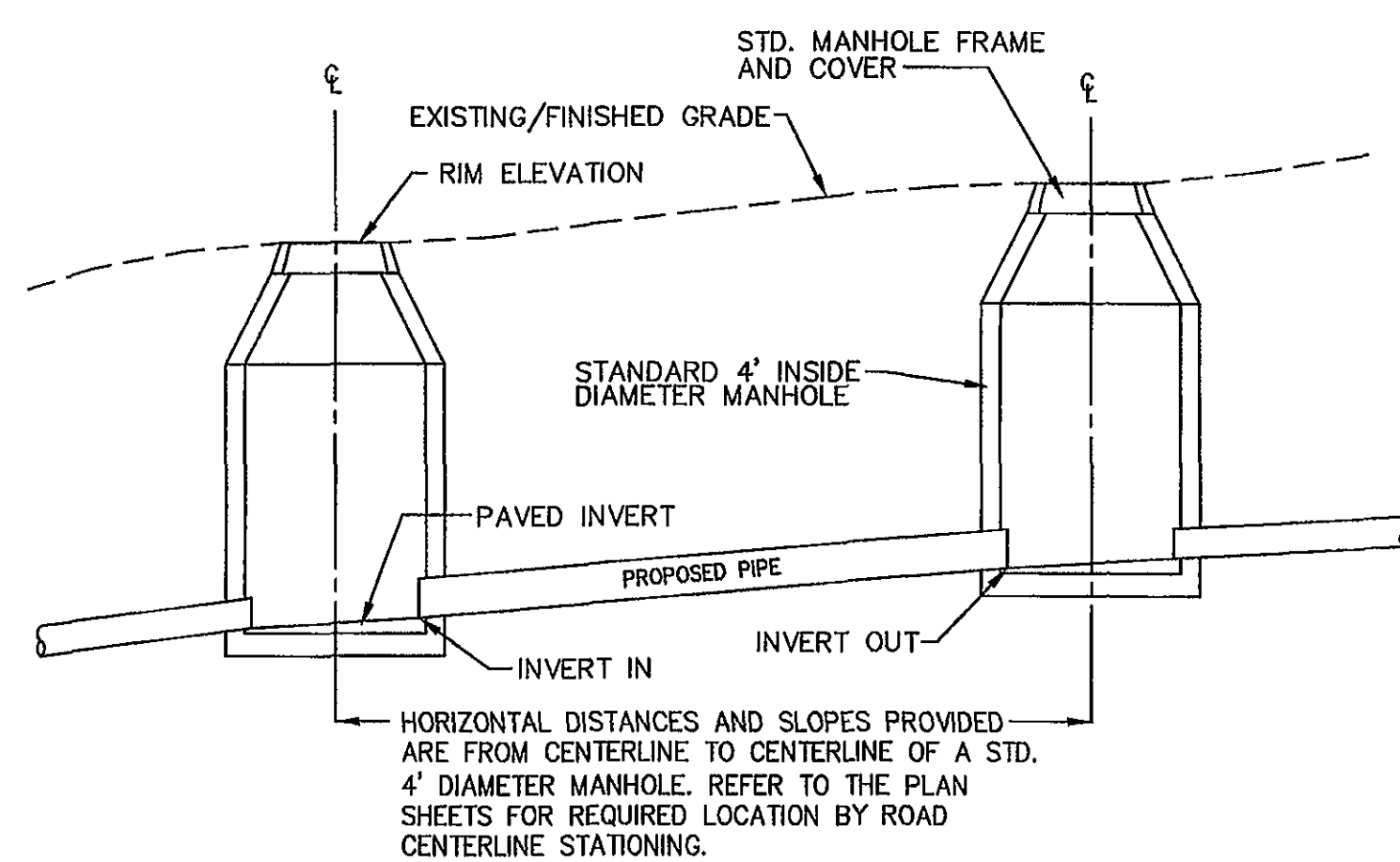


QUANTITY & COST ESTIMATE

ITEM	QUANTITY	UNIT COST	TOTAL
Roadway Excavation	15,550 CY	x \$2.50 CY	\$38,875.00
Cut & Pavement	2613 SY	x \$10.00 SY	\$26,130.00
Curb & Gutter	1632 LF	x \$12.00 LF	\$19,585.00
Grate Inlets	2 EA	x \$1,500.00 EA	\$3,000.00
Curb Inlets - Std. 38's	3 EA	x \$1,500.00 EA	\$4,500.00
Curb Inlets - Std. 30's	2 EA	x \$1,500.00 EA	\$3,000.00
Std. Manholes	2 EA	x \$1,500.00 EA	\$3,000.00
15" Conc. Pipe	432 LF	x \$19.50 LF	\$8,250.00
18" Conc. Pipe	130 LF	x \$25.00 LF	\$3,250.00
Grass-lined Ditches	770 LF	x \$5.00 LF	\$3,850.00
8" S.S. Pipe	1432 LF	x \$20.00 LF	\$28,640.00
Std. S.S. Manholes	4 EA	x \$1,500.00 EA	\$6,000.00
Inside-Drop Manhole	1 EA	x \$2,500.00 EA	\$2,500.00
4" Laterals/Cleanouts	20 EA	x \$300.00 EA	\$6,000.00
6"-Dbl 4" Cleanout	1 EA	x \$500.00 EA	\$500.00
8" Waterline Pipe	722 LF	x \$22.50 LF	\$14,440.00
Fire Hydrant Assembly	1 EA	x \$1,500.00 EA	\$1,500.00
Single Meter Setters	10 EA	x \$250.00 EA	\$2,500.00
Double Meter Setters	6 EA	x \$350.00 EA	\$2,100.00
Air Release Valve	1 EA	x \$1,500.00 EA	\$1,500.00
In-Line Blowoff	1 EA	x \$500.00 EA	\$500.00
Misc. Bends	4 EA	x \$200.00 EA	\$800.00
Sub-Total			\$180,420.00
10% Contingency			\$18,040.00
ESTIMATED TOTAL			\$198,460.00



MANHOLE CONSTRUCTION INFORMATION

NO SCALE

SANITARY SEWER MANHOLE AND CLEANOUT INFORMATION

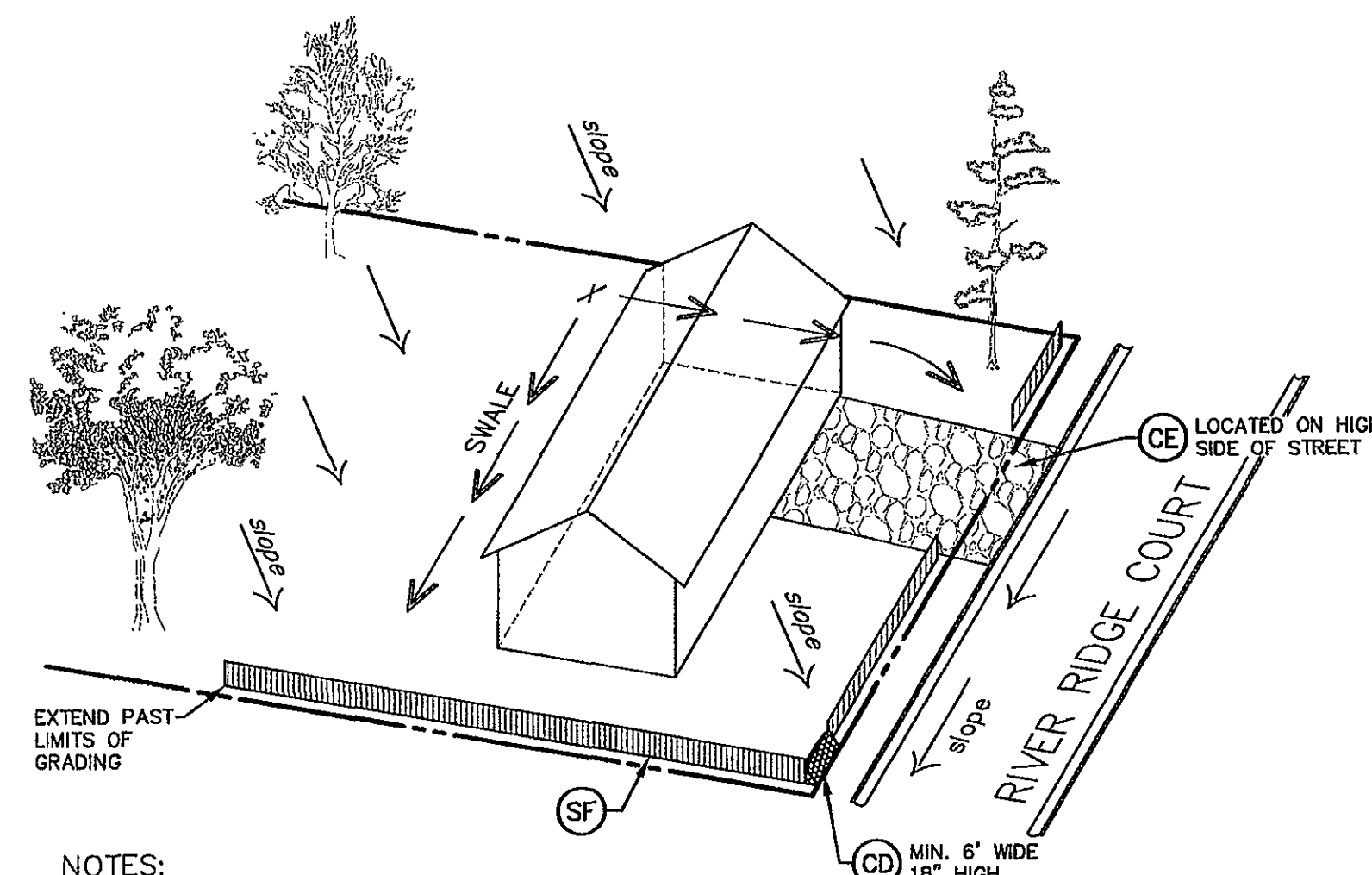
LINE	BEARING	DISTANCE
#SS-1 to #SS-2	S. 55°57'40" E.	93.87'
#SS-2 to #SS-3	N. 71°04'43" E.	301.80'
Ex. to #SS-4	S. 05°15'16" W.	140.75'
#SS-4 to #SS-5	S. 71°04'43" W.	186.19'

LOT	MH - STA/OS	C.O. Inv.	MIN. FLOOR ELEV.
45	'SS-2' - 37.2' STUB from MH.	1194.0	1196.0
46	'SS-2' - 0+24.3 / 30.5' Rt.	1194.5	1196.5
47	'SS-2' - 0+80.6 / 30.5' Rt.	1195.5	1197.5
48	'SS-2' - 1.37.8 / 30.5' Rt.	1196.5	1198.5
49	'SS-2' - 1+93.5 / 30.5' Rt.	1197.6	1199.6
50	'SS-2' - 2+53.0 / 30.5' Rt.	1198.7	1200.7
51	'SS-3' - 30.5' STUB from MH.	1199.8	1201.8
52	'SS-5' - 18.5' STUB from MH.	1199.4	1201.4
53	'SS-4' - 1+60.8 / 18.5' Lt.	1199.1	1201.1
54	'SS-4' - 1+09.0 / 18.5' Lt.	1195.9	1197.9
55/56	'SS-4' - 18.5' STUB from MH.	1190.5	1192.5
57	'SS-4' - 0+24.0 / 25.5' Rt.	1192.3	1194.3
58	'SS-4' - 1+11.0 / 25.5' Rt.	1196.1	1198.1
59	'SS-4' - 1+52.0 / 25.5' Rt.	1197.9	1199.9
60	'SS-5' - 35.8' STUB from MH.	1199.6	1201.6
61	'SS-3' - 14.0' STUB from MH.	1199.1	1201.1
62	'SS-2' - 2+14.0 / 14.0' Lt.	1197.7	1199.7
63	'SS-2' - 1+63.0 / 14.0' Lt.	1196.7	1198.7
64	'SS-2' - 1+05.0 / 14.0' Lt.	1195.6	1197.6
65	'SS-2' - 0+48.2 / 14.0' Rt.	1194.6	1196.6
66	'SS-1' - 0+41.0 / 19.0' Lt.	1190.6	1192.6

STATIONS AND OFFSETS ARE MEASURED ALONG A BASELINE FROM CENTER OF MANHOLE TO CENTER OF MANHOLE WITH 0+00.0 BEING THE BEGINNING AT THE LOWER MANHOLE.

CLEANOUT ELEVATIONS ARE BASED ON A MINIMUM SLOPE OF 2.08% WITHIN THE RIGHT-OF-WAY OR EASEMENTS AND MAY BE INCREASED AS DICTATED BY THE SURROUNDING TOPOGRAPHY.

THE MIN. FLOOR ELEVATION IS BASED ON SEC. 200.02-5-A-8 OF THE W.V.W.A. WATER & SEWER REGULATIONS. LOT OWNERS REQUESTING A LOWER SERVICE ELEVATION WILL REQUIRE THE USE OF A PRIVATE SEWAGE PUMP FACILITY, INSTALLED AND MAINTAINED BY THE HOMEOWNER.

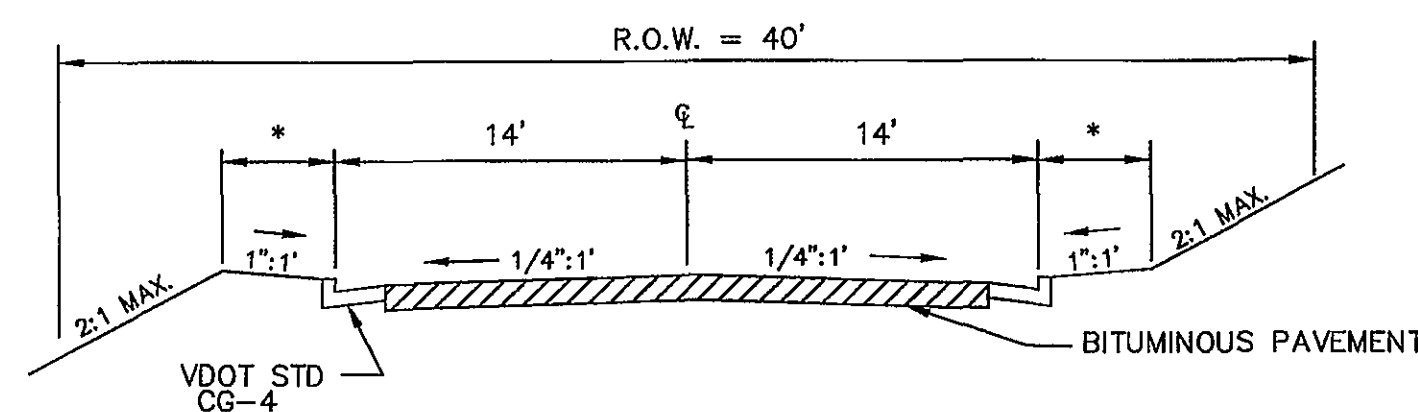


NOTES:

1. REFER TO VESCH FOR DETAILS OF PROPOSED SOIL EROSION MEASURES
2. LAYOUT IS FOR SCHEMATIC PURPOSES ONLY, G.C. SHALL ADJUST LOCATION OF SILT FENCING AND CHECK DAM TO INTERCEPT ALL DISTURBED AREAS.
3. ADDITIONAL ITEMS OR MODIFICATIONS MAY BE REQUIRED AS DIRECTED BY ROANOKE COUNTY INSPECTORS.
4. POSITIVE DRAINAGE SHALL BE PROVIDED ALONG THE LONGITUDINAL SLOPE OF THE SILT FENCING TO THE PROPOSED CHECK DAM.

TYPICAL ESC PLAN FOR A SINGLE DWELLING

NO SCALE



* NOTE THAT MINIMUM SHOULDER WIDTH SHALL BE 6' UNLESS PROPOSED WATERLINE CONSTRUCTION IS LOCATED IN THE SHOULDER, THEN SAID SHOULDER AREA SHALL BE MINIMUM 10' PAST THE CENTERLINE OF THE INSTALLED WATERLINE.

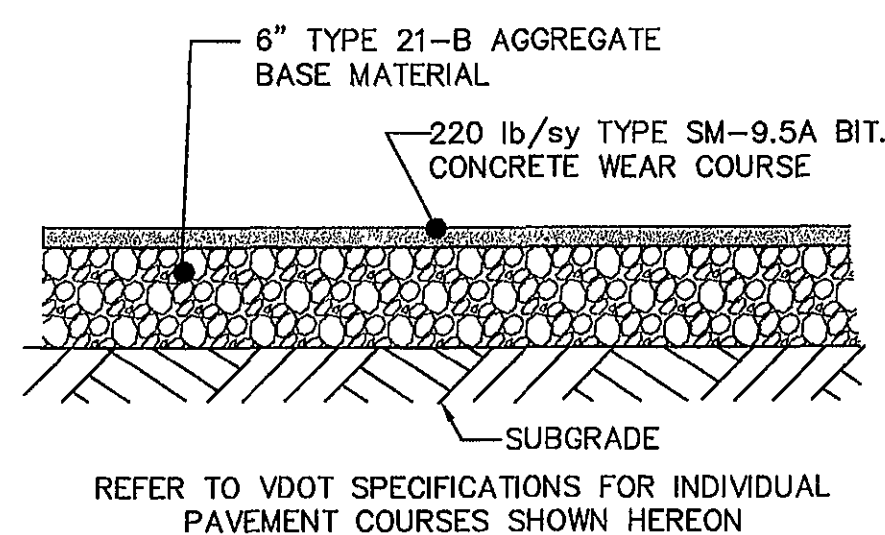
RIVER RIDGE COURT
FROM STA. 10+15.4 to STA. 18+01.97

PAVEMENT DESIGN TO BE BASED ON AN
ADT OF 220 AND A DESIGN CBR OF 10.0

CBR TESTS AND FINAL PAVEMENT SPECIFICATIONS
TO BE PROVIDED TO VDOT RESIDENCY FOR
APPROVAL PRIOR TO INSTALLATION

TYPICAL ROADWAY SECTION

NO SCALE



CONSTRUCTION DETAILS & NOTES

THE VILLAS AT RIVER OAKS

SITUATE OFF OF MILLWHEEL DRIVE
CATAWBA MAGISTERIAL DISTRICT
ROANOKE COUNTY, VIRGINIA

Designed:.....J.V. Judy
Drawn:.....J.V. Judy
Checked:.....F.B. Caldwell
Revised:.....March 20, 2005
Scale:.....AS SHOWN
Tax Parcel:.....56.03-2-43.2
W.O. #:.....01-0090

CWA
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