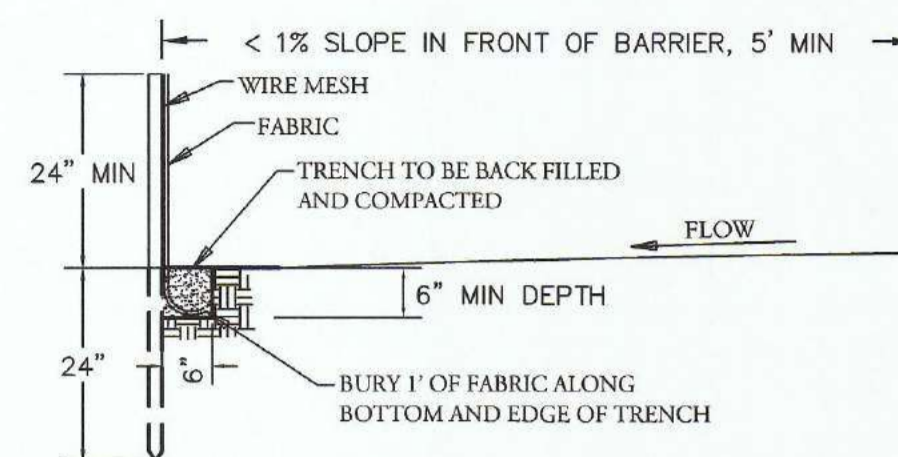
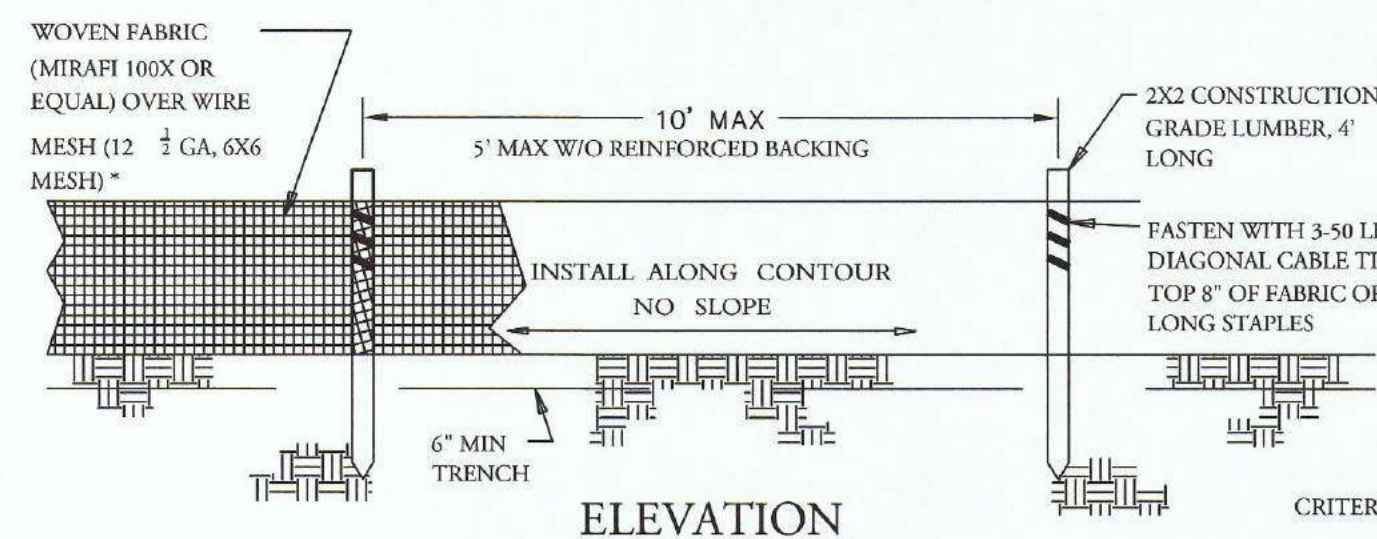
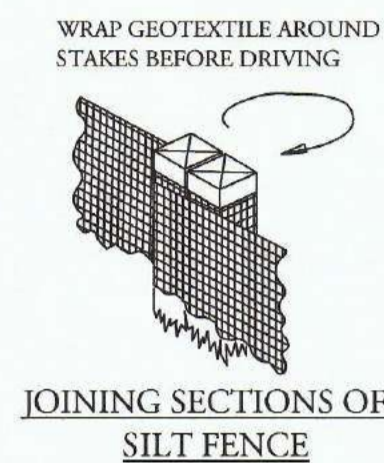


- DESIGN CRITERIA**
- SILT FENCE FOR SHEET FLOW SHALL HAVE A MAXIMUM DRAINAGE AREA OF 1/4 ACRE PER 100 LF.
  - STRAW BALE BARRIERS FOR SHEET FLOW SHALL HAVE A MAXIMUM DRAINAGE AREA OF 1/4 ACRE PER 100 LF.
  - REFER TO INDIVIDUAL ESC FIGURE FOR INSTALLATION.
  - TERRACING INCLUDES LOGS, WATTLES & FILTER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

SPACING CHART FOR ESC DEVICES



SECTION

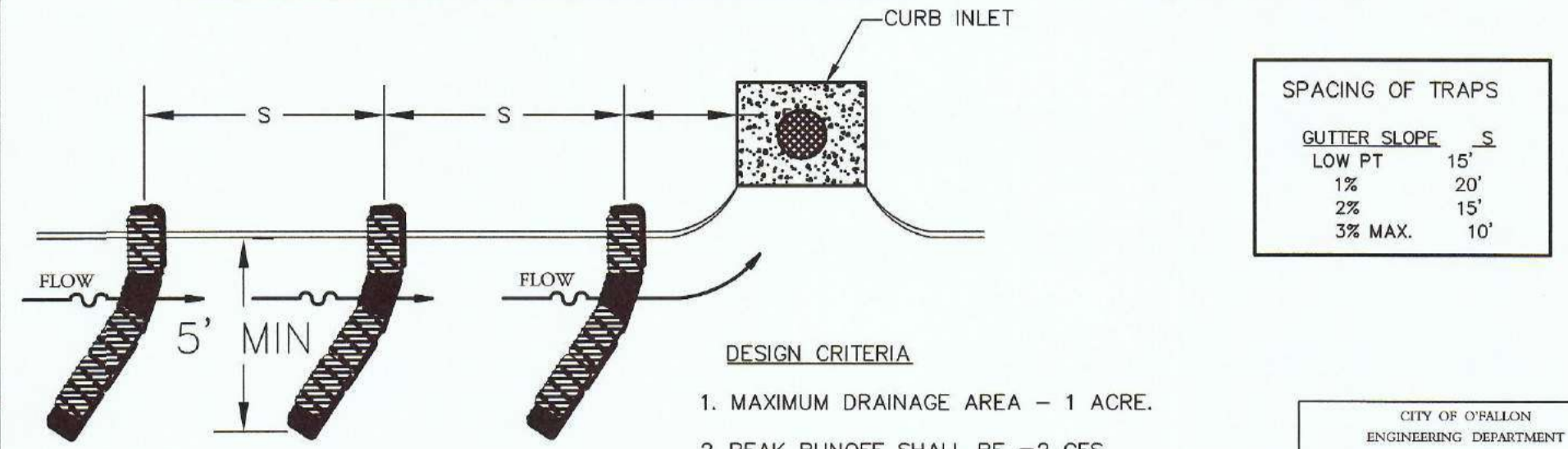
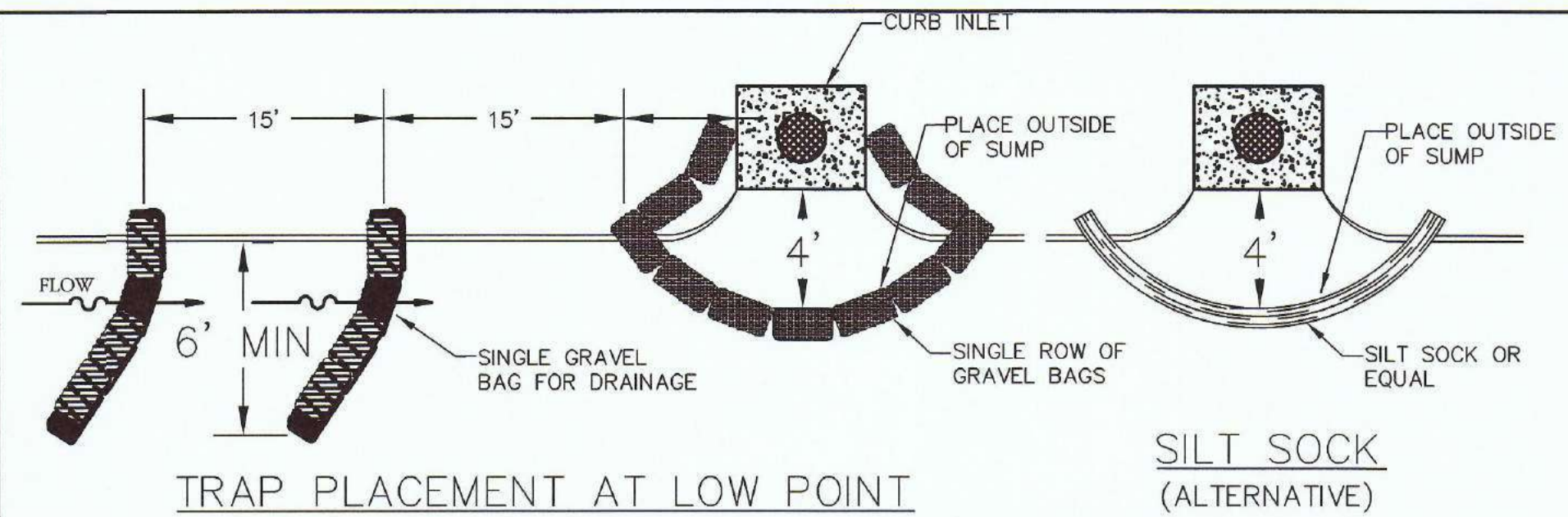


JOINING SECTIONS OF SILT FENCE

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

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

SILT FENCE INSTALLATION SHEET FLOW (ONLY)



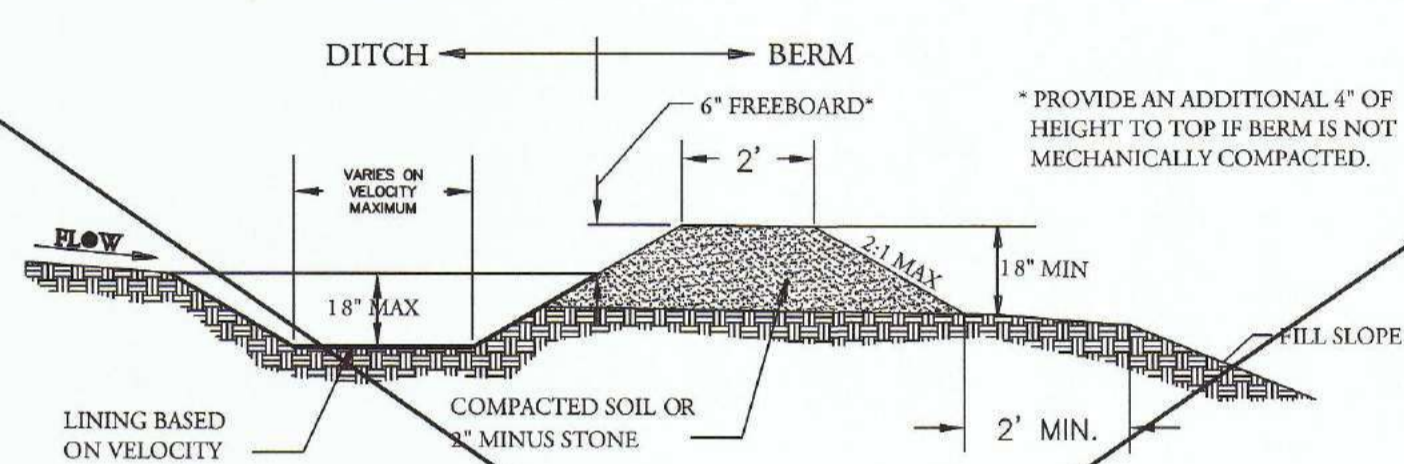
TRAP PLACEMENT AT INTERMEDIATE INLET

- DESIGN CRITERIA**
- MAXIMUM DRAINAGE AREA - 1 ACRE.
  - PEAK RUNOFF SHALL BE =2 CFS BASED ON THE 6-MONTH STORM.
  - STACK GRAVEL BAGS DOUBLE HIGH. PROVIDE GAP FOR DRAINAGE.

**SPACING OF TRAPS**

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

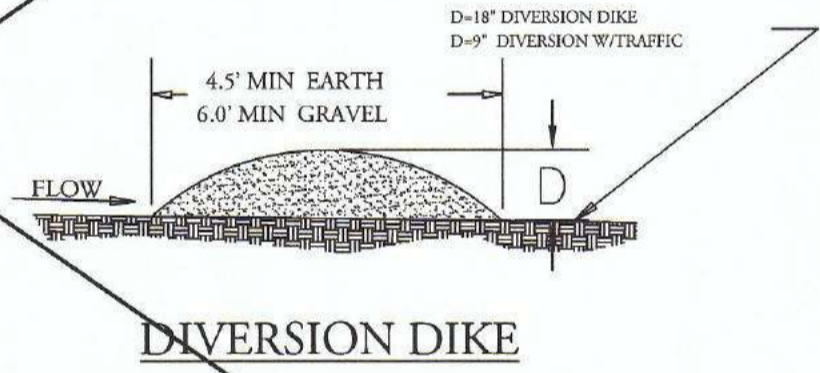
CURB INLET PROTECTION



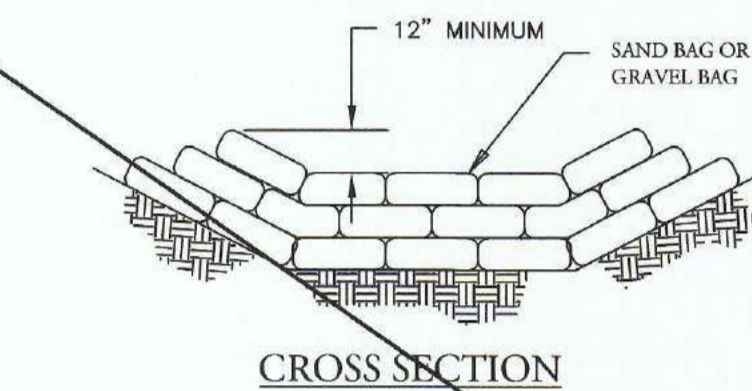
DIVERSION BERM

- DESIGN CRITERIA**
- DIVERSIONS SHALL BE USED FOR DRAINAGE AREAS = 3 ACRES.
  - DIVERSION CHANNELS SHALL BE DESIGNED TO CONVEY THE 6-MO STORM AT NON-EROSIVE VELOCITIES.
  - CRITICAL LOCATIONS SHALL BE DESIGNED FOR THE 15YR / 20MIN. STORM.
  - MAXIMUM CHANNEL SLOPE OF 3% WITHOUT CHECK DAMS.
  - SWALE SEDIMENT TRAPS ARE TO BE USED IN HIGHLY ERODIBLE AREAS.
  - CHANNELS SHALL BE PROTECTED USING APPROPRIATE CHANNEL LINERS.
  - CHANNEL OUTLETS MUST BE STABILIZED.
  - STORM SEWERS MAY BE USED IN LIEU OF OPEN CHANNELS.

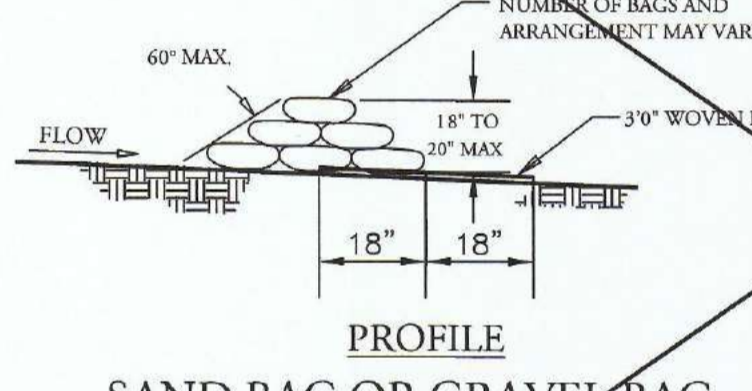
DIVERSION BERMS & DIKES



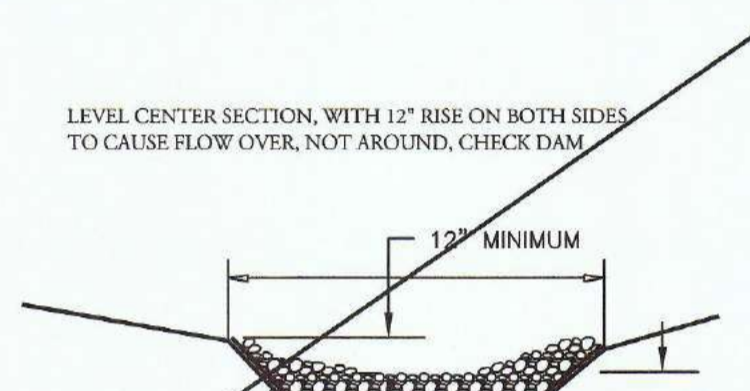
DIVERSION DIKE



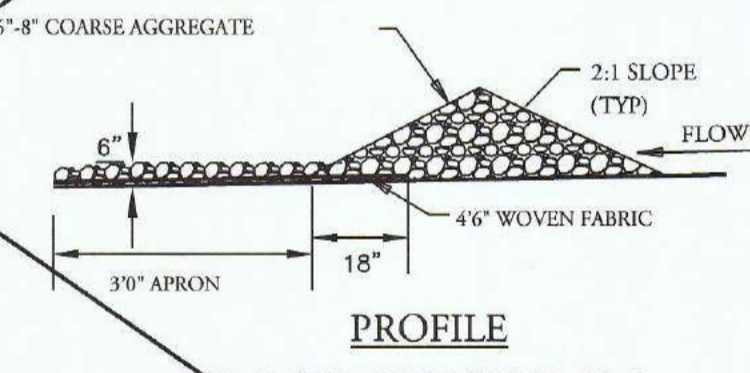
CROSS SECTION



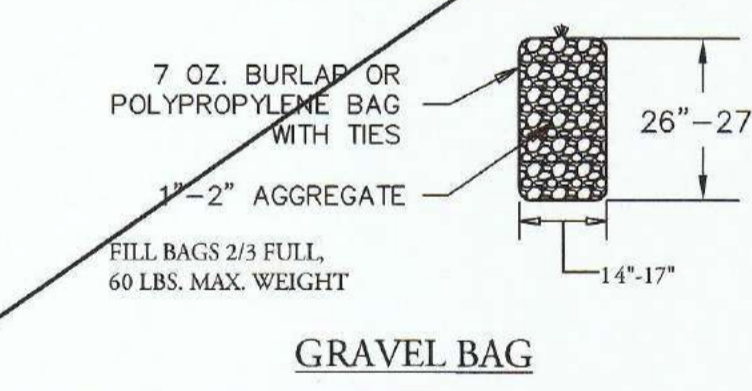
PROFILE SAND BAG OR GRAVEL BAG CHECK DAM



CROSS SECTION



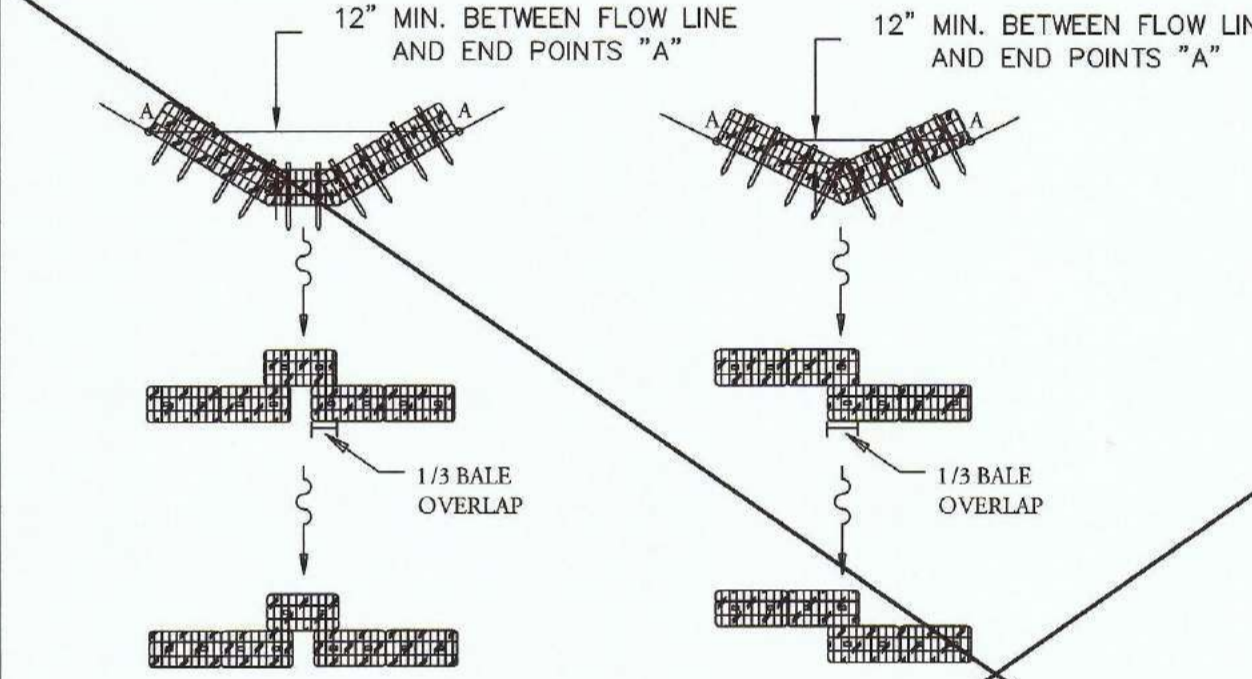
PROFILE ROCK CHECK DAM



GRAVEL BAG

- NOTE**
- CHECK DAMS MAY BE CONSTRUCTED OF SEVERAL ESC CHECK DAM PRODUCTS.
  - SEE TABLE 60-12 AND ESC 1 FOR CHECK DAM SPACING.

CHECK DAMS



TRAPEZOIDAL DITCH

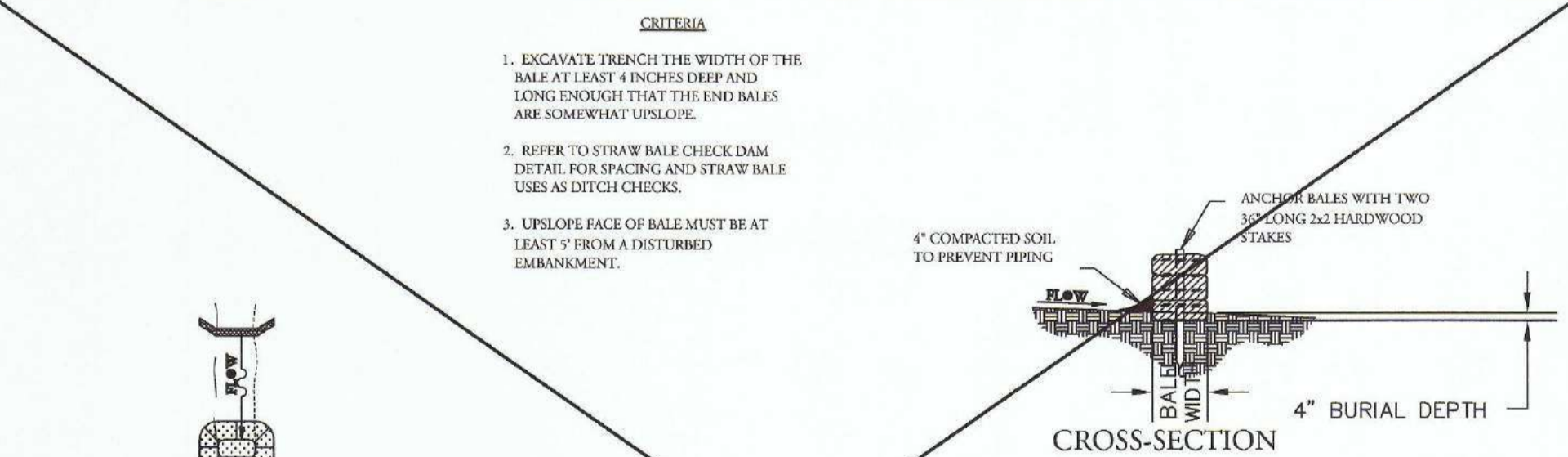
V-DITCH

- CRITERIA FOR LOW CONCENTRATED FLOWS**
- DRAINAGE AREAS SHALL BE LESS THAN 1 ACRE.
  - INSTALL TWO STAKES PER BALE.
  - BALES WILL BE TRENCHED 4" DEEP INTO EARTH.
  - MAXIMUM CHANNEL SLOPE OF 3%. SEDIMENTATION TRAPS TO BE USED IN HIGHLY ERODIBLE AREAS.

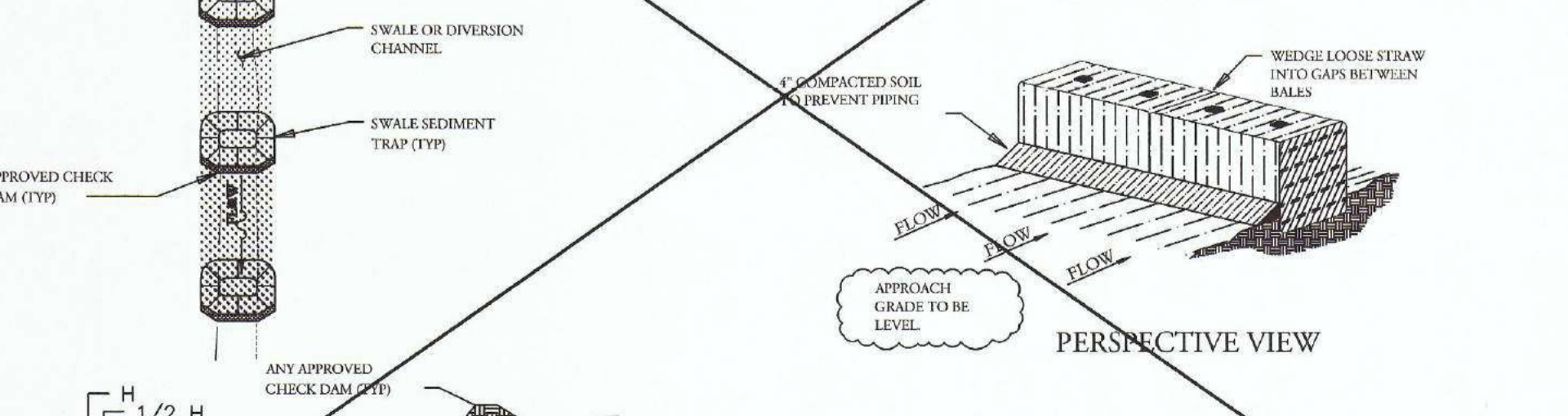
**CHECK DAM SPACING**

Ditch Maximum Slope	Spacing
3%	50%
5%	75%

STRAW BALE CHECK DAM

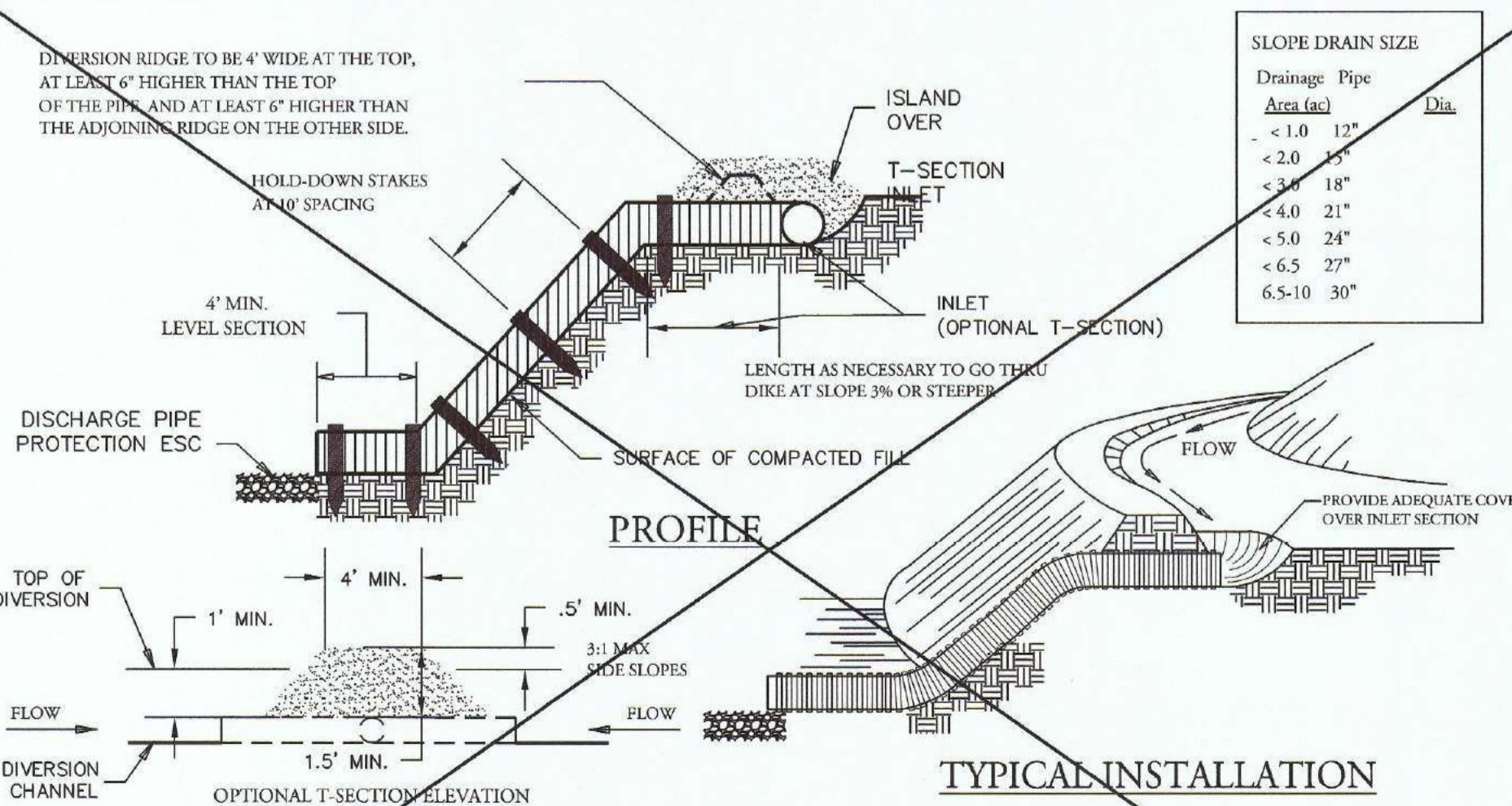


CROSS-SECTION



PERSPECTIVE VIEW

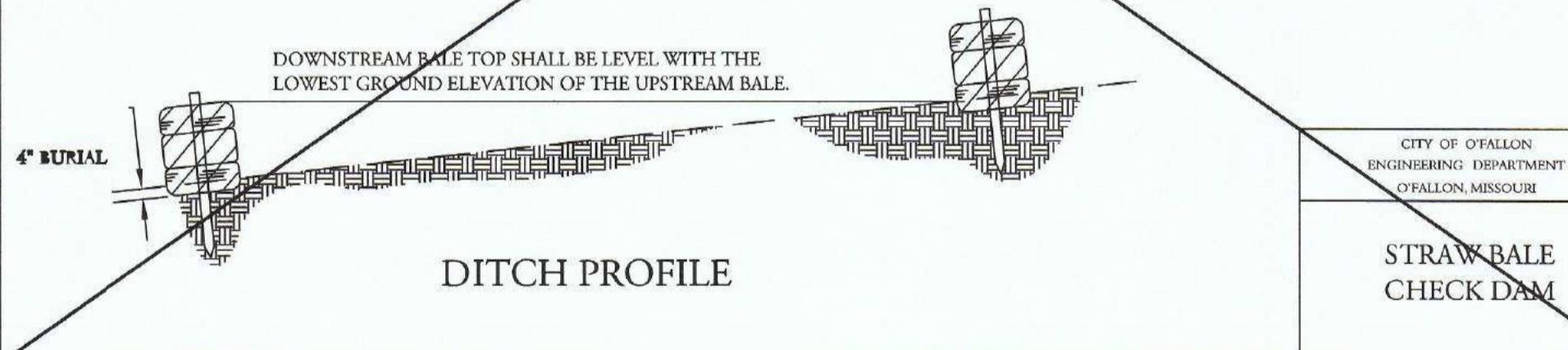
SWALE SEDIMENT TRAP STRAW BALE BARRIER INSTALLATION



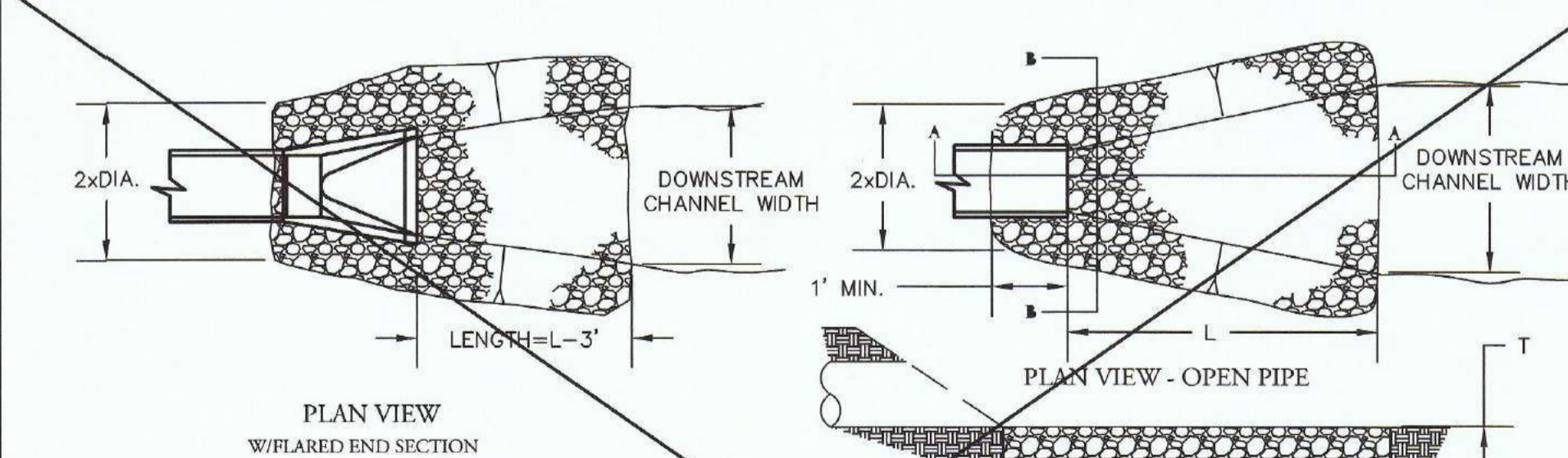
TYPICAL INSTALLATION

TEMPORARY SLOPE DRAIN

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



DITCH PROFILE



PLAN VIEW W/ FLARED END SECTION

**RIPRAP SIZE & APRON DIMENSION**

PIPE SIZE	VELOCITY < 5 FPS				VELOCITY < 10 FPS			
	dso	dmax	T	L	dso	dmax	T	L
12	5	9	15	12	5	9	15	18
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

- DESIGN CRITERIA**
- FRICITION NUMBER MUST BE = 2.50.
  - USE 3 TIMES PIPE DIAMETER FOR DOWNSTREAM CHANNEL WIDTH IF THERE IS NO DEFINED CHANNEL.
  - BANK PROTECTION HEIGHT TO BE 2/3 TIMES PIPE DIAMETER.
  - ROCK SLOPES SHALL BE NO STEEPER THAN 3:1.

TEMPORARY OUTLET PIPE DISCHARGE PROTECTION

PROJECT TITLE  
**KNIGHTS OF COLUMBUS - O'FALLON**

ENGINEERING COMPANY'S INFORMATION  
**VOLZ Incorporated**  
ENGINEERS  
LAND PLANNING  
LAND SURVEYING  
TRANSPORTATION  
CONSULTING  
MANAGEMENT  
10849 Indian Head Indl. Blvd.  
St. Louis, Missouri 63132  
314.426.6212 Main  
314.890.1250 Fax  
www.volzing.com  
Authority #203

ORDER # 11344  
ENGINEER SIGNATURE BLOCK  
Ryan L. Holmes  
Professional Engineer  
PE-2017018988

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

DEVELOPER / OWNER INFORMATION:  
Knights of Columbus - O'Fallon  
202 W. 3rd St.  
O'Fallon, MO 63366

P&Z NO. 17-011060  
CITY NO.  
DATE: 02/16/2018  
PAGE NO.

**C9**

EROSION DETAILS