



**Department of
Transportation**
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PID 124680, SHE-66-03.23: QUANTITY CALCULATIONS

Calculated by: *Jun Xie, Date: 03/30/26*

Checked by:

Revised by: *Jun Xie, Date: 07/15/26*

Plan Splits:

1. 01/STR
 - a. SHE-66-0323

Roadway

(01/STR)

1. Item 201E11000 CLEARING AND GRUBBING
 - a. SHE-66-0323:
 - i. LS
2. Item 202E23000 PAVEMENT REMOVED
 - a. SHE-66-0323:
 - i. $25\text{ft} \times 65\text{ft} = 1625\text{sf} = 180.65\text{sy}$
 - ii. Round up to 181sy
3. Item 202E38201 GUARDRAIL REMOVED FOR REUSE, AS PER PLAN
 - a. SHE-66-0323:
 - i. $105\text{ft} \times 2 \text{ runs} = \underline{210\text{ft}}$
4. Item 202E75000 FENCE REMOVED
 - a. SHE-66-0323:
 - i. 103ft
5. Item 203E10000 EXCAVATION
 - a. SHE-66-3.23
 - i. 72cy
 - 1) See sheet 12 earthwork quantity table cut total for details
6. Item 203E20000 EMBANKMENT
 - a. SHE-66-3.23
 - i. 45cy
 - 1) See sheet 12 earthwork quantity table fill total for details

7. Item 204E10000 SUBGRADE COMPACTION
- a. SHE-66-0323:
 - i. $2 \times (11.5' + 1' + 18'') \times 65' = 1820\text{sf} = 202.2\text{sy}$. Round to 203sy

Erosion Control

8. Item 659E10000 SEEDING AND MULCHING
(01/STR)
- a. SHE-66-0323:
 - i. Estimated to be 301sy
 - 1) See sheet 12 Seeding and Earth Work Quantity table for details
9. Item 659E14000 REPAIR SEEDING AND MULCHING
(01/STR)
- a. SHE-66-0323:
 - i. $301\text{sy} \times 5\% = 15.05\text{sy}$
 - ii. Round to 15sy
10. Item 659E20000 COMMERCIAL FERTILIZER
(01/STR)
- a. SHE-66-0323:
 - i. $301\text{sy} / (7410 \text{ sy/ton}) = 0.041\text{ton}$
 - ii. Round to 0.04ton
11. Item 659E35000 WATER
(01/STR)
- a. SHE-66-0323:
 - i. $2 \text{ applications} \times 300\text{sy} \times 0.0027\text{MGal/sy} = 1.62 \text{ MGal}$
 - ii. Round up to 2 MGal
12. Item 832E30000 EROSION CONTROL
(01/STR)
- a. SHE-66-0323:
 - i. BMP-Estimator:
 - 1. Perimeter filter fabric fence: 100 ft
 - 2. Average R/W width: 60 ft
 - 3. Other input shown on plans
 - 4. Results: \$5,589
 - ii. Round to 5600 EA

Pavement

(01/STR)

13. Item 301E56000 ASPHALT CONCRETE BASE, PG64-22, (449)
- a. SHE-66-0323:
 - i. $2 \times (11.5' + 1' + 4'') \times 65'(\text{length}) \times 8''(\text{depth}) = 1112.2\text{cf} = 41.19\text{cy}$
 - ii. Round up to 42cy
14. Item 304E20000 AGGREGATE BASE
- a. SHE-66-0323:
 - i. $2 \times (11.5' + 1' + 4'' + 6'') \times 65'(\text{length}) \times 6''(\text{depth}) = 866.7\text{cf} = 32.10\text{cy}$
 - ii. Round up to 33cy
15. Item 407E10000 TACK COAT
- a. SHE-66-0323:

- i. $2 \times (11.5' + 1') \times 65'(\text{length}) = 1625\text{sf} = 180.6\text{sy} \times 0.05 \text{ Gal/sy} = 9.03\text{Gal}$
- ii. $2 \times (11.5' + 1' + 4'') \times 65'(\text{length}) = 1668.3\text{sf} = 185.37\text{sy} \times 0.05 \text{ Gal/sy} = 9.27\text{Gal}$
- iii. $2 \times (11.5' + 1' + 4'') \times 65'(\text{length}) = 1668.3\text{sf} = 185.37\text{sy} \times 0.05 \text{ Gal/sy} = 9.27\text{Gal}$
- iv. $9.03\text{Gal} + 9.27\text{Gal} + 9.27\text{Gal} = 27.57\text{Gal}$
- v. Round up to 28 Gal

16. Item 441E50000 ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), PG64-22

- a. SHE-66-0323:
 - i. $2 \times (11.5' + 1') \times 65'(\text{length}) \times 3'' (\text{depth}) = 406.25\text{cf} = 15.05\text{cy}$
 - ii. Round up to 16cy

17. Item 617E10100 COMPACTED AGGREGATE

- a. SHE-66-0323:
 - i. $2 \times 2' (\text{width}) \times 65'(\text{length}) \times 8'' (\text{depth}) = 173.3\text{cf} = 6.42\text{cy}$
 - ii. Round up to 7cy

TRAFFIC CONTROL

(01/STR)

18. Item 621E54000 RAISED PAVEMENT MARKER REMOVED

- a. SHE-66-0323:
 - i. 1 RPM removed and not put back.

19. Item 642E00100 EDGE LINE, 4", TYPE 1

- a. SHE-66-0323:
 - i. $65\text{ft} \times 2 = 130 \text{ ft} = 0.025 \text{ mile}$
 - ii. Round up to 0.03mile

20. Item 642E00300 CENTER LINE, TYPE 1

- a. SHE-66-0323:
 - i. $65\text{ft} = 0.012 \text{ mile}$
 - ii. Round up to 0.02 mile

Drainage: SHE-66-0323

(01/STR)

21. Item 202E11000 STRUCTURE REMOVED

- a. SHE-66-0323:
 - i. LS

22. Item 503E11100 COFFERDAMS AND EXCAVATION BRACING

- a. SHE-66-0323:
 - i. LS

23. Item 503E21300 UNCLASSIFIED EXCAVATION (WINGWALL FOOTING)

- a. SHE-66-0323:
 - i. LS
 - ii. Estimation: $400.2469\text{sf} (\text{channel excavation elevation view area}) \times 34\text{ft} (\text{channel excavation length}) = 13608.3946\text{cf} = 504.0146\text{cy}$. Round to 504cy.

24. Item 509E10000 EPOXY COATED STEEL REINFORCEMENT

- a. SHE-66-0323:
 - i. 8140 LB.

1) See Type B Headwall Reinforcing Schedule (plan sheet 17) for details

25. Item 511E46010 CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING

- a. SHE-66-0323:
 - i. $13.89\text{cy} \times 2 = 27.78\text{cy}$. Round up to 28cy
 - 1) See design data sheet HWDD-1 (01-17-25, sheet 3, type B, design height 11'-6") for details
- 26. Item 511E46510 CLASS QC1 CONCRETE, FOOTING**
 - a. SHE-66-0323:
 - i. 23.91cy (wingwall footing) + 0.93cy/ft (culvert footing) $\times$ (9ft + 2 x 9in) = 33.68cy.
 - ii. 2 ends $\times$ 33.68cy = 67.36cy. Round up to 68cy.
 - 1) See design data sheet HWDD-1 (01-17-25, sheet 6, type B, design height 11'-6") for details
- 27. Item 511E46610 CLASS QC1 CONCRETE, HEADWALL**
 - a. SHE-66-0323:
 - i. 0.07cy/ft (fore slope wall) $\times$ (9ft + 2 x 9in) = 0.735cy
 - 1) See design data sheet HWDD-1 (01-17-25, sheet 6, fore slope wall width 1'-3", height 1'-6") for details
 - ii. 2 ends $\times$ 0.735cy = 1.47cy. Round up to 2cy
- 28. Item 512E33000 TYPE 2 WATERPROOFING**
 - a. SHE-66-0323:
 - i. Top: $[1' + (9' + 2 \times 9'') + 1'] \times (48' - 2 \times 1.25' + 2 \times 1') = 593.75\text{sf}$
 - ii. 2 Sides: $2 \times [1' + (8' + 2 \times 9'')] \times (48' - 2 \times 1.25' + 2 \times 1') = 997.5\text{sf}$
 - iii. Total Area: $593.75\text{sf} + 997.5\text{sf} = 1591.25\text{sf} = 176.81\text{sy}$. Round up to 177sy.
- 29. Item 516E13600 1" PREFORMED EXPANSION JOINT FILLER**
 - a. SHE-66-0323:
 - i. $1.25'(\text{w}) \times 11(\text{H}) \times 4 = 55\text{sf}$
- 30. Item 518E21230 POROUS BACKFILL WITH GEOTEXTILE FABRIC**
 - a. SHE-66-0323:
 - i. LS
- 31. Item 601E32100 ROCK CHANNEL PROTECTION, TYPE B WITH FILTER**
 - a. SHE-66-0323:
 - i. $12' \times 27' \times 2.5' = 810\text{cf} = 30\text{cy}$
- 32. Item 605E31100 AGGREGATE DRAINS**
 - a. SHE-66-0323:
 - i. Station 170+15.00 (LT.): 10ft
 - ii. Station 170+60.00 (RT.): 7ft
 - iii. Total: 10ft + 7ft = 17ft
- 33. Item 611E94944 9' X 8' CONDUIT, TYPE A, 706.05**
 - a. SHE-66-0323:
 - i. 48ft

Maintenance of Traffic

- 34. Item 614E12420 DETOUR SIGNING**
 - a. LS

Incidentals

- 35. Item 614E11000 MAINTAINING TRAFFIC**
 - a. LS
- 36. Item 623E10000 CONSTRUCTION LAYOUT STAKES AND SURVEYING**

b. LS

37. Item 624E10000 MOBILIZATION

a. LS

END OF CALCULATIONS