GENERAL NOTES

1. Area of Tract: 19.9 Acres

2. This site does not contain any Flood Plain.

3. Material removed from this site shall be placed in an approved landfill.

4. The Village of Dardenne Prairie/St. Charles County Highway Department may require additional siltation control as determined by the City/County Inspector.

5. Grading will comply with the Geotechnical Engineer's Report.

6. The Contractor shall keep roads clear of mud and debris.

7. SOIL:

a. Soil preparation and revegation shall consist of seeding fescue between March 1 and June 1 at a rate of 30 pounds per acre.

b. Owner/Developer assumes full responsibility as to performance of grading operation and assurance that all properties and city/county roads will be adequately protected.

c. Of straw bales are destroyed by heavy rains, vandalism, etc., they are to be replaced immediately by the Contractor.

d. Proposed phasing of development (appox. dates):

October 1995 - Clearing

October 1995 - Grading and construction (installation of temporary sediment control, storm drainage and paving).

December 1995 - Final grading and landscaping (vegetative cover).

e. Where natural vegetation is removed during grading, vegetation shall be re-established in such density 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.

f. When grading operations are completed or suspended for more than 30 days, permanent grass must be established at sufficient density to provide erosion control on the site. Between permanent grass seeding periods, temporay cover shall be provided according to the Designated Officials recommentation. All finished grades (areas not be disturbed by future improvements) in excess of 20% slopes (5:1) shall be mulched and tacked at the rate of 100 pounds per 1,000 square feet when seeded.

g. Any existing ponds, sinkholes, etc., located in the proposed street right-of-way, or which impacts proposed street right-of-way, shall be treated in accordance with the soils report.

h. Any wells and/or springs which may exist on the property should be located and treated in a manner acceptable to the local governing authority.

i. All existing trash, debris and broken concrete pieces onsite must be removed and disposed of offsite.

j. Debris and foundation material from any existing onsite building or structure which is scheduled to be razed for this development must be disposed of offsite.

k. Soft soils in the bottom and banks of existing or former pond sites should be removed, spread out and permitted to dry sufficiently to be used as fill. None of this material should be placed in proposed public right-of-way locations or on any storm sewer location.

8. BID YARDAGE:

a. The total yardage for this project is based on a 15% shrinkage factor.

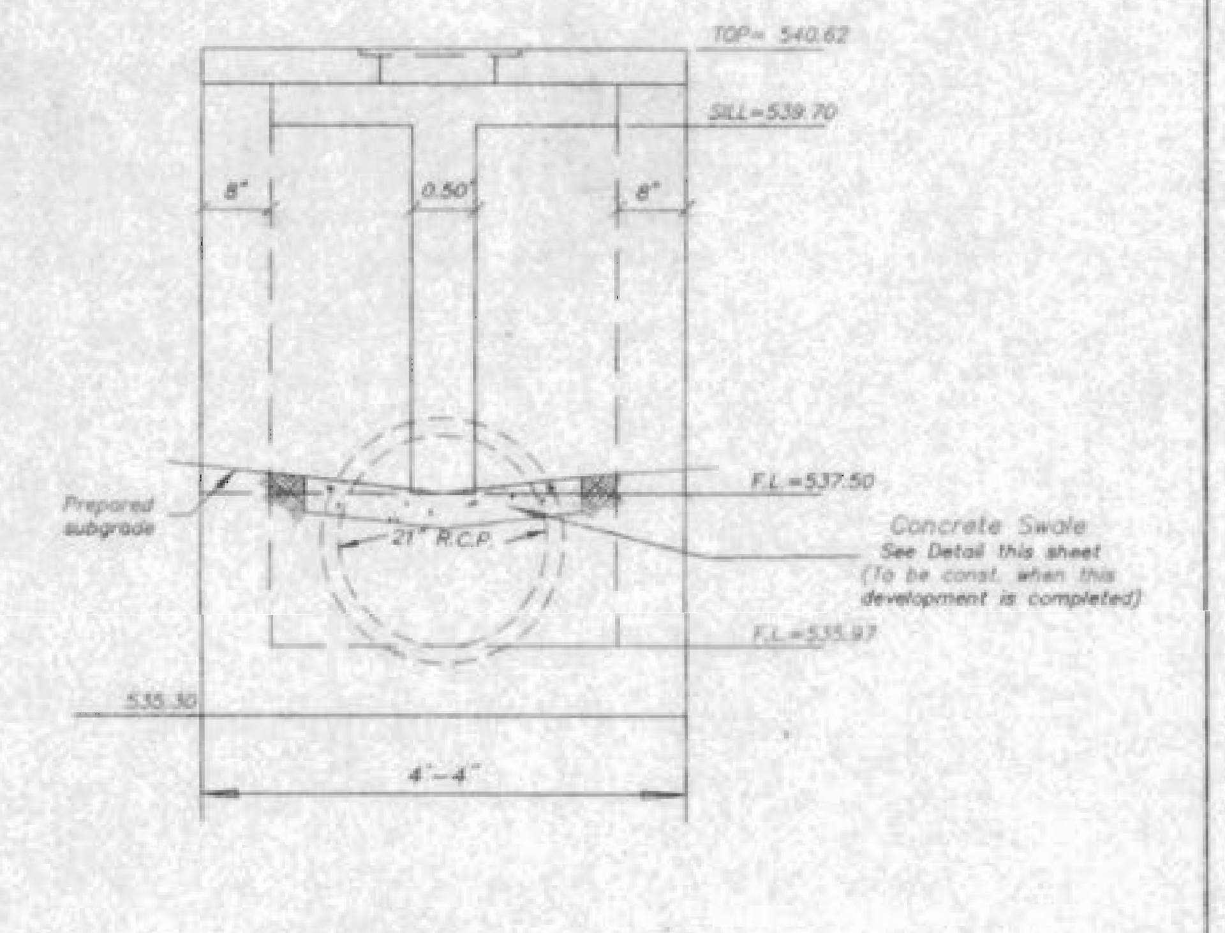
b. This shrinkage factor is subject to change due to soil conditions (types and moisture content), weather conditions and the percent of compaction actually achieved. As a result, adjustments in final grades may be required.

c. Earth quantities obtained from aerial grid map, with contours at two foot intervals with a tolerance of plus or minus one foot or 1/2 contour intervals.

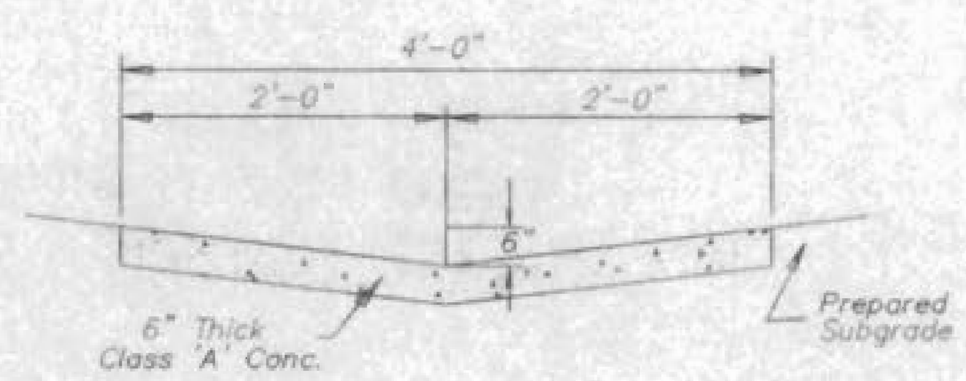
d. The computed bid yardage is to finished grade and does not include subgrade removal.

9. SILTATION CONTROL:

a. Siltation control shall consist of temporary berms and swales to divert storm water runoff to a natural discharge point (see Grading Plan for locations). At which point there shall be a double row of straw bales with four feet of separation between rows. The straw bales shall be placed with a one foot separation between bales and straw bales shall be staggered. In aareas where a berm and swale are not be feasible, a single row of straw bales shall be placed end to end to protect adjacent property and right-of-ways (this shall be the responsibility of the Grading Contractor or Developer if so agreed). Upon completion of storm sewers, straw bales shall be placed on all sides of appropriate structures to keep silt out of the storm sewers (this shall be the responsibility of the Sewer Contractor or the Developer if so agreed). All straw bales shall be securely anchored and properly maintained until all disturbed areas are paved or vegetation is established. A synthetic filter barrier may be used in place of straw bales. Temporary siltation control measures shall be maintained until vegetative cover is established at a sufficient density to provide erosion control on the site.



OVERFLOW STRUCTURE "2"
DETENTION BASIN "A"



CONCRETE SWALE DETAIL

VEGETATIVE ESTABLISHMENT
For Urban Development Sites
APPENDIX A

Seeding rates:

Permanent:

Tall Fesuce - 30 lbs./ac.
Smooth Brome - 20 lbs./ac.
combined: Fescue @ 15 lbs./ac. and Brome @ 10 lbs./ac.

Temporary:

Wheat or Rye - 150 lbs./ac. (3.5 lbs. per square foot)
Oats - 120 lbs./ac (2.75lbs. per square foot)

Seeding periods:

Fescue or Brome - March 1 to June 1
August 1 to October 1

Wheat or Rye - March 15 to November 1
Oats - March 15 to September 15

Mulch rates: 100 lbs. per 1,000 sq. feet (4,356 lbs. per acre)

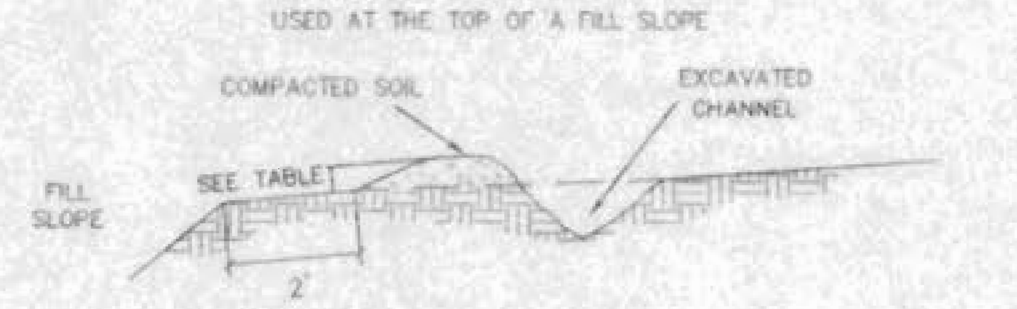
Fertilizer rates: Nitrogen 30 lbs./ac.
Phosphate 30 lbs./ac.
Potassium 30 lbs./ac.
Lime 600 lbs./ac.

*ENM = effective neutralizing material as per State evaluation of quarried rock.

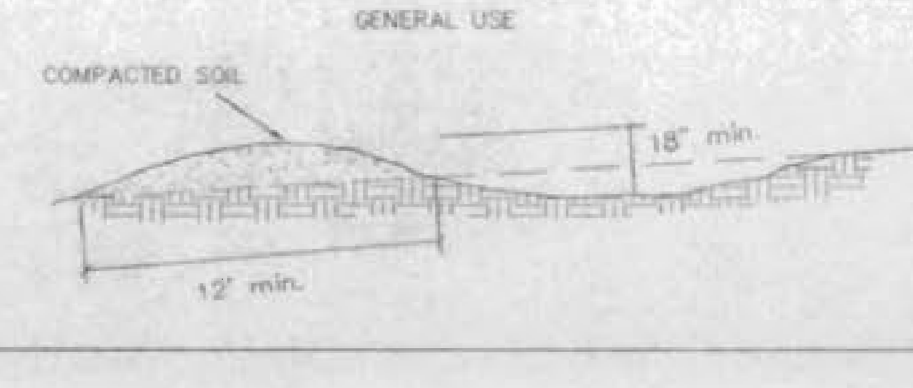
DIVERSIONS
For Urban Development Sites
APPENDIX B

** 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.

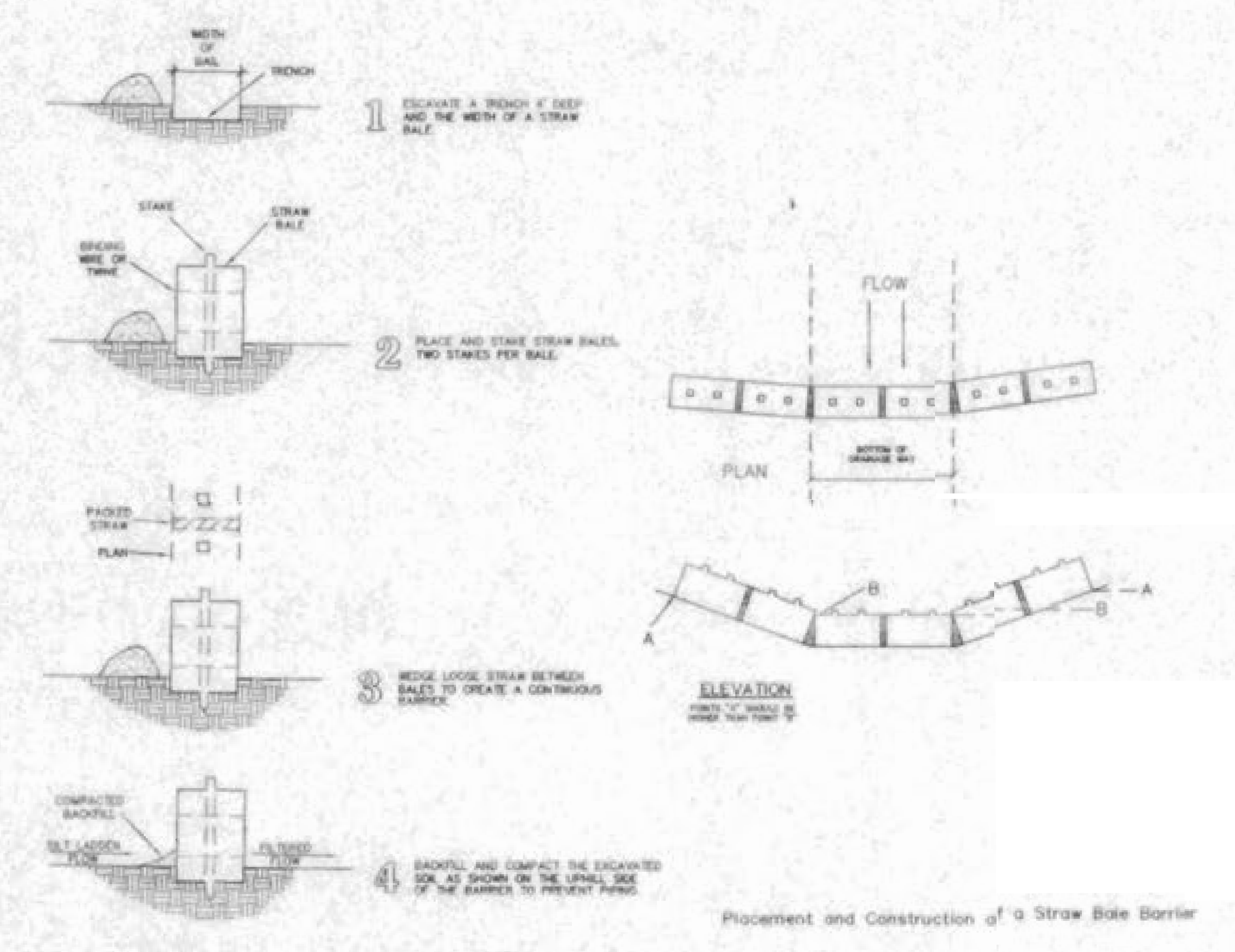
COMBINATION DIVERSION
USED AT THE TOP OF A FILL SLOPE



COMBINATION DIVERSION
GENERAL USE

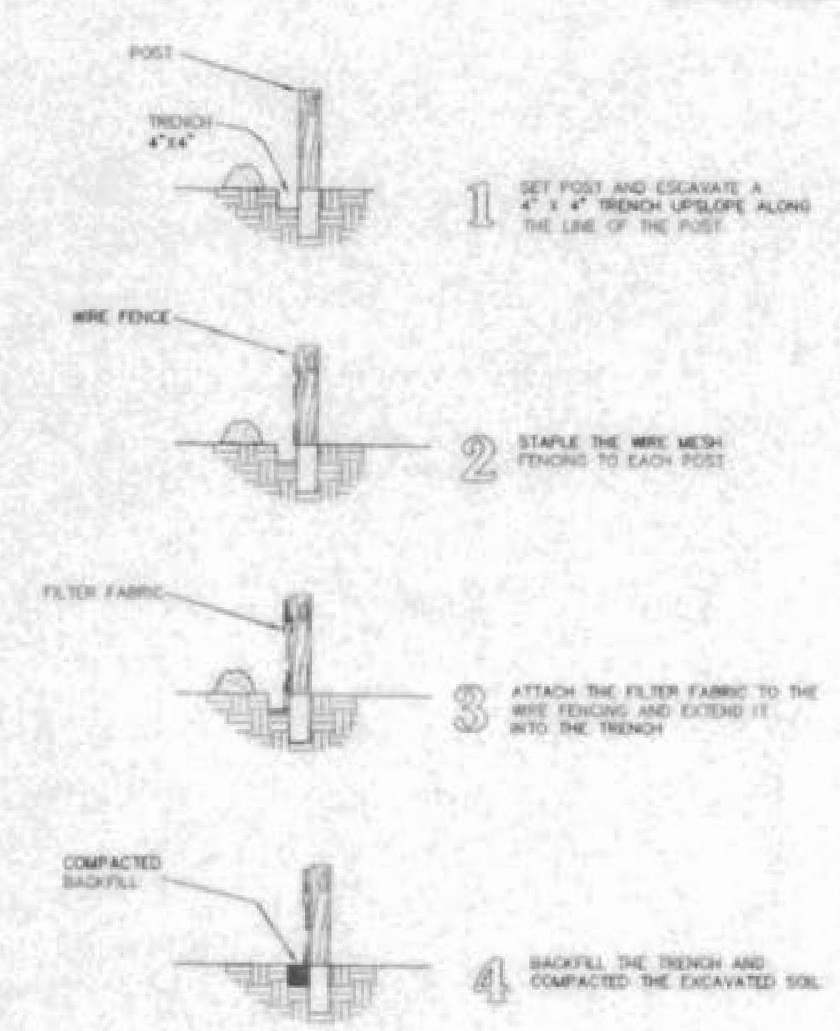


STRAW BALE BARRIER
For Urban Development Sites
APPENDIX C



Placement and Construction of a Straw Bale Barrier

SYNTHETIC FILTER BARRIERS
For Urban Development Sites
APPENDIX D



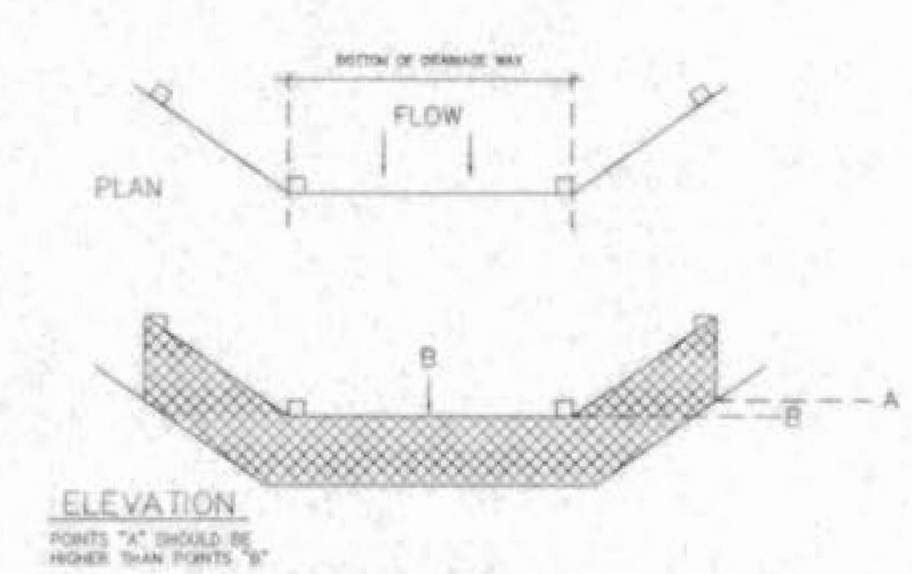
MAINTENANCE

1. Filter barriers shall be inspected immediatly after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately.

2. Should the fabric decompose or become ineffective prior to the end of the expected usable life and the barrier still be necessary, the fabric shall be replaced promptly.

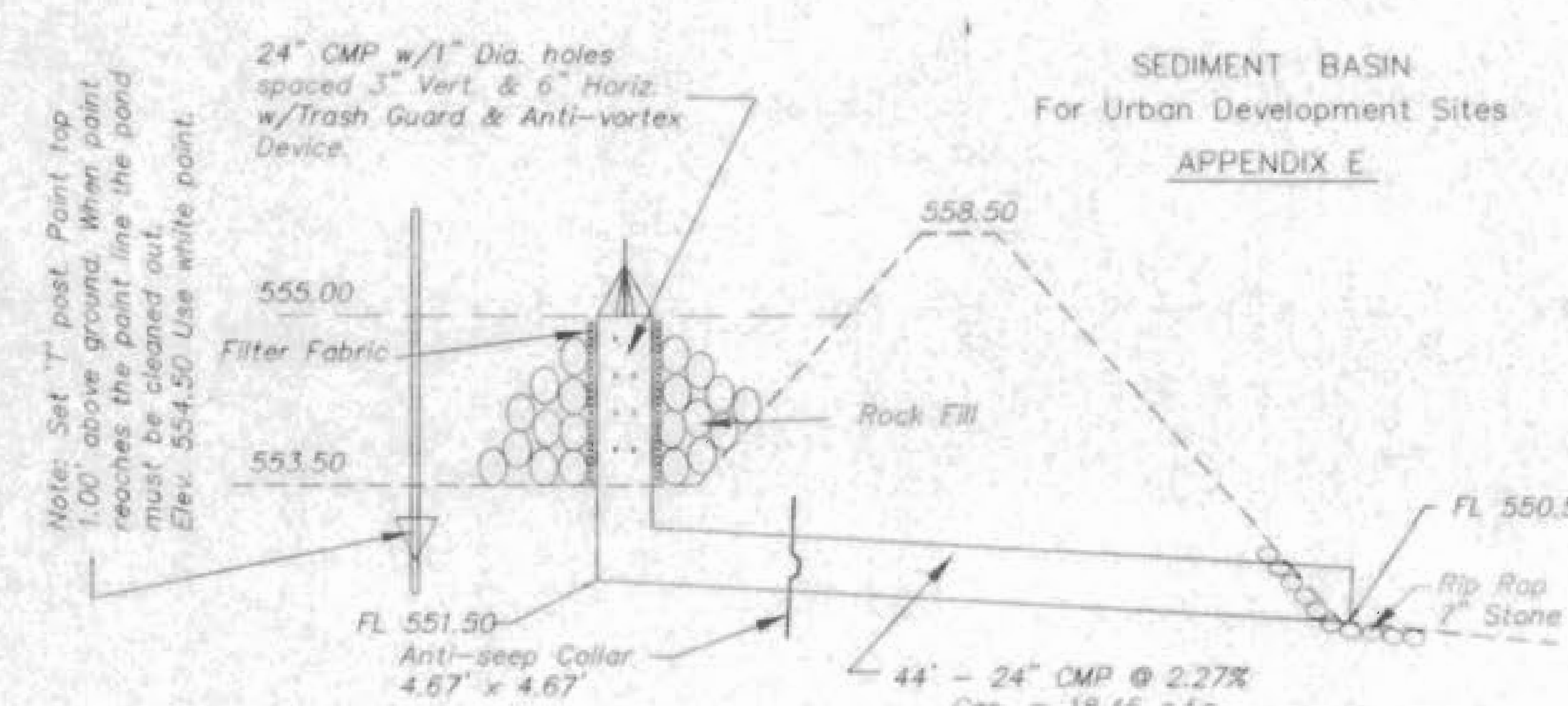
3. Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximately half the height of the barrier.

4. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required shall be dressed to conform with the existing grade, prepared and seeded.



Placement and Construction of a Synthetic Filter Barrier

SEDIMENT BASIN
For Urban Development Sites
APPENDIX E



DETAIL OF TEMPORARY SILTATION PIPE
BASIN "B"

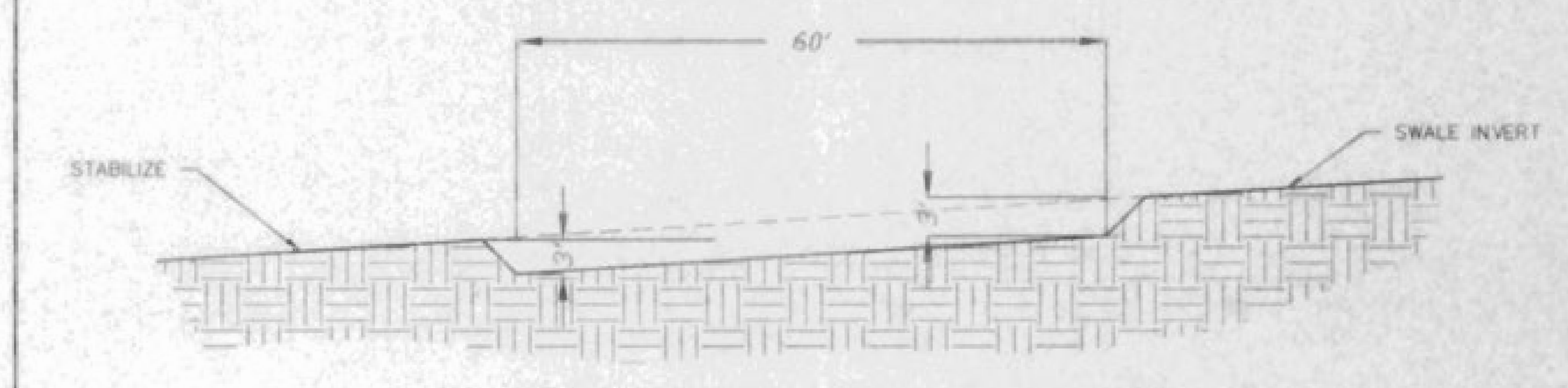
Sediment Basin "B"

1. Average land slope = 584-558 = 26 divided by 585 = 4.4%
2. Length of slope = 585'
3. Drainage Area = 7.44 ac.
4. Soil type = other
5. Life = 1 Year

1. Land Slope = (Table B-6) = 0.82
2. Delivery Ratio = (Table B-7) = 0.60
3. Sediment Yield = (Table B-8) = .031
4. Sediment Storage = LS x yield x acres
= 0.82 x .031 x 7.44
= 0.19 acre feet
= 8,276 c.f. Storage Req'd (8,574 c.f. Provided)

Total Q to Basin = 12.65 c.f.s.
Standpipe = 24" CMP
$Q= 3.0\ (1w)\ (h)^{3/2}$
$Q= 3.0 \times 6.28 \times 0.77^{3/2}$
Q= 12.73 c.f.s.

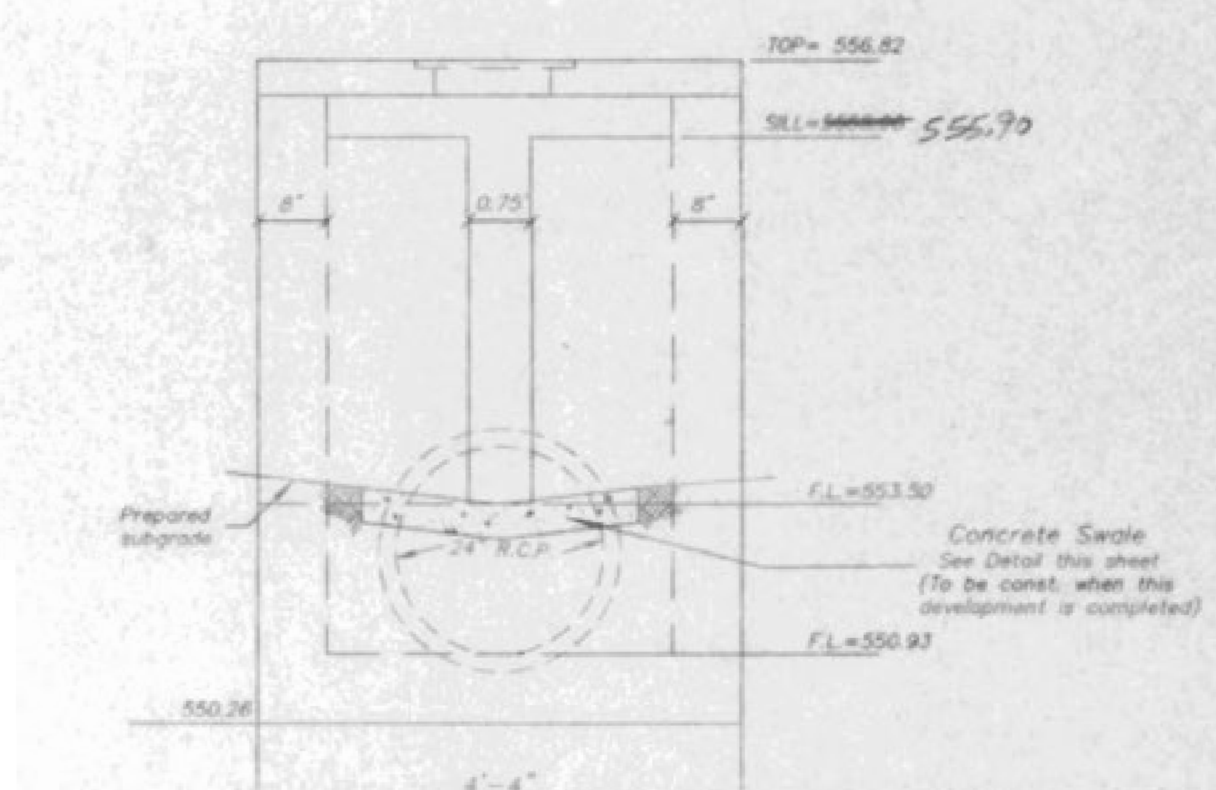
Top of Standpipe 555.00
+0.77
Highwater = 555.77
Top of Dam = 558.50



NOTES:
1. THE SWALE SEDIMENT TRAP SHALL 25'x60'x3' TO PROVIDE MINIMUM STORAGE OF 1800 CUBIC FEET PER ACRE OF DRAINAGE AREA.
2. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
3. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION SHALL BE MINIMIZED.
4. THE SEDIMENT TRAP SHALL BE REMOVED AND AREA STABILIZED WHEN THE CONTRIBUTORY DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
5. THE SWALE SEDIMENT TRAP WILL BE PROPERLY BACK FILLED AND THE SWALE RECONSTRUCTED.

SWALE SEDIMENT TRAP

NOT TO SCALE



OVERFLOW STRUCTURE "31"
DETENTION BASIN "B"

ENGINEERS AUTHENTICATION
The responsibility for Professional Engineering liability on this project is hereby specifically limited to the set of plans authenticated on each sheet by the Engineer's signature, original stamped Engineer's seal, and the original stamped date hereunder attached. All responsibility is disclaimed for all other plan sheets or sets involved in this project preceeding this date and excludes all revisions after this date unless reauthenticated.

ZAVRADINOS & ASSOCIATES, INC. DBA
ZAVRADINOS ENGINEERING & SURVEYING

STATE OF MISSOURI
DIMITRIOS ZAVRADINOS
NUMBER E-20163
REGISTERED PROFESSIONAL ENGINEER

120495

12-7-95

D.J. ZAVRADINOS, Pres E-20163 DATE