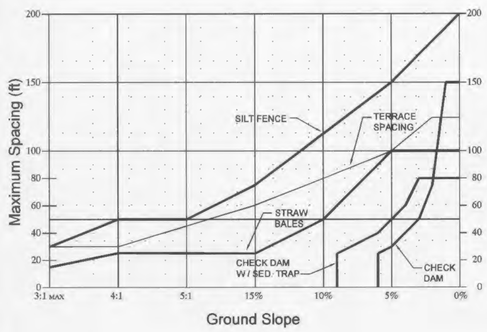
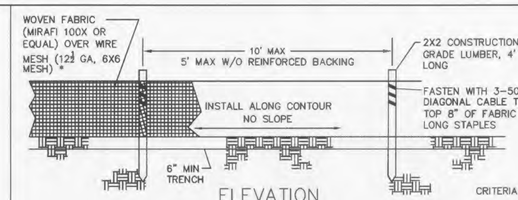


DESIGN CRITERIA

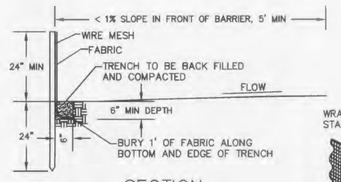
1. SILT FENCE FOR SHEET FLOW SHALL HAVE A MAXIMUM DRAINAGE AREA OF 1/4 ACRE PER 100 LF.
2. STRAW BALE BARRIERS FOR SHEET FLOW SHALL HAVE A MAXIMUM DRAINAGE AREA OF 1/4 ACRE PER 100 LF.
3. REFER TO INDIVIDUAL ESC FIGURE FOR INSTALLATION.
4. TERRACING INCLUDES LOGS, WATTLES & FILTER SOCKS.

CITY OF O'FALLON ENGINEERING DEPARTMENT O'FALLON, MISSOURI

SPACING CHART FOR ESC DEVICES

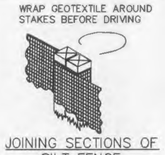


ELEVATION



SECTION

NOTE: IF FABRIC IS INSTALLED BY EQUIPMENT DESIGNED TO SLICE INTO THE GROUND, THE TRENCH IS NOT REQ'D.



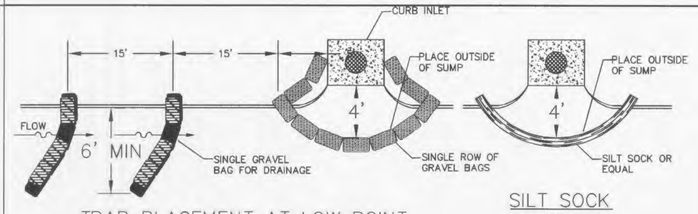
JOINING SECTIONS OF SILT FENCE

CRITERIA

1. SILT FENCE SHALL BE 24 INCHES HIGH.
2. SILT FENCE SHALL NOT BE USED FOR CONCENTRATED FLOWS.
3. GEOSYNTHETIC REINFORCED SILT FENCE BACKING MAY BE USED IN LIEU OF WIRE MESH.
4. WIRE MESH WILL BE USED AT LOCATIONS SHOWN ON THE APPROVED SWPPP.

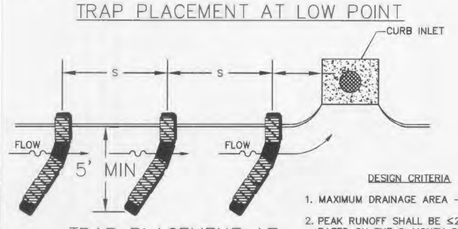
CITY OF O'FALLON ENGINEERING DEPARTMENT O'FALLON, MISSOURI

SILT FENCE INSTALLATION SHEET FLOW (ONLY)



TRAP PLACEMENT AT LOW POINT

SILT SOCK (ALTERNATIVE)



TRAP PLACEMENT AT INTERMEDIATE INLET

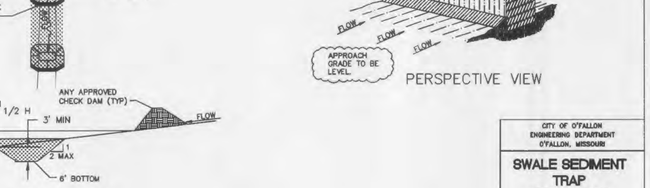
SPACING OF TRAPS	
GUTTER SLOPE	S
LOW PT	15'
1%	20'
2%	15'
3% MAX.	10'

DESIGN CRITERIA

1. MAXIMUM DRAINAGE AREA – 1 ACRE.
2. PEAK RUNOFF SHALL BE ≤2 CFS BASED ON THE 6-MONTH STORM.
3. STACK GRAVEL BAGS DOUBLE HIGH. PROVIDE GAP FOR DRAINAGE.

CITY OF O'FALLON ENGINEERING DEPARTMENT O'FALLON, MISSOURI

CURB INLET PROTECTION

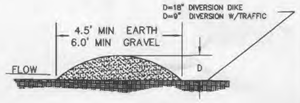


* PROVIDE AN ADDITIONAL 4" OF HEIGHT TO TOP IF BERM IS NOT MECHANICALLY COMPACTED.

DIVERSION BERM

DESIGN CRITERIA

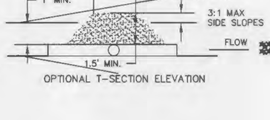
1. DIVERSIONS SHALL BE USED FOR DRAINAGE AREAS ≤ 3 ACRES.
2. DIVERSION CHANNELS SHALL BE DESIGNED TO CONVEY THE 6-MO STORM AT NON-EROSIVE VELOCITIES.
3. CRITICAL LOCATIONS SHALL BE DESIGNED FOR THE 15YR / 20Min. STORM.
4. MAXIMUM CHANNEL SLOPE OF 3% WITHOUT CHECK DAMS.
5. SWALE SEDIMENT TRAPS ARE TO BE USED IN HIGHLY EROSIVE AREAS.
6. CHANNELS SHALL BE PROTECTED USING APPROPRIATE CHANNEL LINERS.
7. CHANNEL OUTLETS MUST BE STABILIZED.
8. STORM SEWERS MAY BE USED IN LIEU OF OPEN CHANNELS.



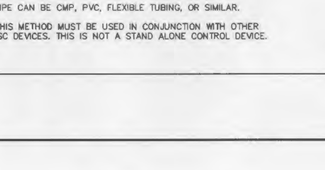
DIVERSION DIKE

CITY OF O'FALLON ENGINEERING DEPARTMENT O'FALLON, MISSOURI

DIVERSION BERMS + DIKES



CROSS SECTION

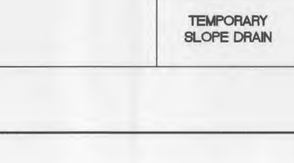


PROFILE

SAND BAG OR GRAVEL BAG CHECK DAM

LEVEL CENTER SECTION, WITH 12" RISE ON BOTH SIDES TO CAUSE FLOW OVER, NOT AROUND, CHECK DAM

CROSS SECTION



PROFILE

ROCK CHECK DAM

GRAVEL BAG

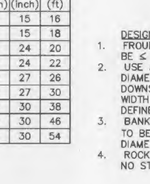
NOTE:
1. CHECK DAMS MAY BE CONSTRUCTED OF SEVERAL ESC CHECK DAM PRODUCTS.
2. SEE TABLE TO THE RIGHT FOR CHECK DAM SPACING.

CHECK DAM SPACING	
Ditch Slope	Maximum Spacing
3%	50%
2%	75%

CITY OF O'FALLON ENGINEERING DEPARTMENT O'FALLON, MISSOURI

CHECK DAMS

TRAPEZOIDAL DITCH

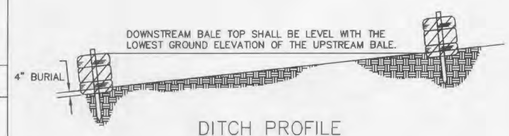


V-DITCH

CRITERIA FOR LOW CONCENTRATED FLOWS

1. DRAINAGE AREAS SHALL BE LESS THAN 1 ACRE.
2. INSTALL TWO STAKES PER BALE.
3. BALES WILL BE TRENCHED 4" DEEP INTO EARTH.
4. MAXIMUM CHANNEL SLOPE OF 3%.
5. SEDIMENTATION TRAPS TO BE USED IN HIGHLY EROSIVE AREAS.

CHECK DAM SPACING	
Ditch Slope	Maximum Spacing
3%	50%
2%	75%



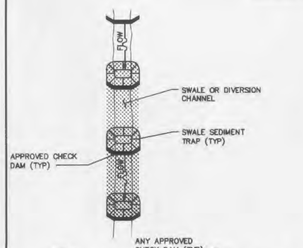
DITCH PROFILE

CITY OF O'FALLON ENGINEERING DEPARTMENT O'FALLON, MISSOURI

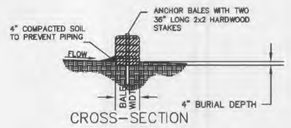
STRAW BALE CHECK DAM

CRITERIA

1. EXCAVATE TRENCH THE WIDTH OF THE BALE AT LEAST 4 INCHES DEEP AND LONG ENOUGH THAT THE END BALES ARE SOMEWHAT UPSLOPE.
2. REFER TO STRAW BALE CHECK DAM DETAIL FOR SPACING AND STRAW BALE USES AS DITCH CHECKS.
3. UPSLOPE FACE OF BALE MUST BE AT LEAST 5' FROM A DISTURBED EMBANKMENT.



DITCH PROFILE



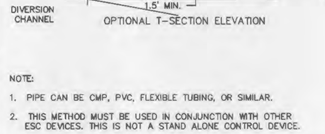
CROSS-SECTION

PERSPECTIVE VIEW

CITY OF O'FALLON ENGINEERING DEPARTMENT O'FALLON, MISSOURI

SWALE SEDIMENT TRAP STRAW BALE BARRIER INSTALLATION

PROFILE



OPTIONAL T-SECTION ELEVATION

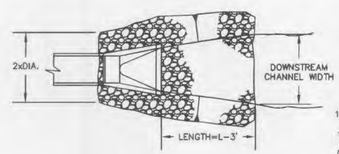
TYPICAL INSTALLATION

SLOPE DRAIN SIZE	
Drainage Area (ac)	Pipe Dia.
< 1.0	12"
< 2.0	15"
< 3.0	18"
< 4.0	21"
< 5.0	24"
< 6.5	27"
6.5-10	30"

NOTE:
1. PIPE CAN BE CMP, PVC, FLEXIBLE TUBING, OR SIMILAR.
2. THIS METHOD MUST BE USED IN CONJUNCTION WITH OTHER ESC DEVICES. THIS IS NOT A STAND ALONE CONTROL DEVICE.

CITY OF O'FALLON ENGINEERING DEPARTMENT O'FALLON, MISSOURI

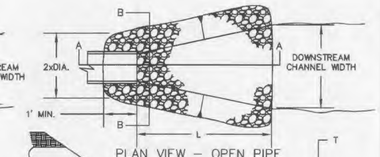
TEMPORARY SLOPE DRAIN



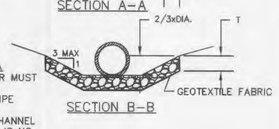
PLAN VIEW
W/FLARED END SECTION

RIPRAP SIZE & APRON DIMENSION								
PIPE SIZE	VELOCITY < 5 FPS				VELOCITY < 10 FPS			
	ROCK SIZE		APRON DIM		ROCK SIZE		APRON DIM	
	d_{50}	d_{MAX}	T	L	d_{50}	d_{MAX}	T	L
(inch)	(inch)	(inch)	(inch)	(ft)	(inch)	(inch)	(inch)	(ft)
12	5	9	15	12	5	9	15	16
15	5	9	15	14	5	9	15	18
18-24	5	9	15	16	9	14	24	20
27-30	5	9	15	18	9	14	24	22
36-42	9	14	24	22	12	18	27	26
48-54	9	14	24	26	12	18	27	30
60-66	12	18	27	34	15	24	30	38
72-84	15	24	30	42	15	24	30	46
96	18	27	30	50	18	27	30	54

d_{50} – NOMINAL DIAMETER
d_{MAX} – MAXIMUM DIAMETER
T – THICKNESS
L – LENGTH



SECTION A-A



SECTION B-B

DESIGN CRITERIA

1. FROUDE NUMBER MUST BE ≤ 2.50.
2. USE 3 TIMES PIPE DIAMETER FOR DOWNSTREAM CHANNEL WIDTH IF THERE IS NO DEFINED CHANNEL.
3. BANK PROTECTION HEIGHT TO BE 2/3 TIMES PIPE DIAMETER.
4. ROCK SLOPES SHALL BE NO STEEPER THAN 3:1.

CITY OF O'FALLON ENGINEERING DEPARTMENT O'FALLON, MISSOURI

TEMPORARY OUTLET PIPE DISCHARGE PROTECTION

PANERA BREAD BAKERY
CAFE #692
CONSTRUCTION PLANS

ST. CHARLES ENGINEERING & SURVEYING, INC.
801 S. FIFTH STREET, SUITE 202
ST. CHARLES, MO 63301
TEL: (636) 947-0607
FAX: (636) 947-3448

ENGINEER SIGNATURE BLOCK

STATE OF MISSOURI
MICHAEL NEWELL MEINERS
NUMBER E-22483
PROFESSIONAL ENGINEER
6/10/14
ELECTRONIC SEAL
MICHAEL NEWELL MEINERS
CIVIL ENGINEER PE-22483

Developer / Owner Information
K PROPERTIES HOLDINGS, LLC
1704 NORTH FOURTH STREET
ST. CHARLES, MO 63301
CONTACT: MIKE THOELE
(314) 220-1205

EROSION CONTROL DETAILS

P&Z No. 1812.03

Approval Date: 5/2/2013
City No. 14-63CP

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