BRIDGE NO: MOT-4-1779L
SFN: 5760518
BRIDGE DESCRIPTION: SR 4 over Webster Street

CALCULATED BY: AMR DATE: 08/10/22
CHECKED BY: BWR DATE: 08/10/22

ESTIMATED QUANTITIES

Note to Designer: Edit Blue Text Only!

GENERAL INPUT:

Skew = 7.00 degrees

DECK:

Bridge limits = 170.14 ft

	REAR ABUTMENT	FORWARD ABUTMENT
Deck width =	68.00 ft	68.00 ft
Average deck width =	68.00 ft	
Slab thickness =	0.73 ft	

ABUTMENTS:

	REAR ABUTMENT	FORWARD ABUTMENT
Length of breastwall (from proposed abutment plan) =	69.73 ft	67.71 ft
Length of backwall =	69.73 ft	67.71 ft
Width of breastwall =	3.75 ft	3.75 ft
Width of approach slab =	64.67 ft	64.67 ft
Thickness of approach slab =	1.25 ft	1.25 ft
Existing bottom of footing elevation =	745.08	744.22
Top of deck elevations at bridge limits:		
Left toe of parapet elevation =	755.27	754.72
Right toe of parapet elevation =	760.55	760.1
Average top of deck elevation =	757.91	757.41

	Left	Right	Left	Right
Approach slab seat elevation =	754.02	759.30	753.5	758.85
Average approach slab seat elevation =	756.66		756.16	
Average beam seat elevation =	753.59		752.88	
Average top of slope elevation =				

	Wingwall 1	Wingwall 2	Wingwall 3	Wingwall 4
Wingwall thickness =	1.75 ft			
Overall wingwall length =	9.00 ft	13.50 ft	14.50 ft	8.75 ft

PARAPET DATA:
Perimeter of epoxy sealing standard SBR-1-20 section = 7.83 ft

ITEM	ITEM EXT.	DESCRIPTION
ITEM 202	11203	PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN

Approximate area of deck to remove = 11328.00 ft^2
Cost to remove deck = $20/ft^2

Approximate volume of abutment concrete to remove = 1900.00 ft^3
Cost to remove concrete = $200/cy

Total cost = $241,000

Quantity = Lump

ITEM	ITEM EXT.	DESCRIPTION
ITEM 202	22900	APPROACH SLAB REMOVED

Rear approach slab plan area = 1200.00 ft^2
Forward approach slab plan area = 1200.00 ft^2

Total Quantity = 267 sq yd

Designer: AMR Date: 8-10-22
Checker: BWR Date: 8-10-22

ITEM 202	23500	WEARING COURSE REMOVED

Toe/Toe = 64.67 ft
Bridge Length = 170.50 ft
Deck Area = 11025.72 ft^2

Rear approach slab plan area = 1200.00 ft^2
Forward approach slab plan area = 1200.00 ft^2

Total Quantity = 1492 sq yd

ITEM 202	32800	CONCRETE SLOPE PROTECTION REMOVED

Plan Area R.A. = 1002.20 ft^2
Plan Area F.A. = 895.52 ft^2

Total Quantity = 211 sq yd

ITEM 203	10000	EXCAVATION

	REAR ABUTMENT	FORWARD ABUTMENT
Average height of excavation =	5.57 ft	5.57 ft
Length of excavation =	24.50 ft	24.50 ft
Width of excavation =	75.40 ft	73.38 ft
Base of Geogrid Length =	8.00 ft	8.00 ft
Volume of excavation =	6824.64 ft^3	6641.81 ft^3

Total Quantity = 499 cu yd

ITEM 204	30010	GRANULAR MATERIAL, TYPE B

	Rear	Forward
Lower Wedge Area =	3.00 ft^2	
Equivalent Number Lower Wedges =	1.50	2.00
Upper Wedge Area =	6.55 ft^2	
Length =	68.00 ft	68.00 ft
Volume =	751.40 ft^3	853.40 ft^3

Total Quantity = 60 cu yd

ITEM 204	50001	GEOTEXTILE FABRIC, AS PER PLAN

Width of Fabric at Sides and Abutment = 9.0 ft
Width of Fabric at End of Approach Slab = 0.0 ft

Rear

	Phase 3 Length		Phase 4 Length	
Layer	Transverse	Longitudinal	Transverse	Longitudinal
1	33.7 ft	0.0 ft	33.9 ft	0.0 ft
2	33.7 ft	0.0 ft	33.9 ft	0.0 ft
3	33.7 ft	0.0 ft	33.9 ft	0.0 ft
4	29.0 ft	0.0 ft	33.9 ft	0.0 ft
5	18.6 ft	0.0 ft	23.8 ft	0.0 ft
Total	148.7 ft	0.0 ft	159.4 ft	0.0 ft
Area	1338.30 ft^2	0.00 ft^2	1434.60 ft^2	0.00 ft^2
	R.A. Total =	2772.90 ft^2		

Forward

	Phase 3 Length		Phase 4 Length	
Layer	Transverse	Longitudinal	Transverse	Longitudinal
1	33.9 ft	0.0 ft	33.0 ft	0.0 ft
2	33.9 ft	0.0 ft	33.0 ft	0.0 ft
3	33.9 ft	0.0 ft	33.0 ft	0.0 ft
4	33.9 ft	0.0 ft	33.0 ft	0.0 ft
5	33.9 ft	0.0 ft	25.4 ft	0.0 ft
6	33.9 ft	0.0 ft	13.4 ft	0.0 ft
Total	203.2 ft	0.0 ft	170.9 ft	0.0 ft
Area	1828.44 ft^2	0.00 ft^2	1537.92 ft^2	0.00 ft^2
	F.A. Total =	3366.36 ft^2		

Total Quantity = 683 sq yd

Designer: AMR Date: 8-10-22

Checker: BMR Date: 8-10-22

ITEM 503	11100	COFFERDAMS AND EXCAVATION BRACING

	REAR ABUTMENT		FORWARD ABUTMENT
Average Depth of sheeting =	16.71 ft		16.71 ft
Length of sheeting =	25.00 ft		25.00 ft
Cost of sheeting =		$15/ft^2	
Cost =	$12,600		

Total Quantity = Lump

ITEM 503	21300	UNCLASSIFIED EXCAVATION

	Plan Area	Average Height	Volume
Wingwall 1	65.26 ft^2	4.00 ft	261.04 ft^3
Wingwall 2	43.22 ft^2	4.00 ft	172.88 ft^3
Wingwall 3	46.19 ft^2	4.00 ft	184.76 ft^3
Wingwall 4	48.13 ft^2	4.00 ft	192.52 ft^3
		Total =	30 cu yd

Total Quantity = Lump

ITEM 509	10000	EPOXY COATED REINFORCING STEEL

Approach Slab Total = 36458 lb
Abutment total = 7616 lb
Diaphragm Guide Total = 725 lb

Total Quantity = 44799 lb

ITEM 509	26000	GALVANIZED STEEL REINFORCEMENT

Superstructure Total = 18468 ft

ITEM 509	30020	NO. 4 GFRP DEFORMED BARS

Superstructure Total = 35421 ft

ITEM 509	30030	NO. 5 GFRP DEFORMED BARS

Superstructure Total = 50940 ft

ITEM 509	30040	NO. 6 GFRP DEFORMED BARS

Superstructure Total = 29379 ft

ITEM 510	10000	DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT

REAR ABUTMENT	FORWARD ABUTMENT
296 each	210 each

Total Quantity = 506 each

ITEM 511	33501	SEMI-INTEGRAL DIAPHRAGM GUIDE, AS PER PLAN

R.A. = 1 each
F.A. = 1 each

Total = 2 each

ITEM 511	34446	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK

Deck concrete:
Area of bridge deck = 11609.15 ft^2
Thickness of new deck = 0.73 ft
Deck volume = 8465.01 ft^3

Deck haunch concrete:
Length of beam = 167.08 ft
Average haunch area = 0.28 ft^2
Number of beams = 8 each
Volume of haunches = 375.93 ft^3

Deck overhang concrete:
Average overhang width = 2.12 ft
Additional thickness = 0.34 ft
Length of deck = 167.08 ft
Number of sides = 2 each
Volume of overhangs = 242.04 ft^3

Diaphragm:

	REAR ABUTMENT	FORWARD ABUTMENT
Diaphragm thickness =	3.75 ft	3.75 ft
Average diaphragm height =	3.80 ft	3.80 ft
Length of diaphragm =	70.00 ft	68.00 ft
Girder deductions from diaphragm:		
Cross section area of girder =	49.98 in^2	49.98 in^2
Web thickness =	0.68 in	0.68 in
Flange thickness =	1.10 in	1.10 in
*Area per girder to be deducted =	0.24 ft^2	0.24 ft^2
Face of diaphragm to girder end (along CL beam) =	1.28 ft	1.75 ft
Volume deduction from diaphragm per girder =	0.31 ft^3	0.42 ft^3
Total deduction for all girders =	2.48 ft^3	3.38 ft^3
Diaphragm guide deduction:		
Height of diaphragm guide =	2.00 ft	2.00 ft
Length of diaphragm guide =	3.81 ft	3.81 ft
Width of diaphragm guide =	3.00 ft	3.00 ft
Deduction for diaphragm guide =	22.86 ft^3	22.86 ft^3
Total net diaphragm volume =	972.16 ft^3	942.76 ft^3

Total Quantity = 408 cu yd

ITEM 511	34450	CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET)

Parapet:

Area of standard section =	4.17 ft^2
Length of standard section =	167.08 ft
Number of sides =	2 each
Length of standard section on approach slab =	10.00 ft
Volume of parapet transition on wingwall =	49.14 ft^3
Number of parapet transitions on wingwalls =	4 each
Pilaster Concrete behind parapet =	16.16 ft^3
Number of Pilasters =	2 each
Total volume of parapet =	1787.76 ft^3

Total Quantity = 67 cu yd

ITEM 511	44110	CLASS QC1 CONCRETE, ABUTMENT NOT INCLUDING FOOTING

	REAR ABUTMENT	FORWARD ABUTMENT
Elevation Area of Breastwall =	59.24 ft^2	79.28 ft^2
Width of breastwall =	3.75 ft	3.75 ft
Volume of breastwall concrete =	222.15 ft^3	297.30 ft^3

	Wingwall 1	Wingwall 2	Wingwall 3	Wingwall 4
Area of wingwall below construction joint =	131.19 ft^2	30.53 ft^2	29.62 ft^2	49.91 ft^2
Thickness =		1.83 ft		
Area of wingwall above construction joint =	129.29 ft	68.66 ft	84.73 ft	86.96 ft
Wingwall thickness =		1.50 ft		
Wingwall volume =	434.41 ft^3	158.95 ft^3	181.39 ft^3	221.93 ft^3

Total Quantity = 57 cu yd

ITEM 511	81300	CONCRETE MISC.: AESHTETIC TEST PANEL

Total Quantity = 2 each

ITEM 512	10100	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)

	REAR ABUTMENT		FORWARD ABUTMENT
Breastwall:			
Area of breastwall to seal =	237.02 ft^2		142.09 ft^2
Area of wingwalls to seal =	166.45 ft^2		108.66 ft^2
Wingwall thickness =		1.50 ft	
Length of top of wingwalls =	40.74 ft		33.00 ft
Total area per abutment =	464.58 ft^2		250.75 ft^2
	79.48 ft^2		

Piers		
Column Perimeter =	9.42 ft	
	Pier 1	Pier 2
Total Column Height =	75.90 ft	76.32 ft
Column Area =	715.34 ft^2	719.30 ft^2
Cap Area =	547.10 ft^2	547.10 ft^2
Bottom of Cap =	159.09 ft^2	159.09 ft^2
Pier Total =	2847.02 ft^2	

Parapet and edge of deck:	
Average Overhang =	2.25 ft
Parapet perimeter =	7.83 ft
Average cantilever deck slab thickness=	1.12 ft
Length of superstructure to be sealed =	170.89 ft
Face of R.A. Diaphragm =	260.18 ft
Face of F.A. Diaphragm =	262.32 ft
Total superstructure quantity =	4407.41 ft^2

Approach Slabs:	
Length of parapet on approach slabs =	66.95 ft
Perimeter of parapet section on approach slab =	7.83 ft
Total Approach Slab Quantity =	524.22 ft^2
Quantity for Substructure =	396 sq yd
Quantity for Superstructure =	490 sq yd
Quantity for General =	59 sq yd
Total Quantity =	945 sq yd

ITEM 512	33000	TYPE 2 WATERPROOFING

	REAR ABUTMENT	FORWARD ABUTMENT
Width of waterproofing =	3.00 ft	3.00 ft
Height of waterproofing =	8.22 ft	7.72 ft
Area of waterproofing =	24.66 ft^2	23.16 ft^2

Total Quantity = 6 sq yd

ITEM 512	74000	REMOVAL OF EXISTING COATINGS FROM CONCRETE SURFACES

	Area
Rear Abutment	162.95 ft^2
Forward Abutment	54.42 ft^2
Piers	2,847.02 ft^2
Total Quantity =	341 sq yd

ITEM 513	10201	STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN

Fatigue Retrofits

Fatigue Retrofit Plate Area =	1.46 ft^2
Fatigue Retrofit Plate Thickness =	0.05 ft
Filler Plate Area =	0.73 ft^2
Filler Plate Thickness =	0.05 ft
Unit weight of steel =	490 lb/ft^3
Number of top flange retrofit plates per beam line =	4 each
Number of beam lines =	8 each
Total weight of fatigue retrofits =	1786.45 lb

Bottom Flange Strengthened Plate

Plate Area =	11.33 ft^2
Plate Thickness =	0.04 ft
Unit weight of steel =	490 lb/ft^3
Number of beams =	8 each
Number of piers =	1 each
Total weight of bottom flange plates =	1851.11 lb

Crossframes

Number of standard crossframe bays =	10 each
Total length of standard crossframe bay =	27.44 ft
Unit weight of standard crossframe angle =	6.1 lb/ft
Number of pier crossframe bays =	2 each
Total length of pier crossframe bay =	36.20 ft
Unit weight of pier crossframe angle =	8.2 lb/ft
Total weight of new crossframes =	2268 lb
Total Weight =	5906 lb

ITEM 513	20000	WELDED STUD SHEAR CONNECTORS

Number of beams =	8 each
Number of rows of shear connectors per beam =	280 each
Number of shear connectors per row =	3 each
Total Quantity =	6720 each

ITEM 514	00050	SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL

Total length of W36x170 section =	162.32 ft
Depth of W36x170 =	3.02 ft
Flange width of W36x170 =	1.00 ft
Nominal measurement of W36x170 =	9.03 ft
Number of existing beams =	8 each
Area of existing beams to paint =	11730.33 ft^2
Perimeter of existing crossframe angle =	1.00 ft
Total length of existing crossframe bay =	27.44 ft
Number of existing crossframe bays =	61 each
Perimeter of existing pier crossframe angle =	1.33 ft
Total length of existing pier crossframe angle =	36.20 ft
Number of existing pier crossframe bays =	12 each
Area of existing crossframes to paint =	2253.04 ft^2
Total Quantity =	13984 ft^2

ITEM 514	00056	FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT

Total Quantity = 13984 ft^2

ITEM 514	00060	FIELD PAINTING STRUCTURAL STEEL, INTERMEDIATE COAT

Total length of W36x170 section = 164.32 ft
Depth of W36x170 = 3.02 ft
Flange width of W36x170 = 1.00 ft
Nominal measurement of W36x170 = 9.03 ft
Number of existing beams = 8 each
Area of existing beams to paint = 11874.86 ft^2

Perimeter of existing crossframe angle = 1.00 ft
Total length of existing crossframe bay = 27.44 ft
Number of existing crossframe bays = 61 each
Perimeter of existing pier crossframe angle = 1.33 ft
Total length of existing pier crossframe angle = 36.20 ft
Number of existing pier crossframe bays = 12 each
Area of existing crossframes to paint = 2253.04 ft^2

Total Quantity = 14128 ft^2

Number of new standard crossframes to paint = 10 each
Perimeter of standard crossframe angle = 1.00 ft
Total length of standard crossframe bay = 27.44 ft
Number of new pier crossframes to paint = 2 each
Perimeter of pier crossframe angle = 1.33 ft
Total length of pier crossframe bay = 36.20 ft
Area of new crossframes to paint = 370.93 ft^2

Total Quantity = 14499 ft^2

ITEM 514	00066	FIELD PAINTING STRUCTURAL STEEL, FINISH COAT

Total Quantity = 14499 ft^2

ITEM 514	00504	GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL

Amount to provide per BDM 404.1.11 for each beam = 1 min/ft
Total length of beams = 1298.56 ft

Total Quantity = 22 man hour

ITEM 514	10000	FINAL INSPECTION REPAIR

Total length of beams = 1298.56 ft
Per C&MS 514.21: inspect every = 150.00 ft
Number of crossframe assemblies = 73 each
Per C&MS 514.21: inspect = 5%

Total Quantity = 13 each

ITEM 514	27700	FIELD PAINTING MISC.: COATING OF BEAM ENDS

Total length of W36x170 section = 5.26 ft
Depth of W36x170 = 3.02 ft
Flange width of W36x170 = 1.00 ft
Nominal measurement of W36x170 = 9.03 ft
Number of existing beams = 8 each
Area of existing beams to paint = 380.12 ft^2

Total Quantity = 381 ft^2

ITEM 516	13600	1" PREFORMED EXPANSION JOINT FILLER

Area of Parapet = 4.08 ft^2
No. of Locations = 4

	R.A.	F.A.
Length of Slope protection =	97.76 ft	87.82 ft
Thickness =	0.50 ft	

Total Quantity = 110 ft^2

ITEM 516	13900	2" PREFORMED EXPANSION JOINT FILLER

	Rear Abutment			Rear Abutment	
	Left	Right		Left	Right
Height of Diaphragm =	4.87 ft	4.64 ft		4.95 ft	5.12 ft
Thickness of Diaphragm =			3.75 ft		
Height of Approach Slab =			2.45 ft		
Length Beyond Back of Diaphragm =	20.80 ft	13.35 ft		12.78 ft	12.72 ft

Total Quantity = 220 ft^2

ITEM 516	14020	SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL

	Length	Height	Overlap
R.A. =	70 ft	9.31	4.5
F.A. =	68 ft	9.31	4.5

Total Quantity = 166 ft

ITEM 516	44100	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (11" X 17" X 2.049" WITH A 12" X 18" X 1.5" LOAD PLATE)

Number of abutment bearings = 16 each
Number of pier bearings = 0 each

Total Quantity = 16 each

ITEM 516	44100	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (12" X 18.5" X 2.049" WITH A 13" X 26" X VARIES LOAD PLATE)

Number of abutment bearings = 0 each
Number of pier bearings = 8 each

Total Quantity = 8 each

ITEM 516	44100	ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (12" X 18.5" X 2.499" WITH A 13" X 19.5" X VARIES LOAD PLATE)

Number of abutment bearings = 0 each
Number of pier bearings = 8 each

Total Quantity = 8 each

ITEM 516	47001	JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN

Number of beams to support = 8 each
Number of substructures = 4 each
Number of supports = 32 each

Lump sum cost to use = $64,000

Total Quantity = Lump

ITEM 518	12200	SCUPPERS, INCLUDING SUPPORTS

Total Quantity = 1 each

ITEM 518	21200	POROUS BACKFILL WITH GEOTEXTILE FABRIC

	REAR ABUTMENT		FORWARD ABUTMENT
Plan Area of Porous Backfill =	237.91 ft^2		207.81 ft^2
Height of porous backfill =		1.00 ft	
Volume =	237.91 ft^3		207.81 ft^3

Total Quantity = 17 cu yd

ITEM 518	40000	6" PERFORATED CORRUGATED PLASTIC PIPE

R.A. = 78.50 ft
F.A. = 71.20 ft

Total Quantity = 150 ft

ITEM 518	40010	6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS

R.A. = 37.00 ft
F.A. = 49.00 ft

Total Quantity = 86 ft

ITEM 526	25011	REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15"), AS PER PLAN

Rear approach plan area = 1690.18 ft^2
Forward approach plan area = 1678.00 ft^2

Total Quantity = 375 sq yd

ITEM 526	90020	TYPE B INSTALLATION

Rear approach length = 67.27 ft
Forward approach length = 64.67 ft
Width = 5.00 ft

Total Quantity = 74 sq yd

SPECIAL	53013000	CONCRETE MISC.: FORMLINER

		Area
Rear Abutment		
	WW1	122.23 ft^2
	WW2	37.86 ft^2
Forward Abutment		
	WW3	48.72 ft^2
	WW4	49.50 ft^2
Substructure Total =		259 ft^2
Parapet		
Transitions		137.00 ft^2
Within Bridge Limits		1,023.54 ft^2
Superstructure Total =		1,161 ft^2

$\Sigma = 1420\ FT^2$

ITEM 601	21000	CONCRETE SLOPE PROTECTION

Rear plan area = 1002.20 ft^2
Forward plan area = 895.52 ft^2

Total Quantity = 211 sq yd

ITEM 607	39900	VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC

Length of fence on left parapet = 165.00 ft
Length of fence of right parapet = 165.00 ft

Total Quantity = 330 ft

ITEM 840	23000	SELECT GRANULAR BACKFILL

Rear

	Phase 3 Length			Phase 4 Length		
Layer	Transverse	Longitudinal	Area	Transverse	Longitudinal	Area
1	33.1 ft	8.0 ft		33.7 ft	8.0 ft	269.60 ft^2
2	34.9 ft	11.0 ft	383.90 ft^2	33.7 ft	11.0 ft	370.70 ft^2
3	34.9 ft	11.0 ft	383.90 ft^2	33.7 ft	11.0 ft	370.70 ft^2
4	29.0 ft	23.5 ft	681.50 ft^2	29.1 ft	23.5 ft	683.85 ft^2
5	16.8 ft	23.5 ft	394.80 ft^2	18.5 ft	23.5 ft	434.75 ft^2

Rear Total = 3973.70 ft^3

Forward

	Phase 3 Length			Phase 4 Length		
Layer	Transverse	Longitudinal	Area	Transverse	Longitudinal	Area
1	33.9 ft	8.0 ft	270.88 ft^2	33.0 ft	8.0 ft	264.16 ft^2
2	33.9 ft	11.0 ft	372.46 ft^2	33.0 ft	11.0 ft	363.22 ft^2
3	33.9 ft	14.0 ft	474.04 ft^2	33.0 ft	14.0 ft	462.28 ft^2
4	33.9 ft	14.0 ft	474.04 ft^2	33.0 ft	14.0 ft	462.28 ft^2
5	23.7 ft	23.5 ft	556.95 ft^2	25.5 ft	23.5 ft	599.25 ft^2
6	11.7 ft	23.5 ft	274.95 ft^2	13.5 ft	23.5 ft	317.25 ft^2

Forward Total = 4891.76 ft^3

Total Quantity = 329 cu yd

ITEM 844	10001	CONCRETE PATCHING WITH GALVANIC ANODE PROTECTION, AS PER PLAN

	Area
Rear Abutment	50.00 ft^2
Forward Abutment	0.00 ft^2
Piers	9.00 ft^2

Total Quantity = 59 ft^2

ITEM 863	00100	GEOGRID, TYPE P1

Rear

	Phase 3 Length			Phase 4 Length		
Layer	Transverse	Longitudinal	Area	Transverse	Longitudinal	Area
1	33.1 ft	8.0 ft	340.88 ft^2	33.7 ft	8.0 ft	345.60 ft^2
2	33.1 ft	11.0 ft	468.71 ft^2	33.7 ft	11.0 ft	475.20 ft^2
3	34.7 ft	11.0 ft	486.20 ft^2	33.7 ft	11.0 ft	475.20 ft^2
4	29.2 ft	23.5 ft	909.45 ft^2	30.0 ft	23.5 ft	928.25 ft^2
5	16.8 ft	23.5 ft	618.05 ft^2	18.6 ft	23.5 ft	660.35 ft^2

Rear Total = 5707.89 ft^2

Forward

	Phase 3 Length			Phase 4 Length		
Layer	Transverse	Longitudinal	Area	Transverse	Longitudinal	Area
1	33.9 ft	8.0 ft	346.88 ft^2	33.0 ft	8.0 ft	340.16 ft^2
2	33.9 ft	11.0 ft	476.96 ft^2	33.0 ft	11.0 ft	467.72 ft^2
3	33.9 ft	14.0 ft	607.04 ft^2	33.0 ft	14.0 ft	595.28 ft^2
4	33.9 ft	14.0 ft	607.04 ft^2	33.0 ft	14.0 ft	595.28 ft^2
5	23.7 ft	23.5 ft	780.20 ft^2	25.5 ft	23.5 ft	822.50 ft^2
6	11.8 ft	23.5 ft	500.55 ft^2	13.5 ft	23.5 ft	540.50 ft^2

Forward Total = 6680.11 ft^2

Total Quantity = 1377 sq yd