Riprap - (20)(50)(3)/27 = 125 CY @ $40 = $5,000

Guardrail - (2)(20)+(4)(25) = 140 LF @ $15 = $2,500

$64,000

+20% Engy, Admin, & Cont $13,000

$77,000 ⇒ Use $80,000

REACH 4 TOTAL - $3,965,000

Reach 5 - Cache La Poudre Street to Patty Jewett Golf Course

Sta. 137+05 to Sta 152+45 - New open channel between Cache La Poudre Street and Vintah Street

Clearing - (125)(1540)/43560 = 4.4 Ac @ $20000 = $88,000

Earthwork - (0.4)(1600)(1540)/27 = 36500 CY @ $4 = $146,000

5' High Rock Retain Wall - (2)(4)(1540) = 12320 LF @ $100 = $1,232,000
20' Wide Drop Structure - 1 Each @ $15000 = $15,000
Landscaping - (170)(1540)/43560 = 6.0 Ac @ $35000 = $210,000

Asp Path - (15)(1540)/9 = 2575 SY @ $6 = $15,500

R.O.W. Acquistion - (Commercial/Industrial - Mostly outside Floodplain) - 1.7 Ac @ $50000 = $85,000

Residences - 5 Each @ $75000 = $375,000

Partial Residential Lots - 12 Each @ $5000 = $60,000

Apartments (10 Unit-Small) - L.S. - $150,000

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FILE 90-809

PROJ. Shooks Run

SHEET 19

SUBJ. Estimate of Probable of Construction Costs - Detention

Remove Residences - 5 Each @ $10000 = $50,000

Remove Apartment Building - 1 Each @ $ 50000 = $50,000

$2,476,500

+ 20% Engr, Admin, & Cont $ 495,500

$ 2,972,000 ⇒ Use $ 2,975,000

Sta 152+45 to Sta 153+55 - Use Existing Uintah Street Culvert

Clean Exist Culvert - LS = $2,500

Struc Conc - Invert Lining - (20)(150)(1)/27 = 111

Hdwalls - (2)(20)(0.09) = 4

Wings - (7' Ave H - 25' L) = (4)(25)(0.46) = 46

165 CY @ $275 = $45,500

Riprap - (20)(50)(3)/27 = 125 CY @ $40 = $5,000

Guardrail - (2)(20) + (4)(25) = 140 LF @ $15 = $2,500

$55,500

+ 20% Engr, Admin & Cont $11,000

$66,500 ⇒ Use $70,000

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PROJ. Shooks Run

SHEET 20

SUBJ. Estimate of Probable Construction Costs - Detention

Sta 153+55 to Sta 157+55 - New open channel between Uintah Street and San Miguel Street

Clearing - (125)(400)/43560 = 1.1 Ac @ $20000 = $22,000

Earthwork - (0.4)(1600)(400)/27 = 9,500 CY @ $4 = $38,000

5' High Rock Retaining Wall - (2)(4)(400) = 3200 LF @ $100 = $320,000
20' Wide Drop Structure - 1 Each @ $15000 = $15,000
Landscaping - (170)(400)/43560 = 1.6 Ac @ $35000 = $56,000

Asp Path - (15)(400)/9 = 6755Y @ $6 = $4,000

R.O.W. Acquisition - Residences - 2 Each @ $75000 = $150,000

Apartments (8 Unit - Medium) - L.S. - $160,000

Apartments (12 Unit - Large) - L.S. - $300,000

Remove Residences - 2 Each @ $10,000 = $20,000

Remove Apartment Bldg - 3 Each @ $50000 = $150,000

$1,235,000

+20% Engr, Admin, & Cont $247,000

$1,482,000 ⇒ Use $1,485,000

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PROJ. Shooks Run SHEET 21

SUBJ. Estimate of Probable OF Construction Costs - Detention

Sta 157+55 to Sta 158+40 - Use Exist. Culvert at San Miguel Street

Clean Exist Culvert - L.S. = $2,500

Struc Conc - Invert Lining - (20)(85)(1)/27 = 63

Hdwalls - (2)(20)(0.09) = 4

Wings - (7' Avg H - 25' L) = (4)(25)(0.46) = 46

115 CY @ $275 = $32,000

Riprap - (20)(50)(3)/27 = 125 CY @ $40 = $5,000

Guardrail - (2)(20) + (4)(25) = 140 LF @ $15 = $2,500

$42,000

+ 20% Engr, Admin & Cont $8,500

$50,500 ⇒ Use $50,000

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LOC. FILE 90-809

PROJ. Shocks Run SHEET 22

SUBJ Estimate of Probable Construction Costs - Detention OF

Sta 158+40 to Sta 167+35 - New open channel between San Miguel Street and Pedestrian Bridge

Clearing - (125)(895)/43560 = 2.6 Ac @ $20000 = $52,000

Earthwork - (0.5)(2500)(895)/27 = 41500 CY @ $4 = $166,000

5' High Rock Retain Wall - (2)(5)(895) = 8950 LF @ $100 = $895,000
20' Wide Drop Structure - 2 Each @ $15000 = $30,000
Landscaping - (210)(895)/43560 = 4.3 Ac @ $35000 = $150,500

Asp Path - (15)(895)/9 = 1500 SY @ $6 = $9,000

R.O.W. Acquisition - Residences - 6 Each @ $75000 = $450,000

Partial Residential Lot - 8 Each @ $5000 = $40,000
School - Mostly Outside Floodplain - 0.7 Ac @ $50,000 = $35,000
Remove Residences - 6 Each @ $10000 = $60,000

$1,887,500

+20% Engr, Admin, & Cont $377,500

⇒ Use $2,265,000

Sta 167+35 to Sta 176+25 - New open channel between Pedestrian Bridge and Patty Jewett Golf Course South Boundary

Clearing - (150)(890)/43560 = 3.1 Ac @ $20000 = $62000

Earthwork - (0.5)(3600)(890)/27 = 59500 CY @ $4 = $238,000

5' High Rock Retain Wall - (2)(6)(890) = 10680 LF @ $100 = $1,068,000
20' Wide Drop Structure - 2 Each @ $15000 = $30,000
Landscaping - (250)(890)/43560 = 5.1 Ac @ $35000 = $178,500

Asp Path - (15)(1050)/9 = 1750 SY @ $6 = $10,500

Replace Pedestrian Bridge - (8)(200) = 1600 SF @ $80 = $128,000

R.O.W. Acquisition - Residences - 2 Each @ $75,000 = $150,000

- Partial Residential Lots - 8 Each @ $5000 = $80,000
- School - Mostly outside floodplain - 1.7 Ac @ $50,000 = $85,000

Remove Residences - 2 Each @ $10000 = $20,000

$2,050,000

+20% Engr, Admin, & Cont $410,000

⇒ Use $2,460,000

REACH 5 TOTAL - $9,305,000

## REACH 6 - Patty Jewett Golf Course

Sta 176+25 to Sta 189+05 - Detention Pond between Patty Jewett Golf Course South Boundary and Espanola Street

Clearing - (100)(1280)/43560 = 2.9 Ac @ $20000 = $58,000

Earthwork - 550000± CY @ $4 = $2,200,000
36" RCP Outlet Pipe - 150 LF @ $50 = $7,500
5' High Rock Retaining Wall - (2)(1)(1280) = 2560 LF @ $100 = $256,000
Riprap Spillway - (100)(125)(3)/27 = 1400 CY @ $40 = $56,000
30' Wide Drop Structure - 3 Each @ $20000 = $60,000
Hdwalls, Wingwalls, & Spillway Cutoff - L.S. = $20,000
Reset Exist Golf Cart Bridge - 4 Each @ $10000 = $40,000

Landscaping - 69.6 Ac @ $35000 = $2,436,000

$5,133,500

+20% Engr, Admin, & Cont $1,027,000

$6,160,500 ⇒ Use $6,160,000

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PROJ. Shocks Run SHEET 24

SUBJ. Estimate of Probable of Construction Costs - Detention

Sta. 189+05 to Sta 190+85 - Replace Culvert at Espanola Street w/ 3-12'x10' RCB

Remove Exist Culvert - L.S. = $45,000

Struc Excav - [(50)(3)(180) + (35)(10)(180)]/27 = 3500 CY @ $6 = $21,000

Struc Back - [(10)(180)(12) + (50)(180)(1)]/27 = 1500 CY @ $7 = $10,500

Bedding - (50)(0.5)(180)/27 = 175 CY @ $15 = $3,000

Struc Conc - 3-12'x10' RCB = [(3)(1.99) - (2)(12)(1)/27](180) = 915

Hdwalls - (2)(40)(0.09) = 7

Wings - (7 Avg H - 25' L) = (4)(25)(0.46) = 46

970 CY @ $275 = $267,000

Riprap - (40)(50)(3)/27 = 225 CY @ $40 = $9,000

Guardrail - (2)(40) + (4)(25) = 180 LF @ $15 = $3,000

Asp Pvmt Replmt - (60)(24)/9 = 175 SY @ $12 = $2,500

$361,000

+20% Engr, Admin, & Cont $72,500

$433,500 ⇒ Use $435,000

Sta 190+85 to Sta 198+45 - New open channel between Espanola Street and End of Existing Channel Lining

Remove Conc Pvmt - [(8.5)(2) + 10](760)/9 = 2300 SY @ $10 = $23,000

Earthwork - (0.8)(960)(760)/27 = 22,000 CY @ $4 = $88,000

5' High Rock Retain Wall - (2)(0.4)(760) = 608 LF @ $100 = $61,000

30' Wide Drop Structure - 1 Each @ $20000 = $20,000

Reset Exist Golf Cart Bridge - 4 Each @ $10000 = $40,000

Landscaping - (300)(760)/43560 = 5.2 Ac @ $35000 = $182,000

$414,000

+20% Engr, Admin, & Cont $83,000

$497,000 ⇒ Use $500,000

Sta 198+45 to Sta 216+40 - New open channel between End of Existing Channel Lining and Paseo Road

Clearing - (75)(260)/43560 = 0.4 Ac @ $20000 = $8,000

Earthwork - (0.7)(430)(1795)/27 = 20000 CY @ $4 = $80,000

5' High Rock Retain Wall - (2)(0.2)(1795) = 718 LF @ $100 = $72,000

Reset Exist Golf Cart Bridge - 1 Each @ $10000 = $10,000

Replace Golf Cart Bridge = (8)(30) = 240 SF @ $70 = $17,000

Landscaping - (160)(1795)/43560 = 6.6 Ac @ $35000 = $231,000

$418,000

+20% Engr, Admin, & Cont. $84,000

$502,000 ⇒ Use $505,000

REACH 6 TOTAL = $7,600,000

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CK. | PROJ. Shocks Run | SHEET 26

DATE February 10, 1993 | SUBJ. Estimate of Probable Construction Costs - Detention

Reach 7 - Paseo Road to Van Buren Channel Diversion

Sta. 216+40 to Sta 216+95 - Replace Culvert at Paseo Road w/ 3-10'x5' RCB

Remove Exist Culvert - LS = $15,000

Struc Excav - [(45)(3)(55) + (20)(5)(55)]/27 = 500 CY @ $6 = $3,000

Struc Back - [(10)(55)(7) + (45)(55)(1)]/27 = 300 CY @ $7 = $2,000

Bedding - (45)(55)(0.5)/27 = 50 CY @ $15 = $1,000

Struc Conc - 3-10'x5' RCB = [(3)(1.52) - (2)(7)(1)/27](55) = 222

Hdwalls = (2)(34)(0.09) = 6

Wingwalls = (5' Ave H - 20' L) = (4)(20)(0.36) = 29

260 CY @ $275 = $71,500

Riprap - (35)(50)(3)/27 = 200 CY @ $40 = $8,000

Curb and Gutter - (2)(55) = 110 LF @ $8 = $1,000

Sidewalk - (2)(4)(55)/9 = 505 SY @ $17 = $1,000

Guardrail - (2)(34) + (4)(20) = 148 LF @ $15 = $2,500

Asp Pvmt Replmt - (55)(36)/9 = 225 SY @ $12 = $3,000

$108,000

+20% Engg, Admin, & Cont $21,500

$129,500 ⇒ Use $130,000

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PROJ. Shooks Run SHEET 27

SUBJ. Estimate of Probable Construction Costs- Detention

Sta 216+95 to Sta 218+30 - New open channel between Paseo Road and Jefferson Street

Clearing - (50)(135)/43560 = 0.2 Ac @ $ 20000 = $ 4,000

Earthwork - (0.6)(354)(135)/27 = 1000 CY @ $4 = $ 4,000

5' High Rock Retain Wall - (2)(0.2)(135) = 54 LF @ $100 = $ 5,500

Landscaping - (110)(135)/43560 = 0.3 Ac @ $ 35000 = $ 10,500

Asp Path - (15)(135)/9 = 225 SY @ $6 = $ 1,500

R.O.W. Acquisition - Residences - 3 Each @ $ 75000 = $ 225,000

Partial Residential Lot - 1 Each @ $5000 = $ 5,000

Remove Residences - 3 Each @ $ 10000 = $ 30,000

$ 285,500

+20% Engr, Admin, & Cont $ 57,000

$ 342,500 ⇒ Use $ 345,000

Sta. 218+30 to 219+10 - Replace Culvert at Jefferson Street w/ 3-10'x5' RCB

Remove Exist Culvert - L.S. = $ 10,000

Struc Excav - [(45)(4)(80) + (25)(4)(80)]/27 = 1000 CY @ $6 = $ 6,000

Struc Back - [(10)(80)(7) + (45)(80)(1)]/27 = 500 CY @ $ ? = $ 3,500

Bedding = (45)(80)(0.5)/27 = 100 CY @ $15 = $ 1,500

Struc Conc - 3-10'x5' RCB = [(3)(1.52) - (2)(7)(1)/27](80) = 323

Hdwalls - (2)(34)(0.09) = 6

Wings - (5' Ave H - 20' L) = (4)(20)(0.36) = 29

360 CY @ $275 = $99,000

Riprap - (35)(50)(3)/27 = 200 CY @ $40 = $8,000

Curb and Gutter - (2)(55) = 110 LF @ $8 = $1,000

Sidewalk - (2)(4)(55)/9 = 50 SY @ $17 = $1,000

Guardrail - (2)(34) + (4)(20) = 148 LF @ $15 = $2,500

Asp Pvmt Replmt - (55)(36)/9 = 220 SY @ $12 = $3,000

$135,500

+20% Engr, Admin, & Cont $27,000

$162,500 ⇒ Use $165,000

Sta 219+10 to 222+50 - New open channel between Jefferson Street and Madison Street

Clearing - (50)(340)/43560 = 0.4 Ac @ $20,000 = $8,000

Earthwork - (0.6)(354)(340)/27 = 3000 CY @ $4 = $12,000

5' High Rock Retain Wall - (2)(0.2)(340) = 136 LF @ $100 = $14,000

Landscaping - (110)(340)/43560 = 0.9 Ac @ $35000 = $31,500

Asp Path - (15)(340)/9 = 570 SY @ $6 = $3,500

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PROJ. Shoaks Run SHEET 29

SUBJ. Estimate of Probable of Construction Costs - Detention

R.O.W Acquisition - (Commercial - Mostly outside Floodplain) - 0.2Ac @ $50,000 = $10,000

- Commercial Buildings - 23,900SF @ $35 = $836,500

- Residences - 2 Each @ $75000 = $150,000

Remove Commercial Bldg - Large - 2 Each @ $50,000 = $100,000

Remove Residences - 2 Each @ $10000 = $20,000

$1,185,500

+20% Engr, Admin, & Cont $237,000

$1,422,500 ⇒ Use $1,425,000

Sta. 222+50 to 223+30 - Replace Culvert at Madison Street w/ 3-10'x5' RCB

Remove Exist Culvert - L.S. = $10,000

Struc Excav = [(45)(5)(80) + (25)(4)(80)]/27 = 1000 CY @ $6 = $6,000

Struc Back - [(10)(80)(7) + (45)(80)(1)]/27 = 500 CY @ $7 = $3,500

Embankment - (45)(80)(1)/27 = 200 CY @ $4 = $1,000

Bedding - (45)(80)(0.5)/27 = 100 CY @ $15 = $1,500

Struc Conc - 3-10'x5' RCB - [(3)(1.52 - (2)(7)(1)/27](80) = 323

Hdwalls - (2)(34)(0.09) = 6

Wings - (5' Ave H - 2ft)(4)(20)(0.36) = 29

360 CY @ $275 = $99,000

Riprap - (35)(50)(3)/27 = 200 CY @ $40 = $8,000

Curb and Gutter - (2)(55) = 110 LF @ $8 = $1,000

Sidewalk - (2)(4)(55)/9 = 50 SY @ $17 = $1,000

Guardrail - (2)(34) + (4)(20) = 148 LF @ $15 = $2,500

Asp Pvmt Replmt - (55)(36)/9 = 225 SY @ $12 = $3,000

$136,500

+ 20% Engr, Admin, & Cont $27,500

$164,000 ⇒ Use $165,000

Sta 223+30 to Sta 226+25 - New open channel between Madison Street and Monroe Street

Clearing - (50)(295)/43560 = 0.3 Ac @ $20000 = $6,000

Earthwork - (0.16)(354)(295)/27 = 2500 CY @ $4 = $10,000

5' High Rock Retain Wall - (2)(0.2)(295) = 118 LF @ $100 = $12,000

Landscaping - (110)(295)/43560 = 0.7 Ac @ $35000 = $24,500

Asp Path - (15)(295)/9 = 500 SY @ $6 = $3,000

R.O.W. Acquisition - Residences - 3 Each @ $75,000 = $225,000

- Partial Residential Lots - 3 Each @ $5000 = $15,000

Remove Residences - 3 Each @ $10000 = $30,000

$325,500

+ 20% Engr, Admin, & Cont $65,000

$390,500 ⇒ Use $390,000

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CK. | PROJ. Shooks Run | SHEET 31

DATE February 10, 1993 | SUBJ. Estimate of Probable Construction Costs - Detention

Sta. 226+25 to Sta 227+05 - Replace Culvert at Monroe Street w/ 3-10'x5' RCB

Remove Exist Culvert - L.S. = $10,000

Struct Excav - [(45)(4)(80)+(25)(4)(80)]/27 = 1000 CY @ $6 = $6,000

Struct Back - [(10)(7)(80)+(45)(80)(1)]/27 = 500 CY @ $7 = $3,500

Bedding - (45)(80)(0.5)/27 = 100 CY @ $15 = $1,500

Struc Conc - 3-10'x5' RCB - [(3)(1.52)-(2)(7)(1)/27](80) = 323

Hdwalls - (2)(34)(0.09) = 6

Wings - (5 Ave # - 20' L) = (4)(20)(0.36) = 29

360 CY @ $275 = $99,000

Riprap - (35)(50)(3)/27 = 200 CY @ $40 = $8,000

Curb and Gutter - (2)(55) = 110 LF @ $8 = $1,000

Sidewalk - (2)(4)(55)/9 = 50 SY @ $17 = $1,000

Guardrail - (2)(34)+(4)(20) = 148 LF @ $15 = $2,500

Asp Pvmt Replmnt - (55)(36)/9 = 225 SY @ $12 = $3,000

$135,500

+20% Engr, Admin, & Cont $27,000

$162,500 ⇒ Use $165,000

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PROJ. Shooks Run — SHEET 32

SUBJ. Estimate of Probable Construction Costs - Dekunton

Sta. 227+05 to Sta. 229+70 - New open channel between Monroe Street and Jackson Street

Clearing - (50)(265)/43560 = 0.3 Ac @ $20000 = $6,000

Earthwork = (0.6)(354)(265)/27 = 2000 CY @ $4 = $8,000

5' High Rock Retain Wall - (2)(0.2)(265) = 106 LF @ $100 = $10,500

Landscaping - (110)(265)/43560 = 0.7 Ac @ $35000 = $24,500

Asp Path - (15)(265)/9 = 450 SY @ $6 = $3,000

R.O.W. Acquisition - Residences - 5 Each @ $75000 = $375,000

- Partial Residential Properties - 1 Each @ $5000 = $5,000

Remove Residences - 5 Each @ $10000 = $50,000

$482,000

+20% Engr, Admin, & Cont $96,500

$578,500 ⇒ Use $580,000

Sta. 229+70 to Sta 234+15 - Replace culvert at Jackson Street/LaSalle Street w/ 3 - 10'X5' RCB

Remove Exist Culvert - $55,000

Strc Excav - [(45)(4)(445)+(25)(4)(445)]/27 = 5000 CY @ $6 = $30,000

Strc Back - [(10)(7)(445)+(45)(1)(445)]/27 = 2000 CY @ $7 = $14,000

Bedding - (45)(445)(0.5)/27 = 400 CY @ $15 = $6,000

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CK. | PROJ. Shocks Run | SHEET 33

DATE February 10, 1993 | SUBJ. Estimate of Probable Construction Costs - Detention

Struc Conc - 3-10'x5' RCB - [(3)(1.52) - (2)(7)(1)/27](445) = 1798

Hdwalls - (2)(34)(0.09) = 6

Wings - (5' Ave H - 20' L) = (4)(20)(0.36) = 29

1833 CY @ $275 = $505,000

Riprap - (35)(50)(3)/27 = 200 CY @ $40 = $8,000

Curb and Gutter - (4)(55) = 220 LF @ $8 = $2,000

Sidewalk - (4)(4)(55)/9 = 100 SY @ $17 = $2,000

Guardrail - (2)(34) + (4)(20) = 148 LF @ $15 = $2,500

Asp Pvmt Replmt - [(55)(26) + (55)(340)(0.5) + (55)(36)]/9 = 1425 SY @ $12 = $17,000

R.O.W. Acquistion (Church - Mostly Outside Floodplain) - 0.5 Ac @ $50,000 = $25,000

$666,500

+20% Engr, Admin, & Cont $133,500

=> Use $800,000

Sta 234+15 to Sta 235+40 - New open channel between LaSalle Street and Pedestrian Path

Clearing - (50)(125)/43560 = 0.1 Ac @ $20000 = $2,000

Earthwork - (0.16)(354)(125)/27 = 1000 CY @ $4 = $4,000

5' High Rock Retain Wall - (2)(0.2)(125) = 50 LF @ $100 = $5,000

30' Wide Drop Structure - 1 Each @ $20000 = $20,000

Landscaping - (110)(125)/43560 = 0.3 Ac @ $35000 = $10,500

Asp Path - (15)(125)/9 = 200 SY @ $6 = $1,500

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PROJ. Shooks Run SHEET 34

SUB: Estimate of Probable Construction Costs - Detention

R.O.W. Acquisition - Residences - 2 Each @ $75000 = $150,000

Remove Residences - 2 Each @ $10000 = $20,000

$213,000

+20% Engg, Admin, & Cont $42,500

$255,500 ⇒ Use $255,000

Sta. 235+40 to Sta 235+90 - Replace Culvert at Pedestrian Path - W/ 3 - 10' x 5' RCB

Remove Exist Culvert - $5,000

Struc Excav = [(45)(5)(50) + (35)(4)(50)]/27 = 1000 CY @ $6 = $6,000

Struc Back - [(10)(7)(50) + (45)(1)(50)]/27 = 500 CY @ $7 = $3,500

Bedding - (45)(50)(0.5)/27 = 50 CY @ $15 = $1,000

Struc Conc - 3 - 10' x 5' RCB - [(3)(1.52) - (2)(7)(1)/27](50) = 202

Hdwalls - (2)(34)(0.09) = 6

Wings - (5' Ave H - 20' L) = (4)(20)(0.36) = 29

240 CY @ $275 = $66,000

Riprap - (35)(50)(3)/27 = 200 CY @ $40 = $8,000

Guardrail - (2)(34) + (4)(20) = 148 LF @ $15 = $2,500

Asp Pvmt Replmt - (55)(15)/9 = 100 SY @ $6 = $1,000

$93,000

+20% Engg, Admin, & Cont $18,500

$111,500 ⇒ Use $115,000

Sta 235+90 to Sta 236+20 - New open channel between Pedestrian Path and C.R.I.P. Railroad

Clearing - (50)(30)/43560 = 0.1 Ac @ $20000 = $2,000

Earthwork - (0.6)(354)(50)/27 = 500 CY @ $4 = $2,000

5' High Back Retain Wall - (2)(0.2)(50) = 20 LF @ $100 = $2,000

Landscaping - (110)(50)/43560 = 0.1 Ac @ $35000 = $3,500

Asp Path - (15)(50)/9 = 1000 SY @ $6 = $1,000

$10,500

+20% Engr, Admin, & Cont $2,500

$13,000 ⇒ Use $15,000

Sta. 236+20 to Sta 236+75 - Replace Culvert at C.R.I.P. Railroad w/ 2-9'x5' RCB

Remove Exist Culvert - L.S. = $10,000

Struct Excav - [(30)(5)(55) + (10)(6)(55)]/27 = 500 CY @ $6 = $3,000

Struc Back - [(10)(7)(55) + (30)(1)(55)]/27 = 250 CY @ $7 = $2,000

Embankment - (30)(3)(55)/27 = 250 CY @ $4 = $1,000

Struc Conc - 2-9'x5' RCB - [(2)(1.31) - (1)(7)(1)/27](55) = 130

Hdwalls - (2)(21)(0.09) = 4

D/S Wings - (5' Ave H - 20' L) = (2)(20)(0.36) = 14

150 CY @ $275 = $41,500

Riprap - (20)(50)(3)/27 = 125 CY @ $40 = $5,000

Guardrail - (2)(21) + (2)(20) = 82 LF @ $15 = $1,500

Railroad Track Replmt - 50 LF @ $100 = $5,000

$69,000

+20% Engr, Admin, & Cont $14,000

$83,000 ⇒ Use $85,000

Templeton Gap Road at Van Buren Channel - Replace Culvat w/ 2-11'x6' RCB

Remove Exist Culvert - L.S. = $15,000

Struc Excav - [(35)(2)(100) + (20)(8)(100)]/27 = 1000 CY @ $6 = $6,000

Struc Back - [(10)(8)(100) + (35)(1)(100)]/27 = 500 CY @ $7 = $3,500

Embankment - (35)(1)(100)/27 = 250 CY @ $4 = $1,000

Struc Conc - 2-11'x6' RCB - [(2)(1.61) - (1)(8)(1)/27](100) = 292

Hdwalls - (2)(25)(0.09) = 5

Channel Transitions - (2)[(7.12)(2) + 11](0.67)(25)/27 = 32

330 CY @ $275 = $91,000

Curb and Gutter - (2)(45) = 90 LF @ $8 = $1,000

Sidewalk - (2)(4)(45)/9 = 50 SY @ $17 = $1,000

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DATE February 10, 1993

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PROJ. Shooks Run SHEET 37

SUBJ. Estimate of Probable Construction Costs - Detention

Guardrail - (2)(25)+(4)(25) = 150 LF @ $15 = $2,500

Asp Pvmt Replmt - (45)(60)/9 = 300 SY @ $12 = $4,000

$125,000

+20% Engr, Admin, & Cont $25,000

=> Use $150,000

REACH 7 TOTAL - $4,785,000

ALTERNATIVE TOTAL - $51,620,000

# K. ESTIMATE OF PROBABLE CONSTRUCTION COSTS FOR SOFT-LINED CHANNEL SIDE-SLOPES ONLY IMPROVEMENT WITH CROSSING MAINTENANCE ALTERNATIVE

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DATE March 3, 1993

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PROJ. Shooks Run

SHEET 1

SUBJ. Estimate of Probable of Construction Costs - Side Slopes

ESTIMATE OF PROBABLE CONSTRUCTION COSTS - SIDE SLOPE IMPROVEMENTS ONLY ALTERNATIVE

Reach 1 - Fountain Creek to Abandoned Railroad

Sta. 0+25 to Sta. 9+75 - New open channel between Fountain Creek and Las Vegas Street

Clearing - (1.40)(950)/43560 = 3.1 Ac @ $20000 = $62,000

Earthwork - (0.4)(600)(950)/27 = 8500 CY @ $4 = $34,000

5' High Rock Retaining Wall - [(2)(2)+1](950) = 4750 LF @ $100 = $475,000

Landscaping - 3.1 Ac @ $35000 = $108,500

4" Thick Asphalt Path - (15)(950)/9 = 160054 @ $6 = $10,000

R.O.W. Acquistion (Commercial/Industrial - Mostly in Floodplain) - 3.1 Ac @ $25000 = $77,500

Relocate Mobile Homes - 8 Each @ $2000 = $16,000

$783,000

+20% Engr, Admin, & Cont $157,000

⇒ Use $940,000

Sta. 9+75 to Sta. 10+80 Exist. Bridge and Dissipator at Las Vegas Street w/5 - 12'X10' RCB and Dissipator

Clean Exist Bridge and Dissipator - L.S. = $2,500

Embankment Riprap - (2)(50)(20)(2)/27 = 150 CY @ $50 = $7,500

$10,000

+20% Engr, Admin & Cont $2,000

$12,000 ⇒ Use $15,000

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PROJ. Shooks Run SHEET 2

SUBJ. Estimate of Probable Construction Costs - Side Slopes OF

Sta 10+80 to Sta 11+20 - Maintenance of concrete transition channel between Las Vegas Street and A.T.S.F. & D.R.G.W. Railroad

Watertight MH Covers - 2 Each @ $500 = $1,000

$1,000

+20% Engr, Admin, & Cont $500

$1,500 => Use $5,000

Sta 11+65 to Sta 15+60 - New open channel between A.T.S.F. & D.R.G.W. Railroad and Abandoned Railroad

Clearing - (165)(395)/43560 = 1.5 Ac @ $20000 = $30,000

Earthwork - [(0.6)(1500)(395)]/27 = 13500 CY @ $4 = $54,000

5' High Rock Retaining Wall - (2)(4)(395) = 3160 LF @ $100 = $316,000

15' Wide Drop Structure - 1 Each @ $15,000 = $15,000

Landscaping - 1.5 Ac @ $35000 = $52,500

4" Thick Asp Path - (15)(395)/9 = 6754 @ $6 = $4,500

R.O.W. Acquisition - (Commercial/Industrial - Mostly Outside Floodplain) - 1.5 Ac @ $50000 = $75000

$547,000

+20% Engr, Admin & Cont $109,500

$656,500 => Use $660,000

REACH 1 TOTAL - $1,620,000

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PROJ. Shooks Run

SHEET 3

SUBJ. Estimate of Probable Construction Costs - Side Slopes OF

## Reach 2 - Abandoned Railroad to Costilla Street

**Sta. 16+20 to Sta. 24+00 - Clear existing channel between Abandoned Railroad and Fountain Boulevard**

Clearing - (100±)(780)/43560 = 1.8 Ac @ $20000 = $36,000

Asp Path - (15)(500±)/9 = 850 SY @ $6 = $5,500

$41,500

+20% Engr, Admin, & Cont $8,500

Use => $50,000

**Sta. 24+00 to Sta. 25+50 - Maintenance of Culverts at Fountain Boulevard**

Clean Exist. Culverts - L.S. = $5,000

Struc Conc - Invert Lining - (20)(150)(1)/27 = 115 CY @ $275 = $32,000

Embankment Riprap - (2)(200)(30)(2)/27 = 900 CY @ $50 = $45,000

Guardrail - (2)(75) = 150 LF @ $15 = $2,500

$84,500

+20% Engr, Admin & Cont $17,000

$101,500 => Use $105,000

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PROJ. Shooks Run

SHEET 4

SUBJ. Estimate of Probable Construction Costs - Side Slopes

Sta. 25+50 to Sta. 48+65 - Clear Channel and Stabilize West Bank between Fountain Boulevard and Costilla Street

Clearing - (150±)(2315)/43560 = 8.0 Ac @ $20000 = $160,000

Earthwork - (0.7)(2100)(2315)/27 = 126000 CY @ $4 = $504,000

5' High Rock Retaining Wall - (6)(2315) = 13890 LF @ $100 = $1,389,000

Landscaping - (150)(2315)/43560 = 8.0 Ac @ $35000 = $280,000

R.O.W. Acquisition (Commercial/Industrial - Mostly outside Floodplain) - 8.0 Ac @ $50000 = $400,000

Commercial/Industrial Building - 2500SF @ $35 = $87,500

Remove Commercial Building - Small - 1 Each @ $20000 = $20,000

$2,840,500

+20% Engr, Admin & Cont $568,000

$3,408,500 => Use $3,410,000

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PROJ. Shooks Run SHEET 5

SUBJ. Estimate of Probable Construction Costs - Side Slopes

Sta 48+65 to Sta 50+65 - Maintenance of Culvert at Costilla Street

Clean Exist Culvert - L.S. = $2,500

Strc Conc - Invert Lining - (20)(200)(1)/27 = 148

Hdwalls - (1)(22)(0.109) = 2

Wings - (7' Ave H - 25' L) = (4)(25)(0.46) = 46

200 CY @ $275 = $55,000

Embankment Rprap - (1)(500)(30)(2)/2 = 1125 CY @ $50 = $56,500

Guardrail - (2)(22) + (4)(25) = 144 LF @ $15 = $2,500

$116,500

+20% Engr, Admin & Cont $23,500

⇒ Use $140,000

REACH 2 TOTAL - $3,705,000

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CK. | PROJ. Shooks Run | SHEET 6

DATE March 3, 1993 | SUBJ. ~~Estimate of Probable~~ Construction Costs - Side Slopes OF

## Reach 3 - Costilla Street to Boulder Street

Sta 50+65 to Sta 71+55 - New open channel between Costilla Street and El Paso Street (South)

Clearing - (150)(2090)/43560 = 7.2 Ac @ $20000 = $144,000

Remove Exist Conc Retaining Wall - (8)(400) = 3200 SF @ $5 = $16,000

Earthwork - (0.16)(2400)(2090)/27 = 111500 CY @ $4 = $446,000

5' High Rock Retaining Wall - (6+4)(2090) = 20900 LF @ $100 = $2,090,000

15' Wide Drop Structure - 2 Each @ $15000 = $30,000

Landscaping - (205)(2090)/43560 = 9.8 Ac @ $35000 = $343,000

Reconst. 8" Aerial San Sewer Crossing - 60 LF @ $150 = $9,000

Reconst. 18" Aerial San Sewer Crossing - 25 LF @ $200 = $5,000

Asp Path - (15)(2090)/9 = 3500 SY @ $6 = $21,000

R.O.W. Acquisition - (Commercial/Industrial - Mostly Outside Floodplain) - 9.2 Ac @ $50000 - $460,000

Commercial/Industrial Buildings - 30275 SF @ $35 = $1,060,000
Partial Residential Lots - 2 Each @ $5000 = $10,000
Residences - 1 Each @ $75000 = $75,000

Remove Commercial/Industrial Buildings - Large - 2 Each @ $50000 = $100,000

Small - 5 Each @ $20000 = $100,000

Remove Residences - 1 Each @ $10000 = $10,000

$4,919,000

+20% Engr, Admin, & Cont $984,000

$5,903,000 ⇒ Use $5,905,000

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PROJ. Shooks Run SHEET 7

SUBJ. Estimate of Probable Construction Costs - Side Slopes

Sta 71+55 to Sta 72+80 - Maintenance of Culvert at El Paso Street (South)

Clean Exist Culvert - L.S. - #2,500

Struc Conc - Invert Lining - (20)(1.25)(1)/27 = 93

Hdwalls - (1)(22)(0.09) = 2

Wings - (7' Ave H - 25' L) = (2)(25)(0.46) = 23

120 CY @ #275 = #33,000

Embankment Riprap - (2)(200)(30)(2)/27 = 900 CY @ $50 = #45,000

Guardrail - (2)(22)+(4)(25) = 144 LF @ #15 = #2,500

#83,000

+20% Engr, Admin & Cont #17,000

⇒ Use #100,000

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PROJ. Shooks Run

SHEET 8

SUBJ. Estimate of Probable of Construction Costs-Side Slopes

Sta. 72+80 to Sta 76+80 - New open channel between El Paso Street (South) and Pikes Peak Avenue

Clearing - (100)(400)/43560 = 0.9 Ac @ $20000 = $18,000

Remove Exist Conc. Retain Wall - (6)(125) = 750 SF @ $5 = $4,000

Earthwork - (0.6)(1600)(400)/27 = 14500 CY @ $4 = $58,000

5' High Rock Retain Wall - (2)(4)(400) = 3200 LF @ $100 = $320,000

Landscaping - (170)(400)/43560 = 1.6 Ac @ $35000 = $56,000

Asp Path - (15)(400)/9 = 7000 SY @ $6 = $4,500

R.O.W. Acquistion (Commercial/Industrial - Mostly outside Floodplain) - 1.6 Ac @ $50000 = $80,000

Commercial/Industrial Buildings - 7200 SF @ $35 = $252,000

Remove Commercial/Industrial Buildings - Large - 1 Each @ $50,000 = $50,000

Small - 1 Each @ $20000 = $20,000

$862,500

+20% Engr, Admin, & Cont $172,500

⇒ Use $1,035,000

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PROJ. Shocks Run SHEET 9

SUBJ. Estimate of Probable Construction Cost - Side Slopes

Sta. 76+80 to Sta 85+60 - Maintenance of Culvert at Pikes Peak Avenue/El Paso Street (North)

Clean Exist Culvert - L.S. - #5,000

Structural Conc - Invert Lining - [(20)(175)+(30)(190)](1)/27 = 341

Hdwalls - (1)(22)(0.09) = 2

Wings - (7' Ave H - 25' L) = (2)(25)(0.46) = 23

370 CY @ #275 = #102,000

Embankment Riprap - (1)(300)(30)(2)/27 = 675 CY @ #50 = #34,000

Guardrail - (1)(22)+(2)(25) = 72 LF @ #15 = #1,000

#142,000

+20% Engr, Admin & Cont #28,500

#170,500 ⇒ Use #170,000

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DATE March 3, 1993 | SUBJ. Estimate of Probable Construction Costs - Side Slopes

=> Maintenance of Culvert at Kiowa Street

Clean Exist Culvert - L.S. - $2,500

Structual Conc - Invert Lining - (20)(150)(1)/27 = 111

Hdwalls - (2)(22)(0.09) = 4

Wings - (7' Ave H - 25' L) = (4)(25)(0.46) = 46

165 CY @ $275 = $45,500

Embankment Riprap - (2)(175)(30)(2)/27 = 775 CY @ $50 = $39,000

Guardrail - (2)(22) + (4)(25) = 144 LF @ $15 = $2,500

$89,500

+20% Engr, Admin & Cont $18,000

$107,500 => Use $110,000

Sta. 85+60 to Sta. 89+95 - New open channel between Kiowa Street and Bijou Street

Clearing - (100)(435)/43560 = 1.0 Ac @ $20000 = $20,000

Remove Exist Conc. Retain Wall - (15)(365) = 5475 SF @ $5 = $27,500

Earthwork - (0.5)(825)(435)/27 = 7000 CY @ $4 = $28,000

5' High Rock Retain Wall - (2)(3)(435) = 2610 LF @ $100 = $261,000

15' Wide Drop Structure - 1 Each @ $15,000 = $15,000

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SHEET 11

SUBJ. Estimate of Probable Construction Costs - Side Slopes OF

Landscaping - (125)(435)/43560 = 1.2 Ac @ $35000 = $42,000

Asp Path - (15)(435)/9 = 725 SY @ $6 = $4,500

R.O.W. Acquisition - (Commercial/Industrial - Mostly Outside Flood plain) 0.3 Ac @ $50000 = $15,000

Commercial/Industrial Buildings - 1500 SF @ $35 = $52,500

Residences - 2 Each @ $75000 = $150,000

Partial Residential Lots + 3 Each @ $5000 = $15,000

Remove Commercial/Industrial Buildings -

- Small - 1 Each @ $20000 = $20,000

Remove Residences - 2 Each @ $10000 = $20,000

$670,500

+20% Engr, Admin, & Cont $134,500

=> Use $805,000

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**WILSON & COMPANY**

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PROJ. Shooks Run SHEET 12

SUBJ. Estimate of Probable Construction Costs - Side Slopes OF

Sta. 89+95 to Sta 94+50 - Maintenance of Culvert at Bijou Street

Clean Exist Culvert - LS, - $5,000

Earthwork - (2)(20)(300)/27 = 500 CY @ $4 = $2,000

Struc Conc - Invert Lining - (20)(455)(1)/27 = 337

Hdwalls - (2)(22)(0.09) = 4

Wings - (7' Ave H - 25'L) = (4)(25)(0.46) = 46

390 CY @ $275 = $107,500

Embankment Riprap - (2)(150)(30)(2)/27 = 675 CY @ $50 = $34,000

Guardrail - (2)(22) + (4)(25) = 144 LF @ $15 = $2,500

Asp Path - (15)(300)/9 = 5005Y @ $6 = $3,000

$154,000

+20% Engr, Admin, & Cont $ 31,000

⇒ Use $185,000

Sta. 94+50 to Sta 98+10 - New open channel between Bijou Street and Platte Avenue

Clearing - (50)(360)/43560 = 0.4 Ac @ $20000 = $8,000

Earthwork - (0.6)(300)(360)/27 = 2500 CY @ $4 = $10,000

5' High Rock Retain Wall - (3)(360) = 1080 LF @ $100 = $108,000

15' Wide Drop Structure - 1 Each @ $15000 = $15,000

Landscaping - (70)(360)/43560 = 0.6 Ac @ $35000 = $21,000

R.O.W. Acquisition - Residences - 2 Each @ $75000 = $150,000
Partial Residential Lots - 2 Each @ $5000 = $10,000
Remove Residences - 2 Each @ $10000 = $20,000

$342,000

+20% Engr, Admin, & Cont $68,500

$410,500 => $415,000

Sta 98+10 to Sta 106+30 - Maintenance of Culvert at Platte Avenue/ School and Bridge at Boulder Street

Clean Exist Culvert & Bridge - L.S. - $5,000

Earthwork - (2)(20)(600)/27 = 1000 CY @ $4 = $4,000

Struc Conc - Invert Lining - [(20)(600) + (40)(100)] (1)/27 = 595 CY @ $275 = $164,000

Embankment Riprap - (2)(150)(30)(2)/27 = 675 CY @ $50 = $34,000

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PROJ. Shooks Run SHEET 14

SUB: Estimate of Probable OF Construction Costs - Side Slopes

Guardrail - (1)(22) + (2)(40) + (4)(25) = 202 LF @ $15 = $ 3,000

Landscaping - (40)(500)/43560 = 0.5 Ac @ $35000 = $17,500

Asp Path - (15)(500)/9 = 850 SY @ $6 = $5,000

R.O.W. Acquisition - (School - Inside Floodplain) - (55)(500)/43560 = 0.6 Ac @ $25000 = $15,000

$47,500

+20% Engr, Admin, & Cont $ 49,500

$297,000 ⇒ Use $300,000

REACH 3 - TOTAL - $9,025,000

Reach 4 - Boulder Street to Cache La Poudre Street

Sta. 106+30 to Sta 112+35 - New open channel between Boulder Street and St Vrain Street

Clearing - (85)(605)/43560 = 1.2 Ac @ $20000 = $24,000

Earthwork - (0.2)(350)(605)/27 = 2000 CY @ $4 = $8,000

5' High Rock Retain Wall - (2)(2)(605) = 2420 LF @ $100 = $242,000

Landscaping - (85)(605)/43560 = 1.2 Ac @ $35000 = $42,000

Asp Path - (15)(605)/9 = 1000 SY @ $6 = $6,000

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PROJ. Shooks Run SHEET 15

SUBJ. Estimate of Probable Construction Costs - Side Slopes

R.O.W. Acquisition -
- Partial Residential Lots - 1 Each @ $5000 = $5,000

$32,000

+20% Engr, Admin, & Cont $ 6,500

$39,500 ⇒ Use $40,000

Sta. 112+35 to Sta 113+40 - Maintenance of Culvert at St. Main Street

Clean Exist Culvert - L.S. = $2,500

Struc Conc - Invert Lining - (20)(105)(1)/27 = 78

Hdwalls - (2)(22)(0.09) = 4

Wings - (7' Ave H - 25' L) = (4)(25)(6.46) = 46

130CY @ $275 = $36,000

Embankment Riprap - (2)(100)(30)(2)/27 = 450CY @ $50 = $22,500

Guardrail - (2)(22) + (4)(25) = 144LF @ $15 = $2,500

$63,500

+20% Engr, Admin & Cont $ 13,000

$76,500 ⇒ Use $80,000

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PROJ. Shooks Run SHEET 16

SUBJ. Estimate of Probable Construction Costs - Side Slopes OF

Sta. 113+40 to Sta 117+75 - New open channel between St. Urain Street and Willamette Street

Clearing - (125)(435)/43560 = 1.2 Ac @ $20000 = $24,000

Earthwork - (0.2)(540)(435)/27 = 2000 CY @ $4 = $8,000

5' High Rock Retain Wall - (2)(2.4)(435) = 2088 LF @ $100 = $209,000

Landscaping - (125)(435)/43560 = 1.2 Ac @ $35000 = $42,000

Asp Path - (15)(435)/9 = 725 SY @ $6 = $4,500

R.O.W. Acquisition - Residences - 1 Each @ $75000 = $75,000
Partial Residential Lots - 2 Each @ $5000 = $10,000
Remove Residences - 1 Each @ $5000 = $5000

$382,500

+20% Engr, Admin, & Cont $76,500

$459,000 ⇒ Use $460,000

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PROJ. Shooks Run SHEET 17

SUBJ. Estimate of Probable Construction Costs - Side Slopes

Sta 117+75 to Sta 119+80 - Maintenance of Culvert at Willamette Street

Clean Exist Culvert - L.S. - $2,500

Struc Conc - Invert Lining - (20)(205)(1)/27 = 155 CY @ $275 = $43,000

Embankment Repair - (2)(125)(30)(2)/27 = 550 CY @ $50 = $27,500

Guardrail - (2)(22) + (4)(35) = 144 LF @ $15 = $2,500

$75,500

+ 20% Engr, Admin, & Cont $15,500

$91,000 ⇒ Use $95,000

COMP. WMD

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PROJ. Shocks Run SHEET 18

SUBJ. ~~Estimate of Probable~~ OF Construction Costs - Side Slopes

Sta. 119+80 to Sta 135+15 - New Open Channel between Willamette Street and Cache La Poudre Street

Clearing - (150)(1535)/43560 = 5.3 Ac @ $20000 = $106,000

Earthwork - (0.3)(1230)(1535)/27 = 21,000 CY @ $4 = $84,000

5' High Rock Retain Wall - (2)(3.6)(1535) = 11052 LF @ $100 = $1,105,500

15' Wide Drop Structure - 1 Each @ $15000 = $15,000

Landscaping - (165)(1535)/43560 = 5.8 Ac @ $35000 = $203,000

Replace Pedestrian Bridge - (165)(8) = 1320 SF @ $60 = $79,500

R.O.W. Acquistion -

- Partial Residential Lots - 4 Each @ $5000 = $20,000

$1,613,000

+20% Engr, Admin, & Cont $323,000

$1,936,000 ⇒ Use $1,940,000

Sta. 135+15 to Sta. 137+05 - Maintenance of Culvert at Cache La Poudre Street

Clean Exist Culvert - LS, = $2,500

Struc Conc - Invert Lining - (20)(190)(1)/27 = 141

Hdwalls - (2)(22)(0.09) = 4

Wings - (7' Ave H - 25' L) = (4)(25)(0.46) = 46

195 CY @ $275 = $54,000

Embankment Riprap - (2)(150)(30)(2)/27 = 675 CY @ $50 = $34,000

Guardrail - (2)(22) + (4)(25) = 144 LF @ $15 = $2,500

$93,000

+20% Engy, Admin, & Cont $19,000

$112,000 => Use $115,000

REACH 4 TOTAL - $3,085,000

Reach 5 - Cache La Poudre Street to Patty Jewett Golf Course

Sta. 137+05 to Sta 152+45 - New open channel between Cache La Poudre Street and Uintah Street

Clearing - (125)(1540)/43560 = 4.4 Ac @ $20000 = $88,000

Earthwork - (0.4)(1500)(1540)/27 = 34500 CY @ $4 = $138,000

5' High Rock Retain Wall - (2)(4)(1540) = 12320 LF @ $100 = $1,232,000
15' Wide Drop Structure - 1 Each @ $15000 = $15,000
Landscaping - (165)(1540)/43560 = 5.8 Ac @ $35000 = $203,000

Asp Path - (15)(1540)/9 = 2575 SY @ $6 = $15,500

R.O.W. Acquistion - (Commercial/Industrial - Mostly outside Floodplain) - 1.6 Ac @ $50000 = $80,000

Residences - 7 Each @ $75000 = $525,000

Residential Lots - 1 Each @ $20000 = $20,000

Partial Residential Lots - 10 Each @ $5000 = $50,000

Apartments (10 unit small) - L.S. = $150,000

Remove Residences - 7 Each @ $10000 = $70,000

Remove Apartment Bldg - 1 Each @ $50000 = $50,000

$2,636,500

+ 20% Engr, Admin, & Cont $527,500

$3,164,000 ⇒ Use $3,165,000

Sta. 152+45 to Sta 153+55 - Maintenance of Uintah Street Culvert

Clean Exist Culvert - L.S. = $2,500

Struc Conc - Invert Lining - (20)(150)(1)/27 = 111

Hdwalls - (1)(22)(0.09) = 2

Wings - (7' Avg H - 25' L) = (2)(25)(0.46) = 23

140 CY @ $275 = $38,500

Embankment Riprap - (2)(125)(30)(2)/27 = 555 CY @ $50 = $29,000

Guardrail - (2)(22) + (4)(25) = 144 LF @ $15 = $2,500

$72,500

+ 20% Engr, Admin, & Cont $14,500

$87,000 ⇒ Use $90,000

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PROJ. Shooks Run SHEET 21

SUBJ. Estimate of Probable Construction Costs - Side Slopes

Sta 153+55 to Sta 157+55 - New open channel between Vintah Street and San Miguel Street

Clearing - (125)(400)/43560 = 1.1 Ac @ $20000 = $22,000

Earthwork - (0.4)(1500)(400)/27 = 9000 CY @ $4 = $36,000

5' High Rock Retain Wall - (2)(4)(400) = 3200 LF @ $100 = $320,000

15' Wide Drop Structure - 1 Each @ $15000 = $15,000

Landscaping - (165)(400)/43560 = 1.5 Ac @ $35000 = $52,500

Asp Path - (15)(400)/9 = 6755Y @ $6 = $4,000

R.O.W. Acqusition - Residences - 2 Each @ $75000 = $150,000

Apartments (12 unit-large) - L.S. - $300,000

Remove Residences - 2 Each @ $10,000 = $20,000

Remove Apartment Building - 2 Each @ $50000 = $100,000

$1,019,500

+20% Engr, Admin, & Cont $204,000

$1,223,500 ⇒ Use $1,225,000

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PROJ. Shooks Run SHEET 22

SUBJ. Estimate of Probable Construction Cost - Side Slope

Sta. 157+55 to Sta 158+40 - Maintenance of Culvert at San Miguel

Clean Exist Culvert - L.S. - $2,500

Struc Conc - Invert Lining - (20)(85)(1)/27 = 63

Headwalls - (2)(22)(0.09) = 4

Wings - (7' Avg. H - 25' L) = (4)(25)(0.46) = 46

115 CY @ $275 = $32,000

Embankment Riprap - (2)(125)(30)(2)/27 = 555 CY @ $50 = $29,000

Guardrail - (2)(22) + (4)(25) = 144 LF @ $15 = $2,500

$66,000

+20% Engr, Admin & Cont $13,500

$79,500 ⇒ Use $80,000

COMP. WWD

CK.

DATE March 3, 1993

**WILSON & COMPANY**

LOC. FILE 90-809

PROJ. Shocks Run SHEET 23

SUBJ. Estimate of Probable Construction Costs - Side Slopes OF

Sta 158+40 to Sta 167+35 - New open channel between San Miguel Street and Pedestrian Bridge

Clearing - (125)(895)/43560 = 2.6 Ac @ $20000 = $52,000

Earthwork - (0.5)(2375)(895)/27 = 39500 CY @ $4 = $158,000

5' High Rock Retain Wall - (2)(5)(895) = 8950 LF @ $100 = $895,000
15' Wide Drop Structure - 2 Each @ $15000 = $30,000
Landscaping - (205)(895)/43560 = 4.2 Ac @ $35000 = $147,000

Asp Path - (15)(895)/9 = 1500 SY @ $6 = $9,000

R.O.W. Acquisition - Residences - 6 Each @ $75000 = $450,000

Partial Residential Lot - 9 Each @ $5000 = $45,000
School - Mostly Outside Floodplain - 0.8 Ac @ $50,000 = $40,000
Remove Residences - 6 Each @ $10000 = $60,000

$1,886,000

+20% Engr, Admin, & Cont $337,500

$2,223,500 ⇒ Use $2,225,000

Sta. 167+35 to Sta 176+25 - New open channel between Pedestrian Bridge and Patty Jewett Golf Course South Boundary

Clearing - (150)(890)/43560 = 3.1 Ac @ $20000 = $62000

Earthwork - (0.5)(3450)(890)/27 = 57000 CY @ $4 = $228,000

5' High Rock Retain Wall - (2)(6)(890) = 10680 LF @ $100 = $1,068,000
15' Wide Drop Structure - 2 Each @ $15000 = $30,000
Landscaping - (245)(890)/43560 = 5.0 Ac @ $35000 = $175,000

Asp Path - (15)(1050)/9 = 1750 SY @ $6 = $10,500

Replace Pedestrian Bridge - (8)(195) = 1560 SF @ $80 = $125,000

R.O.W. Acquisition - Residences - 2 Each @ $75,000 = $150,000

- Partial Residential Lots - 8 Each @ $5000 = $40,000
- School - Mostly outside floodplain - 1.7 Ac @ $50,000 = $85,000

Remove Residences - 2 Each @ $10,000 = $20,000

$1,993,500

+20% Engr, Admin, & Cont $399,000

$2,392,500 ⇒ Use $2,395,000

REACH 5 TOTAL - $9,180,000

## REACH 6 - Patty Jewett Golf Course

Sta 176+25 to Sta 189+05 - New open channel between Patty Jewett Golf Course South Boundary and Espanola Street

Clearing - (  )(1280)/43560 = 2.9 Ac @ $20000 = $58,000

Earthwork - (0.7)(2550)(1280)/27 = 85000 CY @ $4 = $340,000

5' High Rock Retaining Wall - (2)(1)(1280) = 2560 @ $100 = $256,000

15' Wide Drop Structure - 3 Each @ $15000 = $45,000

Reset Exist. Golf Cart Bridge - 4 Each @ $10000 = $40,000

Landscaping - (345)(1280)/43560 = 10.1 Ac @ $35000 = $353,500

$1,092,500

+20% Engr, Admin, & Cont $218,500

$1,311,000 ⇒ Use $1,315,000

COMP. WHF

CK.

DATE March 4, 1993

WILSON & COMPANY ENGINEERS & ARCHITECTS

LOC. FILE 90-809

PROJ. Shooks Run SHEET 25

SUBJ. Estimate of Probable OF Construction Costs - Side Slopes

Sta. 189+05 to Sta 109+85 - Maintenance of Culvert at Espanola Street

Strc Conc - Hdwalls - (1)(14)(0.09) = 1

Wings - (7' Ave H - 25' L) = (2)(25)(0.46) = 23

25 CY @ $275 = $7,000

Embankment Riprap - (2)(200)(30)(2)/27 = 900 CY @ $50 = $45,000

Guardrail - (1)(14) + (2)(25) = 64 LF @ $15 = $1,000

$53,000

+20% Engr, Admin, & Cont $11,000

$64,000 ⇒ Use $65,000

Sta. 190+85 to Sta 198+45 - Maintenance of open channel between Espanola Street and End of Existing Channel Lining

Repair Exist Conc Lining - (10)(760/100) = 80 CY @ $375 = $30,000

$30,000

+20% Engr, Admin & Cont $6,000

$36,000 ⇒ Use $40,000

Sta 198+45 to Sta 216+40 - Maintenance of open channel between End of Existing Channel Lining and Paseo Road

Selective Clearing - (50)(260)/43560 = 0.3 Ac @ $5000 = $1,500

Selective Riprap - (0.3)(500) = 150 CY @ $50 = $7,500

Selective Landscaping - 0.3 Ac @ $10000 = $3,000

$12,000

+20% Engr, Admin & Cont $2,500

$14,500 ⇒ Use $15,000

REACH 6 TOTAL - $1,435,000

REACH 7 - Paseo Road to Van Buren Channel Diversion

Sta 216+40 to Sta 216+95 - Maintenance of Culvert at Paseo Road

Clean Exist Culvert - L.S. = $2,500

Struc Conc - Hdwalls - (2)(23)(0.09) = 4

Wings - (5' Ave H - 20'L) = (4)(20)(0.36) = 29

35 CY @ $275 = $10,000

Embankment Riprap - (2)(100)(20)(2)/27 = 300 CY @ $50 = $15,000

Guardrail - (2)(23) + (4)(20) = 126 LF @ $15 = $2,000

$29,500

+20% Engr Admin & Cont $6,000

$35,500 ⇒ Use $35,000

COMP. WHT

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DATE March 4, 1993

WILSON & COMPANY

LOC. FILE 90-809

PROJ. Shooks Run SHEET 27

SUBJ. Estimate of Probable Construction Costs-Side Slopes

Sta 216+95 to Sta 218+30 - New open channel between Paseo Road and Jefferson Street

Clearing - (50)(135)/43560 = 0.2 Ac @ $ 20000 = $ 4,000

Buried Riprap - (2)(11)(2)(135)/27 = 225 CY @ $50 = $ 11,500

Landscaping - (65)(135)/43560 = 0.2 Ac @ $ 35000 = $ 7,000

Asp Path - (15)(135)/9 = 225 SY @ $6 = $ 1,500

R.O.W. Acquisition - Residences - 2 Each @ $ 75000 = $ 150,000

Partial Residential Lot - 1 Each @ $5000 = $ 5,000

Remove Residences - 2 Each @ $ 10000 = $ 20,000

$ 199,000

+20% Engr, Admin, & Cont $ 40,000

$ 239,000 ⇒ Use $ 240,000

Sta. 218+30 to 219+10 - Maintenance of Culvert at Jefferson Street

Clean Exist Culvert - L.S. = $ 1,000

Embankment Riprap - (2)(50)(20)(2)/27 = 150 CY @ $50 = $ 7,500

Guardrail - (2)(22)+(4)(10) = 84 LF @ $15 = $ 1,500

$ 10,000

+20% Engr, Admin & Cont $ 2,000

$ 12,000 ⇒ Use $ 15,000

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DATE March 4, 1993

WILSON & COMPANY

LOC.

FILE 90-809

PROJ. Shooks Run

SHEET 28

SUBJ. Estimate of Probable Construction Costs - Side Slopes

Sta 219+10 to 222+50 - New open channel between Jefferson Street and Madison Street

Clearing - (50)(340)/43560 = 0.4 Ac @ $20,000 = $8,000

Buried Rprap - (2)(11)(340)/27 = 575 CY @ $50 = $29,000

Landscaping - (65)(340)/43560 = 0.5 Ac @ $35000 = $17,500

Asp Path - (15)(340)/9 = 5755Y @ $6 = $3,500

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DATE March 4, 1993

WILSON & COMPANY

LOC. FILE 90-809

PROJ. Shooks Run SHEET 29

SUBJ. Estimate of Probable Construction Costs - Side Slopes

R.O.W. Acquisition - (Commercial - Mostly outside Floodplain) - 0.12Ac @ $50,000 = $10,000

- Residences - 2 Each @ $>5000 = $150,000

Remove Residences - 2 Each @ $10000 = $20,000

$238,000

+20% Engr, Admin, & Cont $48,000

$286,000 => Use $290,000

Sta 222+50 to 223+30 - Maintenance of Culvert at Madison Street

Clean Exist Culvert - L.S. = $1,000

Embankment Riprap - (2)(50)(20)(2)/27 = 150CY @ $50 = $7,500

Guardrail - (2)(22) + (4)(10) = 84 LF @ $15 = $1,500

$10,000

+20% Engr, Admin, & Cont $2,000

$12,000 => Use $15,000

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DATE March 4, 1993

WILSON & COMPANY

LOC. FILE 70-809

PROJ. Shoks Run SHEET 30

SUBJ. Estimate of Probable Construction Costs - Side Slopes OF

Sta 223+30 to Sta 226+25 - New open channel between Madison Street and Monroe Street

Clearing - (50)(295)/43560 = 0.3 Ac @ $20000 = $6,000

Buried Rprp - (2)(11)(2)(295)/27 = 500 CY @ $50 = $25,000

Landscaping - (65)(295)/43560 = 0.4 Ac @ $35000 = $14,000

Asp Path - (15)(295)/9 = 5005Y @ $6 = $3,000

R.O.W. Acquisition - Residences - 3 Each @ $75,000 = $225,000

- Partial Residential Lots - 3 Each @ $5000 = $15,000

Remove Residences - 3 Each @ $10000 = $30,000

$318,000

+ 20% Engr, Admin, & Cont $64,000

$382,000 ⇒ Use $385,000

COMP. WW

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DATE March 4, 1993

WILSON & COMPANY ENGINEERS & ARCHITECTS

LOC. FILE 90-809

PROJ. Shooks Run SHEET 31

SUBJ. Estimate of Probable Construction Costs - Side Slopes OF

Sta 226+25 to Sta 227+05 - Maintenance of Culvert at Monroe Street

Clean Exist Culvert - L.S. - $1,000

Embankment Riprap - (2)(50)(20)(2)/27 = 150 CY @ $50 = $7,500

Guardrail - (2)(22)+(4)(10) = 84 LF @ $15 = $1,500

$10,000

+20% Engr, Admin & Cont $2,000

$12,000 ⇒ Use $15,000

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DATE March 4, 1993

WILSON & COMPANY

LOC.

FILE 90-809

PROJ. Shooks Run

SHEET 32

SUBJ. Estimate of Probable Construction Costs - Side Slopes

Sta. 227+05 to Sta. 229+70 - New open channel between Monroe Street and Jackson Street

Clearing - (50)(265)/43560 = 0.3 Ac @ $20000 = $6,000

Buried Riprap - (2)(11)(2)(265)/27 = 450 CY @ $50 = $22,500

Landscaping - (65)(265)/43560 = 0.4 Ac @ $35000 = $14,000

Asp Path - (15)(265)/9 = 450 SY @ $6 = $3,000

R.O.W. Acquisition - Residences - 3 Each @ $75000 = $225,000

- Partial Residential Properties - 3 Each @ $5000 = $15,000

Remove Residences - 3 Each @ $10000 = $30,000

$315,500

+20% Engr, Admin, & Cont $63,500

$379,000 ⇒ Use $380,000

Sta. 229+70 to Sta 234+15 - Maintenance of Culvert at Jackson Street/LaSalle Street

Clean Exist Culvert - $2,500

Embankment Riprap - (2)(50)(20)(2)/27 = 150 CY @ $50 = $7,500

Guardrail - (2)(22)+(4)(10) = 84 LF @ $15 = $1,500

$11,500

+20% Engr, Admin, & Cont $2,500

$14,000 ⇒ Use $15,000

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DATE March 4, 1993

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LOC.

FILE 90-809

PROJ. Shoaks Run

SHEET 33

SUBJ. Estimate of Probable Construction Costs - Sideslopes OF

Sta. 234+15 to Sta 235+40 - New openchannel between LaSalle Street and Pedestrian Path

Clearing - (50)(125)/43560 = 0.1 Ac @ $20000 = $2,000

Buried Riprap - (2)(11)(4)(125)/27 = 225 CY @ $50 = $11,500

15' Wide Drop Structure - 1 Each @ $15000 = $15,000

Landscaping - (65)(125)/43560 = 0.2 Ac @ $35000 = $7,000

Asp Path - (15)(125)/9 = 200 SY @ $6 = $1,500

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DATE March 4, 1993

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LOC.

FILE 90-809

PROJ. Shooks Run

SHEET 34

SUBJ. Estimate of Probable Construction Costs - Side Slopes OF

R.O.W. Acquisition - Residences - 1 Each @ $75000 = $75,000
Partial Residential Lot - 1 Each @ $5000 = $5,000
Remove Residences - 1 Each @ $10000 = $10,000

$127,000

+20% Engg, Admin, & Cont $25,500

$152,500 ⇒ Use $155,000

Sta. 235+40 to Sta 235+90 - Maintenance of Culvert at Pedestrian Path -

Clean Exist Culvert - $500

Struc Conc - Hdwalls - (2)(11)(0.09) = 2

Wings - (5' Ave H - 20' L) = (4)(20)(0.36) = 29

35CY @ $275 = $10,000

Embankment Riprap - (2)(50)(20)(2)/27 = 150CY @ $50 = $7,500

Guardrail - (2)(11) + (4)(20) = 102 LF @ $15 = $1,500

$19,500

+20% Engg, Admin & Cont $4,000

$23,500 ⇒ Use $25,000

COMP. MKA

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DATE March 4, 1993

WILSON & COMPANY

LOC. FILE 90-809

PROJ. Shooks Run SHEET 35

SUBJ. Estimate of Probable Construction Costs - Side Slopes

Sta 235+90 to Sta 236+20 - New open channel between Pedestrian Path and C.R.I.P. Railroad

Clearing - (50)(30)/43560 = 0.1 Ac @ $20000 = $2,000

Buried Riprap - (2)(11)(2)(50)/27 = 100 CY @ $50 = $5,000

Landscaping - (65)(50)/43560 = 0.1 Ac @ $35000 = $3,500

Asp Path - (15)(50)/9 = 100 SY @ $6 = $1,000

$11,500

+20% Engr, Admin, & Cont $2,500

$14,000 ⇒ Use $15,000

Sta. 236+20 to Sta 236+75 - Maintenance of Culvert at C.R.I.P. Railroad

Clean Exist Culvert - L.S. = $1,000

Struc Conc - Hdwall - (1)(22)(0.09) = 2

D/S Wings - (5' Ave H - 20L) = (2)(20)(0.36) = 14

20 CY @ $275 = $5,500

Embankment Riprap - (1)(50)(20)(2)/27 = 75 CY @ $50 = $4,000

Guardrail - (1)(22) + (2)(20) = 62 LF @ $15 = $1,000

$11,500

+20% Engr, Admin & Cont $2,500

$14,000 ⇒ Use $15,000

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DATE March 4, 1995

WILSON & COMPANY ENGINEERS & ARCHITECTS

LOC.

FILE 90-809

PROJ. Shooks Run

SHEET 36

SUBJ. Estimate of Probable Construction Costs - Side Slopes OF

Templeton Gap Road at Van Buren Channel - Maintenance of Culvert

Embankment Riprap - (2)(50)(20)(2)/27 = 150 CY @ $50 = $7,500

Guardrail - (2)(17) + (4)(25) = 134 LF @ $15 = $2,000

$9,500

+20% Engr, Admin, & Cont $2,000

$11,500 ⇒ Use $15,000

REACH 7 TOTAL - $1,615,000

ALTERNATIVE TOTAL - $29,665,000

# L. ESTIMATE OF PROBABLE CONSTRUCTION COSTS FOR RECOMMENDED IMPROVEMENTS

COMP. [illegible]

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DATE July 30, 1993

WILSON & COMPANY

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FILE 90-809

PROJ Shooks Run

SHEET 1

SUBJ Estimate of Probable Construction Costs - Recommended Improvements

# ESTIMATE OF PROBABLE CONSTRUCTION COSTS - RECOMMENDED IMPROVEMENTS

## Reach 1 - Fountain Creek to Abandoned Railroad - Proactive Maintenance and Roadway Crossing Enlargement

Sta. 0+25 to Sta. 8+25 - Maintenance of open channel between Fountain Creek and Las Vegas Street

Proactive Maintenance - 800 LF @ $205 = $165,000

Sta. 8+25 to Sta. 9+75 - Channel Transition D/S of Las Vegas Street

L.S. = $100,000

Sta. 9+75 to Sta 10+80 - Replace Exist. Bridge and Dissipator at Las Vegas Street w/ 5 - 12' x 10' RCB and Dissipator

L.S. - $345,000

Sta. 10+80 to Sta. 11+20 - Channel Transition U/S of Las Vegas Street

L.S. = $60,000

Sta. 11+65 to Sta. 15+60 - Maintenance of open channel between A.T.S.F. & D.R.G.W. Railroad and Abandoned Railroad

L.S. = $80,000

REACH 1 TOTAL = $750,000

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CK | PROJ Shooks Run | SHEET 2

DATE July 30, 1993 | SUBJ Estimate of Potable Construction Costs - Recommended Improvements | OF

Reach 2 - Abandoned Railroad to Costilla Street - Reactive Maintenance Only and Roadway Crossings Enlargement

Sta. 22+50 to Sta. 24+00 - Channel Transition D/S of Fountain Boulevard

L.S. = $100,000

Sta. 24+00 to Sta. 25+50 - Replace Culverts at Fountain Boulevard w/ 4 - 12'x10' RCB

L.S. = $ 535,000

Sta. 25+50 to Sta. 27+50 - Channel Transition U/S of Fountain Boulevard

L.S. = $125,000

Sta. 47+15 to Sta. 48+65 - Channel Transition D/S of Costilla Street

L.S. = $100,000

Sta. 48+65 to Sta. 50+65 - Replace Culvert at Costilla Street w/ 4 - 10'x10' RCB

L.S. = $585,000

REACH 2 TOTAL = $1,445,000

COMP WHH

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DATE July 30, 1993

WILSON &COMPANY

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FILE 90-809

PROJ Shocks Run

SHEET 3

SUBJ Estimate of Probable Construction Costs - Recommended Improvements OF

Reach 3 - Costilla Street to Boulder Street - Structural Full Improvement

REACH 3 TOTAL = $17,075,000

Reach 4 - Boulder Street to Cache La Poudre Street - Structural Full Improvement/ Proactive Maintenance and Roadway Crossings Enlargement

Sta. 106+30 to Sta. 112+35 - Structural Full Improvement along channel between Boulder Street and St. Vrain Street

L.S. = $725,000

Sta. 112+35 to Sta. 113+40 - Replace Culvert at St. Vrain Street w/ 4-10'X10' RCB

L.S. = $275,000

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DATE July 30, 1993

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PROJ Shooks Run

SHEET 4

SUBJ Estimate of Probable Construction Costs - Recommended Improvements

OF

Sta. 113+40 to Sta. 117+75 - Structural Full Improvement along channel between St. Vrain Street and Willamette Street

L.S. = $620,000

Sta. 117+75 to Sta 119+80 - Replace Culvert at Willamette Street w/ 3-10'X10'RCB

L.S. = $435,000

Sta. 119+80 to Sta 121+80 - Channel Transition U/S of Willamette Street

L.S. = $125,000

Sta. 121+80 to Sta. 133+65 - Maintenance of open channel between Willamette Street and Cache La Poudre Street

Proactive Maintenance - 1185LF@ $100 = $120,000

Sta. 133+65 to Sta 135+15 - Channel Transition D/S of Cache la Poudre Street

L.S. = $100,000

Sta. 135+15 to Sta 137+05 - Replace Culvert at Cache La Poudre Street w/ 3-10'X10'RCB

L.S. = $390,000

=> Replace Exist. Pedestrian Bridge over Cache la Poudre Culvert Crossing

L.S. = $120,000

REACH 4 TOTAL - $2,910,000

Reach 5 - Cache La Poudre Street to Patty Jewett Golf Course - Soft-Lined Side Slopes Only Improvement and Roadway Crossings Enlargement

Sta. 137+05 to Sta. 152+45 - Soft-Lined Side Slopes Improvement along channel between Cache La Poudre Street and Vintah Street

L.S. = $3,165,000

Sta. 152+95 to Sta. 153+55 - Replace Culvert at Vintah Street w/ 2-14'X10'RCB

L.S. = $290,000

Sta. 153+55 to Sta. 157+55 - Soft-Lined Side Slopes Improvement along channel between Vinta'n Street and San Miguel Street

L.S. = $1,225,000

Sta. 157+55 to Sta. 158+40 - Replace Culvert at San Miguel Street w/ 2-14'x10' RCB

L.S. = $170,000

Sta. 158+40 to Sta. 167+35 - Soft-Lined Side Slopes Improvement along channel between San Miguel Street and Pedestrian Bridge

L.S. = $2,225,000

Sta. 167+35 to Sta 176+25 - Soft-Lined Side Slopes Improvement along channel between Pedestrian Bridge and Patty Jewett Golf Course

L.S. = $2,395,000

REACH 5 TOTAL = $9,470,000

Reach 6 - Patty Jewett Golf Course - Proactive Maintenance and Roadway Crossing Enlargement

Sta. 176+25 to Sta 187+55 - Maintenance of open channel between Patty Jewett Golf Course South Boundary and Espanola Street

Proactive Maintenance - 1130 LF @ $80 = $90,000

Sta. 187+55 to Sta 189+05 - Channel Transition D/S of Espanola Street

L.S. = $100,000

Sta. 189+05 to Sta. 190+85 - Replace Culvert at Espanola Street w/ 3-12'X10'RCB

L.S. = $410,000

Sta. 190+85 to Sta 192+85 - Channel Transition U/S of Espanola Street

L.S. = $125,000

Sta. 192+85 to Sta 198+45 - Maintenance of open channel between Espanola Street and End of Existing Channel Lining

Proactive Maintenance - 560 LF @ $50 = $30,000

Sta. 198+45 to Sta 214+90 - Maintenance of open channel between End of Existing Channel Lining and Paseo Road

Proactive Maintenance - 1645 LF @ $20 = $35,000

Sta. 214+90 to Sta 216+40 - Channel Transition D/S of Paseo Road

L.S. = $100,000

REACH 6 TOTAL = $890,000

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DATE July 30, 1993

WILSON & COMPANY

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FILE 90-809

PROJ Shooks Run

SHEET 8

SUBJ Estimate of Probable Construction Costs - Recommend Improvements

Reach 7 - Paseo Road to Van Buren Channel Diversion - Structural Full Improvement

REACH 7 TOTAL = $3,740,000

SELECTED ALTERNATIVE TOTAL = $36,280,000