GRADING SUMMARY

Station to Station	PAY ITEM 20401-0000 ROADWAY EXCAVATION (BCM)			ADJUSTMENTS TO EXCAVATION							ROADWAY EMBANKMENT (NO PAY) (CCM)							MASS HAUL		Item 30502-0100		Item 62407-0000	Item 20403-0000
	Roadway Prism	Approach Roads	Total Excavation	(+) Structure Excavation	(-) Pavement Removal	(-) Topsoil Stripping in Cuts	Item 20402-0000 (+) Subexcavation	(-) Unsuitable Material	Shrink/ Swell Factor	Total Excavation Available for Fills	Roadway Prism	Approach Roads	(+) Structural Backfill (Mechanically Reinforced)	(+) Pavement Removal	(+) Subexcavation	(+) Topsoil Replacement Under Fills	Total Embankment	Excavation Minus Embankment	Mass Ordinate	Aggregate-Topsoil Course, 25 mm Depth	Topsoil for Item 30502-0100	Placing Conserved Topsoil	Unclassified Boorrow
	BCM	BCM	BCM	BCM	BCM	CCM	BCM	BCM		CCM	CCM	CCM	CCM	CCM	CCM	CCM	CCM	CCM	CCM	(m2)	(m3)	(m3)	(m3)
Option Y																							
44+700 - 44+730	387		387		10	57	0		1.30	416	12			0	0	0	12	404	404	54	1	56	404
44+730 - 44+850	343		343		43	244	0		0.90	50	554			0	0	127	681	-631	-227	246	6	365	-631
44+850 - 44+920	2,328		2,328		0	253	0		1.30	2,698	65			16	0	14	95	2,603	2,376	140	4	264	2,603
44+920 - 45+000	356		356		0	91	0		0.90	239	1,187			19	0	187	1,393	-1,155	1,221	289	7	271	-1,155
45+000 - 45+305	122		122		0	167	0		0.90	-41	4,588			1	0	469	5,058	-5,099	-3,877	1,023	26	610	-5,099
45+305 - 45+327 (Bridge)				352					0.90	317			570				570	-253	-4,130			0	-253
45+327 - 45+800	2,248		2,248		96	582	0		0.90	1,413	2,528			26	0	480	3,034	-1,621	-5,751	1,658	41	1,021	-1,621
45+559		102	102		0	57	0		0.90	41		74		0	0	0	74	-34	-5,785	0	0	57	-34
45+645		111	111		0	22	0		0.90	80		0		0	0	0	0	80	-5,705	0	0	22	80
Mitigation Areas	3,454		3,454		289	363	0		0.90	2,522	0			0	0	0	0	2,522	-3,183			363	2,522
See Tabulation Below	0		0		0	0	1,000		0.90	900	0			0	1000	0	1000	-100	-3,283			0	-100
Option Y Totals	9,238	213	9,451	352	438	1,836	1,000	0		8,634	8,934	74	570	62	1,000	1,277	11,917	-3,284	-3,284	3,410	85	3,028	-3,284

Project WY HPP 4-I(5) Beartooth Highway
Earthwork Station Ranges
PBS&J Project No. 100002989
August 1, 2008

Station to Station	Shrink/Swell Factor	Comment	Input File
44+700 to 44+730	1.30	Rock Cut	btew-optywest1.inp
44+730 to 44+850	0.90		btew-optywest2.inp
44+850 to 44+920	1.30	Rock Cut	btew-optywest3.inp
44+920 to 45+000	0.90		btew-optywest4.inp
45+000 to 45+305	0.90		btew-nf29.inp
45+305 to 45+328		Bridge	
45+328 to 45+800	0.90		btew-nf30opty.inp

```
/* quiet */

/* Earthwork run with no factor  */

XSECTION

Earthwork

tolerance =     0.01
/* Vertical search distance = ???  (GEOPAK 2000 or later only) */

xs dgn = s:\tranproj\246195-15\hwydes\wyfs 4-1(4)\design\xswy04-scheduleAwest.dgn

    Existing Ground Line
        soil type = ROADWAY_EXC
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line, line_string
            lv = 56
            co = 2,7

     Proposed Finish Grade
        soil type = EMBANKMENT
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line
            lv = 2,8,10,11,12,18,19
            co = 0,10,11,12,16,17,18,19,244


    Proposed Undercut
        /* pave layer 1 in criteria files */
        soil type = HACP
        roadway exc mult factor =     0.000001
        subsoil exc mult factor =     0.000001
        fill mult factor =     0.000001
            type = line
            lv = 3
            co = 3
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */

    Proposed Undercut
        /* pave layer 2 in criteria files */
        soil type = AGGREGATE_BASE
        roadway exc mult factor =     0.000001
        subsoil exc mult factor =     0.000001
        fill mult factor =     0.000001
            type = line
            lv = 4
            co = 4
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */

    Proposed Undercut
        /* wall excav in criteria files */
        soil type = WALL
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line
            lv = 11,12,47
            co = 0,11,12,47
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */



    Write Earthwork Shapes
        plot param
            lv = 52
```

```
        co = 0
        wt = 0
        lc = 0
        Stratify Shape Color

combine common exc + subgrade exc + subsoil exc

   /* Add accum unadj vol column   (GEOPAK 2000 or later only) */
   /* Add accum adj vol column   (GEOPAK 2000 or later only) */
   /* End area decimal places = [0-4]   (GEOPAK 2000 or later only) */

Process Earthwork for Baseline = wy04A
    job number = wy4

    beg sta = 44+700 r 1
    end sta = 44+730 r 1
```

```
/* quiet */

/* Earthwork run with no factor  */

XSECTION

Earthwork

tolerance =     0.01
/* Vertical search distance = ???  (GEOPAK 2000 or later only) */

xs dgn = s:\tranproj\246195-15\hwydes\wyfs 4-1(4)\design\xswy04-scheduleAwest.dgn

    Existing Ground Line
        soil type = ROADWAY_EXC
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line, line_string
            lv = 56
            co = 2,7

     Proposed Finish Grade
        soil type = EMBANKMENT
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line
            lv = 2,8,10,11,12,18,19
            co = 0,10,11,12,16,17,18,19,244


    Proposed Undercut
        /* pave layer 1 in criteria files */
        soil type = HACP
        roadway exc mult factor =     0.000001
        subsoil exc mult factor =     0.000001
        fill mult factor =     0.000001
            type = line
            lv = 3
            co = 3
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */

    Proposed Undercut
        /* pave layer 2 in criteria files */
        soil type = AGGREGATE_BASE
        roadway exc mult factor =     0.000001
        subsoil exc mult factor =     0.000001
        fill mult factor =     0.000001
            type = line
            lv = 4
            co = 4
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */

    Proposed Undercut
        /* wall excav in criteria files */
        soil type = WALL
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line
            lv = 11,12,47
            co = 0,11,12,47
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */



    Write Earthwork Shapes
        plot param
            lv = 52
```

```
        co = 0
        wt = 0
        lc = 0
        Stratify Shape Color

combine common exc + subgrade exc + subsoil exc

   /* Add accum unadj vol column   (GEOPAK 2000 or later only) */
   /* Add accum adj vol column   (GEOPAK 2000 or later only) */
   /* End area decimal places = [0-4]   (GEOPAK 2000 or later only) */

Process Earthwork for Baseline = wy04A
    job number = wy4

    beg sta = 44+730 r 1
    end sta = 44+850 r 2
```

```
/* quiet */

/* Earthwork run with no factor  */

XSECTION

Earthwork

tolerance =     0.01
/* Vertical search distance = ???  (GEOPAK 2000 or later only) */

xs dgn = s:\tranproj\246195-15\hwydes\wyfs 4-1(4)\design\xswy04-scheduleAwest.dgn

    Existing Ground Line
        soil type = ROADWAY_EXC
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line, line_string
            lv = 56
            co = 2,7

     Proposed Finish Grade
        soil type = EMBANKMENT
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line
            lv = 2,8,10,11,18,19
            co = 0,10,11,16,17,18,19,244


    Proposed Undercut
        /* pave layer 1 in criteria files */
        soil type = HACP
        roadway exc mult factor =     0.000001
        subsoil exc mult factor =     0.000001
        fill mult factor =     0.000001
            type = line
            lv = 3
            co = 3
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */

    Proposed Undercut
        /* pave layer 2 in criteria files */
        soil type = AGGREGATE_BASE
        roadway exc mult factor =     0.000001
        subsoil exc mult factor =     0.000001
        fill mult factor =     0.000001
            type = line
            lv = 4
            co = 4
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */

    Proposed Undercut
        /* wall excav in criteria files */
        soil type = WALL
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line
            lv = 11,12,47
            co = 11,12,47
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */



    Write Earthwork Shapes
        plot param
            lv = 52
```

```
        co = 0
        wt = 0
        lc = 0
        Stratify Shape Color

combine common exc + subgrade exc + subsoil exc

   /* Add accum unadj vol column   (GEOPAK 2000 or later only) */
   /* Add accum adj vol column   (GEOPAK 2000 or later only) */
   /* End area decimal places = [0-4]   (GEOPAK 2000 or later only) */

Process Earthwork for Baseline = wy04A
    job number = wy4

    beg sta = 44+850 r 2
    end sta = 44+920 r 2
```

```
/* quiet */

/* Earthwork run with no factor  */

XSECTION

Earthwork

tolerance =     0.01
/* Vertical search distance = ???  (GEOPAK 2000 or later only) */

xs dgn = s:\tranproj\246195-15\hwydes\wyfs 4-1(4)\design\xswy04-scheduleAwest.dgn

    Existing Ground Line
        soil type = ROADWAY_EXC
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line, line_string
            lv = 56
            co = 2,7

     Proposed Finish Grade
        soil type = EMBANKMENT
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line
            lv = 2,8,10,11,18,19
            co = 0,10,11,16,17,18,19,244


    Proposed Undercut
        /* pave layer 1 in criteria files */
        soil type = HACP
        roadway exc mult factor =     0.000001
        subsoil exc mult factor =     0.000001
        fill mult factor =     0.000001
            type = line
            lv = 3
            co = 3
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */

    Proposed Undercut
        /* pave layer 2 in criteria files */
        soil type = AGGREGATE_BASE
        roadway exc mult factor =     0.000001
        subsoil exc mult factor =     0.000001
        fill mult factor =     0.000001
            type = line
            lv = 4
            co = 4
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */

    Proposed Undercut
        /* wall excav in criteria files */
        soil type = WALL
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line
            lv = 11,12,47
            co = 11,12,47
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */



    Write Earthwork Shapes
        plot param
            lv = 52
```

```
        co = 0
        wt = 0
        lc = 0
        Stratify Shape Color

combine common exc + subgrade exc + subsoil exc

   /* Add accum unadj vol column   (GEOPAK 2000 or later only) */
   /* Add accum adj vol column   (GEOPAK 2000 or later only) */
   /* End area decimal places = [0-4]   (GEOPAK 2000 or later only) */

Process Earthwork for Baseline = wy04A
    job number = wy4

    beg sta = 44+920 r 2
    end sta = 45+000 r 2
```

```
/* quiet */

/* Earthwork run with no factor  */

XSECTION

Earthwork

tolerance =     0.01
/* Vertical search distance = ???  (GEOPAK 2000 or later only) */

xs dgn = s:\tranproj\246195-15\hwydes\wyfs 4-1(4)\design\xswy04-scheduleAwest.dgn

    Existing Ground Line
        soil type = ROADWAY_EXC
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line, line_string
            lv = 56
            co = 2,7

     Proposed Finish Grade
        soil type = EMBANKMENT
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line
            lv = 2,8,10,11,18,19
            co = 0,10,11,16,17,18,19,244


    Proposed Undercut
        /* pave layer 1 in criteria files */
        soil type = HACP
        roadway exc mult factor =     0.000001
        subsoil exc mult factor =     0.000001
        fill mult factor =     0.000001
            type = line
            lv = 3
            co = 3
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */

    Proposed Undercut
        /* pave layer 2 in criteria files */
        soil type = AGGREGATE_BASE
        roadway exc mult factor =     0.000001
        subsoil exc mult factor =     0.000001
        fill mult factor =     0.000001
            type = line
            lv = 4
            co = 4
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */

    Proposed Undercut
        /* wall excav in criteria files */
        soil type = WALL
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line
            lv = 11,12,47
            co = 11,12,47
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */



    Write Earthwork Shapes
        plot param
            lv = 52
```

```
        co = 0
        wt = 0
        lc = 0
        Stratify Shape Color

combine common exc + subgrade exc + subsoil exc

   /* Add accum unadj vol column   (GEOPAK 2000 or later only) */
   /* Add accum adj vol column   (GEOPAK 2000 or later only) */
   /* End area decimal places = [0-4]   (GEOPAK 2000 or later only) */

Process Earthwork for Baseline = wy04A
    job number = wy4

    beg sta = 45+000 r 2
    end sta = 45+020 r 2
```

```
/* quiet */

/* Earthwork run with no factor  */

XSECTION

Earthwork

tolerance =     0.01
/* Vertical search distance = ???  (GEOPAK 2000 or later only) */

xs dgn = s:\tranproj\246195-15\hwydes\wyfs 4-1(4)\design\xswy04.dgn

    Existing Ground Line
        soil type = ROADWAY_EXC
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line, line_string
            lv = 56
            co = 2,7

     Proposed Finish Grade
        soil type = EMBANKMENT
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line
            lv = 2,8,10,11,18,19
            co = 0,10,11,16,17,18,19,244


    Proposed Undercut
        /* pave layer 1 in criteria files */
        soil type = HACP
        roadway exc mult factor =     0.000001
        subsoil exc mult factor =     0.000001
        fill mult factor =     0.000001
            type = line
            lv = 3
            co = 3
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */

    Proposed Undercut
        /* pave layer 2 in criteria files */
        soil type = AGGREGATE_BASE
        roadway exc mult factor =     0.000001
        subsoil exc mult factor =     0.000001
        fill mult factor =     0.000001
            type = line
            lv = 4
            co = 4
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */

    Proposed Undercut
        /* wall excav in criteria files */
        soil type = WALL
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line
            lv = 11,12,47
            co = 11,12,47
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */



    Write Earthwork Shapes
        plot param
            lv = 52
```

```
        co = 0
        wt = 0
        lc = 0
        Stratify Shape Color

combine common exc + subgrade exc + subsoil exc

   /* Add accum unadj vol column   (GEOPAK 2000 or later only) */
   /* Add accum adj vol column   (GEOPAK 2000 or later only) */
   /* End area decimal places = [0-4]   (GEOPAK 2000 or later only) */

Process Earthwork for Baseline = wy04
    job number = wy4

    beg sta = 45+000
    end sta = 45+305
```

```
/* quiet */

/* Earthwork run with no factor  */

XSECTION

Earthwork

tolerance =     0.01
/* Vertical search distance = ???  (GEOPAK 2000 or later only) */

xs dgn = P:\Projects - Transportation\Tranproj\100002989\HwyDes\WYFS
4-1(5)\design\xswy04opt2.dgn

    Existing Ground Line
        soil type = ROADWAY_EXC
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line, line_string
            lv = 56
            co = 2,7

     Proposed Finish Grade
        soil type = EMBANKMENT
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line
            lv = 2,8,10,11,18,19
            co = 0,10,11,16,17,18,19,244


    Proposed Undercut
        /* pave layer 1 in criteria files */
        soil type = HACP
        roadway exc mult factor =     0.000001
        subsoil exc mult factor =     0.000001
        fill mult factor =     0.000001
            type = line
            lv = 3
            co = 3
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */

    Proposed Undercut
        /* pave layer 2 in criteria files */
        soil type = AGGREGATE_BASE
        roadway exc mult factor =     0.000001
        subsoil exc mult factor =     0.000001
        fill mult factor =     0.000001
            type = line
            lv = 4
            co = 4
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */

    Proposed Undercut
        /* wall excav in criteria files */
        soil type = WALL
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line
            lv = 11,12,47
            co = 11,12,47
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */



    Write Earthwork Shapes
        plot param
```

```
        lv = 52
        co = 0
        wt = 0
        lc = 0
        Stratify Shape Color

combine common exc + subgrade exc + subsoil exc

   /* Add accum unadj vol column   (GEOPAK 2000 or later only) */
   /* Add accum adj vol column   (GEOPAK 2000 or later only) */
   /* End area decimal places = [0-4]   (GEOPAK 2000 or later only) */

Process Earthwork for Baseline = OPT2
    job number = wy4

    beg sta = 45+328
    end sta = 45+800
```

```
/* quiet */

/* Earthwork run with no factor  */

XSECTION

Earthwork

tolerance =     0.01
/* Vertical search distance = ???  (GEOPAK 2000 or later only) */

xs dgn = P:\Projects - Transportation\Tranproj\100002989\HwyDes\WYFS
4-1(5)\design\xswy04apprd03a.dgn

    Existing Ground Line
        soil type = ROADWAY_EXC
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line, line_string
            lv = 56
            co = 2,7

     Proposed Finish Grade
        soil type = EMBANKMENT
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line
            lv = 2,8,10,11,18,19
            co = 0,10,11,16,17,18,19,244


    Proposed Undercut
        /* pave layer 1 in criteria files */
        soil type = HACP
        roadway exc mult factor =     0.000001
        subsoil exc mult factor =     0.000001
        fill mult factor =     0.000001
            type = line
            lv = 3
            co = 3
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */

    Proposed Undercut
        /* pave layer 2 in criteria files */
        soil type = AGGREGATE_BASE
        roadway exc mult factor =     0.000001
        subsoil exc mult factor =     0.000001
        fill mult factor =     0.000001
            type = line
            lv = 4
            co = 4
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */

    Proposed Undercut
        /* wall excav in criteria files */
        soil type = WALL
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line
            lv = 11,12,46,47
            co = 11,12,46,47
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */



    Write Earthwork Shapes
        plot param
```

```
        lv = 52
        co = 0
        wt = 0
        lc = 0
        Stratify Shape Color

combine common exc + subgrade exc + subsoil exc

   /* Add accum unadj vol column   (GEOPAK 2000 or later only) */
   /* Add accum adj vol column   (GEOPAK 2000 or later only) */
   /* End area decimal places = [0-4]   (GEOPAK 2000 or later only) */

Process Earthwork for Baseline = app03-A
    job number = wy4

    beg sta = 3+004.500
    end sta = 3+030.000
```

```
/* quiet */

/* Earthwork run with no factor  */

XSECTION

Earthwork

tolerance =     0.01
/* Vertical search distance = ???  (GEOPAK 2000 or later only) */

xs dgn = P:\Projects - Transportation\Tranproj\100002989\HwyDes\WYFS
4-1(5)\design\xswy04apprd04a.dgn

    Existing Ground Line
        soil type = ROADWAY_EXC
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line, line_string
            lv = 56
            co = 2,7

     Proposed Finish Grade
        soil type = EMBANKMENT
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line
            lv = 2,8,10,11,18,19
            co = 0,10,11,16,17,18,19,244


    Proposed Undercut
        /* pave layer 1 in criteria files */
        soil type = HACP
        roadway exc mult factor =     0.000001
        subsoil exc mult factor =     0.000001
        fill mult factor =     0.000001
            type = line
            lv = 3
            co = 3
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */

    Proposed Undercut
        /* pave layer 2 in criteria files */
        soil type = AGGREGATE_BASE
        roadway exc mult factor =     0.000001
        subsoil exc mult factor =     0.000001
        fill mult factor =     0.000001
            type = line
            lv = 4
            co = 4
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */

    Proposed Undercut
        /* wall excav in criteria files */
        soil type = WALL
        roadway exc mult factor =     1.00
        subsoil exc mult factor =     1.00
        fill mult factor =     1.00
            type = line
            lv = 11,12,46,47
            co = 11,12,46,47
        /* Do not include in mass ordinate   (GEOPAK 2000 or later only) */



    Write Earthwork Shapes
        plot param
```

```
        lv = 52
        co = 0
        wt = 0
        lc = 0
        Stratify Shape Color

combine common exc + subgrade exc + subsoil exc

   /* Add accum unadj vol column   (GEOPAK 2000 or later only) */
   /* Add accum adj vol column   (GEOPAK 2000 or later only) */
   /* End area decimal places = [0-4]   (GEOPAK 2000 or later only) */

Process Earthwork for Baseline = app04-A
    job number = wy4

    beg sta = 4+004.500
    end sta = 4+017.452
```

Project WY HPP 4-I(5) Beartooth Highway
Earthwork - Existing Wetland Reclamation - Original
PBS&J Project No. 100002989
August 1, 2008

Station	Cut Area Square Meters	Fill Area Square Meters	Average End Area Square Meters	Volume Cubic Meters
44+860	0.1892	0		
			0.305	3
44+870	0.694	0.275		
			0.180	2
44+880	0.117	0.177		
			-0.919	-18
44+900	0.133	1.911		
			-2.252	-45
44+920	0.246	2.972		
			5.086	102
44+940	12.897	0.000		
			10.433	209
44+960	7.968	0.000		
			5.700	114
44+980	3.432	0.000		
			2.107	42
45+000	0.783	0.000		

TOTAL CUBIC METERS	**408**

Project WY HPP 4-I(4) Beartooth Highway
Earthwork - Existing Wetland Reclamation - Original 1
PBS&J Project No. 100002989
August 1, 2008

Station	Area Square Meters	Average End Area Square Meters	Volume Cubic Meters
19+980	0		
		0.543	22
20+000	1.085		
		7.493	300
20+020	2.088		
		7.995	160
20+040	13.901		
		16.611	332
20+060	19.321		
		11.988	240
20+080	4.654		
		4.424	88
20+100	4.193		
		4.074	81
20+120	3.954		
		4.803	96
20+140	5.652		
		5.773	115
20+160	5.893		
		5.374	107
20+180	4.855		
		5.188	104
20+200	5.521		
		6.382	128
20+220	7.243		
		7.176	144
20+240	7.109		
		9.255	185
20+260	11.400		
		11.852	237
20+280	12.303		
		6.152	123
20+300	0.000		

TOTAL CUBIC METERS	**2462**

Project WY HPP 4-I(4) Beartooth Highway
Earthwork - Existing Wetland Reclamation - Original 2
PBS&J Project No. 100002989
August 1, 2008

Station	Area Square Meters	Average End Area Square Meters	Volume Cubic Meters
45+375	0.000		
		1.765	9
45+380	3.529		
		4.067	81
45+400	4.605		
		4.140	41
45+410	3.674		
		2.952	30
45+420	2.230		
		3.081	15
45+425	3.931		
		4.045	61
45+440	4.158		
		5.306	106
45+460	6.454		
		6.125	122
45+480	5.795		
		8.175	164
45+500	10.555		
		7.644	153
45+520	4.733		
		4.517	90
45+540	4.300		
		4.292	86
45+560	4.283		
		3.750	3
45+561	3.216		
		1.608	31
45+580	0.000		

TOTAL CUBIC METERS	**992**

Project WY HPP 4-I(4) Beartooth Highway Option Y
Earthwork Existing Topsoil Station Ranges

PBS&J Project No. 100002989

August 1, 2008

See S:\Tranproj|100002989|HwyDes\WYFS 4-1(4)\Geopak\Earthwork\existing topsoil shapes.dgn

Station	Cut	Fill	From	To	Topsoil Areas	Depth Meters	Total Cut Topsoil Volume Cubic Meters	Total Fill Topsoil Volume Cubic Meters
44+700	x		lt toe	rt toe	Cut = 319 s.m	0.18	57	
44+720	x		lt toe	rt toe				
44+730		x	lt toe (-12.1)	-3.7				
	x		-3.7	rt toe (14.7)				
44+740		x	lt toe (-14.4)	-4.3	Cut = 1355 s.m	0.18	244	
	x		-4.3	2.6				
		x	2.6	5.1				
	x		5.1	rt toe (12.8)				
44+750		x	lt toe (-12.8)	-5.2				
	x		-5.2	2.2				
		x	2.2	6.1				
	x		6.1	rt toe (14.6)				
44+760	x		lt toe	1.6				
		x	1.6	6.8				
	x		6.8	rt toe				
44+761.645	x		lt toe	1.5				
		x	1.5	6.9				
	x		6.9	rt toe				
44+761.963	x		lt toe	1.5	Fill = 708 s.m.			127
		x	1.5	6.9				
	x		6.9	rt toe				
44+780	x		lt toe	0.0				
		x	0.0	7.3				
	x		7.3	rt toe				
44+793.953	x		lt toe	-1.4				
		x	-1.4	6.8				
	x		6.8	rt toe				
44+796.645	x		lt toe	-1.7				
		x	-1.7	7.0				
	x		7.0	rt toe				
44+830	x		lt toe	-6.6				
		x	-6.6	6.7				
	x		6.7	rt toe				
44+840	x		lt toe	-6.9				
		x	-6.9	-1.4				
	x		-1.4	rt toe				

Project WY HPP 4-I(4) Beartooth Highway Option Y
Earthwork Existing Topsoil Station Ranges

PBS&J Project No. 100002989

August 1, 2008

See S:\Tranproj|100002989|HwyDes\WYFS 4-1(4)\Geopak\Earthwork\existing topsoil shapes.dgn

Station	Cut	Fill	From	To	Topsoil Areas	Depth Meters	Total Cut Topsoil Volume Cubic Meters	Total Fill Topsoil Volume Cubic Meters
44+850	x		lt toe	-9.1				
		x	-9.1	-3.4				
	x		-4.3	rt toe				
44+860	x		lt toe	-11.4				
		x	-11.4	-5.1	Cut = 1403 s.m		253	
	x		-5.1	rt toe				
44+870		x	lt toe	-5.6		0.18		
	x		-5.6	rt toe				
44+880	x		lt toe	rt toe	Fill = 77 s.m.			14
44+920	x		lt toe	rt toe				
44+930		x	lt toe	-1.4				
	x		-1.4	rt toe				
44+940		x	lt toe	5.3	Cut = 700 s.m		91	
	x		5.3	rt toe				
44+960		x	lt toe	6.6		0.13		
	x		6.6	rt toe				
44+980		x	lt toe	6.6				
	x		6.6	rt toe	Fill = 1438 s.m.			187
45+000		x	lt toe	6.1				
	x		6.1	rt toe				
45+020		x	lt toe	6.6				
	x		6.6	rt toe				
45+040		x	lt toe	rt toe				
45+120		x	lt toe	rt toe				
45+140		x	lt toe	7.6	Cut = 1286 s.m		167	
	x		7.6	rt toe				
45+160		x	lt toe	6.6				
	x		6.6	rt toe				
45+170		x	lt toe	6.4				
	x		6.4	rt toe		0.13		
45+180		x	lt toe	7.1				
	x		7.1	rt toe				
45+200		x	lt toe	9.0				
	x		9.0	rt toe				
45+210		x	lt toe	10.1	Fill = 3607 s.m.			469
	x		10.1	rt toe				

Project WY HPP 4-I(4) Beartooth Highway Option Y
Earthwork Existing Topsoil Station Ranges

PBS&J Project No. 100002989

August 1, 2008

See S:\Tranproj|100002989|HwyDes\WYFS 4-1(4)\Geopak\Earthwork\existing topsoil shapes.dgn

Station	Cut	Fill	From	To	Topsoil Areas	Depth Meters	Total Cut Topsoil Volume Cubic Meters	Total Fill Topsoil Volume Cubic Meters
45+220		x	lt toe	10.0				
	x		10.0	rt toe				
45+240		x	lt toe	rt toe				
45+302.151		x	lt toe	rt toe				
05 to 45+328 - Bridge								
45+330		x	lt toe	rt toe				
45+340		x	lt toe	rt toe				
45+355		x	lt toe	rt toe				
45+360		x	lt toe	8.9				
	x		8.9	rt toe				
45+380		x	lt toe	10.7				
	x		10.7	rt toe				
45+400		x	lt toe	7.1				
	x		7.1	rt toe				
45+410		x	lt toe	6.5	**Cut = 2939 s.m**		**382**	
	x		6.5	rt toe				
45+420		x	lt toe	5.7				
	x		5.7	rt toe				
45+425		x	lt toe	5.5				
	x		5.5	rt toe				
45+440		x	lt toe	6.1				
	x		6.1	rt toe				
45+460		x	lt toe	7.1				
	x		7.1	rt toe				
45+480		x	lt toe	rt toe				
45+520		x	lt toe	rt toe				
45+540	x		lt toe	-7.7		**0.13**		
		x	-7.7	rt toe				
45+560		x	lt toe	rt toe				
45+580	x		lt toe	-6.6				
		x	-6.6	21.4				
	x		21.4	rt toe				
45+600	x		lt toe	-6.1				
		x	-6.1	10.9				
	x		10.9	rt toe				
45+620	x		lt toe	-5.2				

Project WY HPP 4-I(4) Beartooth Highway Option Y
Earthwork Existing Topsoil Station Ranges

PBS&J Project No. 100002989

August 1, 2008

See S:\Tranproj|100002989|HwyDes\WYFS 4-1(4)\Geopak\Earthwork\existing topsoil shapes.dgn

Station	Cut	Fill	From	To	Topsoil Areas	Depth Meters	Total Cut Topsoil Volume Cubic Meters	Total Fill Topsoil Volume Cubic Meters
		x	-5.2	8.8				
	x		8.8	rt toe	**Fill = 3315 s.m.**			**431**
45+624.786	x		lt toe	-4.6				
		x	-4.6	10.3				
	x		10.3	rt toe				
45+640	x		lt toe	-1.1				
		x	-1.1	5.6				
	x		5.6	rt toe				
46+645.063	x		lt toe	-1.7				
		x	-1.7	6.3				
	x		6.3	rt toe				
45+660		x	lt toe	rt toe				
45+700		x	lt toe	rt toe				
45+740		x	lt toe	rt toe	**Cut = 1667 s.m**		**200**	
45+760	x		lt toe	rt toe		**0.12**		
45+800	x		lt toe	rt toe	**Fill = 406 s.m.**			**49**
Obliteration Areas	x				**Cut = 2793 s.m Fill = 0 s.m.**	**0.13**	**363**	**0**
apprd03	x				**Cut = 434 s.m**	**0.13**	**57**	**0**
apprd04	x				**Cut = 167 s.m**	**0.13**	**22**	**0**
TOTAL CUBIC METERS							**1835**	**1277**

TOTAL CUBIC METERS AVAILABLE = 3,113

Project WY HPP 4-I(5) Beartooth Highway Option Y
Earthwork Existing Pavement Removal Station Ranges

PBS&J Project No. 100002989

August 1, 2008

Station	Pavement Removal in Cuts (Area)	Backfill for Pavement Removal Under Fill (Area)	Total Pavement Removal Area	Pavement Removal in Cuts (Volume)	Backfill for Pavement Removal Under Fill (Volume)	Total 3" Depth Pavement Volume Cubic Meters
44+700 to 44+730	133.0	0.0	133.0	10.0	0.0	10.0
44+730 to 44+850	579.0	0.0	579.0	43.4	0.0	43.4
44+850 to 44+920	0.0	216.0	216.0	0.0	16.2	16.2
44+920 to 45+000	0.0	251.0	251.0	0.0	18.8	18.8
45+000 to 45+305	0.0	14.4	14.4	0.0	1.1	1.1
45+305 to 45+328 - Bridge				0.0	0.0	0.0
45+328 to 45+800	1275.0	345.0	1620.0	95.6	25.9	121.5
OBLITERATION AREAS	3854.0		3854.0	289.1	0.0	289.1
TOTAL CUBIC METERS 500						