GILES ROAD STORMWATER IMPROVEMENTS AND SIDEWALK ADDITION

TOWN OF BLACKSBURG
BLACKSBURG, VIRGINIA

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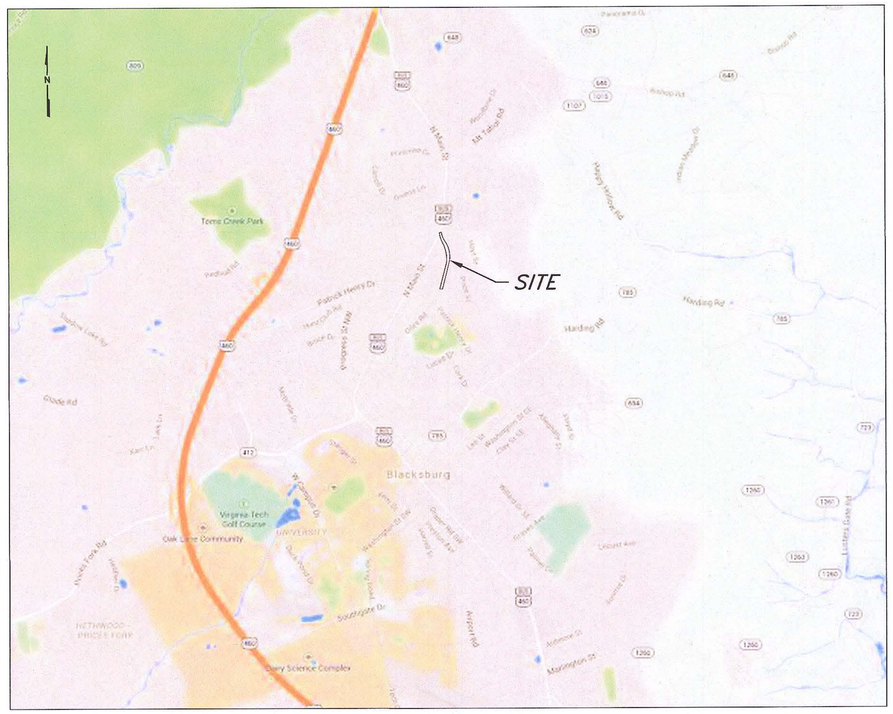
Kafi Howard 8/21/20 DATE
TOWN ENGINEER

DATE
TOWN PLANNER



VICINITY MAP
1" = 2,000'

EXISTING	LEGEND	PROPOSED
W	WATER LINE	N/A
6" PVC	SANITARY SEWER	N/A
12" CPP	STORM DRAIN	18"
	U/G ELECTRIC	N/A
	O/H POWER	N/A
	5' CONTOUR LINE	2160
	1' CONTOUR LINE	
N/A	SPOT ELEVATION	56.55
A	SANITARY MANHOLE MARKER	N/A
1	STORM SEWER STRUCTURE MARKER	100
	BENCHMARK	N/A
	HORIZONTAL CONTROL	N/A
	SANITARY SEWER MANHOLE	N/A
	STORM MANHOLE	
	STORM DROP INLET	N/A
	VDOT DI-3B STORM DROP INLET	
N/A	VDOT DI-3C STORM DROP INLET	
	POWER POLE	N/A
	GUY WIRE	N/A
	SIGN	
	LIGHT POLE	N/A
MB	MAILBOX	MB
	FENCE	N/A
	GUARD RAIL	N/A
	GRAVEL ROAD	N/A
	ASPHALT ROAD	
N/A	CURB AND GUTTER	
SIDEWALK	SIDEWALK	
	TREE	N/A
	BUILDING	N/A
	RIGHT-OF-WAY	N/A

COMMONWEALTH OF VIRGINIA
JAY MARCEL McGUIRE
Lic. No. 033440
28 August 2018
PROFESSIONAL ENGINEER

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HURT & PROFFITT
1881 Pratt Drive
Blacksburg, Va. 24060
540-552-5592
CULTURAL RESOURCES

DATE	24 AUG 18
DESIGNED:	JMM
DRAWN	MDA
CHECKED	JMJ
QA/QC	JDW

REV. #	COMMENTS	DATE

GILES ROAD STORMWATER IMPROVEMENTS AND SIDEWALK ADDITION
TOWN OF BLACKSBURG
BLACKSBURG, VIRGINIA

COVER SHEET

DOCUMENT NO. 31213 – 001
SHEET C001

GENERAL PROJECT NOTES:

1. OWNER/DEVELOPER:
   TOWN OF BLACKSBURG
   300 SOUTH MAIN STREET
   BLACKSBURG, VIRGINIA 24060
2. PLAN PREPARED BY:
   HURT & PROFFITT, INC.
   C/O JAY MCGUIRE, P.E.
   1861 PRATT DRIVE
   BLACKSBURG, VIRGINIA 24060
3. ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL REQUIREMENTS.
4. ALL IMPROVEMENTS AND WORK SHALL BE SUBJECT TO INSPECTION BY THE OWNER AND ITS REPRESENTATIVES.
5. THE EXISTING UNDERGROUND UTILITIES INDICATED ON THESE PLANS ARE BASED ON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK AND FOR ANY DAMAGES THAT OCCUR AS A RESULT OF FAILURE TO LOCATE AND PRESERVE THESE UTILITIES. IF ADDITIONAL UTILITIES ARE FOUND OTHER THAN THOSE SHOWN ON THE PLANS, CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER & UTILITY OWNER AND TAKE NECESSARY AND PROPER STEPS TO PROTECT THE UTILITY AND ASSURE THE CONTINUANCE OF SERVICE.
6. ANY DISCREPANCIES FOUND BETWEEN THE CONSTRUCTION DOCUMENTS AND SITE CONDITIONS, OR ANY INCONSISTENCIES OR AMBIGUITIES IN THE DRAWINGS SHALL BE IMMEDIATELY REPORTED TO THE OWNER'S REPRESENTATIVE, WHO SHALL PROMPTLY CORRECT SUCH INCONSISTENCIES OR AMBIGUITIES. WORK DONE BY THE CONTRACTOR WITHOUT DIRECTION AFTER HIS DISCOVERY OF SUCH INCONSISTENCIES OR AMBIGUITIES SHALL BE DONE AT THE CONTRACTOR'S OWN RISK.
7. ACQUIRE ALL NECESSARY PERMITS BEFORE STARTING DEMOLITION AND/OR CONSTRUCTION.
8. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF THE AMERICANS WITH DISABILITIES ACT (ADA).
9. CONTRACTOR SHALL MAINTAIN EMERGENCY, SERVICE, AND DELIVERY VEHICLE ACCESS TO THE SURROUNDING STREETS, DRIVEWAYS, AND RESIDENCES. COORDINATE WITH THE OWNER.
10. COORDINATE WITH THE OWNER TO NOTIFY LOCAL POLICE, LOCAL RESCUE SQUAD, AND LOCAL FIRE DEPARTMENT WHEN ACCESS TO THE SITE CHANGES. PHASE THE WORK IN A MANNER THAT ENSURES THAT CLEAR ACCESS TO ADJACENT BUILDINGS IS MAINTAINED.
11. CONTRACTOR SHALL MAINTAIN REASONABLE INGRESS/EGRESS FOR AFFECTED PROPERTY OWNERS THROUGHOUT CONSTRUCTION.
12. CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL PLAN FOR REVIEW AND APPROVAL BY THE OWNER PRIOR TO COMMENCING WORK.
13. LOCATION OF CONSTRUCTION TRAILER AND STAGING AREAS SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER.
14. THIS PROJECT DOES NOT LIE WITHIN A 100-YEAR FLOOD PLAIN.
15. THIS PROJECT DOES NOT PROPOSE ANY IMPACTS TO WETLANDS OR WATERS OF THE U.S.
16. THERE ARE NO KNOWN GRAVES, OBJECTS, OR STRUCTURES ON SITE MARKING A PLACE OF HUMAN BURIAL.
17. BLASTING IS NOT ALLOWED FOR THIS PROJECT.
18. BURNING IS NOT ALLOWED FOR THIS PROJECT.
19. CONTRACTOR SHALL MAINTAIN DRAINAGE FACILITIES ON AND THROUGH THE SITE AT ALL TIMES DURING CONSTRUCTION. TEMPORARY FACILITIES, PUMPING ARRANGEMENTS, AND/OR CONNECTIONS REQUIRED TO MAINTAIN DRAINAGE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
20. WHERE SPECIFIC MANUFACTURERS' NAMES ARE SHOWN ON THESE PLANS AND DETAILS OF A PARTICULAR PRODUCT, THIS SHALL NOT EXCLUDE THE USE OF AN EQUAL SUBSTITUTE PRODUCT FROM OTHER MANUFACTURERS, WITH APPROVAL OF TOWN ENGINEER.
21. THE TOTAL DISTURBED AREA IS LESS THAN 1 ACRE (0.88 ACRES), AND THIS PROJECT IS CONSIDERED LINEAR DEVELOPMENT. THEREFORE, ACCORDING TO TOWN CODE SECTION 18-602(C)(9), STORMWATER PERMIT COMPLIANCE IS NOT REQUIRED.

GENERAL UTILITY NOTES:

1. UTILITY SERVICE MUST BE MAINTAINED THROUGHOUT CONSTRUCTION. SERVICE SHALL NOT BE INTERRUPTED WITHOUT PRIOR APPROVAL FROM THE OWNER. APPROVED PERIODS OF INTERRUPTED SERVICE SHALL BE MINIMIZED IN DURATION AND SHALL BE COORDINATED WITH THE OWNER AND THE UTILITY PROVIDER.
2. THE EXISTING UNDERGROUND UTILITIES INDICATED ON THESE PLANS ARE BASED ON AVAILABLE INFORMATION AND ARE APPROXIMATE IN LOCATION, ELEVATION, AND AMOUNT. THIS PLAN SHALL NOT BE CONSTRUED TO GUARANTEE THE EXISTENCE OF SUCH, OR THE LACK OF EXISTENCE OF ADDITIONAL UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES BEFORE COMMENCING WORK AND FOR ANY DAMAGES THAT OCCUR AS A RESULT OF FAILURE TO LOCATE AND PRESERVE THESE UTILITIES.
3. CONTRACTOR SHALL CONTACT MISS UTILITY (811) AND TOWN OF BLACKSBURG PUBLIC WORKS DEPARTMENT (540-443-1200) A MINIMUM OF 72 HOURS PRIOR TO ANY EARTH MOVING OR EXCAVATION ACTIVITIES.
4. IF ADDITIONAL UTILITIES ARE FOUND OTHER THAN THOSE SHOWN ON THE PLANS, CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER & UTILITY OWNER AND TAKE NECESSARY AND PROPER STEPS TO PROTECT THE UTILITY AND ASSURE THE CONTINUANCE OF SERVICE.
5. FIELD VERIFY LOCATION AND SIZE OF EXISTING UTILITIES AT THEIR CONNECTION TO UTILITIES SHOWN ON THE PLANS AS A FIRST STEP TO SITE UTILITY CONSTRUCTION.
6. EXISTING UTILITY CROSSING ELEVATIONS, GROUND SURFACE ELEVATIONS, AND MANHOLE TOP ELEVATIONS AS SHOWN IN PROFILES ARE APPROXIMATE. FIELD VERIFY EXISTING SURFACE ELEVATIONS AND EXISTING UTILITY INVERT ELEVATIONS.
7. ADJUST ALL SANITARY SEWER STRUCTURE TOPS, FIRE HYDRANTS, WATER METER LIDS, AND VALVE BOXES TO BE FLUSH WITH FINISHED GRADE. VALVES OVER 7' DEEP REQUIRE A RISER TO RAISE NUT/STEM WITHIN 2' OF FINISHED GRADE.
8. INSTALL MANHOLE TOPS FLUSH WITH FINISHED GRADE.
9. ALL UTILITIES SHALL BE VISUALLY INSPECTED BY TOWN'S INSPECTOR PRIOR TO BACKFILLING TRENCHES.
10. THE MOST RECENT OSHA TRENCHING STANDARDS SHALL APPLY TO THIS PROJECT.
11. BARRICADE OPEN EXCAVATIONS OCCURRING AS PART OF THIS WORK AND POST WARNING LIGHTS. OPERATE WARNING LIGHTS AS RECOMMENDED BY THE AUTHORITY HAVING JURISDICTION.
12. CONTRACTOR SHALL COMPLY WITH S59.1-406, ET SEQ. OF THE CODE OF VIRGINIA (OVERHEAD HIGH VOLTAGE LINES SAFETY ACT).

UTILITY PROVIDER CONTACT INFORMATION:

WATER, STORM SEWER, SANITARY SEWER:
TOWN OF BLACKSBURG
PUBLIC WORKS DEPARTMENT – UTILITIES DIVISION
2700 PROSPERITY ROAD
BLACKSBURG, VA 24060
(540) 443-1200

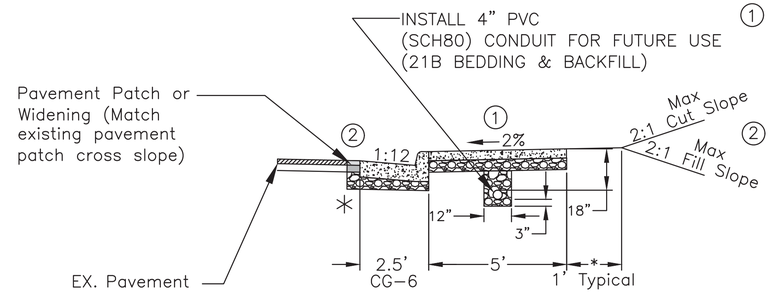
ELECTRIC:
APPALACHIAN ELECTRIC POWER (AEP)
1-800-956-4237

NATURAL GAS:
ATMOS ENERGY
888-286-6700

TELECOMMUNICATIONS:
VERIZON
(540) 553-8600

COMCAST
(888) 266-2278

SHENTEL
(800) 743-6835

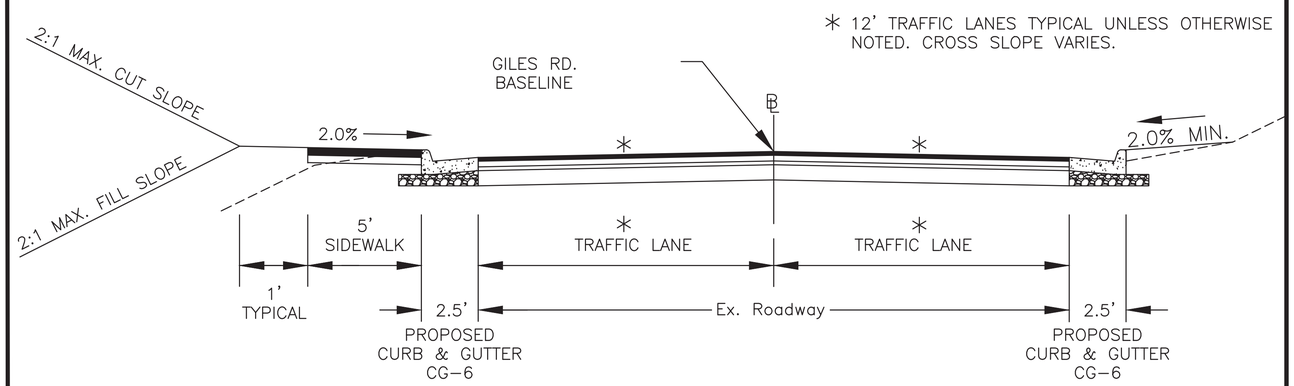


SIDEWALK WITH CURB & GUTTER
N.T.S.

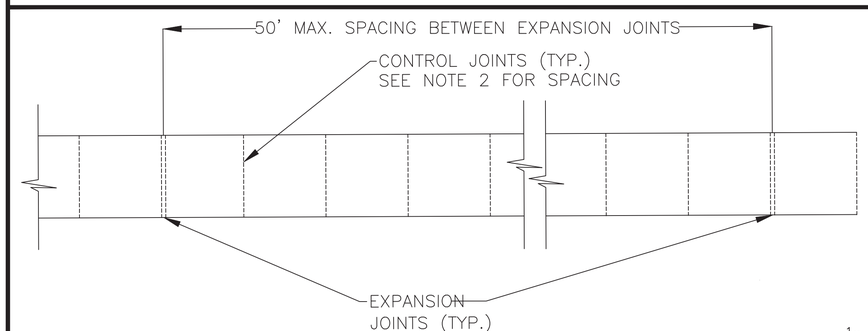
① SIDEWALK CONSTRUCTION:
Surface: 4" A3 Concrete Sidewalk.
Subbase: 4" VDOT Aggregate Base Material Type 1, 21B Compacted to 95% Standard Proctor.

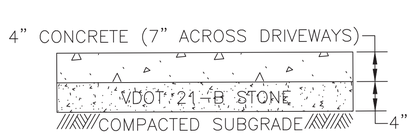
② PAVEMENT PATCH OR WIDENING CONSTRUCTION:
Surface: 2" Asphalt Concrete, Type SM-9.5A @ 220 lbs/SY. (Provide 2" Surface with final roadway overlay.
Base: 3" Asphalt Concrete, Type BM-25.0
Subbase: 6" Graded Aggregate, Type 1, 21B.

* 12" Max Sawcut From Face Of Gutter.

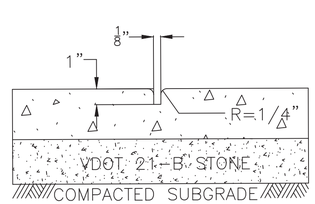


TYPICAL ROADWAY SECTION WITH SIDEWALK AND CURB & GUTTER
N.T.S.





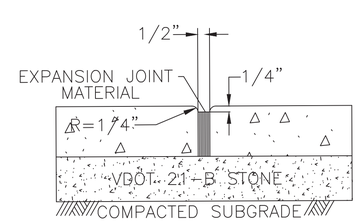
SIDEWALK SECTION



CONTROL JOINT

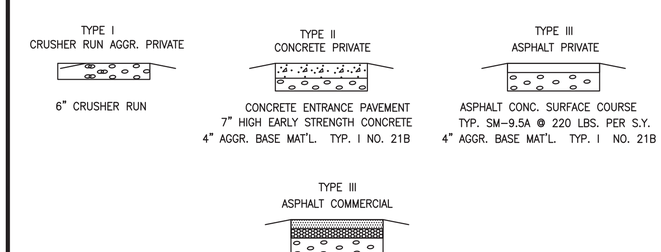
NOTES:

1. ALL CONCRETE SHALL BE VDOT CLASS A3.
2. CONTRACTION JOINTS SHALL BE SPACED AT 5' INTERVALS FOR 5' WIDE SIDEWALKS.
3. SIDEWALKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH TOWN STANDARDS AND SPECIFICATIONS.
4. CONTRACTOR SHALL BACKFILL BEHIND SIDEWALK TO PROVIDE POSITIVE DRAINAGE.



EXPANSION JOINT

DRIVEWAY RECONSTRUCTION SURFACE TYPES
N.T.S.



FOR NON-SINGLE FAMILY HOME ENTRANCES AND PUBLIC PARKING LOTS, ASPHALT STRUCTURE SHALL BE THE FOLLOWING
1.5" ASPHALT CONC. TYPE SM-9.5D @ 165 LBS/SY
3" ASPHALT CONCRETE, TYPE BM-25.0A @ 440 LBS/SY
6" GRADED AGGREGATE, TYPE 1, 21B
COMPACTED TO 95% STD. PROCTOR

COMMONWEALTH OF VIRGINIA
JAY MARCEL McGUIRE
Lic. No. 033440
28 August 2018
PROFESSIONAL ENGINEER

HURT & PROFFITT 1861 Pratt Drive Blacksburg, Va. 24060 540-552-5592 CULTURAL RESOURCES	DATE : 24 AUG 18 DESIGNED: JMM DRAWN : MDA CHECKED : JMJ QA/QC : JDW	REV. # COMMENTS DATE	**GILES ROAD STORMWATER IMPROVEMENTS AND SIDEWALK ADDITION** TOWN OF BLACKSBURG BLACKSBURG, VIRGINIA	**GENERAL NOTES & TYPICAL SECTIONS**	DOCUMENT NO. **31213 – 001** SHEET **C002**

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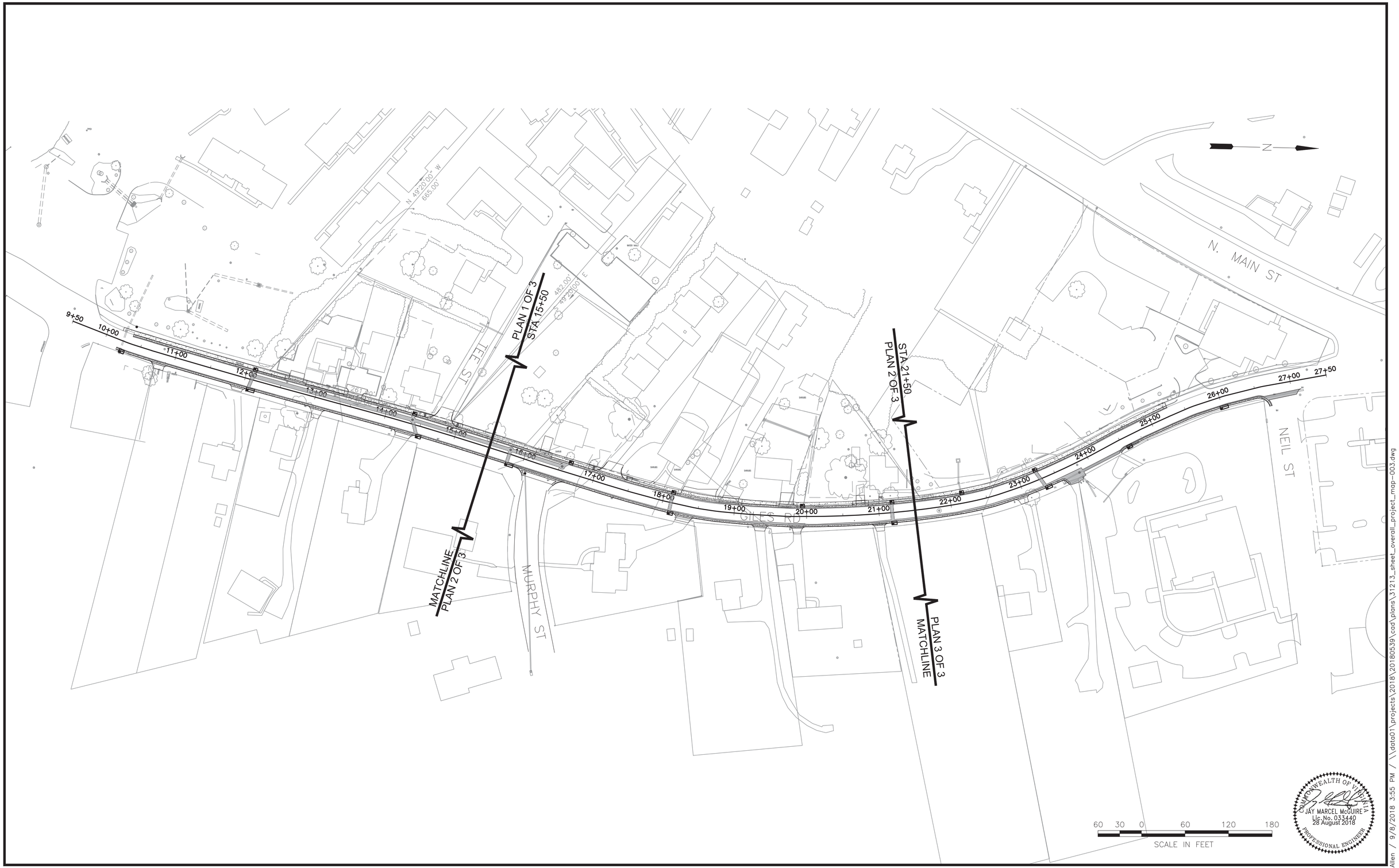

HURT & PROFFITT
CULTURAL RESOURCES
1861 Pratt Drive
Blacksburg, Va. 24060
540-552-5592

DATE :	24 AUG 18
DESIGNED:	JMM
DRAWN :	MDA
CHECKED :	JMJ
QA/QC :	JDW

REV. #	COMMENTS	DATE

GILES ROAD STORMWATER IMPROVEMENTS AND SIDEWALK ADDITION
TOWN OF BLACKSBURG
BLACKSBURG, VIRGINIA

OVERALL PROJECT MAP

DOCUMENT NO.
31213 – 001
SHEET
C003

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DEMOLITION LEGEND

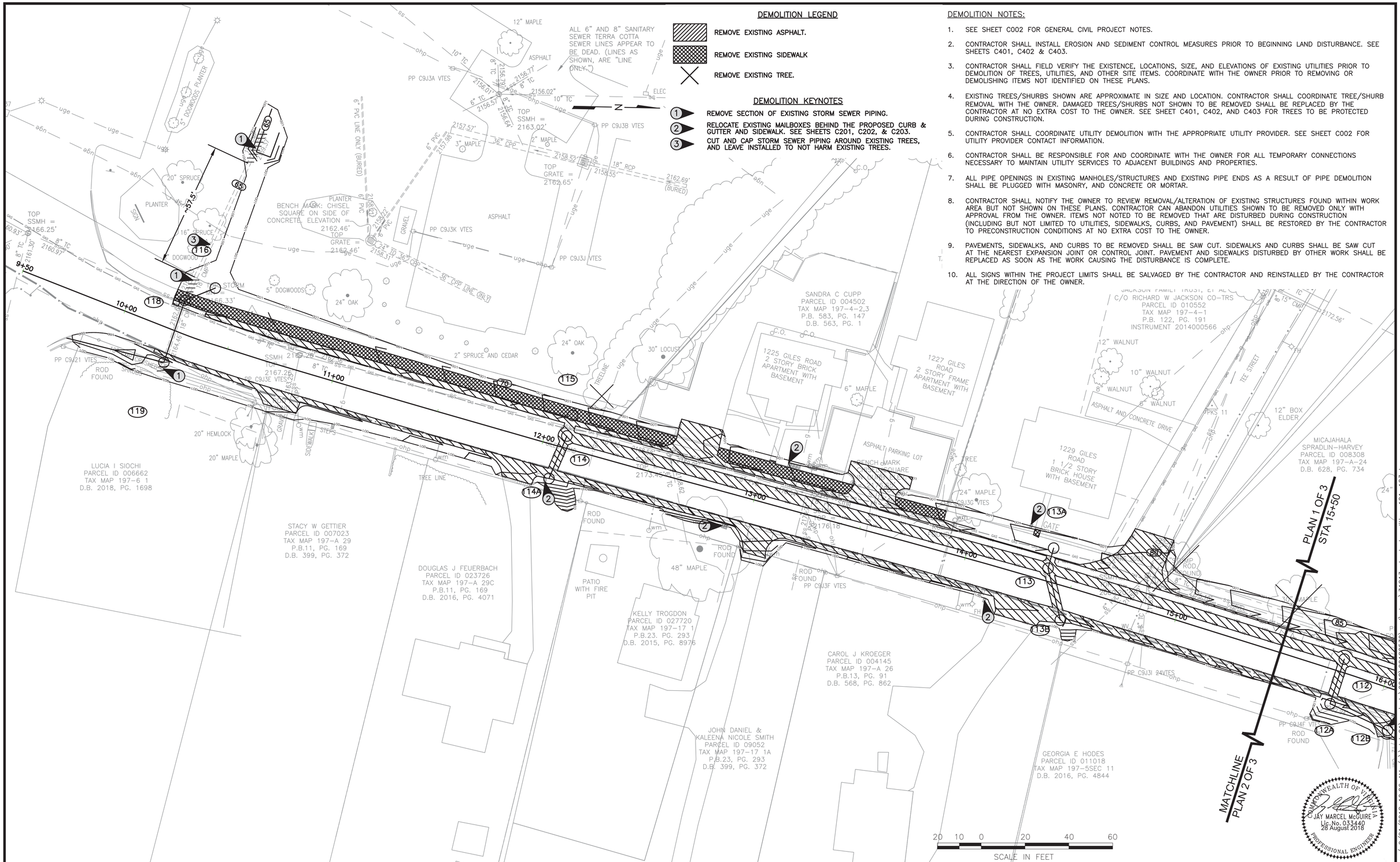
- REMOVE EXISTING ASPHALT.
- REMOVE EXISTING SIDEWALK
- REMOVE EXISTING TREE.

DEMOLITION KEYNOTES

1. REMOVE SECTION OF EXISTING STORM SEWER PIPING.
2. RELOCATE EXISTING MAILBOXES BEHIND THE PROPOSED CURB & GUTTER AND SIDEWALK. SEE SHEETS C201, C202, & C203.
3. CUT AND CAP STORM SEWER PIPING AROUND EXISTING TREES, AND LEAVE INSTALLED TO NOT HARM EXISTING TREES.

DEMOLITION NOTES:

1. SEE SHEET C002 FOR GENERAL CIVIL PROJECT NOTES.
2. CONTRACTOR SHALL INSTALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO BEGINNING LAND DISTURBANCE. SEE SHEETS C401, C402 & C403.
3. CONTRACTOR SHALL FIELD VERIFY THE EXISTENCE, LOCATIONS, SIZE, AND ELEVATIONS OF EXISTING UTILITIES PRIOR TO DEMOLITION OF TREES, UTILITIES, AND OTHER SITE ITEMS. COORDINATE WITH THE OWNER PRIOR TO REMOVING OR DEMOLISHING ITEMS NOT IDENTIFIED ON THESE PLANS.
4. EXISTING TREES/SHURBS SHOWN ARE APPROXIMATE IN SIZE AND LOCATION. CONTRACTOR SHALL COORDINATE TREE/SHURB REMOVAL WITH THE OWNER. DAMAGED TREES/SHURBS NOT SHOWN TO BE REMOVED SHALL BE REPLACED BY THE CONTRACTOR AT NO EXTRA COST TO THE OWNER. SEE SHEET C401, C402, AND C403 FOR TREES TO BE PROTECTED DURING CONSTRUCTION.
5. CONTRACTOR SHALL COORDINATE UTILITY DEMOLITION WITH THE APPROPRIATE UTILITY PROVIDER. SEE SHEET C002 FOR UTILITY PROVIDER CONTACT INFORMATION.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR AND COORDINATE WITH THE OWNER FOR ALL TEMPORARY CONNECTIONS NECESSARY TO MAINTAIN UTILITY SERVICES TO ADJACENT BUILDINGS AND PROPERTIES.
7. ALL PIPE OPENINGS IN EXISTING MANHOLES/STRUCTURES AND EXISTING PIPE ENDS AS A RESULT OF PIPE DEMOLITION SHALL BE PLUGGED WITH MASONRY, AND CONCRETE OR MORTAR.
8. CONTRACTOR SHALL NOTIFY THE OWNER TO REVIEW REMOVAL/ALTERATION OF EXISTING STRUCTURES FOUND WITHIN WORK AREA BUT NOT SHOWN ON THESE PLANS. CONTRACTOR CAN ABANDON UTILITIES SHOWN TO BE REMOVED ONLY WITH APPROVAL FROM THE OWNER. ITEMS NOT NOTED TO BE REMOVED THAT ARE DISTURBED DURING CONSTRUCTION (INCLUDING BUT NOT LIMITED TO UTILITIES, SIDEWALKS, CURBS, AND PAVEMENT) SHALL BE RESTORED BY THE CONTRACTOR TO PRECONSTRUCTION CONDITIONS AT NO EXTRA COST TO THE OWNER.
9. PAVEMENTS, SIDEWALKS, AND CURBS TO BE REMOVED SHALL BE SAW CUT. SIDEWALKS AND CURBS SHALL BE SAW CUT AT THE NEAREST EXPANSION JOINT OR CONTROL JOINT. PAVEMENT AND SIDEWALKS DISTURBED BY OTHER WORK SHALL BE REPLACED AS SOON AS THE WORK CAUSING THE DISTURBANCE IS COMPLETE.
10. ALL SIGNS WITHIN THE PROJECT LIMITS SHALL BE SALVAGED BY THE CONTRACTOR AND REINSTALLED BY THE CONTRACTOR AT THE DIRECTION OF THE OWNER.



COMMONWEALTH OF VIRGINIA
JAY MARCEL McGUIRE
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28 August 2018
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HURT & PROFFITT	DATE : 24 AUG 18 DESIGNED: JMM DRAWN : MDA CHECKED : JMJ QA/QC : JDW	REV. # COMMENTS DATE	GILES ROAD STORMWATER IMPROVEMENTS AND SIDEWALK ADDITION TOWN OF BLACKSBURG BLACKSBURG, VIRGINIA	EXISTING CONDITIONS & DEMOLITION PLAN 1 OF 3	DOCUMENT NO. 31213 – 001 SHEET C101

1861 Pratt Drive
Blacksburg, Va. 24060
540-552-5592
CULTURAL RESOURCES

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DEMOLITION NOTES:

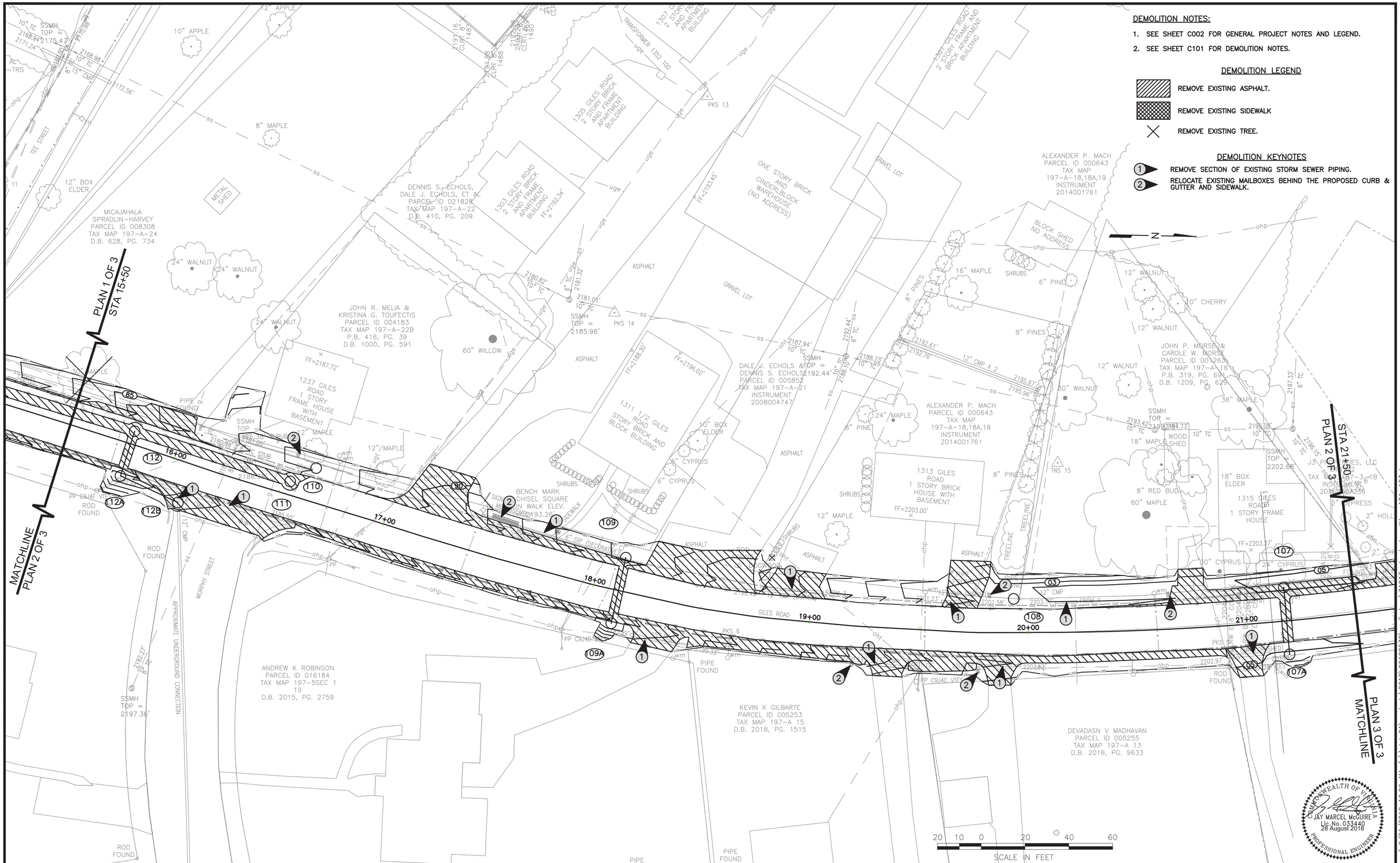
1. SEE SHEET C002 FOR GENERAL PROJECT NOTES AND LEGEND.
2. SEE SHEET C101 FOR DEMOLITION NOTES.

DEMOLITION LEGEND

- REMOVE EXISTING ASPHALT.
- REMOVE EXISTING SIDEWALK
- REMOVE EXISTING TREE.

DEMOLITION KEYNOTES

1. REMOVE SECTION OF EXISTING STORM SEWER PIPING.
2. RELOCATE EXISTING MAILBOXES BEHIND THE PROPOSED CURB & GUTTER AND SIDEWALK.



HURT & PROFFITT 1861 Pratt Drive Blacksburg, Va. 24060 540-552-5592 CULTURAL RESOURCES	DATE : 24 AUG 18 DESIGNED: JMM DRAWN : MDA CHECKED : JMJ QA/QC : JDW	REV. # COMMENTS DATE	**GILES ROAD STORMWATER IMPROVEMENTS AND SIDEWALK ADDITION** TOWN OF BLACKSBURG BLACKSBURG, VIRGINIA	**EXISTING CONDITIONS & DEMOLITION PLAN 2 OF 3**	DOCUMENT NO. **31213 – 001** SHEET **C102**

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DEMOLITION NOTES:

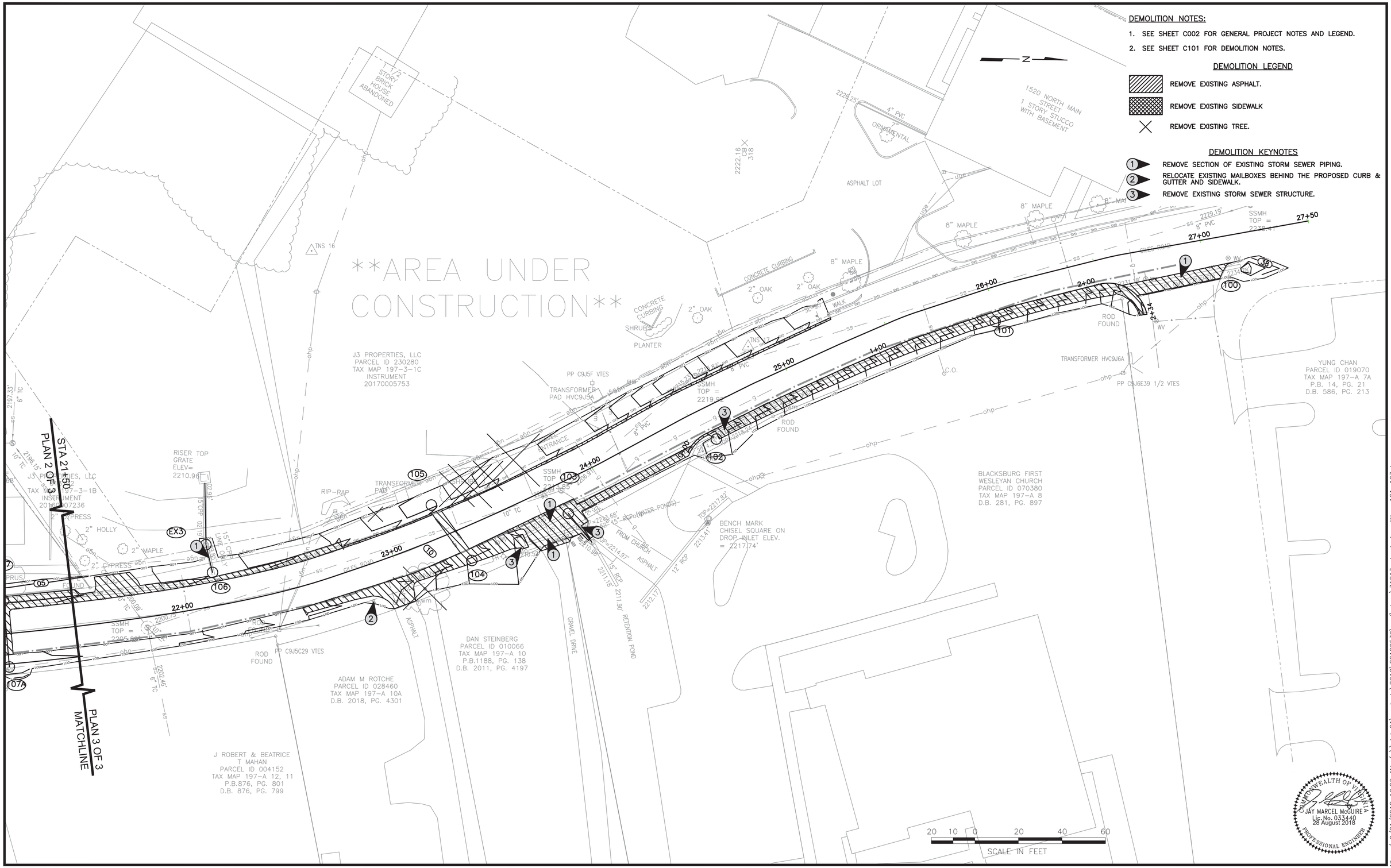
1. SEE SHEET C002 FOR GENERAL PROJECT NOTES AND LEGEND.
2. SEE SHEET C101 FOR DEMOLITION NOTES.

DEMOLITION LEGEND

- REMOVE EXISTING ASPHALT.
- REMOVE EXISTING SIDEWALK
- REMOVE EXISTING TREE.

DEMOLITION KEYNOTES

1. REMOVE SECTION OF EXISTING STORM SEWER PIPING.
2. RELOCATE EXISTING MAILBOXES BEHIND THE PROPOSED CURB & GUTTER AND SIDEWALK.
3. REMOVE EXISTING STORM SEWER STRUCTURE.



JAY MARCEL McGUIRE
Lic. No. 033440
28 August 2018
COMMONWEALTH OF VIRGINIA
PROFESSIONAL ENGINEER

HURT & PROFFITT	DATE : 24 AUG 18	REV. #	COMMENTS	DATE	GILES ROAD STORMWATER IMPROVEMENTS AND SIDEWALK ADDITION	EXISTING CONDITIONS & DEMOLITION PLAN 3 OF 3	DOCUMENT NO. 31213 – 001
1861 Pratt Drive Blacksburg, Va. 24060 540-552-5592 CULTURAL RESOURCES	DESIGNED: JMM				TOWN OF BLACKSBURG BLACKSBURG, VIRGINIA		SHEET C103
	DRAWN : MDA						
	CHECKED : JMJ						
	QA/QC : JDW						

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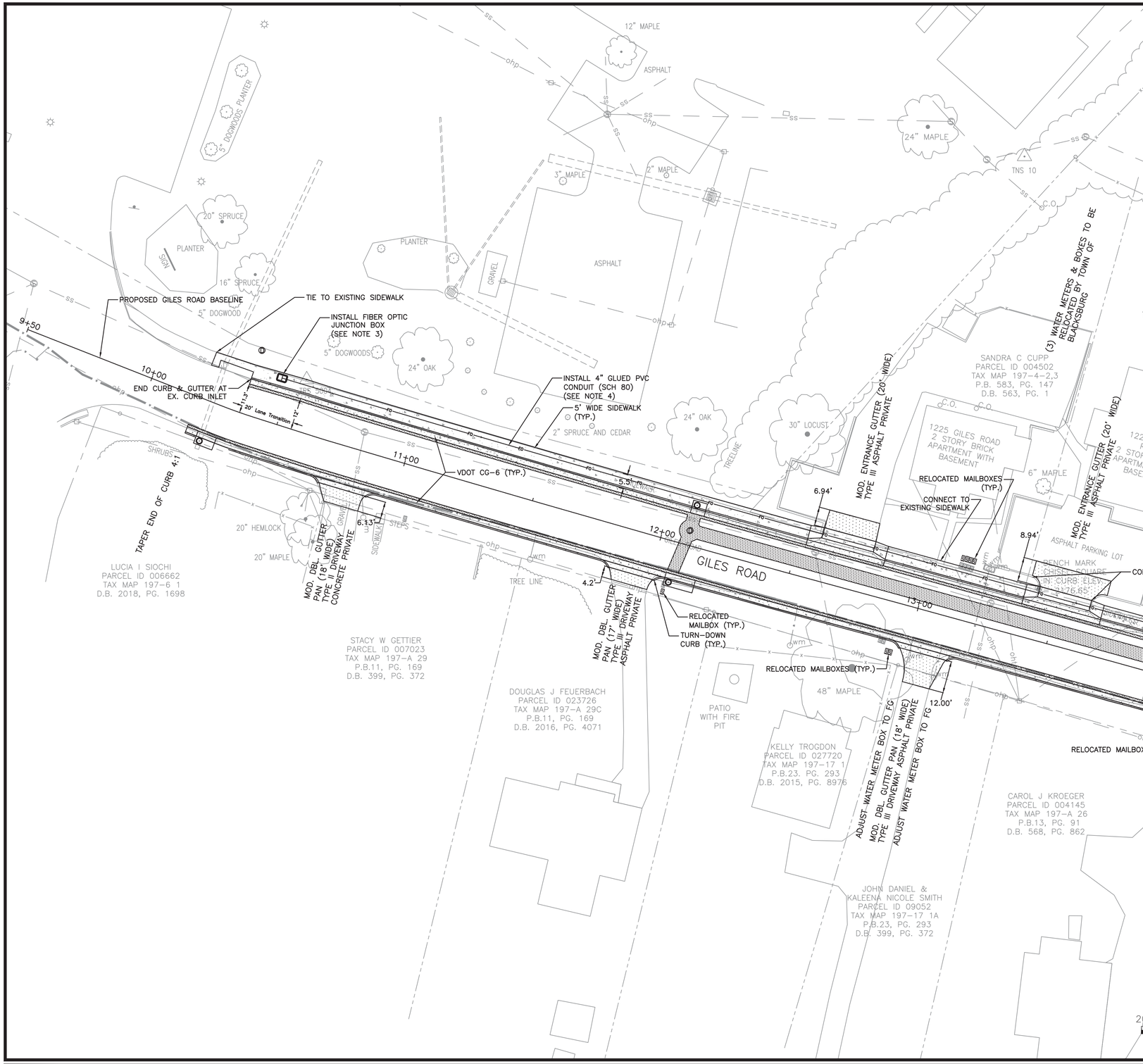


ROAD & SIDEWALK LAYOUT NOTES:

1. SEE SHEET C002 FOR GENERAL PROJECT NOTES.
2. ALL CURVE RADIUS DIMENSIONS ARE 5' UNLESS OTHERWISE INDICATED.
3. FIBER OPTIC JUNCTION BOXES SHALL BE PEM-2436-30-HP, BY PENCELL PLASTICS OR APPROVED EQUAL.
4. FIBER OPTIC CONDUIT SHALL BE 4" PVC CONDUIT (SCH 80) AND GLUED AT EACH JOINT. CONTRACTOR SHALL INSTALL DT900-SIZE DETECTABLE MULETAPE IN EACH RUN OF CONDUIT.
5. ALL DIMENSIONS ARE PERPENDICULAR TO PROPOSED, UNLESS OTHERWISE INDICATED.
6. SITE CONCRETE SHALL COMPLY WITH DETAILS ON SHEET C002. CONTROL JOINTS SHALL BE INSTALLED EVERY 5', AND EXPANSION JOINTS SHALL BE INSTALLED EVERY 50' (MAX) UNLESS OTHERWISE NOTED. EXPANSION JOINTS SHALL BE PROVIDED AT TIE-IN OF NEW AND OLD SIDEWALKS. REINFORCE TIE-IN OF NEW AND OLD SIDEWALK WITH #4 DOWELS AT 12" O.C. AND INSERTED INTO CONCRETE 10" PER SIDE WITH MINIMUM COVER OF 2" OF CONCRETE.
7. ASPHALT PAVEMENT PATCH AND/OR WIDENING ALONG CURB & GUTTER AS WELL AS DRIVEWAY PAVING SHALL COMPLY WITH DETAILS ON SHEET C002. WHERE NEW PAVEMENT OR GUTTER IS INSTALLED ADJACENT TO EXISTING PAVEMENT, EXISTING PAVEMENT SHALL BE SAW CUT 1' MAX. BACK FROM THE EXISTING EDGE AND PRIMED WITH VDOT APPROVED PRIMER PRIOR TO PLACEMENT OF NEW ASPHALT MATERIAL. THE FACE OF GUTTER PAN SHALL ALSO BE PRIMED.
8. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL COMPLY WITH VDOT AND TOWN OF BLACKSBURG STANDARDS AND SPECIFICATIONS.
9. PROPOSED / RELOCATED MAILBOX LOCATIONS ARE APPROXIMATE. COORDINATE WITH HOME OWNERS AND UNITED STATES POSTAL SERVICE.

COMMONWEALTH OF VIRGINIA
JAY MARCEL McGUIRE
Lic.No. 033440
28 August 2018
PROFESSIONAL ENGINEER

HURT & PROFFITT
1861 Pratt Drive
Blacksburg, Va. 24060
540-552-5592
CULTURAL RESOURCES

DATE	: 24 AUG 18
DESIGNED:	JMM
DRAWN	: MDA
CHECKED :	JMJ
QA/QC	: JDW

REV. #	COMMENTS	DATE

GILES ROAD STORMWATER IMPROVEMENTS AND SIDEWALK ADDITION
TOWN OF BLACKSBURG
BLACKSBURG, VIRGINIA

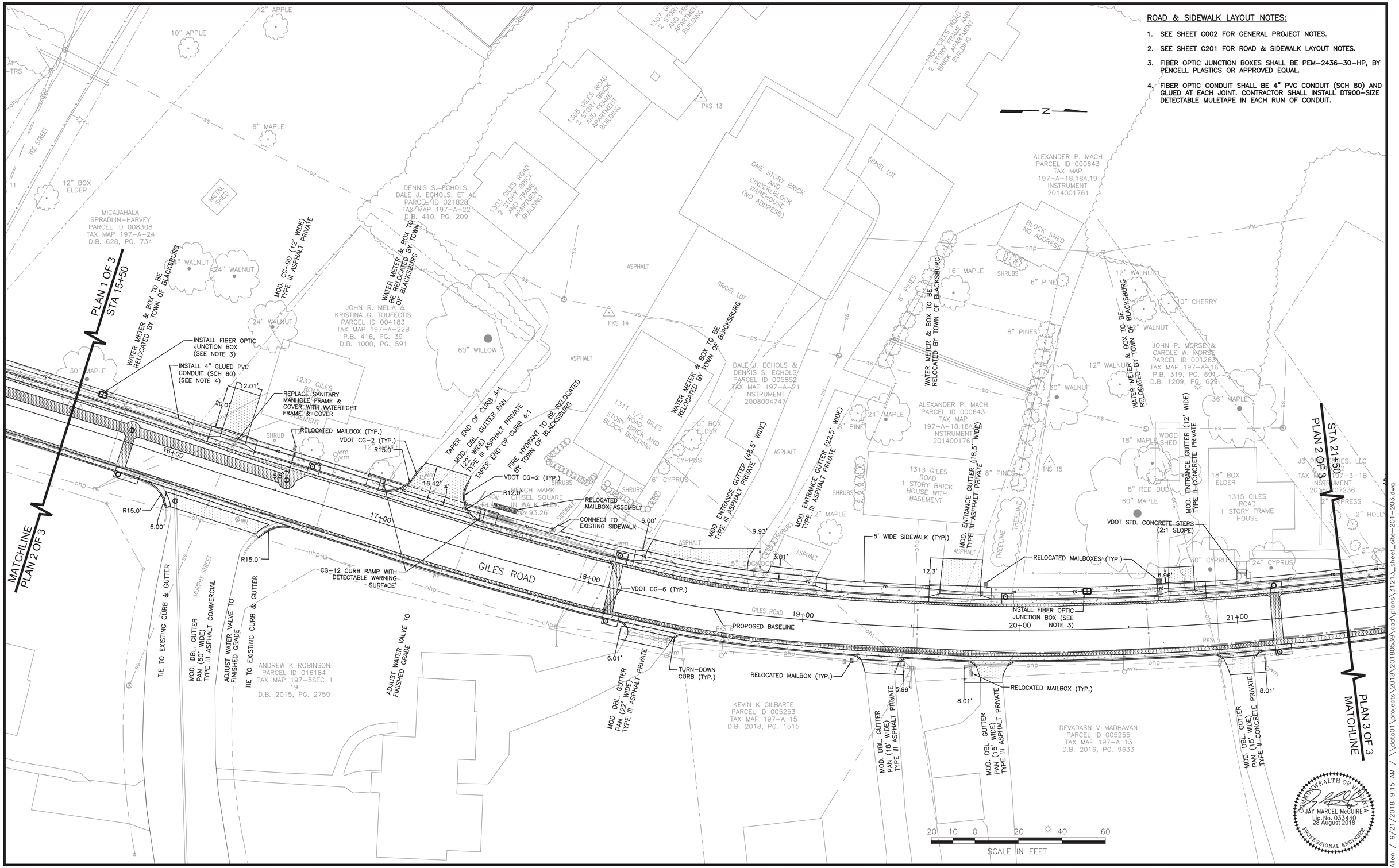
ROAD, SIDEWALK & UTILITY ADJUSTMENTS PLAN 1 OF 3

DOCUMENT NO. **31213 – 001**
SHEET **C201**

Matthew D. Allen / 9/21/2018 9:15 AM / \\data01\projects\2018\20180539\cad\plans\31213_sheet_site-201-203.dwg

ROAD & SIDEWALK LAYOUT NOTES:

1. SEE SHEET C002 FOR GENERAL PROJECT NOTES.
2. SEE SHEET C201 FOR ROAD & SIDEWALK LAYOUT NOTES.
3. FIBER OPTIC JUNCTION BOXES SHALL BE PEM-2436-30-HP, BY PENCELL PLASTICS OR APPROVED EQUAL.
4. FIBER OPTIC CONDUIT SHALL BE 4" PVC CONDUIT (SCH 80) AND GLUED AT EACH JOINT. CONTRACTOR SHALL INSTALL DT900-SIZE DETECTABLE MULETAPE IN EACH RUN OF CONDUIT.



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1861 Pratt Drive
Blacksburg, Va. 24060
540-552-5592
CULTURAL RESOURCES

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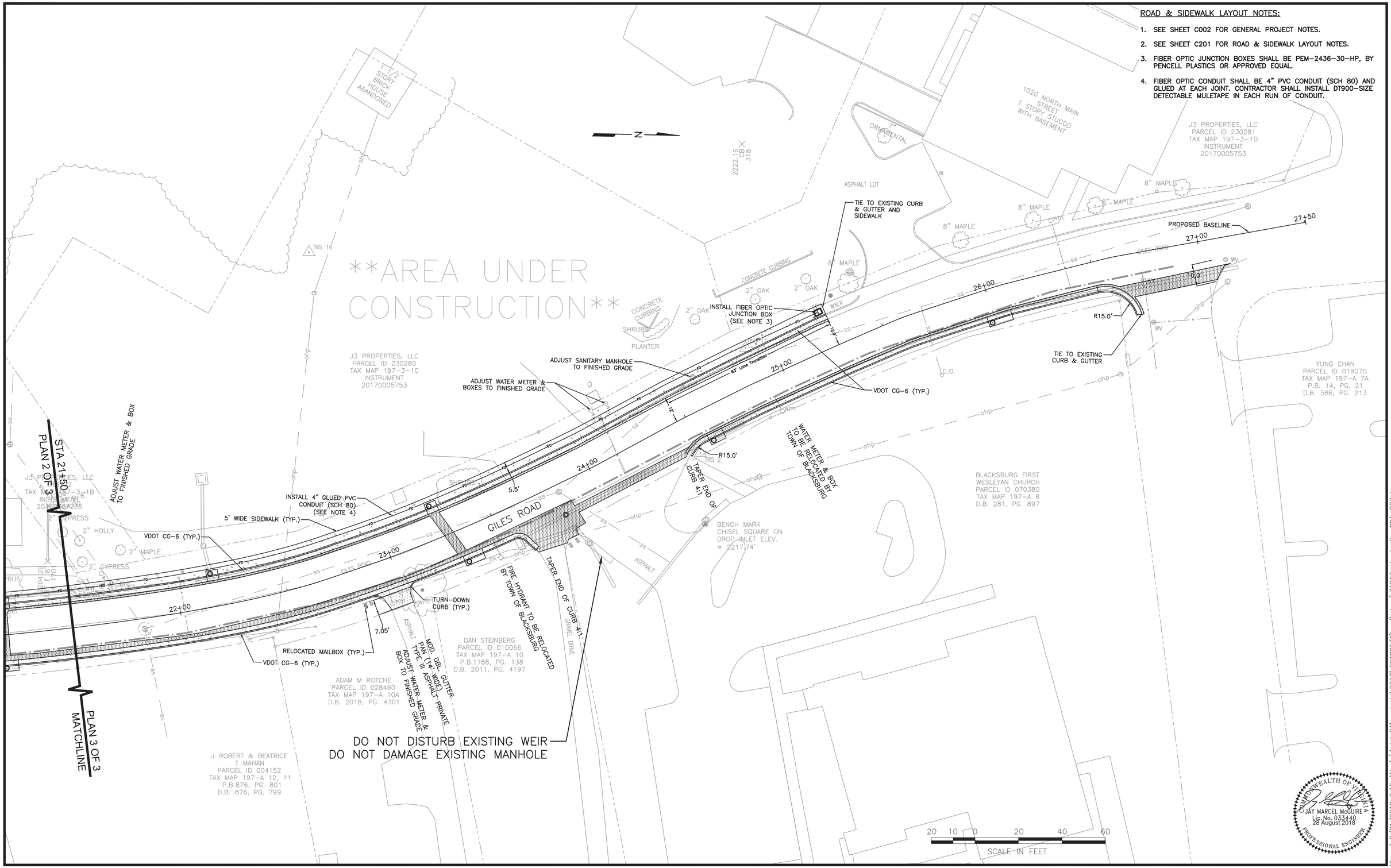
GILES ROAD STORMWATER IMPROVEMENTS AND SIDEWALK ADDITION
TOWN OF BLACKSBURG
BLACKSBURG, VIRGINIA

ROAD, SIDEWALK & UTILITY ADJUSTMENTS PLAN 2 OF 3

DOCUMENT NO. 31213 – 001
SHEET C202

ROAD & SIDEWALK LAYOUT NOTES:

1. SEE SHEET C002 FOR GENERAL PROJECT NOTES.
2. SEE SHEET C201 FOR ROAD & SIDEWALK LAYOUT NOTES.
3. FIBER OPTIC JUNCTION BOXES SHALL BE PEM-2436-30-HP, BY PENCELL PLASTICS OR APPROVED EQUAL.
4. FIBER OPTIC CONDUIT SHALL BE 4" PVC CONDUIT (SCH 80) AND GLUED AT EACH JOINT. CONTRACTOR SHALL INSTALL DT900-SIZE DETECTABLE MULETAPE IN EACH RUN OF CONDUIT.

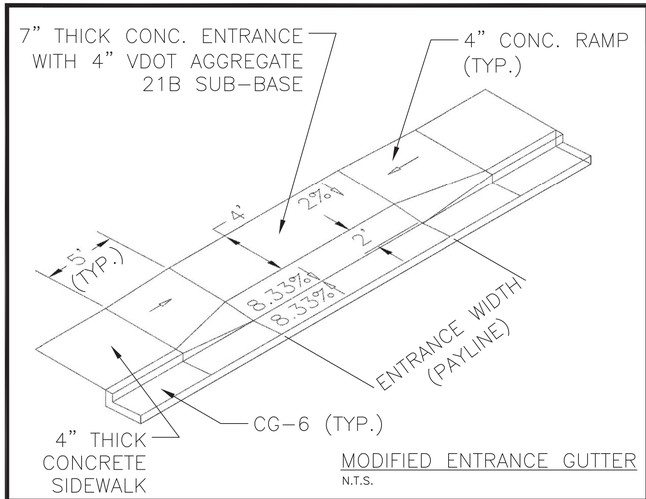


HURT & PROFFITT				
1861 Pratt Drive Blacksburg, Va. 24060 540-552-5592 CULTURAL RESOURCES	DATE : 24 AUG 18 DESIGNED: JMM DRAWN : MDA CHECKED : JMJ QA/QC : JDW	REV. # COMMENTS DATE	**GILES ROAD STORMWATER IMPROVEMENTS AND SIDEWALK ADDITION** TOWN OF BLACKSBURG BLACKSBURG, VIRGINIA	**ROAD, SIDEWALK & UTILITY ADJUSTMENTS PLAN 3 OF 3**

DOCUMENT NO. **31213 – 001**

SHEET **C203**

Matthew D. Allen / 9/21/2018 9:15 AM / \\data01\projects\2018\20180539\cad\plans\31213_sheet_site-201-203.dwg

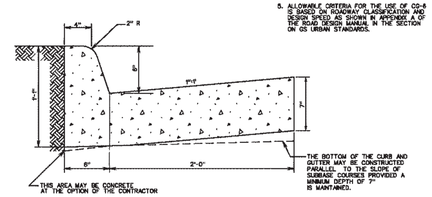


MODIFIED ENTRANCE GUTTER
N.T.S.

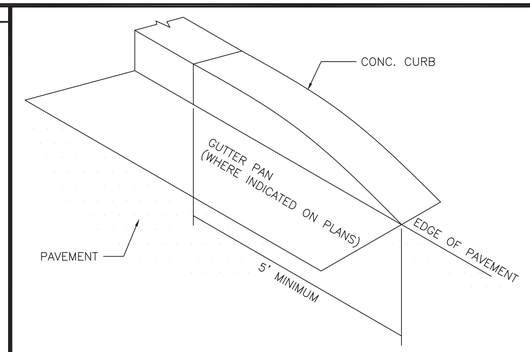
CG-6

NOTES:

1. THIS ITEM MAY BE PRECAST OR CAST IN PLACE.
2. CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.
3. COMBINATION CURB & GUTTER HAVING A RADIUS OF 300 FEET OR LESS (ALONG FACE OF CURB) SHALL BE PAID FOR AS RADIAL COMBINATION CURB & GUTTER.
4. FOR USE WITH STABILIZED OPEN-GRADED DRAINAGE COURSE. THE BOTTOM OF THE CURB & GUTTER SHALL BE CONSTRUCTED PARALLEL TO THE SLOPE OF SUBBASE COURSES AND TO THE DEPTH OF THE PAVEMENT.
5. ALLOWABLE CRITERIA FOR THE USE OF CG-6 IS BASED ON ROADWAY CLASSIFICATION AND DESIGN SPEED AS SHOWN IN APPENDIX A OF THE ROAD DESIGN MANUAL IN THE SECTION ON GS URBAN STANDARDS.

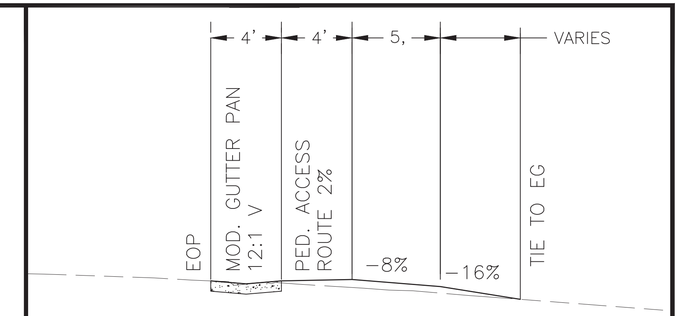


SPECIFICATION REFERENCE	COMBINATION 6" CURB AND GUTTER	VDOT ROAD AND BRIDGE STANDARDS
105 502	VIRGINIA DEPARTMENT OF TRANSPORTATION	REVISION DATE: 2010.03 — SHEET 1 OF 1

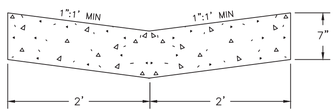


TURNDOWN CURB
NTS

NOTE: TO BE USED AT END OF CURB RADII AT MODIFIED GUTTER PAN



TYPICAL ENTRANCE PROFILE

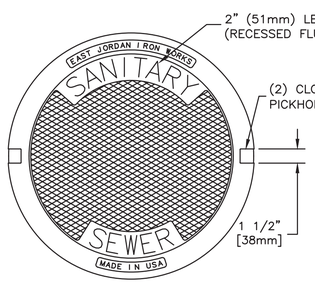


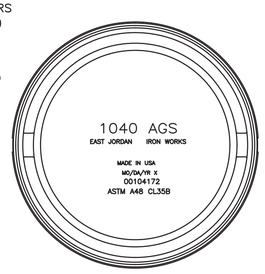
NOTES:

1. THIS ITEM MAY BE PRECAST OR CAST IN PLACE.
2. CONCRETE TO BE CLASS A3 IF CAST IN PLACE, 4000 PSI IF PRECAST.

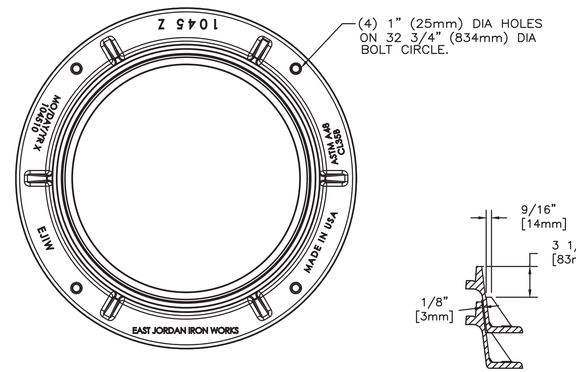
MODIFIED DOUBLE GUTTER PAN
NTS

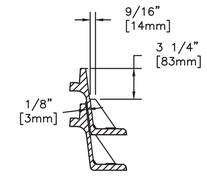
STANDARD SANITARY SEWER FRAME & COVER DETAIL



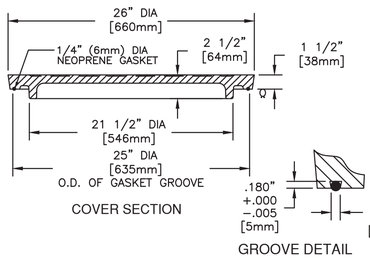


BOTTOM VIEW OF COVER



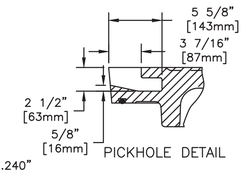


STACK DETAIL

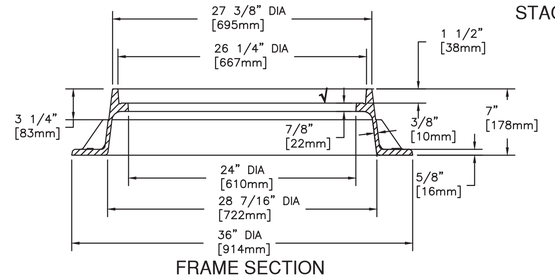


COVER SECTION

GROOVE DETAIL

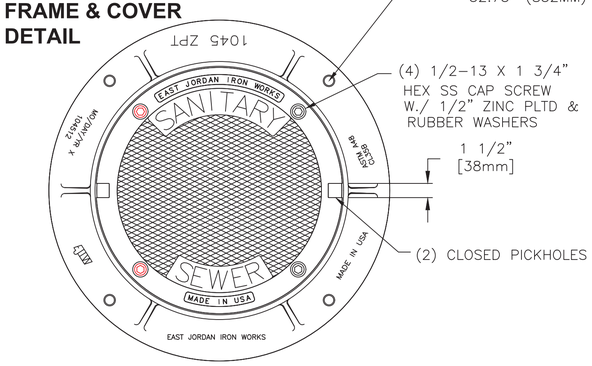


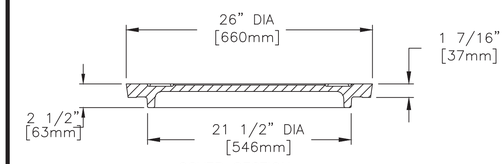
PICKHOLE DETAIL



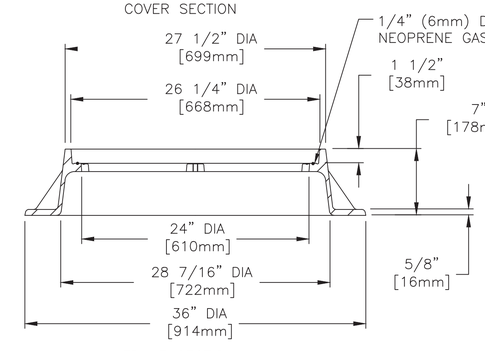
FRAME SECTION

WATERTIGHT SANITARY SEWER FRAME & COVER DETAIL

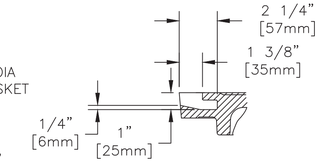




COVER SECTION



FRAME SECTION



PICKHOLE DETAIL

COMMONWEALTH OF VIRGINIA
JAY MARCEL McGUIRE
Lic. No. 033440
28 August 2018
PROFESSIONAL ENGINEER

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HURT & PROFFITT
CULTURAL RESOURCES
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Blacksburg, Va. 24060
540-552-5592

DATE	24 AUG 18
DESIGNED:	JMM
DRAWN	MDA
CHECKED	JMJ
QA/QC	JDW

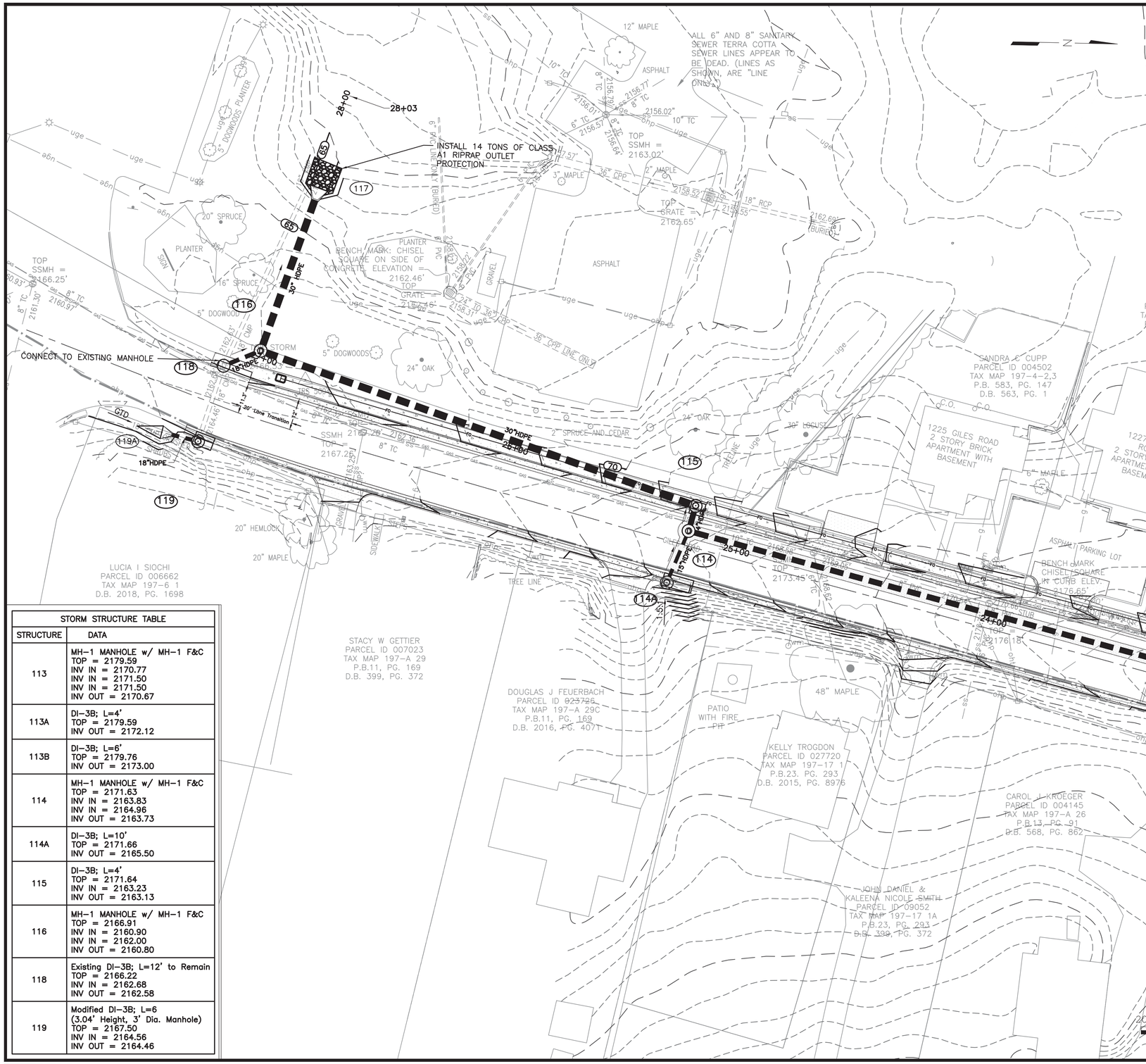
REV. #	COMMENTS	DATE

GILES ROAD STORMWATER IMPROVEMENTS AND SIDEWALK ADDITION
TOWN OF BLACKSBURG
BLACKSBURG, VIRGINIA

ROAD & SIDEWALK DETAILS

DOCUMENT NO. 31213 – 001
SHEET C204

Matthew D. Allen / 9/17/2018 2:08 PM / \\data01\projects\2018\20180539\cad\plans\31213_sheet_site_details-204.dwg



STORM STRUCTURE TABLE	
STRUCTURE	DATA
113	MH-1 MANHOLE w/ MH-1 F&C TOP = 2179.59 INV IN = 2170.77 INV IN = 2171.50 INV IN = 2171.50 INV OUT = 2170.67
113A	DI-3B; L=4' TOP = 2179.59 INV OUT = 2172.12
113B	DI-3B; L=6' TOP = 2179.76 INV OUT = 2173.00
114	MH-1 MANHOLE w/ MH-1 F&C TOP = 2171.63 INV IN = 2163.83 INV IN = 2164.96 INV OUT = 2163.73
114A	DI-3B; L=10' TOP = 2171.66 INV OUT = 2165.50
115	DI-3B; L=4' TOP = 2171.64 INV IN = 2163.23 INV OUT = 2163.13
116	MH-1 MANHOLE w/ MH-1 F&C TOP = 2166.91 INV IN = 2160.90 INV IN = 2162.00 INV OUT = 2160.80
118	Existing DI-3B; L=12' to Remain TOP = 2166.22 INV IN = 2162.68 INV OUT = 2162.58
119	Modified DI-3B; L=6 (3.04' Height, 3' Dia. Manhole) TOP = 2167.50 INV IN = 2164.56 INV OUT = 2164.46

GRADING & DRAINAGE NOTES:

1. SEE SHEET C002 FOR GENERAL CIVIL PROJECT NOTES.
2. PROPOSED CONTOUR INTERVAL IS 1', WITH ADDITIONAL SPOT ELEVATIONS FOR CLARITY.
3. ALL EXISTING UTILITY TOPS SHALL BE ADJUSTED TO PROPOSED ELEVATIONS. PROPOSED UTILITY TOPS WITHIN PAVEMENT OR CONCRETE SHALL BE INSTALLED FLUSH WITH THE SURFACE.
4. CONTRACTOR SHALL SIZE MANHOLE DIAMETERS TO ACCOMMODATE ALL PIPES ENTERING AND LEAVING THE MANHOLE.
5. ALL STORM DRAIN MANHOLES SHALL HAVE STEPS AND INVERT SHAPING IN ACCORDANCE WITH STANDARD DETAILS ON SHEET C307.
6. MANHOLE MATERIALS AND CONSTRUCTION SHALL CONFORM TO VDOT STANDARD DETAIL MH-1 ON SHEET C307.
7. HIGH DENSITY POLYETHYLENE PIPE (HDPE) SHALL BE USED. ALL STORM DRAIN LINES SHALL BE BEDDED IN ACCORDANCE WITH DETAIL TB-7 AND TB-8 ON SHEET C307.
8. ALL STORM SEWER SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
9. SEE SHEETS C304 & C305 FOR STORM DRAIN PROFILES, INCLUDING INVERT AND TOP ELEVATIONS.
10. WHERE NEW ASPHALT OR CONCRETE MEETS EXISTING ASPHALT OR CONCRETE, MATCH EXISTING GRADE.
11. WHEN PLACING TOPSOIL A MINIMUM TOPSOIL THICKNESS OF 3" AND A MAXIMUM THICKNESS OF 6" SHALL BE PROVIDED ON AREAS TO RECEIVE TOPSOIL. CONTRACTOR IS RESPONSIBLE FOR SUPPLYING ADEQUATE VOLUME OF TOPSOIL FROM OFF-SITE SOURCES FOR THIS WORK.
12. ALL FILL MATERIALS SHALL BE FREE FROM MUD, REFUSE, CONSTRUCTION DEBRIS, ORGANIC MATERIAL, ROCK OR GRAVEL GREATER THAN 4 INCHES IN ANY DIMENSION, AND FROZEN OR OTHERWISE UNSUITABLE MATERIAL.
13. ALL VEGETATION SUCH AS ROOTS, BRUSH, HEAVY SODS, HEAVY GROWTH OF GRASS, AND ALL DECAYED VEGETATIVE MATTER, RUBBISH, AND OTHER UNSATISFACTORY MATERIAL WITHIN THE AREA UPON WHICH FILL IS TO BE PLACED, SHALL BE STRIPPED OR OTHERWISE REMOVED BEFORE THE FILL IS STARTED. IN NO CASE WILL UNSATISFACTORY MATERIAL REMAIN IN OR UNDER THE FILL AREA.
14. TOPSOIL SHALL BE REMOVED AS REQUIRED WITHOUT CONTAMINATION WITH SUBSOIL AND STOCKPILED CONVENIENT TO AREAS FOR LATER APPLICATION OR AT LOCATIONS SPECIFIED. ANY SURPLUS OF TOPSOIL FROM EXCAVATIONS AND GRADING SHALL BE STOCKPILED IN LOCATIONS APPROVED BY THE OWNER. SILT FENCE SHALL BE INSTALLED ON THE DOWNSLOPE SIDE OF, AND SEEDING SHALL BE INSTALLED ON TOP OF ALL STOCKPILES.
15. ON AREAS TO RECEIVE TOPSOIL, THE COMPACTED SUBGRADE SHALL BE SCARIFIED TO A 2-INCH DEPTH FOR BONDING OF TOPSOIL WITH SUBSOIL. TOPSOIL SHALL THEN BE SPREAD EVENLY AND GRADED TO THE ELEVATIONS AND SLOPES SHOWN. TOPSOIL SHALL NOT BE SPREAD WHEN FROZEN OR EXCESSIVELY WET OR DRY. MINIMUM TOPSOIL THICKNESS OF 1/2" SHALL BE PROVIDED.

COMMONWEALTH OF VIRGINIA
JAY MARCEL McGUIRE
Lic. No. 033440
28 August 2018
PROFESSIONAL ENGINEER

HURT & PROFFITT
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1861 Pratt Drive
Blacksburg, Va. 24060
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DATE : 24 AUG 18
DESIGNED: JMM
DRAWN : MDA
CHECKED : JMJ
QA/QC : JDW

REV. # COMMENTS DATE

GILES ROAD STORMWATER IMPROVEMENTS AND SIDEWALK ADDITION
TOWN OF BLACKSBURG
BLACKSBURG, VIRGINIA

GRADING & DRAINAGE PLAN 1 OF 3

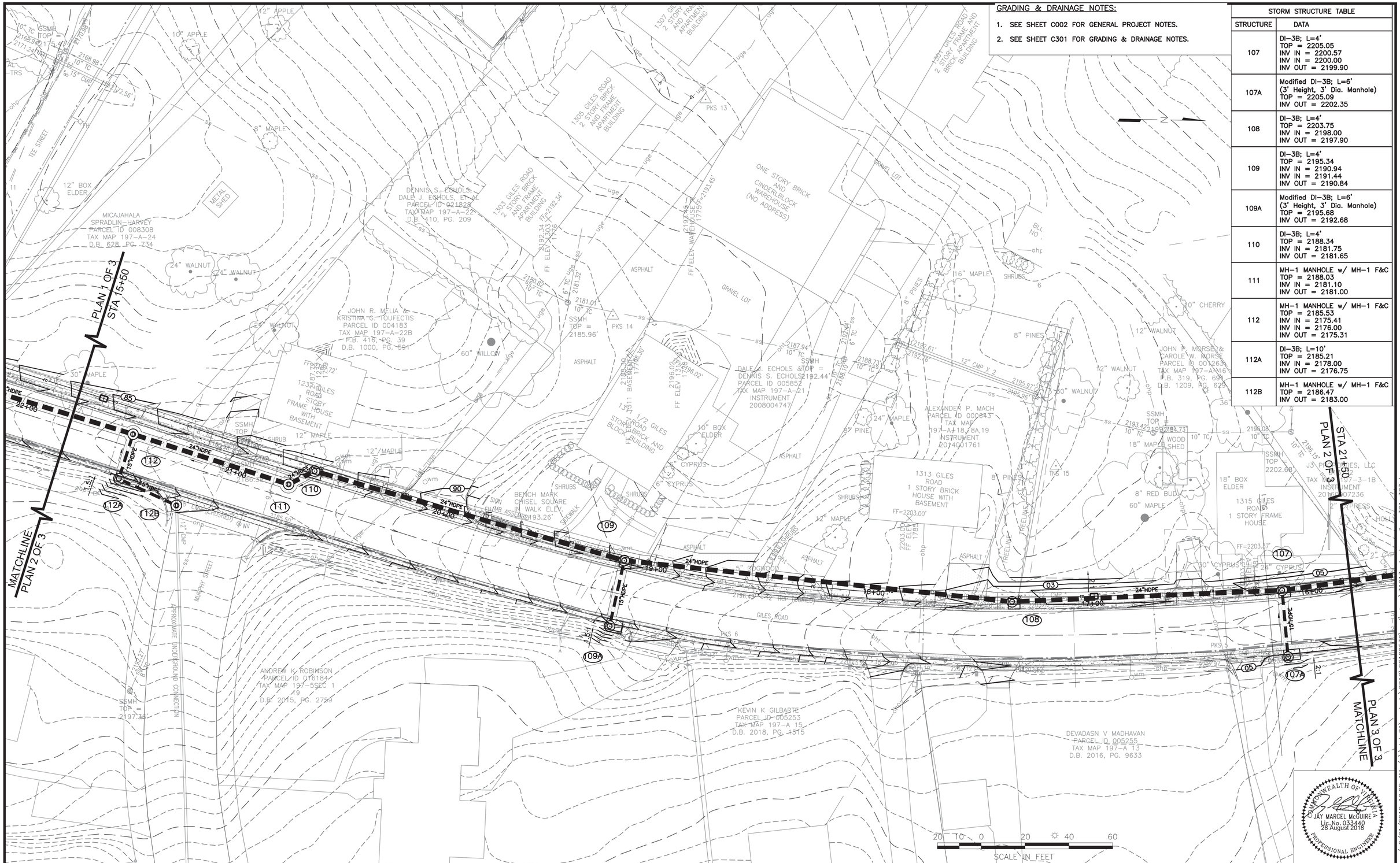
DOCUMENT NO. 31213 – 001
SHEET C301

Matthew D. Allen / 9/21/2018 10:08 AM / \\data01\projects\2018\20180539\cad\plans\31213_sheet_grading-301-303.dwg

GRADING & DRAINAGE NOTES:

1. SEE SHEET C002 FOR GENERAL PROJECT NOTES.
2. SEE SHEET C301 FOR GRADING & DRAINAGE NOTES.

STORM STRUCTURE TABLE	
STRUCTURE	DATA
107	DI–3B; L=4' TOP = 2205.05 INV IN = 2200.57 INV IN = 2200.00 INV OUT = 2199.90
107A	Modified DI–3B; L=6' (3' Height, 3' Dia. Manhole) TOP = 2205.09 INV OUT = 2202.35
108	DI–3B; L=4' TOP = 2203.75 INV IN = 2198.00 INV OUT = 2197.90
109	DI–3B; L=4' TOP = 2195.34 INV IN = 2190.94 INV IN = 2191.44 INV OUT = 2190.84
109A	Modified DI–3B; L=6' (3' Height, 3' Dia. Manhole) TOP = 2195.68 INV OUT = 2192.68
110	DI–3B; L=4' TOP = 2188.34 INV IN = 2181.75 INV OUT = 2181.65
111	MH–1 MANHOLE w/ MH–1 F&C TOP = 2188.03 INV IN = 2181.10 INV OUT = 2181.00
112	MH–1 MANHOLE w/ MH–1 F&C TOP = 2185.53 INV IN = 2175.41 INV IN = 2176.00 INV OUT = 2175.31
112A	DI–3B; L=10' TOP = 2185.21 INV IN = 2178.00 INV OUT = 2176.75
112B	MH–1 MANHOLE w/ MH–1 F&C TOP = 2186.47 INV OUT = 2183.00



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COMMONWEALTH OF VIRGINIA
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1861 Pratt Drive
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REV. #	COMMENTS	DATE

GILES ROAD STORMWATER IMPROVEMENTS AND SIDEWALK ADDITION

TOWN OF BLACKSBURG
BLACKSBURG, VIRGINIA

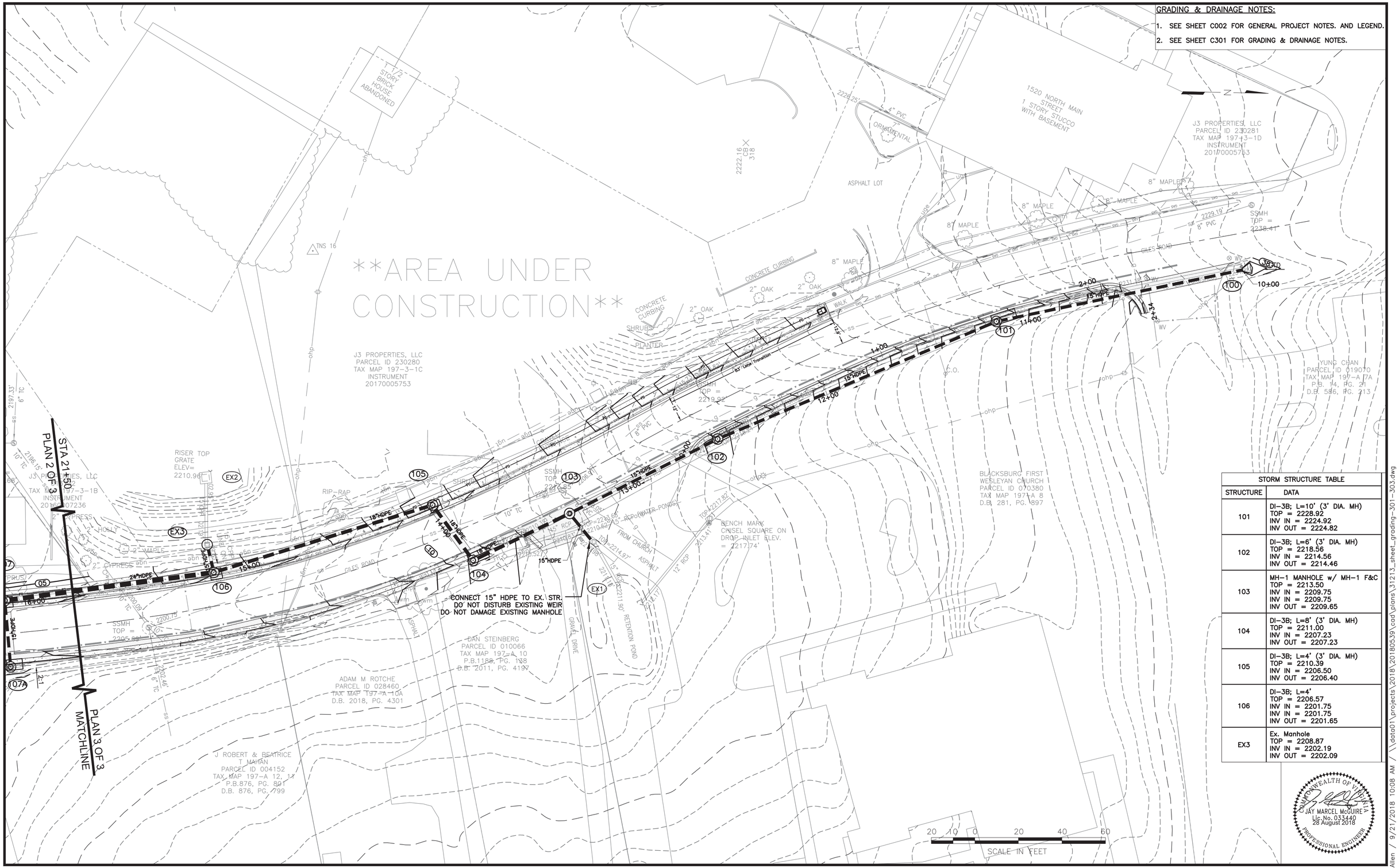
GRADING & DRAINAGE PLAN 2 OF 3

DOCUMENT NO. 31213 – 001
SHEET C302

Matthew D. Allen / 9/21/2018 10:08 AM / \\data01\projects\2018\20180539\cad\plans\31213_sheet_grading-301-303.dwg

GRADING & DRAINAGE NOTES:

1. SEE SHEET C002 FOR GENERAL PROJECT NOTES. AND LEGEND.
2. SEE SHEET C301 FOR GRADING & DRAINAGE NOTES.



STORM STRUCTURE TABLE	
STRUCTURE	DATA
101	DI-3B; L=10' (3' DIA. MH) TOP = 2228.92 INV IN = 2224.92 INV OUT = 2224.82
102	DI-3B; L=6' (3' DIA. MH) TOP = 2218.56 INV IN = 2214.56 INV OUT = 2214.46
103	MH-1 MANHOLE w/ MH-1 F&C TOP = 2213.50 INV IN = 2209.75 INV IN = 2209.75 INV OUT = 2209.65
104	DI-3B; L=8' (3' DIA. MH) TOP = 2211.00 INV IN = 2207.23 INV OUT = 2207.23
105	DI-3B; L=4' (3' DIA. MH) TOP = 2210.39 INV IN = 2206.50 INV OUT = 2206.40
106	DI-3B; L=4' TOP = 2206.57 INV IN = 2201.75 INV IN = 2201.75 INV OUT = 2201.65
EX3	Ex. Manhole TOP = 2208.87 INV IN = 2202.19 INV OUT = 2202.09

COMMONWEALTH OF VIRGINIA
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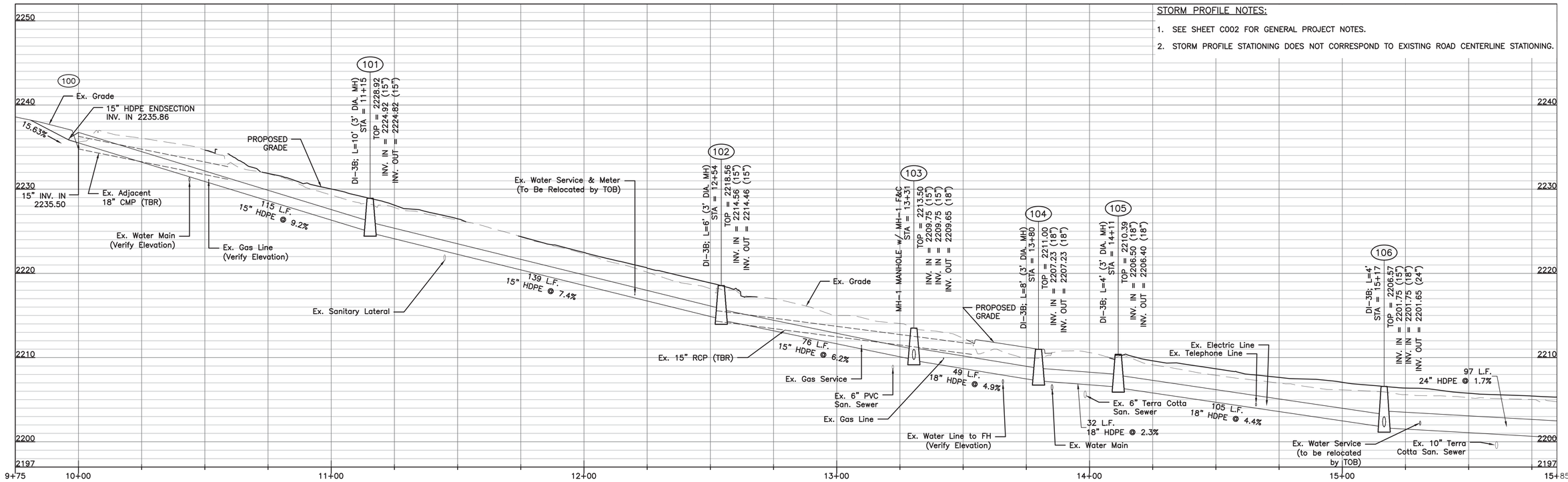
TOWN OF BLACKSBURG
BLACKSBURG, VIRGINIA

GRADING & DRAINAGE PLAN 3 OF 3

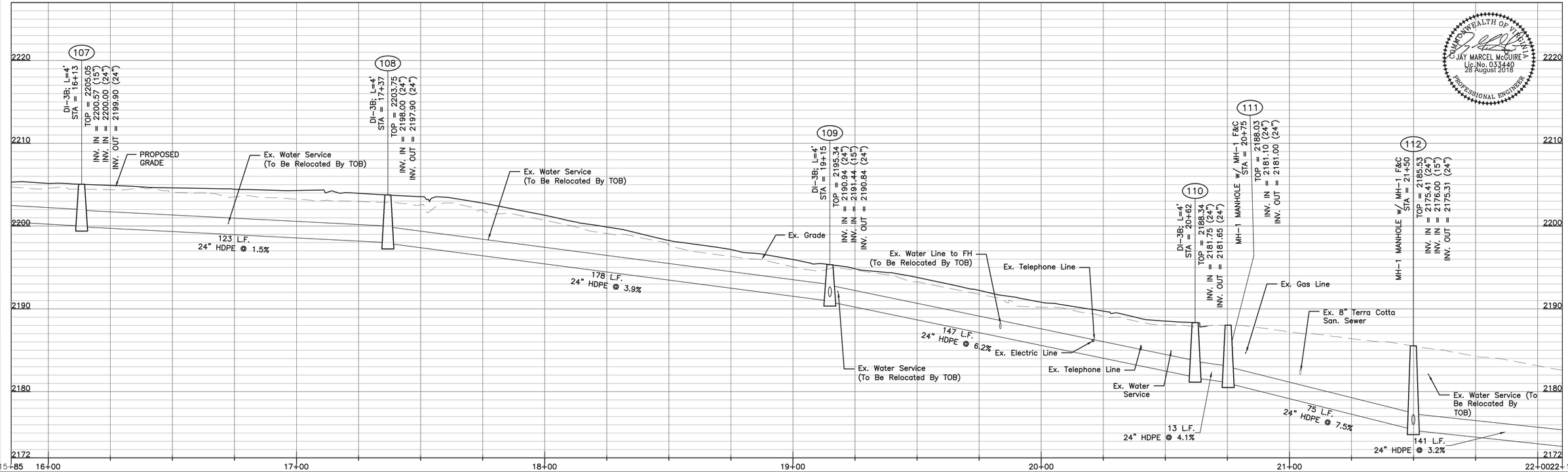
DOCUMENT NO. 31213 – 001
SHEET C303

Matthew D. Allen / 9/21/2018 10:08 AM / \\data01\projects\2018\20180539\cad\plans\31213_sheet_grading-301-303.dwg

STORM PROFILE STA. 9+75 TO 15+85



STORM PROFILE STA. 15+85 TO 22+10



HURT & PROFFITT
CULTURAL RESOURCES
1861 Pratt Drive
Blacksburg, Va. 24060
540-552-5592

DATE	: 24 AUG 18
DESIGNED:	JMM
DRAWN	: MDA
CHECKED :	JMJ
QA/QC	: JDW

REV. #	COMMENTS	DATE

GILES ROAD STORMWATER IMPROVEMENTS AND SIDEWALK ADDITION
TOWN OF BLACKSBURG
BLACKSBURG, VIRGINIA

STORM SEWER PROFILES 1 OF 3

DOCUMENT NO. **31213 – 001**
SHEET **C304**

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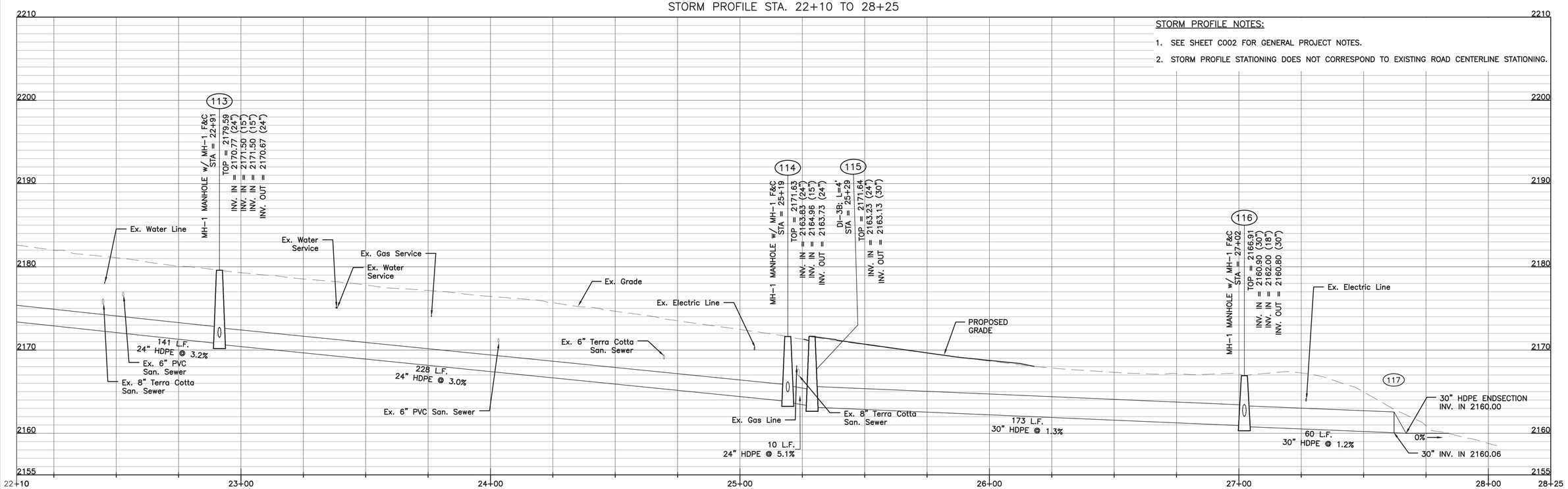
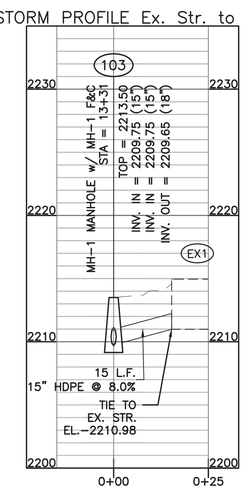
STORM PROFILE STA. 22+10 TO 28+25



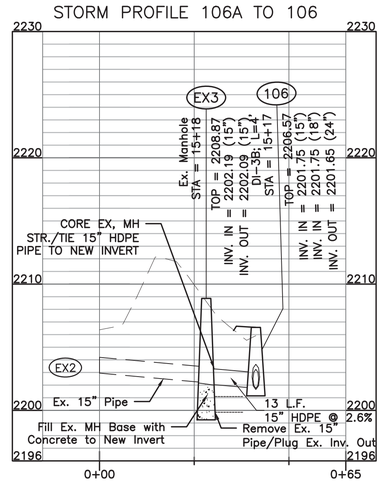
STORM PROFILE NOTES:

1. SEE SHEET C002 FOR GENERAL PROJECT NOTES.
2. STORM PROFILE STATIONING DOES NOT CORRESPOND TO EXISTING ROAD CENTERLINE STATIONING.

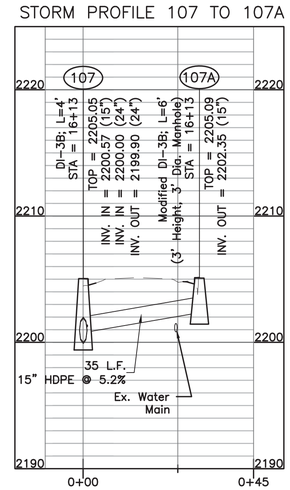
STORM PROFILE Ex. Str. to 103



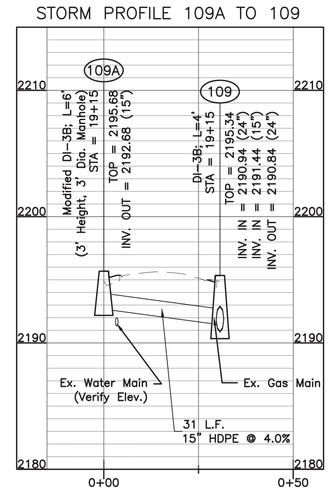
STORM PROFILE 106A TO 106



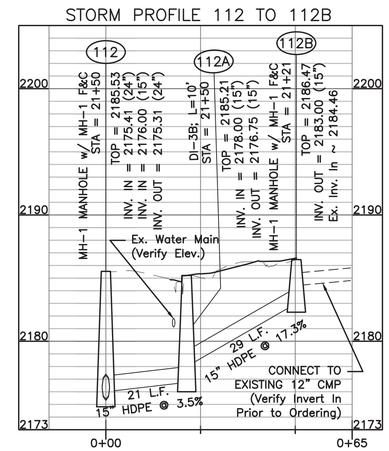
STORM PROFILE 107 TO 107A



STORM PROFILE 109A TO 109



STORM PROFILE 112 TO 112B



COMMONWEALTH OF VIRGINIA
JAY MARCEL McGUIRE
Lic. No. 033440
28 August 2018
PROFESSIONAL ENGINEER

HURT & PROFFITT
1861 Pratt Drive
Blacksburg, Va. 24060
CULTURAL RESOURCES 540-552-5592

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GILES ROAD STORMWATER IMPROVEMENTS AND SIDEWALK ADDITION
TOWN OF BLACKSBURG
BLACKSBURG, VIRGINIA

STORM SEWER PROFILES 2 OF 3

DOCUMENT NO. **31213 – 001**
SHEET **C305**

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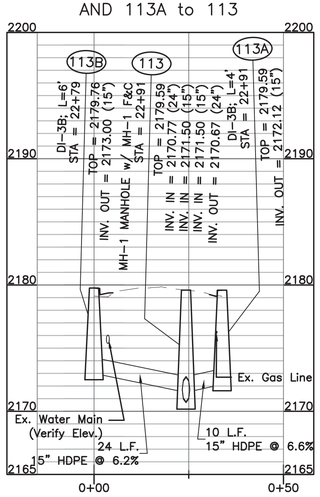
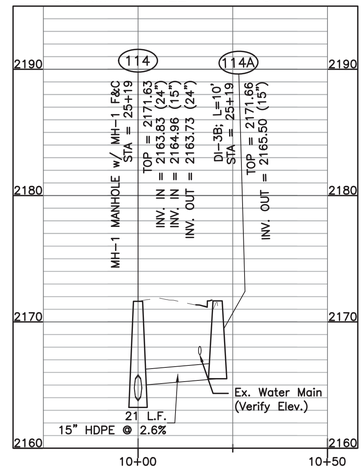
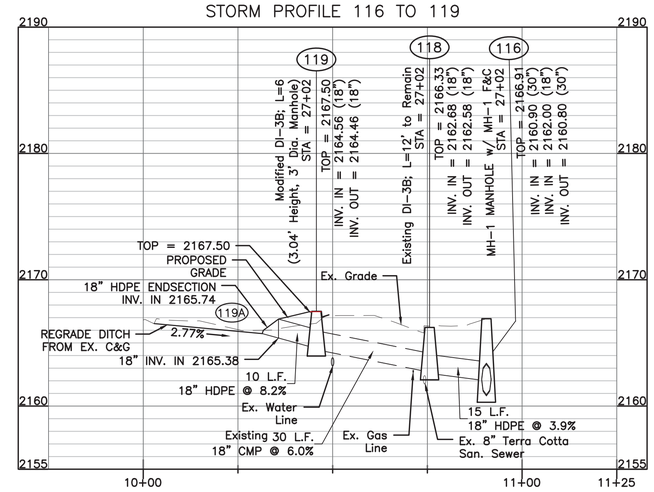
STORM PROFILE 113B TO 113
AND 113A to 113



STORM PROFILE 114A TO 114



STORM PROFILE 116 TO 119



COMMONWEALTH OF VIRGINIA
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HURT & PROFFITT 1861 Pratt Drive Blacksburg, Va. 24060 540-552-5592 CULTURAL RESOURCES	DATE : 24 AUG 18 DESIGNED: JMM DRAWN : MDA CHECKED : JMJ QA/QC : JDW	REV. # COMMENTS DATE	**GILES ROAD STORMWATER IMPROVEMENTS AND SIDEWALK ADDITION** TOWN OF BLACKSBURG BLACKSBURG, VIRGINIA	**STORM SEWER PROFILES 3 OF 3**	DOCUMENT NO. **31213 – 001** SHEET **C306**

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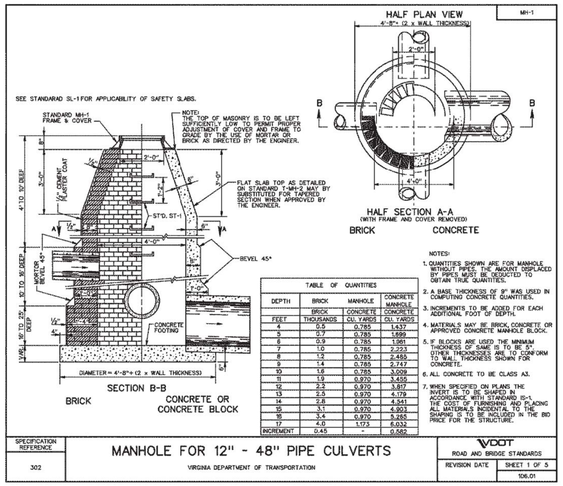


NOTES:

1. QUANTITIES SHOWN ARE FOR MANHOLE WITHOUT PIPES. THE AMOUNT DISPLACED BY PIPES MUST BE DEDUCTED TO OBTAIN TRUE QUANTITIES.
2. A BASE THICKNESS OF 8" WAS USED IN COMPUTING CONCRETE QUANTITIES.
3. INCREMENTS TO BE ADDED FOR EACH ADDITIONAL FOOT OF DEPTH.
4. MATERIALS MAY BE BRICK, CONCRETE OR APPROVED CONCRETE MANHOLE BLOCK.
5. IF BLOCKS ARE USED THE MINIMUM THICKNESS OF SAME IS TO BE 5", OTHER THICKNESSES ARE TO CONFORM TO WALL THICKNESS SHOWN FOR CONCRETE.
6. ALL CONCRETE TO BE CLASS A3.
7. WHEN SPECIFIED ON PLANS, THE INVERT OF PIPE IS TO BE SHAPED IN MANHOLE AS DETAILED ON IS-1. THE COST OF FURNISHING AND PLACING ALL MATERIALS INCIDENTAL TO THE SHAPING IS TO BE INCLUDED IN THE BID PRICE FOR THE STRUCTURE.

TABLE OF QUANTITIES

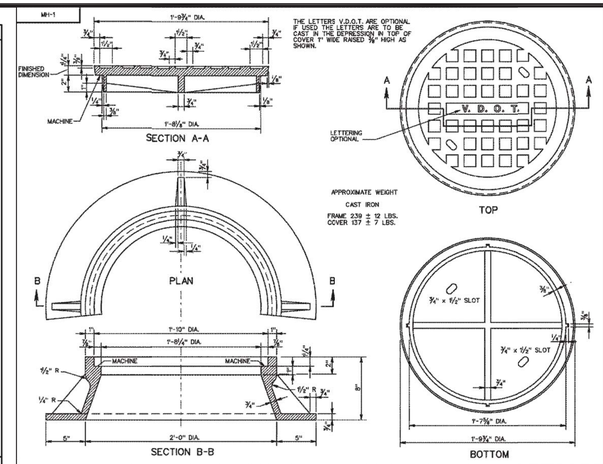
DEPTH	BRICK	MANHOLE	CONCRETE
	BRICK	CONCRETE	MANHOLE
FEET	THOUSANDS	CU. YARDS	CU. YARDS
4	0.5	0.785	1.437
5	0.7	0.785	1.699
6	0.9	0.785	1.961
7	1.0	0.785	2.223
8	1.2	0.785	2.485
9	1.4	0.785	2.747
10	1.6	0.785	3.009
11	1.9	0.970	3.455
12	2.2	0.970	3.897
13	2.5	0.970	4.179
14	2.8	0.970	4.541
15	3.1	0.970	4.903
16	3.4	0.970	5.265
17	4.0	1.173	6.032
INCREMENT	0.45	-	0.562

SPECIFICATION REFERENCE: 302

MANHOLE FOR 12" - 48" PIPE CULVERTS

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT ROAD AND BRIDGE STANDARDS — REVISION DATE — SHEET 1 OF 5 — 106.01

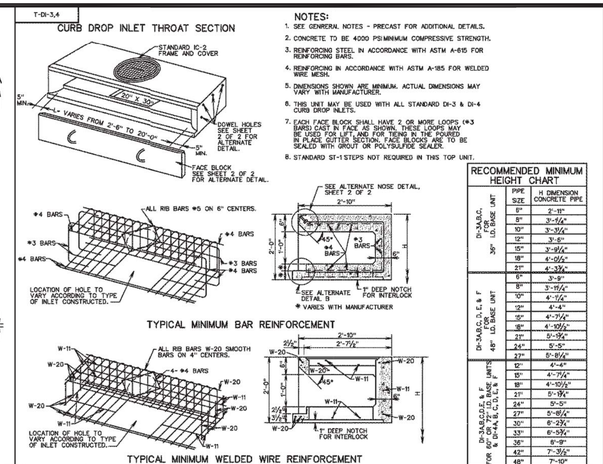


VDOT ROAD AND BRIDGE STANDARDS — SHEET 2 OF 5 — REVISION DATE — 106.02

STANDARD MANHOLE FRAME AND COVER

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE: 224, 302



NOTES:

1. SEE GENERAL NOTES - PRECAST FOR ADDITIONAL DETAILS.
2. CONCRETE TO BE 4000 PSI MINIMUM COMPRESSIVE STRENGTH.
3. REINFORCING STEEL IN ACCORDANCE WITH ASTM A-615 FOR REINFORCING BARS.
4. REINFORCING IN ACCORDANCE WITH ASTM A-185 FOR WELDED WIRE MESH.
5. DIMENSIONS SHOWN ARE MINIMUM. ACTUAL DIMENSIONS MAY VARY WITH MANUFACTURER.
6. THIS UNIT MAY BE USED WITH ALL STANDARD DI-3 & DI-4 CURB DROP INLETS.
7. EACH FACE BLOCK SHALL HAVE 2 OR MORE LOOPS (#3 BARS) CAST IN FACE AS SHOWN. THESE LOOPS MAY BE USED FOR LIFT AND FOR TIEING IN THE POURED IN PLACE GUTTER SECTION. FACE BLOCKS ARE TO BE SEALED WITH GROUT OR POLYSULFIDE SEALER.
8. STANDARD ST-1 STEPS NOT REQUIRED IN THIS TOP UNIT.

RECOMMENDED MINIMUM HEIGHT CHART

	PIPE SIZE	H DIMENSION CONCRETE PIPE
DI-3A,B,C, 36" LD. BOXES UNIT	12"	2'-11"
	15"	3'-1½"
	18"	3'-3½"
	21"	3'-5½"
	24"	3'-7½"
	27"	3'-9½"
	30"	3'-11½"
	33"	4'-1½"
	36"	4'-3½"
DI-3A,D,E & F 48" LD. BOXES UNIT	12"	2'-11"
	15"	3'-1½"
	18"	3'-3½"
	21"	3'-5½"
	24"	3'-7½"
	27"	3'-9½"
	30"	3'-11½"
	33"	4'-1½"
	36"	4'-3½"
	42"	4'-7½"
	48"	4'-11½"
DI-3A,B,C,D,E & F FOR 60" OR 72" LD. BOXES UNIT	12"	3'-1½"
	15"	3'-3½"
	18"	3'-5½"
	21"	3'-7½"
	24"	3'-9½"
	27"	3'-11½"
	30"	4'-1½"
	33"	4'-3½"
	36"	4'-5½"
	42"	4'-9½"
	48"	4'-11½"

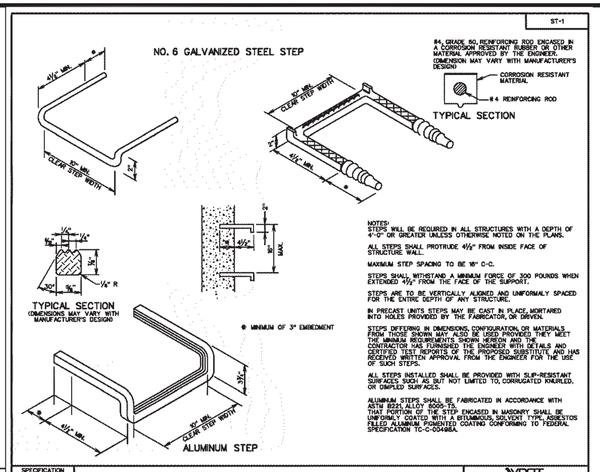
VDOT ROAD AND BRIDGE STANDARDS — SHEET 1 OF 2 — REVISION DATE — 103.05

STANDARD PRECAST TOP UNITS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE: 105, 233, 302

T-DI-3,4

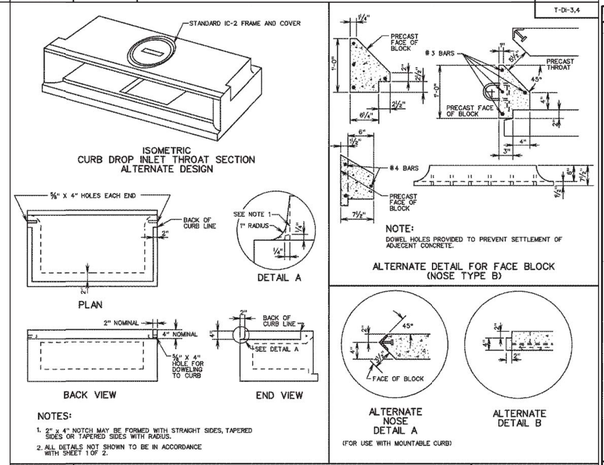


SPECIFICATION REFERENCE

STANDARD STEP

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT ROAD AND BRIDGE STANDARDS — REVISION DATE — SHEET 1 OF 1 — 106.09

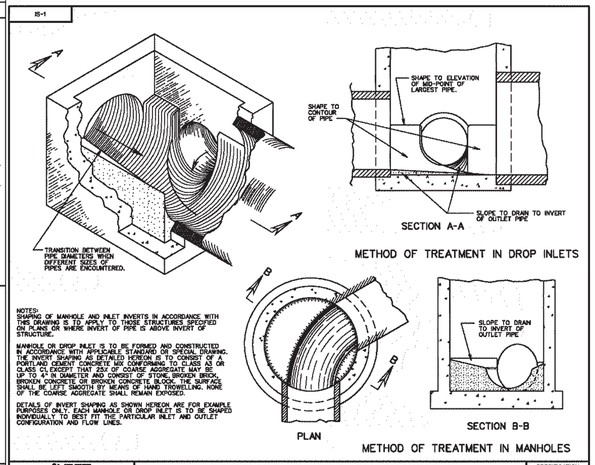


SPECIFICATION REFERENCE: 105, 233, 302

STANDARD PRECAST TOP UNITS

VIRGINIA DEPARTMENT OF TRANSPORTATION

VDOT ROAD AND BRIDGE STANDARDS — REVISION DATE — SHEET 2 OF 2 — 103.06

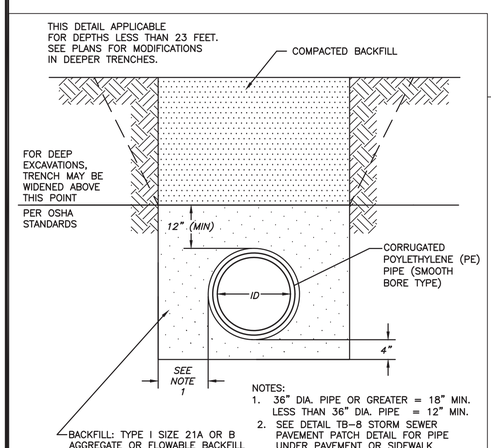


VDOT ROAD AND BRIDGE STANDARDS — SHEET 1 OF 1 — REVISION DATE — 106.08

STANDARD METHOD OF SHAPING MANHOLE & INLET INVERTS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE: 302

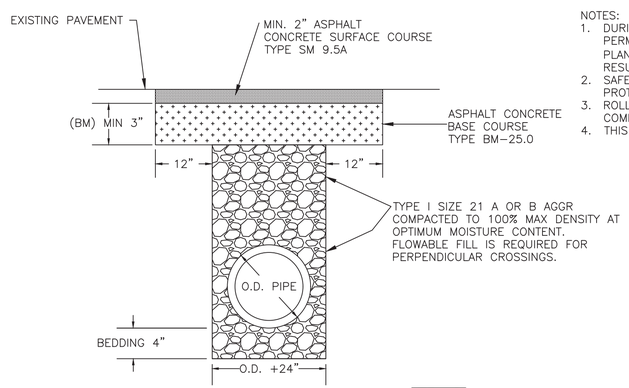


NOTES:

1. 36" DIA. PIPE OR GREATER = 18" MIN. LESS THAN 36" DIA. PIPE = 12" MIN.
2. SEE DETAIL TB-8 STORM SEWER PAVEMENT PATCH DETAIL FOR PIPE UNDER PAVEMENT OR SIDEWALK

POLYETHYLENE PIPE
STORM SEWER TRENCH BED

TB-7



STORM SEWER
PAVEMENT PATCH DETAIL
N.T.S.

TB-8

NOTES:

1. DURING COLD WEATHER, COLD MIX TO BE USED AS TEMPORARY MEASURE. PERMANENT SM PAVING TO BE PLACED WITHIN 3 WEEKS OF START UP OF HOT MIX PLANTS. CHECK STONE AND REFILL/TAMP AS NECESSARY, AT LEAST WEEKLY, UNTIL RESURFACED.
2. SAFETY MEASURES ARE REQUIRED; IN ACCORDANCE WITH THE VA WORK AREA PROTECTION MANUAL.
3. ROLLING AND COMPACTION EQUIPMENT TO BE SUITABLE TO OBTAIN 95% COMPACTION.
4. THIS DETAIL ALSO APPLIES TO PIPING UNDER SIDEWALK.

COMMONWEALTH OF VIRGINIA
JAY MARCEL McGUIRE
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28 August 2018
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GILES ROAD STORMWATER IMPROVEMENTS AND SIDEWALK ADDITION
TOWN OF BLACKSBURG
BLACKSBURG, VIRGINIA

GRADING & DRAINAGE DETAILS

DOCUMENT NO. 31213 – 001
SHEET C307

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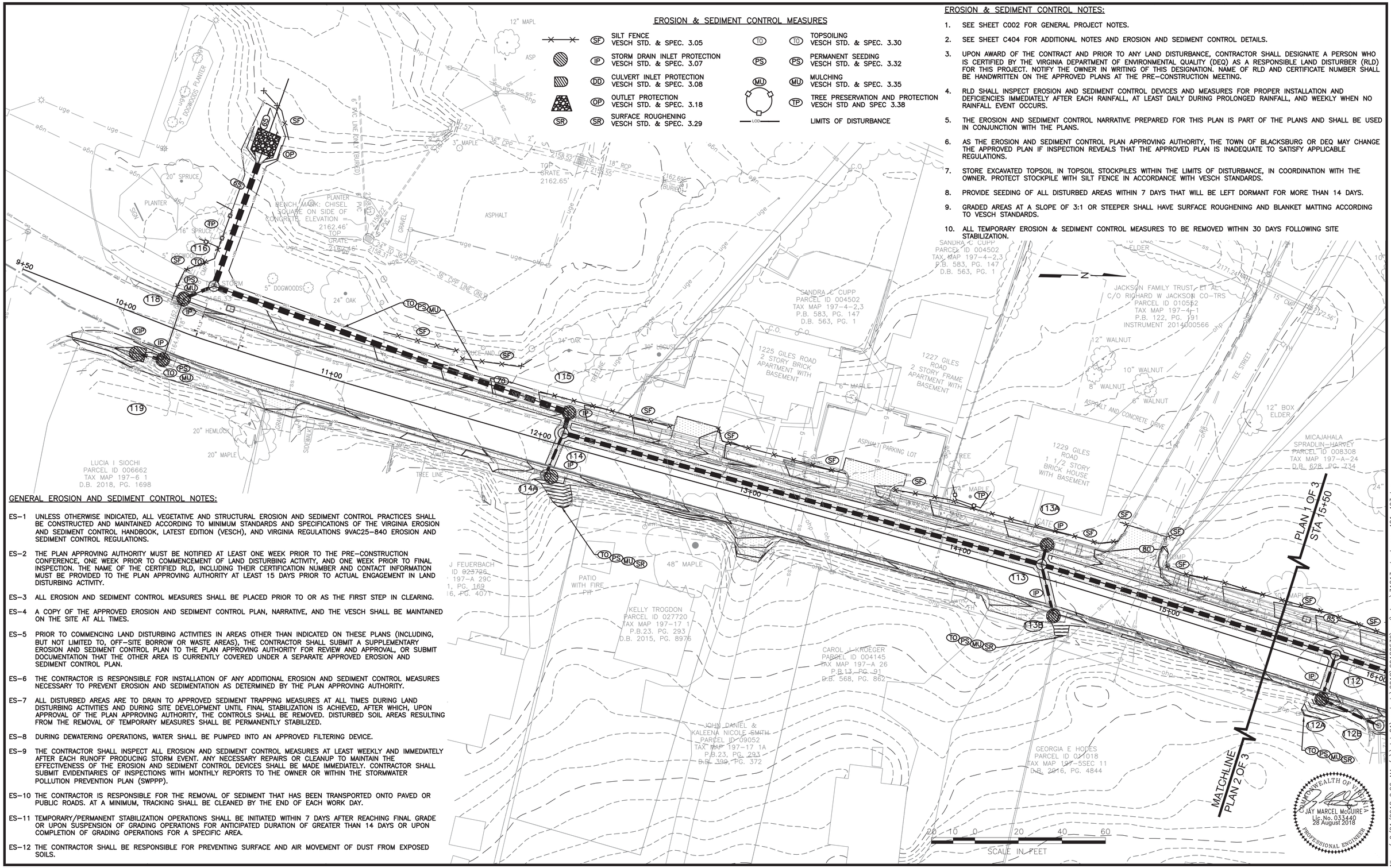
EROSION & SEDIMENT CONTROL MEASURES

SF	SILT FENCE VESCH STD. & SPEC. 3.05	TO	TOPSOILING VESCH STD. & SPEC. 3.30
IP	STORM DRAIN INLET PROTECTION VESCH STD. & SPEC. 3.07	PS	PERMANENT SEEDING VESCH STD. & SPEC. 3.32
DD	CULVERT INLET PROTECTION VESCH STD. & SPEC. 3.08	MU	MULCHING VESCH STD. & SPEC. 3.35
OP	OUTLET PROTECTION VESCH STD. & SPEC. 3.18	TP	TREE PRESERVATION AND PROTECTION VESCH STD AND SPEC 3.38
SR	SURFACE ROUGHENING VESCH STD. & SPEC. 3.29	LOD	LIMITS OF DISTURBANCE

EROSION & SEDIMENT CONTROL NOTES:

1. SEE SHEET C002 FOR GENERAL PROJECT NOTES.
2. SEE SHEET C404 FOR ADDITIONAL NOTES AND EROSION AND SEDIMENT CONTROL DETAILS.
3. UPON AWARD OF THE CONTRACT AND PRIOR TO ANY LAND DISTURBANCE, CONTRACTOR SHALL DESIGNATE A PERSON WHO IS CERTIFIED BY THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ) AS A RESPONSIBLE LAND DISTURBER (RLD) FOR THIS PROJECT. NOTIFY THE OWNER IN WRITING OF THIS DESIGNATION. NAME OF RLD AND CERTIFICATE NUMBER SHALL BE HANDWRITTEN ON THE APPROVED PLANS AT THE PRE-CONSTRUCTION MEETING.
4. RLD SHALL INSPECT EROSION AND SEDIMENT CONTROL DEVICES AND MEASURES FOR PROPER INSTALLATION AND DEFICIENCIES IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY WHEN NO RAINFALL EVENT OCCURS.
5. THE EROSION AND SEDIMENT CONTROL NARRATIVE PREPARED FOR THIS PLAN IS PART OF THE PLANS AND SHALL BE USED IN CONJUNCTION WITH THE PLANS.
6. AS THE EROSION AND SEDIMENT CONTROL PLAN APPROVING AUTHORITY, THE TOWN OF BLACKSBURG OR DEQ MAY CHANGE THE APPROVED PLAN IF INSPECTION REVEALS THAT THE APPROVED PLAN IS INADEQUATE TO SATISFY APPLICABLE REGULATIONS.
7. STORE EXCAVATED TOPSOIL IN TOPSOIL STOCKPILES WITHIN THE LIMITS OF DISTURBANCE, IN COORDINATION WITH THE OWNER. PROTECT STOCKPILE WITH SILT FENCE IN ACCORDANCE WITH VESCH STANDARDS.
8. PROVIDE SEEDING OF ALL DISTURBED AREAS WITHIN 7 DAYS THAT WILL BE LEFT DORMANT FOR MORE THAN 14 DAYS.
9. GRADED AREAS AT A SLOPE OF 3:1 OR STEEPER SHALL HAVE SURFACE ROUGHENING AND BLANKET MATTING ACCORDING TO VESCH STANDARDS.
10. ALL TEMPORARY EROSION & SEDIMENT CONTROL MEASURES TO BE REMOVED WITHIN 30 DAYS FOLLOWING SITE STABILIZATION.



GENERAL EROSION AND SEDIMENT CONTROL NOTES:

ES-1 UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION (VESCH), AND VIRGINIA REGULATIONS 9VAC25-840 EROSION AND SEDIMENT CONTROL REGULATIONS.

ES-2 THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED AT LEAST ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO FINAL INSPECTION. THE NAME OF THE CERTIFIED RLD, INCLUDING THEIR CERTIFICATION NUMBER AND CONTACT INFORMATION MUST BE PROVIDED TO THE PLAN APPROVING AUTHORITY AT LEAST 15 DAYS PRIOR TO ACTUAL ENGAGEMENT IN LAND DISTURBING ACTIVITY.

ES-3 ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.

ES-4 A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN, NARRATIVE, AND THE VESCH 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 AND SEDIMENT CONTROL PLAN TO THE PLAN APPROVING AUTHORITY FOR REVIEW AND APPROVAL, OR SUBMIT DOCUMENTATION THAT THE OTHER AREA IS CURRENTLY COVERED UNDER A SEPARATE APPROVED EROSION AND SEDIMENT CONTROL PLAN.

ES-6 THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.

ES-7 ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT TRAPPING MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED, AFTER WHICH, UPON APPROVAL OF THE PLAN APPROVING AUTHORITY, THE CONTROLS SHALL BE REMOVED. DISTURBED SOIL AREAS RESULTING FROM THE REMOVAL OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED.

ES-8 DURING DEWATERING OPERATIONS, WATER SHALL BE PUMPED INTO AN APPROVED FILTERING DEVICE.

ES-9 THE CONTRACTOR SHALL INSPECT ALL EROSION AND SEDIMENT CONTROL MEASURES AT LEAST WEEKLY AND IMMEDIATELY AFTER EACH RUNOFF PRODUCING STORM EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION AND SEDIMENT CONTROL DEVICES SHALL BE MADE IMMEDIATELY. CONTRACTOR SHALL SUBMIT EVIDENTIARIES OF INSPECTIONS WITH MONTHLY REPORTS TO THE OWNER OR WITHIN THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP).

ES-10 THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF SEDIMENT THAT HAS BEEN TRANSPORTED ONTO PAVED OR PUBLIC ROADS. AT A MINIMUM, TRACKING SHALL BE CLEANED BY THE END OF EACH WORK DAY.

ES-11 TEMPORARY/PERMANENT STABILIZATION OPERATIONS SHALL BE INITIATED WITHIN 7 DAYS AFTER REACHING FINAL GRADE OR UPON SUSPENSION OF GRADING OPERATIONS FOR ANTICIPATED DURATION OF GREATER THAN 14 DAYS OR UPON COMPLETION OF GRADING OPERATIONS FOR A SPECIFIC AREA.

ES-12 THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING SURFACE AND AIR MOVEMENT OF DUST FROM EXPOSED SOILS.

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EROSION & SEDIMENT CONTROL PLAN 1 OF 3

DOCUMENT NO. 31213 – 001
SHEET C401

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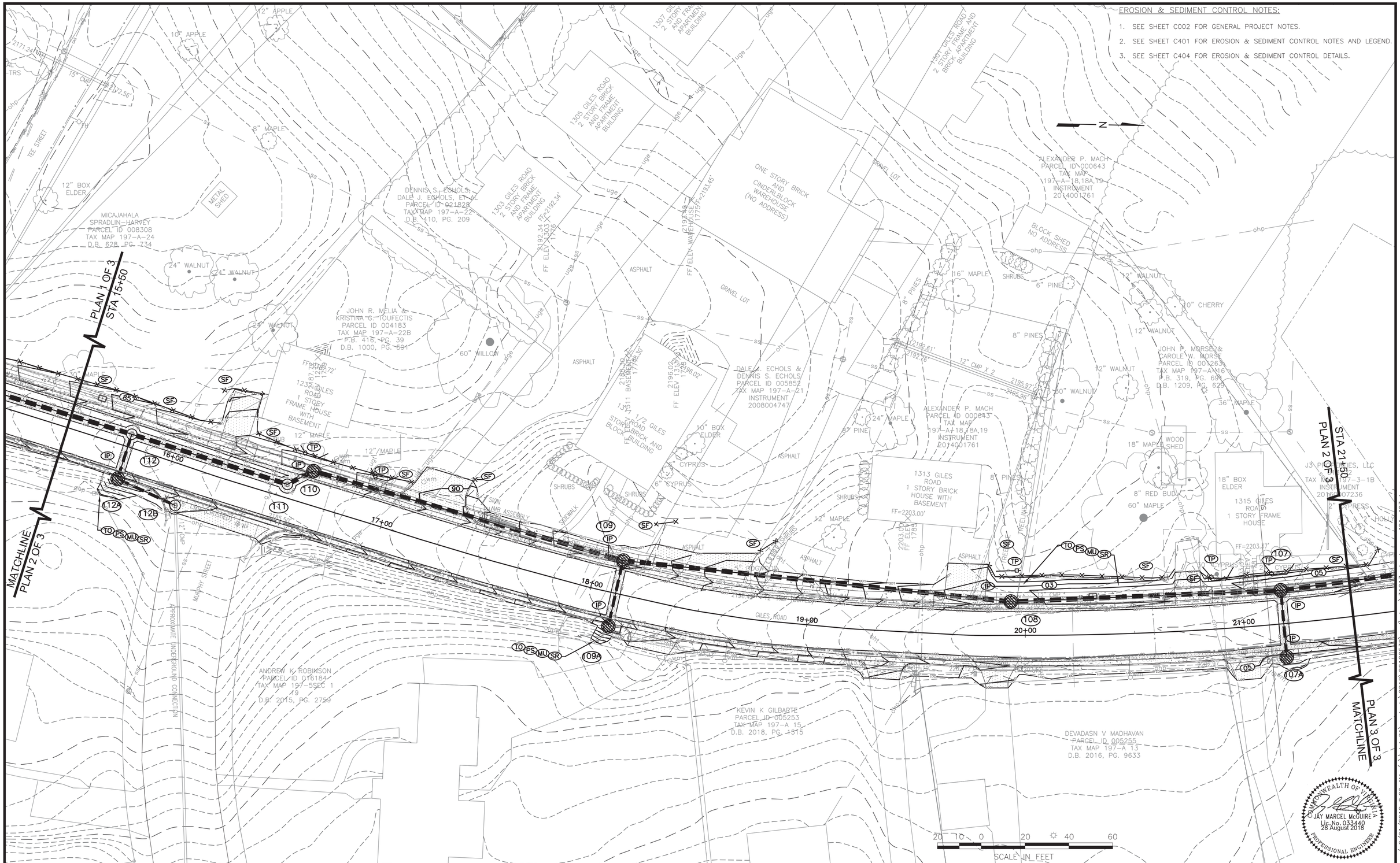
EROSION & SEDIMENT CONTROL NOTES:

1. SEE SHEET C002 FOR GENERAL PROJECT NOTES.
2. SEE SHEET C401 FOR EROSION & SEDIMENT CONTROL NOTES AND LEGEND.
3. SEE SHEET C404 FOR EROSION & SEDIMENT CONTROL DETAILS.



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BLACKSBURG, VIRGINIA

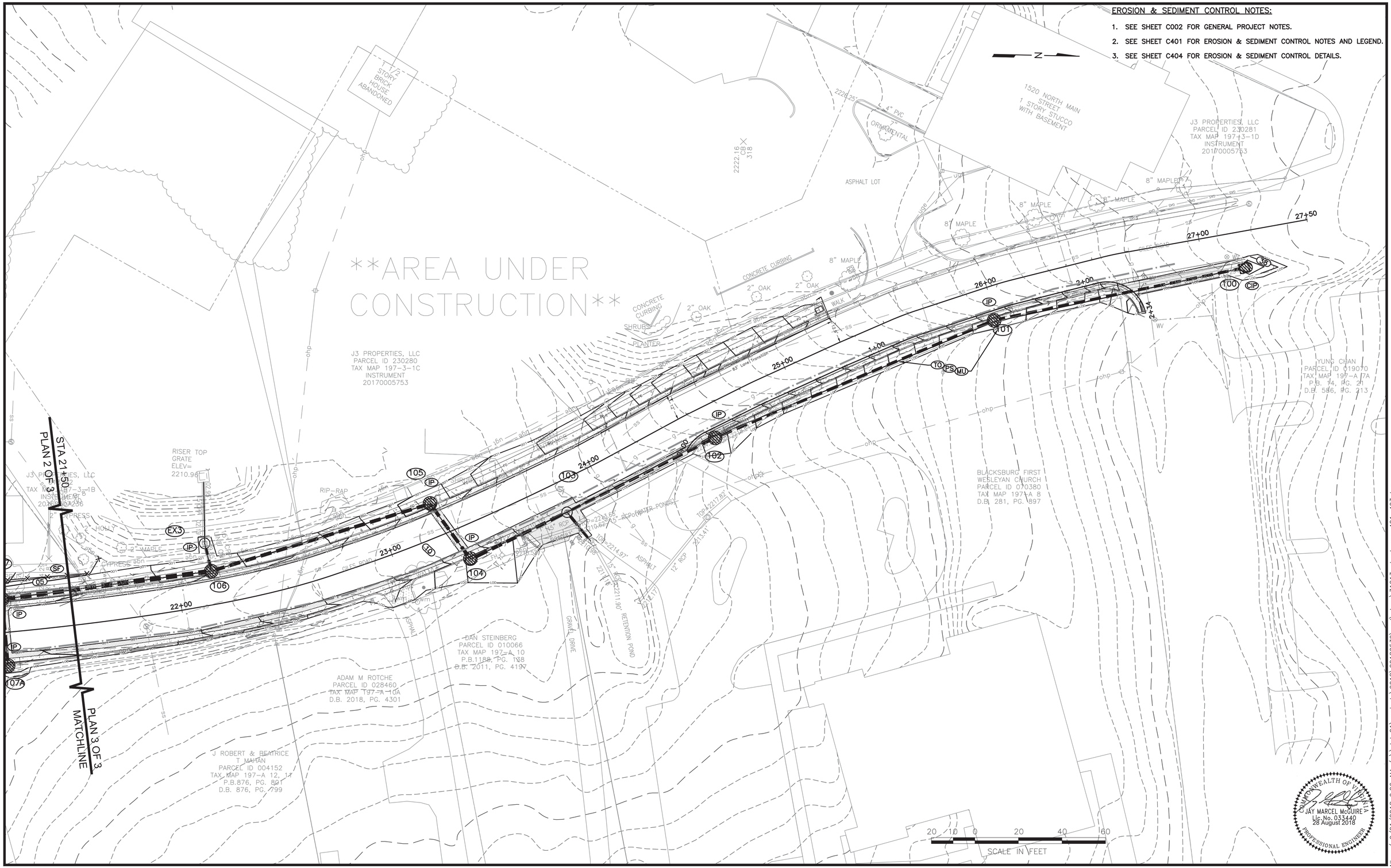
EROSION & SEDIMENT CONTROL PLAN 2 OF 3

DOCUMENT NO. 31213 – 001
SHEET C402

Matthew D. Allen / 9/21/2018 9:26 AM / \\data01\projects\2018\20180539\cad\plans\31213_sheet_esc-401-403.dwg

EROSION & SEDIMENT CONTROL NOTES:

1. SEE SHEET C002 FOR GENERAL PROJECT NOTES.
2. SEE SHEET C401 FOR EROSION & SEDIMENT CONTROL NOTES AND LEGEND.
3. SEE SHEET C404 FOR EROSION & SEDIMENT CONTROL DETAILS.



COMMONWEALTH OF VIRGINIA
JAY MARCEL McGUIRE
Lic. No. 033440
28 August 2018
PROFESSIONAL ENGINEER

HURT & PROFFITT 1861 Pratt Drive Blacksburg, Va. 24060 540-552-5592 CULTURAL RESOURCES	DATE : 24 AUG 18 DESIGNED: JMM DRAWN : MDA CHECKED : JMJ QA/QC : JDW	REV. # COMMENTS DATE	GILES ROAD STORMWATER IMPROVEMENTS AND SIDEWALK ADDITION TOWN OF BLACKSBURG BLACKSBURG, VIRGINIA	EROSION & SEDIMENT CONTROL PLAN 3 OF 3	DOCUMENT NO. 31213 – 001 SHEET C403

Matthew D. Allen / 9/21/2018 9:26 AM / \\data01\projects\2018\20180539\cad\plans\31213_sheet_esc-401-403.dwg

VIRGINIA ADMINISTRATIVE CODE 9VAC25–840–40 MINIMUM STANDARDS

A VESCP MUST BE CONSISTENT WITH THE FOLLOWING CRITERIA, TECHNIQUES, AND METHODS:

1. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 14 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

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

3. 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 IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.

4. SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND–DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.

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

6. SEDIMENT TRAPS AND SEDIMENT BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.

A. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN THREE ACRES.

B. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A 25–YEAR STORM OF 24–HOUR DURATION. RUNOFF COEFFICIENTS USED IN RUNOFF CALCULATIONS SHALL CORRESPOND TO A BARE EARTH CONDITION ORTHOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.

7. CUT AND FILL SLOPES SHALL BE DESIGNED AND 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.

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

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

10. ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT–LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.

11. BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS OR PIPES 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.

12. WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.

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

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

15. THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.

16. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:

A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.

B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.

C. EFFLUENT FROM 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 OFF–SITE PROPERTY.

D. MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.

E. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THIS CHAPTER.

F. APPLICABLE SAFETY REQUIREMENTS SHALL BE COMPLIED WITH.

17. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND–DISTURBING ACTIVITIES.

18. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE VESCP AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

19. PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24–HOUR DURATION IN ACCORDANCE WITH THE FOLLOWING STANDARDS AND CRITERIA. STREAM RESTORATION AND RELOCATION PROJECTS THAT INCORPORATE NATURAL CHANNEL DESIGN CONCEPTS ARE NOT MAN–MADE CHANNELS AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN–MADE CHANNELS:

A. CONCENTRATED STORMWATER RUNOFF LEAVING A DEVELOPMENT SITE SHALL BE DISCHARGED DIRECTLY INTO AN ADEQUATE NATURAL OR MAN–MADE RECEIVING CHANNEL, PIPE OR STORM SEWER SYSTEM. FOR THOSE SITES WHERE RUNOFF IS DISCHARGED INTO A PIPE OR PIPE SYSTEM, DOWNSTREAM STABILITY ANALYSES AT THE OUTFALL OF THE PIPE OR PIPE SYSTEM SHALL BE PERFORMED.

B. ADEQUACY OF ALL CHANNELS AND PIPES SHALL BE VERIFIED IN THE FOLLOWING MANNER:

(1) THE APPLICANT SHALL DEMONSTRATE THAT THE TOTAL DRAINAGE AREA TO THE POINT OF ANALYSIS WITHIN THE CHANNEL IS ONE HUNDRED TIMES GREATER THAN THE CONTRIBUTING DRAINAGE AREA OF THE PROJECT IN QUESTION; OR

(2)(A) NATURAL CHANNELS SHALL BE ANALYZED BY THE USE OF A TWO–YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP CHANNEL BANKS NOR CAUSE EROSION OF CHANNEL BED OR BANKS.

(B) ALL PREVIOUSLY CONSTRUCTED MAN–MADE CHANNELS SHALL BE ANALYZED BY THE USE OF A TEN–YEAR STORM TO VERIFY THAT STORMWATER WILL NOT OVERTOP ITS BANKS AND BY THE USE OF A TWO–YEAR STORM TO DEMONSTRATE THAT STORMWATER WILL NOT CAUSE EROSION OF CHANNEL BED OR BANKS; AND

(C) PIPES AND STORM SEWER SYSTEMS SHALL BE ANALYZED BY THE USE OF A TEN–YEAR STORM TO VERIFY THAT STORMWATER WILL BE CONTAINED WITHIN THE PIPE OR SYSTEM.

C. IF EXISTING NATURAL RECEIVING CHANNELS OR PREVIOUSLY CONSTRUCTED MAN–MADE CHANNELS OR PIPES ARE NOT ADEQUATE, THE APPLICANT SHALL:

(1) IMPROVE THE CHANNELS TO A CONDITION WHERE A TEN–YEAR STORM WILL NOT OVERTOP THE BANKS AND A TWO–YEAR STORM WILL NOT CAUSE EROSION TO THE CHANNEL THE BED OR THE BANKS; OR

(2) IMPROVE THE PIPE OR PIPE SYSTEM TO A CONDITION WHERE THE TEN–YEAR STORM IS CONTAINED WITHIN THE APPURTENANCES;

(3) DEVELOP A SITE DESIGN THAT WILL NOT CAUSE THE PRE–DEVELOPMENT PEAK RUNOFF RATE FROM A TWO–YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A NATURAL CHANNEL OR WILL NOT CAUSE THE PRE–DEVELOPMENT PEAK RUNOFF RATE FROM A TEN–YEAR STORM TO INCREASE WHEN RUNOFF OUTFALLS INTO A MAN–MADE CHANNEL; OR

(4) PROVIDE A COMBINATION OF CHANNEL IMPROVEMENT, STORMWATER DETENTION OR OTHER MEASURES WHICH IS SATISFACTORY TO THE VESCP AUTHORITY TO PREVENT DOWNSTREAM EROSION.

D. THE APPLICANT SHALL PROVIDE EVIDENCE OF PERMISSION TO MAKE THE IMPROVEMENTS.

E. ALL HYDROLOGIC ANALYSES SHALL BE BASED ON THE EXISTING WATERSHED CHARACTERISTICS AND THE ULTIMATE DEVELOPMENT CONDITION OF THE SUBJECT PROJECT.

F. IF THE APPLICANT CHOOSES AN OPTION THAT INCLUDES STORMWATER DETENTION, HE SHALL OBTAIN APPROVAL FROM THE VESCP OF A PLAN FOR MAINTENANCE OF THE DETENTION FACILITIES. THE PLAN SHALL SET FORTH THE MAINTENANCE REQUIREMENTS OF THE FACILITY AND THE PERSON RESPONSIBLE FOR PERFORMING THE MAINTENANCE.

G. OUTFALL FROM A DETENTION FACILITY SHALL BE DISCHARGED TO A RECEIVING CHANNEL, AND ENERGY DISSIPATORS SHALL BE PLACED AT THE OUTFALL OF ALL DETENTION FACILITIES AS NECESSARY TO PROVIDE A STABILIZED TRANSITION FROM THE FACILITY TO THE RECEIVING CHANNEL.

H. ALL ON–SITE CHANNELS MUST BE VERIFIED TO BE ADEQUATE.

I. INCREASED VOLUMES OF SHEET FLOWS THAT MAY CAUSE EROSION OR SEDIMENTATION ON ADJACENT PROPERTY SHALL BE DIVERTED TO A STABLE OUTLET, ADEQUATE CHANNEL, PIPE OR PIPE SYSTEM, OR TO A DETENTION FACILITY.

J. IN APPLYING THESE STORMWATER MANAGEMENT CRITERIA, INDIVIDUAL LOTS OR PARCELS IN A RESIDENTIAL, COMMERCIAL OR INDUSTRIAL DEVELOPMENT SHALL NOT BE CONSIDERED TO BE SEPARATE DEVELOPMENT PROJECTS. INSTEAD, THE DEVELOPMENT, AS A WHOLE, SHALL BE CONSIDERED TO BE A SINGLE DEVELOPMENT PROJECT. HYDROLOGIC PARAMETERS THAT REFLECT THE ULTIMATE DEVELOPMENT CONDITION SHALL BE USED IN ALL ENGINEERING CALCULATIONS.

K. ALL MEASURES USED TO PROTECT PROPERTIES AND WATERWAYS SHALL BE EMPLOYED IN A MANNER WHICH MINIMIZES IMPACTS ON THE PHYSICAL, CHEMICAL AND BIOLOGICAL INTEGRITY OF RIVERS, STREAMS AND OTHER WATERS OF THE STATE.

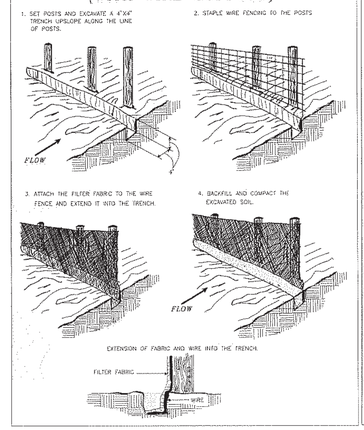
L. ANY PLAN APPROVED PRIOR TO JULY 1, 2014, THAT PROVIDES FOR STORMWATER MANAGEMENT THAT ADDRESSES ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN–MADE CHANNELS SHALL SATISFY THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN–MADE CHANNELS IF THE PRACTICES ARE DESIGNED TO (I) DETAIN THE WATER QUALITY VOLUME AND TO RELEASE IT OVER 48 HOURS; (II) DETAIN AND RELEASE OVER A 24–HOUR PERIOD THE EXPECTED RAINFALL RESULTING FROM THE ONE YEAR, 24–HOUR STORM; AND (III) REDUCE THE ALLOWABLE PEAK FLOW RATE RESULTING FROM THE 1.5, 2, AND 10–YEAR, 24–HOUR STORMS TO A LEVEL THAT IS LESS THAN OR EQUAL TO THE PEAK FLOW RATE FROM THE SITE ASSUMING IT WAS IN A GOOD FORESTED CONDITION, ACHIEVED THROUGH MULTIPLICATION OF THE FORESTED PEAK FLOW RATE BY A REDUCTION FACTOR THAT IS EQUAL TO THE RUNOFF VOLUME FROM THE SITE WHEN IT WAS IN A GOOD FORESTED CONDITION DIVIDED BY THE RUNOFF VOLUME FROM THE SITE IN ITS PROPOSED CONDITION, AND SHALL BE EXEMPT FROM ANY FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS FOR NATURAL OR MAN–MADE CHANNELS AS DEFINED IN ANY REGULATIONS PROMULGATED PURSUANT TO § 62.1–44.15:54 OR 62.1–44.15:65 OF THE ACT.

M. FOR PLANS APPROVED ON AND AFTER JULY 1, 2014, THE FLOW RATE CAPACITY AND VELOCITY REQUIREMENTS OF § 62.1–44.15:54 A OF THE ACT AND THIS SUBSECTION SHALL BE SATISFIED BY COMPLIANCE WITH WATER QUANTITY REQUIREMENTS IN THE STORMWATER MANAGEMENT ACT (§ 62.1–44.15:24 ET SEQ. OF THE CODE OF VIRGINIA) AND ATTENDANT REGULATIONS, UNLESS SUCH LAND–DISTURBING ACTIVITIES ARE IN ACCORDANCE WITH 9VAC25–870–48 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATIONS.

N. COMPLIANCE WITH THE WATER QUANTITY MINIMUM STANDARDS SET OUT IN 9VAC25–870–66 OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATIONS SHALL BE DEEMED TO SATISFY THE REQUIREMENTS OF SUBDIVISION 19 OF THIS SUBSECTION.

1992 3.05

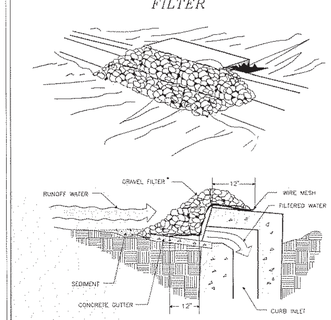
CONSTRUCTION OF A SILT FENCE (WITH WIRE SUPPORT)



Source: Adapted from Installation of Straw and Fabric Filter Barriers for Sediment Control, Sherwood and Wyant — Plate 3.05-1

1992 3.07

GRAVEL CURB INLET SEDIMENT FILTER



SPECIFIC APPLICATION

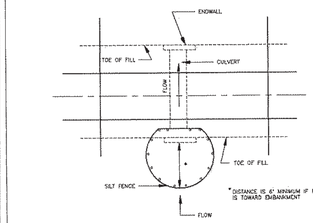
THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

* GRAVEL SHALL BE VDOT #3, #357 OR 5 COARSE AGGREGATE

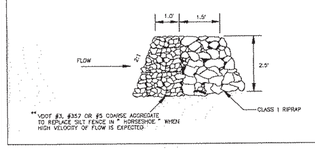
Source: Va. DSWC — Plate 3.07-6

1992 3.08

SILT FENCE CULVERT INLET PROTECTION



OPTIONAL STONE COMBINATION **

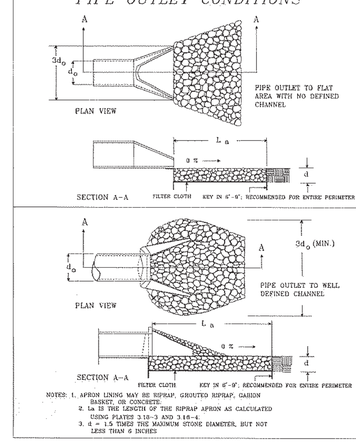


** VDOT #3, #357 OR #5 COARSE AGGREGATE TO REPLACE SILT FENCE IN " HORSESHOE " WHEN HIGH VELOCITY OF FLOW IS EXPECTED

Source: Adapted from VDOT Standard Sheets and Va. DSWC — Plate 3.08-1

1992 3.18

PIPE OUTLET CONDITIONS

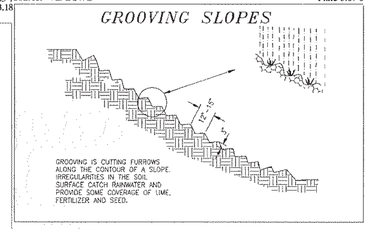


NOTES: 1. APRON LINING MAY BE RIPRAP, GROUTED RIPRAP, GABION BASKET, OR CONCRETE.
2. La IS THE LENGTH OF THE RIPRAP APRON AS CALCULATED USING PLATES 3.18-3 AND 3.18-4.
3. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER, BUT NOT LESS THAN 6 INCHES

Source: Va. DSWC — Plate 3.18-1

1992 3.29

GROOVING SLOPES



GROOVING IS CUTTING FURROWS ALONG THE CONTOUR OF A SLOPE. IRREGULARITIES IN THE SOIL SURFACE CATCH RAINWATER AND PROVIDE SOME COVERAGE OF LIME, FERTILIZER AND SEED.

Source: Va. DSWC — Plate 3.29-2

1992 3.32

TABLE 3.32-C
SITE SPECIFIC SEEDING MIXTURES FOR APPALACHIAN/MOUNTAIN AREA

	Total Lbs. Per Acre
Minimum Care Lawn	
- Commercial or Residential	200-250 lbs.
- Kentucky 31 or Turf-Type Tall Fescue	90-100%
- Improved Perennial Ryegrass *	0-10%
- Kentucky Bluegrass	0-10%
High-Maintenance Lawn	
Minimum of three (3) up to five (5) varieties of bluegrass from approved list for use in Virginia.	125 lbs.
General Slope (3:1 or less)	
- Kentucky 31 Fescue	128 lbs.
- Red Top Grass	2 lbs.
- Seasonal Nurse Crop **	20 lbs.
	150 lbs.
Low-Maintenance Slope (Steeper than 3:1)	
- Kentucky 31 Fescue	108 lbs.
- Red Top Grass	2 lbs.
- Seasonal Nurse Crop **	20 lbs.
- Crownvetch ***	20 lbs.
	150 lbs.

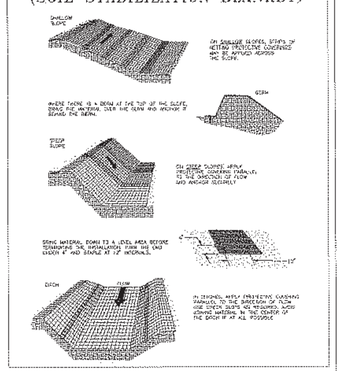
* Perennial Ryegrass will germinate faster and at lower soil temperatures than fescue, thereby providing cover and erosion resistance for seedbed.

** Use seasonal nurse crop in accordance with seeding dates as stated below:
March, April through May 15th ..... Annual Rye
May 16th through August 15th ..... Foxtail Millet
August 16th through September, October ..... Annual Rye
November through February ..... Winter Rye

*** If Flatpea is used, increase to 30 lbs./acre. All legume seed must be properly inoculated. Weeping Lovegrass may also be included in any slope or low-maintenance mixture during warmer seeding periods; add 10-20 lbs/acre in mixes.

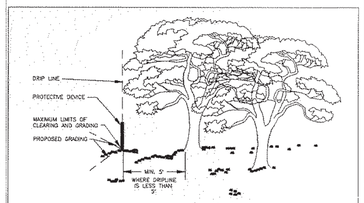
1992 3.36

TYPICAL ORIENTATION OF TREATMENT – 1 (SOIL STABILIZATION BLANKET)



Source: Adapted from Ludlow Products Brochure — Plate 3.36-1

1992 3.38

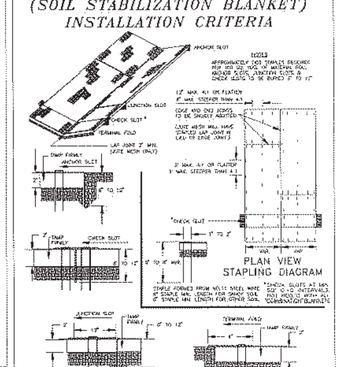


CONSTRUCTION OPERATIONS RELATIVE TO THE LOCATION OF PROTECTED TREES

Source: Public Facilities Manual, Vol. III, Fairfax Co., Va., 1976 — Plate 3.38-1

1992 3.36

TYPICAL TREATMENT – 1 (SOIL STABILIZATION BLANKET) INSTALLATION CRITERIA



Source: VDOT Road and Bridge Standards — Plate 3.36-2

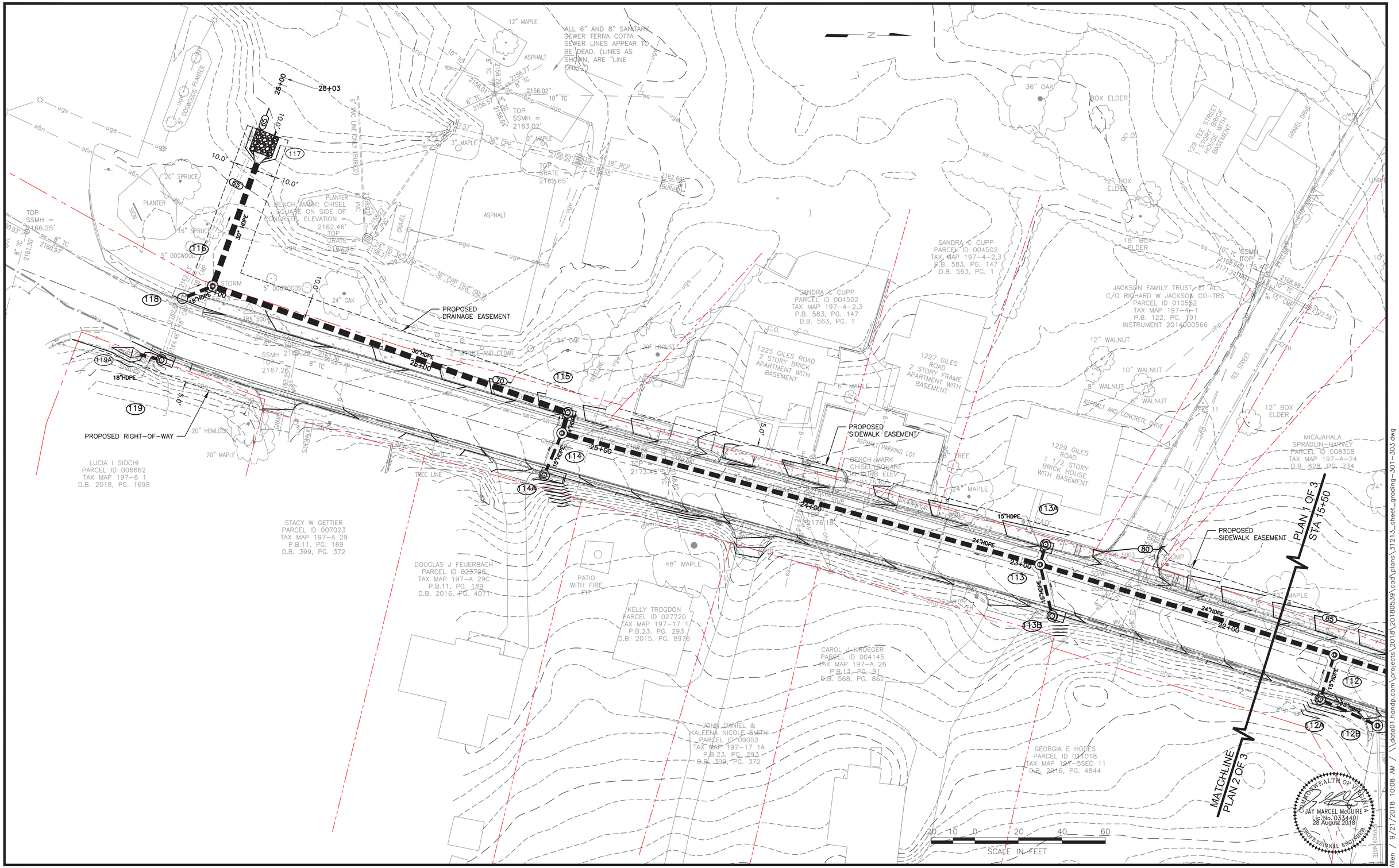
COMMONWEALTH OF VIRGINIA
JAY MARCEL McGUIRE
Lic. No. 033440
28 August 2018
PROFESSIONAL ENGINEER

HURT & PROFFITT 1861 Pratt Drive, Blacksburg, Va. 24060, 540-552-5592 — CULTURAL RESOURCES	DATE : 24 AUG 18 DESIGNED: JMM DRAWN : MDA CHECKED : JMJ QA/QC : JDW	REV. # COMMENTS DATE	**GILES ROAD STORMWATER IMPROVEMENTS AND SIDEWALK ADDITION** TOWN OF BLACKSBURG BLACKSBURG, VIRGINIA

EROSION & SEDIMENT CONTROL NOTES & DETAILS

DOCUMENT NO. **31213 – 001**
SHEET **C404**

Matthew D. Allen / 9/17/2018 6:12 PM / \\data01\projects\2018\20180539\cad\plans\31213_sheet_esc_notes_&_details-404.dwg



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Blacksburg, Va. 24060
540-552-5592
CULTURAL RESOURCES

DATE	24 AUG 18
DESIGNED:	JMM
DRAWN :	MDA
CHECKED :	JMJ
QA/QC :	JDW

REV. #	COMMENTS	DATE

GILES ROAD STORMWATER IMPROVEMENTS AND SIDEWALK ADDITION
TOWN OF BLACKSBURG
BLACKSBURG, VIRGINIA

RIGHT-OF-WAY PLAN 1 of 3

DOCUMENT NO. **31213 – 001**
SHEET **C501**

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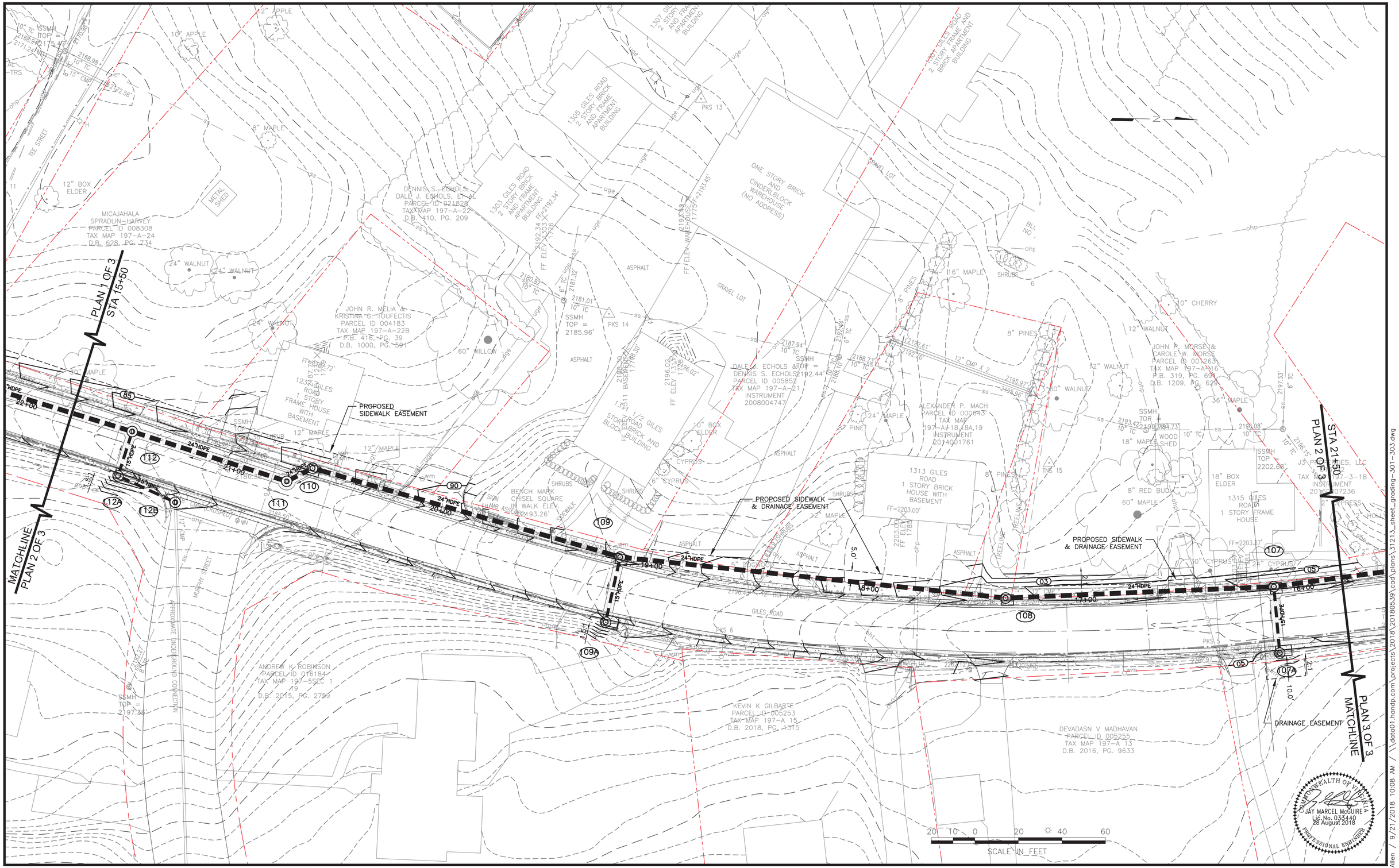

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GILES ROAD STORMWATER IMPROVEMENTS AND SIDEWALK ADDITION
TOWN OF BLACKSBURG
BLACKSBURG, VIRGINIA

RIGHT-OF-WAY PLAN 2 of 3

DOCUMENT NO. **31213 – 001**
SHEET **C502**

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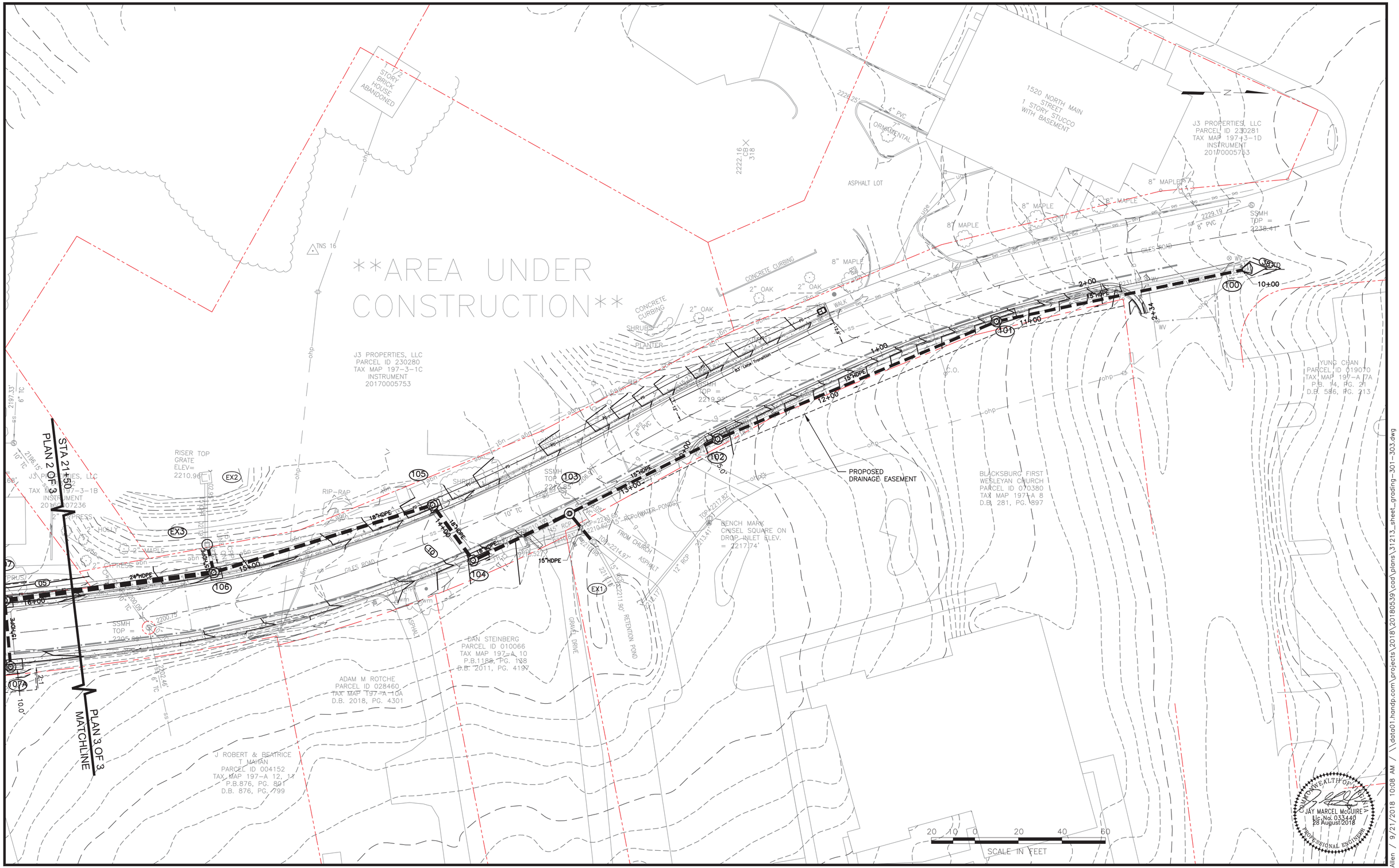

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TOWN OF BLACKSBURG
BLACKSBURG, VIRGINIA

RIGHT-OF-WAY PLAN 3 of 3

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