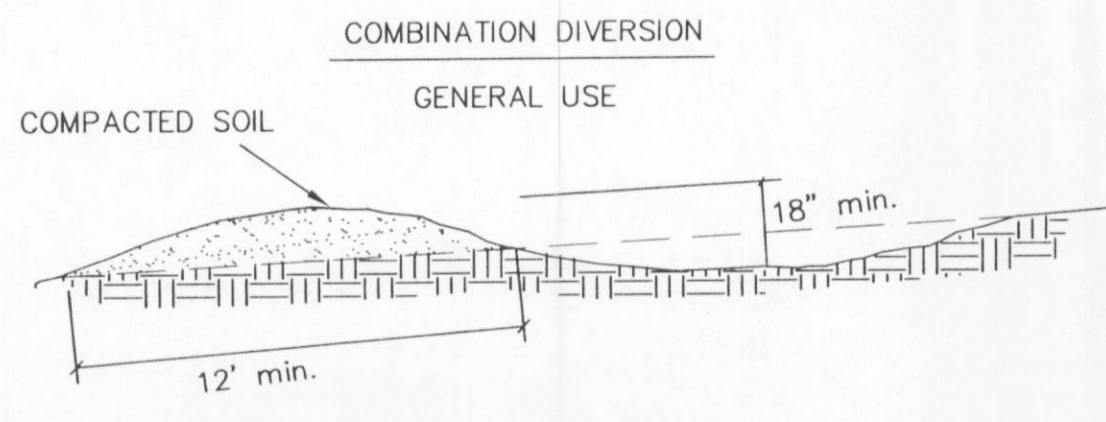
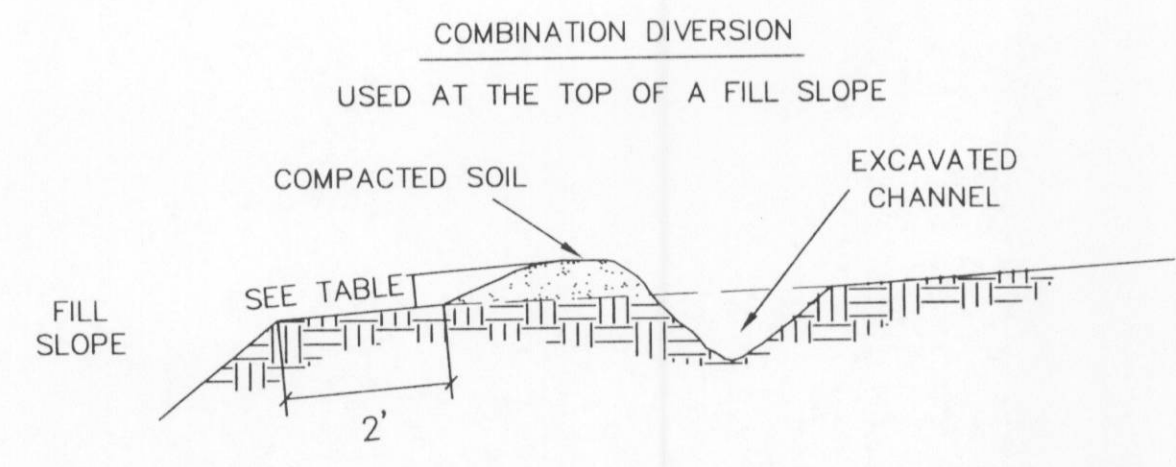


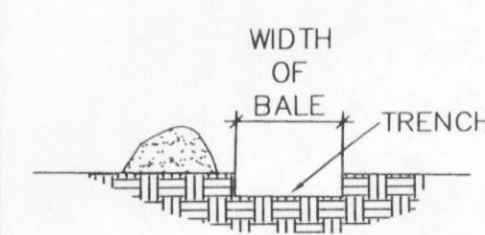
DIVERSIONS  
For Urban Development Sites  
APPENDIX B

\*\* Outlets for diversions must be stable. Stable outlets consist of grass waterways, earthen channels with capacity adequate to prevent gully erosion, grade stabilization structures or other practices as approved by the Designated Official.

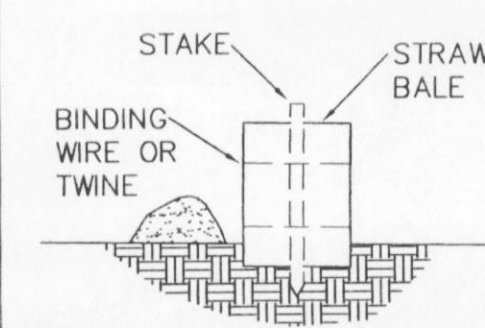


DIVERSION SWALES

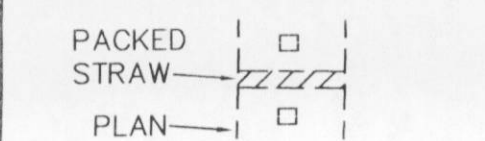
NOT TO SCALE



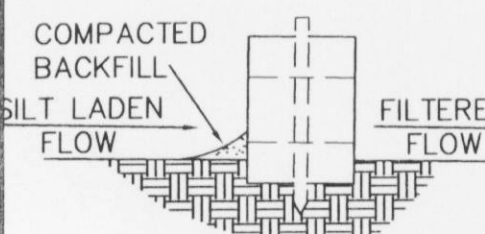
1 EXCAVATE A TRENCH 4" DEEP AND THE WIDTH OF A STRAW BALE



2 PLACE AND STAKE STRAW BALES, TWO STAKES PER BALE



3 WEDGE LOOSE STRAW BETWEEN BALES TO CREATE A CONTINUOUS BARRIER



4 BACKFILL AND COMPACT THE EXCAVATED SOIL AS SHOWN ON THE UPHILL SIDE OF THE BARRIER TO PREVENT PIPING

STRAW BALE BARRIER  
SILT BARRIER AND DITCH CHECK

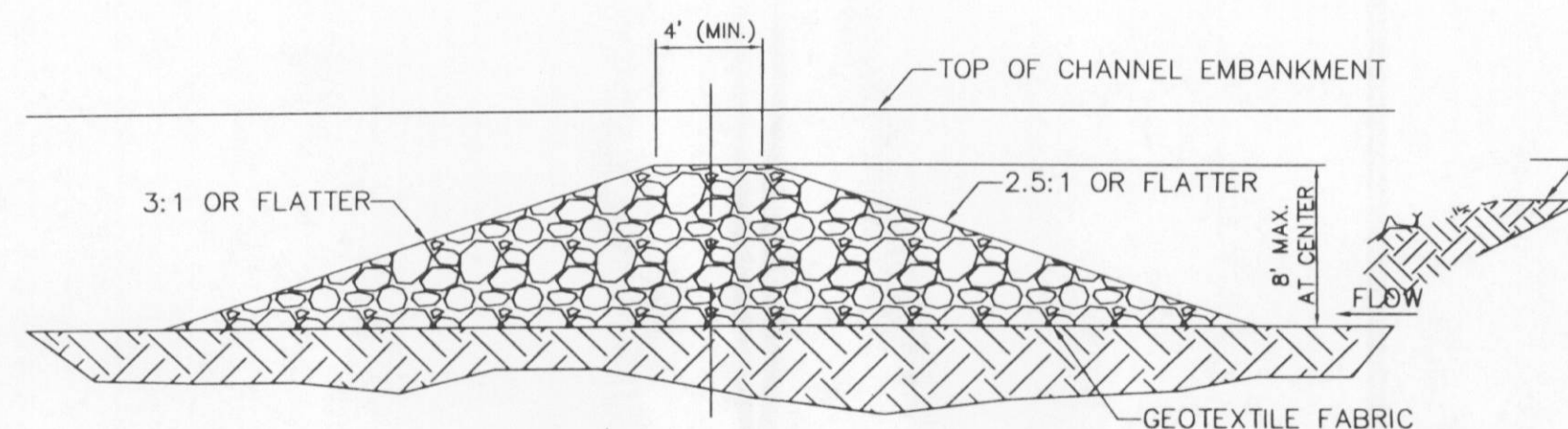
NOT TO SCALE



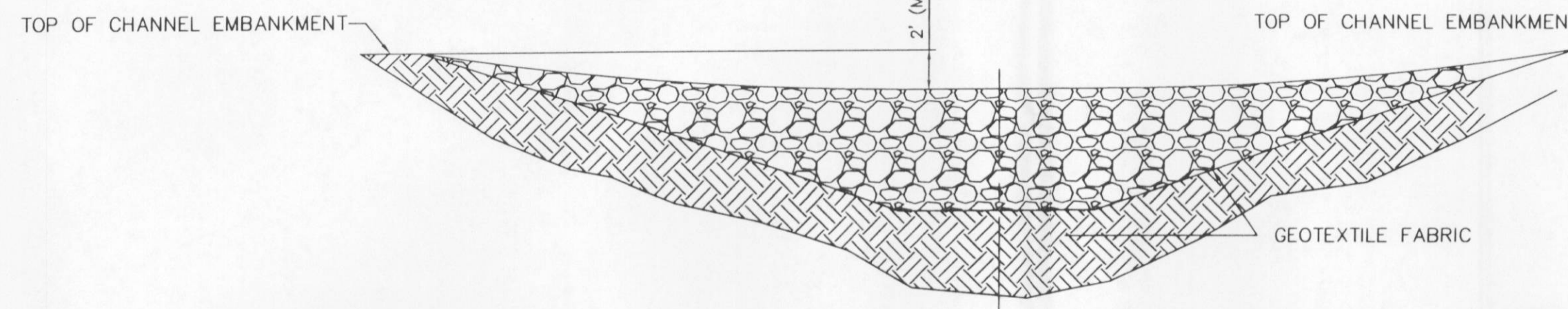
Missouri One Call System, Inc.  
Call Before You Dig!  
1-800-DIG-RITE  
(1-800-344-7483)

All the improvements & facilities and utilities, above ground and underground shown herein were plotted from available information and do not necessarily reflect the actual existence, nonexistence, elevation, size, type, number or location of these or other improvements, facilities, or utilities. The General Contractor and/or owner shall be responsible for verifying the actual location & elevation of all improvements, facilities, & utilities, shown or not shown, and said improvements, facilities, & utilities shall be located in the field prior to any grading, excavation or construction of any improvements. These provisions shall in no way absolve any part from complying with the Underground Facility Safety & Damage Prevention Act, Chapter 319, RSMo.

CALL MISSOURI ONE-CALL, 1-800-DIG-RITE.



PROFILE



ELEVATION

ROCK DAM DETAILS  
(INSTALLATION IN DRAINAGE CHANNEL)

NOT TO SCALE

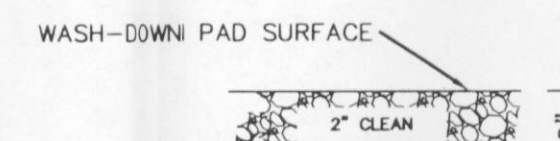
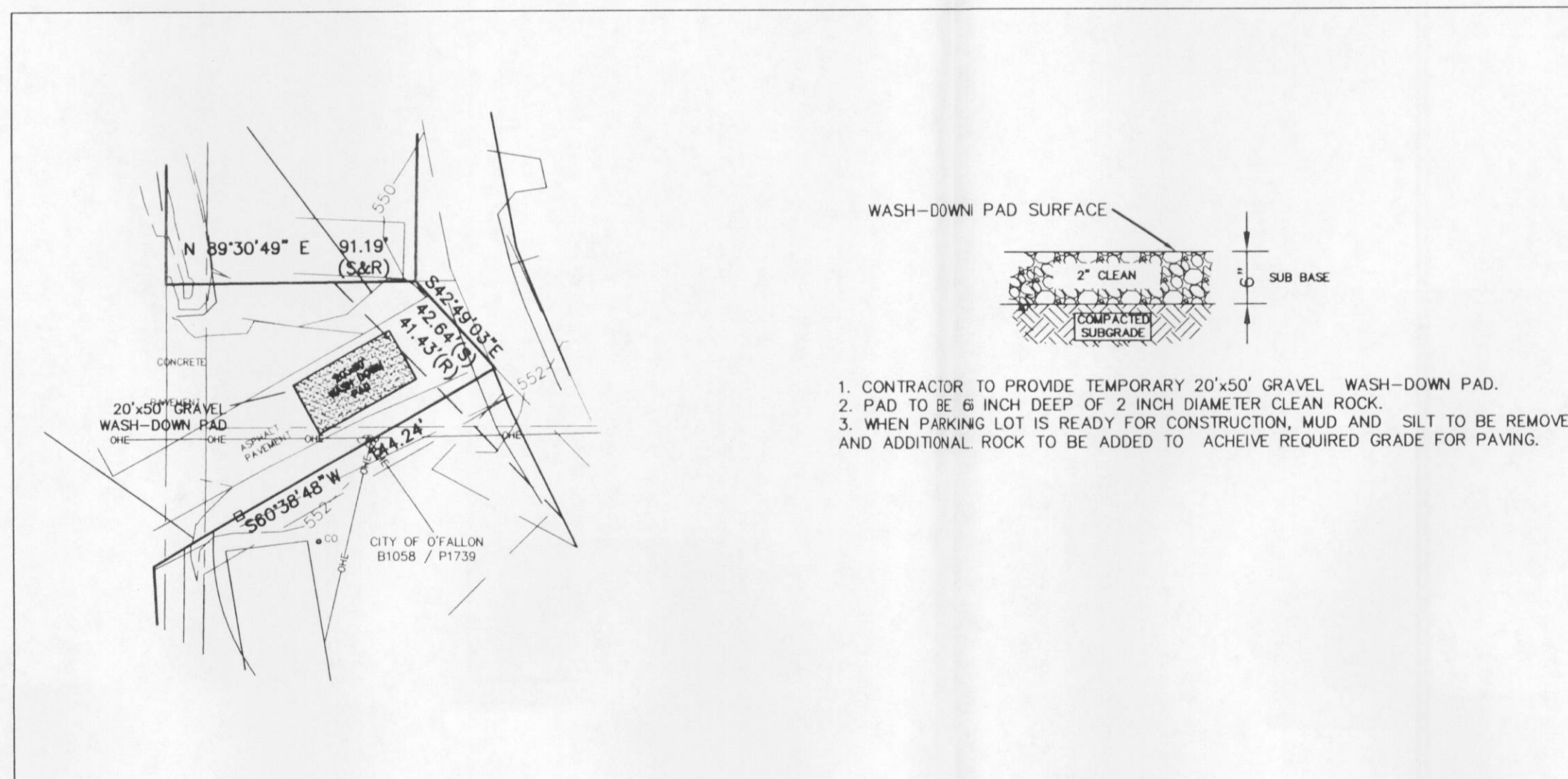
ROCK DAM SPECIFICATIONS

**DESCRIPTION:** This work shall consist of furnishing, installing, maintaining and, when required, removal of the temporary rock dam. The dam shall be used as a barrier placed perpendicular to the flow of water in a defined drainage channel to minimize erosion and contain sediment. This dam shall be installed and located as soon as construction will allow or as directed by the Engineer.

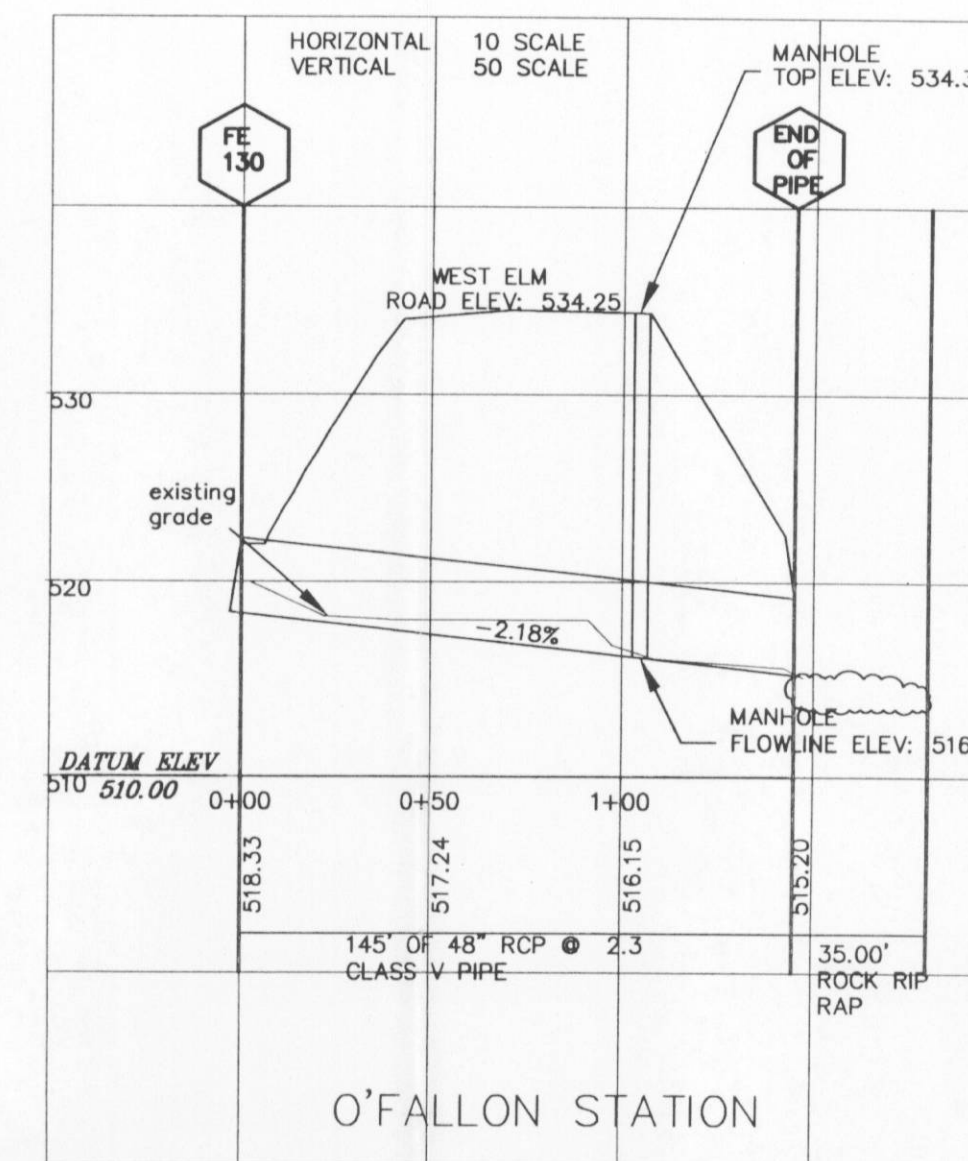
**MATERIALS:** The woven geotextile fabric shall be Webtech j-2 or Mrafi 500x, or equal. Rock shall be crushed limestone, consisting of a well graded mixture of stone. Larger stones shall predominate, with sufficient smaller sizes to fill the voids between the stones.

**EXECUTION:** The Contractor shall determine the exact location of all underground utilities which could be affected by the construction of the dam. He shall follow all State and local requirements for impoundment sites. The Contractor shall clear and grub the area under the dam, removing and disposing of all root material, brush and other debris. He shall grade the earth abutments no steeper than 3 horizontal to 1 vertical and shall provide a smooth foundation. The entire foundation, including both earth abutments shall be covered with the geotextile fabric, making sure that the upstream strips overlap the downstream strips at least one (1) foot, and that the upslope ends are keyed in. The Contractor shall construct the dam to the indicated dimensions.

**MAINTENANCE:** The Owner and/or Contractor shall inspect the dam after each rainfall event of at least 0.5 inches or greater. Any deficiencies or damage shall be repaired by the Contractor. Accumulated silt and or debris shall be removed and relocated as directed by the Engineer. At no time shall the sediment be allowed to build up more than one half (1/2) the height of the rock dam. If the dam is damaged or inadvertently moved during the silt removal process, the Contractor shall immediately replace the dam after damage occurs. Once the grading operation is complete and vegetation has been established, the Contractor shall be responsible for removal of the dam.



1. CONTRACTOR TO PROVIDE TEMPORARY 20'x50' GRAVEL WASH-DOWN PAD.
2. PAD TO BE 6 INCH DEEP OF 2 INCH DIAMETER CLEAN ROCK.
3. WHEN PARKING LOT IS READY FOR CONSTRUCTION, MUD AND SILT TO BE REMOVED AND ADDITIONAL ROCK TO BE ADDED TO ACHIEVE REQUIRED GRADE FOR PAVING.



West Elm 48" RCP Culvert Calculator

Drainage Area:	13.2 Acres
Multi-Family:	14.6 Acres
Commercial:	4.6 Acres
Open Area:	60.85 CFS
13.2 Ac X 4.61 CFS/Ac:	78.55 CFS
14.6 Ac X 5.38 CFS/Ac:	12.00 CFS
4.6 Ac X 2.61 CFS/Ac:	151.40 CFS
TOTAL CFS:	

Entered Data:

Shape:	Circular
Number of Barrels:	1
Solving for:	Headwater
Chart Number:	8
Scale Number:	3
Chart Description:	BOX CULVERT WITH FLARED WINGWALLS; NO INLET TOP EDGE BEVEL
Scale Description:	WINGWALLS FLARED 0 DEGREES (SIDES EXTENDED STRAIGHT)
Overlapping:	On
Flowrate:	152.0000 cfs
Manning's n:	0.0130
Roadway Elevation:	534.2500 ft
Inlet Elevation:	518.3300 ft
Outlet Elevation:	515.2000 ft
Diameter:	4.0000 ft
Length:	145.0000 ft
Entrance Loss:	0.0000
Tailwater:	2.2800 ft

Computed Results:

Headwater:	527.7556 ft Inlet Control
Slope:	0.0216 ft/ft
Velocity:	18.2945 fps

Messages:

Computing Inlet Control headwater.  
Solving Inlet Equation 26.  
Solving Inlet Equation 28.  
Headwater: 527.7556 ft

DIS-CHARGE	HEAD- WATER CONTROL	INLET CONTROL	OUTLET CONTROL	FLOW DEPTH	NORMAL DEPTH	CRITICAL DEPTH	VEL. DEPTH	OUTLET DEPTH	TAILWATER DEPTH
Flow cfs	ELEV. ft	DEPTH ft	DEPTH ft	DEPTH ft	DEPTH ft	DEPTH ft	fps	DEPTH ft	DEPTH ft
2.16	518.89	0.56	0.00	NA	0.29	0.42	5.43	0.29	0.00
4.32	519.16	0.83	0.00	NA	0.40	0.60	6.70	0.40	0.00
6.48	519.37	1.04	0.00	NA	0.48	0.74	7.57	0.48	0.00
8.64	519.55	1.21	0.00	NA	0.55	0.85	8.25	0.55	0.00
10.80	519.71	1.38	0.00	NA	0.61	0.96	8.82	0.61	0.00
12.96	519.86	1.53	0.00	NA	0.67	1.05	9.31	0.67	0.00
15.12	520.00	1.67	0.00	NA	0.72	1.14	9.74	0.72	0.00
17.28	520.13	1.80	0.00	NA	0.77	1.22	10.13	0.77	0.00
19.44	520.26	1.93	0.00	NA	0.82	1.30	10.49	0.82	0.00
21.60	520.38	2.05	0.00	NA	0.86	1.37	10.82	0.86	0.00
23.76	520.49	2.16	0.00	NA	0.91	1.44	11.12	0.91	0.00
25.92	520.60	2.27	0.00	NA	0.95	1.51	11.41	0.95	0.00
28.08	520.71	2.38	0.00	NA	0.98	1.57	11.68	0.98	0.00
30.24	520.81	2.48	0.00	NA	1.02	1.63	11.93	1.02	0.00
32.40	520.91	2.58	0.00	NA	1.06	1.69	12.17	1.06	0.00
34.56	521.01	2.68	0.00	NA	1.09	1.75	12.40	1.09	0.00
36.72	521.11	2.78	0.00	NA	1.13	1.81	12.61	1.13	0.00
38.88	521.20	2.87	0.00	NA	1.16	1.86	12.82	1.16	0.00
41.04	521.30	2.97	0.00	NA	1.20	1.91	13.02	1.20	0.00
43.20	521.39	3.06	0.00	NA	1.23	1.97	13.21	1.23	0.00
45.36	521.48	3.15	0.00	NA	1.26	2.02	13.39	1.26	0.00
47.52	521.56	3.23	0.00	NA	1.29	2.07	13.57	1.29	0.00
49.68	521.65	3.32	0.00	NA	1.32	2.11	13.74	1.32	0.00
51.84	521.74	3.41	0.00	NA	1.35	2.16	13.90	1.35	0.00
54.00	521.82	3.49	0.00	NA	1.38	2.21	14.06	1.38	0.00
56.16	521.91	3.58	0.00	NA	1.41	2.25	14.21	1.41	0.00
58.32	521.99	3.66	0.00	NA	1.44	2.30	14.36	1.44	0.00
60.48	522.07	3.74	0.00	NA	1.46	2.34	14.51	1.46	0.00
62.64	522.15	3.82	0.00	NA	1.49	2.39	14.65	1.49	0.00
64.80	522.24	3.91	0.00	NA	1.52	2.43	14.78	1.52	0.00
66.96	522.32	3.99	0.00	NA	1.55	2.47	14.92	1.55	0.00
69.12	522.40	4.07	0.00	NA	1.57	2.51	15.05	1.57	0.00
71.28	522.47	4.14	0.00	NA	1.60	2.55	15.17	1.60	0.00
73.44	522.55	4.22	0.00	NA	1.63	2.59	15.29	1.63	0.00
75.60	522.63	4.30	0.00	NA	1.65	2.63	15.41	1.65	0.00
77.76	522.71	4.38	0.00	NA	1.68	2.67	15.53	1.68	0.00
79.92	522.79	4.46	0.00	NA	1.71	2.71	15.64	1.71	0.00
82.08	522.86	4.53	0.00	NA	1.73	2.75	15.75	1.73	0.00
84.24	522.94	4.61	0.00	NA	1.76	2.78	15.86	1.76	0.00
86.40	523.02	4.69	0.00	NA	1.78	2.82	15.97	1.78	0.00
88.56	523.10	4.77	0.00	NA	1.81	2.85	16.07	1.81	0.00
90.72	523.18	4.85	0.00	NA	1.83	2.89	16.17	1.83	0.00
92.88	523.26	4.93	0.00	NA	1.86	2.92	16.27	1.86	0.00
95.04	523.34	5.01	0.00	NA	1.88	2.96	16.37	1.88	0.00
97.20	523.42	5.09	0.00	NA	1.91	2.99	16.46	1.91	0.00
99.36	523.50	5.17	0.00	NA	1.93	3.02	16.55	1.93	0.00
101.52	523.58	5.25	0.00	NA	1.95	3.05	16.64	1.95	0.00
103.68	523.66	5.33	0.00	NA	1.98	3.08	16.73	1.98	0.00
105.84	523.74	5.41	0.00	NA	2.00	3.11	16.82	2.00	0.00
108.00	523.82	5.49	0.00	NA	2.03	3.14	16.90	2.03	0.00
110.16	523.90	5.57	0.00	NA	2.05	3.17	16.99	2.05	0.00
112.32	523.98	5.65	0.00	NA	2.07	3.20	17.07	2.07	0.00
114.48	524.06	5.73	0.00	NA	2.10	3.23	17.15	2.10	0.00
116.64	524.14	5.81	0.00	NA	2.12	3.26	17.23	2.12	0.00
118.80	524.22	5.89	0.00	NA	2.15	3.28	17.30	2.15	0.00
120.96	524.30	5.97	0.00	NA	2.17	3.31	17.38	2.17	0.00
123.12	524.38	6.05	0.00	NA	2.19	3.34	17.45	2.19	0.00
125.28	524.46	6.13	0.00	NA	2.21	3.36	17.51	2.21	0.00

O'FALLON LUMBER-GENTEMAN TRACT  
GRADING SPECIFICATIONS AND DETAILS  
04126 NOVEMBER 10, 2004

January 3, 2005  
July 7, 2005  
July 19, 2005

ENGINEERS CERTIFICATION:  
The following applies to ALL sheets and documents involved in the preparation of the plans and documents for this project. The responsibility for Professional Engineering liability on this project is limited to the set of plans displaying the signature and an original stamped seal of the Engineer on each sheet. ALL responsibility is Disclaimed: until ALL review agency approvals are granted; for all other plan sheets issued prior to this plan set date; for this set when another set is issued after this date; if the sheets are used individually instead of a set. This applies for ALL sheets and documents involved in this project whether this statement appears on them or not. Copyright. All Rights Reserved.

STATE OF MISSOURI  
ROBERT E. BAXTER  
REGISTERED PROFESSIONAL ENGINEER  
NUMBER E-25639  
7/19/05  
ROBERT E. BAXTER # 25639 DATE

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