SECTION III

COMPUTATION BOOK MODEL FOR NEW BRIDGE CONSTRUCTION PROJECT

PROJECT COMPUTATION BOOK

FINANCIAL PROJECT NO. 408460-1-52-01

HILLSBOROUGH COUNTY

I-75 (SR 93A)/COUNTY ROAD 581 (BRUCE B. DOWNS) FLYOVER FROM THE HILLSBOROUGH RIVER TO NORTH OF THE I-75/CR 581 INTERCHANGE

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.

PLAN QUANTITY CONCEPT SIGNATURE
THE DESIGN ENGINEER RESPONSIBLE FOR CALCULATIONS: ALL SUPPORT MEASUREMENTS AND COMPUTATIONS HAVE BEEN INCLUDED FOR ALL PLAN QUANTITY ITEMS WITHIN THIS COMPUTATION BOOK.

NOTE: Designer has option to sign coversheet instead of individual Comp Book Sheet

Revision 1:
8/03/06 RH Revised Sheets:
1-4, 11, 16,17,19, 21, 35-37, 76

Revision 2:
2/09/07 RWJ Revised Pay Items:
102-60,102-71-27,102-74-1,102-74-2,102-76,102-99,
425-2-61,425-2-91,430-171-129,430-171-229,575-1-1
Added Pay Item 730-76-122

Revision 3:
4/27/07 RWJ Revised Pay Items:
102-60,102-71-11,102-74-1,102-79,102-89-7,102-911-1,
102-911-2,339-1,430-171-140,430-171-147

PREPARED BY:

URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
(813) 286-1711

PREPARED BY: Robb Hideck

CHECKED BY: Robert W. Joel, P.E.

ENGINEER OF RECORD: Robert W. Joel, P.E.

DATE: April 27, 2007

P.E. NO.: 52479

1-75 (SR 93A)/COUNTY ROAD NO 581 (BRUCE B DOWNS) FLYOVER
BRIDGE NO. 100712

INDEX

DESCRIPTION		PAGE NUMBER
COMPUTATION BOOK PAY ITEM SUMMARY SHEET - BRIDGE 100712 (TOTAL)		1 to 2
PLAN AND ELEVATION - BRIDGE 100712		3 to 3C
400-2-4	CONCRETE CLASS II (SUPERSTRUCTURE)	4 to 4H
400-2-10	CONCRETE CLASS II (APPROACH SLABS)	5 to 5B
400-4-5	CONCRETE CLASS IV (SUBSTRUCTURE)	6 to 6AB
400-4-25	CONCRETE CLASS IV (MASS-SUBSTRUCTURE)	7 to
400-9	BRIDGE DECK GROOVIG AND PLANING (DECK THICKNESS 8.5" OR	8 to 8A
415-1-4	REINFORCED STEEL (SUPESTRUCTURE)	4 to 4H
415-1-5	REINFORCED STEEL (SUBSTRUCTURE)	6 to 6AB
415-1-9	REINFORCE STEEL (APPROACH SLABS)	5 to 5B
455-34-5	PRESTESSED CONCRETE PILING (24" SQ.)	9 to 9B
455-133-2	STEEL SHEET PILING (TEMPORARY-CRITICAL)	10 to 10A
455-137	TEST LOAD (DYNAMIC)	11 to 11
455-143-5	TEST PILES (PRESTRESSED CONCRETE) (24" SQ.)	12 to 12
459-71	POLYETHYLENE SHEETING ON CONCRETE PILES	13 to 13A
460-2-2	STRUCTURAL STEEL (LOW ALLOY)	14 to 14M
460-7-5	EXPANSION JOINT SEAL (MODULAR)	15 to 15A
461-113-17	MULTIROTATIONAL BEARING ASSEMBLY-FIXED (1501-1750 KIPS)	16 to 16A
461-113-19	MULTIROTATIONAL BEARING ASSEMBLY-FIXED (>=2001 KIPS)	17 to 17
461-114-14	MULTIROTATIONAL BEARING ASSEMBLY-EXPANSION (751-1000 KIPS)	18 to 18
461-114-19	MULTIROTATIONAL BEARING ASSEMBLY-EXPANSION (>=2001 KIPS)	19 to 19
506-2	BRIDGE DRAIN PIPING	20 to 20D
506-3	BRIDGE DRAINS	21 to 21
521-5-1	CONCRETE TRAFFIC RAILING BARRIER (32" F-SHAPE)	22 to 22A
521-5-2	CONCRETE TRAFFIC RAILING BARRIER (42" F-SHAPE)	23 to 23A
521-8-1	CONCRETE TRAFFIC RAILING BARRIER (RETAINING WALL SYSTEM MOUNTED WITH SLEEPER SLAB) (32" F-SHAPE)	24 to 24A
524-2-2	SLOPE PAVEMENT CONCRETE (4")	25 to 25A
548-12	RETAINING WALL SYSTEM (PERMANENT) (EXCLUDINGBARRIER)	26 to 26D
548-13	RETAINING WALL SYSTEM (TEMPORARY) (EXCLUDINGBARRIER)	27 to 27C

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

COMPUTATION BOOK PAY ITEM SUMMARY SHEET

FORM 700-050-10
CONSTRUCTION
05/08

Date: 2/15/2006

Contract ID: 7102 Fin. Proj. ID: 408460-1-52-01 Managing District: 7 FAP No.

Fin Proj. Regular Work Paid: $ 21,433,152.93

FINAL QUANTITY	UNIT MEASURE	ITEM CODE			S.A. No.	PAY ITEM DESCRIPTION	~~Hum. Bird Doc. No. Or~~ Page No.	UNIT PRICE	Item Paid Amount	Line Item Adjusted Amount	Total Item Paid Amount
2,775.100	CY	400	2	4		CONC CLASS II, (SUPERSTRUCTURE)	4	$ 611.1500			$ 1,696,002.37
110.200	CY	400	2	10		CONCRETE CLASS II, (APPROACH SLABS)	5	$ 331.3900			$ 36,519.18
76.100	CY	400	4	5		CONCRETE CLASS IV, (SUBSTRUCTURE)	6	$ 1,610.2800			$ 122,542.31
2,438.000	CY	400	4	25		CONCRETE CLASS IV, MASS, SUBSTRUCTURE	7	$ 450.9200			$ 1,099,342.96
8,906.000	SY	400	9			BRIDGE DECK GROOVING & PLANING, (DECK 8.5"&>)	8	$ 4.1700			$ 37,138.02
868,716.000	LB	415	1	4		REINFORCING STEEL - (SUPERSTRUCTURE)	4	$ 0.8400			$ 729,721.44
457,647.000	LB	415	1	5		REINFORCING STEEL- (SUBSTRUCTURE)	6	$ 0.8400			$ 384,423.48
21,498.000	LB	415	1	9		REINFORCING STEEL- (APPROACH SLABS)	5	$ 0.8400			$ 18,058.32
21,712.000	LF	455	34	5		PRESTRESSED CONCRETE PILING, (24" SQ)	9	$ 103.5200			$ 2,247,626.24
2,079.000	SF	455	133	2		SHEET PILING STEEL, (TEMPORARY-CRITICAL)	10	$ 7.2500			$ 15,072.75
16.000	EA	455	137			TEST LOAD- (DYNAMIC)	11	$ 2,360.1100			$ 37,761.76
1,865.000	LF	455	143	5		TEST PILES-(PRESTRESSED CONCRETE) (24" SQ)	12	$ 145.5500			$ 271,450.75
850.000	SY	459	71			PILES, POLYETHYLENE SHEETING	13	$ 4.5000			$ 3,825.00
1.000	LS	460	2	2		STRUCT STEEL, (LOW ALLOY)	14	$ 12,787,000.0000			$ 12,787,000.00
92.000	LF	460	7	5		EXPANSION JOINT SEAL, (MODULAR)	15	$ 541.0000			$ 49,772.00
2.000	EA	461	113	17		MULTIROTATIONAL BEARING ASSEM-FIXED, (F&I) (1501-1750 KIPS)	16	$ 15,281.8800			$ 30,563.76
2.000	EA	461	113	19		MULTIROTATIONAL BEARING ASSEM-FIXED, (F&I) (>= 2001KIPS)	17	$ 17,232.4200			$ 34,464.84
4.000	EA	461	114	14		MULTIROTATIONAL BEARING ASSEM EXP, (F&I) (751- 1000KIPS)	18	$ 14,546.7500			$ 58,187.00
8.000	EA	461	114	19		MULTIROTATIONAL BEARING ASSEM-EXP,(F&I) (>=2001KIPS)	19	$ 25,007.5400			$ 200,060.32
272.000	LF	506	2			BRIDGE DRAINAGE PIPE	20	$ 71.8400			$ 19,540.48
4.000	EA	506	3			BRIDGE DRAINS	21	$ 3,923.5100			$ 15,694.04
120.000	LF	521	5	1		CONCRETE TRAFFIC RAILING, BRIDGE (32" F - SHAPE)	22	$ 85.5800			$ 10,269.60
3,578.000	LF	521	5	2		CONCRETE TRAFFIC RAILING, BRIDGE (42" F - SHAPE)	23	$ 89.3300			$ 319,622.74
1,364.000	LF	521	8	1		CONCRETE TRAFFIC RAILING BARRIER, (RET WALL SYS) (32" F)	24	$ 284.6800			$ 388,303.52
28.000	SY	524	2	2		CONCRETE SLOPE PAVEMENT,NON REINFORCED, (4")	25	$ 80.9400			$ 2,266.32
25,538.000	SF	548	12			RETAINING WALL SYSTEM, (PERMANENT) EXCLUDING BARRIER	26	$ 27.7300			$ 708,168.74
7,317.000	SF	548	13			RETAINING WALL SYSTEM,(TEMPORARY) EXCLUDING BARRIER	27	$ 15.0000			$ 109,755.00
									PAGE TOTAL		$ 21,433,152.93

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

COMPUTATION BOOK PAY ITEM SUMMARY AND CERTIFICATION SHEET

FORM 700-050-10
CONSTRUCTION
05/08

DATE: 2/15/2006

CONTRACT ID: 7102 FIN PROJ ID: 408460-1-52-01 MANAGING DISTRICT: 7 FAP NO.

CONTRACT ADJUSTMENTS				
ADJUSTMENT DESCRIPTION	AMOUNT		ADJUSTMENT DESCRIPTION	AMOUNT
GASOLINE				
DIESEL	$ 4,762.34			
BITUMINOUS MATERIAL				
STEEL ADJUSTMENTS				
LIQUIDATED SAVINGS				
LIQUIDATED DAMAGES				
INCENTIVES/DISINCENTIVES				
NO EXCUSE BONUS				
LANE RENTAL				
ARBITRATION ORDERS				
COURT ORDERS				
DAMAGE RECOVERY				

TOTAL AMOUNT OF CONTRACT ADJUSTMENTS $ 4,762.34

TOTAL AMOUNT OF CONTRACT (w/Cont. Adj.) $ 21,437,915.27

DFEO USE ONLY

PAR REVIEWS

Johnny Vaseline 7/11/2006

Reviewer's Signature Date:

Per R & AM, Chapter 4

CERTIFICATION STATEMENT:

This block shall be signed by an F.E. Qualified Person(s) responsible for the accuracy of the Final Estimates Package, as submitted, in accordance with Chapter 4 of the R & AM.

I CERTIFY, BASED ON MY PERSONAL KNOWLEDGE AND WELL-FOUNDED BELIEF, THE QUANTITIES ARE ACCURATE AND CONFORM TO THE CONTRACT, PLAN DIMENSIONS, SPECIFICATION TOLERANCES, MANUALS, AND THAT THIS FINAL ESTIMATE, AS SUBMITTED, IS TRUE AND CORRECT.

Title: Office Engineer Signature: Johnny Johns

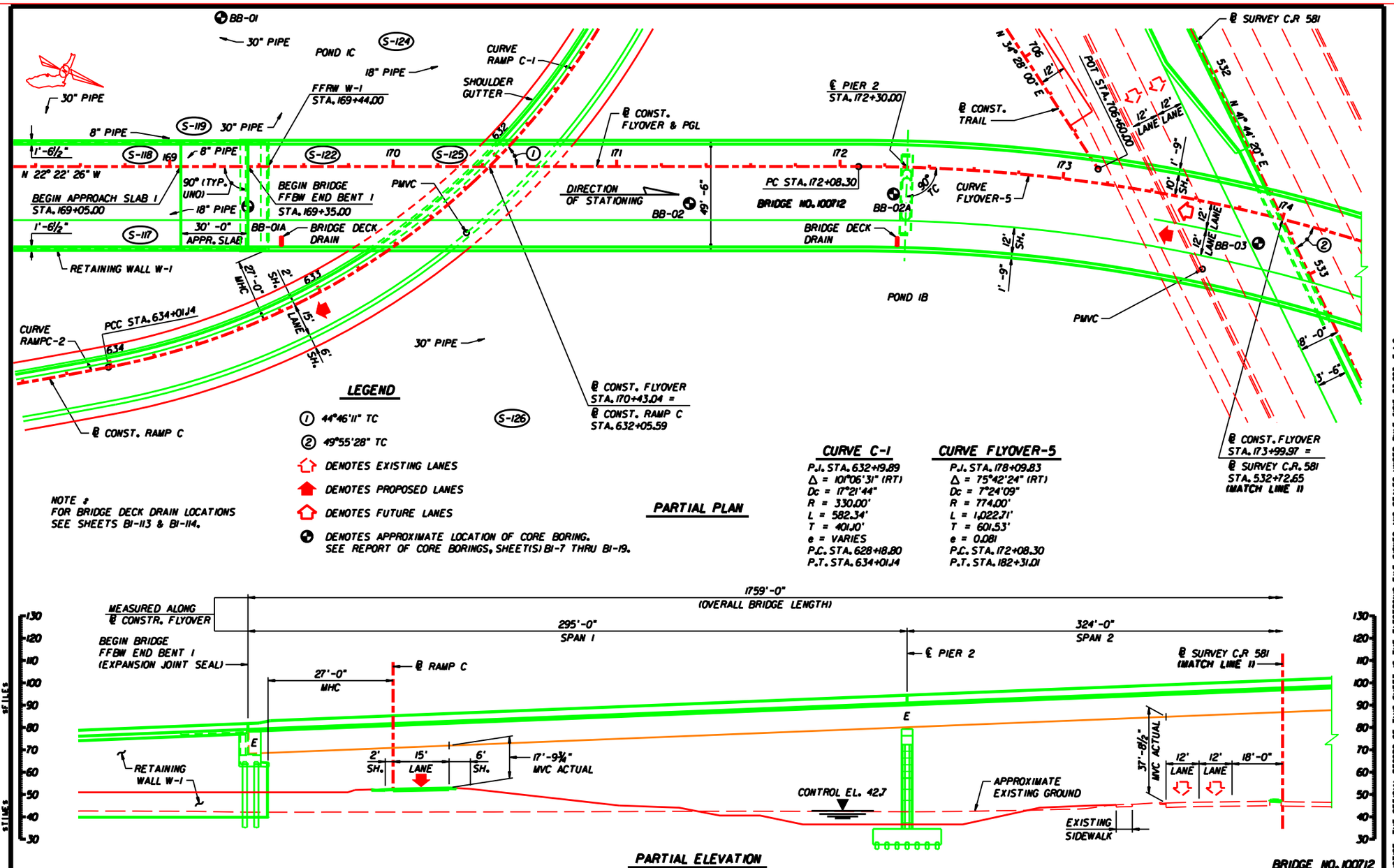
And/Or Title: Project Administrator Signature: Manor Majors

Signed Manor Majors

Project Administrator (Print): Manor Majors

Signed Willie B. Long

Resident Engineer (Print): Willie B. Long



NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
DRAWN BY	JLS	12/04
CHECKED BY	SLM	12/04
DESIGNED BY	DRG	12/04
CHECKED BY	SLM	5/05
APPROVED BY	S.L. MONTGOMERY	

ENGINEER OF RECORD: URS
URS CORPORATION SOUTHERN
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
CERTIFICATE OF AUTHORIZATION NO. 00080893A
SCOTT L. MONTGOMERY, P.E. NO. 42006

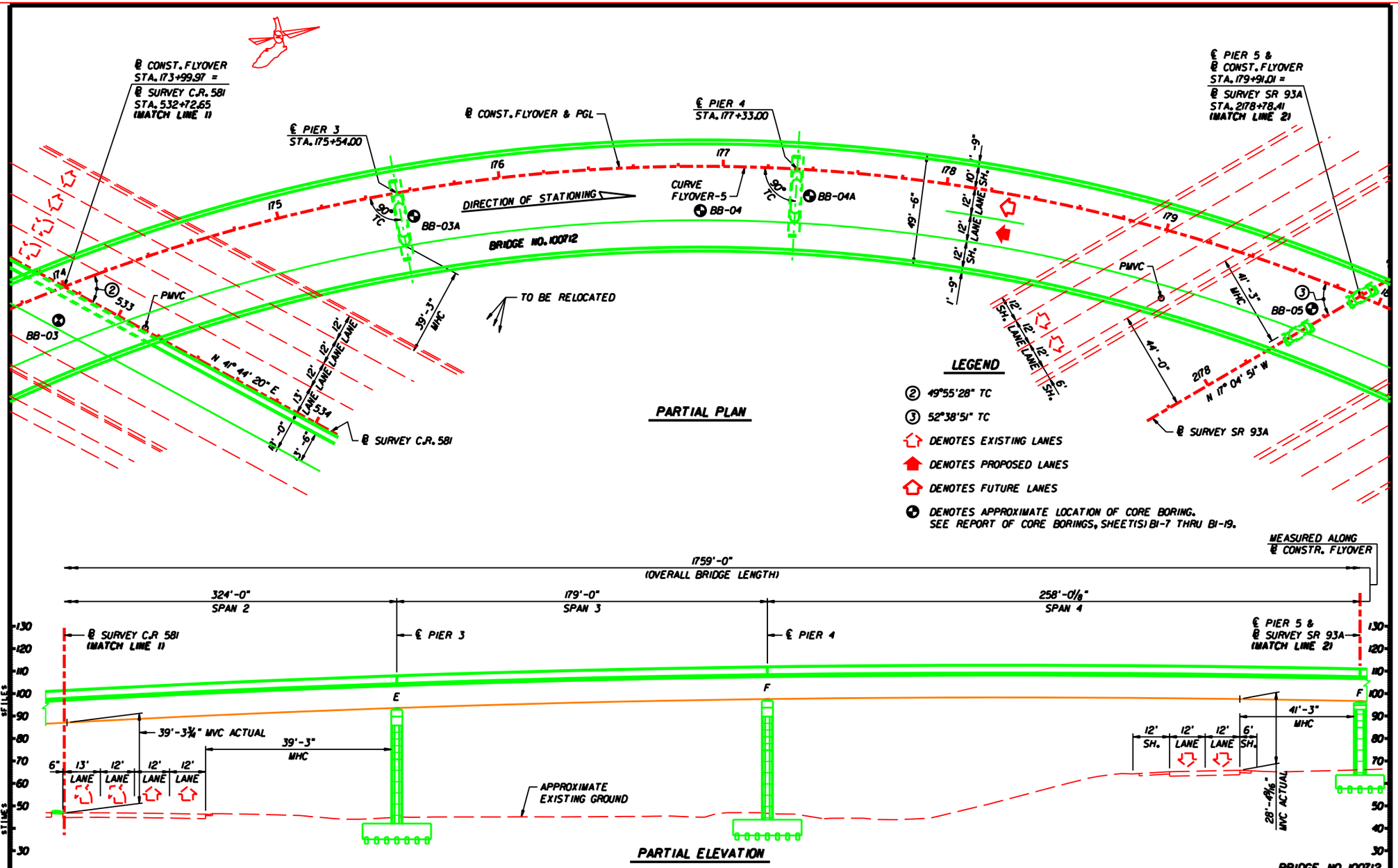
FLORIDA DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
I-75	HILLSBOROUGH	408460-1-52-01

SHEET TITLE: PLAN AND ELEVATION (1 OF 4)

PROJECT NAME: I-75 (SR 93A) OVER C.R. NO. 581 (BRUCE B. DOWNS) FLYOVER

SHEET NO. B1-1



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REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
DRAWN BY	JLS	12/04
CHECKED BY	SLM	12/04
DESIGNED BY	DBG	12/04
CHECKED BY	SLM	5/05
APPROVED BY	S.L. MONTGOMERY	

ENGINEER OF RECORD:
URS
URS CORPORATION SOUTHERN
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
CERTIFICATE OF AUTHORIZATION NO. 00080003A
SCOTT L. MONTGOMERY, P.E. NO. 42006

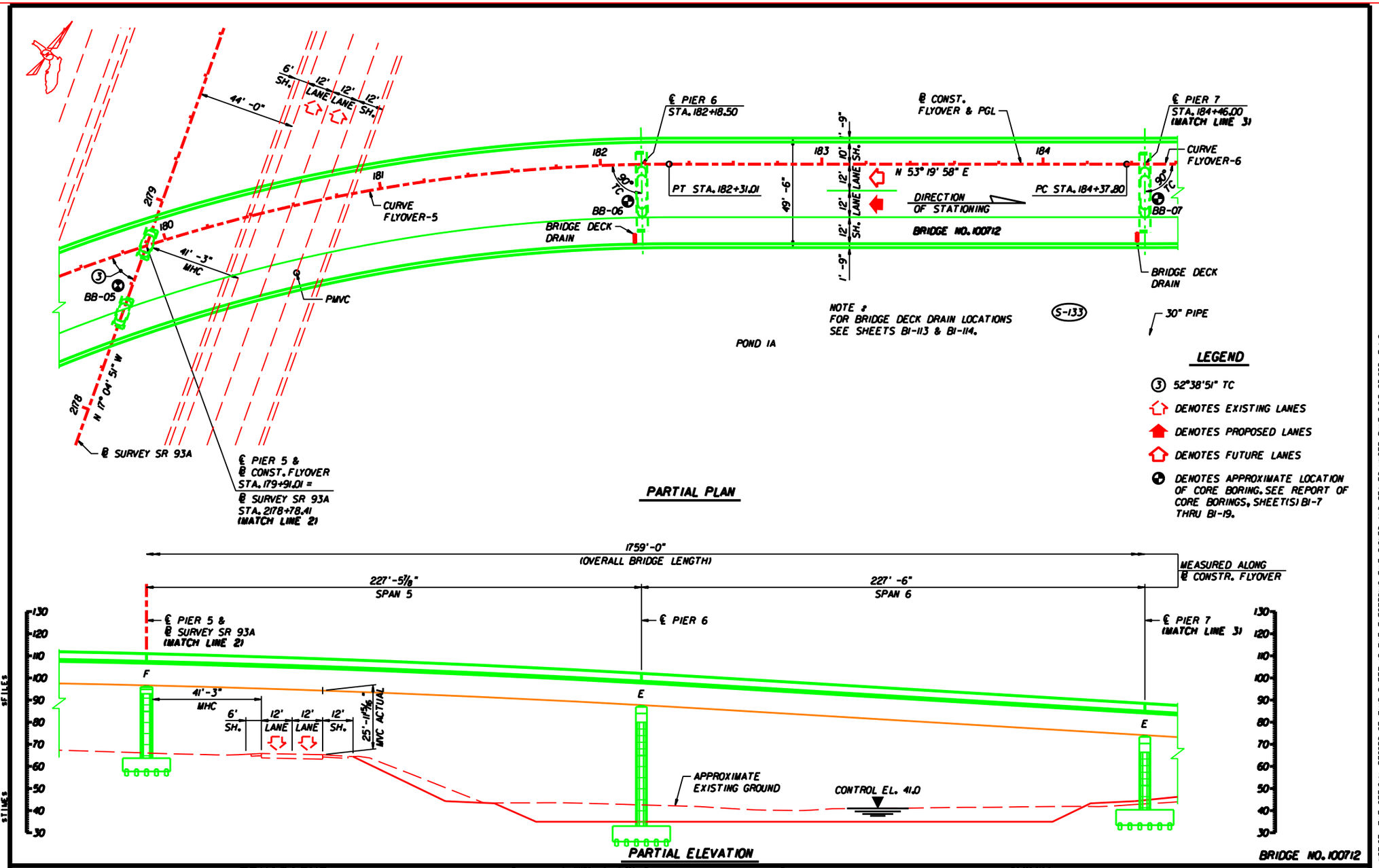
FLORIDA DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
60003A	HILLSBOROUGH	408460-1-52-01

SHEET TITLE: PLAN AND ELEVATION (2 OF 4)

PROJECT NAME: I-75 (SR 93A) OVER C.R. NO. 581 (BRUCE B. DOWNS) FLYOVER

SHEET NO. BI-2



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REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
DRAWN BY	JLS	12/04
CHECKED BY	SLM	12/04
DESIGNED BY	DRG	12/04
CHECKED BY	SLM	5/05
APPROVED BY	S.L. MONTGOMERY	

ENGINEER OF RECORD:
URS
URS CORPORATION SOUTHERN
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
CERTIFICATE OF AUTHORIZATION NO. 00080933A
SCOTT L. MONTGOMERY, P.E. NO. 42006

FLORIDA DEPARTMENT OF TRANSPORTATION

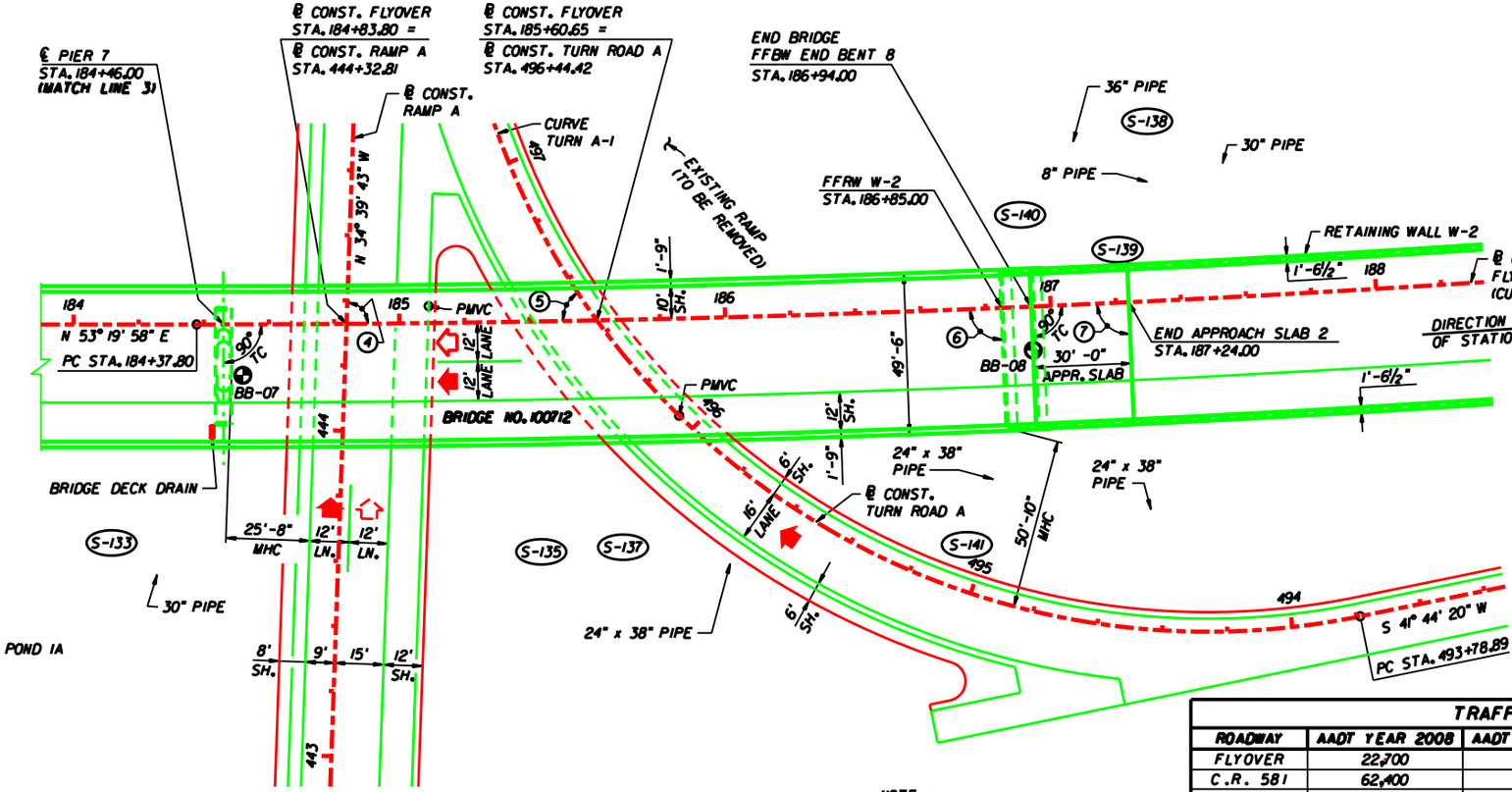
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93A	HILLSBOROUGH	408460-1-52-01

SHEET TITLE: PLAN AND ELEVATION (3 OF 4)

PROJECT NAME: I-75 (SR 93A) OVER C.R. NO. 581 (BRUCE B. DOWNS) FLYOVER

SHEET NO. BI-3

$DATE$ $TIME$ $FILE$



CURVE FLYOVER-6

P.I. STA. 188+05.84
Δ = 7°01'13" (LT)
Dc = 0°57'18"
R = 6,000.00'
L = 735.15'
T = 368.04'
e = VARIES
P.C. STA. 184+37.80
P.T. STA. 191+72.95

CURVE TURN A-1

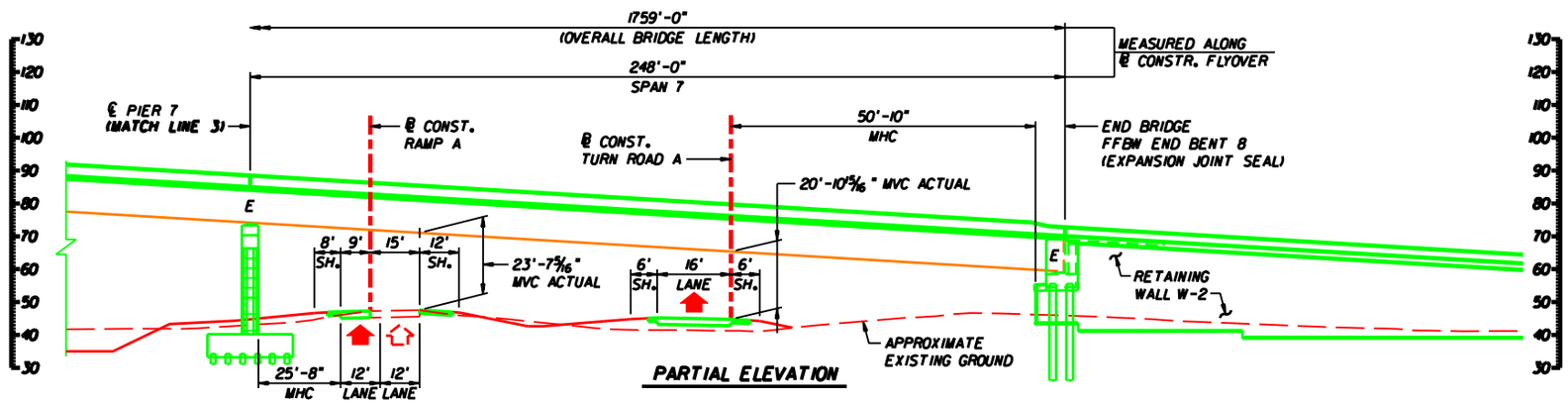
P.I. STA. 496+61.25
Δ = 101°11'06" (RT)
Dc = 24°41'47"
R = 232.00'
L = 409.72'
T = 282.37'
e = 0.00
P.C. STA. 493+78.89
P.T. STA. 497+88.60

PARTIAL PLAN

NOTE :
FOR BRIDGE DECK DRAIN LOCATIONS SEE SHEETS BI-113 & BI-114.

TRAFFIC DATA

ROADWAY	AADT YEAR 2008	AADT YEAR 2028	DESIGN SPEED	% TRUCKS
FLYOVER	22,700	30,900	40 MPH	1.0
C.R. 581	62,400	73,600	45 MPH	----
I-75	94,100	139,100	70 MPH	6.0
RAMP A	4,650	8,500	50 MPH	1.0



PARTIAL ELEVATION

LEGEND

- (4) 87°33'20" TC
- (5) 55°09'23" TC
- (6) 90°05'09" TC
- (7) 89°42'48" TC
- DENOTES EXISTING LANES
- DENOTES PROPOSED LANES
- DENOTES FUTURE LANES
- DENOTES APPROXIMATE LOCATION OF CORE BORING. SEE REPORT OF CORE BORINGS, SHEET(S) BI-7 THRU BI-19.

BRIDGE NO. 100712

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 60Q-23.003, F.A.C.

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
DRAWN BY	JLS	12/04
CHECKED BY	SLM	12/04
DESIGNED BY	DMG	12/04
CHECKED BY	SLM	5/05
APPROVED BY	S.L. MONTGOMERY	

ENGINEER OF RECORD: URS
URS CORPORATION SOUTHERN
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
CERTIFICATE OF AUTHORIZATION NO. 00000823A
SCOTT L. MONTGOMERY, P.E. NO. 42006

FLORIDA DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93A	HILLSBOROUGH	408460-1-52-01

SHEET TITLE: PLAN AND ELEVATION (4 OF 4)

PROJECT NAME: I-75 (SR 93A) OVER C.R. NO. 581 (BRUCE B. DOWNS) FLYOVER

SHEET NO. BI-4

$FILES
$TIMES
$DATES

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

CONCRETE AND REINFORCING STEEL COMPUTATIONS

FORM 700-050-07
CONSTRUCTION
06/02

PAY ITEM NO. 400-2-4

PAY ITEM NO. 415-1-4

		PAY ITEM DESCRIPTION	CONC CLASS II(SUPERSTRUCTURE)					PAY ITEM DESCRIPTION	REINF STEEL (SUPERSTRUCTURE)				
COMPONENT NAME	NO. REQ	DESIGN ORIGINAL		CONSTRUCTION FINAL				DESIGN ORIGINAL		CONSTRUCTION FINAL			
		VOLUME {CY}	REFERENCE/REMARKS	VOLUME {CY}	OVER/UNDER RUN	REF.	REMARKS.	WEIGHT {LB}	REFERENCE/REMARKS	WEIGHT {LB}	OVER/UNDER RUN	REF.	REMARKS.
Bridge 100712													
Superstructure		2,775.1	See Page 4A - 4H for back-up documents	2,775.1				868,716		✓			See Design Page 4A-4H
		2,775.1	<PAGE TOTAL>	2,775.1				868,716	<PAGE TOTAL>	868,716			
		2,775.1	<PROJECT GRAND> <TOTAL>	2,775.1				868,716	<PROJECT GRAND> <TOTAL>	868,716			

Construction Option:
Place Designer quantity or place check mark if final quantity does not change.

Not Showing all back-up data

If the above item is under the **Plan Quantity Concept**, then the block below **must** be appropriately filled out.

Plan Quantity Concept Signature Block
Design Engineers Responsible for Calculations: All support measurements and computations have been included for this Plan Quantity Item.

Signature: Thomas S. Peake **Print Name:** Thomas S. Peake

NOTES FOR EXPLANATION OF OVER/UNDER RUN

CONCRETE:	STEEL:

URS Corporation

Project: BBD Flyover
Project Number: 12002951.00005.
Description: Superstructure Concrete Qty's

Designed By: TSP
Date: 08-Sep-05

Checked By: MH
Date: 9/9/05

Deck Concrete

Location	Length Rt ~~Gutter~~ Copin	Length Left ~~Gutter~~ Copin	Average Length	Width	Deck Thickness	Volume	Volume
Pour 1	374.839 ft	373.344 ft	374.091 ft	49.500 ft	9.500 in	14659.70 ft^3	542.95 yd^3
Pour 2	218.844 ft	226.589 ft	222.716 ft	49.500 ft	9.500 in	8727.69 ft^3	323.25 yd^3
Pour 3	214.318 ft	228.729 ft	221.523 ft	49.500 ft	9.500 in	8680.95 ft^3	321.52 yd^3
Pour 4	223.344 ft	238.359 ft	230.852 ft	49.500 ft	9.500 in	9046.50 ft^3	335.06 yd^3
Pour 5	297.198 ft	302.500 ft	299.849 ft	49.500 ft	9.500 in	11750.33 ft^3	435.20 yd^3
Pour 6	204.724 ft	215.500 ft	210.112 ft	49.500 ft	9.500 in	8233.76 ft^3	304.95 yd^3
Pour 7	171.474 ft	183.000 ft	177.237 ft	49.500 ft	9.500 in	6945.47 ft^3	257.24 yd^3
Pour 8	6.000 ft	6.000 ft	6.000 ft	49.500 ft	9.500 in	235.13 ft^3	8.71 yd^3

Haunch

Right Box

Plate	Section ID	Top Flange Length	Top Flange Width	Top Flange Thickness	Length * Width	Length * Thickness	Average Width	Average Thickness
1	1	79.771 ft	18.000 in	1.250 in	1435.875 in	99.714 in		
2	2	126.000 ft	18.000 in	1.750 in	2268.000 in	220.500 in		
3	3	52.000 ft	26.000 in	2.500 in	1352.000 in	130.000 in		
4	4	13.000 ft	36.000 in	2.500 in	468.000 in	32.500 in		
5	5	46.000 ft	36.000 in	3.750 in	1656.000 in	172.500 in		
6	4	11.250 ft	36.000 in	2.500 in	405.000 in	28.125 in		
7	3	58.750 ft	26.000 in	2.500 in	1527.500 in	146.875 in		
8	6	118.115 ft	18.000 in	1.750 in	2126.063 in	206.701 in		
9	7	48.000 ft	18.000 in	1.250 in	864.000 in	60.000 in		
10	8	39.000 ft	28.000 in	1.250 in	1092.000 in	48.750 in		
11	9	30.000 ft	28.000 in	2.500 in	840.000 in	75.000 in		
12	8	19.000 ft	28.000 in	1.250 in	532.000 in	23.750 in		
13	10	104.990 ft	18.000 in	1.250 in	1889.813 in	131.237 in		
14	11	22.000 ft	18.000 in	1.250 in	396.000 in	27.500 in		
15	12	24.000 ft	18.000 in	2.500 in	432.000 in	60.000 in		
16	11	51.000 ft	18.000 in	1.250 in	918.000 in	63.750 in	21.044 in	1.579 in
17	13	94.297 ft	18.000 in	1.250 in	1697.344 in	117.871 in		
18	14	29.000 ft	18.000 in	1.250 in	522.000 in	36.250 in		
19	15	28.000 ft	28.000 in	1.250 in	784.000 in	35.000 in		
20	16	30.000 ft	28.000 in	2.500 in	840.000 in	75.000 in		
21	15	30.000 ft	28.000 in	1.250 in	840.000 in	37.500 in		
22	14	29.000 ft	18.000 in	1.250 in	522.000 in	36.250 in		
23	17	110.896 ft	18.000 in	1.250 in	1996.125 in	138.620 in		
24	18	43.000 ft	18.000 in	1.250 in	774.000 in	53.750 in		
25	20	24.000 ft	18.000 in	1.750 in	432.000 in	42.000 in		
26	18	45.000 ft	18.000 in	1.250 in	810.000 in	56.250 in		
27	21	103.115 ft	18.000 in	1.250 in	1856.063 in	128.893 in		
28	22	49.000 ft	28.000 in	1.250 in	1372.000 in	61.250 in		
29	24	36.000 ft	28.000 in	2.500 in	1008.000 in	90.000 in		
30	22	49.000 ft	28.000 in	1.250 in	1372.000 in	61.250 in		
31	25	123.000 ft	18.000 in	1.250 in	2214.000 in	153.750 in		
32	26	58.573 ft	18.000 in	1.250 in	1054.313 in	73.216 in		

Left Box

Plate	Section ID	Top Flange Length	Top Flange Width	Top Flange Thickness	Length * Width	Length * Thickness	Average Width	Average Thickness
1	1	79.500 ft	18.000 in	1.250 in	1431.000 in	99.375 in		
2	2	126.000 ft	18.000 in	1.750 in	2268.000 in	220.500 in		
3	3	52.500 ft	26.000 in	2.500 in	1365.000 in	131.250 in		
4	4	13.500 ft	36.000 in	2.500 in	486.000 in	33.750 in		
5	5	46.000 ft	36.000 in	3.750 in	1656.000 in	172.500 in		
6	4	12.500 ft	36.000 in	2.500 in	450.000 in	31.250 in		
7	3	60.500 ft	26.000 in	2.500 in	1573.000 in	151.250 in		
8	6	122.000 ft	18.000 in	1.750 in	2196.000 in	213.500 in		
9	7	50.000 ft	18.000 in	1.250 in	900.000 in	62.500 in		
10	8	38.000 ft	28.000 in	1.250 in	1064.000 in	47.500 in		
11	9	36.000 ft	28.000 in	2.500 in	1008.000 in	90.000 in		
12	8	17.000 ft	28.000 in	1.250 in	476.000 in	21.250 in		
13	10	109.000 ft	18.000 in	1.250 in	1962.000 in	136.250 in		
14	11	23.000 ft	18.000 in	1.250 in	414.000 in	28.750 in		
15	12	24.000 ft	18.000 in	2.500 in	432.000 in	60.000 in		
16	11	53.000 ft	18.000 in	1.250 in	954.000 in	66.250 in	21.055 in	1.585 in
17	13	118.016 ft	18.000 in	1.250 in	2124.281 in	147.520 in		
18	14	30.000 ft	18.000 in	1.250 in	540.000 in	37.500 in		
19	15	27.000 ft	28.000 in	1.250 in	756.000 in	33.750 in		
20	16	36.000 ft	28.000 in	2.500 in	1008.000 in	90.000 in		
21	15	29.000 ft	28.000 in	1.250 in	812.000 in	36.250 in		
22	14	30.000 ft	18.000 in	1.250 in	540.000 in	37.500 in		
23	17	93.484 ft	18.000 in	1.250 in	1682.719 in	116.855 in		
24	18	45.000 ft	18.000 in	1.250 in	810.000 in	56.250 in		
25	20	24.000 ft	18.000 in	1.750 in	432.000 in	42.000 in		
26	18	45.000 ft	18.000 in	1.250 in	810.000 in	56.250 in		
27	21	103.500 ft	18.000 in	1.250 in	1863.000 in	129.375 in		
28	22	49.000 ft	28.000 in	1.250 in	1372.000 in	61.250 in		
29	24	36.000 ft	28.000 in	2.500 in	1008.000 in	90.000 in		
30	22	49.000 ft	28.000 in	1.250 in	1372.000 in	61.250 in		
31	25	123.000 ft	18.000 in	1.250 in	2214.000 in	153.750 in		
32	26	57.500 ft	18.000 in	1.250 in	1035.000 in	71.875 in		

4A

4C

REINFORCING STEEL QUANTITIES SUPERSTRUCUTRE SPANS 1-7 GB 9.14.05 BLK / TSP 9/14/05

DATE RAN: WED SEP 14 08:09:03 2005

NAME OF UNIT	QUANTITY/UNIT	NO. UNITS	TOTAL-QUANTITY	COST/LB	TOTAL-COST
SUPERSTRUCTURE SPANS 1-7	869012 LBS X	1 =	869012 LBS AT	0.000 = $	0.00
	GRAND TOTAL =		869012 LBS	$	0.00

869012

LOCATION SUPERSTRUCTURE SPANS 1-7 NO. REQUIRED = 1

										LBS/MARK
										522543.72
6 S1	49- 2	7078 1	49- 2							
5 S3	11- 9	3540 13	0- 5 1/2	4- 2	7- 1				90 85	43228.51
5 S4	965- 0	56 2	2- 2	900- 0					30	56364.30
5 S4	871- 6	56 2	2- 2	871- 6						50902.57
5 S5	965- 0	2 2	2- 2	900- 0					30	2013.01
5 S5	871- 6	2 2	2- 2	871- 6						1817.95
5 S6	962-10	2 2	2- 2	900- 0					29	2008.49
5 S6	812- 8	2 2	2- 2	812- 8						1695.22
5 S7	965- 0	21 2	2- 2	900- 0					30	21136.61
5 S7	867- 0	21 2	2- 2	867- 0						18989.90
5 S8	965- 0	21 2	2- 2	900- 0					30	21136.61
5 S8	850- 4	21 2	2- 2	850- 4						18624.84
5 S9	962-10	21 2	2- 2	900- 0					29	21089.15
5 S9	833- 9	21 2	2- 2	833- 9						18261.63
5 S10	965- 0	5 2	2- 2	900- 0					30	5032.53
5 S10	871- 6	5 2	2- 2	871- 6						4544.87
5 S11	962-10	5 2	2- 2	900- 0					29	5021.23
5 S11	812- 8	5 2	2- 2	812- 8						4238.06
5 S12	219- 6	55 2	2- 2	213- 0					3	12591.67
5 S13	272- 8	55 2	2- 2	264- 0					4	15641.60
5 S14	161- 4	55 2	2- 2	157- 0					2	9254.92
5 S15	75- 2	55 2	2- 2	73- 0					1	4311.95
5 S16	96- 2	55 2	2- 2	94- 0					1	5516.62
4 S50	7- 4	94 25	1- 1	1- 5	1- 1	1- 2	3- 2			457.31
4 S51	4- 2	94 32	1- 0	1- 5	1- 9					261.65
5 S52	46- 2	14 1	46- 2							674.13
5 S53	3- 0	32 17 3	2- 2							100.13
6 S54	49- 2	6 1	49- 2							443.09
6 S55	9- 7	16 1	9- 7							230.30
6 S56	4- 0	32 1	4- 0							192.26
6 S57	8- 0	4 42	0- 7	1- 6	3- 4	1- 6		7- 6		47.96
6 S58	8- 4	20 1	8- 4							250.32
6 S59	4- 1	24 20	1- 3	0- 4 1/2		0- 4 1/2	1- 6	0- 9		145.27
6 S60	6- 9	24 1	6- 9							243.32

URS

Page _____ of _____

Job Bruce B. Downs Flyover | Project No. 12022751.00005 | Sheet _____ of _____

Description Superstructure Bar Bills | Computed by TSP | Date 9/7/05

Checked by MH | Date 9/10/05

KK ✓ TSP 9/12/05

Bar 651 Type 1

Note: Superelevation not considered since the bridge has a S.E. Transition.

B: (49'-6") - 2(2") = 49'-2".

Qty: 2(3538) = 7076 bars

Bar 552

* Bar 552 is included in the cost for Traffic railing barrier.

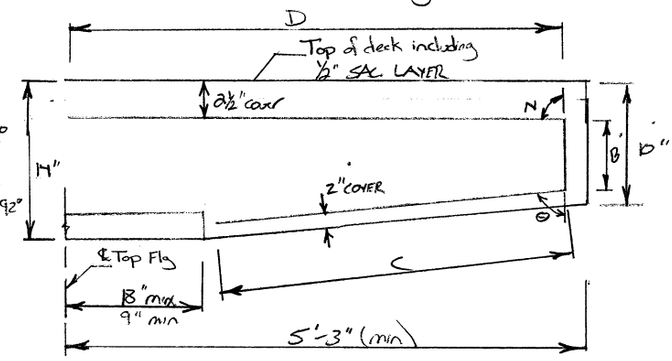
Bar 553 Type 13

$\theta_{max} = \tan^{-1}\left(\frac{(5'-3") - (9")}{(14") - (10")}\right) = 85.76°$

$\theta_{min} = \tan^{-1}\left(\frac{(5'-3") - (1'-6")}{(14") - (10")}\right) = 81.92°$

SAY θ = 85°.

N = 90°



B = 10" - (2½") - (2") = 5½"

$C = \frac{(5'-3") - (18") - (2") - (2")}{\sin 85°} = 3.430' = 3'-5\frac{3}{16}"$ SAY 3'-5"

D = (1'-9") + (5'-2") - (2") = 6'-9"

Qty: 2(1772) = 3544 bars

Bar 554 Type 2

* Longitudinal Bars are detailed to 2" off of the FFBW, although details show a 6" gap. Allow the difference to be made up in the splices.

C: (1771'-9 7/16") - 2(2") = 1771'-5 7/16" SAY 1771'-6"

B: 2'-2" (Class C Splice)

$N = \frac{1771'-9\frac{7}{16}"}{(60") - (2'-2")} = 30.64$ SAY 31 + 1 = 30

Qty: 56 bars.

Bar 555 Type 2

B: 2'-2"

C: (1771'-9 7/16") - 2(2") = 1771'-5 7/16" SAY 1771'-6"

Qty: 2 bars.

N: 31 + 1 = 30 ← same as 554

Bar 556 Type 2

B: 2'-2"

C: 1712'-11 5/8" - 2(2") = 1712'-7 5/8" SAY 1712'-8".

N: 1712'-8" / ((60") - (2'-2")) = 27.61 SAY 30 + 1 = 29

Qty: 2 bars.

URS

Page _____ of _____

Job Bruce B. Downs Flyover | Project No. 12002951.00005 | Sheet _____ of _____

Description Superstructure Bar Bills | Computed by TSP | Date 9/13/05

Checked by MH | Date 9/13/05

Bar 6S55 Type 1

B: (8'-3") - (2") + (1'-6") = 9'-7".
↑ ld #6

Qty = (4 bars)(4 drains) = 16 bars

Bar 6S56 Type 1

B: ½(3'-6")/sin45° + (1'-6") = 4'-0".

Qty = (8 bars)(4 drains) = 32 bars

Bar 6S57 Type 42

B = (9½") + (4½") - (2") - (2½") - (¾") - (⅝") - (¾") = SAY 7".
↑ bottom cover ↑ top cover ↑ #6 bar ↑ #5 bar ↑ #6 bar

C: E: 1'-6" => development length

D = 3'-6" - 2(2") tan(22½°) = 3'-4 5/16" SAY 3'-4".

H = C + B + D + B + E = 7'-6".

Qty = (1 bars)(4 drains) = 4 bars.

Bar 6S58 Type 1

B = 16" + 2(3'-6") = 8'-4".
↑ drain width

Qty = 5 bars (4 drains) = 20 bars

Bar 6S59 Type 20

B = 1'-3" => scaled from elevation

C = 4½".

D = 0".

E = 4½"

F = 1'-6" => ld

H = 14" - 2" - 2½" = 9½", SAY 9"

Qty = (6 bars)(4 drains) = 24 bars

Bar 6S60 Type 1

B = (1'-3") + (4") + (1'-6") = 6'-9"

Qty = 6 bars (4 drains) = 24 bars

H

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

CONCRETE AND REINFORCING STEEL COMPUTATIONS

FORM 700-050-07
CONSTRUCTION
06/02

PAY ITEM NO. 400-2-10

PAY ITEM NO. 415-1-9

		PAY ITEM DESCRIPTION		CONC CLASS II (APPROACH SLABS)				PAY ITEM DESCRIPTION		REINF STEEL (APPROACH SLABS)			
COMPONENT NAME	NO. REQ	DESIGN ORIGINAL		CONSTRUCTION FINAL				DESIGN ORIGINAL		CONSTRUCTION FINAL			
		VOLUME {CY}	REFERENCE/REMARKS	VOLUME {CY}	OVER/UNDER RUN	REF.	REMARKS.	WEIGHT {LB}	REFERENCE/REMARKS	WEIGHT {LB}	OVER/UNDER RUN	REF.	REMARKS.
Bridge 100712													
Approach Slab 1		55.1	See Page 5A - 5C	✓				10,749		✓			See Design Page 5A - 5C
Approach Slab 2		55.1	See Page 5A - 5C	✓				10,749		✓			
		110.2	<PAGE TOTAL>	110.2				21,498	<PAGE TOTAL>	21,498			
		110.2	<PROJECT GRAND> <TOTAL>	110.2				21,498	<PROJECT GRAND> <TOTAL>	21,498			

Construction Option:
Place Designer quantity or place check mark if final quantity does not change.

Not showing all back-up

If the above item is under the **Plan Quantity Concept**, then the block below **must** be appropriately filled out.

Plan Quantity Concept Signature Block

Design Engineers Responsible for Calculations: All support measurements and computations have been included for this Plan Quantity Item.

Signature: Johnson Duvall **Print Name:** Johnson Duvall

NOTES FOR EXPLANATION OF OVER/UNDER RUN

CONCRETE:	STEEL:

URS Corporation

Project: Bruce B Downs Flyover
Project Number: 12002951.00005.
Description: Approach Slab Quantities

Designed By: TSP
Date: 05-Sep-05

Checked By: MH
Date: 9/7/05

Approach Slab 1&2

L1	30	ft
L2	30	ft
M1	1.5417	ft
M2	1.5417	ft
N1	46	ft
N2	46	ft
Skew	0	degrees
total avg width	49.083	ft
total average length	30.000	ft
thickness of slab	1.000	ft
thickness @ backwall	1.146	ft
width of top of backwall	1.000	ft
Volume of Concrete	55.07	CY
Tot Volume of Concrete	110.1345	CY

Reinforcement

Approach Slab 1&2

Bar	Spa	No.	Length
5A1	1	50	29'-8"
8A2	0.75	66	29'-8"
5B Top	1	31	48'-9"
5B bottom	0.75	41	48'-9"
5C	1	~~30~~ 60	5'-0"

5A

GB 9.19.05

5B

REINFORCING STEEL QUANTITIES

DATE RAN: WED SEP 07 10:32:29 2005

NAME OF UNIT	QUANTITY/UNIT	NO. UNITS	TOTAL-QUANTITY	COST/LB	TOTAL-COST
APPROACH SLABS 1&2	10749 LBS X	2 =	21498 LBS AT	0.000 = $	0.00
		GRAND TOTAL =	21498 LBS	$	0.00

LOCATION APPROACH SLABS 1&2 NO. REQUIRED = 2

					LBS/MARK
5	A1	29- 8	50- 1	29- 8	1547.08
8	A2	29- 8	66- 1	29- 8	5227.74
5	B	48- 9	72- 1	48- 9	3660.93
5	C	5- 0	60- 1	5- 0	312.90

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

CONCRETE AND REINFORCING STEEL COMPUTATIONS

FORM 700-050-07
CONSTRUCTION
06/02

PAY ITEM NO. 400-4-5

PAY ITEM NO. 415-1-5

		PAY ITEM DESCRIPTION		CONC CLASS IV (SUBSTRUCTURE)				PAY ITEM DESCRIPTION		REINF STEEL (SUBSTRUCTURE)			
COMPONENT NAME	NO. REQ	DESIGN ORIGINAL		CONSTRUCTION FINAL				DESIGN ORIGINAL		CONSTRUCTION FINAL			
		VOLUME {CY}	REFERENCE/REMARKS	VOLUME {CY}	OVER/UNDER RUN	REF.	REMARKS.	WEIGHT {LB}	REFERENCE/REMARKS	WEIGHT {LB}	OVER/UNDER RUN	REF.	REMARKS.
Bridge 100712			See Design Calc.						See Design Calc.				
			Pages 6A - 6AH						Pages 6A - 6AH				
EB 1		27.1		✓				12,884		✓			
Pier 2		0.9		✓				102,241		✓			
Pier 3		0.9		✓				70,400		✓			
Pier 4		0.9		✓				72,290		✓			
Pier 5		17.6		✓				59,307		✓			
Pier 6		0.9		✓				67,986		✓			
Pier 7		0.7		✓				59,689		✓			
EB 8		27.1		✓				12,850		✓			
		76.1	<PAGE TOTAL>	76.1				457,647	<PAGE TOTAL>	457,647			
		76.1	<PROJECT GRAND> <TOTAL>	76.1				457,647	<PROJECT GRAND> <TOTAL>	457,647			

Not showing all back-up data

Not showing all back-up data

Construction Option:
Place Designer quantity or place check mark if final quantity does not change.

If the above item is under the **Plan Quantity Concept**, then the block below **must** be appropriately filled out.

Plan Quantity Concept Signature Block
Design Engineers Responsible for Calculations: All support measurements and computations have been included for this Plan Quantity Item.

Signature: _____ **Print Name:** _____

NOTES FOR EXPLANATION OF OVER/UNDER RUN

CONCRETE:	STEEL:

URS Corporation

Project: Bruce B. Downs Flyover
Project Number: 12002951.00005.
Description: Substructure Concrete

Designed By: RTG
Date: 12-Sep-05

Checked By: GRB
Date: 9 30 05

Pier Footings

Pier 2 Footing

Length =	28 ft
Width =	52 ft
Height	8.5 ft
Surface Area =	4272 sf
Volume =	12376 cf
Mass Concrete?	***mass concrete***
No. Piles =	45
Pile Size =	24 in
Pile Embed =	1 ft
Pile Volume =	180 cf
Net Volume =	12196 cf
No. footings	1
Volume per Footing =	451.7 cy
Total Volume =	451.7 cy

Pier 3 Footing

Length =	22 ft
Width =	40 ft
Height	7 ft
Surface Area =	2628 sf
Volume =	6160 cf
Mass Concrete?	***mass concrete***
No. Piles =	28
Pile Size =	24 in
Pile Embed =	1 ft
Pile Volume =	112 cf
Net Volume =	6048 cf
No. footings	1
Volume per Footing =	224.0 cy
Total Volume =	224.0 cy

Pier 4 Footing

Length =	22 ft
Width =	40 ft
Height	7 ft
Surface Area =	2628 sf
Volume =	6160 cf
Mass Concrete?	***mass concrete***
No. Piles =	28
Pile Size =	24 in
Pile Embed =	1 ft
Pile Volume =	112 cf
Net Volume =	6048 cf
No. footings	1
Volume per Footing =	224.0 cy
Total Volume =	224.0 cy

Pier 5 Footing

Length =	22 ft
Width =	22 ft
Height	5 ft
Surface Area =	1408 sf
Volume =	2420 cf
Mass Concrete?	***mass concrete***
No. Piles =	16
Pile Size =	24 in
Pile Embed =	1 ft
Pile Volume =	64 cf
Net Volume =	2356 cf
No. footings	2
Volume per Footing =	87.3 cy
Total Volume =	174.5 cy

Pier 6 Footing

Length =	40 ft
Width =	22 ft
Height	6 ft
Surface Area =	2504 sf
Volume =	5280 cf
Mass Concrete?	***mass concrete***
No. Piles =	28
Pile Size =	24 in
Pile Embed =	1 ft
Pile Volume =	112 cf
Net Volume =	5168 cf
No. footings	1
Volume per Footing =	191.4 cy
Total Volume =	191.4 cy

Pier 7 Footing

Length =	28 ft
Width =	34 ft
Height	7 ft
Surface Area =	2772 sf
Volume =	6664 cf
Mass Concrete?	***mass concrete***
No. Piles =	30
Pile Size =	24 in
Pile Embed =	1 ft
Pile Volume =	120 cf
Net Volume =	6544 cf
No. footings	1
Volume per Footing =	242.4 cy
Total Volume =	242.4 cy

Pier Columns

Pier	Elev E	Elev F	Elev G	Elev H
2	79.275	76.943	71.123	35.600
3	92.621	89.715	84.191	42.400
4	97.007	94.100	88.576	43.180
6	85.821	83.543	77.696	38.000
7	72.083	71.485	64.785	39.958

Pier	Elev A	Elev B	Elev C	Elev D
5 Left	95.246	94.562	91.900	62.800
5 Right	93.632	92.948	90.286	63.300

Column

Piers 2,3,4,6&7

Cross Section Area Corresp. To Dim "A"	62.5 sf	Min Perimeter =	37.4 ft
Min Area of Column Flare =	62.5 sf	Max Perimeter =	52.4 ft
Max Area of Column Flair =	100.0 sf		

Pier 5

Cross Section Area Corresp. To Dim "A"	37.5 sf	Min Perimeter =	25 ft
Min Area of Column Flare =	37.5 sf	Max Perimeter =	33 ft
Max Area of Column Flair =	59.5 sf		

	Bottom Portion of Column				Flared Portion of Column				Total Vol (cy)
	Dim "A" (ft)	Vol (cf)	Surface Area (sf)	Mass Concrete?	Height (ft)	Vol (cf)	Surface Area (sf)	Mass Concrete?	
Column Pier 2	20.523	1282.688	892.5602	Yes	15.0	1218.75	836	Yes	92.6
Column Pier 3	26.791	1674.438	1126.9834	Yes	15.0	1218.75	836	Yes	107.2
Column Pier 4	30.396	1899.750	1261.8104	Yes	15.0	1218.75	836	Yes	115.5
Column Pier 5 L	21.100	791.250	602.5	Yes	8.0	388	329	Yes	43.7
Column Pier 5 R	18.986	711.975	549.65	Yes	8.0	388	329	Yes	40.7
Column Pier 6	24.696	1543.500	1048.6304	Yes	15.0	1218.75	836	Yes	102.3
Column Pier 7	9.827	614.188	492.5298	Yes	15.0	1218.75	836	Yes	67.9

6A

URS Corporation

Project: Bruce B. Downs Flyover **Designed By:** RTG **Checked By:** GLB
Project Number: 12002951.00005. **Date:** 12-Sep-05 **Date:** 9-9-05
Description: Substructure Concrete

End Bent 8

Cap

Location	Average Length (ft)	Height (ft)	Width (ft)	Pile Volume (ft^3/pile)	No. Piles	Volume (ft^3)	Mass Concrete?
End Bent Cap	49.083	4	9.17	4.00	13	1748.36	yes
					Total Cap =	64.8 cy	

Backwall

Elevation E 68.95
Elevation F 53.56 Average Bck Wall Ht (ft) = 11.39

Average Length (ft)	Height (ft)	Width (ft)	Volume (ft^3)
49.083	11.39	1.0	559.06
		Total Backwall =	20.7 cy

Cheekwalls

Elevation B	68.953	Elevation H	69.934
Elevation C	69.298	Elevation I	70.279
Elevation D	67.828	Elevation J	68.809
Elevation M	53.338	Elevation N	54.299

Item	Length (ft)	Height (ft)	Width (ft)	Volume (ft^3)
Front Cheek Wall	5.75	11.7875	0.667	45.21
Front Cheek Wall	5.75	11.8075	0.667	45.28
Back Cheek Wall	2.42	10.49	1	25.39
Back Cheek Wall	2.42	10.51	1	25.43
Back Lip	0.5	14.49	0.5	3.62
Back Lip	0.5	14.51	0.5	3.63
Bottom Lip	9.67	1	0.5	4.84
Bottom Lip	9.67	1	0.5	4.84
			Total Cheek Walls =	5.9 cy

Pedestal Volume

Pedestal Length = 4.0 ft
Pedestal Width = 4.0 ft
Min Pedestal thickness = 5 in

Location Pier	Cap Elev "M" or "N"	Cap Elev "M" or "N"	Cap X-slope	Cap Length (ft)	Avg Pedestal Height (in)	# of Pedestals	Volume (ft^3)	Volume (cy)
EB1	53.338	54.299	0.0200	48.083	5.48	2.0	14.6	0.5

EB8 Summary

Cap (cy) =	64.8
Pedestal (cy) =	0.5
Walls (cy) =	26.6
Total (cy) =	**91.9**

Total End Bent Concrete

	EB 1	EB 8	**Total**
Cap (cy) =	64.8 *	64.8 *	**129.6 ***
Pedestal (cy) =	0.5	0.5	**1**
Walls (cy) =	26.6	26.6	**53.2**
Total (cy) =	**91.9**	**91.9**	**183.8**

* Denotes Mass Concrete

Total Substructure Concrete

Mass Total (cy)	**2438.0**
Standard Total (cy)	**76.1**
Grand Total (cy)	**2514.1**

6D

URS

Page ____ of ____

Job BRUCE B. DOWNS FLYOVER | Project No. ____ | Sheet ____ of ____

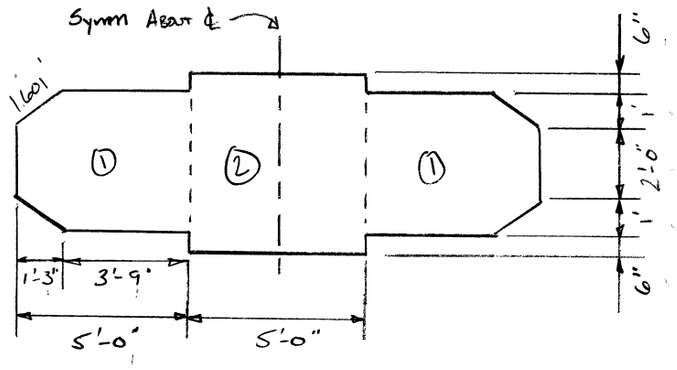
Description SUBSTRUCTURE QUANTITIES | Computed by RTG | Date 9/6/05

Checked by GB / BKK RTG | Date 9.8.05 / 9/12/05

SUBSTRUCTURE CONCRETE - PIERS

PIERS 2,3,4,6,7 CROSS SECTION AREAS

BOTTOM OF COLUMN



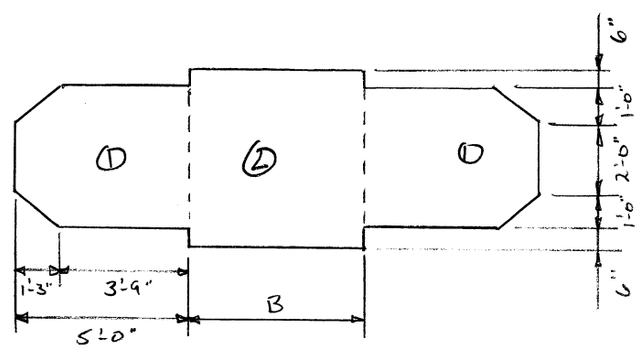
PERIMETER
$= [3.75' + 1.601' + 2' + 1.601' + 3.75' + 5'] 2 = 35.4'$
+6" +6" 37.4'

AREA OF ① $= [5'(4') - 1'(1.25')] 2 = 37.5 \text{ ft}^2$

AREA OF ② $= 5.0'(5') = 25.0 \text{ ft}^2$

TOTAL $= 62.5 \text{ ft}^2$

TOP OF COLUMN @ ℄



• B = WIDTH BASED ON 15 FT AVG HT

NOTE: VOLUME CALCULATIONS ARE BASED ON ASSUMPTION THAT THE 15'-0" DIMENSION IS ALSO APPROXIMATELY THE AVG. HEIGHT OF THE COLUMN FLARE. THE PROJECTED COLUMN FACE AREA WAS DRAWN AND MEASURED IN MICROSTATION. THE ACTUAL AREA VS. THE AREA CALCULATED ASSUMING 15'-0" IS DIFFERENT BY LESS THAN 1%

$B = 5' + 15'/4 (2) = 12.5'$

AREA OF ① $= 37.5 \text{ ft}^2$

AREA OF ② $= 12.5'(5') = 62.5 \text{ ft}^2$

TOTAL $= 100 \text{ ft}^2$

PERIMETER $= [12.5' + 3.75' + 1.601' + 2' + 1.601' + 3.75'] 2 = 50.4'$
+6" +6" 52.4'

REINFORCING STEEL QUANTITIES

DATE RAN: THU SEP 15 12:53:07 2005

NAME OF UNIT	QUANTITY/UNIT	NO. UNITS	TOTAL-QUANTITY	COST/LB	TOTAL-COST
END BENTS 1 AND 8	~~11587~~ LBS X	2 =	23174 LBS AT	0.000 = $	0.00
		GRAND TOTAL =	~~23174~~ LBS	$	0.00

LOCATION END BENTS 1 AND 8 NO. REQUIRED = 2

										LBS/MARK
68	E1	18- 0	77 4.4.4	3- 5	5- 1				~~1445.44~~ 2197.19	
68	E2	14- 8	13. 5.	3- 5	5- 1	0- 7	2- 2		~~198.84~~ 286.35	
11	E3	48- 7	17 1	48- 7					4388.07	
6	E4	5- 9	22.11	3- 9	1- 0	1- 0			190.00	
5	E5	50- 3	~~8 2~~ 114	1- 8	48- 7			1	~~419.29~~	
6	E6	4- 2	~~56~~ 1	4- 2					~~608.70~~ 713.53	
6	E7	11- 1	~~56~~ 1	11- 1					1598.08 1897.72	
5	E8	50- 3	24. 2	1- 8	48- 7			1	1257.86	
6	E9	1- 6	1 1	1- 6					~~24.70~~	
6	E10	11- 6	4 10	10- 6	1- 0				69.09	
6	E11	5- 3	4 10	4- 3	1- 0				31.54	
5	E12	11-10	8 11	8- 6	1- 8	1- 8			98.74	
5	E13	8- 8	28 1	8- 8					~~253.11~~	
5	E14	5-11	28 1	5-11					172.77	
5	E15	10- 2	12 1	10- 2					127.24	
5	E16	11- 1	4 1	11- 1					46.24	
5	E17	11- 4	12 1	11- 4					141.84	
5	E18	4- 6	~~20~~ 10	2-10	1- 8				~~93.87~~	
5	E19	6- 3	2 1	6- 3					13.04	
5	E20	5- 3	2 1	5- 3					10.95	
5	E21	4- 3	20 13	1- 7 1/2	1- 3 1/2	1- 3 1/2		45 45	87.76	
5	E22	3- 6	22 13	1- 0	1- 3	1- 3		45 45	80.31	
5	E23	7- 6	16 ~~14~~ 11	4- 6	1- 6	1- 6			~~109.51~~	
5	E24	6- 6	14 11	3- 6	1- 6	1- 6			94.91	
5	E99	4- 0	~~8~~ 4 1	4- 0					~~33.38~~ 16.69	

End Bent 1 only 8 114 times for Qty purposes

Job BBD FLYOVER | Project No. | Page ___ of ___
Description BAR SCHEDULES | Computed by SLM | Sheet ___ of ___ | Date 9/15/05
Checked by GEB | Date 9.15.05
SL 9/15/05 | Reference

Rev TSP 11/17/05
Rev SLM 1/4/06

END BENTS 1 + 8 (PER EACH)

·~~8~~ 6 E1. Type 4. A = G = 4. B = 3'-5".
C = (4'-7") - (3") + (6") + (3")
= 5'-1".
#= (4 + 2·4 + 4) x 2 + 13
= 77.

✓ TSP 1/4/06

·~~8~~ 6 E2. Type 5. B = 3'-5".
C = 5'-1".
D = 7".
E = (5'-1") - (1'-9") - (1') - (2")
= 2'-2".
#=13.

·11E3. Type 1. B = L = 48'-7".
#=17.

·6E4 Type 11. B = 3'-9".
C = D = 1'-0".
#= ~~44~~ 22

·5E5 Type 2. C = 48'-7".
B = 1'-8".
N = 1.
#=8.

·6E6. Type 1. B = 4'-~~8~~ 2".
#= ~~96~~ 114.

·6E7 Type 1. B = 11'-1".
#= ~~96~~ 114.

·5E8. Type 2. B = 1'-8".
C = 48'-7".
N=1
#=24.

·6E9. Type 1. B = 1'-6".
#= ~~11~~ 12

Rev TSP 10/20/05

6T

URS

Job: BBD Flyover
Description: BAR SCHEDULES
Project No.:
Computed by: SZ
Checked by: GEB
Rev TSP 10/20/05

Page ____ of ____
Sheet ____ of ____
Date: 9/15/05
Date: 9.15.05
Reference

END BENTS 1+8 (CONT'D)

· SE21. TYPE 13.

= 20.

$B = \frac{13\frac{3}{4}''}{\cos 45°}$

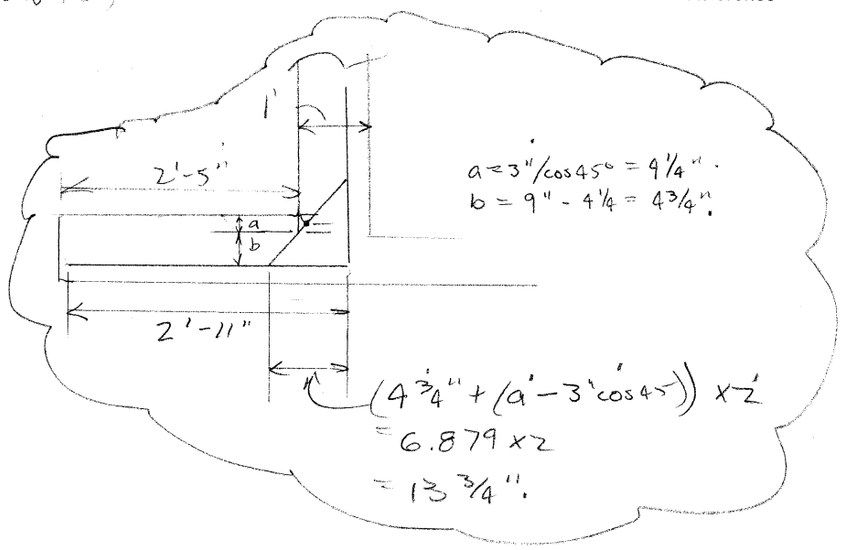
$= 1'-7\frac{1}{2}''$.

$C = (2'-11'') - (1'-7\frac{1}{2}'')$

$= 1'-3\frac{1}{2}''$.

$D = 1'-3\frac{1}{2}''$.

$\phi = 45°$.
$N = 45°$.



· SE22 TYPE 13

= ~~22~~. B = 8½"/cos 45 = 1'-0".

C = D = 1'-3".

· SE23 TYPE 11. B = 4'-6".
C = D = 1'-6".

= ~~14~~ 16.

· SE24 TYPE 11. B = 3'-6".
C = D = 1'-6".

= 14.

· SE ~~29~~ 25 TYPE 1 B = 4'-0".

= 8.

URS

Job: BBD Flyover	Project No.	Page ___ of ___	
Description: Bar Schedules	Computed by: SLM	Sheet 6 of ___	Date 9/13/05
	Checked by: GEB		Date 9.13.05

Reference

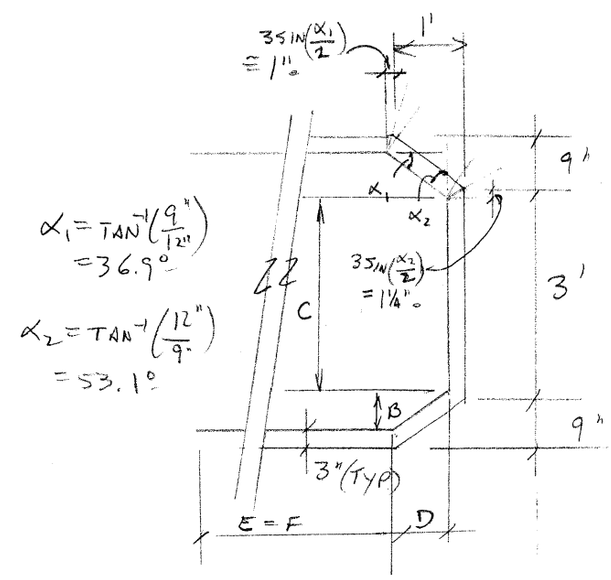
PIER 5 (CONT'D)

4C7 TYPE 43

#BARS = ~~40~~ 42 (LEFT)
= ~~38~~ 38 (RT)

B = 9" − 3" + 1¼"
= 7¼"
C = 36" − 2(1¼")
= 2'−9½".
D = 12" − 3" + 1"
= 10".
E = F = (3'−9") + (½ ℓd) − (10")
= 3'−7".
H = 0.

L = 12'−0".



4C8 TYPE 4 STYLE A=G=5 (135° Hook)

#BARS = ~~60~~ 62 (LEFT)
= ~~56~~ 58 (RIGHT)

B = 5.5' − 2(4½") = 4'−9".
C = (1.5') − (3") + (.5×5½") + 1.5" + (1.5×.5") + .5" = 1'−8½"
L = 2(4'−9") + (1'−8½") + (4½")
= 13'−8".

4C9 TYPE 11

#BARS = 10 SETS OF 4

B = VARIES FROM: (1'−6") − (3") − (5½") + (¼×6") = 11"
TO: (11") + (7'×¼") = 2'−8".

C = D = 1'−9".

L = VARIES FROM: 4'−5".
TO: 6'−2".

4C10 TYPE 43

#BARS = 20.

B = 7¼".
C = 2'−9½".
D = 10".
E = F = (3'−7") + $\left(\frac{8'-1'}{4}\right)$ = 5'−4"
H = 0

L = (12') + 2$\left(\frac{7'}{4}\right)$ = 15'−6".

GAB

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

CONCRETE AND REINFORCING STEEL COMPUTATIONS

FORM 700-050-07
CONSTRUCTION
06/02

PAY ITEM NO. 400-4-25

PAY ITEM NO.

PAY ITEM DESCRIPTION CONC CLASS IV (MASS)(SUBSTRUCTURE)

COMPONENT NAME	NO. REQ	DESIGN ORIGINAL VOLUME {CY}	DESIGN ORIGINAL REFERENCE/REMARKS	CONSTRUCTION FINAL VOLUME {CY}	CONSTRUCTION FINAL OVER/UNDER RUN	CONSTRUCTION FINAL REF.	CONSTRUCTION FINAL REMARKS.
EB 1		64.8		✓			
Pier 2		590.4		✓			
Pier 3		377.3		✓			
Pier 4		385.6		✓			
Pier 5		258.9		✓			
Pier 6		339.8		✓			
Pier 7		356.4		✓			
EB 8		64.8		✓			
		2,438.0	**<PAGE TOTAL>**	2,438.0			
		2,438.0	**<PROJECT GRAND> <TOTAL>**	2,438.0			

PAY ITEM DESCRIPTION

DESIGN ORIGINAL WEIGHT {LB}	DESIGN ORIGINAL REFERENCE/REMARKS	CONSTRUCTION FINAL WEIGHT {LB}	CONSTRUCTION FINAL OVER/UNDER RUN	CONSTRUCTION FINAL REF.	CONSTRUCTION FINAL REMARKS.
	<PAGE TOTAL>				
	<PROJECT GRAND> <TOTAL>				

Construction Option:
Place Designer quantity or place check mark if final quantity does not change.

If the above item is under the **Plan Quantity Concept**, then the block below **must** be appropriately filled out.

Plan Quantity Concept Signature Block
Design Engineers Responsible for Calculations: All support measurements and computations have been included for this Plan Quantity Item.

Signature: Robert T. Gaskins **Print Name:** Robert T. Gaskins

NOTES FOR EXPLANATION OF OVER/UNDER RUN

CONCRETE:	STEEL:

FORM 700-050-01
CADD FORM 1
CONSTRUCTION
11/98

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

AREA COMPUTATIONS

PAY ITEM NO. 400-9

PAY ITEM DESCRIPTION BRIDGE DECK GROOVING AND PLANING (DECK THICKNESS 8.5" OR GREATER)

STATION TO STATION	TRAV. OR PAGE NO.	SIDE	DESIGN ORIGINAL WIDTH	LENGTH	CURVE CORR.(+/-)	AREA (S.Y.)	REMARKS	CONSTRUCTION FINAL WIDTH	LENGTH	AREA (S.Y.)	REMARKS
BRIDGE 100712						8,906	See Bridge Plan			8,906	See designer page 8-A
							Sheet # B - 6				No changes
							Note # 3				

8,906	= PAGE TOTAL <	8,906
8,906	= PROJECT GRAND TOTAL <	8,906

If the above item is under the **Plan Quantity Concept**, then the block below **must** be appropriately filled out.

Plan Quantity Concept Signature Block
Design/Engineers Responsible for Calculations: All support measurements and computations have been included for this Plan Quantity item.

Signature: _____ **Print Name:**

NOTES FOR EXPLANATION OF OVER/UNDER RUN:

RECYCLED PAPER

URS Corporation

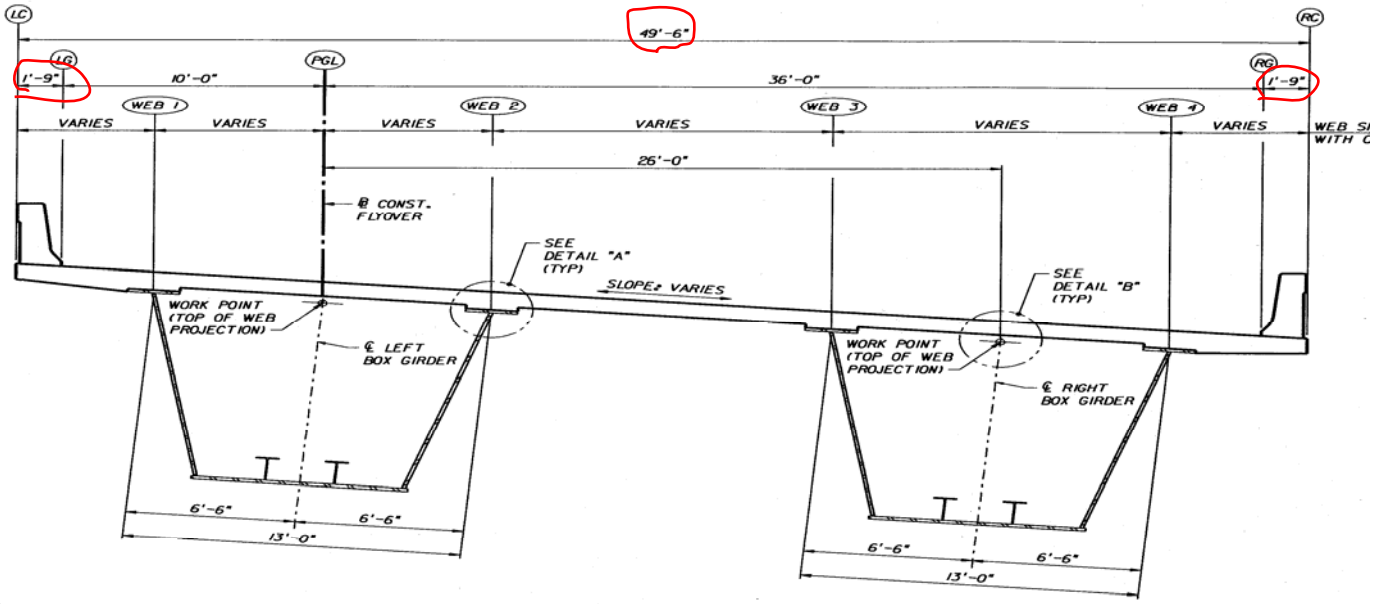
Project: BBD Flyover **Designed By:** TSP **Checked By:** MH

Project Number: 12002951.00005 **Date:** 05- Sep-05 **Date:** 9/7/05

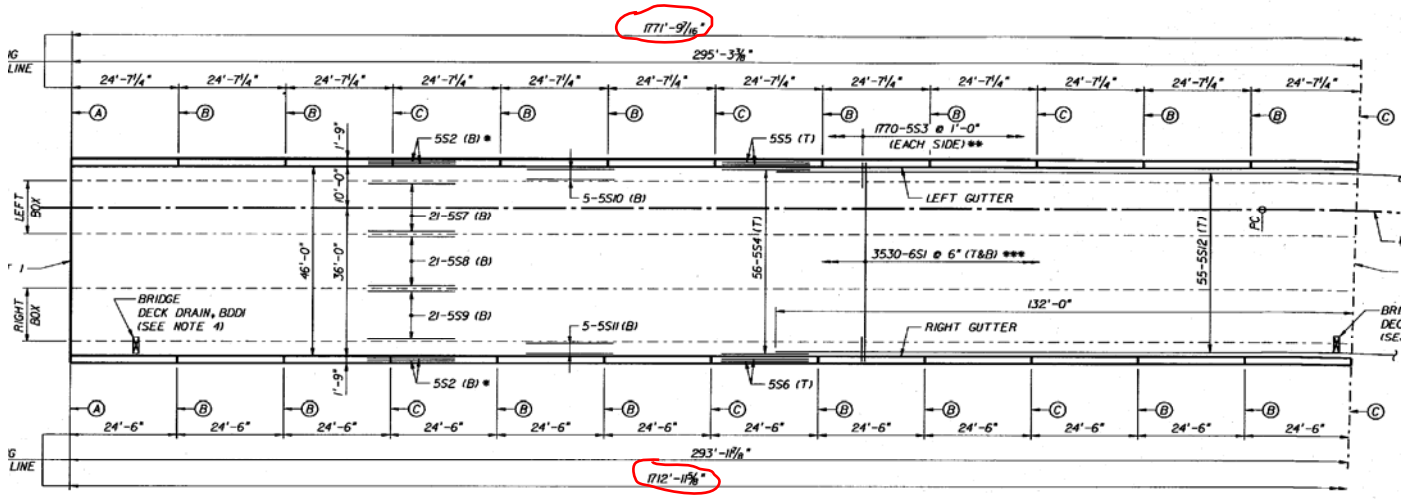
Description: Bridge Deck Grooving

Length A	1742.4 ft
Width B	49.500 ft
Barrier 1 Width C	1.750 ft
Barrier 2 Width D	1.750 ft
Area A*(B-C-D)	80150 ft^2
	= 8,906 yd²

TSP 9/19/05



TYPICAL SECTION



PLAN - SPAN 1

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

PILING TABULATION

FORM 700-050-08
CONSTRUCTION
11/07

STRUCTURE IDENTIFICATION: Bridge 100712 PAY ITEM NO. 0455 34 5

PAY ITEM DESCRIPTION PRESTRESSED CONCRETE PILING, 24" SQ

DESIGN ORIGINAL QUANTITY					CONSTRUCTION FINAL QUANTITY			
STRUCTURE COMPONENT IDENTIFICATION	NO. REQ'D EA	LENGTH EACH LINEAR* (LF)	TOTAL LENGTH LINEAR* (LF)	REFERENCE/REMARKS	AUTHORIZED LINEAR* (LF)	INSTALLED LINEAR* (LF)	OVER OR UNDER RUN FROM DESIGN ORIGINAL LINEAR* (LF)	REFERENCE/REMARKS
EB 1	12	138.00	1,656.0	See Designer Calculations	138.00	1,721.00	65.00	
Pier 2	43	93.00	3,999.0	Page 9-A & 9-B	85.00	4,010.00	11.00	See Pile Driving Field
Pier 3	26	100.00	2,600.0		100.00	2,656.00	56.00	Book # 20001 Page 78
Pier 4	26	100.00	2,600.0		85.00	2,586.00	-14.00	for final tabulation
Pier 5	30	125.00	3,750.0		125.00	3,775.00	25.00	
Pier 6	26	100.00	2,600.0		85.00	2,597.00	-3.00	
Pier 7	28	95.00	2,660.0		95.00	2,678.00	18.00	
EB 8	12	136.00	1,632.0		136.00	1,689.00	57.00	

Field Book
For Reference Only

*PROVIDE APPROPRIATE UNITS FOR THIS ITEM AS SHOWN IN CONTRACT (i.e. LF, M1).	21,497	< PAGE TOTAL >	21,712
	21,497	< PROJECT GRAND TOTAL >	21,712

EXPLANATION OF OVER/UNDER RUN (DESIGN ORIGINAL/FINAL PAY LENGTH)

PILING AUTHORIZED:	PILING INSTALLED:
Underrun of 38 LF is due to the difference between estimated lengths	Overrun of 215 LF is due to the differnce between estimated lengths versus the
versus the actual approved authorized lengths.	required depth piles were driven to obtain specific bearing. This includes Pile
	Cut-Off's and splices.

EXTRA NOTES / REMARKS:

URS Corporation

Project: Bruce B. Downs Flyover
Project Number: 12002951.00005.
Description: Piles/Polyethylene Sheeting

Designed By: RTG
Date: 11-Oct-05

Checked By: GB
Date: 10.11.05

Revisions By: TSP
Date: 11/22/05

Test Pile and Production Pile Lengths

Williams Earth Sciences Revised the TEST pile lengths & the pile [illegible]

* No preformed pile holes reduired for project.*

End Bent 1		
Avg Bott. of Cap Elev.	A	63.92
Cap Depth	B	N/A
Pile Tip Elev.	C	-73
Pile Embedment into Cap	D	1
Test Pile Length	E = A-B-C+D+15	153 ft
Production Pile Length	F = A-B-C+D	138 ft
Total # Piles	G	13
Test Piles	H	1
# Production Piles	I = F-G	12
Total Length Production Piles	J=H*E	1656 ft
Total Length Test Piles	K=G*D	153 ft

Pier 2		
Top of Footing Elev.	A	35.60
Cap Depth	B	8.5
Pile Tip Elev.	C	-65 ~~-60~~
Pile Embedment into Cap	D	1
Test Pile Length	E = A-B-C+D+15	101 ~~103~~ ft
Production Pile Length	F = A-B-C+D	93 ~~88~~ ft
Total # Piles	G	45
Test Piles	H	2
# Production Piles	I = F-G	43
Total Length Production Piles	J=H*E	3777 ~~3784~~ ft
Total Length Test Piles	K=G*D	216 206 ft

Pier 3		
Top of Footing Elev.	A	42.40
Cap Depth	B	7
Pile Tip Elev.	C	-64 ~~-63~~
Pile Embedment into Cap	D	1
Test Pile Length	E = A-B-C+D+15	115 ~~114~~ ft
Production Pile Length	F = A-B-C+D	100 ~~99~~ ft
Total # Piles	G	28
Test Piles	H	2
# Production Piles	I = F-G	26
Total Length Production Piles	J=H*E	2600 ~~2574~~ ft
Total Length Test Piles	K=G*D	230 ~~228~~ ft

Pier 4		
Top of Footing Elev.	A	43.18
Cap Depth	B	7
Pile Tip Elev.	C	-63 ~~-60~~
Pile Embedment into Cap	D	1
Test Pile Length	E = A-B-C+D+15	115 ~~112~~ ft
Production Pile Length	F = A-B-C+D	100 ~~97~~ ft
Total # Piles	G	28
Test Piles	H	2
# Production Piles	I = F-G	26
Total Length Production Piles	J=H*E	2600 ~~2522~~ ft
Total Length Test Piles	K=G*D	230 ~~224~~ ft

9A

URS Corporation

Project: Bruce B. Downs Flyover
Project Number: 12002951.00005.
Description: Piles/Polyethylene Sheeting

Designed By: RTG
Date: 11-Oct-05

Checked By: GJB
Date: 10.11.05

Reviewed By: TSP
Date: 11/22/05

Williams Earth Sciences revised the TEST pile lengths in the pile data table

Pier 5		
Top of Footing Elev.	A	63.05
Cap Depth	B	5.0
Pile Tip Elev.	C	-38
Pile Embedment into Cap	D	1
Test Pile Length	E = A-B-C+D+15	140 ~~112~~ ft
Production Pile Length	F = A-B-C+D	125 ~~97~~ ft
Total # Piles	G	32
Test Piles	H	2
# Production Piles	I = F-G	30
Total Length Production Piles	J=H*E	3750 ~~2910~~ ft
Total Length Test Piles	K=G*D	280 ~~224~~ ft

Pier 6		
Top of Footing Elev.	A	38.00
Cap Depth	B	6
Pile Tip Elev.	C	-67 ~~-55~~
Pile Embedment into Cap	D	1
Test Pile Length	E = A-B-C+D+15	115 ~~103~~ ft
Production Pile Length	F = A-B-C+D	106 ~~88~~ ft
Total # Piles	G	28
Test Piles	H	2
# Production Piles	I = F-G	26
Total Length Production Piles	J=H*E	2600 ~~2288~~ ft
Total Length Test Piles	K=G*D	230 ~~206~~ ft

Pier 7		
Top of Footing Elev.	A	39.96
Cap Depth	B	7
Pile Tip Elev.	C	-61 ~~-50~~
Pile Embedment into Cap	D	1
Test Pile Length	E = A-B-C+D+15	110 ~~99~~ ft
Production Pile Length	F = A-B-C+D	95 ~~84~~ ft
Total # Piles	G	30
Test Piles	H	2
# Production Piles	I = F-G	28
Total Length Production Piles	J=H*E	2660 ~~2352~~ ft
Total Length Test Piles	K=G*D	220 ~~198~~ ft

End Bent 8		
Avg Bott. of Cap Elev.	A	53.82
Cap Depth	B	N/A
Pile Tip Elev.	C	-81 ~~-85~~
Pile Embedment into Cap	D	1
Test Pile Length	E = A-B-C+D+15	151 ~~155~~ ft
Production Pile Length	F = A-B-C+D	136 ~~140~~ ft
Total # Piles	G	13
Test Piles	H	1
# Production Piles	I = F-G	12
Total Length Production Piles	J=H*E	1632 ~~1680~~ ft
Total Length Test Piles	K=G*D	151 ~~155~~ ft

Totals

Test Piles = ~~1594~~ ft 1710
Production Piles = ~~19766~~ ft 21417

Pile Splices

Total = 28

93

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

AREA COMPUTATIONS

FORM 700-050-01
CONSTRUCTION
09/07

PAY ITEM NO. 0455133 2

PAY ITEM DESCRIPTION SHEET PILING STEEL, TEMPORARY-CRITICAL

STATION TO STATION	TRAV. OR PAGE NO.	SIDE	DESIGN ORIGINAL					CONSTRUCTION FINAL			
			WIDTH	LENGTH	CURVE CORR(+/-)	AREA (SF)	REMARKS	WIDTH	LENGTH	AREA (SF)	REMARKS
Bridge 100712											
											For Reference Only
TW-1			42.00	55.18		2,318		42.00	49.50	2,079	See F.B. # 3 - Page 20
											Final quantity change due
											to utility conflict
											See Page - 10A

2,318	< PAGE TOTAL >	2,079
2,318	< PROJECT GRAND TOTAL >	2,079

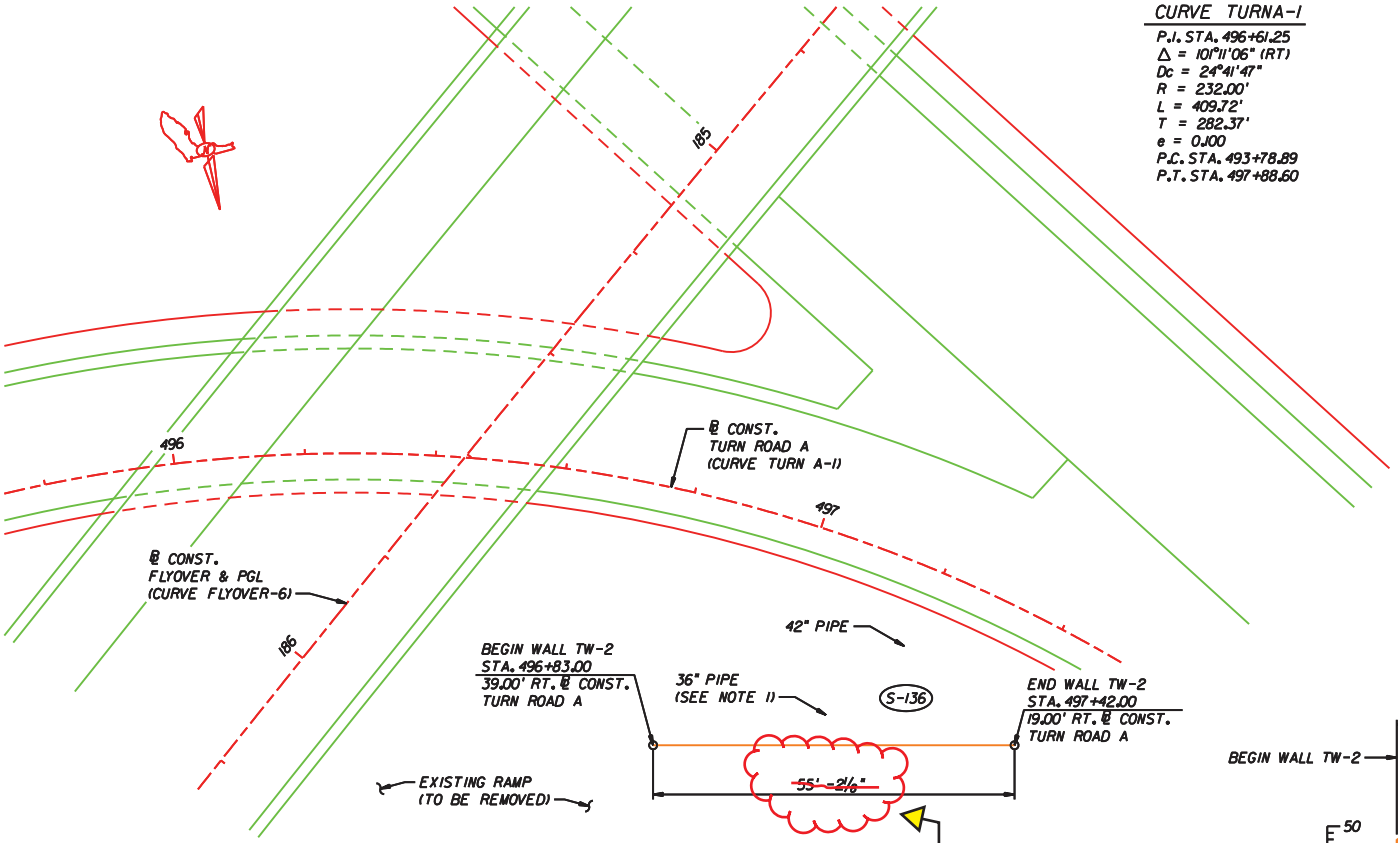
If the above item is under the **Plan Quantity Concept**, then the block below **must** be appropriately filled out.

Plan Quantity Concept Signature Block
Design Engineers Responsible for Calculations: All support measurements and computations have been included for this Plan Quantity item.

Signature: Murray McDonough **Print Name:** Murray McDonough

NOTES FOR EXPLANATION OF OVER/UNDER RUN: This quantity underran 239 SF due to a utility conflict which required a field change.

EXTRA NOTES / REMARKS:



PLAN

This quantity changed due to conflict with utility.
Length = 49' 5"

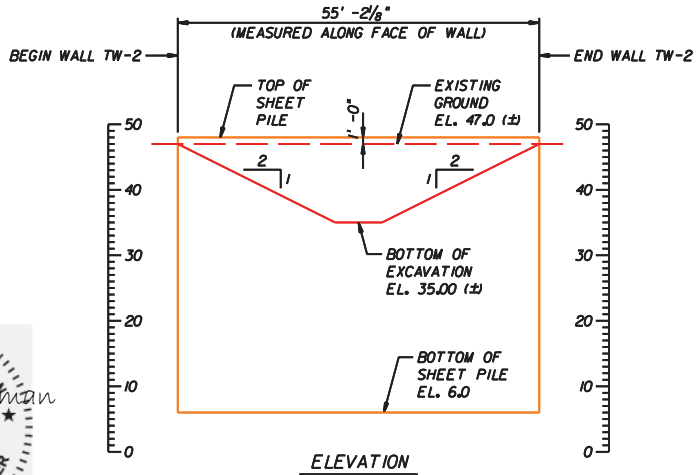
CHANGES ARE TO BE SIGNED, SEALED & DATED BY RESPONSIBLE ENGINEER

CURVE TURNA-1

P.I. STA. 496+61.25
Δ = 101°11'06" (RT)
Dc = 24°41'47"
R = 232.00'
L = 409.72'
T = 282.37'
e = 0.100
P.C. STA. 493+78.89
P.T. STA. 497+88.60

NOTES

1. 36" PIPE TO BE INSTALLED AFTER SHEET PILE WALL AND EXISTING RAMP ARE REMOVED.



ELEVATION
(REFLECTIVE VIEW)

WILLIAM C. NORMAN CERTIFICATE No. 00000 STATE OF FLORIDA PROFESSIONAL ENGINEER
William C. Norman
3/7/2007

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
DRAWN BY	JLS	10/05
CHECKED BY	MCM	10/05
DESIGNED BY	MCM	10/05
CHECKED BY	RTG	10/05
APPROVED BY	S.L. MONTGOMERY	

ENGINEER OF RECORD: URS
URS CORPORATION SOUTHERN
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
CERTIFICATE OF AUTHORIZATION NO. 00000023A

FLORIDA DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
93A	HILLSBOROUGH	408460-1-52-01

SHEET TITLE: PLAN AND ELEVATION SHEET PILE WALL TW-2

PROJECT NAME: I-75 (SR 93A) OVER C.R. NO. 581 (BRUCE B. DOWNS) FLYOVER

SHEET NO. RW-19

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 60Q-23.003, F.A.C.

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

LINEAR MEASUREMENT, COMPONENT WEIGHT, PER HOUR, PER DAY OR PER EACH COMPUTATIONS

FORM 700-050-03
CONSTRUCTION
06/02

PAY ITEM NO. 455-137

PAY ITEM DESCRIPTION TEST LOAD(DYNAMIC)

LOCATION	SIDE	DESIGN ORIGINAL		CONSTRUCTION FINAL			
		LENGTH*, COMPONENT WEIGHT*, OR NUMBER PER HOUR, DAY, EACH	REFERENCES/REMARKS	LENGTH*, COMPONENT WEIGHT*, OR NUMBER PER HOUR, DAY, EACH	REFERENCE	OVER/UNDER RUN	REMARKS
Bridge 100712							
End Bent 1		1 EA		2 EA		1.0	See Pile Driving Book
Pier 2		2 EA		2 EA			# 2001, Page No. 27
Pier 3		2 EA		2 EA			for final.
Pier 4		2 EA		2 EA			
Pier 5		2 EA		2 EA			
Pier 6		2 EA		3 EA		1.0	See Pile Driving Book
Pier 7		2 EA		2 EA			# 2001, Page No. 27
End Bent 8		1 EA		1 EA			for final.
*PROVIDE APPROPRIATE UNITS FOR THIS ITEM AS SHOWN IN CONTRACT (I.e. LF, M1, LB, KG,)		14 EA	< PAGE TOTAL >	16 EA			
		14 EA	< PROJECT GRAND TOTAL >	16 EA			

Field Book
For Reference only

If the above item is under the **Plan Quantity Concept**, then the block below **must** be appropriately filled out.

Plan Quantity Concept Signature Block
Design Engineers Responsible for Calculations: All support measurements and computations have been included for this Plan Quantity item.

Signature: _____ **Print Name:** _____

NOTES FOR EXPLANATION OF OVER/UNDER RUN

Overrun due to requiring additional data for dynamic testing.

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

PILING TABULATION

FORM 700-050-08
CONSTRUCTION
11/07

STRUCTURE IDENTIFICATION: Bridge 100712 PAY ITEM NO. 0455143 5

PAY ITEM DESCRIPTION TEST PILES-PRESTRESSED CONCRETE,24" SQ

DESIGN ORIGINAL QUANTITY					CONSTRUCTION FINAL QUANTITY			
STRUCTURE COMPONENT IDENTIFICATION	NO. REQ'D EA	LENGTH EACH LINEAR* (LF)	TOTAL LENGTH LINEAR* (LF)	REFERENCE/REMARKS	AUTHORIZED LINEAR* (LF)	INSTALLED LINEAR* (LF)	OVER OR UNDER RUN FROM DESIGN ORIGINAL LINEAR* (LF)	REFERENCE/REMARKS
EB 1	1	153	153	See Designer Calculations	160.0	171.00		
Pier 2	2	108	216	Pages 9-A & 9-B	110.0	219.00		See Pile Driving Field
Pier 3	2	115	230		115.0	258.00		Book # 20001 Page 78
Pier 4	2	115	230		115.0	262.00		for final tabulation
Pier 5	2	140	280		140.0	270.00		
Pier 6	2	115	230		115.0	268.00		
Pier 7	2	110	220		110.0	242.00		
EB 8	1	151	151		160.0	175.00		

Field Book
For Reference Only

*PROVIDE APPROPRIATE UNITS FOR THIS ITEM AS SHOWN IN CONTRACT (i.e. LF, M1).	1,710	< PAGE TOTAL >	1,865
	1,710	< PROJECT GRAND TOTAL >	1,865

EXPLANATION OF OVER/UNDER RUN (DESIGN ORIGINAL/FINAL PAY LENGTH)

PILING AUTHORIZED:	PILING INSTALLED: The Overrun of 155 LF is due to test piling driven to minimum tip elevation and proper bearing was achieved.

EXTRA NOTES / REMARKS:

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

AREA COMPUTATIONS

FORM 700-050-01
CONSTRUCTION
09/07

PAY ITEM NO. 0459 71

PAY ITEM DESCRIPTION PILES, POLYETHYLENE SHEETING

STATION TO STATION	TRAV. OR PAGE NO.	SIDE	DESIGN ORIGINAL					CONSTRUCTION FINAL			
			WIDTH	LENGTH	CURVE CORR(+/-)	AREA (SY)	REMARKS	WIDTH	LENGTH	AREA (SY)	REMARKS
EB 1	9-A					569	See Designer Calculations			569	See Field Book # 20002
EB 2	9-A					281	Page 13-A			281	for final measured qty.
						850	< PAGE TOTAL >			850	
						850	< PROJECT GRAND TOTAL >			850	

Field Book
For Reference Only

If the above item is under the **Plan Quantity Concept**, then the block below **must** be appropriately filled out.

Plan Quantity Concept Signature Block
Design Engineers Responsible for Calculations: All support measurements and computations have been included for this Plan Quantity item.

Signature: _____ **Print Name:** _____

NOTES FOR EXPLANATION OF OVER/UNDER RUN:

EXTRA NOTES / REMARKS:

URS Corporation

Project: Bruce B. Downs Flyover
Project Number: 12002951.00005.
Description: Piles/Polyethylene Sheeting

Designed By: RTG
Date: 13-Sep-05

Checked By: GEB
Date: 9.13.05

Polyethylene Sheeting on Concrete Piles

End Bent 1		
Est. Avg. Ground Elevation	A	42 ft
Avg Pile ~~Cut-Off~~ Elevation	B	63.9 ft
Pile Size	C	24 in
Number of Piles	D	13
Area of Poly. Sheeting	E=(B-A)*(4C/12)*D*2.25	5125 ft^2

→ Avg Elev of Bottom of Cap @ Piles

End Bent 8		
Est. Avg. Ground Elevation	A	43 ft
Avg Pile ~~Cut-Off~~ Elevation	B	53.8 ft
Pile Size	C	24 in
Number of Piles	D	13
Area of Poly. Sheeting	E=(B-A)*(4C/12)*D*2.25	2527 ft^2

→ Average of Bottom of Cap

Total Sheeting= 7652 ft^2
850 yd^2

13A

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

LUMP SUM QUANTITIES

FORM 700-050-05
CONSTRUCTION
06/02

PAY ITEM NO. 460-2-2

PAY ITEM DESCRIPTION STRUCT STEEL (LOW ALLOY)

DESIGNER QUANTITY (NO SECONDARY UNIT) 1 LUMP SUM

CONSTRUCTION FINAL QUANTITY 1 Lump Sum

PAY ITEM DESCRIPTION

DESIGNER QUANTITY (WITH SECONDARY UNITS, SEE BELOW)

CONSTRUCTION FINAL QUANTITY

SECONDARY UNIT COMPUTATIONS

STATION LOCATION	DESIGN ORIGINAL									CONSTRUCTION FINAL	
	AREA ITEMS			VOLUME	WEIGHT ITEMS	LINEAR ITEMS	EA. ITEMS	MISCELLANEOUS ITEMS*	REFERENCES	INCREASES OR DECREASES	REFERENCES
	LENGTH	WIDTH	AREA	VOLUME MEASURE	WEIGHT MEASURE	LINEAR MEASURE	EACH				
Bridge 100712					6,426,932				See Designer		NO CHANGES
									Calculations		
									Pages 14-A		
									thru 14-M		

Not showing all back up data

NOTES FOR EXPLANATION OF OVER/UNDER RUN

URS Corporation

Project:	BBD Flyover	***Designed By:***	TSP	***Checked By:***	MH
Project Number:	12002951.00005.	***Date:***	05-Sep-05	***Date:***	10/20/05
Description:	Structural Steel Quantities	***Rev:***	TSP		
		Date:	10/19/2005		

Right Box Steel Unit Weight= 490 lbs/ft^3

Plate	Sec ID	Length	TF Width	TF Thick	BF Width	BF Thick	Web Height	Web Thick	BF Stiff	Volume	Weight
1	1	79.771 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	1.000 in	0.000 in^2	231.22 ft^3	113296.36 lbs
2	2	126.000 ft	18.000 in	1.750 in	100.000 in	1.250 in	123.693 in	1.000 in	0.000 in^2	380.96 ft^3	186671.89 lbs
3	3	52.000 ft	26.000 in	2.500 in	100.000 in	1.250 in	123.693 in	0.875 in	22.100 in^2	186.21 ft^3	91243.71 lbs
4	4	13.000 ft	36.000 in	2.500 in	100.000 in	1.250 in	123.693 in	0.875 in	22.100 in^2	51.07 ft^3	25022.73 lbs
5	5	46.000 ft	36.000 in	3.750 in	100.000 in	2.500 in	123.693 in	0.875 in	22.100 in^2	249.38 ft^3	122195.45 lbs
6	4	11.250 ft	36.000 in	2.500 in	100.000 in	1.250 in	123.693 in	0.875 in	22.100 in^2	44.19 ft^3	21654.29 lbs
7	3	58.750 ft	26.000 in	2.500 in	100.000 in	1.250 in	123.693 in	0.875 in	22.100 in^2	210.38 ft^3	103087.85 lbs
8	6	118.115 ft	18.000 in	1.750 in	100.000 in	1.250 in	123.693 in	0.875 in	0.000 in^2	331.76 ft^3	162560.85 lbs
9	7	48.000 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	0.000 in^2	128.82 ft^3	63122.30 lbs
10	8	39.000 ft	28.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	118.59 ft^3	58108.07 lbs
11	9	30.000 ft	28.000 in	2.500 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	105.80 ft^3	51844.35 lbs
12	8	19.000 ft	28.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	57.77 ft^3	28309.06 lbs
13	10	104.990 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	301.02 ft^3	147497.89 lbs
14	11	22.000 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	63.08 ft^3	30907.39 lbs
15	12	24.000 ft	18.000 in	2.500 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	76.31 ft^3	37392.15 lbs
16	11	51.000 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	146.22 ft^3	71648.94 lbs
17	13	94.297 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	0.000 in^2	253.07 ft^3	124004.90 lbs
18	14	29.000 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	83.15 ft^3	40741.55 lbs
19	15	28.000 ft	28.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	85.14 ft^3	41718.62 lbs
20	16	30.000 ft	28.000 in	2.500 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	105.80 ft^3	51844.35 lbs
21	15	30.000 ft	28.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	91.22 ft^3	44698.52 lbs
22	14	29.000 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	83.15 ft^3	40741.55 lbs
23	17	110.896 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	0.000 in^2	297.62 ft^3	145833.33 lbs
24	18	43.000 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	123.29 ft^3	60409.89 lbs
25	20	24.000 ft	18.000 in	1.750 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	71.81 ft^3	35187.15 lbs
26	18	45.000 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	129.02 ft^3	63219.65 lbs
27	21	103.115 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	0.000 in^2	276.74 ft^3	135600.61 lbs
28	22	49.000 ft	28.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	149.00 ft^3	73007.58 lbs
29	24	36.000 ft	28.000 in	2.500 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	126.97 ft^3	62213.22 lbs
30	22	49.000 ft	28.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	149.00 ft^3	73007.58 lbs
31	25	123.000 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	1.000 in	0.000 in^2	356.52 ft^3	174693.57 lbs
32	26	58.573 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	1.000 in	0.000 in^2	169.77 ft^3	83189.53 lbs

Total = **2564674.91 lbs**

Left Box

Plate	Sec ID	Length	TF Width	TF Thick	BF Width	BF Thick	Web Height	Web Thick	BF Stiff	Volume	Weight
1	1	79.500 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	1.000 in	0.000 in^2	230.43 ft^3	112911.70 lbs
2	2	126.000 ft	18.000 in	1.750 in	100.000 in	1.250 in	123.693 in	1.000 in	0.000 in^2	380.96 ft^3	186671.89 lbs
3	3	52.500 ft	26.000 in	2.500 in	100.000 in	1.250 in	123.693 in	0.875 in	22.100 in^2	188.00 ft^3	92121.05 lbs
4	4	13.500 ft	36.000 in	2.500 in	100.000 in	1.250 in	123.693 in	0.875 in	22.100 in^2	53.03 ft^3	25985.15 lbs
5	5	46.000 ft	36.000 in	3.750 in	100.000 in	2.500 in	123.693 in	0.875 in	22.100 in^2	249.38 ft^3	122195.45 lbs
6	4	12.500 ft	36.000 in	2.500 in	100.000 in	1.250 in	123.693 in	0.875 in	22.100 in^2	49.10 ft^3	24060.32 lbs
7	3	60.500 ft	26.000 in	2.500 in	100.000 in	1.250 in	123.693 in	0.875 in	22.100 in^2	216.65 ft^3	106158.55 lbs
8	6	122.000 ft	18.000 in	1.750 in	100.000 in	1.250 in	123.693 in	0.875 in	0.000 in^2	342.67 ft^3	167908.34 lbs
9	7	50.000 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	0.000 in^2	134.19 ft^3	65752.39 lbs
10	8	38.000 ft	28.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	115.55 ft^3	56618.12 lbs
11	9	36.000 ft	28.000 in	2.500 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	126.97 ft^3	62213.22 lbs
12	8	17.000 ft	28.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	51.69 ft^3	25329.16 lbs
13	10	109.000 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	312.51 ft^3	153132.05 lbs
14	11	23.000 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	65.94 ft^3	32312.27 lbs
15	12	24.000 ft	18.000 in	2.500 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	76.31 ft^3	37392.15 lbs
16	11	53.000 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	151.96 ft^3	74458.70 lbs
17	13	118.016 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	0.000 in^2	316.73 ft^3	155196.20 lbs
18	14	30.000 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	86.01 ft^3	42146.44 lbs
19	15	27.000 ft	28.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	82.10 ft^3	40228.67 lbs
20	16	36.000 ft	28.000 in	2.500 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	126.97 ft^3	62213.22 lbs
21	15	29.000 ft	28.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	88.18 ft^3	43208.57 lbs
22	14	30.000 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	86.01 ft^3	42146.44 lbs
23	17	93.484 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	0.000 in^2	250.89 ft^3	122936.43 lbs
24	18	45.000 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	129.02 ft^3	63219.65 lbs
25	20	24.000 ft	18.000 in	1.750 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	71.81 ft^3	35187.15 lbs
26	18	45.000 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	129.02 ft^3	63219.65 lbs
27	21	103.500 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	0.000 in^2	277.77 ft^3	136107.45 lbs
28	22	49.000 ft	28.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	149.00 ft^3	73007.58 lbs
29	24	36.000 ft	28.000 in	2.500 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	126.97 ft^3	62213.22 lbs
30	22	49.000 ft	28.000 in	1.250 in	100.000 in	1.250 in	123.693 in	0.875 in	13.200 in^2	149.00 ft^3	73007.58 lbs
31	25	123.000 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	1.000 in	0.000 in^2	356.52 ft^3	174693.57 lbs
32	26	57.500 ft	18.000 in	1.250 in	100.000 in	1.250 in	123.693 in	1.000 in	0.000 in^2	166.66 ft^3	81665.69 lbs

Total = **2615618.04 lbs**

End Diaphragms

Location	Type	Flg Thick	Flg Width	TF Length	BF Length	Web Area	Web Thick	Volume	Weight
EB 1	D1	1.250 in	12.000 in	38.198 ft	17.594 ft	323.565 ft^2	1.000 in	32.78 ft^3	16059.95 lbs
Pier 2	D2	1.750 in	26.000 in	29.750 ft	17.583 ft	341.930 ft^2	1.750 in	64.82 ft^3	31762.15 lbs
Pier 3	D3	1.250 in	16.000 in	31.750 ft	17.583 ft	341.672 ft^2	1.500 in	49.56 ft^3	24284.79 lbs
Pier 4	D3	1.250 in	16.000 in	34.250 ft	17.583 ft	342.872 ft^2	1.500 in	50.06 ft^3	24528.43 lbs
Pier 5 Lt	D4	1.250 in	16.000 in	31.750 ft	17.583 ft	341.672 ft^2	1.500 in	49.56 ft^3	24284.79 lbs
Pier 5 Rt	D4	1.250 in	16.000 in	31.750 ft	17.583 ft	341.672 ft^2	1.500 in	49.56 ft^3	24284.79 lbs
Pier 6	D3	1.250 in	16.000 in	34.250 ft	17.583 ft	340.622 ft^2	1.500 in	49.78 ft^3	24390.62 lbs
Pier 7	D3	1.250 in	16.000 in	31.750 ft	17.583 ft	341.672 ft^2	1.500 in	49.56 ft^3	24284.79 lbs
EB 8	D1	1.250 in	12.000 in	38.198 ft	17.594 ft	323.565 ft^2	1.000 in	32.78 ft^3	16059.95 lbs

Total = **209940.29 lbs**

End Diaphragm Splices

Location	Splice Width	Splice Thick	Top Splice		Bot Splice	Web Splice		Volume	Weight
			Int Splice Length	Ext Splice Length	Splice Area	Area	Length		
EB 1	12.000 in	1.250 in	87.250 in	0.000 in	7.290 ft^2	4.750 in^2	107.000 in	4.21 ft^3	2062.91 lbs
Pier 2	26.000 in	1.750 in	122.000 in	52.000 in	17.146 ft^2	17.438 in^2	110.000 in	18.60 ft^3	9116.07 lbs
Pier 3	16.000 in	1.250 in	107.500 in	46.750 in	9.602 ft^2	17.438 in^2	105.500 in	9.83 ft^3	4816.45 lbs
Pier 4	16.000 in	1.250 in	97.500 in	40.000 in	9.602 ft^2	17.438 in^2	105.500 in	9.44 ft^3	4626.46 lbs
Pier 5 Lt	16.000 in	1.250 in	107.500 in	46.750 in	9.602 ft^2	17.438 in^2	105.500 in	9.83 ft^3	4816.45 lbs
Pier 5 Rt	16.000 in	1.250 in	107.500 in	46.750 in	9.602 ft^2	17.438 in^2	105.500 in	9.83 ft^3	4816.45 lbs
Pier 6	16.000 in	1.250 in	97.500 in	40.000 in	9.602 ft^2	17.438 in^2	105.500 in	9.44 ft^3	4626.46 lbs
Pier 7	16.000 in	1.250 in	107.500 in	46.750 in	9.602 ft^2	17.438 in^2	105.500 in	9.83 ft^3	4816.45 lbs
EB 8	12.000 in	1.250 in	87.250 in	0.000 in	7.290 ft^2	4.750 in^2	107.000 in	4.21 ft^3	2062.91 lbs

Total= **41760.58 lbs**

End Diaphragm Misc. Details

End Bent 1 Connection Plates

Qty	Area	Length	Volume	Weight
4	6.30 in^2	3.500 in	0.05 ft^3	25.01 lbs

Web Stiffener

Location	Qty	Length	Width	Thickness	Volume	Weight
Type D1	8	3.797 ft	8.000 in	0.500 in	0.844 ft^3	413.45 lbs
Type D3	16	3.766 ft	8.000 in	0.500 in	1.674 ft^3	820.15 lbs

14-A

Structural Steel Quantity Summary

Item	Weight
Right Box	2564674.91 lbs
Left Box	2615618.04 lbs
End Diaphragm	254560.00 lbs
Internal Cross Frame	144670.88 lbs
Temporary External Cross Frame	57466.50 lbs
Connector Plates	164501.67 lbs
Transverse Shear Stiffeners	35294.20 lbs
Field Splices	146163.82 lbs
Top Lateral Bracing	277504.44 lbs
Bearing Stiffeners	40181.42 lbs
Jacking Stiffeners	15741.87 lbs
Transverse Bottom Flange Stiffeners	7391.17 lbs
Access Hole Covers	3349.12 lbs
Shear Connectors	12158.06 lbs
7/8" Diameter High Strength Bolts	87430.16 lbs
Hatch Cover at End Bents	225.56 lbs

Grand Total Weight of Structural Steel= 6426931.82 lbs

URS

Page _____ of _____

Job: Bruce B. Downs Flyover — Project No. 12008951.00005 — Sheet _____ of _____

Description: Structural Steel Grade End Diaphragm — Computed by: TSP — Date: 9/5/05

Checked by: MH — Date: 9/10/05

Back ✓ TSP 9/12/05

Rev TSP 10/19/05*

MH 10/19/05

Type D1 Diaphragm (EB1 + EB8)

Top Flange Length = $\left[19.5' - \frac{7.25''}{12}(0.25) - \frac{3}{2}\left(\frac{7/8''}{12}\right) - 3\left(\frac{1/2''}{12}\right)\right](2) = 38.229'$

Bottom Flange Length = $18' - 2\left(\frac{2\,7/16''}{12}\right) = 17.594'$

Web Area (Interior) = $\frac{1}{2}\left(\left(8' - \frac{7/8''}{12}\right) + \left(\left(13' - 2\left(\frac{7\,1/4''}{12}\right)(0.25)\right) - \frac{7/8''}{12}\right)(9'\,4\,3/4'')\right) = 96.\cancel{522}\,.454\ ft^2$

Web Area (Ext) = $\frac{1}{2}\left(\left(6.5' + \left(\frac{7\,1/4''}{12}\right)(0.25) - \frac{7/16''}{12}\right) + \left(9' - \frac{7/16''}{12}\right)\right)(9'\,4\,3/4'' - \cancel{(1\,1/4'')}) = \cancel{70.170}\ 72.325\ 73.136\ ft^2$

Total Area = $2(96.\cancel{522}\,.454\ ft^2 + \cancel{70.170}\ 72.325\ 73.136\ ft^2) = \cancel{334.584}\ \cancel{337.674}\ 337.180\ ft^2 - 2[\pi(1'4'')^2 + 10''(32'')] = \cancel{327.197}\ \cancel{327.196}\ 323.565\ ft^2$ OK

Type D2 Diaphragm (Pier 2)

Top Flange Length = $2\left[\left(13' - 3'6'' - 2\left(\frac{1/2''}{12}\right)\right) + \left(6.5' - \frac{1}{2}\left(\frac{36''}{12}\right) - \frac{1/2''}{12}\right)\right] = 29.750'$

Bottom Flange Length = $2\left[9' - \left(\frac{2\,1/2''}{12}\right)\right] = 17.583'$

Web Area (Int) = $\frac{1}{2}\left[\left(8' - \left(\frac{7/8''}{12}\right)\right) + \left(13' - \left(\frac{7/8''}{12}\right)\right)\right](10.167') - \left[\pi(1.333')^2 + (10'')(32'')/144\right] - 2\left(\frac{18\,1/2''}{12}\right)\left(\frac{6''}{12}\right)$

$- 2\left(\frac{1}{2}\right)\left(\frac{4''}{12}\right)\left(\frac{1\,1/2''}{12}\right) - 2\left(\frac{19''}{12}\right)\left(\frac{14''}{12}\right) = 92.930\ ft^2$

Web Area (Ext) = $\frac{1}{2}\left[\left(6.5' - \left(\frac{7/16''}{12}\right)\right) + \left(9' - \left(\frac{7/16''}{12}\right)\right)\right](10.021') - \left(\frac{18\,1/2''}{12}\right)\left(\frac{6''}{12}\right) - \left(\frac{2\,3/4''}{12}\right)\left(\frac{5''}{12}\right) = 76.431\ ft^2$

Total Area = $2(92.930\ ft^2 + 76.431\ ft^2) = 338.722\ ft^2$

Type D3 Diaphragm (Pier 3)

Top Flange Length = $2\left[\left(13' - \frac{28''}{12} - 2\left(\frac{1/2''}{12}\right)\right) + \left(6.5' - \frac{1}{2}\left(\frac{28''}{12}\right) - \frac{1/2''}{12}\right)\right] = 31.750'$

Bottom Flange Length = $2\left[9' - \left(\frac{2\,1/2''}{12}\right)\right] = 17.583'$

Web Area (Int) = $\frac{1}{2}\left[\left(8' - \left(\frac{7/8''}{12}\right)\right) + \left(13' - \left(\frac{7/8''}{12}\right)\right)\right](10.104') - \left[\pi(1.333')^2 + \left(\frac{10''}{12}\right)\left(\frac{32''}{12}\right)\right] - 2\left(\frac{14\,1/2''}{12}\right)\left(\frac{5\,3/4''}{12}\right)$

$- 2\left(\frac{1}{2}\right)\left(\frac{4''}{12}\right)\left(\frac{1\,1/2''}{12}\right) - (2)\left(\frac{16''}{12}\right)\left(\frac{12\,1/2''}{12}\right) = 93.573\ ft^2$

Web Area (Ext) = $\frac{1}{2}\left[\left(6.5' - \left(\frac{7/16''}{12}\right)\right) + \left(9' - \left(\frac{7/16''}{12}\right)\right)\right](10.104') - \left(\frac{14\,1/2''}{12}\right)\left(\frac{5\,3/4''}{12}\right) - \left(\frac{2\,3/4''}{12}\right)\left(\frac{5''}{12}\right) = \cancel{76.461}\ 77.263\ ft^2$

Total Area = $2[93.573\ ft^2 + \cancel{76.461}\ 77.263\ ft^2] = \cancel{340.068}\ 341.672\ ft^2$

Type D3 Diaphragm (Pier 4)

Top Flange Length = $2\left[\left(13' - \frac{18''}{12} - 2\left(\frac{1/2''}{12}\right)\right) + \left(6.5' - \frac{1}{2}\left(\frac{18''}{12}\right) - \frac{1/2''}{12}\right)\right] = 34.250'$

Bottom Flange Length = $2\left[9' - \left(\frac{2\,1/2''}{12}\right)\right] = 17.583'$

Web Area (Int) = $\frac{1}{2}\left[\left(8' - \left(\frac{7/8''}{12}\right)\right) + \left(13' - \left(\frac{7/8''}{12}\right)\right)\right](10.104') - \left[\pi(1.333')^2 + \left(\frac{10''}{12}\right)\left(\frac{32''}{12}\right)\right] - 2\left(\frac{9\,1/2''}{12}\right)\left(\frac{5\,3/4''}{12}\right)$

$- 2\left(\frac{1}{2}\right)\left(\frac{4''}{12}\right)\left(\frac{1\,1/2''}{12}\right) - 2\left(\frac{16''}{12}\right)\left(\frac{12\,1/2''}{12}\right) = 93.973\ ft^2$

Web Area (Ext) = $\frac{1}{2}\left[\left(6.5' - \left(\frac{7/16''}{12}\right)\right) + \left(9' - \left(\frac{7/16''}{12}\right)\right)\right](\cancel{10}\ 10.104') - \left(\frac{9\,1/2''}{12}\right)\left(\frac{5\,3/4''}{12}\right) - \left(\frac{2\,3/4''}{12}\right)\left(\frac{5''}{12}\right) = \cancel{76.461}\ 77.463\ ft^2$

Total Area = $2[93.973\ ft^2 + \cancel{76.461}\ 77.463\ ft^2] = \cancel{341.268}\ 342.872\ ft^2$

* Adjusted Ext Web Area for new bot. flg. splice connection.

URS

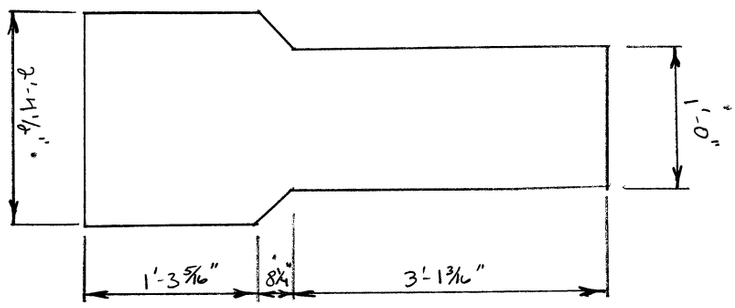
Page ____ of ____

Job Bruce B. Downs Flyover | Project No. 12002951.00005 | Sheet ____ of ____

Description Diaphragm Splice Quantities | Computed by TSP | Date 10/19/05

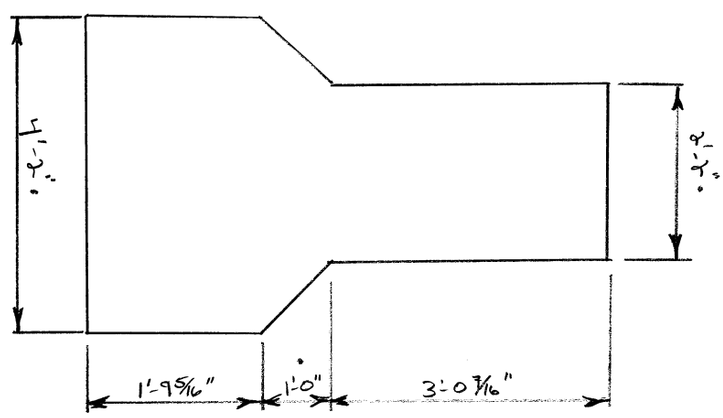
Bottom Plate Area | Checked by MH | Date 10/19/05

Type D1 Diaphragm



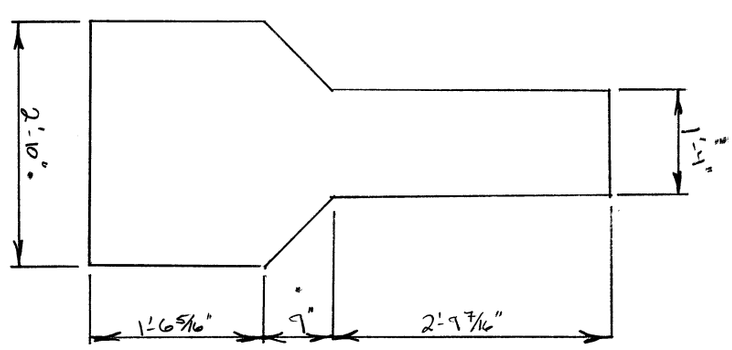
Area = (2'-4½")(1'-3 5/16") + (8¼")² + (1'-0")(8¼") + (3'-1 3/16")(1'-0") = 7.290 ft²

Type D2 Diaphragm



Area = (4'-2")(1'-9 5/16") + (1'-0")² + (2'-2")(1'-0") + (2'-2")(3'-0 7/16") = 17.146 ft²

Type D3 & D4 Diaphragms



Area = (2'-10")(1'-6 5/16") + (9")² + (1'-4")(9") + (1'-4")(2'-9 7/16") = 9.602 ft²

H3

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

LINEAR MEASUREMENT, COMPONENT WEIGHT, PER HOUR, PER DAY OR PER EACH COMPUTATIONS

FORM 700-050-03
CONSTRUCTION
06/02

PAY ITEM NO. 460-7-5

PAY ITEM DESCRIPTION EXPANSION JOINT SEAL (MODULAR)

LOCATION	SIDE	DESIGN ORIGINAL		CONSTRUCTION FINAL			
		LENGTH*, COMPONENT WEIGHT*, OR NUMBER PER HOUR, DAY, EACH	REFERENCES/REMARKS	LENGTH*, COMPONENT WEIGHT*, OR NUMBER PER HOUR, DAY, EACH	REFERENCE	OVER/UNDER RUN	REMARKS
Bridge 100712							
End Bent 1		46 LF	See Designer Calculations	✓			No Change
			Page 15-A				
End Bent 8		46 LF		✓			

Construction Option: Place Designer quantity or place check mark if final quantity does not change.

*PROVIDE APPROPRIATE UNITS FOR THIS ITEM AS SHOWN IN CONTRACT (I.e. LF, M1, LB, KG,)	92 LF	< PAGE TOTAL >	92 LF
	92 LF	< PROJECT GRAND TOTAL >	92 LF

If the above item is under the **Plan Quantity Concept**, then the block below **must** be appropriately filled out.

Plan Quantity Concept Signature Block
Design Engineers Responsible for Calculations: All support measurements and computations have been included for this Plan Quantity item.

Signature: _____ **Print Name:** _____

NOTES FOR EXPLANATION OF OVER/UNDER RUN

URS Corporation

Project: BBD Flyover **Designed By:** TSP **Checked By:** MH
Project Number: 12002951.00005. **Date:** 05-Sep-05 **Date:** 9/7/05
Description: Expansion Joint Seal (Modular)

Length EB 1*	46.00 ft
Length EB 8*	46.00 ft
Total	92.00 ft

* Expansion Joint Seal is measured from gutter line to gutter line along the centerline of the joint.

15A

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

LINEAR MEASUREMENT, COMPONENT WEIGHT, PER HOUR, PER DAY OR PER EACH COMPUTATIONS

FORM 700-050-03
CONSTRUCTION
09/07

PAY ITEM NO. 0461113 17

PAY ITEM DESCRIPTION MULTIROTATIONAL BEARING ASSEM-FIXED, F&I, 1501-1750 KIPS

LOCATION	SIDE	DESIGN ORIGINAL		CONSTRUCTION FINAL			
		LENGTH*, COMPONENT WEIGHT*, OR NUMBER PER HOUR, DAY, EACH	REFERENCES/REMARKS	LENGTH*, COMPONENT WEIGHT*, OR NUMBER PER HOUR, DAY, EACH	REFERENCE	OVER/UNDER RUN	REMARKS
Bridge 100712							
Pier 4		2 EA	See Designer Calculations	✓			No Change
			Page 16-A				See page 16A
*PROVIDE APPROPRIATE UNITS FOR THIS ITEM AS SHOWN IN CONTRACT (I.e. LF, M1, LB, KG,)		2 EA	< PAGE TOTAL >	2 EA			
		2 EA	< PROJECT GRAND TOTAL >	2 EA			

Construction Option: Place Designer quantity or place check mark if final quantity does not change.

If the above item is under the **Plan Quantity Concept**, then the block below **must** be appropriately filled out.

Plan Quantity Concept Signature Block
Design Engineers Responsible for Calculations: All support measurements and computations have been included for this Plan Quantity item.

Signature: _____ **Print Name:** _____

NOTES FOR EXPLANATION OF OVER/UNDER RUN:

EXTRA NOTES / REMARKS:

URS

Page ____ of ____

Job BRUXER DOWNS | Project No. ____ | Sheet ____ of ____

Description BEARINGS | Computed by GEB | Date 9.12.05

Checked by RTG | Date 9/13/05

	EXP/ FIXED	TOTAL REACTION + LOAD LEFT	RIGHT
EB 1	E.	861.	892.
PIER 2	E.	2632.	3179.
PIER 3	E.	1885.	1977.
PIER 4	F.	1601.	1491.
PIER 5	F.	2007.	2108
PIER 6	E.	1610.	1722.
PIER 7	E.	2134.	2153.
PIER 8	E.	759.	827.

PAY ITEM:

461-113-17.	F.	1501-1750	:	2.
461-113-19.	F.	≥2001	:	2.
461-114-14.	E	751-1000.	:	4.
461-114-19	E	≥2001.	:	8.

- PIERS 3 & 6 GROUPED WITH HIGHER GROUP TO MINIMIZE NUMBER OF PAY ITEMS. ✓

16A

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

LINEAR MEASUREMENT, COMPONENT WEIGHT, PER HOUR, PER DAY OR PER EACH COMPUTATIONS

FORM 700-050-03
CONSTRUCTION
06/02

PAY ITEM NO. 461-113-19

PAY ITEM DESCRIPTION MULTIROTATIONAL BEARING ASSEM-FIX(F&I)(>=2001 KIPS)

LOCATION	SIDE	DESIGN ORIGINAL		CONSTRUCTION FINAL			
		LENGTH*, COMPONENT WEIGHT*, OR NUMBER PER HOUR, DAY, EACH	REFERENCES/REMARKS	LENGTH*, COMPONENT WEIGHT*, OR NUMBER PER HOUR, DAY, EACH	REFERENCE	OVER/UNDER RUN	REMARKS
Bridge 100712							
							No Changes
Pier 5		2 EA	See Designer Calculations	✓			See Page 16A
			Page 16-A				
*PROVIDE APPROPRIATE UNITS FOR THIS ITEM AS SHOWN IN CONTRACT (I.e. LF, M1, LB, KG,)		2 EA	< PAGE TOTAL >	2 EA			
		2 EA	< PROJECT GRAND TOTAL >	2 EA			

Construction Option: Place Designer quantity or place check mark if final quantity does not change.

If the above item is under the **Plan Quantity Concept**, then the block below **must** be appropriately filled out.

Plan Quantity Concept Signature Block
Design Engineers Responsible for Calculations: All support measurements and computations have been included for this Plan Quantity item.

Signature: _____ **Print Name:** _____

NOTES FOR EXPLANATION OF OVER/UNDER RUN

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

LINEAR MEASUREMENT, COMPONENT WEIGHT, PER HOUR, PER DAY OR PER EACH COMPUTATIONS

FORM 700-050-03
CONSTRUCTION
06/02

PAY ITEM NO. 461-114-14

PAY ITEM DESCRIPTION MULTIROTATIONAL BEARING ASSEM EXP(F&I)(751-1000 KIPS)

LOCATION	SIDE	DESIGN ORIGINAL			CONSTRUCTION FINAL			
		LENGTH*, COMPONENT WEIGHT*, OR NUMBER PER HOUR, DAY, EACH		REFERENCES/REMARKS	LENGTH*, COMPONENT WEIGHT*, OR NUMBER PER HOUR, DAY, EACH	REFERENCE	OVER/UNDER RUN	REMARKS
Bridge 100712								
								No Changes
End Bent 1		2	EA	See Designer Calculations	✓			See Page 16A
End Bent 8		2	EA	Page 16-A	✓			
*PROVIDE APPROPRIATE UNITS FOR THIS ITEM AS SHOWN IN CONTRACT (I.e. LF, M1, LB, KG,)		4	EA	< PAGE TOTAL >	4	EA		
		4	EA	< PROJECT GRAND TOTAL >	4	EA		

Construction Option: Place Designer quantity or place check mark if final quantity does not change.

If the above item is under the **Plan Quantity Concept**, then the block below **must** be appropriately filled out.

Plan Quantity Concept Signature Block
Design Engineers Responsible for Calculations: All support measurements and computations have been included for this Plan Quantity item.

Signature: _____ **Print Name:** _____

NOTES FOR EXPLANATION OF OVER/UNDER RUN

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

LINEAR MEASUREMENT, COMPONENT WEIGHT, PER HOUR, PER DAY OR PER EACH COMPUTATIONS

FORM 700-050-03
CONSTRUCTION
06/02

PAY ITEM NO. 461-114-19

PAY ITEM DESCRIPTION MULTIROTATIONAL BEARING ASSEM EXP(F&I)(>=2001 KIPS)

LOCATION	SIDE	DESIGN ORIGINAL		CONSTRUCTION FINAL			
		LENGTH*, COMPONENT WEIGHT*, OR NUMBER PER HOUR, DAY, EACH	REFERENCES/REMARKS	LENGTH*, COMPONENT WEIGHT*, OR NUMBER PER HOUR, DAY, EACH	REFERENCE	OVER/UNDER RUN	REMARKS
Bridge 100712							
							No Changes
Pier 2		2 EA		✓			See Page 16A
Pier 3		2 EA		✓			
Pier 6		2 EA		✓			
Pier 7		2 EA		✓			
*PROVIDE APPROPRIATE UNITS FOR THIS ITEM AS SHOWN IN CONTRACT (I.e. LF, M1, LB, KG,)		8 EA	< PAGE TOTAL >	8 EA			
		8 EA	< PROJECT GRAND TOTAL >	8 EA			

Construction Option: Place Designer quantity or place check mark if final quantity does not change.

If the above item is under the **Plan Quantity Concept**, then the block below **must** be appropriately filled out.

Plan Quantity Concept Signature Block
Design Engineers Responsible for Calculations: All support measurements and computations have been included for this Plan Quantity item.

Signature: _____ **Print Name:** _____

NOTES FOR EXPLANATION OF OVER/UNDER RUN

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

LINEAR MEASUREMENT, COMPONENT WEIGHT, PER HOUR, PER DAY OR PER EACH COMPUTATIONS

FORM 700-050-03
CONSTRUCTION
06/02

PAY ITEM NO. 506-2

PAY ITEM DESCRIPTION BRIDGE DRAINAGE PIPING

LOCATION	SIDE	DESIGN ORIGINAL		CONSTRUCTION FINAL			
		LENGTH*, COMPONENT WEIGHT*, OR NUMBER PER HOUR, DAY, EACH	REFERENCES/REMARKS	LENGTH*, COMPONENT WEIGHT*, OR NUMBER PER HOUR, DAY, EACH	REFERENCE	OVER/UNDER RUN	REMARKS
Bridge 100712							
EB 1		74 LF	See Designer Calculations	74 LF			Pier 2,7 Additional
Pier 2		62 LF	Pages 20-A & 20-D	70 LF		8.0	pipe added for
Pier 6		70 LF		70 LF			Field Change
Pier 7		51 LF		58 LF		7.0	
							See Field Book # 2001
							page # 67 for
							measured quantities
*PROVIDE APPROPRIATE UNITS FOR THIS ITEM AS SHOWN IN CONTRACT (I.e. LF, M1, LB, KG,)		257 LF	< PAGE TOTAL >	272 LF			
		257 LF	< PROJECT GRAND TOTAL >	272 LF			

Not showing all back-up data

Field Book For Reference Only

If the above item is under the **Plan Quantity Concept**, then the block below **must** be appropriately filled out.

Plan Quantity Concept Signature Block

Design Engineers Responsible for Calculations: All support measurements and computations have been included for this Plan Quantity item.

Signature: Gabriel Braesch **Print Name:** Garbriel Braesch

NOTES FOR EXPLANATION OF OVER/UNDER RUN

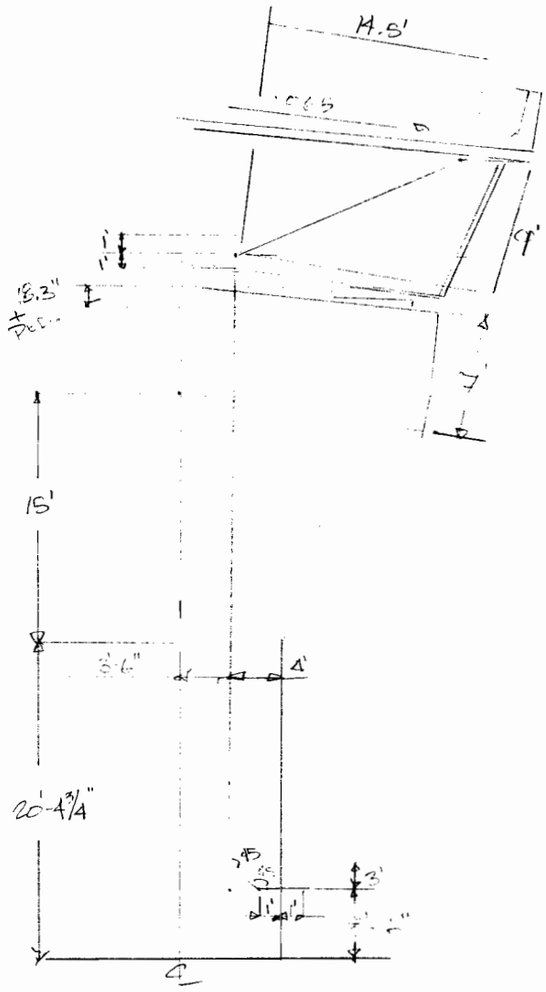
URS

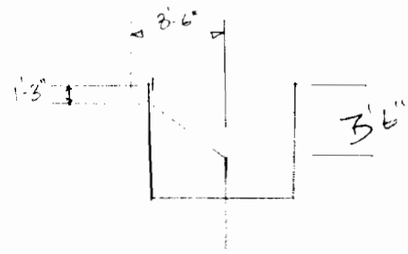
Job [illegible] | Project No. | Sheet ___ of ___

Description [illegible] | Computed by GCB | Date 9.13.05

[illegible] | Checked by RTK | Date [illegible]

Pipe 2





Pertinent dim:

$$L = 1+1+\sqrt{3^2+3^2} + (20'-4\tfrac{3}{4}'-8'6'')+(15-3'6'\times.065)$$
$$+(7'-3'6') + \sqrt{3.5^2+3.5^2} + 18.3''/12 + (5''+2'(.065)) + 1+1$$
$$+\sqrt{9^2+14.5^2}$$

$L = 62.49'$ of PIPE.

URS

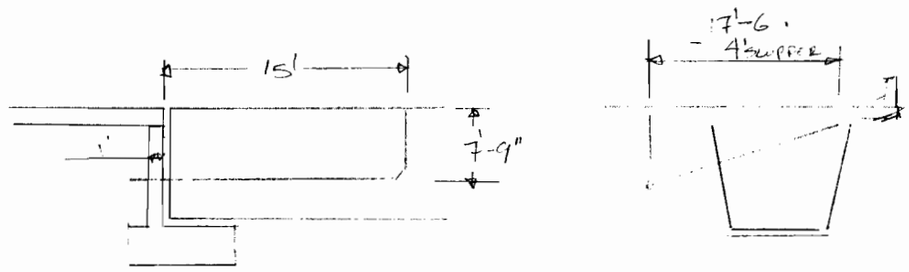
Page ____ of ____

Job [illegible] | Project No. ____ | Sheet 3 of 3

Description [illegible] | Computed by GLB | Date 9.13.05

Drains | Checked by RTT | Date 9.11.05

EB 1



To Drainage [illegible]

Total Back [illegible]

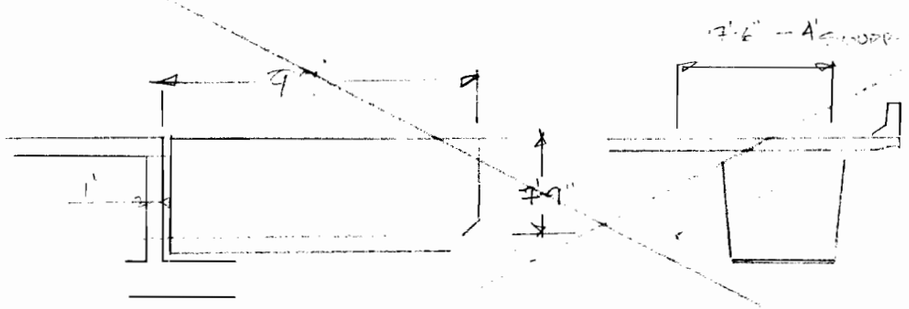
$L = 1' + 15 + \sqrt{7.75^2 + 13.5^2} = 31.57'$ of pipe

$+ \sqrt{32^2 + 28^2} = 74.09'$

GLB 10.11.05

EB 8

[illegible]



$L = 1' + 99' + \sqrt{7.75^2 + 13.5^2} = 115.57'$ of pipe

$+ \sqrt{42.05^2 + 28^2} = 166.09'$ [illegible]

32

Location	# of Drains	Ft of Pipe
EB 1	1	~~31.57'~~ 74.09'
Pile 2	1	62.49'
Pile 3	1	59.76'
EB 8	1	~~115.57'~~ 166.09'
TOTAL	4 drains	~~279.39'~~ 316.43 ft of pipe

200

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

LINEAR MEASUREMENT, COMPONENT WEIGHT, PER HOUR, PER DAY OR PER EACH COMPUTATIONS

FORM 700-050-03
CONSTRUCTION
06/02

PAY ITEM NO. 506-3

PAY ITEM DESCRIPTION BRIDGE DRAINS

LOCATION	SIDE	DESIGN ORIGINAL		CONSTRUCTION FINAL			
		LENGTH*, COMPONENT WEIGHT*, OR NUMBER PER HOUR, DAY, EACH	REFERENCES/REMARKS	LENGTH*, COMPONENT WEIGHT*, OR NUMBER PER HOUR, DAY, EACH	REFERENCE	OVER/UNDER RUN	REMARKS
Bridge 100712							
EB 1		1 EA		✓			See Field Book No. 7
Pier 2		1 EA		✓			Page 77
Pier 6		1 EA		✓			
EB 8		1 EA		✓			
*PROVIDE APPROPRIATE UNITS FOR THIS ITEM AS SHOWN IN CONTRACT (I.e. LF, M1, LB, KG,)		4 EA	< PAGE TOTAL >	4 EA			
		4 EA	< PROJECT GRAND TOTAL >	4 EA			

Field Book
For Reference Only

Construction Option:
Place Designer quantity or place check mark if final quantity does not change.

If the above item is under the **Plan Quantity Concept**, then the block below **must** be appropriately filled out.

Plan Quantity Concept Signature Block

Design Engineers Responsible for Calculations: All support measurements and computations have been included for this Plan Quantity item.

Signature: Gabriel Braesch **Print Name:** Gabriel Braesch

NOTES FOR EXPLANATION OF OVER/UNDER RUN

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

LINEAR MEASUREMENT, COMPONENT WEIGHT, PER HOUR, PER DAY OR PER EACH COMPUTATIONS

FORM 700-050-03
CONSTRUCTION
06/02

PAY ITEM NO. 521-5-1

PAY ITEM DESCRIPTION CONCRETE TRAFFIC RAILING BARRIER BRIDGE (32" F)

LOCATION	SIDE	DESIGN ORIGINAL		CONSTRUCTION FINAL			
		LENGTH*, COMPONENT WEIGHT*, OR NUMBER PER HOUR, DAY, EACH	REFERENCES/REMARKS	LENGTH*, COMPONENT WEIGHT*, OR NUMBER PER HOUR, DAY, EACH	REFERENCE	OVER/UNDER RUN	REMARKS
Bridge 100712							
							Field Book For Reference Only
Approach Slab 1		60 LF	See Designer calculations	60 LF			
			on page 22A				
Approach Slab 2		60 LF		60 LF			See Field Book No. 12
							Page 22
							No Changes
*PROVIDE APPROPRIATE UNITS FOR THIS ITEM AS SHOWN IN CONTRACT (I.e. LF, M1, LB, KG,)		120 LF	< PAGE TOTAL >	120 LF			
		120 LF	< PROJECT GRAND TOTAL >	120 LF			

If the above item is under the **Plan Quantity Concept**, then the block below **must** be appropriately filled out.

Plan Quantity Concept Signature Block

Design Engineers Responsible for Calculations: All support measurements and computations have been included for this Plan Quantity item.

Signature: Thomas S. Peake **Print Name:** Thomas S. Peake

NOTES FOR EXPLANATION OF OVER/UNDER RUN

Additional traffic railing barrier overrun of 35 LF due to requiring the match of existing field conditions.

URS Corporation

Project: BBD Flyover **Designed By:** TSP **Checked By:** MH
Project Number: 12002951.00005. **Date:** 05-Sep-05 **Date:** 9/7/05
Description: ~~42"~~ 32" F-Shape Bridge Barrier

Approach Slab 1

Length of L1	A	30.0	ft
Length of L2	B	30.0	ft
Tot Length	A+B	60.0	ft

Approach Slab 2

Length of L1	A	30.0	ft
Length of L2	B	30.0	ft
Tot Length	A+B	60.0	ft

Grand Total = 120.0 ft

22A

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

LINEAR MEASUREMENT, COMPONENT WEIGHT, PER HOUR, PER DAY OR PER EACH COMPUTATIONS

FORM 700-050-03
CONSTRUCTION
06/02

PAY ITEM NO. 521-5-2

PAY ITEM DESCRIPTION CONCRETE TRAFFIC RAILING BARRIER BRIDGE (42" F)

LOCATION	SIDE	DESIGN ORIGINAL		CONSTRUCTION FINAL			
		LENGTH*, COMPONENT WEIGHT*, OR NUMBER PER HOUR, DAY, EACH	REFERENCES/REMARKS	LENGTH*, COMPONENT WEIGHT*, OR NUMBER PER HOUR, DAY, EACH	REFERENCE	OVER/UNDER RUN	REMARKS
							Authorized change
Bridge 100712		3,485 LF	See Designer calculations	3,578 LF		93.0	This qty changed
			Page 23A				due to matching
					Field Book		existing field
					For Reference Only		conditions. See F.B.
							# 20003 Page 38
							Plan Qty = 3,485
							Authorized + 93
							Final Qty = 3,578

*PROVIDE APPROPRIATE UNITS FOR THIS ITEM AS SHOWN IN CONTRACT (I.e. LF, M1, LB, KG,)	3,485 LF	< PAGE TOTAL >	3,578 LF
	3,485 LF	< PROJECT GRAND TOTAL >	3,578 LF

If the above item is under the **Plan Quantity Concept**, then the block below **must** be appropriately filled out.

Plan Quantity Concept Signature Block

Design Engineers Responsible for Calculations: All support measurements and computations have been included for this Plan Quantity item.

Signature: Thomas S. Peake **Print Name:** Thomas S. Peake

NOTES FOR EXPLANATION OF OVER/UNDER RUN The traffic railing barrier was increased by 93 LF due to matching existing field conditions.

URS Corporation

Project: BBD Flyover **Designed By:** TSP **Checked By:** MH
Project Number: 12002951.00005. **Date:** 05-Sep-05 **Date:** 9/7/05
Description: 42" F-Shape Bridge Barrier

Length of Left Gutter	A	1771.8	ft
Length of Right Gutter	B	1713.0	ft
Tot Length	A+B	3484.8	ft

83 A

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

LINEAR MEASUREMENT, COMPONENT WEIGHT, PER HOUR, PER DAY OR PER EACH COMPUTATIONS

FORM 700-050-03
CONSTRUCTION
09/07

PAY ITEM NO. 0521 8 1

PAY ITEM DESCRIPTION CONCRETE TRAFFIC RAILING BARRIER, RETAINING WALL SYSTEM

LOCATION	SIDE	DESIGN ORIGINAL		CONSTRUCTION FINAL			
		LENGTH*, COMPONENT WEIGHT*, OR NUMBER PER HOUR, DAY, EACH	REFERENCES/REMARKS	LENGTH*, COMPONENT WEIGHT*, OR NUMBER PER HOUR, DAY, EACH	REFERENCE	OVER/UNDER RUN	REMARKS
Bridge 100712							
W -1		260 LF	See Designer Calculations	✓			No Changes
			Page 24A				
W - 2		1,104 LF		✓			
*PROVIDE APPROPRIATE UNITS FOR THIS ITEM AS SHOWN IN CONTRACT (I.e. LF, M1, LB, KG,)		1,364 LF	< PAGE TOTAL >	1,364 LF			
		1,364 LF	< PROJECT GRAND TOTAL >	1,364 LF			

If the above item is under the **Plan Quantity Concept**, then the block below **must** be appropriately filled out.

Plan Quantity Concept Signature Block

Design Engineers Responsible for Calculations: All support measurements and computations have been included for this Plan Quantity item.

Signature: Murray McDonough **Print Name:** Murray McDonough

NOTES FOR EXPLANATION OF OVER/UNDER RUN:

EXTRA NOTES / REMARKS:

URS

Job B.B. DOWNS FLYOVER
Description QUANTITIES

Project No.
Computed by MCM
Checked by RTG

Page ____ of ____
Sheet ____ of ____
Date 9/15/05
Date 11/1/05
Reference

TRAFFIC RAILING BARRIER ON MSE WALL

WALL W-1

LT. SIDE: END WALL STA. 168+00
A.S STA 169+05
105 LF

RT. SIDE: BEGIN WALL STA. 167+50
A.S. STA 169+05
155 LF

$\Rightarrow \Sigma$ 260 LF

WALL W-2

LT. SIDE: A.S. STA. 187+24
P.T. STA 191+72.95
448.95 $\left(\frac{5989}{6000}\right)$ = 448.13 LF
P.T. STA 191+72.95
BEGIN WALL STA. 193+00
127.05

RT. SIDE A.S. STA. 187+24
P.T. STA. 191+72.95
448.95 $\left(\frac{6037}{6000}\right)$ = 451.72
P.T. STA 191+72.95
END WALL STA. 192+50
77.05

$\Rightarrow \Sigma$ 1103.95 LF

2 of 4

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

AREA COMPUTATIONS

FORM 700-050-01
CONSTRUCTION
09/07

PAY ITEM NO. 0524 2 2

PAY ITEM DESCRIPTION CONCRETE SLOPE PAVEMENT,NON REINFORCED, 4"

STATION TO STATION	TRAV. OR PAGE NO.	SIDE	DESIGN ORIGINAL					CONSTRUCTION FINAL			
			WIDTH	LENGTH	CURVE CORR(+/-)	AREA (SY)	REMARKS	WIDTH	LENGTH	AREA (SY)	REMARKS
End Bent 1						14.0	See Designer Calculations			✓	No Changes
End Bent 2						14.0	Page 25A			✓	
						28	< PAGE TOTAL >			28	
						28	< PROJECT GRAND TOTAL >			28	

Construction Option: Place Designer quantity or place check mark if final quantity does not change.

If the above item is under the **Plan Quantity Concept**, then the block below **must** be appropriately filled out.

Plan Quantity Concept Signature Block

Design Engineers Responsible for Calculations: All support measurements and computations have been included for this Plan Quantity item.

Signature: Gabriel Braesch **Print Name:** Gabriel Braesch

NOTES FOR EXPLANATION OF OVER/UNDER RUN:

EXTRA NOTES / REMARKS:

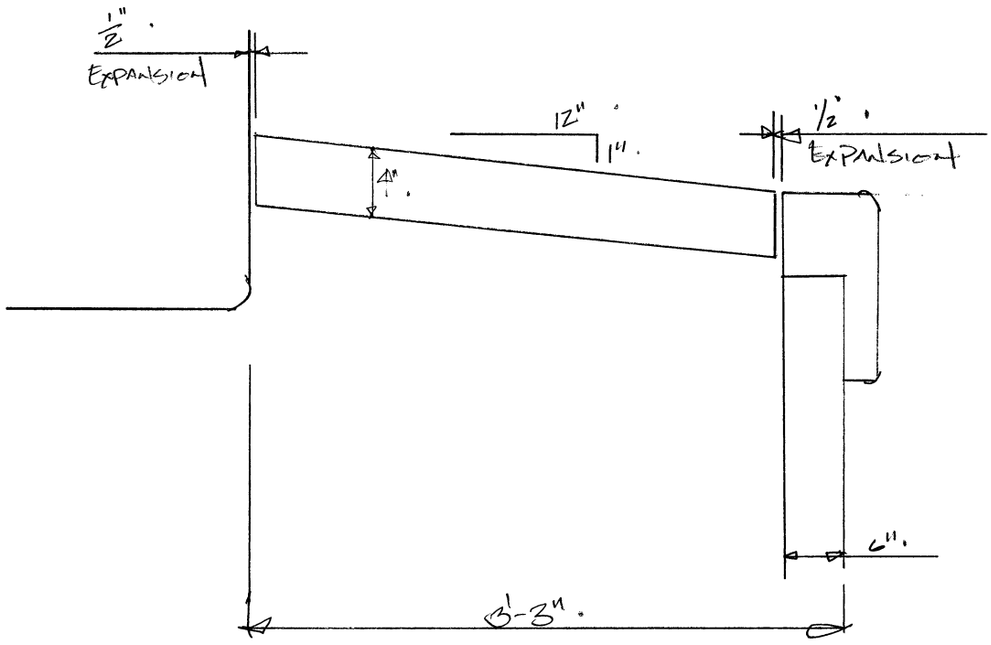
URS

Page ____ of ____

Job BRUCE BDOWNS | Project No. ____ | Sheet ____ of ____

Description SLOPE PAVEMENT | Computed by GEB | Date 9.12.05

CONCRETE - 4" | Checked by RTG | Date 9/12/05



WIDTH: (3'-3") - 6" - (1/2" × 2) = 32" = 2.67'

EB1: 2.67 × [(49'-1") - (6" × 2)] = 128.38 □'
= 14.26 □YD

EB8: 2.67 × [(49'-1") - (6" × 2)] = 128.38 □'
= 14.26 □YD

TOTAL SLOPE PAVEMENT CONCRETE:
29 SQUARE YD.

25A

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

AREA COMPUTATIONS

FORM 700-050-01
CONSTRUCTION
06/02

PAY ITEM NO. 548-12

PAY ITEM DESCRIPTION RETAINING WALL SYSTEM(PERMANENT)(EXCLUDING BARRIER)

STATION TO STATION	TRAV. OR PAGE NO.	SIDE	DESIGN ORIGINAL					CONSTRUCTION FINAL			
			WIDTH	LENGTH	CURVE CORR(+/-)	AREA (SF)	REMARKS	WIDTH	LENGTH	AREA (SF)	REMARKS
Bridge 100712											
W-1						9,494	See Designer Calculations			✓	No Changes
							Pages 26-A thru 26-D				Pay Plan Quantity
W-2						16,044				✓	
						25,538	< PAGE TOTAL >			25,538	
						25,538	< PROJECT GRAND TOTAL >			25,538	

If the above item is under the **Plan Quantity Concept**, then the block below **must** be appropriately filled out.

Plan Quantity Concept Signature Block

Design Engineers Responsible for Calculations: All support measurements and computations have been included for this Plan Quantity item.

Signature: Murray McDonough **Print Name:** Murray McDonough

NOTES FOR EXPLANATION OF OVER/UNDER RUN

Good as of 1/16 ; May change at later date

RETAINING WALL W-1					
STATIONS	LEFT ELEVATIONS			Left Wall Area	
	TOP OF COPING	PROPOSED GROUND	TOP OF LEVELING PAD		
168+00.00	75.108	75.100	60.600		
168+25.00	76.158	62.600	60.600	375.827	
168+50.00	77.207	50.100	48.100		558.306
168+75.00	78.256	46.000	43.500	798.285	
169+00.00	79.305	45.500	43.500		882.014
169+05.00	79.515	45.500	43.500	179.550	
				2793.981	

RETAINING WALL W-1					
STATIONS	RIGHT ELEVATIONS			Right Wall Area	
	TOP OF COPING	PROPOSED GROUND	TOP OF LEVELING PAD		
167+50.00	73.980	74.000	60.000		
167+75.00	74.848	61.500	60.000	360.346	
168+00.00	75.682	55.000	52.000		481.626
168+25.00	76.517	54.700	52.000	602.492	
168+50.00	77.352	54.400	52.000		623.358
168+75.00	78.186	54.200	52.000	644.224	
169+00.00	79.021	54.000	52.000		665.091
169+05.00	79.188	54.000	52.000	135.522	
				3512.660	

RETAINING WALL W-1 QUANTITIES

WALL WRAP AROUND FROM STA. 169+05

$A_1 = \left[\frac{77.868' + 78.823'}{2} - 49\right] 26.5' = 836.35^{SF}$

$A_2 = \left[\frac{63.534' + 64.388' - 1'}{2} - 48\right] 12.5' + (1' \times 3.25') = 196.51^{SF}$

$A_3 = \left[\frac{64.388' + 64.989'}{2} - 45.5'\right] 48 = 921.05^{SF}$

$A_4 = \left[\frac{64.135' + 64.989' - 1}{2} - 43.5'\right] 12.5' + (1' \times 3.25') = 260.28^{SF}$

$A_5 = \left[\frac{79.377' + 78.265'}{2} - 43.5'\right] 26.5 = 936.01^{SF}$

WRAP AROUND TOTAL Σ 3150.19

LEFT WALL AREA = 2793.98

RIGHT WALL AREA = 3512.66

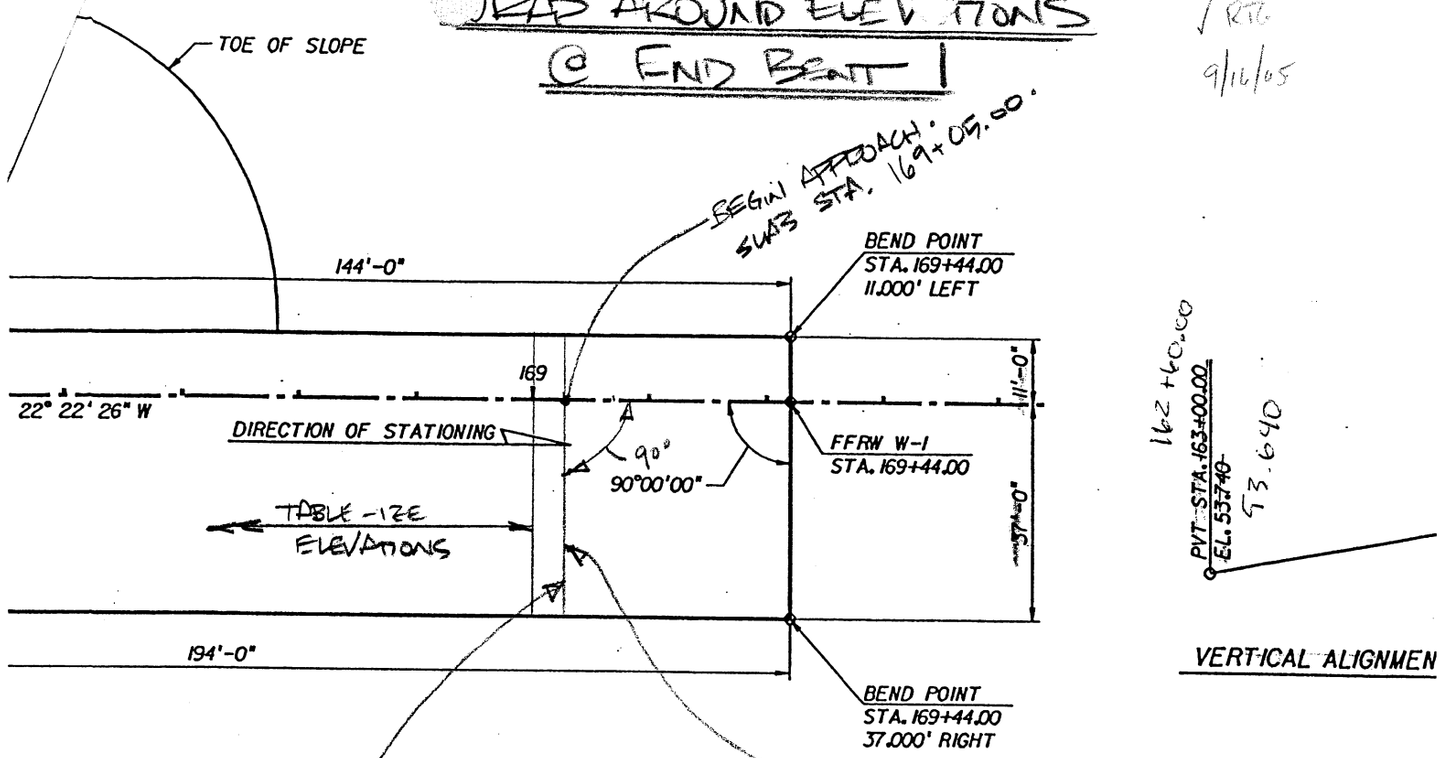
WRAP-AROUND AREA = 3150.19

Σ 9456.83 SF

RTC 9/14/05

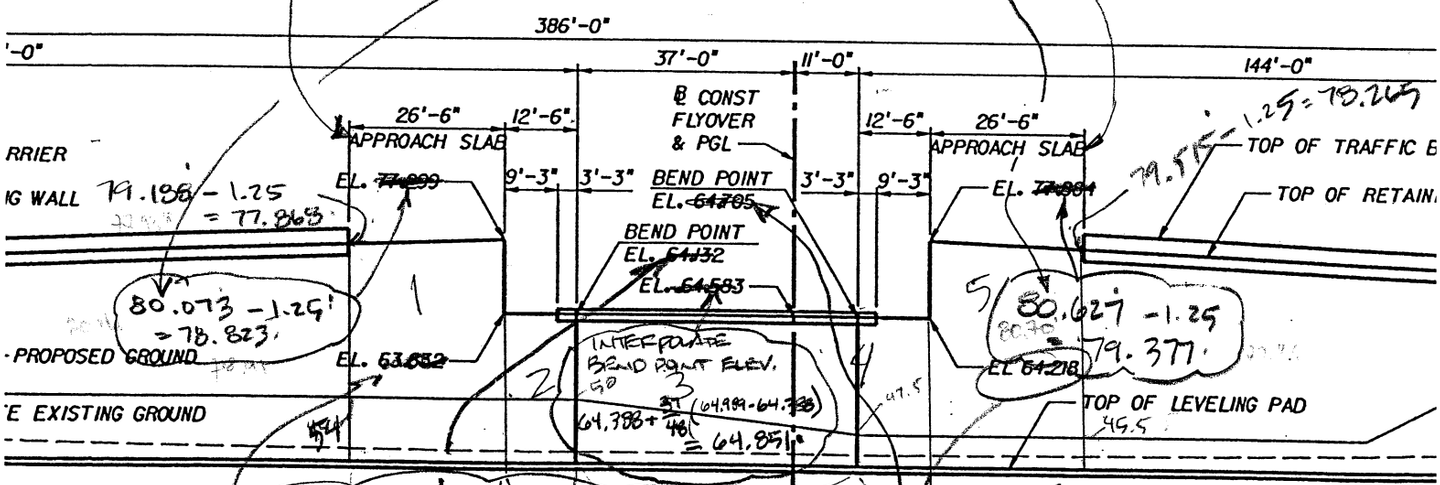
JRAP AROUND ELEVATIONS @ END BENT 1

✓ RTC 9/16/05



PLAN - WALL W-1

TOP OF COPING (GL) ELEV. @ STA. 169+31.58'



Bottom of EB CAP EL 63.617 - 0.083/2 = 63.534

Bottom of EB CAP EL 63.617 + 1.000 - 2.75/12 = 64.388

ELEVATION - WALL W-1

(UNFOLDED VIEW LOOKING STATIONS BACK)

Bottom of EB CAP EL 64.218 + 1.000 - 2.75/12 → 64.989

Bottom of EB CAP EL 64.218 - .083 = 64.135

DESCRIPTION		NAMES	DATES
	DRAWN BY	JBH	12/04
	CHECKED BY	SLM	12/04
	DESIGNED BY	SLM	12/04
	CHECKED BY	TSP	12/04
	APPROVED BY	S.L. MONTGOMERY	

ENGINEER OF RECORD:
URS
URS CORPORATION SOUTHERN
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
CERTIFICATE OF AUTHORIZATION NO. 00000002
SCOTT L. MONTGOMERY, P.E. NO. 42006

FLORIDA DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93A	HILLSBOROUGH	408460-1-52-01

SHEET TITLE: PLAN &

PROJECT NAME: C.R. NO. 5

26B

RETAINING WALL W-2 QUANTITIES

RETAINING WALL W-2

	STATIONS	LEFT ELEVATIONS: TOP OF COPING	PROPOSED GROUND	TOP OF LEVELING PAD	Left Wall Area
CURVED ALIGNMENT	187+24.00	68.080	43.000	40.800	687.737
	187+50.00	66.520	43.100	40.800	623.106
	187+75.00	65.020	43.200	40.800	585.674
	188+00.00	63.520	43.300	40.800	548.243
	188+25.00	62.020	43.400	40.800	510.812
	188+50.00	60.520	43.400	40.800	473.381
	188+75.00	59.020	43.500	40.800	435.949
	189+00.00	57.520	43.500	40.800	399.076
	189+25.00	56.065	43.500	40.800	363.879
	189+50.00	54.699	43.400	40.800	330.915
	189+75.00	53.423	43.400	40.800	300.185
	190+00.00	52.236	43.400	40.800	271.689
	190+25.00	51.139	43.300	40.800	245.427
	190+50.00	50.131	43.300	40.800	221.399
	190+75.00	49.213	43.200	40.800	199.604
	191+00.00	48.385	43.200	40.800	180.043
	191+25.00	47.645	43.100	40.800	162.716
	191+50.00	46.996	43.100	40.800	136.002
	191+72.95	46.478	43.000	40.800	
TANGENT ALIGNMENT	191+72.95	46.478	43.000	40.800	11.597
	191+75.00	46.436	43.000	40.800	135.010
	192+00.00	45.965	42.900	40.800	124.365
	192+25.00	45.584	42.900	40.800	115.958
	192+50.00	45.293	42.800	40.800	109.788
	192+75.00	45.091	42.800	40.800	105.856
	193+00.00	44.978	42.800	40.800	
					7278.410

RETAINING WALL W-2

STATIONS	RIGHT ELEVATIONS: TOP OF COPING	PROPOSED GROUND	TOP OF LEVELING PAD	Right Wall Area
187+24.00	69.040	45.900	43.900	637.266
187+50.00	67.480	46.100	43.900	574.270
187+75.00	65.980	46.300	43.900	536.538
188+00.00	64.480	46.500	43.900	498.807
188+25.00	62.980	46.500	43.900	461.076
188+50.00	61.480	46.500	43.900	423.345
188+75.00	59.980	45.900	43.900	403.221
189+00.00	58.480	45.300	42.500	383.661
189+25.00	57.025	45.200	42.500	348.181
189+50.00	55.659	45.000	42.500	314.953
189+75.00	54.383	44.800	42.500	283.977
190+00.00	53.196	44.700	42.500	255.253
190+25.00	52.099	45.200	42.500	228.780
190+50.00	51.091	44.700	42.500	204.559
190+75.00	50.173	44.700	42.500	182.589
191+00.00	49.345	44.800	42.500	162.872
191+25.00	48.605	44.800	42.500	145.406
191+50.00	47.956	44.700	42.500	120.004
191+72.95	47.438	44.600	42.500	
191+72.95	47.438	44.600	42.500	10.080
191+75.00	47.396	44.600	42.500	116.510
192+00.00	46.925	44.500	42.500	105.865
192+25.00	46.544	45.400	42.500	97.458
192+50.00	46.253	46.300	42.500	
				6494.671

WALL WRAP-AROUND FROM STA 187+24

$A_1 = \left[\frac{66.83' + 68.42'}{2} - 40.8'\right](26.5')\left(\frac{5989}{6000}\right) = 736.01$

$A_2 = \left[\frac{53.255' + 54.109' - 1'}{2} - 42'\right](12.5')\left(\frac{5989}{6000}\right) + (1' * 3.25')\left(\frac{5989}{6000}\right) = 142.77$

$A_3 = \left[\frac{54.109 + 55.070}{2} - 42'\right](48') = 604.30^{SF}$

$A_4 = \left[\frac{54.216 + 55.070 - 1}{2} - 42'\right](12.5')\left(\frac{6037}{6000}\right) + (1' * 3.25')\left(\frac{6037}{6000}\right) = 156.00$

$A_5 = \left[\frac{69.380 + 67.790}{2} - 43.9'\right](26.5')\left(\frac{6037}{6000}\right) = 658.18$

WRAP AROUND TOTAL Σ 2297.26^{SF}

LEFT WALL AREA = 7278.41^{SF}

RIGHT WALL AREA = 6494.67^{SF}

WRAP-AROUND AREA = 2297.26^{SF}

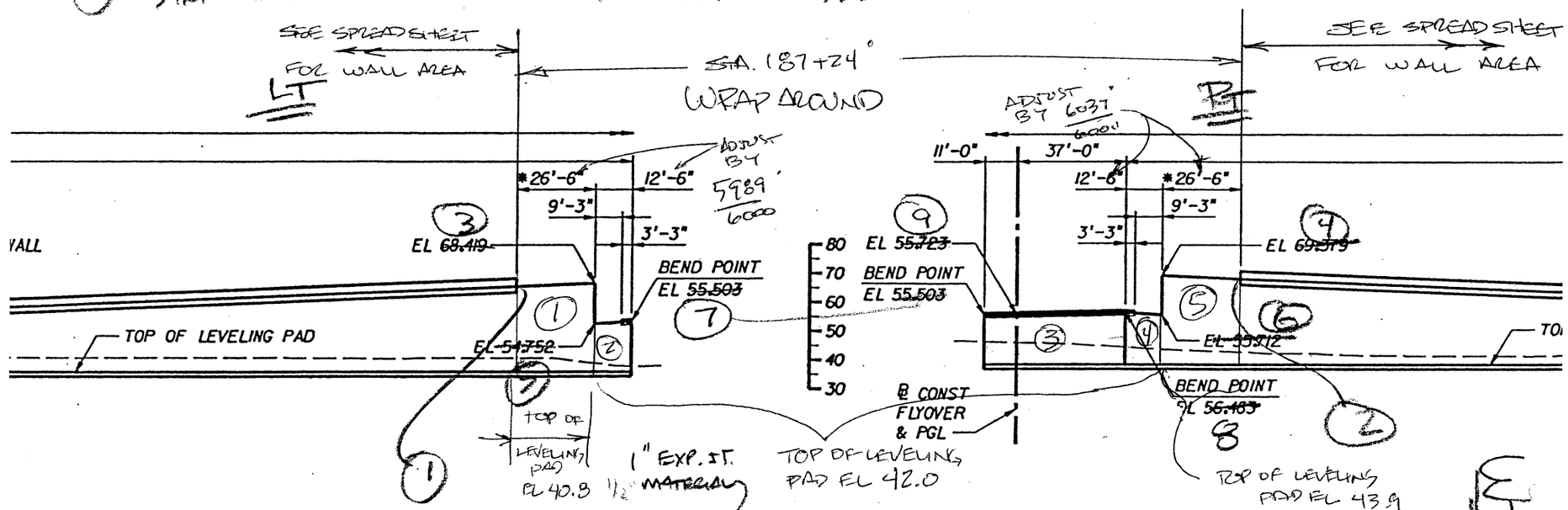
Σ $16{,}070.34^{SF}$

(1) STA. 187+24' LT. EL 68.080 - 1.25' = 66.830

(2) STA 187+24 RT. EL 69.040 - 1.25' 67.790

(3) STA 186+97.5' LT. EL 69.670 - 1.25' = 68.420.

(4) STA 186+97.5 RT. EL 70.630 - 1.25' - 69.380.



(5) BOTTOM OF EB 8 CAP LT EL 53.338 - .085 = 53.255 (53.29; .0417)

(6) BOTTOM OF EB 8 CAP RT EL 54.299 - .083 = 54.216 (54.26; .0417)

(7) BOTTOM OF EB 8 CAP LT. EL 53.338 + 1' - $\frac{2.75'}{12}$ = 54.109.

(8) " " RT. EL 54.299' + 1' - $\frac{2.75}{12}$ = 55.070.

(9) 54.109' + $\frac{11}{48}$ (55.070 - 54.109) = 54.329.

WRAP AROUND ELEVATIONS
@ END BENT 8

STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION

AREA COMPUTATIONS

FORM 700-050-01
CONSTRUCTION
09/07

PAY ITEM NO. 0548 13

PAY ITEM DESCRIPTION RETAINING WALL SYSTEM,TEMPORARY, EXCLUDING BARRIER

STATION TO STATION	TRAV. OR PAGE NO.	SIDE	DESIGN ORIGINAL					CONSTRUCTION FINAL			
			WIDTH	LENGTH	CURVE CORR(+/-)	AREA (SF)	REMARKS	WIDTH	LENGTH	AREA (SF)	REMARKS
TW - 1						7,317	See Designer Calculations			✓	No Change
							Pages 27-A thru 27-C				
						7,317	< PAGE TOTAL >			7,317	
						7,317	< PROJECT GRAND TOTAL >			7,317	

If the above item is under the **Plan Quantity Concept**, then the block below **must** be appropriately filled out.

Plan Quantity Concept Signature Block

Design Engineers Responsible for Calculations: All support measurements and computations have been included for this Plan Quantity item.

Signature: Thomas S. Peake **Print Name:** Thomas S. Peake

NOTES FOR EXPLANATION OF OVER/UNDER RUN:

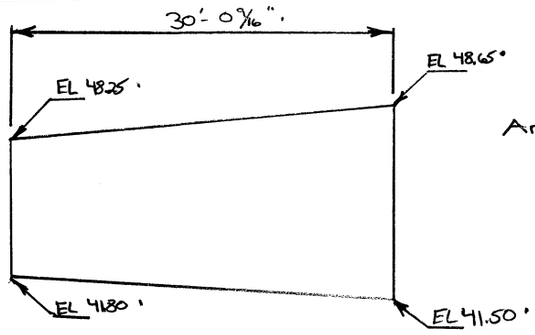
EXTRA NOTES / REMARKS:

URS

				Page ____ of ____	
Job	Bruce B. Downs Flyover	Project No.	12002951.00005	Sheet ____ of ____	
Description	Temporary Wall Quantities	Computed by	TSP	Date	10/20/05
	Wall TW-1 (Wire Mesh)	Checked by	RTG	Date	10/20/05

Pay Item 548-13 (Temporary) (Excluding Barrier)

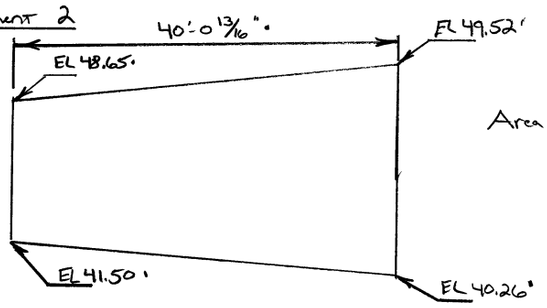
Segment 1



Area: $\frac{1}{2}\left((48.25+48.65)-(41.80+41.50)\right)(30'\text{-}0\tfrac{9}{16}")$

$= 204.319\ ft^2$

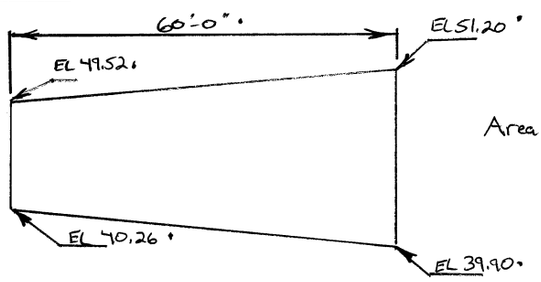
Segment 2



Area = $\frac{1}{2}\left((48.65+49.52)-(41.50+40.26)\right)(40'\text{-}0\tfrac{13}{16}")$

$= 328.756\ ft^2$

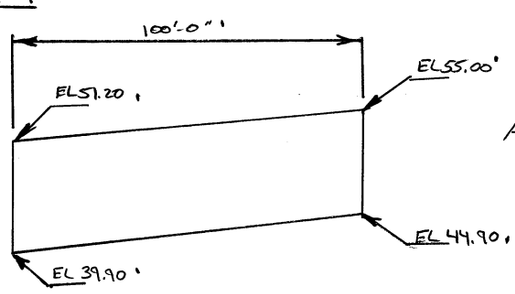
Segment 3



Area = $\frac{1}{2}\left((49.52+51.20)-(40.26+39.90)\right)(60'\text{-}0")$

$= 616.800\ ft^2$

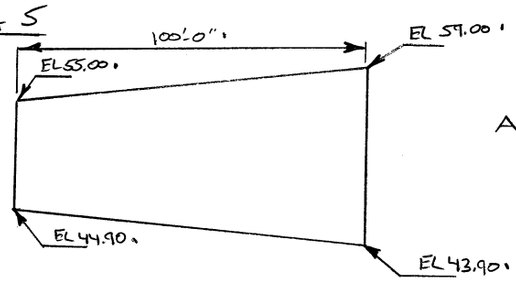
Segment 4



Area = $\frac{1}{2}\left((51.20+55.00)-(39.90+44.90)\right)(100'\text{-}0")$

$= 1070.000\ ft^2$

Segment 5



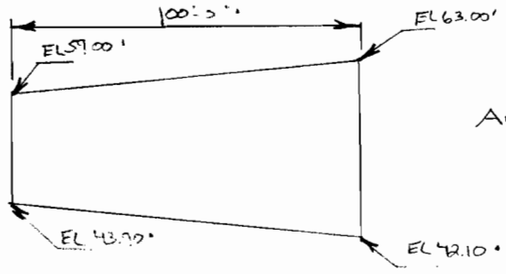
Area = $\frac{1}{2}\left((55.00+59.00)-(44.90+43.90)\right)(100'\text{-}0")$

$= 1260.000\ ft^2$

27 A

Job	Bruce B. Downs Flyover	Project No.	12000251.00025	Page ____ of ____	
Description	Temporary Wall Quantities	Computed by	TSP	Sheet ____ of ____	Date 10/20/05
	Wall TW-1 (Wall Mesh)	Checked by	RTG		Date 10/20/05

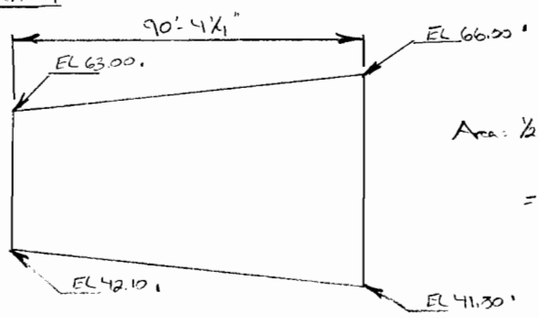
Segment 6



Area = ½((59.00 + 63.00) − (43.90 + 42.10))(100'-0")

= 1800.000 ft²

Segment 7



Area = ½((63.00 + 66.00) − (42.10 + 41.30))(90'-4¼")

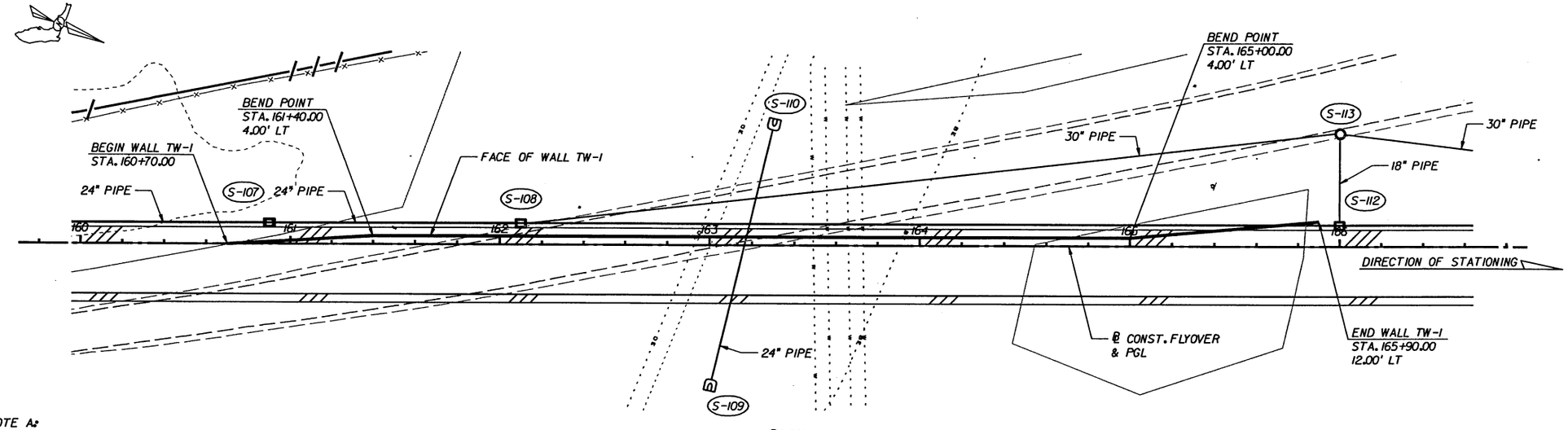
= 2037.456 ft²

Grand Total = 204.319 ft² + 328.756 ft² + 616.800 ft² + 1070.000 ft² + 1260.000 ft² + 1800.000 ft² + 2037.486 ft²

= 7317.361 ft²

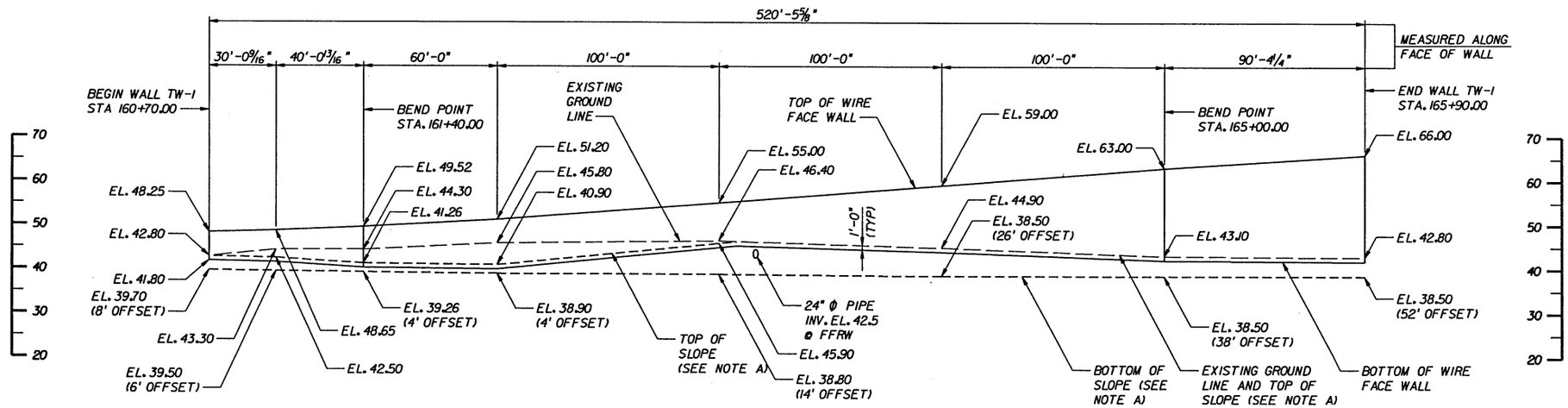
Area of TW-1 = 7317 ft²

27 C



PLAN

NOTE A:
TEMPORARY EXCAVATED SLOPE REQUIRED FOR INSTALLATION OF 24" PIPE DURING PHASE 4, STAGE 1. TOP OF SLOPE IS USED TO ESTABLISH BOTTOM OF WIRE FACE WALL. BOTTOM OF SLOPE IS USED FOR ELEVATION OF GLOBAL STABILITY. OFFSET SHOWN IS FROM FFRW TO BOTTOM OF EXCAVATION.



ELEVATION

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
DRAWN BY	CJK	9/05
CHECKED BY	MCM	9/05
DESIGNED BY	MCM	9/05
CHECKED BY	RTG	9/05
APPROVED BY	S.L. MONTGOMERY	

ENGINEER OF RECORD:
URS
URS CORPORATION SOUTHERN
7650 WEST COURTNEY CAMPBELL CAUSEWAY
TAMPA, FL 33607-1462
CERTIFICATE OF AUTHORIZATION NO. 00000002
SCOTT L. MONTGOMERY, P.E. NO. 42008

FLORIDA DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 93A	HILLSBOROUGH	408460-1-52-01

SHEET TITLE: PLAN & ELEVATION
TEMPORARY WIRE FACE WALL TW-1

PROJECT NAME: I-75 (SR 93A) OVER
C.R. NO. 581 (BRUCE B. DOWNS) FLYOVER

SHEET NO. TW-4

E:\FDOT2002PROJECTS\40846015201\STRUCT\TEMP_WALLS\SHEETPILEWALL_TW-1.DGN
11:07:05 AM
10/20/2005

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.