

GEORGIA DEPARTMENT OF TRANSPORTATION

GDOT Project No: NH000-0575-01(028)

PI No: 713640

JBT Project No. 255717

Bridge No. 38

I-575 REVERSIBLE OVER BELLS FERRY RD

November, 2009

COBB COUNTY

DESIGN CALCULATIONS

Note 1: Georgia Department of Transportation (GDOT) terminated Contract Number TOURDPPI60072 for its convenience prior to the completion of all work under that contract and directed that the work with respect to these calculations be discontinued.

(a) These calculations were not completed at the time of GDOT's direction and the information contained herein is not complete and/or has not been fully verified or checked. These calculations are a work-in-progress and are presented only as such.

(b) Any user is cautioned that the use of these calculations and any related information or calculations, without access to pertinent factors and without proper regard for their purpose, could lead to erroneous conclusions.

(c) If any such calculations or any information contained herein is used in future work efforts or any follow on design work activity, a complete confirmation of the information contained herein should be performed prior to any such use.

(d) GTP has no responsibility for the use of this information not under its direct control.

Prepared for Georgia Transportation Partners
Atlanta, Georgia

J.B. TRIMBLE, INC.
2550 Heritage Ct, SE Suite 250
Atlanta, GA 30339-3062
(770) 952-1022

Purpose of Calculation

Bridge design calculations for Bridge #38 were made for costing purposes.

1. Specifications and References

AASHTO 17th Edition, 2002

GDOT Bridge Design Manual, 2008

2. Computer

Computer Type Used: PC

Operating System: Windows XP, Pentium 4, 2GB RAM (min.)

3. Computer Programs (Standard Computer Program)

None

CALCULATION COVER SHEET

PROJECT I-75 / I-575 NORTHWEST CORRIDOR	JOB NO. NH000-0575-01(028)	CALC NO. BR#38	SHEET 1
SUBJECT References for Design		DISCIPLINE STRUCTURAL	

CALCULATION STATUS DESIGNATION	PRELIMINARY	CONFIRMED	SUPSEDED	VOIDED	INCOMPLETE
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

COMPUTER PROGRAM/TYPE	SCP	MAINFRAME	PC	PROGRAM	VERSION/RELEASE NO.
	<input type="radio"/> YES <input type="radio"/> NO	<input type="radio"/>	<input type="radio"/>	NONE	

Note 1: Georgia Department of Transportation (GDOT) terminated Contract Number TOURDPPI60072 for its convenience the completion of all work under that contract and directed that the work with respect to these calculations be discontinued.

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Included Reference Information:

- Roadway information
- Bridge Survey Shots
- Existing Bridge Plans
- Existing Bridge Maintenance Reports
- BFI

A	As per GDOT's termination for convenience direction	68	68	JCR			11/30/09
NO.	REASON FOR REVISION	TOTAL NO. OF SHEETS	LAST SHEET NO.	BY	CHECKED	APPROVED/ACCEPTED	DATE

RECORD OF REVISIONS

CALCULATION SHEET

PROJECT: I-75 / I-575 NORTHWEST CORRIDOR
JOB NUMBER NH000-0575-01(028)
CALC NO. BR#38

SUBJECT: Roadway Information
BY: JCR DATE: 11/30/2009

SHEET NO.
SHEET REV.

PI	()	1162+59.8641	1468028.9379	2176862.6992
PI	()	1176+85.4854	1469435.3671	2176629.5621
Tangential Direction:		N 9°24'43.4203" W		
Tangential Length:		1425.6213		

Element: Linear

PI	()	1176+85.4854	1469435.3671	2176629.5621
PI	()	1183+52.8783	1470093.5595	2176519.1261
Tangential Direction:		N 9°31'29.1403" W		
Tangential Length:		667.3929		

Element: Linear

PI	()	1183+52.8783	1470093.5595	2176519.1261
PC	()	1189+11.4340	1470644.5222	2176427.3407
Tangential Direction:		N 9°27'29.1619" W		
Tangential Length:		558.5558		

Element: Circular

PC	()	✓ 1189+11.4340	✓ 1470644.5222	✓ 2176427.3407
PI	()	1218+37.7290	✓ 1473531.0373	✓ 2175946.4734
CC	()		1471178.5827	2179633.1603
PT	()	✓ 1236+76.1628	✓ 1474311.0107	✓ 2178766.9067
Radius:		✓ 3250.0000		
Delta:		83°59'58.7274" Right		
Degree of Curvature (Arc):		1°45'46.6095"		
Length:		4764.7288		
Tangent:		2926.2950		
Chord:		4349.3340		
Middle Ordinate:		834.7726		
External:		1123.2942		
Tangent Direction:		N 9°27'29.1619" W		
Radial Direction:		N 80°32'30.8380" E		
Chord Direction:		N 32°32'30.2018" E		
Radial Direction:		S 15°27'30.4344" E		
Tangent Direction:		N 74°32'29.5656" E		

BR#38
575 o
Betts
Ferry

Element: Linear

PT	()	1236+76.1628	1474311.0107	2178766.9067
PC	()	1258+60.9756	1474893.3497	2180872.6817
Tangential Direction:		N 74°32'29.5656" E		
Tangential Length:		2184.8128		

309.6643

9693

Element: Circular

PC	()	✓ 1258+60.9756	✓ 1474893.3497	✓ 2180872.6817
PI	()	1276+86.2122	✓ 1475379.8475	✓ 2182631.8884
CC	()		1477683.6201	2180101.0496
PT	()	✓ 1291+18.0216	✓ 1477176.9079	✓ 2182951.3598
Radius:		✓ 2895.0000		
Delta:		64°27'40.0868" Left		
Degree of Curvature (Arc):		1°58'44.8637"		
Length:		3257.0459		

BR#39
575 o
Hawkins
Store

PROJECT:	NW Corridor
COUNTY:	COBB
BRIDGE:	38
DESCRIPTION:	I-575 over Bells Ferry Rd.

VERTICAL GRADE DATA FOR NEW ALIGNMENT, ADJUSTED FOR SURVEY DIFF.:

PVC =	1227+99.63	PVI =	1233+99.63	PVT =	1239+99.63
PVI EL. =	1016.2400	PVI EL. =	1006.82	PVI EL. =	1005.3200
		VC Length (ft) =	1200		

ELEVATION COMPARISON, ADJUSTED FOR SURVEY DIFF.

BENT 1R LEFT SIDE		BENT 1R RIGHT SIDE	
Geomath Rdy EL. =	1009.553	Geomath Rdy EL. =	1007.209
Survey EL. =	1009.566	Survey EL. =	1007.157
DIFFERENCE =	-0.013	DIFFERENCE =	0.052
BENT 3R LEFT SIDE		BENT 3R RIGHT SIDE	
Geomath Rdy EL. =	1007.283	Geomath Rdy EL. =	1004.864
Survey EL. =	1007.273	Survey EL. =	1004.932
DIFFERENCE =	0.010	DIFFERENCE =	-0.068
Mean EL. Difference = -0.005			

Degree of Curvature (Arc): 2°51'53.2403"
 Length: 718.1910
 Tangent: 363.0047
 Chord: 714.3384
 Middle Ordinate: 32.1509
 External: 32.6762
 Tangent Direction: S 21°27'32.4974" E
 Radial Direction: S 68°32'27.5026" W
 Chord Direction: S 11°10'18.1158" E
 Radial Direction: S 89°06'56.2659" W
 Tangent Direction: S 0°53'03.7341" E

BELLS FERRY RD

Element: Linear

PT () ✓ 293+39.3773 ✓ 1474918.3415 ✓ 2178583.2832
 POE () 305+92.5328 ✓ 1473665.3353 ✓ 2178602.6251
 Tangential Direction: ✓ S 0°53'03.7341" E
 Tangential Length: 1253.1555

Alignment Name: XR 1280+00 Hawkins Store
Alignment Description: I-575 Hawkins Store Road
Alignment Style: MAIN_P_SIDECL

	Station	Northing	Easting
Element: Linear			
POB ()	✓ 346+19.4014	✓ 1476189.0826	✓ 2182198.5369
POE ()	353+89.5329	✓ 1476184.6832	✓ 2182968.6559
Tangential Direction:	✓ S 89°40'21.6972" E		
Tangential Length:	770.1315		

Alignment Name: XR 1449+00 Towne Lake
Alignment Description: I-575 Towne Lake Pkwy
Alignment Style: MAIN_P_SIDECL

	Station	Northing	Easting
Element: Linear			
POB ()	✓ 491+04.8011	✓ 1492492.6748	✓ 2185975.2171
POE ()	497+98.0939	✓ 1492576.4982	✓ 2186663.4238
Tangential Direction:	✓ N 83°03'20.1529" E		
Tangential Length:	693.2928		

BELLS FERRY

Tangent Grade: 2.33%
 Tangent Length: 50.0000

Element: Linear

PVI 298+00.0000 977.1434
 PVI 298+50.0000 978.4530

Tangent Grade: 2.62%
 Tangent Length: 50.0000

Element: Linear

PVI 298+50.0000 978.4530
 PVI 299+00.0000 980.4041

Tangent Grade: 3.90%
 Tangent Length: 50.0000

Element: Linear

PVI 299+00.0000 980.4041
 PVI 299+50.0000 981.7541

Tangent Grade: 2.70%
 Tangent Length: 50.0000

Element: Linear

PVI 299+50.0000 981.7541
 PVI 300+00.0000 983.2850

Tangent Grade: 3.06%
 Tangent Length: 50.0000

Element: Linear

PVI 300+00.0000 983.2850
 PVI 300+50.0000 984.7541

Tangent Grade: 2.94%
 Tangent Length: 50.0000

Element: Linear

PVI 300+50.0000 984.7541
 PVI 301+00.0000 985.7637

Tangent Grade: 2.02%
 Tangent Length: 50.0000

Element: Linear

PVI 301+00.0000 985.7637
 PVI 301+50.0000 987.2488

Tangent Grade: 2.97%
 Tangent Length: 50.0000

Element: Linear

PVI 301+50.0000 987.2488
 PVI 302+00.0000 988.6820

Tangent Grade: 2.87%
 Tangent Length: 50.0000

Element: Linear

CALCULATION SHEET

PROJECT: I-75 / I-575 NORTHWEST CORRIDOR
JOB NUMBER NH000-0575-01(028)
CALC NO. BR#38

SUBJECT: Bridge Survey Shots
BY: JCR DATE: 11/30/2009

SHEET NO.
SHEET REV.

I-575 over Bells Ferry (Existing Right Bridge)

BENT 1 LEFT SIDE

SVXO10251 N 1474216.412400 E 2178461.681100 Z 1009.566 TBRDG

"ZEBG68"

BENT 1 RIGHT SIDE

SVXO10248 N 1474172.128600 E 2178462.395600 Z 1007.157 TBRDG

"ZEBG71"

BENT 3 LEFT SIDE

SVXO10230 N 1474305.222800 E 2178726.551700 Z 1007.273 TBRDG

"ZEBG68"

BENT 3 RIGHT SIDE

SVXO10241 N 1474262.238300 E 2178727.566600 Z 1004.932 TBRDG

"ZEBG71"

CALCULATION SHEET

PROJECT: I-75 / I-575 NORTHWEST CORRIDOR
JOB NUMBER NH000-0575-01(028)
CALC NO. BR#38

SUBJECT: Existing Bridge Plans
BY: JCR DATE: 11/30/2009

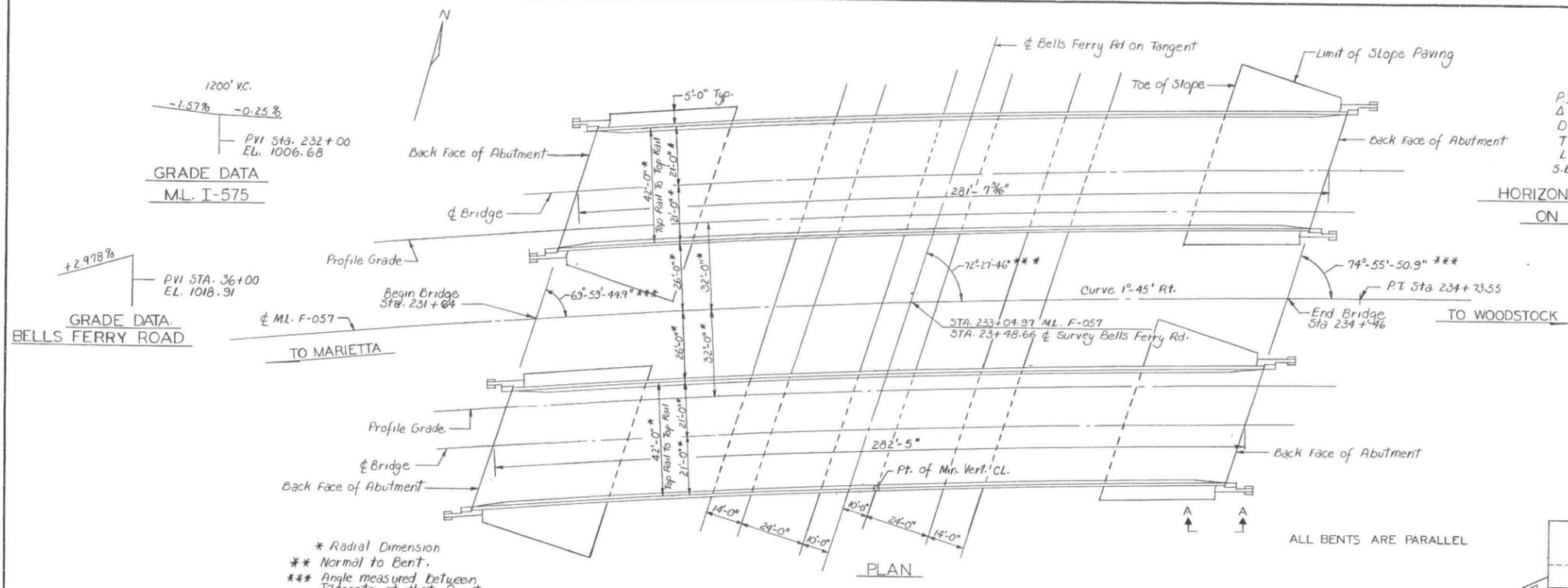
SHEET NO.
SHEET REV.

STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
GA.	I-575-1(2)00	56	88

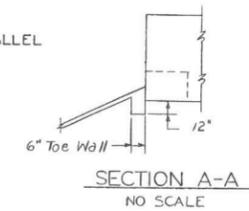
CONTRACT 2
REV. 5-11-78
REV. 5-24-78

P.I. Sta. 216+21.64
Δ = 83° 58' 36" Rt.
D = 1° 45'
T = 2946.76'
L = 4778.67'
S.E. = 0.06 1/ft

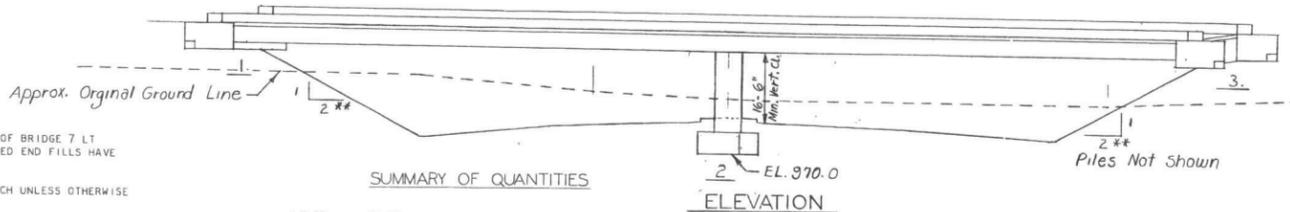
HORIZONTAL CURVE DATA
ON M.L. F-057



* Radial Dimension
** Normal to Bent.
*** Angle measured between tangents at that point.



SECTION A-A
NO SCALE



ELEVATION

GENERAL NOTES

SPECIFICATIONS - GEORGIA STANDARD DATED 1977
 WAITING PERIOD - NO WORK SHALL BE STARTED AT BENT 3 OF BRIDGE 7 LT AND BENTS 1 AND 3 OF BRIDGE 7 RT UNTIL THE COMPLETED END FILLS HAVE BEEN IN PLACE FOR AN ESTIMATED PERIOD OF 30 DAYS
 CHAMFER - ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4 INCH UNLESS OTHERWISE NOTED.
 PROTECTIVE SURFACE TREATMENT - PER SECTION 500.13c WILL BE REQUIRED AT THIS SITE.
 REINFORCEMENT - ALL REINFORCEMENT SHALL BE PLACED AND TIED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.
 DRIVING DATA PILES - ONE REQUIRED AT BENTS 1 AND 3.
 PLAN DRIVING OBJECTIVE - SEE SUBSTRUCTURE DETAILS
 ALL AREAS WITH MINOR IMPERFECTIONS INCLUDING HONEYCOMBING SHALL BE CORRECTED WITH APPROVED EPOXY COMPOUND AS DIRECTED BY THE ENGINEER.
 COST OF FALSEWORK, EXCAVATION NECESSARY FOR ABUTMENT CONSTRUCTION, FORMS, ACCESS DOOR ASSEMBLIES, CELL DRAIN ACCESSORIES, EPOXY AND MISCELLANEOUS ITEMS WILL BE PAID FOR AS " LUMP SUPERSTR CONC."
 SEGMENTAL CONSTRUCTION - PROPOSALS FOR CONSTRUCTION BY SEGMENTAL METHODS MAY BE SUBMITTED FOR CONSIDERATION AS AN ALTERNATE TO METHOD SHOWN ON PLANS. ALL PROPOSALS MUST INCLUDE A SET OF CONSTRUCTION DRAWINGS AND COMPLETE DESIGN CALCULATIONS. ALL PROPOSALS SHALL CONFORM TO THE LATEST A.A.S.H.T.C. SPECIFICATIONS EXCEPT THAT NO TENSION STRESS IN THE CONCRETE AFTER LOSSES WILL BE ALLOWED. ALL PROPOSALS SHALL ALSO CONFORM TO THE GEORGIA SPECIAL PROVISIONS AND WILL BE SUBJECT TO APPROVAL BY THE STATE BRIDGE ENGINEER. IF APPROVED FOR USE THE ALTERNATE SEGMENTAL CONSTRUCTION METHOD SHALL BE OF NO EXTRA COST TO THE DEPARTMENT AND WITH NO INCREASE IN CONTRACT TIME.
 PARTIAL PAYMENTS WILL NOT BE MADE FOR LUMP PRESTRESSING-CAST-IN-PLACE CONCRETE - BR NO 7 LT.
 BARRIER - BARRIER SHALL CONFORM TO LINE AND GRADE AND SHALL BE FINISHED AS SHOWN ON PLANS.
 PROTECTIVE PLATFORMS WILL BE REQUIRED AT THIS SITE. SEE SPECIAL PROVISIONS. THE CONTRACTOR SHALL MAINTAIN A MINIMUM VERTICAL CLEARANCE OF 15 FT.

SUMMARY OF QUANTITIES

LT BR	RT BR	DESCRIPTION
224	224	CU YD BR EXCAV, GR SEP
179	179	CU YD BR BK FILL
705	705	SQ YD CONC SLOPE PAV, 4 IN
LUMP		SUPERSTR CONC (CL AA) - BR NO 7 LT
LUMP		SUPERSTR CONC (CL AA) - BR NO 7 RT
262.4	257.74	CU YD CL AA CONC
252	248	Use on Construction
39.297	39.297	LB BAR REINF STEEL
34.563	34.563	Use on Construction
LUMP		SUPERSTR REINF STEEL - BR NO 7 LT
LUMP		SUPERSTR REINF STEEL - BR NO 7 RT
714	754	LIN FT PILING IN PLACE, STEEL H, 12 BP 53
1	1	EACH LOAD TEST, STEEL H 12 BP 53 (IF REQD)
LUMP		PRESTRESSING CAST-IN-PLACE CONC - BR NO 7 LT
LUMP		PRESTRESSING CAST-IN-PLACE CONC - BR NO 7 RT
LUMP		EPOXY COATED SUPERSTRUCTURE REINFORCEMENT STEEL - BR NO 7 LT
LUMP		EPOXY COATED SUPERSTRUCTURE REINFORCEMENT STEEL - BR NO 7 RT

DESIGN DATA

SPECIFICATIONS - A.A.S.H.T.O., 1973; INT 1974, 1975 1976
 TYPICAL - HS20-40 AND/OR MILITARY LOADING - IMPACT ALLOWED
 FUTURE PAVING ALLOWANCE = 15 LBS /SQ FT
 CONCRETE: F'C = 3,500 PSI (ALLOW FC=1,400PSI)
 REINFORCING STEEL: GRADE 60 (FY = 60,000 PSI) (ALLOW FS=24,000PSI)

UTILITIES

NONE

BRIDGE CONSISTS OF
 1 - 140'-11"; 141'-0" CONT POST TENSIONED BOX GIRDER UNIT-----SPECIAL DESIGN;
 2 STEEL H PILE END ABUTMENTS..... SPECIAL DESIGN
 1 - INTEGRAL CONCRETE INTERMEDIATE BENT..... SPECIAL DESIGN
 END POST AND END POST GUARDRAIL ATTACHMENT DETAILS . GA STD 3053 (2-1-75)
 L = 4'-0" W = 1'-1" H = 2'-8"
 BAR BENDING DETAILS..... GA. STD NO. 3501
 TYPICAL FILL DETAILS AT END OF BRIDGE..... GA. STD 9037 (9-1-70)

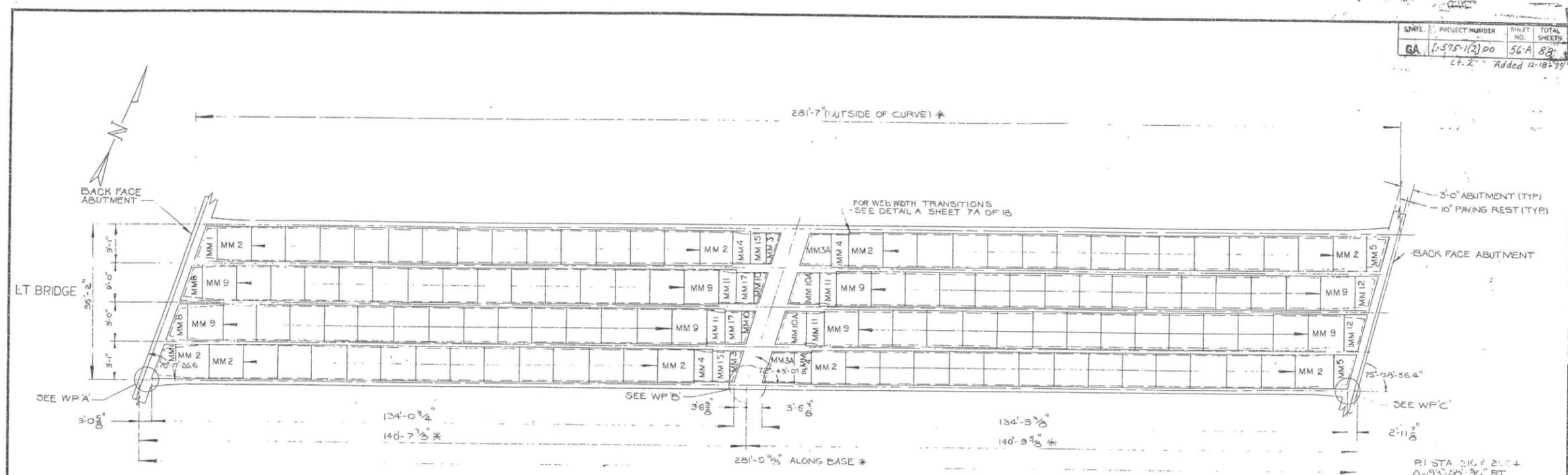
BRIDGE NO. 7LT. & 7RT.

GEORGIA
 DEPARTMENT OF TRANSPORTATION
 HIGHWAY DIVISION-BRIDGE DESIGN

PLAN AND ELEVATION
 I-575 OVER BELLS FERRY RD.
 COBB-CHEROKEE I-575-1(2)00 CT 2
 SCALE: 1"=20'-0" JAN 1978

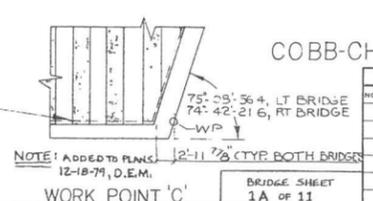
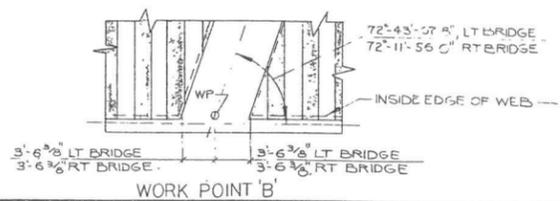
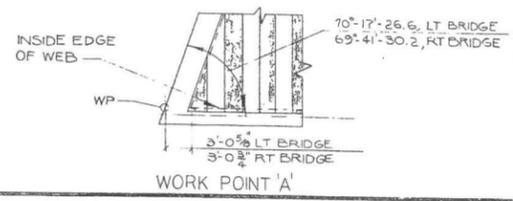
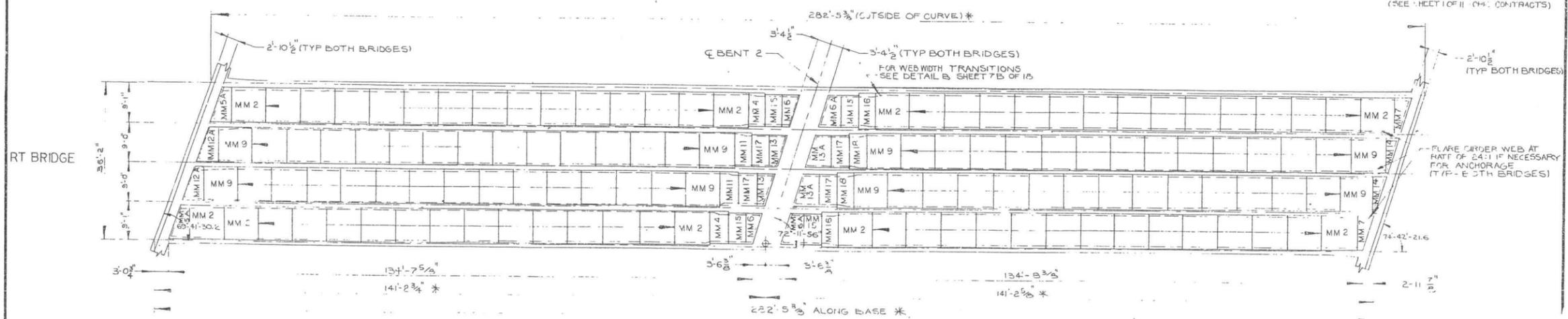
BRIDGE SHEET 1 OF 11	DESIGNED BDM	TRACED BDM	REVIEWED LRP
	DRAWN JWW	CHECKED BDM	APPROVED

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	1-575-1(2)00	56A	88
CT-2 Added 12-18-79			



P1 STA 210+21.04
 Δ = 93° 05' 36" RT
 D = 17.45'
 T = 2945.76'
 L = 4798.67'
 S.E. = 0.06/FT
 HORIZONTAL CURVE DATA
 ON MLF-057
 (SEE SHEET 11 OF 14 CONTRACTS)

* DIMENSIONED ALONG ARC



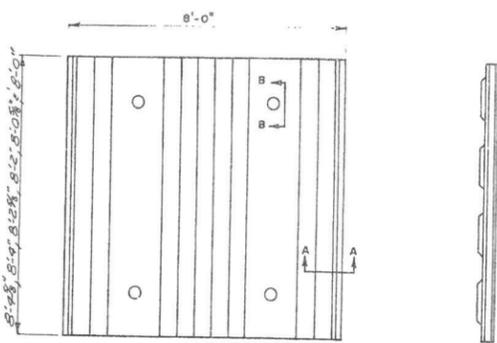
NOTE: ADDED TO PLANS 12-11-79 CTYP BOTH BRIDGES
 12-18-79, D.E.M.
 BRIDGE SHEET 1A OF 11

GEORGIA DEPT OF TRANSPORTATION
 COBB-CHEROKEE CTY PROJ. NO. 1-575-1(2)00 CT.2

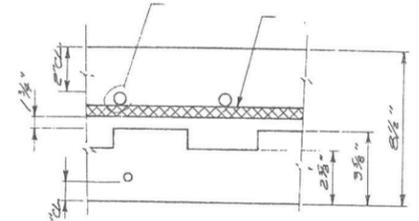
REVISIONS			
NO.	DATE	DESCRIPTION	BY

1-75 OVER BELLS FERRY ROAD
 SCALE 3/8" = 1'-0"
 DATE 2-27-79
 BOBBITT IN PLAC INC.
 TRUSTEE, FL 33786
 AUSTIN BRIDGE CO
 P.O. BOX 1590
 DALLAS, TEXAS 75221
 DRAWING NUMBER 18 OF 11

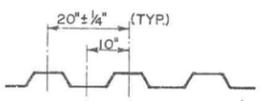
- CONCRETE:** Concrete shall be placed in accordance with the specifications for Highway Construction. All concrete shall be placed in accordance with the specifications for Highway Construction.
- FINISH:** The top surface of the Precast Prestressed Bridge Deck shall be finished in accordance with the specifications for Highway Construction.
- QUANTITY:** Quantities of deck concrete and reinforcing steel shall be based on the plan quantities.
- BEARING MATERIAL:** Precast Prestressed Bridge Deck shall be supported on the bridge abutments and piers by **FIBERBOARD BEARING MATS**.
- SPECS:** The Precast Prestressed Bridge Deck shall be made in accordance with the specifications for Highway Construction.
- NOTES:** Making sure that the bridge deck is supported on the bridge abutments and piers. Precast Prestressed Bridge Deck shall be supported on the bridge abutments and piers by fiberboard bearing mats.
- TOLERANCES:** Tolerances for Precast Prestressed Bridge Deck shall be:
 - Nominal depth (±) 1/2"
 - Strand vertical position (±) 1/2"
 - Strand horizontal position (±) 1/2"
 - Length of unit (±) 1"
 - From bottom of panel
- STEEL:** Truss bars (transverse) to original deck system to be removed and replaced by straight bars, bar for bar, in total width of deck.
- PROFILE OF BEAMS:** Profile beams: Profile elevation will be relocated as required for composite construction. Adequate provisions shall be taken to insure all contact surfaces between the Precast Prestressed Composite Bridge Deck Units and the supporting units.
- NARROW UNITS:** Narrow units that are less than 8" shall be placed in accordance with the 8" nominal unit and shall be placed in accordance with the specifications for Highway Construction.
- CURING COMPOUND:** Membrane Curing Compound will not be applied to the Precast Prestressed Composite Bridge Deck Units.
- RIN:** If saw cut falls within rib area, it will be repaired. If saw cut falls outside rib area, it will be repaired. If saw cut falls outside rib area, it will be repaired.
- REINFORCING STEEL:** State of Georgia's Steel Reinforcing Steel shall be used. Strand shall be 70K, 7 WIRE, STRAND, TYPE 1, in accordance with ASTM A416.
- FINISH:** The top surface of the Precast Prestressed Composite Bridge Deck shall be finished in accordance with the specifications for Highway Construction.
- REINFORCING STEEL:** Reinforcing steel shall be placed in accordance with the specifications for Highway Construction.



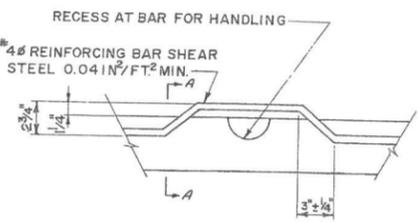
TYP. PRECAST UNIT



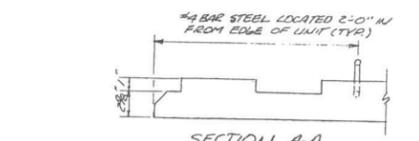
PARTIAL SECTION



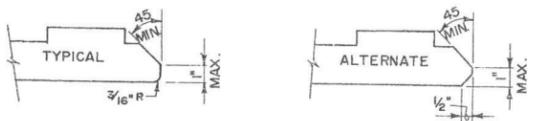
SHEAR BAR CYCLE



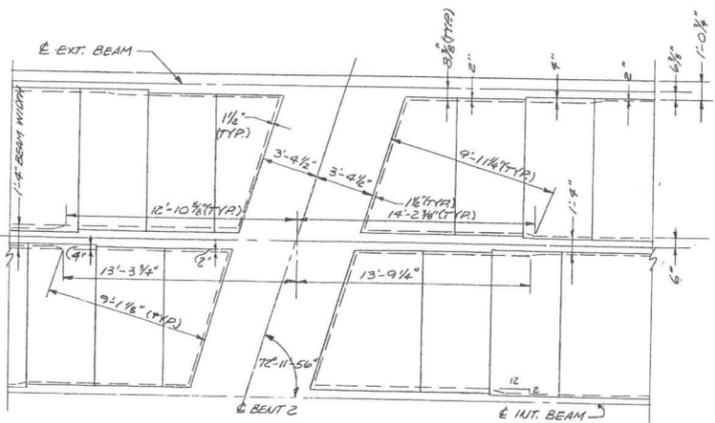
SECTION B-B SHEAR BAR



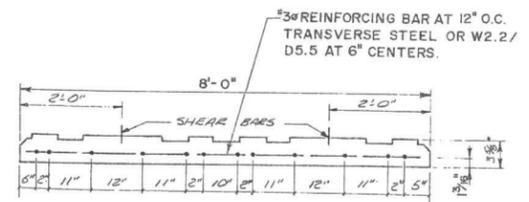
SECTION A-A



SECTION A-A EDGE DETAIL



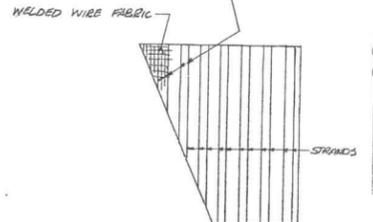
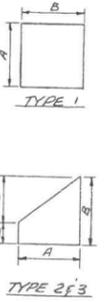
GIRDER WIDTH TRANSITIONS - RT. BR.



STRAND LOCATION IN SAW-CUT UNITS

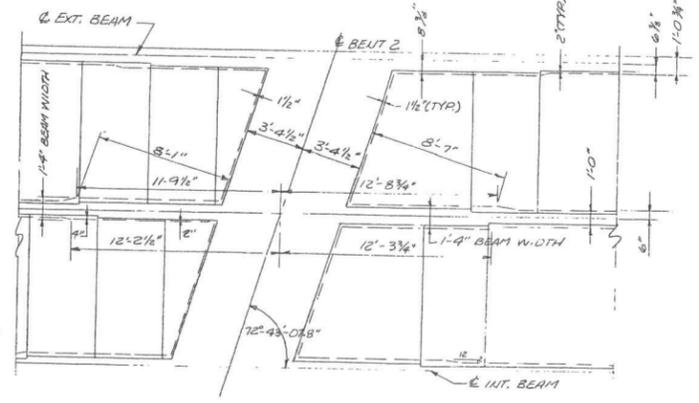
NOTE: THESE STRAND PATTERNS ARE FOR HS-LOADING AS PER CONTRACT DRAWINGS

GENERAL		PANEL DIMENSIONS						
MARK	NO. SEQD.	TYPE	A	B	C	D	AREA	"Z"
MM1	2	2	8'-4 3/8"	5'-6"	3'-0"	2'-5 3/8"	33.5612	13591
MM2	120	1	8'-4 3/8"	8'-0"			67.1124	13591
MM3	2	3	8'-0 3/8"	3'-1 3/8"	2'-4 3/8"	0'-7 3/4"	14.9515	1281
MM4	6	1	8'-2 3/8"	4'-0"			32.8152	1052
MM5	2	3	8'-4 3/8"	5'-0 3/8"	2'-2 3/8"	2'-9 3/8"	33.0467	13578
MM5A	2	2	8'-4 3/8"	5'-2"	3'-1 1/4"	2'-0 3/4"	30.5830	13587
MM6	2	3	8'-0 3/8"	4'-7 3/8"	3'-1 1/4"	2'-0 3/4"	22.3346	1274
MM6A	2	2	8'-0 3/8"	5'-3 3/8"	2'-7"	2'-8 1/4"	32.2280	
MM7	2	3	8'-4 3/8"	3'-7 3/8"	2'-3 3/8"	1'-3 3/8"	20.7792	
MM8	2	2	8'-4"	5'-5 3/8"	2'-11 3/8"	2'-6"	33.3336	13315
MM9	120	1	8'-4"	8'-0"			66.6672	13315
MM10	2	3	8'-0"	3'-1 1/4"	2'-5 3/8"	0'-7 3/4"	14.8760	1250
MM10A	2	2	8'-0"	7'-9 3/8"	2'-5 3/8"	4'-10 3/4"	49.1240	1250
MM11	6	1	8'-2"	4'-0"			32.6668	1020
MM12	2	3	8'-4"	5'-0 3/8"	2'-2 1/4"	2'-10 1/8"	32.9182	13311
MM12A	2	2	8'-4"	3'-1 3/4"	3'-1"	2'-0 3/4"	30.1060	
MM13	2	3	8'-0"	4'-0 3/8"	2'-6 3/8"	1'-6"	22.2856	1250
MM13A	2	2	8'-0"	5'-3 3/8"	2'-6 3/8"	2'-8 3/8"	32.0000	1250
MM14	2	3	8'-4"	3'-7 3/8"	2'-3 3/8"	1'-4 3/8"	20.767	13234
MM15	6	1	8'-0 3/8"	4'-0"			32.2280	1281
MM16	2	1	8'-4 3/8"	4'-0"			33.5416	
MM17	6	1	8'-0"	4'-0"			32.0000	1250
MM18	2	1	8'-4"	4'-0"			33.9332	
MM19	2	2	8'-0 3/8"	7'-4 3/8"	2'-6 3/8"	4'-10 3/4"	49.9428	1274



ADDITIONAL REINF. TYP. ALL SKEWED UNITS

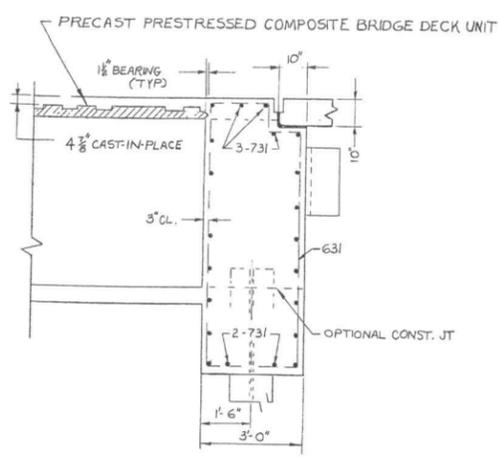
NOTE: WELDED WIRE FABRIC MAY BE USED AT THE PRODUCER'S OPTION TO PREVENT SPALLING OR CHIPPING



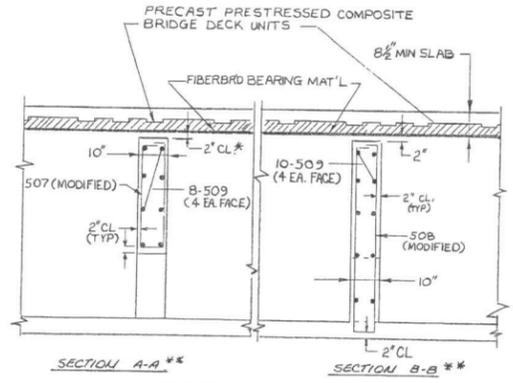
GIRDER WIDTH TRANSITIONS - LI. BR.

PRODUCER BOBBITT - IN-PLACE CORP
PO BOX 854
TITUSVILLE, FLORIDA
CONTRACTOR: AUSTIN BRIDGE CO
P.O. BOX 1590
DALLAS, TEXAS
I-575-1(2)00 CT. 2
2-575 OVER BELLS FERRY RD
CORR - CHEROKEE CO., GEORGIA
SCALE: APPROVED BY: TAKEN BY: MLB
DATE: REBAR: STAY-IN PLACE FORM DETAILS
1

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	I-575-1(2)00	56-C	88
Ct. 2 Added 12-18-79			

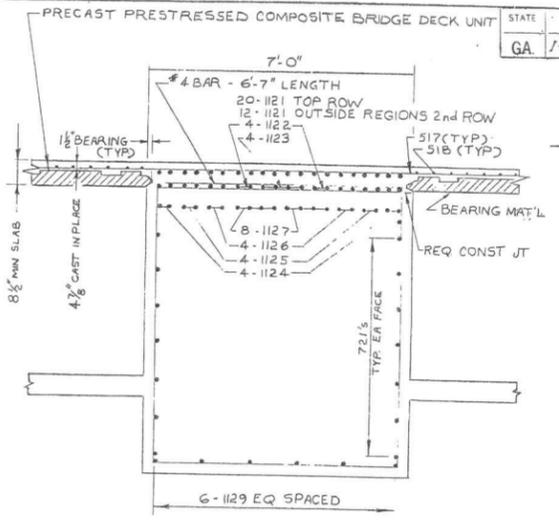
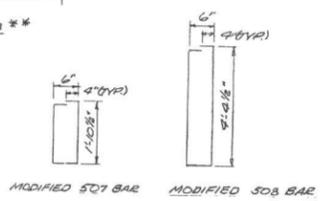


TYP SECTION AT END BENTS

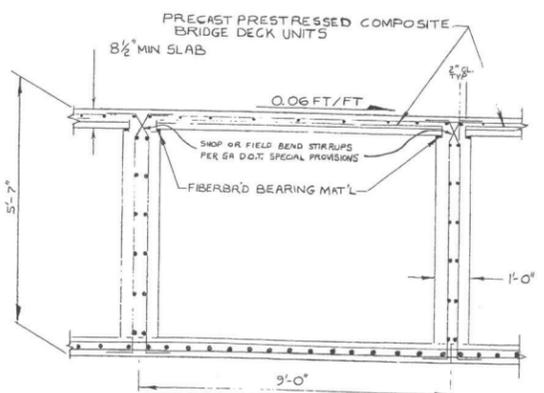


DIAPHRAGM DETAILS

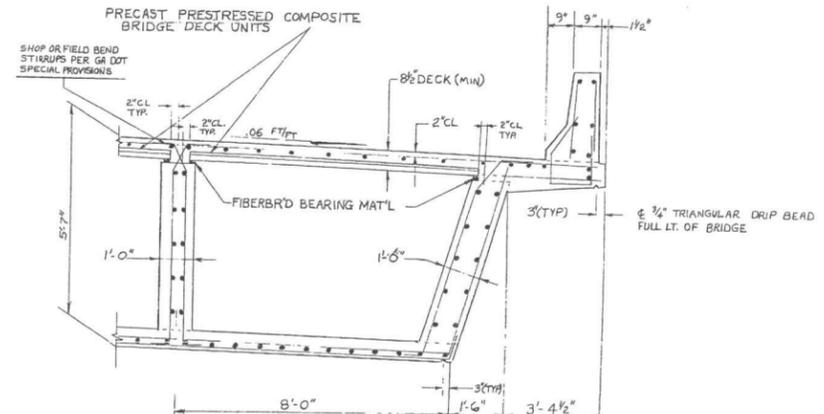
** MODIFIED FROM SECTIONS ON SHEET 5 OF 11 OF ORIG. CONTRACTS.
 * LOWERING INTERMEDIATE DIAPHRAGMS 2" REQUIRES DECK UNITS TO PASS OVER TOP WITHOUT INTERFERING WITH OR BEARING DIRECTLY ON DIAPHRAGM.



SECTION AT INTERMEDIATE BENT



SECTION THRU ROADWAY AT BAYS NO 2 & 3



SECTION THRU ROADWAY AT EXTERIOR BAYS 1 & 4

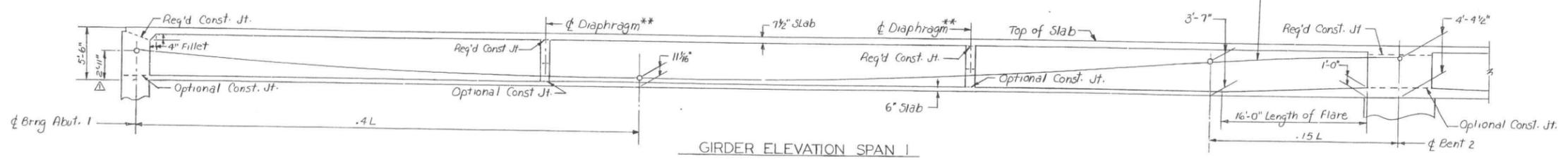
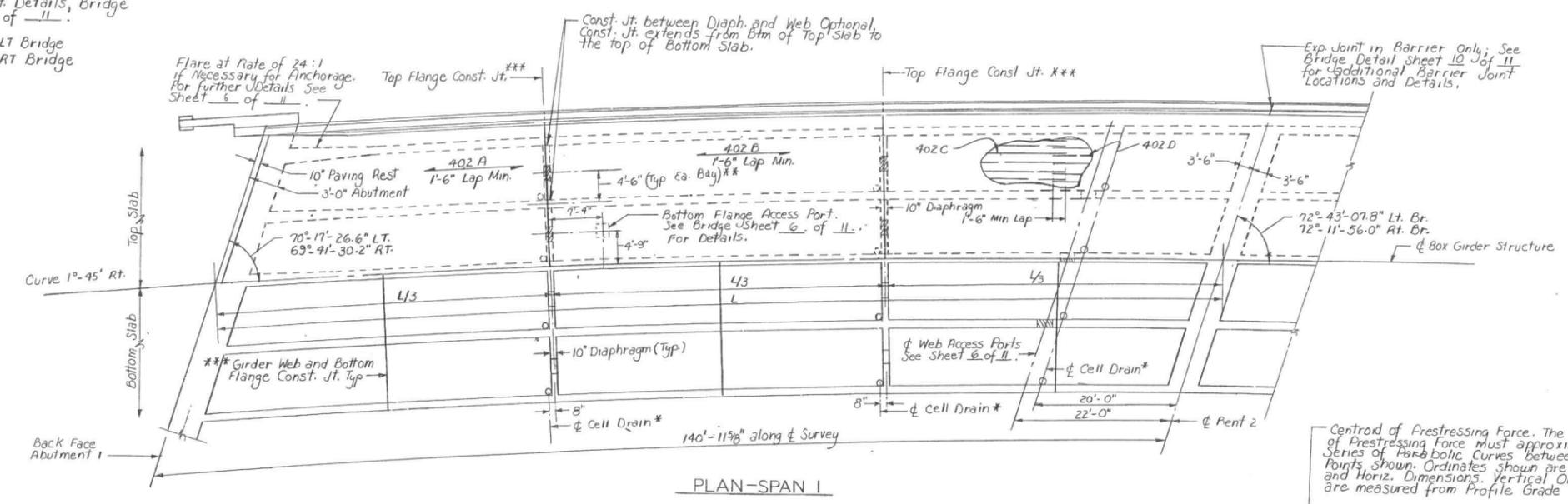
PRODUCER: BOBBITT-IN PLACE CORP. P.O. BOX 854 TITUSVILLE, FLORIDA	
CONTRACTOR: AUSTIN BRIDGE CO. P.O. BOX 1590 DALLAS, TEXAS	
I-575-1(2)00 CT. 2 I-575 OVER BELLS FERRY RD. COBB-CHEROKEE CO. GEORGIA	
SCALE	APPROVED BY
DATE	DRAWN BY W6J
STAY-IN PLACE FORM DETAILS	
DRAWING NUMBER	
2	

NOTE: ADDED TO PLANS 12-18-79, DE.M. BRIDGE SHEET 1C OF 11

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	I-575-1(2)00	57	88

CONTRACT 2
REV. 6-8-79

* For Cell Drain Details, See Bridge Detail Sheet 6 of 11.
 ** See Diaphragm Detail with Access Port, Bridge Sheet 5 of 11.
 *** See Const. Jt. Details, Bridge Sheet 6 of 11.
 L = 140'-8 7/8" LT Bridge
 141'-2 1/2" RT Bridge



Centroid of Prestressing Force. The Centroid of Prestressing Force must approximate a Series of Parabolic Curves between the Points shown. Ordinates shown are Vert. and Horiz. Dimensions. Vertical Ordinates are measured from Profile Grade Elevations.

Concrete: Post-Tensioning shall not begin until the concrete has reached a minimum compressive strength of 3000 psi (f'c = 3000)

Post-Tensioning: The required Jacking Force (P_{jack}) is 2082 Kips at each Girder Web or a Total Force of 10,409 Kips. Tendons shall be stressed to the required Jacking Force from both Ends (Simultaneous stressing not required). Stressing shall proceed on the Basis of Cycles; One Tendon in each web, in such an order that Lateral and vertical Eccentricity of Prestressing will be a minimum. All features of the Prestressing System proposed shall be subject to approval of the Engineer, including number, location and Type of Tendons and Ducts, Anchorage Details, Tensioning sequence and provisions for Grouting and Venting. If the system requires flaring of Girder Webs at the Anchorage Ends, Details and additional reinforcement required will be subject to approval by the Engineer. A minimum of 3" clearance shall be maintained between Tendon Groups Vertically and 2 1/2" Horizontally. A Maximum Group of 3 Post-Tensioning Units may be banded Vertically.

Bar Reinf. interfering with Prestressing Tendon Alignment shall be adjusted as directed by the Engineer.

- Design is based on following:
- a. Friction Loss Coefficients are $K = 0.0003$; $\mu = 0.25$.
 - b. Jacking Force (P_{jack}) includes friction losses and provision for other losses in accordance with the 1995 A.A.S.H.T.O. Interim Specifications.
 - c. Tendons to be jacked to 0.75 f'_s and anchored at an equivalent Anchor Set of 5/8".
 - d. f'c = 3500 PSI (28 Day Compressive Strength)

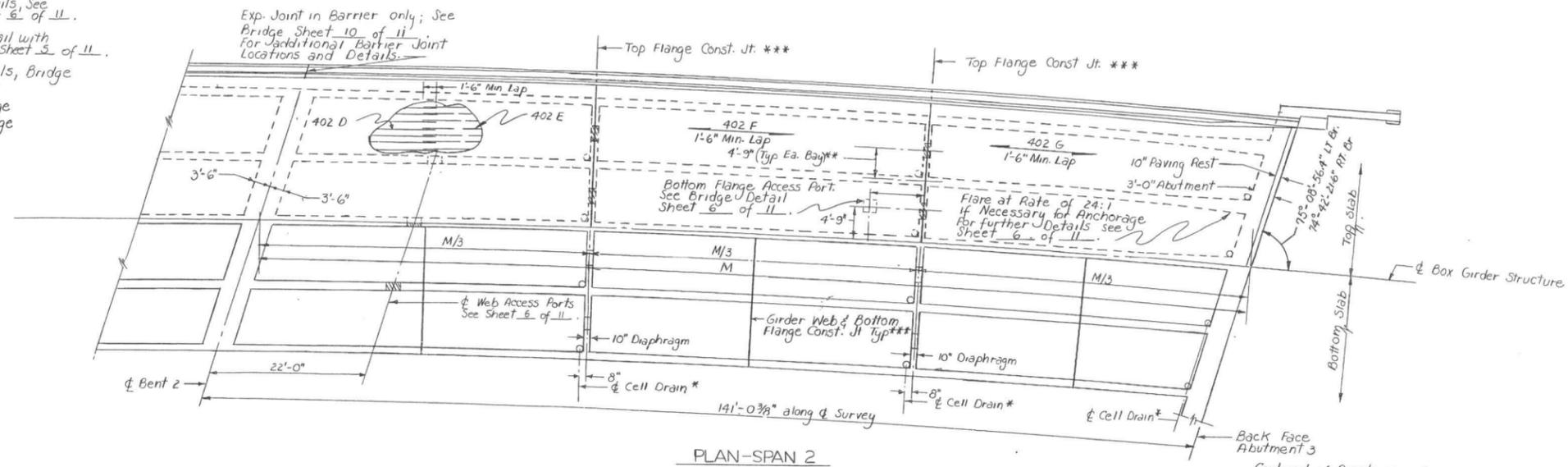
BRIDGE NO 7 LT & 7RT.	
GEORGIA	
DEPARTMENT OF TRANSPORTATION	
HIGHWAY DIVISION-BRIDGE DESIGN	
SUPERSTRUCTURE DETAILS	
I-575 OVER BELLS FERRY RD.	
COBB-CHEROKEE	I-575-1(2)00CT.2
NO SCALE	
BRIDGE SHEET 2 OF 11	DESIGNED: FFC DRAWN: JWW
TRACED: JWW CHECKED: BDM	REVIEWED: LRP APPROVED:

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	I-575-1(2)00	58	88

CONTRACT 2
Rev. 6-8-79

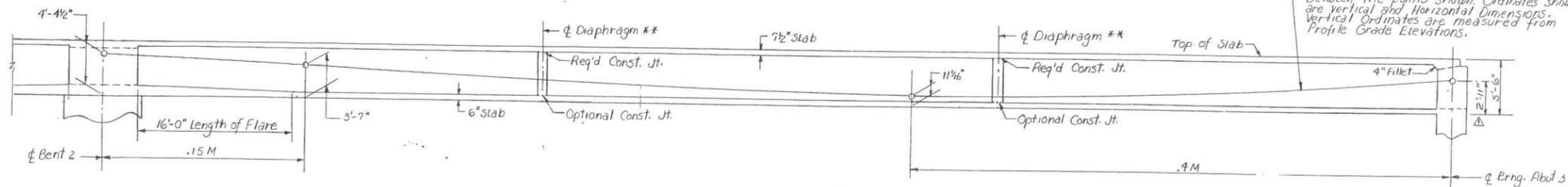
Note: Webs are Laid out as Arcs of Concentric Circles and Diaphragms are laid out on Radial Lines.

- * For Cell Drain Details, See Bridge Detail Sheet 6 of 11.
 - ** See Diaphragm Detail with Access Port, Bridge Sheet 5 of 11.
 - *** See Const. Jt. Details, Bridge Sheet 6 of 11.
- M = 140'-10 3/8" LT. Bridge
141'-2 1/2" RT. Bridge



PLAN-SPAN 2

Centroid of Prestressing Force. The Centroid of Prestressing Force must approximate a series of Parabolic Curves between the points shown. Ordinates shown are vertical and horizontal dimensions. Vertical Ordinates are measured from Profile Grade Elevations.



GIRDER ELEVATION SPAN 2

BRIDGE NO 7 LT & 7RT.

GEORGIA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION-BRIDGE DESIGN

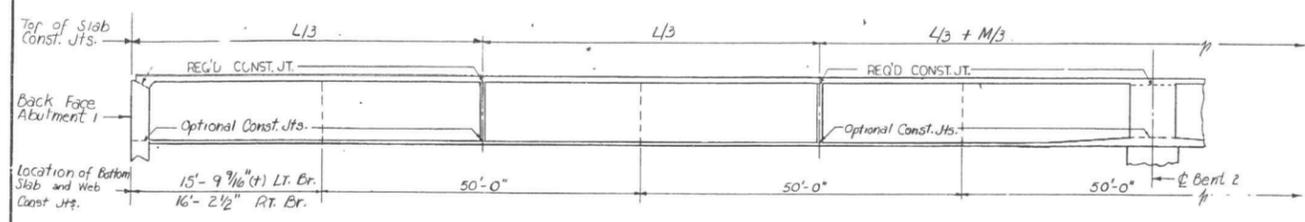
SUPERSTRUCTURE DETAILS
I-575 OVER BELLS FERRY RD.
COBB-CHEROKEE I-575-1(2)00CT.2
NO SCALE

BRIDGE SHEET
3 OF 11

DATE	12-8-79
BY	JWW
REVISIONS	

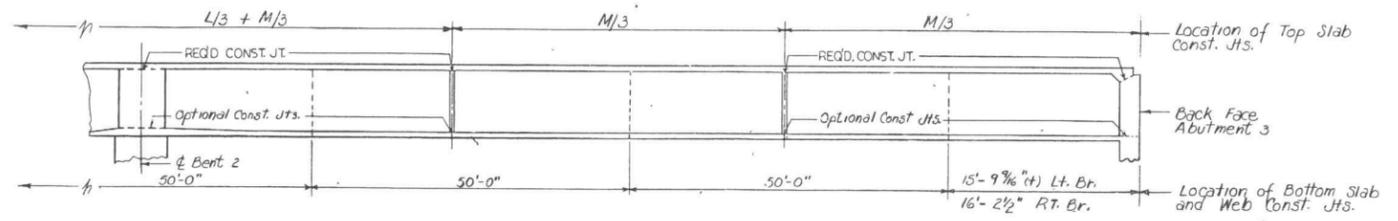
DESIGNED	FEC	TRACED	LRP
DRAWN	JWW	CHECKED	BDM
		APPROVED	

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
	GA.	I-575-1(2)00	60	88



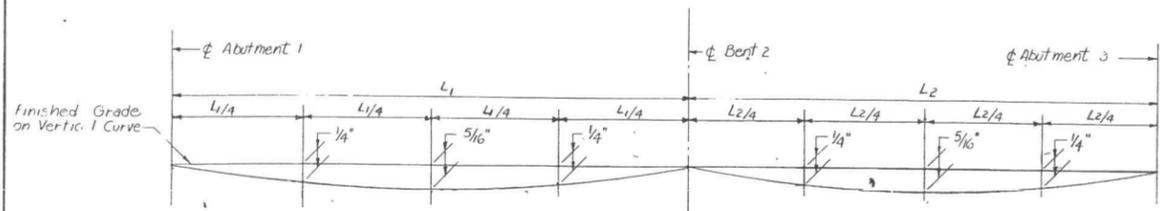
CONCRETE PLACING SEQUENCE-SPAN 1

NOTE: CONCRETE PLACING SEQUENCE DIMENSIONS ARE ALONG THE PROFILE GRADE LINE.



CONCRETE PLACING SEQUENCE-SPAN 2

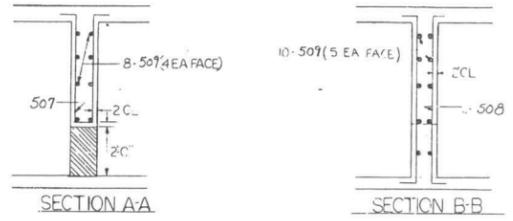
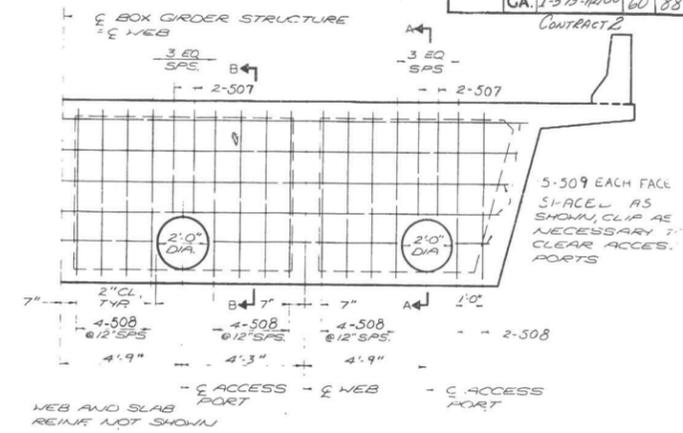
- 1) FORMS AND FALSEWORK FOR THE BOTTOM SLAB OF THE ENTIRE LENGTH AND WIDTH OF SUPERSTR SHALL BE IN PLACE PRIOR TO PLACING ANY SUPERSTRUCTURE CONCRETE.
- 2) CONCRETE FOR BOTTOM SLAB, WEB WALLS AND DIAPHRAGMS MAY BE PLACED IN ANY SEQUENCE.
- 3) NO TOP SLAB CONCRETE MAY BE PLACED UNTIL ALL WALLS AND DIAPHRAGMS ARE IN PLACE.
- 4) CONSTRUCTION JOINTS WILL BE PERMITTED AT DESIGNATED LOCATIONS ONLY OR AT LOCATIONS PROPOSED BY CONTRACTOR AND APPROVED BY THE STATE BRIDGE ENGINEER.
- 5) CONCRETE SHALL NOT BE PLACED IN BARRIER UNTIL FALSEWORK HAS BEEN RELEASED. BARRIER MAY BE PLACED IN ANY SEQUENCE.



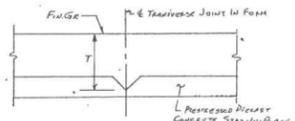
Deflections shown are approximate final deflections due to Dead Load and Prestress, including time effects. Initial deflections at time of prestressing are approximately 40% of these values.

Falsework shall be cambered for the full deflection shown, plus effects of Vertical Curve, Normal Slope of Road and Anticipated Settlement of Deflection of Falsework.

GIRDER DEFLECTION CURVE



DIAPHRAGM DETAILS WITH ACCESS PORTS



DETAIL FOR STAY-IN-PLACE CONCRETE FORMS
NO SCALE

BRIDGE 10 7 LT and 7 RT

DATE		REVISIONS	
GEORGIA DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION - BRIDGE DESIGN			
SUPERSTRUCTURE DETAILS I-575 OVEP BELLS FERRY RD. COBB-CHEROKEE I-575-1(2)00 CT.2 NO SCALE FFR 1577			
DESIGNED	TRACED	REVIEWED	APPROVED
DRWN	CHECKED	LRR	

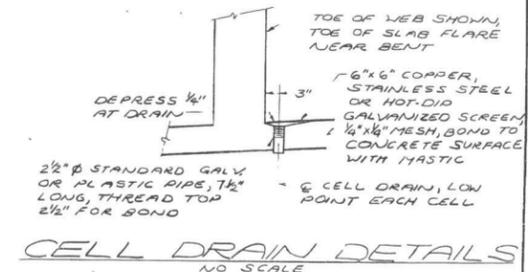
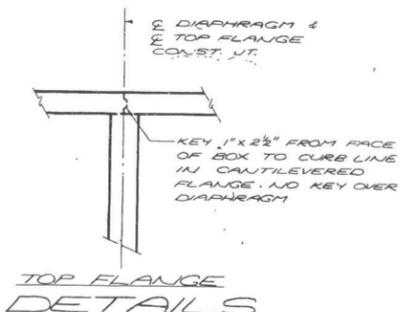
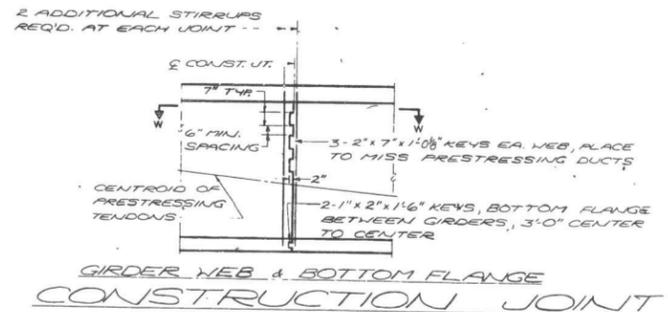
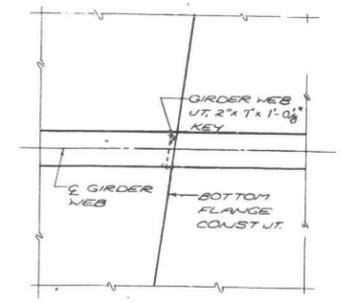
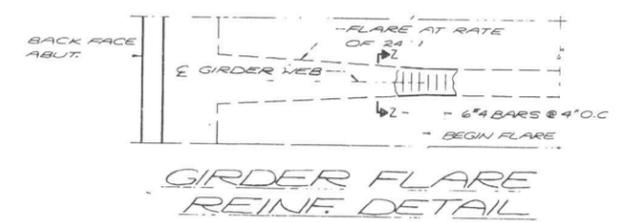
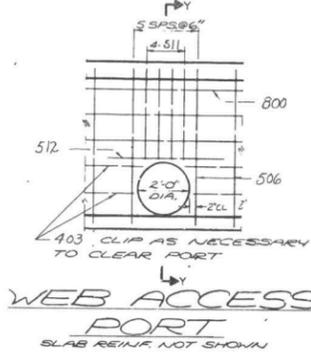
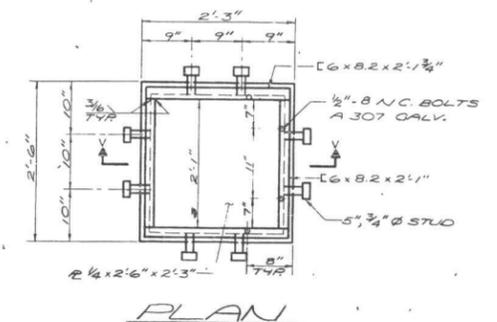
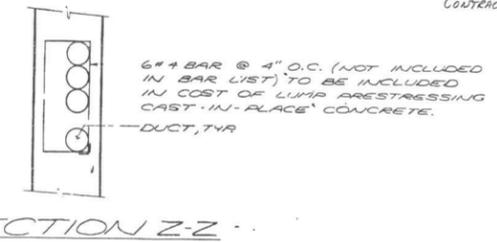
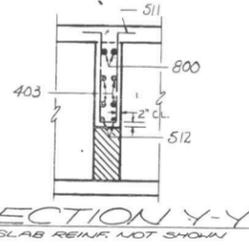
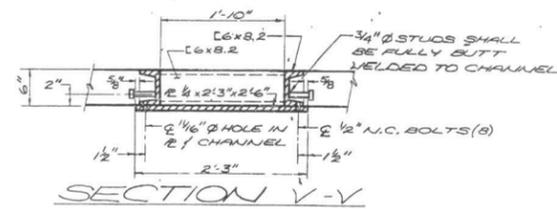
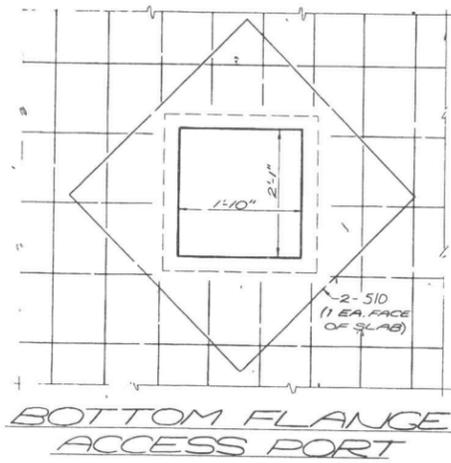
BRIDGE SHEET
5 OF 11

NOTE: CLIP BARS IN BOTTOM SLAB TO CLEAR OPENING BY 2" MIN.

NOTE: 2 ACCESS PORT ASSEMBLIES REQUIRED. A-36 STEEL GALVANIZED, ASTM A-120, OR A-153, AFTER FABRICATION. APPROX. WEIGHT PER ASSEMBLY UNIT - 125 lbs.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	GA.	I-575-1(2)00	61	88	

CONTRACT 2



BRIDGE NO. 7 LE & 7 RT.

DATE		REVISIONS	

GEORGIA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION - BRIDGE DESIGN

SUPERSTRUCTURE DETAILS
I-575 OVER BELLS FERRY RD.
COBB-CHEROKEE I-575-1(2)00 CT. 2

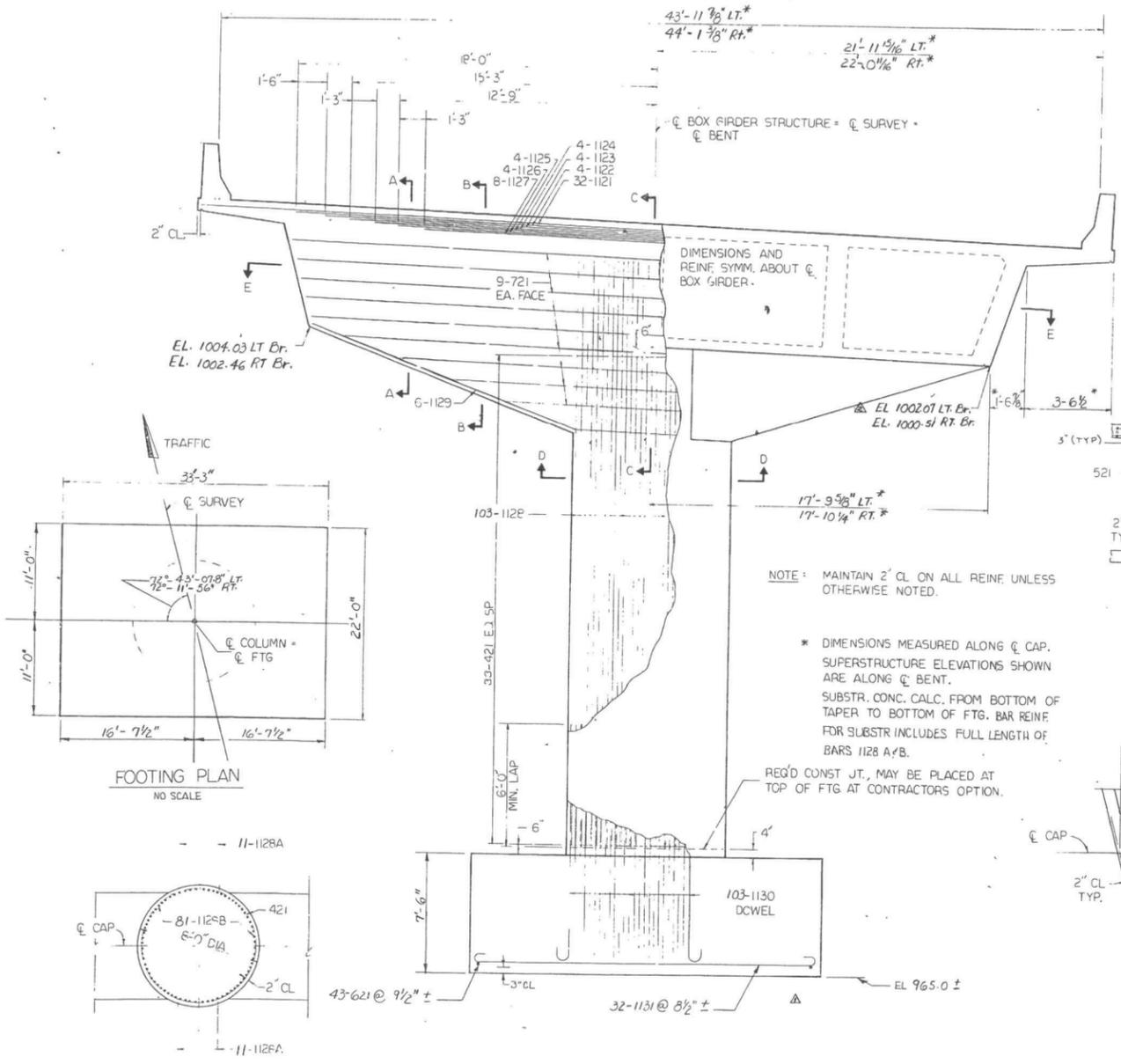
NO SCALE FEB 1977

DESIGNED: BDM	TRACED: BDM	REVIEWED: LRP
DRAWN: JWW	CHECKED: BDM	APPROVED:

BRIDGE SHEET
6 OF 11

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	I-575-112100	62	88

CONTRACT 2
REV. 5-11-78
REV. 5-24-78



FOOTING PLAN
NO SCALE

SECTION D-D
SCALE: 1/4" = 1'-0"

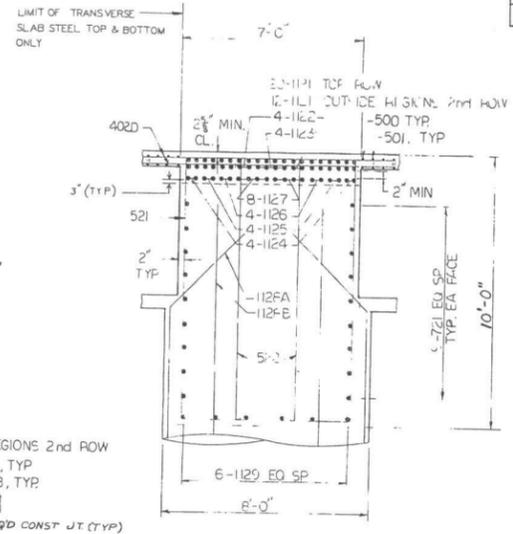
ELEVATION
SCALE: 1" = 3'-0"
LOOKING AHD.

NOTE: MAINTAIN 2" CL ON ALL REIN UNLESS OTHERWISE NOTED.

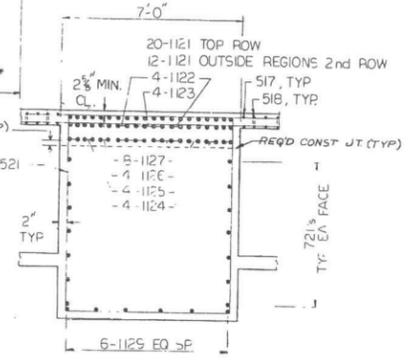
* DIMENSIONS MEASURED ALONG \bar{C} CAP. SUPERSTRUCTURE ELEVATIONS SHOWN ARE ALONG \bar{C} BENT. SUBSTR. CONC. CALC. FROM BOTTOM OF TAPER TO BOTTOM OF FTG. BAR REIN. FOR SUBSTR INCLUDES FULL LENGTH OF BARS 1128 A/B.

REQ'D CONST JT. MAY BE PLACED AT TOP OF FTG AT CONTRACTORS OPTION.

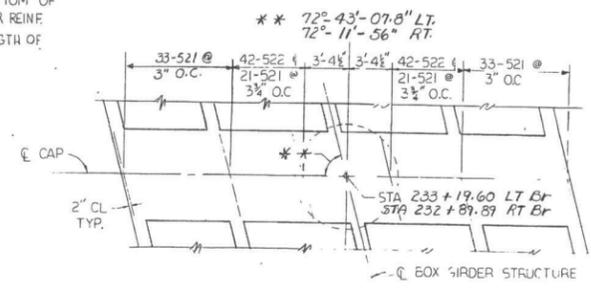
ITEM	QUANTITIES	
	2LT	2RT
CU. YDS. CLASS AA CONCRETE	191.43 251.61	127.76 248.76
LBS BAR REIN. STEEL	34,661	34,661
	34,563	34,563



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

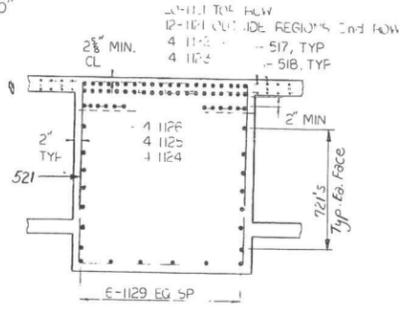


SECTION B-B
SCALE: 3/8" = 1'-0"



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

NOTE: STIRRUPS SHALL BE PLACED TANGENT TO \bar{C} SURVEY AT \bar{C} BENT. STIRRUP SPACING SHALL BE MEASURED ALONG \bar{C} BENT.



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

SOIL BEARING CAPACITY
FOOTINGS DESIGNED FOR A SOIL BEARING CAPACITY OF 5 TONS/SQ. FT.

BRIDGE NO. 7LT & 7RT.

GEORGIA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION - BRIDGE DESIGN

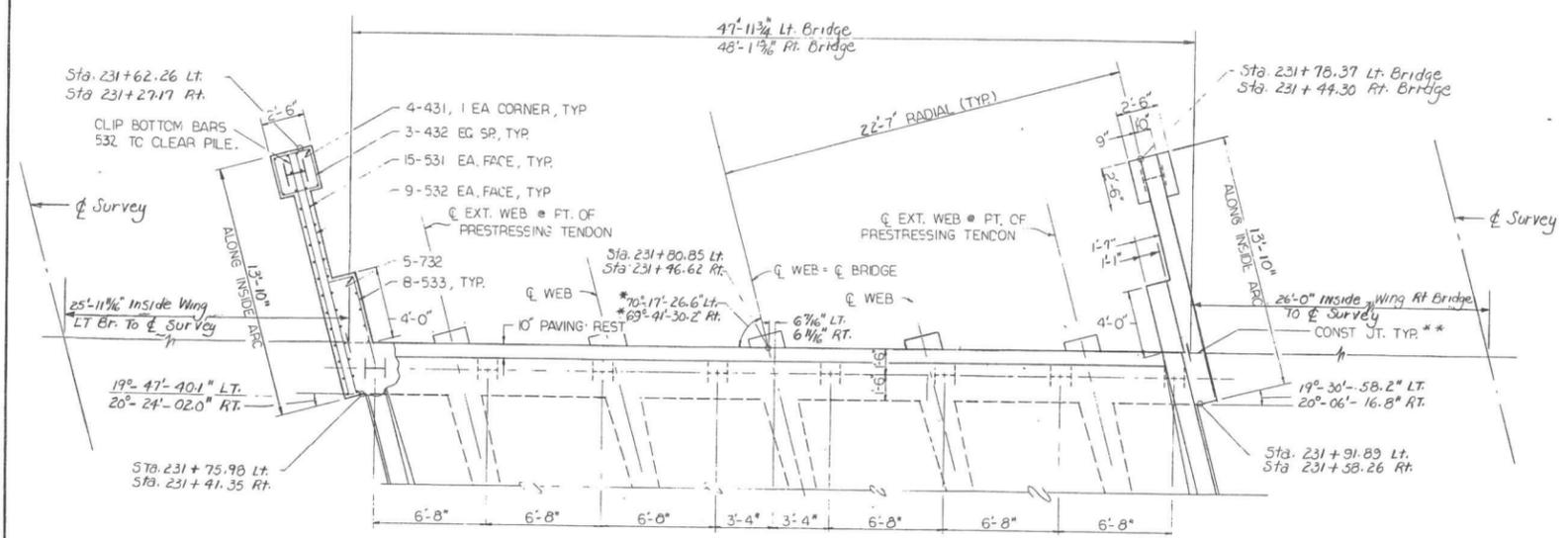
BENT 2 DETAILS
I-575 OVER BELLS FERRY RD.
COBB CHEROKEE I-575-112100 CT.2
SCALE - AS SHOWN MAR 1977

DESIGNED 28297	TRACED	REVIEWED LRT
DRAWN JWW	CHECKED BDR	APPROVED

BRIDGE SHEET
7 OF 11

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	1-575-1(2)00	63	88

Contract 2
Rev. 7-26-79

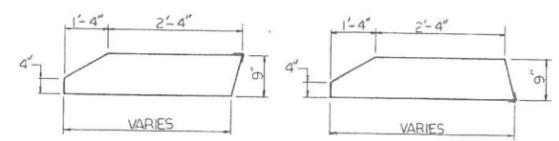


PLAN

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

NOTE: * MEASURED FROM TANGENT TO Q BRIDGE AT ITS INTERSECTION WITH BK. FACE OF ABUTMENT.
SEE BRIDGE SHEET 9 OF 11 FOR FURTHER ABUTMENT DETAILS.
** WINGWALLS BEYOND CONST. JT. SHALL BE POURED AFTER THE POST-TENSIONING OF THE STRUCTURE IS COMPLETED.

- NOTES
- 1) CONTRACTOR TO SUBMIT FOR APPROVAL WORKING DRAWINGS OF THE BEARING SEAT DETAILS NEEDED FOR THE PRESTRESSING SYSTEM THAT WILL BE USED.
 - 2) EDGE DISTANCE OF BEARING PLATES SHALL BE 1 1/2" MIN.
 - 3) THE ANCHORAGES SHALL BE RECESSED AND THE RECESS SHALL BE FILLED WITH CONCRETE TO PROVIDE 2" MINIMUM COVER OVER ALL METAL SURFACES AFTER POST-TENSIONING AND GROUTING OF THE TENDONS HAS BEEN COMPLETED AND ACCEPTED.
 - 4) CONCRETE IN ABUTMENTS 1 AND 3 SHALL BE INCLUDED WITH LUMP SUPERSTR. CONC. (CL AA). BAR REINFORCEMENT IN ABUTMENTS 1 AND 3 SHALL BE INCLUDED WITH LUMP SUPERSTR. REINF. STEEL.
 - 5) NUMBER AND LENGTH OF 434, 435, AND 436 BARS AND VOLUME OF CONCRETE IN BEARING SEAT TO COMPLY WITH PROPOSED PRESTRESSING SYSTEM. THE COST OF CONCRETE AND BARS SHALL BE INCLUDED IN PRICE OF LUMP PRESTRESSING CAST-IN-PLACE CONCRETE.
 - 6) SEE GA. STD 3053 FOR DETAILS OF 4'-0" x 1'-1" x 2'-8" ENDOPOST AND BAR REINF. IN ENDOPOST. COST OF BARS IN ENDOPOST SHALL BE INCLUDED WITH PRICE OF LUMP LBS. BAR REINF. FOR SUPERSTRUCTURE.

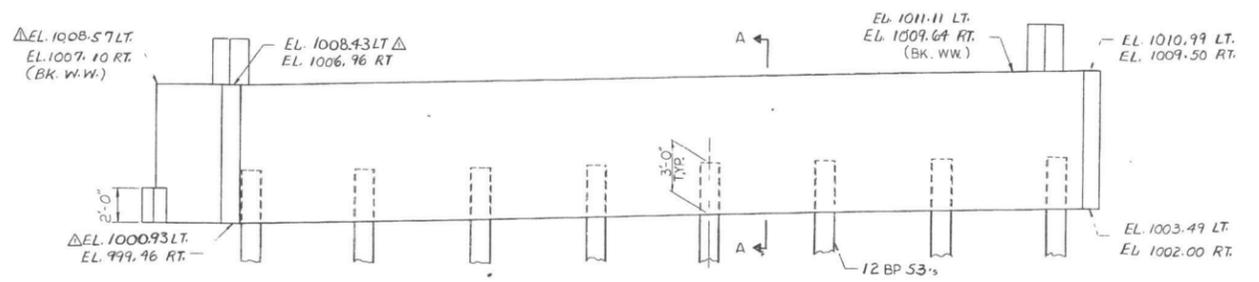


P501A P501B

SCALE: NONE

PLAN DRIVING OBJECTIVE

DRIVE ALL PILES TO A DRIVING RESISTANCE OF 70 TONS AFTER A MIN. TIP ELEV OF 970 IS ACHIEVED.



ELEVATION

SCALE: 1/4" = 1'-0"
LOOKING BACK

BRIDGE NO. 7 LT. & 7 RT.

REVISIONS		DATE	BY	REASON

GEORGIA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION - BRIDGE DESIGN

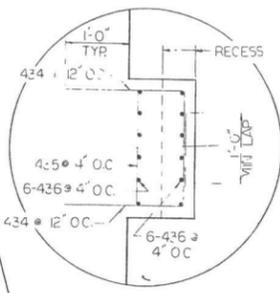
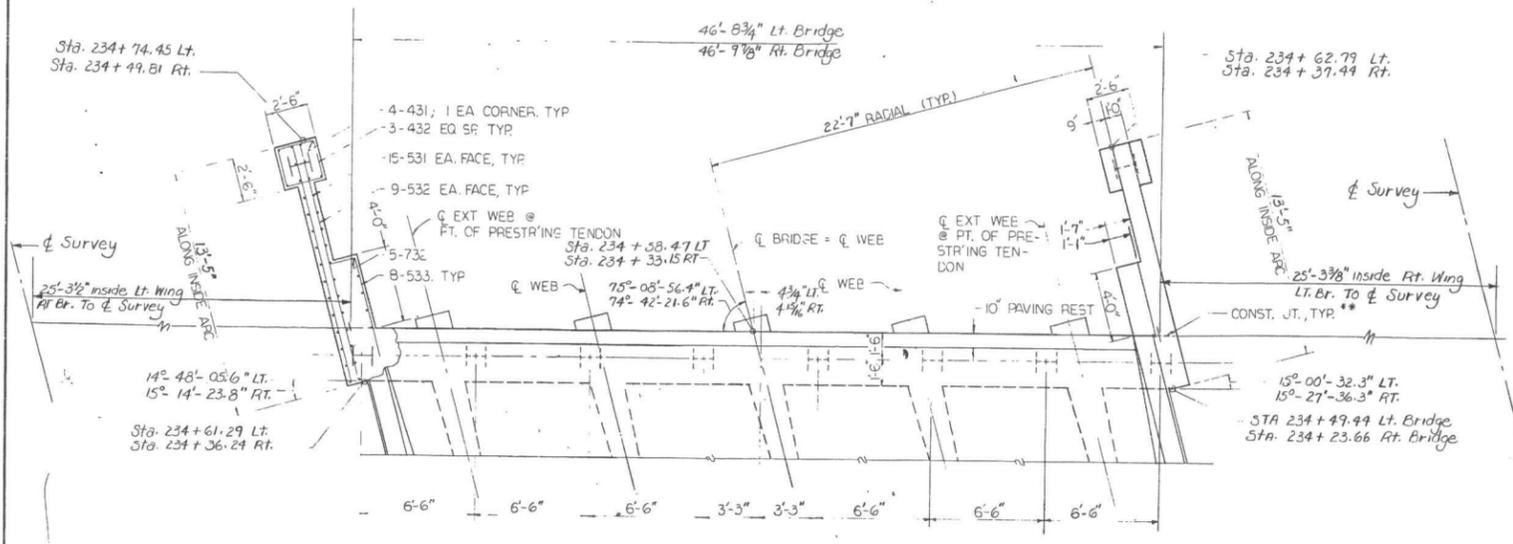
ABUTMENT 1
I-575 OVER BELLS FERRY RD.
COBB-CHEROKEE I-575-1(2)00 CT 2
SCALE: AS SHOWN MAR 1977

DESIGNED: <u>BDM</u>	TRACED: <u>JWP</u>	REVIEWED: <u>JWP</u>
DRAWN: <u>JWW</u>	CHECKED: <u>RDM</u>	APPROVED: <u>JWP</u>

BRIDGE SHEET
8 OF 11

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.	I-575-1(2)00	64	88

CONTRACT 2
REV 7-26-79



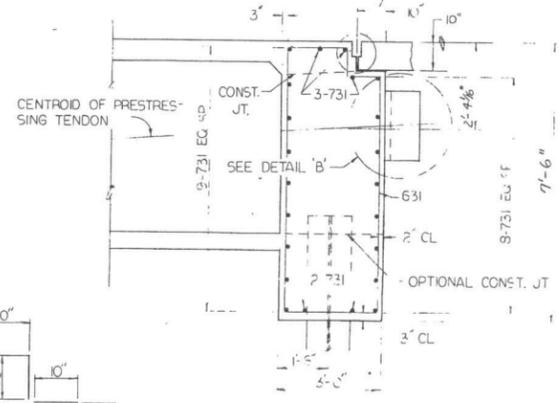
PLAN DRIVING OBJECTIVE
 DRIVE ALL PILES TO A DRIVING RESISTANCE OF 70 TONS AFTER ACHIEVING A MINIMUM Tip Elevation of:
 980 Bent 1 Lt.
 975 Bent 1 Rt.

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

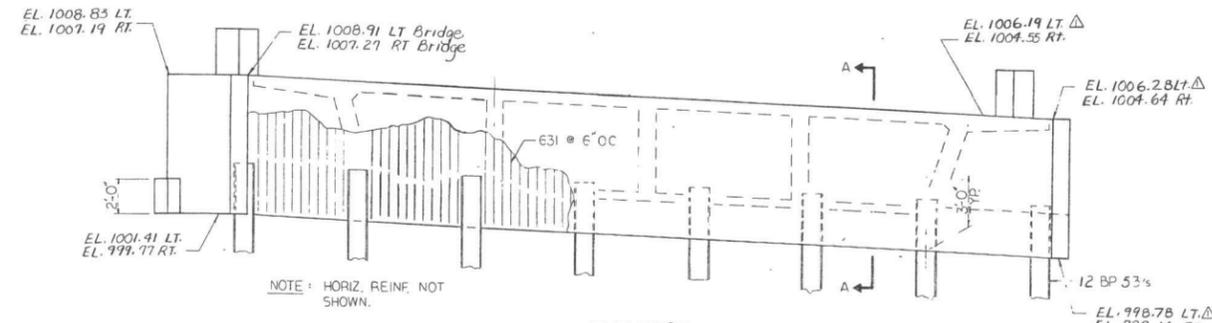
- NOTE: MAINTAIN 2" CL. ON ALL REINF. UNLESS OTHERWISE NOTED.
- * MEASURED FROM TANGENT TO Q BRIDGE AT ITS INTERSECTION WITH BACK FACE OF ABUTMENT.
 - ** WINGWALLS BEYOND CONST. JT. SHALL BE POURED AFTER THE POST TENSIONING OF THE STRUCTURE IS COMPLETED.
- COST OF EXP. JT. MATERIAL SHALL BE INCLUDED IN PRICE BID FOR CL. AA CONCRETE.

PLAN
SCALE: NONE

LIMITS OF TRANSVERSE REINF (TOP & BOT) IN FLANGES
 SEE GA JTD. 9017H (5-12-76)
 FOR EXP. JT. DETAIL. (A=1 3/4" @ 60°F)

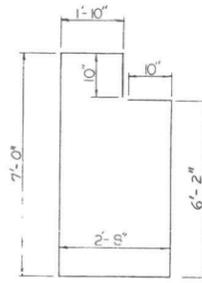


SECTION A-A
SCALE: 1/2" = 1'-0"



NOTE: HORIZ. REINF. NOT SHOWN.

ELEVATION
SCALE: NONE
LOOKING AHEAD



TYPE 99 BAR
SCALE: NONE

BRIDGE NO. 7 LT & 7 RT.

GEORGIA
DEPARTMENT OF TRANSPORTATION
 HIGHWAY DIVISION - BRIDGE DESIGN

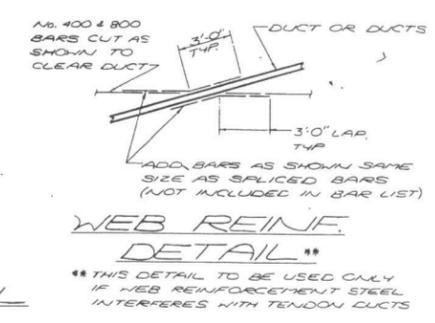
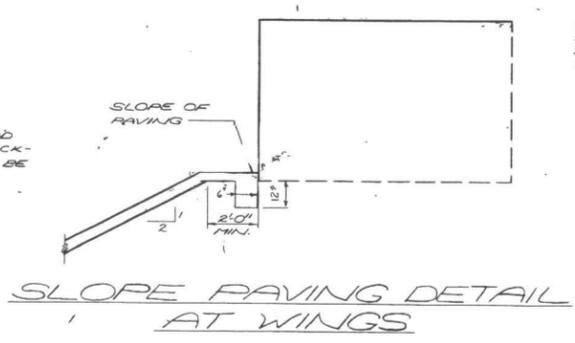
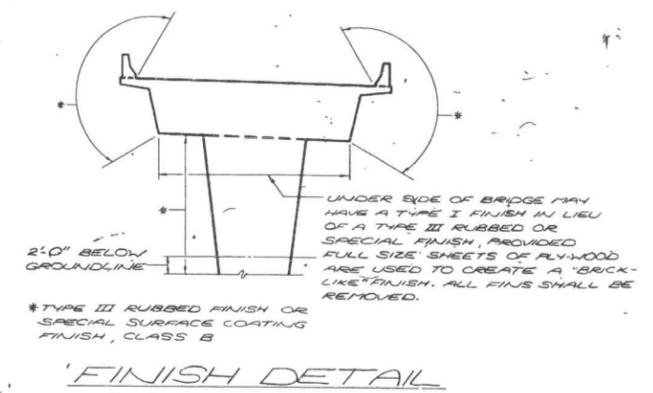
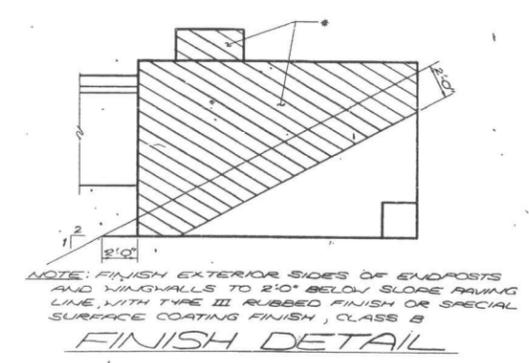
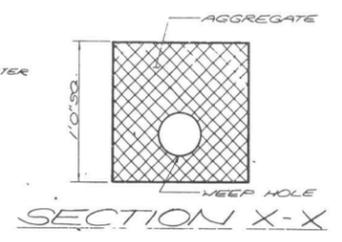
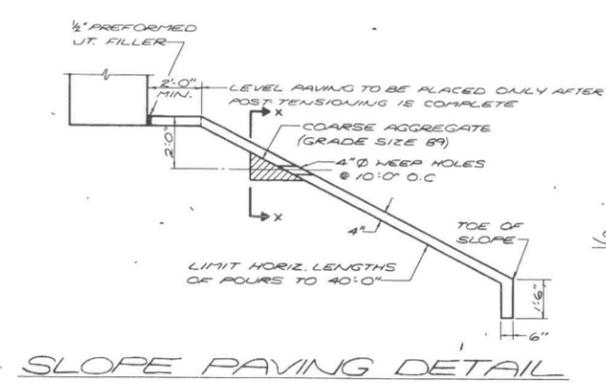
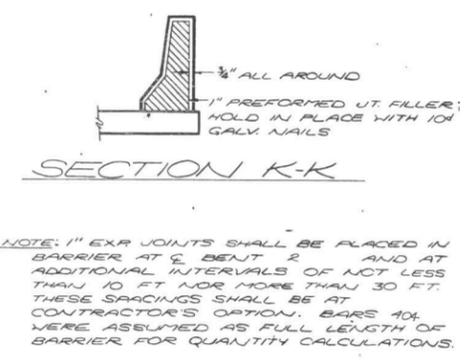
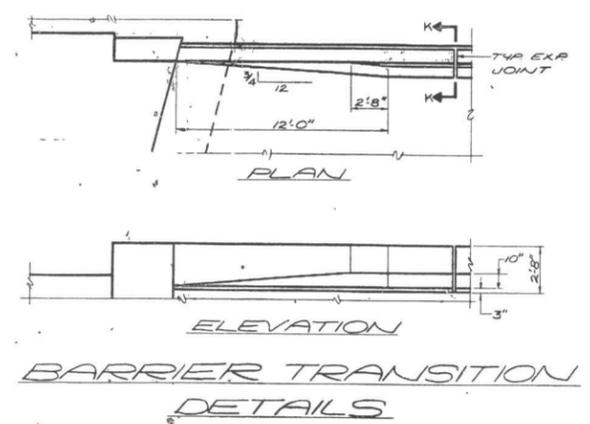
ABUTMENT 3
 I-575 OVER BELLS FERRY RD.
 CCB-B-CHEPOKEE I-575-1(2)-1(2)00 CT2
 SCALE: AS SHOWN MAR 1977

DESIGNED BY DSC	TRACED BY JWW	REVIEWED BY LDP
DRAWN BY DSC	CHECKED BY JWW	APPROVED BY

BRIDGE SHEET
9 OF 11

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
3	GA.	I-575-1(2)00	65	88	

CONTRACT 2



BRIDGE NO. 7 LT. & 7 RT.

GEORGIA	
DEPARTMENT OF TRANSPORTATION	
HIGHWAY DIVISION - BRIDGE DESIGN	
MISCELLANEOUS DETAILS	
I-575 OVER BELLS FERRY RD	
COBB-CHEROKEE	I-575-1(2)00 CT2
NO SCALE	MAR 1977
DESIGNED: <i>ETM</i>	TRACED: <i>ETM</i>
DRAWN: <i>JWV</i>	CHECKED: <i>ETM</i>
REVIEWED: <i>LRP</i>	APPROVED: <i>LRP</i>

CALCULATION SHEET

PROJECT: I-75 / I-575 NORTHWEST CORRIDOR
JOB NUMBER NH000-0575-01(028)
CALC NO. BR#38

SUBJECT: Bridge Maintenance Reports
BY: JCR DATE: 11/30/2009

SHEET NO.
SHEET REV.

BRIDGE INVENTORY DATA LISTING GEOGRAPHIC AREA DEPARTMENT OF TRANSPORTATION

Structure ID: 067-0117-0 Cobb SUFF. RATING 90.90

Location & Geography

* Structure I.D.No:	067-0117-0	* 104 Highway System:	1	Signs & Attachments	
* 200 Bridge Information	07	* 26 Functional Classification:	11	225 Expansion Joint Type:	15
* 6A Feature Int:	M-9020 BELLS FERRY ROAD	* 204 Federal Route Type:	1	242 Deck Drains:	0
* 6B Critical Bridge:	0	No.: 05751		243 Parapet Location:	0
* 7A Route Number Carried:	SR00417	105 Federal Lands Highway:	0	Height:	0.00
* 7B Facility Carried:	I-575 (NBL)	110 Truck Route:	1	Width:	0.00
* 9 Location:	4 MINE OF KENNESAW	206 School Bus Route:	0		
2 DOT District:	7	217 Benchmark Elevation:	0000.00		
207 Year Photo:	2007	218 Datum:	0	238 Curb:	0.00 0
* 91 Inspection Frequency:	24	19 Bypass Length:	01	239 Handrail:	9 9
92A Fract Crit Insp Freq:	00	20 Toll:	3	* 240 Median Barrier Rail:	0
92B Underwater Insp Freq:	00	21 Maintenance:	01	241 Bridge Median Height:	0.00
92C Other Spc. Insp Freq:	00	22 Owner:	01	Width:	0.00
* 4 Place Code:	00000	31 Design Load:	6		
* 5 Inventory Route (O/U):	1	37 Historical Significance:	5	* 230 Guardrail Loc Dir Rear:	6
Type:	1	205 Congressional District:	11	Fvrd:	0
Designation:	1	27 Year Constructed:	1980	Oppo Dir Rear:	0
Number:	00575	106 Year Reconstructed:	0000	Fvrd:	0
Direction:	0	33 Bridge Median:	1	244 Approach Slab:	3
* 16 Latitude:	34-3.1252	34 Skew:	20	224 Retaining Wall:	0
* 17 Longitude:	84-33.3728	35 Structure Flared:	0	233 Posted Speed Limit:	65
98 Border Bridge:	000	38 Navigation Control:	N	236 Warning Sign:	0
99 ID Number:	0000000000000000	213 Special Steel Design:	0	234 Delineator:	1
* 100 STRAHNET:	1	267 Type of Paint:	0	235 Hazard Boards:	0
12 Base Highway Network:	1	42 Type of Service on:	1	237 Utilities Gas:	00
13A LRS Inventory Route:	671041700	214 Movable Bridge:	0	W	00
13B Sub Inventory Route:	0	203 Type Bridge:	O-O-P-O	Ele	00
* 101 Parallel Structure:	R	259 Pile Encasement:	3	Telephone:	00
* 102 Direction of Traffic:	1	43 Structure Type Main:	6	Sε	00
* 264 Road Inventory Mile Post:	020.88	45 No. Spans Main:	002	Lighting Street:	0
* 208 Inspection Area:	09	44 Structure Type Appr:	0	Navigation:	0
Engineer's Initial:	sgm	46 No. Spans Appr:	0000	Aerial:	0
* Location I.D. No.:	067-00417D-004.02N	226 Bridge Curve Horz:	1	248 County Continuity No.:	01
		111 Pier Protection:	0		
		107 Deck Structure Type:	1		
		108 Wearing Surface Type:	1		
			Mt		
			F		
			0		

BRIDGE INVENTORY DATA LISTING GEOGRAPHIC AREA DEPARTMENT OF TRANSPORTATION

Structure ID: 067-0117-0

Cobb

SUFF. RATING

90.90

Programming Data

201 Project No.: I-575-1 (2) 00 CT.2
 202 Plans Available: 4
 249 Prop. Proj. No. 000000000000000000
 250 Approval Status: 0000
 251 P.I. No.: 00000000
 252 Contract Date: 02/01/1901
 260 Seismic No.: 00000
 75 Type Work: 00 0
 94 Bridge Imp. Cost: \$0
 95 Roadway Imp. Cost: \$0
 96 Total Imp Cost: \$0
 76 Imp. Length: 000000
 97 Imp. Year: 141945 Year: 2026
 114 Future ADT: 141945 Year: 2026

Measurements

* 29 ADT: 094630 Year: 2006
 109 % Trucks: 0
 * 28 Lanes On: 02 Under: 04
 210 No. Tracks On: 00 Under: 00
 * 48 Max. Span Length: 0141
 * 49 Structure Length: 282
 51 Br. Rwdy. Width: 40.50
 52 Deck Width: 43.70
 * 47 Tot. Horz. Cl: 40.50
 50 Curb/Sdewlk Width: 0.00/0.00
 32 Approach Rdwy Width: 038
 * 229 Shoulder Width:
 Rear Lt: 4.00 Type: 2 Rt: 10.00
 Fwd Lt: 4.00 Type: 2 Rt: 10.00

Pavement Width:

Rear: 24.00 Type: 2
 Fwd: 24.00 Type: 2

Intersection Rear: 1 Fwd: 1

36 Safety Features Br. Rail: 1

Transition: 1

App. G. Rail: 1

App. Rail End: 1

53 Minimum Cl.Over: 99 ' 99 "

Under: H 16 ' 06 "

* 228 Min. Vertical Cl

Act. Odm Dir: 99 ' 99 "

Oppo. Dir: 99 ' 99 "

Posted Odm. Dir: 00 ' 00 "

Oppo. Dir: 00 ' 00 "

55 Lateral Undercl. Rt: H 17.50

56 Lateral Undercl. Lt: 6.00

* 10 Max Min Vert Cl: 99 ' 99 " Dir: 0

39 Nav Vert Cl: 000 Horz: 0000

116 Nav Vert Cl Closed: 000

245 Deck Thickness Main: 7.50

Deck Thick Approach: 0.00

246 Overlay Thickness: 0.00

212 Year Last Painted: Sup: 0000 Sub: 0000

Ratings

65 Inventory Rating Method: 2
 63 Inventory Rating Method: 2
 66 Inventory Type: 2 Rating: 36
 64 Operating Type: 2 Rating: 51
 231 Calculated Loads
 H-Modified: 20 0
 HS-Modified: 25 0
 Type 3: 28 0
 Type 3s2: 40 0
 Timber: 36 0
 Piggyback: 40 0

261 H Inventory Rating: 20

262 H Operating Rating: 28

67 Structural Evaluation: 7

58 Deck Condition: 7

59 Superstructure Condition: 7

* 227 Collision Damage: 1

60A Substructure Condition: 8

60B Scour Condition: N

60C Underwater Condition: N

71 Waterway Adequacy: N

61 Channel Protection Cond: N

68 Deck Geometry: 7

69 UnderClr. Horz/Vert: 6

72 Appr. Alignment: 8

62 Culvert: N

Posting Data

70 Bridge Posting Required: 5

41 Struct Open, Posted, Cl: A

* 103 Temporary Structure: 0

232 Posted Loads H-Modified: 00

HS-Modified: 00

Type 3: 00

Type3s2: 00

Timber: 00

Piggyback: 00

253 Notification Date 02/01/1901

253 Fed Notify Date: 02/01/1901

0

Hydraulic Data

215 Waterway Data
 Highway Elev.: 0000.0 Year: 1900
 Avg. Streambed Elev.: 0000.0 Freq.: 00
 Drainage Area: 000000
 Area Of Opening: 000000
 113 Scour Critical: N
 216 Water Depth: 00.0 Br. Height: 00.0
 222 Slope Protection: 4
 221 Spur Dikes Rear: 0 Fwd: 0
 219 Fender System: 0
 220 Dolphin: 0
 223 Culvert Cover: 000
 Type: 0
 No. Barrels: 0
 Width: 0.00 Height: 0.00
 Length: 0 Apron: 0 Diver: ZZZ
 * 265 U/W Insp. Area: 0

* Location I.D. No.: 067-00417D-004.02N

GEORGIA DEPARTMENT OF TRANSPORTATION

Bridge Inspection Report

District: 7
Bridge Inspector: Jerry Cooper
Location ID: 067-00417D-004.02N
Structure ID: 067-0117-0

Inspection Date: 5/9/2007
Over: M-9020 BELLS FERRY ROAD
County: Cobb
Road Name: I-575 (NBL)

Inspection Area: 09
Bridge Status: 07

EVALUATION & DEFICIENCIES

SubStructure:

Year Painted: 0000

Concrete caps at both abutments.
 Bent 2 has a hammer head cap on one concrete column.
 All substructure units are poured with superstructure, no bearings.
 Abut. 3 has some sealing done, some minor leakage still exists.
 Minor erosion at wing wall abut. 3 rt.

SuperStructure:

Year Painted: 0000

2 span post-tensioned box beam.
 Very minor cracking in the exterior walls at both abutments.
 Went inside box 9-93 - minor cracking in back walls at both abutments and at bent 2.
 Minor hairline cracking in exterior wall along cable path.
 Two minor spalls in the exterior wall in span 2.
 Went back in box on 7-99 and there was no change since the 3-93 inspection.
 Very minor collision damage over inside EBL (scratch)

Deck:

7 1/2" concrete slab (poured continuous).
 Evazote joints at both abutments.
 Minor cracking in the deck surface.
 Minor transverse cracking in the deck over bent 2.

General:

Built in 1980 project # I-575-1 (2) 00 CT.2.
 Note: Use the basket truck to enter the box for inspection.

Condition Rating

Temp Shored: No

Component	Material	Rating	Truck Type	Gross/H-Mod	HSMOD	Tand	3-S-2	Log	Piggy
Substructure	Concrete	8	Calculated Posting	20	25	28	40	36	40
Superstructure	Concrete	7	Posting Required	No	No	No	No	No	No
Deck	Concrete	7	Existing Posting	00	00	00	00	00	00

Not a School Bus Route.

Structure Does Not Require Posting

GEORGIA DEPARTMENT OF TRANSPORTATION

Deficiency Report

District: 7
Bridge Inspector: Jerry Cooper
Location ID: 067-00417D-004.02N
Structure ID: 067-0117-0

Inspection Date: 5/9/2007
Over: M-9020 BELLS FERRY ROAD
County: Cobb
Asst. District Engineer: Shun Pringle

Inspection Area: 09

EVALUATION & DEFICIENCIES

I-575 (NBL) Over M-9020 BELLS FERRY ROAD-----4 MI NE OF KENNESAW

Item	Units	Work	P	Date Reported	Location	Date Completed	Complete
845	HOURS	112	A	4/1/1985		8/1/1985	122.00
800	LIN. FT.	81	B	5/23/2001		12/14/2001	205.00

Comments:

GEORGIA DEPARTMENT OF TRANSPORTATION

Collision Report

District: 7
Bridge Inspector: Jerry Cooper
Location ID: 067-00417D-004.02N
Structure ID: 067-0117-0

Inspection Date: 5/9/2007
Over: M-9020 BELLS FERRY ROAD
County: Cobb
Road Name: I-575 (NBL)

Inspection Area: 09
Skew: 20
Initial Report Date: 6/1/1996

Steel Cont. Pl grid. Beam

Span # with Beam Damage	1
Total # of Beams in Span	1
# of Damaged Beams	1

Minor Nick

Minimum VC	16.00' 8.00"
Actual VC (POI)	16.00' 7.00"
Posted VC	0.00' 0.00"

POI---> Point of Impact
VC ---> Vertical Clearanc

Initial report, Damage was present prior to last inspection.

Damage Location in Span

Span 1 over inside EBL.

Damage in Detail

1-Localized damage, nicks, burs, minor knots.

Very minor scratch to bottom of box.

Repairs

*** Repairs are not Required ***

None

Additional Comments

None

BRIDGE INVENTORY DATA LISTING GEOGRAPHIC A DEPARTMENT OF TRANSPORTATION

Structure ID: 067-0117-0

Cobb

SUFF. RATING

90.90

Location & Geography

* Structure I.D.No: 067-0117-0
 * 6A Feature Int: SR 417 NBL (I-575)
 * 6B Critical Bridge: 0
 * 7A Route Number Carried: CR02845
 * 7B Facility Carried: BELLS FERRY ROAD
 * 9 Location: 4 MINE OF KENNESAW
 * 91 Inspection Frequency: 00 Date: 02/01/1901
 * 4 Place Code: 00000
 * 5 Inventory Route (O/U): 2
 * Type: 5
 * Designation: 1
 * Number: 09020
 * Direction: 0
 * 16 Latitude: 34-3.1252 HMMS Prefix:
 * 17 Longitud 84-33.3728 HMMS Suffix: MP:
 * 100 STRAHNET: 0

Signs & Attachments

* 240 Median Barrier Rail: 0
 * 230 Guardrail Loc Dir Rear: 4
 Fwr: 4
 Oppo Dir Rear: 4
 Fwr: 4

Ratings

* 227 Collision Damage: 1

Measurements

* 29 ADT: 010700 Year: 1998
 * 28 Lanes On: 02 Under: 04
 * 48 Max. Span Length: 0141
 * 49 Structure Length: 282
 * 47 Tot. Horz. Cl: 69.50
 * 229 Shoulder Width:
 Rear Lt: 2.00 Type: 3 Rt: 10.00
 Fwr Lt: 2.00 Type: 3 Rt: 10.00
 Pavement Width:
 Rear: 24.00 Type: 2
 Fwr: 24.00 Type: 2
 Intersection Rear: 1 Fwr: 1

Posting Data

* 103 Temporary Structure: 0
 * 248 County Continuity No.: 01

Hydraulic Data

* 228 Min. Vertical Cl
 Act. Odm Dir: 16 ' 06 "
 Oppo. Dir: 16 ' 06 "
 Posted Odm. Dir: 00 ' 00 "
 Oppo. Dir: 00 ' 00 "
 * 10 Max Min Vert Cl: 16 ' 08 " Dir: 1
 * 265 U/W Insp. Are 0 Diver: ZZZ

* 26 Functional Classification: 16
 * 204 Federal Route Type: M No.:
 * 105 Federal Lands Highway: 0
 * 110 Truck Route: 0
 * 19 Bypass Length: 01
 * 20 Toll: 3
 * 21 Maintenance: 01
 * 22 Owner: 01
 * 27 Year Constructed: 1980
 * 42 Type of Service on: 1 Under: 1
 * 43 Structure Type Main: 6 06
 * 208 Inspection Area: 09 Initials: JMC
 * Location I.D. No.: 067-09020M-007.81N
 * XReference I.D. No 067-00417D-004.02N

GEORGIA DEPARTMENT OF TRANSPORTATION

Bridge Component Report

District: 7 Jerry Cooper Inspection Date: 5/9/2007 Inspection Area: 09
 Bridge Inspector: Location ID: 067-00417D-004.02N Over: M-9020 BELLS FERRY ROAD
 County: Cobb
 Structure ID: 067-0117-0 Road Name: I-575 (NBL)

SubStructure Data

Bent#	Type	Foundation	Col	#Cols	Piling	#Piles	Sway	CAP	Remarks
1	A	DP		0		0		C	Only back wall exposed.
2	P	SF	C	1		0		C	1 large round pier.
3	A	DP		0		0		C	Only back wall exposed.

SuperStructure Data

Span#	Beam Type	Spacing	Length	#Beams	Remarks
1	P.S. Concrete Box	0.00	141.00	1	Pre-stressed Post-tension
2	P.S. Concrete Box	0.00	141.00	1	Pre-stressed Post-tension

Bearing Data

Span#	Rear Type Bearing	FWD Type Bearing	Remarks
1	08 - Beam on Cap	08 - Beam on Cap	No Bearings.
2	08 - Beam on Cap	08 - Beam on Cap	No Bearings.

BRIDGE INVENTORY DATA LISTING GEO A DEPARTMENT OF TRANSPORTATION

Structure ID: 067-0118-0 Cobb SUFF. RATING 91.75

Location & Geography

* Structure I.D.No: 067-0118-0
 * 200 Bridge Information 07
 * 6A Feature Int: M-9020 BELLS FERRY ROAD
 * 6B Critical Bridge: 0
 * 7A Route Number Carried: SR00417
 * 7B Facility Carried: I-575 (SBL)
 * 9 Location: 4 MINE OF KENNESAW
 * 2 DOT District: 7
 * 207 Year Photo: 2007
 * 91 Inspection Frequency: 24 Date: 07/02/2007
 * 92A Fract Crit Insp Freq: 00 Date: 02/01/1901
 * 92B Underwater Insp Freq: 00 Date: 02/01/1901
 * 92C Other Spc. Insp Freq: 00 Date: 02/01/1901
 * 4 Place Code: 00000
 * 5 Inventory Route (O/U): 1
 * Type: 1
 * Designation: 1
 * Number: 00575
 * Direction: 0
 * 16 Latitude: 34-3.1418 MMS Prefix: SR
 * 17 Longitude: 84-33.3733 MMS Suffix: 00 MP: 3.97
 * 98 Border Bridge: 000 %Shared: 00
 * 99 ID Number: 0000000000000000
 * 100 STRAHNET: 1
 * 12 Base Highway Network: 1
 * 13A LRS Inventory Route: 671041700
 * 13B Sub Inventory Route: 0
 * 101 Parallel Structure: L
 * 102 Direction of Traffic: 1
 * 264 Road Inventory Mile Post: 020.89
 * 208 Inspection Area: 09 Initials: JMC
 * Engineer's Initial: sgm
 * Location I.D. No.: 067-00417D-004.03N

Signs & Attachments

225 Expansion Joint Type: 15
 242 Deck Drains: 0
 243 Parapet Location: 0
 Height: 0.00
 Width: 0.00
 238 Curb: 0.00 0
 239 Handrail: 9 9
 * 240 Median Barrier Rail: 0
 241 Bridge Median Height: 0.00
 Width: 0.00
 * 230 Guardrail Loc Dir Rear: 6
 Fwrd: 0
 Oppo Dir Rear: 0
 Fwrd: 0
 244 Approach Slab: 3
 224 Retaining Wall: 0
 233 Posted Speed Limit: 65
 236 Warning Sign: 0
 234 Delineator: 1
 235 Hazard Boards: 0
 237 Utilities Gas: 00
 W 00
 Ele 00
 Telephone: 00
 Sc 00
 247 Lighting Street: 0
 Naviga: 0
 Aerial: 0
 * 248 County Continuity No.: 01

BRIDGE INVENTORY DATA LISTING GEOGRAPHIC AREA DEPARTMENT OF TRANSPORTATION

Structure ID: 067-0118-0

Cobb

SUFF. RATING

91.75

Programming Data

201 Project No.: I-575-1 (2) 00 CT.2
 202 Plans Available: 0
 249 Prop. Proj. No. 000000000000000000
 250 Approval Status: 0000
 251 P.I. No.: 00000000
 252 Contract Date: 02/01/1901
 260 Seismic No.: 000000
 75 Type Work: 00 0
 94 Bridge Imp. Cost: \$ 0
 95 Roadway Imp. Cost: \$ 0
 96 Total Imp Cost: \$ 0
 76 Imp. Length: 000000
 97 Imp. Year: 0000
 114 Future ADT: 124935 Year: 2026

Measurements

* 29 ADT: 083290 Year: 2006
 109 % Trucks: 0
 * 28 Lanes On: 02 Under: 04
 210 No. Tracks On: 00 Under: 00
 * 48 Max. Span Length: 0141
 * 49 Structure Length: 282
 51 Br. Rwdy. Width: 40.50
 52 Deck Width: 43.70
 * 47 Tot. Horz. Cl: 40.50
 50 Curb/Sdewlk Width: 0.00/0.00
 32 Approach Rdwy Width: 038
 * 229 Shoulder Width:
 Rear Lt: 4.00 Type: 2 Rt: 10.00
 Fwd Lt: 4.00 Type: 2 Rt: 10.00

Ratings

65 Inventory Rating Method: 2
 63 Inventory Rating Method: 2
 66 Inventory Type: 2 Rating: 36
 64 Operating Type: 2 Rating: 51
 231 Calculated Loads
 H-Modified: 20 0
 HS-Modified: 25 0
 Type 3: 28 0
 Type 3s2: 40 0
 Timber: 36 0
 Piggyback: 40 0

261 H Inventory Rating: 20
 262 H Operating Rating: 28
 67 Structural Evaluation: 7
 58 Deck Condition: 7
 59 Superstructure Condition: 7
 * 227 Collision Damage: 0
 60A Substructure Condition: 8
 60B Scour Condition: N
 60C Underwater Condition: N
 71 Waterway Adequacy: N
 61 Channel Protection Cond: N
 68 Deck Geometry: 7
 69 UnderClr. Horz/Vert: 6
 72 Appr. Alignment: 8
 62 Culvert: N

Hydraulic Data

215 Waterway Data
 Highwater Elev.: 0000.0 Year: 1900
 Avg. Streambed Elev.: 0000.0 Freq.: 00
 Drainage Area: 000000
 Area Of Opening: 000000
 113 Scour Critical: N
 216 Water Depth: 00.0 Br. Height: 00.0
 222 Slope Protection: 4
 221 Spur Dikes Rear: 0 Fwd: 0
 219 Fender System: 0
 220 Dolphin: 0
 223 Culvert Cover: 000
 Type: 0
 No. Barrels: 0
 Width: 0.00 Height: 0.00
 Length: 0 Apron: 0 Diver: ZZZ
 * 265 U/W Insp. Area: 0

Posting Data

70 Bridge Posting Required: 5
 41 Struct Open, Posted, Cl: A
 * 103 Temporary Structure: 0
 232 Posted Loads H-Modified: 00
 HS-Modified: 00
 Type 3: 00
 Type3s2: 00
 Timber: 00
 Piggyback: 00
 253 Notification Date 02/01/1901
 253 Fed Notify Date: 02/01/1901 0

* Location I.D. No.: 067-00417D-004.03N Sup: 0000 Sub: 0000

GEORGIA DEPARTMENT OF TRANSPORTATION

Bridge Inspection Report

District: 7
Bridge Inspector: Jerry Cooper
Location ID: 067-00417D-004.03N
Structure ID: 067-0118-0

Inspection Date: 7/2/2007
Over: M-9020 BELLS FERRY ROAD
County: Cobb
Road Name: I-575 (SBL)

Inspection Area: 09
Bridge Status: 07

EVALUATION & DEFICIENCIES

SubStructure:

Year Painted: 0000

All concrete units - hammer head cap and 1 column at bent #2.
 Concrete abutments and superstructure was poured as one during construction.

SuperStructure:

Year Painted: 0000

2 span post tensioned box beam (1 box).
 Went inside box on 09-93 .
 Minor cracking in back walls at both abutments and at bent #2 .
 Minor hair line cracking in exterior walls along cable path .
 Went in the box on 7-99 and there was no change since the last inspection of 3-93.

Deck:

7 1/2" concrete slab (poured continuous).
 Rubber compression seals at both abutments have been replaced with silicone.
 The deck surface has minor cracking throughout with moderate transverse cracking located over bent 2.

General:

Built in 1980 project # I-575-1 (2) 00 CT.2
 Note: Use the basket truck to enter the box for inspection.

Condition Rating

Temp Shored: No

Component	Material	Rating	Truck Type	Gross/H-Mod	HMod	Tand	3-S-2	Log	Piggy
Substructure	Concrete	8	Calculated Posting	20	25	28	40	36	40
Superstructure	Concrete	7	Posting Required	No	No	No	No	No	No
Deck	Concrete	7	Existing Posting	00	00	00	00	00	00

Not a School Bus Route.

Structure Does Not Require Posting

GEORGIA DEPARTMENT OF TRANSPORTATION

Deficiency Report

District: 7
Bridge Inspector: Jerry Cooper
Location ID: 067-00417D-004.03N
Structure ID: 067-0118-0

Inspection Date: 7/2/2007
Over: M-9020 BELLS FERRY ROAD
County: Cobb
Asst. District Engineer: Shun Pringle

Inspection Area: 09

EVALUATION & DEFICIENCIES

I-575 (SBL) Over M-9020 BELLS FERRY ROAD-----4 MI NE OF KENNESAW

Item	Units	Work	P	Date Reported	Location	Date Completed	Complete
800	LIN. FT.	81	B	6/1/1999		7/19/2005	2,240.00
845	HOURS	16	B	5/23/2001		6/28/2006	1,862.00
845	HOURS	80	B	7/19/2005		6/28/2006	344.00

Comments:

BRIDGE INVENTORY DATA LISTING GEO A DEPARTMENT OF TRANSPORTATION

Structure ID: 067-0118-0

Cobb

SUFF. RATING

91.75

Location & Geography

* Structure I.D.No: 067-0118-0
 * 6A Feature Int: SR 417 SBL (I-575)
 * 6B Critical Bridge: 0
 * 7A Route Number Carried: CR02845
 * 7B Facility Carried: BELLS FERRY ROAD
 * 9 Location: 4 MINE OF KENNESAW

* 91 Inspection Frequency: 00 Date: 02/01/1901

* 4 Place Code: 000000

* 5 Inventory Route (O/U): 2

Type: 5

Designation: 1

Number: 09020

Direction: 0

* 16 Latitude: 34-3.1418

* 17 Longitud 84-33.3733

* 100 STRAHNET: 0

12 Base Highway Network: 1

13A LRS Inventory Route: 672284500

13B Sub Inventory Route: 0

* 101 Parallel Structure: L

* 102 Direction of Traffic: 2

* 104 Highway System: 0

* 26 Functional Classification: 16

* 204 Federal Route Type: M No.: 1

105 Federal Lands Highway: 0

* 110 Truck Route: 0

* 19 Bypass Length: 01

* 20 Toll: 3

* 21 Maintenance: 01

* 22 Owner: 01

27 Year Constructed: 1980

* 42 Type of Service on: 1 Under: 1

* 43 Structure Type Main: 6 06

* 208 Inspection Area: 09 Initials: JMC

* Location I.D. No.: 067-09020M-007.82N

* XReference I.D. No 067-00417D-004.03N

Signs & Attachments

* 240 Median Barrier Rail: 0

* 230 Guardrail Loc Dir Rear: 4

Fwrdd: 4

Oppo Dir Rear: 4

Fwrdd: 4

Measurements

* 29 ADT: 010700 Year: 1998

* 28 Lanes On: 02 Under: 04

* 48 Max. Span Length: 0141

* 49 Structure Length: 282

* 47 Tot. Horz. Cl: 69.50

* 229 Shoulder Width:

Rear Lt: 2.00 Type: 3 Rt: 12.00

Fwrdd Lt: 2.00 Type: 3 Rt: 10.00

Pavement Width:

Rear: 24.00 Type: 2

Fwrdd: 24.00 Type: 2

Intersection Rear: 1 Fwrdd: 1

* 228 Min. Vertical Cl

Act. Odm Dir: 21 ' 02 "

Oppo. Dir: 21 ' 03 "

Posted Odm. Dir: 00 ' 00 "

Oppo. Dir: 00 ' 00 "

* 10 Max Min Vert Cl: 21 ' 05 " Dir: 2

Ratings

* 227 Collision Damage: 0

Posting Data

* 103 Temporary Structure: 0

* 248 County Continuity No.: 01

Hydraulic Data

* 265 U/W Insp. Are 0 Diver: ZZZ

CALCULATION SHEET

PROJECT: I-75 / I-575 NORTHWEST CORRIDOR
JOB NUMBER NH000-0575-01(028)
CALC NO. BR#38

SUBJECT: Bridge Foundation Investigation
BY: JCR DATE: 11/30/2009

SHEET NO.
SHEET REV.

**BRIDGE AND RETAINING WALL
FOUNDATION INVESTIGATION REPORT
I-575 over M-9020 (Bells Ferry Road)
Northwest Corridor Project**
GDOT Project No. CSNHS-0008-00(256), PI No. 0008256
Cobb County, Georgia

WILLMER ENGINEERING INC.
Project No. ATL-171-3099D

Document No.: ATL-171-3099D
Revision: 1
Issue Date: August 22, 2008
Document Status: Issued for Use

Prepared For

GEORGIA TRANSPORTATION PARTNERS
Atlanta, Georgia

Prepared By

WILLMER ENGINEERING INC.
3772 Pleasantdale Road
Suite 165
Atlanta, Georgia 30340-4270

770.939.0089

August 22, 2008

VIA COURIER

Pete M. McMahon, PE
Georgia Transportation Partners
c/o PBS&J, Inc.
5665 New Northside Drive
Suite 400
Atlanta, Georgia 30328

**SUBJECT: Bridge and Retaining Wall Foundation Investigation Report
I-575 over M-9020 (Bells Ferry Road)
Northwest Corridor Project**
GDOT Project No. CSNHS-0008-00(256), PI No. 0008256
Cobb County, Georgia
Willmer Project No. ATL-171-3099D

Dear Mr. McMahon:

Willmer Engineering Inc. (Willmer) is pleased to provide this Bridge and Retaining Wall Foundation Investigation (BFI and WFI) report for the proposed widening of the I-575 bridge over M-9020 (Bells Ferry Road) in Cobb County, Georgia. The BFI and WFI were performed in general accordance with our contract with Georgia Transportation Partners (GTP), dated May 12, 2007. The objective of this investigation was to gather enough geotechnical information to support the costing plans to be developed by GTP. Additional borings will be performed in the design/build phase of the project to provide additional information as required. This report was prepared in general accordance with Georgia Department of Transportation (GDOT) guidance documents for bridge and retaining wall foundation investigation. This report was revised to incorporate GTP comments dated January 3 and 9, 2008, and GDOT comments dated July 18, 2008.

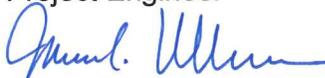
The attached summary presents the site and subsurface conditions along the proposed bridge and retaining wall alignments, and our geotechnical recommendations related to foundation design and construction.

We appreciate the opportunity to be of service to you on this project and look forward to a continuing relationship. Please contact us if you have any questions concerning this report or require further assistance.

Sincerely,

WILLMER ENGINEERING INC.

Murthy S. Kotha
Project Engineer


James L. Willmer, PE
Executive Vice President/Principal Consultant

Sujit K. Bhowmik, PhD, PE
Chief Engineer

Attachments: **Bridge and Retaining Wall Foundation Investigations**

Figures

Figure 1 Project Location Map
Figure 2 Boring Location Plan
Figure 3 Generalized Subsurface Profile
Section A-A' (Lt. Bridge & MSE Walls)
Figure 4 Generalized Subsurface Profile
Section B-B' (Rt. Bridge & MSE Walls)

Appendix I

Boring Record Legend
Unified Soil Classification System Reference Sheet
Engineering Description of Rock Hardness
Boring Records: BB-1, BB-2, W-1 and W-2 (New Borings)
Laboratory Test Results

Appendix II

Boring Records: B-1L through B-3L and B-1R through B-4R
(Borings from Existing GDOT BFI Report)

Revision History:

<u>Revision</u>	<u>Issue Date</u>	<u>Document Status</u>
A	December 11, 2007	Issued for Review
0	January 11, 2008	Issued for Use
1	August 22, 2008	Issued for Use

BRIDGE FOUNDATION INVESTIGATION	
Willmer Project Number	ATL-171-3099D
GDOT Project Number	CSNHS-0008-00(256)
Project P.I. Number	0008256
Location	I-575 Bridge over M-9020 (Bells Ferry Road), Cobb County, Georgia (see Figure 1)
GENERAL INFORMATION	
Project Description	<p>The two existing I-575 bridges over M-9020 (Bells Ferry Road) are planned to be replaced with one new bridge as part of the proposed I-575 widening over Bells Ferry Road. The bridge will be a reinforced concrete structure with two 65-foot spans.</p> <p>The existing bridges have three spans and are supported on H-piles at the end bents and H-pile footings at the intermediate bents. The BFI report for the existing bridges was obtained from GDOT, and it includes seven borings performed by GDOT in 1977.</p>
Geologic Information	The project alignment is geologically sited within the Piedmont Physiographic Province of Georgia, and is underlain by Metamorphosed Maffic Rock Formations which include amphibolite, mica schist and biotite gneiss.
Subsurface Features	<p>Subsurface information for this project was obtained from two borings (BB-1 and BB-2) performed by Willmer as part of the present study (see Appendix I) and seven borings (B-1L through B-3L and B-1R through B-4R) performed by GDOT in 1977 as part of the BFI for the two existing bridges (see Appendix II).</p> <p>The subsurface profile at the two new boring locations is generally comprised of residuum underlain by partially weathered rock (PWR) and parent bedrock. The residual soils consist of loose to very dense silty sand/sandy silt. Although no fill material was encountered at the two borings performed for the BFI, fill was encountered at two borings (W-1 and W-2) drilled from the existing roadway (I-575) shoulders for the retaining wall investigation. The fill material consisted of loose to medium dense silty sand.</p> <p>During the present field investigation ground water was encountered at all boring locations between elevations 973 and 975 feet, and during the field investigation by GDOT in 1977, ground water was encountered between elevations 982 and 984 feet.</p>

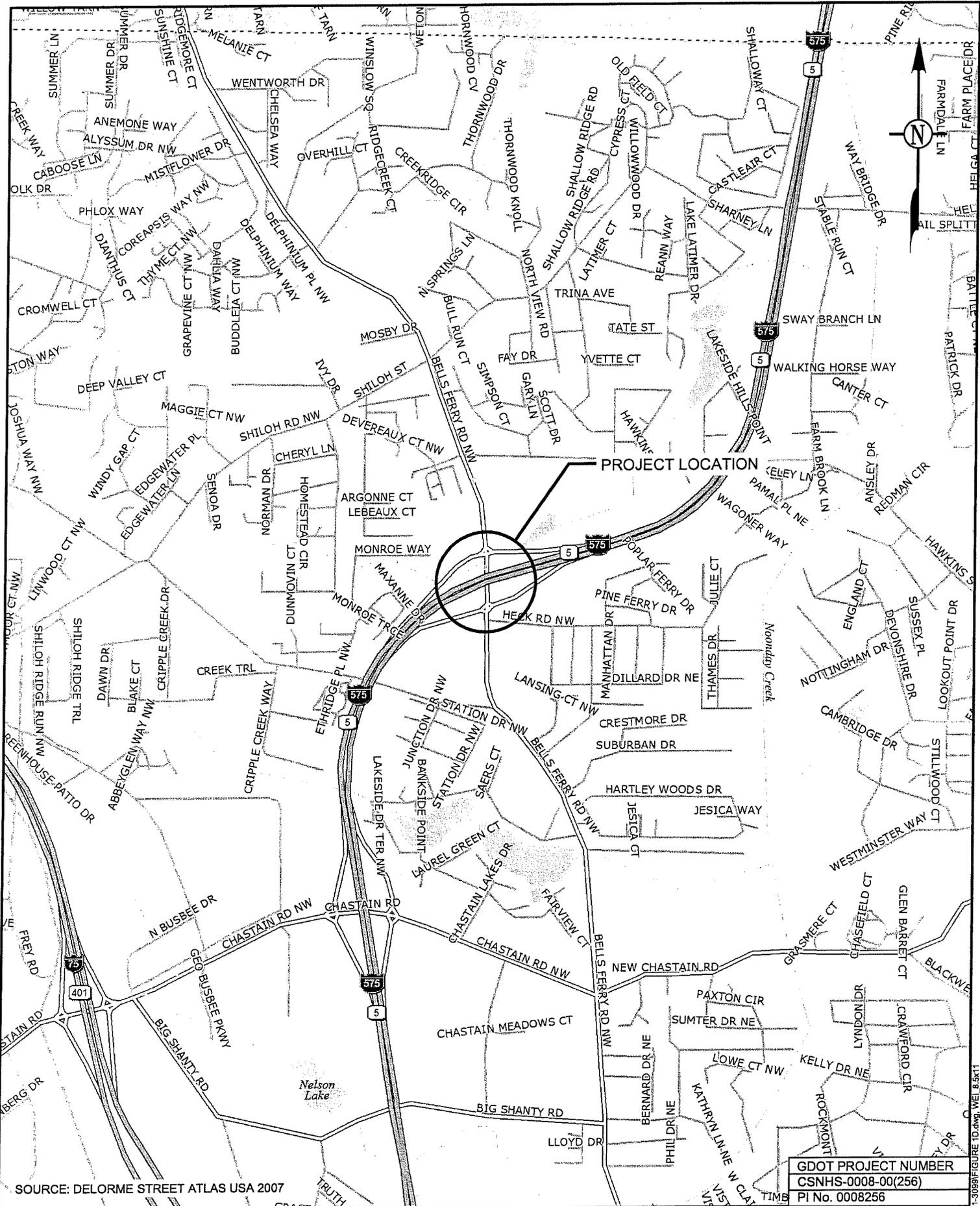
PWR AND AUGER REFUSAL ELEVATIONS (feet)			
Bent No.	Reference Boring No.	Top of PWR	Auger Refusal
1	B-1L	964	961
	B-1R	962	958
	BB-1	964	963
2	B-2L	960	*
	B-2R	960	*
	B-3R	972	968
3	BB-2	958	955
	B-3L	975	967
	B-4R	970	953
* Boring was not extended to auger refusal.			
MAXIMUM PILE DESIGN LOADS			
Pile Type	Load Transfer (%)		Design Load
	Friction	End Bearing	
H-Piles	10	90	10 BP 42 = 55 Tons 12 BP 53 = 70 Tons 14 BP 73 = 96 Tons 14 BP 89 = 117 Tons
FOUNDATION RECOMMENDATIONS			
Bent No.	Pile Footing (Type)		Pile Bent (Type)
1			H
2			H
3			H
PILE TIP ELEVATIONS (feet)			
Bent No.	Reference Boring No.	H-Pile	
		Minimum Tip	Estimated Tip
1-Left	B-1L, B-2L	962	960
1-Right	BB-1	963	963
2-Left	B-2L	960 ±	960 ±
2-Right	B-2R, B-3R	964 ±	962 ±
3-Left	BB-2	955	955
3-Right	B-3R, B-4R	964	964
NOTES			
Elevations	All elevations referenced in this report are based on Control Points No. 293 (Scribe Mark-T, EL. 976.66 feet), No. 243 (60D Traverse, EL. 1007.25 feet) and No. 138 (3/4" rebar, EL. 1004.88 feet) established by the surveyors.		
PDO	Driving resistance after Minimum Tip Elevations are achieved.		

Points	Pile points are recommended for piles driven at all bents to insure adequate penetration through/into dense/very dense soils and PWR. The use of points should be at the direction of the project Geotechnical Engineer.
Down-drag Protection	To avoid inducing down-drag loads onto the piles from potential settlement of the loose to medium dense silty sand during construction of the MSE wall, we recommend that the piles at Bents 1 and 3 be protected from down-drag by using Jackets or other approved measures.
Waiting Period	None required (see MSE wall recommendations)
Special Problems	None.
As-built Information	As-built information should be forwarded to the Geotechnical Engineering Bureau upon completion of the foundation system.

RETAINING WALL INVESTIGATION																	
Location	Two MSE retaining walls (Wall Nos. 6 and 7) are proposed for the bridge at I-575 over M-9020 (Bells Ferry Road). Wall No. 6 and 7 are comprised of the abutment walls and wing walls on the two sides at Bents 1 and 3, respectively. The total length of each wall is about 325 feet (see Figure 2) and the maximum height of the walls is about 35 feet. The bottom elevation of the walls at the bridge bents is about 978 feet.																
Subsurface Features	<p>The subsurface profile (see Figures 3 and 4 and boring logs for BB-1, BB-2, W-1 and W-2) along the proposed walls is comprised of fill and residuum underlain by partially weathered rock (PWR). The fill consists of loose to medium dense silty sand. The residual soils consist of loose to very dense silty sand and/or soft to stiff sandy silt underlain by partially weathered rock.</p> <p>Ground water was not encountered at borings W-1 and W-2. Groundwater was encountered at borings BB-1 and BB-2 between elevations 973 and 975 feet during the present field investigation, and between elevations 982 and 984 feet during the field investigation by GDOT in 1977. It should be noted that the borings for the present study were performed during an extended dry period, and ground water may be encountered at a higher elevation during construction.</p>																
Soil Parameters	<p>The following soil design parameters are recommended for use for the proposed MSE walls:</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding-right: 20px;">Soil Unit Weight</td> <td style="padding-right: 20px;">γ</td> <td style="padding-right: 20px;">=</td> <td>125 pcf</td> </tr> <tr> <td>Cohesion</td> <td>c</td> <td>=</td> <td>0 psf</td> </tr> <tr> <td>Angle of Internal Friction</td> <td>ϕ</td> <td>=</td> <td>32 degrees</td> </tr> <tr> <td>Coefficient of Sliding Friction</td> <td>μ</td> <td>=</td> <td>0.40</td> </tr> </table> <p>The above design parameters assume the backfill material behind the MSE wall fill to consist of silty sand compacted to the specified density, and the subgrade prepared as recommended below.</p>	Soil Unit Weight	γ	=	125 pcf	Cohesion	c	=	0 psf	Angle of Internal Friction	ϕ	=	32 degrees	Coefficient of Sliding Friction	μ	=	0.40
Soil Unit Weight	γ	=	125 pcf														
Cohesion	c	=	0 psf														
Angle of Internal Friction	ϕ	=	32 degrees														
Coefficient of Sliding Friction	μ	=	0.40														

Recommendations	<p>Based on the available boring data in the vicinity of the proposed MSE walls, the soil type and strength along the walls are expected to vary significantly. We recommend that the MSE walls be constructed in stages to minimize differential settlement along the walls. The following steps are recommended for the MSE walls.</p> <p>(i) Based on available information on location and elevation of the proposed MSE walls, the MSE walls at the bridge abutments will likely be along or adjacent to an existing concrete-lined ditch. Prior to MSE wall construction, the concrete-lined ditch should be removed and final grade achieved by placement of compacted structural fill.</p> <p>(ii) Any soft/loose soils from beneath the MSE walls should be over-excavated and replaced with compacted wall backfill material. The depth and extent of any over-excavation should be determined during construction by the project Geotechnical Engineer.</p> <p>(iii) The maximum allowable bearing pressures for Wall Nos. 6 and 7 are 2,500 psf and 2,000 psf, respectively. However, at the location of maximum wall height, the design bearing pressures will likely exceed the corresponding maximum allowable bearing pressures. Therefore, we recommend that the MSE walls be constructed in two stages. In the first stage, the wall should be constructed to half of its final height. A minimum 30-day waiting period should be allowed after the first stage before beginning the second stage of construction. Settlement of the MSE wall should be monitored upon completion of the first stage of construction. The length of the waiting period may be increased or decreased based on the settlement monitoring data, at the discretion of the project Geotechnical Engineer.</p> <p>(iv) After the waiting period, the MSE wall should be constructed to the final height.</p> <p>(v) The MSE wall backfill material and drainage measures should conform to GDOT standard specifications.</p>
Prepared By	Murthy S. Kotha / Sujit K. Bhowmik, PhD, PE
Senior Review By	James L. Willmer, PE

FIGURES



SOURCE: DELORME STREET ATLAS USA 2007

GDOT PROJECT NUMBER
 CSNHS-0008-00(256)
 PI No. 0008256

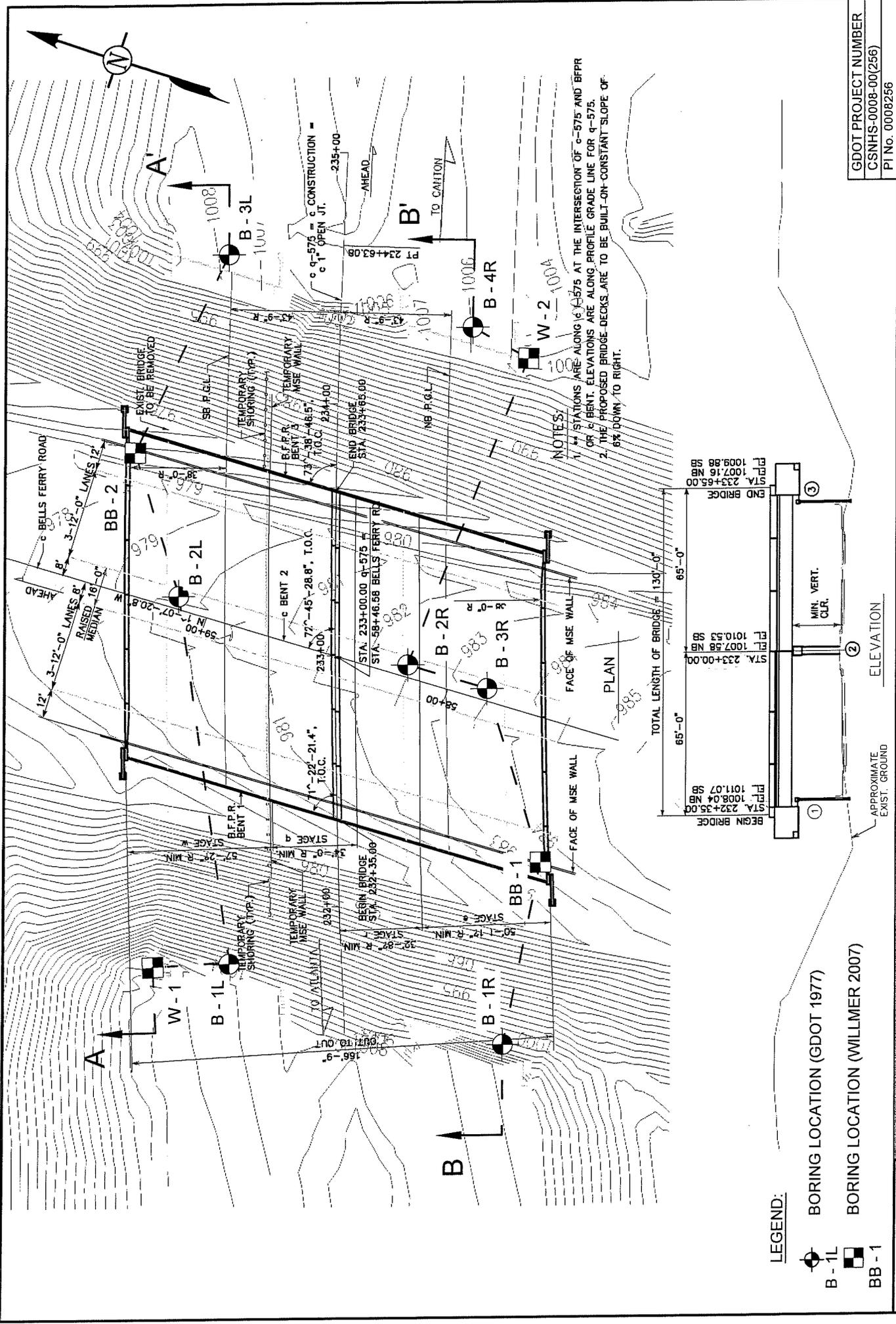
SCALE: 1" = 2000'
 DATE: 12/6/2007
 DRAWN BY: MDB
 REVIEWED BY: MK



GEOTECHNICAL ENGINEERING
 CONSTRUCTION SERVICES
 ENVIRONMENTAL SERVICES AND ENGINEERING
 3772 PLEASANTDALE ROAD - SUITE 165
 ATLANTA, GA 30340-4270

FIGURE 1
 PROJECT LOCATION MAP
 I-575 OVER M-902 (BELLS FERRY ROAD)
 NORTHWEST CORRIDOR PROJECT
 COBB COUNTY, GEORGIA
 WILLMER PROJECT No. ATL-171-3099D

I:\AUGCAD\171-GE0171-3099D\Figure 1.dwg, WEI 8.5x11



NOTES:

- STATIONS ALONG I-575 AT THE INTERSECTION OF c-575 AND BFRP OR c BENT. ELEVATIONS ARE ALONG PROFILE GRADE LINE FOR q-575.
- THE PROPOSED BRIDGE DECKS ARE TO BE BUILT ON CONSTANT SLOPE OF 6% DOWN TO RIGHT.

LEGEND:

- B - 1L
- BB - 1

BORING LOCATION (GDOT 1977)
BORING LOCATION (WILLMER 2007)

SCALE: 1" = 50'
DATE: 6/3/2008
DRAWN BY: MDB
REVIEWED BY: MK

WILLMER ENGINEERING INC.

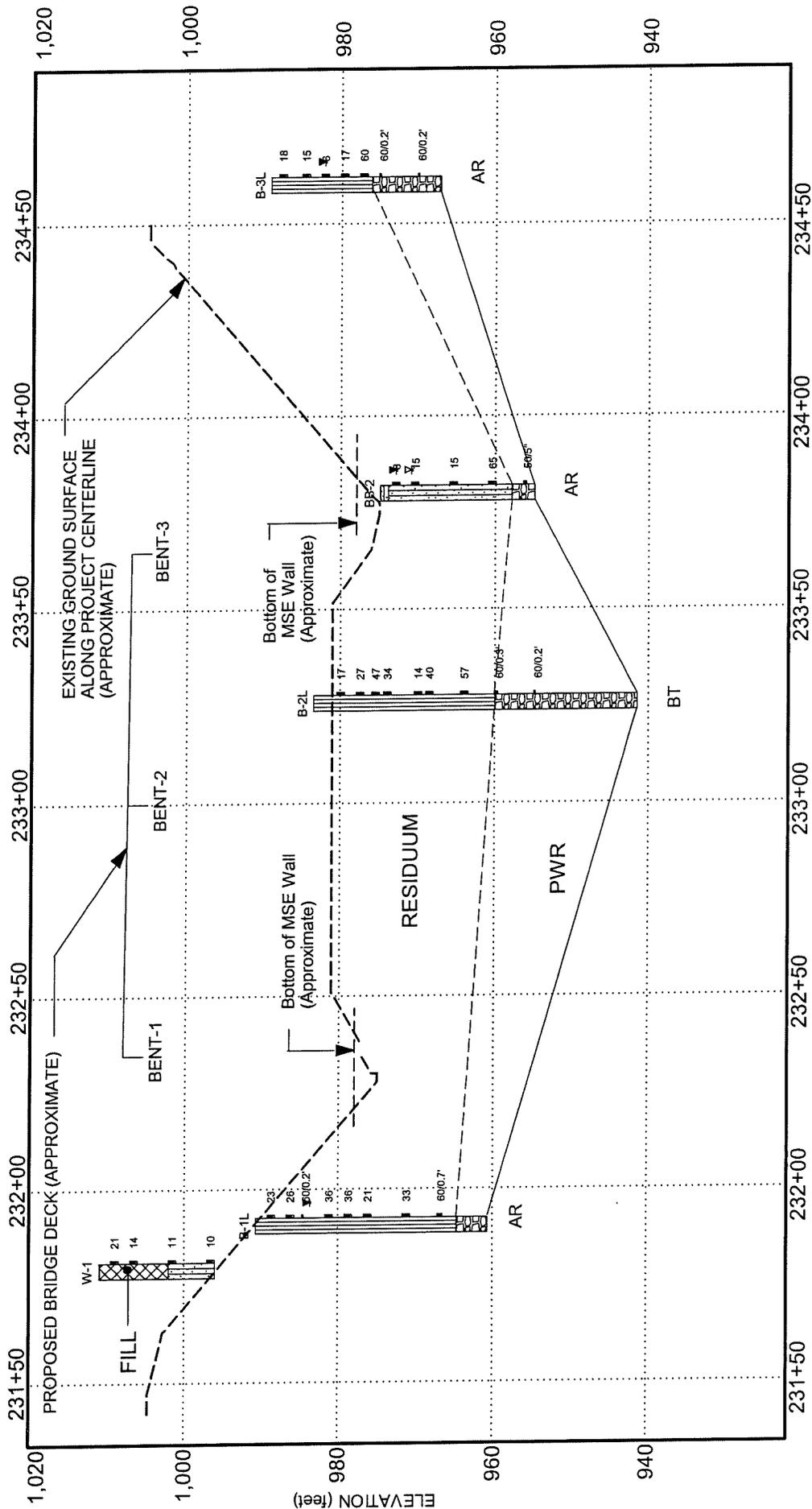


GEOTECHNICAL ENGINEERING & CONSTRUCTION SERVICES
ENVIRONMENTAL SERVICES AND ENGINEERING
3772 PLEASANTDALE ROAD - SUITE 165
ATLANTA, GA 30340-4270

FIGURE 2

BORING LOCATION PLAN
I-575 OVER M-9020 (BELLS FERRY ROAD)
NORTHWEST CORRIDOR PROJECT
COBB COUNTY, GEORGIA
WILLMER PROJECT No. ATL-171-3099D

GDOT PROJECT NUMBER	CSNHS-0008-00(256)
PI No.	0008256



DISTANCE (feet)

LEGEND:

- ▬ - Groundwater Table @ 24 hours
- ▬ - Groundwater Table @ Time of Boring
- AR - Auger Refusal
- BT - Boring Terminated
- PWR - Partially Weathered Rock

SCALE : 1 inch = 20 feet (vertical)
 1 inch = 40 feet (horizontal)

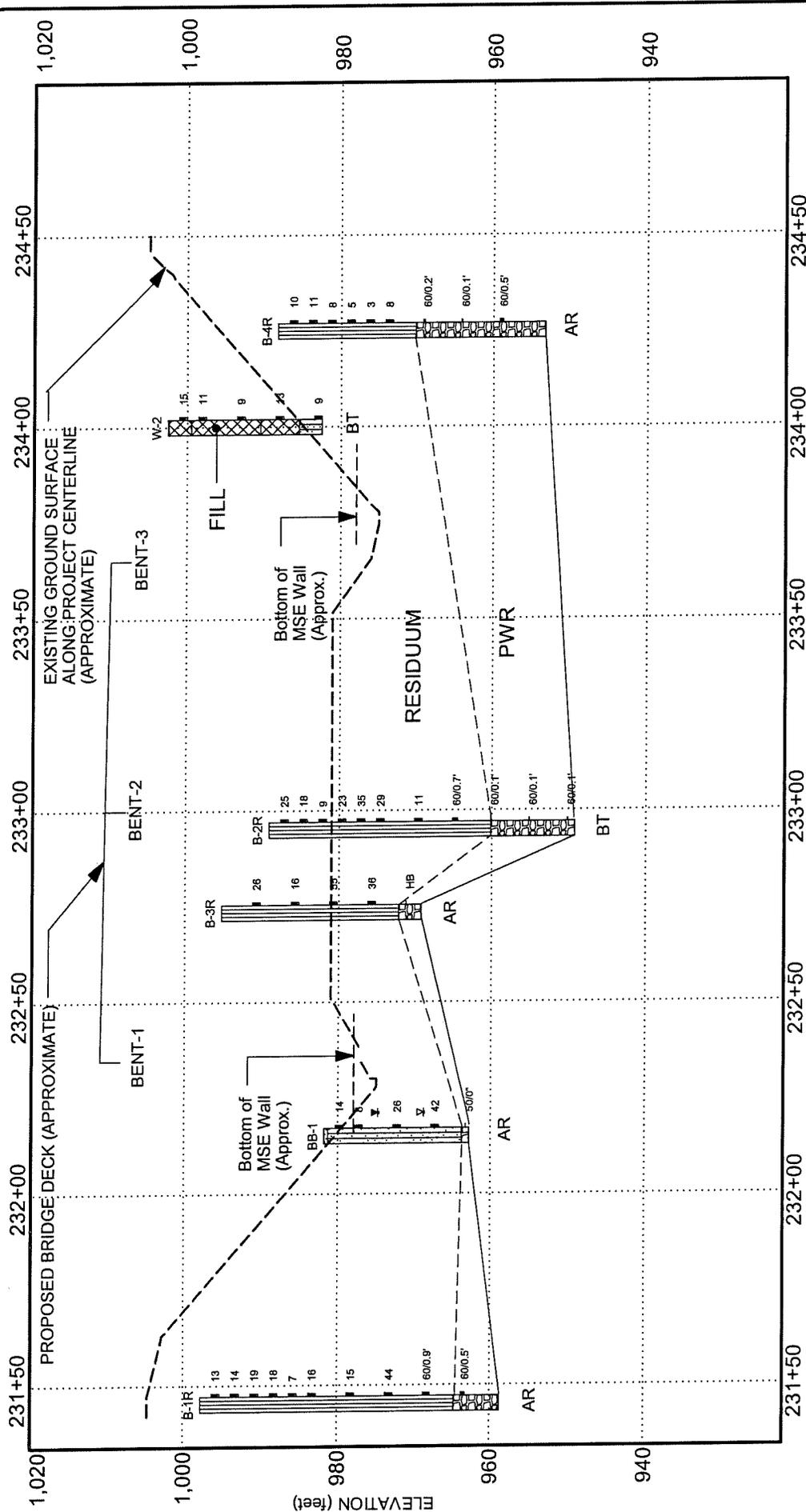
NOTE:

1. Borings B-1L, B-2L and B-3L were performed by GDOT in 1977.
2. Boring B-1L is plotted 10 feet right from the actual location for clarity.

**GENERALIZED SUBSURFACE PROFILE
 SECTION A-A'
 (LT. BRIDGE AND MSE WALLS)**

I-575 over M-9020 (Bells Ferry Road)
 GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256
 Cobb County, Georgia

PROJECT #	DATE	FIGURE
171-3099D	August 20, 2008	3



DISTANCE (feet)

GENERALIZED SUBSURFACE PROFILE SECTION B-B' (RT. BRIDGE and MSE Walls)		
I-575 over M-9020 (Bells Ferry Road) GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256 Cobb County, Georgia		
PROJECT #	DATE	FIGURE
171-3099D	August 20, 2008	4

NOTE:
 1. Borings B-1R, B-2R, B-3R and B-4R were performed by GDOT in 1977.
 2. Boring B-3R is plotted 10 feet left and W-2 is plotted 20 feet left from the actual boring location for clarity.

LEGEND:
 ▫ - Groundwater Table @ 24 hours
 ✕ - Groundwater Table @ Time of Boring
 AR - Auger Refusal
 BT - Boring Terminated
 PWR - Partially Weathered Rock
 HB - Hammer Bounce
 SCALE : 1 inch = 20 feet (vertical)
 1 inch = 40 feet (horizontal)

APPENDIX I

BORING RECORD LEGEND

SM, CL, etc. - GROUP SYMBOL based on Unified Soil Classification System.
(Refer to ASTM D-2488 and Table 1 of D-2487)

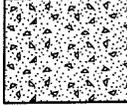
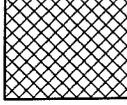
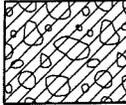
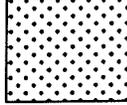
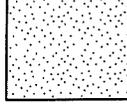
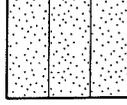
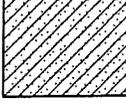
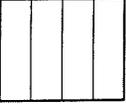
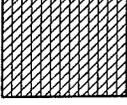
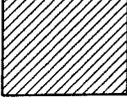
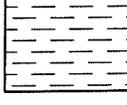
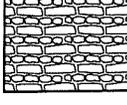
N-VALUE: BLOWS PER FOOT- Standard Penetration Resistance (SPT) blow count ,
the sum of the second and third 6-inch increments of the SPT test.
(Refer to ASTM D-1586)

CONSISTENCY / RELATIVE DENSITY Correlated with SPT Blow Count, N:

<u>SILTS AND CLAYS</u>		<u>SANDS</u>	
<u>N</u> (blows per foot)	<u>Consistency</u>	<u>N</u> (blows per foot)	<u>Relative Density</u>
0 - 2	Very Soft	0 - 4	Very Loose
3 - 4	Soft	5 - 10	Loose
5 - 8	Firm	11 - 30	Medium Dense
9 - 15	Stiff	31 - 50	Dense
16 - 30	Very Stiff	> 50	Very Dense
31 - 50	Hard		
> 50	Very Hard		

NOTES:

- Groundwater Measurements:
-  Water level at time of backfilling
 -  Water level at time of boring
 -  Caved level at 24 hours

ASPHALT 	CONCRETE 	TOPSOIL 	FILL 	GW 	GP 	GM 
GC 	SW 	SP 	SM 	SC 	SANDY SILT 	SANDY CLAY 
ML 	MH 	CL-ML 	CL 	CH 	OL 	OH 
PEAT 	PWR 	ROCK 				

UNIFIED SOIL CLASSIFICATION SYSTEM REFERENCE SHEET

MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS <u>LARGER</u> THAN #200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION <u>RETAINED</u> #4 SIEVE	CLEAN GRAVELS LITTLE OR NO FINES	(GW)	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES APPRECIABLE AMOUNT OF FINES	(GP)	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES APPRECIABLE AMOUNT OF FINES	(GM)	SILTY GRAVELS and GRAVEL-SAND-SILT MIXTURES
		GRAVELS WITH FINES APPRECIABLE AMOUNT OF FINES	(GC)	CLAYEY GRAVELS and GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION <u>PASSING</u> #4 SIEVE	CLEAN SAND LITTLE OR NO FINES	(SW)	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES APPRECIABLE AMOUNT OF FINES	(SP)	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES APPRECIABLE AMOUNT OF FINES	(SM)	SILTY SANDS and SAND-SILT MIXTURES
		SANDS WITH FINES APPRECIABLE AMOUNT OF FINES	(SC)	CLAYEY SANDS and SAND-CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS <u>SMALLER</u> THAN #200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT <u>LESS</u> THAN 50		(ML)	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR VERY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT <u>LESS</u> THAN 50		(CL)	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
	SILTS AND CLAYS LIQUID LIMIT <u>LESS</u> THAN 50		(OL)	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT <u>GREATER</u> THAN 50		(MH)	INORGANIC ELASTIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS
	SILTS AND CLAYS LIQUID LIMIT <u>GREATER</u> THAN 50		(CH)	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
	SILTS AND CLAYS LIQUID LIMIT <u>GREATER</u> THAN 50		(OH)	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			(PT)	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

ENGINEERING DESCRIPTION OF ROCK HARDNESS

Hardness	Description
Very hard	Cannot be scratched with knife or sharp pick. Breaking of hand specimens requires several hard blows of geologist's pick.
Hard	Can be scratched with knife or pick only with difficulty. Hard blow of hammer required to detach hand specimen.
Moderately hard	Can be scratched with knife or pick. can be excavated by hard blow of point of a geologist's pick. Hand specimens can be detached by moderate blow.
Medium	Can be grooved or gouged 1/16 inch deep by firm pressure on knife or pick point. Can be excavated in small chips to pieces about 1 inch maximum size by hard blows of the point of a geologist's pick.
Soft	Can be gouged or grooved readily with knife or pick point. Can be excavated in chips to pieces several inches in size by moderate blows of a pick point. Small thin pieces can be broken by finger pressure.
Very soft	Can be carved with knife. Can be excavated readily with point of pick. Pieces 1 inch or more in thickness can be broken with finger pressure. Can be scratched readily by fingernail.
Partially Weathered Rock	For engineering purposes, partially weathered rock (PWR) is locally defined as residual soils exhibiting Standard Penetration Test N-values in excess of 50 blows for 6 inches of penetration.

HOLE No. BB-1

Sheet 1 of 1

Project: **I-575 over M-9020 (Bells Ferry Road)**

Location: **Cobb County, Georgia**

Project Number: **171-3099D; GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256**

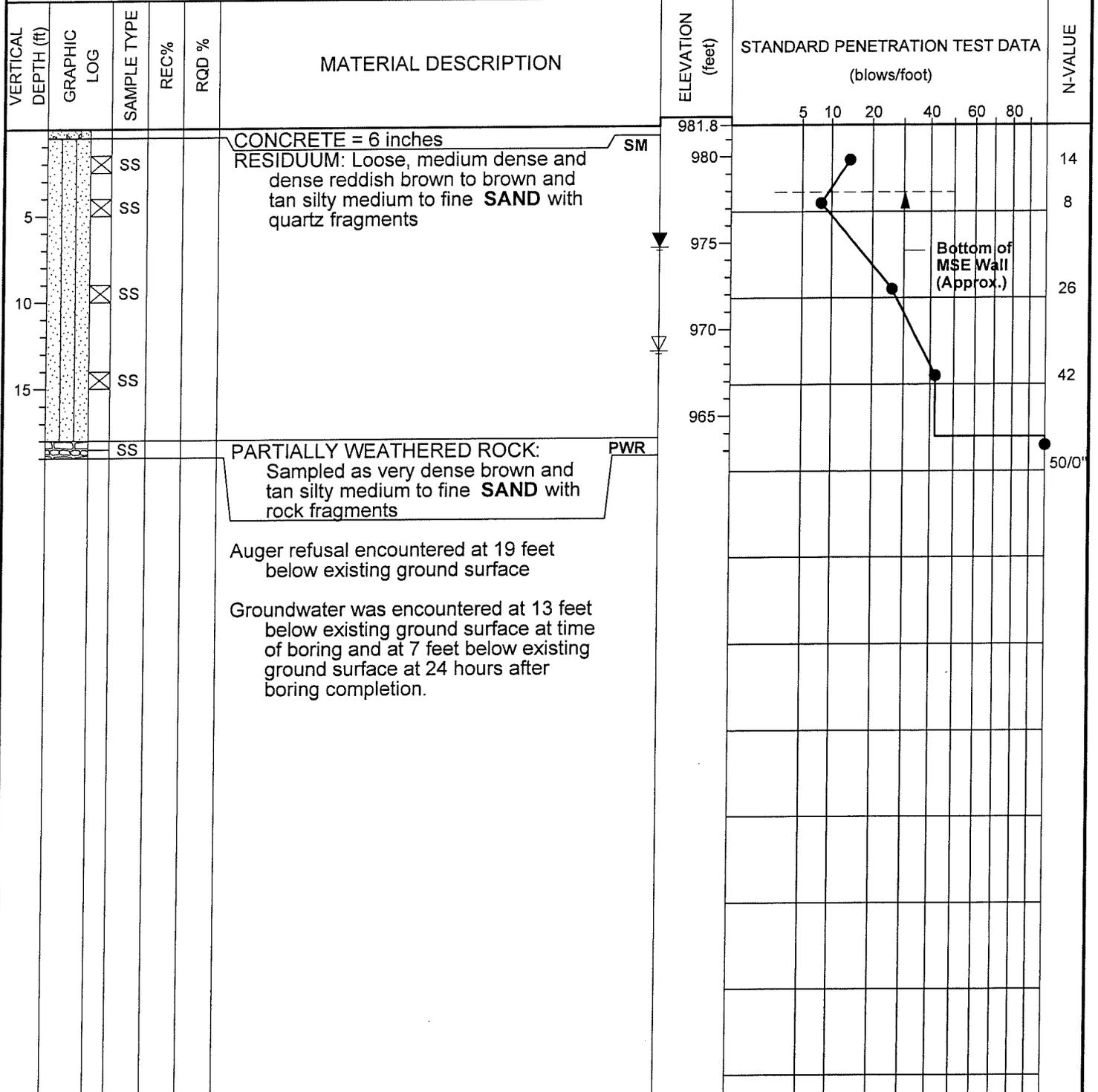
Location: **BENT - 1**

Azimuth: -- Angle from Horizontal: **90** Surface Elevation (ft): **981.80** Station: **ST. 232+15, 80' Rt. of CL**

Drilling Equipment: **CME 550** Drilling Method: **HSA**

Core Boxes: -- Samples: **5** Overburden (ft): **19** Rock (ft): -- Total Depth (ft): **19.0**

Logged By: **MK** Date Drilled: **10/1/07**



Auger refusal encountered at 19 feet below existing ground surface

Groundwater was encountered at 13 feet below existing ground surface at time of boring and at 7 feet below existing ground surface at 24 hours after boring completion.

SPTN 171-3099D.GPJ 12/6/07

SAMPLER TYPE SS - Split Spoon ST - Shelby Tube NQ - Rock Core, 1-7/8"		DRILLING METHOD HSA - Hollow Stem Auger CFA - Continuous Flight Augers DC - Driving Casing		Hole No. BB-1	
NX - Rock Core, 2-1/8" CU - Cuttings CT - Continuous Tube		RW - Rotary Wash RC - Rock Core			

HOLE No. BB-2

Sheet 1 of 1

Project: **I-575 over M-9020 (Bells Ferry Road)**

Location: **Cobb County, Georgia**

Project Number: **171-3099D; GDOT Proj. #: CSNHS-0008-00(256); PI #: 0008256**

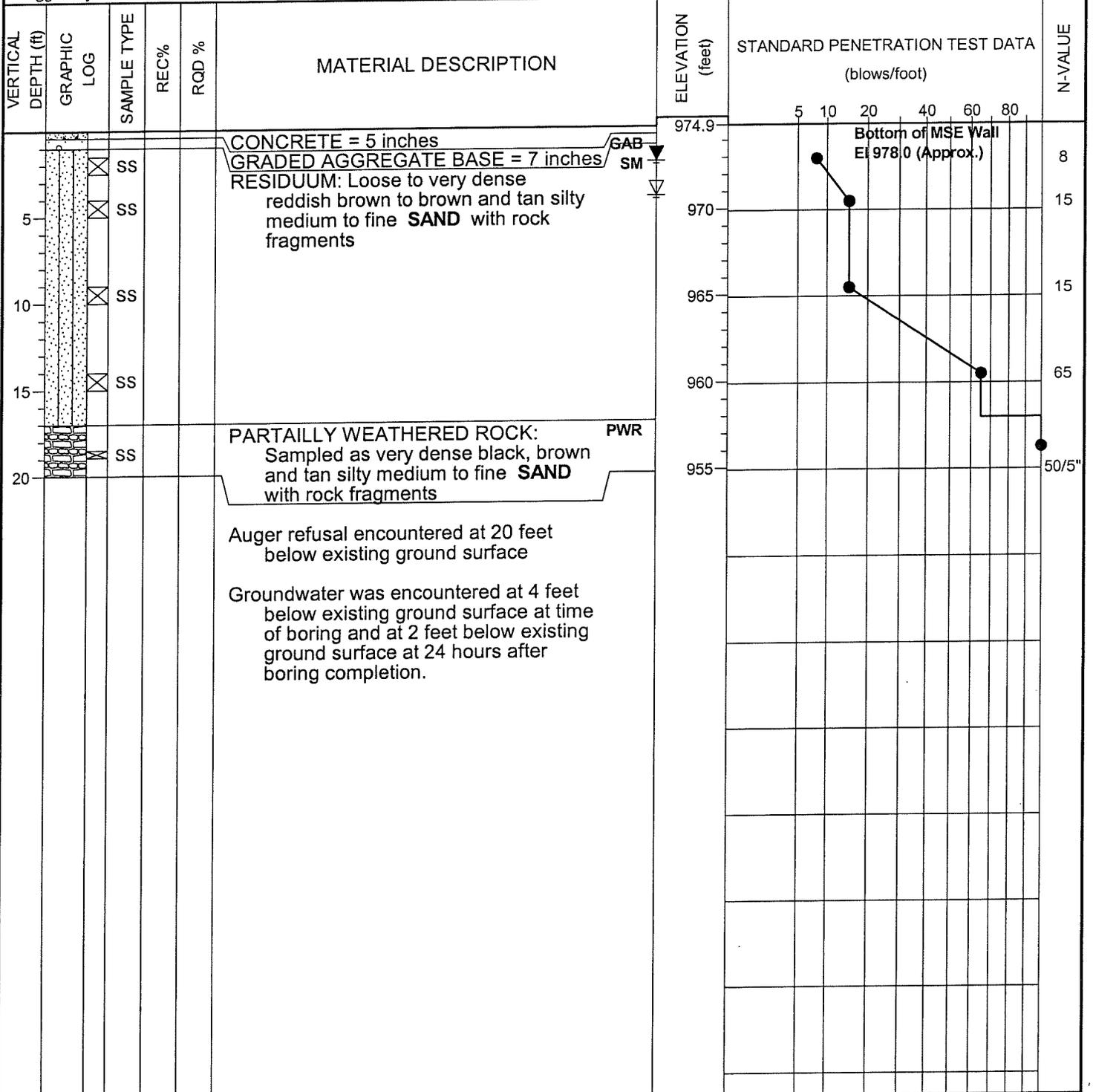
Location: **BENT - 3**

Azimuth: -- Angle from Horizontal: **90** Surface Elevation (ft): **974.89** Station: **ST. 233+85, 80' Lt. of CL**

Drilling Equipment: **CME 550** Drilling Method: **HSA**

Core Boxes: -- Samples: **5** Overburden (ft): **20** Rock (ft): -- Total Depth (ft): **20.0**

Logged By: **MK** Date Drilled: **10/1/07**



CONCRETE = 5 inches
 GRADED AGGREGATE BASE = 7 inches
 RESIDUUM: Loose to very dense reddish brown to brown and tan silty medium to fine SAND with rock fragments

PARTIALLY WEATHERED ROCK: Sampled as very dense black, brown and tan silty medium to fine SAND with rock fragments

Auger refusal encountered at 20 feet below existing ground surface

Groundwater was encountered at 4 feet below existing ground surface at time of boring and at 2 feet below existing ground surface at 24 hours after boring completion.

Bottom of MSE Wall El 978.0 (Approx.)

GAB SM

PWR

SPTN 171-3099D.GPJ 12/6/07

SS - Split Spoon ST - Shelby Tube NQ - Rock Core, 1-7/8"	SAMPLER TYPE NX - Rock Core, 2-1/8" CU - Cuttings CT - Continuous Tube	HSA - Hollow Stem Auger CFA - Continuous Flight Augers DC - Driving Casing	DRILLING METHOD RW - Rotary Wash RC - Rock Core	Hole No. BB-2
--	---	--	---	-------------------------

Project: I-575 over M-9020 (Bells Ferry Road)		HOLE No. W-1	
Location: Cobb County, Georgia		Sheet 1 of 1	
Project Number: 171-3099D; GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256		Location: MSE Wall No.6	
Azimuth: -- Angle from Horizontal: 90		Surface Elevation (ft): 1011.01 Station: ST. 231+80, 75' Lt. of CL	
Drilling Equipment: CME 550		Drilling Method: HSA	
Core Boxes: -- Samples: 4		Overburden (ft): -- Rock (ft): -- Total Depth (ft): 15.0	
Logged By: MK		Date Drilled: 10/4/07	

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE	
0					TOPSOIL = 1 inch / FILL	1011.0			
1		SS			FILL : Medium dense reddish brown and tan silty medium to fine SAND with GAB and rock fragments	1010		21	
5		SS				1005		14	
10		SS			RESIDUUM : Loose to medium dense silty medium to fine SAND (slightly micaceous) SM	1000		11	
15		SS			Boring terminated at 15 feet below existing ground surface Groundwater was not encountered at time of boring.			10	

SAMPLER TYPE SS - Split Spoon NX - Rock Core, 2-1/8" ST - Shelby Tube CU - Cuttings NQ - Rock Core, 1-7/8" CT - Continuous Tube	DRILLING METHOD HSA - Hollow Stem Auger RW - Rotary Wash CFA - Continuous Flight Augers RC - Rock Core DC - Driving Casing	Hole No. <div style="text-align: center; font-size: 1.2em;">W-1</div>
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SPTN 171-3099D.GPJ 12/6/07

HOLE No. W-2

Sheet 1 of 1

Project: **I-575 over M-9020 (Bells Ferry Road)**

Location: **Cobb County, Georgia**

Project Number: **171-3099D; GDOT Proj. #: CSNHS-0008-00(256); PI #: 0008256**

Location: **MSE Wall No. 7**

Azimuth: -- Angle from Horizontal: **90** Surface Elevation (ft): **1002.50** Station: **ST. 234+20, 75' Rt. of CL**

Drilling Equipment: **CME 550** Drilling Method: **HSA**

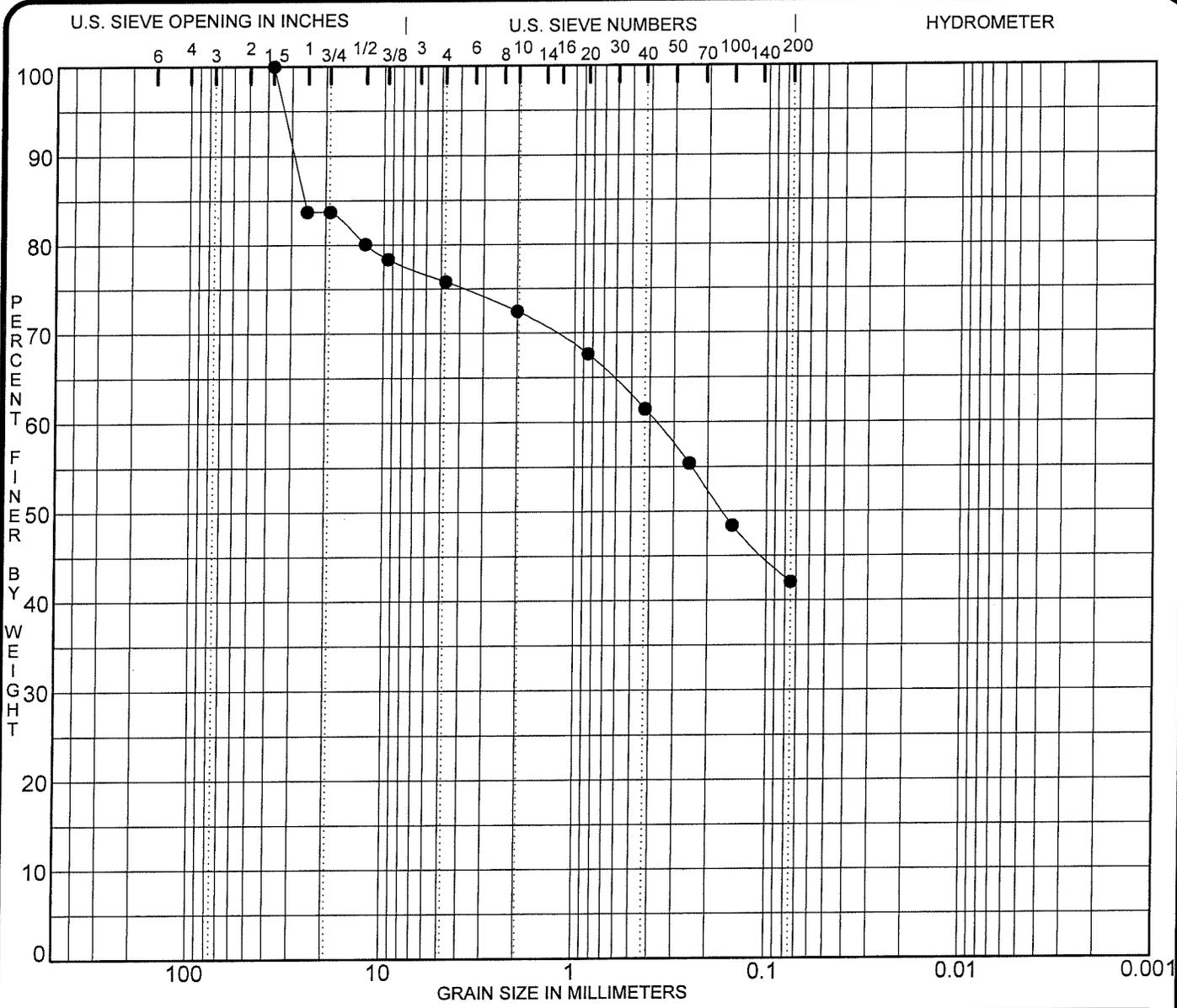
Core Boxes: -- Samples: **5** Overburden (ft): -- Rock (ft): -- Total Depth (ft): **20.0**

Logged By: **MK** Date Drilled: **10/3/07**

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)					N-VALUE	
							5	10	20	40	60		80
0					TOPSOIL = 1 inch / FILL	1002.5							
0 - 5	[Cross-hatched pattern]	SS			FILL : Medium dense reddish brown and tan silty medium to fine SAND	1000							15
5 - 10	[Cross-hatched pattern]	SS			Loose and medium dense reddish brown and tan silty medium to fine SAND with gravel	995							11
10 - 15	[Cross-hatched pattern]	SS			Medium dense dark brown silty medium to fine SAND with organic odor	990							9
15 - 20	[Cross-hatched pattern]	SS			RESIDUUM : Loose reddish brown silty coarse to fine SAND	985							13
20		SS			RESIDUUM : Loose reddish brown silty coarse to fine SAND	985							9
					Boring terminated at 20 feet below existing ground surface								
					Groundwater was not encountered at time of boring.								

Bottom of MSE Wall (Approx.)

SAMPLER TYPE SS - Split Spoon ST - Shelby Tube NQ - Rock Core, 1-7/8"		DRILLING METHOD HSA - Hollow Stem Auger CFA - Continuous Flight Augers DC - Driving Casing		Hole No. <p style="text-align: center; font-size: 1.2em;">W-2</p>	
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COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	Soil Description	MC%	LL	PL	PI	Cc	Cu
● W-2 (3.5-5 ft)	Brown silty medium to fine SAND with gravel (micaceous)						

Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● W-2 (3.5-5 ft)	37.50	0.37			24.2	33.7	42.1	

PROJECT I-575/M-9020 (Bells Ferry Rd), Cobb County, GA JOB NO. 171-3099 D
 GDOT Proj. # CSNHS-0008-00(256); PI # 0008256 DATE 12/7/07



GRADATION CURVE

APPENDIX II

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
SOILS ENGINEERING AND GEOLOGY BRANCH

BRIDGE SUBSURFACE INVESTIGATION

CSNHS-0008-00 (256)

PROJECT PI No. 0008256 COUNTY Cobb DATE 3/1/77
 LOCATION I-575 over M-9020 (Bells Ferry Road) BORING NO. B-1L
 BENT NO. 1 FOOTING _____ GROUND ELEV. 990.66
 PROPOSED FOOTING ELEV. _____ PARTY CHIEF Hollis

ELEV	BORING LOG	BLOW	UNIFIED	γ	W	G _s	% 200	% CLAY	LL	PI	σ	φ		
990	Gr. El. <u>1</u>													
	Med. Dense Mtc. Micas. Clayey Sandy Silt	1s 23												
	Dse. Mtc. Micas. Sdy. Silt	2s 26												
	V Dse. Weathered Boulder	3s 60=2'												
980	Dse. Mtc. Micas. Sandy Silt W/ Weath. Rock	4s 36												
		5s 36												
	Medium Dense Same	6s 21												
970	Dse. Mtc. Micas. Sandy Silt W/ Weathered Rock	7s 33												
	Very Dense Same	8s 60=7'												
	V Hd. Weath. Granite													
960	Refusal													

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.
 No claim will be considered if the contractor relies on this information in his bidding or in the construction operations and finds that it is inaccurate.
 This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
SOILS ENGINEERING AND GEOLOGY BRANCH

BRIDGE SUBSURFACE INVESTIGATION

CSNHS-0008-00 (256)
PROJECT PI No. 0008256 **COUNTY** Cobb **DATE** 2/28/77
LOCATION I-575 over M-9020 (Bells Ferry Road) **BORING NO.** B-1R
BENT NO. 1 **FOOTING** **GROUND ELEV.** 997.75
PROPOSED FOOTING ELEV. **PARTY CHIEF** Hollis

ELEV	BORING LOG	BLOW	UNIFIED	γ	W	G _s	% 200	% CLAY	LL	PI	C	φ
1000	Gr. El. 7											
	Med. Dense Red Micas. Clayey Sdy. Silt	1s 13										
		2s 14										
990		3s 19										
	Medium Dense Mfic. Sandy Silt	4s 18										
	Loose Same	5s 7										
		6s 16										
980	Medium Dense Mfic. Micas. Sandy Silt W/ Weathered Rock	7s 15										
	Dense Same	8s 44										
970												
	Very Dense Weath. Granite	9s 60=9'										
		10s 60=5'										
960	Rock											
	Refusal											

The Department of Transportation is making this foundation report available to the public as a service to the engineering profession. No claim will be made for the accuracy or reliability of the data or conclusions presented herein. This report is not to be used for any purpose other than that for which it was prepared.

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
SOILS ENGINEERING AND GEOLOGY BRANCH

BRIDGE SUBSURFACE INVESTIGATION

CSNHS-0008-00 (256)
PROJECT PI No. 0008256 **COUNTY** Cobb **DATE** 3/1/77
LOCATION I-575 over M-9020 (Bells Ferry Road) **BORING NO.** B-2L
BENT NO. 2 **FOOTING** **GROUND ELEV.** 983.44
PROPOSED FOOTING ELEV. **PARTY CHIEF** Hollis

ELEV	BORING LOG	BLOW	UNIFIED	Y	W	Gs	% 200	% CLAY	LL	PI	C	Ø
	Gr. El. 7											
980	Med. Dense Mltc. Micas. Clayey Sandy Silt	1s 17										
		2s 27										
	Dse. Mltc. Micas. Sdy	3s 47										
	Silt W/ Weathered Rock	4s 34										
970	Medium Dense Same	5s 14										
	Dse. Mltc. Micas. Sdy.	6s 40										
	Silt W/ Weathered Rock	7s 57										
960	Very Dense Same	8s 60±3'										
		9s 60±2'										
950	Very Hard Weath. Granite											
940	End Drilling											

The Department of Transportation in making this report is not responsible to contractors and is not liable for its accuracy.

It is the responsibility of the contractor to provide the necessary information in the bidding or contract documents and to verify the accuracy of the data used in the report.

This report is an investigation report and is not to be used as a part of the Plans and Specifications of the contract on the job.

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
 SOILS ENGINEERING AND GEOLOGY BRANCH

BRIDGE SUBSURFACE INVESTIGATION

CSNHS-0008-00 (256)

PROJECT PI No. 0008256 COUNTY Cobb DATE 2/28/77
 LOCATION L-575 over M-9020 (Bells Ferry Road) BORING NO. B-2R
 BENT NO. 2 FOOTING _____ GROUND ELEV. 989.16
 PROPOSED FOOTING ELEV. _____ PARTY CHIEF Hollis

ELEV	BORING LOG	BLOW	UNIFIED	γ	W	G _s	% 200	% CLAY	LL	PI	C	φ		
990	Gr. El. ✓													
	Dense Mltc. Micac. Sandy Silt	1s 25												
	Medium Dense Same	2s 18												
980	Lsa. Mltc. Micac. Sdy. Silt	3s 9												
	Medium Dense Same	4s 23												
	Dse. Mltc. Sdy. Silt	5s 35												
	W/ Weathered Rock	6s 29												
970	Medium Dense Mltc. Sandy Sil # W/Gravel	7s 11												
		8s 60=7'												
960	Very Dense Weath. Granite	9s 60=1'												
		60=1'												
950		60=1'												
	End Drilling													

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DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
SOILS ENGINEERING AND GEOLOGY BRANCH

BRIDGE SUBSURFACE INVESTIGATION

CSNHS-0008-00 (256)

PROJECT PI No. 0008256 COUNTY Cobb DATE 3/1/77
 LOCATION I-575 over M-9020 (Bells Ferry Road) BORING NO. B-3L
 BENT NO. 3 FOOTING _____ GROUND ELEV. 989.16
 PROPOSED FOOTING ELEV. _____ PARTY CHIEF Hollis

ELEV	BORING LOG	BLOW	UNIFIED	γ	W	G _s	% 200	% CLAY	LL	PI	C	φ
990	Gr. El. <u>7</u>											
	Med. Dense Mltc. Micas. Clayey Sandy Silt	1s	18									
3 wt.	Medium Dense Mltc. Micas. Sandy Silt	2s	15									
980	Lse. Same W/ Gravel	3s	6									
	med. dense mltc. micas. sdy. silt w/ gravel	4s	17									
		5s	60									
	Very Dense Mltc. Micas. Sandy Silt	6s	60=2									
970	W/ Weathered Rock	7s	60=2									
	Very Hard Rock											
	Refusal											

The Department of Transportation hereby certifies that the results of the tests conducted herein were obtained in accordance with the procedures specified in the Manual of Practice for Soil Testing, Part 1, published by the American Society of Civil Engineers, Inc., New York, New York, 1963.

No claim will be made for the accuracy of the test results or for the use of the results in any design or construction project unless it is specifically stated in the contract documents and specifications that it is necessary.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
SOILS ENGINEERING AND GEOLOGY BRANCH

BRIDGE SUBSURFACE INVESTIGATION

CSNHS-0008-00 (256)

PROJECT PI No. 0008256 COUNTY Cobb DATE 3/2/77
 LOCATION 1-575 over M-9020 (Bells Ferry Road) BORING NO. B-3R
 BENT NO. 2 FOOTING _____ GROUND ELEV. 995.25
 PROPOSED FOOTING ELEV. _____ PARTY CHIEF Hollis

LEVEL	BORING LOG	BLOW	UNIFIED	Y	W	Gs	% 200	% CLAY	LL	PI	C	φ		
	Gr. El. <u>7</u>													
990	Medium Dse. to Dense Miltc. Micac. Sdy. Silt	1s 2s	26 16											
980	Very Dense Same		55											
	Dense Miltc. Micac. Sandy Silt	4s	36											
970	V. Dse. Weathered Rock Very Hard Rock	5s	HB											
	Practical Refusal													

The Department of Transportation is making this foundation report available to contractors assuming no responsibility for its accuracy. No claim will be considered if the contractor or relies on this information in his bidding or in his construction operations and finds that it is inaccurate. This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND RESEARCH, FOREST PARK, GEORGIA
SOILS ENGINEERING AND GEOLOGY BRANCH

BRIDGE SUBSURFACE INVESTIGATION

CSNHS-0008-00 (256)

PROJECT PI No. 0008256 COUNTY Cobb DATE 2/28/77

LOCATION L-575 over M-9020 (Bells Ferry Road) BORING NO. B-4R

BENT NO. 3 FOOTING _____ GROUND ELEV. 988.25

PROPOSED FOOTING ELEV. _____ PARTY CHIEF Hollis

ELEV	BORING LOG	BLOW	UNIFIED	γ	W	Gs	% 200	% CLAY	LL	PI	C	φ
990	Gr. El. <u>7</u>											
	Stiff Mltc. Sandy Silty Clay	1s 10										
	Same	2s 11										
980	Loose Mltc. Micas. Sandy Silt	3s 8										
		4s 5										
	VLse Gray Micas. Sdy. Silt	5s 3										
	Loose Mltc. Micas. Sandy Silt	6s 8										
970		7s 60=2'										
		8s 60=1'										
960	VDse. Weath. Rock	9s 60=5'										
	Refusal											

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy. No claim will be considered if the contractor relies on this information in the bidding of his construction operations and finds that it is inaccurate. This foundation investigation report is not valid for use as a part of the design and construction of any structure.