

OREGON DEPARTMENT OF TRANSPORTATION AGGREGATE SITES

DISTRICT 10

JUNE 2002

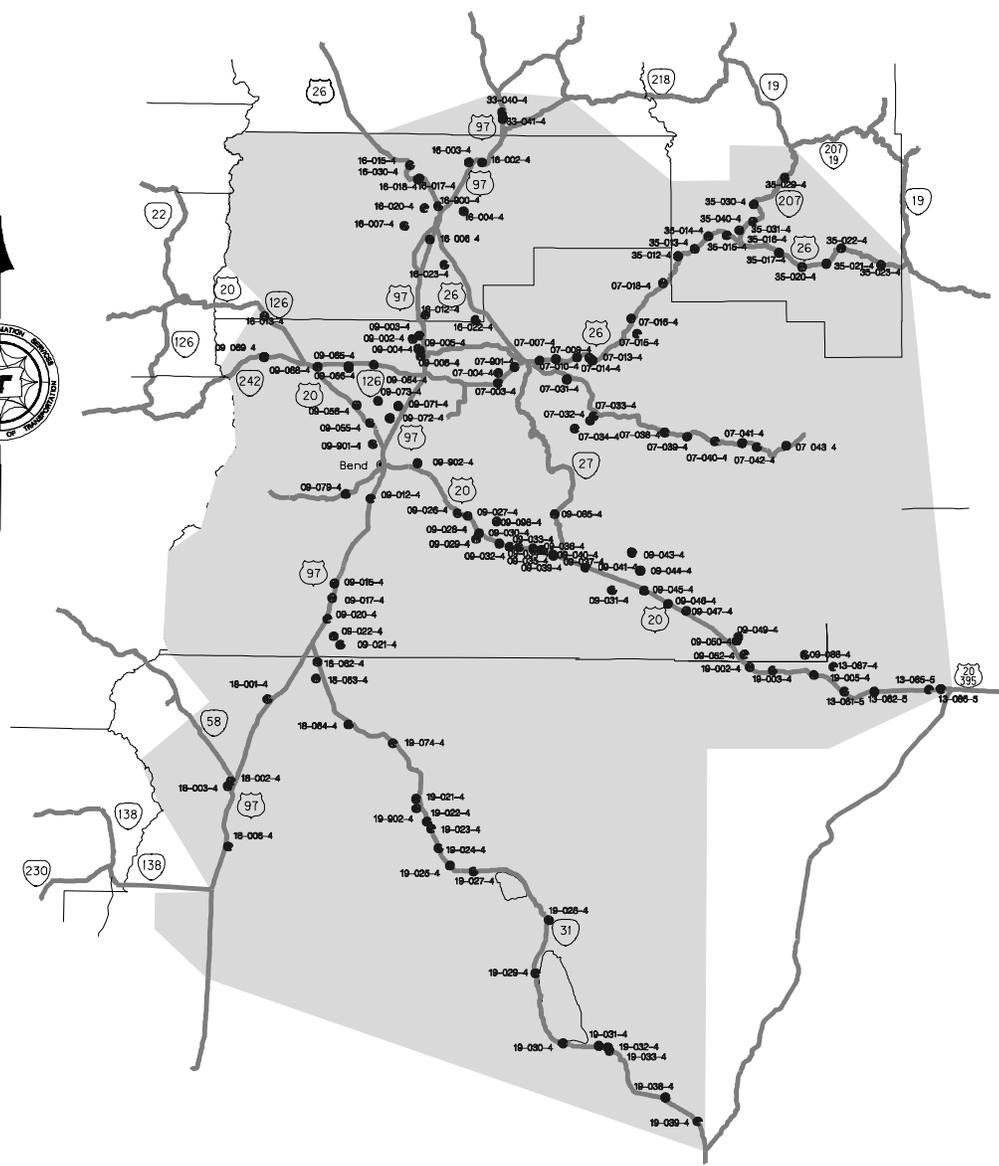
ROUTE AND HIGHWAY NUMBERS

-  INTERSTATE
-  U.S. ROUTE
-  OREGON ROUTE

LEGEND

-  COUNTY BOUNDARY
-  00-000-0 SITE ID NUMBER
-  ● SITE LOCATION SYMBOL

SCALE
0 2 4 6 8 10 30 MILES
1 inch = 30 MILES



List of Sites in District 10

Source Numbers

07-003-4	4
07-004-4	6
07-007-4	8
07-009-4	10
07-010-4	12
07-013-4	14
07-014-4	16
07-015-4	18
07-016-4	20
07-018-4	22
07-031-4	24
07-032-4	26
07-033-4	28
07-034-4	30
07-038-4	32
07-039-4	34
07-040-4	36
07-041-4	38
07-042-4	40
07-043-4	42
07-901-4	44
09-002-4	46
09-003-4	48
09-004-4	50
09-005-4	52
09-006-4	54
09-012-4	56
09-015-4	58
09-017-4	60
09-020-4	62
09-021-4	64
09-022-4	66
09-026-4	68
09-027-4	70
09-028-4	72
09-029-4	74
09-030-4	76
09-031-4	78
09-032-4	80
09-033-4	82
09-034-4	84
09-035-4	86
09-036-4	88
09-037-4	90
09-039-4	92
09-040-4	94
09-041-4	96
09-043-4	98
09-044-4	100
09-045-4	102
09-046-4	104
09-047-4	106
09-049-4	108

09-050-4	110
09-052-4	112
09-055-4	114
09-056-4	116
09-064-4	118
09-065-4	120
09-066-4	122
09-068-4	124
09-069-4	126
09-071-4	128
09-072-4	130
09-073-4	132
09-079-4	134
09-085-4	136
09-088-4	138
09-098-4	140
09-901-4	142
09-902-4	144
13-061-4	146
13-062-4	148
13-085-4	150
13-086-5	152
13-087-4	154
16-002-4	156
16-003-4	158
16-004-4	160
16-006-4	162
16-007-4	164
16-012-4	166
16-013-4	168
16-015-4	170
16-017-4	172
16-018-4	174
16-020-4	176
16-022-4	178
16-023-4	180
16-030-4	182
16-900-4	184
18-001-4	186
18-002-4	188
18-003-4	190
18-006-4	192
18-062-4	194
18-063-4	196
18-064-4	198
19-002-4	200
19-003-4	202
19-005-4	204
19-021-4	206
19-022-4	208
19-023-4	210
19-024-4	212
19-025-4	214
19-027-4	216
19-028-4	218
19-029-4	220
19-030-4	222

19-031-4	224
19-032-4	226
19-033-4	228
19-038-4	230
19-039-4	232
19-074-4	234
19-902-4	236
33-040-4	238
33-041-4	240
35-012-4	242
35-013-4	244
35-014-4	246
35-015-4	248
35-016-4	250
35-017-4	252
35-020-4	254
35-021-4	256
35-022-4	258
35-023-4	260
35-029-4	262
35-030-4	264
35-031-4	266
35-040-4	268

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Crook					10	0041	12.5	15S	15.0E	21
File ID		Source #	Date Visited	Map #		Type of Site				
07414		07-003-4	11/03/1999	1R-2-879		Quarry				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
44 15'03.80166"	120 56'10.58541"	987.114	52.8	<17	07-0064					
Comments										
GPS acquired in lower pit.										
Rock Type	Unit	Color		Weathering		Jointing				
Basalt	QTb	Medium Dark Grey (N4)		Slight to Moderate		Moderate to Highly Fractured				
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Good to Fair			R3 to R4	168	250,000	567,000				
Potentially Significant Site	Why					Open/Closed	Direction			
Yes	Large acreage, adjacent to Highway 126, good rock, large quantity.					Closed	NA			
Adjacent Land Use										
Ranching										
Remarks										
This site is located on Highway 126 between Redmond and Prineville. The rock is a fine-grain, highly fractured basalt. The top 5 feet is moderately weathered. There is little to no overburden on fairly flat ground. You can rip some of the rock but most likely would need to drill and blast to produce some good dice rock. There is good screening for the southern pit and fair screening for the northern pit. There is plenty of room to work and stock pile material here. There is a stock pile site adjacent to the highway and the upper pit is used to store waste rock. There are power lines that bisect the property. If we moved the old waste material out of the existing pit and put it in a better location we could open up more ground for production. There is no gate here because this is a public access road to residences through and adjacent to our property. We need to develop a better location for the waste rock and bone-yard material.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
2.630	2.72	16.9	6	1.2			17.7	.7		
Material Use										
(1994)										

E

NW



Panoramic view of the southern pit.

Close-up view of the jointing pattern in the northern pit face.

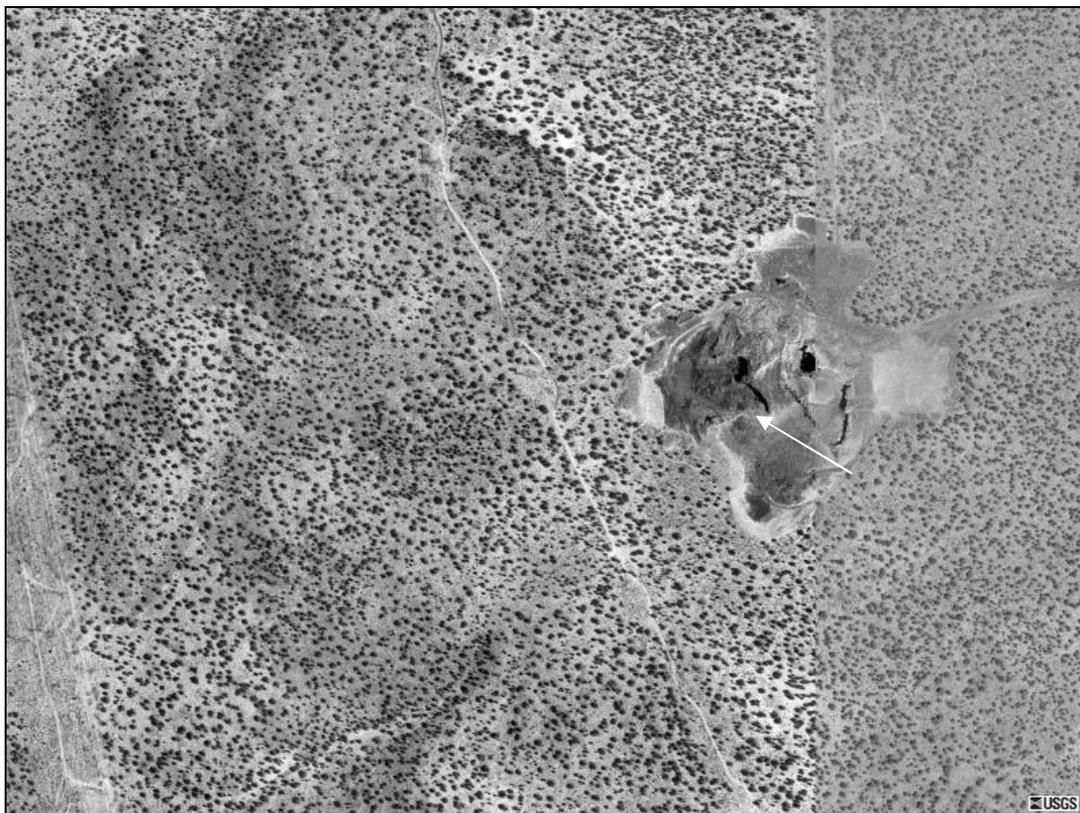
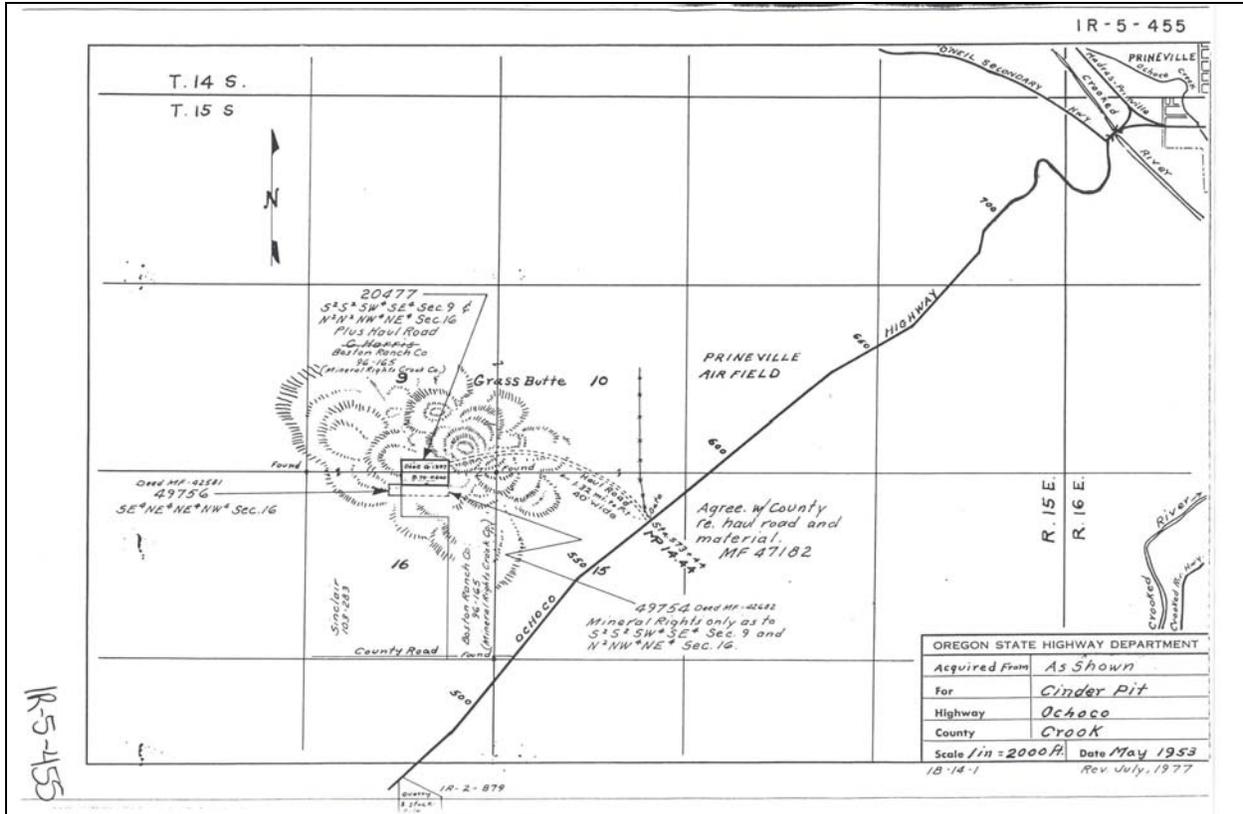


Aerial view of the quarry site along Highway 126.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Crook	Grassy Butte Cinder			10	0041	14.4	15S	15.0E	16
File ID		Source #	Date Visited	Map #			Type of Site		
20477, 49756		07-004-4	11/03/1999	1R-5-455			Cinder Pit		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #			
44 16'32.32348"	120 56'06.53972"	1083.002	22.5	<12		07-0034			
Comments									
GPS acquired in the pit									
Rock Type	Unit	Color		Weathering			Jointing		
Cinder	QTp	NA		NA			NA		
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Good			NA	120	500,000	810,000			
Potentially Significant Site	Why			Open/Closed	Direction				
No	Large cinder pit close to Highway 126.			Closed	NA				
Adjacent Land Use									
Ranching									
Remarks									
This site is located north of Highway 126 between Redmond and Prineville. The cinder cone has some good looking sanding material with a few lithified zones/flows of basalt. There could be up to 25% waste from this site. That would include material that is too big to be crushed or not the right size in some form. Most of the cinder can be ripped and screened quite easily, but you will need to crush some at this location due to the lithified nature of the volcanic rock. There is plenty of room to work with good screening from most vantage points. Adjacent to the north is a target range for a gun club. The gate for the access road was damaged by a low-boy semi-truck prior to my visit and will need to be fixed.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
	2.76	50.0			30.68	.3			
Material Use									
SAND AG (1965)									



Panoramic view of the cinder pit.

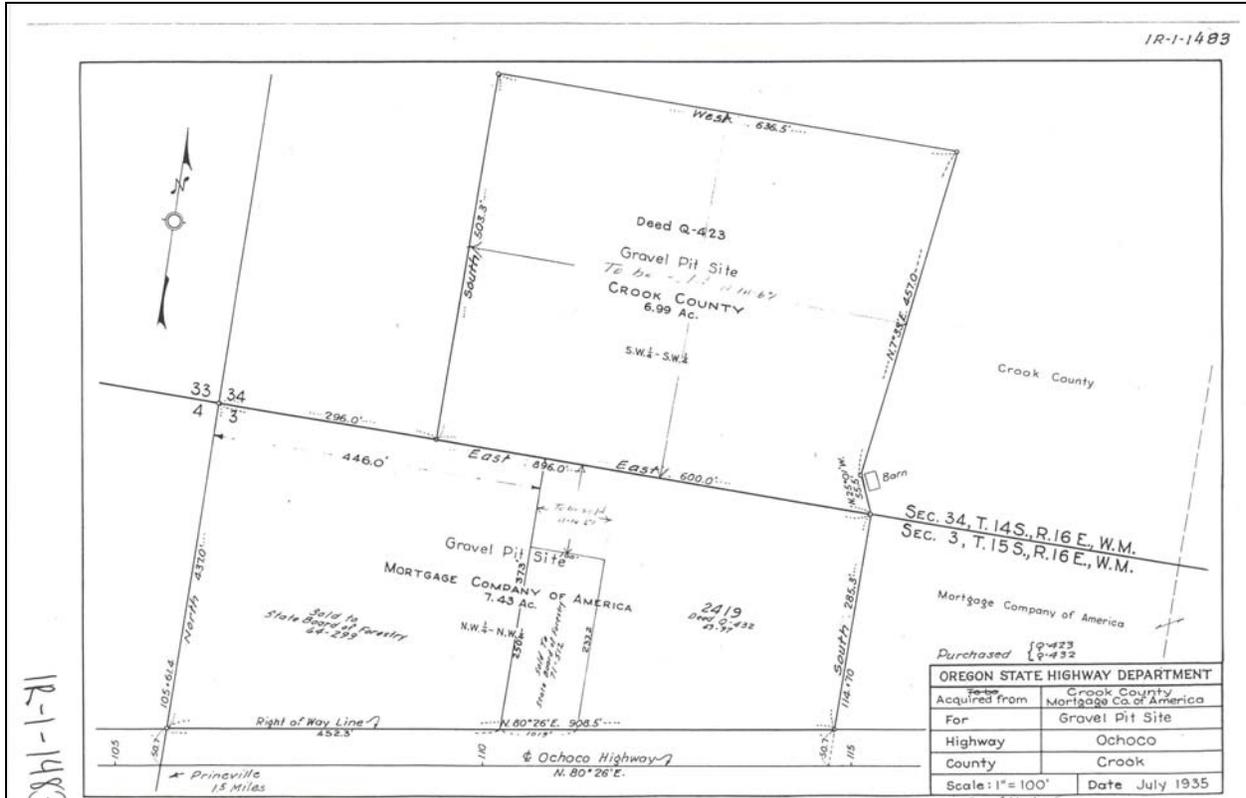


Aerial view of the cinder site that is just north of Highway 126.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Crook					10	0041	20.81	15S	16.0E	03
File ID		Source #	Date Visited	Map #		Type of Site				
02420, 02419		07-007-4	11/03/1999	1R-1-1483		Maintenance Yard				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #				
44 18'15.06000"	120 48'16.93000"	913	19.56	NA						
Comments										
Lat. and Long. acquired using Terrain Navigator Software										
Rock Type	Unit	Color		Weathering			Jointing			
NA	NA	NA		NA			NA			
Quality			Hardness	lbs./cu ft.		Reserve (cy)	Reserve (Tons)			
NA			NA	0						
Potentially Significant Site	Why			Open/Closed		Direction				
No	Maintenance Yard			NA		NA				
Adjacent Land Use										
Residential										
Remarks										
This location is just east of Prineville and is an ODOT Maintenance Yard.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
Material Use										



Aerial view of the maintenance yard east of Prineville, OR.



County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Crook				10	0041	23.6	14S	16.0E	36
File ID		Source #	Date Visited	Map #			Type of Site		
02413		07-009-4	11/03/1999	1R-1-1484			Borrow		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #				
44 18'27.74563"	120 45'06.93333"	918.209	11.97	<2	07-0069				
Comments									
GPS acquired in the pit									
Rock Type	Unit	Color		Weathering			Jointing		
Volcanic Gravel	Qs	NA		NA			NA		
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Good to Fair			NA	120	100,000	162,000			
Potentially Significant Site	Why			Open/Closed	Direction				
No	Easement has been cross-fenced, new residential area adjacent to this site.			Closed	To the south approximately 400 meters is Ochoco Creek.				
Adjacent Land Use									
Residential/Farming									
Remarks									
This site is located just east of Prineville and north of Highway 26. The rock is a heterogeneous mix of varying size (<20cm) and shape of volcanic gravel. This ground can have up to 35% sand mixed in. There is room to work but no screening from the highway. The eastern most access road is now part of a private drive, and the western easement road has been fenced and cross fenced with no access evident. The northern portion of our property is fenced and being used as a grazing field with irrigation pipe in place but not in use at the time of my visit. There are a lot of new homes and housing developments out in this area, very near our property. It appears that the past disturbance has been reclaimed. This site is out of the flood plane.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
	2.51	20.5	11.3	6.2			11.0	2.7	
Material Use									
(1975)									

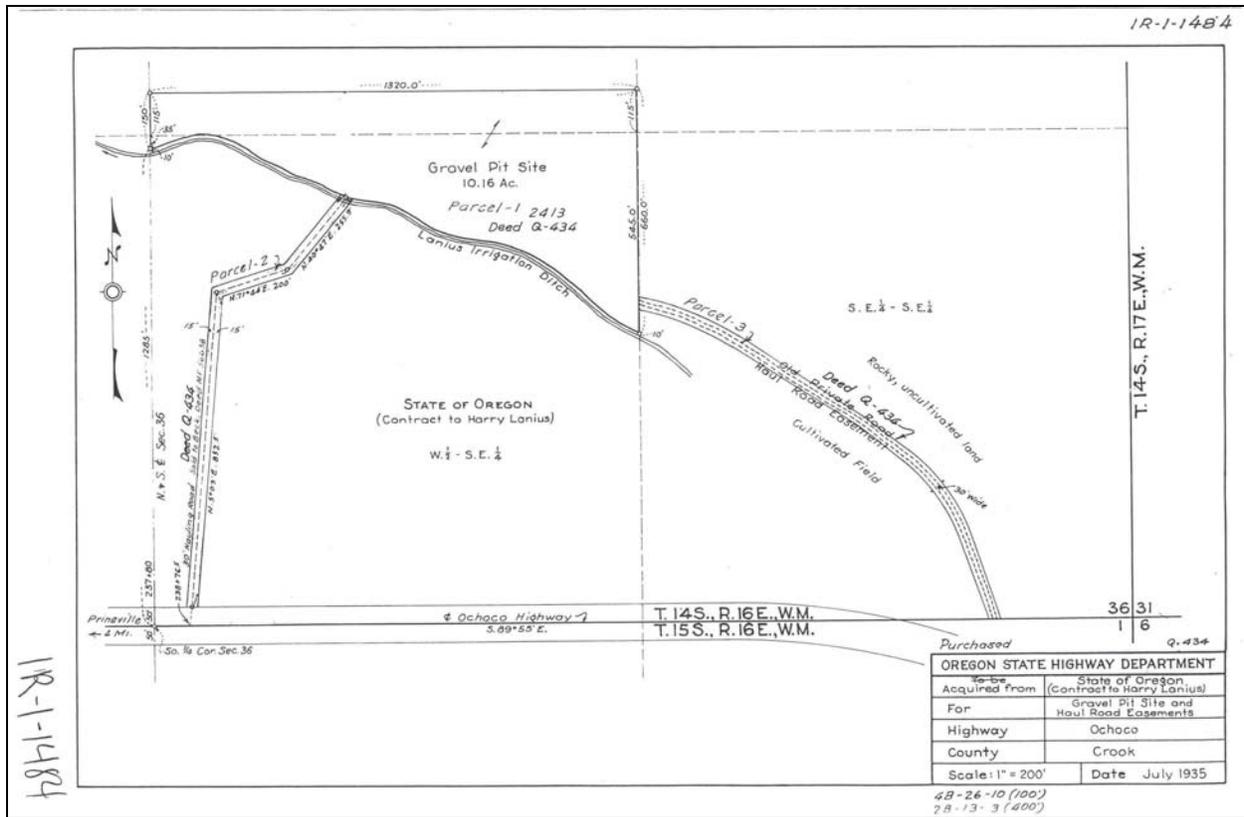
N

SE



Looking east at the borrow site along Highway 26.

Close-up view of the gravel at this location with the hammer for scale.



Aerial view of the borrow site in relation to the surrounding area.
Highway 26 is in the bottom portion of the image.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Crook					10	0041	26.8	14S	17.0E	33
File ID		Source #	Date Visited	Map #		Type of Site				
05613		07-010-4	11/03/1999	1R-2-556		Road Cut				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
44 18'41.95032"	120 41'09.21509"	964.217	16.33	NA						
Comments										
GPS acquired along Highway 26 and milepoint 27.										
Rock Type	Unit	Color		Weathering		Jointing				
Andesite	Tca	Medium Dark Grey (N4)		Fresh to Slight		Highly Fractured				
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Good			R4	167						
Potentially Significant Site	Why			Open/Closed	Direction					
No	Road cut along Highway 26. Narrow work area.			Closed	South across Highway 26 approximately 150 meters is the Ochoco Reservoir.					
Adjacent Land Use										
Residential/Forest										
Remarks										
This site is on the inside radius of Highway 26. You could straighten out the road here and develop this site for aggregate. This would produce lake front property for future use. This site has been released to State Parks.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
		2.64								
Material Use										
(1937)										

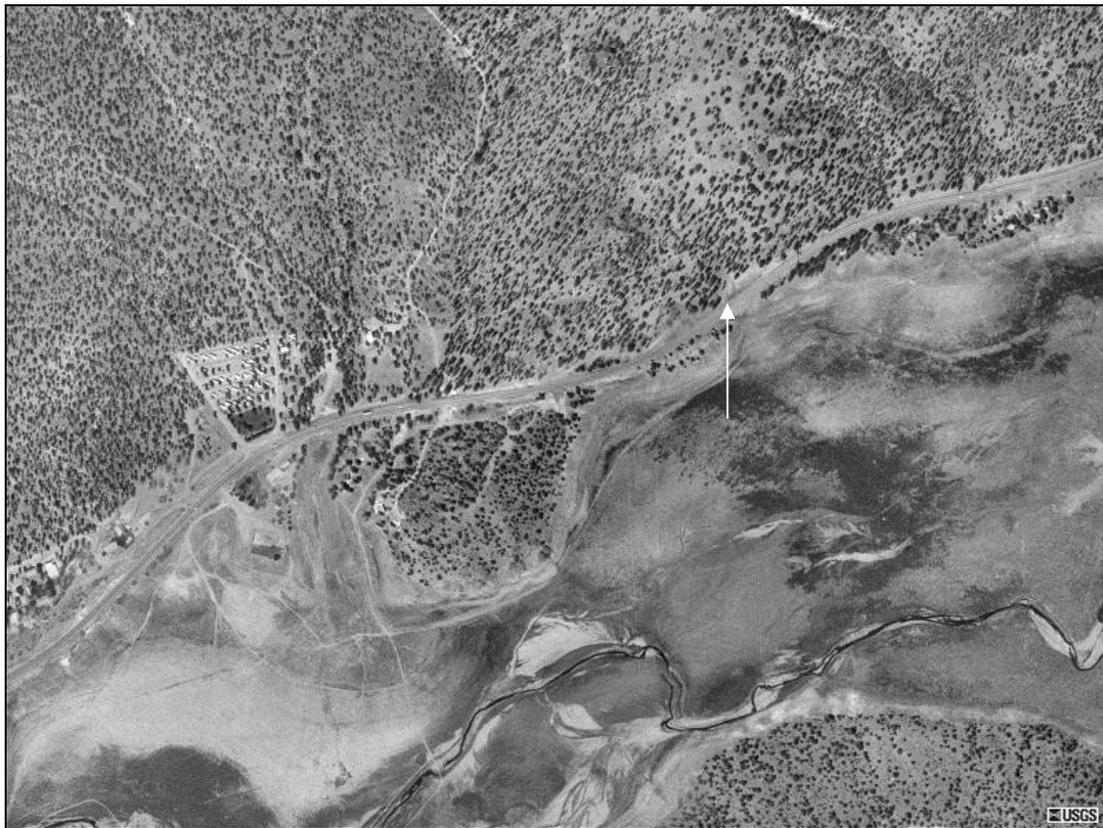
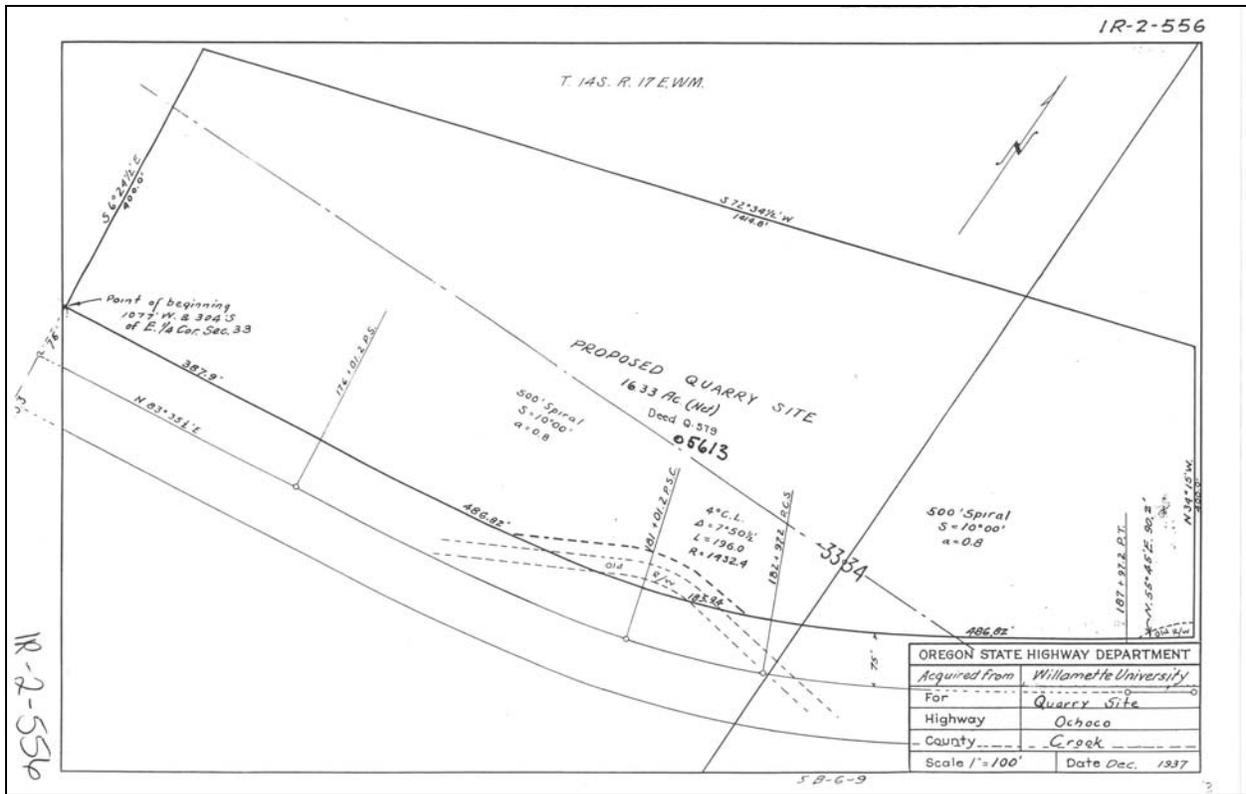
SW

NE



Looking northwest across Highway 26 at the road cut.

Close-up view of the fracture pattern in the andesite at this location.



Aerial view of the site along the highway.
The Ochoco Reservoir is dry in this photograph with the creek evident.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Crook				10	0041	29.41	14S	17.0E	36
File ID		Source #	Date Visited	Map #			Type of Site		
06900		07-013-4	11/03/1999	1R-2-830			Raw Land		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #			
44 18'36.64500"	120 38'40.75000"	1024	2.83	NA					
Comments									
Lat. and Long. acquired using Terrain Navigator Software									
Rock Type	Unit	Color		Weathering			Jointing		
NA	NA	NA		NA			NA		
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
NA			NA	120	30,000	48,600			
Potentially Significant Site	Why	Open/Closed	Direction						
No	Too small.	Closed	South across Highway 26 approximately 400 meters is Ochoco Creek.						
Adjacent Land Use									
Ranching									
Remarks									
This property is adjacent to Highway 26. It had no visible disturbance. I could not locate the exact location but acquired images of the area. There is a better and larger site 700 meters to the east. This site could be used by Maintenance for a stock pile site.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
Material Use									

E



Looking east across the highway at the small site.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Crook				10	0041	29.86	14S	17.0E	36
File ID		Source #	Date Visited	Map #			Type of Site		
06189, 06191, 06190		07-014-4	11/03/1999	1R-2-641			Quarry		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #			
44 18'17.03399"	120 38'12.16866"	971.537	12.89	<1					
Comments									
GPS acquired in the pit.									
Rock Type	Unit	Color		Weathering			Jointing		
Basalt	Tca	Medium Dark Grey (N4)		Fresh to Decomposing			Moderate Fracture to Massive		
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Good to Poor			R4	161	120,000	260,820			
Potentially Significant Site	Why			Open/Closed	Direction				
Maybe	Good rock, adjacent to Highway 26, minimal acreage.			Closed	South across Highway 26 approximately 350 meters is Ochoco Creek.				
Adjacent Land Use									
Ranching									
Remarks									
This site is located along the inside radius of Highway 26 about 9 miles east of Prineville. The rock is a porphyritic basalt, with a fine-grain ground mass and phenocrysts of plagioclase. The phenocrysts are small (<3mm), and not too abundant (<5%). The rock can be very blocky, with a possible use as rip rap. There is no screening and no room to work here. You would need to drill and blast the rock. All work at this site in the future should concentrate on removing material from the top down. Past production here has been from the bottom, adjacent to the highway. This has produced vertical walls with dangerous hanging boulders. There is limited overburden with less than 2 feet of soil. A secondary dike crosscuts the rock exposure and helps to promote the strong weathering seen on the rock face. The terrain is steep and falling rock can pose a danger to workers.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
Material Use									

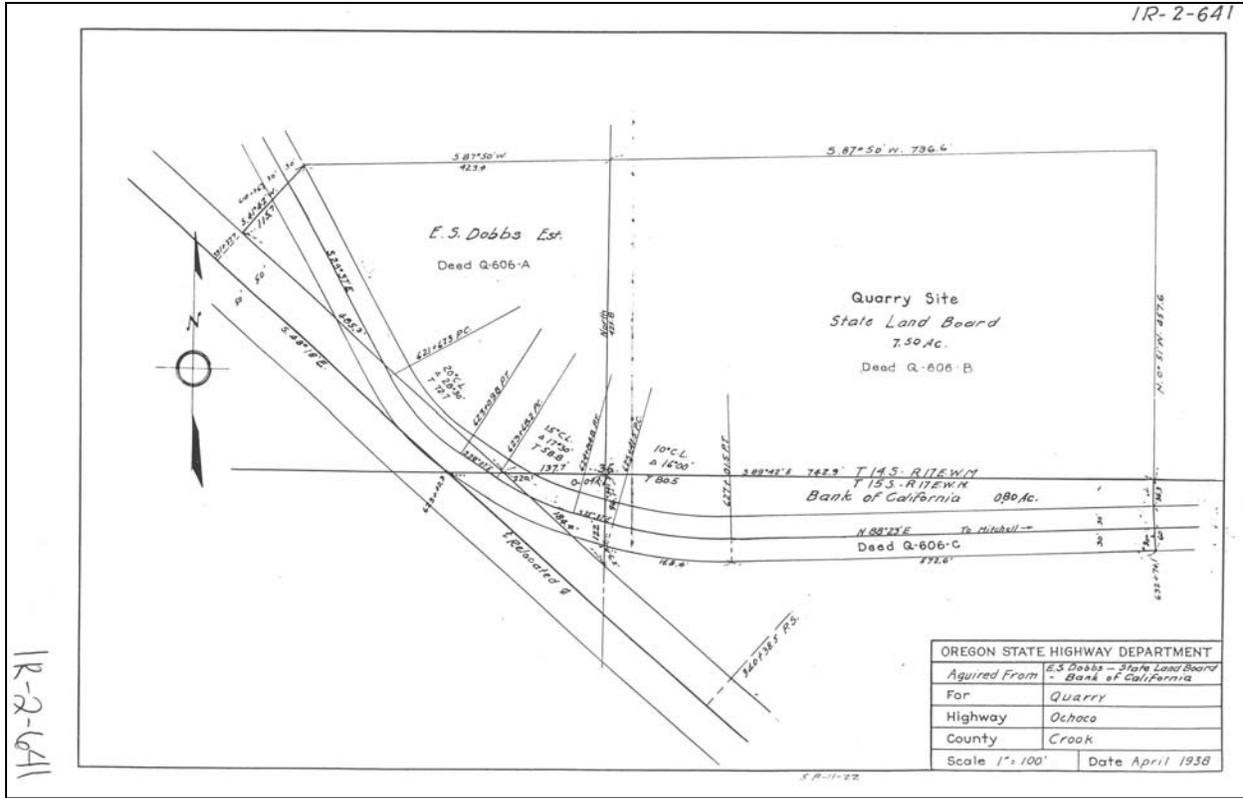
N

E



Looking northeast at the quarry site along Highway 26.

Close-up view of the fracture pattern with the hammer for scale.

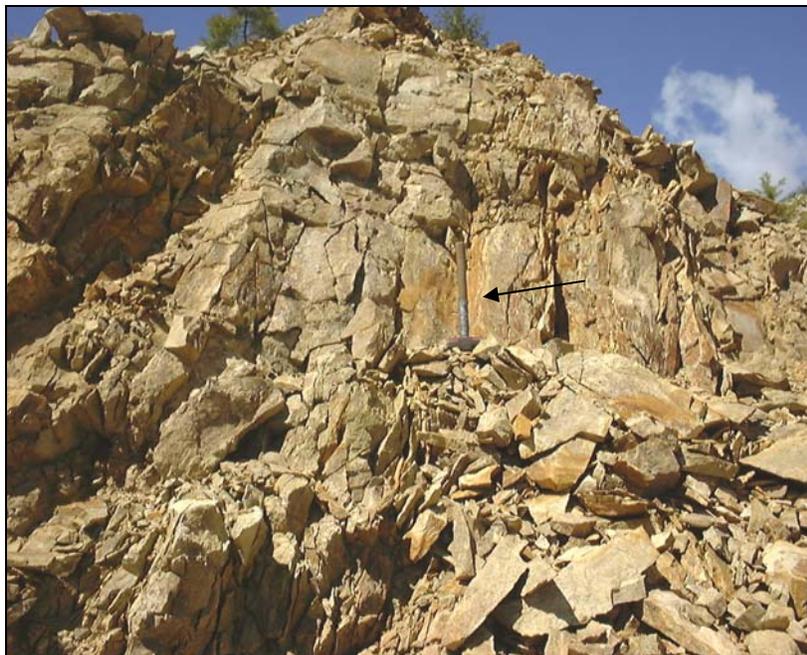


Aerial view of the quarry site that is adjacent to Highway 26.

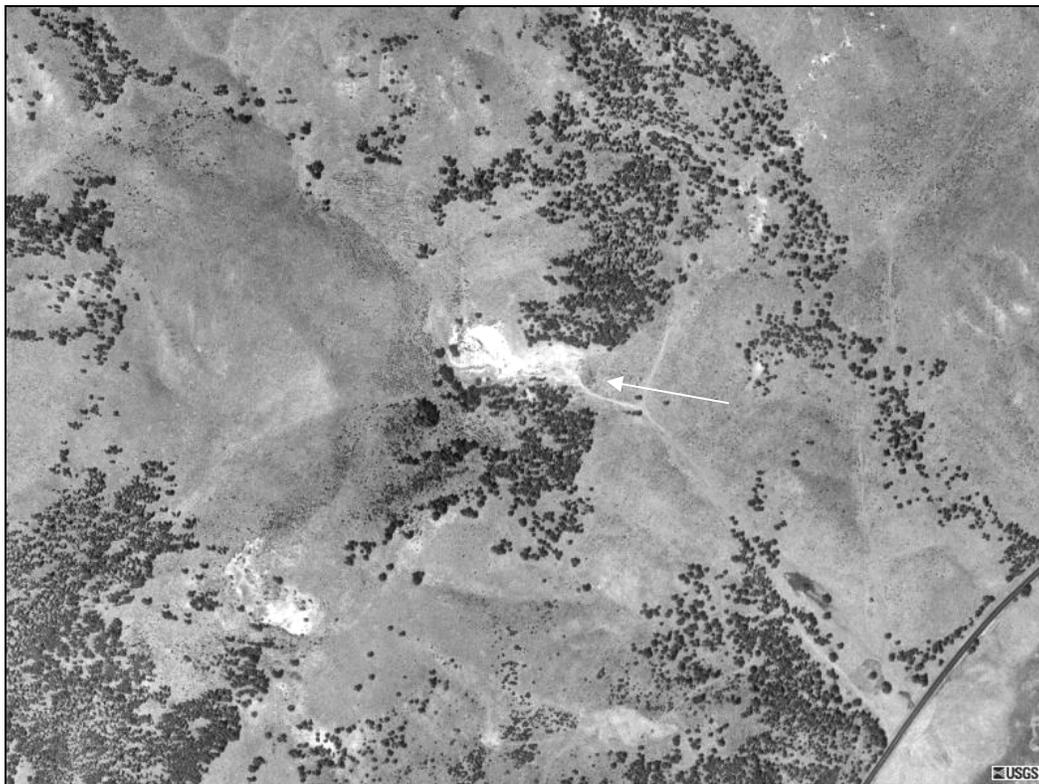
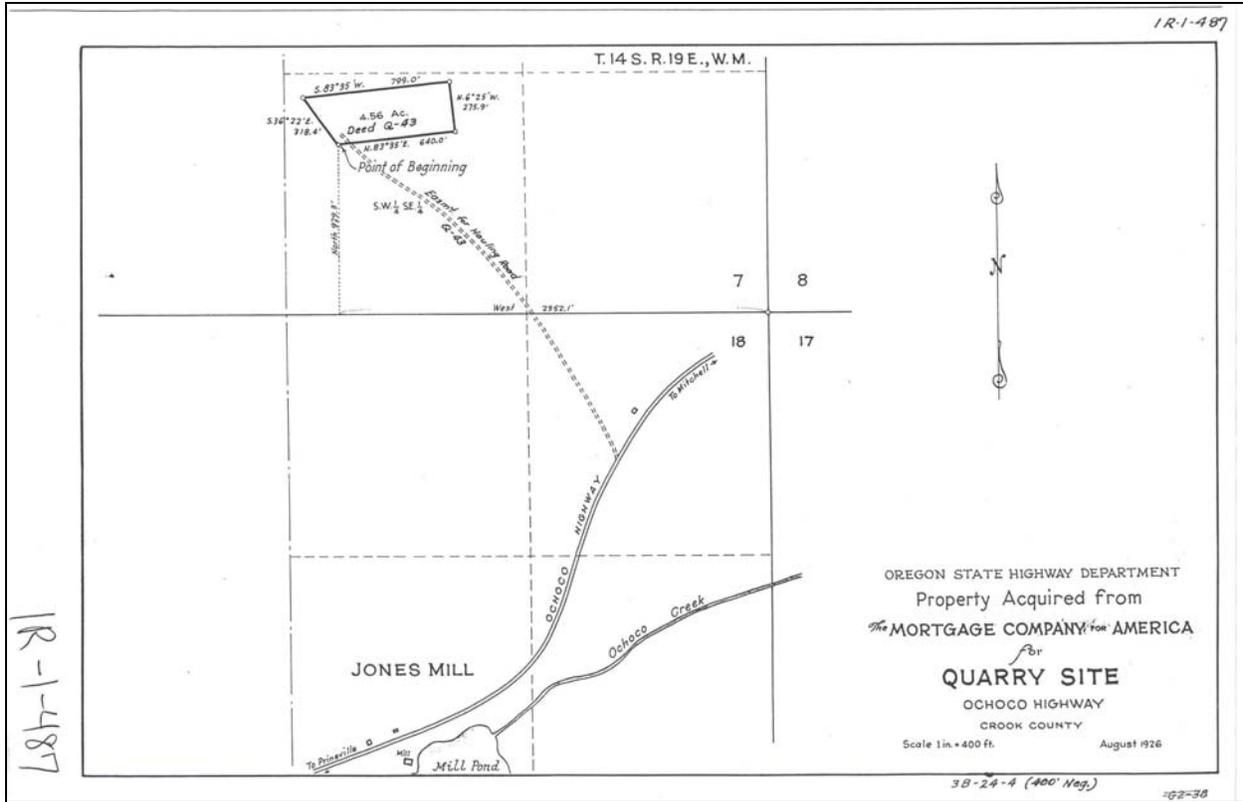
County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Crook				10	0041	35	14S	19.0E	07
File ID		Source #	Date Visited	Map #			Type of Site		
Q0043		07-015-4	05/02/2001	1R-1-487			Quarry		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #			
44°21'53.55183"	120°29'44.02705"	1185.595	4.56	<1		07-0053			
Comments									
GPS acquired in the pit.									
Rock Type	Unit	Color		Weathering			Jointing		
Rhyolite	Tr	Pinkish Grey 5YR 8/1		Slight to Fresh			Highly Fractured		
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Poor			R2+	140	30,000	56,700			
Potentially Significant Site	Why			Open/Closed	Direction				
No	NA			Closed	NA				
Adjacent Land Use									
Open Space/ Farming									
Remarks									
This site is about 700 meters north of the old Ochoco Highway. Access is through a private locked gate. The rock here is a highly fractured rhyolite. The terrain is moderate relief. You can rip the material. There is limited room to work with good screening.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
Material Use									



View of the small quarry site along the Old Ochoco Highway.



Close-up view of the pit face at the small quarry site, notice the highly fractured nature of the rhyolite.



Aerial view of the quarry site along the Old Ochocho Highway.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Crook	Sears Creek Quarry				10	0041	40	13S	18.0E	36
File ID		Source #	Date Visited	Map #		Type of Site				
16149,22069,18837		07-016-4	06/06/2000	1R-2-2528		Quarry				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
44 24'06.32618"	120 30'45.28124"	1196.845	8.08	<2	07-0051					
Comments										
GPS acquired in the pit.										
Rock Type	Unit	Color		Weathering		Jointing				
Basalt	Tca	Medium Dark Grey (N4)		Fresh to Slight		Moderate to Highly Fractured				
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Good to Very Good			R3+	165	100,000	222,750				
Potentially Significant Site	Why			Open/Closed	Direction					
No	NA			Closed	Adjacent to the west is Sears Creek					
Adjacent Land Use										
Open space										
Remarks										
This site is located north of and adjacent to Highway 26. The rock is a fine-grain basalt that is moderate to highly fractured. There is plenty of room to work and fair to no screening from the highway. You can rip the rock for pit run material. There is a possibility of elongated pieces. The terrain is moderate to steep. You can acquire moderate amounts of rip rap. There is a stock pile site across the highway from the quarry. There is a gate at this site but it was not locked at the time of the visit. Minor use as a waste site. Good to fair berm at the creek's edge. Approximately 245,000 cubic yards has been removed.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
2.45	2.49	23.1	8.8	2.1			12.8	0.4		
Material Use										
AC (1991)										

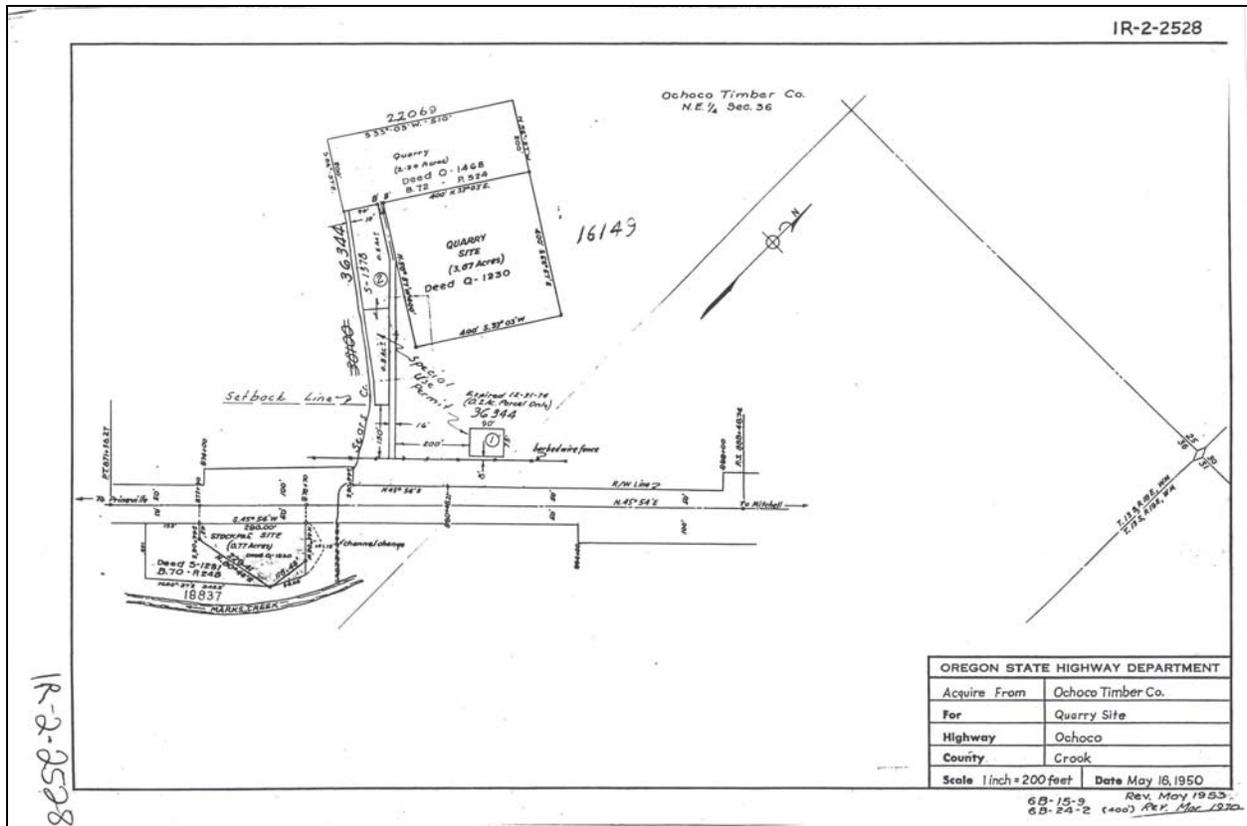
NW

SE



Panoramic view of the quarry site along Highway 26. The access point is to the far right of the image.

Close-up view of the jointing pattern at the pit face with the hammer for scale.



Aerial view of the quarry site in relation to the surrounding terrain.
The stockpile site is in the lower center of the image.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Crook	McGinnis Creek Quarry				10	0041	48.14	12S	19.0E	35
File ID		Source #	Date Visited		Map #			Type of Site		
21673		07-018-4	06/06/2000		1R-5-492			Quarry		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
44 29'01.14825"	120 24'42.05610"	1379.875	40	<2						
Comments										
GPS acquired in the pit.										
Rock Type	Unit	Color		Weathering			Jointing			
Basalt	Tca	Dark Grey (N3)		Fresh			Highly Fractured			
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Very Good to Good			R3+	164	290,000	642,060				
Potentially Significant Site	Why			Open/Closed	Direction					
No	Leased ground from the Forest Service			Closed	Adjacent to McGinnis Creek					
Adjacent Land Use										
National Forest										
Remarks										
This site is located approximately 800 meters northwest of Highway 26, off of Forest Service road 350. The rock is a very fine-grain, highly fractured basalt. There is room to work with good screening from the highway. The terrain is fairly flat to gradual and slopes about ten degrees. You can rip the rock for pit run material. There are two distinct flows in contact with one another. You can possibly get elongated pieces due to the fine-grain nature of the rock. Also the basalt can produce a lot of fines. This is Forest Service ground that is used as a minor waste site.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
2.47	2.56	26.2	4.4	4.3			23.9	1.0		
Material Use										
AC (1991)										

N

S



Looking northeast at the quarry face along the Forest Service Road.

Close-up view of the fracture pattern with the hammer for scale.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Crook					10	0380	7.03	15S	17.0E	20
File ID		Source #	Date Visited		Map #			Type of Site		
17302		07-031-4	11/04/1999		1R-5-107			Quarry		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
44 15'38.12988"	120 43'03.33229"	1263.002	23	<3						
Comments										
GPS acquired in the pit.										
Rock Type	Unit	Color		Weathering			Jointing			
Basalt	Tba	Medium Grey (N5)		Fresh			Highly Fractured			
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Very Good			R4	170	750,000	1,721,250				
Potentially Significant Site	Why				Open/Closed		Direction			
Yes	Large acreage, room to work, close to a state highway.				Closed		NA			
Adjacent Land Use										
Open space										
Remarks										
This site is located about 6 miles southeast of Prineville on Highway 380. The rock is a very good fine-grain, highly fractured basalt (dice rock). You would need to drill and blast with minor ripping potential. There is good screening from the highway with plenty of room to work here. The terrain has low relief with no overburden. This site can produce a minor quantity of rip rap. This site is in a very good lithological unit. If we ever want to expand our ground in the region we should find this same unit.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
		2.79								
Material Use										
BASEAG, AC AG (1955)										

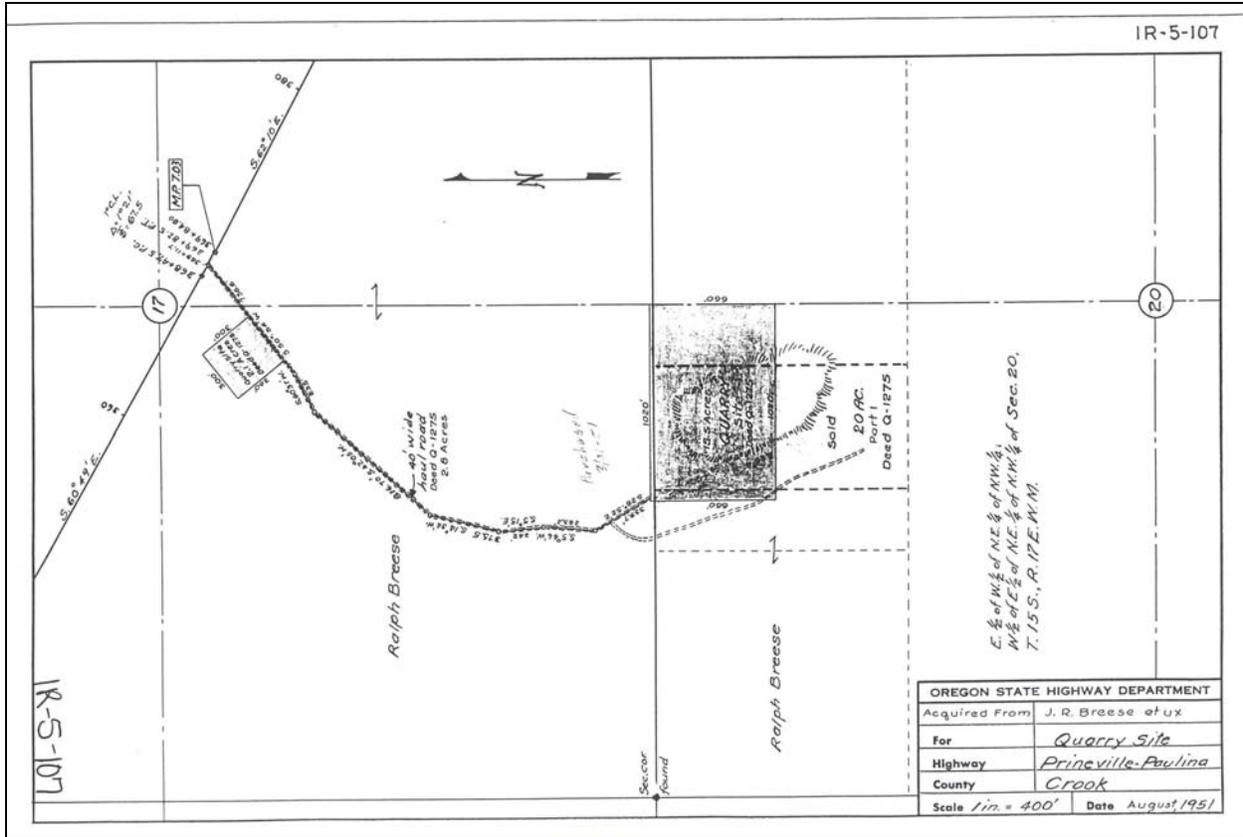
NW

E



Looking northeast at the quarry site and the past disturbance.

Close-up view of the jointing pattern with the hammer for scale. Minor rip rap from this site.

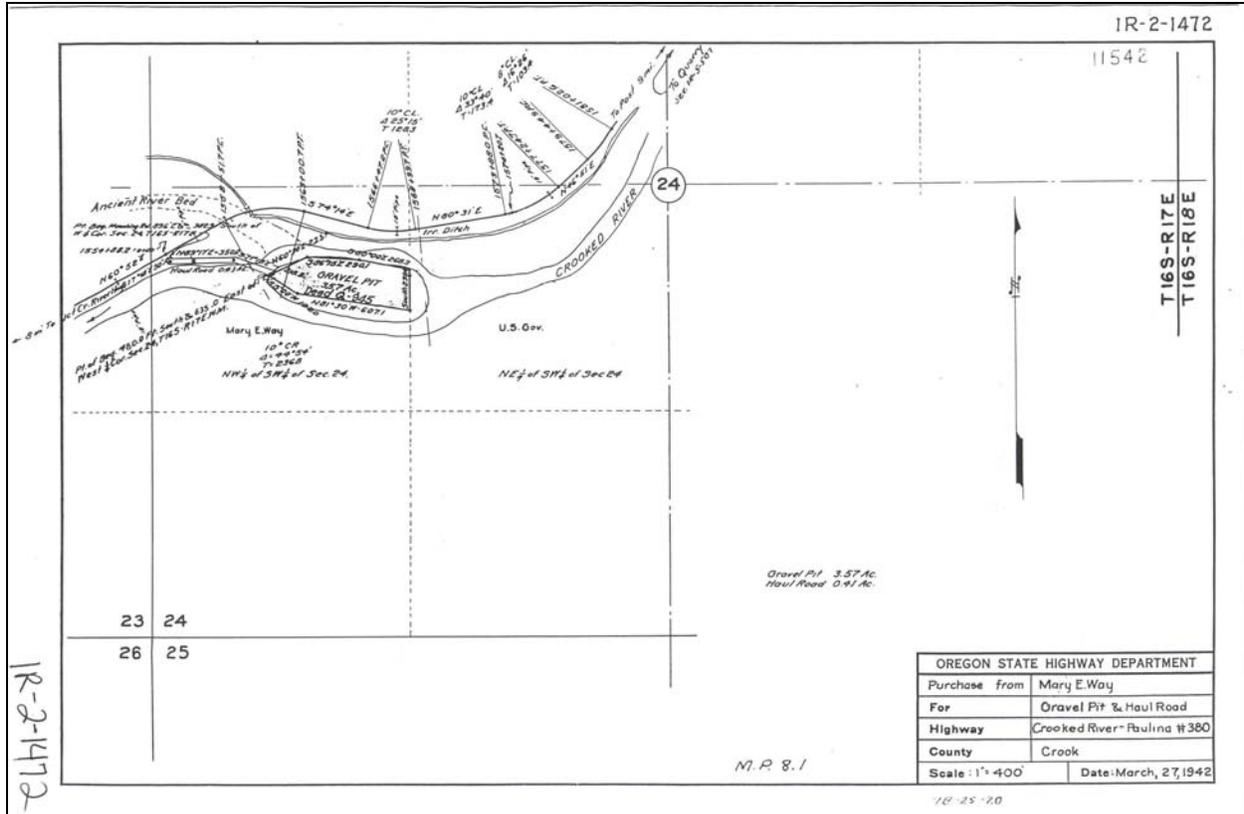


Aerial view of the quarry site, Highway 380 is in the upper right corner.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Crook					10	0380	16.45	16S	17.0E	24
File ID		Source #	Date Visited	Map #			Type of Site			
11542		07-032-4	11/04/1999	1R-2-1472			Gravel			
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
44 09'57.65000"	120 38'36.38000"	1035	3.98	NA						
Comments										
Lat. and Long. acquired using Terrain Navigator Software										
Rock Type	Unit	Color	Weathering			Jointing				
Alluvium	NA	NA	NA			NA				
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Poor			NA	120						
Potentially Significant Site	Why			Open/Closed	Direction					
No	In the Reservoir.			Closed	In the Prineville Reservoir.					
Adjacent Land Use										
Open space										
Remarks										
This site is located in the Prineville Reservoir/Crooked River. The lake has deposited Silt/Sand and has less than 1% gravel. The lake level was down for this time of the year and this site was high and dry for evaluation purposes. For all intents this site is depleted of all gravel and material. This site was tested in 1949 and the LL was measured at 22%.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
Material Use										



Looking south at the gravel site along the Crooked River.
 During most of the year this site is under water.



Aerial view of the gravel site during a low water period.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Crook				10	0380	16.45	16S	17.0E	13
File ID		Source #	Date Visited	Map #			Type of Site		
21710		07-033-4	11/04/1999	1R-5-507			Quarry		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #			
44 10'35.71166"	120 37'55.49879"	991.767	14.9	<1					
Comments									
GPS acquired along the gravel road and the quarry site.									
Rock Type		Unit	Color		Weathering		Jointing		
Basalt/Pyroclastics/Debris Flows		Qls	Medium Dark Grey (N4)		Fresh		Moderate to Massive Fracture		
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Very Good to Good			R4	163	100,000	220,050			
Potentially Significant Site	Why		Open/Closed	Direction					
Maybe	Very good rock, close to Highway 380.		Closed	South across the gravel road approximately 70 meters is the Crooked River.					
Adjacent Land Use									
Open space/Ranching									
Remarks									
This site is located at the upper reaches of the Prineville Reservoir at the confluence with the Crooked River. The rock is a fine-grain basalt dike that crosscuts pyroclastics and debris flows. The debris flow has no aggregate value and would be waste material. There is no screening at this remote site but there is room to work. The terrain is steep and future production should take this in to consideration. You will need to drill and blast with a strong possibility that you could acquire some rip rap from this site. With the terrain so steep it would be nice to develop this site from the top down. This site has had recent fencing installed on what appears to be our property.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
	2.6						9.7	.4	
Material Use									
Rip Rap (1983)									

SW

NW



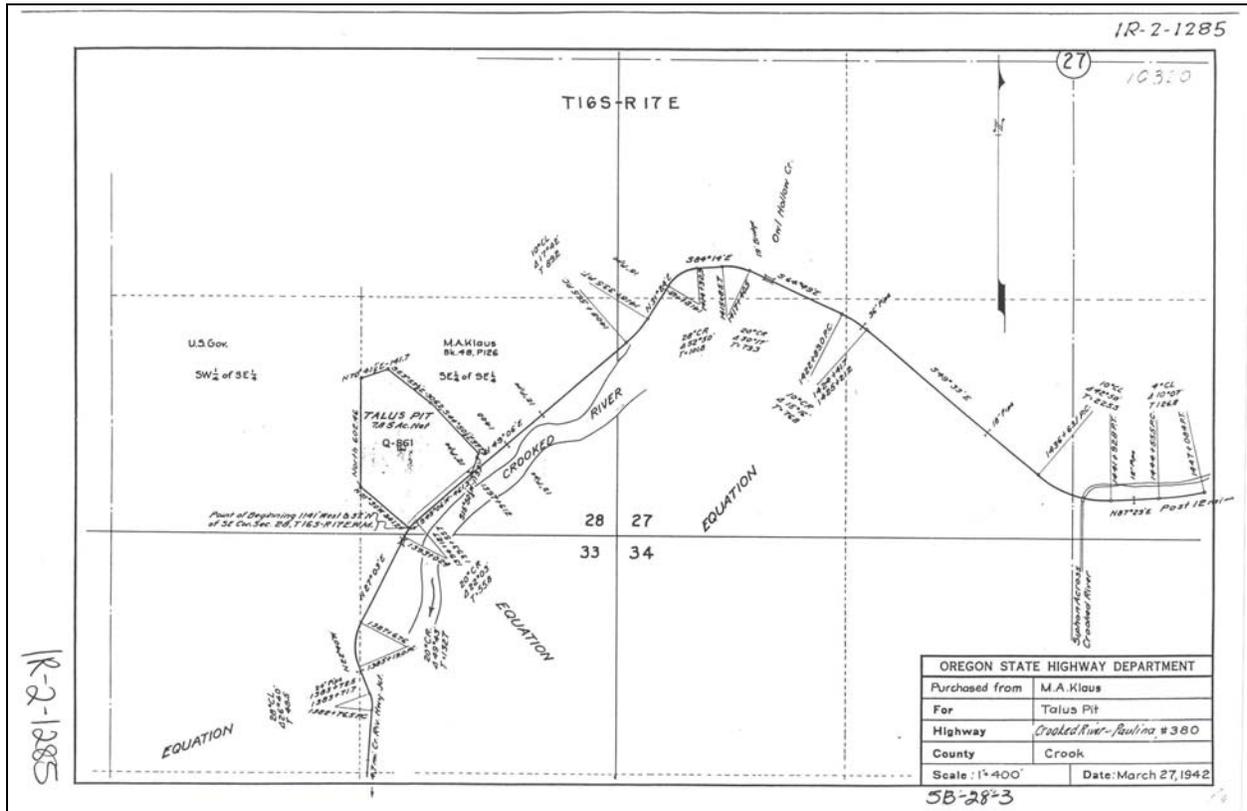
Looking west at the face of the cliff. This is the basalt dike that crosscuts the debris flow in the area.

Close-up view of the columnar jointing with the hammer for scale.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Crook	Peterson Rock Garden Pit				10	0380	16.45	16S	17.0E	28
File ID		Source #	Date Visited	Map #		Type of Site				
10320		07-034-4	11/04/1999	1R-2-1285		Quarry				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
44 08'49.41000"	120 41'30.64000"	1003	7.85	NA						
Comments										
Lat. and Long. acquired using Terrain Navigator Software										
Rock Type	Unit	Color		Weathering			Jointing			
Rhyolite	Tca	NA		NA			NA			
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Poor			NA	155						
Potentially Significant Site	Why			Open/Closed	Direction					
No	Adjacent to and in the Prineville Reservoir.			Closed	In and adjacent to the Prineville Reservoir					
Adjacent Land Use										
Open space/BLM										
Remarks										
The lithology at this site is composed of Rhyolite and is of little use to us. This site is in and adjacent to the reservoir. Easement to this site has been eliminated since the construction of the Prineville Reservoir. We would need to develop a new road through the State Park if we want to use this site.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
Material Use										



Aerial view of the site adjacent to and in the reservoir.



County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Crook					10	0380	29.3	16S	19.0E	35
File ID		Source #	Date Visited	Map #		Type of Site				
08782		07-038-4	05/31/2000	1R-2-1107		Borrow				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
44 08'19.15835"	120 24'26.7939"	1042.921	3.51	<2						
Comments										
GPS acquired at the access point and Highway 380.										
Rock Type	Unit	Color		Weathering			Jointing			
Volcanic Gravel	Qal	NA		NA			NA			
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Good to Fair			NA	120	20,000	32,400				
Potentially Significant Site	Why			Open/Closed	Direction					
No	Too small			Closed	South about 70 meters is the Crooked River					
Adjacent Land Use										
Ranching										
Remarks										
This site is adjacent to and south of Highway 380. The gravel is composed of a heterogeneous mix of sizes and shapes. With the dominant being cobble size and less. There is about 60% gravel and 40% sand by volume. There is no screening but room to work. This ground is used as a stock pile and waste site.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
Material Use										

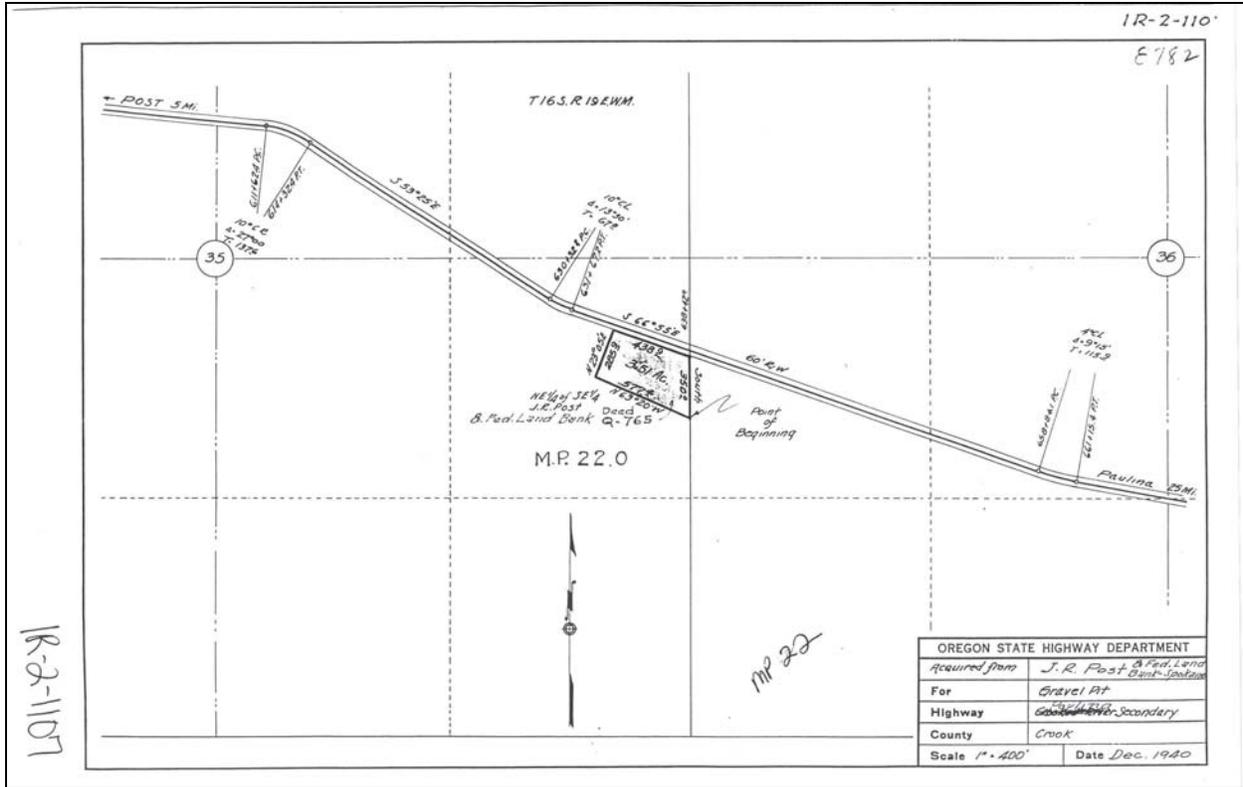
SW

NE



Looking northwest at the gravel site along Highway 380. The Crooked River is in the far left of the image.

Close-up view of the gravel at the site with the hammer for scale.



Aerial view of the site between the Crooked River and Highway 380.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Crook	Lost Creek Quarry			10	0380	33.26	17S	20.0E	04
File ID		Source #	Date Visited	Map #			Type of Site		
27760		07-039-4	05/31/2000	1R-5-1132			Quarry		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #			
44 07'43.2021"	120 20'7.46348"	1061.551	9.3	<2		07-0045			
Comments									
GPS acquired in the pit.									
Rock Type	Unit	Color		Weathering			Jointing		
Basalt	Tba	Medium Dark Grey (N4)		Fresh to Slight			Highly Fractured		
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Good			R3+	186	85,000	213,435			
Potentially Significant Site	Why			Open/Closed	Direction				
No	NA			Closed	South about 200 meters is the Crooked River				
Adjacent Land Use									
Ranching									
Remarks									
This site is located adjacent to and north of Highway 380. The rock is a fine-grain basalt with very minor staining on the fracture surface. You can rip the rock for pit run material. There is a moderate amount of room to work but no screening from the highway. The terrain is moderately steep, around 25 to 30 degrees and there is little to no overburden. The quarry site is mostly on BLM ground with a small portion on ODOT controlled property.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
2.5	2.72		17.6	7.3					
Material Use									
AC (1984)									

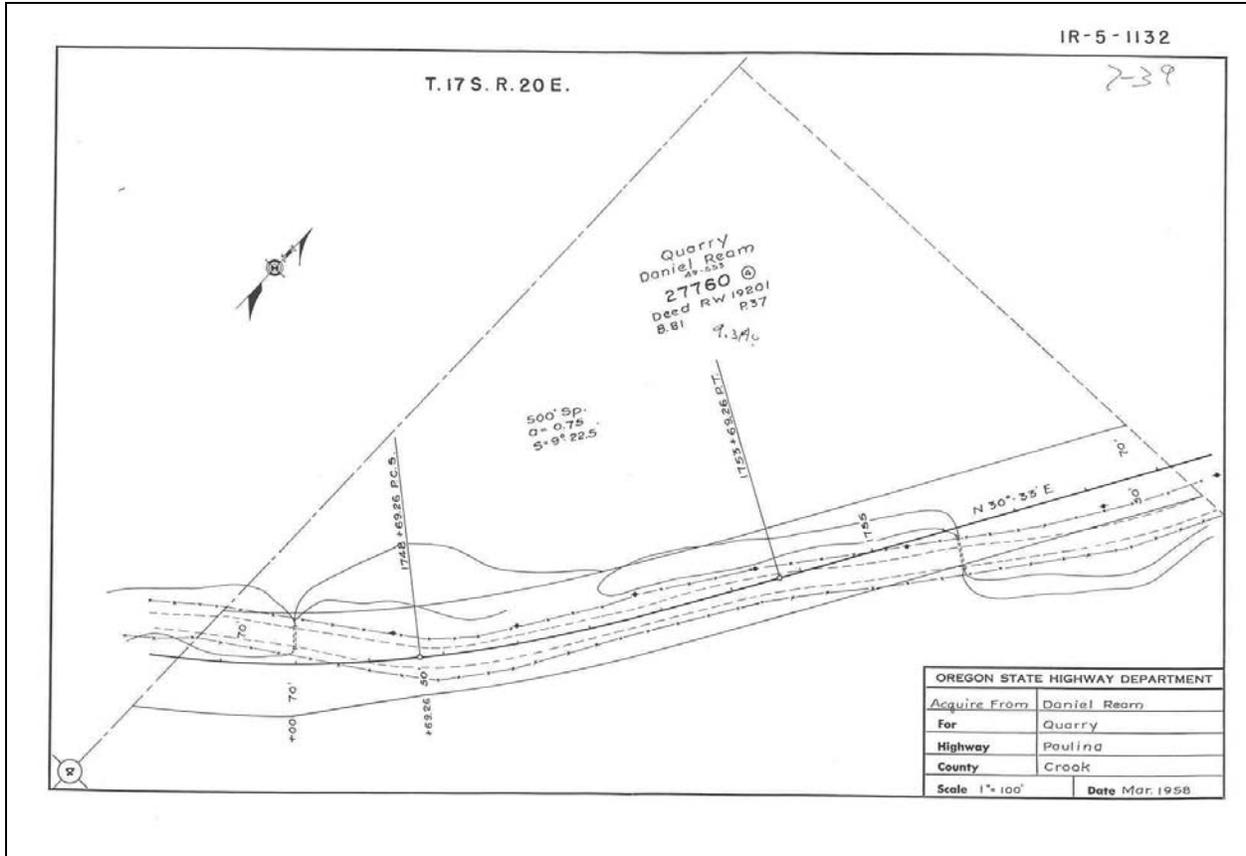
SW

NE



Looking northwest at the quarry site along Highway 380. Part of the site is on BLM ground.

Close-up view of the pit run material at this site.



Aerial view of the quarry site along Highway 380.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Crook				10	0380	38	17S	21.0E	06
File ID		Source #	Date Visited	Map #			Type of Site		
29952, 29951		07-040-4	05/02/2001	1R-5-1292, 1R-5-1404, 1R-5-1291			Quarry		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #			
44 07'07.26657"	120 14'51.05022"	1088.683	28.77	<2		07-0013			
Comments									
GPS acquired in the pit.									
Rock Type	Unit	Color		Weathering			Jointing		
Basalt	Tba	Dark Grey (N3)		Fresh to Slight			Highly Fractured		
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Good			R3+	177	675,000	1,612,913			
Potentially Significant Site	Why	Open/Closed		Direction					
No	USA Ground	Closed		South approximately 250 meters is the Crooked River.					
Adjacent Land Use									
Open Space									
Remarks									
Part USA and ODOT. This site is adjacent to and north of Highway 380. The rock here is a fine-grain, highly fractured basalt. The weathering is fresh with a thin olive colored rind. You can rip the rock and acquire minor rip rap. There is room to work with good screening from the highway. The terrain is gradual to moderate with the quarry site occupying a small hill. Approximately 50,000 cubic yards have been removed.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
2.75	2.81	15.2	5.6	1.2			19.1	0.4	
Material Use									
(1992)									

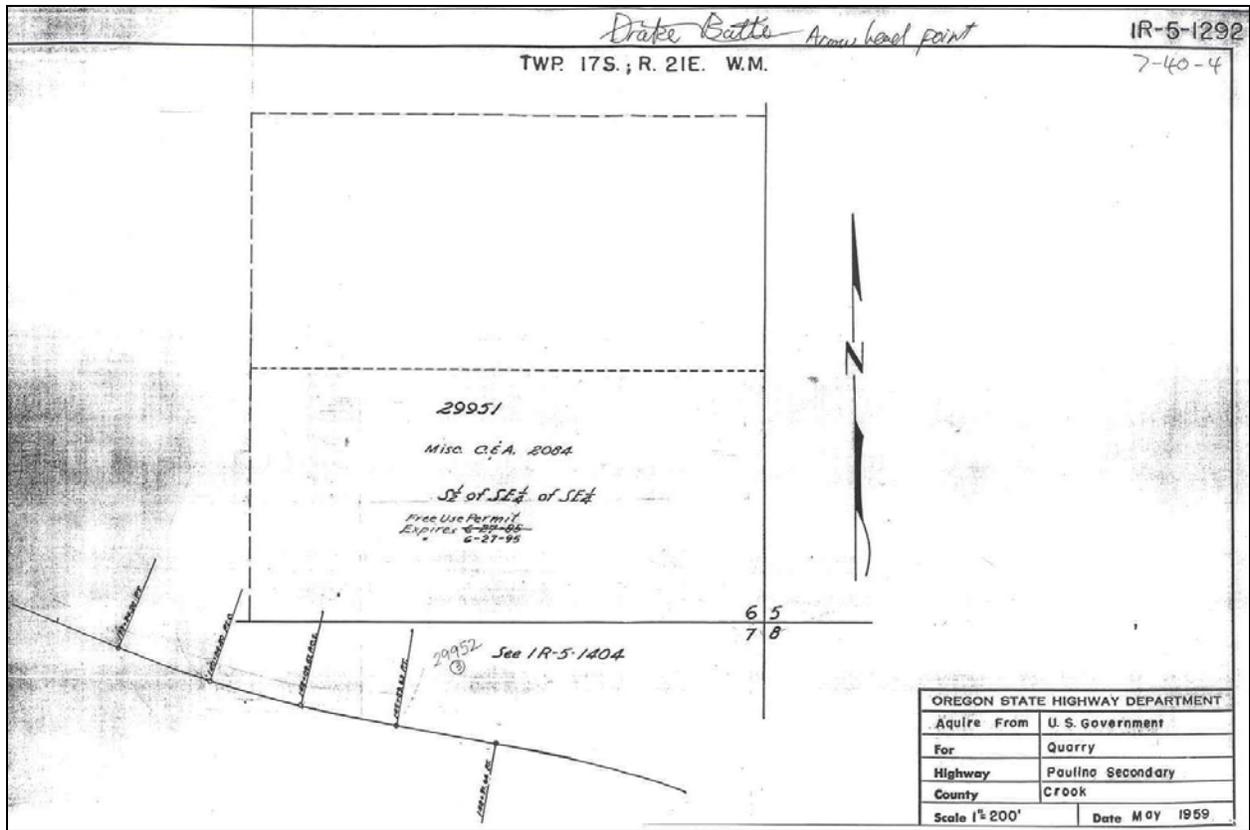
S

NE

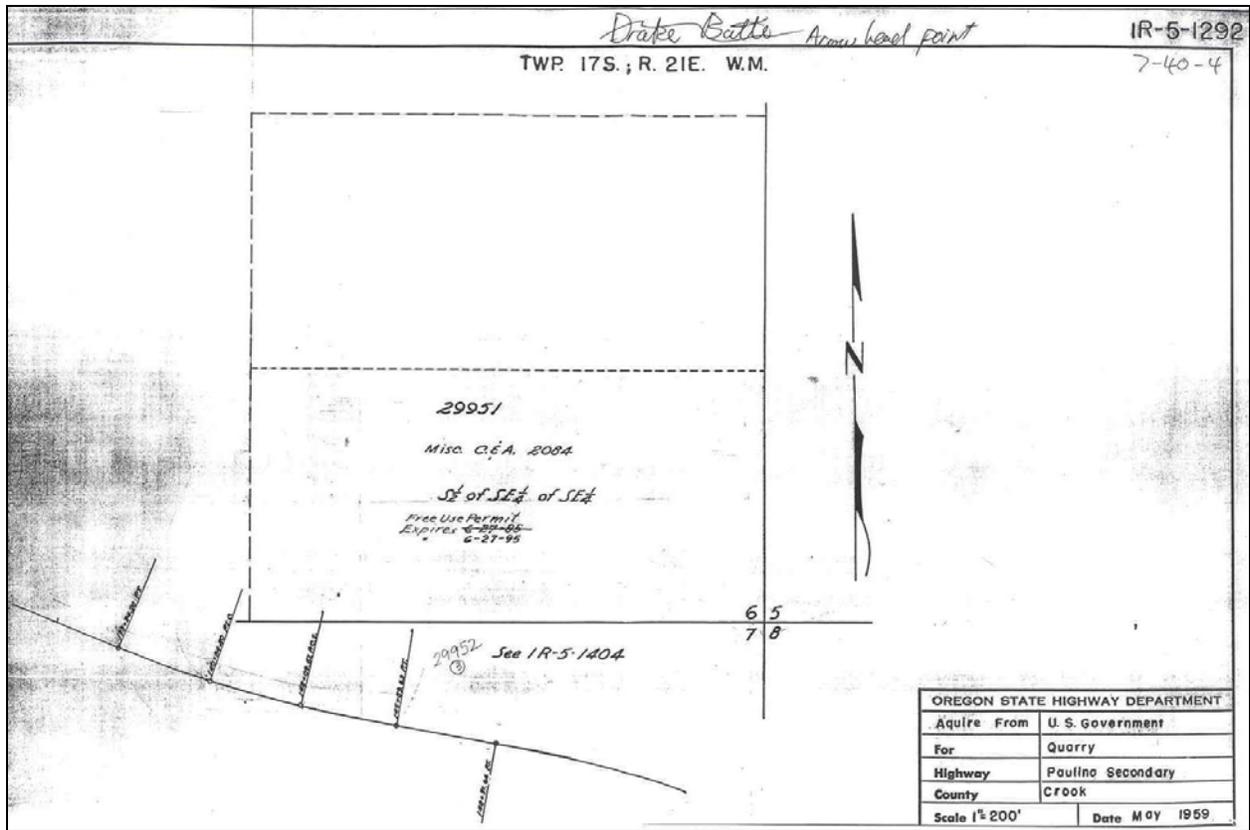


Panoramic view of the quarry site located north of Highway 380.

Close-up view of the fracture pattern of the basalt.



Aerial view of the quarry site located adjacent to and north of Highway 380.



County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Crook					10	0380	43.6	17S	21.0E	12
File ID		Source #	Date Visited	Map #		Type of Site				
08633		07-041-4	06/01/2000	1R-2-1081		Borrow				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
44 06'49.78958"	120 09'42.13435"	1083.176	4.17	NA						
Comments										
GPS acquired along Highway 380.										
Rock Type	Unit	Color	Weathering		Jointing					
Volcanic Gravel		NA	NA		NA					
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Good to Fair			NA	120	60,000	97,200				
Potentially Significant Site	Why			Open/Closed	Direction					
No	Too small			Closed	North about 700 meters is the Crooked River					
Adjacent Land Use										
Ranching										
Remarks										
This site is located adjacent to and south of Highway 380. The rock is a heterogeneous mix of size, shape, and lithology. There is about 40% rock and 60% sand/silt by volume. There is no access to the site (fenced) now. A rancher uses this site for a stock pond and grazing area. The terrain is flat. There is no screening from the highway with little room to work.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
Material Use										

E

SW



Looking south at the borrow site along Highway 380.

Close-up view of the material at this location.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Crook	Prineville Sand and Gravel				10	0360	23.7	17S	220E	09
File ID		Source #	Date Visited	Map #		Type of Site				
29951		07-042-4	6/01/2000	1R-5-1291		Borrow				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
44 06'19.70112"	120 06'47.06363"	1103.728	20	NA						
Comments										
GPS acquired at the access point and Highway 380.										
Rock Type	Unit	Color		Weathering			Jointing			
Volcanic Gravel	Tcp	NA		NA			NA			
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Good to Fair			NA	120						
Potentially Significant Site	Why			Open/Closed	Direction					
No	BLM ground			Closed	North about 700 meters is Beaver Creek					
Adjacent Land Use										
Ranching										
Remarks										
This site is located adjacent to and north of Highway 380. This ground is owned by the USA and has not been used for some time. The material is composed of a heterogeneous mix of size, shape, and rock lithologies. There is about 40% gravel, and 60% sand/silt by volume. The ground is flat and used for a stock pile site. There is room to work and no screening from the highway. The lease for this site has expired and would need to be assessed for future work.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
Material Use										

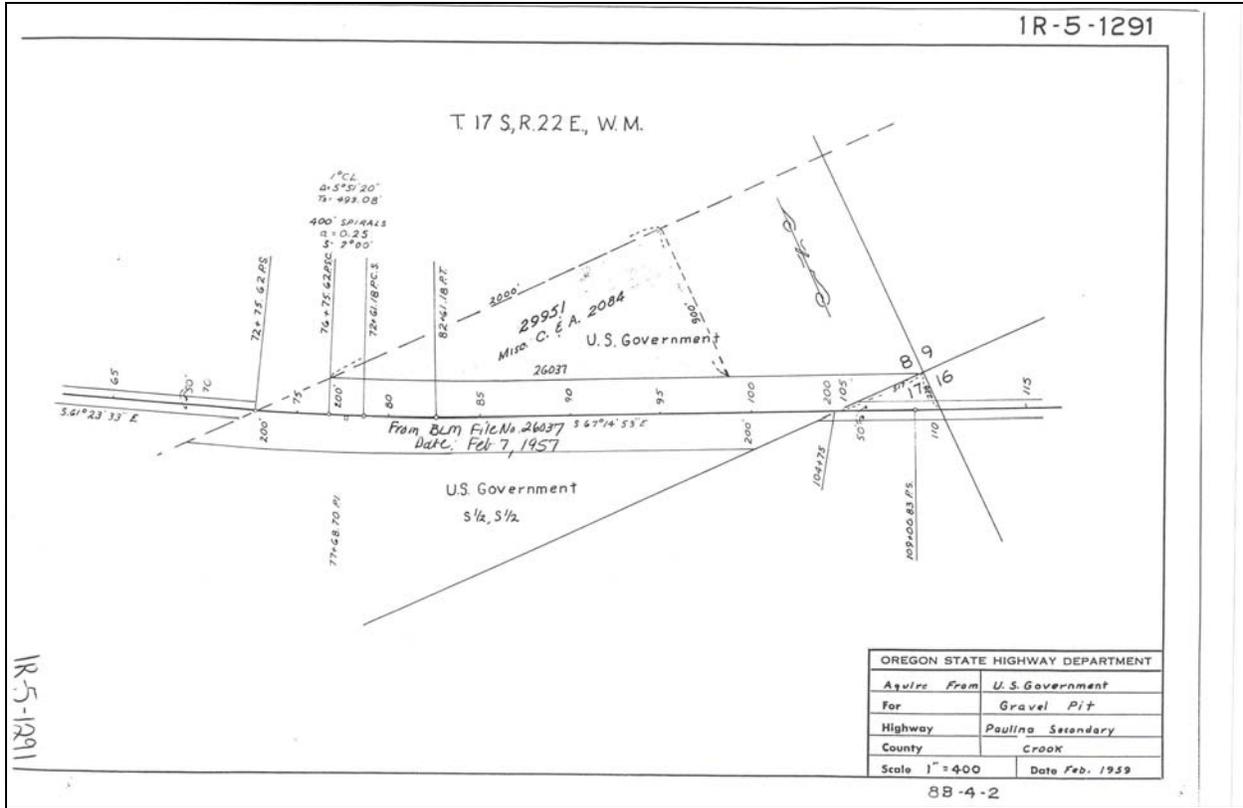
NW

NE



Looking to the north at the borrow site along Highway 380. It appears that the site has had some reclamation.

Close-up view of the gravel at this location with the hammer for scale.



Aerial view of the borrow site.
 Beaver Creek is in the upper right hand corner of the image.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Crook				10	0380	52.5	17S	23.0E	07
File ID		Source #	Date Visited	Map #			Type of Site		
26039		07-043-4	06/01/2000	1R-5-965			Quarry		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #			
44 06'26.16471"	120 01'15.98643"	1108.891	20.19	<1					
Comments									
GPS acquired at the base of the pit.									
Rock Type	Unit	Color		Weathering			Jointing		
Basalt	Tcp	Medium Dark Grey (N4)		Slight			Highly Fractured		
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Good to Fair			R3	174	300,000	704,700			
Potentially Significant Site	Why			Open/Closed	Direction				
No	NA			Closed	Adjacent to Beaver Creek				
Adjacent Land Use									
Ranching									
Remarks									
This site is located north of and adjacent to Highway 380. The rock is a fine-grain basalt that is slightly weathered and highly fractured. You can rip the rock for pit run. The terrain is steep at about 30 to 35 degrees. There is a minor amount of vesicular basalt exposed within the flows as well as some small highly weathered dikes. There is room to work but no screening from the highway.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
Material Use									

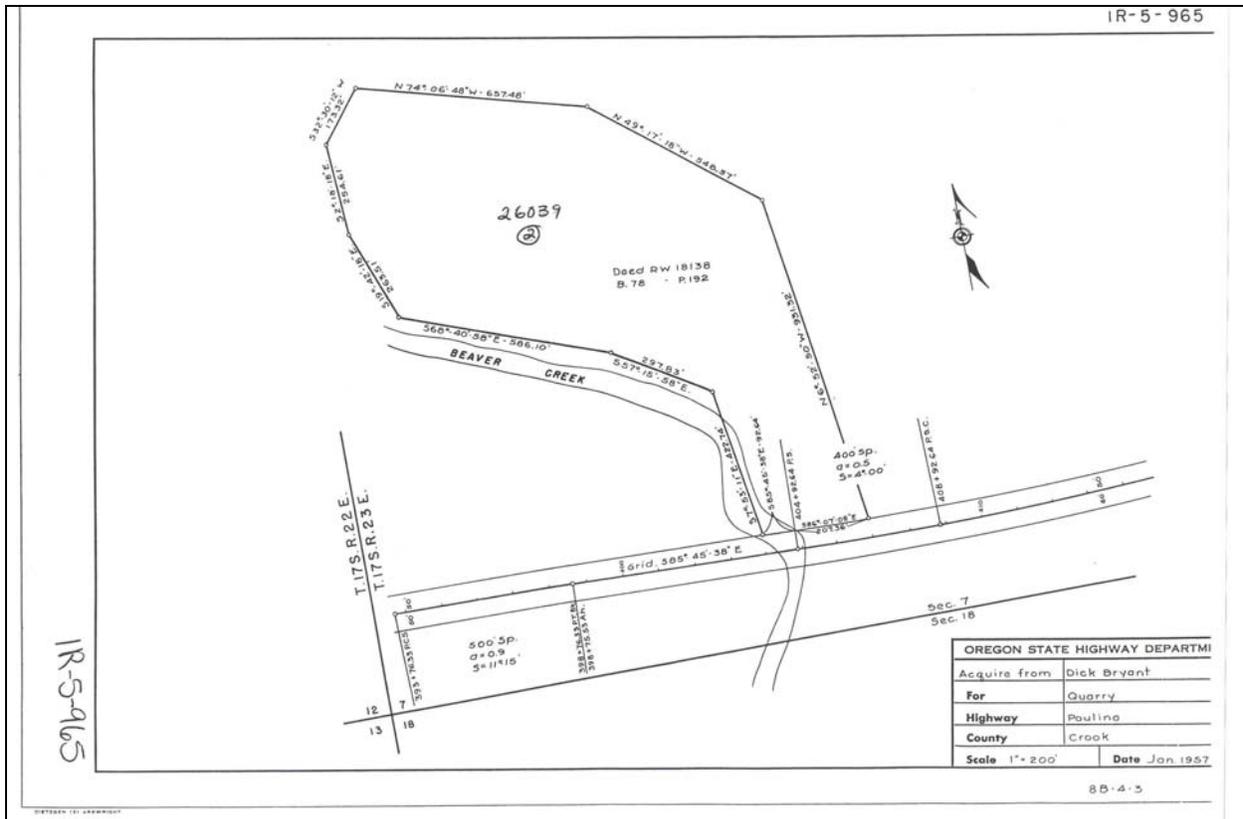
NW

NE



Looking north at the quarry site.

Close-up view of some of the pit run material with the hammer for scale.

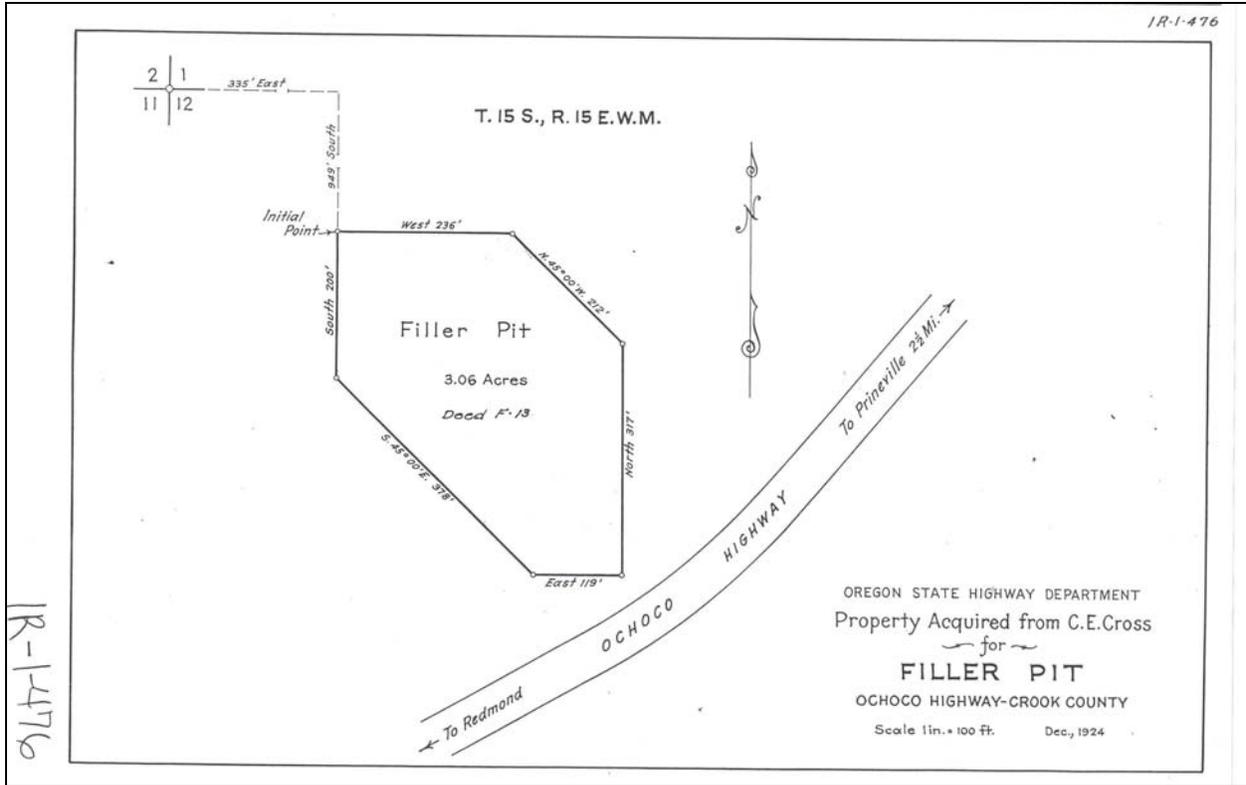


Aerial view of the quarry site that is adjacent to Beaver Creek and north of Highway 380.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Crook				10	0042	0	15S	15.0E	12
File ID		Source #	Date Visited	Map #			Type of Site		
F0013		07-901-4	11/03/1999	1R-1-476			Borrow		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #			
44 17'19.98233"	120 53'05.71535"	981.697	3.06	NA					
Comments									
GPS acquired in the pit									
Rock Type	Unit	Color		Weathering			Jointing		
Volcanic Gravel	NA	NA		NA			NA		
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
NA			NA	120					
Potentially Significant Site	Why			Open/Closed	Direction				
No	Too small of acreage.			Closed	NA				
Adjacent Land Use									
Industrial Park. Inside the city limits of Prineville.									
Remarks									
This site is located north of Highway 126 in the Industrial Park west of the town of Prineville. This borrow site is used as a waste site now. The material at this site is composed of silt and some sand. There is no screening from the highway and there is plenty of room to work. The terrain is flat with minor past disturbances. This site should be evaluated for surplus per Region 4 Geology.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
Material Use									



Looking northwest at the borrow site along Highway 126.



Aerial view of the borrow site along the highway.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes	Weigand P.T.			10	0004	115.26	14S	13.0E	18
File ID		Source #	Date Visited	Map #			Type of Site		
18110		09-002-4	8/24/1999	1R-5-181			Cinder Pit		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #			
44 20'57.49555"	121 12'35.80421"	937.894	20	<4		09-0168			
Comments									
GPS acquired at access point									
Rock Type	Unit	Color		Weathering			Jointing		
Cinder	QTp	NA		NA			NA		
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Good			NA	120	700,000	1,134,000			
Potentially Significant Site	Why			Open/Closed	Direction				
No	This is leased ground.			Closed	NA				
Adjacent Land Use									
Ranching/Farming/Residential adjacent.									
Remarks									
This site is located about 2 miles west of Terrebonne. It is a cinder pit that is owned by the Federal Government. The cinder is fairly clean and there would be minimal crushing here. There is some screening with plenty of room to work. Some of the home sites are adjacent to the property boundary and seem to be too close to the bench walls. Locked gate, some tall vertical walls, quantity calculation is the maximum. The north/south measurement is larger than the 1R-map delineates.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
	2.91	49.0							
Material Use									
SAND AG (1957)									

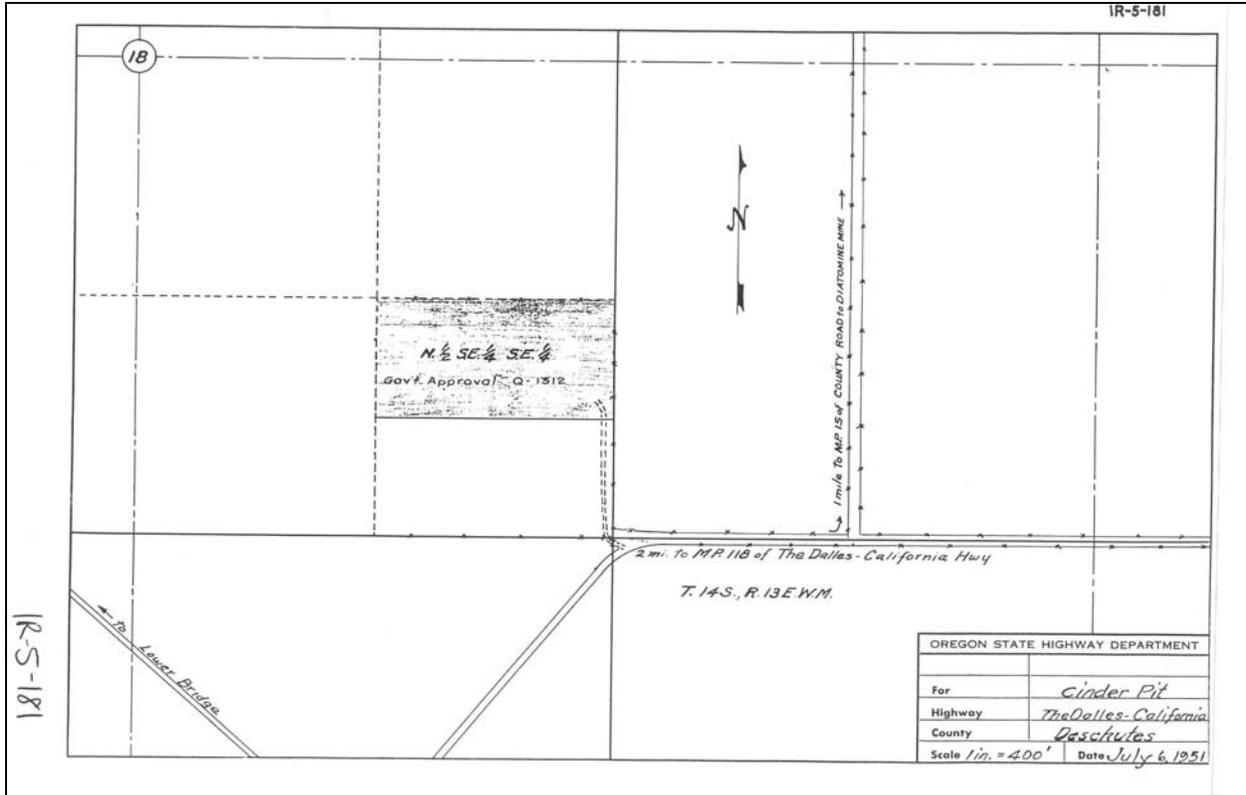
S

N



Looking west at one of the cinder pits in this general vicinity.

Close-up view of the scoriaceous basalt (cinder).



Aerial view of the cinder pit and the surrounding area.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes	Terrebonne Cinder Pit				10	0004	115.2	14S	13.0E	16
File ID		Source #	Date Visited	Map #		Type of Site				
20833		09-003-4	8/25/1999	1R-5-446		Cinder Pit				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
44 21'32.21632"	121 11'18.79531"	853.048	26	<21						
Comments										
GPS acquired at the locked gate.										
Rock Type	Unit	Color	Weathering		Jointing					
Cinder	QTp	NA	NA		NA					
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
NA			NA	120						
Potentially Significant Site	Why			Open/Closed	Direction					
No	Depleted			Closed	NA					
Adjacent Land Use										
Town of Terrebonne										
Remarks										
This property is located on the west side of Terrebonne. There is no screening and plenty of room to work here. The site is surrounded by residential homes on acreage. There are some homes here that are too close to the high wall and could pose a danger. This ground is in the process of being filled in with waste rock and materials. It appears that there is no more removal of cinder at this location.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
Material Use										

SE

SW



Looking south at the cinder pit and the homes up on top of the hill in the background.

NE

SE



Looking east at the cinder pit located west of the town of Terrebonne, OR.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes					10	0004	118.52	14S	13.0E	29
File ID		Source #	Date Visited	Map #		Type of Site				
15307, 15369, 15368, 15367		09-004-4	8/25/1999	1R-2-1895,1R-2-1892		Raw Land				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
44 19'43.40000"	121 11'25.20000"	913	41.94	NA						
Comments										
GPS acquired at county road and BLM ground.										
Rock Type	Unit	Color	Weathering			Jointing				
Basalt	QTb	NA	NA			NA				
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Fair to Good			NA	120						
Potentially Significant Site	Why			Open/Closed	Direction					
No	Leased ground			Closed	NA					
Adjacent Land Use										
Residential homes on acreage surround the property.										
Remarks										
This is raw land west of Highway 97 about one mile. There are limited exposures to evaluate the basalt. The quality of the basalt would be fair to poor. This ground is leased from the USA. There is no prior disturbance that I could find. There are many new residential homes on acreage that surround this site now. The easement is no longer evident. I went up Galloway Avenue to reach this property.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
	2.82	50.9								
Material Use										
SAND AG (1949)										

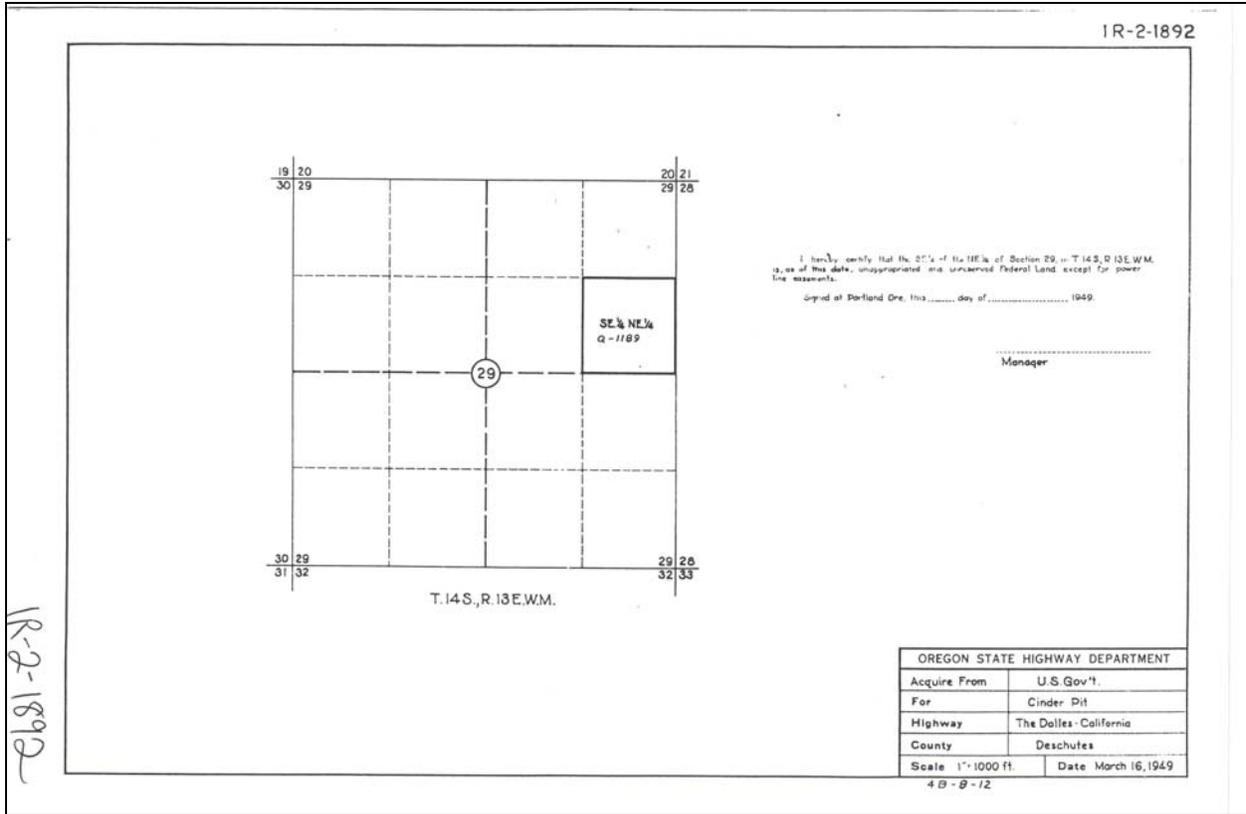
NE



Looking up to the hill top site from the southwest.



Close-up view of the vesicular basalt in the area, with the hammer for scale.



Aerial view of the site and the surrounding area.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes					10	0004	118.52	14S	13.0E	29
File ID		Source #	Date Visited	Map #			Type of Site			
17287		09-005-4	8/25/1999	1R-2-105			Raw Land			
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
44 19'36.48746"	121 11'19.07434"	938.961	80	NA						
Comments										
GPS acquired at site 09-004-4										
Rock Type	Unit	Color	Weathering			Jointing				
Basalt	QTb	NA	NA			NA				
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Fair to Good			NA	120						
Potentially Significant Site	Why			Open/Closed	Direction					
No	Leased ground			Closed	NA					
Adjacent Land Use										
Residential homes on acreage surround the property.										
Remarks										
This site is adjacent to site 09-004-4. This is raw land west of Highway 97 about one mile. There are limited exposures to evaluate the basalt. The quality of the basalt would be fair to poor. This ground is leased from the USA. There is no prior disturbance that I could find. There are many new residential homes on acreage that surround this site now. The easement is no longer evident.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
	2.82	50.9								
Material Use										
SAND AG (1949)										

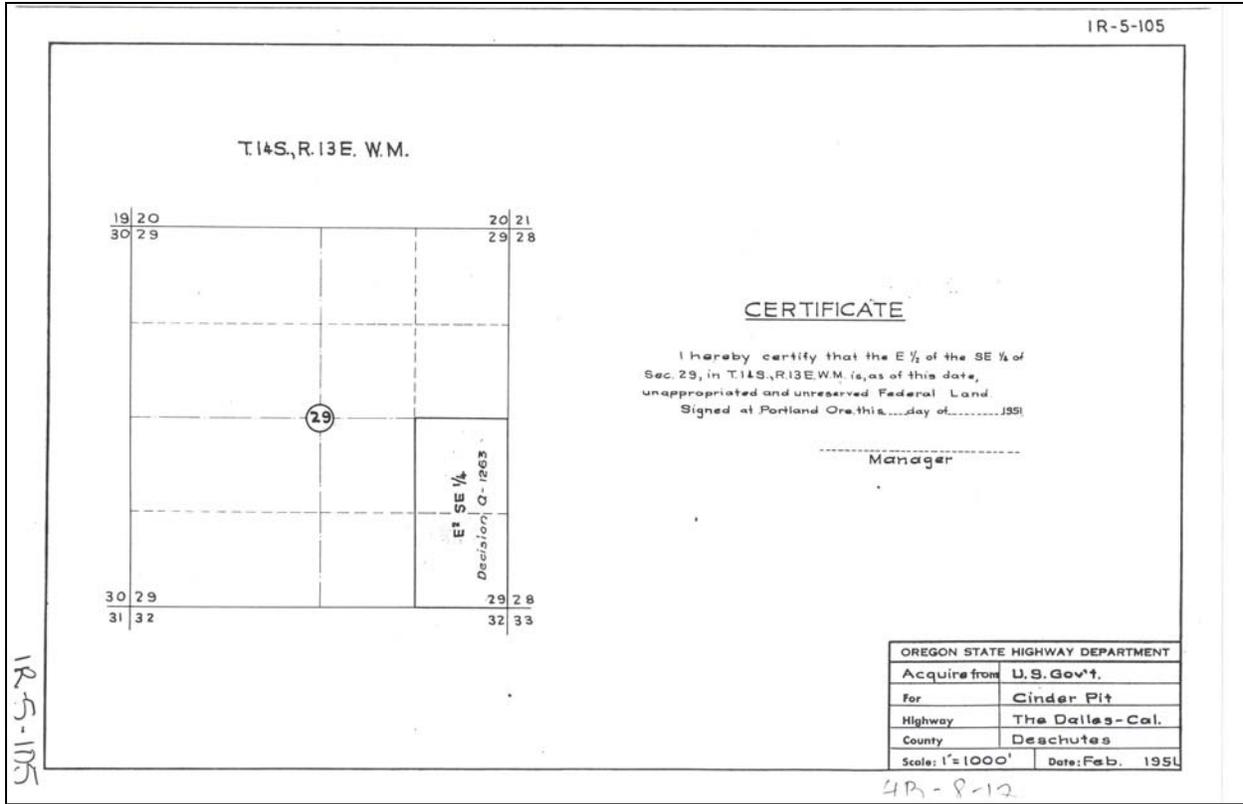
NE



Looking up to the hill-top site from the southwest.



Close-up of the vesicular basalt in the area, with the hammer for scale



Aerial view of the site and the surrounding area.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes	Redmond Cinder Pit				10	0004	118.52	14S	13.0E	33
File ID		Source #	Date Visited	Map #		Type of Site				
14908, F0055		09-006-4	8/25/1999	1R-1-1193		Cinder Pit				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
44 18'45.20000"	121 11'09.34000"	884	5	NA						
Comments										
Lat. and Long. acquired using Terrain Navigator Software										
Rock Type	Unit	Color		Weathering		Jointing				
Cinder	QTP	NA		NA		NA				
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Good			NA	120	50,000	81,000				
Potentially Significant Site	Why					Open/Closed		Direction		
No	Small acreage, limited room to work, area has residential development.					Closed		NA		
Adjacent Land Use										
Private quarries/Residential property										
Remarks										
This site is west of Highway 97 about one mile. The ground was not found amongst multiple private quarries. No easement was evident. This site would need a current survey to evaluate property. From the adjacent ground the cinder in this area is limited to 25 feet thick. The cinder sits on top of a Tuff/Pyroclastic Unit. The cinder deposit thickens as you move south. This site might be depleted, but I calculated a quantity based on assumptions that the property I viewed was ours.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
	2.75	43.6								
Material Use										
SAND AG (1953)										

E

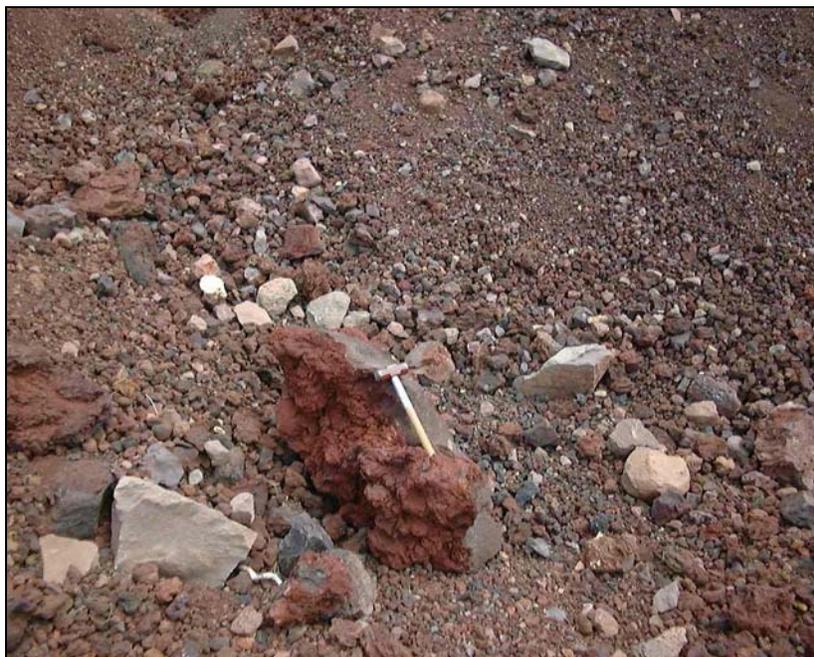


Looking east at the general area of the cinder pit.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes					10	0004	121.52	18S	12.0E	30
File ID		Source #	Date Visited	Map #		Type of Site				
19572		09-012-4	05/31/2000	1R-2-1156		Cinder Pit				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
43 58'57.62803"	121 20'14.47026"	1216.42	22.45	NA	09-0129					
Comments										
GPS acquired at the locked gate.										
Rock Type	Unit	Color	Weathering		Jointing					
Cinder	QTp	NA	NA		NA					
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Good			NA	120	160,000	259,200				
Potentially Significant Site	Why			Open/Closed	Direction					
No	Cinder pit			Closed	NA					
Adjacent Land Use										
Ranching/Open space										
Remarks										
This site is east of Highway 97 about 300 meters. The haul road is not used anymore, but you access the pit from Knott Road to a County Road. This is a good close source of scoriaceous basalt (cinder). The cinder is a heterogeneous mix of size from sand to large boulder. There is some screening with ample room to work. Minor waste site, locked gate.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
Material Use										

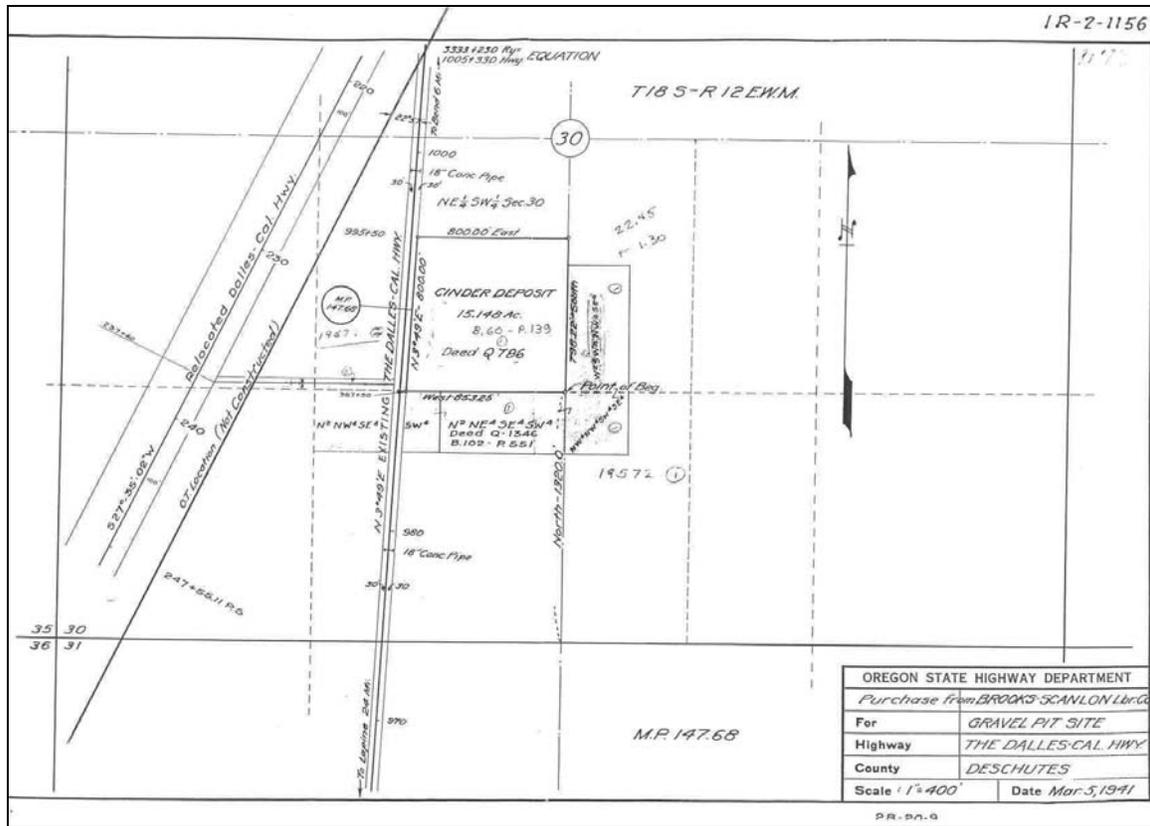
NW

SE



Looking north at the cinder pit along a County Road. The access point is in the left side of the image.

Close-up view of the scoriaceous basalt in the pit.



Aerial view of the cinder pit with the access point from Highway 97.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes					10	0004	159.3	21S	11.0E	06
File ID		Source #	Date Visited	Map #		Type of Site				
S0677		09-015-4	05/31/2000	1R-1-1727		Borrow				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
43 47'13.37499"	121 26'52.97295"	1278.035	40	NA						
Comments										
GPS acquired along Highway 97.										
Rock Type	Unit	Color	Weathering		Jointing					
Volcanic Gravel	Qs	NA	NA		NA					
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Fair			NA	120	160,000	259,200				
Potentially Significant Site	Why	Open/Closed		Direction						
No	BLM ground	Closed		West about 1000 meters is the Little Deschutes River						
Adjacent Land Use										
Open space										
Remarks										
This site is adjacent to and west of Highway 97. This is raw land with some minor disturbances on flat terrain. There is a high percent of sand (90%) to gravel (10%). A lot of cinder and pumice laying around. There is plenty of room to work and good screening from the highway. The rail line in the area bisects property. The site is in a pine forest (small trees). This is BLM ground.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
2.71							14.16	1.2		
Material Use										
CTB, BORROW, Pit Run and Gravel (1967)										

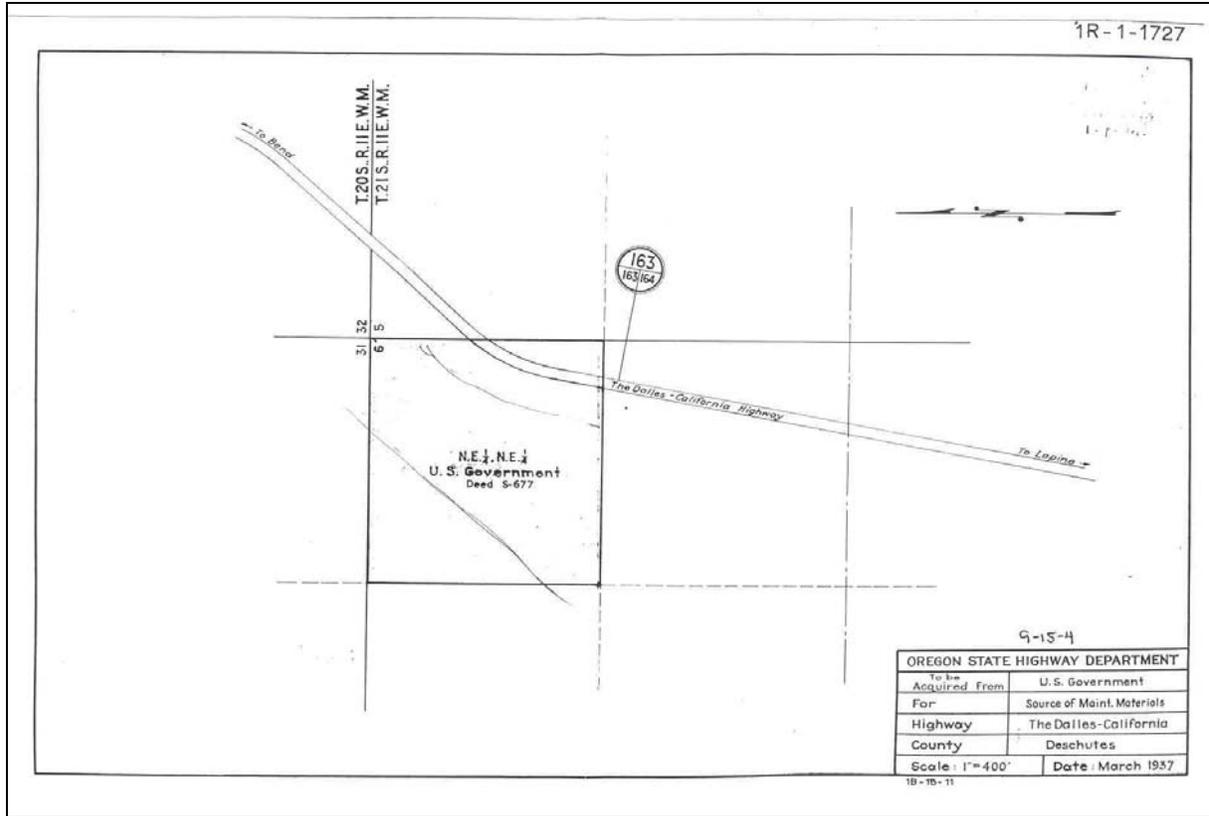
S

W



Looking to the southwest at the entrance point to the borrow site along Highway 97.

Close-up view of the cinder material at this site.



Aerial view of the borrow site between the highway and the rail line.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes				10	0004	161.86	21S	11.0E	18
File ID		Source #	Date Visited	Map #			Type of Site		
21059		09-017-4	11/02/1999	1R-5-465			Borrow		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #			
43 45'11.38923"	121 27'21.20264"	1282.108	20.37	<1					
Comments									
GPS acquired in the pit									
Rock Type	Unit	Color		Weathering			Jointing		
Volcanic Gravel	Qs	NA		NA			NA		
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Good to Fair			NA	120	55,000	89,100			
Potentially Significant Site	Why	Open/Closed	Direction						
No	Leased ground.	Closed	Paulina Creek is to the southwest approximately 700 meters.						
Adjacent Land Use									
Rural/Residential									
Remarks									
This site is located at the junction of Highway 97 and Paulina Lake Road. The material is composed of small size gravel (40%) that is less than 15 millimeters, and sand (60%) by volume. Three quarters of the pit is now a pond with vegetation growing in it. There is some screening and some room to work. This is leased ground from the USA. This is a wetland site now per Region Geology. The information center to Newberry Crater is across the road from this location. There are minor quantities of Pine trees about 35 feet tall. It appears that 80,000 cubic yards have been removed to date.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
	2.75								
Material Use									
CTB, BORROW (1970)									

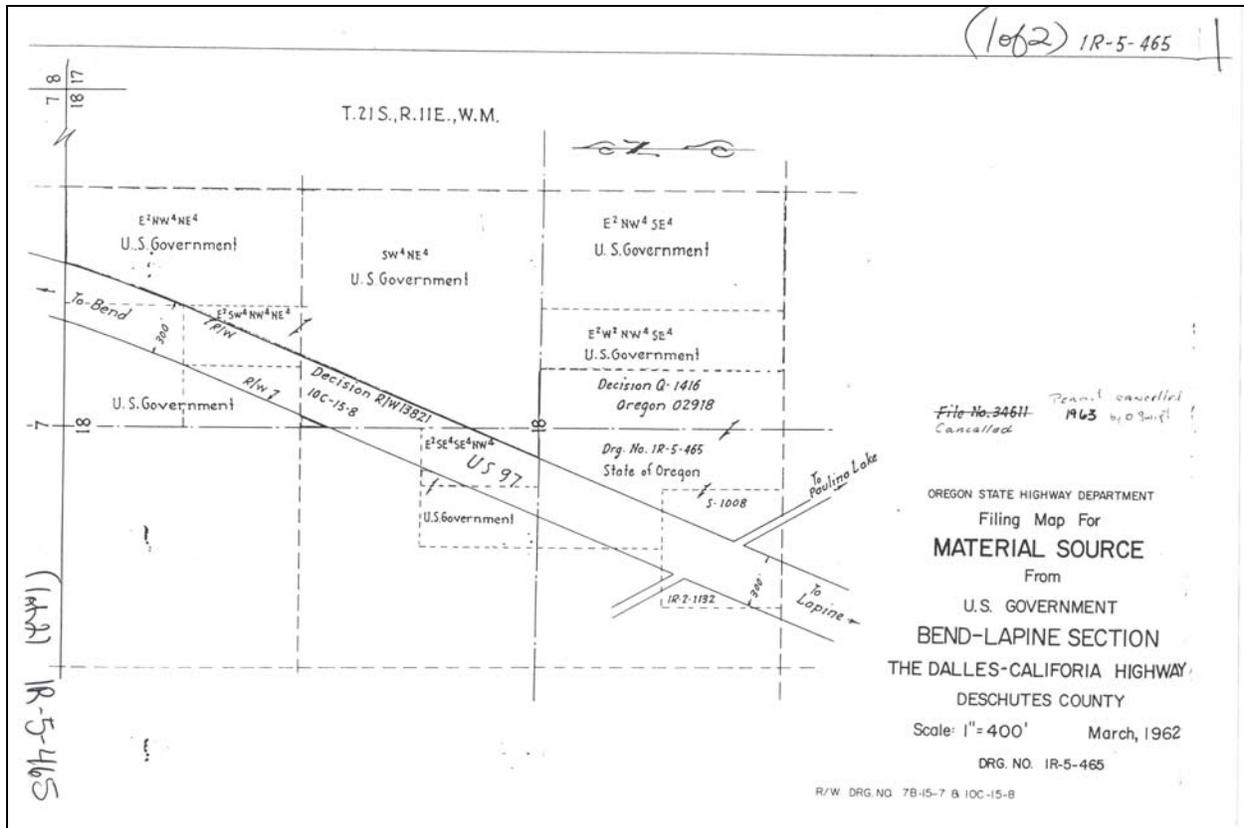
SW

NE



Looking to the west at the borrow site just east of Highway 97.

Close-up view of the volcanic material at this location.



Aerial view of the borrow site in relation to the surrounding area and Highway 97.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes	Wood Chopper Butte				10	0004	167.87	22S	11.0E	01
File ID		Source #	Date Visited	Map #		Type of Site				
Q0523		09-020-4	11/02/1999	1R-1-1748		Borrow				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
43 42'16.97577"	121 28'12.89871"	1291.217	40	<23						
Comments										
GPS acquired at the access point to the pit off of Rosland Road.										
Rock Type	Unit	Color	Weathering		Jointing					
Volcanic Gravel	Qs	NA	NA		NA					
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Good			NA	120	300,000	486,000				
Potentially Significant Site	Why			Open/Closed	Direction					
No	USA ground			Closed	NA					
Adjacent Land Use										
Commercial/Residents on acreage.										
Remarks										
This site is located less than a mile east of Highway 97, and north of La Pine, OR. The material is from glacial outwash. The gravel is composed of a heterogeneous mix of size and shape. The dominant size is in the sand/silt range, with 80% sand and 20% gravel mix. There is no screening and plenty of room to work. This site is open to the public for off road activities. The access road has changed and a new County Road (Rosland) is the access to the site now. The area is being developed for residential construction. USA ground.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
Material Use										

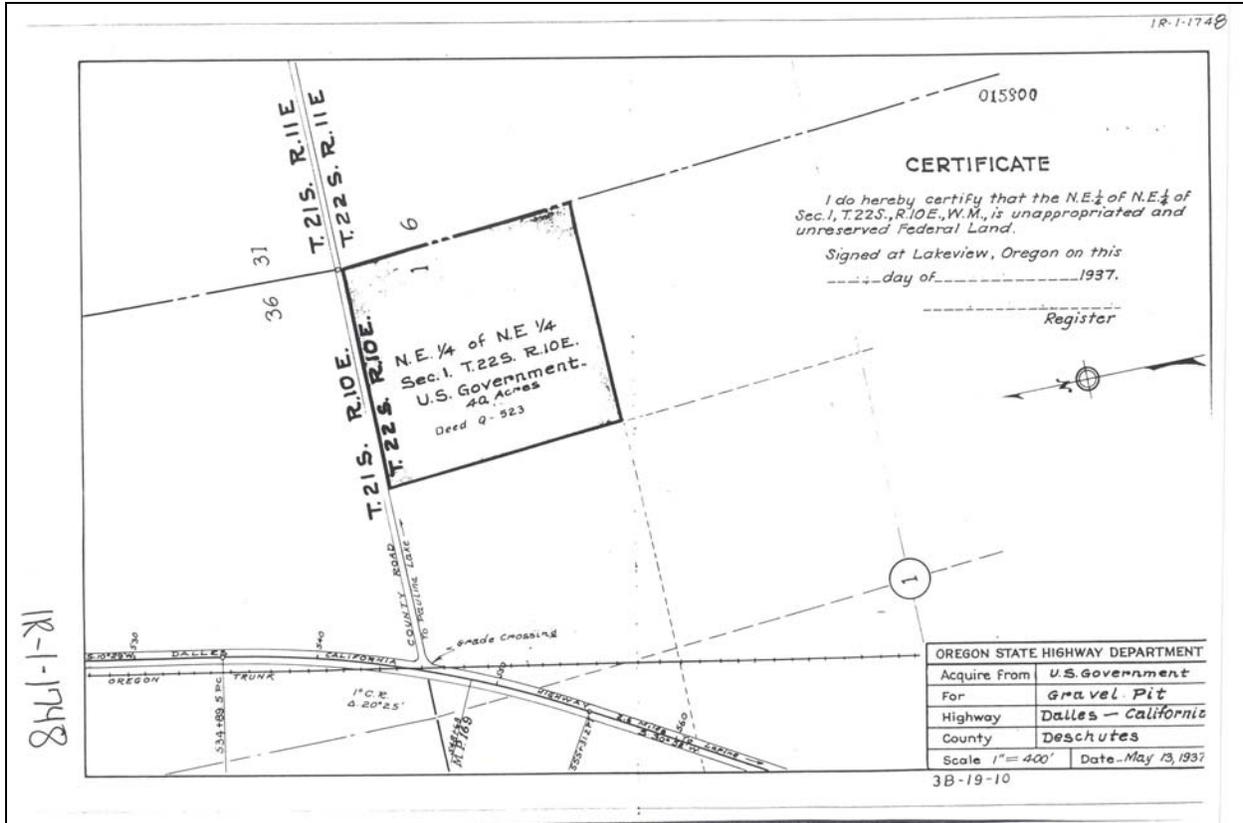
E

S

W



View to the south of the borrow site that is east of Highway 97.
This site is used for off road activities

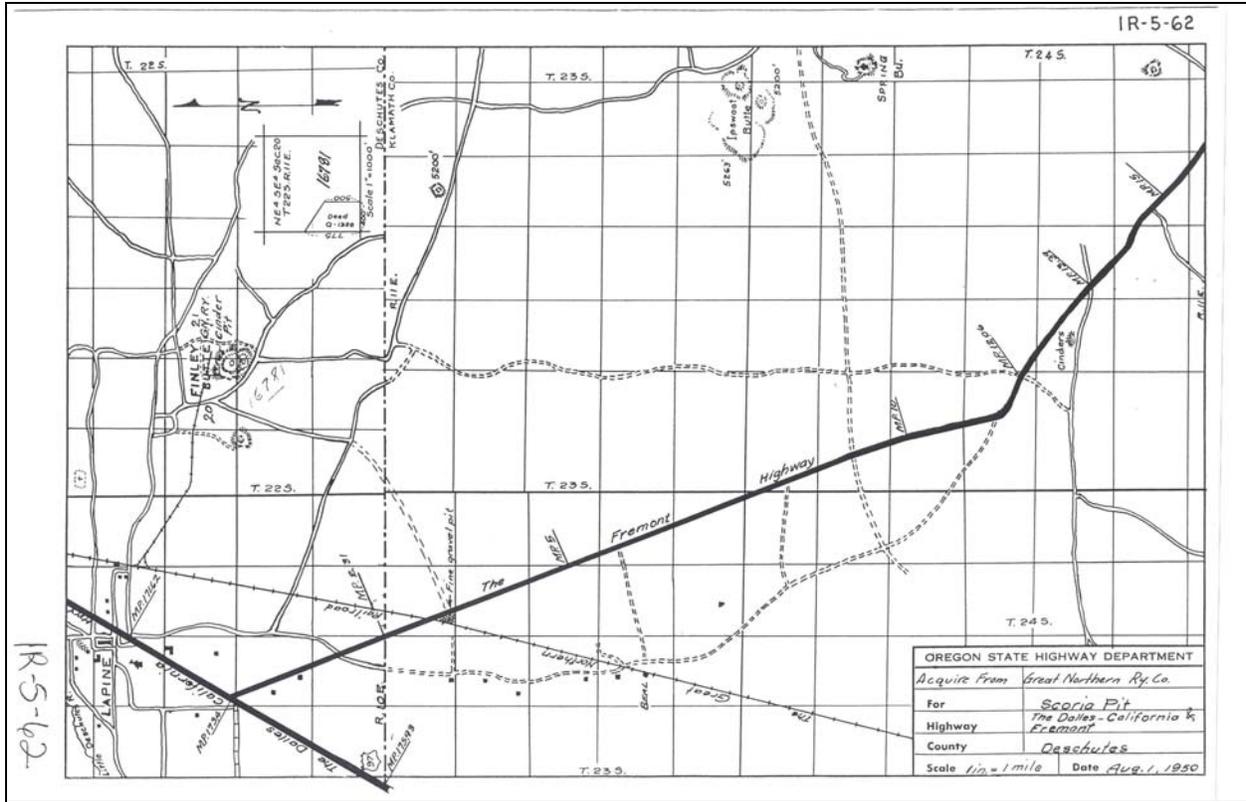


Aerial view of the borrow site that is east of Highway 97.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes	Finley Butte			10	0004	167.87	22S	11.0E	20
File ID		Source #	Date Visited	Map #			Type of Site		
16781		09-021-4	11/02/1999	1R-5-62			Cinder Pit		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #			
43 38'48.93183"	121 25'41.98784"	1400.819	5.85	<2		09-0142			
Comments									
GPS acquired on the road south and adjacent to the pit.									
Rock Type	Unit	Color		Weathering			Jointing		
Cinder	QTp	NA		NA			NA		
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Good			NA	120	80,000	129,600			
Potentially Significant Site	Why					Open/Closed	Direction		
No	Good source of sanding material that is close to LaPine and Highway 97.					Closed	NA		
Adjacent Land Use									
National Forest									
Remarks									
This site is east of La Pine at the base of Finley Butte. The site I visited in November of 1999 is Forest Service ground. Maintenance had their portable crusher here producing about 20,000 cubic yards of sanding material for the La Pine Maintenance Yard. There is good screening and room to work at this location. The cinder here is a good clean scoriaceous basalt that is easy to rip and process. The quantity I calculated is based on a 5 acre parcel of ground and a 10 foot lift.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
2.64			1.4				18.6	0.5	
Material Use									
AC (1992)									



Looking to the north at the process of crushing the cinder at Finley Butte.



Aerial view of the cinder site east of La Pine, OR.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes	La Pine Gravel Pit			10	0004	167.87	22S	11.0E	18
File ID		Source #	Date Visited	Map #			Type of Site		
08927		09-022-4	11/02/1999	1R-2-1131			Borrow		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #				
43 39'53.63896"	121 27'0"7.75941"	1305.823	120	<10					
Comments									
GPS acquired at the edge of the pit.									
Rock Type	Unit	Color	Weathering			Jointing			
Volcanic Gravel	Qs	NA	NA			NA			
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Good			NA	120	200,000	324,000			
Potentially Significant Site	Why			Open/Closed	Direction				
No	Borrow site			Closed	NA				
Adjacent Land Use									
National Forest									
Remarks									
This site is located a couple of miles east of La Pine. The material here is a heterogeneous mix of sizes and shapes of volcanic gravel. The pit occupies a topographic draw on the west flank of Newberry Crater. This is most likely a glacial outwash plain. The material has a mix of 70% sand and 30% pea gravel by volume. There is screening from the road and plenty of room to work. Power lines bisect the property. We own almost 120 acres but about 60 is classified as excess in the Right of Way data base. There is some timber value here. The town of LaPine is to use this area for subsurface water per Region Geology. The County has the use of this site also. Ground is used as a motto cross area and gun range. Approximately 75,000 cubic yards removed.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
2.43	2.51			5.3			10.3	1.8	
Material Use									
AC (1979)									

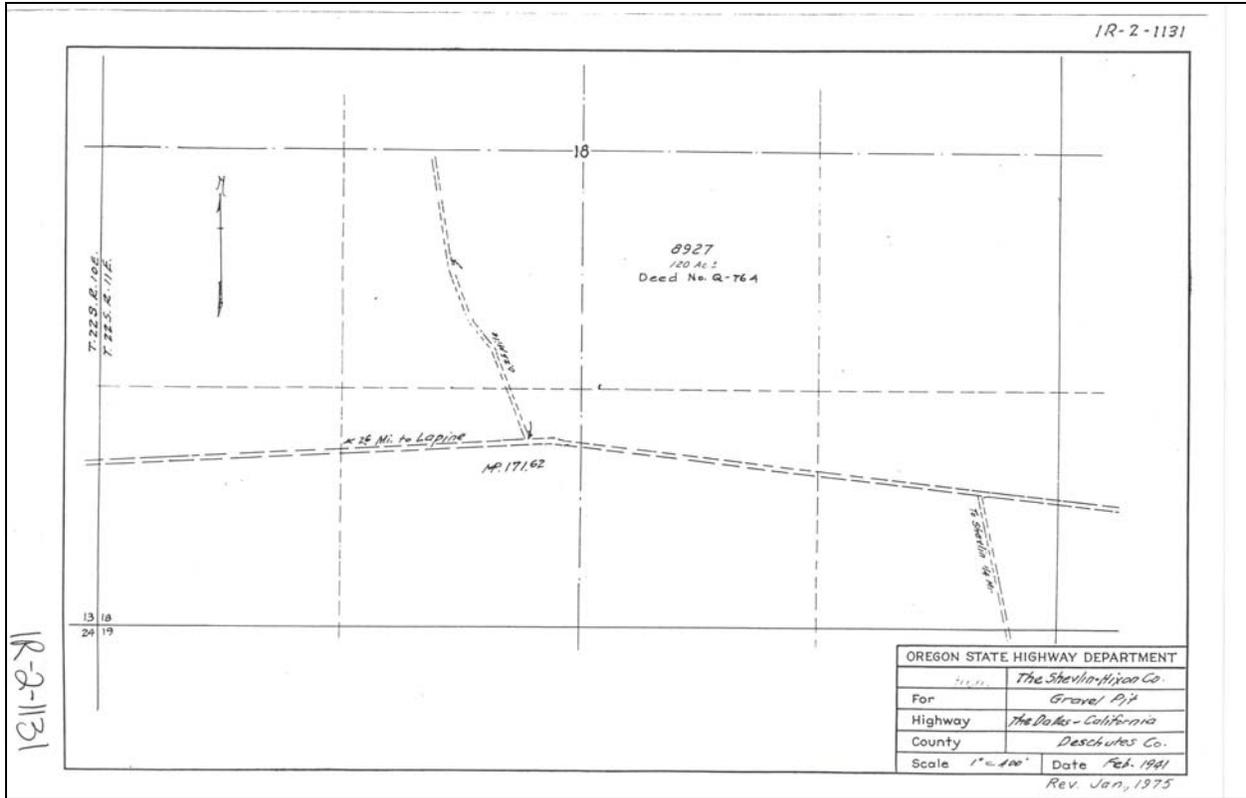
W

E



Panoramic view to the north of the borrow site located east of La Pine, OR.

Close-up view of the volcanic material at this location.



Aerial view of the borrow site and the surrounding area.
The linear feature running through the pit are high power lines.

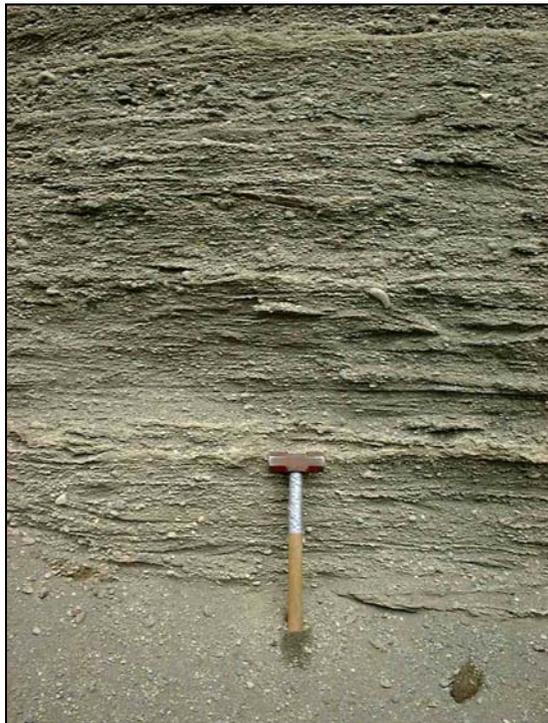
County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes					10	0007	16.37	19S	14.0E	04
File ID		Source #	Date Visited	Map #		Type of Site				
Q0235		09-026-4	05/30/2000	1R-1-1018		Borrow				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
43 57'6.40578"	121 03'45.92213"	1133.549	20	<10	09-0145					
Comments										
GPS acquired at the access point.										
Rock Type	Unit	Color	Weathering		Jointing					
Volcanic Gravel	QTg	NA	NA		NA					
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Fair to Good			NA	120	160,000	259,200				
Potentially Significant Site	Why			Open/Closed	Direction					
No	Borrow site in an area of many borrow sites.			Closed	NA					
Adjacent Land Use										
Open space										
Remarks										
This site is located about 800 meters south of Highway 20, off of a County Road. The material is a wind blown sand (40%) and small pebbles (60%) on flat terrain. The depth to bedrock is unknown. There is room to work with no screening from the County Road. This site is used for a sanding source. There is a small quarry adjacent to the south that is just about to open up some ground.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
	1.97	29.8					11.0	1.2		
Material Use										
CTERM (1986)										

SE

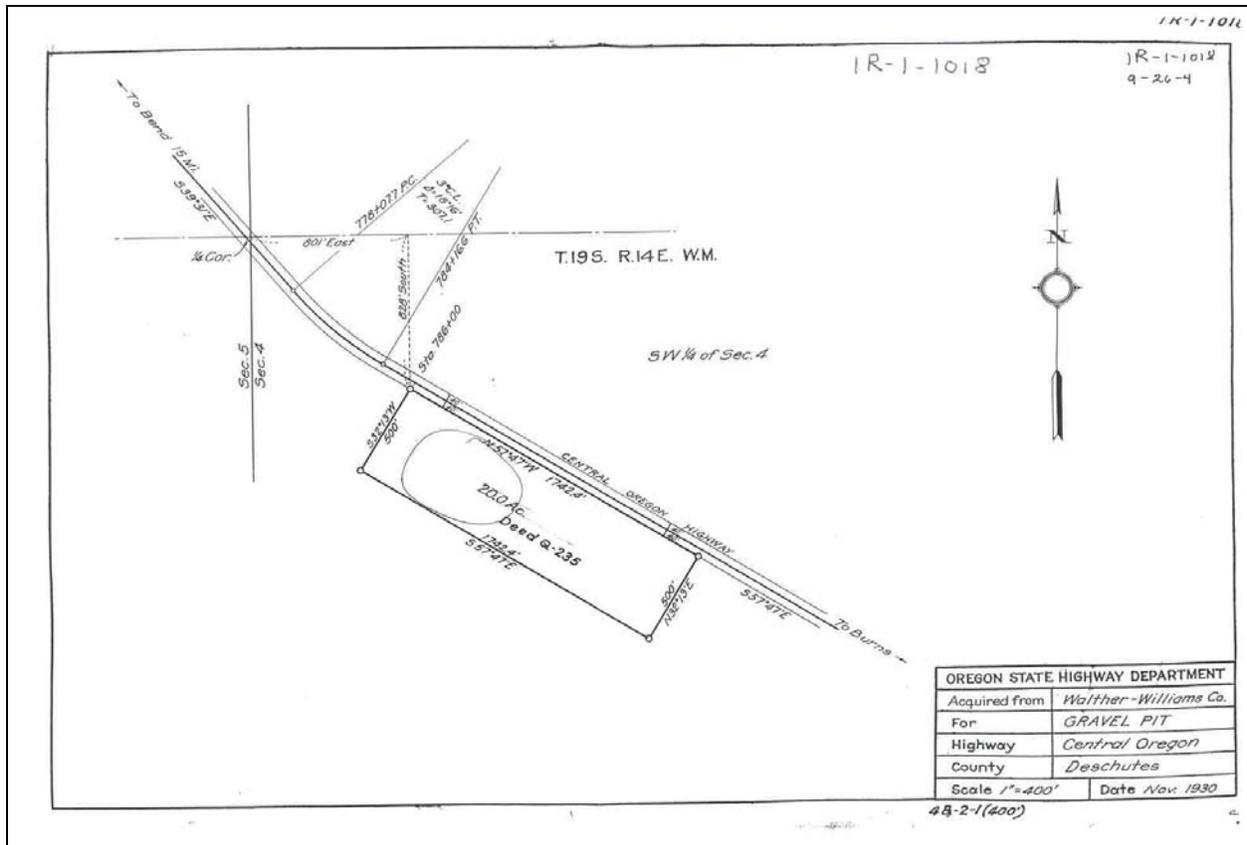
SW



Looking southwest at the borrow site along Horse Ridge Fr. Road.



Close-up view of the wind blown volcanic deposits at this site.



Aerial view of the borrow site along the County Road.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes	Horse Ridge Gravel Site				10	0007	0	19S	14.0E	11
File ID		Source #	Date Visited	Map #		Type of Site				
25874		09-027-4	05/03/2001	10C-43-9		Stock Pile Site				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
43 56'34.26303"	121 01'27.84524"	1107.641	30	Multiple	09-0033					
Comments										
GPS acquired on site										
Rock Type	Unit	Color	Weathering		Jointing					
Volcanic Colluvium	Qb	NA	NA		NA					
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
NA			NA	155	320,000	669,600				
Potentially Significant Site	Why			Open/Closed	Direction					
No	NA			Closed	NA					
Adjacent Land Use										
Open Space										
Remarks										
This site is located adjacent to and east of Highway 20. This is now a stock pile site for Maintenance use. There are multiple borrow pits in the area that have been naturally reclaimed. The terrain is flat with ample room and no screening from the highway. Unknown depth to bedrock at this location.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
2.43	2.51	29.2	2.9	1.6			19.3	1.5		
Material Use										
AC (1991)										

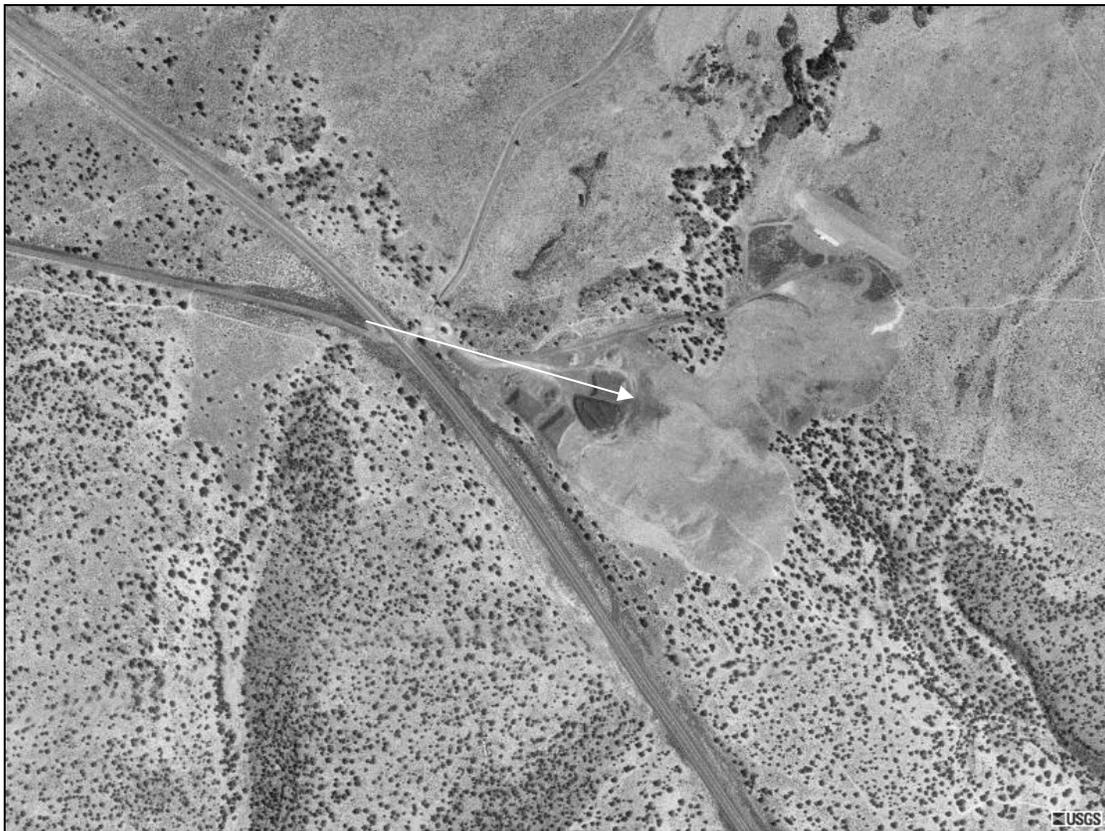
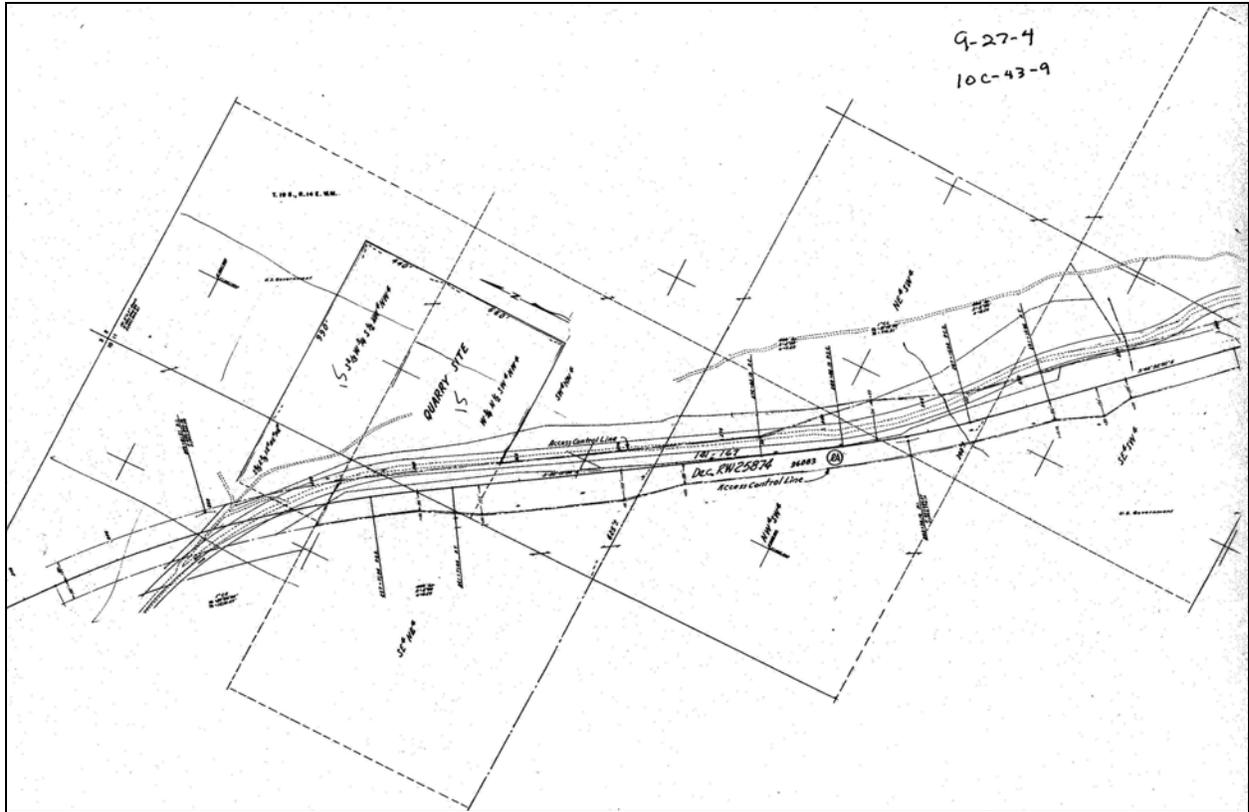
NW

E

SE

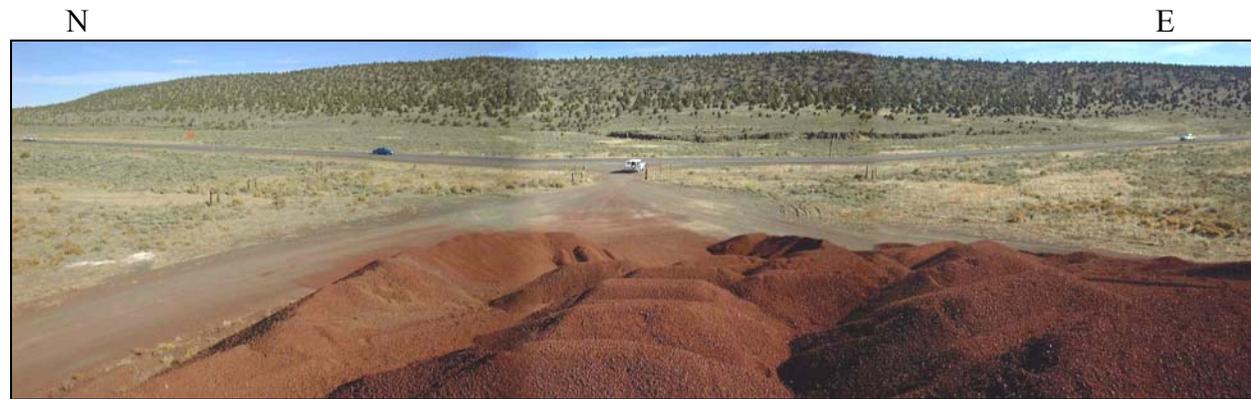


Panoramic view of the aggregate stockpile site adjacent to and east of Highway 20.



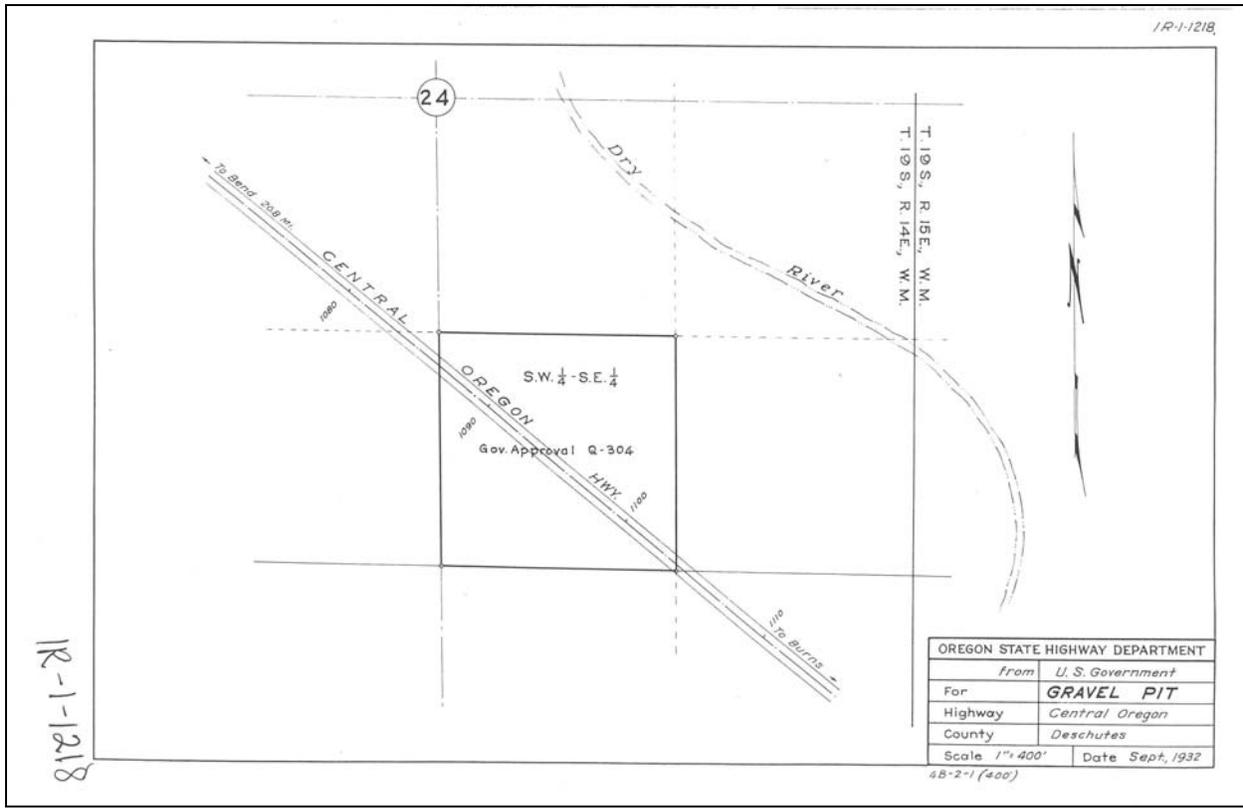
Aerial view of the stock pile site that is east of Highway 20.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes					10	0007	20.96	19S	14.0E	24
File ID		Source #	Date Visited		Map #			Type of Site		
0Q304		09-028-4	10/12/1999		1R-1-1218			Raw Land		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #				
43 54'14.00713"	120 59'35.71598"	1283.487	40	NA						
Comments										
GPS acquired at the entrance to the stock pile site.										
Rock Type	Unit	Color		Weathering			Jointing			
Basalt	Tob	Medium Dark Grey (N4)		Fresh to Slight			Moderately Fractured			
Quality			Hardness	lbs./cu ft.	Reserve (cy)		Reserve (Tons)			
Good to Fair			R3	120						
Potentially Significant Site	Why					Open/Closed	Direction			
No	Good size acreage, good rock, room to work, Highway 20 bisects property.					Closed	NA			
Adjacent Land Use										
Open space/One residence about 400 meters to the northeast										
Remarks										
This property is located on Highway 20 a couple of miles east of the Horse Ridge Natural Area. This site has limited exposures on the northern part of the property. The basalt is vesicular and looks to be of good to fair quality. There are no past disturbances to evaluate this property. The land on the south side of Highway 20 is used as a stock pile site for cinders. There is little to no overburden here. You would need to drill and blast the rock. There is room to work but no screening from the highway. This is flat ground with plenty of room to work. Highway 20 bisects the property. The quantity is based on a 10 foot lift for 20 acres. USA ground.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
	2.22									
Material Use										
CTB, BORROW (1937)										



Looking to the northeast at the raw land across Highway 20 from the stockpile site.

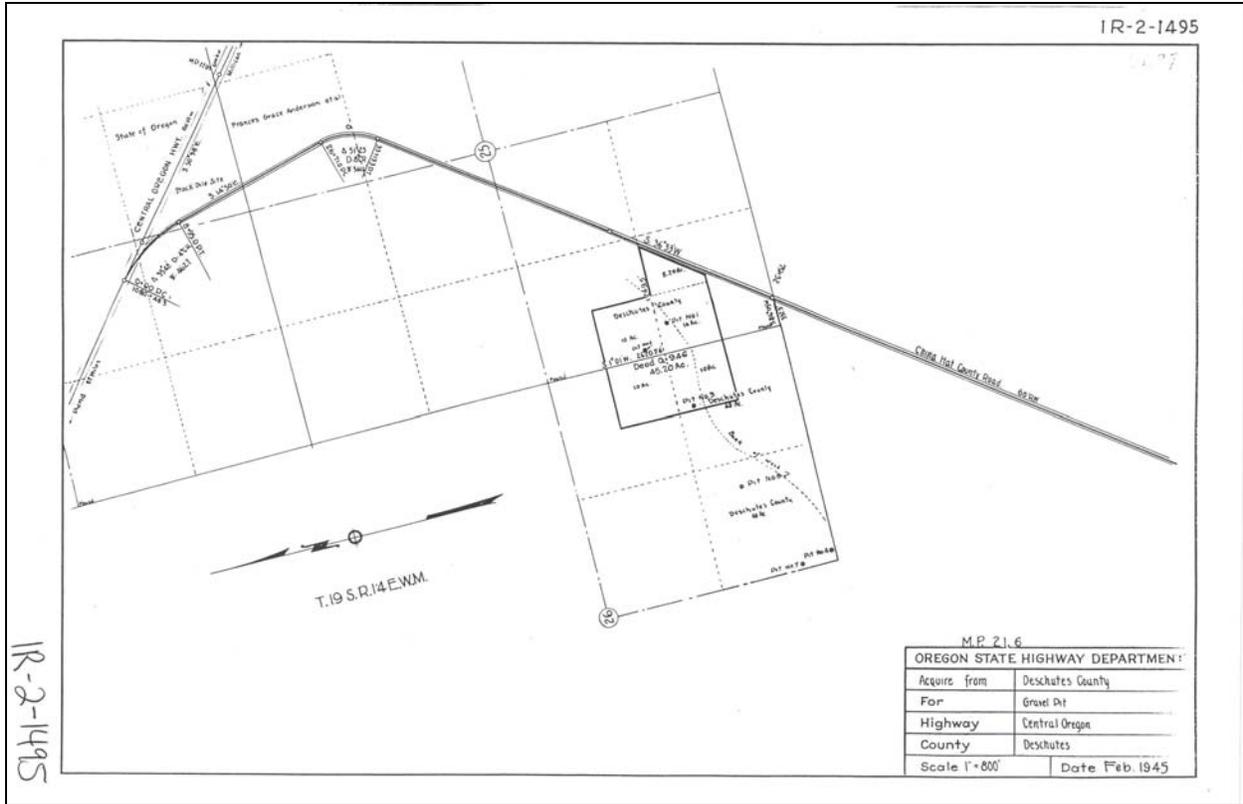
Close-up view of the vesicular basalt at this location.



County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes					10	0007	20.96	19S	14.0E	25
File ID		Source #	Date Visited	Map #		Type of Site				
11697		09-029-4	10/12/1999	1R-2-1495		Borrow				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
43 53'30.03000"	121 00'11.88000"	1280	45.2	NA						
Comments										
Lat. and Long. acquired using Terrain Navigator Software										
Rock Type	Unit	Color		Weathering			Jointing			
Volcanic Gravel	Qs	NA		NA			NA			
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Unknown			NA	120	200,000	324,000				
Potentially Significant Site	Why				Open/Closed		Direction			
No	Large acreage, room to work, aggregate quality undetermined.				Closed		NA			
Adjacent Land Use										
Open space										
Remarks										
This site is south of Highway 20 about 3/4 of a mile, just west of China Hat County Road. There are no exposures here at this site. The BLM is in the process of reclaiming the roads and have them blocked to the property. This site most likely would produce sand and pea gravel, like every other site along Highway 20. The terrain is flat with no screening from the county road and plenty of room to work. The quantity calculation is determined for 10 foot lifts on 40 acres of ground. This area has had past reclamation and I was not able to evaluate the property up close.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
Material Use										



Looking southeast at the general area of the borrow pits along the county road.



Aerial view of the borrow site that is west of the county road.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes					10	0007	25.43	19S	15.0E	33
File ID		Source #	Date Visited	Map #		Type of Site				
04468		09-030-4	10/12/1999	1R-1-1226		Borrow				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
43 52'55.672"	120 55'48.92778"	1303.394	13.7	<2						
Comments										
GPS acquired along Highway 20 and the pit.										
Rock Type	Unit	Color	Weathering		Jointing					
Volcanic Gravel	Qs	NA	NA		NA					
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Good			NA	120	80,000	129,600				
Potentially Significant Site	Why			Open/Closed	Direction					
No	Too small			Closed	NA					
Adjacent Land Use										
Open space										
Remarks										
Highway 20 bisects this property east/west, and a BLM road bisects the northern portion of the property. The material at this site is composed of 40% sand, and 60% gravel. The gravel is subangular to subrounded clasts, with the largest size less than 5 centimeters and the dominant size around 1 centimeter. Unknown depth to any basalt flows. The ground is flat, with no screening and some room to work.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
	2.51	15.7								
Material Use										
CTB, BORROW (1937)										

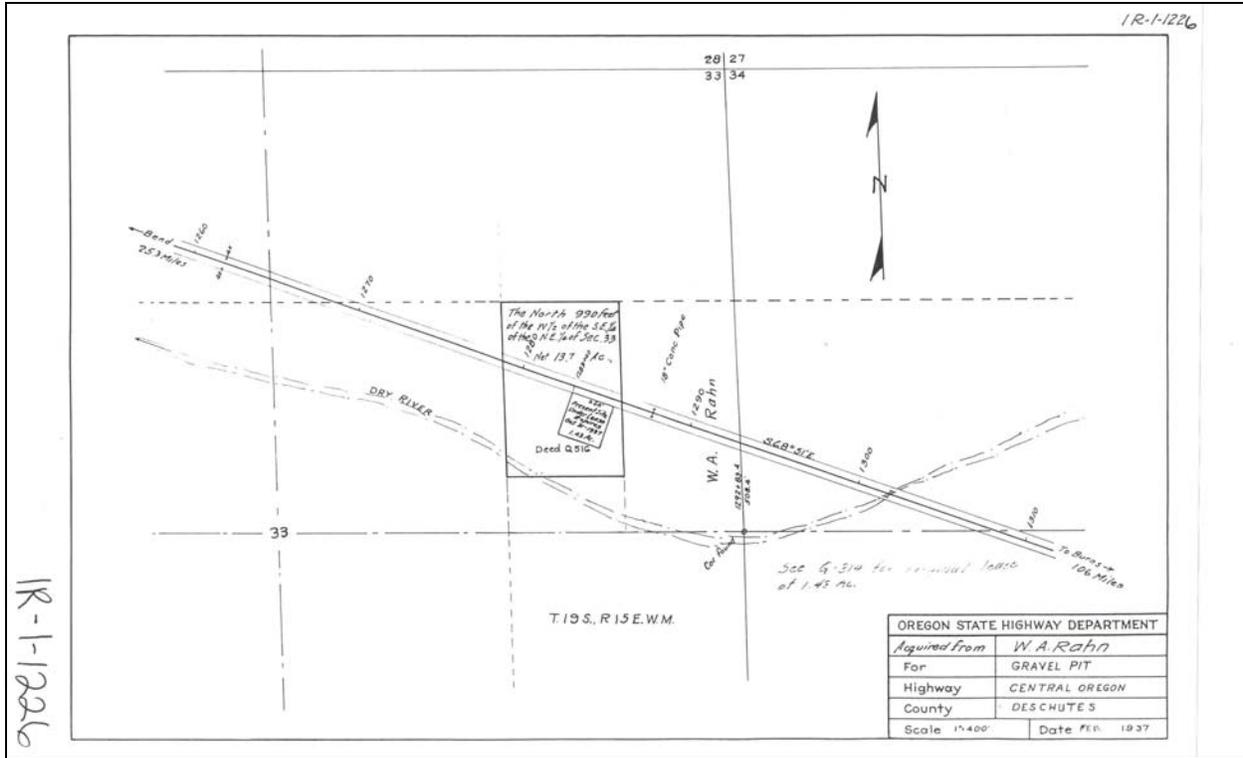
SW

NW



Looking to the west at the borrow site along Highway 20.

Close-up view of the volcanic material at this location.



Aerial view of the borrow site located on the south side of the highway.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes					10	0007	42	21S	18.0E	04
File ID		Source #	Date Visited	Map #			Type of Site			
16561		09-031-4	10/14/1999	1R-5-27			Raw Land			
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
43 46'30.23219"	120 34'20.87809"	1457.274	40	NA						
Comments										
GPS acquired on the property.										
Rock Type	Unit	Color		Weathering			Jointing			
Rhyolite	Tvs	Light Grey (N7)		NA			NA			
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Poor			R2	120	200,000	324,000				
Potentially Significant Site	Why					Open/Closed	Direction			
No	Owned by USA					Closed	NA			
Adjacent Land Use										
Open space										
Remarks										
This site is about one mile south of Highway 20. There are no rock exposures, just rhyolite float mixed in with the soils. The terrain is moderately steep, with room to work and partial screening. The ground is leased from the USA and the State Land Board. Latitude and Longitude for the access road is 43° 47' 44.65551 and 120° 32' 16.76960.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
	2.50	28.1								
Material Use										
Oil Rock (1950)										

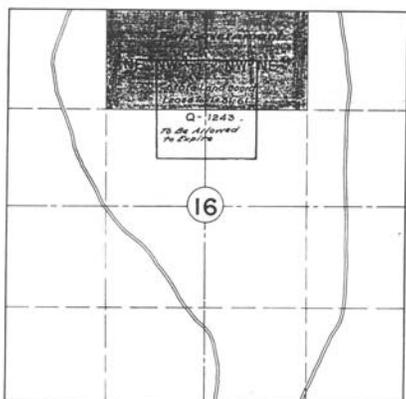
W



Looking to the west at the raw land site that is south of Highway 20.

1R-5-27

T. 19 S., R. 15 E. W. M.



T. 21 S., R. 18 E. W. M.



Certificate

I hereby certify that the ~~NE 1/4 NW 1/4 and NW 1/4 NE 1/4 of Sec. 16, T. 19 S., R. 15 E. W. M. and the SW 1/4 SW 1/4 of Sec. 4, T. 21 S., R. 18 E. W. M.~~ are, as of this date unappropriated and unreserved Federal land.

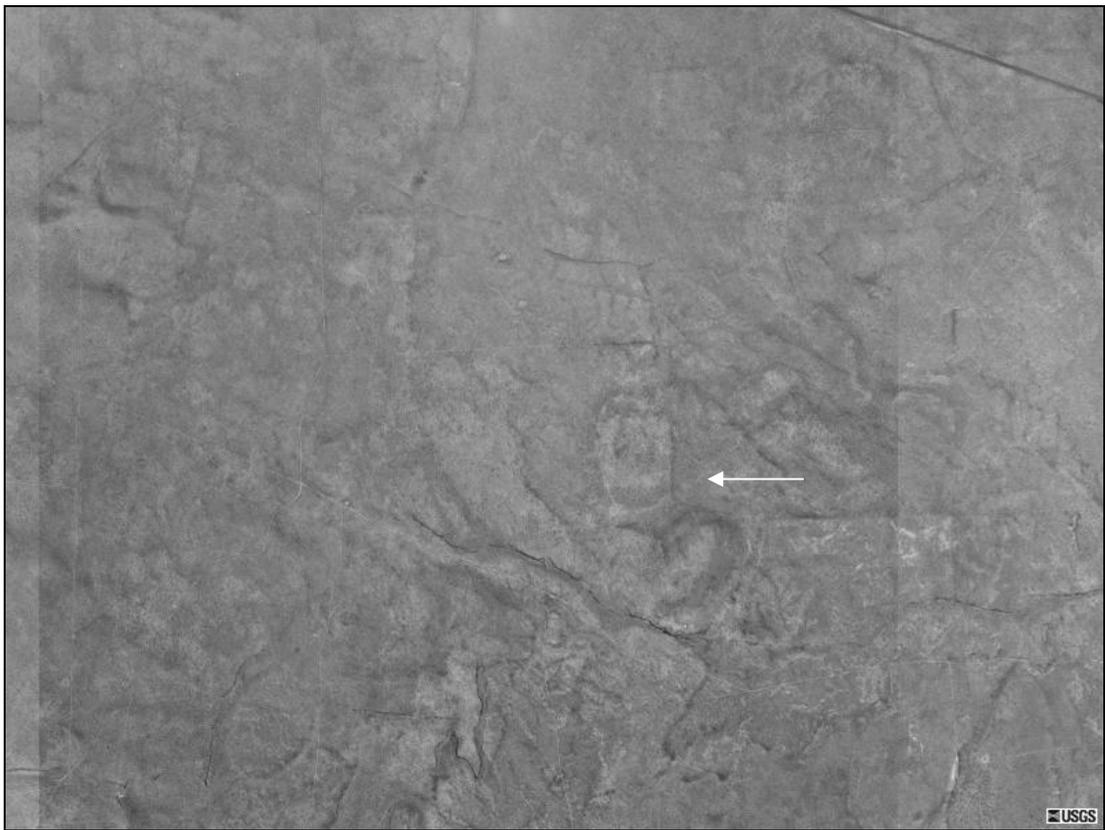
Signed at Portland, Oregon this ___ day of _____, 1950

Manager

OREGON STATE HIGHWAY DEPARTMENT	
To be acquired from U. S. A.	
For	Quarry Sites
Highway	Central Oregon
County	Deschutes
Scale 1" = 1000'	Date Aug. 1, 1950

Rev. 12 '50

1R-5-27



Aerial view of the raw land site, Highway 20 is in the upper right corner of the image.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes					10	0007	27.15	19S	15.0E	35
File ID		Source #	Date Visited	Map #		Type of Site				
06234, 06235, 22707		09-032-4	10/13/1999	1R-2-666		Borrow				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
43 52'31.28035"	120 53'47.30606"	1305.264	33.28	<26						
Comments										
GPS acquired at the access road and Highway 20.										
Rock Type	Unit	Color	Weathering		Jointing					
Volcanic Gravel	Qs	NA	NA		NA					
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Good			NA	120	20,000	32,400				
Potentially Significant Site	Why			Open/Closed	Direction					
No	Borrow site			Closed	NA					
Adjacent Land Use										
Open space										
Remarks										
This property is adjacent to Highway 20. The material at this site is composed of angular to subrounded clasts that are 40% sand/silt and 60% gravel with the dominant size gravel around 5 cm. This is flat terrain with ample room to work, but no screening from the highway. The area is not fenced and there is no gate. The ground is being used now for a motto cross area.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
		29.38			18.22	1.4				
Material Use										
CLASS B, AC (1971)										

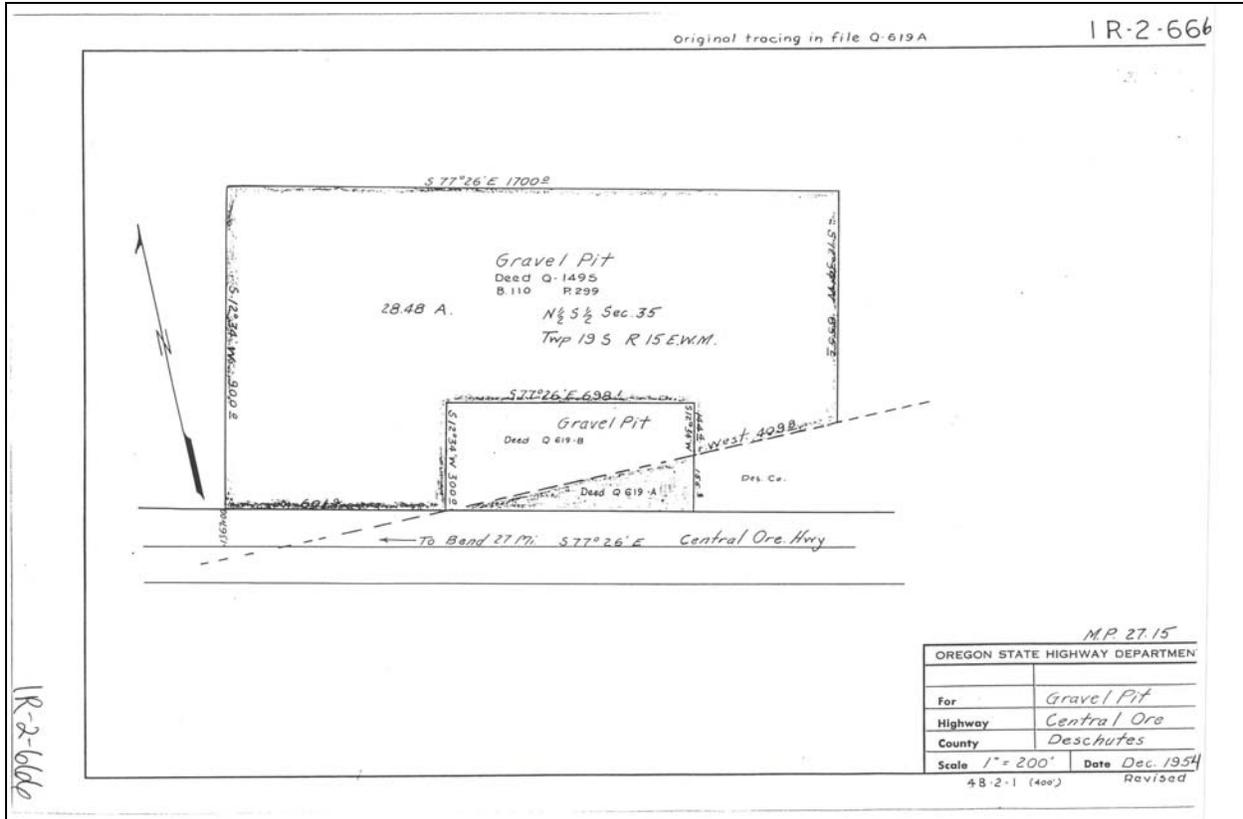
S

N



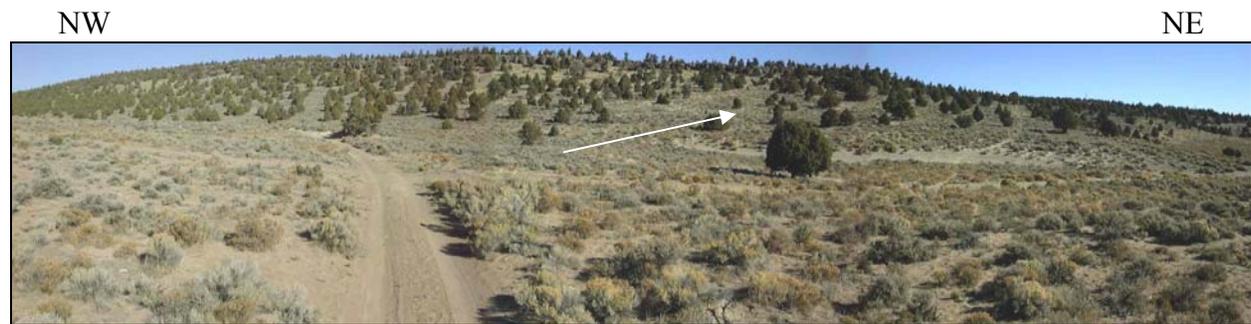
Looking west at the borrow site along Highway 20.

Close-up view of the volcanic gravel at this location.

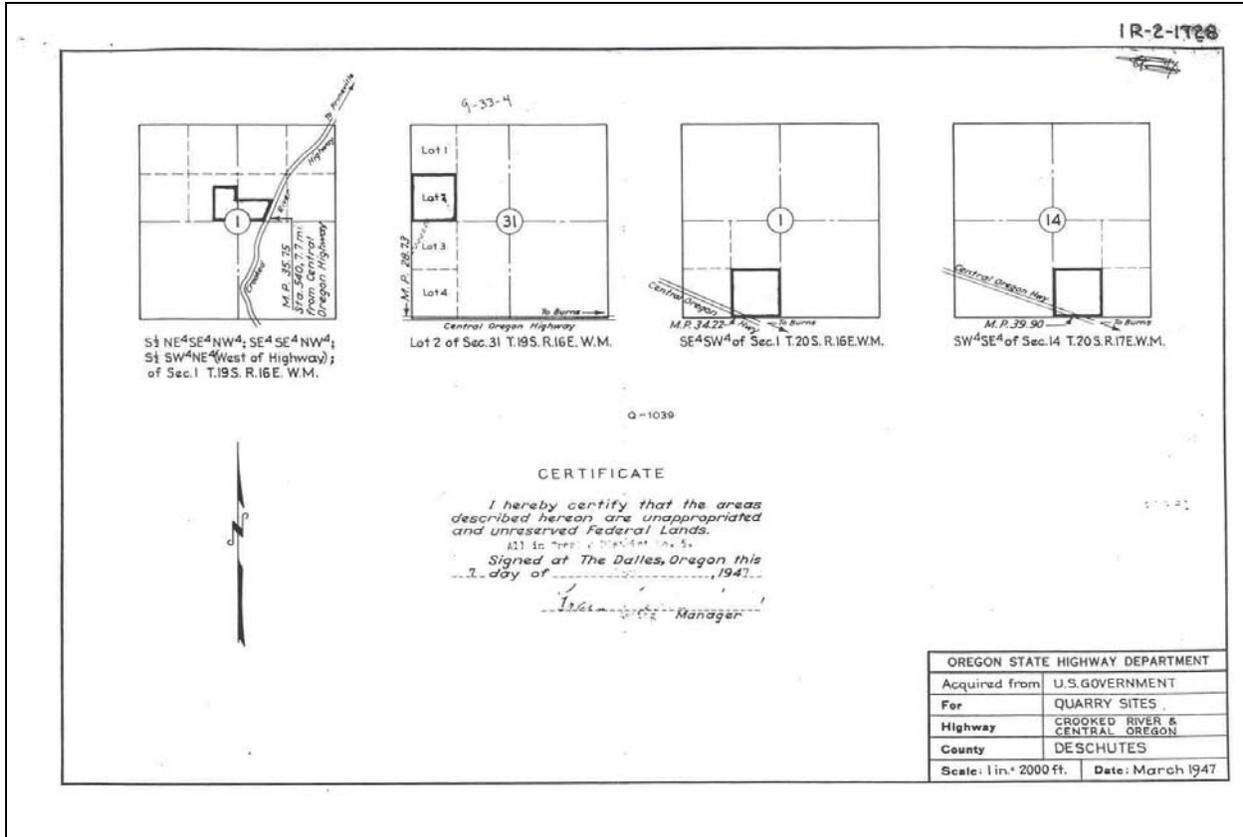


Aerial view of the borrow site along the highway.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes				10	0007	28.73	19S	16.0E	31
File ID		Source #	Date Visited	Map #			Type of Site		
13577		09-033-4	10/12/1999	1R-2-1728			Raw Land		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #			
43 52'18.03035"	120 52'4.11324"	1320.167	40	NA					
Comments									
GPS acquired at BLM road and Highway 20.									
Rock Type	Unit	Color		Weathering			Jointing		
Basalt	Tob	Medium Grey (N5)		Slight to Fresh			Moderately Fractured		
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Good to Fair			R3 to R4	178	500,000	1,201,500			
Potentially Significant Site	Why				Open/Closed	Direction			
No	Large acreage, room to work, close to Highway 20. USA ground.				Closed	NA			
Adjacent Land Use									
Open space									
Remarks									
This site is north of Highway 20 about 700 meters. It is raw land with no visible disturbance. The rock is a medium-grain porphyritic basaltic andesite, with some platy fractures. This flow forms a cap rock that appears to be about 10 feet thick. The overburden could be up to 8 feet thick at the base of the hill. There is no screening from the highway and there is ample room to work here. You would need to drill and blast and the development should be from the top down. There is a moderate supply of clean wind deposited sand at the base of the hill (5,000 cubic yards). USA ground.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
	2.82	22.7							
Material Use									
Surfacing Top (1947)									



Looking north at the raw land site up on the hill.



Aerial view of the ground north of Highway 20.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes				10	0007	30.81	20S	16.0E	04
File ID		Source #	Date Visited	Map #			Type of Site		
Q0339		09-034-4	10/12/1999	1R-1-1224			Borrow		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #			
43 52'17.32159"	120 49'20.07667"	1313.086	3.44	<1					
Comments									
GPS acquired along the north side of Highway 20.									
Rock Type	Unit	Color		Weathering			Jointing		
Volcanic Gravel	Qs	NA		NA			NA		
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Good			NA	120	20,000	32,400			
Potentially Significant Site	Why			Open/Closed	Direction				
No	Too small.			Closed	NA				
Adjacent Land Use									
Open space									
Remarks									
The aggregate is composed of subangular to subrounded gravel. This material at the site is composed of 60% sand and 40% gravel. The dominant size gravel is around 1 centimeter and the largest is 5 centimeters. The terrain is flat. There is no screening from this property which is adjacent to Highway 20.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
Material Use									

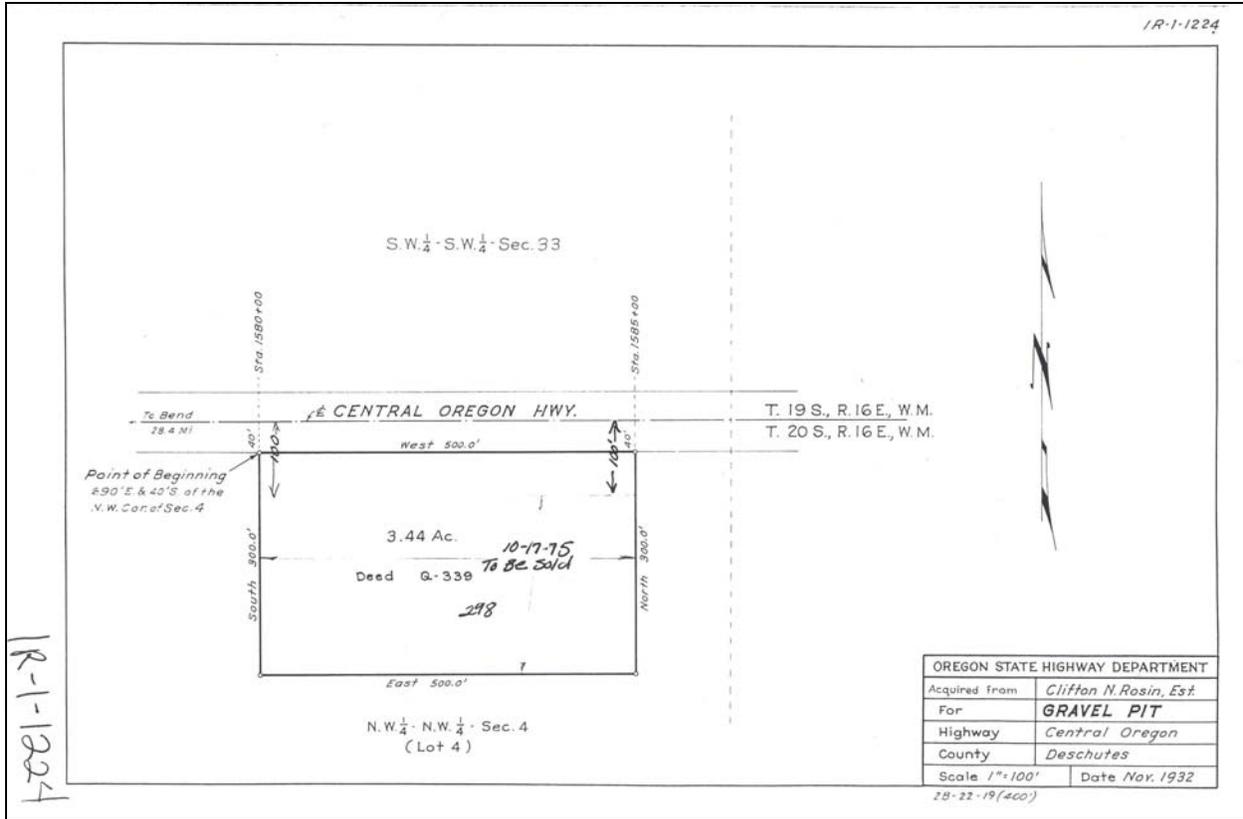
S

W



Looking to the southwest at the borrow site along Highway 20.

Close-up view of the volcanic gravel in this location.

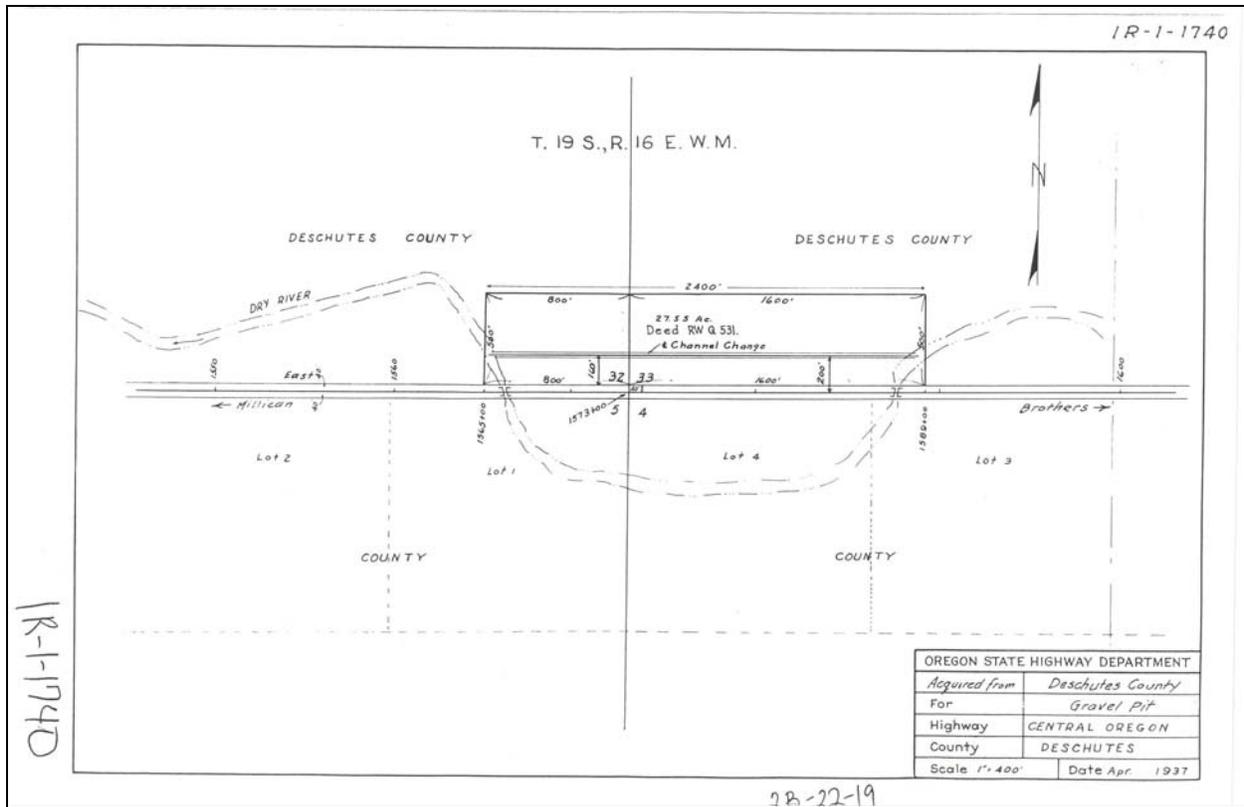


Aerial view of the borrow site in relation to the surrounding ground.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes					10	0007	30.81	19S	16.0E	32
File ID		Source #	Date Visited	Map #		Type of Site				
04696		09-035-4	10/12/1999	1R-1-1740		Raw Land				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
43 52'17.32159"	120 49'20.07667"	1313.086	27.55	NA						
Comments										
GPS acquired along the north side of Highway 20.										
Rock Type	Unit	Color	Weathering		Jointing					
Volcanic Gravel	Qs	NA	NA		NA					
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Good			NA	120	300,000	486,000				
Potentially Significant Site	Why			Open/Closed	Direction					
No	Quality, quantity, acreage along Highway 20.			Closed	NA					
Adjacent Land Use										
Open space										
Remarks										
This is raw land with no prior disturbance adjacent to Highway 20. The aggregate is composed of subangular to subrounded gravel. The material at this site has 60% sand and 40% gravel. The dominant size being around 1 centimeter and the largest 5 centimeters. The terrain is flat, with room to work, but no screening. There is a dry river channel that bisects the property.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
Material Use										



Looking to the north across Highway 20 at the raw land site.



Aerial view of the raw land adjacent to and north of Highway 20.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes				10	0007	32.46	20S	16.0E	03
File ID		Source #	Date Visited	Map #			Type of Site		
08551, 08550, 04470		09-036-4	10/12/1999	1R-1-1688			Borrow		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #				
43 52'04.93365"	120 47'44.60616"	1312.023	60	<2					
Comments									
GPS acquired at BLM road and Highway 20.									
Rock Type	Unit	Color	Weathering			Jointing			
Volcanic Gravel	Qs	NA	NA			NA			
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Good			NA	120	800,000	1,296,000			
Potentially Significant Site	Why			Open/Closed	Direction				
No	Borrow site in an area of many borrow sites.			Closed	NA				
Adjacent Land Use									
Open space									
Remarks									
This site is on both sides of Highway 20. The material is composed of subangular to subrounded gravel. This site has 60% sand and 40% gravel with the dominant size being around 1 centimeter and the largest 5 centimeters. There is some screening from the highway and ample room to work. There is some relief here and the calculations are based on 25 acres of disturbance and a 20 foot deep pit. Approximately 12,000 cubic yards have been removed to date.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
					47.3	14.1			
Material Use									
PIT GRAVEL (1979)									

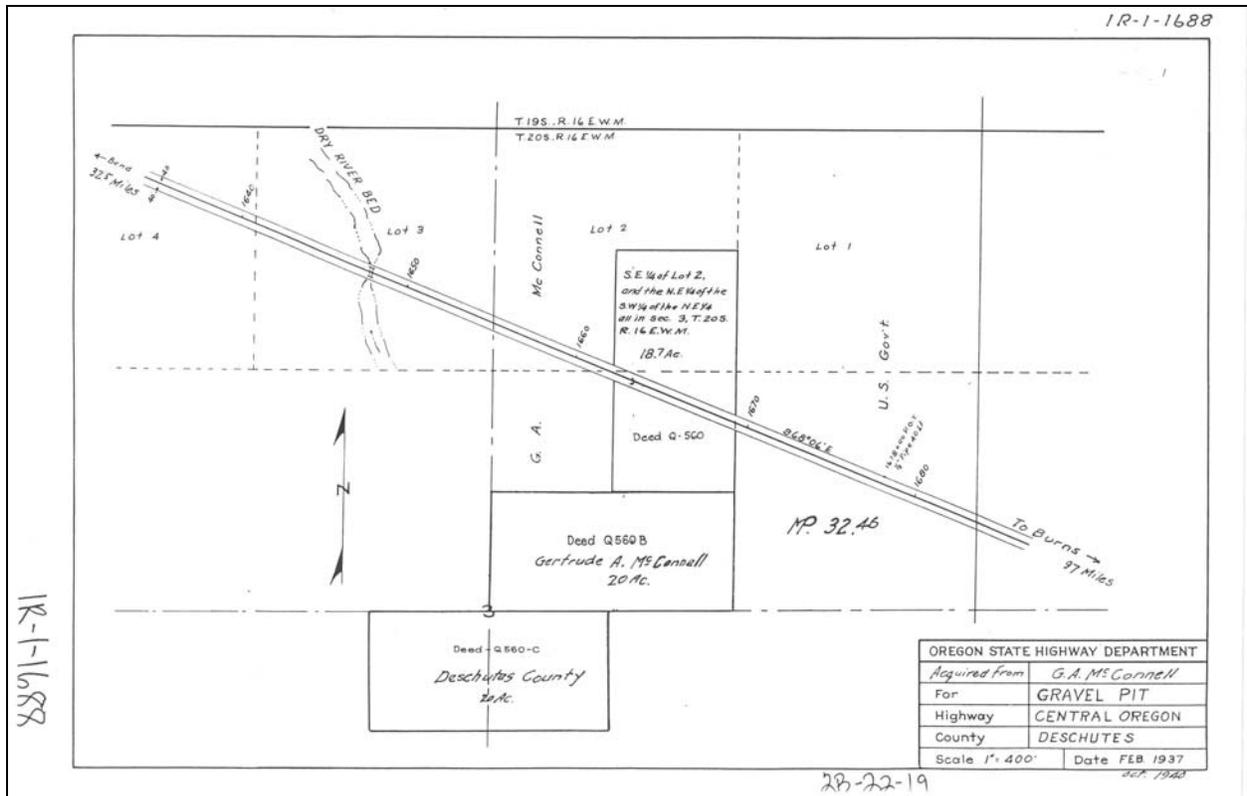
E

SW



Looking to the southeast at the borrow site south of Highway 20.

Close-up view of the volcanic gravel with the hammer for scale.



Aerial view of the site in relation to the highway.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes				10	0007	33.6	20S	16.0E	02
File ID		Source #	Date Visited	Map #			Type of Site		
04469		09-037-4	10/12/1999	1R-1-1687			Borrow		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #			
43 51'12.97956"	120 45'32.20373"	1330.6	27.5	<2					
Comments									
GPS acquired at site 09-039-4.									
Rock Type	Unit	Color		Weathering			Jointing		
Volcanic Gravel	Qs	NA		NA			NA		
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Good			NA	120	190,000	307,800			
Potentially Significant Site	Why			Open/Closed	Direction				
No	Borrow site in an area of many borrow sites.			Closed	NA				
Adjacent Land Use									
Open space									
Remarks									
This site is located adjacent to Highway 20. The material is composed of subangular to subrounded gravel. This site has 20% sand and 80% gravel with the dominant size being around 1 centimeter and the largest 5 centimeters. There is no screening from the highway and ample room to work here. The terrain is flat. This site and sites 09-039-4 and 09-040-4 are near each other. I calculated the quantity on 15 acres of disturbance with a 10 foot lift. This area has 3 different source numbers, that were acquired over a period of time.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
	2.53	29.0			24.63	1.4			
Material Use									
CTB, BORROW (1962)									



Looking to the west at the borrow site along (arrow) Highway 20.

Close-up of the volcanic gravel at this location.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes					10	0007	34.1	20S	16.0E	12
File ID		Source #	Date Visited	Map #		Type of Site				
Q0566, Q0891		09-039-4	10/12/1999	1R-2-512		Borrow				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
43 51'12.97956"	120 45'32.20373"	1330.6	53.61	<1						
Comments										
GPS acquired in the pit.										
Rock Type	Unit	Color		Weathering			Jointing			
Volcanic Gravel	Qs	NA		NA			NA			
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Good			NA	120	480,000	777,600				
Potentially Significant Site	Why			Open/Closed	Direction					
No	Borrow site in an area of many borrow sites.			Closed	NA					
Adjacent Land Use										
Open space										
Remarks										
This site is located adjacent to Highway 20. The material is composed of subangular to subrounded gravel. This site has 20% sand and 80% gravel with the dominant size gravel being around 1 centimeter and the largest 5 centimeters. There is some screening from the highway and ample room to work here. The terrain is fairly flat. This site and sites 09-037-4 and 09-040-4 are near each other. There is a dry draw that is part of this site that has good to fair basalt flows exposed. This is the same rock that you find across the highway at site 09-040-4. This area has 3 different source numbers, that were acquired over a period of time. The latitude, longitude for the access road is: 43° 51' 25.29247, 120 45° 37' 9.2231 elevation is 1323.911 meters.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
	2.53	29.0			24.63	1.4				
Material Use										
CTB, BORROW, Surfacing (1962)										

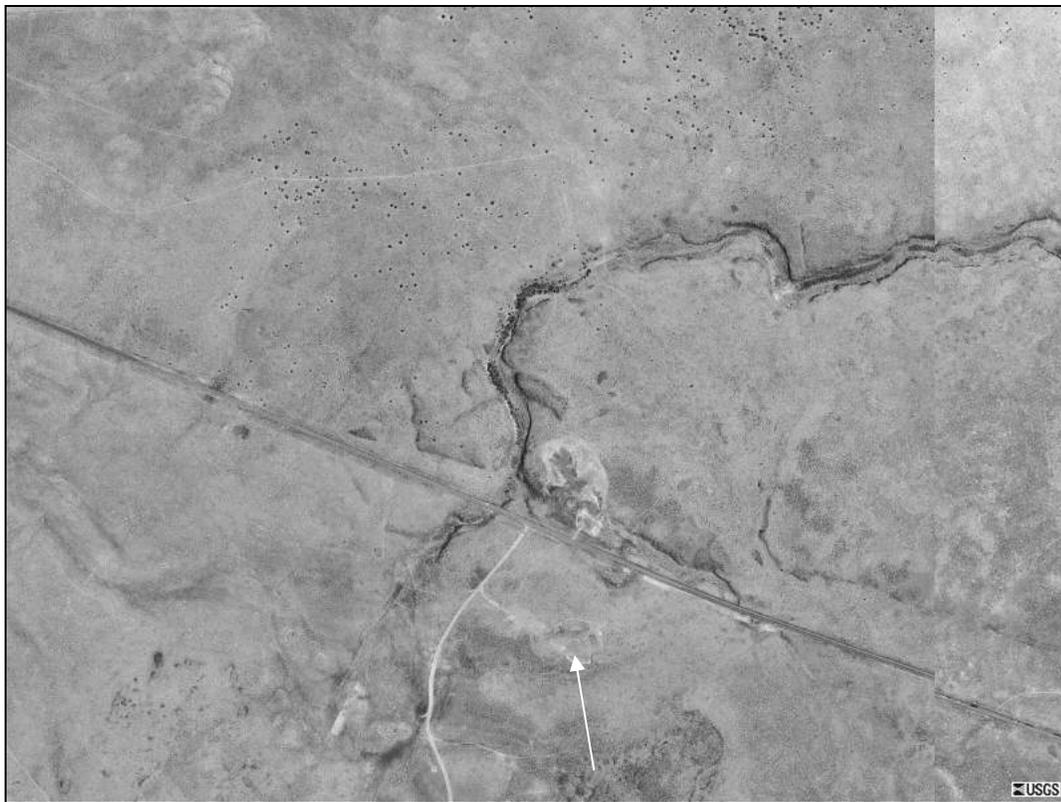
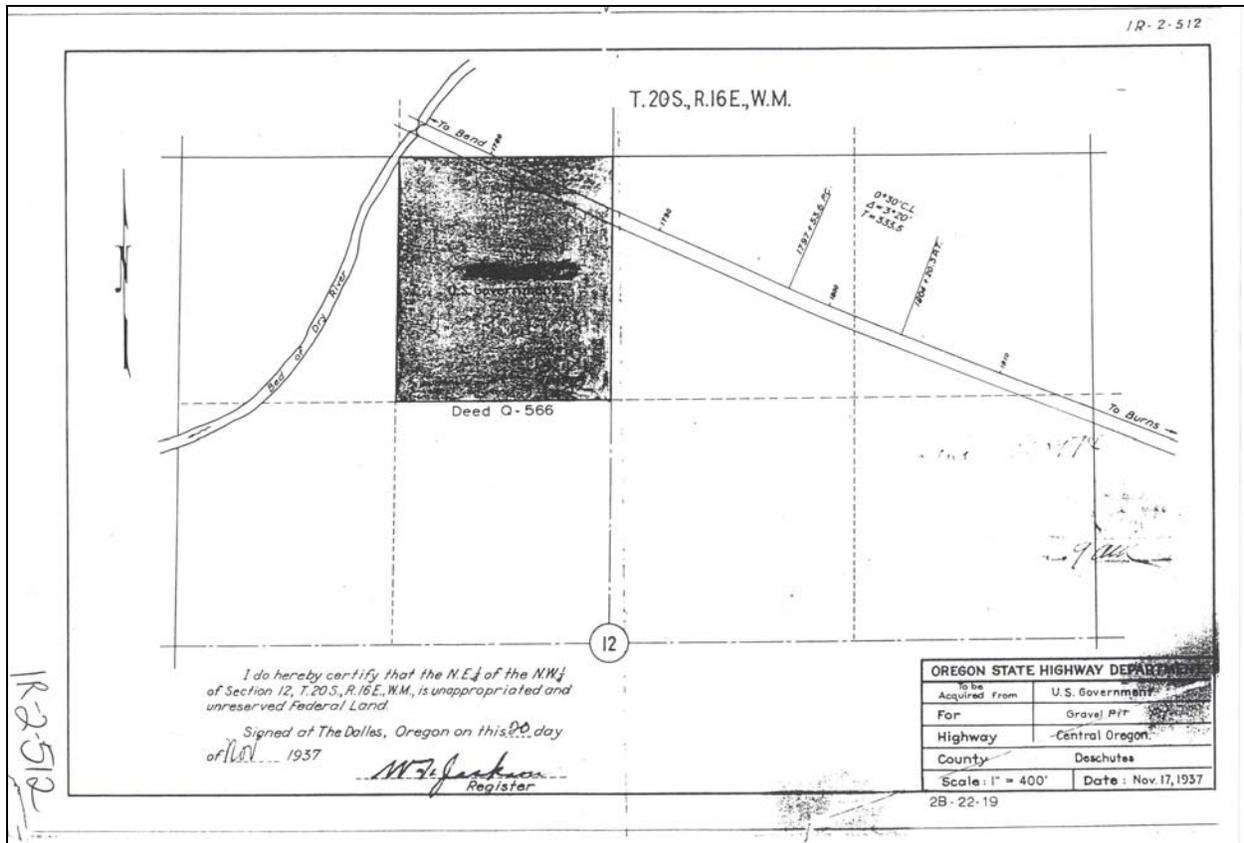
W

NE



Looking northwest at the prior disturbance along Highway 20.

Close-up view of the volcanic gravel (pea) with the hammer for scale.



Aerial view of the borrow site in relation to the highway and the surrounding area.

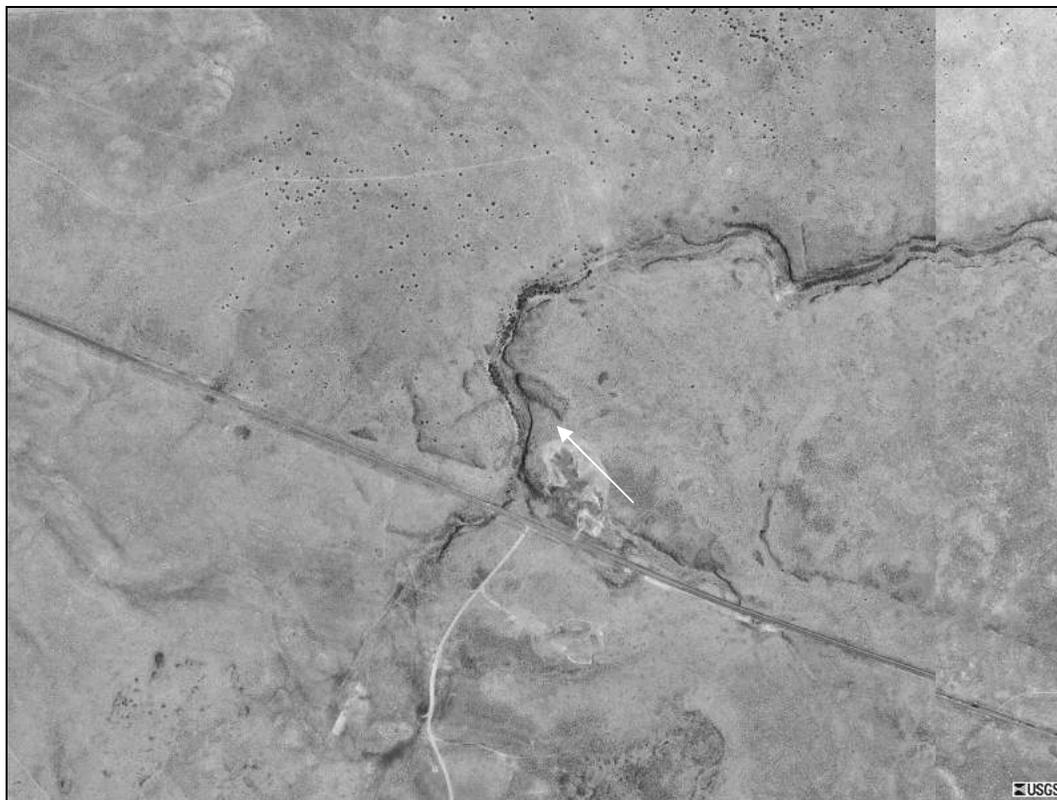
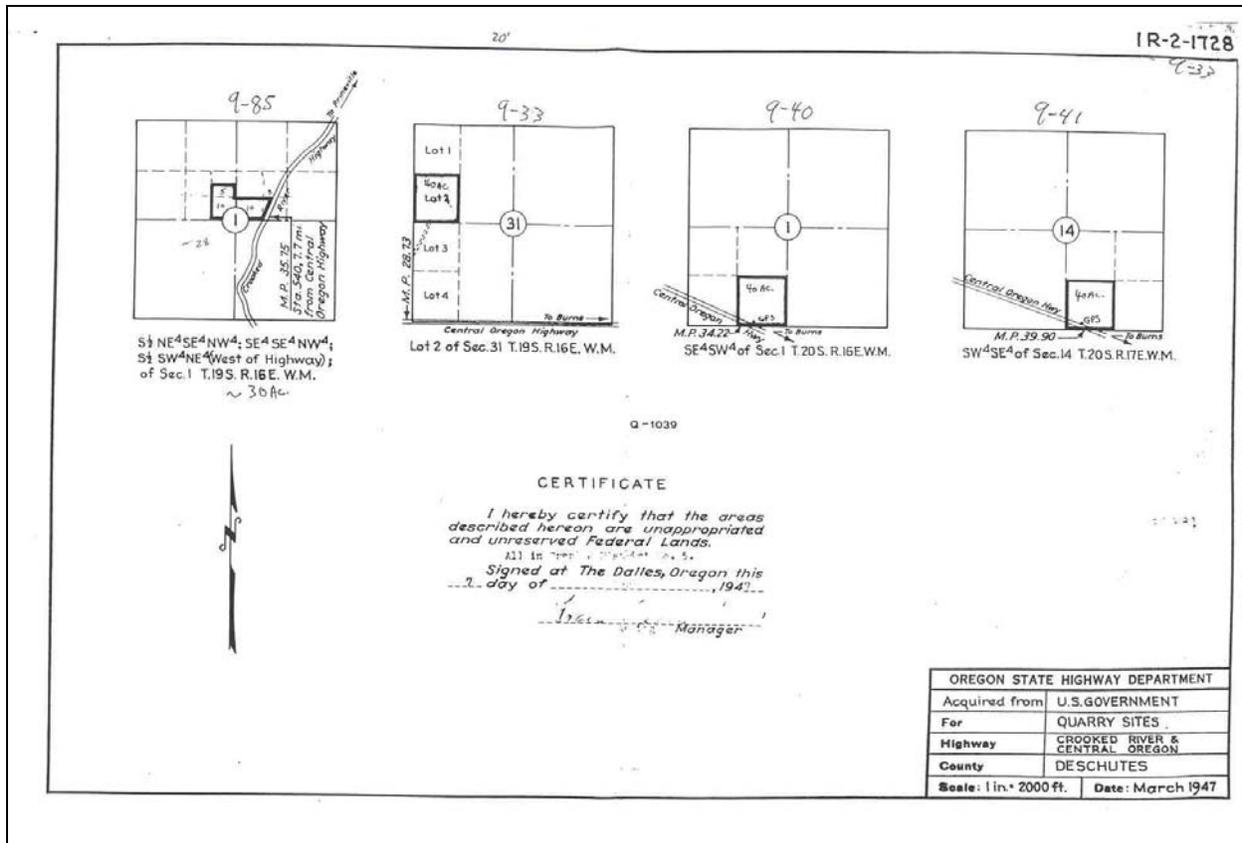
County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes				10	0007	34.22	20S	16.0E	01
File ID		Source #	Date Visited	Map #		Type of Site			
13577		09-040-4	10/14/1999	1R-2-1728		Quarry			
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #				
43 51'24.31274"	120 45'31.97522"	1323.412	40	<1					
Comments									
GPS acquired at access road and Highway 20.									
Rock Type	Unit	Color		Weathering		Jointing			
Basalt	QTb	Medium Grey (N5)		Fresh		Moderate to Massive Fracture			
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Fair			R3	160	968,000	2,090,880			
Potentially Significant Site	Why			Open/Closed	Direction				
No	Borrow site in an area of many borrow sites.			Closed	NA				
Adjacent Land Use									
Open space									
Remarks									
This site is located on the north side of Highway 20. The rock here is a medium to fine-grain vesicular basalt. It is very blocky, with some columnar jointing and minor platy fracture. There is good screening from the highway with some room to work. You would need to drill and blast the rock. There is no overburden. There were some exposed core holes I filled in while I was there. This area is unique with the exposed basalt flows adjacent to the highway. This site has not met AC specifications in the past. Past production is approximately 14,000 cubic yards. This site is one of the few sites in this area that is a genuine quarry. USA ground.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
2.66	2.61	28.6	1.5	0.5			17.8	0.2	
Material Use									
AC (1991)									



Looking northwest at the quarry pit and the surrounding terrain.



Close-up of the massive fracture pattern in the basalt at this location.



Aerial view of the pit in relation to the highway and the surrounding terrain.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes					10	0007	39.9	20S	17.0E	14
File ID		Source #	Date Visited	Map #		Type of Site				
13577		09-041-4	10/13/1999	1R-2-1728		Raw Land				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
43 49'40.18911"	120 39'14.97618"	1366.731	40	NA						
Comments										
GPS acquired along the north side of Highway 20.										
Rock Type	Unit	Color		Weathering		Jointing				
Basalt	QTb	Medium Dark Grey (N4)		Fresh to Slight		Undetermined				
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Good to Fair			R3	156	200,000	421,200				
Potentially Significant Site	Why				Open/Closed		Direction			
No	Large acreage, adjacent to Highway 20, room to work. USA ground.				Closed		NA			
Adjacent Land Use										
Open space										
Remarks										
This site is along Highway 20 as you leave Millican Valley going east. There is no prior disturbance at this site. There is a small exposure along Highway 20. The rock is a medium-grain vesicular basalt/basaltic andesite. There could be up to 5 feet of overburden here. There is plenty of room to work, with no screening from the highway. There is low relief with some Juniper trees here. You would most likely need to drill and blast at this location. The quantity calculations are based on a 15 acre disturbance and a pit depth of about 10 feet. USA ground.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
	2.88	27.2								
Material Use										
Surfacing (1947)										

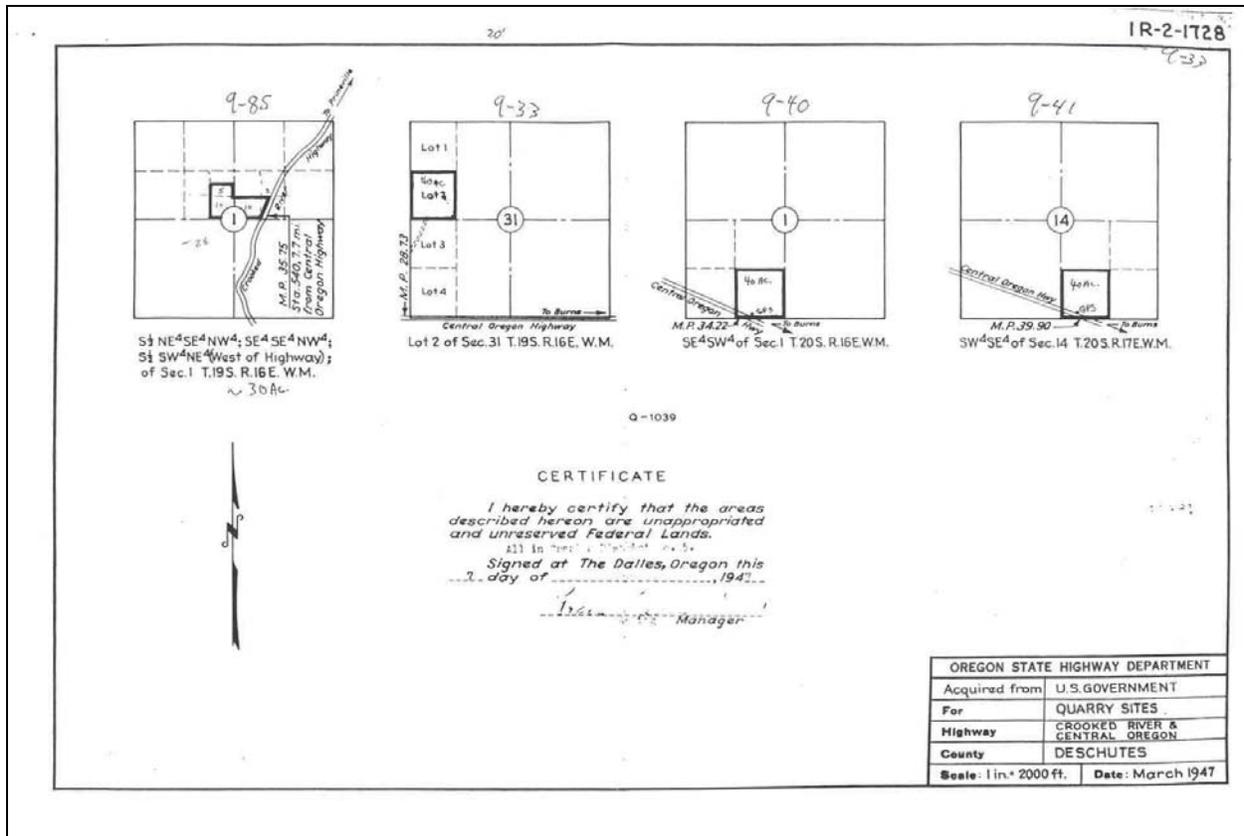
NW

NE



Looking to the north across Highway 20 at the undisturbed site.

Close-up view of the vesicular basalt at this location.



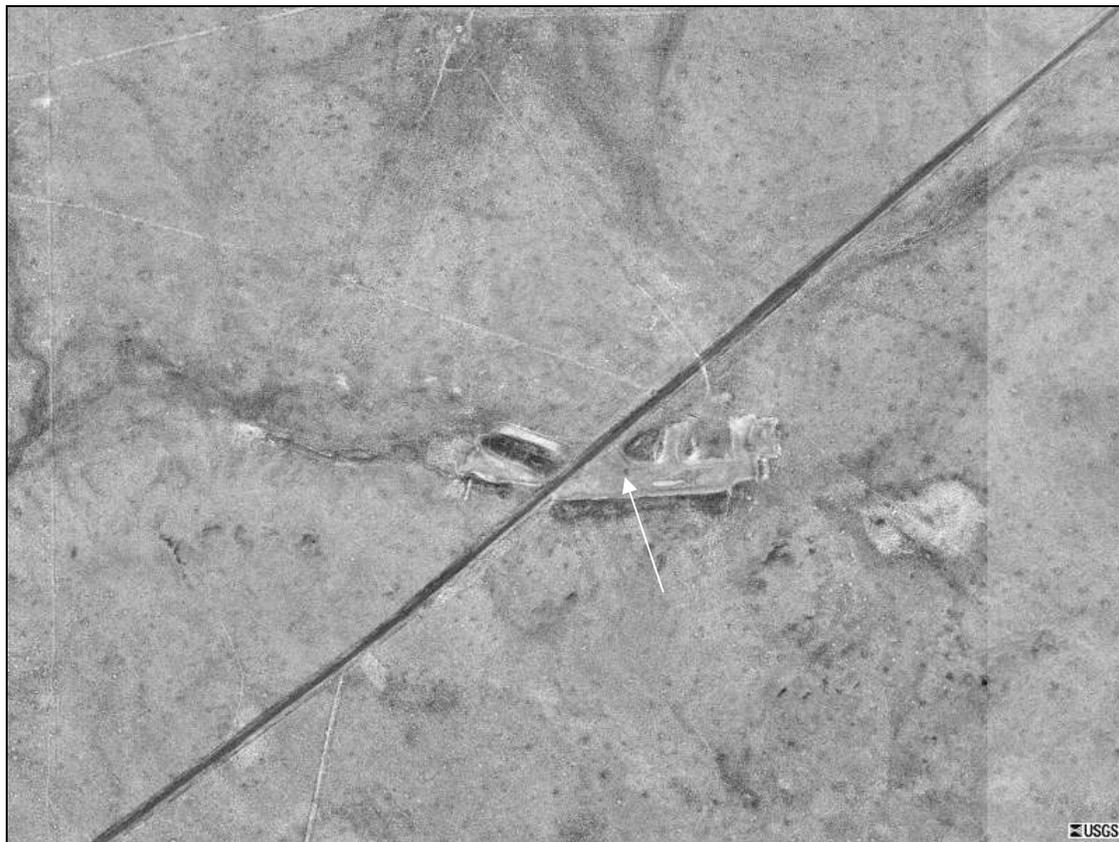
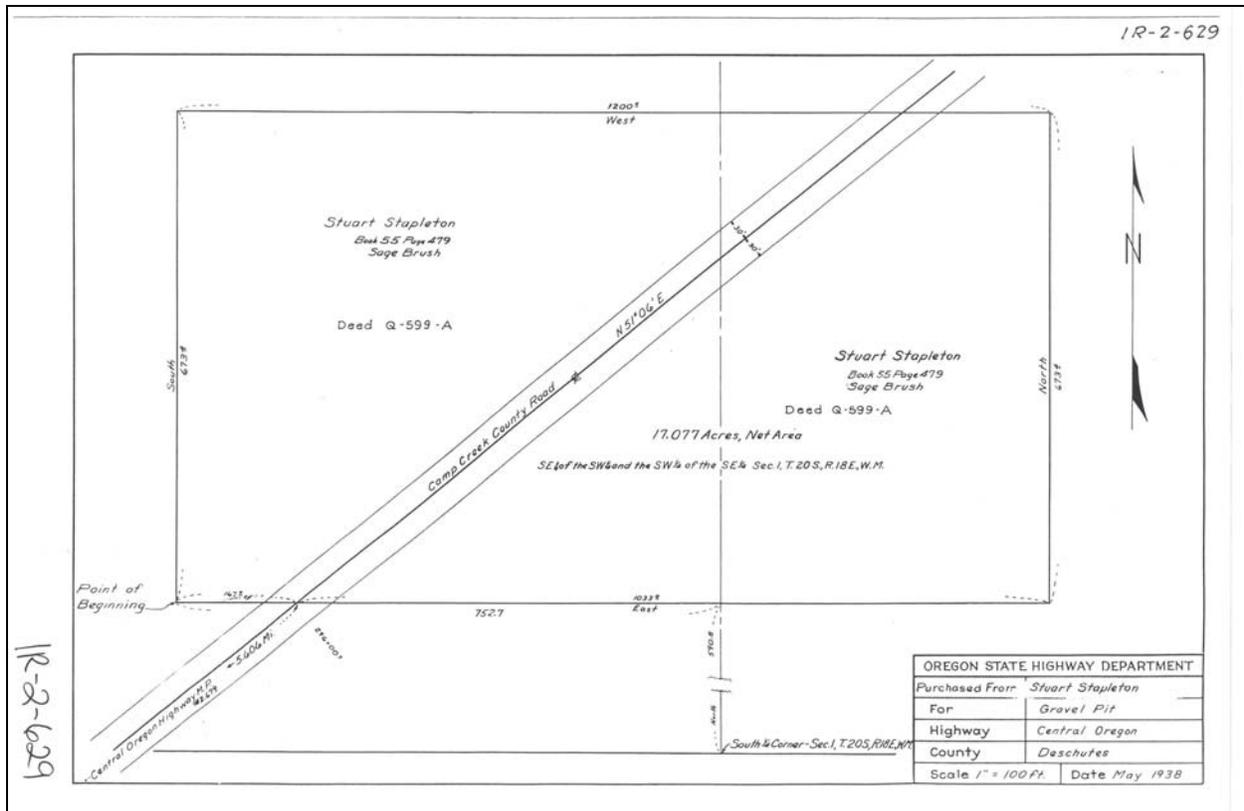
Aerial view of the site in relation to the highway and the surrounding area.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes	Wilson Pit			10	0007	42.7	20S	18.0E	01
File ID		Source #	Date Visited	Map #			Type of Site		
06146		09-043-4	10/13/1999	1R-2-629			Borrow		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #			
43 51'36.78143"	120 30'35.64928"	1389.136	17.08	<2					
Comments									
GPS acquired along Camp Creek County Road.									
Rock Type	Unit	Color		Weathering			Jointing		
Volcanic Gravel	Qb	NA		NA			NA		
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Fair			NA	120	200,000	324,000			
Potentially Significant Site	Why				Open/Closed		Direction		
No	Very limited supply of aggregate, small acreage for this area.				Closed		NA		
Adjacent Land Use									
Open space									
Remarks									
This site is north of Brothers off of Highway 20 on Camp Creek Road. The material at this site is composed of 90% clays, silt, and minor sand, with 10% gravel of variable sizes. The terrain is fairly flat with no screening and room to work. This disturbance is used as a stock pond for livestock in the area. This site holds water and had some at the bottom of the pit when I visited it in October. The local ranchers use this site as a watering hole for their animals.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
Material Use									
CTB, BORROW									



Looking to the northwest at the borrow site along Camp Creek County Road. Water is located in the pit upper right corner of the image.

Close-up view of the volcanic material at this location.

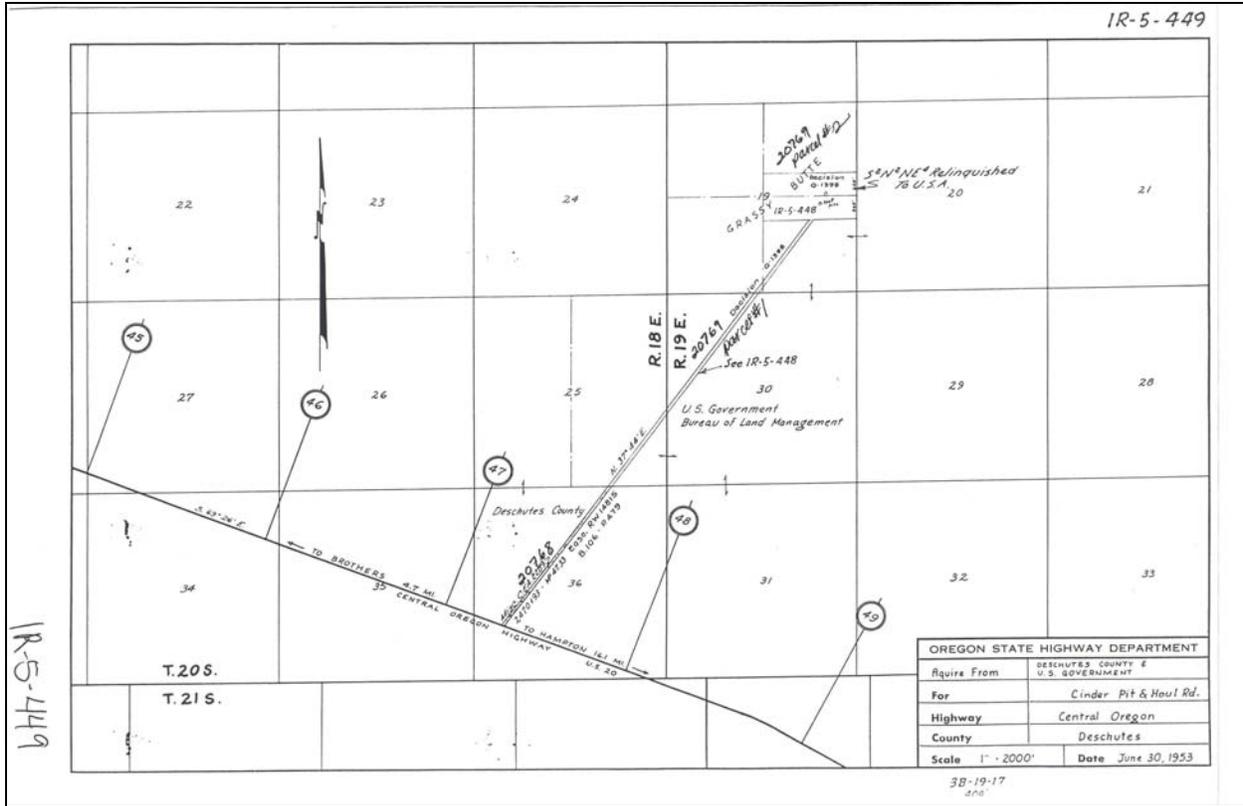


Aerial view of the borrow site along the county road.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes	Grassy Butte			10	0007	47.3	20S	19.0E	19
File ID		Source #	Date Visited	Map #			Type of Site		
20768, 20769		09-044-4	10/14/1999	1R-5-448, 1R-5-449			Cinder Pit		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #				
43 49'12.83396"	120 28'58.93565"	1472.736	85	<4	09-0144				
Comments									
GPS acquired in the pit.									
Rock Type	Unit	Color	Weathering			Jointing			
Cinder	QTp	NA	NA			NA			
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Good to Fair			NA	120	1,250,000	2,025,000			
Potentially Significant Site	Why					Open/Closed	Direction		
Yes	Large acreage, plenty of sanding material with some basalt rock for a future supply.					Closed	NA		
Adjacent Land Use									
Open Space									
Remarks									
This is a good scoriaceous basalt 2.5 miles north of Highway 20. You can rip and crush the material here with little waste. There is good screening with ample room to work. The northern bench at this site is too tall (60 ft.) and should be decreased to a safer size. There is a 20 foot thick very tabular lava flow at the base of the cinder cone. This could be used as an aggregate resource sometime in the future. There has been approximately 200,000 cubic yards of material removed to date. The quantity calculation is based on the volume of a cone, with the parameters of a base length of 1250 feet and a height of 100 feet. The latitude and longitude for the access road is 43° 47' 23.41040, 120° 30' 57.25688, 1437.924.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
	2.94	42.7							
Material Use									
SAND AG (1953)									



Looking to the north at the bench cut in the cinder pit.



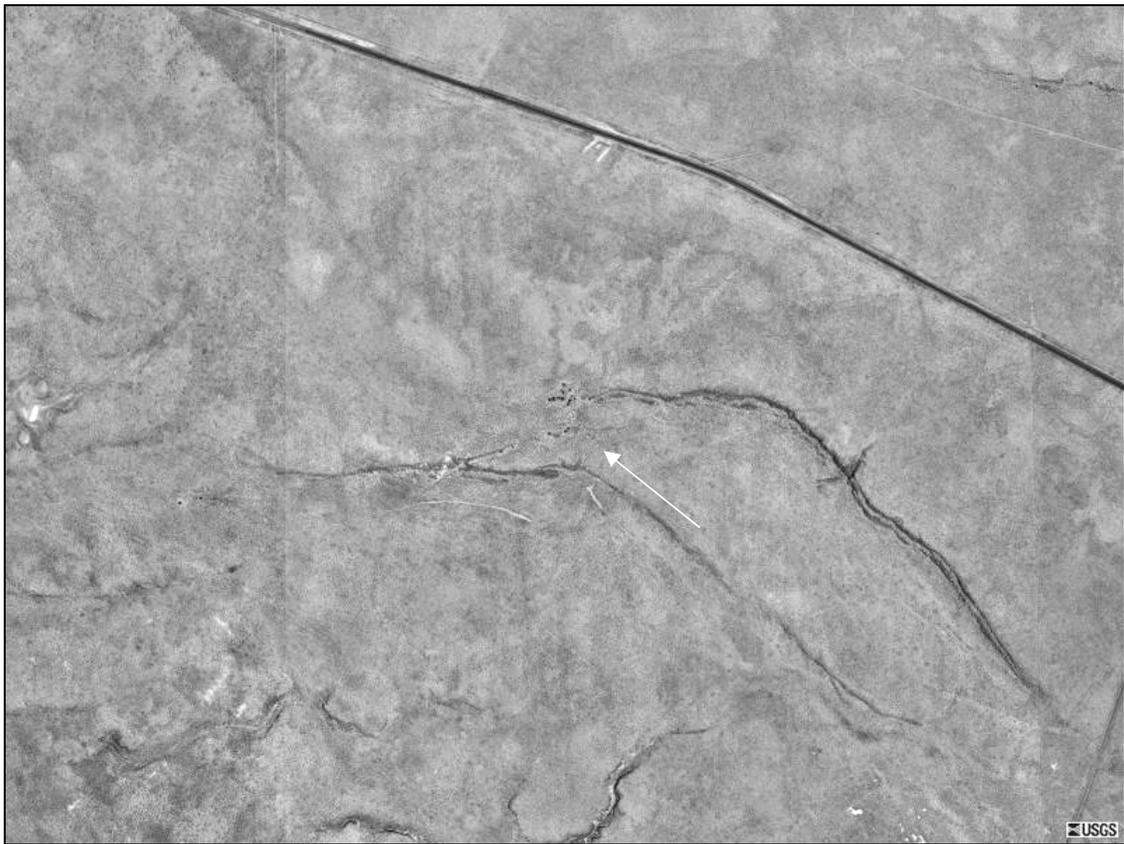
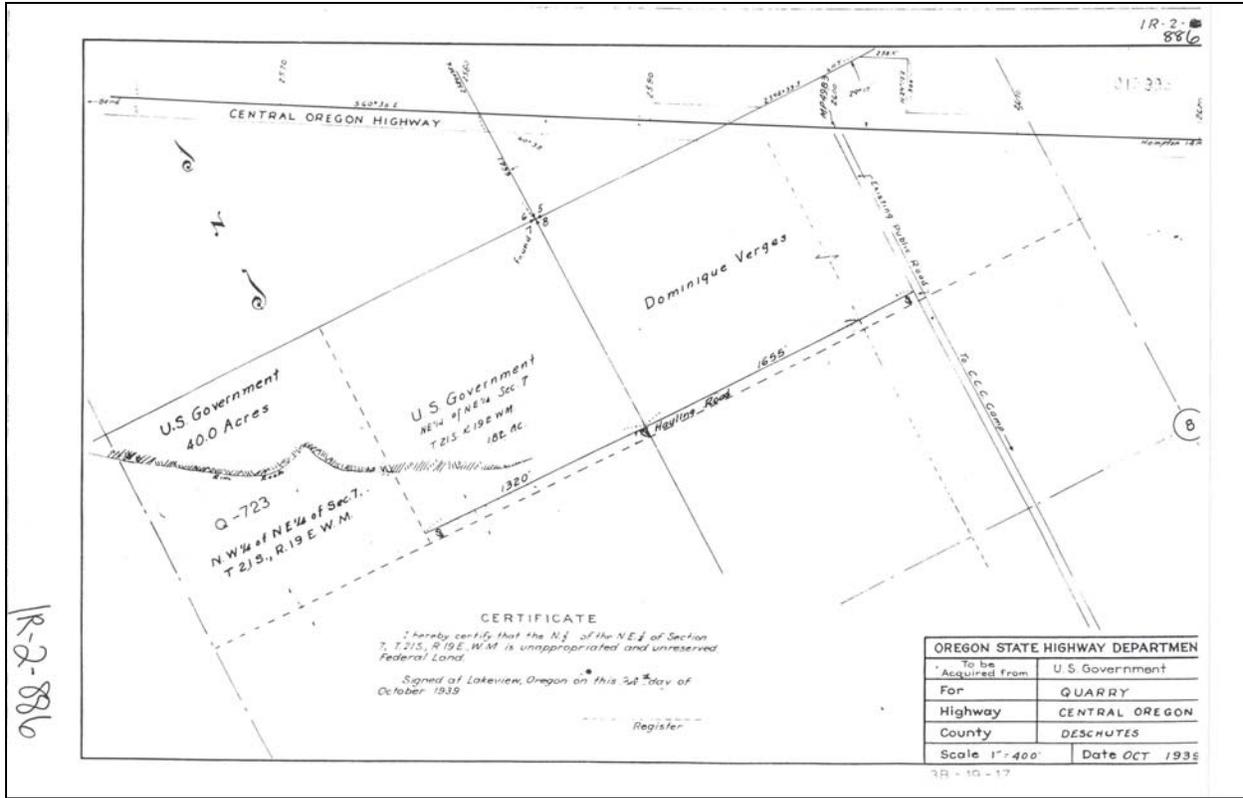
Aerial view of the cinder pit north of the highway.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes				10	0007	49.3	21S	19.0E	07
File ID		Source #	Date Visited	Map #			Type of Site		
Q0723		09-045-4	10/14/1999	1R-2-886			Raw Land		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #			
43 46'29.33524"	120 28'14.98834"	1381.733	40	NA					
Comments									
GPS acquired at county road and Highway 20.									
Rock Type	Unit	Color		Weathering			Jointing		
Basalt	QTb	Medium Grey (N5)		Fresh			Undetermined		
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Good to Fair			R3	160	200,000	432,000			
Potentially Significant Site	Why					Open/Closed	Direction		
No	Large acreage, room to work, good screening from the highway, good to fair rock.					Closed	NA		
Adjacent Land Use									
Open space									
Remarks									
This site is south of Highway 20. It is a raw piece of land that has no visible disturbance. There is a tabular basalt unit here that is approximately 40 feet thick. Columnar jointing is common in this igneous flow. There would be good screening for a site this close to the highway. There is also plenty of room to work here. The terrain is fairly flat. The easement off of Frederick Butte Road has been fenced. I could not get to this site to evaluate the material. I used site 09-040-4 as a template for the rock evaluation, since they are mapped in the same geological unit. If we ever want to develop this ground we will need a new easement. This is leased ground from the USA.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
		37.32					22.5	.4	
Material Use									
Base and AC (1972)									

NW

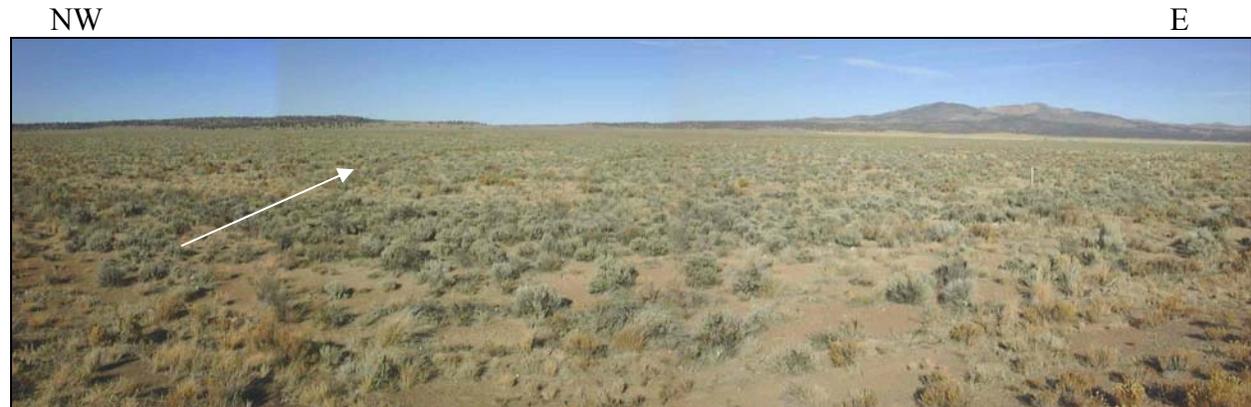


Looking to the northwest at the undisturbed site from Fredrick Butte County Road.

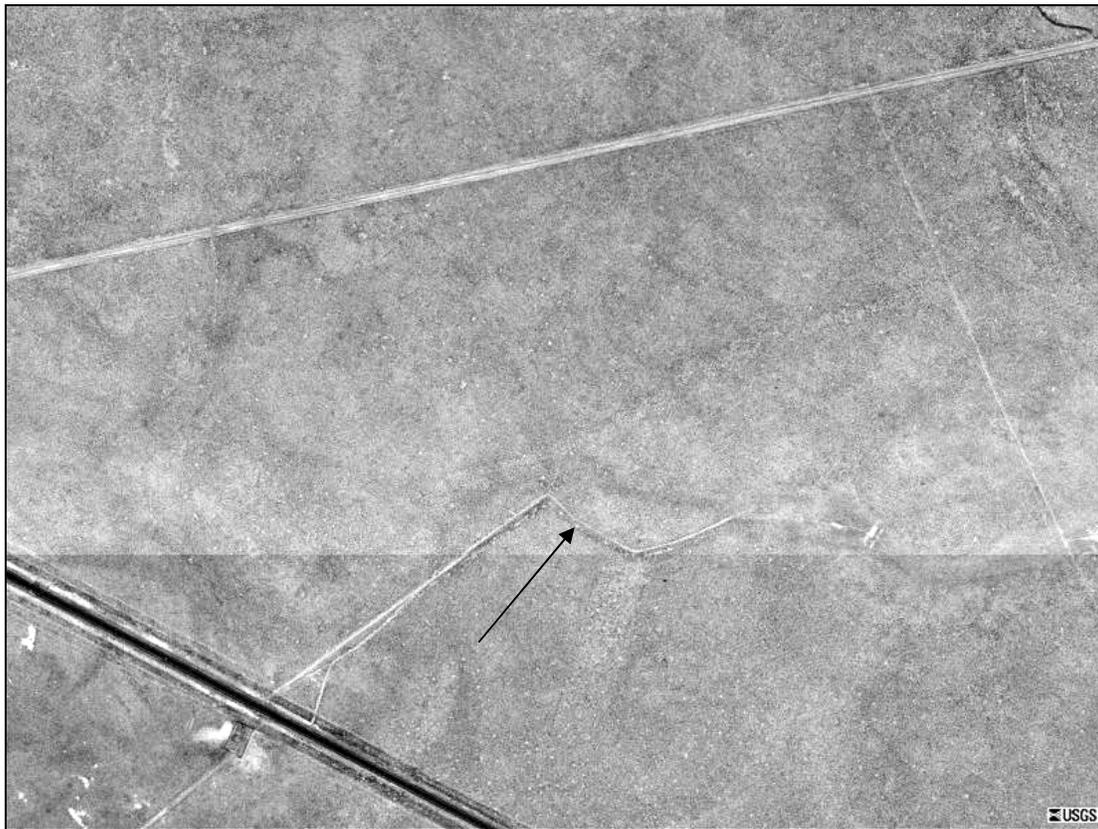
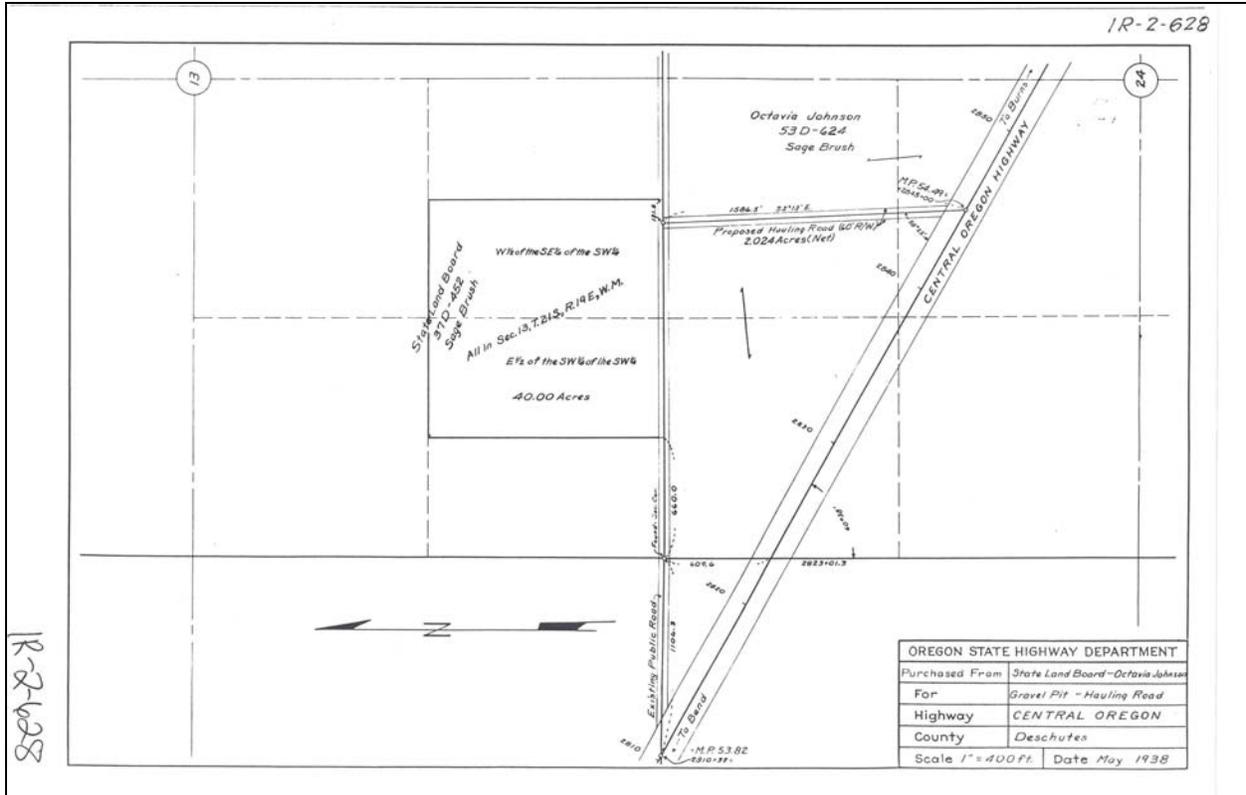


Aerial view of the site south of Highway 20.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes					10	0007	53.82	21S	19.0E	24
File ID		Source #	Date Visited	Map #		Type of Site				
06147, 06148		09-046-4	10/14/1999	1R-2-628		Borrow				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
43 44'39.42000"	120 23'45.86000"	1365	42.02	<1						
Comments										
Lat. and Long. acquired using Terrain Navigator Software										
Rock Type	Unit	Color	Weathering		Jointing					
Volcanic Gravel	Qs	NA	NA		NA					
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Poor			NA	120	645,000	1,044,900				
Potentially Significant Site	Why			Open/Closed	Direction					
No	Borrow site in an area of many borrow sites.			Closed	NA					
Adjacent Land Use										
Open space										
Remarks										
This site is on the north side of Highway 20. The material at this site is composed of 95% sand/silt and 5% gravel. There is flat ground with no visible easement to the property. There is no screening and ample room to work. The 1R map has the county road in the wrong location in conjunction with the mile point. The quantity is based on a 10 foot lift for 40 acres.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
	2.6	40								
Material Use										
CTB, BORROW (1938)										



Looking to the northeast at the borrow site north of Highway 20.



Aerial view of the borrow site located north of Highway 20.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes	Gravel Pit & Haul Rd.			10	0007	57.3	21S	20.0E	28
File ID		Source #	Date Visited	Map #			Type of Site		
06144, 06145, 06145A		09-047-4	10/14/1999	1R-2-623			Borrow		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #			
43 43'39.70417"	120 20'21.86581"	1349.712	44.52	<6					
Comments									
GPS acquired along county road and site.									
Rock Type	Unit	Color		Weathering			Jointing		
Volcanic Gravel	Qs	NA		NA			NA		
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Poor			NA	120	240,000	388,800			
Potentially Significant Site	Why			Open/Closed	Direction				
No	Borrow site in an area of many borrow sites.			Closed	NA				
Adjacent Land Use									
Open space/Ranch to the north about one mile									
Remarks									
This site is located north of Highway 20 about 200 meters. This is a borrow site with most of the material as sand/silt with little to no gravel exposed. The past disturbance totals about 6 acres. The adjacent property has cross fenced our property and we no longer have access to this ground. The terrain is flat with plenty of room to work and minimal screening. There are many pits at this site with the total disturbance around 6 acres. The pits average about 8 feet deep. The quantity calculation is based on a 20 acre disturbance with a 10 foot pit depth, minus the past disturbance.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
	2.52								
Material Use									
CTB (1972)									

NE

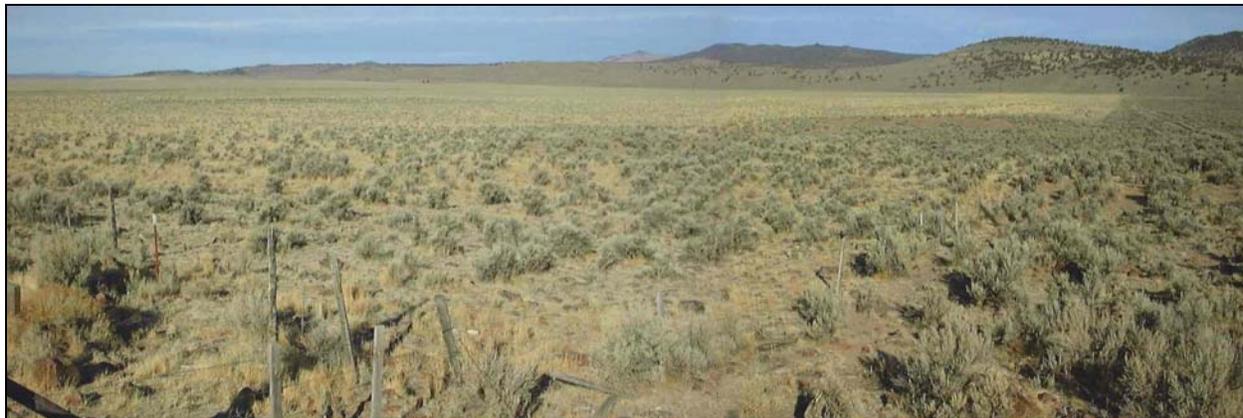


Looking to the northeast at the borrow site north of the highway.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes	Tinner Pit				10	0007	63.91	22S	21.0E	10
File ID		Source #	Date Visited	Map #			Type of Site			
Q0241		09-049-4	11/02/1999	1R-1-1042			Borrow			
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
43 40'0"7.7582"	120 10'32.515"	1361.219	5.51	<3						
Comments										
GPS acquired near section corner, southeast side of property.										
Rock Type	Unit	Color		Weathering			Jointing			
Volcanic Gravel	Qs	NA		NA			NA			
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Poor			NA	120	80,000	129,600				
Potentially Significant Site	Why			Open/Closed	Direction					
No	Borrow site in an area of many borrow sites.			Closed	NA					
Adjacent Land Use										
Open space										
Remarks										
This site is located east of Hampton about 1 mile. The material at this site is composed of 90% sand/silt and 10% pea gravel. The ground is flat with ample room to work and some screening. Near the base of a small butte, part of the pit is in a dry drainage ditch near the northeast corner of the property. The latitude and longitude of the access road is 43 40 11.18035 and 120 13 50.08827.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
	2.47									
Material Use										
CTB, BORROW; Topping (1938)										

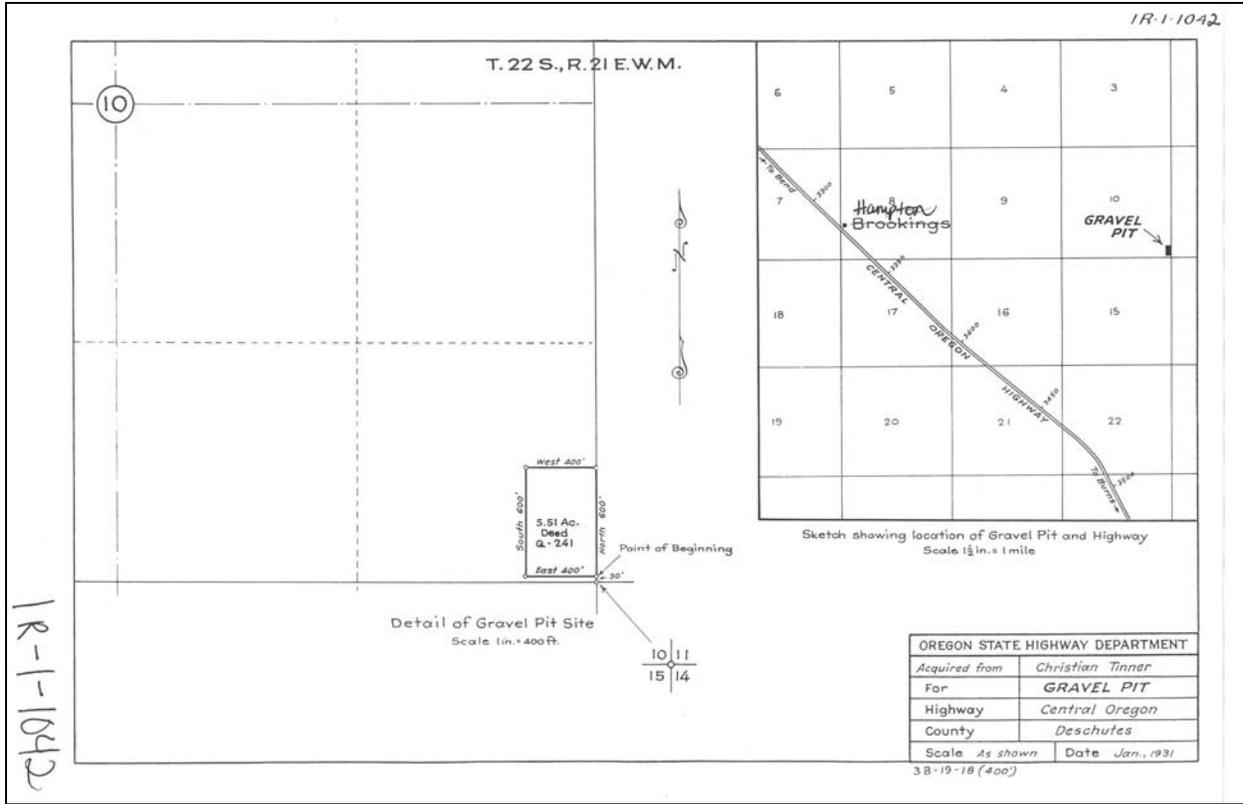
NW

N



Looking to the northwest at the small borrow site adjacent to the fence line.

Close-up view of the volcanic material at this location.



Aerial view of the borrow site, delineated by the fence line.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes				10	0007	66.25	22S	21.0E	15, 22
File ID		Source #	Date Visited	Map #			Type of Site		
06145B		09-050-4	11/02/1999	1R-2-624			Borrow		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #			
43 39'29.45187"	120 10'51.7051"	1347.968	104.59	<3					
Comments									
GPS acquired in the pit and at the access road off of Highway 20.									
Rock Type		Unit	Color	Weathering			Jointing		
Volcanic Gravel		Qs	NA	NA			NA		
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Good to Fair			NA	120	986,000	1,597,320			
Potentially Significant Site	Why			Open/Closed	Direction				
No	Borrow site in an area of many borrow sites.			Closed	NA				
Adjacent Land Use									
Open space									
Remarks									
This site is located off of Highway 20 to the north about 700 meters. The material at this site is composed of 40% pea gravel and 60% sand/silt. There is limited screening and plenty of room to work. This site is at the base of a small cliff composed of basalt. The basalt cliff is just off of our ground. Flat ground, unknown depth to bedrock, up to 29,000 cubic yards removed in the past. The quantity is based on a 10 foot lift for 100 acres.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
	2.78	15.1							
Material Use									
CTB, BORROW; Topping and Road Mix (1937)									

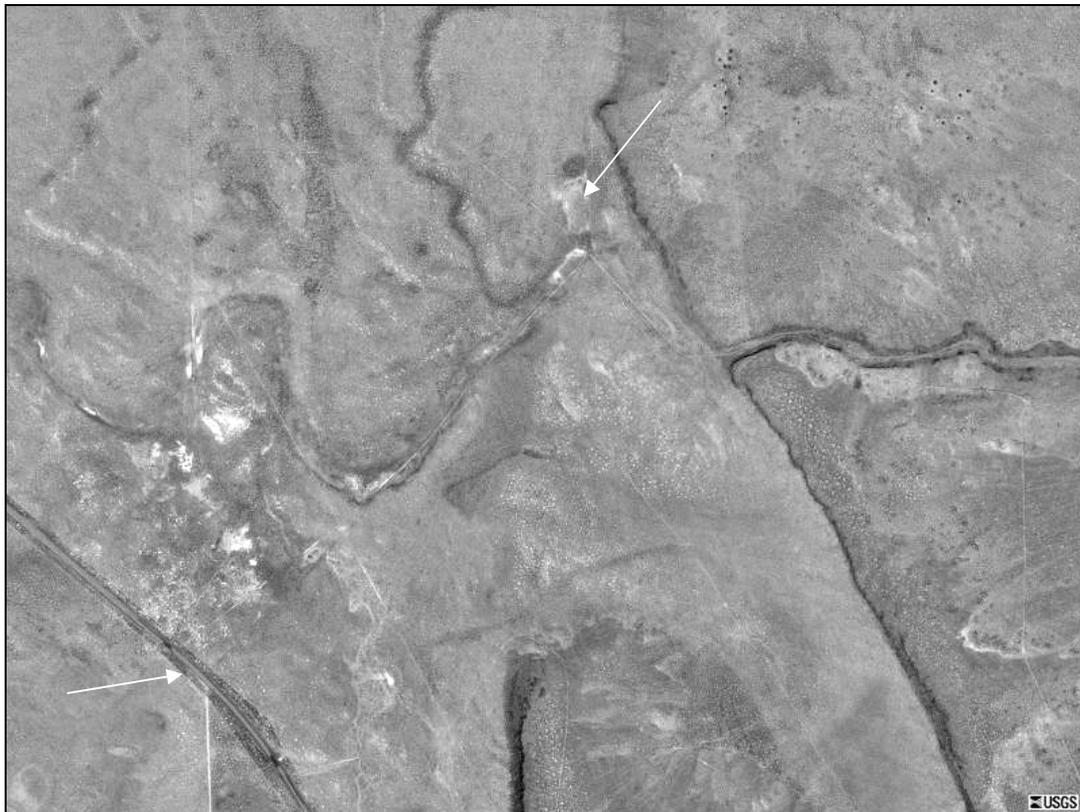
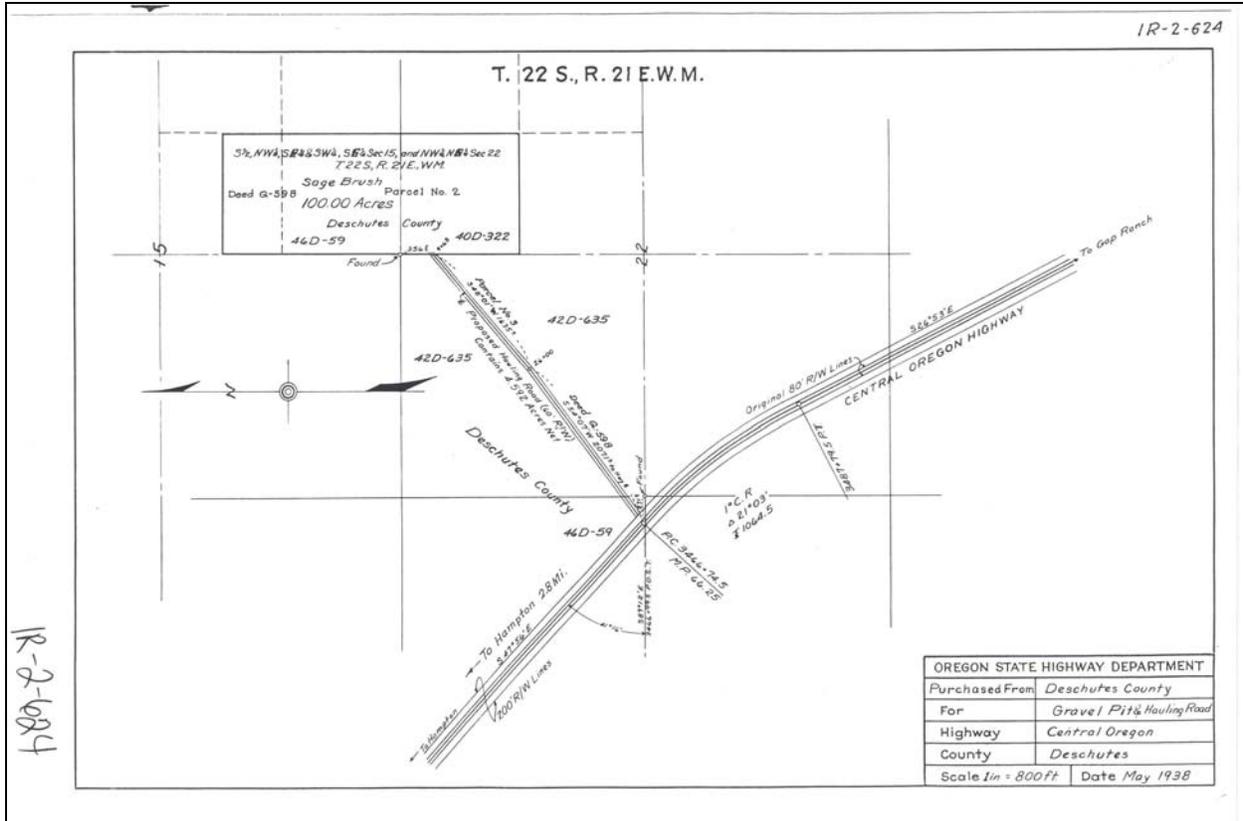
SE

NW



Looking to the southwest at the borrow site and the past disturbance.

Close-up view of the volcanic material at this location.

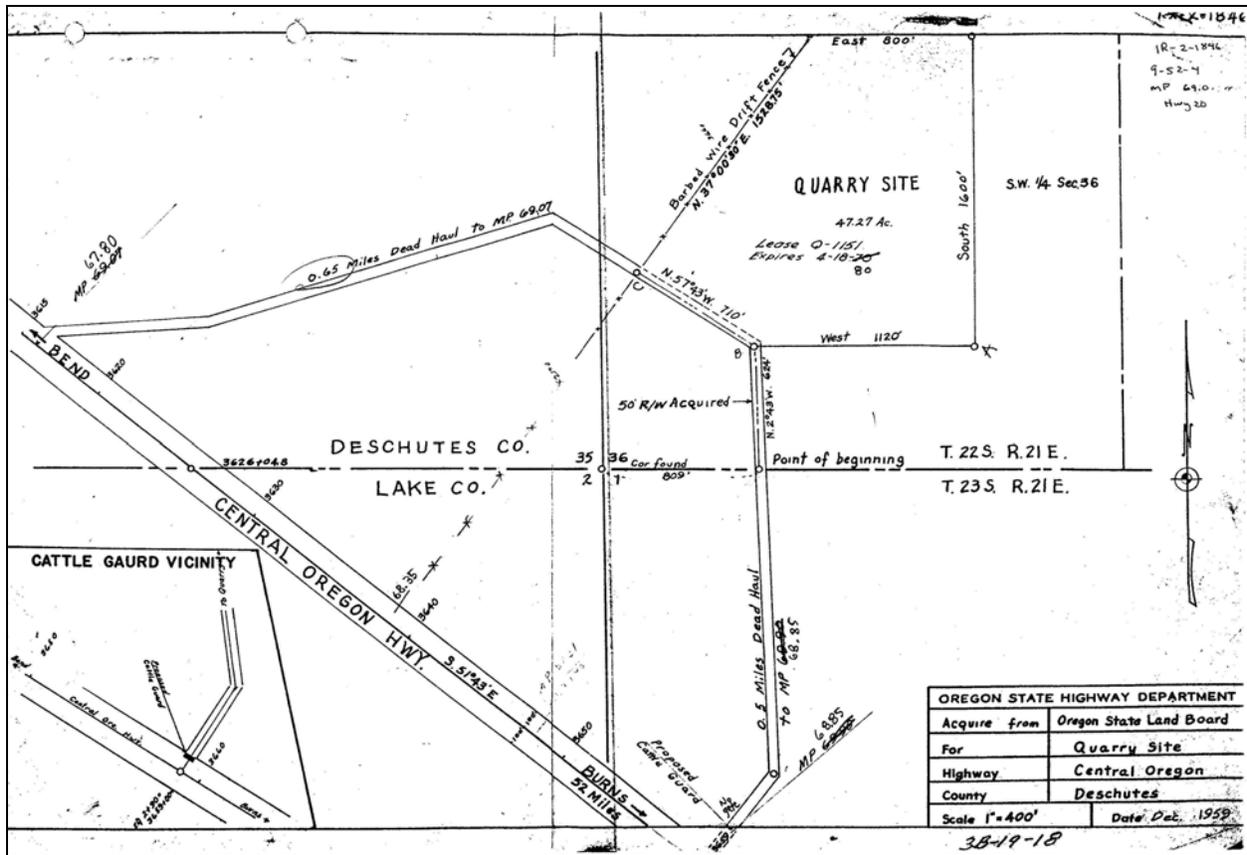


Aerial view of the borrow site located north of Highway 20. Access is in the lower left corner.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes				10	0007	69	22S	21.0E	36
File ID		Source #	Date Visited	Map #			Type of Site		
Q1151		09-052-4	05/03/2001	1R-2-1846			Raw Land		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #			
43 36'46.46559"	120 09'56.19831"	1356.161	47.27	NA					
Comments									
GPS acquired at access along Highway 20									
Rock Type	Unit	Color		Weathering			Jointing		
Basalt	Tob	NA		NA			NA		
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Fair			NA	150	800,000	1,620,000			
Potentially Significant Site	Why			Open/Closed	Direction				
No	NA			Closed	NA				
Adjacent Land Use									
Open Space									
Remarks									
This site is northeast of Highway 20 approximately 1/2 mile. This is raw land with no visible disturbance. The material here is a basalt along a flow front. There is room to work with limited screening. The terrain is very steep with relief around 200 feet. I did not hike in to see the site. Acquired the mage from Highway 20.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
		19.58					12.3	0.5	
Material Use									
1972									



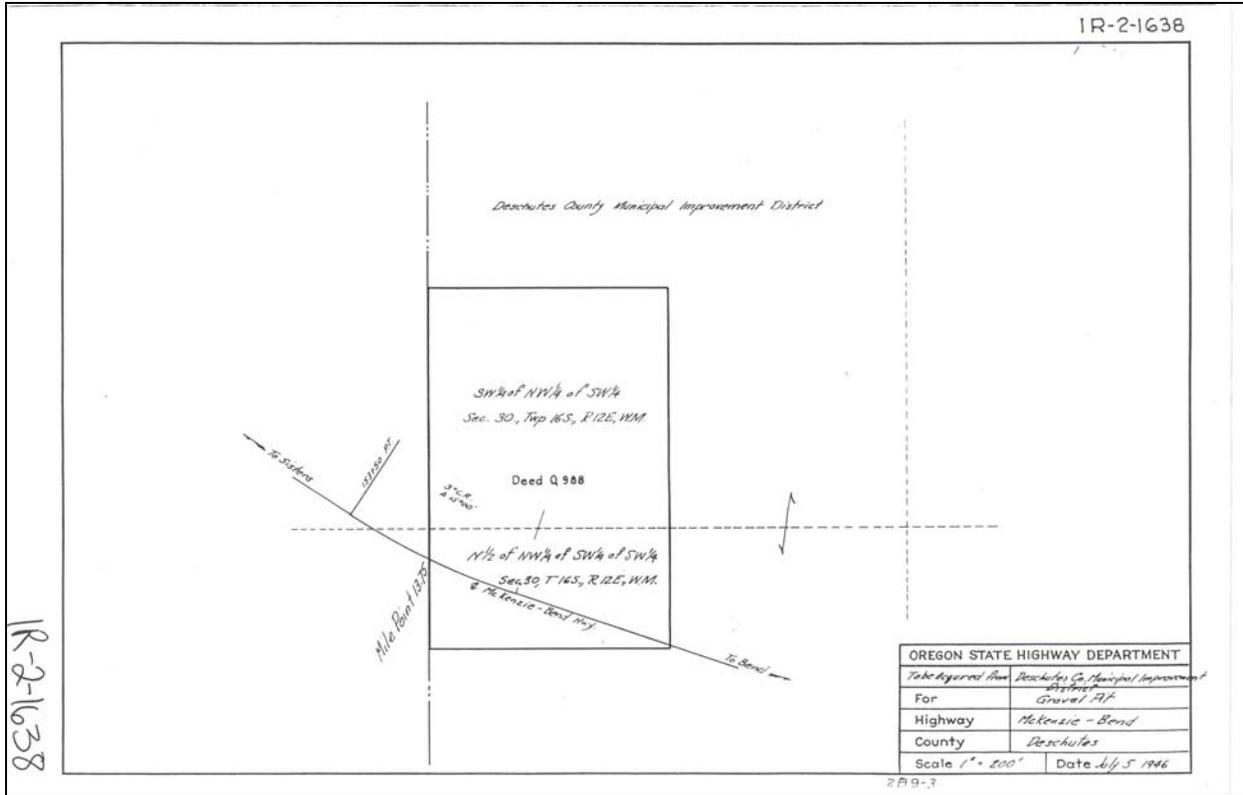
View looking across Highway 20 at the raw land site.



County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes	Tumalo Pit			10	0017	13.8	16S	12.0E	30
File ID		Source #	Date Visited	Map #			Type of Site		
12936		09-055-4	8/26/1999	1R-2-1638			Borrow		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #				
44 09'28.45524"	121 20'34.93546"	1014.389	14.1	<10	09-0081				
Comments									
GPS acquired at access gate.									
Rock Type	Unit	Color	Weathering			Jointing			
Volcanic Gravel	Qs	NA	NA			NA			
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Fair to Poor			NA	120	160,000	259,200			
Potentially Significant Site	Why			Open/Closed	Direction				
No	This site is in use as a stock pile site, and is almost depleted of fill material.			Closed	To the east about one mile is the Deschutes River.				
Adjacent Land Use									
Residential homes on acreage adjacent to the north.									
Remarks									
This site is located just northwest of Tumalo on Highway 20. This property is being used as a stock pile site now. The material is composed of unconsolidated sand (95%), and minor gravel (5%). If the need arose, the pit floor could be lowered to acquire more fill. The quantity amount is based on a ten foot lift per ten acres. The property is bisected by Highway 20 and has no disturbance on the south side of the highway. There is no screening from the highway but there is ample room to work.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
	2.74	27.2			21.71	.6			
Material Use									
BASEAG, AC; Surfacing and Base Course (1963)									



Looking to the southeast at the stockpile site along Highway 20.



Aerial view of the borrow/stock pile site located north of Highway 20.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes					10	0017	9.7	16S	11.0E	10
File ID		Source #	Date Visited	Map #		Type of Site				
17320, 16405, 16406		09-056-4	8/26/1999	1R-5-110, 1R-5-15		Raw Land				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
44 11'48.70883"	121 23'08.52163"	998.805	60	NA						
Comments										
GPS acquired along Innes Market Road and the property.										
Rock Type	Unit	Color	Weathering		Jointing					
Basalt	Qtba	NA	NA		NA					
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Good to Poor			NA	120	160,000	259,200				
Potentially Significant Site	Why				Open/Closed		Direction			
No	This site has not been proven in quality or quantity yet.				Closed		NA			
Adjacent Land Use										
Open space/Rural Residential										
Remarks										
This site is located on Innes Market Road east of Highway 20 about 1200 meters. This site is raw land with no disturbances. There are some exposures of a porphyritic basalt of undetermined thickness on the side of the hill. There is a cat cut at the base of the hill that has exposed some scoriaceous basalt but little else. There could be up to 5 feet of overburden here, limited screening from the county road. Flat to moderately steep terrain. The property would need an assessment. USA ground. The quantity I calculated is based on 10 acres and a 10 foot lift.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
Material Use										

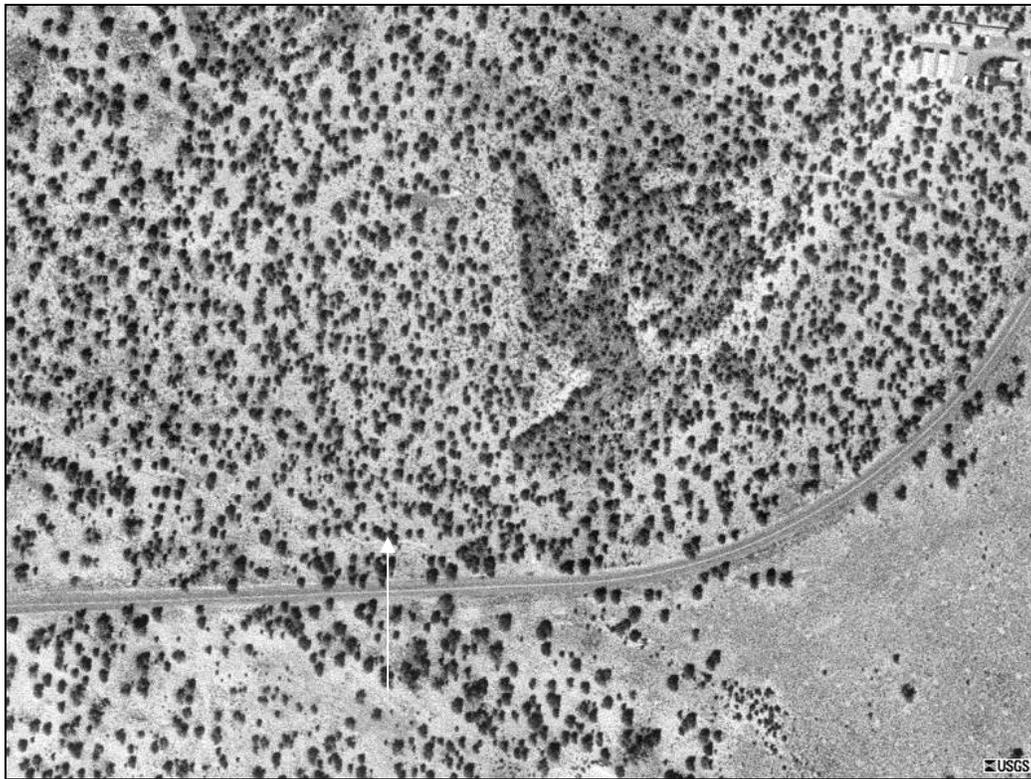
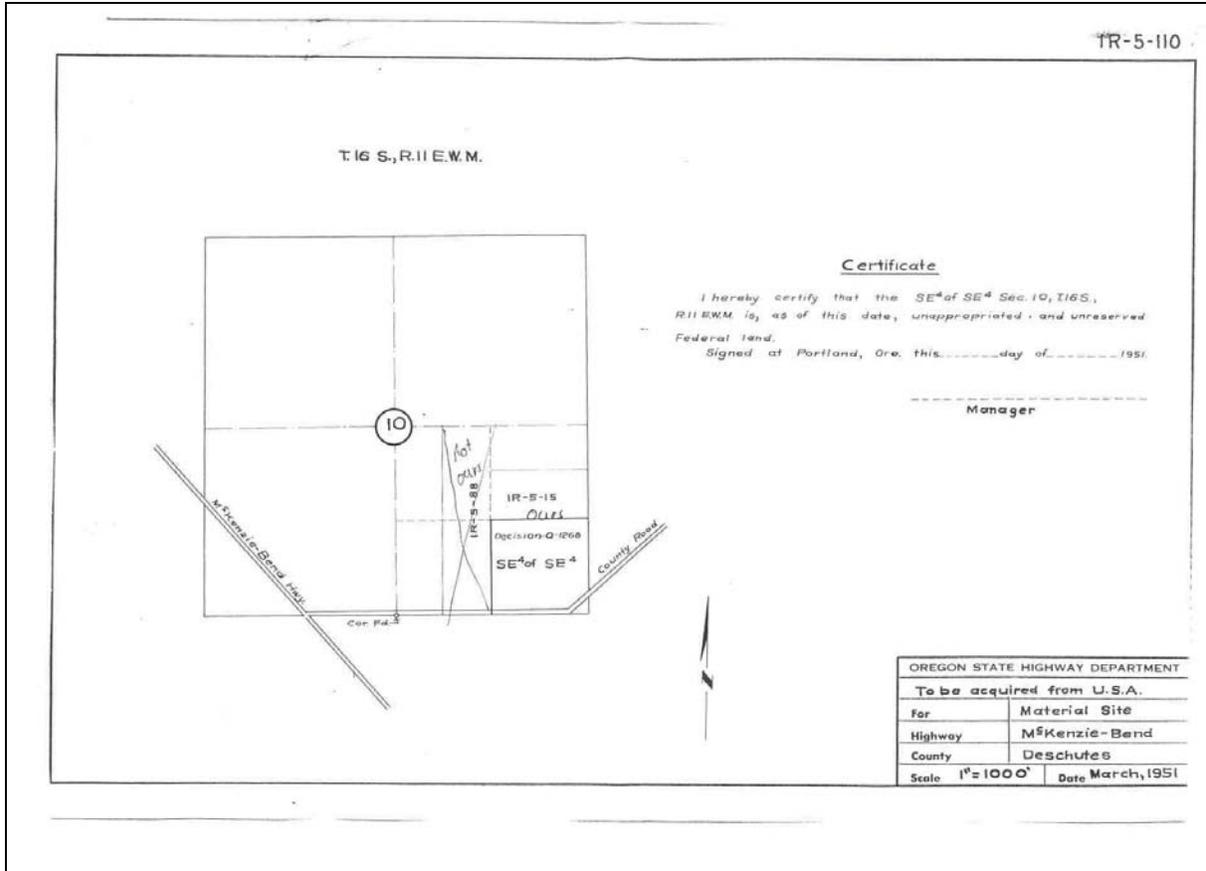
NW

NE



Looking to the north across Innes Market Road at the undisturbed volcanic terrain.

Close-up view of a volcanic flow front at this location.



Aerial view of the undisturbed ground that comprises this site.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes					10	0015	102.9	15S	12.0E	18
File ID		Source #	Date Visited	Map #		Type of Site				
16647, 22969		09-064-4	8/19/1999	1R-5-36, 1R-5-654		Cinder Pit				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
44° 16' 06.84736	121° 20' 54.12291	931.363	30	<3	09-0160					
Comments										
GPS acquired in the pit.										
Rock Type	Unit	Color	Weathering		Jointing					
Cinder	NA	NA	NA		NA					
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Good			NA	120	500,000	810,000				
Potentially Significant Site	Why			Open/Closed	Direction					
No	BLM property/Leased			Closed	NA					
Adjacent Land Use										
Open space										
Remarks										
This site is located about one mile south of Highway 126. This is a cinder pit on BLM ground. Approximately 100,000 cubic yards removed. Heavy use as a gun range, and motto cross track. Access point latitude and longitude is 44 17'29.8685",121 19'54.63567".										
202B	203B	211	206 Fine	206 Coarse	208 F Ht.	208 F Ht.	208 C	208 C Ht.		
	2.75	41.8			29.56	.3				
Material Use										
SAND AG; Surfacing Base (1963)										

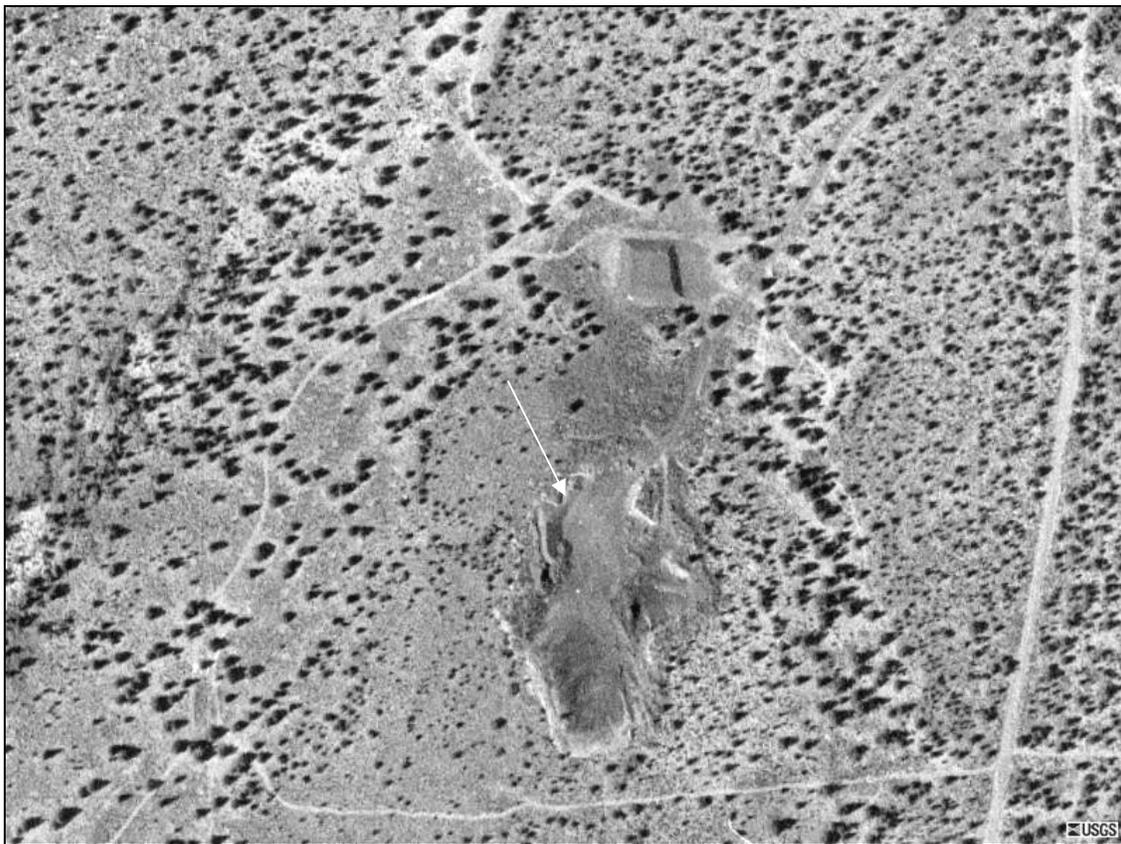
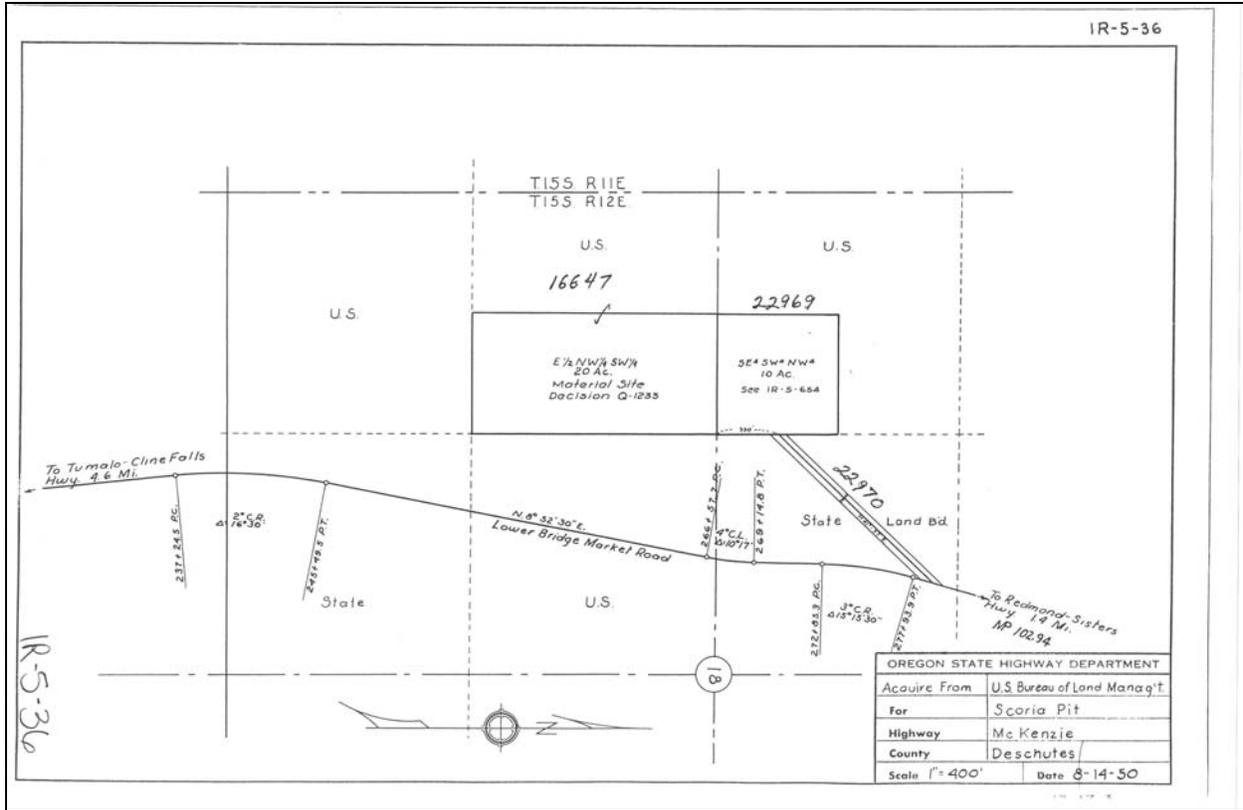
E

S



Looking to the southeast at the cinder pit.

Close-up view of the scoriaceous basalt at this location with the hammer for scale.



Aerial view of the cinder pit.

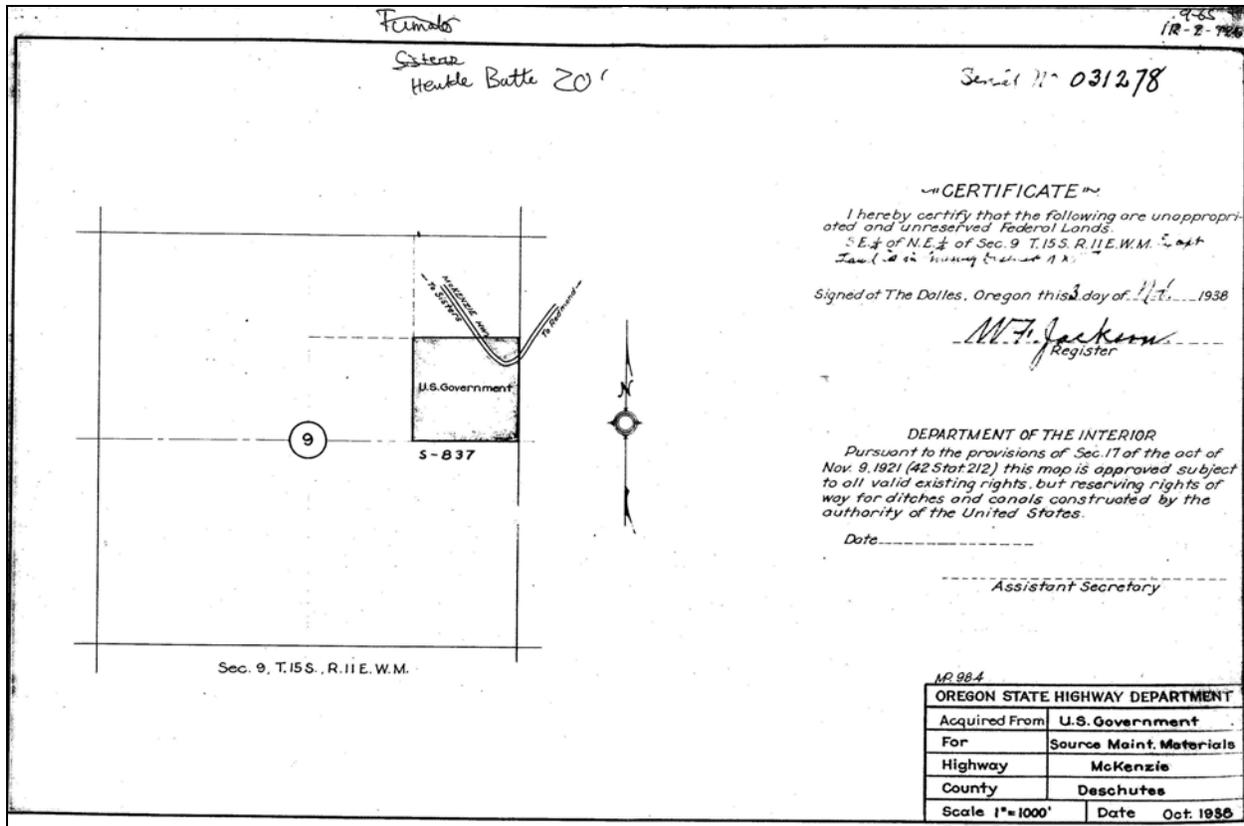
County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes					10	0015	99.93	15S	11.0E	09
File ID		Source #	Date Visited	Map #			Type of Site			
S0837		09-065-4	05/01/2001	1R-2-725			Raw Land			
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
44 17'12.72000"	121 24'47.16000"	918	40	NA						
Comments										
Lat. and Long. acquired using Terrain Navigator Software										
Rock Type	Unit	Color	Weathering			Jointing				
Basalt	Tob	NA	NA			NA				
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Fair			NA	150	484,000	980,100				
Potentially Significant Site	Why			Open/Closed	Direction					
No	USA Ground			Closed	Na					
Adjacent Land Use										
NA										
Remarks										
This site is south of Highway 126 about 150 meters. This is raw land with no visible disturbance. There is no access to this site along the old highway alignment. The rock here is a vesicular basalt of marginal quality. There is no room to work, but good screening from the highway. There is a home less than 100 meters away from the site. The site occupies the edge of a small canyon. Site 09-066-4 is adjacent.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
		20.9								
Material Use										

E

S



Looking to the southeast at the raw land site in the draw (09-066-5) and the adjacent raw land site along the old highway alignment shown at the right side of the image.



Aerial view of the raw land site in relation to Highway 126.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes					10	0015	99.3	15S	11.0E	10
File ID		Source #	Date Visited	Map #		Type of Site				
16330		09-066-4	05/01/2001	1B-17-3		Gravel				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
44 17'05.35708"	121 24'38.87635"	870.576	20	<1						
Comments										
GPS acquired on site.										
Rock Type	Unit	Color		Weathering		Jointing				
Volcanic Gravel	Tob	NA		NA		NA				
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Good			NA	120						
Potentially Significant Site	Why			Open/Closed	Direction					
No	USA Ground			Closed	Dry Creek (Deep Canyon) bisects ground					
Adjacent Land Use										
Open Space										
Remarks										
This site is south of Highway 126 about 150 meters. The ground is located in Deep Canyon and the material is both lava flows of basalt and volcanic gravel in the dry creek bed. The gravel is composed of small boulder and less (40%) with the rest sand and silt (60%) size. There is room to work with limited screening. Site 09-065-4 is adjacent.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
		20.0								
Material Use										

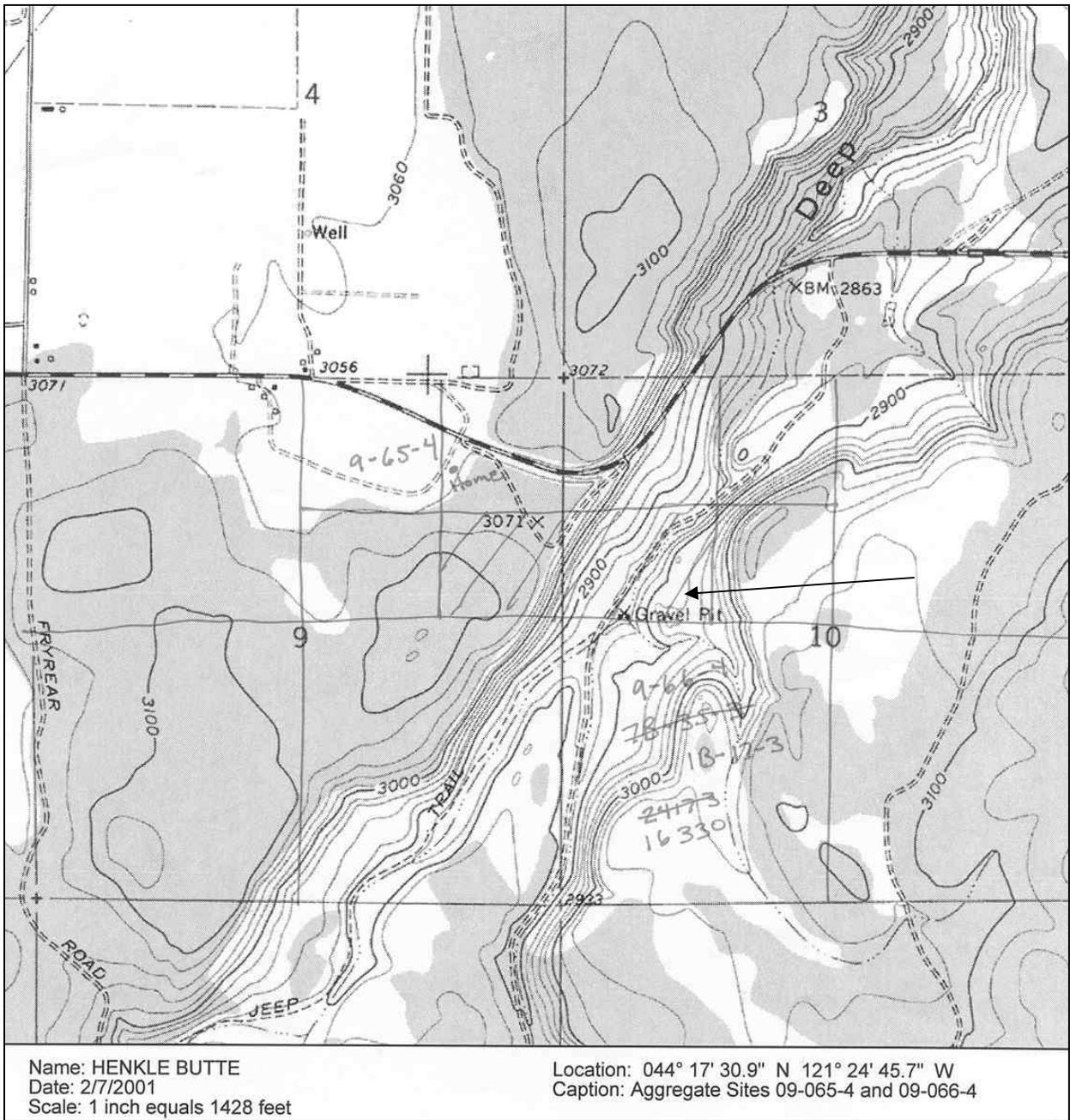
NW

E



View to the north of the gravel site within the draw. Highway 126 is in the upper left hand corner.

Close-up view of the volcanic gravel at this site with the hammer for scale.



Scanned quad-sheet of sites 09-065-4 and 09-066-4.
The aerial photograph two pages prior shows site 09-065-4.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes					10	0015	94.9	15S	10.0E	11
File ID		Source #	Date Visited	Map #		Type of Site				
06464, 06480, 09985		09-068-4	8/24/1999	1R-2-755		Borrow				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
44 17'08.58217"	121 30'39.5192"	953.328	23.28	<3	09-0154					
Comments										
GPS acquired in the pit.										
Rock Type	Unit	Color	Weathering		Jointing					
Volcanic Gravel	Qs	NA	NA		NA					
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Good to Fair			NA	120	150,000	243,000				
Potentially Significant Site	Why			Open/Closed	Direction					
No	Borrow site			Closed	North across Highway 126 is Squaw Creek					
Adjacent Land Use										
Ranching/Minor residences within the Sisters vicinity										
Remarks										
This site is located on Highway 126 just east of Sisters. The material is composed of poorly sorted, rounded to well-rounded volcanic gravel. The break down is 60% sand, and 40% gravel. The gravel is further divided up; boulder (<5%), then cobble (<25%), then pebble (<10%). There is limited screening with plenty of room to work on flat ground. The site is being used for waste rock and a minor service stock pile site. Minor timber with 40 foot Pines and some Juniper. Most of the property has had some prior disturbance.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
2.660	2.61	28.6	1.5	.5			17.8	.2		
Material Use										
AC (1991)										

NW

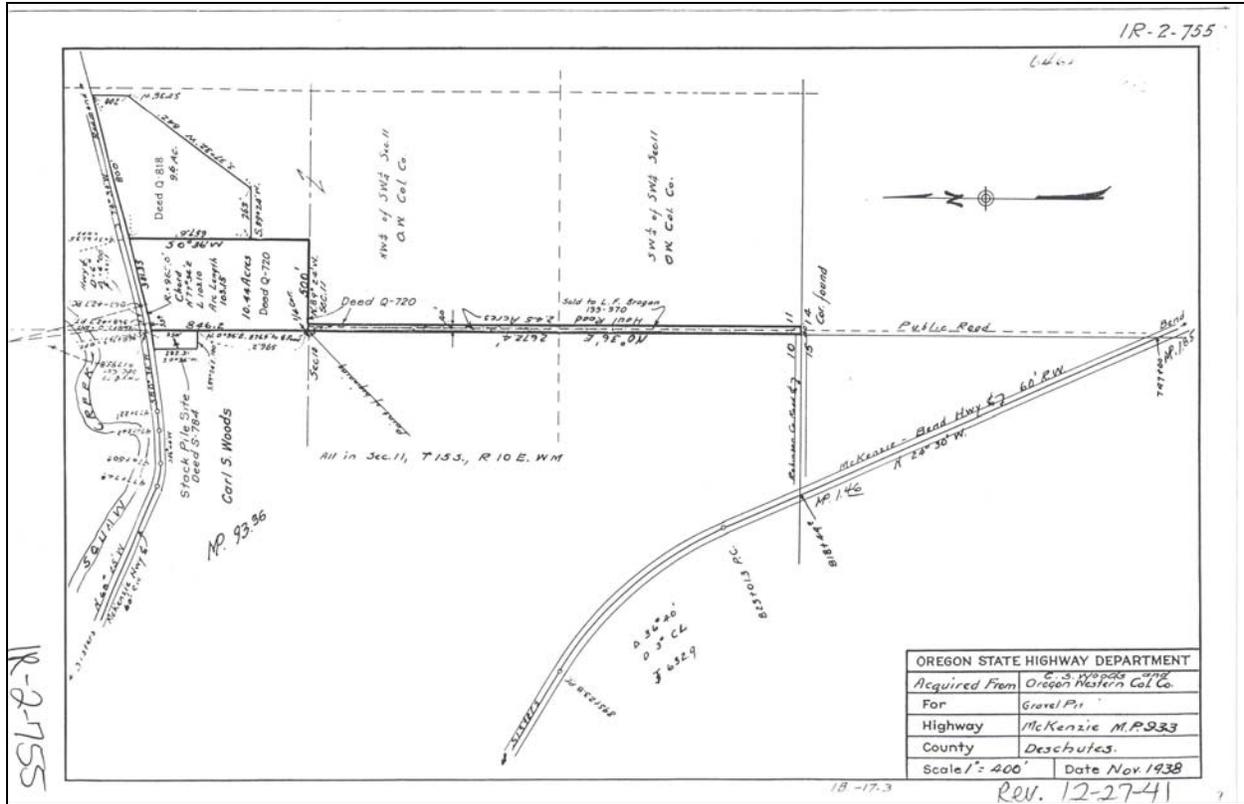
S



Panoramic view looking to the southeast at the disturbed ground here at this location.



Close-up view of the volcanic gravel at this site.

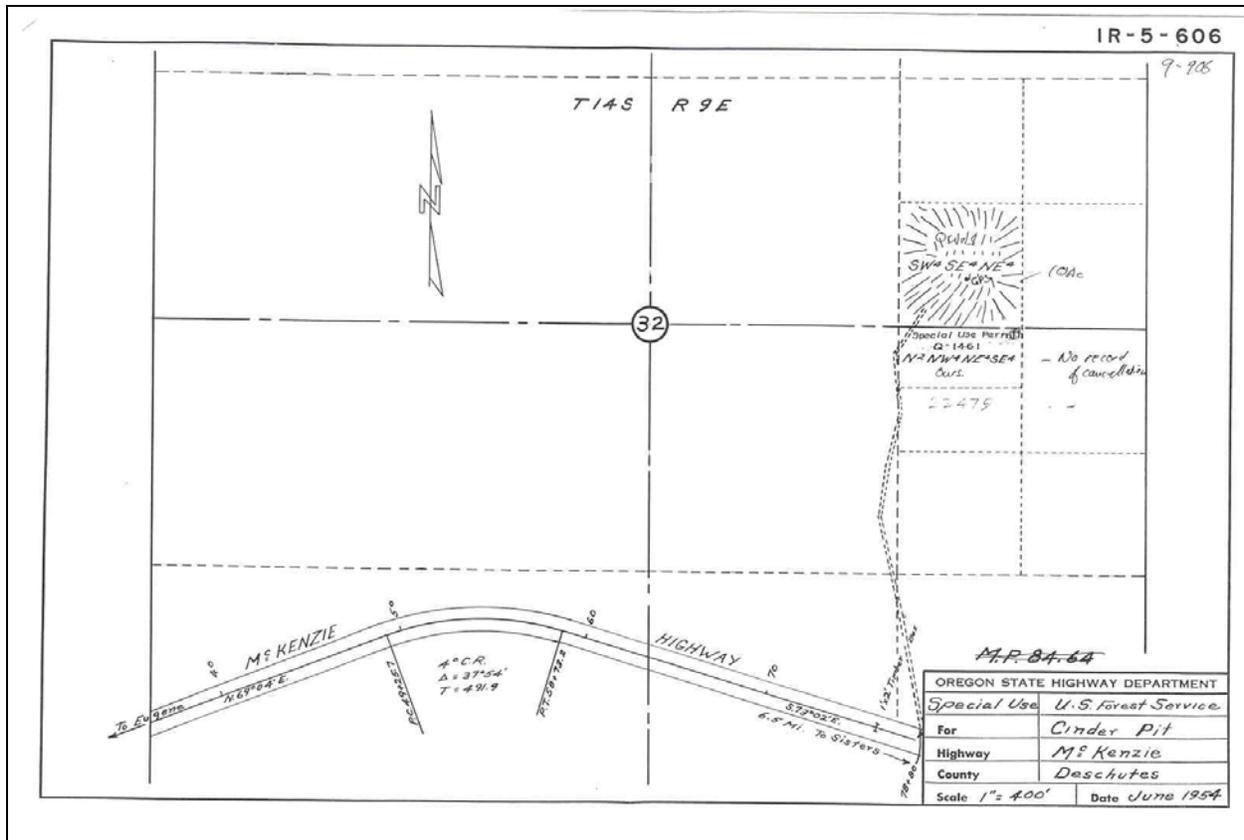


Aerial view of the gravel/borrow site along Highway 126.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes	Fourmile Butte Quarry			10	0015	86.24	14S	09.0E	32
File ID		Source #	Date Visited	Map #			Type of Site		
22479		09-069-4	8/24/1999	1R-5-606			Cinder Pit		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #			
44 18'24.12222"	121 40'49.65126"	1127.293	15	<3					
Comments									
GPS acquired in the pit.									
Rock Type	Unit	Color		Weathering			Jointing		
Cinder	QTp	NA		NA			NA		
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)			
Good			NA	120					
Potentially Significant Site	Why			Open/Closed	Direction				
No	Leased property			Closed	NA				
Adjacent Land Use									
Open space									
Remarks									
This site is located off of the McKenzie Highway. The access to the property needs some road work. This site has heavy use as a rifle range. There is limited room to work around the butte. Good screening from the road. Good source of somewhat clean cinders. This is Forest Service ground and would need a special use permit to open the ground back up. Approximately 150,000 cubic yards have been removed to date.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
Material Use									



Looking to the northwest from the cinder pit.
Black Butte is in the background of the image, above the vehicle.



Aerial view of the cinder pit with the access road from Highway 126.

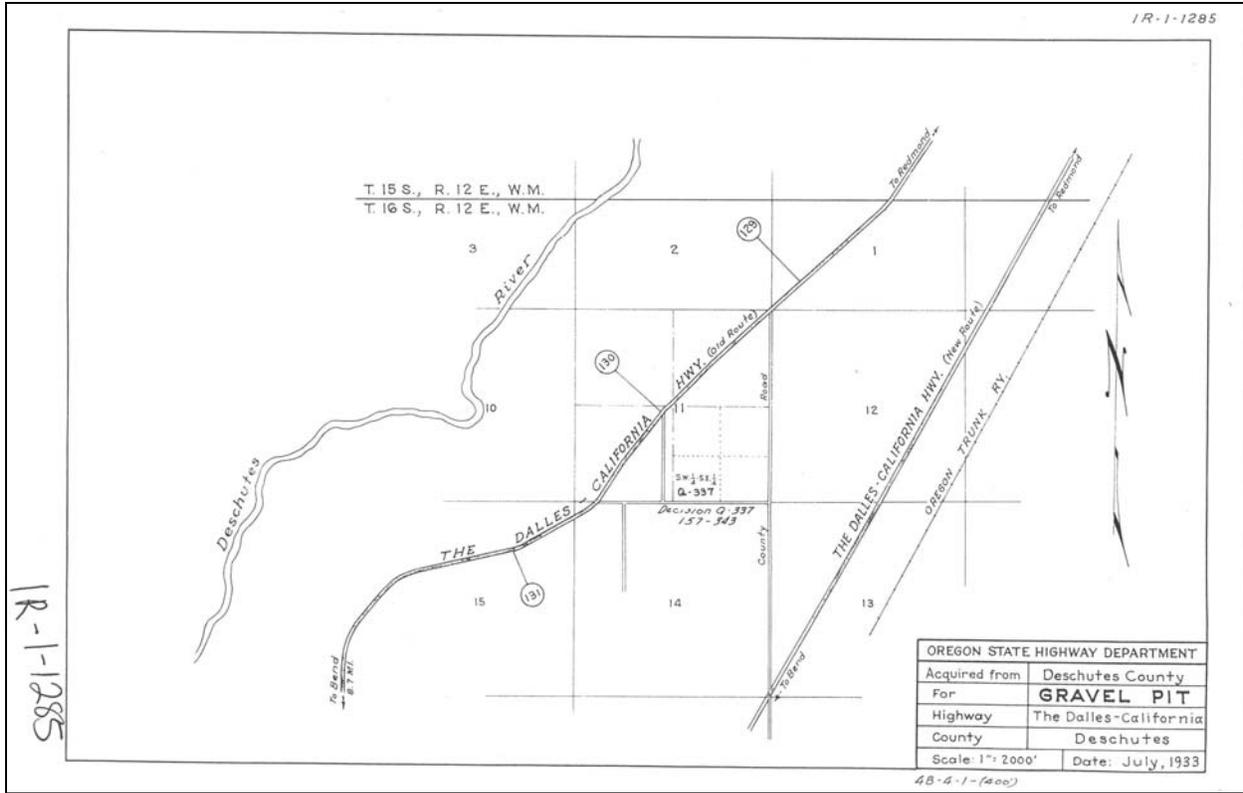
County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes	Peterson Rock Garden Pit			10	0375	6.7	16S	12.0E	11
File ID		Source #	Date Visited	Map #			Type of Site		
39872		09-071-4	8/25/1999	1R-1-1285			Borrow		
Latitude	Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #			
44 11'50.00886"	121 15'06.46712"	926.618	40	<8		09-0123			
Comments									
GPS acquired in the pit.									
Rock Type		Unit	Color		Weathering		Jointing		
Andesite/Volcanic Gravel		Qs	Medium Grey (N5)		Fresh		NA		
Quality			Hardness	lbs./cu ft.	Reserve (cy)		Reserve (Tons)		
Fair to Poor			R2 to R3	120	240,000		521,640		
Potentially Significant Site	Why			Open/Closed		Direction			
No	Quality is in question, site being filled in with waste rock.			Closed		Adjacent on the west side of this site is an irrigation ditch.			
Adjacent Land Use									
Remarks									
This site is located between Bend and Redmond on Young Road. This ground is composed of a thin andesite flow that caps a poorly sorted, friable material composed of 90% sand/silt, and 10% gravel size pebbles. The property has no screening, with plenty of room to work. The Pilot Butte Canal Ditch bisects the northwest corner of our property. It appears we own about 7 acres on the west side of the canal. There is no gate here and the site is taking on the appearance of a small landfill. We also use this site for stock piling crushed aggregate.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
	2.75	4.3							
Material Use									
BORROW (1936)									



Panoramic view of the borrow site located north of Young Rd.



Close-up view of the thin andesite flow at this location.

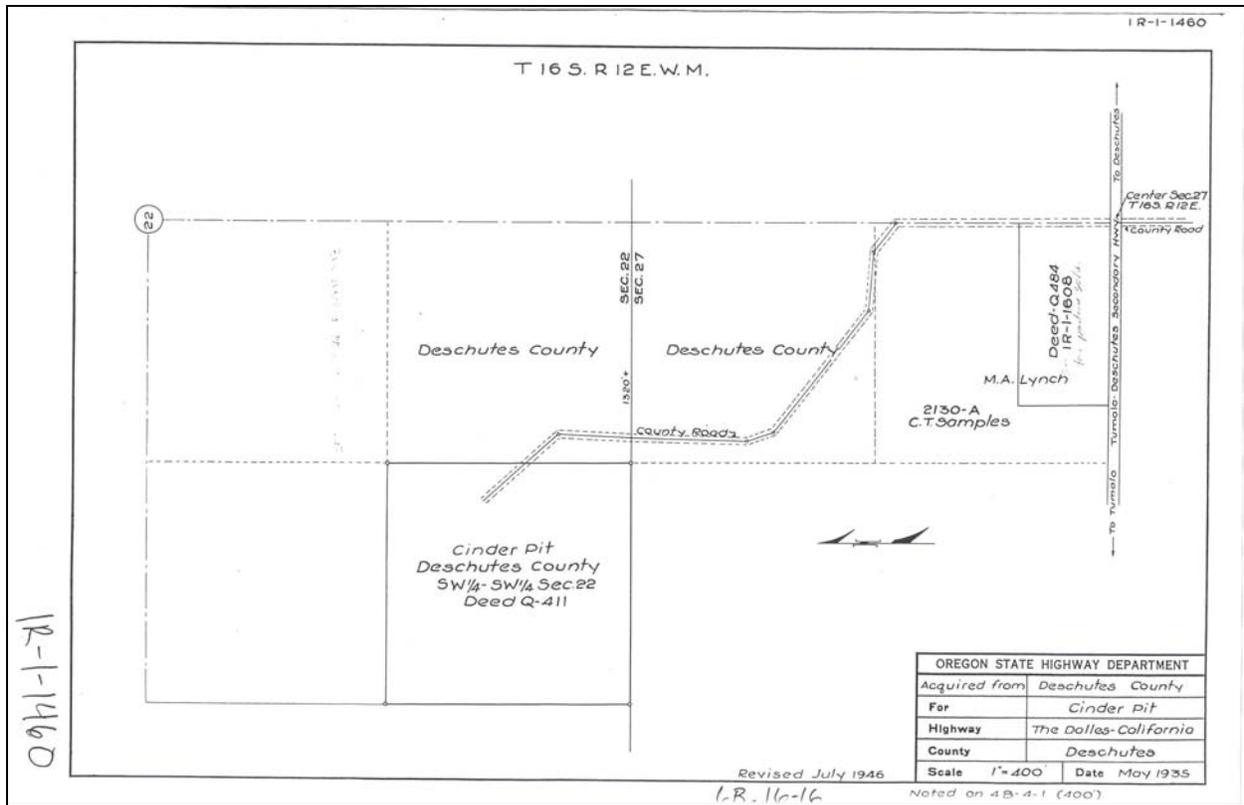


Aerial view of the borrow site located between the irrigation ditch and Young Road.

County	Site Name			Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes	Long Butte			10	0004	132.13	16	12.0E	22, 27
File ID		Source #	Date Visited		Map #		Type of Site		
02129, 02130, 03621, Q0350		09-072-4	8/26/1999		1R-1-1460, 1R-1-1324		Cinder Pit		
Latitude		Longitude	Elev. (m)	Acreage	Pit Size		DOGAMI Permit #		
44 10'08.25093"		121 16'46.70033"	1020.395	42.59	<20		09-0002		
Comments									
GPS acquired in the pit.									
Rock Type		Unit	Color		Weathering		Jointing		
Cinder		QTp	NA		NA		NA		
Quality				Hardness	lbs./cu ft.	Reserve (cy)		Reserve (Tons)	
Good				NA	120	320,000		518,400	
Potentially Significant Site		Why			Open/Closed		Direction		
No		NA			Closed		NA		
Adjacent Land Use									
Residential									
Remarks									
This site is located north of the Tumalo-Deschutes Highway about one mile. The material here is a very good source for cinder. It appears to be very clean with little waste. There is no screening here, but ample room to work. The site is surrounded by residential homes. Our property is bound on the north and east by private quarries. The quantity is based on ten foot lifts per twenty acres. The northern boundary of the pit is at the property line. We would need to survey this site and develop a plan to continue removing sanding material from here. There is a private site adjacent to the north and west of our ground. The county was removing material from our ground the day I was there. There is a small area at the northeast corner of our property that has a thin basalt flow that could be removed for aggregate if the need ever arose. The south/south west portion of the property is flat undisturbed and could account for more sanding material.									
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.	
	2.75	69.0							
Material Use									
SAND AG; Oil Rock (1955)									



Looking to the north at Long Butte and the disturbance at this location.



Aerial view of Long Butte and the surrounding property.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes					10	0373	5.74	16S	12.0E	08
File ID		Source #	Date Visited	Map #		Type of Site				
12232		09-073-4	8/26/1999	1R-2-1642		Borrow				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
44 12'28.61185"	121 19'07.43829"	969.687	10	<2						
Comments										
GPS acquired along Cline Falls Highway and access point.										
Rock Type	Unit	Color	Weathering			Jointing				
Volcanic Gravel	Ts	NA	NA			NA				
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Fair to Poor			NA	120	110,000	178,200				
Potentially Significant Site	Why			Open/Closed	Direction					
No	Not much aggregate at this location.			Closed	NA					
Adjacent Land Use										
Residential homes on acreage surround the property.										
Remarks										
This site is adjacent and east of Kline Falls Highway. The material is composed of poorly sorted, rounded to well-rounded heterogeneous mix of gravel (20%) and sand (80%). The dominant size gravel is around 1 centimeter with the largest in the boulder category. There is no screening and plenty of room to work. This site appears to be used for a waste site. Someone has installed a electric fence around our property.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
	2.57	28.2								
Material Use										
Topping and Oil Rock (1946)										

SE

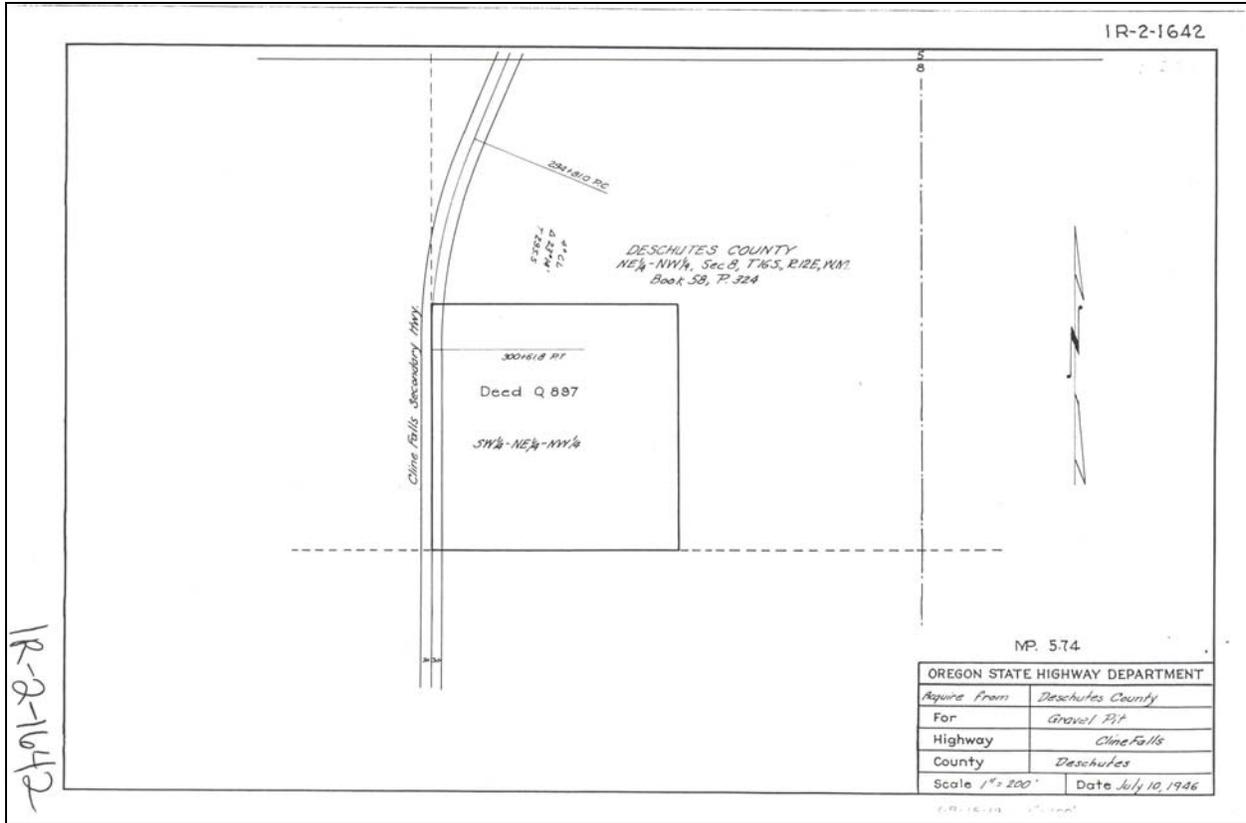
W



Looking to the southwest at the borrow site along Kline Falls Highway.



Close-up of the volcanic material and the bedding planes at this location with the hammer for scale.



Aerial view of the borrow site in relation to the surrounding property.

County	Site Name				Dist	Hwy	Mile Pt	TWP	RGE	Sect
Deschutes	Century Drive Gravel Pit				10	0372	7.77	18S	11.0E	21
File ID		Source #	Date Visited	Map #		Type of Site				
08702		09-079-4	8/26/1999	1R-2-1089		Borrow				
Latitude	Longitude	Elev. (m)	Acreage	Pit Size	DOGAMI Permit #					
43 59'36.8789"	121 25'01.55368"	1237.072	80	<30	09-0076					
Comments										
GPS acquired in the pit.										
Rock Type	Unit	Color	Weathering		Jointing					
Volcanic Gravel	QTba	NA	NA		NA					
Quality			Hardness	lbs./cu ft.	Reserve (cy)	Reserve (Tons)				
Good			NA	120	20,000	32,400				
Potentially Significant Site	Why	Open/Closed	Direction							
No	Borrow site	Closed	The Deschutes River is to the east approximately 1000 meters.							
Adjacent Land Use										
Forest Service Ground										
Remarks										
This site is located adjacent to and south east of Century Drive. The material at this site is well-rounded gravel (50%), and sand/silt (50%). The dominant size is around cobble (12 cm), with a high percentage of pea gravel. The property has plenty of room to work with fair screening and no overburden. This ground is leased from the Forest Service and is all but depleted. There is still timber (pine) on the property. The terrain is flat. There is no gate or fencing for this site. When I visited this site Maintenance was using it for training on there graders.										
202B	203B	211	206 Fine	206 Coarse	208 F	208 F Ht.	208 C	208 C Ht.		
2.56	2.61	25.2	4.0	2.6			10.5	0.3		
Material Use										
AC BASE (1991)										

NW

SE



Panoramic view of the gravel/borrow site south of Century Drive.



Close-up view of the volcanic gravel at this location, with the hammer for scale.