

# STONERIDGE TOWNHOMES

## SITE DEVELOPMENT PLANS BOTETOURT COUNTY, VIRGINIA

### PROPERTY OWNER IDENTIFICATION

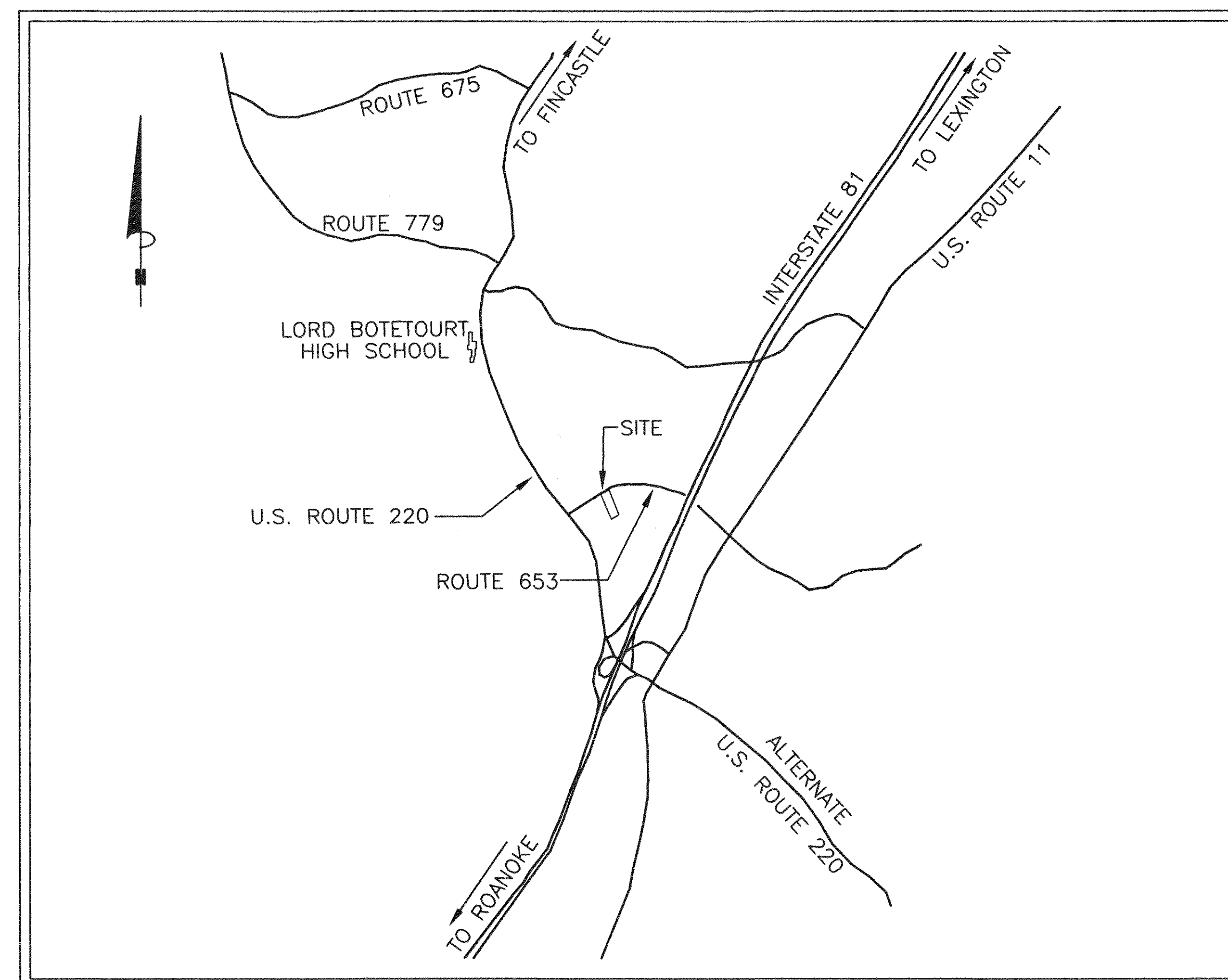
1. PROPERTY OWNER:  
S & S REAL PROPERTIES, L.C.
2. SUBMITTING ENGINEER:  
ENGINEERING CONCEPTS, INC.  
20 S. ROANOKE ST.  
FINCASTLE, VIRGINIA 24090  
(540) 473-1253  
JACK ELLINWOOD - PROJECT MANAGER

### PROPERTY IDENTIFICATION

1. TAX PARCEL # 101-69
2. ZONING CLASSIFICATION:  
R3 CONDITIONAL (MODIFIED)
3. TOTAL ACREAGE OF PARCEL TO BE DEVELOPED:  
3.492 ACRES

### OWNER:

S & S REAL PROPERTIES, INC.  
(SONNY & RODNEY SPICKARD)  
P.O. BOX 534  
TROUTVILLE, VIRGINIA 24175  
PHONE: (540) 992-6492



### SHEET INDEX

1. COVER SHEET
2. UTILITY & DIMENSIONAL PLAN
3. SITE GRADING PLAN
4. MISCELLANEOUS PROFILE SHEET
5. PLAN AND PROFILE OFF-SITE WATERLINE
6. PLAN AND PROFILE ON-SITE WATERLINE
7. STANDARD SEWER DETAIL SHEET
8. STANDARD WATER DETAIL SHEET
9. MISCELLANEOUS NOTES
- \* EROSION AND SEDIMENT CONTROL PLANS PREVIOUSLY APPROVED—  
SEE SEPARATE PLANS BY ECI DATED: AUGUST 5, 1998

### ENTIRE DEVELOPMENT TABULATION

#### ZONING TABULATION

AREA OF DEVELOPMENT	3.492 ACRES
CURRENT ZONING	R-3 CONDITIONAL (MODIFIED)
CURRENT USE	VACANT
PROPOSED USE	TOWNHOMES

#### MINIMUM REQUIREMENTS

MAXIMUM DENSITY	6 UNITS/ACRE
PLATTED AREA	3.492 ACRES
MAXIMUM UNITS	8 UNITS/ACRE x 3.492 ACRES = 28 UNITS
UNITS PROVIDED	22 UNITS
MINIMUM FRONTAGE	100 FT
PLATTED FRONTAGE	346.58 FT

#### YARDS

MINIMUM FRONT SETBACK	24 FT FROM TRAVELWAY
MINIMUM REAR YARD	18 FT
MINIMUM SIDE YARD(END UNITS)	10 FT
THIS SITE	ALL YARD REQUIREMENTS MET.

#### LOT SIZE

INTERIOR AVERAGE	30 FT x 92 FT = 2760 S.F.
EXTERIOR AVERAGE	43 FT x 93 FT = 4000 S.F.
AVERAGE UNIT SIZE	1200 S.F.

SCREENING & BUFFERING - SHALL MEET OR EXCEED THE REQUIREMENTS OF THE BOTETOURT COUNTY ZONING ORDINANCE.

LANDSCAPING - SHALL MEET OR EXCEED THE REQUIREMENTS OF THE BOTETOURT COUNTY ZONING ORDINANCE.

SIGNS - SHALL MEET THE REQUIREMENTS OF THE BOTETOURT COUNTY ZONING ORDINANCE. THIS DEVELOPMENT PROPOSES ONLY MONUMENTAL SIGNS.

LIGHTING - EXTERIOR LIGHTING SHALL BE ARRANGED SO THAT NO GLARE OR DIRECT LIGHT ILLUMINATES AREAS BEYOND THE BOUNDARY LINES. MAXIMUM LIGHTING HEIGHT SHALL BE 20 FEET.

UTILITIES - THIS SITE WILL BE SERVED BY PUBLIC WATER AND SEWER.

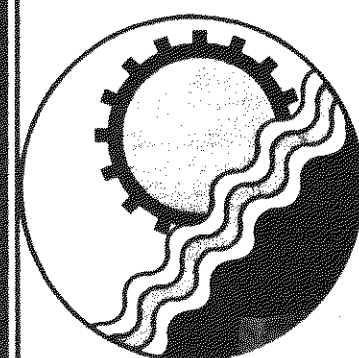
#### PARKING

REQUIRED:  
TOWNHOMES - 2 SPACES/UNIT  
22 UNITS x 2 SPACES/UNIT = 44 SPACES

PROVIDED:  
TOWNHOMES  
2 GARAGE SPACES/TOWNHOME = 44 SPACES

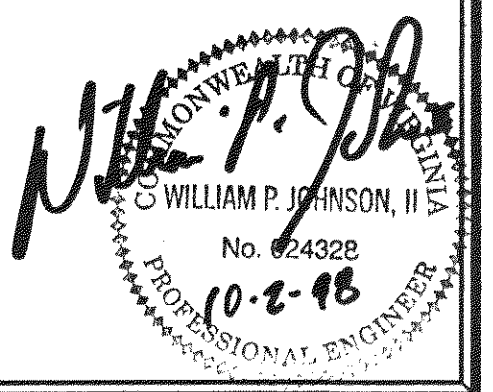
2 DRIVEWAY SPACES/TOWNHOME = 44 SPACES  
SPACES  
OVERFLOW PARKING = 7 SPACES  
95 TOTAL SPACES PROVIDED

ECI PLAN DATE: SEPTEMBER 1998  
ECI PROJECT: 98094



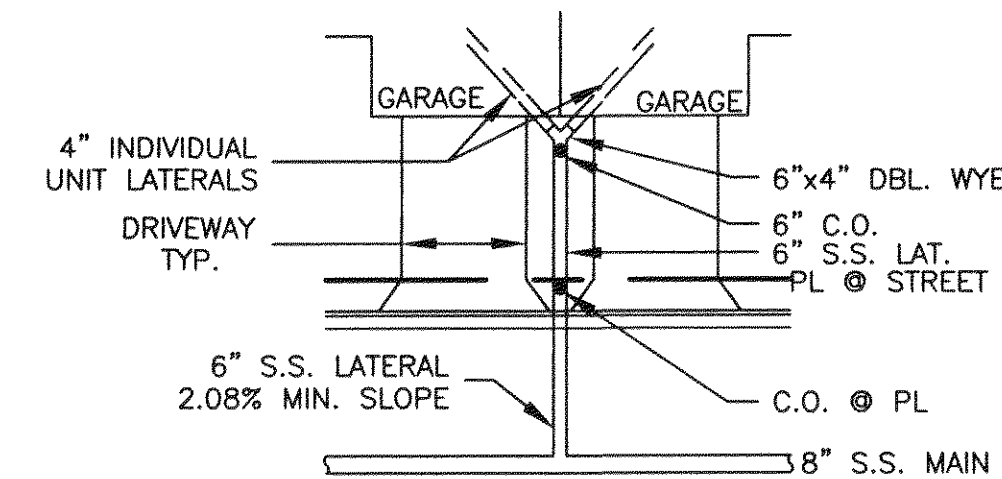
**ENGINEERING CONCEPTS, INC.**

20 S. ROANOKE ST., PO BOX 619  
FINCASTLE, VIRGINIA 24090  
540.473.1253 FAX: 540.473.1254



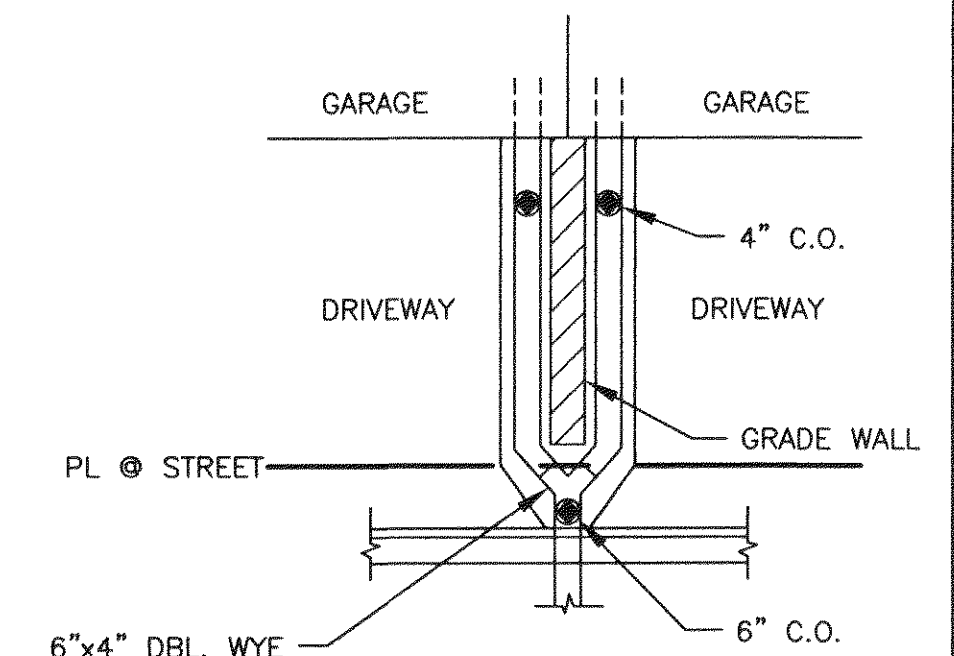


NOW OR FORMERLY  
HUBERT H. & LORENE E. TAYLOR  
DEED BOOK 179, PAGE 182  
TAX PARCEL 101-70  
ZONED: A-1

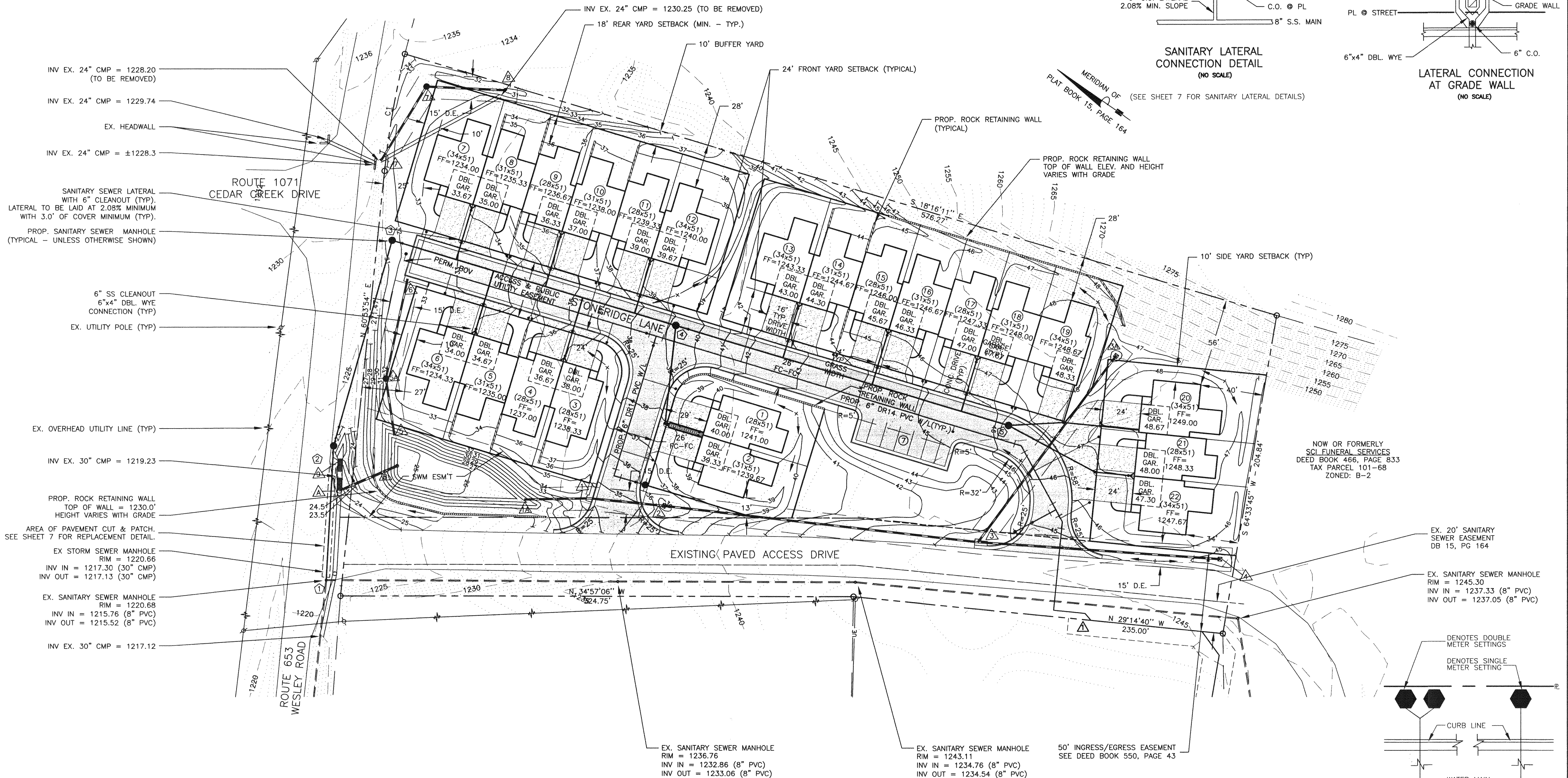
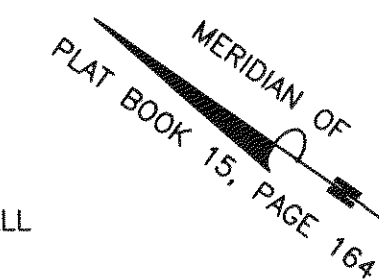


SANITARY LATERAL CONNECTION DETAIL  
(NO SCALE)

(SEE SHEET 7 FOR SANITARY LATERAL DETAILS)



LATERAL CONNECTION AT GRADE WALL  
(NO SCALE)



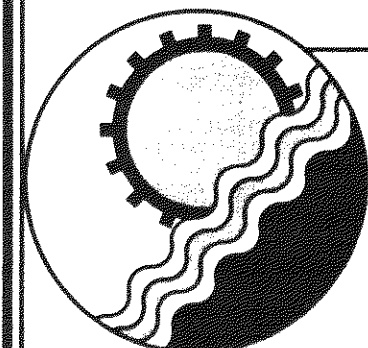
NOW OR FORMERLY  
ROANOKE MEMORIAL HOSPITALS  
DEED BOOK 312, PAGE 614  
TAX PARCEL 101-69A  
ZONED: SC

- NOTES:  
1. REFER TO SHEET 4 FOR STORM SEWER & SANITARY PROFILES.  
2. REFER TO SHEET 3 FOR DETAILED GRADING PLAN.  
3. REFER TO SHEETS 4 & 5 FOR WATERLINE PROFILES.  
4. REFER TO SEPARATE E&S PLANS BY ECI FOR GRADING NOTES AND EROSION SEDIMENT REQUIREMENTS (PREVIOUSLY APPROVED BY BOTETOURT COUNTY).

NOW OR FORMERLY  
NORMAN A. ANDERSON  
DEED BOOK 353, PAGE 406  
TAX PARCEL 101-68A  
ZONED: SC

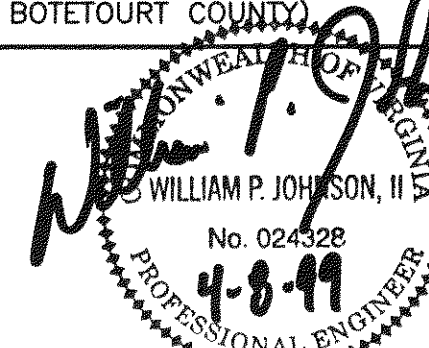
NOTE: REFER TO ARCHITECTURAL PLANS FOR ALL BUILDING SPECIFIC CONSTRUCTION DETAILS.

\*ALL CURB RADII BASED ON FACE OF CURB.



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No.	Revision	By	Appd.	Date	Drawn
1	OFFSITE WATERLINE ALIGNMENT AND EASEMENT CHANGE	PSN	WPJ	4/6/99	FGM
					Designed FGM/JDE
					Checked JDE/WPJ
					Approved WPJ

**STONERIDGE TOWNHOMES**  
**BOTETOURT COUNTY, VIRGINIA**

**UTILITY AND**  
**DIMENSIONAL PLAN**

1"=30'

AUGUST 1998

PROJECT: 98094

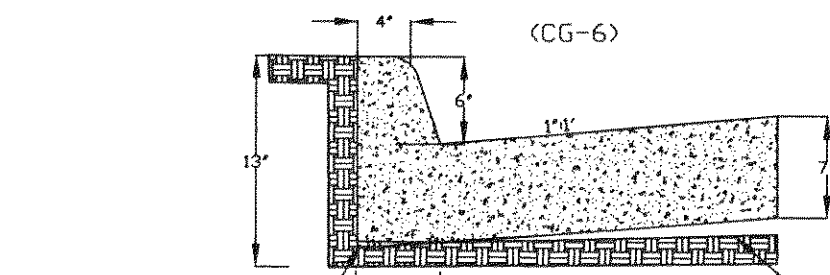
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## COMBINATION 6" CURB &amp; GUTTER

N.T.S.

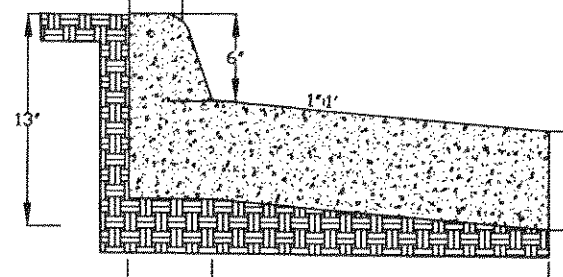
(CG-6)



## COMBINATION 6" REVERSE CURB &amp; GUTTER

N.T.S.

(CG-6R)

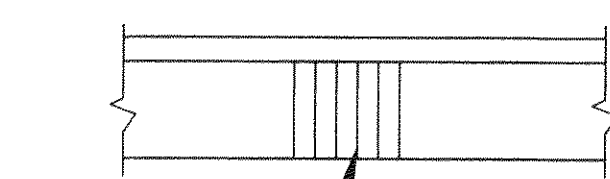


THESE CURBS ARE TO BE USED WHEN DESIGN SPEED IS 40 MPH OR LESS ON RURAL HIGHWAYS AND 45 MPH OR LESS IN DEVELOPED URBAN & SUBURBAN AREAS

NOTE: COMB. CURB & GUTTER HAVING A RADIUS OF 300' OR LESS ALONG FACE OF CURB SHALL BE PAID FOR AS RADIAL COMBINATION CURB & GUTTER

THIS ITEM MAY BE PRECAST OR CAST IN PLACE

CONCRETE TO BE CLASS AS IF CAST IN PLACE, 4000 PSI IF PRECAST.



DENOTES 5.0 FT TRANSITION TO CG-6R

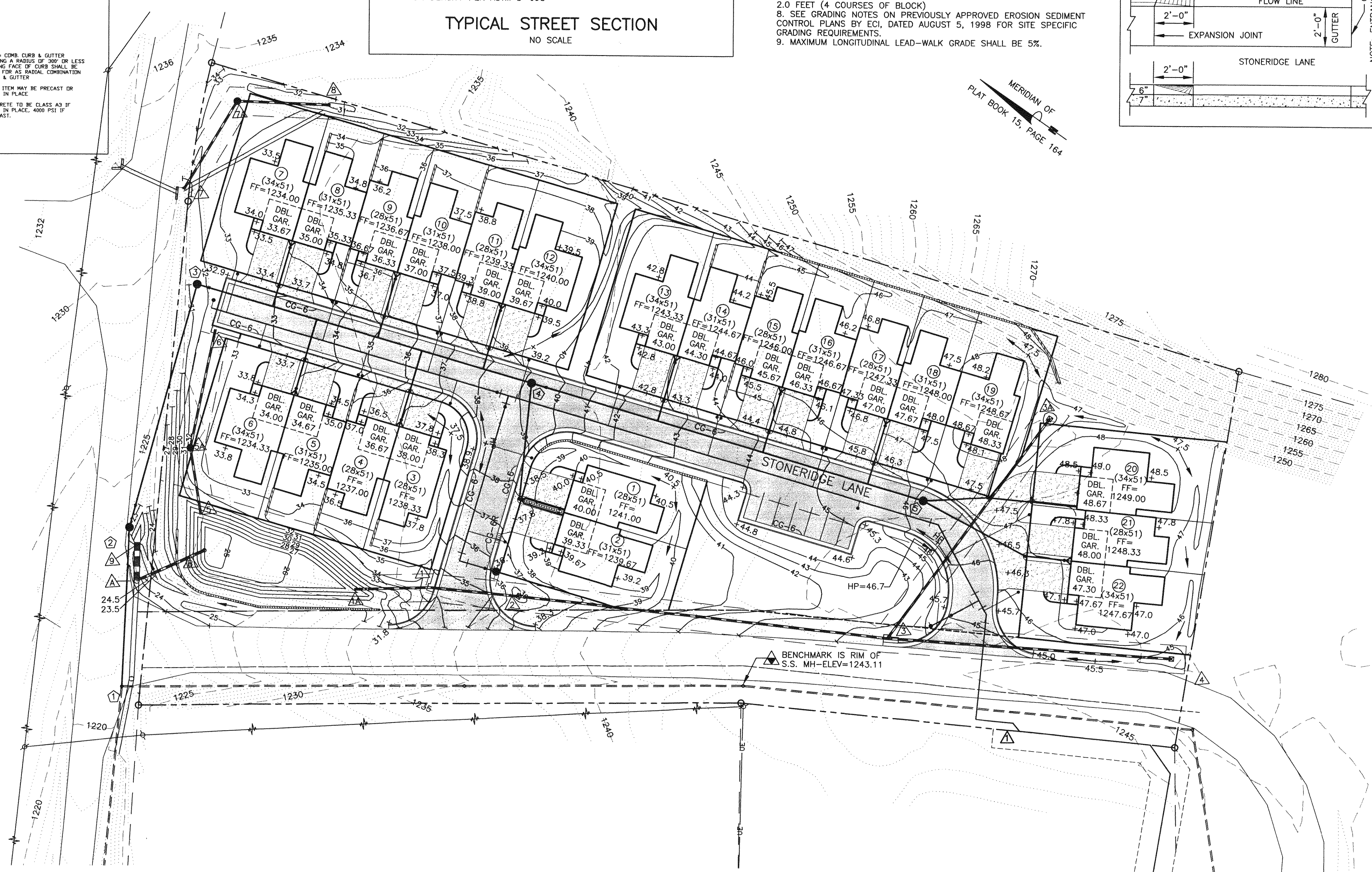
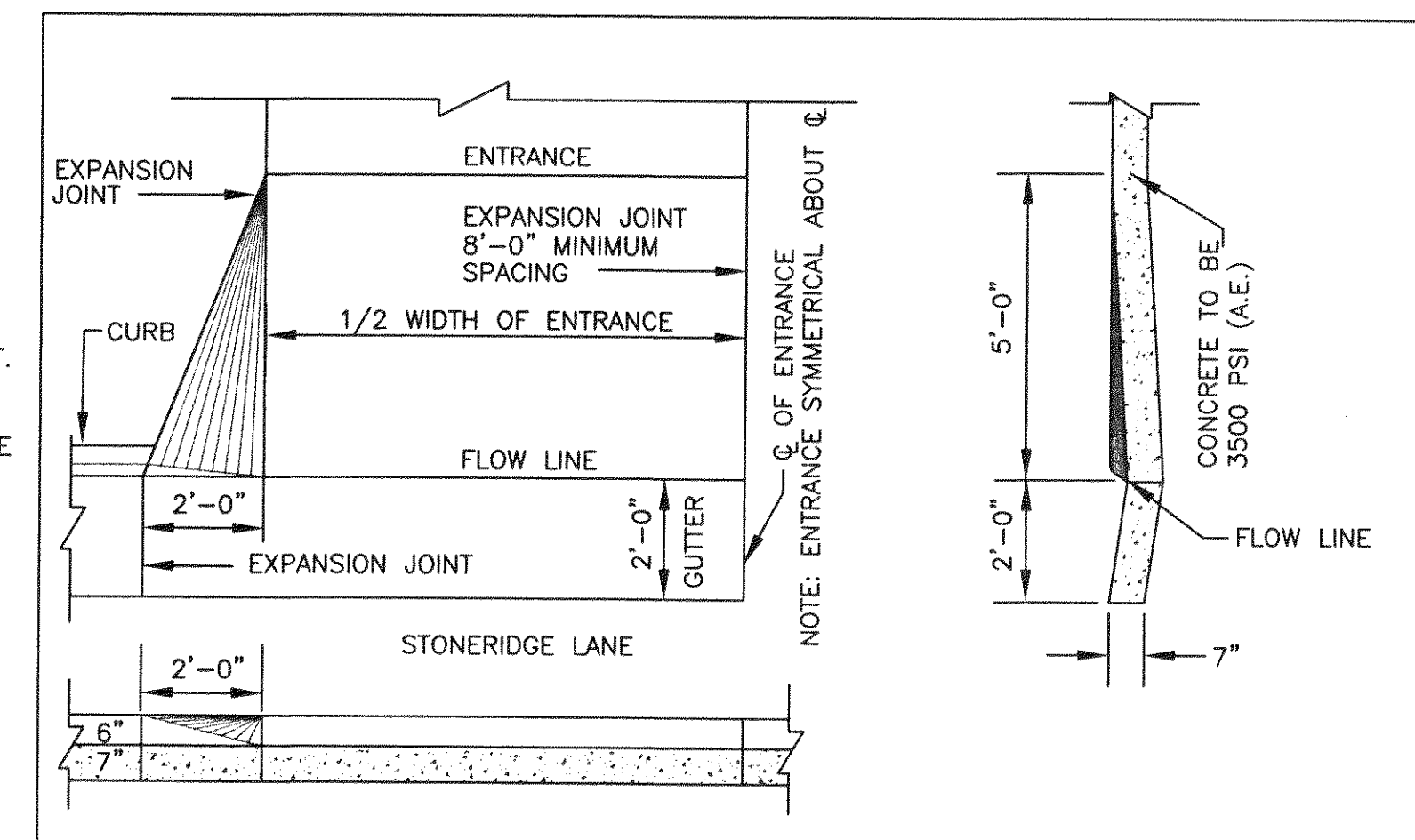
- MINIMUM SECTION COMPOSITION:
1. 2" SM-2A TOP COURSE
  2. 6" 21-B AGGREGATE BASE
  3. SUBGRADE COMPACTED TO 95% DENSITY PER ASTM D-698

\* COMPOSITION OF SECTION BASED ON CBR VALUE OF 10. CBR TEST WILL BE REQUIRED TO DETERMINE THE SUBGRADE SUPPORT ADEQUACY FOR THE MINIMUM SECTION SHOWN.

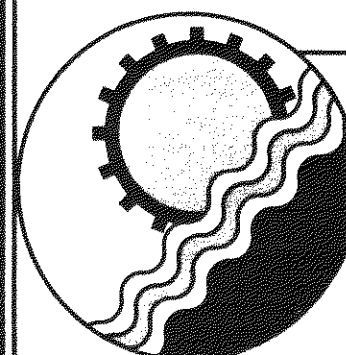
## TYPICAL STREET SECTION

NO SCALE

- NOTES:
1. ALL STOOP TO LEAD-WALK ELEVATION CHANGES ARE 6" UNLESS INDICATED WITH A "NO RISER" ANNOTATION.
  2. ALL SPOT ELEVATIONS AT THE CURB LINE REPRESENT TOP OF CURB UNLESS NOTED OTHERWISE.
  3. ALL CURB & GUTTER IS STANDARD VDOT CG-6 UNLESS OTHERWISE NOTED. TAPER ALL CURB RETURNS TO PAVEMENT ELEVATION. (2 FEET BEYOND POINT OF TANGENCY)
  4. ALL FINISHED FLOOR TO GARAGE FLOOR ELEVATION CHANGES REQUIRE 4 INCHES (0.33 FEET) UNLESS OTHERWISE NOTED.
  5. ALL CURB CUTS FOR COMBINATION ENTRANCE APRONS SHALL BE CONSTRUCTED PER THE DRIVEWAY ENTRANCE DETAIL SHOWN ON THIS SHEET.
  6. ALL STOOPS TO SLOPE AWAY FROM ENTRANCE TOWARD LEAD-WALK A MINIMUM OF 1/4 INCH PER FOOT (2%)
  7. MAXIMUM VERTICAL FLOOR STAGGER BETWEEN INDIVIDUAL UNITS SHALL BE 2.0 FEET (4 COURSES OF BLOCK)
  8. SEE GRADING NOTES ON PREVIOUSLY APPROVED EROSION SEDIMENT CONTROL PLANS BY ECI, DATED AUGUST 5, 1998 FOR SITE SPECIFIC GRADING REQUIREMENTS.
  9. MAXIMUM LONGITUDINAL LEAD-WALK GRADE SHALL BE 5%.

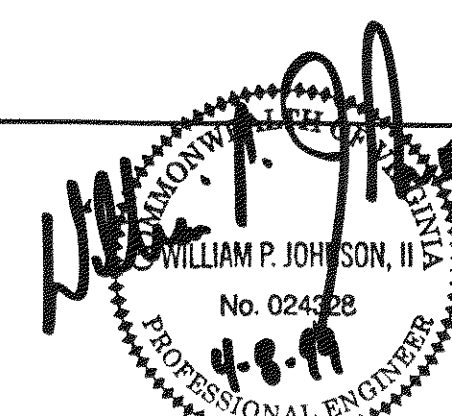


THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. UTILITIES MAY EXIST WITHIN THE CONSTRUCTION AREA OF THESE PLANS THAT ARE NOT SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION AND DEPTH OF ALL UTILITIES BEFORE COMMENCING WORK, AND FOR ANY DAMAGES WHICH OCCUR BY HIS FAILURE TO LOCATE SUCH UTILITIES. IF DURING CONSTRUCTION OPERATIONS THE CONTRACTOR SHOULD ENCOUNTER UTILITIES OTHER THAN THOSE SHOWN ON THESE PLANS, HE SHALL IMMEDIATELY NOTIFY THE ENGINEER AND TAKE NECESSARY AND PROPER STEPS TO PROTECT THE FACILITY AND ASSURE CONTINUANCE OF SERVICE. CALL MISS UTILITIES AT 1-800-552-7001 (TOLL FREE) 48 HOURS BEFORE DIGGING.



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No.	Revision	By	Appd.	Date	Drawn
1	OFFSITE WATERLINE ALIGNMENT AND EASEMENT CHANGE	PSN	WPJ	4/6/99	FGM
					Designed FGM/JDE
					Checked JDE/WPJ
					Approved WPJ

STONERIDGE TOWNHOMES  
BOETOURT COUNTY, VIRGINIA

SITE GRADING  
PLAN

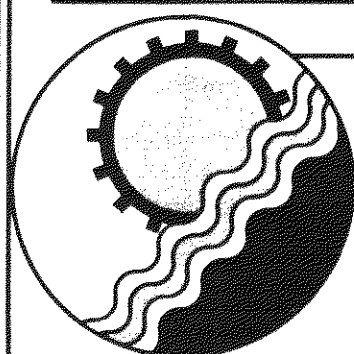
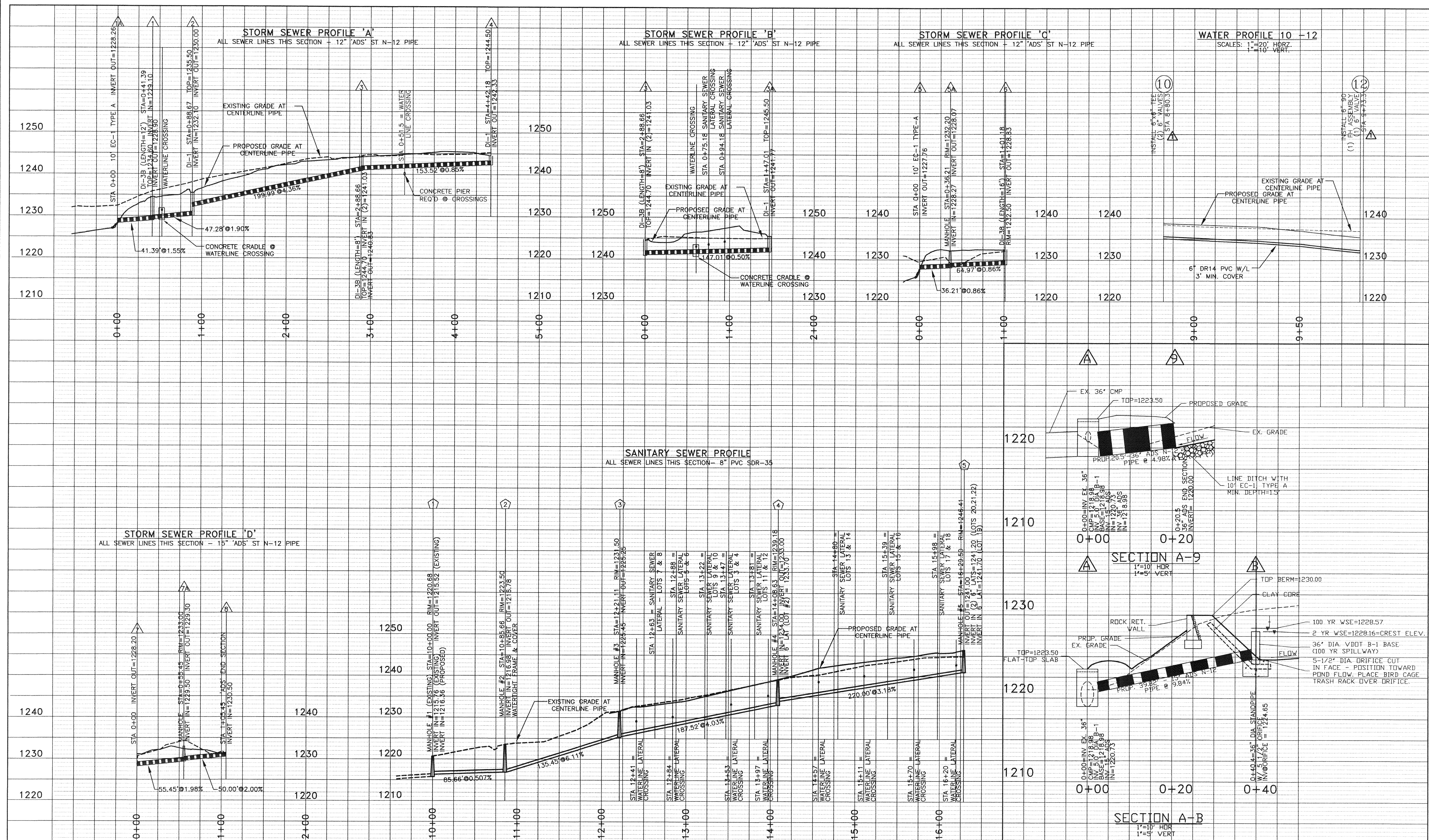
1"=30'

JULY 24, 1998

PROJECT: 98094

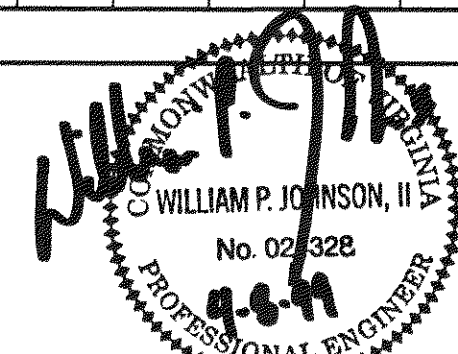
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No.	Revision	By	Appd.	Date	Drawn
1	STATION CHANGE DUE TO	PSN	WPJ	4/6/99	FGM
2	OFFSITE WATER ALIGNMENT				Designed FGM/JDE
3	CHANGE.				Checked JDE
					Approved HTB

**STONERIDGE TOWNHOMES**  
**BOTETOURT COUNTY, VIRGINIA**

**MISCELLANEOUS**  
**PROFILE SHEET**

HOR: 1"=50' VERT: 1"=10'

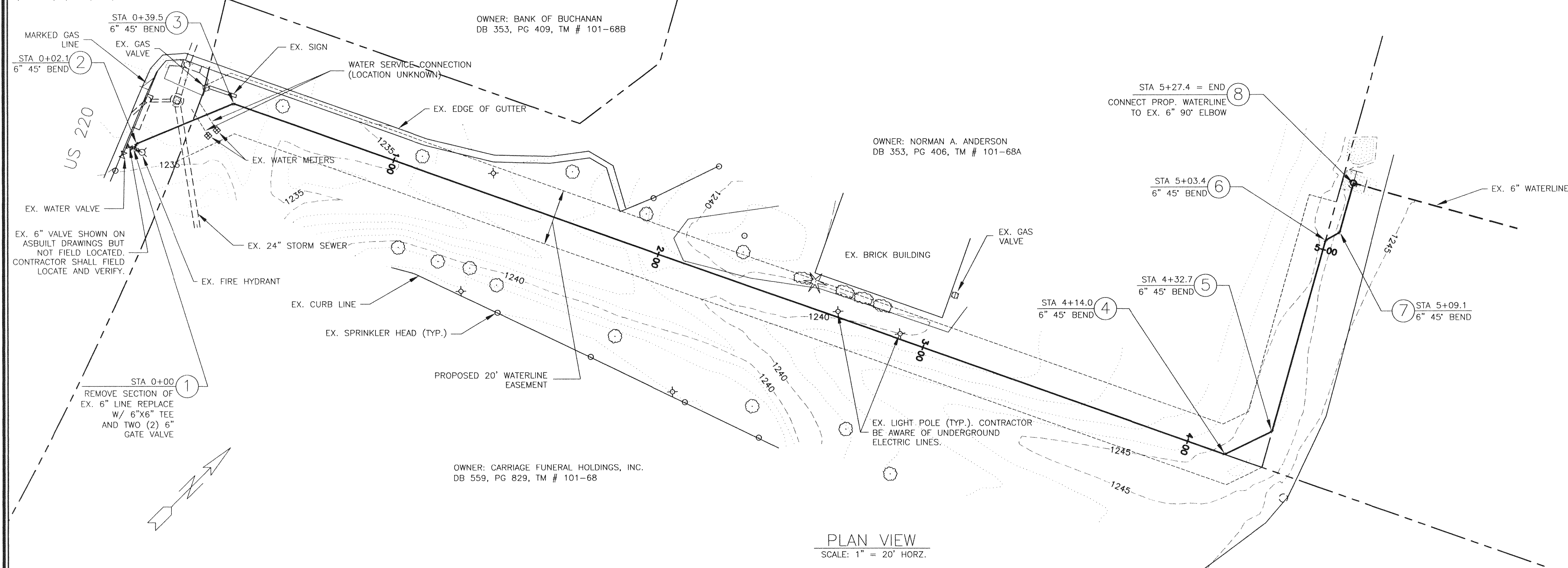
AUGUST 5, 1998

PROJECT: 98094

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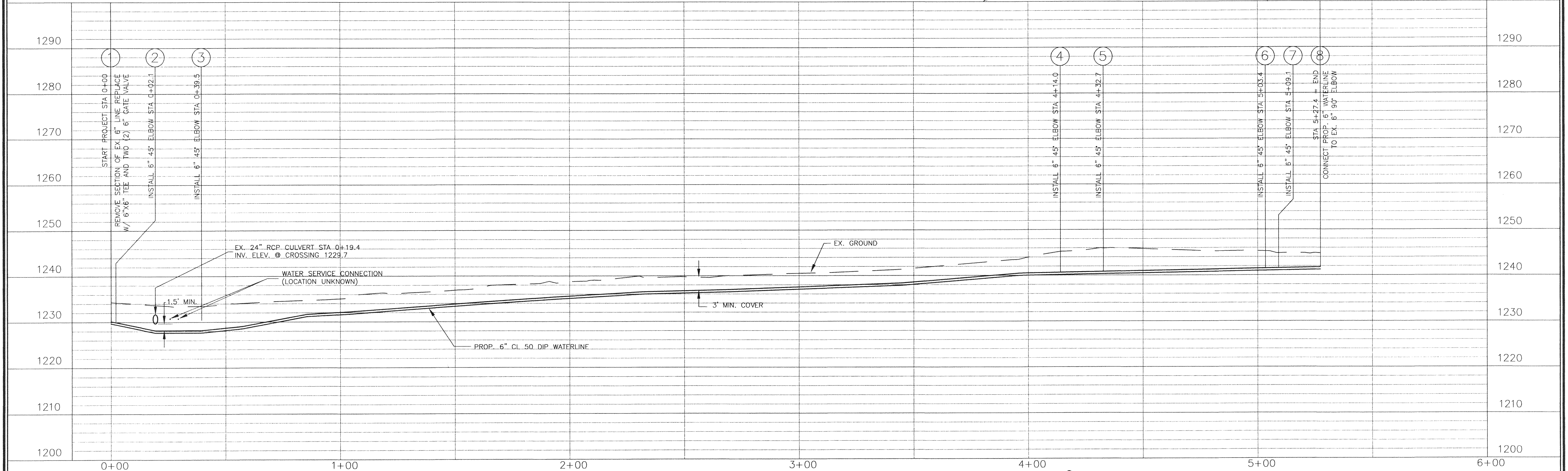


N:\PROJECTS\98094\DWGS\RCP01001.DWG



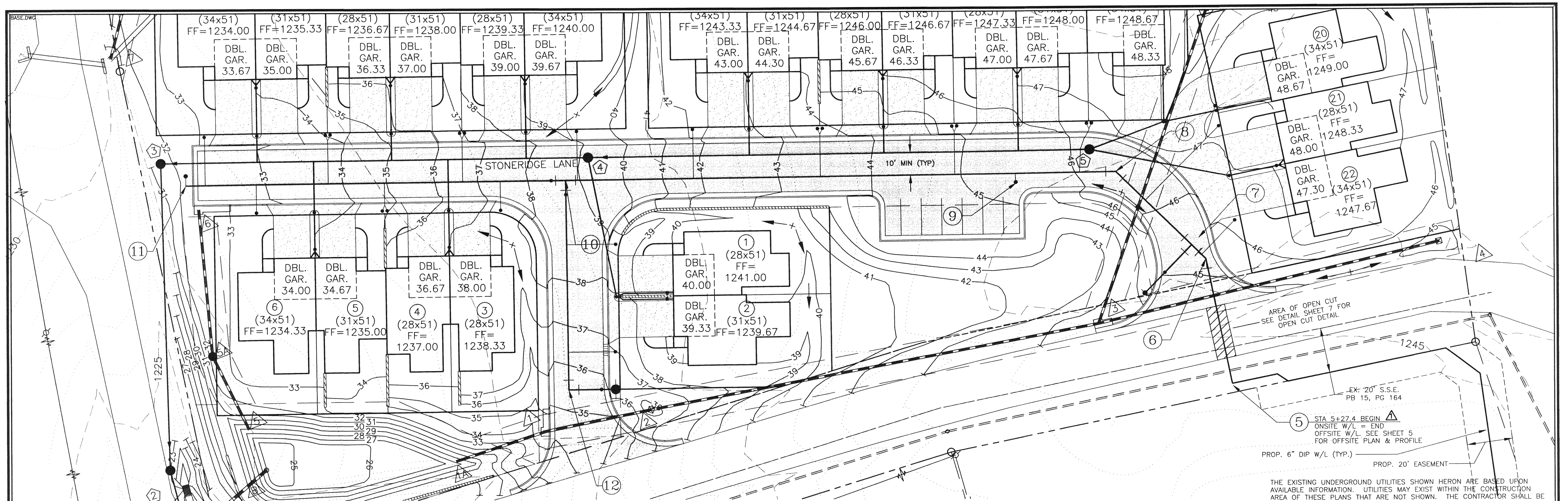
THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. UTILITIES MAY EXIST WITHIN THE CONSTRUCTION AREA OF THESE PLANS THAT ARE NOT SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION AND DEPTH OF ALL UTILITIES BEFORE COMMENCING WORK, AND FOR ANY DAMAGES WHICH OCCUR BY HIS FAILURE TO LOCATE SUCH UTILITIES. IF DURING CONSTRUCTION OPERATIONS THE CONTRACTOR SHOULD ENCOUNTER UTILITIES OTHER THAN THOSE SHOWN ON THESE PLANS, HE SHALL IMMEDIATELY NOTIFY THE ENGINEER AND TAKE NECESSARY AND PROPER STEPS TO PROTECT THE FACILITY AND ASSURE CONTINUANCE OF SERVICE. CALL MISS UTILITIES AT 1-800-552-7001 (TOLL FREE) 48 HOURS BEFORE DIGGING.

PLAN VIEW  
SCALE: 1" = 20' HORZ.

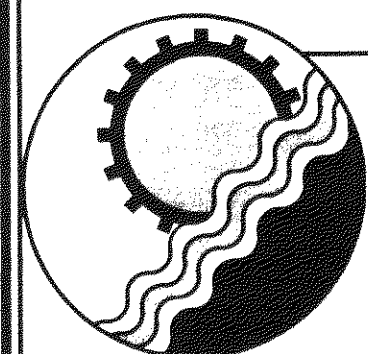
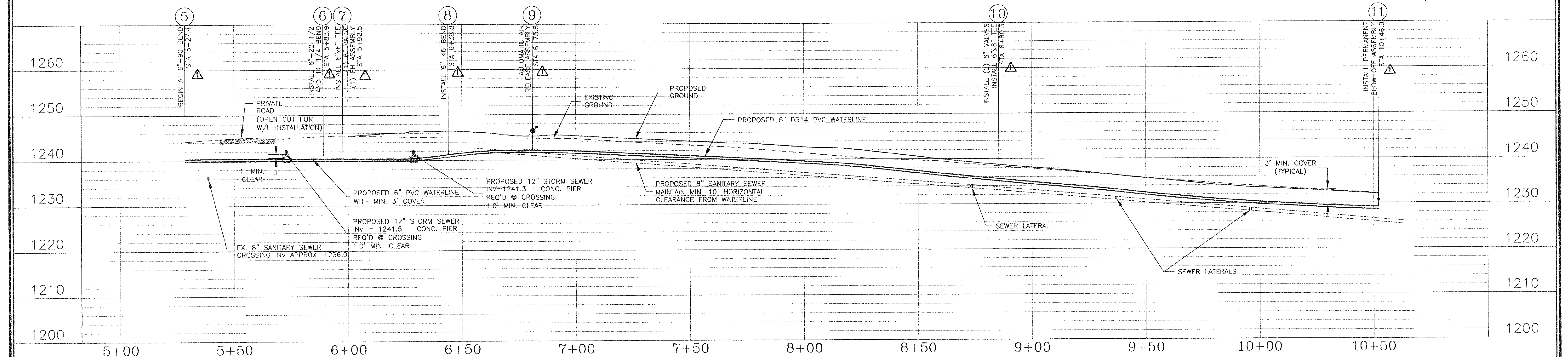


PROFILE VIEW  
SCALE: 1" = 20' HORZ.  
1" = 10' VERT.



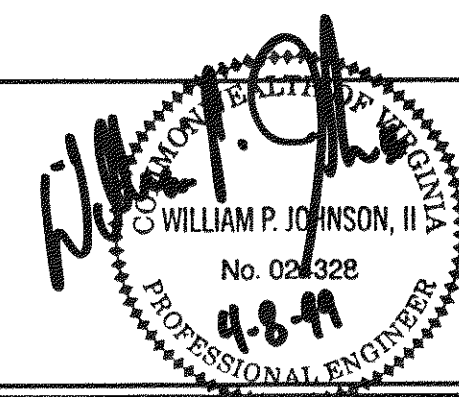


NOTES: FOR PROFILE OF WATER LINE RUN 10 TO 11 SEE SHEET 4. SEE SHEET X FOR EASEMENT LOCATIONS.



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No.	Revision	By	Appd.	Date	Drawn
1	STATION CHANGE DUE TO	PSN	WPJ	4/6/99	RHW
	OFFSITE WATERLINE ALIGNMENT				Designed JDE/RHW
	CHANGE				Checked WPJ/JDE
					Approved WPJ

**STONERIDGE TOWNHOMES  
BOTETOURT COUNTY, VIRGINIA**

**PLAN AND PROFILE  
ON-SITE WATER LINE**

H:1"=20' V:1"=10'

SEPTEMBER 25, 1998

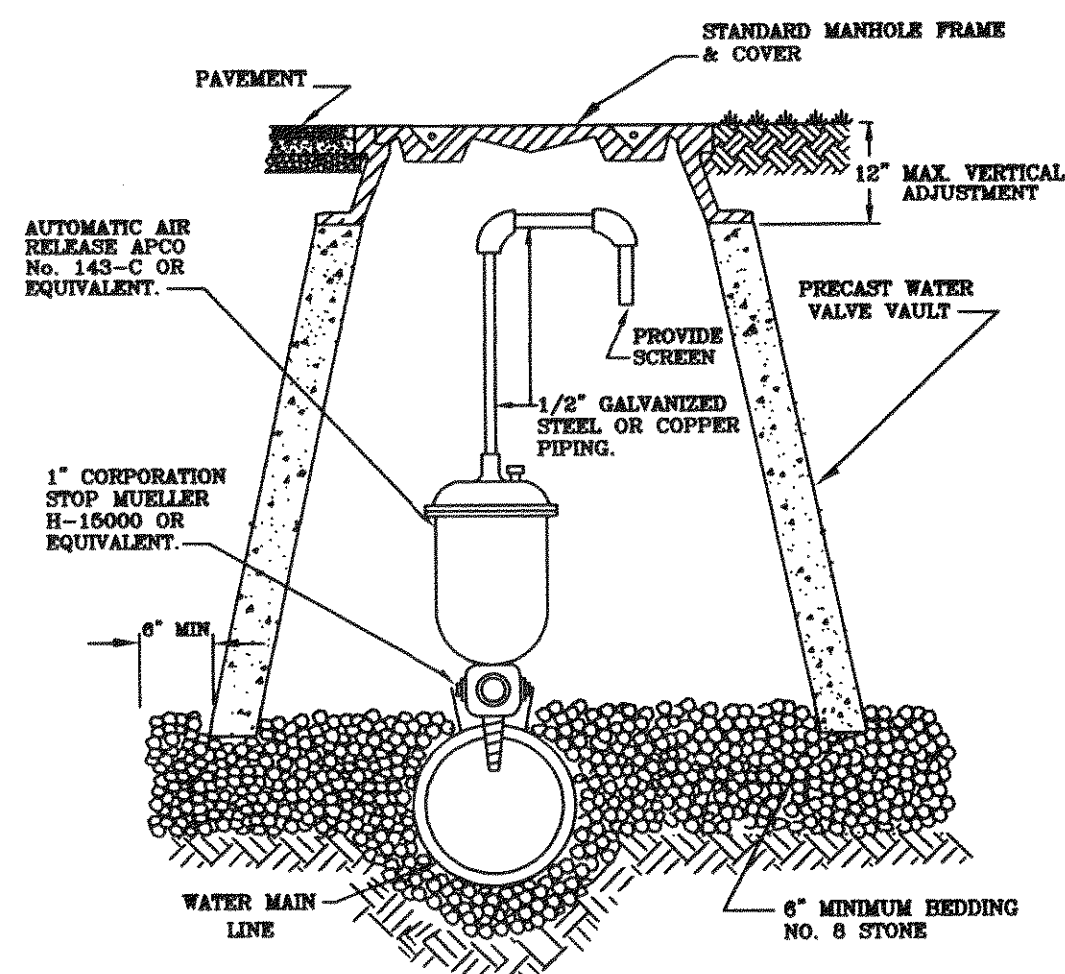
PROJECT: 98094

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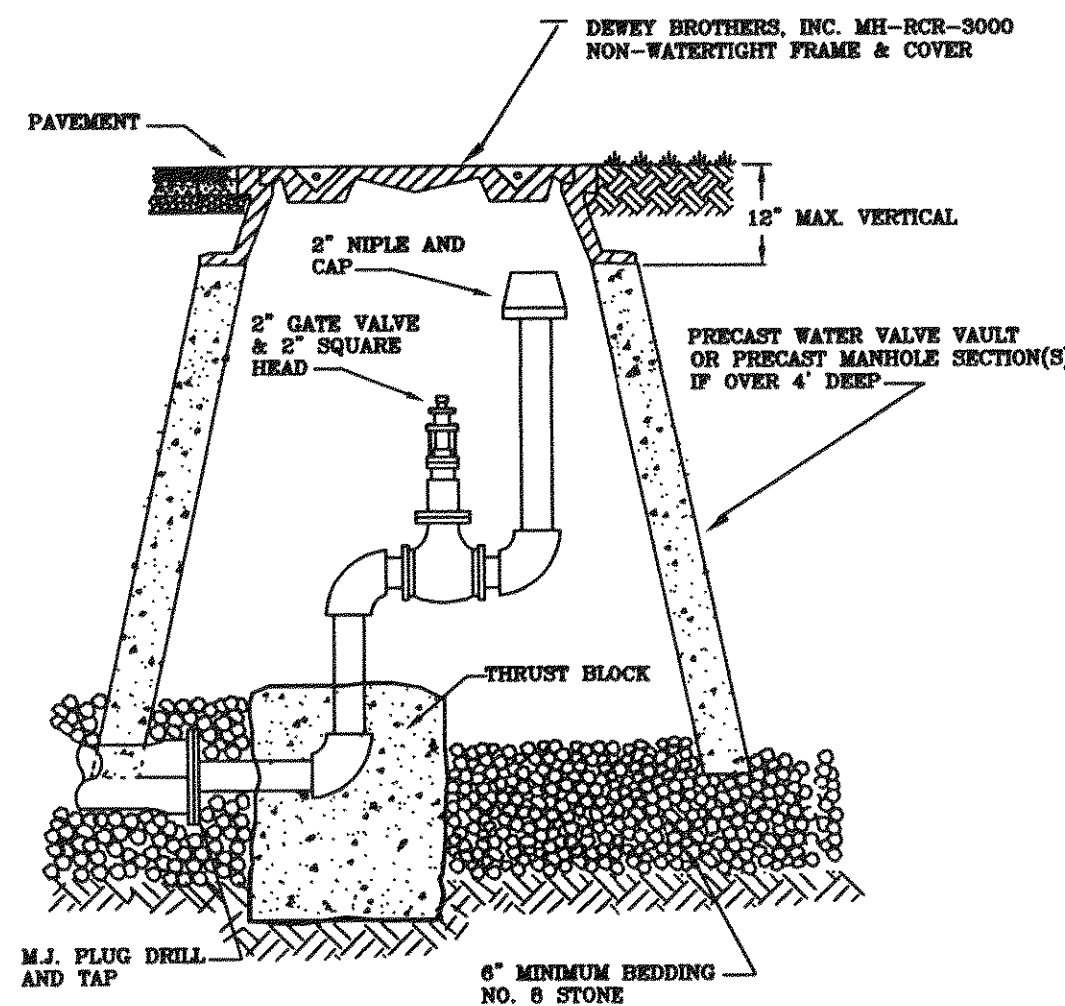




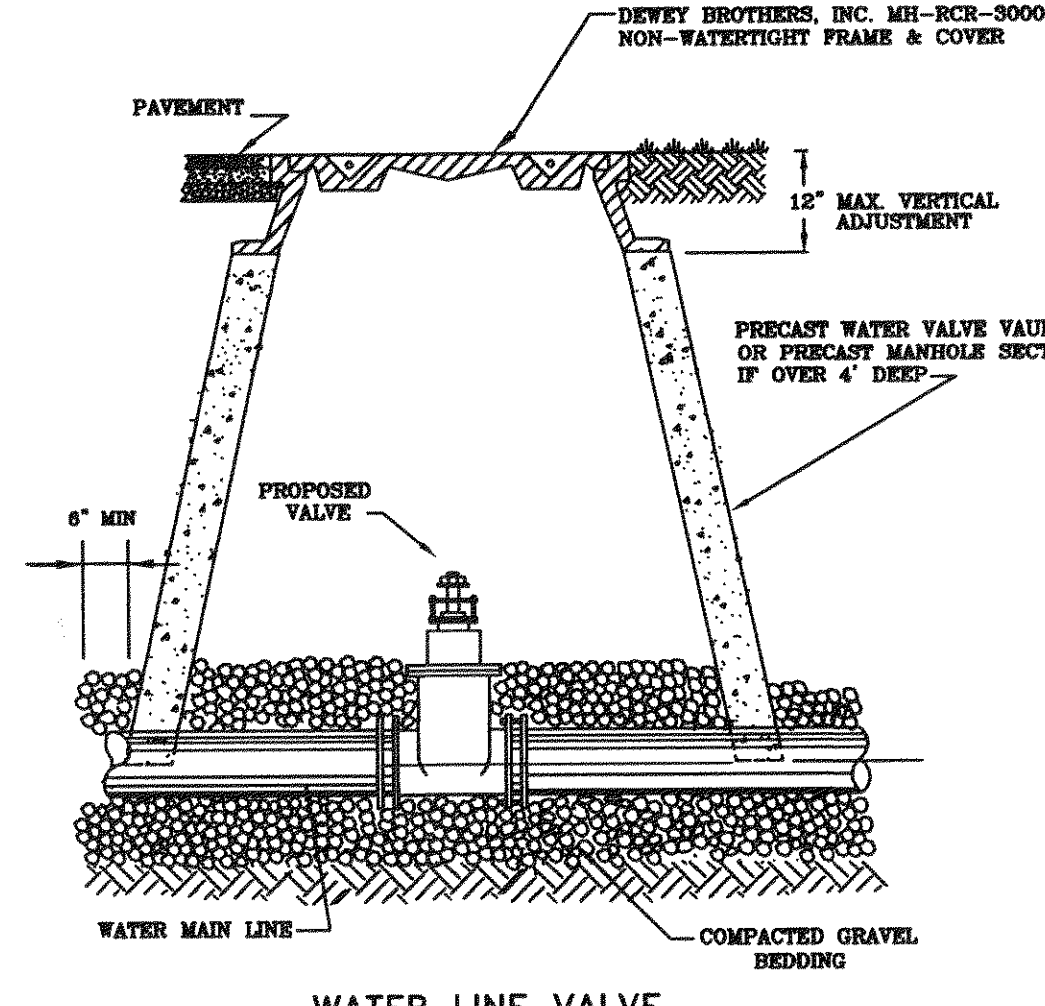




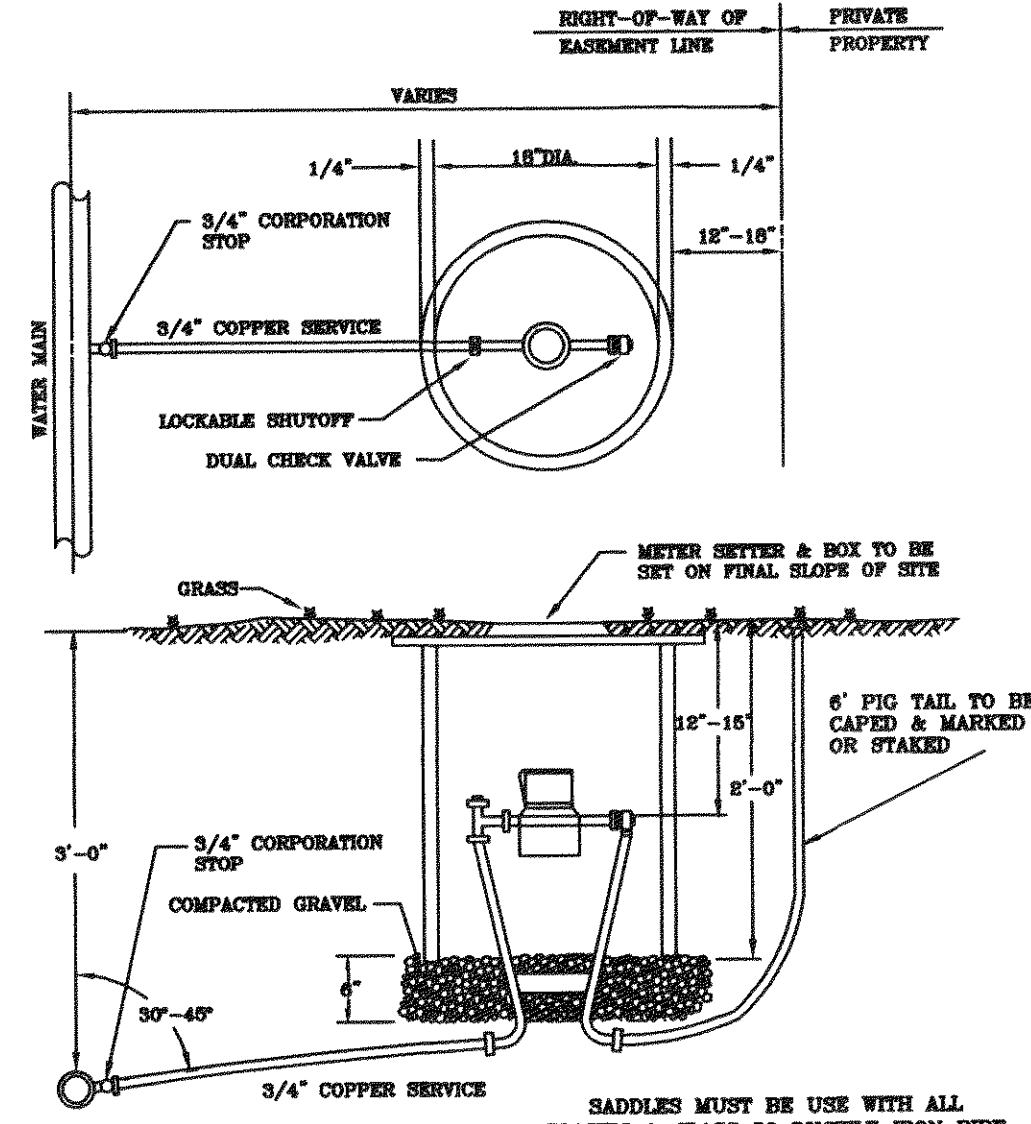
**AUTOMATIC AIR  
RELEASE ASSEMBLY**



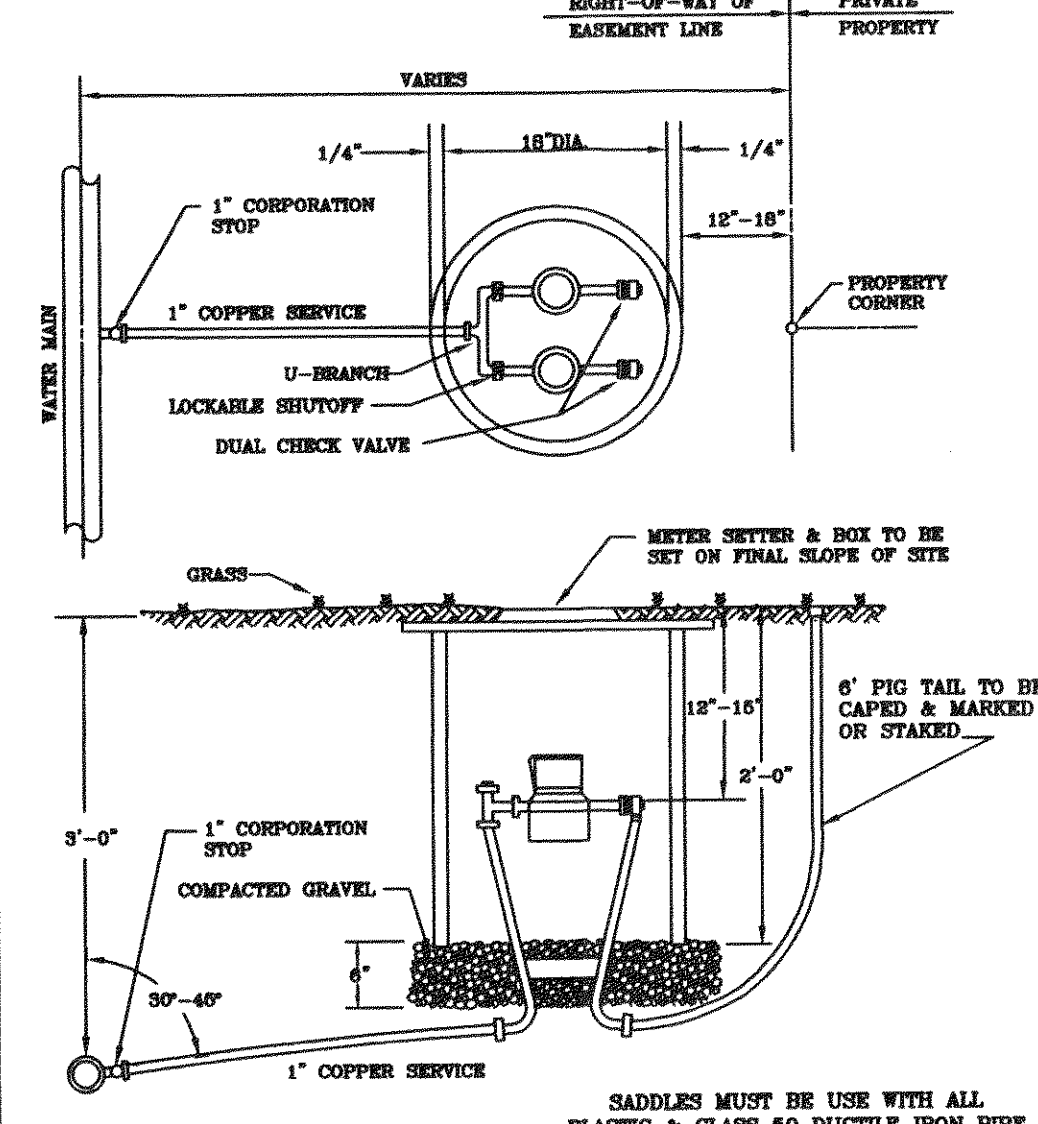
**PERMANENT END  
OF LINE**



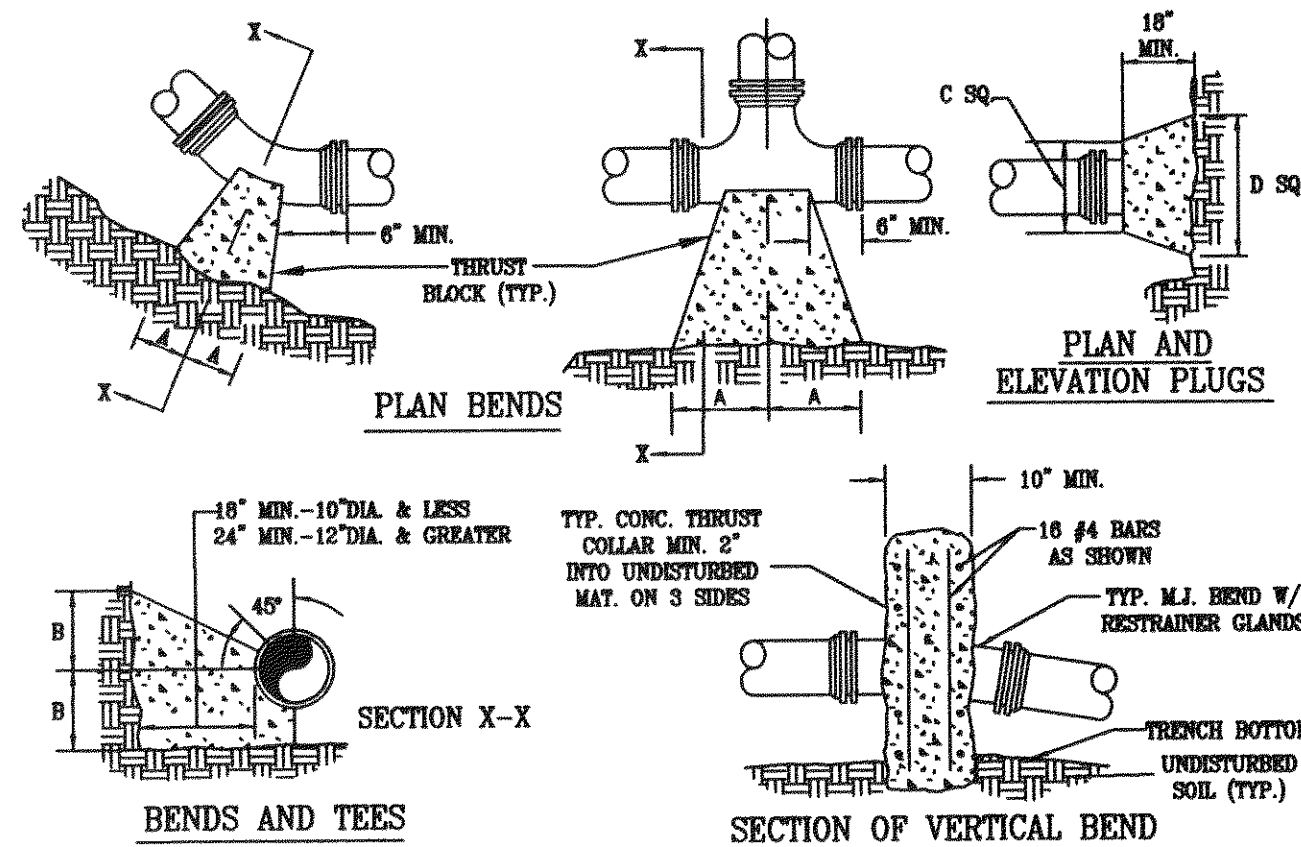
**WATER LINE VALVE  
INSTALLATION**



**SINGLE RESIDENTIAL  
WATER SERVICE**



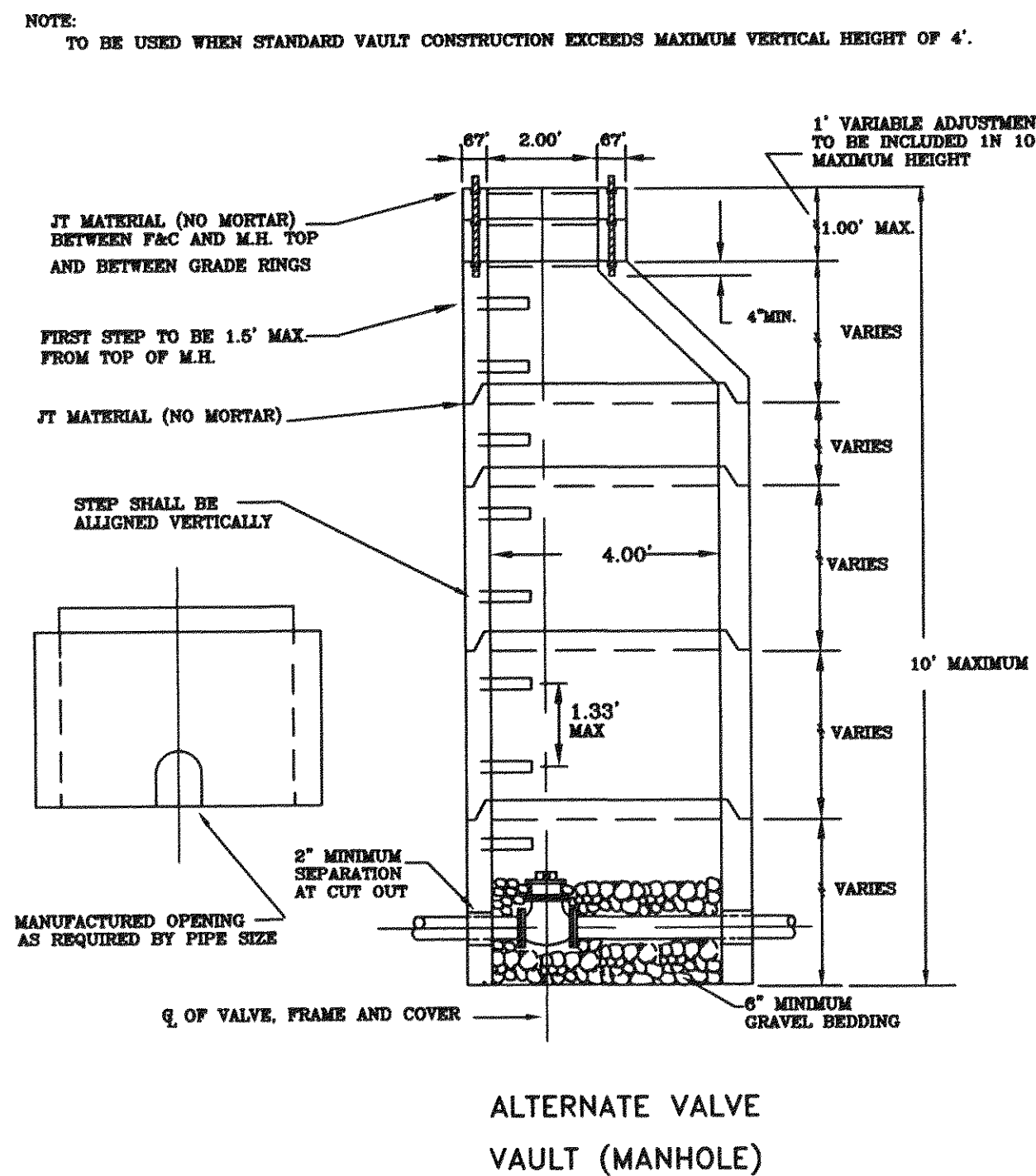
**DOUBLE RESIDENTIAL  
WATER SERVICE**



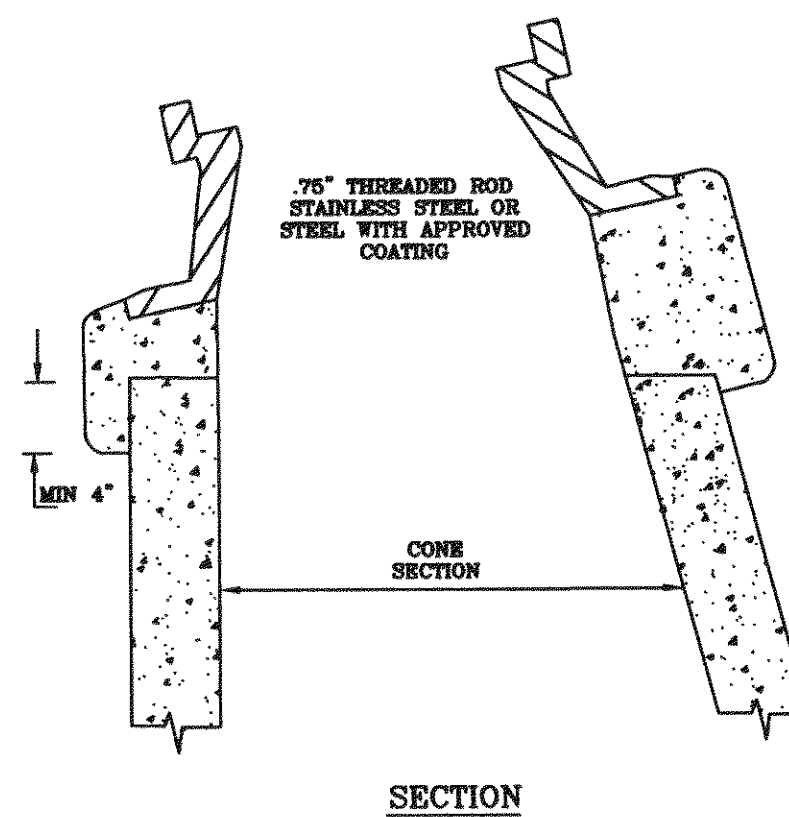
- NOTES:**
- FOR VERT. BEND DOWN IN EXCESS OF 11 1/4" BEND, ANCHORAGE SHALL BE DESIGNED BY ENGINEER.
  - FOR VERT. BEND UPWARD, BLOCKING TO BE SIMILAR TO THAT FOR HORIZ. BEND.
  - GLANDS & BOLTS SHALL BE PROTECTED FROM COR. BY PLASTIC SHEETING WHEN POURING THRUST BLOCKS.
  - ALL THRUST BLOCK & SUPPORT CONC. SHALL BE 3000 PSI READY MIX CONC.
  - THRUST BLOCKS WITH "B" DIMENSION GREATER THAN 30" SHALL HAVE THE RESTRAINED PIPE INSTALLED WITH A MINIMUM OF 4' OF COVER.

PIPE SIZE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	TEE	PLUG
4"	8"	12"	8"	8"	8"	8"
6"	18"	12"	8"	10"	8"	8"
8"	18"	13"	10"	10"	8"	8"
10"	20"	16"	12"	14"	8"	12"
12"	20"	16"	12"	14"	8"	12"
16"	26"	20"	16"	18"	11"	13"
24"	82"	42"	62"	30"	44"	22"
30"	185"	42"	100"	42"	52"	42"

**THRUST BLOCK  
CONSTRUCTION**

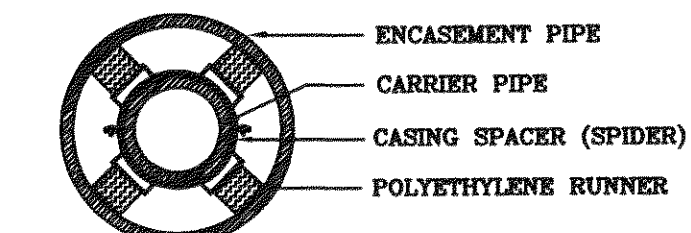
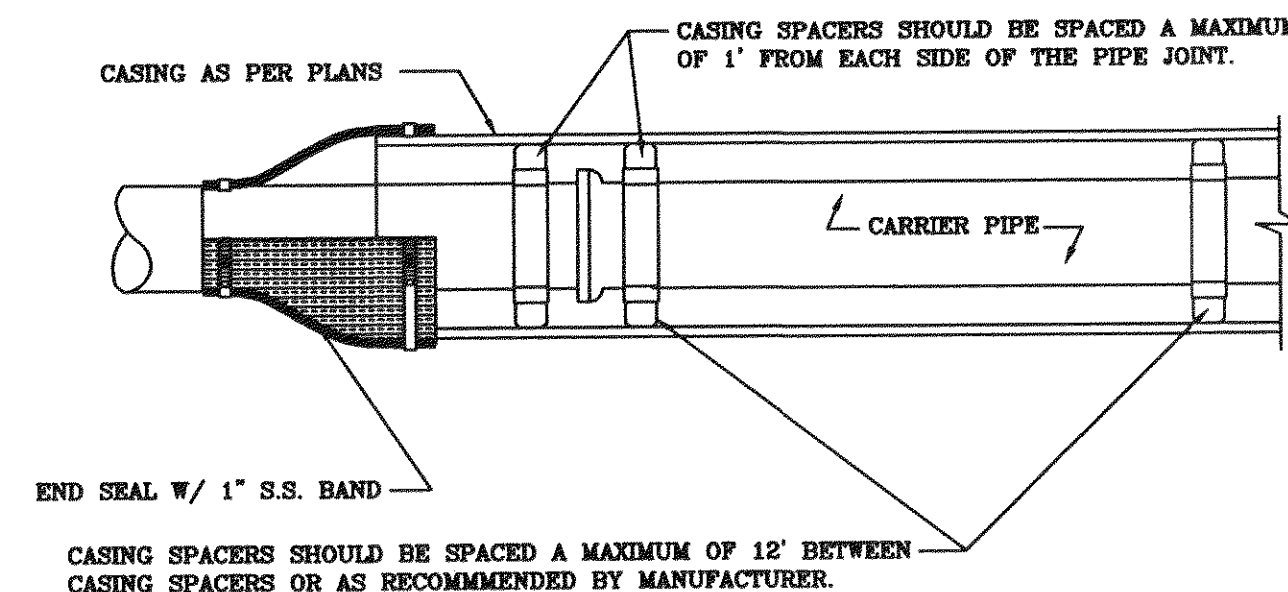


**ALTERNATE VALVE  
VAULT (MANHOLE)**



- NOTE:**
- USE MODERATELY STUFFY MIX OF NON-SHRIKING CEMENT, SAND AND 1/2" AND LESS DIAMETER GRAVEL WITH 28 DAYS, STRENGTH AT 3,000 P.S.I.
  - MIX IS TO BE FORCED INTO ALL GROOVES AND UNDER FLANGE OF FRAME AND LEFT AT OR ABOVE TOP OF FLANGE.
  - MAX. OF 4 BRICK OR CONCRETE BLOCKS TO BE USED FOR GRADE CONTROL.
  - DO NOT BACKFILL AROUND FRAME AND COVER, FOR 48 HOURS AFTER CON. IS PLACED, THE USE OF HIGHLY STRENGTH CONCRETE WOULD REDUCE TIME TO (24) HRS.
  - RESTRICT TRAFFIC LOAD FOR MIN. 24 HOURS.

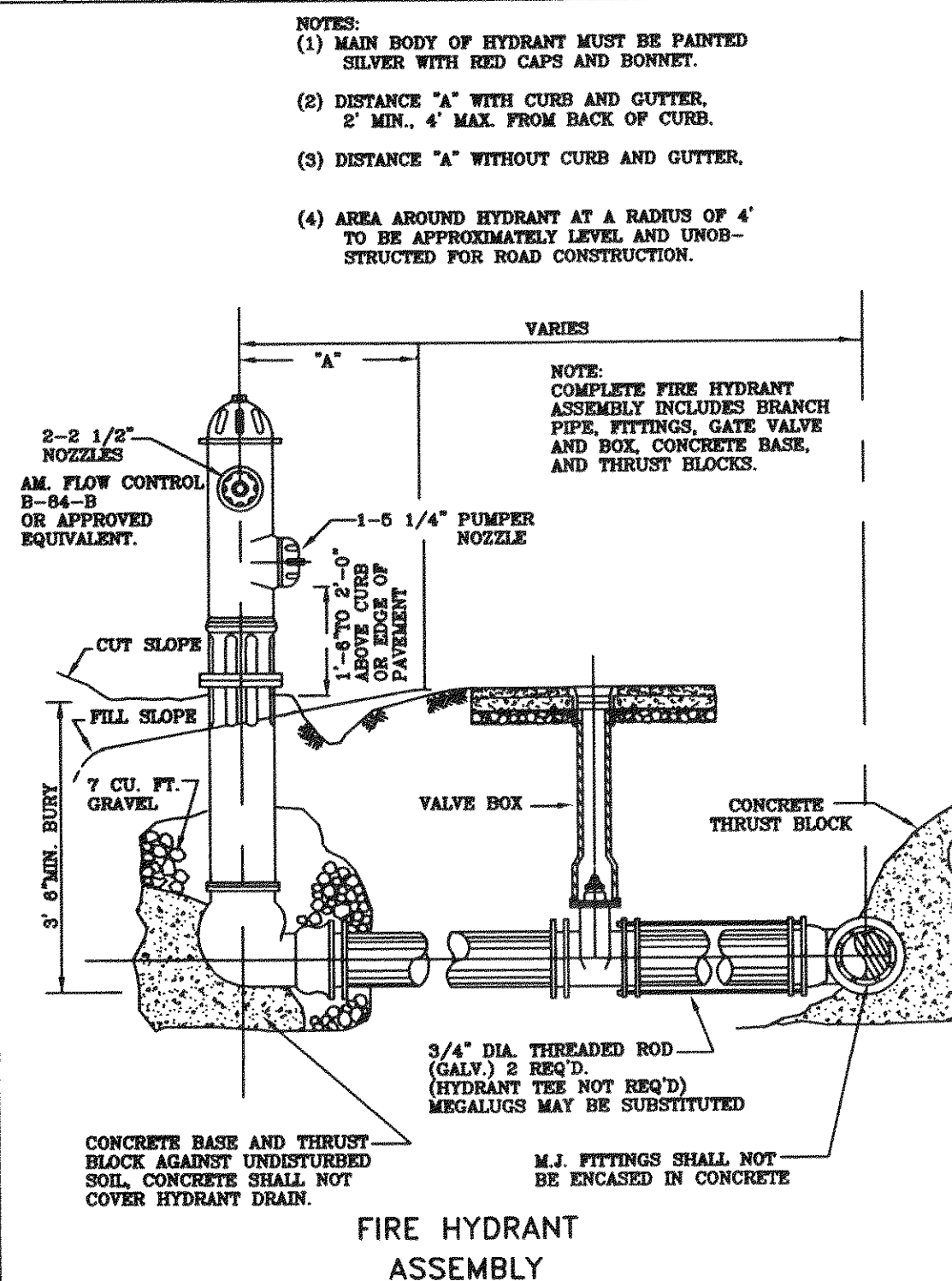
**INSTALLATION DETAIL  
FOR ALL FRAMES  
AND COVERS**



- NOTE:**
- 18" LONG TREATED TIMBER SKIDS OF APPROPRIATE WIDTH SO THAT BELLS OR FLANGES DO NOT REST ON CASING WITH MORE THAN 3/4" FREE PLAY. SKIDS TO BE PLACED AT 4'-0" O.C. AND SECURED WITH 2" x 1/4" GALV. STEEL STRAPS OR 1" S.S. BANDS. SOAP-BASED LUBRICANT MAY BE USED FOR SLIDING OF SKID WITH DUCTILE IRON PIPE AND FLAX-BASED LUBRICANT MAY BE USED FOR SLIDING OF SKID WITH PVC PIPE.

**NOTE:** A 1" DRAIN WILL BE REQUIRED ON THE LOWER END OF THE CASING IF THE CASING ENDS ARE SEALED WITH MORTAR AND BRICK.

**PIPE SUPPORT  
IN CASING PIPE**



**FIRE HYDRANT  
ASSEMBLY**

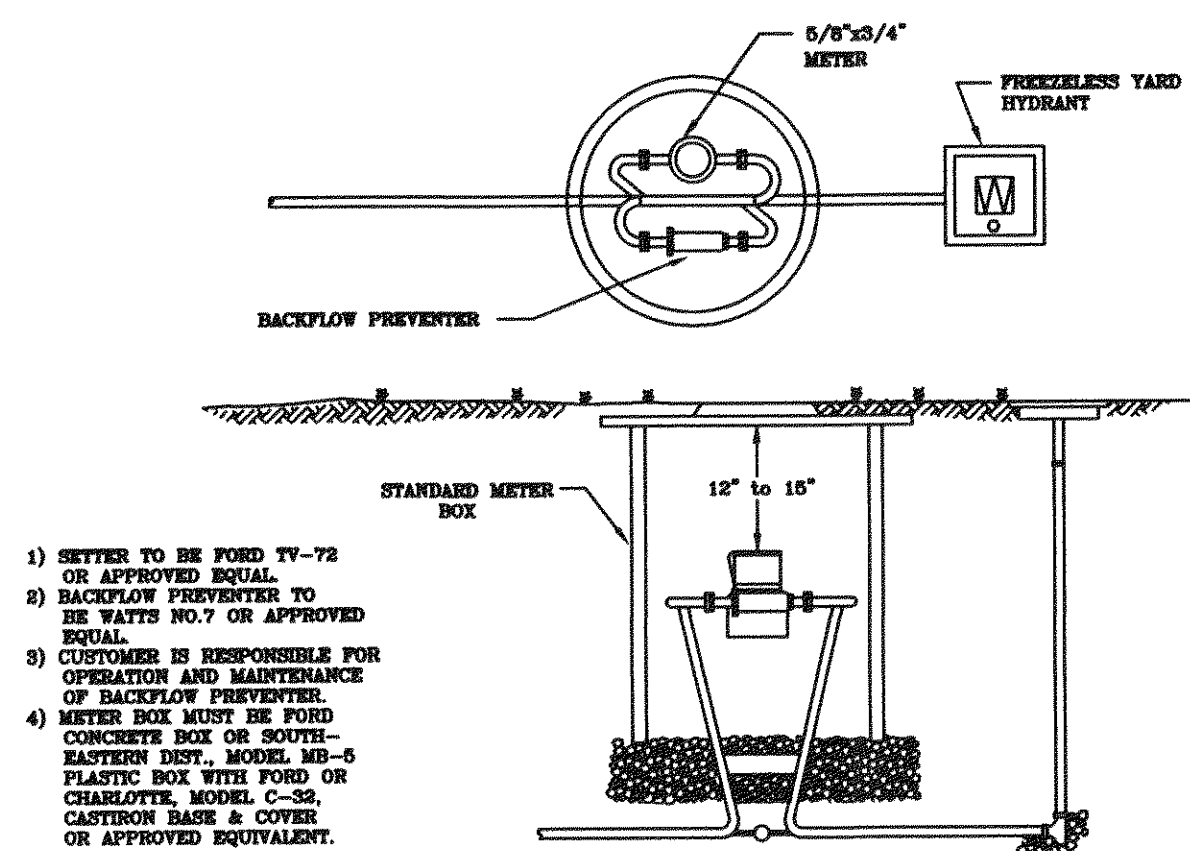
# **VALVE & WATER STANDARDS FOR CONSTRUCTION**

- VAULTS, MANHOLE BASES, RISERS, TAPERS AND GRADE RINGS SHALL BE PRECAST REINFORCED CONCRETE MANUFACTURED IN ACCORDANCE TO VIRGINIA DEPARTMENT OF TRANSPORTATION, ROAD AND BRIDGE SPECIFICATIONS, SECTION 503.
- MANHOLE BASE AND RISER SECTIONS CONSTRUCTION SHALL BE VERTICAL WITH MAXIMUM 1 INCH IN 4 FT. TILT.
- A MAXIMUM OF 2 CONSTRUCTION GRADE RINGS OR MAXIMUM OF 1" OF GRADE RINGS AND FRAME AND COVER ADJUSTMENT ARE ALLOWABLE.
- FINAL ADJUSTMENT OF FRAME AND COVER SHALL BE IN ACCORDANCE TO FRAME AND COVER ADJUSTMENT DETAIL USING NON-SHRIKING CONCRETE WITH MAXIMUM OF 4 BRICKS OR CONCRETE BLOCKS FOR GRADE CONTROL. FRAME AND COVER ARE TO BE SET AT FINISH GRADE OR 1/4 INCH ABOVE FINISH GRADE IN PAVEMENT AND YARD AREAS AND MINIMUM 8 INCH ABOVE FINISH GRADE IN OTHER AREAS. MANHOLE FRAMES AND COVERS ARE NOT TO BE SET IN DRAINAGE SWALE, VALLEY CUTTER, ETC.
- JOINTS AND OPENINGS IN MANHOLE UNITS SHALL BE MADE WATER TIGHT BY USING BUTYL SEALANTS, "O" RING GASKETS OR MASTIC. THE CONCRETE SURFACE SHALL BE CLEANED PRIOR TO USE OF SEALANT.
- FRAME AND COVERS
  - DEWEY BROTHERS INC.
  - APPROVED EQUAL.
- ALL LIFT HOLES, OPENINGS AROUND PIPE, ETC. SHALL BE FILLED FROM INSIDE AND OUTSIDE TO THICKNESS OF STRUCTURE.
- ALL UNITS USED IN MANHOLES AND VAULT CONSTRUCTION SHALL BE SECURELY CONNECTED BY INTERLOCKING BETWEEN UNITS, CONCRETE COLLARS OR OTHER APPROVED METHODS.
- AREA AROUND METER BOX AT A RADIUS OF 4 FT. TO BE ON FINISH GRADE AND UNSTRUCTURED EXCEPT FOR ROAD CONSTRUCTION.

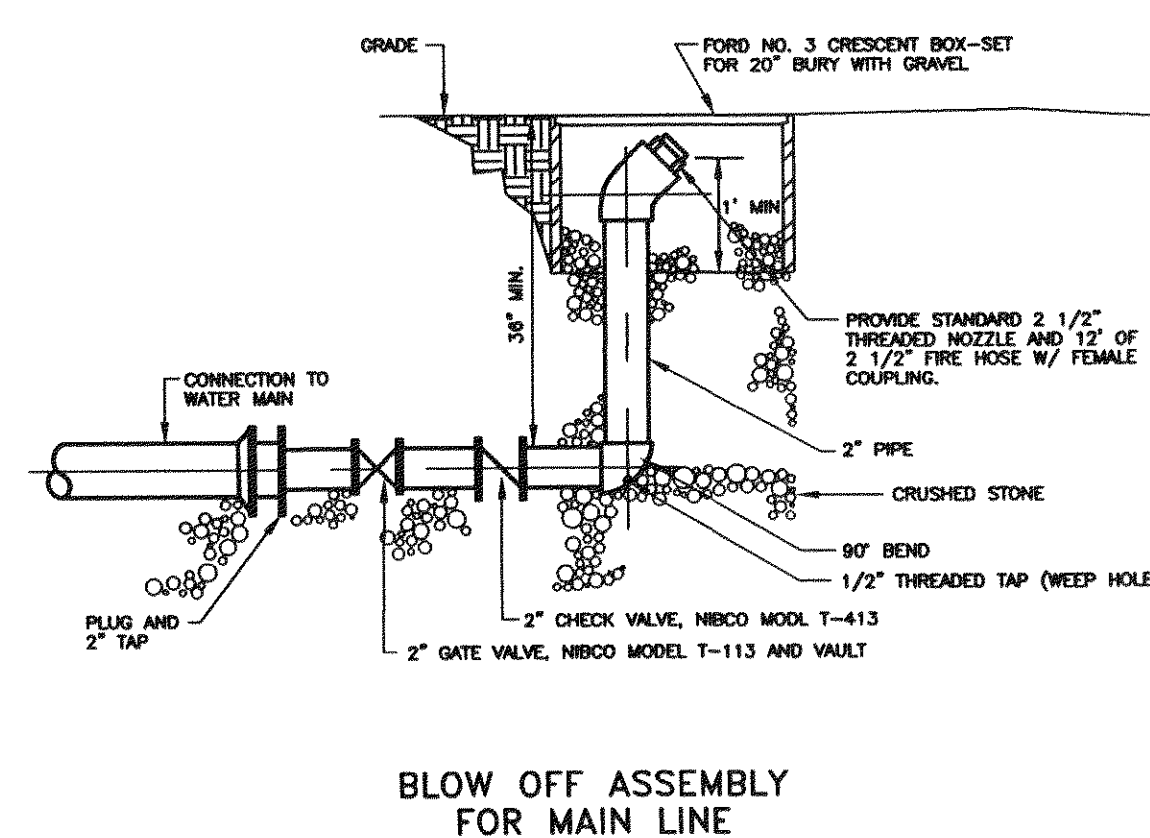
## **APPROVED MATERIALS**

- METER BOXES
  - FORD CRESCENT BOX
  - SOUTHEASTERN DISTRIBUTOR MODEL MB-5 PLASTIC BOX WITH FORD OR CHARLOTTE MODEL C-32 CAST IRON BASE & COVER (NOT APPROVED FOR ROADWAY AREA).
  - APPROVED EQUAL.
- METER SETTER (INCLUDING INLET RISER VALVE AND DOUBLE CHECK VALVE ON OUTLET)
  - FORD VEH472-15-ND
  - APPROVED EQUAL.
- METER SETTER EXTENDER OR RISER
  - NOT ALLOWED UNLESS APPROVED BY THE UTILITY DIRECTOR.
- CORPORATION STOP
  - FORD MODEL F-500.
  - MUELLER MODEL M-1500.
  - APPROVED EQUAL.
- U-BRANCH
  - FORD MODEL U28-43.
  - MUELLER MODEL M-15362
  - APPROVED EQUAL.
- SERVICE SADDLES (FOR PVC PIPE)
  - FORD MODEL FS 202 AND FC 202 WITH STAINLESS STEEL BAND AND BOLTS.
  - APPROVED EQUAL.
- GATE VALVES
  - AMERICAN FLOW CONTROL SERIES 500 RESILIENT WEDGE GATE VALVE
  - APPROVED EQUAL.
- AIR RELEASE VALVES
  - VAL-MATIC COMBINATION AIR RELEASE, AIR & VACUUM VALVE, SERIES 200
  - APPROVED EQUAL.
- FIRE HYDRANT
  - AMERICAN FLOW CONTROL 5-1/4" B-84-B
  - APPROVED EQUAL.

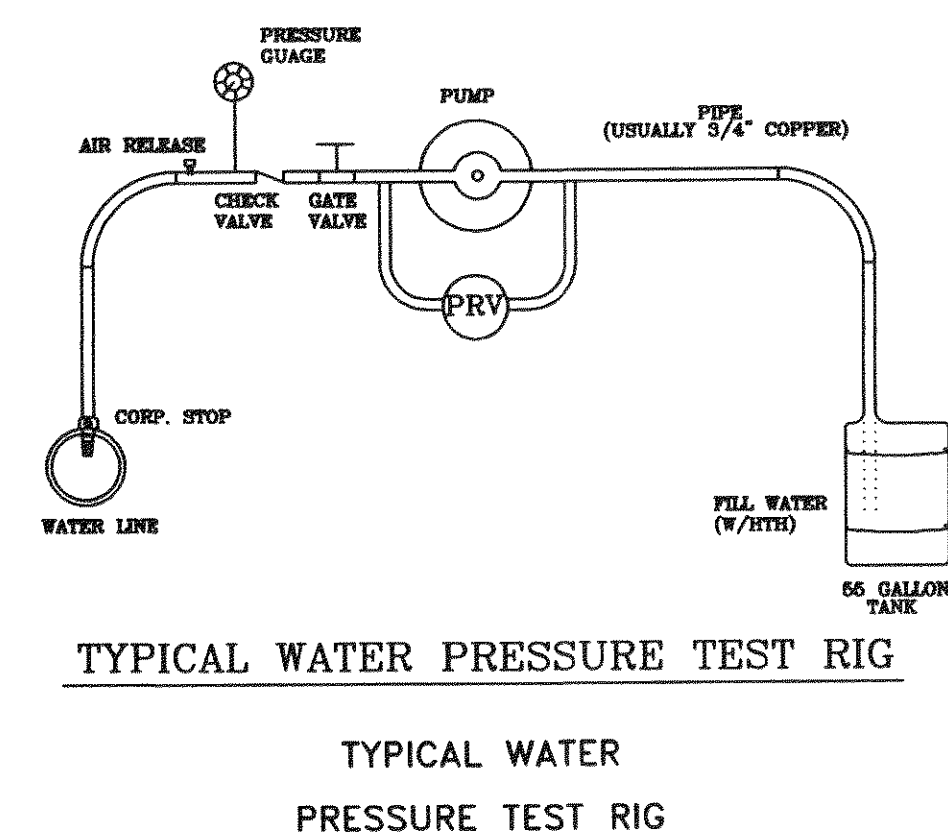
## **TYPICAL SPRINKLER SERVICE**



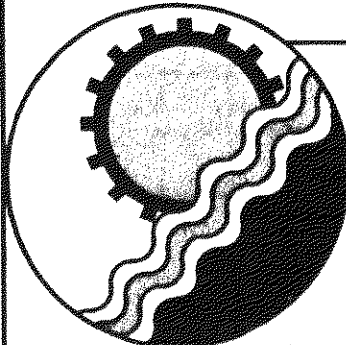
- SETTER TO BE FORD VEH-72 OR APPROVED EQUAL.
- BACKFLOW PREVENTER TO BE WATER NO. 1 OR APPROVED EQUAL.
- CUSTOMER IS RESPONSIBLE FOR OPERATION AND MAINTENANCE OF BACKFLOW PREVENTER.
- METER BOX MUST BE FORD CONCRETE BOX OR SOUTHEASTERN DIST. MODEL MB-5 PLASTIC BOX WITH FORD OR CHARLOTTE MODEL C-32 CASTIRON BASE & COVER OR APPROVED EQUIVALENT.



**BLOW OFF ASSEMBLY  
FOR MAIN LINE**

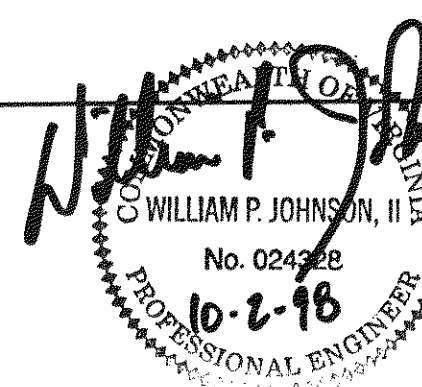


**TYPICAL WATER  
PRESSURE TEST RIG**



**ENGINEERING CONCEPTS, INC.**

20 S. ROANOKE ST., PO BOX 619  
FINCASTLE, VIRGINIA 24090  
540.473.1253 FAX: 540.473.1254



Drawn  
SCG/FGM  
Designed  
SCG/FGM  
Checked  
JDE/WPJ  
Approved  
WPJ

**STONERIDGE TOWNHOMES  
BOTETOURT COUNTY, VIRGINIA**

**STANDARD WATER  
DETAIL SHEET**

NO SCALE  
AUGUST 98  
PROJECT: 98094  
8 of 9



GRADING NOTES:

1. THE GRADING CONTRACTOR SHALL OBTAIN ALL NECESSARY LAND DISTURBING PERMITS.
2. PRIOR TO BEGINNING EARTHWORK OPERATIONS, THE CONTRACTOR SHALL EMPLOY A QUALIFIED, PROFESSIONAL GEOTECHNICAL ENGINEER LICENSED IN THE STATE OF VIRGINIA. AS A RESULT OF ONSITE TESTING, THE GEOTECHNICAL ENGINEER SHALL MAKE RECOMMENDATIONS REGARDING THE ONSITE PLACEMENT OF FILL MATERIAL AND PROPER COMPACTION METHODS. NO WARRANTIES ARE MADE BY THE OWNER OR ENGINEER FOR ANY SUBSURFACE CONDITIONS ON THE PROPERTY.
3. FILL SHALL BE PLACED ONLY ON FIRM SUBGRADES APPROVED BY THE SOILS ENGINEER. SUBGRADES SHALL BE SCARIFIED TO A DEPTH OF 4 INCHES PRIOR TO FILL PLACEMENT TO ASSURE BONDING BETWEEN THE TWO SOILS. ALL FILL AREAS SHALL BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% DRY DENSITY (ASTM D699), UNLESS NOTED OTHERWISE. THE COMPACTION SHALL BE ACCOMPLISHED BY PLACING FILL IN 6 TO 8 INCH LIFTS AND MECHANICALLY COMPACTING EACH LIFT TO THE REQUIRED DENSITY. THE SOILS ENGINEER SHALL PERFORM FIELD DENSITY TEST ON EACH LIFT OR AS NECESSARY TO ASCERTAIN THAT ADEQUATE COMPACTION HAS BEEN ACHIEVED. CALIFORNIA BEARING RATIO TESTS SHALL BE PERFORMED IN MATERIAL PROPOSED FOR USE BENEATH PAVEMENT WHETHER CUT OR FILL.

4. CLEAR SITE WITHIN LIMITS OF GRADING WORK. DO NOT DISTURB AREAS OUTSIDE OF GRADING LIMITS OR PROPOERTY BOUNDARY.

5. REMOVE TREES, SHRUBS, GRASS AND OTHER VEGETATION, IMPROVEMENTS OR OBSTRUCTIONS AS REQUIRED TO PERMIT INSTALLATION OF NEW CONSTRUCTION. ALL UNSUITABLE MATERIAL SHALL BE DISPOSED OF IN A MANNER AND LOCATION ACCEPTABLE TO THE GOVERNING AUTHORITY. REMOVE TREES AND OTHER VEGETATION, INCLUDING STUMPS AND ROOTS, COMPLETELY IN AREAS REQUIRED FOR SUBSEQUENT SEEDING. CUT OFF TREES AND STUMPS IN AREAS TO RECEIVE FILL MORE THAN THREE FEET IN DEPTH TO WITHIN EIGHT INCHES OF THE ORIGINAL GROUND SURFACE.

6. BARRICADE OPEN EXCAVATIONS OCCURRING AS PART OF THIS WORK AND OPERATE WARNING LIGHTS AS RECOMMENDED BY AUTHORITIES HAVING JURISDICTION.

7. EXCAVATION FOR STRUCTURES:
  - A. CONFORM TO ELEVATIONS AND DIMENSIONS SHOWN WITHIN A TOLERANCE OF PLUS OR MINUS 0.10 FOOT.
  - B. PROVIDE TRUE AND STRAIGHT FOOTING EXCAVATIONS WITH UNIFORM LEVEL BOTTOMS OF THE WIDTH INDICATED TO ENSURE PROPER PLACEMENT AND COVER OF ALL REINFORCEMENT.
  - C. REMOVE ALL LOOSE MATERIALS FROM THE EXCAVATION PRIOR TO PLACEMENT OF CONCRETE.
  - D. PROVIDE A MINIMUM OF 2'-0" FROM THE FINISHED GRADE TO TOP OF ALL EXTERIOR WALL FOOTINGS.
  - E. FOOTINGS WHICH SUPPORT CONCRETE MASONRY UNITS MAY BE STEPPED PROVIDED THE VERTICAL STEP DOES NOT EXCEED ONE HALF OF THE HORIZONTAL DISTANCE BETWEEN STEPS AND HORIZONTAL DISTANCE BETWEEN STEPS IS NOT LESS THAN TWO FEET.
  - F. IF ROCK IS ENCOUNTERED IN A FOOTING EXCAVATION, UNDERCUT IT A MINIMUM OF 12" BELOW THE BOTTOM OF THE FOOTINGS AND FILL THE RESULTING OVER-EXCAVATION WITH CONTROLLED FILL.

8. CUT SURFACE UNDER PAVEMENTS TO COMPLY WITH CROSS SECTIONS, ELEVATIONS, AND GRADES AS INDICATED.

9. EXCAVATE TRENCHES TO UNIFORM WIDTH CONFORMING TO VDOT STANDARD PB-1 FOR STORM DRAINAGE PIPING AND UB-1 FOR SANITARY SEWER AND WATER. BACKFILL TRENCHES WITH CONTROLLED FILL.

10. PREVENT SURFACE WATER AND SUBSURFACE OR GROUND WATER FROM FLOWING INTO EXCAVATIONS AND FROM FLOODING PROJECT SITE AND SURROUNDING AREA. DO NOT ALLOW WATER TO ACCUMULATE IN EXCAVATIONS. REMOVE WATER TO PREVENT SOFTENING OF FOUNDATION BOTTOMS, UNDERCUTTING FOOTINGS, AND SOIL CHANGES DETRIMENTAL TO STABILITY OF SUBGRADES AND FOUNDATIONS. CONVEY WATER REMOVED FROM EXCAVATIONS AND RAIN WATER TO COLLECTING OR RUNOFF AREAS. ESTABLISH AND MAINTAIN TEMPORARY DRAINAGE DITCHES AND OTHER DIVERSIONS OUTSIDE EXCAVATION LIMITS FOR EACH STRUCTURE. DO NOT USE TRENCH EXCAVATIONS AS TEMPORARY DITCHES.

11. PROTECT EXCAVATED BOTTOMS OF ALL FOOTINGS AND TRENCHES AGAINST FREEZING WHEN ATMOSPHERIC TEMPERATURE IS LESS THAN 35 F (1 C).

12. BACKFILLING:
  - A. COMPACT THE BACKFILL AROUND THE OUTSIDE OF BUILDING TO A MINIMUM OF 85% OF MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D 1557 MODIFIED PROCTOR. DO NOT ALLOW HEAVY COMPACTION EQUIPMENT SUCH AS ROLLERS, ETC., CLOSER TO ANY FOOTING THAN THE HORIZONTAL DISTANCE SUBTENDED BY A 45° ANGLE WITH THE TOP EDGE OF THE FOOTINGS AND THE SURFACE OF THE GROUND.
  - B. BACKFILL BEHIND WALLS AFTER PERMANENT CONSTRUCTION WHICH BRACES THE WALL IS IN PLACE OR TEMPORARY BRACING OF THE WALL IS PROPERLY INSTALLED, AND AFTER ACCEPTANCE OF CONSTRUCTION BELOW FINISH GRADE INCLUDING DAMP-PROOFING, REMOVAL OF CONCRETE FORMWORK, AND REMOVAL OF TRASH AND DEBRIS.

13. UNIFORMLY GRADE AREAS WITHIN LIMITS OF GRADING INCLUDING ADJACENT TRANSITION AREAS. SMOOTH FINISHED SURFACES WITHIN SPECIFIED TOLERANCES, COMPACT WITH UNIFORM LEVELS OR SLOPES BETWEEN POINTS WHERE ELEVATIONS ARE SHOWN, OR BETWEEN SUCH POINTS AND EXISTING GRADES. GRADE AREAS ADJACENT TO BUILDING LINES TO DRAIN AWAY FROM STRUCTURES TO PREVENT PONDING.

14. FINISH LAWN AREAS TO WITHIN ONE INCH ABOVE OR BELOW REQUIRED SUBGRADE ELEVATIONS. SHAPE SURFACE UNDER WALKS AND PAVEMENTS TO LINE, GRADE, AND CROSS SECTION, WITH NOT MORE THAN 1/2" ABOVE OR BELOW REQUIRED SUBGRADE ELEVATION.

15. GRADE SURFACE UNDER BUILDING SLABS SMOOTH AND EVEN, FREE OF VOIDS. PROVIDE FINAL GRADES WITHIN 1/2" OF THOSE INDICATED WHEN TESTED WITH A 10' STRAIGHT EDGE.

16. PROTECT GRADED AREAS FROM TRAFFIC AND EROSION. REPAIR AREAS WHICH HAVE SETTLED, ERODED, OR BECOME DAMAGED DUE TO CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST TO OWNER.

17. UNDER FOUNDATIONS, SIDEWALKS, AND PAVEMENTS COMPACT EACH LAYER TO 95 % MAXIMUM DRY DENSITY ASTM D1557 (MODIFIED PROCTOR) OR 100% MAXIMUM DRY DENSITY ASTM D698 (STANDARD PROCTOR).

18. UNDER LAWN OR UNPAVED AREAS, COMPACT SUBGRADE AND EACH LAYER TO 85 % MAXIMUM DRY DENSITY (MODIFIED PROCTOR).

19. ALL SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE CAPPED AND PIPED TO THE NEAREST STORM SEWER SYSTEM OR NATURAL WATERCOURSE. THE PIPE SHALL BE A MINIMUM OF 6" DIAMETER AND CONFORM TO V.D.O.T. STANDARD SB-1.

GENERAL SITE NOTES:

1. THIS SITE DOES NOT LIE WITHIN A F.E.M.A. DESIGNATED FLOOD ZONE, AS SHOWN ON MAP NO. 5100180150A.
2. TOPOGRAPHIC INFORMATION FROM FIELD RUN TOPOGRAPHY BY ENGINEERING CONCEPTS, INC. DATED JULY 6, 1998.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS.
4. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION TO ELIMINATE THE POSSIBILITY OF ANY DISTURBANCE OR DAMAGE TO PUBLIC OR PRIVATELY OWNED UTILITIES, STRUCTURES, OTHER FACILITIES OR OBSTRUCTION RESULTING FROM HIS ACTIVITIES. TO THIS END, CONTRACTOR SHALL, AT NO ADDITIONAL COST TO THE OWNER, TAKE ALL MEASURES NECESSARY TO PROVIDE, AND SHALL BE SOLELY RESPONSIBLE FOR, TEMPORARY SUPPORT AND SHORING, ADEQUATE PROTECTION, AND MAINTENANCE OF CONTINUOUS OPERATION OF ALL UNDER AND ABOVE GROUND UTILITY SERVICES. THE CONTRACTOR SHALL CALL MISS UTILITY AT 1-800-552-7001 48 HOURS PRIOR TO DIGGING. ALL UTILITY TIE-INS ARE TO BE COORDINATED WITH THE APPROPRIATE PUBLIC OR PRIVATE UTILITY AUTHORITY BEFORE COMMENCING WORK ON EXISTING UTILITIES. THE CONTRACTOR SHALL SUPPLY ALL UTILITY COMPANIES WITH APPROVED PLAN COPIES FOR COORDINATION OF EXTENSION AND TIE-IN EFFORTS.
5. SITE CONDITIONS MAY NECESSITATE SLIGHT DEVIATIONS IN ALIGNMENT, GRADE, AND/OR LOCATION OF NEW FACILITIES FROM THE PLAN ALIGNMENT. THE CONTRACTOR SHALL CONSTRUCT THE NEW FACILITIES TO SUCH DEVIATIONS AS DIRECTED BY THE ENGINEER WITHOUT ADDITIONAL COST OR FINE TO THE OWNER. SHOULD PLAN DEVIATIONS BE REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO UNDERTAKING ANY REVISION.
6. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE CURRENT BOCA AND/OR STATE AND LOCAL BUILDING CODES AS WELL AS THE CONSTRUCTION STANDARDS AND SPECIFICATIONS OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION.
7. THE CONTRACTOR SHALL MAINTAIN THE CONSTRUCTION AREA IN A SAFE AND ACCEPTABLE MANNER AND SHALL BE RESPONSIBLE FOR REMEDIATING ANY DAMAGES RESULTING FROM HIS FAILURE TO DO SO.
8. THE CONTRACTOR SHALL MAINTAIN LIMITS OF CONSTRUCTION WITHIN THE PROPERTY BOUNDARIES OR EASEMENTS AS INDICATED.
9. AN APPROVED SET OF PLANS SHALL BE KEPT ON THE SITE AT ALL TIMES.
10. ALL CONSTRUCTION DEBRIS SHALL BE CONTAINERIZED IN CONFORMANCE WITH THE VIRGINIA LITTER CONTROL ACT AND DISPOSED OF IN A MANNER AND LOCATION ACCEPTABLE TO THE GOVERNING JURISDICTION. AT LEAST ONE TRASH RECEPTACLE SHALL BE ONSITE DURING CONSTRUCTION.
11. TEMPORARY TOILETS SHALL BE PROVIDED ONSITE AT A RATIO OF ONE TOILET PER 30 WORKERS DURING THE CONSTRUCTION PERIOD.
12. GRADE STAKES SHALL BE SET FOR CURB & GUTTER, SANITARY SEWERS, WATER LINES, AND STORM SEWER.
13. CURB SIDE TRASH REFUSE SHALL BE UTILIZED FOR THIS FACILITY.

SANITARY SEWER NOTES & SPECIFICATIONS

- 1.PIPE & FITTINGS: ALL SANITARY SEWER PIPE AND FITTINGS SHALL BE POLYVINYL CHLORIDE (PVC), SDR 35, AND SHALL CONFORM WITH ASTM D-3034.

- 2.INSTALLATION: THE SANITARY SEWER PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE PIPE MANUFACTURER'S RECOMMENDATIONS AND THESE SPECIFICATIONS. THE PIPE SHALL BE LAID IN TRUE STRAIGHT LINES WITH THE BALL ENDS UPSTREAM AND WITH THE INVERT OF THE PIPE BEING THE TRUE ELEVATION AND GRADE OF THE SYSTEM. THE PIPE SHALL BE VISUALLY INSPECTED FOR DEFECTS BEFORE LOWERING THE PIPE IN THE TRENCH. FIELD CUTTING OF THE PIPE SHALL BE DONE SO IN A NEAT AND WORKMANLIKE MANNER, SO AS TO LEAVE A SMOOTH END AT RIGHT ANGLES TO THE AXIS OF THE PIPE.

- 3.TRENCH EXCAVATION: TRENCHES SHALL BE EXCAVATED IN STRAIGHT LINES AND SHALL BE OF SUFFICIENT WIDTH TO PERMIT THE PROPER INSTALLATION OF BRACING, SHORING OR SHEETING. TRENCH WIDTH SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATION. THE BOTTOM OF THE PIPE TRENCH SHALL BE EXCAVATED TO A MINIMUM OVER DEPTH OF FOUR (4) INCHES BELOW THE BOTTOM OF THE PIPE, TO PROVIDE FOR THE COMPACTED BEDDING MATERIAL.

- 4.BEDDING: BEDDING MATERIAL SHALL BE COARSE AGGREGATE SIZE NUMBER 57 AND SHALL CONFORM WITH VDOT SECTION 203 AND/OR ASTM C33. BEDDING MATERIAL SHALL BE PLACED AND COMPACTED IN FOUR (4) INCHES BELOW THE PIPE AND AS A MINIMUM UP TO THE SPRINGLINE OF THE PIPE. CARE SHALL BE TAKEN TO ENSURE THE BEDDING MATERIAL FULLY SUPPORTS THE SIDE AND BOTTOM OF THE PIPE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

- 5.BACKFILL: BACKFILL MATERIAL SHALL BE EITHER APPROVED EXCAVATED MATERIAL OR APPROVED SUITABLE MATERIAL FROM OTHER SOURCES THAT IS FREE OF ORGANIC MATERIAL, LOAM, DEBRIS, OR MINIMUM ONE (1) FOOT ABOVE THE TOP OF PIPE SHALL BE FREE OF STONES LARGER THAN TWO (2) INCHES AND SHALL BE PLACED IN SIX (6) INCH LAYERS AND COMPACTED WITH HAND TAMPERS. BACKFILL FROM THIS POINT TO TOP OF TRENCH SHALL BE FREE OF STONES LARGER THAN FOUR (4) INCHES AND SHALL BE PLACED IN LAYERS NOT TO EXCEED EIGHT (8) INCHES AND COMPACTED WITH MECHANICAL TAMPERS. BACKFILL BELOW UNPAVED AREAS SHALL BE COMPACTED TO 90%. BACKFILL BELOW PAVED AREAS SHALL BE COMPACTED TO 95%. BACKFILL COMPACTION TESTING SHALL BE IN ACCORDANCE WITH ASTM D-1557.

- 6.TESTING OF SANITARY SEWER: TESTING FOR WATER TIGHTNESS SHALL BE MADE UTILIZING A LOW PRESSURE AIR TEST. THE TESTING EQUIPMENT, PROCEDURE AND RESULTS WILL ALL BE SUBJECT TO THE APPROVAL OF THE COUNTY ENGINEER. THE AIR TEST SHALL BE IN ACCORDANCE WITH UNI B-6-90 AND ASTM C-F-1417, CURRENT REVISION. THE CONTRACTOR SHALL DEFLECTION TEST THE ENTIRE LENGTH OF PIPE BY MEANS OF A GO-NO-GO MANDREL TO ASSURE THAT A 5.0% DEFLECTION HAS NOT BEEN EXCEEDED. MANDREL SHALL BE SIZED AT 5% LESS THAN ASTM DIMENSION FOR THE SEWER.

7. A MINIMUM COVER OF THREE (3) FEET IS REQUIRED OVER PROPOSED LINES.

8. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND UNCOVERING ALL MANHOLES AFTER PAVING. MANHOLE TOPS SHALL BE ADJUSTED TO GRADE IF NECESSARY.

9. ALL EXISTING UTILITIES MAY NOT BE SHOWN OR MAY NOT BE SHOWN IN THE EXACT LOCATION. THE CONTRACTOR SHALL COMPLY WITH STATE WATER WORKS REGULATIONS, SECTION 12.05.03, WHERE LINES CROSS.

10. HOUSE CONNECTIONS ARE TO BE MADE WITH 4" PIPE INSTALLED AT A MINIMUM GRADE OF 1/4 INCH TO 1 FOOT IN ACCESS AND UTILITY EASEMENT.

11. LINES SHALL BE STAKED PRIOR TO CONSTRUCTION.

EROSION - SEDIMENT CONTROL NOTES

DESCRIPTION OF THE SITE

PHASE 1 OF THIS PROJECT CONSISTS OF 6 RESIDENTIAL-TOWNHOME UNITS. ALL UTILITIES AND ACCESS DRIVES WILL BE INSTALLED WITH PHASE 1. THE SITE WILL BE MASS GRADED FOR FUTURE UNIT CONSTRUCTION.

DATES OF CONSTRUCTION

SUMMER OF 1998 TO SUMMER OF 1999

1. UNLESS OTHERWISE INDICATED ALL VEGETATIVE AND STRUCTURAL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VA. EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

2. THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.

3. ALL PERIMETER EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED AS THE FIRST STEP IN GRADING.

4. A COPY OF THE APPROVED EROSION CONTROL PLANS SHALL BE KEPT ON SITE AT ALL TIMES.

5. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE INSPECTOR.

6. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL DEVICES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND UNTIL FINAL STABILIZATION IS ACHIEVED. THE CONTRACTOR SHALL REMOVE ALL DEVICES FROM THE SITE AFTER STABILIZATION, ONLY AFTER PRIOR APPROVAL OF THE INSPECTOR.

7. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DISTURBED AREAS WITHIN SEVEN DAYS OF REACHING FINAL GRADES. TEMPORARY, DENUDED AREAS THAT ARE TO BE EXPOSED LONGER THAN THIRTY DAYS SHALL BE SEEDD WITH TEMPORARY VEGETATION.

8. DURING CONSTRUCTION, SOIL STOCKPILES SHALL BE STABILIZED AND PROTECTED WITH SEDIMENT TRAPPING MEASURES AND STABILIZED WITH TEMPORARY VEGETATION IF UNUSED FOR 30 DAYS OR LONGER.

9. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH MAJOR RAINFALL EVENT ANY REPAIRS NECESSARY SHALL BE MADE IMMEDIATELY TO ENSURE THE PROTECTION OF OFFSITE PROPERTIES.

10. THE CONTRACTOR IS REQUIRED TO REMOVE ALL SILT FROM STREAMS AND DRAINAGE WAYS PRIOR TO BOND RELEASE.

11. TEMPORARY AND PERMANENT SEEDING SHALL ADHERE TO THE SPECIFICATIONS SHOWN ON THE EROSION & SEDIMENT CONTROL DRAWINGS.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL LAND DISTURBING PERMITS.

EARTH EMBANKMENT NOTES

THE BOTTOM OF THE SPILLWAY RISER FOUNDATION BASE EXCAVATION SHALL BE OBSERVED BY THE SOILS ENGINEER IN ORDER TO ASCERTAIN THAT ALL UNSUITABLE AND LOOSE MATERIALS ARE REMOVED AND THAT ACCEPTABLE BEARING CONDITIONS EXIST IN THE EXCAVATION'S BASE.

THE IMPERVIOUS CORE SHALL BE KEYED INTO THE UNDISTURBED (EXISTING) SOIL STRATUM. THIS CORE SHOULD BE KEYED AT LEAST 4 FEET INTO THIS RELATIVELY DENSE STRATUM (WIDTH = 4 FT.)

THE EMBANKMENT FOUNDATIONS AND ABUTMENTS SHALL BEAR ON FIRM AND STABLE EXISTING SUBGRADE WHICH HAS BEEN PREPARED SO AS TO REMOVE ALL ORGANIC, LOOSE, AND GENERALLY UNSUITABLE MATERIAL.

ALL MATERIALS TO BE USED FOR BACKFILL OR COMPACTED FILL SHALL BE INSPECTED AND TESTED BY THE SOILS ENGINEER IN ACCORDANCE WITH ASTM D2487 PRIOR TO PLACEMENT TO DETERMINE IF THEY ARE SUITABLE FOR THE INTENDED USE.

FILL EMPLOYED IN THE IMPERVIOUS CORE SHALL CONSIST OF A CLAY WITH A PERMEABILITY (K-VALUE) OF LESS THAN 10-6 CM/SEC AND CLASSIFIED AS CL OR CH AS DEFINED BY THE UNIFIED SOIL CLASSIFICATION SYSTEM. FILL EMPLOYED AS GENERAL EMBANKMENT FILL SHALL CONTAIN AT LEAST 15 % BUT NO MORE THAN 49% PASSING THE NO. 200 SIEVE (SILT OR CLAY) AND BE CLASSIFIED AS SM OR SC AS DEFINED BY THE UNIFIED SOIL CLASSIFICATION SYSTEM.

EROSION - SEDIMENT CONTROL PHASING NOTES

1. INSTALL ALL PERIMETER SILT FENCE.
2. CONSTRUCT RETAINING WALL AT THE STORMWATER MANAGEMENT FACILITY.
3. CONSTRUCT STORMWATER MANAGEMENT POND AND OUTLET STRUCTURE WITH GRAVEL CULVERT INLET PROTECTION. (FACILITY TO BE USED AS A TEMPORARY SEDIMENT TRAP)
4. INSTALL DIVERSION DIKES TO DIVERT RUNOFF TO THE POND.
5. INSTALL CONSTRUCTION ROAD STABILIZATION (ROAD BASE STONE) IMMEDIATELY AFTER REACHING SUBGRADE ELEVATIONS. APPLY PRIME COAT AFTER PLACEMENT.
6. INSTALL INLET AND OUTLET PROTECTION IMMEDIATELY AFTER STORM SEWER AND INLET PLACEMENT.
7. CONTRACTOR SHALL REMOVE EROSION CONTROL MEASURES ONLY AFTER DISTURBED AREAS ARE STABILIZED AND APPROVAL HAS BEEN OBTAINED FROM THE INSPECTOR.

WATER NOTES

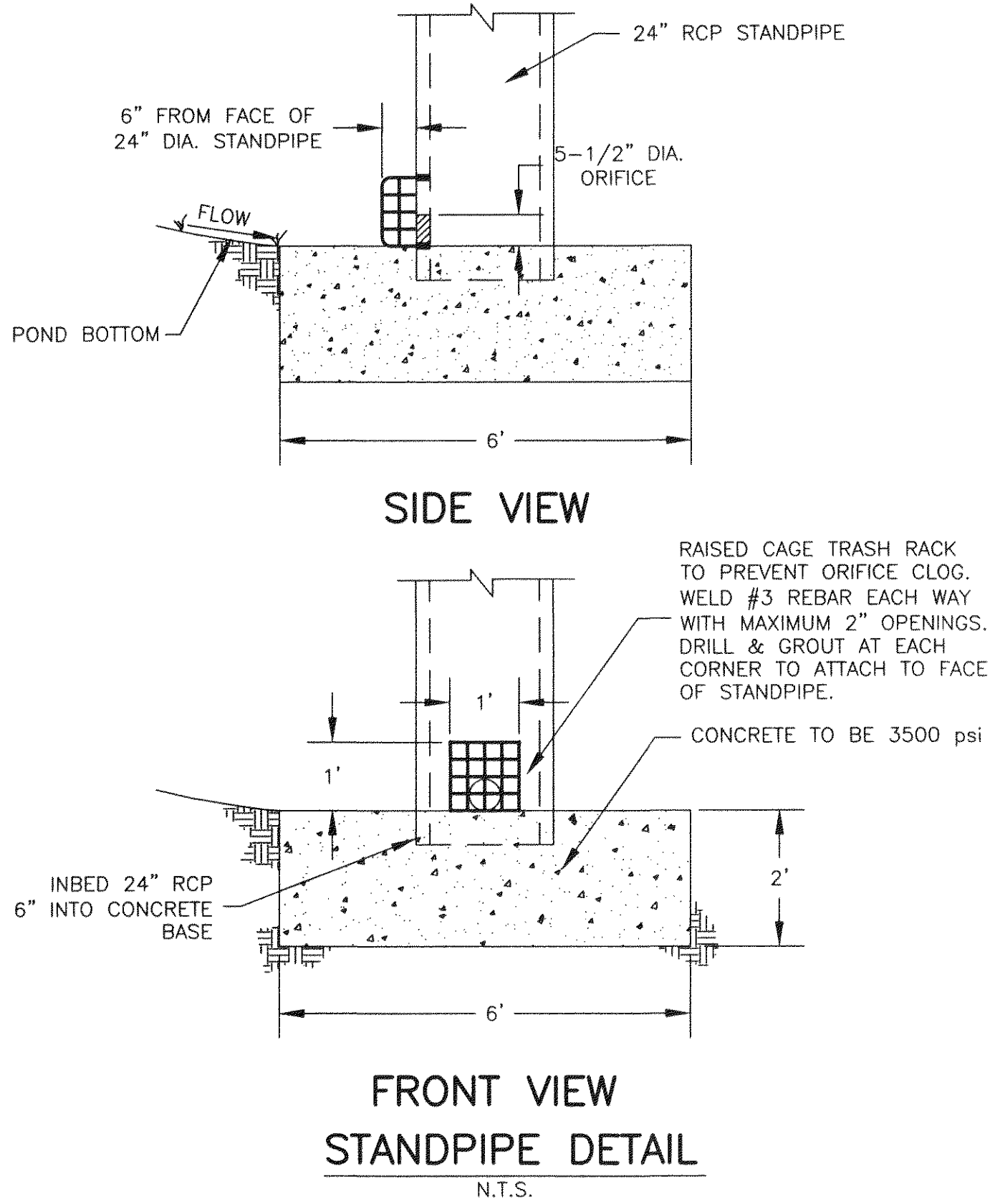
1. A MINIMUM COVER OF THREE (3) FEET IS REQUIRED OVER PROPOSED LINES.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND UNCOVERING VALVE VAULTS AFTER PAVING AND ADJUSTMENT FOR FINAL GRADE IF NECESSARY.
3. ALL EXISTING UTILITIES MAY NOT BE SHOWN IN THE EXACT LOCATION. THE CONTRACTOR SHALL COMPLY WITH THE STATE WATER WORKS REGULATIONS, SECTION 12.05.03.
4. ALL TRENCHES IN EXISTING OR FUTURE HIGHWAY RIGHTS-OF-WAY SHALL BE COMPACTED ACCORDING TO V.D.O.T. STANDARDS.
5. LINES SHALL BE STAKED PRIOR TO CONSTRUCTION.
6. WATER MAIN SHALL BE AS A MINIMUM SDR-14 PVC IN ACCORDANCE WITH AWWA C-900.
7. A CONTINUOUS AND UNIFORM BEDDING SHALL BE PROVIDED IN THE TRENCH FOR ALL PIPE. STONES AND ROCKS FOUND IN THE TRENCH SHALL BE REMOVED FOR A DEPTH OF AT LEAST SIX (6) INCHES BELOW THE BOTTOM OF THE PIPE AND TAMPED SELECTED FILL BEDDING PROVIDED. AFTER THE PIPE HAS BEEN PLACED IN THE TRENCH, THE TRENCH SHALL BE BACKFILLED WITH SELECTED MATERIAL, THOROUGHLY COMPACTED TO 90%, 95% UNDER PAVEMENT OR CONCRETE SLAB, OF THE MODIFIED PROCTOR (ASTM D-1557) USING CARE NOT TO DAMAGE THE PIPE.
8. ALL WATER MAINS SHALL BE PRESSURE TESTED IN ACCORDANCE WITH THE COUNTY UTILITY DEPARTMENT. COORDINATE INSPECTIONS FOR TESTING.

SUBSEQUENT TO THE CLEARING AND ROUGH GRADING OPERATIONS AND PRIOR TO THE PLACEMENT OF ANY STONE, SPILLWAY RISER, EXCAVATION OR EMBANKMENT FILL, THE EXPOSED SUBGRADE SOILS SHALL BE CAREFULLY INSPECTED.

ANY UNSUITABLE MATERIALS THUS EXPOSED SHALL BE REMOVED AND REPLACED WITH A WELL COMPACTED, SUITABLE MATERIAL. THE INSPECTION OF THESE PHASES SHALL BE PERFORMED BY THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE. DENSITY TESTING AT THE DISCRETION OF THE SOILS ENGINEER SHALL BE PERFORMED AT THIS TIME.

FILL SHALL BE PLACED ONLY ON FIRM SUBGRADES APPROVED BY THE SOILS ENGINEER. SUBGRADES SHALL BE SCARIFIED A DEPTH OF 4 INCHES PRIOR TO FILL PLACEMENT TO ASSURE BONDING BETWEEN THE TWO SOILS. ALL IMPERVIOUS CORE AND EMBANKMENT FILL SHALL BE COMPACTED TO A DRY DENSITY OF AT LEAST 95 % OF THAT SOIL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698). THE COMPACTION SHALL BE ACCOMPLISHED BY PLACING THE FILL IN MAXIMUM 6 TO 8 INCH LOOSE LIFTS AND MECHANICALLY COMPACTING EACH LIFT TO THE REQUIRED DENSITY. THE FILL SHALL BE COMPACTED AT A MOISTURE CONTENT WHICH IS +3 TO -2 PERCENTAGE POINTS OF THE FILL MATERIALS OPTIMUM MOISTURE CONTENT, A SOILS TECHNICIAN UNDER THE DIRECTION OF THE SOILS ENGINEER SHALL PERFORM FIELD DENSITY TESTS ON EACH LIFT AS NECESSARY TO ASCERTAIN THAT ADEQUATE COMPACTION HAS BEEN ACHIEVED.

PRIOR TO POND AND EMBANKMENT CONSTRUCTION THE GEOTECHNICAL ENGINEER SHALL INVESTIGATE SOILS WITHIN THE POND AREA TO ASCERTAIN THE SUITABILITY OF THE SOIL FOR WET STORAGE. A GEOSYNTHETIC CLAY LINER OR EQUAL SHALL BE UTILIZED PER MANUFACTURERS SPECIFICATIONS IN THE EVENT SOILS AREN'T COMPATIBLE FOR DETENTION. USE CLAYMAX 600 SP BY CETCO.



HEIGHT OF WALL						AREA OF FOOTING	
IN FEET						SO. FT.	SO. FT.
3	1'- 6"	1'- 9 1/4"	2.362	3.213			
4	1'- 6"	2'- 4 1/2"	4.453	5.972			
5	1'- 6"	3'- 0"	7.087	4.788			
6	1'- 6"	3'- 7 1/4"	10.763	5.663			
7	1'- 6"	4'- 2 1/4"	14.842	6.518			
8	1'- 9"	4'- 9 1/4"	19.429	7.396			
9	1'- 9"	5'- 4 3/4"	24.531	8.269			
10	1'- 10"	6'- 0"	30.634	9.157			
11	1'- 10"	6'- 7 1/4"	35.970	10.038			
12	1'- 11"	7'- 2 1/4"	44.395	10.930			
13	1'- 11"	7'- 9 3/8"	51.968	11.816			
14	2'- 0"	8'- 4 1/2"	60.714	12.711			
15	2'- 0"	9'- 0"	69.530	13.595			

Drain pipes are to be one continuous length or Bell and Spigot with mortared joints.

H= Height in feet  
Base =  $\frac{H}{3}$   
Wt. Cu. Ft. Earth = 100 Lbs.  
Rubble = 150 Lbs.  
Angle of Repose =  $1\frac{1}{2}:1$

3" drain pipes 8" apart

Class A3 or C1 Conc.

Note: if compression of toe exceeds safe bearing capacity of soil, a special footing is to be used.

401.03