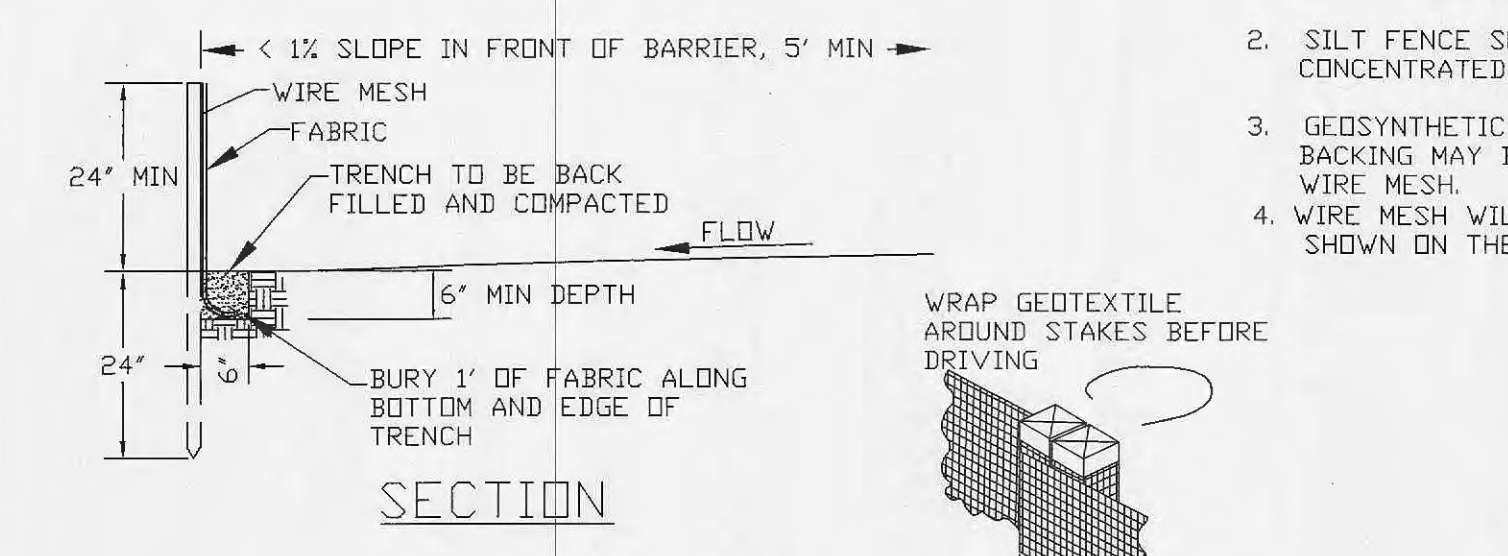
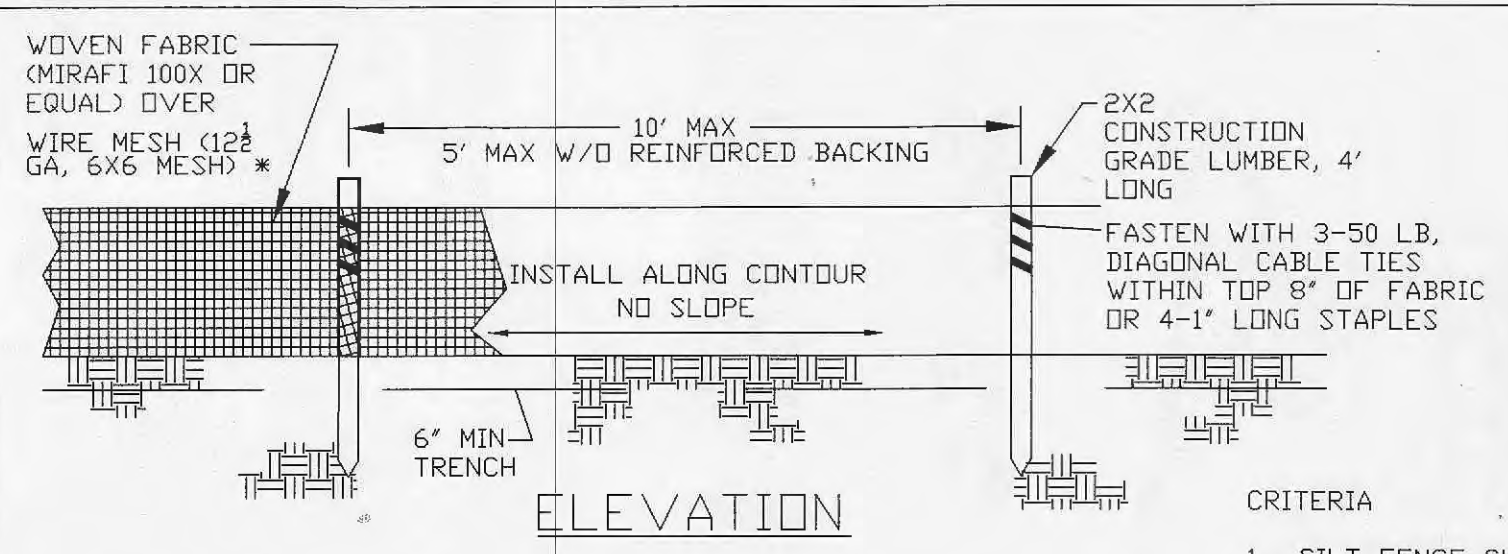


- DESIGN CRITERIA**
- SILT FENCE FOR SHEET FLOW SHALL HAVE A MAXIMUM DRAINAGE AREA OF 1/4 ACRE PER 100 LF.
  - STRAW BALE BARRIERS FOR SHEET FLOW SHALL HAVE A MAXIMUM DRAINAGE AREA OF 1/4 ACRE PER 100 LF.
  - REFER TO INDIVIDUAL ESC FIGURE FOR INSTALLATION.
  - TERRACING INCLUDES LOGS, WATTLES & FILTER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

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**SPACING CHART FOR ESC DEVICES**



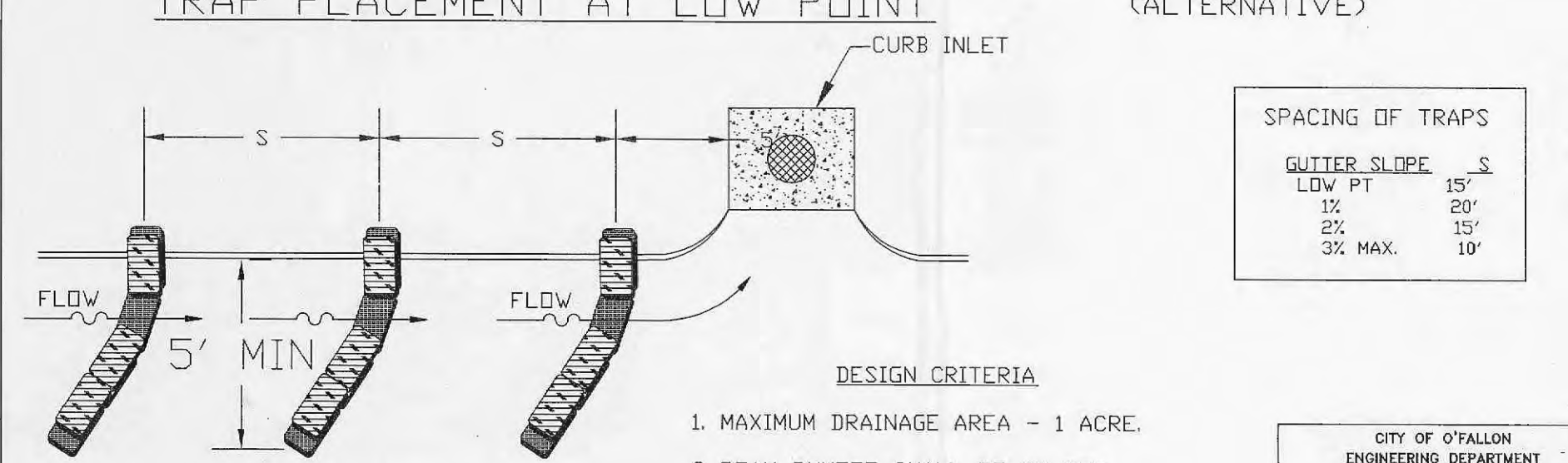
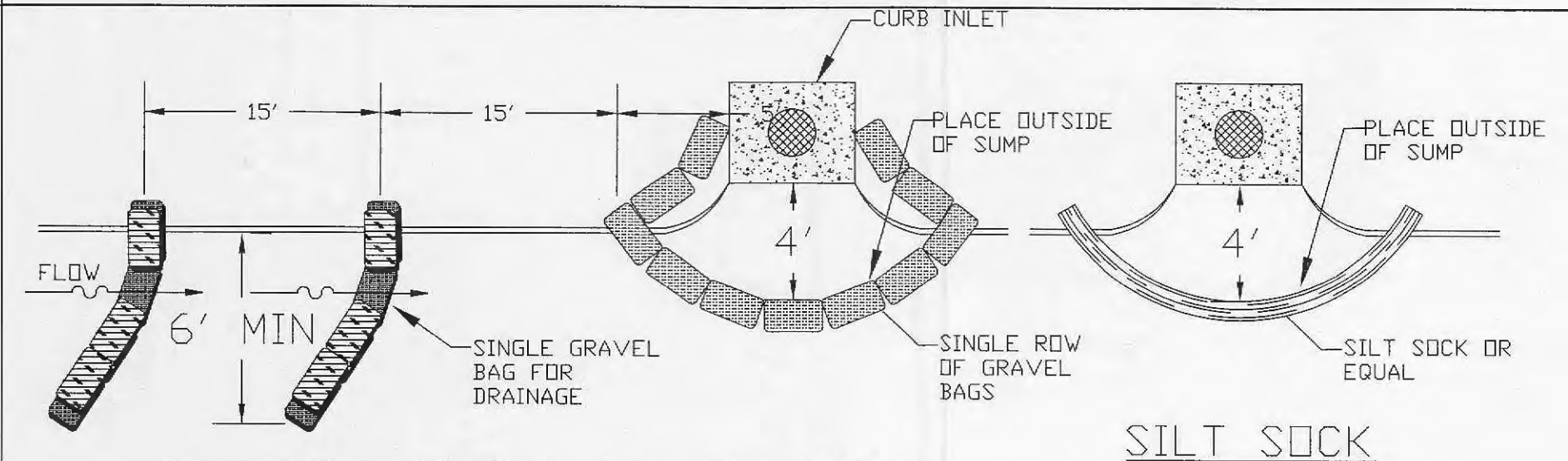
- CRITERIA**
- SILT FENCE SHALL BE 24 INCHES HIGH.
  - SILT FENCE NOT BE USED FOR CONCENTRATED FLOWS.
  - GEOSYNTHETIC REINFORCED SILT FENCE BACKING MAY BE USED IN LIEU OF WIRE MESH.
  - WIRE MESH WILL BE USED AT LOCATIONS SHOWN ON THE APPROVED SWPPP.

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

**JOINING SECTIONS OF SILT FENCE**

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**SILT FENCE INSTALLATION SHEET FLOW (ONLY)**



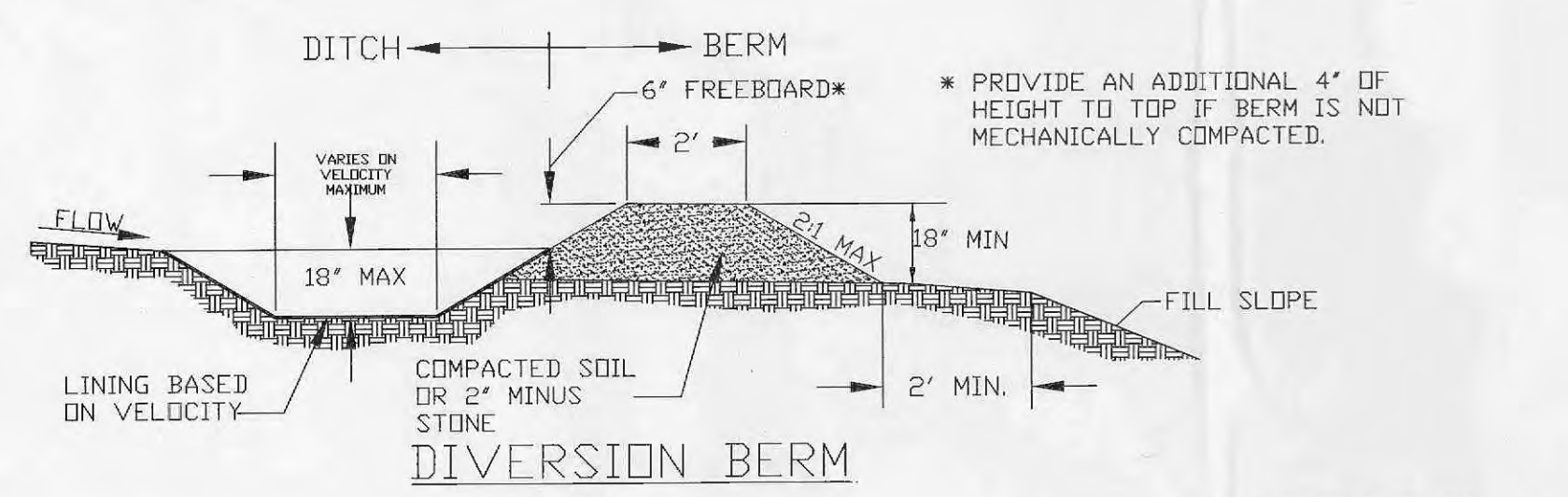
**SPACING OF TRAPS**

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

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

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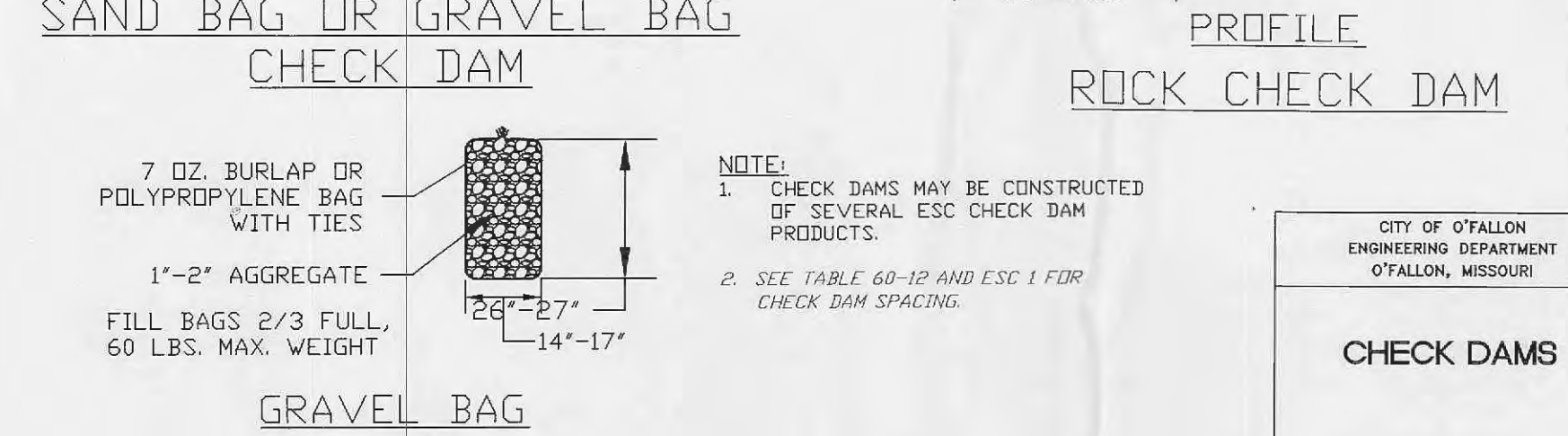
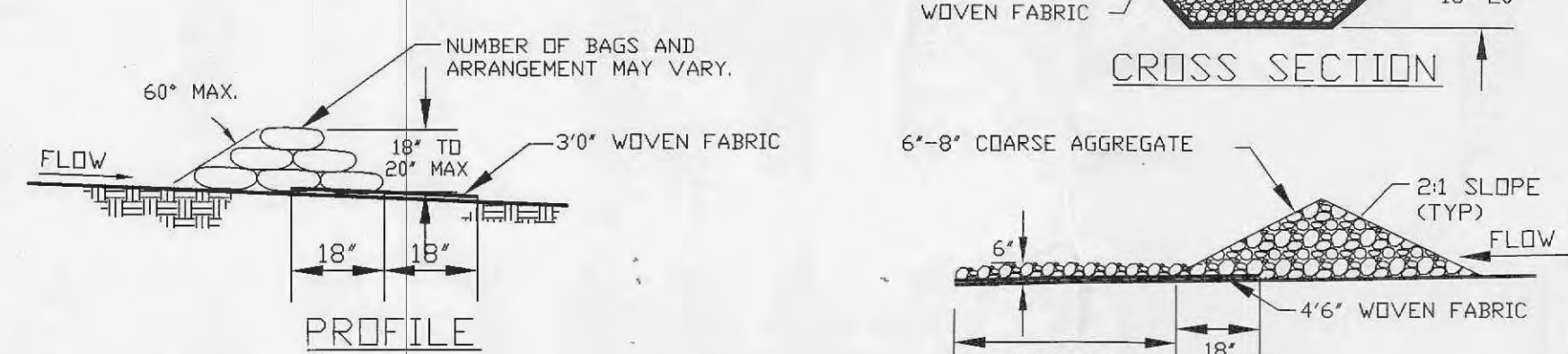
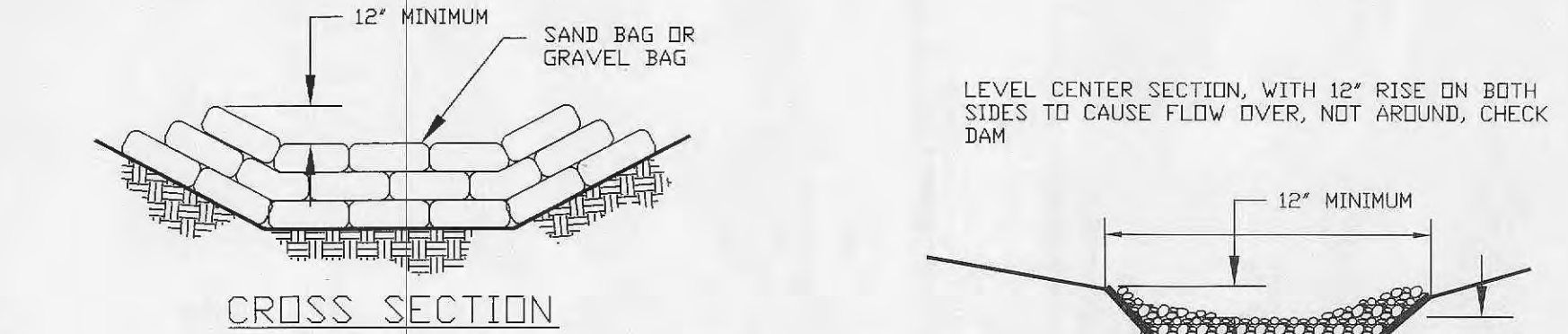
**CURB INLET PROTECTION**



- DESIGN CRITERIA**
- DIVERSIONS SHALL BE USED FOR DRAINAGE AREAS  $\leq 3$  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 ERODIVE AREAS.
  - CHANNELS SHALL BE PROTECTED USING APPROPRIATE CHANNEL LINERS.
  - CHANNEL OUTLETS MUST BE STABILIZED.
  - STORM SEWERS MAY BE USED IN LIEU OF OPEN CHANNELS.

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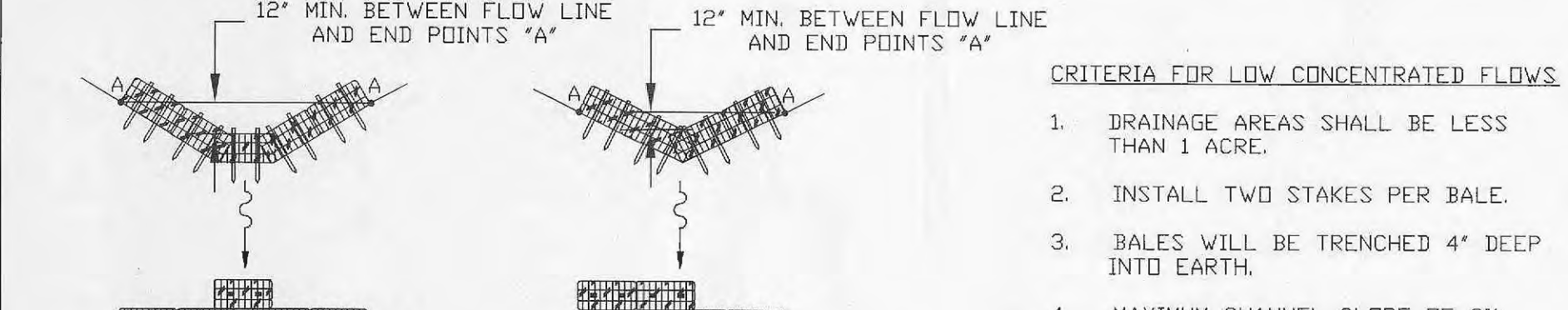
**DIVERSION BERMS + DIKES**



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

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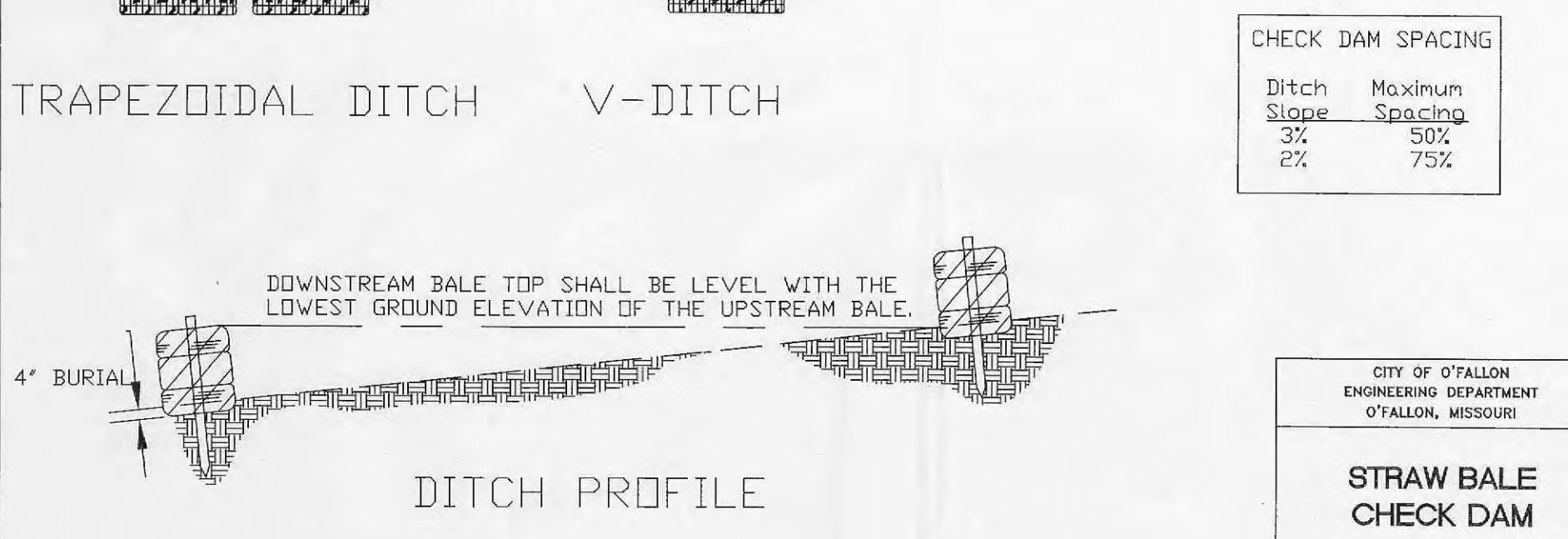
**CHECK DAMS**



- CRITERIA FOR LOW CONCENTRATED FLOWS**
- DRAINAGE AREAS SHALL BE LESS THAN 1 ACRE.
  - INSTALL TWO STAKES PER BALE.
  - BALES WILL BE TRENCHED 4\"/>

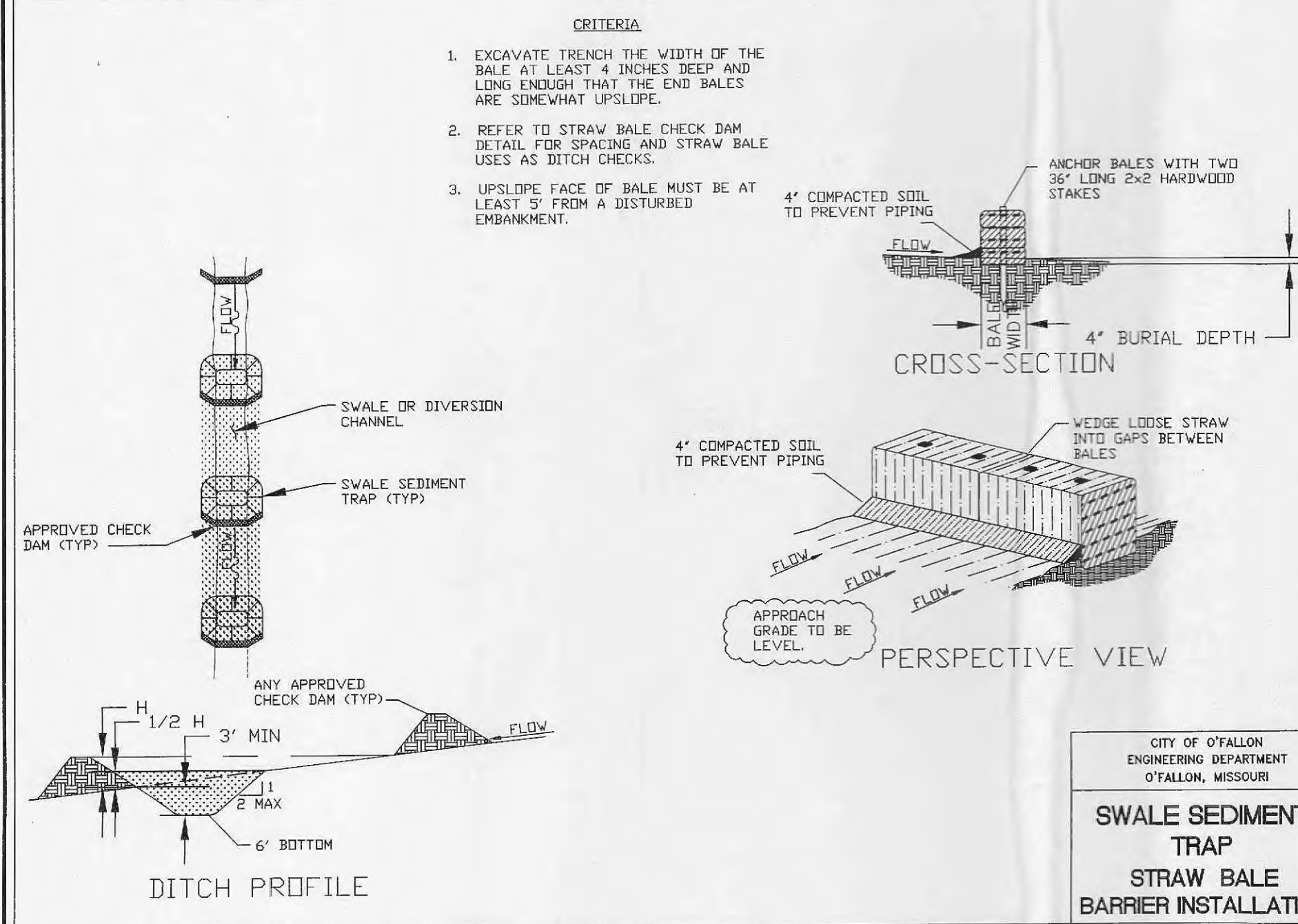
**CHECK DAM SPACING**

Ditch Slope	Maximum Spacing
3%	50%
2%	75%



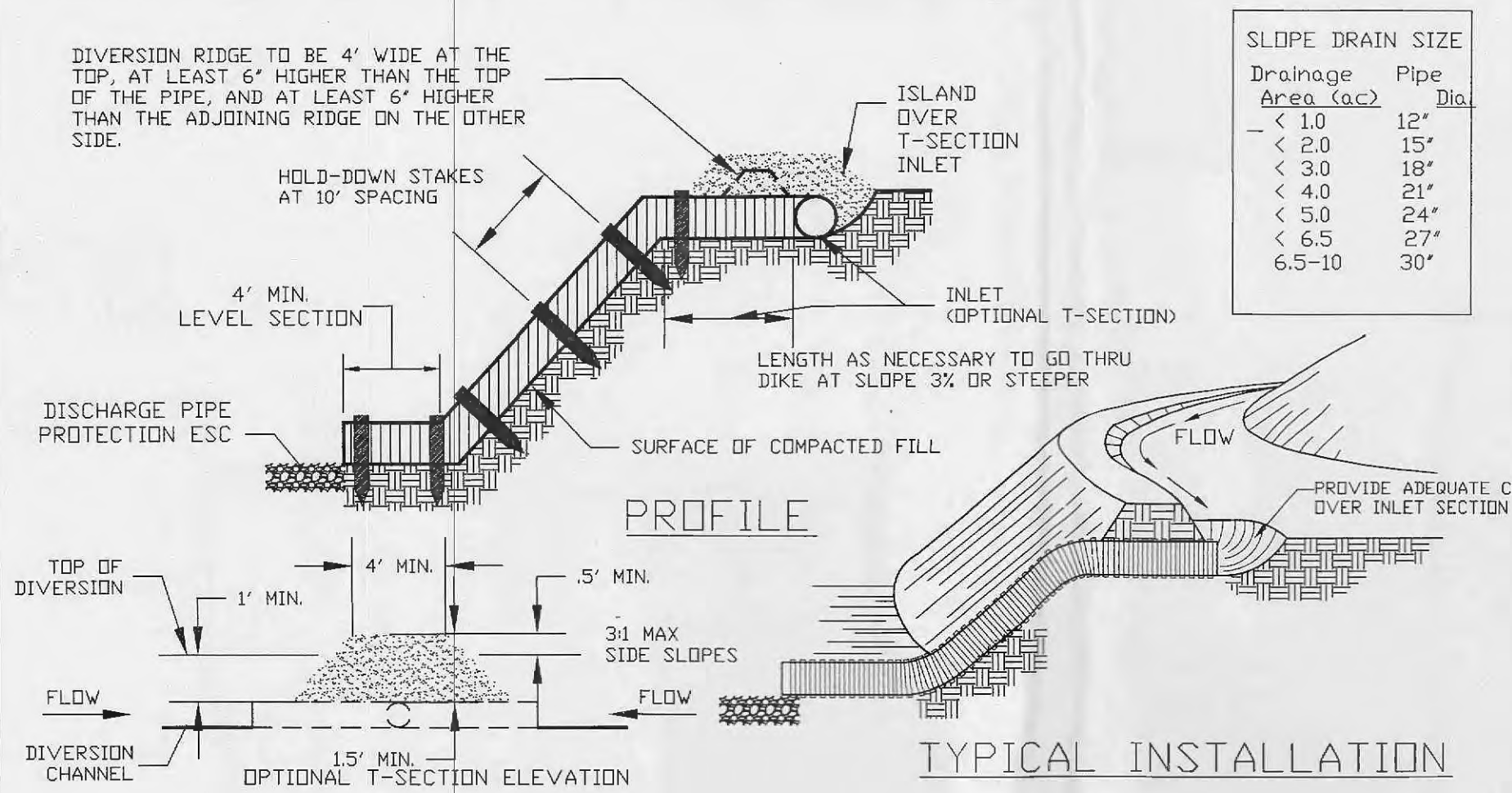
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**STRAW BALE CHECK DAM**



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**SWALE SEDIMENT TRAP STRAW BALE BARRIER INSTALLATION**



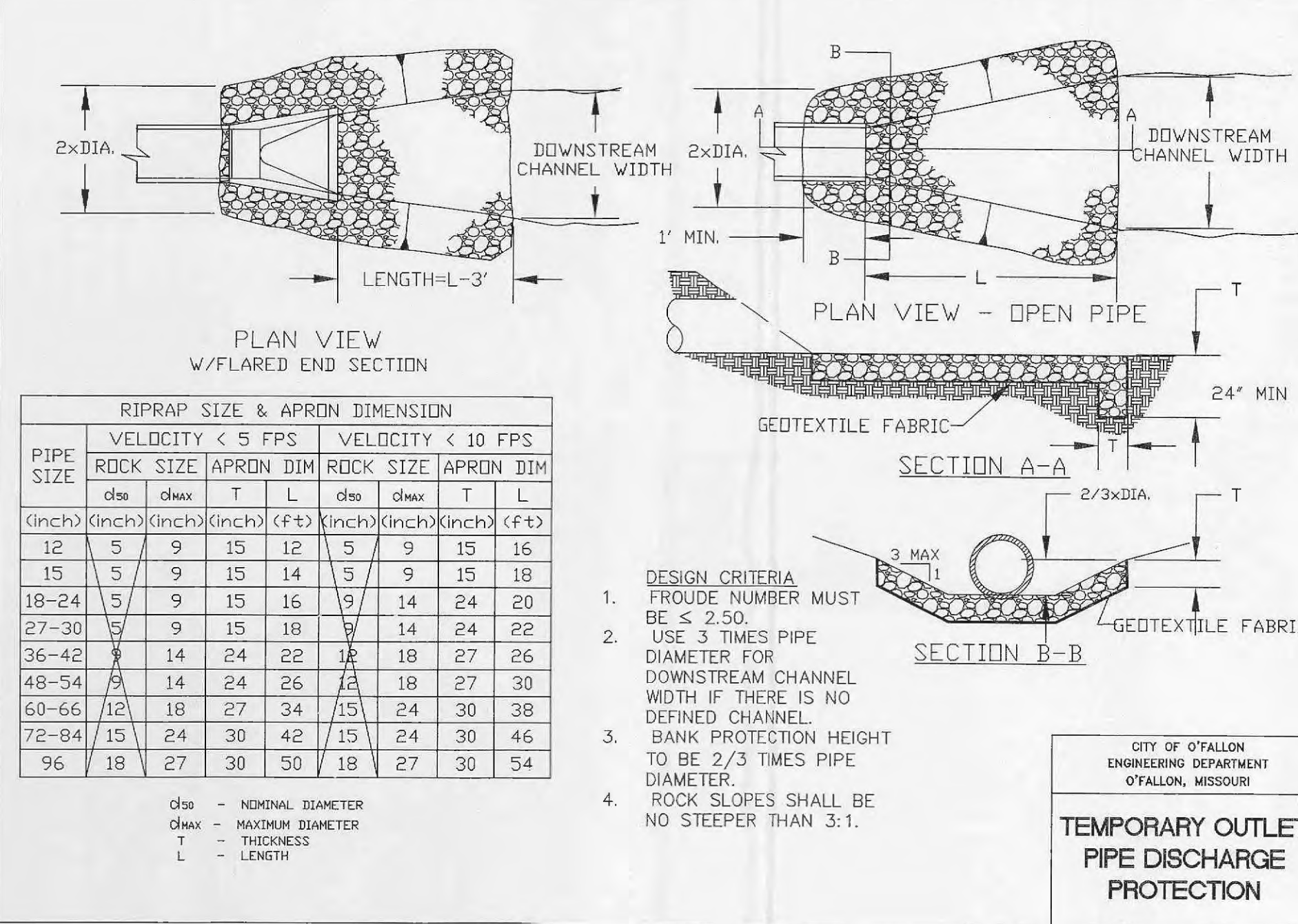
**SLOPE DRAIN SIZE**

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:**
- 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.

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**TEMPORARY SLOPE DRAIN**



**RIPRAP SIZE & APRON DIMENSION**

PIPE SIZE	VELOCITY < 5 FPS				VELOCITY < 10 FPS			
	ROCK SIZE	APRON DIM	ROCK SIZE	APRON DIM	ROCK SIZE	APRON DIM	ROCK SIZE	APRON DIM
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	7	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

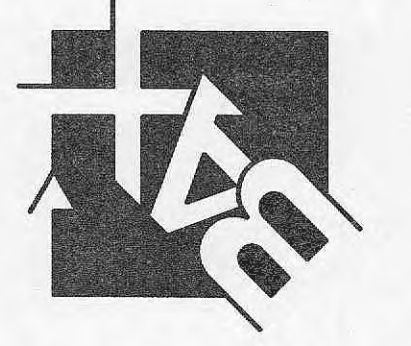
- DESIGN CRITERIA**
- FROUDE NUMBER MUST BE  $\leq 2.50$ .
  - USE 3 TIMES PIPE DIAMETER FOR DOWNSTREAM CHANNEL WIDTH IF THERE IS NO DEFINED CHANNEL.
  - BANK PROTECTION HEIGHT TO BE 2/3 TIMES PIPE DIAMETER.
  - ROCK SLOPES SHALL BE NO STEEPER THAN 3:1.

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**TEMPORARY OUTLET PIPE DISCHARGE PROTECTION**

**PROJECT TITLE:**  
SUGARFIRE SMOKEHOUSE

**ENGINEERING PLANNING SURVEYING**  
221 Point West Blvd.  
St. Charles, MO 63301  
636-929-5552  
FAX 636-928-1718



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STATE OF MISSOURI  
REGISTERED PROFESSIONAL ENGINEER  
CLIFFORD L. HEITMANN  
NUMBER E-29817  
CLIFFORD L. HEITMANN  
CIVIL ENGINEER  
029817

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**REVISIONS**

NO.	DATE	CITY COMMENTS
10-13-14		

**Developer / Owner:**  
WINGHAVEN BBO, LLC  
9955 WINGHAVEN BLVD  
O'FALLON, MO 63368  
314-591-6396

**P+Z No.** 9831.37.09  
**City No.** 9831.37.09.01  
14-387

**Page No.**  
3 of 6

**REFERENCE DETAILS**

Box Project # 05-82838A Issue Date: 8/1/2014