| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
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| ITEM | EXTENSION | TOTAL | UNIT | DESCRIPTION | ABUT. | PIER | SUPER. | GEN. |
|---|---|---|---|---|---|---|---|---|
| 202 | 11203 | LS | | PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN | | | | |
| 202 | 22900 | 148 | SY | APPROACH SLAB REMOVED | | | | 148 |
| 204 | 30010 | 26 | CY | GRANULAR MATERIAL, TYPE B | | | | 26 |
| 204 | 50000 | 382 | SY | GEOTEXTILE FABRIC | | | | 382 |
| 503 | 21101 | 553 | CY | UNCLASSIFIED EXCAVATION, AS PER PLAN | 466 | 87 | | |
| 509 | 10000 | 106584 | LB | EPOXY COATED REINFORCING STEEL | 4217 | | 100,473 | 1,894 |
| 509 | 20001 | 15 | LB | REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN | 15 | | | |
| 509 | 25000 | 770 | LB | UNCOATED REINFORCING STEEL | 770 | | | |
| 509 | 30020 | 10310 | FT | NO. 4 GFRP DEFORMED BARS | | | 8,860 | 1,450 |
| 510 | 10001 | 216 | EACH | DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN | 216 | | | |
| 511 | 33501 | 2 | EACH | SEMI-INTEGRAL DIAPHRAGM GUIDE, AS PER PLAN | 2 | | | |
| 511 | 34413 | 28 | CY | CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE, AS PER PLAN | | | 28 | |
| 511 | 34446 | 278 | CY | CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK | | | 278 | |
| 511 | 34451 | 101 | CY | CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN | | | 87 | 14 |
| 511 | 46210 | 41 | CY | CLASS QC1 CONCRETE, RETAINING/WINGWALL INCLUDING FOOTING | 41 | | | |
| 512 | 10100 | 992 | SY | SEALING OF CONCRETE SURFACES (EPOXY-URETHANE) | 42 | 220 | 640 | 90 |
| 512 | 33000 | 32 | SY | TYPE 2 WATERPROOFING | 32 | | | |
| 513 | 20000 | 3408 | EACH | WELDED STUD SHEAR CONNECTORS | | | 3,408 | |
| 513 | 95030 | 32 | EACH | STRUCTURAL STEEL, MISC.: 2" DIA. FIELD DRILLED HOLES | | | 32 | |
| 514 | 00050 | 12296 | SF | SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL | | | 12,296 | |
| 514 | 00056 | 12296 | SF | FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT | | | 12,296 | |
| 514 | 00060 | 12145 | SF | FIELD PAINTING OF EXISTING STRUCTURAL STEEL, INTERMEDIATE COAT | | | 12,145 | |
| 514 | 00066 | 12145 | SF | FIELD PAINTING STRUCTURAL STEEL, FINISH COAT | | | 12,145 | |
| 514 | 00504 | 19 | MNHR | GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL | | | 19 | |
| 514 | 10000 | 13 | EACH | FINAL INSPECTION REPAIR | | | 13 | |
| 516 | 10010 | 59 | FT | ARMORLESS PREFORMED JOINT SEAL | | | | 59 |
| 516 | 13600 | 17 | SF | 1" PREFORMED EXPANSION JOINT FILLER | | | | 17 |
| 516 | 13900 | 133 | SF | 2" PREFORMED EXPANSION JOINT FILLER | | | | 133 |
| 516 | 14020 | 127 | FT | SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL | 127 | | | |
| 516 | 44201 | 8 | EACH | ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN | 8 | | | |
| 516 | 47001 | LS | | JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN | | | | |
| 518 | 21201 | 23 | CY | POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN | 23 | | | |
| 518 | 40000 | 70 | FT | 6" PERFORATED CORRUGATED PLASTIC PIPE | 70 | | | |
| 518 | 40011 | 100 | FT | 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN | 100 | | | |
| SPECIAL | 51900100 | 1239 | SF | COMPOSITE FIBER WRAP SYSTEM (SEE PROPOSAL NOTE) | | 1239 | | |
| 526 | 25010 | 175 | SY | REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15") | | | | 175 |
| 526 | 90031 | 64 | FT | TYPE C INSTALLATION, AS PER PLAN | | | | 64 |
| 601 | 20001 | 40 | SY | CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN | | | | 40 |
| 607 | 39900 | 565 | FT | VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC | | | 565 | |
| 625 | 33000 | 1 | EACH | STRUCTURE GROUNDING SYSTEM | | | | 1 |
| 840 | 23000 | 236 | CY | SELECT GRANULAR BACKFILL | | | | 236 |
| 843 | 50000 | 25 | SF | PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR | | 25 | | |
| 863 | 00100 | 1197 | SY | GEOGRID, TYPE P1 | | | | 1,197 |

| | | | | | |
|---|---|---|---|---|---|
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**ITEM 202 PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN**

**PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN** **LS**

| | | | | | |
|---|---|---|---|---|---|
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**ITEM 202 APPROACH SLAB REMOVED**

*Area of Approach Slab at Rear Abutment*

| | | | |
|---|---|---|---|
| Length = | 25.00 | ft | ex. Plans |
| Max. Width = | 27.50 | ft | ex. Plans |
| Safety Curb Length = | 10.67 | ft | ex. Plans |
| Safety Curb Max. Width = | 2.25 | ft | ex. Plans |
| Area = | 663.50 | $ft^2$ | |
| Area = | 73.72 | $yd^2$ | |

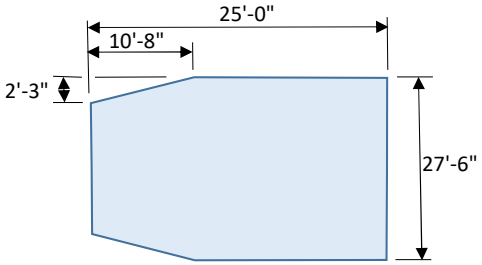
*Area of Approach Slab at Forward Abutment*

| | | | |
|---|---|---|---|
| Length = | 25.00 | ft | ex. Plans |
| Max. Width = | 27.50 | ft | ex. Plans |
| Saftety Curb Length = | 10.67 | ft | ex. Plans |
| Saftety Curb Max. Width = | 2.25 | ft | ex. Plans |
| Area = | 663.50 | $ft^2$ | |
| Area = | 73.72 | $yd^2$ | |

*Total Area of Approach Slab*

| | | |
|---|---|---|
| Area Rear Abutment = | 73.72 | $yd^2$ |
| Area Forward Abutment = | 73.72 | $yd^2$ |
| Total = | 147.44 | $yd^2$ |

**APPROACH SLAB REMOVED** **148 SY**



| | | | | | |
|---|---|---|---|---|---|
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**ITEM 204 GRANULAR MATERIAL, TYPE B**

*Rear Abutment*

| | | | |
|---|---|---|---|
| Assumed Area behind Abutment = | **11.0** | $ft^2$ | **CADD |
| Length along Abutment = | **31.8** | ft | |
| Total = | 350.0 | $ft^3$ | |
| Total = | 13.0 | $yd^3$ | |

*Forward Abutment*

| | | |
|---|---|---|
| Assumed Area behind Abutment = | 11.0 | $ft^2$ |
| Length along Abutment = | 31.8 | ft |
| Total = | 350.0 | $ft^3$ |
| Total = | 13.0 | $yd^3$ |

*Total Granular Material*

| | | |
|---|---|---|
| Rear Abutment = | 13.0 | $yd^3$ |
| Forward Abutment = | 13.0 | $yd^3$ |
| Total = | 25.9 | $yd^3$ |

**GRANULAR MATERIAL, TYPE B** **26 CY**

| | | | | | |
|---|---|---|---|---|---|
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**ITEM 204 GEOTEXTILE FABRIC**

*Rear Abutment*

| | | |
|---|---|---|
| Length along Abutment = | **31.8** | ft |
| Length of Fabric = | **9.0** | ft |
| Number of Locations = | **6** | each |
| Total = | 1,718.2 | $ft^2$ |
| Total = | 190.9 | $yd^2$ |

*Forward Abutment*

| | | |
|---|---|---|
| Length along Abutment = | 31.8 | ft |
| Length of Fabric = | 9.0 | ft |
| Number of Locations = | 6 | each |
| Total = | 1,718.2 | $ft^2$ |
| Total = | 190.9 | $yd^2$ |

*Total Geotextile Fabric*

| | | |
|---|---|---|
| Rear Abutment = | 190.9 | $yd^2$ |
| Forward Abutment = | 190.9 | $yd^2$ |
| Total = | 381.8 | $yd^2$ |

**GEOTEXTILE FABRIC** **382 SY**

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
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**ITEM 503 UNCLASSIFIED EXCAVATION, AS PER PLAN**

*At Rear Abutment*

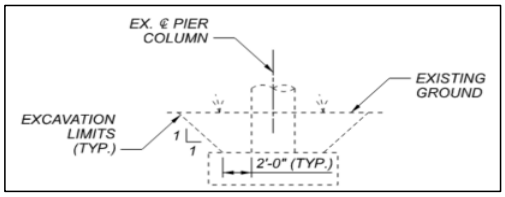
| | | | |
|---|---|---|---|
| Assumed Area behind Abutment = | 150.0 | $ft^2$ | **CADD |
| Length along Abutment = | 27.7 | ft | |
| Assumed Area behind Wingwall = | 16.0 | $ft^2$ | **CADD |
| Length behind Wingwall = | 5.5 | ft | **CADD |
| Assumed Area in front of Wingwall = | 60.0 | $ft^2$ | **CADD |
| Length in front of Wingwall = | 11.7 | ft | **CADD |
| Assumed Area adjacent to Geo wall = | 20.0 | $ft^2$ | **CADD |
| Assumed Length adjacent to Geo wall = | 13.5 | ft | **CADD |
| Number of Wingwall Locations = | 2 | each | |
| Total = | 6,280.0 | $ft^3$ | |
| Total = | 232.6 | $yd^3$ | |

*At Forward Abutment*

| | | |
|---|---|---|
| Assumed Area behind Abutment = | 150.0 | $ft^2$ |
| Length behind Abutment = | 27.7 | ft |
| Assumed Area behind Wingwall = | 16.0 | $ft^2$ |
| Length behind Wingwall = | 5.5 | ft |
| Assumed Area in front of Wingwall = | 60.0 | $ft^2$ |
| Length in front of Wingwall = | 11.7 | ft |
| Assumed Area adjacent to Geo wall = | 20.0 | $ft^2$ |
| Assumed Length adjacent to Geo wall = | 13.5 | ft |
| Number of Wingwall Locations = | 2 | each |
| Total = | 6,280.0 | $ft^3$ |
| Total = | 232.6 | $yd^3$ |

*At Piers*

| | | | |
|---|---|---|---|
| ex. ground to top of footing avg. distance = | 3.3 | ft | **ex. Survey and ex. Plans |
| Pier Column Diameter = | 3.0 | ft | |
| Min. Excavation Offset at Column Base = | 2.0 | ft | (either side of pier column) |
| Volume = | 282.4 | $ft^3$ | |
| deduct Pier Column Volume = | 23.2 | $ft^3$ | |
| Number of Locations = | 9 | each | |
| Total = | 2,332.9 | $ft^3$ | |
| Total = | 86.4 | $yd^3$ | |




*Total Unclassified Excavation*

| | | |
|---|---|---|
| Rear Abutment = | 233 | $yd^3$ |
| Forward Abutment = | 233 | $yd^3$ |
| Piers = | 87 | $yd^3$ |
| Total = | 553 | $yd^3$ |

**UNCLASSIFIED EXCAVATION, AS PER PLAN** **553 CY**

| | | | | | |
|---|---|---|---|---|---|
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**ITEM 509 EPOXY COATED REINFORCING STEEL**

*Superstructure*

Superstructure = **100473** lb **see hand calcs for additional information

*Substructure*

Substructure = **4217** lb **see hand calcs for additional information

*Railing on Approach Slab*

Railing on Approach Slab = **1894** lb **see hand calcs for additional information

*Total Epoxy Resteel*

| | | |
|---|---|---|
| Superstructure = | 100,473 | lb |
| Substructure = | 4,217 | lb |
| Railing on Approach Slab = | 1,894 | lb |
| Total = | 106,584 | lb |

**EPOXY COATED REINFORCING STEEL** **106584 LB**

| | | | | | |
|---|---|---|---|---|---|
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**ITEM 509 REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN**

*Rear Abutment*

| | | | |
|---|---|---|---|
| Number of Longitudinal Bars (to remain) = | 5 | each | **A504 in ex. Plans |
| Diameter of Longitudinal Bars (to remain) = | 0.625 | in | |
| Length of Abutment Removal = | 4.08 | ft | |
| Number of Transverse U-Bars (to remain) = | 5 | each | **A505 in ex. Plans |
| Diameter of Transverse U-Bars (to remain) = | 0.625 | in | |
| Length of Transverse U-Bars (to remain) = | 6.333 | ft | |
| Height of Abutment Removal = | 2.00 | ft | |
| Number of Front Vertical Bars (to remain) = | 5 | each | **A503 in ex. Plans |
| Diameter of Front Vertical Bars (to remain) = | 0.625 | in | |
| Number of Back Vertical Bars (to remain) = | 5 | each | **A502 in ex. Plans |
| Diameter of Back Vertical Bars (to remain) = | 0.625 | in | |
| Distance to Shear Key = | 3.00 | in | |
| Assumed Clear Distance = | 2.00 | in | |
| Percent of replacement re-steel= | 10 | % | **BDM 405.2 |

*Forward Abutment*

| | | | |
|---|---|---|---|
| Number of Longitudinal Bars (to remain) = | 5 | each | **A504 in ex. Plans |
| Diameter of Longitudinal Bars (to remain) = | 0.625 | in | |
| Length of Abutment Removal = | 4.08 | ft | |
| Number of Transverse U-Bars (to remain) = | 5 | each | **A505 in ex. Plans |
| Diameter of Transverse U-Bars (to remain) = | 0.625 | in | |
| Length of Transverse U-Bars (to remain) = | 6.333 | ft | |
| Height of Abutment Removal = | 2.00 | ft | |
| Number of Front Vertical Bars (to remain) = | 5 | each | **A503 in ex. Plans |
| Diameter of Front Vertical Bars (to remain) = | 0.625 | in | |
| Number of Back Vertical Bars (to remain) = | 5 | each | **A502 in ex. Plans |
| Diameter of Back Vertical Bars (to remain) = | 0.625 | in | |
| Distance to Shear Key = | 3.00 | in | |
| Assumed Clear Distance = | 2.00 | in | |
| Percent of replacement re-steel= | 10 | % | **BDM 405.2 |

*Total*

| | | |
|---|---|---|
| Rear Abutment = | 7.09 | lb |
| Forward Abutment = | 7.09 | lb |
| Total = | 14.18 | lb |

**REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER** **15 LB**

| | | | | | |
|---|---|---|---|---|---|
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**ITEM 509 UNCOATED REINFORCING STEEL**

*Rear Abutment Dowels at Wingwall*

Weight = **385** lbs. **see hand calcs for additional information

*Forward Abutment Dowels at Wingwall*

Weight = **385** lbs. **see hand calcs for additional information

*Total Uncoated Resteel*

| | | |
|---|---|---|
| Rear Abutment = | 385 | lbs. |
| Forward Abutment = | 385 | lbs. |
| Total = | 770 | lbs. |

**UNCOATED REINFORCING STEEL** **770 LB**

| | | | | | |
|---|---|---|---|---|---|
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**ITEM 509 NO. 4 GFRP DEFORMED BARS**

*At Superstructure Railing*

Railing on Superstructure = **8860** ft. **see hand calcs for additional information

*At Approach Slab Railing*

Railing on Approach Slab = **1450** ft. **see hand calcs for additional information

*Total Length of No. 4 GFRP*

| | | |
|---|---|---|
| Superstructure Railing = | 8,860 | ft |
| Approach Slab Railing = | 1,450 | ft |
| Total = | 10,310 | ft |

**NO. 4 GFRP DEFORMED BARS** **10310 FT**

| | | | | | |
|---|---|---|---|---|---|
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**ITEM 510 DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN**

*Right Rear Wingwall*

Footing Dowels = **22** each
Wingwall Dowels = **32** each

*Left Rear Wingwall*

Footing Dowels = **22** each
Wingwall Dowels = **32** each

*Right Forward Wingwall*

Footing Dowels = **22** each
Wingwall Dowels = **32** each

*Left Forward Wingwall*

Footing Dowels = **22** each
Wingwall Dowels = **32** each

*Total Dowel Holes*

| | | |
|---|---|---|
| Right Rear Wingwall = | 54 | each |
| Left Rear Wingwall = | 54 | each |
| Right Forward Wingwall = | 54 | each |
| Left Forward Wingwall = | 54 | each |
| Total = | 216 | each |

**DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT, AS PER PLAN** **216 EACH**

| | | | | | |
|---|---|---|---|---|---|
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**ITEM 511 SEMI-INTEGRAL DIAPHRAGM GUIDE, AS PER PLAN**

*Rear Abutment*

Diaphragm Guide = 1 each

*Forward Abutment*

Diaphragm Guide = 1 each

*Total Diaphragm Guides*

| | | |
|---|---|---|
| Rear Abutment = | 1 | each |
| Forward Abutment = | 1 | each |
| Total = | 2 | each |

| | |
|---|---|
| **SEMI-INTEGRAL DIAPHRAGM GUIDE, AS PER PLAN** | **2 EACH** |

| | | | | | |
|---|---|---|---|---|---|
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**ITEM 511 CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE, AS PER PLAN**

*Rear Abutment*

Area = **99.85** $ft^2$ **CADD
Thickness = **3.75** ft

Total = 374.4 $ft^3$
Total = 13.9 $yd^3$

*Forward Abutment*

Area = **99.85** $ft^2$
Thickness = **3.75** ft

Total = 374.4 $ft^3$
Total = 13.9 $yd^3$

*Total Concrete Volume*

Rear Abutment = 13.9 $yd^3$
Forward Abutment = 13.9 $yd^3$
Total = 27.7 $yd^3$

**CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE, AS PER PLAN** **28 CY**

| | | | | | |
|---|---|---|---|---|---|
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**ITEM 511 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK**

*8.5" Deck*

| | | |
|---|---|---|
| Width = | 31.33 | ft |
| Thickness = | 0.71 | ft |
| Length = | 287.59 | ft |
| Total = | 6,383 | $ft^3$ |
| Total = | 236.4 | $yd^3$ |

*Overhang*

| | | |
|---|---|---|
| Number of Locations = | 2 | each |
| Width = | 38.00 | in |
| Span 1 & 4 Thickness = | 4.563 | in |
| Span 2 & 3 Thickness = | 4.500 | in |
| Span 1 & 4 Length = | 60.50 | ft |
| Span 2 & 3 Length = | 83.25 | ft |
| Total = | 687 | $ft^3$ |
| Total = | 25.4 | $yd^3$ |

*Haunch*

| | | |
|---|---|---|
| Number of Locations = | 4 | each |
| Width = | 12.00 | in |
| Span 1 & 4 Thickness = | 3.625 | in |
| Span 2 & 3 Thickness = | 3.375 | in |
| Span 1 & 4 Length = | 60.50 | ft |
| Span 2 & 3 Length = | 83.25 | ft |
| Pier 1 Top Moment Plate Volume = | 1.69 | $ft^3$ |
| Pier 2 Top Moment Plate Volume = | 2.26 | $ft^3$ |
| Pier 3 Top Moment Plate Volume = | 1.69 | $ft^3$ |
| Total = | 311 | $ft^3$ |
| Total = | 11.5 | $yd^3$ |

*Additional Concrete above End Diaphragm*

| | | | |
|---|---|---|---|
| Number of Locations = | 2 | each | |
| Area = | 14.03 | $ft^2$ | **CADD |
| Length = | 3.750 | ft | |
| Total = | 105 | $ft^3$ | |
| Total = | 3.9 | $yd^3$ | |

*Total Concrete Volume*

| | | |
|---|---|---|
| 8.5" Deck = | 236.4 | $yd^3$ |
| Overhang = | 25.4 | $yd^3$ |
| Haunch = | 11.5 | $yd^3$ |
| Additional above End Diaphragm = | 3.9 | $yd^3$ |
| Total = | 277.3 | $yd^3$ |

**CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK** **278 CY**

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
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| Job #: | 10276486 | No: | | | |

**ITEM 511 CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN**

*On Superstructure*

| | | | |
|---|---|---|---|
| Railing Area = | 4.08 | $ft^2$ | **ODOT SCD SBR-1-20 |
| Length = | 287.59 | ft | |
| Number of Locations = | 2 | each | |
| Total = | 2,349 | $ft^3$ | |
| Total = | 87 | $yd^3$ | |

*On Approach Slab*

| | | | |
|---|---|---|---|
| Railing Area = | 4.08 | $ft^2$ | **ODOT SCD SBR-1-20 |
| Length = | 11.00 | ft | |
| Volume of Transition = | 49.14 | $ft^3$ | **ODOT SCD SBR-1-20 |
| Number of Locations = | 4 | each | |
| Total = | 376 | $ft^3$ | |
| Total = | 14 | $yd^3$ | |

*Total Concrete Volume*

| | | |
|---|---|---|
| On Superstructure = | 87 | $yd^3$ |
| On Approach Slab = | 14 | $yd^3$ |
| Total = | 101 | $yd^3$ |

| | |
|---|---|
| **CLASS QC2 CONCRETE WITH QC/QA, BRIDGE DECK (PARAPET), AS PER PLAN** | **101 CY** |

| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
|---|---|---|---|---|---|
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**ITEM 511 CLASS QC1 CONCRETE, RETAINING/WINGWALL INCLUDING FOOTING**

*Right Rear Wingwall*

| | | |
|---|---|---|
| Area above CJ = | 64.95 | $ft^2$ |
| Thickness above CJ = | 1.50 | ft |
| Area below CJ = | 52.27 | $ft^2$ |
| Thickness below CJ = | 2.25 | ft |
| Footing Length = | 11.70 | ft |
| Footing Depth = | 2.25 | ft |
| Footing Thickness = | 2.25 | ft |
| Total = | 274.3 | $ft^3$ |
| Total = | 10.2 | $yd^3$ |

*Left Rear Wingwall*

| | | |
|---|---|---|
| Area above CJ = | 65.43 | $ft^2$ |
| Thickness above CJ = | 1.50 | ft |
| Area below CJ = | 52.55 | $ft^2$ |
| Thickness below CJ = | 2.25 | ft |
| Footing Length = | 11.70 | ft |
| Footing Depth = | 2.25 | ft |
| Footing Thickness = | 2.25 | ft |
| Total = | 275.6 | $ft^3$ |
| Total = | 10.2 | $yd^3$ |

*Right Forward Wingwall*

| | | |
|---|---|---|
| Area above CJ = | 66.15 | $ft^2$ |
| Thickness above CJ = | 1.50 | ft |
| Area below CJ = | 52.02 | $ft^2$ |
| Thickness below CJ = | 2.25 | ft |
| Footing Length = | 11.70 | ft |
| Footing Depth = | 2.25 | ft |
| Footing Thickness = | 2.25 | ft |
| Total = | 275.5 | $ft^3$ |
| Total = | 10.2 | $yd^3$ |

*Left Forward Wingwall*

| | | |
|---|---|---|
| Area above CJ = | 65.77 | $ft^2$ |
| Thickness above CJ = | 1.50 | ft |
| Area below CJ = | 51.66 | $ft^2$ |
| Thickness below CJ = | 2.25 | ft |
| Footing Length = | 11.70 | ft |
| Footing Depth = | 2.25 | ft |
| Footing Thickness = | 2.25 | ft |
| Total = | 274.1 | $ft^3$ |
| Total = | 10.2 | $yd^3$ |

*Total Concrete Volume*

| | | |
|---|---|---|
| Right Rear = | 10.2 | $yd^3$ |
| Left Rear = | 10.2 | $yd^3$ |
| Right Forward = | 10.2 | $yd^3$ |
| Left Forward = | 10.2 | $yd^3$ |
| Total = | 40.7 | $yd^3$ |

| | |
|---|---|
| **CLASS QC1 CONCRETE, RETAINING/WINGWALL INCLUDING FOOTING** | **41 CY** |

| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
|---|---|---|---|---|---|
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
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**ITEM 512 SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)**

*Rear Abutment*

| | | | |
|---|---|---|---|
| Average Beam Seat Elevation = | 938.73 | ft | |
| Average Existing Grade Elevation = | 936.12 | ft | |
| Abutment Length = | 35.28 | ft | |
| Typical Wingwall Thickness Above C.J. = | 1.50 | ft | |
| Top of Wingwall Elevation = | 943.53 | ft | (max. of Left and Right wingwalls) |
| Proposed Grade Along Wingwall = | 2:1 | | |
| Number of Wingwalls = | 2 | each | |
| Total = | 216 | $ft^2$ | |
| Total = | 21 | $yd^2$ | |

*Pier 1*

| | | | |
|---|---|---|---|
| Pier Column Diameter = | 3 | ft | ex. Plans |
| Number of Pier Columns = | 3 | each | ex. Plans |
| Pier Column Exposed Height = | 13.46 | ft | Column height less 1'-0" (assumed minimum soil cover replaced after pier wrapping operations) |
| Pier Cap Width = | 3 | ft | ex. Plans |
| Average Pier Cap Depth = | 3.58 | ft | ex. Plans |
| c/c Column Length = | 24.50 | ft | ex. Plans |
| Pier Column Total = | 380.5 | $ft^2$ | |
| Pier Cap Total = | 268.7 | $ft^2$ | |
| Total = | 73 | $yd^2$ | |

*Pier 2*

| | | | |
|---|---|---|---|
| Pier Column Diameter = | 3 | ft | ex. Plans |
| Number of Pier Columns = | 3 | each | ex. Plans |
| Pier Column Exposed Height = | 13.86 | ft | Column height less 1'-0" (assumed minimum soil cover replaced after pier wrapping operations) |
| Pier Cap Width = | 3 | ft | ex. Plans |
| Average Pier Cap Depth = | 3.58 | ft | ex. Plans |
| c/c Column Length = | 24.50 | ft | ex. Plans |
| Pier Column Total = | 392.0 | $ft^2$ | |
| Pier Cap Total = | 268.7 | $ft^2$ | |
| Total = | 74 | $yd^2$ | |

*Pier 3*

| | | | |
|---|---|---|---|
| Pier Column Diameter = | 3 | ft | ex. Plans |
| Number of Pier Columns = | 3 | each | ex. Plans |
| Pier Column Exposed Height = | 13.46 | ft | Column height less 1'-0" (assumed minimum soil cover replaced after pier wrapping operations) |
| Pier Cap Width = | 3 | ft | ex. Plans |
| Average Pier Cap Depth = | 3.58 | ft | ex. Plans |
| c/c Column Length = | 24.50 | ft | ex. Plans |
| Pier Column Total = | 380.5 | $ft^2$ | |
| Pier Cap Total = | 268.7 | $ft^2$ | |
| Total = | 73 | $yd^2$ | |

*Forward Abutment*

| | | | |
|---|---|---|---|
| Average Beam Seat Elevation = | 938.67 | ft | |
| Average Existing Grade Elevation = | 936.56 | ft | |
| Abutment Length = | 35.28 | ft | |
| Typical Wingwall Thickness Above C.J. = | 1.50 | ft | |
| Top of Wingwall Elevation = | 943.53 | ft | (max. of Left and Right wingwalls) |
| Proposed Grade Along Wingwall = | 2:1 | | |
| Number of Wingwalls = | 2 | each | |
| Total = | 186 | $ft^2$ | |
| Total = | 21 | $yd^2$ | |

*Superstructure*

| | | | |
|---|---|---|---|
| Bridge Railing Perimeter = | 7.90 | ft | **ODOT SCD SBR-1-20 |
| Back of Barrier to Edge of Deck = | 0.17 | ft | |
| Maximum Deck Edge Thickness = | 1.09 | ft | |
| Underside of Deck Overhang = | 0.50 | ft | |
| Length of Bridge Railing = | 287.59 | ft | |
| Distance Between End Diaphragms = | 280.96 | ft | (front face-to-front face) |
| Number of Locations = | 2 | each | |
| Area of Exposed Rear End Diapragm = | 111.00 | $ft^2$ | **CADD |
| Area of Exposed Fwd. End Diapragm = | 111.00 | $ft^2$ | **CADD |
| Total = | 5,752 | $ft^2$ | |
| Total = | 640 | $yd^2$ | |

*Railing on Approach Slab*

*Note: conservatively apply the full bridge railing perimeter for the entire length of the railing transition sections.

| | | | |
|---|---|---|---|
| Bridge Railing Perimeter = | 7.90 | ft | **ODOT SCD SBR-1-20 |
| Back of Barrier to Edge of Approach Slab = | 0.17 | ft | |
| Length = | 25.00 | ft | (including transition) |
| Number of Locations = | 4 | each | |
| Total = | 806 | $ft^2$ | |
| Total = | 90 | $yd^2$ | |

*Total Concrete Sealing*

| | | |
|---|---|---|
| Abutments = | 42 | $yd^2$ |
| Piers = | 220 | $yd^2$ |
| Superstructure = | 640 | $yd^2$ |
| General = | 90 | $yd^2$ |
| Total = | 992 | $yd^2$ |

**SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)** **992 SY**

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
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**ITEM 512 TYPE 2 WATERPROOFING**

*Existing Abutment Weepholes*

| | | | |
|---|---|---|---|
| Width = | 3 | ft | **CMS 711.25 |
| Length = | 3 | ft | **CMS 711.25 |
| Rear Abutment Weepholes = | 2 | each | |
| Forward Abutment Weepholes = | 2 | each | |
| Total = | 36 | $ft^2$ | |
| Total = | 4 | $yd^2$ | |

*Diaphragm Guides*

| | | | |
|---|---|---|---|
| Width = | 3 | ft | **CMS 711.25 |
| Length = | 24.17 | ft | |
| Diaphragm Guide = | 2 | each | |
| Total = | 145.0 | $ft^2$ | |
| Total = | 16.1 | $yd^2$ | |

*Wingwall Widenings*

| | | | |
|---|---|---|---|
| Width = | 3 | ft | **CMS 711.25 |
| Right Rear Length = | 8.70 | ft | |
| Left Rear Length = | 8.86 | ft | |
| Right Forward Length = | 8.86 | ft | |
| Left Forward Length = | 8.70 | ft | |
| Total = | 105.4 | $ft^2$ | |
| Total = | 11.7 | $yd^2$ | |

*Total Waterproofing*

| | | |
|---|---|---|
| Existing Weepholes = | 4 | $yd^2$ |
| Diaphragm Guides = | 16.1 | $yd^2$ |
| Wingwall Widenings = | 11.7 | $yd^2$ |
| Total = | 31.8 | $yd^2$ |

**TYPE 2 WATERPROOFING** **32 SY**

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
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**ITEM 513 WELDED STUD SHEAR CONNECTORS**

*Existing Beams*

| | | |
|---|---|---|
| Beam 1 = | **852** | each |
| Beam 2 = | **852** | each |
| Beam 3 = | **852** | each |
| Beam 4 = | **852** | each |
| Total = | 3408 | each |

**WELDED STUD SHEAR CONNECTORS** **3408 EACH**

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
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**ITEM 513 STRUCTURAL STEEL, MISC.: 2" DIA. FIELD DRILLED HOLES**

*Existing Beams*

| | | |
|---|---|---|
| Beam 1 = | 8 | each |
| Beam 2 = | 8 | each |
| Beam 3 = | 8 | each |
| Beam 4 = | 8 | each |
| Total = | 32 | each |

**STRUCTURAL STEEL, MISC.: 2" DIA. FIELD DRILLED HOLES** **32 EACH**

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
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| Job #: | 10276486 | No: | | | |

**ITEM 514 SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL**

*Existing Beams*

| | | |
|---|---|---|
| Span 1 & 4 (36WF150) depth = | **35.875** | in |
| Span 1 & 4 (36WF150) width = | **12.000** | in |
| Span 2 & 3 (36WF170) depth = | **36.125** | in |
| Span 2 & 3 (36WF170) width = | **12.000** | in |
| Beam length (36WF150) = | **59.00** | ft |
| Beam Length (36WF170) = | **83.25** | ft |
| Number of beams = | **4** | each |

Total = 10246 $ft^2$ **CMS 514.23

*Incidentals*

20% of Beams = 2049 $ft^2$ **crossframes, bearings, etc.

*Total Surface Preparation*

| | | |
|---|---|---|
| Existing Beams = | 10246 | $ft^2$ |
| Incidentals = | 2049 | $ft^2$ |
| Total = | 12295 | $ft^2$ |

**SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL** **12296 SF**

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
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**ITEM 514 FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT**

*See ITEM 514 - SURFACE PREPARATION OF EXISTING STRUCTURAL STEEL*

| | |
|---|---|
| **FIELD PAINTING OF EXISTING STRUCTURAL STEEL, PRIME COAT** | **12296 SF** |

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
| Task: | Stage 3 Estimated Quantities | Page: | | of: | |
| Job #: | 10276486 | No: | | | |

**ITEM 514 FIELD PAINTING OF EXISTING STRUCTURAL STEEL, INTERMEDIATE COAT**

*Existing Beams*

| | | | |
|---|---|---|---|
| Span 1 & 4 (36WF150) depth = | **35.875** | in | |
| Span 1 & 4 (36WF150) width = | **12.000** | in | |
| Span 2 & 3 (36WF170) depth = | **36.125** | in | |
| Span 2 & 3 (36WF170) width = | **12.000** | in | |
| Beam length (36WF150) = | **57.25** | ft | **CMS 514.17 |
| Beam Length (36WF170) = | **83.25** | ft | |
| Number of beams = | **4** | each | |
| Total = | 10120 | $ft^2$ | **CMS 514.23 |

*Incidentals*

| | | | |
|---|---|---|---|
| 20% of Beams = | 2024 | $ft^2$ | **crossframes, bearings, etc. |

*Total Surface Preparation*

| | | |
|---|---|---|
| Existing Beams = | 10120 | $ft^2$ |
| Incidentals = | 2024 | $ft^2$ |
| Total = | 12144 | $ft^2$ |

| | | |
|---|---|---|
| **FIELD PAINTING OF EXISTING STRUCTURAL STEEL, INTERMEDIATE** | **12145** | **SF** |

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
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**ITEM 514 FIELD PAINTING STRUCTURAL STEEL, FINISH COAT**

*See ITEM 514 - FIELD PAINTING OF EXISTING STRUCTURAL STEEL, INTERMEDIATE COAT*

| | |
|---|---|
| **FIELD PAINTING STRUCTURAL STEEL, FINISH COAT** | **12145 SF** |

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
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**ITEM 514 GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL**

*Existing Beams*

| | | | |
|---|---|---|---|
| Length of Beam = | 284.5 | ft | |
| Number of Beams = | 4 | each | |
| Estimating Time = | 1 | min/foot | **BDM 404.1.11 |
| Total = | 1138 | min. | |
| Total = | 18.97 | hours | |

**GRINDING FINS, TEARS, SLIVERS ON EXISTING STRUCTURAL STEEL** **19 MNHR**

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
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**ITEM 514 FINAL INSPECTION REPAIR**

*Existing Beams*

| | | | |
|---|---|---|---|
| Length of Beam = | 284.5 | ft | |
| Number of Beams = | 4 | each | |
| Location per linear foot of beam = | 150 | foot/each | **CMS 514.21 |
| Total = | 8 | each | |

*Crossframe Assemblies and other Secondary Structural Members*

| | | | |
|---|---|---|---|
| Number of Ex. Crossframes = | 69 | each | |
| Number of Ex. Bearings = | 12 | each | |
| Percentage | 5 | % | **CMS 514.21 |
| Total = | 5 | each | |

*Total Final Inspection Repair*

| | | |
|---|---|---|
| Existing Beams = | 8 | each |
| Crossframes, etc. = | 5 | each |
| Total = | 13 | each |

**FINAL INSPECTION REPAIR** **13 EACH**

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
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**ITEM 516 ARMORLESS PREFORMED JOINT SEAL**

*Rear Abutment*

| | | | |
|---|---|---|---|
| Toe/Toe Barrier = | 28.6 | ft | |
| Upturn into curb = | 0.7 | ft | **SCD AS-2-15 |
| Total = | 29.3 | ft | |

*Forward Abutment*

| | | | |
|---|---|---|---|
| Toe/Toe Barrier = | 28.6 | ft | |
| Upturn into curb = | 0.7 | ft | **SCD AS-2-15 |
| Total = | 29.3 | ft | |

*Total Joint Length*

| | | |
|---|---|---|
| Rear Abutment = | 29 | each |
| Forward Abutment = | 29 | each |
| Total = | 59 | each |

| | | |
|---|---|---|
| **ARMORLESS PREFORMED JOINT SEAL** | **59** | **FT** |

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
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**ITEM 516 1" PREFORMED EXPANSION JOINT FILLER**

*Railing*

Railing Area = **588.0** $in^2$ **SCD SBR-1-20

No. of Locations = **4** each

Total = 2352.0 $in^2$

Total = 16.3 $ft^2$

**1" PREFORMED EXPANSION JOINT FILLER** **17 SF**

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
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**ITEM 516 2" PREFORMED EXPANSION JOINT FILLER**

*Between End Diaphragm and Wingwall* **SCD SICD-1-21

| | | |
|---|---|---|
| Width = | 3.83 | ft |
| Right Rear Depth = | 4.81 | ft |
| Left Rear Depth = | 4.79 | ft |
| Right Forward Depth = | 4.85 | ft |
| Left Forward Depth = | 4.88 | ft |
| Total = | 74.0 | $ft^2$ |

*Between Approach Slab and Wingwall* **SCD SICD-1-21

| | | |
|---|---|---|
| Depth = | 1.25 | ft |
| Right Rear Length = | 11.04 | ft |
| Left Rear Length = | 11.20 | ft |
| Right Forward Length = | 11.20 | ft |
| Left Forward Length = | 11.04 | ft |
| Total = | 55.6 | $ft^2$ |

*Between Sleeper Slab and Roadway Curb* **SCD AS-2-15

| | | | |
|---|---|---|---|
| Type 4-C Curb Depth = | 16.0 | in | **SCD BP-5.1 |
| Type 4-C Curb Width = | 6.0 | in | **SCD BP-5.1 |
| No. of Locations = | 4 | each | |
| Total = | 2.7 | $ft^2$ | |

**2" PREFORMED EXPANSION JOINT FILLER** **133 SF**

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
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| Job #: | 10276486 | No: | | | |

**ITEM 516 SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL**

*Between End Diaphragm and Rear Abutment* **SCD SICD-1-21

| | | |
|---|---|---|
| Right Rear Vertical Depth = | 6.06 | ft |
| Rear Abutment Length = | 34.99 | ft |
| Rear Diaphragm Guide Length = | 16.00 | ft |
| Left Rear Vertical Depth = | 6.04 | ft |
| Total = | 63.1 | ft |

*Between End Diaphragm and Forward Abutment* **SCD SICD-1-21

| | | |
|---|---|---|
| Right Forward Vertical Depth = | 6.10 | ft |
| Forward Abutment Length = | 34.99 | ft |
| Forward Diaphragm Guide Length = | 16.00 | ft |
| Left Forward Vertical Depth = | 6.13 | ft |
| Total = | 63.2 | ft |

*Total Semi-Integral Joint Seal*

| | | |
|---|---|---|
| Rear Abutment = | 63.1 | ft |
| Forward Abutment = | 63.2 | ft |
| Total = | 126.3 | ft |

**SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL** **127 FT**

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
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| Job #: | 10276486 | No: | | | |

**ITEM 516 ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN**

*At Rear Abutment*

No. of Locations = 4 each

Total = 4 each

*At Forward Abutment*

No. of Locations = 4 each

Total = 4 each

*Total Abutment Bearings*

Rear Abutment = 4 each
Forward Abutment = 4 each
Total = 8 each

**ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN** **8 EACH**

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 5/4/2021 |
| Subject: | PIC-71-0099 | Checked: | XXX | Date: | XX/XX/XX |
| Task: | Stage 2 Estimated Quantities | Page: | | of: | |
| Job #: | 10276486 | No: | | | |

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

**JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN** **LS**

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
| Task: | Stage 3 Estimated Quantities | Page: | | of: | |
| Job #: | 10276486 | No: | | | |

**ITEM 518 POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN**

*At Rear Abutment*

| | | |
|---|---|---|
| Width = | 2 | ft |
| Top of Footing Elev. = | 932.45 | ft |
| Top of Backfill Elev. = | 937.13 | ft |
| Length = | 22 | ft |
| Total = | 8 | $yd^3$ |

*At Forward Abutment*

| | | |
|---|---|---|
| Width = | 2 | ft |
| Top of Footing Elev. = | 932.45 | ft |
| Top of Backfill Elev. = | 937.07 | ft |
| Length = | 22 | ft |
| Total = | 8 | $yd^3$ |

*At Wingwalls*

| | | |
|---|---|---|
| Number of Locations = | 4 | each |
| Width = | 2 | ft |
| Top of Footing Elev. = | 932.45 | ft |
| Avg. Top Elev. of 2' thick portion = | 937.14 | ft |
| Average Length = | 5.00 | ft |
| Total = | 7 | $yd^3$ |

*Total Porous Backfill*

| | | |
|---|---|---|
| Rear Abutment = | 8 | $yd^3$ |
| Forward Abutment = | 8 | $yd^3$ |
| Wingwalls = | 7 | $yd^3$ |
| Total = | 22 | $yd^3$ |

| | |
|---|---|
| **POROUS BACKFILL WITH GEOTEXTILE FABRIC, AS PER PLAN** | **23 CY** |

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
| Task: | Stage 3 Estimated Quantities | Page: | | of: | |
| Job #: | 10276486 | No: | | | |

**ITEM 518 6" PERFORATED CORRUGATED PLASTIC PIPE**

*At Rear Abutment*

Total = **35** ft

*At Forward Abutment*

Total = **35** ft

*Total PCPP*

| | | |
|---|---|---|
| Rear Abutment = | 35 | ft |
| Forward Abutment = | 35 | ft |
| Total = | 70 | ft |

| | |
|---|---|
| **6" PERFORATED CORRUGATED PLASTIC PIPE** | **70 FT** |

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
| Task: | Stage 3 Estimated Quantities | Page: | | of: | |
| Job #: | 10276486 | No: | | | |

**ITEM 518 6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN**

*At Rear Abutment*

| | | |
|---|---|---|
| Left Rear = | 25 | ft |
| Right Rear = | 25 | ft |
| Total = | 50 | ft |

*At Forward Abutment*

| | | |
|---|---|---|
| Left Rear = | 25 | ft |
| Right Rear = | 25 | ft |
| Total = | 50 | ft |

*Total NPCPP*

| | | |
|---|---|---|
| Rear Abutment = | 50 | ft |
| Forward Abutment = | 50 | ft |
| Total = | 100 | ft |

| | |
|---|---|
| **6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS, AS PER PLAN** | **100 FT** |

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
| Task: | Stage 3 Estimated Quantities | Page: | | of: | |
| Job #: | 10276486 | No: | | | |

**ITEM 51900100 COMPOSITE FIBER WRAP SYSTEM (SEE PROPOSAL NOTE)**

*At Pier 1*

| | | | |
|---|---|---|---|
| Bottom of Column Elev. = | 920.88 | ft | **from ex. Plans |
| Bottom of Cap Elev. = | 935.15 | ft | **from survey and ex. Plans |
| Column Diameter = | 3.00 | ft | |
| Number of Columns = | 3 | each | |
| Total = | 403 | $ft^2$ | |

*At Pier 2*

| | | | |
|---|---|---|---|
| Bottom of Column Elev. = | 920.88 | ft | **from ex. Plans |
| Bottom of Cap Elev. = | 935.86 | ft | **from survey and ex. Plans |
| Column Diameter = | 3.00 | ft | |
| Number of Columns = | 3 | each | |
| Total = | 424 | $ft^2$ | |

*At Pier 3*

| | | | |
|---|---|---|---|
| Bottom of Column Elev. = | 920.88 | ft | **from ex. Plans |
| Bottom of Cap Elev. = | 935.44 | ft | **from survey and ex. Plans |
| Column Diameter = | 3.00 | ft | |
| Number of Columns = | 3 | each | |
| Total = | 412 | $ft^2$ | |

*Total FRP Wrap*

| | | |
|---|---|---|
| Pier 1 = | 403 | $ft^2$ |
| Pier 2 = | 424 | $ft^2$ |
| Pier 3 = | 412 | $ft^2$ |
| Total = | 1239 | $ft^2$ |

**COMPOSITE FIBER WRAP SYSTEM (SEE PROPOSAL NOTE)** **1239 SF**

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
| Task: | Stage 3 Estimated Quantities | Page: | | of: | |
| Job #: | 10276486 | No: | | | |

**ITEM 526 REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15")**

*At Rear Abutment*

Width = **31.33** ft
Length = **25.00** ft

Total = 783 $ft^2$

*At Forward Abutment*

Width = **31.33** ft
Length = **25.00** ft

Total = 783 $ft^2$

*Total Approach Slab*

Rear Abutment = 783 $ft^2$
Forward Abutment = 783 $ft^2$
Total = 1567 $ft^2$
Total = 174.1 $yd^2$

**REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15")** **175 SY**

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
| Task: | Stage 3 Estimated Quantities | Page: | | of: | |
| Job #: | 10276486 | No: | | | |

**ITEM 526 TYPE C INSTALLATION, AS PER PLAN**

*At Rear Abutment*

| | | |
|---|---|---|
| Width = | **31.33** | ft |
| Skew = | **11.62** | deg |
| Total = | 31.99 | ft |

*At Forward Abutment*

| | | |
|---|---|---|
| Width = | **31.33** | ft |
| Skew = | **11.62** | deg |
| Total = | 31.99 | ft |

*Total Approach Slab*

| | | |
|---|---|---|
| Rear Abutment = | 31.99 | $ft^2$ |
| Forward Abutment = | 31.99 | $ft^2$ |
| Total = | 63.98 | $ft^2$ |

**TYPE C INSTALLATION, AS PER PLAN** **64 FT**

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
| Task: | Stage 3 Estimated Quantities | Page: | | of: | |
| Job #: | 10276486 | No: | | | |

**ITEM 601 CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN**

*Total*

Existing crushed agg. slope protection = **381.0** $yd^2$ *ex. Plans

10% replacement = **38.10** $yd^2$

Total = 38.10 ft

**CRUSHED AGGREGATE SLOPE PROTECTION, AS PER PLAN** **40 SY**

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
| Task: | Stage 3 Estimated Quantities | Page: | | of: | |
| Job #: | 10276486 | No: | | | |

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

*On Superstructure*

| | | |
|---|---|---|
| Left Railing = | **282.50** | ft |
| Right Railing = | **282.50** | ft |
| Total = | 565.00 | ft |

| | |
|---|---|
| **VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC** | **565 FT** |

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
| Task: | Stage 3 Estimated Quantities | Page: | | of: | |
| Job #: | 10276486 | No: | | | |

**ITEM 625 STRUCTURE GROUNDING SYSTEM**

*Total*

number of locations = 1 each

**STRUCTURE GROUNDING SYSTEM** **1 EACH**

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
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| Job #: | 10276486 | No: | | | |

**ITEM 840 SELECT GRANULAR BACKFILL**

*Rear Abutment*

| | | | |
|---|---|---|---|
| Assumed Area behind Abutment = | 100.0 | $ft^2$ | **CADD |
| Length along Abutment = | 31.8 | ft | |
| Total = | 3,181.8 | $ft^3$ | |
| Total = | 117.8 | $yd^3$ | |

*Forward Abutment*

| | | |
|---|---|---|
| Assumed Area behind Abutment = | 100.0 | $ft^2$ |
| Length along Abutment = | 31.8 | ft |
| Total = | 3,181.8 | $ft^3$ |
| Total = | 117.8 | $yd^3$ |

*Total Granular Backfill*

| | | |
|---|---|---|
| Rear Abutment = | 117.8 | $yd^3$ |
| Forward Abutment = | 117.8 | $yd^3$ |
| Total = | 235.7 | $yd^3$ |

**SELECT GRANULAR BACKFILL** **236 CY**

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
| Task: | Stage 3 Estimated Quantities | Page: | | of: | |
| Job #: | 10276486 | No: | | | |

**ITEM 843 PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR**

*At Pier 1*

| | | |
|---|---|---|
| Spall Height | 7.0 | ft |
| Spall Width | 3.0 | ft |
| 20% Contingency = | 4.2 | ft2 |
| Total = | 25.2 | ft |

**PATCHING CONCRETE STRUCTURES WITH TROWELABLE MORTAR** **25 SF**

| | | | | | |
|---|---|---|---|---|---|
| Project: | MAD/PIC-71-4.56/0.00 | Computed: | RBK | Date: | 11/2/2021 |
| Subject: | PIC-71-0099 | Checked: | THS | Date: | 11/9/2021 |
| Task: | Stage 3 Estimated Quantities | Page: | | of: | |
| Job #: | 10276486 | No: | | | |

**ITEM 863 GEOGRID, TYPE P1**

*Rear Abutment*

| | | |
|---|---|---|
| Length along Abutment = | **31.8** | ft |
| Layer 1 Length of Geogrid = | **26.8** | ft |
| Layer 2 Length of Geogrid = | **28.0** | ft |
| Layer 3-5 Length of Geogrid = | **32.5** | ft |
| Layer 6 Length of Geogrid = | **17.0** | ft |
| Additional turnup Length along wingwalls = | **0.0** | ft |
| Layer 2 Length = | **19.00** | ft |
| Layer 3-5 Length = | **23.50** | ft |
| Layer 6 Length = | **8.0** | ft |
| Number of Locations = | **2** | each |
| Total = | 5,385.3 | $ft^2$ |
| Total = | 598.4 | $yd^2$ |

*Rear Abutment*

| | | |
|---|---|---|
| Length along Abutment = | 31.8 | ft |
| Layer 1 Length of Geogrid = | 26.8 | ft |
| Layer 2 Length of Geogrid = | 28.0 | ft |
| Layer 3-5 Length of Geogrid = | 32.5 | ft |
| Layer 6 Length of Geogrid = | 17.0 | ft |
| Additional turnup Length along wingwalls = | 0.0 | ft |
| Layer 2 Length = | 19.0 | ft |
| Layer 3-5 Length = | 23.5 | ft |
| Layer 6 Length = | 8.0 | ft |
| Number of Locations = | 2 | each |
| Total = | 5,385.3 | $ft^2$ |
| Total = | 598.4 | $yd^2$ |

*Total Geogrid, Type P1*

| | | |
|---|---|---|
| Rear Abutment = | 598.36 | $yd^2$ |
| Forward Abutment = | 598.36 | $yd^2$ |
| Total = | 1,196.73 | $yd^2$ |

**GEOGRID, TYPE P1** **1197 SY**