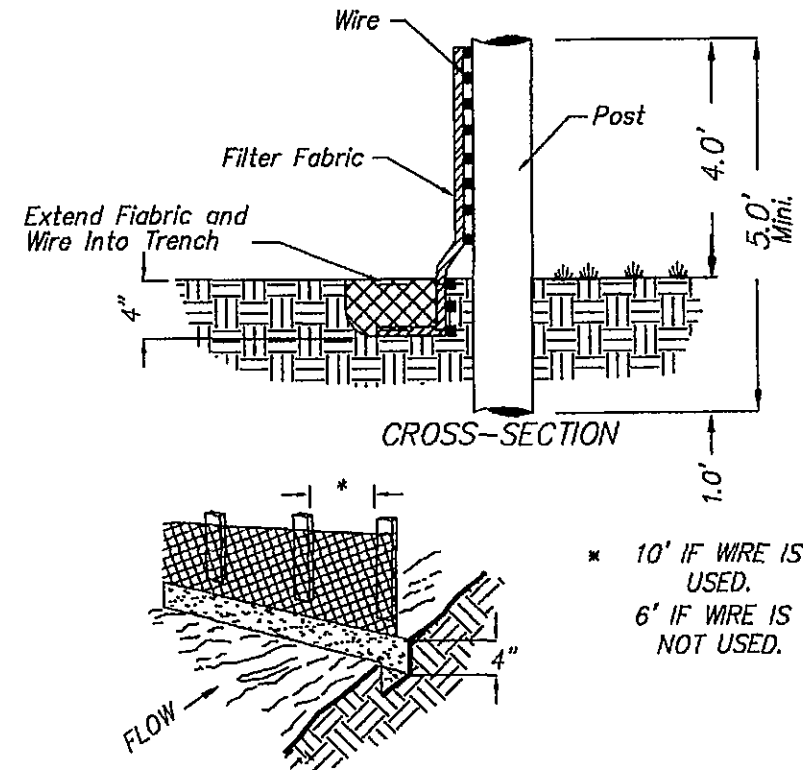


### FUEL STORAGE CONTAINMENT NOTES

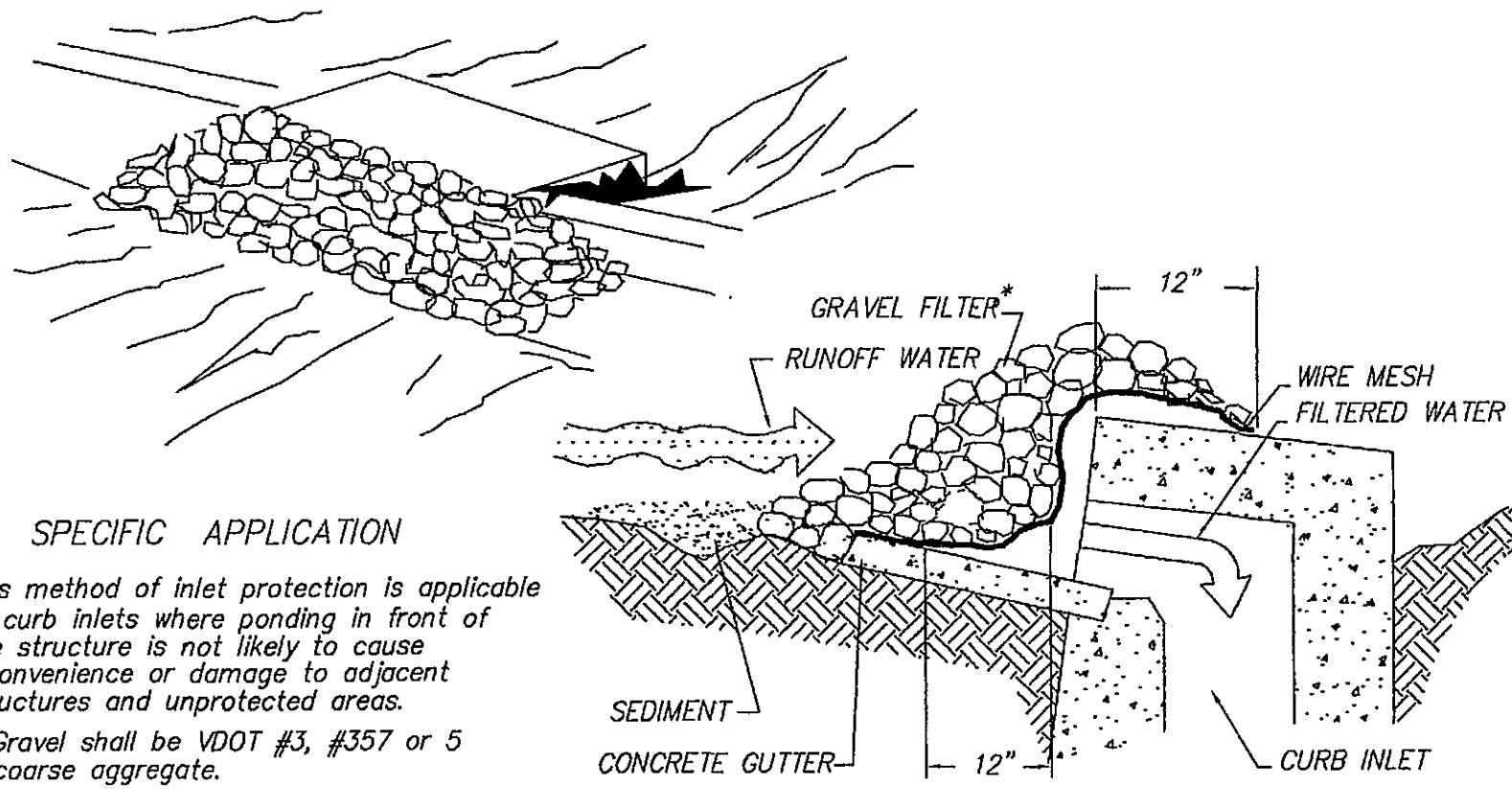
IN THE EVENT THAT THE GENERAL CONTRACTOR, OR A SUB-CONTRACTOR REQUIRES ON-SITE FUEL STORAGE FOR EQUIPMENT FUELING, A CONTAINMENT DIKE SHALL BE PROVIDED AROUND THE FULL PERIMETER OF THE FUEL STORAGE AREA. THIS CONTAINMENT DIKE SHALL CONSIST OF A COMPACTED EARTHEN BERM NO LESS THAN 24" IN HEIGHT, WITH MAXIMUM 3H:1V SIDE SLOPES, AND A TOP WIDTH OF NO LESS THAN THREE FEET. ADDITIONALLY, THE CONTRACTOR SHALL HAVE A POLLUTANT SPILL CONTAINMENT CONTINGENCY PLAN FILED WITH THE GENERAL CONTRACTOR, AND APPROVED SPILL ABSORPTION MATERIALS IMMEDIATELY ADJACENT TO THE FUELING AREA. THE LOCATION OF THE TANK SHOWN HEREON SHALL BE GENERALLY ADHERED TO, WITH THE TANK BEING A MINIMUM OF 200' FROM A LIVE STREAM.

CRS

CONSTRUCTION ROAD STABILIZATION  
ONCE THE PROPOSED PUBLIC STREET EXTENSION IS AT ROUGH GRADE, AND THE APPLICABLE UTILITIES AND STORM DRAIN WITHIN THE ROAD-BED HAVE BEEN CONSTRUCTED, THE CONTRACTOR SHALL PROVIDE, PLACE, AND COMPACT A 20' WIDE BY 6" THICK LAYER OF VDOT STD. NO. 1 STONE, CENTERED ALONG THE CENTER OF THE NEW STREET. THE TOP ELEVATION OF THIS 6" THICK STONE LAYER SHALL BE 9-1/2" BELOW FINISH TOP OF PAVEMENT ELEVATION.



(SF) CONSTRUCTION OF A SILT FENCE

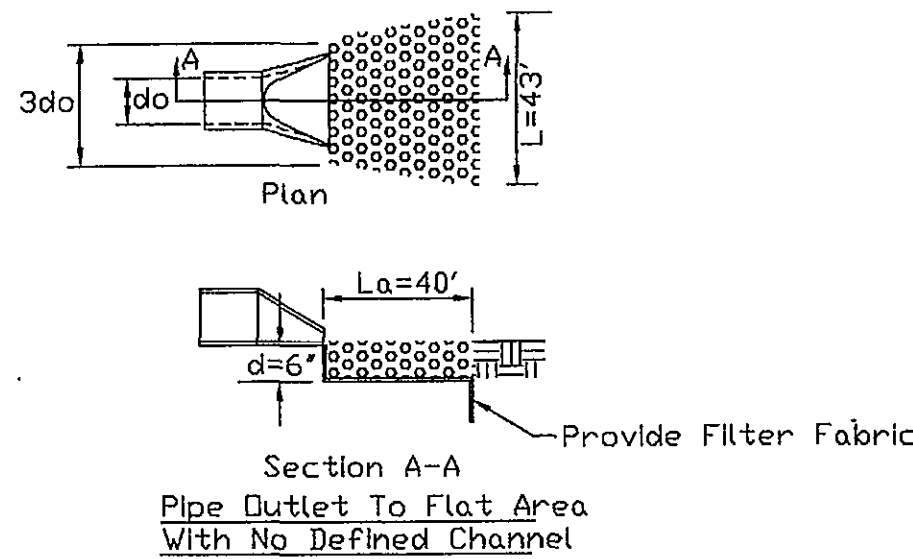


#### SPECIFIC APPLICATION

This method of inlet protection is applicable at curb inlets where ponding in front of the structure is not likely to cause inconvenience or damage to adjacent structures and unprotected areas.

\* Gravel shall be VDOT #3, #357 or 5 coarse aggregate.

(IP) GRAVEL CURB INLET SEDIMENT FILTER



#### Section A-A

Pipe Outlet To Flat Area With No Defined Channel

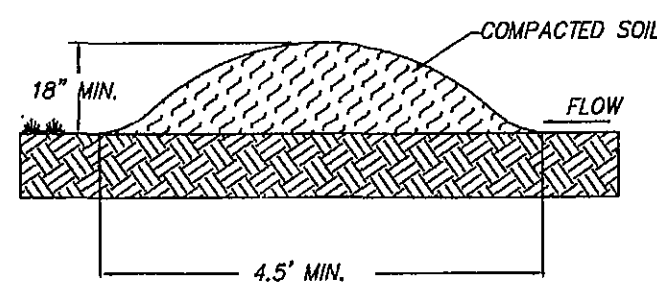
NOTES

1. Apron (lining may be rip-rap, grouted rip-rap, gabion basket, or concrete).

2. La is the length of the rip-rap apron as calculated using plates 318-3 and 318-4.

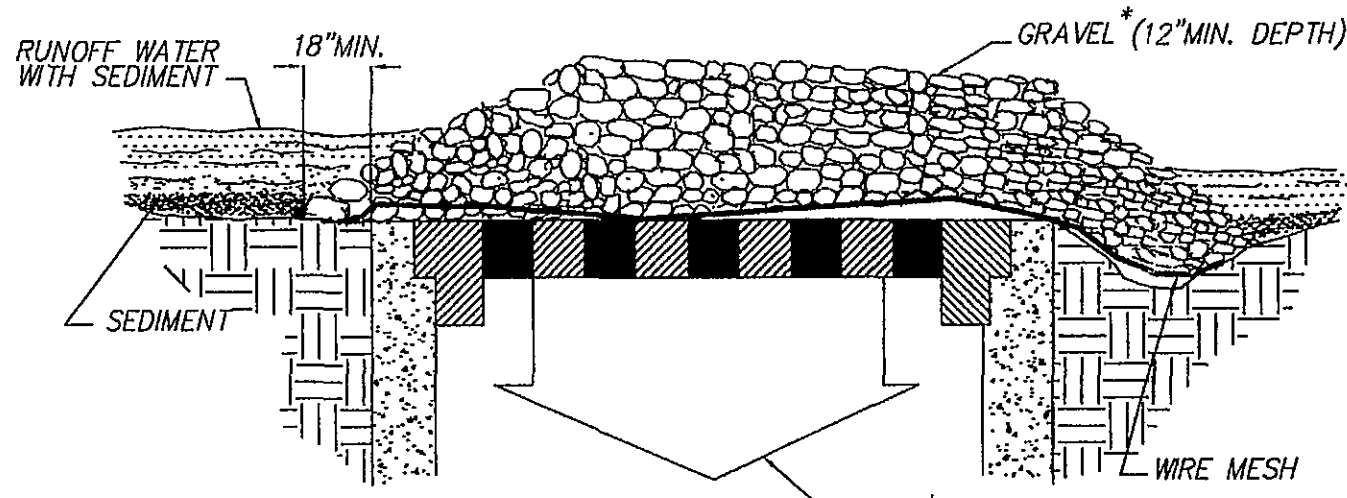
3. d = 1.5 times the maximum stone diameter, but not less than 6".

(OP) OUTLET PROTECTION



(DD) TEMPORARY DIVERSION DIKE

(RWD) RIGHT OF WAY DIVERSION



#### SPECIFIC APPLICATION

This method of inlet protection is applicable where heavy concentrated flows are expected, but not where ponding around the structure might cause excessive inconvenience or damage to adjacent structures and unprotected areas.

\* Gravel shall be VDOT #3, #357 or #5 coarse aggregate.

(IP) GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER

(PS) PERMANENT SEEDING MIXTURE

DISTURBED AREAS SHALL BE PERMANENTLY SEED WITHIN SEVEN (7) DAYS OF ACHIEVING FINAL GRADE, OR ON DISTURBED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE WITHIN ONE YEAR.

| TYPE A  | TYPE B (SLOPES 3:1 OR STEEPER)  |
|---|---|
| 03/15 TO 05/15 SEE 08/16 TO 10/31:<br>ANNUAL RYEGRASS @ 20 LB / ACRE<br>RED TOP @ 2 LB / ACRE<br>KY 31 FESCUE @ 150 LB / ACRE | 03/15 TO 05/15 SEE 08/16 TO 10/31:<br>CROWN VETCH @ 20 LB / ACRE<br>ANNUAL RYEGRASS @ 20 LB / ACRE<br>RED TOP @ 2 LB / ACRE<br>KY 31 FESCUE @ 108 LB / ACRE |
| 05/16 TO 08/15:<br>FOXTAIL MILLET @ 20 LB / ACRE<br>RED TOP @ 2 LB / ACRE<br>KY 31 FESCUE @ 150 LB / ACRE                     | 05/16 TO 08/15:<br>CROWN VETCH @ 20 LB / ACRE<br>FOXTAIL MILLET @ 20 LB / ACRE<br>RED TOP @ 2 LB / ACRE<br>KY 31 FESCUE @ 108 LB / ACRE                     |
| 11/01 TO 02/28:<br>WINTER RYE @ 20 LB / ACRE<br>RED TOP @ 2 LB / ACRE<br>KY 31 FESCUE @ 150 LB / ACRE                         | 11/01 TO 02/28:<br>CROWN VETCH @ 20 LB / ACRE<br>WINTER RYE @ 20 LB / ACRE<br>RED TOP @ 2 LB / ACRE<br>KY 31 FESCUE @ 108 LB / ACRE                         |

LIME: 4,000 LB / ACRE PULVERIZED AGRICULTURAL LIMESTONE

FERTILIZER: 10-20-10 @ 1,000 LB / ACRE

MULCH: SHALL BE USED OVER ALL SEEDING AREAS AND SHALL BE APPLIED IN STRICT ACCORDANCE WITH STANDARD AND SPECIFICATION 3.35 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

SOIL CONDITIONING: INCORPORATION OF LIME AND FERTILIZER, SELECTION OF CERTIFIED SEED, MULCHING, MAINTENANCE OF NEW SEEDLINGS, AND RESEEDING SHALL BE IN ACCORDANCE WITH SPECIFICATIONS CONTAINED WITHIN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. ADDITIONAL SEEDING TO BE PERFORMED AS REQUIRED BY THE CITY ENGINEER.

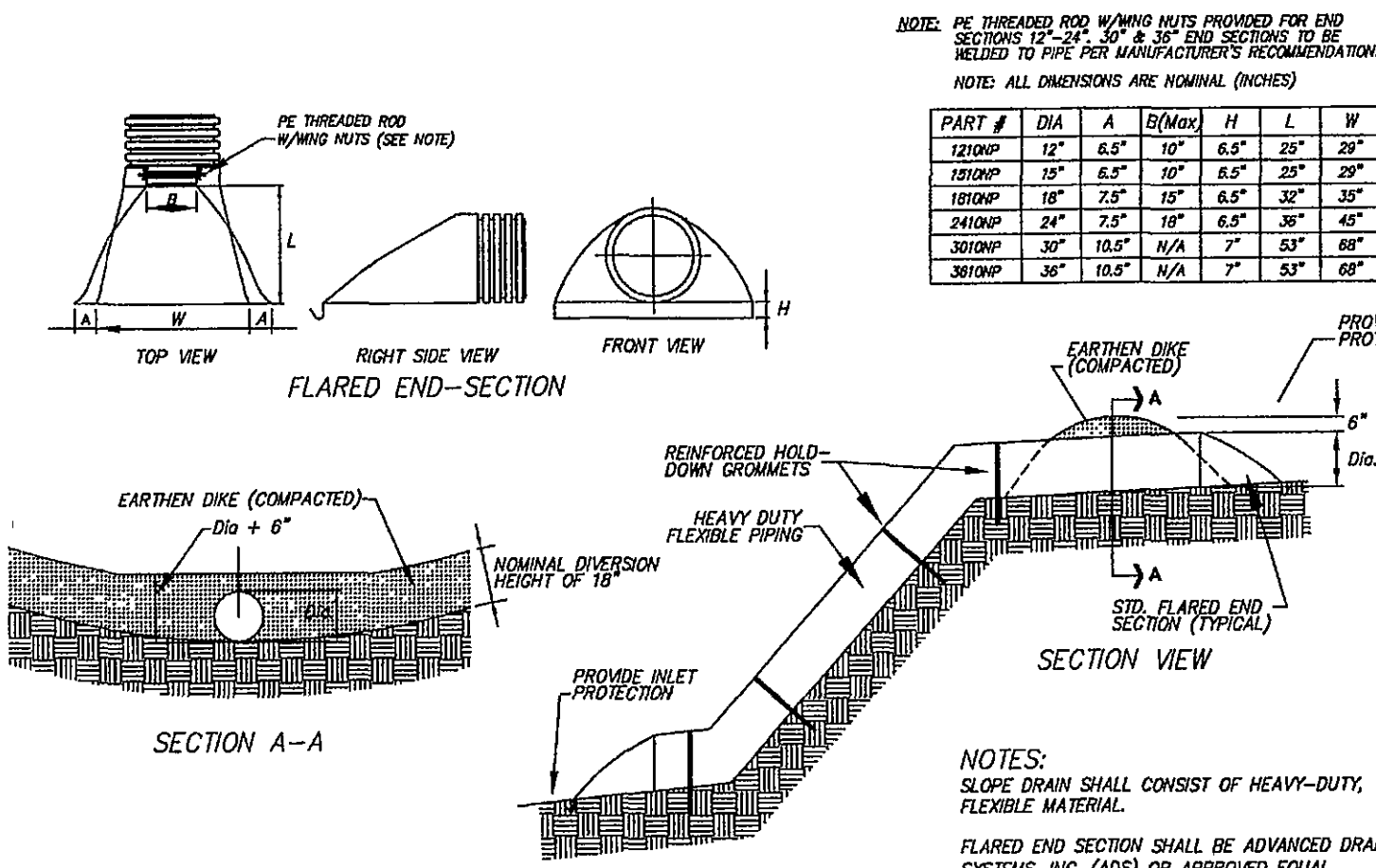
SEED APPLICATION: APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER ON A FIRM, FRIABLE, SEEDBED. MAXIMUM SEEDING DEPTH SHALL BE 1/4 INCH.

### EROSION-SILTATION CONTROL COST ESTIMATE

(FOR SOIL EROSION CONTROL BONDING PURPOSES ONLY)

ALL COSTS GIVEN ARE COMPLETE IN PLACE

| DESCRIPTION                         | UNIT   | QUANTITY | UNIT COST   | TOTAL COST          |
|-------------------------------------|--------|----------|-------------|---------------------|
| CONSTRUCTION ENTRANCE               | EA     | 1        | \$ 1,000.00 | \$ 1,000.00         |
| SILT FENCE                          | LF     | 770      | \$ 4.00     | \$ 3,080.00         |
| INLET PROTECTION                    | EA     | 6        | \$ 150.00   | \$ 900.00           |
| VDOT EC-2 LINING                    | SY     | 364      | \$ 3.50     | \$ 1,274.00         |
| PERMANENT SEEDING                   | ACRE   | 3.6      | \$ 1,500.00 | \$ 5,400.00         |
| TEMPORARY SEEDING                   | ACRE   | 3.6      | \$ 500.00   | \$ 1,800.00         |
| TEMPORARY SEDIMENT BASIN            | EA     | 1        | \$ 3,500.00 | \$ 3,500.00         |
| DIVERSION DIKE                      | LF     | 820      | \$ 4.00     | \$ 3,280.00         |
| OUTLET PROTECTION CL-1 RIP RAP      | TONS   | 97       | \$ 18.00    | \$ 1,746.00         |
| TEMP. SLOPE DRAIN                   | EA     | 2        | \$ 450.00   | \$ 900.00           |
| MATTING                             | 100 SY | 40       | \$ 55.00    | \$ 2,200.00         |
| CHECK DAMS                          | EA     | 3        | \$ 100.00   | \$ 300.00           |
| R-O-W DIVERSION                     | EA     | 2        | \$ 150.00   | \$ 300.00           |
| <b>SUB-TOTAL</b>                    |        |          |             | <b>\$ 25,680.00</b> |
| <b>10% CONTINGENCY</b>              |        |          |             | <b>\$ 2,568.00</b>  |
| <b>TOTAL ESTIMATED PROJECT COST</b> |        |          |             | <b>\$ 28,248.00</b> |



NOTE: PE THREADED ROD W/ WING NUTS PROVIDED FOR END SECTIONS 12"-24" 5/8" & 3/4" END SECTIONS TO BE HELD TO PIPE PER MANUFACTURER'S RECOMMENDATIONS.

NOTE: ALL DIMENSIONS ARE NOMINAL (INCHES)

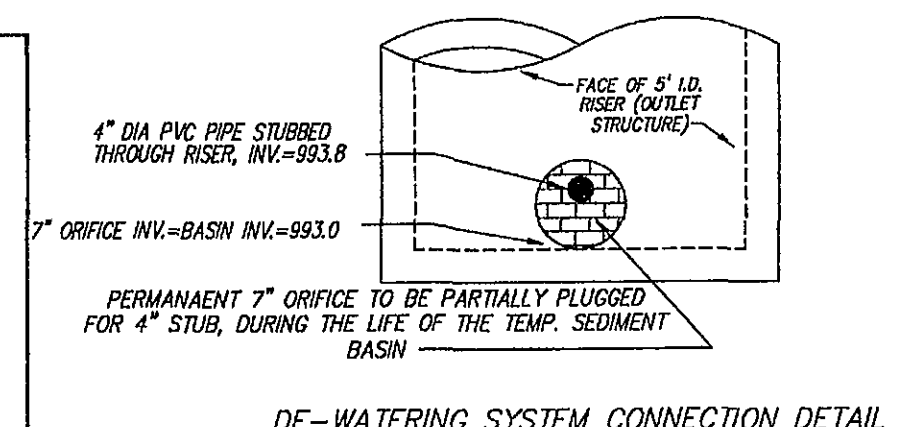
| PART # | DIA | A     | B(MAX) | H    | L   | W   |
|--------|-----|-------|--------|------|-----|-----|
| 12INDP | 12" | 6.5"  | 10"    | 6.5" | 20" | 20" |
| 18INDP | 18" | 6.5"  | 10"    | 6.5" | 20" | 20" |
| 24INDP | 24" | 7.5"  | 10"    | 6.5" | 30" | 30" |
| 30INDP | 30" | 10.5" | N/A    | 7"   | 50" | 60" |

NOTE: SLOPE DRAIN SHALL CONSIST OF HEAVY-DUTY, FLEXIBLE MATERIAL.

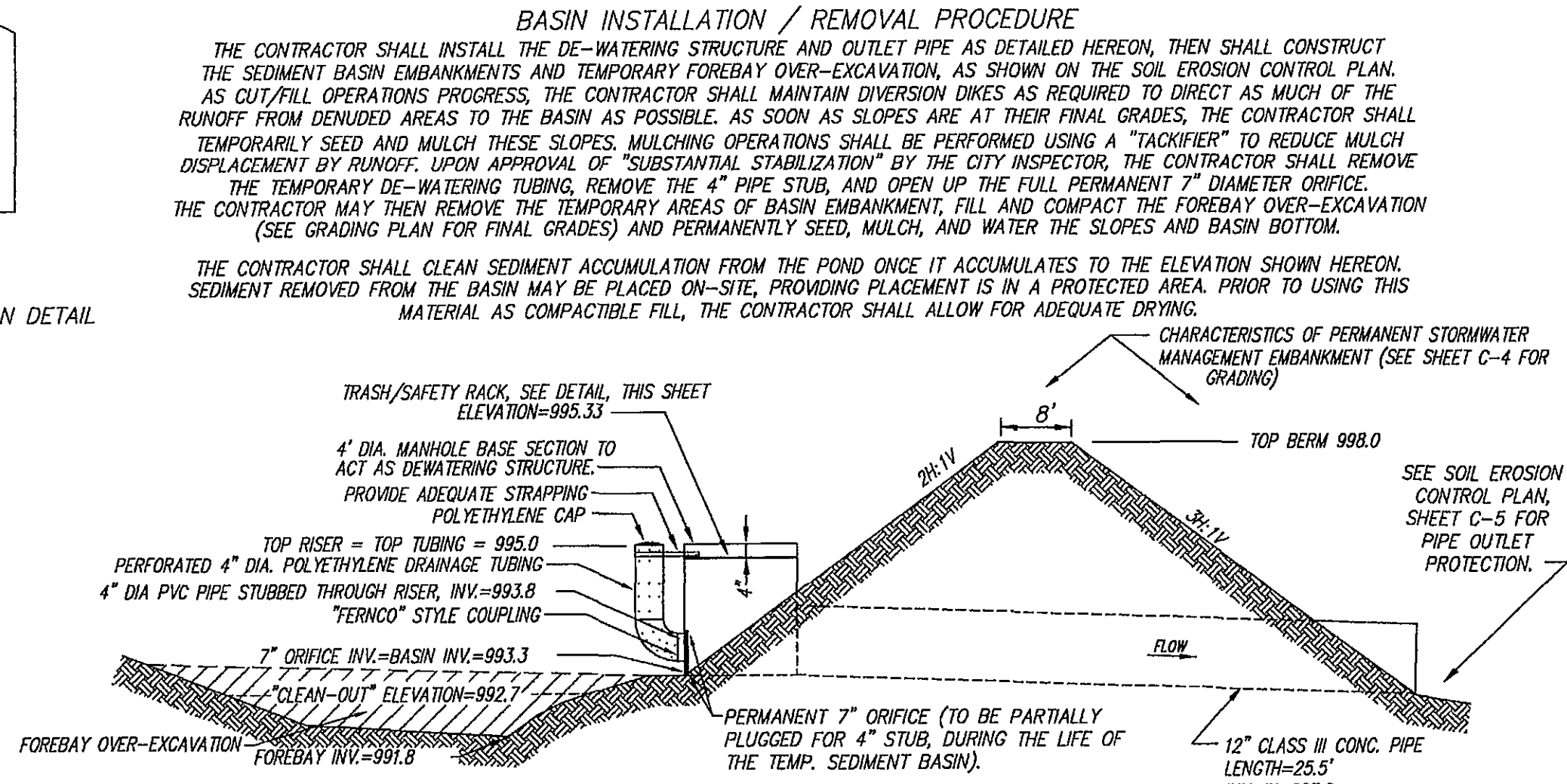
FLARED END SECTION SHALL BE ADVANCED DRAINAGE SYSTEMS, INC. (ADS) OR APPROVED EQUAL.

REINFORCED HOLD-DOWN CROWMETS SHALL BE SPACED AT 10-FOOT (OR LESS) INTERVALS AND AT THE TOP AND THE OF THE SLOPE.

(TSD) TEMPORARY SLOPE DRAIN



DE-WATERING SYSTEM CONNECTION DETAIL



#### BASIN INSTALLATION / REMOVAL PROCEDURE

THE CONTRACTOR SHALL INSTALL THE DE-WATERING STRUCTURE AND OUTLET PIPE AS DETAILED HEREON, THEN SHALL CONSTRUCT THE SEDIMENT BASIN EMBANKMENTS AND TEMPORARY FOREBAY OVER-EXCAVATION, AS SHOWN ON THE SOIL EROSION CONTROL PLAN. AS CUT/FILL OPERATIONS PROGRESS, THE CONTRACTOR SHALL MAINTAIN DIVERSION DIKES AS REQUIRED TO DIRECT AS MUCH OF THE RUNOFF FROM DENUDE AREAS TO THE BASIN AS POSSIBLE. AS SOON AS SLOPES ARE AT THEIR FINAL GRADES, THE CONTRACTOR SHALL TEMPORARILY SEED AND MULCH THESE SLOPES. MULCHING OPERATIONS SHALL BE PERFORMED USING A "TRACKER" TO REDUCE MULCH DISPLACEMENT BY RUNOFF. UPON APPROVAL OF "SUBSTANTIAL STABILIZATION" BY THE CITY INSPECTOR, THE CONTRACTOR SHALL REMOVE THE TEMPORARY DE-WATERING TUBING, REMOVE THE 4" PIPE STUB, AND OPEN UP THE FULL PERMANENT 7" DIAMETER ORIFICE. THE CONTRACTOR MAY THEN REMOVE THE TEMPORARY AREAS OF BASIN EMBANKMENT, FILL AND COMPACT THE FOREBAY OVER-EXCAVATION (SEE GRADING PLAN FOR FINAL GRADES) AND PERMANENTLY SEED, MULCH, AND WATER THE SLOPES AND BASIN BOTTOM.

THE CONTRACTOR SHALL CLEAN SEDIMENT ACCUMULATION FROM THE POND ONCE IT ACCUMULATES TO THE ELEVATION SHOWN HEREON. SEDIMENT REMOVED FROM THE BASIN MAY BE PLACED ON-SITE, PROVIDING PLACEMENT IS IN A PROTECTED AREA. PRIOR TO USING THIS MATERIAL AS COMPACTIBLE FILL, THE CONTRACTOR SHALL ALLOW FOR ADEQUATE DRYING.

CHARACTERISTICS OF PERMANENT STORMWATER MANAGEMENT EMBANKMENT (SEE SHEET C-4 FOR GRADING)

TOP BERM 998.0

2H:1V

8'

4" DIA. MANHOLE BASE SECTION TO ACT AS DEWATERING STRUCTURE.

PROVIDE ADEQUATE STRAPPING POLYETHYLENE CAP

TOP RISER = TOP TUBING = 995.0

PERFORATED 4" DIA. POLYETHYLENE DRAINAGE TUBING

4" DIA. PVC PIPE STUBBED THROUGH RISER, INV.=993.8

"TERNCO" STYLE COUPLING

7" ORIFICE INV.=BASIN INV.=993.3

"CLEAN-OUT" ELEVATION=992.7

FOREBAY OVER-EXCAVATION FOREBAY INV.=991.8

PERMANENT 7" ORIFICE (TO BE PARTIALLY PLUGGED FOR 4" STUB, DURING THE LIFE OF THE TEMP. SEDIMENT BASIN).

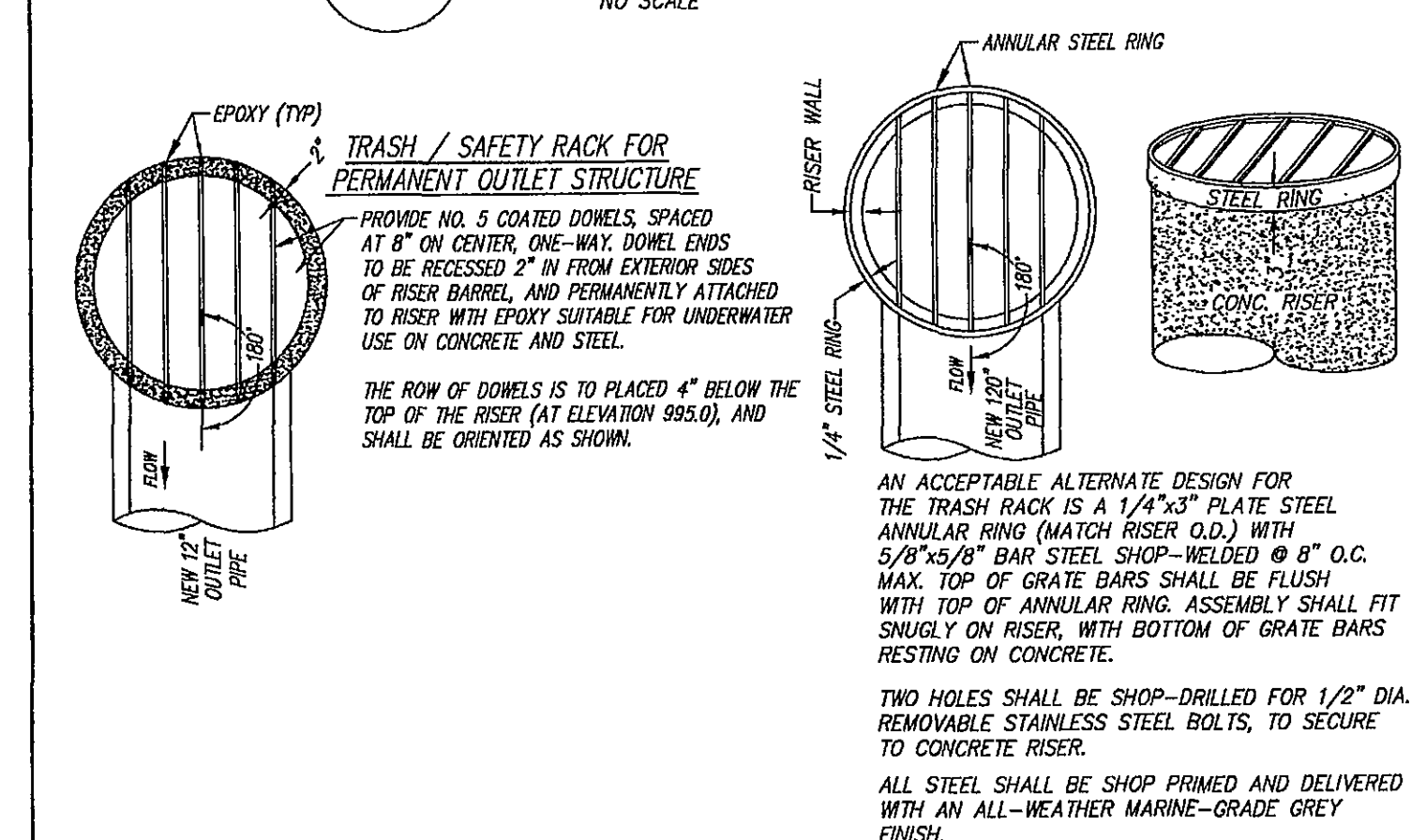
12" CLASS III CONC. PIPE LENGTH=28.5' INV. IN=993.0 INV. OUT=992.0 SLOPE=3.9%

SEE SOIL EROSION CONTROL PLAN, SHEET C-5 FOR PIPE OUTLET PROTECTION.

THE CONTRACTOR SHALL INSTALL THE TEMPORARY DE-WATERING STRUCTURE AS SHOWN, SUCH THAT "WET" STORAGE IS PROVIDED TO ELEVATION 1074.1, AND WATER PONDING ABOVE THIS ELEVATION WILL BE FILTERED THROUGH THE PERFORATED TUBING, THEREBY ALLOWING THE SEDIMENT TIME TO SETTLE.

THE POND SHALL BE CLEANED OF EXCESS SEDIMENT ONCE HALF OF THE "WET" DEPTH HAS BEEN REDUCED BY SILTATION.

(TSB) TEMPORARY SEDIMENT BASIN DEWATERING SYSTEM



#### TRASH / SAFETY RACK FOR PERMANENT OUTLET STRUCTURE

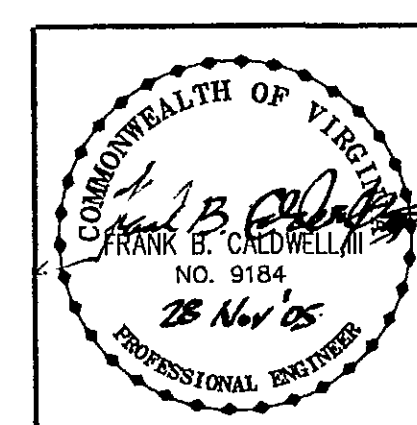
PROVIDE NO. 5 COATED DOWELS, SPACED AT 8" ON CENTER, ONE-WAY, DOWEL ENDS TO BE RECESSED 2" IN FROM EXTERIOR SIDES OF RISER BARREL, AND PERMANENTLY ATTACHED TO RISER WITH EPOXY SUITABLE FOR UNDERWATER USE ON CONCRETE AND STEEL.

THE ROW OF DOWELS IS TO BE PLACED 4" BELOW THE TOP OF THE RISER (AT ELEVATION 995.0), AND SHALL BE ORIENTED AS SHOWN.

AN ACCEPTABLE ALTERNATE DESIGN FOR THE TRASH RACK IS A 1/4"x3" PLATE STEEL ANNULAR RING (MATCH RISER O.D.) WITH 5/8"x5/8" BAR STEEL SHOP-WELDED @ 8" O.C. MAX. TOP OF GRATE BARS SHALL BE FLUSH WITH TOP OF ANNULAR RING. ASSEMBLY SHALL FIT SNUGLY ON RISER, WITH BOTTOM OF GRATE BARS RESTING ON CONCRETE.

TWO HOLES SHALL BE SHOP-DRILLED FOR 1/2" DIA. REMOVABLE STAINLESS STEEL BOLTS, TO SECURE TO CONCRETE RISER.

ALL STEEL SHALL BE SHOP PRIMED AND DELIVERED WITH AN ALL-WEATHER MARINE-GRADE GREY FINISH.



Designed: JWK

Checked: FBC

Date: SEPTEMBER 1, 2005

Rev: NOV. 28, 2005

Scale: 1"=30'

Tax Parcel: 6050113

W.O. No.: 05-0052

#### EROSION CONTROL DETAILS

FOR

CHURCH ALIVE

INTERNATIONAL

CORNER OF PETERS CREEK RD AND SALEM

TURNPIKE NORTHWEST

CITY OF ROANOKE, VA.

CWA

ENGINEERS / SURVEYORS / PLANNERS

4803 MELROSE AVENUE, N.W.

P.O. BOX 6800

ROANOKE, VIRGINIA 24017

(540) 366-3400

FAX: (540) 366-8708