Johnson, Mirmiran, & Thompson

Calculated:	*PPA*	Date:	*12/13/2019*		
Checked:	*NCM*	Date:	*12/17/2019*	Stage Submission:	Final Tracings
Concurred:	*PPA*	Date:	*12/18/2019*	PID/Job No.:	102858
Back Checked:	*NCM*	Date:	*12/19/2019*		
Released:	*PPA/NCM*	Date:	*12/19/2019*		
Project:	*POR-76-(16.58)(21.18)*			Bridge No.:	POR-76-1658
Subject:	***ESTIMATED QUANTITIES FOR CR-137 (JOHN THOMAS ROAD OVER IR 76)***			SFN:	6702880

POR-76-1658 Replacement of Deck and raising superstructure (4 Span Continuous Steel Beam With Reinforced Concrete Deck And Substructure)

ESTIMATED QUANTITIES

CALCULATED BY: PPA DATE: 12/13/2019
CHECKED BY: NCM DATE: 12/17/2019

ITEM	EXT.	PARTICIPATION 01/IMS/BR	TOTAL	UNIT	DESCRIPTION	ABUT.	PIERS	SUPER.	GEN.	SHT. REF.
202	11203	LS	LS		PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN				LS	2
202	22900	156	156	SY	APPROACH SLAB REMOVED				156	
202	38601	48	48	FT	BRIDGE RAILING REMOVED FOR STORAGE, AS PER PLAN				48	2
503	11100	LS	LS		COFFERDAMS AND EXCAVATION BRACING				LS	
503	21100	176	176	CY	UNCLASSIFIED EXCAVATION	176				
509	10000	65,685	65,685	LB	EPOXY COATED REINFORCING STEEL	7,434	2,450	55,801		
510	10000	574	574	EACH	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT	412	162			
511	34446	189	189	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK			189		
511	34450	49	49	CY	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)			49		
511	41010	10	10	CY	CLASS QC1 CONCRETE, PIER ABOVE FOOTINGS		10			
511	43510	53	53	CY	CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING	53				
512	10100	741	741	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)	71	247	423		
512	33000	8	8	SY	TYPE 2 WATERPROOFING	8				
512	74000	236	236	SY	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES	11	225			
513	10200	1,105	1,105	LB	STRUCTURAL STEEL MEMBERS, LEVEL UF			1,105		
513	20000	1,890	1,890	EACH	WELDED STUD SHEAR CONNECTORS			1,890		
514	00050	2,851	2,851	SF	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL			2,851		
514	00056	2,851	2,851	SF	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT			2,851		
514	00060	3,001	3,001	SF	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT			3,001		
514	00067	3,001	3,001	SF	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN			3,001		2
514	00504	7	7	MNHR	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL			7		
514	10000	3	3	EACH	FINAL INSPECTION REPAIR			3		
516	11210	64	64	FT	STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL	64				
516	13600	33	33	SF	1" PREFORMED EXPANSION JOINT FILLER	32		1		
516	13900	13	13	SF	2" PREFORMED EXPANSION JOINT FILLER	13				
516	25000	163	163	SF	NYLON REINFORCED NEOPRENE SHEETING	163				
516	44100	10	10	EACH	11" X 12" X 2 5/8" ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (12" X 18 1/4" X 1 1/2") (NEOPRENE)	10				
516	44100	10	10	EACH	14" X 16" X 2 5/8" ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (15" X 17" X 2") (NEOPRENE)		10			
516	44100	5	5	EACH	14" X 16" X 2 5/8" ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (15" X 22 1/4" X 2") (NEOPRENE)		5			
516	47000	LS	LS		JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE			LS		
518	21201	25	25	CY	POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN	25				4 & 5
518	40012	80	80	FT	6" NON-PERFORATED CORRUGATED PLASTIC PIPE	80				
SPECIAL	51900100	1,531	1,531	SF	COMPOSITE FIBER WRAP SYSTEM		1,531			2 & 13
519	11101	384	384	SF	PATCHING CONCRETE STRUCTURE, AS PER PLAN		384			2
526	25010	160	160	SY	REINFORCED CONCRETE APPROACH SLABS WITH QA/QC (T=15")				160	
526	90010	57	57	FT	TYPE A INSTALLATION				57	
601	20000	339	339	SY	CRUSHED AGGREGATE SLOPE PROTECTION	339				
607	39900	320	320	FT	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC				320	

	1658 Input	
Bridge Limits	210.84	
Span 1	42.5	
Span 2	60.67	
Span 3	60.67	
Span 4	42.5	
C/C Bearings	206.33	
Deck Width	25.33	btw. Fascia beams
O/O Width	31.33	
F/F width	28.00	
# Beams	5	
Bm Spacing	6.33	
Lt Rail Area	2.94	
Rt Rail Area	2.94	
Skew	0.00	
Deck Area	6606.32	
Prop. Deck	31.33	

202	**11203**	**LS**			**PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN**
	deck removal	$ 99,095.00			use $15 / sf of existing deck area
	abut. Removal	$ 6,000.00			use $200 / cy, each abutment and 2 wingwalls are approximately 15 cy
	misc.	$ 5,000.00			various incidentals such as end cross frames, scuppers,etc
		$ 110,095.00			total
		$110,000.00			
202	**22900**	**156**		**SY**	**APPROACH SLAB REMOVED**
		28.00		ft	width
		25.00		ft	length
		2		each	# of approach slabs
		155.56		**sy**	**total**
202	**38601**	**48**		**FT**	**BRIDGE RAILING REMOVED FOR STORAGE, AS PER PLAN**
		12		ft	existing parapet length
		4		each	locations
		48		**ft**	**total**
503	**11100**	**LS**			**COFFERDAMS AND EXCAVATION BRACING**
		$ 5,000.00			no traffic to maintain, so it should be very straightforward
503	**21100**	**176**		**CY**	**UNCLASSIFIED EXCAVATION**
abutments	end area	32		ft	length
	(trapezoid)	36		sf	6' deep, 3 feet wide at bottom, 6' under AS, assumes 1:1 layback
		2		each	number of abutments
		2304		cf	subtotal
WW	end area-1	13		ft	length
	(trapezoid)	25		sf	6' deep, 1 feet wide at bottom, 6' under AS, assumes 1:1 layback to excavate for upper section
	end area-2	36		sf	approximately 6' x 6 to excavate for footing extension
	(trapezoid)	8		ft	length
		4		each	number of wingwalls
		2452.00		cf	subtotal
		176		cy	abutment total
		176		**cy**	**total**

509	**10000**	**65,685**		**LB**	**EPOXY COATED REINFORCING STEEL**
		7434		lb	abutments + seismic pedestals at abutments
		2450		lb	pier
		10456		lb	parapet
		45345		lb	deck
	for info only	15443		lb	approach slab
	for info only	946		lb	sleeper slab
		65685		**lb**	**total**
510	**10000**	**574**		**EACH**	**DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT**
RA		124		each	beam/backwall
		26		each	seismic pedestal
		28		each	wingwall
		178		each	RA total
FA		124		each	beam/backwall
		26		each	seismic pedestal
		84		each	wingwall
		234		each	FA total
		54		each	pier 1
		54		each	pier 2
		54		each	pier 3
		162		each	pier total
		574		**each**	**total**
511	**34446**	**189**		**CY**	**CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK**
		25.33		ft	deck width between overhangs
		207.83		ft	deck length (brg to brg + distance to face of backwall - strip seals)
		8.5		in	nominal deck thickness
		5		each	number of beams
		0.83		in	largest top flange thickness (W 27x102, conservative)
		10.02		in	largest top flange width (W 27x102, conservative)
		3.17		in	haunch thickness (average from TS table)
		3.00		ft	left overhang width
		3.00		ft	right overhang width
		12.50		in	overhang thickness
		3729.5		cf	nominal deck volume
		228.92		cf	rectangular haunch volume
		1118.05		cf	overhang volume
		5076.43		cf	deck total
		188.02		**cy**	**total**
511	**34450**	**49**		**CY**	**CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)**
BR-1-13	Parapet	2.94		sf	parapet cross sectional area
		193.84		ft	length between transitions
		2		each	number of barriers
		44.01		cf	14'-0" transition integral barrier volume per std dwg
		4		each	number of transitions, 2 on bridge (FA), 2 on approach slabs (RA)
		1315.82		cf	total
		48.73		**cy**	**total**

511	41010	10		CY	CLASS QC1 CONCRETE, PIER ABOVE FOOTINGS
		25.33		ft	straight length
		3.00		ft	width/end radius
		83.07		sf	area
		1.06		ft	proposed height
		3		each	number of piers
		264.82		cf	pier total
		9.81		**cy**	**total**
511	**43510**	**53**		**CY**	**CLASS QC1 CONCRETE, ABUTMENT INCLUDING FOOTING**
RA	beam seat	30.17		ft	length
		2.00		ft	width
		1.57		ft	avg. height (avg. prop beam seat - sawcut)
		94.8		cf	subtotal
	backwall	31.00		ft	length
		1.75		ft	Full width (including approach slab seat, will subtract notch later)
		5.30		ft	avg. height (avg. top deck - sawcut)
		287.3		cf	subtotal
	AS seat notch	27.83		ft	length
	(SUBTRACT)	0.50		ft	width
		2.04		ft	height
		28.4		cf	subtotal
	seismic	4.73		ft	length
	pedestal	2.00		ft	width
		0.38		ft	height
		3.5		cf	subtotal
	WW - 1	6.75		ft	length
	rectangle	1.92		ft	width
		5.22		ft	height
		67.5		cf	subtotal
	WW - 2	7.25		ft	length
	rectangle	1.92		ft	width
		3.00		ft	height
		41.7		cf	subtotal
	WW - 3	7.25		ft	length
	triangle	1.92		ft	width
		2.22		ft	height
		15.4		cf	subtotal
	WW notch	12.75		ft	length (SEE ABUTMENT DETAIL SHEET … AT SECTION B IN FRONT OF BR-1-13 BARRIER TRANSITION)
	(SUBTRACT)	0.42		ft	width
		1.75		ft	height
		9.3		cf	subtotal
		2		each	number of WW
		588.0		*cf*	*RA TOTAL*

FA	beam seat	30.17		ft	length
		2.00		ft	width
		1.56		ft	avg. height (avg. prop beam seat - sawcut)
		94.4		cf	subtotal
	backwall	30.17		ft	length
		1.75		ft	Full width (including approach slab seat, will subtract notch later)
		5.30		ft	avg. height (avg. top deck - sawcut)
		280.0		cf	subtotal
	backwall	4.00		ft	extension length (2' on each side)
	extension	1.75		ft	width
	to connect to	5.30		ft	avg. height (avg. top deck - sawcut)
	prop. 1' WW	37.1		cf	subtotal
	AS seat notch	29.00		ft	length
	(SUBTRACT)	0.50		ft	width
		2.04		ft	height
		29.6		cf	subtotal
	seismic	4.73		ft	length
	pedestal	2.00		ft	width
		0.40		ft	height
		3.7		cf	subtotal
above	WW - 1	6.75		ft	length
beam seat	rectangle	1.00		ft	width
		5.23		ft	height
		35.3		cf	subtotal
	WW - 2	4.00		ft	length
	rectangle	1.00		ft	width
		3.00		ft	height
		12.0		cf	subtotal
	WW - 3	4.00		ft	length
	triangle	1.00		ft	width
		2.23		ft	height
		4.5		cf	subtotal
below	WW - 1	6.75		ft	length
sawcut but	rectangle	3.17		ft	width
above ftg		6.04		ft	height
		129.1		cf	subtotal
	footing	7.75		ft	length
		2.17		ft	width
		2.25		ft	height
		37.8		cf	subtotal
"barrier"		1.46		sf	area (flooded from microstation)
btw deck and		1.25		ft	length (of backwall)
AS on backwall		1.8		cf	subtotal
for exp. Joint					
retainer					
		2		each	number of WW
		826.5		*cf*	*FA TOTAL*
		52.4		**cy**	**total**

512	10100	741		SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
RA	main	30.17		ft	length
		7.30		ft	"Perimeter" of Sealing - avg. height of beam seat + width of beam seat + avg. height of backwall
		220.22		sf	subtotal
	WW	6.75		ft	length (str.)
		4.50		ft	estimated height (str.) (wingwall height + distance to ground line)
		7.25		ft	length (sloped)
		2.50		ft	estimated height (str.) (wingwall height + distance to ground line)
		2		each	number of wings
		97.00		sf	subtotal
FA	main	30.17		ft	length
		7.30		ft	"Perimeter" of Sealing - avg. height of beam seat + width of beam seat + avg. height of backwall
		220.22		sf	subtotal
	WW	6.75		ft	length (str.)
		4.50		ft	estimated height (str.) (wingwall height + distance to ground line)
		4.0		ft	length (sloped)
		2.00		ft	estimated height (str.) (wingwall height + distance to ground line)
		10.75		ft	top of wingwall
		1		ft	thickness of wingwall
		2		each	number of wings
		98.25		sf	subtotal
		71.0		*sy*	*Abutment Total*
BR-1-13	main parapet	193.84		ft	total length
	btw	8.68		ft	perimeter (Section D)…overhang assumed as 1'
	transitions	2		each	number of barriers
		3364.52		sf	subtotal
	RA	14		ft	length
	transitions	7.00		ft	avg. perimeter (section A-C similar, use section C)
		2		each	locations
		196.00		sf	subtotal
	FA	14		ft	length
	transitions	8.50		ft	avg. perimeter (section F-H similar, use section F)
		2		each	locations
		238.00		sf	subtotal
		423.00		*sy*	*PARAPET/DECK TOTAL*
piers	cap	25.3		ft	cap length (full width, center to center fascia columns)
		9.42		ft	nose circumference
		3		ft	width
		5.35		ft	avg. height (top of proposed - bottom of ex cap)
		321.73		sf	cap sides
		61.86		sf	cap bottom (total - column holes)
		383.59		sf	subtotal (1 cap only)
	columns	12.56		ft	avg height to existing ground
		3		ft	diameter
		3		each	number of columns
		355.10		sf	subtotal (3 columns per pier)
		3		each	locations
		2216.07		sf	subtotal (all piers)
		247.00		*sy*	*PIER TOTAL*
		741.00		**sy**	**total**

512	**33000**	**8**		**SY**	**TYPE 2 WATERPROOFING**
	both	6		ft	new wingwall / existing wingwall joint
	abuts	4		each	number of WW (2 at each abut)
		3		ft	width (minimum per 711.25)
		8		**sy**	**total**
512	**74000**	**236**		**SY**	**REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES**
	abutments	30.17		ft	length
		1.5		ft	height (below removal line to existing grade)
		2		each	number of abutments
		90.50		sf	total for abutments
		11		sy	total for abutments
	piers	383.59		sf	area of cap
		63.85		sf	subtract out proposed cap portion
		355.10		sf	area of column to be sealed
		3		each	number of piers
		2024.52		sf	total for piers
		225		sy	total for piers
		236		**sy**	**total**
513	**10200**	**1105**		**LB**	**STRUCTURAL STEEL MEMBERS, LEVEL UF**
		6.33		ft	length of each bay
		2.24		ft	height of girder (WF 27x94)
		3.88		ft	diagonal angle length
		6.33		ft	bottom angle length
		14.09		ft	total length
		4		each	number of bays
		9.8		lb/ft	4"x4"x3/8" angle unit weight
		2		each	ends
		1105.04		**lb**	**total**
513	**20000**	**1890**		**EACH**	**WELDED STUD SHEAR CONNECTORS**
		189		each	number of studs along beam
		2		each	studs per beam
		5		each	number of beams
		1890		**each**	**total**

514	**00050**	**2851**		**SF**	**SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL**
field	existing	10		ft	beam length
	beam ends	6.79		ft	perimeter
	at abutments	10		each	number of beams (5 beams x 2 abutments)
		678.75		sf	subtotal
		0.05		**%**	assume additional 5% for flange sides
		712.69		sf	loaded subtotal
	existing	20		ft	beam length (10' EACH - 2 directions)
	beam ends	6.79		ft	perimeter
	at piers	15		each	number of beams (5 beams x 3 piers)
		2036.25		sf	subtotal
		0.05		**%**	assume additional 5% for flange sides
		2138.06		sf	loaded subtotal
		2851		sf	TOTAL
514	**00056**	**2851**		**SF**	**FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT**
		2851		sf	TOTAL - match 514E00050
514	**00060**	**3001**		**SF**	**FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT**
		2851		sf	BEAM TOTAL - match 514E00050
	end	6.33		ft	beam spacing
	x-frames	2.24		ft	beam depth
		3.88		ft	diagonal angle length
		18.74		sf	total area per bay
		4		each	number of bays
		2		each	number of abutments
		150		sf	*END CROSS FRAME TOTAL*
		3001		sf	**FIELD PAINT TOTAL**
514	**00067**	**3001**		**SF**	**FIELD PAINTING STRUCTURAL STEEL, FINISH COAT, AS PER PLAN**
		3001		sf	TOTAL - match 514E00060
514	**00504**	**7**		**MNHR**	**GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL**
		400		ft	total length of existing beam on structure
		400		min	1 minute per linear foot of beam (in BDM)
		7		**mnhr**	**conversion**
514	**10000**	**3**		**EACH**	**FINAL INSPECTION REPAIR**
		400		ft	total length of existing beam on structure
		150		ft	1 inspection per every 150 feet of girder
		1		each	# of bridges
		3		**each**	**final repair total**

516	**11210**	**64**		**FT**	**STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL**
		31.83		ft	RA + additional horizontal length into curbs
		31.83		ft	FA
		63.67		**ft**	**total**
516	**13600**	**33**		**SF**	**1" PREFORMED EXPANSION JOINT FILLER**
RA	Interface	12.75		ft	length
	at WW/AS	1.25		ft	approach slab thickness
		2		each	number of locations
		31.9		sf	subtotal
	Interface	0.49		sf	flooded area (area of rail which is larger than curb, but so small say ok)
	at end	2		each	locations
	transiton/curb	1.0		sf	subtotal
		32.9		**sf**	**total**
516	**13900**	**13**		**SF**	**2" PREFORMED EXPANSION JOINT FILLER**
FA	Interface	3.74		ft	average height
	at prop. WW	1.75		ft	width
	& beam seat	2		each	locations (forward abutment wings ONLY)
		13		**sf**	**total**
516	**25000**	**163**		**SF**	**NYLON REINFORCED NEOPRENE SHEETING**
	both	27.17		ft	length of abutment / backwall joint
	abuts	2		each	number of abutments
		3		ft	width (minimum per 711.25)
		163		**sf**	**total**
516	**44100**	**10**		**EACH**	**11" X 12" X 2 5/8" ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (12" X 18 1/4" X 1 1/2") (NEOPRENE)**
		2		each	abutments
		0		each	piers
		5		each	beamlines
		10		**each**	**total**
516	**44100**	**10**		**EACH**	**14" X 16" X 2 5/8" ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (15" X 17" X 2") (NEOPRENE)**
		0		each	abutments
		2		each	piers
		5		each	beamlines
		10		**each**	**total**
516	**44100**	**5**		**EACH**	**14" X 16" X 2 5/8" ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (15" X 22 1/4" X 2") (NEOPRENE)**
		0		each	abutments
		1		each	piers
		5		each	beamlines
		5		**each**	**total**
516	**47000**	**LS**			**JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE**
		2		each	number of abutments
		3		each	number of piers
		5		each	number of beams
		25		each	total number of bearings
		500		$	jacking cost per bearing
		$ 12,500.00			**ESTIMATED LUMP SUM COST for Estimator**

518	**21201**	**25**		**CY**	**POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN**
	RA	27.17		ft	length (extends to face of prop WW)
		6.12		ft	avg height (avg top deck - AS thick - avg. ex. beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep))
		2		ft	thickness
		332.77		cf	RA PROP TOTAL
	FA	27.17		ft	length
		6.14		ft	avg height (avg top deck - AS thick - avg. ex. beam seat + 1.5 (approx. height to mid weep) + 1.17 (1' below bot of weep))
		2		ft	thickness
		333.46		cf	FA PROP TOTAL
		24.68		**cy**	**total**
					NOTE - item to include "retain and clean out existing weepholes for drainage"
518	**40012**	**80**		**FT**	**6" NON-PERFORATED CORRUGATED PLASTIC PIPE**
	FA	40		ft	drainage behind WW to outlet at tied concrete block mat (west WW)
	FA	40		ft	drainage behind WW to outlet at tied concrete block mat (east WW)
		80		**ft**	**total**
SPECIAL	**51900100**	**1531**		**SF**	**COMPOSITE FIBER WRAP SYSTEM**
		9.42		ft	circumference of column
		18.42		ft	pier 1 existing pier height
		18.18		ft	pier 2 existing pier height
		17.58		ft	pier 3 existing pier height
		3		each	number of columns
		1531.04		**sf**	**total**
519	**11101**	**384**		**SF**	**PATCHING CONCRETE STRUCTURE, AS PER PLAN**
	P1	93		sf	Estimated area, from table on plans
	P2	18		sf	Estimated area, from table on plans
	P3	273		sf	Estimated area, from table on plans
		384		**sf**	**total**
526	**25010**	**160**		**SY**	**REINFORCED CONCRETE APPROACH SLABS WITH QA/QC (T=15")**
	RA-1	29		ft	width
		12.25		ft	length
	RA-2	27.83		ft	width
		12.75		ft	length
		710.125		sf	RA total
	FA	29		ft	width
		25		ft	length
		725		sf	FA total
		159.46		**sy**	**total**

526	**90010**	**57**		**FT**	**TYPE A INSTALLATION**
		27.83		ft	rear AS
		29		ft	fwd AS
		56.83		**ft**	**total**
601	**20000**	**339**		**SY**	**CRUSHED AGGREGATE SLOPE PROTECTION**
	RA	38.00		ft	approx. length (not along slope)
		2			slope (X:1)
		42.49		ft	length along slope
		37.33		ft	width (bridge width/cos(skew) + 3' on each end)
		1586.12		sf	subtotal
	FA	35.00		ft	approx. length (not along slope)
		2			slope (X:1)
		39.13		ft	length along slope
		37.33		ft	width (bridge width/cos(skew) + 3' on one end)
		1460.90		sf	subtotal
		338.56		**sy**	**total**
607	**39900**	**320**		**FT**	**VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC**
		160		ft	length per parapet
		2		each	number of parapets
		320		**ft**	**total**