# Bridge No. CUY-71-1188

# SFN 1804898

## Structure Quantity Calculations

4/26/2022

Prepared for: ODOT

District 12

Prepared by:

ms consultants, inc.
engineers, architects, planners

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 513E21501 |
|---|---|---|---|---|---|
| CHECKED BY: | WER | DATE: | 4/28/22 | PAGE NUMBER: | 1 |

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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE CUY-71-1188 (SFN 1804898)

ITEM NAME REPLACEMENT OF DETERIORATED END CROSSFRAMES, AS PER PLAN PAY UNIT LB

| DESCRIPTION | | | | | | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Beam** | | | | | | | | | | | |
| | | Type | 33WF118 | | | | | | | | |
| | | Depth (in.) | 32.86 | | | | | | | | |
| | Flange Thickness (in.) | | 0.738 | | | | | | | | |
| **End Crossframe** | | | | | | | | | | | |
| | **Bottom Member L4x4x5/16** | | | | | | | | | | |
| | Weight (lb/ft) | Member Length (ft) | Quantiy | Total Weight (lb) | | | | | | | |
| | 8.20 | 7.7604 | 3 | 190.91 | | | | | | | |
| | **Diagonal Member L4x4x5/16** | | | | | | | | | | |
| | Weight (lb/ft) | Member Length (ft) | Quantiy | Total Weight (lb) | | | | | | | |
| | 8.20 | 4.50 | 1 | 36.90 | | | | | | | |
| | | | | | | Total | 230 | LB | | 230.0 | |
| | | | | | | | | | **TOTAL** | 230 | **230** |

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 516E01301 |
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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE CUY-71-1188 (SFN 1804898)

ITEM NAME ELASTOMERIC STRIP SEAL WITHOUT STEEL EXTRUSIONS, AS PER PLAN PAY UNIT FT

| DESCRIPTION | | | | | | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Rear Abutment (Southbound Direction)** | | | | | | | | | | | |
| | Length (ft) | 94.375 | | | | | | | | | |
| | | | | | | Total | 95 | FT | | 95.0 | |
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| | | | | | | | | | **TOTAL** | 95 | **95** |

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 516E47001 |
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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE CUY-71-1188 (SFN 1804898)

ITEM NAME JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN PAY UNIT LS

| DESCRIPTION | SUB TOTAL | TOTAL |
|---|---|---|
| LUMP SUM ITEM | | |
| **TOTAL** | - | **LS** |

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 530E00400 |
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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE CUY-71-1188 (SFN 1804898)

ITEM NAME STRUCTURES: REMOVE ABANDONED SCUPPER BRACKETS PAY UNIT EACH

| DESCRIPTION | | | | | | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **No. of Scupper Brackets** | | | 24 | | | | | | | | |
| | | | | | | Total | 24 | EACH | | 24.0 | |
| | | | | | | | | | **TOTAL** | 24 | **24** |

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 530E00400 |
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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE CUY-71-1188 (SFN 1804898)

ITEM NAME STRUCTURES: REPLACE STEEL SHIM PLATES PAY UNIT EACH

| DESCRIPTION | | | | | | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **No. of Bearings** | | 5 | | | | | | | | |
| | | | | | | Total | 5 | EACH | | 5.0 | |
| | | | | | | | | | **TOTAL** | 5 | **5** |

# Bridge No. LAK-44-0207 L

# SFN 4304381

## Structure Quantity Calculations

4/26/2022

Prepared for: ODOT

District 12

Prepared by:

ms consultants, inc.
engineers, architects, planners

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 513E10201 |
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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-44-0207 L (SFN 4304381)

ITEM NAME STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN PAY UNIT LB

| DESCRIPTION | | | | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| **3/8" Plate** | | | | * - as shown on plans | | | | | |
| Weight (lb/ft) | Height (ft) | Section B-B Width (ft)* | Section C-C Width (ft)* | Total Weight (lb) | | | | | |
| 15.30 | 3.00 | 1.25 | 1.75 | 275.40 | | | | | |
| **Stiffener Angles 5 x 3 1/2 x 5/8** | | | | | | | | | |
| Weight (lb/ft) | Length (ft) | Quantity per Girder | No. of Girders | Total Weight (lb) | | | | | |
| 16.80 | 4.00 | 4 | 2 | 537.60 | | | | | |
| | | | | | Total | 850 | LB | 850.0 | |
| | | | | | | | **TOTAL** | 850 | **850** |

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 513E21501 |
|---|---|---|---|---|---|
| CHECKED BY: | WER | DATE: | 4/28/22 | PAGE NUMBER: | 2 |

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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-44-0207 L (SFN 4304381)

ITEM NAME REPLACEMENT OF DETERIORATED END CROSSFRAMES, AS PER PLAN PAY UNIT LB

| DESCRIPTION | | | | | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| **Riveted Plate Girder** | | | | | | | | | | |
| | | | Depth (ft) | 4.04167 | | | | | | |
| Double Angle Flange Leg Length (in.) | | | | 5 | | | | | | |
| **End Crossframe** | | | | | | | | | | |
| **Bottom Member L4x4x5/16** | | | | | | | | | | |
| Weight (lb/ft) | Member Length (ft) | Quantity | Total Weight (lb) | | | | | | | |
| 8.20 | 7.92 | 6 | 389.50 | | | | | | | |
| **Outside Diagonal Member L4x4x5/16** | | | | | | | | | | |
| Weight (lb/ft) | Member Length (ft) | Quantity | Total Weight (lb) | | | | | | | |
| 8.20 | 4.48 | 1 | 36.77 | | | | | | | |
| 5% contingency (for gusset plates) | | | | 21.31 | | | | | | |
| | | | | | | Total | 450 | LB | 450.0 | |
| | | | | | | | | **TOTAL** | 450 | **450** |

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 514E20001 |
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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-44-0207 L (SFN 4304381)

ITEM NAME FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN (ONE COAT) PAY UNIT SF

| DESCRIPTION | | | | | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| **Paint Area of Girder Web Before Installation of Repair Plates** | | | | | | | | | | |
| Rear Abutment | | | | | | | | | | |
| | Girder No. | Length (FT) | Height (FT) | Repair Area (SF) | Multiply Both Sides of Web | Total Repair Area per Girder | | | | |
| | 1 | 1.5 | 3 | 4.5 | 2 | 9.0 | | | | |
| | 6 | 1.5 | 3 | 4.5 | 2 | 9.0 | | | | |
| | | | | | | Total (Rear Abutment) | 18.0 | SF | 18 | |
| Forward Abutment | | | | | | | | | | |
| | Girder No. | Length (FT) | Height (FT) | Repair Area (SF) | Multiply Both Sides of Web | Total Repair Area per Girder | | | | |
| | 1 | 2.0 | 3 | 6.0 | 2 | 12.0 | | | | |
| | 6 | 1.5 | 3 | 4.5 | 2 | 9.0 | | | | |
| | | | | | | Total (Forward Abutment) | 21.0 | SF | 21 | |
| **Paint Area of Entire Beam End After Installation of Repair Plates** | | | | | | | | | | |
| Rear Abutment | | | | | | | | | | |
| Girder No. | Length (FT) | Girder Height (FT) | Flange Width (IN.) | Stiffener Leg Perimeter (IN.) | Paint Area (SF) | Multiply Both Sides of Web | Total Paint Area per Girder | | | |
| 1 | 1.5 | 4 | 6.81 | 7.0 | 9.61 | 2 | 19.22 | | | |
| 6 | 1.5 | 4 | 6.81 | 7.0 | 9.61 | 2 | 19.22 | | | |
| | | | | | | Total (Rear Abutment) | 39.0 | SF | 39 | |
| Forward Abutment | | | | | | | | | | |
| Girder No. | Length (FT) | Girder Height (FT) | Flange Width (IN.) | Stiffener Leg Perimeter (IN.) | Paint Area (SF) | Multiply Both Sides of Web | Total Paint Area per Girder | | | |
| 1 | 2.0 | 4 | 6.81 | 7.0 | 12.04 | 2 | 24.07 | | | |
| 6 | 1.5 | 4 | 6.81 | 7.0 | 9.61 | 2 | 19.22 | | | |
| | | | | | | Total (Forward Abutment) | 44.0 | SF | 44 | |
| | | | | | | | | **TOTAL** | 122 | **122** |

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 530E00200 |
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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-44-0207 L (SFN 4304381)

ITEM NAME STRUCTURES: RE-WELDING END CROSSFRAME MEMBERS PAY UNIT LS

| DESCRIPTION | SUB TOTAL | TOTAL |
|---|---|---|
| LUMP SUM ITEM | | |
| **TOTAL** | - | **LS** |

**QUANTITY CALCULATIONS**

| | | | | | |
|---|---|---|---|---|---|
| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 530E00400 |
| CHECKED BY: | WER | DATE: | 4/28/22 | PAGE NUMBER: | 5 |

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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-44-0207 L (SFN 4304381)

ITEM NAME STRUCTURES: REPLACE KEEPER PLATES PAY UNIT EACH

| DESCRIPTION | | | | | | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **No. of Keeper Plates** | | 6 | | | | | | | | |
| | | | | | | Total | 6 | EACH | | 6.0 | |
| | | | | | | | | | **TOTAL** | 6 | **6** |

# Bridge No. LAK-44-0207 R

# SFN 4304411

## Structure Quantity Calculations

4/26/2022

Prepared for: ODOT

District 12

Prepared by:

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engineers, architects, planners

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 513E10201 |
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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-44-0207 R (SFN 4304411)

ITEM NAME STRUCTURAL STEEL MEMBERS, LEVEL UF, AS PER PLAN PAY UNIT LB

| DESCRIPTION | | | | | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| **3/8" Plate** | | | | | | * - as shown on plans | | | | |
| Weight (lb/ft) | Height (ft) | Section B-B Width (ft)* | Section C-C $Width_1$ (ft)* | Section C-C $Width_2$ (ft)* | Total Weight (lb) | | | | | |
| 15.30 | 3.50 | 1.25 | 3.167 | 3.00 | 794.325 | | | | | |
| **Stiffener Angles 5 x 3 1/2 x 5/8** | | | | | | | | | | |
| Weight (lb/ft) | Length (ft) | Quantity per Girder | No. of Girders | Total Weight (lb) | | | | | | |
| 16.80 | 4.50 | 4 | 2 | 604.80 | | | | | | |
| | | | | | Total | 1440 | LB | | 1440.0 | |
| | | | | | | | | **TOTAL** | 1,440 | **1,440** |

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 513E21501 |
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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-44-0207 R (SFN 4304411)

ITEM NAME REPLACEMENT OF DETERIORATED END CROSSFRAMES, AS PER PLAN PAY UNIT LB

| DESCRIPTION | | | | | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| **Riveted Plate Girder** | | | | | | | | | | |
| | | | Depth (ft) | 4.54167 | | | | | | |
| Double Angle Flange Leg Length (in.) | | | | 5 | | | | | | |
| **End Crossframe** | | | | | | | | | | |
| **Bottom Member L4x4x5/16** | | | | | | | | | | |
| Weight (lb/ft) | Member Length (ft) | Quantity | Total Weight (lb) | | | | | | | |
| 8.20 | 8.60 | 3 | 211.53 | | | | | | | |
| **Outside Diagonal Member L4x4x5/16** | | | | | | | | | | |
| Weight (lb/ft) | Member Length (ft) | Quantity | Total Weight (lb) | | | | | | | |
| 8.20 | 5.02 | 2 | 82.38 | | | | | | | |
| 5% contingency (for gusset plates) | | | | 14.70 | | | | | | |
| | | | | | | Total | 310 | LB | 310 | |
| | | | | | | | | **TOTAL** | 310 | **310** |

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 514E20001 |
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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-44-0207 R (SFN 4304411)

ITEM NAME FIELD PAINTING OF DAMAGED STRUCTURAL STEEL, AS PER PLAN (ONE COAT) PAY UNIT SF

**Paint Area of Girder Web Before Installation of Repair Plates**

Rear Abutment

| Girder No. | Length (FT) | Height (FT) | Repair Area (SF) | Multiply Both Sides of Web | Total Repair Area per Girder |
|---|---|---|---|---|---|
| 1 | 1.5 | 3.5 | 5.25 | 2 | 10.50 |
| 6 | 1.5 | 3.5 | 5.25 | 2 | 10.50 |

Total (Rear Abutment) 21.0 SF | SUB TOTAL: 21

Forward Abutment

| Girder No. | Length (FT) | Height (FT) | Repair Area (SF) | Multiply Both Sides of Web | Total Repair Area per Girder |
|---|---|---|---|---|---|
| 1 | 6.67 | 3.5 | 23.33 | 2 | 46.67 |
| 6 | 6.67 | 3.5 | 23.33 | 2 | 46.67 |

Total (Forward Abutment) 93.3 SF | SUB TOTAL: 93

**Paint Area of Entire Beam End After Installation of Repair Plates**

Rear Abutment

| Girder No. | Length (FT) | Girder Height (FT) | Flange Width (IN.) | Stiffener Leg Perimeter (IN.) | Paint Area (SF) | Multiply Both Sides of Web | Total Paint Area per Girder |
|---|---|---|---|---|---|---|---|
| 1 | 1.5 | 4.5 | 6.81 | 7.0 | 10.65 | 2 | 21.30 |
| 6 | 1.5 | 4.5 | 6.81 | 7.0 | 10.65 | 2 | 21.30 |

Total (Rear Abutment) 43.0 SF | SUB TOTAL: 43

Forward Abutment

| Girder No. | Length (FT) | Girder Height (FT) | Flange Width (IN.) | Stiffener Leg Perimeter (IN.) | Paint Area (SF) | Multiply Both Sides of Web | Total Paint Area per Girder |
|---|---|---|---|---|---|---|---|
| 1 | 6.67 | 4.5 | 6.81 | 7.0 | 38.30 | 2 | 76.60 |
| 6 | 6.67 | 4.5 | 6.81 | 7.0 | 38.30 | 2 | 76.60 |

Total (Forward Abutment) 154.0 SF | SUB TOTAL: 154

**TOTAL** 311 **311**

# Bridge No. LAK-20-1434

# SFN 4302133

# Structure Quantity Calculations

4/26/2022

Prepared for: ODOT

District 12

Prepared by:

ms consultants, inc.
engineers, architects, planners

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 512E10600 |
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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-20-1434 (SFN 4302133)

ITEM NAME CONCRETE REPAIR BY EPOXY INJECTION PAY UNIT FT

| DESCRIPTION | | | | | | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Length (ft) | Quantity | Total Concrete Repair (ft) | | | | | | | |
| | Abutments | 66 | 2 | 66 | | | | | | | |
| | Piers | 63 | 3 | 95 | | | | | | | |
| | | | | | | Total | 161 | FT | | 161.0 | |
| | | | | | | | | | **TOTAL** | 161 | **161** |

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 513E21501 |
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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-20-1434 (SFN 4302133)

ITEM NAME REPLACEMENT OF DETERIORATED END CROSSFRAMES, AS PER PLAN PAY UNIT LB

| DESCRIPTION | | | | | | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Beam** | | | | | | | | | | | |
| | | Type | 36WF150 | | | | | | | | |
| | | Depth (in.) | 35.84 | | | | | | | | |
| | Flange Thickness (in.) | | 0.940 | | | | | | | | |
| **End Crossframe** | | | | | | | | | | | |
| | **Bottom Member L4x4x5/16** | | | | | | | | | | |
| | Weight (lb/ft) | Member Length (ft) | Quantity | Total Weight (lb) | | | | | | | |
| | 8.20 | 8.50 | 4 | 278.80 | | | | | | | |
| | **Outside Diagonal Member L4x4x5/16** | | | | | | | | | | |
| | Weight (lb/ft) | Member Length (ft) | Quantity | Total Weight (lb) | | | | | | | |
| | 8.20 | 4.06 | 8 | 266.36 | | | | | | | |
| | **Inside Diagonal Member L4x4x5/16** | | | | | | | | | | |
| | Weight (lb/ft) | Member Length (ft) | Quantity | Total Weight (lb) | | | | | | | |
| | 8.20 | 3.24 | 8 | 212.22 | | | | | | | |
| | 5% contingency (for gusset plates) | | | 37.87 | | | | | | | |
| | | | | | | Total | 800 | LB | | 800.0 | |
| | | | | | | | | | **TOTAL** | 800 | **800** |

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 516E46200 |
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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-20-1434 (SFN 4302133)

ITEM NAME BEARING DEVICE, ROCKER PAY UNIT EACH

| DESCRIPTION | | | | | | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **No. of Bearings** | | 3 | | | | | | | | |
| | | | | | | Total | 3 | EACH | | 3.0 | |
| | | | | | | | | | **TOTAL** | 3 | **3** |

**QUANTITY CALCULATIONS**

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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-20-1434 (SFN 4302133)

ITEM NAME RESET BEARING, AS PER PLAN PAY UNIT EACH

| DESCRIPTION | | | | | | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | **No. of Bearings** | | 12 | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | Total | 12 | EACH | | 12.0 | |
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| | | | | | | | | | | | |
| | | | | | | | | | **TOTAL** | 12 | **12** |

**QUANTITY CALCULATIONS**

| | | | | | |
|---|---|---|---|---|---|
| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 516E46800 |
| CHECKED BY: | WER | DATE: | 4/28/22 | PAGE NUMBER: | 5 |

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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-20-1434 (SFN 4302133)

ITEM NAME REFURBISH AND RESET BEARING PAY UNIT EACH

| DESCRIPTION | | | | | | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | **No. of Bearings** | | 3 | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | Total | 3 | EACH | | 3.0 | |
| | | | | | | | | | | | |
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| | | | | | | | | | | | |
| | | | | | | | | | **TOTAL** | 3 | **3** |

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 516E47001 |
|---|---|---|---|---|---|
| CHECKED BY: | WER | DATE: | 4/28/22 | PAGE NUMBER: | 6 |

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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-20-1434 (SFN 4302133)

ITEM NAME JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN PAY UNIT LS

| DESCRIPTION | SUB TOTAL | TOTAL |
|---|---|---|
| LUMP SUM ITEM | | |
| **TOTAL** | - | **LS** |

**QUANTITY CALCULATIONS**

| | | | | | |
|---|---|---|---|---|---|
| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 519E11101 |
| CHECKED BY: | WER | DATE: | 4/28/22 | PAGE NUMBER: | 7 |

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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-20-1434 (SFN 4302133)

ITEM NAME PATCHING CONCRETE STRUCTURE, AS PER PLAN PAY UNIT SF

| | DESCRIPTION | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|
| Total | 200 | SF | ***PER CONTRACT DOCUMENTS | | 200 | |
| | | | | **TOTAL** | 200 | **200** |

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 530E00200 |
|---|---|---|---|---|---|
| CHECKED BY: | WER | DATE: | 4/28/22 | PAGE NUMBER: | 8 |

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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-20-1434 (SFN 4302133)

ITEM NAME STRUCTURES: STRUCTURE CLEANING PAY UNIT LS

| DESCRIPTION | SUB TOTAL | TOTAL |
|---|---|---|
| LUMP SUM ITEM | | |
| **TOTAL** | - | **LS** |

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 530E00400 |
|---|---|---|---|---|---|
| CHECKED BY: | WER | DATE: | 4/28/22 | PAGE NUMBER: | 9 |

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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-20-1434 (SFN 4302133)

ITEM NAME STRUCTURES: REPLACE DRAINAGE CONDUIT PAY UNIT EACH

| DESCRIPTION | | | | | | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **No. of Drainage Conduits** | | | 4 | | | | | | | | |
| | | | | | | Total | 4 | EACH | | 4.0 | |
| | | | | | | | | | **TOTAL** | 4 | **4** |

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 530E00400 |
|---|---|---|---|---|---|
| CHECKED BY: | WER | DATE: | 4/28/22 | PAGE NUMBER: | 10 |

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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-20-1434 (SFN 4302133)

ITEM NAME STRUCTURES: REPLACE HORIZONTAL AND VERTICAL CURB PLATES PAY UNIT EACH

| DESCRIPTION | | | | | | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **No. of Curb Plates** | | 4 | | | | | | | | |
| | | | | | | Total | 4 | EACH | | 4.0 | |
| | | | | | | | | | **TOTAL** | 4 | **4** |

# Bridge No. LAK-84-1613

# SFN 4302613

## Structure Quantity Calculations

4/26/2022

Prepared for: ODOT

District 12

Prepared by:

ms consultants, inc.
engineers, architects, planners

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 513E21501 |
|---|---|---|---|---|---|
| CHECKED BY: | WER | DATE: | 4/28/22 | PAGE NUMBER: | 1 |

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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-84-1613 (SFN 4302613)

ITEM NAME REPLACEMENT OF DETERIORATED END CROSSFRAMES, AS PER PLAN PAY UNIT LB

| DESCRIPTION | | | | | | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Beam** | | | | | | | | | | | |
| | | Type | 36WF182 | | | | | | | | |
| | | Depth (in.) | 36.32 | | | | | | | | |
| | Flange Thickness (in.) | | 1.180 | | | | | | | | |
| **End Crossframe** | | | | | | | | | | | |
| | **Bottom Member L4x4x5/16** | | | | | | | | | | |
| | Weight (lb/ft) | Member Length (ft) | Quantiy | Total Weight (lb) | | | | | | | |
| | 8.20 | 8.72 | 6 | 429.18 | | | | | | | |
| | **Outside Diagonal Member L4x4x5/16** | | | | | | | | | | |
| | Weight (lb/ft) | Member Length (ft) | Quantiy | Total Weight (lb) | | | | | | | |
| | 8.20 | 4.13 | 5 | 169.20 | | | | | | | |
| | **Inside Diagonal Member L4x4x5/16** | | | | | | | | | | |
| | Weight (lb/ft) | Member Length (ft) | Quantiy | Total Weight (lb) | | | | | | | |
| | 8.20 | 3.27 | 4 | 107.24 | | | | | | | |
| | 5% contingency (for gusset plates) | | | 35.28 | | | | | | | |
| | | | | | | Total | 750 | LB | | 750.0 | |
| | | | | | | | | | **TOTAL** | 750 | **750** |

**QUANTITY CALCULATIONS**

| | | | | | |
|---|---|---|---|---|---|
| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 516E46800 |
| CHECKED BY: | WER | DATE: | 4/28/22 | PAGE NUMBER: | 2 |

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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-84-1613 (SFN 4302613)

ITEM NAME REFURBISH AND RESET BEARING PAY UNIT EACH

| DESCRIPTION | | | | | | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **No. of Bearings** | | 16 | | | | | | | | |
| | | | | | | Total | 16 | EACH | | 16.0 | |
| | | | | | | | | | **TOTAL** | 16 | **16** |

**QUANTITY CALCULATIONS**

| | | | | | |
|---|---|---|---|---|---|
| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 516E47001 |
| CHECKED BY: | WER | DATE: | 4/28/22 | PAGE NUMBER: | 3 |

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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-84-1613 (SFN 4302613)

ITEM NAME JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN PAY UNIT LS

| DESCRIPTION | SUB TOTAL | TOTAL |
|---|---|---|
| LUMP SUM ITEM | | |
| **TOTAL** | - | **LS** |

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 519E11101 |
|---|---|---|---|---|---|
| CHECKED BY: | WER | DATE: | 4/28/22 | PAGE NUMBER: | 4 |

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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-84-1613 (SFN 4302613)

ITEM NAME PATCHING CONCRETE STRUCTURE, AS PER PLAN PAY UNIT SF

| DESCRIPTION | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|
| Total | 200 | SF | ***PER CONTRACT DOCUMENTS | | 200.0 | |
| | | | | **TOTAL** | 200 | **200** |

**QUANTITY CALCULATIONS**

| | | | | | |
|---|---|---|---|---|---|
| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 530E00200 |
| CHECKED BY: | WER | DATE: | 4/28/22 | PAGE NUMBER: | 5 |

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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-84-1613 (SFN 4302613)

ITEM NAME STRUCTURES: STRUCTURE CLEANING PAY UNIT LS

| DESCRIPTION | SUB TOTAL | TOTAL |
|---|---|---|
| LUMP SUM ITEM | | |
| **TOTAL** | - | **LS** |

# Bridge No. LAK-44-0510

# SFN 4302702

## Structure Quantity Calculations

4/26/2022

Prepared for: ODOT

District 12

Prepared by:

ms consultants, inc.
engineers, architects, planners

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 513E21501 |
|---|---|---|---|---|---|
| CHECKED BY: | WER | DATE: | 4/28/22 | PAGE NUMBER: | 1 |

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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-44-0510 (SFN 4302702)

ITEM NAME REPLACEMENT OF DETERIORATED END CROSSFRAMES, AS PER PLAN PAY UNIT LB

| DESCRIPTION | | | | | | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Beam** | | | | | | | | | | | |
| | | Type | 33WF141 | | | | | | | | |
| | | Depth (in.) | 33.31 | | | | | | | | |
| | Flange Thickness (in.) | | 0.960 | | | | | | | | |
| **End Crossframe** | | | | | | | | | | | |
| | **Bottom Member L4x4x5/16** | | | | | | | | | | |
| | Weight (lb/ft) | Member Length (ft) | Quantiy | Total Weight (lb) | | | | | | | |
| | 8.20 | 7.21 | 2 | 118.30 | | | | | | | |
| | **Diagonal Member L4x4x5/16** | | | | | | | | | | |
| | Weight (lb/ft) | Member Length (ft) | Quantiy | Total Weight (lb) | | | | | | | |
| | 8.20 | 4.28 | 2 | 70.19 | | | | | | | |
| | 5% contingency (for gusset plates) | | | 9.42 | | | | | | | |
| | | | | | | Total | 200 | LB | | 200.0 | |
| | | | | | | | | | **TOTAL** | 200 | **200** |

**QUANTITY CALCULATIONS**

| | | | | | |
|---|---|---|---|---|---|
| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 516E46200 |
| CHECKED BY: | WER | DATE: | 4/28/22 | PAGE NUMBER: | 2 |

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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-44-0510 (SFN 4302702)

ITEM NAME BEARING DEVICE, ROCKER PAY UNIT EACH

| DESCRIPTION | | | | | | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **No. of Bearings** | 1 | | | | | | | | | |
| | | | | | | Total | 1 | EACH | | 1 | |
| | | | | | | | | | **TOTAL** | 1 | **1** |

**QUANTITY CALCULATIONS**

| | | | | | |
|---|---|---|---|---|---|
| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 516E46800 |
| CHECKED BY: | WER | DATE: | 4/28/22 | PAGE NUMBER: | 3 |

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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-44-0510 (SFN 4302702)

ITEM NAME REFURBISH AND RESET BEARING PAY UNIT EACH

| DESCRIPTION | | | | | | | | | | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **No. of Bearings** | 11 | | | | | | | | | |
| | | | | | | Total | 11 | EACH | | 11 | |
| | | | | | | | | | **TOTAL** | 11 | **11** |

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 516E47001 |
|---|---|---|---|---|---|
| CHECKED BY: | WER | DATE: | 4/28/22 | PAGE NUMBER: | 4 |

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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-44-0510 (SFN 4302702)

ITEM NAME JACKING AND TEMPORARY SUPPORT OF SUPERSTRUCTURE, AS PER PLAN PAY UNIT LS

| DESCRIPTION | SUB TOTAL | TOTAL |
|---|---|---|
| LUMP SUM ITEM | | |
| **TOTAL** | - | **LS** |

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 519E11101 |
|---|---|---|---|---|---|
| CHECKED BY: | WER | DATE: | 4/28/22 | PAGE NUMBER: | 5 |

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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-44-0510 (SFN 4302702)

ITEM NAME PATCHING CONCRETE STRUCTURE, AS PER PLAN PAY UNIT SF

| | | | | DESCRIPTION | SUB TOTAL | TOTAL |
|---|---|---|---|---|---|---|
| Total | 200 | SF | ***PER CONTRACT DOCUMENTS | | 200 | |
| | | | | **TOTAL** | 200 | **200** |

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 530E00200 |
|---|---|---|---|---|---|
| CHECKED BY: | WER | DATE: | 4/28/22 | PAGE NUMBER: | 6 |

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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-44-0510 (SFN 4302702)

ITEM NAME STRUCTURES: STRUCTURE CLEANING PAY UNIT LS

| DESCRIPTION | SUB TOTAL | TOTAL |
|---|---|---|
| LUMP SUM ITEM | | |
| **TOTAL** | - | **LS** |

**QUANTITY CALCULATIONS**

| MADE BY: | JSP | DATE: | 4/26/22 | ITEM NUMBER: | 530E00200 |
|---|---|---|---|---|---|
| CHECKED BY: | WER | DATE: | 4/28/22 | PAGE NUMBER: | 7 |

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PID NO. 114176 PROJECT D12 BH FY2023 STEEL REPAIR STRUCTURE LAK-44-0510 (SFN 4302702)

ITEM NAME STRUCTURES: RE-WELDING END CROSSFRAME MEMBERS PAY UNIT LS

| DESCRIPTION | SUB TOTAL | TOTAL |
|---|---|---|
| LUMP SUM ITEM | | |
| **TOTAL** | - | **LS** |

EUTHENICS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| CLIENT | MS consultants | PROJECT NO. | 1180 | PID | 114176 | | |
| PROJECT | ODT D12/D3 GES Task 3 - Steel Repairs | COMP. BY | MMP | DATE | 3/1/2022 | Updated | 4/22/2022 |
| SUBJECT | Final Plan Quantities | CHECKED BY | OOS | DATE | 3/3/2022 | | |

| Item | Extension | Description | Unit | Location | | | | | | | | | Totals | Sheet Ref. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 3 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | |
| 513 | 21501 | Replacement of Deteriorated End Cross-Frames, As Per Plan | LB | 1150 | | 900 | 7170 | 1240 | 885 | 2035 | 100 | 150 | 13630 | 21 |
| 513 | 21001 | Trimming of Beam End, As Per Plan | EA | | | | | | | | | 4 | 4 | 21 |
| 513 | 10201 | Structural Steel Members, Level UF, As Per Plan | LB | 255 | | | | 590 | | | | | 845 | 21 |
| 513 | 95020 | Structural Steel, Misc.: Intermediate Crossframe Repair | LS | 1 | | | | | | | | | 1 | 29 |
| 514 | 02001 | Field Painting of Damaged Structural Steel, As Per Plan (One Coat) | SF | 1100 | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| 516 | 46701 | Reset Bearing, As Per Plan | EA | | | | 6 | 10 | | | | | 16 | 22 |
| Special | 516E46800 | Refurbish and Reset Bearing | EA | 20 | 18 | 20 | 36 | | 36 | 42 | | 8 | 180 | 22 |
| 516 | 47001 | Jacking and Temporary Support of Superstructure, As Per Plan | LS | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | 8 | 22 |
| | | | | | | | | | | | | | | |
| 519 | 11100 | Patching Concrete Structures | SF | | | | 200 | 200 | 200 | | | | 600 | 22 |
| | | | | | | | | | | | | | | |
| Special | 530E00200 | Special - Structures: Structure Cleaning | LS | | | | | 1 | 1 | 1 | 1 | 1 | 5 | 22 |
| Special | 530E00200 | Special - Structures: Drilling Ends of Cracks in Structural Steel | | | | | | | 1 | | 1 | | 2 | 22 |
| Special | 530E00200 | Special - Structures: Re-Weldimg End Crossframe Members | | | | | | | 1 | 1 | | | 2 | 22 |
| Special | 530E00400 | Special - Structures: Remove Abandoned Scupper Brackets | EA | 32 | | | | | | | | | 32 | 22 |
| | | | | | | | | | | | | | | |
| 849 | 10700 | Straightening Damaged Members | LS | | 1 | | | | | | | | 1 | 22 |

**Cross Frame Repair Quantity Calculations**

Location 3:

Horizontal Members

| | | | |
|---|---|---|---|
| Number = | 8 | | |
| Girder Spacing = | 9.417 | ft. | |
| Skew = | 13.511 | deg | |
| Member Length = | 9.685 | | |
| Total Length = | 77.478 | ft. | |

Diagonal Members

| | | | |
|---|---|---|---|
| Number = | 6 | | |
| Spaces = | 4 | ft. | |
| Member Length = | 4.842 | ft. | (Assumes Diagonals are Equally Spaced and at 60 Degrees) |
| Total Length = | 29.054 | ft. | |

| | | | |
|---|---|---|---|
| Assumed Member Weight = | 9.8 | lb./ft. | (Based on a 4"x4"x0.375" angle - no plan dimensions available) |
| Total Estimated Weight = | 1148.4 | lb. | (Includes 10% additional detail factor for welds, fasteners etc.) |

Location 6:

Horizontal Members

| | | | |
|---|---|---|---|
| Number = | 7 | | |
| Girder Spacing = | 9.708 | ft. | |
| Skew = | 22.428 | deg | |
| Member Length = | 10.503 | | |
| Total Length = | 73.519 | ft. | |

Diagonal Members

| | | | |
|---|---|---|---|
| Number = | 5 | | |
| Spaces = | 4 | ft. | |
| Member Length = | 5.251 | ft. | (Assumes Diagonals are Equally Spaced and at 60 Degrees) |
| Total Length = | 26.257 | ft. | |
| | | | |
| Member Weight = | 8.2 | lb./ft. | (Based on a 4"x4"x0.3125" angle) |
| Total Estimated Weight = | 900.0 | lb. | (Includes 10% additional detail factor for welds, fasteners etc.) |

Location 7:

Horizontal Members

| | | | |
|---|---|---|---|
| Number = | 23 | | |
| Girder Spacing = | 8.833 | ft. | (on average) |
| Skew = | 62.178 | deg | |
| Member Length = | 18.926 | | |
| Total Length = | 435.302 | ft. | |

Diagonal Members

| | | | |
|---|---|---|---|
| Number = | 11 | | |
| Spaces = | 6 | ft. | |
| Member Length = | 6.309 | ft. | (Assumes Diagonals are Equally Spaced and at 60 Degrees) |
| Total Length = | 69.396 | ft. | |
| | | | |
| Member Weight = | 12.8 | lb./ft. | (Based on a 4"x4"x0.5" angle) |
| Total Estimated Angle Weight = | 6460.1 | lb. | (Includes 10% additional detail factor for welds, fasteners etc.) |
| | | | |
| Gusset Plates replaced = | 4.0 | | |
| Assumed width = | 16.0 | in. | (no plan dimensions shown for these) |
| Assumed Height = | 6.0 | in. | |
| Assumed Thickness = | 0.5 | in. | |
| Total Volume = | 192.0 | $in.^3$ | |
| Weight = | 54.4 | lbs | |
| | | | |
| Total estimated weight = | 7166.0 | | (Includes 10% additional detail factor for welds, fasteners etc.) |

Location 8:

Horizontal Members

| | | | |
|---|---|---|---|
| Number = | 8 | | |
| Girder Spacing = | 8.250 | ft. | |
| Skew = | 21.169 | deg | |
| Member Length = | 8.847 | | |
| Total Length = | 70.776 | ft. | |

Diagonal Members

| | | | |
|---|---|---|---|
| Number = | 15 | | |
| Spaces = | 4 | ft. | |
| Member Length = | 4.423 | ft. | (Assumes Diagonals are Equally Spaced and at 60 Degrees) |
| Total Length = | 66.352 | ft. | |
| | | | |
| Member Weight = | 8.2 | lb./ft. | (Based on a 4"x4"x0.3125" angle) |
| Total Estimated Weight = | 1236.9 | lb. | (Includes 10% additional detail factor for welds, fasteners etc.) |

Location 9:

Horizontal Members

| | | | |
|---|---|---|---|
| Number = | 8 | | |
| Girder Spacing = | 8.641 | ft. | (Along Skew) |
| Member Length = | 8.641 | | |
| Total Length = | 69.125 | ft. | |

Diagonal Members

| | | | |
|---|---|---|---|
| Number = | 3 | | |
| Spaces = | 4 | ft. | |
| Member Length = | 4.320 | ft. | (Assumes Diagonals are Equally Spaced and at 60 Degrees) |
| Total Length = | 12.961 | ft. | |
| | | | |
| Member Weight = | 9.8 | lb./ft. | (Based on a 4"x4"x0.375" angle) |
| Total Estimated Weight = | 884.9 | lb. | (Includes 10% additional detail factor for welds, fasteners etc.) |

Location 10:

Horizontal Members (Large Frames)

| | | | |
|---|---|---|---|
| Number = | 23 | | |
| Girder Spacing = | 9.233 | ft. | (Along Skew, Average) |
| Member Length = | 9.233 | | |
| Total Length = | 212.349 | ft. | |

Horizontal Members (Small Frames)

| | | | |
|---|---|---|---|
| Number = | 3 | | |
| Girder Spacing = | 4.917 | ft. | (Along Skew) |
| Member Length = | 4.917 | | |
| Total Length = | 14.750 | ft. | |

Diagonal Members (Large Frames)

| | | | |
|---|---|---|---|
| Number = | 2 | | |
| Spaces = | 4 | ft. | |
| Member Length = | 4.616 | ft. | (Assumes Diagonals are Equally Spaced and at 60 Degrees) |
| Total Length = | 9.233 | ft. | |
| | | | |
| Member Weight = | 8.2 | lb./ft. | (Based on a 4"x4"x0.3125" angle) |
| Total Estimated Weight = | 2034.8 | lb. | (Includes 10% additional detail factor for welds, fasteners etc.) |

Location 11:

Horizontal Members

| | | | |
|---|---|---|---|
| Number = | 1 | | |
| Girder Spacing = | 10.120 | ft. | (Along Skew) |
| Member Length = | 10.120 | | |
| Total Length = | 10.120 | ft. | |
| | | | |
| Member Weight = | 9.8 | lb./ft. | (Based on a 4"x4"x0.375" angle) |
| Total Estimated Weight = | 99.2 | lb. | |

Location 12:

Horizontal Members

| | | | |
|---|---|---|---|
| Number = | 1 | | |
| Girder Spacing = | 10.000 | ft. | |
| Member Length = | 10.000 | | |
| Total Length = | 10.000 | ft. | |

Diagonal Members

| | | | |
|---|---|---|---|
| Number = | 1 | | |
| Spaces = | 4 | ft. | |
| Member Length = | 5.000 | ft. | (Assumes Diagonals are Equally Spaced and at 60 Degrees) |
| Total Length = | 5.000 | ft. | |
| | | | |
| Assumed Member Weight = | 9.8 | lb./ft. | (Based on a 4"x4"x0.375" angle no plan dimension available) |
| Total Estimated Weight = | 147.0 | lb. | |

**Bearing Stiffener Replacement Quantity Calculations**

Location 3:

| | | | |
|---|---|---|---|
| Stiffeners Replaced = | 3.0 | | |
| Width = | 6.0 | in. | |
| Height = | 72.0 | in. | |
| Thickness = | 0.625 | in. | |
| Total Volume = | 810.0 | $in.^3$ | |
| Weight = | 229.7 | lbs | |
| Total estimated weight = | 252.7 | | (Includes 10% additional detail factor for welds, fasteners etc.) |

Location 8:

| | | | |
|---|---|---|---|
| Stiffeners Replaced = | 6.0 | | |
| Width = | 7.5 | in. | |
| Height = | 56.0 | in. | |
| Thickness = | 0.750 | in. | |
| Total Volume = | 1890.0 | $in.^3$ | |
| Weight = | 535.9 | lbs | |
| Total estimated weight = | 589.5 | | (Includes 10% additional detail factor for welds, fasteners etc.) |

**Field Painting of Damaged Structrual Steel, As Per Plan (One Coat)**

Location 3:

| | | | | |
|---|---|---|---|---|
| Number of Beams = | 5 | | per structure | |
| Number of Bridges = | 2 | | side-by-side structures | |
| Distance to Stiffener = | 0.5 | ft. | from Beam end | (Approx, based on x-frame detail and photos) |
| Paint Limits: | | | | |
| South Abutment = | 3 | ft. | past stiffener | (approx, based on photos) |
| North Abutment = | 2 | ft. | past stiffener | (approx, based on photos) |
| Beam Depth = | 6.1458 | ft. | | |
| Flange Width = | 1.333 | ft. | | |
| Beam Perimeter = | 16.2917 | ft. | (2 beam depths + 3 flange widths - excludes top of top flange) | |
| Stiffener Area = | 3 | $ft.^2$ | per stiffener | |
| Painting Area = | 467.29 | $ft.^2$ | North Abutment | |
| Painting Area = | 630.21 | $ft.^2$ | South Abutment | |
| Total Painting Area = | 1100 | $ft.^2$ | (Rounded up to nearest 5 SF) | |