

3.2.5.2 Railroads

A major railroad grade embankment (approximately 4'-12' in height) is located on the eastern edge of the site, immediately outside of the permit area. This grade supports the main rail line(s) and is owned and maintained by the Denver and Rio Grande Western Railroad. This line will undoubtedly remain in service after closure of the C.V. Spur.

The railroad loop within the C.V. Spur is owned by Beaver Creek Coal Company. It consists of a single set of tracks slightly elevated (3') above natural ground. This rail serves as a loop for the unit trains to travel head-first into the silo, eliminating the need for engine switching. The loop is 8,340 feet long. This rail line will be used and maintained throughout the C.V. Spur operational life.

Grades and typical cross-section of the rail loop are shown on Plate 3-5, "Railroad Facilities".

3.2.5.3 Conveyors

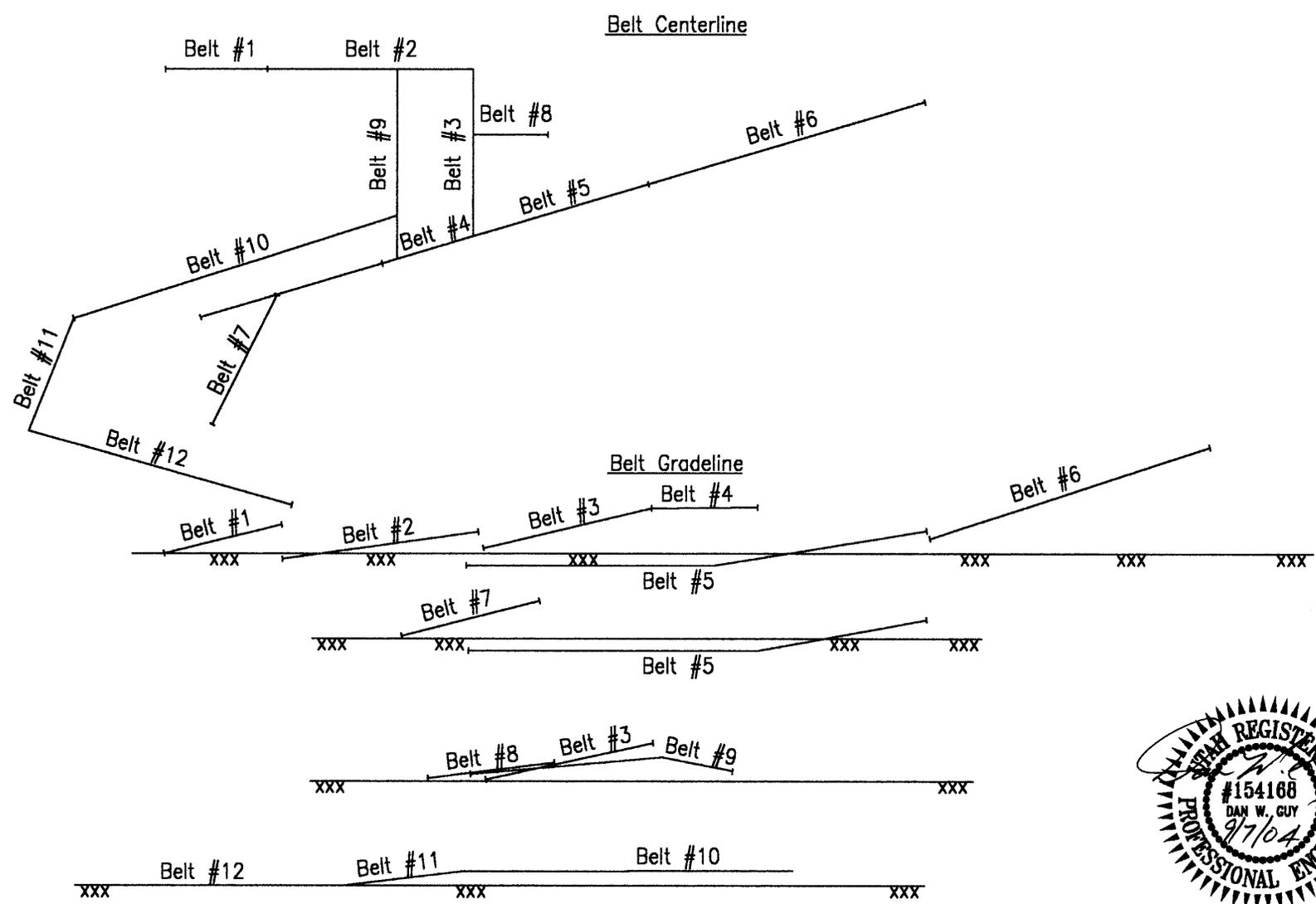
There are twelve (12) separate, permanent conveyor runs at the C.V. Spur (see Figure 3-7). In addition, there are temporary, portable conveyors used on the site. The number and location of the temporary conveyors varies according to need.

Conveyor #1 - 36" x 250' long stacking conveyor from the truck dump to the raw coal stacking tube.

Conveyor #2 - 36" x 420' reclaim conveyor from raw coal pile into wash plant.

Conveyor(s)# 3-(2) 36" x 365' clean fine and coarse coal conveyors from the plant to the clean coal stacking tube.

05/16/83



Savage Coal Terminal

### Centerline and Grade of Belts

3.2.5.3 Conveyors (continued)

Conveyor #4 - 36" x 225' clean fine coal transfer conveyor from coarse coal stacking tube to fine coal stacking tube.

Conveyor #5 - 48" x 600' clean coal reclaim conveyor from clean coal piles to transfer in loadout sample building.

Conveyor #6 - 48" x 660' loading conveyor from transfer point in sample building to 10,000 ton silo.

Conveyor #7 - This conveyor is 36" x approximately 350' and runs from the new truck dump to a crushed coal stacking tube.

Conveyor #8 - 42" x 150' conveyor from the new truck dump to the twin 36" conveyors described in #3 above.

Conveyor #9 - 48" x 440' conveyor from the plant feed belt to the clean coal stacking tube area.

Conveyor #10 - 48" x 728' elevated conveyor from truck loop storage area to conveyor #9.

Conveyor #11 - 48" x 246' feed conveyor from the truck loop storage area to conveyor #10.

Conveyor #12 - 48" x 564' future surface transfer system to move coal from the track loop storage area to conveyors #10 and #11.

Grade of all conveyors are shown on Figure 3-7, "Conveyors - Loadout & Grades". All surface conveyors are covered and equipped with walkways. All conveyors will be used throughout the C.V. Spur operational life.

3.2.5.4 Maintenance

Transportation facilities are maintained and will be restored to prevent damage to fish, wildlife and related environmental values, as well as additional contributions of suspended solids to streamflow or runoff outside the permit area. In addition, they are maintained in a manner to control and minimize degradation of water quality and quantity, control and minimize erosion and siltation as well as pollution. This is accomplished in the following ways:

- (1) All conveyors are covered to minimize fugitive dust;
- (2) The use of stacking tubes for coal pile minimizes fugitive dust from free-falling coal;
- (3) Coal is drawn into the plant and silo conveyors by underground feeders, equipped with water sprays to minimize dust;
- (4) The unit train loadout is within the enclosed area, and water sprays are available if necessary to reduce dust;
- (5) Roads are watered as necessary to minimize dust;
- (6) Drainage controls are maintained to prevent contaminated water from the disturbed area from leaving the permit area.

3.2.6 Water Management Facilities

3.2.6.1 Process-Water System

The process water system for the preparation plant is designed so that under normal operating conditions no waste water is discharged and makeup water is added only to replace absorption losses of water into the coal and refuse. A six-inch pipeline from a pumping station at the Price River is the primary water supply. This pipeline, as well as the secondary makeup water source (the sedimentation ponds described

in section 3.2.6.3) feeds a collection sump (housed on the northeast corner of the site, see Plate 3-1) from which water is then drawn on demand into the prep plant. At the present time, water is used for dust control, processing, wash down and road watering. No washing of coal is presently being performed in the plant.

3.2.6.1 Process-Water System (continued)

As previously stated, the preparation plant is designed to operate as a non-discharging facility. In the event that a mechanical failure or some other unforeseen circumstance would cause an overflow of water while the drainwater storage sump within the plant was completely full, provisions have been made to directly convey the water to series of sediment ponds. The UPDES permit for C.V. Spur has established discharge pont No. 002 as the preparation plant in the event an emergency discharge is required.

3.2.5.2 Sewage Systems

There are two (2) wastewater disposal facilities at C.V. Spur (see Plate 3-2). Both sites are of the septic tank-drainfield type and each is approved by the Utah Health Department.

Table 7-25  
CULVERT DESIGN SPECIFICATIONS

Culvert Number	Design Discharge (cfs)	Diameter (ft)	Length (ft)	Normal Depth	Velocity (ft/sec)
C-1	0.81	1.0	30	0.45	2.38
C-1a	0.81	2.0	40	0.45	2.38
C-2	0.98	1.5	35	0.35	2.80
C-3	3.70	(2) 1.5	30	0.59	2.90
C-4	0.36	2.0	60	0.26	1.81
C-5	9.68	2.0	70	1.35	3.59
C-6	0.80	1.5	30	0.38	2.20
C-7	10.56	2.0	30	1.43	4.40
C-8	0.77	1.5	860	0.71	3.65
C-9	1.44	1.5	50	0.51	2.70
C-10	11.97	2.0	70	1.60	4.44
C-11	-	-	-	-	-
C-12	5.11	1.5	40	1.11	3.64
C-13	5.11	1.5	180	1.17	4.73
<del>C-13A</del>	<del>5.11</del>	<del>1.5</del>	<del>50</del>	<del>1.11</del>	<del>3.64</del>
C-13B	5.11	1.50	60	1.11	3.64
C-14**	-	-	-	-	-
C-15	20.50	2.0	20	2.87*	7.60*
C-16	1.34	2.0	30	0.45	2.10
C-17	0.36	2.0	40	0.26	1.81
C-18	0.80	1.0	40	0.46	2.20
C-19	0.22	1.0	20	0.28	1.19
C-20	0.22	1.0	20	0.28	1.19
C-21	1.11	2.0	60	0.34	2.05
C-22	13.88	2.0	100	2.10****	11.49
C-23	0.15	1.0	30	0.20	1.50
C-24	1.44	1.5	30	0.51	2.70
C-25	1.11	1.5	20	0.40	2.05
<del>C-26</del>	<del>1.44</del>	<del>1.5</del>	<del>30</del>	<del>0.51</del>	<del>2.70</del>

\* Head Water Depth = 3.50 ft.

\*\* Removed 12/18/91 - Replaced with open spillway

\*\*\* Erosion to be minimized by the use of 9" med. diam. rip-rap at the culvert outlet.

\*\*\*\* Head Water Depth - 3.50 ft.

Note: Culvert C-11 has been removed and replaced with extended 24" culvert C-21.

Culvert C-13A will be replaced with extended culvert C-13.

Culvert C-26 will be replaced with extended 18" Culvert C-8.

Circular Channel Analysis & Design  
Solved with Manning's Equation

Open Channel - Uniform flow

Worksheet Name: SAVAGE COAL TERMINAL

Comment: CULVERT C-8 (EXTENDED)

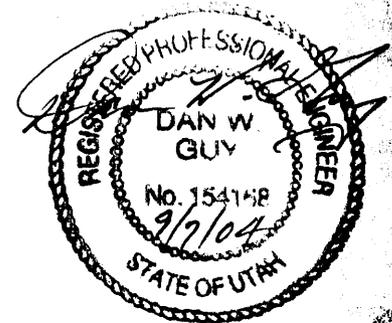
Solve For Full Flow Diameter

Given Input Data:

Slope.....	0.0350 ft/ft
Manning's n.....	0.024
Discharge.....	1.44 cfs

Computed Results:

Full Flow Diameter.....	0.71 ft
Full Flow Depth.....	0.71 ft
Velocity.....	3.65 fps
Flow Area.....	0.39 sf
Critical Depth....	0.56 ft
Critical Slope....	0.0376 ft/ft
Percent Full.....	100.00 %
Full Capacity.....	1.44 cfs
QMAX @.94D.....	1.55 cfs
Froude Number.....	FULL



Open Channel Flow Module, Version 3.43 (c) 1991  
Haestad Methods, Inc. \* 37 Brookside Rd \* Waterbury, Ct 06708

**APPENDIX 3-8**

Proposed

Transfer Conveyor Addition

I. **Introduction**

This proposal is for the addition of a new transfer conveyor system to move coal from the new loop track storage area to the reclaim and silo loadout system. This conveyor system will vastly reduce the movement of the coal by trucks and loaders.

II. **General**

The proposed system consists of 3 conveyors. Two of the conveyors will be elevated, and are approximately 246' and 728' in length, respectively. The third conveyor is a surface transfer system, and is approximately 564' in length. This conveyor is shown as a future installation; however, it is included in this proposal for permitting purposes. Conveyor details are shown on enclosed Plates A3-8-1, A3-8-2, and A3-8-3. All conveyors are 48" wide and will be equipped with covers.

The only other change to the site plan will be the extension of culvert C-8 for a distance of approximately 800'. This will be an 18" CMP culvert in place of the existing ditch beneath the proposed 728' conveyor. No other drainage controls will be changed as a result of this installation. All construction will be within the existing disturbed area.

III. **Environmental Controls**

A. **Hydrology**

As indicated above, the only change in hydrology will be the extension of existing culvert C-8 to replace the ditch beneath the 728' conveyor structure. This will reduce the potential impact to the open ditch and eliminate the need for ditch maintenance beneath the conveyor structure. Runoff from the area of culvert extension is primarily by sheet flow in the northeasterly direction, and will remain the same after installation. The culvert will still drain to the open ditch below and flow to the sediment pond. There will be no changes to drainage areas or other hydrologic controls from this system.

The proposed culvert installation is shown on Plate 3-2. Culvert sizing and flow details are shown on Table 7-25, page 7-88a.

**B. Vegetation**

All construction will be within the existing disturbed area; therefore, there will be no effect on vegetation.

**C. Soils**

There will be no impact to soils, since this is an existing disturbed area.

**D. Air Quality**

The existing stockpile area is within the approved air quality permit. The installation of the conveyors will likely have a positive effect on actual emissions due to the reduction in coal handling by loaders and trucks.

**E. Reclamation Cost Estimate**

**Introduction** : Reclamation cost estimates for the Transfer Conveyor Addition are based on those used in Appendix 3-5 - "Reclamation Cost Estimate" dated April 2002. Demolition and Labor costs are based on the latest figures provided by the Division. No additional costs are estimated for earthwork or revegetation for this area, since these costs are included with the overall reclamation estimate in Appendix 3-5.

**Procedure** : The only additional reclamation costs included on this area will be the removal of the conveyors and culvert and demolition/disposal of the concrete. The proposed reclamation will include removal and transport of steel structures. Concrete will be broken up and placed in the Sediment Pond No. 1 during final reclamation.

**Calculations** :

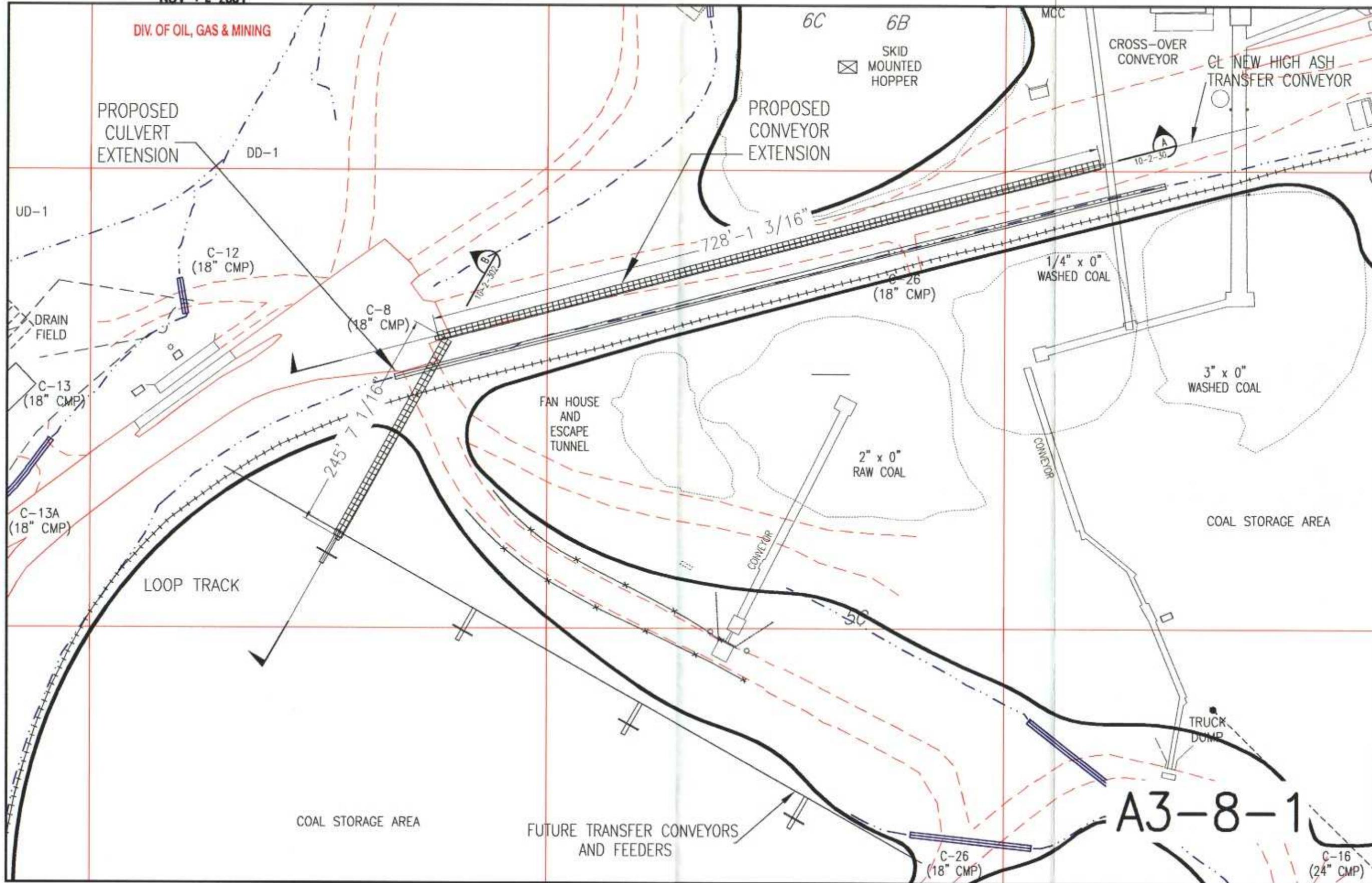
<u>Item</u>	<u>Size</u>	<u>Disposal</u>	<u>Cost/Unit</u>	<u>Cost</u>
Concrete 22@(2'x2'x8')	26 CY	On-Site	\$26.88/CY	\$698.88
48" Conveyor	1538'x7'x4'	Haul	\$0.22/CF	\$9,478.08
18" CMP Culvert	18" x 800'	Haul	\$0.22/CF	\$1,243.44
Labor	48 Hours	-	\$35.75/MH	\$1,716.00
Foreman	24 Hours	-	\$50.00/MH	\$1,200.00

**Summary** : The total projected reclamation cost for the Transfer Conveyor Addition is \$14,332.40. The Savage Coal Terminal is presently bonded for a total of \$2,525,000.00 this figure includes a 5% contingency of \$126,250.00. Reclamation cost for this amendment amounts to 11.35% of the contingency figure and only 0.57% of the posted bond.

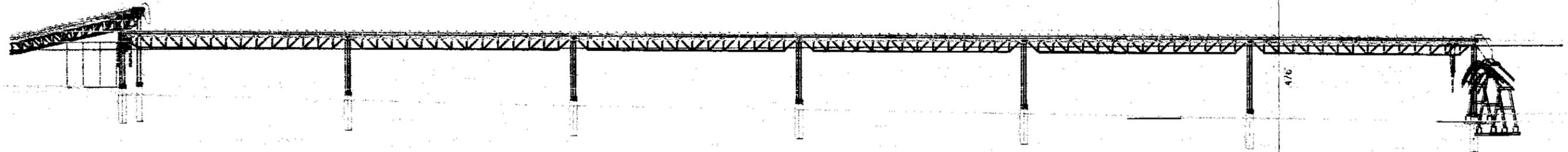
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DIV. OF OIL, GAS & MINING



28'-10 1/2"



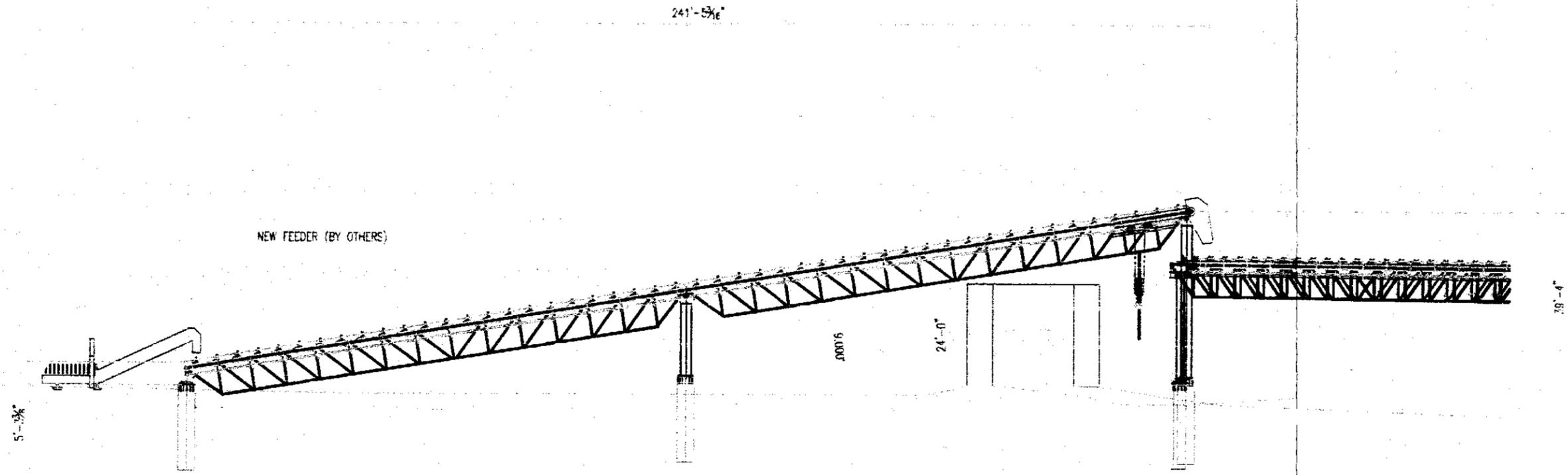
728'-0"

38'-10 1/2"

120'-0"

SECTION (A)

A3-8-2



SECTION (B)