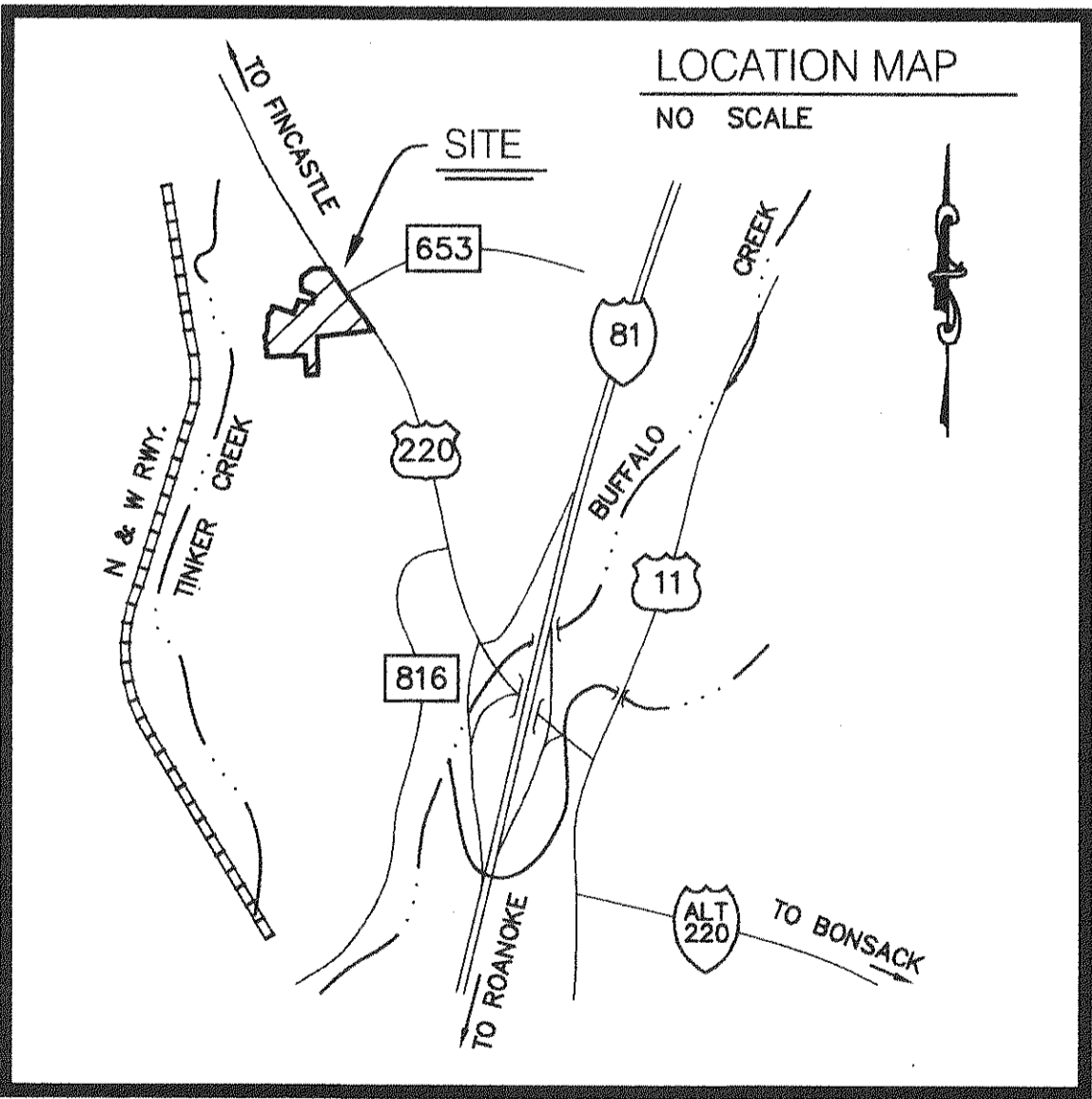


DEVELOPMENT PLANS
FOR
"BOTETOURT COMMONS KROGER"

STORE "R-364"
SITUATED IN
AMSTERDAM MAGISTERIAL DISTRICT
BOTETOURT COUNTY, VIRGINIA

DATE: 23 APRIL 1999
"AS-BUILT" 23 AUGUST 1999

PREPARED FOR
TIMBERBROOK ASSOCIATES, L.C.



INDEX OF DRAWINGS

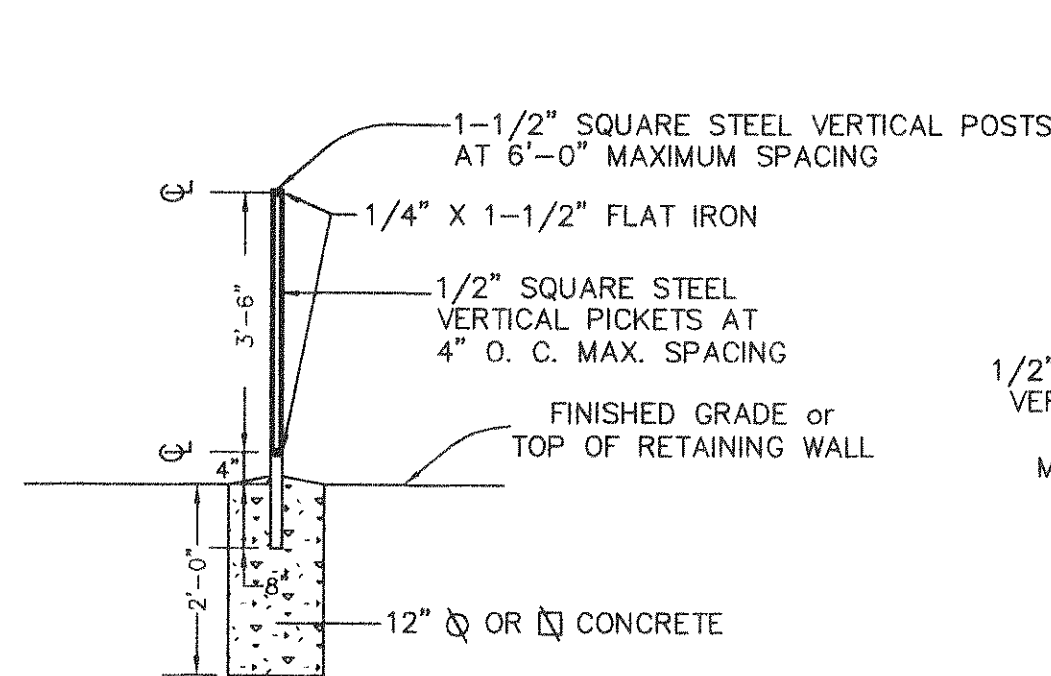
SHEET No.	DESCRIPTION
1.	LUMSDEN ASSOCIATES COVER SHEET
2.	NOTES & DETAILS
3.	DIMENSIONAL LAYOUT
4.	DIMENSIONAL LAYOUT
5.	KROGER SITE LAYOUT
6.	GRADING PLAN
7.	GRADING PLAN
8.	ROAD & RETAINING WALL PROFILES
9.	STORM DRAIN PROFILES
10.	WATER & SEWER PROFILES
11.	LANDSCAPE AND PAVING PLAN
12.	LIGHTING PLAN
13.	EROSION CONTROL PLAN
14.	CONSTRUCTION SPECIFICATIONS
15.	WATER AND SEWER DETAILS
16.	EROSION CONTROL NOTES & DETAILS

LUMSDEN ASSOCIATES, P.C.
ENGINEERS-SURVEYORS-PLANNERS
ROANOKE, VIRGINIA

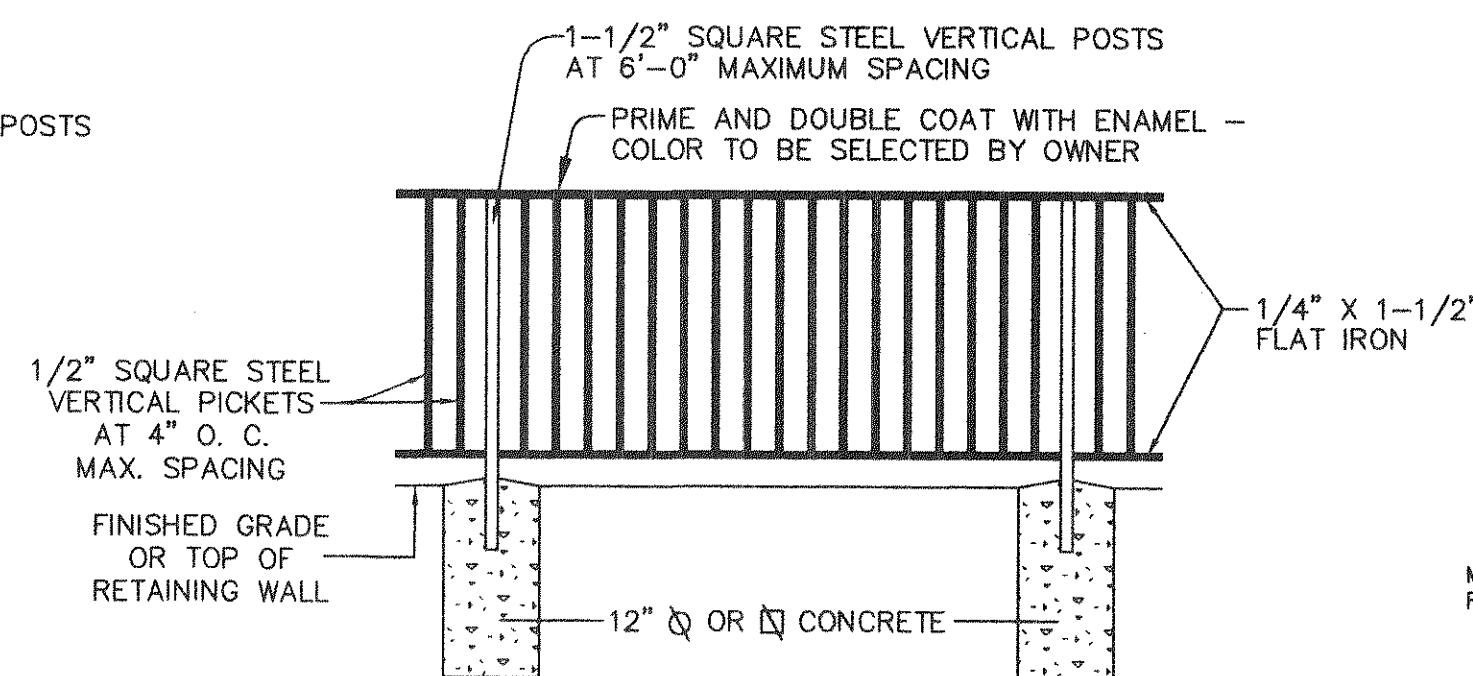
"AS-BUILT"

- NOTE:
- "AS-BUILT" INFORMATION TAKEN FROM PLANS FURNISHED BY J.P. TURNER & BROTHERS, INC., CONTRACTOR.
 - "AS-BUILT" DIMENSIONS SHOWN IN BRACKETS.

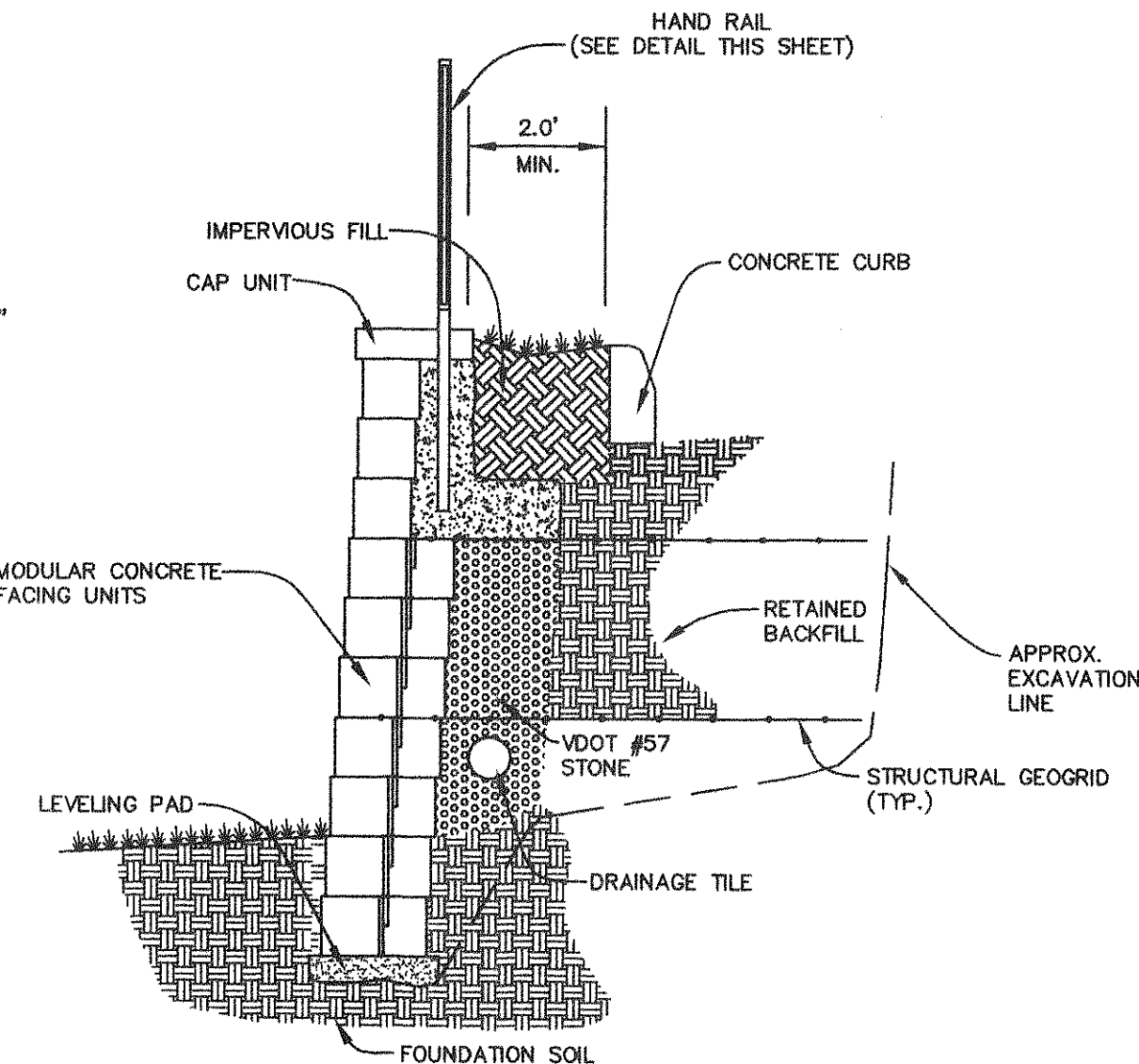
REVISIONS			
DATE	SHEETS	DATE	SHEETS
4/19/99	"		



HANDRAIL - SECTION

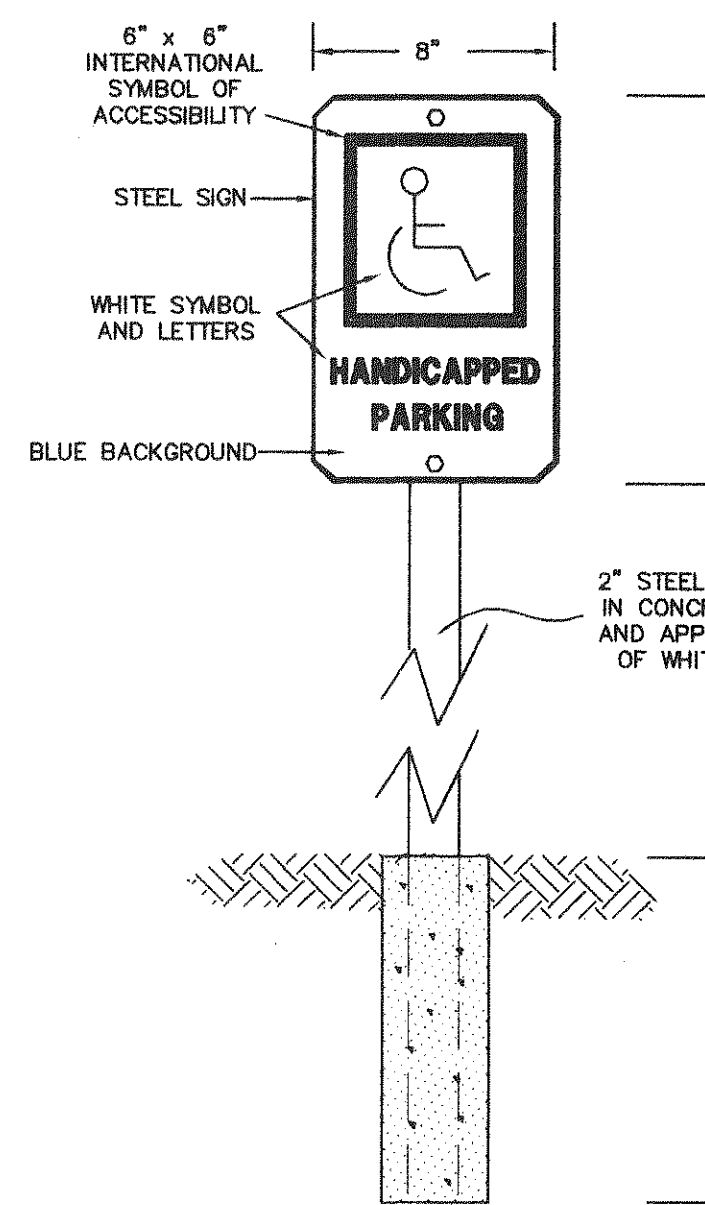


HANDRAIL - ELEVATION

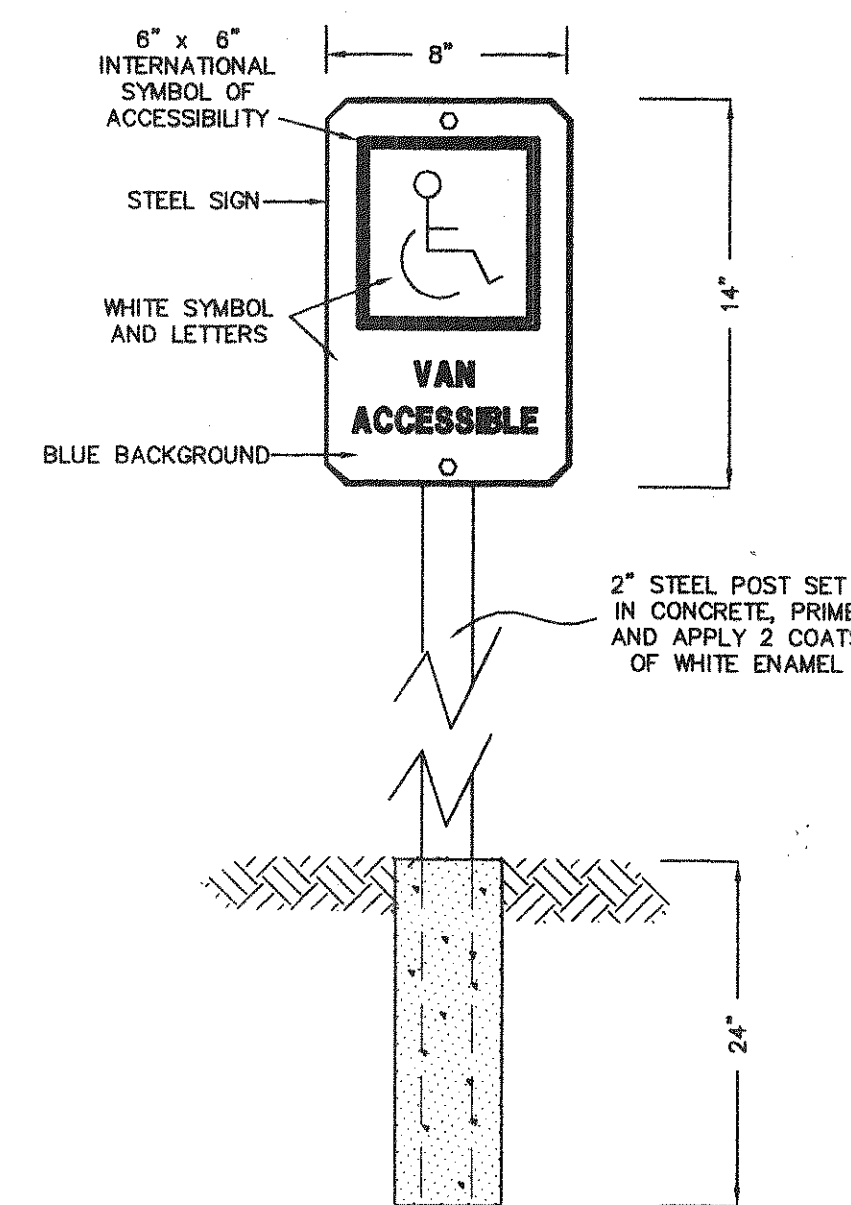


NOTES:
1. WALL SUPPLIER SHALL SUBMIT SHOP DRAWINGS OF THE RETAINING WALLS. SUCH SHOP DRAWINGS SHALL BE SIGNED & SEALED BY REGISTERED ENGINEER.

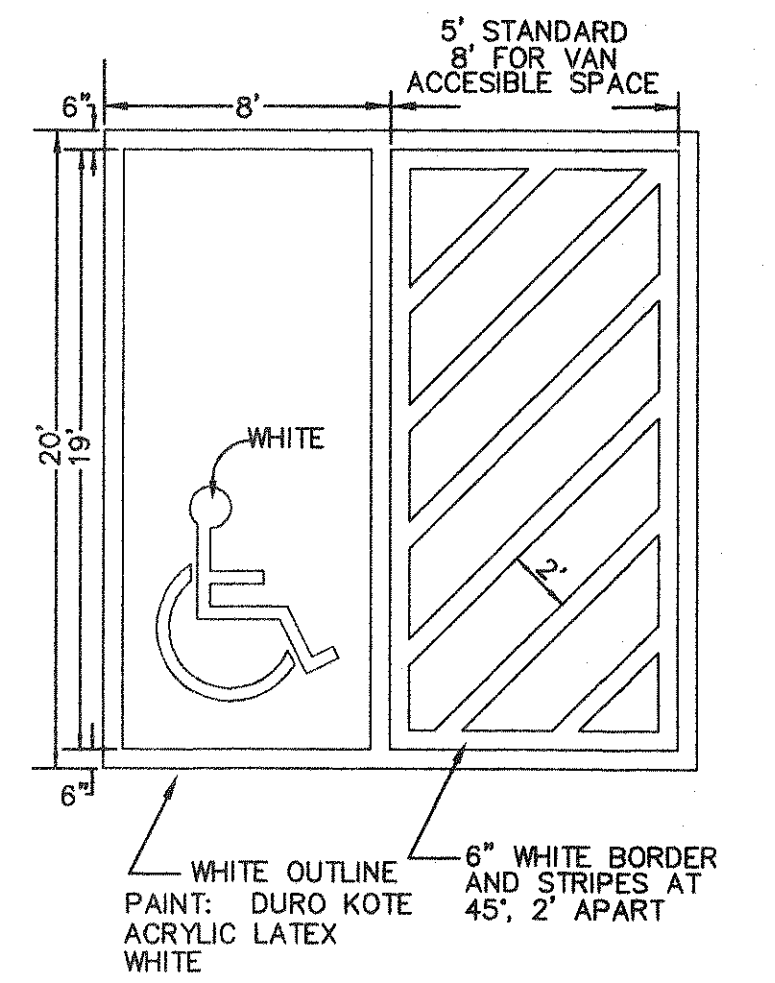
CONCRETE BLOCK RETAINING WALL



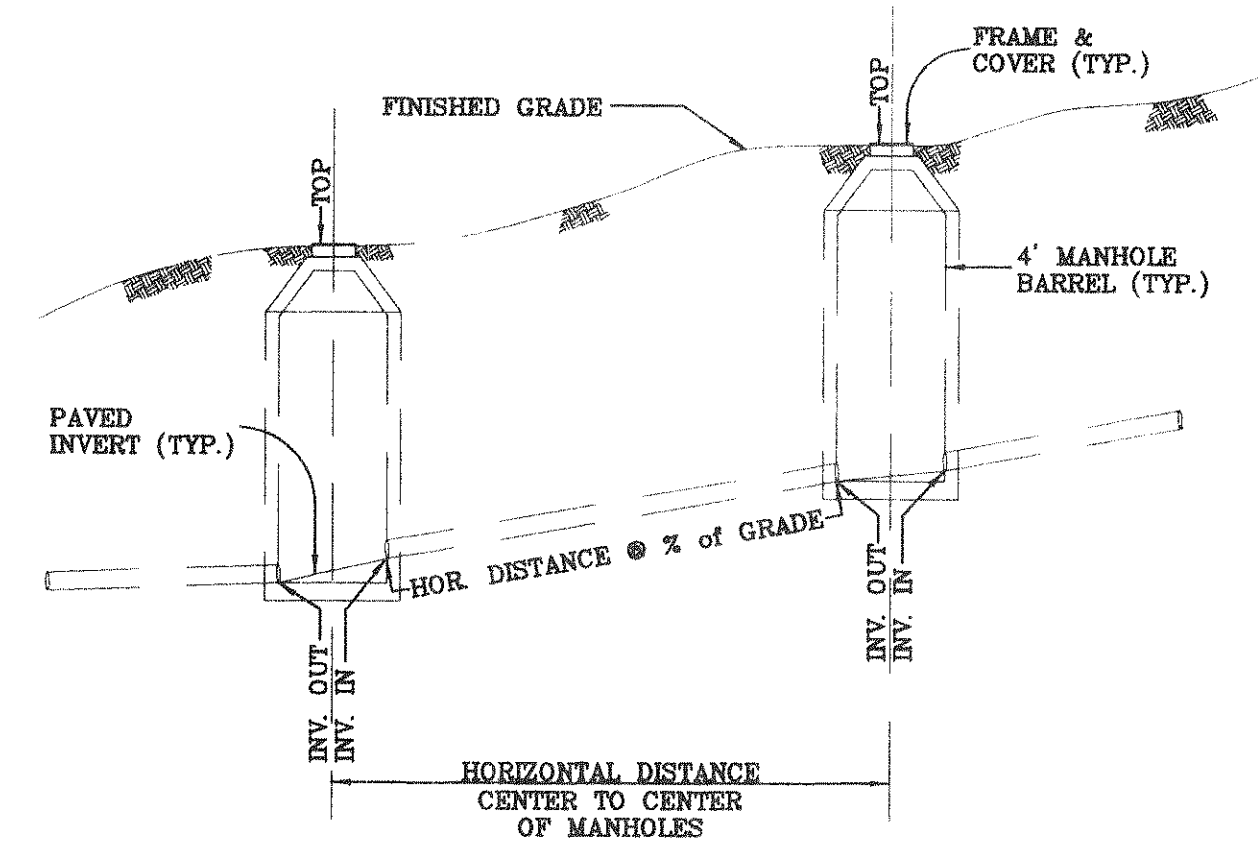
HANDICAP PARKING SIGN (S1)



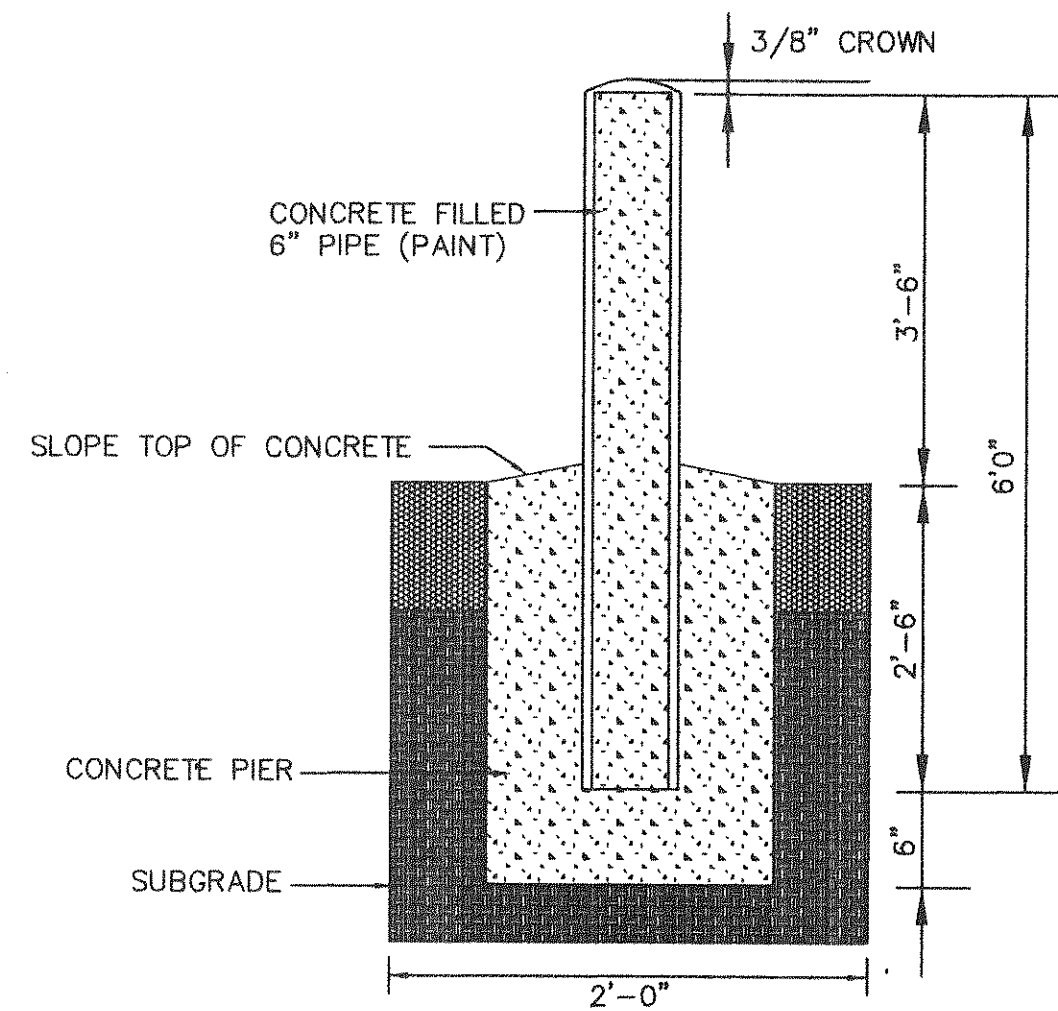
VAN ACCESSIBLE HANDICAP PARKING SIGN (S2)



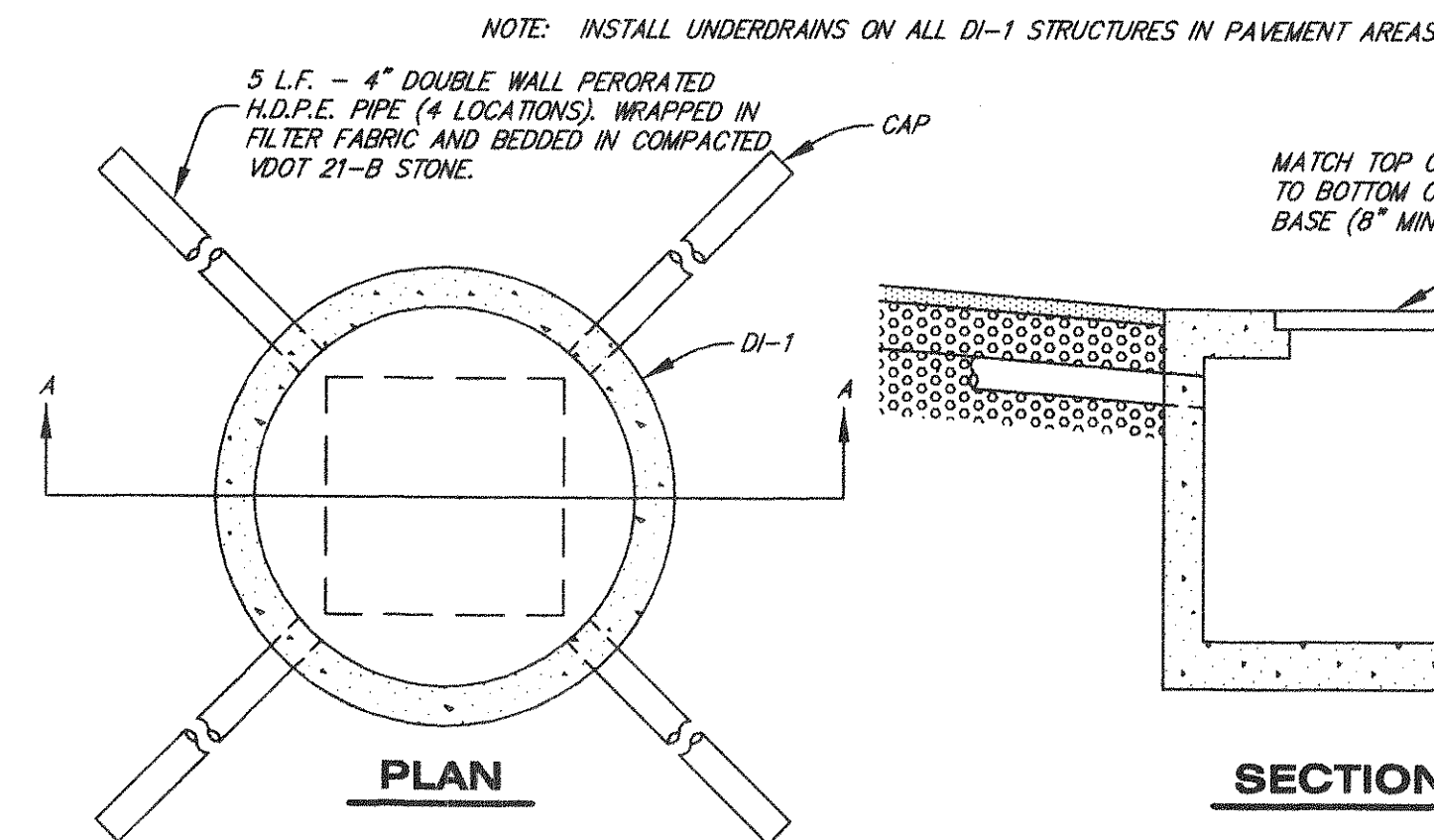
HANDICAP PARKING



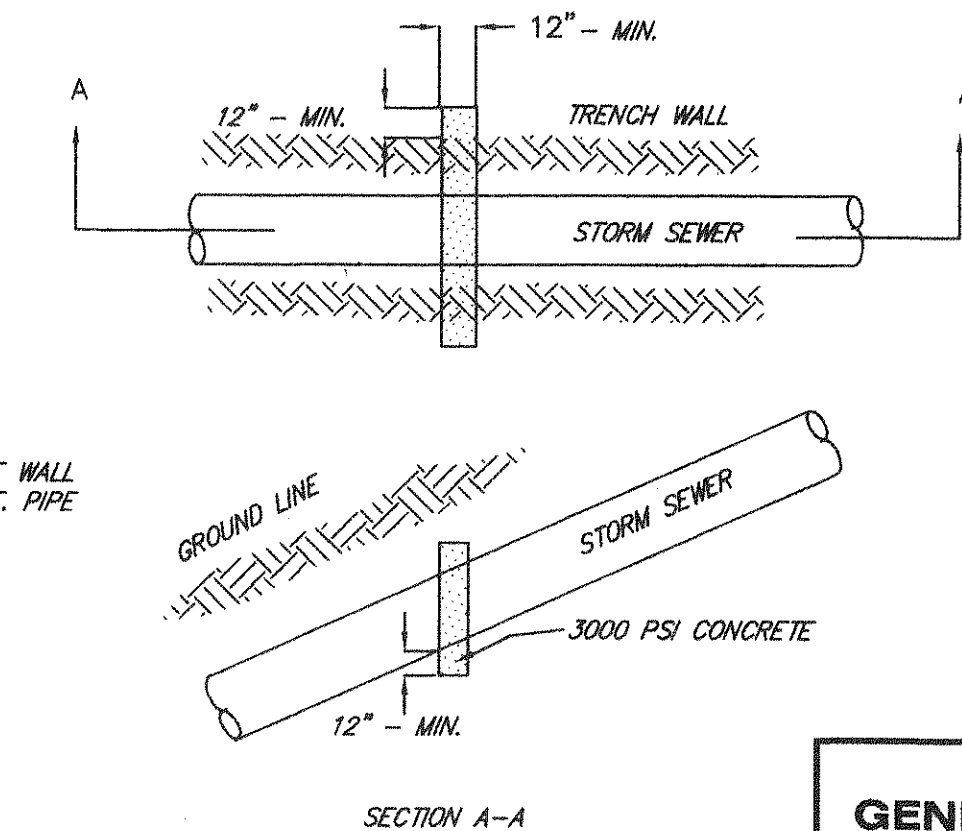
SANITARY SEWER HORIZONTAL & SLOPE DISTANCE DETAIL



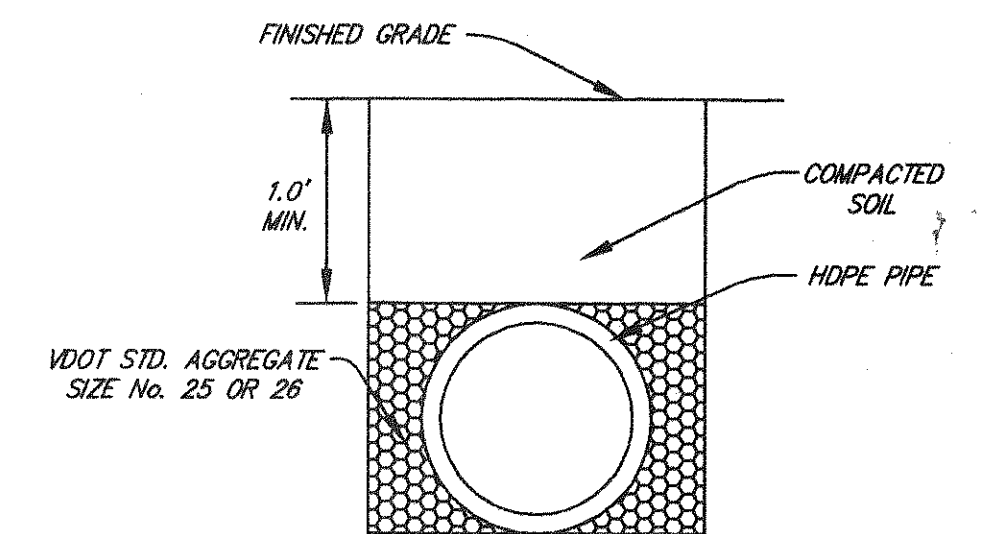
PIPE BOLLARD DETAIL



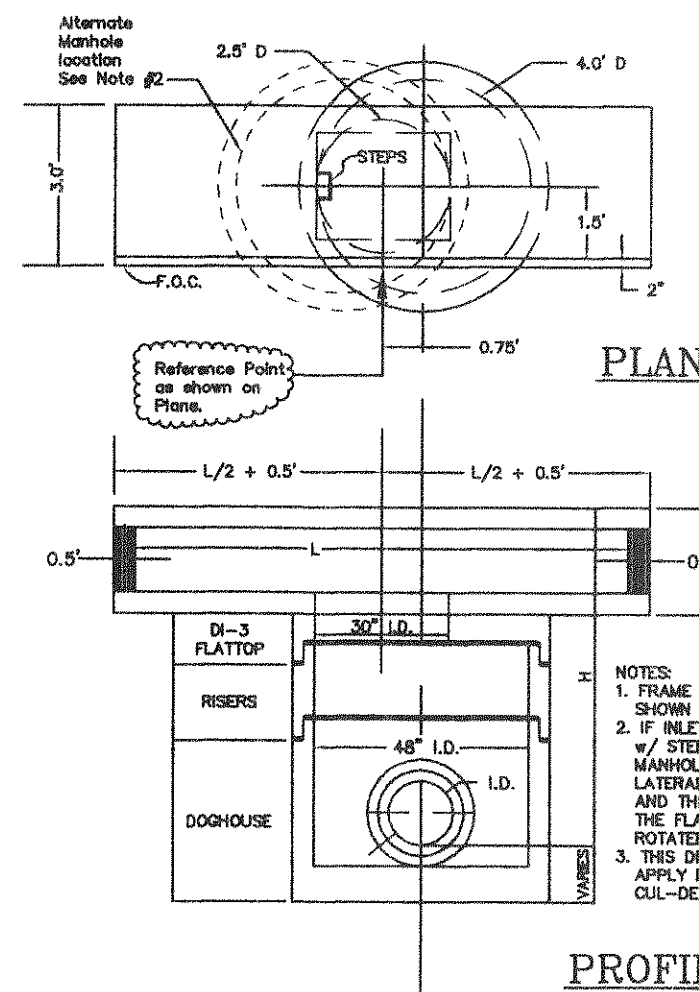
DI-1 UNDERDRAIN



ANCHOR BLOCK



PLASTIC PIPE BEDDING

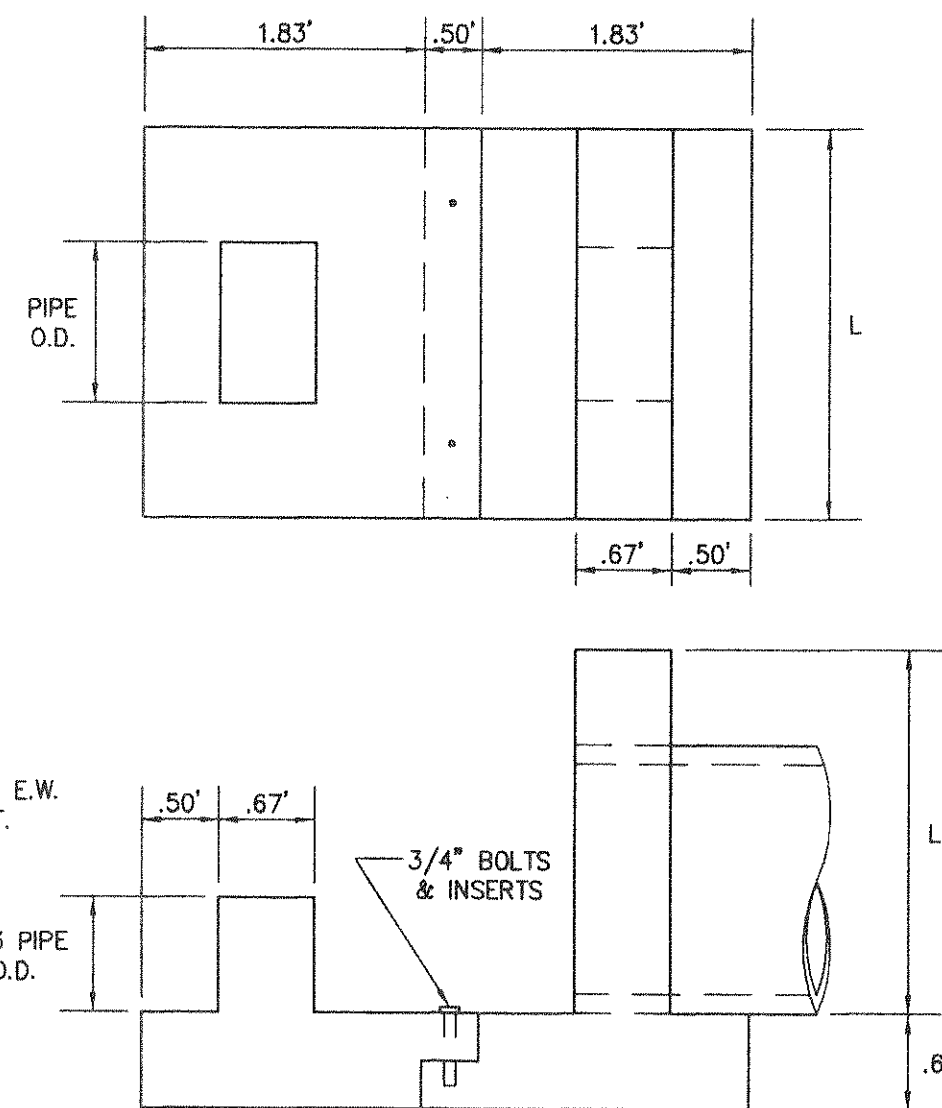


LOCATION DETAIL FOR DI-3C (PRECAST)

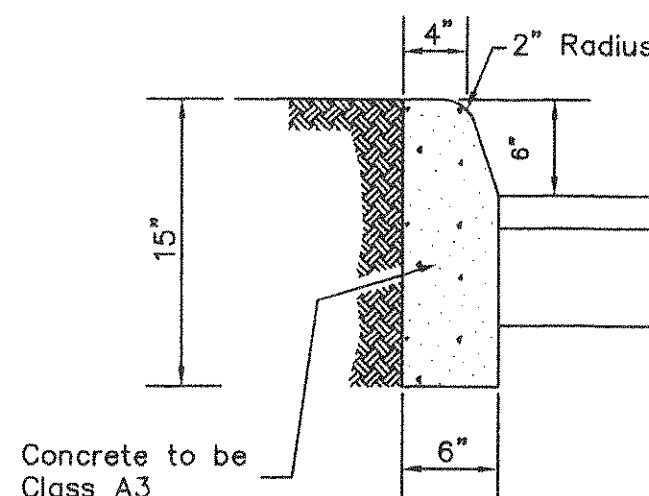
PIPE I.D.	H	L
12"	2.00'	4.00'
15"	2.25'	5.00'
18"	2.50'	6.00'
24"	3.17'	8.00'
30"	3.83'	10.00'
36"	4.50'	12.00'

NOTES:

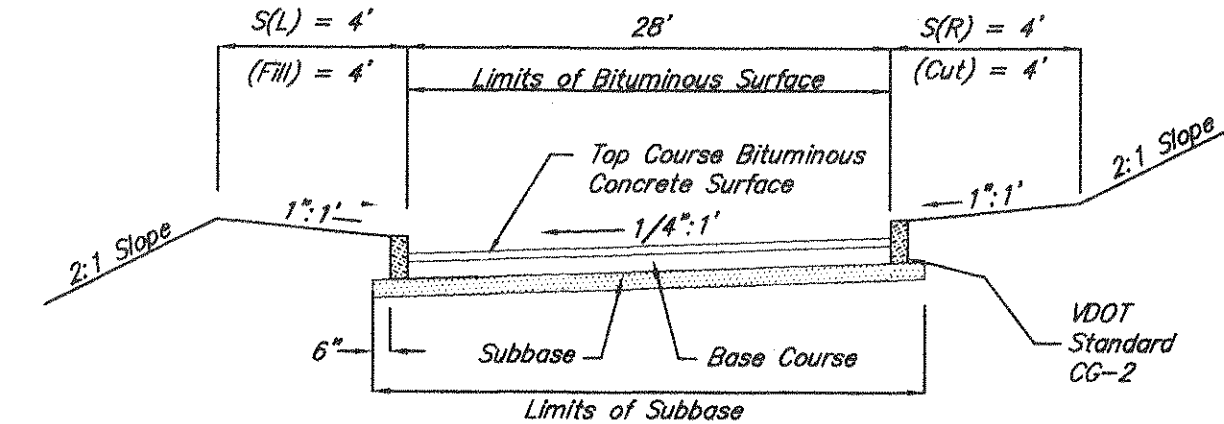
- CONCRETE 4,000 P.S.I.
- REINFORCING #4 @ 6" C.C. E.W. DOUBLE ROW THROUGHOUT.



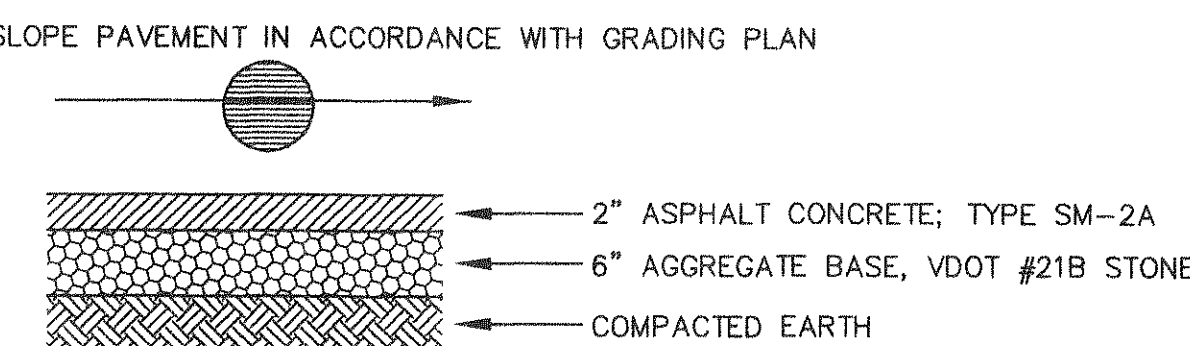
EW-1 MODIFIED WITH ENERGY DISSIPATOR



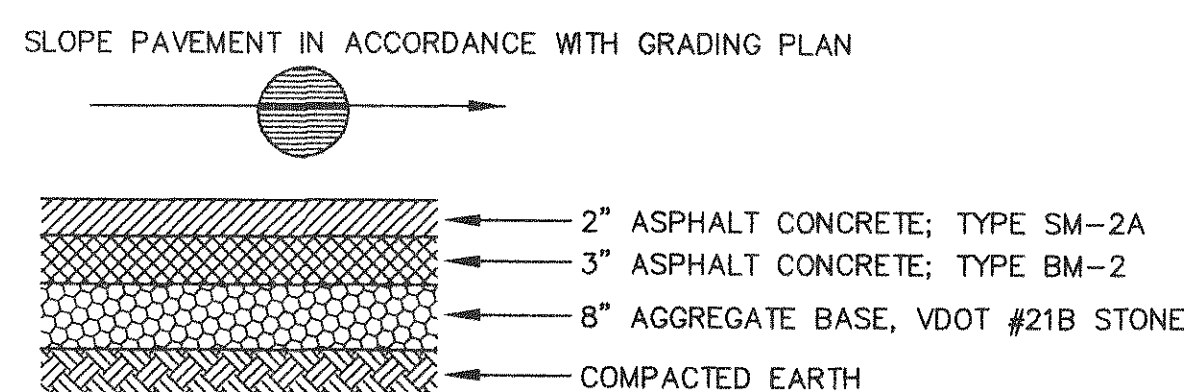
CONCRETE CURB (CG-2)



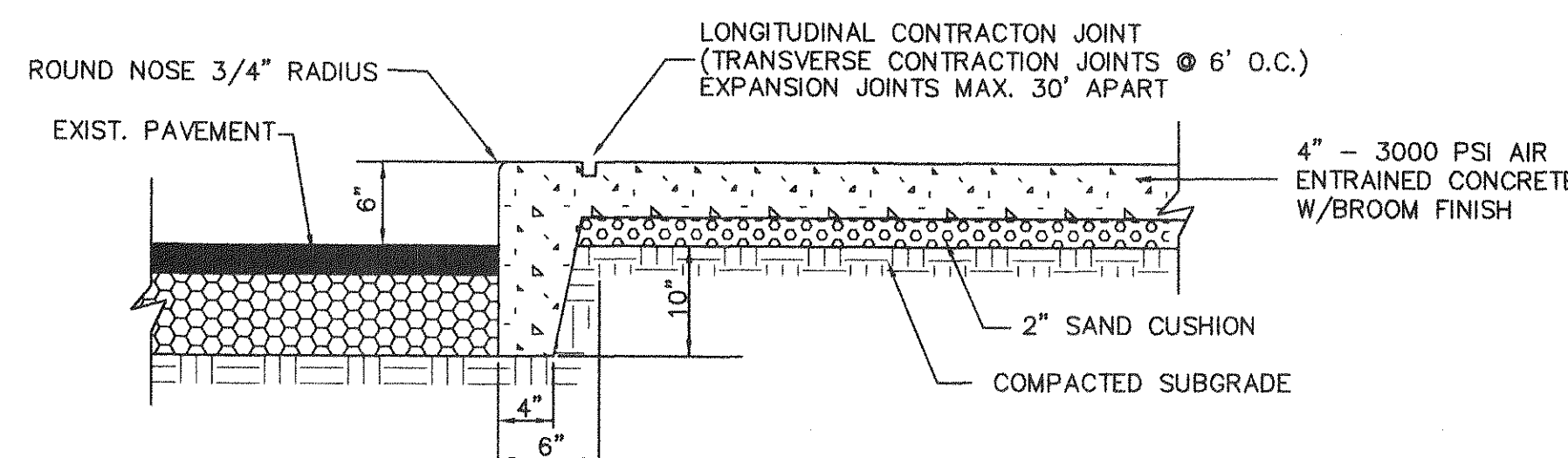
TYPICAL SECTION ACCESS DRIVE



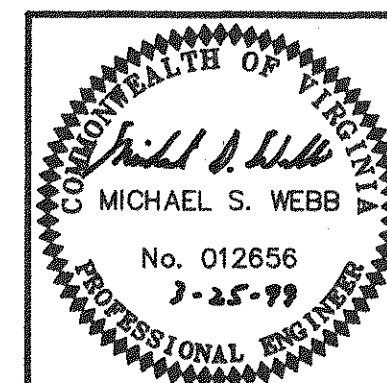
STANDARD PAVEMENT DETAIL *



HEAVY DUTY PAVEMENT STRUCTURE DETAIL *



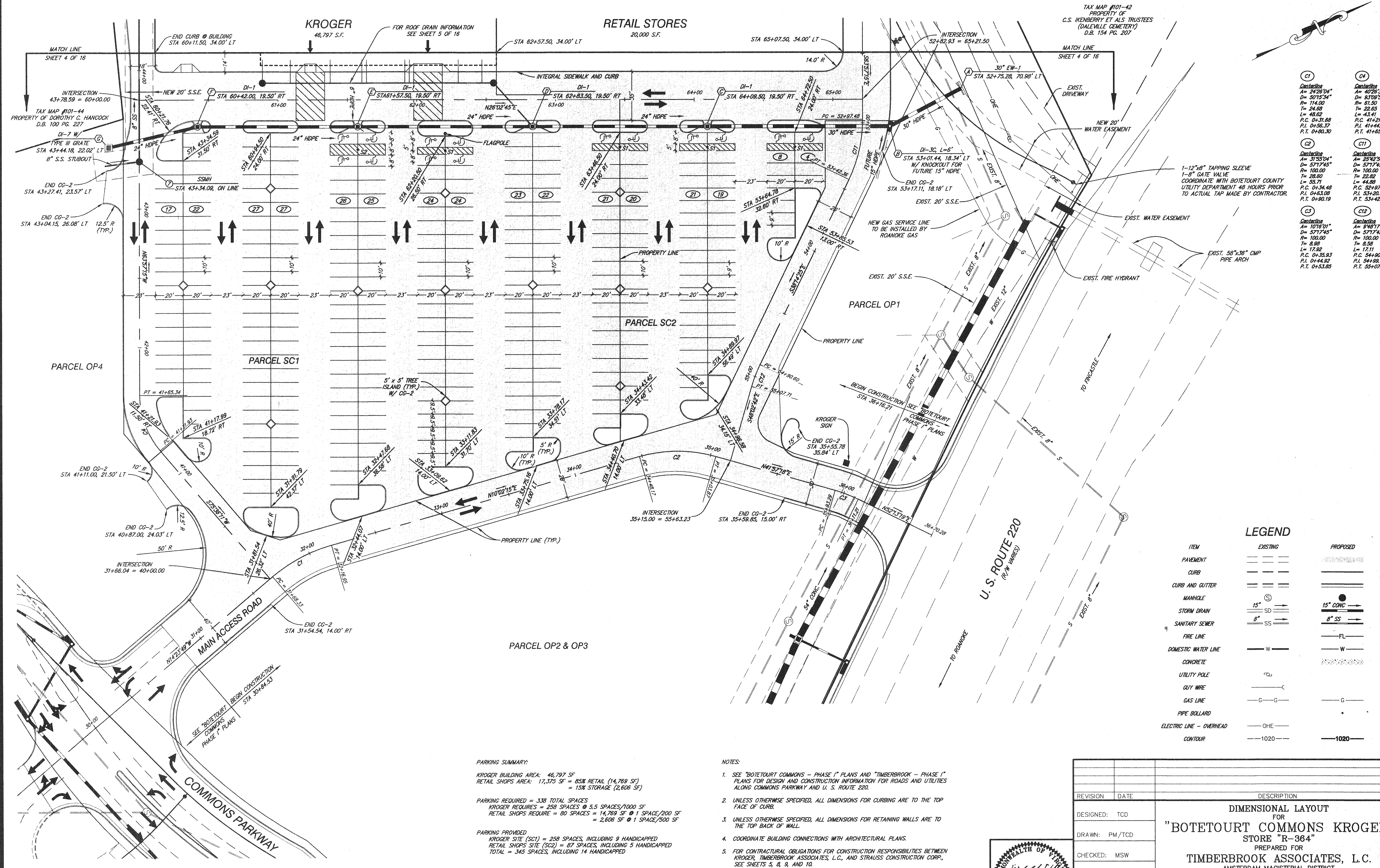
INTEGRAL CONCRETE CURB & WALK



- GENERAL NOTES**
- THE PROPERTY SHOWN ON THESE PLANS IS LOCATED AT BOTETOURT COUNTY TAX ASSESSMENT NUMBER (PART OF) 101-448.
 - DEVELOPER: TIMBERBROOK ASSOCIATES, L.C. 5100 BERNARD DRIVE SW. ROANOKE, VIRGINIA 24018
 - CURRENT ZONING: SC
 - TOTAL SITE ACREAGE: 6.97 AC. KROGER SITE: 4.57 AC (PARCEL SC1) RETAIL SHOPS: 1.83 AC (PARCEL SC2) COMMON ACCESS AREA: 0.77 AC
 - NO TITLE REPORT FURNISHED FOR THIS PROPERTY.
 - THE PROPERTY SHOWN ON THESE PLANS IS TO BE SERVED BY COUNTY WATER AND SEWER.
 - THE DEVELOPMENT SHOWN ON THESE PLANS SHALL BE ACCESSED BY PRIVATE ROAD.
 - TOPOGRAPHIC INFORMATION PROVIDED BY ENGINEERING CONCEPTS, INC.

- CONSTRUCTION NOTES:**
- ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT COUNTY OF BOTETOURT STANDARDS AND SPECIFICATIONS.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE OWNER AND THE ENGINEER OF ANY CHANGES OR CONDITIONS ATTACHED TO PERMITS OBTAINED FROM ANY AUTHORITY ISSUING PERMITS.
 - NO SUBSOIL INVESTIGATIONS HAVE BEEN MADE BY THE DESIGNING ENGINEER.
 - THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY EXISTING CONDITIONS PRIOR TO STARTING CONSTRUCTION.
 - LUMSDEN ASSOCIATES, P.C. DOES NOT CERTIFY TO THE LOCATION OF OR THE EXISTENCE OF ANY EXISTING UNDERGROUND UTILITIES. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO STARTING CONSTRUCTION.
 - AREAS TO BE GRADED SHALL BE CLEARED & GRUBBED OF ALL VEGETATION, STRUCTURES AND OTHER PHYSICAL FEATURES IN PREPARATION OF GRADING. TOPSOIL SHALL BE REMOVED FROM THE CLEARED AREA AND STOCKPILED FOR FUTURE USE.
 - FILL MATERIAL SHALL BE FREE OF ORGANIC MATTER AND ROCKS LARGER THAN 6 INCHES IN DIAMETER. FILL MATERIAL SHALL BE PLACED AND COMPACTED IN 8 INCH LIFTS TO 95% MINIMUM DENSITY, STANDARD PROCTOR.

REVISION	DATE	DESCRIPTION
DESIGNED - TCD		
DRAWN - PM		
CHECKED - MSW		
NOTES & DETAILS FOR "BOTETOURT COMMONS KROGER" STORE "R-364" PREPARED FOR TIMBERBROOK ASSOCIATES, L.C. AMSTERDAM MAGISTRAL DISTRICT BOTETOURT COUNTY, VIRGINIA		
LUMSDEN ASSOCIATES, P.C. ENGINEERS-SURVEYORS-PLANNERS ROANOKE, VIRGINIA		
SCALE: NONE	DATE: 4/23/99	COMM: #97-452K
		SHEET 2 of 16



C1	Centerline A= 2426'04" D= 3075'34" R= 114.00 T= 24.68 L= 43.62 P.C. 0+31.89 P.T. 0+56.37 P.T. 0+80.30	C4	Centerline A= 4026'34" D= 3075'34" R= 114.00 T= 24.68 L= 43.62 P.C. 41+21.93 P.T. 41+44.50 P.T. 41+65.34
C2	Centerline A= 3135'04" D= 5717'45" R= 100.00 T= 22.62 L= 44.98 P.C. 0+34.48 P.T. 0+63.08 P.T. 0+90.19	C7	Centerline A= 2542'50" D= 5717'45" R= 100.00 T= 22.62 L= 44.98 P.C. 35+97.48 P.T. 53+20.30 P.T. 53+42.36
C3	Centerline A= 10716'01" D= 5717'45" R= 100.00 T= 8.59 L= 17.92 P.C. 0+35.93 P.T. 0+44.92 P.T. 0+53.85	C12	Centerline A= 9487'11" D= 5717'45" R= 100.00 T= 8.59 L= 17.11 P.C. 54+90.60 P.T. 54+98.18 P.T. 55+07.71

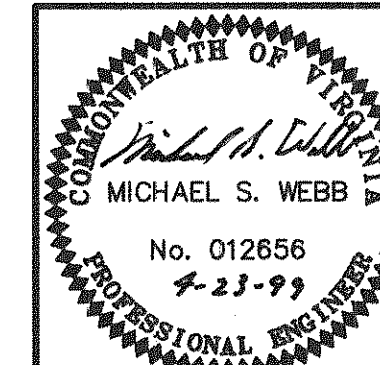
ITEM	EXISTING	PROPOSED
PAVEMENT	---	---
CURB	---	---
CURB AND GUTTER	---	---
MANHOLE	15" S	15" CONC
STORM DRAIN	15" SD	8" CONC
SANITARY SEWER	8" SS	8" SS
FIRE LINE	---	FL
DOMESTIC WATER LINE	W	W
CONCRETE	---	---
UTILITY POLE	---	---
GUY WIRE	---	---
GAS LINE	---	---
PIPE BOLLARD	---	---
ELECTRIC LINE - OVERHEAD	OHE	OHE
CONTOUR	1020	1020

PARKING SUMMARY:
KROGER BUILDING AREA: 46,797 SF
RETAIL SHOPS AREA: 17,375 SF = 85% RETAIL (14,769 SF)
= 15% STORAGE (2,606 SF)

PARKING REQUIRED = 338 TOTAL SPACES
KROGER REQUIRES = 258 SPACES @ 5.5 SPACES/1000 SF
RETAIL SHOPS REQUIRE = 80 SPACES @ 1 SPACE/200 SF
= 2,606 SF @ 1 SPACE/500 SF

PARKING PROVIDED
KROGER SITE (SC1) = 258 SPACES, INCLUDING 9 HANDICAPPED
RETAIL SHOPS SITE (SC2) = 87 SPACES, INCLUDING 5 HANDICAPPED
TOTAL = 345 SPACES, INCLUDING 14 HANDICAPPED

- NOTES:**
- SEE "BOTETOURT COMMONS - PHASE I" PLANS AND "TIMBERBROOK - PHASE I" PLANS FOR DESIGN AND CONSTRUCTION INFORMATION FOR ROADS AND UTILITIES ALONG COMMONS PARKWAY AND U. S. ROUTE 220.
 - UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS FOR CURBING ARE TO THE TOP FACE OF CURB.
 - UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS FOR RETAINING WALLS ARE TO THE TOP BACK OF WALL.
 - COORDINATE BUILDING CONNECTIONS WITH ARCHITECTURAL PLANS.
 - FOR CONTRACTUAL OBLIGATIONS FOR CONSTRUCTION RESPONSIBILITIES BETWEEN KROGER, TIMBERBROOK ASSOCIATES, L.C., AND STRAUSS CONSTRUCTION CORP., SEE SHEETS 5, 8, 9, AND 10.



REVISION	DATE	DESCRIPTION
DESIGNED:	TCD	DIMENSIONAL LAYOUT FOR "BOTETOURT COMMONS KROGER" STORE "R-364" PREPARED FOR TIMBERBROOK ASSOCIATES, L.C. AMSTERDAM MAGISTERIAL DISTRICT BOTETOURT COUNTY, VIRGINIA
DRAWN:	PM/TCD	
CHECKED:	MSW	
LUMSDEN ASSOCIATES, P.C. ENGINEERS-SURVEYORS-PLANNERS ROANOKE, VIRGINIA		
SCALE: 1" = 30'		COMM: 97-452K
DATE: 4/23/99		SHEET 3 of 16

NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS FOR CURBING ARE TO THE TOP FACE OF CURB.
2. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS FOR RETAINING WALLS ARE TO THE TOP BACK OF WALL.
3. COORDINATE BUILDING CONNECTIONS WITH ARCHITECTURAL PLANS.
4. FOR CONTRACTUAL OBLIGATIONS FOR CONSTRUCTION RESPONSIBILITIES BETWEEN KROGER, TIMBERBROOK ASSOCIATES, L.C., AND STRAUSS CONSTRUCTION CORP., SEE SHEETS 5, 8, 9, AND 10.

C5	C6
Centerline A= 9700.00" D= 22910.59" R= 25.00 L= 18.70 P.C. 0+45.92 P.T. 0+70.92 P.T. 0+83.19	Centerline A= 4175.13" D= 21470.08" R= 25.00 L= 18.70 P.C. 0+45.92 P.T. 0+70.92 P.T. 0+83.19
C6	C7
Centerline A= 5000.02" D= 28382.52" R= 25.00 L= 17.46 P.C. 0+48.63 P.T. 0+51.37 P.T. 0+66.09	Centerline A= 3236.39" D= 4131.07" R= 138.00 L= 40.37 P.C. 50+53.33 P.T. 50+83.70 P.T. 51+31.67
C7	C10
Centerline A= 2220.51" D= 30282.35" R= 188.00 L= 37.14 P.C. 0+48.60 P.T. 0+86.74 P.T. 1+22.93	Centerline A= 2722.29" D= 11435.30" R= 50.00 L= 12.18 P.C. 0+51.70 P.T. 0+83.97 P.T. 0+75.68

TAX MAP #101-43
PROPERTY OF
RACHEL E. HANCOCK
D.B. 380, PG. 657

TAX MAP #101-44
PROPERTY OF
DOROTHY C. HANCOCK
D.B. 100, PG. 227

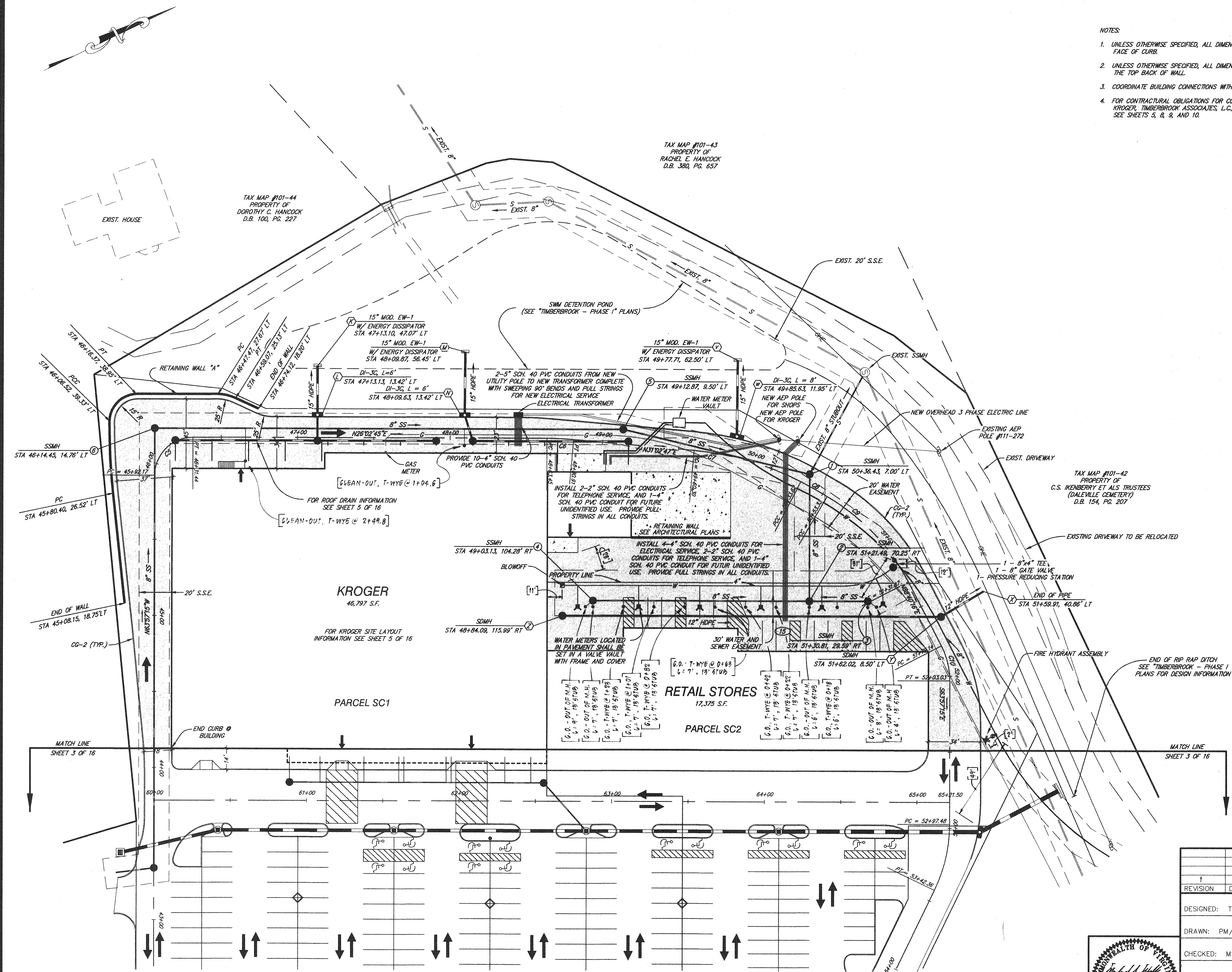
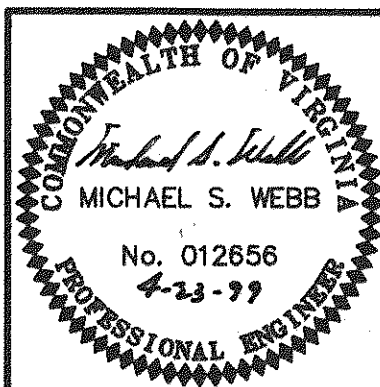
TAX MAP #101-42
PROPERTY OF
C.S. KENBERRY ET AL'S TRUSTEES
(DALEVILLE CEMETERY)
D.B. 154, PG. 207

LEGEND

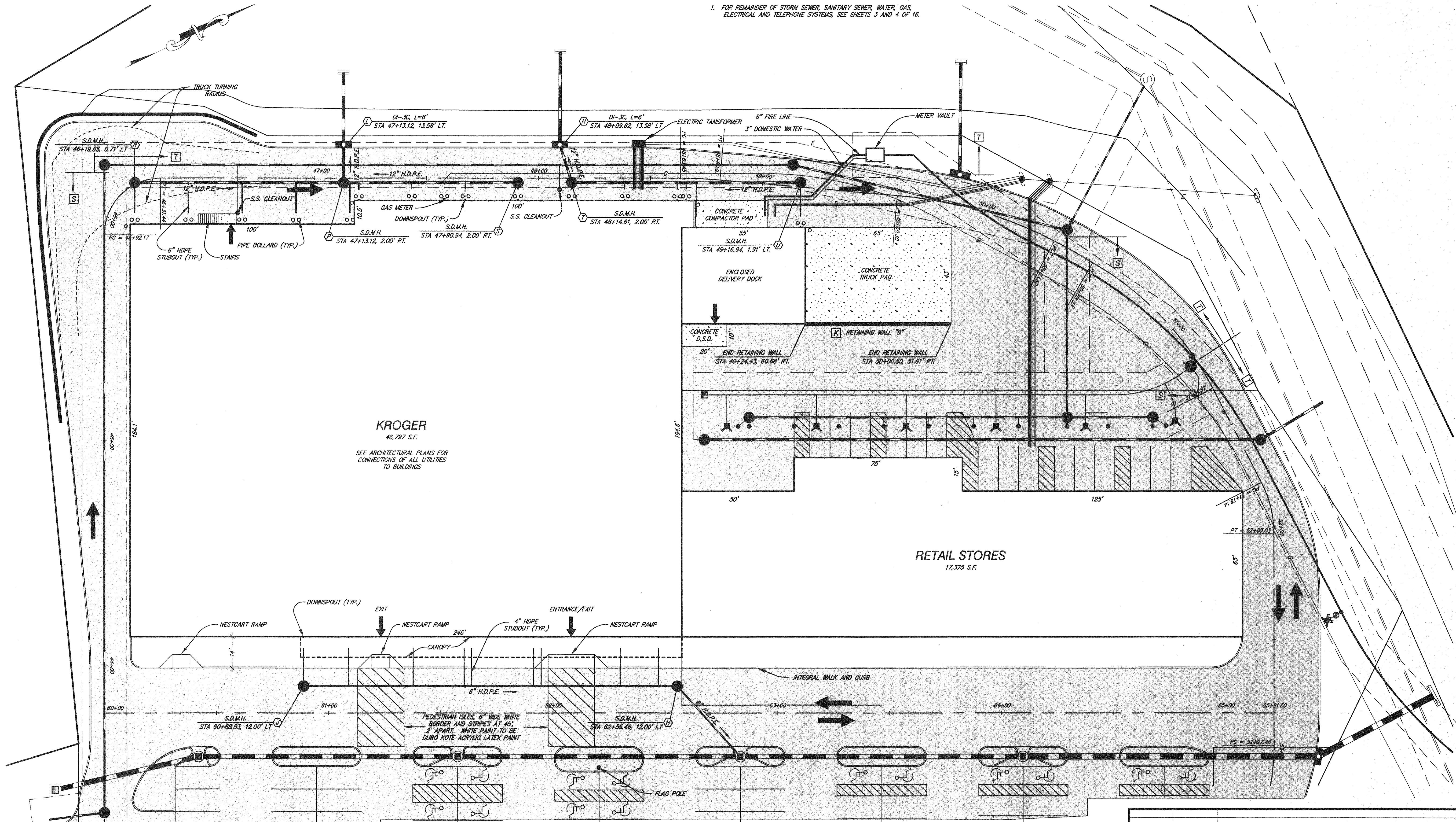
ITEM	EXISTING	PROPOSED
PAVEMENT	---	---
CURB	---	---
CURB AND GUTTER	---	---
MANHOLE	15" SD	15" CONC
STORM DRAIN	8" SS	8" SS
SANITARY SEWER	FL	FL
FIRE LINE	---	---
DOMESTIC WATER LINE	---	---
CONCRETE	---	---
UTILITY POLE	---	---
GUY WIRE	---	---
GAS LINE	---	---
PIPE BOLLARD	---	---
ELECTRIC LINE - OVERHEAD	---	---
CONTOUR	1020	1020

"AS-BUILT"

1	8/28/99	"AS-BUILT" WATER & SANITARY SEWER
REVISION	DATE	DESCRIPTION
DESIGNED: TCD		DIMENSIONAL LAYOUT FOR
DRAWN: PM/TCD		"BOTETOURT COMMONS KROGER"
CHECKED: MSW		STORE "R-364"
		PREPARED FOR
		TIMBERBROOK ASSOCIATES, L.C.
		AMSTERDAM MAGISTERIAL DISTRICT
		BOTETOURT COUNTY, VIRGINIA
		LUMSDEN ASSOCIATES, P.C.
		ENGINEERS-SURVEYORS-PLANNERS
		ROANOKE, VIRGINIA
		SCALE: 1" = 30'
		DATE: 4/23/99
		COMM: 97-452K
		SHEET 4 of 16



NOTES:
1. FOR REMAINDER OF STORM SEWER, SANITARY SEWER, WATER, GAS, ELECTRICAL AND TELEPHONE SYSTEMS, SEE SHEETS 3 AND 4 OF 16.



KROGER
46,797 S.F.
SEE ARCHITECTURAL PLANS FOR CONNECTIONS OF ALL UTILITIES TO BUILDINGS

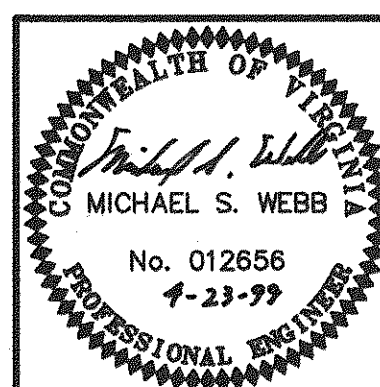
RETAIL STORES
17,375 S.F.

CONSTRUCTION RESPONSIBILITY LEGEND

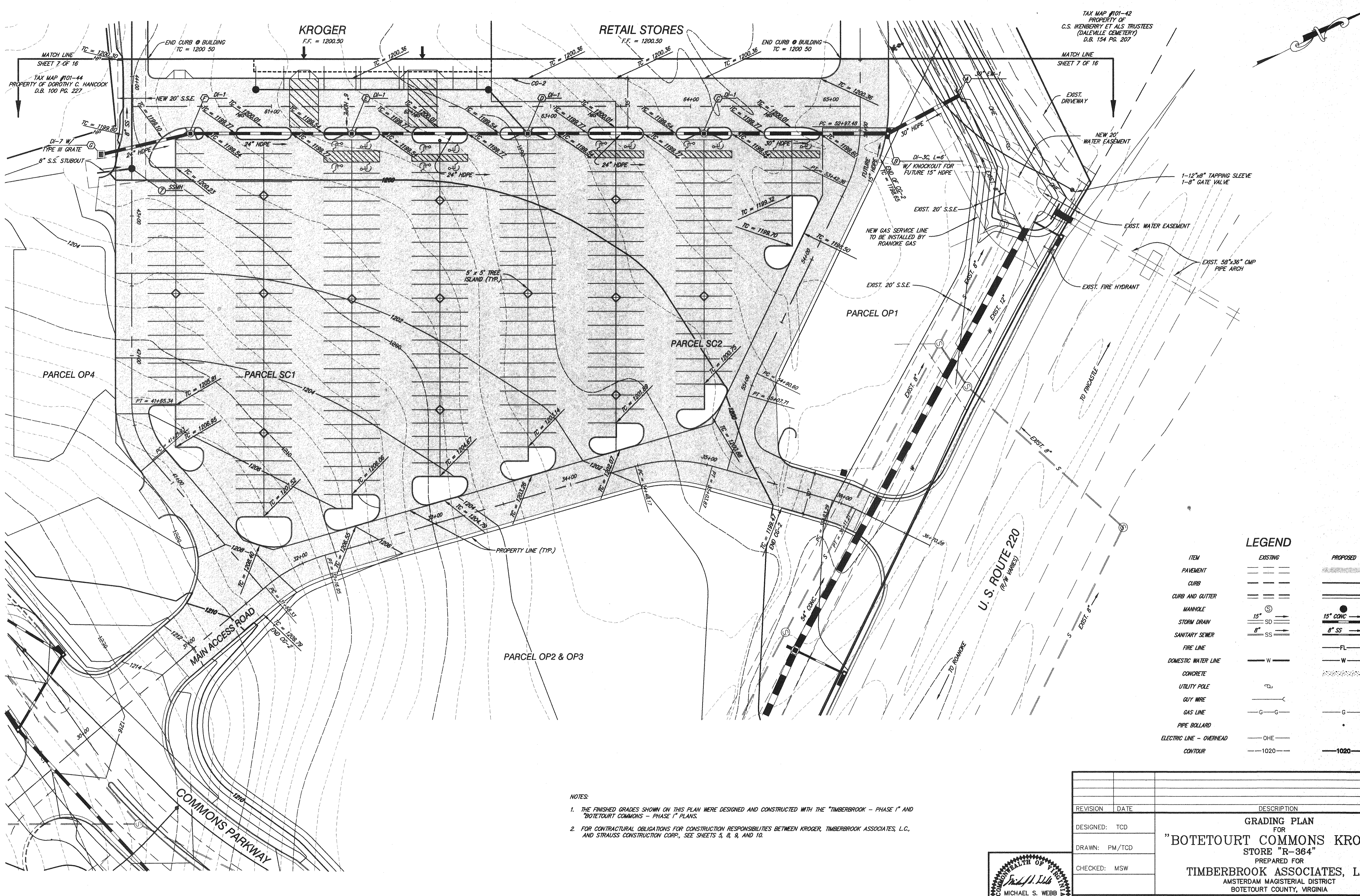
- [S] DENOTES ITEMS TO BE CONSTRUCTED BY STRAUSS CONSTRUCTION CORP.
- [T] DENOTES ITEMS TO BE CONSTRUCTED BY TIMBERBROOK ASSOCIATES, L.L.C.
- [K] DENOTES ITEMS TO BE CONSTRUCTED BY KROGER

LEGEND

ITEM	EXISTING	PROPOSED	ITEM	EXISTING	PROPOSED
PAVEMENT	---	---	CONCRETE	---	---
CURB	---	---	UTILITY POLE	---	---
CURB AND GUTTER	---	---	GUY WIRE	---	---
MANHOLE	---	---	GAS LINE	---	---
STORM DRAIN	15" SD	15" CONC	PIPE BOLLARD	---	---
SANITARY SEWER	8" SS	8" SS	ELECTRIC LINE - OVERHEAD	---	---
FIRE LINE	---	---	CONTOUR	---	---
DOMESTIC WATER LINE	---	---			

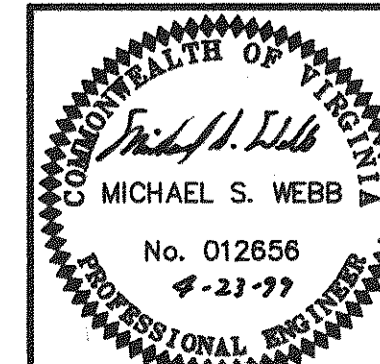


REVISION		DATE	DESCRIPTION	
DESIGNED:		TCD	KROGER SITE LAYOUT FOR "BOTETOURT COMMONS KROGER" STORE "R-364" PREPARED FOR TIMBERBROOK ASSOCIATES, L.C. AMSTERDAM MAGISTERIAL DISTRICT BOTETOURT COUNTY, VIRGINIA	
DRAWN:		PM/TCD		
CHECKED:		MSW		
LUMSDEN ASSOCIATES, P.C. ENGINEERS-SURVEYORS-PLANNERS ROANOKE, VIRGINIA			SCALE: 1" = 20'	COMM: 97-452K
			DATE: 4/23/99	SHEET 5 of 16



LEGEND		
ITEM	EXISTING	PROPOSED
PAVEMENT	---	---
CURB	---	---
CURB AND GUTTER	---	---
MANHOLE	15" SD	15" CONC
STORM DRAIN	8" SS	8" SS
SANITARY SEWER	---	---
FIRE LINE	---	---
DOMESTIC WATER LINE	---	---
CONCRETE	---	---
UTILITY POLE	---	---
GUY WIRE	---	---
GAS LINE	---	---
PIPE BOLLARD	---	---
ELECTRIC LINE - OVERHEAD	---	---
CONTOUR	---	---

- NOTES:
- THE FINISHED GRADES SHOWN ON THIS PLAN WERE DESIGNED AND CONSTRUCTED WITH THE "TIMBERBROOK - PHASE I" AND "BOTETOURT COMMONS - PHASE I" PLANS.
 - FOR CONTRACTURAL OBLIGATIONS FOR CONSTRUCTION RESPONSIBILITIES BETWEEN KROGER, TIMBERBROOK ASSOCIATES, L.C., AND STRAUSS CONSTRUCTION CORP., SEE SHEETS 3, 8, 9, AND 10.



REVISION	DATE	DESCRIPTION
DESIGNED: TCD		GRADING PLAN FOR "BOTETOURT COMMONS KROGER" STORE "R-364" PREPARED FOR TIMBERBROOK ASSOCIATES, L.C. AMSTERDAM MAGISTERIAL DISTRICT BOTETOURT COUNTY, VIRGINIA
DRAWN: PM/TCD		
CHECKED: MSW		
LUMSDEN ASSOCIATES, P.C. ENGINEERS-SURVEYORS-PLANNERS ROANOKE, VIRGINIA		SCALE: 1" = 30' DATE: 4/23/99
		COMM: 97-452K SHEET 6 of 16

NOTES:

1. THE FINISHED GRADES SHOWN ON THIS PLAN WERE DESIGNED AND CONSTRUCTED WITH THE "TIMBERBROOK - PHASE I" AND "BOTETOURT COMMONS - PHASE I" PLANS.
2. FOR CONTRACTUAL OBLIGATIONS FOR CONSTRUCTION RESPONSIBILITIES BETWEEN KROGER, TIMBERBROOK ASSOCIATES, L.C., AND STRAUSS CONSTRUCTION CORP., SEE SHEETS 3, 8, 9, AND 10.

TAX MAP #101-43
PROPERTY OF
RACHEL E. HANCOCK
D.B. 390, PG. 657

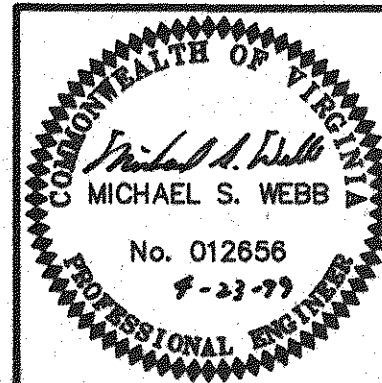
TAX MAP #101-44
PROPERTY OF
DOROTHY C. HANCOCK
D.B. 100, PG. 227

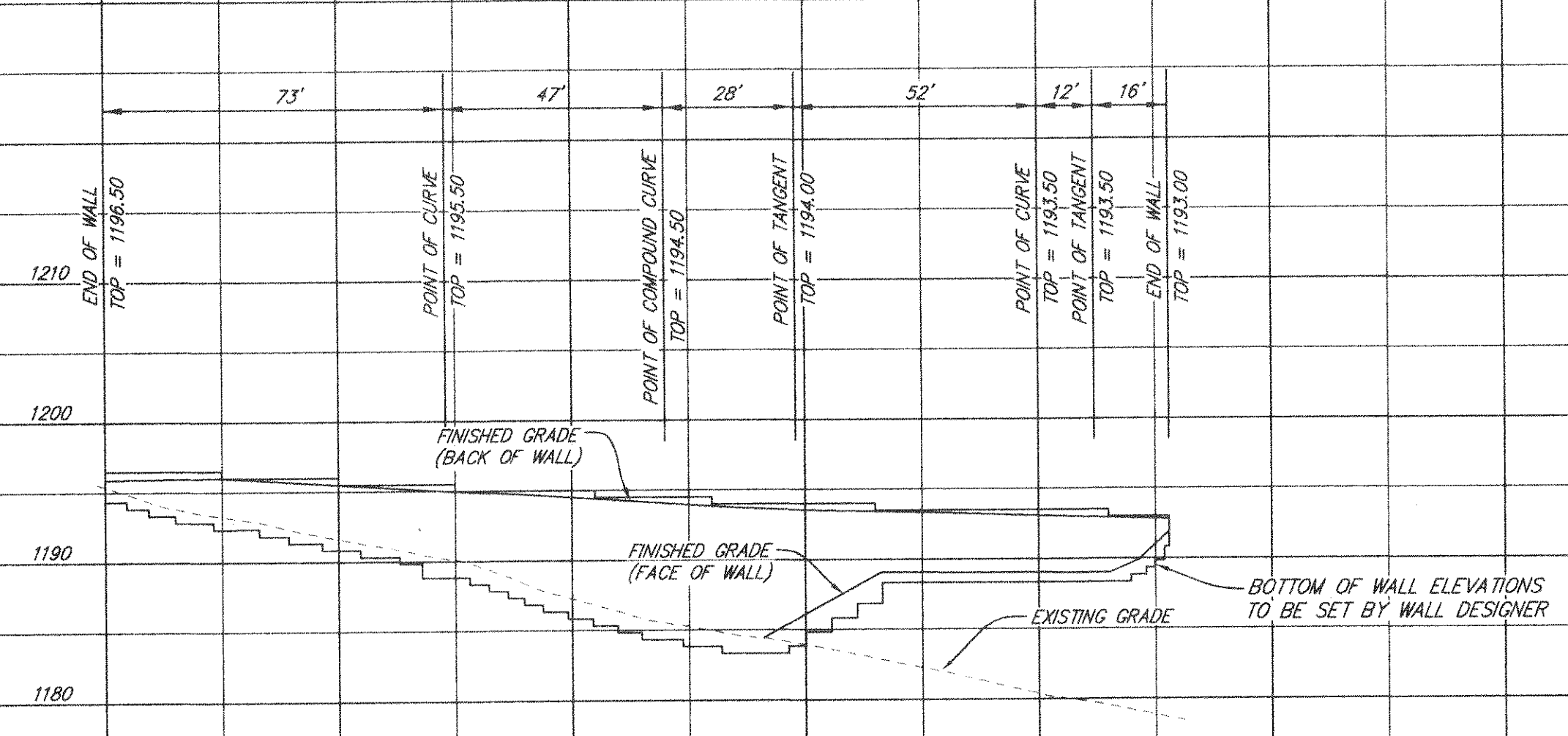
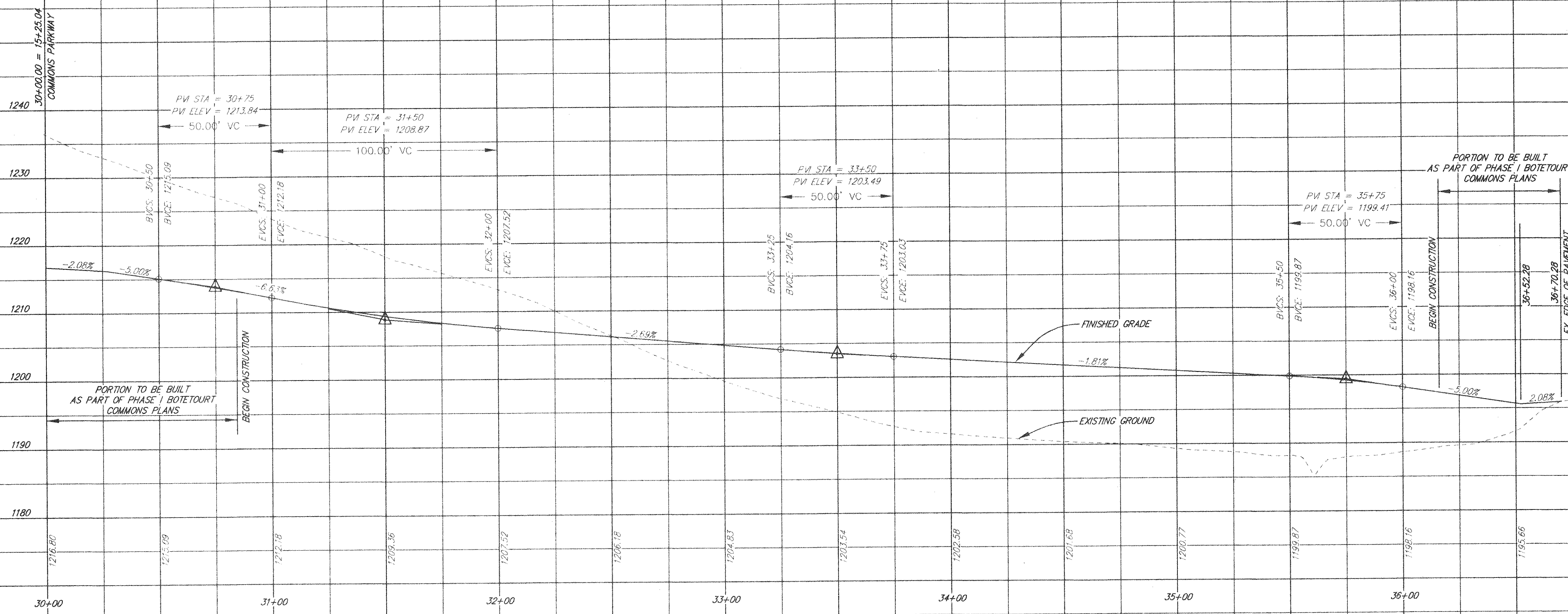
TAX MAP #101-42
PROPERTY OF
C.S. IKENBERRY ET ALS TRUSTEES
(DALEVILLE CEMETERY)
D.B. 154, PG. 207

LEGEND

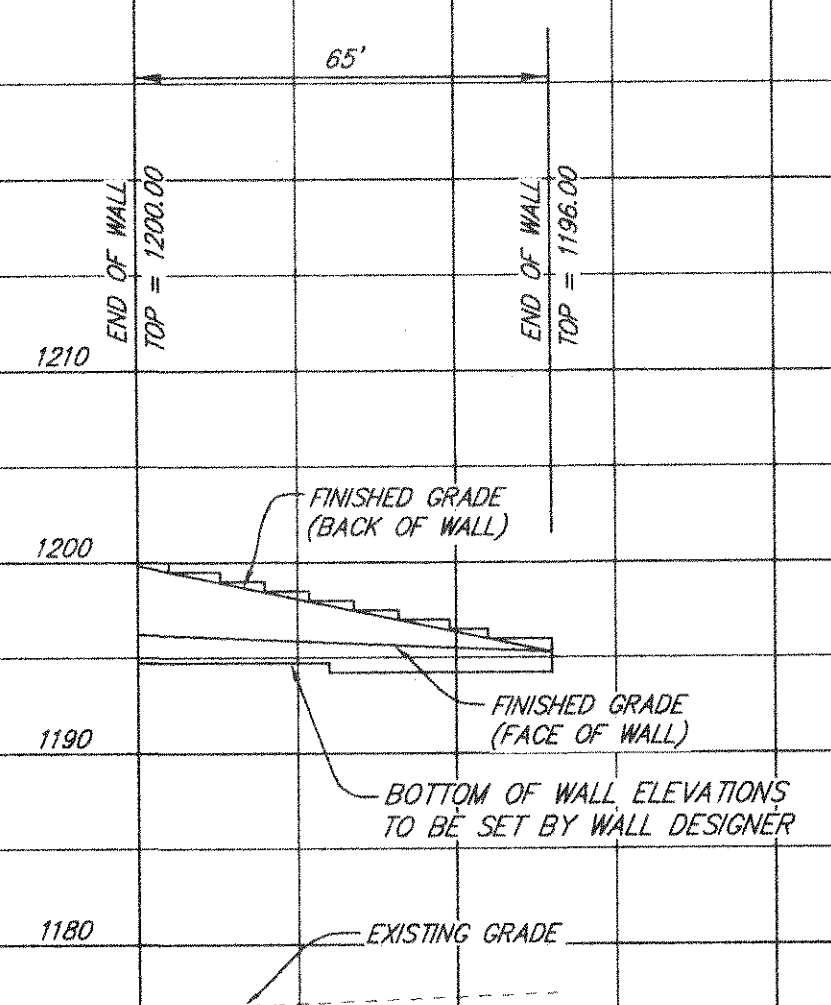
ITEM	EXISTING	PROPOSED
PAVEMENT	---	---
CURB	---	---
CURB AND GUTTER	---	---
MANHOLE	⊙	⊙
STORM DRAIN	15" SD	15" CONC
SANITARY SEWER	8" SS	8" SS
FIRE LINE	FL	FL
DOMESTIC WATER LINE	W	W
CONCRETE	---	---
UTILITY POLE	⊙	⊙
GUY WIRE	---	---
GAS LINE	G-G	G
PIPE BOLLARD	•	•
ELECTRIC LINE - OVERHEAD	OHE	OHE
CONTOUR	1020	1020

REVISION	DATE	DESCRIPTION
DESIGNED: TCD		GRADING PLAN FOR "BOTETOURT COMMONS KROGER" STORE "R-364" PREPARED FOR TIMBERBROOK ASSOCIATES, L.C. AMSTERDAM MAGISTERIAL DISTRICT BOTETOURT COUNTY, VIRGINIA
DRAWN: PM/TCD		
CHECKED: MSW		
LUMSDEN ASSOCIATES, P.C. ENGINEERS-SURVEYORS-PLANNERS ROANOKE, VIRGINIA		SCALE: 1" = 30' DATE: 4/23/99 COMM: 97-452K SHEET 7 of 16

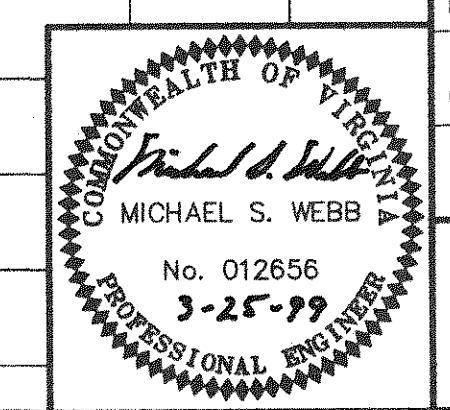




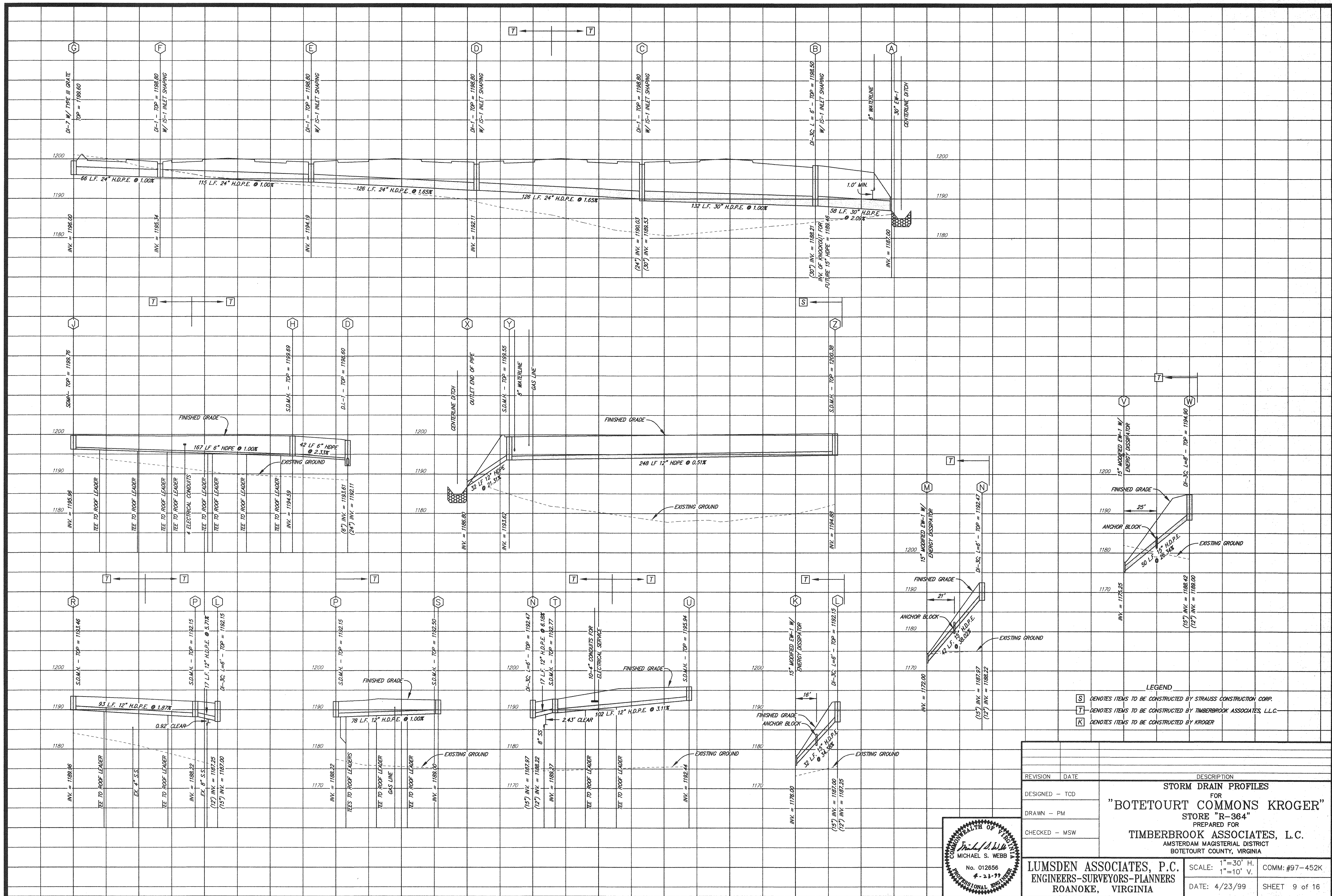
RETAINING WALL "A"

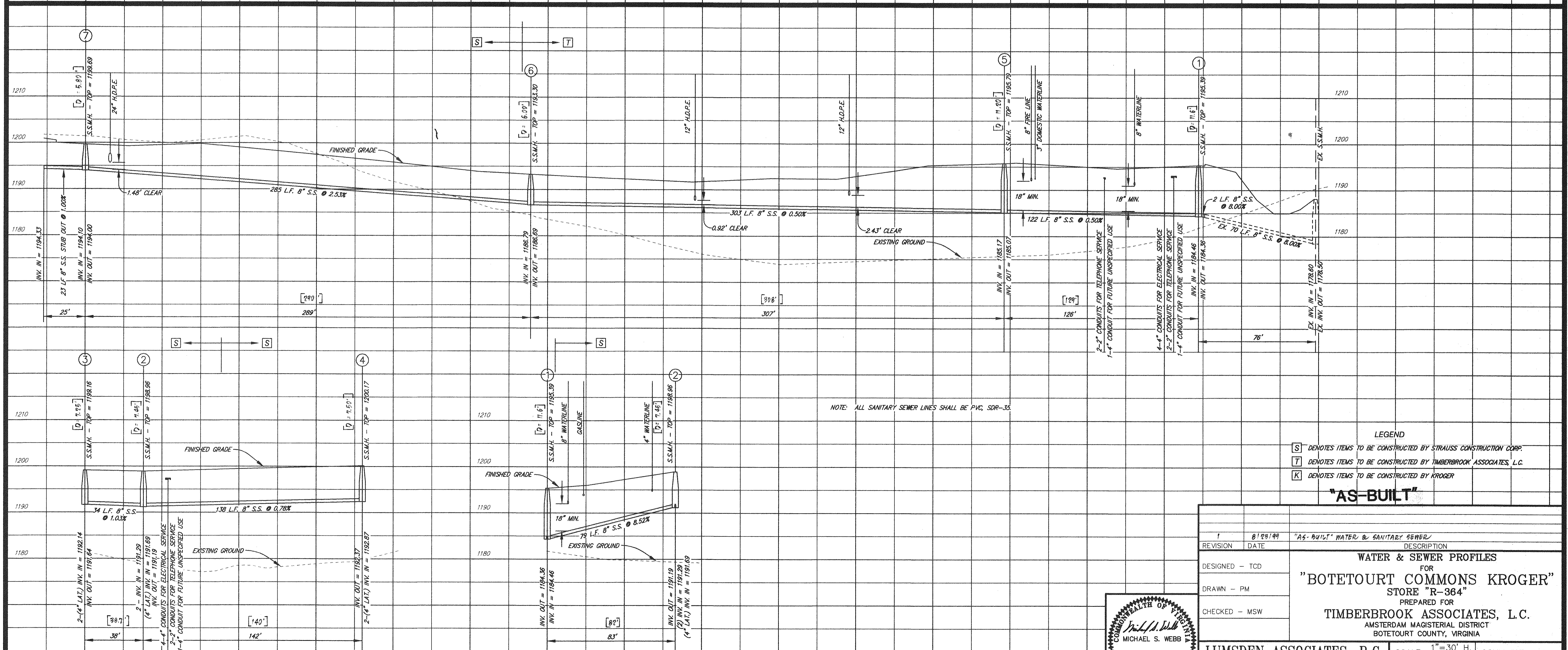
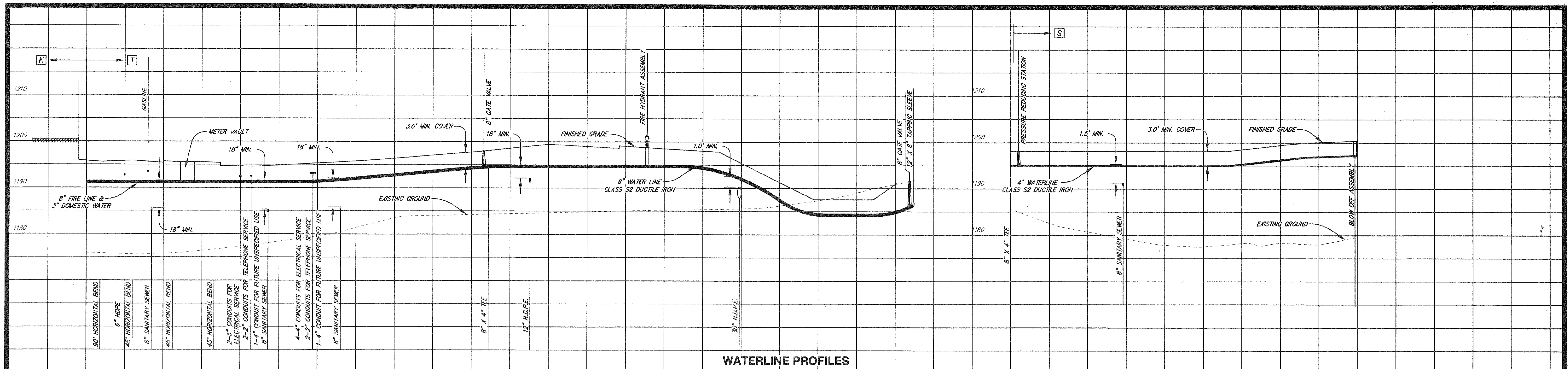


RETAINING WALL "B"



REVISION		DATE	DESCRIPTION
DESIGNED - TCD			ROAD & RETAINING WALL PROFILES
DRAWN - PM			FOR
CHECKED - MSW			"BOTETOURT COMMONS KROGER"
			STORE "R-364"
			PREPARED FOR
			TIMBERBROOK ASSOCIATES, L.C.
			AMSTERDAM MAGISTERIAL DISTRICT
			BOTETOURT COUNTY, VIRGINIA
LUMSDEN ASSOCIATES, P.C.		SCALE: 1"=30' H. 1"=10' V.	COMM: #97-452K
ENGINEERS-SURVEYORS-PLANNERS		DATE: 4/23/99	SHEET 8 of 16
ROANOKE, VIRGINIA			





LEGEND

[S] DENOTES ITEMS TO BE CONSTRUCTED BY STRAUSS CONSTRUCTION CORP.

[T] DENOTES ITEMS TO BE CONSTRUCTED BY TIMBERBROOK ASSOCIATES, L.C.

[K] DENOTES ITEMS TO BE CONSTRUCTED BY KROGER

"AS-BUILT"

REVISION	DATE	DESCRIPTION
1	8/23/99	"AS-BUILT" WATER & SANITARY SEWER
DESIGNED	TCB	WATER & SEWER PROFILES
DRAWN	PM	FOR
CHECKED	MSW	"BOTETOURT COMMONS KROGER"
		STORE "R-364"
		PREPARED FOR
		TIMBERBROOK ASSOCIATES, L.C.
		AMSTERDAM MAGISTERIAL DISTRICT
		BOTETOURT COUNTY, VIRGINIA

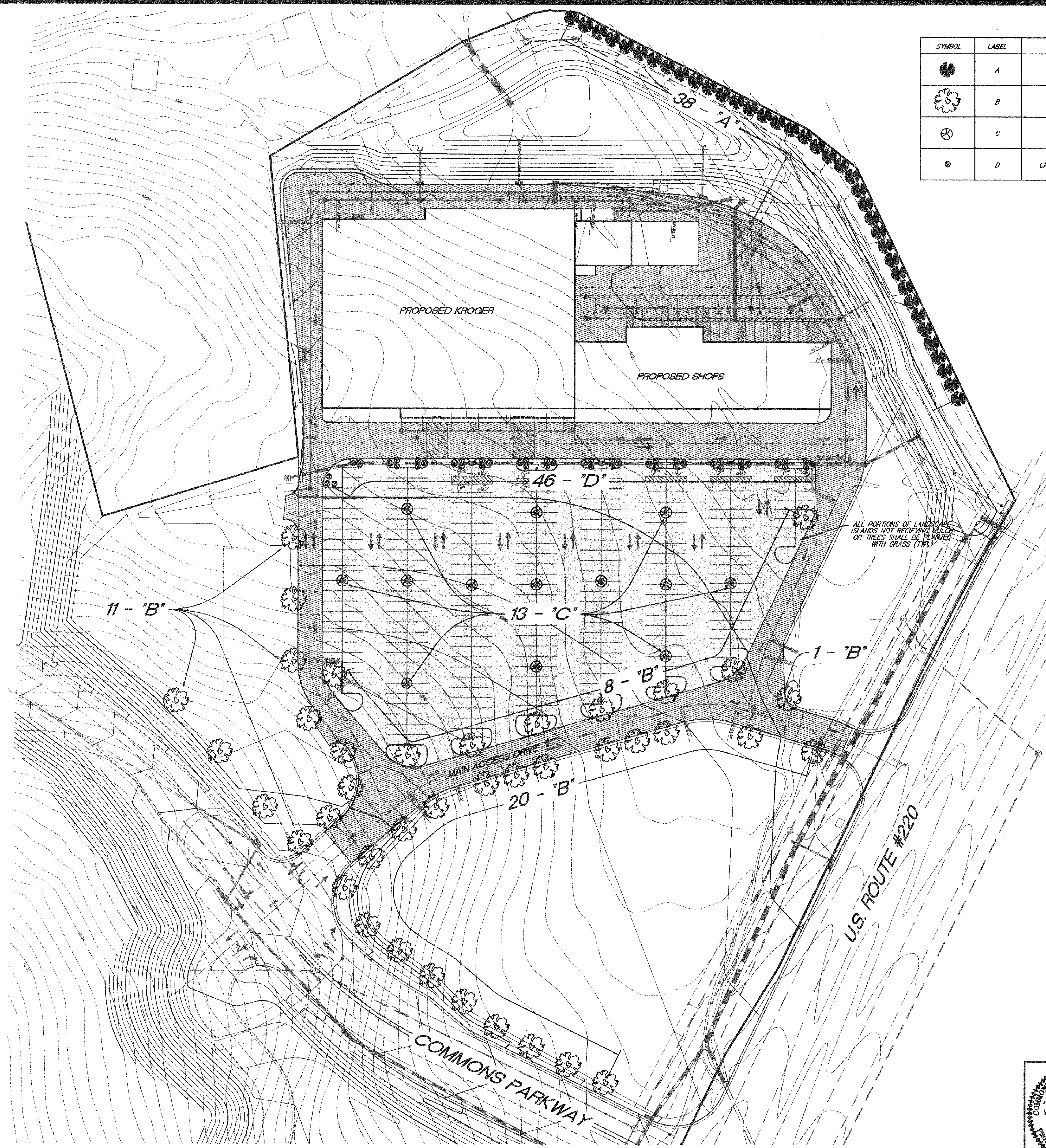
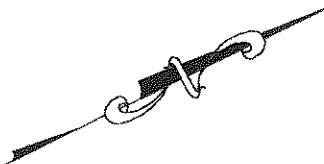
LUMSDEN ASSOCIATES, P.C.
ENGINEERS-SURVEYORS-PLANNERS
ROANOKE, VIRGINIA

SCALE: 1"=30' H.
1"=10' V.

COMM: #97-452K

DATE: 4/23/99

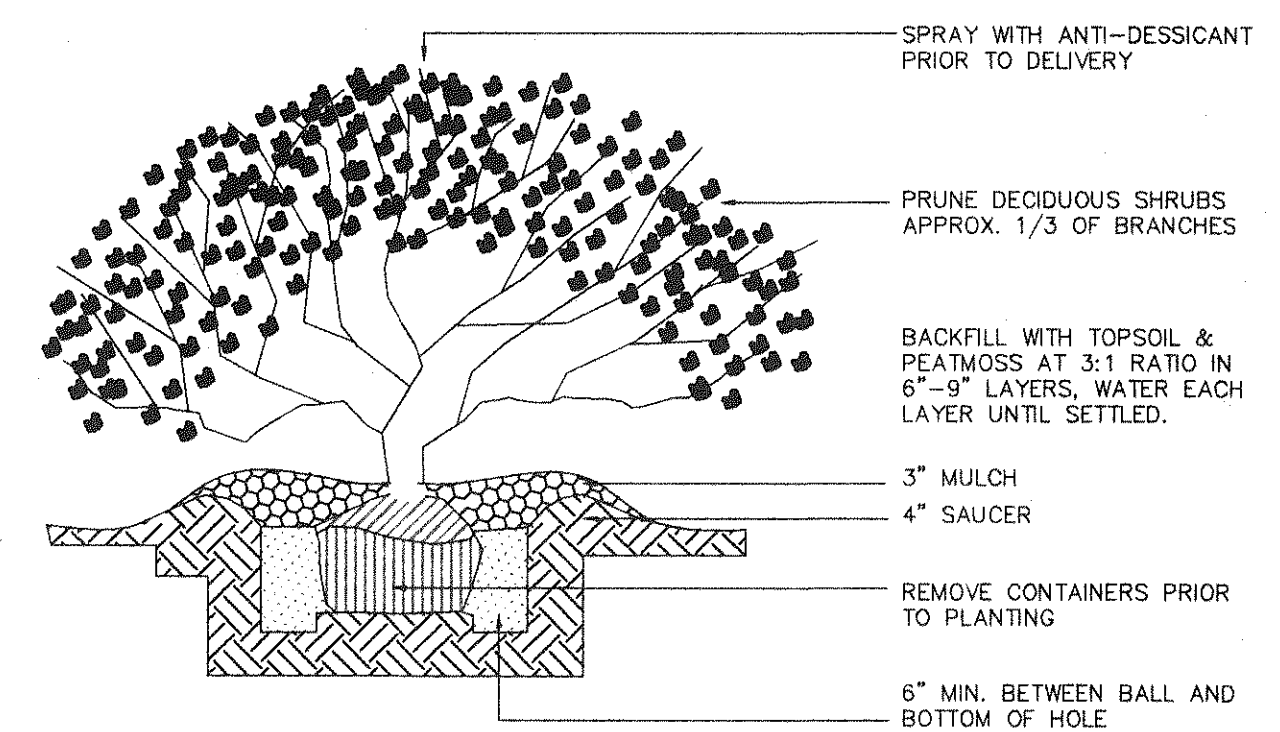
SHEET 10 of 16



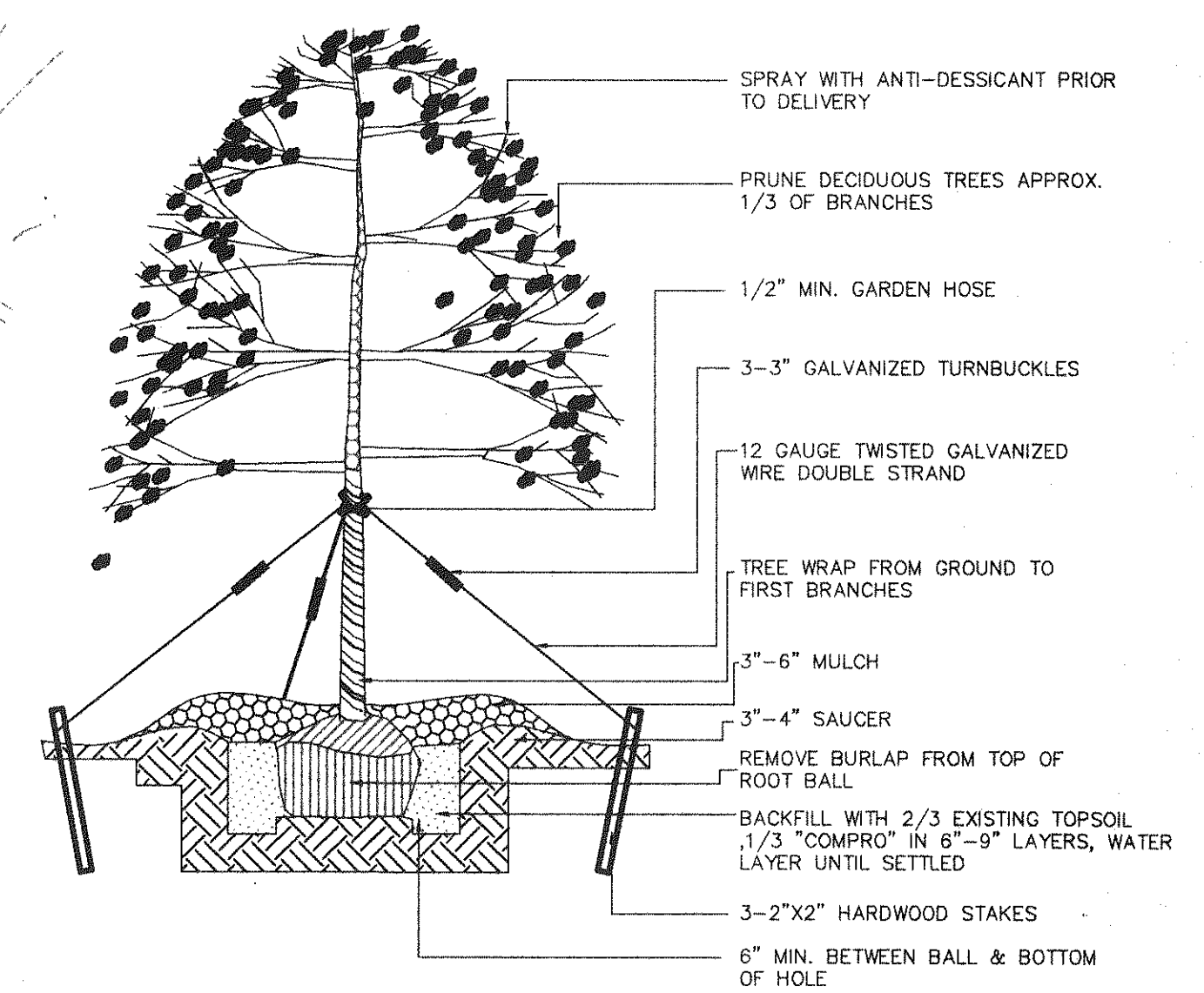
LANDSCAPING SCHEDULE

SYMBOL	LABEL	COMMON NAME	BOTANICAL NAME	QUANTITY	SIZE, DESCRIPTION
	A	LEYLAND CYPRESS	CUPRESSOCYPARIA LEYLANDI	38	5' TALL, B & B
	B	RED OAK	QUERCUS RUBRA	40	2" CALIPER, B & B
	C	EASTERN REDBUD	CERIS CANADENSIS	13	5' TALL, B & B
	D	CHINESE JUNIPER SARGENTII	JUNIPERUS CHINENSIS "SARGENTII"	46	1 GALLON CONTAINER

HEAVY DUTY PAVEMENT (SEE DETAIL SHEET 2)
 REGULAR DUTY PAVEMENT (SEE DETAIL SHEET 2)



SHRUB PLANTING DETAIL

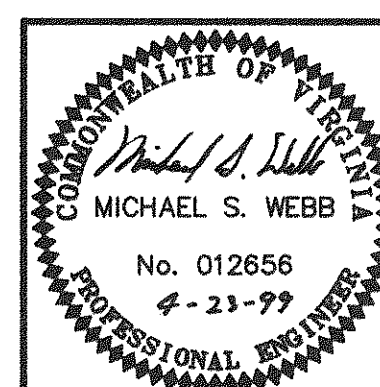


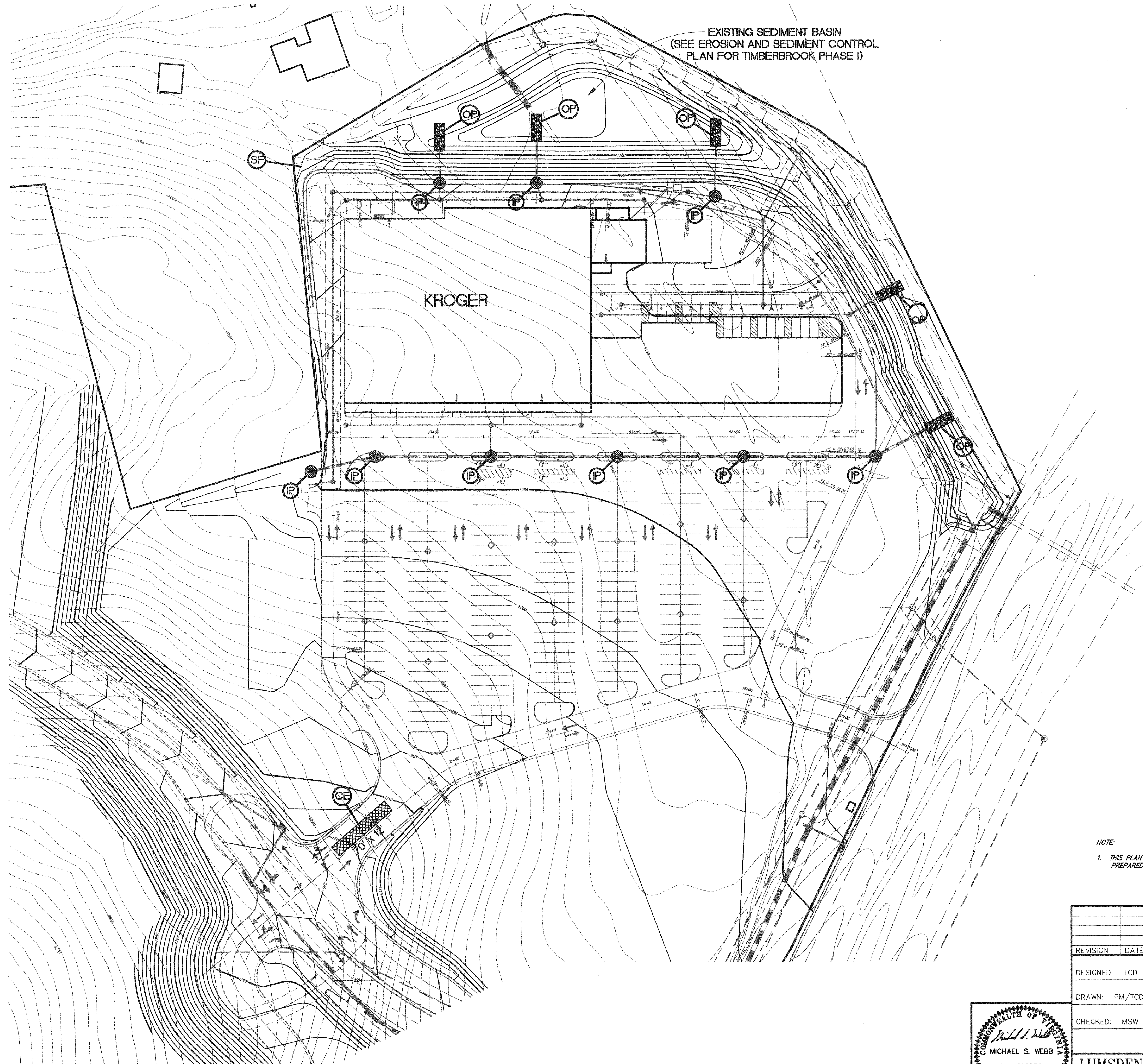
TREE PLANTING DETAIL

LANDSCAPE REQUIREMENTS

TOTAL PARKING SPACES = 345
TOTAL AREA OF PARKING = 185,646 S.F.
LANDSCAPE REQUIRED 200 S.F. LANDSCAPING / 10 SPACES = 6,900 S.F.
1 S.F. LANDSCAPING / 20 S.F. PARKING = 8,280 S.F.
1 - 2" CALIPER TREE / 10 SPACES = 35 TREES
TOTAL REQUIRED = 15,180 S.F. WITH 35 - 2" CALIPER TREES
TOTAL PROVIDED = 16,680 S.F. WITH 53 - 2" CALIPER TREES

REVISION	DATE	DESCRIPTION
DESIGNED:	TCD	LANDSCAPE AND PAVING PLAN FOR "BOTETOURT COMMONS KROGER" STORE "R-364" PREPARED FOR TIMBERBROOK ASSOCIATES, L.C. AMSTERDAM MAGISTERIAL DISTRICT BOTETOURT COUNTY
DRAWN:	PM/TCD	
CHECKED:	MSW	
SCALE:	1" = 50'	COMM: 97-452K
DATE:	4/23/99	SHEET 11 of 16





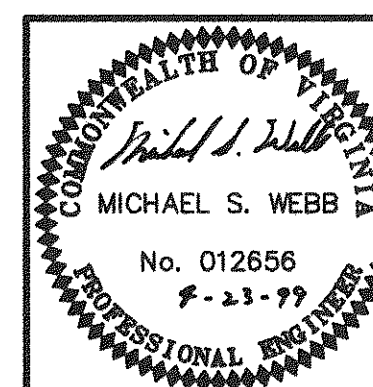
EXISTING SEDIMENT BASIN
(SEE EROSION AND SEDIMENT CONTROL
PLAN FOR TIMBERBROOK PHASE I)

KROGER

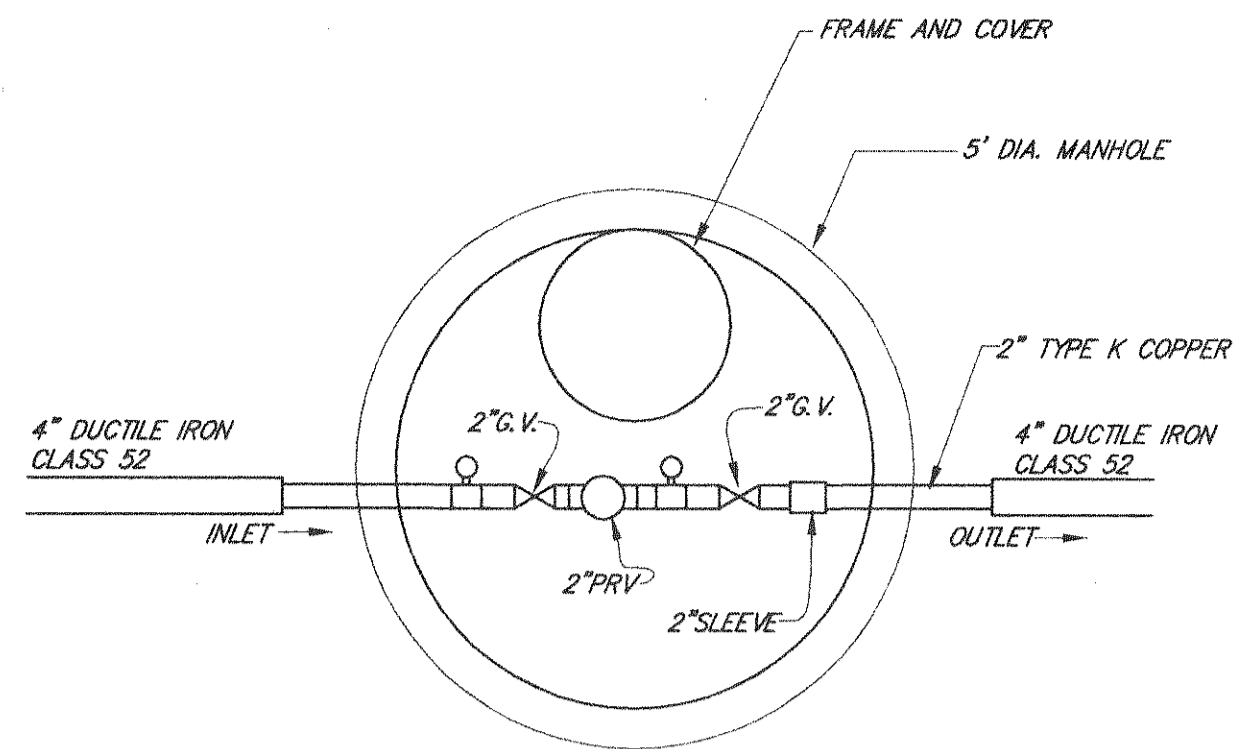
NOTE:

1. THIS PLAN SUPPLEMENTS EROSION AND SEDIMENT CONTROL PLANS
PREPARED FOR BETOURT COMMONS AND TIMBERBROOK.

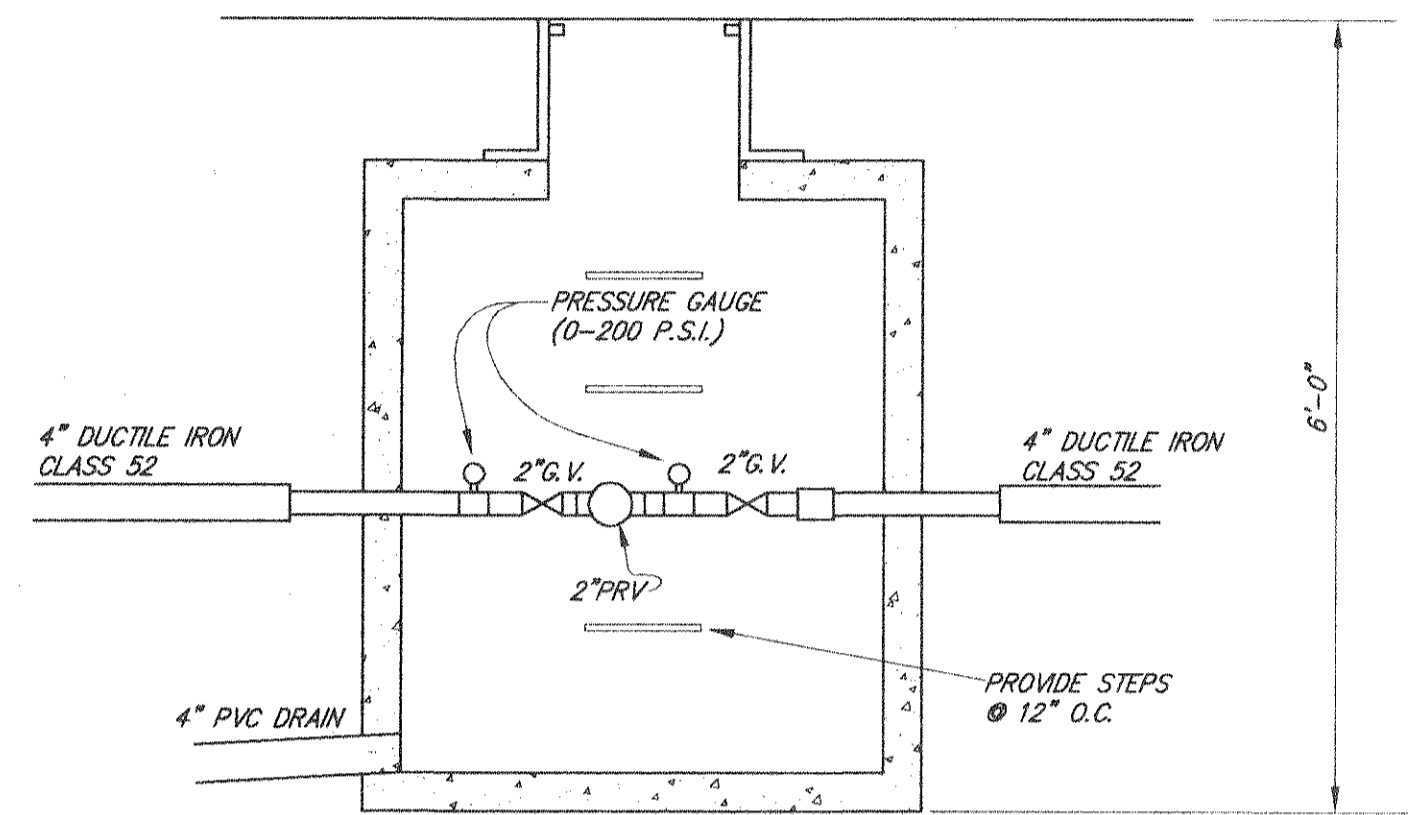
REVISION	DATE	DESCRIPTION
DESIGNED: TCD		EROSION AND SEDIMENT CONTROL PLAN FOR "BOTETOURT COMMONS KROGER" STORE "R-364" PREPARED FOR TIMBERBROOK ASSOCIATES, L.C. AMSTERDAM MAGISTERIAL DISTRICT BOTETOURT COUNTY, VIRGINIA
DRAWN: PM/TCD		
CHECKED: MSW		
LUMSDEN ASSOCIATES, P.C. ENGINEERS-SURVEYORS-PLANNERS ROANOKE, VIRGINIA		SCALE: 1" = 50' DATE: 4/23/99 COMM: 97-452K SHEET 13 of 16



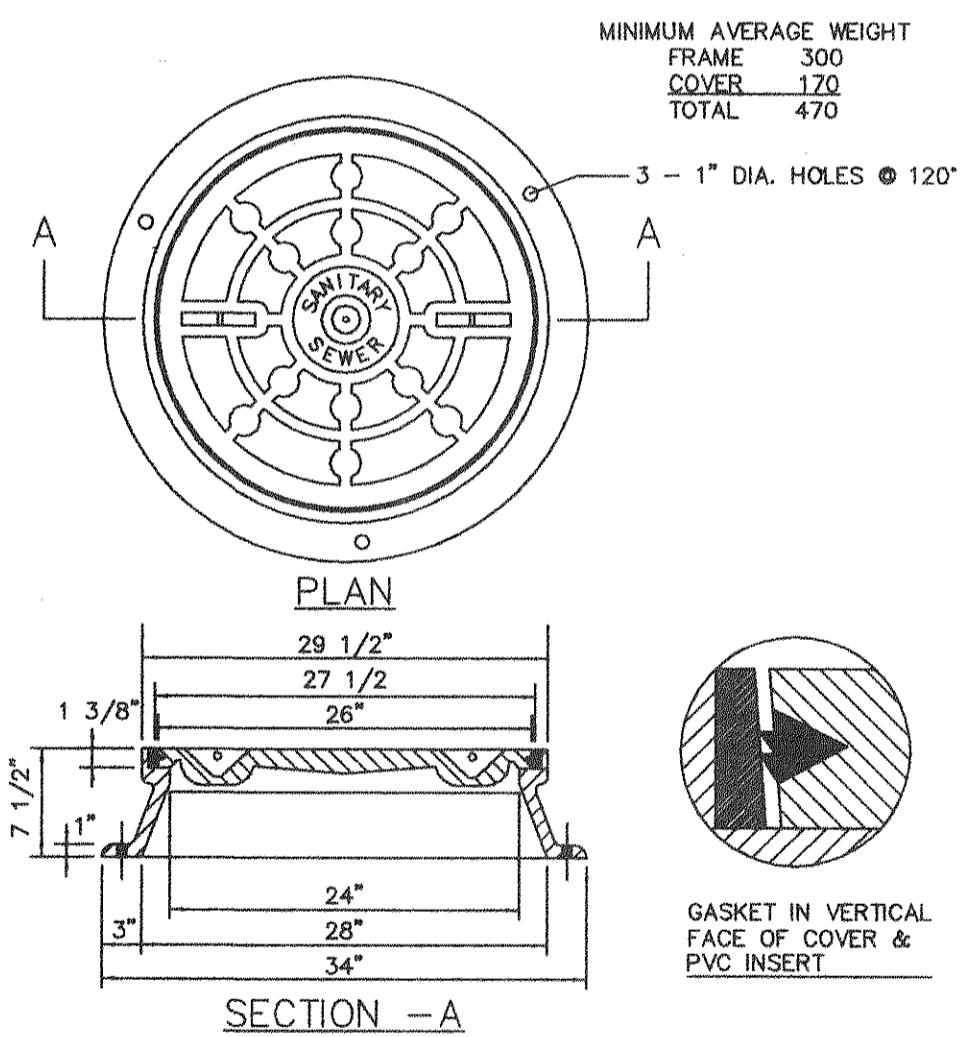
*** THIS PLAN IS FOR EROSION AND SEDIMENT CONTROL PURPOSES ONLY ***



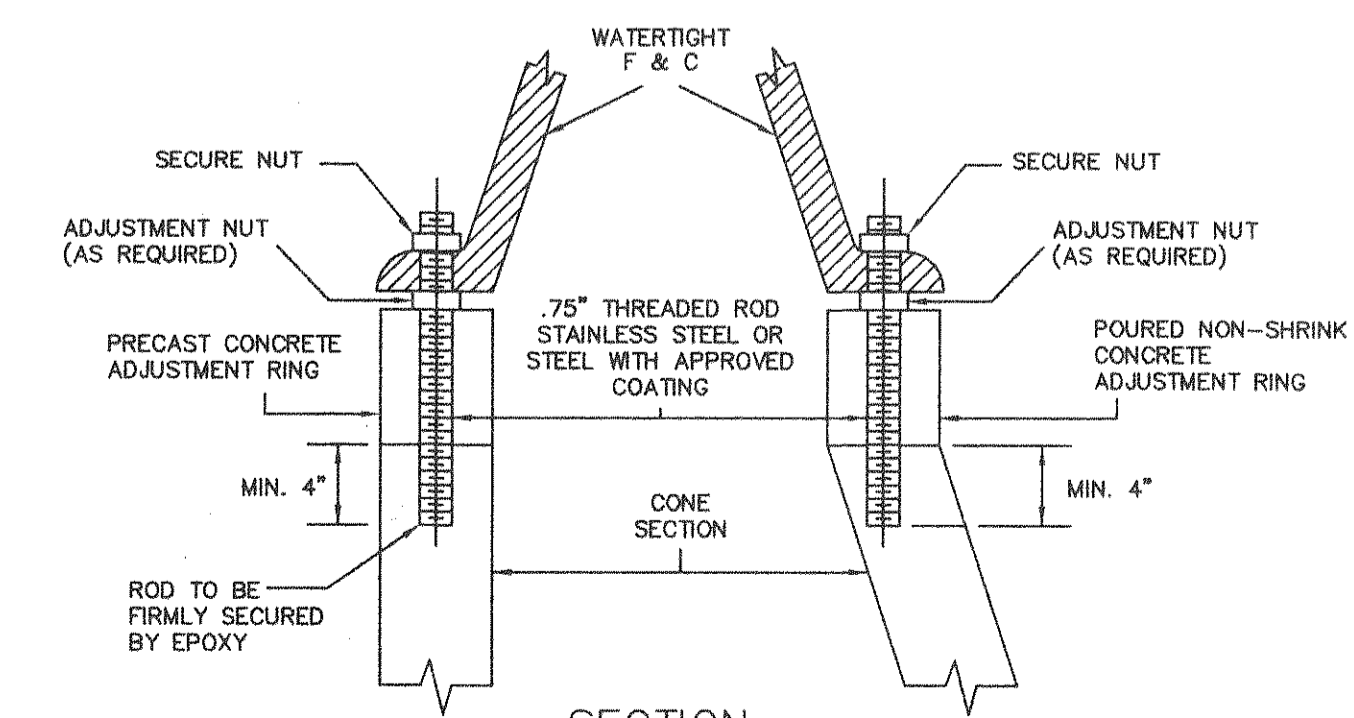
PRESSURE REDUCING VALVE PLAN
N.T.S.



PRESSURE REDUCING VALVE SECTION
N.T.S.



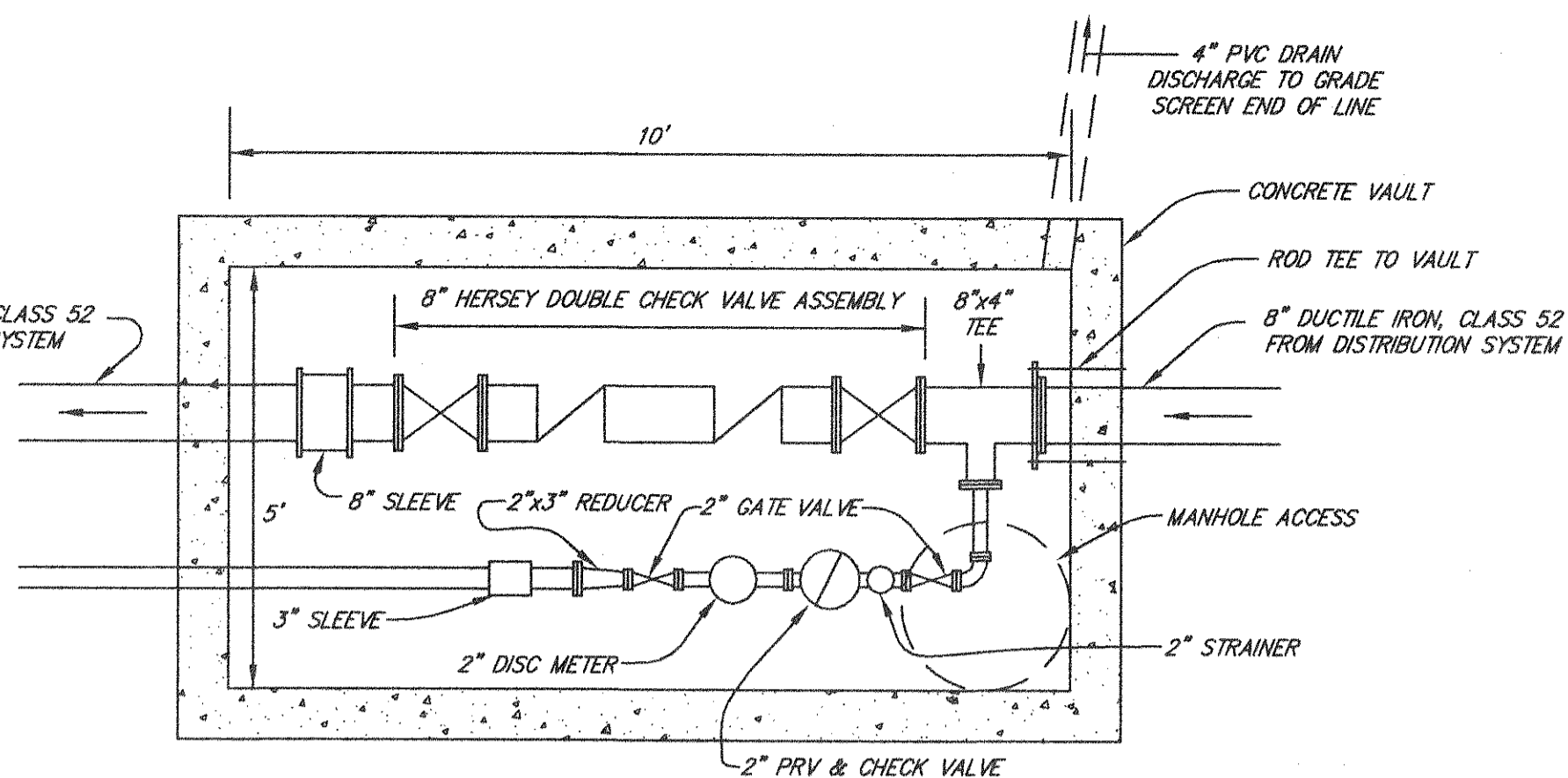
SECTION - A



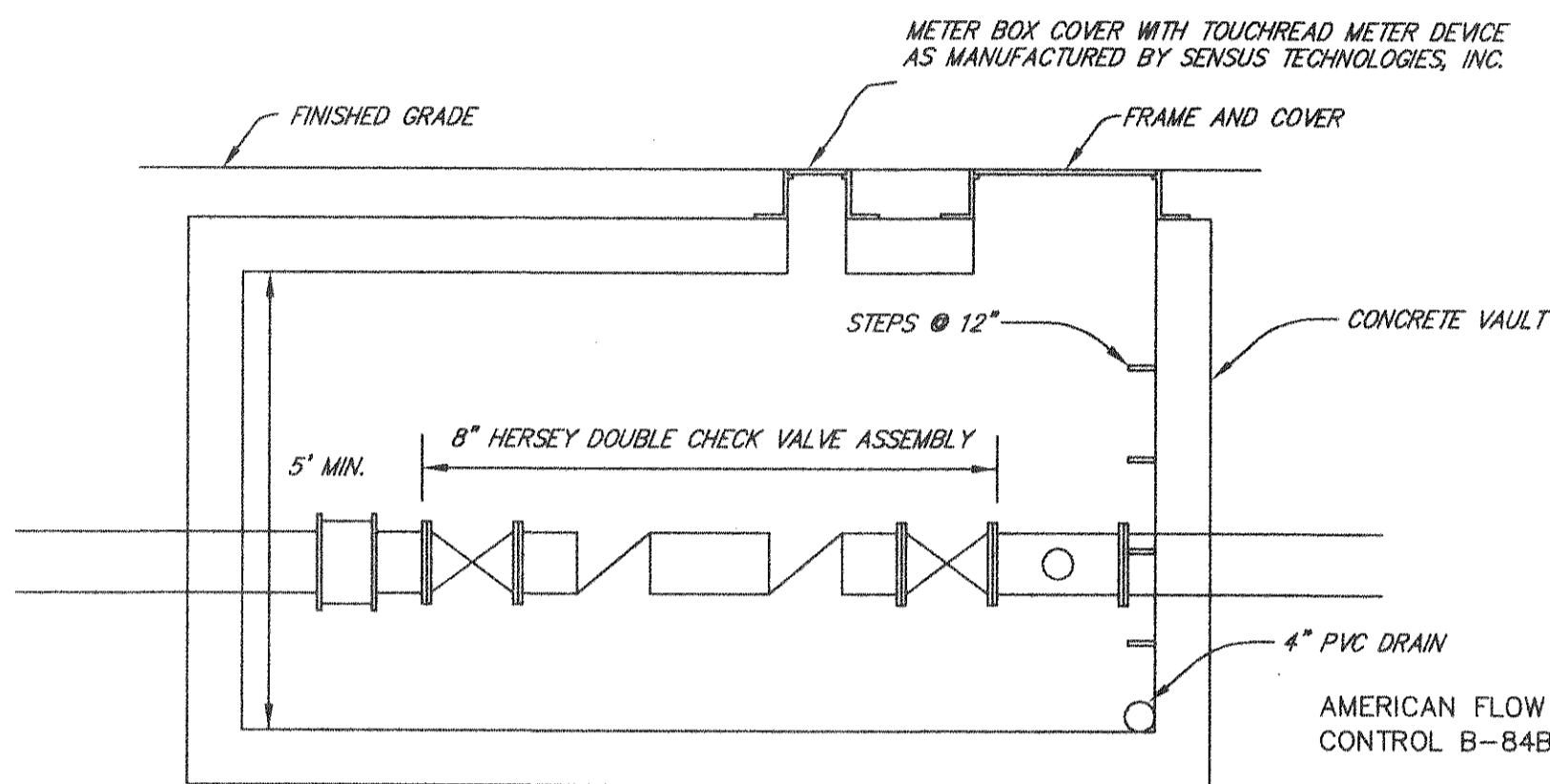
NOTE: APPROVED WATER SEALANT REQUIRED AT ALL JOINTS AND EXTERIOR OF POURED CONCRETE

SANITARY SEWER FRAME AND COVER
INSTALLATION DETAIL

- NOTES:
1. PRESSURE REDUCING VALVE (PRV) SHALL BE CAPABLE OF REDUCING 165 PSI INLET PRESSURE TO 60 PSI OUTLET PRESSURE.
 2. 2" PIPING SHALL BE TYPE "K" COPPER.
 3. 2" FITTINGS SHALL BE BRASS.
 4. GATE VALVES SHALL BE WHEEL OPERATED.

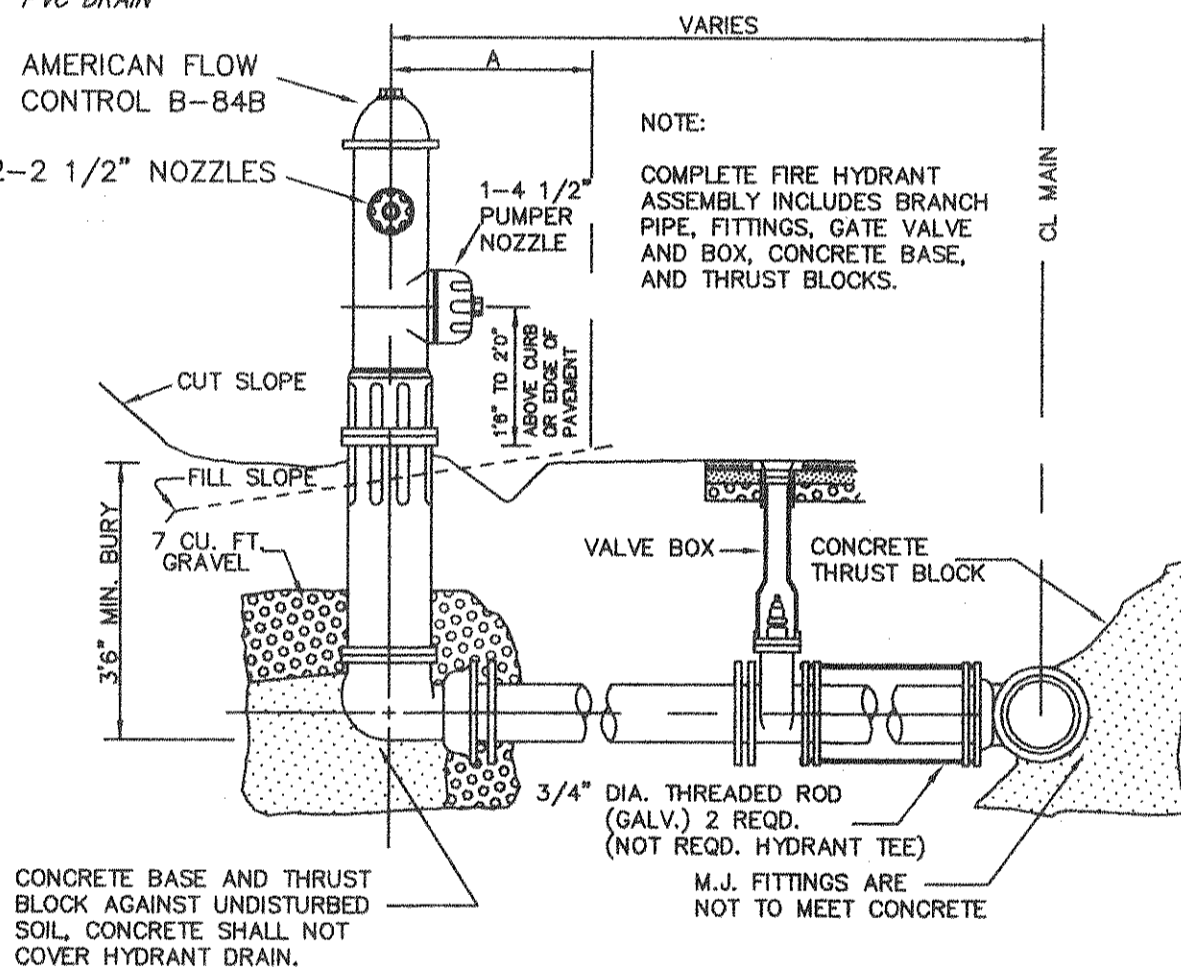


KROGER WATER METER VAULT PLAN



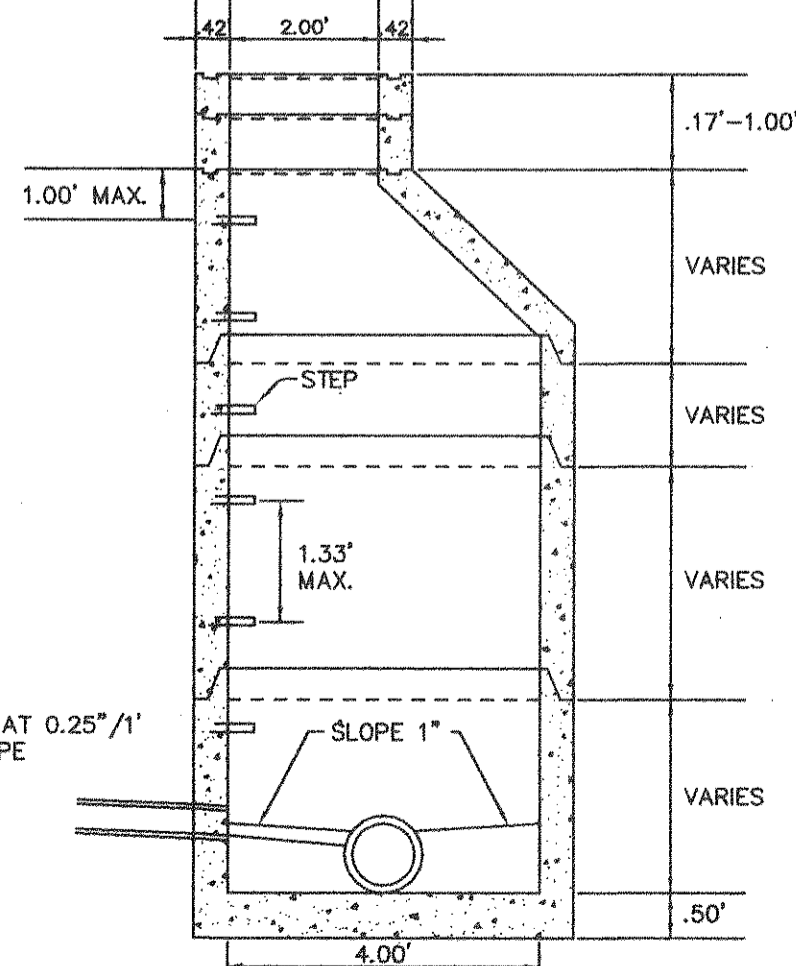
KROGER WATER METER VAULT SECTION

- NOTES:
- (1) DISTANCE "A" WITH CURB AND GUTTER, 2' MIN., 4' MAX. FROM BACK OF CURB.
 - (2) DISTANCE "A" WITHOUT CURB AND GUTTER, 6' MIN., 12' MAX. FROM EDGE OF PAVEMENT.

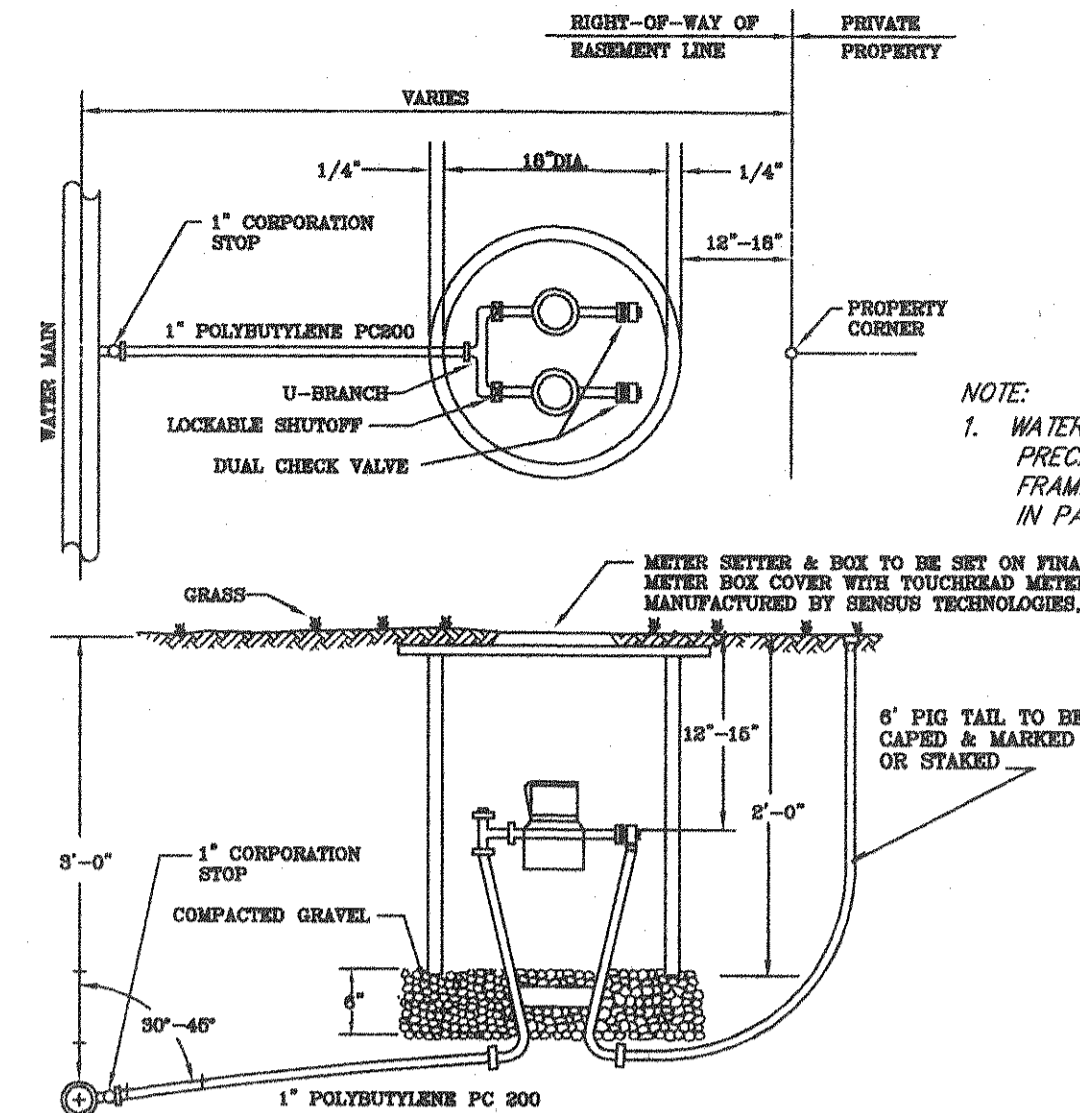


FIRE HYDRANT SETTING

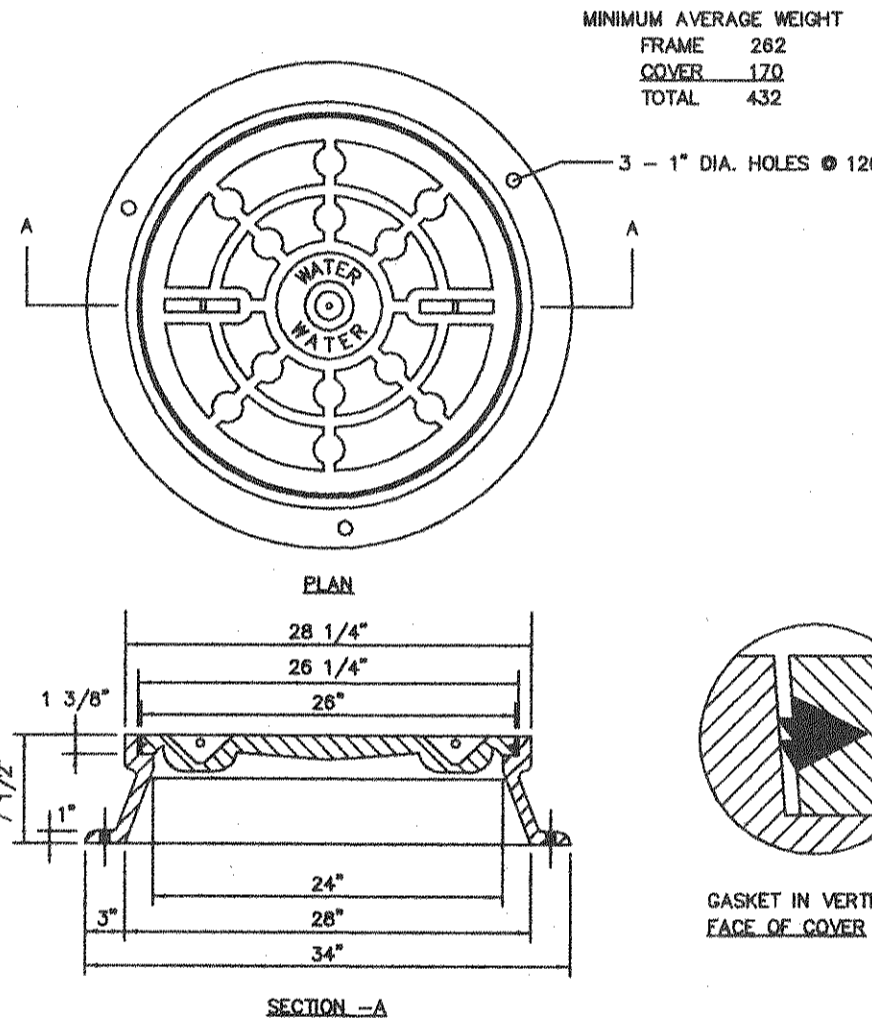
- NOTES:
1. IN TRAFFIC AREAS INSTALLATION OF A TRAFFIC BEARING BOX LABELED AS "SEWER CLEANOUT REQUIRED. BOX SHALL BE SET IN A 12\"/>



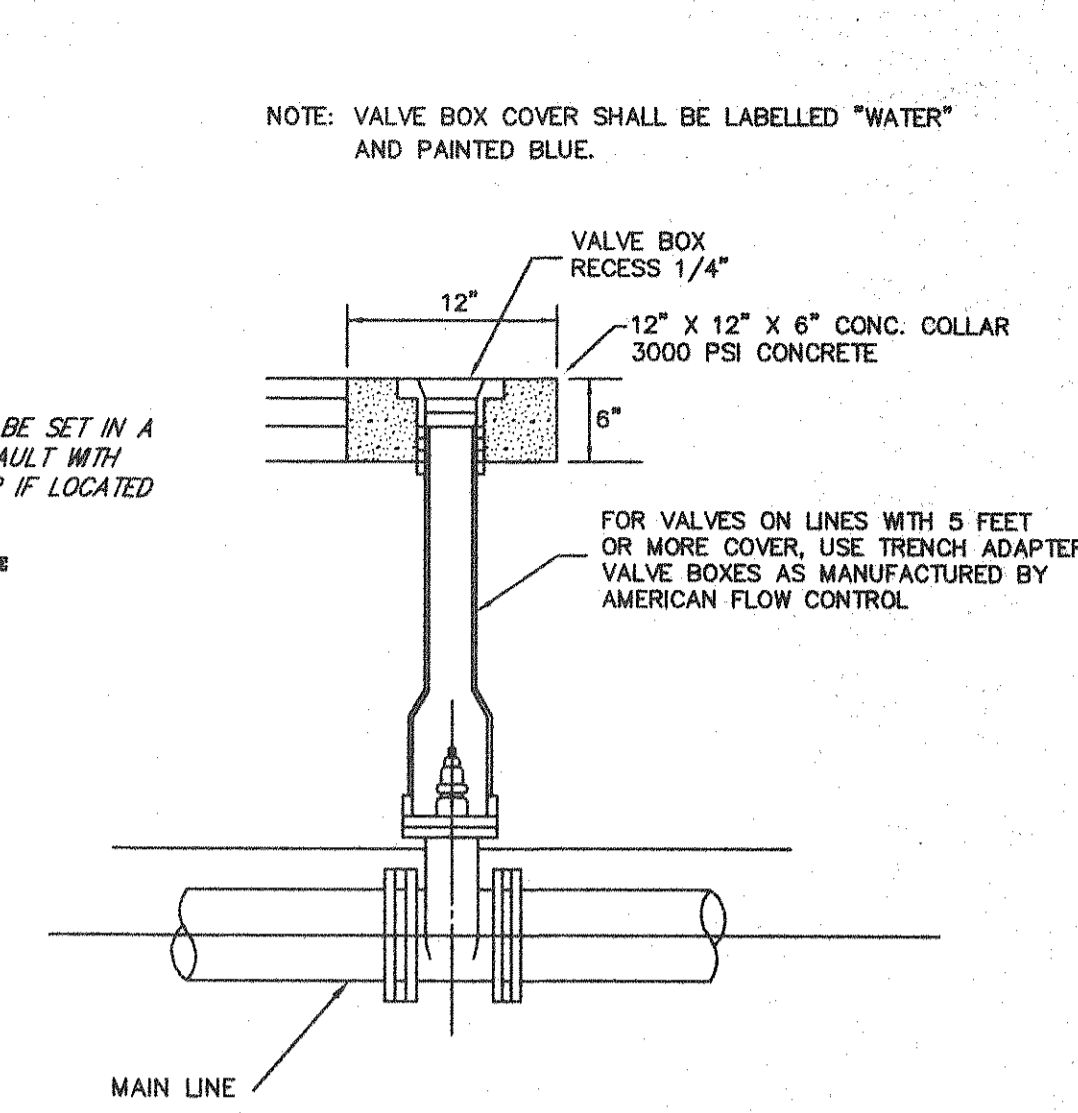
STANDARD MANHOLE



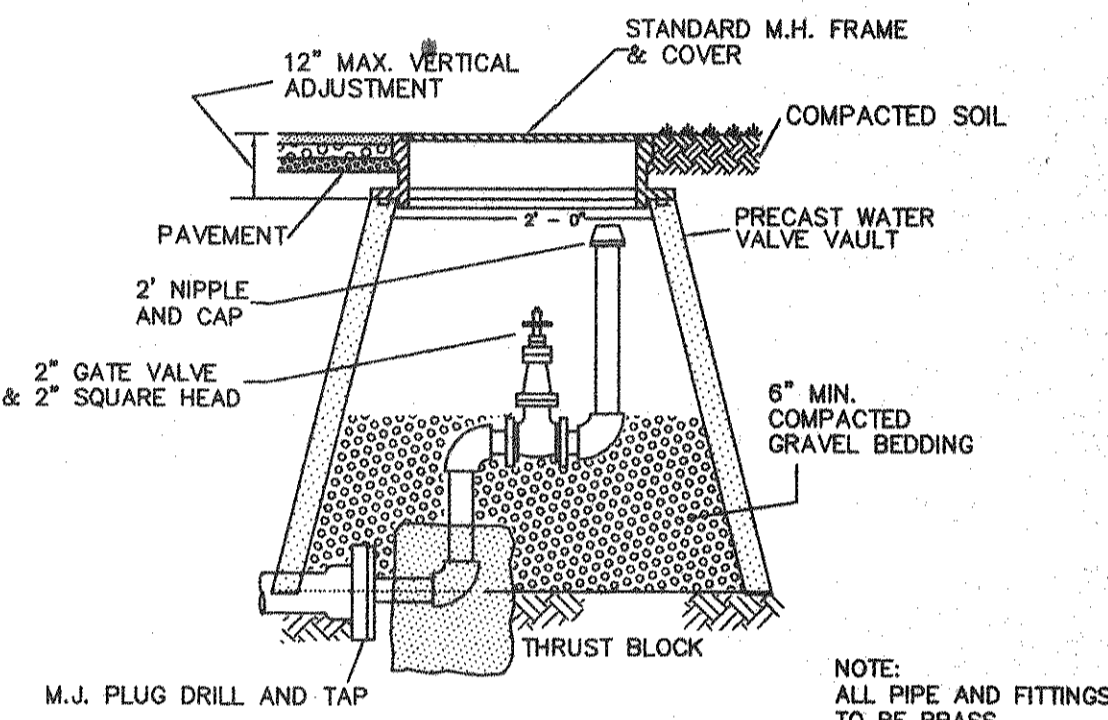
DOUBLE WATER SERVICE



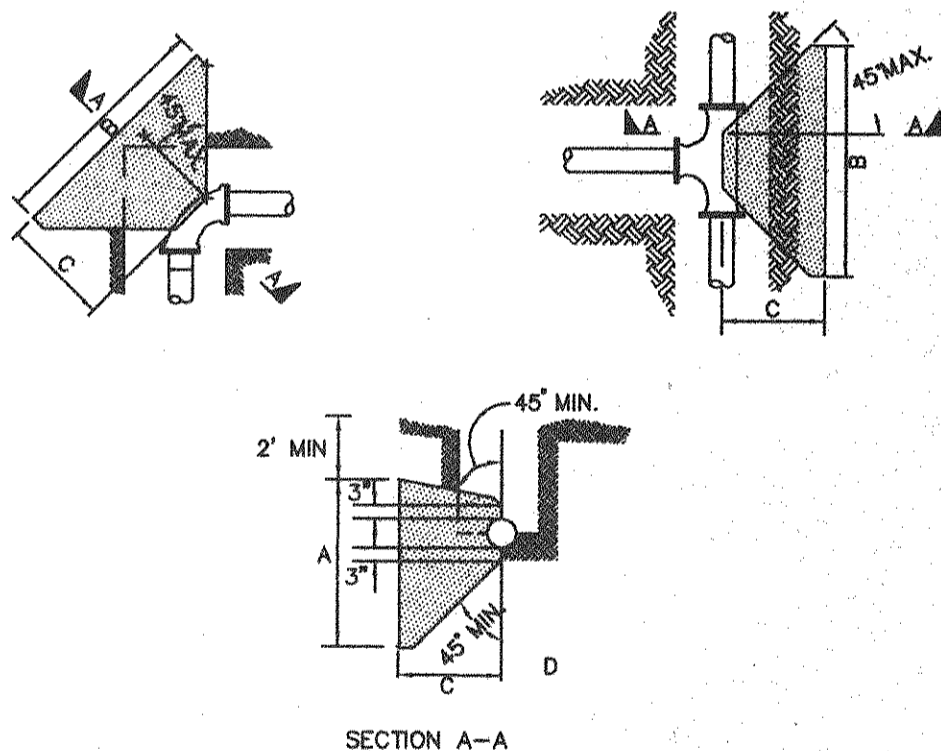
WATER VAULT FRAME AND COVER
INSTALLATION DETAIL



WATER LINE VALVE INSTALLATION



PERMANENT END OF LINE



SECTION A-A

PIPE SIZE	TEE OR DEAD END	90° BEND	45° BEND	22.5° LESS BEND
8" OR LESS	A B C	A B C	A B C	A B C
8"	1.2 2.0 3.0	1.5 2.5 3.5	1.2 2.0 3.0	1.2 2.0 3.0
10"	1.7 2.8 4.0	2.0 3.5 5.0	1.5 2.5 3.5	1.5 2.5 3.5
12"	2.0 3.5 5.0	2.5 4.0 6.0	1.7 2.8 4.0	1.7 2.8 4.0
14"	2.5 4.0 6.0	3.0 5.0 7.0	2.0 3.5 5.0	2.0 3.5 5.0
16"	3.0 5.0 7.0	3.5 6.0 8.0	2.5 4.0 6.0	2.5 4.0 6.0
24"	4.0 7.0 10.0	4.5 8.0 11.0	3.0 5.0 7.0	3.0 5.0 7.0

- NOTES:
1. THE ABOVE NOTED DIMENSIONS ARE MINIMUM BASED ON CONCRETE ANCHOR EXTENDING TO UNDISTURBED SOIL. LINE PRESSURE NOT TO EXCEED 150 PSI AND, MINIMUM SOIL BEARING CAPACITY OF 2500 PSF. UNSATISFACTORY SOIL BEARING OR EXCESS PRESSURE WILL REQUIRE ADDITIONAL DESIGN.
 2. CONCRETE SHALL NOT BE POURED ON JOINTS OR BOLTS.
 3. CONCRETE TO BE MINIMUM 3000 PSI - 28 DAY COMPRESSIVE STRENGTH.
 4. FITTING CONTACT AREA SHALL BE POLYETHYLENE WRAPPED PRIOR TO BLOCKING.

THRUST BLOCK FOR HORIZONTAL
AND LOWER VERTICAL BENDS

REVISION		DATE		DESCRIPTION	
DESIGNED - TCD		DRAWN - PM		CHECKED - MSW	
<p>WATER & SEWER DETAILS FOR "BOTETOURT COMMONS KROGER" STORE "R-364" PREPARED FOR TIMBERBROOK ASSOCIATES, L.C. AMSTERDAM MAGISTERIAL DISTRICT BOTETOURT COUNTY, VIRGINIA</p>					
LUMSDEN ASSOCIATES, P.C. ENGINEERS-SURVEYORS-PLANNERS ROANOKE, VIRGINIA		SCALE: NONE DATE: 4/23/99		COMM: #97-452K SHEET 15 of 16	

