202E11203	PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN	LUMP	LS

LUMP SUM

202E22900	APPROACH SLAB REMOVED	133	SY

NUMBER:	2	EACH	~2 APPROACHES/BRIDGE @ 1 BRIDGES
LENGTH:	25.00	FT	~25'-0" EX. LENGTH
WIDTH:	24.00	FT	~38'-0" EX. WIDTH
VOLUME:	**133**	**SY**	2 EACH x 25 FT x 24 FT x x 1SY/9SF

503E11101	COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN	LUMP	LS

LUMP SUM

503E21300	UNCLASSIFIED EXCAVATION	LUMP	LS

LUMP SUM

505E11100	PILE DRIVING EQUIPMENT MOBILIZATION	LUMP	LS

LUMP SUM

507E00500	12" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN	1080.00	FT

Driven Length = Estimated Length x No. Piles

DRIVEN PILES:

NUMBER:	18	EACH	9 PER ABUTMENT @ 2 ABUTMENTS
LENGTH:	60.00	FT	ESTIMATED PILE LENGTH
VOLUME:	**1080.00**	FT	18 EACH x 60 FT

507E00551	12" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED, AS PER PLAN	1170.00	FT

Furnished Length = (Estimated Length + 5'-0") x No. Piles

FURNISHED PILES:

NUMBER:	18	EACH	9 PER ABUTMENT @ 2 ABUTMENTS
LENGTH:	65.00	FT	ESTIMATED PILE LENGTH
VOLUME:	**1170.00**	FT	18 EACH x 65 FT

507E00700	16" CAST-IN-PLACE REINFORCED CONCRETE PILES, DRIVEN	510.00	FT

Driven Length = Estimated Length x No. Piles

DRIVEN PILES:

NUMBER:	6	EACH	3 PER PIER @ 2 PIERS
LENGTH:	85.00	FT	DRIVEN PILE LENGTH
VOLUME:	**510.00**	FT	6 EACH x 85 FT

507E00751	16" CAST-IN-PLACE REINFORCED CONCRETE PILES, FURNISHED, AS PER PLAN	540.00	FT

Furnished Length = (Estimated Length + 5'-0") x No. Piles

FURNISHED PILES:

NUMBER:	6	EACH	3 PER PIER @ 2 PIERS
LENGTH:	90.00	FT	ESTIMATED PILE LENGTH
VOLUME:	**540.00**	FT	6 EACH x 90 FT

509E10000	EPOXY COATED REINFORCING STEEL	116338	LB

SUMMARY TABLE	ABUT.	PIER	SUPER.	GEN.
	7863	1220	107255	0

TOTAL:	**116338**	**LB**

510E10001	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN	172	EACH

REAR ABUTMENT RIGHT WINGWALL DOWELS:

NUMBER:	5	EACH/FACE	
NUMBER:	2	FACES	
SUBTOTAL=	**10**	**EACH**	~ 5 DOWELS EACH/FACE x 2 FACES

REAR ABUTMENT LEFT DOWELS:

NUMBER:	13	EACH/SIDES	
NUMBER:	2	SIDES	
SUBTOTAL=	**26**	**EACH**	~ 13 DOWELS EACH/SIDES x 2 SIDES

REAR ABUTMENT FOOTING DOWELS:

NUMBER:	14	EACH/SIDE	
NUMBER:	2	SIDES	~LEFT AND RIGHT
SUBTOTAL=	**28**	**EACH**	~ 14 DOWELS EACH/SIDE x 2 SIDES

FORWARD ABUTMENT RIGHT WINGWALL DOWELS:

NUMBER:	5	EACH/FACE	
NUMBER:	2	FACES	
SUBTOTAL=	**10**	**EACH**	~ 5 DOWELS EACH/FACE x 2 FACES

FORWARD ABUTMENT LEFT DOWELS:

NUMBER:	13	EACH/SIDES	
NUMBER:	2	SIDES	
SUBTOTAL=	**26**	**EACH**	~ 13 DOWELS EACH/SIDES x 2 SIDES

FORWARD ABUTMENT FOOTING DOWELS:

NUMBER:	14	EACH/SIDE	
NUMBER:	2	SIDES	~LEFT AND RIGHT
SUBTOTAL=	**28**	**EACH**	~ 14 DOWELS EACH/SIDE x 2 SIDES

ADDITIONAL DOWELS

NUMBER:	44	EACH/SIDE	
NUMBER:	1	SIDES	
SUBTOTAL=	**44**	**EACH**	
NUMBER:	**172**	**EACH**	~ 10 EACH + 26 EACH + 28 EACH + 10 EACH + 26 EACH + 28 EACH+ 44 EACH

511E33500	SEMI-INTEGRAL DIAPHRAGM GUIDE	2	EACH

NUMBER:	1	EACH	~1 PER ABUTMENT
ABUTMENTS:	2	EACH	~2 ABUTMENTS
BRIDGES:	1	EACH	~1 BRIDGES
NUMBER:	**2**	**EACH**	1 EACH x 2 EACH x 1 EACH

511E34446	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK	347	CY

DECK:

NUMBER:	1	EACH	~1 BRIDGES
LENGTH:	173.66	FT	~BRIDGE LIMITS
WIDTH:	60.33	FT	~PROPOSED DECK WIDTH OUT-TO-OUT
DEPTH:	0.71	FT	~8.5" THICK DECK
VOLUME:	**275**	**CY**	1 EACH x 173.66 FT x 60.33 FT x 0.71 FT x 1CY/27CF

HAUNCH:

NUMBER:	8	EACH	~1 BRIDGES WITH 8 BEAMS EACH (I.E. 7 TYP. HAUNCHES)
LENGTH:	167.00	FT	~CL BRG-CL BRG - 2x (1'-0" TO DIAPHRAGM. FACE)
WIDTH 1:	0.96	FT	~ 11.5" FLANGE WIDTH
DEPTH 1:	0.17	FT	~ 2" AVG. THICKNESS
VOLUME:	**7**	**CY**	7 EACH x 167 FT x 0.96 FT x 0.17 FT x 1CY/27CF

OVERHANG HAUNCH:

NUMBER:	1	EACH	~1 BRIDGES
LENGTH:	167.00	FT	~CL BRG-CL BRG - 2x (1'-0" TO ABUT. FACE)
LT WIDTH:	2.73	FT	~2'-8.75" LT CL BEAM TO END
RT WIDTH:	2.48	FT	~ 2'-5.75" RT CL BEAM TO END
TOTAL WIDTH:	5.21	FT	~ 2.73 FT (LT) + 2.48 FT (RT)
DEPTH:	0.25	FT	~ 3" ADDITIONAL DECK THICK
VOLUME:	**9**	**CY**	1 EACH x 167 FT x 5.21 FT x 0.25 FT x 1CY/27CF

REAR END DIAPHRAGM:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH:	62.46	FT	~OUT-TO-OUT
WIDTH:	3.75	FT	~ABUTMENT WIDTH
HEIGHT:	3.21	FT	~AVG. TOP OF HAUNCH - AVG. BEAM SEAT - 3.273" BEARING
VOLUME:	**28**	**CY**	1 EACH x 62.46 FT x 3.75 FT 3.21 FT x 1CY/27CF

FWD END DIAPHRAGM:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH:	62.46	FT	~OUT-TO-OUT
WIDTH:	3.75	FT	~ABUTMENT WIDTH
HEIGHT:	3.21	FT	~AVG. TOP OF HAUNCH - AVG. BEAM SEAT - 3.273" BEARING
VOLUME:	**28**	**CY**	1 EACH x 62.46 FT x 3.75 FT 3.21 FT x 1CY/27CF

TOTAL:	**347**	**CY**

511E34450	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)	66	CY

PARAPETS:

NUMBER:	2	EACH	~2 SIDES PER BRIDGE @ 1 BRIDGES
LENGTH:	195.66	FT	~BRIDGE PARAPET LIMITS+2 (11'-0" SECTIONS ON APPR.)
AREA:	4.08	SF	(STD. DWG. SBR-1-13)
VOLUME:	59.18	CY	2 EACH x 195.66 FT x 4.08 SF x 1CY/27CF

TRANSITIONS:

NUMBER:	4	EACH	~4 PER BRIDGE @ 1 BRIDGES
VOLUME:	1.82	CY/EACH	(STD. DWG. SBR-1-13)
VOLUME:	7.28	CY	4 EACH x 1.82 CY/EACH

TOTAL:	66	CY

511E42510	CLASS QC1 CONCRETE, PIER CAP	8	CY

PIER CAP (STRAIGHT):

NUMBER:	2	EACH	~2 PIERS
LENGTH:	8.75	FT	~OUT-TO-OUT STRAIGHT SECTION
WIDTH:	2.75	FT	~PIER WIDTH
HEIGHT:	3.00	FT	~AVG. HEIGHT
VOLUME:	**6**	**CY**	2 EACH x 8.75 FT x 2.75 FT 3 FT x 1CY/27CF

PIER CAP (ROUNDED ENDS):

NUMBER:	2	EACH	~2 PIERS(2 HALF CIRCLES)
DIAMETER:	2.75	FT	~ROUNDED SECTION DIAMETER
HEIGHT:	3.00	FT	~AVG. HEIGHT
VOLUME:	**2**	**CY**	2 EACH x π x (2.75 FT DIA.)^2 x 3 FT x 1CY/27CF

TOTAL:	8	CY

511E43510	CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING	92	CY

LEFT REAR ABUTMENT:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH:	16.00	FT	~OUT-TO-OUT ALONG CL ABUTMENT
WIDTH:	3.75	FT	~ABUTMENT WIDTH
AVG. SEAT ELEV=	1101.73	FT	~AVERAGE SEAT ELEV.
TOP FOOT. ELEV.=	1097.82	FT	~ 1094.57 BOT. FOOTING ELEVATION + 3.25 FT
HEIGHT:	3.91	FT	~Average Top of Haunch - Average Beam Seat
VOLUME:	**9**	**CY**	~ 1 EACH x 16 FT x 3.75 FT 3.91 FT x 1CY/27CF

RIGHT REAR ABUTMENT:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH:	0.00	FT	~OUT-TO-OUT ALONG CL ABUTMENT
WIDTH:	3.75	FT	~ABUTMENT WIDTH
AVG. SEAT ELEV=	1101.73	FT	~AVERAGE SEAT ELEV.
TOP FOOT. ELEV.=	1097.82	FT	~ 1094.57 BOT. FOOTING ELEVATION + 3.25 FT
HEIGHT:	3.91	FT	~Average Top of Haunch - Average Beam Seat
VOLUME:	**0**	**CY**	~ 1 EACH x 0 FT x 3.75 FT 3.91 FT x 1CY/27CF

LEFT REAR FOOTING:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH:	25.21	FT	~OUT-TO-OUT
WIDTH:	6.25	FT	~FOOTING WIDTH
HEIGHT:	3.13	FT	~AVG. FOOTING HEIGHT
VOLUME:	**19**	**CY**	~ 1 EACH x 25.21 FT x 6.25 FT 3.13 FT x 1CY/27CF

RIGHT REAR FOOTING:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH:	8.94	FT	~OUT-TO-OUT
WIDTH:	6.25	FT	~FOOTING WIDTH
HEIGHT:	3.13	FT	~AVG. FOOTING HEIGHT
VOLUME:	**7**	**CY**	~ 1 EACH x 8.94 FT x 6.25 FT 3.13 FT x 1CY/27CF

LEFT REAR WINGWALL:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH 1:	2.27	FT	~TALL SECTION LENGTH
LENGTH 2:	6.50	FT	~SHORT SECTION LENGTH
AVG. WING LENGTH:	8.77	FT	~ 2.27 FT + 6.5 FT AVERAGE WING LENGTH
MAX TOP ELEV.:	1105.64	FT	~TALL SECTION ELEV
MIN TOP ELEV.:	1102.50	FT	~SHORT SECTION ELEV
TOP FOOT. ELEV.=	1097.82	FT	~ 1094.57 BOT. FOOTING ELEVATION + 3.25 FT
WIDTH:	2.50	FT	~WINGWALL WIDTH
HEIGHT 1:	7.82	FT	~TALL SECTION HEIGHT
HEIGHT 2:	4.68	FT	~SHORT SECTION HEIGHT
AVERAGE HEIGHT:	6.25	FT	~ AVERAGE OF (7.82 FT AND 4.68 FT)
VOLUME 1:	1.64	CY	~VOLUME OF RECTANGULAR SECTION: 2.27 FT x 2.5 FT x 7.82 FT x (1 CY/27 CF)
VOLUME 2:	3.76	CY	~VOLUME OF TRAPEZOIDAL SECTION: 6.5 FT x 2.5 FT x 6.25 FT AVG. HEIGHT x (1 CY/27 CF)
VOLUME:	**5**	**CY**	~ 1.64 CY + 3.76 CY

RIGHT REAR WINGWALL:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH 1:	2.73	FT	~AVERAGE TALL SECTION LENGTH
LENGTH 2:	6.50	FT	~SHORT SECTION LENGTH
AVG. WING LENGTH:	9.23	FT	~ 2.73 FT + 6.5 FT AVERAGE WING LENGTH
MAX TOP ELEV.:	1105.85	FT	~TALL SECTION ELEV
MIN TOP ELEV.:	1102.50	FT	~SHORT SECTION ELEV
TOP FOOT. ELEV.=	1097.82	FT	~ 1094.57 BOT. FOOTING ELEVATION + 3.25 FT
WIDTH:	2.50	FT	~WINGWALL WIDTH
HEIGHT 1:	8.03	FT	~TALL SECTION HEIGHT
HEIGHT 2:	4.68	FT	~SHORT SECTION HEIGHT
AVERAGE HEIGHT:	6.36	FT	~ AVERAGE OF (8.03 FT AND 4.68 FT)
VOLUME 1:	2.03	CY	~VOLUME OF RECTANGULAR SECTION: 2.73 FT x 2.5 FT x 8.03 FT x (1 CY/27 CF)
VOLUME 2:	3.82	CY	~VOLUME OF TRAPEZOIDAL SECTION: 6.5 FT x 2.5 FT x 6.36 FT AVG. HEIGHT x (1 CY/27 CF)
VOLUME:	**6**	**CY**	~ 2.03 CY + 3.82 CY

LEFT FORWARD ABUTMENT:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH:	16.36	FT	~OUT-TO-OUT ALONG CL ABUTMENT
WIDTH:	3.75	FT	~ABUTMENT WIDTH
AVG. SEAT ELEV=	1101.22	FT	~AVERAGE SEAT ELEV.
TOP FOOT. ELEV.=	1097.32	FT	~ 1094.07 BOT. FOOTING ELEVATION + 3.25 FT
HEIGHT:	3.90	FT	~Average Top of Haunch - Average Beam Seat
VOLUME:	**9**	**CY**	~ 1 EACH x 16.36 FT x 3.75 FT 3.9 FT x 1CY/27CF

RIGHT FORWARD ABUTMENT:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH:	0.00	FT	~OUT-TO-OUT ALONG CL ABUTMENT
WIDTH:	3.75	FT	~ABUTMENT WIDTH
AVG. SEAT ELEV=	1101.22	FT	~AVERAGE SEAT ELEV.
TOP FOOT. ELEV.=	1097.32	FT	~ 1094.07 BOT. FOOTING ELEVATION + 3.25 FT
HEIGHT:	3.90	FT	~Average Top of Haunch - Average Beam Seat
VOLUME:	**0**	**CY**	~ 1 EACH x 0 FT x 3.75 FT 3.9 FT x 1CY/27CF

LEFT FORWARD FOOTING:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH:	24.50	FT	~OUT-TO-OUT
WIDTH:	6.25	FT	~FOOTING WIDTH
HEIGHT:	3.13	FT	~AVG. FOOTING HEIGHT
VOLUME:	**18**	**CY**	~ 1 EACH x 24.5 FT x 6.25 FT 3.13 FT x 1CY/27CF

RIGHT FORWARD FOOTING:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH:	9.39	FT	~OUT-TO-OUT
WIDTH:	6.25	FT	~FOOTING WIDTH
HEIGHT:	3.13	FT	~AVG. FOOTING HEIGHT
VOLUME:	**7**	**CY**	~ 1 EACH x 9.39 FT x 6.25 FT 3.13 FT x 1CY/27CF

LEFT FORWARD WINGWALL:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH 1:	2.23	FT	~TALL SECTION LENGTH
LENGTH 2:	6.50	FT	~SHORT SECTION LENGTH
AVG. WING LENGTH:	8.73	FT	~ 2.23 FT + 6.5 FT AVERAGE WING LENGTH
MAX TOP ELEV.:	1105.13	FT	~TALL SECTION ELEV
MIN TOP ELEV.:	1102.00	FT	~SHORT SECTION ELEV
TOP FOOT. ELEV.=	1097.32	FT	~ 1094.07 BOT. FOOTING ELEVATION + 3.25 FT
WIDTH:	2.50	FT	~WINGWALL WIDTH
HEIGHT 1:	7.81	FT	~TALL SECTION HEIGHT
HEIGHT 2:	4.68	FT	~SHORT SECTION HEIGHT
AVERAGE HEIGHT:	6.25	FT	~ AVERAGE OF (7.81 FT AND 4.68 FT)
VOLUME 1:	1.62	CY	~VOLUME OF RECTANGULAR SECTION: 2.23 FT x 2.5 FT x 7.81 FT x (1 CY/27 CF)
VOLUME 2:	3.76	CY	~VOLUME OF TRAPEZOIDAL SECTION: 6.5 FT x 2.5 FT x 6.25 FT AVG. HEIGHT x (1 CY/27 CF)
VOLUME:	**5**	**CY**	~ 1.62 CY + 3.76 CY

RIGHT FORWARD WINGWALL:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH 1:	2.27	FT	~AVERAGE TALL SECTION LENGTH
LENGTH 2:	7.25	FT	~SHORT SECTION LENGTH
AVG. WING LENGTH:	9.52	FT	~ 2.27 FT + 7.25 FT AVERAGE WING LENGTH
MAX TOP ELEV.:	1105.34	FT	~TALL SECTION ELEV
MIN TOP ELEV.:	1102.00	FT	~SHORT SECTION ELEV
TOP FOOT. ELEV.=	1097.32	FT	~ 1094.07 BOT. FOOTING ELEVATION + 3.25 FT
WIDTH:	2.50	FT	~WINGWALL WIDTH
HEIGHT 1:	8.02	FT	~TALL SECTION HEIGHT
HEIGHT 2:	4.68	FT	~SHORT SECTION HEIGHT
AVERAGE HEIGHT:	6.35	FT	~ AVERAGE OF (8.02 FT AND 4.68 FT)
VOLUME 1:	1.68	CY	~VOLUME OF RECTANGULAR SECTION: 2.27 FT x 2.5 FT x 8.02 FT x (1 CY/27 CF)
VOLUME 2:	4.26	CY	~VOLUME OF TRAPEZOIDAL SECTION: 7.25 FT x 2.5 FT x 6.35 FT AVG. HEIGHT x (1 CY/27 CF)
VOLUME:	**6**	**CY**	~ 1.68 CY + 4.26 CY

TOTAL:	**92**	**CY**

512E10100	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	791	SY

PARAPET/EDGE:

NUMBER:	2	EACH	~2 SIDES PER BRIDGE @ 1 BRIDGES
BARRIER HEIGHT:	3.5	FT	(STD. DWG. SBR-1-13)
BARRIER WIDTH:	0.83	FT	(STD. DWG. SBR-1-13)
DECK EDGE THICK:	1.04	FT	~DECK THICK.
OVERHANG:	4.25	FT	~PER PROPOSED LIMITS = 2.729FT+2.479FT-.958 FT
PERMITER:	13.19	FT	~ 2 x 3.5 FT + 0.83 FT + 1.04 FT + 4.25 FT
PERIMTER:	7.89	FT	~APPROACH SLAB
LENGTH:	173.66	FT	~BRIDGE LIMITS
LENGTH:	25.00	FT	~APPROACH SLAB
AREA:	**596.71**	**SY**	~ 2 x 2 EACH + 13.19 FT + 173.66 FT x 1SY/9SF

REAR END DIAPHRAGM:

NUMBER:	2	EACH	~2 PER BRIDGE @ 1 BRIDGES
LENGTH:	62.46	FT	~ABUTMENT SEAT LENGTH
HEIGHT:	3.21	FT	~HT - DECK THICKNESS, SEE ITEM 511E34446 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK
AREA:	**44.49**	**SY**	2 EACH x 62.46 FT x 3.21 FT x 1 SY/27 SF

FWD END DIAPHRAGM:

NUMBER:	2	EACH	~2 PER BRIDGE @ 1 BRIDGES
LENGTH:	62.46	FT	~ABUTMENT SEAT LENGTH
HEIGHT:	3.21	FT	~HT - DECK THICKNESS, SEE ITEM 511E34446 - CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK
AREA:	**44.53**	**SY**	2 EACH x 62.46 FT x 3.21 FT x 1 SY/27 SF

REAR ABUTMENT:

NUMBER:	2	EACH	~2 PER BRIDGE @ 1 BRIDGES
LENGTH:	16.00	FT	~ABUTMENT LENGTH, SEE ITEM 511E43510 - CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING
HEIGHT:	0.50	FT	~6" PER SICD-1-96HT ABOVE GROUNDLINE
AREA:	**1.78**	**SY**	2 EACH x 16 FT x 0.5 FT x 1 SY/27 SF

LEFT REAR WINGWALL:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH 1:	2.50	FT	~TALL SECTION LENGTH ALONG FRONT FACE
LENGTH 2:	6.50	FT	~SHORT SECTION LENGTH ALONG FRONT FACE
LENGTH 3:	9.72	FT	~ 2.5 FT FLAT SECT. + SQRT[(6.5 FT)^2 + (3.14)^2] SLOPED SECT.
MAX TOP ELEV.:	1105.64	FT	~TALL SECTION ELEV, SEE ITEM 511E43510 - CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING
MIN TOP ELEV.:	1102.50	FT	~SHORT SECTION ELEV, SEE ITEM 511E43510 - CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING
TOP FOOT. ELEV.=	1097.82	FT	~ 1094.82 BOT. FOOTING ELEVATION + 3 FT,, SEE ITEM 511E43510 - CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOC
WIDTH:	2.50	FT	~WINGWALL WIDTH
HEIGHT 1:	7.82	FT	~TALL SECTION HEIGHT
HEIGHT 2:	4.68	FT	~SHORT SECTION HEIGHT
HEIGHT 3:	3.50	FT	~ 1 FT DOWN THE BACK OF WALL TO POROUS BACKFILL + 2.5 FT WIDTH OF WINGWALL
AREA 1:	2.17	SY	~FRONT FACE AREA OF RECTANGULAR SECTION: 2.5 FT x 7.82 FT x (1 SY/9 SF)
AREA 2:	2.53	SY	~FRONT FACE AREA OF TRAPEZOIDAL SECTION: 6.5 FT x 6.25 FT AVG. HEIGHT x (1 SY/9 SF)
AREA 3:	3.78	SY	~TOP AREA: 9.72 FT ALONG THE TOP x 3.5 FT WIDTH x (1 SY/9 SF)
AREA 4:	1.30	SY	~SIDE AREA: 4.68 FT SIDE HEIGHT x 2.5 FT WIDTH x (1 SY/9 SF)
AREA:	**10**	**SY**	~ 2.17 SY + 2.53 SY + 3.78 SY + 1.3 SY

RIGHT REAR WINGWALL:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH 1:	2.50	FT	~TALL SECTION LENGTH ALONG FRONT FACE
LENGTH 2:	6.50	FT	~SHORT SECTION LENGTH ALONG FRONT FACE
LENGTH 3:	9.81	FT	~ 2.5 FT FLAT SECT. + SQRT[(6.5 FT)^2 + (3.35)^2] SLOPED SECT.
MAX TOP ELEV.:	1105.85	FT	~TALL SECTION ELEV, SEE ITEM 511E43510 - CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING
MIN TOP ELEV.:	1102.50	FT	~SHORT SECTION ELEV, SEE ITEM 511E43510 - CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING
TOP FOOT. ELEV.=	1097.82	FT	~ 1094.82 BOT. FOOTING ELEVATION + 3 FT,, SEE ITEM 511E43510 - CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOC
WIDTH:	2.50	FT	~WINGWALL WIDTH
HEIGHT 1:	8.03	FT	~TALL SECTION HEIGHT
HEIGHT 2:	4.68	FT	~SHORT SECTION HEIGHT
HEIGHT 3:	3.50	FT	~ 1 FT DOWN THE BACK OF WALL TO POROUS BACKFILL + 2.5 FT WIDTH OF WINGWALL
AREA 1:	2.23	SY	~FRONT FACE AREA OF RECTANGULAR SECTION: 2.5 FT x 8.03 FT x (1 SY/9 SF)
AREA 2:	2.53	SY	~FRONT FACE AREA OF TRAPEZOIDAL SECTION: 6.5 FT x 6.36 FT AVG. HEIGHT x (1 SY/9 SF)
AREA 3:	3.82	SY	~TOP AREA: 9.81 FT ALONG THE TOP x 3.5 FT WIDTH x (1 SY/9 SF)
AREA 4:	1.30	SY	~SIDE AREA: 4.68 FT SIDE HEIGHT x 2.5 FT WIDTH x (1 SY/9 SF)
AREA:	**10**	**SY**	~ 2.23 SY + 2.53 SY + 3.82 SY + 1.3 SY

FORWARD ABUTMENT:

NUMBER:	2	EACH	~2 PER BRIDGE @ 1 BRIDGES
LENGTH:	16.36	FT	~ABUTMENT LENGTH, SEE ITEM 511E43510 - CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING
HEIGHT:	0.50	FT	~6" PER SICD-1-96HT ABOVE GROUNDLINE
AREA:	1.82	SY	2 EACH x 16.36 FT x 0.5 FT x 1 SY/27 SF

LEFT FORWARD WINGWALL:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH 1:	2.00	FT	~TALL SECTION LENGTH ALONG FRONT FACE
LENGTH 2:	6.00	FT	~SHORT SECTION LENGTH ALONG FRONT FACE
LENGTH 3:	8.77	FT	~ 2 FT FLAT SECT. + SQRT[(6 FT)^2 + (3.13)^2] SLOPED SECT.
MAX TOP ELEV.:	1105.13	FT	~TALL SECTION ELEV, SEE ITEM 511E43510 - CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING
MIN TOP ELEV.:	1102.00	FT	~SHORT SECTION ELEV, SEE ITEM 511E43510 - CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING
TOP FOOT. ELEV.=	1097.32	FT	~ 1094.32 BOT. FOOTING ELEVATION + 3 FT,, SEE ITEM 511E43510 - CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOC
WIDTH:	2.50	FT	~WINGWALL WIDTH
HEIGHT 1:	7.81	FT	~TALL SECTION HEIGHT
HEIGHT 2:	4.68	FT	~SHORT SECTION HEIGHT
HEIGHT 3:	3.50	FT	~ 1 FT DOWN THE BACK OF WALL TO POROUS BACKFILL + 2.5 FT WIDTH OF WINGWALL
AREA 1:	1.74	SY	~FRONT FACE AREA OF RECTANGULAR SECTION: 2 FT x 7.81 FT x (1 SY/9 SF)
AREA 2:	2.33	SY	~FRONT FACE AREA OF TRAPEZOIDAL SECTION: 6 FT x 6.25 FT AVG. HEIGHT x (1 SY/9 SF)
AREA 3:	3.41	SY	~TOP AREA: 8.77 FT ALONG THE TOP x 3.5 FT WIDTH x (1 SY/9 SF)
AREA 4:	1.30	SY	~SIDE AREA: 4.68 FT SIDE HEIGHT x 2.5 FT WIDTH x (1 SY/9 SF)
AREA:	**9**	**SY**	~ 1.74 SY + 2.33 SY + 3.41 SY + 1.3 SY

RIGHT FORWARD WINGWALL:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH 1:	2.50	FT	~TALL SECTION LENGTH ALONG FRONT FACE
LENGTH 2:	7.25	FT	~SHORT SECTION LENGTH ALONG FRONT FACE
LENGTH 3:	10.48	FT	~ 2.5 FT FLAT SECT. + SQRT[(7.25 FT)^2 + (3.34)^2] SLOPED SECT.
MAX TOP ELEV.:	1105.34	FT	~TALL SECTION ELEV, SEE ITEM 511E43510 - CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING
MIN TOP ELEV.:	1102.00	FT	~SHORT SECTION ELEV, SEE ITEM 511E43510 - CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING
TOP FOOT. ELEV.=	1097.32	FT	~ 1094.32 BOT. FOOTING ELEVATION + 3 FT,, SEE ITEM 511E43510 - CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOC
WIDTH:	2.50	FT	~WINGWALL WIDTH
HEIGHT 1:	8.02	FT	~TALL SECTION HEIGHT
HEIGHT 2:	4.68	FT	~SHORT SECTION HEIGHT
HEIGHT 3:	3.50	FT	~ 1 FT DOWN THE BACK OF WALL TO POROUS BACKFILL + 2.5 FT WIDTH OF WINGWALL
AREA 1:	2.23	SY	~FRONT FACE AREA OF RECTANGULAR SECTION: 2.5 FT x 8.02 FT x (1 SY/9 SF)
AREA 2:	2.82	SY	~FRONT FACE AREA OF TRAPEZOIDAL SECTION: 7.25 FT x 6.35 FT AVG. HEIGHT x (1 SY/9 SF)
AREA 3:	4.08	SY	~TOP AREA: 10.48 FT ALONG THE TOP x 3.5 FT WIDTH x (1 SY/9 SF)
AREA 4:	1.30	SY	~SIDE AREA: 4.68 FT SIDE HEIGHT x 2.5 FT WIDTH x (1 SY/9 SF)
AREA:	**10**	**SY**	~ 2.23 SY + 2.82 SY + 4.08 SY + 1.3 SY

PIER:

NUMBER:	2	EACH	~2 PER BRIDGE @ 1 BRIDGES
DIAMETER:	2.75	FT	~ROUNDED SECTION DIAMETER
LENGTH 1:	8.75	FT	~LENGTH OF FLAT SECTIONS
LENGTH 2:	8.64	FT	~PERIMETER OF ROUNDED SECTIONS: π x (2.75 FT DIA.)
CAP PERIMETER:	86.00	FT	~ 2 x (8.75 FT FLAT SECT.) + 2 HALF CIRCLES AT 8.64 FT
HEIGHT:	3.00	FT	~CAP HEIGHT
NUMBER PILES:	3.00	EACH	~ 3 PILES PER PIER CAP
PILE DIAMETER:	1.33	FT	~ 16" PILE DIAMETER
PILE AREA:	4.19	SF	~PILE AREA: 3 EACH x π x (1.33 FT DIA.)^2
CAP AREA:	30.00	SF	~BOTTOM AREA: π/4 x (2.75 FT DIA.)^2 + 8.75 FT x 2.75 FT
AREA:	**63.07**	**SY**	2 EACH x [(86 FT x 3 FT CAP SIDES) + (30 SF BOTTOM AREA- 4.19 SF PILE AREA)]x 1 SY/9 SF

ABUTMENT TOTAL:	**42.00**	**SY**
PIER TOTAL:	**63.00**	**SY**
SUPER TOTAL:	**686.00**	**SY**
TOTAL:	**791.00**	**SY**

512E33000	**TYPE 2 WATERPROOFING**	**9**	**SY**

ABUTMENTS:

NUMBER:	4	EACH	~2 AROUND CLOSURE @ 2 ABUTMENTS
HEIGHT:	6.80	FT	~HT - APP. SLAB THICKNESS
WIDTH:	3.00	FT	~STD. SPEC. 511.09 (36" STRIP)
AREA=	**9**	**SY**	~ 4 EACH + 6.8 FT + 3 FT x 1SY/9SF

513E10260	**STRUCTURAL STEEL MEMBERS, LEVEL 3**	**240457**	**LB**

BEAMS:

NUMBER:	8	EACH	~8 BEAMS (W33X141)
LENGTH:	171.00	FT	~52'-0" + 65'-0" + 52'-0" + (1'-0"/END) x (2 ENDS)
UNIT WT:	141.00	LB/FT	
SUBTOTAL=	**192888**	**LB**	~ 8 EACH x 171 FT x 141 LB/FT

WEB SPLICE PLATES:

NUMBER:	2	EACH	~1 EACH SIDE OF BEAM WEB @ 2 SIDES
LENGTH:	1.67	FT	~ 20" LONG
HEIGHT:	2.00	FT	~ 24" TALL
THICK.:	0.04	FT	~ 0.5" THICK
UNIT WT:	490.00	LB/FT	
SUBTOTAL=	**136.11**	**LB**	~ 2 EACH x 1.67 FT x 2 FT x 0.04 FT x 490 LB/FT

OUTER FLANGE SPLICE PLATES:

NUMBER:	2	EACH	
LENGTH:	2.25	FT	~ 27" LONG
WIDTH:	0.96	FT	~ 11.5" TALL
THICK.:	0.04	FT	~ 0.5" THICK
UNIT WT:	490.00	LB/FT	
SUBTOTAL=	**88.05**	**LB**	~ 2 EACH x 2.25 FT x 0.96 FT x 0.04 FT x 490 LB/FT

INTERIOR FLANGE SPLICE PLATES:

NUMBER:	4	EACH	
LENGTH:	2.25	FT	~ 27" LONG
WIDTH:	0.38	FT	~ 4.5" TALL
THICK.:	0.05	FT	~ 0.63" THICK
UNIT WT:	490.00	LB/FT	
SUBTOTAL=	**86.13**	**LB**	~ 4 EACH x 2.25 FT x 0.38 FT x 0.05 FT x 490 LB/FT

INTERMEDIATE DIAPHRAGMS:

NUMBER:	90	EACH	~NUMBER OF DIAPHRAGMS
LENGTH:	6.94	FT/EACH	~BOT. CHORD LENGTH: 7'-10.5" BEAM SPACING - 0.605" WEB THICKNESS -2x (2" CLEAR/BEAM SIDE)
UNIT WT:	42.70	LB/FT	~MC18x42.7
HEIGHT:	2.60	FT	~CONNECTION HEIGHT: 33.1" BEAM DEPTH - 2x (0.96" FLANGES)
WIDTH:	0.96	FT	~CONNECTION WIDTH: 11.5"
THICK:	0.04	FT	~CONNECTION THICKNESS: 0.5"
SUBTOTAL=	**35808.62**	**LB**	~NUMBERxLENGTHxUNIT WT+NUMBERx2xHEIGHTxWIDTHxTHICKx490LB/CU FT

TOTAL=	**229006.91**	**LB**	
CONTINGENCY=	**5**	**%**	~ACCOUNTS FOR FASTENERS
FINAL TOTAL=	**240457**	**LB**	

513E20000	WELDED STUD SHEAR CONNECTORS	5784	EACH

BEAMS:

NUMBER:	241		~ NUMBER ROWS/BEAM
NUMBER:	3		~ NUMBER STUDS PER ROW
NUM. OF BEAMS:	8		~ NUMBER OF BEAMS
TOTAL:	**5784**	**EACH**	

514E00060	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT	14531	SF

BEAM PROPERTIES: (W33X141)

Beam Depth:	33.3	IN	
Flange Width:	11.5	IN	
Flange Thickness:	0.96	IN	
Web Depth:	31.38	IN	~ (33.3 IN BEAM DEPTH) - 2x(0.96 IN FLANGE THICK.)
Web Thickness:	0.605	IN	
Beam Perimeter	99.89	IN	~ 4x(0.96 IN FLANGE THICK.) + 3x(11.5 IN FLANGE WIDTH) - 2x(0.61 IN WEB THICK.) + 2x(31.38 IN WEB HEIGHT)
Number:	8.00	EACH	
Beam Perimeter	8.32	FT	
Beam Length	171.00	FT	
SUBTOTAL=	**11387.46**	**SF**	~ 8 EACH x (8.32 FT PERIMETER) x (171 FT BEAM LENGTH)

INTERMEDIATE DIAPHRAGMS:

NUMBER:	90	EACH	~NUMBER OF DIAPHRAGMS
LENGTH 1:	6.94	FT/EACH	~DIAPH LENGTH: 7'-10.5" BEAM SPACING - 0.605" WEB THICKNESS -2x (2" CLEAR/BEAM SIDE)
PERIMETER:	4.32	SF/FT	~MC18x42.7 = 18 IN x 2 + 3.95 IN X 4
HEIGHT 2:	2.60	FT	~CONNECTION HEIGHT: 33.1" BEAM DEPTH - 2x (0.96" FLANGES)
WIDTH 2:	0.96	FT/EACH	~CONNECTION WIDTH = 11.5 IN
SUBTOTAL=	**3143.11**	**SF**	~NUMBERxPERIMETERxLENGTH+NUMBERx2xHEIGHT 2xWIDTH 2
TOTAL=	**14531**	**SF**	

514E00066	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT	14531	SF

BEAM PROPERTIES: (W33X141)

Beam Depth:	33.3	IN	
Flange Width:	11.5	IN	
Flange Thickness:	0.96	IN	
Web Depth:	31.38	IN	~ (33.3 IN BEAM DEPTH) - 2x(0.96 IN FLANGE THICK.)
Web Thickness:	0.605	IN	
Beam Perimeter	99.89	IN	~ 4x(0.96 IN FLANGE THICK.) + 3x(11.5 IN FLANGE WIDTH) - 2x(0.61 IN WEB THICK.) + 2x(31.38 IN WEB HEIGHT)
Number:	8.00	EACH	
Beam Perimeter	8.32	FT	
Beam Length	171.00	FT	
SUBTOTAL=	**11387.46**	**SF**	~ 8 EACH x (8.32 FT PERIMETER) x (171 FT BEAM LENGTH)

INTERMEDIATE DIAPHRAGMS:

NUMBER:	90	EACH	~NUMBER OF DIAPHRAGMS
LENGTH 1:	6.94	FT/EACH	~DIAPH LENGTH: 7'-10.5" BEAM SPACING - 0.605" WEB THICKNESS -2x (2" CLEAR/BEAM SIDE)
PERIMETER:	4.32	SF/FT	~MC18x42.7 = 18 IN x 2 + 3.95 IN X 4
HEIGHT 2:	2.60	FT	~CONNECTION HEIGHT: 33.1" BEAM DEPTH - 2x (0.96" FLANGES)
WIDTH 2:	0.96	FT/EACH	~CONNECTION WIDTH = 11.5 IN
SUBTOTAL=	**3143.11**	**SF**	~NUMBERxPERIMETERxLENGTH+NUMBERx2xHEIGHT 2xWIDTH 2
TOTAL=	**14531**	**SF**	

516E13600	1" PREFORMED EXPANSION JOINT FILLER	17	SF

AT PARAPETS:

NUMBER:	4	EACH	~2 SIDES/APPROACH @ 2 APPROACHES/BRIDGE BETWEEN BRIDGE PARAPET AND APPROACH PARAPET
BRIDGE SKEW:	15		
PARAPET AREA:	4.08	SF	(STD. DWG. SBR-1-13)
AREA=	**17**	**SF**	~ 4 EACH x (4.08 SF PARAPET AREA) x SEC(15º SKEW)

516E13900	2" PREFORMED EXPANSION JOINT FILLER	44	SF

AT WINGWALL/SEAT:

NUMBER:	4	EACH	~4 PER BRIDGE
HEIGHT:	4.23	FT	~1105.85-1101.62
WIDTH:	2.59	FT	~WINGWALL THICKNESS / COS 15 DEG
AREA=	**44**	**SF**	~ 4 EACH x 4.23 FT x 2.59 FT

516E14020	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL	137	FT

REAR LENGTH:	68.46	FT	~REAR DIAPHRAGM LENGTH + 3' VERT x 2
FORWARD LENGTH:	68.46	FT	~FORWARD DIAPHRAGM LENGTH + 3' VERT x 2
LENGTH:	136.92	FT	~68.46 FT REAR + 68.46 FT FORWARD
TOTAL:	**137.00**	**FT**	

516E44201	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN: (13" x 11 1/2" x 3 1/4")	16	EACH

***AT ABUTMENTS**

NUMBER:	8	EACH	~NUMBER OF BEAMS
NUMBER:	2	EACH	~NUMBER OF SUPPORT LOCATIONS
NUMBER:	1	EACH	~1 BRIDGES
TOTAL:	**16**	**EACH**	~8 EACH x 2 EACH x 1 EACH

516E44201	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN: (14" x 16" x 3 7/8")	16	EACH

*AT PIERS

NUMBER:	8	EACH	~NUMBER OF BEAMS
NUMBER:	2	EACH	~NUMBER OF SUPPORT LOCATIONS
NUMBER:	1	EACH	~1 BRIDGES
TOTAL:	**16**	**EACH**	~8 EACH x 2 EACH x 1 EACH

518E12301	SCUPPERS, INCLUDING SUPPORTS, AS PER PLAN	4	EACH

NUMBER:	4	EACH	~NUMBER OF SCUPPERS/SIDE
NUMBER:	1	EACH	~NUMBER OF SIDES
TOTAL:	**4**	**EACH**	~4 EACH x 1 EACH

518E21200	POROUS BACKFILL WITH GEOTEXTILE FABRIC	78	CY

REAR ABUTMENT:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH:	62.46	FT	~OUT-TO-OUT ALONG CL ABUTMENT
WIDTH:	2.00	FT	~POROUS BACKFILL WIDTH
AVG. TOD ELEV=	1104.67	FT	~AVERAGE TOP OF DECK ELEV.-15" APPROACH SLAB
TOP FOOT. ELEV.=	1097.82	FT	~ 1094.82 BOT. FOOTING ELEVATION + 3 FT
HEIGHT:	6.35	FT	~ 1104.67 TOD - 1.25 FT APP. SLAB - 1097.82 TOP OF FOOTING
VOLUME:	**29.4**	**CY**	~ 1 EACH x 62.46 FT x 2 FT 6.35 FT x 1CY/27CF

LEFT REAR WINGWALL:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH 1:	2.27	FT	~TALL SECTION LENGTH
LENGTH 2:	6.50	FT	~SHORT SECTION LENGTH
AVG. WING LENGTH:	8.77	FT	~ 2.27 FT + 6.5 FT AVERAGE WING LENGTH
MAX TOP ELEV.:	1105.64	FT	~TALL SECTION ELEV
MIN TOP ELEV.:	1102.50	FT	~SHORT SECTION ELEV
TOP FOOT. ELEV.=	1097.82	FT	~ 1094.82 BOT. FOOTING ELEVATION + 3 FT
WIDTH:	2.00	FT	~POROUS BACKFILL WIDTH
HEIGHT 1:	6.82	FT	~TALL SECTION HEIGHT -1 FT
HEIGHT 2:	3.68	FT	~SHORT SECTION HEIGHT -1 FT
AVERAGE HEIGHT:	5.25	FT	~ AVERAGE OF (6.82 FT AND 3.68 FT)
VOLUME 1:	1.14	CY	~VOLUME OF RECTANGULAR SECTION: 2.27 FT x 2 FT x 6.82 FT x (1 CY/27 CF)
VOLUME 2:	2.53	CY	~VOLUME OF TRAPEZOIDAL SECTION: 6.5 FT x 2 FT x 5.25 FT AVG. HEIGHT x (1 CY/27 CF)
VOLUME:	**3.7**	**CY**	~ 1.14 CY + 2.53 CY

RIGHT REAR WINGWALL:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH 1:	2.73	FT	~TALL SECTION LENGTH
LENGTH 2:	6.50	FT	~SHORT SECTION LENGTH
AVG. WING LENGTH:	9.23	FT	~ 2.73 FT + 6.5 FT AVERAGE WING LENGTH
MAX TOP ELEV.:	1105.85	FT	~TALL SECTION ELEV
MIN TOP ELEV.:	1102.50	FT	~SHORT SECTION ELEV
TOP FOOT. ELEV.=	1097.82	FT	~ 1094.82 BOT. FOOTING ELEVATION + 3 FT
WIDTH:	2.00	FT	~POROUS BACKFILL WIDTH
HEIGHT 1:	7.03	FT	~TALL SECTION HEIGHT -1 FT
HEIGHT 2:	3.68	FT	~SHORT SECTION HEIGHT -1 FT
AVERAGE HEIGHT:	5.36	FT	~ AVERAGE OF (7.03 FT AND 3.68 FT)
VOLUME 1:	1.42	CY	~VOLUME OF RECTANGULAR SECTION: 2.73 FT x 2 FT x 7.03 FT x (1 CY/27 CF)
VOLUME 2:	2.58	CY	~VOLUME OF TRAPEZOIDAL SECTION: 6.5 FT x 2 FT x 5.36 FT AVG. HEIGHT x (1 CY/27 CF)
VOLUME:	**4.0**	**CY**	~ 1.42 CY + 2.58 CY

LEFT FORWARD ABUTMENT:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH:	62.46	FT	~OUT-TO-OUT ALONG CL ABUTMENT
WIDTH:	2.00	FT	~POROUS BACKFILL WIDTH
AVG. SEAT ELEV=	1104.16	FT	~AVERAGE SEAT ELEV.
TOP FOOT. ELEV.=	1097.32	FT	~ 1094.32 BOT. FOOTING ELEVATION + 3 FT
HEIGHT:	6.84	FT	~ 1104.16 TOD - 1.25 FT APP. SLAB - 1097.32 TOP OF FOOTING
VOLUME:	**31.6**	**CY**	~ 1 EACH x 62.46 FT x 2 FT 6.84 FT x 1CY/27CF

LEFT FORWARD WINGWALL:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH 1:	2.23	FT	~TALL SECTION LENGTH
LENGTH 2:	6.50	FT	~SHORT SECTION LENGTH
AVG. WING LENGTH:	8.73	FT	~ 2.23 FT + 6.5 FT AVERAGE WING LENGTH
MAX TOP ELEV.:	1105.13	FT	~TALL SECTION ELEV
MIN TOP ELEV.:	1102.00	FT	~SHORT SECTION ELEV
TOP FOOT. ELEV.=	1097.32	FT	~ 1094.32 BOT. FOOTING ELEVATION + 3 FT
WIDTH:	2.00	FT	~POROUS BACKFILL WIDTH
HEIGHT 1:	6.81	FT	~TALL SECTION HEIGHT -1 FT
HEIGHT 2:	3.68	FT	~SHORT SECTION HEIGHT -1 FT
AVERAGE HEIGHT:	5.25	FT	~ AVERAGE OF (6.81 FT AND 3.68 FT)
VOLUME 1:	1.13	CY	~VOLUME OF RECTANGULAR SECTION: 2.23 FT x 2 FT x 6.81 FT x (1 CY/27 CF)
VOLUME 2:	2.53	CY	~VOLUME OF TRAPEZOIDAL SECTION: 6.5 FT x 2 FT x 5.25 FT AVG. HEIGHT x (1 CY/27 CF)
VOLUME:	**3.7**	**CY**	~ 1.13 CY + 2.53 CY

RIGHT FORWARD WINGWALL:

NUMBER:	1	EACH	~1 PER BRIDGE @ 1 BRIDGES
LENGTH 1:	2.27	FT	~AVERAGE TALL SECTION LENGTH
LENGTH 2:	7.25	FT	~SHORT SECTION LENGTH
AVG. WING LENGTH:	9.52	FT	~ 2.27 FT + 7.25 FT AVERAGE WING LENGTH
MAX TOP ELEV.:	1105.34	FT	~TALL SECTION ELEV
MIN TOP ELEV.:	1102.00	FT	~SHORT SECTION ELEV
TOP FOOT. ELEV.=	1097.32	FT	~ 1094.32 BOT. FOOTING ELEVATION + 3 FT
WIDTH:	2.00	FT	~POROUS BACKFILL WIDTH
HEIGHT 1:	7.02	FT	~TALL SECTION HEIGHT -1 FT
HEIGHT 2:	3.68	FT	~SHORT SECTION HEIGHT -1 FT
AVERAGE HEIGHT:	5.35	FT	~ AVERAGE OF (7.02 FT AND 3.68 FT)
VOLUME 1:	1.18	CY	~VOLUME OF RECTANGULAR SECTION: 2.27 FT x 2 FT x 7.02 FT x (1 CY/27 CF)
VOLUME 2:	2.87	CY	~VOLUME OF TRAPEZOIDAL SECTION: 7.25 FT x 2 FT x 5.35 FT AVG. HEIGHT x (1 CY/27 CF)
VOLUME:	**4.1**	**CY**	~ 1.18 CY + 2.87 CY
TOTAL:	**78**	**CY**	

518E40000	**6" PERFORATED CORRUGATED PLASTIC PIPE**	**172**	**FT**

NUMBER:	2	EACH	~2 APPROACHES/BRIDGE @ 1 BRIDGES
LENGTH:	86.00	FT	~ABUTMENT LENGTH +5 FT ADDITIONAL ON EACH SIDE
VOLUME:	**172**	**FT**	2 EACH x 86 FT

518E40010	**6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS**	**60**	**FT**

NUMBER:	4	EACH	~2 SIDES/APPROACHES @ 2 APPROACH/BRIDGES
LENGTH:	15.00	FT	~ASSUMED 15 FT LENGTH
VOLUME:	**60**	**FT**	4 EACH x 15 FT

523E20000	**DYNAMIC LOAD TESTING**	**2**	**EACH**

NUMBER:	1	EACH	~NUMBER OF TESTS/LOCATION
NUMBER:	2	EACH	~NUMBER OF LOCATIONS
TOTAL:	**2**	**EACH**	~1 EACH x 2 EACH

526E25000	**REINFORCED CONCRETE APPROACH SLABS (T=15")**	**335**	**SY**

NUMBER:	2	EACH	~2 APPROACHES/BRIDGE @ 1 BRIDGES
LENGTH:	25.00	FT	
WIDTH:	60.33	FT	
VOLUME:	**335**	**SY**	2 EACH x 25 FT x 60.33 FT x x 1SY/9SF

526E90010	**TYPE A INSTALLATION**	**125**	**FT**

APPROACH:

NUMBER:	2	EACH	~2 SIDES PER BRIDGE @ 1 BRIDGES
BRIDGE SKEW:	15	DEG	
DECK WIDTH:	60.33	FT	~OUT-OUT BRIDGE DECK
LENGTH:	124.92	FT	~ 2 EACH x (60.33 FT DECK WIDTH) x SEC(15º SKEW)

601E32204	**ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FABRIC**	**278**	**CY**

R.A. PLAN AREA:	1875	SF
F.A. PLAN AREA:	1438	SF
SLOPE ANGLE:	28.00	DEGREES
DEPTH:	2.00	FT
VOLUME:	**278.00**	**CY**

846E00110	**POLYMER MODIFIED ASPHALT EXPANSION JOINT SYSTEM**	**56**	**CF**

APPROACH:

NUMBER:	2	EACH	~2 SIDES PER BRIDGE @ 1 BRIDGES
BRIDGE SKEW:	15	DEG	
JOINT WIDTH:	1.67	FT	~ 20" THICKNESS PER NOTE 2 FROM STD. DWG. AS-2-15 SHEET 1 OF 1 NOTE 11
DEPTH:	0.27	FT	~ 3.25" THICKNESS PER ROADWAY FULL DEPTH TYPICAL SECTION
DECK WIDTH:	60.33	FT	~OUT-OUT BRIDGE DECK
VOLUME:	56.39	CF	~ 2 EACH x (60.33 FT DECK WIDTH) x SEC(15º SKEW) x (1.67 FT JOINT WIDTH) x (0.27 FT JOINT DEPTH)