McCONVILLE ROAD CULVERT REPLACEMENT

LYNCHBURG, VIRGINIA

CITY PROJECT NO.: T0200

ENGINEERING PROJECT NO.: 11018-D

SITE NOTES:

1.) DEVELOPER/OWNER:
CITY OF LYNCHBURG
900 CHURCH STREET
LYNCHBURG, VA 24504

2.) CONTRACTOR TO FIELD VERIFY ALL INVERTS AND CONNECTION POINTS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. IF POTENTIAL CONFLICTS ARE DETECTED, CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY.

3.) TOPOGRAPHIC INFORMATION IS TAKEN FROM AERIAL AND CITY GIS.

4.) THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK AND FOR ANY DAMAGES THAT OCCUR BY HIS/HER FAILURE TO LOCATE OR PRESERVE THESE UTILITIES. IF, DURING CONSTRUCTION, THE CONTRACTOR SHOULD ENCOUNTER UTILITIES OTHER THAN THOSE SHOWN ON THE PLANS HE/SHE SHOULD NOTIFY THE ENGINEER AND TAKE NECESSARY AND PROPER STEPS TO PROTECT THE FACILITY AND ASSURE THE CONTINUANCE OF SERVICE.

5.) DISPOSE OF TREES, STUMPS AND OTHER DEBRIS OFF SITE.

6.) ANY DISCREPANCIES FOUND BETWEEN THE DRAWINGS AND SITE CONDITIONS OR ANY DISCREPANCIES OR AMBIGUITIES IN THE DRAWINGS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER. WORK DONE BY THE CONTRACTOR WITHOUT DIRECTION AFTER THE DISCOVERY OF SUCH INCONSISTENCIES SHALL BE DONE AT THE CONTRACTOR'S RISK.

7.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL NECESSARY PERMITS BEFORE THE START OF CONSTRUCTION.

8.) CONTACT CITY ENVIRONMENTAL REVIEWER, CITY CONSTRUCTION COORDINATOR AND MISS UTILITY (811) 72 HOURS IN ADVANCE OF ANY CONSTRUCTION ACTIVITY.

9.) THE PROPERTY SHOWN HEREON IS NOT WITHIN A FEMA 100 YEAR FLOOD PLAIN. SEE PANEL# 51009300239D, ZONE "X", DATED JUNE 3, 2008.

10.) DIMENSIONS ARE FROM THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.

11.) ALL PAVING AND CONCRETE FLATWORK SHALL BE AS PER APPLICABLE SECTIONS OF THE CITY OF LYNCHBURG'S MANUAL OF SPECIFICATIONS AND STANDARD DETAILS.

12.) ALL FILLS TO BE COMPACTED IN 8" LOOSE LIFTS TO 95% STD. PROCTOR.

13.) ALL DISTURBED AREAS TO RECEIVE TEMPORARY SEEDING, PERMANENT SEEDING AND MULCH.

14.) HDPE PIPE SHALL BE DOUBLE WALL TYPE "S" WITH SMOOTH INTERIOR AND MEET AASHTO REQUIREMENTS M294. PVC PIPE SHALL BE SDR-35.

15.) POLYPROPYLENE CULVERT PIPES SHALL CONFORM TO AASHTO REQUIREMENTS M330. PIPE BEDDING SHALL COMPLY WITH VDOT PIPE BEDDING STANDARD PB-1.

16.) NO SITE, LOGGING, GRUBBING OR GRADING IS PERMITTED PRIOR TO ISSUANCE OF A LAND DISTURBING PERMIT. NO BURNING OF ANY DEBRIS WITHOUT PRIOR APPROVAL FROM THE FIRE MARSHALL'S OFFICE.

17.) THIS PROJECT HAS VSMP COVERAGE. THIS PROJECTS REGISTRATION # IS VAR10G103.

18.) IN STREAM WORK IS PERMITTED WITH THE USACE. PERMIT # NAO-204-1057. PLEASE SEE THE PROJECT MANUAL AND SPECIFICATIONS FOR THE PERMIT AND CONDITIONS THEREOF.

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LYNCHBURG, VA 24502
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COMCAST
BRIAN BEMIS
CONSTRUCTION TECHNICIAN
434-996-8061
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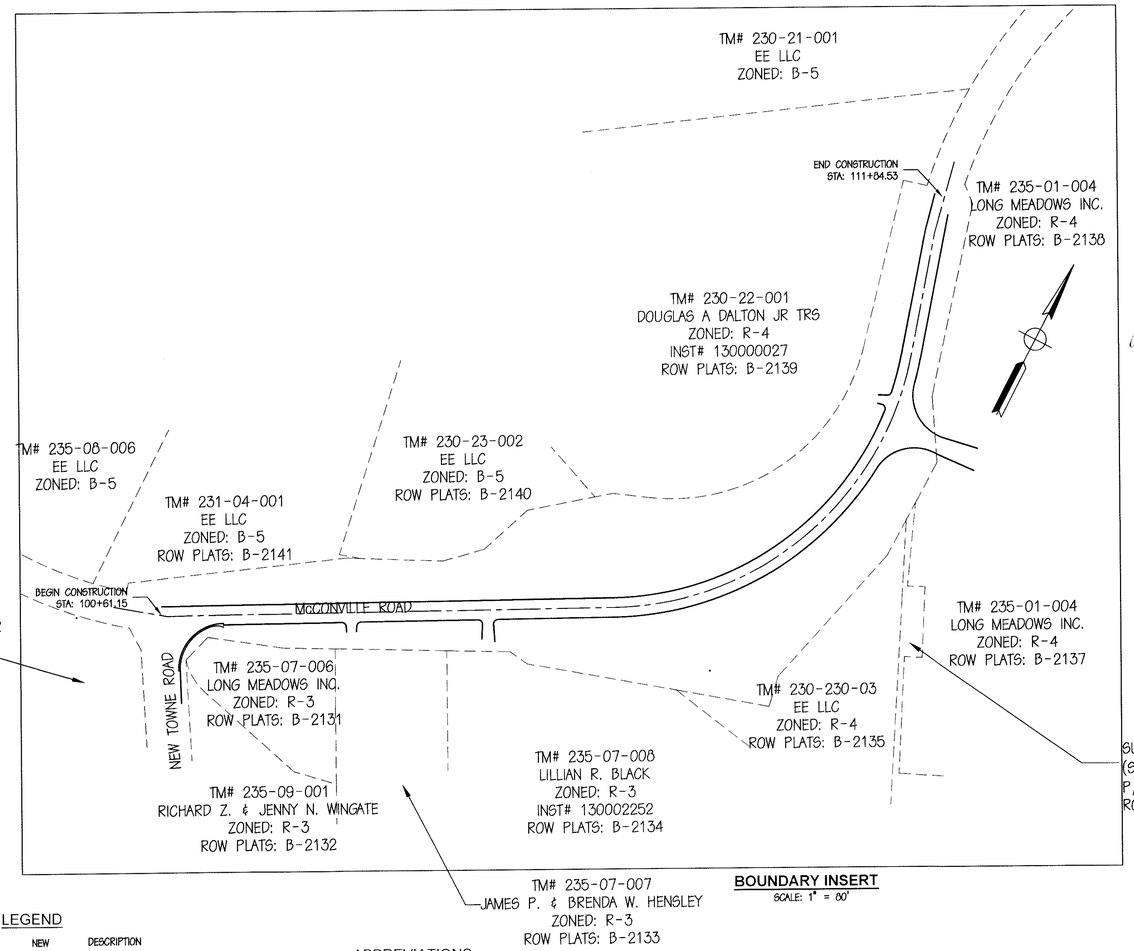

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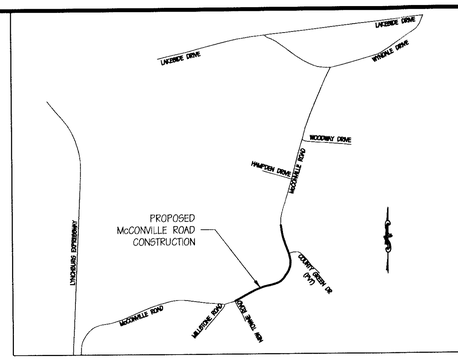

VICINITY MAP
NOT TO SCALE

OWNER — 23 Sept. 2015

E&SC/SWM APPROVAL — 9/23/15

UTILITY ENGINEER — 9/19/15

LEGEND

EXISTING	NEW	DESCRIPTION
		BUILDING WALL
		CONC. WALKS
1340	1340	CONTOURS
×1350.6	+ 50 62/TC	SPOT ELEVATION
		STORM SEWER
S	S	SANITARY SEWER & MANHOLES
W	W	WATER LINE, VALVE & FIRE HYDRANT
UE		UNDERGROUND ELECTRIC LINE
OE		OVERHEAD ELECTRIC LINE
G		GAS LINE
		EDGE OF PAVEMENT
		CURB AND GUTTER 25.04A
		REVERSE CURB AND GUTTER 25.04AR
X		FENCE
		TREELINE

ABBREVIATIONS

AB	ANCHOR BLOCK	HOR	HORIZONTAL
BLDG	BUILDING	INV	INVERT
BC	BOTTOM FACE OF CURB	IN	INVERT IN
BM	BENCHMARK	IO	INVERT OUT
CL	CENTERLINE	MAX	MAXIMUM
CL	CLASS	MECH	MECHANICAL
CMP	CORRUGATED METAL PIPE	MH	MANHOLE
CO	CLEANOUT	MIN	MINIMUM
CONC	CONCRETE	PVC	BEGIN VERTICAL CURVE
DI	DROP INLET	PVC	POLYVINYL CHLORIDE
DIA	DIAMETER	PVT	END VERTICAL CURVE
DIP	DUCTILE IRON PIPE	RCP	REINFORCED CONCRETE PIPE
EA	EACH	SHT	SHEET
EC	EROSION CONTROL	STR	STRUCTURE
ELEV	ELEVATION	SW	SIDEWALK
EP	EDGE OF PAVEMENT	T	TOP
ES	END SECTION	TBR	TO BE REMOVED
EX	EXISTING	TC	TOP BACK OF CURB
FB	FACE OF BUILDING	TYP	TYPICAL
FF	FINISHED FLOOR ELEVATION	VB	VERTICAL BEND
		VDOT	VIRGINIA DEPARTMENT OF TRANSPORTATION
FH	FIRE HYDRANT		
GV	GATE VALVE	WWM	WELDED WIRE MESH
HB	HORIZONTAL BEND	W/	WITH
		WV	WATER VALVE

SHEET INDEX

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C-103	4 of 13	UTILITY PLAN
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C-104A	7 of 13	ROAD CROSS SECTIONS
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C-110	13 of 13	DRAINAGE AREAS

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CONSULTANTS

COMMONWEALTH OF VIRGINIA
NORMAN B. WALTON JR.
No. 036517
9/31/15
PROFESSIONAL ENGINEER

JOB:

McCONVILLE ROAD
CULVERT REPLACEMENT
LYNCHBURG, VIRGINIA
CITY PROJECT NO.: T0200
ENGINEERING PROJECT NO.: 11018-D

CLIENT:

CITY OF LYNCHBURG

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5	05/03/13	FINAL SUBMISSION
4	11/08/12	ROW REVISIONS
3	09/19/12	SIGN AND LIMITS REVISION
2	05/11/12	STREAM DIVERSION & W.
1	01/24/12	REVISED PER CITY COMMENTS

ISSUE:	10/12/2011
CONTOUR INTERVAL:	2'
DESIGNED BY:	MJD/NBW
DRAWN BY:	MJD
CHECKED BY:	NBW

SHEET TITLE

COVER SHEET
CONSTRUCTION PLANS

SHEET C-100

JOB NO. 11175 — SHEET NO. 1 OF 13

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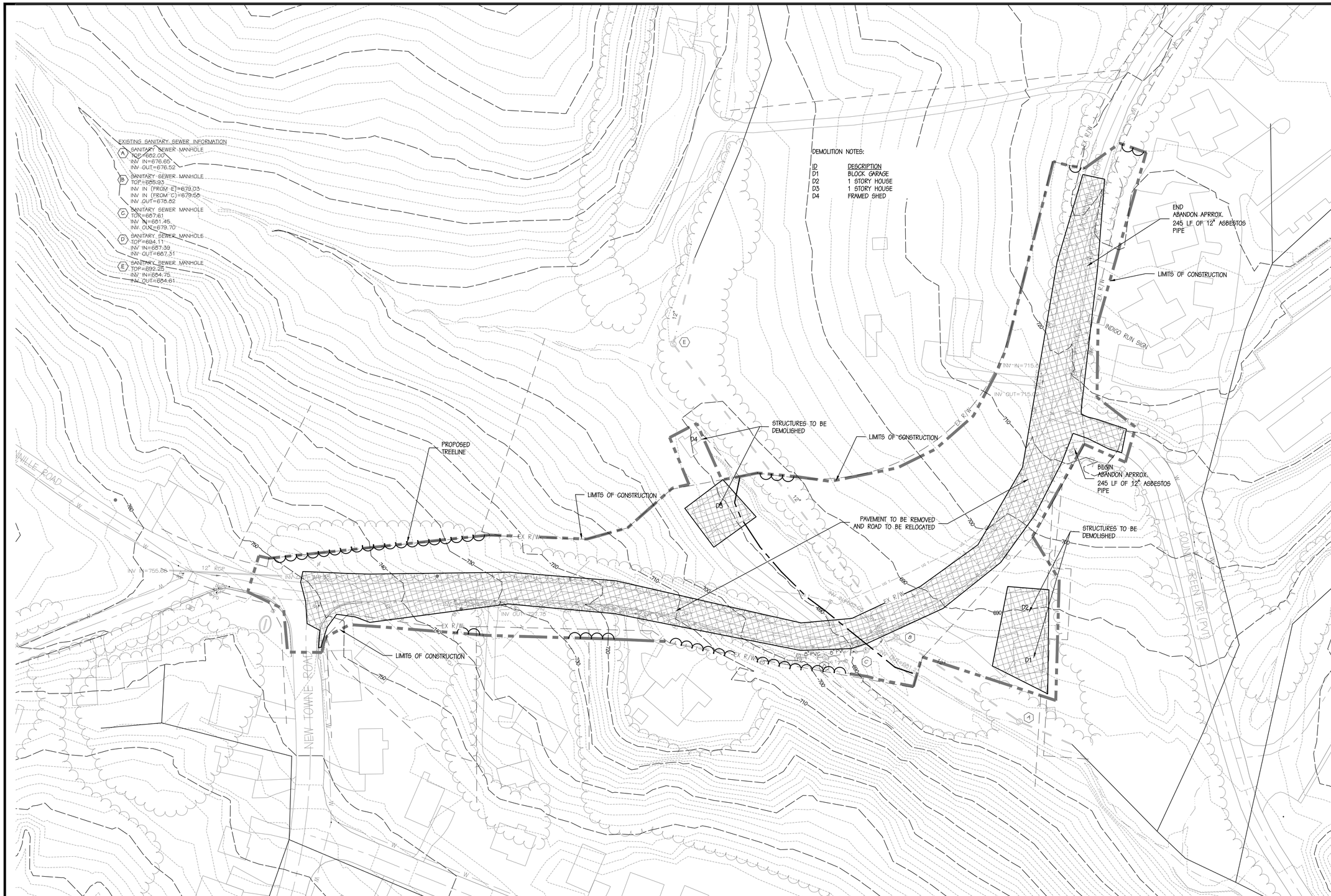

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SHEET TITLE

EXISTING CONDITIONS
& DEMOLITION
CONSTRUCTION PLANS

GRAPHIC SCALE
0 50 100
1"=50'

SHEET
C-101

JOB NO.: 11175
SHEET NO 2 OF 13

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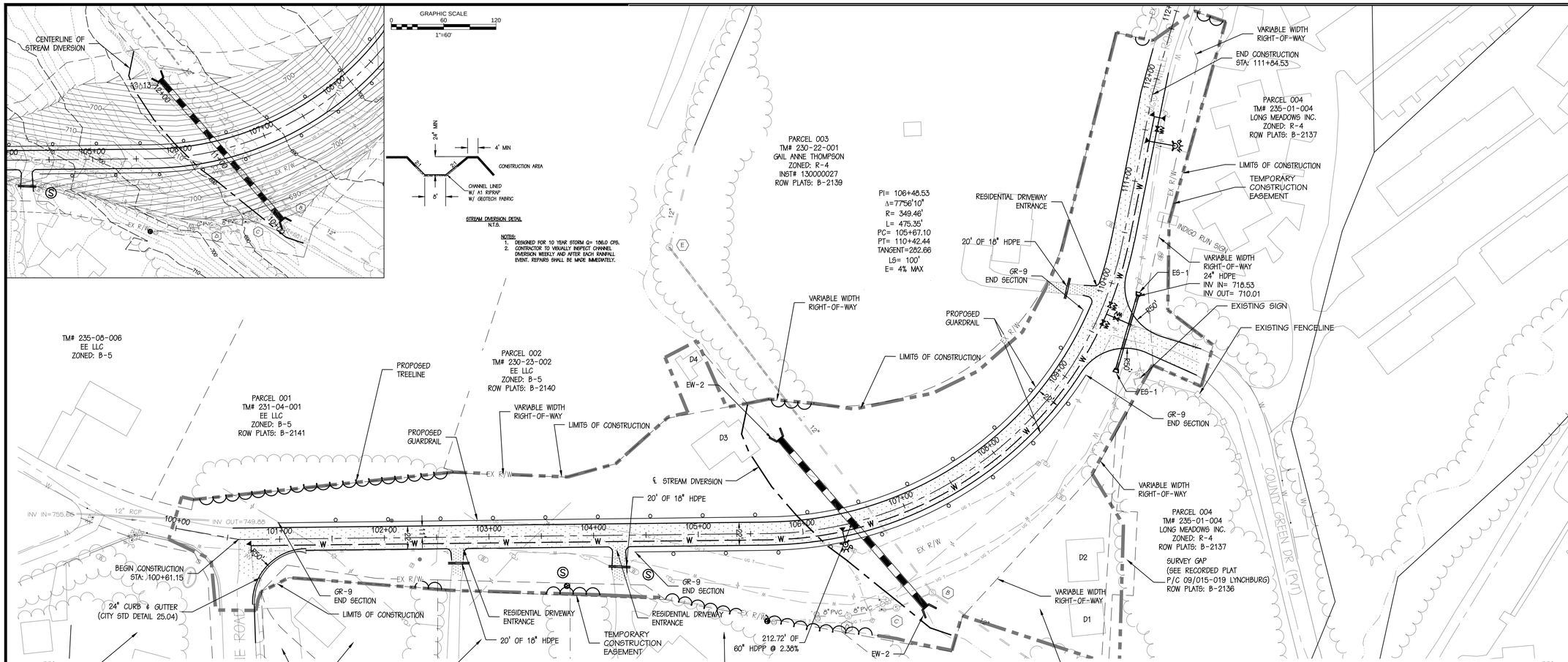

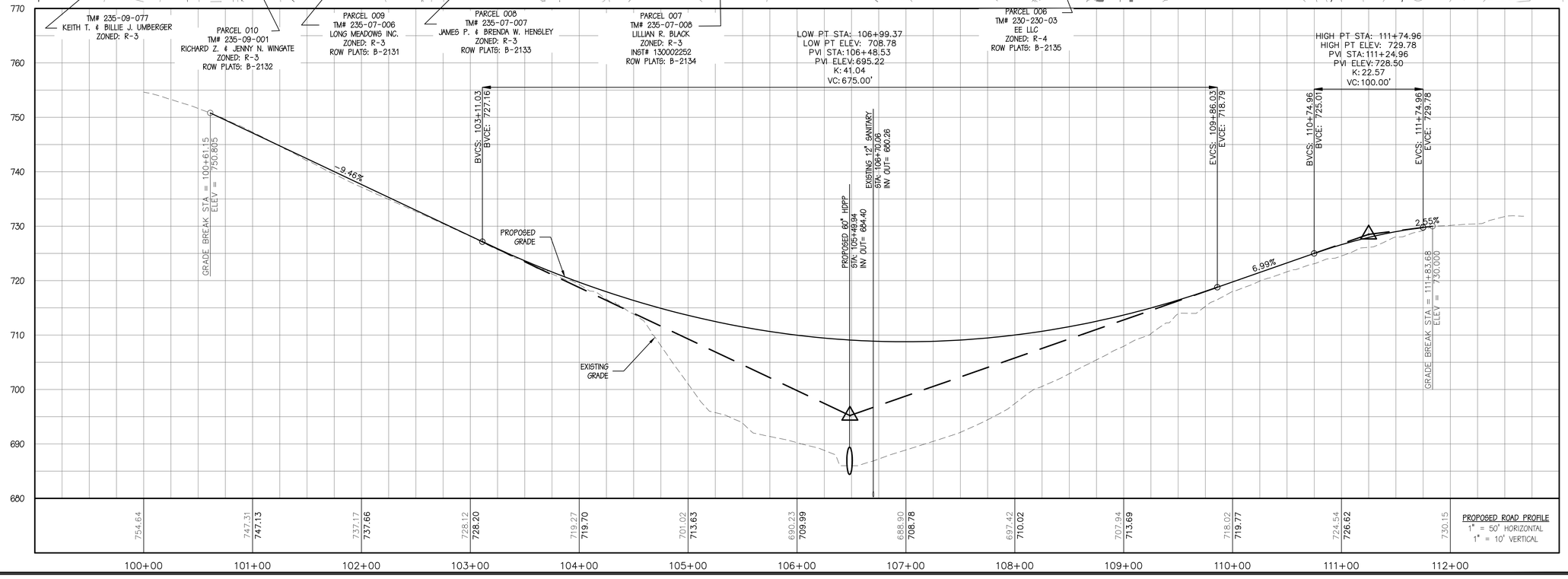

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SHEET TITLE

ROAD PLAN & PROFILE
CONSTRUCTION PLANS

GRAPHIC SCALE
0 50 100
1"=50'

SHEET
C-102

JOB NO.: 11175
SHEET NO 3 OF 13

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NOTES:

1) CONTRACTOR TO ASSURE ALL SERVICES IN THE LIMITS OF CONSTRUCTION REMAIN ACTIVE AT ALL TIMES.

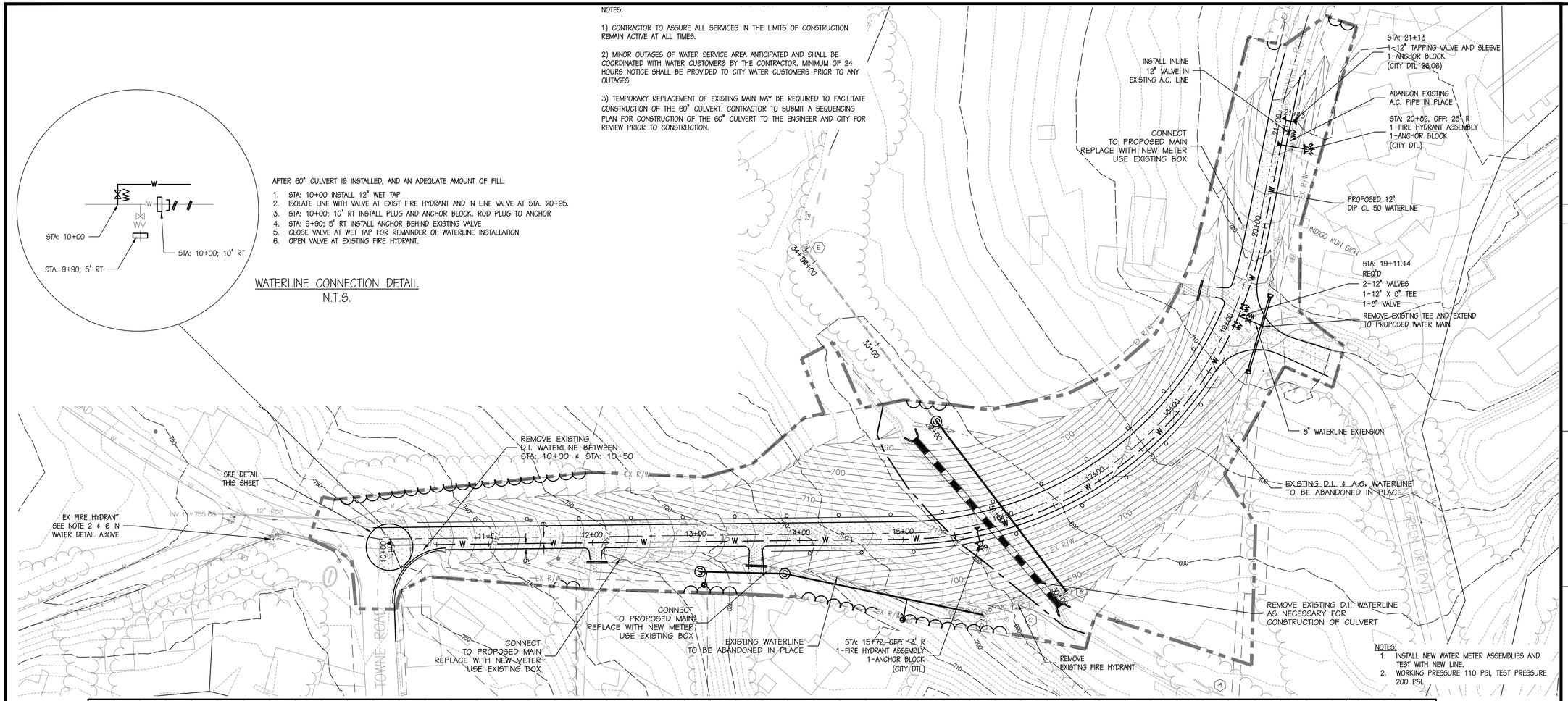
2) MINOR OUTAGES OF WATER SERVICE AREA ANTICIPATED AND SHALL BE COORDINATED WITH WATER CUSTOMERS BY THE CONTRACTOR. MINIMUM OF 24 HOURS NOTICE SHALL BE PROVIDED TO CITY WATER CUSTOMERS PRIOR TO ANY OUTAGES.

3) TEMPORARY REPLACEMENT OF EXISTING MAIN MAY BE REQUIRED TO FACILITATE CONSTRUCTION OF THE 60" CULVERT. CONTRACTOR TO SUBMIT A SEQUENCING PLAN FOR CONSTRUCTION OF THE 60" CULVERT TO THE ENGINEER AND CITY FOR REVIEW PRIOR TO CONSTRUCTION.

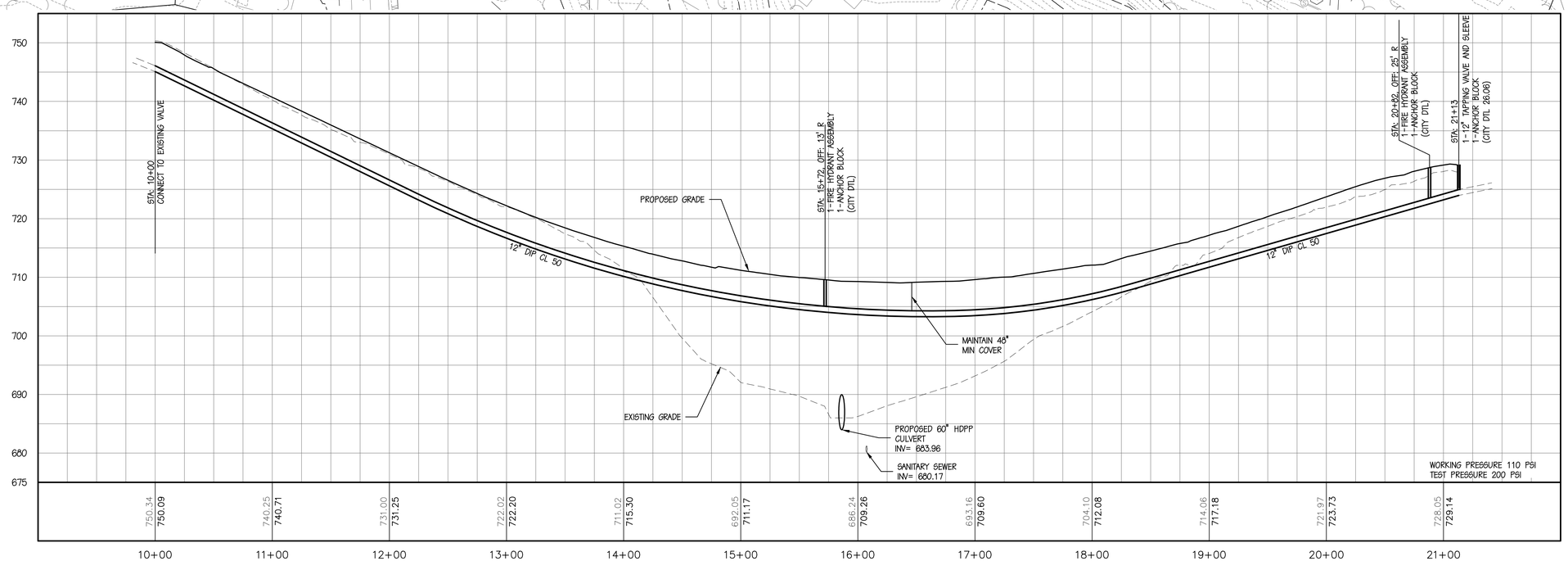
AFTER 60" CULVERT IS INSTALLED, AND AN ADEQUATE AMOUNT OF FILL:

1. STA: 10+00 INSTALL 12" WET TAP
2. ISOLATE LINE WITH VALVE AT EXIST FIRE HYDRANT AND IN LINE VALVE AT STA. 20+95.
3. STA: 10+00; 10' RT INSTALL PLUG AND ANCHOR BLOCK. ROD PLUG TO ANCHOR
4. STA: 9+90; 5' RT INSTALL ANCHOR BEHIND EXISTING VALVE
5. CLOSE VALVE AT WET TAP FOR REMAINDER OF WATERLINE INSTALLATION
6. OPEN VALVE AT EXISTING FIRE HYDRANT.

WATERLINE CONNECTION DETAIL
N.T.S.



NOTES:
1. INSTALL NEW WATER METER ASSEMBLIES AND TEST WITH NEW LINE.
2. WORKING PRESSURE 110 PSI, TEST PRESSURE 200 PSI.



PROPOSED WATERLINE PROFILE
1" = 50' HORIZONTAL
1" = 10' VERTICAL

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UTILITY PLAN
CONSTRUCTION PLANS

GRAPHIC SCALE
0 50 100
1"=50'

SHEET
C-103

JOB NO.: 11175
SHEET NO 4 OF 13

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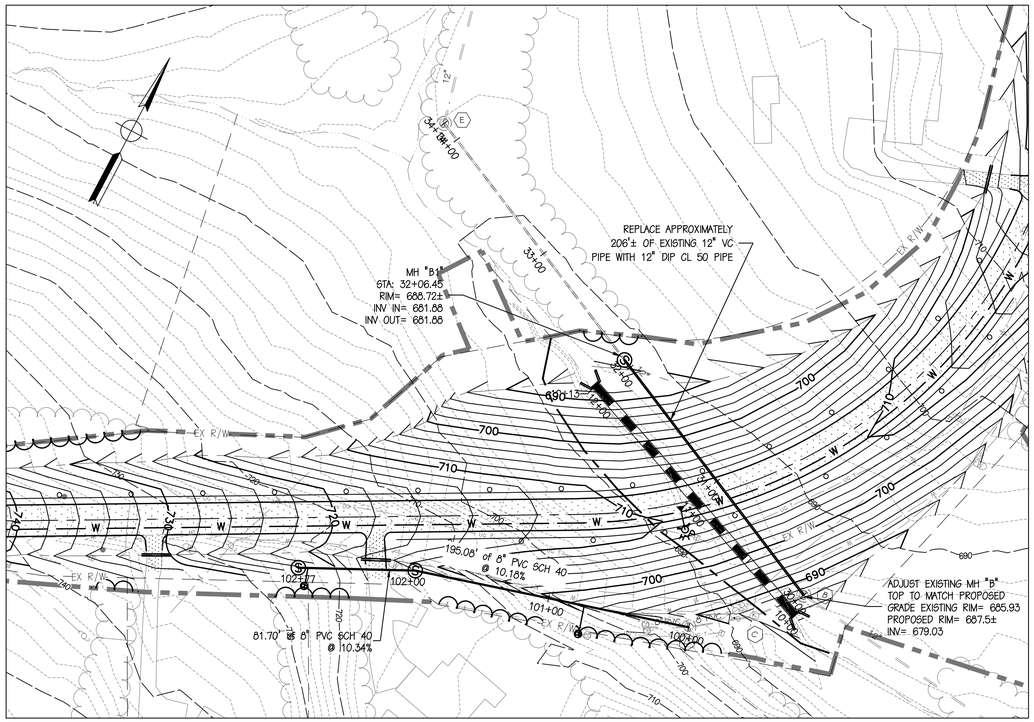

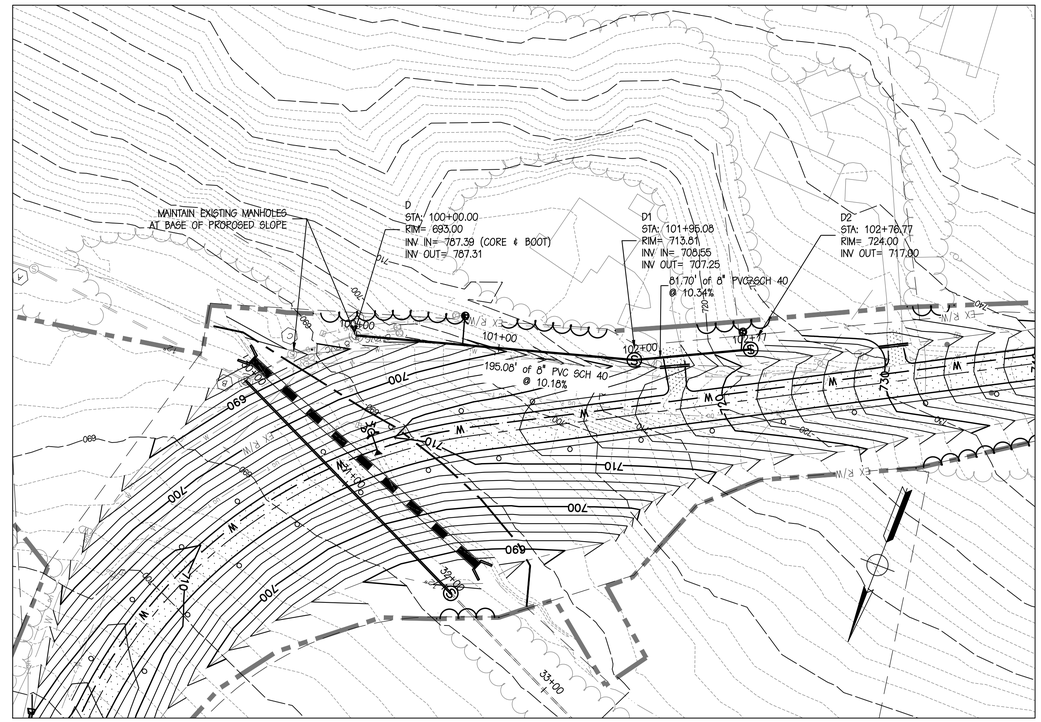

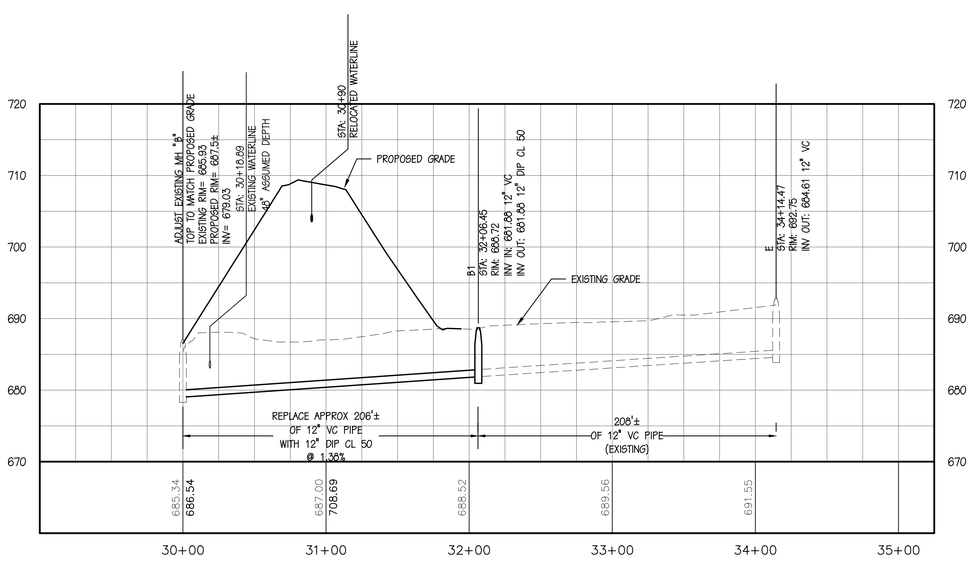

SANITARY SEWER REPLACEMENT PROFILE
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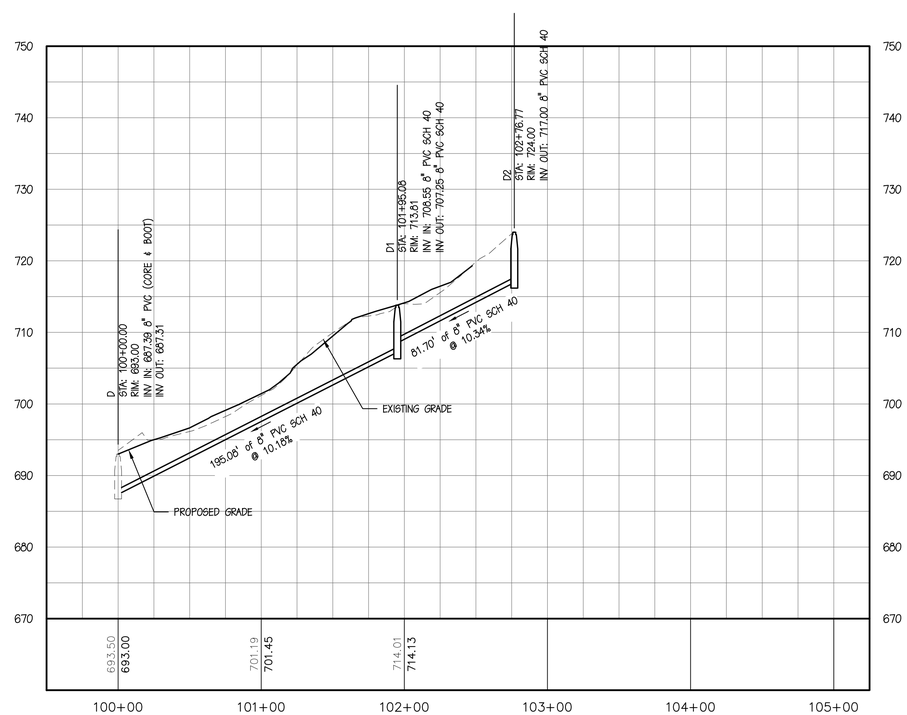
1" = 10' VERTICAL



PROPOSED SANITARY SEWER PROFILE
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UTILITY PLAN
CONSTRUCTION PLANS

GRAPHIC SCALE
0 50 100
1"=50'

SHEET
C-103A

JOB NO.: 11175
SHEET NO 5 OF 13

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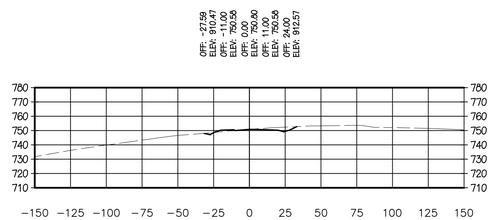

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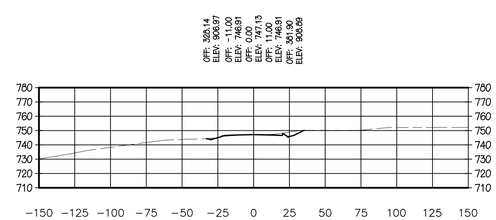

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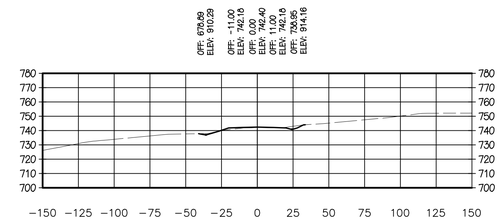

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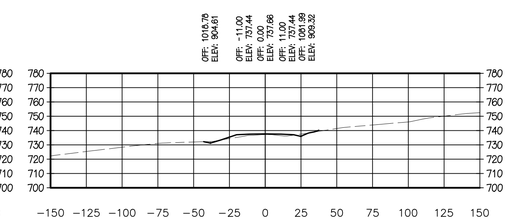

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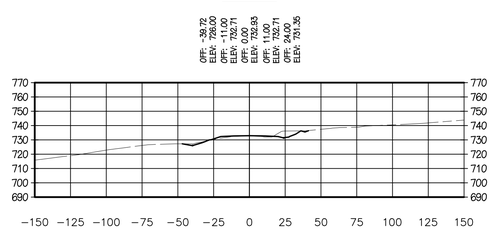

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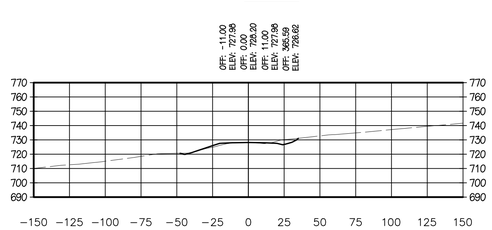

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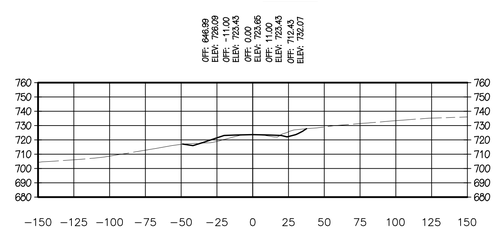

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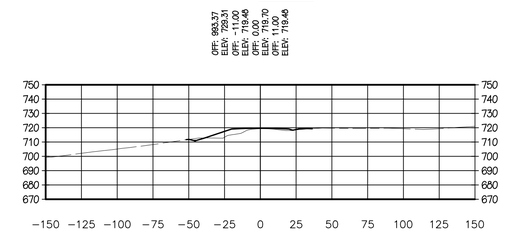

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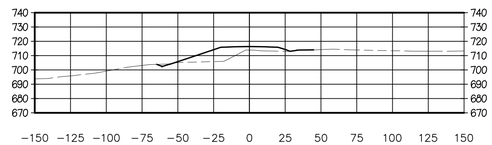

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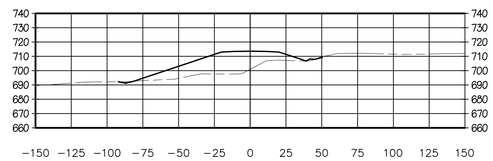

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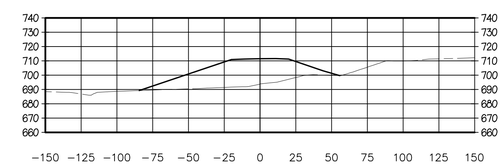

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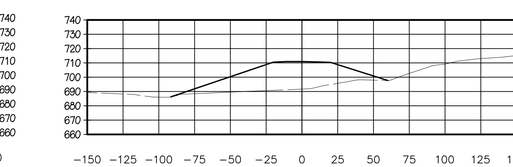

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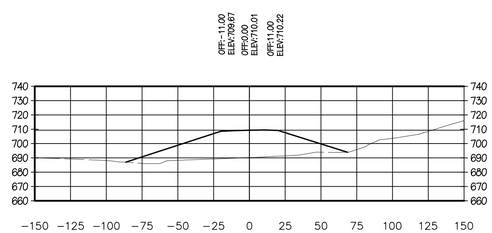

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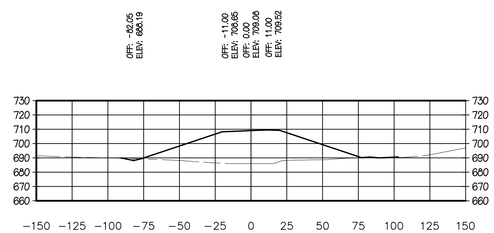

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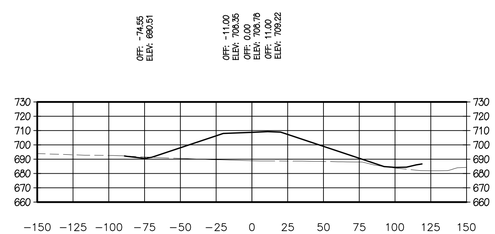

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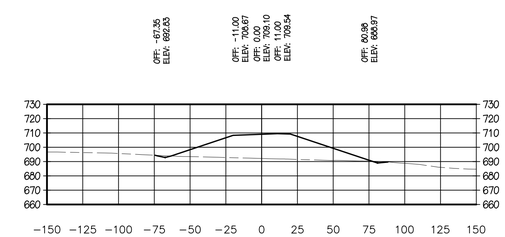

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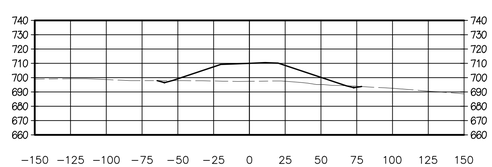

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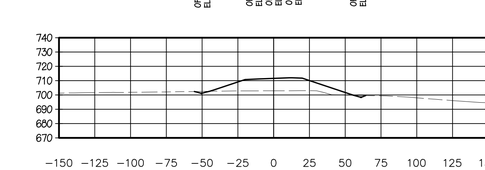

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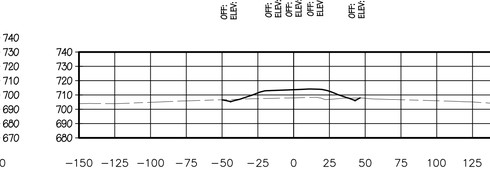

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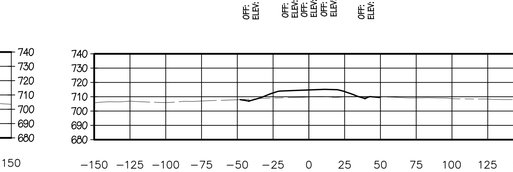

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No. 036517
8/31/15
PROFESSIONAL ENGINEER

JOB:

McCONVILLE ROAD
CULVERT REPLACEMENT
LYNCHBURG, VIRGINIA
CITY PROJECT NO.: T0200
ENGINEERING PROJECT NO.: 11018-D

CLIENT:

CITY OF LYNCHBURG

MARK	DATE	DESCRIPTION
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1	01/24/12	REVISED PER CITY COMMENTS

ISSUE: 10/12/2011
CONTOUR INTERVAL: 2'
DESIGNED BY: MJD/NBW
DRAWN BY: MJD
CHECKED BY: NBW

SHEET TITLE

ROAD CROSS SECTIONS
CONSTRUCTION PLANS

GRAPHIC SCALE
0 50 100
1"=50'

SHEET
C-104

JOB NO.: 11175
SHEET NO 6 OF 13

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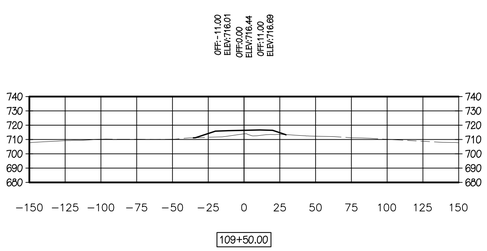

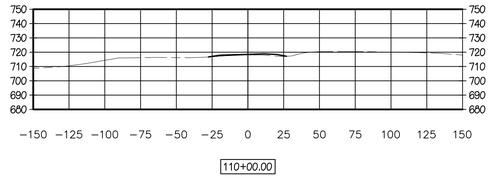

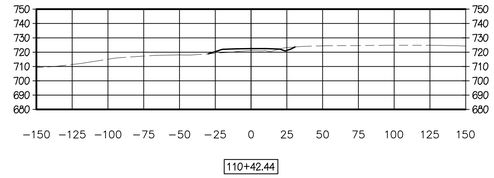

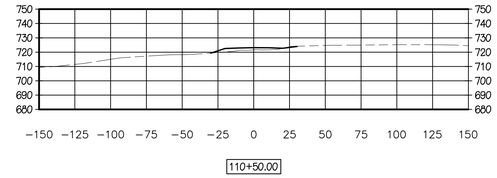

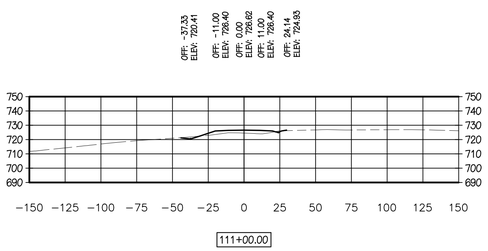

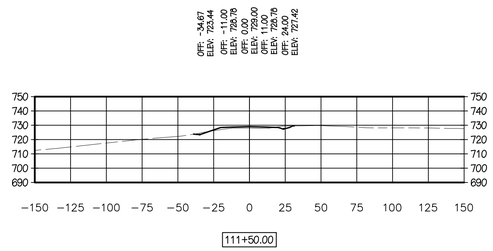

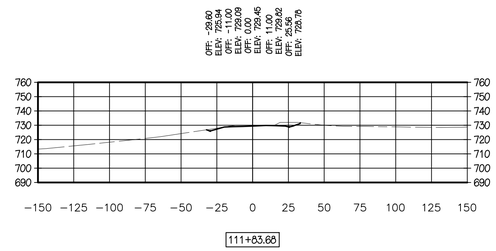

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CHECKED BY:	NBW

SHEET TITLE

ROAD CROSS SECTIONS
CONSTRUCTION PLANS

GRAPHIC SCALE
0 50 100
1"=50'

SHEET
C-104A

JOB NO.: 11175
SHEET NO 7 OF 13

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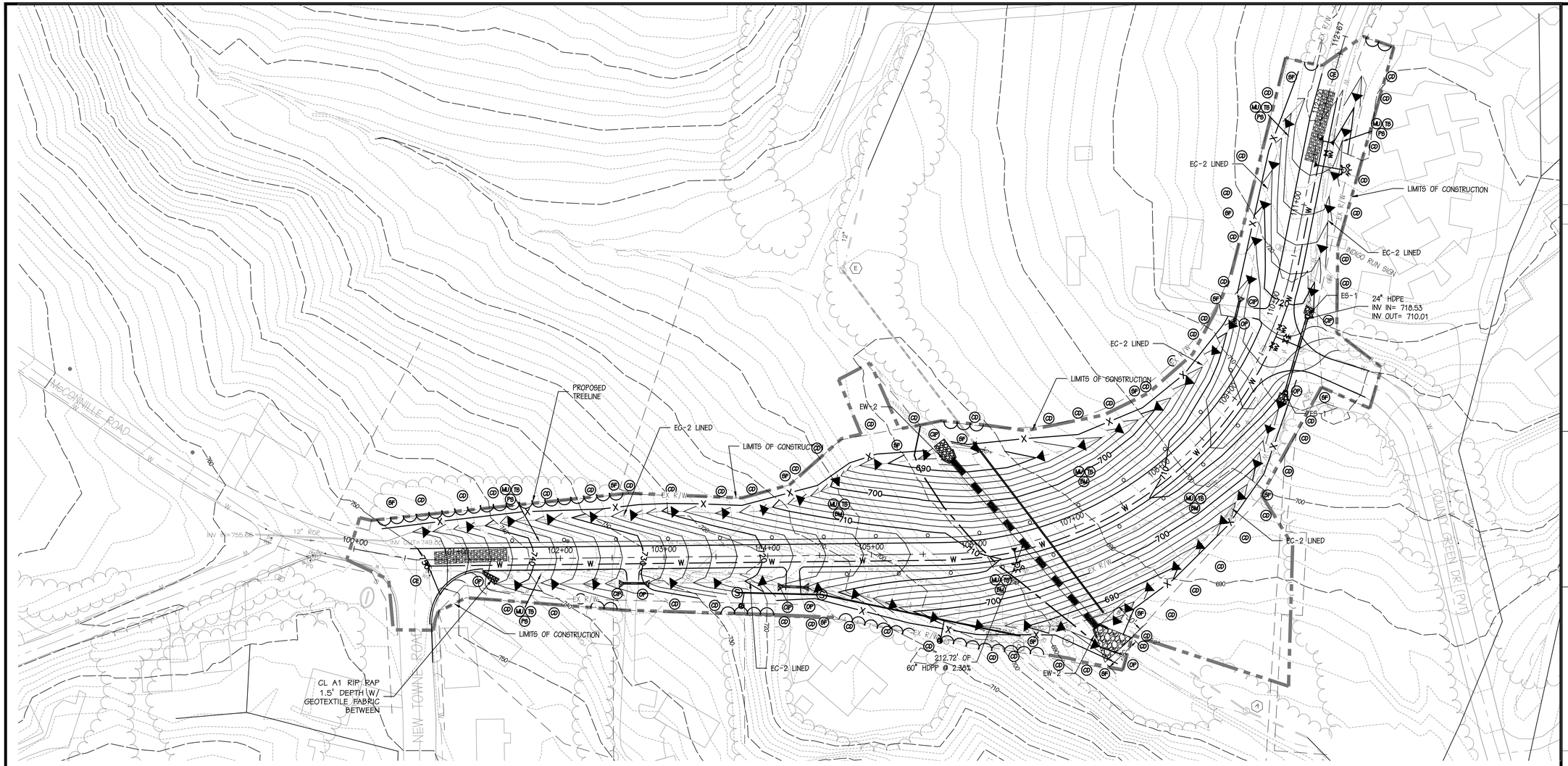
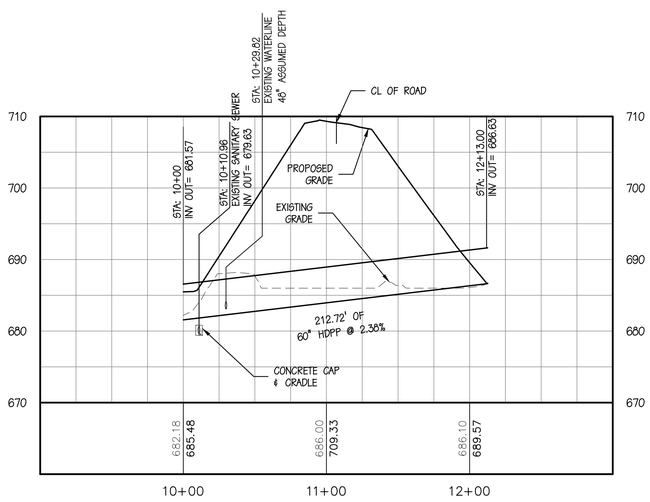
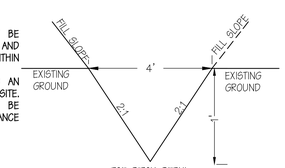




PROPOSED CULVERT PROFILE
1" = 50' HORIZONTAL
1" = 10' VERTICAL

NOTES:

1. ALL EROSION CONTROL/STORMWATER MANAGEMENT MEASURES MUST BE DE-WATERED PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY AND ALL TEMPORARY EROSION CONTROL MEASURES MUST BE REMOVED WITHIN 30 DAYS OF PERMANENT STABILIZATION OF THE SITE.
2. ALL UNUSABLE MATERIAL REMOVED FROM THE SITE MUST GO TO AN APPROVED SITE. ALL FILL MATERIAL MUST COME FROM AN APPROVED SITE. LOCATIONS AND PERMIT NUMBERS FOR OFFSITE LOCATIONS MUST BE PROVIDED TO THE CITY OF LYNCHBURG ENVIRONMENTAL COMPLIANCE INSPECTOR BEFORE ISSUANCE OF LAND DISTURBANCE PERMIT.



TOE DITCH DETAIL
(ALL TOE DITCHES TO BE EC-2 LINED)
N.T.S.

EROSION AND SEDIMENT CONTROL LEGEND

3.02	TEMPORARY STONE CONSTRUCTION ENTRANCE	CE	
3.05	SILT FENCE	SF	X—X—X
3.08	CULVERT INLET PROTECTION	CIP	
3.18	OUTLET PROTECTION	OP	
3.20	ROCK CHECK DAMS	CD	
3.31	TEMPORARY SEEDING	TS	—TS—
3.32	PERMANENT SEEDING	PS	—PS—
3.35	MULCHING	MU	—MU—
3.36	SOIL STABILIZATION BLANKETS & MATTING	BM	—BM—

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EROSION & SEDIMENT CONTROL PLAN
CONSTRUCTION PLANS

GRAPHIC SCALE
0 50 100
1"=50'

SHEET
C-105

JOB NO.: 11175
SHEET NO 8 OF 13

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EROSION AND CONTROL NARRATIVE

I. PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO REPLACE AN EXISTING CULVERT UNDER McCONVILLE ROAD, REPLACEMENT OF SANITARY SEWER VITRIFIED CLAY PIPE AND OTHER ROADWAY IMPROVEMENTS. APPROXIMATELY 4.33 AC WILL BE DISTURBED TO COMPLETE THIS PROJECT.

II. EXISTING SITE CONDITIONS

EXISTING SITE CONDITIONS INCLUDE THE ROADWAY OF McCONVILLE ROAD AND A 36" RCP CULVERT. THE PREDOMINANT GROUND COVER IS EXISTING ASPHALT OR GRASS.

III. ADJACENT PROPERTIES

McCONVILLE ROAD IS SURROUNDED BY PROPERTIES THAT ARE FULLY DEVELOPED AND TYPICALLY RESIDENTIAL IN NATURE OR FARM LAND.

IV. OFF-SITE AREAS

UNSUITABLE MATERIAL SHALL BE HAULED FROM THE SITE AND DISPOSED OF IN AN APPROVED MANNER. THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION AND SEDIMENT CONTROL PLAN TO CITY OF LYNCHBURG PERTAINING TO ANY NECESSARY OFF-SITE DISTURBED AREAS OR ON-SITE DISTURBED AREAS OUTSIDE THE LIMITS OF CLEARING SHOWN ON THESE PLANS, SUCH AS BORROW PITS, STOCKPILES, STAGING AREAS, AND SPOIL AREAS THAT ARE USED FOR THIS PROJECT.

THIS PROJECT IS AN IMPORT SITE AND A BORROW AREA WILL BE REQUIRED. THE CONTRACTOR SHALL SUPPLY LOCATIONS AND PERMIT NUMBERS FOR OFFSITE LOCATIONS TO CITY OF LYNCHBURG ENVIRONMENTAL COMPLIANCE INSPECTOR PRIOR TO ISSUANCE OF LAND DISTURBANCE PERMIT.

V. SOILS

SOILS AT THE SITE ARE CLASSIFIED AS URBAN PREVIOUSLY DEVELOPED.

VI. CRITICAL AREAS

CARE SHALL BE TAKEN TO STABILIZE ALL SLOPES AND PREVENT EROSION. ATTENTION SHALL BE SPECIFICALLY DIRECTED TO THE PROTECT THE EXISTING CREEK DURING CONSTRUCTION OPERATIONS. CARE SHALL BE TAKEN TO PREVENT SEDIMENT LADEN RUNOFF FROM LEAVING THE SITE.

VII. EROSION AND SEDIMENT CONTROL MEASURES

ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED BY THE CONTRACTOR IN ACCORDANCE WITH THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. SYMBOLS, DETAILS, AND DIMENSIONS USED ARE TAKEN FROM THE HANDBOOK, AS WELL AS THE VIRGINIA DEPARTMENT OF TRANSPORTATION'S ROAD AND BRIDGE STANDARDS, LATEST EDITION, VOLUME I OF 2.

A STRUCTURAL PRACTICES

1. SILT FENCE (SF), SPEC. 3.05: SILT FENCE BARRIERS SHALL BE PROVIDED WHERE SHOWN AND AS NEEDED TO PREVENT SEDIMENT FROM LEAVING THE SITE.
2. CULVERT INLET PROTECTION (CIP), SPEC. 3.06: CULVERT INLET PROTECTION SHALL BE PROVIDED AS SHOWN ON PLANS.
3. CHECK DAM (CD) SPEC. 3.20: PROVIDE ROCK CHECK DAMS AS SHOWN ON PLANS.

B VEGETATIVE PRACTICES

1. TEMPORARY SEEDING (TS), SPEC. 3.31: TEMPORARY SEEDING SHALL BE PROVIDED AS SHOWN ON THE SEEDING SCHEDULE FOR ALL DISTURBED AREAS.
2. PERMANENT SEEDING (PS), SPEC. 3.32: PERMANENT SEEDING SHALL BE PROVIDED AS SHOWN ON THE SEEDING SCHEDULE FOR ALL DISTURBED AREAS.
3. MULCHING (MU), SPEC. 3.35: MULCHING SHALL BE PROVIDED AS SHOWN ON THE PLANS FOR ALL DISTURBED AREAS.

C. MINIMUM STANDARDS (MS): ALL APPLICABLE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS AND MINIMUM STANDARDS SHALL BE ADHERED TO DURING ALL PHASES OF CONSTRUCTION. THESE INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:

MS-1 STABILIZATION OF DENUDED AREAS:
PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO BARE AREAS WITHIN 7 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE UNLESS OTHERWISE SHOWN. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN 7 DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE, BUT WILL REMAIN DORMANT OR UNDISTURBED FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

MS-2 STABILIZATION OF SOIL STOCKPILES:
DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

MS-3 PERMANENT VEGETATIVE COVER: A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPINION OF THE COUNTY INSPECTOR, IS UNIFORM AND MATURE ENOUGH TO SURVIVE AND INHIBIT EROSION.

MS-4 TIMING AND STABILIZATION OF SILT TRAPPING MEASURES:
STORM DRAIN INLET PROTECTION, SILT FENCING AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND DISTURBING ACTIVITY. THE STRUCTURES SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.

MS-5 STABILIZATION OF EARTHEN STRUCTURES: STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

MS-6 SEDIMENT BASINS: N/A

MS-7 CUT AND FILL SLOPES: CUT AND FILL SLOPES SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.

MS-8 CONCENTRATED RUNOFF DOWN CUT OR FILL SLOPES: CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.

MS-9 WATER SEEPS FROM A SLOPE FACE: WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.

MS-10 STORM SEWER INLET PROTECTION: N/A

MS-11 STABILIZATION OF OUTLETS: BEFORE NEWLY CONSTRUCTED STORM WATER CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.

MS-12 WORK IN LIVE WATERCOURSES: PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT AND SEDIMENT TRANSPORT WHEN WORKING IN LIVE WATERCOURSES. THE WORK AREA SHALL BE STABILIZED TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.

MS-13 CROSSING A LIVE WATERCOURSE:
WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX MONTH PERIOD, A TEMPORARY STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIALS SHALL BE PROVIDED.

MS-14 APPLICABLE REGULATIONS: ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.

MS-15 STABILIZATION OF BED AND BANKS: THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IN COMPLETED.

MS-16 UNDERGROUND UTILITIES: UNDERGROUND UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:

1. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPEN AT ONE TIME.
2. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES. EFFLUENT FOR DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFFSITE PROPERTY.
3. RESTABILIZATION SHALL BE IN ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
4. APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH AT ALL TIMES.

MS-17 CONSTRUCTION ACCESS ROUTES: WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY

MS-18 TEMPORARY E&S CONTROL MEASURE REMOVAL:ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE COUNTY INSPECTOR.

MS-19 ADEQUACY OF RECEIVING CHANNELS:PROPERTIES AND WATERWAYS DOWNSTREAM FROM THE DEVELOPMENT SITE SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATES OF STORM WATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24 HOUR DURATION.D. MAINTENANCE: ALL EROSION AND SEDIMENT CONTROL STRUCTURES AND SYSTEMS SHALL BE MAINTAINED, INSPECTED, AND REPAIRED AS NEEDED TO INSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED AT THE END OF EACH DAY AND AFTER EVERY RAINFALL EVENT.

1. DAMAGE TO EROSION CONTROL MEASURES CAUSED BY CONSTRUCTION TRAFFIC OR OTHER ACTIVITY SHALL BE REPAIRED BEFORE THE END OF EACH WORKING DAY.
2. MAINTAIN ALL SEEDED AREAS UNTIL A UNIFORM STAND IS ACCEPTED.
3. (SPEC. 3.05) SILT FENCE BARRIERS WILL BE CHECKED DAILY FOR UNDERMINING OR DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL REACHES HALF WAY TO THE TOP OF THE BARRIER.
4. (SPEC.3.08) THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED. AGGREGATE SHALL BE REPLACED OR CLEANED WHEN INSPECTION REVEALS THAT CLOGGED VOIDS ARE CAUSING PONDING PROBLEMS WHICH INTERFERE WITH ON-SITE CONSTRUCTION. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
5. (SPEC. 3.18 & 3.19) RIPRAP INSTALLATIONS SHOULD BE INSPECTED PERIODICALLY TO DETERMINE IF HIGH FLOWS HAVE CAUSED SCOUR BENEATH THE RIPRAP OR GEOTEXTILE FABRIC OR DISLODGED ANY OF THE STONE.
6. (SPEC. 3.20) CHECK DAMS SHALL BE INSPECTED FOR SEDIMENT ACCUMULATION AFTER EACH RUN-OFF PRODUCING STORM EVENT. SEDIMENT SHALL BE REMOVED WHEN IT REACHES ONE HALF OF THE ORIGINAL HEIGHT OF THE MEASURE. REGULAR INSPECTIONS SHOULD BE MADE TO INSURE THAT THE CENTER OF THE DAM IS LOWER THAN THE EDGES. EROSION CAUSED BY HIGH FLOWS AROUND THE EDGES OF THE DAM SHOULD BE CORRECTED IMMEDIATELY.
7. (SPEC. 3.31 & 3.32) AREAS WHICH FAIL TO ESTABLISH VEGETATIVE COVER ADEQUATE TO PREVENT RILL EROSION WILL BE RESEEDED AS SOON AS SUCH AREAS ARE IDENTIFIED.
8. (SPEC. 3.35) ALL MULCHING SHALL BE INSPECTED AFTER RAINSTORMS TO CHECK FOR EROSION AND UNDERMINING. IF WASHOUT OR BREAKAGE OCCURS, REINSTALL THE MATERIAL AFTER REPAIRING DAMAGE TO THE SLOPE OR DITCH.

VIII. SEQUENCE OF CONSTRUCTION

1. CONSTRUCT THE TEMPORARY STONE CONSTRUCTION ENTRANCE, SILT FENCE, OTHER APPLICABLE EROSION AND SEDIMENT CONTROL MEASURES.
2. CLEAR AND GRUB AS NEEDED.
3. CLEAR LAND AND REMOVE UNSUITABLE MATERIAL TO AN APPROVED LOCATION.
4. INSTALL STREAM DIVERSION.
5. REMOVE EXISTING CULVERT.
6. INSTALL NEW 60" CULVERT
7. PLACE FILL FOR NEW ALIGNMENT.
8. CONSTRUCT CHECK DAMS AND APPLY TEMPORARY AND PERMANENT SEEDING BEFORE CONTINUING ANY CONSTRUCTION.
9. CONSTRUCT AND INSTALL ALL EROSION AND SEDIMENT CONTROL MEASURES AS IS PRACTICABLE WHILE PERFORMING GRADING TO BRING ALL AREAS TO GRADES SHOWN.
10. PROVIDE TEMPORARY SEEDING AND OTHER EROSION CONTROL DEVICES TO MINIMIZE TRANSPORT OF SEDIMENT. SOIL STABILIZATION BLANKETS SHALL BE PLACED ON AREAS INDICATED IMMEDIATELY AFTER FINISHED GRADE IS REACHED AND AS PRACTICAL.
11. PERFORM PERMANENT SEEDING, STRAW MULCHING, AND STABILIZE ALL DISTURBED AREAS. APPLY DOUBLE SHREDDED HARDWOOD MULCH TO PLANTED AREAS.
12. EROSION CONTROL DEVICES MUST REMAIN IN PLACE UNTIL RELEASED BY THE CITY OF LYNCHBURG EROSION CONTROL INSPECTOR.
13. REMOVE TEMPORARY EROSION CONTROL MEASURES, AND STABILIZE AFFECTED AREAS.10. CLOSE OUT THE PROJECT.

GENERAL EROSION AND SEDIMENT CONTROL NOTES

ES-1: UNLESS OTHERWISE INDICATED. ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS VR 625-02-00 EROSION AND SEDIMENT CONTROL REGULATIONS.

ES-2: THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE. ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY AND ONE WEEK PRIOR TO THE FINAL INSPECTION.

ES-J: ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.

ES-4: A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

ES-5: PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF SITE BORROW OR WASTE AREAS). THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.

ES-6: THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE CITY OF LYNCHBURG, VIRGINA.

ES-7: ALL DISTURBED AREAS(INCLUDING DISPOSAL AREAS) ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZA TION IS ACHIEVED.

ES-8: DURING DEWATERING OPERATIONS. WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE. THIS INCLUDES RUN-OFF FROM HYDRO-DEMOLITION ACTIVITIES.

ES-9: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

ES-10: THE CONTRACTOR SHALL OBTAIN A VIRGINIA STORM WATER MANAGEMENT PERMIT (VSMP) FOR CONSTRUCTION DISCHARGES. A STORM WATER POLLUTION PREVENTION PLAN SHALL BE A COMPONANT OF THIS PERMIT. THE VSMP AND THE SWPPP SHALL BE ALL INCLUSIVE OF ALL REGULATED ACTIVITIES ASSOCIATED WITH THE PROJECT.

ES-11: PERIMETER EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITY. AS CONSTRUCTION PROCEEDS, ALL ADDITIONAL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AS SOON AS POSSIBLE. EROSION AND SEDIMENT CONTROL DEVICES AS SHOWN ON THE PLAN ARE A MINIMUM AND THE PROJECT CONDITION MAY DICTATE ADDITIONAL CONTROL. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE PER THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.

ES-12: THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL EROSION CONTROL DEVICES FOR THE DURATION OF THE PROJECT. ALL EROS/ON AND SEDIMENT CONTROL DEVICES SHALL BE CHECKED WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL TO INSURE THAT ALL DEVICES ARE IN PLACE AND FUNCTIONING AS REQUIRED. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE MAINTAINED PER THE LATEST EDITION OF THE VIRGIN/A EROSION AND SEDIMENT CONTROL HANDBOOK. IN GENERAL, IF THE SILT BUILT UP BEHIND A BARRIER BECOMES AS DEEP AS 9 INCHES, THE SILT IS TO BE REMOVED AND THE BARRIER REPAIRED OR REPLACED. AFTER COMPLETION OF THE PROJECT AND PERMANENT SEEDING HAS BEEN ESTABLISHED, EROSION CONTROL DEVICES AND ANY SILT BUILT UP SHALL BE REMOVED. DISTURBED AREAS DUE TO THIS CLEANUP OPERATION SHALL BE REPAIRED. RESEEDED AND REMULCHED.

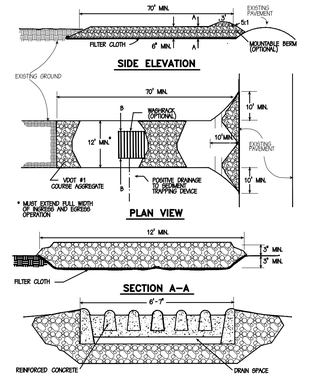
TABLE 3.32-D
SITE SPECIFIC SEEDING MIXTURES FOR PIEDMONT AREA

MINIMUM CARE LAWN	TOTAL LBS. PER ACRE
-COMMERCIAL OR RESIDENTIAL	175-200 LBS.
- KENTUCKY 31 OR TURF-TYPE TALL FESCUE	95-100%
- IMPROVED PERENNAL RYEGRASS	0-5%
- KENTUCKY BLUEGRASS	0-5%
HIGH-MAINTENANCE LAWN	200-250 LBS.
- KENTUCKY 31 OR TURF-TYPE TALL FESCUE	100%
GENERAL SLOPE (3:1) OR LESS	
- KENTUCKY 31 FESCUE	125 LBS.
- RED TOP GRASS	2 LBS.
- SEASONAL NURSE CROP*	20 LBS.
	150 LBS.
LOW-MAINTENANCE SLOPE (STEEPER THAN 3:1)	
- KENTUCKY 31 FESCUE	105 LBS.
- RED TOP GRASS	2 LBS.
- SEASONAL NURSE CROP*	20 LBS.
- CROWNVETCH**	150 LBS.

*USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:
- FEBRUARY 16TH THROUGH APRIL
- MAY 15T THROUGH AUGUST 15TH
- AUGUST 16TH THROUGH OCTOBER
- NOVEMBER THROUGH FEBRUARY 15TH

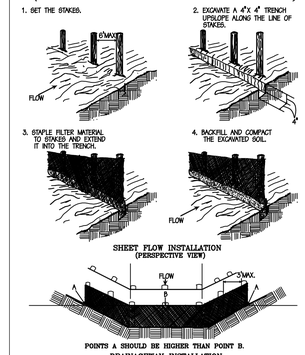
**SUBSTITUTE SERICEA LESPEDEZA FRO CROWNVETCH EAST OF FARMVILLE, VA. (MAY THROUGH SEPTEMBER USE HULLED SERICEA, ALL OTHER PERIODS, USE UNHULLED SERICEA). IF FLATPEA IS USED IN LIEU OF CROWNVETCH, INCREASE RATE TO 30 LBS/ACRE. ALL LEGUME SEED MUST BE PROPERLY INOCULATED. WEEPING LOVEGRASS MAY BE ADDED TO ANY SLOPE OR LOW-MAINTENANCE MIX DURING WARMER SEEDING PERIODS; ADD 10-20 LBS./ACRE IN MIXES.

STONE CONSTRUCTION ENTRANCE



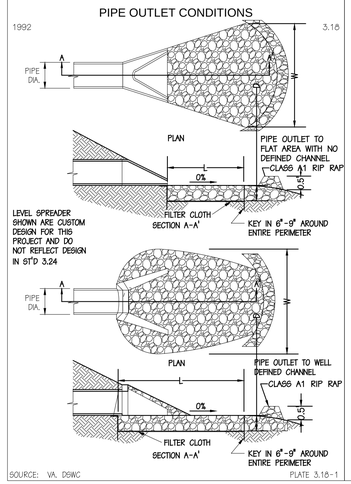
SOURCE: ADAPTED from 1993 Maryland Standards for Soil erosion and Sediment Control, and Va. DSWC PLATE 3.02-1

CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)



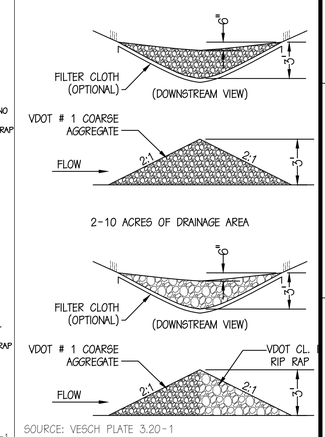
SOURCE: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control,Va. DSWC Sherwood and Wyatt PLATE 3.05-2

PIPE OUTLET CONDITIONS



SOURCE: VA. DSWC PLATE 3.18-1

ROCK CHECK DAM



SOURCE: VESCH PLATE 3.20-1

3.18 Outlet protection		
ID	OP-1	
Feature ID	60" HDPP	
Design Event Frequency	10 yr	
Design Flow (cfs)	186	
Tailwater Depth (ft)	1.15	
Discharge Velocity (ft/s)	21	
Rip Rap Gradation	Class I	
Apron Length (ft)	30	
Apron Width(s) (ft)	15	35
Side Slopes (H:V)	2	
Apron Depth (ft)	1	

Check Dams

Stone Gradation	VDOT #1
Height	0.5'

PERKINS & ORRISON
ENGINEERS ▲ PLANNERS ▲ SURVEYORS
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PO BOX 1567 17 W. NELSON STREET LEXINGTON, VIRGINIA 24450
PHONE: 540-464-9001 FAX: 540-464-5009
EMAIL: PNO@PERKINS-ORRISON.COM

CONSULTANTS

COMMONWEALTH OF VIRGINIA
NORMAN B. WALTON JR.
No. 036517
8/31/15
PROFESSIONAL ENGINEER

JOB:

McCONVILLE ROAD
CULVERT REPLACEMENT
LYNCHBURG, VIRGINIA
CITY PROJECT NO.: T0200
ENGINEERING PROJECT NO.: 11018-D

CLIENT:

CITY OF LYNCHBURG

MARK	DATE	DESCRIPTION
8	08/31/15	REV PER CITY COMMENTS
7	06/12/15	REV PER CITY COMMENTS
6	09/05/13	UPDATE UG UTILITIES
5	05/03/13	FINAL SUBMISSION
4	11/08/12	ROW REVISIONS
3	09/19/12	SIGN AND LIMITS REVISION
2	05/11/12	STREAM DIVERSION & WL
1	01/24/12	REVISED PER CITY COMMENTS

ISSUE: 10/12/2011
CONTOUR INTERVAL: 2'
DESIGNED BY: MJD/NBW
DRAWN BY: MJD
CHECKED BY: NBW

SHEET TITLE

E&S DETAILS
CONSTRUCTION PLANS

SHEET C-106

JOB NO.: 11175 SHEET NO 9 OF 13

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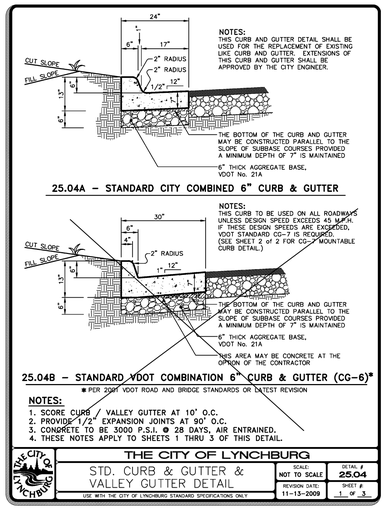
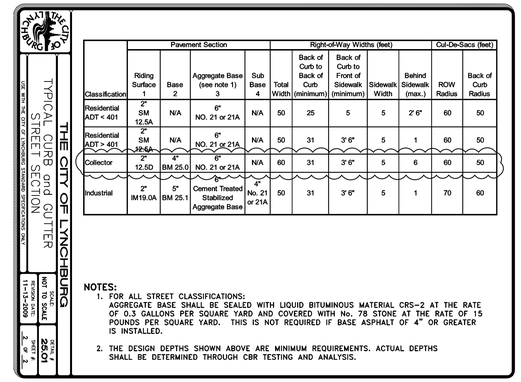
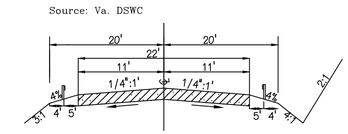
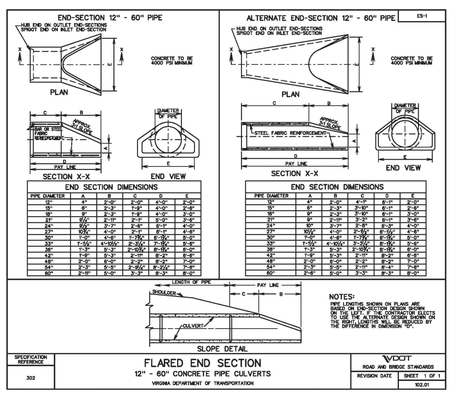




Classification	Pavement Section: Riding Surface 1	Base 2	Aggregate Base (see note 1) 3	Sub Base 4	Right-of-Way Widths (feet): Total Width	Back of Curb to Back of Curb (minimum)	Back of Curb to Front of Sidewalk (minimum)	Sidewalk Width	Behind Sidewalk (max.)	Cul-De-Sacs (feet): ROW Radius	Back of Curb Radius
Residential ADT < 401	2" SM 12.5A	N/A	6" NO. 21 or 21A	N/A	50	25	5	5	2' 6"	60	50
Residential ADT > 401	2" SM 12.5A	N/A	6" NO. 21 or 21A	N/A	50	31	3' 6"	5	1	60	50
Collector	2" 12.5D	4" BM 25.0	6" NO. 21 or 21A	N/A	60	31	3' 6"	5	6	60	50
Industrial	2" IM19.0A	5" BM 25.1	Cement Treated Stabilized Aggregate Base	4" No. 21 or 21A	50	31	3' 6"	5	1	70	60



McCONVILLE ROAD TYPICAL SECTION
STA: 100+61.15 TO 111+84.53
NOT TO SCALE



END SECTION DIMENSIONS

PIPE DIAMETER	A	B	C	D	E
12"	4"	2'-0"	2'-0"	4'-0"	2'-0"
15"	4"	2'-0"	2'-0"	4'-0"	2'-0"
18"	4"	2'-3"	1'-9"	4'-0"	2'-0"
24"	8½"	2'-7"	2'-8"	5'-0"	4'-0"
27"	10½"	2'-7"	2'-8"	5'-0"	4'-0"
30"	1'-0"	4'-0"	1'-7½"	6'-10½"	5'-0"
33"	1'-0"	4'-10½"	2'-0½"	7'-10½"	5'-0"
36"	1'-0"	5'-3"	2'-10½"	8'-0"	5'-0"
42"	1'-0"	5'-3"	3'-4½"	8'-0"	5'-0"
48"	1'-0"	5'-3"	3'-7"	8'-0"	7'-0"
54"	2'-3"	5'-3"	3'-10½"	8'-10½"	7'-0"
60"	2'-6"	5'-3"	3'-3"	8'-3"	8'-0"

END SECTION DIMENSIONS

PIPE DIAMETER	A	B	C	D	E
12"	4"	2'-0"	4'-0"	6'-1"	2'-0"
15"	4"	2'-0"	2'-0"	6'-1"	2'-0"
18"	4"	2'-3"	2'-9"	6'-1"	2'-0"
24"	8"	2'-7"	2'-8"	6'-3"	4'-0"
27"	10½"	4'-0"	2'-10½"	6'-10½"	4'-0"
30"	1'-0"	4'-0"	1'-7½"	6'-10½"	5'-0"
33"	1'-0"	4'-10½"	3'-1½"	6'-10½"	5'-0"
36"	1'-0"	5'-3"	2'-10½"	8'-0"	5'-0"
42"	1'-0"	5'-3"	3'-4½"	8'-0"	5'-0"
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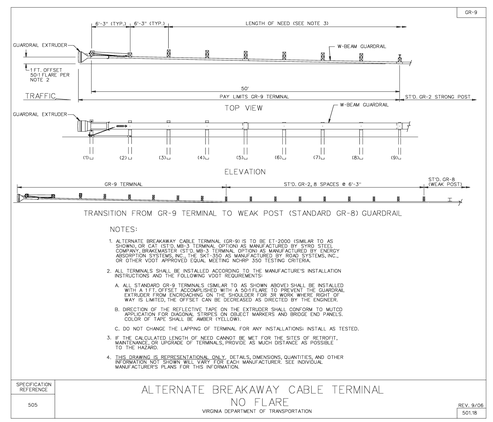

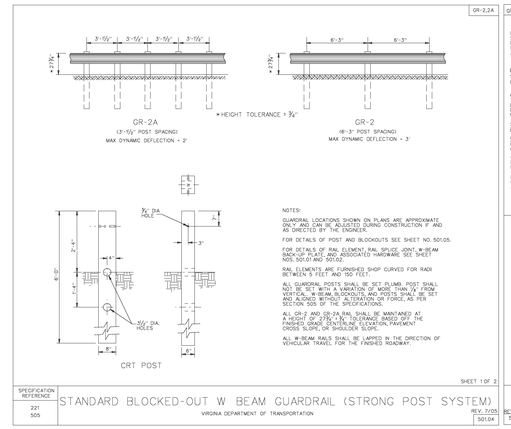

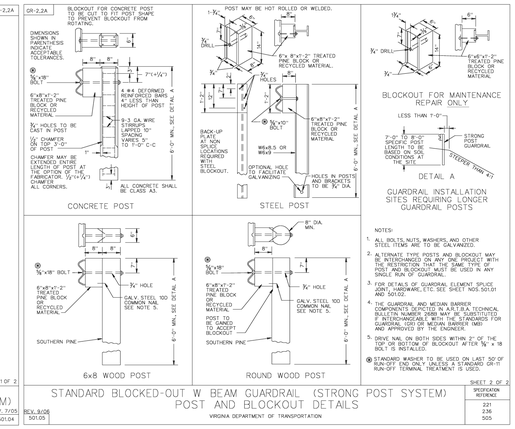

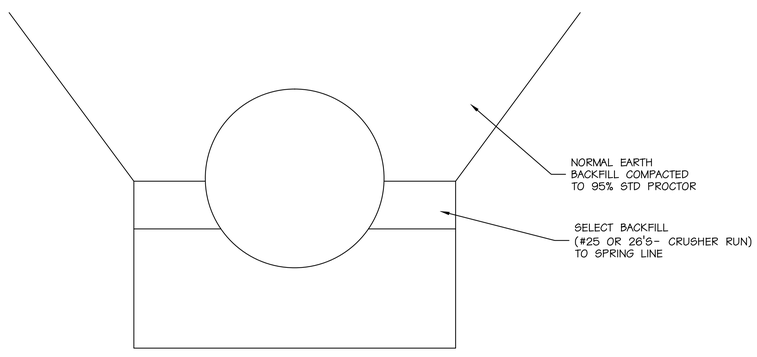

60" CULVERT DETAIL
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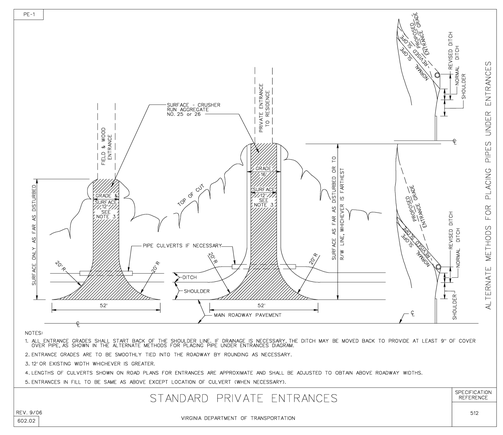

Estimated Quantity Take Off

Locality	City of Lynchburg		
Project:	McConville Road Culvert Replacement CP No. T0200, EP No. 11018-D		
Date:	6/10/2015		
Item	DESCRIPTION	UNIT	QUANTITY
	General Construction		
	Mobilization	LS	1
	Regular Excavation	CY	630
	Borrow Excavation	CY	27,000
	Road Demolition	SY	2,840
	Traffic Control	LS	1
	Construction Stakeout	LS	1
	Road Work		
	VDOT SM-12.5D	TN	312
	VDOT BM-25.0	TN	625
	VDOT 21A	TN	927
	VDOT CG-6	LF	82
	VDOT GR-2	LF	1,340
	VDOT GR-9	EA	4
	Residential Driveway/Private Drive Repair		
	VDOT SM-12.5D	TN	49
	VDOT 21A	TN	146
	18" HDPE storm sewer	LF	59
	24" HDPE storm sewer	LF	73
	Road Drainage		
	Dry Rip-Rap Class 1 5' thick	SY	13
	VDOT EC-2	SY	1,026
	VDOT ES-1 (24")	EA	2
	VDOT EW-2 (60")	EA	2
	60" HDPP storm sewer	LF	213
	4" Double Solid Yellow Line (Type B, Class 1)	LF	1,124
	E&SC and Stream Diversion		
	Erosion and Sediment Control	LS	1
	Stream Diversion	SY	430
	Utilities		
Water	12" DIP CL 50	LF	1113
	8" DIP CL 50	LF	26
	12" x 12" Tapping Sleeve & Box	EA	2
	12" Gate Valve & Box	EA	4
	8" Gate Valve & Box	EA	1
	12" Bend	EA	1
	12" x 8" Tee	EA	1
	10" Plug	EA	1
	Fire Hydrant Assembly	EA	2
	Anchor Blocks	EA	8
Sanitary	12" DIP CL 50	LF	275
	8" SCH 35 PVC	LF	206
	Sanitary Sewer Manhole	LF	20-17
	Frame and Cover	EA	3
	Adjust Existing Frame and Cover	EA	1
	Sewer connection with cleanout	EA	2

ESTIMATED QUANTITY TAKEOFF

PERKINS & ORRISON
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EMAIL: PNO@PERKINS-ORRISON.COM

CONSULTANTS

COMMONWEALTH OF VIRGINIA
No. 036517
8/31/15
PROFESSIONAL ENGINEER

JOB:

McCONVILLE ROAD
CULVERT REPLACEMENT
LYNCHBURG, VIRGINIA
CITY PROJECT NO.: T0200
ENGINEERING PROJECT NO.: 11018-D

CLIENT:

CITY OF LYNCHBURG

MARK	DATE	DESCRIPTION
8	08/31/15	REV PER CITY COMMENTS
7	06/12/15	REV PER CITY COMMENTS
6	09/05/13	UPDATE UG UTILITIES
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1	01/24/12	REVISED PER CITY COMMENTS

ISSUE: 10/12/2011
CONTOUR INTERVAL: 2'
DESIGNED BY: MJD/NBW
DRAWN BY: MJD
CHECKED BY: NBW

SHEET TITLE

SITE DETAILS
CONSTRUCTION PLANS

SHEET
C-107

JOB NO.: 11175
SHEET NO 10 OF 13

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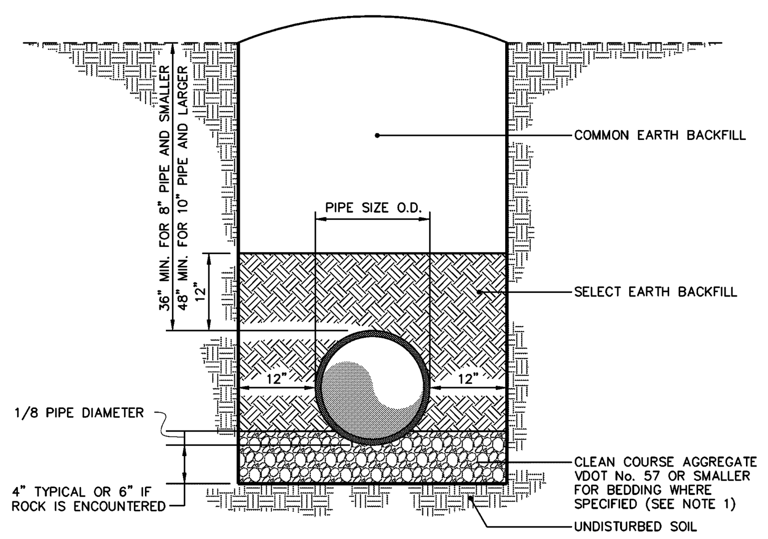
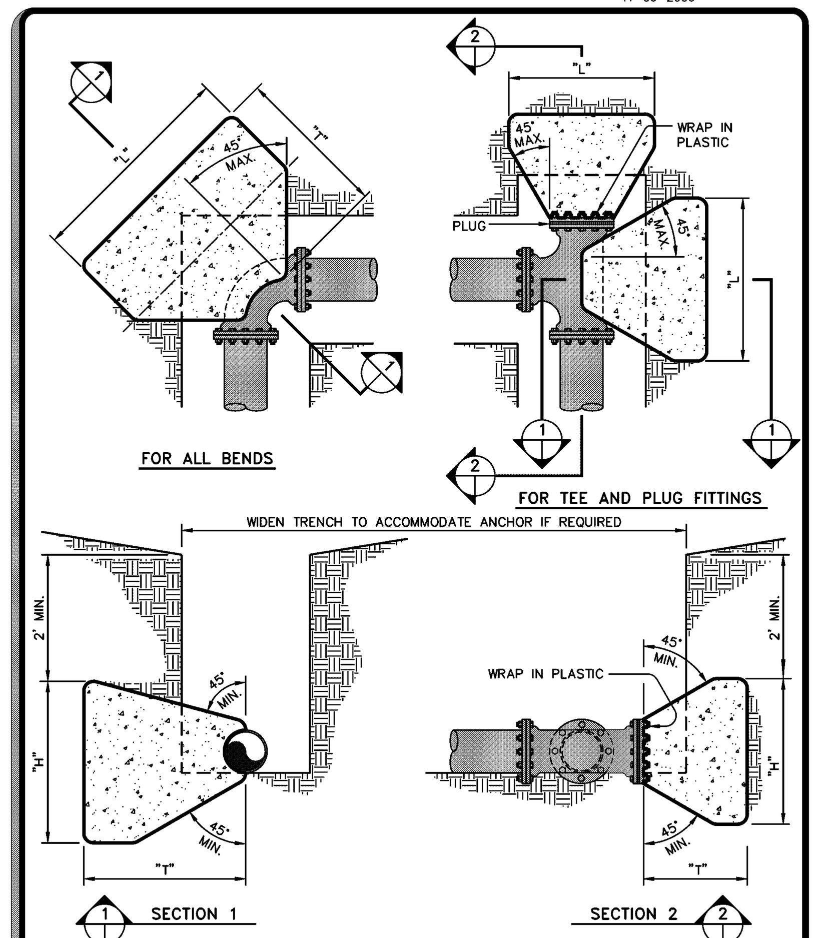
11-06-2006



NOTES:

1. BEDDING SHALL BE REQUIRED FOR WATER LINES 16" IN DIAMETER AND LARGER OR IF ROCK IS ENCOUNTERED.
2. EXTRA DEPTH EXCAVATION SHALL BE PAID FOR AS ANYTHING BEYOND 4" OF COVER TO TOP OF PIPE.
3. ANY EXCAVATION BEYOND TRENCH LIMITS SHOWN ON DETAIL SHALL BE AT THE CONTRACTOR'S EXPENSE.

THE CITY OF LYNCHBURG
WATER LINE TRENCH DETAIL
SCALE: NOT TO SCALE | DETAIL # 26.01 | REVISION DATE: 11-13-2009 | SHEET # 1 of 1
USE WITH THE CITY OF LYNCHBURG STANDARD SPECIFICATIONS ONLY



THE CITY OF LYNCHBURG
TYPE "F" HORIZONTAL ANCHOR BLOCKING
SCALE: NOT TO SCALE | DETAIL # 26.02 | REVISION DATE: 11-13-2009 | SHEET # 1 of 3
USE WITH THE CITY OF LYNCHBURG STANDARD SPECIFICATIONS ONLY

TYPE "F" HORIZONTAL ANCHOR BLOCK DATUM

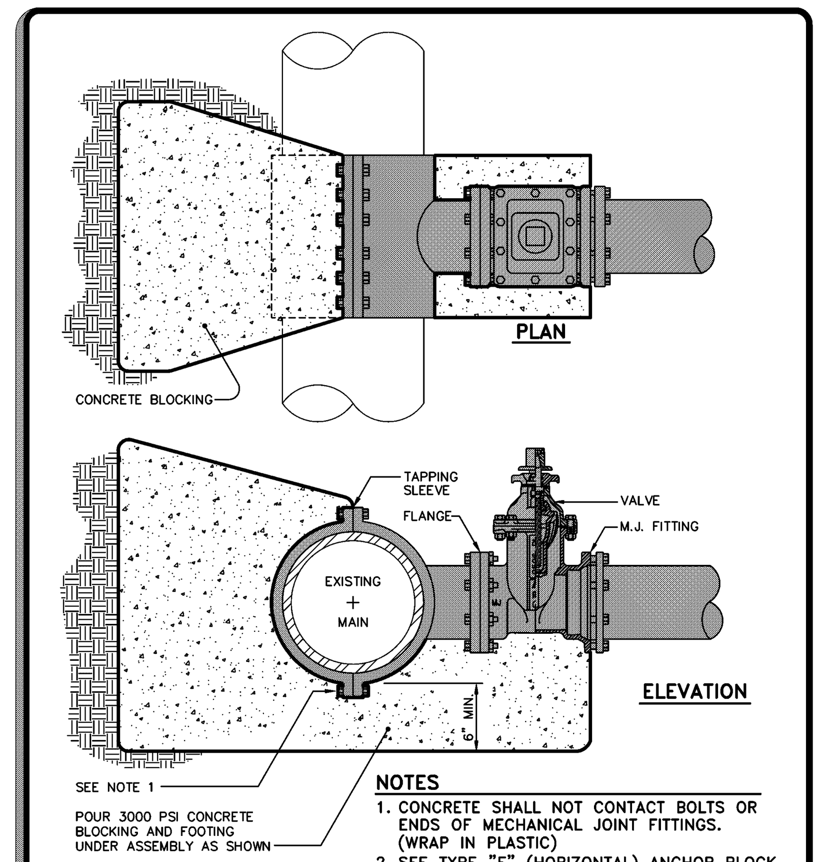
TYPE FITTING	PIPE SIZE INCHES	DIMENSIONS (Ft.) "L"	"H"	"T"	VOL. CONC. CU. YARDS
TEST PRESSURE = 150 P.S.I. & BELOW					
11 1/4°	6	1.5	2	2.5	0.19
22 1/2°	6	1.5	2	2.52	0.19
45°	6	2	2.25	2.6	0.26
90°	6	2.5	2.5	3.01	0.40
TEE	6	2	2.25	2.5	0.25
PLUG	6	2	2.25	2.5	0.25
11 1/4°	8	1.66	2.16	2.67	0.23
22 1/2°	8	1.66	2.16	2.69	0.23
45°	8	2.66	2.66	2.77	0.41
90°	8	3.66	3.16	3.21	0.75
TEE	8	3.16	2.91	2.66	0.50
PLUG	8	3.16	2.91	2.66	0.50
11 1/4°	12	2	2.5	3	0.33
22 1/2°	12	2.5	2.75	3.02	0.44
45°	12	4	3.5	3.12	0.87
90°	12	5.5	4.25	3.62	1.63
TEE	12	4.5	3.75	3	0.99
PLUG	12	4.5	3.75	3	0.99
TEST PRESSURE = 151 P.S.I. to 200 P.S.I.					
11 1/4°	6	1.5	2	2.5	0.19
22 1/2°	6	1.5	2	2.52	0.19
45°	6	2	2.55	2.6	0.29
90°	6	3	2.75	3.01	0.52
TEE	6	2.5	2.5	2.5	0.34
PLUG	6	2.5	2.5	2.5	0.34
11 1/4°	8	1.66	2.16	2.67	0.23
22 1/2°	8	2.16	2.41	2.69	0.31
45°	8	3.16	2.91	2.77	0.52
90°	8	4.16	3.41	3.21	0.90
TEE	8	3.66	3.16	2.66	0.62
PLUG	8	3.66	3.16	2.66	0.62
11 1/4°	12	2	2.5	3	0.33
22 1/2°	12	3	3	3.02	0.56
45°	12	4.5	3.75	3.12	1.03
90°	12	6.5	4.75	3.62	2.14
TEE	12	5.5	4.25	3	1.35
PLUG	12	5.5	4.25	3	1.35
TEST PRESSURE = 201 P.S.I. to 250 P.S.I.					
11 1/4°	6	1.5	2	2.5	0.19
22 1/2°	6	1.5	2	2.52	0.19
45°	6	2.5	2.5	2.6	0.35
90°	6	3.5	3	3.01	0.64
TEE	6	3	2.75	2.5	0.43
PLUG	6	3	2.75	2.5	0.43
11 1/4°	8	1.66	2.16	2.67	0.23
22 1/2°	8	2.16	2.41	2.69	0.31
45°	8	3.66	3.16	2.77	0.64
90°	8	4.66	3.66	3.21	1.07
TEE	8	4.16	3.41	2.66	0.75
PLUG	8	4.16	3.41	2.66	0.75
11 1/4°	12	2.5	2.75	3	0.44
22 1/2°	12	3.5	3.25	3.02	0.69
45°	12	5.5	4.25	3.12	1.41
90°	12	7.5	5.25	3.62	2.71
TEE	12	6	4.5	3	1.56
PLUG	12	6	4.5	3	1.56

THE CITY OF LYNCHBURG
TYPE "F" HORIZONTAL ANCHOR BLOCKING
SCALE: NOT TO SCALE | DETAIL # 26.02 | REVISION DATE: 11-13-2009 | SHEET # 2 of 3
USE WITH THE CITY OF LYNCHBURG STANDARD SPECIFICATIONS ONLY

TYPE "F" HORIZONTAL ANCHOR BLOCK DATUM

TYPE FITTING	PIPE SIZE INCHES	DIMENSIONS (Ft.) "L"	"H"	"T"	VOL. CONC. CU. YARDS
TEST PRESSURE = 150 P.S.I. & BELOW					
11 1/4°	16	3	2	3	0.48
22 1/2°	16	4	3	3	0.93
45°	16	6	4	3	1.81
90°	16	8	5.5	3.75	3.92
TEE	16	8	5.5	2.67	3.02
PLUG	16	8	5.5	2.67	3.02
11 1/4°	24	4.5	3	4	1.31
22 1/2°	24	6	4.5	4	2.56
45°	24	8.5	6.25	4	4.97
90°	24	12	8	4.5	9.84
TEE	24	12	8	4	8.94
PLUG	24	12	8	4	8.94
TEST PRESSURE = 151 P.S.I. to 200 P.S.I.					
11 1/4°	16	3	2.67	3	0.63
22 1/2°	16	4.5	3.5	3	1.20
45°	16	7.5	4.25	3	2.40
90°	16	10	5.75	3.75	5.11
TEE	16	10	5.75	5	6.46
PLUG	16	10	5.75	5	6.46
11 1/4°	24	5	3.5	4	1.68
22 1/2°	24	7	5	4	3.30
45°	24	10	7	4	6.54
90°	24	13	10	4.5	13.31
TEE	24	13	10	4.5	13.31
PLUG	24	13	10	4.5	13.31
TEST PRESSURE = 201 P.S.I. to 250 P.S.I.					
11 1/4°	16	3.5	3	3	0.81
22 1/2°	16	5.5	3.67	3	1.53
45°	16	7.5	5.25	3	2.95
90°	16	12	6	3.75	6.38
TEE	16	12	6	4	6.72
PLUG	16	12	6	4	6.72
11 1/4°	24	6	3.75	4	2.14
22 1/2°	24	8	5.5	4	4.13
45°	24	12	7.25	4	8.11
90°	24	14	11.5	4.75	17.21
TEE	24	14	11.5	4.75	17.21
PLUG	24	14	11.5	4.75	17.21

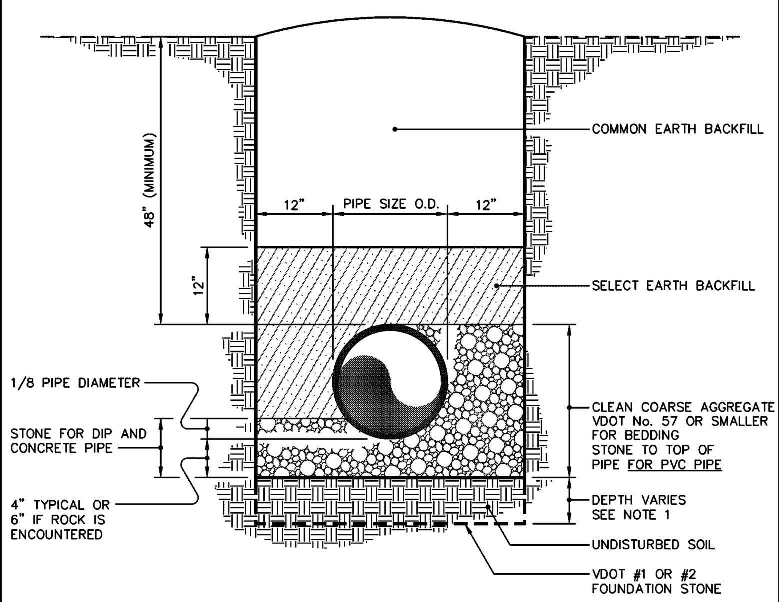
THE CITY OF LYNCHBURG
TYPE "F" HORIZONTAL ANCHOR BLOCKING
SCALE: NOT TO SCALE | DETAIL # 26.02 | REVISION DATE: 11-13-2009 | SHEET # 3 of 3
USE WITH THE CITY OF LYNCHBURG STANDARD SPECIFICATIONS ONLY



NOTES

1. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS. (WRAP IN PLASTIC)
2. SEE TYPE "F" (HORIZONTAL) ANCHOR BLOCK DETAIL 26.02 FOR AREA OF CONCRETE REQUIRED.
3. TAPPING SLEEVE SHALL BE A MINIMUM OF 4' FROM NEAREST PIPE JOINT.

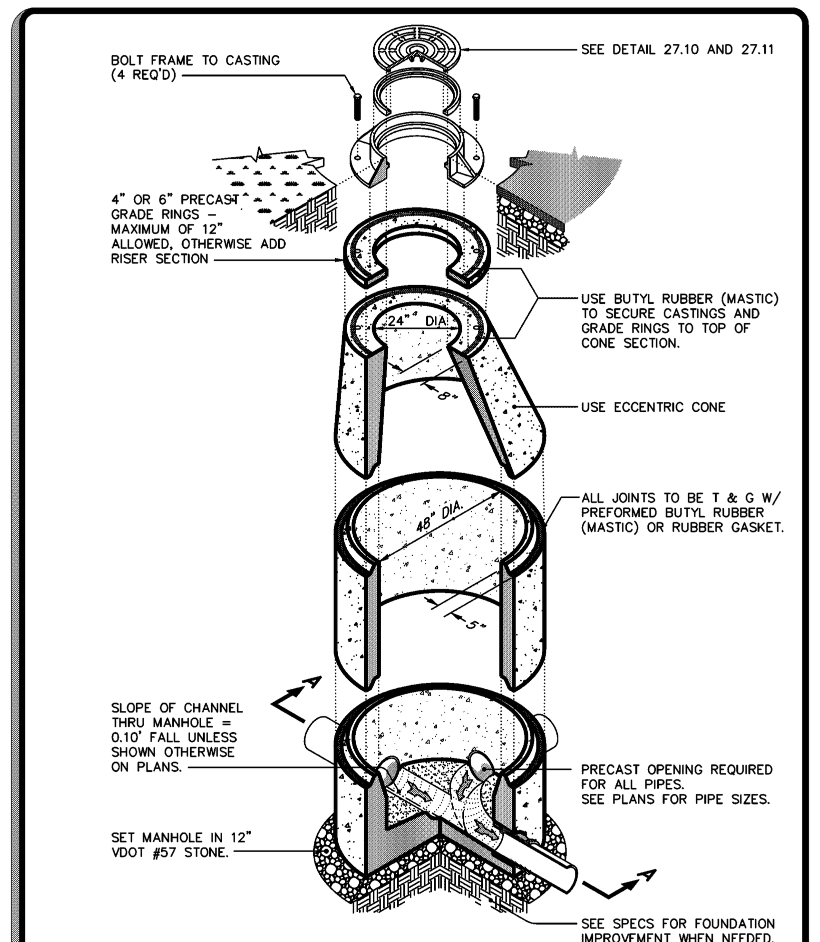
THE CITY OF LYNCHBURG
TAPPING SLEEVE & VALVE DETAIL
SCALE: NOT TO SCALE | DETAIL # 26.06 | REVISION DATE: 11-13-2009 | SHEET # 1 of 1
USE WITH THE CITY OF LYNCHBURG STANDARD SPECIFICATIONS ONLY



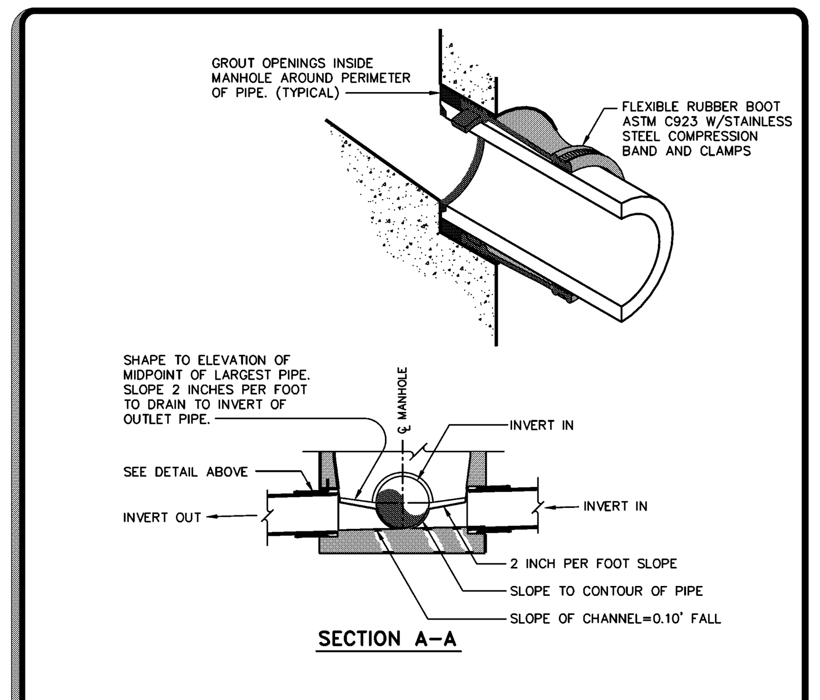
NOTES:

1. FOUNDATION STONE SHALL BE REQUIRED WHEN SOIL CONDITIONS ARE UNSUITABLE.
2. EXTRA DEPTH EXCAVATION SHALL BE PAID FOR AS ANYTHING BEYOND 4" OF COVER TO TOP OF PIPE.
3. AN ADDITIONAL 1 INCH DEPTH OF BEDDING MATERIAL WILL BE REQUIRED FOR EACH ADDITIONAL 2 FEET OF TRENCH DEPTH IN EXCESS OF 16 FEET UP TO A MAXIMUM OF 12 INCHES.

THE CITY OF LYNCHBURG
SANITARY SEWER LINE TRENCH DETAIL
SCALE: NOT TO SCALE | DETAIL # 27.01 | REVISION DATE: 11-13-2009 | SHEET # 1 of 1
USE WITH THE CITY OF LYNCHBURG STANDARD SPECIFICATIONS ONLY



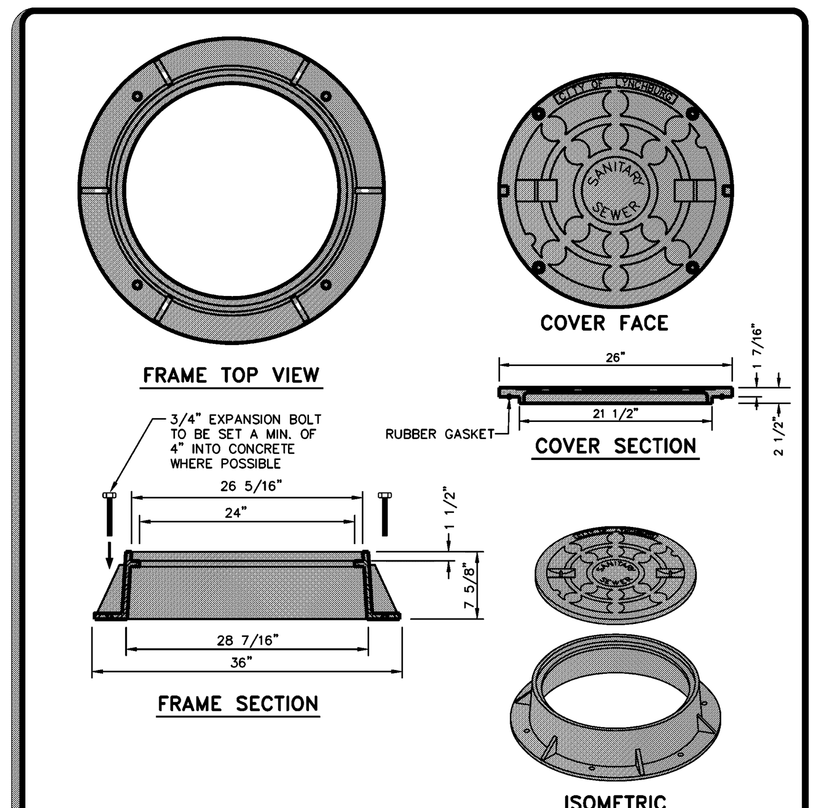
THE CITY OF LYNCHBURG
PRECAST CONCRETE 4' DIAMETER MANHOLE
SCALE: NOT TO SCALE | DETAIL # 27.02 | REVISION DATE: 11-13-2009 | SHEET # 1 of 2
USE WITH THE CITY OF LYNCHBURG STANDARD SPECIFICATIONS ONLY



NOTES: ⚠

1. MAXIMUM DEPTH 4' DIAMETER MANHOLE = 20' (SEE SEWER DESIGN SECTION FOR OTHER REQUIREMENTS / LIMITATIONS).
2. THE INVERT SHAPING AS SHOWN SHALL CONSIST OF 3,000 PSI CONCRETE TROWELLED TO A SMOOTH SURFACE WITH NO AGGREGATE EXPOSED.
3. DETAILS OF INVERT SHAPING AS SHOWN HEREON ARE FOR EXAMPLE PURPOSES ONLY. EACH MANHOLE IS TO BE SHAPED INDIVIDUALLY TO BEST FIT THE PARTICULAR INLET AND OUTLET CONFIGURATION AND FLOW LINES.
4. WHEN DIFFERENT DIAMETER PIPES ARE USED FROM INVERT IN TO INVERT OUT, PROVIDE A SMOOTH TRANSITION THROUGH THE INVERT.

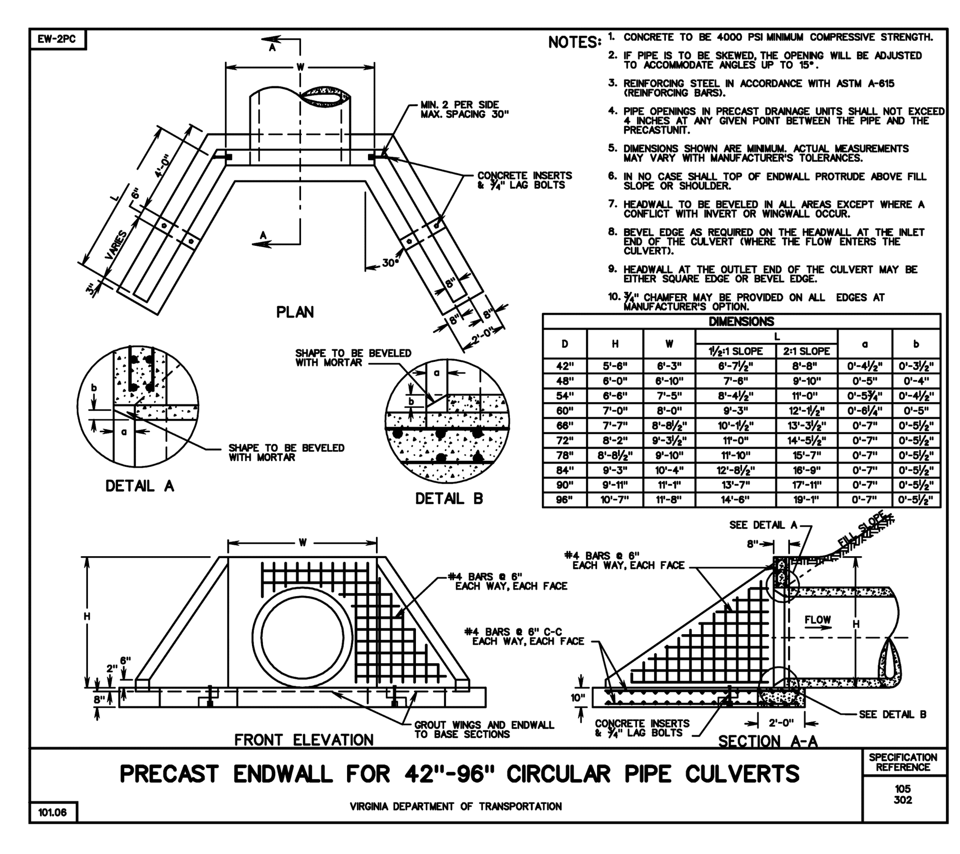
THE CITY OF LYNCHBURG
PRECAST CONCRETE 4' DIAMETER MANHOLE
SCALE: NOT TO SCALE | DETAIL # 27.02 | REVISION DATE: 11-13-2009 | SHEET # 2 of 2
USE WITH THE CITY OF LYNCHBURG STANDARD SPECIFICATIONS ONLY



NOTES:

1. MANHOLE FRAMES AND COVERS SHALL BE ROADWAY TYPE WITH DEEP SOCKET COVERS. MACHINE FRAMES AND COVERS TO PREVENT RATTLING. CASTINGS SHALL BE GRAY IRON MEETING REQUIREMENTS OF ASTM A48, CLASS 30.

THE CITY OF LYNCHBURG
WATERPROOF MANHOLE FRAME and COVER
SCALE: NOT TO SCALE | DETAIL # 27.11 | REVISION DATE: 11-13-2009 | SHEET # 1 of 1
USE WITH THE CITY OF LYNCHBURG STANDARD SPECIFICATIONS ONLY



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CONSULTANTS

COMMONWEALTH OF VIRGINIA
NORMAN B. WALTON JR.
No. 036517
8/31/15
PROFESSIONAL ENGINEER

JOB:

McCONVILLE ROAD
CULVERT REPLACEMENT
LYNCHBURG, VIRGINIA
CITY PROJECT NO.: T0200
ENGINEERING PROJECT NO.: 11018-D

CLIENT:

CITY OF LYNCHBURG

MARK	DATE	DESCRIPTION
8	08/31/15	REV PER CITY COMMENTS
7	06/12/15	REV PER CITY COMMENTS
6	09/05/13	UPDATE UG UTILITIES
5	05/03/13	FINAL SUBMISSION
4	11/08/12	ROW REVISIONS
3	09/19/12	SIGN AND LIMITS REVISION
2	05/11/12	STREAM DIVERSION & WL
1	01/24/12	REVISED PER CITY COMMENTS

ISSUE:	10/12/2011
CONTOUR INTERVAL:	2'
DESIGNED BY:	MJD/NBW
DRAWN BY:	MJD
CHECKED BY:	NBW

SHEET TITLE

UTILITY DETAILS
CONSTRUCTION PLANS

SHEET C-108

JOB NO. 11175 | SHEET NO. 11 of 13

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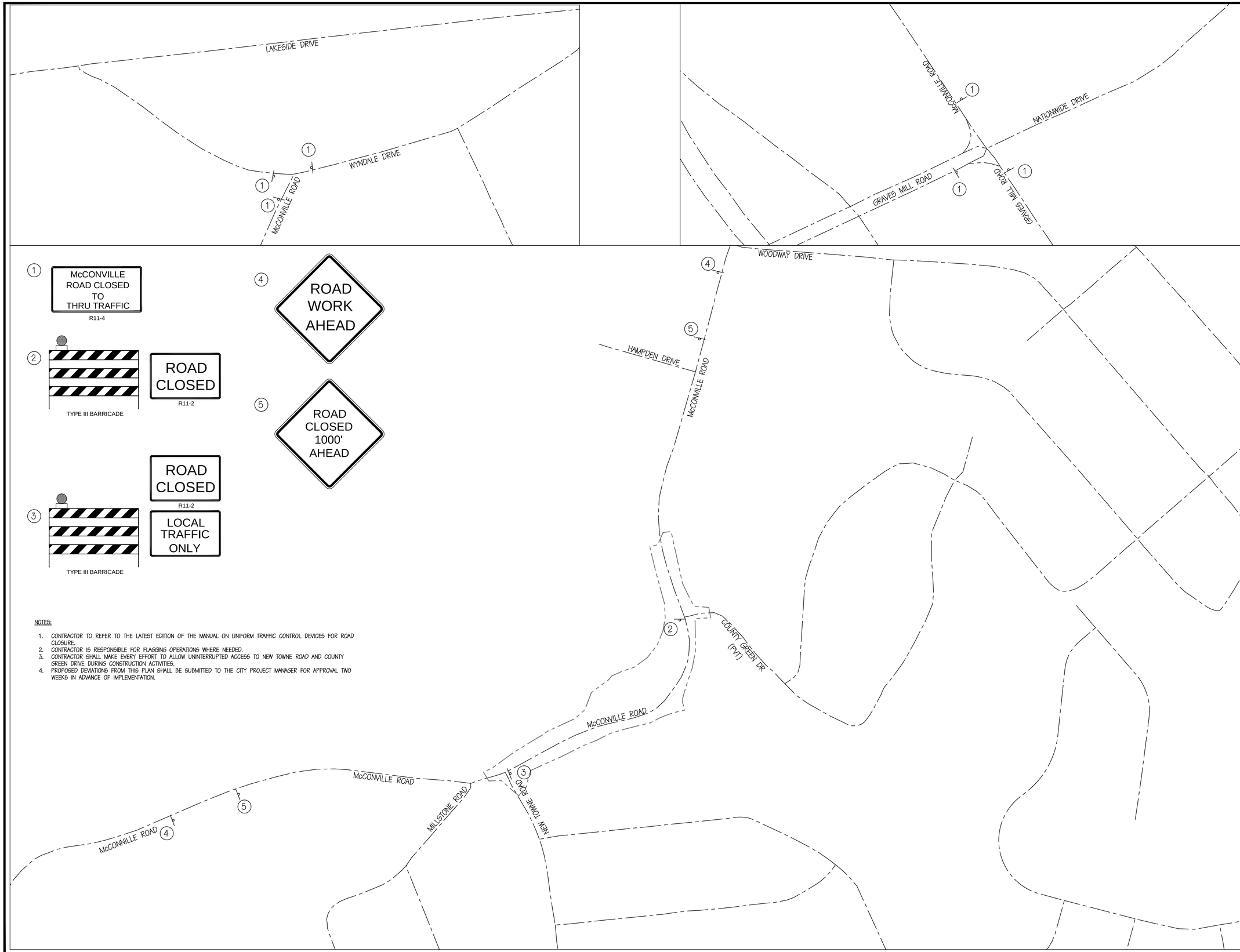

NOTES:

1. CONTRACTOR TO REFER TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR ROAD CLOSURE.
2. CONTRACTOR IS RESPONSIBLE FOR FLAGGING OPERATIONS WHERE NEEDED.
3. CONTRACTOR SHALL MAKE EVERY EFFORT TO ALLOW UNINTERRUPTED ACCESS TO NEW TOWNE ROAD AND COUNTY GREEN DRIVE DURING CONSTRUCTION ACTIVITIES.
4. PROPOSED DEVIATIONS FROM THIS PLAN SHALL BE SUBMITTED TO THE CITY PROJECT MANAGER FOR APPROVAL TWO WEEKS IN ADVANCE OF IMPLEMENTATION.

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CITY OF LYNCHBURG

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1	01/24/12	REVISED PER CITY COMMENTS

ISSUE:	10/12/2011
CONTOUR INTERVAL:	2'
DESIGNED BY:	MJD/NBW
DRAWN BY:	MJD
CHECKED BY:	NBW

SHEET TITLE

MAINTENANCE OF TRAFFIC PLAN
CONSTRUCTION PLANS

GRAPHIC SCALE
0 150 300
1"=150'

SHEET
C-109

JOB NO.: 11175
SHEET NO 12 OF 13

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PRE AND POST

GRAPHIC SCALE
0 250 500
1"=250'

DITCH AREAS

GRAPHIC SCALE
0 100 200
1"=100'

NOTES:

1. PRE IMPERVIOUS COVER = 0.97AC
2. POST IMPERVIOUS COVER = 0.66AC

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8/31/15
PROFESSIONAL ENGINEER

JOB:

McCONVILLE ROAD
CULVERT REPLACEMENT
LYNCHBURG, VIRGINIA
CITY PROJECT NO.: T0200
ENGINEERING PROJECT NO.: 11018-D

CLIENT:

CITY OF LYNCHBURG

MARK	DATE	DESCRIPTION
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ISSUE:	10/12/2011
CONTOUR INTERVAL:	2'
DESIGNED BY:	MJD/NBW
DRAWN BY:	MJD
CHECKED BY:	NBW

SHEET TITLE

DRAINAGE AREAS

SHEET

C-110

JOB NO.: 11175

SHEET NO 13 OF 13

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