

**FISHBECK**SHEET 1 OF 7 SHEETSSUBJECT DESC.: SR 18 OVER CENTER CREEKProject ID Number: 88876 JOB NUMBER: MED-18-0172DESIGNED BY: BSM DATE: 10/7/22 CHECKED BY: JBD DATE: 10/7/22**202E11002 STRUCTURE REMOVED, OVER 20 FOOT SPAN****FROM ODOT PROCEDURES FOR ESTIMATING MAY 2013****REMOVAL DECK = \$20/SF, REMOVAL SUBSTRUCTURE CONCRETE = \$200/CY****EXISTING DECK AREA = 24FT(44FT) = 1056SF(\$20/SF) = \$21120****R.A. FOOTING = (94FT)\*((2.75FT\*2FT) + (2.2FT\*2.5FT)) = 38 CY****R.A. BELOW CONST. JOINT = 51FT\*13.25FT\*2FT = 50 CY****R.A. WINGWALL ABOVE FOOTING**

RIGHT WINGWALL HEIGHT VARIES 7.7FT TO 13FT

RIGHT WINGWALL = (18FT\*2FT)\*(7.7FT+13FT)/2+(13FT\*7FT\*2FT)+(7.5FT\*7FT\*1.5FT) = 23 CY

LEFT WINGWALL HEIGHT VARIES 9.8FT TO 13FT

LEFT WINGWALL = (10.3FT\*2FT)\*(9.8+13)/2+(4.66FT\*13FT\*2FT)+(7.5FT\*9.25FT\*1.5FT) = 17 CY

**F.A. FOOTING = 94FT \* ((2.75FT\*2FT) + (2.2FT\*2.5FT)) = 38 CY****F.A. BELOW CONST. JOINT = 51FT\*13.25\*2FT = 50 CY****F.A. WINGWALL ABOVE FOOTING**

RIGHT WINGWALL HEIGHT VARIES 9.5FT TO 14.7FT

RIGHT WINGWALL = (1FT\*16FT\*2FT)+(16FT\*2FT)\*(14.7FT+9.5FT)/2+(7FT\*9.5FT\*1.5FT) = 19 CY

LEFT WINGWALL HEIGHT VARIES 8.5FT TO 14.7FT

LEFT WINGWALL = (6.5FT\*14.7FT\*2FT)+(16\*2)\*(14.7+8.5)/2+(7FT\*8.5FT\*1.5FT) = 24 CY

**TOTAL CONCRETE REMOVED = 259CY(\$200/CY) = \$51800****TOTAL REMOVAL COST = \$72920****202E22900 APPROACH SLAB REMOVED**Note: Per existing plans, approach slab only 24 feet wide.  
wearing course paved on top is 44 feet, matching bridge width**EXISTING APPROACH SLAB AREA = 2\*15FT(24FT) = 720 SF****TOTAL APPROACH SLAB AREA REMOVED = 80 SY****202E23500 WEARING COURSE REMOVED****EXISTING APPROACH SLAB AREA = 2\*15FT(24FT) = 720 SF****NO WEARING SURFACE ON BRIDGE DECK****TOTAL WEARING COURSE REMOVED = 80 SY****503E21100 COFFERDAMS AND EXCAVATION BRACING (LS)**

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**503E21100 UNCLASSIFIED EXCAVATION**

R.A. LENGTH = 103.75FT

R.A. WIDTH ABOVE FOOTING = 2.25 FT + 1 FT BEHIND = 3.25 FT

R.A. HEIGHT FROM TOP OF FOOTING TO GRADE = 15 FT (951-936)

R.A. VOLUME = (103.75FT) (3.25FT \* 15FT) = 187 CY

F.A. LENGTH = 103.75FT

F.A. WIDTH ABOVE FOOTING = 2.25 FT + 1 FT BEHIND = 3.25 FT

F.A. HEIGHT FROM TOP OF FOOTING TO GRADE = 15 FT (951-936)

F.A. VOLUME = (103.75FT) (3.25FT \* 15FT) = 187 CY

**TOTAL UNCLASSIFIED EXCAVATION = 374 CY**

**503E31120 SHALE EXCAVATION**

R.A. LENGTH = 103.75FT

R.A. WIDTH OF FOOTING = 4.5 FT + 1FT BEHIND = 5.5 FT

R.A. DEPTH OF FOOTING = 3 FT

R.A. HEIGHT FROM TOP OF FOOTING TO T/R = 1.2FT

R.A. WIDTH ABOVE FOOTING = 2.25FT + 1FT BEHIND = 3.25 FT

R.A. VOLUME = 103.75 FT (5.5 FT) (3 FT+1.2FT) = 89 CY

F.A. LENGTH = 103.75FT

F.A. WIDTH OF FOOTING = 4.5 FT + 1FT BEHIND = 5.5 FT

F.A. DEPTH OF FOOTING = 3 FT

F.A. VOLUME = 103.75 FT (5.5 FT) (3 FT) = 63 CY

**TOTAL SHALE EXCAVATION = 152 CY**

**509E10000 EPOXY COATED REINFORCING STEEL**

FROM REBAR LIST, ABUTMENT REBAR WEIGHT = 16179 LBS

FROM REBAR LIST, SUPERSTRUCTURE REBAR WEIGHT = 17656 LBS

**TOTAL WEIGHT OF REBAR = 33835 LBS**

**FISHBECK**SHEET 3 OF 7 SHEETSSUBJECT DESC.: SR 18 OVER CENTER CREEKProject ID Number: 88876 JOB NUMBER: MED-18-0172DESIGNED BY: BSM DATE: 10/7/22 CHECKED BY: JBD DATE: 10/7/22**511E34410 CLASS QC2 CONCRETE, SUPERSTRUCTURE**

ABUTMENT WIDTH ABOVE CONST. JOINT = 2.25 FT, LENGTH = 50.81 FT

R.A. HEIGHT FROM TOP OF BEARING TO BOTTOM OF SLAB = 2.42 FT

R.A. VOLUME = 2.42FT(2.25FT)(50.81 FT) = 10 CY

F.A. HEIGHT FROM TOP OF BEARING TO BOTTOM OF SLAB = 2.42 FT

F.A. VOLUME = 2.42FT(2.25FT)(50.81 FT) = 10 CY

SLAB AREA = 28.74 FT (44FT) = 1265 SF

SLAB DEPTH = 17.75 IN

SLAB VOLUME = 1265 SF (17.75 IN) = 70 CY**TOTAL QC2 CONCRETE, SUPERSTRUCTURE = 90 CY****511E43512 CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT INCLUDING FOOTING**

R.A. LENGTH = 103.75FT

R.A. AREA OF FOOTING = 4.5 FT (3FT) = 13.5 SF

R.A. FOOTING VOLUME = 103.75 FT (13.5 SF) = 52 CY

R.A. STEM AREA = 2.25 FT (11.8 FT) = 26.6 SF

R.A. STEM VOLUME = 103.75 FT (28.8 SF) = 102 CY

R.A. WINGWALL AREA = 140 SF

R.A. WINGWALL VOLUME = 140 SF(2.25 FT) = 12 CY

F.A. LENGTH = 103.75FT

F.A. AREA OF FOOTING = 4.5 FT (3FT) = 13.5 SF

F.A. FOOTING VOLUME = 103.75 FT (13.5 SF) = 52 CY

F.A. STEM AREA = 2.25 FT (11.9 FT) = 26.8 SF

F.A. STEM VOLUME = 103.75 FT (28.8 SF) = 103 CY

F.A. WINGWALL AREA = 140 SF

F.A. WINGWALL VOLUME = 140 SF(2.25 FT) = 12 CY**TOTAL QC2 CONCRETE, ABUTMENT = 333 CY**

**FISHBECK**SHEET 4 OF 7 SHEETSSUBJECT DESC.: SR 18 OVER CENTER CREEKProject ID Number: 88876 JOB NUMBER: MED-18-0172DESIGNED BY: BSM DATE: 10/7/22 CHECKED BY: JBD DATE: 10/7/22**512E10100 SEALING OF CONCRETE SURFACES**

R.A. NORTH WINGWALL TOP = 2.25FT(26.8FT) = 7 SY

R.A. NORTH WINGWALL SIDE = 2.5FT (26.8FT) = 7 SY

R.A. SOUTH WINGWALL TOP = 2.25FT(26.2FT) = 7 SY

R.A. SOUTH WINGWALL SIDE = 2.5FT (26.2FT) = 7 SY

F.A. SOUTH WINGWALL TOP = 2.25FT(26.8FT) = 7 SY

F.A. SOUTH WINGWALL SIDE = 2.5FT (26.8FT) = 7 SY

F.A. NORTH WINGWALL TOP = 2.25FT(26.2FT) = 7 SY

F.A. NORTH WINGWALL SIDE = 2.5FT (26.2FT) = 7 SY

TOTAL FOR WINGWALLS = 56 SY

ABUTMENT LENGTH(EXCLUDING WINGWALLS = 50.81 FT

HEIGHT VARIES (APPROXIMATELY 12 FT)

TOTAL FOR ABUTMENTS = 2\*50.81FT(12FT) = 135 SY

AREA ALONG DECK = (17.75 IN DECK + 6 IN)\*2 SIDES = 3.96 FT

LENGTH OF DECK = 24.7 FT

TOTAL FOR DECK = 3.96FT(24.7FT) = 11 SY**TOTAL AREA FOR SEALING = 202 SY****516E13600 1" PREFORMED EXPANSION JOINT FILLER**

WIDTH = 2.6 FT

R.A. HEIGHT = 4.2 FT

R.A. AREA = 2\*2.6FT(4.2FT) = 22 SF

F.A. HEIGHT = 4.2 FT

F.A. AREA = 2\*2.6FT(4.2FT) = 22 SF**TOTAL AREA FOR 1" PEJF = 44 SF****516E14020 SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL**

LENGTH OF R.A. = LENGTH OF F.A. = 50.81 FT

**TOTAL LENGTH OF JOINT SEAL = 102 FT**

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BEARINGS 11 3/4" X 11 3/4" X 2" THICK

NUMBER OF R.A. BEARINGS = 6

NUMBER OF F.A. BEARINGS = 6

**TOTAL ELASTOMERIC BEARINGS = 12****517E70100 RAILING (THREE STEEL TUBE)**

LENGTH OF NORTH RAILING = LENGTH OF SOUTH RAILING = 39 FT

**TOTAL LENGTH OF TST RAILING = 78 FT****518E21200 POROUS BACKFILL WTH GEOTEXTILE FABRIC**

WIDTH BEHIND ABUTMENT AND WINGWALL = 2 FT

LENGTH OF R.A. NORTH WW = 26.8 FT

DEPTH FROM TOP OF ROCK TO TOP OF GRADE VARIES, ASSUME 13 FT

R.A. NORTH WW VOLUME = 2FT(26.8FT)(13FT) = 26 CY

LENGTH OF R.A. SOUTH WW = 26.2 FT

DEPTH FROM TOP OF ROCK TO TOP OF GRADE VARIES, ASSUME 13 FT

R.A. SOUTH WW VOLUME = 2FT(26.2FT)(13FT) = 25 CY

LENGTH OF F.A. NORTH WW = 26.8 FT

DEPTH FROM TOP OF ROCK TO TOP OF GRADE VARIES, ASSUME 13 FT

F.A. NORTH WW VOLUME = 2FT(26.8FT)(10FT) = 26 CY

LENGTH OF F.A. SOUTH WW = 26.2 FT

DEPTH FROM TOP OF ROCK TO TOP OF GRADE VARIES, ASSUME 13 FT

F.A. SOUTH WW VOLUME = 2FT(26.2FT)(13FT) = 25 CY

TOTAL FOR WINGWALLS = 102 CY

LENGTH OF R.A. = LENGTH OF F.A. = 50.81 FT

R.A. DEPTH VARIES, ASSUME 13 FT

F.A. DEPTH VARIES, ASSUME 13 FT

R.A. VOLUME = 50.81 FT (13FT)(2FT) = 49 CYF.A. VOLUME = 50.81 FT (13FT)(2FT) = 49 CY**TOTAL FOR POROUS BACKFILL = 200 CY**

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**SPECIAL 518E22300 STEEL DRIP STRIP**

LENGTH OF DECK = 24.7 FT

**TOTAL LENGTH OF STEEL DRIP STRIP = 50 FT**

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

R.A. 2 PIPES, LENGTHS 49 FT, 52 FT

F.A. 2 PIPES, LENGTHS 49 FT, 52 FT

**TOTAL LENGTH, 6" PCPP = 202 FT**

**518E40012 6" NON-PERFORATED CORRUGATED PLASTIC PIPE**

R.A. NORTH PIPE

PIPE OUTLET ELEVATION = 935.60

GROUND ELEVATION AT OUTLET = 940

APPROX LENGTH = 10 FT

R.A. SOUTH PIPE

PIPE OUTLET ELEVATION = 935.60

GROUND ELEVATION AT OUTLET = 940

APPROX LENGTH = 10 FT

F.A. NORTH PIPE

PIPE OUTLET ELEVATION = 935.60

GROUND ELEVATION AT OUTLET = 940

APPROX LENGTH = 10 FT

F.A. SOUTH PIPE

PIPE OUTLET ELEVATION = 935.60

GROUND ELEVATION AT OUTLET = 940

APPROX LENGTH = 10 FT

**APPROXIMATE LENGTH OF NPCPP = 40 FT**

**FISHBECK**SHEET 7 OF 7 SHEETSSUBJECT DESC.: SR 18 OVER CENTER CREEKProject ID Number: 88876 JOB NUMBER: MED-18-0172DESIGNED BY: BSM DATE: 10/7/22 CHECKED BY: JBD DATE: 10/7/22**524E94804 DRILLED SHAFTS, 42" DIAMETER, INTO BEDROCK**

NUMBER OF R.A. DRILLED SHAFTS = 10

DEPTH OF R.A. DRILLED SHAFTS = 7 FT

TOTAL FOR R.A. = 70 FT

NUMBER OF F.A. DRILLED SHAFTS = 10

DEPTH OF F.A. DRILLED SHAFTS = 7 FT

TOTAL FOR F.A. = 70 FT

**TOTAL LENGTH OF DRILLED SHAFTS = 140 FT****526E30000 REINFORCED CONCRETE APPROACH SLABS (T=17")**

LENGTH = 30 FT (2) = 60 FT

WIDTH = 44 FT

**TOTAL APPROACH SLAB AREA = 293 SY****613E41200 LOW STRENGTH MORTAR BACKFILL**

STATION 12+50 3.825 SF

STATION 12+60 BACK 3.877 SF

STATION 12+60 FORWARD 9.229 SF

STATION 13+50 BACK 3.488 SF

STATION 13+50 FORWARD 11.943 SF

STATION 13+60 11.322 SF

STATION 13+70 5.1 SF

VOLUME, STA. 12+50 TO STA. 12+60 BACK = 10FT \* (3.825 SF+3.877 SF)/2 = 1.43 CY

VOLUME, STA. 12+60 BACK TO STA. 13+50 BACK = 90FT \* (3.877 SF +3.488 SF)/2 = 12.3 CY

VOLUME, STA. 12+60 FORWARD TO STA. 13+50 FORWARD = 90FT \* (9.2 SF + 11.9 SF)/2 = 35.3 CY

VOLUME STA. 13+50 FORWARD TO STA. 13+60 = 10FT \* (11.943 SF + 11.322 SF)/2 = 4.31 CY

VOLUME STA. 13+60 TO STA. 13+70 = 10FT \* (11.322 SF + 5.1 SF)/2 = 3.04 CY

**TOTAL VOLUME LOW STRENGTH MORTAR BACKFILL = 60 CY**