



STORMWATER MANAGEMENT & EROSION CONTROL PLAN

Ontivity Fiber Hut - Blanchard
32622 Highway 41, Blanchard
Bonner County, Idaho

January 23, 2026

PROJECT LOCATION: The project location is legally described as Lot 1 of Hoodoo View Acres located in Section 24, Township 55 North, Range 6 West, Boise Meridian, Bonner County, Idaho. The address associated with the parcel is 32622 Highway 41, in Blanchard, Idaho.

PROJECT DESCRIPTION: To be permitted to construct a fiber utility hut within a 75 ft x 90 ft lease area within the project location as described above. Site improvements consist of a 432 square foot (sf) equipment shelter, two (2) fiber vaults, a concrete generator pad, a gravel compound area, and extending the existing gravel driveway. The proposed stormwater plan also accounts for the future site improvements that consist of an additional 432 sf equipment shelter and a concrete generator pad. The existing overall parcel is 7.20 acres owned by Yount Properties, LLC. The parcel consists of multiple existing structures consisting of a barn, storage units, sheds and corrals. There is an existing gravel driveway and gravel storage area. The remainder of the parcel is vacant and covered in grasses. The overall parcel consists of mild slopes with McDonald Creek running through the southeast corner of the property. The 6,750 sf lease area is flat and vacant and located in the southwest corner of the property.

SOIL TYPE/SITE CHARACTERISTICS: The Natural Resources Soil Conservation Service (NRCS) Web Soil Survey lists soils on the parcel as Bonner gravelly ashy silt loam type. The NRCS lists the above soil type as hydrologic soil group B therefore, an infiltration rate of 0.57 inches/hour associated with hydrologic soil group B was utilized for the stormwater analysis on this site. The typical subsurface profile for the on-site soil is reported as follows:

Bonner gravelly ashy silt loam (0-4% slopes)
0-1 in: organic material
1-22 in: gravelly ashy silt loam
22-30 in: gravelly loam
30-60 in: very gravelly loamy sand

The above soil type is well-draining and appears to be consistent with surrounding parcels.

STORMWATER CRITERIA AND METHODOLOGY: Bonner County regulations state that stormwater shall not leave any site faster than the pre-development peak flow rate for a 25-year storm event. The first 0.5 inches of runoff from new impermeable surfaces must also be treated. The parcel was divided into four (4) basins, however, only one basin will contain any improvements. Therefore, Basin 1 is the only basin that was analyzed for stormwater runoff storage and treatment volumes as the other basins will remain unchanged. Storage and treatment of runoff for Basin 1 will be attained using a grassed infiltration area (GIA) that will run alongside the expanded and transversely sloped gravel driveway. Runoff from the structure and concrete pad will be captured in three (3) gravel drains that will direct flow to the GIA. Runoff from the gravel compound will be graded to sheet flow to the GIA. Overall development of the basin will continue to route runoff as it has historically. The attached Stormwater Plans shows the relationship of the impervious surfaces to the stormwater features.

EROSION/SEDIMENTATION: Temporary erosion and sedimentation control will be accomplished using straw wattles constructed and maintained before the point of discharge as described on the plans. All barriers will be installed prior to construction, placed perpendicular to the line of flow, and inspected and maintained by the contractor until vegetation has been reestablished and the

stormwater system is in place. All disturbed areas will be vegetated or improved according to the plans. Vehicle track-out control will be attained with a temporary gravel construction entrance to the site.

OPERATION AND MAINTENANCE PLAN: To keep erosion to a minimum, stormwater feature areas to be vegetated will be seeded and mulched upon final grading. Newly planted areas will be inspected after large storms for erosion until well established. Eroded areas will be replaced. At a minimum, site inspections are to take place once every 7 days, within 24 hours of an anticipated storm event of 0.5 inches or greater, and within 24 hours of the end of a storm event of 0.5 inches or greater. The contractor will be responsible for maintenance of the system.

CONSTRUCTION SCHEDULE: Erosion control measures are to be installed in Spring of 2026 followed by the grassed infiltration area and impervious site improvements. Final project completion and site stabilization is expected in the Spring of 2026.

STORMWATER SYSTEM CALCULATIONS SUMMARY: The Rational Method with a 25-year return period was used for calculations in conjunction with the ITD Zone C intensity-duration-frequency curve. The Bowstring Method was used to determine the required detention volume. Below is a table summary of the stormwater analysis for Basin 1. See attached calculations for additional information.

BASIN	Pre-Dev Peak Flow (cfs)	Post-Dev Peak Flow (cfs)	Required Detention Vol. (CF)	Required Treatment Vol. (CF)	Detention Vol. Provided by GIA (CF)
1	0.29	0.43	82	188	189

The attached plan and this document were prepared by the undersigned, whose seal as a licensed professional engineer, is affixed below.

CLEARWATER ENGINEERING, LLC



Nicole M. Costello, P.E.
Managing Member, Project Engineer



1/23/26

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STORMWATER ANALYSIS

Rational Method for Runoff Calculations

Pre-Development - Basin 1

Water Quantity Storm

25 year -----

Surface Type	Area A (ft ²)	Area A (Acres)	Runoff Coefficient C
Unimproved Area	20,606	0.473	0.15
Gravel/Compacted Dirt	1,735	0.040	0.85
Roof/Concrete	-	0.000	0.95
Totals	22,341	0.513	

Weighted Runoff Coefficient, C = 0.204
i = 2.8 in/hr

TIME OF CONCENTRATION:

$$tc = [(Ct (Ln/S^{(1/2)}))]^{0.6}$$

Ct = 0.15 for overland flow
L = 91 ft
n = 0.40 for grass
S = 0.027 ft/ft

tc1 = 3.83 min

tc = $\Sigma(tc1) = 3.83$ min *Use 5 minute minimum

Peak Runoff, Qp = CiA

Qp = 0.29 cfs

Post-Development - Basin 1

Water Quantity Storm

25 year -----

Surface Type	Area A (ft ²)	Area A (Acres)	Runoff Coefficient C
Unimproved Area	17,840	0.410	0.15
Gravel/Compacted Dirt	3,283	0.075	0.85
Roof/Concrete	1,218	0.028	0.95
Totals	22,341	0.513	

Weighted Runoff Coefficient, C = 0.296
i = 2.8 in/hr

TIME OF CONCENTRATION:

$$tc = [(Ct (Ln/S^{(1/2)}))]^{0.6}$$

Ct = 0.15 for overland flow
L = 82 ft
n = 0.02 for gravel
S = 0.027 ft/ft

tc1 = 0.60 min

tc = $\Sigma(tc1) = 0.60$ min *Use 5 minute minimum

Peak Runoff, Qp = CiA

Qp = 0.43 cfs

Impervious surfaces to be treated= 4,501 sf

Required Treatment Volume (1st 1/2")= 188 cf

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BOWSTRING METHOD - Basin 1

DETENTION BASIN DESIGN									
Within Property Boudaries									
Volume In = 1.34 * Q dev.* t				(t <= tc)					
Volume In = (Q dev. * t) + (0.34 * Q dev.* Tc*60)				(t > tc)					
Volume Out = Q max + Swale Infiltration									
Q max = Min(Q dev, Q pre)									
Time Increment (min.)	5								
Time of Concentration, tc (min.)	5								
Pre-Dev. Outflow, Q pre	0.29								
Design Year Flow (yr.)	25								
Area (acres)	0.513								
Developed "C" factor	0.296								
Area X "C"	0.152								
Infiltration (in/hr)	0.57								
Swale Area (sf)	518								
	Time Inc. (min.)	Time Inc. (sec.) t	Intensity (in./hr.) i	Q dev. (cfs) AxCx _i	Volume in (cu. ft.)	Q max (cfs)	Infiltration (cu.ft.)	Volume out (cu.ft.)	Storage (cu. ft.) V _{in} -V _{out}
5	300	2.80	0.43	171	0.29	2	89	82	
10	600	2.10	0.32	224	0.29	4	178	46	
15	900	1.70	0.26	259	0.26	6	238	20	
20	1200	1.60	0.24	316	0.24	8	300	17	
25	1500	1.40	0.21	341	0.21	10	329	11	
30	1800	1.20	0.18	347	0.18	12	340	6	
35	2100	1.10	0.17	368	0.17	14	365	3	
40	2400	0.95	0.14	361	0.14	16	363	2	
45	2700	0.90	0.14	383	0.14	18	387	5	
50	3000	0.87	0.13	410	0.13	20	417	7	
55	3300	0.85	0.13	439	0.13	23	448	9	
60	3600	0.78	0.12	438	0.12	25	451	13	
65	3900	0.75	0.11	456	0.11	27	471	15	
70	4200	0.70	0.11	457	0.11	29	475	18	
75	4500	0.69	0.10	482	0.10	31	502	20	
80	4800	0.67	0.10	499	0.10	33	521	22	
85	5100	0.65	0.10	513	0.10	35	538	25	
90	5400	0.63	0.10	526	0.10	37	553	27	
95	5700	0.60	0.09	529	0.09	39	558	30	
100	6000	0.59	0.09	547	0.09	41	579	32	
105	6300	0.58	0.09	564	0.09	43	598	34	
110	6600	0.55	0.08	560	0.08	45	596	37	
115	6900	0.52	0.08	553	0.08	47	592	39	
	120	7200	0.50	0.08	554	0.08	49	596	41
	240	14400	0.33	0.05	727	0.05	98	820	93
	480	28800	0.22	0.03	966	0.03	197	1,159	193
	720	43200	0.17	0.03	1,118	0.03	295	1,410	292
	1440	86400	0.11	0.02	1,379	0.02	590	1,968	588

Detention Required = 82 cf

Swale Specifications	
Swale Length, L	84 ft
Swale Bottom Width, W	3 ft
Swale Depth, D	0.5 ft
Swale Side Slope	3:1
Swale Cross-Sectional Area, A	2.25 sf
Swale Wetted Perimeter, P	6.16 ft
Swale Total Surface Area, SA = P*L	518 sf
Swale Total Storage Volume, V =A*L	189 cf