

# INGAL BOULEVARD WATERLINE REPLACEMENT

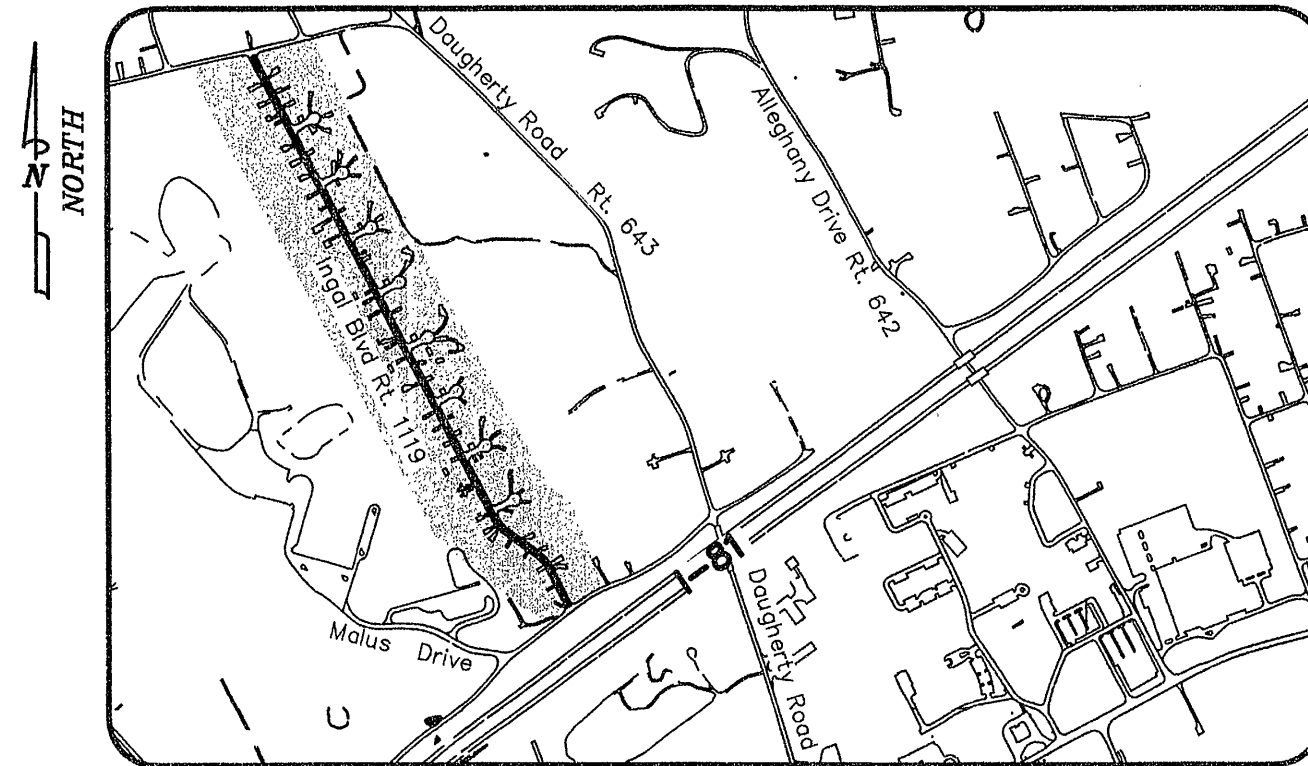
## ROANOKE COUNTY, VIRGINIA

### GENERAL NOTES

- THE TOPOGRAPHIC FEATURES DEPICTED HEREON ARE TAKEN FROM THE ROANOKE COUNTY TOPOGRAPHIC RECORDS ARCHIVE. A TOPOGRAPHIC SURVEY TO PROVIDE ADDITIONAL TOPOGRAPHIC INFORMATION WAS PERFORMED BY GAY AND NEEL, INC. AUGUST 2008.
- THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND THEREFORE MAY NOT INDICATE ALL ENCUMBRANCES THAT MAY AFFECT THE SUBJECT PROPERTIES.
- LOCATIONS OF UNDERGROUND UTILITIES AS SHOWN HEREON ARE APPROXIMATE, BASED ON AVAILABLE SURFACE STRUCTURES, SUCH AS VALVES, MANHOLES, ETC., "MISS UTILITY" MARKINGS, AND RECORD INFORMATION. GAY AND NEEL, INC. DOES NOT WARRANT EXISTENCE OF, OR LOCATIONS OF UNDERGROUND UTILITY LINES AND/OR STRUCTURES.
- PROPERTY LINES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY. NO BOUNDARY SURVEY HAS BEEN PERFORMED AS A PART OF THIS PROJECT.
- THE SUBJECT PROPERTY IS NOT LOCATED WITHIN A F.E.M.A. DESIGNATED 100-YEAR FLOOD ZONE. THE SUBJECT PROPERTY LIES WITHIN ZONE "X" AS SHOWN ON F.I.R.M. COMMUNITY PANEL NO. 51161C01616, EFFECTIVE DATE OF SEPTEMBER 28, 2007. THIS DETERMINATION HAS BEEN MADE BY GRAPHIC METHODS. NO ELEVATION STUDY HAS BEEN PERFORMED AS A PART OF THIS PROJECT.
- ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM TO THE LATEST EDITION OF THE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS OF THE WESTERN VIRGINIA WATER AUTHORITY (AUTHORITY) AVAILABLE AT WWW.WESTERNVAVATER.ORG OR BY CONTACTING THE AUTHORITY AT 540-853-8700. THE PROJECT SHALL ALSO COMPLY WITH THE GOVERNING JURISDICTION'S STANDARDS AND OTHER AGENCY STANDARDS (E.G., VDOT, DEQ, DCR, VOH, ETC.) WHERE APPLICABLE.
- THE AUTHORITY WILL INSTALL ALL NEW WATER METERS AND REMOVE ALL EXISTING WATER METERS. THE CONTRACTOR SHALL INSTALL COMPLETE NEW WATER SERVICES INCLUDING THE METER SETTER AND VAULT. FOLLOWING WATER REPLACEMENT BY THE AUTHORITY, THE CONTRACTOR SHALL DEMOLISH THE EXISTING WATER METER SETTER AND VAULT. THE CONTRACTOR SHALL COORDINATE EXISTING METER REMOVAL AND NEW METER INSTALLATION DIRECTLY WITH THE AUTHORITY. THE CONTRACTOR SHALL PROVIDE AT LEAST THREE (3) BUSINESS DAYS ADVANCE NOTICE TO THE AUTHORITY PRIOR TO NEEDING METER INSTALLATIONS. THE CONTRACTOR SHALL SEQUENCE CONSTRUCTION ACTIVITY TO PROVIDE A SERIES OF AT LEAST TEN (10) SERVICES THAT ARE READY TO RECEIVE NEW METERS BEFORE CONTACTING THE AUTHORITY FOR WATER METER REPLACEMENT.
- ALL CONNECTIONS TO EXISTING WATERLINES SHALL BE PERFORMED BY THE AUTHORITY. THE CONTRACTOR SHALL PROVIDE FULL STAINLESS STEEL TAPPING SLEEVES(S) AND VALVE(S). THE CONTRACTOR SHALL EXCAVATE TO THE EXISTING WATERLINE, SHORE THE TRENCH PER OSHA REQUIREMENTS, CLEAN THE EXISTING WATERLINE, AND INSTALL THE TAPPING SLEEVE AND VALVE PRIOR TO THE AUTHORITY PERFORMING THE TAP. THE CONTRACTOR SHALL NOTIFY THE AUTHORITY'S UTILITY LINE SERVICES DIVISION AT 540-853-2792 AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO REQUIRING THE CONNECTION.
- ALL CONNECTIONS TO EXISTING SANITARY SEWER LINES SHALL BE PERFORMED BY THE AUTHORITY. THE CONTRACTOR SHALL EXCAVATE TO THE EXISTING SEWER LINE, SHORE THE TRENCH PER OSHA REQUIREMENTS, AND CLEAN THE EXISTING SEWER LINE PRIOR TO THE AUTHORITY PERFORMING THE TAP. THE CONTRACTOR SHALL NOTIFY THE AUTHORITY'S UTILITY LINE SERVICES DIVISION AT 540-853-2792 AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO REQUIRING THE CONNECTION.
- THE CONTRACTOR SHALL PERFORM ALL MANHOLE CONNECTIONS. THE CORING AND BOOT INSTALLATION SHALL BE INSPECTED AND APPROVED BY AN AUTHORITY CONSTRUCTION INSPECTOR PRIOR TO ACTIVATING SEWER SERVICE. THE CONTRACTOR SHALL CONTACT THE AUTHORITY'S CONSTRUCTION INSPECTOR RESPONSIBLE FOR THE PROJECT AT LEAST ONE (1) DAY PRIOR TO INITIATING THE MANHOLE CONNECTION.
- PRIOR TO CONSTRUCTION IN THE RIGHT-OF-WAY, ALL APPLICABLE PERMIT(S) FROM THE GOVERNING JURISDICTION AND/OR AGENCY MUST BE OBTAINED AND A COPY KEPT ON THE PROJECT SITE.
- THE CONTRACTOR SHALL NOTIFY THE AUTHORITY'S ENGINEERING COORDINATOR, CHUCK CLARK, AT 540-537-3243 AT LEAST THREE (3) DAYS PRIOR TO CONSTRUCTION.
- A PRE-CONSTRUCTION CONFERENCE SHALL BE SCHEDULED AT LEAST ONE (1) DAY PRIOR TO ANY CONSTRUCTION.
- THE CONTRACTOR SHALL HAVE A VALID MISS UTILITY TICKET PRIOR TO EXCAVATION. CONTACT MISS UTILITY AT 1-800-552-7001.
- ALL EXISTING UTILITIES MAY NOT BE SHOWN OR MAY NOT BE SHOWN IN THEIR EXACT LOCATION. CONTRACTOR SHALL LOCATE ALL UTILITIES AND DETERMINE ALL INVERTS PRIOR TO CONSTRUCTION TO ALLOW FOR ADJUSTMENTS DUE TO CONFLICTS WITH OTHER UTILITIES. THE CONTRACTOR SHALL COMPLY WITH THE VIRGINIA STATE WATER WORKS REGULATIONS, SECTION 12.05.03, AND THE VIRGINIA STATE SEWAGE COLLECTION AND TREATMENT REGULATIONS WHERE LINES CROSS.
- AN APPROVED SET OF PLANS AND PERMITS MUST BE AVAILABLE AT THE CONSTRUCTION SITE AT ALL TIMES.
- CONSTRUCTION DEBRIS SHALL BE CONTAINERIZED IN ACCORDANCE WITH THE VIRGINIA LITTER CONTROL ACT.
- PRIOR TO COMMENCING WORK, THE CONTRACTOR'S CERTIFIED RESPONSIBLE LAND DISTURBER SHALL OBTAIN AN EROSION AND SEDIMENT CONTROL PERMIT FOR THE PROJECT FROM THE LOCAL GOVERNING JURISDICTION AND DCR (IF REQUIRED). ALL EROSION AND SEDIMENT CONTROL MEASURES MUST BE IN ACCORDANCE WITH THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND SHALL BE INSTALLED PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF CLEANING ALL VEHICLES AND EQUIPMENT PRIOR TO ENTERING PUBLIC STREETS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE STREETS ARE KEPT IN A CLEAN, MUD- AND DUST-FREE CONDITION AT ALL TIMES.
- FIELD CHANGES SHALL BE APPROVED BY THE AUTHORITY'S ENGINEERING DIVISION PRIOR TO SUCH CONSTRUCTION.
- THE CONTRACTOR SHALL MAKE PROVISIONS TO PROVIDE ACCESS TO ALL PROPERTIES DURING CONSTRUCTION AND SHALL MAINTAIN SAFE ACCESSIBILITY TO FIRE HYDRANTS AT ALL TIMES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND UNCOVERING ALL MANHOLES AFTER PAVING. MANHOLE RIMS SHALL BE INSTALLED TO GRADE AND FLUSH WITH THE FINAL PAVEMENT.
- UNREPAIRED ROADWAYS OPENED TO TRAFFIC SHALL HAVE, AT A MINIMUM, COMPACTED AGGREGATE MATERIAL VDOT 21A OR 21B FLUSH WITH THE ADJACENT ROADWAY SURFACE AND SHALL BE INSPECTED AND REPAIRED ON A DAILY BASIS. SOME AREAS WILL REQUIRE A TEMPORARY PATCH UNTIL FINAL PAVING CAN BE COMPLETED.
- THE CONTRACTOR SHALL NOT EXCAVATE MORE TRENCH LENGTH THAN CAN BE RESTORED WITHIN THE SAME WORK DAY. ALL TRENCHES SHALL BE BACKFILLED OR PLATED AT THE END OF EACH WORK DAY OR WHEN THE CONTRACTOR IS NOT ON SITE.
- THE CONTRACTOR SHALL SUPPLY THE AUTHORITY WITH CORRECT AS-BUILT PLANS BEFORE SUBSTANTIAL COMPLETION WILL BE GRANTED.
- ALL UTILITIES TO BE MAINTAINED BY THE WESTERN VIRGINIA WATER AUTHORITY SHALL BE WITHIN DEDICATED RIGHTS-OF-WAY OR EASEMENTS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OF ANY UTILITIES DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES. VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING WORK.
- ALL ACTIVITIES IN PUBLIC RIGHT-OF-WAY SHALL CONFORM TO VDOT WORK AREA PROTECTION MANUAL. (MOST RECENT EDITION)
- PAVEMENT WORK WITHIN THE VDOT RIGHT-OF-WAY REQUIRES THE FOLLOWING INSPECTIONS:
  - SUBGRADE PRIOR TO PLACEMENT OF BASE STONE
  - BASE STONE PRIOR TO PLACEMENT OF PAVEMENT
  - PAVEMENT
- THE MINIMUM REQUIRED DENSITY FOR ALL COMPACTION SHALL BE 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN  $\pm 2\%$  OF THE OPTIMUM.
- ALL NEW WATERLINE SERVICE LATERAL INSTALLATION SHALL BE DIRECTIONAL BORED, UNLESS CONDITIONS DICTATE OTHERWISE.
- ALL FIRE HYDRANTS TO BE LOCATED OUTSIDE OF VDOT CLEAR ZONE, A MINIMUM OF 8 FT. FROM THE FACE OF CURB.
- ANY NEW ALIGNMENTS, CHANGE IN GRADES, ALTERNATE PIPE SIZES OR MANHOLES WILL REQUIRE A NEW SET OF PLANS STAMPED BY THE CONSULTING ENGINEER. COUNTY ENGINEERS WILL REVIEW PLANS WITHIN THREE DAYS OF SUBMITTAL. PLAN SHEETS CAN BE 8.5" X 11" IF THE INFORMATION IS LEGIBLE.

### WESTERN VIRGINIA WATER AUTHORITY NOTES: WATERLINE NOTES

- A MINIMUM COVER OF THREE (3) FEET IS REQUIRED OVER PROPOSED LINES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND UNCOVERING VALVE VAULTS, MANHOLE COVERS, ETC., AFTER PAVING AND ADJUSTMENT TO FINAL GRADE IF NECESSARY.
- 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.
- ALL TRENCHES IN EXISTING OR FUTURE HIGHWAY RIGHTS-OF-WAY SHALL BE COMPACTED ACCORDING TO WESTERN VIRGINIA WATER AUTHORITY STANDARDS.
- LINES SHALL BE STAKED PRIOR TO CONSTRUCTION.
- ALL WATER MAINS UNDER A WORKING PRESSURE OF 100 PSI OR GREATER MUST BE DUCTILE IRON. FITTINGS MUST ADDRESS HIGH PRESSURE, IF APPLICABLE.
- ALL WATER METERS SHALL BE  $\frac{3}{4}$ " METERS, UNLESS OTHERWISE NOTED.
- FOR THIS PROJECT, ALL WATER SERVICES SHALL BE "TYPE A" UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL SECURE PERMISSION TO WORK ON PRIVATE PROPERTY WHEN NECESSARY TO CONNECT NEW WATER SERVICES TO EXISTING SERVICE LINES.



VICINITY MAP  
SCALE: 1"=1000'

### EROSION CONTROL SYMBOLS:

- |      |                                   |
|------|-----------------------------------|
| (SF) | 3.05 SILT FENCE                   |
| (P)  | 3.07 STORM DRAIN INLET PROTECTION |
| (TO) | 3.30 TOPSOILING                   |
| (PS) | 3.32 PERMANENT SEEDING            |
| (MU) | 3.35 MULCHING                     |

### LEGEND:

---	LIMITS OF DISTURBANCE LINE	TELE PED	EXISTING TELEPHONE PEDESTAL
---	PROPERTY LINE	GV	EXISTING GAS VALVE
---	EXISTING 2' CONTOURS	GM	EXISTING GAS METER
---	PROPOSED 2' CONTOURS	LP	EXISTING LIGHT POLE
x 90.56	EXISTING SPOT ELEVATION	W	EXISTING WELL
x 90.56	PROPOSED SPOT ELEVATION	DR	DRILL HOLE
x 90.56	PROPOSED TOP CURB ELEVATION	FD	EXISTING FIRE HYDRANT
x 90.56	PROPOSED BOTTOM CURB ELEVATION	FW	PROPOSED FIRE HYDRANT
==B"S==	EXISTING SANITARY SEWER	WM	EXISTING WATER VALVE
---	PROPOSED SANITARY SEWER	WM	PROPOSED WATER VALVE
==6"W==	EXISTING WATERLINE	WM	EXISTING WATER SERVICE
---	PROPOSED WATERLINE	WM	PROPOSED WATER SERVICE
==24"==	EXISTING STORM SEWER	CO	EXISTING SEWER CLEANOUT
---	PROPOSED STORM SEWER	CO	PROPOSED SEWER CLEANOUT
---	EXISTING EDGE OF PAVEMENT	SMH	EXISTING SEWER MANHOLE
---	PROPOSED PAVEMENT	SMH	PROPOSED SEWER MANHOLE
---	PROPOSED GRAVEL	SHR	EXISTING SHRUB
---	PROPOSED CONCRETE/SIDEWALK	TR	EXISTING TREE
---	EXISTING BUILDING	+	PROPOSED TREE
---	PROPOSED BUILDING	+	EXISTING SIGN
---OHE---	EXISTING OVERHEAD ELECTRIC	+	PROPOSED SIGN
---UGE---	EXISTING BURIED ELECTRIC	TP	BORE HOLE/TEST PIT
---TV---	EXISTING BURIED CABLE TV LINE	CP	CONTROL POINT
---G---	EXISTING GAS LINE	RF	IRON ROD FOUND
---TEL---	EXISTING BURIED TELEPHONE LINE	IRS	IRON ROD SET
---	EXISTING FENCE LINE	IR	PROPERTY CORNER
---	EXISTING TREELINE	FP	FENCE POST
U.P.	BENCHMARK LOCATION	(TBR)	TO BE REMOVED
---	EXISTING UTILITY POLE	MB	EXISTING MAILBOX
---	EXISTING GUY WIRE		

### ABBREVIATION LEGEND:

A/C	AT	LB.	POUND
AC	AIR CONDITIONER	M.B.L.	METER
ALT.	ALTERNATE	MAG.	MINIMUM BUILDING LINE
APPROX.	APPROXIMATE	MAX.	MAGISTERIAL
AVG.	AVERAGE	MB	MAIL BOX
B.M.	BENCHMARK	MH	MANHOLE
BC	BOTTOM OF CURB	M	MILE
BLVD.	BOULEVARD	MIN.	MINIMUM
BSMT	BASEMENT	MON.	MONUMENT
BW.	BOTTOM OF WALL	MTL	METAL
C.F.	CUBIC FEET	N.I.C.	NOT IN CONTRACT
CI.	CURB INLET	N.S.	NORFOLK & SOUTHERN
CM.U	CONCRETE MASONRY UNIT	N.T.S.	NOT TO SCALE
C.V.	CHECK VALVE	N/F	NOW OR FORMERLY
C.Y.	CUBIC YARD	NBL	NORTHBOND LANE
CAL.	CALIPER	NO./#	NUMBER
CATV	CABLE TELEVISION	NRV	NEW RIVER VALLEY
CHD	CHORD	O.D.	OUTSIDE DIAMETER
CMP	CORRUGATED METAL PIPE	O.F.C.I.	OWNER FURNISHED CONTRACTOR INSTALLED
CO	CLEAN-OUT	OH	OVERHEAD
CO.	COUNTY	OHE	OVERHEAD ELECTRIC
CONC.	CONCRETE	P.B.	PLAT BOOK
CRK.	CREEK	P.U.	PUBLIC UTILITY
D.B.	DEED BOOK	P.U. & D.E.	PUBLIC UTILITY AND DRAINAGE EASEMENT
D.E.	DRAINAGE EASEMENT	P.U.E.	PUBLIC UTILITY EASEMENT
D.I.	DROP INLET	P.	POLYETHYLENE
D.L.P.	DUCTILE IRON PIPE	PED.	PEDESTAL
D.S.	DOWN SPOUT	PAGE	PAGE
DECD.	DEGREES	PROP.	PROPOSED
DEG.	DEGREES	PSI	POUNDS PER SQUARE INCH
DET.	DETAIL	PVC	POLYVINYLCHLORIDE
DFC	DRAINFIELD CORNER	PVMT	PAVEMENT
DI	DROP INLET	R	RADIUS
DIA.	DIAMETER	R.R.	RAILROAD
DIST.	DISTRICT	R/W	RIGHT-OF-WAY
DR.	DRIVE	RCP	REINFORCED CONCRETE PIPE
DWG	DRAWING	RD.	ROAD
DWLG	DWELLING	REF.	REFERENCE
E.G.	EDGE OF GRAVEL	REQ'D	REQUIRED
E.P.	EDGE OF PAVEMENT	RET.	RETAINING
EA.	EACH	REV.	REVISION
EBL	EASTBOUND LANE	ROUTE	ROUTE
ELEV.	ELEVATION	R.W.Y.	RAILWAY
ED.	EDGE OF WATER	S.D.	STORM DRAIN
ESMT.	EASEMENT	SDMH	STORM DRAIN MANHOLE
EVS.	EVERGREEN	S.F.	SQUARE FEET
EXIST.	EXISTING	SBL	SOUTHBOND LANE
EXT.	EXTENSION	SCH	SCHEDULE
F.E.M.A.	FEDERAL EMERGENCY MANAGEMENT AGENCY	SH.	SHEET
F.H.	FIRE HYDRANT	SHF.	SPECIFICATION
F.I.R.M.	FLOOD INSURANCE RATE MAP	SPK	SEPTIC TANK
F/L	FLOW LINE	SSEW	SANITARY SEWER
F.	FINISH FLOOR	ST.	SANITARY SEWER MANHOLE
FND	FOUND	ST.	STREET
FR	FRAME	STA.	STATION
FT.	FEET	STD.	STANDARD
G.M.	GAS METER	STY.	STORY
G.V.	GATE VALVE	SWME	STORMWATER MANAGEMENT EASEMENT
ONI	GAY AND NEEL, INC.	SWMP	STORMWATER MANAGEMENT FACILITY
OPM	GALLONS PER MINUTE	TH	TOP OF CURB/CONCRETE
GRAV.	GRAVEL	TCP	TERRA COTTA PIPE
GRD	GROUND	TEL	TELEPHONE
HP	HIGH POINT	TOS	TOP OF BANK
H.U.D.	HOUSING AND URBAN DEVELOPMENT	TOS	TOP OF SLOPE
H/C	HANDICAPPED	TW	TOP OF WALL
HCR	HANDICAPPED RAMP	TYP.	TYPICAL
HOPE	HIGH DENSITY POLYETHYLENE PIPE	U.G.	UNDERGROUND
HR	HEADWALL	U.P.	UTILITY POLE
HW	HYDRANT	U.S.	UNITED STATES
HYD.	HYDRAULIC	VA.	VIRGINIA
I.D.	INSIDE DIAMETER	VDOT	VIRGINIA DEPARTMENT OF TRANSPORTATION
IN.	INCH	VECH	VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK
INST.	INSTRUMENT	W.B.	WELL BOOK
INT.	INTERSECTION	W.F.	WELDED WIRE FABRIC
INV.	INVERT	W	WITH
INVU	INVERT IN	WBL	WESTBOUND LANE
INVERT	INVERT OUT	WM	WATER METER
L.F.	LINEAR FOOT	WTNK	WATER TANK
LP	LIGHT POLE	WV	WATER VALVE
L.P.	LOW POINT	WW	WOVEN WIRE
L.S.I.	LANDSCAPED ISLAND	XFMR	TRANSFORMER

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### APPROVAL & ACCEPTANCE:

APPROVED FOR CONSTRUCTION \_\_\_\_\_ DATE \_\_\_\_\_

GAY AND NEEL, INC.



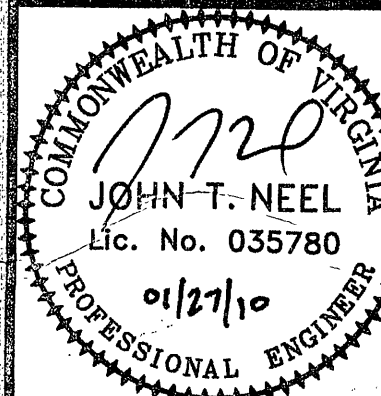
CIVIL ENGINEERING  
LAND PLANNING  
SURVEYING

328 Mountain Avenue S.W.  
Roanoke, Virginia 24016  
Phone: (540) 345-1110 Fax: (540) 345-5560  
Email: info@gayandneel.com

GNI Cover Sheet

Ingal Boulevard Waterline  
Replacement

Roanoke County, Virginia



### REVISED:

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DESIGNED/CALC.: TMK  
CHECKED: RWA  
DRAWN: RWA  
SCALE: 1"=30'  
DATE: 01/08/09

JOB NO. 2119.0

SHEET C0-02