATION PREPARATION (PIER NO.4)(STA.18+62.00)	L.S.	1						1	
(10)	303-01.02	GRANULAR BACKFILL (BRIDGES)	TON	38		8					30
	604-03.09	CLASS 'D' CONCRETE (BRIDGE DECK)	C.Y.	385	385						
	604-02.03	EPOXY COATED REINFORCING STEEL	LB.	138,371	138,371						
(9)	604-03.01	CLASS 'A' CONCRETE (BRIDGES)	C.Y.	336	19	12	71	69	69	59	37
	604-03.02	STEEL BAR REINFORCEMENT (BRIDGES)	LB.	66,718	3109	2944	16,154	14902	14,851	12,839	3919
(1)	604-03.04	PAVEMENT AT BRIDGE ENDS	S.Y.	174		87					87
	604-04.01	APPLIED TEXTURE FINISH (NEW STRUCTURES)	S.Y.	1652							
	606-02.03	STEEL PILES (10-INCH)	L.F.	548		200	348				
	606-02.06	PILE TIPS (STEEL PILES, 10-INCH)	EA.	32		8	24				
(6)	615-01.03	PRESTRESSED CONCRETE I-BEAM (TYPE III)	L.F.	1610							
(8)	620-06	CONCRETE RAILING (STD-7-1)	L.F.	849							
	709-05.09	MACHINED RIP-RAP (CLASS C)	TON	1121		826					295
(7)	710-09.01	6" PERF. PIPE WITH VERTICAL DRAIN SYSTEM	L.F.	86		43					43
	710-09.02	6" PIPE UNDERDRAIN	L.F.	28		14					14

(1) NOTE: SQUARE YARD FOR PAVEMENT AT BRIDGE ENDS SHALL BE MEASURED AS ROAD SURFACE AREA AND SHALL INCLUDE ALL CONCRETE, REINFORCING STEEL, JOINT MATERIAL, BRIDGE END DRAIN SYSTEM, SURFACE FINISH AS PER SP604 AND ANY OTHER INCIDENTALS NECESSARY FOR COMPLETE INSTALLATION. PRIOR TO CONSTRUCTION OF THE PAVEMENT AT BRIDGE ENDS, THE CONTRACTOR SHALL SUBMIT A PROPOSED BILL OF STEEL TO THE ENGINEER FOR APPROVAL.

(2) NOTE: LUMP SUM: EXISTING BRIDGE CONSISTING OF EIGHT SIMPLY SUPPORTED STEEL I-BEAM SPANS WITH A CONCRETE DECK, ASPHALT OVERLAY, AND CONCRETE SUBSTRUCTURES TO BE REMOVED TO 1'-0" BELOW GROUND. (LENGTH 411.0', WIDTH 20.417') ALL SALVAGEABLE MATERIAL TO BECOME PROPERTY OF GREENE COUNTY.

(3) EXCAVATION BASED ON FINAL PROFILE AT THE ABUTMENTS AND EXISTING GROUNDLINE AT THE PIERS.

(4) NOTE: SEE FOUNDATION PREPARATION NOTE THIS SHEET.

(5) NOTE: THE COST OF BITUMINOUS-FIBERBOARD, ETC., AND ALL MISCELLANEOUS JOINT MATERIAL TO BE INCLUDED IN BRIDGE ITEMS BID ON.

(6) NOTE: COST OF ELASTOMERIC PADS AND RUBBER BONDING CEMENT TO BE INCLUDED IN THE COST OF THE PRESTRESSED BEAM.

(7) NOTE: COST OF POLYETHYLENE SHEETING AND ALL MISCELLANEOUS ITEMS NECESSARY FOR INSTALLATION TO BE INCLUDED IN COST OF PERFORATED PIPE.

(8) NOTE: THE COST OF 8 INSERT ASSEMBLIES AND 32 ⅞"ø X 1½" HEX HEAD BOLTS, (A307), TO BE INCLUDED IN ITEM 620-06.

(9) NOTE: THE COST OF ALL MATERIALS AND LABOR NECESSARY FOR THE INSTALLATION OF 32 ANCHOR BOLT ASSEMBLIES SHALL BE INCLUDED IN ITEM 604-03.01, CLASS "A" CONCRETE (BRIDGES).

(10) NOTE: GRANULAR BACKFILL SHALL BE CLASS "A" GRADING "D" MATERIAL. SEE STANDARD DRAWING STD-10-1.

DESIGNED BY A. PATEL DATE 6-92
DRAWN BY K. PHILLIPS DATE 6-92
SUPERVISED BY H. PATE & J. FIELDS DATE 6-92
CHECKED BY B. PATEL DATE 7-92

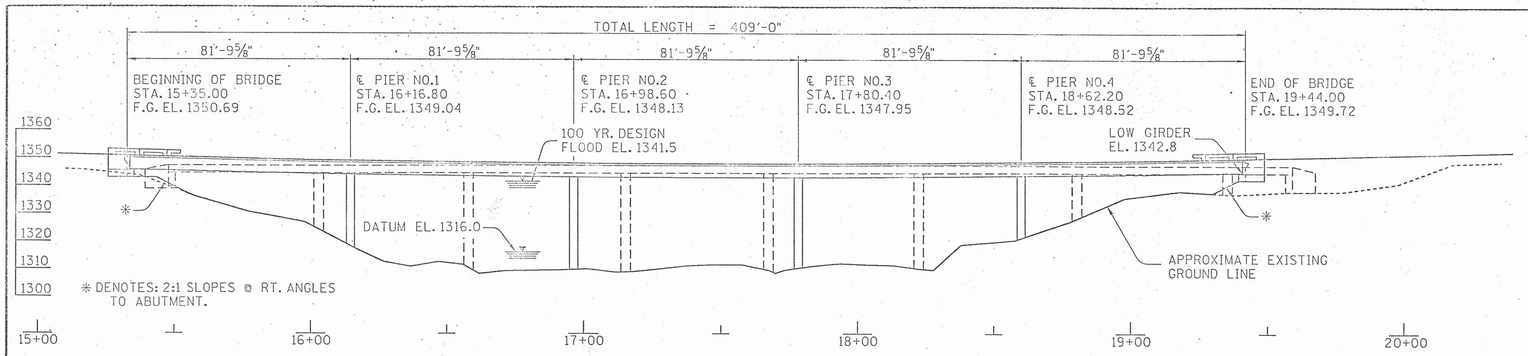
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

GENERAL NOTES AND ESTIMATED QUANTITIES
STATE ROUTE 351
OVER NOLICHUCKY RIVER
STATION 17+39.75
GREENE COUNTY
1992

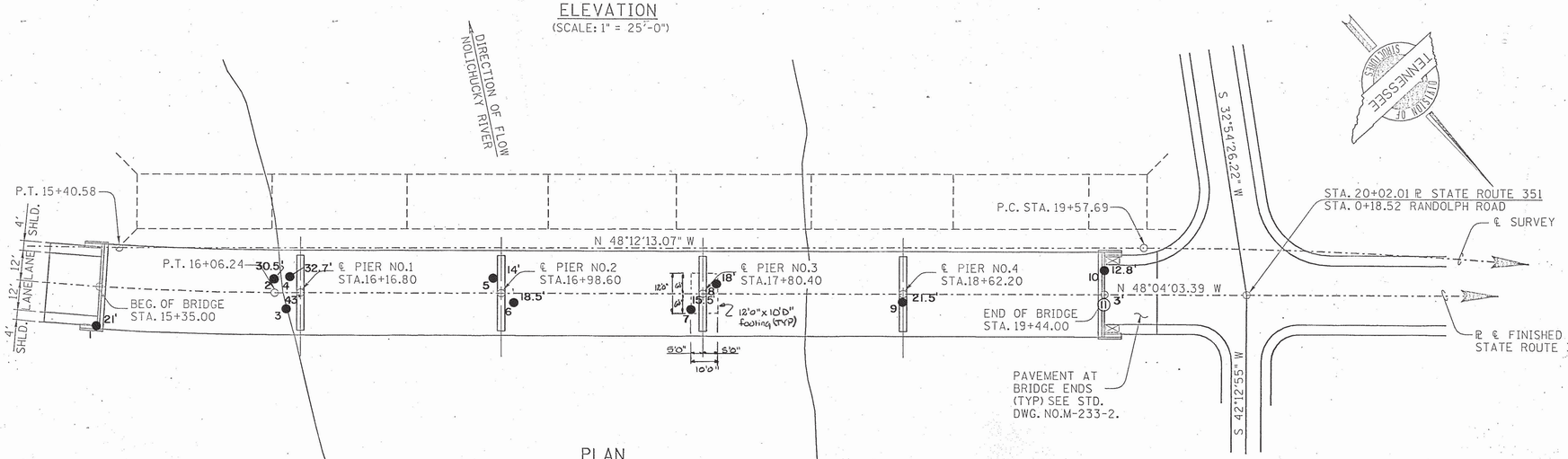
CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-271-71

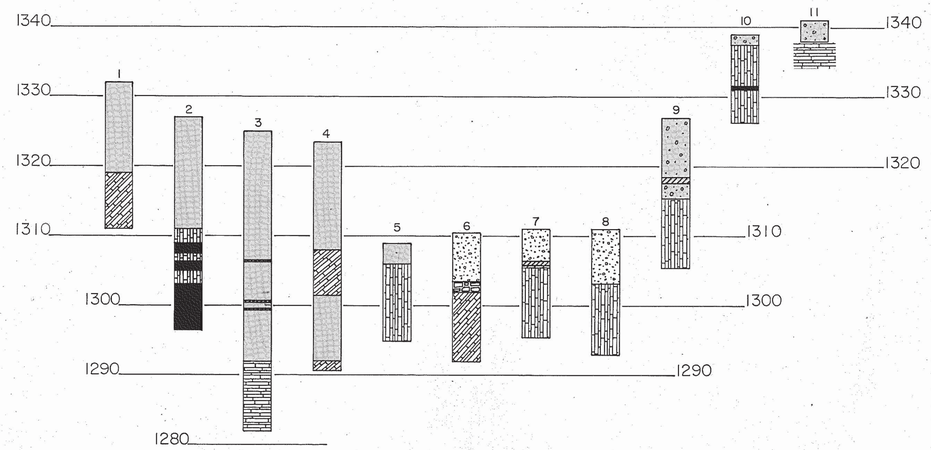
30S351APL.DGN



ELEVATION
(SCALE: 1" = 25'-0")



PLAN
(SCALE: 1" = 25'-0")



CAVITY
SANDY CLAY
SANDY CLAY WITH COBBLES
SAND AND COBBLES
POSSIBLE BOULDER
WEATHERED LIMESTONE
LIMESTONE

WASHBORE ⑪ 3' TERMINATED DEPTH
21' CORE
HOLE NO. 2

1. G. 1332.0 R. 1319.0		7. G. 1311.0 R. 1305.5	
2. G. 1327.0 R. 1311.2		8. G. 1311.0 R. 1303.2	
3. G. 1325.0 R. 1292.0		9. G. 1327.0 R. 1315.5	
4. G. 1323.5 R. 1308.0		10. G. 1339.0 R. 1337.5	
5. G. 1309.0 R. 1306.0		11. G. 1341.0 R. 1338.0	
6. G. 1310.5 R. 1303.5			

℄ SURVEY CURVE DATA

P.I. 13+88.44
N 697718.16
E 2947426.67
Δ 15°18'19.09" RT.
D 5°00'
R 1145.92'
T 153.97'
Lc 306.11'
S.E. +0.0 %
L.T.
Design Speed = m.p.h.

℞ CURVE DATA

P.I. 14+55.44
N 697774.42
E 2947390.28
Δ 15°10'09" RT.
D 5°00'
R 1145.92'
T 152.59'
Lc 303.39'
S.E. +0.071 %
L.T. 220'
Design Speed = 50 m.p.h.

CONST. NO. 30016-3214-94

PROJECT NO.	YEAR	SHEET NO.
BR-STP-351(14)	1992	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

HYDRAULIC DATA

DRAINAGE AREA = 1030 SQ. MILES.
DESIGN DISCHARGE (100 YR.) = 117,320 CFS.
WATER AREA PROVIDED BELOW EL. 1341.5 = 9,330 SQ. FT.
100 YEAR VELOCITY = 12.6 FT./SEC.
100 YR. BRIDGE BACKWATER = 0.38 FT.
ROADWAY OVERTOPPING ELEV. = 1348.0 .

NOTES:

REQUIRED:

1) SUFFICIENT GROUND, ROCK AND CORING INFORMATION FOR BRIDGE FOUNDATION.

2) APPROXIMATE EXISTING GROUND AND ROCK LINE.

BENCHMARKS:

1) B.M. #1 EL. 1355.87
SURVEY CONTROL MARKER
23' RT. STA. 12+05

2) B.M. #2 EL. 1353.81
SURVEY CONTROL MARKER
11' RT. STA. 21+15

NOTE: THIS DRAWING IS FOR FOUNDATION DATA ONLY AND IS NOT TO BE USED AS A LAYOUT.

BRIDGE ID NO. 30S23910003
STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

FOUNDATION DATA STATE ROUTE 351 OVER NOLICHUCKY RIVER STATION 17+39.75 GREENE COUNTY 1992

DESIGNED BY R. PATEL /H. PATE DATE 7-91
DRAWN BY KEITH DOUGLAS DATE 8-91
SUPERVISED BY K.D.F./PATE/BURKE DATE 8-91
CHECKED BY B. PATEL DATE 7-92

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

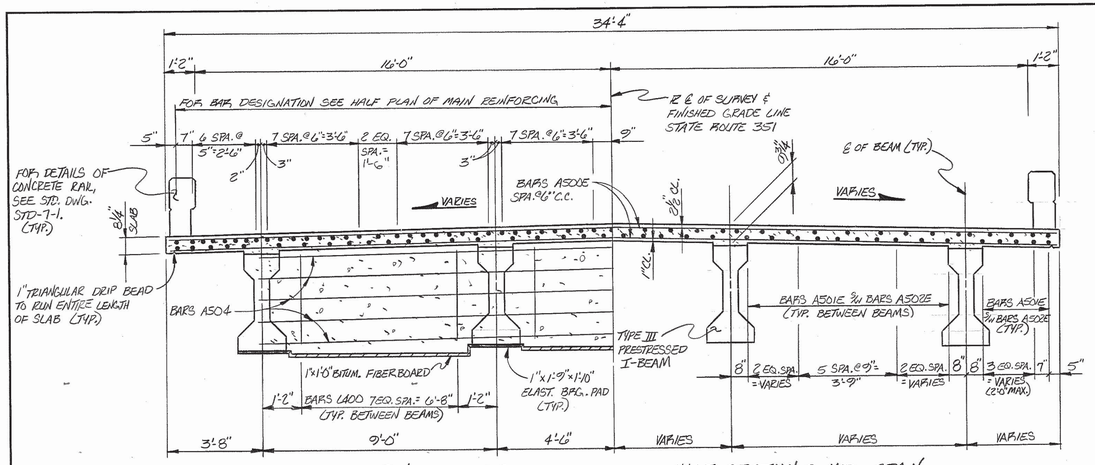
M-271-72

CONST. NO. 30016-3214-94

PROJECT NO.	YEAR	SHEET NO.
BRS-STP-351(14)	1992	

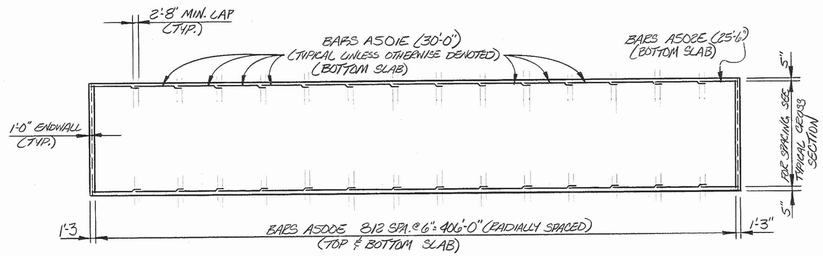
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



HALF-SECTION @ SUPPORT — HALF-SECTION @ MID-SPAN

TYPICAL CROSS-SECTION
(LOOKING FOREWARD ON SURVEY)

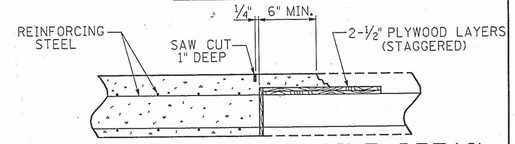


SLAB PLAN

NOTE: WHEN POURING SLAB, PROVISIONS SHALL BE MADE FOR SETTING REINFORCING STEEL FOR BRIDGE RAIL. THE BRIDGE RAIL SHALL NOT BE POURED UNTIL THE SLAB IS POURED AND CURED. ALSO SEE DRAWING NO. STD-7-1.

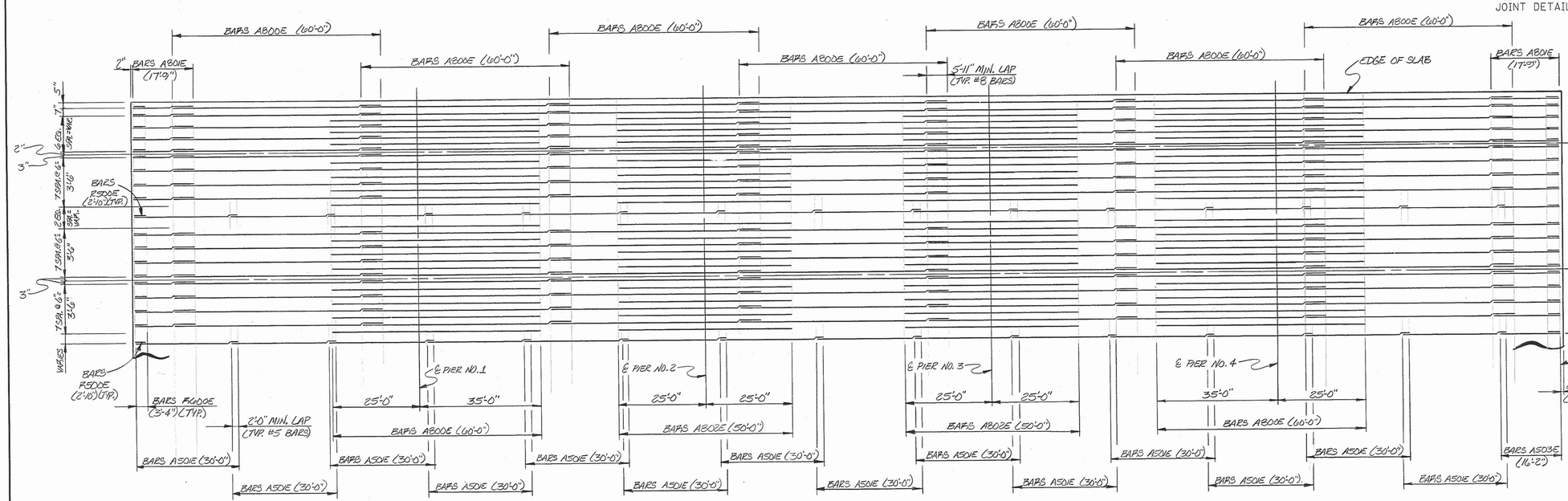
NOTE: WHEN POURING WINGWALLS, PROVISIONS SHALL BE MADE FOR SETTING REINFORCING STEEL FOR WINGPOST AND BRIDGE RAIL. FOR DETAILS OF WINGPOST AND BRIDGE RAIL SEE STD. DWG. NO. STD-7-1.

NOTE: ALL GIRDERS TO BE SUPPORTED DURING CONSTRUCTION OF SLAB TO PREVENT ROTATION.



SLAB CONSTRUCTION JOINT DETAIL

NOTE: SLAB CONSTRUCTION JOINTS MAY BE LOCATED AT THE CONTRACTOR'S OPTION EXCEPT NO JOINT MAY BE LOCATED CLOSER THAN 1/5 SPAN LENGTH FROM AN INTERIOR SUPPORT. THE CONTRACTOR SHALL MAKE ADEQUATE PROVISIONS DURING PLACEMENT OF SLAB TO PREVENT THE EXTERIOR BEAM FROM TWISTING. NO EQUIPMENT SHALL BE PERMITTED ON THE BRIDGE UNTIL ALL POURS ARE MADE AND THE CONCRETE IS PROPERLY CURED. ALL SLAB CONSTRUCTION JOINTS SHALL BE IN ACCORDANCE WITH THE SLAB CONSTRUCTION JOINT DETAIL SHOWN ABOVE.



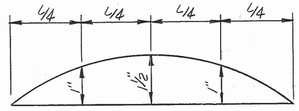
HALF PLAN OF MAIN REINFORCEMENT

NOTE: OUTSIDE EDGE OF SLAB AND BRIDGE RAIL TO CONFORM TO HORIZONTAL CURVE.

NOTE: NO PORTION OF THE BRIDGE RAIL SHALL BE POURED UNTIL THE ENTIRE DECK SLAB IS IN PLACE.

ESTIMATED QUANTITIES

CLASS "D" CONCRETE (BRIDGE DECK)	EPOXY-COATED REINFORCING STEEL	CLASS "A" CONCRETE (BRIDGES)	REINFORCING STEEL
C.Y.	LB.	C.Y.	LB.
385	138,371	19	3,109



DEAD LOAD CORRECTION CURVE

NOTE: THIS CURVE IS FOR DEAD LOAD SLAB AND ALL DEAD LOADS THAT ARE APPLIED AFTER SLAB IS IN PLACE AND SHOULD BE CORRECTED TO COMPENSATE FOR THE EFFECTS DUE TO VERTICAL CURVE. IF PRESTRESSED DECK PANELS ARE USED AND THE BEAMS ARE PROPILED AFTER PANELS ARE IN PLACE, REDUCE THE DEAD LOAD CORRECTION VALUES SHOWN BY 25%.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

SUPERSTRUCTURE
STATE ROUTE 351
OVER NOLICHUCKY RIVER
STATION 17+30.75
GREENE COUNTY
1992

DESIGNED BY B. PATEL DATE 10-91
DRAWN BY M. SUEDAM DATE 12-92
SUPERVISED BY J. FIELDS & H. PATE DATE 6-92
CHECKED BY B. PATEL DATE 7-92

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

APPROVED _____
DIRECTOR OF HIGHWAYS

M-271-73

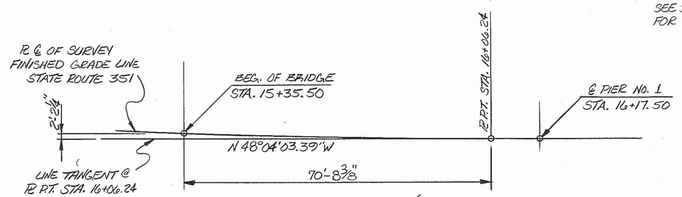
313213

CONST. NO. 30016-3214-94

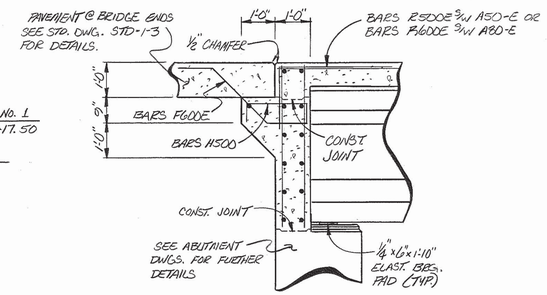
PROJECT NO.	YEAR	SHEET NO.
BR-STP-351(14)	1992	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

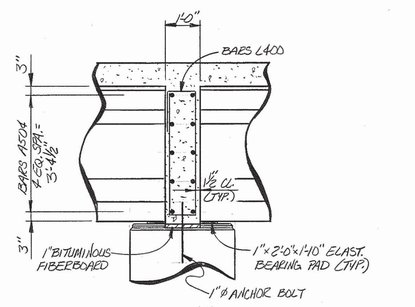


STAKE-OUT PLAN



SECTION "A-A"

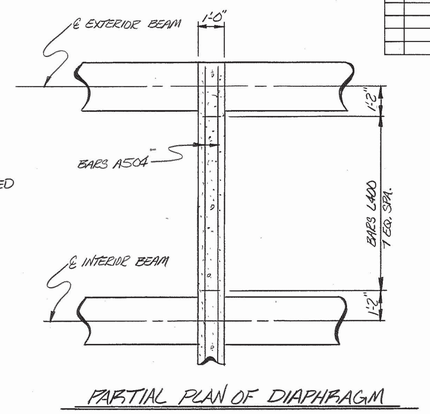
NOTE: THE TOP 12" OF THE ENDWALLS SHALL BE POURED CONCURRENTLY WITH THE DECK SLAB AND INCLUDED IN THE QUANTITY FOR ITEM 604-03.09.



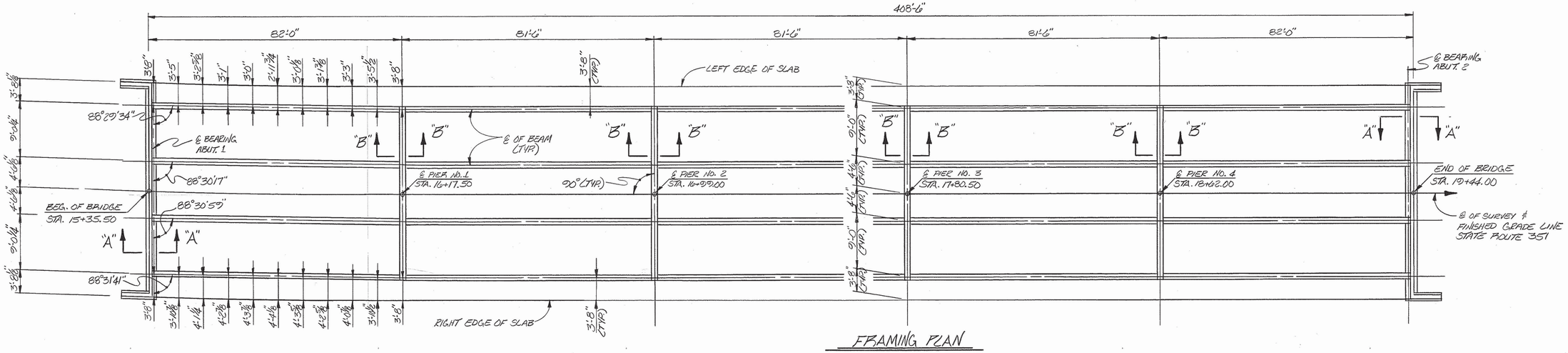
SECTION "B-B"

NOTE: ANCHOR BOLT ASSEMBLIES AT PIERS SHALL BE IN ACCORDANCE WITH STANDARD DRAWING STD-6-1.

NOTE: SUPPORT DIAPHRAGMS SHALL BE POURED CONCURRENTLY WITH THE DECK SLAB AND INCLUDED IN THE QUANTITY FOR ITEM 604-03.09.



PARTIAL PLAN OF DIAPHRAGM



FRAMING PLAN

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

SUPERSTRUCTURE DETAILS
STATE ROUTE 351
OVER NOLICHUCKY RIVER
STATION 17+39.75
GREENE COUNTY
1992

DESIGNED BY R. PATEL DATE 10-91
DRAWN BY M. SUEDAM DATE 6-92
SUPERVISED BY J. FIELDS & H. PATE DATE 6-92
CHECKED BY R. PATEL DATE 7-92

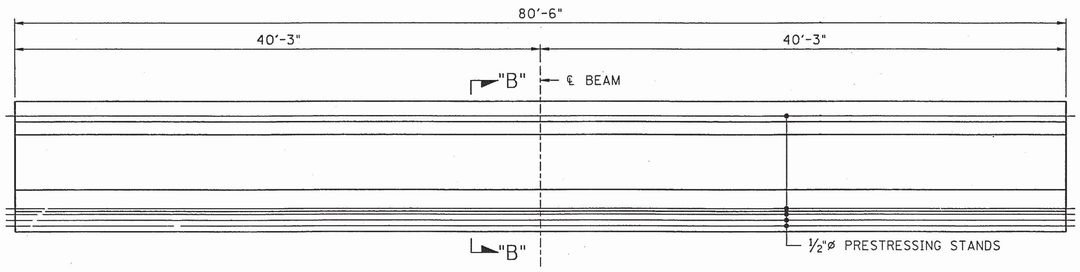
CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

APPROVED _____
DIRECTOR OF HIGHWAYS

M-271-74

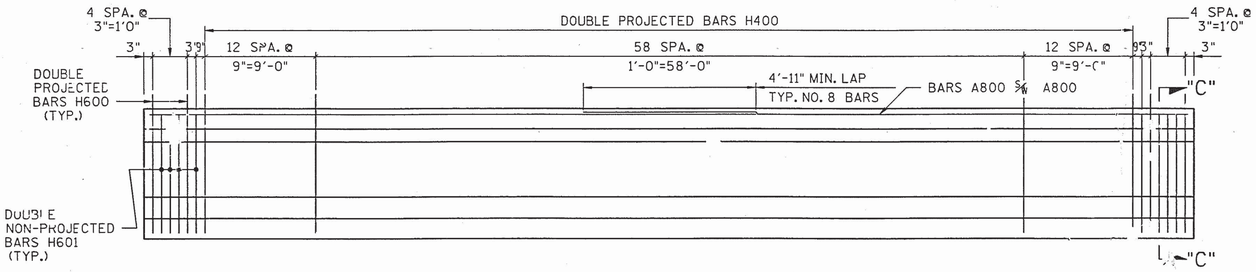
313513

1B080F.DGN



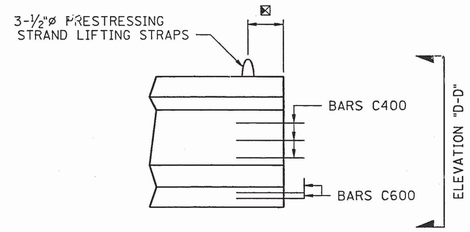
ELEVATION

(SHOWING PRESTRESSING STRANDS)



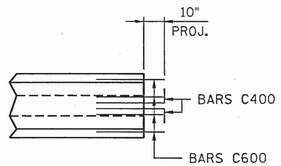
ELEVATION

(SHOWING STIRRUP BAR ARRANGEMENT)

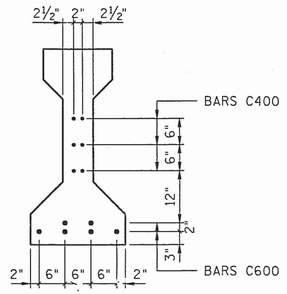


PART-ELEVATION

☒ DENOTES: DISTANCE TO BE DETERMINED BY THE FABRICATOR

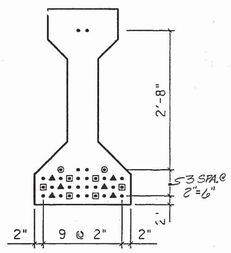


PART-PLAN



ELEVATION "D-D"

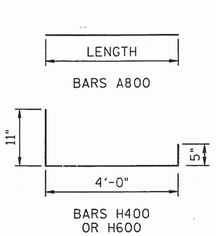
△ DENOTES: BREAK BOND 8'-0" FROM END OF BEAM.
□ DENOTES: BREAK BOND 20'-0" FROM END OF BEAM.
○ DENOTES: BREAK BOND 25'-0" FROM END OF BEAM.

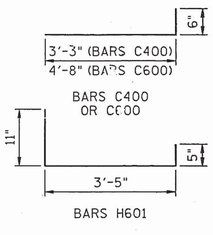


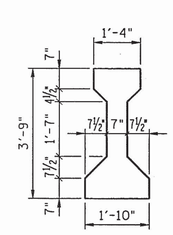
SECTION "B-B"

SHOWING PRESTRESSING STRANDS

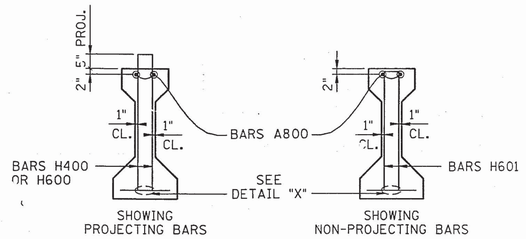
BILL OF STEEL PER BEAM			
BAR	SIZE	NO. REQ'D	LENGTH
A800	8	4	42'-7"
C400	4	12	3'-9"
C600	6	12	5'-2"
H400	4	166	5'-4"
H600	6	8	5'-4"
H601	6	16	4'-9"



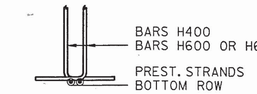




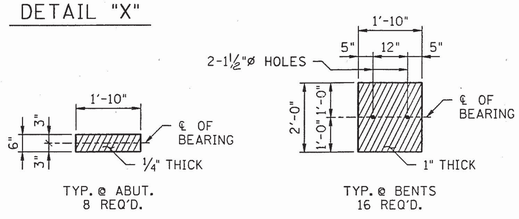
AASHTO TYPE III



SECTION "C-C"



DETAIL "X"



ELASTOMERIC BEARING PAD DETAILS

PRESTRESSED BEAM DESIGN DATA - PER BEAM

LIVE LOAD DISTRIBUTION FACTOR: 1.744 WHEELS
COMPOSITE DEAD LOAD: 516 LB/FT
COMPOSITE DESIGN SLAB (f'c = 3000 PSI): 108.000 IN. x 8.250 IN.

COMPOSITE DL + LIVE LOAD MAXIMUM DESIGN VALUES	SPAN POINT					
	0.0	0.1	0.2	0.3	0.4	0.5
POSITIVE MOMENT (K-FT)(SL)	-239	589	989	1214	1302	1257
NEGATIVE MOMENT (K-FT)(SL)	-1208	-744	-536	-362	-250	-213
SHEAR (K)(LF)	190	174	156	135	113	89

MAXIMUM STRESS (PSI)(SL)	@ MIDSPAN		@ END SPAN	
	TOP	BOTTOM	TOP	BOTTOM
INIT PRES + BM DL	149	3149	-322	2263
FINAL PRES + TOTAL DL + LL	2355	-329	-407	2959

(NO SIGN DENOTES COMPRESSION; '-' DENOTES TENSION)

ULTIMATE MOMENT CAPACITY REQUIRED = 4026 K-FT
ULTIMATE MOMENT CAPACITY PROVIDED = 5378 K-FT

NOTE: DOWNWARD DEFLECTION UNDER TOTAL LL IS NOT ALLOWED.
(SL) DENOTES: SERVICE LOAD & (LF) DENOTES: LOAD FACTORED

ESTIMATED QUANTITIES - PER BEAM			
NO. BEAMS REQ'D	PRESTRESSING STRANDS (LOW RELAXATION) LB.	CLASS "A" CONCRETE C.Y.	REINFORCING STEEL LB.
20	1531	11.6	1347

NOTE: COST OF ELASTOMERIC PADS AND RUBBER BONDING CEMENT TO BE INCLUDED IN THE COST OF PRESTRESSED BEAM.

CONST. NO. 30016-3214-94

PROJECT NO.	YEAR	SHEET NO.
BR-STP-351(14)	1992	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
1	8-19-92	RPatel	REVISED BEAM STRENGTH

NOTES:

1) THE TOP OF ALL BEAMS ARE TO BE ROUGH FLOATED. AT APPROXIMATELY THE TIME OF INITIAL SET, THE TOP OF THE BEAMS SHALL ALSO BE SCRUBBED TRANSVERSELY WITH A COARSE WIRE BRUSH TO REMOVE ALL LAITANCE AND PRODUCE A ROUGH SURFACE. WHERE PRECAST SLAB PANELS ARE TO BE USED AND SET ON BITUMINOUS FIBERBOARD, THE OUTER TWO INCHES OF THE TOP FLANGE MAY BE TROWELED.
2) MILD STEEL REINFORCING SHALL BE ASTM A615 GRADE 60.
3) ALL PRESTRESSING STRANDS TO BE ½"ø ASTM GRADE 270K, 7 WIRE UNCOATED STRESS RELIEVED LOW RELAXATION PRESTRESSING STRANDS.
4) AFTER THE BEAM IS REMOVED FROM THE PRESTRESSING BED, BARS C600 AND C400 SHALL BE BENT A SUFFICIENT AMOUNT SO AS TO PERMIT THE "C" BARS OF ADJOINING BEAM TO MESH WHEN IN THE ERECTED POSITION.
5) THE PRESTRESSING STRANDS SHALL BE LEFT PROJECTING 3"± FROM THE ENDS OF THE BEAMS. THERE SHALL NOT BE ANY PROTECTIVE COATING PLACED ON THE ENDS OF THE BEAMS OR ON THE PROJECTING STRANDS.
1 6) THE CONCRETE FOR THIS CONSTRUCTION SHALL BE OF SUCH PROPERTIES AS TO ATTAIN A COMPRESSIVE STRENGTH OF NOT LESS THAN 6000 PSI AT THE AGE OF 28 DAYS AND STRESS TRANSFER SHALL NOT BE MADE TO THE BRIDGE MEMBER UNTIL THE TEST SPECIMENS INDICATE THAT THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF AT LEAST 5500 PSI. SEE GENERAL NOTES FOR CONCRETE FINISHING NOTE.
7) AN INITIAL FORCE OF 31,003 LBS. SHALL BE APPLIED TO EACH STRAND IN ALL BEAMS.
8) ALL BEAMS ARE AASHTO - PCI STANDARD TYPE III.
9) PRESTRESSING STRANDS SHALL NOT BE GREATER THAN NOMINAL ½" DIAMETER.
10) THE SEQUENCE FOR TRANSFER OF STRESS OR THE CUTTING STRANDS SHALL BE IN ACCORDANCE WITH ARTICLE 615.14 OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND SHALL BE SHOWN ON THE APPROVED SHOP DRAWINGS. AT NO TIME SHALL MORE THAN 1/6TH OF THE TOTAL PRESTRESSING FORCE BE ECCENTRIC ABOUT THE CENTERLINE OF THE BEAM.
11) ELASTOMERIC PADS TO BE ¼"×6"× 1'-10" ABUTMENTS AND 1"×2'-0"×1'-10" WITH 1½"ø HOLES AT PIERS.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

PRESTRESSED I-BEAM DETAILS
STATE ROUTE 351
OVER NOLICHUCKY RIVER
STATION 17+39.75
GREENE COUNTY
1992

DESIGNED BY R. PATEL DATE 6-92
DRAWN BY M. SURDAM DATE 6-92
SUPERVISED BY J. FIELDS & H. PATE DATE 6-92
CHECKED BY R. PATEL DATE 7-92

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-271-75

CONST. NO. 30016-3214-04

PROJECT NO.	YEAR	SHEET NO.
BR-STP-351(14)	1992	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

ELEVATION "A-A"

ELEVATION "B-B"

PLAN

ELEVATION

(LOOKING BACK ON SURVEY)

SECTION "D-D"

SECTION "E-E"

SECTION "C-C"

DIRECTION OF SURVEY

RISER BLOCK SLOPE DETAIL

NOTE: SEE STANDARD DRAWING STD-6-1 FOR PILE DETAILS AND NOTES.

NOTE: RISER BLOCKS TO BE POURED MONOLITHICALLY WITH ABUTMENT BEAM.

NOTE: THE BACKWALL SHALL NOT BE POURED UNTIL THE GIRDERS ARE IN PLACE. THE TOP 12" OF THE BACKWALL SHALL BE POURED CONCURRENTLY WITH THE END OF SLAB.

NOTE: RISER BLOCK BEARING PAD SURFACES TO CONFORM TO BOTTOM OF BEAM GRADE.

NOTE: COST OF BRIDGE RAIL AND POST IS TO BE INCLUDED IN THE COST OF BRIDGE RAIL SYSTEM.

ESTIMATED QUANTITIES ●

● DENOTES: THESE QUANTITIES ARE FOR ABUTMENT BEAM, WING BEAMS AND RISER BLOCKS ONLY. THE ENDWALL, WINGWALLS, AND ROADWAY BRACKET ARE INCLUDED IN THE SUPERSTRUCTURE QUANTITIES.

CLASS "A" CONCRETE (BRIDGES)	REINFORCING STEEL
C.Y.	LB.
12	2944

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

ABUTMENT NO. 1
STATE ROUTE 351
OVER NOLICHUCKY RIVER
STATION 1739.75
GREENE COUNTY
1992

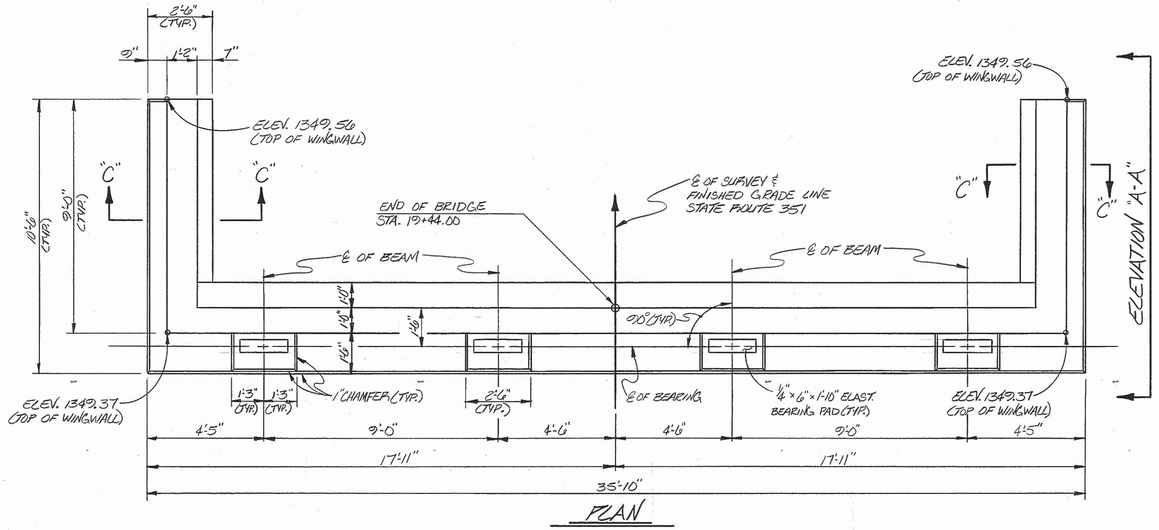
DESIGNED BY B. PATEL DATE 6-92
DRAWN BY M. SURDAM DATE 6-92
SUPERVISED BY J. FIELDS & H. PATE DATE 6-92
CHECKED BY B. PATEL DATE 7-92

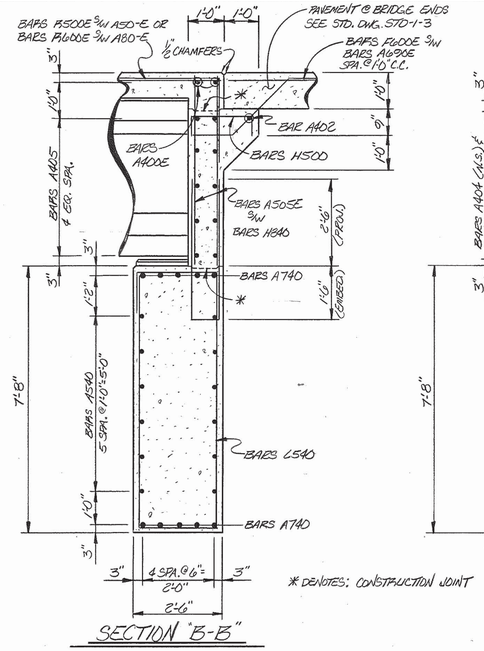
CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

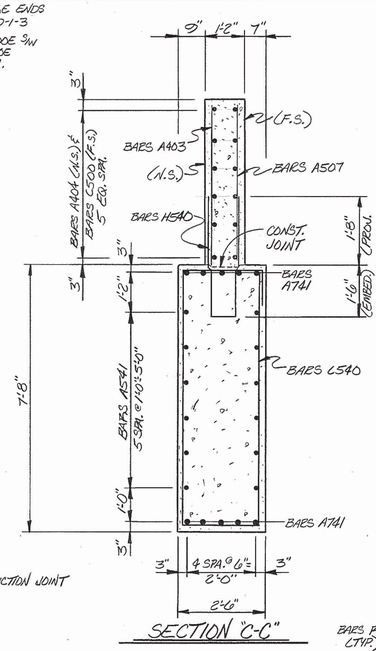
APPROVED
DIRECTOR OF HIGHWAYS

M-271-76

313313







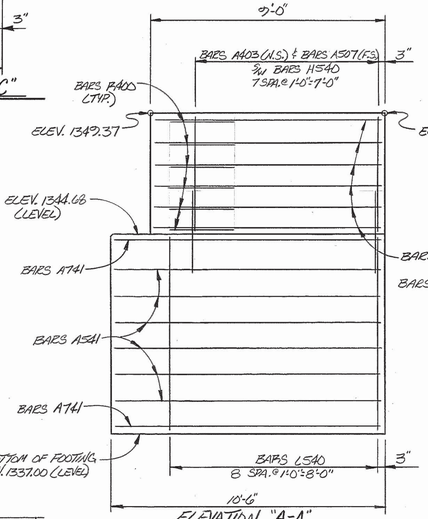
CONST. NO. 3001G-3214-94

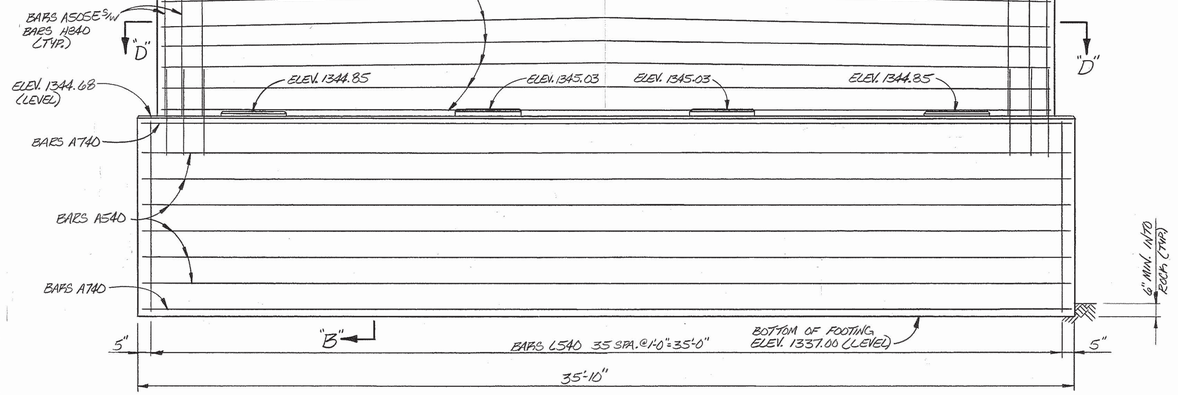
PROJECT NO.	YEAR	SHEET NO.
BR-STP-351(14)	1992	

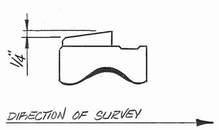
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

NOTE: THE CONTRACTOR SHALL SUPPORT THE ABUTMENT UNTIL THE SUPERSTRUCTURE IS IN PLACE, FALSEWORK HAS BEEN REMOVED AND BACKFILLING HAS BEEN COMPLETED.







RISER BLOCK SLOPE DETAIL

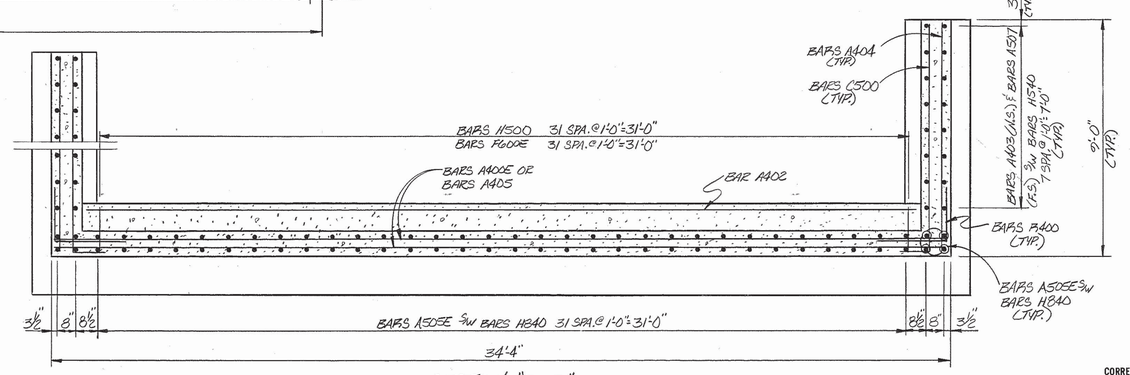
NOTE: RISER BLOCKS TO BE POURED MONOLITHICALLY WITH ABUTMENT BEAM.

NOTE: THE BACKWALL SHALL NOT BE POURED UNTIL THE GIRDERS ARE IN PLACE. THE TOP 12" OF THE BACKWALL SHALL BE POURED CONCURRENTLY WITH THE END OF SLAB.

NOTE: RISER BLOCK BEARING PAD SURFACES TO CONFORM TO BOTTOM OF BEAM GRADE.

NOTE: COST OF BRIDGE RAIL AND POST IS TO BE INCLUDED IN THE COST OF BRIDGE RAIL SYSTEM.

● DENOTES: THESE QUANTITIES ARE FOR ABUTMENT BEAM, WING BEAMS AND RISER BLOCKS ONLY. THE ENDWALL, WINGWALLS AND ROADWAY BRACKET ARE INCLUDED IN THE SUPERSTRUCTURE QUANTITIES.



SECTION "D-D"

ESTIMATED QUANTITIES ●

CLASS "A" CONCRETE (BRIDGE) C.Y.	REINFORCING STEEL LB.
37	3919

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

ABUTMENT NO. 2
STATE ROUTE 351
OVER, NOLICHUCKY RIVER,
STATION 17+39.75
GREENE COUNTY
1992

DESIGNED BY	B. PATEL	DATE 6-92
DRAWN BY	M. SUEDAM	DATE 7-92
SUPERVISED BY	J. FIELDS & H. PATE	DATE 7-92
CHECKED BY	B. PATEL	DATE 7-92

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

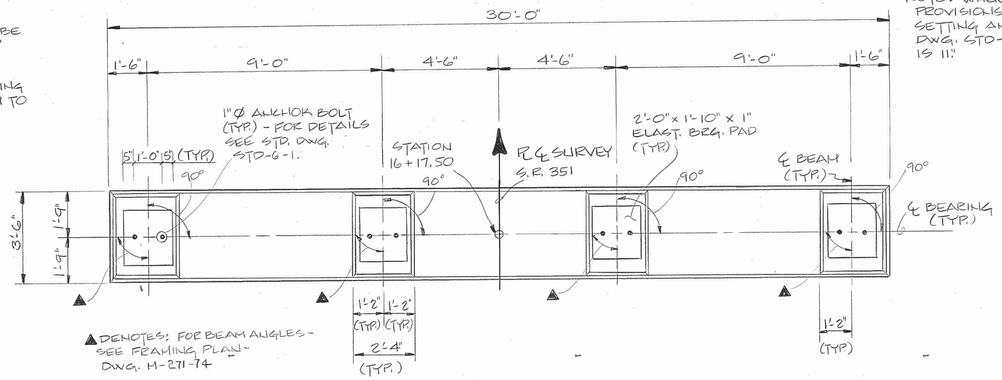
APPROVED _____
DIRECTOR OF HIGHWAYS

M-271-77

339313

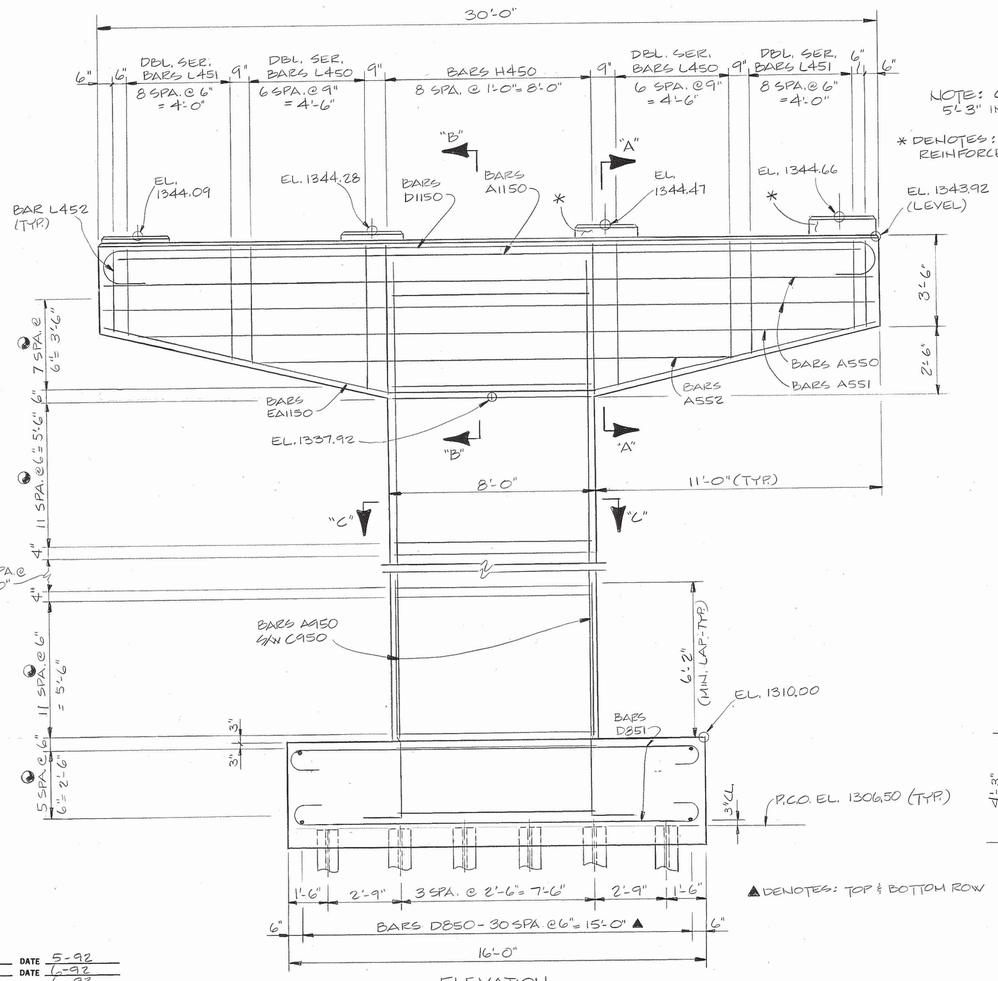
NOTE: RISER BLOCKS TO BE POURED MONOLITHICALLY WITH CAP BEAM.

NOTE: RISER BLOCK BEARING PAD SURFACE TO CONFORM TO BOTTOM OF BEAM GRADE.



PLAN

NOTE: SEE STD. DWG. STD-6-1 FOR PILE DETAILS AND NOTES.



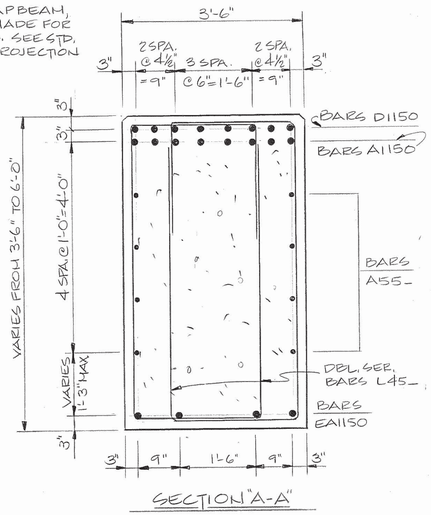
ELEVATION
(LOOKING FORWARD ON SURVEY)

◉ DENOTES: STIRRUP SET CONSISTS OF:
2 BARS X550 S/W
4 BARS YB550 &
2 BARS YB551

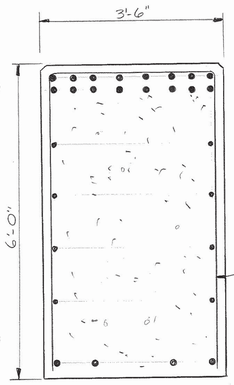
⊙ DENOTES: STIRRUP SET CONSISTS OF:
2 BARS X450 S/W
4 BARS YB450 &
2 BARS YB451

◉ 32 SPA @ 6" = 16'-0"

NOTE: WHEN POURING CAP BEAM, PROVISIONS SHALL BE MADE FOR SETTING ANCHOR BOLTS. SEE STD. DWG. STD-6-1. BOLT PROJECTION IS 11".



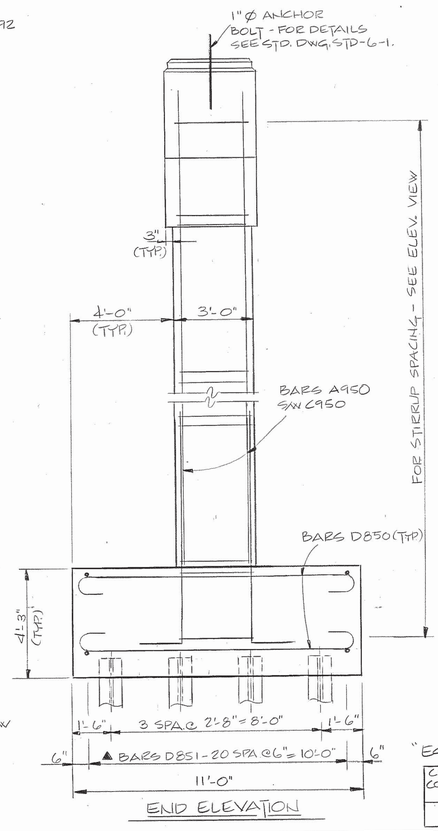
SECTION "A-A"



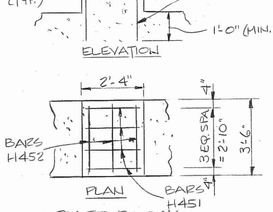
SECTION "B-B"
(SHOWING VERT. REINFORCEMENT)

NOTE: COLUMN STEEL TO EXTEND 5'-3" INTO CAP BEAM.

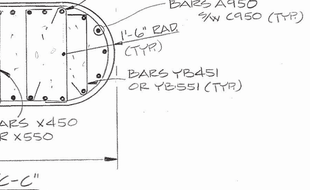
* DENOTES: RISER BLOCK REQUIRES REINFORCEMENT. SEE DETAIL THIS SHEET.



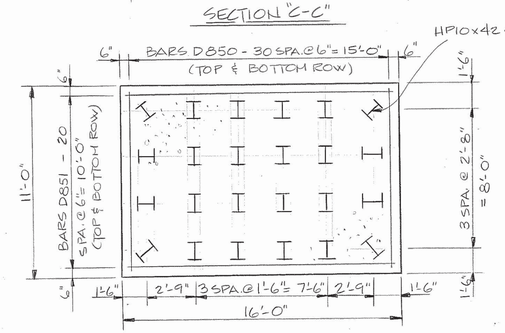
END ELEVATION



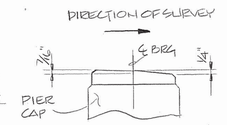
RISER BLOCK REINFORCEMENT DETAIL



SECTION "C-C"



PLAN OF FOOTING
(16'-0" x 11'-0" x 4'-3")



RISER BLOCK SLOPE DETAIL

"ESTIMATED QUANTITIES"

CLASS "A" CONCRETE C.Y.	REINFORCING STEEL LBS.
71	16,154

CONST. NO. 30016-3214-94

PROJECT NO.	YEAR	SHEET NO.
BR-STP-39(14)	1992	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

PIER NO. 1
STATE ROUTE 351 OVER
NOLICHUCKY RIVER
STATION 17+39.75
GREENE COUNTY
1992

DESIGNED BY R. PATEL DATE 5-92
DRAWN BY D. LUTTRELL DATE 6-92
SUPERVISED BY FIELDS & PATEL DATE 6-92
CHECKED BY B. PATEL DATE 7-92

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

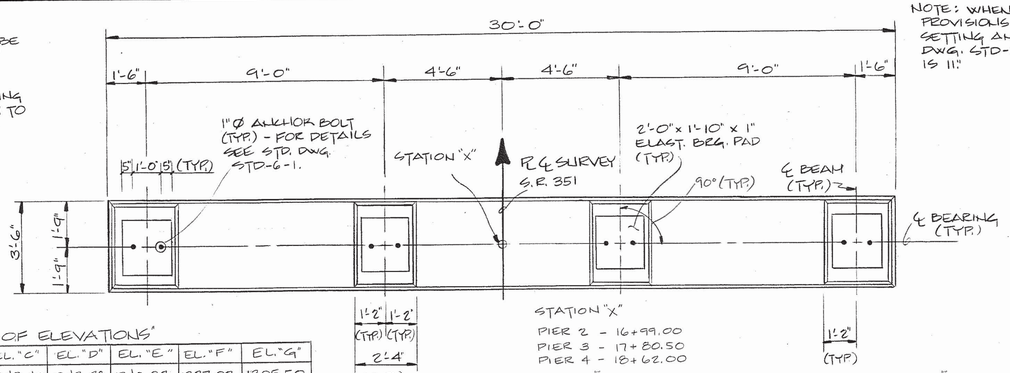
APPROVED _____
DIRECTOR OF HIGHWAYS

M-271-78

213213

NOTE: RISER BLOCKS TO BE POURED MONOLITHICALLY WITH CAP BEAM.

NOTE: RISER BLOCK BEARING PAD SURFACE TO CONFORM TO BOTTOM OF BEAM GRADE.



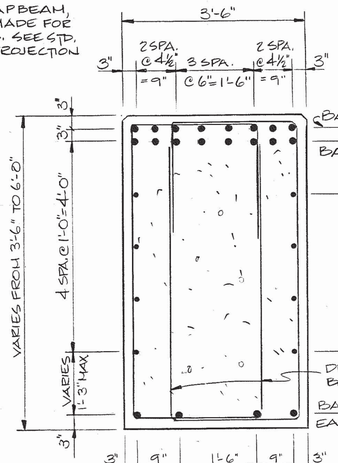
STATION "X"
PIER 2 - 16+99.00
PIER 3 - 17+80.50
PIER 4 - 18+62.00

"TABLE OF ELEVATIONS"

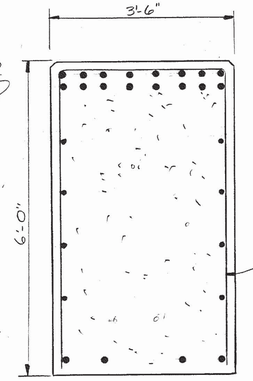
	EL."A"	EL."B"	EL."C"	EL."D"	EL."E"	EL."F"	EL."G"
PIER 2	1343.19	1343.37	1343.40	1343.28	1343.02	1337.02	1305.50
PIER 3	1343.00	1343.18	1343.18	1343.00	1342.83	1336.83	1305.50
PIER 4	1343.54	1343.72	1343.72	1343.54	1343.37	1337.37	1317.50

PLAN

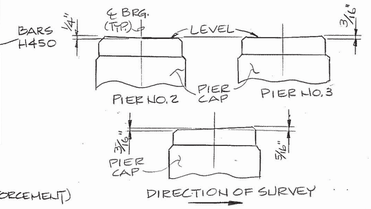
NOTE: WHEN POURING CAP BEAM, PROVISIONS SHALL BE MADE FOR SETTING ANCHOR BOLTS. SEE STD. DWG. STD-6-1. BOLT PROJECTION IS 11."



SECTION "A-A"



SECTION "B-B"
(SHOWING VERTICAL REINFORCEMENT)



DIRECTION OF SURVEY

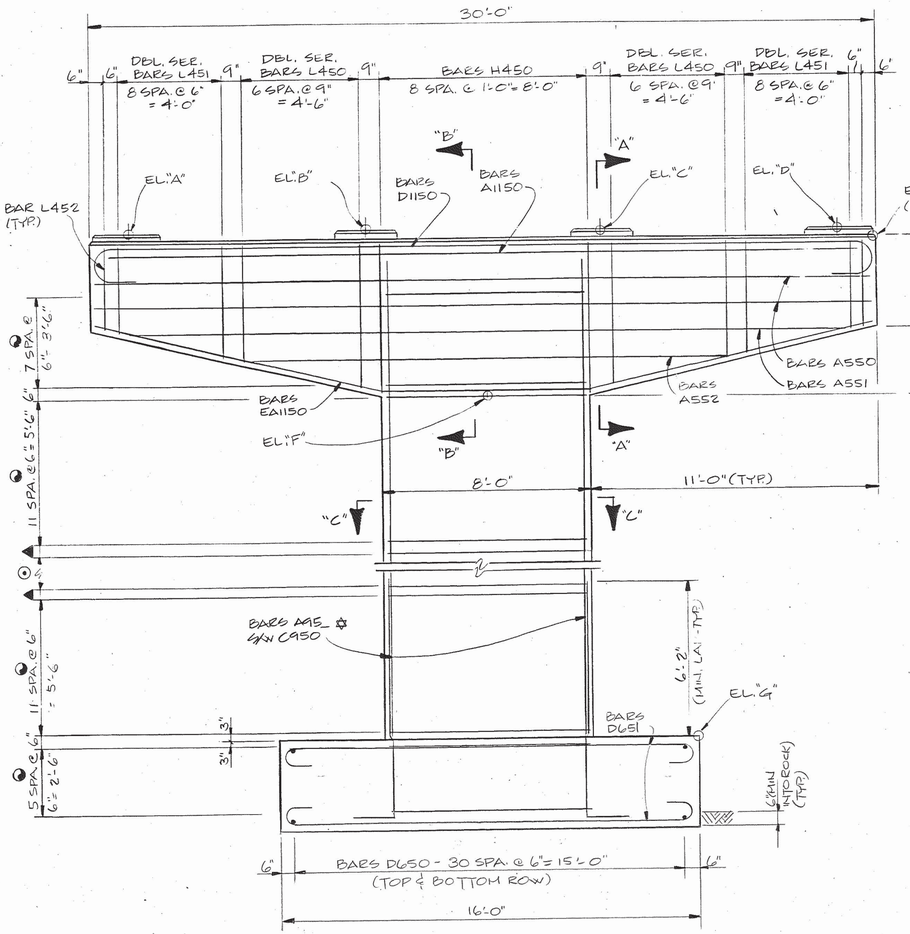
RISER BLOCK SLOPE DETAIL

CONST. NO. 30016-3214-94

PROJECT NO.	YEAR	SHEET NO.
BR-STP-35(14)	1992	

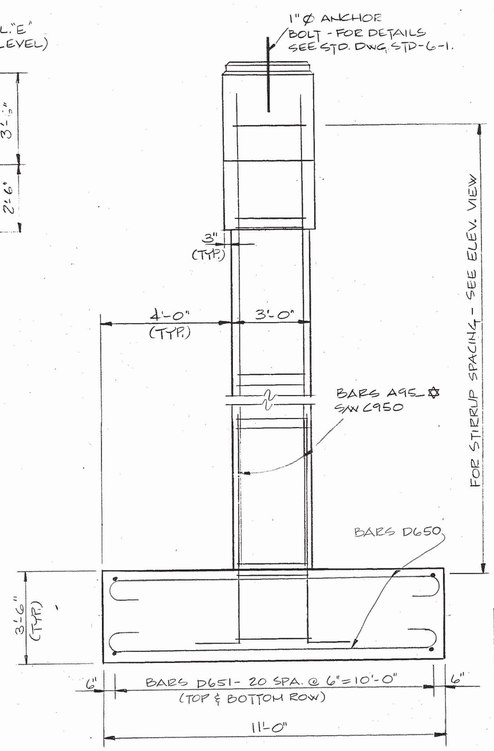
REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION

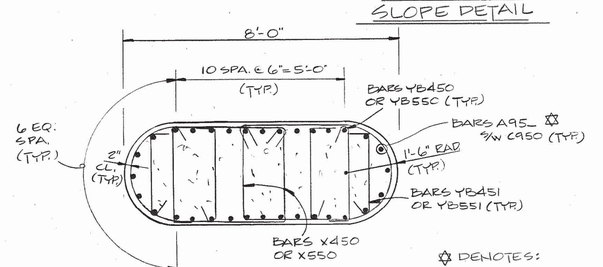


ELEVATION
(LOOKING FORWARD ON SURVEY)

NOTE: COLUMN STEEL TO EXTEND 5'-3" INTO CAP BEAM.

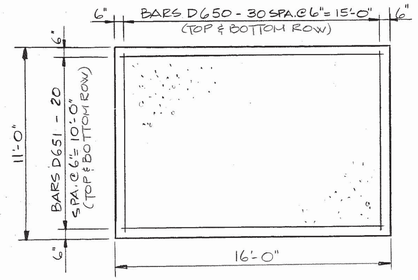


END ELEVATION



SECTION "C-C"

✡ DENOTES:
PIER 2 - BARS A951
PIER 3 - BARS A952
PIER 4 - BARS A953



PLAN OF FOOTING
(16'-0" x 11'-0" x 3'-6")

"ESTIMATED QUANTITIES"

	CLASS "A" CONCRETE C.Y.	REINFORCING STEEL LBS.
PIER 2	69	14,902
PIER 3	69	14,651
PIER 4	59	12,839

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

PIERS NO. 2, 3 & 4
STATE ROUTE 351 OVER
HOLICHUCKY RIVER
STATION 17+39.75
GREENE COUNTY
1992

● DENOTES: STIRRUP SET CONSISTS OF:
2 BARS X550 S/W
4 BARS YB550 ✡
2 BARS YB551

⊙ DENOTES: STIRRUP SET CONSISTS OF:
2 BARS X450 S/W
4 BARS YB450 ✡
2 BARS YB451

PIER 2 = 39 SPA. @ 6" = 19'-6"
PIER 3 = 38 SPA. @ 6" = 19'-0"
PIER 4 = 15 SPA. @ 6" = 7'-6"

▲ DENOTES:
PIER 2 = 4⅝"
PIER 3 = 6½"
PIER 4 = 6¾"

DESIGNED BY	R. PATEL	DATE	5-92
DRAWN BY	B. LUTTRELL	DATE	6-92
SUPERVISED BY	FIELDS & DATE	DATE	6-92
CHECKED BY	D. PATEL	DATE	7-92

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

APPROVED _____
DIRECTOR OF HIGHWAYS

M-27-79

315213

BS027F.DGN

BILL OF STEEL

SUPERSTRUCTURE (EPOXY-COATED)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A400E	ENDWALL @ A-2	4	2					34'-0"
A401E	ENDWALL @ A-1	4	2					34'-1"
A500E	TOP & BOT. SLAB	5	1626					34'-0"
A501E	TOP & BOT. SLAB	5	602					30'-0"
A502E	TOP & BOT. SLAB	5	40					25'-6"
A503E	TOP SLAB	5	3					16'-2"
A505E	ENDWALL @ A-2	5	72					4'-6"
A506E	ENDWALL @ A-1	5	72					4'-5"
A800E	TOP SLAB	8	298					60'-0"
A801E	TOP SLAB	8	68					17'-9"
A802E	TOP SLAB	8	60					50'-0"
F600E	PAVEM'T @ B.E.	6	64	1'-1"	1'-5⅞"	1'-1"	1'-5⅞"	4'-3"
R500E	TOP SLAB	5	6	2'-10"	2'-0"			4'-10"
R600E	TOP SLAB	6	68	3'-4"	2'-5"			5'-9"

SUPERSTRUCTURE (REGULAR)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A402	RDWY. BRKT. @ A-2	4	1					31'-8"
A403	WINGWALL @ A-2	4	16					4'-7"
A404	WINGWALL @ A-1 & 2	4	24					8'-8"
A405	ENDWALL @ A-2	4	10					34'-0"
A406	ENDWALL @ A-1	4	10					34'-1"
A407	RDWY. BKT. @ A-1	4	1					31'-9"
A408	WINGWALLS @ A-1	4	2					4'-10"
A409	WINGWALLS @ A-1	4	2					4'-8"
A504	DIAPHRAGM	5	40					26'-8"
A507	WINGWALL @ A-2	5	16					4'-7"
A508	WINGWALL @ A-1	5	8					4'-10"
A509	WINGWALL @ A-1	5	8					4'-8"
C500	WINGWALL @ A-2	5	12	8'-8"				9'-6"

SUPERSTRUCTURE (REGULAR) (CONT.)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
CB400	WINGWALL @ A-1	4	6	2'-8"	2'-4"	1¾"		5'-0"
CB500	WINGWALL @ A-1	5	6	8'-7"	1'-0"	¾"		9'-7"
CD400	WINGWALL @ A-1	4	6	2'-8"	2'-4"	1¾"		5'-0"
CD500	WINGWALL @ A-1	5	6	8'-9"	1'-0"	¾"		9'-9"
H500	RDWY. BKT./E.W. @ A-1 & 2	5	64	1'-8"	6"			2'-8"
L400	DIAPHRAGM	4	96	9"	1'-0"	3'-6"		9'-6"
R400	ENDWALL @ A-1 & 2	4	12	2'-8"	2'-0"			4'-8"

ABUTMENT NO. 1 (REGULAR)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A542	ABUT. BEAM	5	5					35'-7"
A543	WING BEAMS	5	5					10'-3"
A544	WING BEAMS	5	5					10'-1"
A742	ABUT. BEAM	7	9					35'-7"
A743	WING BEAM	7	9					10'-3"
A744	WING BEAM	7	9					10'-1"
H541	WING BEAMS	5	16	10"	3'-1"			7'-0"
H841	ABUT. BEAM	8	36	8"	3'-8"			8'-0"
L541	ABUT. & WING BMS.	5	52	2'-2"	1'-0"	2'-2"		9'-8"
VA840	ABUT. & WING BMS.	8	16	2'-6"				5'-0"

ABUTMENT NO. 2 (REGULAR)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A540	ABUT. BEAM	5	12					35'-6"
A541	WING BEAMS	5	24					10'-2"
A740	ABUT. BEAM	7	10					35'-6"
A741	WING BEAMS	7	20					10'-2"
H540	WING BEAMS	5	16	10"	3'-2"			7'-2"
H840	ABUT. BEAM	8	36	8"	4'-0"			8'-8"
L540	ABUT. & WING BMS.	5	54	2'-2"	1'-0"	7'-4"		20'-0"

PIER NO. 1

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A550	CAP BEAM	5	4					29'-8"
A551	CAP BEAM	5	2					28'-6"
A552	CAP BEAM	5	2					19'-10"
A950	COLUMN/CAP	9	32					33'-2"
A1150	CAP	11	8					28'-8"
C950	COLUMN/FOOT.	9	32	9'-4"				10'-11"
D850	FOOTING	8	62	10'-6"				12'-4"
D851	FOOTING	8	42	15'-6"				17'-4"
D1150	CAP	11	8	29'-8"				32'-10"
EA1150	CAP	11	4	8'-0"	11'-1"	2'-6"		30'-2"
H450	CAP	4	9	3'-2"	5'-8"			14'-6"
H451	RISER BLOCKS	4	8	2'-0"	1'-7"			5'-2"
H452	RISER BLOCKS	4	6	2'-11"	1'-6"			5'-11"

PIER NO. 1 (CONT.)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
SERIES								
L450	CAP BEAM	4	4	2'-5"	1'-0"			110'-10"
				DIM. C VARIES FROM 5'-6" TO 4'-6" IN INC. OF 2" (7 BARS)				
SERIES								
L451	CAP BEAM	4	4	2'-5"	1'-0"			122'-3"
				DIM. C VARIES FROM 4'-4" TO 3'-5" IN INC. OF 1⅜" (9 BARS)				
L452	CAP BEAM	4	2	3'-2"	1'-0"	3'-4"		14'-0"
X450	CAP/COL./FOOT.	4	66	2'-8"	3'-1"	1'-4"		14'-2"
X550	CAP/COL./FOOT.	5	76	2'-8"	3'-1"	1'-4"		14'-5"
YB450	CAP/COL./FOOT.	4	132	2'-8"	5"			3'-8"
YB451	CAP/COL./FOOT.	4	66	2'-3"	5"			3'-3"
YB550	CAP/COL./FOOT.	5	152	2'-8"	6"			3'-10"
YB551	CAP/COL./FOOT.	5	76	2'-3"	6"			3'-5"

PIER NO. 2

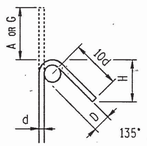
BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
A550	CAP BEAM	5	4					29'-8"
A551	CAP BEAM	5	2					28'-6"
A552	CAP BEAM	5	2					19'-10"
A951	COLUMN/CAP	9	32					36'-9"
A1150	CAP	11	8					28'-8"
C950	COLUMN/FOOT.	9	32	9'-4"				10'-11"
D650	FOOTING	6	62	10'-6"				11'-10"
D651	FOOTING	6	42	15'-6"				16'-10"
D1150	CAP	11	8	29'-8"				32'-10"
EA1150	CAP	11	4	8'-0"	11'-1"	2'-6"		30'-2"

CONST. NO. 30016-3214-94

PROJECT NO.	YEAR	SHEET NO.
BR-STP-351(14)	1992	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



BAR SIZE	D (IN.)	135° HOOK HOOK A OR G	135° HOOK H APPROX.
#3	1½	5	3½
#4	2	6½	4½
#5	2½	8	5½
#6	4½	10¼	6½
#7	5¼	1'-0¼	7¼
#8	6	1'-2¼	9

135° SEISMIC STIRRUP/TIE HOOK DIMENSIONS (ALL GRADES)

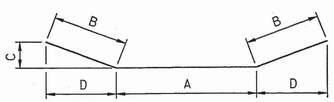
REINFORCING STEEL CODE

TYPE	SIZE	SERIES
A	5	06

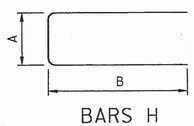
NOTE: DIMENSIONS SHOWN ON THIS SHEET ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK DETAILS SHALL APPLY, EXCEPT AS NOTED.

NOTE: THE SUFFIX E, FOR BARS SO MARKED, DENOTES EPOXY COATED REINFORCEMENT.

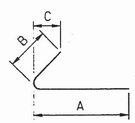
BARS A



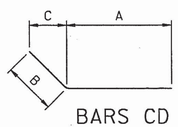
BARS E



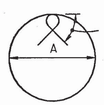
BARS H



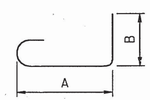
BARS CB



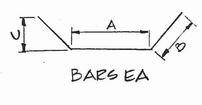
BARS CD



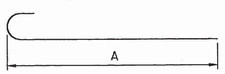
BARS T



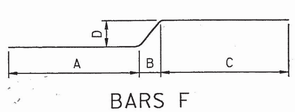
BARS YA



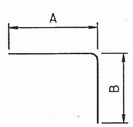
BARS EA



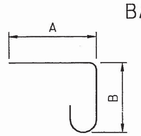
BARS B



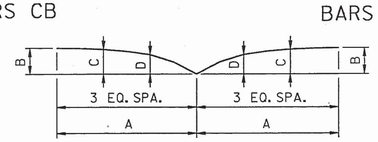
BARS F



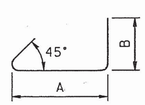
BARS R



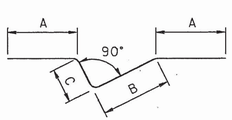
BARS RB



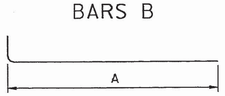
BARS V



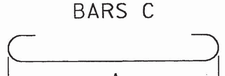
BARS YB



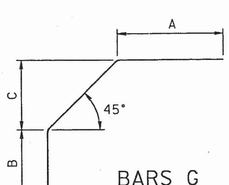
BARS JX



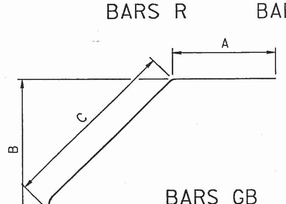
BARS C



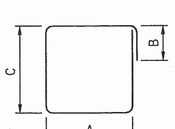
BARS D



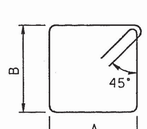
BARS G



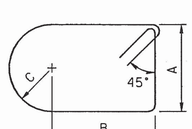
BARS GB



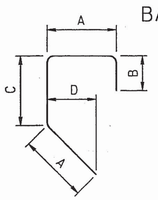
BARS L



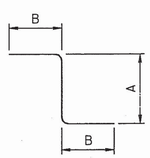
BARS LS



BARS X

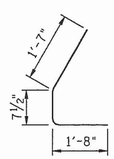


BARS J

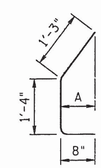


BARS Z

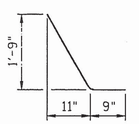
BARS VA



BARS PB500E



BARS GA570E OR BARS GA571E



BARS VP570E

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

BILL OF STEEL
STATE ROUTE 351 OVER
NOLICHUCKY RIVER
STATION 17+39.75
GREENE COUNTY
1992

DESIGNED BY R. PATEL DATE 5-92
DRAWN BY D. LITTRELL DATE 6-92
SUPERVISED BY FIELDS & PATE DATE 6-92
CHECKED BY R. PATEL DATE 7-92

CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-271-80

BS027F.DGN

BILL OF STEEL

PIER NO. 2 (CONT.)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
H450	CAP	4	9	3'-2"	5'-8"			14'-6"
SERIES								
L450	CAP BEAM	4	4	2'-5"	1'-0"			110'-10"
				DIM. C VARIES FROM 5'-6" TO 4'-6" IN INC. OF 2" (7 BARS)				
SERIES								
L451	CAP BEAM	4	4	2'-5"	1'-0"			122'-3"
				DIM. C VARIES FROM 4'-4" TO 3'-5" IN INC. OF 1 3/8" (9 BARS)				
L452	CAP BEAM	4	2	3'-2"	1'-0"	3'-4"		14'-0"
X450	CAP/COL./FOOT.	4	80	2'-8"	3'-1"	1'-4"		14'-2"
X550	CAP/COL./FOOT.	5	76	2'-8"	3'-1"	1'-4"		14'-5"
YB450	CAP/COL./FOOT.	4	160	2'-8"	5"			3'-8"
YB451	CAP/COL./FOOT.	4	80	2'-3"	5"			3'-3"
YB550	CAP/COL./FOOT.	5	152	2'-8"	6"			3'-10"
YB551	CAP/COL./FOOT.	5	76	2'-3"	6"			3'-5"

PIER NO. 3

A550	CAP BEAM	5	4					29'-8"
A551	CAP BEAM	5	2					28'-6"
A552	CAP BEAM	5	2					19'-10"
A952	COLUMN/CAP	9	32					36'-7"
A1150	CAP	11	8					28'-8"
C950	COLUMN/FOOT.	9	32	9'-4"				10'-11"
D650	FOOTING	6	62	10'-6"				11'-10"

PIER NO. 3 (CONT.)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
D651	FOOTING	6	42	15'-6"				16'-10"
D1150	CAP	11	8	29'-8"				32'-10"
EA1150	CAP	11	4	8'-0"	11'-1"	2'-6"		30'-2"
H450	CAP	4	9	3'-2"	5'-8"			14'-6"
SERIES								
L450	CAP BEAM	4	4	2'-5"	1'-0"			110'-10"
				DIM. C VARIES FROM 5'-6" TO 4'-6" IN INC. OF 2" (7 BARS)				
SERIES								
L451	CAP BEAM	4	4	2'-5"	1'-0"			122'-3"
				DIM. C VARIES FROM 4'-4" TO 3'-5" IN INC. OF 1 3/8" (9 BARS)				
L452	CAP BEAM	4	2	3'-2"	1'-0"	3'-4"		14'-0"
X450	CAP/COL./FOOT.	4	78	2'-8"	3'-1"	1'-4"		14'-2"
X550	CAP/COL./FOOT.	5	76	2'-8"	3'-1"	1'-4"		14'-5"
YB450	CAP/COL./FOOT.	4	156	2'-8"	5"			3'-8"
YB451	CAP/COL./FOOT.	4	78	2'-3"	5"			3'-3"
YB550	CAP/COL./FOOT.	5	152	2'-8"	6"			3'-10"
YB551	CAP/COL./FOOT.	5	76	2'-3"	6"			3'-5"

PIER NO. 4

A550	CAP BEAM	5	4					29'-8"
A551	CAP BEAM	5	2					28'-6"
A552	CAP BEAM	5	2					19'-10"
A953	COLUMN/CAP	9	32					25'-1"
A1150	CAP	11	8					28'-8"

PIER NO. 4 (CONT.)

BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH
C950	COLUMN/FOOT.	9	32	9'-4"				10'-11"
D650	FOOTING	6	62	10'-6"				11'-10"
D651	FOOTING	6	42	15'-6"				16'-10"
D1150	CAP	11	8	29'-8"				32'-10"
EA1150	CAP	11	4	8'-0"	11'-1"	2'-6"		30'-2"
H450	CAP	4	9	3'-2"	5'-8"			14'-6"
SERIES								
L450	CAP BEAM	4	4	2'-5"	1'-0"			110'-10"
				DIM. C VARIES FROM 5'-6" TO 4'-6" IN INC. OF 2" (7 BARS)				
SERIES								
L451	CAP BEAM	4	4	2'-5"	1'-0"			122'-3"
				DIM. C VARIES FROM 4'-4" TO 3'-5" IN INC. OF 1 3/8" (9 BARS)				
L452	CAP BEAM	4	2	3'-2"	1'-0"	3'-4"		14'-0"
X450	CAP/COL./FOOT.	4	32	2'-8"	3'-1"	1'-4"		14'-2"
X550	CAP/COL./FOOT.	5	76	2'-8"	3'-1"	1'-4"		14'-5"
YB450	CAP/COL./FOOT.	4	64	2'-8"	5"			3'-8"
YB451	CAP/COL./FOOT.	4	32	2'-3"	5"			3'-3"
YB550	CAP/COL./FOOT.	5	152	2'-8"	6"			3'-10"
YB551	CAP/COL./FOOT.	5	76	2'-3"	6"			3'-5"

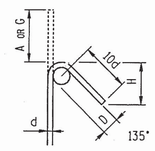
BAR	LOCATION	SIZE	NO. REQ'D	BENDING DIMENSIONS A	B	C	D	LENGTH

CONST. NO. 30016-3214-94

PROJECT NO.	YEAR	SHEET NO.
BR-STP-351(14)	1992	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION



BAR SIZE	D (IN.)	135° HOOK HOOK A OR G	135° HOOK H APPROX.
#3	1½	5	3½
#4	2	6½	4½
#5	2½	8	5½
#6	4½	10¼	6½
#7	5¼	1-0¼	7¼
#8	6	1-2¼	9

135° SEISMIC STIRRUP/TIE HOOK DIMENSIONS (ALL GRADES)

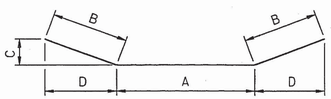
REINFORCING STEEL CODE

TYPE	SIZE	SERIES
A	5	06

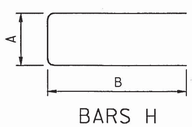
NOTE: DIMENSIONS SHOWN ON THIS SHEET ARE OUTSIDE TO OUTSIDE OF BAR. STANDARD C.R.S.I. HOOK DETAILS SHALL APPLY, EXCEPT AS NOTED.

NOTE: THE SUFFIX E, FOR BARS SO MARKED, DENOTES EPOXY COATED REINFORCEMENT.

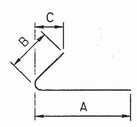
BARS A



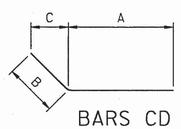
BARS E



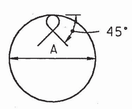
BARS H



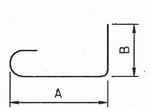
BARS CB



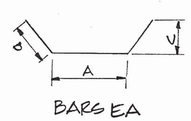
BARS CD



BARS T



BARS YA



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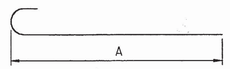

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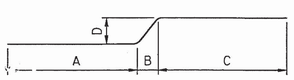

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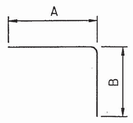

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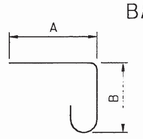

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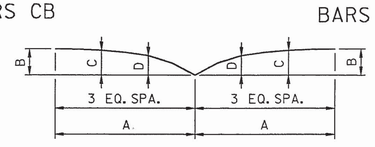

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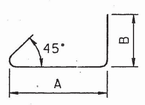
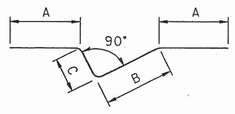


BARS YB



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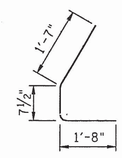

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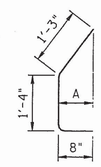
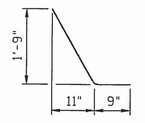


BARS GA570E OR BARS GA571E



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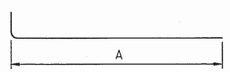

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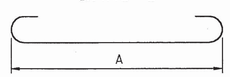

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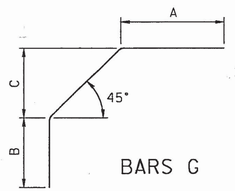
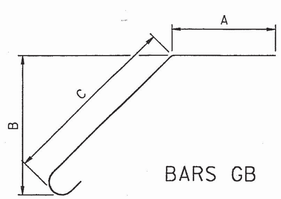


BARS G



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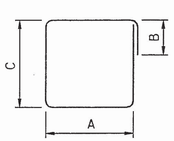
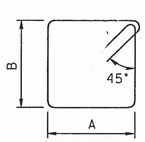


BARS L



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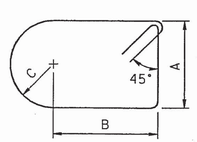

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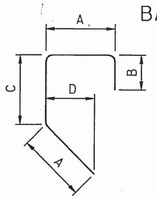

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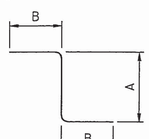


BARS Z

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

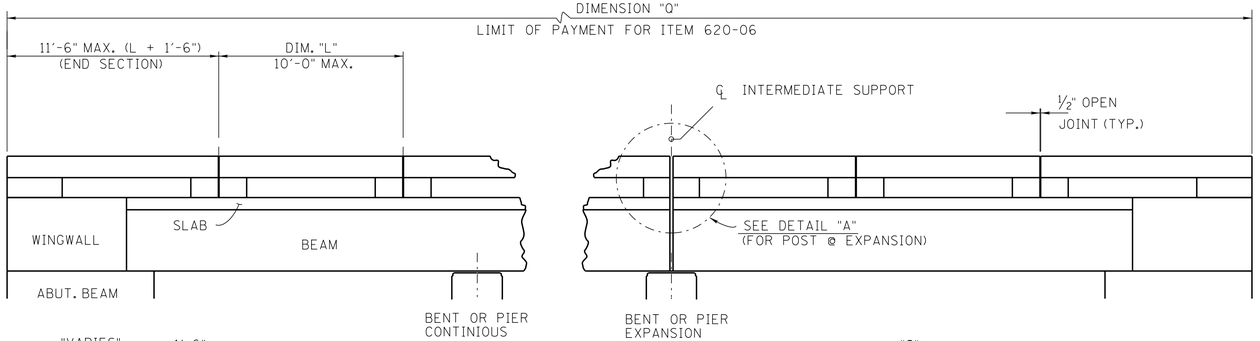
BILL OF STEEL
STATE ROUTE 351 OVER
NOLICHUCKY RIVER
STATION 17+39.75
GREENE COUNTY
1992

DESIGNED BY R. PATEL DATE 5-92
DRAWN BY D. LUTTRULL DATE 6-92
SUPERVISED BY FIELDS & DATE DATE 6-92
CHECKED BY B. PATEL DATE 7-92

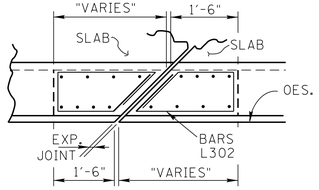
CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

M-271-81

STD71.DGN



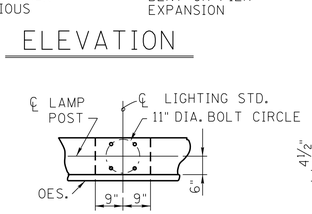
ELEVATION



PLAN OF SKEWED POST @ EXPANSION DETAIL "A"

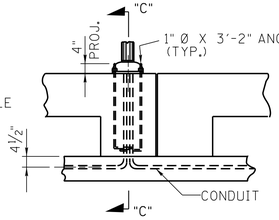
(TYP. @ ANY EXP. JOINT)

OES. DENOTES: OUTSIDE EDGE OF SLAB.

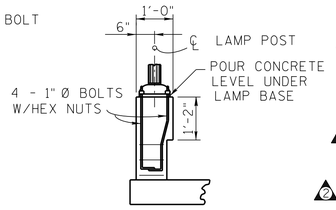


PLAN

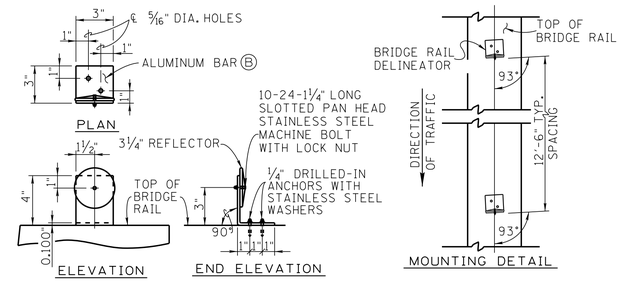
FOR LOCATION OF LIGHTING STD. IF APPLICABLE, SEE LAYOUT DWG.



LIGHT STANDARD MOUNTING AND CONDUIT PLACEMENT DETAILS



SECTION "C"-"C"



① BRIDGE RAIL DELINEATOR

②Ⓑ ASTM B209 ALUMINUM BAR ALLOY SHALL HAVE A MINIMUM TENSIL STRENGTH OF 22 KSI AND SHALL BE CAPABLE OF BEING BENT COLD THROUGH AN ANGLE OF 180° AROUND A PIN HAVING A DIAMETER NOT GREATER THAN 2 TIMES THE SHEET OR PLATE THICKNESS. AS AN ALTERNATE THE MOUNT MAY BE CUT FROM A 4"x3"x¼" ALUMINUM ANGLE. THE ANGLE SHALL CONFORM TO STANDARD SPECIFICATION B308.

① BRIDGE RAIL DELINEATOR REFLECTOR SHALL CONFORM TO THE REQUIREMENTS OUTLINED IN SECTION 916.08 OF THE STANDARD SPECIFICATIONS FOR TYPE I OR TYPE II DELINEATORS. THE COLOR OF THE DELINEATORS SHALL CONFORM TO THE REQUIREMENTS OUTLINED IN MANUAL ON TRAFFIC CONTROL DEVICES.

BRIDGE RAIL DELINEATORS WILL NOT BE REQUIRED IN AREAS WHERE ROADWAY IS LIGHTED.

③ THE COST OF FURNISHING AND INSTALLING BRIDGE RAIL DELINEATORS, AND INSERT ASSEMBLIES, INCLUDING ALL MATERIALS, LABOR AND INCIDENTALS NECESSARY TO COMPLETE THE INSTALLATION, SHALL BE INCLUDED IN BID PRICE FOR BRIDGE RAIL.

② DRILLED-IN ANCHORS: THE MINIMUM REQUIRED ULTIMATE LOAD FOR ¼" ø ANCHORS IS 800 POUNDS. IN PLACE REQUIREMENTS: THE UNITS SHALL BE SUBSET 3/32" TO ¼" AND TORQUED, WITH DELINEATOR BRACKET IN PLACE, TO AN EQUIVALENT DIRECT PULL OUT OF 60 PERCENT OF REQUIRED ULTIMATE LOAD. SLIPPAGE NOT TO EXCEED ¼".

PROJECT NO.	YEAR	SHEET NO.
	1987	

REVISIONS

NO.	DATE	BY	BRIEF DESCRIPTION
M/R 1	10-25-93	R.M.D.	COLOR OF DELINEATOR
M/R 2	12-20-93	RMD	ADDED ALT. MOUNT FOR DELINEATOR
M/R 3	3-28-94	MAH	REVISED NOTE
M/R 4	12-18-95	BRB	REVISED SPACING OF WINGPOST REINF. AND REVISED LENGTH OF BOLT

GENERAL NOTES:

1) SPECIFICATIONS: STANDARD ROAD AND BRIDGE SPECIFICATIONS OF THE TENNESSEE DEPT. OF TRANSPORTATION CURRENT EDITION.

2) DESIGN SPECIFICATIONS: AASHTO CURRENT EDITION WITH ADDENDA.

3) CONCRETE: TO BE CLASS "A".

4) REINFORCING STEEL: TO BE ASTM A615 GRADE 60. STANDARD CRSI HOOK DETAILS APPLY UNLESS OTHERWISE NOTED ON THE BILL OF STEEL. SPACING DIMENSIONS ARE CENTER TO CENTER UNLESS OTHERWISE NOTED ON DETAIL DRAWINGS. ALL STEEL TO BE EPOXY COATED WHEN EPOXY BARS ARE USED IN BRIDGE DECK. COST TO BE INCLUDED IN UNIT PRICE BID FOR RAIL.

5) FOR DIMENSIONS "O" AND "L" SEE LAYOUT SHEET OF STRUCTURES. MAX. "L" = 10'-0" "O" = OUT TO OUT WINGPOST.

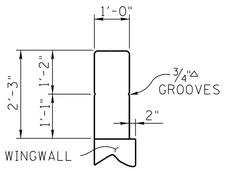
6) ALL POSTS SHALL BE VERTICAL. RAIL SHALL CONFORM TO LINE AND GRADE OF ROADWAY.

7) PAYMENT FOR CONCRETE RAIL SHALL BE BASED ON LINEAR FEET FROM END OF WINGPOST TO END OF WINGPOST.

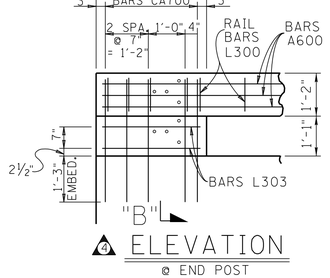
8) RAILING SHALL NOT BE CONSTRUCTED ON ANY STRUCTURE UNTIL THE FALSEWORK HAS BEEN STRUCK.

9) THIS RAIL HAS BEEN SUCCESSFULLY CRASH TESTED TO THE SATISFACTION OF THE FEDERAL HIGHWAY ADMINISTRATION AND IS RECOMMENDED FOR USE IN FHWA MEMORANDUM "BRIDGE RAILS" AUG. 28, 1986.

10) BASIS OF PAYMENT SHALL INCLUDE ALL MISCELLANEOUS ITEMS TO COMPENSATE FOR ALL LABOR, MATERIALS, TOOLS AND INCIDENTALS FOR THE ENTIRE CONCRETE RAIL SHALL BE INCLUDED IN TH PRICE BID FOR ITEM 620-06.

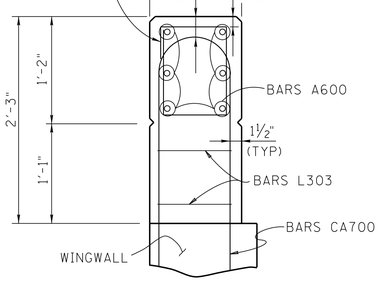


END POST

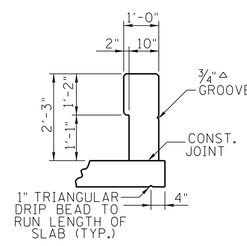


④ ELEVATION

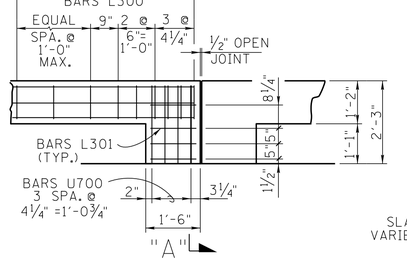
@ END POST



SECTION "B"-"B"

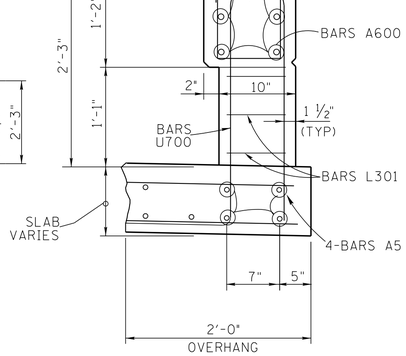


INTERIOR POST



ELEVATION

@ INTERIOR POST



SECTION "A"-"A"

ESTIMATED QUANTITIES

ITEMS	CLASS "A" CONCRETE CY.	REINF. STEEL LB.
✳ ④ ONE INTER. POST, 90°	.1150	81.4
④ ONE WING POST, 90°	.2500	110.7
ONE LINEAR FT. RAIL	.0432	10.5

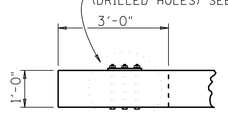
✳ DENOTES: INTERIOR POST ARE 1'-6".

M/R MINOR REVISION - FHWA APPROVAL NOT REQUIRED

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

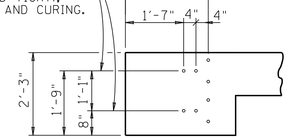
STANDARD CONCRETE RAIL 1987

OPTIONAL GUARDRAIL ATTACHMENT (DRILLED HOLES) SEE PLATE DETAIL

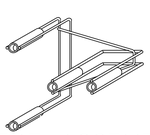


④ PLAN

FERRULE SHALL HAVE CLOSED ENDS AND TAPPED OVERSIZED AS SPECIFIED BY ASTM A563, TABLE 5. ASSEMBLY SHALL BE BOLTED TO FORMS, (HAND TIGHT), DURING CONCRETE POURING AND CURING.

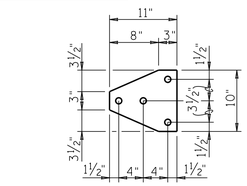


④ ELEVATION



④ INSERT ASSEMBLY

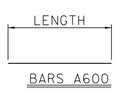
CAST IN PLACE THREADED STEEL INSERT WITH ⅞" ø × 2" HEX HEAD GALVANIZED BOLTS (A307) HOT DIP ZINC COATING ASTM A153

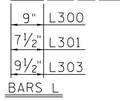


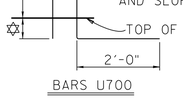
④ PLATE DETAIL

½" ASTM A36 GALVANIZED PLATE WITH ⅞" ø HEX HEAD GALVANIZED BOLTS (A307) HOT DIP ZINC COATING A153

FOR USE WHEN GUARDRAIL ATTACHMENTS REQUIRED







✡ DENOTES: VARIES DUE TO THICKNESS OF SLAB AND SLOPE.

① BAR DETAILS

① BAR DIMENSIONS ARE OUT TO OUT. THE FIRST DIGIT OF THE BAR NUMBER INDICATES SIZE.

☒ DENOTES: BARS TO BE USED IN LIEU OF U700 ON WINGWALLS AND RETAINING WALLS.

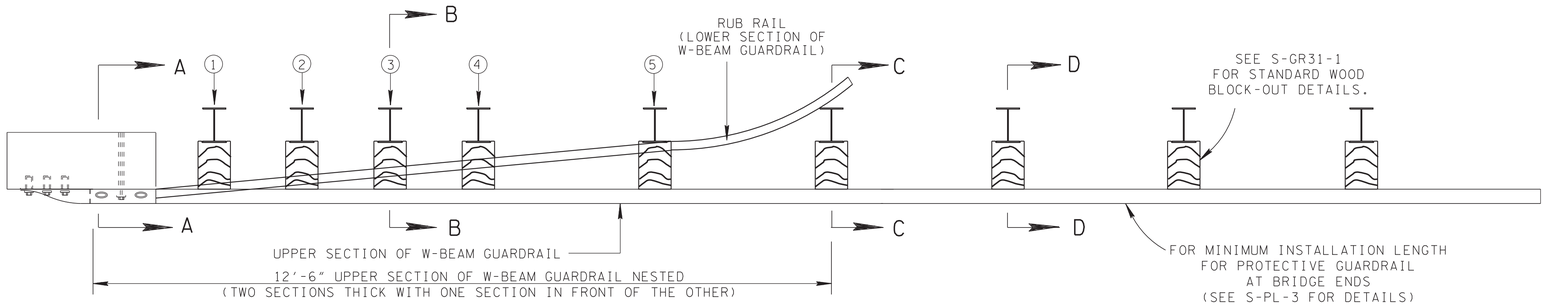
NOTE: REINFORCING STEEL QUANTITIES ARE BASED ON 8" SLAB.

DESIGNED BY SEE GEN. NOTE NO. 9 DATE
DRAWN BY K. PHILLIPS & M. SURDAM DATE 5-11-87
SUPERVISED BY JWF AND RMD DATE 5-11-87
CHECKED BY DATE

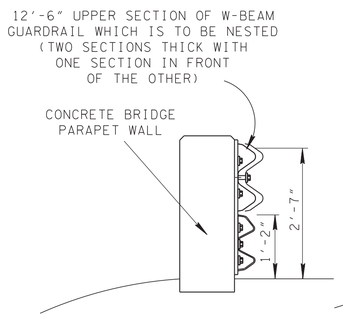
CORRECT Edward P. Wasserman
ENGINEER OF STRUCTURES

STD-7-1

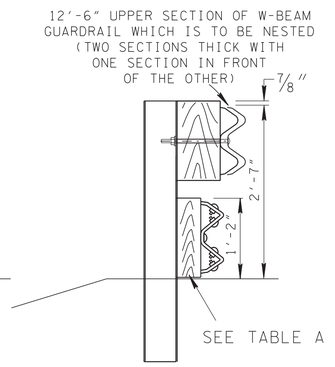
REV. 10-10-16: UPDATED REFERENCES TO OTHER STANDARD DRAWINGS. MODIFIED PLAN AND ELEVATION VIEW.



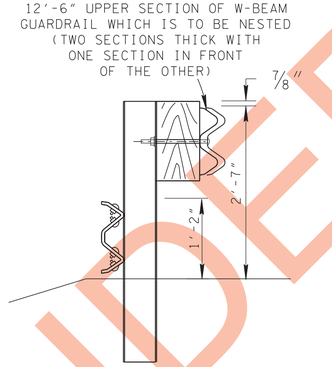
PLAN



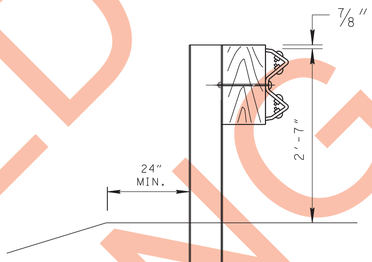
SECTION A-A



SECTION B-B



SECTION C-C

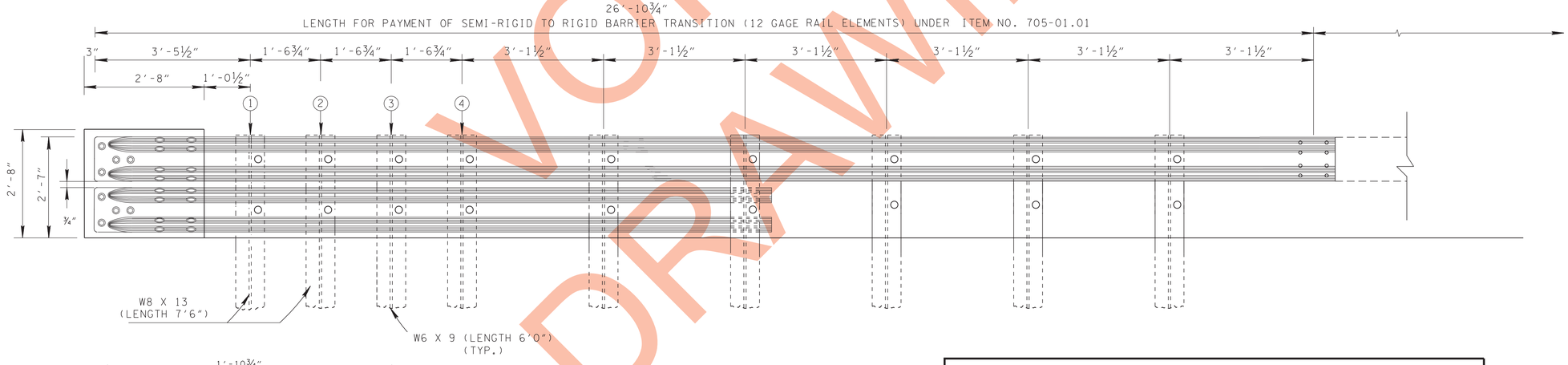


SECTION D-D

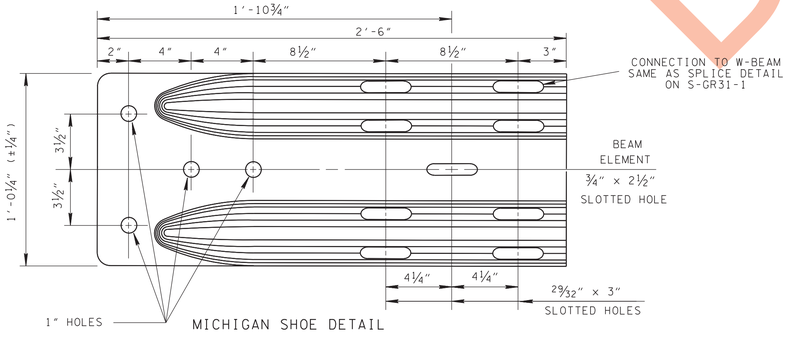
TABLE A

GUARDRAIL RUB-RAIL BLOCK-OUT THICKNESS TABLE	
POST	THICKNESS
1	0.556'
2	0.446'
3	0.338'
4	0.230'
5	NO BLOCK

TREATED TIMBER 14½" X 4" BLOCK-OUT



ELEVATION



MICHIGAN SHOE DETAIL

GENERAL NOTES

(A) TO BE USED AT ALL GUARDRAIL TRANSITIONS TO BRIDGE RAIL OR CONCRETE BARRIER WALLS WITH ADT>400 VEH/DAY.

(B) CONNECTION TO BRIDGE RAIL SHOWN; FOR CONNECTION TO CONCRETE BARRIER WALLS, SEE S-SSMB-6.

(C) BOLTS FROM MICHIGAN SHOE TO BRIDGE RAIL TO BE AS SHOWN ON STRUCTURE'S BRIDGE RAIL STANDARD DRAWINGS.

(D) SEE S-GR31-1 FOR ALL OTHER DETAILS AND MATERIAL PROPERTIES NOT SHOWN.

(E) RUB RAIL IS ONLY REQUIRED AT BRIDGES.

(F) PAY ITEM 705-01.01 GUARDRAIL AT BRIDGE ENDS.

(G) SEE S-PL-3 FOR MINIMUM LENGTH AND DELINEATOR REQUIREMENTS.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

GUARDRAIL CONNECTION TO BRIDGE ENDS OR BARRIER WALL

7-11-13 | S-GRC-1