

0010

File ACT/007/007 #2



**KAISER COAL CORPORATION**  
**Sunnyside Coal Mines**  
P.O. Box 10  
Sunnyside, Utah 84539  
Telephone (801) 888-4421

November 4, 1988

Mr. John Whitehead  
Department of Natural Resources  
Division of Oil, Gas & Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

Dear John:

Re: Response to State Violation No. N88-30-2-1,  
ACT/007,007, Folder No. 5,  
Carbon, County, Utah

Enclosed is the revised drawing for the Borrow Area Sediment Pond (Drawing D4-0166) and the riprap sizing for the appropriate ditches associated with this pond.

The riprap design program is good for slopes up to the 15 percent range. For steeper slopes; i.e., greater than 15%, Kaiser requests the Division consider using riprap,  $D_{50} = 6"$ , grouted in place. Keyways  $12" \times 12"$  would be placed on 10-foot centers as riprap is placed and grouted. This method is working on the SSSF and Coarse Refuse Toe Ponds at Sunnyside and the Slurry Pipeline Pond at Wellington. Kaiser requests the option to use  $6"$  grouted riprap instead of placing ungrouted riprap  $D_{50} = 2.5"$  for the pond inlet ditch.

As we discussed, Kaiser is awaiting the last bid for pond construction which is anticipated today. Upon receipt of that bid, a decision will be made on the contractor and the job contract awarded. Kaiser will also stake the pond for the contractor today. Assuming release of funds for construction next week, Kaiser will then mobilize the contractor immediately to begin work.

Please feel free to call if I can be of further assistance.

Sincerely,

W. P. Balaz, Jr., P. E.  
Manager of Administration

WPB:th

Enclosures

cc: Lou Kuchinic, Letter Only  
Bill Warmack W/Enclosures

KAISER COAL CORPORATION  
SUNNYSIDE MINES  
BORROW AREA SEDIMENT POND  
RIPRAP SIZING

PROGRAM: SSRIPRAP  
DATE: 11/04/88

NOTE: CHANNEL SIZING TAKEN FROM APPROVED DESIGNS SUBMITTED TO DOGM ON 6/30/88

POND INLET SIZING

-----  
INPUT DATA:

PEAK DISCHARGE 25-YEAR STORM	26.08 CFS
SLOPE OF DITCH	12.5 %
MANNINGS NUMBER	0.03
WIDTH OF BOTTOM OF DITCH	2 FT
DITCH SIDE SLOPES	3 :1
DEPTH OF FLOW	0.7 FT

OUTPUT DATA:

AREA OF FLOW	2.9 SQ.FT.
WETTED PERIMETER	6.4 FT
HYDRAULIC RADIUS	0.45 FT
VELOCITY	10.2 FPS
DISCHARGE	29.4 CFS

KAISER COAL CORPORATION  
SUNNYSIDE MINES  
BORROW AREA SEDIMENT POND  
RIPRAP SIZING (CONT)

RIP RAP SELECTION

-----  
CALCULATE MANNINGS N  
-----

D 50 = RIP RAP SIZE FT.  
D50 = 2.5

$$N = .0395 * D50^{1/6}$$

N = 0.046

RECHECK DEPTH OF FLOW	INPUT
-----	-----
d = DEPTH OF FLOW FT.	0.7
b = CHANNEL BOTTOM WIDTH FT.	2
Q = FLOWRATE CFS	29.36
S = SLOPE %	12.50%
SG = SPECIFIC GRAVITY ROCK	2.65

$$d = ((N * Q) / (1.5 * b * S^{.5}))^{.6}$$

d = 1.16

CHECK FOR STABILITY

-----  
T = Gds

T = TRACTIVE FORCE

G = 62.4

d = CHANNEL FLOW DEPTH FT

s = SLOPE

T = 9.02 LBS/FT<sup>2</sup>

$$NB = (21 * T) / (G * (SG - 1) * D50)$$

NB = 0.736

ANGLE OF REPOSE , RIP RAP FIGURE 3.14 BARFIELD, WARNER AND HAAN, P 187

-----  
AR = ANGLE OF REPOSE  
AR = 42 DEGREES

AC = ANGLE OF CHANNEL BOTTOM  
FOR 12.50% SLOPE  
AC = 7.13 DEGREES

KAISER COAL CORPORATION  
SUNNYSIDE MINES  
BORROW AREA SEDIMENT POND  
RIPRAP SIZING (CONT)

CALCULATE SAFETY FACTOR FOR BOTTOM OF CHANNEL  
-----

SF = SAFETY FACTOR

$$SF = \cos AC * \tan AR / \sin AC + NB * \tan AR$$

$$SF = 1.14$$

CHECK STABILITY OF RIP RAP ON SIDE SLOPES  
-----

CALCULATE T MAX

$$T \text{ MAX} = .76 * G * d * S$$

$$T \text{ MAX} = 6.86 \text{ LBS/FT}^2$$

$$NB \text{ MAX} = (21 * T \text{ MAX}) / (G * (SG - 1) * D50)$$

$$NB \text{ MAX} = 0.559$$

ASSUME UNIFORM FLOW

$$A = \tan^{-1}(1 / \text{SIDE SLOPE})$$

$$\text{SIDE SLOPE} \quad 3 : 1$$

$$A = 18.43$$

$$B = \tan^{-1}(\cos AC / (2 * \sin A / NB * \tan AR) + \sin AC)$$

$$B = 35.72 \text{ DEGREES}$$

$$N' = NB \text{ MAX} * ((1 + \sin(AC + B)) / 2)$$

$$N' = 0.470$$

$$SF = (\cos A * \tan AR) / ((N' * \tan AR) + (\sin A * \tan B))$$

$$SF = 1.26 \text{ FS} > 1 \text{ THEREFORE RIPRAP IS STABLE}$$

KAISER COAL CORPORATION  
SUNNYSIDE MINES  
BORROW AREA SEDIMENT POND  
RIPRAP SIZING

PROGRAM: SS RIPRAP  
DATE: 11/04/88

NOTE: CHANNEL SIZING TAKEN FROM APPROVED DESIGNS SUBMITTED TO DOGM ON 6/30/88

POND OUTLET SIZING

-----

INPUT DATA:

PEAK DISCHARGE 25-YEAR STORM	26.08 CFS
SLOPE OF DITCH	24 %
MANNINGS NUMBER	0.03
WIDTH OF BOTTOM OF DITCH	3 FT
DITCH SIDE SLOPES	3 :1
DEPTH OF FLOW	0.5 FT

OUTPUT DATA:

AREA OF FLOW	2.3 SQ.FT.
WETTED PERIMETER	6.2 FT
HYDRAULIC RADIUS	0.37 FT
VELOCITY	12.4 FPS
DISCHARGE	27.9 CFS

KAISER COAL CORPORATION  
SUNNYSIDE MINES  
BORROW AREA SEDIMENT POND  
RIPRAP SIZING (CONT)

RIP RAP SELECTION  
-----

CALCULATE MANNINGS N  
-----

D 50 = RIP RAP SIZE FT.

D50 = 2.5

$N = .0395 * D50^{1/6}$

N = 0.046

RECHECK DEPTH OF FLOW  
-----

INPUT  
-----

d = DEPTH OF FLOW FT.	0.5
b = CHANNEL BOTTOM WIDTH FT.	3
Q = FLOWRATE CFS	27.87
S = SLOPE %	24.00%
SG = SPECIFIC GRAVITY ROCK	2.65

$d = ((N * Q) / (1.5 * b * S^{.5}))^{.6}$

d = 0.72

CHECK FOR STABILITY  
-----

T=Gds

T= TRACTIVE FORCE

G= 62.4

d=CHANNEL FLOW DEPTH FT

s=SLOPE

T= 10.82 LBS/FT<sup>2</sup>

$NB = (21 * T) / (G * (SG - 1) * D50)$

NB= 0.883

ANGLE OF REPOSE , RIP RAP FIGURE 3.14 BARFIELD, WARNER AND HAAN, P 187  
-----

AR = ANGLE OF REPOSE

AR = 42 DEGREES

AC = ANGLE OF CHANNEL BOTTOM

FOR 24.00% SLOPE

AC= 13.50 DEGREES

KAISER COAL CORPORATION  
SUNNYSIDE MINES  
BORROW AREA SEDIMENT POND  
RIPRAP SIZING (CONT)

CALCULATE SAFETY FACTOR FOR BOTTOM OF CHANNEL  
-----

SF = SAFETY FACTOR  
SF =  $\cos AC * \tan AR / \sin AC + NB * \tan AR$

SF = 0.85

CHECK STABILITY OF RIP RAP ON SIDE SLOPES  
-----

CALCULATE T MAX  
T MAX =  $.76 * G * d * S$

T MAX = 8.22 LBS/FT<sup>2</sup>

NB MAX =  $(21 * T \text{ MAX}) / (G * (SG - 1) * D50)$

NB MAX = 0.671

ASSUME UNIFORM FLOW

A =  $\tan^{-1}(1/\text{SIDE SLOPE})$   
SIDE SLOPE 3 : 1  
A = 18.43

B =  $\tan^{-1}(\cos AC / (2 * \sin A / NB * \tan AR) + \sin AC)$

B = 37.22 DEGREES

N' =  $NB \text{ MAX} * ((1 + \sin(AC + B)) / 2)$

N' = 0.595

SF =  $(\cos A * \tan AR) / ((N' * \tan AR) + (\sin A * \tan B))$

SF = 1.08 FS > 1 THEREFORE RIPRAP IS STABLE

KAISER COAL CORPORATION  
SUNNYSIDE MINES  
BORROW AREA SEDIMENT POND  
RIPRAP SIZING

PROGRAM: SSRIPRAP  
DATE: 11/04/88

NOTE: CHANNEL SIZING TAKEN FROM APPROVED DESIGNS SUBMITTED TO DOGM ON 6/30/88

PRIMARY SPILLWAY SIZING

-----

INPUT DATA:

PEAK DISCHARGE 10-YEAR STORM	15.12 CFS
SLOPE OF DITCH	0.5 %
MANNINGS NUMBER	0.03
WIDTH OF BOTTOM OF DITCH	4 FT
DITCH SIDE SLOPES	3 :1
DEPTH OF FLOW	0.9 FT

OUTPUT DATA:

AREA OF FLOW	6.0 SQ.FT.
WETTED PERIMETER	9.7 FT
HYDRAULIC RADIUS	0.62 FT
VELOCITY	2.6 FPS
DISCHARGE	15.4 CFS

KAISER COAL CORPORATION  
SUNNYSIDE MINES  
BORROW AREA SEDIMENT POND  
RIPRAP SIZING (CONT)

RIP RAP SELECTION

-----  
CALCULATE MANNINGS N  
-----

D 50 = RIP RAP SIZE FT.

D50 = 0.5

$N = .0395 * D50^{1/6}$

N = 0.035

RECHECK DEPTH OF FLOW

INPUT

-----  
-----  
d = DEPTH OF FLOW FT. 0.9  
b = CHANNEL BOTTOM WIDTH FT. 4  
Q = FLOWRATE CFS 15.41  
S = SLOPE % 0.50%  
SG = SPECIFIC GRAVITY ROCK 2.65

$d = ((N * Q) / (1.5 * b * S^{.5}))^{.6}$

d = 1.16

CHECK FOR STABILITY

-----  
T = Gds

T = TRACTIVE FORCE

G = 62.4

d = CHANNEL FLOW DEPTH FT

s = SLOPE

T = 0.36 LBS/FT2

$NB = (21 * T) / (G * (SG - 1) * D50)$

NB = 0.029

ANGLE OF REPOSE , RIP RAP FIGURE 3.14 BARFIELD, WARNER AND HAAN, P 187

-----  
AR = ANGLE OF REPOSE

AR = 42 DEGREES

AC = ANGLE OF CHANNEL BOTTOM

FOR 0.50% SLOPE

AC = 0.29 DEGREES

KAISER COAL CORPORATION  
SUNNYSIDE MINES  
BORROW AREA SEDIMENT POND  
RIPRAP SIZING (CONT)

CALCULATE SAFETY FACTOR FOR BOTTOM OF CHANNEL  
-----

SF = SAFETY FACTOR

$$SF = \cos AC * \tan AR / \sin AC + NB * \tan AR$$

$$SF = 28.53$$

CHECK STABILITY OF RIP RAP ON SIDE SLOPES  
-----

CALCULATE T MAX

$$T \text{ MAX} = .76 * G * d * S$$

$$T \text{ MAX} = 0.27 \text{ LBS/FT}^2$$

$$NB \text{ MAX} = (21 * T \text{ MAX}) / (G * (SG - 1) * D50)$$

$$NB \text{ MAX} = 0.022$$

ASSUME UNIFORM FLOW

$$A = \tan^{-1}(1 / \text{SIDE SLOPE})$$

SIDE SLOPE 3 : 1

$$A = 18.43$$

$$B = \tan^{-1}(\cos AC / (2 * \sin A / NB * \tan AR) + \sin AC)$$

$$B = 1.83 \text{ DEGREES}$$

$$N' = NB \text{ MAX} * ((1 + \sin(AC + B)) / 2)$$

$$N' = 0.012$$

$$SF = (\cos A * \tan AR) / ((N' * \tan AR) + (\sin A * \tan B))$$

$$SF = 2.62 \text{ FS} > 1 \text{ THEREFORE RIPRAP IS STABLE}$$

KAISER COAL CORPORATION  
SUNNYSIDE MINES  
BORROW AREA SEDIMENT POND  
RIPRAP SIZING

PROGRAM: SS RIPRAP  
DATE: 11/04/88

NOTE: CHANNEL SIZING TAKEN FROM APPROVED DESIGNS SUBMITTED TO DOGM ON 6/30/88

EMERGENCY SPILLWAY SIZING

-----

INPUT DATA:

PEAK DISCHARGE 10-YEAR STORM	10.96 CFS
SLOPE OF DITCH	0.5 %
MANNINGS NUMBER	0.03
WIDTH OF BOTTOM OF DITCH	4 FT
DITCH SIDE SLOPES	3 :1
DEPTH OF FLOW	0.9 FT

OUTPUT DATA:

AREA OF FLOW	6.0 SQ.FT.
WETTED PERIMETER	9.7 FT
HYDRAULIC RADIUS	0.62 FT
VELOCITY	2.6 FPS
DISCHARGE	15.4 CFS

KAISER COAL CORPORATION  
SUNNYSIDE MINES  
BORROW AREA SEDIMENT POND  
RIPRAP SIZING (CONT)

RIP RAP SELECTION  
-----

CALCULATE MANNINGS N  
-----

D 50 = RIP RAP SIZE FT.

D50 = 0.5

$N = .0395 * D50^{1/6}$

N = 0.035

RECHECK DEPTH OF FLOW  
-----

INPUT  
-----

d = DEPTH OF FLOW FT. 0.9

b = CHANNEL BOTTOM WIDTH FT. 4

Q = FLOWRATE CFS 15.41

S= SLOPE % 0.50%

SG = SPECIFIC GRAVITY ROCK 2.65

$d = ((N * Q) / (1.5 * b * S^{.5}))^{.6}$

d = 1.16

CHECK FOR STABILITY  
-----

T=Gds

T= TRACTIVE FORCE

G= 62.4

d=CHANNEL FLOW DEPTH FT

s=SLOPE

T= 0.36 LBS/FT<sup>2</sup>

$NB = (21 * T) / (G * (SG - 1) * D50)$

NB= 0.029

ANGLE OF REPOSE , RIP RAP FIGURE 3.14 BARFIELD, WARNER AND HAAN, P 187  
-----

AR = ANGLE OF REPOSE

AR = 42 DEGREES

AC = ANGLE OF CHANNEL BOTTOM

FOR 0.50% SLOPE

AC= 0.29 DEGREES

KAISER COAL CORPORATION  
SUNNYSIDE MINES  
BORROW AREA SEDIMENT POND  
RIPRAP SIZING (CONT)

CALCULATE SAFETY FACTOR FOR BOTTOM OF CHANNEL  
-----

SF = SAFETY FACTOR

$$SF = \cos AC * \tan AR / \sin AC + NB * \tan AR$$

$$SF = 28.53$$

CHECK STABILITY OF RIP RAP ON SIDE SLOPES  
-----

CALCULATE T MAX

$$T \text{ MAX} = .76 * G * d * S$$

$$T \text{ MAX} = 0.27 \text{ LBS/FT}^2$$

$$NB \text{ MAX} = (21 * T \text{ MAX}) / (G * (SG - 1) * D50)$$

$$NB \text{ MAX} = 0.022$$

ASSUME UNIFORM FLOW

$$A = \tan^{-1}(1 / \text{SIDE SLOPE})$$

$$\text{SIDE SLOPE} \quad 3 : 1$$

$$A = 18.43$$

$$B = \tan^{-1}(\cos AC / (2 * \sin A / NB * \tan AR) + \sin AC)$$

$$B = 1.83 \text{ DEGREES}$$

$$N' = NB \text{ MAX} * ((1 + \sin(AC + B)) / 2)$$

$$N' = 0.012$$

$$SF = (\cos A * \tan AR) / ((N' * \tan AR) + (\sin A * \tan B))$$

$$SF = 2.62 \text{ FS} > 1 \text{ THEREFORE RIPRAP IS STABLE}$$



KAISER COAL CORPORATION  
Sunnyside Coal Mines  
P.O. Box 10  
Sunnyside, Utah 84539  
Telephone (801) 888-4421

October 24, 1988

RECEIVED  
OCT 27 1988

DEPARTMENT OF  
OIL, GAS & MINING

Mr. Bill Minchey  
Minchey Digging  
P. O. Box 247  
Cleveland, Utah 84518

Dear Mr. Minchey:

Kaiser Coal Corporation invites you to bid on the construction of a Borrow Area Sediment Pond at its Sunnyside Mines. The attached bid package contains the pertinent specifications for the project.

Kaiser also requests that each bidder specify payment terms with their bids.

Please feel free to call me at 888-4421 if you have any questions.

Thank you for your interest in this project.

Sincerely,

W. P. Balaz, P.E.  
Manager of Administration

WPB:th

Attachments

cc: Lou Kuchinic  
Denise Dragoo  
Ed Barton  
John Whitehead



**KAISER COAL CORPORATION**  
Sunnyside Coal Mines  
P.O. Box 10  
Sunnyside, Utah 84539  
Telephone (801) 888-4421

October 24, 1988

Mr. Wayne Nielson  
Nielson Construction Company  
North Loop Road  
Huntington, Utah 84528

Dear Mr. Nielson:

Kaiser Coal Corporation invites you to bid on the construction of a Borrow Area Sediment Pond at its Sunnyside Mines. The attached bid package contains the pertinent specifications for the project.

Kaiser also requests that each bidder specify payment terms with their bids.

Please feel free to call me at 888-4421 if you have any questions.

Thank you for your interest in this project.

Sincerely,

W. P. Balaz, P.E.  
Manager of Administration

WPB:th

Attachments

cc: Lou Kuchinic  
Denise Dragoo  
Ed Barton  
John Whitehead



**KAISER COAL CORPORATION**  
**Sunnyside Coal Mines**  
P.O. Box 10  
Sunnyside, Utah 84539  
Telephone (801) 888-4421

October 24, 1988

Mr. Tony Siaperas  
Siaperas Construction  
6135 E. North Coal Creek Road  
Wellington, Utah 84542

Dear Mr. Siaperas:

Kaiser Coal Corporation invites you to bid on the construction of a Borrow Area Sediment Pond at its Sunnyside Mines. The attached bid package contains the pertinent specifications for the project.

Kaiser also requests that each bidder specify payment terms with their bids.

Please feel free to call me at 888-4421 if you have any questions.

Thank you for your interest in this project.

Sincerely,

W. P. Balaz, P.E.  
Manager of Administration

WPB:th

Attachments

cc: Lou Kuchinic  
Denise Dragoo  
Ed Barton  
John Whitehead

KAISER COAL CORPORATION  
SUNNYSIDE MINES

CONSTRUCTION SPECIFICATION FOR BORROW AREA SEDIMENTATION POND

OCTOBER 24, 1988

The purpose of this specification is to solicit bids for the construction of the Borrow Area Sedimentation Pond and its associated structures. This pond is designed and intended to collect and hold, prior to any necessary discharge, surface runoff from the undisturbed and borrow areas on the east side of the slurry pond and south of the railroad wye. Construction permits have been received by Kaiser Coal Corporation from the Utah Division of Oil, Gas and Mining, and the Utah Department of Health for the construction of this pond. The successful bidder is expected to comply fully with these permits.

The locations of the sedimentation pond and the associated facilities are shown on Drawings D4-0166 and C4-0076, which are attached. Contractor access to the work site is to be through the lower yard gate just south of the clean coal stockpile.

This specification covers the construction of the Borrow Area Sedimentation Pond complete with surface diversion ditch, inflow ditch, spillway and decant, riprap, and splash basins. Any request by Owner, Contractor, or other for deviation from this specification must be submitted in writing, attached to this document, and approved by all involved parties prior to its acceptance.

RESPONSIBILITIES OF OWNER

It shall be Kaiser's responsibility to:

- 1) Provide an adequate work site. This shall include timely removal of any mining equipment or other such material from the work site.
- 2) Provide engineering control to initially establish the work location. This will include provision of an elevation benchmark, corner locations of the sedimentation pond, and center points of the soil piles. It will not be the Owner's responsibility to maintain any of these points following the Contractor's arrival on the work site.
- 3) Provide, in a timely manner, all materials which are required for the project, except those specifically excluded from this specification.

CONTRACTOR'S RESPONSIBILITY

It shall be the responsibility of the successful bidder to:

- 1) Comply fully with this specification, including all design details; appropriate permits; and local, state, and federal laws and regulations.
- 2) Provide adequate supervision, labor, and equipment to ensure a proper and timely completion of the job. No maintenance or other assistance will be available from the Owner.
- 3) Provide certified compaction testing where compaction is required.
- 4) Follow fully instructions and recommendations of the Owner's authorized representative, provided they do not deviate from this specification (including approved modifications).
- 5) To avoid more surface disturbance and vegetation damage than is necessary to complete the project.
- 6) Ensure that all Contractor personnel, while on the Owner's property, wear steel-toed boots or shoes, hard hat, and safety glasses with side shields at all times.
- 7) Comply with Company, State, and Federal safety regulations as applicable.

SITE PREPARATION, BORROW AND SOIL PILES

An earthen dam to provide the necessary treatment will be constructed at the location of the existing silt fence. The dam will form two sides of the pond with the other two sides formed by natural topography. Borrow for the dam will be excavated from the east hillside of the pond area itself. Such excavation will be contained within the structure level. Should additional borrow be required, it will be obtained from Borrow Area No. 3. Should surplus borrow be available from the pond excavation, it will be moved to Borrow Area No. 3 for use elsewhere.

It is anticipated that little, if any, topsoil will be available from the pond area as the site has been previously disturbed. Prior to construction, however, the operator will sample the upper twelve inches of soil and have it analyzed for suitability as topsoil. The Division will be

SPECIFICATION  
BORROW AREA POND  
PAGE 3

consulted prior to construction as to such suitability determination. Any topsoil recovered will be stored at Borrow Area No. 3. The ground surface under the dam will have all vegetation matter and rubbish removed and will be ripped prior to dam construction.

SEDIMENTATION POND

The sedimentation pond is to be a combination of an earthen dam and incised pond excavated in accordance with Drawing D4-0166. Pond sides are to typically be 2.5h:1v. Deviation to this slope is at the spillway which is 4h:1v.

The inlet will be in the northeast corner of the pond. Grouted riprap, including riprap keying 12" X 12" on 10-foot centers, will be installed. Ditch slope and cross section will conform to design drawing (D4-0166).

A splash basin of grouted riprap will extend into the pond from the bottom of the inlet ditch. This splash basin will be a minimum of six feet long, six feet wide, and eighteen inches thick and will have an adverse slope of six inches over its length.

The spillway will be lined with grouted riprap its full length, including keying 12" X 12" on 10-foot centers. The spillway is to conform to the following specifications:

	<u>Crest</u>	<u>Side Hill</u>
Approximate Channel Grade	.5%	40%
Bottom Width*	4.0 ft.	3.0 ft.
Channel Side Slope	3h:1v	3h:1v
Channel Depth*	1.0 ft.	.8 ft.
Approximate Length	24 ft.	20 ft.

\* After Riprap Installation

A four-inch diameter pipe is to be used as a decant. This decant is to be installed as shown on Drawing D4-0166. The decant will discharge into the spillway. The decant pipe backfill material is to be compacted to an 85% density. Two anti-seep collars will be provided on the decant pipe. Backfill around these collars is to be compacted to an 85% density.

OUTLET DITCH

The outlet ditch connects the spillway outslope to the final discharge splash basin. This ditch is to be located and constructed according to

SPECIFICATION  
BORROW AREA POND  
PAGE 4

Drawing D4-0166. The ditch shall be as straight and uniform as possible. It is to conform to the following specifications:

Approximate Channel Grade	24%
Bottom Width	3.0 ft.
Channel Side Slope	3h:1v
Channel Depth	.8 ft.
Approximate Length	55 ft.

Excess dirt removed during construction of this ditch is to be placed on the pond spoil pile unless it is determined by the Owner's representative to be of a suitable quality for use as topsoil, in which case it is to be placed on the pond topsoil pile. No premium will be paid for moving of this dirt to either pile.

Erosion protection will be provided by installing an armored corner and grouted riprap and splash basin, 600 feet long, six feet wide, and eighteen inches deep on the discharge end of the ditch.

SURFACE DIVERSION DITCH

The surface diversion ditch intercepts surface runoff from the existing ditch and directs the flow to the pond inlet. This ditch is to be located and constructed according to Drawing D4-0166. It is to conform to the following specifications:

Approximate Channel Grade	1.8%
Bottom Width	2.4 ft.
Channel Side Slope	3h:1v
Channel Depth	1.3 ft.
Approximate Length	250 ft.

Excess dirt removed during construction of this ditch is to be moved to Borrow Area No. 3 for future use unless it is determined by Owner's representative to be of suitable quality for use as topsoil, in which case it is to be placed on pond topsoil pile. No premium will be paid for moving of this dirt to either pile.

SOIL COMPACTION

Soils around and over the pond decant pipe and part or all of each culvert must be properly compacted to meet the densities stated under each section of this specification and must be so certified by contractor.

SPECIFICATION  
BORROW AREA POND  
PAGE 5

Compactions are to be to AASHO standards. The Owner may perform compaction tests at the Owner's expense. In the event the Owner's tests indicate inadequate compaction, the Contractor must provide adequate compaction at no additional cost to the Owner.

DISTURBED AREA AND SOIL PILE REVEGETATION

Contractor will be required to revegetate disturbed areas, pond inslopes and outslopes, and soil piles to prevent erosion. On slopes steeper than 3:1, the use of hydro mulch with tackifier is anticipated. Soil amendments will be added per recommendation based on soil sampling and consistent with the permit. Kaiser will supply the seed mix and soil amendments. Kaiser will also obtain soil tests if additional tests are needed.

HOUSEKEEPING

The Contractor is responsible to assure good housekeeping of the work site at all times. This includes, but is not limited to, the removal, cleanup, or proper storage of trash, oil, vegetal debris, large rocks, excess excavated material, and broken or repair parts. At the completion of the project, the Contractor will be required to remove all of the Contractor's material and equipment.

SCHEDULE

All bids on this revised specification are due in the office of Mr. Bill Balaz, Sunnyside Mines, by 5:00 p.m., November 1, 1988. Bids received after this time may not be accepted.

Award of the bid is anticipated on November 3, 1988.

The project is to be started at the work site within 24 hours following award of the contract.

The project is to be completed as quickly as possible after award of the contract. Since this project is under a State regulatory agency deadline, no weather-related or other delays will be allowed.

BID FORM

Each bidder must fill out the attached Bid Form. Quantities shown are those anticipated by the Owner and will be subject to change as identified during the actual construction process. Any variances from quantities or items on this form should be adequately documented in writing by the bidder at the time of bidding. It is anticipated that no change orders which result in an increased cost to the Owner will be approved by the Owner following the award of a contract to the successful bidder.

Each bidder is to provide a detailed schedule showing the projected work activities, allotted times, and dates. This schedule is to be submitted with the bid.

Each bidder is to provide a listing of the equipment proposed for use on this project. This listing is to be provided with the bid.

KAISER COAL CORPORATION  
SUNNYSIDE MINES

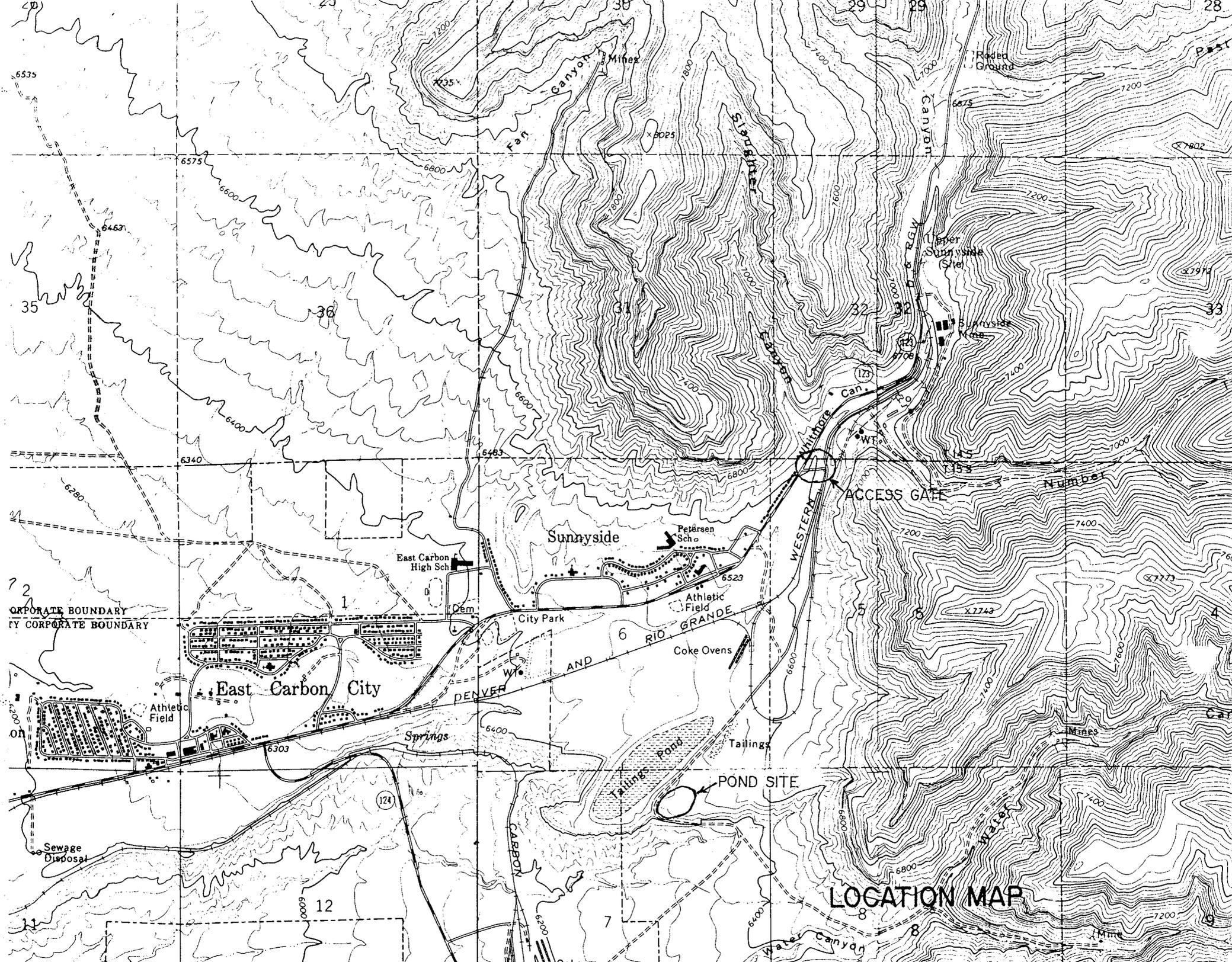
BID FORM FOR  
BORROW AREA SEDIMENTATION POND

<u>Item</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Total Price</u>
Mobilization	Lump Sum	\$ _____	\$ _____
Pond Excavation, Incl. Inlet Ditch And Road	12,500 cy	_____	_____
Spillway Excavation	50 cy	_____	_____
Decant Pipe Installation	520 ft.	_____	_____
Riprap Installation	55 cy	_____	_____
Ditch Excavation	122 cy	_____	_____
Armored Corner	1	_____	_____
Splash Basins (Include Riprap)	2 each	_____	_____
Revegetation		_____	_____
Compaction Testing		_____	_____
Other - Specify		_____	_____
		TOTAL	\$ _____

\_\_\_\_\_  
Company

\_\_\_\_\_  
Signed

\_\_\_\_\_  
Date



LOCATION MAP

CORPORATE BOUNDARY  
MINE CORPORATE BOUNDARY

Sewage Disposal

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**Document Information Form**

Mine Number: C/007/007

File Name: Incoming  
Sunnyside

To: John Whitehead

**From:**

Person W.P. Balaz

Company Kaiser

Date Received: 10-27-88

Explanation: Map - Plate III-42 Drawing D4-0166

Borrow Area Drainage Pond

\_\_\_\_\_  
\_\_\_\_\_

cc:

**Document Information Form**

Mine Number: C/007/007

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Sunnyside

To: John Whitehead

**From:**

Person W.P. Balaz

Company Kaiser

Date Received: 10-27-88

Explanation: Map - Plate 111-42 Borrow

Area Pond Drainage

**cc:**