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ACT/007/007
Copy to Sally & Joe

KAISER STEEL

KAISER STEEL CORPORATION
WESTERN COAL OPERATIONS
SUNNYSIDE, UTAH 84539
TELEPHONE 801-888-4421

JIM

MAY 04 1982

29 April 1982

Mr. James W. Smith, Jr., Min. Coord.
Division of Oil, Gas & Mining
4241 State Office Bldg.
Salt Lake City, Utah, 84114

re: New Haul Road
Sunnyside Mines
ACT/007/007

Dear Jim,

Please find attached a map of the Coarse Refuse Haul Road site with the surface drainage indicated on it. Also calculation tabulation sheets are included.

The 48"ø culvert in the slurry ditch under the new haul road at station 7+00 has a capacity of 160cfs, which is 50 cfs more than the Main Bldgs-Prep Plant-Storage Yard areas combined, which runoff does not all get to the slurry ditch. Therefore, the culvert is more than adequate to handle the slurry & rainfall runoff.

With this information and our letter of 4-6-82, the concerns as outlined in your letter of 2-24-82 should be resolved.

If you have any questions, please contact us. We ask for your immediate approval of the proposed new haul road and release to begin construction. If we do not receive a response within 10 days, Kaiser Steel Corp. will assume this submittal and request are approved.

Sincerely,

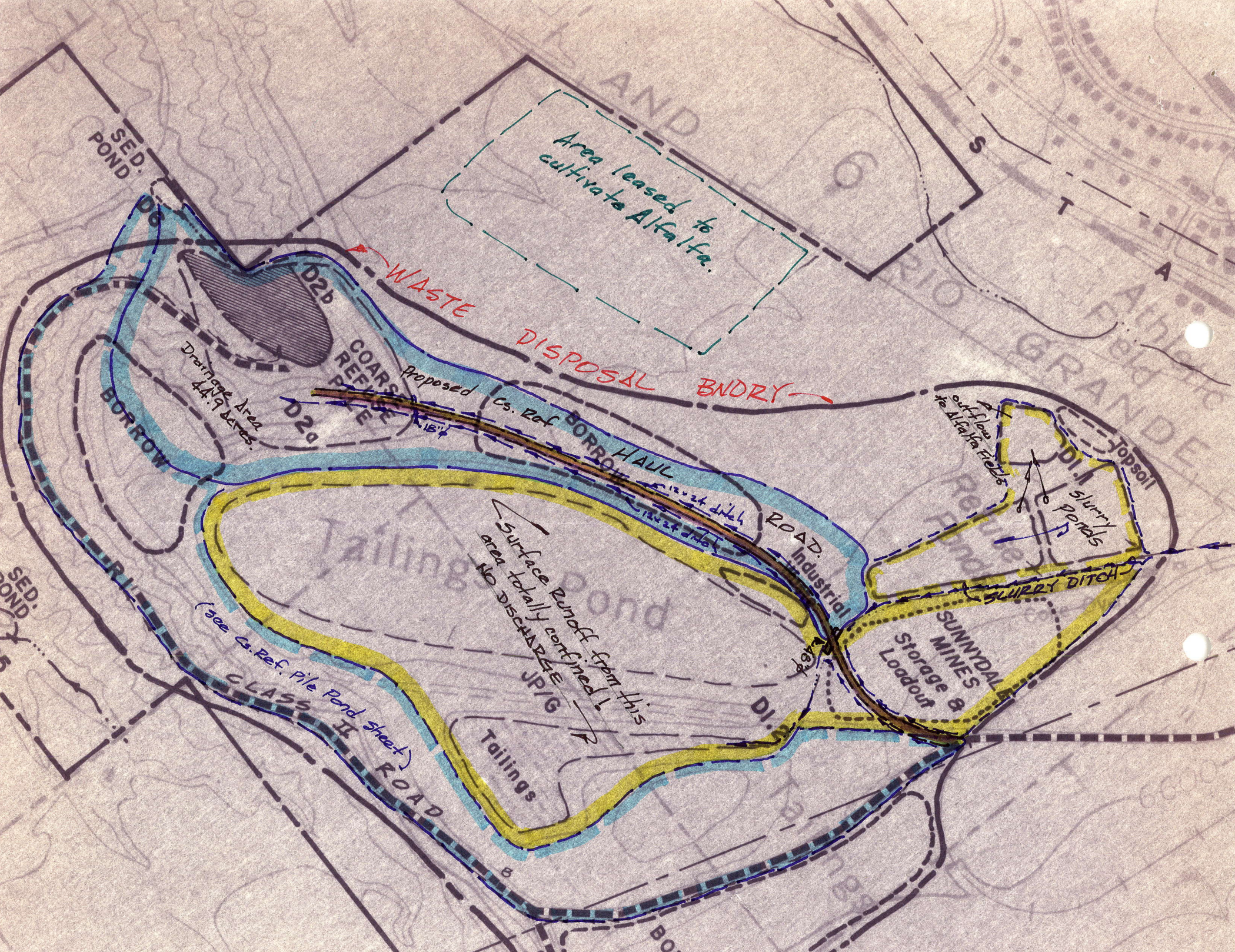
John S. Huefner

John S. Huefner, PE.
Civil Engineer

cc: Denise A. Dragoo

REGISTERED - Return Receipt Requested.

RECEIVED
MAY 04 1982
DIVISION OF
OIL, GAS & MINING



Area leased to cultivate Alfalfa.
WASTE DISPOSAL BNDRY
SED. POND
D6
D2b
D2a
COARSE REFUSE PILE
Drainage Area 44.9 acres.
BORROW
Proposed Cs. Ref
18"φ
BORROW
HAUL ROAD.
12x24 ditch
12x24 ditch
Industrial
Surface Runoff from this area totally confined!
NO DISCHARGE
JP/G
Tailings Pond
Tailings
(see Cs. Ref. Pile Pond Sheet)
CLASS II ROAD
D1.
48"φ
SUNNYDALE MINES Storage & Loadout
SLURRY DITCH
Slurry Ponds
Topsoil
D1.1
outflow to Alfalfa Fields
Refuse Pond
Athletic Field
GRANDE
S
T
A

TABULATION of Surface Runoff Calculations
for those roads using Coarse Refuse as base & surfacing material. Drainage study to satisy Stipulations 5-81-1 & -5 pertaining to the Coarse Refuse Use Study.

	1. MK	2. Acre	3. GCD	4. CN_2	5. CN_1	6. S	7. P"	8. Pcfs	9. ditch/pipe
1. Manshaft & Methane vent pipe area:									
MNSH	A_2	12.3	50	56	36	2.78	.44	5.43	12"dx42"w (mod D-1A)
	B_2	18.1	40	64	44	2.27	.56	10.27	12"dx48"w (D-6A)
	C_2	2.1	60	46	27	3.70	.28	0.59	6"dx12"w (mod D-6)
2. #2 Canyon above storage yard, incl. fan area:									
#2CN	A	21.4	60	72	53	1.89	.68	14.65	12"dx48"w (D-6A)
	B	122.4	40	66	46	2.17	.59	72.95	5wtr-bars w/12"dx48"w(D-6A)
	C	48.6	50	74	55	1.82	.70	34.45	2wtr-bars w/12"dx48"w(D-6A)
	D	10.5	30	68	48	2.08	.62	6.54	12"dx36"w (mod D-6)
	E	58.9	50	70	51	1.96	.66	38.94	3wtr-bars w/12"dx42"w(md D-6)
	F	26.5	40	78	60	1.67	.76	20.25	1wtr-bar w/12"dx36"w(mod D-6)
3. Main Bldg area, Prep. Plant area & Storage yard:									
MNST	I	53.4	50	72	53	1.89	.68	36.56	12"dx24"bx96"w (D-2C)
	II	73.7	50	72	53	1.89	.68	50.45	1wtr-bar w/12"dx24"bx60"w(D-2A)
	III	21.1	40	76	58	1.72	.74	15.72	12"dx24"bx60"w (D-2A)
	IV	5.4	20	84	68	1.47	.84	4.57	12"dx36"w (mod D-6)
4. #2 Mine Outcrop Fan area & access road:									
FNCN	A_1	24.2	30	80	63	1.59	.79	19.25	1wtr-bar w/12"dx36"w(md D-6)
	B_1	38.9	30	80	63	1.59	.79	30.95	3wtr-bar w/12"dx36"w(md D-6)
5. Water Canyon & Portal area:									
WTCN	A'	50.6	20	90	78	1.28	.92	47.16	4wtr-bars w/12"dx36"w(md D-6)
	B'	90.9	40	84	68	1.47	.84	76.86	6wtr-bars w/12"dx36"w(md D-6)
	C'	100.7	30	88	75	1.33	.90	91.47	12"dx30"w w/1-18"ø & 2-24"ø pipe
6. New proposed Coarse Refuse Haul Road drainage:									
HLRD	R	44.9	20	78	60	1.67	.76	34.31	12"dx24"w(ea sd) w/18"ø pipe

NOTES for above columns:
1. Location identification per map MK.
2. Area in acres as determined by planimeter from 1"=500' scale map.
3. Ground Cover Density (GCD) estimated from area photo.
4. Curve Number for AMC-II per Fig 9-5 & 9-6, SCS Sect. 4 Eng Manual.
5. Curve Number for AMC-I since site in semi-arid area per Table 10.1, SCS Eng Manual.
6. SCS Rainfall-Runoff relation, potential retention S from S=1000/CN-10.
7. ACTUAL RUNOFF (Qinches) from SCS method $Q=(P-.2S)^2/P+.8S$; with P=1.9"(10yr24hr storm).
8. Q converted to flow by Q"/12xAreax43560/time 60x60 = CFS.
9. indication of ditch & pipe size., per E.W.Seelye DESIGN pg. 10-06 & -05.

KSC- ACT/007/007 28 Apr 1982

(This initi 'design of Sed. Pond submitted' DOGM.)

DOGM / DRAINAGE STUDY
SEDIMENTATION POND 1

Kaiser Steel Corp.
ACT/007/007
8 February 1980

COARSE REFUSE PILE /ICELANDER

Direct Rainfall Runoff Estimation- SCS Method/Sec 4, Engr Hndbk
CN from fig. 9.6,pg 9.11; sage-grass complex (soil group unk)
so use composite: $CN = \frac{70(B)+82.5(C)}{2} = 76$ w/10% ground cover.

from relationship $S = \frac{1000}{CN} - 10$, use table10.1,pg10.7: S=7.24(AMC-I).

P=1.9" from NOAA Utah Atlas (range 1.8" to 2.0"),

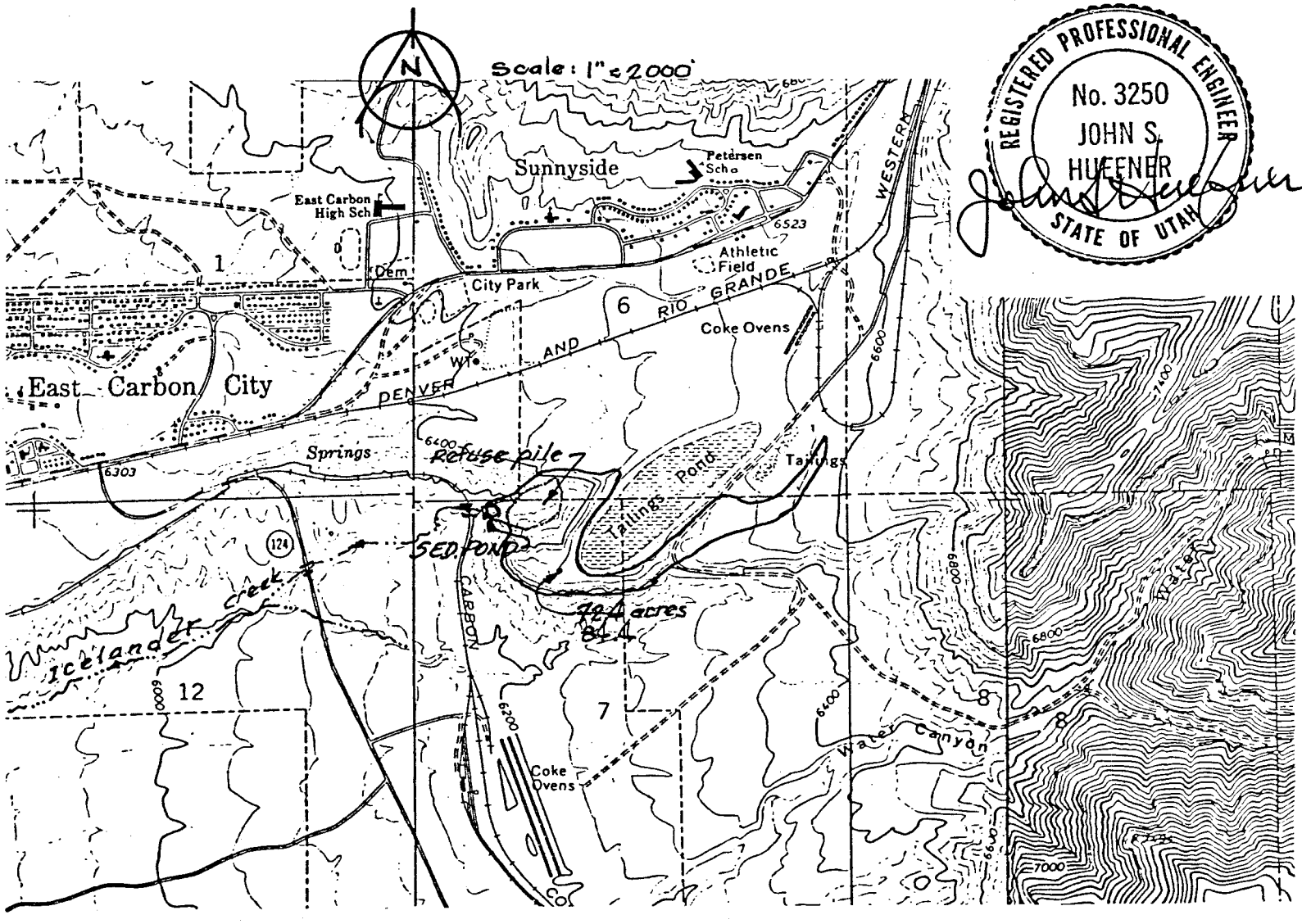
$Q = \frac{(P-.2S)^2}{P+.8S}$ (from eq. 10.10,pg10.5): $Q = \frac{(1.9 - .2x7.24)^2}{1.9 + .8x7.24} = 0.0266"$

Volume = $\frac{.0266"}{12}$ x43,560x72.4ac = 6990cf, say 7000cf.

therefore pond size shall be 5'd x 20'w x 32'l = 7040cf (OK).

Univ. Soil Loss Eq.(USLE)per SCS/TR-51: A=RKLSCP -
where R=20; K=.30; LS=.49(3%@600'); C=.70; P=.65
therefore A=20(.30).49(.70).65=1.34tons/acre/year.
Sediment volume = 1.34x72.4x2000/115pcf=1684cf/yr.
(pond will have life of 2yrs before being ½ full)

SPILLWAY DESIGN
for 25yr/6hr storm, total rainfall is 1.6" per NOAA Ut Atlas,
so $Q = \frac{(1.6-.2x7.24)^2}{1.6+.8x7.24} = .003" / 12 x43560x72.4=821cf / 21600=0.04cfs$



REGISTERED PROFESSIONAL ENGINEER
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