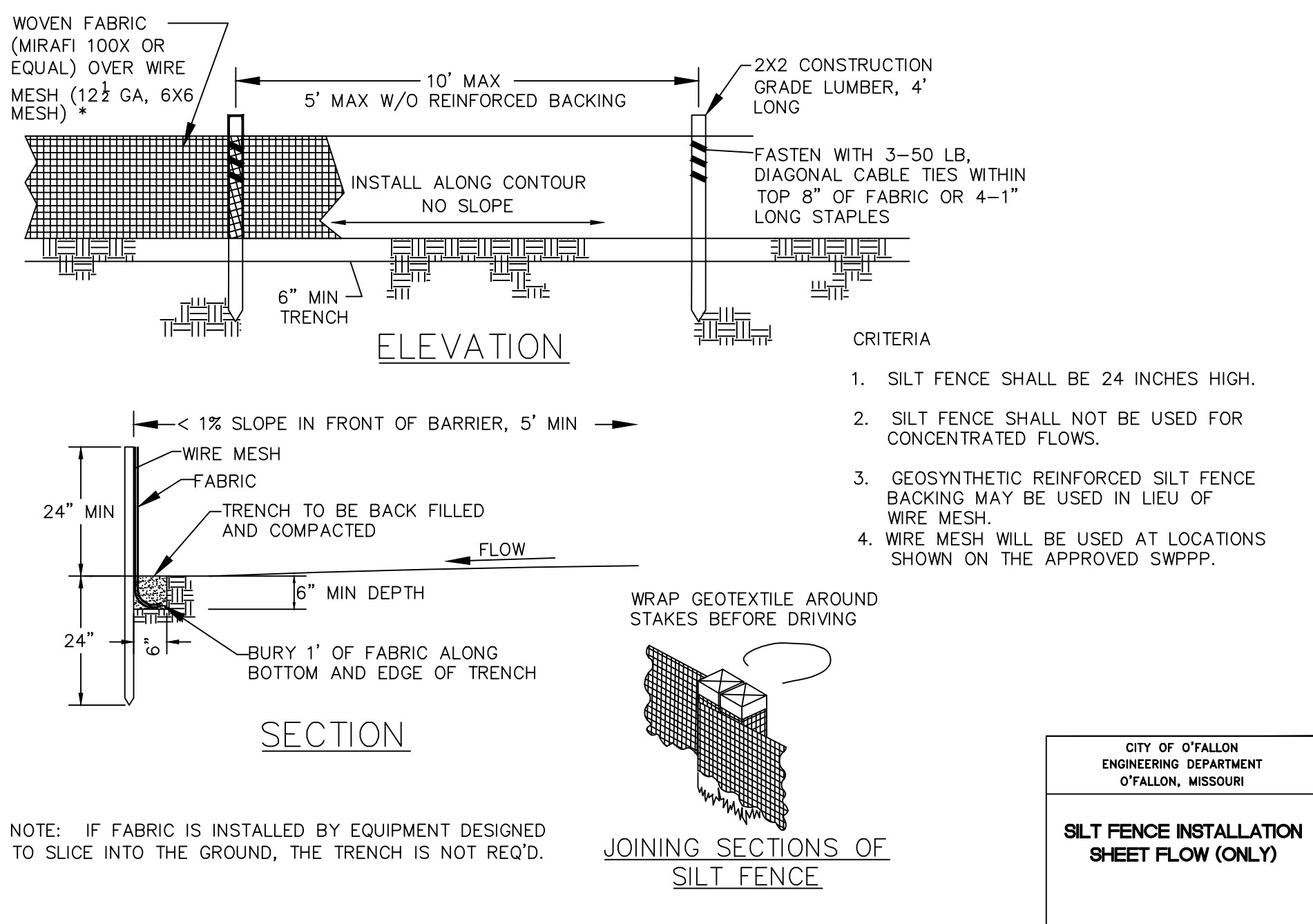
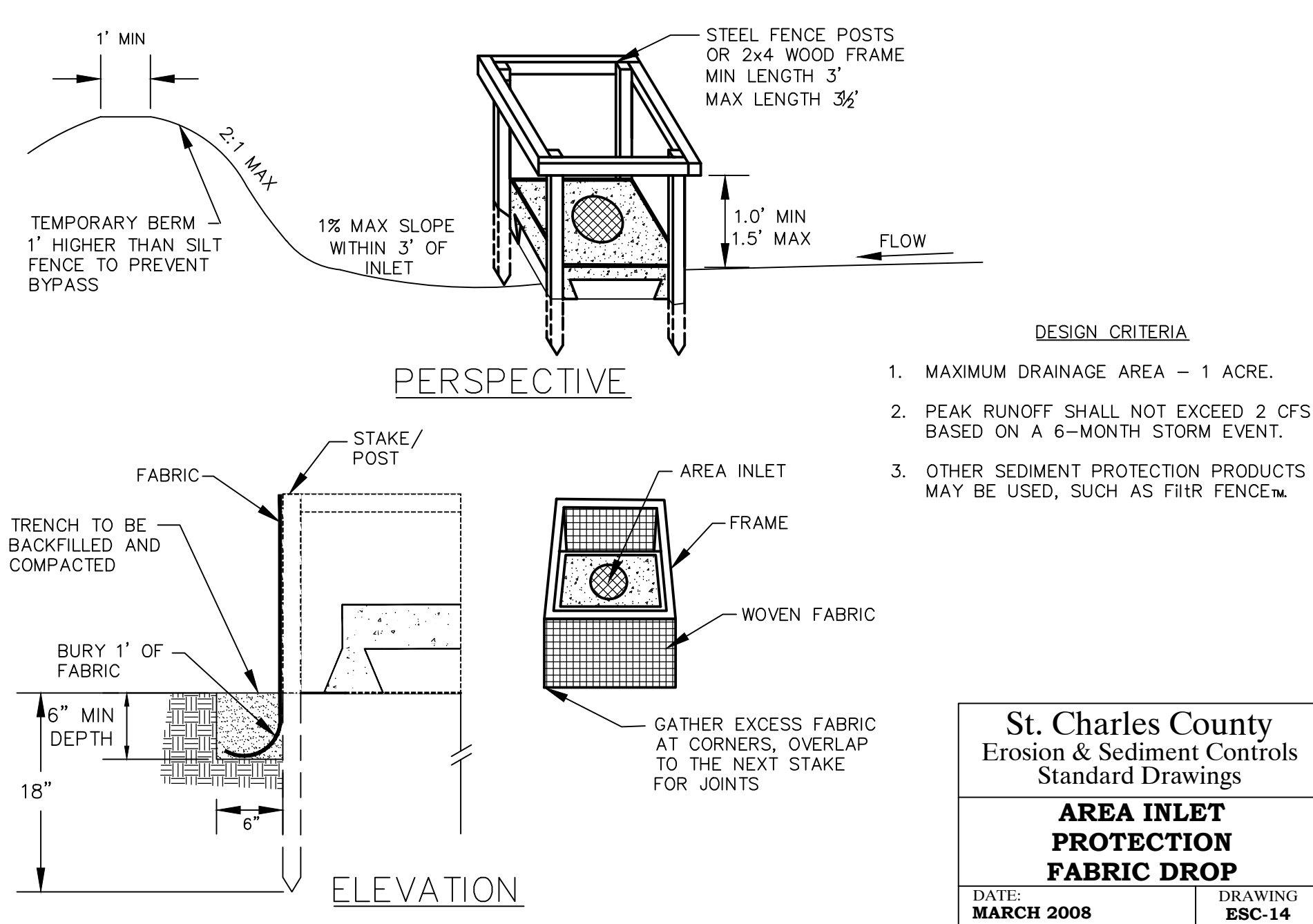


GENERAL EROSION NOTES:
 1. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH STORM WATER POLLUTION PREVENTION SHALL OBTAIN A COPY OF THE STORM WATER POLLUTION PREVENTION PLAN AND THE STATE OF MISSOURI NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT (NPDES PERMIT) AND BECOME FAMILIAR WITH THEIR CONTENTS.
 2. CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES AS REQUIRED BY THE SWPPP. ADDITIONAL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED AS DICTATED BY CONDITIONS AT NO ADDITIONAL COST OF OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION.
 3. BEST MANAGEMENT PRACTICES (BMP'S) AND CONTROLS SHALL CONFORM TO FEDERAL, STATE, OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AS APPLICABLE. CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY PERMITTING AGENCY OR OWNER.
 4. SITE MAP MUST CLEARLY DELINEATE ALL STATE WATERS.
 5. CONTRACTOR SHALL MINIMIZE CLEARING TO THE MAXIMUM EXTENT PRACTICAL OR AS REQUIRED BY THE GENERAL PERMIT.
 6. GENERAL CONTRACTOR SHALL DENOTE ON PLAN THE TEMPORARY PARKING AND STORAGE AREA WHICH SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AND CLEANING AREA, EMPLOYEE PARKING AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
 7. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC.) SHALL BE DETAINED AND PROPERLY TREATED OR DISPOSED.
 8. SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOATATION BOOMS SHALL BE MAINTAINED ON SITE OR READILY AVAILABLE TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
 9. DUST ON THE SITE SHALL BE CONTROLLED. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.
 10. RUBBISH, TRASH, SEALED LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO TIGHTLY SEALED CONTAINERS. MATERIALS SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORM WATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
 11. THE LOCAL AGENCY(IES) MUST BE NOTIFIED AT LEAST FORTY-EIGHT HOURS PRIOR TO THE COMMENCEMENT OF ANY GRADING OPERATIONS.
 12. NO GRADED AREA IS TO REMAIN WITHOUT VEGETATIVE GROUND COVER FOR MORE THAN THIRTY (30) DAYS WITHOUT BEING SEEDED AND MULCHED OR SODED.
 13. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS STOPPED FOR AT LEAST 14 DAYS, SHALL BE TEMPORARILY SEEDED. THESE AREAS SHALL BE SEEDED NO LATER THAN 14 DAYS FROM THE LAST CONSTRUCTION ACTIVITY OCCURRING IN THESE AREAS.
 14. IF THE ACTION OF VEHICLES TRAVELING OVER THE GRAVEL CONSTRUCTION ENTRANCES IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF DIRT OR MUD, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.
 15. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
 16. CONTRACTORS OR SUBCONTRACTORS WILL BE RESPONSIBLE FOR REMOVING ANY SEDIMENT THAT MAY HAVE COLLECTED IN THE STORM SEWER DRAINAGE SYSTEMS IN CONJUNCTION WITH THE STABILIZATION OF THE SITE.
 17. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
 18. DUE TO THE GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES) TO PREVENT EROSION.
 19. ALL CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY, THIS INCLUDES BACKFILLING OF TRENCHES FOR UTILITY CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING.
 20. THE CONTRACTOR SHALL FIELD INVESTIGATE THE ENTIRE SITE PRIOR TO HIS BID SUBMITTAL NOTING THE EXISTING VEGETATION AND TREES AND INCLUDING THE REMOVAL AND DISPOSAL IN HIS BID.
 21. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. LOCATION, DEPTH AND CONNECTION OF THE UTILITIES SHALL BE COORDINATED WITH THE UTILITY COMPANIES.
 22. UNDERGROUND STRUCTURES, FACILITIES, AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS. THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN.
 23. FLOOD ZONE: THIS SITE FALLS WITHIN UNSHADED "ZONE X," AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, PER FIRM: SHADED "ZONE X," AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN ONE FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD; "ZONE AE," SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD; BASE FLOOD ELEVATIONS DETERMINED; "FLOODWAY AREAS IN ZONE AE," THE FLOODWAY IS THE CHANNEL OF A STREAM PLUS ANY ADJACENT FLOODPLAIN AREAS THAT MUST BE KEPT FREE OF ENCROACHMENT SO THAT THE 1% ANNUAL CHANCE FLOOD CAN BE CARRIED WITHOUT SUBSTANTIAL INCREASES IN FLOOD HEIGHTS; PER FLOOD INSURANCE RATE MAP, FOR CITY OF O'FALLON, MISSOURI AND INCORPORATED AREAS, MAP NUMBER 291830451G, MAP REVISED ON JANUARY 20, 2016. FLOOD ZONES ARE DETERMINED BY SCALING.
 24. THE BOUNDARY INFORMATION AND CONTOURS AS SHOWN IS FROM A TOPOGRAPHIC SURVEY PERFORMED BY COCHRAN.
 25. TEMPORARY SILTATION CONTROL STRUCTURES SHALL BE MAINTAINED UNTIL A VEGETATIVE COVER OF AREA DISTURBED IS ESTABLISHED AT A SUFFICIENT DENSITY TO PROVIDE EROSION CONTROL ON THE SITE, AS DETERMINED BY THE CITY ENGINEER.
 26. WHERE NATURAL VEGETATION IS REMOVED DURING GRADING, VEGETATION SHALL BE REESTABLISHED VEGETATIVE COVER OF AREA DISTURBED AS TO PREVENT EROSION. PERMANENT TYPE GRASSES SHALL BE ESTABLISHED AS SOON AS POSSIBLE OR DURING THE NEXT SEEDING PERIOD AFTER GRADING HAS BEEN COMPLETED.
 27. WHEN GRADING OPERATIONS ARE COMPLETED OR SUSPENDED FOR MORE THAN THIRTY (30) DAYS, PERMANENT GRASS MUST BE ESTABLISHED TO VEGETATIVE COVER TO PROVIDE EROSION CONTROL ON THE SITE. BETWEEN PERMANENT GRASS SEEDING PERIODS, TEMPORARY COVER SHALL BE PROVIDED ACCORDING TO THE CITY ENGINEER'S RECOMMENDATIONS. ALL FINISHED GRADES (AREAS NOT TO BE DISTURBED BY FUTURE IMPROVEMENTS) IN TWENTY (20) PERCENT SLOPES (5 HORIZONTAL TO 1 VERTICAL) SHALL BE MULCHED.
 28. ALL EROSION AND SEDIMENT CONTROL FACILITIES SHALL BE INSPECTED FOLLOWING EACH RAINSTORM CAUSING SIGNIFICANT RUNOFF, OR BEING OF SUFFICIENT INTENSITY OR DURATION AS TO STOP CONSTRUCTION OR GRADING PROGRESS. THE SEDIMENT CONTROL FACILITIES SHALL BE CLEANED OF SEDIMENT, REPAIRED IF DAMAGED AND RESTORED TO SERVICEABLE CONDITIONS IF:
 1. EROSION SEDIMENT HAS ACCUMULATED IN SILT DEVICES,
 2. SEDIMENT EROSION CONTROL DEVICES HAVE BEEN DAMAGED,
 3. OBVIOUS GULLIES OR SEDIMENT DEPOSITS HAVE BEEN FORMED ON THE DOWNSTREAM SIDE OF CONTROL DEVICES, OR
 4. SEDIMENT HAS BEEN CARRIED BEYOND THE WORKING SITE.

S.W.P.P.P. GENERAL NOTES AND DETAILS

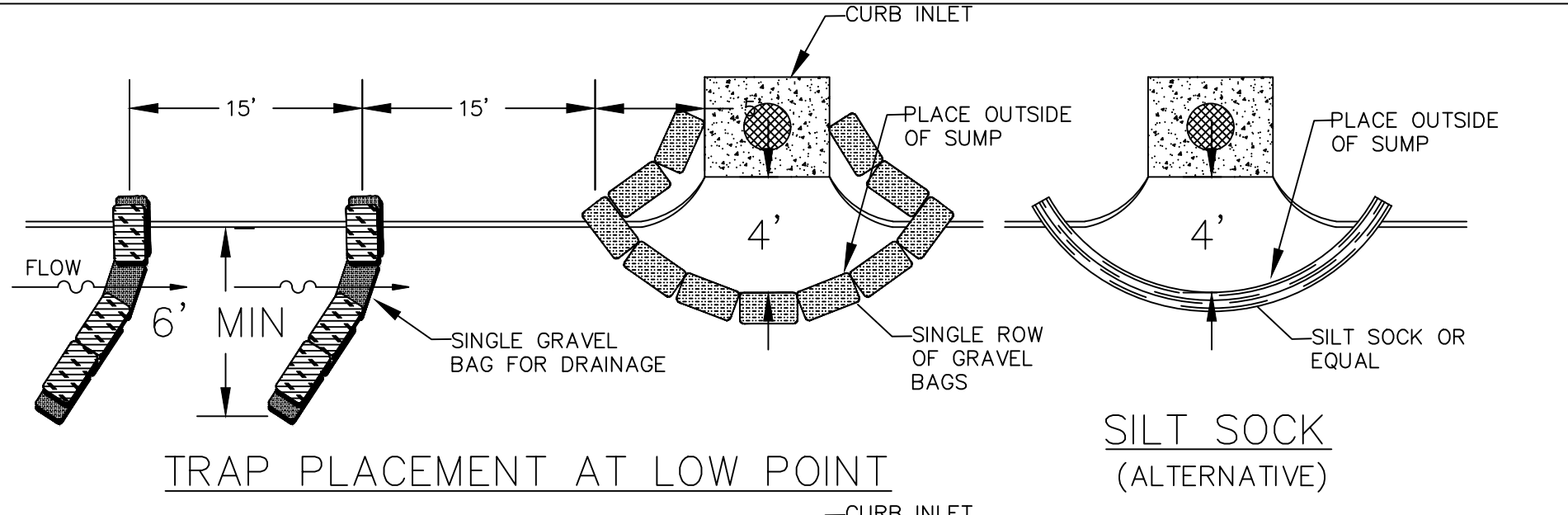


- CRITERIA
1. SILT FENCE SHALL BE 24 INCHES HIGH.
 2. SILT FENCE SHALL NOT BE USED FOR CONCENTRATED FLOWS.
 3. GEOSYNTHETIC REINFORCED SILT FENCE BACKING MAY BE USED IN LIEU OF WIRE MESH.
 4. WIRE MESH WILL BE USED AT LOCATIONS SHOWN ON THE APPROVED SWPPP.



- DESIGN CRITERIA
1. MAXIMUM DRAINAGE AREA - 1 ACRE.
 2. PEAK RUNOFF SHALL NOT EXCEED 2 CFS BASED ON A 6-MONTH STORM EVENT.
 3. OTHER SEDIMENT PROTECTION PRODUCTS MAY BE USED, SUCH AS FILTER FENCE™.

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 Erosion & Sediment Controls
 Standard Drawings
**AREA INLET
 PROTECTION
 FABRIC DROP**
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- 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**

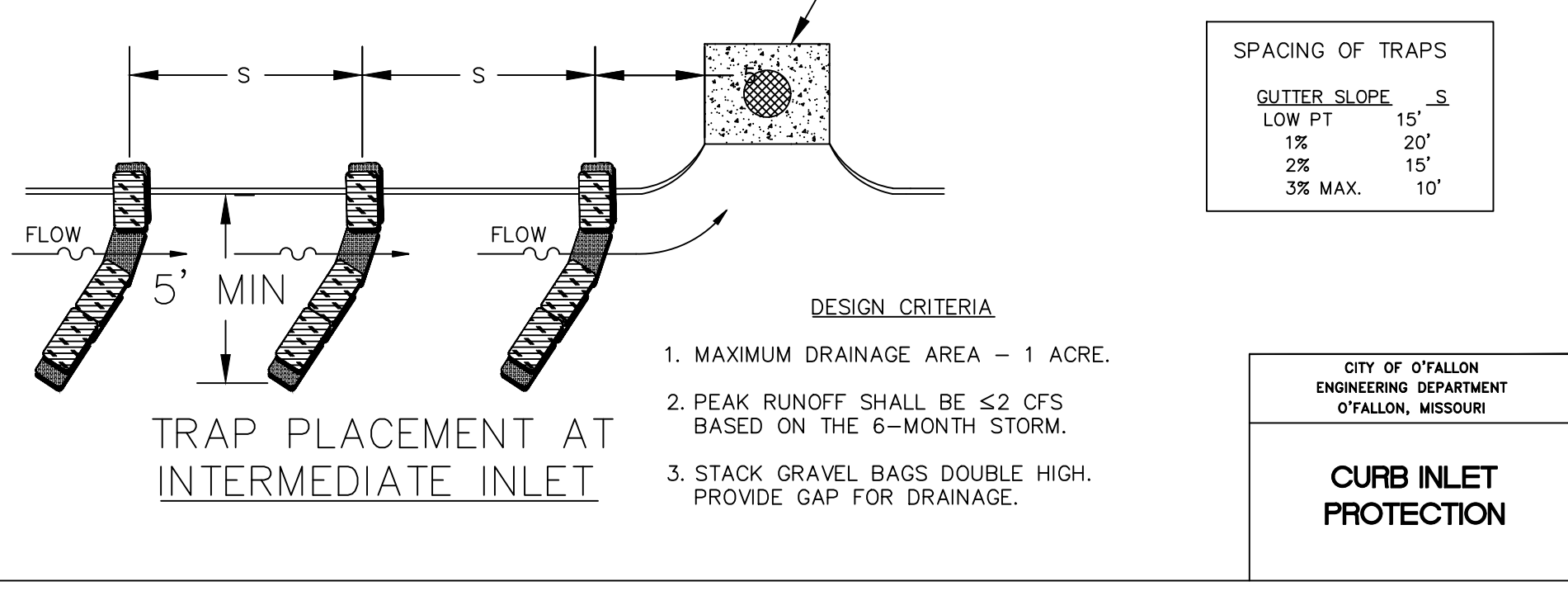
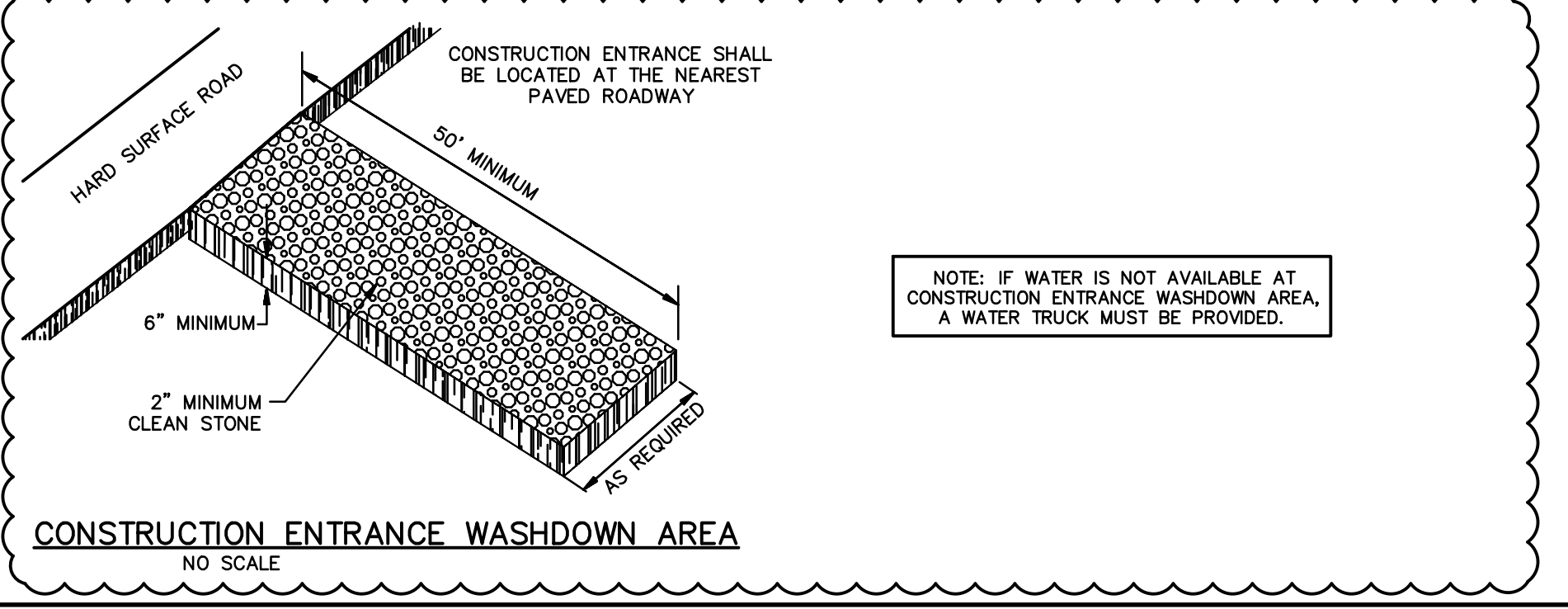


TABLE 60-5 SOIL STABILIZATION SCHEDULE

SOIL DISTURBANCE ACTIVITY OR CONDITION	REQUIRED STABILIZATION TIME
SOIL DISTURBANCE HAS CEASED IN AREAS GREATER THAN 2,000 SQUARE FEET	14 DAYS
AFTER CONSTRUCTION OF DIKES, BERMS, DIVERSIONS, AND OTHER CONCENTRATED FLOW AREAS	5 DAYS
WHEN SLOPES ARE STEEPER THEN 3 HORIZONTAL TO 1 VERTICAL	7 DAYS
WHEN SLOPES ARE GREATER THAN 3% AND LONGER THAN 150 FEET	14 DAYS
PERIMETER CONTROLS AROUND SOIL STOCKPILES	END OF WORKDAY
STABILIZATION OR COVERING OF INACTIVE STOCKPILES	30 DAYS
WHEN LAND DISTURBANCE IS COMPLETED, PERMANENT SOIL STABILIZATION MUST BE INSTALLED	30 DAYS



NOTE: IF WATER IS NOT AVAILABLE AT CONSTRUCTION ENTRANCE WASHDOWN AREA, A WATER TRUCK MUST BE PROVIDED.

Table 60-7 Temporary Fall Seeding

Plant Species	Rate (lb/acre)	Seeding Times
Side-Oats	65	8/16 - 9/30
Winter Rye	50	8/01 - 10/15
Winter Wheat	60	8/01 - 10/15
Orchard Grass	120	8/01 - 10/15
Perennial Ryegrass	80	8/01 - 10/15
Tall fescue, Smooth Bromo	80	8/01 - 10/15
K-31 Fescue	120	9/01 - 11/15
Ladino Clover	2 ²	8/15 - 9/15
Crimson Clover	6 ²	8/15 - 9/15
Orchard Grass and Oats or Rye	15 ² 40 ²	8/15 - 9/15

¹If using aerial seeding or other broadcast method to apply seed without rolling or culti-packing, increase seeding rates by 50 percent.
²Pure live seed (PLS)

Table 60-8 Temporary Spring Seeding

Plant Species	Rate (lb/acre)	Seeding Dates
Winter Rye	50	3/15 - 5/31
Spring Oats	65	3/15 - 5/31
Annual Ryegrass	4 ²	3/15 - 6/15
Sudagrass	16 ²	4/15 - 6/15
K-31 Fescue	30 ²	3/15 - 5/31
Red Clover & Oats	30 ²	3/15 - 5/31

¹If using aerial seeding or other broadcast method to apply seed without rolling or culti-packing, increase seeding rates by 50 percent.
²Pure live seed (PLS)

Table 60-6 Soil Amendment Rates

Soil Amendment Material	Application Rate (lb per Acre)
Fertilizer	50 ¹
Nitrogen (N)	30 ¹
Phosphate (P ₂ O ₅)	50 ¹
Potash (K ₂ O)	50 ¹
Lime	1,000 ²

¹Increase the rate by 25% for slopes steeper than 3:1.
²Rate is in effective neutralizing material (ENM) units.

Table 60-9 Mulching Materials

Material	Rate	Requirements	Installation/Uses
Straw	1.5-2.5 tons/ac (3-4 tons, if roller punched)	Dry, unchopped, unweathered; free of weed seeds & rot.	Spread by machine 1.5-2.5 inches deep; must be tacked or tied down.
Compost Blanket	1" thick	Double the application rate for embankments	Follow manufacturer's application method.
Wood fiber, wood cellulose, paper	1-2 tons/ac	Double the application rate in critical areas	Use with power mulcher or hydroseeder; may be used to tack straw on steep slopes. Cannot be used in hot dry weather.

All OSHA rules & regulations established for the type of construction required by these plans shall be strictly followed (e. Trenching, Blasting, etc.)

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STATE OF MISSOURI
 MICHAEL L. HACKMEISTER
 LICENSED PROFESSIONAL ENGINEER
 PE 201708890

DATE

Michael L. Hackmeister No. E-2017018980
 Registered Professional Engineer
 State of Missouri
 for Cochran Engineering & Surveying

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 2082 SOUTH STATE STREET, ANN ARBOR, MI 48104
 (734)-323-1822

Owner Information
BLOOM MEDICALS OF MO CULTIVATION 1 LLC
 2082 SOUTH STATE STREET, ANN ARBOR, MI 48104

SWPPP General Notes and Details

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