6/99

THIS CONTRACT PLAN SET INCLUDES:

ROADWAY PLANS. SUMMARY OF PAY ITEMS (3 SHEETS).
SIGNING AND PAVEMENT MARKING PLANS AND STRUCTURES PLANS.

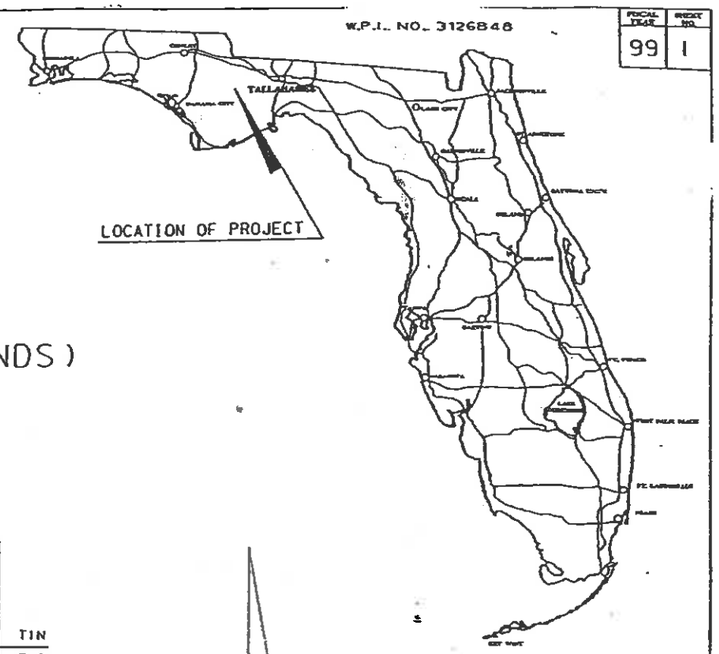
A DETAILED INDEX APPEARS ON THE KEY SHEET OF THE ROADWAY PLANS AND THE INDEX OF BRIDGE SHEETS OF THE STRUCTURES PLANS.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED

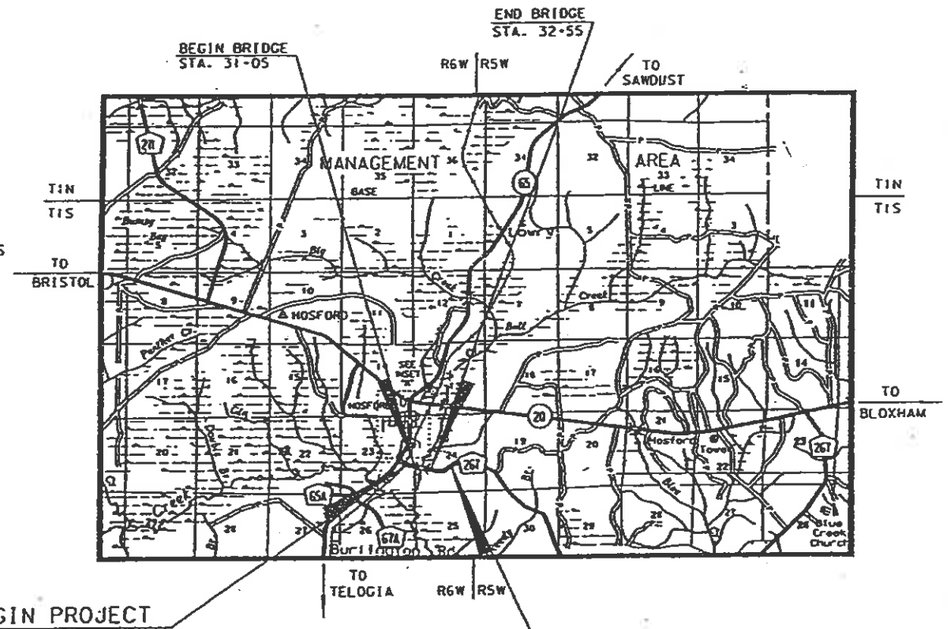
STATE HIGHWAY

FP-ID NO. 221923-1-52-01
STATE PROJECT NO. 56520-3602 (FEDERAL FUNDS)
LIBERTY COUNTY
CR 2224 (CR 267)



INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
1A-1C	SUMMARY OF PAY ITEMS
2	TYPICAL SECTION
3	SUMMARY OF QUANTITIES
4	ROADWAY PLAN - PROFILE
5	ROADWAY SOIL SURVEY
6-13	CROSS SECTIONS
14	DETOUR PLAN - PROFILE
15	TRAFFIC CONTROL PLAN
16	UTILITY ADJUSTMENTS
17-19	SIGNING AND PAVEMENT MARKING PLANS
20	NOT USED
21-43	INTERIM STANDARDS



PLANS PREPARED BY:
JMI ENGINEERS
VENDOR NO. VF-V30337209
1424 PIEDMONT DRIVE EAST
TALLAHASSEE , FL 32312
(850) 385-7450

THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AND GOVERNED BY THE STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, ROADWAY AND DESIGN STANDARDS. (BOOKLET DATED JANUARY 1994 & SUBSEQUENT INTERIMS)

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN ALTERED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

GOVERNING SPECIFICATIONS: STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS, DATED 1991 AND SUPPLEMENTS THERETO IF NOTED IN THE SPECIAL PROVISIONS FOR THIS PROJECT.

LENGTH OF PROJECT

	LINEAR FT.	MILES
ROADWAY	1750.00	0.332
BRIDGES	150.00	0.028
NET LENGTH OF PROJ.	1900.00	0.360
EXCEPTIONS	0.00	0.000
GROSS LENGTH OF PROJ.	1900.00	0.360

REVISIONS		
DATE	BY	DESCRIPTION

1

ROADWAY PLANS APPROVED BY: JOHN W. "WALLY" JORDAN, JR., P.E.
DATE: 2/22/99
P.E. NO.: 50894

FDOT PROJECT MANAGER : DONNIE MARTIN CR 2224 (CR267) FROM MILEPOST .202 TO MILE POST .562

RECYCLED PAPER

STATE PROJ. NO.	SHEET NO.
56520-3602	1A

3/11/99
CES0154

CESPJ15 4
PAGE 01 OF 01

WANDIST: 03 COUNTY: 56 SECTION: 520 221923 1 52 01

SUMMARY OF BRIDGE PAY ITEMS

A L T	S P C	ITEM NUMBER			ITEM		UNIT	221923152O1 BR - 564067 FA PART				QUANTITY TOTAL
	1	110	3		STRUCTURE REMOVAL OF EXISTING		LS	1.000				1.000
	1	360	1		APPROACH SLABS CONC		EA	2.000				2.000
	1	400	2	4	CONC CLASS II	(SUPERSTRUCTURE)	CY	318.000				318.000
	1	400	4	5	CONC CLASS IV	(SUBSTRUCTURE)	CY	81.400				81.400
	1	400	7		BRIDGE FLOOR GROOVING		SY	845.000				845.000
	2	400	148	1	TRAFFIC RAILING (F81)(BARRIER)		LF	300.000				300.000
	3	415	1	4	REINF STEEL	(SUPERSTRUCTURE)	LB	58231.000				58231.000
	3	415	1	5	REINF STEEL	(SUBSTRUCTURE)	LB	11385.000				11385.000
	3	455	3	2	PILING FURNISHED (PREST CONC)	(18" SQ.	LF	947.000				947.000
	1	455	4	2	PILING DRIVEN (PREST CONC)	(18" SQ)	LF	947.000				947.000
	1	455	15		PILE HOLES PREFORMED		EA	24.000				24.000
	1	455	17	2	PILE SPLICES	(18")	EA	2.000				2.000
	2	455	85	11	PILE EXTRACTION (0 50' PENETRATION) (18")		EA	2.000				2.000
	2	455	115		PILE REDRIVE		EA	2.000				2.000
	2	455	137		TEST LOAD(DYNAMIC)		EA	2.000				2.000
	2	455	140	12	TEST PILES FURNISHED	(18" SQ.	LF	130.000				130.000
	2	455	141	12	TEST PILES DRIVEN	(18" SQ)	LF	130.000				130.000
	1	514	71	3	PLASTIC FILTER FABRIC	(RIPRAP)	SY	536.000				536.000
	2	530	3	3	RIPRAP (RUBBLE)	(BANK AND SHORE)	TN	847.000				847.000

NOTE: * IDENTIFIES ITEMS NORMALLY REQUIRING SHOP DRAWINGS CONTRACTOR SHALL DETERMINE OTHER ITEMS REQUIRING SHOP DRAWINGS.

3/11/99

2

REVISIONS												
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

JMI ENGINEERS, INC.
1424 Piedmont Drive East
Tallahassee, Florida 32312
Tel: 850-385-1450 Fax: 850-385-3545

SUMMARY OF PAY ITEMS

STATE PROJ. NO.	SHEET NO.
56520-3602	1B

3/11/99
CES0152

CESPJ1S 2
PAGE 01 OF 01

MANDIST: 03 COUNTY: 56 SECTION: 520 221523 1 52 01

SUMMARY OF ROADWAY PAY ITEMS

ALT	SPC	ITEM NUMBER	ITEM	UNIT	22192315201 FA PART				QUANTITY TOTAL
1		101 1	MOBILIZATION	LS	1.000				1.000
1		102 1	MAINTENANCE OF TRAFFIC	LS	1.000				1.000
1		102 2 1	SPECIAL DETOUR (DETOUR 1)	LS	1.000				1.000
2		102 60	WORK ZONE SIGNS	ED	7508.000				7508.000
2		102 70 11	BARRIER WALL (TEMP) (FBI)(STANDARD)(CONCRETE)	LF	204.000				204.000
2		102 74 1	BARRICADE (TEMPORARY)(TYPES I,II,VP & DRUM)	ED	15200.000				15200.000
2		102 74 2	BARRICADE (TEMPORARY)(TYPE III) (6")	ED	2768.000				2768.000
2		102 77	HIGH INTENSITY FLASHING LIGHTS (TEMP TYPE B)	ED	1334.000				1334.000
2		102 78	MARKER PAVT REFLECTIVE (TEMPORARY)	EA	134.000				134.000
2		102 79	LIGHTS(TEMP BARR. WALL MOUNT)(TYPE C STEADY BURN)	ED	2664.000				2664.000
2		102 81 1	IMPACT ATTENUATOR MODULES VENIC. (INERTIA)(TEMP)	EA	14.000				14.000
1		104 4	MOWING	AC	6.000				6.000
2		104 10 1	HAY OR STRAW BALE (18" X 18" X 36")	EA	2250.000				2250.000
1		104 11	TURBIDITY BARRIER FLOATING	LF	1714.000				1714.000
1		104 13	SILT FENCE STAKED	LF	214.000				214.000
2		105 70	TRAINEE MANHOURS	MH	1000.000				1000.000
1		110 1 1	CLEARING & GRUBBING	LS	1.000				1.000
1		110 4	PAVEMENT REMOVAL OF EXISTING CONCRETE	SY	502.000				502.000
2		110 7 1	MAILBOX (FBI) (SINGLE)	EA	2.000				2.000
1		120 4	EXCAVATION SUBSOIL	CY	571.000				571.000
1		120 6	EMBANKMENT	CY	3340.000				3340.000
1		160 4	STABILIZATION TYPE B	SY	5556.000				5556.000
1		285 704	BASE OPTIONAL (BASE GROUP 04)	SY	3428.000				3428.000
3		300 1 3	BIT MATL (TACK COAT)	GA	322.000				322.000
3		331 2	ASPH CONC TYPE S	TN	368.300				368.300
1		339 1	ASPHALT PAVEMENT MISCELLANEOUS	TN	26.300				26.300
1		430 984 329	MITERED END SECTION (CORR PIPE ROUND) (24" SD)	EA	2.000				2.000
1		514 71 1	PLASTIC FILTER FABRIC (SUBSURFACE)	SY	4310.000				4310.000
1		524 1 1	DITCH PAVT CONC (3")	SY	636.000				636.000
1		536 1 1	GUARDRAIL (ROADWAY)	LF	750.000				750.000
2		536 73	GUARDRAIL REMOVAL	LF	151.000				151.000
3		536 88	GUARDRAIL END ANCHORAGE ASSEMBLY, TYPE SRT 350	EA	4.000				4.000
1		570 5	FERTILIZER	TN	1.400				1.400
1		570 9	WATER FOR GRASS	MG	81.000				81.000
1		575 1	SODDING	SY	14538.000				14538.000
1		710 7	PAVT MESSAGE, PAINTED	EA	1.000				1.000
3		710 23 61	TRAFFIC STRIPE SOLID (WHITE/BLACK) (6")	MM	1.436				1.436
3		710 24 61	TRAFFIC STRIPE SOLID (YELLOW) (6")	MM	1.436				1.436
3		710 25 241	TRAFFIC STRIPE SOLID (WHITE/BLACK) (24")	LF	20.000				20.000

NOTE: * IDENTIFIES ITEMS NORMALLY REQUIRING SHOP DRAWINGS CONTRACTOR SHALL DETERMINE OTHER ITEMS REQUIRING SHOP DRAWINGS.

3/11/99

3

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

JMI ENGINEERS, INC.
1424 Piedmont Drive East
Tallahassee, Florida 32312
Tel: 850 385-7450 Fax: 850-385-3545

SUMMARY OF PAY ITEMS

STATE PROJ. NO.	SHEET NO.
56520-3602	1C

3/11/99
CES0152

CESPJ15 2
PAGE 01 OF 01

MANDIST: 03 COUNTY: 56 SECTION: 520 221923 : 52 01

SUMMARY OF SIGNING PAY ITEMS

A L T	S P C	ITEM NUMBER	ITEM	UNIT	22192315201 FA PART				QUANTITY TOTAL
1		700 40 1	SIGN SINGLE POST (LESS THAN 12)	AS	1.000				1.000
1		700 46 11	SIGN EXISTING (REMOVAL) (SINGLE POST)	AS	2.000				2.000
1		700 48 58	SIGN PANELS (REPLACE) (15 OR <)	EA	1.000				1.000
2		706 3	RETRO REFLECTIVE PAVEMENT MARKERS	EA	98.000				98.000

NOTE: * IDENTIFIES ITEMS NORMALLY REQUIRING SHOP DRAWINGS CONTRACTOR SHALL DETERMINE OTHER ITEMS REQUIRING SHOP DRAWINGS.

3/11/99

4

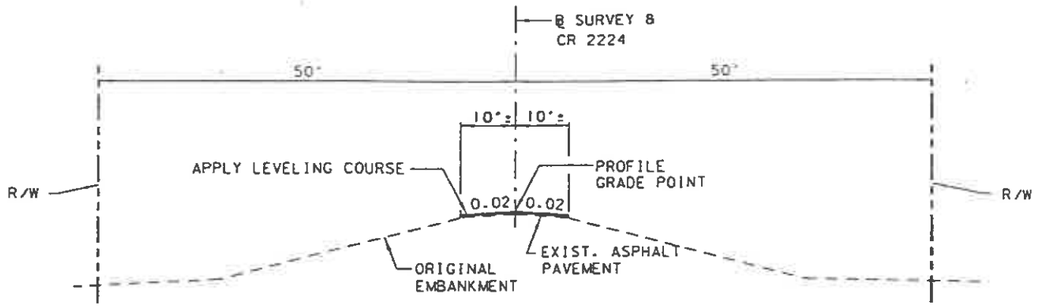
REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

JMI ENGINEERS, INC.
1424 Piedmont Drive East
Tallahassee, Florida 32312
Tel: 850-385-1450 Fax: 850-385-5549

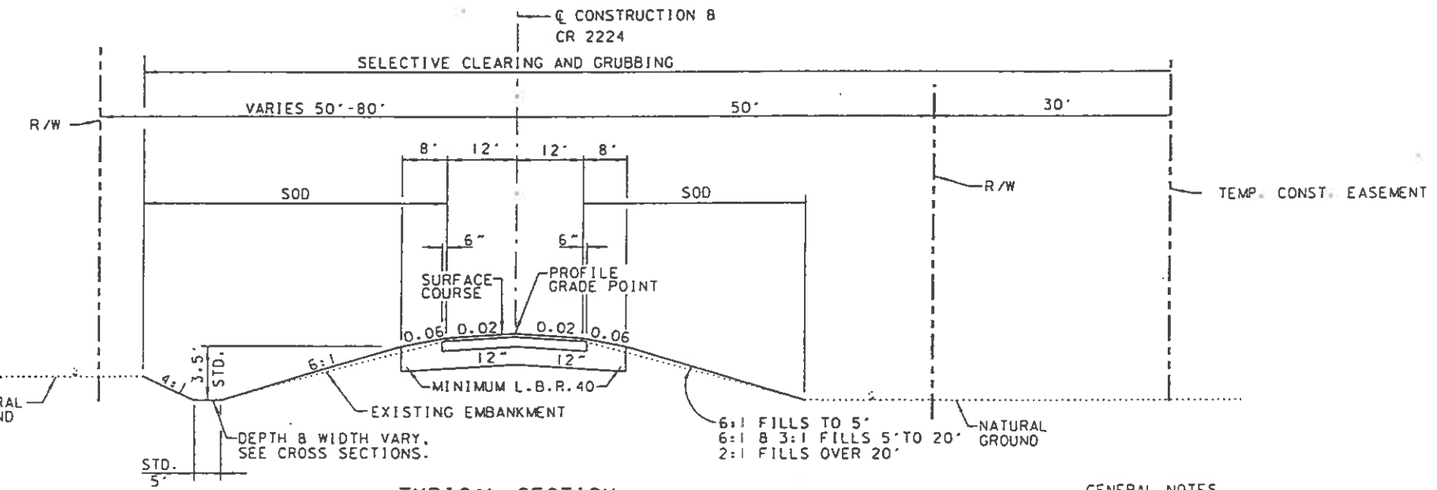
SUMMARY OF PAY ITEMS

STATE PROJ. NO.	SHEET NO.
56520-3602	2



RESURFACING TYPICAL SECTION

STA. 23+00 TO 26+00 AND STA. 40+00 TO 42+00
USE TYPE S-III SURFACE COURSE. (75 lbs/S.Y. AVG.)



NEW CONSTRUCTION

OPTIONAL BASE GROUP 4 (FOR THICKNESS SEE BELOW)
WITH TYPE S STRUCTURAL COURSE (200 lbs/S.Y.)

NOTE: THE LAST LAYER OF STRUCTURAL COURSE SHALL BE TYPE S-III SURFACE COURSE.(75 lbs/S.Y.)

COURSES	OPTION CODE
OPTIONAL BASE GROUP 4	
6" LIMEROCK	985
4" ABC-3	127
7" GRADED AGGREGATE	135

TRAFFIC DATA

1991 FADT - 350	K-10.98%
1998 EST. ADT - 450	D-55%
2003 EST. ADT - 500	T-12% (24HR.)
2008 EST. ADT - 550	T-6% DES. HR.
2018 EST. ADT - 700	T-3% DES. HR. HEAVY
	T-3.5% DES. HR. MEDIUM

DESIGN SPEED 55MPH

TYPICAL SECTION

NEW CONSTRUCTION
STA. 26+00 TO 40+00

TYPICAL SECTION NOTE

CLEAR ZONE FOR THIS SECTION IS 24' OFF THE EDGE OF TRAVEL WAY ON EACH SIDE OF THE ROAD.

3/11/99

GENERAL NOTES

1. ALL SOD MATERIALS SHALL BE SUBJECT TO INSPECTION BY THE DEPARTMENT PRIOR TO PLACEMENT. ANY SOD WITH NOXIOUS WEEDS AND GRASSES, INCLUDING TROPICAL SODA APPLE SHALL BE REJECTED FOR USE ON THIS PROJECT. ALL SOD SHALL BE OVERSEEDED WITH 30 LBS/ACRE OF RYE. THE CONTRACTOR SHALL FURNISH TO THE ENGINEER, PRIOR TO INCORPORATION INTO THE PROJECT, A CERTIFICATION FROM THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES DIVISION OF PLANT INDUSTRY, STATING THAT THE SOD, HAY STRAW, AND MULCH MATERIALS ARE FREE FROM NOXIOUS WEEDS, INCLUDING TROPICAL SODA APPLE.
2. ALL HAY BALES AND STAKED SILT FENCES SHALL BE REMOVED AT THE COMPLETION OF THE PROJECT AS DIRECTED BY THE PROJECT ENGINEER.
3. THE CONTRACTOR SHALL NOT BRING ANY HAZARDOUS MATERIALS ONTO THE PROJECT. SHOULD THE CONTRACTOR REQUIRE SUCH FOR PERFORMING THE CONTRACTED WORK, THE CONTRACTOR SHALL REQUEST, IN WRITING, PERMISSION FROM THE PROJECT ENGINEER. THE CONTRACTOR SHALL PROVIDE A COPY TO THE DISTRICT CONTAMINATION IMPACTS COORDINATOR (DCIC). THE CONTRACTOR SHALL PROVIDE THE DCIC WITH A COPY OF THE MATERIAL SAFETY DATA SHEET (MSDS) FOR EACH HAZARDOUS MATERIAL PROPOSED FOR USE. THE PROJECT ENGINEER SHALL COORDINATE WITH THE DCIC PRIOR TO ISSUING WRITTEN APPROVAL TO THE CONTRACTOR. BECAUSE STATE LAW DOES NOT TREAT PETROLEUM PRODUCTS THAT ARE PROPERLY CONTAINERIZED AND INTENDED FOR EQUIPMENT USE AS A HAZARDOUS MATERIAL, SUCH PRODUCTS DO NOT NEED A MSDS SUBMITTAL.
4. ANY KNOWN OR SUSPECTED HAZARDOUS MATERIAL FOUND ON THE PROJECT BY THE CONTRACTOR SHALL BE IMMEDIATELY REPORTED TO THE PROJECT ENGINEER, WHO SHALL DIRECT THE CONTRACTOR TO PROTECT THE AREA OF KNOWN OR SUSPECTED CONTAMINATION FROM FURTHER ACCESS. THE PROJECT ENGINEER IS TO NOTIFY THE DCIC OF THE DISCOVERY. THE DCIC WILL ARRANGE FOR INVESTIGATION, IDENTIFICATION, AND REMEDIATION OF THE HAZARDOUS MATERIAL. THE CONTRACTOR SHALL NOT RETURN TO THE AREA OF CONTAMINATION UNTIL APPROVAL IS PROVIDED BY THE PROJECT ENGINEER; THE DCIC WILL ADVISE THE PROJECT ENGINEER.

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

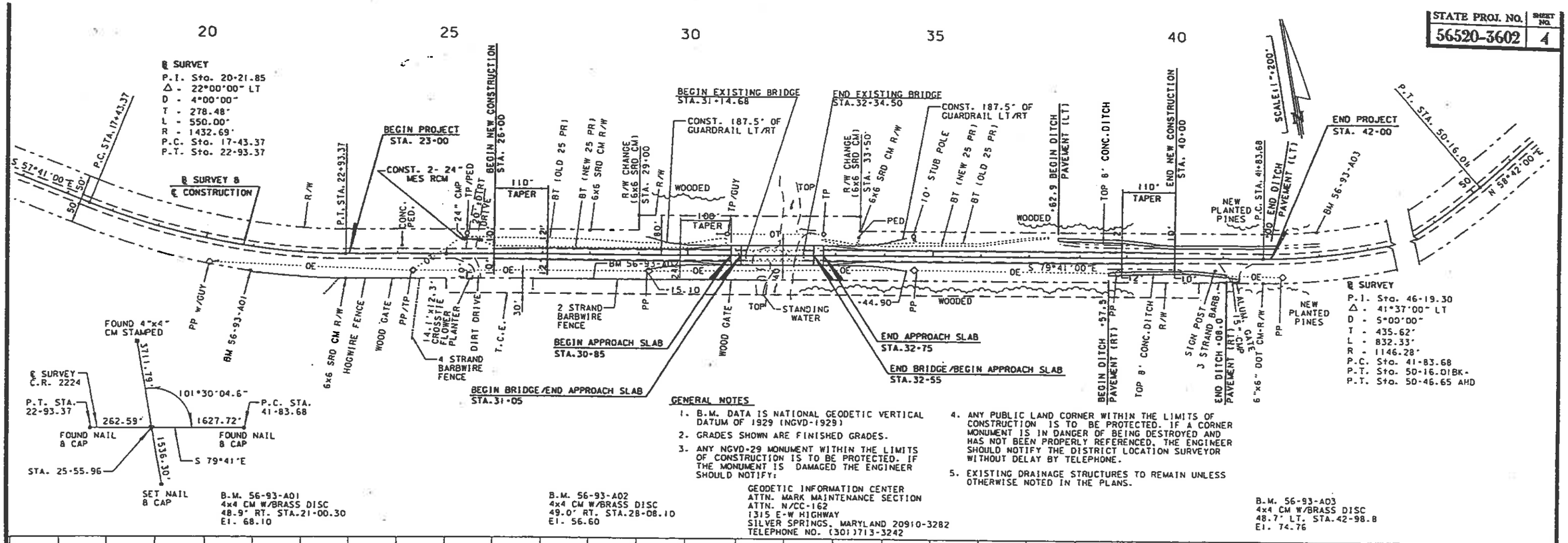
FLORIDA DEPARTMENT OF TRANSPORTATION

JMI ENGINEERS, INC.
1424 Piedmont Drive East
Tallahassee, Florida 32312
Tele 904-385-7450 Fax 904-385-3545

TYPICAL SECTION

5

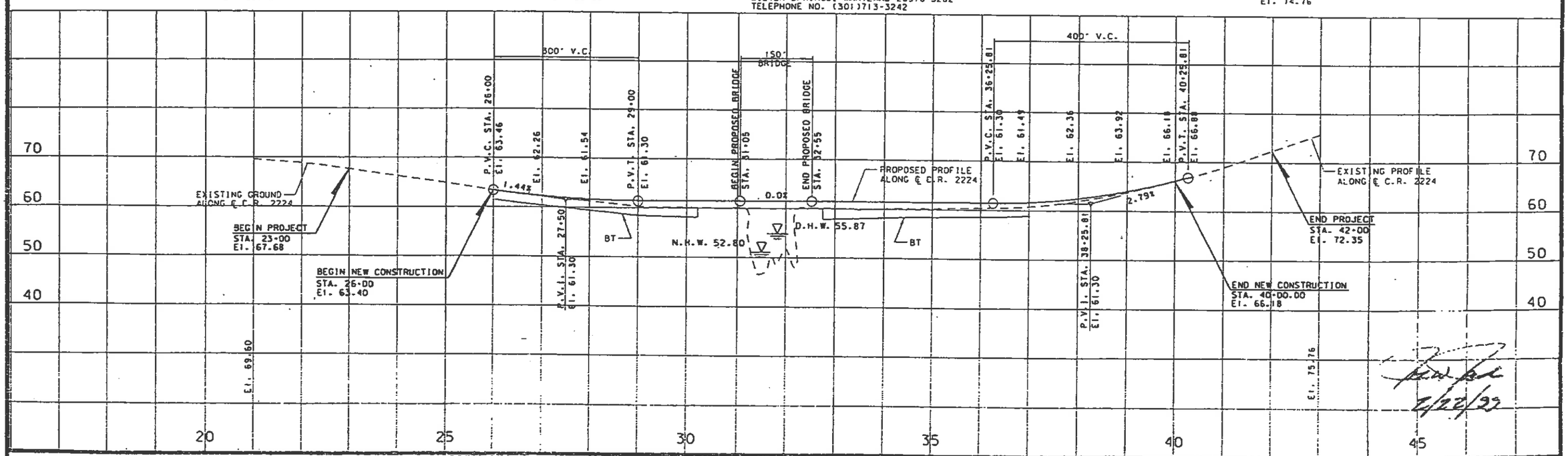
STATE PROJ. NO.	SHEET NO.
56520-3602	4



GENERAL NOTES

1. B.M. DATA IS NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD-1929)
2. GRADES SHOWN ARE FINISHED GRADES.
3. ANY NGVD-29 MONUMENT WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF THE MONUMENT IS DAMAGED THE ENGINEER SHOULD NOTIFY:

   GEODETIC INFORMATION CENTER
   ATTN. MARK MAINTENANCE SECTION
   ATTN. N/CC-162
   1315 E-W HIGHWAY
   SILVER SPRINGS, MARYLAND 20910-3282
   TELEPHONE NO. (301)713-3242
4. ANY PUBLIC LAND CORNER WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED AND HAS NOT BEEN PROPERLY REFERENCED, THE ENGINEER SHOULD NOTIFY THE DISTRICT LOCATION SURVEYOR WITHOUT DELAY BY TELEPHONE.
5. EXISTING DRAINAGE STRUCTURES TO REMAIN UNLESS OTHERWISE NOTED IN THE PLANS.



REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

JMI ENGINEERS, INC.
1424 Piedmont Drive East
Tallahassee, Florida 32312
Tel: 904-385-1450 Fax: 904-385-2545

BIG CREEK
PLAN AND PROFILE

6

COUNTY	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
LIBERTY	FL.	56520-3502		5

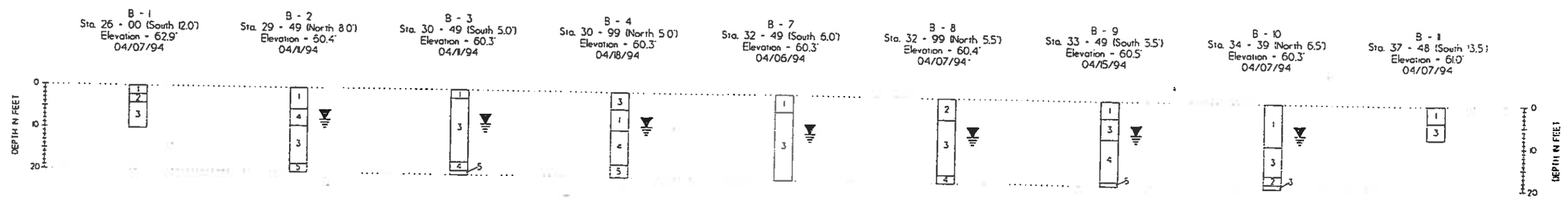
CROSS-SECTION OF ROADWAY SOIL SURVEY

REPORT OF TESTS

MECHANICAL ANALYSIS

MATERIAL NO.	ORGANIC CONTENT	LBR VALUE	PASSING 200 MESH	CONSTANTS MATERIAL LIQUID LIMIT	CONSTANTS MATERIAL PLASTIC INDEX	NUMBER LBR TESTS	NUMBER GRADATION TESTS	NUMBER LL - PI TESTS	CLASSIFICATION GROUP	MATERIAL DESCRIPTION
1	0 - 2	23 - 40	10 - 18	- NP -	- NP -	2	10	0	A - 2 - 4	SILTY SAND (SM)
2	0 - 2	--	4 - 7	- NP -	- NP -	1	3	0	A - 3	UNIFORM FINE SAND (SP)
3	3 - 8	--	7 - 24	- NP -	- NP -	1	11	0	A - 2 - 4	SILTY SAND WITH ORGANICS (SM)
4	4 - 9	--	4 - 9	- NP -	- NP -	--	3	0	A - 3	UNIFORM FINE SAND WITH ORGANICS (SP)
5	1	--	40 - 89	74 - 218	42 - 97	--	3	3	A - 7 - 5	HIGHLY PLASTIC CLAYEY SILT (MH)

NOTES:
1. STRATA BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL STRATA AT EACH TEST HOLE LOCATION ONLY.
2. REMOVAL OF MUCK AND PLASTIC MATERIAL OCCURRING WITHIN THE ROADWAY SHALL BE ACCOMPLISHED IN ACCORDANCE WITH INDEX NO.. 500 THE MATERIAL UTILIZED IN EMBANKMENT CONSTRUCTION SHALL BE IN ACCORDANCE WITH INDEX NO. 505 ONLY IN THE AREA OF NEW CONSTRUCTION.
3. IF THE SYMBOL -- IS PRESENT. IT REPRESENTS UNMEASURED SOIL PARAMETERS.
4. STRATA NUMBERS 1 AND 2 ARE SELECT MATERIALS (SELECT MATERIAL REFERS TO INDEX 505 ONLY) HOWEVER. IT MAY RETAIN MOISTURE AN BE DIFFICULT TO COMPACT.
5. STRATA NUMBER 5 SHOULD BE TREATED AS A HIGHLY PLASTIC MATERIAL.
6. STRATA NUMBERS 3 AND 4 MAY NOT BE SUITABLE (BECAUSE OF THE ORGANICS) FOR USE IN THE CONSTRUCTION OF THE ROADWAY SUBGRADES.
7. DEPTH TO GROUNDWATER SHOWN IS BASED ON GROUNDWATER ENCOUNTERED ON DATE BORING WAS INSTALLED. DEPTH TO GOUNDWATER AT OTHER TIMES MAY VARY FROM THAT SHOWN.



REVISIONS					
DATE	BY		DATE	BY	

	NAME	DATE
DRAWN BY	VR	06/94
CHECKED BY	MH	06/94
DESIGNED BY	VR	06/94
CHECKED BY	MH	06/94
APPROVED BY	M. L. HAYDEN	

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.
202 NORTH POINT BOULEVARD, SUITE C
TALLAHASSEE FLORIDA 32308
PHONE (904) 386-1253
FAX (904) 385-8050

SEAL
MYRON L. HAYDEN, PE
DATE: 11-20-98

DISTRICT THREE
FLORIDA DEPARTMENT OF TRANSPORTATION

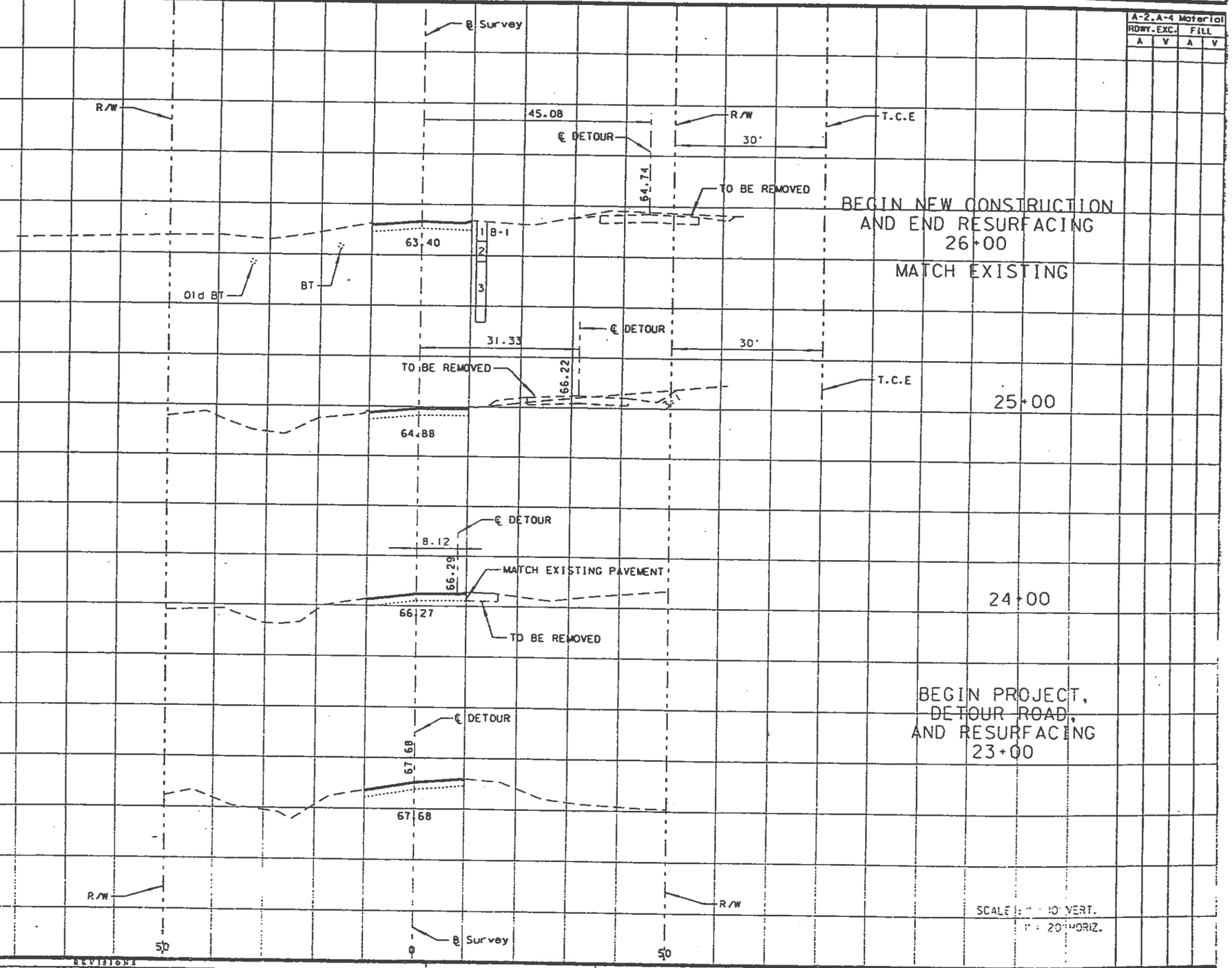
ROAD NO.	COUNTY	PROJECT NUMBER
CR 2224	LIBERTY	56520-3502

SHEET TITLE: ROADWAY SOIL SURVEY
PROJECT NAME: CR 2224 OVER SWAMP CREEK
DRAWING NO. 7

STATE PROJ. NO.	SHEET NO.
56520-3602	6

A-8 Material			
Sub.-Exc.		Rdwy.-Exc.	
A	V	A	V

A-2, A-4 Material			
RDWY.-EXC.		FILL	
A	V	A	V



2/22/95

SCALE: 1" = 10' VERT.
1" = 20' HORIZ.

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

JMI ENGINEERS, INC.
1424 Piedmont Drive East
Tallahassee, Florida 32312
Tel: 904-385-1450 Fax: 904-385-3545

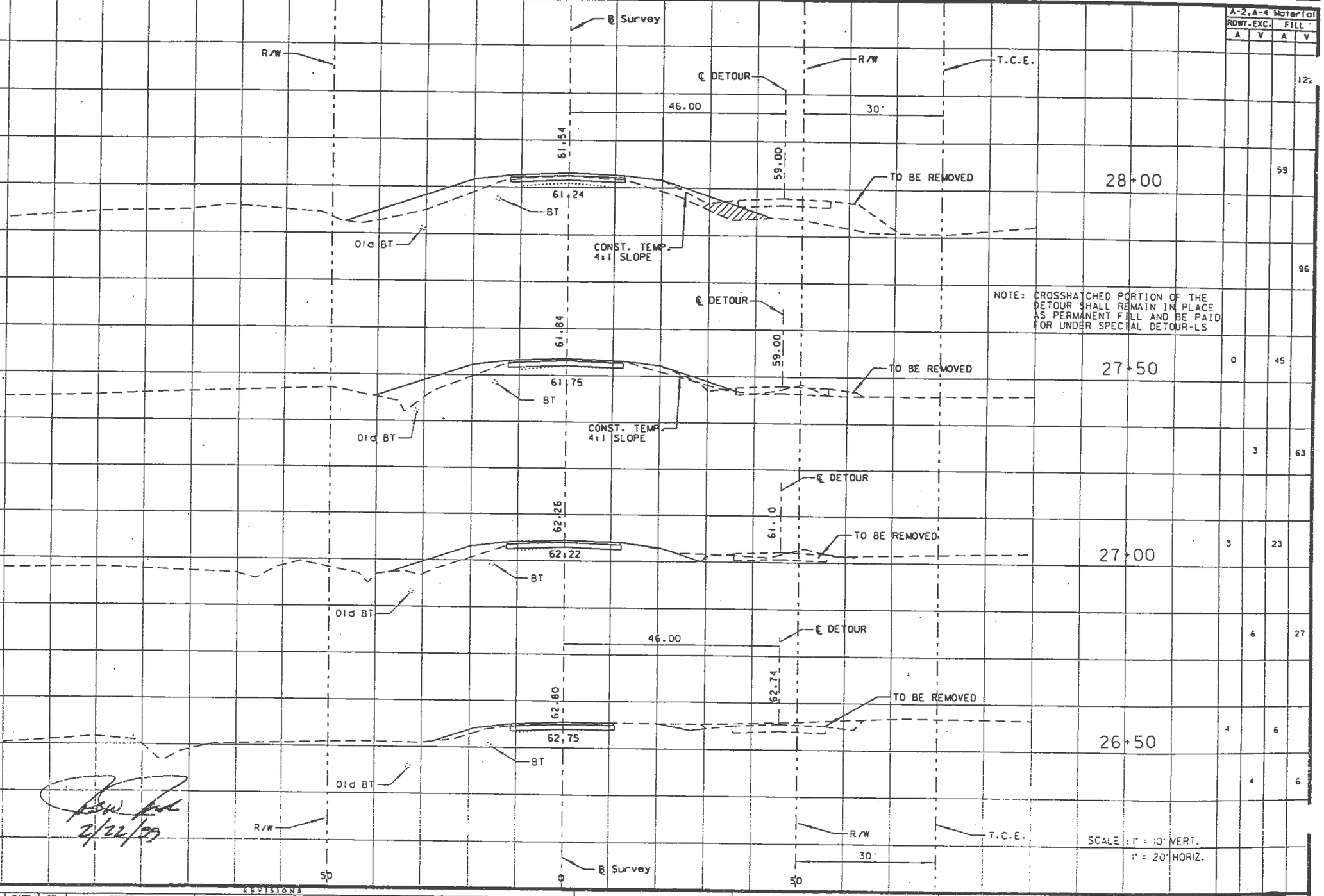
CROSS SECTIONS

8

STATE PROJ. NO.	SHEET NO.
56520-3602	7

A-8 Material			
Sub.-Exc.		Rdwy.-Exc.	
A	V	A	V

A-2, A-4 Material			
RDWY.-EXC.		FILL	
A	V	A	V
			124
		59	
			96
0		45	
3		63	
3		23	
6		27	
4		6	
4		6	



NOTE: CROSSHATCHED PORTION OF THE DETOUR SHALL REMAIN IN PLACE AS PERMANENT FILL AND BE PAID FOR UNDER SPECIAL DETOUR-LS

2/22/99

SCALE: 1" = 10' VERT.
1" = 20' HORIZ.

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

JMI ENGINEERS, INC.
1424 Piedmont Drive East
Tallahassee, Florida 32312
Tel: 904-385-7450 Fax: 904-385-3545

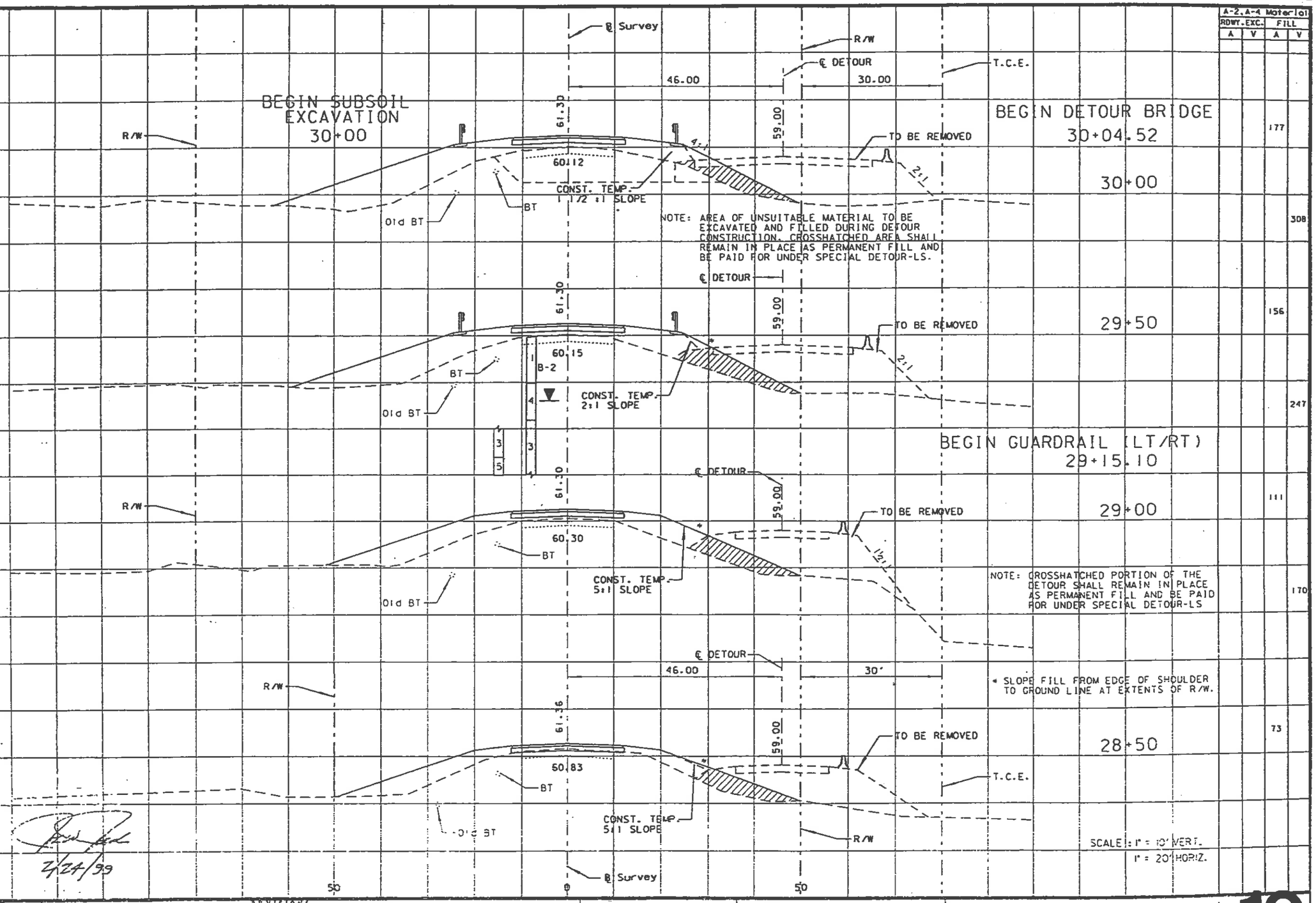
CROSS SECTIONS

9

STATE PROJ. NO.	SHEET NO.
56520-3602	8

Unsuitable A-2-4 Sub-Exc.		Rdwy-Exc	
A	V	A	V

A-2, A-4 Material RDWY.-EXC.		FILL	
A	V	A	V



130	177
	308
	156
	247
	111
	170
	73

4/24/99

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

JMI ENGINEERS, INC.
1424 Piedmont Drive East
Tallahassee, Florida 32312
Tel: 904-385-7450 Fax: 904-385-3545

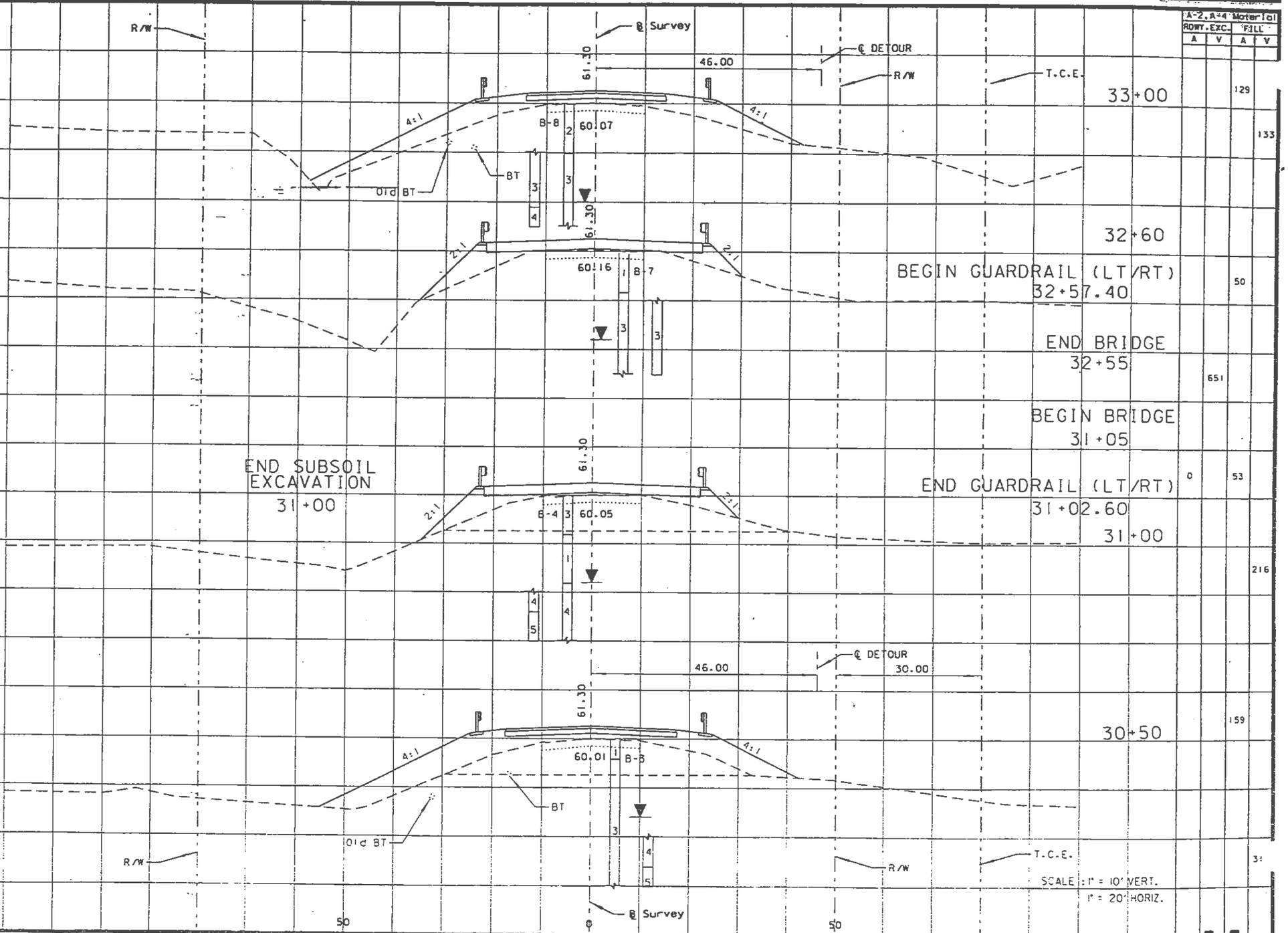
CROSS SECTIONS

10

STATE PROJ. NO.	SHEET NO.
56520-3602	9

Unsuitable A-2-4 Sub. Exc.		Rdwy. Exc.	
A	V	A	V

A-2, A-4 Material			
RDWY. EXC.		FILL	
A	V	A	V



2/24/99

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

JMI ENGINEERS, INC.
1424 Piedmont Drive East
Tallahassee, Florida 32312
Tel: 904-385-7450 Fax: 904-385-3545

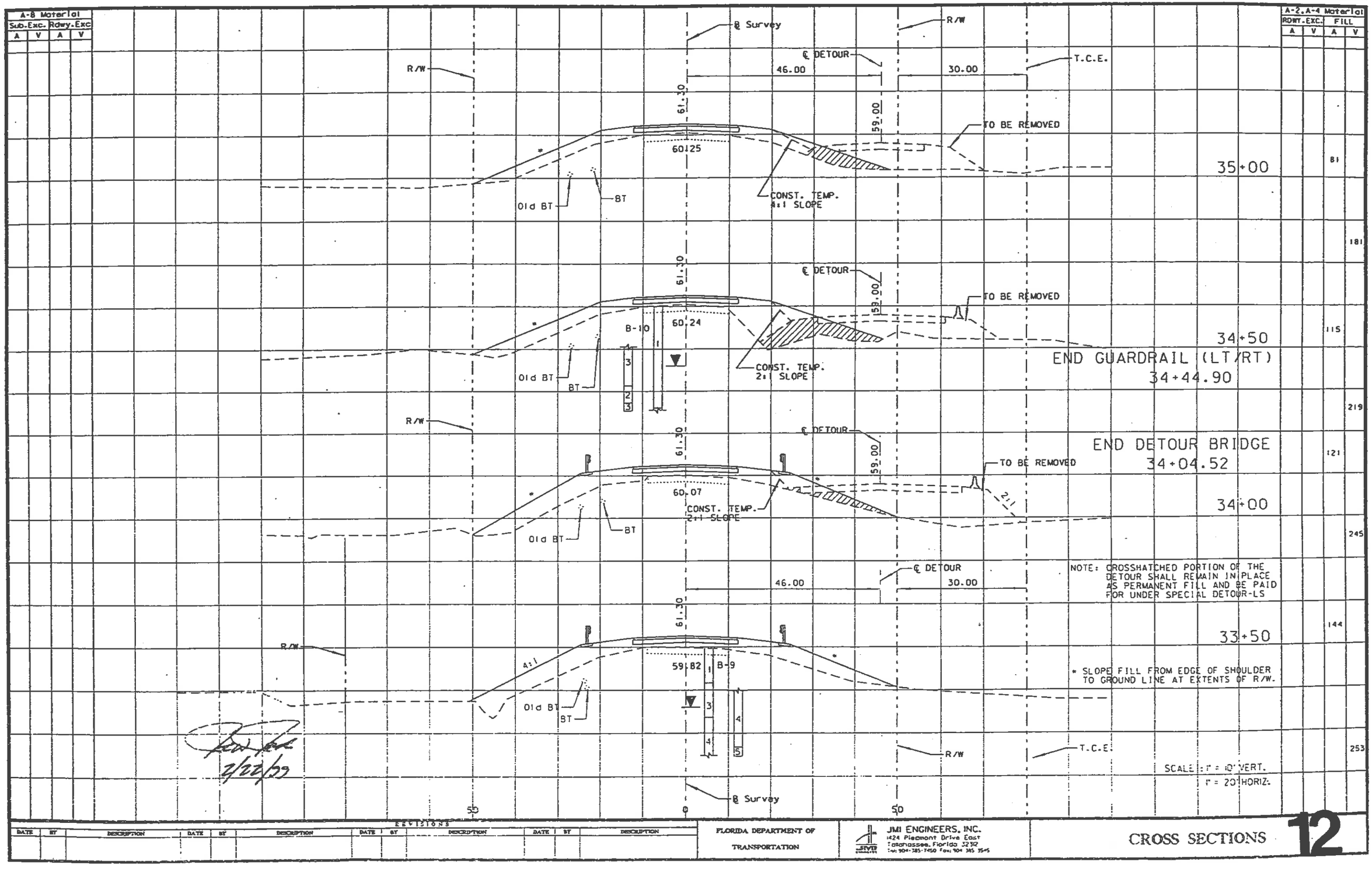
CROSS SECTIONS

11

STATE PROJ. NO.	SHEET NO.
56520-3602	10

A-8 Material			
Sub.Exc.		Rdwy.Exc	
A	V	A	V

A-2,A-4 Material			
RDWY.EXC.		FILL	
A	V	A	V



2/22/99

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

JMI ENGINEERS, INC.
1424 Piedmont Drive East
Tallahassee, Florida 32312
Tel: 904-385-7450 Fax: 904 385 3545

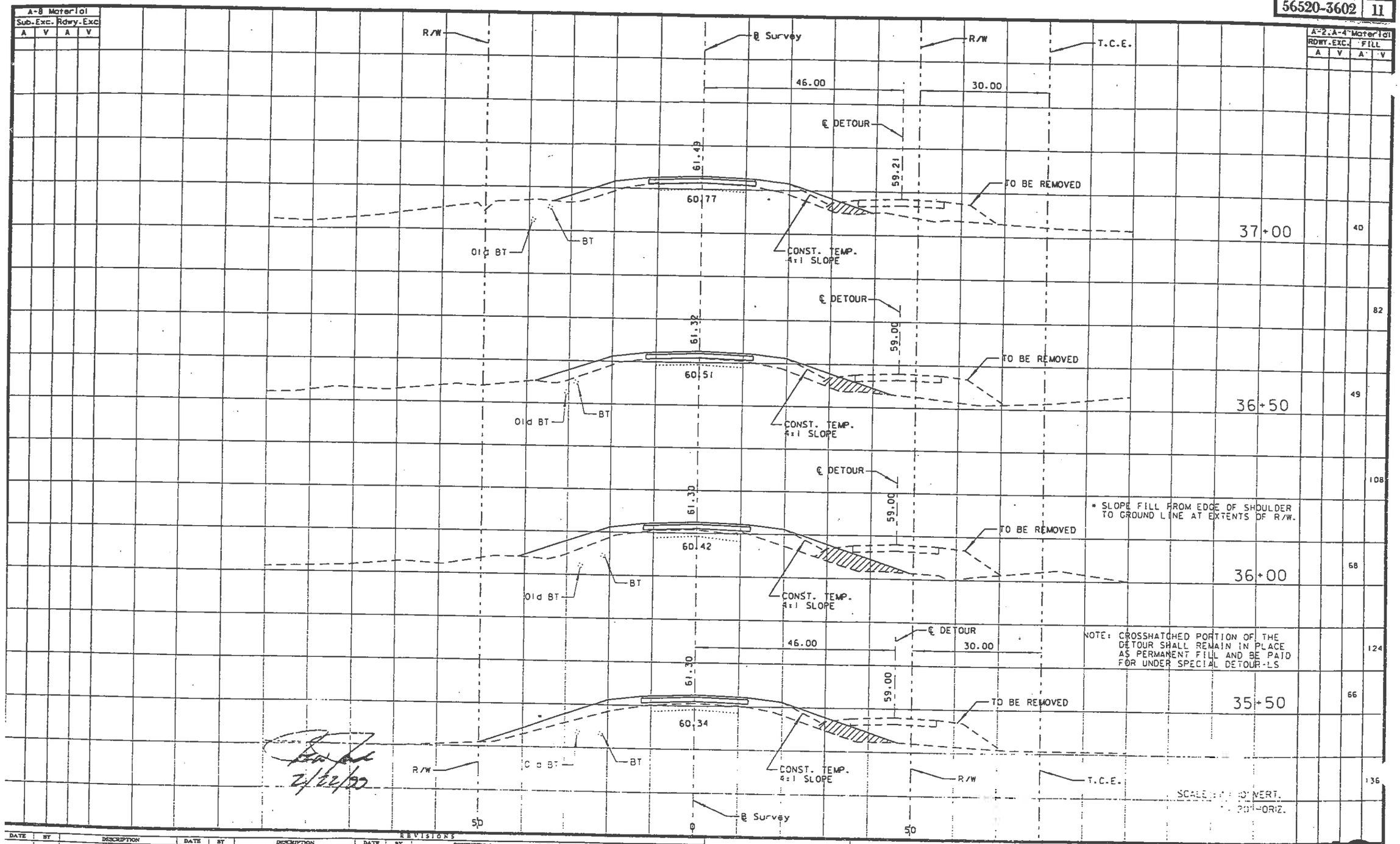
CROSS SECTIONS

12

STATE PROJ. NO.	SHEET NO.
56520-3602	11

A-8 Material			
Sub-Exc.		Rdwy-Exc.	
A	V	A	V

A-2, A-4 Material			
RDWY. EXC.		FILL	
A	V	A	V



2/22/00

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

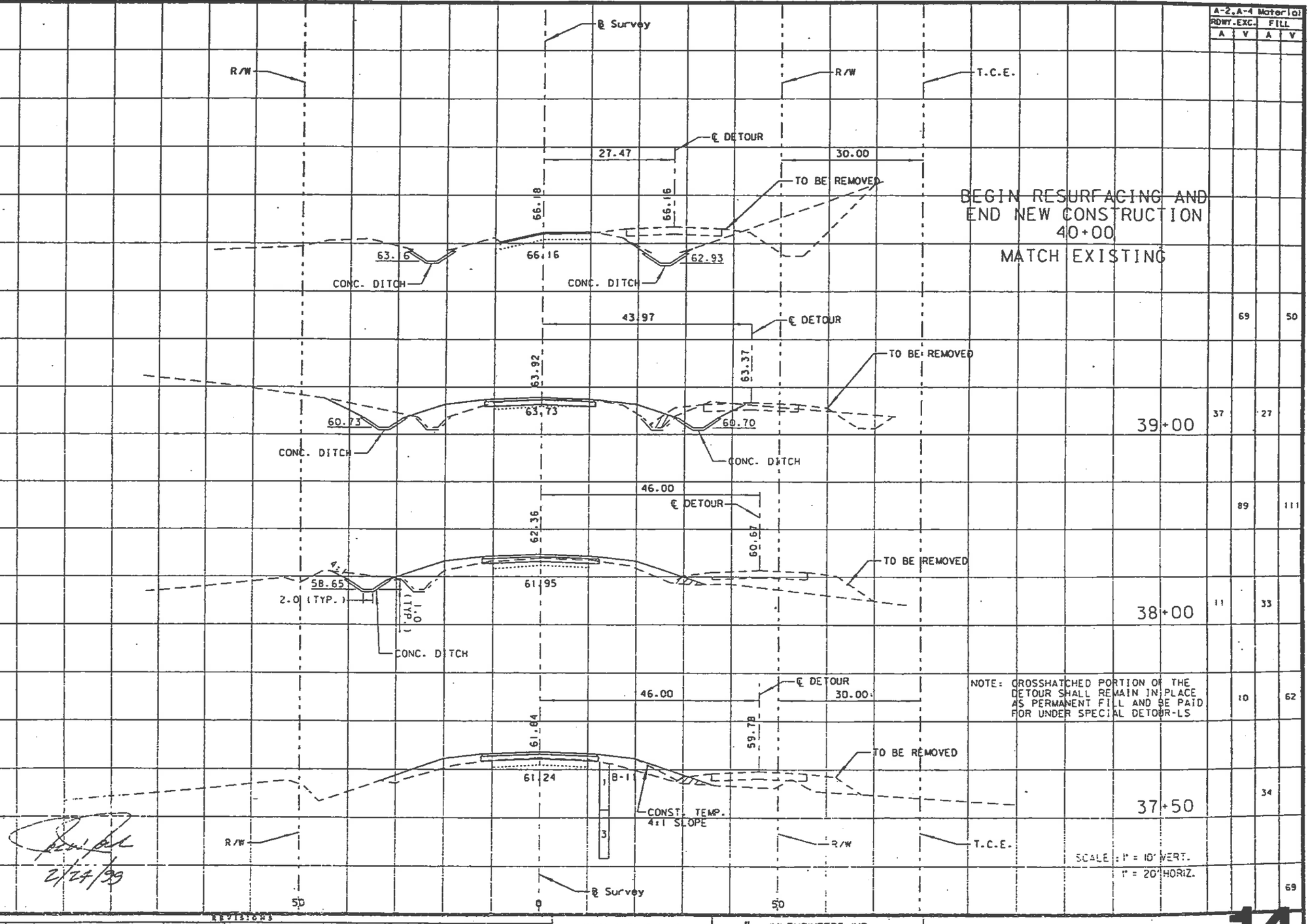
FLORIDA DEPARTMENT OF TRANSPORTATION

JMI ENGINEERS, INC.
1424 Piedmont Drive East
Tallahassee, Florida 323..
Tel: 904 385 ... Fax: 904 385 ...

CROSS SECTIONS

13

STATE PROJ. NO.	SHEET NO.
56520-3602	12



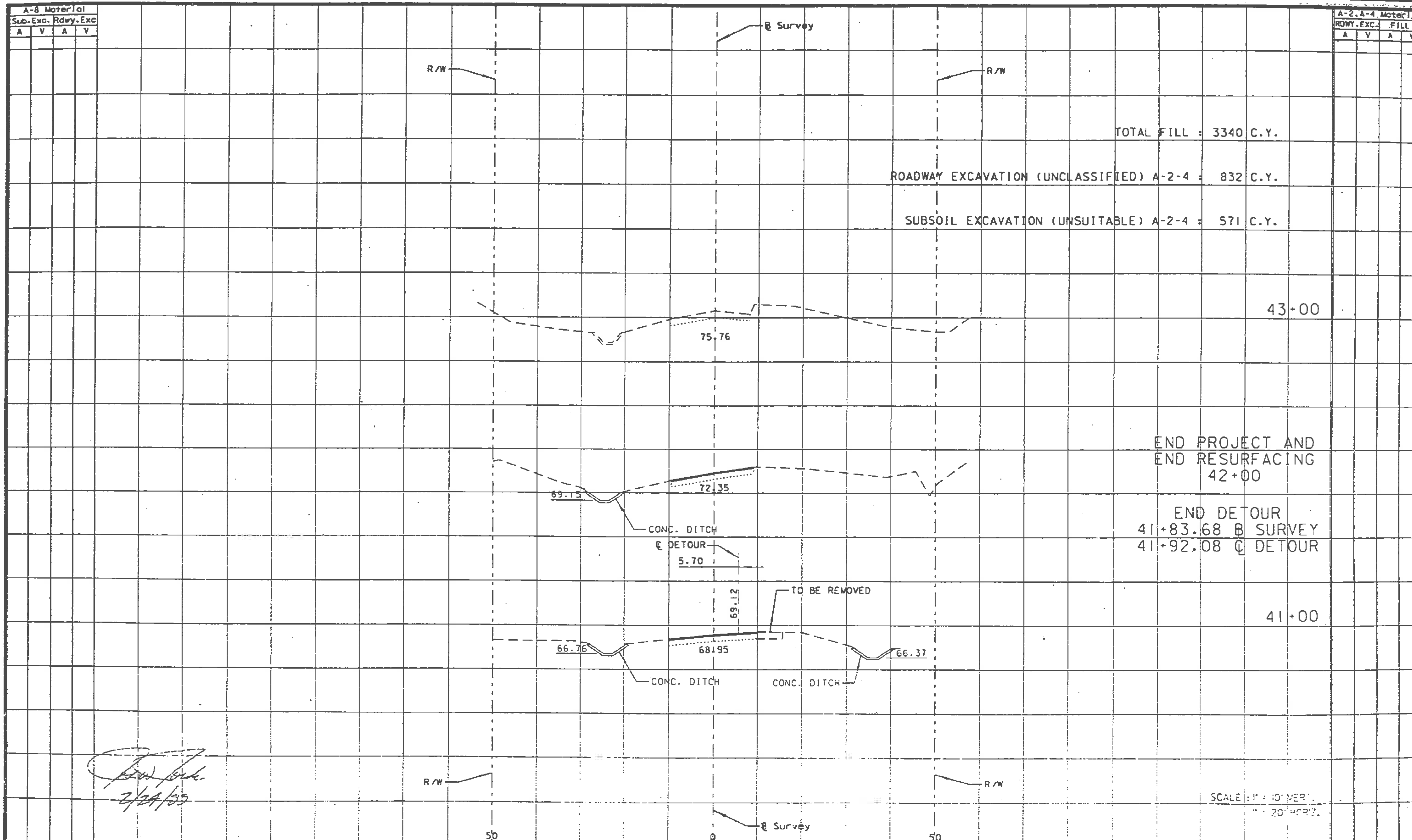
REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF
TRANSPORTATION

JMI ENGINEERS, INC.
1424 Piedmont Drive East
Tallahassee, Florida 32312
Tel. 904-385-7450 Fax. 904-385-3545

CROSS SECTIONS


A-8 Material
Sub.Exc. Rdwy.Exc
A V A V
A-2,A-4 Material
RDWY.EXC. FILL
A V A V
℄ Survey
R/W
R/W
TOTAL FILL = 3340 C.Y.
ROADWAY EXCAVATION (UNCLASSIFIED) A-2-4 = 832 C.Y.
SUBSOIL EXCAVATION (UNSUITABLE) A-2-4 = 571 C.Y.
43+00
75.76
END PROJECT AND
END RESURFACING
42+00
69.75
72.35
CONC. DITCH
END DETOUR
41+83.68 ℄ SURVEY
41+92.08 ℄ DETOUR
℄ DETOUR
5.70
69.12
TO BE REMOVED
41+00
66.76
68.95
66.37
CONC. DITCH
CONC. DITCH
R/W
R/W
SCALE: 1" = 10' VERT.
1" = 20' HORIZ.
℄ Survey
50
0
50

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

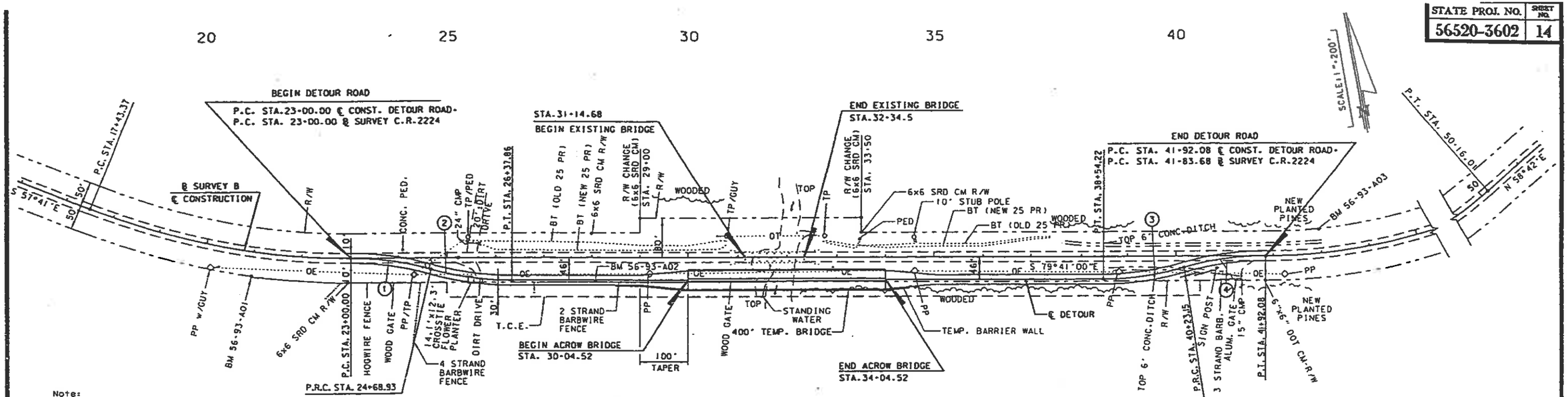
REVISIONS

FLORIDA DEPARTMENT OF TRANSPORTATION

JMI ENGINEERS, INC.

CROSS SECTIONS

STATE PROJ. NO.	SHEET NO.
56520-3602	14



Note:

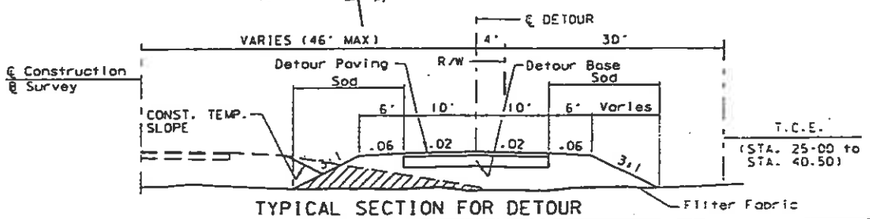
1. The cost for removing fencing, gates and crosstie flower planter shall be included in Selective Clearing and Grubbing.

ESTIMATE OF SPECIAL DETOUR QUANTITES

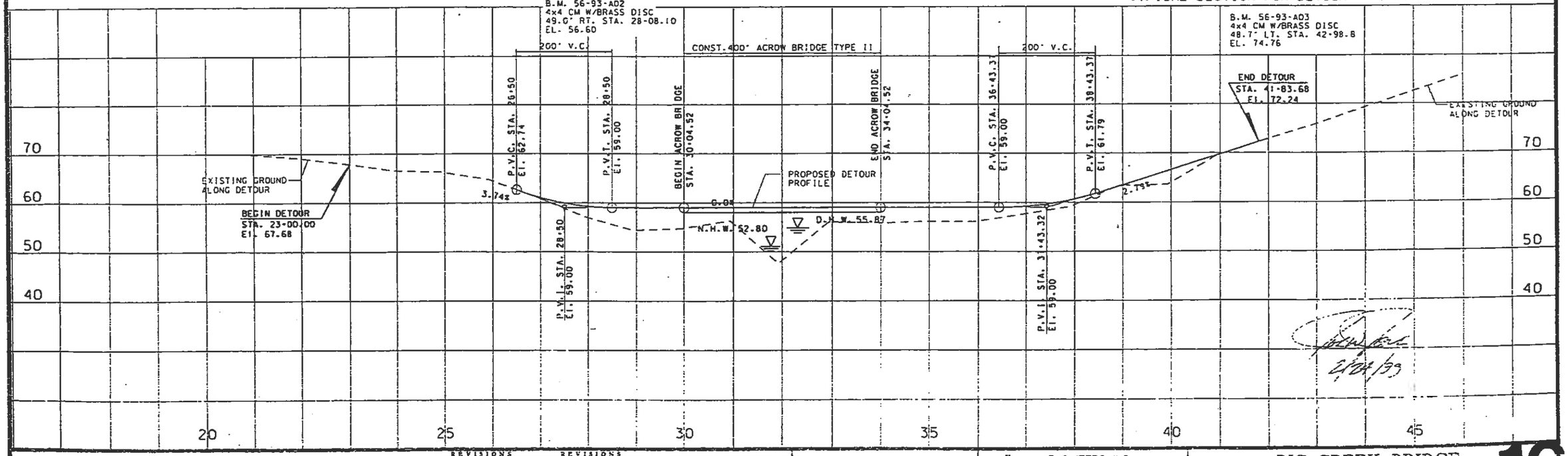
DESCRIPTION	UNIT	QUANTITY
Borrow Excavation	C.Y.	3342
Detour Paving	S.Y.	3516
Temp. Sodding	S.Y.	2842
Detour Base	S.Y.	3516

Note: These quantities are shown for informational purposes only. The contractor should not use these quantities as the sole basis for his bid proposal.

CURVE DATA ALONG ℄ DETOUR				
CURVE	①	②	③	④
P.I.	23+85.00	25+53.93	39+39.22	41+08.15
Δ	15°41'57"	15°41'57"	15°41'57"	15°41'57"
D	9°17'35"	9°17'35"	9°17'35"	9°17'35"
T	85'	85'	85'	85'
L	168.93'	168.93'	168.93'	168.93'
R	616.54'	616.54'	616.54'	616.54'
P.C.	23+00.00	24+68.93	38+54.22	40+23.15
P.T.	24+68.93	26+37.86	40+23.15	41+92.08



TYPICAL SECTION FOR DETOUR



REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

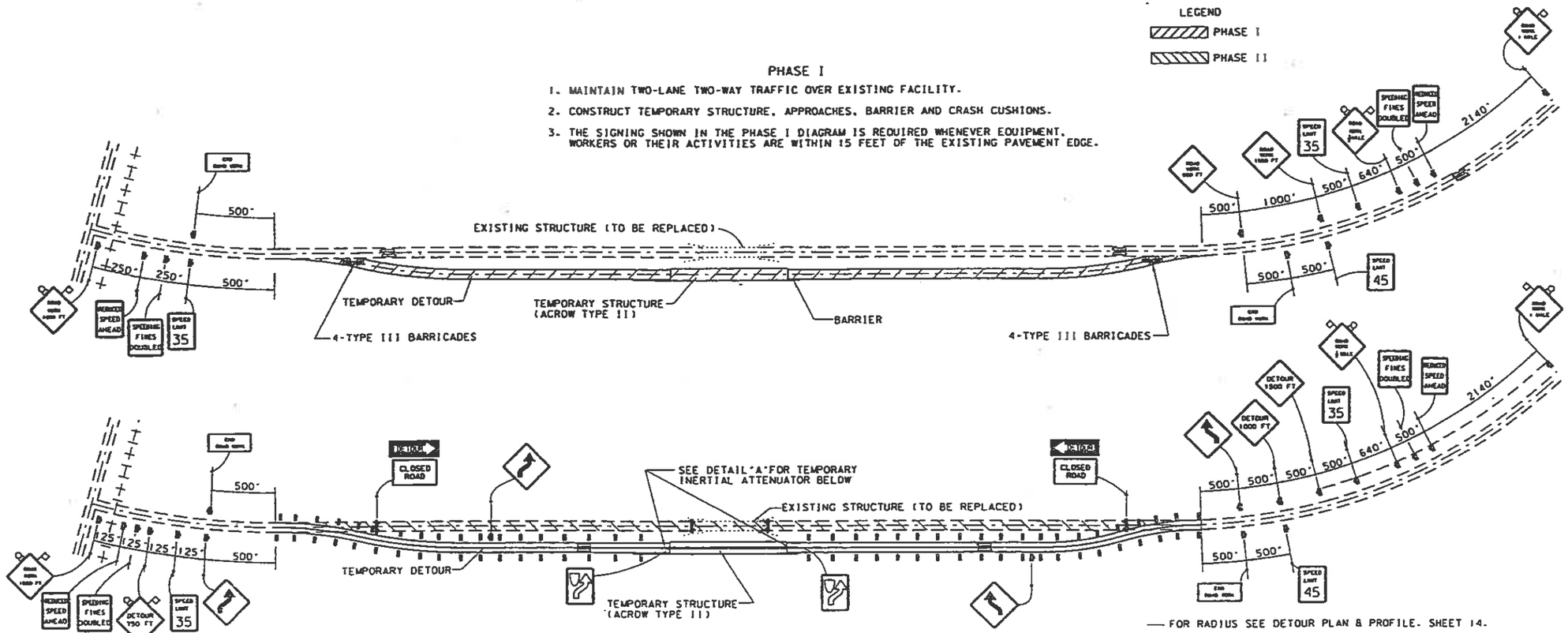
FLORIDA DEPARTMENT OF TRANSPORTATION

JMI ENGINEERS, INC.
1424 Piedmont Drive East
Tallahassee, Florida 32312
Tel: 904-385-7450 Fax: 904-385-3545

BIG CREEK BRIDGE DETOUR PLAN AND PROFILE

16

STATE PROJ. NO.	SHEET NO.
56520-3602	15



SYMBOLS:

- SIGN WITH 18" x 18"(MIN.) ORANGE FLAG AND TYPE B LIGHT
- TYPE I OR TYPE II BARRICADE OR VERTICAL PANEL OR DRUM (WITH STEADY BURNING LIGHT AT NIGHT ONLY). CONES OR TUBULAR MARKERS MAY BE USED DURING DAYLIGHT ONLY.
- TYPE III BARRICADE (WITH FLASHING LIGHT).
- WORK ZONE SIGN
- TEMPORARY INERTIAL ATTENUATOR

DETAIL "A" — ℄ TRUSS — ACROW TYPE II

3/11/93

PHASE II

1. RE-SIGN AND MARK AS SHOWN IN PHASE II PLAN.
2. REROUTE TRAFFIC TO DETOUR AND MAINTAIN TWO-WAY TRAFFIC ON DETOUR. INSTALL TYPE III BARRICADES.
3. REMOVE EXISTING BRIDGE STRUCTURE.
4. CONSTRUCT NEW BRIDGE STRUCTURE.
5. CONSTRUCT NEW FILL AND BASE WITH STABILIZATION.
6. PERFORM PAVING OPERATION.

PHASE III

1. REROUTE TRAFFIC BACK TO MAIN ROADWAY.
2. PERFORM PAVING OPERATIONS.
3. REMOVE SPECIAL DETOURS.
4. RESTORE ALL DISTURBED AREAS TO PRECONSTRUCTION STATE.
5. INSTALL FINAL PAVEMENT MARKINGS.
6. INSTALL SIGN PANELS, SIGNS AND COMPLETE OTHER SIGNING OPERATIONS.

GENERAL MAINTENANCE OF TRAFFIC NOTES:

1. ALL SIGNING, PAVEMENT MARKINGS, BARRICADES AND WARNING LIGHTS FOR MAINTENANCE OF TRAFFIC SHALL CONFORM TO THE "ROADWAY AND TRAFFIC DESIGN STANDARDS" INDEX NO. 600 SERIES AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.)(1988 EDITION).
2. EXISTING SIGNS AND PAVEMENT MARKINGS THAT CONFLICT WITH CONSTRUCTION SIGNING AND MARKINGS SHALL BE REMOVED OR COVERED.
3. ARROWS DENOTE DIRECTION OF TRAFFIC ONLY AND DO NOT REFLECT PAVEMENT MARKINGS.
4. PROVISIONS APPROVED BY THE ENGINEER SHALL BE MADE FOR THE REMOVAL OF STORM WATER FROM THE ROADWAY(S) DURING CONSTRUCTION.
5. AFTER COMPLETION OF EACH CONSTRUCTION PHASE THE CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY PAVEMENT MARKINGS. (I.E., LANE LINES) UNTIL PERMANENT MARKINGS ARE INSTALLED.
6. FOR PAY ITEM NOTES SEE ROADWAY SUMMARY OF QUANTITIES SHEET.
7. ALL TEMPORARY STRIPING SHALL BE INCLUDED UNDER ITEM NUMBERS 710 SERIES. SEE CES FOR PAY ITEMS.
8. THE CONTRACTOR SHALL NOTIFY ALL CONCERNED UTILITY COMPANIES PRIOR TO WORKING NEAR THEIR EXISTING FACILITIES.
9. THE CONTRACTOR SHALL MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION AT ALL TIMES.
10. ALL LANES MUST BE REOPENED TO NORMAL TRAFFIC WITHIN 12 HOURS DURING AN EVACUATION NOTICE OF A HURRICANE OR ANY OTHER CATASTROPHIC EVENT AND SHALL REMAIN OPEN FOR THE DURATION OF THE EVACUATION OR EVENT AS DIRECTED BY THE PROJECT ENGINEER.
11. SEE INDEX 650 FOR ADDITIONAL INFORMATION.

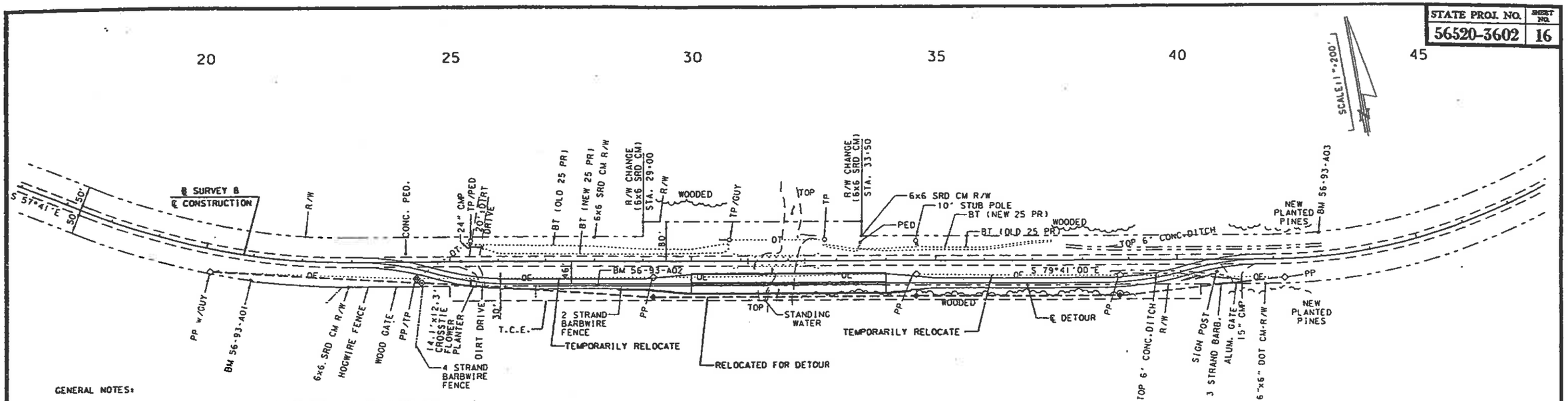
REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

JMI ENGINEERS, INC.
1424 Piedmont Drive East
Tallahassee, Florida 32308

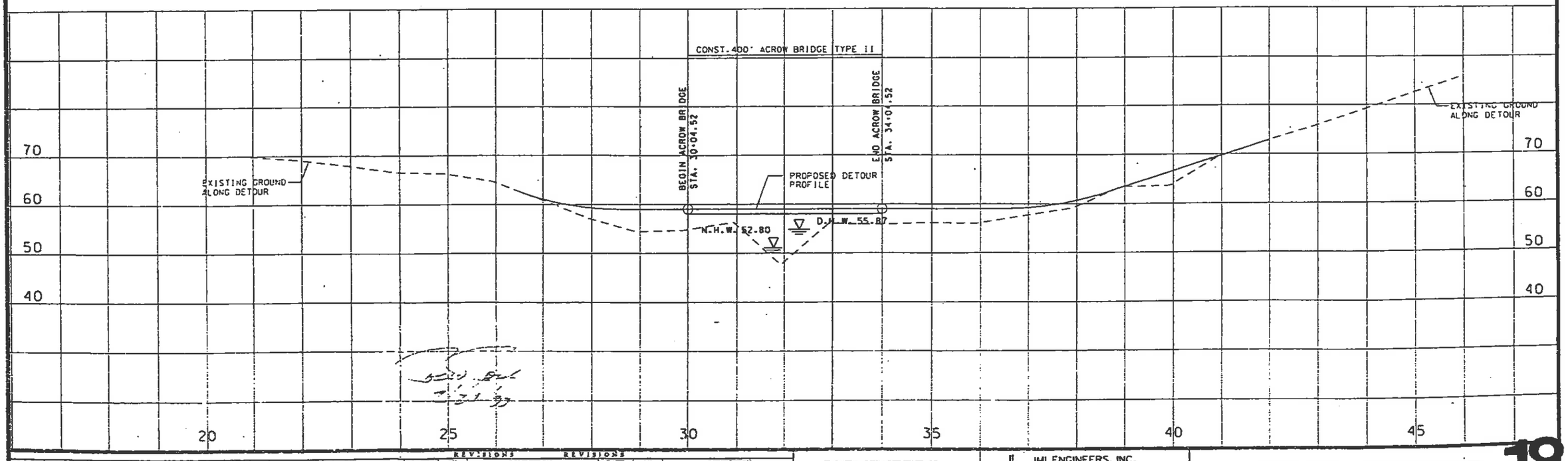
TRAFFIC CONTROL PLAN 17

STATE PROJ. NO.	SHEET NO.
56520-3602	16



GENERAL NOTES:

1. THE LOCATION OF THE EXISTING UTILITIES SHOWN IN THE PLANS ARE APPROXIMATE ONLY. THE EXACT LOCATION SHALL BE DETERMINED BY THE UTILITY COMPANY FOLLOWING THE CLEARING AND GRUBBING OF THE PROJECT SITE.
2. UTILITIES ARE TO BE ADJUSTED BY OTHERS.
3. A 6" DIA WATER MAIN WILL BE CONSTRUCTED BY THE LIBERTY COUNTY WATER AUTHORITY ALONG THE NORTH SIDE OF C.R.2224 (C.R. 267) IN THE FUTURE. THE FUTURE WATER MAIN IS NOT SHOWN ON THIS PLAN.
4. IN CASE OF AN EMERGENCY CONTACT:
   TALQUIN ELECTRIC COOPERATIVE, INC. (850) 627-7651
   GTCOM TELECOMMUNICATIONS CO. (850) 229-7231
   LIBERTY COUNTY WATER AUTHORITY (850) 643-2778



REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

JMI ENGINEERS, INC.
1624 Piedmont Drive East
Tallahassee, Florida 32312
Tele 904 385-7450 Fax 904-385 3545

UTILITY ADJUSTMENT

18

TABULATION OF QUANTITIES

BID ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS ORIGINAL	SHEET NUMBERS FINAL	TOTAL THIS SHEET ORIG.	TOTAL THIS SHEET FINAL	GRAND TOTAL ORIG.	GRAND TOTAL FINAL	REF. SHEET
700-40-1	SINGLE SIGN POST (LESS THAN 12')	AS	1		1		1		19
	ADVANCED WARNING CURVE LT								
700-46-11	"WEIGHT LIMIT 10 TONS" (REMOVAL)	AS	2		2		2		19
700-48-58	SIGN PANELS REPLACE (15 OR <)	EA	1		1		1		19
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	EA	98		98		98		19
710-7	PAVEMENT MESSAGES, PAINTED	EA	1		1		1		19
710-23-061	SOLID TRAFFIC STRIPE, (WHITE) (6")	N.M.	1.432		1.432		1.432		19
710-24-061	SOLID TRAFFIC STRIPE, (YELLOW) (6")	N.M.	1.432		1.432		1.432		19
710-25-241	SOLID TRAFFIC STRIPE, (WHITE) (24")	L.F.	20		20		20		19

12/7/95

19

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

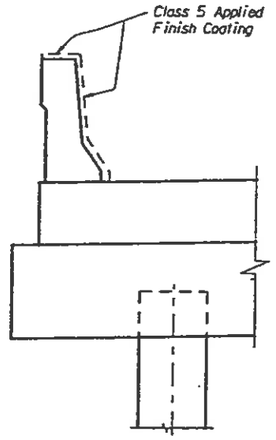
JMI ENGINEERS, INC.
1424 PIEDMONT DRIVE EAST
TALLAHASSEE, FLORIDA 32312
TEL. 904-385-7450 FAX. 904-385-3545

SIGNING AND PAVEMENT MARKING
TABULATION OF QUANTITIES

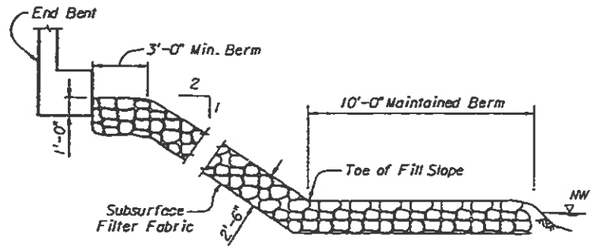
STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
FLA.	56520-3602		B-1

F.A.P. No. BRO-0003-(38)

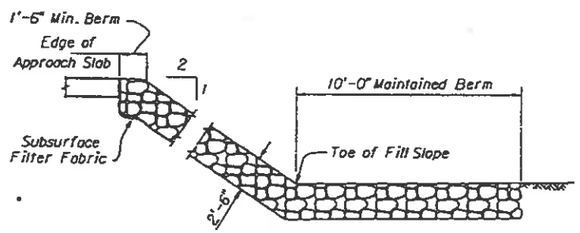
INDEX OF SHEETS



APPLIED FINISH DETAIL



SECTION THRU FORWARD SLOPE



SECTION THRU SIDE SLOPE

RUBBLE RIPRAP DETAILS (BANK & SHORE)

GENERAL NOTES

GENERAL SPECIFICATIONS : Florida Department of Transportation Standard Specifications for Road and Bridge Construction (1991) and Supplements thereto.

DESIGN SPECIFICATIONS : Designed in accordance with the 1992 edition of the AASHTO Standard Specifications for Highway Bridges and approved revisions.

GUIDELINES:
1. BRIDGE DESIGN: Florida Department Of Transportation "Structures Design Guidelines", 1987, including 1988 and 1989 revisions.

DESIGN LOADING : HS 20-44 : Seismic Design (Category B)

MATERIAL STRESSES : All allowable stresses are in accordance with current AASHTO Standard Specifications for all materials shown in the plans.

MAXIMUM CONCRETE STRESSES : Class II : fc=1.360 p.s.i. : f'c=3.400 p.s.i. (Supstr. & Barrier) *Deck f'c=4500 p.s.i.
Class IV : fc=1.360 p.s.i. : f'c=3.400 p.s.i. (Substr.) *f'c=5500 p.s.i.
Class V Special : fc=2.400 p.s.i. : f'c=6,000 p.s.i. (Prestressed Piling) (Precast)
* Strength required by Article 346

REINFORCING STEEL : Prestressed items and all other Reinforcing Steel shall be Grade 60 (fs=24.000 p.s.i.)

DESIGN METHOD : These Structures have been designed by Load Factor Method, except the loads on Piles have been computed for Service Loads.

PILE LOAD : See Construction Data sheet for Pile Loads.

PILES : Prestressed Concrete (18" Sq.)

FUTURE WEARING SURFACE : 15 lbs. per sq. ft.

ENVIRONMENTAL CLASSIFICATION : Substructure : Corrosive (Moderately Aggressive)
Superstructure : Non-corrosive (Slightly Aggressive)

LOCATION: Inland

SURFACE FINISH : A Class 5 Applied Finish Coating shall be applied to the following exposed surfaces: the inside face, and top of Barriers. (See Applied Finish Detail)

UTILITIES : Conduit to be furnished by others and installed by the Contractor.

BID ITEMS : Payment for incidental items not specifically covered in the Individual Bid Items shall be included in the Contract unit Price for Bid Items.

EXISTING STRUCTURE : Item No. 110 - 3: Approximately 2580 sq. ft. of Existing Structure to be removed.

ITEM NO.400 - 7 : Deck Grooving: Bridge deck shall be grooved from gutter to gutter. The Quantity for this item includes 89 S.Y. of grooving on each Approach Slab.

APPROACH SLABS : The area of each approach slab is approximately 97 sq. yd.

REVISIONS					
Date	By	Description	Date	By	Description

	Name	Date
Drawn by	EBS	7/94
Checked by	SGS	7/94
Designed by	JP	7/94
Checked by	JR	7/94
Approved by	D.F. Snyder	

ENGINEER OF RECORD: JMI ENGINEERS, INC.
1424 Piedmont Drive East
Tallahassee, Florida 32312
Tel: 904-385-7450 Fax: 904-385-3545

LOGO: JMI ENGINEERS

SEAL: 2/22/95

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
C.R. 2224	LIBERTY	56520-3602

SHEET TITLE: INDEX OF BRIDGE SHEETS, GENERAL NOTES AND RIPRAP DETAILS

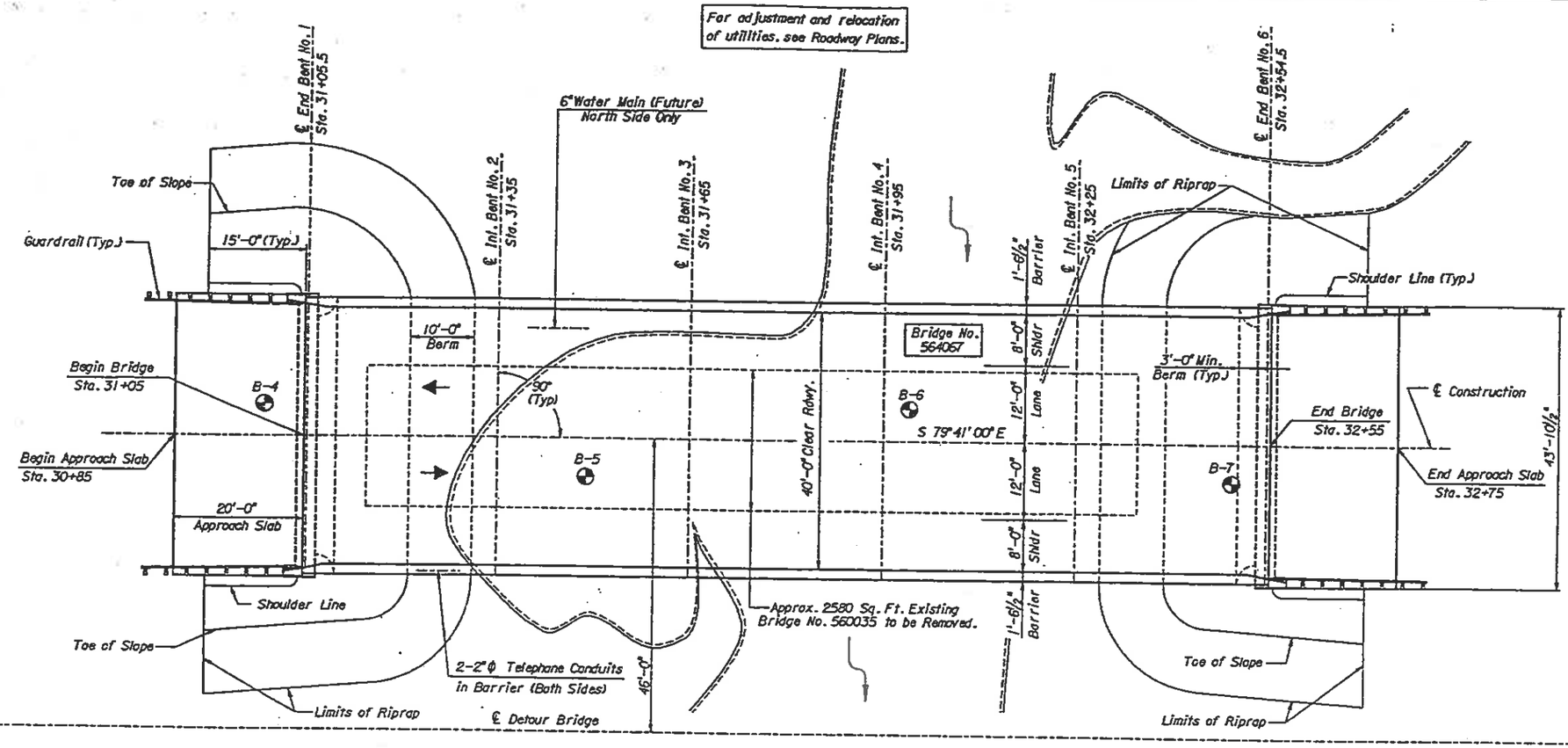
PROJECT NAME: C.R. 2224 (C.R. 267) BRIDGE OVER BIG CREEK

DRAWING NO.: 20

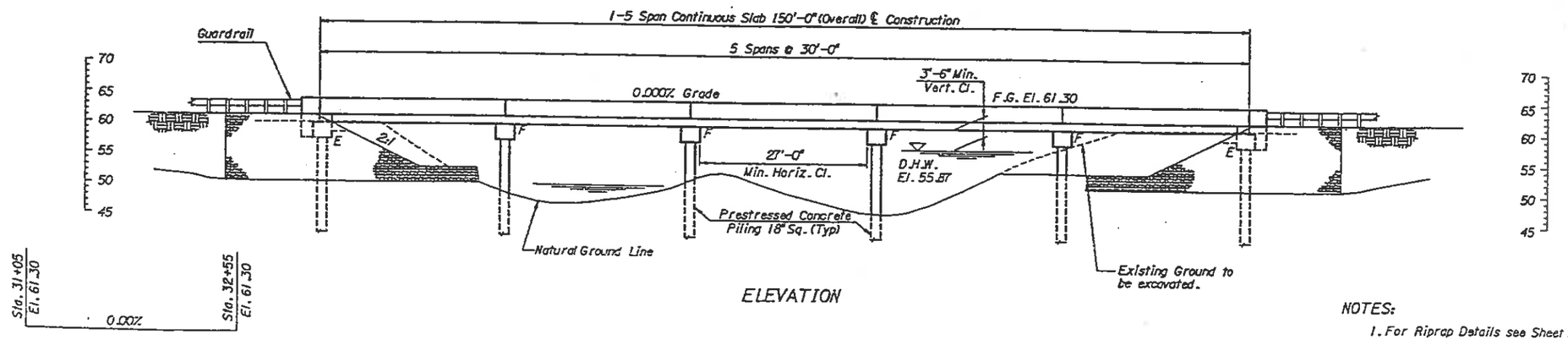
WPI No. 3126848 Bridge No. 564067

FED. ROAD NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	56520-3602		B-2

For adjustment and relocation of utilities, see Roadway Plans.



PLAN



ELEVATION

PROFILE GRADE C.R.2224 (C.R.267)

TRAFFIC DATA

1991 FADT= 350
1998 EST. ADT= 450
2003 EST. ADT= 500
2008 EST. ADT= 550
2018 EST. ADT= 700

K= 10.98%
D= 55%
T= 12% (24 Hr.)
T= 6% Des. Hr.
T= 3% Des. Hr. Heavy
T= 3.5% Des. Hr. Medium

Design Speed = 55 MPH

NOTES:
1. For Riprap Details see Sheet No. B-1.
2. For Data on Borings, see Sheet Nos. B-4 thru B-6.

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REVISIONS						
Date	By	Description	Date	By	Description	

	Names	Dates
Drawn by	EBS	7/94
Checked by	SGS	7/94
Designed by	JP	7/94
Checked by	JR	7/94
Approved by	D.F. SNYDER	

ENGINEER OF RECORD:
JMI ENGINEERS, INC.
1424 Piedmont Drive East
Tallahassee, Florida 32312
Tel: 904-385-7450 Fax: 904-385-3545

LOGO: JMI ENGINEERS

SEAL: David F. Snyder 11-29-94

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
C.R. 2224	LIBERTY	56520-3602

W.P.I. 3126848 Bridge No. 564067

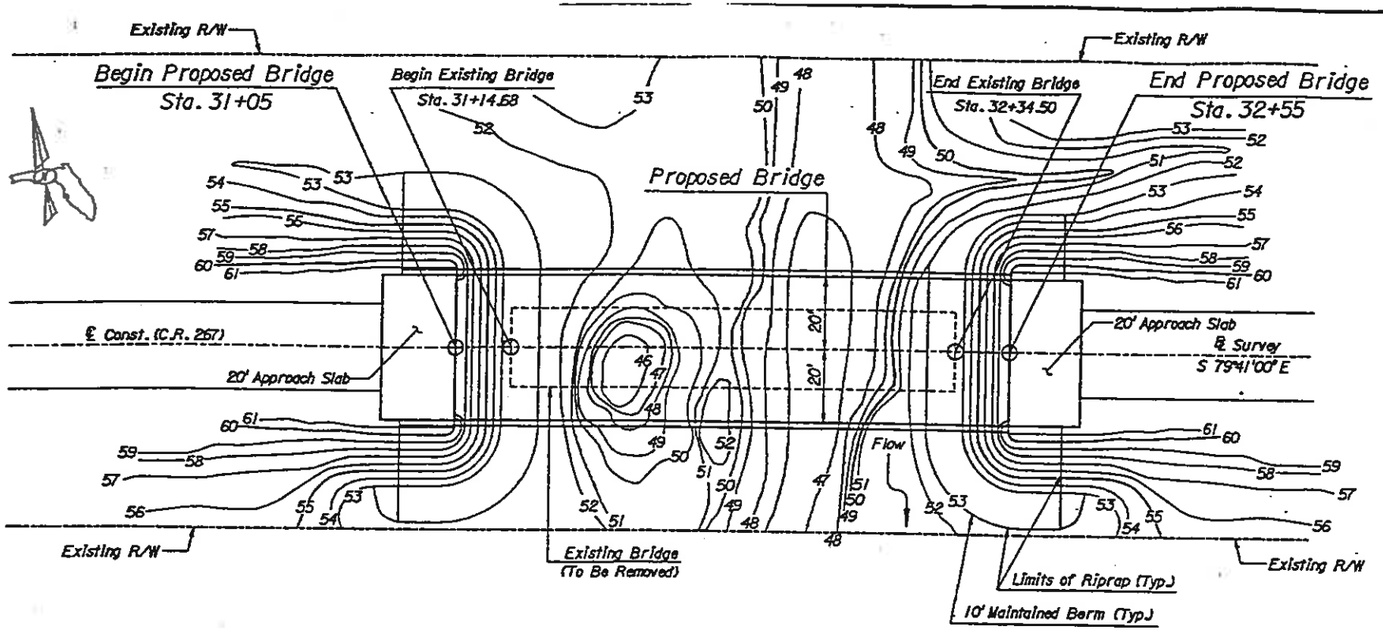
SHEET TITLE: PLAN AND ELEVATION

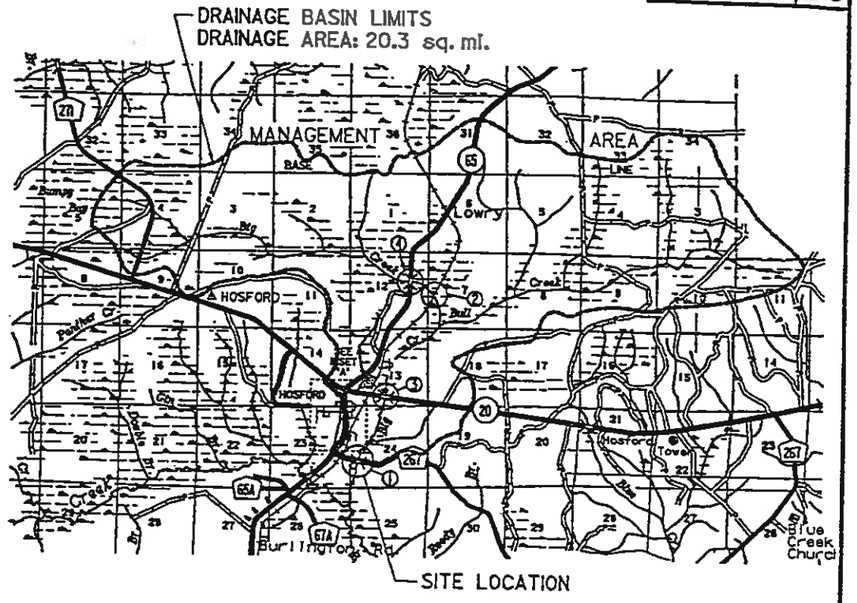
Drawing No. ——

PROJECT NAME: C.R. 2224 (C.R. 267) BRIDGE OVER BIG CREEK

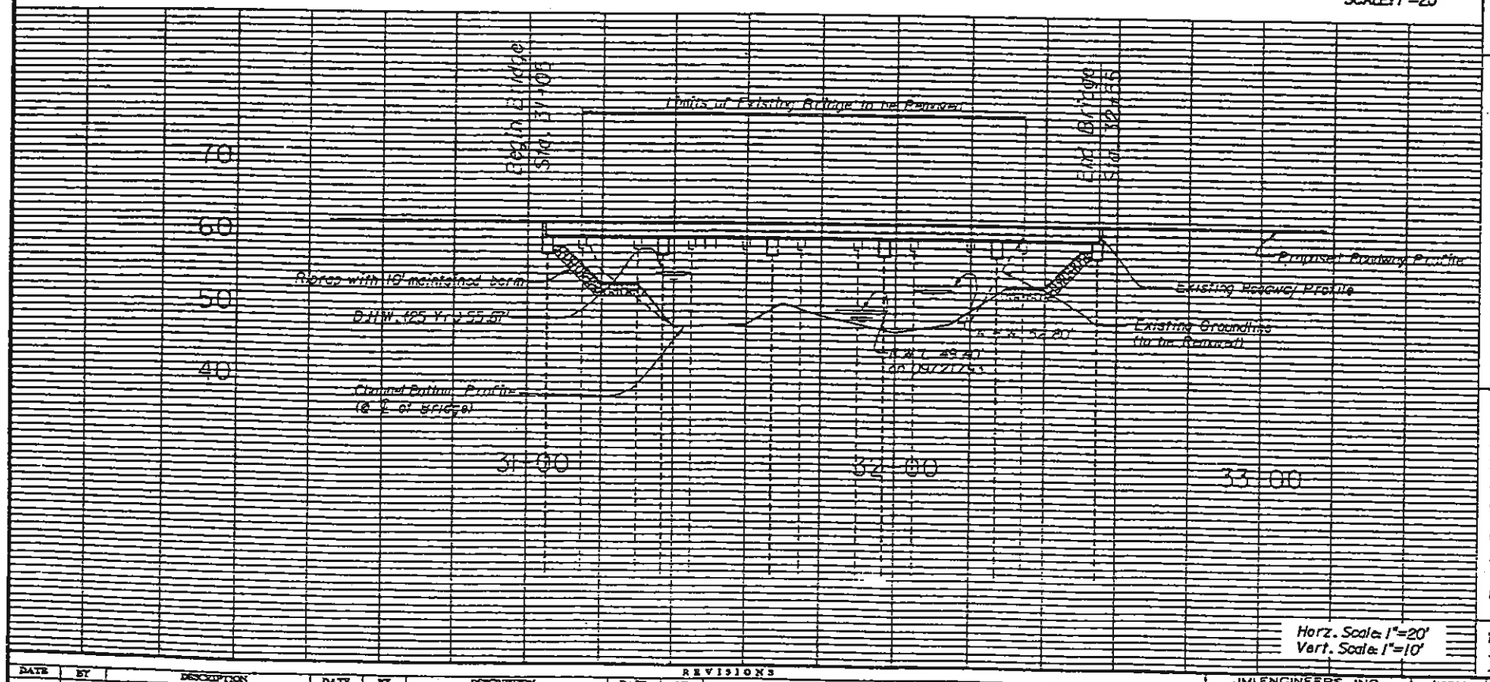
Index No. ——

STATE PROJ. NO.	SHEET NO.
56520-3602	B-3





SCALE: 1"=20'



(REFERENCE)	EXISTING STRUCTURES (1)	(2)	(3)	(4)	ASSUMED CONFIGURATION
FOUNDATION	Timber Piling	Timber Piling	Timber Piling	Concrete Piling	Concrete Piling
OVERALL LENGTH	120'	177.0'	140'	206.5'	150'
SPAN LENGTH	15'	7.5'	28'	33.5'	30'
TYPE CONSTRUCTION	Conc. & Asph. Pav't	RR Tracks & Ties	Conc. & Asph. Pav't	Conc. & Asph. Pav't	AASHTO Girder
AREA OF OPENING @ H.W.	707 sq.ft. @ 56.96	Unknown	Unknown	Unknown	999 sq.ft. @ 58.31
ROADWAY WIDTH	23.08'	9.0'	32.5'	44.8'	43.08'
ELEV. LOW MEMBER	59.4	83.95	67.7	88.42	59.4

HYDRAULIC DESIGN DATA

NOTE: The hydraulic data is shown for informational purposes only to indicate the flood discharges and water surface elevations which may be anticipated in any given year. This data was generated using highly variable factors determined by a study of the watershed. Many judgements and assumptions are required to establish these factors. The resultant hydraulic data is sensitive to changes, particularly antecedent conditions, urbanization, channelization and land use. Users of this data are cautioned against the assumption of precision which cannot be obtained.

DEFINITIONS:
Design Flood: The flood utilized to assure a desired level of hydraulic performance.
Base Flood: The flood having a 1% chance of being exceeded in any year. (100 Year Frequency)
Overtopping Flood: The flood which causes flow over the highway, over a watershed divide or thru emergency relief structures.
Greatest Flood: The most severe flood which can be predicted where overtopping is not practicable.

WATER SURFACE ELEVATIONS: N.H.W.(Non-Tidal) 52.80' M.H.W. - M.L.W. -

FLOOD DATA:	MAX. EVENT OF RECORD	DESIGN FLOOD	BASE FLOOD	☐ OVERTOPPING FLOOD ☒ GREATEST FLOOD
STAGE ELEV. NGVD (FT.)	Unknown	55.87	57.00	58.31
DISCHARGE (CFS)	Unknown	3025	4874	7458
AVERAGE VELOCITY (FPS)	Unknown	4.56	5.99	7.47
EXCEEDANCE PROB. (%)	0.01	0.04	0.01	0.002
FREQUENCY (YR.)	± 100	25	100	500

HYDRAULIC RECOMMENDATIONS

1. BEGIN BRIDGE STATION 31+05 END BRIDGE STATION 32+55 SKEW ANGLE -0-
2. CHANNEL SECTION: ℄ STATION 31+80 BOTTOM WIDTH 96' ELEV. 51.5' SIDE SLOPE 2:1
3. LIMITS OF CHANNEL EXCAVATION: RT. -0- LT. -0-
4. CLEARANCE: NAVIGATION: HORIZ. N/A VERT. N/A ABOVE EL. N/A DRIFT: HORIZ. 30' VERT. 3.53 ABOVE EL. 55.87
5. SCOUR PREDICTION: Greatest Flood: Contraction Scour = 1.50': Pier Scour = 6.55': Base Flood: Contraction Scour = 0.79': Pier Scour = 5.84' Assumed no abutment scour because rip rap is present. Scour elevations are provided in the BHS.
6. SLOPE PROTECTION: Rubble Riprap (Bank & Spread on 2:1 slopes to the toe of the abutment; 2:1 on embankments.
7. DECK DRAINAGE: 4" diameter scuppers @ 10' intervals.
8. OTHER:

REMARKS: Maximum event of record was estimated by Marvin Franklin at USGS.; Replacement of existing 120' long bridge located from stations 31+14.5 to 32+34.5.

Bridge No. 564067

REVISIONS												
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

JMI ENGINEERS, INC.

	NOTES	DATES
Drawn by	EGS	06/05/94
Checked by	SCS	06/05/94
Design by	JB	06/05/94
Checked by	DFS	06/05/94
Approved by	D.F. SMYTH	

FLORIDA DEPARTMENT OF TRANSPORTATION

BRIDGE HYDRAULIC RECOMMENDATIONS
C.R. 2224 (C.R. 267) OVER BIG CREEK

22

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FL	56520-3602		B-4

GEOTECHNICAL NOTES

FOR BORING LOCATIONS. SEE PLAN & ELEVATION SHEET

PROJECT LOCATION

TOWNSHIP : 1 SOUTH
RANGE : 6 WEST
SECTION : 24

NOTES

1. Numbers left of borings indicate standard penetration (SPT) values for 12" penetration (Unless otherwise noted)
2. Absence of groundwater data does not imply that the groundwater was not encountered. it does mean that groundwater elevations were not measured and may exist within the soil profiles.
3. Water elevations shown represent the water elevations encountered. fluctuations in the elevations of the water should be expected.
4. Soil descriptions, test data and standard penetration values shown are for the soil boring only and may not apply to any locations except at the location of the soil boring. Extrapolation of the soil boring data to other locations is the sole responsibility of the person performing the extrapolation.

Granular Materials Relative Density	SPT (blows/ft)	Silts and Clays Consistency	SPT (blows/ft)
Very Loose	Less than 4	Very Soft	Less than 2
Loose	4 - 10	Soft	2 - 4
Medium or Compact	10 - 30	Firm	4 - 8
Dense	30 - 50	Stiff	8 - 15
Very Dense	Greater than 50	Very Stiff	15 - 30
		Hard	Greater than 30

ROD (%)	ROCK QUALITY
0 - 25	VERY POOR
25 - 50	POOR
50 - 75	FAIR
75 - 90	GOOD
90 - 100	EXCELLENT

SPLIT-SPOON: INSIDE DIAMETER - 1.38"
OUTSIDE DIAMETER - 2.00"
AVG. HAMMER DROP - 30"
HAMMER WEIGHT - 140 LBS.

LEGEND

BORING LOCATION
LABORATORY RESULTS
- WATER CONTENT — w
- ORGANIC CONTENT — Org
- LIQUID LIMIT — LL
- PLASTICITY INDEX — PI
- -200 MESH — -200

ROCK STRENGTH
- UNCONFINED COMPRESSIVE (tons/sq foot) - TSF — qu
- TENSILE (tons/sq foot) - TSF — t

WATER SURFACE
DEPTH OF CASING (BOLD LINE)

UNIFORM FINE SAND (SP)
CLAYEY SAND (SC)
HIGHLY PLASTIC CLAY (CH)
HIGHLY PLASTIC SILT (MH)
SILTY SAND (SM)
SILTY WITH LOW PLASTICITY (ML)
CLAY WITH LOW PLASTICITY (CL)
ORGANICS (OH)
FAIR TO GOOD LIMESTONE (ROD ≥ 50)
POOR TO VERY POOR LIMESTONE (ROD < 50)

ENVIRONMENTAL PARAMETERS

Resistivity (Water) 1900 ohm-cm
pH (Water) 6.7
- Chloride (Water) 5 ppm
- Sulfate (Water) 0 ppm

Resistivity (Soil) 16100 ohm-cm
pH (Soil) 7.6
- Chlorides (Soil) 20 ppm
- Sulfates (Soil) 58 ppm

Environmental: Substructure: Moderately Aggressive
Superstructure: Slightly Aggressive (Inland)

TYPE OF DRILLING RIG: CME 55
DRILLING SUBCONTRACTOR: ARDAMAN & ASSOCIATES. INC.
SENIOR DRILLER: PHILIP BONEY
FIELD ENGINEER: SUSAN WRANOSKY

23

BRIDGE NO. 564067

REVISIONS					
DATE	BY		DATE	BY	

	NAME	DATE
DRAWN BY	V.S.	8/96
CHECKED BY	M.H.	8/96
DESIGNED BY	V.S.	8/96
CHECKED BY	M.H.	8/96
APPROVED BY:	M. L. HAYDEN	

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.
202 NORTH POINT BOULEVARD, SUITE C
TALLAHASSEE, FLORIDA 32308
PHONE (904) 386-1253
FAX (904) 385-8050

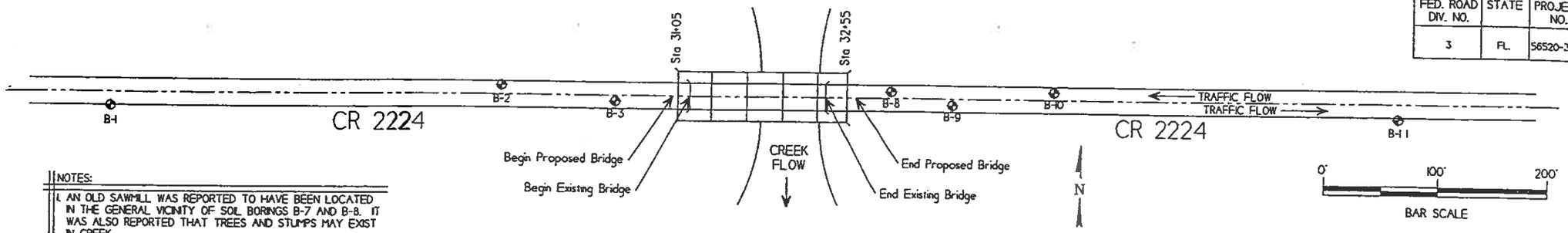
SEAL
MYRON L. HAYDEN, P.E.
DATE: 11-20-98

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT THREE

ROAD NO.	COUNTY	PROJECT NUMBER
CR 2224	LIBERTY	56520-3602

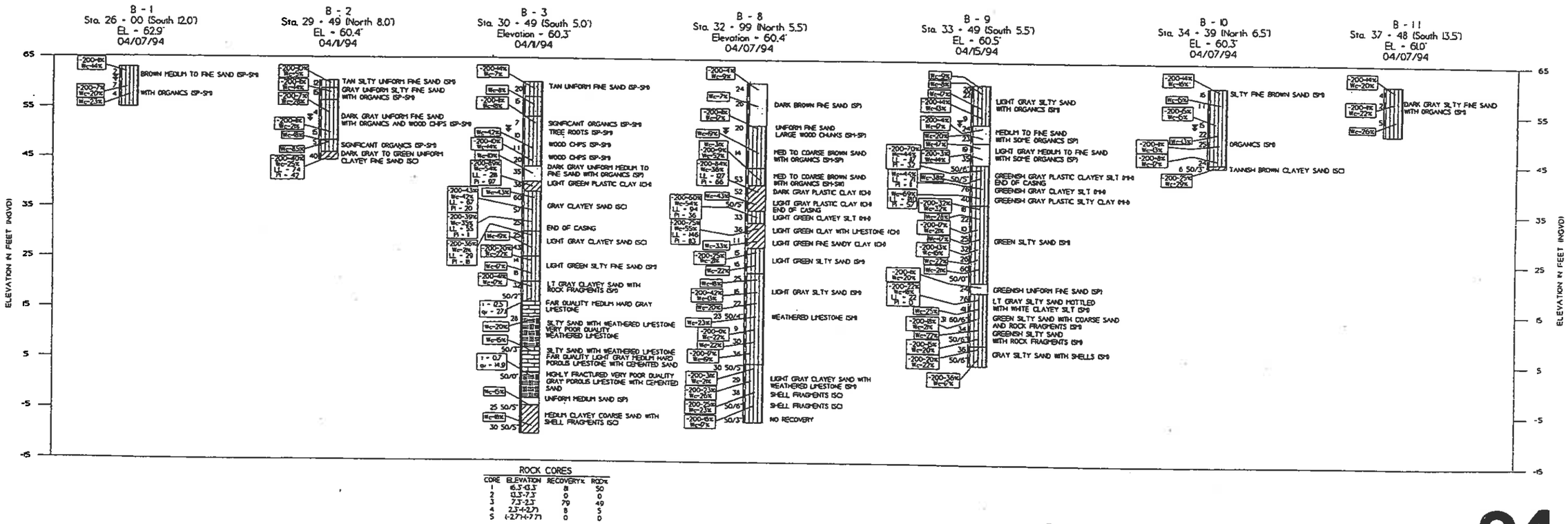
SHEET TITLE: GEOTECHNICAL NOTES
SHEET NO: B-4
PROJECT NAME: C.R. 2224 OVER BIG CREEK

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FL.	56520-3602		B-5



NOTES:

1. AN OLD SAWMILL WAS REPORTED TO HAVE BEEN LOCATED IN THE GENERAL VICINITY OF SOIL BORINGS B-7 AND B-8. IT WAS ALSO REPORTED THAT TREES AND STUMPS MAY EXIST IN CREEK.
2. ARTESIAN CONDITIONS SHOULD BE ANTICIPATED BELOW ELEVATION 29 FEET.



ROCK CORES

CORE	ELEVATION	RECOVERY%	RQD%
1	15.5'-13.5'	8	50
2	13.5'-7.5'	0	0
3	7.5'-2.5'	79	49
4	2.5'-(-2.7')	8	5
5	(-2.7')-(-7.7')	0	0

24

BRIDGE NO 56-1067

REVISIONS					
DATE	BY		DATE	BY	

	NAME	DATE
DRAWN BY	V.S.	11/94
CHECKED BY	M.H.	11/94
DESIGNED BY	V.S.	11/94
CHECKED BY	M.H.	11/94
APPROVED BY	M. L. HAYDEN	

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.

2042 NORTH POINT BOULEVARD, SUITE C
TALLAHASSEE, FLORIDA 32308
PHONE (904) 386-0253
FAX (904) 385-8050

SEAL

MYRON L. HAYDEN, P.E.

DATE: 11-20-98

DISTRICT THREE

FLORIDA DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	PROJECT NUMBER
CR 2224	LIBERTY	56520-3602

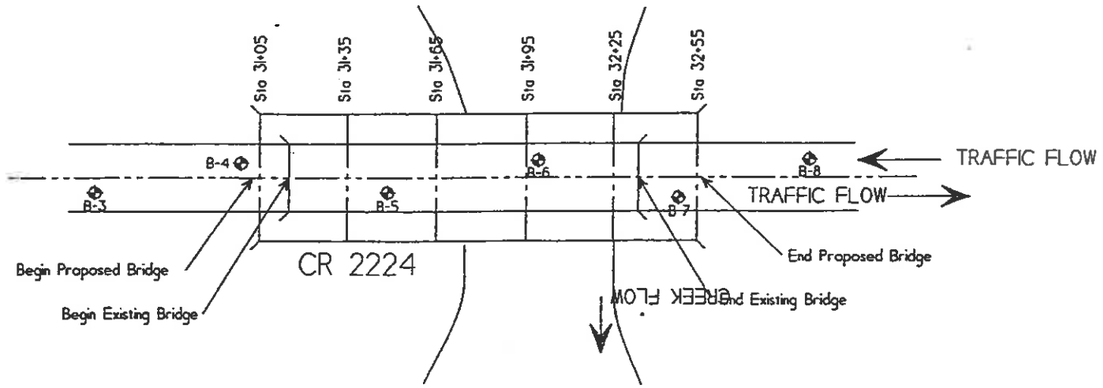
SHEET TITLE: BIG CREEK BRIDGE APPROACH BORING LOG PROFILES — SHEET NO 8-5

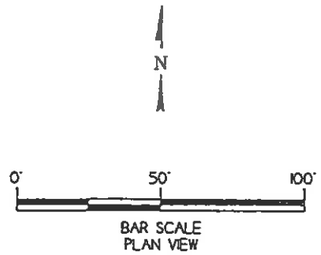
PROJECT NAME: C.R. 2224 OVER BIG CREEK — INDEX NO

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FL	56520-3602	.	B-6

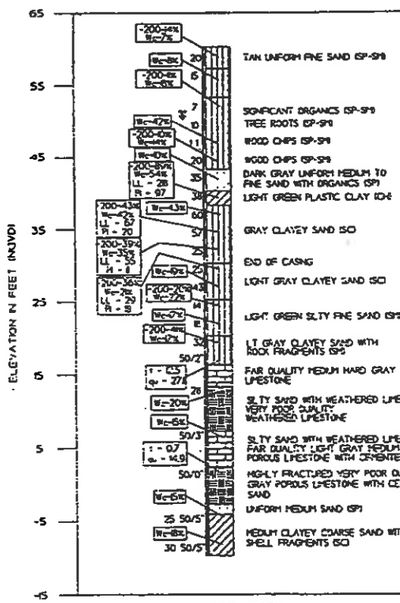
NOTES:

1. AN OLD SAWMILL WAS REPORTED TO HAVE BEEN LOCATED IN THE GENERAL VICINITY OF SOIL BORINGS B-7 AND B-8. IT WAS ALSO REPORTED THAT TREES AND STUMPS MAY EXIST IN CREEK.
2. ARTESIAN CONDITIONS SHOULD BE ANTICIPATED BELOW ELEVATION 29 FEET.





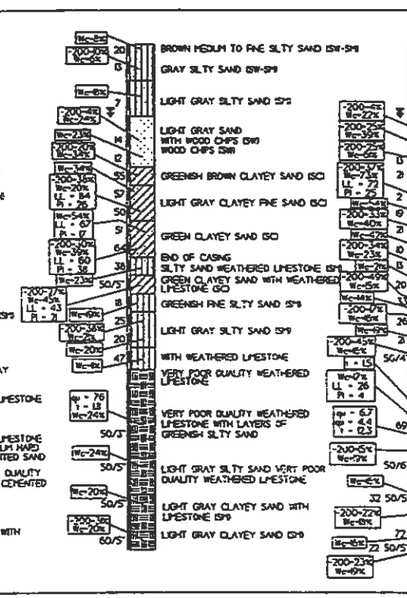
B - 3
Sta. 30 + 49 (South 5.0')
Elevation = 60.3'
04/11/94



ROCK CORES

CORE	ELEVATION	RECOVERY%	RQD%
1	15.3-13.3	81	50
2	13.3-7.3	0	0
3	7.3-2.3	79	49
4	2.3-(-2.7)	5	5
5	(-2.7)-(-7.7)	0	0

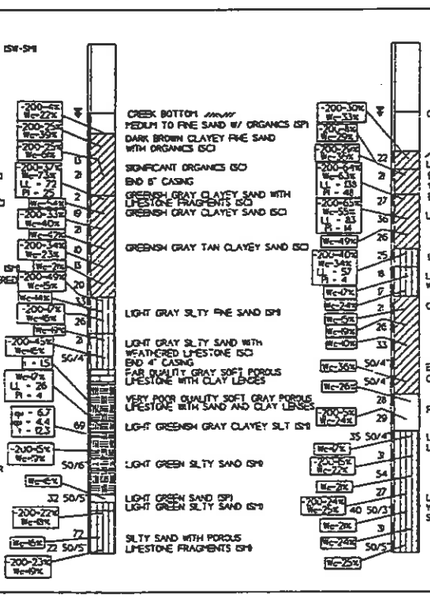
B - 4
Sta. 30 + 99 (North 5.0')
Elevation = 60.3'
04/18/94



ROCK CORES

CORE	ELEVATION	RECOVERY%	RQD%
1	15.3-13.3	89	0
2	13.3-8.3	29	13
3	8.3-3.3	97	83
4	3.3-(-1.7)	0	0
5	(-1.7)-(-6.7)	0	0

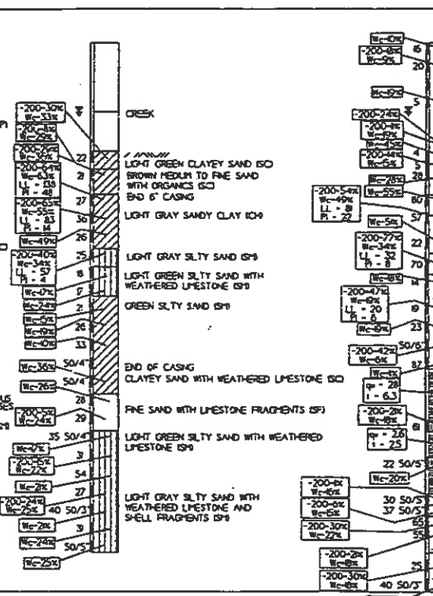
B - 5
Sta. 31 + 49 (South 5.0')
Elevation = 60.3'
04/06/94



ROCK CORES

CORE	ELEVATION	RECOVERY%	RQD%
1	15.3-13.3	50	15
2	13.3-8.3	12	5
3	8.3-3.3	98	33
4	3.3-(-1.7)	13	7
5	(-1.7)-(-6.7)	5	0

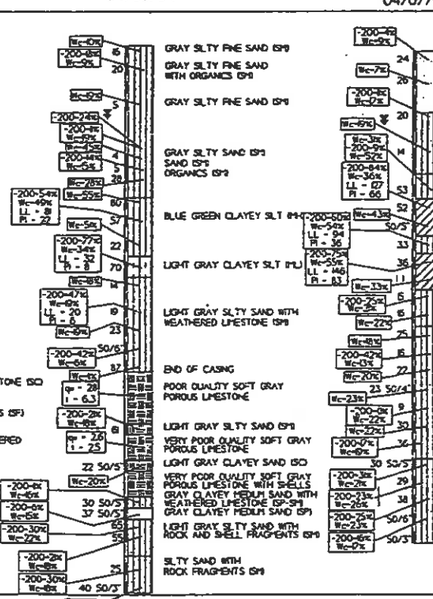
B - 6
Sta. 32 + 00 (North 5.5')
Elevation = 60.3'
04/06/94



ROCK CORES

CORE	ELEVATION	RECOVERY%	RQD%
1	15.3-13.3	92	29
2	13.3-8.3	42	27
3	8.3-3.3	38	22
4	3.3-(-1.7)	17	0

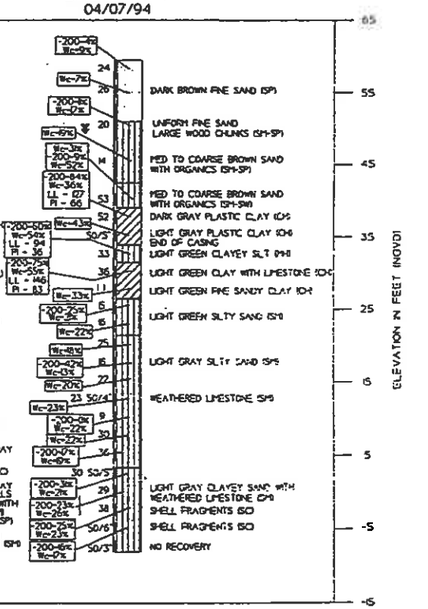
B - 7
Sta. 32 + 49 (South 6.0')
Elevation = 60.3'
04/06/94



ROCK CORES

CORE	ELEVATION	RECOVERY%	RQD%
1	15.3-13.3	92	29
2	13.3-8.3	42	27
3	8.3-3.3	38	22
4	3.3-(-1.7)	17	0

B - 8
Sta. 32 + 99 (North 5.5')
Elevation = 60.4'
04/07/94



ROCK CORES

CORE	ELEVATION	RECOVERY%	RQD%
1	15.3-13.3	92	29
2	13.3-8.3	42	27
3	8.3-3.3	38	22
4	3.3-(-1.7)	17	0

BRIDGE NO. 564067

REVISIONS					
DATE	BY		DATE	BY	

	NAME	DATE
DRAWN BY	V.S.	11/94
CHECKED BY	M.H.	11/94
DESIGNED BY	V.S.	11/94
CHECKED BY	M.H.	11/94
APPROVED BY	M. L. HAYDEN	

ENVIRONMENTAL & GEOTECHNICAL SPECIALISTS, INC.
202 NORTH POINT BOULEVARD, SUITE C
TALLAHASSEE, FLORIDA 32308
PHONE (904) 386-1253
FAX (904) 385-8050

SEAL:
MYRON L. HAYDEN, P.E.
DATE: 11-20-98

DISTRICT THREE
FLORIDA DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	PROJECT NUMBER
CR 2224	LIBERTY	56520-3602

SHEET TITLE: BIG CREEK BRIDGE BORING LOG PROFILES
SHEET NO. B-6
PROJECT NAME: C.R. 2224 OVER BIG CREEK
INDEX NO

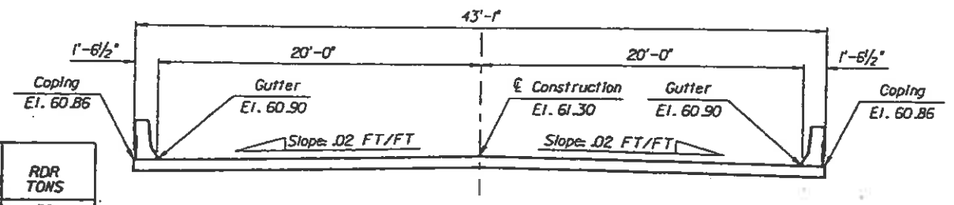
FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	56520-3602		8-7

PILE INSTALLATION DATA

LOCATION BENT NO.	DESIGN LOAD TONS	TOTAL SCOUR RESISTANCE TONS	NET SCOUR RESISTANCE TONS	MINIMUM TIP ELEVATION FEET NGVD	SCOUR ELEVATION FEET NGVD	RDR TONS
1	38	70	35	20.5	37.5	130
2	84	68	34	20.5	37.5	244
3	84	68	34	20.5	37.5	244
4	84	68	34	20.5	37.5	244
5	84	68	34	20.5	37.5	244
6	38	70	35	20.5	37.5	130

Net scour resistance is equal to ½ of the total scour resistance, when installed in an undersized "Pilot Hole".

RDR, the Required Driving Resistance, is equal to the Design Load multiplied by a factor of safety of 2.5 plus the Net Scour Resistance in tons.
RDR = (Design Load x 2.5) + Net Scour



SECTION THRU SUPERSTRUCTURE SHOWING FINISH GRADE ELEVATIONS

NOTES:

All Piles are 18" Sq. Prestressed Concrete Piles.

All Piles are Plumb.

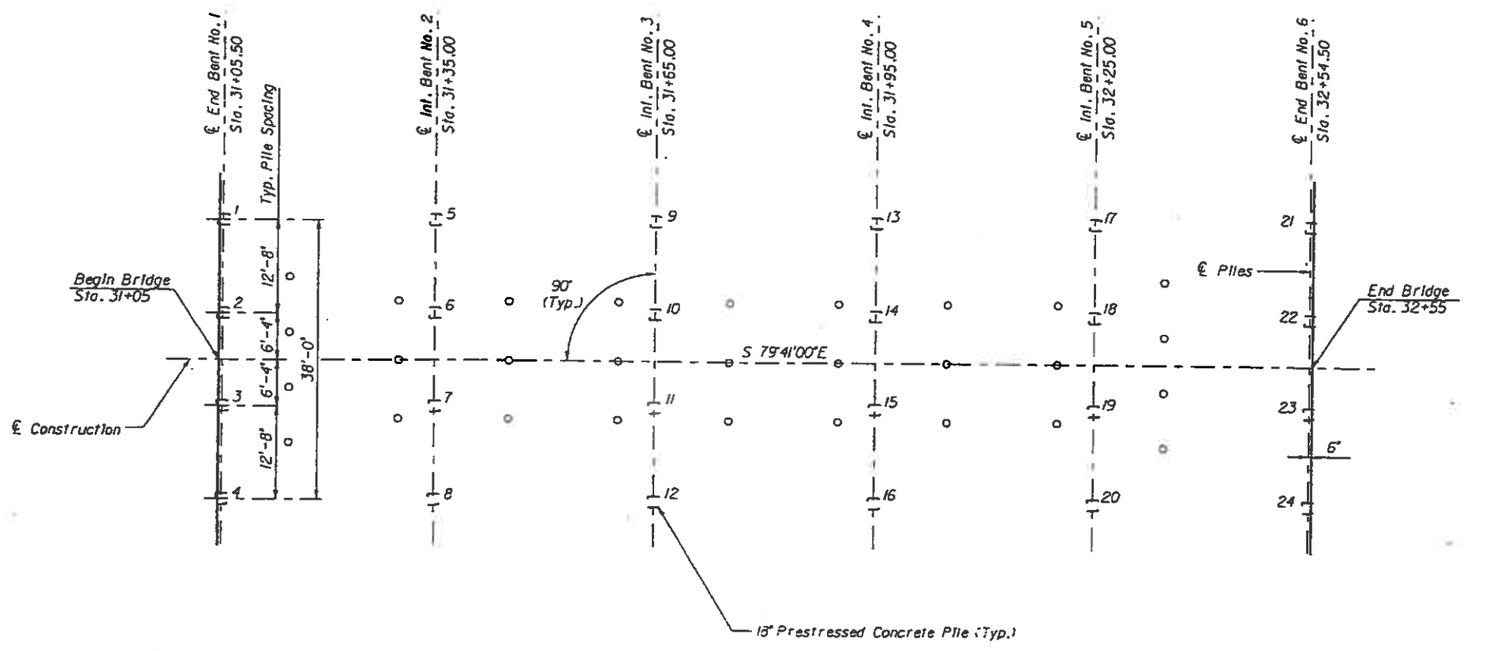
For the Pile Cutoff Elevations see Substructure sheets.

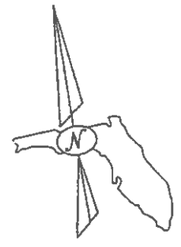
TEST PILE: Drive one unloaded Test Pile of Prestressed Concrete (18" sq.) 65'-0" long in the position of a permanent plumb pile at Bent No. 2 and Bent No.4. Locate as directed by the Engineer. A Dynamic Load Test shall be performed on the Test Piles.

o – Denotes known existing Timber Piles. New piling was spaced such that no pile is within three feet (3') of known existing timber piling. If actual field conditions indicate that a new pile is closer than the specified three feet (3'), contact EOR prior to driving pile.

Pile holes (Pay Item No. 455-15) shall consist of predrilling each pile location with an 18 inch bit to an elevation of 30 feet NGVD.

Piling shall not be driven deeper than a tip elevation of 5 feet NGVD.





26

Bridge No.564067

REVISIONS					
Date	By	Description	Date	By	Description

	Name	Date
Drawn by	EBS	7/94
Checked by	SGS	7/94
Designed by	JP	7/94
Checked by	JR	7/94
Approved by	D.F. SNYDER	

ENGINEER OF RECORD:
JMI ENGINEERS, INC.
1424 Piedmont Drive East
Tallahassee, Florida 32312
Tel: 904-385-7450 Fax: 904-385-3545

LOGO: JMI ENGINEERS

SEAL: 12/7/95

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
C.R. 2224	LIBERTY	56520-3502

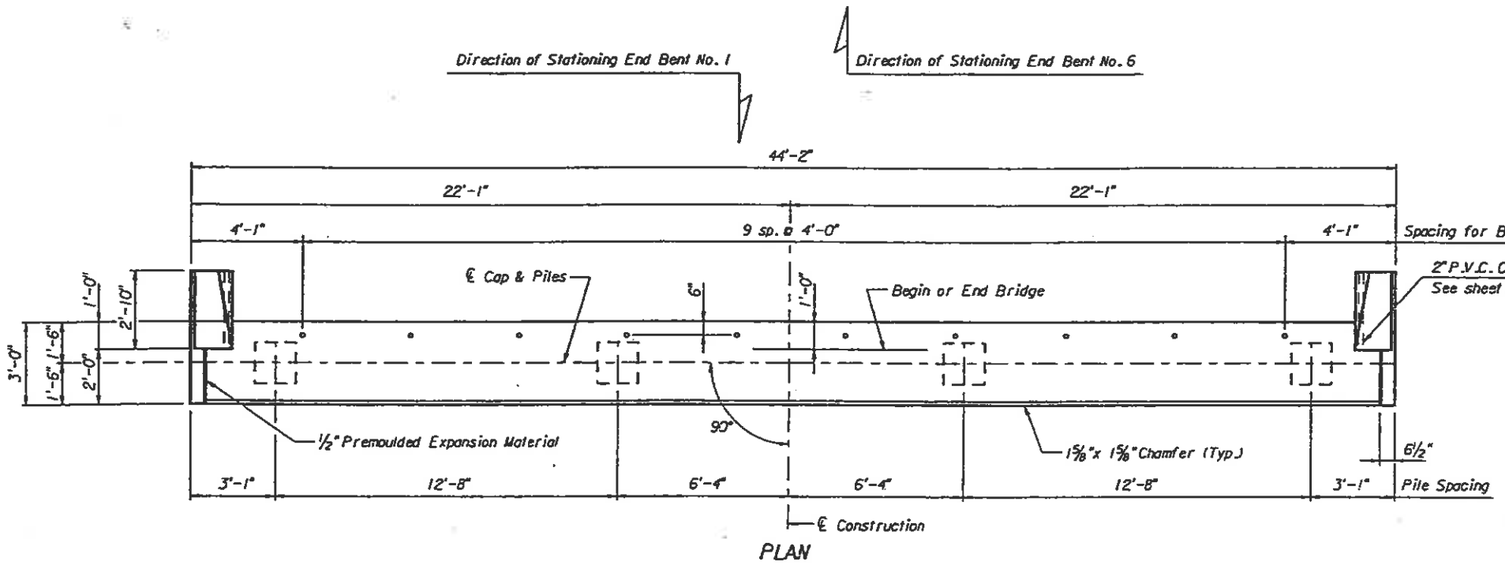
SHEET TITLE: CONSTRUCTION DATA SHEET

PROJECT NAME: C.R.2224 (C.R. 267) BRIDGE OVER BIG CREEK

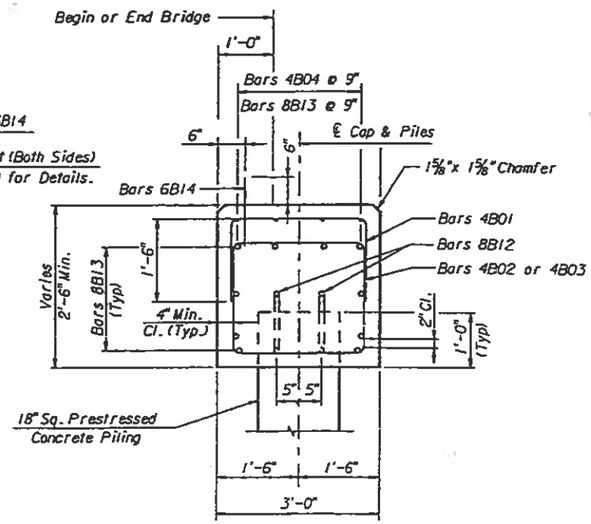
Drawing No.

Index No.

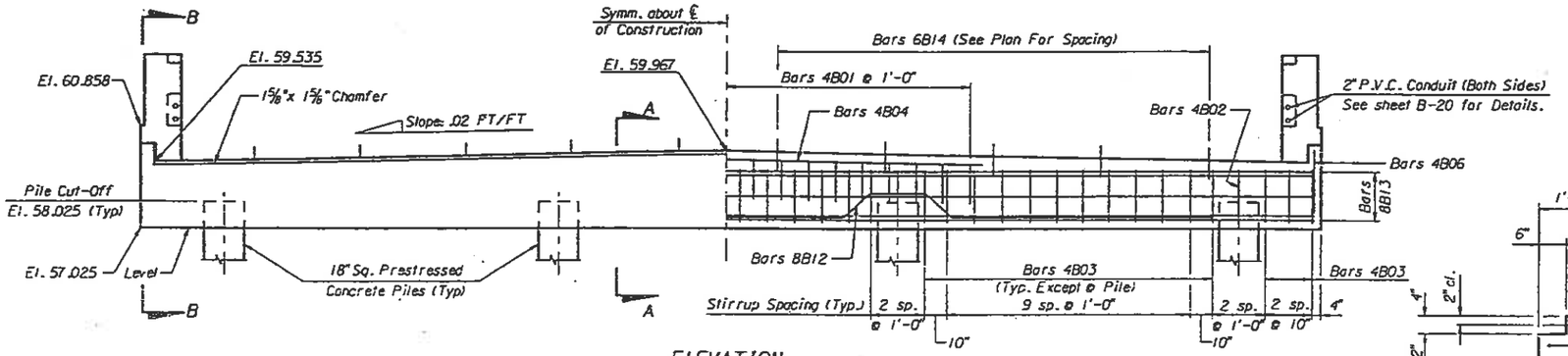
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	S6520-3602	..	B-8



PLAN

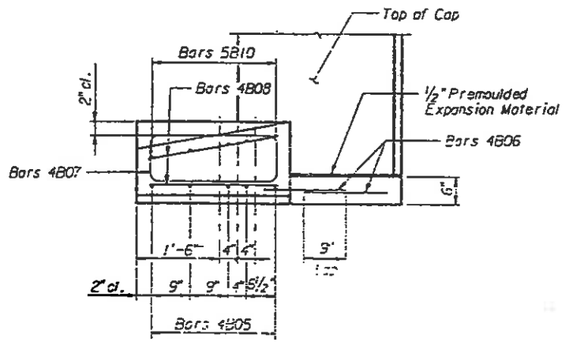


SECTION A-A

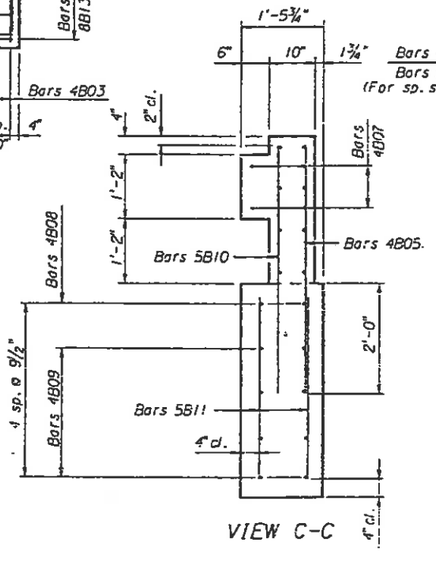


ELEVATION

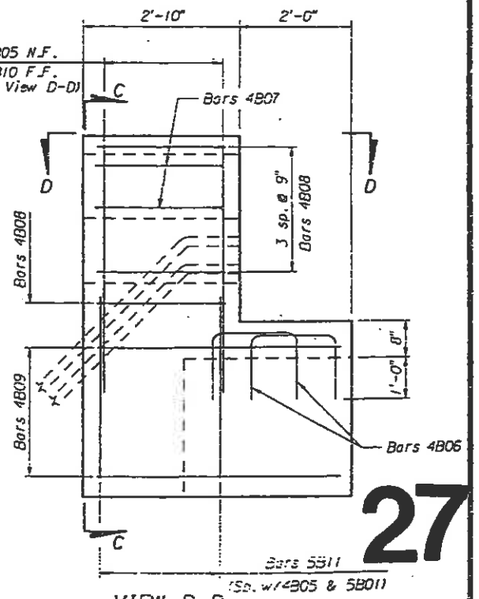
Note: All Piles are plumb.



VIEW D-D



VIEW C-C



VIEW B-B

* ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
Class IV Concrete (Substructure)	C.Y.	14.7
Reinforcing Steel (Substructure)	LB.	2007
18" Sq. Prestressed Concrete Piles	L.F.	172

* Quantities are for one End Bent only.

3/11/94

27

Bridge No. 554067

REVISIONS					
Date	By	Description	Date	By	Description

	Names	Dates
Drawn by	EBS	7/94
Checked by	SGS	7/94
Designed by	JP	7/94
Checked by	JR	7/94
Approved by	D. F. SNYDER	

ENGINEER OF RECORD: JMI ENGINEERS, INC.
1424 Piedmont Drive East
Tallahassee, Florida 32312
Tel: 904-385-1450 Fax: 904-385-3545

LOGO: JMI ENGINEERS

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
C.R. 2224	LIBERTY	56520-3602

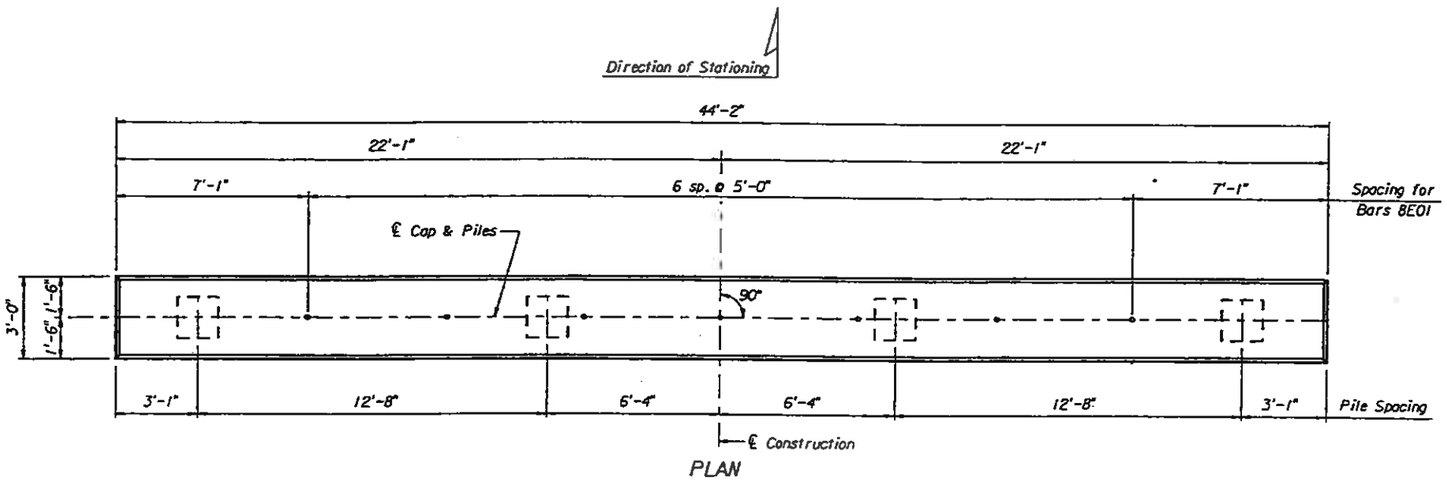
SHEET TITLE: END BENT NOS. 1 AND 6

DRAWING NO.: ——

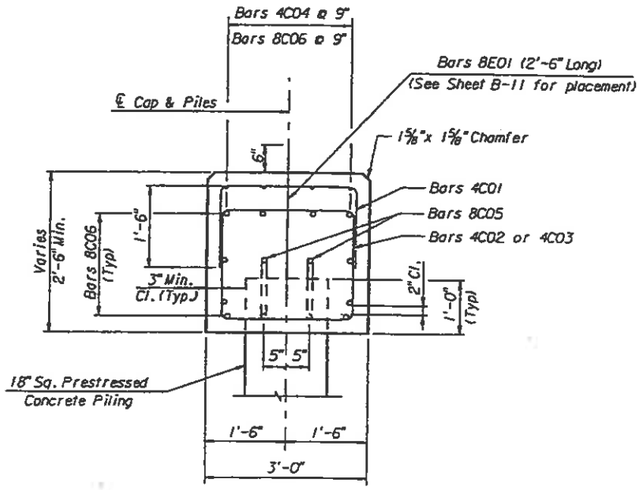
PROJECT NAME: C.R.2224 (C.R. 267) BRIDGE OVER BIG CREEK

FHWA NO.

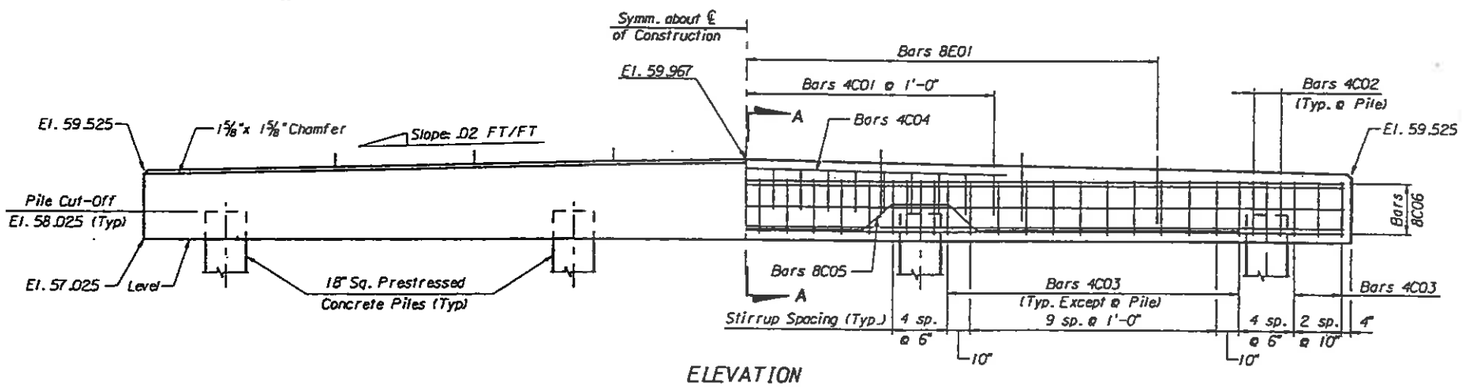
FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	56520-3602	-	B-2



PLAN



SECTION A-A



ELEVATION

Note: All Piles are plumb.

* ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
Class IV Concrete (Substructure)	C.Y.	13.0
Reinforcing Steel (Substructure)	LB.	1843
18" Sq. Prestressed Concrete Piles	L.F.	172

* Quantities are for one Intermediate Bent only.

3/11/93

28

Bridge No. 564067

REVISIONS					
Date	By	Description	Date	By	Description

	Names	Dates
Drawn by	EBS	7/94
Checked by	SGS	7/94
Designed by	JP	7/94
Checked by	JR	7/94
Approved by	D. F. SNYDER	

ENGINEER OF RECORD:
JMI ENGINEERS, INC.
1424 Piedmont Drive East
Tallahassee, Florida 32312
Tel: 904-385-1450 Fax: 904-385-3545

LOGO: JMI ENGINEERS

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
C.R. 2224	LIBERTY	56520-3602

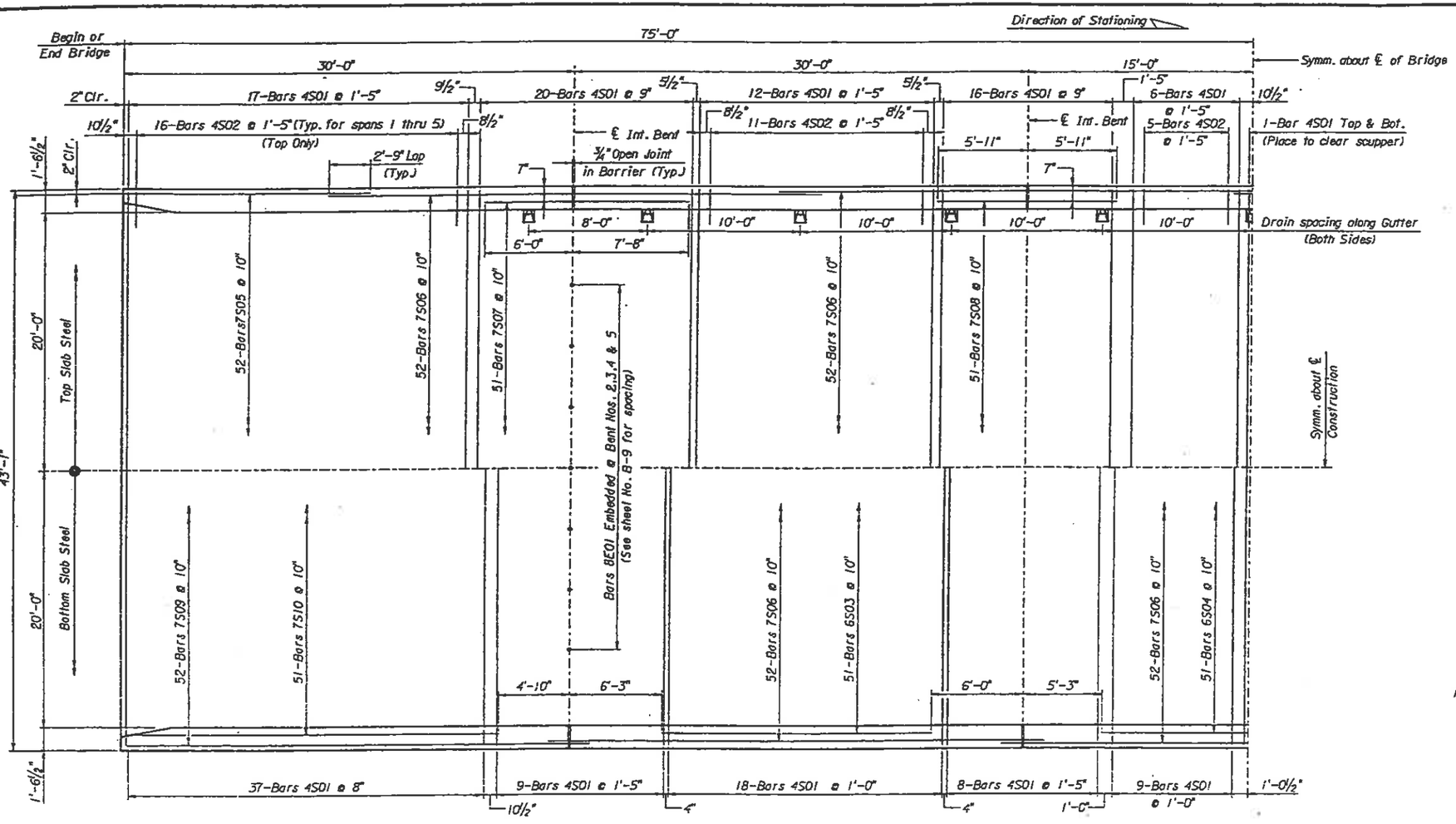
TITLE: INTERMEDIATE BENT NOS. 2 THRU 5

Drawing No. -

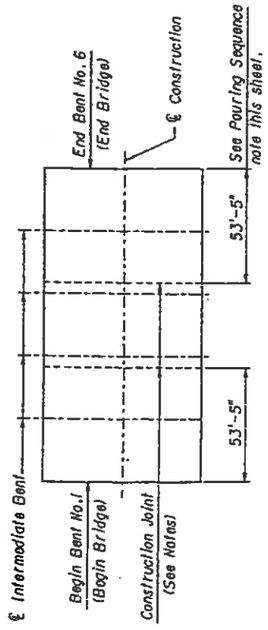
PROJECT NAME: C.R.2224 (C.R. 267) BRIDGE OVER BIG CREEK

Page No.

FED. ROAD PROJ. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	56520-3602		B-10



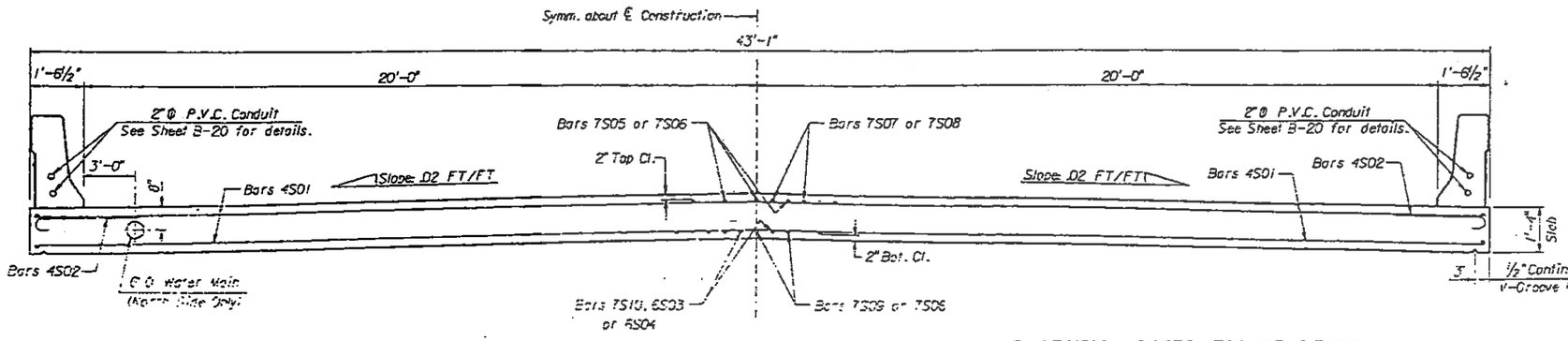
HALF PLAN



POURING DIAGRAM

NOTES:

Set bars in slab for Barrier as detailed on Barrier Sheet.
See sheet No. B-11 for detail sections at bents.
Pouring Sequence Note: After pouring the first unit, succeeding pours shall begin at the end away from and proceed toward the previously placed unit. (First unit maybe at either end of bridge)



HALF SECTION MID-SPAN

HALF SECTION INTERMEDIATE BENTS

* ESTIMATED QUANTITIES

ITEM	UNIT	QUANTITY
Class II Concrete (Superstructure)	C.Y.	516
Reinforcing Steel (Superstructure)	LB.	58,231
Concrete Handrail Barrier	L.F.	300

* Quantities are for complete Superstructure.

29

Note:
6" Water Main shall be placed in the concrete Superstructure as shown to accommodate the construction of a future water main along the north side of C.R. 2224 (C.R. 267). 6" Water Main conduit shall be supplied by the Liberty County Water Authority and installed by the contractor.

Bridge No. 554057

REVISIONS					
Date	By	Description	Date	By	Description

	Names	Dates
Drawn by	EBS	7/94
Checked by	SGS	7/94
Designed by	JF	7/94
Checked by	JD	7/94
Approved by	L.F. Snyder	

ENGINEER OF RECORD:
JMI ENGINEERS, INC.
1624 Piedmont Drive East
Tallahassee, Florida 32312
Tel: 904-385-7450 Fax: 904-385-7465

LOGO: JMI ENGINEERS

SEAL: David F. Snyder 3-27-96

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

HIGH. NO.	COUNTY	PROJECT NO.
	LIBERTY	56520-3602

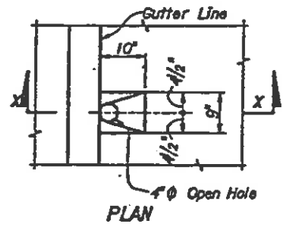
SHEET TITLE: 5 SPAN CONTINUOUS SUPERSTRUCTURE

PROJECT NAME: C.R. 2224 (C.R. 267) BRIDGE OVER BIG CREEK

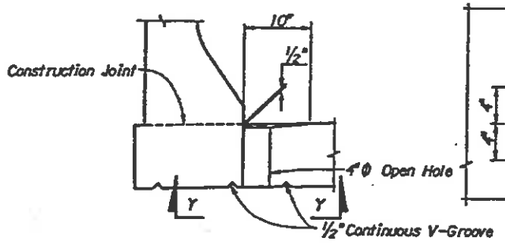
DRAWING NO.

STRUCT. NO.

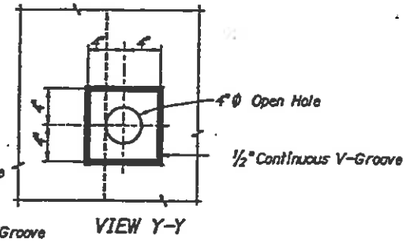
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	56520-3602		8-11



PLAN

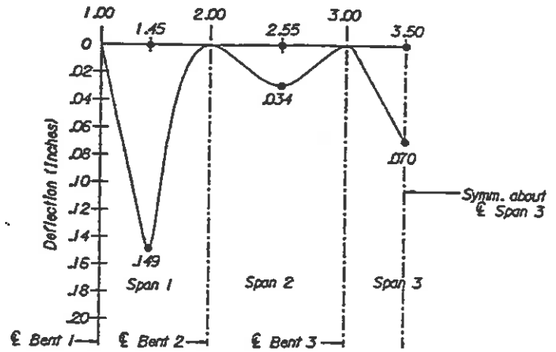


SECTION X-X

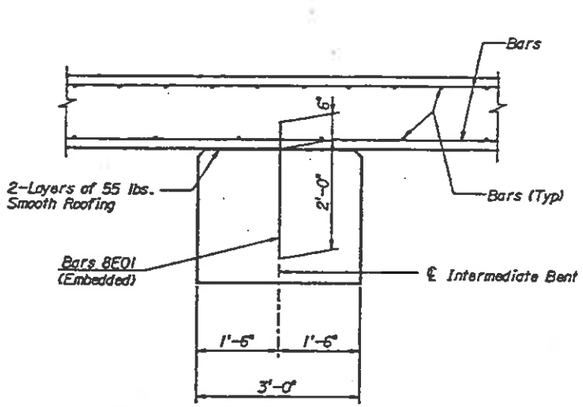


VIEW Y-Y

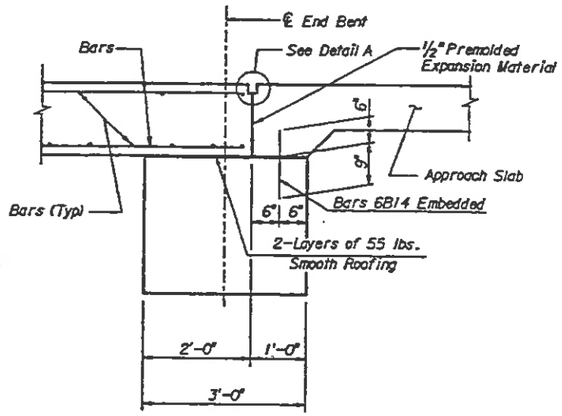
DRAIN DETAILS



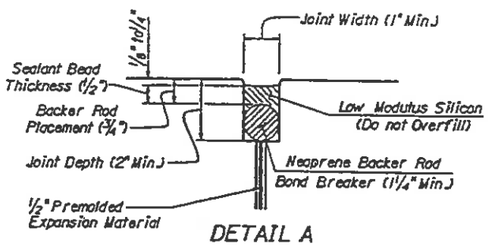
DEAD LOAD DEFLECTION DIAGRAM



SECTION AT INTERMEDIATE BENT (TYP)
Reinforcing in End Cap omitted for clarity.



SECTION AT END BENT
Reinforcing in Approach Slab and End Bent omitted for clarity.



DETAIL A

30

Bridge No. 564067

REVISIONS						
Date	By	Description	Date	By	Description	

	Name	Date
Drawn by	EBS	7/94
Checked by	SGS	7/94
Designed by	JP	7/94
Checked by	JR	7/94
Approved by	D.F. Snyder	

ENGINEER OF RECORD:
JMI ENGINEERS, INC.
1424 Piedmont Drive East
Tallahassee, Florida 32312
Tele 904-385-7450 Fax: 904-385-3545

LOGO: JMI ENGINEERS

SEAL: Donald F. Snyder 11-29-94

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
C.R. 2224	LIBERTY	56520-3602

SHEET TITLE: MISCELLANEOUS DETAILS

PROJECT NAME: C.R. 2224 (C.R. 267) BRIDGE OVER BIG CREEK

Drawing No.

PROJECT NO.

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	56520-3602		B-12

MARK SIZE	MARK DES	LENGTH FT	LENGTH IN	NO BARS	TYP BAR	STY A	STY G	B FT	B IN	B FR	C FT	C IN	C FR	D FT	D IN	D FR	E FT	E IN	E FR	F FT	F IN	F FR	H FT	H IN	H FR	J FT	J IN	K FT	K IN	N NO	O ANG
LOCATION END BENT 1 OR 6 NO. REQUIRED - 2																															
4	B01	5	4	19	11			2	4		1	6		1	6																
4	B02	6	6	4	5			1	10		2	4		0	3		0	3													
4	B03	8	4	42	4	6	6	1	10		2	4																			
4	B04	19	0	4	1			19	0																						
4	B05	4	6	10	1			4	6																						
4	B06	4	4	4	11			1	6		1	5		1	5																
4	B07	6	11	4	4	6	6	2	6		0	1 1/2																			
4	B08	2	6	20	1			2	6																						
4	B09	4	2	16	1			4	2																						
5	B10	4	6	10	1			4	6																						
5	B11	3	2	20	1			3	2																						
6	B14	1	3	10	1			1	3																						
8	B12	37	8	2	16			1	0		8	7		2	1		9	7 1/2		9	7 1/2		36	0						3	
8	B13	43	8	10	1			43	8																						
LOCATION INTERMEDIATE BENT 2 NO. REQUIRED - 4																															
4	C01	5	6	19	11			2	6		1	6		1	6																
4	C02	7	0	12	5			2	0		2	6		0	3		0	3													
4	C03	9	0	42	4	6	6	2	0		2	6																			
4	C04	19	0	4	1			19	0																						
8	E01	2	6	7	1			2	6																						
8	C05	37	8	2	16			1	0		8	7		2	1		9	7 1/2		9	7 1/2		36	0						3	
8	C06	43	8	10	1			43	8																						
LOCATION SUPERSTRUCTURE NO. REQUIRED - 1																															
4	S01	42	9	306	1			42	9																						
4	S02	3	5	128	17	1		2	11																						
6	S03	17	9	102	1			17	9																						
6	S04	19	5	51	1			19	5																						
7	S05	16	3	104	1			16	3																						
7	S06	32	9	364	1			32	9																						
7	S07	13	8	102	1			13	8																						
7	S08	11	10	102	1			11	10																						
7	S09	31	3	104	1			31	3																						
7	S10	25	0	102	1			25	0																						

END OF LIST

NOTE: ALL STEEL THIS SHEET SHALL BE GRADE 60.

31

Bridge No. 564067

REVISIONS

Date	By	Description	Date	By	Description

	Name	Date
Drawn by	EBS	08/94
Checked by	JMP	08/94
Designed by	JR	08/94
Checked by	DFS	08/94
Approved by	D.F. SNYDER	

ENGINEER OF RECORD:
JMI ENGINEERS, INC.
1424 Piedmont Drive East
Tallahassee, Florida 32312
Tele 904-385-7450 Fax 904-386-3645

LOGO: JMI ENGINEERS

SEAL: David F. Snyder 3-27-96

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
C.R. 2224	LIBERTY	56520-3602

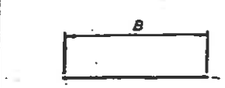
SHEET TITLE: REINFORCING BAR LIST

Drawing No. ——

PROJECT NAME: C.R. 2224 (C.R. 267) BRIDGE OVER BIG CREEK

WORK NO.

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	56520-3602	-	B-13



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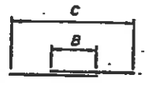

No. of Laps = N
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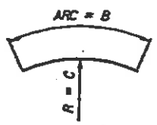

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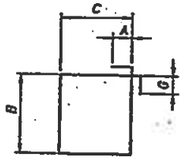

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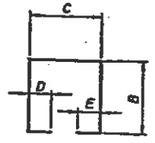

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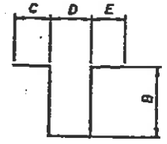

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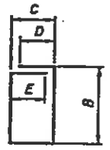

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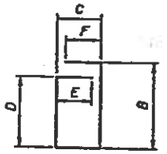

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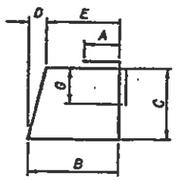

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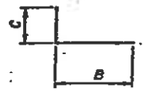
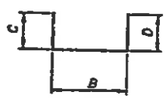


TYPE 10



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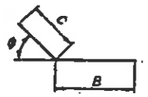

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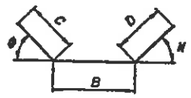

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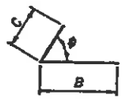
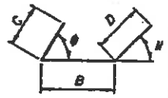


TYPE 14



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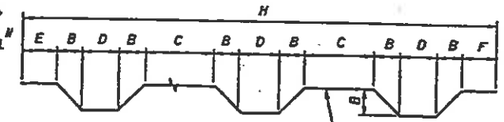
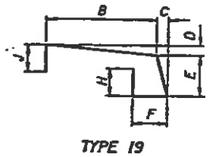


TYPE 16

Number of Beams or Walls = N
Number of D's = N-1
Number of B's = 2N-2
Number of C's = N-2
45° Typical



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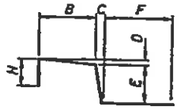

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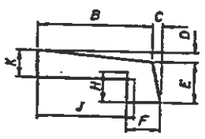
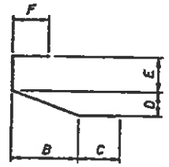


TYPE 21



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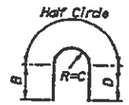
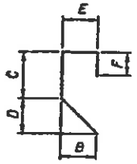


TYPE 23

TYPE 24



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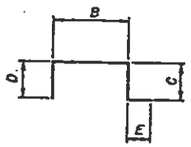

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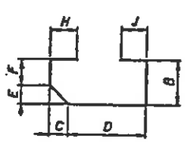

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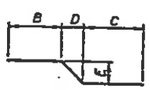
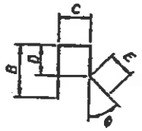


TYPE 28



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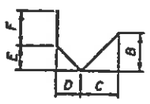
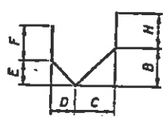
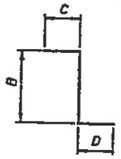


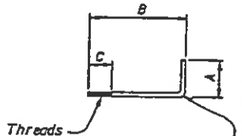
TYPE 30



TYPE 31



TYPE 32



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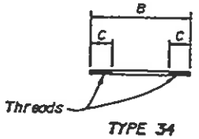
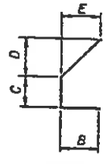
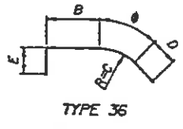


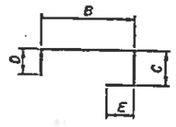
TYPE 34



TYPE 35



TYPE 36



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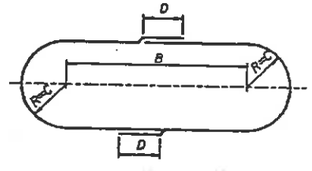

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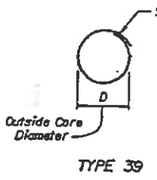
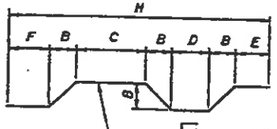


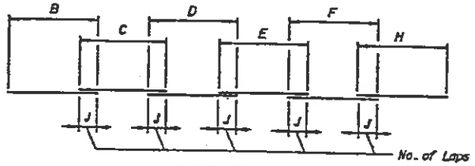
TYPE 39

C = Pitch
B = Overall Height
ϕ = Spirals shall be made of grade 60 billet steel using either plain or deformed bars A.S.T.M. A-615 or Cold drawn steel wire A.S.T.M. A-82.
N = Total number of closed turns at Top and Bottom of columns
Splices may be accomplished by lapping 1.5 turns. Cost of Channel Spacers and Splices shall be included in the Contract Unit Price for Reinf. Steel (Substr.)

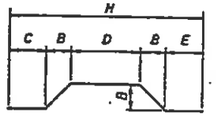


Number of Beams or Walls = N
Number of D's = N-1
Number of B's = 2N-1
Number of C's = N-1
45° Typical

TYPE 40



TYPE 41



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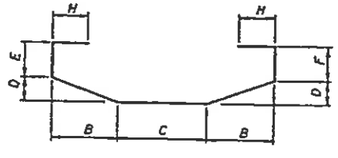
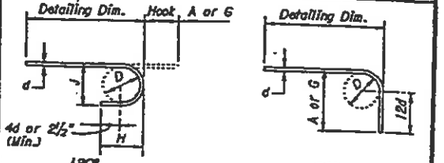


TYPE 43

NOTE: For Bar Dimensions See REINFORCING BAR LIST Sheet.

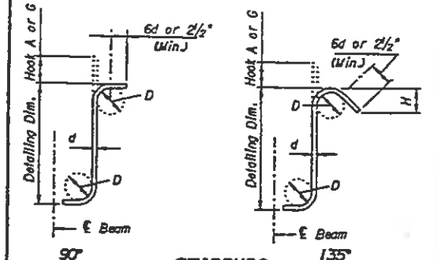
32

HOOK DETAILS



RECOMMENDED END HOOKS
ALL GRADES
D = 6d for #3 thru #8
D = 8d for #9, #10 and #11
D = 10d for #14 and #18

BAR SIZE	180° HOOKS		90° HOOKS
	A OR G	J	A OR G
#3	5"	3"	6"
#4	6"	4"	8"
#5	7"	5"	10"
#6	8"	6"	1'-0"
#7	10"	7"	1'-2"
#8	11"	8"	1'-4"
#9	1'-3"	1 1¾"	1'-7"
#10	1'-5"	1'-1¼"	1'-10"
#11	1'-7"	1'-2¾"	2'-0"
#14	2'-3"	1'-9¾"	2'-7"
#18	3'-0"	2'-4½"	3'-5"
STYLE	1		3



STIRRUPS (TIES SIMILAR)

RECOMMENDED STIRRUP & TIE HOOK DIMENSIONS

BAR SIZE	D (IN.)	90° HOOKS	135° HOOKS	
		HOOK A or G	HOOK A or G	APPROX. H
#3	1½"	4"	4"	2½"
#4	2"	4½"	4½"	3"
#5	2½"	5"	5½"	3¾"
#6	4½"	1'-0"	7¾"	4½"
#7	5½"	1'-2"	9"	5¼"
#8	6"	1'-4"	10¼"	6"
STYLE		4	5	

STYLE 6 = NO HOOK

Hook Styles Detailed on this sheet are for Illustration Only.
Actual Hook Style for any particular bar will be shown under A or G Heading on REINFORCING BAR LIST sheet.
All Dimensions are out to out.

Bridge No. 564067

REVISIONS

Date	By	Description	Date	By	Description
			92		

	Names	Dates
Drawn by	RDH	1-86
Checked by	RDS	1-86
Designed by		
Checked by		
Approved by	AGM	

ENGINEER OF RECORD:
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LOGO: JMI ENGINEERS

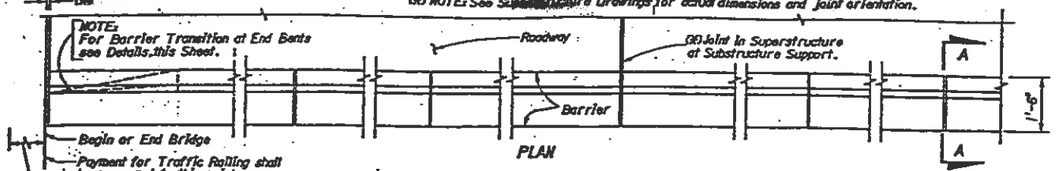
SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
C.R. 2224	LIBERTY	56520-3602

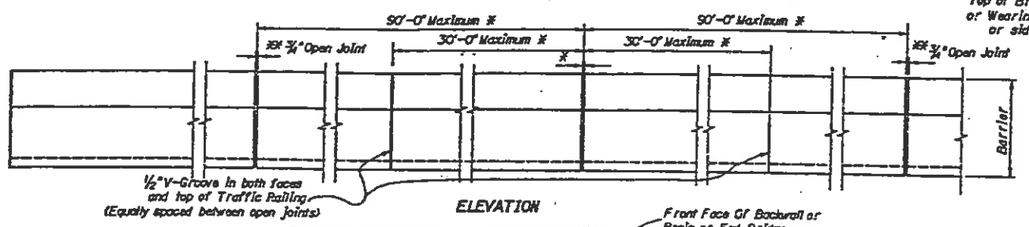
SHEET TITLE: STANDARD BAR BENDING DETAILS
Drawing No. 1 of 1

PROJECT NAME: C.R. 2224 (C.R. 267) BRIDGE OVER BIG CREEK
Index No. 1300

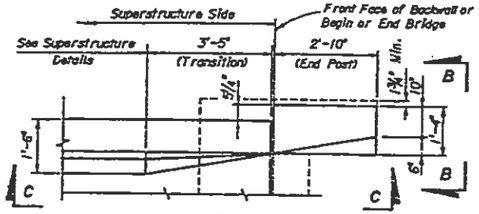


PLAN

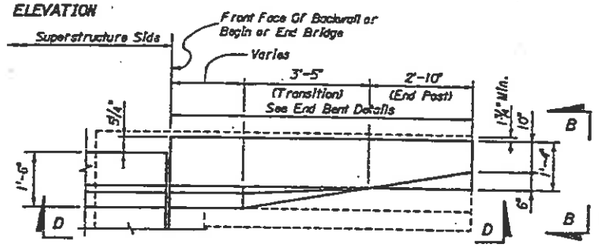
\# NOTE: ¾" Open Joints shall be provided at:
1 – Substructure supports where superstructure slab is continuous.
2 – Midspan where span length exceeds 90 feet.
3 – Intermediate locations (equally spaced) between midspan and substructure support where span length exceeds 180 feet.



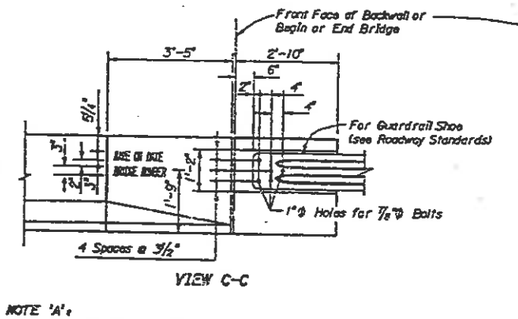
ELEVATION



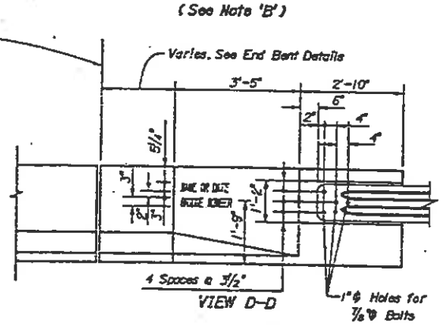
PLAN
(See Note 'A')



PLAN
(See Note 'B')

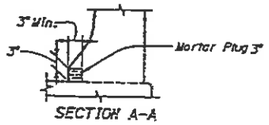


VIEW C-C



VIEW D-D

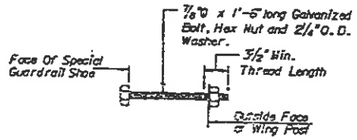
NOTE 'A':
If Barrier Transition is required and the Superstructure Depth (thickness) is 25 inches or less, the Transition shall be provided on the Superstructure side. To accommodate the Transition on the Superstructure the Reinforcement (Bars 5V, 5P & 4S) will need adjusting. The 1'-2" portion of Bars 5V shall be bent to fit and the horizontal 10" portion along the bottom shall be cut at the center.



SECTION A-A

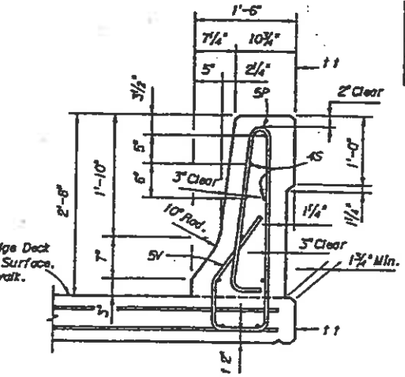
NOTE: When open joint in Barrier is not coincident with joint in the superstructure, the lower 3" portion of the open joint shall be plugged by filling with mortar in accordance with Article 400-15.1.

NOTE 'B':
If Barrier Transition is required and the Superstructure Depth (thickness) exceeds 25 inches, the Barrier Transition shall be provided on the End Bent side.



BOLT DETAIL

NOTE: The Cost of Bolts is to be included in the Contract Unit Price for Guardrail

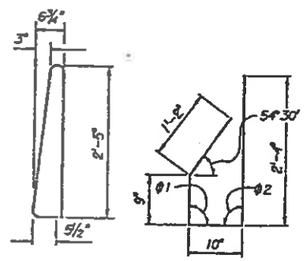


TYPICAL SECTION THRU TRAFFIC RAILING

† For Slabs 8" thick or less. If Slab is thicker than 8" or Barrier is located on a Retaining Wall, embed Bar 5V 6".

†† Where Barriers of adjacent bridges are to be built back to back, the outside vertical plane of the Barrier and Slab may coincide if so shown on the Superstructure Plans.

ROADWAY CROSS-SLOPE	LOW GUTTER ϕ1	LOW GUTTER ϕ2	HIGH GUTTER ϕ1	HIGH GUTTER ϕ2
0.00 to 0.02	90°	90°	90°	90°
0.02+ to 0.06	93°	87°	87°	93°
0.06+ to 0.10	96°	84°	84°	96°



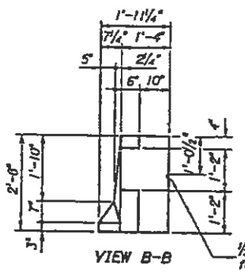
BAR 5P BAR 5V

BENDING DIAGRAMS

SECTION THRU RECESSED 'V' GROOVE TO FORM INSCRIBED LETTERS AND FIGURES

BAR BENDING NOTES

1. All bar dimensions in the bending diagrams are out to out.
2. Bars 5P and 5V shall be bent around a pin diameter = 2½".
3. The 9" and the 2'-4" vertical dimensions shown for bar 5V are based on a bridge slab 8" thick or greater and without raised sidewalk or wearing surface. If the slab thickness is less than 8" decrease these dimensions by an amount equal to the difference in the thicknesses and if a wearing surface or a raised sidewalk is to be provided, increase the dimensions by an amount equal to the wearing surface thickness or sidewalk thickness.
4. Reinforcement for Barrier on Retaining Wall shall be the same as detailed above for an 8" slab with ϕ1 = ϕ2 = 90°.

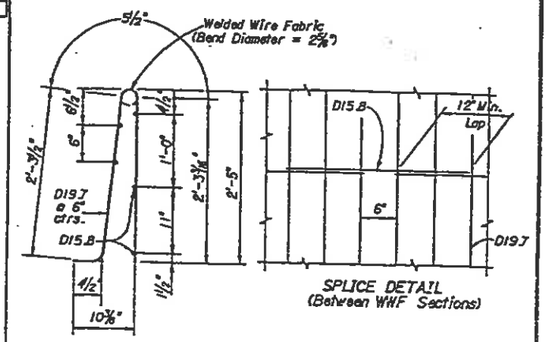


VIEW B-B

TYPICAL TRAFFIC RAILING QUANTITIES

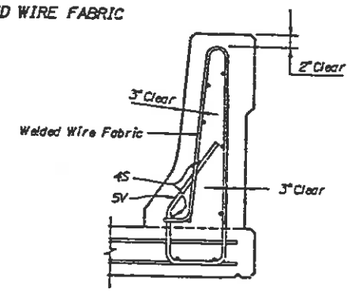
CONCRETE: 0.1030 C.Y. per linear foot.
REINFORCING STEEL: 20.49 lbs. per linear foot.
(Above quantities are based on 8" slab and 0.02 '/' cross-slope)

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	56520-3602		B-14



SPLICE DETAIL
(Between WWF Sections)

WELDED WIRE FABRIC



ALTERNATE REINFORCING DETAILS

The Contractor may utilize Welded Wire Fabric in lieu of all Bars 5P and Four (4) of the Bars 4S. Welded Wire Fabric shall conform to ASTM A497.

REINFORCING STEEL NOTES

Place longitudinal steel in bottom of slab as shown above to facilitate tying bars 5V. Do not add reinforcing steel for tie purposes.

All vertical reinforcing steel in Traffic Railing shall be No. 5 Bars spaced at 8" c.c. and all longitudinal reinforcing steel shall be No. 4 Bars. At all open joints all reinforcing shall have 2" minimum cover. At all construction joints Bars 4S may be continuous or spliced. All splices in Bars 4S shall be 1'-4" minimum.

TRAFFIC RAILING NOTES

CONCRETE AND REINFORCING STEEL: See General Notes.

PAYMENT: Traffic Railing on Bridges shall be paid for per linear foot (Item No. 400-148-1), which shall include all Concrete and Reinforcing Steel. Traffic Railing shall be measured along the centerline of the top surface of the concrete barrier.

MARKERS: Markers recording the elevation shall be placed on top of the Traffic Railing at End Bents. On bridges longer than 100 ft., one marker shall be placed at each end of the bridge. On bridges 100 ft. or less, one marker shall be placed at one end of the bridge only. Markers are to be furnished by the Florida Department of Transportation and installed by the Contractor. The cost of installing the markers shall be included in the Contract Unit Price for Traffic Railing (Barrier).

TRAFFIC RAIL CONSTRUCTION: The contractor may construct the railing by the use of stationary removable forms or by the use of slip forms without altering the rail dimensions shown above.

SUPERELEVATED BRIDGES: At the option of the Contractor, Traffic Railing and End Bent Wing Posts on superelevated bridges, may be constructed perpendicular to the roadway surface. The cost of modifications shall be at the Contractor's expense.

BOLTS: Bolts, Nuts, and Washers shall be hot dip galvanized in accordance with A.S.T.M. A-153.

RETAINING WALL: If the Barrier is to be provided on a retaining wall, the Barrier Section shall be as shown above. Other details such as transition for guardrail attachment, maximum spacing of ¾" open joint and ½"V-Groove shall also apply. See Wall Plans for Payment.

NAME AND BRIDGE NUMBER: The Name and Bridge Number to be placed on the Traffic Railing shall be seen on the driver's right when approaching bridge. The date is to be placed on the driver's left when approaching the bridge. The date shall be the year the bridge is constructed. Block plastic letters and figures 3" in height, as approved by the Engineer, may be used in lieu of letters and figures formed by ⅜"V-Grooves. V-Grooves shall be formed by preformed letters and figures.

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REVISIONS									
Date	By	Description	Date	By	Description				
			92R			Drawn by	WEH	2-89	
						Checked by	AJG	2-89	
						Designed by			
						Checked by			
						Approved by	AJG		

ENGINEER OF RECORD:
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Tel: 904-385-7450 Fax: 904-385-3545

LOGO: JMI ENGINEERS

SEAL:

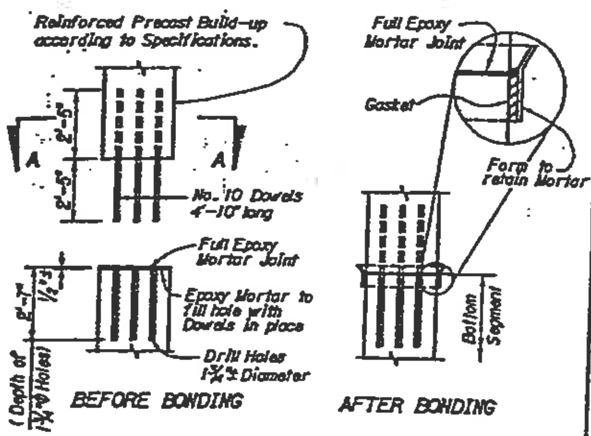
FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
C.R. 2224	LIBERTY	56520-3602

Bridge No. 564067

SHEET TITLE: TRAFFIC RAILING BARRIER — Drawing No. 1 of 1

PROJECT NAME: C.R. 2224 (C.R. 267) BRIDGE OVER BIG CREEK — Index No. 700

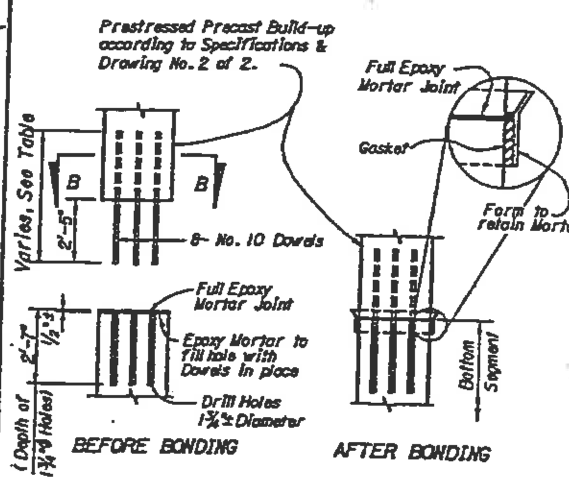


NOTE: Dowels shown for 24" Pile. See Sect. A-A for spacing and number of Dowels for each Pile.

REINFORCED PRECAST SPLICES
(Extensions 2' Min. but less than 5') (Not Drivable)

TABLE OF BONDED SPLICE DATA		
Drivable Splice	Min. Splice Length	No. 10 Dowel Length
YES	10'-0"	7'-5"
NO *	5'-0"	4'-10"

* For Splices less than 5'-0" (not Drivable), use the Reinforced Precast Splice.

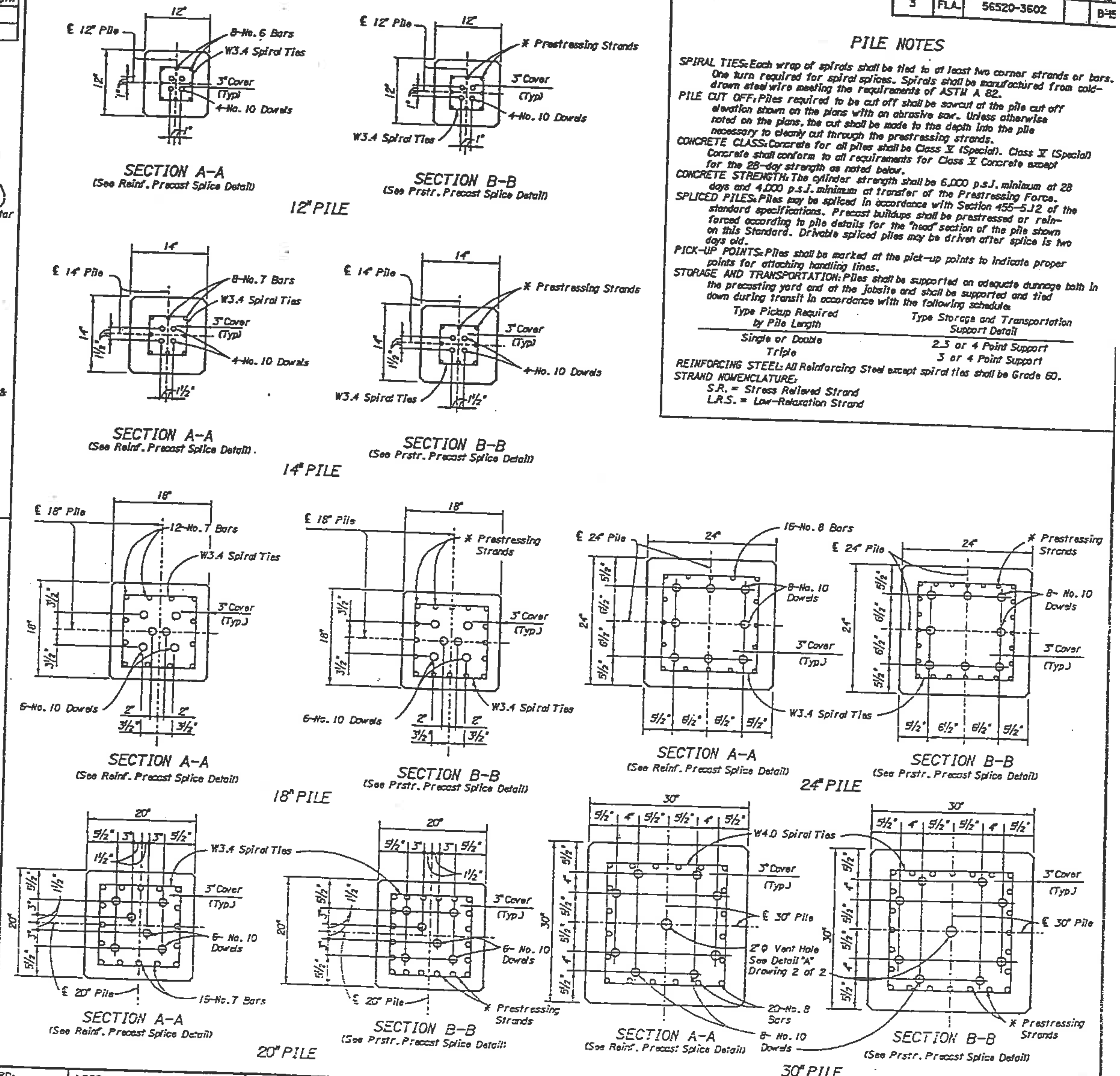


NOTE: Dowels shown for 24" Pile. See SECTION B-B for spacing & Number of Dowels for each Pile.

PRESTRESSED PRECAST SPLICES
(Extensions 5' or longer)

DETAILS FOR REINFORCED PRECAST & PRESTRESSED PRECAST PILE SPLICES

* For actual prestressing strand pattern, see Drawing 2 of 2.



FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	56520-3602		B-15

PILE NOTES

SPIRAL TIES: Each wrap of spirals shall be tied to at least two corner strands or bars. One turn required for spiral splices. Spirals shall be manufactured from cold-drawn steel wire meeting the requirements of ASTM A 82.

PILE CUT OFF: Piles required to be cut off shall be sawcut at the pile cut off elevation shown on the plans with an abrasive saw. Unless otherwise noted on the plans, the cut shall be made to the depth into the pile necessary to cleanly cut through the prestressing strands.

CONCRETE CLASS: Concrete for all piles shall be Class V (Special). Class V (Special) Concrete shall conform to all requirements for Class V Concrete except for the 28-day strength as noted below.

CONCRETE STRENGTH: The cylinder strength shall be 6,000 p.s.i. minimum at 28 days and 4,000 p.s.i. minimum at transfer of the Prestressing Force.

SPLICED PILES: Piles may be spliced in accordance with Section 455-5.12 of the standard specifications. Precast buildups shall be prestressed or reinforced according to pile details for the "head" section of the pile shown on this Standard. Drivable spliced piles may be driven after splice is two days old.

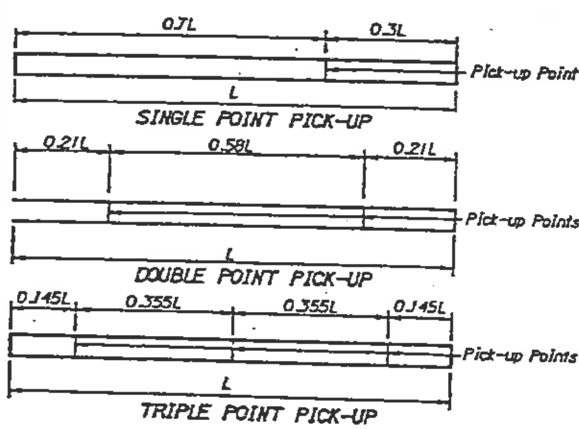
PICK-UP POINTS: Piles shall be marked at the pick-up points to indicate proper points for attaching handling lines.

STORAGE AND TRANSPORTATION: Piles shall be supported on adequate dunnage both in the precasting yard and at the jobsite and shall be supported and tied down during transit in accordance with the following schedule:

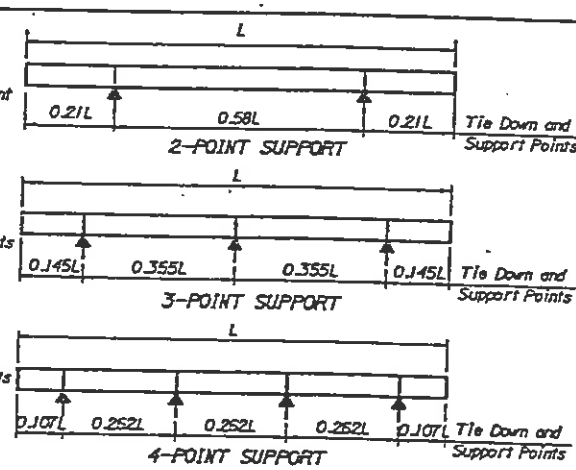
Type Pickup Required by Pile Length	Type Storage and Transportation Support Detail
Single or Double	2,3 or 4 Point Support
Triple	3 or 4 Point Support

REINFORCING STEEL: All Reinforcing Steel except spiral ties shall be Grade 60.

STRAND NOMENCLATURE:
S.R. = Stress Relieved Strand
L.R.S. = Low-Relaxation Strand

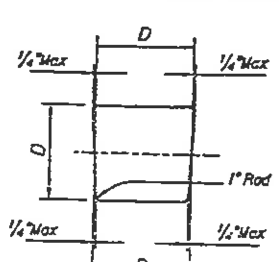


PILE PICK-UP DETAILS

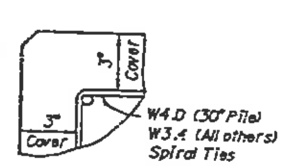


STORAGE AND TRANSPORTATION SUPPORT DETAILS

PILE SIZE	MAX. LENGTH "L" FOR PICK-UP		
	SINGLE POINT	DOUBLE POINT	TRIPLE POINT
12"	50'	70'	L > 70'
14"	55'	75'	L > 75'
18"	60'	90'	L > 90'
20"	65'	95'	L > 95'
24"	70'	100'	L > 100'
30"	90'	125'	L > 125'



TYPICAL PILE SHAPE FOR WOOD FORMS



TYPICAL DETAIL SHOWING COVER DIMENSION

REVISIONS					
Date	By	Description	Date	By	Description
			92R		

	Names	Dates
Drawn by	TGA	1-91
Checked by	AJG	5-91
Designed by		
Checked by		
Approved by	NICHOLS/AJG	

ENGINEER OF RECORD:
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Tallahassee, Florida 32312
Tel: 904-385-7450 Fax: 904-385-3545

LOGO: JMI ENGINEERS

SEAL:

34

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
C.R. 2224	LIBERTY	56520-3602

Bridge No. 564067

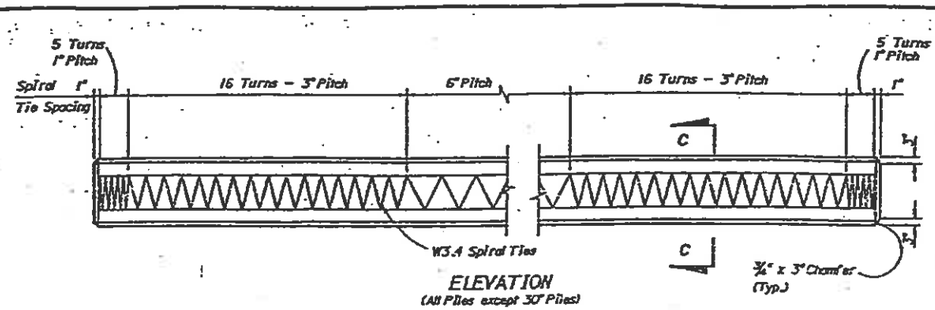
SHEET TITLE: 12", 14", 18", 20", 24", AND 30" PRESTRESSED CONCRETE PILES

PROJECT NAME: C.R. 2224 (C.R. 267) BRIDGE OVER BIG CREEK

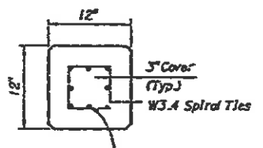
Drawing No. 1 of 2

Index No. 600

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FED. AID NO.	SHEET NO.
3	FLA.	56520-3602		8-16



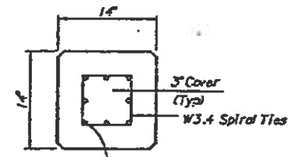
ELEVATION
(All Piles except 30" Piles)



ALTERNATE STRAND PATTERN ***

8 - 7/16"ø S.R.-As = 0.115in.² - 270K at 21,700# ea.
8 - 1/2"ø S.R.-As = 0.144in.² - 250K at 24,100# ea.
12 - 3/8"ø L.R.S.-As = 0.085in.² - 270K at 14,800# ea.
12 - 3/8"ø S.R.-As = 0.085in.² - 270K at 15,600# ea.

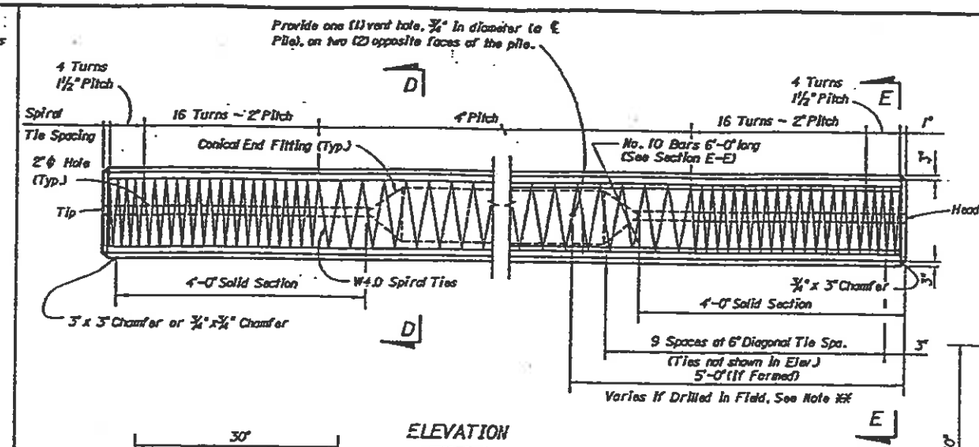
SECTION C-C
12" PILE



ALTERNATE STRAND PATTERN ***

8 - 1/2"ø (Spec.)L.R.S. - As=0.167 in.² - 270K at 30,000# ea.
8 - 1/2"ø (Spec.)S.R. - As=0.167 in.² - 270K at 31,570# ea.
8 - 1/2"ø L.R.S. - As=0.153 in.² - 270K at 29,500# ea.
12 - 7/16"ø S.R. - As=0.115 in.² - 270K at 21,200# ea.
12 - 1/2"ø S.R. - As=0.144 in.² - 250K at 22,600# ea.
16 - 3/8"ø S.R. - As=0.085 in.² - 270K at 16,070# ea.

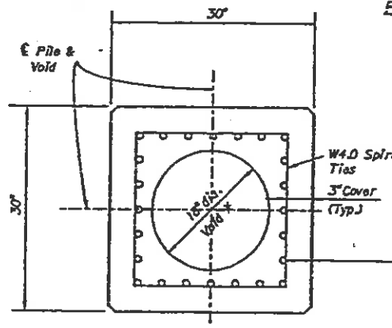
SECTION C-C
14" PILE



ELEVATION
(30" Piles)

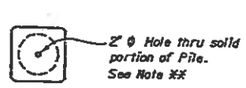
ALTERNATE STRAND PATTERN ***

20 - 7/16"ø (Spec.)L.R.S. - As = 0.196 in.² - 270K at 38,600# ea.
20 - 3/8"ø L.R.S. - As = 0.192 in.² - 270K at 38,880# ea.
24 - 1/2"ø (Spec.)L.R.S. - As = 0.167 in.² - 270K at 32,300# ea.
24 - 7/16"ø S.R. - As = 0.192 in.² - 270K at 35,000# ea.
24 - 7/16"ø (Spec.)S.R. - As = 0.196 in.² - 270K at 35,200# ea.
28 - 1/2"ø L.R.S. - As = 0.153 in.² - 270K at 22,100# ea.
28 - 1/2"ø (Spec.)S.R. - As = 0.167 in.² - 270K at 30,200# ea.

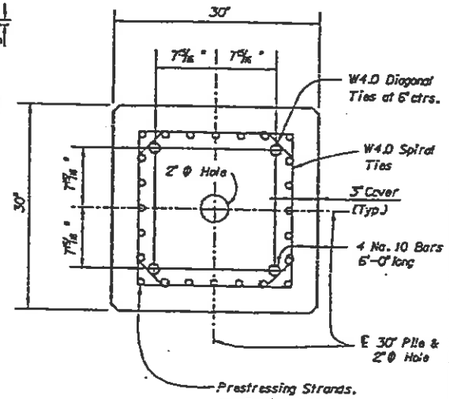


* Omit Void at Ends, see Elevation View

SECTION D-D
30" PILE

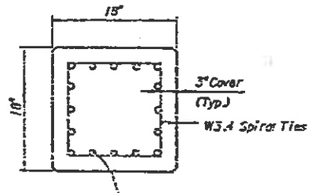


DETAIL "A"



SECTION E-E
30" PILE

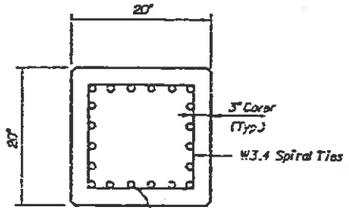
** NOTE:
The 18"ø Void in the pile shall be positively vented to water or air after the final pile installation. If the 3/4"ø vents are included in the pile cut-off section, two (2) new holes, 3/4" in diameter, shall be drilled on two (2) opposite faces of the pile below the bottom of substructure elevation. If the pile void can not be vented directly to water or air, then venting shall be provided by the use of a 1"ø P.V.C. conduit through the 2"ø hole(s) or the the 18"ø void to the outside. This might involve venting through a substructure cap or column. Voids between segments of spliced piles shall be connected by 2"ø hole(s). See Detail "A".



ALTERNATE STRAND PATTERN ***

12 - 1/2"ø (Spec.) L.R.S. - As = 0.167 in.² - 270K at 32,400# ea.
12 - 7/16"ø S.R. - As = 0.192 in.² - 270K at 35,100# ea.
16 - 1/2"ø S.R. - As = 0.153 in.² - 270K at 26,800# ea.
20 - 7/16"ø L.R.S. - As = 0.115 in.² - 270K at 20,000# ea.
20 - 7/16"ø S.R. - As = 0.115 in.² - 270K at 21,197# ea.
24 - 3/8"ø L.R.S. - As = 0.085 in.² - 270K at 16,500# ea.

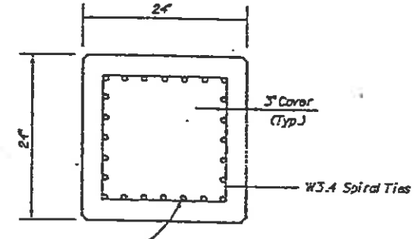
SECTION C-C
18" PILE



ALTERNATE STRAND PATTERN ***

16 - 1/2"ø L.R.S. - As = 0.153 in.² - 270K at 30,000# ea.
16 - 1/2"ø (Spec.) S.R. - As = 0.167 in.² - 270K at 31,570# ea.
20 - 1/2"ø S.R. - As = 0.153 in.² - 270K at 25,500# ea.
24 - 7/16"ø L.R.S. - As = 0.115 in.² - 270K at 20,520# ea.
24 - 7/16"ø S.R. - As = 0.115 in.² - 270K at 21,745# ea.

SECTION C-C
20" PILE



ALTERNATE STRAND PATTERN ***

20 - 1/2"ø (Spec.)L.R.S. - As = 0.167 in.² - 270K at 33,820# ea.
20 - 7/16"ø S.R. - As = 0.192 in.² - 270K at 36,250# ea.
20 - 7/16"ø (Spec.)S.R. - As = 0.196 in.² - 270K at 37,050# ea.
24 - 1/2"ø L.R.S. - As = 0.153 in.² - 270K at 29,000# ea.
24 - 1/2"ø (Spec.)S.R. - As = 0.167 in.² - 270K at 31,570# ea.

SECTION C-C
24" PILE

*** NOTE:
Any of the given Alternate Strand Patterns may be utilized. The strands shall be located as follows: place one strand at each corner and place the remaining strands equally spaced between the corner strands.
The Total strand pattern shall be concentric with the nominal concrete section of the pile.

35

REVISIONS						Bridge No. 564067
Date	By	Description	Date	By	Description	
			92R			

	Name	Date
Drawn by	TGA	1-91
Checked by	AJG	5-91
Designed by		
Checked by		
Approved by	NICHOLS/AJG	

ENGINEER OF RECORD:
JMI ENGINEERS, INC.
1428 Piedmont Drive East
Tallahassee, Florida 32312
Tele 904-893-7450 Fax 904-385-3545

LOGO: JMI ENGINEERS

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
C.R. 2224	LIBERTY	56520-3602

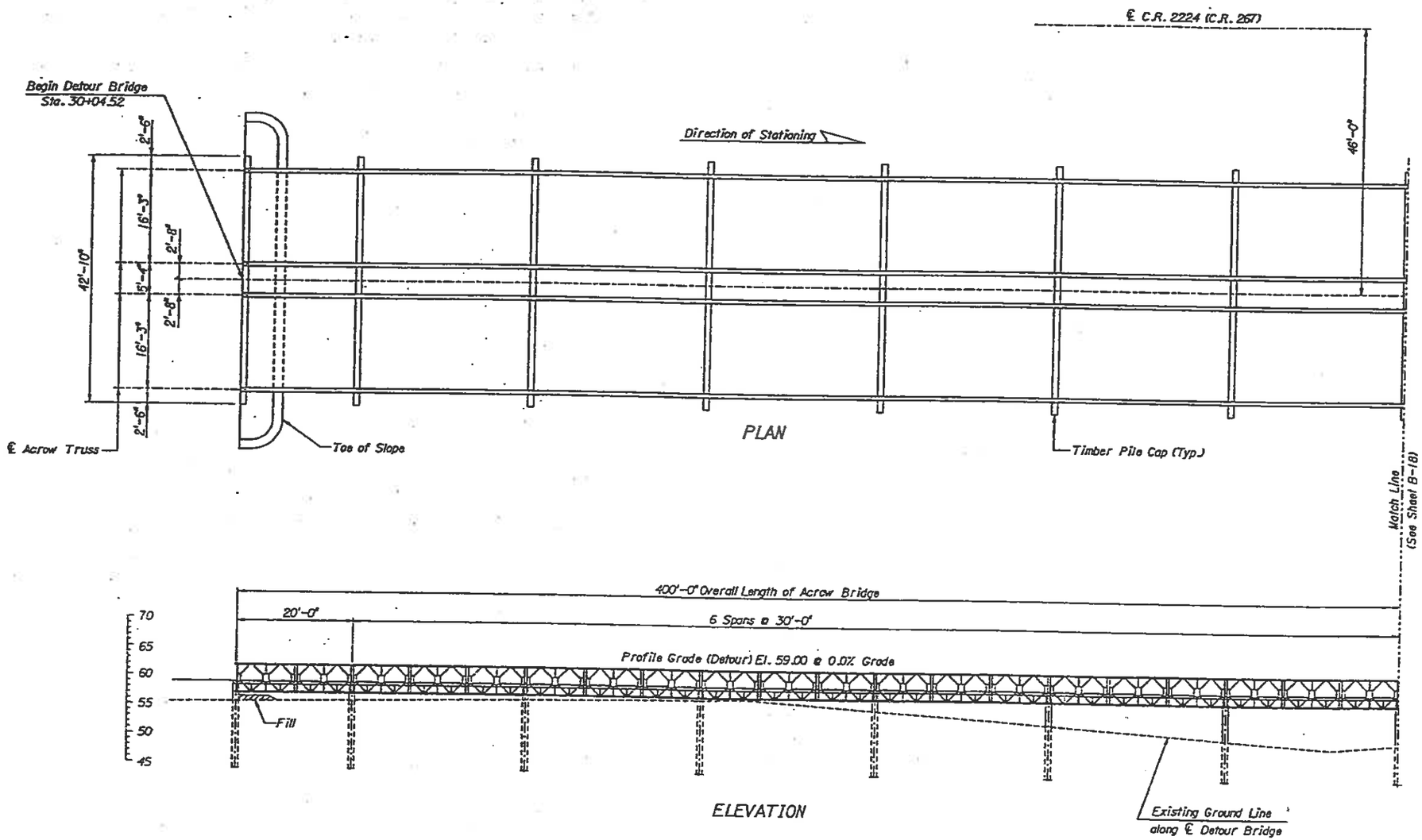
SHEET TITLE: 12", 14", 18", 20", 24", AND 30" PRESTRESSED CONCRETE PILES

Drawing No. 2 of 2

PROJECT NAME: C.R. 2224 (C.R. 267) BRIDGE OVER BIG CREEK

Project No. 600

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.	56520-3602	- -	B-17



NOTE: For Timber Bent Details see Sheet No. B-19.

Bridge No. 564067

REVISIONS					
Date	By	Description	Date	By	Description

	Names	Dates
Drawn by	EBS	9/94
Checked by	JR	9/94
Designed by	JR	9/94
Checked by	DFS	9/94
Approved by	D.F. Snyder	

ENGINEER OF RECORD:
JMI ENGINEERS, INC.
1424 Piedmont Drive East
Tallahassee, Florida 32312
Tel: 904-385-7450 Fax: 904-385-2545

LOGO:
JMI ENGINEERS

SEAL:
David F. Snyder
11 29 94

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
C.R. 2224	LIBERTY	56520-3602

SHEET TITLE:
PLAN AND ELEVATION
ACROW TYPE II DETOUR BRIDGE

Drawing No.
1 of 2

PROJECT NAME:
C.R. 2224 (C.R. 267) BRIDGE

INDEX NO.

STATE PROJ. NO.	SHEET NO.
36070-3501	12

FINANCIAL PROJECT ID 238679-1-52-01

SUMMARY OF EARTHWORK

DESCRIPTION	RDWY EXC			SUBSOIL EXCAVATION				FILL
	A-2-4, A-2-6, A-2-7, A-6, A-7-5, A-7-6	LIMESTONE	A-2-4, A-3	A-2-4, A-2-6, A-2-7, A-6, A-7-5, A-7-6	A-8	LIMESTONE	A-2-4, A-3	A-2-4, A-3
SR 500	229875	4144	29546	139435	0	1976	6996	350280
CR 464-B	59	0	0	231	0	0	0	321
CR 225	58	0	69	369	0	0	36	2058
NW 95th AVE	34	0	0	248	0	0	0	252
NW 80th AVE	85	0	73	556	0	0	52	744
NW 78th AVE	0	0	2	62	0	0	59	146
NW CONESTOGA BLVD	777	0	252	954	0	0	0	954
POND E-1	3941	0	304	0	0	0	0	2613
POND E-2	2465	0	309	0	0	0	0	2307
POND E-3	1339	27	17	0	0	0	0	3752
POND E-4	300	0	48	0	0	0	0	2200
POND E-5	2748	0	173	0	0	0	0	1497
TOTAL	241681	4171	30793	141855	0	1976	7143	367124

SUMMARY OF EARTHWORK ADJUSTMENTS

DESCRIPTION	P CY	F CY
RDWY EXC (A-2-4,A-2-6,A-2-7,A-6,A-7-5,A-7-6)	241681	
RDWY EXC (LIMESTONE)	4171	
RDWY EXC (A-2-4,A-3)	30793	
TOTAL RDWY EXC	276645	
SUBSOIL EXC (A-2-4,A-2-6,A-2-7,A-6,A-7-5,A-7-6)	141855	
SUBSOIL EXC (A-8)	0	
SUBSOIL EXC (LIMESTONE)	1976	
SUBSOIL EXC (A-2-4,A-3)	7143	
TOTAL SUBSOIL EXC	150974	
FILL (A-2-4,A-3)	367124	
FILL ADJUSTMENT (-50%) (367124 x 0.50)	(-)183562	
TOTAL FILL WITH ADJUSTMENT	550686	
DEDUCT RDWY EXC. (A-2-4,A-3)	(-)30793	
DEDUCT SUBSOIL EXC. (A-2-4,A-3)	(-)17143	
BORROW EXCAVATION REQUIRED	512750	
BORROW TRUCK ADJUSTMENT (+25%) (512136 x 0.25)	(-)128188	
TOTAL BORROW EXCAVATION (PAY ITEM)	640938	

1. Earthwork has been calculated using the limerock base option. If another option is constructed, there shall be no revision to the earthwork quantities for which payment is made by plan quantity.
2. Estimated 187 CY of unclassified material (containing muck/plastic/high plastic/limestone/etc.) to be displaced by the storm sewer (or drainage structure) system not included in quantities shown above.
3. Borrow excavation material shall be A-2-4, A-3.

SUMMARY OF STAKED SILT FENCE TYPE III

LOCATION STA. TO STA.	SIDE	P LF	F LF	REMARKS	FIELD BOOK REFERENCE
535+00 - 540+00	LT	500			
556+00 - 561+00	LT	500			
579+00 - 592+00	LT	1300			
594+00 - 619+00	LT	2500			
631+00 - 660+00	LT	2900			
697+00 - 701+00	LT	400			
715+00 - 722+00	LT	700			
725+00 - 735+00	LT	1000			
537+00 - 551+50	RT	1450			
555+00 - 583+00	RT	2800			
588+00 - 594+00	RT	600			
617+00 - 644+00	RT	2700			
662+00 - 666+50	RT	450			
668+00 - 686+00	RT	1800			
692+00 - 694+25	RT	225			
696+00 - 712+00	RT	1600			
714+50 - 731+00	RT	1650			
748+00 - 750+00	RT	200			
585+00 DITCHES	LT & RT	30			
585+00 MEDIAN	C/L	10			
590+00 DITCHES	LT & RT	30			
590+00 MEDIAN	C/L	10			
625+00 DITCHES	LT & RT	30			
625+00 MEDIAN	C/L	10			
630+00 DITCHES	LT & RT	30			
630+00 MEDIAN	C/L	10			
655+00 DITCHES	LT & RT	30			
655+00 MEDIAN	C/L	10			
660+00 DITCHES	LT & RT	30			
660+00 MEDIAN	C/L	10			
685+00 DITCHES	LT & RT	30			
685+00 MEDIAN	C/L	10			
730+00 DITCHES	LT & RT	30			
730+00 MEDIAN	C/L	10			
735+00 DITCHES	LT & RT	30			
735+00 MEDIAN	C/L	10			
CR 464-B	LT & RT	440			
CR 225	RT	300			
NW 95TH AVE	LT	200			
NW 80TH AVE	LT	70			
NW 78TH AVE	RT	210			
CONESTOGA BLVD	RT	190			
POND E-1	RT	520			
POND E-2	LT	455			
POND E-3	RT	375			
POND E-4	RT	295			
POND E-5	RT	290			
TOTAL		26980			

REVISIONS									
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

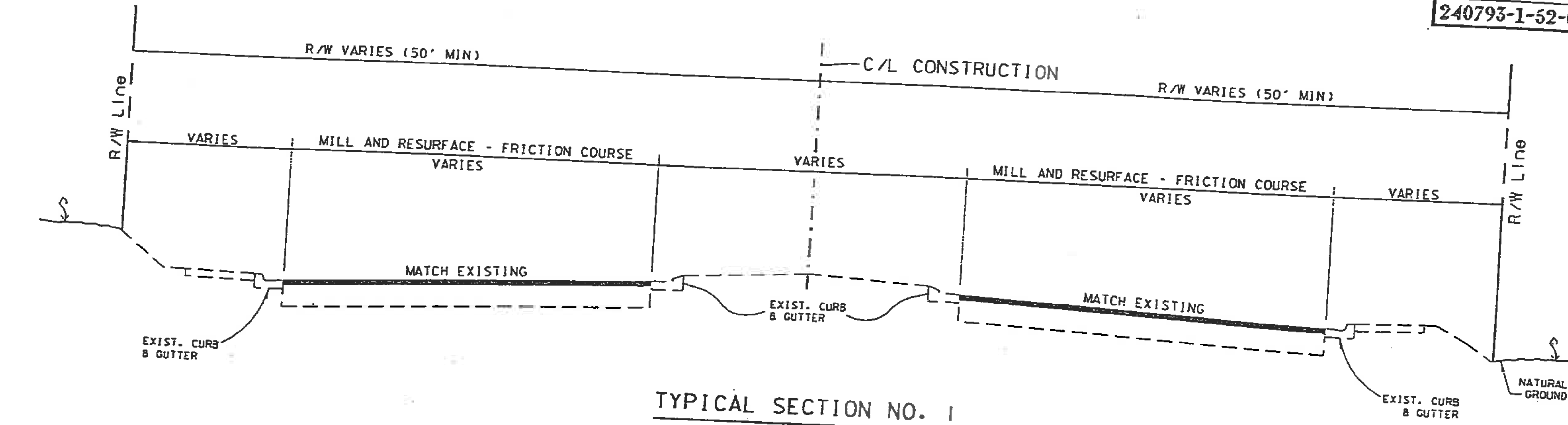
FLORIDA DEPARTMENT OF TRANSPORTATION

Carter-Burgess

SUMMARY OF QUANTITIES

FINANCIAL PROJ.ID	STATE PROJ.NO.
240793-1-52-01	79040-3544

97

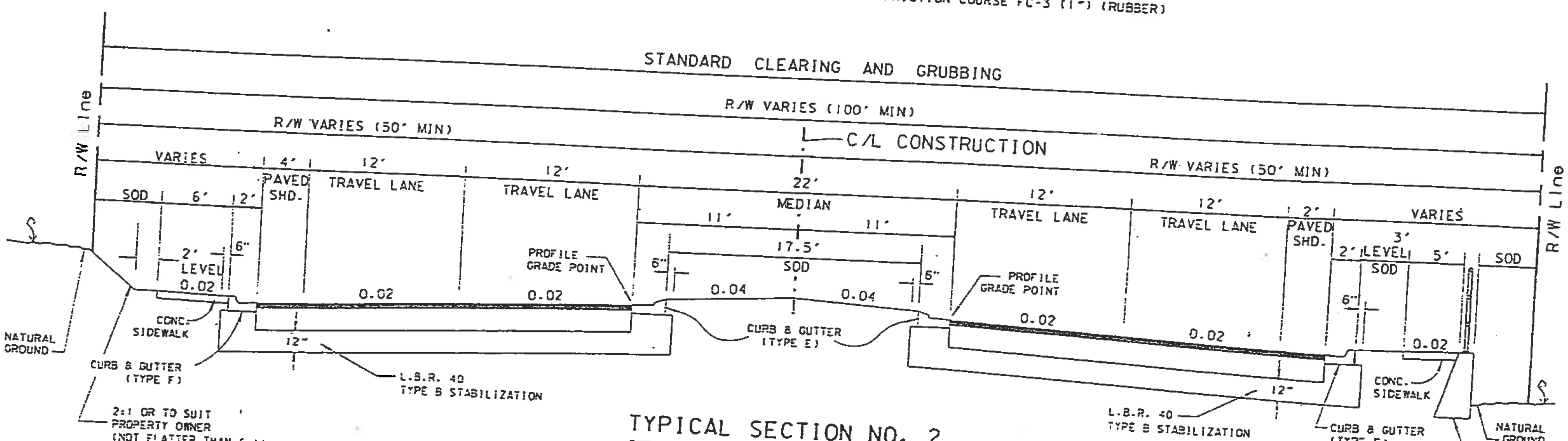


TYPICAL SECTION NO. 1

S.R. 15 / 600
STA. 20-00 TO STA. 23-61.65
STA. 133-00 TO STA. 141-00

MILLING
MILL EXISTING ASPHALT PAVEMENT (1" AVG. DEPTH)

RESURFACING
FRICTION COURSE FC-3 (1") (RUBBER)



TYPICAL SECTION NO. 2

S.R. 15 / 600
STA. 23-31.65 TO STA. 25-70

OPTIONAL BASE GROUP 09 (FOR THICKNESS, SEE INDEX 514) WITH TYPE S STRUCTURAL COURSE (3") AND FRICTION COURSE FC-3 (1") (RUBBER)

38

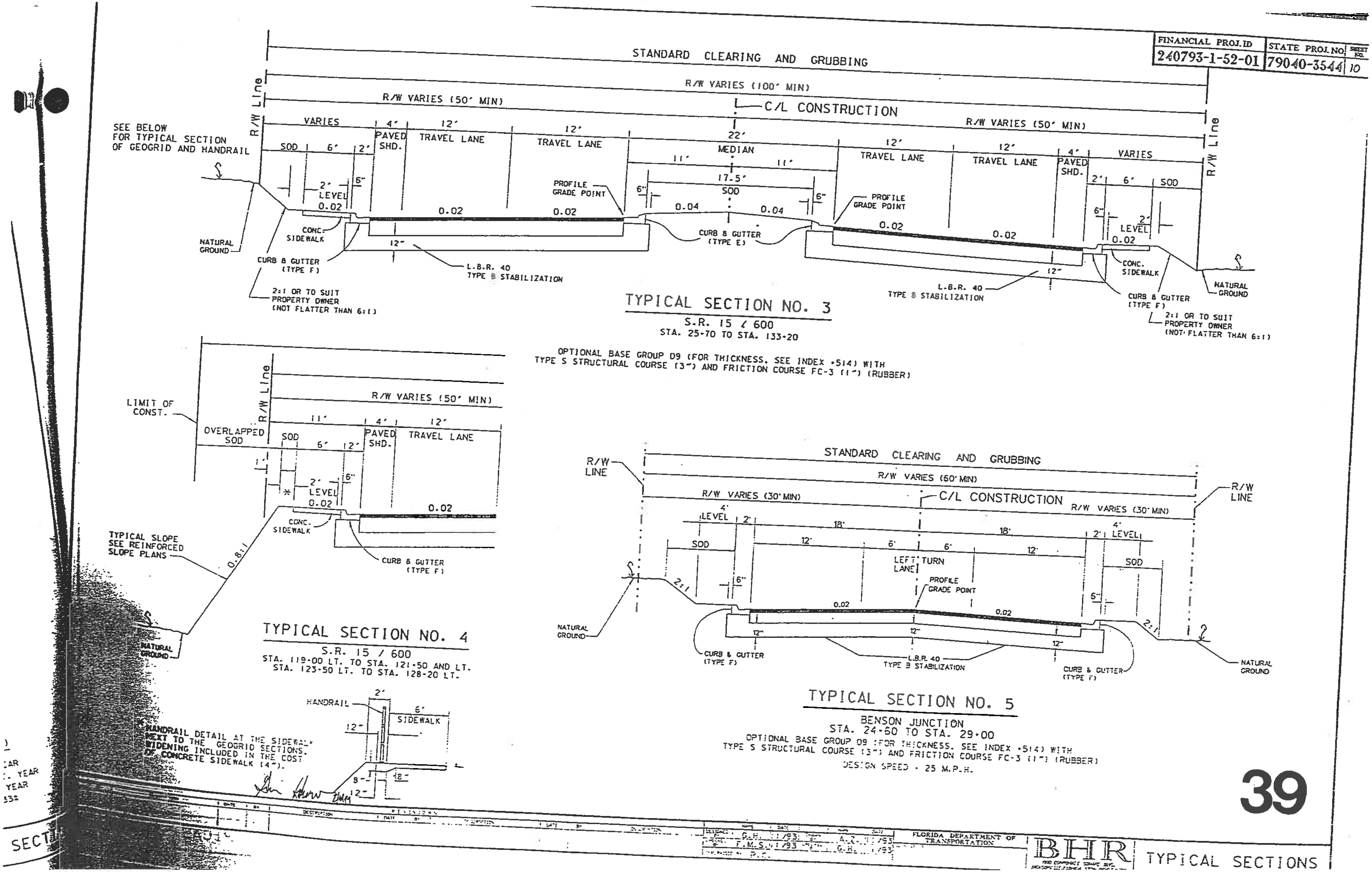
TRAFFIC DATA (S.R. 15/600)

1998 A.D.T. = 15,600 CURRENT YEAR
EST. 2001 A.D.T. = 17,000 POST CONST. YEAR
EST. 2021 A.D.T. = 26,600 DESIGN YEAR
K=10.74% D=63.12% 24-HR. T= 3.33%
DESIGN SPEED 45 M.P.H.

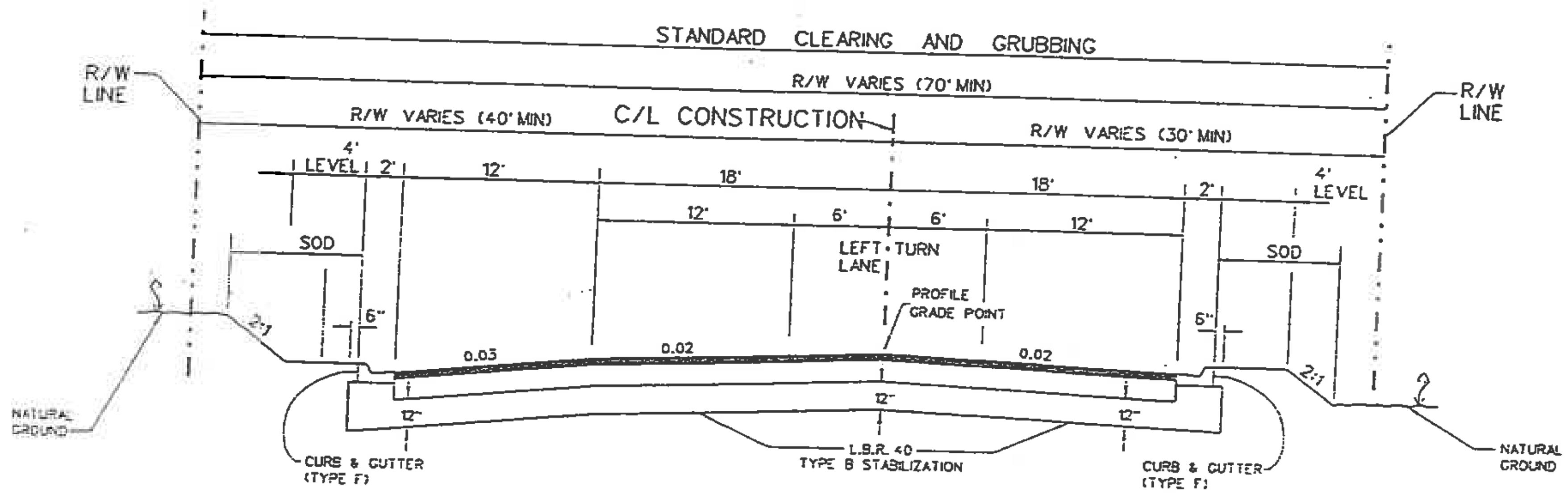
REVISIONS

DESIGNED G.H. 11/93 — A.Z. 11/93
F.M.S. /93 — G.H. 11/93

FLORIDA DEPARTMENT OF TRANSPORTATION


FINANCIAL PROJ. ID 240793-1-52-01
STATE PROJ. NO. 79040-3544
SHEET NO. 10
STANDARD CLEARING AND GRUBBING
R/W VARIES (100' MIN)
R/W VARIES (50' MIN)
C/L CONSTRUCTION
R/W Line
SEE BELOW FOR TYPICAL SECTION OF GEOGRID AND HANDRAIL
VARIES
SOD
PAVED SHD.
TRAVEL LANE
MEDIAN
LEVEL
PROFILE GRADE POINT
CONC. SIDEWALK
NATURAL GROUND
CURB & GUTTER (TYPE F)
CURB & GUTTER (TYPE E)
L.B.R. 40 TYPE B STABILIZATION
2:1 OR TO SUIT PROPERTY OWNER (NOT FLATTER THAN 6:1)
TYPICAL SECTION NO. 3
S.R. 15 / 600
STA. 25+70 TO STA. 133+20
OPTIONAL BASE GROUP 09 (FOR THICKNESS, SEE INDEX #514) WITH TYPE S STRUCTURAL COURSE (3") AND FRICTION COURSE FC-3 (1") (RUBBER)
LIMIT OF CONST.
OVERLAPPED SOD
TYPICAL SLOPE SEE REINFORCED SLOPE PLANS
TYPICAL SECTION NO. 4
S.R. 15 / 600
STA. 119+00 LT. TO STA. 121+50 AND LT. STA. 123+50 LT. TO STA. 128+20 LT.
HANDRAIL
SIDEWALK
HANDRAIL DETAIL AT THE SIDEWALK NEXT TO THE GEOGRID SECTIONS. WIDENING INCLUDED IN THE COST OF CONCRETE SIDEWALK (4").
R/W LINE
R/W VARIES (60' MIN)
R/W VARIES (30' MIN)
LEFT TURN LANE
TYPICAL SECTION NO. 5
BENSON JUNCTION
STA. 24+60 TO STA. 29+00
OPTIONAL BASE GROUP 09 (FOR THICKNESS, SEE INDEX #514) WITH TYPE S STRUCTURAL COURSE (3") AND FRICTION COURSE FC-3 (1") (RUBBER)
DESIGN SPEED - 25 M.P.H.
FLORIDA DEPARTMENT OF TRANSPORTATION
BHR
TYPICAL SECTIONS

FINANCIAL PROJ.ID	STATE PROJ.NO	SHEET NO.
240793-1-52-01	79040-3544	11



TYPICAL SECTION NO. 6

DIRKSEN DRIVE
STA. 31+00 TO STA. 39+30
OPTIONAL BASE GROUP 09 (FOR THICKNESS, SEE INDEX 514) WITH
TYPE S STRUCTURAL COURSE (3") AND FRICTION COURSE FC-3 (1") (RUBBER)

DESIGN SPEED = 45 M.P.H.

REVISIONS

FLORIDA DEPARTMENT OF TRANSPORTATION

BHR TYPICAL

SUMMARY OF DRAINAGE STRUCTURES

FINANCIAL PROJ. ID	STATE PROJ. NO	SHEET NO.
240793-1-52-01	79040-3544	14

QUANT.	STR. NO.	INDEX NO.	STATION	SIDE	DESCRIPTION	SIZE	LENGTH	R.C.P STORM SEWER CLASS II								DUCT IRON PIPE	CURB INLET						MANHOLE			DITCH BOTTOM INLET				M.E.S. S.D.		CLASS I CONC. E.W.	CLASS II CONC. E.W.	REINF. STEEL RDWY.	REMARKS
								18"	24"	30"	36"	42"	48"	54"	60"	14"x 23" 30"	PAR. P-5	<10' P-5	<10' P-6	<10' J-5	<10' J-6	<10' 7	PAR. P-7	<10' P-7	<10' J-7	<10' C	<10' D	<10' SPEC.	<10' E-J	18"	14"x 23"	CY	CY	LB	
P	S-1	200.211	23-86	LT.	PARTIAL INLET												1																	PARTIAL INLET - TOP ONLY
F																																	
P	S-2	200.211	25-62.50	LT.	INLET, PIPE	24	173		173									1																
F																																	
P	S-3	200.211	25-62.50	RT.	INLET, PIPE	18	47	47										1																
F																																	
P	S-4	200.211	26-81	LT.	INLET, PIPE	18	45	45														1												
F																																	
P	S-5	200.211	27-12	LT.	INLET, PIPE	24	146		146										1															
F																																	
P	S-6	200.201	28-07	LT.	MH, PIPE	18	92	92															1										
F																																	
P	S-6A	200.211	28-06	RT.	INLET, PIPE	18	76	76											1															
F																																	
P	S-7	200.211	28-85	RT.	INLET, PIPE	18	212	212										1																
F																																	
P	S-8	200.211	28-85	LT.	INLET, PIPE	18	77	77										1																
F																																	
P	S-9	200.232	31-00	RT.	DBI, PIPE	18	9	9																		1								
F																																	
P	S-10	200.201	31-00	RT.	MH, PIPE	18	97	97															1										
F																																	
P	S-10A	200.232	31-00	LT.	DBI, PIPE	18	96	96																		1								
F																																	
P	S-11	200.201	32-00	RT.	MH, PIPE	24	264		264														1										
F																																	
P	S-12	250	34-60	LT.	ENDWALL, PIPE	24	16		16																							2-24		
F																																	
P	S-13	200.211	34-60	LT.	INLET, PIPE	24	77		77										1															
F																																	
P	S-14	200.211	34-67	RT.	INLET, PIPE	42	15					15									1													
F																																	
P	S-15	200.232	34-72	RT.	DBI, PIPE	54	90							90															1					
F																																	
P	S-16	200.232	36-00	LT.	DBI, PIPE	18	98	98																		1								
F																																	
P	S-17	200.201	36-00	RT.	MH, PIPE	36	130				130													1										
F																																	
P	S-18	200.211	37-80	LT.	INLET, PIPE	18	77	77										1																
F																																	
P	S-19	200.211	37-60	RT.	INLET, PIPE	36	177				177									1														
F																																	
P	S-19A	200.232	39-50	LT.	DBI, PIPE	18	128	128																		1								
F																																	
P	S-20	200.232	40-80	LT.	DBI, PIPE	18	15	15																		1								
F																																	
P	S-21	200.211	40-80	LT.	INLET, PIPE	24	77		77									1																
F																																	
P	S-22	200.211	40-80	RT.	INLET, PIPE	36	257				257									1														
F																																	
P	S-23	200.232	41-30	LT.	DBI, PIPE	18	48	48																		1								
F																																	
P	S-24	200.211	44-10	RT.	INLET, PIPE	30	327			327								1																
F																																	
P	S-25	200.211	44-10	LT.	INLET, PIPE	18	77	77										1																
F																																	
P	S-26	200.211	47-00	RT.	INLET, PIPE	30	287			287								1																
F																																	
P	S-27	200.211	47-00	LT.	INLET, PIPE	18	77	77										1																
F																																	
P	S-28	250	47-90	LT.	ENDWALL, PIPE	18	97	97																								1-56		
F																																	
P	S-29	200.201	47-90	RT.	MH, PIPE	24	87		87														1										
F																																	
P	S-30	250	50-00	RT.	ENDWALL, PIPE	18	17	17																								1-56		
F																																	
P	S-31	200.211	50-00	RT.	INLET, PIPE	18	207	207										1																
F																																	
P	S-32	200.211	50-00	LT.	INLET, PIPE	18	78	78										1																
F																																	
P	S-33	200.211	56-20	RT.	INLET, PIPE	24	247		247									1																
F																																	
P	S-34	200.232	56-20	LT.	DBI, PIPE	18	15	15																		1								
F																																	
P	S-35	200.211	56-20	LT.	INLET, PIPE	18	77	77										1																
F																																	
P	S-36	200.211	58-70	RT.	INLET, PIPE	30	147			147									1																
F																																	
P	S-37	200.211	58-70	LT.	INLET, PIPE	18	78	78											1																
F																																	
P	S-37A	200.232	58-70	LT.	DBI, PIPE	18	15	15																		1								
F																																	
P	S-38	200.211	60-20	RT.	INLET, PIPE	36	257				257									1														
F																																	
P	S-39	250	60-20	LT.	ENDWALL, PIPE	18	14	14																								1-56		
F																																	
P	S-40	200.211	60-20	LT.	INLET, PIPE	8	75	75											1																
F																																	
P	S-41	200.211	62-80	RT.	INLET, PIPE	36	277				277									1														
F																																	
P	S-42	200.232	62-80	LT.	DBI, PIPE	18	15	15																		1								
F																																	
SUB TOTALS		P (PLAN QUANTITY)						960	1087	761	1138	15	0	90	0	0	0	5	5	4	1	0	4	3	0	0	1	0	0	6.92	0	0		
		F (FINAL QUANTITY)																																

41

DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

BHR

SUMMARY OF DRAINAGE STRUCTURES

SUMMARY OF DRAINAGE STRUCTURES

FINANCIAL PROJ. ID	STATE PROJ. NO.	SHEET NO.
240793-1-52-01	79040-3544	15

QUANT	STR. NO.	INDEX NO.	STATION	SIDE	DESCRIPTION	SIZE	LENGTH	R.C.P. STORM SEWER CLASS II 18"	24"	30"	36"	42"	48"	54"	60"	14"x23"	DUCT IRON PIPE 30"
P	S-43	200, 211	62-80	LT.	INLET, PIPE	18	76	76									
F																	
P	S-44	200, 232	63-85	LT.	DBI, PIPE	18	103	103									
F																	
P	S-45	200, 232	65-60	LT	DBI. PIPE	18	96	96									
F																	
P	S-46	200, 201	65-60	RT.	MH. PIPE	36	284				284						
F																	
P	S-47	200, 232	67-88	LT.	DBI. PIPE	18	22	22									
F																	
P	S-48	200, 211	67-71	LT.	INLET, PIPE	18	82	82									
F																	
P	S-49	200, 211	68-50	RT.	INLET, PIPE	60	85								85		
F																	
P	S-50	200, 232	68-58	LT.	DBI. PIPE	18	15	15									
F																	
P	S-51	200, 211	68-58	LT.	INLET, PIPE	24	75		75								
F																	
P	S-52	200, 211	71-00	RT.	INLET, PIPE	54	245							245			
F																	
P	S-53	200, 211	71-00	LT.	INLET, PIPE	18	75	75									
F																	
P	S-54	200, 232	74-00	LT.	DBI. PIPE	24	96		96								
F																	
P	S-55	200, 201	74-00	RT.	MH. PIPE	54	297							297			
F																	
P	S-56	200, 211	77-00	RT.	INLET, PIPE	54	297							297			
F																	
P	S-57	200, 211	77-00	LT.	INLET, PIPE	18	75	75									
F																	
P	S-58	200, 211	80-00	RT.	INLET, PIPE	54	297							297			
F																	
P	S-59	200, 232	80-00	LT.	DBI. PIPE	24	15		15								
F																	
P	S-60	200, 211	80-00	LT.	INLET, PIPE	24	75		75								
F																	
P	S-61	200, 201	85-00	RT.	MH. PIPE	54	297							297			
F																	
P	S-62	200, 211	85-50	RT.	INLET, PIPE	54	247							247			
F																	
P	S-63	200, 232	85-50	LT.	DBI. PIPE	24	15		15								
F																	
P	S-64	200, 211	85-50	LT.	INLET, PIPE	24	75		75								
F																	
P	S-65	200, 232	89-00	LT.	DBI. PIPE	36	96				96						
F																	
P	S-66	200, 201	89-00	RT.	MH. PIPE	54	347							347			
F																	
P	S-67	200, 211	91-00	RT.	INLET, PIPE	48	197						197				
F																	
P	S-68	200, 211	91-00	LT.	INLET, PIPE	18	75	75									
F																	
P	S-69	200, 211	93-35.32	RT.	INLET, PIPE	48	283						283				
F																	
P	S-70	200, 211	93-55.32	LT.	INLET, PIPE	24	75		75								
F																	
P	S-71	200, 211	97-00	RT.	INLET, PIPE	36	310				310						
F																	
P	S-72	200, 211	[illegible]	LT.	INLET, PIPE	18	77	77									
F																	
P	S-73	200, 211	[illegible]	RT.	[illegible] PIPE	36	297				297						
F																	
P	S-74	200, 211	100-00	LT.	INLET, PIPE	18	77	77									
F																	
P	S-75	200, 211	102-80	RT.	INLET, PIPE	36	228				228						
F																	
P	S-75A	200, 201	100-50.5	RT.	MH. PIPE	36	45				45						
F																	
P	S-76	200, 211	[illegible]	LT.	INLET, PIPE	18	77	77									
F																	
P	S-77	200, 232	104-63	RT.	DBI. PIPE	18	15	15									
F																	
P	S-78	200, 211	104-53	RT.	INLET, PIPE	36	81				81						
F																	
P	S-79	200, 211	104-53	LT.	INLET, PIPE	30	83			83							
F																	
P	S-80	200, 201	106-08	RT.	MH. PIPE	18	45	45									
F																	
P	S-81	250	106-25	RT.	ENDWALL, PIPE	18	24	24									
F																	
P	S-81A	200, 201	106-82	LT.	MH. PIPE	42	48	[illegible]									
F																	
P	S-82	200, 211	107-12	LT.	INLET, PIPE	[illegible]	222	[illegible]									
F																	
P	S-83	200, 211	108-54	RT.	INLET, PIPE	[illegible]	[illegible]	[illegible]									
F																	
P	S-84	200, 211	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]										
F																	
P	S-85	200, 211	[illegible]	[illegible]	INLET, PIPE	[illegible]	[illegible]										
F																	
SUB TOTALS	P (PLAN QUANTITY)							[illegible]									
	F (FINAL QUANTITY)																

STR. NO.	CURB INLET PAR. P-5	<10' P-5	<10' P-6	<10' J-5	<10' J-6	<10' 7	MANHOLE PAR. P-7	<10' P-7	<10' J-7	DITCH BOTTOM INLET <10' C	<10' D	<10' SPEC.	<10' E-J	M.E.S. S.D. 18"	14"x23"	CLASS I CONC. E.W. CY	CLASS II CONC. E.W. CY	REINF. STEEL RDWY. LB	REMARKS
S-43		1																	
S-44										1									
S-45										1									
S-46									1										
S-47										1									
S-48		1																	
S-49					1														
S-50										1									
S-51			1																
S-52				1															
S-53		1																	
S-54										1									
S-55									1										
S-56					1														
S-57			1																
S-58				1															
S-59										1									
S-60		1																	
S-61									1										
S-62					1														
S-63										1									
S-64		1																	
S-65											1								
S-66									1										
S-67			1																
S-68	1																		
S-69				1															
S-70		1																	
S-77																			CONFLICT MANHOLE
S-82																35			
S-84																			CONFLICT MANHOLE

FLORIDA DEPARTMENT OF TRANSPORTATION

SUMMARY OF DRAINAGE STRUCTURES

SUMMARY OF DRAINAGE STRUCTURES

FINANCIAL PROJ. ID	STATE PROJ. NO	SHEET NO.
240793-1-52-01	79040-3544	16

QUANT	STR. NO.	INDEX NO.	STATION	SIDE	DESCRIPTION	SIZE	LENGTH	R.C.P. STORM SEWER CLASS II 18"	24"	30"	36"	42"	48"	54"	60"	14"x23"	DUCT IRON PIPE 30"	CURB INLET PAR. P-5	<10' P-5	<10' P-6	<10' J-5	<10' J-6	<10' 7	MANHOLE PAR. P-7	<10' P-7	<10' J-7	DITCH BOTTOM INLET <10' C	<10' D	<10' SPEC.	<10' E-J	M.E.S. S.D. 18"	14"x23"	CLASS I CONC. E.W. CY	CLASS II CONC. E.W. CY	REINF. STEEL RDWY. LB	REMARKS
P	S-86	200,211	113-00	RT.	INLET, PIPE	18	237	237											1																	
P	S-87	200,211	113-00	LT.	INLET, PIPE	18	77	77											1																	
P	S-88	200,211	116-00	RT.	INLET, PIPE	18	297	297											1																	
P	S-89	200,211	116-00	LT.	INLET, PIPE	18	77	77											1																	
P	S-90	200,211	119-00	RT.	INLET, PIPE	18	297	297											1																	
P	S-91	200,211	119-00	LT.	INLET, PIPE	18	77	77											1																	
P	S-92	200,211	122-00	RT.	INLET, PIPE	18	297	297											1																	
P	S-93	200,211	122-00	LT.	INLET, PIPE	18	77	77											1																	
P	S-93A	200,211	123-66.55	RT.	INLET, PIPE	18	165	165											1																	
P	S-93B	200,211	123-72.74	LT.	INLET, PIPE	18	77	77											1																	
P	S-94	200,211	125-00	RT.	INLET, PIPE	18	128	128											1																	
P	S-95	200,211	125-00	LT.	INLET, PIPE	16	77	77											1																	
P	S-96	200,211	131-40	RT.	INLET, PIPE	18	69	69											1																	
P	S-97	200,211	131-40	LT.	INLET, PIPE	18	57	57											1																	
P	S-97A	200,201	132-00	LT.	PARTIAL MH																			1												
P	S-97B	200,201	132-00	RT.	PARTIAL MH																			1												PARTIAL MANHOLE - TOP ONLY
P	S-98	273	35-00 Dirksen Dr.	LT.	MES, PIPE	18	13	13																							1					
P	S-99	200,211	34-89 Dirksen Dr.	RT.	INLET, PIPE	18	47	47											1																	
P	S-100	200,211	34-89 Dirksen Dr.	LT.	INLET, PIPE	18	14	14											1																	
P	S-101	200,201	34-85 Dirksen Dr.	LT.	MH, PIPE	16	115	115																	1											
P	S-102	273	33-70 Dirksen Dr.	LT.	MES	15																									1					
P	S-103	200,211	31-65 Dirksen Dr.	RT.	INLET, PIPE	16	47	47											1																	
P	S-104	200,211	31-65 Dirksen Dr.	LT.	INLET, PIPE	18	11	11											1																	
P	S-105	200,232	31-65 Dirksen Dr.	LT.	DBI, PIPE	30	198			198																		1								
P	S-105A	273	31-65 Dirksen Dr.	LT.	MES, PIPE	14"x 23"	13									13																1				
P	S-106	200,232	103-54	RT.	DBI, PIPE	18	38	38																			1									
P	S-107	250	29-00 Benson Jct. Rd.	LT.	ENDWALL	30																											3.25			
P	S-108	200,211	27-10 Benson Jct. Rd.	RT.	INLET, PIPE	15	35	35											1																	
P	S-109	200,211	27-10 Benson Jct. Rd.	LT.	INLET, PIPE	15	10	10											1																	
P	S-110	250	27-10 Benson Jct. Rd.	LT.	ENDWALL	15																											1.56			
P	S-111	200,232	126-86 Meadors Ln.	RT.	DBI, PIPE	18	69	69																			1									
P	S-112	200,232	126-90 Meadors Ln.	LT.	DBI, PIPE	18	45	45																			1									
P	S-113	200,232	29-21 Borwick Rd.	RT.	DBI, PIPE	18	44	44																			1									
P	S-114	200,232	29-21 Borwick Rd.	LT.	DBI, PIPE	18	44	44																			1									
P	S-115	200,232	11-68 Lat. Ditch 1	LT.	DBI, PIPE	2-24	27		54																											
P	S-116	250	11-65 Lat. Ditch 1	LT.	ENDWALL, PIPE	54	74							74															1				11.7			W.R.A. NO. 1 CONTROL STRUCTURE (SEE SHEET 26)
P	S-117	250	11-95.32 Lat. Ditch 1	LT.	ENDWALL	2-24																											2.82			
P	S-118	200,201	11-24.51 Ft. Florida Rd.	RT.	MH, PIPE	60	95								95																					
P	S-119	251	11-92.55 Ft. Florida Rd.	RT.	ENDWALL	60																												11.3	395	
P	S-120	200,232	27-00 Lat. Ditch 2	LT.	DBI, PIPE	48	82						82																1							
P	S-121	250	27-00 Lat. Ditch 2	LT.	ENDWALL	48																											[illegible]			W.R.A. NO. 2 CONTROL STRUCTURE (SEE SHEET 26)

SUB TOTALS	P (PLAN QUANTITY)	[illegible]
	F (FINAL QUANTITY)	
TOTALS	P (PLAN QUANTITY)	[illegible]
	F (FINAL QUANTITY)	

FLORIDA DEPARTMENT OF TRANSPORTATION

BHR

SUMMARY OF DRAINAGE STRUCTURES

FINANCIAL PROJ. ID	STATE PROJ. NO.	SHEET NO.
240793-1-52-01	79040-3544	17

SCALE: 1"=40'

EQUATION: STA. 54-45.53 ℄ CONST. (BK.) =
STA. 23-31.65 ℄ CONST. (AH.)
BEGIN FULL PAVEMENT SECTION

① CURVE DATA & SURVEY
PI Sta 17-79.18
Δ = 17°06'00.00" (LT)
D = 1°00'00.00"
L = 1,710.0000
T = 861.4035
R = 5,729.5780
PC Sta 9-17.78
PT Sta 26-27.78

② CURVE DATA ℄ CONST.
PI Sta 24-75.39
Δ = 6°09'11.26" (LT)
D = 2°08'32.92"
L = 287.1967
T = 143.7365
R = 2,674.275]
PCC Sta 23-31.65
PT Sta 26-18.85
e = .02

CONSTRUCTION NOTES

BEGIN CONSTRUCTION
BEGIN MILLING & RESURFACING
STA 20-00.00 ℄ SURVEY

END MILLING & RESURFACING
STA 23-31.65 ℄ CONST.

BEGIN PROJECT
STA 22-31.65 ℄ SURVEY
END STATE PROJECT NO. 79040-3539

STA. 25-93.57 ℄ SURVEY
S.R. 15/600
STA. 125-93.57 ℄ CONST.
MEADORS LANE

END PROPOSED GRAVITY WALL W/ HANDRAIL
STA. 25-50.00

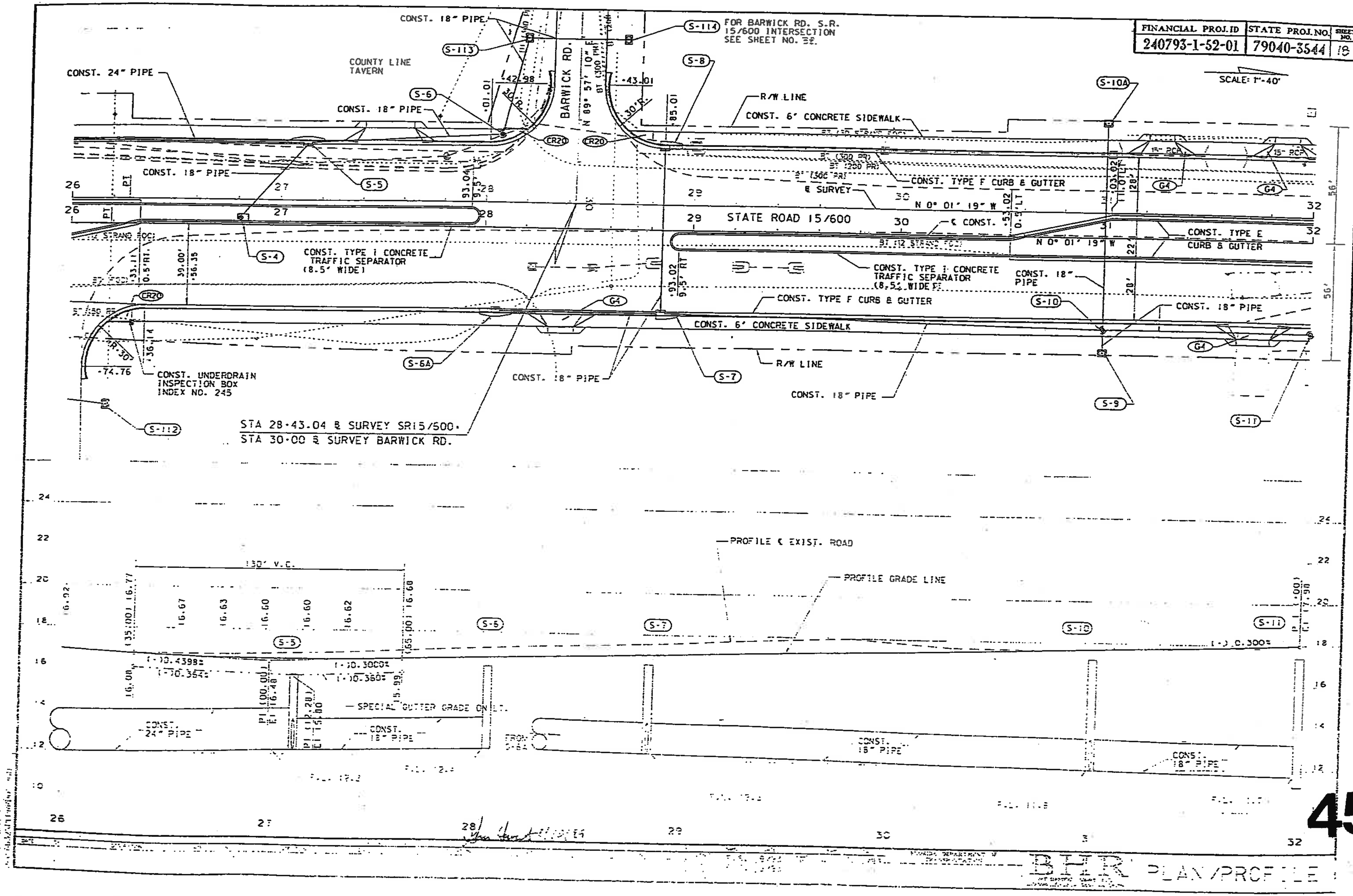
FOR MEADORS LANE
S.R. 15/600 INTERSECTION
SEE SHEET NO.

GENERAL NOTES

1. BUILDINGS TO BE REMOVED BY OTHERS, UNLESS OTHERWISE NOTED.
2. EXISTING DRAINAGE STRUCTURES WITHIN CONSTRUCTION LIMITS SHALL BE REMOVED UNLESS OTHERWISE NOTED.
3. THE LOCATIONS OF THE UTILITIES SHOWN IN THE PLANS ARE APPROXIMATE ONLY. THE EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION.
4. UTILITIES ARE TO BE ADJUSTED BY OTHERS AS DIRECTED BY THE ENGINEER, IN ACCORDANCE WITH THE UTILITY ACCOMMODATION MANUAL.
5. UTILITY OWNER

COMPANIES	TELEPHONE NOS.
SOUTHERN BELL	(407) 237-3754
AT&T CORPORATION	(407) 294-3005
FLORIDA GAS [illegible]	(407) 295-8920
FLORIDA PUBLIC UTILITIES	(407) 734-2927
DEBARY CABLEVISION	(904) 668-8686

6. ALL PIPES JOINTS SHALL BE WRAPPED IN ACCORDANCE WITH INDEX 280 WITH FILTER FABRIC MEETING THE REQUIREMENTS OF INDEX 199, TYPE D-3 WITH AN AASHTO OF 70 OR LESS. THE COST OF THE FILTER FABRIC SHALL BE INCLUDED IN THE COST OF THE PIPES.
7. DRAINAGE STRUCTURES CONSTRUCTED OUTSIDE OF R/W WILL BE CONSTRUCTED AT DISCRETION OF PROPERTY OWNER.
8. ANY PUBLIC LAND CORNER WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED AND HAS NOT BEEN PROPERLY REFERENCED, THE PROJECT ENGINEER SHOULD NOTIFY THE DISTRICT LOCATION SURVEY WITHOUT DELAY BY TELEPHONE.
9. NO ALTERNATE PIPE MATERIAL WILL BE ALLOWED.


FINANCIAL PROJ. ID
240793-1-52-01
STATE PROJ. NO.
79040-3544
SHEET NO.
18
SCALE: 1"=40'
FOR BARWICK RD. S.R. 15/600 INTERSECTION SEE SHEET NO. 32.
COUNTY LINE TAVERN
BARWICK RD.
STATE ROAD 15/600
CONST. 24" PIPE
CONST. 18" PIPE
CONST. 6' CONCRETE SIDEWALK
R/W LINE
CONST. TYPE F CURB & GUTTER
CONST. TYPE E CURB & GUTTER
CONST. TYPE I CONCRETE TRAFFIC SEPARATOR (8.5' WIDE)
CONST. UNDERDRAIN INSPECTION BOX INDEX NO. 245
& SURVEY
& CONST.
N 0° 01' 19" W
STA 28+43.04 & SURVEY SR15/600 = STA 30+00 & SURVEY BARWICK RD.
PROFILE & EXIST. ROAD
PROFILE GRADE LINE
130' V.C.
SPECIAL GUTTER GRADE ON LT.
S-4
S-5
S-6
S-6A
S-7
S-8
S-9
S-10
S-10A
S-11
S-112
S-113
S-114
PLAN/PROFILE

FINANCIAL PROJ. ID	STATE PROJ. NO.	SHEET NO.
240793-1-52-01	79040-5544	19

SCALE: 1"=40'

STA. 34-33.96 ℄ SURV. 15/600
STA. 10-00 ℄ SURVEY LATERAL DITCH NO. 1
R/W LINE
CONST. UNDERDRAIN INSPECTION BOX INDEX NO. 245
CONST. 6' CONCRETE SIDEWALK
CONST. TYPE F CURB & GUTTER
CONST. 24" PIPE
CONST. 18" PIPE
INV. 13.42
N 0° 01' 19" W
℄ SURVEY
℄ CONST.
STATE ROAD 15/600
INV. 13.00
CONST. 36" PIPE
CONST. 5' CONCRETE SIDEWALK
AUTO PAINT & BODY
EXIST. WELL TO BE CAPPED
2 STY CONC. BLOCK BLDG.
℄ SURVEY LATERAL DITCH NO. 1
DRAINAGE EASEMENT
TO W.R.A. No. 1
CONST. 42" PIPE
CONST. 54" PIPE
CONST. 5' C.L.F.
CONST. 36" PIPE
FOR DETAILS OF WATER RETENTION AREA NO. 1 SEE SHEET NO. 18
W.R.A. NO. 1
ANTIQUE FURNITURE STORE
1 STY CONC. BLOCK BLDG.
S-11 S-12 S-13 S-14 S-15 S-16 S-17 S-18 S-19
G4

PROFILE & EXIST. ROAD
PROFILE GRADE LINE
(-) 0.30%
(-) 0.30%
EXIST. 24"X24" CBC INV. 13.9
CONST. 24" PIPE
CONST. 36" PIPE
F.L. 12.9
F.L. 10.9
F.L. 10.5
F.L. 11.0
F.L. 11.4
F.L. 13.4
F.L. 11.9

BHR PLAN/PROFILE

FINANCIAL PROJ. ID	STATE PROJ. NO.	SHEET NO.
240793-1-52-01	79040-3544	20

SCALE: 1"=40'

STATE ROAD 15/600

B.M. NO. 42
FDOT CONC. MONUMENT
50.2 LT. STA. 41+51
ELEV. 17.02

BHR PLAN/PROFILE

FINANCIAL PROJ. ID	STATE PROJ. NO.	SHEET NO.
240793-1-52-01	79040-3544	21

EXIST. WELL TO BE CAPPED

S-25

R/W LINE

CONST. 6' CONCRETE SIDEWALK

S-27

CONST. 18" PIPE

S-28

SCALE: 1"=40'

S-32

G4

CONST. TYPE F CURB & GUTTER

CONST. 18" PIPE

STATE ROAD 15/600

N 0° 01' 19" W

℄ SURVEY

3.0'R. TYP.

CONST. TYPE I CONCRETE TRAFFIC SEPARATOR(8.5"MD)

CONST. TYPE F CURB & GUTTER

CONST. 18" PIPE

CONST. TYPE F CURB & GUTTER

CONST. 18" PIPE

CONST. TYPE F CURB & GUTTER

CONST. 18" PIPE

R/W LINE

CONST. 30" PIPE

CONST. 5' CONCRETE SIDEWALK

1 STY FRAME

AUTO REPAIR CENTER

S-24

S-26

S-29

S-31

CONST. 24" PIPE

CONST. 18" PIPE

1 STY METAL BLDG.

1 STY METAL BLDG.

TOWING CENTER

AUTO SALVAGE

S-30

PROFILE & EXIST. ROAD

PROFILE GRADE LINE

S-24

S-26

S-29

S-31

(-) 0.300%

CONST. 30" PIPE

CONST. 24" PIPE

CONST. 18" PIPE

F.L. 15.4

F.L. 15.3

F.L. 15.8

F.L. 15.

F.L. 17.2

F.L. 15.3

F.L. 6.6

F.L. 4.4

44 45 46 47 48 49 50

48

FINANCIAL PROJ. ID	STATE PROJ. NO.	SHEET NO.
240793-1-52-01	79040-3544	22

SCALE: 1"=40'

③ CURVE DATA & SURVEY
PI Sta 66-76.16
Δ = 24° 15' 14.10" (RT)
D = 0° 59' 59.96"
L = 2,425.42
T = 1,231.15
R = 5,729.65
PC Sta 54-45.01
PT Sta 78-70.43

④ CURVE DATA & CONST.
PI Sta 67-02.79
Δ = 24° 15' 14.10" (RT)
D = 1° 00' 00.00"
L = 2,425.39
T = 1,231.14
R = 5,729.58
PC Sta 54-71.66
PT Sta 78-97.05
e = N.C.

STATE ROAD 15/600
N 0° 01' 19" W
℄ SURVEY
℄ CONST.
PC STA. STA. 54-45.01
90° ℄ SURVEY
P.C.
P.T.
4,725' R TYP.

CONST. 18" PIPE
R/W LINE
CONST. 6' CONCRETE SIDEWALK
CONST. TYPE F CURB & GUTTER
CONST. TYPE E CURB & GUTTER
CONST. TYPE I CONCRETE TRAFFIC SEPARATOR (8.5' WIDE)
CONST. 5' CONCRETE SIDEWALK
ASPHALT
S-32
S-31
S-30
G4
18" RCP
24" RCP
ASPHALT DRIVEWAY
CONC. DRIVE
STAR LANE

1 STY METAL
ZOOK HEAVY EQUIPMENT INC.
1 STY CONC. BLOCK BLDG.
AUTO SALVAGE
AUTO SUPPLIES
1 STY FRAME BLDG.
RES.

B.M. NO. 52
FDOT CONC. MONUMENT
50.8 LT. STA. 51-54
ELEV. 18.74

PROFILE GRADE LINE
PROFILE ℄ EXIST. ROAD
(-) 0.300%
P.I. (+00) EL 22.69
F.L. 17.2

BHR PLAN/PROFILE

FINANCIAL PROJ. ID	STATE PROJ. NO.	SHEET NO.
240793-1-52-01	79040-3544	23

SCALE: 1"=40'

S-34 CONST. 18" PIPE
S-35
R/W LINE
S-37A STA. 58-42.10 ℄ SURV. S.R. 15/600
STA. 20-00 ℄ SURVEY LATERAL
DITCH NO.2
S-37 CONST. 18" PIPE
S-39
S-40
CONST. 18" PIPE
CONST. 6" CONCRETE SIDEWALK
CONST. TYPE F CURB & GUTTER
CONST. TYPE E CURB & GUTTER
℄ SURVEY
℄ CONST.
CONST. 18" PIPE
CONST. TYPE F CURB & GUTTER
STATE ROAD 15/600
CONST. TYPE F CURB & GUTTER
CONST. 6" CONCRETE SIDEWALK
R/W LINE
CONST. 24" PIPE
CONST. 18" PIPE
DIRT DRIVE
S-36
S-38
CONST. 30" PIPE
CONST. 36" PIPE
℄ SURVEY LATERAL
DITCH NO. 2
N 81°46'29" E
1 STY FRAME BLDG.
1 STY METAL BLDG.

③ CURVE DATA ℄ SURVEY
PI Sta 66-76.16
Δ = 24° 15' 14.10" (RT)
D = 0° 59' 59.96"
L = 2,425.42
T = 1,231.15
R = 5,729.65
PC Sta 54-45.01
PT Sta 78-70.43

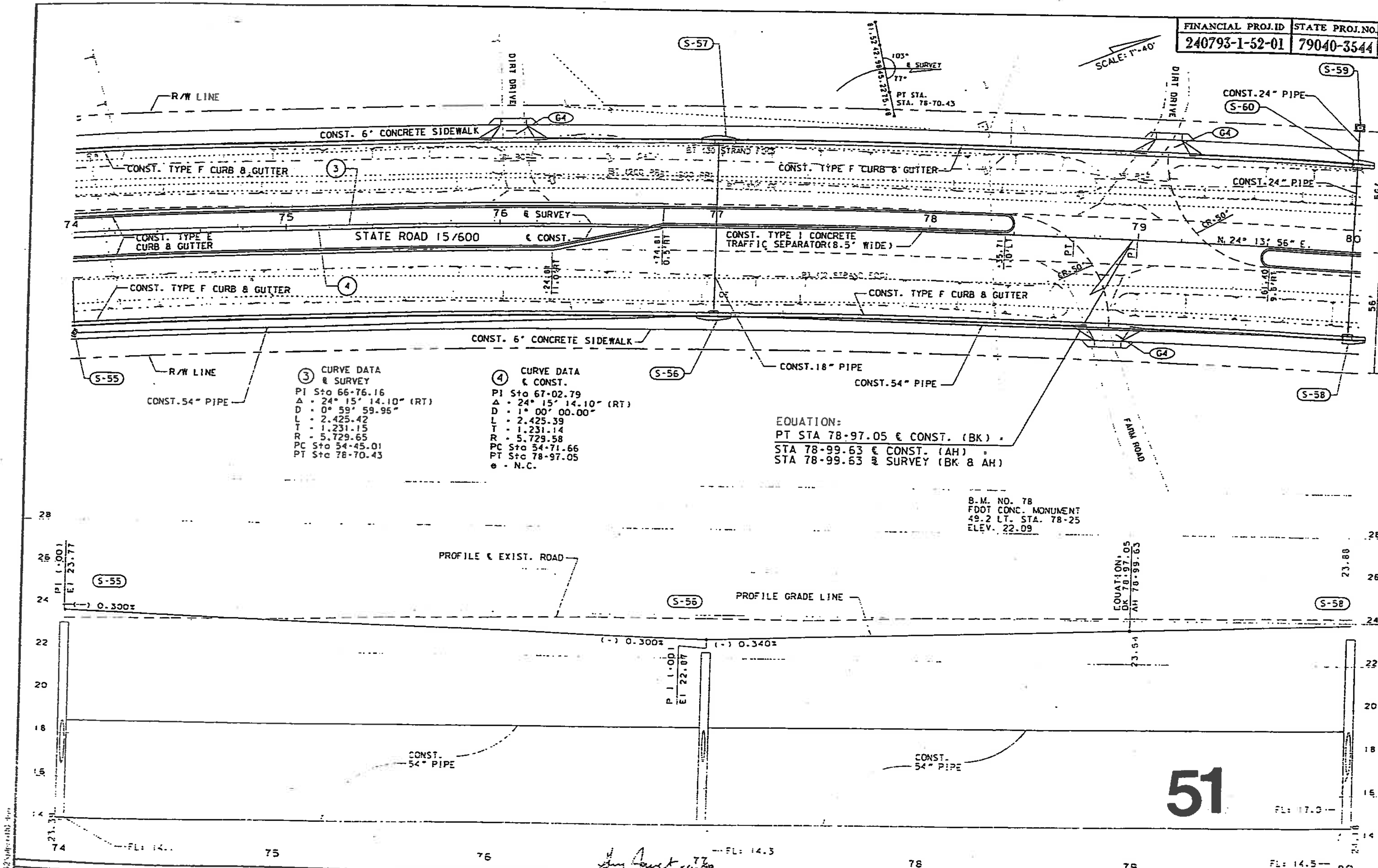
④ CURVE DATA ℄ CONST.
PI Sta 67-02.79
Δ = 24° 15' 14.10" (RT)
D = 1° 00' 00.00"
L = 2,425.39
T = 1,231.14
R = 5,729.58
PC Sta 54-71.66
PT Sta 78-97.05
e = N.C.

B.M. NO. 60
FDOT CONC. MONUMENT
48.6 LT. STA. 60-40
ELEV. 19.74

S-33 S-36 S-38
PROFILE GRADE LINE
(-) 0.300%
(-) 0.300%
PROFILE ℄ EXIST. ROAD
CONST. 24" PIPE
CONST. 30" PIPE
CONST. 36" PIPE
F.L. 16.7
F.L. 15.4
F.L. 15.3
F.L. 15.7
F.L. 15.2
EXIST. 2' X 2' CBC INV. 15.21

BHR PLAN/PROFILE

FINANCIAL PROJ.ID	STATE PROJ.NO.	SHEET NO.
240793-1-52-01	79040-3544	26



SCALE: 1"=40'
R/W LINE
DIRT DRIVE
CONST. 6' CONCRETE SIDEWALK
CONST. TYPE F CURB & GUTTER
CONST. TYPE E CURB & GUTTER
STATE ROAD 15/600
℄ SURVEY
℄ CONST.
CONST. TYPE I CONCRETE TRAFFIC SEPARATOR(8.5' WIDE)
PT STA. STA. 78-70.43
CONST. 24" PIPE
CONST. 18" PIPE
CONST. 54" PIPE
N. 24° 13' 56" E.
FARM ROAD
S-55
S-56
S-57
S-58
S-59
S-60
G4
CURVE DATA ℄ SURVEY
PI Sta 66-76.16
Δ = 24° 15' 14.10" (RT)
D = 0° 59' 59.96"
L = 2,425.42
T = 1,231.15
R = 5,729.65
PC Sta 54-45.01
PT Sta 78-70.43
CURVE DATA ℄ CONST.
PI Sta 67-02.79
Δ = 24° 15' 14.10" (RT)
D = 1° 00' 00.00"
L = 2,425.39
T = 1,231.14
R = 5,729.58
PC Sta 54-71.66
PT Sta 78-97.05
e = N.C.
EQUATION:
PT STA 78-97.05 ℄ CONST. (BK) =
STA 78-99.63 ℄ CONST. (AH) =
STA 78-99.63 ℄ SURVEY (BK & AH)
B.M. NO. 78
FDOT CONC. MONUMENT
49.2 LT. STA. 78-25
ELEV. 22.09
PROFILE ℄ EXIST. ROAD
PROFILE GRADE LINE
(-) 0.300%
(-) 0.340%
PI (.00) El 23.77
PI (.00) El 22.07
EQUATION: BK 78-97.05 AH 78-99.63
23.54
23.80
CONST. 54" PIPE
FL: 14.
FL: 14.3
FL: 17.0
FL: 14.5
74
75
76
77
78
79
80

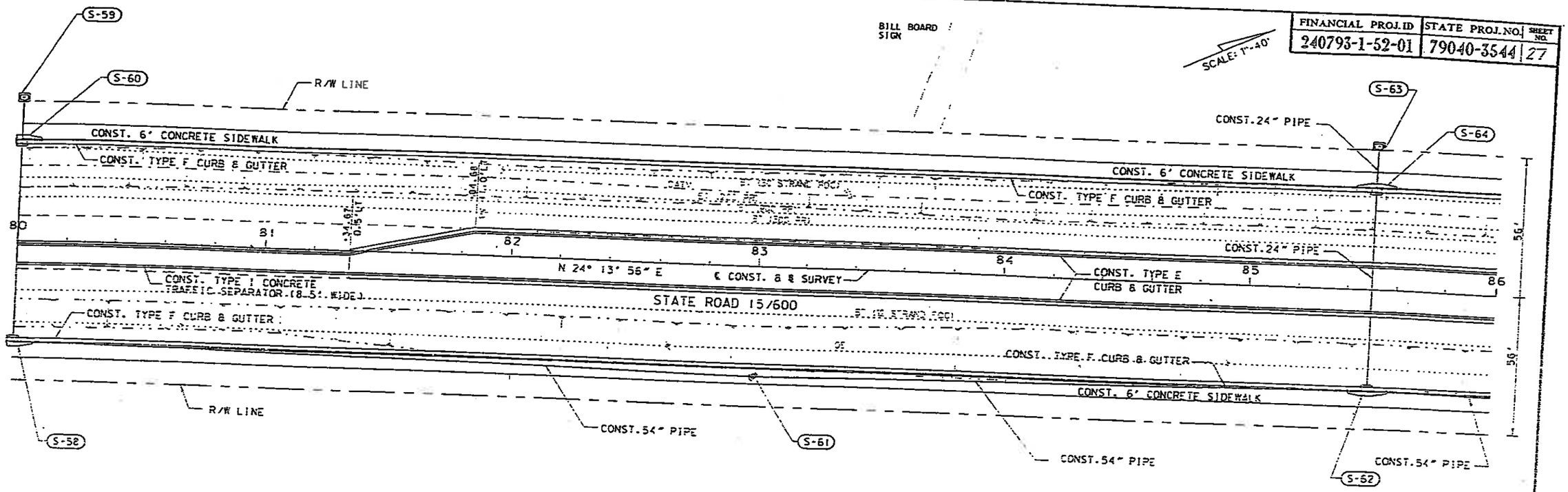
FLORIDA DEPARTMENT OF TRANSPORTATION

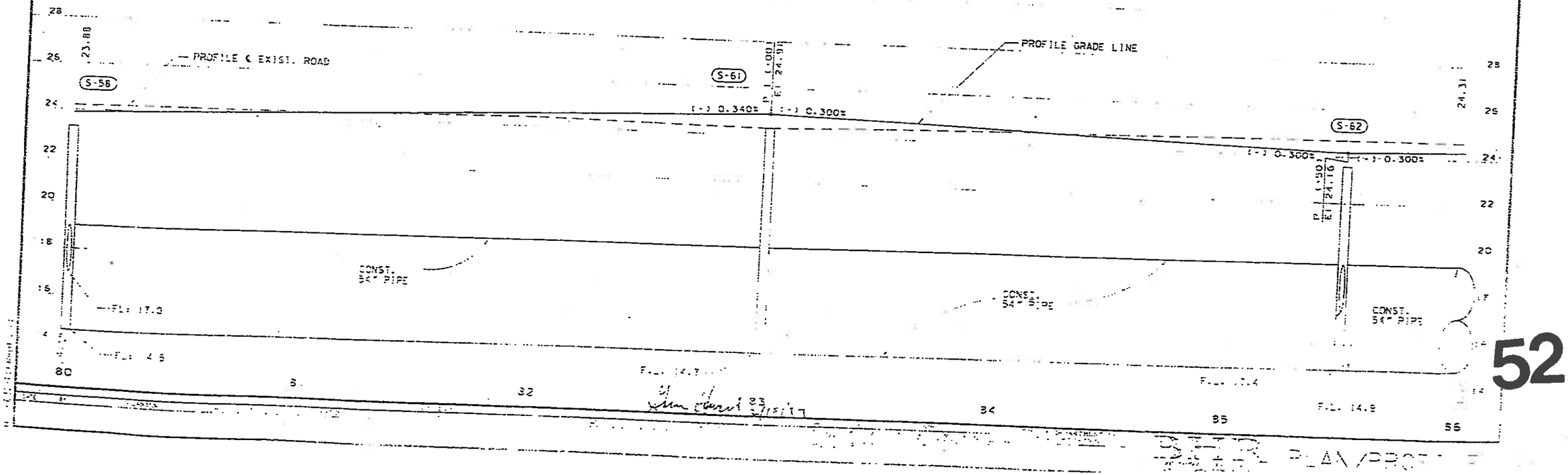
BHR

PLAN/PROFILE

FINANCIAL PROJ. ID	STATE PROJ. NO.	SHEET NO.
240793-1-52-01	79040-3544	27

SCALE: 1"=40'





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PSTDSN55 VERSION (2.43)            FLORIDA DEPARTMENT OF TRANSPORTATION                 PAGE  1
                                          E_N_G_L_I_S_H  I_N_P_U_T
                                     BOX CULVERT AND WINGWALL DESIGN                 VERSION NO. 2.43

CARD *     REG. LIVE LOAD       * SERVICE *  LOAD  *  I OTH  * INF.  * LOC.NEG
 NO. * CODE OMIT O-FILL OVERLD *   LOAD  * FACTOR * MOMENT * LINE *  MOMENT

1- 1   HS20  NO    NO       0.     NO       YES      NO      NO       1.00

       * SOIL  * STEEL * STEEL * CONCRETE * SHEAR *  SHEAR  * THICK INC. *
       *  WT.  *   FY  *   FS  * STRENGTH * CNCRT * STIRRUP * SLAB  WALL *
         PCF      KSI     KSI      PSI       PSI      PSI      IN    IN
        120.0     60.     24.    3400.        0.       0.      .50   .50

     * EXTERIOR COVER *  INT. * SAME THICK * BAR * BAR SPCG * BAR SIZ *    *
     * T.SB B.SB WALL * COVER * SLAB  WALL * TBL * MAX  MIN * MAX MIN * N * ENVIR *
        IN   IN   IN     IN                      IN   IN
      2.50 2.50 2.50   2.50   NO      NO    YES  18.0  4.0   11   4   9.0    1

*****
CULV *  TYPE   * SPAN * HEIGHT * FILL * LENGTH * LSKEW   * RSKEW * FLOOR *
                   FT      FT     FT      FT      DEG       DEG

3- 1  SINGLE     6.00    5.00    9.00  166.00      0         0     FULL

      * TOP   * BOT. * EXT.  * INT.  * L.LOAD * SOIL PRESS * WATER *   H  AUNCH  *
      * SLAB  * SLAB * WALL  * WALL  * SURCHG * MAX.   MIN  *PRESS  *  TOP * BOT  *
         IN      IN     IN     IN       FT      PSI    PSI    PSI      IN    IN

        .00     .00    .00    .00     2.00      30.    15.    62.4    2.0    .0
*****
WING * MIN.  * WINGWALL *WSKEWL *WSKEWL *WSKEWR *WSKEWR  * WLENGL * WLENGL * WLENGR * WLENGR *
WALL  OUTPUT    TYPE      FRONT   BACK    FRONT   BACK     FRONT    BACK     FRONT    BACK
                                                             FT       FT       FT       FT

4- 1    YES   STRAIGHT       0     180       0     180       .00      .00      .00      .00

       *FFACE *   OTHER   * CUL.  * NO. OF   *
        COVER     COVER     EXT.    HEADWALL
         IN        IN

        2.50      2.50      BOTH     BOTH
```

S-85

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on Jan 05 16:.. .7 1998 TD400 I:\PLOT\BOXS85G1.PRF

STATE PROJ. NO.	SHEET NO.
55050-3544	6

1/ 5/98 FLORIDA DEPARTMENT OF TRANSPORTATION 14:37:37

BOX CULVERT AND WINGWALL DESIGN VERSION NO. 2.43
E_N_G_I_N_S_H O_U_T_P_U_T

PROJECT NUMBER : 55050-3544 LOCATION DESCRIPTION :
ENVIRONMENT : SLIGHTLY AGGRESSIVE, USE CLASS II CONCRETE

MATERIAL PROPERTIES

STEEL YIELD STRENGTH	60. KSI
CONCRETE 28 DAY STREN.	3400. PSI
DESIGN F'C	3400. PSI

CONCRETE COVER FOR REINFORCING BARS

BARREL EXT. COVER: TOP SL.	2 IN	BOT. SL.	2 IN	WALL	2 IN
BARREL INT. COVER: ALL LOC.	2 IN				
WINGWALL : ALL LOC.	2 IN				

PROPERTIES OF ELEMENTS

BARREL : NO. OF BARREL(S) - 1; SPAN - 6 FT 0 IN; HEIGHT - 5 FT 0 IN; DEPTH OF FILL - 9 FT 0 IN
LENGTH AT BOX CENTER LINE - 166 FT 0 IN; LEFT SIDE SKEW ANGLE - 0 DEGREE; WIDTH - 7 FT 6 IN
RIGHT SIDE SKEW ANGLE - 0 DEGREE; WIDTH - 7 FT 6 IN
THKNSS.: TOP SL. - 9 IN; BOTTOM SL. - 9 IN; EXT. WALL - 9 IN; INT. WALL - 0 FT 0 IN

WINGWALL: NO. OF WINGWALL(S) BOTH LEFT AND RIGHT SIDES NO. OF HEADWALL(S) BOTH LEFT AND RIGHT SIDES

TOP BEVEL	6 IN;	SIDE BEVEL	6 IN;		
WALL HEIGHT	6 FT 9 IN;	FOOTING WIDTH	4 FT 10 IN;	HEEL DIMENSION	2 FT 10 IN;
TOE DIMENSION	1 FT 3 IN;	WALL THICKNESS	9 IN;	FOOTING THICKNESS	8 IN;
TOE PRESSURE	826. psf				

SKEW ANGLE : LEFT FRONT - 0 DEGREE; LEFT BACK - 180 DEGREE;
RIGHT FRONT - 0 DEGREE; RIGHT BACK - 180 DEGREE.
LENGTH - 13 FT 0 IN* (0 FT 0 IN**); FRONT TIP HEIGHT - 6 FT 9 IN
WALL - 2.377 C.Y.; FOOTING - 2.093 C.Y.;
TOTAL - 4.470 C.Y.

TOTAL WINGWALL LENGTH WITH BARREL WIDTH : LEFT - 33 FT 6 IN; RIGHT - 33 FT 6 IN

CONCRETE QUANTITIES

BARREL :	POUR 1 (BOTTOM SLAB) - .218 C.Y./FT.;	POUR 2 (WALLS) - .259 C.Y./FT.;	POUR 3 (TOP SLAB) - .219 C.Y./FT.		
	POUR 4 (HEADWALL(S)) - .694 C.Y.		TOTAL (EXCLUDE HEADWALL) - .695 C.Y./FT.		
WINGWALL:	POUR 1 (FOOTING***) - 9.391 C.Y.;	POUR 2 (WALLS) - 9.509 C.Y.;	TOTAL - 18.900 C.Y.		

TOTAL CONCRETE QUANTITIES

BARREL	- 116.143 C.Y.;	WINGWALL	- 18.900 C.Y.;	TOTAL -	135.043 C.Y.

* SKEWED WINGWALL LENGTH MEASURED ON CENTER LINE FROM CONSTRUCTION JOINT
** DISTANCE FROM OUTSIDE EDGE OF BARREL EXTERIOR WALL TO CONSTRUCTION JOINT ON CENTER LINE OF WINGWALL
*** INCLUDE TOE AND KEY AT BARREL ENDS

ENVIRONMENT : SLIGHTLY AGGRESSIVE, USE CLASS II CONCRETE

S-85

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REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF | S.R. 61 (THOMASVILLE RD.) WOODBINE DR. TO KINHEGA DR.

Jan 05 16 2 1998 TD42L I:\PLOT\BOXS8562.PRF

STATE PROJ. NO.	SHEET NO.
55050-3544	7

STEEL QUANTITIES AND BAR SCHEDULE

BARREL QUANTITIES:

LOCATION	BAR	NUMBER SETS	SIZE	SPACING (FT-IN)	TYPE	LENGTH (FT-IN)	QUANTITY (LB)	B LENGTH (FT-IN)	C LENGTH (FT-IN)	D LENGTH (FT-IN)
TOP SLAB	A100	249	4	0- 8	1	7- 2	1192			
BOT SLAB	A200	285	4	0- 7	1	7- 2	1364			
CORNER (TOP)	A1	400	4	0-10	10	6- 2	1648	2- 3	3-11	
CORNER (BOTTOM)	A2	400	4	0-10	10	6- 2	1648	2- 3	3-11	
EXTERIOR WALL (INSIDE)	B1	400	4	0-10	1	6- 2	1648			
LONGITUDINAL	C1	160 (5)	4	1- 6	1	34- 5	3678			
HEADWALL BOTH SIDES	G1	4 (1)	4	SEE INDEX	1	7- 2	19			
HEADWALL BOTH SIDES	P	16	4	1- 0	11	3- 5	37	0-11	1- 5	1- 1

PER FOOT BARREL STEEL QUANTITY 67. LBS./FOOT
TOTAL BARREL STEEL QUANTITY 11234 LBS.

WINGWALL QUANTITIES: E_N_G_L_I_S_H O_U_T_P_U_T

LOCATION	BAR	NUMBER SETS	SIZE	SPACING (FT-IN)	TYPE	LENGTH (FT-IN)	WEIGHT (LB)	B LENGTH (FT-IN)	C LENGTH (FT-IN)
STEM	F	32	4	1- 5 1/2	10	8- 9	188	1- 8	7- 1
STEM	J	32	4	1- 5 1/2	1	7- 1	152		
STEM	K	40	4	1- 6	1	12- 8	340		
FOOTING	KF	16	4	SEE INDEX	1	12- 8	136		
FOOTING	L	36	4	1- 5 1/2	1	4- 5	108		
FOOTING LEFT SIDE	M1	2 (1)	4	SEE INDEX	1	33- 2	44		
FOOTING RIGHT SIDE	M2	2 (1)	4	SEE INDEX	1	33- 2	44		
STEM TO BARREL DOWELS	N **	28	6	1- 0	10	6- 0	252	3- 0	3- 0
FOOTING SPILLWAY	R	16	4	1- 0	1	2- 7	28		

PER FOOT WINGWALL STEEL QUANTITY 20. LBS./FOOT
TOTAL WINGWALL STEEL QUANTITY 1292 LBS.

* LENGTH IS THE SUM OF BAR LENGTH AT BEGINNING/TOP AND ENDING/BOTTOM OF WINGWALL. NUMBER OF BAR IS THE AMOUNT REQUIRED FOR THIS SUMMATION OF LENGTH. B AND C LENGTH IS FOR THE FIRST BAR OF WINGWALL CLOSE TO THE JOINT OF WINGWALL AND BARREL.

** FOR SKEWED WINGS BEND BARS N TO ACCOMMODATE SKEW. PROVIDE FOR 3 FT. OF BAR IN THE WINGWALL AND HEADWALL.

TOTAL STEEL QUANTITIES

BARREL	11234 LBS.
WINGWALL	1292 LBS.
TOTAL	12526 LBS.

J. Thompson 1/16/98

S-85

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REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

DRIVER | FLORIDA DEPARTMENT OF | S.R. 61 (THOMASVILLE RD.) WOODBINE DR. TO KINHEGA DR.

Jan 05 16 1998 TD488 C:\PLOT\BOXS85G3.PRF

SUMMARY OF DRAINAGE STRUCTURES

STATE PROJ. NO. 55050-3544 | SHEET NO. 15

QUANT	STR. NO.	INDEX NO.	STATION	SIDE	DESCRIPTION	SIZE	LENGTH	STORM SEWER PIPE RCP CLASS III 18"	24"	30"	36"	42"	48"	54"	60"	72"	RCP CROSS DRAIN CLASS III 42"	RCP SIDE DRAIN CLASS III 18"	24"	CURB INLETS P-1 <10'	P-1 >10'	P-2 <10'	P-2 >10'	P-5 <10'	P-6 <10'	7 <10'	J-1 <10'	J-1 >10'	J-2 <10'	J-2 >10'	J-5 <10'	V <10'	DITCH BOTTOM INLETS C <10'	D <10'	E <10'	K <10'	K >10'	MANHOLES P-7 <10'	P-7 >10'	J-7 <10'	J-7 >10'	SPECIAL <10'	SPECIAL >10'	MITERED END SECTION CD 18"	SD 18"	SD 24"	SD 30"	BASIN OUTLET 36"	BASIN OUTLET 48"	BASIN OUTLET 72"	CLASS I CONC CY	STEEL LB	SOD TYPE VARIES SY	SOD BAHIA SY	REMARKS
P	S-1	200 . 201	283 + 70(SR 61)	R	MH . PIPE	18"	32'	32'																														1																	
F																																																							
P	S-2	200,201,	284 + 01.04	L	INLET . PIPE	18"	12'	12'												1																																			
F		210 8 280																																																					
P	S-3	200.201.210	284 + 01.04	R	INLET . PIPE	18"	231'	231'												1																																			
F																																																							
P	S-4	200.201.210	286 + 35	R	INLET . PIPE	18"	110'	110'												1																																			
F																																																							
P	S-5	200.201.210	286 + 35	L	INLET . PIPE	18"	234'	234'												1																																			
F																																																							
P	S-6A	201 . 232	285 + 80	R	INLET . PIPE	18"	102'	102'																											1																		(▲)		
F																																																							
P	S-6B	201 . 232	286 + 85	R	INLET . PIPE	18"	126'	126'																											1																		(▲)		
F																																																							
P	S-6	201 . 232	288 + 15	R	INLET . PIPE	18"	106'	106'																											1																		(▲)		
F																																																							
P	S-7	200.201.210	288 + 72	R	INLET . PIPE	18"	110'	110'												1																																			
F																																																							
P	S-8	200.201.210	288 + 72	L	INLET . PIPE	24"	247'		247'											1																																			
F																																																							
P	S-9	201 . 232	289 + 25	R	INLET . PIPE	24"	171'		171'																										1																		(▲)		
F																																																								
P	S-10		DELETED																																																				
F																																																							
P	S-11	201 . 232	1291 + 00'	R	INLET . PIPE	24"	20'		20'																										1																		(▲)		Alt. B 4.5'x6'
F																																																							
P	S-12	200.201.210	1291 + 22.15	R	INLET . PIPE	30"	110'			110'												1																																	
F																																																							
P	S-13	200.201.210	1291 + 22.15	L	INLET . PIPE	30"	261'			261'																				1																											Alt. B 4'x4'
F																																																							
P	S-14		DELETED																																																				
F																																																							
P	S-15		DELETED																																																				
F																																																							
P	S-16		DELETED																																																				
F																																																							
P	S-17	201 . 232	1291 + 81.65	R	INLET . PIPE	24"	77'		77'																										1																		(▲)		Const on Exist. 24" RCP
F																																																							
P	S-18	200 . 201	1293 + 85	L	MH . PIPE	30"	392'			392'																													1																
F																																																							
P	S-19	200 . 201	1294 + 27.55	R	MH . PIPE	18"	39'	39'																														1																	Alt. B
F																																																							
P	S-19A	201 . 232	1293 + 85	R	INLET . PIPE	18"	200'	200'																											1																		(▲)		
F																																																							
P	S-20	200.201.211	30-78.85	R	INLET . PIPE	18"	16'	16'																1																															Const on Exist. 18" RCP
F			(@ Papillion)																																																				
P	S-20A	200.201.210	30-78.85	L	INLET . PIPE	18"	31'	31'																							1																								Alt. A 3.5'x5.5'
F			(@ Papillion)																																																				
P	S-21	200.201.210	1297 + 80	R	INLET . PIPE	18"	110'	110'													1																																		
F																																																							
P	S-22	200.201.210	1297 + 80	L	INLET . PIPE	30"	302'			302'																		1																											Alt. B 4'x4'
F																																																						
P	S-23	201 . 232	1298 + 65	R	INLET . PIPE	18"	140'	140'																										1																			(▲)		
F																																																							
P	S-24		DELETED																																																				
F																																																							
P	S-25	20[illegible] . 232	1300 + 07	R	INLET. PIPE	24"	73'		73'																									1																			(▲)		
F																																																							
P	S-25A	201 . 232	1307 + 00	R	INLET . PIPE	18"	396'	396'																											1																		(▲)		
F																																																							
P	S-25B	232 . 201	1303 + 00	R	INLET . PIPE	18"	211'	211'																											1																		(▲)		
F																																																							
P	S-26		DELETED																																																				
F																																																							
P	S-27	200.201.210	1300 + 83.91	R	INLET . PIPE	30"	[illegible]			110'																																													
F																																																							
P	S-28	200.201.210	1300 + 83.91	[illegible]	INLET . PIPE	3[illegible]"	[illegible]				54'																																												Alt. B 4'x5'
F																																																							
P	S-29	200 . 201	1301 + 32.03	[illegible]	MH . PIPE		[illegible]			206'		262'*																																											* Class IV Pipe
F																																																							
P	SUBTOTALS	P=PLAN QUANTITY						2246	588	1381	54	262*								6	1	2		1				1			1		1	1	9			2	1														(▲)	[illegible]	* Includes 262 LF of Class IV Pipe
F	SUBTOTALS	F=FINAL QUANTITY																																																						

12-13-97

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

& ASSOCIATES

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. 61 (THOMASVILLE RD.) WOODE[illegible]E DR. TO KINHEGA DR.

Doc 17 #9143147/ 1997 10488

SUMMARY OF DRAINAGE STRUCTURES

STATE PROJ. NO. 55050-3544 SHEET NO. 17

QUANT	STR. NO.	INDEX NO.	STATION	SIDE	DESCRIPTION	SIZE	LENGTH	STORM SEWER PIPE									RCP CROSS DRAIN CLASS III	RCP SIDE DRAIN CLASS III		CURB INLETS													DITCH BOTTOM INLETS					MANHOLES						MITERED END SECTION							CLASS I CONC	STEEL	SOD		REMARKS
								RCP CLASS III												P-1		P-2		P-5	P-6	7	J-1		J-2		J-5	V	C	D	E	K		P-7		J-7		SPECIAL		CD	SD			BASIN OUTLET					TYPE VARIES	BAHIA	
								18"	24"	30"	36"	42"	48"	54"	60"	72"	42"	18"	24"	<10'	>10'	<10'	>10'	<10'	<10'	<10'	<10'	>10'	<10'	>10'	<10'	<10'	<10'	<10'	<10'	<10'	>10'	<10'	>10'	<10'	>10'	<10'	>10'	18"	18"	24"	30"	36"	48"	72"	CY	LB	SY		
P	S-58	200.201.211	1339 - 35	R	INLET . PIPE	18"	106'	106'																1																																
F																																																							
P	S-59	201.221	30 - 70	R	INLET . PIPE	18"	62'	62'																								1																							
F			(CERCY TRACE)																																																				
P	S-60	201.221	30 - 70	L	INLET . PIPE	18"	20'	20'																								1																							
F			(CERCY TRACE)																																																			
P	S-61	200.201.211	1342 - 40	R	INLET . PIPE	18"	106'	106'																1																																
F																																																						
P	S-62	200.201.210	1342 - 40	L	INLET . PIPE	30"	297'			297'																	1																												Alt. B 4'x4'
F																																																					
P	S-63	200.201.211	1345 - 40	R	INLET . PIPE	18"	106'	106'																1																																
F																																																							
P	S-64	200.201.210	1345 - 40	L	INLET . PIPE	30"	297'			297'																	1																												Alt. B 4'x4'
F																																																					
P	S-65	200.201.211	1348 - 40	R	INLET . PIPE	18"	106'	106'																1																																
F																																																							
P	S-66	200.201.210	1348 - 40	L	INLET . PIPE	30"	157'			157'																	1																												Alt. B 4'x4'
F																																																					
P	S-67	200.201.210	1350 - 00	L	INLET . PIPE	30"	157'			157'										1																																			
F																																																							
P	S-68	200.201.211	1351 - 60	R	INLET . PIPE	18"	106'	106'																1																																
F																																																							
P	S-69	200.201.210	1351 - 60	L	INLET . PIPE	30"	157'			157'																	1																												Alt. B 4'x4'
F																																																					
P	S-70	200.201.211	1353 - 20	R	INLET . PIPE	18"	106'	106'																1																																
F																																																							
P	S-71	200.201.210	1353 - 20	L	INLET . PIPE	30"	317'			317'																	1																												Alt. B 4'x4'
F																																																						
P	S-72		DELETED																																																				
F																																																							
P	S-73	200.201.211	1356 - 40	R	INLET . PIPE	18"	106'	106'																1																																
F																																																								
P	S-74	200.201.210	1356 - 40	L	INLET . PIPE	30"	157'			157'																	1																												Alt. B 4'x4'
F																																																						
P	S-75	200.201.210	1358 - 00	L	INLET . PIPE	30"	157'			157'										1																																			
F																																																							
P	S-76	200.201.211	1359 - 60	R	INLET . PIPE	18"	106'	106'																1																																
F																																																							
P	S-77	200.201.210	1359 - 60	L	INLET . PIPE	30"	168'			168'																	1																												Alt. B 4'x4'
F																																																						
P	S-78	200.201.211	1361 - 30	R	INLET . PIPE	18"	106'	106'																1																																
F																																																							
P	S-79	200.201.210	1361 - 30	L	INLET . PIPE	30"	416'			416'																	1																												Alt. B 4'x4'
F																																																						
P	S-80	201 . 232	1361 - 50	L	INLET . PIPE	18"	40'	40'																								1																					Ⓐ		
F																																																						
P	S-81	273	28+45	R	MES. PIPE	24"	24'											24'																											1								Ⓐ		
F			(OXBOTTOM RD.)																																																				
P	S-82	200.201.273	28-72	R	MH .PIPE. MES	30"	64'			64'																														1							1						Ⓐ		Alt. B 4'x4'
F			(OXBOTTOM RD.)																																																			
P	S-83	200.201.210	1365 - 50	L	INLET . PIPE	42"	244'					244'															1																												Alt. B 5'x4'
F																																																						
P	S-84	200.201.210	1365 - 50	R	INLET . PIPE	18"	110'	110'												1																																			
F																																																							
P	S-85	290	1366 - 16.06	L & R	CONC.																																																		
F					BOX CULV.																																																		
P	S-86	200.201.210	1367 - 98.72	L	INLET . PIPE	60"	398'								398'														1																										Alt. B 7'x4
F																																																						
P	S-87	200.201.210	1367 - 98.72	R	INLET . PIPE	18"	110'	110'														1																																	
F																																																							
P	S-88	200.201.210	1372 - 00	R	INLET . PIPE	18"	110'	[illegible]																																															
F																																																							
P	S-89	200.201.210	1372 - 00	L	INLET . PIPE	60"	266'								266'												1																												Alt. B 7'x4'
F																																																							
P	S-90	200.201.210	1374 - 70	R	INLET . PIPE	18"	[illegible]																																																
F																																																							
P	S-91	200.201.210	1374 - 70	L	INLET.PIPE	60"	[illegible]																																																Alt. B 7'x4
F																																																							
P	S-91A	232.201	23+11.83	R	INLET . PIPE	48"	[illegible]																																																[illegible]
F			[illegible]																																																			
SUBTOTALS P=PLAN QUANTITY F=FINAL QUANTITY																																																							

DATE BY

KINHEGA DR.

Wed Apr 15 11:50:54 19 YD400 F:\PLOT\SUMDR3.PRF

SUMMARY OF DRAINAGE STRUCTURES

STATE PROJ. NO. 55050-3544
SHEET NO. 19

QUAN	STR. NO.	INDEX NO.	STATION	SIDE	DESCRIPTION	SIZE	LENGTH	STORM SEWER PIPE									RCP CROSS DRAIN CLASS III	RCP SIDE DRAIN CLASS III		CURB INLETS													DITCH BOTTOM INLETS					MANHOLES						MITERED END SECTION							CLASS I CONC	STEEL	SOD		REMARKS
								RCP CLASS III												P-1		P-2		P-5	P-6	7	J-1		J-2		J-5	V	C	D	E	K		P-7		J-7		SPECIAL		CD	SD			BASIN OUTLET					TYPE VARIES	BAHIA	
								18"	24"	30"	36"	42"	48"	54"	60"	72"	42"	18"	24"	<10'	>10'	<10'	>10'	<10'	<10'	<10'	<10'	>10'	<10'	>10'	<10'	<10'	<10'	<10'	<10'	<10'	>10'	<10'	>10'	<10'	>10'	<10'	>10'	18"	18"	24"	30"	36"	48"	72"	CY	LB	SY		
P	S-121	200.201.210	1413 + 60	R	INLET . PIPE	18"	110'	110'												1																																			
F																																																							
P	S-122	200.201.210	1416 + 30	L	INLET . PIPE	24"	267'		267'											1																																			Alt. B
F																																																							
P	S-123	200.201.210	1416 + 30	R	INLET . PIPE	18"	110'	110'												1																																			
F																																																							
P	S-124	200.201.210	418 + 90	L	INLET . PIPE	24"	257'		257'											1																																			Alt. B
F																																																							
P	S-125	200 . 201	418 + 90	R	MH . PIPE	18"	110'	110'																														1																	
F																																																								
P	S-126	273	31 + 25	R	MES . PIPE	18"	63'											63'																											1								Ⓐ		
F			(KIMMER ROWE)																																																				
P	S-127	200 . 201	419 + 36	R	MH . PIPE	18"	44'	44'																														1																	
F																																																							
P	S-128	273	31 + 25	L	MES . PIPE	18"	64'											64'																											1								Ⓐ		
F			(KIMMER ROWE)																																																				
P	S-129	200.201.210	419 + 85	R	INLET . PIPE	18"	47'	47'												1																																			
F																																																							
P	S-130	200.201.210	421 + 65	L	INLET . PIPE	18"	272'	272'												1																																			
F																																																							
P	S-131	200.201.210	421 + 65	R	INLET . PIPE	18"	110'	110'												1																																			
F																																																							
P	S-132	200.201.210	424 + 40	L	INLET . PIPE	18"	272'	272'												1																																			
F																																																							
P	S-133	200.201.210	424 + 40	R	INLET . PIPE	18"	110'	110'												1																																			
F																																																							
P	S-134	201 . 232	30 + 90	R	INLET . PIPE	18"	38'	38'																									1																						Ⓔ	w/Trav. Slot (E)
F			(NORTHBROOKE)																																																				
P	S-135		DELETED																																																				
F																																																							
P	S-135A	201 . 232	30 + 90	L	INLET . PIPE	18"	13'	13'																									1																						Ⓔ	w/Trav. Slot (E)
F			(NORTHBROOKE)																																																			
P	S-135B	200 . 201	30 + 75	L	MH . PIPE	16"	38'	38'																														1																	
F			(NORTHBROOKE)																																																			
P	S-136	200 . 201	428 + 30	R	MH . PIPE	18"	93'	93'																														1																	
F																																																							
P	S-137	200 . 201	429 + 25	R	MH . PIPE	18"	96'	98'																														1																	Const on Exist 18" RCP
F																																																							
P	S-138	200.201.210	430 + 25	R	INLET . PIPE	18"	[illegible]	[illegible]												1																																			
F																																																							
P	S-139	200.201.210	430 + 25	L	INLET . PIPE	24"	37[illegible]		378'																																														
F																																																							
P	S-140	201.232.250	433 + 92.50	L	INLET.PIPE.EW	24"	136'		136'																										1																2.24			Ⓔ	w/Trav. Slots (N & S)
F																																																							
P	S-141	200.201.210	434 + 06.32	R	INLET . PIPE	18"	110'	110'														1																																	
F																																																							
P	S-142	200.201.210	434 + 06.32	L	INLET . PIPE	24"	237'		237'													1																																	
F																																																							
P	S-143	250 . 281	31 + 00	R	EW . PIPE	24"	30'		30'																																										2.24			Ⓔ	
F			(OCLEON DR.)																																																				
P	S-144	200 . 201	30 + 70	R	MH . PIPE	24"	164'		164'																													1																	
F			(OCLEON DR.)																																																			
P	S-145	250 . 281	31 + 00	L	EW . PIPE	24	30'		30																																										2.24			Ⓔ	
F			(OCLEON DR.)																																																				
P	S-146	200 . 201	30 + 70	L	MH . PIPE	24"	46		46'																													1																	
F			(OCLEON DR.)																																																			
P	S-147	200.201.210	436 + 45.83	R	INLET . PIPE	18"	[illegible]	[illegible]																																															
F																																																							
P	S-148	[illegible].01.210	436 + 45.83	L	INLET . PIPE	30"	374'			374'																																													Alt. B 4'x4'
F																																																							
P	S-149	200.201.210	440 + 25	R	INLET . PIPE	16	[illegible]	[illegible]																																															
F																																																							
P	S-150	200.201.210	440 + 25	L	INLET . PIPE	30"	[illegible]			[illegible]																																													Alt. B [illegible]
F																																																						
P	S-150A	201 . 232	27 + 43.[illegible]	[illegible]	INLET . PIPE	[illegible]	[illegible]																																														Ⓐ		
F			(N CHURCH)																																																			
P	S-150B	200.201.210	441 + [illegible]	[illegible]	INLET . PIPE	[illegible]	[illegible]																																																Alt. [illegible]
F																																																							
P	S-151	201 . 232	30 + 60	[illegible]	INLET . PIPE	[illegible]	[illegible]																																														Ⓐ		w/Trav. Slot (E)
F			(LOMA FAR[illegible] RD.)																																																			
SUBTOTALS	P=PLAN QUANTITY								[illegible]	67'																	2						3					7							2						6.72		Ⓐ	[illegible]	
	F=FINAL QUANTITY																																																				

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

3-97

ECO RIVER

FLORIDA DEPARTMENT OF TRANSPORTATION

S.R. [illegible] [illegible]SVILLE RD.: WOODBINE DR. TO KINHEGA DR.

[illegible] OF DRAINAGE STRUCTURES

SUMMARY OF DRAINAGE STRUCTURES

STATE PROJ. NO.	SHEET NO.
55050-3544	21

QUANT	STR. NO.	INDEX NO.	STATION	SIDE	DESCRIPTION	SIZE	LENGTH	STORM SEWER PIPE									RCP CROSS DRAIN CLASS III	RCP SIDE DRAIN CLASS III		CURB INLETS													DITCH BOTTOM INLETS					MANHOLES						MITERED END SECTION							CLASS I CONC	STEEL	SOD		REMARKS
								RCP CLASS III												P-1		P-2		P-5	P-6	7	J-1		J-2		J-5	V	C	D	E	K		P-7		J-7		SPECIAL		CD	SD			BASIN OUTLET					TYPE VARIES	BAHIA	
								18"	24"	30"	36"	42"	48"	54"	60"	72"	42"	18"	24"	<10'	>10'	<10'	>10'	<10'	<10'	<10'	<10'	>10'	<10'	>10'	<10'	<10'	<10'	<10'	<10'	<10'	>10'	<10'	>10'	<10'	>10'	<10'	>10'	18"	18"	24"	30"	36"	48"	72"	CY	LB	SY		
P	S-174A	200.201.261	470 + 81.25	L	MH.PIPE.UEW	30"	16'			16'																																1									3.44	140		⦿	Const U-EW w/ Baffles
F																																																							
P	S-174A	200 . 201	470 + 81.25	L	PIPE	42"	31'					31'																																											
F																																																							
P			(℄ SWMF 5)																																																				
F																																																							
P	S-174B	200 . 201	32 - 84.28	℄	MH . PIPE	42"	35'					35'																												1															Alt. B 5'x5'
F																																																							
P	S-174C	201 . 232	32 - 74.88	℄	INLET . PIPE	42"	7'					7'																						1•																				⦿	• Alt. B 5'x5'. Type DJ
F																																																							
P	S-174D	200 . 201	32 - 73	R	MH . PIPE	42"	127'					127'																												1															Alt. B 5'x5'
F																																																							
P	S-174E	200 . 201	34 - 00	R	MH . PIPE	42"	54'					54'																												1															Alt. B 5'x5'
F																																																							
P	S-174F	200.201.250	34 - 17.68	R	MH.PIPE.EW	48"	6'						6'																											1											8.15			⦿	Alt. B 6'x6'
F																																																							
P	S-174G	200 . 201	34 + 89.37	L	MH . PIPE	24"	222'		222'																													1																	
F																																																							
P	S-174H	200 . 201	35 - 08.63	L	MH . PIPE	24"	63'		63'																													1																	
F																																																							
P	S-174I	200 . 201	34 - 75.95	L	MH . PIPE	24"	49'		49'																													1																	
F																																																							
P	S-174J	201.232.261	34 + 36.68	L	INLET.PIPE.UEW	24"	61'		61'																									1•																	2.52	108		⦿	• Special Inlet
F																																																							Const U-EW w/ Baffles
P			(SR 61)																																																				
F																																																							
P	S-175	200.201.	471 + 66.91	L & R	INLET.PIPE.EW	42"	140'										140'																	1•																	6.33		Ⓐ		• Special Inlet, Type DJ
F		232 & 250																																																					Alt. B 5'x5'
P	S-176	200.201.210	474 + 71	L	INLET . PIPE	24"	387'		387'											1																																			
F																																																							
P	S-176A	200.201.212	474 + 71	R	INLET . PIPE	18"	58'	58'																		1																													
F																																																							
P	S-177	200.201.210	474 - 71	R	INLET . PIPE	18"	35'	35'												1																																			
F																																																							
P	S-178	200.201.210	476 - 65.06	L	INLET . PIPE	24"	190'		190'											1																																			
F																																																							
P	S-179	200.201.210	476 - 65.06	R	INLET . PIPE	18"	93'	93'												1																																			
F																																																							
P	S-180	201. 232	477 + 00	R	INLET . PIPE	18"	34'	34'																											1																		Ⓐ		w/ Trav. Slots (N & S)
F																																																							
P	S-181		DELETED																																																				
F																																																							
P	S-182		DELETED																																																				
F																																																							
P	S-183		DELETED																																																				
F																																																							
P	S-184		DELETED																																																				
F																																																							
P	S-185		DELETED																																																				
F																																																							
P			BANNERMAN ROAD																																																				
F																																																							
P	S-186	200.201.210	229 - 25.00	L	INLET . PIPE	18"	271'	271'												1																																			
F																																																							
P	S-186A	200.201.210	229 - 25.00	R	INLET . PIPE	18"	58'	58'												1																																			
F																																																							
P	S-187	200.201.210	231 - 99.00	R	INLET . PIPE	18"	80'	80														1																																	
F																																																							
P	S-188	200.201.210	231 - 99.00	L	INLET . PIPE	18"	250'	250'																																															
F																																																							
P	S-189	200.201.210	234 + 3[illegible]	L	INLET . PIPE	24"	298'		298'																																														
F																																																							
P	S-190	200.201.210	234 - 32.00	R	INLET . PIPE	18"	[illegible]	[illegible]																																															
F																																																							
P	S-191	200.201	[illegible]	L	MH . PIPE	24"	[illegible]																																																
F																																																							
P	S-192	200.201.2[illegible]0	240 + [illegible]		INLET . [illegible]	24"	[illegible]																																																
F																																																							
P	S-193	200.201.210	240 - [illegible]	R	INLET . PIPE	18"	[illegible]																																																
F																																																							

SUBTOTALS P=PLAN QUANTITY F=FINAL QUANTITY [illegible]

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
4/14/98	LHS	MOVED S-1[illegible] [illegible] ADDED S-17[illegible]			

ECDRIVER
CONSULTING ENGINEERS

FLORIDA DEPARTMENT OF TRANSPORTATION

THOMASVILLE RD. / WOODBINE DR. TO KINHEGA DR.

SUMMARY OF DRAINAGE STRUCTURES

Thu Apr 16 14:42:50 19 TD400 F:\PLOT\SUMDR7.PRF

GENERAL NOTES

1. **GENERAL SPECIFICATIONS:**
FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 1991 EDITION AND SUPPLEMENTS THERETO.

2. **DESIGN SPECIFICATIONS:**
FLORIDA DEPARTMENT OF TRANSPORTATION, STRUCTURES DESIGN GUIDELINES, 1994 (TOPIC NO. 625-020-150-a) REVISED 4/95, EXCEPTING THE USE OF S.I. UNITS. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES (1992 EDITION) AND APPLICABLE INTERIMS THRU 1994.

3. **DESIGN LOADS:**
LIVE LOAD: HS 20-44, MODIFIED FOR MILITARY LOADING AS REQUIRED.
FUTURE WEARING SURFACE ALLOWANCE - 15 LBS. PER SQ. FT.
STAY-IN-PLACE FORM ALLOWANCE - 20 LBS. PER SQ. FT. OVER THE PROJECTED PLAN AREA OF THE METAL FORMS, FOR THE UNIT WEIGHT OF METAL FORMS AND CONCRETE REQUIRED TO FILL THE FORM FLUTES.
TRAFFIC RAILING BARRIER - 418 LBS. PER LIN. FT.
PRESTRESSED BEAMS DESIGNED FOR ADDITIONAL 5% INCREASE IN LIVE LOAD.
SEISMIC PERFORMANCE CATEGORY B.

DISTRIBUTION VALUES	INTERIOR BEAMS	EXTERIOR BEAMS
LIVE LOAD (WHEEL LOAD AS FUNCTION OF BEAM SPACING, S)	S/5.5	S/5.5
DEAD LOAD (LBS. PER FT.) TRAFFIC BARRIER	44	353

4. **EARTHQUAKE**
DESIGN CONFORMS WITH THE STRUCTURES DESIGN GUIDELINES REQUIREMENTS FOR SEISMIC ACCELERATION COEFFICIENT OF 0.035. SEISMIC DESIGN IS PER AASHTO SEISMIC PERFORMANCE CATEGORY A EXCEPT THAT SEISMIC FORCE HAS BEEN CALCULATED PER AASHTO SEISMIC PERFORMANCE CATEGORY B.

5. **DESIGN METHOD:**
LOAD FACTOR DESIGN: SITE CAST REINFORCED CONCRETE. PRESTRESSED BEAMS HAVE BEEN CHECKED FOR ULTIMATE STRENGTH AND SELECTION OF SHEAR REINFORCEMENT.
SERVICE LOAD DESIGN: LIVE LOAD PLUS IMPACT DEFLECTION, REINFORCEMENT FATIGUE, FLEXURAL CRACKING (Z FACTOR) AND PILE CAPACITY.
PRESTRESSED CONCRETE BEAM SELECTION OF PRESTRESS FORCE

6. **MATERIALS AND ALLOWABLE STRESSES:**
A) ALLOWABLE STRESSES ARE IN ACCORDANCE WITH THE ABOVE DESIGN SPECIFICATIONS FOR ALL MATERIALS SHOWN ON PLANS.
B) CONCRETE:

	MINIMUM 28-DAY COMPRESSIVE STRENGTH (PSI)	LOCATION OF CONCRETE IN STRUCTURE
CLASS II	f'c = 3,400	CAST-IN-PLACE SUPERSTRUCTURE & BARRIER POST
CLASS II (BRIDGE DECK)	f'c = 4,500	CAST-IN-PLACE BRIDGE DECK
CLASS IV	f'c = 5,500	CAST-IN-PLACE SUBSTRUCTURE
CLASS V (SPECIAL)	f'c = 6,000	PRESTRESSED BEAMS PRECAST PRESTRESSED CONCRETE PILES

C) REINFORCING STEEL:
ALL REINFORCING STEEL SHALL BE GRADE 60 (Fy = 60 ksi).
REINFORCING STEEL SHALL BE ASTM A615 AND UNCOATED (BLACK).
D) PRESTRESSING STRANDS: 7-WIRE LOW RELAXATION, GRADE 270.
E) ELASTOMERIC BEARINGS: DUROMETER 50 (U.O.N.). THE CONTRACTOR SHALL SUPPLY COMPOSITE NEOPRENE BEARING PADS.

7. **CONCRETE COVER:**
CONCRETE COVERS SHOWN IN THE PLANS DO NOT INCLUDE PLACEMENT AND FABRICATION TOLERANCES UNLESS SHOWN AS "MINIMUM COVER". SEE FDOT STANDARD SPECIFICATIONS FOR ALLOWABLE TOLERANCES.
SUPERSTRUCTURE (CIP): 2" TYP.
SUBSTRUCTURE: 3" TYP., 4" CAST AGAINST EARTH AND SURFACES IN WATER.
PRECAST PRESTRESSED PILING: 3"

8. **ENVIRONMENTAL CLASSIFICATION:**
LOCATION: INLAND
SUBSTRUCTURE: MODERATELY AGGRESSIVE (SOIL - pH - 6.2)
SUPERSTRUCTURE: SLIGHTLY AGGRESSIVE

9. **CONCRETE SURFACE FINISH:**
A CLASS 5 APPLIED FINISH COATING SHALL BE APPLIED TO THE FOLLOWING EXPOSED CONCRETE SURFACES ON EACH SIDE OF BRIDGES (SEE DETAIL). THE INSIDE, OUTSIDE AND TOP OF TRAFFIC RAILING BARRIERS AND WING POSTS, THE COPING AREAS BELOW BARRIERS, INCLUDING END BENT WINGWALLS.

10. **MISCELLANEOUS STRUCTURAL STEEL:**
ALL MISCELLANEOUS STRUCTURAL STEEL SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123. THE SEISMIC DOWEL BARS SHALL BE ASTM A615 PLAIN REINFORCING BARS (NOT DEFORMED). THE SEISMIC DOWEL SLEEVES SHALL BE ASTM A36 OR ASTM A53, GRADE B.

11. **PILE INSTALLATION:**
SCOUR HAS BEEN CONSIDERED IN THE DESIGN WITH SCOUR ELEVATIONS SHOWN IN THE PILE INSTALLATION TABLE ON SHEET No. B-11. UNDER NO CIRCUMSTANCE SHALL THE PILES BE INSTALLED TO FINAL TIP ELEVATIONS ABOVE THE MINIMUM TIP ELEVATION SHOWN IN THE TABLE. ALL NEW PILES ARE 24" SQUARE PRESTRESSED CONCRETE AND SHALL BE DRIVEN TO THE REQUIRED DRIVING RESISTANCE AS SHOWN ON SHEET No. B-11.

12. **SCREEDING DECK SLABS:**
THE RIDING SURFACE OF THE BRIDGE DECK SHALL BE SCREEDED TO FINISH GRADE WITH NO ALLOWANCE FOR PERMANENT CAMBER. DECK SLABS SHALL BE SCREEDED LONGITUDINALLY BETWEEN BULKHEADS UNLESS OTHERWISE DIRECTED IN WRITING BY THE ENGINEER.

13. **BRIDGE FLOOR GROOVING:**
THE ENTIRE BRIDGE DECK INCLUDING APPROACH SLABS SHALL BE GROOVED IN ACCORDANCE WITH SPECIFICATION SECTION 400-15.2.5 PRIOR TO INSTALLATION OF EXPANSION JOINT.

14. **REMOVAL OF EXISTING BRIDGE:**
THE EXISTING BRIDGE IS 34'-1" WIDE AND CONSISTS OF SIX SPANS, 20' LONG FOR AN OVERALL LENGTH OF 120'. THE APPROXIMATE PLAN AREA OF STRUCTURE TO BE REMOVED IS 4090 SF. THE EXISTING SUBSTRUCTURE CONSISTS OF 7 CONCRETE BENT CAPS ON 14" PRECAST CONCRETE PILES (5 PILES PER END BENT, 4 PILES PER BENT). THE EXISTING SUPERSTRUCTURE CONSISTS OF A SITE-CAST CONCRETE FLAT SLAB.
THE EXISTING BRIDGE STRUCTURE SHALL BE REMOVED IN ITS ENTIRETY INCLUDING BUT NOT LIMITED TO THE EXISTING BRIDGE SUBSTRUCTURE, SUPERSTRUCTURE, APPROACH SLABS, GUARDRAIL AND SLOPE PROTECTION. EXISTING PILES SHALL BE COMPLETELY EXTRACTED OR CUT OFF A MINIMUM OF TWO FEET BELOW THE PROPOSED GROUND LINE. DISPOSAL OF ALL MATERIAL FROM THE EXISTING BRIDGE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

15. **UTILITIES:**
SEE ALSO UTILITY PLANS FOR THE LOCATION OF EXISTING UTILITIES AND FOR ADDITIONAL DETAILS OF PROPOSED UTILITIES TO BE SUPPORTED ON THE BRIDGE. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION OR CONSTRUCTION.

16. **DATUM:**
ALL ELEVATIONS ARE REFERRED TO NATIONAL GEODETIC VERTICADATUM (NGVD) OF 1929.

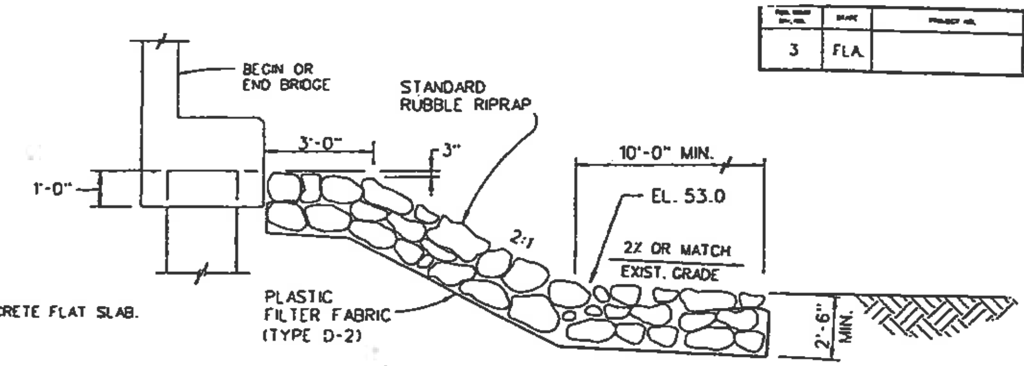
17. **MISCELLANEOUS:**
A) PROVIDE ¾" CHAMFERS ON ALL EXPOSED EDGES EXCEPT AS OTHERWISE NOTED.
B) CONSTRUCTION JOINTS WILL BE PERMITTED ONLY AT LOCATION INDICATED ON PLANS. ADDITIONAL CONSTRUCTION JOINTS OR ALTERATIONS TO THOSE SHOWN SHALL REQUIRE APPROVAL OF THE ENGINEER.
C) ALL DIMENSIONS PERTAINING TO THE LOCATION OF REINFORCING ARE TO THE CENTERLINE OF BAR EXCEPT WHERE THE COVER DIMENSION IS SHOWN TO FACE OF CONCRETE.
D) ALL DIMENSIONS IN THE PLANS ARE MEASURED HORIZONTALLY OR VERTICALLY, UNLESS NOTED OTHERWISE. ALL DIMENSIONS AND JOINT OPENINGS ARE MEASURED AT NORMAL TEMPERATURES OF 70° F.

18. **TELEPHONE CONDUIT IN TRAFFIC RAILING BARRIER (NORTH SIDE ONLY)**
THE CONTRACTOR SHALL INSTALL 2-2" TELEPHONE CONDUITS IN THE TRAFFIC RAILING BARRIER ON THE NORTH SIDE OF THE STRUCTURE AS SHOWN IN THE PLANS. THE UTILITY OWNER SHALL FURNISH AND DELIVER THE CONDUITS, FITTINGS AND FLEXIBLE EXPANSION COUPLERS TO THE PROJECT SITE. ONLY MATERIALS PROVIDED BY THE UTILITY AND APPROVED BY THE DEPARTMENT SHALL BE INSTALLED BY THE CONTRACTOR. FLEXIBLE EXPANSION COUPLERS SHALL BE PROVIDED AT THE BRIDGE ENDS.
FOR UTILITY CONDUIT DETAILS, SEE SHEET NO. B-6.

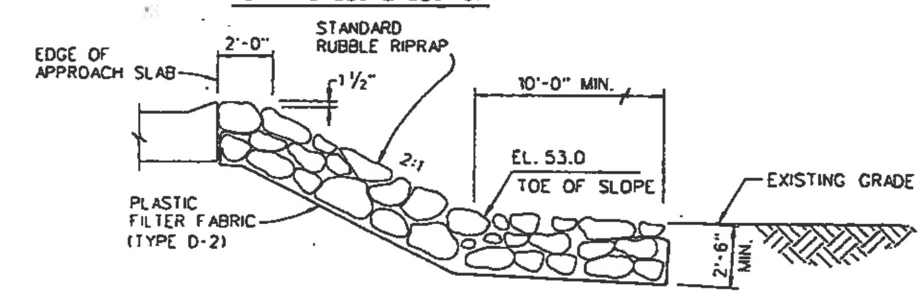
19. **PROVISIONS FOR FUTURE JACKING (FOR BEARING PAD REPLACEMENT):**
TOTAL JACKING FORCE SHOWN INCLUDES THE DEAD LOAD AND THE MAXIMUM LIVE LOAD PLUS IMPACT REACTION WITH THE TRAFFIC CENTERED WITHIN THEIR DESIGNATED LANES
JACKING SHALL OCCUR BETWEEN BOTTOM OF CONCRETE DIAPHRAGMS AND TOP OF BENT. JACK SHALL BE PLACED ADJACENT TO BEAMS. DIFFERENTIAL DISPLACEMENT BETWEEN BEAMS WILL NOT BE PERMITTED.
SEE SHEET No. B-27 FOR FUTURE BEARING PAD REPLACEMENT DETAILS.

PAY ITEM NOTES

A) FOR SUMMARY OF BRIDGE PAY ITEMS, SEE PRINT OF COMPUTER (CES) OUTPUT.
B) PAYMENT FOR INCIDENTAL ITEMS NOT SPECIFICALLY COVERED IN THE INDIVIDUAL BID ITEMS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE PAY ITEMS.
C) FOR TRAFFIC CONTROL NOTES, SEE ROADWAY PLANS.
D) COST OF FURNISHING AND INSTALLING COMPOSITE NEOPRENE BEARING PADS AS SHOWN ON SHEET No. B-5 SHALL BE PAID FOR UNDER PAY ITEM No. 400-147 COMPOSITE NEOPRENE PADS. 30 NEOPRENE BEARING PADS FOR A TOTAL OF 3.7 CU. FT. SHALL BE PROVIDED BY THE CONTRACTOR
E) THE TOTAL PLAN AREA OF APPROACH SLABS REQUIRED IS 205 S.Y. THE AREA OF CONCRETE APPROACH SLABS TO RECEIVE BRIDGE FLOOR GROOVING IS 196 S.Y. AND HAS BEEN INCLUDED IN PAY ITEM NO. 400-7. SEE ROADWAY PLANS AND SHEET No. B-19 FOR DETAILS.
F) THE COST OF ALL OPERATIONS RELATED TO REMOVAL AND DISPOSAL OF THE EXISTING BRIDGE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR PAY ITEM No. 110-3 (REMOVAL OF EXISTING STRUCTURES)
G) APPROACH SLAB IS TO BE PAID UNDER PAY ITEM NO. 360-1 REFER TO ROADWAY PLANS PAY ITEMS.
H) COST OF FURNISHING AND INSTALLING EXPANSION JOINTS SHALL BE INCLUDED IN THE COST OF SUPERSTRUCTURE CONCRETE PAY ITEM 400-2-4.
I) COST OF BRIDGE FLOOR GROOVING SHALL BE PAID FOR UNDER PAY ITEM No. 400-7.
J) THE COST FOR THE INSTALLATION OF THE UTILITY CONDUITS SHALL BE INCLUDED IN THE PAY ITEM No 400-148-1 TRAFFIC RAILING BARRIER
K) SEISMIC DOWEL BARS AND SEISMIC DOWEL SLEEVES SHALL BE PAID FOR UNDER PAY ITEM No 460-2-15, STRUCTURAL STEEL (MISCELLANEOUS) (APPROXIMATELY 440 LBS.)



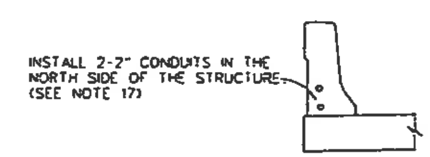
FORWARD SLOPE SECTION



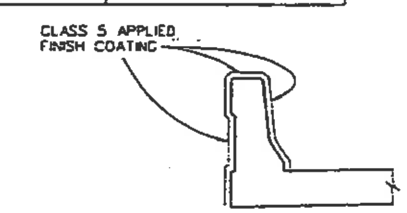
SIDE SLOPE SECTION

RUBBLE RIPRAP DETAILS

STANDARD RUBBLE RIPRAP CHARACTERISTICS				
SPECIFIC GRAVITY	Wmin (lbs)	W50 (lbs)	Wmax (lbs)	BLANKET THICKNESS (T) (ft)
2.3 - UP	60	300	700	2.5



TELEPHONE CONDUIT DETAIL



SURFACE FINISH DETAIL

LEGEND

I.F. - INNER FACE
O.F. - OUTER FACE
E.F. - EACH FACE
W.P. - WORKING POINT
U.O.N - UNLESS OTHERWISE NOTED

INDEX OF SHEETS

EXISTING BRIDGE PLANS

W.P.I. No. 3114193

FINAL SUBMITTAL

REVISIONS					
Date	By	Description	Date	By	Description

	Names	Dates
Drawn by	R.S.H.	4-96
Checked by	L.Z.	4-96
Designed by	L.Z.	4-96
Checked by	R.W.W.	4-96
Approved by	SCOTT JONES, P.E.	

ENGINEER OF RECORD:
PITMAN-HARTENSTEIN & ASSOC. INC ENGINEERS
7120 ... EXPRESSWAY JACKSONVILLE, FLORIDA

LOGO: SEAL:

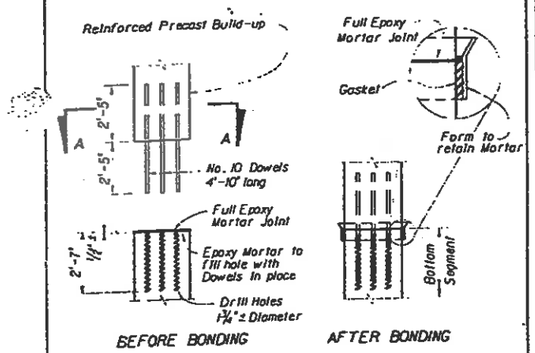
FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

SHEET TITLE: GENERAL NOTES AND INDEX OF SHEETS

PROJECT NAME: S.R. 10 (U.S. 90) OVER LITTLE REEDY CREEK (BRIDGE NO. 520141)

ROAD NO.	COUNTY	PROJECT NO.
S.R. 10	HOLMES	52010-3527

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			B-1



NOTE: Dowels shown for 24" Pile. See Sect. A-A for spacing and number of Dowels for each Pile.

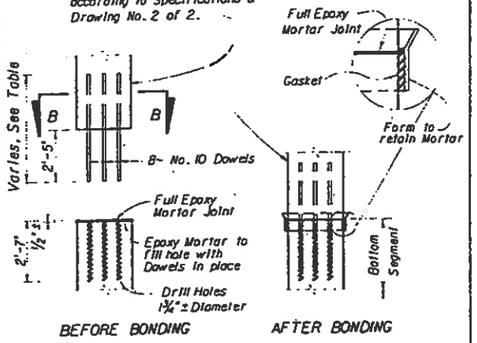
REINFORCED PRECAST SPLICES
(Extensions 2" Min. but less than 5') (Not Drivable)

NOTE: The reinforced precast Build-up shall conform with the Specifications and Section A-A. Spiral ties pitch shall be 6" Max.

TABLE OF BONDED SPLICE DATA		
Drivable Splice	Min. Splice Length	No. 10 Dowel Length
YES	10'-0"	7'-5"
NO *	5'-0"	4'-10"

* For Splices less than 5'-0" (not Drivable), use the Reinforced Precast Splice.

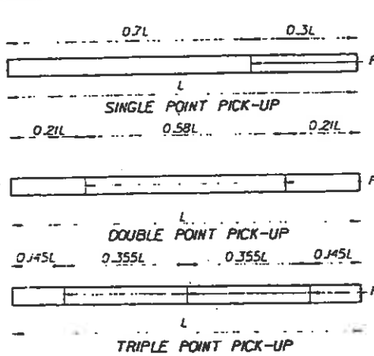
Prestressed Precast Build-up according to Specifications & Drawing No. 2 of 2.



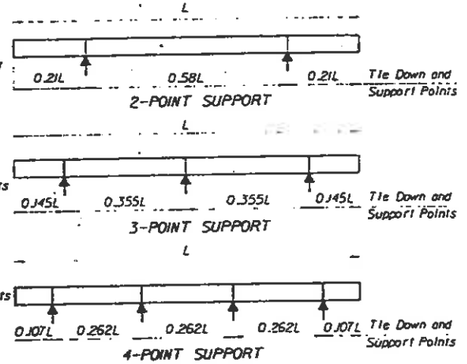
NOTE: Dowels shown for 24" Pile. See SECTION B-B for spacing & Number of Dowels for each Pile.

PRESTRESSED PRECAST SPLICES
(Extensions 5' or longer)

DETAILS FOR REINFORCED PRECAST & PRESTRESSED PRECAST PILE SPLICES

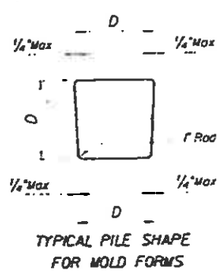


PILE PICK-UP DETAILS

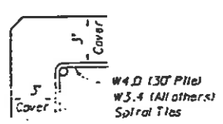


STORAGE AND TRANSPORTATION SUPPORT DETAILS

PILE SIZE	MAX. LENGTH "L" FOR PICK-UP		
	SINGLE POINT	DOUBLE POINT	TRIPLE POINT
12"	50'	70'	L > 70'
14"	55'	75'	L > 75'
18"	60'	90'	L > 90'
20"	65'	95'	L > 95'
24"	70'	100'	L > 100'
30"	90'	125'	L > 125'

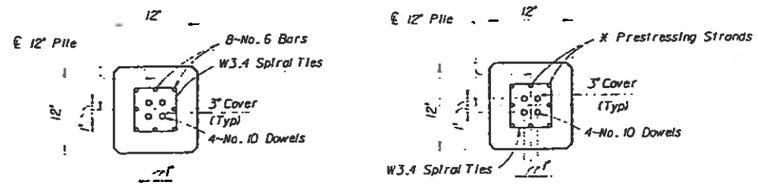


TYPICAL PILE SHAPE FOR MOLD FORMS

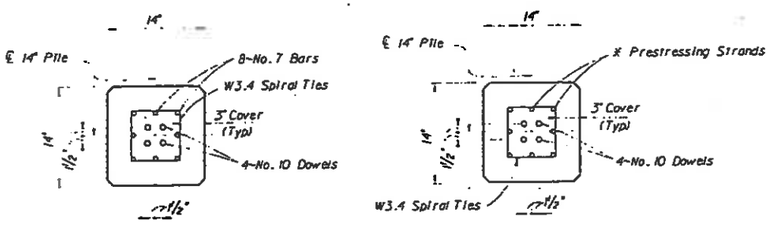


TYPICAL DETAIL SHOWING COVER DIMENSION

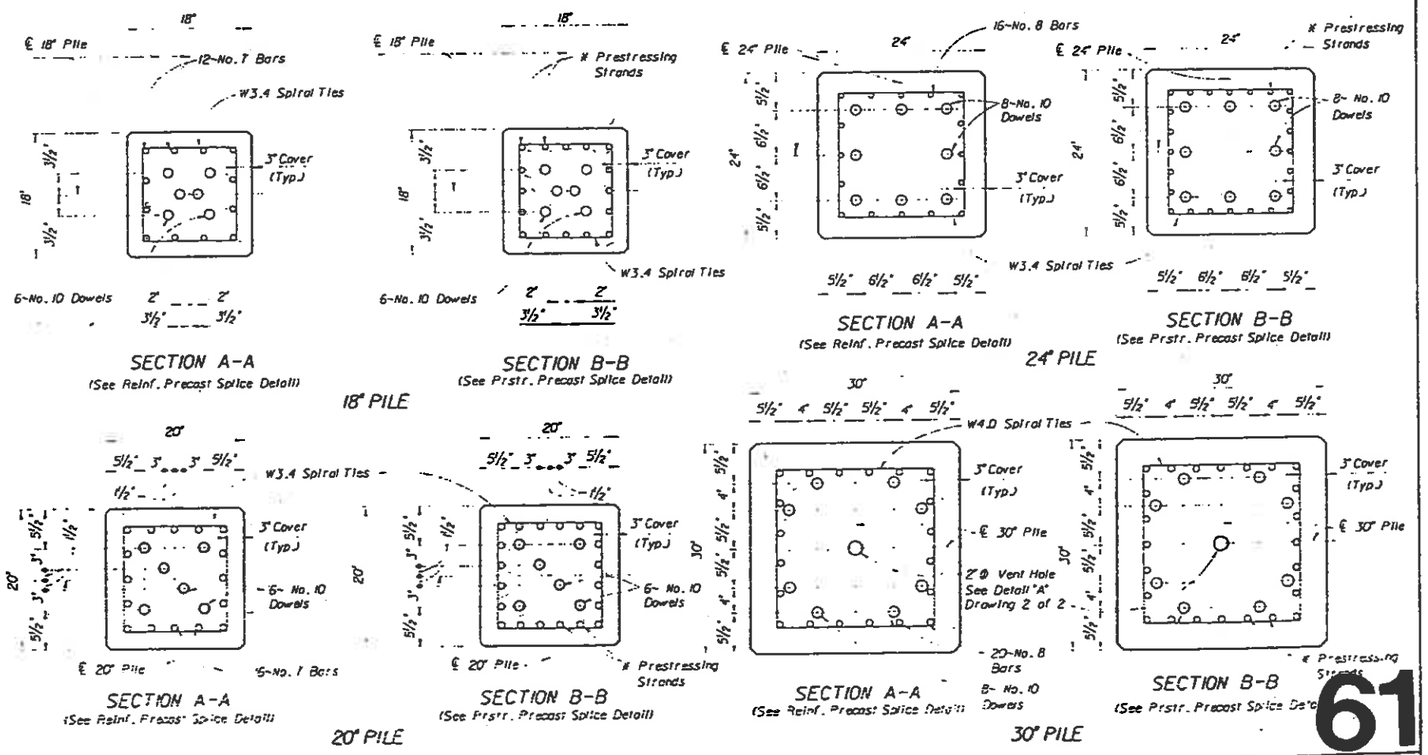
* For actual prestressing strand pattern, see Drawing 2 of 2.



12" PILE



14" PILE



3	FLA.			B-2

PILE NOTES

SPIRAL TIES: Each wrap of spirals shall be tied to at least two corner strands or bars. One turn required for spiral splices. Spirals shall be manufactured from cold-drawn steel wire meeting the requirements of ASTM A 82.

PILE CUT OFF: Piles required to be cut off shall be sawcut at the pile cut off elevation shown on the plans with an abrasive saw. Unless otherwise noted on the plans, the cut shall be made to the depth into the pile necessary to cleanly cut through the prestressing strands.

CONCRETE CLASS: Concrete for all piles shall be Class V (Special). Class V (Special) Concrete shall conform to all requirements for Class V Concrete except for the 28-day strength as noted below.

CONCRETE STRENGTH: The cylinder strength shall be 6,000 p.s.i. minimum at 28 days and 4,000 p.s.i. minimum at transfer of the Prestressing Force.

SPLICED PILES: Piles may be spliced in accordance with Section 455-5.12 of the standard specifications. Precast buildups shall be prestressed or reinforced according to pile details for the "head" section of the pile shown on this Standard. Drivable spliced piles may be driven after splice is two days old.

PICK-UP POINTS: Piles shall be marked at the pick-up points to indicate proper points for attaching handling lines.

STORAGE AND TRANSPORTATION: Piles shall be supported on adequate dunnage both in the precasting yard and at the jobsite and shall be supported and tied down during transit in accordance with the following schedule:

Type Pickup Required by Pile Length	Type Storage and Transportation Support Detail
Single or Double	2, 3 or 4 Point Support
Triple	3 or 4 Point Support

REINFORCING STEEL: All Reinforcing Steel except spiral ties shall be ASTM A 615, Grade 60.

STRAND NOMENCLATURE:
S.R. = Stress Relieved Strand
L.R.S. = Low-Relaxation Strand
1/2" ø (Spec.): A_s = 0.167 in²
9/16" ø (Spec.): A_s = 0.196 in²

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REVISIONS									
Date	By	Description		No.	Description				
			94R						

	TCA	1-91
	AJG	5-92
	NICHOLS/AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

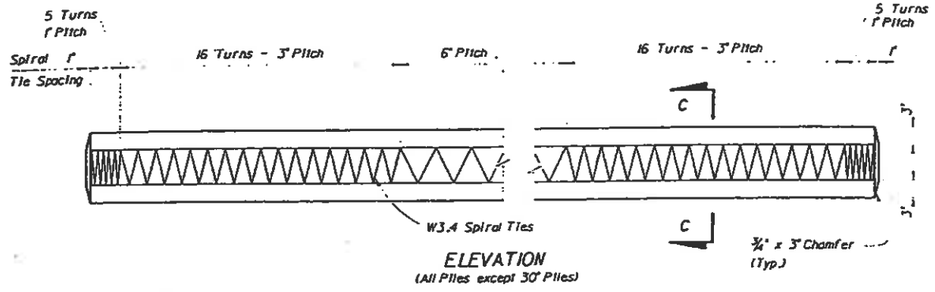
S.R. No.	COUNTY	FINANCIAL PROJECT ID
S.R. 10	HOLMES	52010-3527

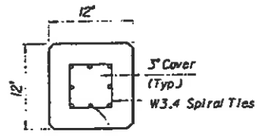
12", 14", 18", 20", 24", AND 30" PRESTRESSED CONCRETE PILES

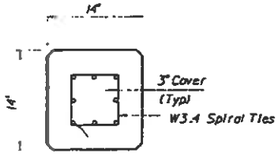
S.R. 10 (U.S. 90) OVER LITTLE REEDY CREEK

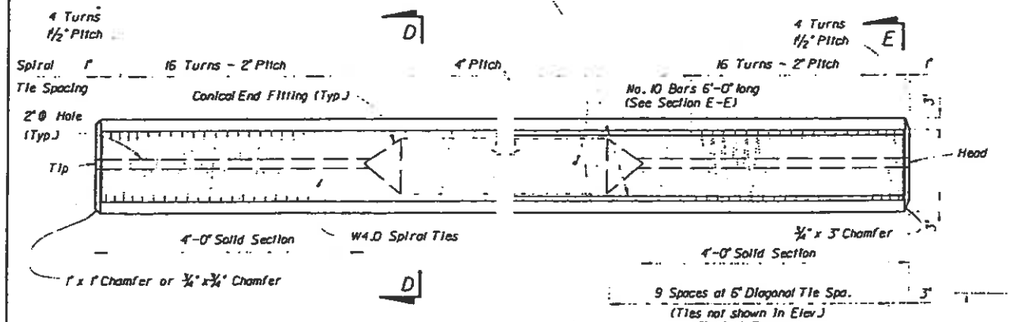
1 of 2

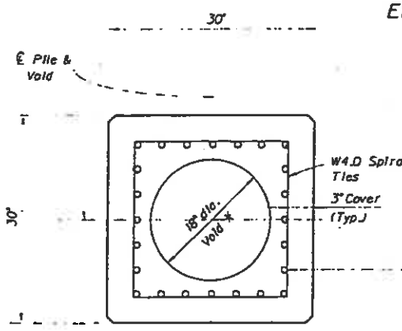
600

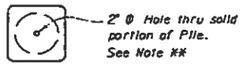


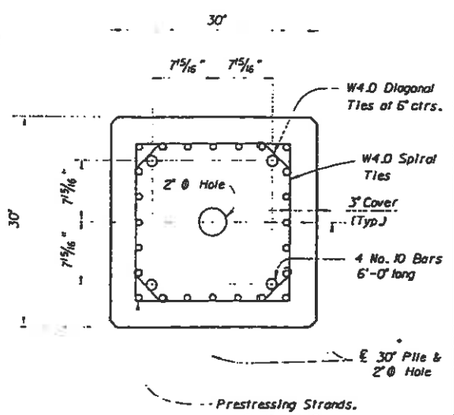


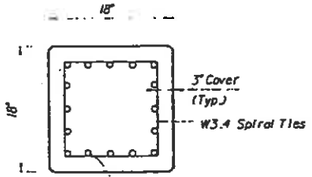


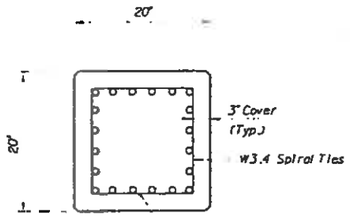


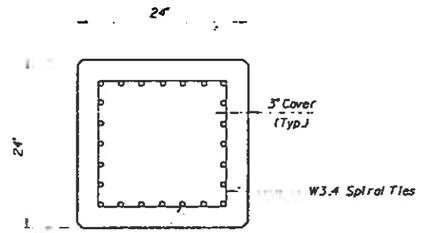












3	FLA.			B-3

ELEVATION
(All Piles except 30" Piles)

ALTERNATE STRAND PATTERN***

8 ~ 7/16"Ø. Grade 270 L.R.S. at 21,700# each
8 ~ 1/2"Ø. Grade 250 S.R. at 24,100# each
12 ~ 3/8"Ø. Grade 270 L.R.S. at 14,800# each
12 ~ 3/8"Ø. Grade 270 S.R. at 15,600# each

SECTION C-C
12" PILE

ALTERNATE STRAND PATTERN***

8 ~ 1/2"Ø. Grade 270 (Spec.)L.R.S. at 30,000# each
8 ~ 1/2"Ø. Grade 270 (Spec.)S.R. at 31,570# each
8 ~ 1/2"Ø. Grade 270 L.R.S. at 29,500# each
12 ~ 7/16"Ø. Grade 270 S.R. at 21,200# each
12 ~ 1/2"Ø. Grade 250 S.R. at 22,600# each
16 ~ 3/8"Ø. Grade 270 S.R. at 16,070# each

SECTION C-C
14" PILE

Provide one (1) vent hole, 3/4" in diameter (to ℄ Pile), on two (2) opposite faces of the pile.

ELEVATION
(30" Piles)

ALTERNATE STRAND PATTERN ***

20 ~ 9/16"Ø. Grade 270 (Spec.)L.R.S. at 38,600# each
20 ~ 9/16"Ø. Grade 270 L.R.S. at 38,880# each
24 ~ 1/2"Ø. Grade 270 (Spec.)L.R.S. at 32,300# each
24 ~ 9/16"Ø. Grade 270 S.R. at 35,000# each
24 ~ 9/16"Ø. Grade 270 (Spec.)S.R. at 35,200# each
28 ~ 1/2"Ø. Grade 270 L.R.S. at 28,100# each
28 ~ 1/2"Ø. Grade 270 (Spec.)S.R. at 30,200# each

*
Omit Void at Ends, see Elevation View

SECTION D-D
30" PILE

DETAIL "A"

SECTION E-E
30" PILE

** NOTE:
The 18" Ø Void in the pile shall be positively vented to water or air after the final pile installation. If the 3/4" Ø vents are included in the pile cut-off section, two (2) new holes, 3/4" in diameter, shall be drilled on two (2) opposite faces of the pile below the bottom of substructure elevation. If the pile void can not be vented directly to water or air, then venting shall be provided by the use of a 1" Ø P.V.C. conduit through the 2" Ø hole(s) or the the 18" Ø void to the outside. This might involve venting through a substructure cap or column. Voids between segments of spliced piles shall be connected by 2" Ø hole(s). See Detail "A".

ALTERNATE STRAND PATTERN***

12 ~ 1/2"Ø. Grade 270 (Spec.) L.R.S. at 32,400# each
12 ~ 9/16"Ø. Grade 270 S.R. at 35,100# each
16 ~ 1/2"Ø. Grade 270 S.R. at 26,800# each
20 ~ 7/16"Ø. Grade 270 L.R.S. at 20,000# each
20 ~ 7/16"Ø. Grade 270 S.R. at 21,100# each
24 ~ 3/8"Ø. Grade 270 L.R.S. at 16,300# each

SECTION C-C
18" PILE

ALTERNATE STRAND PATTERN***

16 ~ 1/2"Ø. Grade 270 L.R.S. at 30,000# each
16 ~ 1/2"Ø. Grade 270 (Spec.) S.R. at 31,570# each
20 ~ 1/2"Ø. Grade 270 S.R. at 26,500# each
24 ~ 7/16"Ø. Grade 270 L.R.S. at 20,500# each
24 ~ 7/16"Ø. Grade 270 S.R. at 21,740# each

SECTION C-C
20" PILE

ALTERNATE STRAND PATTERN***

20 ~ 1/2"Ø. Grade 270 (Spec.)L.R.S. at 33,820# each
20 ~ 9/16"Ø. Grade 270. S.R. 270 at 36,290# each
20 ~ 9/16"Ø. Grade 270 (Spec.)S.R. at 37,050# each
24 ~ 1/2"Ø. Grade 270 L.P.S. at 29,000# each
24 ~ 1/2"Ø. Grade 270 (Spec.)S.R. at 31,570# each

SECTION C-C
24" PILE

*** NOTE:
Any of the given Alternate Strand Patterns may be utilized. The strands shall be located as follows : place one strand at each corner and place the remaining strands equally spaced between the corner strands.
The Total strand pattern shall be concentric with the nominal concrete section of the pile.

NOTE:
CONTRACTOR OPTION: The 30" pile may be cast SOLID by omitting the 18" void, the 2" holes, and the 3/4" vent holes. In this event, the Contractor shall submit for approval calculations and a proposed strand configuration that provide net prestressing after losses equal to 1000 psi.

REVISIONS

94R

	TGA	1-91
	AJG	5-91
	NICHOLS/AJG	

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

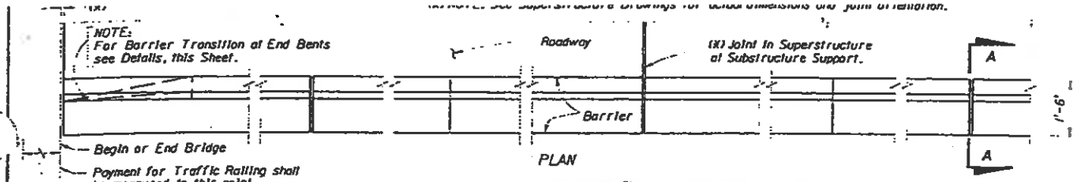
SEAL

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

12", 14", 18", 20", 24", AND 30"
PRESTRESSED CONCRETE PILES

2 of 2

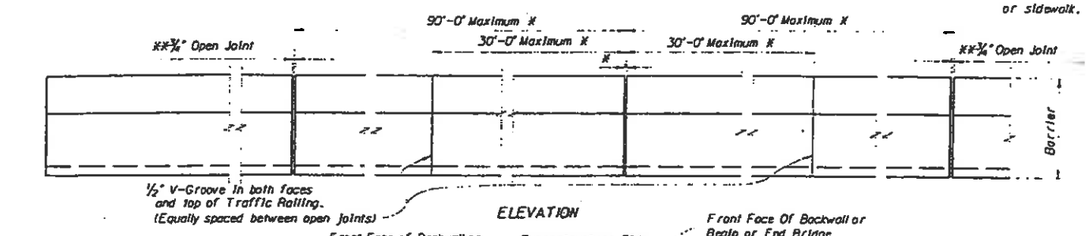
S.R. 10 (U.S. 90) OVER LITTLE REEDY CREEK



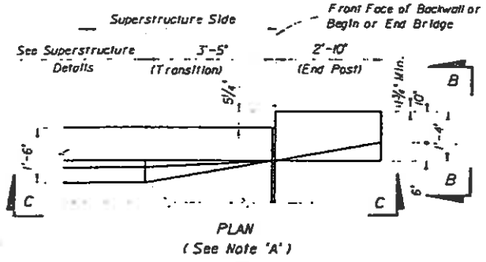
PLAN

End Bent Wing Post shall be paid for at the Contract Unit Price for Concrete (Substructure) and Reinforcing Steel (Substructure).

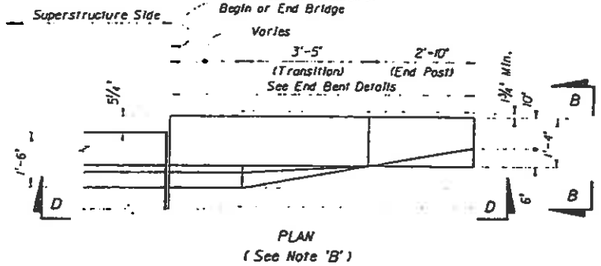
** NOTE: ¾" Open Joints shall be provided at:
1 - Substructure supports where superstructure slab is continuous.
2 - Midspan where span length exceeds 90 feet.
3 - Intermediate locations (equally spaced) between midspan and substructure support where span length exceeds 180 feet.



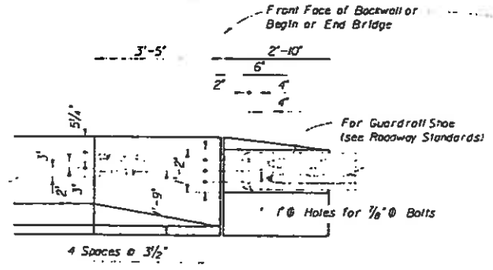
ELEVATION



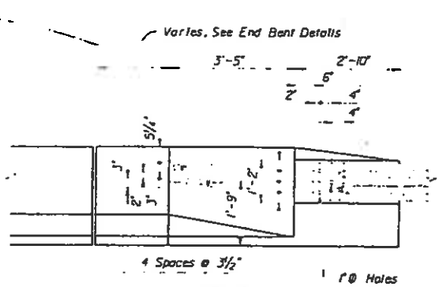
PLAN
(See Note 'A')



PLAN
(See Note 'B')

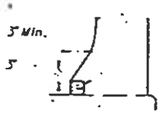


VIEW C-C



VIEW D-D

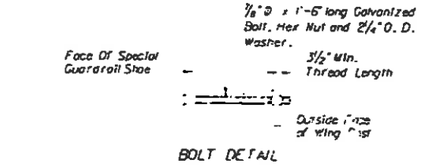
NOTE 'A':
If Barrier Transition is required and the Superstructure Depth (thickness) is 25" or less, the Transition shall be provided on the Superstructure side. To accommodate the Transition on the Superstructure the Reinforcement (Bars 5V, 5P & 4S) will need adjusting. The 1'-2" portion of Bars 5V shall be bent to fit and the horizontal 10" portion along the bottom shall be cut at the center.



SECTION A-A

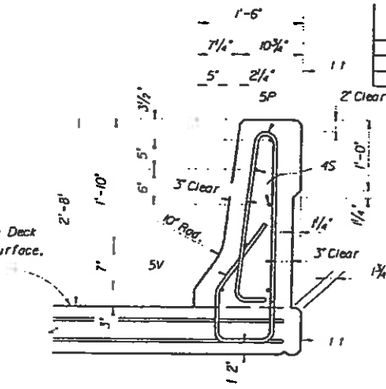
NOTE: When open joint in Barrier is not coincident with joint in the superstructure, the lower 3" portion of the open joint shall be plugged by filling with mortar in accordance with Article 400-15.1.

NOTE 'B':
If Barrier Transition is required and the Superstructure Depth (thickness) exceeds 25", the Barrier Transition shall be provided on the End Bent side.



BOLT DETAIL

NOTE: The Cost of Bolts is to be included in the Contract Unit Price for Guardrail.

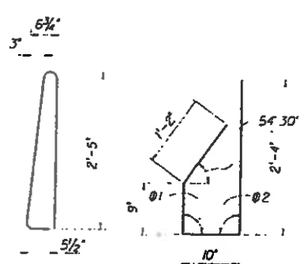


TYPICAL SECTION THRU TRAFFIC RAILING

† For Slabs 8" thick or less. If Slab is thicker than 8" or Barrier is located on a Retaining Wall, embed Bar 5V 6".

†† Where Barriers of adjacent bridges are to be built back to back, the outside vertical plane of the Barrier and Slab may coincide if so shown on the Superstructure Plans.

ROADWAY CROSS-SLOPE	LOW GUTTER		HIGH GUTTER	
	Ø1	Ø2	Ø1	Ø2
0% to 2%	90°	90°	90°	90°
2% to 6%	93°	87°	87°	93°
6% to 10%	96°	84°	84°	96°



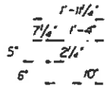
BAR 5P (No. 5)

BAR 5V (No. 5)

BENDING DIAGRAMS

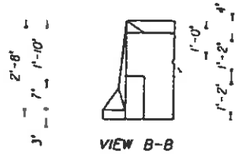
BAR BENDING NOTES

1. All bar dimensions in the bending diagrams are out to out.
2. Bars 5P and 5V shall be bent around a pin diameter = 2½".
3. The 9" and the 2'-4" vertical dimensions shown for Bar 5V are based on a bridge slab 8" thick or greater and without raised sidewalk or wearing surface. If the slab thickness is less than 8" decrease these dimensions by an amount equal to the difference in the thicknesses; and if a wearing surface or a raised sidewalk is to be provided, increase the dimensions by an amount equal to the wearing surface thickness or sidewalk thickness.
4. Reinforcement for Barrier on Retaining Wall shall be the same as detailed above for a 8" slab with Ø1 = Ø2 = 90°.



TYPICAL TRAFFIC RAILING QUANTITIES

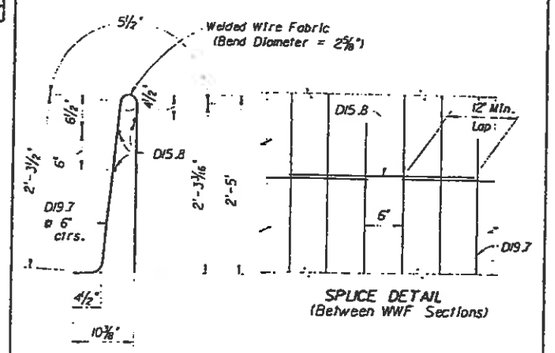
CONCRETE: 0.103 c.y. per linear foot
REINFORCING STEEL: 20.49 lbs per linear foot
(Above quantities are based on 8" slab and 2% cross-slope).



VIEW B-B

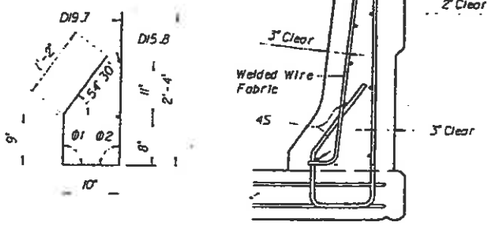
½" V-Groove (in back face of Wingwall)

SECTION THRU RECESSED 'V' GROOVE TO FORM INSCRIBED LETTERS AND FIGURES



SPLICE DETAIL (Between WWF Sections)

WELDED WIRE FABRIC



ALTERNATE REINFORCING DETAILS

The Contractor may utilize Welded Wire Fabric in lieu of all Bars 5P and 5V and Four (4) of the Bars 4S. Welded Wire Fabric shall conform to ASTM A497.

REINFORCING STEEL NOTES

Place longitudinal steel in bottom of slab as shown above to facilitate tying bars 5V. Do not add reinforcing steel for tie purposes.

All vertical reinforcing steel in Traffic Railing shall be No. 5 Bars spaced at 8" c.c. and all longitudinal reinforcing steel shall be No. 4 Bars. At all open joints all reinforcing shall have 2" minimum cover. At all construction joints Bars 4S (No. 4) may be continuous or spliced. All splices in Bars 4S shall be 1'-4" minimum.

TRAFFIC RAILING NOTES

CONCRETE AND REINFORCING STEEL: See General Notes.

PAYMENT: Traffic Railing on Bridges shall be paid for per linear foot (Item No. 400-14B-1), which shall include all Concrete and Reinforcing Steel. Traffic Railing shall be measured along the centerline of the top surface of the concrete barrier.

MARKERS: Markers recording the elevation shall be placed on top of the Traffic Railing at End Bents. On bridges longer than 100 ft, one marker shall be placed at each end of the bridge. On bridges 100 ft or less, one marker shall be placed at one end of the bridge only. Markers are to be furnished by the Florida Department of Transportation and installed by the Contractor. The cost of installing the markers shall be included in the Contract Unit Price for Traffic Railing (Barrier).

TRAFFIC RAIL CONSTRUCTION: The contractor may construct the railing by the use of stationary removable forms or by the use of slip forms without altering the rail dimensions shown above.

SUPERELEVATED BRIDGES: At the option of the Contractor, Traffic Railing and End Bent Wing Posts on superelevated bridges, may be constructed perpendicular to the roadway surface. The cost of modifications shall be at the Contractor's expense.

BOLTS: Bolts, Nuts, and Washers shall be hot dip galvanized in accordance with ASTM A153.

RETAINING WALL: If the Barrier is to be provided on a retaining wall, the Barrier Section shall be as shown above. Other details such as transition for guardrail attachment, maximum spacing of ¾" open joint and ½" V-Groove shall also apply. See Wall Plans for Payment.

NAME AND BRIDGE NUMBER: The Name and Bridge Number to be placed on the Traffic Railing shall be seen on the driver's right when approaching bridge. The date is to be placed on the driver's left when approaching the bridge. The date shall be the year the bridge is constructed. Block plastic letters and figures 3" in height, as approved by the Engineer, may be used in lieu of letters and figures formed by ⅜" V-Grooves. V-Grooves shall be formed by preformed letters and figures.

63

3	FLA.		B-4

REVISIONS								
Date	By	Description	File	By	Description	Designed	Detailed	Quantities
			94R			Checked		

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
605 Suwannee Street, MS 13
Tallahassee, Florida 32399-0450

LOGO:

SEAL

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

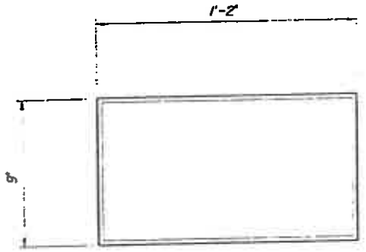
Road No.	County	Financial Project ID
S.R. 10	HOLMES	52010-3527

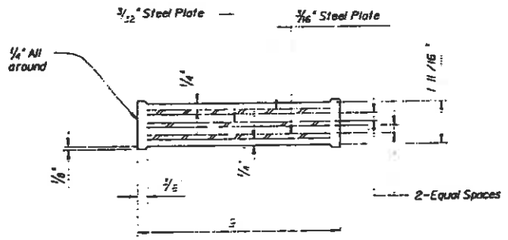
TRAFFIC RAILING BARRIER

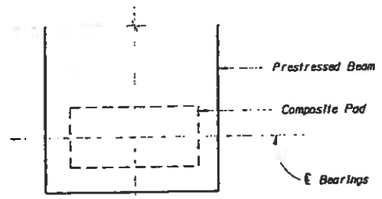
Sheet No. 1 of 1

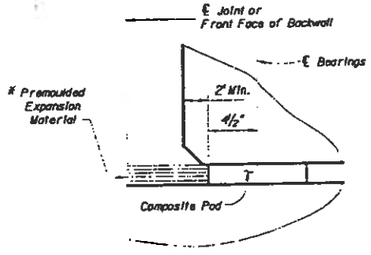
S.R. 10 (U.S. 90) OVER UTTLE REEDY CREEK

Station 700









3	FLA.			B-5

PART PLAN

PLAN

TYPICAL SECTION

COMPOSITE PAD

PART ELEVATION

* Premoulded Expansion Material is required for Cast-In-Place Beam Extension.

BEARING PAD NOTES

Neoprene in all Bearing Pads shall have a Grade 50 durometer hardness.

Steel Plates in composite pads shall conform to ASTM A36 or ASTM A570 Grade 36.

Variations in pad dimensions will be allowed provided revised pads will meet the current specifications and are approved by the Engineer.

Bearing seat shall be finished parallel to the bottom of Beam.

64

REVISIONS
94R

RSH	6-96
RWW	6-96
LZ	6-96
SWJ	6-95

SCOTT JONES, P.E.

ENGINEER OF RECORD:
PITMAN-HARTENSTEIN & ASSOC., INC.
ENGINEERS
7820 ARLINGTON EXPWY.
JACKSONVILLE, FLORIDA

LOGO:

SEAL:

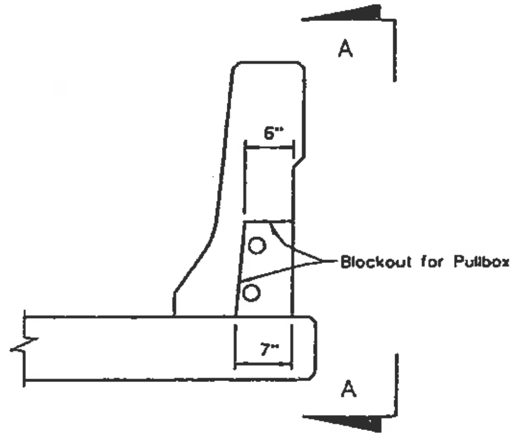
FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

S.R. 10	HOLMES	52010-3527

COMPOSITE NEOPRENE BEARING PADS

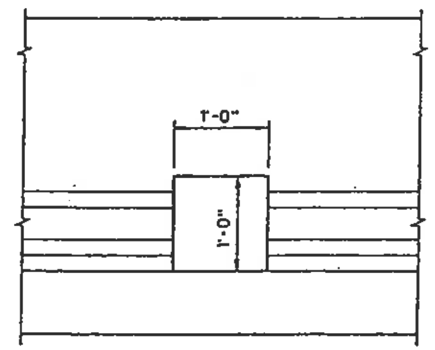
S.R. 10 (U.S. 90) OVER LITTLE REEDY CREEK

3	FLA.	-		B-6

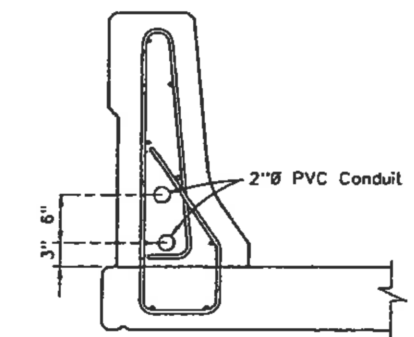


SECTION THRU BARRIER AT PULLBOX

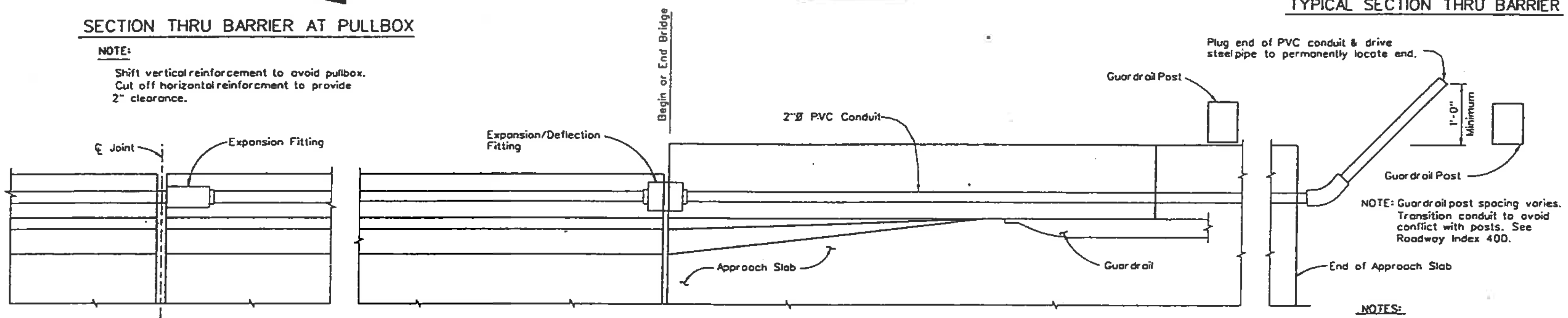
NOTE:
Shift vertical reinforcement to avoid pullbox. Cut off horizontal reinforcement to provide 2" clearance.



VIEW A-A



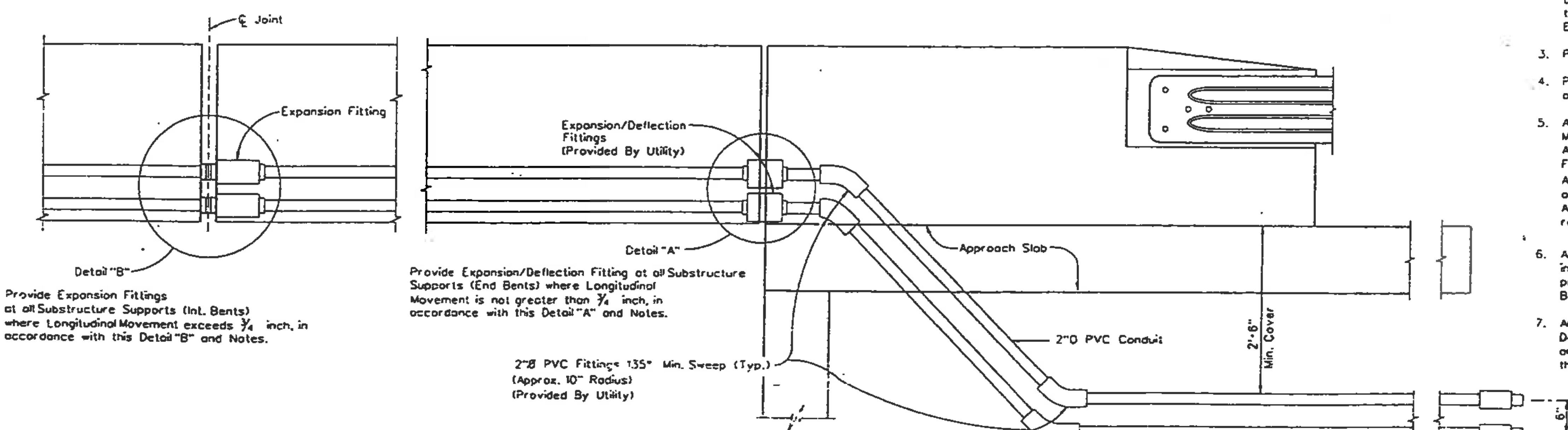
TYPICAL SECTION THRU BARRIER



NOTE: Guardrail post spacing varies. Transition conduit to avoid conflict with posts. See Roadway Index 400.

NOTE: Expansion/Deflection Fitting shall be installed within an Annular Open Space to allow for vertical and horizontal displacement.

PLAN VIEW AT BEGIN & END BRIDGE & OPEN JOINT IN BARRIER



Provide Expansion Fittings at all Substructure Supports (Int. Bents) where Longitudinal Movement exceeds ¾ inch, in accordance with this Detail "B" and Notes.

Provide Expansion/Deflection Fitting at all Substructure Supports (End Bents) where Longitudinal Movement is not greater than ¾ inch, in accordance with this Detail "A" and Notes.

ELEVATION VIEW AT BEGIN & END BRIDGE & OPEN JOINTS IN BARRIER

NOTES:

1. All PVC conduits, flexible expansion/deflection and expansion fittings, pullboxes and pull wires shall be furnished by the utility company, approved by the Department and installed by the Contractor as detailed in the plans. The installation shall be paid under Item No. 400-148-1, Traffic Railing Barrier.
2. All duct shall be 2" PVC Schedule 40 or better which conforms with Underwriters Laboratories Section 651, the National Electrical Code Sect 347, and the National Electrical Manufactures Association TC-2.
3. Pull Boxes to be located at: LITTLE REEDY CREEK - Sta. 90-53.40 and 91-69.40
4. Pullboxes shall be equally spaced (max. 1000'), unless otherwise specified by the utility company.
5. All Expansion/Deflection Fittings shall be Metallic as provided by the following Manufacturers: Crouse-Hinds, Appleton, O. Z., or approved equal. Adapters to connect Non-Metallic PVC Conduits to Metallic Expansion/Deflection Fitting shall also be provided as needed.
   All metallic portions of conduit and pull boxes shall be 316 stainless steel, or hot dipped galvanized steel in accordance with ASTM specifications A-123, A-153 or A-307. Metallic portions of conduit and pull boxes shall clear reinforcing steel.
6. All Fittings shall be installed in accordance with the Manufacturer's instructions. As a minimum, an Expansion/Deflection Fitting shall be provided at each Open Joint in the Barrier at a Substructure (End Bent) Support (See Detail "A", this sheet).
7. An Annular Open Space between the Concrete and the Expansion/Deflection Fitting shall be provided to assure proper fitting operation, and if necessary the Contractor may bend or adjust Reinforcement in the Traffic Barrier to allow installation of the fittings.

REVISIONS

Date	By	Description	Date	By	Description

	Names	Dates
Drawn by	R.S.H.	12-95
Checked by	R.W.W.	12-95
Designed by	R.W.W.	12-95
Checked by	S.W.J.	12-95
Approved by	SCOTT JONES, P.E.	

ENGINEER OF RECORD: PITMAN-HARTENSTEIN & ASSOC., INC. ENGINEERS, JACKSONVILLE, FLORIDA

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
S.R. 10	HOLMES	52010-3527

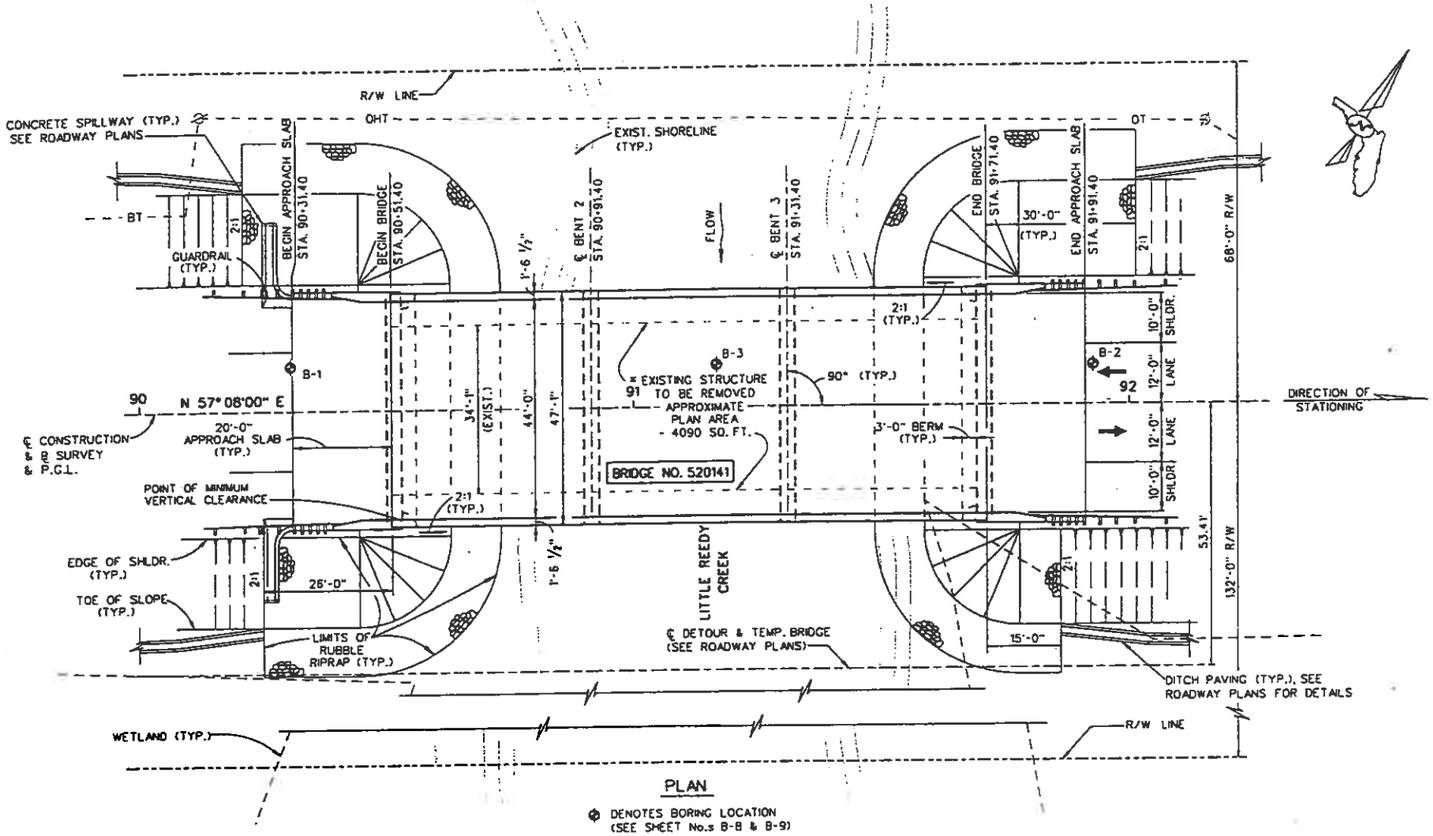
SHEET TITLE: UTILITY CONDUIT DETAILS

PROJECT NAME: S.R. 10 (U.S. 90) OVER LITTLE REEDY CREEK

Drawing No.

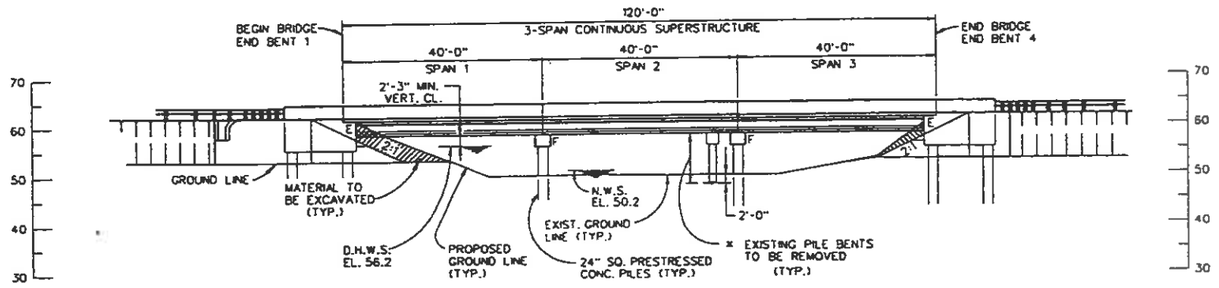
Index No.

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			B-7



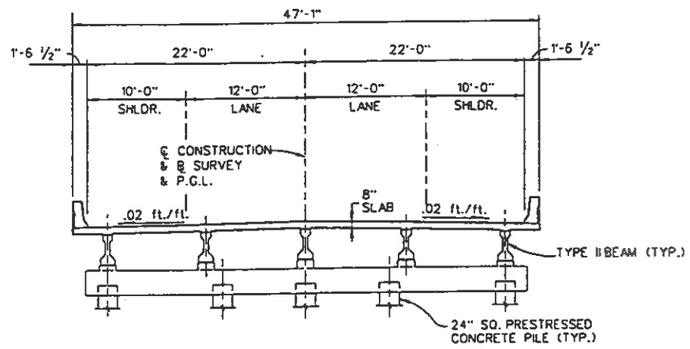
PLAN

℄ DENOTES BORING LOCATION (SEE SHEET No.s B-8 & B-9)

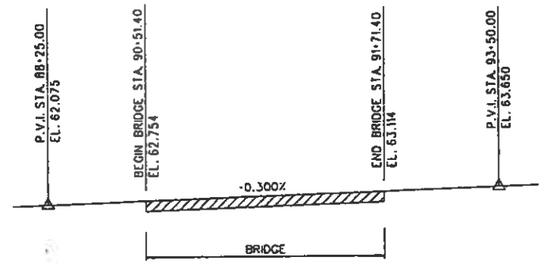


ELEVATION

* FOR DETAILS ON REMOVAL OF THE EXISTING STRUCTURE, SEE SHEET No. B-1.



TYPICAL SECTION



S.R. 10 (U.S. 90) P.G.L.
(ALONG ℄ CONSTRUCTION & ℄ SURVEY)

TRAFFIC DATA

1999 ADT - 2950
2019 ADT - 5300
K - 10.98%
D - 50%
T - 9.0%
DESIGN SPEED - 65 MPH

66

REVISIONS					
Date	By	Description	Date	By	Description

	Names	Dates
Drawn by	R.S.H.	4-96
Checked by	R.W.W.	4-96
Designed by	L.Z.	4-96
Checked by	R.W.W.	4-96
Approved by	SCOTT JONES, P.E.	

ENGINEER OF RECORD:
PITMAN-HARTENSTEIN & ASSOC., INC. ENGINEERS
7820 ARLINGTON EXPWY. JACKSONVILLE, FLORIDA

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
S.R. 10	HOLMES	52010-3527

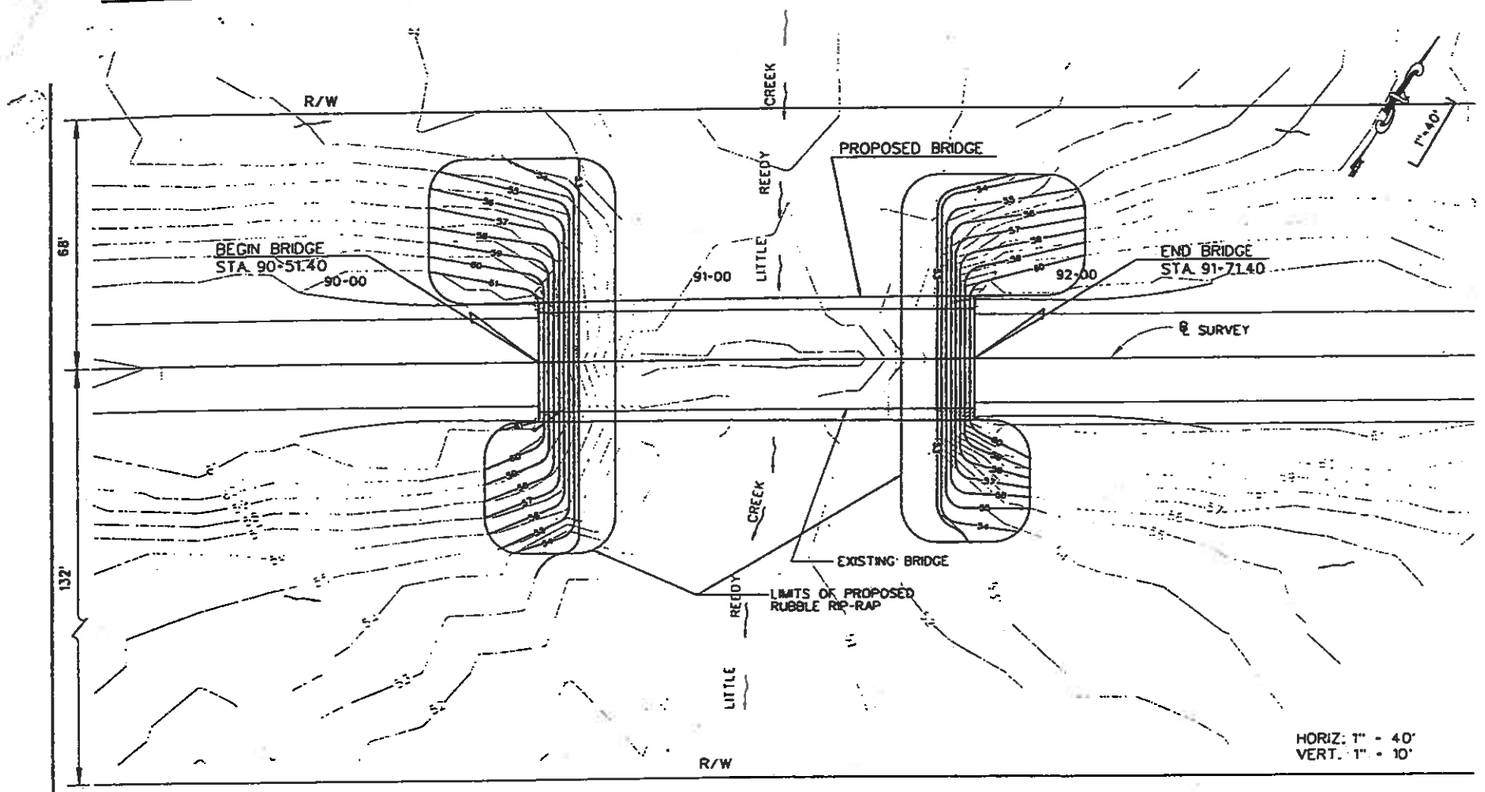
SHEET TITLE: PLAN AND ELEVATION

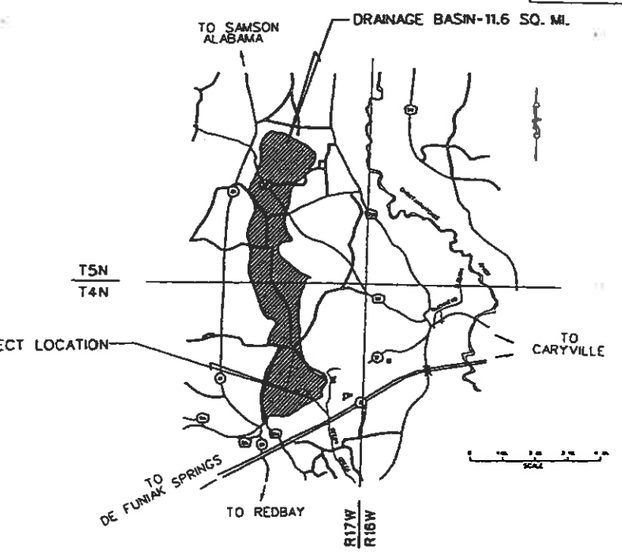
Drawing No.

PROJECT NAME: S.R. 10 (U.S. 90) OVER LITTLE REEDY CREEK (BRIDGE No. 520141)

Index No.

STATE PROJ. NO.	SHEET NO.
52010-3527	B-8
BRIDGE No. -	





(REFERENCE)	EXISTING STRUCTURES (1)	(2)	(3)	(4)	PROPOSED BRIDGE
FOUNDATION	14" CONC. PILES				24" CONC. PILE
OVERALL LENGTH	120'				120'
SPAN LENGTH	20'				40'
TYPE CONSTRUCTION	FLAT SLAB				AASHTO TYPE II GIRDER
AREA OF OPENING @ H.W.	-				-
ROADWAY WIDTH	27'				44'
ELEV. LOW MEMBER	60.38				58.22 MIN.

HYDRAULIC DESIGN DATA

NOTE: The hydraulic data is shown for informational purposes only to indicate the flood discharges and water surface elevations which may be anticipated in any given year. This data was generated using highly variable factors determined by a study of the watershed. Many judgements and assumptions are required to establish these factors. The resultant hydraulic data is sensitive to changes, particularly antecedent conditions, urbanization, channelization and land use. Users of this data are cautioned against the assumption of precision which cannot be obtained.

DEFINITIONS:
Design Flood: The flood utilized to assure a desired level of hydraulic performance
Base Flood: The flood having a 1% chance of being exceeded in any year. (100 Year Frequency)
Overtopping Flood: The flood which causes flow over the highway, over a watershed divide or thru emergency relief structures.
Greatest Flood: The most severe flood which can be predicted where overtopping is not practicable.

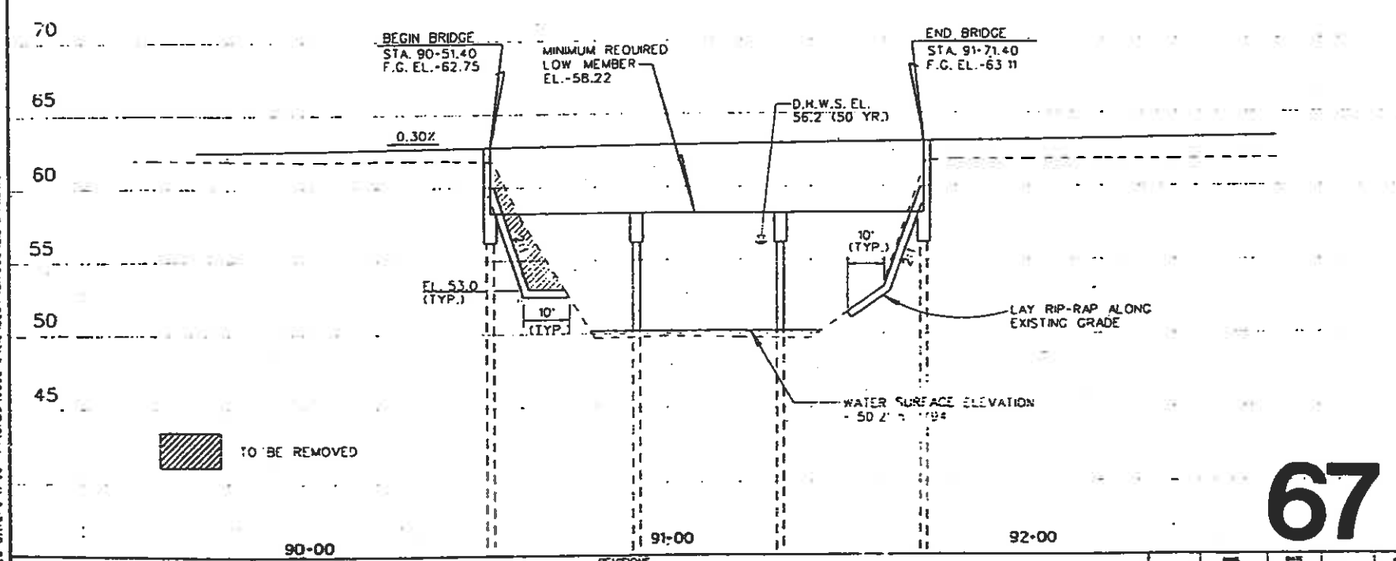
WATER SURFACE ELEVATIONS: N.H.W.(Non-Tidal) 50.2' M.H.W. N/A M.L.W. N/A

FLOOD DATA:	MAX. EVENT OF RECORD (1929)	DESIGN FLOOD	BASE FLOOD	☐ OVERTOPPING FLOOD ☒ GREATEST FLOOD
STAGE ELEV. NGVD (FT.)	58.4	56.90	57.39	58.54
DISCHARGE (CFS)	UNKNOWN	1710	2052	2963
AVERAGE VELOCITY (FPS)	UNKNOWN	4.69	4.96	5.52
EXCEEDANCE PROB. (%)	UNKNOWN	2%	1%	0.2%
FREQUENCY (YR.)	500±	50 YR	100 YR	500 YR

HYDRAULIC RECOMMENDATIONS

1. BEGIN BRIDGE STATION 90-51.40 END BRIDGE STATION 91-71.40 SKEW ANGLE 0°
2. CHANNEL SECTION: $\mathcal{L}$ STATION N/A BOTTOM WIDTH - ELEV. - SIDE SLOPE -
3. LIMITS OF CHANNEL EXCAVATION: RT. N/A LT. N/A
4. CLEARANCE: NAVIGATION: HORIZ. N/A VERT. N/A ABOVE EL. N/A DRIFT: HORIZ. 38' VERT. 2.00' ABOVE EL. 56.22'
5. SCOUR PREDICTION: NO EVIDENCE OF PAST SCOUR PROBLEMS.
(100 YR. SCOUR ELEVATION - 43.69 500 YR. SCOUR ELEVATION - 42.72)
6. SLOPE PROTECTION: MINIMUM ABUTMENT PROTECTION (RUBBLE RIPRAP)
7. DECK DRAINAGE: BRIDGE SLOPED TO CONVEY RUNOFF TO FLUMES LOCATED AT THE WEST END OF THE BRIDGE
8. OTHER: BRIDGE SURVEYED IN MAY 1994

REMARKS: NO WORK WILL BE DONE IN CHANNEL



67

REVISIONS												
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	

	NAME	DATE
DESIGNED BY	J.L.C.	2/95
CHECKED BY	S.W.J.	2/95
APPROVED BY: SCOTT W. JONES, P.E.		

	NAME	DATE
DRAWN BY	S.J.G.	2/96
CHECKED BY	J.L.C.	2/96

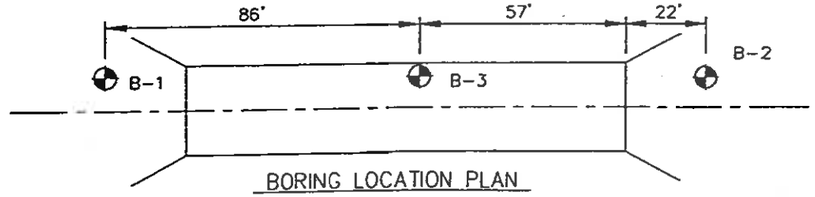
FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY :
DATE :

BRIDGE HYDRAULIC RECOMMENDATION SHEET
US 90/SR 10 LITTLE REEDY CREEK

PLOT @ 1:20 DATE: 6-11-96 P:\CADD...\a2121_a\REEDY\BRIDGE\XLS-BHR.DWG

FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
	FLA.	52010-3527		8-9

WPI 3114193



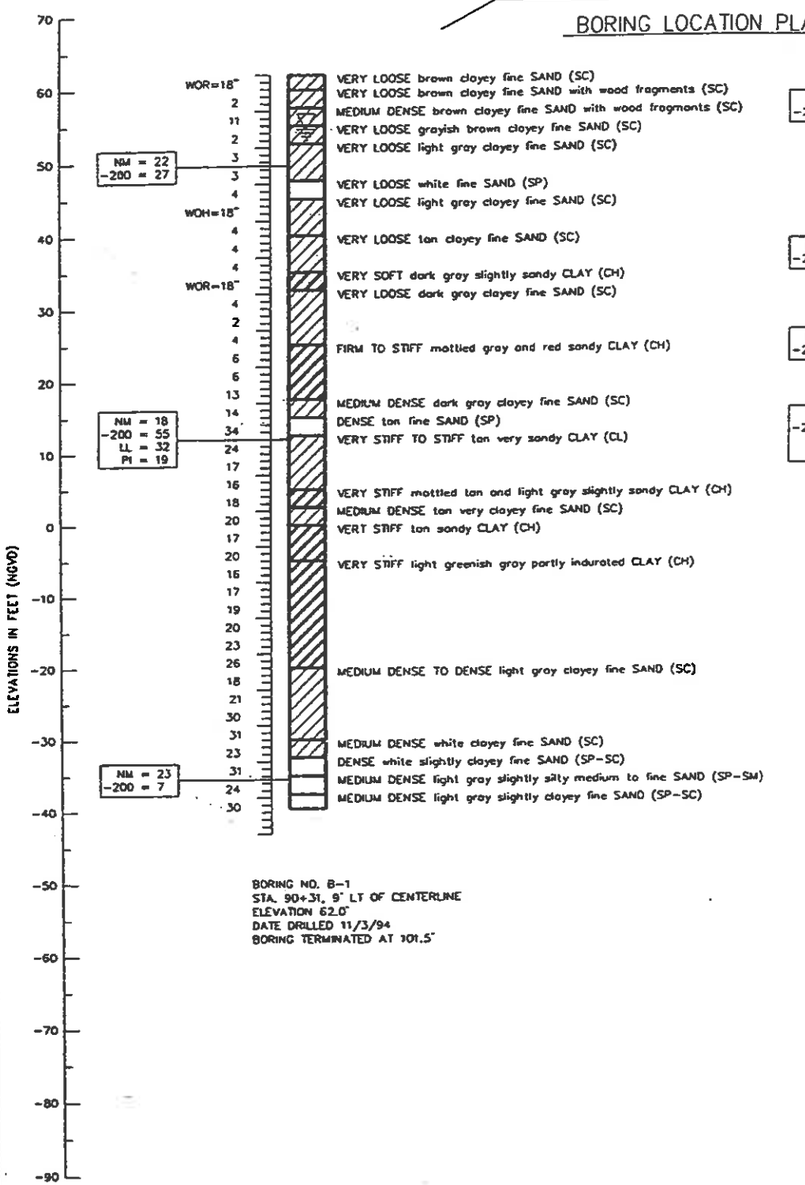
BORING LOCATION PLAN

0 25 50

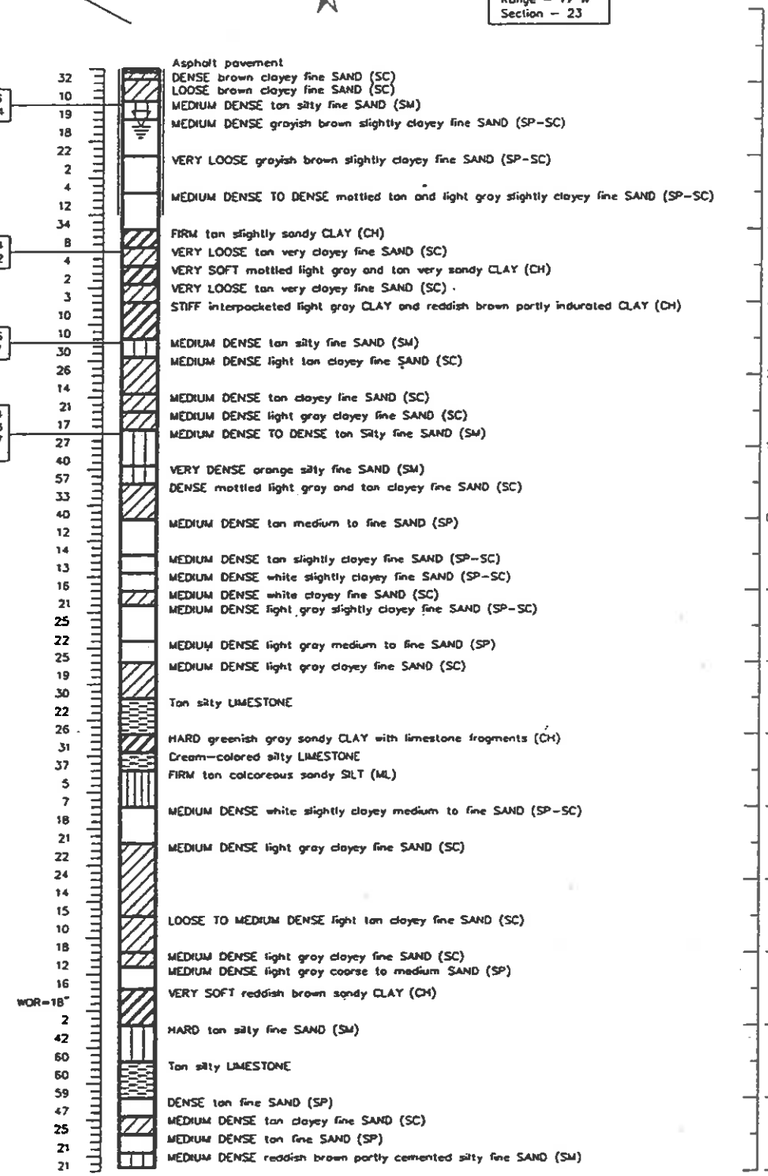
LOCATION
Township – 3 N
Range – 17 W
Section – 23

LEGEND

- = SP and SP-SC, Sands and slightly clayey sands
- = SM, Silty sands
- = CH, Inorganic clays of low plasticity
- = SC AND CL, Clayey sands and very sandy clays
- = LS, Limestone
- = ML, Sandy silt
- = Asphalt pavement



BORING NO. B-1
STA. 90+31, 9' LT OF CENTERLINE
ELEVATION 62.0'
DATE DRILLED 11/3/94
BORING TERMINATED AT 101.5'



BORING NO. B-2
STA. 91+93, 8' LEFT OF CENTERLINE
ELEVATION 62.0'
DATE DRILLED 10/30/94
BORING TERMINATED AT 151.5'

GENERAL NOTES

DRILL AND PENETRATION TESTING WERE PERFORMED IN ACCORDANCE WITH ASTM D 1586. NUMBER TO LEFT OF BORING INDICATES BLOWS OF 1 3/8" I.D., 2" O.D. SPLIT-SPOON FOR 12" OF PENETRATION (UNLESS OTHERWISE NOTED) WITH A 140 LB. HAMMER DROPPED 30 INCHES

THE BORING LOGS SHOWN REPRESENT SUBSURFACE CONDITIONS WITHIN THE BOREHOLE AT THE TIME OF DRILLING. NO WARRANTY AS TO THE SUBSURFACE CONDITION, STRATA DEPTH OR SOIL CONSISTENCY BETWEEN OR OUTSIDE BORING LOCATIONS IS EXPRESSED OR IMPLIED BY THIS DRAWING.

REFER TO GEOTECHNICAL REPORT BY WILLIAMS EARTH SCIENCES DATED 12/23/94 FOR DETAILED BORING INFORMATION.

CREW CHIEF: PATTERSON
DRILLER: DYER
DRILL RIG TYPE: FAILING 250
HAMMER TYPE: MANUAL

NOTES

Numbers to the left of borings indicate SPT values for 12" penetration. (Unless otherwise noted.)

▽ = Water Table

□ = Casing used

ENVIRONMENTAL CLASSIFICATION

SUBSTRUCTURE: MODERATELY AGGRESSIVE
SUPERSTRUCTURE: SLIGHTLY AGGRESSIVE

Granular Materials – Relative Density	SPT (Blows/Ft)
Very Loose	Less than 4
Loose	4 – 10
Medium or Compact	11 – 30
Dense	31 – 50
Very Dense	Greater than 50

Silts and Clays – Consistency	SPT (Blows/Ft)
Very Soft	Less than 2
Soft	2 – 4
Firm	5 – 8
Stiff	9 – 15
Very Stiff	16 – 30
Hard	Greater than 30

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J394084 (BRDG)

REVISIONS						
Date	By	Description	Date	By	Description	

	Name	Date
Drawn by	TEJ	12-94
Checked by	DJB	12-94
Designed by	MDB	12-96
Checked by	MDB	12-96
Approved by	W.DARREL BURNETT, P.E.	

ENGINEER OF RECORD:
WILLIAMS EARTH SCIENCES, INC.
1726 FRANKFORD AVENUE
PANAMA CITY, FLORIDA 32405

LOGO: WILLIAMS EARTH SCIENCES, INC.

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	STATE PROJECT NO.
S.R. 10	HOLMES	52010-3527

SHEET TITLE: REPORT OF CORE BORINGS

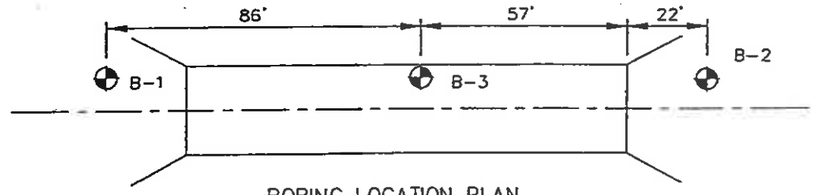
Drawing No.

PROJECT NAME: S.R. 10 (U.S. 90) OVER LITTLE REEDY CREEK

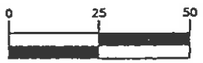
Index No.

ROAD SYSTEM ID NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
	FLA.	52010-3527		8-10

WPI 3114193



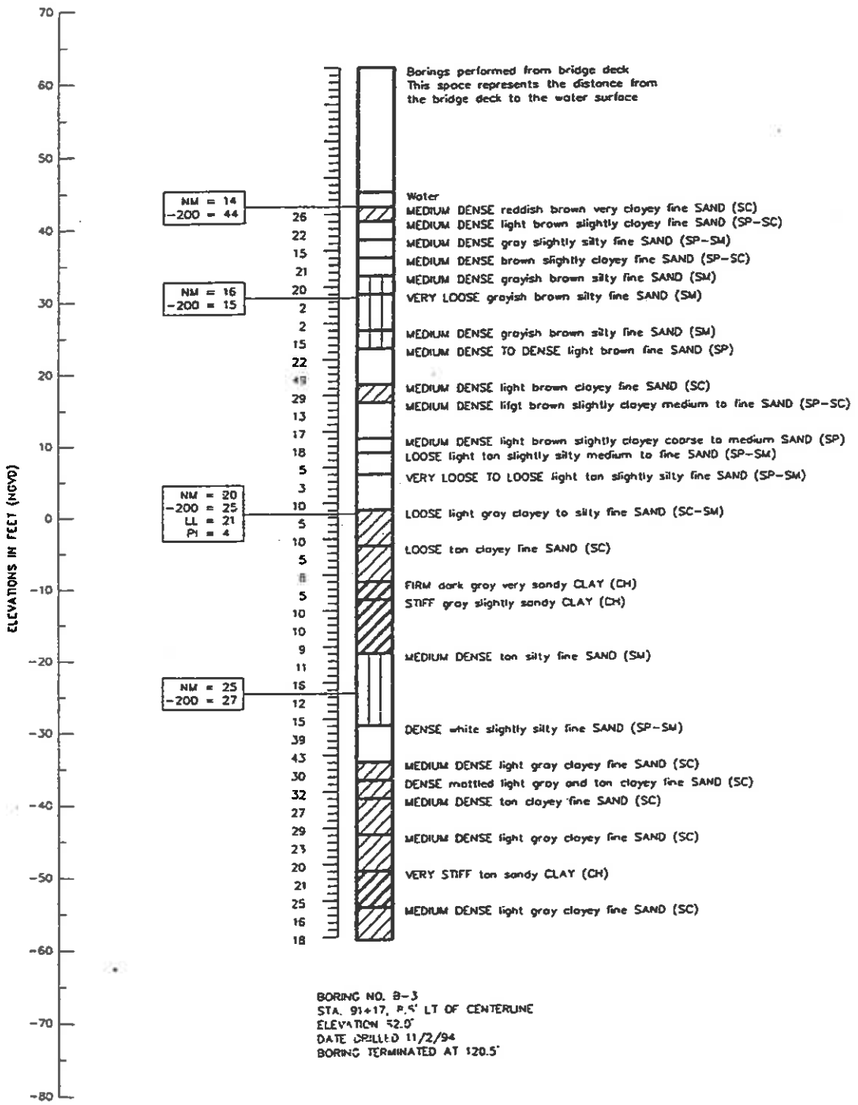
BORING LOCATION PLAN



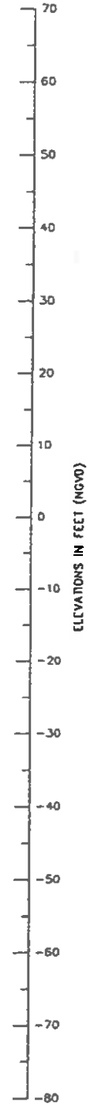
LOCATION
Township – 3 N
Range – 17 W
Section – 23

LEGEND

- = SP and SP-SC, Sands and slightly clayey sands
- = SM, Silty sands
- = CH, Inorganic clays of low plasticity
- = SC AND CL, Clayey sands and very sandy clays
- = LS, Limestone
- = ML, Sandy silt
- = Asphalt pavement



BORING NO. B-3
STA. 91+17, 8.5' LT OF CENTERLINE
ELEVATION 52.0'
DATE DRILLED 11/2/94
BORING TERMINATED AT 120.5'



GENERAL NOTES

DRILL AND PENETRATION TESTING WERE PERFORMED IN ACCORDANCE WITH ASTM D 1586. NUMBER TO LEFT OF BORING INDICATES BLOWS OF 1 3/8" I.D., 2" O.D. SPLIT-SPOON FOR 12" OF PENETRATION (UNLESS OTHERWISE NOTED) WITH A 140 LB HAMMER DROPPED 30 INCHES

THE BORING LOGS SHOWN REPRESENT SUBSURFACE CONDITIONS WITHIN THE BOREHOLE AT THE TIME OF DRILLING. NO WARRANTY AS TO THE SUBSURFACE CONDITION, STRATA DEPTH OR SOIL CONSISTENCY BETWEEN OR OUTSIDE BORING LOCATIONS IS EXPRESSED OR IMPLIED BY THIS DRAWING.

REFER TO GEOTECHNICAL REPORT BY WILLIAMS EARTH SCIENCES DATED 12/23/94 FOR DETAILED BORING INFORMATION.

CREW CHIEF: PATTERSON
DRILLER: DYER
DRILL RIG TYPE: FAILING 250
HAMMER TYPE: MANUAL

NOTES

Numbers to the left of borings indicate SPT values for 12" penetration. (Unless otherwise noted.)

▽ = Water Table

▯ = Casing used

ENVIRONMENTAL CLASSIFICATION

SUBSTRUCTURE: MODERATELY AGGRESSIVE
SUPERSTRUCTURE: SLIGHTLY AGGRESSIVE

Granular Materials – Relative Density	SPT (Blows/Ft)
Very Loose	Less than 4
Loose	4 – 10
Medium or Compact	11 – 30
Dense	31 – 50
Very Dense	Greater than 50

Silts and Clays – Consistency	SPT (Blows/Ft)
Very Soft	Less than 2
Soft	2 – 4
Firm	5 – 8
Stiff	9 – 15
Very Stiff	15 – 30
Hard	Greater than 30

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U:\94084 BRDG2

REVISIONS					
Date	By	Description	Date	By	Description

	Name	Date
Drawn by	TEJ	12-94
Checked by	DTR	12-94
Designed by	MCB	12-94
Checked by	WDB	12-94
Approved by	for DARREL BURNETT, P.E.	

ENGINEER OF RECORD:
WILLIAMS EARTH SCIENCES, INC.
1726 FRANKFORD AVENUE
PANAMA CITY, FLORIDA 32405

LOGO: WILLIAMS EARTH SCIENCES, INC.

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	STATE PROJECT NO.
S.R. 10	HOLMES	52010-3527

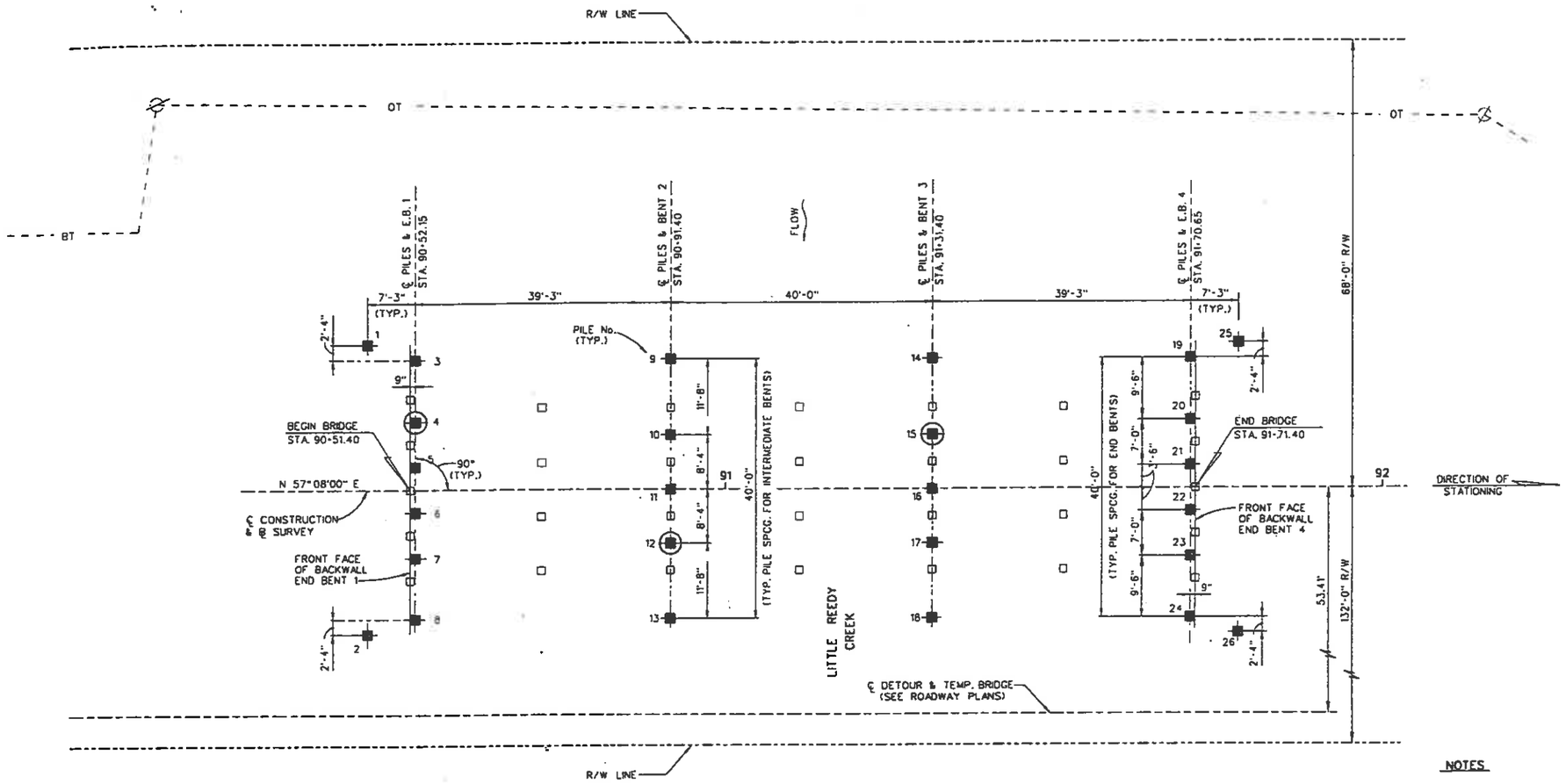
SHEET TITLE: REPORT OF CORE BORINGS

Drawing No.

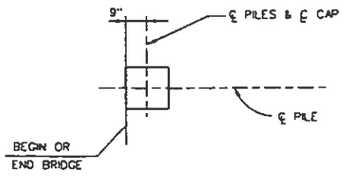
PROJECT TITLE: S.R. 10 (U.S. 90) OVER LITTLE REEDY CREEK

Index No.

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			B-11



FOUNDATION LAYOUT



DETAIL AT END BENT 1

(END BENT 4 - OPPOSITE HAND)

PILE CUTOFF ELEVATIONS				
BENT No.	1	2	3	4
ELEVATION	56.4	56.5	56.7	56.8

PILE INSTALLATION TABLE

BENT No.	℄ PILE STATION	PILE SIZE (IN.)	DESIGN LOAD (TONS)	TOTAL DOWNDRAG (TONS)	SCOUR ELEVATION (FT.) (100 YR.)	* TOTAL SCOUR RESISTANCE (TONS)	** NET SCOUR RESISTANCE (TONS)	MINIMUM TIP ELEVATION (FT.)	PREFORM TO ELEVATION (FT.)	JET TO ELEVATION (FT.)	TEST PILE LENGTH (FT.)
E.B.1	90+44.90	24	20	NA	43.69	NA	NA	NA	NA	NA	NA
E.B.1	90+52.15	24	80	NA	43.69	15	15	-10	NA	NA	85
BENT 2	90+91.40	24	100	NA	43.69	20	20	-20	NA	NA	105
BENT 3	91+31.40	24	100	NA	43.69	20	20	-20	NA	NA	105
E.B.4	91+70.65	24	80	NA	43.69	50	60	-15	NA	NA	NA
E.B.4	91+77.90	24	20	NA	43.69	NA	NA	NA	NA	NA	NA

* - TOTAL SIDE FRICTION RESISTANCE FROM GROUND LINE TO THE SCOUR ELEVATION.
** - NET SIDE FRICTION RESISTANCE FROM THE REQUIRED PREFORMED OR JETTING ELEVATION TO THE SCOUR ELEVATION
RDR - (DESIGN LOAD X F.S.) - (SCOUR) + (DOWNDRAG)
NA - NOT APPLICABLE

LEGEND:

- □ EXISTING 14" PRECAST PILE
- ■ NEW 24" PLUMB PILE
- ◉ NEW 24" TEST PILE

NOTES

1. ALL NEW PILES ARE 24" SQ. PRESTRESSED CONCRETE PILES AND SHALL BE DRIVEN PLUMB. SEE INDEX 600 ON SHEET NO'S. B-2 AND B-3.
2. PILES SHALL BE DRIVEN TO THE REQUIRED DRIVING RESISTANCE (RDR) EQUAL TO THE DESIGN LOAD SHOWN IN THE PILE INSTALLATION TABLE TIMES THE APPROPRIATE FACTOR OF SAFETY IN ACCORDANCE WITH SECTION 4455-3.12.2 OF THE SUPPLEMENTAL SPECIFICATIONS TO THE FDOT STANDARD SPECIFICATIONS PLUS THE NET SCOUR RESISTANCE PLUS THE TOTAL DOWNDRAG.
3. DRIVE THREE 24" SQ. DYNAMIC LOAD TEST PILES (WITH PDA) IN THE POSITION OF A PERMANENT PLUMB PILE AT THE LOCATIONS INDICATED OR AS DIRECTED BY THE ENGINEER. ONE 85 FT PILE AT E.B. 1, ONE 105 FT PILE AT BENT 2 AND ONE 105 FT PILE AT BENT 3. DYNAMIC LOAD TESTING, SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 4455 OF THE SUPPLEMENTAL SPECIFICATIONS TO THE FDOT STANDARD SPECIFICATIONS.
4. TEST PILES SHALL BE DRIVEN UNTIL APPROVAL OF THE ENGINEER IS OBTAINED.
5. JETTING BELOW THE SCOUR ELEVATION WILL NOT BE PERMITTED.
6. FOR MAINTENANCE OF EXISTING UTILITIES, SEE UTILITY ADJUSTMENT SHEETS (SHEET NO. 22-23) IN THE ROADWAY PLANS.
7. TO ACHIEVE THE REQUIRED MINIMUM TIP ELEVATION, IT IS ESTIMATED THAT A DRIVING RESISTANCE HIGHER THAN THAT REQUIRED FOR LOAD CAPACITY MAY BE ENCOUNTERED IN SOME LOCATIONS.
8. SCOUR HAS BEEN CONSIDERED IN THE DESIGN WITH SCOUR ELEVATIONS (100 YR.) SHOWN IN THE TABLE. UNDER NO CIRCUMSTANCE SHALL THE PILE BE INSTALLED ABOVE THE MINIMUM TIP. THE INTENDED FUNCTION OF THE MINIMUM TIP ELEVATION IS TO MAINTAIN SUFFICIENT LATERAL AND AXIAL CAPACITY IN THE EVENT OF THE MAXIMUM SCOUR CONDITION.
9. PILE HOLES MAY BE PREFORMED AS NECESSARY AS DIRECTED BY THE ENGINEER. PREFORMING OR JETTING SHALL NOT BE ALLOWED BEYOND EL 43.7 NGVD UNLESS SPECIFICALLY DIRECTED BY THE ENGINEER. PREFORMED PILE HOLES SHALL BE GROUTED IN ACCORDANCE WITH SECTION 4455 OF THE SUPPLEMENTAL SPECIFICATIONS TO THE FDOT STANDARD SPECIFICATIONS.

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REVISIONS					
Date	By	Description	Date	By	Description

	Names	Dates
Drawn by	E.K.C.	4-96
Checked by	L.Z.	4-96
Designed by	R.W.W	4-96
Checked by	L.Z.	4-96
Approved by	SCOTT JONES, P.E	

ENGINEER OF RECORD:
PITMAN-HARTENSTEIN & ASSOC., INC. ENGINEERS
7820 ARLINGTON EXPWY.
JACKSONVILLE, FLORIDA

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
S.R. 10	HOLMES	52010-3527

SHEET TITLE: FOUNDATION LAYOUT
Drawing No.
PROJECT NAME: S.R. 10 (U.S. 90) OVER LITTLE REEDY CREEK
Vision No.

	STATE			SHEET NO.
3	FLA.			B-12

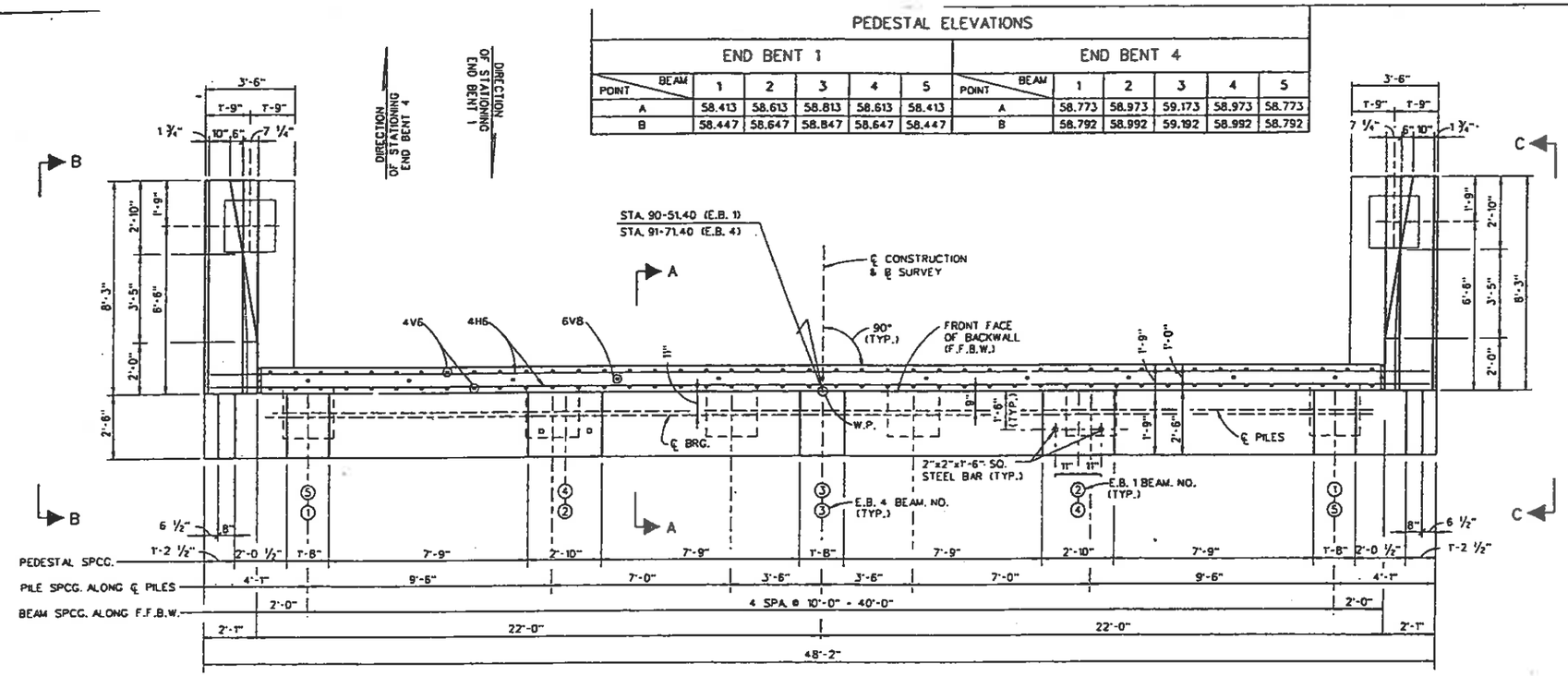
PEDESTAL ELEVATIONS

END BENT 1						END BENT 4					
POINT \ BEAM	1	2	3	4	5	POINT \ BEAM	1	2	3	4	5
A	58.413	58.613	58.813	58.613	58.413	A	58.773	58.973	59.173	58.973	58.773
B	58.447	58.647	58.847	58.647	58.447	B	58.792	58.992	59.192	58.992	58.792

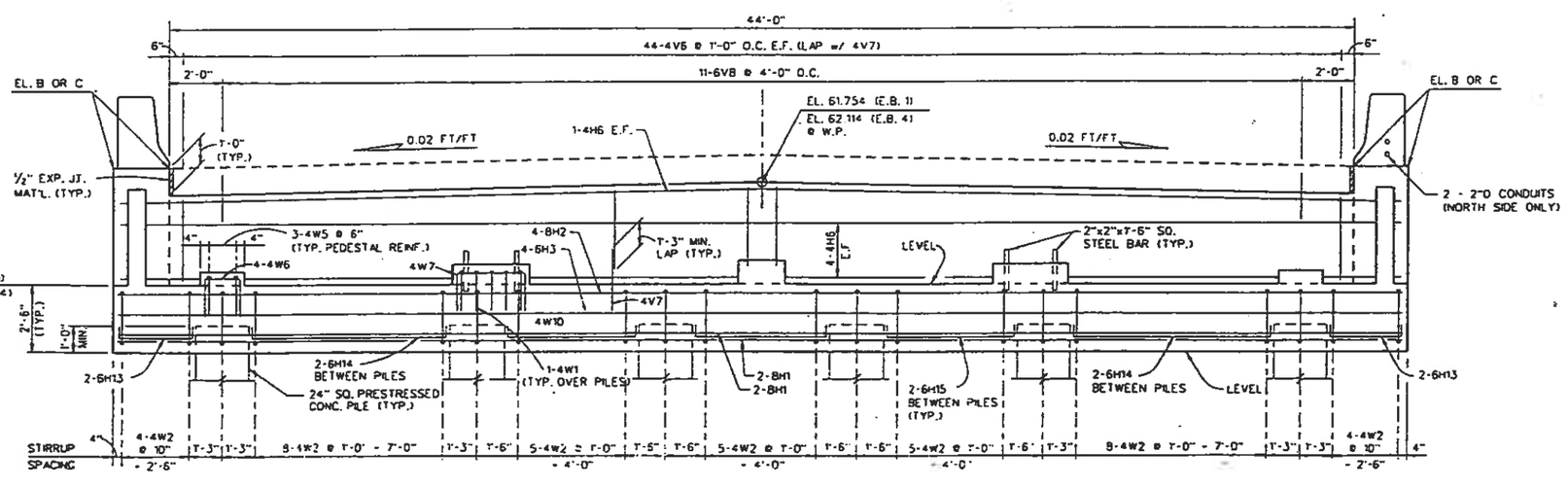
ESTIMATED QUANTITIES

ITEM	UNIT	END BENT 1	END BENT 4
CLASS IV CONCRETE (SUBSTRUCTURE)	C.Y.	33.99	33.99
REINFORCING STEEL (SUBSTRUCTURE)	LBS.	3,730	3,730
CLASS IV CONCRETE BREAKDOWN			
CAP & PEDESTALS	C.Y.	19.80	19.80
BACKWALL, WINGWALLS & CHEEKWALLS	C.Y.	11.95	11.95
BARRIER POSTS	C.Y.	2.24	2.24

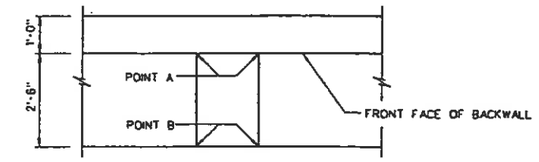
NOTE: FOR PILING QUANTITY, SEE SUMMARY OF BRIDGE PAY ITEMS.



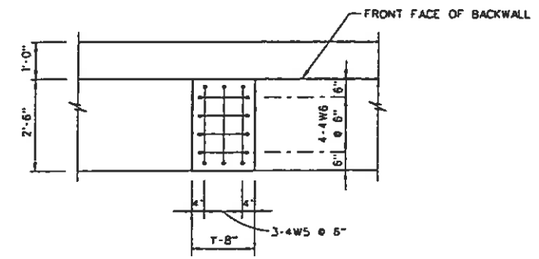
PLAN



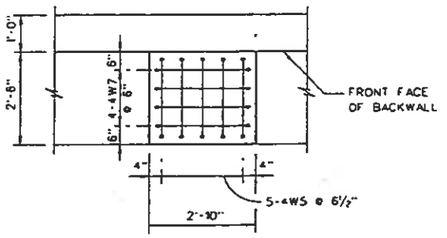
ELEVATION



PEDESTAL PLAN
(SEE TABLE FOR ELEVATIONS)



1'-8" PEDESTAL REINFORCING PLAN



2'-10" PEDESTAL REINFORCING PLAN

NOTES:

1. FOR GENERAL NOTES, SEE SHEET No. B-1
2. FOR REINFORCING BAR LIST AND DETAILS, SEE SHEET No's. B-22 AND B-23.
3. FOR PRESTRESSED CONCRETE PILE DETAIL, SEE SHEET No's. B-2 AND B-3
4. FOR APPROACH SLAB DETAIL, SEE SHEET No B-19 AND ROADWAY PLANS SHEET No. 26.
5. FOR PILE CUTOFF ELEVATIONS, SEE SHEET No. B-11
6. FOR LEGEND, SEE SHEET No. B-1
7. FOR SECTION A-A, VIEW B-B AND VIEW C-C SEE SHEET No B-13.
8. FOR CONDUIT DETAIL, SEE SHEET No. B-6
9. FOR ELEVATION B & C, SEE SHEET No. B-13

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REVISIONS					
Date	By	Description	Date	By	Description

	Names	Dates
Drawn by	R.S.H.	4-95
Checked by	L.Z.	4-96
Designed by	L.Z.	4-96
Checked by	S.W.J	4-96
Approved by	SCOTT JONES, P.E.	

ENGINEER OF RECORD:
PITMAN HARTENSTEIN & ASSOC., INC. ENGINEERS
7523 N LENGTON EXPWY
JACKSONVILLE, FLORIDA

LOGO:

SEAL:

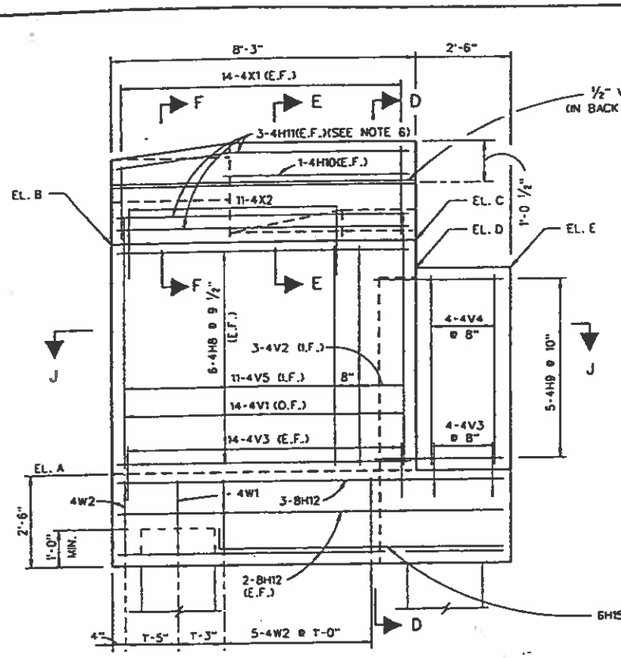
FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
S.R. 10	HOLMES	52010-3527

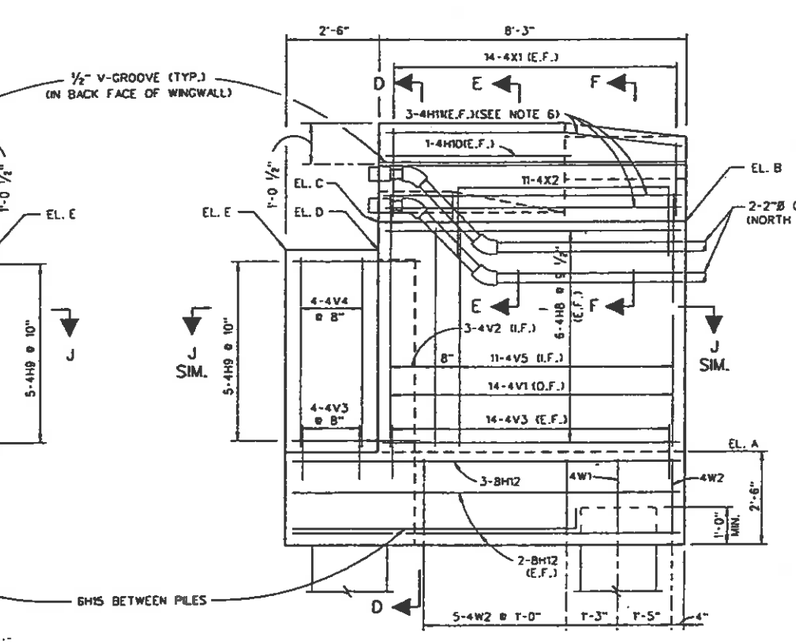
SHEET TITLE: END BENTS 1 AND 4

Drawing No.

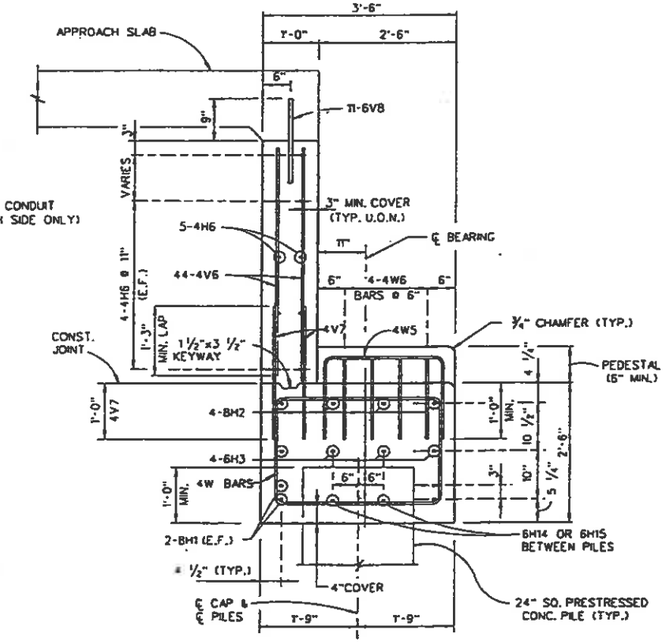
PROJECT NAME: S.R. 10 (U.S. 90) OVER LITTLE REEDY CREEK



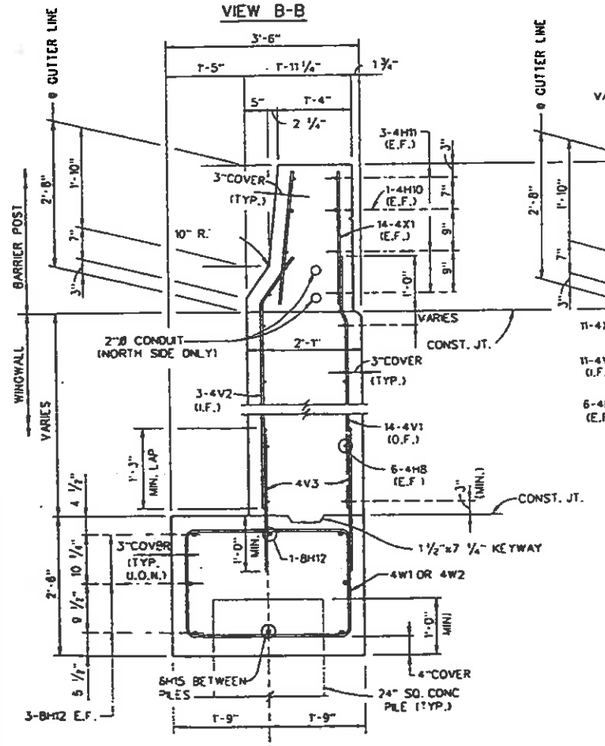
VIEW B-B



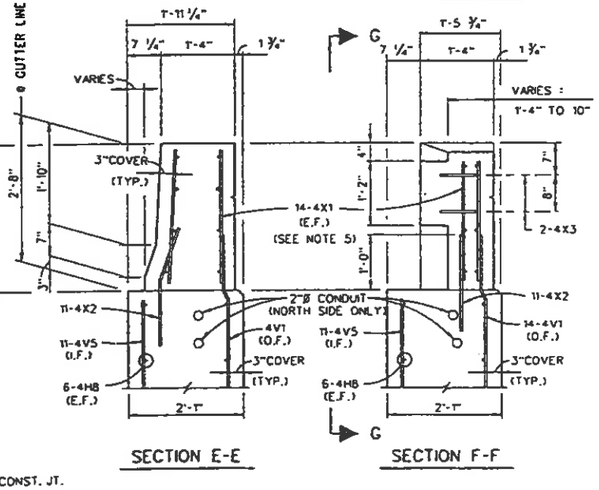
VIEW C-C



SECTION A-A

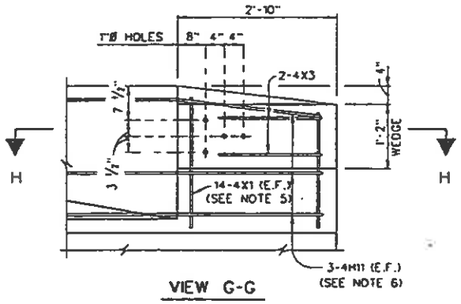


SECTION D-D

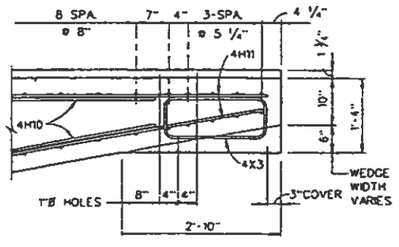


SECTION E-E

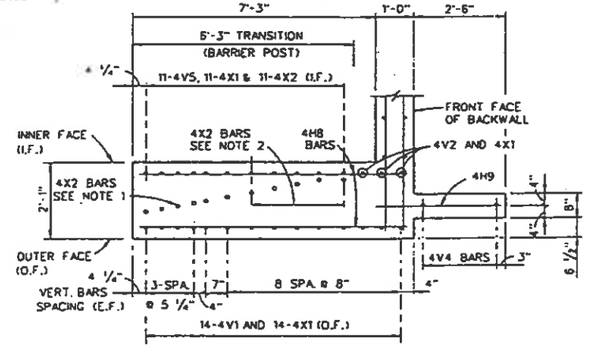
SECTION F-F



VIEW G-G



SECTION H-H



SECTION J-J

NOTE: 4X1 BARS LAP WITH 4V2 OR 4X2 BARS (I.F.)
4X1 BARS LAP WITH 4V1 BARS (O.F.)

NOTES:

1. SET X2 BARS TO LAP WITH X1 BARS.
2. FIELD BEND TOP OF X2 BARS (I.F.) TO MATCH TRANSITION IN BARRIER POST.
3. ALL TRANSITIONING BARRIER POSTS SHALL HAVE WEDGES & 1" DIA. HOLES FOR PRESENT OR FUTURE GUARDRAIL ATTACHMENT.
4. SECTIONS D-D, E-E AND F-F SHOWN FOR VIEW B-B, VIEW C-C OPPOSITE HAND
5. FIELD CUT 4X1 BARS AS REQUIRED TO FIT
6. FIELD BEND 2-4H11 (TOP) TO FIT.
7. FOR CONDUIT DETAIL, SEE SHEET No. B-6

WINGWALL ELEVATIONS

WINGWALL VIEW	EL. A	EL. B	EL. C	EL. D	EL. E
END BENT 1					
B-B	57.910	62.289	62.314	61.534	61.541
C-C		62.289	62.314	61.534	61.541
END BENT 4					
B-B	58.270	62.699	62.674	61.893	61.886
C-C		62.699	62.674	61.893	61.886

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REVISIONS

Date	By	Description	Date	By	Description

	Names	Dates
Drawn by	E.K.C.	4-96
Checked by	R.W.W.	4-96
Designed by	L.Z.	4-96
Checked by	S.W.J.	4-96
Approved by	SCOTT JONES, P.E.	

ENGINEER OF RECORD:
PITMAN-HARTENSTEIN & ASSOC., INC.
ENGINEERS
7820 ARLINGTON EXPWY
JACKSONVILLE, FLORIDA

LOGO:

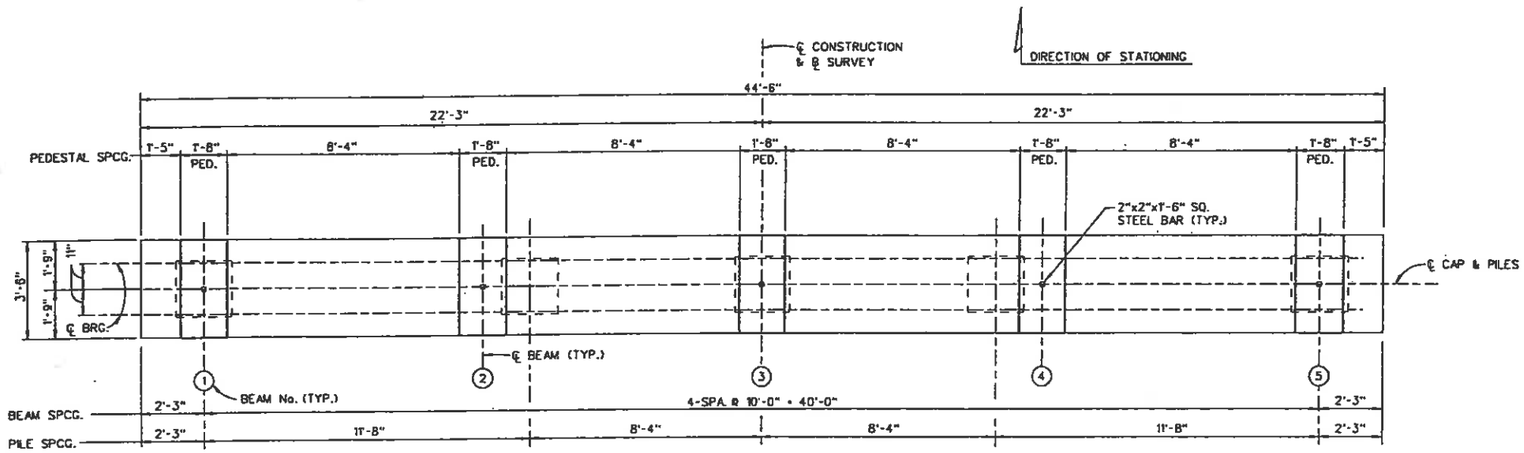
SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

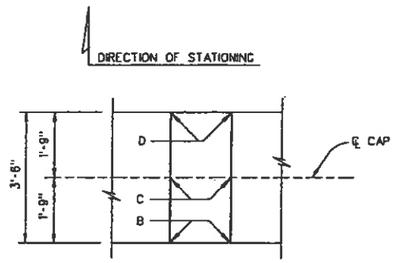
ROAD NO.	COUNTY	PROJECT NO.
S.R. 10	HOLMES	52010-3527

SHEET TITLE: END BENT DETAILS
Drawing No.
PROJECT NAME: S.R. 10 (U.S. 90) OVER LITTLE REEDY CREEK

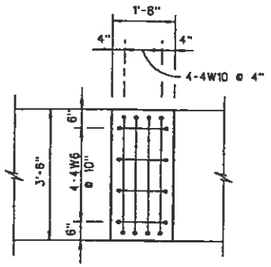
3	FLA.			B-14



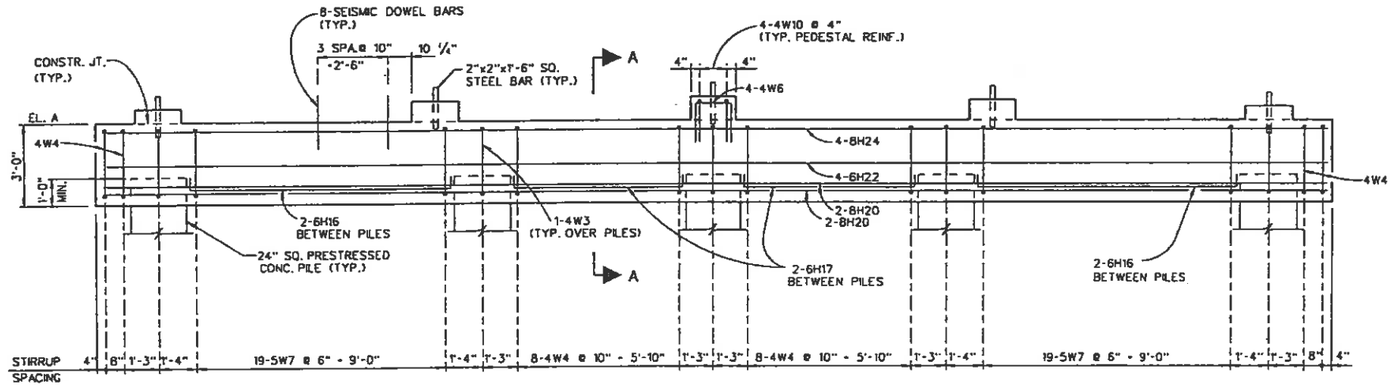
PLAN



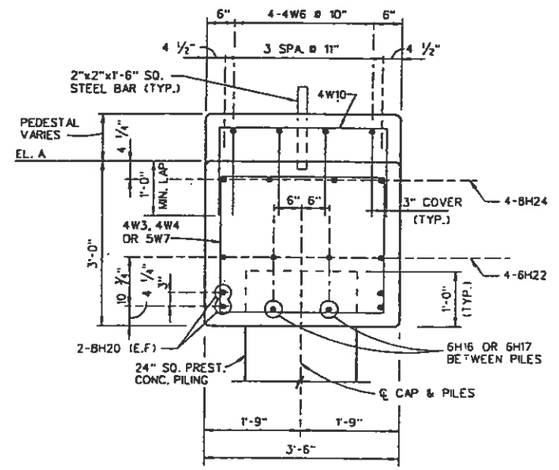
PEDESTAL PLAN
(SEE TABLE FOR ELEVATIONS)



PEDESTAL REINFORCING PLAN



ELEVATION



SECTION A-A

TABLE OF ELEVATIONS							
BENT	ELEVATION A	BEAM / ELEV.	1	2	3	4	5
BENT 2	58.030	B	58.546	58.746	58.946	58.746	58.546
		C	58.533	58.733	58.933	58.733	58.533
		D	58.557	58.757	58.957	58.757	58.557
BENT 3	58.150	B	58.666	58.866	59.066	58.866	58.666
		C	58.653	58.853	59.053	58.853	58.653
		D	58.677	58.877	59.077	58.877	58.677

ESTIMATED QUANTITIES			
ITEM	UNIT	INT. BENT 2	INT. BENT 3
CLASS IV CONCRETE (SUBSTRUCTURE)	C.Y.	17.29	17.29
REINFORCING STEEL (SUBSTRUCTURE)	LBS.	2,105	2,105
CLASS IV CONCRETE BREAKDOWN			
CAP	C.Y.	16.56	16.56
PEDESTALS	C.Y.	0.73	0.73

NOTE: FOR PILING QUANTITY, SEE SUMMARY OF BRIDGE PAY ITEMS.

NOTES:

1. FOR GENERAL NOTES, SEE SHEET No. B-1.
2. FOR REINFORCING BAR LIST AND DETAILS, SEE SHEET No's. B-22 AND B-23.
3. FOR PRESTRESSED CONCRETE PILE DETAIL, SEE SHEET No's. B-2 AND B-3.
4. FOR PILE CUTOFF ELEVATIONS, SEE SHEET No. B-11.
5. FOR LEGEND, SEE SHEET No. B-1.
6. FOR SEISMIC DOWEL BARS, SEE SHEET No. B-18

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REVISIONS

Date	By	Description	Date	By	Description

	Names	Dates
Drawn by	R.S.H.	4-96
Checked by	L.Z.	4-96
Designed by	L.Z.	4-96
Checked by	S.W.J.	4-96
Approved by	SCOTT JONES, P.E.	

ENGINEER OF RECORD:
PITMAN-HARTENSTEIN & ASSOC., INC. ENGINEERS
7820 ARLINGTON EXPWY. JACKSONVILLE, FLORIDA

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
S.R. 10	HOLMES	52010-3527

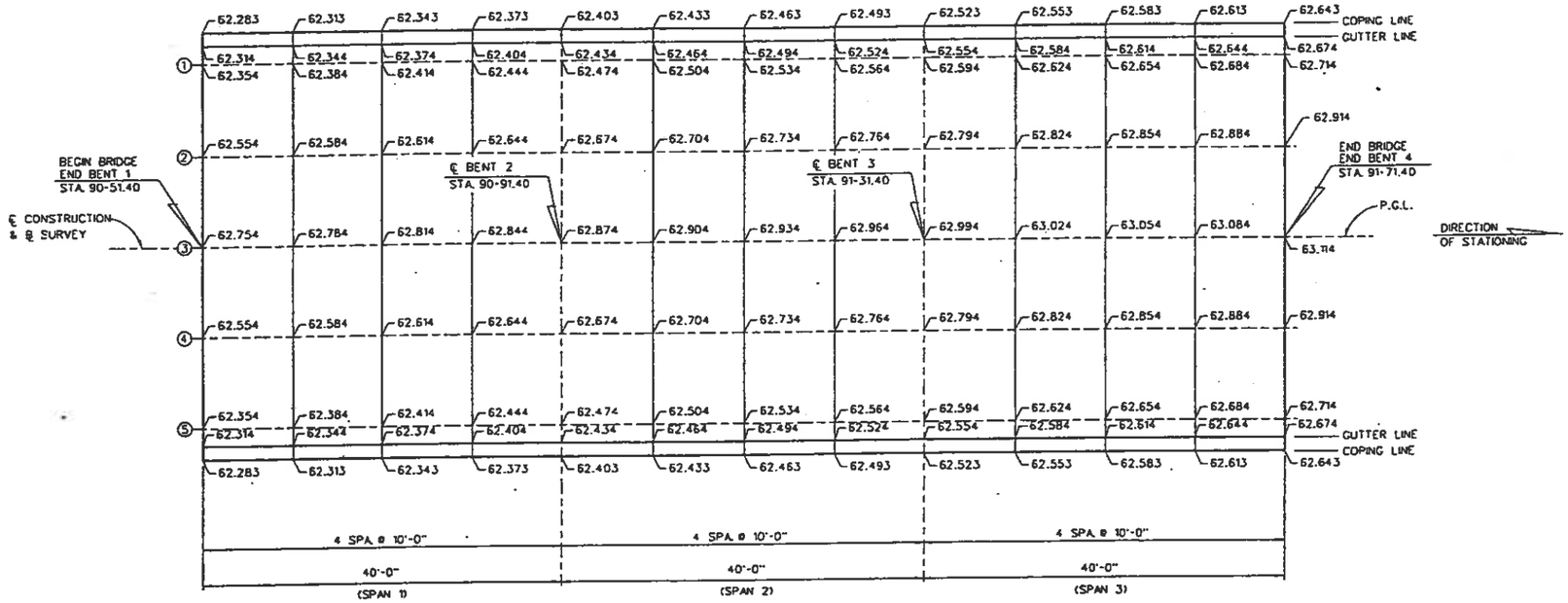
SHEET TITLE: INTERMEDIATE BENTS 2 AND 3

Drawing No.

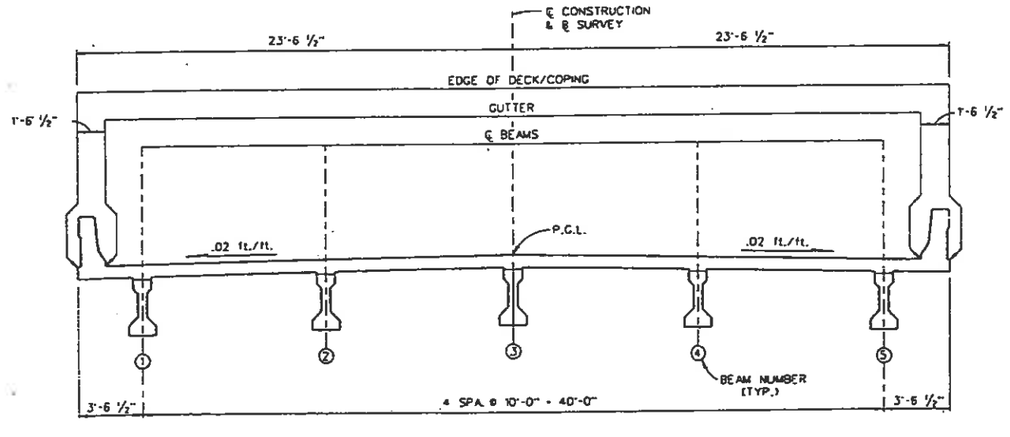
PROJECT NAME: S.R. 10 (U.S. 90) OVER LITTLE READY CREEK

Index No.

3	FLA.			8-15



PLAN
FINISH GRADE ELEVATIONS



TYPICAL SECTION THRU BRIDGE SHOWING
LOCATIONS OF ELEVATIONS

73B

REVISIONS					
Date	By	Description	Date	By	Description

	Names	Dates
Drawn by	R.S.H.	4-96
Checked by	L.Z.	4-96
Designed by	L.Z.	4-96
Checked by	R.W.W.	4-96
Approved by	SCOTT JONES P.E.	

ENGINEER OF RECORD:
PITMAN-HARTENSTEIN & ASSOC., INC.
ENGINEERS
7820 ARLINGTON EXPWY.
JACKSONVILLE, FLORIDA

LOGO:

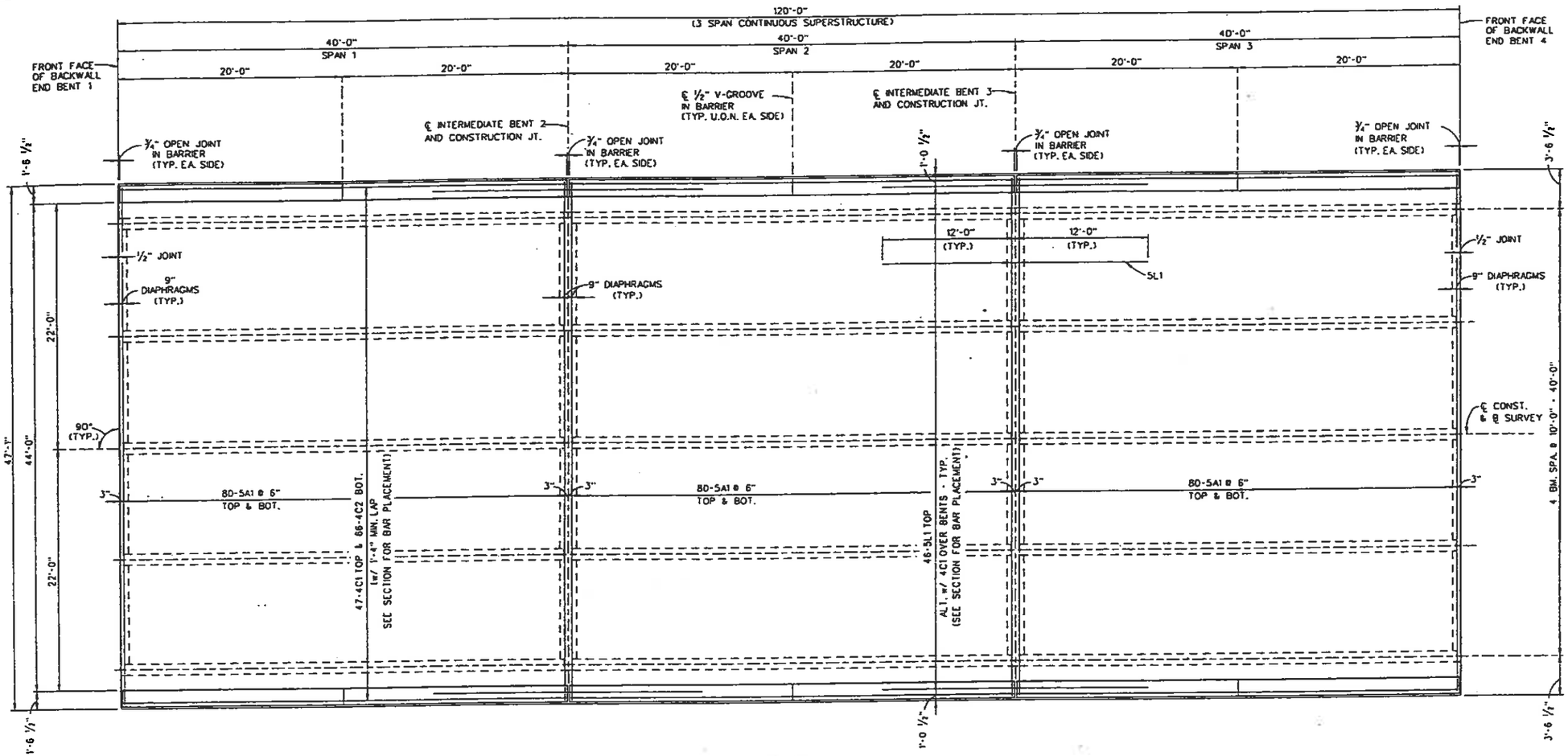
SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

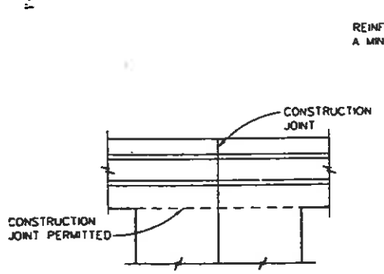
ROAD NO.	COUNTY	PROJECT NO.
S.R. 10	HOLMES	52030-3527

SHEET TITLE: FINISH GRADE ELEVATIONS
PROJECT NAME: S.R. 10 (U.S. 90) LITTLE REEDY CREEK
Drawing No.
Index No.

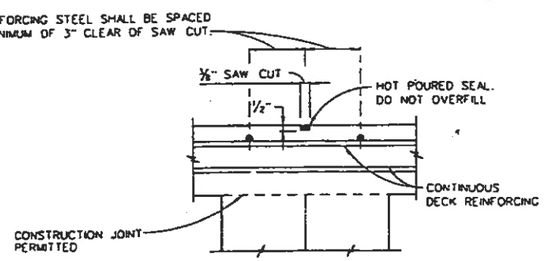
3	FLA.			B-16



PLAN



DETAIL A1

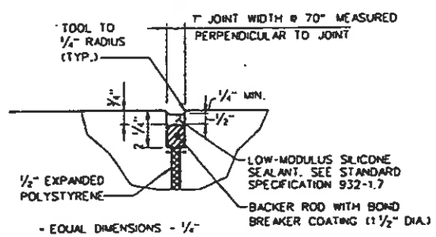


ALTERNATE DETAIL A2

SUPERSTRUCTURE JOINT DETAILS

NOTES:

1. DETAIL A1 SHALL APPLY WHEN SLAB PLACEMENT TERMINATES AT AN INTERIOR SUPPORT.
2. AT THE OPTION OF THE CONTRACTOR, ALTERNATE DETAIL A2 MAY BE USED WHEN SLAB PLACEMENT IS CONTINUOUS OVER AN INTERIOR SUPPORT. THE COST OF CONSTRUCTING ALTERNATE JOINTS A2 AT INTERIOR SUPPORTS SHALL BE AT CONTRACTORS EXPENSE. THE SAW CUTS SHALL BE MADE NO LATER THAN THE DAY FOLLOWING CONCRETE PLACEMENT.



EXPANSION JOINT DETAIL

NOTES:

1. SET VERTICAL BARS IN SLAB FOR TRAFFIC RAILING BARRIER. SEE SHEET No. B-4 (INDEX 700) FOR DETAILS.
2. FOR SUPERSTRUCTURE SECTIONS AND DETAILS, SEE SHEET No's. B-17 AND B-18.
3. FOR REINFORCING BAR LIST AND DETAILS, SEE SHEET No's. B-22 AND B-23.
4. FOR ESTIMATED QUANTITIES, SEE SHEET No. B-17.
5. FOR LEGEND, SEE SHEET No. B-1.
6. FOR PAYMENT OF EXPANSION JOINTS, SEE PAY ITEM NOTE "H" ON SHEET No B-1

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REVISIONS						Names	Dates
Date	By	Description	Date	By	Description	Drawn by	R.S.H. 4-96
						Checked by	L.Z. 4-96
						Designed by	L.Z. 4-96
						Checked by	S.W.J. 4-96
						Approved by	SCOTT JONES, P.E.

ENGINEER OF RECORD:
PITTMAN-FEENSTEIN & ASSOC., INC. ENGINEERS
[illegible] LINGTON EXPWY [illegible] NVILLE, FLORIDA

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
S.R. 10	HOLMES	52010-3527

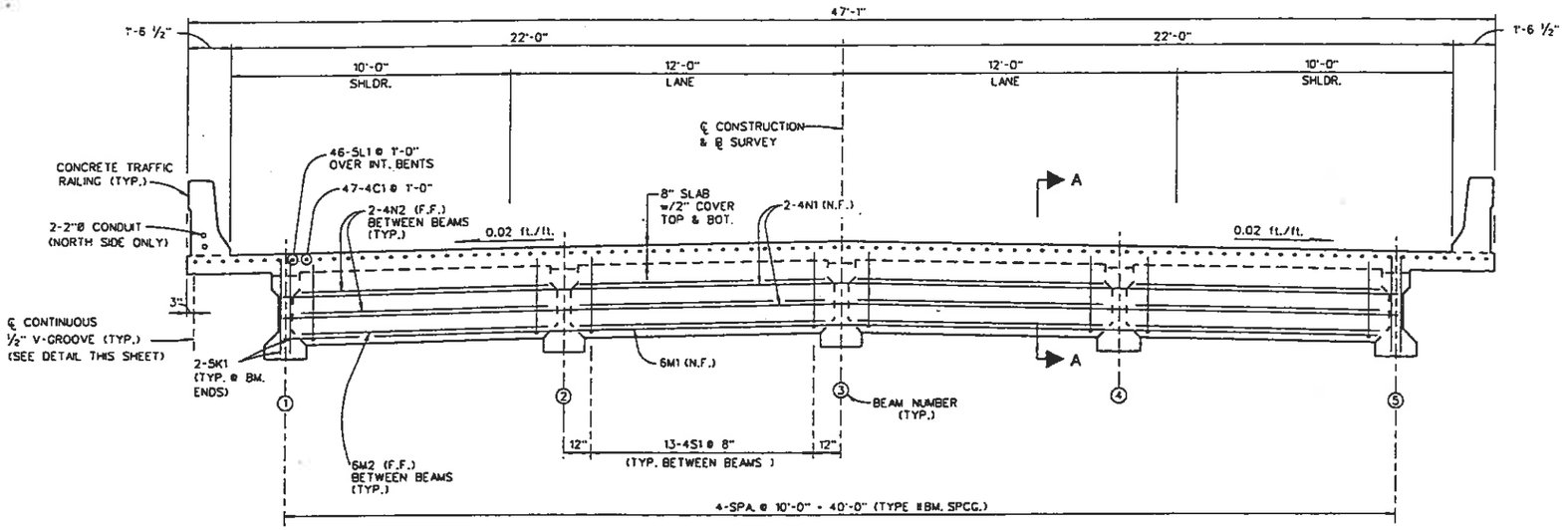
SHEET TITLE: SUPERSTRUCTURE
Drawing No.
PROJECT NAME: S.R. 10 (U.S. 90) OVER LITTLE REEDY CREEK
Sheet No. 74

3	FLA.			8-17

ESTIMATED QUANTITIES

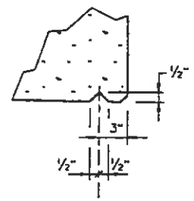
ITEM	UNIT	QUANTITY
CLASS II CONCRETE (SUPERSTRUCTURE)	C.Y.	157.69
REINFORCING STEEL (SUPERSTRUCTURE)	LBS.	37,859
CLASS II CONCRETE BREAKDOWN		
SLAB & BUILD-UP	C.Y.	140.65
DIAPHRAGMS	C.Y.	17.04

NOTE:
THE QUANTITY OF SUPERSTRUCTURE CONCRETE DOES NOT INCLUDE THE CONCRETE REQUIRED TO FILL THE STAY-IN-PLACE METAL FORM FLUTES. THE METAL FORM ATTACHMENTS AND ACCESSORIES AND ALL MISCELLANEOUS ITEMS REQUIRED TO INSTALL THE FORMS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE SUPERSTRUCTURE CONCRETE.

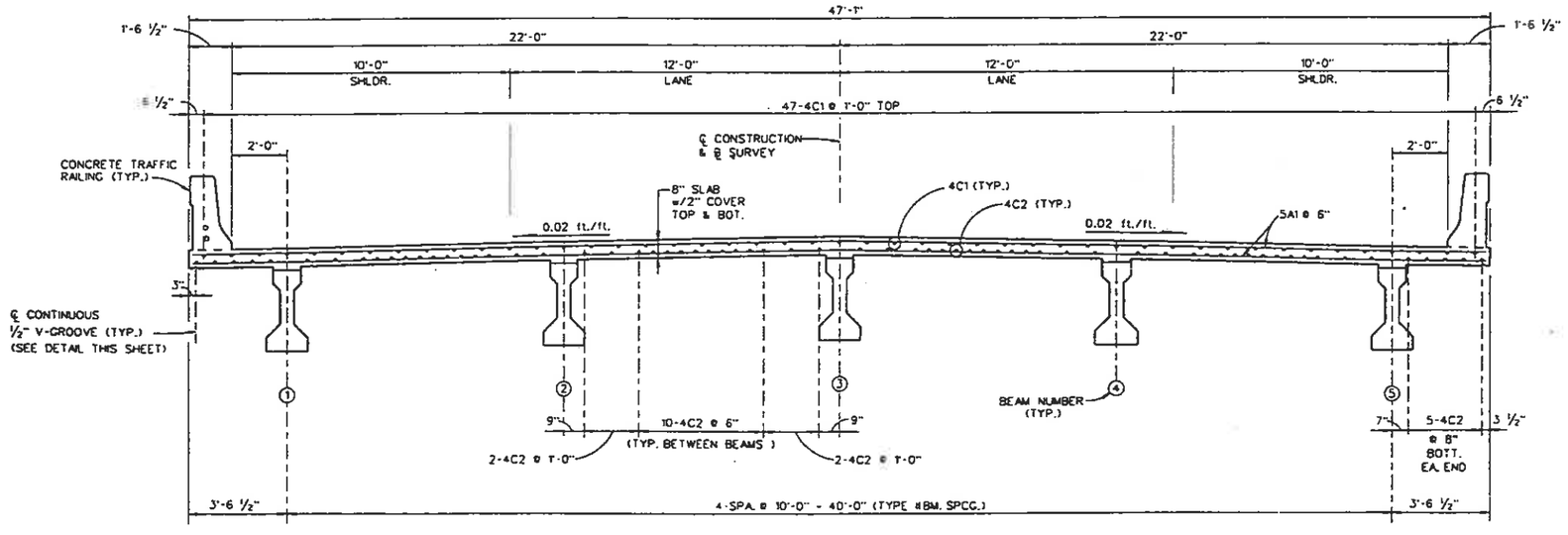


SECTION AT BENTS

(BOTTOM LONGITUDUNAL, TOP & BOTT. TRANSVERSE STEEL IN SLAB ARE NOT SHOWN FOR CLARITY)



V-GROOVE DETAIL



SECTION THRU DECK

TYPICAL SECTION

NOTES:

1. FOR TRAFFIC RAILING BARRIER REINFORCING STEEL, SEE SHEET No. B-4.
2. FOR REINFORCING BAR LIST AND DETAILS, SEE SHEET No's. B-22 & B-23.
3. FOR BEARING PAD DETAILS, SEE SHEET No. B-5.
4. FOR SECTION A-A, SEE SHEET No. B-18.
5. FOR UTILITY CONDUIT DETAILS, SEE SHEET No. B-6.
6. FOR GENERAL NOTES, SEE SHEET No. B-1.
7. FOR LEGEND, SEE SHEET No B-1.
8. FOR STAY-IN-PLACE FORM DETAILS, SEE SHEET No. B-19.

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REVISIONS							Names	Dates
Date	By	Description	Date	By	Description	Drawn by	R.S.H.	4-96
						Checked by	L.Z.	4-96
						Designed by	L.Z.	4-96
						Checked by	R.W.W.	4-96
						Approved by	SCOTT JONES, P.E.	

ENGINEER OF RECORD:
PITMAN-HARTENSTEIN & ASSOC., INC.
ENGINEERS
7820 ARLINGTON EXPWY.
JACKSONVILLE, FLORIDA

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

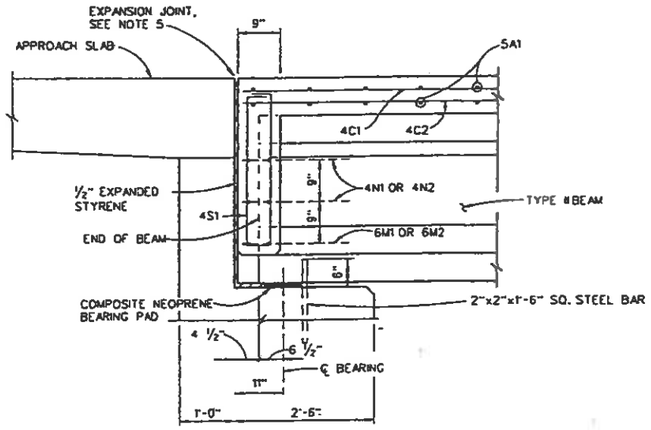
ROAD NO.	COUNTY	PROJECT NO.
S.R. 10	HOLMES	52010-3527

SHEET TITLE: SUPERSTRUCTURE SECTIONS

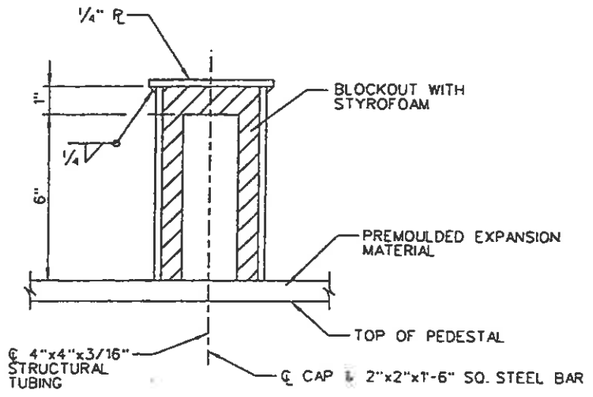
Drawing No.

PROJECT NAME: S.R. 10 (U.S. 90) OVER LITTLE REEDY CREEK

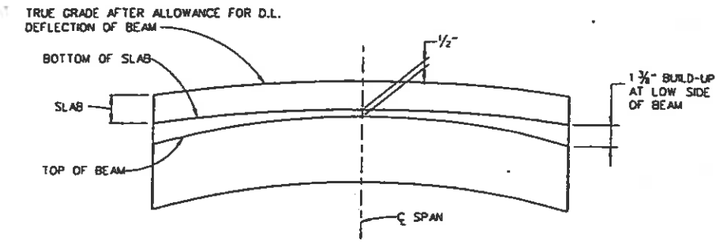
Index No.



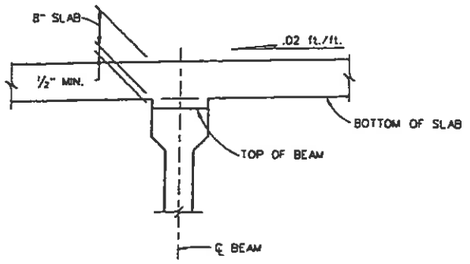
SECTION A-A AT END BENT



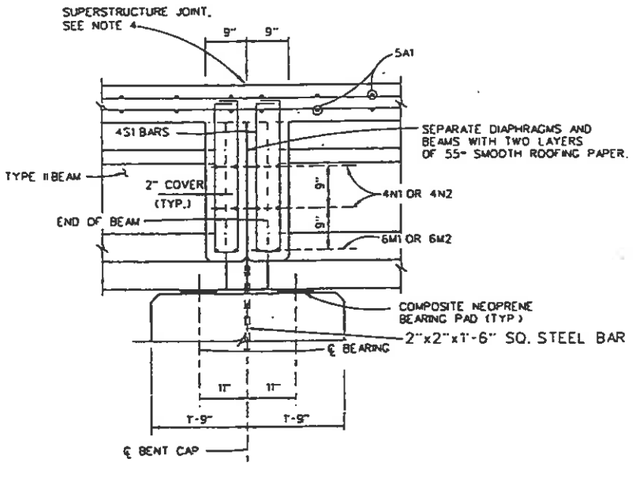
DETAIL A



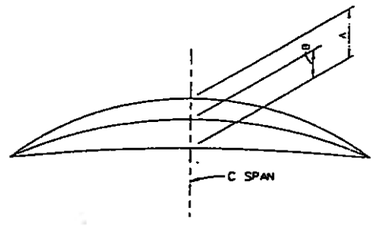
SKETCH SHOWING
RELATIONSHIP OF BEAM AND SLAB



DETAIL SHOWING
BUILD-UP OVER BEAMS



SECTION A-A AT INTERMEDIATE BENT



CAMBER DIAGRAM

LEGEND:

A - EXPECTED CAMBER DUE TO PRESTRESS AND BEAM DEAD LOAD AT 120 DAYS = 1⅜"
B - D.L. DEFLECTION DURING SLAB POUR = ¼"

NOTES:

1. ACTUAL CAMBER SHALL BE MEASURED PRIOR TO SETTING BEAMS.
2. IF ACTUAL MEASURED CAMBER IS MORE THAN ¼" LESS THAN PREDICTED, THE ENGINEER SHALL BE NOTIFIED BEFORE SETTING
3. IF ACTUAL MEASURED CAMBER IS MORE THAN ¼" GREATER THAN PREDICTED, THE ENGINEER SHALL BE NOTIFIED. POSSIBLE CORRECTIVE ACTION MAY BE GRINDING PEDESTALS.
4. FOR SUPERSTRUCTURE JOINT DETAILS, SEE SHEET No B-16
5. FOR EXPANSION JOINT DETAIL, SEE SHEET No. B-16.
6. FOR BEARING PAD DETAILS, SEE SHEET No B-5.
7. FOR PAYMENT OF SEISMIC DOWEL BARS AND SEISMIC DOWEL SLEEVES SEE PAY ITEM NOTE 'K' ON SHEET B-1.

76

REVISIONS						
Date	By	Description	Date	By	Description	

	Names	Dates
Drawn by	R.S.H.	4-96
Checked by	L.Z.	4-96
Designed by	L.Z.	4-96
Checked by	S.W.J	4-96
Approved by	SCOTT JONES, P.E.	

ENGINEER OF RECORD:
PITMAN-HARTENSTEIN & ASSOC., INC.
ENGINEERS
7220 FOLKSTON EXPWY
JACKSONVILLE, FLORIDA

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO	COUNTY	PROJECT NO.
S.R. 10	HOLMES	52010-3527

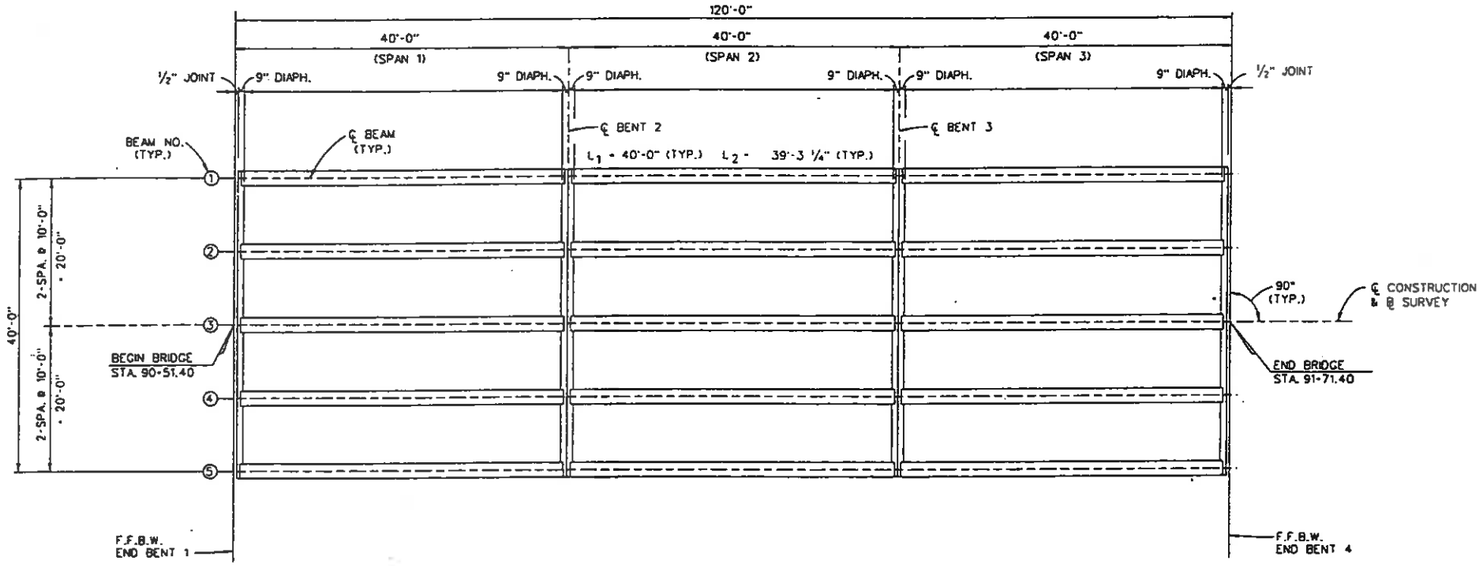
SHEET TITLE: SUPERSTRUCTURE DETAILS

Drawing No.

PROJECT NAME: S.R. 10 (U.S. 90) OVER LITTLE REEDY CREEK

Bridge No.

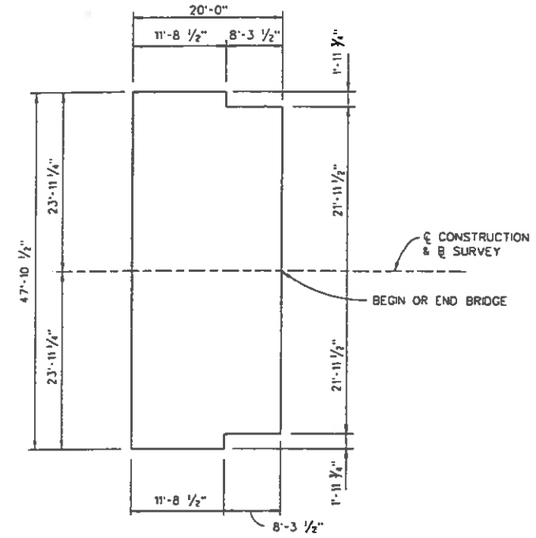
3	FLA.			B-19



FRAMING PLAN

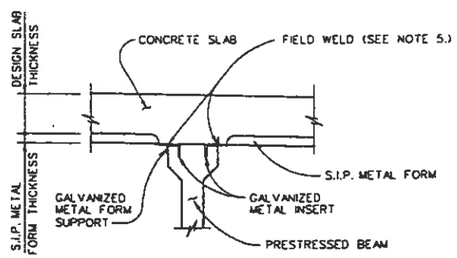
L_1 - DISTANCE BETWEEN ℄ INTERMEDIATE BENTS OR FRONT FACE OF BACKWALLS ALONG ℄ BEAM

L_2 - CASTING LENGTH (OVERALL LENGTH OF BEAM ALONG ℄ BEAM)

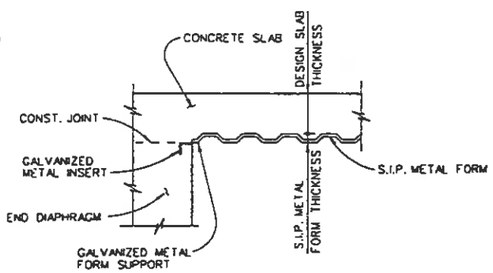


APPROACH SLAB PLAN DETAIL

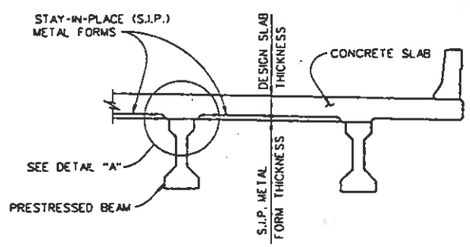
NOTE:
REFER TO ROADWAY PLANS SHEET No. 26, F.D.O.T. STANDARD APPROACH SLAB INDEX NO. 900, FOR REINFORCING AND ADDITIONAL DETAILS.



DETAIL "A"



PARTIAL SECTION THRU END OF SPAN



PARTIAL SECTION THRU SUPERSTRUCTURE

STAY-IN-PLACE FORMS AT CONCRETE BEAMS

NOTES FOR OPTIONAL STAY-IN-PLACE FORMS (S.I.P.)

1. STAY-IN-PLACE METAL FORMS MAY BE USED AS PER SPECIAL PROVISION.
2. THE QUANTITY OF SUPERSTRUCTURE CONCRETE SHOWN DOES NOT INCLUDE THE CONCRETE REQUIRED TO FILL THE STAY-IN-PLACE METAL FORM FLUTES.
3. THE COST OF STAY-IN-PLACE METAL FORMS, THE CONCRETE REQUIRED TO FILL THE FORM FLUTES, THE METAL FORM ATTACHMENTS AND ACCESSORIES AND ALL MISCELLANEOUS ITEMS REQUIRED TO INSTALL THE FORMS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE SUPERSTRUCTURE CONCRETE
4. ALL EMBEDDED ITEMS AND ACCESSORIES REQUIRED FOR THEIR USE SHALL BE INCLUDED IN THE SHOP DRAWING SUBMITTAL FOR THE FORMING SYSTEM.
5. ELECTRICAL GROUNDING TO REINFORCING STEEL IS PROHIBITED.

77

REVISIONS					
Date	By	Description	Date	By	Description

	Names	Dates
Drawn by	R.S.H.	4-96
Checked by	L.Z	4-96
Designed by	L.Z	4-96
Checked by	S.W.J.	4-96
Approved by	SCOTT JONES, P.E.	

ENGINEER OF RECORD:
PITMAN-HARTENSTEIN & ASSOC., INC. ENGINEERS
7820 ARLINGTON EXPWY. JACKSONVILLE, FLORIDA

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
S.R. 10	HOLMES	52010-3527

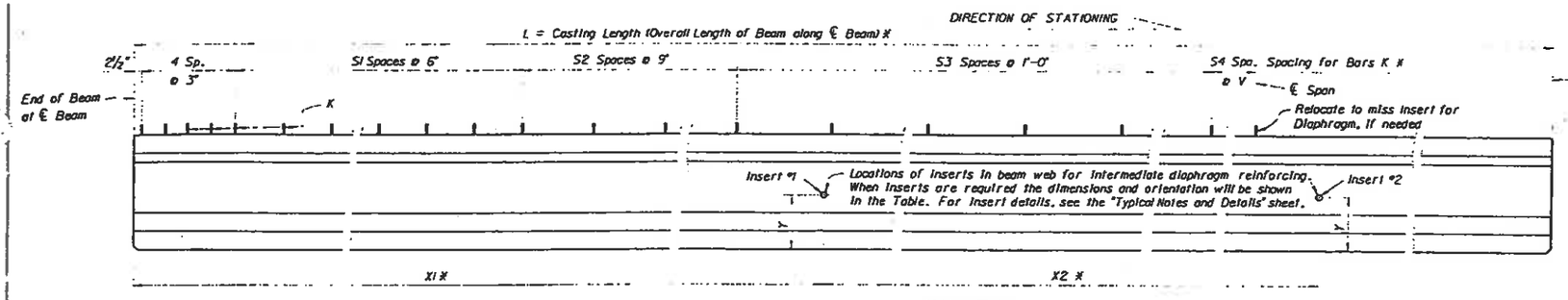
SHEET TITLE: FRAMING PLAN & STAY-IN-PLACE FORMS

Drawing No.

PROJECT NAME: S.R. 10 (U.S. 90) OVER LITTLE REEDY CREEK

Index No.

STATE	PROJECT NO.	FED. AID NO.	SHEET NO.
FLA.			B-20



ELEVATION

NOTE: Dimension R has been included in the lengths (L) of beams to compensate for elastic and time-dependent shortening effects.

BEAM NOTES

1. Work this sheet with Standard Index No. 100.

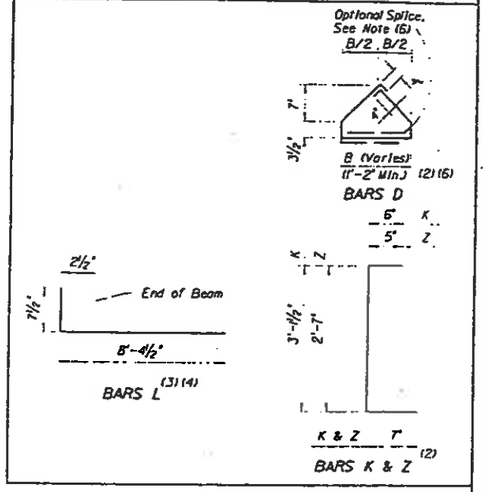
* Note: All longitudinal beam dimensions shown on this sheet with a single asterisk (*) are measured along the top of the beam at the centerline of beam.

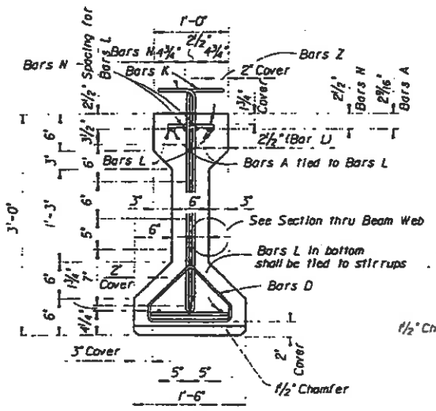
** Note: End of beam bearing dimensions "J" and "K" are measured along the bottom of the beam.

BILL OF REINFORCING STEEL FOR ONE BEAM ONLY

MARK	SIZE	NO. REQUIRED	LENGTH (1)
A	5	4	See Table
D (2)(6)	3	20	Varies (1'-2" Min.)
K (2)	4	See Table	4'-3"
L (3)(4)	4	18	9'-0"
N (5)	7/16" ø Strand	2	See Table
Z (2)	4	32	3'-7"

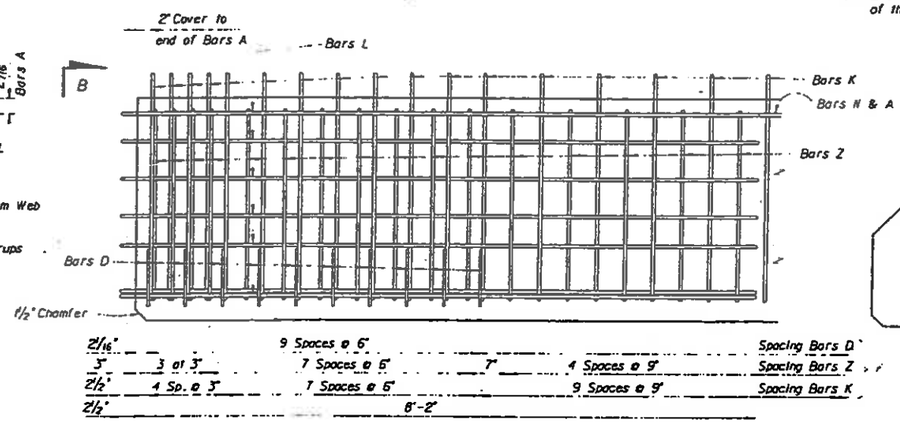
BENDING DIAGRAMS (1)





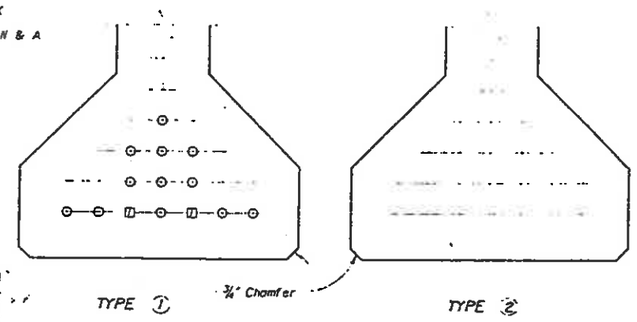
VIEW B-B

(With strands omitted, see Table for reference to strand pattern.)



DETAIL AT END OF BEAM

NOTE: Stirrups shall be placed and tied to the top of the fully bonded prestressing strands in the bottom row.



STRAND PATTERNS AND DEBONDING SCHEDULE

14 -½" 270k LOW RELAXATION STRANDS AT 30,990 lbs EA.

□ 5'-10"

NOTE: ○ -Indicates fully bonded strands.

□ -Indicates referenced pair of strands to be debonded the length shown which is measured from the end of the beam. *

NOTE: Place Bars K and Z one (1) each space (alternate).

TABLE OF BEAM VARIABLES

BEAM ID.	CONCRETE PROPERTIES CLASS	STRENGTHS REL. (f'ci)	STRENGTHS 28-DAY (f'c)	STND PTRN TYPE	PLAN VIEW CASE	END ELEV COND.	END OF BEAM AND BEARING DIMENSIONS ** ANGLE ø	DIM P	DIM J	DIM K	BEAM DIMENSIONS * DIM L	DIM R	DIM V	NUMBER OF SPACES FOR STIRRUP BARS K S1	S2	S3	S4	DIAPHRAGM INSERT LOCATIONS* DIM X1	DIM X2	DIM Y	WS/FS (7) #1	WS/FS (7) #2	REINFORCING STEEL A LENGTH*	K NO. REQ'D	N LENGTH*
I-5	V SPEC.	5000	6000	D	1	1	90°	0	6½"	11"	39'-3¼"	½"	1'-2⅛"	7	9	7	1						10'-0"	55	39'-7¼"

NOTES:

(1) All bar dimensions are out-to-out.

(2) Bars D,K, and Z shall be bent around pins having the following diameters for respective sizes:

Bar Size	Pin Diameters
#3	1"
#4	2"

(3) Bars L shall be bent prior to the beam leaving the prestressing yard. For treatment of bars L at skewed beam ends, see "Plan Ends of Beams".

(4) Caution should be used with Bars L in the ends of exterior beams to assure that the bent portion of the bar is properly oriented so that the bar will be embedded in the diaphragm concrete.

(5) Bars N shall be either ASTM A416, Grade 250 or 270, seven-wire strands 7/16"ø or larger, stressed to 10,000 lbs. each.

(6) The minimum Dimension B and length of Bars D shown apply to one-piece Bars D placed perpendicular to the centerline of the beam. Dimension B and the length of Bars D for beams with skewed ends vary with the skew (See "Plan Ends of Beams").
At the Contractor's option, Bars D may be fabricated either as a two-piece bar with a 1'-2" lap splice of the bottom legs or may be welded wire fabric, one or two-piece, provided the wire size and spacing furnishes the same steel area as the No. 3 Bars shown.

(7) (WS) means Near Side and (FS) means Far Side, both referring to which face of the beam web is to receive the insert for the dimensioned location. (NS) and (FS) are referenced to the DIRECTION OF STATIONING shown.

(8) CONTRACTOR'S OPTION: Welded deformed wire fabric reinforcement may be used in lieu of Bars D, K, L and Z provided the wire sizes and spacings match those shown on this sheet for these bars.

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REVISIONS						
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	

Designed By	E.K.C.	4-96
Detailed By	L.Z.	4-96
Checked By	L.Z.	4-96
Quantities By	R.W.W.	4-96
Approved By	SCOTT JONES	

ENGINEER OF RECORD: PITTMAN-HARTENSTEIN & ASSOC., INC. ENGINEERS, 7620 ARLINGTON EXPWY, JACKSONVILLE, FLORIDA

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

FED. NO.	DIST.	COUNTY NO.
S.R. 10	HOLMES	52010-3527

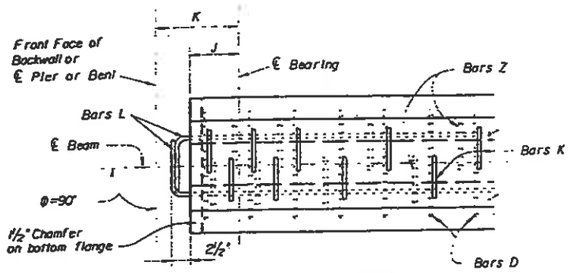
AASHTO TYPE II BEAMS

Sheet No. 1 of 1

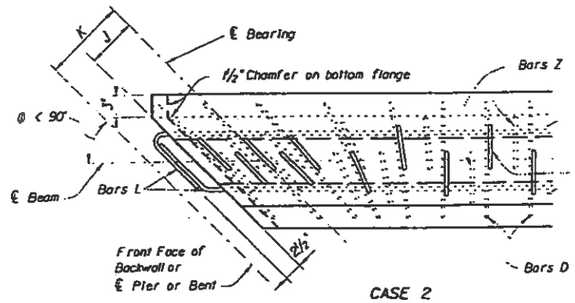
PROJECT NAME: S.R. 10 (U.S. 90) OVER UTTLE REEDY CREEK

Type No. S-102

	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
	FLA.			B-21

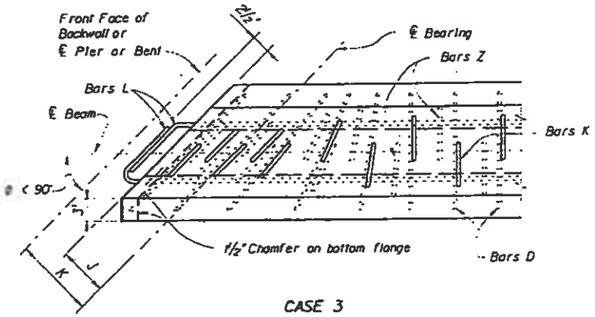


CASE 1



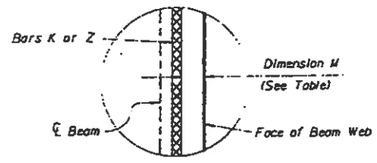
CASE 2
(See Note)

PLAN ENDS OF BEAMS



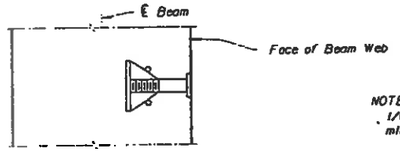
CASE 3
(See Note)

Note: For both Plan Views Case 2 and Case 3, the first Bar Z and the first two Bars K shall be placed parallel to the skewed end of the Beam. The remainder of the Bars Z & K shall be placed so as to transition from the skewed end to an axis perpendicular to the centerline of the beam. Bars D in the bottom flange shall be rotated along with Bars Z & K. Bar spacing may not agree with Beam Sheets.



SECTION THRU BEAM WEB
(Showing Concrete Cover)

TABLE OF DIMENSIONS M	
BEAM TYPE	DIMENSION M
II	2"
III	2½"
IV	3"



SECTION THRU BEAM WEB AT INSERT FOR DIAPHRAGM REINFORCING
(When Intermediate Diaphragms are Required)

NOTE: Insert shall be 1"Ø, zinc-electroplated, ferrule wing nut, UNC threads, 1/0 minimum gage wire, not more than 4" in depth and shall have a minimum ultimate tensile strength of 11,400 lbs. in 4000 psi concrete.

If inserts are needed on both sides of web on assembly as long as the the thickness of the web, consisting of two (2) Ferrule Inserts attached by two (2) or more struts may be utilized. The connecting struts shall have a minimum ultimate tensile strength of 22,800 lbs..

BEAM NOTES

MORTAR LEAKAGE: Any mortar leakage that occurs and stains resulting from leakage shall be removed so that beams have a uniform appearance.

STRANDS: At the option of the Contractor, other types, sizes and/or configurations of strands may be used in lieu of the stranding shown on these sheets. Calculations shall be submitted showing the substitution meets the following requirements:

1. The strands meet all the requirements of ASTM A416 for the grade of strands proposed.
2. The net compressive stress in the concrete due to prestressing acting alone, after all losses, is not less than that provided by the stranding shown on these sheets.
3. The ultimate strength of the structure with the proposed stranding is not less than the ultimate strength of the original design.
4. The proposed stranding complies in all respects with the Department's Structures Design Guidelines.

FINISH: The top surface of the beam shall be rough floated and then scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface for bonding. All beams shall receive a Class 3 surface finish.

SUBMITTALS: The Specifications stipulate the conditions for which Shop Drawings are not required. If each and every condition cannot be met, then a formal Shop Drawing submittal is required. Supplemental reinforcing provided by the Contractor to facilitate fabrication of prestressed beams do not require Shop Drawings.

STRAND DETENSIONING: Strand detensioning shall be based upon the following priority, from first to last:

1. Top dormant strands (Bars N)
2. Fully bonded strands
3. Partially debonded (shielded) strands

FORMS AND PALLETS: All beams shall be cast on concrete based pallets and in metal forms.

HANDLING: In the handling of beams, they must be maintained in an upright position at all times and must be picked up from points located a maximum distance of 3 ft. from the ends of the beam.

STORAGE AND TRANSPORTATION: Beams shall be stored on adequate dunnage and supported during transit within 18" from ends of beam.

STRAND EXTENSION: All strands shall extend 2½" beyond ends of beams.

CONCRETE: Refer to Table of Beam Variables on the individual beam sheets for the class of concrete, 28-day strength (f'c) and cylinder strength at transfer of the tensioning load (f'ci).

REINFORCING STEEL: All reinforcing steel shall be ASTM A615 Grade 60.

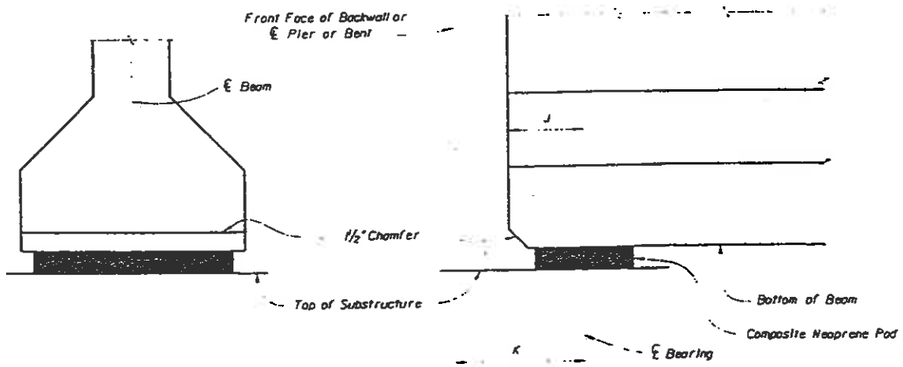
BEARING PADS: The cost of installing bearing pads shall be included in the contract unit price of prestressed beams. The composite neoprene pads may or may not be furnished to the contractor by FDOT. See the General Notes for the bridge, or the Bid Item Notes, for additional information regarding who the pads provider will be.

MISCELLANEOUS: The cost of inserts for diaphragm tie bars shall be included in the contract unit prices for prestressed beams.

NOTES: Work this sheet with individual beam sheets, Type II, III and IV only.

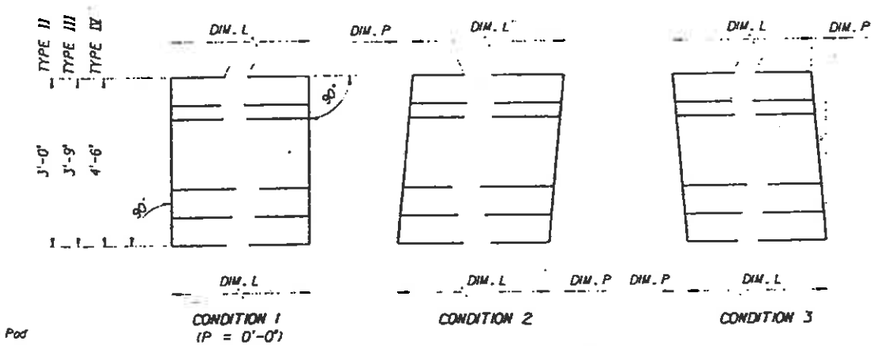
See "TABLE OF BEAM VARIABLES" on individual beam sheets for angle "Ø"s and dimensions "J", "K", "L" and "P".

For beams with vertically bevelled ends, such as conditions 2 & 3, the first Bar K shall be placed parallel to the end bevel. Adjacent Bars Z and K shall be placed so as to transition from the end bevel to a vertical axis. The spacing of Bars K and Z shown shall apply along the top flange of the beam and the spacing along the bottom of the beam shall be adjusted by not more than ½" (32 / 64) until the vertical position is attained.



END ELEVATION
(Perpendicular to ℄ Beam)

SIDE ELEVATION
(Perpendicular To ℄ Bearing)



END ELEVATIONS OF BEAMS
(Showing Vertical Bevel of Beam End)

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REVISIONS						DESIGNED	NAMES	DATES
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DRAWN BY	WEH	1-89
			94R			CHECKED BY	DCP	1-89
						DESIGNED BY	DCP	1-89
						CHECKED BY	WEH	1-89

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

TYPICAL NOTES AND DETAILS FOR AASHTO TYPE II, III AND IV PRESTRESSED BEAMS

DRAWING NO. 1 of 1

ROAD NO. | COUNTY | PROJECT NO.
S.R. 10 (U.S. 90) OVER LITTLE REEDY CREEK | 100

MARK		LENGTH		NO.	TYP	STY		B			C			D			E			F			H			J			K			N	Ø
SIZE	DES	FT.	IN.	BARS	BAR	A	G	FT.	IN.	FR.	FT.	IN.	FR.	FT.	IN.	FR.	FT.	IN.	FR.	FT.	IN.	FR.	FT.	IN.	FR.	FT.	IN.	FR.	FT.	IN.	FR.	No.	ANG.
LOCATION - END BENTS 1 AND 4																															No. REQUIRED: 2	
8	H1	47	08	4	1			47	08																								
8	H2	47	08	4	1			47	08																								
6	H3	47	08	4	1			47	08																								
4	H6	47	08	10	1			47	08																								
4	H8	7	09	24	1			7	09																								
4	H9	3	03	10	1			3	03																								
4	H10	5	09	4	1			5	09																								
4	H11	7	09	12	1			7	09																								
8	H12	10	03	14	1			10	03																								
6	H13	4	05	4	11			2	05		1	00		1	00																		
6	H14	8	10	4	11			5	10		1	00		1	00																		
6	H15	6	04	8	11			4	04		1	00		1	00																		
4	V1	5	06	28	28			4	00		1	00		0	06		0	01														
4	V2	5	07	6	12			4	05		1	02																					35.5
4	V3	2	08	64	1			2	08																								
4	V4	3	05	8	1			3	05																								
4	V5	4	01	22	1			4	01																								
4	V6	3	02	88	1			3	02																								
4	V7	2	06	88	1			2	06																								
6	V8	1	06	11	1			1	06																								
4	W1	7	06	8	5			1	11		3	00		0	04		0	04														
4	W2	10	07	51	4	4	4	1	11		3	00																					
4	W5	5	04	19	11			2	00		1	08		1	08																		
4	W6	4	06	12	11			1	02		1	08		1	08																		
4	W7	5	08	8	11			2	04		1	08		1	08																		
4	X1	2	05	56	1			2	05																								
4	X2	2	00	22	1			2	00																								
4	X3	6	00	4	7			1	10		0	10		0	09		0	09														

MARK		LENGTH		NO.	TYP	STY		B			C			D			E			F			H			J			K			N	Ø
SIZE	DES	FT.	IN.	BARS	BAR	A	G	FT.	IN.	FR.	FT.	IN.	FR.	FT.	IN.	FR.	FT.	IN.	FR.	FT.	IN.	FR.	FT.	IN.	FR.	FT.	IN.	FR.	FT.	IN.	FR.	No.	ANG.
LOCATION - INTERMEDIATE BENTS 2 AND 3																															No. REQUIRED: 2	
6	H16	11	00	4	11			9	00		1	00		1	00																		
6	H17	7	08	4	11			5	08		1	00		1	00																		
8	H20	44	00	4	1			44	00																								
6	H22	44	00	4	1			44	00																								
8	H24	44	00	4	1			44	00																								
4	W3	8	08	5	5			2	06		3	00		0	04		0	04														
4	W4	11	09	20	4	4	4	2	06		3	00																					
4	W6	3	10	20	11			1	02		1	04		1	04																		
5	W7	12	00	38	4	4	4	2	06		3	00																					
4	W10	5	08	20	11			3	00		1	04		1	04																		
LOCATION - SUPERSTRUCTURE																															No. REQUIRED: 1	
5	A1	46	09	480	12			23	04	½	23	04	½																				2.3
4	C1	122	04	47	41			40	06		41	04		40	06											1	04					2	
4	C2	122	04	66	41			40	06		41	04		40	06											1	04					2	
5	L1	24	00	92	1			24	00																								
5	K1	3	04	60	1			3	04																								
6	M1	40	00	6	12			20	00		20	00																					2.3
6	M2	8	07	24	1			8	07																								
4	N1	40	00	12	12			20	00		20	00																					2.3
4	N2	9	02	48	1			9	02																								
4	S1	6	10	312	7			2	10		0	05		0	04		0	04														

NOTES:

1. ALL BAR DIMENSIONS SHOWN ARE OUT-TO-OUT.
2. FOR STANDARD BAR BENDING DETAILS, SEE SHT. No. B-23..

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.
3	FLA.			B-22

REVISIONS					
Date	By	Description	Date	By	Description

	Names	Dates
Drawn by	R.S.H.	12-95
Checked by	R.W.W.	12-95
Designed by	L.Z.	12-95
Checked by	R.W.W.	12-95
Approved by	SCOTT JONES, P.E.	

ENGINEER OF RECORD:
PITTMAN MARTENSTEIN & ASSOC., INC.
ENGINEERS
[illegible] WASHINGTON EXPWY.
JACKSONVILLE, FLORIDA

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
S.R. 10	HOLMES	52010-3527

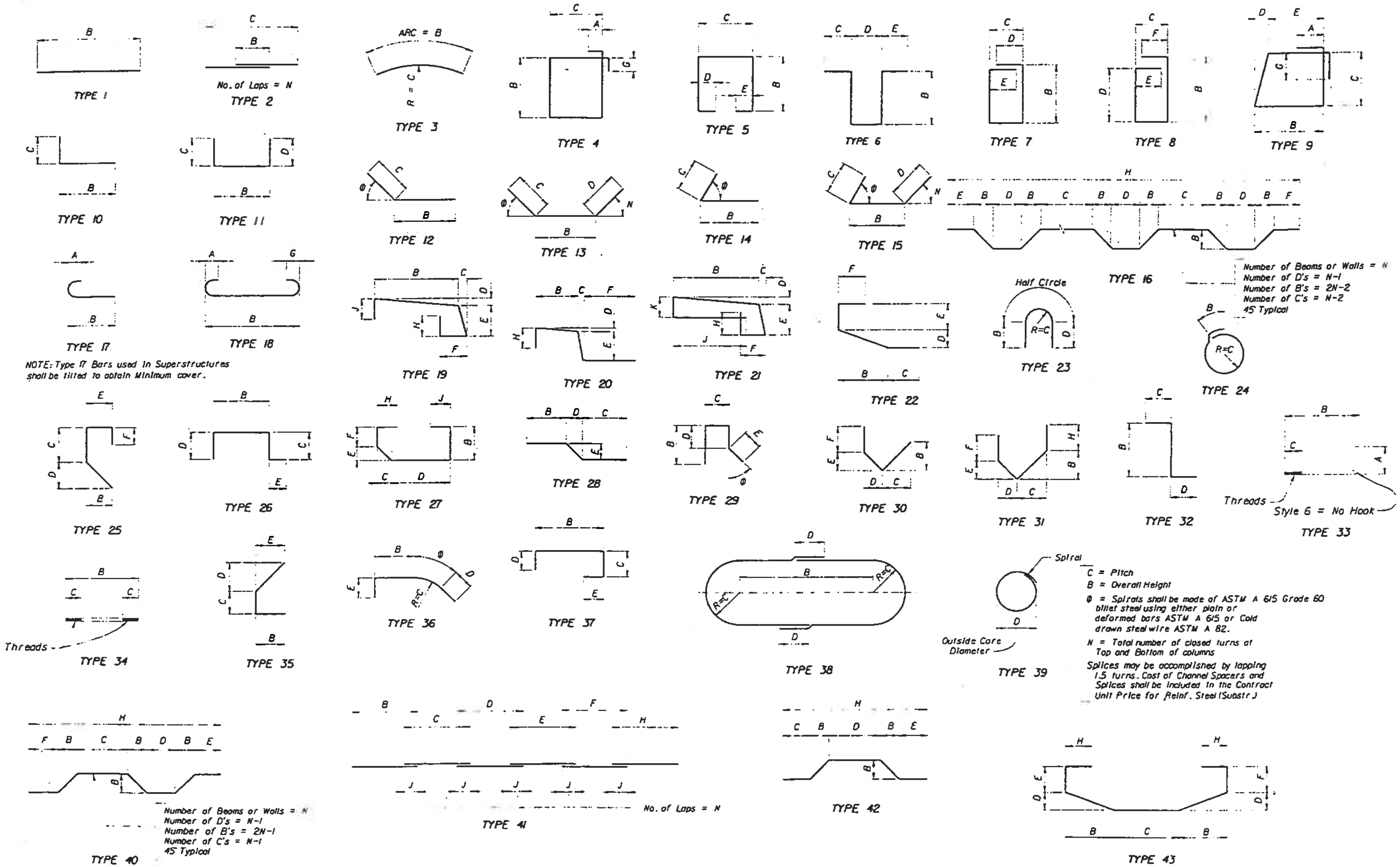
SHEET TITLE: REINFORCING BAR LIST

Drawing No.

PROJECT NAME: S.R. 10 (U.S. 90) OVER LITTLE REEDY CREEK

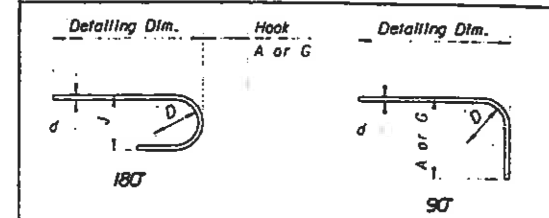
Index No.

80

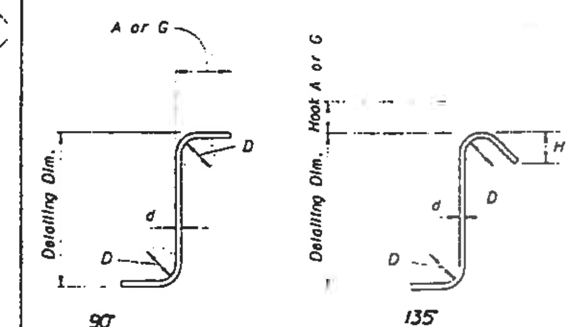

TYPE 1
No. of Laps = N
TYPE 2
ARC = B
TYPE 3
TYPE 4
TYPE 5
TYPE 6
TYPE 7
TYPE 8
TYPE 9
TYPE 10
TYPE 11
TYPE 12
TYPE 13
TYPE 14
TYPE 15
TYPE 16
Number of Beams or Walls = N
Number of D's = N-1
Number of B's = 2N-2
Number of C's = N-2
45° Typical
TYPE 17
NOTE: Type 17 Bars used in Superstructures shall be tilted to obtain Minimum cover.
TYPE 18
TYPE 19
TYPE 20
TYPE 21
TYPE 22
Half Circle
TYPE 23
TYPE 24
TYPE 25
TYPE 26
TYPE 27
TYPE 28
TYPE 29
TYPE 30
TYPE 31
TYPE 32
Threads
Style 6 = No Hook
TYPE 33
Threads
TYPE 34
TYPE 35
TYPE 36
TYPE 37
TYPE 38
Spiral
C = Pitch
B = Overall Height
Φ = Spirals shall be made of ASTM A 615 Grade 60 billet steel using either plain or deformed bars ASTM A 615 or Cold drawn steel wire ASTM A 82.
N = Total number of closed turns at Top and Bottom of columns
Splices may be accomplished by lapping 1.5 turns. Cost of Channel Spacers and Splices shall be included in the Contract Unit Price for Reinf. Steel (Substr.)
Outside Core Diameter
TYPE 39
Number of Beams or Walls = N
Number of D's = N-1
Number of B's = 2N-1
Number of C's = N-1
45° Typical
TYPE 40
No. of Laps = N
TYPE 41
TYPE 42
TYPE 43

NOTE: For Bar Dimensions See REINFORCING BAR LIST Sheet.

HOOK DETAILS



BAR SIZE	D	180° HOOKS A OR G	180° HOOKS J	90° HOOKS A OR G
#3	2¼"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3¾"	7"	5"	10"
#6	4½"	8"	6"	1'-0"
#7	5¼"	10"	7"	1'-2"
#8	6"	11"	8"	1'-4"
#9	9½"	1'-3"	11¾"	1'-7"
#10	10¾"	1'-5"	1'-1¼"	1'-10"
#11	12"	1'-7"	1'-2¾"	2'-0"
#14	18¼"	2'-3"	1'-9¾"	2'-7"
#18	24"	3'-0"	2'-4½"	3'-5"
STYLE		1		3



STIRRUPS
(TIES SIMILAR)

RECOMMENDED STIRRUP & TIE HOOK DIMENSIONS

BAR SIZE	D	90° HOOKS HOOK A or G	135° HOOKS HOOK A or G	135° HOOKS APPROX. H
#3	1½"	4"	4"	2½"
#4	2"	4½"	4½"	3"
#5	2½"	6"	5½"	3¾"
#6	4½"	1'-0"	7¾"	4½"
#7	5¼"	1'-2"	9"	5¼"
#8	6"	1'-4"	10¼"	6"
STYLE		4	5	

STYLE 6 = NO HOOK

Hook Styles Detailed on this sheet are for Illustration Only.

Actual Hook Style for any particular bar will be shown under A or G Heading on REINFORCING BAR LIST sheet.

All Dimensions are out-to-out.

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REVISIONS
94R

ENGINEER OF RECORD:
STRUCTURES DESIGN OFFICE
CENTRAL OFFICE
605 Suwannee Street, MS 33
Tallahassee, Florida 32399-0450

LOGO:

SEAL:

FLORIDA DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN OFFICE

ROAD NO.	COUNTY	PROJECT NO.
S.R. 10	HOLMES	52010-3527

STANDARD BAR BENDING DETAILS

S.R. 10 (U.S. 90) OVER LITTLE REEDY CREEK

1 of 1

1300

THIS CONTRACT PLAN SET INCLUDES:

SUMMARY OF PAY ITEMS (4 SHEETS)
ROADWAY PLANS
STRUCTURE PLANS

A DETAILED INDEX APPEARS ON THE KEY SHEET OF EACH COMPONENT SET OF PLANS

INDEX OF ROADWAY PLANS

RECYCLED PAPER

THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AND ARE GOVERNED BY THE STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, ROADWAY AND TRAFFIC DESIGN STANDARDS (BOOKLET DATED JANUARY, 1994).

REVISIONS

PROJECT No. 52010-3529 BRIDGE SHEETS B-1 & B-9	3-6-97
PROJECT No. 52010-3528 ROADWAY SHEET 34	3-6-97
PROJECT No. 52010-3530 BRIDGE SHEETS B-1 & B-9	3-6-97

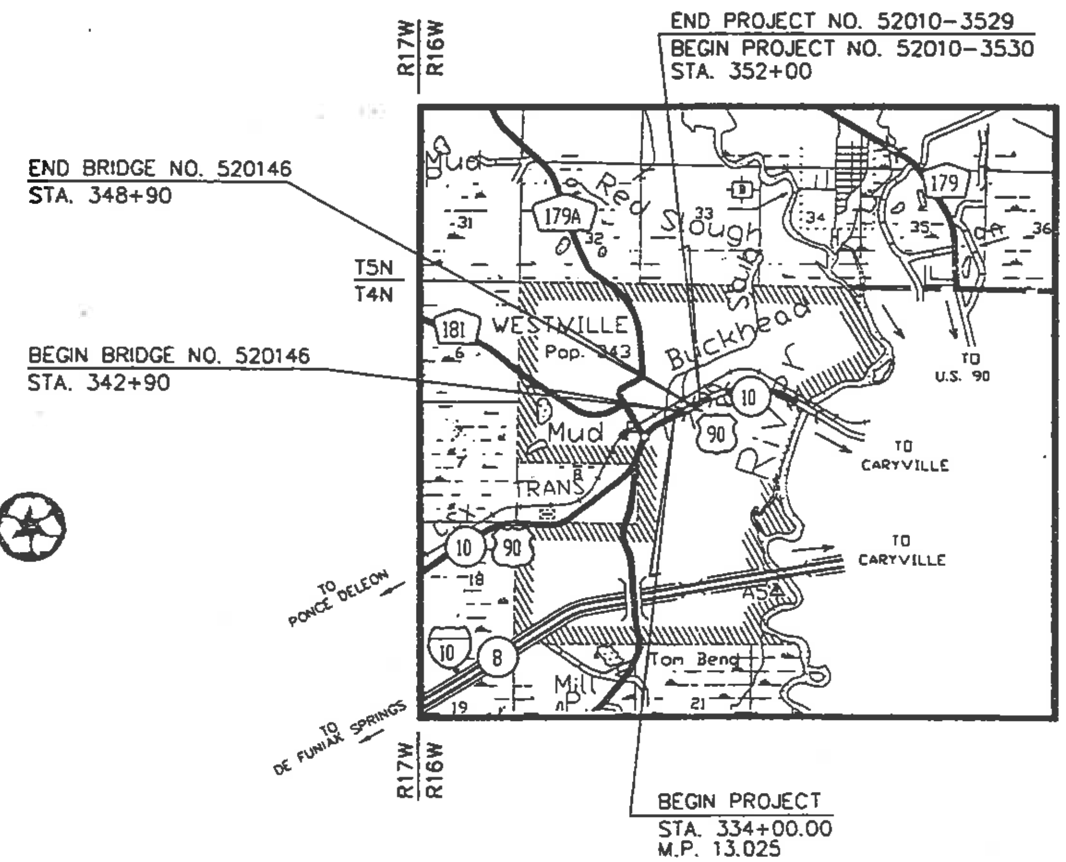
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
STATE HIGHWAY

STATE PROJECT NO. 52010-3529

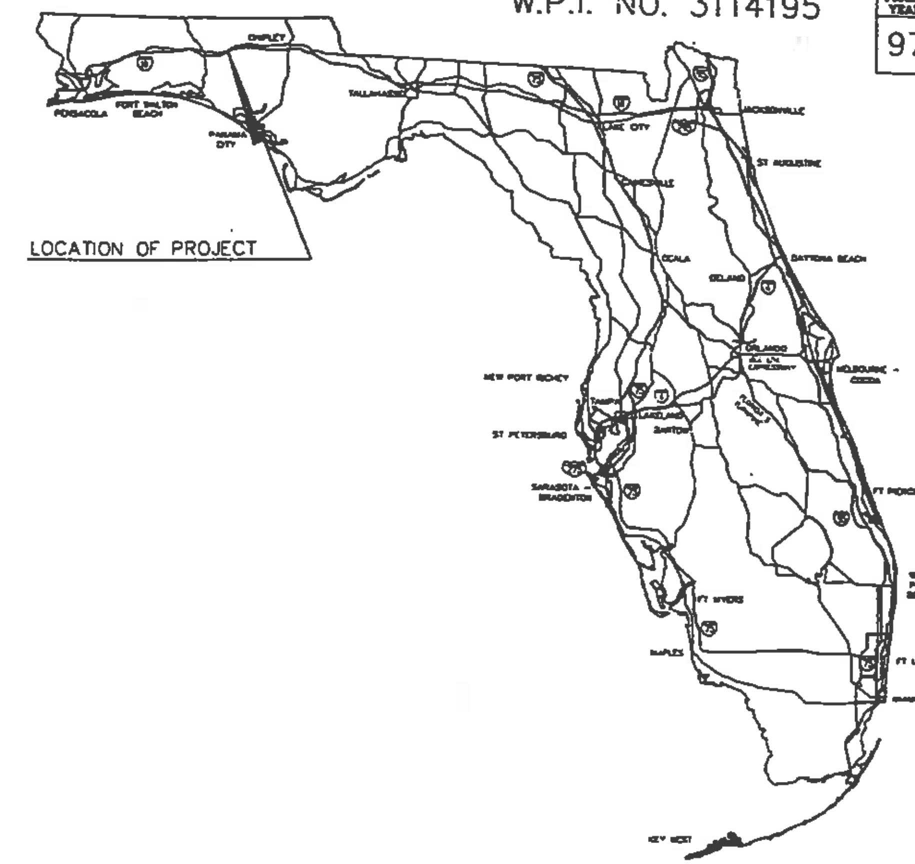
HOLMES COUNTY

STATE ROAD NO. 10 (U.S. 90)



W.P.I. NO. 3114195

FISCAL YEAR	SHEET NO.
97	1



FINAL SUBMITTAL

ROADWAY PLANS ENGINEER OF RECORD
WALTER V. KLOSS, P.E.
7820 ARLINGTON EXPWY.
SUITE 640, JACKSONVILLE, FL 32211

PLANS PREPARED BY :

PITMAN • HARTENSTEIN & ASSOC., INC.
ENGINEERS
7820 ARLINGTON EXPWY, SUITE 640
JACKSONVILLE, FLORIDA 32211

VF 592-695-553-001

NOTE: THIS PROJECT TO BE LET TO CONTRACT WITH STATE PROJECT NO. 52010-3527, 52010-3528 & 52010-3530

THIS PROJECT CAN NOT BE LET/CONSTRUCTED WITHOUT STATE PROJECT 52010-3530

ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN ALTERED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

GOVERNING SPECIFICATIONS: STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS, DATED 1991 SUPPLEMENTS AND SPECIAL PROVISIONS THERETO IF NOTED IN THE CONTRACT SPECIFICATIONS FOR THIS PROJECT

LENGTH OF PROJECT

	LINEAR FT.	MILES
ROADWAY	1200.00	0.227
BRIDGES	600.00	0.113
NET LENGTH OF PROJ.	1800.00	0.340
EXCEPTIONS	–	–
GROSS LENGTH OF PROJ.	1800.00	0.340

FDOT PROJECT MANAGER : BILL PAXTON, P.E.

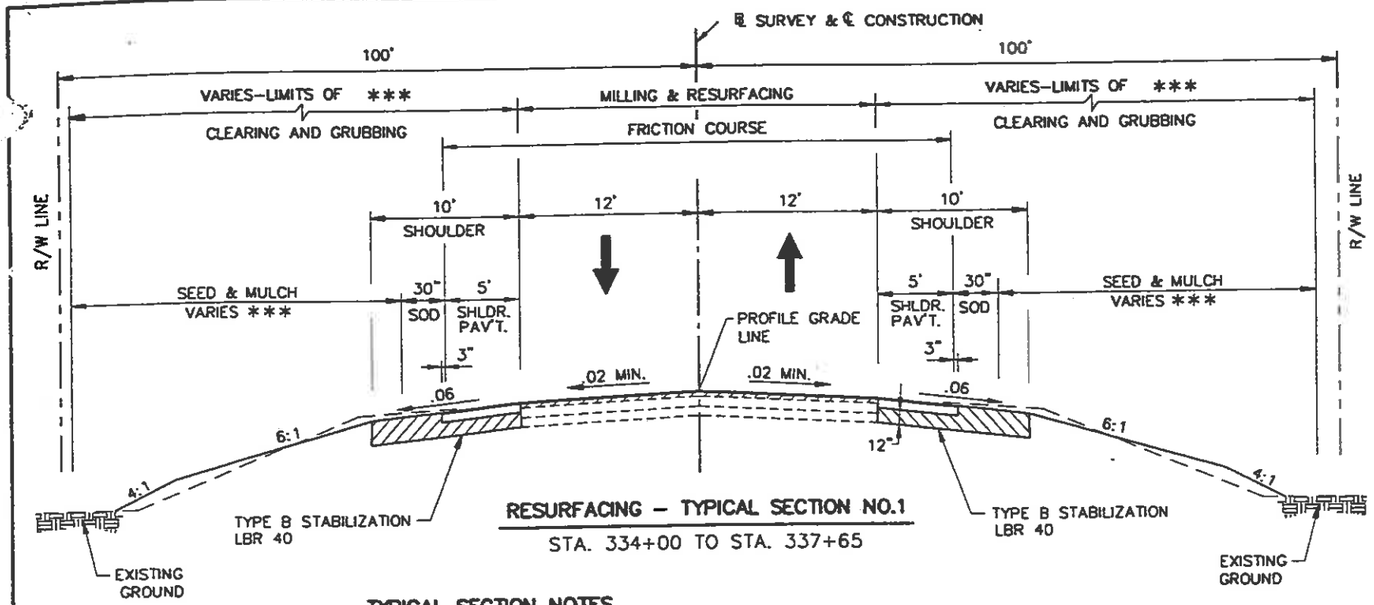
REVISIONS

DATE	BY	DESCRIPTION

S.R. 10 @ BUCKHEAD SLOUGH
(BRIDGE NO. 520146)

ROADWAY PLANS APPROVED BY: WALTER V. KLOSS, P.E.
DATE:
PE NO.: 42525

STATE PROJ. NO.	SHEET NO.
52010-3529	2

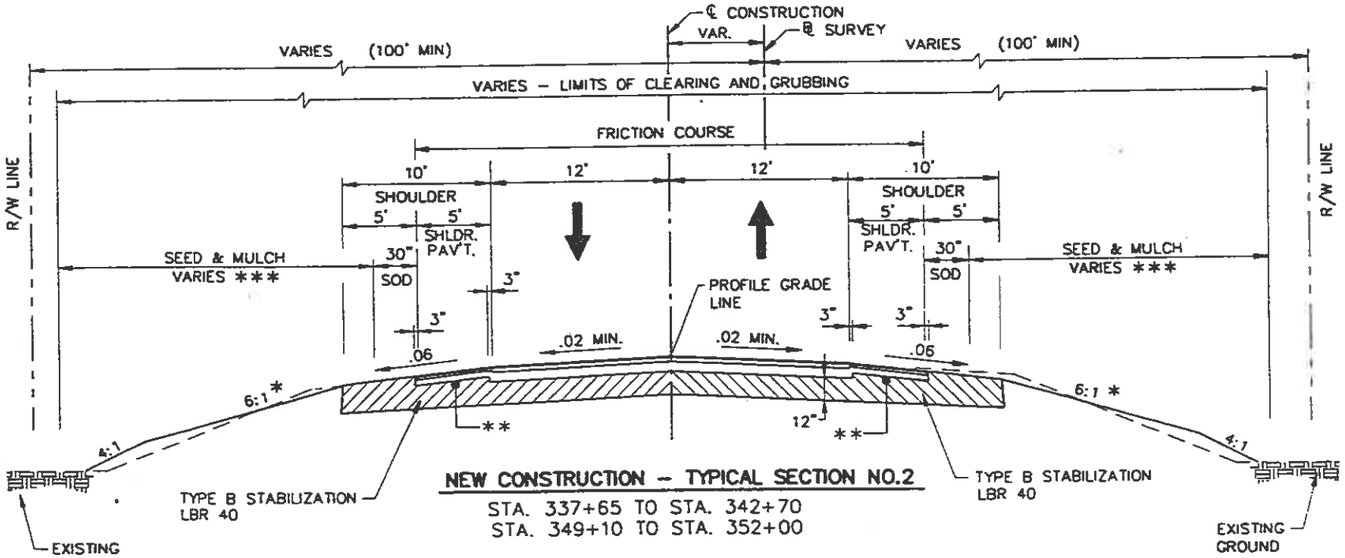


RESURFACING – TYPICAL SECTION NO.1

STA. 334+00 TO STA. 337+65

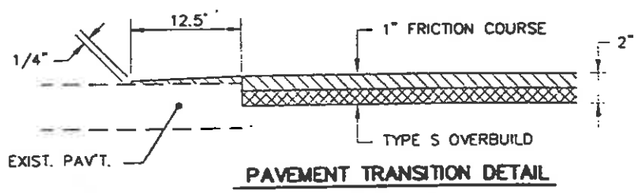
TYPICAL SECTION NOTES

1. ALL 2:1 SLOPES SHALL BE PROTECTED WITH PLASTIC EROSION MAT PRIOR TO PLACEMENT OF SODDING.
2. ALL PERMANENT GRASS AREAS ARE TO RECEIVE A 6" TOPSOIL TREATMENT.
3. ALL SLOPES STEEPER THAN 3:1 TO BE SODDED.



NEW CONSTRUCTION – TYPICAL SECTION NO.2

STA. 337+65 TO STA. 342+70
STA. 349+10 TO STA. 352+00



PAVEMENT TRANSITION DETAIL

NOT TO SCALE

NEW CONSTRUCTION

STA. 337+65 TO STA. 342+70
STA. 349+10 TO STA. 352+00
OPTIONAL BASE GROUP 06 WITH TYPE S STRUCTURAL COURSE (3" THICK) AND FRICTION COURSE (RUBBER) FC-3 (1" THICK)

SHOULDER PAVEMENT

OPTIONAL BASE GROUP 16 WITH TYPE S STRUCTURAL COURSE (1" THICK) AND FRICTION COURSE (RUBBER) FC-3 (1"THICK)

MILLING

STA. 334+12.50 – STA. 337+65
MILL EXISTING PAVEMENT 1.5" AVG. DEPTH

RESURFACING

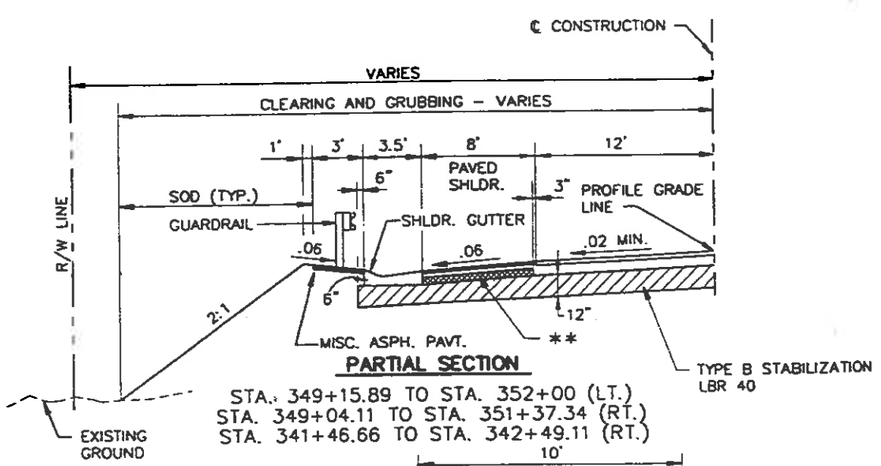
STA. 334+00 – 337+65
ASPHALT OVERBUILD TYPE S (100 LBS PER SY AVG.)
& FRICTION COURSE (RUBBER) FC-3 (1" THICK)

OPTIONAL BASE GROUP PERMITTED	OPTION CODE
4 1/2" ABC – 3 (MIN. MARSHALL STABILITY 1000)	207
9" GRADED AGGREGATE BASE (LBR 100)	215
7 1/2" LIMEROCK (LBR 100)	201

TRAFFIC DATA

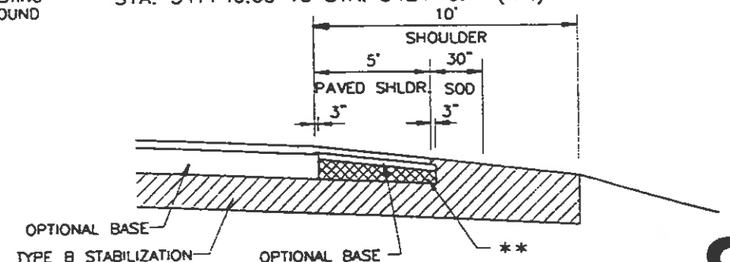
1991 ADT = 2200
1999 EST. ADT = 2950
2004 EST. ADT = 3550
2009 EST. ADT = 4150
2019 EST. ADT = 5300
K=10.98% , D= 50% , T=9% (24 HOUR)
DESIGN SPEED = 65 MPH

* SLOPE VARIES, SEE CROSS SECTIONS
** AT THE CONTRACTOR'S OPTION THIS AREA MAY BE CONSTRUCTED OF BASE MATERIAL AT NO ADDITIONAL COMPENSATION.
*** SEE CROSS SECTIONS FOR LIMITS OF CLEARING & GRUBBING AND SEEDING & MULCHING.



PARTIAL SECTION

STA. 349+15.89 TO STA. 352+00 (LT.)
STA. 349+04.11 TO STA. 351+37.34 (RT.)
STA. 341+46.66 TO STA. 342+49.11 (RT.)



SHOULDER PAVEMENT DETAIL (NEW CONSTRUCTION)

83

DESIGNED BY	NAME	DATE	DRAWN BY	NAME	DATE
	VDC	12/96		FPV	12/96
CHECKED BY			CHECKED BY		
	WVK	12/96		JA	12/96

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY :

TYPICAL SECTION

STATE PROJ. NO.	SHEET NO.
52010-3529	3

SUMMARY OF SODDING (BERMUDA)

LOCATION	SIDE	P			F		
STATION TO STATION		L	W	SY	L	W	SY
334+00 - 342+00 ±	RT.	800	2.5	222.2			
334+00 - 342+00 ±	LT.	800	2.5	222.2			
342+00 - 342+45 (SLOPE)	RT.	45	36	180.0			
342+00 - 342+55 (SLOPE)	LT.	55	36	220.0			
346+65 - 348+60 (SLOPE)	RT.	195	10	216.7			
349+30 - 350+00 (SLOPE)	RT.	70	19.5 AVG.	151.67			
349+40 - 352+00 (SLOPE)	LT.	260	27	780.0			
⊙ DRAINAGE STRUCTURES & •				79			
• SOD ALONG OUTLET DITCH							
TOTALS	-	-	-	2072			

TRAFFIC CONTROL SUMMARY OF QUANTITIES

ITEM NUMBER	DESCRIPTION	UNIT	QUANTITY PHASE 1 STAGE A	PHASE 1 STAGE B	PHASE 2	PHASE 3 STAGE A	PHASE 3 STAGE B		TOTAL
102-10	OFF DUTY LAW ENFORCEMENT	NM	160	0	0	0	240		400
102-70-11	BARRIER (TEMP.) (F& I) (CONCRETE)	LF	0	0	840	0	0		840
102-70-21	BARRIER WALL (TEMP.)(REL)(STD.)(CONC.)	LF	0	660	0	0	0		660
102-74-1	BARRICADE (TEMP) TYPE I, II, VP & DRUM	ED	260	702	5684	525	260		7431
102-74-2	BARRICADE (TEMP) (TYPE III)	ED	60	216	2436	175	60		2947
102-75-2	SIGN CONSTRUCTION (TEMP) (POST MOUNTED)	ED	100	270	4060	315	100		4845
102-77	HIGH INTENSITY FLASHING LIGHTS	ED	80	108	812	70	80		1150
102-78	TEMP. PAVEMENT MARKERS	EA	0	0	120	0	9		129
102-79	LIGHTS, TEMP. BARRIER WALL MT. (TYPE C STEADY BURN)	EA	0	0	8925	0	0		8925
102-81-1	IMPACT ATTENUATOR (INERTIAL)	EA	0	5	10	0	0		15
102-96	SIGN TEMP. REGULATORY (POST MOUNTED)	ED	0	162	1218	105	0		1485
102-99	SIGN VARIABLE MESSAGE (TEMP.)	ED	20	54	406	35	10		525
710-23-61	TEMP. PAVT. MARKING (WHITE)(SOLID)	NM	0	0	0.68	0.75	0.07		1.5
710-24-61	TEMP. PAVT. MARKING (YELLOW)(SOLID)	NM	0	0	0.68	0.14	0.68		1.5

SUMMARY OF EARTHWORK

DESCRIPTION	P (C.Y.)	F (C.Y.)
ROADWAY FILL	6,982	
SUBSOIL EXCAVATION		
(A-3, A-2-4) & (A-4,A-7-6)	6,016	
TOTAL SUBSOIL EXCAVATION	6,016	

NOTE: EARTHWORK HAS BEEN CALCULATED USING THE LIMEROCK BASE OPTION. IF ANOTHER OPTION IS CONSTRUCTED, THERE SHALL BE NO REVISION TO EARTHWORK QUANTITIES FOR WHICH PAYMENT IS MADE BY PLAN QUANTITY.
ROADWAY FILL INCLUDES SUBSOIL BACKFILL.

SEEDING RATES FOR DISTRICT THREE: LBS PER ACRE

TYPE OF SEED	MARCH TO NOVEMBER	NOVEMBER TO MARCH
PERMANENT GRASS		
HULLED BERMUDA	20	
UNHULLED BERMUDA	20	40
BAHIA-ARGENTINA OR PENSACOLA	40	40
TOTAL:	80	80
QUICK GROW:		
BROWN TOP MILLET	20 TO 30	
ANNUAL RYE GRASS		20 TO 30

SUMMARY OF DRAINAGE STRUCTURES

	STR. NO.	STATION-LOCATION	TYPE	BARRELS	SIZE (IN.)	LENGTH (FT.)	PIPES STORM SEWER CMP (FEET) 18"	24"	GUTTER INLETS S <10	>10	CLASS I CONC. CY	RIPRAP TN	SOD SY	REMARKS
P	S-1	STA. 341+44 - 22.12' RT.	INLET, PIPE	1	18	32	32		1					
F														
P	S-2	STA. 341+44 - 54.24' RT.	WINGED CONCRETE ENDWALL								0.77	25.8	27	45° WINGS
F														
P	S-3	STA. 351+40 - 22.12' LT.	INLET, PIPE	1	18	28	28		1					
F														
P	S-4	STA. 351+40 - 48.79' LT.	WINGED CONCRETE ENDWALL								0.77	25.8	25	45° WINGS
F														
P	S-5	STA. 351+40 - 22.12' RT.	INLET, PIPE	1	18	34	34		1					
F														
P	S-6	STA. 351+40 - 56.82' RT.	WINGED CONCRETE ENDWALL								0.77	25.8	27	45° WINGS
F														
TOTALS			P=PLAN QUANTITY				94	-	3		2.31	77.4	79	
			F=FINAL QUANTITY											

PAY ITEM NOTES

102-1 INCLUDES ALL MAINTENANCE OF TRAFFIC ITEMS NOT INCLUDED FOR PAYMENT UNDER INDIVIDUAL PAY ITEMS.

102-2-1 THE SPECIAL DETOUR ITEM INCLUDES ALL WORK NECESSARY TO CONSTRUCT, MAINTAIN AND REMOVE THE DETOUR. SEE THE ESTIMATE OF DETOUR QUANTITIES ON SHT. NO. 14 FOR THE WORK ITEMS INVOLVED. THIS ITEM ALSO INCLUDES THE COST OF RESTORING THE DETOUR AREA WITHIN REASONABLE CONFORMANCE TO THE ORIGINAL GROUND LINE UNLESS OTHERWISE DIRECTED BY THE ENGINEER, INCLUDING THE COST OF SUPPLYING ANY FILL MATERIAL AND PLASTIC FILTER FABRIC NECESSARY FOR CONST. AND RESTORATION PURPOSES, TEMPORARY DITCH LINING, AND TEMPORARY SODDING.

102-99 CONTINGENCY. ESTIMATED FOR MAINTENANCE OF TRAFFIC AS DIRECTED BY THE ENGINEER.

104-4 INCLUDES TRASH PICK-UP, MOWING THE GRASS ONCE (1) A MONTH WITHIN THE PROJECT LIMITS DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER.

104-11 & 104-13 ESTIMATED FOR PREVENTION, CONTROL & ABATEMENT OF EROSION AND WATER POLLUTION AND ARE TO BE USED AT LOCATION DESIGNATED BY THE PLANS OR AS DIRECTED BY THE ENGINEER.

110-1-1 INCLUDES ALL CLEARING AND GRUBBING NECESSARY FOR CONSTRUCTION OF THE DETOUR WHICH INCLUDES REMOVING AND DISPOSING OF EXISTING FENCES, BUSHE, TREES, LANDSCAPING, ETC. WHICH ARE IN CONFLICT WITH THE DETOUR. ALSO INCLUDES THE COST OF REMOVAL AND DISPOSAL OF EXISTING GUARDRAIL, EXISTING PAVEMENT, BASE COURSE AND DITCH PAVEMENT WHERE REQUIRED OR AS DIRECTED BY THE ENGINEER.

331-2 INCLUDES APPROXIMATELY 48.7 TONS OF TYPE S OVERBUILD.

400-1-15 INCLUDES 5 CY FOR MISCELLANEOUS CONSTRUCTION AS DIRECTED BY THE PROJECT ENGINEER.

430-31-125 INCLUDES WRAPPING OF PIPE JOINTS WITH FILTER FABRIC.

570-5 BASED ON TWO APPLICATIONS

570-10 BASED ON 20 Lbs/AC

SUMMARY OF GUARDRAIL

LOCATION STA. TO STA.	SIDE	GUARDRAIL P	GUARDRAIL F	END ANCHORAGE TYPE II P EA	TYPE II F EA	TYPE MELT P EA	TYPE MELT F EA
339+36.38 - 342+73.88	RT.	337.5		0		1	
341+24.50 - 342+87.00	LT.	162.5		0		1	
348+93.00 - 351+80.50	RT.	287.5		0		1	
* 349+05.12 - 352+00.00	LT.	300.0		0		-	
TOTALS		1,087.5				3	

* LENGTH OF GUARDRAIL IS 6.12 FT. LONGER. GUARDRAIL LENGTH ADJUSTED FOR QUANTITY ESTIMATE.

REVISIONS												
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	

DESIGNED BY JA 12/96 · DRAWN BY JA 12/96 · CHECKED BY

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY

PITMAN HARTENSTEIN & ASSOC., INC.

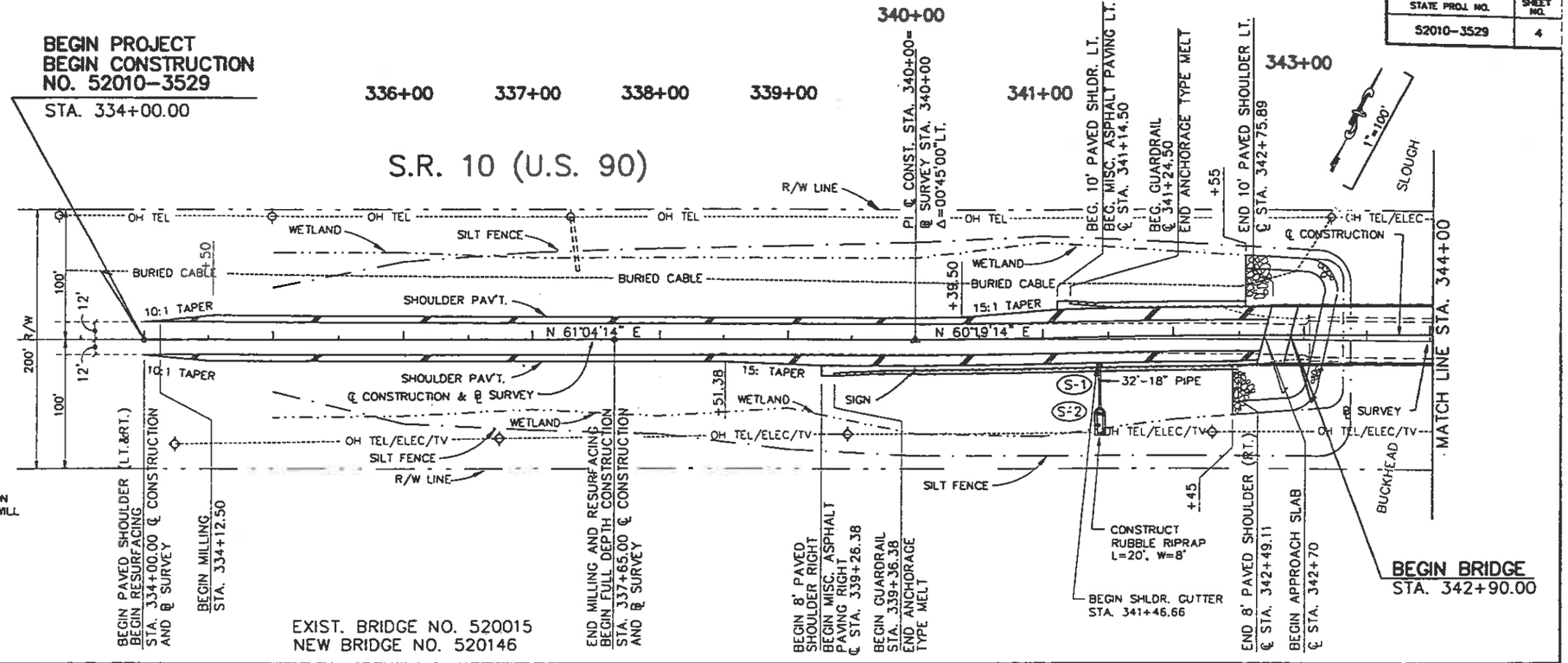
SUMMARY OF QUANTITIES

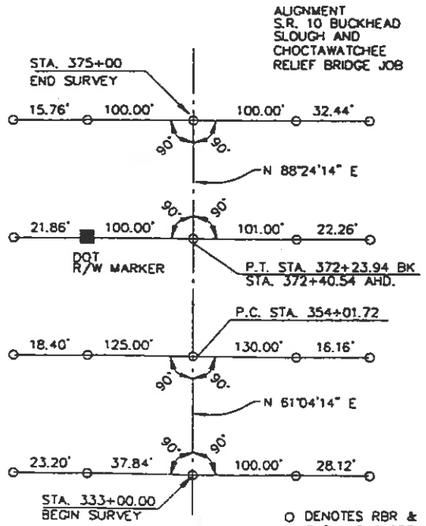
STATE PROJ. NO.	SHEET NO.
52010-3529	4

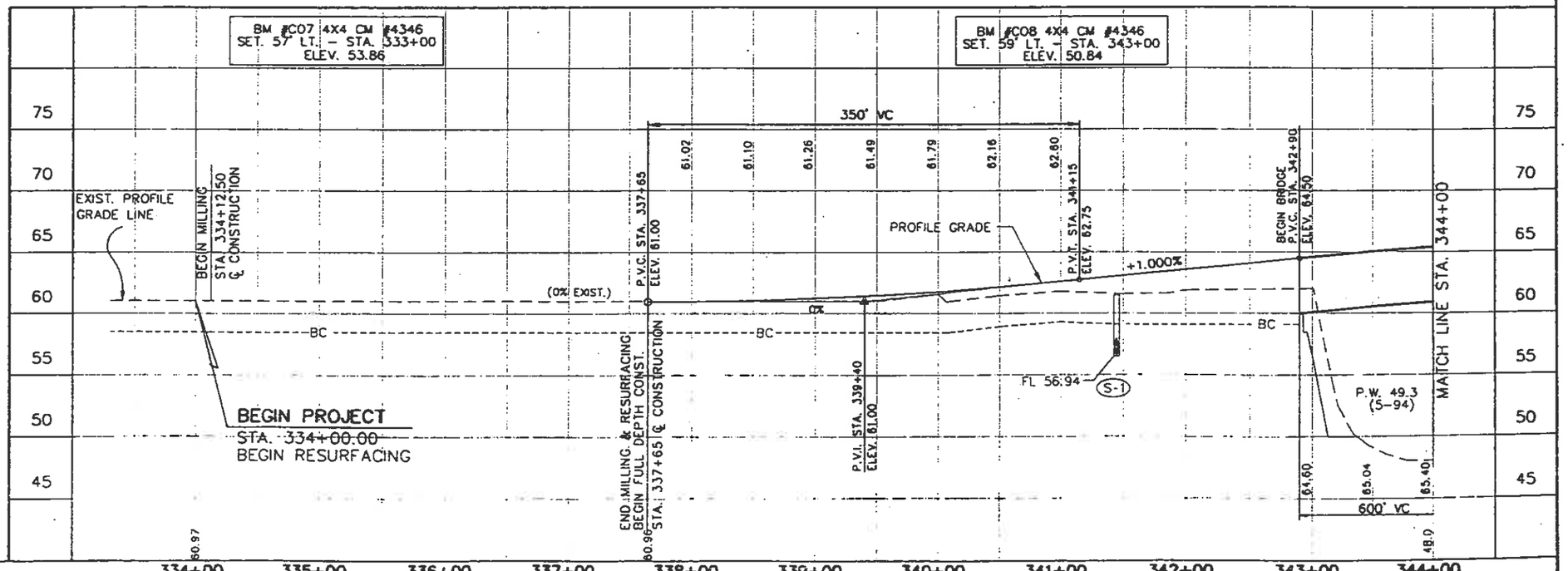
GENERAL NOTES:

1. B.M. DATA IS NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD-29)
2. ANY PUBLIC LAND CORNER WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED AND AND HAS NOT BEEN PROPERLY REFERENCED, THE PROJECT ENGINEER SHOULD NOTIFY THE DISTRICT LOCATION SURVEYOR BY TELEPHONE WITHOUT DELAY.
3. NOTIFY UTILITY COMPANIES 15 WORKING DAYS PRIOR TO THE COMMENCEMENT OF ANY WORK. (SEE SHT. NO. 19 FOR UTILITY OWNERS.
4. THE CONTRACTOR SHALL NOT BRING ANY HAZARDOUS MATERIALS ON TO THE PROJECT. SHOULD THE CONTRACTOR REQUIRE SUCH FOR PERFORMING THE CONTRACTED WORK, THE CONTRACTOR SHALL REQUEST, IN WRITING, WRITTEN PERMISSION FROM THE PROJECT ENGINEER. THE CONTRACTOR SHALL PROVIDE A COPY TO THE DISTRICT CONTAMINATION IMPACTS COORDINATOR (DCIC). THE CONTRACTOR SHALL PROVIDE THE DCIC WITH A COPY OF THE MATERIAL SAFETY DATA SHEET (MSDS) FOR EACH HAZARDOUS MATERIAL PROPOSED FOR USE. THE PROJECT ENGINEER SHALL COORDINATE WITH THE DCIC PRIOR TO ISSUING WRITTEN APPROVAL TO THE CONTRACTOR. BECAUSE STATE LAW DOES NOT TREAT PETROLEUM PRODUCTS THAT ARE PROPERLY CONTAINERIZED AND INTENDED FOR EQUIPMENT USE AS A HAZARDOUS MATERIAL, SUCH PRODUCTS DO NOT NEED A MSDS SUBMITTAL.

   ANY KNOWN OR SUSPECTED HAZARDOUS MATERIAL FOUND ON THE PROJECT BY THE CONTRACTOR SHALL BE IMMEDIATELY REPORTED TO THE PROJECT ENGINEER, WHO SHALL DIRECT THE CONTRACTOR TO PROTECT THE AREA OF KNOWN OR SUSPECTED CONTAMINATION FROM FURTHER ACCESS. THE PROJECT ENGINEER IS TO NOTIFY THE DCIC OF THE DISCOVERY. THE DCIC WILL ARRANGE FOR INVESTIGATION, IDENTIFICATION, AND REMEDIATION OF THE HAZARDOUS MATERIAL. THE CONTRACTOR SHALL NOT RETURN TO THE AREA OF CONTAMINATION UNTIL APPROVAL IS PROVIDED BY THE PROJECT ENGINEER; THE DCIC WILL ADVISE THE PROJECT ENGINEER.
5. MILLING AND RESURFACING WILL BE COMPLETED ON A DISTRICT MAXIMUM OF THREE WORKING DAYS.







DESIGNED	J.A.	12/96	DRAWN	J.A.	12/96
CHECKED	V.D.G.	12/96	QUALITY CHECKED	V.D.G.	12/96

FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY

ENGINEERS

PLAN AND PROFILE

P:\CADD\52062-2CL\REV-96\PP-1 1-8 10:47:29 am EST

STATE PROJ. NO.	SHEET NO.
52010-3529	5

345+00 346+00 347+00 348+00 349+00 350+00 351+00 352+00 353+00 354+00

S.R. 10 (U.S. 90)

END BRIDGE
348+90.00

CONSTRUCT TURBIDITY BARRIER AS DIRECTED BY THE ENGINEER. (L=470')

EXIST. R/W

OH TEL

SLOUGH

SHORE LINE

SILT FENCE

MATCH LINE STA. 344+00

N 60°19'14" E

BUCKHEAD

℄ SURVEY

OH TEL/ELEC/TV

WETLAND

EXIST. R/W

BEGIN 8' PAVED SHOULDER
℄ STA. 349+30.89
+40

SHORE LINE

CONST. RUBBLE RIPRAP
L=20', W=8'

WETLAND

S-4

±78.88
108.27

R/W LINE

±63.09
83.47

SHOULDER PAVT.

S-3

28"-18" PIPE

BURIED CABLE

SIGN

℄ CONSTRUCTION

N 61°04'14" E

END SHOULDER GUTTER
STA. 351+37.34

S-5

34"-18" PIPE

SILT FENCE

OH TEL/ELEC/TV

±32.82
114.89

S-6

SHORE LINE

+30

R/W LINE

CONSTRUCT TURBIDITY BARRIER AS DIRECTED BY THE ENGINEER. (L=270')

END APPROACH SLAB
℄ STA. 349+10.00

BEGIN 8' PAVED SHOULDER
℄ STA. 349+19.11

±20.82
139.68

CONST. RUBBLE RIPRAP
L=20', W=8'

END GUARDRAIL
℄ STA. 351+80.50 RT.
END ANCHORAGE TYPE MELT

END 8' PAVED SHOULDER RT.
END MISC. ASPH. PAVING RT.
℄ STA. 351+90.50

125' 125' 250' R/W

1"=100'

EXIST. BRIDGE NO. 520015
NEW BRIDGE NO. 520146

END PROJECT NO. 52010-3529
BEGIN PROJECT NO. 52010-3530
STA. 352+00.00

700' VC

BM #C09 4X4 CM #4346
SET 67' LT. STA. 353+00
ELEV. 50.424

P.V.I. STA. 345+90
ELEV. 67.50

+1.000% -1.000%

END BRIDGE
ELEV. 64.50

P.V.C. STA. 349+20
ELEV. 64.20

PROFILE GRADE

-1.000% +1.000%

BC

EXIST. GROUND LINE ALONG ℄ CONST.

2:1

S-5
S-3

FL 56.59

P.V.I. STA. 352+70
ELEV. 60.70

NOTE: FOR PLAN & PROFILE AND VERTICAL CURVE DATA CONTINUATION SEE STATE PROJECT NO. 52010-3530

MATCH LINE STA. 344+00

CUT BENCH ELEV. 50

℄ P.V. 49.3 (5/94)

P.V.T. STA. 348+90
ELEV. 64.50

600' VC

65.40 63.91 63.49 63.14 62.86 62.66 62.52 65.67 65.87 65.98 66.00 65.94 65.80 65.57 65.27 64.87 48.0 62.3

70 65 60 55 50 45 40 35 30

345+00 346+00 347+00 348+00 349+00 350+00 351+00 352+00 353+00 354+00

DATE	BY	DESCRIPTION

	NAME	DATE		NAME	DATE
DESIGNED BY	J.A	12/96	DRAWN BY	J.A/F.V.	12/96
CHECKED BY	V.D.C.	12/96	CHECKED BY	V.D.C	12/96

WALTER V. KLOSS, PE

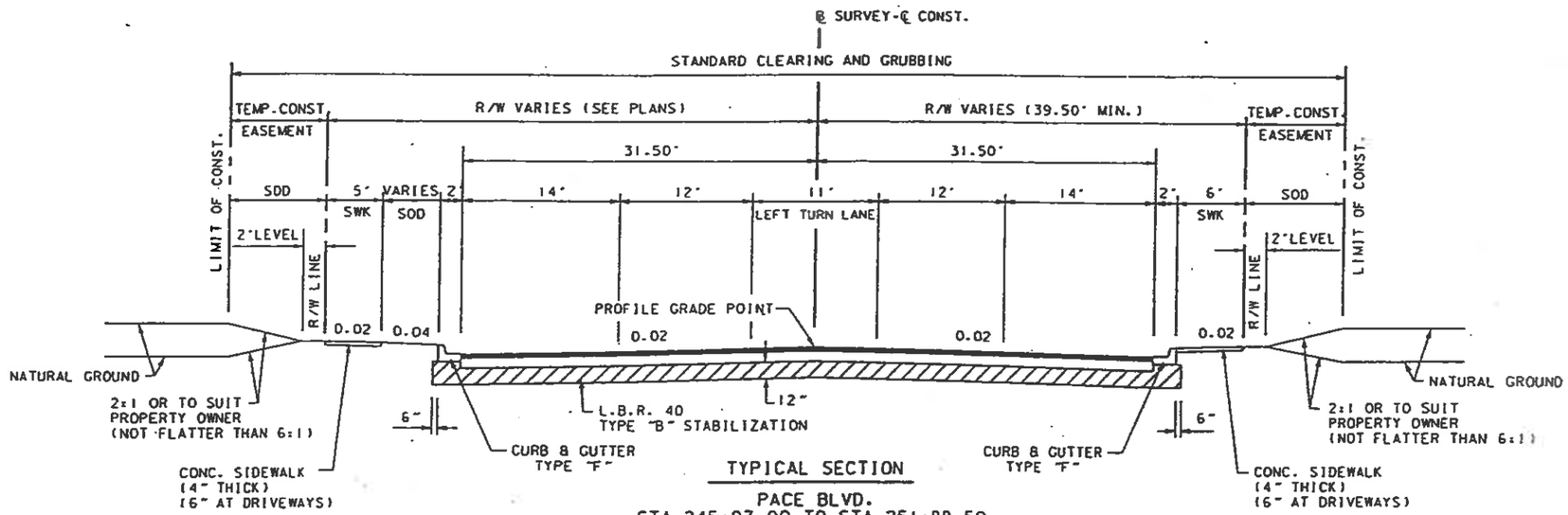
FLORIDA DEPARTMENT OF TRANSPORTATION
APPROVED BY

ENGINEERS

PLAN AND PROFILE

86

STATE PROJ. NO.	SHEET NO.
48050-3536	4



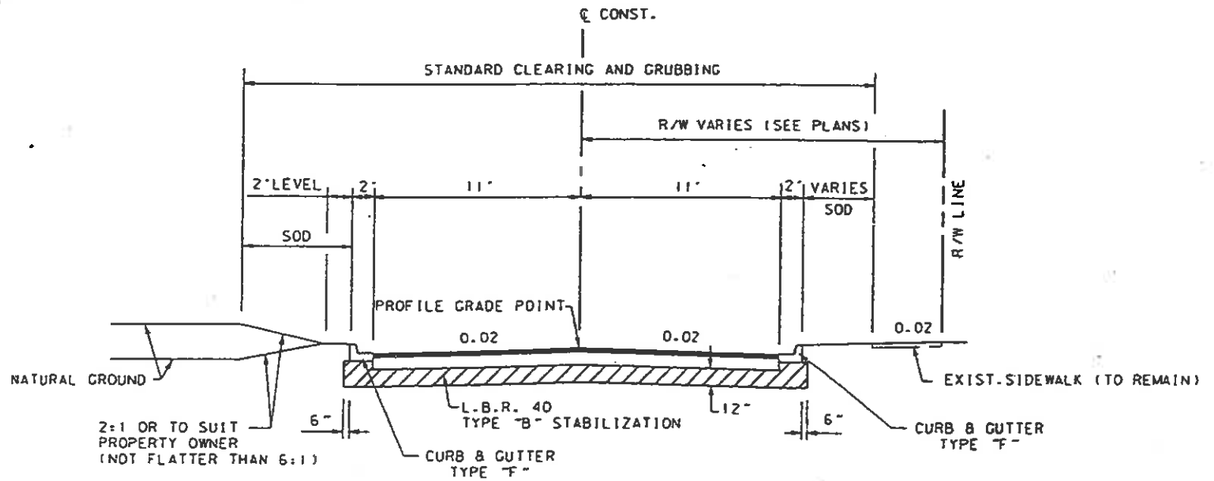
TYPICAL SECTION

PACE BLVD.
STA.245+97.00 TO STA.251+88.50

DESIGN SPEED 30 M.P.H.

ROADWAY PAVEMENT CONSTRUCTION

OPTIONAL BASE GROUP 06 WITH TYPE S STRUCTURAL COURSE (3")
AND FRICTION COURSE FC-3 RUBBER (1")



TYPICAL SECTION

INTERLAKEN ST. RELOCATION
STA.9+21.82 TO STA.13+07.89

DESIGN SPEED 20 M.P.H.

ROADWAY PAVEMENT CONSTRUCTION

OPTIONAL BASE GROUP 04 WITH TYPE S STRUCTURAL COURSE (2")

87

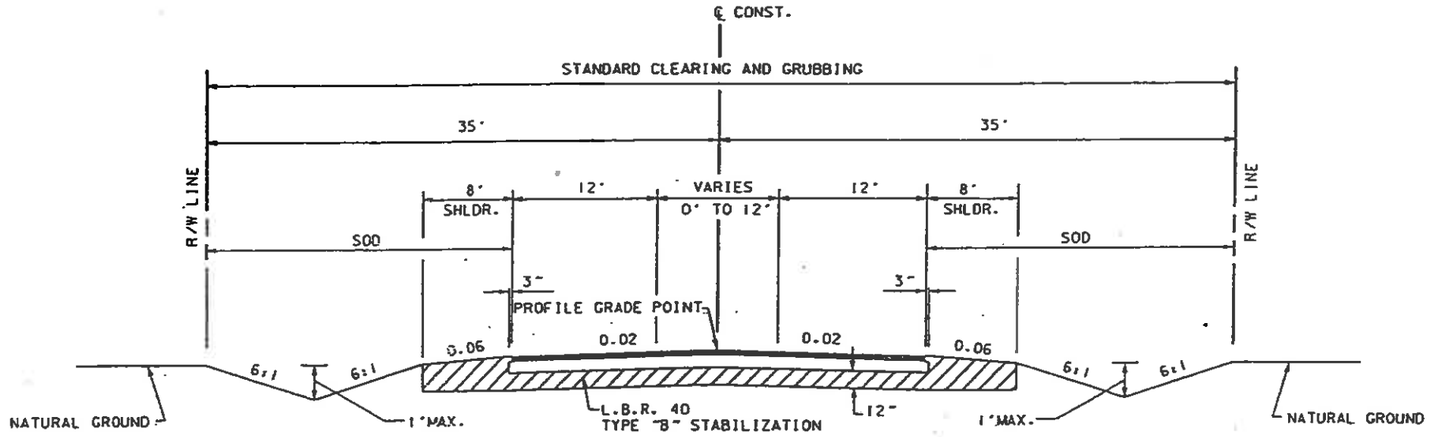
REVISIONS																			
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

PREPARED BY: PETRIC ENGINEERING, INC.

TYPICAL SECTIONS

STATE PROJ. NO.	SHEET NO.
48050-3536	5



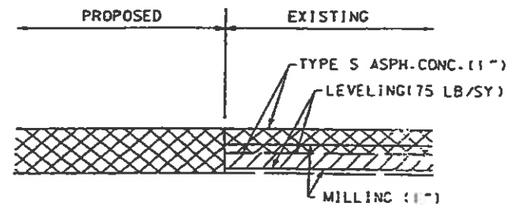
TYPICAL SECTION

WEIS LANE
STA.25+60.23 TO 34+16.50

ROADWAY PAVEMENT CONSTRUCTION

OPTIONAL BASE GROUP 04 WITH TYPE S STRUCTURAL COURSE (2")
NOTE: USE SAME PAVEMENT CONSTRUCTION FOR BROADMOOR LANE, SEAMARGE LANE, CARY'S LANE AND SOUTH "N" ST.

DESIGN SPEED 30 M.P.H.



MILLING & RESURFACING DETAIL

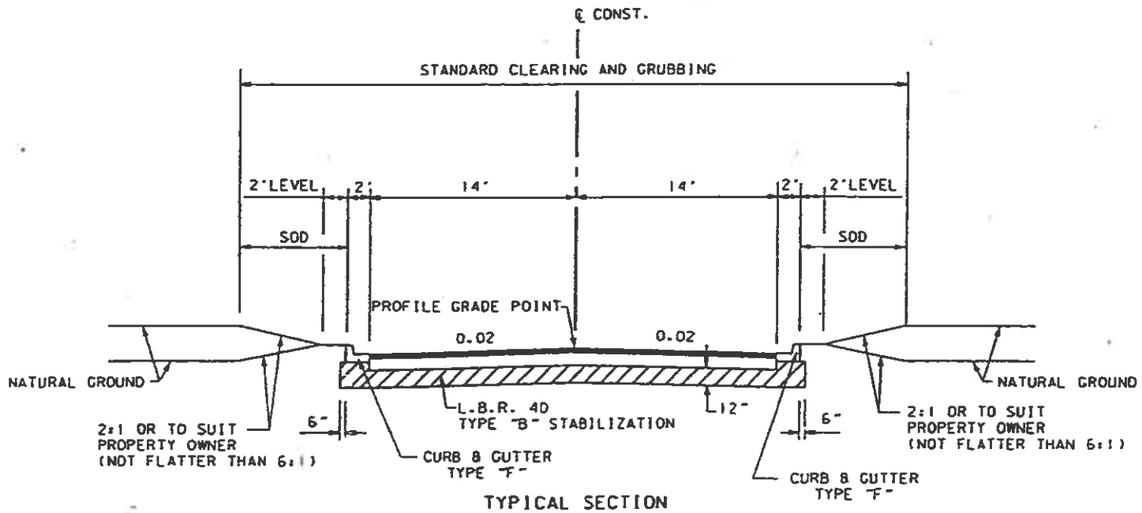
BARRANCAS AVE.
STA. 11+99.86 TO STA. 13+16.21
SOUTH "N" ST.
STA. 27+68.65 TO STA. 28+45.11

MILLING

MILL EXIST.ASPHALTIC CONC.PAVT.(1" AVG.DEPTH)

SURFACE COURSE CONSTRUCTION

TYPE S LEVELING COURSE (75 LB/SY AVG)
TYPE S ASPH.CONC. (1" THICK)



TYPICAL SECTION

McLEOD
STA.28+19.20 TO STA.29+68.93
FOR PAVEMENT DESIGN SEE ABOVE

DESIGN SPEED 20 M.P.H.

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REVISIONS																
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION		

FLORIDA DEPARTMENT OF TRANSPORTATION

PREPARED BY: METRIC ENGINEERING, INC.

TYPICAL SECTIONS

STATE PROJ. NO.	SHEET NO.
48050-3536	10

SUMMARY OF DRAINAGE STRUCTURES

QUANT.	STR. NO.	STATION	DESCRIPTION	BARRELS	SIZE (IN)	LENGTH (FT)	R.C.P. STORM SEWER										P.V.C. SCH.80 PIPE	CURB INLET										BARRIER WALL INLET		DITCH BOTTOM INLETS						MANHOLE					PRECAST CAP	SOD.	CLASS I CONCRETE	REINF. STEEL	REMARKS
							CLASS II ROUND PIPE					CLASS IV ROUND PIPE		CLASS HE-II ELLIP.PIPE				P-2	P-5		P-6		J-5		J-6		?	STD.	J-BOX	D		F		G		P-7		P-7 PARTIAL	J-7				(ENDWALL)	RDWY.	
							15"	18"	24"	30"	36"	24"	30"	19"x30"	29"x45"	48"x76"	15"	<10	<10	>10	<10	>10	<10	>10	<10	>10	<10	<10	>10	<10	>10	<10	>10	<10	>10	<10	>10	<10	<10	>10		S.Y.	C.Y.	LBS.	
P	OS-3	248+10 (120' RT.) B PACE BLVD.	INLET-PIPE	1	24	89			89																					1															W/FIBERGLASS SKIMMER
F																																													
P	OS-3A	247+60 (42' RT.) B PACE BLVD.	MANHOLE	1	–	–																																1							
F																																													
P	OS-4	241+85 (45' RT.) B PACE BLVD.	MANHOLE-PIPE	1	48X76	385										385																							1						
F																																													
P	OS-4A	237+87 (64' RT.) B PACE BLVD.	MANHOLE-PIPE-PIPE	1	48X76/15	297 8 7	7									279																							1						
F																																													
P	OS-4B	235+05 (51' RT.) B PACE BLVD.	EW	1	48X76	–																																				126	8.66		
F																																													
P	JB-1	30+20 (RT.)	PRECAST CAP	–	–	–																																			1				
F																																													
P	JB-2	29+06 (8' RT.) ℄ CONST. McLEOD ST.	PRECAST CAP	–	–	–																																			1				
F																																													
P	S-73	11+64.92 (MED. LT.)	INLET-PIPE	1	–	49		49																			1																		
F																																													
P	S-74	12+05 (RT.)	INLET	–	60X72	–																	1																						
F																																													
P	S-67A	9+85 (50' RT.) INTERLAKEN	MANHOLE-PIPE	1	24	82			82																											1									
F																																													
P	S-67B	11+20 (35' LT.) INTERLAKEN	INLET-PIPE	1	18	80		80																								1													
F																																													
P	S-67C	10+72 (35' RT.) INTERLAKEN	INLET-PIPE	1	24	82			20																							1													
F																																													
	SUB-TOTALS	P-PLAN QUANTITY					7	129	191							664							1				1			1		2				1		1	2		2	126	8.66		
	TOTALS	P-PLAN QUANTITY					7	3290	1212	703	535	649	50	139	247	664	121	1	13		12		5	2	1	1	5	12		5	1	14		1		8	3	1	4		2	783	49.83	86	
		F-FINAL QUANTITY																																											

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

PREPARED BY:
METRIC ENGINEERING, INC.

SUMMARY OF DRAINAGF STRUCTURES

STATE PROJ. NO.	SHEET NO.
48050-3536	11

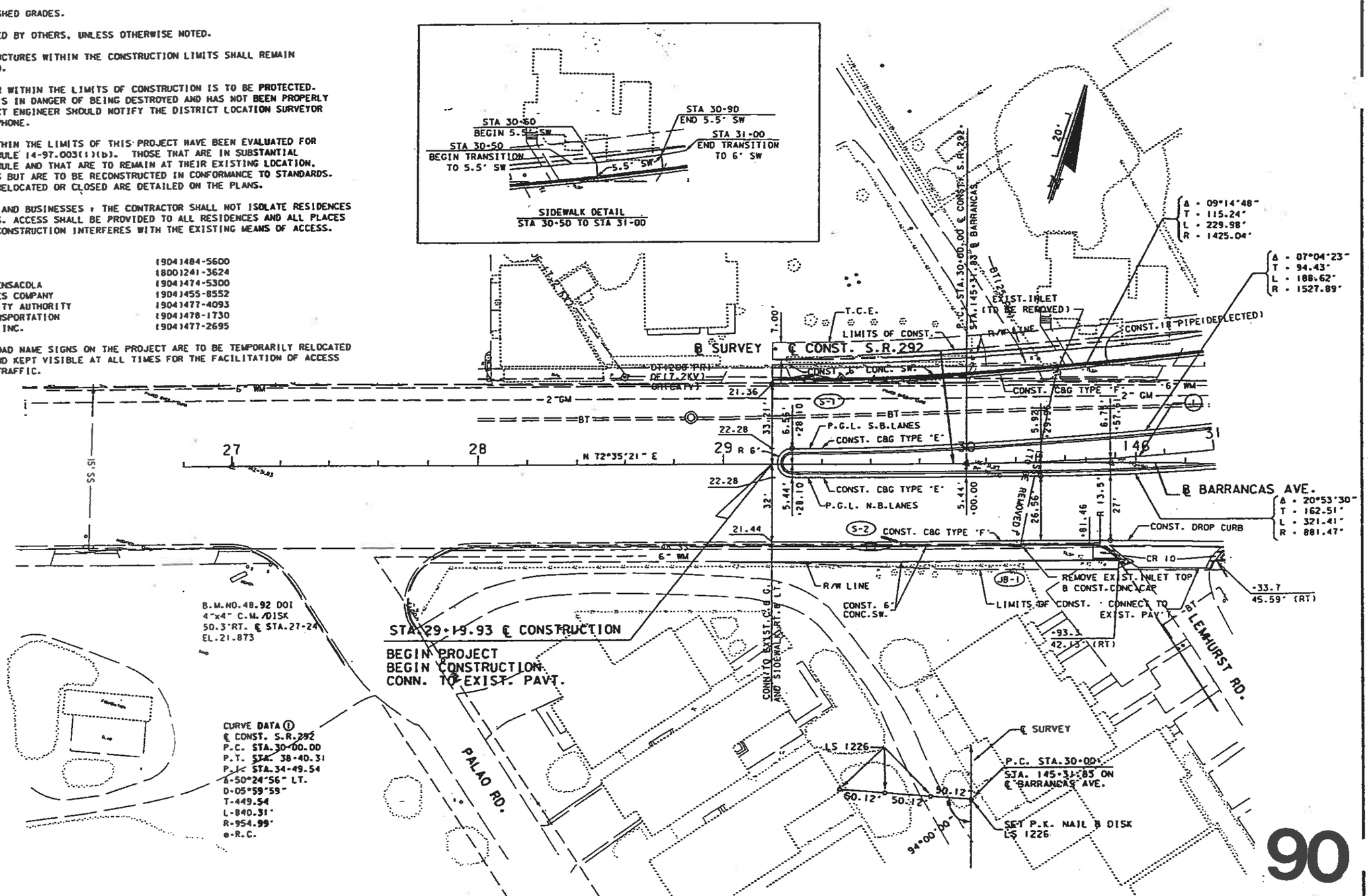
GENERAL NOTES

1. B.M. DATA IS NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD-29)
2. GRADES SHOWN ARE FINISHED GRADES.
3. BUILDINGS TO BE REMOVED BY OTHERS, UNLESS OTHERWISE NOTED.
4. EXISTING DRAINAGE STRUCTURES WITHIN THE CONSTRUCTION LIMITS SHALL REMAIN UNLESS OTHERWISE NOTED.
5. ANY PUBLIC LAND CORNER WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED AND HAS NOT BEEN PROPERLY REFERENCED, THE PROJECT ENGINEER SHOULD NOTIFY THE DISTRICT LOCATION SURVEYOR WITHOUT DELAY BY TELEPHONE.
6. EXISTING DRIVEWAYS WITHIN THE LIMITS OF THIS PROJECT HAVE BEEN EVALUATED FOR CONFORMANCE WITH FAC RULE 14-97.003(1)(b). THOSE THAT ARE IN SUBSTANTIAL CONFORMANCE WITH THE RULE AND THAT ARE TO REMAIN AT THEIR EXISTING LOCATION, ARE NOT SHOWN ON PLANS BUT ARE TO BE RECONSTRUCTED IN CONFORMANCE TO STANDARDS. THOSE THAT ARE TO BE RELOCATED OR CLOSED ARE DETAILED ON THE PLANS.
7. ACCESS FOR RESIDENCES AND BUSINESSES : THE CONTRACTOR SHALL NOT ISOLATE RESIDENCES AND PLACES OF BUSINESS. ACCESS SHALL BE PROVIDED TO ALL RESIDENCES AND ALL PLACES OF BUSINESS WHENEVER CONSTRUCTION INTERFERES WITH THE EXISTING MEANS OF ACCESS.
8. UTILITY OWNERS :

GULF POWER	(904)484-5600
SOUTHERN BELL	(800)241-3624
ENERGY SERVICES OF PENSACOLA	(904)474-5300
PEOPLES WATER SERVICES COMPANY	(904)455-8552
ESCAMBIA COUNTY UTILITY AUTHORITY	(904)477-4093
FLORIDA DEPT. OF TRANSPORTATION	(904)478-1730
COX CABLE PENSACOLA INC.	(904)477-2695

9. EXISTING STREET AND ROAD NAME SIGNS ON THE PROJECT ARE TO BE TEMPORARILY RELOCATED DURING CONSTRUCTION AND KEPT VISIBLE AT ALL TIMES FOR THE FACILITATION OF ACCESS BY EMERGENCY VEHICLE TRAFFIC.

SIDEWALK DETAIL
STA 30+50 TO STA 31+00



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REVISIONS															
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	

FLORIDA DEPARTMENT OF TRANSPORTATION

PREPARED BY : PETRIC ENGINEERING, INC.

PLAN
STA.29+19.93 TO STA.31+00

STATE PROJ. NO.	SHEET NO.
48050-3536	12

CURVE DATA (1)

℄ CONST. S.R.292
P.C. STA.30-00.00
P.T. STA.38-40.31
P.I. STA.34-49.54
Δ-50°24'56" LT.
D-05°59'59"
T-449.54
L-840.31'
R-954.99'
⊕-R.C.

CURVE DATA (10)

℄ CONST. BARRANCAS AVE.
P.C. STA.10-84.54
P.T. STA.11-71.42
P.I. STA.11-33.03
Δ-63°24'37" LT.
D-72°59'18"
T-48.49
L-86.88'
R-78.50'
⊕-R.C.

STA. 34+43.30 ℄ CONST. S.R. 292
STA. 10+00.00 ℄ CONST. BARRANCAS AVE.

BROADMOOR LANE

℄ BARRANCAS AVE.

℄ CONST. S.R.292

℄ SURVEY

STA.32+22.47 ℄ CONST.S.R.292
STA.30+00 ℄ BROADMOOR LANE

STA.13+16.21 ℄CONST. BARRANCAS AVE.
3'RT. STA.152+12.66 ℄ BARRANCAS
CONNECT TO EXIST. PAVT.
END MILLING AND RESURFACING

P.T.STA.11+71.42 ℄ CONST.
3'RT.150+67.87 ℄ BARRANCAS

N72°34'56"E ℄ CONST. BARRANCAS AVE.

REVISIONS

DATE	BY	DESCRIPTION
5-20-96	CJL	ADDED DRIVEWAY AT STA.34+01 LT.

REVISIONS DATED 5-20-96 APPROVED

FLORIDA DEPARTMENT OF TRANSPORTATION

PREPARED BY: METRIC ENGINEERING, INC.

PLAN
STA.31+00 TO STA.37+00

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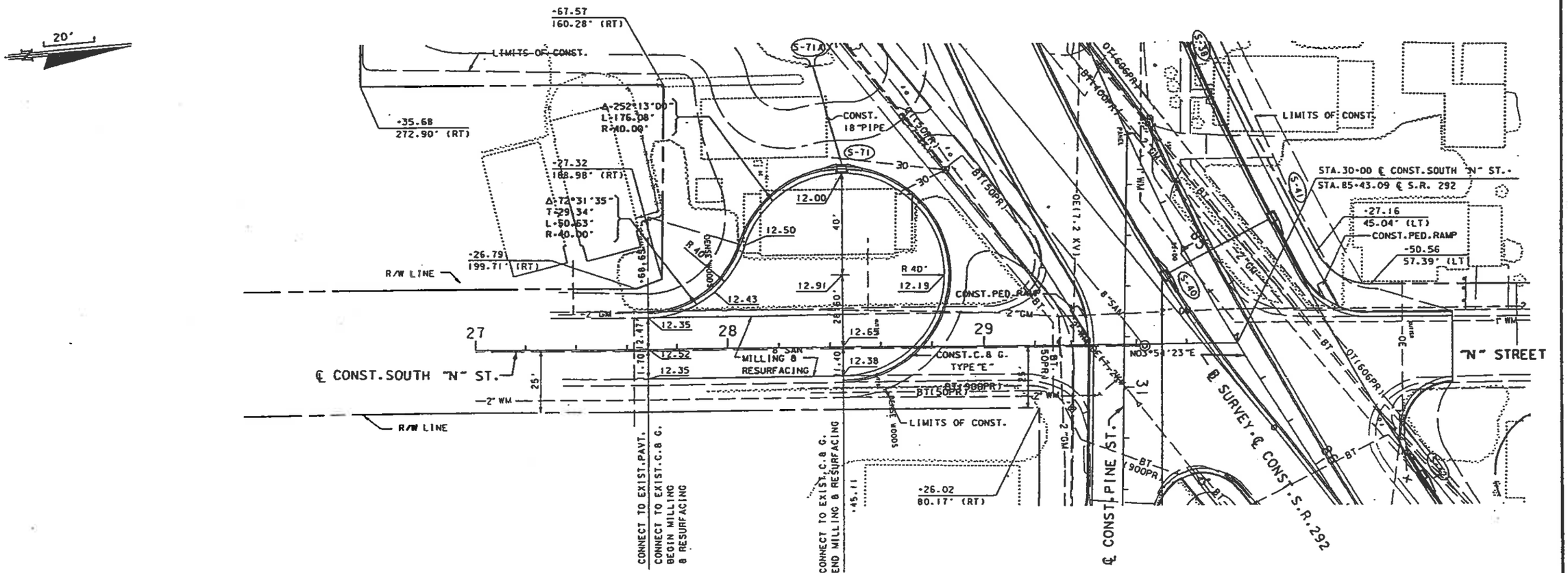

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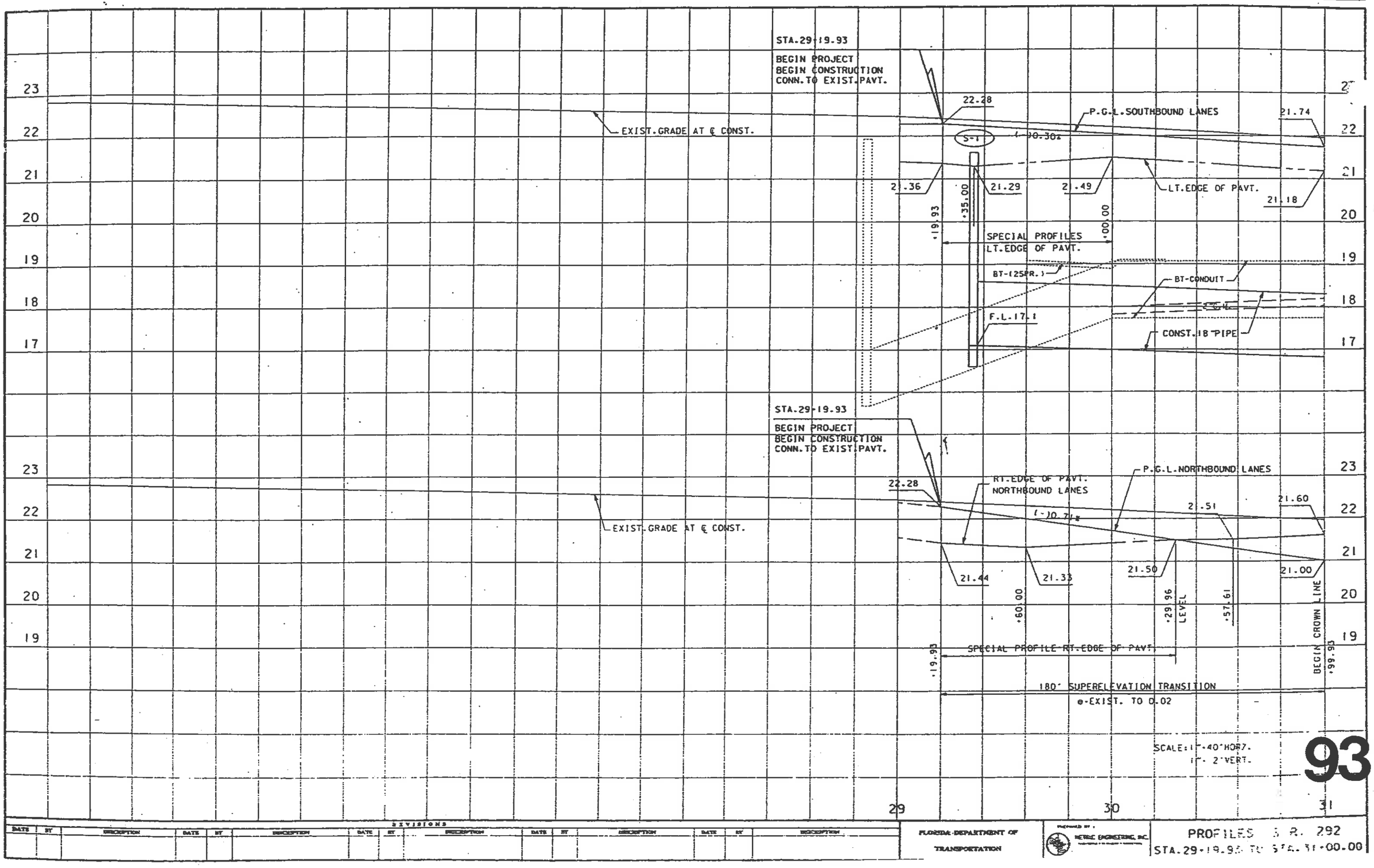
REVISIONS																			
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

PREPARED BY: METRIC ENGINEERING, INC.

SOUTH "N" STREET
STA.27+00 TO STA.30+00

STATE PROJ. NO.	SHEET NO.
48050-3536	30



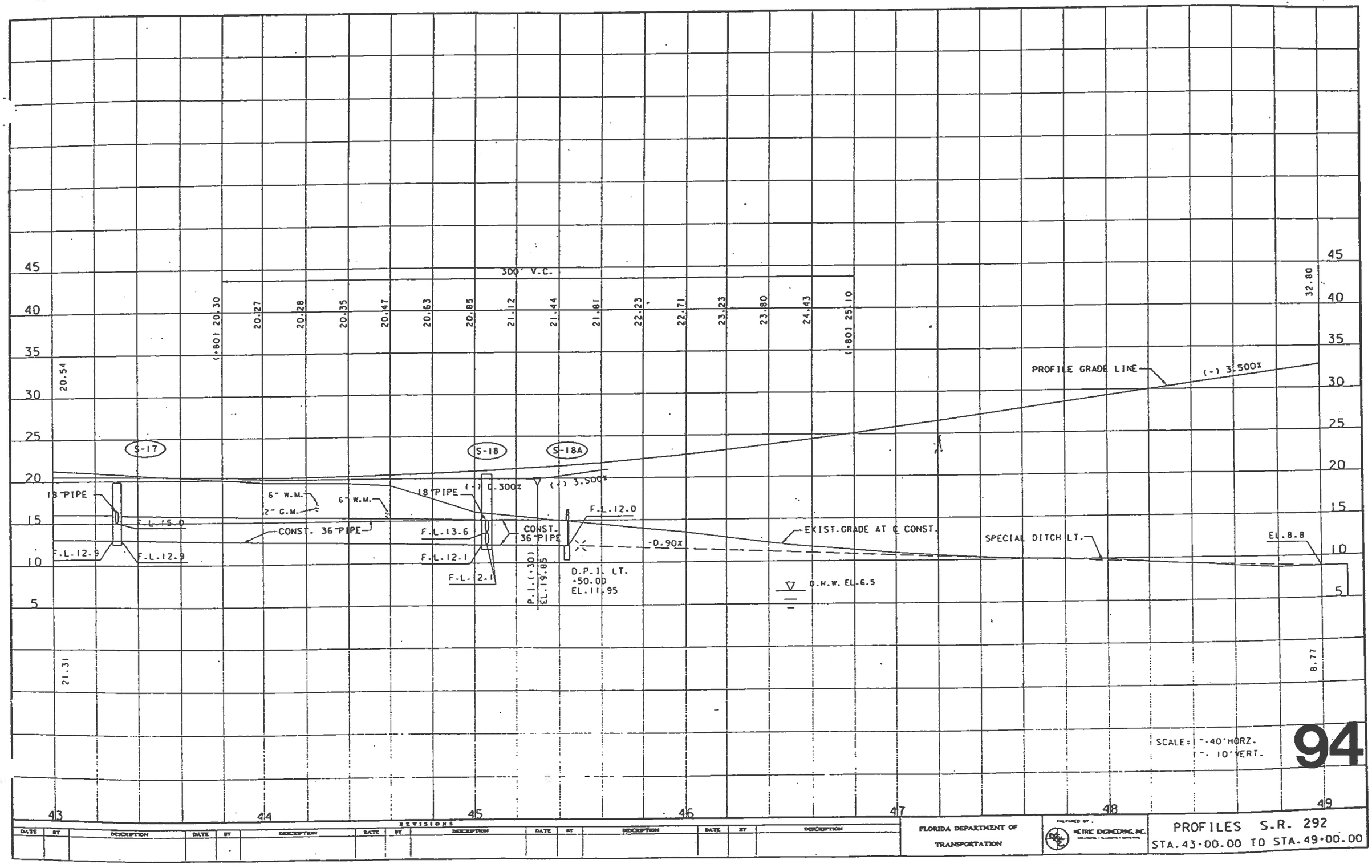
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

REVISIONS

FLORIDA DEPARTMENT OF TRANSPORTATION

Prepared by: HEPBC ENGINEERING, INC.

PROFILES S.R. 292
STA.29+19.93 TO STA.31+00.00



SCALE: 1"=40' HORZ.
1"= 10' VERT.

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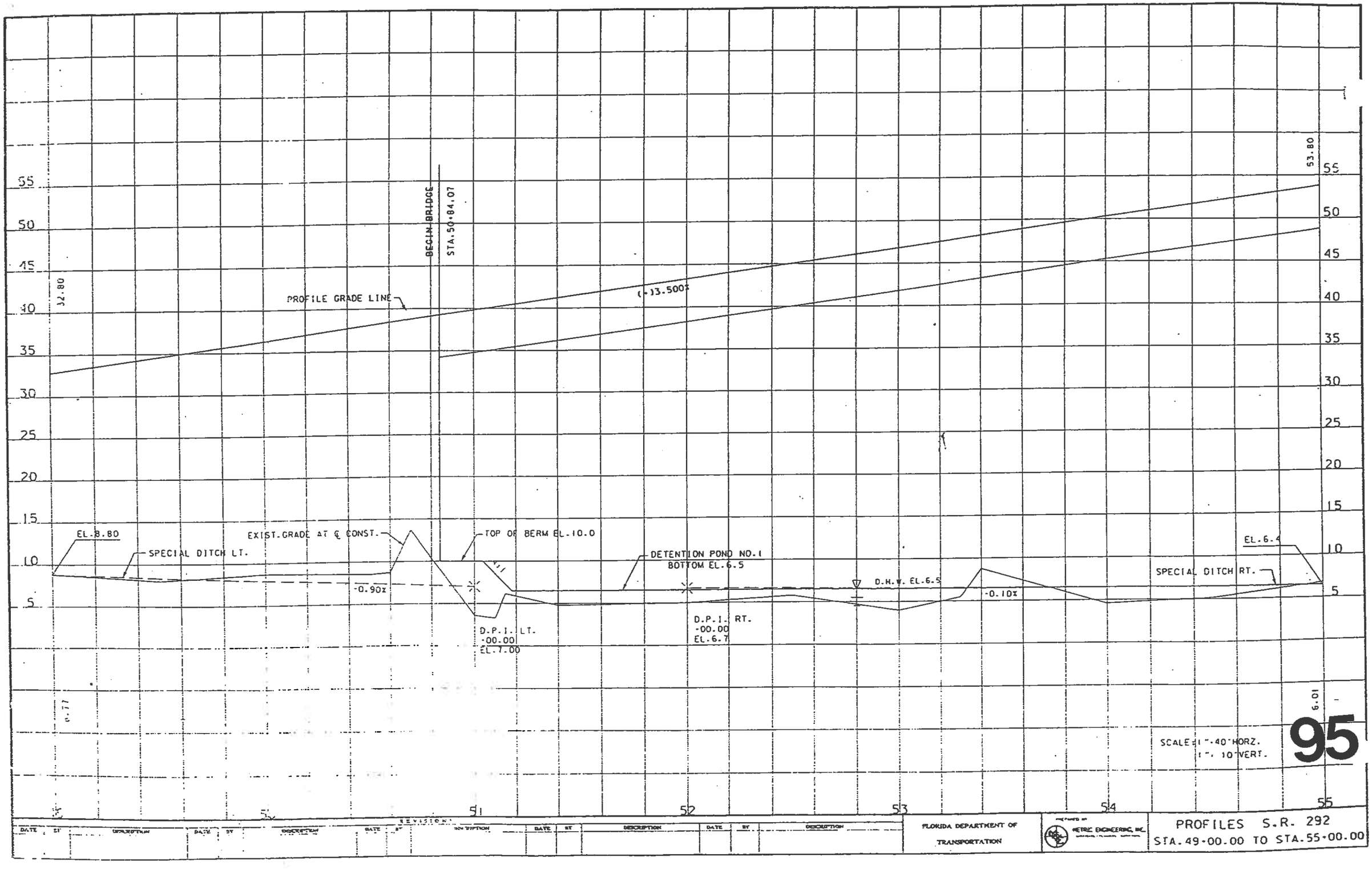
REVISIONS																	
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

PREPARED BY: METRIC ENGINEERING, INC.

PROFILES S.R. 292
STA. 43+00.00 TO STA. 49+00.00

STATE PROJ. NO.	SHEET NO.
48050-3536	34



SCALE: 1"=40' HORZ.
1"=10' VERT.

95

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

PREPARED BY METRIC ENGINEERING, INC.

PROFILES S.R. 292
STA. 49-00.00 TO STA. 55-00.00

A	Area or Amperes
AAA	American Automobile Association
AASHO	American Association Of State Highway Officials
AASHTO	American Association Of State Highway And Transportation Officials
ABC	Asphalt Base Course
Abd.	Abandoned
ABS	Acrylonitrite-Butadiene-Styrene Pipe
AC, Ac.	Acre
AC or Asph. Conc.	Asphaltic Concrete
Accel.	Acceleration
Act.	Actuated
ADA	The Americans With Disabilities Act
Adh.	Adhesive
Adj.	Adjust
ADT	Average Daily Traffic
AADT	Annual Average Daily Traffic
Agg.	Aggregate
Ah.	Ahead
AISC	American Institute Of Steel Construction
Alt.	Alternate
Al.	Aluminum
AM	12:00 Midnight Until 11:59 Noon
ANSI	American National Standards Institute
AOS	Apparent Opening Size
Appl.	Applied, Application
Apprh.	Approach
Approx.	Approximate
ARTBA	American Road & Transportation Builders Association
Artf.	Artificial
Asph.	Asphalt
Assem.	Assembly
Assn.	Association
Assoc.	Associate, Association
ASTM	American Society For Testing Materials
Attn.	Attention
Attnuatr.	Attenuator
Aux. or Auxil.	Auxiliary
Ave.	Avenue
AWG	American Wire Gauge
AWS	American Welding Society
Az.	Azimuth
B to B	Back to Back
Bascr.	Bascule
Bbl.	Barrel
Bd. or Bnd.	Bond or Bonded
BC	Bottle Cap or Bolt Circle
B/C, B.C.	Back Of Curb
BCCMP	Bituminous Coated Corrugated Metal Pipe Culvert
BCPA	Bituminous Coated Pipe Arch Culvert
BCPCMP	Bituminous Coated And Paved Corrugated Metal Pipe Culvert
BCPPA	Bituminous Coated And Paved Pipe Arch Culvert
BCT	Breakaway Cable Terminal
BE	Buried Electric
Beg.	Begin
Bit.	Bituminous
Bk.	Back
BL, BLC	Base Line, Base Line Control
Bldg.	Building
Blkhd.	Bulkhead
Blvd.	Boulevard
BM	Bench Mark
Bndry.	Boundary
Bdr.	Border
Bot.	Bottom
BP	Borrow Pit
Bq.	Becquerel
Br.	Bridge
Brg.	Bearing
Brkwy.	Breakaway
BT	Buried Telephone Cable or Duct
Btfly.	Butterfly
BW	Barbed Wire, Bottom Width or Both Ways
BO	Basin Outlet
C	Cantilever Length, Cut, Colorless, Coulomb or Cycle Length
°C	Degree Celsius
C & G	Curb And Gutter
CA	Coarse Aggregate
Cap.	Capacity
CAP	Corrugated Aluminum Pipe
Caps.	Capital Letters
CASP	Corrugated Aluminized Steel Pipe
CATV	Cable Television
CB	Catch Basin
CBC	Concrete Box Culvert
CBS	Concrete Box Structure
CC, C/C, or C to C	Center to Center
CCEW	Center to Center Each Way
CD	Cross Drain
cd	Candela
Cem.	Cement or Cemetery
Cem'd.	Cemented
CFS	Cubic Feet Per Second
Ch.	Channel
Chchg.	Channel Change
Chg.	Changeable
CI	Cast Iron
CIP	Cast Iron Pipe
CIPL	Cast In Place
cir. or circ.	Circle or Circular
circ.	Circumference
Ckt.	Circuit
Cl. or Clear	Clearance
CL, C/L or ℄	Center Line
CM	Concrete Monument
CMB	Concrete Median Barrier
CMP	Corrugated Metal Pipe
CMPA	Corrugated Metal Pipe Arch
Co.	County or Company
Col.	Column
Com.	Commercial or Common
COMM	Committee or By Committee
Comp.	Composite
Con.	Connect or Connection
Conc.	Concrete
Const.	Construct or Construction
Contrl.	Controller
Cont.	Continuation
Contr.	Contractor
Coord.	Coordinate
Cor.	Corner
Corr.	Corrugated
CP	Concrete Pipe
CPE	Corrugated Polyethylene Pipe
CR	Control Radius or County Road
CRA	Clear Recovery Area
Crs. or Cse.	Course
CS	Curve To Spiral
CSP	Corrugated Steel Pipe
CT	Clear Trunk
Ctlvr.	Cantilever
Ctr.	Center
CU or Cu	Copper
Culv.	Culvert
Cwt.	Hundredweight
CY	Cubic Yard
Cyl.	Cylindrical
CZ	Clear Zone
D	Degree Of Curvature, Depth, Density, Distance, Diameter or Directional Distribution
DA	Drainage Area or Deflection Angle
DBH	Diameter At Breast Height
DBI	Ditch Bottom Inlet
Dbl.	Double
DCS	Degree Of Curvature (Spiral)
DD	Dry Density
DDHV	Directional Design Hour Traffic
Decel.	Deceleration
Deg.	Degree
Delin.	Delineators
Demobl.	Demobilization
Dept.	Department
Det.	Detour, Detection, Detectable
DGN or Dgn.	Design
DHV	Design Hourly Volume
DHW	Design High Water
DT	Ditch
DI	Drop Inlet
Dia. or D	Diameter
Dim.	Dimension
Dist.	Distance
Disp.	Disposal
DLS	District Location Surveyor
DMM	Domestic Mail Manual
DOT	Department Of Transportation
DPI	Ditch Point Intersection
Dr. or DR.	Drain, Drive or Design Review
DR	Design Review
Driv.	Driven
Drwy.	Driveway
DS	Design Speed
DSL	Design Service Life
Dwg.	Drawing
E	East or External Distance
e	Rate Of Superelevation
E to E	End to End
EA or Ea.	Each
EB	Eastbound
El. or Elev.	Elevation
Elast.	Elastomeric
Elec.	Electric
Ellip.	Elliptical
Embk.	Embankment
Emul.	Emulsified
Encl.	Enclosure
Engr.	Engineer
EOS	End Of Survey or Equivalent Opening Size
Eq.	Equation or Equal
Equip.	Equipment
Esmt.	Easement
Est. or Estm.	Estimate
Est.	Establish or Established
Etc. or etc.	Et Cetera (And So Forth)
EW	Endwall
Ex.	Except, Example
Exc. or Excav.	Excavation
Exist.	Existing
Exp.	Expansion
Ext.	Extension
Exwy.	Expressway
F	Fill, Farad
F or Final	Final Quantity
F & I	Furnish & Install
F to F	Face to Face
FA	Federal Aid or Fine Aggregate
FAC	Florida Administrative Code
FAP	Federal Aid Project
FC	Friction Course
FD	French Drain
Fdn.	Foundation
FDOT	Florida Department Of Transportation
FE	Floor Elevation
Fed.	Federal
Fert.	Fertilizer
FES	Flared End Section
FETS	Flared End Terminal Section
FH	Fire Hydrant
FHWA	Federal Highway Administration
Fig.	Figure
Fin.	Finish
F.L.	Flow Line
FL, Fl. or Fla.	Florida
Flex.	Flexible
FNO	Fuse (Type Slow Burn)
FOC	Fiber Optics Cable
FPM or fpm	Feet Per Minute
FRP	Fiber Reinforced Pipe
FPS or fps	Feet Per Second
FR or Fr.	Frame
Frang.	Frangible
Freq.	Frequency
FS	For Side
Ft.	Foot or Feet
FTB	Floating Turbidity Barrier
FTBA	Florida Transportation Builder Association
Furn.	Furnish
Fut.	Future
G	Giga or Gauss
g	Gram or Gravity
Galv.	Galvanized
Ga.	Gauge or Gage
Gal. or Gal.	Gallon
Gar.	Garage
GD	Gutter Drain
GIP	Galvanized Iron Pipe
GM	Gas Main
GP	Grade Point
Gr.	Grade, Guardrail or Grate
Gr. or Gro.	Gross
GRC	Galvanized Rigid Steel Conduit
Grd.	Ground
gross km	Gross Kilometer
Gr. Wt. or gr. wt.	Gross Weight
Gtlr.	Gutter
Gy	Gray
H	Henry
h	Hour or Hecto
ha	Hectare
HAR	Highway Advisory Radio
HB	Hay Bales
HC	Horizontal Clearance
HD	High Density or Heavy Duty
HD or Hd.	Head
Hdwl.	Headwall
HH	Heavy Hex
Hndrl	Handrail
HOA	Hand/Off/Automatic
Horiz. or Hor.	Horizontal
HP	High Pressure or Horsepower
Hr.	Hour
HS	High Strength
Hse.	House
Ht.	Height
HW	High Water or Hot Water
Hwy.	Highway
Hyd.	Hydrant or Hydraulic
Hz	Hertz
I	External Angle (Delta), Interstate
Intchg. or Ichg.	Interchange
IES	Illuminating Engineering Society
ID	Inside Diameter or Identification
IMC	Intermediate Metal Conduit
In.	Inch
Inc.	Incorporated or Including
Incl. or Inc.	Included
Ind.	Industry or Industrial
IP	Iron Pipe
Install.	Installed
Isect.	Intersection
Isl.	Island
ITE	Institute Of Transportation Engineers
J	Joule
JB	Junction Box
Jct.	Junction
Jt.	Joint
K	Design Hour Factor or Kelvin
k	Kilo (prefix)
kg	Kilogram
kg/m	Kilogram Per Meter
kg/m²	Kilogram Per Square Meter
kg/m³	Kilogram Per Cubic Meter
Kilo	One Thousand
Kip	1000 Pounds
km	Kilometer
km/h	Kilometer Per Hour
kn	Knot
kPa	Kilopascal
ksi	Kips Per Square Inch
kV	Kilovolt
kVA	Kilovolt Ampere
kWh	Kilowatthour
L	Length, Length Of Curve, Liter, Left
2-L	Two-Lane
2L1W	Two-Lane One-Way
2L2W	Two-Lane Two-Way
LA or L/A	Limited Access
lane km	Lane Kilometer
Lat.	Lateral or Latitude
Lb.	Pound
lb/sy	Pounds Per Square Yard
LBR	Limerock Bearing Ratio
LC	Long Chord
LEO	Law Enforcement With Flashing Lights And Radar
Lgth.	Length
Lin.	Linear
lm	Lumen
Lmrk.	Limerock
Loc., LO	Location
LS	Length Of Spiral
LT	Left Turn
Lt.	Left
Ltd.	Lighted or Limited
Lum.	Luminaire
L/W	Lightweight
lx	Lux
M	Mass, Middle Ordinate Length or Mega
m	Meter or Milli
m²	Square Meter or Meter Square
m³	Cubic Meter or Meter Cubed
m³/m	Cubic Meter Per Meter
m/s	Meters Per Second
Mach.	Machine
Maint.	Maintenance
Matl.	Material
Max.	Maximum
MB	Median Barrier
MBM	Thousand (Feet) Board Measure
Med.	Median
Mega	One Million
Memb.	Member
MES	Mitered End Section
Mess.	Message
Mfg.	Manufactured or Manufacturer
MG	1000 Gallons
MH	Manhole
MHW	Mean High Water
µ	Micro
Mi.	Mile
Micro	One-Millionth
Mid.	Middle
Mil	One-Thousandth Of An Inch
Mil.	Military
Milli	One-Thousandth
Min.	Minimum or Minute
Misc.	Miscellaneous
mL	Milliliter
MLW	Mean Low Water
mm	Millimeter
Mobl.	Mobilization
Mod.	Modify or Modified
Mol	Mole
Mon.	Monument
MOT	Maintenance Of Traffic
MP	Mile Post

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

STANDARD ABBREVIATIONS

	Names	Dates
Designed By		
Drawn By		
Checked By		

Approved By: State Roadway Design Engineer

Revision	Sheet No.	Index No.
02	1 of 2	001

96

MPa	Megapascal
MPH or mph	Miles Per Hour
MSL	Mean Sea Level
Mtd.	Mounted
MUTCD	Manual On Uniform Traffic Control Device
MUTS	Manual On Uniform Traffic Studies
N	North or Newton
N/m	Newtons Per Meter
N/m^2	Newtons Per Square Meter
N/m^3	Newtons Per Cubic Meter
N/mm^2	Newtons Per Square Millimeter
NA or N/A	Not Available or Not Applicable
N & C	Nail & Cap
NB	Northbound
NC	National Coarse
NDCBU	Neighborhood Delivery And Collection Box Unit
NE	Northeast
net km	Net Kilometer
NEMA	National Electrical Manufacturers Association
NGVD	National Geodetic Vertical Datum of 1929
NGS	National Geodetic Survey
NHW	Normal High Water
NIC	Not In Contract
NJ	New Jersey
N•m	Newton Meter
No.	Number
Nom.	Nominal
Norm.	Normal
NS	Non Stress, Not Suitable or Near Side
NT, N&T	Non Traffic, Nail & Tin
NTS	Not To Scale
NW	Northwest
Opass	Overpass
O to O or o to o	Out to Out
OA	Overall
O.B.G.	Optional Base Group
OC	On Center
OD	Outside Diameter
OE	Overhead Electric
OH, OHD or Ohd.	Overhead
Opt.	Option, Optional & Optically
OT	Overhead Telephone
Oz.	Ounce
Ω	Ohm
P	Passenger Car & Light Delivery Truck
P or Plan	Plan Quantity
Pa	Pascal
Par.	Parallel
Pa•s	Pascal Second
Part.	Participation or Partition
Pvmt.	Pavement
PC	Point Of Curvature
PCBC	Precast Concrete Box Culvert
PCC	Point Of Compound Curvature or Plain Cement Concrete
PCE	Permanent Construction Easement
PE	Professional Engineer
Ped	Pedestrian or Pedestal
Pen.	Penetration
PG	Profile Grade
PGL	Profile Grade Line
Ph.	Phase
pH	Measure Of Acidity or Alkalinity
PI	Point Of Intersection
Pkg.	Parking
Pkwy.	Parkway
PL or ℄	Property Line or Plate
PM	12:00 Noon Until 11:59 Midnight
POC	Point On Curve
POST	Point On Semi-Tangent
POT	Point On Tangent
PP	Power Pole
Pr.	Pair
PRC	Point Of Reverse Curvature
Prcst.	Precast
Prest.	Prestressed
Prob.	Probability
Prod.	Product, Production, Producer or Produced
Prog.	Program or Progression
Proj.	Project or Projection
PRM	Permanent Reference Monument
Prov.	Provisions
PRS	Portable Regulatory Sign
PS & E	Plans, Specifications And Estimates
PSF or psf	Pounds Per Square Foot
PSI or psi	Pounds Per Square Inch
PT	Point Of Tangency or Pressure Treated
PVC	Polyvinyl Chloride
PW	Pressure Water
Q	Peak Discharge or Flow Volume.
Pr.	Pair
PRC	Point Of Reverse Curvature
Prcst.	Precast
Prest.	Prestressed
Prob.	Probability
Prod.	Product, Production, Producer or Produced
Prog.	Program or Progression
Proj.	Project or Projection
PRM	Permanent Reference Monument
Prov.	Provisions
PS & E	Plans, Specifications And Estimates
PSF or psf	Pounds Per Square Foot
PSI or psi	Pounds Per Square Inch
PT	Point Of Tangency or Pressure Treated
PVC	Polyvinyl Chloride
PW	Pressure Water
Q	Peak Discharge or Flow Volume
R or Rad.	Radius
R or Rng.	Range
rad	Radian
rad/s	Radian Per Second
RBAC	Rock Base Asphaltic Concrete
RBST	Rock Base Surface Treatment
RCP	Reinforced Concrete Pipe
RCPA	Reinforced Concrete Pipe Arch
Rd.	Road or Round
Rdsd.	Roadside
Rdwy.	Roadway
Rec.	Recovery
Rect.	Reticuline or Rectangular
Ref.	Reference
Refl.	Reflective
Reg.	Region, Regular, Registered or Regulation
Reinf.	Reinforced or Reinforcing
Rejuv.	Rejuvenation
Reloc.	Relocated
Rem.	Removal
Repl.	Replace
Req. or Reqd.	Required
Res.	Residence or Residential
RHW	Insulation (Moisture & Heat Resistant Rubber)
RM	Reference Monument
r/min	Revolution Per Minute
RP	Reference Point
rpm	Revolution Per Minute
RPM	Raised Reflective Pavement Markers
r/s	Revolution Per Second
RR	Railroad
RSDU	Radar Speed Display Unit
Rsf.	Resurface
Rt.	Right
R/W, ROW	Right Of Way
S or s	Speed, South, Seimens, Or Second
SAHM	Sand-Asphalt Hot Mix
SAN or San.	Sanitary
SB	Southbound
SBAC	Shell Base Asphaltic Concrete
SBRM	Sand Bituminous Road Mix
SBST	Shell Base Surface Treatment
SC	Seal Coat or Spiral To Curve
Sch.	Schedule
SCST	Sand-Clay Surface Treatment
SD	Side Drain, Storm Drain
SE	Southeast
Sec.	Second
Sect.	Section
Sed.	Sediment
Sep.	Separator
Seq.	Sequential
Serv.	Service
SF	Adjustment Factor in Percent, Silt Fence
SG	Subgrade
SG or Sp.Gr.	Specific Gravity
Sh. or Sht.	Sheet
Shldr.	Shoulder
SHW	Seasonal High Water
Spa.	Space
Spcg. or Sp.	Spacing
Spec.	Specification
Sq. Ft. or SF	Square Foot
Sq. In.	Square Inch
Sq. Yd. or SY	Square Yard
SR or S.R.	State Road
SRAP	Spiral Rib Aluminum Pipe
SRASP	Spiral Rib Aluminized Steel Pipe
SRSP	Spiral Rib Steel Pipe
SS	Sanitary Sewer
SSMD	Solid State Modular Design
ST	Surface Treatment or Spiral To Tangent
St. or ST.	Street
Sta.	Station
Stab.	Stability or Stabilization
STB	Staked Turbidity Barrier
Std.	Standard
Stg.	Strong
Stge.	Storage
Stl.	Steel
Str.	Structure
Sty.	Story
SU	Single Unit Trucks
Sub. or Subs.	Subsoil
Sub. or Subst.	Substitute
Subgr.	Subgrade
Suppts.	Supports
SUR or Sur.	Survey
Surf.	Surface
SW	Southwest
SW or Swk.	Sidewalk
Sys. or Syst.	System
Sv	Sievert
T	Tangent, Length Of Curve, Percent Trucks, Tesla,
T, TWP or Twp.	Township
t	Metric Ton
tan.	Tangent
TBM	Temporary Bench Mark
TC	Tangent To Curve
TCB	Temporary Concrete Barrier
TCE	Temporary Construction Easement
TCP	Terra Cotta Pipe
TCZ	Traffic Control Zone
Tel.	Telephone
Temp.	Temperature or Temporary
Traf.	Traffic
Theo.	Theoretical
THRMPLSTC	Thermoplastic
THW or THWN	Insulation (Flame Retardant, Moisture And Heat Resistant Thermoplastic)
Thick.	Thickness
Tk	Thick, Thickness or Truck
Tn.	Ton
Trans.	Transition, Transverse, Translate or Transportation
Treat.	Treatment
TS	Tangent To Spiral
TSC	Length Of Tangent (Spiral Curve)
Typ.	Typical
Upass.	Underpass
UG	Underground
UL	Underwriters Laboratories
Ult.	Ultimate
Ultd.	Unlimited
Undr.	Underdrains
Undrwy.	Underroadway
UNL or Undl.	Unloaded
Untr.	Untreated
USC & GS	US Coast and Geodetic Survey (now National Geodetic Survey)
USGS	US Geological Survey
USPS	United States Postal Service
Util.	Utilities
UV	Ultraviolet
V	Volt, Velocity, Volume or Hourly Volume
Var.	Varies, Variable or Variance
VC	Vertical Curve
VCP	Vitrified Clay Pipe
VECP	Value Engineering Change Proposal
Veh.	Vehicle
Vert.	Vertical
VF	Vertical Foot
Vh	Verified Horizontal Location
VMS	Variable Message Sign
Vol.	Volume
VP	Vertical Panel
VPD or Vpd.	Vehicles Per Day
VPH or Vph.	Vehicles Per Hour
VPHPL or Vphpl.	Vehicles Per Hour Per Lane
VRMS	Volts Root Mean Square
Vv	Verified Vertical Elevation
Vvh	Verified Vertical Elevation And Horizontal Location
VW	Variable Width
W	Width, Wide, West or Watt
W/C	Water-Cement Ratio
WB	Westbound
Wb.	Weber
WB40	Intermediate Semi Trailer
WB50	Large Semi Trailer
WB60	Tandem Semi Trailer
WM	Water Main
W.P.I.	Work Program Item
WT	Water Table Or Weight
WWF	Welded Wire Fabric
X	Coordinate Value (East-West Direction) or Extra
X Rd.	Cross Road
Xing.	Crossing
Xsec.	Cross Section
Y	Coordinate Value (North-South Direction)
Yr.	Year

UNITS OF MEASURE

US MEASUREMENT

AC	Acre
AS	Assembly
BU	Bushel
CF	Cubic Foot
CO	Cleanout
CY	Cubic Yard
EA	Each
ED	Each Day
GA	Gallon
GM	Gross Mile
LB	Pound
LF	Linear Foot
LM	Lane Mile
LO	Per Location
LS	Lump Sum
LU	Luminaire
MB	Thousand Board Measure
MG	Thousand Gallons
MH	Man Hour
NM	Net Mile
PA	Per Analysis
PB	Per Building
PE	Pile
PI	Per Intersection
PL	Plant
PM	Per Mile
PS	Per Set
PW	Per Well
SF	Square Foot
SY	Square Yard
TN	Ton

METRIC MEASUREMENT

AS	Assembly
CO	Cleanout
DA	Day
EA	Each
ED	Each Day
GK	Gross Kilometer
HA	Hectare
HR	Hour
KG	Kilogram
KL	Kiloliter
KM	Kilometer
LI	Liter
LK	Lane Kilometer
LO	Per Location
LS	Lump Sum
LS/AS	Lump Sum Per Assembly
LS/DA	Lump Sum Per Day
LS/EA	Lump Sum Per Each
LS/HA	Lump Sum Per Hectare
LS/KG	Lump Sum Per Kilogram
LS/LS	Lump Sum Per Lump Sum
LS/MT	Lump Sum Per Metric Ton
LS/MI	Lump Sum Per Linear Meter
LS/M2	Lump Sum Per Square Meter
LU	Luminaire
MH	Man Hour
MO	Month
MT	Metric Ton
MI	Meter
M2	Square Meter
M3	Cubic Meter
NK	Net Kilometer
PA	Per Analysis
PB	Per Building
PI	Per Intersection
PL	Plant
PW	Per Well

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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

STANDARD ABBREVIATIONS

	Names	Dates
Designed By		
Drawn By		
Checked By		

Approved By
State Roadway Design Engineer

Revision	Sheet No.	Index No.
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STANDARD SYMBOLS FOR KEY MAP

- Highway With Full Control of Access
- Highway With Frontage Roads
- Highway Interchange
- Proposed Controlled Access Highway
- Divided Highway
- Hard Surfaced Road
- Soil, Gravel Or Shell Surfaced Road
- Graded And Drained Road
- Unimproved Road
- Primitive Road
- P — Private Road
- Streets In Inset Or Delimited Areas
- Extension Of Local Roads Within Cities
- FAI — Federal Aid Interstate Highway
- FAU — Federal Aid Urban Highway
- FAP — Federal Aid Primary Highway
- FAS — Federal Aid Secondary Highway
- NFR — National Forest Road
- SFR — State Forest Road
- SPR — State Park Road
- Interstate Highway
- US Numbered Highway
- State Highway
- County Road

- Railroad
- Double Track Railroad
- Abandoned Railroad
- Railroad Station
- Grade Crossing
- Railroad Above
- Railroad Below
- Military Field
- Commercial Or Municipal Airport
- Landing Area Or Strip
- Runways

- FF — Free Ferry
- TF — Toll Ferry
- Canal Or Drainage Ditch
- Intracoastal Waterway
- Narrow Stream
- Wide Stream
- Dam
- Dam Or Spillway With Lock
- Dam With Road
- Flood Control Structure
- Lake, Reservoir Or Pond
- Intermittent Pond
- Meandered Lake
- Marsh Or Swamp
- Mangroves
- Levee Or Dike
- Levee Or Dike With Road
- Highway Bridge
- 3 — Small Bridges Closely Spaced
- Drawbridge
- Highway Grade Separation
- Tunnel
- State Boundary Line
- County Boundary Line
- Civil Township Boundary
- Extended Township Line
- Land Grant Line
- Land Section Line
- State Survey Section Line
- Survey By Others
- Location Of Inset Boundary Within Map
- Military Reservation Boundary
- College Or University Boundary
- Corporate Limits
- Delimited Area, Population Est.
- Reservation, Forest Or Park Boundary
  Wildlife Refuge Boundary

- Residential Area Under Development
- Lighthouse
- State Capital
- County Seat
- Other City Or Village
- Seminole Indian Village
- Welcome Station
- WP — Wayside Park Or Small Park
- WP — Park With Boat Ramp
- B — Boat Ramp
- Museum
- Recreational Area Or Historic Site
- Scenic Site
- Post Office
- School
- Church
- Cemetery
- Church And Cemetery
- Hospital, Health Center Or Rest Home
- Toll House, Port Of Entry Or Weight Station
- Fair Grounds, Race Course Or Rodeo Arena
- Mine Or Strip Mine
- Governmental Research Station

- Agricultural Inspection Station
- FM — Farmers Market
- Game Preserve
- Game Checking Station
- Bird Sanctuary
- Fire Control Headquarters
- Lookout Tower
- FS — Fire Station
- Patrol Or Police Station
- Correctional Institution Or Road Camp
- DOT — Department of Transportation Facility
- Coast Guard Station
- A — Armory
- J — Junkyard
- F — Sanitary Fill
- S — Sewage Disposal Plant
- I — Incinerator
- Power Plant
- Power Substation
- Communications Facility
- Locked Gate Or Fence
- WOOD — Triangulation Station

GENERAL NOTE

1. Symbols on this Index are intended for use on all Roadway, Signing And Marking, Signalization, and Lighting projects. For work zone traffic control symbols refer to Index 600. When additional or similar symbols are used, legends or notations may be required for clarity.

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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

STANDARD SYMBOLS

	Names	Dates
Designed By		
Drawn By		
Checked By		

Approved By _____ State Roadway Design Engineer

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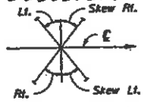
STANDARD SYMBOLS FOR PLAN SHEETS

GENERAL SYMBOLS

- State Line
- County Line
- Township Line
- Section Line
- City Line
- Base Or Survey Line
- Right-Of-Way
- Easement Line
- Limited Access Line
- Fence Line
- National Or State Park Or Forest
- Grant Line
- Railroad (Drainage Maps)
- Railroad (Detail Plans)
- Fence (Limited Access)
- Box Culvert
- Bridge
- Pipe Culvert-Mitered End Section
- Pipe Culvert-Straight Endwall
- Pipe Culvert-U-Type Endwall
- Pipe Culvert-Median Drain
- Pipe Culvert-Other End Treatments
- 18" SD — Storm Drain
- 18" SD ------ Storm Drain
- Inlet
- Manhole
- Tied Longitudinal Joint
- Keyed Longitudinal Joint
- Doweled Transverse Expansion Joint
- Doweled Transverse Contraction Joint
- Transverse Contraction Joint Without Dowels
- Survey Reference Point
- ALACHUA Triangulation Station
- B.M. NO. 112 Bench Mark
- Point Of Intersection
- North Arrow
- TYP. EX. PVMT. WALK. Edges Of Existing Pavement And Sidewalk
- Guardrail
- C.C. Crash Cushion (Attenuator)
- Piling Pier Column
- Concrete Monument
- Base Line
- ℄ Centerline
- ℘ Property Line
- Δ Delta Angle
- ± Approximate
- ∅ Round Or Diameter

- Curb
- Curb And Gutter
- Water Well, Spring
- Levee
- Railroad Mile Post
- Railroad Signal With Gate
- Railroad Switch
- Gate
- Pump Island
- Storage Tank (Surface)
- Storage Tank (Underground)
- Mine Or Quarry
- B P Borrow Pit
- Church
- S Store
- RES Residence
- B Barn
- School
- Hay Bales
- Silt Fence
- Floating Turbidity Barrier
- Staked Turbidity Barrier
- Stream
- Shore Line
- Marsh
- Wetland Boundary
- Hedge
- Trees
- Edge Of Wooded Area
- Shrubbery
- Grove Or Orchard



Definition Of Skew For Cross Drains And Barrels Of Conrete Box Culverts

- Concrete
- Wood
- e Rate Of Superelevation

UTILITY ADJUSTMENT SYMBOLS

EXISTING	PROPOSED	
		Manhole
		Fire Hydrant
		Meter (Type)
		Valve (Type)
		Valve Box (Type)
		Valve Cover (Type)
		Vent (Type)
		Pump Station
S	S	Sewage Pump Station
		Cleanout
		Cable TV Service Box
G 6" Gas G	GGG 6" Gas GGG	Gas
W 6" Water W	WWW 6" Water WWW	Water Main
S 8" San S	SSS 8" San SSS	Sanitary Sewer
BE (7.5 kV) BE	BE BE (7.5 kV) BE BE	Buried Electric
BT (2") BT	BT BT BT (2") BT BT	Buried Telephone
BTV 3" BTV	BTV BTV 3" BTV BTV	Buried Cable Television
BFO (2") BFO	BFO BFO 2" BFO BFO	Buried Fiber Optic
CAS 12" CAS	CAS CAS 12" CAS	Casing
DT 4"x4" DT	DT DT DT 4"x4" DT DT	Duct
NPW 6" NPW	NPW NPW 6" NPW	Non Potable Water
PET 8" PET	PET PET 8" PET	Petroleum
RD 4" RD	RD RD RD RD 4" RD RD	Roof Drain
STM 12" STM	STM STM 12" STM	Steam

EXISTING	PROPOSED	
		Power Pole
		Telephone Pole
		Combination Pole
		Guy Wire And Anchor Pin
		Guy Pole Deadman
		Tower
		Light Pole
		Transformer
OE (7.5 kV) OE	OE (7.5 kV) OE OE	Overhead Electric
OT (2") OT	OT (2") OT OT	Overhead Telephone
OH (2" CATV) OTV	OH (2" CATV) OTV OTV	Overhead Cable Television
OFO (1") OFO	OFO (1") OFO OFO	Overhead Fiber Optic

See General Note Sheet 1 Of 3.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

STANDARD SYMBOLS

	Names	Dates
Designed By		
Drawn By	CDP	08/72
Checked By	CDR	08/72

Approved By _____ State Roadway Design Engineer

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STANDARD SYMBOLS FOR PLAN SHEETS

TRAFFIC SIGNALS SYMBOLS

EXISTING	PROPOSED	
		Traffic Signal Head (Span Wire Mounted)
		Traffic Signal Head (Pedestal Mounted)
		Traffic Signal Head (Mast Arm Mounted)
		Traffic Signal Pole (Concrete, Wood, Metal)
		Vehicle Detector (Loop)
		Signal Cable (On Messenger Wire)
		Conduit
		Vehicle Detector (Points)
		Pedestrian Detector
		Pedestrian Signal Head (Pole Or Pedestal Mounted)
		Controller Cabinet (Base Mounted)
		Controller Cabinet (Pole Mounted)
	W - D W	Walk - Dont Walk
	FDW	Flashing Dont Walk
	5	Signal Face Number
		Signal Lens
	P	Programmed Signal Head
		Messenger Wire
	3	Pole Tabulation Cross Reference
	*3	Pole Tabulation Cross Reference (Joint Use Pole)
	∅	Signal Phase

LIGHTING SYMBOLS

EXISTING	PROPOSED	
		Pole & Luminaire
		Existing Pole & Luminaire To Be Removed
		Final Position Of Relocated Or Adjusted Pole & Luminaire
		High Mast Lighting Tower
		City Or Utility Owned Luminaire & Pole
		PVC (Polyvinyl Chloride) Lighting Conduit And Conductors
		Rigid Galvanized Lighting Conduit And Conductors
		Lighting Pull-Box
		Light Distribution Point
		Joint Use Pole
		Pier Cap Underdeck Luminaire
		Pendant Hung Underdeck Luminaire

SIGNING AND PAVEMENT MARKING SYMBOLS

- Pavement Arrow
- Single Solid Line
- Double Solid Line
- Skip Line
- Stop Bar
- Traffic Sign (Post Mounted)
- Traffic Sign (Overhead)
- (13) Sign Number
- 700-83 Sign Item Number
- Traffic Flow Arrow

See General Notes, Sheet 1 of 3

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

STANDARD SYMBOLS

	Names	Dates
Designed By	-	-
Drawn By	CDP	08/72
Checked By	CDR	08/72

Approved By _____ State Roadway Design Engineer

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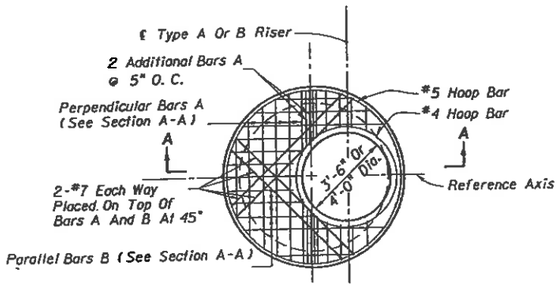
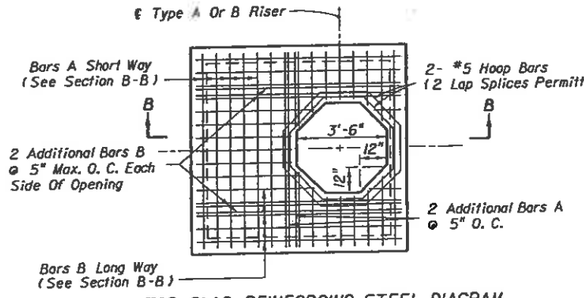
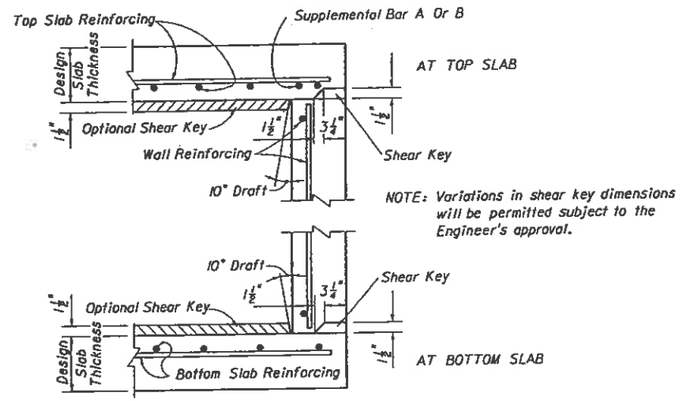


Note: Not Applicable For Type C, D & E Ditch Bottom Inlets. See Index No. 232.

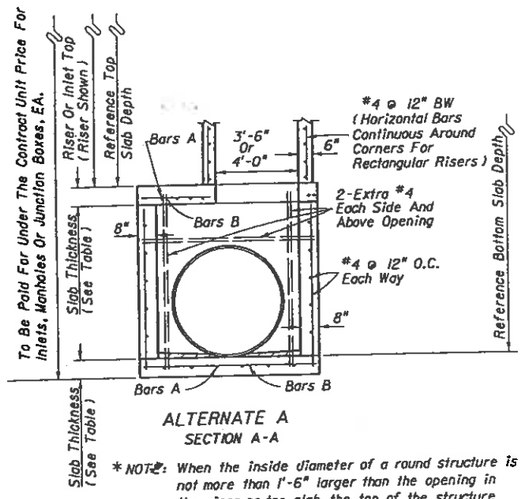
TOP SLAB REINFORCING STEEL DIAGRAM



TOP SLAB REINFORCING STEEL DIAGRAM

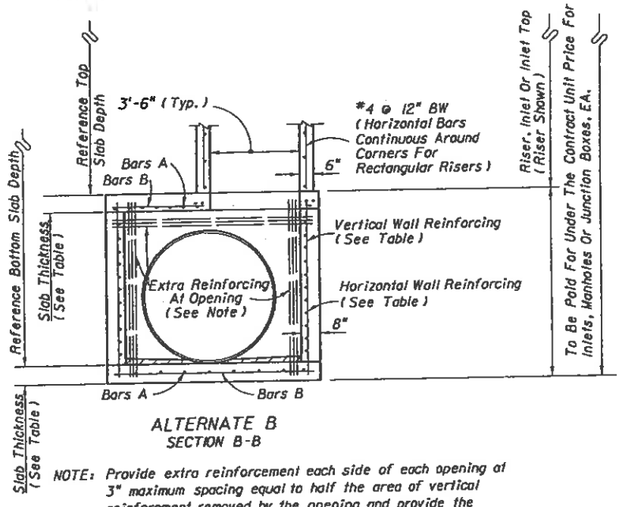


SLAB TO WALL DETAILS FOR PRECAST ALTERNATE WITH 8" WALLS



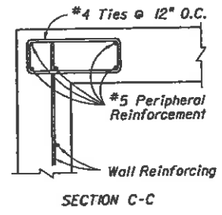
ALTERNATE A
SECTION A-A

* NOTE: When the inside diameter of a round structure is not more than 1'-6" larger than the opening in the riser or top slab, the top of the structure or riser shall be constructed according to the "Special Top Slab" details on this sheet.

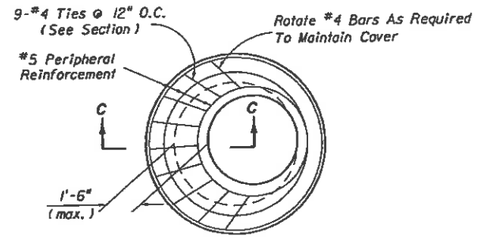


ALTERNATE B
SECTION B-B

NOTE: Provide extra reinforcement each side of each opening at 3" maximum spacing equal to half the area of vertical reinforcment removed by the opening and provide the same area of reinforcement above each opening at 3" maximum spacing as removed by the opening.



SECTION C-C



SPECIAL TOP SLAB *

GENERAL NOTES

1. Standard structure bottoms 4'-0" diameter and smaller (Alt. A) and 3'-6" square (Alt. B) are designated Type P. Larger standard structure bottoms are designated Type J. Risers are permitted for all structures.
2. Walls of circular structures (Alternate A) constructed in place may be of non-reinforced concrete or brick or reinforced concrete. Precast and rectangular structures (Alternate B) shall be constructed of reinforced concrete only.
3. Wall thickness and reinforcement are for either reinforced cast-in-place or precast concrete units except that precast circular units may be furnished with walls in accordance with either A.S.T.M. C478 (up to 96" diameter) or A.S.T.M. C76, Class III, B Wall, modified where the elliptical steel cage area is placed in the center one-third of the wall.
4. Top and floor slab thickness and reinforcement are for precast and cast in place construction. Top and floor slabs shall be of Class II concrete. Concrete as specified in A.S.T.M. C478 (4000 psi) may be used in lieu of Class I and Class II concrete in precast items manufactured in plants which are under the 'Standard Operating Procedures' for the inspection of precast drainage products.
5. All reinforcement shown is A.S.T.M. A615/A615M Grade 60 steel, either smooth or deformed. Equivalent area Grade 40 steel or Grade 65KSI welded wire fabric may be substituted according to index No. 201.
6. Structure bottoms may be used in conjunction with curb inlet tops Types 1, 2, 3, 4, 5, 6, 9, and 10, and any manhole or junction box unless otherwise shown in the plans or other standard drawings. Alt. B structure bottoms may be used in conjunction with curb inlet Types 7 & 8, or any ditch bottom inlet unless otherwise shown in the plans or other standard drawings.
7. Rectangular structures may be rotated as directed by the Engineer in order to facilitate connections between the structure walls and storm sewer pipes.
8. Except when ACI hooks are specifically required, reinforcement top and slab shall be straight embedment.
9. All steel bars shall have 1½" minimum cover unless otherwise shown except for precast circular units manufactured under ASTM C76 or ASTM C478. Horizontal steel in rectangular structures shall be lapped a minimum of 24 bar diameters at corners.
10. The corner fillets shown are necessary for rectangular structures used with circular risers and inlet throats and used on skew with rectangular risers, inlet and inlet throats. Fillets will be required in lieu of the bottom slab of the Alt. B riser when used with the Alt. A box. Each fillet shall be reinforced with 2-#5 bars.
11. Inlet throats, riser or manhole tops shall be secured to structures as shown on Index No. 201.
12. Structures with depths over 14' are to be checked for floatation by designer of project drainage.
13. Units larger than specified standard may be substituted at the contractor's option when these units will not cause or increase the severity of utility conflicts. Such larger units shall be furnished at no additional cost to the Department. Larger Alternate A units cannot replace Alternate B units without approval of the Engineer. This note applies to this index only.
14. For manhole and junction box tops, for frames and covers, and, for supplementary details see Index No. 201.

100a

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

STRUCTURE BOTTOMS TYPE J AND P

	Names	Dates
Designed By		
Drawn By		
Checked By		

Approved By: [signature]
State Drainage Engineer

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SLAB DESIGNS - SQUARE AND RECTANGULAR STRUCTURES

(ALL SLABS 8" THICK - REINFORCING PARALLEL TO SHORT WAY AND LONG WAY)

SHORT-WAY		LONG-WAY	
SLAB DEPTH	SCHEDULE	SLAB DEPTH	SCHEDULE
SIZE: 3'-6" x UNLIMITED			
≥0.5' <29'	B	≥0.5'-40'	B
29'-40'	C		
SIZE: 4'-0" x UNLIMITED			
≥0.5' <19'	B	≥0.5' <34'	B
19' <29'	C	34'-40'	C
29'-40'	D		
SIZE: 5' x 5'			
≥0.5' <3'	C	≥0.5' <3'	C
3' <19'	B	3' <19'	B
19' <28'	C	19' <28'	C
28' <38'	D	28' <38'	D
38'-40'	F	38'-40'	F
SIZE: 5' x 6'			
≥0.5' <3'	C	≥0.5' <3'	C
3' <16'	B	3' <20'	B
16' <24'	C	20' <29'	C
24' <34'	D	29'-40'	D
34'-40'	F		
SIZE: 5' x 7'			
≥0.5' <3'	C	≥0.5' <3'	C
3' <14'	B	3' <22'	B
14' <21'	C	22' <33'	C
21' <39'	D	33'-40'	D
39'-40'	F		
SIZE: 5' x 8'			
≥0.5' <3'	C	≥0.5' <39'	B
3' <8'	B	39'-40'	C
8' <17'	C		
17' <23'	D		
23'-40'	F		
SIZE: 5' x 9'			
≥0.5' <3'	C	≥0.5' <32'	B
3' <8'	B	32'-40'	C
8' <17'	C		
17' <23'	D		
23'-40'	F		

SHORT-WAY		LONG-WAY	
SLAB DEPTH	SCHEDULE	SLAB DEPTH	SCHEDULE
SIZE: 6' x 6'			
≥0.5' <3'	D	≥0.5' <3'	D
3' <4'	C	3' <4'	C
4' <14'	B	4' <14'	B
14' <21'	C	14' <21'	C
21' <28'	D	21' <28'	D
28'-40'	F	28'-40'	F
SIZE: 6' x 7'			
≥0.5' <3'	D	≥0.5' <3'	D
3' <4'	C	3' <4'	C
4' <12'	B	4' <15'	B
12' <19'	C	15' <21'	C
19' <26'	D	21' <30'	D
26'-40'	F	30'-40'	F
SIZE: 6' x 8'			
≥0.5' <3'	D	≥0.5' <3'	D
3' <4'	C	3' <4'	C
4' <7'	B	4' <16'	B
7' <16'	C	16' <23'	C
16' <23'	D	23' <32'	D
23'-40'	F	32'-40'	F
SIZE: 6' x 9'			
≥0.5' <3'	D	≥0.5' <3'	D
3' <15'	C	3' <4'	C
15' <21'	D	4' <18'	B
21' <27'	E	18' <27'	C
27'-40'	G	27' <37'	D
		37'-40'	E
SIZE: 7' x 7'			
≥0.5' <3'	E	≥0.5' <3'	E
3' <4'	D	3' <4'	D
4' <16'	C	4' <16'	C
16' <22'	D	16' <22'	D
22' <28'	E	22' <28'	E
28'-40'	G	28'-40'	G
SIZE: 7' x 8'			
≥0.5' <3'	E	≥0.5' <3'	E
3' <4'	D	3' <4'	D
4' <15'	C	4' <17'	C
15' <21'	D	17' <23'	D
21' <27'	E	23' <29'	E
27'-40'	G	29'-40'	G
SIZE: 7' x 9'			
≥0.5' <3'	E	≥0.5' <3'	E
3' <4'	D	3' <4'	D
4' <12'	C	4' <18'	C
12' <18'	D	18' <24'	D
18' <24'	E	24' <32'	E
24'-40'	G	32'-40'	G

SHORT-WAY		LONG-WAY	
SLAB DEPTH	SCHEDULE	SLAB DEPTH	SCHEDULE
SIZE: 8' x 8'			
≥ 0.5' <3'	D	≥ 0.5' <3'	D
3' <4'	C	3' <4'	C
4' <9'	B	4' <9'	B
9' <17'	C	9' <17'	C
17' <31'	D	17' <31'	D
31'-40'	G	31'-40'	G
SIZE: 8' x 9'			
≥ 0.5' <3'	D	≥ 0.5' <3'	E
3' <4'	C	3' <4'	D
4' <16'	B	4' <18'	C
16' <22'	C	18' <25'	D
22' <29'	D	25' <32'	F
29'-40'	F	32'-40'	G
SIZE: 9' x 9'			
≥ 0.5' <3'	F	≥ 0.5' <3'	F
3' <14'	C	3' <14'	C
14' <20'	D	14' <20'	D
20' <26'	E	20' <26'	E
26'-40'	G	26'-40'	G

SLAB DESIGNS - ROUND STRUCTURES

SLAB DEPTH	SLAB THICKNESS	REINFORCING (2 WAYS) SCHEDULE
SIZE: 3'-6"		
≥0.5'-40'	8"	C
SIZE: 4'-0"		
≥0.5'-40'	8"	C
SIZE: 5'-0"		
≥0.5' <30'	8"	C
30'-40'	8"	D
SIZE: 6'-0"		
≥0.5' <8'	8"	B
8' <18'	8"	C
18' <30'	8"	D
30' <37'	8"	E
37'-40'	8"	G
SIZE: 8'-0"		
≥0.5' <9'	10"	C
9' <15'	10"	D
15' <23'	10"	E
23' <33'	12"	E
33'-40'	12"	G
SIZE: 10'-0"		
≥0.5' <6'	10"	C
6' <11'	10"	D
11' <17'	10"	E
17' <23'	12"	E
23'-40'	12"	G
SIZE: 12'-0"		
≥0.5' <6'	12"	C
6' <11'	12"	D
11' <16'	12"	E
16' <20'	14"	E
20'-40'	14"	G

WALL DESIGNS - RECTANGULAR STRUCTURES

VERTICAL REINFORCING		HORIZONTAL REINFORCING	
WALL DEPTH	SCHEDULE	WALL DEPTH	SCHEDULE
SIZE: 3'-6" * SEE NOTE BELOW			
≥1.17'-40'	A	≥1.17'-40'	B
SIZE: 4'-0"			
≥1.17'-40'	A	≥1.17'-40'	B
SIZE: 5'-0"			
≥1.17'-40'	A	≥1.17' <33'	B
		33'-40'	C
SIZE: 6'-0"			
≥1.17'-40'	A	≥1.17' <22'	B
		22'-40'	C
SIZE: 7'-0"			
≥1.17'-40'	A	≥1.17' <15'	B
		15' <25'	C
		25'-40'	D
SIZE: 8'-0"			
≥1.17'-40'	A	≥1.17' <11'	B
		11' <19'	C
		19' <29'	D
		29'-40'	F
SIZE: 9'-0"			
≥1.17'-40'	A	≥1.17' <15'	C
		15' <22'	D
		22'-40'	F

SIZE is the inside length of a structure wall.

* Precast structures 3'-6" x 3'-6" maybe cast with 6" walls to depths of 15'. See Index 201

GENERAL NOTES

1. Slab reinforcement is appropriate for top, intermediate, and bottom slabs.
2. Slab depth is measured from finished grade to top of slab.
3. Wall design depth is measured to the top of the bottom slab for boxes and to the top of the intermediate slab for risers.
4. Wall height is the distance between top of tower slab to bottom of upper slab.
5. Wall sizes exceeding 9'-0" require a special design.

REINFORCING SCHEDULE

SCHEDULE	GRADE 60 STEEL OR 65 KSI (WIRE FABRIC) in^2/ft
A	0.20
B	0.24
C	0.37
D	0.53
E	0.73
F	1.06
G	1.45

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

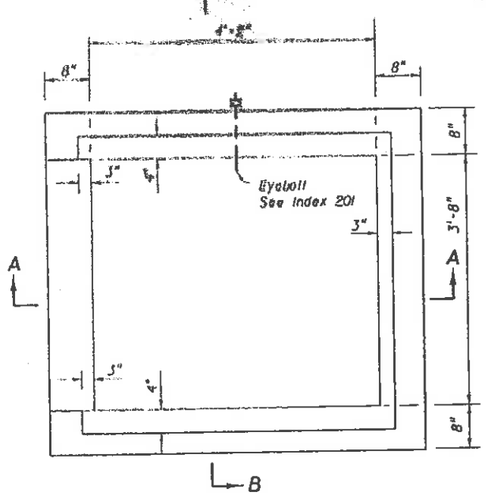
STRUCTURE BOTTOMS TYPE J AND P

	Names	Dates
Designed By		
Drawn By	dtr	05/85
Checked By	JBW	05/85

Approved By: A.D. McLemore, State Design Engineer

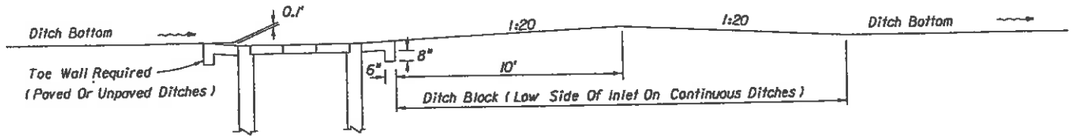
Revision	Sheet No.	Index No.
00	2 of 2	200

100B



Predominate Flow (s)
(Grate, Apron And Slot Not Shown)

PLAN

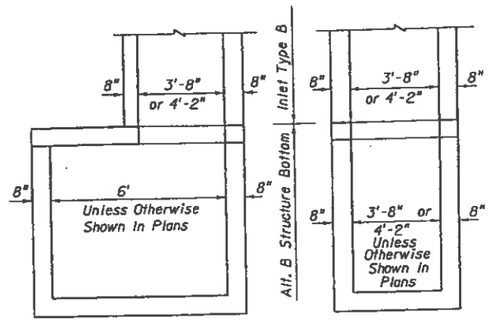


SECTION EE

DITCH BLOCK

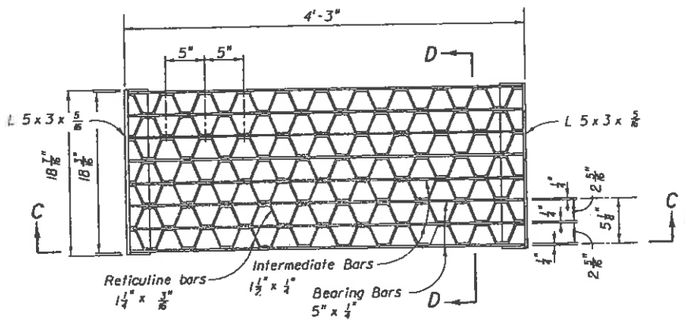
RECOMMENDED MAXIMUM PIPE SIZES	
INLET INSIDE WIDTH	PIPE SIZE
3'-8"	30"
4'-2"	36"

Note: Recommended sizes are for concrete pipe. Sizes for other types of pipe must be verified for fit in accordance with Index No. 201. For larger pipe see bottom detail above and Index No. 200.



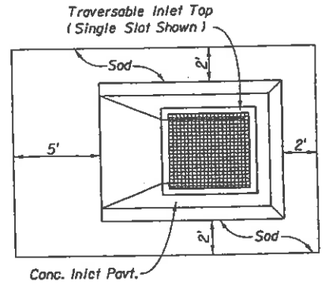
NOTE: Alt. B Structure Bottom Only. See Index No. 200 for structure bottom details and hole reinforcement.

INLET WITH STRUCTURE BOTTOM

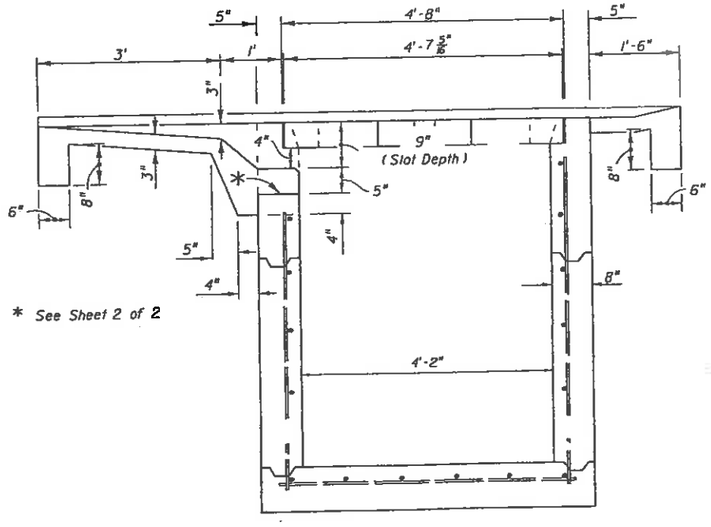


PLAN

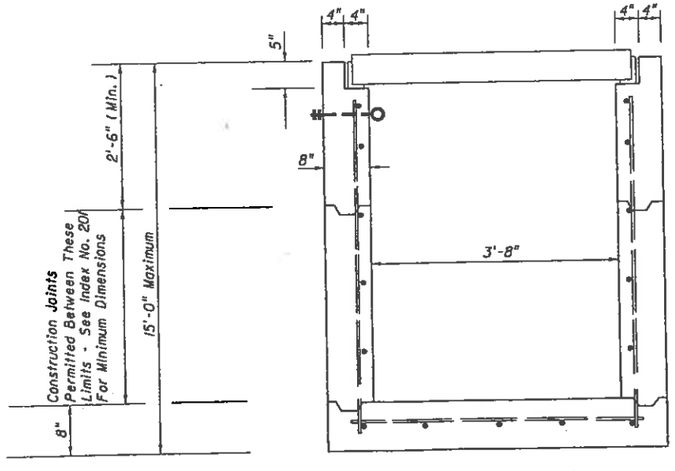
ESTIMATED QUANTITIES For Informational Purposes Only			
SLOT TYPE	PAVEMENT		SOD
	SY	CY	SY
Single Slot	6.2	0.9	14
Double Slot	8.1	1.1	19



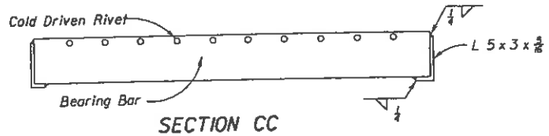
CONCRETE INLET PAVEMENT AND SODDING



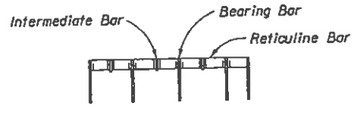
SECTION AA



SECTION BB



SECTION CC



SECTION DD

STEEL GRATE

101

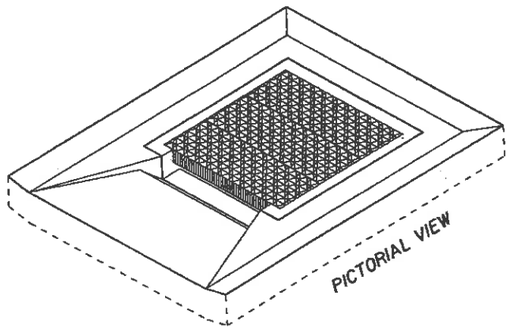
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

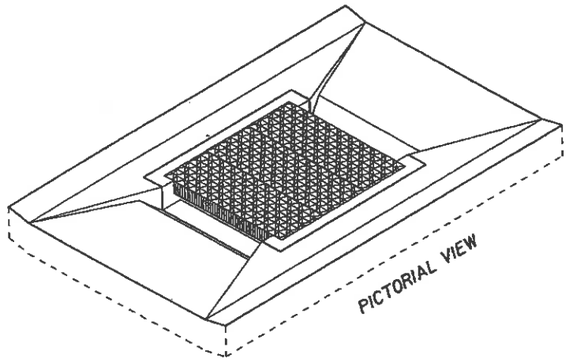
DITCH BOTTOM INLET TYPE B

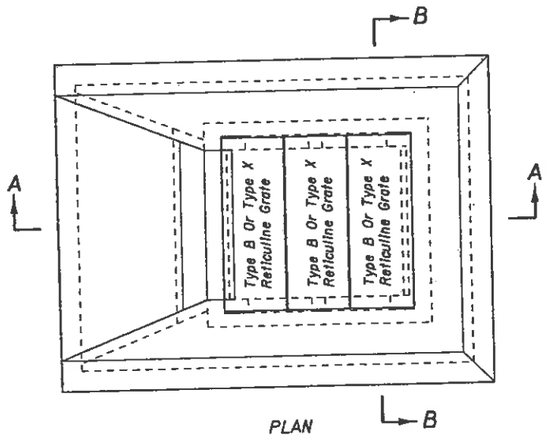
	Names	Dates
Designed By	HAB	01/82
Drawn By	RWR	05/82
Checked By	JVG	05/82

Approved By
State Drainage Engineer

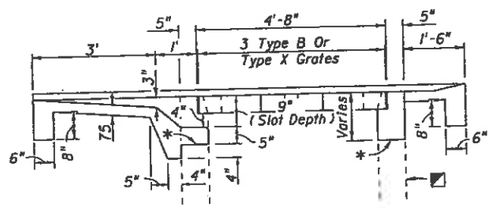
Revision	Sheet No.	Index No.
00	1 of 2	231



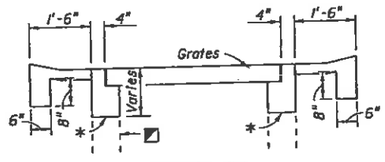




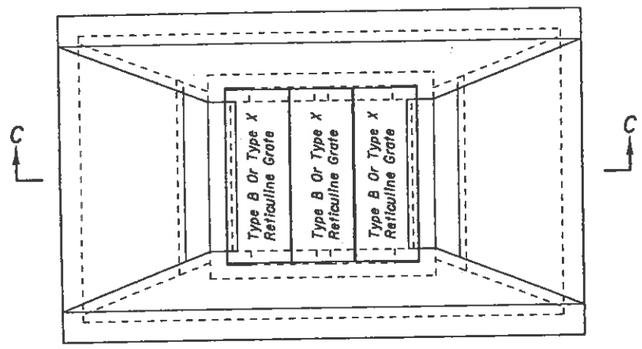
PLAN



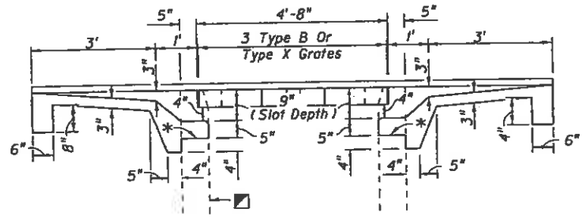
SECTION AA
SINGLE SLOT



SECTION BB



PLAN



SECTION CC
DOUBLE SLOT

Inlet Box (Line Type Indicates Existing Box To Facilitate Depiction Of Partial Construction On Existing Inlets)

* On new boxes the traversable top may be cast as a monolithic unit or cast in segments, and the location of this line may be lower to facilitate handling and placement; however, the slot depth is to remain at 9 inches. See Index No. 201 for top to wall connection. For converting to traversable tops on existing inlets remove concrete to this line and expose the existing reinforcement. Reshape or splice in reinforcement to penetrate the rim and returns of the grate seat, and bend the reinforcement into the slot shelf to extend into the abutting throat pavement.

GENERAL NOTES

1. The general purpose of the inlet top designs are:
   a. For ditches, medians or other areas subject to heavy wheel loads accommodating minimal debris locations and debris imposed locations.
   b. Provide full grate and horizontal slot designs for new construction.
   c. Provide full grate and horizontal slot designs for replacing the verticle slot tops on existing inlets Type B and Type X that are in locations which have become pedestrian active.
2. Box, walls and bottoms reinforcing steel all #4 bars at 12" centers both ways with 2" clearance to inside of walls and bottom. Bars to be cut or bent for 1½" minimum clearance around pipe.
3. When Alternate G grates are specified in the plans, the grates are to be hot-dipped galvanized after fabrication.
4. Cost for constructing traversable tops on new inlet boxes shall be included in the contract unit price for Inlets (DT BOT) (Type B), EA., and shall include the cost for surrounding concrete inlet pavement.
   Existing Inlets Type B and Inlets Type X that are converted to traversable inlet tops shall be paid for under the contract unit price for Inlets (DT BOT) (Type B) (Partial), EA. Unit price and payment shall be full compensation for inlet conversion and shall include the removal and disposal of any existing concrete inlet pavement; the removal and stockpiling or disposal of sufficient material from the existing inlet box to facilitate construction of the required inlet top; construction of the required inlet conversion; backfill construction; construction of concrete inlet pavement; reusing, supplementing, transferring or replacing grates as required by plans or as directed by the Engineer; any required earthwork for ditch restoration within 30' of the inlet; and, seeding and mulching disturbed grasses.
5. Ditch pavement shall be paid for, separate from the inlet and concrete inlet pavement, by pavement types and units as called for in the plans.
6. Sod will be paid for under the contract unit price for Sodding, SY.
7. For supplementary details see Index No. 201.

DESIGN NOTES

1. The type of top (single or double slots) depends on the approach ditch configuration and the hydraulic requirements of the site. The designer will stipulate in the plans the type of top to be constructed at each individual inlet location.

   On existing inlets conversion grates shall be constructed at the original grate elevations unless other elevations are called for in the plans. When plans call for the inlet top to be constructed to support storm water detention, details for ditch modifications and underdrains shall be shown in the plans.

MAINTENANCE NOTES

1. Traversable inlet tops that are constructed by maintenance contract or by maintenance forces may reuse the existing grates that are determined by the Maintenance Engineer to be functionally sound, and their reuse is so directed by the Maintenance Engineer. Existing grates approved for reuse and new grates may be mixed, matched or replaced as directed by the Maintenance Engineer.

TRAVERSABLE TOPS FOR INLETS TYPE B AND FOR CONVERSIONS OF EXISTING INLETS TYPE B AND TYPE X

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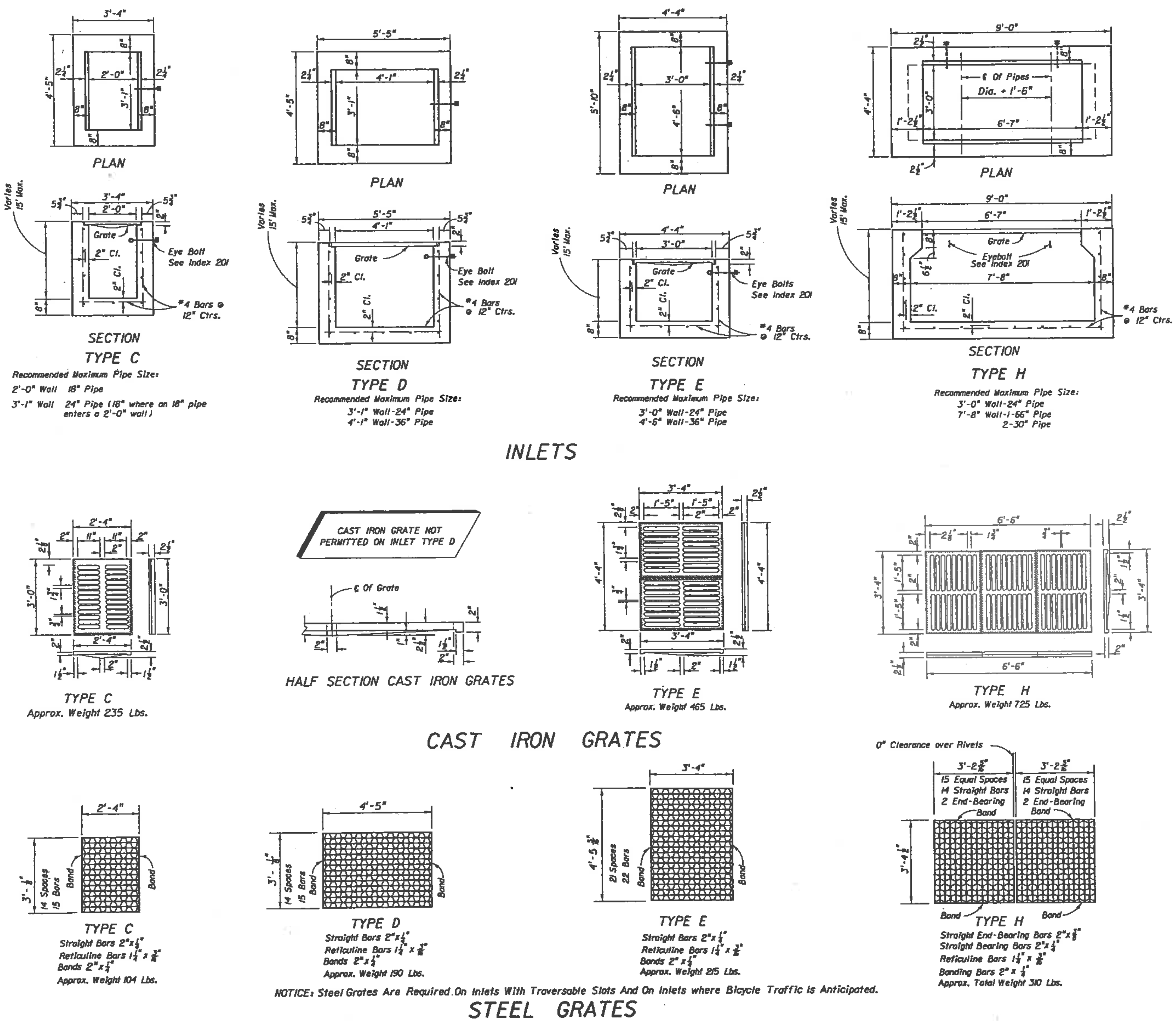
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

DITCH BOTTOM INLETS TYPE B

	Names	Dates
Designed By	WPH	02/98
Drawn By	JDT	02/98
Checked By		

Approved By _____ State Drainage Engineer

Revision	Sheet No.	Index No.
00	2 of 2	231



GENERAL NOTES

1. These inlets are suitable for bicycle and pedestrian areas and are to be used in ditches, medians and other areas subject to infrequent traffic loadings but are not to be placed in areas subject to any heavy wheel loads.
2. Inlets subject to minimal debris should be constructed without slots. Where debris is a problem inlets should be constructed with slots. Slotted inlets located within roadway clear zones and in areas accessible to pedestrians shall have traversable slots. The traversable slot modification is not adaptable to inlet Type H. Slots may be constructed at either or both ends as shown on plans.
3. Steel grates are to be used on all inlets where bicycle traffic is anticipated. Steel grates are to be used on all inlets with traversable slots. Either cast iron or steel grates may be used on inlets without slots where bicycle traffic is not anticipated. Either cast iron or steel grates may be used on all inlets with non-traversable slots. Subject to the selection described above, when Alternate G grate is specified in the plans, either the steel grate, hot dipped galvanized after fabrication, or the cast iron grate may be used, unless the plans stipulate the particular type.
4. Recommended maximum pipe sizes shown are for concrete pipe. Size for other types of pipe must be checked for fit.
5. All exposed corners and edges of concrete are to be chamfered 3/4".
6. Concrete inlet pavement to be used on inlets without slots and inlets with non-traversable slots only when called for in the plans; but required on all traversable slot inlets. Cost to be included in contract unit price for inlets. Quantities shown are for information only.
7. Traversable slots constructed in existing inlets shall be paid for as inlets partial. For conversion work and method of payment see 'TRAVERSABLE SLOT INLETS (PARTIAL) FOR EXISTING INLETS'.
8. Sodding to be used on all inlets not located in paved areas and paid for under contract concrete inlet pavement unit price for Sodding, SY.
9. For supplementary details see Index No. 201.

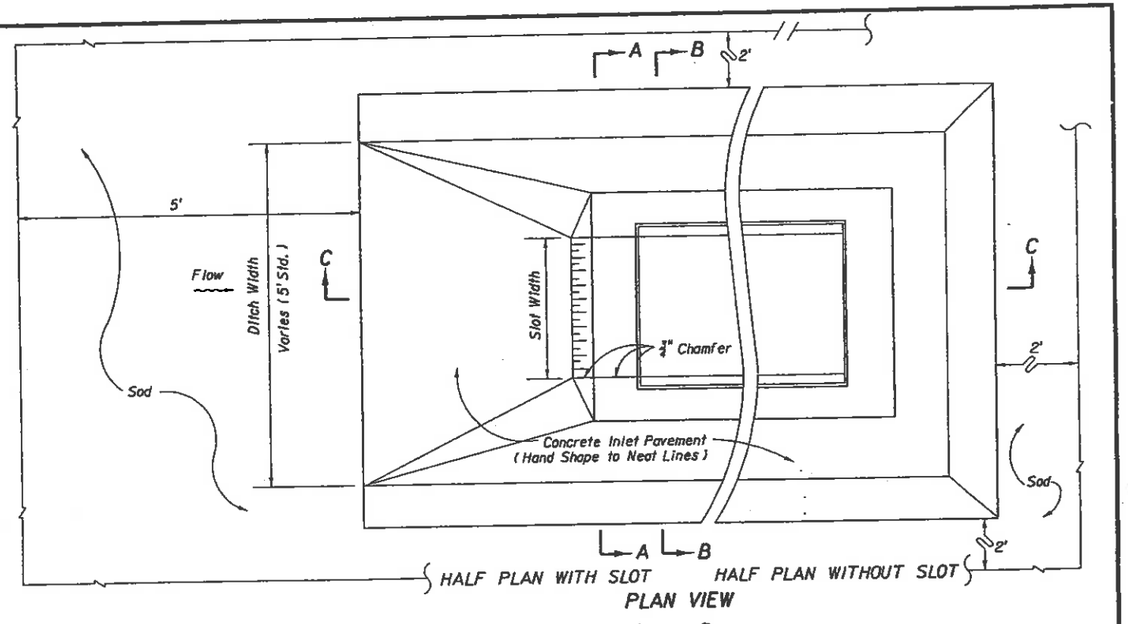
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

DITCH BOTTOM INLETS TYPES C, D, E & H

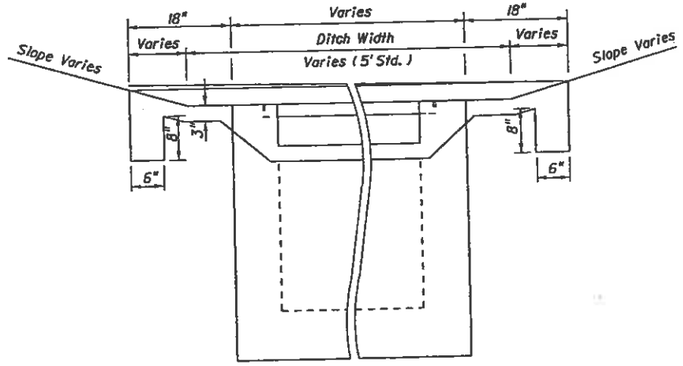
	Names	Dates
Designed By		
Drawn By		
Checked By	EGR/JG	07/81

Approved By: [signature] State Drainage Engineer

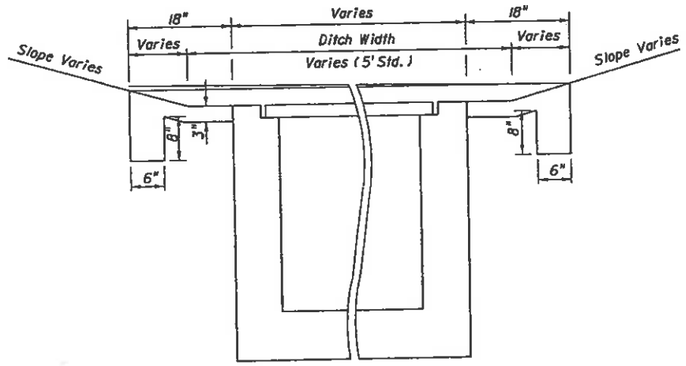
Revision	Sheet No.	Index No.
02	1 of 5	232



PLAN VIEW



SECTION AA



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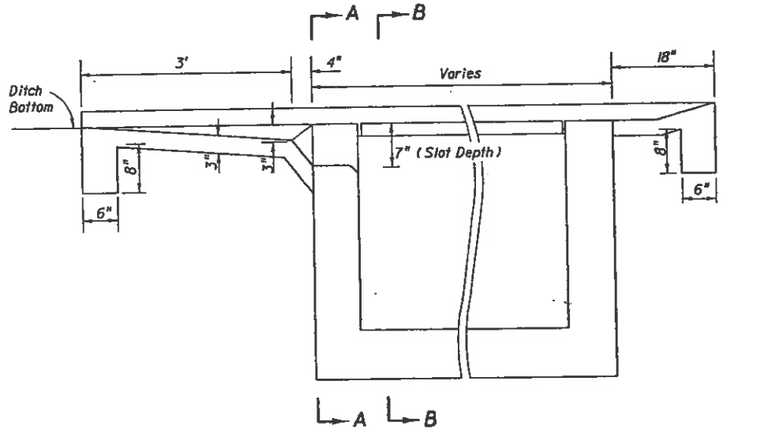

HALF PLAN WITH SLOT HALF PLAN WITHOUT SLOT

SECTION CC

PAVEMENT AND SODDING QUANTITIES FOR TRAVERSABLE SLOTS						
Inlet	Pavement				Sod	
	Single Slot		Double Slot		Single Slot	Double Slot
	SY	CY	SY	CY	SY	SY
C	4.87	0.77	6.16	0.93	12	16
D	5.99	0.91	7.70	1.10	14	19
E	5.88	0.91	7.37	1.08	14	18

TRAVERSABLE SLOTS

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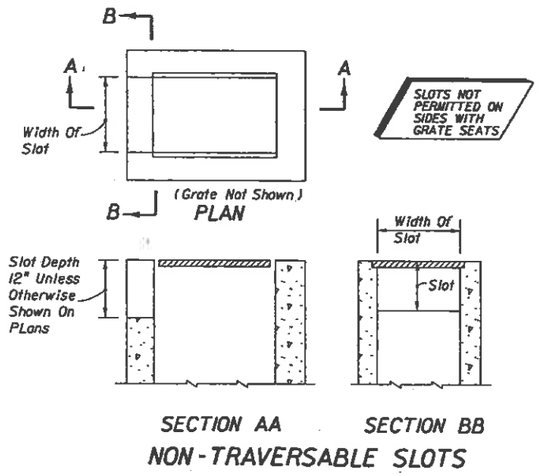
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

DITCH BOTTOM INLETS TYPES C, D, E, & H

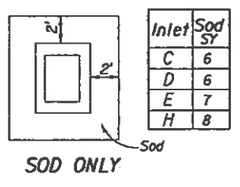
	Names	Dates
Designed By	EBR	02/80
Drawn By	JW	02/80
Checked By	JAG	02/80

Approved By _____ State Drainage Engineer

Revision	Sheet No.	Index No.
00	2 of 5	232

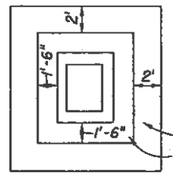


NON-TRAVERSABLE SLOTS



Inlet	Sod SY
C	6
D	6
E	7
H	8

SOD ONLY

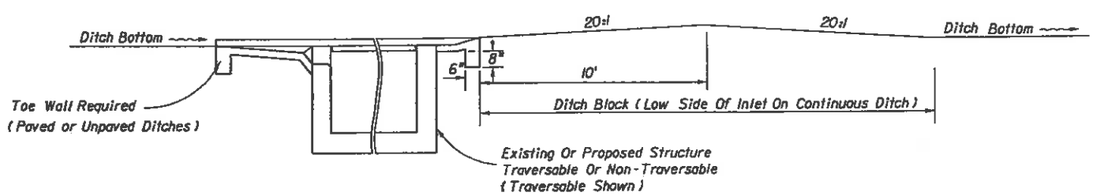


Inlet	Pavt CY	Sod SY
C	0.30	8
D	0.36	9
E	0.37	9
H	0.45	11

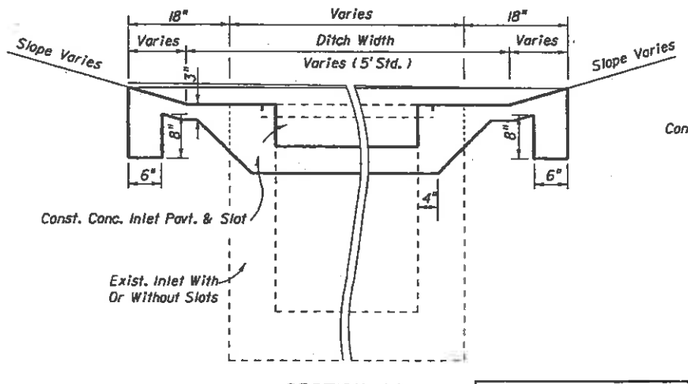
PAVT. AND SOD

NOTE: See General Notes Nos. 6 and 7

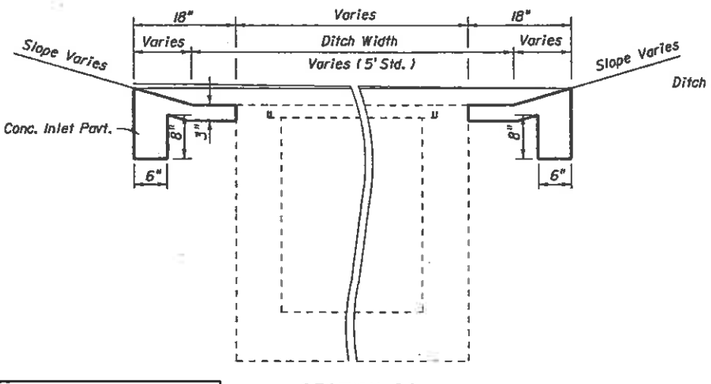
SODDING AND PAVEMENT FOR INLETS WITHOUT SLOTS AND INLETS WITH NON-TRAVERSABLE SLOTS



DITCH BLOCK FOR INLETS WITH OR WITHOUT SLOTS



SECTION AA

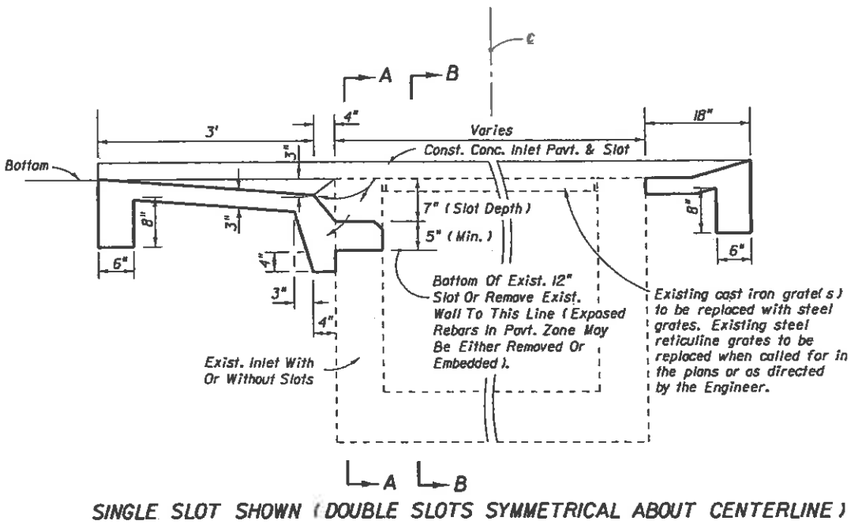


SECTION BB

PAVEMENT AND SODDING QUANTITIES FOR TRAVERSABLE SLOTS						
Inlet	Pavement				Sod	
	Single Slot		Double Slot		Single Slot	Double Slot
	SY	CY	SY	CY	SY	SY
C	4.87	0.83	6.16	1.05	12	16
D	5.99	1.01	7.70	1.30	14	19
E	5.88	0.99	7.37	1.24	14	18

NOTE: For plan view and additional details see sheet 2 of 4.
For payment see General Notes Nos. 6 and 7.

TRAVERSABLE SLOTS FOR EXISTING INLETS



SINGLE SLOT SHOWN (DOUBLE SLOTS SYMMETRICAL ABOUT CENTERLINE)
SECTION CC (CASE I)

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

DITCH BOTTOM INLETS TYPES C,D,E & H

	Names	Dates
Designed By	ESR	07/84
Drawn By	DAE	07/84
Checked By	JBW/JNG	07/84

Approved By S a McLemore
State Drainage Engineer

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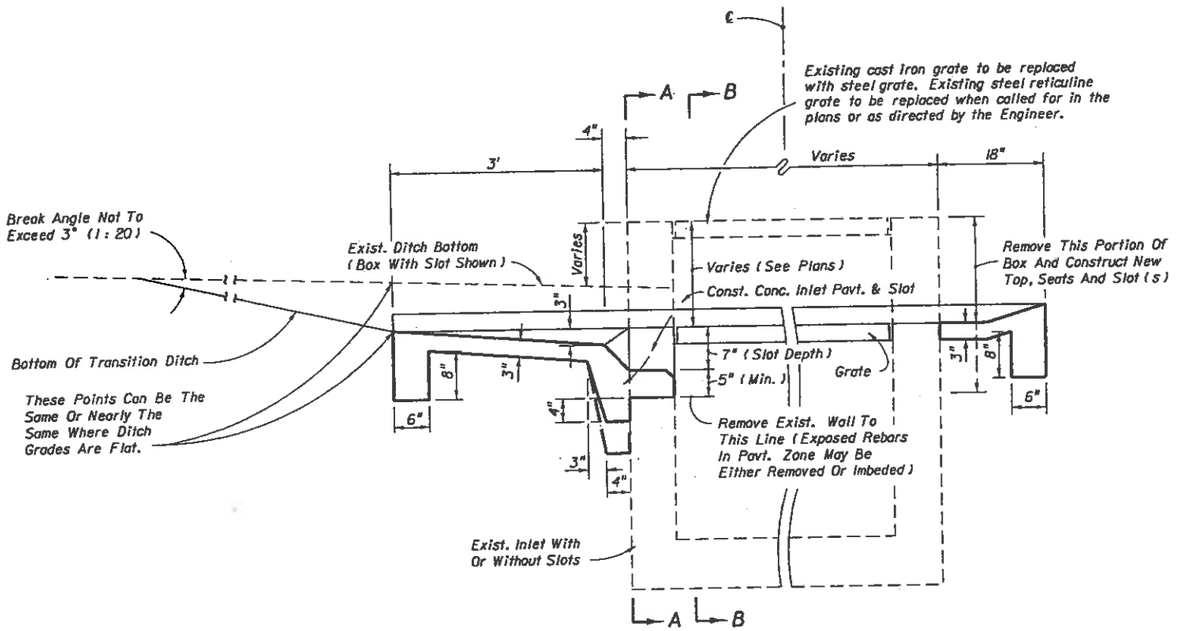
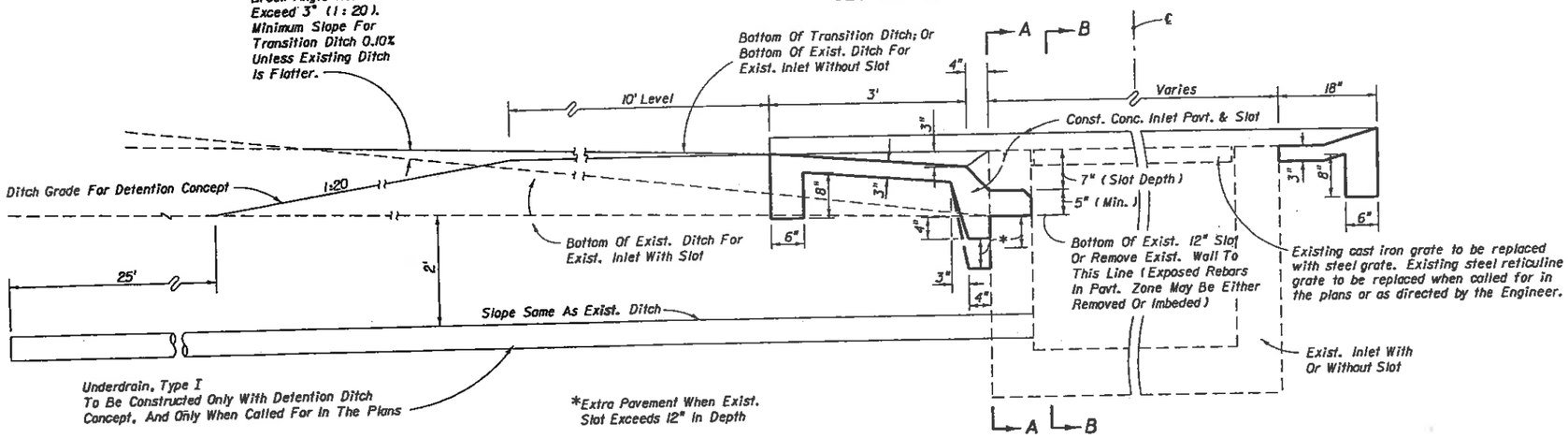


SINGLE SLOT SHOWN (DOUBLE SLOTS SYMMETRICAL ABOUT CENTERLINE)

SECTION CC (CASE 2)



SINGLE SLOT SHOWN (DOUBLE SLOTS SYMMETRICAL ABOUT CENTERLINE)

SECTION CC (CASE 3)

DESIGN NOTES FOR TRAVERSABLE SLOT INLETS (PARTIAL) FOR EXISTING INLETS

1. The general purpose of these conversions is to remove the hazard of the protruding inlet top, while not creating a hazard by depressing the top too deeply.

2. The corrective procedure depends on the approach ditch grade and hydraulic requirements of the site. The selection of the appropriate case depends on the relationship between inlet top and ditch elevation, and, on the vertical clearance between the top of the uppermost pipe(s) and the grate. The purpose for the Case 1 conversion is to add the traversable slot to an existing inlet where top removal, change in grate elevation and ditch transitions are not required. Case 2 will normally be applicable to ditches with flatter grades adjoining the inlet. Case 3 will normally be applicable to ditches with steeper grades adjoining the inlet where buildup of the existing ditch is acceptable.

3. The designer shall stipulate in the plans which case is to be constructed at each individual inlet location.

   Where the existing inlet top is above the existing ditch (Case 2) but borrow material will be required to adjust the ditch (Case 3), and vertical clearance or other conditions do not prevent removal of the inlet top, the designer should call for Case 2. The designer shall determine if ditch reconstruction is required more than 35 feet beyond any traversable slot side and shall include separate pay items in the plans to cover the cost for that portion of required ditch reconstruction exceeding the 35 foot limit. The designer shall also determine whether ditch pavement is required for ditch restoration within the 35 foot limit and include that pavement under a pay item separate from the inlets partial.

   When the detention ditch concept is to be used with Case 3, the designer shall stipulate 'Case 3 (Detention)' in the plans.

   The designer shall determine whether tight soil or other conditions at each individual inlet indicates the need for underdrain in Case 3 conversions and shall call for Underdrain, Type I in the plans.

METHOD OF PAYMENT FOR TRAVERSABLE SLOT INLETS (PARTIAL) FOR EXISTING INLETS

1. Existing inlets converted to traversable slot tops under Cases 1, 2 and 3 shall be paid for as inlets partial, each. Case shall not be included in the pay item description.

2. All ditch reconstruction work within 35 feet of each traversable slot conversion, whether required by these details or as a direct result of the conversion, shall be included as a part of the partial cost. Reconstruction work shall include excavation and removal of surplus materials or borrow materials in place, grading, compaction, shaping and seeding and mulching. Sodding, ditch pavement and underdrain are not included as part of the inlet partial cost and are to be paid for separately.

3. Concrete inlet pavement and sodding shall be in accordance with the sections on this detail and with the Plan on Sheet 2 and Sections AA, BB and CC (as Case 1) and tabular quantities on Sheet 3.

4. Unit price and payment shall constitute full compensation for inlet conversion (including concrete inlet paving and replacement grate(s)), ditch reconstruction, seeding and mulching, and shall be paid for under the contract price for Inlets (DT Bot) (Type ___) (Partial), each.

   Sodding shall be paid for under the contract unit price for Sodding, SY.

   Ditch pavement shall be paid for separate from the inlet by pavement type(s) and unit(s) as called for in the plans.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

DITCH BOTTOM INLETS TYPES C, D, E & H

	Names	Dates
Designed By	JNG/EGR	3/10/86
Drawn By	HSD/dds	5/20/86
Checked By	JNG/EGR	5/22/86

Approved By: A. McLemore, State Drainage Engineer

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TRAVERSABLE SLOT INLETS (PARTIAL) FOR EXISTING INLETS

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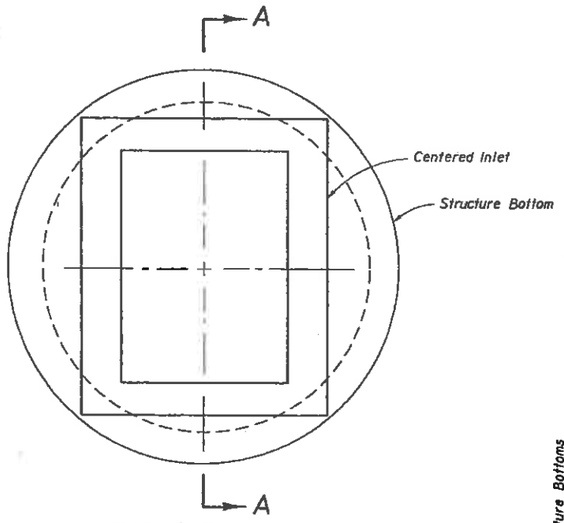
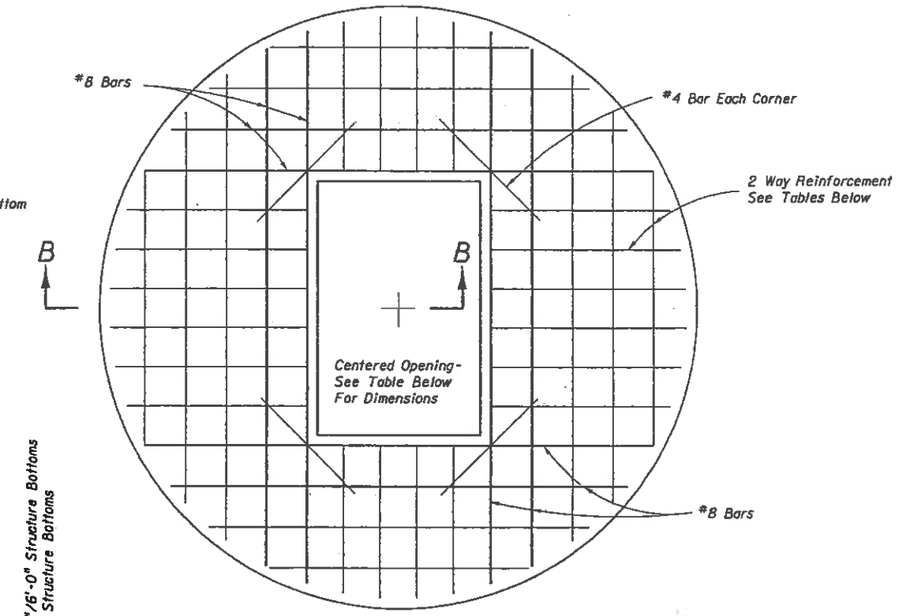
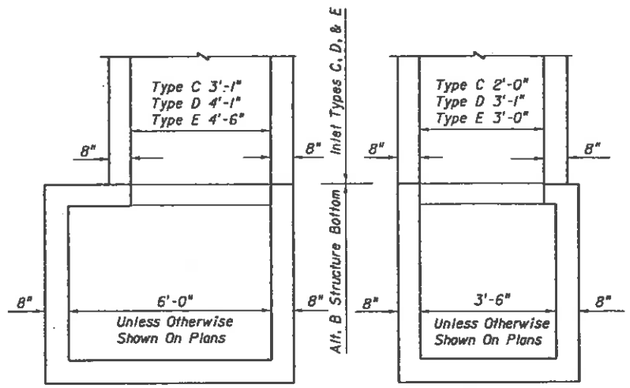


TOP ELEVATION



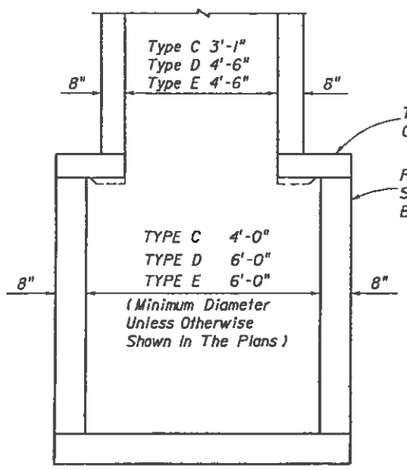
TOP SLAB REINFORCING DIAGRAM



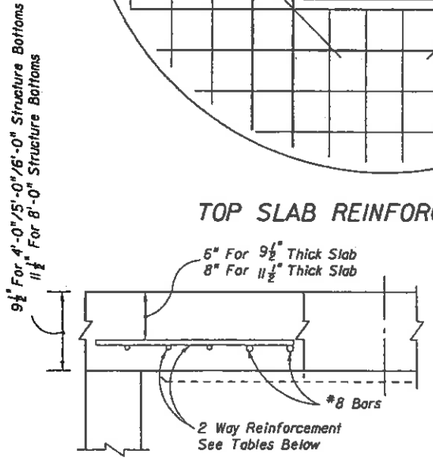
See Index No. 200 for structure bottom details and hole reinforcement.

ALT. B STRUCTURE BOTTOM FOR INLETS TYPE C, D & E

TOP SLAB OPENINGS		
DIAMETER	OPENING SIZE	
	MIN.	MAX.
4'-0"	2'-0" x 3'-1"	2'-0" x 3'-1"
5'-0"	2'-0" x 3'-1"	3'-1" x 4'-1"
6'-0"	2'-0" x 3'-1"	3'-0" x 4'-4"
8'-0"	2'-0" x 3'-1"	3'-0" x 4'-4"



SECTION AA



SECTION BB

TOP SLAB REINFORCING SCHEDULE	
SCHEDULE	GRADE 60 OR 65KSI OR (WIRE FABRIC) In²/ft
A	0.20
B	0.24
C	0.37
D	0.53
E	0.73
F	1.06
G	1.45

TOP SLAB WITH CENTERED OPENING		
SLAB DEPTH	SLAB THICKNESS	REINFORCING (2 WAYS) SCHEDULE
SIZE: 4'-0"		
≥ 0.5'-40'	9½"	C
SIZE: 5'-0"		
≥ 0.5'<30'	9½"	C
30'-40'	9½"	D
SIZE: 6'-0"		
0.5'< 8'	9½"	B
8' < 18'	9½"	C
18'<30'	9½"	D
30'<37'	9½"	E
37'-40'	9½"	G
SIZE: 8'-0"		
≥ 0.5'<9'	11½"	C
9'< 15'	11½"	D
15'<23'	11½"	E
23'<33'	11½"	E
33'-40'	11½"	G

ALT. A STRUCTURE BOTTOM FOR INLETS TYPE C, D AND E

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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

DITCH BOTTOM INLETS TYPES C,D,E & H

	Names	Dates
Designed By		
Drawn By	JDT	02/99
Checked By		

Approved By: State Drainage Engineer

Revision	Sheet No.	Index No.
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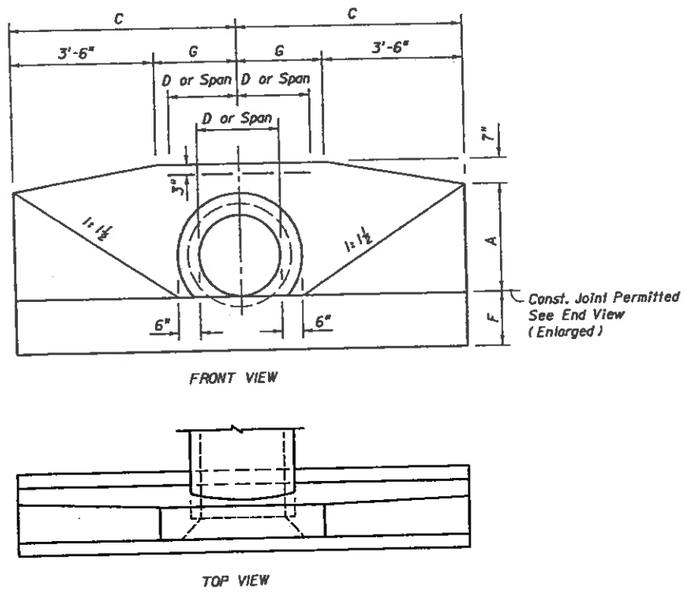
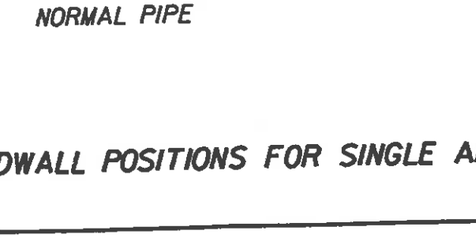
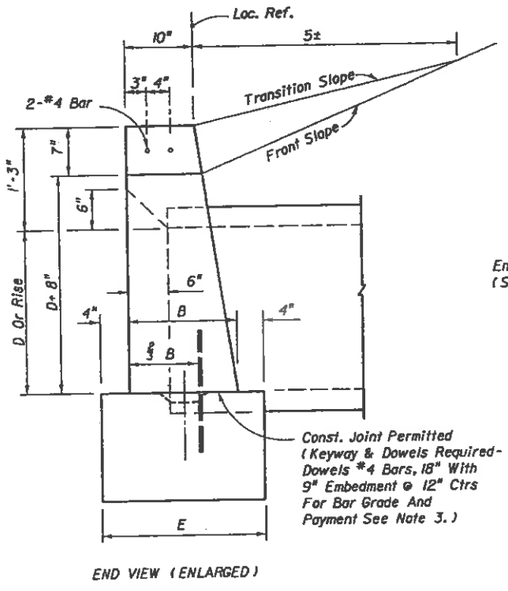


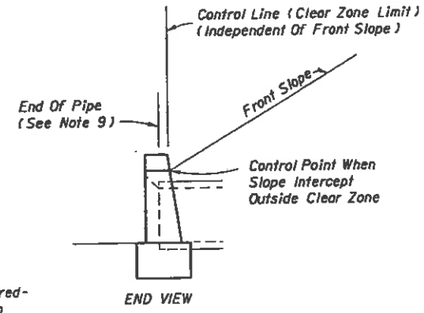
FRONT VIEW



TOP VIEW



END VIEW (ENLARGED)



END VIEW

STANDARD LOCATION CONTROL

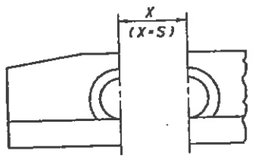
GENERAL NOTES

1. Endwall dimensions, locations and positions are for round and elliptical concrete pipe and for round and pipe-arch corrugated metal pipe. Round concrete pipe shown.
2. Front slope and ditch transitions shall be in accordance with Index No. 280.
3. Endwalls may be cast in place or precast concrete. Reinforcing steel shall be Grades 40 or 60. Additional reinforcement necessary for handling precast units shall be determined by the Contractor or the supplier. Cost of reinforcement shall be included in the contract unit price for concrete, (endwalls).
4. All exposed corners and edges of concrete are to be chamfered ¾".
5. Concrete meeting the requirements of ASTM C478 (4000 psi) may be used in lieu of Class I concrete in precast items manufactured in plants which are under the Standard Operating Procedures for the inspection of precast drainage products.
6. On outfall ditches with side slopes flatter than 1:1½ provide 20' transitions from the endwall to the flatter side slopes, right of way permitting.
7. For sodding around endwalls see Index No. 281.
8. Payment for concrete quantities for endwalls skewed to the pipe shall be made on the following basis:

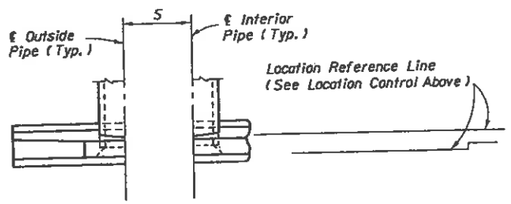
Endwall Skew To Pipe	Use Tabulated Value
0° to 5°	0°
6° to 15°	15°
16° to 30°	30°
31° or over	45°

9. Pipe length plan quantities shall be based on the pipe end locations shown in the standard location control end view, or lengths based on special endwall locations called for in the plans.
10. Payment for pipe in pipe culverts shall be based on plan quantities, adjusted for endwall locations subsequently established by the Engineer.
11. Endwalls to be paid for under the contract unit price for Concrete Class II (Endwalls), CY.

ENDWALL DIMENSIONS (EXCLUSIVE OF MULTIPLE PIPE SPACING)

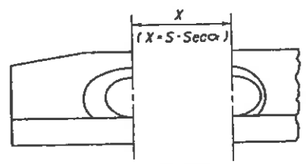


FRONT VIEW

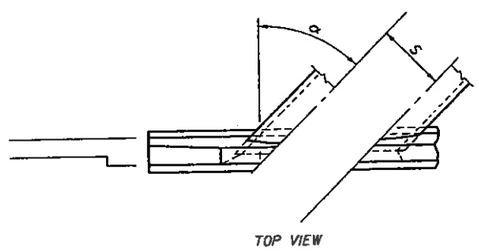


TOP VIEW

NORMAL PIPE



FRONT VIEW



TOP VIEW

SKEWED PIPE

LEGEND

- α Pipe Skew
- S Center To Center Pipe Spacing
- X Centerline To Centerline Dimension At Face Of Headwall

ENDWALL POSITIONS FOR SINGLE AND MULTIPLE PIPE AND SPACING FOR MULTIPLE PIPE

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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

STRAIGHT CONCRETE ENDWALLS SINGLE AND MULTIPLE PIPE

	Names	Dates
Designed By	HAB/EGR	73/83
Drawn By	RWR/HSD	83
Checked By	JBW/AVG	83

Approved By: A.D. McLemore
State Drainage Engineer

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DATA AND ESTIMATED QUANTITIES FOR ONE ENDWALL

ROUND CONCRETE AND CORRUGATED METAL PIPE

D	Opening Area (SF) Number Of Pipes 1	2	3	4	Dimensions A	B	C	E	F	G	S	X 0°	X 15°	X 30°	X 45°	Class I Concrete (CY) Single Concrete 0°	Single Metal 0°
15"	1.23	2.46	3.69	4.92	1'-11"	1'-2"	4'-0"	1'-10"	1'-2"	0'-6"	2'-7"	2'-7"	2'-8"	3'-0"	3'-8"	1.23	1.24
18"	1.77	3.54	5.31	7.08	2'-2"	1'-3"	4'-6"	1'-11"	1'-3"	1'-0"	2'-10"	2'-10"	2'-11"	3'-3"	4'-0"	1.56	1.59
21"	2.41	4.82	7.23	9.64	2'-5"	1'-4"	5'-0"	2'-0"	1'-4"	1'-6"	3'-2"	3'-2"	3'-3"	3'-8"	4'-6"	1.97	
24"	3.14	6.28	9.42	12.56	2'-8"	1'-4"	5'-6"	2'-0"	1'-4"	2'-0"	3'-5"	3'-5"	3'-6"	3'-11"	4'-10"	2.24	2.29
27"	3.98	7.96	11.94	15.92	2'-11"	1'-5"	6'-0"	2'-1"	1'-5"	2'-6"	3'-10"	3'-10"	4'-0"	4'-5"	5'-5"	2.73	
30"	4.91	9.82	14.73	19.64	3'-2"	1'-6"	6'-6"	2'-2"	1'-6"	3'-0"	4'-3"	4'-3"	4'-5"	4'-11"	6'-0"	3.26	3.34
36"	7.07	14.14	21.21	28.28	3'-8"	1'-8"	7'-6"	2'-4"	1'-8"	4'-0"	5'-1"	5'-1"	5'-3"	5'-10"	7'-2"	4.53	4.64
42"	9.62	19.24	28.86	38.48	4'-2"	1'-10"	8'-6"	2'-6"	2'-0"	5'-0"	6'-0"	6'-0"	6'-3"	6'-11"	8'-6"	6.33	6.49
48"	12.57	25.14	37.71	50.28	4'-8"	2'-1"	9'-6"	2'-9"	2'-0"	6'-0"	6'-9"	6'-9"	7'-0"	7'-10"	9'-7"	8.15	8.38
54"	15.90	31.80	47.70	63.60	5'-2"	2'-6"	10'-6"	3'-2"	2'-3"	7'-0"	7'-8"	7'-8"	7'-11"	8'-10"	10'-10"	11.71	11.77

Class I Concrete (CY) — Number And Type Of Pipe And Skew Angle Of Pipe (continued)

D	Double Concrete 0°	15°	30°	45°	Double Metal 0°	15°	30°	45°	Triple Concrete 0°	15°	30°	45°	Triple Metal 0°	15°	30°	45°	Quadruple Concrete 0°	15°	30°	45°	Quadruple Metal 0°	15°	30°	45°	D
15"	1.59	1.60	1.65	1.74	1.62	1.63	1.68	1.78	1.94	1.96	2.05	2.23	1.99	2.02	2.11	2.30	2.30	2.34	2.47	2.74	2.37	2.41	2.75	2.84	15"
18"	1.99	2.01	2.06	2.17	2.04	2.06	2.11	2.23	2.43	2.46	2.56	2.79	2.51	2.54	2.65	2.89	2.86	2.91	3.06	3.40	2.96	3.01	3.17	3.53	18"
21"																									21"
24"	2.82	2.84	2.91	3.06	2.91	2.93	3.01	3.17	3.39	3.43	3.57	3.87	3.52	3.56	3.71	4.03	3.97	4.03	4.24	4.69	4.14	4.20	4.43	4.91	24"
27"																									27"
30"	4.13	4.16	4.26	4.49	4.28	4.31	4.43	4.67	4.98	5.04	5.25	5.69	5.20	5.27	5.49	5.97	5.84	5.93	6.24	6.91	6.13	6.23	6.56	7.29	30"
36"	5.73	5.77	5.92	6.23	5.95	6.00	6.15	6.49	6.92	7.00	7.29	7.91	7.25	7.34	7.65	8.33	8.13	8.26	8.69	9.62	8.57	8.71	9.18	10.20	36"
42"	8.11	8.17	8.39	8.85	8.43	8.50	8.73	9.23	9.90	10.02	10.45	11.38	10.38	10.52	10.98	11.99	11.68	11.87	12.51	13.89	12.32	12.52	13.22	14.73	42"
48"	10.40	10.48	10.75	11.33	10.85	10.94	11.23	11.87	12.64	12.80	13.34	14.50	13.34	13.51	14.11	15.39	14.89	15.13	15.93	17.68	15.82	16.08	16.97	18.90	48"
54"	15.23	15.35	15.78	16.69					18.77	19.02	19.86	21.69					22.29	22.66	23.93	26.67					54"

CORRUGATED METAL PIPE ARCH

Span	Rise	Opening Area (SF) Number Of Pipes 1	2	3	4	Dimensions A	B	C	E	F	G	S	X 0°	X 15°	X 30°	X 45°
17"	13"	1.1	2.2	3.3	4.4	1'-9"	1'-2"	3'-10"	1'-10"	1'-2"	0'-4"	2'-6"	2'-6"	2'-7"	2'-11"	3'-6"
21"	15"	1.6	3.2	4.8	6.4	1'-11"	1'-2"	4'-3"	1'-10"	1'-2"	0'-9"	2'-10"	2'-10"	2'-11"	3'-3"	4'-0"
28"	20"	2.8	5.6	8.4	11.2	2'-4"	1'-3"	5'-2"	1'-11"	1'-3"	1'-8"	3'-5"	3'-5"	3'-6"	3'-11"	4'-10"
35"	24"	4.3	8.6	12.9	17.2	2'-8"	1'-4"	5'-11½"	2'-0"	1'-4"	2'-5½"	4'-0"	4'-0"	4'-2"	4'-7"	5'-8"
42"	29"	5.9	11.8	17.7	23.6	3'-1"	1'-5"	6'-10½"	2'-1"	1'-5"	3'-4½"	4'-9"	4'-9"	4'-11"	5'-6"	6'-9"
49"	33"	8.4	16.8	25.2	33.6	3'-5"	1'-6"	7'-8"	2'-2"	1'-6"	4'-2"	5'-6"	5'-6"	5'-8"	6'-4"	7'-9"
57"	38"	10.6	21.2	31.8	42.4	3'-10"	1'-7"	8'-7½"	2'-3"	1'-7"	5'-1½"	6'-4"	6'-4"	6'-7"	7'-4"	8'-11"
64"	43"	13.2	26.4	39.6	52.8	4'-3"	1'-8"	9'-6½"	2'-4"	1'-8"	6'-0½"	7'-1"	7'-1"	7'-4"	8'-2"	10'-0"
71"	47"	16.9	33.8	50.7	67.6	4'-7"	1'-10"	10'-4"	2'-6"	2'-0"	6'-10"	7'-10"	7'-10"	8'-1"	9'-1"	11'-1"

Class I Concrete (CY) — Number Of Pipe And Skew Angle Of Pipe

Span	Rise	Single 0°	Double 0°	15°	30°	45°	Triple 0°	15°	30°	45°	Quadruple 0°	15°	30°	45°	Span	Rise	Approx. Equiv. Round Pipe
17"	13"	1.16	1.47	1.48	1.52	1.60	1.78	1.80	1.88	2.04	2.09	2.12	2.23	2.48	17"	13"	15"
21"	15"	1.33	1.69	1.70	1.75	1.84	2.04	2.06	2.15	2.33	2.40	2.44	2.57	2.84	21"	15"	18"
28"	20"	1.78	2.31	2.33	2.39	2.53	2.83	2.87	2.99	3.26	3.36	3.42	3.60	4.01	28"	20"	24"
35"	24"	2.34	3.03	3.05	3.14	3.32	3.72	3.77	3.93	4.29	4.40	4.47	4.72	5.25	35"	24"	30"
42"	29"	3.13	4.06	4.09	4.20	4.45	4.99	5.06	5.28	5.76	5.93	6.03	6.36	7.09	42"	29"	36"
49"	33"	3.83	5.00	5.04	5.18	5.48	6.16	6.24	6.52	7.12	7.32	7.44	7.86	8.76	49"	33"	42"
57"	38"	4.87	6.31	6.36	6.53	6.91	7.74	7.84	8.18	8.93	9.18	9.33	9.85	10.96	57"	38"	48"
64"	43"	5.88	7.64	7.70	7.91	8.37	9.40	9.52	9.94	10.86	11.15	11.33	11.97	13.33	64"	43"	54"
71"	47"	7.80	10.15	10.23	10.51	11.12	12.49	12.65	13.22	14.43	14.85	15.10	15.94	17.77	71"	47"	60"

Note: Use the guidelines of General Note No. 8 for selecting tabular quantities.

CONCRETE ELLIPTICAL PIPE

Rise	Span	Opening Area (SF) Number Of Pipes 1	2	3	4	Dimensions A	B	C	E	F	G	S	X 0°	X 15°	X 30°	X 45°
12"	18"	1.3	2.6	3.9	5.2	1'-8"	1'-2"	3'-9"	1'-10"	1'-2"	0'-3"	2'-10"	2'-10"	2'-11"	3'-3"	4'-0"
14"	23"	1.8	3.6	5.4	7.2	1'-10"	1'-3"	4'-2½"	1'-11"	1'-3"	8½"	3'-5"	3'-5"	3'-6"	3'-11"	4'-10"
19"	30"	3.3	6.6	9.9	13.2	2'-3"	1'-4"	5'-1½"	2'-0"	1'-4"	1'-7½"	4'-2"	4'-2"	4'-4"	4'-10"	5'-11"
24"	38"	5.1	10.2	15.3	20.4	2'-8"	1'-5"	6'-3"	2'-1"	1'-5"	2'-9"	5'-2"	5'-2"	5'-4"	6'-0"	7'-4"
29"	45"	7.4	14.8	22.2	29.6	3'-1"	1'-6"	7'-0"	2'-2"	1'-6"	3'-6"	6'-0"	6'-0"	6'-3"	6'-11"	8'-6"
34"	53"	10.2	20.4	30.6	40.8	3'-6"	1'-7"	7'-11½"	2'-3"	1'-7"	4'-5½"	7'-1"	7'-1"	7'-4"	8'-2"	10'-0"
38"	60"	12.9	25.8	38.7	51.6	3'-10"	1'-8"	8'-9"	2'-4"	1'-8"	5'-3"	7'-11"	7'-11"	8'-2"	9'-2"	11'-2"
43"	68"	16.6	33.2	49.8	66.4	4'-3"	1'-10"	9'-8½"	2'-6"	1'-10"	6'-2½"	8'-10"	8'-10"	9'-2"	10'-2"	12'-6"
48"	76"	20.5	41.0	61.5	82.0	4'-8"	2'-1"	10'-8"	2'-9"	2'-0"	7'-2"	9'-9"	9'-9"	10'-1"	11'-3"	13'-9"
53"	83"	24.8	49.6	74.4	99.2	5'-1"	2'-6"	11'-7"	3'-2"	2'-6"	8'-1"	10'-7"	10'-7"	10'-11"	12'-3"	15'-0"
58"	91"	29.5	59.0	88.5	118.0	5'-6"	2'-10"	12'-6½"	3'-6"	2'-10"	9'-0½"	11'-4"	11'-4"	11'-9"	13'-1"	16'-0"

Class I Concrete (CY) — Number Of Pipe And Skew Angle Of Pipe

Rise	Span	Single 0°	Double 0°	15°	30°	45°	Triple 0°	15°	30°	45°	Quadruple 0°	15°	30°	45°	Rise	Span	Approx. Equiv. Round Pipe
12"	18"	1.09	1.45	1.46	1.51	1.60	1.80	1.82	1.91	2.09	2.16	2.20	2.33	2.60	12"	18"	15"
14"	23"	1.36	1.82	1.84	1.89	2.01	2.29	2.32	2.43	2.68	2.75	2.80	2.97	3.33	14"	23"	18"
19"	30"	1.89	2.55	2.57	2.65	2.82	3.22	3.27	3.43	3.77	3.88	3.95	4.19	4.70	19"	30"	24"
24"	38"	2.64	3.55	3.58	3.69	3.93	4.48	4.54	4.77	5.24	5.39	5.49	5.82	6.53	24"	38"	30"
29"	45"	3.32	4.48	4.52	4.66	4.96	5.64	5.72	6.00	6.60	6.80	6.92	7.34	8.24	29"	45"	36"
34"	53"	4.24	5.76	5.81	6.00	6.39	7.29	7.40	7.76	8.55	8.81	8.97	9.52	10.70	34"	53"	42"
38"	60"	5.22	7.16	7.23	7.46	7.96	9.10	9.24	9.70	10.71	11.05	11.25	11.95	13.46	38"	60"	48"
43"	68"	6.63	9.01	9.09	9.38	10.00	11.39	11.56	12.13	13.36	13.77	14.02	14.88	16.73	43"	68"	54"
48"	76"	8.66	11.74	11.85	12.22	13.02	14.82	15.04	15.77	17.37	17.91	18.23	19.34	21.74	48"	76"	60"
53"	83"	12.50	16.98	16.98	17.67	18.83	21.47	21.78	22.86	25.18	25.97	26.44	28.06	31.55	53"	83"	66"
58"	91"	16.46	22.26	22.46	23.16	24.66	28.05	28.46	29.85	32.85	33.85	34.46	36.55	41.05	58"	91"	72"

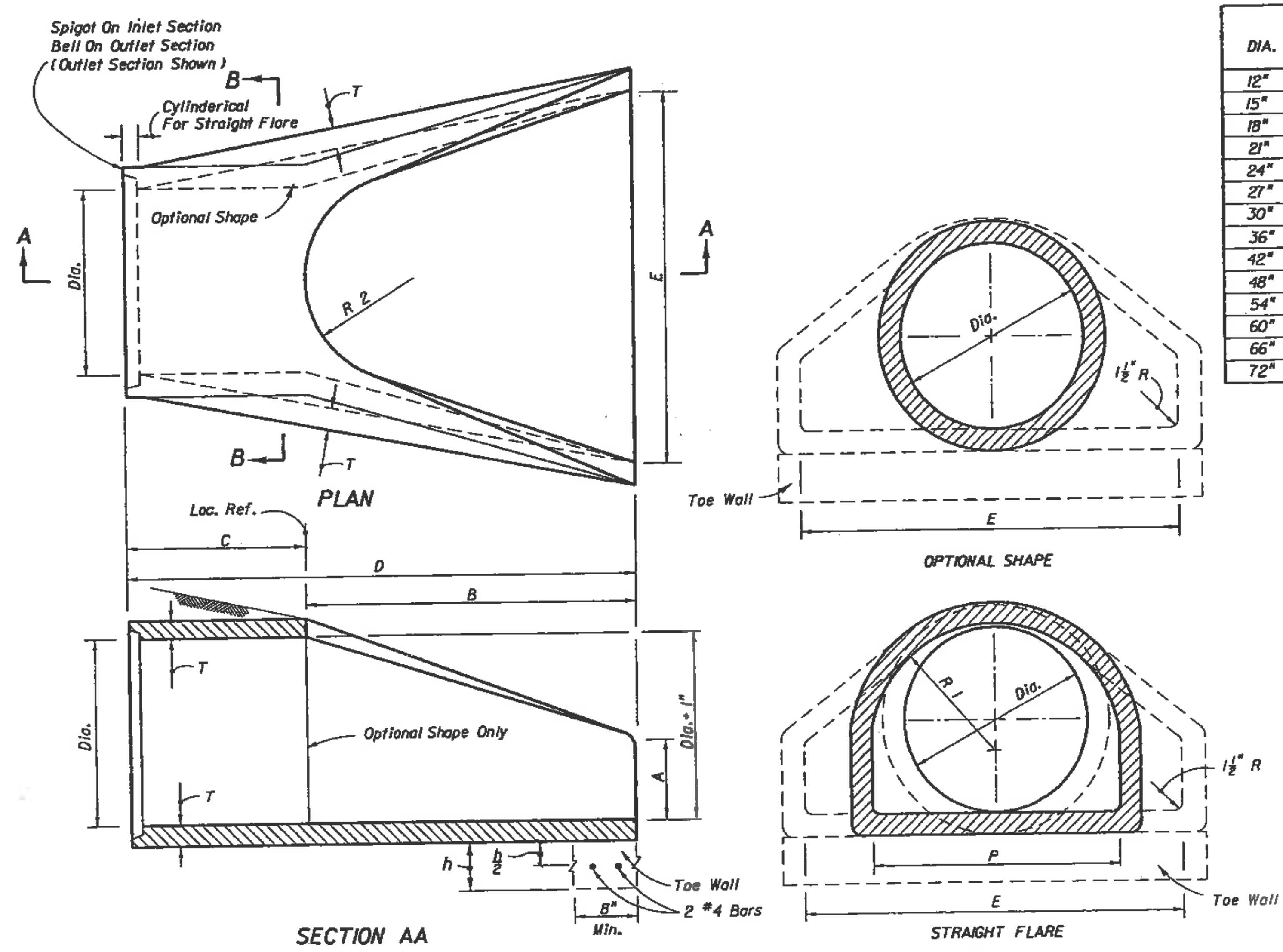
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

STRAIGHT CONCRETE ENDWALLS
SINGLE AND MULTIPLE PIPE

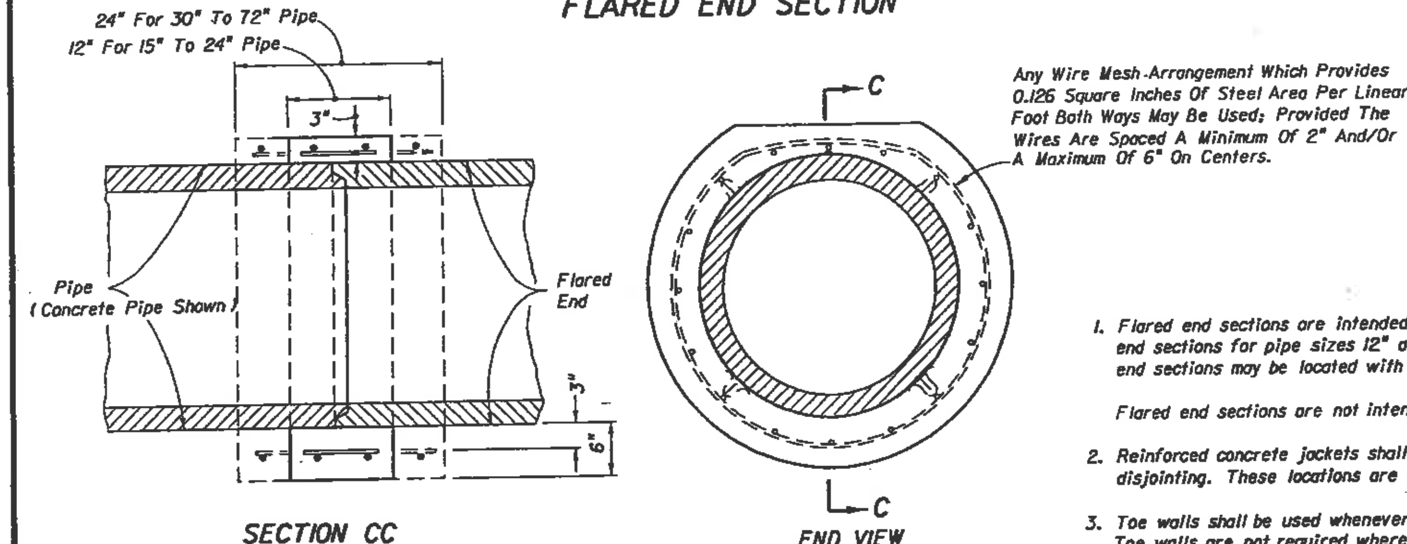
	Names	Dates
Designed By	HAB/EGR	73/83
Drawn By	RWR/HSD	83
Checked By	JBW/JVG	83

Approved By: [signature] State Drainage Engineer

Revision	Sheet No.	Index No.
00	2 of 2	250



FLARED END SECTION



REINFORCED CONCRETE JACKET DETAIL

DIA.	T	REINF REINF. SQ IN/LF	BELL Or SPIGOT	A	B	C	D	E	P	R 1	R 2	FLAT	WEIGHT (LBS.)	h	TOE WALL CLASS I CONC (Misc.) CY
12"	2"	0.07	1 1/2"	4"	2'-0"	4'-0 7/8"	6'-0 7/8"	2'-0"	19 15/16"	10 1/8"	9"	3 1/2"	530	12"	.06
15"	2 1/4"	0.07	2"	6"	2'-3"	3'-10"	6'-1"	2'-6"	24 5/16"	12 1/2"	11"	3 1/2"	740	12"	.07
18"	2 1/2"	0.07	2 1/2"	9"	2'-3"	3'-10"	6'-1"	3'-0"	29"	15 1/2"	12"	4"	990	15"	.11
21"	2 3/4"	0.07	2 1/4"	9"	2'-11"	3'-2"	6'-1"	3'-6"	31 5/8"	16 1/8"	13"	4"	1280	15"	.12
24"	3"	0.07	2 1/2"	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	33 3/16"	16 13/16"	14"	4 1/2"	1520	18"	.17
27"	3 1/4"	0.148	2 1/2"	10 1/2"	4'-0"	2'-1 1/2"	6'-1 1/2"	4'-6"	36"	18 9/16"	14 1/2"	4 1/2"	1930	18"	.19
30"	3 1/2"	0.148	3"	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	5'-0"	37"	18 1/2"	15"	5"	2190	21"	.24
36"	4"	0.148	3 1/2"	1'-3"	5'-3"	2'-10 3/4"	8'-1 3/4"	6'-0"	47 13/16"	24 5/16"	20"	5 1/2"	4100	21"	.29
42"	4 1/2"	0.148	3 3/4"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"	53 7/8"	27 1/2"	22"	5 1/2"	5380	24"	.36
48"	5"	0.148	4 1/4"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	56 1/2"	28 1/2"	22"	5 3/4"	6550	24"	.39
54"	5 1/2"	0.174	4 3/4"	2'-3"	5'-5"	2'-11"	8'-4"	7'-6"	65 1/2"	33 1/8"	24"	6 1/4"	8040	24"	.42
60"	6"	0.174	5"	2'-6"	5'-0"	3'-3"	8'-3"	8'-0"	72 1/2"	36 9/16"	24"	6 3/4"	8750	24"	.44
66"	6 1/2"	0.174	5 1/2"	2'-0"	6'-6"	1'-9"	8'-3"	8'-6"	72"	36 1/8"	24"	7 1/4"	10630	24"	.47
72"	7"	0.174	6"	2'-0"	6'-6"	1'-9"	8'-3"	9'-0"	77 13/16"	38 15/16"	24"	7 3/4"	12520	24"	.50

GENERAL NOTES

1. Flared end sections shall conform to the requirements of ASTM C76 with the exception that dimensions and reinforcement shall be as prescribed in the table above. Circumferential reinforcement may consist of either one cage or two cages of steel. Compressive strength of concrete shall be 4000 psi. Shop drawings for flared end sections having dimensions other than above must be submitted for approval to the State Drainage Engineer.
2. Connections between the flared end section and the pipe culvert may be any of the following types unless otherwise shown on the plans.
   a. Joints meeting the requirements of Section 941-1.5 of the Standard Specifications (O-Ring Gasket). Flared end section joint dimensions and tolerances shall be identical or compatible to those used in the pipe culvert joint. When pipe culvert and flared end section manufacturers are different, the compatibility of joint designs shall be certified to by the manufacturer of the flared end sections.
   b. Joints sealed with preformed plastic gaskets. The gaskets shall meet the requirements of Section 942-2 of the Standard Specifications and the minimum sizes for gaskets shall be as that specified for equivalent sizes of elliptical pipe.
   c. Reinforced concrete jackets, as detailed on this drawing. Cost of the reinforced concrete jacket to be included in the contract unit price for the flared end section. When non-coated corrugated metal pipe is called for in the plans, the pipe shall be bituminous coated in the jacketed area as specified on Index No. 280. Bituminous coating to be included in the contract unit price for the pipe culvert. Concrete jacket shall be as specified on Index No. 280. Cost of concrete and reinforcement shall be included in the contract unit price for the pipe culvert.
3. Toe walls shall be constructed when shown on the plans or at locations designated by the Engineer. Toe walls are to be cast-in-place with Class I Concrete and paid for under the contract unit price for Class I Concrete (Miscellaneous), CY. Reinforcing steel to be included in cost of toe wall.
4. On skewed pipe culverts the flared end sections shall be placed in line with the pipe culvert. Side slopes shall be warped as required to fit the flared end sections.
5. Flared End Section to be paid for under the contract unit price for Flared End Section (Concrete), Each. Sodding shall be in accordance with Index No. 281, and paid for under the contract unit price for Sodding, SY.

DESIGN NOTES

1. Flared end sections are intended for use outside the clear zone on median drain and cross drain installation, except that flared end sections for pipe sizes 12" and 15" are permitted within the clear zone. When the slope intersection permits, 12" and 15" flared end sections may be located with the culvert opening as close as 8' beyond the outside edge of the shoulder.

   Flared end sections are not intended for side drain installations.
2. Reinforced concrete jackets shall be used at all locations where high velocities and/or highly erosive soils may cause disjointing. These locations are to be shown on the plans.
3. Toe walls shall be used whenever the anticipated velocity of discharge and soil type are such that erosive action would occur. Toe walls are not required where ditch pavement is provided, except when disjointing would occur if the ditch pavement should fail.

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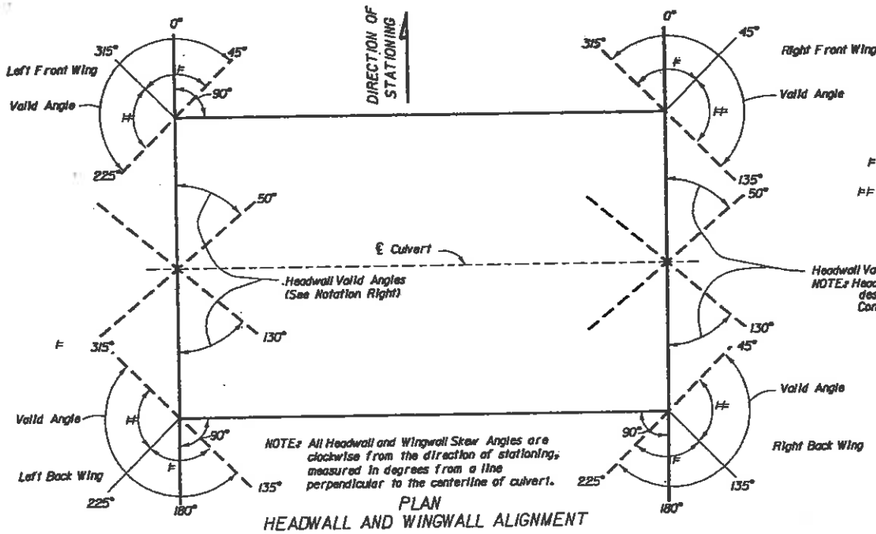
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

FLARED END SECTION

	Names	Dates	Approved By		
Designed By	EGR	09/77	State Drainage Engineer		
Drawn By	HKH	09/77	Revision	Sheet No.	Index No.
Checked By	JVG	09/77	00	1 of 1	270



PLAN
HEADWALL AND WINGWALL ALIGNMENT

= Within these limits the top surface of the Wingwalls shall be level.

=/= Within these limits the top surface of the Wingwalls shall be sloped.

NOTE: Designs for box culverts under this index are to be produced only by computer analysis, utilizing the program named PSTON55. Designs under this index are to be limited to the live loads and dimensional restraints shown in the General Notes of this index and to the fill on the barrel(s) as shown in the roadway plans. It is the construction Contractors responsibility to provide for supporting construction loads that exceed the above loadings.

GENERAL NOTES

DESIGN SPECIFICATIONS: A.A.S.H.T.O. 1996.

LOADING: HS20-44, Modified for Military Loading as Required or HS25, see Structures Design Guidelines.

SURFACE FINISH: The Class Surface finish for all concrete surfaces shall be a general surface finish.

SKEWED CONSTRUCTION JOINTS: Construction joints in barrels of culverts with skewed wingwalls may be placed parallel to the headwalls and the reinforcing steel, in the slabs may be cut provided that the cut reinforcing steel extends beyond the construction joint enough for splices to be made in accordance with the table (lower right) this sheet. The cost of construction joints shall be at the expense of the contractor.

CULVERT EXTENTIONS: For cut backs and ties into existing concrete box culverts see Index No. 280

* REINFORCING BAR SCHEDULE:

A. When the depth is less than or equal to 2.0 feet, Bars C2 are utilized in the bottom of the top slab. In all other cases, Bars C2 are replaced with Bars C1 spaced at 18 inches on centers.

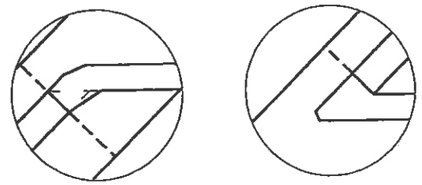
B. When the skew angle for a headwall equals 0 degrees plus or minus 11 degrees the respective S Bars (S2 or S3) will not be utilized.

C. When the barrel height is less than 6 Feet, Bars B2 will be eliminated as shown in Detail J.

D. If the span is less than five feet, Bars A1 and A2 will be Type II Bars.

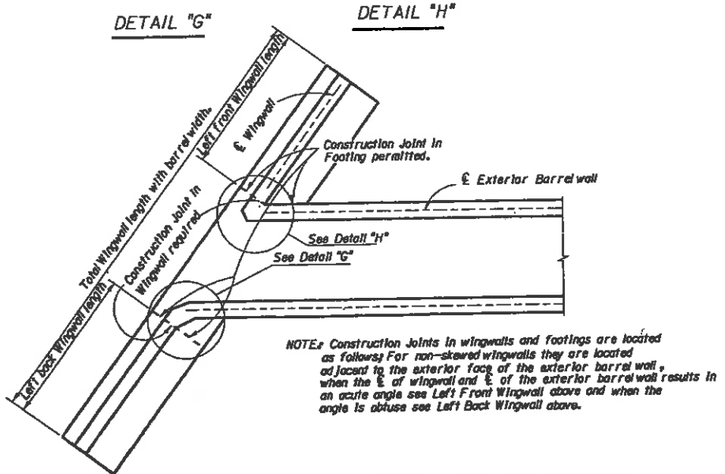
E. The portions of Bars "N" that extendthru Construction Joints into wingwalls above footings shall be given one coat of approved zinc rich paint and shall be encased in approved capped plastic (PVC) pipes filled with approved durable lubricant or cut back asphalt. The length and inside diameter of the plastic pipe shall be approximately ¼" larger than those of the bar.

F. For culvert extensions Bar C1 is redesignated Bar C3 in the bottom slab.



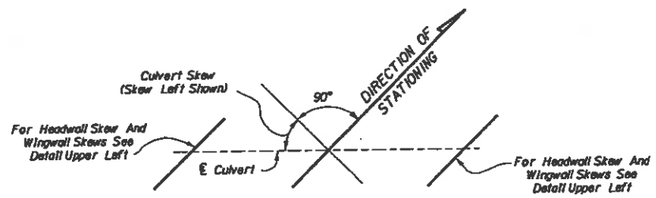
DETAIL "G"

DETAIL "H"



NOTE: Construction Joints in wingwalls and footings are located as follows: For non-skewed wingwalls they are located adjacent to the exterior face of the exterior barrel wall, when the ℄ of wingwall and ℄ of the exterior barrel wall results in an acute angle see Left Front Wingwall above and when the angle is obtuse see Left Back Wingwall above.

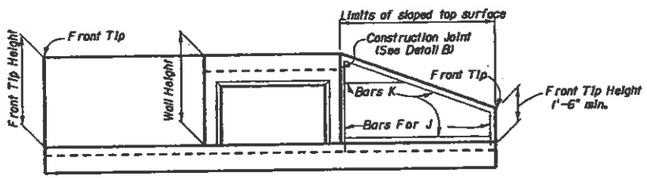
PART PLAN SHOWING WINGWALLS AND THE LOCATION OF CONSTRUCTION JOINTS



SKETCH "A"

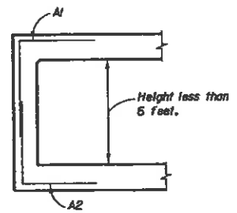
NOTE: For Culvert Skew see Roadway Plans.

CULVERT ALIGNMENT



END ELEVATION OF CULVERT

NOTE: Cut the vertical bars F as required for the longest bar and use the remainder for the shortest bar in the wingwall. The vertical bars J and the horizontal bars K shall be constructed likewise. The lengths shown in the reinforcing steel bar schedule for bars F, J and K require cutting for sloped top wingwalls only.



DETAIL "J"

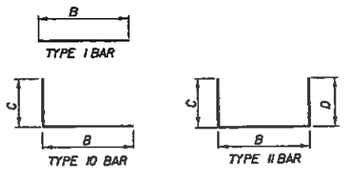


TABLE OF MINIMUM BAR SPLICE LENGTHS

BAR SIZE	SPLICE	BAR SIZE	SPLICE
#4	1'-10"	#8	4'-8"
#5	2'-4"	#9	5'-3"
#6	2'-9"	#10	5'-10"
#7	4'-0"	#11	6'-6"

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

CONCRETE BOX CULVERT
CULVERT DETAILS

	Names	Dates
Designed By		
Drawn By	GFC	1-86
Checked By	RCB	1-86

Approved By: A.A. McLemore, State Drainage Engineer

Revision	Sheet No.	Index No.
00	1 of 5	290

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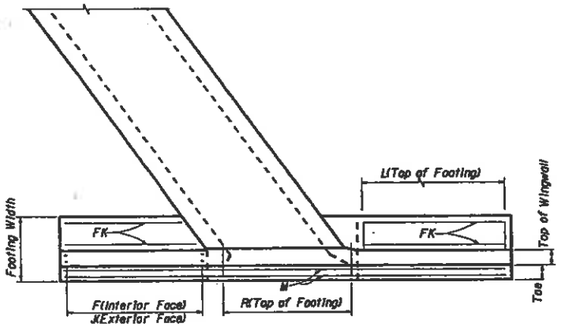
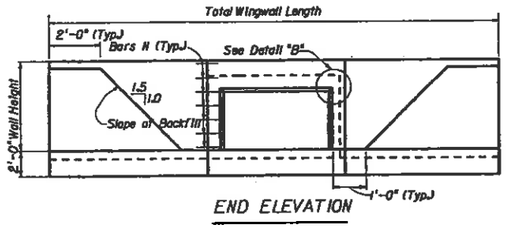
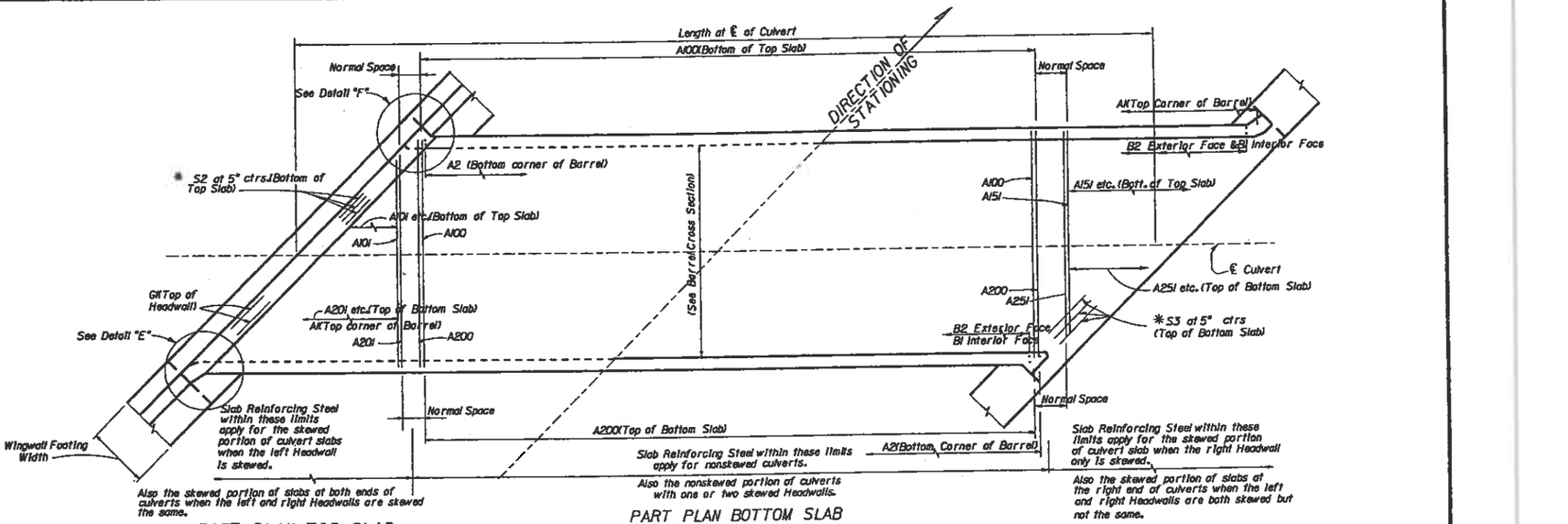


PART PLAN AT END OF CULVERT

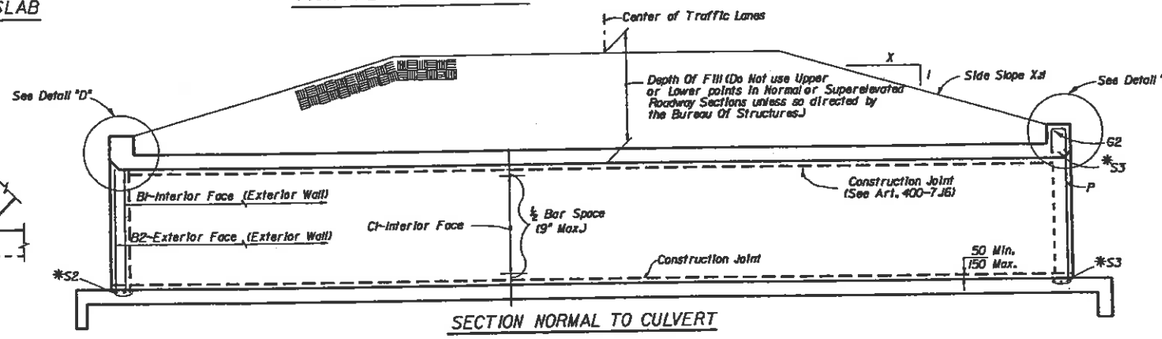


END ELEVATION

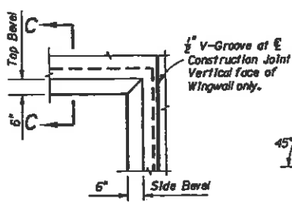


PART PLAN TOP SLAB

PART PLAN BOTTOM SLAB

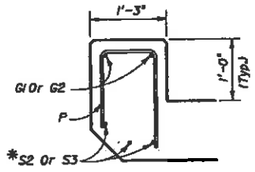


SECTION NORMAL TO CULVERT

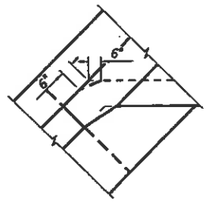


DETAIL "B"

SECTION C-C



DETAIL "D"



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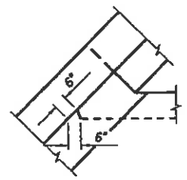
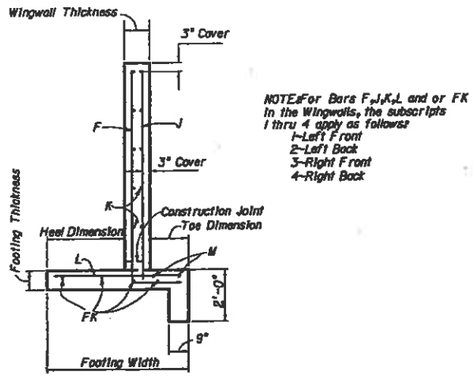
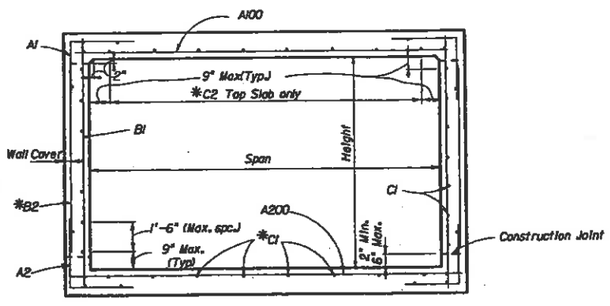


DETAIL "F"



SECTION THRU WINGWALL

NOTE: For Bars F,J,K,L and or FK in the Wingwalls, the subscripts 1 thru 4 apply as follows:
1-Left Front
2-Left Back
3-Right Front
4-Right Back



SECTION THRU BARREL

NOTE: The location of the first bar from the ends of the culvert shall not be less than 3", but not greater than one half the bar spacing.

* See Culvert Details and Reinforcing Bar Schedule, Sheet 1 of 5

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

CONCRETE BOX CULVERT
SINGLE BARREL

	Names	Dates
Designed By		
Drawn By	SFG	1-86
Checked By	RCB	1-86

Approved By: [signature]
State Drainage Engineer

Revision	Sheet No.	Index No.
00	2 of 5	290

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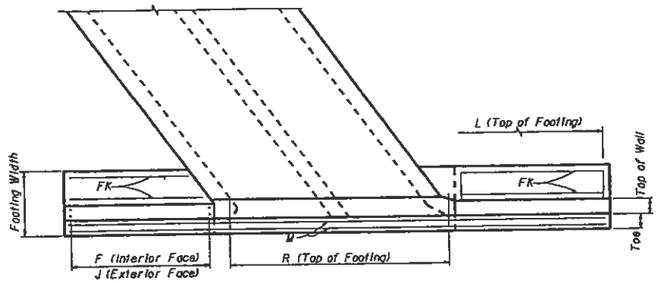
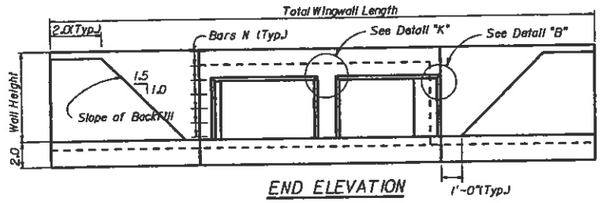
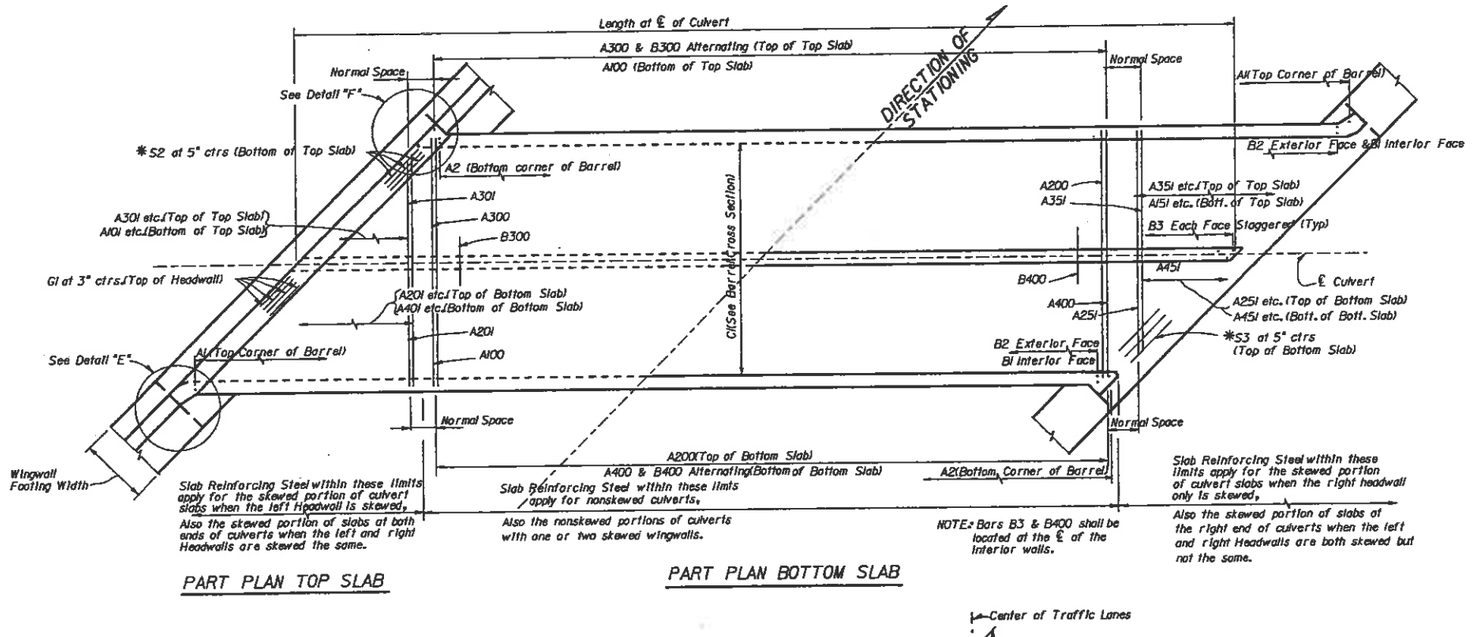


PART PLAN AT END OF CULVERT

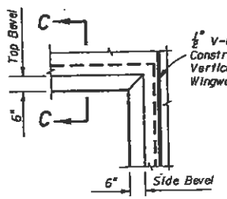


END ELEVATION



PART PLAN TOP SLAB

PART PLAN BOTTOM SLAB



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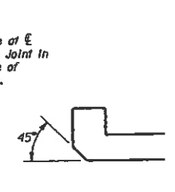
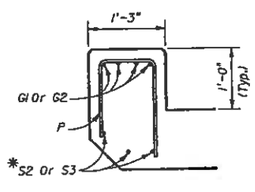
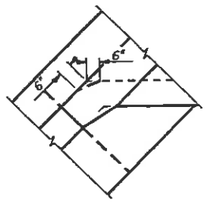


SECTION C-C



DETAIL "D"



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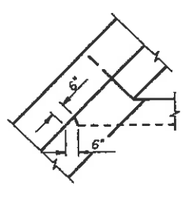

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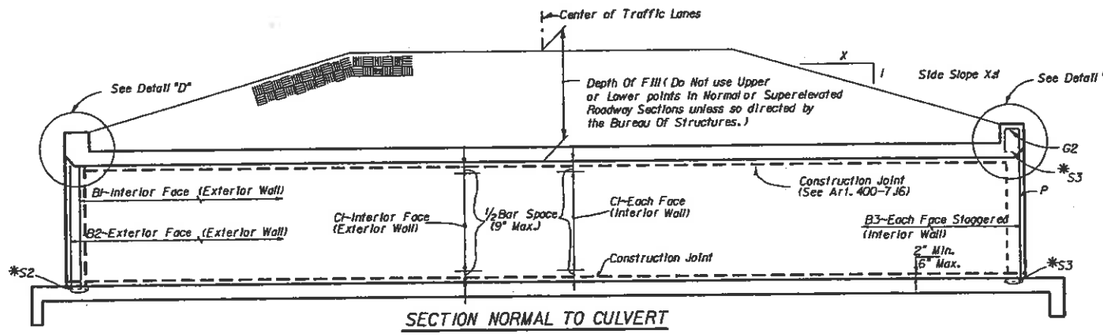
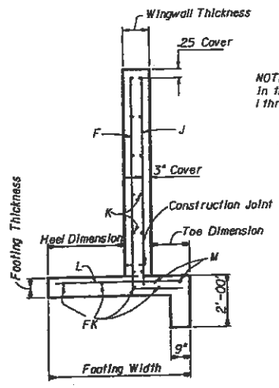
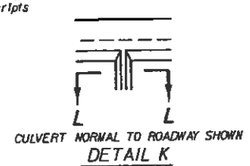


SECTION NORMAL TO CULVERT



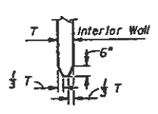
SECTION THRU WINGWALL

NOTE: For Bars F, J, K, L and or FK in the Wingwalls, the subscripts 1 thru 4 apply as follows:
1-Left Front
2-Left Back
3-Right Front
4-Right Back

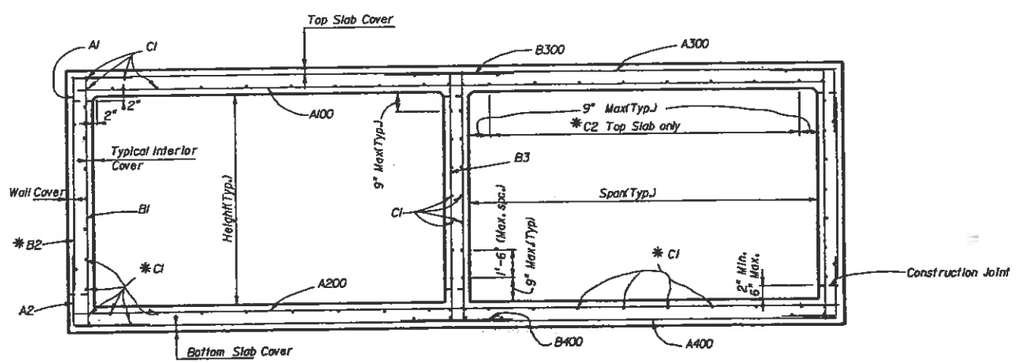


CULVERT NORMAL TO ROADWAY SHOWN

DETAIL K



SECTION LL



SECTION THRU BARREL

NOTE: The location of the first bar from the ends of the culvert shall not be less than .25, but not greater than one half the bar spacing.

* See Culvert Details and Reinforcing Bar Schedule, Sheet 1 of 5

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

CONCRETE BOX CULVERT

DOUBLE BARREL

	Names	Dates
Designed By		
Drawn By	GFG	1-86
Checked By	RCB	1-86

Approved By: A. W. Lemmon, State Drainage Engineer

Revision	Sheet No.	Index No.
00	3 of 5	290

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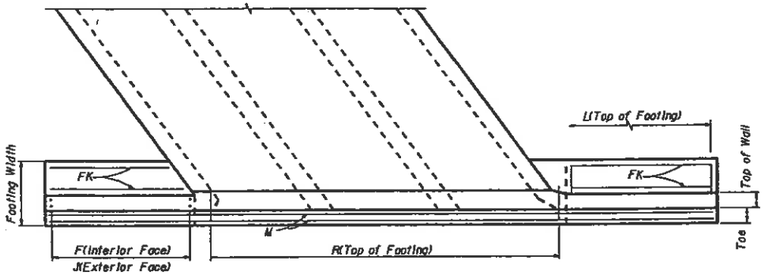
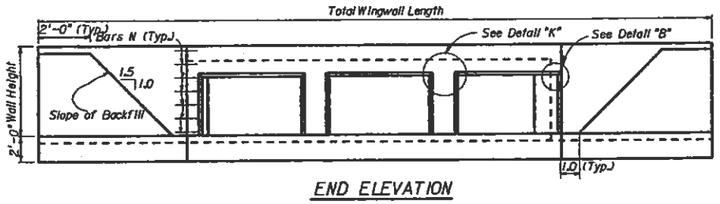
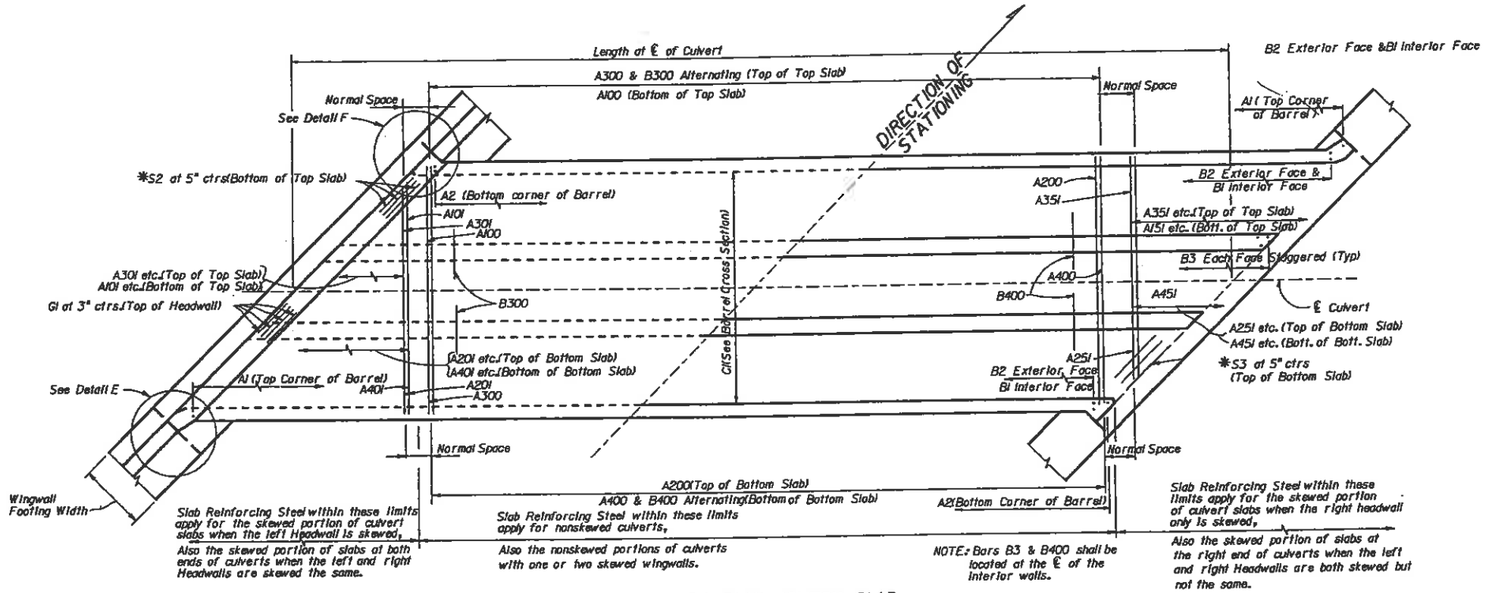


PART PLAN AT END OF CULVERT

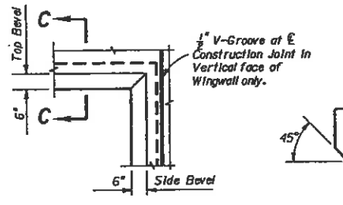


END ELEVATION



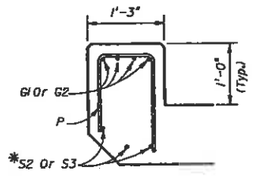
PART PLAN TOP SLAB

PART PLAN BOTTOM SLAB



DETAIL "B"

SECTION C-C



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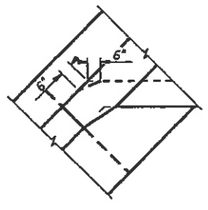

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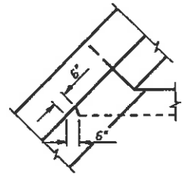

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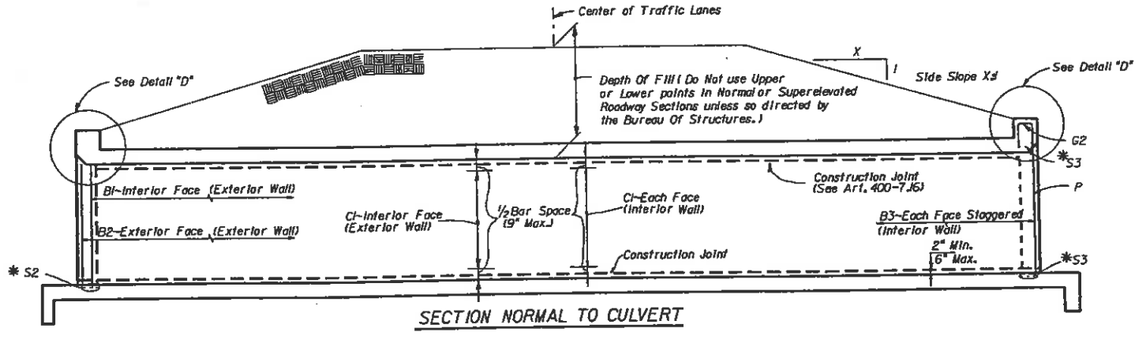
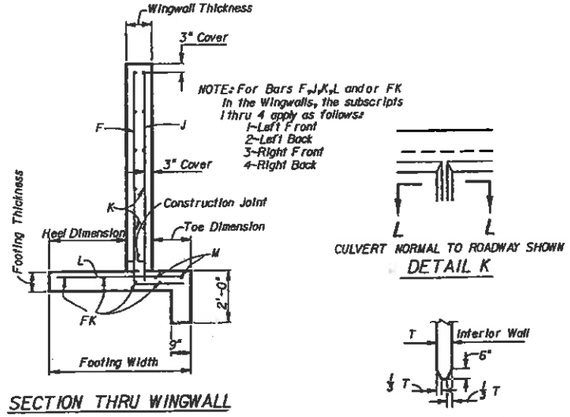
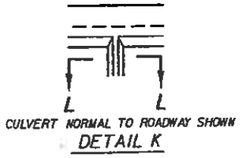


SECTION NORMAL TO CULVERT

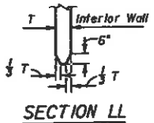


SECTION THRU WINGWALL

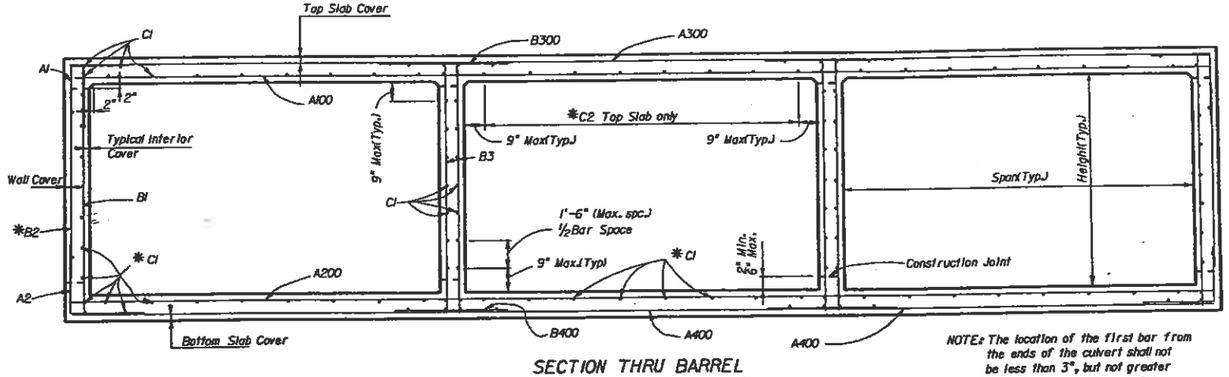


CULVERT NORMAL TO ROADWAY SHOWN

DETAIL K



SECTION LL



SECTION THRU BARREL

NOTE: The location of the first bar from the ends of the culvert shall not be less than 3", but not greater than one half the bar spacing.

*See Culvert Details and Reinforcing Bar Schedule, Sheet 1 of 5

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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

CONCRETE BOX CULVERT
TRIPLE BARREL

	Names	Dates
Designed By		
Drawn By	GFG	1-86
Checked By	RCB	1-86

Approved By: Lonnie
State Drainage Engineer

Revision	Sheet No.	Index No.
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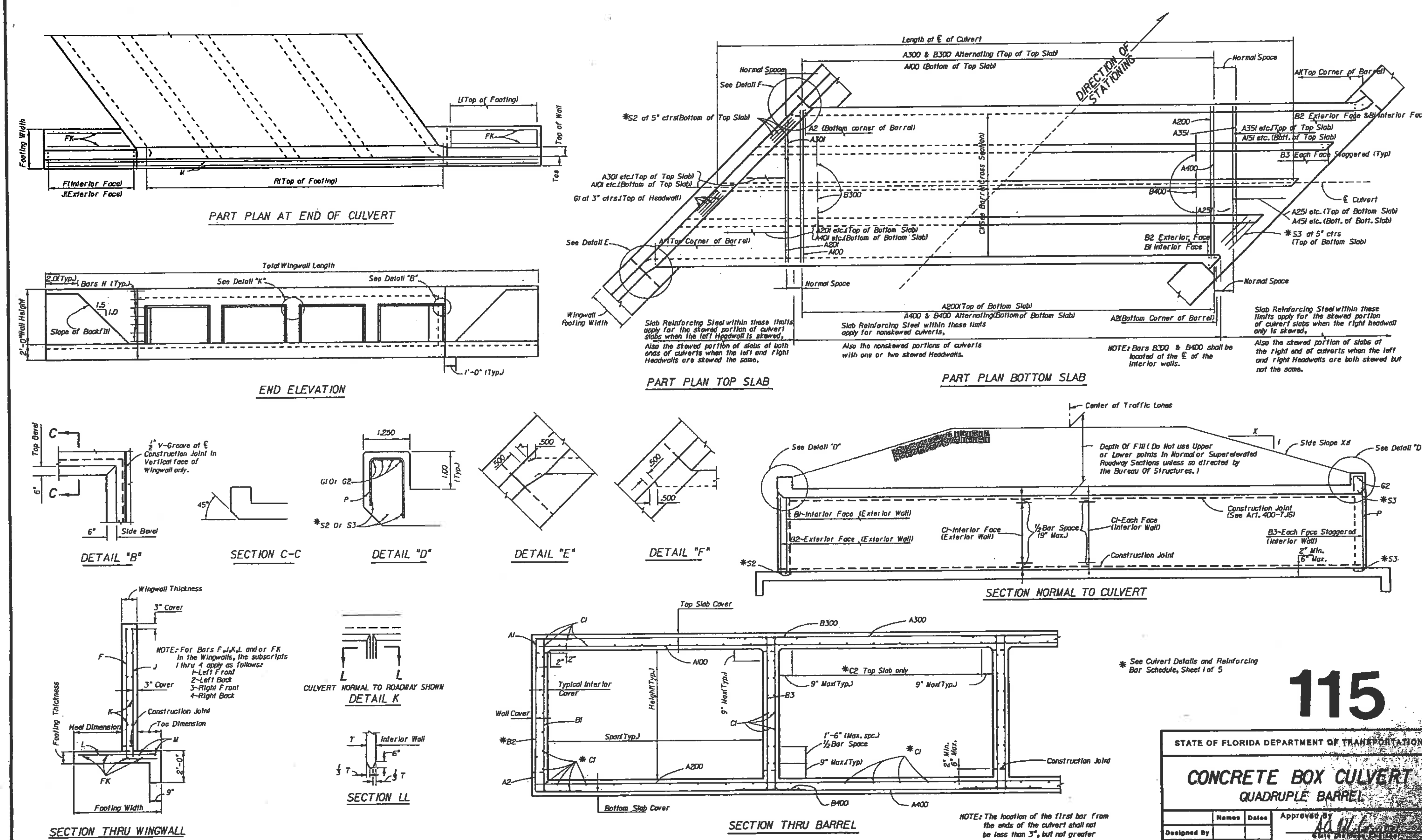
PART PLAN AT END OF CULVERT
L(Top of Footing)
Footing Width
Top of Wall
Toe
F(Interior Face)
J(Exterior Face)
R(Top of Footing)
END ELEVATION
Total Wingwall Length
2.0(Typ.)
Bars N (Typ.)
See Detail "K"
See Detail "B"
Slope of Backfill
2'-0" Wall Height
1'-0" (Typ.)
PART PLAN TOP SLAB
PART PLAN BOTTOM SLAB
Length of ℄ of Culvert
A300 & B300 Alternating (Top of Top Slab)
A100 (Bottom of Top Slab)
DIRECTION OF STATIONING
Normal Space
See Detail F
See Detail E
*S2 at 5" ctrs(Bottom of Top Slab)
A2 (Bottom corner of Barrel)
A301 etc.(Top of Top Slab)
A101 etc.(Bottom of Top Slab)
G1 at 3" ctrs.(Top of Headwall)
A201 etc.(Top of Bottom Slab)
A401 etc.(Bottom of Bottom Slab)
A1(Top Corner of Barrel)
Wingwall Footing Width
A200(Top of Bottom Slab)
A400 & B400 Alternating(Bottom of Bottom Slab)
A2(Bottom Corner of Barrel)
B2 Exterior Face & B1 Interior Face
A351 etc.(Top of Top Slab)
A151 etc.(Bott. of Top Slab)
B3 Each Face Staggered (Typ)
℄ Culvert
A251 etc.(Top of Bottom Slab)
A451 etc.(Bott. of Bott. Slab)
*S3 at 5" ctrs (Top of Bottom Slab)
B2 Exterior Face
B1 Interior Face
Slab Reinforcing Steel within these limits apply for the skewed portion of culvert slabs when the left Headwall is skewed.
Also the skewed portion of slabs at both ends of culverts when the left and right Headwalls are skewed the same.
Slab Reinforcing Steel within these limits apply for nonskewed culverts.
Also the nonskewed portions of culverts with one or two skewed Headwalls.
NOTE: Bars B300 & B400 shall be located at the ℄ of the interior walls.
Slab Reinforcing Steel within these limits apply for the skewed portion of culvert slabs when the right headwall only is skewed.
Also the skewed portion of slabs at the right end of culverts when the left and right Headwalls are both skewed but not the same.
DETAIL "B"
Top Bevel
1/2" V-Groove at ℄ Construction Joint in Vertical face of Wingwall only.
Side Bevel
SECTION C-C
DETAIL "D"
G1 Or G2
*S2 Or S3
DETAIL "E"
DETAIL "F"
SECTION NORMAL TO CULVERT
Center of Traffic Lanes
Depth Of Fill (Do Not use Upper or Lower points in Normal or Superelevated Roadway Sections unless so directed by the Bureau Of Structures.)
Side Slope X:1
See Detail "D"
B1-Interior Face (Exterior Wall)
B2-Exterior Face (Exterior Wall)
C1-Interior Face (Exterior Wall)
1/2 Bar Space (9" Max.)
C1-Each Face (Interior Wall)
Construction Joint (See Art. 400-7.J6)
B3-Each Face Staggered (Interior Wall)
2" Min. 6" Max.
Construction Joint
SECTION THRU WINGWALL
Wingwall Thickness
3" Cover
NOTE: For Bars F, J, K, L and/or FK in the Wingwalls, the subscripts 1 thru 4 apply as follows: 1-Left Front 2-Left Back 3-Right Front 4-Right Back
Construction Joint
Heel Dimension
Toe Dimension
Footing Thickness
Footing Width
DETAIL K
CULVERT NORMAL TO ROADWAY SHOWN
SECTION LL
Interior Wall
SECTION THRU BARREL
Top Slab Cover
Typical Interior Cover
Wall Cover
Span(Typ.)
Height(Typ.)
9" Max(Typ.)
*C2 Top Slab only
1'-6" (Max. spc.)
1/2 Bar Space
Construction Joint
Bottom Slab Cover
* See Culvert Details and Reinforcing Bar Schedule, Sheet 1 of 5
NOTE: The location of the first bar from the ends of the culvert shall not be less than 3", but not greater than one half the bar spacing.

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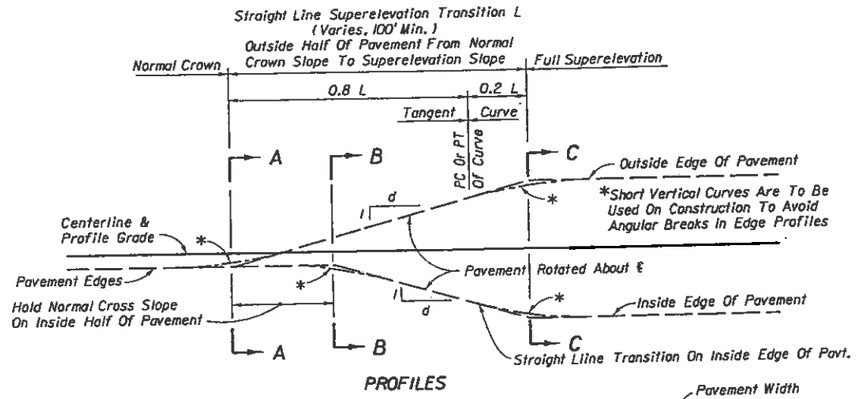
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

CONCRETE BOX CULVERT
QUADRUPLE BARREL

	Names	Dates	Approved By
Designed By			
Drawn By	GFG	1-86	Revision 00
Checked By	RCB	1-86	Sheet No. 5 of 5

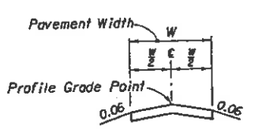
Index No. 290



PROFILES

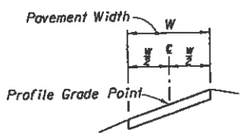
SLOPE RATIOS FOR SUPERELEVATION TRANSITIONS			
SECTION	DESIGN SPEED, MPH		
	45-50	55-60	65-70
	l: d		
2 Lane & 4 Lane	l: 200	l: 225	l: 250
6 Lane	l: 160	l: 180	l: 200
8 Lane	l: 150	l: 170	l: 190

The length of superelevation transition is to be determined by the relative slope between the travel way edge of pavement and the profile grade, except that the minimum length of transition shall be 100 ft.



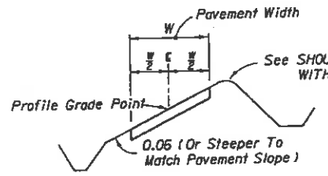
NORMAL CROWN SECTION

SECTION AA



REVERSE CROWN SECTION

SECTION BB



FULLY SUPERELEVATED SECTION

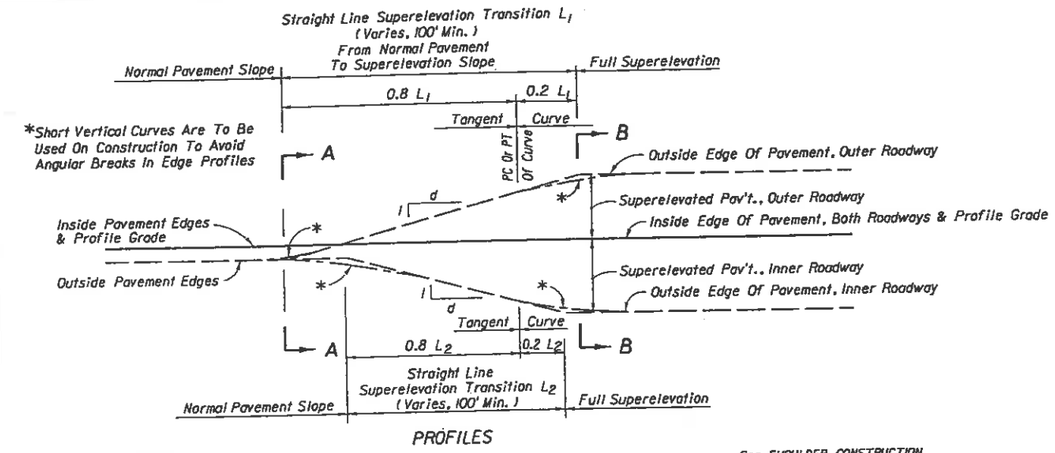
SECTION CC

2-LANE, 4-LANE OR 6-LANE PAVEMENT, NO MEDIAN

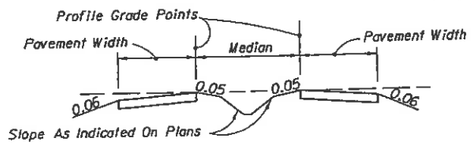
THESE TRANSITION DETAILS ARE TO APPLY IN ALL IN ALL CASES, EXCEPT UNDER THE FOLLOWING CONDITIONS:

1. Curves of insufficient length.
2. Insufficient tangent length between curves.
3. Deficient transition distance between a curve and other control point(s).
4. At PCC's or PRC's (Runoff rates are applicable).

Transitions for these exceptions are to be as detailed in the plans.

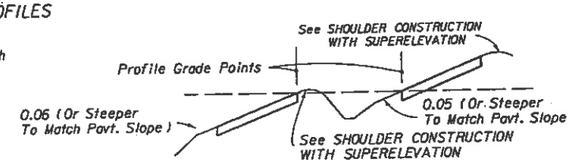


PROFILES



NORMAL SECTION

SECTION AA

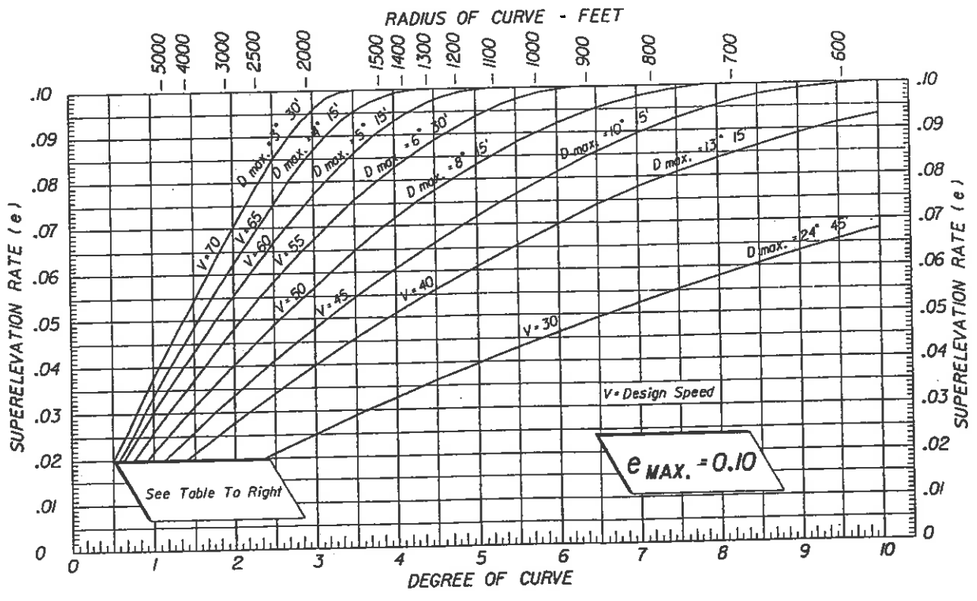


FULLY SUPERELEVATED

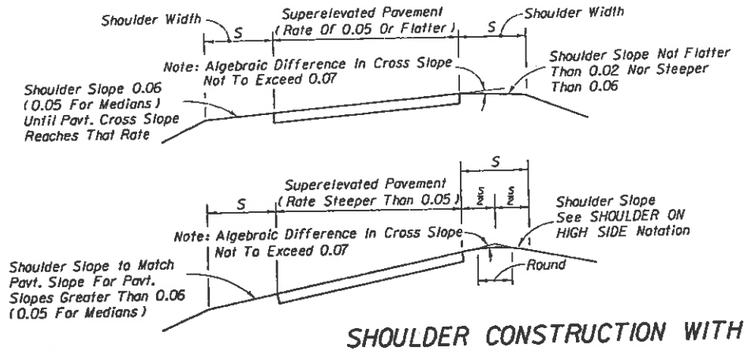
SECTION BB

4-LANE OR 6-LANE PAVEMENT WITH MEDIAN

SUPERELEVATION TRANSITIONS



DESIGN SUPERELEVATION RATES FOR RURAL HIGHWAYS, URBAN FREEWAYS AND HIGH SPEED URBAN HIGHWAYS



SHOULDER CONSTRUCTION WITH SUPERELEVATION

SHOULDER ON HIGH SIDE: A shoulder slope of 0.06 downward from the edge of pavement will be maintained until a 0.07 break in slope at the pavement edge is reached due to superelevation of the pavement. As the pavement superelevation increases, the 0.07 break in slope will be maintained and the shoulder flattened until the shoulder slope reaches the minimum of 0.02 downward from the edge of pavement. Any further increase in pavement superelevation will necessitate sloping the inside half of the shoulder toward the pavement and the outer half outward, both at 0.02 for superelevations 0.06-0.09 and both at 0.03 for superelevation 0.10.

SHOULDER ON LOW SIDE: Maintain 0.06 drop across inside shoulder until pavement cross slope reaches 0.06. For pavement cross slopes greater than 0.06, shoulder to have same slope as pavement.

These slopes are the same as those shown pictorially on sheet 2.

NOTE: These details apply to both paved and grassed shoulders. For median shoulders use 0.05 in lieu of 0.06.

DEGREE OF CURVE (D)	DESIGN SPEED, V MPH						
	30	40	45/50	55	60	65	70
0° 15'	NC	NC	NC	NC	NC	NC	NC
0° 30'	NC	NC	NC	NC	RC	RC	RC
0° 45'	NC	NC	RC	RC	0.023	0.025	0.028
1° 00'	NC	NC	0.021	0.025			
1° 30'	NC	0.021	SEE DESIGN SUPERELEVATION RATE TO LEFT				
2° 00'	RC						

GENERAL NOTES

1. For curves in urban highways and high speed urban streets, see Index No. 511.

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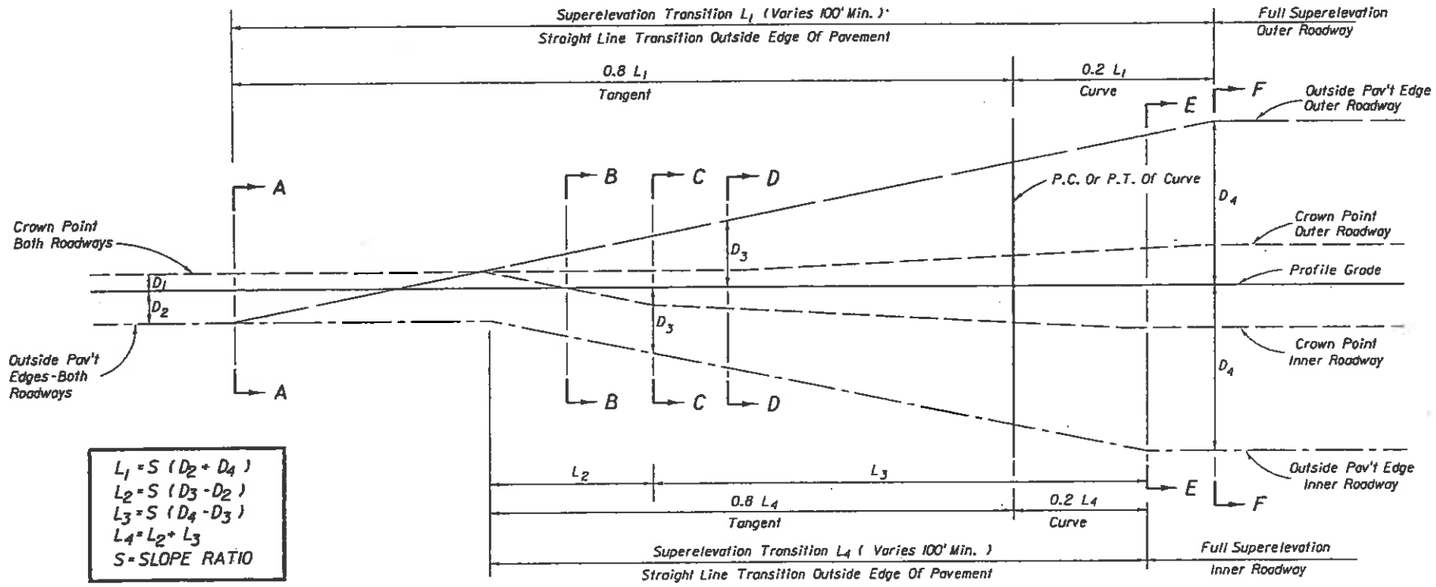
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

SUPERELEVATION
RURAL HIGHWAYS, URBAN FREEWAYS AND HIGH SPEED URBAN HIGHWAYS

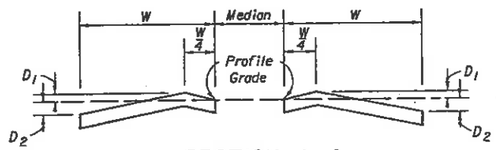
	Names	Dates
Designed By	HFW	5/65
Drawn By	LWF	10/74
Checked By		

Approved By
State Roadway Design Engineer

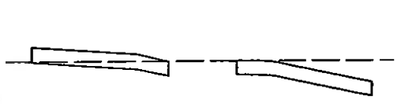
Revision	Sheet No.	Index No.
00	1 of 2	510



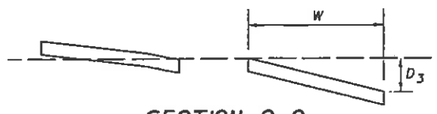
$L_1 = S\ (D_2 + D_4)$
$L_2 = S\ (D_3 - D_2)$
$L_3 = S\ (D_4 - D_3)$
$L_4 = L_2 + L_3$
S = SLOPE RATIO



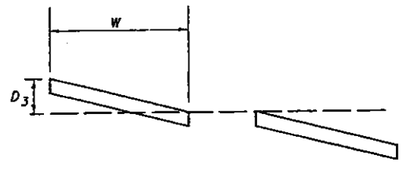
SECTION A-A
NORMAL CROWNED SECTION



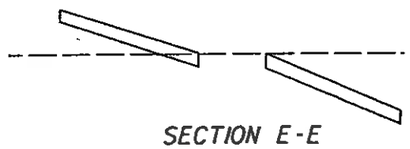
SECTION B-B
SUPERELEVATION SECTION LT. & RT.



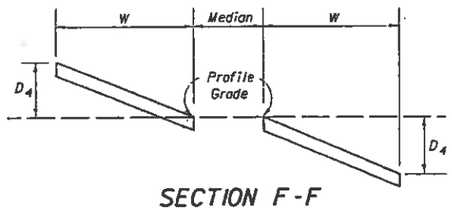
SECTION C-C
SUPERELEVATION SECTION LT.
PLANE INCLINED SECTION RT.



SECTION D-D
PLANE INCLINED SECTION LT.
SUPERELEVATION TRANSITION RT.

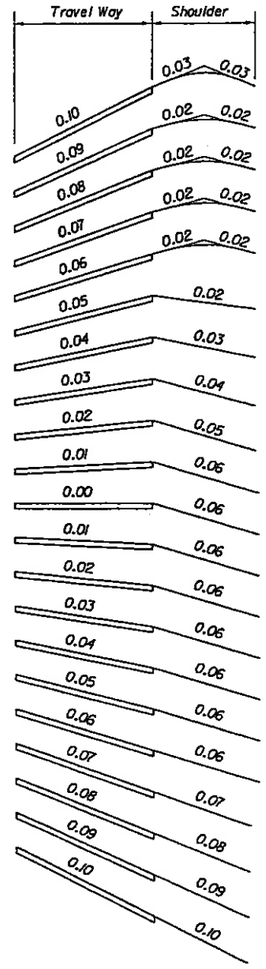


SECTION E-E
SUPERELEVATION TRANSITION LT.
FULL SUPERLEVATION RT.



SECTION F-F
FULL SUPERELEVATION LT. & RT.

8-LANE PAVEMENT WITH ONE LANE SLOPED TO MEDIAN



SLOPES OF TRAVELED WAY
AND ABUTTING SHOULDERS

SHOULDER SLOPES ON SUPERELEVATION SECTIONS

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SUPERELEVATION
RURAL HIGHWAYS, URBAN FREEWAYS AND HIGH SPEED URBAN HIGHWAYS

	Names	Dates
Designed By	WAL	8/77
Drawn By	JSP	8/77
Checked By	WAL	8/77

Approved By _____
State Roadway Design Engineer

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CONTENTS

PREFACE

All projects and works on highways, roads and streets shall have a traffic control plan. All work shall be executed under the established plan and Department approved procedures. This index contains information specific to the Federal and State guidelines and standards for the preparation of traffic control plans and for the execution of traffic control in work zones, for construction and maintenance operations and utility work on highways, roads and streets.

Index 600 provides Department policy and standards. Changes are only to be made thru Department approved procedures. Indexes 601 thru 665 provide typical application for various situations. Modification can be made to these indexes as long as the changes comply with the M.U.T.C.D. and Department Design Standards.

The sign spacings shown on the indexes are typical (recommended) distances. These distances may be increased or decreased based on field conditions, in order to avoid conflicts or to improve site specific traffic controls.

MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

The Florida Department of Transportation has adopted the "Manual On Uniform Traffic Control Devices For Streets And Highways" (MUTCD) and subsequent revisions and addendums, as published by the U.S. Department of Transportation, Federal Highway Administration, for mandatory use on the State Maintained Highway System whenever there exists the need for construction, maintenance operations or utility work.

ABBREVIATIONS

Abbreviations assigned to the 600 series Roadway Design Standards and applicable to traffic control plans, unless otherwise identified in the plans, are as follows:

COMM	Traffic Control Standards Committee
DTOE	District Traffic Operations Engineer
FDOT	Florida Department Of Transportation
HAR	Highway Advisory Radio
L	Taper Length, Buffer Length Or Taper Length Plus Buffer Space
LEO	Law Enforcement Officer
MOT	Maintenance Of Traffic
MUTCD	Manual On Uniform Traffic Control Devices For Streets And Highways
PRS	Portable Regulatory Sign
R	Radius
RPM	Raised Retroreflective Pavement Marker
RSDU	Radar Speed Display Unit
S	Posted Speed Of Off-Peak 85 Percentile Speed (M.P.H.)
TCP	Traffic Control Plan(s)
TCZ	Traffic Control Through Work Zones
TMA	Truck Mounted Attenuator
VMS	Variable Message Sign
VECP	Value Engineering Change Proposal
W	Width Of Taper Transition In Feet i.e., Lateral Offset

SYMBOLS

The symbols shown are found in the Traffic Control Zone Cell Library (TCZ.cel) on the CADD system.

Symbols assigned to the 600 series Roadway Design Standards and applicable to traffic control plans, unless otherwise identified in the plans, are as follows:

- Work Area, Hazard Or Work Phase (Any pattern within a boundary)
- Sign With 18" x 18" (Min.) Orange Flag And Type B Light
- Type I Or Type II Barricade Or Vertical Panel Or Drum
- Type I Or Type II Barricade Or Vertical Panel Or Drum (With Flashing Light At Night Only)
- Type I Or Type II Barricade Or Vertical Panel Or Drum (With Steady Burning Light At Night Only).
- Type I Or Type II Barricade Or Vertical Panel Or Cone Or Tubular Marker Or Drum
- Cone Or Tubular Marker
- Type I, Type II Or Type III Barricade Or Vertical Panel Or Drum
- Type I, Type II Or Type III Barricade Or Vertical Panel Or Drum (With Flashing Light)
- Type I, Type II Or Type III Barricade Or Vertical Panel Or Drum (With Steady Burning Light)
- Type III Barricade
- Type III Barricade (With Flashing Light)
- Type III Barricade (With Steady Burning Light)
- Work Zone Sign
- Flagger
- Traffic Signal
- Advance Warning Arrow Panel
- Portable Signal
- Crash Cushion
- Stop Bar
- W — Work Vehicle With Flashing Beacon
- X — Shadow (S) Or Advance Warning (AW) Vehicle With Advance Warning Arrow Panel And Warning Sign
- A — Truck Mounted Attenuator (TMA)
- Orange Flag For TCZ Signs
- Type B Light For TCZ Signs
- Law Enforcement Officer
- Portable Regulatory Sign
- Radar Speed Display Unit
- Variable Message Sign

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL THROUGH WORK ZONES

GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES

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DEFINITIONS

Regulatory Speed (In Work Zones)

The maximum permitted travel speed posted for the work zone as indicated by the regulatory speed limit signs. The work zone speed must be shown or noted in the plans. This speed should be used as the minimum design speed to determine runout lengths, departure rates, flare rates, lengths of need, clear widths, taper lengths, crash cushion requiremehts, marker spacings, superelevation and other similar features.

Advisory Speed

The maximum recommended travel speed through a curve or a hazardous area.

Travel Way

The intended path for vehicular traffic through or around obstructions in construction, maintenance, utility and other work zones on highways, roads and streets. For traffic control through work zones, travel way includes auxiliary lanes, shoulders and any other permanent or temporary surface intended for the path of vehicular traffic.

Detour, Lane Shift, and Diversion

A detour is the redirection of traffic onto another roadway to bypass the temporary traffic control zone. A lane shift is the redirection of traffic onto a different section of the permanent pavement. A diversion is the redirection of traffic onto a temporary roadway, usually adjacent to the permanent roadway and within the limits of the right-of-way.

Above Ground Hazard

An above ground hazard is any object, material or equipment other than traffic control devices that encroaches upon the travel way or that is located within the clear zone which does not meet the Departments safety criteria, i.e., anything that is greater than 4" in height and is firm and unyielding or doesn't meet breakaway requirements.

TEMPORARY TRAFFIC CONTROL DEVICES

All temporary traffic control devices shall be removed as soon as practical when they are no longer needed. When work is suspended for short periods of time, temporary traffic control devices that are no longer appropriate shall be removed or covered.

PEDESTRIANS AND BICYCLIST

When an existing pedestrian way or bicycle way is located within a traffic control work zone, accomodation must be maintained and include provision for the disabled.

Only approved temporary traffic control devices may be used to delineate a temporary traffic control zone pedestrian walkway.

Advanced notification of sidewalk closures and detours marked shall be provided by appropriate signs.

RAILROADS

Railroad crossings affected by a construction project should be evaluated for traffic controls to reduce queuing on the tracks. The evaluation should include as a minimum: traffic volumes, distance from the tracks to the intersections, lane closure or taper locations, signal timing, etc.

OVERHEAD WORK

No work shall be allowed over a traffic lane using a bucket truck, unless a lane closure has been set up in accordance with the appropriate Index.

OVERWEIGHT/OVERSIZE VEHICLES

Restrictions to Lane Widths, Heights or Load Capacity can greatly impact the movement of over dimensioned loads. The Contractor shall notify the Engineer who in turn shall notify the State Permits Office, phone no. (850) 488-4961, at least seven calander days in advance of implementing a maintenance of traffic plan which will impact the flow of overweight/ oversized vehicles. Information provided shall include location, type of restriction (height, width or weight) and restriction time frames. When the roadway is restored to normal service the State Permits Office shall be notified immediately.

LANE WIDTHS

Lane widths of through roadways should be maintained through work zone travel ways wherever practical. The minimum widths for work zone travel lanes shall be as follows: 11' for Interstate with at least one 12' lane provided in each direction, unless formally excepted by the Federal Highway Administration; 11' for freeways; and 10' for all other facilities.

SIGHT DISTANCE TO DELINEATION DEVICES

Transition tapers should be obvious to drivers. If restricted sight distance is a problem (e.g., a sharp vertical or horizontal curve), the taper should begin well in advance of the view obstruction. The beginning of tapers should not be hidden behind curves.

ABOVE GROUND HAZARD

Above ground hazards (see definitions) are to be considered work areas during working hours and treated with appropriate work zone traffic control procedures. During non-working hours, all objects, materials and equipment that constitute an above ground hazard must be stored/placed outside the travel way and clear zone or be shielded by a barrier or crash cushion.

For above ground hazards within a work zone the clear zone required should be based on the regulatory speed posted during construction.

CLEAR ZONE WIDTHS

The term 'clear zone' describes the unobstructed relatively flat area, impacted by construction, extending outward from the edge of the travel lane. The table below gives clear zone widths in work zones for medians and roadside conditions other than for roadside canals; where roadside canals are present, clear zone widths are to conform with the distances to canals as described in Volume I Ch 4, Sec 4.2 and Exibit 4-A and 4-B of the Plans Preparation Manual.

CLEAR ZONE WIDTHS FOR WORK ZONES	
WORK ZONE SPEED (MPH)	WIDTHS (feet)
60-70	30
55	24
45-50	18
30-40	14
ALL SPEEDS CURB & GUTTER	4' BEHIND FACE OF CURB

SUPERELEVATION

Horizontal curves constructed in conjunction with work zone traffic control should have the required superelevation applied to the design radii. Under conditions where normal cross slope controls curvature, the minimum radii that can be applied are listed in the table below.

MINIMUM RADII FOR NORMAL CROSS SLOPES	
DESIGN SPEED	MINIMUM RADIUS R
MPH	feet
65	3130
60	2400
55	1840
50	1390
45	1080
40	820
35	610
30	430
Superelevate When Smaller Radii Used	

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL THROUGH WORK ZONES

GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES

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Checked By		12/97

Approved By: Roadway Design Engineer

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REGULATORY SPEEDS IN WORK ZONES

Traffic Control Plans (TCPs) for all projects must include specific regulatory speeds for each phase of work. This can either be the posted speed or a reduced speed. The speed shall be noted in the TCPs; this includes indicating the existing speed if no reduction is to be made. Regulatory speeds are to be uniformly established through each phase.

In general, the regulatory speed should be established to route vehicles safely through the work zone as close to normal highway speed as possible. The regulatory speed should not be reduced more than 10 mph below the posted speed and never below the minimum statutory speed for the class of facility. When a speed reduction greater than 10 mph is imposed, the reduction is to be done in 10 mph per 500' increments.

Temporary regulatory speed signs shall be removed as soon as the conditions requiring the reduced speed no longer exist. Once the work zone regulatory speeds are removed, the regulatory speed existing prior to construction will automatically go back into effect unless new speed limit signing is provided for in the plans.

On projects with interspaced work activities, speed reductions should be located in proximity to those activities which merit a reduced speed, and not "blanketed" for the entire project. At the departure of such activities, the normal highway speed should be posted to give the motorist notice that normal speed can be resumed.

If the existing regulatory speed is to be used, consideration should be given to supplementing the existing signs when the construction work zone is between existing regulatory speed signs. For projects where the reduced speed conditions exist for greater than 1 mile in rural areas (non-interstate) and on rural or urban interstate, additional regulatory speed signs are to be placed at no more than 1 mile intervals. Engineering judgement should be used in placement of the additional signs. Locating these signs beyond ramp entrances and beyond major intersections are examples of proper placement. For urban situations (non-interstate), additional speed signs are to be placed at a maximum of 1000' apart.

When field conditions warrant speed reductions different from those shown in the TCP the contractor may submit to the project engineer for approval by the Department, a signed and sealed study to justify the need for further reducing the posted speed, or, the engineer may request the District Traffic Operations Engineer (DTOE) to investigate the need. It will not be necessary for the DTOE to issue regulations for regulatory speeds in work zones due to the revised provisions of F.S. 316.0745(2) (b). Advisory Speed plates will be used at the option of the field engineer for temporary use while processing a request to change the regulatory speed specified in the plans when deemed necessary. Advisory speed plates cannot be used alone but must be placed below the construction warning sign for which the advisory speed is required.

For additional information refer to the FDOT Roadway Plans Preparation Manual, Volume I , Chapter 10.

FLAGGER CONTROL

Where flaggers are used, a FLAGGER symbol or legend sign must replace the WORKERS symbol or legend sign.

The flagger must be clearly visible to approaching traffic for a distance sufficient to permit proper response by the motorist to the flagging instructions, and to permit traffic to reduce speed or to stop as required before entering the work site. Flaggers shall be positioned to maintain maximum color contrast between the Flagger's reflective garments and equipment and the work area background.

HIGH-VISIBILITY CLOTHING

For daytime work, the flagger's vest, shirt, or jacket shall be either orange, yellow, yellow-green, or a flourescent version of these colors For nighttime work, similar outside garments shall be retroreflective. The retroreflective material shall be either orange, yellow, white, silver, yellow-green, or a flourescent version of these colors, and be visible at a minimum distance of 1,000 ft. The retroreflective clothing shall be designed to clearly identify the wearer as a person.

HAND-SIGNALING DEVICES

STOP/SLOW paddles are the primary hand-signaling device. The STOP/SLOW paddle shall have an octagonal shape on a rigid handle. STOP/SLOW paddles shall be at least 26 inches wide with letters at least 6 inches high and should be fabricated from light semi-rigid material. The background of the STOP face shall be red with white letters and border. The background of the SLOW face shall be orange with black letters and border. When used at nighttime, the STOP/SLOW paddle shall be retroreflectorized.

Flag use is limited to immediate emergencies, intersections, and when working on centerline or shared left turn lanes where two (2) flaggers are required and there is opposing traffic in the adjacent lanes. Flags, when used, shall be a minimum of 24 inches square, made of a good grade of red material, and securely fastened to a staff that is approximately 36 inches in length. When used at nighttime, flags shall be retroreflectorized red.

Flashlight, lantern or other lighted signal that will display a red warning light shall be used at night.

FLAGGER STATIONS

Flagger stations shall be located far enough in advance of the work space so that approaching road users will have sufficient distance to stop before entering the work space. When used at nighttime, the flagger station should be illuminated.

SURVEY WORK ZONES

The SURVEY CREW AHEAD symbol or legend sign shall be the principal Advance Warning Sign used for Traffic Control Through Survey Work Zones and may replace the ROAD WORK AHEAD sign when lane closures occur, at the discretion of the Party Chief. Type B Light or dual orange flags shall be used at all times to enhance the SURVEY CREW AHEAD sign. even with mesh signs.
When Traffic Control Through Work Zones is being used for Survey purposes only, the END ROAD WORK sign as called for on certain 600 Series Indexes should be omitted.

Survey Between Active Traffic Lanes or Shared Left Turn Lanes

The following provisions apply to Main Roadway Traffic Control Work Zones. These provisions must be adjusted by the Party Chief to fit roadway and traffic conditions when the Survey Work Zone includes Intersections.

(A) A STAY IN YOUR LANE (MOT-1) sign shall be added to the Advance Warning Sign sequence as the second most immediate sign from the work area.

(B) Elevation Surveys-Cones may be used at the discretion of the Party Chief to protect prism holder and flagger(s). Cones, if used, may be placed at up to 50' intervals along the break line throughout the work zone.

(C) Horizontal Control-With traffic flow in the same direction, cones shall be used to protect the backsight tripod and/or instrument. Cones shall be placed at the equipment, and up to 50' intervals for at least 200' towards the flow of traffic.

(D) Horizontal Control-With traffic flow in opposite directions, cones shall be used to protect the backsight tripod and/or instrument. Cones shall be placed at the equipment, and up to 50' intervals for at least 200' in both directions towards the flow of traffic.

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TRAFFIC CONTROL THROUGH WORK ZONES

GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES

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Drawn By		12/97
Checked By		12/97

Approved By: James A. Hill
V Roadway Design Engineer

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SIGN PLACEMENT

Post-mounted signs installed at the side of the road shall be mounted at a height at least 7 feet measured from the bottom of the sign to a horizontal line extended from the near edge of the pavement. Signs mounted on barricades, or other portable supports shall be no less than 1 foot above the travel way.

ADJOINING AND/OR OVERLAPPING WORK ZONE SIGNING

Adjoining work zones may not have sufficient spacing for standard placement of signs and other traffic control devices in their advance warning areas or in some cases other areas within their traffic control zones. Where such restraints or conflicts occur or are likely to occur, one of the following methods will be employed to avoid conflicts and prevent conditions that could lead to misunderstanding on the part of the traveling public as to the intended travel way by the traffic control procedure applied:

(a) For scheduled projects the engineer in responsible charge of project design will resolve anticipated work zone conflicts during the development of the project traffic control plan. This may entail revision of plans on preceding projects and coordination of plans on concurrent projects.

(b) Unanticipated conflicts arising between adjoining in progress highway construction projects will be resolved by the Resident Engineer for projects under his residency, and, by the District Construction Engineer for in progress projects under adjoining residencies.

(c) The District Maintenance Engineer will resolve anticipated and occuring conflicts within scheduled maintenance operations.

(d) The Unit Maintenance Engineer will resolve conflicts that occur within routine maintenance works; between routine maintenance work, unscheduled work and/or permitted work; and, between unit controlled maintenance works and highway construction projects.

SIGN COVERING AND INTERMITTENT WORK STOPPAGE SIGNING

Existing signs that conflict with temporary work zone signing shall be removed or covered as approved by the Engineer. Traffic control signs that require covers when no work is being performed in a work area shall be fully covered with a durable opaque sheet material.
Plastic film and woven fabrics including burlap will not be permitted.
Covering of only the legend or symbol will not be permitted.
Reflective coverings will not be permitted.
Hinged signs designed to cover when folded and sign blanks will be permitted.
Covers, blanks, hinged panels and intermittent work stoppage shields and plaques are incidental to work operation signs and are not to be paid for separately.

SIGN MATERIALS

Mesh signs may be used only for Daylight Operations as noted in the standards. Type B Lights and Orange Flags are not required.

Vinyl signs may be used for Day or Night Operations not to exceed 12 hours except as noted in the standards. Type B Lights and Orange Flags are not required.

All signs shall be post mounted if operation exceeds 12 hours except as noted in the standards.

WORK ZONE SIGN SUPPORTS

Signs mounted on temporary supports or barricades, and barricade/sign combination shall be crashworthy in accordance with NCHRP 350 requirements and included on the Qualified Products List (QPL).

All post mounted Work Zone signs shall be installed on either round aluminum or steel channel post as specified in the table below.

SUPPORTS FOR MAINTENANCE OF TRAFFIC SIGNS

SIGN SIZE	SIGN BRACKET	ROUND ALUMINUM	DEPTH IN GROUND	STEEL CHANNEL	DEPTH IN GROUND
24" x 36"	2-I	NPS 2.0" x $\frac{1}{8}$"	2'-0"	2.5 lb F/M*	3'-0"
48" x 48" DIAMOND	2-I & I-II	NPS 3.5" x $\frac{3}{16}$"	3'-4"	**	3'-0"
60" x 48"	3-I	NPS 3.5" x $\frac{3}{16}$"	3'-4"	**	3'-0"
24" x 30"	2-I	NPS 2.0" x $\frac{1}{8}$"	2'-0"	2.5 lb F/M*	3'-0"
48" x 48"	2-II	NPS 3.0" x $\frac{1}{8}$"	2'-6"	**	3'-0"
60" x 24"	3-I	NPS 3.0" x $\frac{1}{8}$"	2'-6"	3.0 lb F/M*	3'-0"
60" x 36"	3-I	NPS 3.5" x $\frac{3}{16}$"	3'-4"	4.0 lb F/M*	3'-0"

* F/M Indicates Type F or Type M

** Requires two 3 lb/ft steel channel (F/M) at 2'-6" center to center. All sign brackets shall be Type I. The total number of brackets shall be per post as tabulated, except the "Diamond" sign which shall use two Type I brackets per post.

The 4 lb/ft steel channel shall be installed with approved breakaway bases.

Refer to Design Standard 11860, Sheet 3, for round aluminum sign bracket details, and 11865 Sheet 2 for steel channel breakaway bases, and notes.

SIGNING FOR DETOURS, LANE SHIFTS AND DIVERSIONS

Detours should be signed clearly over their entire length so that motorists can easily determine how to return to the original roadway. The W1-4R, MOT-2, and MOT-3 warning signs should be used for the advanced warning for a lane shift. A diversion should be signed as a lane shift.

EXTENDED DISTANCE ADVANCE WARNING SIGNS

Advance Warning Signs shall be used at extended distance of one-half mile or more when limited sight distance or the nature of the obstruction may require a motorist to bring their vehicle to a stop. Extended distance Advanced Warning Signs may be required on any type roadway, but particularly be considered on multi-lane divided highways where vehicle speed is generally in the higher range (45 M.P.H. or more).

SPEEDING FINES DOUBLED WHEN WORKERS PRESENT SIGN

The SPEEDING FINES DOUBLED WHEN WORKERS PRESENT sign should be installed on all projects. The placement should be 500 ft beyond the ROAD WORK AHEAD sign or midway to the next sign whichever is less.

LENGTH OF ROAD WORK SIGN

The length of road work sign (G20-1) bearing the legend ROAD WORK NEXT_____ MILES is required for all projects of more than 2 miles in length. The number of miles entered should be rounded up to the nearest mile. The sign shall be located at begin construction points.

INTERSECTING ROAD SIGNING

Signing for the control of traffic entering and leaving work zones by way of intersecting highways, roads and streets shall be adequate to make drivers aware of work zone conditions. Under no condition will intersecting leg signing be less than a ROAD WORK AHEAD sign, including light and flag, for approaching vehicles.

END ROAD WORK SIGNS

The END ROAD WORK sign (G20-2A) should be erected approximately 500 feet beyond the end of a construction or maintenance project unless other distance called for in the plans. When other Construction or Maintenance Operations occur within 1 mile this sign should be omitted and signing coordinated in accordance with Index No. 600, ADJOINING AND/OR OVERLAPPING WORK ZONE SIGNING.

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TRAFFIC CONTROL THROUGH WORK ZONES

GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES

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VARIABLE MESSAGE SIGNS (VMS)

The VMS can be used to:
(1) Supplement standard signing in construction/maintenance work zones.
(2) Reinforce static advance warning messages.
(3) Provide motorists with updated guidance information.

The message should be visible and legible at a minimum distance of 900 feet. All messages should be cycled so that two message cycles are displayed to a driver while approaching the sign from 900 feet at 55 mph.

VMS should be placed approx. 500 to 800 feet in advance of the work zone conflicts or 1.5 to 2 miles in advance of complex traffic control schemes which require new and/or unusual traffic maneuvers.

If VMS are to be used at night, the intensity of the flashers shall be reduced during darkness when lower intensities are desirable.

For additional information refer to the FDOT Roadway Plans Preparation Manual, Volume I, Chapter 10.

CHANNELIZING AND LIGHTING DEVICES

Channelizing and lighting devices for work zone traffic control shall be as prescribed in Part VI of the MUTCD, subject to supplemental revisions provided in the contract documents.

Primary work zone traffic control devices are shown on Sheet 8 for the purpose of ready identification. Approved devices are listed on the Departments Qualified Product List.

CHANNELIZING AND LIGHTING DEVICE CONSISTENCY

Barricades, vertical panels, cones, tubular markers and drums shall not be intermixed within either the lateral transition or within the tangent alignment.

REMOVING PAVEMENT MARKINGS

Existing pavement markings that conflict with temporary work zone delineation shall be removed by any method approved by the Engineer, where operations exceed one daylight period; however, painting over existing pavement markings will not be permitted. Full pavement width overlays of either asphalt concrete SP 9.5 or FC-6 is a positive means to achieve obliteration.

SIGNALS

Existing traffic signal operations that require modification in order to carry out work zone traffic control shall be included in the TCP and be approved by the District Traffic Operations Engineer.
Maintain all existing actuated or traffic responsive mode signal operations for main and side street movements for the duration of the Contract and require restoration of any loss of detection within 12 hours. The contractor shall select only detection technology listed on the Department's Approved Products List (APL) and approved by the Engineer to restore detection capabilities. The plans should identify the intersections where Temporary Traffic Detection is required.

WARNING LIGHTS

Warning lights shall be in accordance with Section 6E-5 of the MUTCD except for the application limitations stipulated below:

Flashing

Type A Low Intensity Flashing Warning Lights are to be mounted on barricades, drums, vertical panels or advance warning signs (except as noted below) and are intended to continually warn drivers that they are approaching or proceeding in a hazardous area. Flashing lights shall not be used to delineate the intended path of travel, and not placed with spacings that will form a continuous line to the drivers eye. The Type A light will be used to mark obstructions that are located adjacent to or in the intended travel way. Type A lights shall not be used in conjunction with the first advance warning sign nor the second such sign when used.

Type B High Intensity Flashing Warning Lights shall be mounted on the first advanced warning sign and on the first and second advanced warning sign where two or more signs are used; this applies to all approaches to any work zone.

Steady-Burn

Type C Steady-Burn Lights are to be mounted on barricades, drums, concrete barrier walls or vertical panels and used in combination with those devices to delineate the travel way on lane closures, lane changes, diversion curves and other similar conditions. Steady-burn lights are intended to be placed in a line to delineate the traveled way through and around obstructions in the transition, buffer, work and termination areas of the traffic control zone. Their intended purpose is not for warning drivers that they are approaching or proceeding through a hazardous area.

ROADSIDE BARRIERS

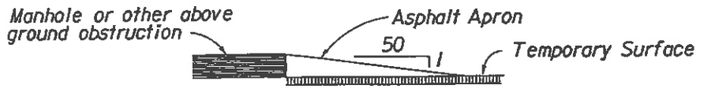
When connecting temporary concrete barrier wall to guardrail the connection shall be made in accordance with Index No. 410.
All guardrail end anchorages to be included in the cost of Temporary Guardrail.

TRUCK MOUNTED ATTENUATORS

Truck-mounted attenuators (TMA) can be used for moving operations and short-term stationary operations. For moving operations, see Index No. 627. For short term, stationary operations, see Part VI of the MUTCD.

MANHOLES/CROSSWALKS

Manholes extending 1" or more above the travel lane and crosswalks having an uneven surface greater than $\frac{1}{2}$" shall have a temporary asphalt apron constructed as shown in the diagram below.



The apron is to be removed prior to constructing the next lift of asphalt
The cost of the temporary asphalt shall be included in the Contract Unit Price for Maintenance of Traffic, L.S.

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Roadway Design Engineer

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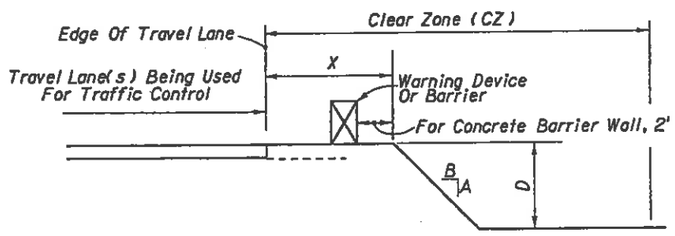
DROPOFF CONDITION

1. A dropoff is defined as a drop in elevation, parallel to the adjacent travel lanes, greater than 3" with slopes (A:B) steeper than 1:4. When dropoffs occur within the clear zone due to construction or maintenance activities, protection devices are required, see chart.
2. Distance X is to be the maximum practical under project conditions.
3. Distance from the travel lane to the barrier or warning device should be maximum practical for project conditions.
4. Any dropoff condition that is created and restored within the same work period will not be subject to the use of barriers; however, warning devices will be required.
5. When permanent curb heights are ≥ 6", no warning device will be required. For curb heights < 6", see chart.



DROPOFF PROTECTION REQUIREMENTS ALL SPEEDS NO CURB AND GUTTER		
X (ft)	D (in)	Device Required
0-CZ	≤3	Sign W8-9AS
0-12	>3	Barrier
12-CZ	>3 to≤5	Warning Device
0-CZ	>5	Barrier

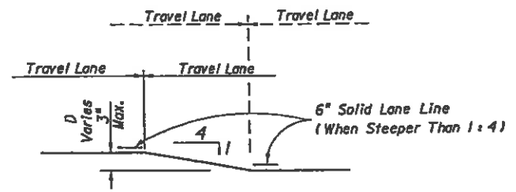
For Clear Zone widths, see Index No. 600 sheet 2.

SHOULDER TREATMENT

NOTES

1. Shoulder treatment may be used in lieu of barrier. Warning devices are required.
2. Daily inspections shall be conducted to assure that no erosion, excessive slopes, rutting, or other adverse conditions exist. Any deficiencies shall be repaired immediately.
3. Compensation for the placement and removal of the material required for the shoulder treatment shall be included in the cost for Maintenance Of Traffic, LS. Use of shoulder treatment in lieu of a barrier is not eligible for VECP consideration.

TRAVEL LANE TREATMENT FOR MILLING OR RESURFACING



NOTES

1. This treatment applies to resurfacing or milling operations between adjacent travel lanes.
2. Whenever there is a difference in elevation between adjacent travel lanes, the W8-9A sign with "UNEVEN PAVEMENT" plaque is required at intervals of $\frac{1}{2}$ mile maximum.
3. If D is $1\frac{1}{2}$" or less, no treatment is required.
4. Treatment allowed only when D is 3" or less.
5. If the slope is steeper than 1:4 (not to be steeper than 1:1), the R4-1 and MOT-1 signs shall be used as a supplement to the W8-9A; this condition should never exceed 3 miles in length.

DROPOFF NOTES

1. These conditions and treatments can be applied only in work areas that fall within a properly signed work zone.
2. The following are defined as acceptable warning devices:
   a. Vertical Panel
   b. Type I Or Type II Barricades
   c. Drum
   d. Cone (where allowed)
   e. Tubular Marker (where allowed)
3. Where a barrier is specified any of the types below may be used as shown in the plans:
   a. Concrete temporary barrier wall;
   b. Temporary guardrail and end anchorages;
   c. Temporary Curb;
   d. Temporary water filled barriers.
4. Warning device spacing shall be as follows:
   A. <u>On Taper</u>
   Maximum spacing between cones and tubular markers shall be 25'. Maximum spacing between Type I or Type II barricades or vertical panels or drums shall be based on the speed limit as follows: 15' up to 25 MPH; 30' for 30 - 40 MPH; 50' for 45 MPH and greater.

   B. <u>On Alignments</u>
   Maximum spacing between cones or tubular markers shall be 25'. and for Type I or Type II barricades, vertical panels or drums is 50' on center for the first 250'; thereafter, cones or tubular markers at 50' on center and Type I or Type II barricades drums or vertical panels at 100' on center.

DROPOFFS IN WORK ZONES

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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL THROUGH WORK ZONES

GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES

	Names	Dates
Designed By		12/97
Drawn By		12/97
Checked By		12/97

Approved By: James A. Trull, Roadway Design Engineer

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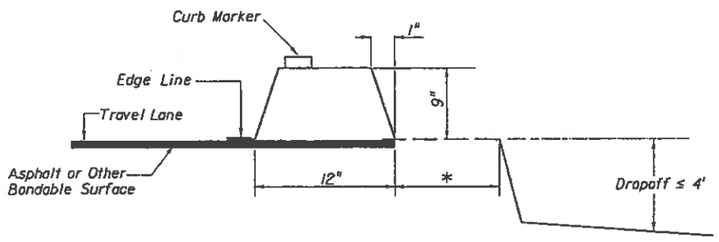
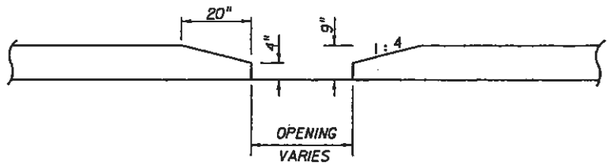
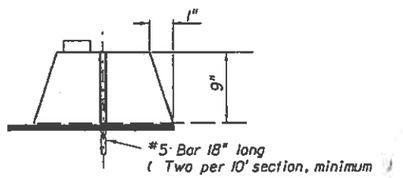


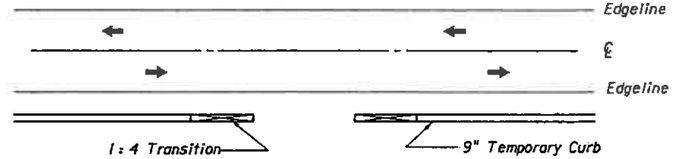
TEMPORARY CURB DETAIL



ELEVATION



PINNING DETAIL



PLAN

TEMPORARY CURB OPENINGS

* 12" (or more) is desirable in order to enhance/improve stability. However, it is recognized that there may be cases where 12" (or more) is not feasible or obtainable. In these instances, engineering judgement must be used to balance this offset distance with the depth of dropoff, soil type, etc.

TEMPORARY CURB

1. Application: Temporary curb shall not be used on facilities with posted speeds greater than 45 mph or dropoffs greater than 4' deep. It shall not be used on interstate or limited access facilities.

2. Edgelines shall be provided in accordance with the traffic striping specifications, including reflective beads. The face of the curb shall also be painted (white or yellow as appropriate). A Curb Marker shall be placed on the temporary curb every 10' (Colorless when curb is on the right side of the lane, and amber when the curb is on the left side of the lane).

3. The temporary asphalt curb is to be bonded to the surface by use of a tack coat. It is important that the curb adhere to the surface in order to provide the strength necessary to redirect errant vehicles. Concrete curb and curb of other approved materials shall be pinned to a paved surface as shown in detail.

4. When temporary curb is call for in the plans the contractor has the option to construct temporary curb of asphalt, Class I concrete, or other Department approved material. Temporary Traffic Separator as shown in Index 614 shall not be allowed as a substitute for Temporary Curb.

5. When concrete is used to construct temporary curb, $\frac{1}{2}$" open joints shall be constructed every 10' in order to control cracking.

6. Drainage needs must be addressed when using temporary curb. If driveways or other accesses are not frequent enough to allow for water runoff, the designer may need to specify the need for "drainage slots" at an appropriate spacing based on grades, number of lanes, etc. Typically, a drainage slot should be 12" wide (a break in the curb) at 50' spacings.

7. At openings such as driveways and business accesses, the temporary curb should be transitioned in height from 4" up to 9" at a 1 : 4 slope in order to eliminate a potential hazard at the end points.

8. Temporary curb shall be paid for under the contract unit price for Temporary Curb, LF, and will include all materials (including Curb Markers) and work necessary to construct, maintain and remove the temporary curb. Any damage to existing pavement caused by the removal of temporary curb shall be satisfactorily repaired and the cost of such repairs are to be included in the cost of the temporary curb.

NOTICE

THE TEMPORARY CURB SHOWN ON THIS INDEX CAN BE USED ON STATE HIGHWAY PROJECTS LET TO CONTRACT THROUGH SEPTEMBER 30, 2002. TEMPORARY CURB AND BARRIERS OTHER THAN THE PRECAST TEMPORARY CONCRETE BARRIER WALL DETAILED ON INDEX 415 THAT ARE USED FOR SHIELDING DROPOFFS ON STATE HIGHWAY PROJECTS LET TO CONTRACT AFTER OCTOBER 1, 2002 MUST MEET NCHRP 350 CRITERIA AND MUST BE INCLUDED ON THE QUALIFIED PRODUCTS LIST. IF AND WHEN A GENERIC TEMPORARY CURB OR LOW PROFILE TYPE BARRIER IS APPROVED FOR USE ON STATE HIGHWAY PROJECTS, THE DESIGN WILL BE POSTED ON THE ROADWAY DESIGN WEB SITE.

TEMPORARY CURB

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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL THROUGH WORK ZONES

GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES

	Names	Dates
Designed By		
Drawn By		
Checked By		

Approved By _____ Roadway Design Engineer

Revision	Sheet No.	Index No.
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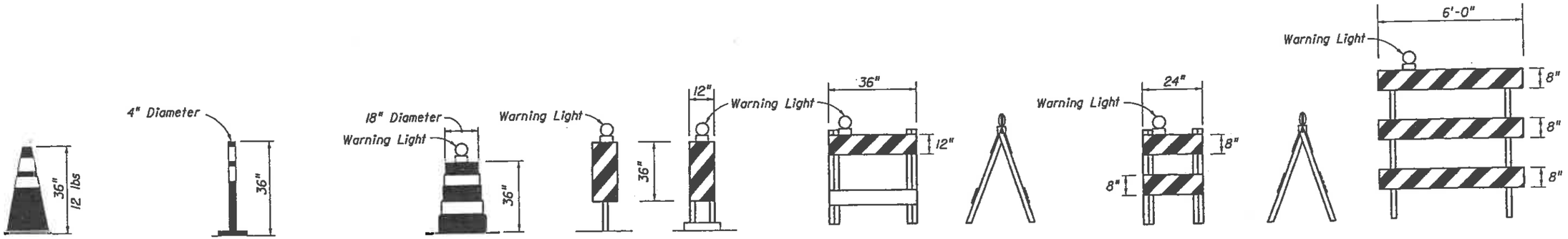


CONES

TUBULAR NON-FIXED MARKER TO BE USED DURING DAYLIGHT ONLY.

STEEL DRUMS NOT PERMITTED

POST MOUNT

A-FRAME

TUBULAR MARKER

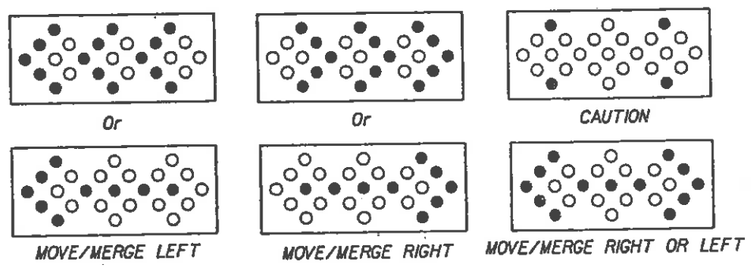
PLASTIC DRUMS

VERTICAL PANEL

TYPE I BARRICADE

TYPE II BARRICADE

TYPE III BARRICADE



● Minimum Required Lamps

○ Additional Lamps Allowed

MODES

ADVANCE WARNING ARROW PANELS

CHANNELIZING AND LIGHTING DEVICE AND ADVANCE WARNING ARROW PANEL NOTES

1. Only approved traffic control devices included on the Qualified Products List (QPL) may be used.
2. The FDOT approval number shall be engraved on the device at a convenient and readily visible location. Where engraving is not practical a water-resistant type label may be used.
3. The details shown on this sheet are for the following purposes: (a) For ease of identification and (b) To provide information that supplements or supercedes that provided by the MUTCD.
4. The Type III Barricade shall have a unit length of 6'-0" only. When barricades of greater lengths are required those lengths shall be in multiples of the 6'-0" unit. Signs used in conjunction with Type III Barricades may be mounted on or above the Barricade. These Signs should not cover more than 50 percent of the top two rails or 33 percent of the total area of the three rails.
5. During hours of darkness, warning lights shall be used on drums, vertical panels, Type I, Type II and Type III barricades in accordance with 'Warning Lights' Sheet 5.
6. Ballast shall not be placed on top rails or any striped rails or higher than 13" above the driving surface.
7. For rails less than 3'-0" long, 4" stripes shall be used.
8. When Advance Warning Arrow Panels are used at night, the intensity of the flashers shall be reduced during darkness when lower intensities are desirable.
9. A single arrow panel shall not be used to shift traffic laterally more than one lane. When arrow panels are used to close multiple lanes, a single panel shall be used at the merging taper for each closed lane.
10. Cones Shall:
    1. Be used only in work zones where workers are present.
    2. Not exceed 1 mile in length of use at any one time nor exceed a 12 hour work period.
    3. Have as a minimum, one designated person for the purpose of continuous monitoring and maintenance of cones during lane closures.
    4. Be reflectorized as per the MUTCD with Department approved reflective collars when used at night.
11. The splicing of sheeting is not permitted on either channelizing devices or MOT signs.

IDENTIFICATIONS - CHANNELIZING AND LIGHTING DEVICES AND ADVANCE WARNING ARROW PANEL MODES

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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL THROUGH WORK ZONES

GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES

	Names	Dates
Designed By		12/07
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Roadway Design Engineer

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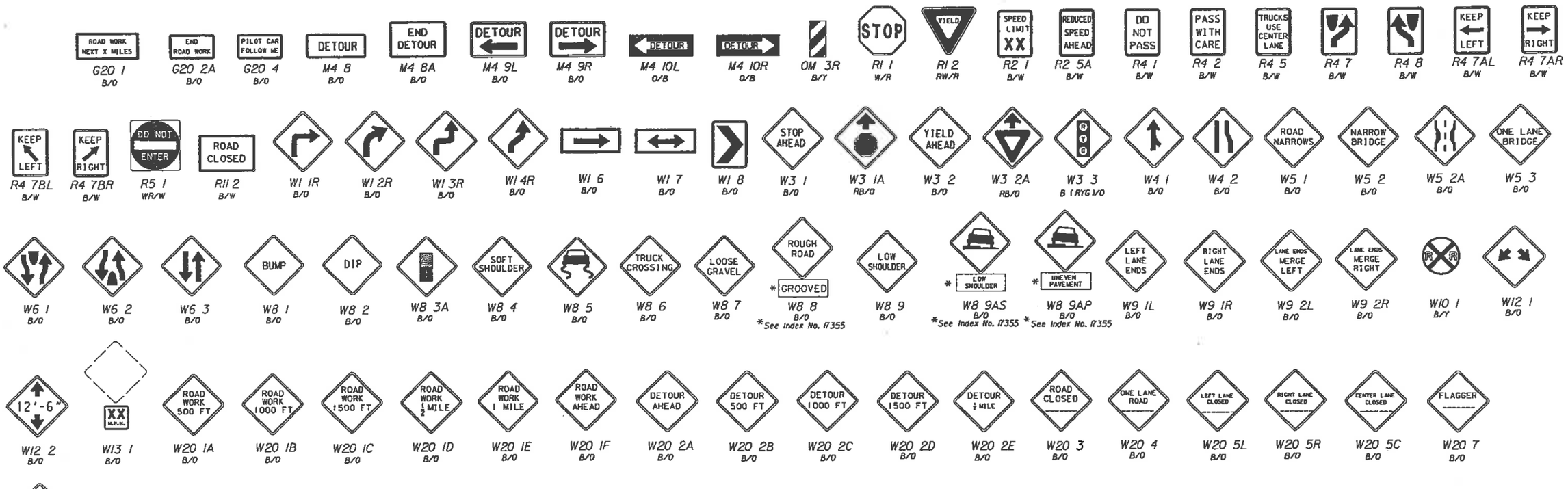

COLOR CODES

Legend and/or Symbol / Background

O-Orange (Reflectorized) R-Red (Reflectorized)
B-Black (Non-Reflectorized) Y-Yellow (Reflectorized)
W-White (Reflectorized) G-Green (Reflectorized)

Note:

1. When standard orange flags or flashing warning lights are used in conjunction with signs, they shall not block the sign face.
2. The sign shields, symbols and messages contained on this sheet are provided for ready reference to those signs used in the development of the 600 series Design Standards and are commonly used in the development of traffic control plans.
   For additional signs and sign detail information refer to the STANDARD HIGHWAY SIGNS MANUAL as specified in the MUTCD. Special signs for traffic control plans will be as approved by the State Traffic Plans Engineer.
   The sign codes shown on this sheet are for the purpose of identifying cell names found in the Traffic Control Cell Library (TCZ.Cel). The STANDARD HIGHWAY SIGNS MANUAL should be referenced for the official sign codes for use in the development of traffic control plans. See Index No. 17355 for MOT sign details.

COMMONLY USED WARNING AND REGULATORY SIGNS IN WORK ZONES

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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL THROUGH WORK ZONES

GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES

	Names	Dates
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Checked By		12/87

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