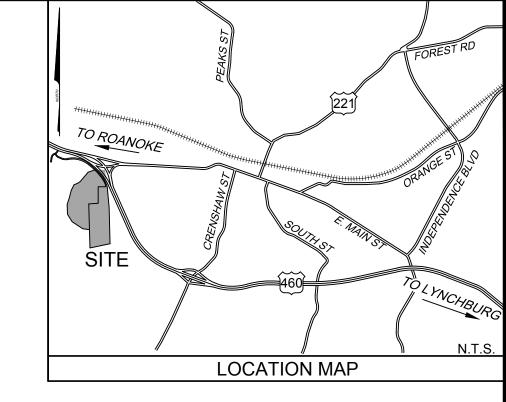
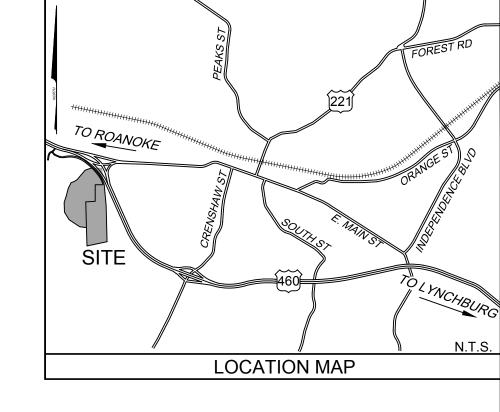
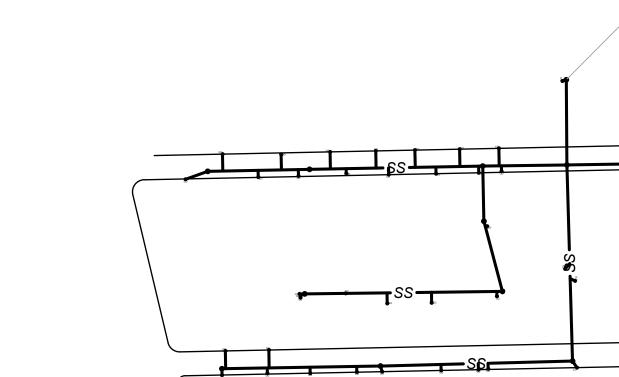
# TOWN & COUNTRY SEWER REPLACEMENT

BEDFORD REGIONAL WATER AUTHORITY BEDFORD COUNTY, VIRGINIA BRWA JOB NO. 2021-004







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## **EXISTING LEGEND**

- IRON PIN FOUND WILLITY POLE
- → GUY WIRE TELEPHONE PEDESTAL
- TELEPHONE MARKER co CLEANOUT
- WATER VALVE
- SANITARY MANHOLE EDGE OF PAVEMENT
- ... CREEK BENCHMARK
- MAILBOX → SIGN
- GUARDRAIL ← EDGE OF WOODS
- —•—•— WOODEN FENCE — 1 — OVERHEAD UTILITY
- SS UG SAN. SEWER LINE
- ==== UG STORM LINE
- CONCRETE
- BLOCK/CONC. WALL APPROXIMATE FLOOD ZONE

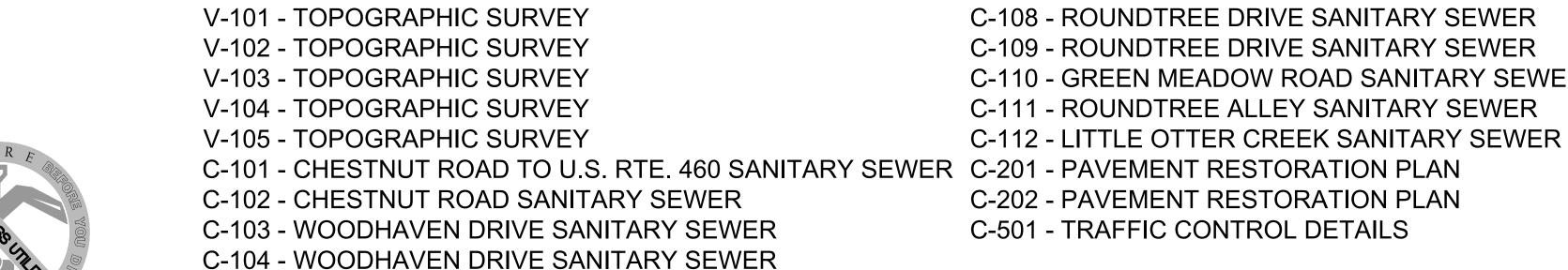
VIRGINIA CERTIFIED RESPONSIBLE LAND DISTURBER

COMPANY **ADDRESS** 

THE ENGINEER AND/OR SURVEYOR TAKES NO RESPONSIBILITY FOR THE LOCATION OR ACCURACY OF THE UTILITIES AS SHOWN HEREON OR ANY

48 WORKING HOURS PRIOR TO STARTING THE WORK, THE CONTRACTOR SHALL CALL MISS UTILITY AT 1-800-552-7001 AND ADVISE THE NATURE AND LOCATION OF THE WORK.





ROUNDTREE DRIVE

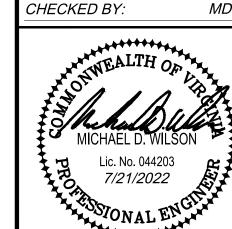
WINDY RIDGE DRIVE

**WOODHAVEN DRIVE** 



8

PROJECT NO. 2021040 37.329998 -79.546684 7/21/2022 DRAWN BY:





BRWA JOB NO. 2021-004

HURT&PROFFITT

#### GENERAL NOTES:

- 1. PRIOR TO STARTING CONSTRUCTION THE CONTRACTOR SHALL MAKE SURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED AND ALL BONDS OR FEES HAVE BEEN PAID. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES.
- 2. EXISTING SITE FEATURES AND UTILITIES SHOWN HAVE BEEN BASED UPON SURVEYS AND OTHER SOURCES BELIEVED TO BE RELIABLE. THE CORRECTNESS OR COMPLETENESS OF THE INFORMATION SHOWN IS NOT GUARANTEED. THE CONTRACTOR SHALL VERIFY ALL INFORMATION BEFORE COMMENCING WORK.
- 3. THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 811 A MINIMUM OF 48 HOURS PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
- 4. THE CONTRACTOR SHALL MAINTAIN TRAFFIC PATTERNS AND SAFETY AT ALL TIMES ON SITE AND ON ADJACENT ROADWAYS.
- 5. NUMERICALLY WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE. NO SCALING OF DIMENSIONS TO BE ACCEPTED.
- 6. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL SITE IMPROVEMENTS AND UTILITIES. ALL DISCREPANCIES SHALL BE IDENTIFIED TO THE ENGINEER IN WRITING.
- 7. THE CONTRACTOR SHALL MAINTAIN A COPY OF THE DRAWINGS AND SPECIFICATIONS AT THE SITE AT ALL TIMES DURING THE CONSTRUCTION.
- 8. ALL WORK PERFORMED AND MATERIALS SUPPLIED SHALL CONFORM TO THE PLANS AND/OR PROJECT SPECIFICATIONS. ANY WORK NOT COVERED IN THE PLANS OR SPECIFICATIONS SHALL CONFORM TO THE LATEST EDITION OF THE VDOT ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS AND BEDFORD REGIONAL WATER AUTHORITY (BRWA) STANDARDS AND SPECIFICATIONS. IN THE EVENT OF CONFLICT AMONG ANY OF THESE STANDARDS. SPECIFICATIONS OR PLANS, THE MOST STRINGENT SHALL GOVERN.
- 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITY COMPANIES AND GOVERNMENT AGENCIES WHO MIGHT HAVE UTILITY LINES ON OR ABOUT THE PREMISES, OR WHO MIGHT BE AFFECTED BY CONSTRUCTION. THE LOCATIONS OF UNDERGROUND FACILITIES SHOWN ON THESE PLANS ARE BASED ON FIELD SURVEYS. IT SHALL BE THE CONTRACTOR'S FULL RESPONSIBILITY TO CONTACT THE APPROPRIATE UTILITY COMPANIES. NO COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR DAMAGE AND REPAIR TO THESE FACILITIES CAUSED BY HIS WORK FORCE OR ACTIVITIES.
- 10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE EROSION AND SEDIMENT CONTROL MEASURES INCLUDING AIRBORNE DUST DURING CONSTRUCTION AND FOLLOWING CONSTRUCTION UNTIL SUCH TIME AS PROPER VEGETATION IS REESTABLISHED.
- 11. THE TOPOGRAPHICAL INFORMATION SHOWN HEREON WAS PREPARED FROM AN ACTUAL FIELD SURVEY PERFORMED BY HURT & PROFFITT, INC. ON APRIL 22, 2021. DATUM NAD83 (HORIZONTAL); NAVD88 (VERTICAL)
- 12. ALL CLEARED MATERIALS TO BE REMOVED FROM SITE AND DISPOSED OF LEGALLY AT THE CONTRACTOR'S EXPENSE.
- 13. CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES THAT ARE TO REMAIN IN PLACE. ANY DAMAGED UTILITY LINE SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
- 14. ALL UNSUITABLE MATERIAL AND OTHER CONSTRUCTION DEBRIS SHALL BE HAULED OFF SITE AND DISPOSED OF LEGALLY.
- 15. PRIOR TO DISCONNECTION AND/ OR RELOCATION OF UTILITY SERVICES, CONTRACTOR TO CONTACT OWNERS REPRESENTATIVE TO COORDINATE SUCH ACTIVITIES WITH
- 16. CONTRACTOR SHALL COMPLY WITH ALL OSHA STANDARDS AND REGULATIONS FOR OPEN TRENCH EXCAVATIONS.
- 17. ALL EXCAVATION SHALL BE UNCLASSIFIED. CONTRACTOR RESPONSIBLE FOR EXCAVATING ALL MATERIALS INCLUDING ROCK.
- 18. CONTRACTOR RESPONSIBLE FOR COORDINATING WITH THE VIRGINIA DEPARTMENT OF TRANSPORTATION. BEDFORD REGIONAL WATER AUTHORITY (BRWA). AND OTHER GOVERNING BODIES FOR PERMITS AND INSPECTIONS AS REQUIRED.
- 19. A PORTION OF THE AREA SHOWN HERON IS LOCATED WITHIN FLOOD HAZARD ZONE 'AE' FOR A 100 YEAR FLOOD AS DETERMINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY AS SHOWN ON COMMUNITY-PANEL MAP #51019C0308D DATED SEPTEMBER 9, 2010. THE APPROXIMATE LIMITS OF FLOOD HAZARD ZONE 'AE' ARE SHOWN HERON BY SCALING FROM THE AFOREMENTIONED MAP.
- 20. CONSTRUCTION LIMITS SHALL INCLUDE ALL DISTURBED AREAS. ALL DISTURBED AREAS SHALL BE SEEDED AND PROVIDED WITH EROSION CONTROL DURING AND AT THE END OF CONSTRUCTION.
- 21. ALL SLOPES STEEPER THAN 2:1 SHALL BE PROTECTED WITH VDOT EC-2 EROSION CONTROL MATTING FROM TOP OF SLOPE TO TOE OF SLOPE. THE CONTRACTOR SHALL ENSURE THE PROPER INSTALLATION OF SUCH MEASURES IN ACCORDANCE WITH VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS AND THE MANUFACTURER'S WRITTEN RECOMMENDATIONS.
- 22. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL CONFINED SPACE
- 23. MAINTAIN ALL OVERHEAD AND UNDERGROUND ELECTRICAL, TELEPHONE, WATER, AND GAS SERVICES AND ALL OTHER UTILITIES DURING ENTIRE CONSTRUCTION PERIOD. UTILITY OUTAGES WILL NOT BE ALLOWED.
- 24. THE CONTRACTOR SHALL MAINTAIN SURFACE DRAINAGE DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL PUMPS AND PIPING REQUIRED TO MAINTAIN SURFACE
- 25. THE CONTRACTOR SHALL BE FULLY LIABLE FOR REPAIR OF ANY DAMAGES ON PUBLIC OR PRIVATE PROPERTY CAUSED BY HIS CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL REPLACE ALL DISTURBED SURFACES IN KIND, INCLUDING PAVEMENT, STONE, DITCHES, MAILBOXES, STORM CULVERTS, FENCING, ETC. AT NO ADDITIONAL COST TO THE OWNER.
- 26. ALL EXISTING SIGNS, CURBS, GUARDRAIL FENCING, STONE, STRUCTURES, LANDSCAPING, PLANTERS, SHRUBS, AND OTHER PHYSICAL IMPROVEMENTS TEMPORARILY REMOVED BY THE CONTRACTOR SHALL BE REPLACED TO ORIGINAL CONDITION, OR TO THE PROPERTY OWNER AND TO THE SATISFACTION OF THE OWNER AND PROPERTY OWNER.
- 27. ALL PROPERTY PINS OR VDOT MONUMENTS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED BY A LAND SURVEYOR LICENSED IN THE COMMONWEALTH OF VIRGINIA AT THE CONTRACTOR'S EXPENSE.
- 28. THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM PROPERTY OWNERS FOR USE OF ANY ACCESS POINTS OTHER THAN THOSE LOCATED WITHIN RIGHT-OF-WAYS AND OBTAINED EASEMENTS. WRITTEN PERMISSION SHALL CONTAIN CONDITIONS FOR USE AND RESTORATION AGREEMENTS BETWEEN PROPERTY OWNER AND CONTRACTOR. COPIES OF WRITTEN PERMISSION SHALL BE PROVIDED TO OWNER PRIOR TO USING OTHER ACCESS POINTS.

- 29. TREES AND SHRUBS TO REMAIN IN PLACE SHALL BE ROPED OFF DURING GRADING OPERATIONS TO KEEP EQUIPMENT AWAY FROM ROOT SYSTEMS. THE CONTRACTOR SHALL MAKE SELECT CUTTING OF TREES, TAKING THE SMALLEST TREES FIRST, THAT ARE MANDATORY FOR WATER LINE CONSTRUCTION. TREES NOT REQUIRING REMOVAL FOR WATER LINE INSTALLATION SHALL BE PROTECTED AND REMAIN UNDISTURBED.
- 30. RESIDENCY POLICY FOR UTILITY CROSSING PRIVATE ENTRANCES IS TO REQUIRE THE UTILITY TO BE BORED UNDER THE ENTRANCES UNLESS THE PROPERTY OWNER AGREES IN WRITING TO ALLOW IT TO BE OPEN CUT.
- 31. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES OR EROSION/SEDIMENT CAUSED BY THE TESTING OF THE WATER LINE SUCH AS FLUSHING OF THE FIRE HYDRANTS. THE CONTRACTOR IS TO MAKE EVERY EFFORT TO MINIMIZE IMPACTS.
- 32. THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH: THESE PLANS, THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD AND BRIDGE SPECIFICATIONS, DATED 2020; THE VDOT ROAD AND BRIDGE STANDARDS, DATED 2016, REVISED MAY 2020; THE VIRGINIA WORK AREA PROTECTION MANUAL, DATED 2011, REVISION 2, DATED SEPTEMBER 1, 2019.
- 33. THE GRADE LINES DENOTE TOP OF FINISHED PAVEMENT UNLESS SHOWN OTHERWISE ON TYPICAL SECTIONS OR PLANS.
- 34. THAT PORTION OF THE RIGHT OF WAY LYING WITHIN THE CLEAR ZONE OR WITHIN A MINIMUM OF 10 FEET, FROM THE EDGE OF PAVEMENT OR SURFACING OR WITHIN THE LIMITS OF THE CONSTRUCTION SLOPES BEYOND 10 FEET, SHALL BE CLEARED AND GRUBBED IN ACCORDANCE WITH THE APPLICABLE VDOT ROAD AND BRIDGE SPECIFICATIONS, SECTIONS 301, WHERE SUFFICIENT RIGHT OF WAY OR CONSTRUCTION EASEMENT IS PROVIDED.
- 35. WHERE STANDARD SLOPE ROUNDOFFS WOULD DAMAGE TREES, BUSHES OR OTHER DESIRABLE VEGETATION, THEY SHALL BE OMITTED WHEN SO ORDERED BY THE ENGINEER.

#### SANITARY NOTES:

- 1. ALL SANITARY SEWER LINES TO BE INSTALLED PER THE BEDFORD REGIONAL WATER AUTHORITY'S STANDARDS AND SPECIFICATIONS AT THE CONTRACTORS
- 2. ANY CHANGES TO THE PLANS MUST BE APPROVED BY THE BEDFORD REGIONAL WATER AUTHORITY PRIOR TO CONSTRUCTION.
- ANY CRUSHED, OVAL SHAPED, OR OTHERWISE UNACCEPTABLE PIPE WILL BE REPLACED BY THE CONTRACTOR AT CONTRACTORS EXPENSE.
- 4. SANITARY SEWER TRENCH SHALL BE PER BRWA DETAIL TB-1.
- 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.
- MAINTAIN 18" OF VERTICAL SEPARATION BETWEEN STORM SEWER LINES, WATER LINES AND THE SANITARY SEWER LINE.
- 7. CONTRACTOR MUST MAINTAIN 10' HORIZONTAL SEPARATION BETWEEN WATER AND SANITARY SEWER LINES AT ALL TIMES.
- 8. ALL PROPOSED SANITARY SEWER LINES SHALL BE SDR 35 UNLESS OTHERWISE
- 9. DUCTILE IRON PIPE SHALL BE CEMENT LINED PER AWWA C104. ALL DUCTILE IRON PIPE INSTALLED BELOW GROUND OR IN CASING SHALL HAVE AN EXTERIOR COAT OF BITUMINOUS MATERIAL.
- 10. SEWER LATERALS ARE SHOWN WHERE KNOWN IN THEIR APPROXIMATE LOCATION. CONTRACTOR SHALL MAKE ALL NECESSARY INVESTIGATIONS TO DETERMINE LOCATION OF EXISTING SEWER LATERALS ALONG LINES TO BE REPLACED.
- 11. ALL PROPOSED SEWER SERVICE LATERALS SHALL BE SDR 35 PVC FROM THE MANHOLE TO THE CLEANOUT.
- 12. ALL LATERALS AND CLEANOUTS ARE TO BE REPLACED IN EXISTING LOCATION.
- 13. ALL MANHOLES WILL BE CONCRETE UNLESS OTHERWISE NOTED.
- 14. CONTRACTOR SHALL VERIFY THE LOCATION AND ACTIVITY OF ALL LATERALS PRIOR TO CONNECTING TO THE EXISTING SEWER MAIN. THE CONTRACTOR SHALL PROPERLY ABANDON IN-ACTIVE SEWER LATERALS.
- 15. ALL EXISTING SURFACE IMPROVEMENTS DAMAGED DURING INSTALLATION OF THE SEWER MAIN AND LATERALS SHALL BE REPLACED IN LIKE KIND.
- 16. LIMITS OF PAVEMENT DISTURBANCE IN PAVEMENT IS DEFINED BY THE LIMITS OF THE UTILITY TRENCH.

#### **VDOT UTILITY INSTALLATION GENERAL NOTES:**

- 1. ALL WORK SHALL COMPLY WITH APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS INCLUDING BUT NOT LIMITED TO: OSHA, NESC, DOT, ETC. GENERAL NOTES APPLY TO ALL DRAWINGS.
- 2. ALL WORK IN PUBLIC ROADS SHALL BE PERFORMED IN ACCORDANCE WITH THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD AND BRIDGE STANDARDS DATED 2016, REVISED MAY 2020, AND THE 2020 ROAD AND BRIDGE SPECIFICATIONS. ALL WORK IN PUBLIC ROADS AND RIGHTS-OF- WAY SHALL BE PERFORMED IN ACCORDANCE WITH THE VIRGINIA WORK AREA PROTECTION MANUAL 2011 EDITION, REVISION 2: SEPTEMBER 1,
- 3. A VDOT LAND USE PERMIT IS REQUIRED FOR WORK PERFORMED WITHIN STATE RIGHT-OF-WAY. ACTIVITIES PERFORMED WITHIN STATE RIGHT-OF-WAY SHALL BE LIMITED TO THOSE EXPRESSLY COVERED BY THE PERMIT WORK DESCRIPTION.
- 4. PERMISSIONS GRANTED BY VDOT LAND USE PERMIT APPLY ONLY TO WORK PERFORMED INSIDE STATE RIGHT-OF-WAY AND IN NO WAY GRANTS PERMISSION FOR WORK TO BE PERFORMED ON PRIVATELY OWNED PROPERTY. CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE PERMISSION OF PRIVATE PROPERTY OWNERS WHEN PERFORMING WORK OUTSIDE OF STATE RIGHT-OF-WAY, INCLUDING ACTIVITIES PERFORMED WITHIN PRESCRIPTIVE EASEMENTS.
- CONTRACTOR SHALL MAINTAIN APPROVED COPIES OF ALL PROJECT RELATED VDOT PERMITS AND REFERENCED APPROVED PLANS ON-SITE AT ALL TIMES.
- 6. VDOT LAND USE SECTION SHALL BE NOTIFIED 5 DAYS PRIOR TO INITIATING WORK WITHIN STATE RIGHT-OF-WAY. SALEM DISTRICT VDOT LAND USE SECTION POINTS OF CONTACT ARE LISTED BELOW BY COVERAGE AREA:
- BEDFORD AND FRANKLIN COUNTIES: TODD K. DANIEL 540-586-7910
- FLOYD, GILES, MONTGOMERY, AND PULASKI COUNTIES: DAVID CLARKE 540-381-7200 HENRY, CARROL, AND PATRICK COUNTIES: LISA HUGHES 276-629-2581
- ROANOKE, CRAIG, BOTETOURT COUNTIES: RAY VARNEY 540-387-5488
- PRIOR TO INITIATING WORK WITHIN STATE RIGHT-OF-WAY, THE CONTRACTOR SHALL HOLD A PRE-CONSTRUCTION CONFERENCE WITH OWNER, ENGINEER, LOCALITY, SUBCONTRACTORS, AND VDOT.
- MAINTENANCE OF TRAFFIC (MOT) PLAN(S) SHALL BE PROVIDED BY THE CONTRACTOR FOR VDOT REVIEW PRIOR TO THE ISSUANCE OF A LAND USE PERMIT BY VDOT.
- CONTRACTOR IS RESPONSIBLE FOR NOTIFYING VDOT TRAFFIC OPERATIONS CENTER (540-375-0170) UPON ENTERING AND EXITING THE ROADWAY.
- 10. CONTRACTOR SHALL PROVIDE ALL NECESSARY SIGNS, FLAG PERSONS AND OTHER DEVICES (LIGHTS, BARRICADES, ETC.) PROVIDING PROTECTION FOR TRAFFIC AND WORKERS IN ACCORDANCE WITH THE VIRGINIA WORK AREA PROTECTION MANUAL 2011 EDITION, REVISION 2: SEPTEMBER 1, 2019 OR AS DIRECTED BY THE AREA LAND USE
- 11. IMPLEMENTATION OF TEMPORARY LANE CLOSURES MUST BE ENTERED INTO THE VDOT LANE CLOSURE ADVISORY MANAGEMENT SYSTEM (LCAMS) AND VATRAFFIC A MINIMUM OF ONE (1) WEEK PRIOR TO THE PLANNED EXECUTION OF LANE CLOSURE ACTIVITIES ON STATE MAINTAINED HIGHWAYS ROUTES 460, 29, 58 AND ALL LIMITED ACCESS AS NOTED ON THE PLANS. THE PERMITTEE OR THEIR CONTRACTOR(S) MAY ENTER THEIR REQUESTS DIRECTLY OR PROVIDE WRITTEN EMAIL REQUESTS TO THE VDOT REGIONAL OPERATIONS CENTER AT: SALEMSMARTTRAFFICCENTER@VDOT.VIRGINIA.GOV
- 12. CONTRACTOR SHALL ENSURE THAT ALL SIGNS ARE IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE VIRGINIA WORK AREA PROTECTION MANUAL.
- 13. FOR ALL ACTIVITIES PERFORMED UNDER THE AUSPICES OF A VDOT LAND USE PERMIT INVOLVING THE INSTALLATION, MAINTENANCE, AND REMOVAL OF WORK ZONE TRAFFIC CONTROL DEVICES, AT LEAST ONE INDIVIDUAL SHALL BE ON-SITE WHO IS VERIFIED BY VDOT IN BASIC WORK ZONE TRAFFIC CONTROL. AN INDIVIDUAL VERIFIED BY VDOT IN INTERMEDIATE WORK ZONE TRAFFIC CONTROL SHALL BE ON-SITE TO PROVIDE SUPERVISION DURING WORK ZONE ADJUSTMENTS OR CHANGES TO TRAFFIC CONTROL DUE TO FIELD CONDITIONS. INDIVIDUALS SHALL HAVE THEIR VERIFICATION CARDS WITH THEM WHILE ON THE WORK SITE.
- 14. UNLESS OTHERWISE APPROVED IN WRITING BY THE VDOT AREA LAND USE ENGINEER. ALL WORK IN PUBLIC ROADS CLASSIFIED AS "ARTERIAL" OR "COLLECTOR" SHALL BE LIMITED TO THE HOURS OF 9:00 AM TO 3:00 PM. MONDAY THROUGH FRIDAY. IN THE SALEM DISTRICT. PUBLIC ROADS CLASSIFIED AS "LOCAL" ROADS SHALL HAVE UNRESTRICTED WORK HOURS AND DAYS.
- 15. PERMITTED NON-EMERGENCY WORK WILL NOT BE ALLOWED ON PUBLIC ROADS CLASSIFIED AS "ARTERIAL" OR "COLLECTOR" FROM NOON ON THE PRECEDING WEEKDAY THROUGH THE FOLLOWING STATE OBSERVED HOLIDAYS: NEW YEAR'S DAY, MEMORIAL DAY, INDEPENDENCE DAY, LABOR DAY, THANKSGIVING DAY, AND CHRISTMAS DAY.
- WORK IN THE VICINITY OF SCHOOL ENTRANCES AND ON SCHOOL ROADS SHOULD BE AVOIDED DURING THE HOURS OF ADMISSION AND DISMISSAL SO AS NOT TO DISRUPT SCHOOL TRAFFIC.
- 17. NO EQUIPMENT OR MATERIALS SHALL BE STORED ON ROAD SURFACES OR ALLOWED TO OCCUPY THE CLEAR ZONE DURING PERIODS OF INACTIVITY. SEE THE VIRGINIA WORK AREA PROTECTION MANUAL 2011 EDITION, REVISION 2: SEPTEMBER 1, 2019 (APPENDIX A, PAGE A-4) FOR CLEAR ZONE DEFINITIONS.
- EXCAVATION MATERIALS SHALL BE STORED AWAY FROM PAVED ROADWAYS. ALL SPILLED MATERIALS SHALL BE IMMEDIATELY REMOVED FROM THE TRAVEL SURFACES AND SHOULDERS.
- 19. MUNICIPAL ROAD SIGNS, DELINEATORS, GUARDRAILS, ETC. SHALL NOT BE REMOVED WITHOUT PRIOR WRITTEN PERMISSION FROM THE APPROVING AUTHORITY.
- 20. DURING CONSTRUCTION, ALL VDOT DRAINAGE STRUCTURES SHALL BE PROTECTED AGAINST SILTATION BY SEDIMENT TRAPPING DEVICES, PROPERLY INSTALLED IN ACCORDANCE WITH VDOT STANDARDS AND SPECIFICATIONS AND VIRGINIA DEPARTMENT OF ENVIRONMENTAL (DEQ) STANDARDS. SEDIMENT TRAPPING DEVICES SHALL BE MAINTAINED UNTIL UPSTREAM STABILIZATION HAS BEEN ADEQUATELY ACHIEVED.
- 21. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL CONFORM TO THE (VDOT) 2016 ROAD AND BRIDGE STANDARDS, REVISED MAY 2020, 2020 ROAD AND BRIDGE SPECIFICATIONS, AND 1992 DEQ VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK THIRD EDITION.
- 22. CONTRACTOR IS RESPONSIBLE FOR CONTACTING MISS UTILITY (1-800-552-7001) TO IDENTIFY AND MARK THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES.
- 23. CONTRACTOR SHALL CONTACT VDOT TRAFFIC ENGINEERING SECTION (BEDFORD COUNTY: 540-586-7910) A MINIMUM OF 7 DAYS PRIOR TO COMMENCEMENT OF INSTALLATION ACTIVITIES WITHIN 1.000 FEET OF SIGNALIZED INTERSECTIONS, FLASHING SIGNS, OR OTHER VDOT ELECTRICAL FACILITIES. THIS INCLUDES EXCAVATION. TRENCHING. PLOWING. OR BORING.

- 24. PLACEMENT OF FIBER OPTIC CABLE SHALL BE LIMITED TO THE AREAS OF THE STATE
- OUTERMOST PORTION OF THE STATE RIGHT-OF-WAY AS ALLOWED BY EXISTING TERRAIN,
- A MINIMUM OF 3 FEET FROM THE TOE OF FILL SLOPES,
- A MINIMUM OF 2 FEET FROM THE BREAK POINTS OF SLOPES STEEPER THAN 3:1, UNLESS PUSHED, BORED OR JACKED.
- FIBER PLACED UNDER PAVED AREAS SHALL BE PUSHED, BORED, OR JACKED,
- FIBER PLACED WITHIN THE SHOULDER OF THE ROAD SHALL BE INSTALLED AS FOLLOWS:
- AND NO CLOSER THAN 2.0 FEET FROM THE FACE OF GUARDRAIL,
- SECTION POINT OF CONTACT SHALL BE NOTIFIED TO AUTHORIZE ANY DEVIATIONS TO THE PERMITTED ACTIVITY, LYNCHBURG DISTRICT LAND USE
- SECTIONREVISED 09/19SHEET 2 OF 3 c. IF MINIMUM 4.0 FOOT OFFSET FROM EDGE OF PAVEMENT IS ACHIEVABLE BUT
- d. NO CLOSER THAN 3.0 FEET FROM THE BACK OF POST IN GUARDRAIL SECTIONS.

RESULTS IN THE PLACEMENT OF FIBER INSIDE THE ROADSIDE DITCHLINE,

- 25. FOR AERIAL CROSSINGS, MINIMUM VERTICAL CLEARANCES OF 18 FEET (NON-LIMITED
- 26. ALL BURIED UTILITIES WITHIN LIMITED ACCESS RIGHT-OF-WAY SHALL MAINTAIN A
- 27. WITH THE EXCEPTION OF TELECOMMUNICATION AND CABLE TELEVISION, ALL BURIED UTILITIES WITHIN NON-LIMITED ACCESS RIGHT-OF- WAY SHALL MAINTAIN A MINIMUM OF 36 INCHES OF COVER. TELECOMMUNICATION AND CABLE TELEVISION FACILITIES BURIED WITHIN NON-LIMITED ACCESS RIGHT-OF-WAY SHALL MAINTAIN A MINIMUM OF 30 INCHES
- 28. UTILITY MARKERS SHALL BE LOCATED BEYOND THE AREAS OF NORMAL MAINTENANCE ACTIVITIES. THE PREFERRED PLACEMENT LOCATION IS AT THE STATE RIGHT-OF-WAY LINE. IF THIS IS NOT OBTAINABLE, OTHER AREAS MAY INCLUDE BESIDE SIGN POSTS LOCATED BEHIND THE DITCH LINE, IMMEDIATELY BEHIND THE BACK OF GUARDRAIL, OR
- 29. JUNCTION BOXES SHALL MEET OR EXCEED VDOT STANDARDS JB-R1 & R2 AND JB-S1, S2,
- 30. NO EXCAVATION (OPEN CUTS, PLOWS, BORE PITS, PULL POINTS, COUPLERS, ETC.) WILL BE ALLOWED ON AREAS OF A 3:1 SLOPE OR GREATER WITHOUT PRIOR APPROVAL BY THE VDOT DISTRICT ENGINEER'S DESIGNEE.
- 31. CONTRACTOR SHALL MAINTAIN AND PROVIDE UPON COMPLETION OF WORK, A SET OF COMPLETE "AS-BUILT" PLANS TO VDOT.
- 32. ANY ERRORS, CONFLICTS, OR DISCREPANCIES FOUND ON THE APPROVED PLANS SHALL BE REPORTED TO THE UTILITY OWNER. VDOT SHALL BE NOTIFIED FOR RESOLUTION BEFORE PROCEEDING FURTHER WITH THE WORK, IF THE STATE MAINTAINED RIGHT-OF-WAY IS AFFECTED.
- COMMONWEALTH AND ALL COMMONWEALTH EMPLOYEES, AGENTS, AND OFFICES, SHALL BE ABSOLVED FROM ALL RESPONSIBILITIES, DAMAGES AND LIABILITIES AS A RESULT OF WORK ARISING FROM THE EXERCISE OF THE PRIVILEGES GRANTED BY PLAN AND/OR

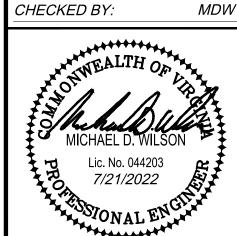
- RIGHT-OF-WAY DESCRIBED BELOW:

- a. NO CLOSER THAN 4.0 FEET FROM THE EDGE OF PAVEMENT, OR WHITE LINE,
- b. IF MINIMUM 4.0 AND 2.0 FOOT OFFSETS CANNOT BE ACHIEVED, VDOT LAND USE
- BORING WILL BE REQUIRED BENEATH THE DITCH CENTERLINE,
- ACCESS) AND 21 FEET (LIMITED ACCESS) SHALL BE MAINTAINED OVER ROADWAYS.
- MINIMUM OF 36 INCHES OF COVER.
- OF COVER.
- BUNCHED TIGHTLY TOGETHER WITH EXISTING UTILITY MARKERS OR PEDESTALS.
- S3. JUNCTION BOXES INSTALLED BETWEEN EDGE OF PAVEMENT AND DITCHLINE SHALL BE LOAD BEARING IN NATURE AND HAVE CONCRETE COLLARS PER VDOT STANDARD.

- 33. THE COMMONWEALTH TRANSPORTATION BOARD. MEMBERS OF THE BOARD. THE PERMIT APPROVAL.WORK

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PROJECT NO. 2021040 37.329998 -79.546684 LONG. 7/21/2022 DATE: DRAWN BY:



APPROVED FOR CONSTRUCTION

> BRWA JOB NO. 2021-004

HURT&PROFFITI SHEET NO.

G-102

#### I. PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF THE REPLACEMENT OF DETERIORATING SANITARY SEWER LINES WITHIN THE TOWN AND COUNTRY SUBDIVISION. APPROXIMATELY 9.050 LF OF SANITARY SEWER LINES WITH ASSOCIATED APPURTENANCES WILL BE REPLACED AND A TOTAL OF APPROXIMATELY 1.1 ACRES WILL BE DISTURBED AS A RESULT OF CONSTRUCTION ACTIVITIES.

#### II. EXISTING SITE CONDITIONS

THE SANITARY SEWER IS PRIMARILY LOCATED WITHIN THE EXISTING RIGHT OF WAY OF THE TOWN AND COUNTRY SUBDIVISION. A SECTION OF SEWER SHALL ALSO BE REPLACED IN AN ALLEY BETWEEN WINDY RIDGE DRIVE AND ROUNDTREE DRIVE. SECTIONS OF THE SANITARY SEWER SYSTEM CROSSING US ROUTE 460 AND PARALLELING LITTLE OTTER CREEK SHALL ALSO

#### III. ADJACENT PROPERTY

AGRICULTURAL LAND ZONED AR (AGRICULTURAL/RESIDENTIAL) LIES WEST OF THE PROJECT AREA, AND A DEVELOPMENT ZONED R1E (EXISTING DENSITY RESIDENTIAL) LIES TO THE SOUTH. US ROUTE 460 LIES NORTH OF THE PROJECT SITE, AND RESIDENTIAL PROPERTIES ZONED R1 (SINGLE FAMILY RESIDENTIAL) LIE TO THE EAST.

#### IV. OFFSITE AREAS

ALL GRADING SHALL OCCUR ON SITE. WE DO NOT ANTICIPATE ANY OFFSITE ACTIVITY TO OCCUR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INDEPENDENTLY VERIFYING QUANTITIES TO HIS OWN SATISFACTION.

#### V. SOILS

THE SOIL SURVEY MAP FOR BEDFORD COUNTY, VIRGINIA, VERSION 11, DATED SEPTEMBER 1, 2021 AND VERSION 17, DATED SEPTEMBER 13, 2021 INDICATES THAT THE SITE CONSISTS OF FAIRVIEW FINE SANDY LOAM (15 TO 25 PERCENT SLOPES), CLIFFORD FINE SANDY LOAM (2 TO 7 PERCENT SLOPES), CLIFFORD FINE SANDY LOAM (7 TO 15 PERCENT SLOPES), HAYESVILLE LOAM (15 TO 20 PERCENT SLOPES), POPLAR FOREST SANDY CLAY LOAM (15 TO 25 PERCENT SLOPES, SEVERELY ERODED), AND POPLAR FOREST SANDY CLAY LAOM (25 TO 40 PERCENT SLOPES. SEVERELY ERODED).

#### VI. STORMWATER

NO STORMWATER MANAGEMENT IS NECESSARY FOR THE SANITARY SEWER REPLACEMENT. NO IMPERVIOUS AREA WILL BE ADDED AND THE DRAINAGE PATTERN WILL REMAIN UNCHANGED.

#### VII. CRITICAL AREAS

THE CRITICAL AREA FOR THIS PROJECT IS THE SOUTH FORK OF LITTLE OTTER CREEK THAT THE SANITARY SEWER PARALLELS. THE CONTRACTOR SHALL ENSURE THAT ALL DISTURBED AREAS ADJACENT TO THE STREAM SHALL BE STABILIZED AS SOON AS POSSIBLE, AND THE CONTRACTOR SHALL TAKE ALL APPROPRIATE MEASURES TO MINIMIZE ENCROACHMENT AND SEDIMENT TRANSPORT.

#### VIII. EROSION AND SEDIMENT CONTROL

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.

#### A. STRUCTURAL PRACTICES

3.05 SILT FENCE (SF) - A TEMPORARY SEDIMENT BARRIER CONSTRUCTED OF POSTS PLACED ACROSS OR AT THE TOE OF A SLOPE OR IN A MINOR DRAINAGE WAY TO INTERCEPT AND DETAIN SEDIMENT AND DECREASE FLOW VELOCITIES FROM DRAINAGE AREAS OF LIMITED SIZE. SILT FENCE SHALL BE INSTALLED ALONG THE EDGE OF PAVEMENT AT THE LIMITS OF GRADING AS SHOWN ON THE PLANS.

3.07 INLET PROTECTION (IP) - A SEDIMENT FILTER AROUND A DROP INLET OR CURB INLET TO PREVENT SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREA.

3.08 CULVERT INLET PROTECTION (CIP) - A SEDIMENT FILTER LOCATED AT THE INLET TO STORM SEWER CULVERTS. TO PREVENT SEDIMENT FROM ENTERING. ACCUMULATING IN AND BEING TRANSFERRED BY A CULVERT AND ASSOCIATED DRAINAGE SYSTEM PRIOR TO PERMANENT STABILIZATION OF A DISTURBED PROJECT AREA.

## B. <u>VEGETATIVE PRACTICES</u>

SEEDING MEASURES SHALL BE USED ON DISTURBED SOIL AT CUT/FILL SLOPES, SIDES OF SEDIMENT BASINS, DITCH LINES, OR AREAS OUTSIDE OF ON-GOING CONSTRUCTION PRACTICES WITHIN SEVEN (7) DAYS OF COMPLETED GRADING. ALL AREAS DISTURBED BY CONSTRUCTION WILL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINAL GRADING.

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

3.31 TEMPORARY SEEDING (TS) - THE CONTRACTOR IS TO IMPLEMENT TEMPORARY SEEDING IF DISTURBED LAND IS LEFT EXPOSED FOR OVER 14 DAYS AND CONSTRUCTION IS NOT COMPLETE IN THIS AREA.

3.32 PERMANENT SEEDING (PS) - ESTABLISHMENT OF PERENNIAL VEGETATIVE COVER BY PLANTING SEED ON ROUGH-GRADED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE FOR A YEAR OR MORE OR WHERE PERMANENT, LONG-LIVED VEGETATIVE COVER IS NEEDED ON FINE-GRADED AREAS.

3.35 MULCHING (MU) - APPLICATION OF PLAN RESIDUES OR OTHER SUITABLE MATERIALS TO DISTURBED SURFACES TO PREVENT EROSION AND REDUCE OVERLAND FLOW VELOCITIES. FOSTERS PLANT GROWTH BY INCREASING AVAILABLE MOISTURE AND PROVIDING INSULATION AGAINST EXTREME HEAT OR COLD.

## C. <u>MINIMUM STANDARDS (MS):</u>

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 THEN 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:

DISTURBANCE TAKES PLACE.

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: SEDIMENT TRAPS, 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 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:

A SEDIMENT BASIN SHALL CONTROL SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES. THE SEDIMENT BASIN SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE THE ANTICIPATED SEDIMENT LOADING FOR THE LAND DISTURBING ACTIVITY. THE OUTFALL DEVISE OR SYSTEM DEVICE SHALL TAKE INTO ACCOUNT THE TOTAL DRAINAGE AREA FLOWING THROUGH THE DISTURBED AREA TO BE SERVED BY THE BASIN.

#### 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

#### MS-9 WATER SEEPS FROM A SLOPE FACE:

WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION

#### MS-10 STORM SEWER INLET PROTECTION:

ALL STORM SEWER INLETS SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.

#### 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 NON-ERODIBLE 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 NON-ERODIBLE 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 IS COMPLETED.

#### MS-16 UNDERGROUND UTILITIES:

UNDERGROUND UTILITIES 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 OPEN AT ONE TIME.
- B. EXCAVATED MATERIAL SHALL BE PLACE ON THE UPHILL SIDE OF TRENCHES. C. EFFLUENT FOR DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVISE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFFSITE PROPERTY.
- D. RE-STABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS. E. APPLICABLE SAFETY REGULATIONS SHALL BE COMPILED 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 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 SEEPING 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.

#### 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:

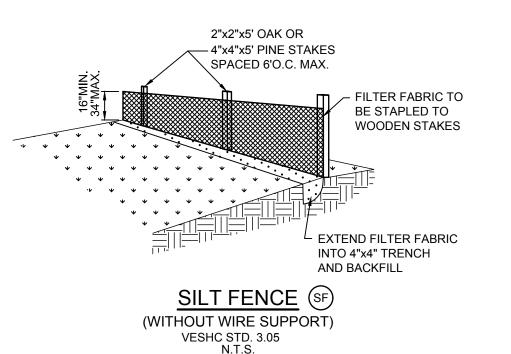
PROPERTIES AND WATERWAYS DOWNSTREAM FROM THE DEVELOPMENT SITE SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION, AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY, AND PEAK FLOW RATES OF STORM WATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24 HOUR DURATION.

## **MANAGEMENT STRATEGIES**

EROSION AND SEDIMENT CONTROL SHALL BE DISCUSSED BETWEEN THE GRADING CONTRACTOR AND THE OWNER PRIOR TO ANY EXCAVATION SO THAT LIMITS OF CONSTRUCTION AND EROSION CONTROL METHODS ARE CLEARLY UNDERSTOOD BY BOTH PARTIES. CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE. THERE IS TO BE NO TRACKING OF MUD OR DIRT BY CONSTRUCTION EQUIPMENT ONTO ANY PAVED DRIVES OR ROADS. SEDIMENT TRAPPING MEASURES WILL BE INSTALLED AS A FIRST STEP IN GRADING AND WILL BE SEEDED AND MULCHED IMMEDIATELY FOLLOWING INSTALLATION. SEEDING OR OTHER STABILIZATION WILL FOLLOW IMMEDIATELY AFTER GRADING. AREAS WHICH ARE NOT TO BE DISTURBED WILL BE CLEARLY MARKED BY FLAGS, SIGNS, ETC. AFTER ACHIEVING ADEQUATE STABILIZATION, THE TEMPORARY E&S CONTROLS WILL BE CLEANED AND REMOVED.

## D. <u>MAINTENANCE</u>

THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL EROSION AND SEDIMENT CONTROL MEASURES. THESE SHALL BE CHECKED DAILY AND AFTER EACH SIGNIFICANT RAINFALL; ANY DEFICIENCIES SHALL BE REPAIRED IMMEDIATELY IN ACCORDANCE WITH THE LATEST EDITION OF THE VESCH OR AS DEEMED NECESSARY BY THE LOCAL APPROVING AUTHORITY.



#### **EROSION AND SEDIMENT CONTROL NOTES:**

- E1. 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 (UNDISTURBED) FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.
- E2. EXCESS EXCAVATION DISPOSED OF OFF THE SITE SHALL BE DISPOSED OF IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.
- E3. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATION OF THE LATEST EDITION OF VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK AND VIRGINIA REGULATIONS AVAC50-30 EROSION AND SEDIMENT CONTROL REGULATIONS.
- E4. EROSION AND SEDIMENT CONTROLS SHALL BE MAINTAINED SO THAT SEDIMENT CARRYING RUNOFF FROM THE SITE WILL NOT ENTER STORM DRAINAGE FACILITIES.
- E5. EROSION AND SEDIMENT CONTROLS SHALL BE MAINTAINED UNTIL THE DISTURBED AREA IS STABILIZED.
- E6. PROPERTIES ADJOINING THE SITE SHALL BE KEPT CLEAN OF MUD OR SILT CARRIED FROM THE SITE BY VEHICULAR TRAFFIC OR RUNOFF.
- E7. THE DISPOSAL OF WASTE MATERIALS REMOVED FROM EROSION AND SEDIMENT CONTROL FACILITIES AND THE DISPOSAL OF THESE FACILITIES SHALL BE IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. SETTLED, TRAPPED, AND FILTERED RESIDUES SHALL NOT BE REUSED AT THIS SITE.
- E8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PERIODICALLY INSPECT ALL SEDIMENT AND EROSION CONTROL DEVICES AND INSURE THAT THEY ARE IN GOOD WORKING ORDER. AT A MINIMUM, ALL DEVICES SHALL BE INSPECTED WEEKLY AND AFTER MAJOR RAINFALL EVENTS ANY DEVICE NEEDING REPAIRS SHALL BE REPAIRED WITHIN 24 HOURS.
- E9. THE CONTRACTOR SHALL INSTALL ADDITIONAL EROSION AND SEDIMENT CONTROL DEVICES IF. DURING THE COURSE OF CONSTRUCTION, BEDFORD COUNTY DETERMINES THAT THEY ARE REQUIRED.
- E10. THE PLAN APPROVING AUTHORITY, MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITIES AND ONE WEEK PRIOR TO THE FINAL INSPECTION.
- E11. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
- E12. 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 SUPPLEMENTAL EROSION AND SEDIMENT CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.
- E13. DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.
- E14. THE CONTRACTOR SHALL MAINTAIN, REPAIR AND/OR REPLACE ANY EXISTING SEDIMENT CONTROL DEVICES ENCOUNTERED AND DISTURBED DURING THE COURSE OF CONSTRUCTION. AT THE END OF EACH DAY ALL MEASURES AND DEVICES SHALL BE REPAIRED OR REPLACED BEFORE LEAVING THE WORK SITE.
- E15. ALL EROSION AND SEDIMENT CONTROL DEVICES AS SHOWN ON THIS PLAN SET ARE TO BE INSTALLED PRIOR TO CONSTRUCTION.
- E.16 EROSION AND SEDIMENT CONTROL MEASURES SHALL COMPLY WITH THE VESCH, 1992 EDITION OR LATER. THE CONTRACTOR SHALL MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES AS NECESSARY AND SHALL BE RESPONSIBLE FOR ALL ADDITIONAL MEASURES AS DETERMINED BY BEDFORD COUNTY.
- E.17 ALL PROPOSED DRAINAGE CHANNELS WILL NEED TO BE REVIEWED IN THE FIELD DURING AND AFTER CONSTRUCTION TO DETERMINE IF EROSION OR SCOUR IS OCCURRING AND IF SUCH IS FOUND, TO DETERMINE APPROPRIATE REMEDIAL CORRECTIVE MEASURES.
- E.18 CONTRACTOR TO TAKE SPECIAL CARE IN EXECUTING THE EROSION AND SEDIMENT CONTROL PLAN. THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVING SEDIMENT AND/OR CLEANING OUT STORM PIPES AS NECESSARY IF SEDIMENT COLLECTS WITHIN THE VDOT RIGHT OF WAY OR ON PRIVATE PROPERTY.
- E.19 EROSION AND SEDIMENT CONTROL AND STORM WATER MANAGEMENT SHALL CONFORM TO BEDFORD COUNTY STANDARDS AND REGULATIONS AND SHALL BE ENFORCED BY BEDFORD COUNTY EROSION AND SEDIMENT CONTROL OFFICERS.
- E.20 ALL DITCHES, SWALES, AND NATURAL WATERCOURSES DOWNSTREAM OF THIS PROJECT WILL BE FIELD REVIEWED DURING AND AFTER CONSTRUCTION TO ENSURE COMPLIANCE TO MINIMUM STANDARD 19 (MS-19) (VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, 1992). IF EROSION OR SCOUR IS OCCURRING, THE DEVELOPER SHALL BE RESPONSIBLE FOR ALL CORRECTIVE MEASURES.

#### **EROSION AND SEDIMENT CONTROL DEVICES:**

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.

#### **EROSION AND SEDIMENT CONTROL MAINTENANCE:**

THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL EROSION CONTROL DEVICES FOR THE DURATION OF THE PROJECT. ALL EROSION 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 VIRGINIA 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.

\* A MULCH COVER IS REQUIRED ON EVERY SEEDING

#### IRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS MINIMUM STANDARD #1

PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN 7 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE.

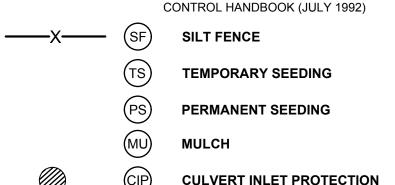
TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

#### **TABLE 3.35-A** ORGANIC MULCH MATERIALS AND APPLICATION RATES

	MULCHES:	RATES:		NOTES:
		PER ACRE	PER 1000 SQ.FT.	NOTES.
	STRAW OR HAY	1½" - 2 TONS (MINIMUM 2 TONS FOR WINTER COVER)	70 - 90 LBS.	FREE FROM WEEDS AND COARSE MATTER. MUST BE ANCHORED. SPREAD WITH A MULCH BLOWER OR BY HAND.

VIRGINIA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL PRACTICES \* CHART TAKEN FROM THE VIRGINIA EROSION AND SEDIMENT

**INLET PROTECTION** 



SEEDING SPECIFICATIONS:

TEMPORARY SEEDING-

WINTER - 40 LBS/AC ANNUAL RYE GRASS AND 40 LBS/AC CEREALE (WINTER) RYE SUMMER - 40 LBS/AC ANNUAL RYE AND 40 LBS/AC FOXTAIL MILLET

FERTILIZER - 1500 LBS. 10-18-10/ACRE LIME - 2 TONS/ACRE

PERMANENT SEEDING-

SEASONAL SPECIFICATION - PER ACRE

02/01 THRU 05/15 100 LBS. TALL FESCUE 2 LBS. RED CLOVER 15 LBS. ANNUAL RYE

05/16 THRU 07/31 120 LBS. TALL FESCUE 2 LBS. RED CLOVER 10 LBS. FOXTAIL MILLET

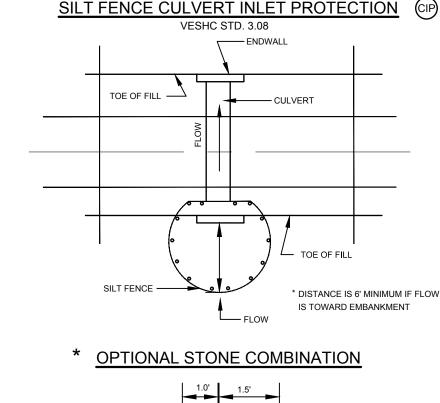
08/01 THRU 09/15 100 LBS. TALL FESCUE

2 LBS. RED CLOVER 15 LBS. ANNUAL RYE 09/16 THRU 01/31 120 LBS. TALL FESCUE

2 LBS. RED CLOVER

10 LBS. CEREALE RYE

FERTILIZER - ALL SEASONS - 1500 LBS. 10-18-10/ACRE LIME - ALL SEASONS - 2 TONS/ACRE



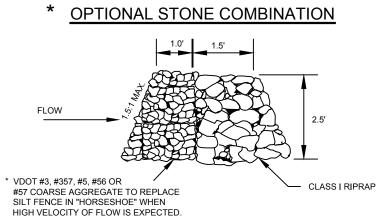
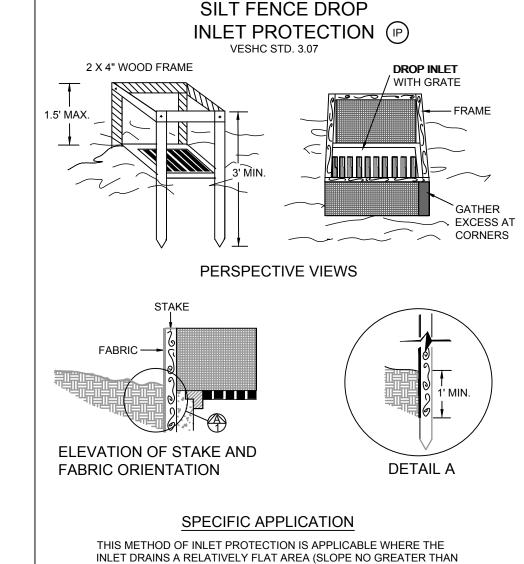


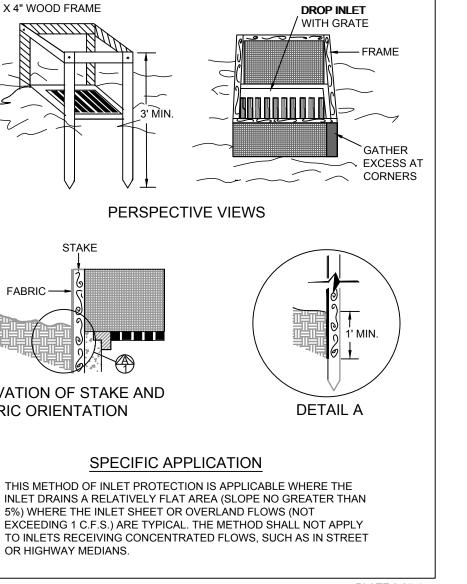
PLATE. 3.08-1 SOURCE: ADAPTED from VDOT Standard Sheets and Va. DSW



5%) WHERE THE INLET SHEET OR OVERLAND FLOWS (NOT EXCEEDING 1 C.F.S.) ARE TYPICAL. THE METHOD SHALL NOT APPLY

SOURCE: N.C. Erosion and Sediment Control Planning and Design <u>Manual</u>, 1988

PLATE 3.07-1



**BRWA JOB NO.** 2021-004

<u>LONG.</u>

DRAWN BY:

CHECKED BY.

HURT&PROFFITT SHEET NO.

G-103

CONSTRUCTION

2021040

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7/21/2022

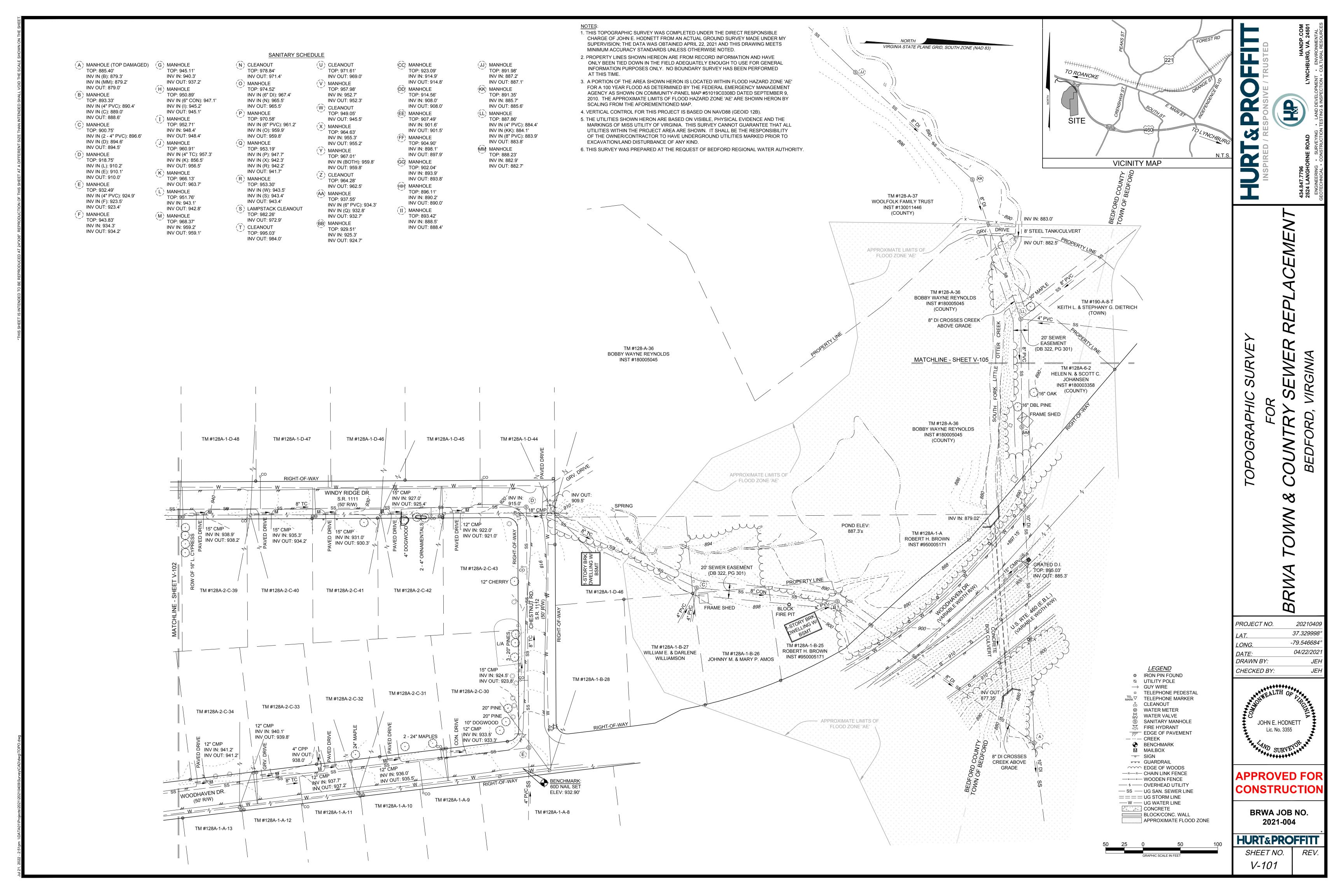
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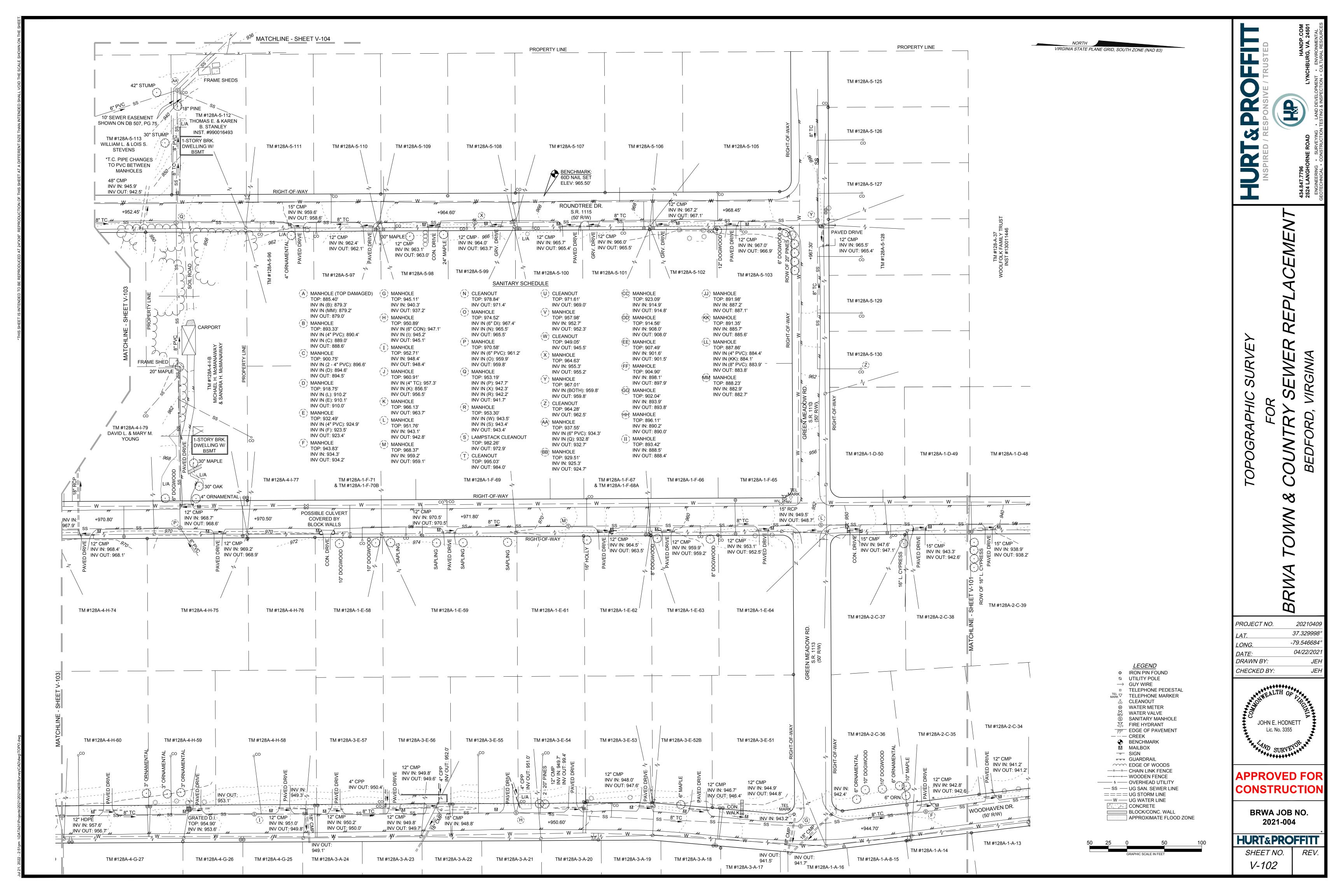
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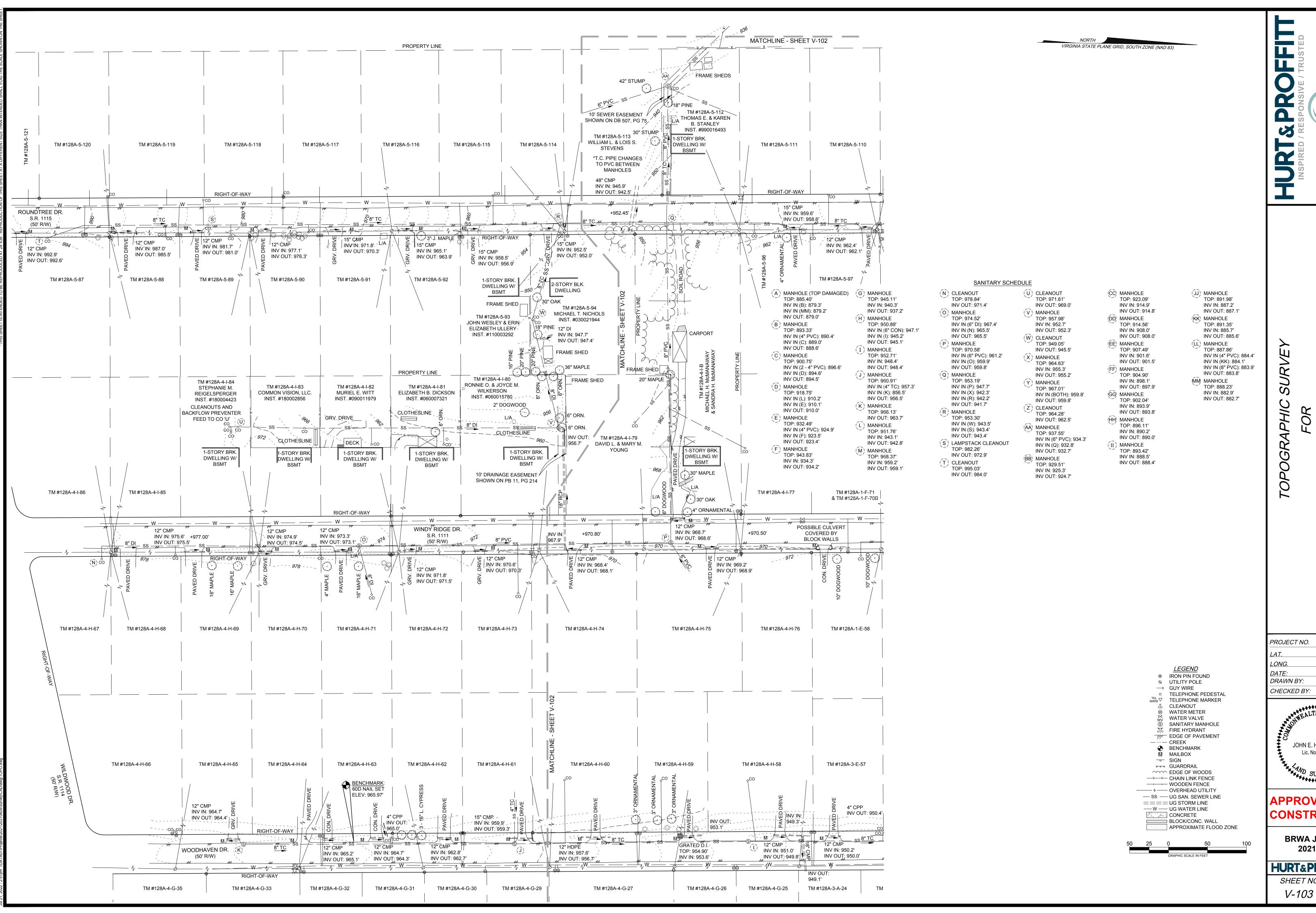
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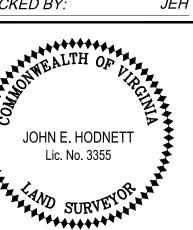






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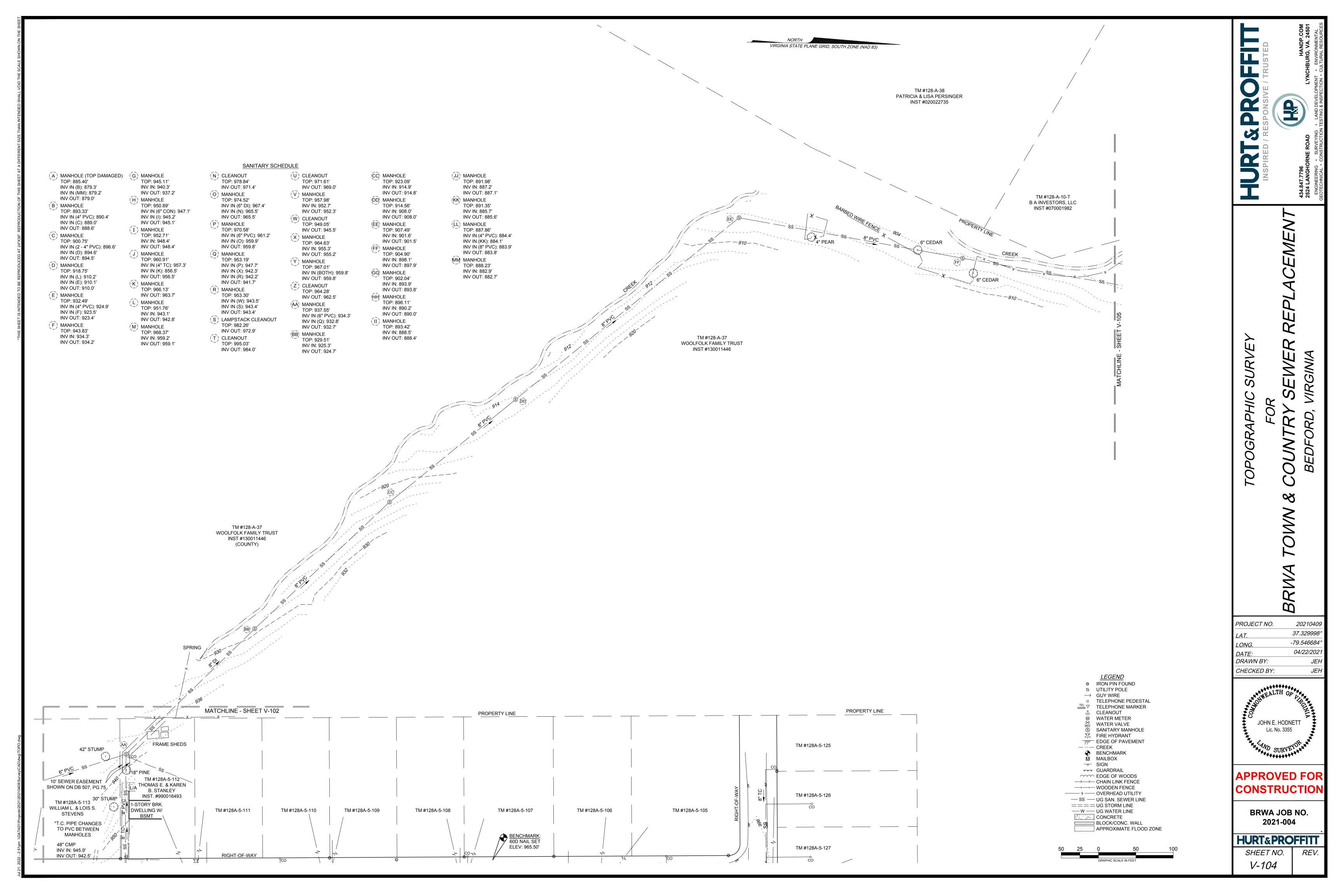
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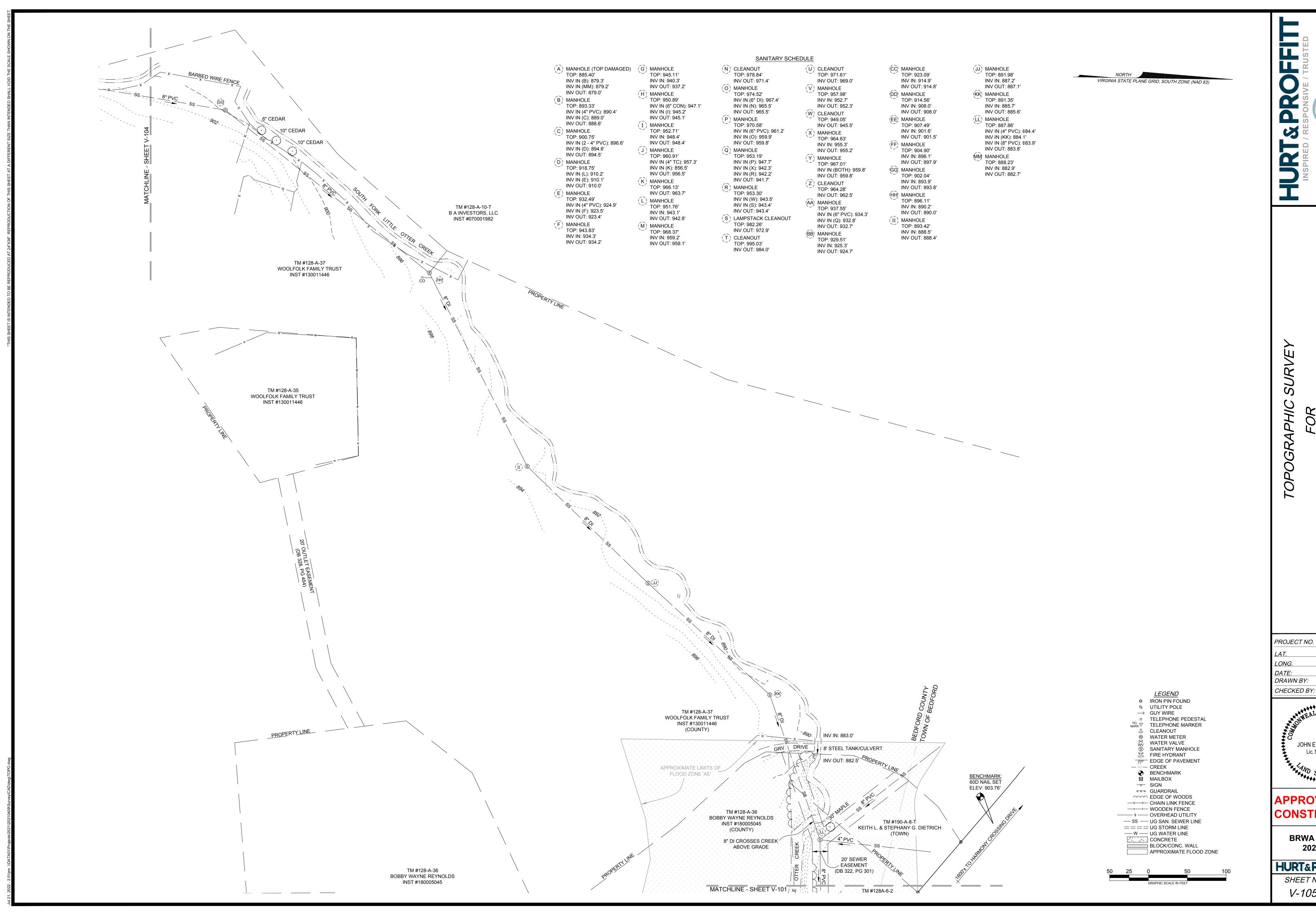


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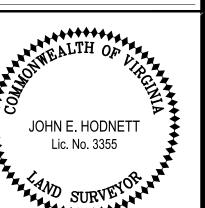
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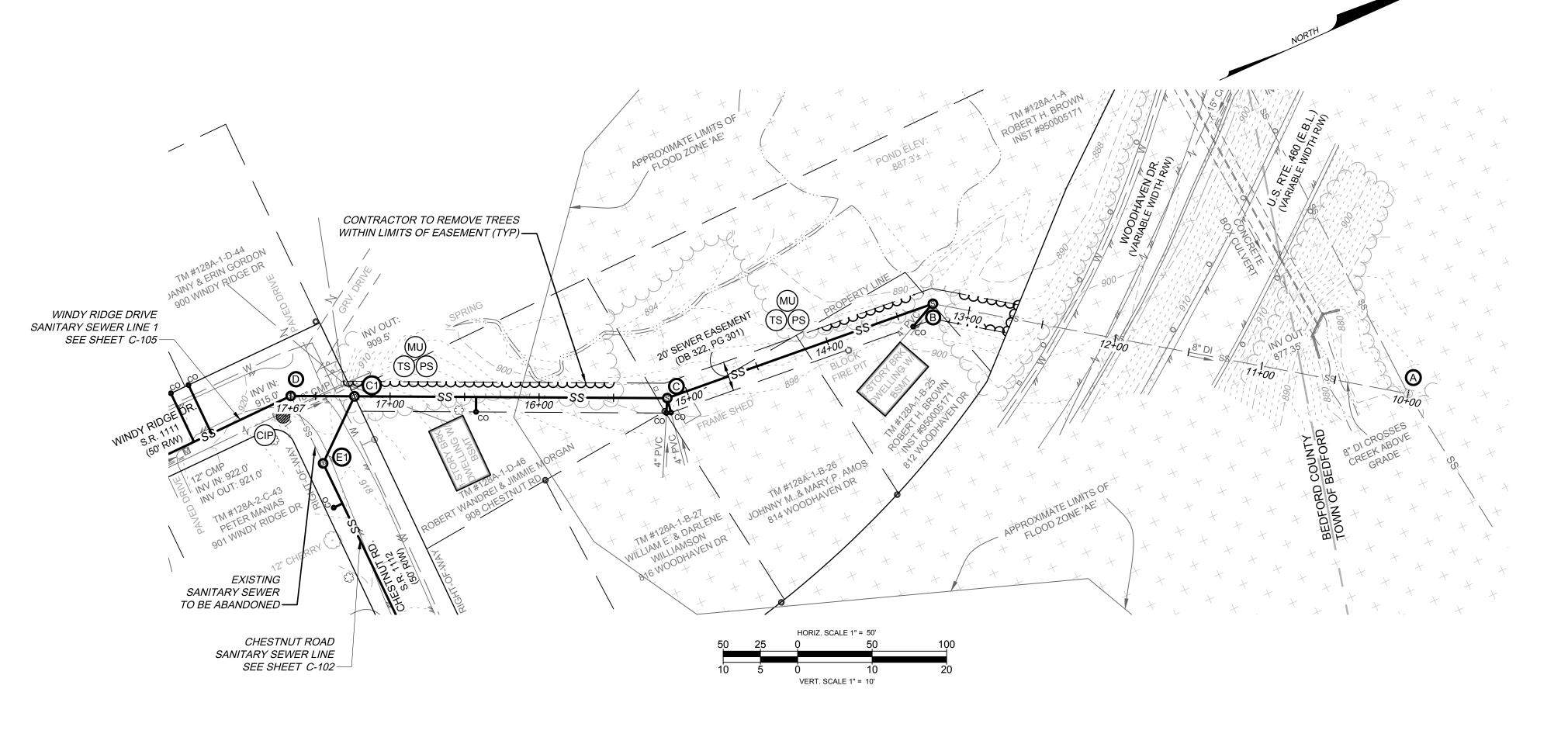


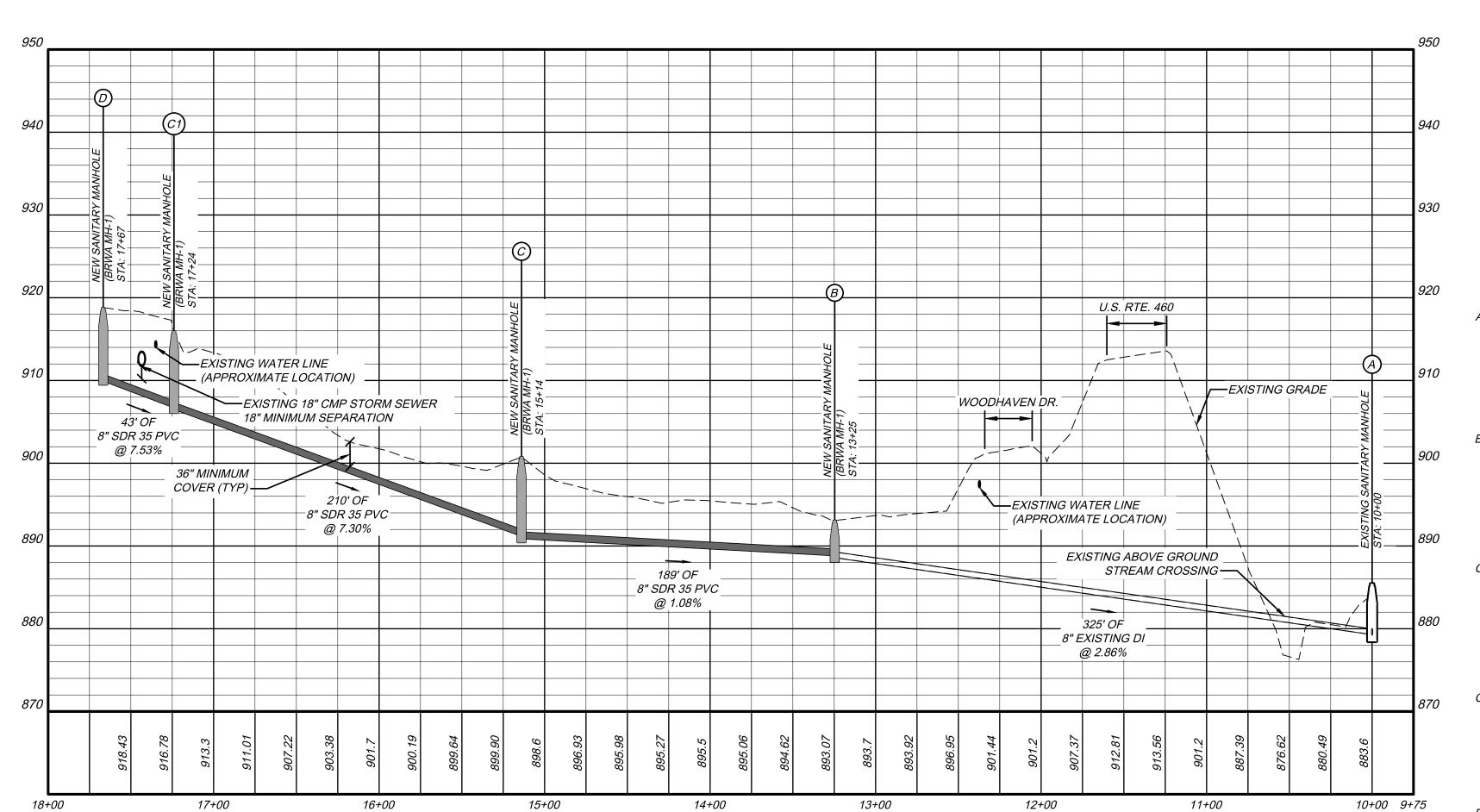
# **APPROVED FOR** CONSTRUCTION

BRWA JOB NO. 2021-004

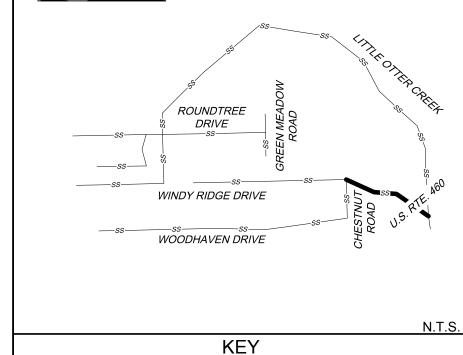
HURT&PROFFITT SHEET NO.

*V-105* 





CHESTNUT ROAD TO U.S. RTE. 460 SANITARY SEWER



1. EXISTING SANITARY SEWER TO BE REPLACED IN THE SAME TRENCH. NEW TRENCH BOTTOM MAY BE LOWER IN SOME LOCATIONS TO PROVIDE SUFFICIENT COVER OVER PIPE. 2. CONTRACTOR TO PROVIDE BYPASS PUMPING. 3. ALL MANHOLES WILL BE REPLACED.

4. ALL EXISTING ACTIVE SERVICES TO HAVE CLEANOUTS. IN SOME CASES AN EXISTING CLEANOUT WAS NOT FOUND. IN THOSE CASES CONTRACTOR TO INSTALL CLEANOUT ON EXISTING SERVICE WHEN LOCATED DURING CONSTRUCTION.

## SANITARY STRUCTURE SCHEDULE

EXISTING SANITARY MANHOLE 48" DIA.; H = 6.40' STA: 10+00 TOP: 885.40

N: 3647278.15 E: 11179306.74 INV IN=879.30 FROM B DEFLECTION: 46.97° L INV IN=879.20 FROM MM DEFLECTION: 5.05° R INV OUT=879.00

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 4.47' STA: 13+25

TOP: 893.07 N: 3647011.64 E: 11179121.20

INV IN=888.90 FROM C DEFLECTION: 30.28° L INV IN=890.40 FROM N/A DEFLECTION: 60.10° L INV OUT=888.60

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 9.80' STA: 15+14

TOP: 900.75 N: 3646823.02 E: 11179106.13

INV IN=896.60 FROM N/A DEFLECTION: 67.25° L INV IN=896.60 FROM N/A DEFLECTION: 84.93° L INV IN=891.25 FROM C1 DEFLECTION: 19.89° R INV OUT=890.95

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 9.37' STA: 17+24

TOP: 915.94 N: 3646631.88

E: 11179019.20 INV IN=906.88 FROM E1 DEFLECTION: 65.30° L INV IN=906.78 FROM D DEFLECTION: 0.00° INV OUT=906.58

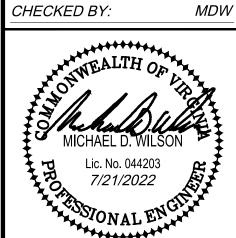
NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 8.76' STA: 17+67

TOP: 918.76 N: 3646592.97 E: 11179001.50

INV IN=910.30 FROM D1 DEFLECTION: 25.72° L INV OUT=910.00

CHES 20210409 PROJECT NO. 37.329998 -79.546684 LONG. 7/21/2022 DRAWN BY:

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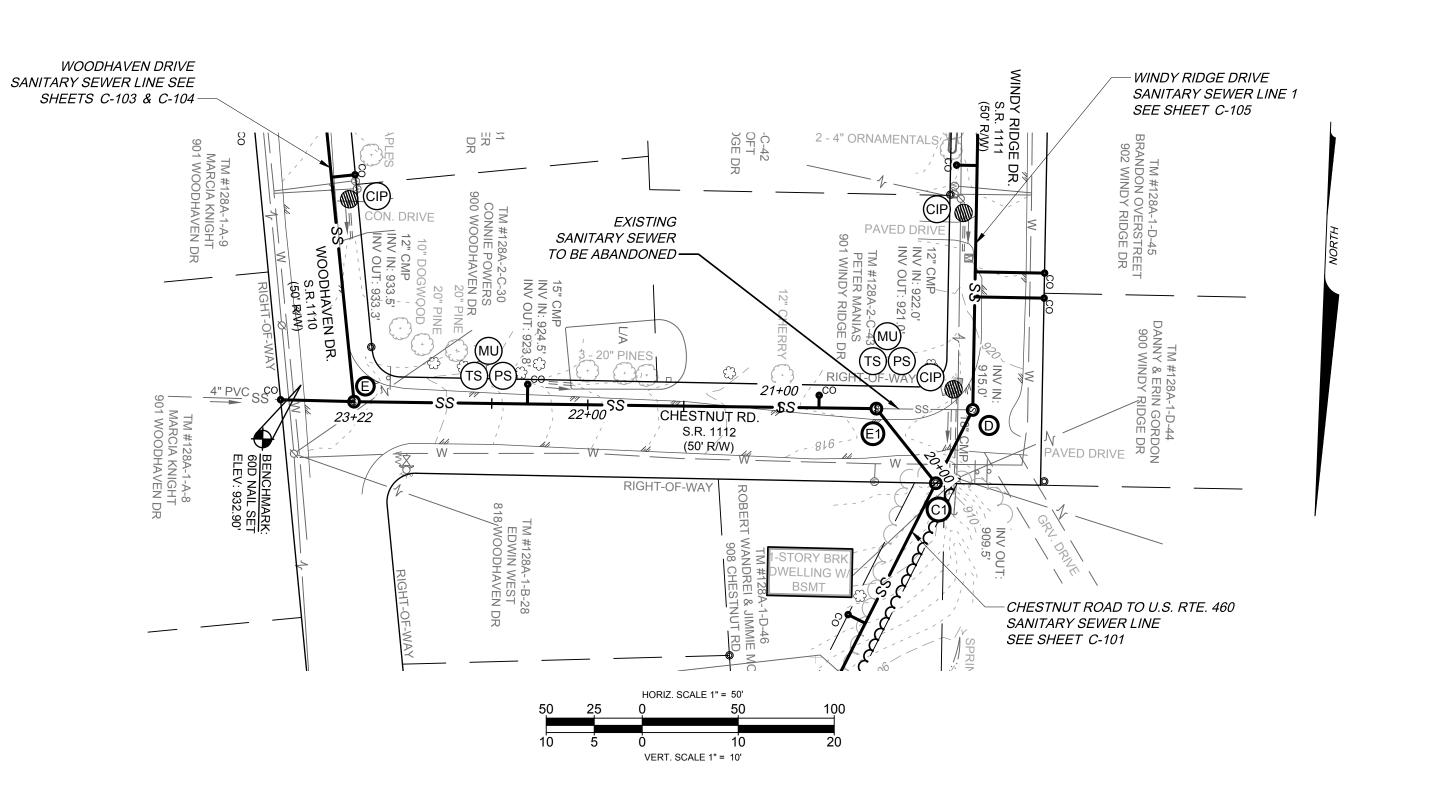
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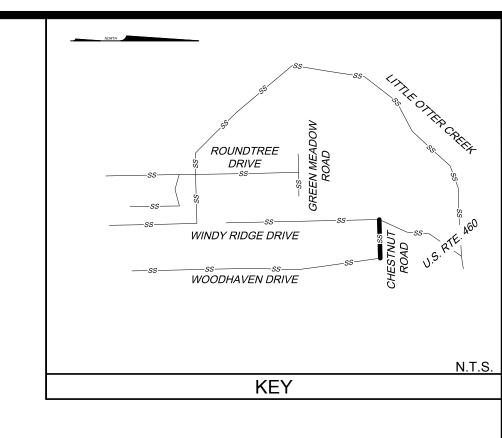
BRWA JOB NO. 2021-004

HURT&PROFFITT

C-101

SHEET NO.





- 1. EXISTING SANITARY SEWER TO BE REPLACED IN THE SAME TRENCH. NEW TRENCH BOTTOM MAY BE LOWER IN SOME LOCATIONS TO PROVIDE SUFFICIENT COVER OVER PIPE.
- 2. CONTRACTOR TO PROVIDE BYPASS PUMPING. 3. ALL MANHOLES WILL BE REPLACED.
- 4. ALL EXISTING ACTIVE SERVICES TO HAVE CLEANOUTS. IN SOME CASES AN EXISTING CLEANOUT WAS NOT FOUND. IN THOSE CASES CONTRACTOR TO INSTALL CLEANOUT ON EXISTING SERVICE WHEN LOCATED DURING CONSTRUCTION.

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 9.37' STA: 20+00

TOP: 915.94 N: 3646631.88 C1

E: 11179019.20

INV IN=906.88 FROM E1 DEFLECTION: 65.30° L INV IN=906.78 FROM D DEFLECTION: 0.00° INV OUT=906.58

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 9.20'

STA: 23+22 TOP: 932.30 N: 3646601.55

E: 11179323.64 INV IN=924.90 FROM N/A DEFLECTION: 0.99° R INV IN=923.60 FROM F DEFLECTION: 83.48° R

INV OUT=923.10

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 6.73'

STA: 20+50 TOP: 917.29

E1 N: 3646594.30 E: 11179051.69

INV IN=910.86 FROM E DEFLECTION: 50.68° L INV OUT=910.56

DRAWN BY: CHECKED BY: MDW

PROJECT NO.

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DATE:

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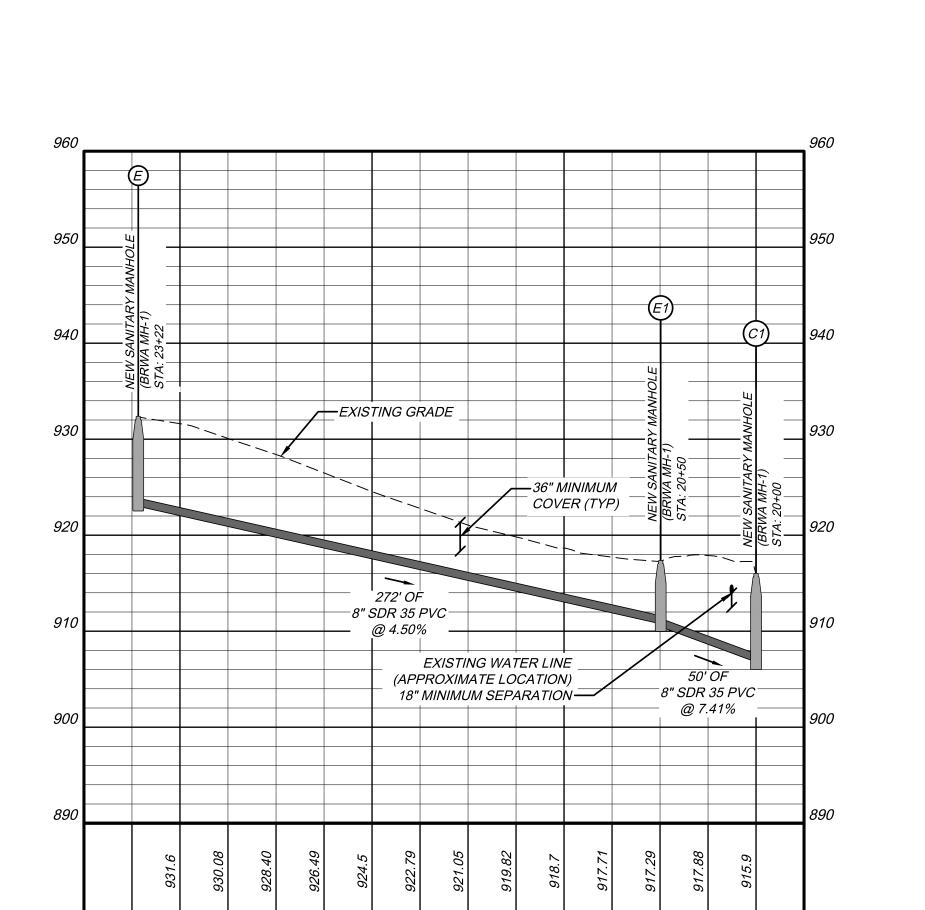
7/21/2022

# **APPROVED FOR** CONSTRUCTION

BRWA JOB NO. 2021-004

**HURT&PROFFITT** SHEET NO.

C-102



CHESTNUT ROAD SANITARY SEWER

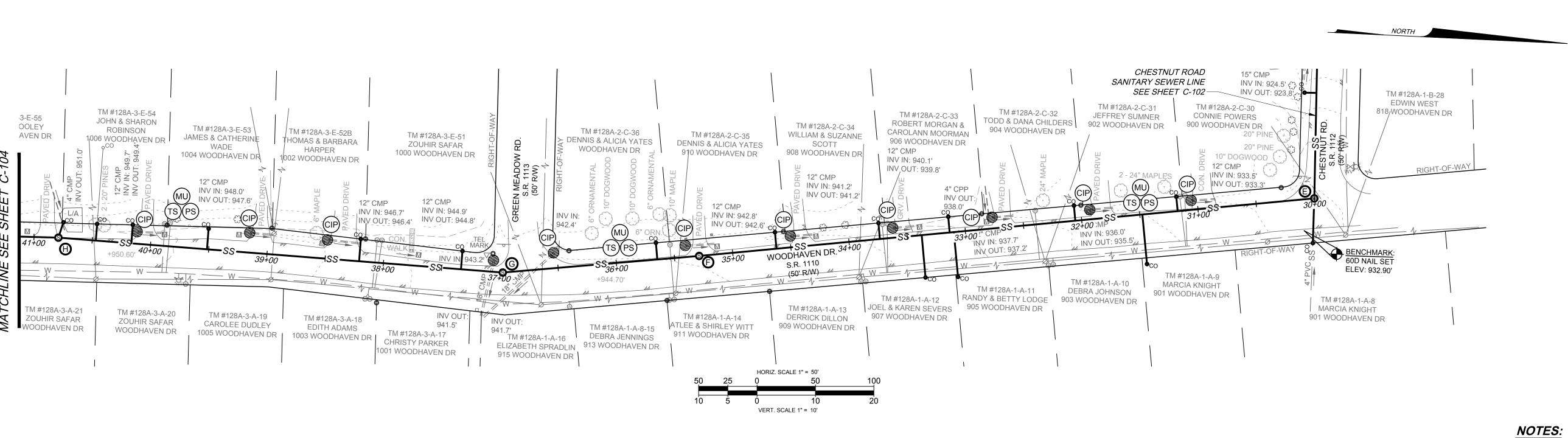
21+00

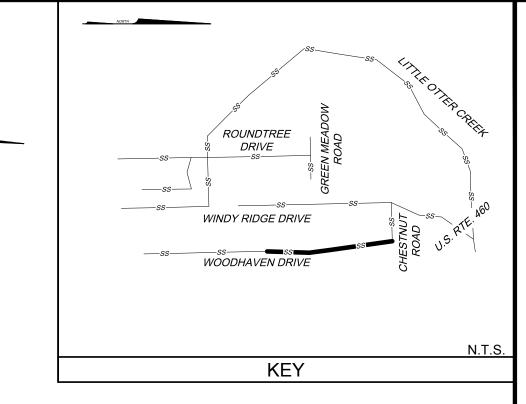
20+00 19+75

22+00

23+00

*23+50* 





THE SAME TRENCH. NEW TRENCH BOTTOM MAY BE LOWER IN SOME LOCATIONS TO PROVIDE

2. CONTRACTOR TO PROVIDE BYPASS PUMPING.

3. ALL MANHOLES WILL BE REPLACED. 4. ALL EXISTING ACTIVE SERVICES TO HAVE

## SANITARY STRUCTURE SCHEDULE

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 9.20' STA:30+00

E: 11179323.64 INV IN=924.90 FROM N/A DEFLECTION: 0.99° R INV IN=923.60 FROM F DEFLECTION: 83.48° R

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 9.66'

N: 3646077.92

E: 11179397.67

INV IN=934.38 FROM G DEFLECTION: 0.51° R INV OUT=934.18

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 7.33'

G N: 3645910.68

INV IN=937.79 FROM H DEFLECTION: 9.32° R INV OUT=937.59

STA: 40+79 TOP: 950.98

E: 11179407.87 INV IN=944.86 FROM I DEFLECTION: 3.00° L



1. EXISTING SANITARY SEWER TO BE REPLACED IN SUFFICIENT COVER OVER PIPE.

CLEANOUTS. IN SOME CASES AN EXISTING CLEANOUT WAS NOT FOUND. IN THOSE CASES CONTRACTOR TO INSTALL CLEANOUT ON EXISTING SERVICE WHEN LOCATED DURING CONSTRUCTION.

TOP: 932.30

N: 3646601.55

INV OUT=923.10

STA: 35+29 TOP: 943.84

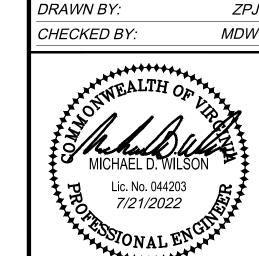
TOP: 944.92

E: 11179419.79

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 6.32'

N: 3645529.33

INV IN=947.10 FROM N/A DEFLECTION: 103.71° R INV OUT=944.66



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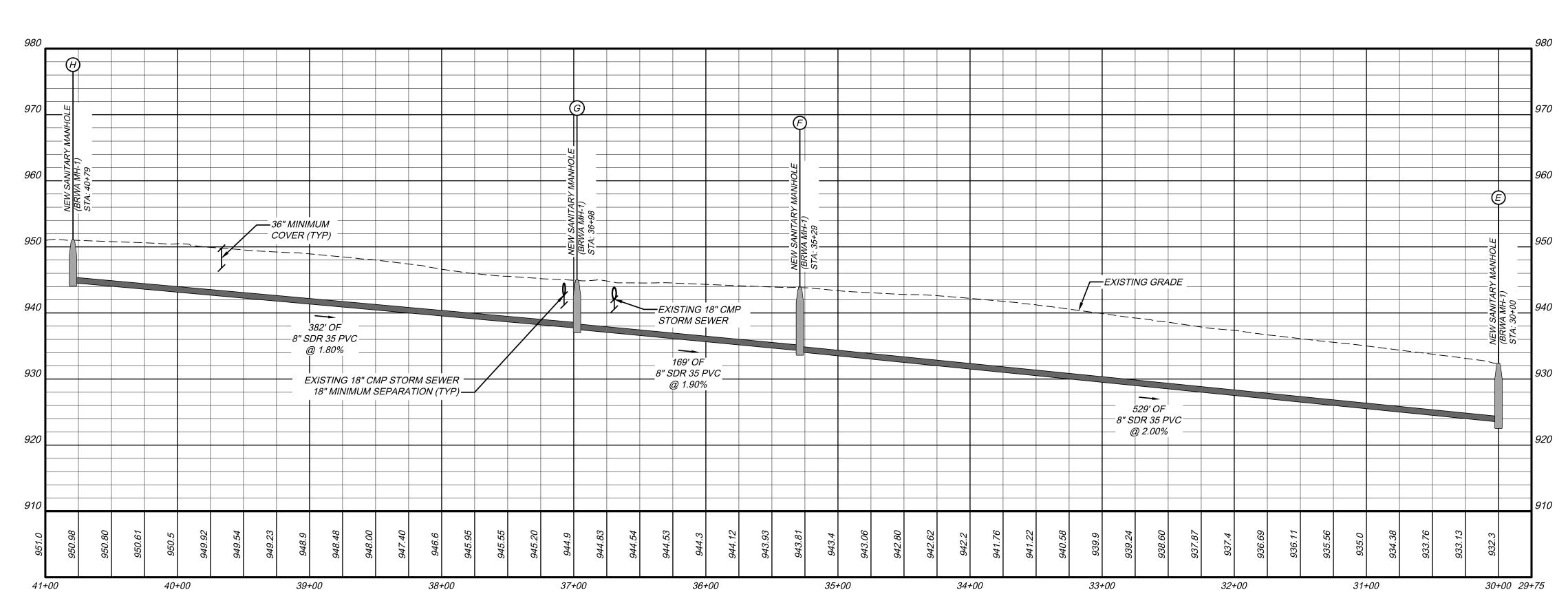
**APPROVED FOR** CONSTRUCTION

> BRWA JOB NO. 2021-004

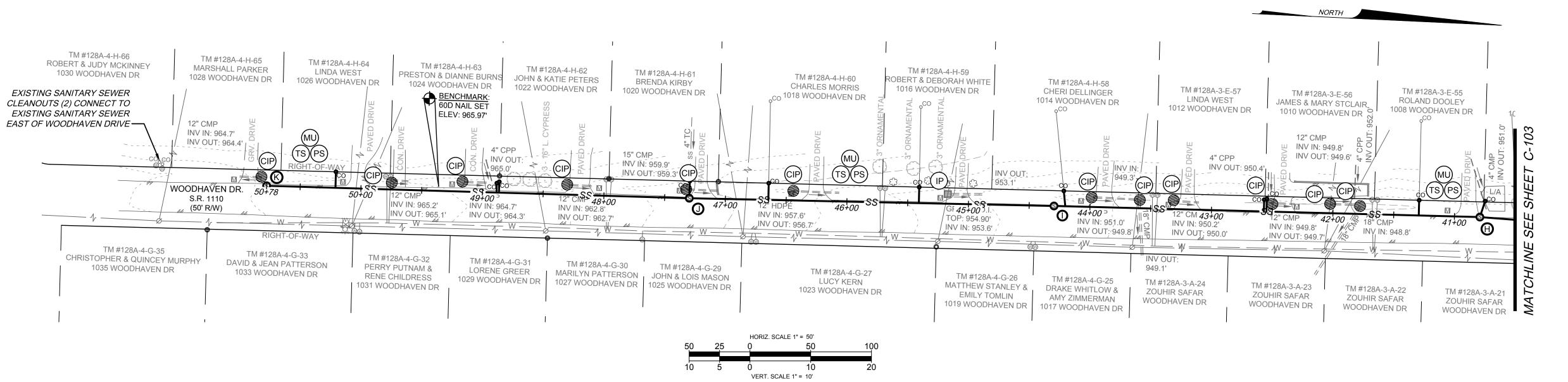
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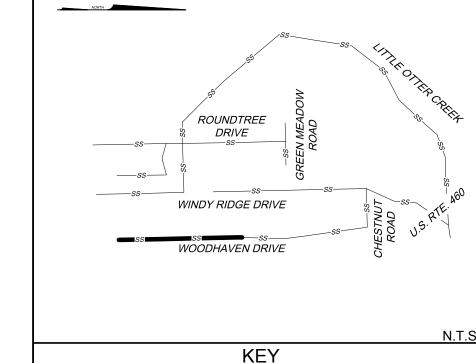
C-103

SHEET NO.



WOODHAVEN DRIVE SANITARY SEWER





# NOTES:

- 1. EXISTING SANITARY SEWER TO BE REPLACED IN THE SAME TRENCH. NEW TRENCH BOTTOM MAY BE LOWER IN SOME LOCATIONS TO PROVIDE SUFFICIENT COVER OVER PIPE.
- 2. CONTRACTOR TO PROVIDE BYPASS PUMPING.
- 3. ALL MANHOLES WILL BE REPLACED. 4. ALL EXISTING ACTIVE SERVICES TO HAVE CLEANOUTS. IN SOME CASES AN EXISTING CLEANOUT WAS NOT FOUND. IN THOSE CASES CONTRACTOR TO INSTALL CLEANOUT ON EXISTING SERVICE WHEN LOCATED DURING CONSTRUCTION.

## SANITARY STRUCTURE SCHEDULE

STA: 40+79 TOP: 950.98

N: 3645529.33 E: 11179407.87 INV IN=944.86 FROM I DEFLECTION: 3.00° L INV IN=947.10 FROM N/A DEFLECTION: 103.71° R

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 5.58' STA: 44+30 TOP: 952.69

N: 3645178.89 E: 11179415.26 INV IN=947.31 FROM J DEFLECTION: 0.28° L INV OUT=947.11

TOP: 961.03 N: 3644878.85 E: 11179423.03 INV IN=955.34 FROM K DEFLECTION: 0.47° R

INV IN=957.30 FROM N/A DEFLECTION: 90.62° R

STA: 50+78

TOP: 966.13 N: 3644531.03 INV OUT=962.30

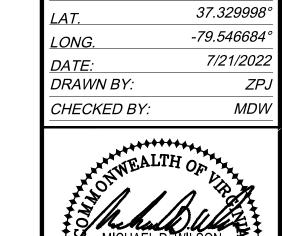
NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 6.32'

INV OUT=944.66

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 5.89' STA: 47+30

INV OUT=955.14 NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 3.83'

E: 11179429.18



PROJECT NO.

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BRWA

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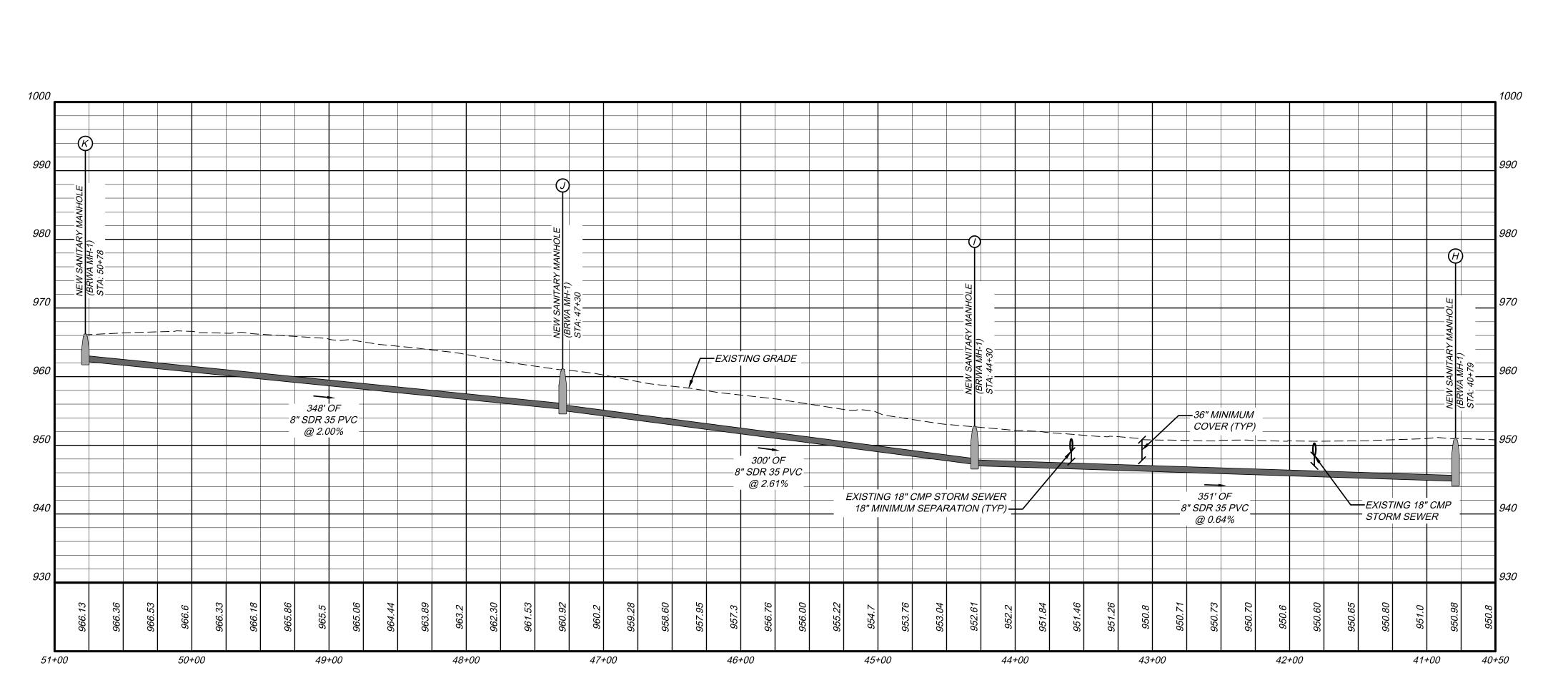
7/21/2022

BRWA JOB NO. 2021-004

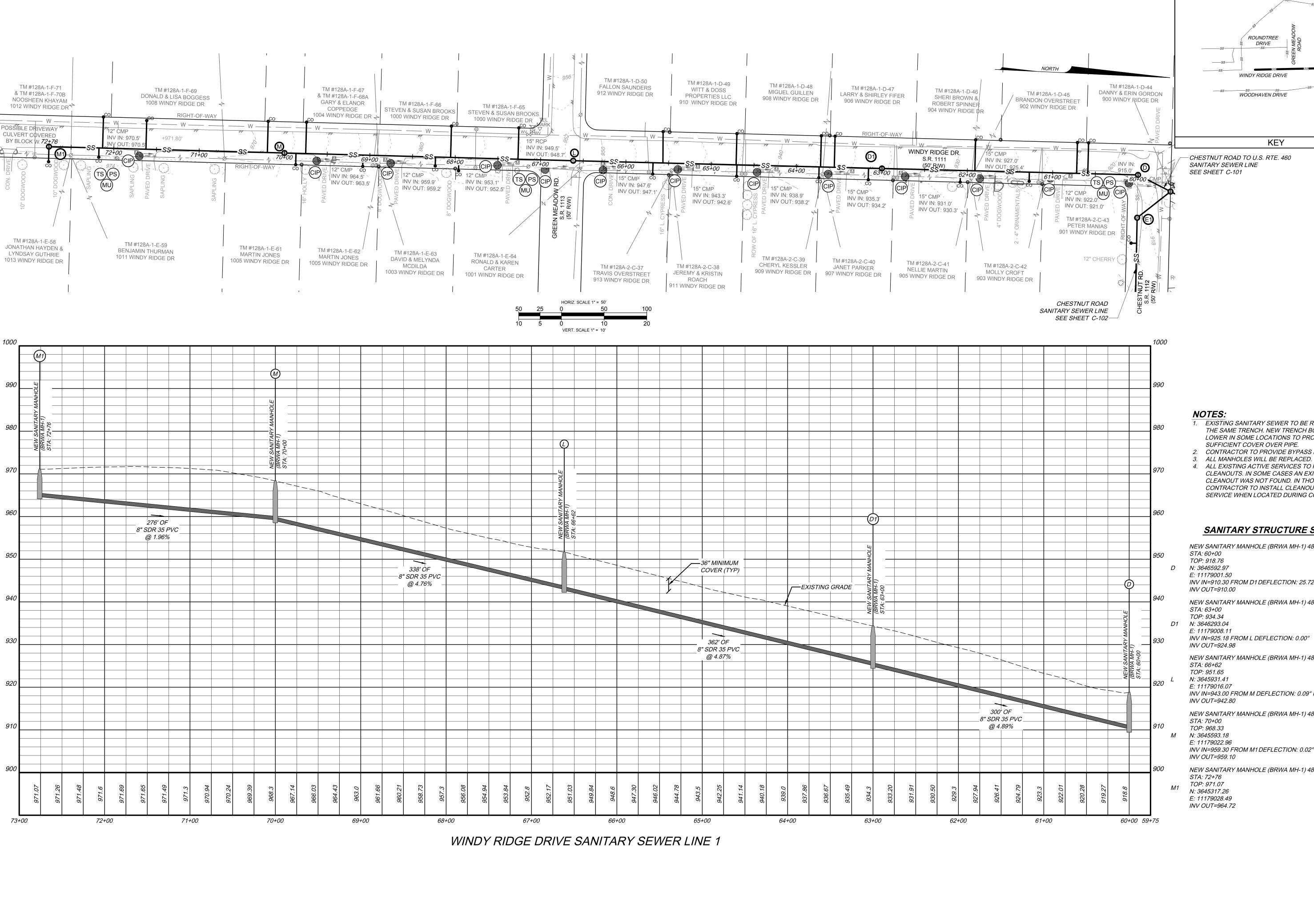
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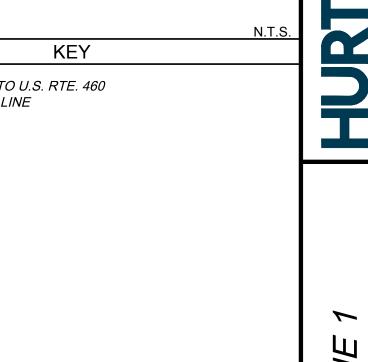
C-104

SHEET NO.



WOODHAVEN DRIVE SANITARY SEWER





- 1. EXISTING SANITARY SEWER TO BE REPLACED IN THE SAME TRENCH. NEW TRENCH BOTTOM MAY BE LOWER IN SOME LOCATIONS TO PROVIDE
- SUFFICIENT COVER OVER PIPE. CONTRACTOR TO PROVIDE BYPASS PUMPING. 3. ALL MANHOLES WILL BE REPLACED.
- 4. ALL EXISTING ACTIVE SERVICES TO HAVE CLEANOUTS. IN SOME CASES AN EXISTING CLEANOUT WAS NOT FOUND. IN THOSE CASES CONTRACTOR TO INSTALL CLEANOUT ON EXISTING SERVICE WHEN LOCATED DURING CONSTRUCTION.

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 8.76'

INV IN=910.30 FROM D1 DEFLECTION: 25.72° L

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 9.36'

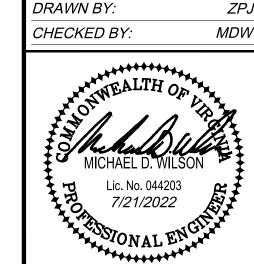
NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 8.85'

INV IN=943.00 FROM M DEFLECTION: 0.09° R

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 9.23'

INV IN=959.30 FROM M1 DEFLECTION: 0.02° R

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 6.35'



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MIND

PROJECT NO.

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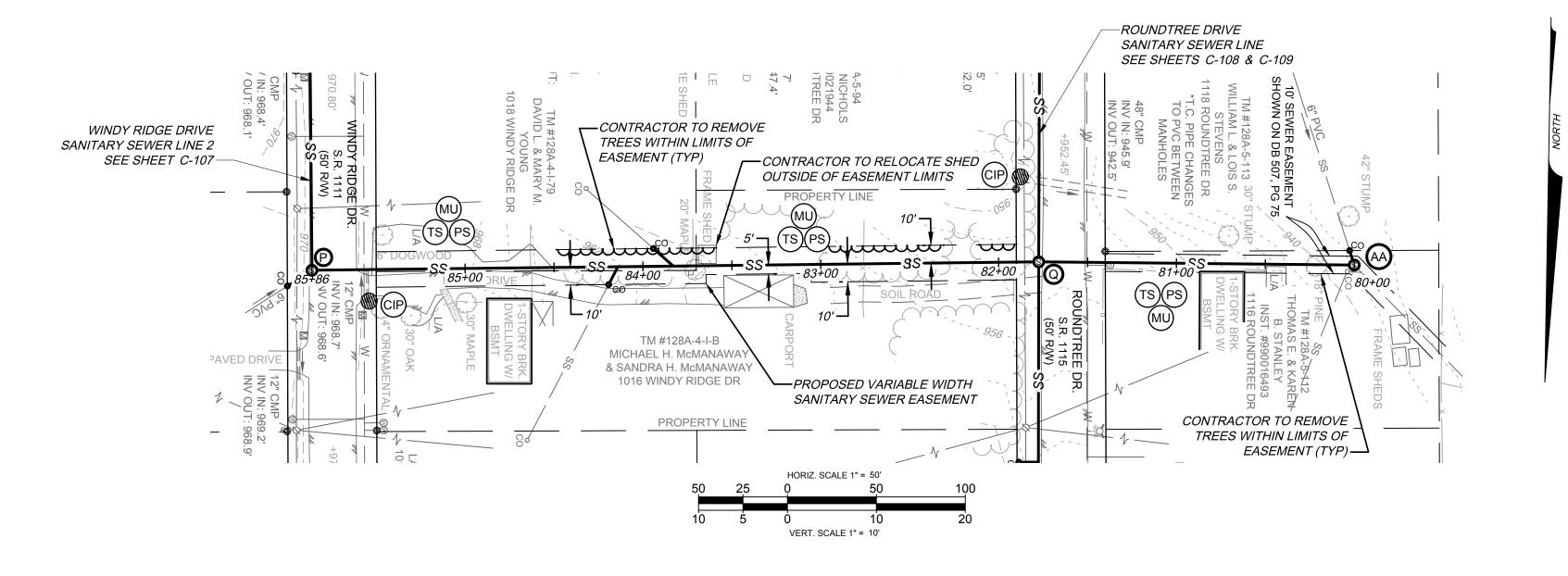
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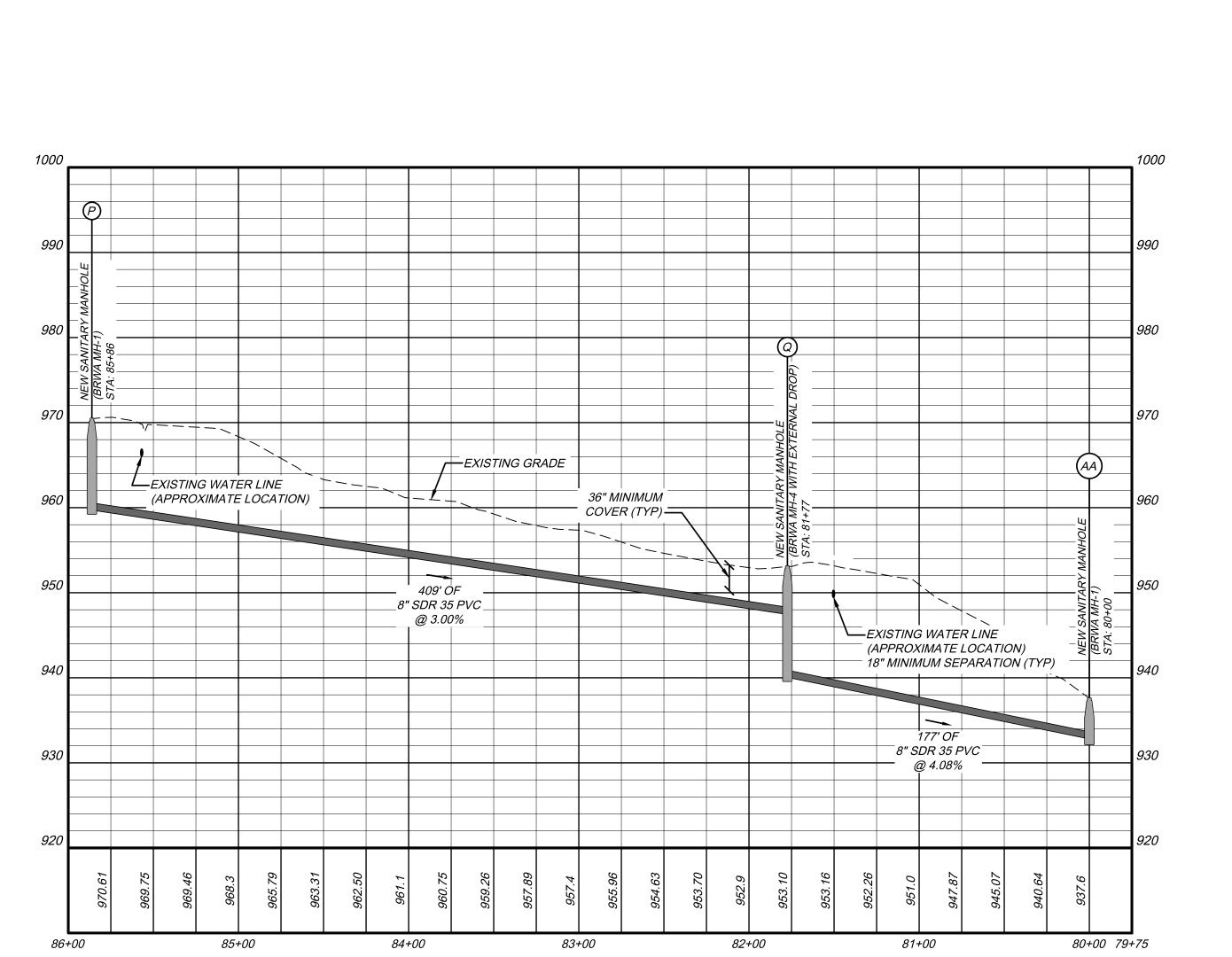
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## **APPROVED FOR** CONSTRUCTION

BRWA JOB NO. 2021-004

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ROUNTREE DRIVE TO WINDY RIDGE DRIVE SANITARY SEWER



- 1. EXISTING SANITARY SEWER TO BE REPLACED IN THE SAME TRENCH. NEW TRENCH BOTTOM MAY BE LOWER IN SOME LOCATIONS TO PROVIDE SUFFICIENT COVER OVER PIPE.
- CONTRACTOR TO PROVIDE BYPASS PUMPING.
- 3. ALL MANHOLES WILL BE REPLACED. 4. ALL EXISTING ACTIVE SERVICES TO HAVE CLEANOUTS. IN SOME CASES AN EXISTING CLEANOUT WAS NOT FOUND. IN THOSE CASES CONTRACTOR TO INSTALL CLEANOUT ON EXISTING SERVICE WHEN LOCATED DURING CONSTRUCTION.

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 4.89'

STA: 80+00 TOP: 937.59

N: 3645060.45 E: 11178447.42

INV IN=932.90 FROM Q DEFLECTION: 45.24° L

INV IN=934.30 FROM N/A DEFLECTION: 26.53° R INV OUT=932.70

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 10.66'

TOP: 970.46

N: 3645073.49

E: 11179033.38 INV IN=960.30 FROM O DEFLECTION: 90.16° R

INV IN=961.20 FROM N/A DEFLECTION: 32.00° L INV OUT=959.80

NEW SANITARY MANHOLE (BRWA MH-4 WITH EXTERNAL DROP) 48" DIA.; H = 12.96' STA: 81+77

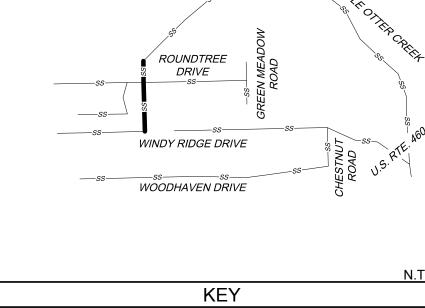
TOP: 953.10

N: 3645061.70 E: 11178624.84

INV IN=947.54 FROM P DEFLECTION: 1.25° L INV IN=940.64 FROM R DEFLECTION: 89.63° R

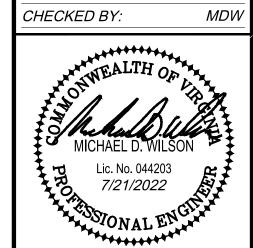
INV IN=940.64 FROM X DEFLECTION: 90.49° L INV IN (DROP)=930.34 DEFLECTION: 1.25° L

INV OÙT=940.14



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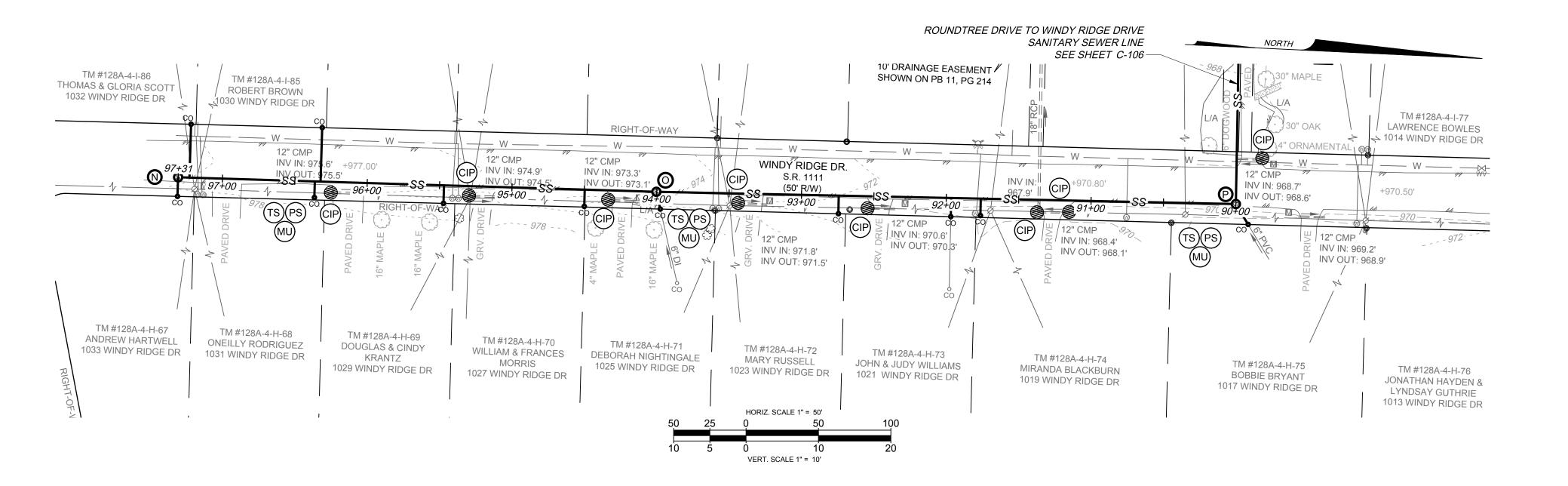
BPROJECT NO. 20210409 37.329998 -79.546684 LONG. 7/21/2022 DATE: DRAWN BY:

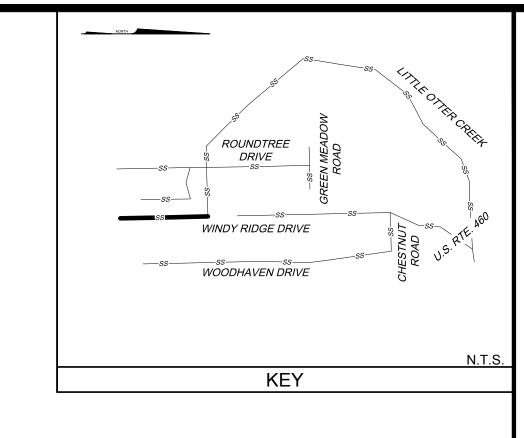


**APPROVED FOR** CONSTRUCTION

> BRWA JOB NO. 2021-004

**HURT&PROFFITT** 





- THE SAME TRENCH. NEW TRENCH BOTTOM MAY BE LOWER IN SOME LOCATIONS TO PROVIDE SUFFICIENT COVER OVER PIPE.
- 4. ALL EXISTING ACTIVE SERVICES TO HAVE
- CLEANOUTS. IN SOME CASES AN EXISTING CLEANOUT WAS NOT FOUND. IN THOSE CASES

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 7.21' STA: 97+31

TOP: 978.19

TOP: 974.52

E: 11179043.79

INV IN=965.70 FROM N DEFLECTION: 0.53° R

INV OUT=959.80

1. EXISTING SANITARY SEWER TO BE REPLACED IN 2. CONTRACTOR TO PROVIDE BYPASS PUMPING.

3. ALL MANHOLES WILL BE REPLACED.

CONTRACTOR TO INSTALL CLEANOUT ON EXISTING SERVICE WHEN LOCATED DURING CONSTRUCTION.

N: 3644343.04 E: 11179049.34 INV OUT=970.99

> NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 9.02' STA: 94+00

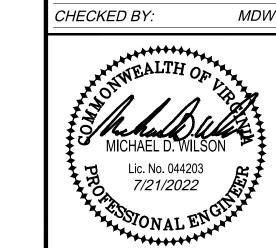
N: 3644673.37

INV IN=967.40 FROM N/A DEFLECTION: 104.03° L INV OUT=965.50

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 10.66' STA:90+00

TOP: 970.46 N: 3645073.49 E: 11179033.38

INV IN=960.30 FROM O DEFLECTION: 90.16° R INV IN=961.20 FROM N/A DEFLECTION: 32.00° L



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DATE:

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BRWA

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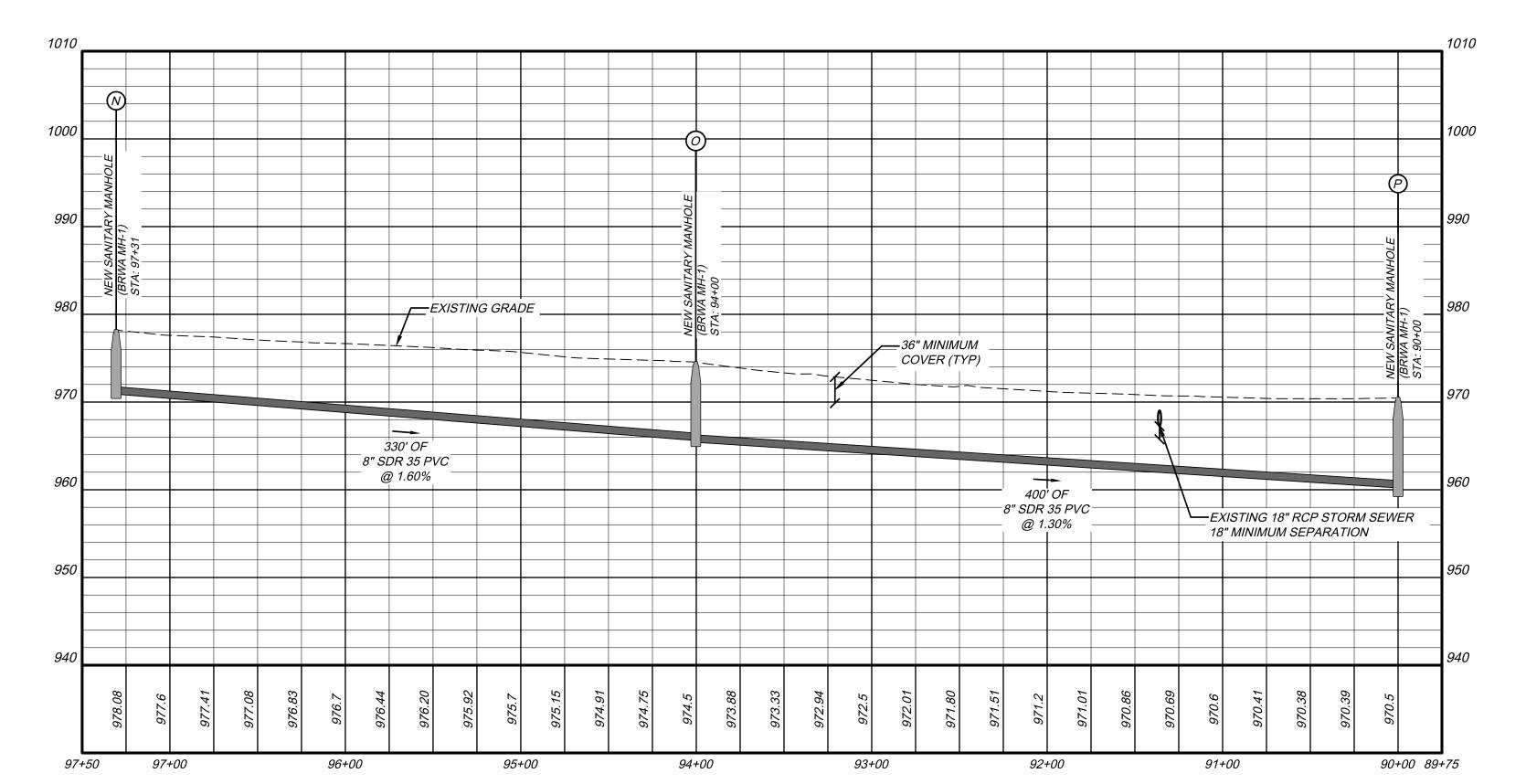
**APPROVED FOR** CONSTRUCTION

> BRWA JOB NO. 2021-004

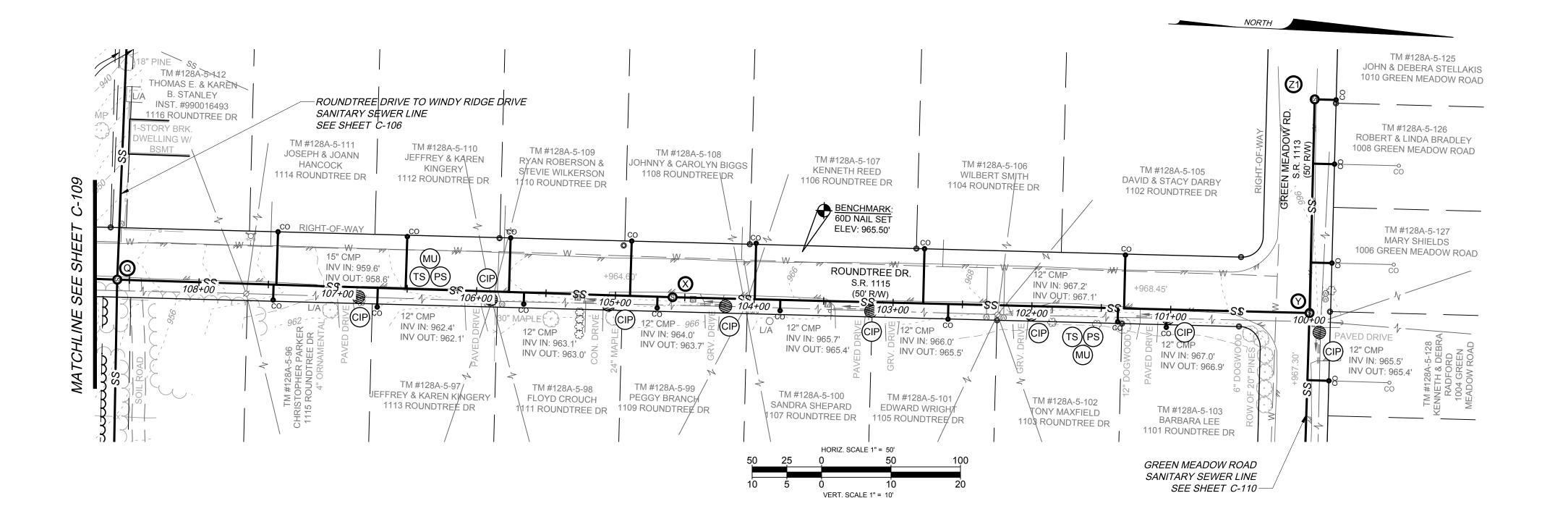
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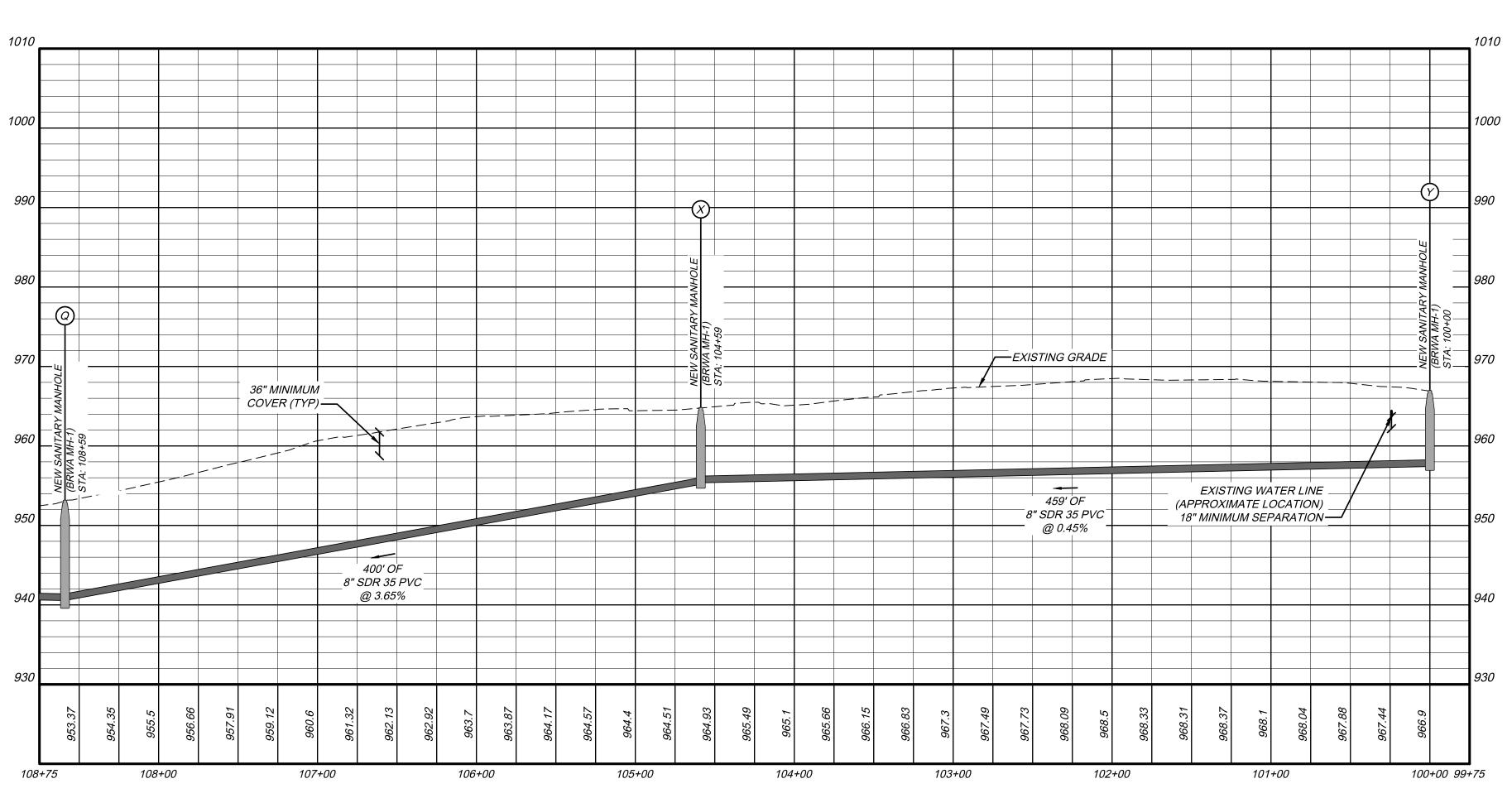
C-107

SHEET NO.



WINDY RIDGE DRIVE SANITARY SEWER LINE 2





ROUNDTREE DRIVE SANITARY SEWER



- 1. EXISTING SANITARY SEWER TO BE REPLACED IN THE SAME TRENCH. NEW TRENCH BOTTOM MAY BE LOWER IN SOME LOCATIONS TO PROVIDE SUFFICIENT COVER OVER PIPE.
- 2. CONTRACTOR TO PROVIDE BYPASS PUMPING.
- 3. ALL MANHOLES WILL BE REPLACED. 4. ALL EXISTING ACTIVE SERVICES TO HAVE CLEANOUTS. IN SOME CASES AN EXISTING CLEANOUT WAS NOT FOUND. IN THOSE CASES CONTRACTOR TO INSTALL CLEANOUT ON EXISTING SERVICE WHEN LOCATED DURING CONSTRUCTION.

NEW SANITARY MANHOLE (BRWA MH-4 WITH EXTERNAL DROP) 48" DIA.; H = 12.96' STA: 108+59 TOP: 953.10 N: 3645061.70

E: 11178624.84 INV IN=947.54 FROM P DEFLECTION: 1.25° L INV IN=940.64 FROM R DEFLECTION: 89.63° R INV IN=940.64 FROM X DEFLECTION: 90.49° L INV IN:(DROP)=930.34 DEFLECTION: 1.25° L

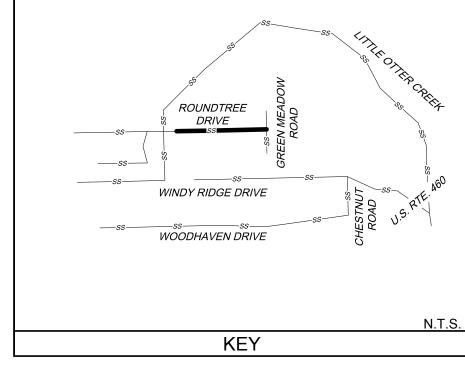
INV OÙT=940.14

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 9.52' STA: 104+59 TOP: 964.78

N: 3645461.78 E: 11178618.61 INV IN=955.45 FROM Y DEFLECTION: 0.39° R INV OUT=955.25

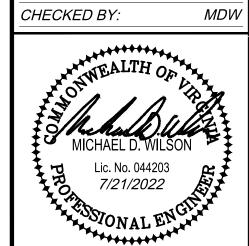
NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 9.40' STA: 100+00 TOP: 966.90

N: 3645920.46 E: 11178608.34 INV IN=958.00 FROM Z1 DEFLECTION: 90.02° L INV IN=958.00 FROM Z DEFLECTION: 90.40° R INV OUT=957.50



TRE ROUND ४

BRWA 20210409 PROJECT NO. 37.329998 -79.546684 LONG. 7/21/2022 DATE: DRAWN BY:



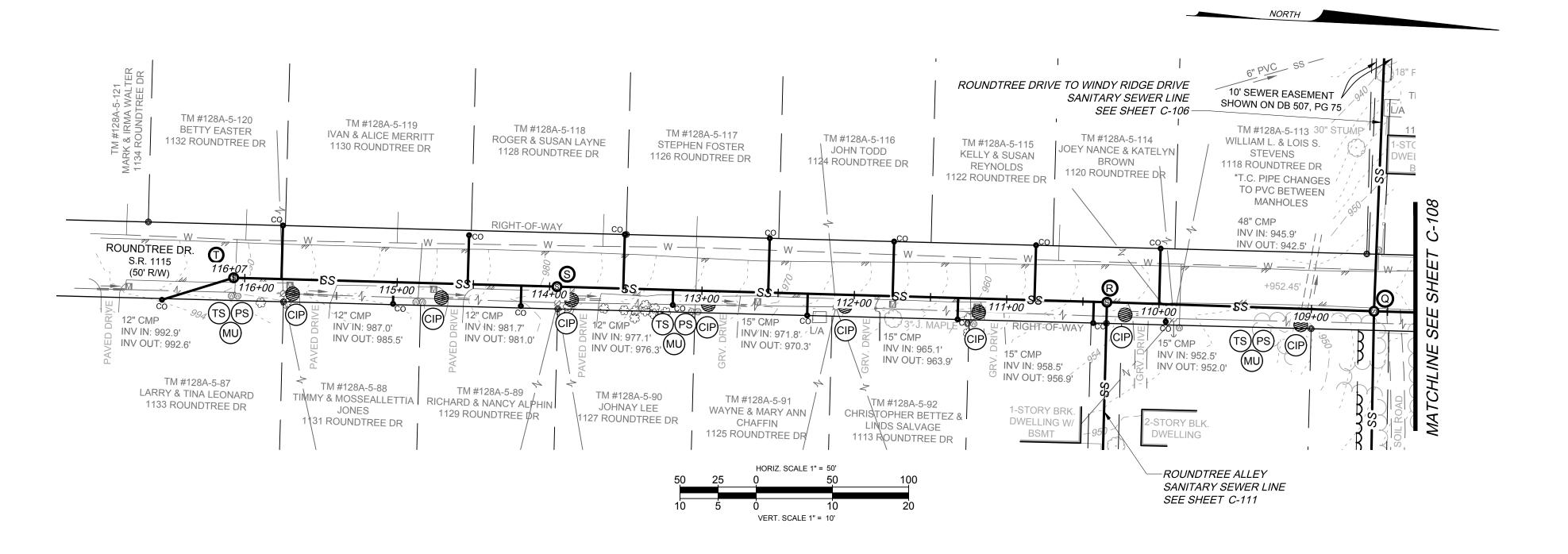
**APPROVED FOR** CONSTRUCTION

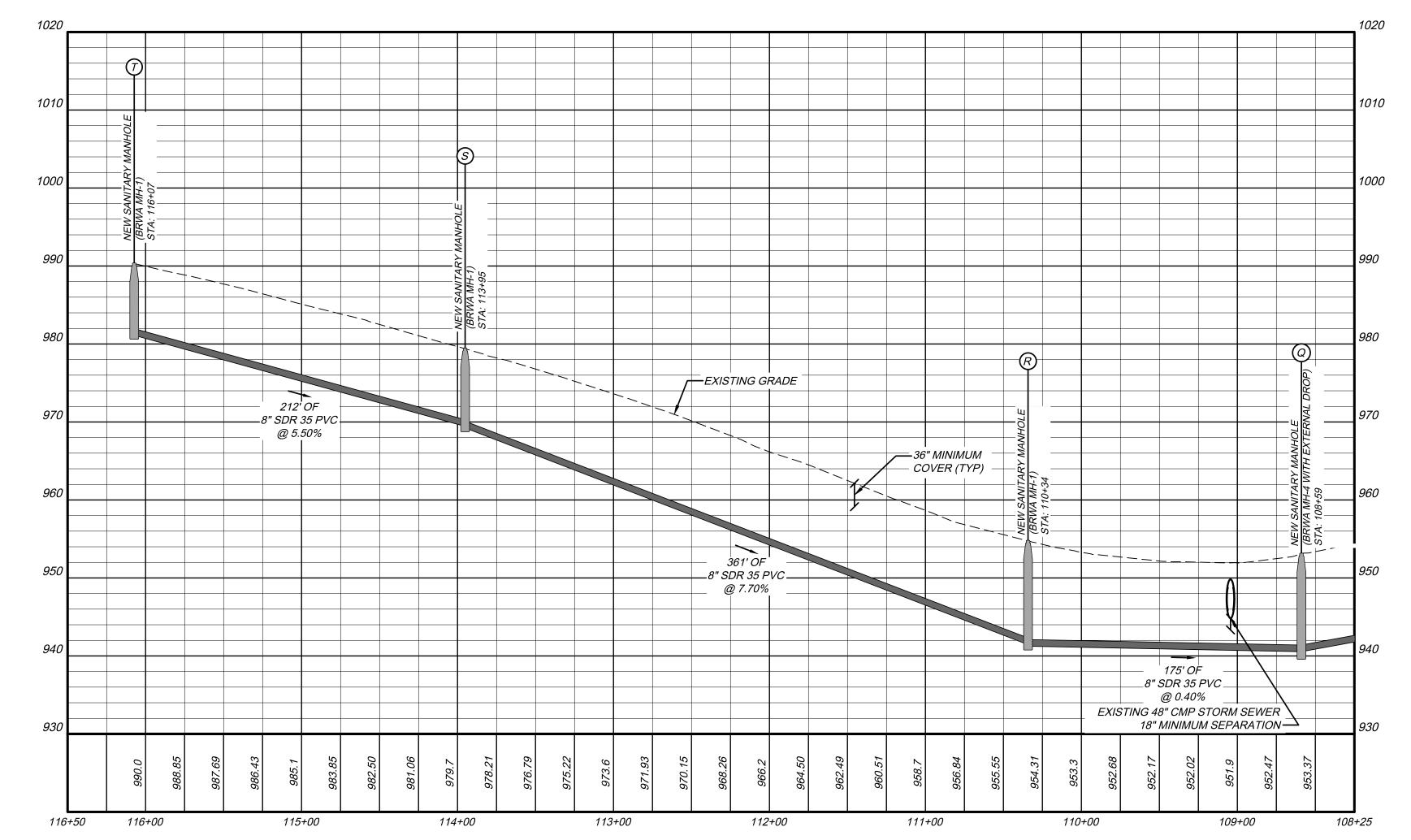
> BRWA JOB NO. 2021-004

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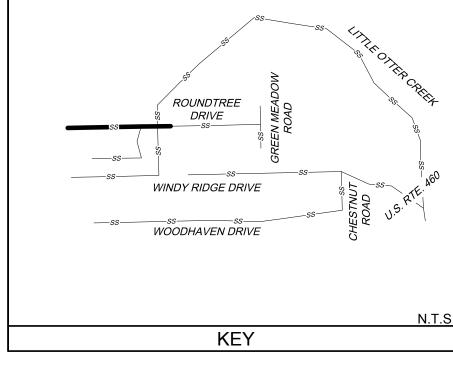
SHEET NO.

C-108





ROUNDTREE DRIVE SANITARY SEWER



#### NOTES: 1. EXISTING SANITARY SEWER TO BE REPLACED IN

THE SAME TRENCH. NEW TRENCH BOTTOM MAY BE LOWER IN SOME LOCATIONS TO PROVIDE SUFFICIENT COVER OVER PIPE. 2. CONTRACTOR TO PROVIDE BYPASS PUMPING. 3. ALL MANHOLES WILL BE REPLACED. 4. ALL EXISTING ACTIVE SERVICES TO HAVE CLEANOUTS. IN SOME CASES AN EXISTING CLEANOUT WAS NOT FOUND. IN THOSE CASES CONTRACTOR TO INSTALL CLEANOUT ON EXISTING

SERVICE WHEN LOCATED DURING CONSTRUCTION.

## SANITARY STRUCTURE SCHEDULE

NEW SANITARY MANHOLE (BRWA MH-4 WITH EXTERNAL DROP) 48" DIA.; H = 12.96' STA: 108+59 TOP: 953.10

N: 3645061.70

E: 11178624.84 INV IN=947.54 FROM P DEFLECTION: 1.25° L INV IN=940.64 FROM R DEFLECTION: 89.63° R INV IN=940.64 FROM X DEFLECTION: 90.49° L INV IN:(DROP)=930.34 DEFLECTION: 1.25° L INV OUT=940.14

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 13.40' STA: 110+34 TOP: 954.74

N: 3644886.41

E: 11178627.20 INV IN=941.54 FROM S DEFLECTION: 0.31° L INV IN=941.64 FROM W DEFLECTION: 90.43° L INV OUT=941.34

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 10.06' STA: 113+95

TOP: 979.39 S N: 3644525.57 E: 11178634.02

INV IN=969.53 FROM T DEFLECTION: 0.04° L INV OUT=969.33

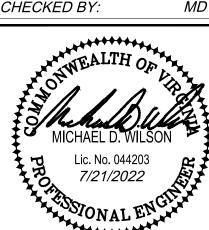
NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 9.12' STA: 116+07

TOP: 990.32 N: 3644313.44 E: 11178638.17

INV OUT=981.20

# TRE ROUND ४ BRWA

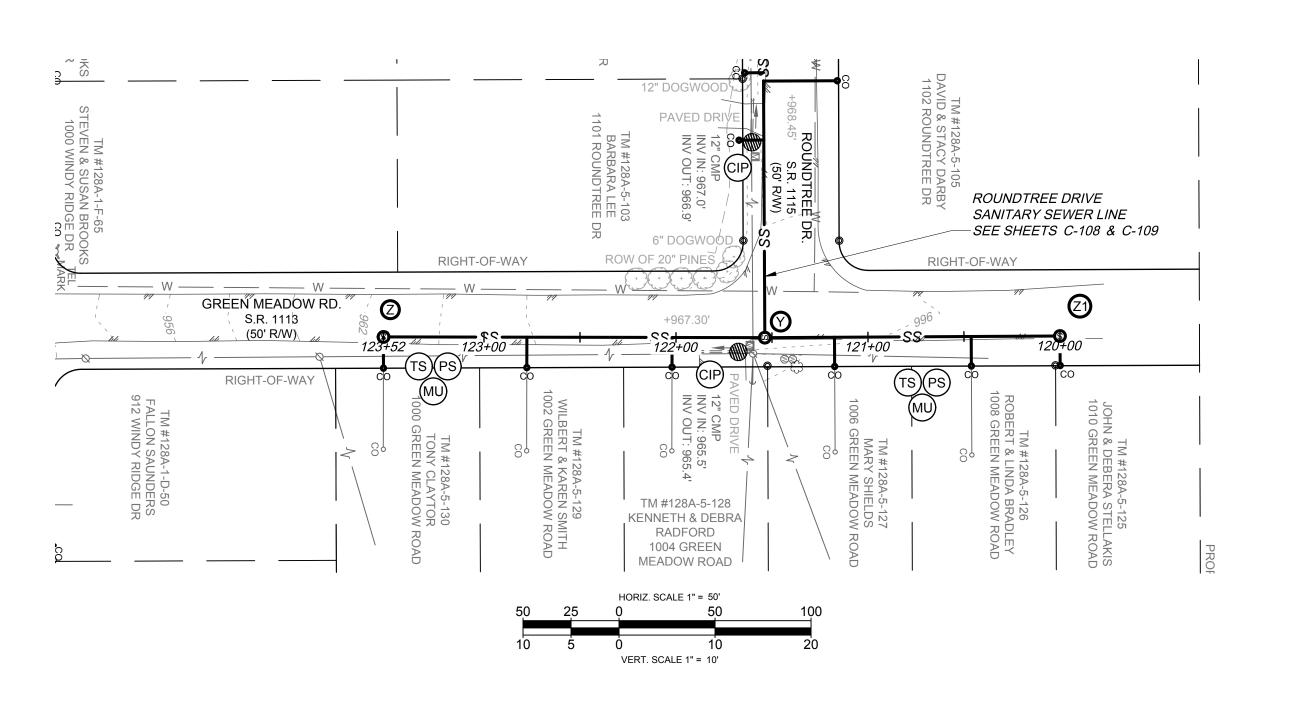
PROJECT NO. 20210409 37.329998 -79.546684 LONG. 7/21/2022 DATE: DRAWN BY: CHECKED BY: MDW

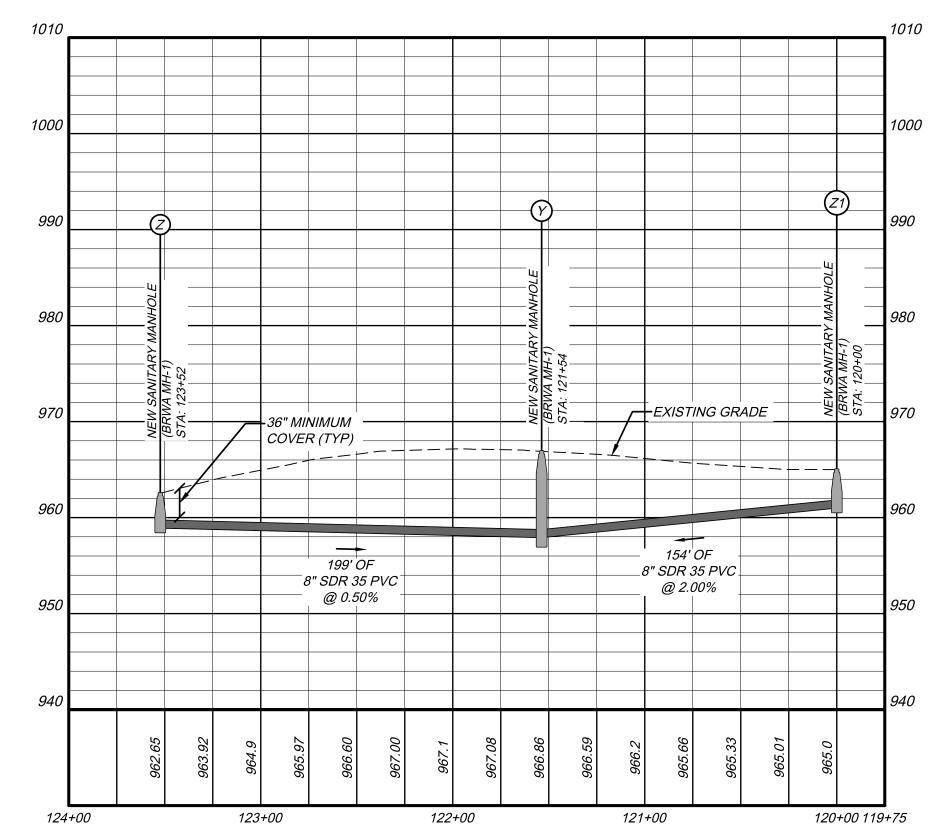


# **APPROVED FOR** CONSTRUCTION

BRWA JOB NO. 2021-004

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GREEN MEADOW ROAD SANITARY SEWER



- 1. EXISTING SANITARY SEWER TO BE REPLACED IN THE SAME TRENCH. NEW TRENCH BOTTOM MAY BE LOWER IN SOME LOCATIONS TO PROVIDE SUFFICIENT COVER OVER PIPE. 2. CONTRACTOR TO PROVIDE BYPASS PUMPING.
- 3. ALL MANHOLES WILL BE REPLACED.
- 4. ALL EXISTING ACTIVE SERVICES TO HAVE CLEANOUTS. IN SOME CASES AN EXISTING CLEANOUT WAS NOT FOUND. IN THOSE CASES CONTRACTOR TO INSTALL CLEANOUT ON EXISTING SERVICE WHEN LOCATED DURING CONSTRUCTION.

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 9.40' STA: 121+54 TOP: 966.90

N: 3645920.46 E: 11178608.34

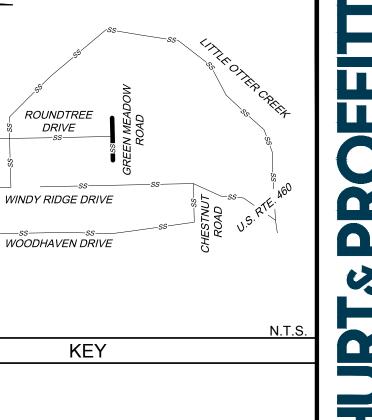
INV IN=958.00 FROM Z1 DEFLECTION: 90.02° L INV IN=958.00 FROM Z DEFLECTION: 90.40° R INV OUT=957.50

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 3.54'

STA: 123+52 TOP: 962.53 N: 3645923.52 E: 11178806.93 INV OUT=958.99

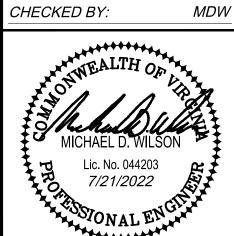
NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 3.93'

STA: 120+00 TOP: 965.00 N: 3645916.96 E: 11178454.67 INV OUT=961.07



MEAL ४ GREEN BRWA

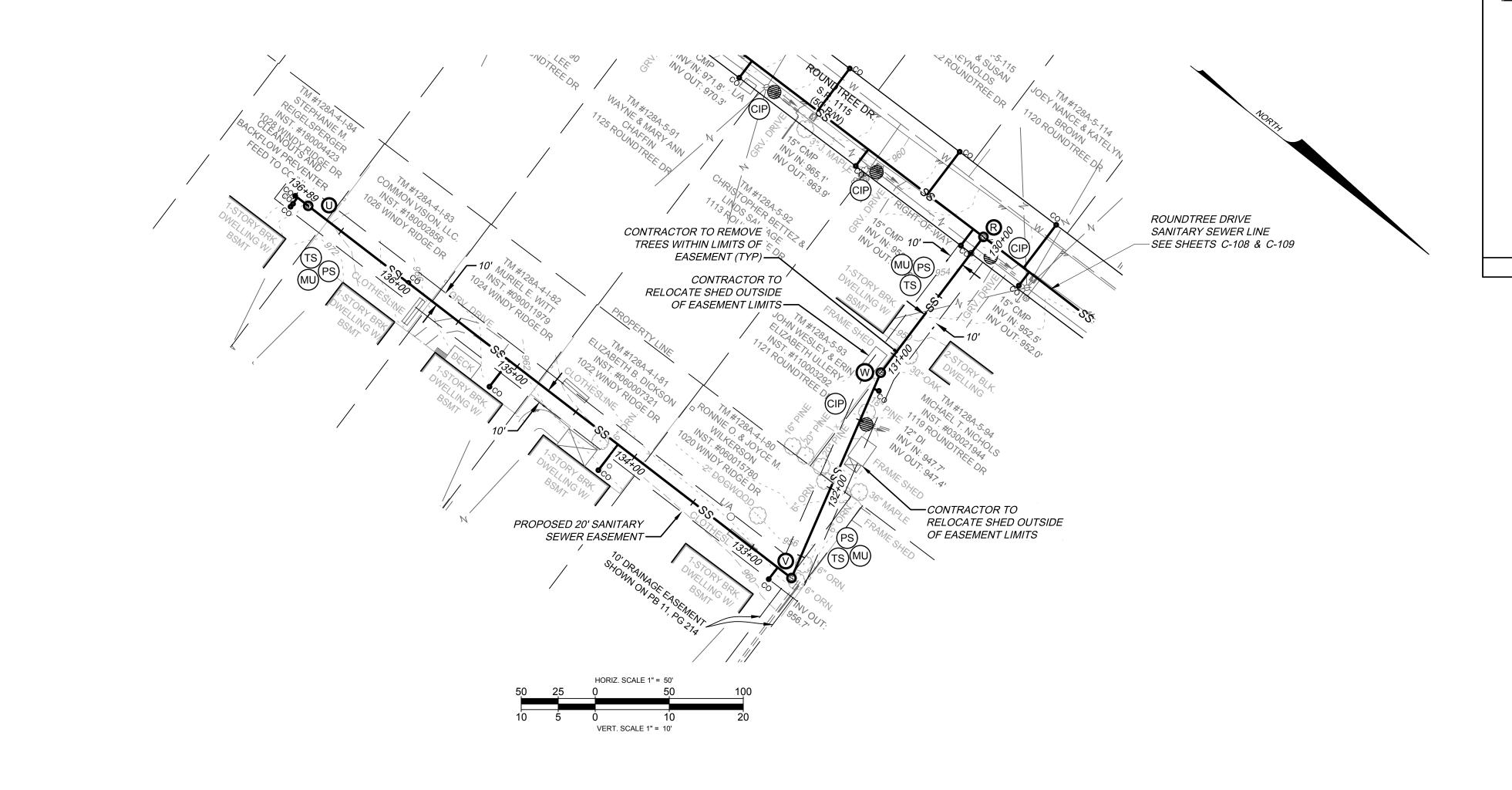
PROJECT NO. 20210409 37.329998 -79.546684 LONG. 7/21/2022 DATE: DRAWN BY:

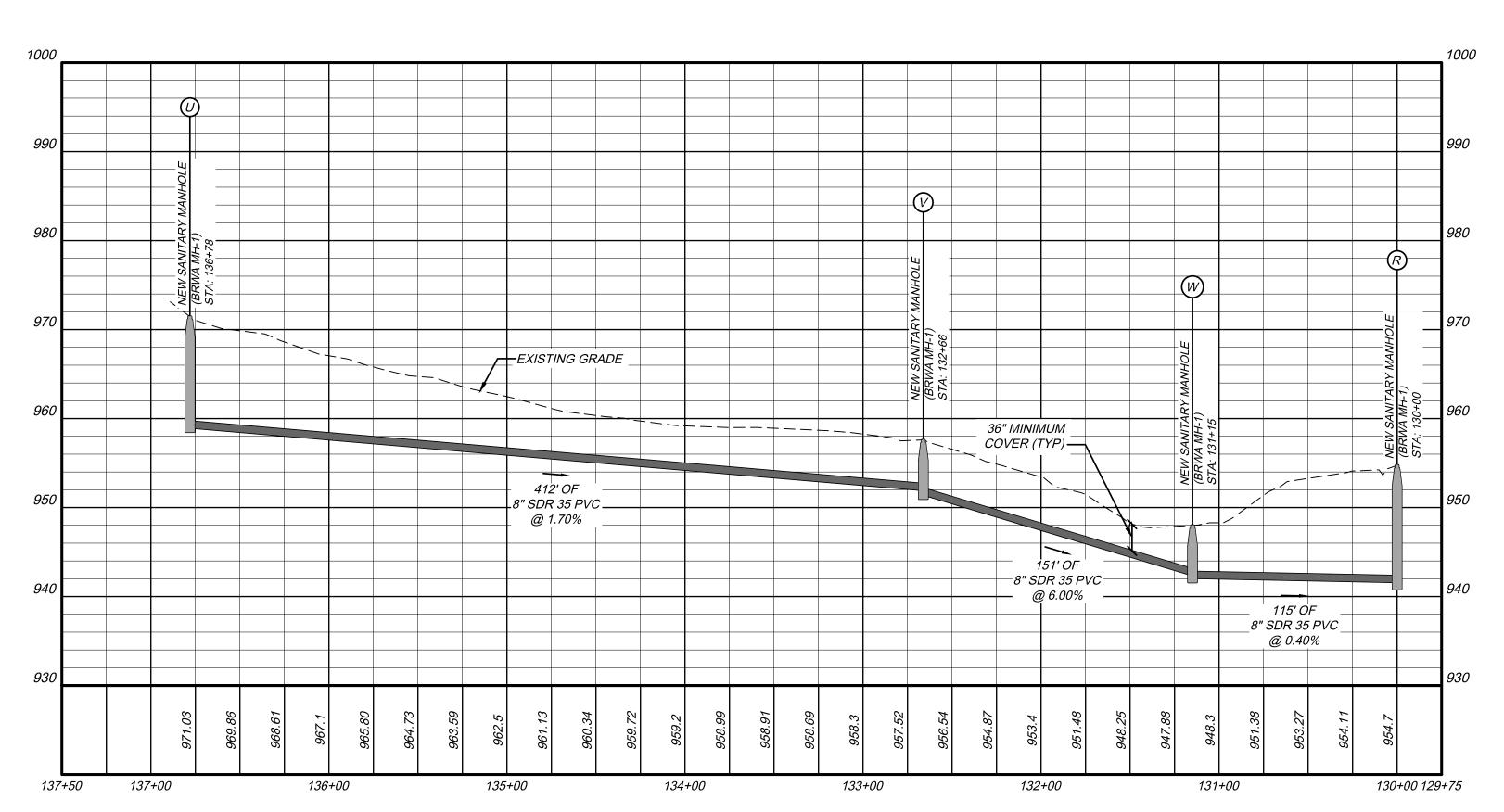


**APPROVED FOR** CONSTRUCTION

> BRWA JOB NO. 2021-004

**HURT&PROFFITT** 





## ROUNDTREE ALLEY SANITARY SEWER

1. EXISTING SANITARY SEWER TO BE REPLACED IN THE SAME TRENCH. NEW TRENCH BOTTOM MAY BE LOWER IN SOME LOCATIONS TO PROVIDE SUFFICIENT COVER OVER PIPE.

WINDY RIDGE DRIVE

**WOODHAVEN DRIVE** 

KEY

- 2. CONTRACTOR TO PROVIDE BYPASS PUMPING. 3. ALL MANHOLES WILL BE REPLACED.
- 4. ALL EXISTING ACTIVE SERVICES TO HAVE CLEANOUTS. IN SOME CASES AN EXISTING CLEANOUT WAS NOT FOUND. IN THOSE CASES CONTRACTOR TO INSTALL CLEANOUT ON EXISTING SERVICE WHEN LOCATED DURING CONSTRUCTION.

## SANITARY STRUCTURE SCHEDULE

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 13.40' STA: 130+00 TOP: 954.74 N: 3644886.41

E: 11178627.20 INV IN=941.54 FROM S DEFLECTION: 0.31° L INV IN=941.64 FROM W DEFLECTION: 90.43° L INV OUT=941.34

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 12.46' STA: 136+78

TOP: 971.46 N: 3644515.54 E: 11178893.48 INV OUT=959.00

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 6.12' STA: 132+66 TOP: 957.60 V N: 3644927.45

E: 11178888.28 INV IN=951.98 FROM U DEFLECTION: 104.08° R INV OUT=951.48

NEW SANITARY MANHOLE (BRWA MH-1) 48" DIA.; H = 5.89' STA: 131+15

TOP: 947.99 W N: 3644888.81 E: 11178742.09

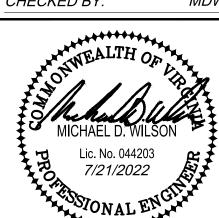
INV IN=942.40 FROM V DEFLECTION: 13.61° L INV OUT=942.10



ROUND

४

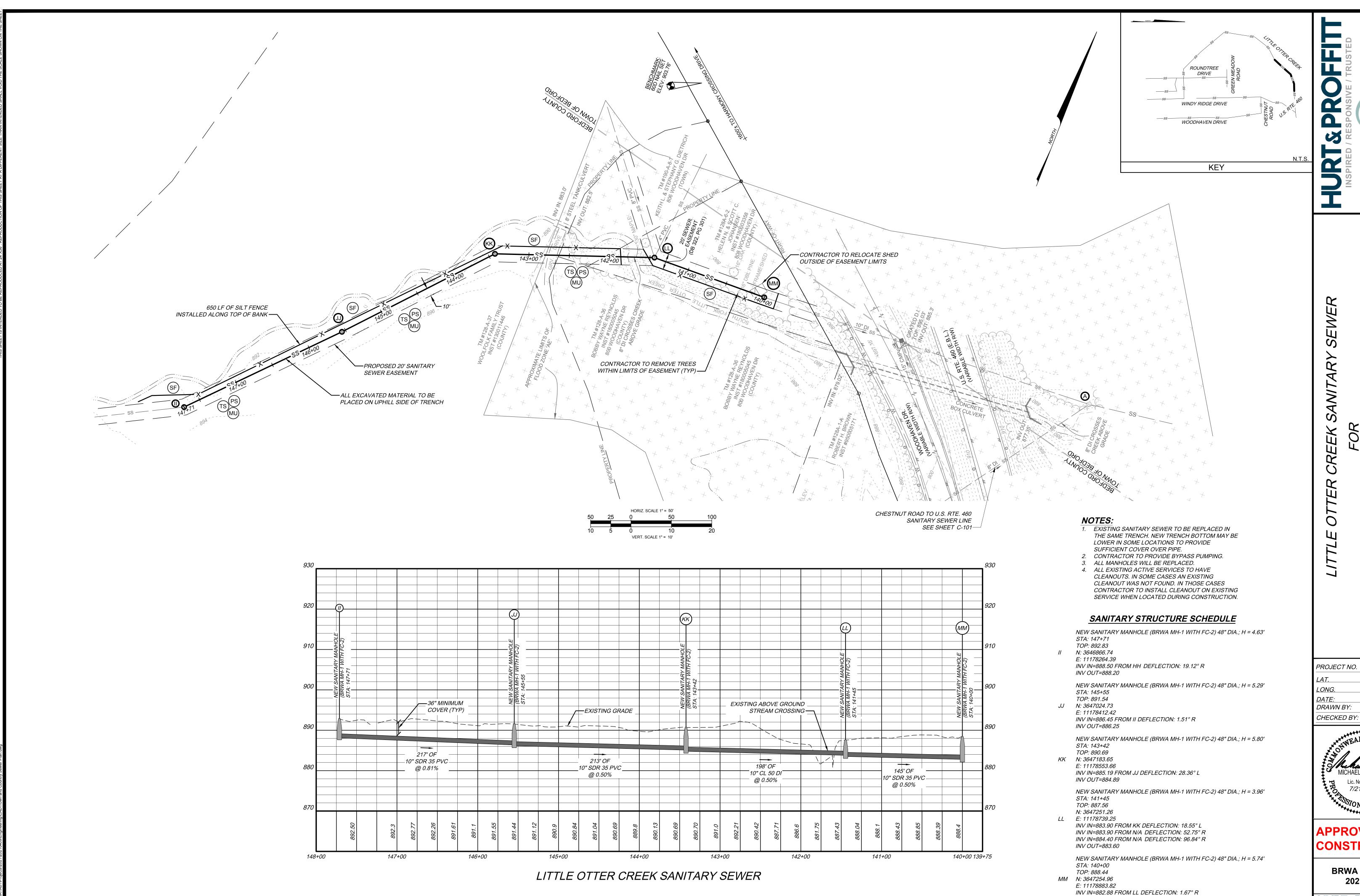
BRWA PROJECT NO. 20210409 37.329998 -79.546684 LONG. 7/21/2022 DATE: DRAWN BY: CHECKED BY: MDW



**APPROVED FOR** CONSTRUCTION

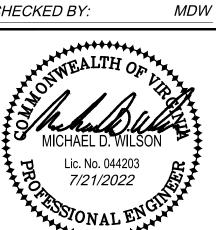
> BRWA JOB NO. 2021-004

**HURT&PROFFITT** 



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PROJECT NO. 20210409 37.329998 -79.546684 7/21/2022 DRAWN BY:



# **APPROVED FOR** CONSTRUCTION

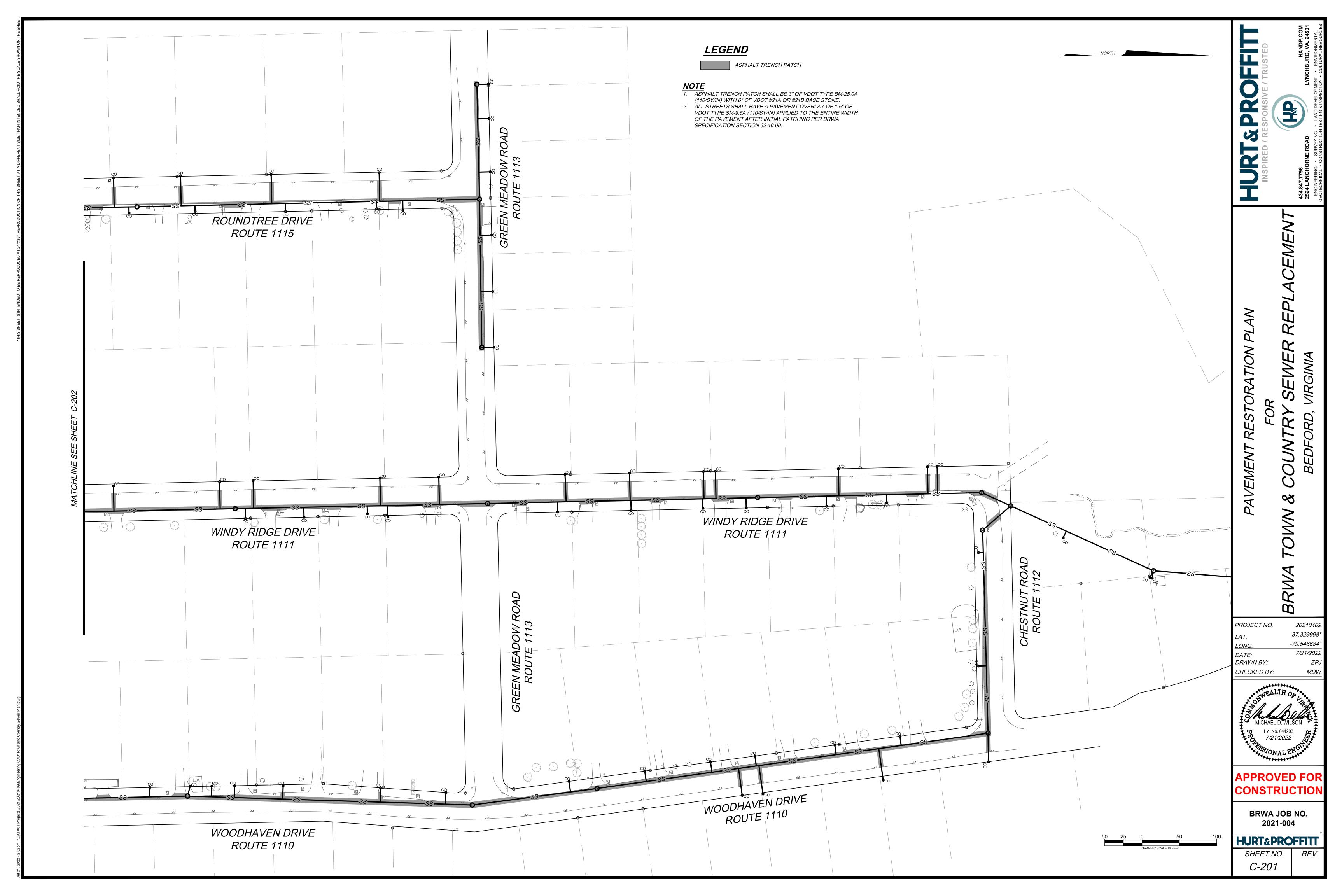
BRWA JOB NO. 2021-004

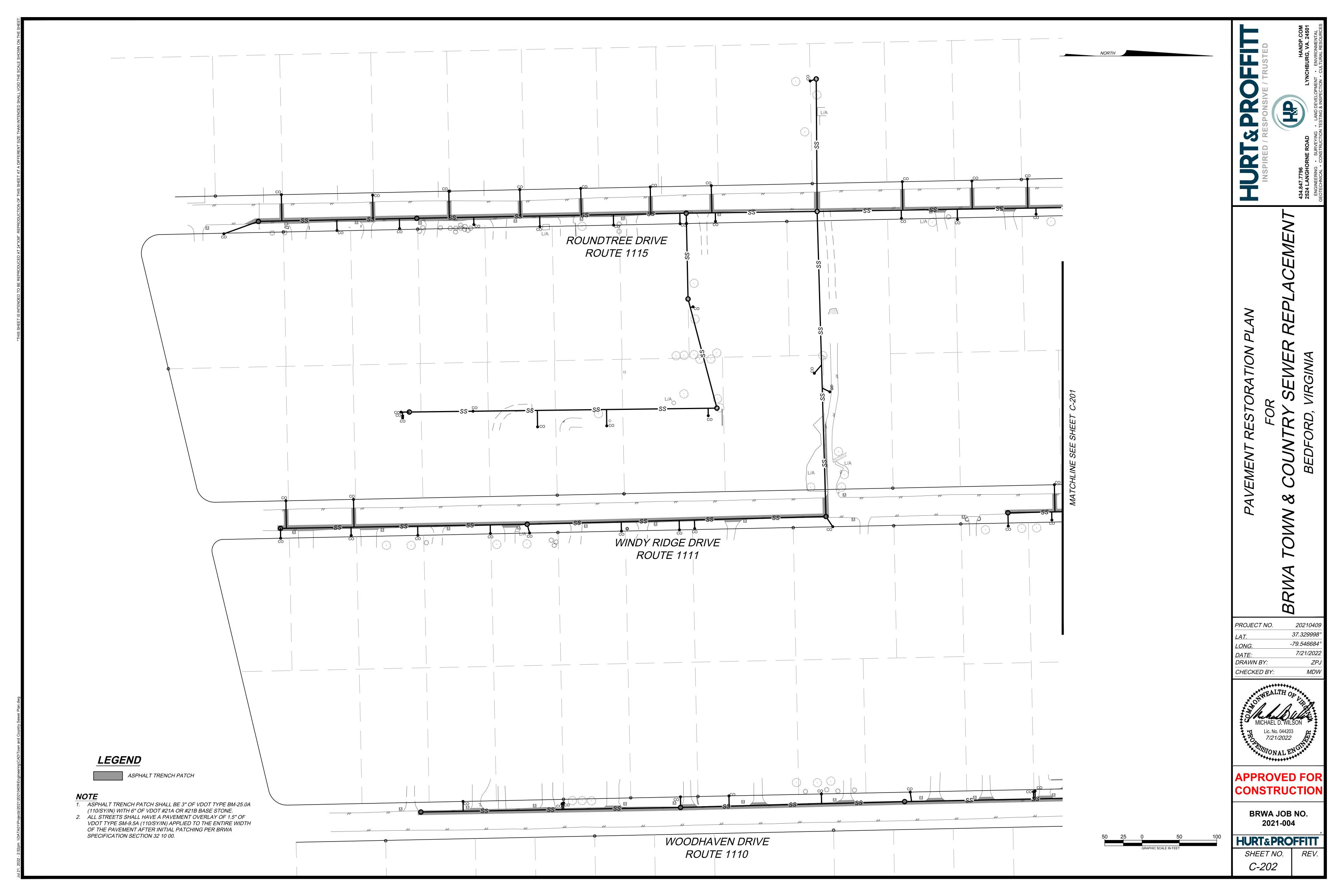
HURT&PROFFITT

C-112

INV OUT=882.70

SHEET NO.





**Typical Traffic Control** 

Shoulder Operation with Minor Encroachment

(Figure TTC-5.2)

**NOTES** 

2. Sign spacing should be 1300'-1500' for Limited Access highways. For all other roadways, the sign

3. When work takes up part of a lane on a high volume roadway; vehicular traffic volumes, vehicle mix,

4. The ROAD WORK AHEAD (W20-1) sign on an intersecting roadway may be omitted where drivers

emerging from that roadway will encounter another advance warning sign prior to this activity area.

5. A shadow vehicle with either an arrow board operating in the caution mode, or at least one high-

6. Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity amber

intensity amber rotating, flashing, or oscillating light shall be parked 80' - 120' in advance of the

rotating, flashing, or oscillating lights. Vehicle hazard warning signals can be used to supplement

Limit

Lane Width (Feet)

9 | 10 | 11 | 12

450 500 550 600 L=SW

Remarks

Speed Limit

the closure operation is on a Limited Access highway, the minimum lane width is 11 feet.

spacing should be 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where

speed and capacity should be analyzed to determine whether the affected lane should be closed. Unless

the lane encroachment analysis permits a remaining lane width of 10 feet, the lane should be closed. If

1. For required sign assemblies for multi-lane roadways see Note 1, TTC-4.1

high-intensity amber rotating, flashing, or oscillating lights.

Lane Width (Feet)

9 10 11 12

25 95 105 115 125 L=S<sup>2</sup>W/60

35 185 205 225 245 L=S<sup>2</sup>W/60

40 240 270 295 320 L=S<sup>2</sup>W/60 45 405 450 495 540 L=SW

8. Channelizing device spacing shall be at the following:

7. Taper length (L) and channelizing device spacing shall be at the following:

Remarks

L=S2W/60

Location

Spacing

the posted speed limit is 45 mph or less.

SEE TABLE 6H-3

- 80' - 120'

**\_\_50'** - 100'

SHADOW VEHICLE

REQUIRED

SEE TABLE 6H-3

FLAGGER STATION

SEE NOTES 2, 3, 5 & 6

SEE NOTE 10

W20-4

SEE NOTE 15

September 2019

SEE NOTES 2, 3, 5 & 6

FLAGGER STATION

(CENTER TO CENTER) STED/STATUTORY SPEED

41 - 55 MPH

> 55 MPH

10 FEET

PTRS SEE NOTE 4

15 FEET

20 FEET

ROADWAY

CENTER LINE

PTRS SEE NOTE 4 & 14

1: Revision 1 – 4/1/2015

2: Revision 2 – 9/1/2019

Page 6H-55

September 2019

Page 6H-65

SEE NOTE 5

10 FEET

15 FEET 20 FEET

**Typical Traffic Control** 

Lane Closure Operation in an Intersection

(Figure TTC-28.2)

**NOTES** 

b. Detour the effective routes to other roads and streets as approved and directed by the District<sup>2</sup> Traffic

Appropriate signing as shown should be used for law enforcement and flagging operations. For detour

c. Place a state certified flagger on each leg of the intersection controlling a single lane of traffic.

2. Sign spacing distance should be 350'-500' where the posted speed limit is 45 mph or less, 500'-800' where

3. To maintain efficient traffic flow in a flagging operation on a two-lane roadway the maximum time

6. If room permits, a shadow vehicle with at least one rotating amber light or high intensity amber flashing

7. For emergency situations (any non-planned operation) of 30 minutes or less duration, two rotating

8. If the work space extends across a crosswalk, the crosswalk should be closed using the information and

9. Turns can be prohibited as required by vehicular traffic conditions. Unless the streets are wide, it might

amber lights or high intensity amber flashing or oscillating<sup>1</sup> lights mounted on the vehicle and

visible for 360° shall be required in addition to the channelizing devices shown around the vehicle.

motorist should be stopped at a flagger station is 8 minutes for high volume roadways (average daily

traffic of 500 or more vehicles per day) to a maximum of 12 minutes for low volume roadways (less than

1. The control of traffic through the intersection in order of preference should be:

500 vehicles per day). For additional information see Section 6E.07. $^2$ 

or oscilllating<sup>1</sup> light should be parked 80'-120' in advance of the first work crew.

be physically impossible to make certain turns, especially for large vehicles.

4. Channelizing device spacing shall be on 20' centers or less.

Also, vehicle hazard warning signals shall be used.

a. Obtain the services of law enforcement personnel.

the posted speed limit is greater than 45 mph.

5. PTRS shall be used as noted in Section 6F.99.

devices shown in Figure TTC-36.

signs see Figure TTC-34.

Standard:

Guidance:

(CENTER TO CENTER)

POSTED/STATUTORY SPEED LI

<40 MPH

2: Revision 2 – 9/1/2019

41 - 55 MPH

SEE NOTE 3

IN THEIR POSSESSION WHEN PERFORMING FLAGGING DUTIES.

PHASES OF THE PROJECT.

COUNTY AND VDOT.

13. MOTORISTS SHALL BE WARNED IN ADVANCE OF ANY INTERSECTION CLOSURES. 14. A MINIMUM 10' CLEAR ROADWAY SHALL BE MAINTAINED AT ALL TIMES DURING HOURS. PER VDOT SPECIFICATIONS, THE SEASONAL LIMITS ON STEEL PLATES SHALL BE FOLLOWED. AFTER SEVEN (7) DAYS, ANY OPEN-CUT ASPHALT SHALL REQUIRE TEMPORARY ASPHALT PATCHING. A SIGNAGE METHOD TO PROTECT

AREA PROTECTION MANUAL, REVISION 2, SEPTEMBER 1, 2019, 2009 MANUAL ON 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS 2011 EDITION, AND NATIONAL COOPERATIVE HIGHWAY RESEARCH

16. ALL WORK ZONES ARE TO BE REMOVED AND NORMAL TRAFFIC PATTERNS RESTORED AT THE COMPLETION OF EACH DAY'S SPECIFIED WORK HOURS, AS IDENTIFIED IN THE VDOT LAND USE PERMIT SPECIAL PROVISIONS GENERAL, AND

17. MAINTENANCE OF TRAFFIC (MOT) SHALL BE IN ACCORDANCE WITH THE 2011 VIRGINIA WORK AREA PROTECTION MANUAL, REV. 2, SEPTEMBER 1 2019, 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 2020 VDOT ROAD AND BRIDGE SPECIFICATIONS, 2020 VDOT ROAD AND BRIDGE STANDARDS, REVISED MAY 2020, AND THE FOLLOWING 2011 VWAPM 2011 EDITION REVISION 2: SEPTEMBER 1,

18. CONTRACTOR IS RESPONSIBLE FOR PROVIDING A STAGING AREA OUTSIDE THE CLEAR ZONE OR DYNAMIC DEFLECTION AREAS OF PHYSICAL BARRIERS AT ALL

THE TYPES OF TRAFFIC CONTROL MEASURES NECESSARY FOR THE MAJOR WORK FOR ENSURING SAFE TRAVEL AROUND ALL WORK AREAS.

THE MAINTENANCE OF TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE VIRGINIA DEPARTMENT OF TRANSPORTATION'S WORK AREA PROTECTION MANUAL, FHWA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, AND AASHTO'S LATEST DESIGN MANUAL.

SIGN SPACING DISTANCE		
POSTED SPEED LIMIT (MPH)	0-45	46 +
SIGN SPACING DISTANCE	350'-500'	500'-800'
CONE SPACING DISTANCE		
POSTED SPEED LIMIT (MPH)	0-35	36 +
LOCATION		
TRANSITION SPACING	20'	40'
TRAVELWAY SPACING	40'	80'

BUFFER SPACE/FLAGGER DISTANCE FROM WORK AREA	
POSTED SPEED LIMIT (MPH)	DISTANCE (FEET)
0 - 20	115 – 120
25	155 — 160
30	200 - 210
35	250 — 260
40	305 — 320
45	360 — 380
50	425 — 445
55	500 - 520
60	570 — 590
65	645 — 675
70	730 – 760

MAINTENANCE OF TRAFFIC NOTES

1. IT IS NOT THE INTENT OF THIS PLAN TO ENUMERATE EVERY DETAIL WHICH MUST BE CONSIDERED IN THE CONSTRUCTION OF EACH WORK ZONE, BUT ONLY TO SHOW THE GENERAL FEATURES NECESSARY TO PROVIDE FOR PROPER HANDLING OF TRAFFIC. THE CONSTRUCTION TECHNIQUES ULTIMATELY EMPLOYED BY THE CONTRACTOR ARE TO BE APPROVED BY BEDFORD COUNTY AND VDOT. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE FOR SAFE TRAVEL AROUND

2. CONTRACTOR SHALL CONTACT BEDFORD COUNTY AND VDOT REPRESENTATIVES IN WRITING WITH A WORK SCHEDULE TWO WEEKS BEFORE STARTING WORK. BEDFORD COUNTY AND VDOT REPRESENTATIVES WILL DETERMINE IF POLICE PATROL IS NECESSARY FOR TRAFFIC CONTROL

3. THE CONTRACTOR SHALL COORDINATE THE SEQUENCE OF CONSTRUCTION WITH BEDFORD COUNTY.

4. SIGN SPACING MAY BE ADJUSTED TO FIT FIELD CONDITIONS WITH BEDFORD

SHALL BE FREE OF STORED MATERIALS AND PARKED EQUIPMENT. 6. THE POSTED SPEED LIMIT IS 25 MPH IN THE PROJECT AREA.

8. WORK SHALL NOT OCCUR AT NIGHT UNLESS DURING AN EMERGENCY CONDITION. CONSTRUCTION WORK AFTER DARK SHALL OCCUR WITH FLOODLIGHTS BEING USED WHERE EXISTING LIGHT IS NOT ADEQUATE. THE FLOODLIGHTS SHALL NOT CREATE A DISTRACTING GLARE TO ADJACENT DRIVERS.

REQUIRED AND SHALL CONFORM TO THE WAPM. 11. CONTRACTOR SHALL MAINTAIN ALL EXISTING ROADWAY SIGNAGE DURING ALL

12. LANE CLOSURES SHALL BE LIMITED TO 1/4 MILE OR AS DIRECTED BY BEDFORD

WORK HOURS WITH FULL PAVEMENT LANE WIDTHS TO BE RESTORED AFTER WORK PEDESTRIANS SHALL ALSO BE IMPLEMENTED IN ALL WORK AREAS.

15. ALL TRAFFIC CONTROL DEVICES USED WILL CONFORM TO THE 2011 VIRGINIA WORK UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE VIRGINIA SUPPLEMENT TO THE PROGRAM (NCHRP) REPORT 350.

## MAINTENANCE OF TRAFFIC NARRATIVE

SIGN SPACING DISTANCE		
POSTED SPEED LIMIT (MPH)	0-45	46 +
SIGN SPACING DISTANCE	350'–500'	500'-800'
CONE SPACING DISTANCE		
POSTED SPEED LIMIT (MPH)	0-35	36 +
LOCATION		
TRANSITION SPACING	20'	40'
TRAVELWAY SPACING	40'	80'

## TABLE 6H-3

BUFFER SPACE/FLAGGER DISTANCE FROM WORK AREA		
POSTED SPEED LIMIT (MPH)	DISTANCE (FEET)	
0 - 20	115 — 120	
25	155 — 160	
30	200 — 210	
35	250 — 260	
40	305 — 320	
45	360 — 380	
50	425 — 445	
55	500 - 520	
60	570 — 590	
65	645 — 675	
70	730 – 760	
·		

THE WORK ZONES.

COUNTY AND VDOT APPROVAL. 5. WHEN WORK IS NOT BEING PERFORMED, THE CLEAR ZONE OF THE ROADWAY

7. SAFE ACCESS TO ALL EXISTING PUBLIC ROADWAYS SHALL BE MAINTAINED AT ALL

9. ALL FLAGGERS SHALL BE STATE-CERTIFIED AND HAVE THEIR CERTIFICATION CARD

10. CHANNELIZING DEVICES SUCH AS CONES OR BARRELS SHALL BE UTILIZED WHERE

VDOT ACCEPTED CONSTRUCTION PLANS.

2019 TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION FIGURES AND NOTES

LOCATIONS FOR CONSTRUCTION EQUIPMENT AND OR MATERIAL STORAGE.

THIS MAINTENANCE OF TRAFFIC PLAN IS INTENDED TO PROVIDE A BASIC OVERVIEW OF ZONES ON THE PROJECT. THIS PLAN IS NOT INTENDED TO SHOW EVERY FEATURE OF THE TRAFFIC CONTROL PLAN. THE CONTRACTOR SHALL ULTIMATELY BE RESPONSIBLE

SIGN SPACING DISTANCE		
POSTED SPEED LIMIT (MPH)	0-45	46 +
SIGN SPACING DISTANCE	350'–500'	500'-800'
CONE SPACING DISTANCE		
POSTED SPEED LIMIT (MPH)	0-35	36 +
LOCATION		
TRANSITION SPACING	20'	40'
TRAVELWAY SPACING	40'	80'
·		<u> </u>

POSTED SPEED LIMIT (MPH)	DISTANCE (FEET)
0 - 20	115 — 120
25	155 — 160
30	200 – 210
35	250 — 260
40	305 – 320
45	360 - 380
50	425 — 445
55	500 - 520
60	570 — 590
65	645 — 675
70	730 — 760

1: Revision 1 - 4/1/2015

Location Spacing

2: Revision 2 – 9/1/2019

Page 6H-16

Guidance

**Standard:** 

first work crew.

Limit

Transition 20' 40' Travelway 40' 80' \*Construction Access 80' 120' \*Construction access spacing may be increased to this distance, but shall not exceed one access per ¼ mile. 9. On roadways with paved shoulders having a width of 8 feet or more, channelizing devices shall be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the traveled way.<sup>2</sup>

Limited Access highways shall use a 1000' merging taper regardless of the posted speed, a 750' shifting

taper for posted speeds < 65 mph and a 1000' shifting taper for posted speeds ≥ 65 mph.²

Shoulder Taper = 1/3 L Minimum

**Channelizing Device Spacing** 

Speed Limit

10. The buffer space length The buffer space length shall be as shown in Table 6H-3 on Page 6H-5 for the posted speed limit.

11. A truck-mounted attenuator (TMA) shall be used on Limited Access highways and multi-lane roadways with posted speed limit equal to or greater than 45 mph.

12. When a side road intersects the highway within the temporary traffic control zone, additional traffic control devices shall be placed as needed.

2: Revision 2 – 9/1/2019

**Typical Traffic Control** 

Lane Closure on a Two-Lane Roadway Using Flaggers (Figure TTC-23.2) **NOTES** 

1. Sign spacing distance should be 350'-500' where the posted speed limit is 45 mph or less, and 500'-800'

where the posted speed limit is greater than 45 mph. 2. Care should be exercised when establishing the limits of the work zone to insure maximum possible sight distance in advance of the flagger station and transition, based on the posted speed limit and at least equal to or greater than the values in Table 6H-3. Generally speaking, motorists should have a clear line of sight from the graphic flagger symbol sign to the flagger.

3. To maintain efficient traffic flow in a flagging operation on a two-lane roadway, the maximum time motorists should be stopped at a flagger station is 8 minutes for high volume roadways (average daily traffic of 500 or more vehicles per day) to a maximum of 12 minutes for low volume roadways (less than 500 vehicles per day). For additional information see Section 6E.07.2

Standard:

4. Portable Temporary Rumle Strips (PTRS) shall be used as noted in Section 6F.99.

5. Flagging stations shall be located far enough in advance of the work space to permit approaching traffic to reduce speed and/or stop before passing the work space and allow sufficient distance for departing traffic in the left lane to return to the right lane before reaching opposing traffic (see Table 6H-3 on Page 6H-5).

6. All flaggers shall be state certified and have their certification card in their possession when

performing flagging duties (see Section 6E.01, Qualifications for Flaggers). 7. Cone spacing shall be based on the posted speed and the values in Table 6H-4 on Page 6H-6. 8. A shadow vehicle with at least one high intensity amber rotating, flashing, or oscillating light shall

be parked 80'-120' in advance of the first work crew.

1: Revision 1 – 4/1/2015

2: Revision 2 – 9/1/2019

8. A SLOW (W21-V10) sign<sup>2</sup> may be required in this area to give advance warning of the operation ahead by slowing approaching traffic prior to reaching the flagger station or queued traffic.

9. If the queue of traffic reaches the BE PREPARED TO STOP (W3-4) sign then the signs, and if used the PTRS<sup>1</sup> should be readjusted at greater distances.

10. When a highway-rail crossing exists within or upstream of the transition area and it is anticipated that aueues resulting from the lane closure might extend through the highway-rail grade crossing, the temporary traffic control zone should be extended so that the transition area precedes the highway-rail crossing (see Figure TTC-56 for additional information on highway-rail crossings).

Standard: 11. At night, flagger stations shall be illuminated, except in emergencies (see Section 6E.08). Option:

12. Cones may be eliminated when using a pilot vehicle operation or when the total roadway width is 20 feet

13. For low-volume situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger, positioned to be visible to road users approaching from both directions, may be used (see Chapter 6E). Standard:1

14. When used<sup>2</sup>, three portable temporary rumble (PTRS) strips shall be installed across the entire travel lane adjacent to the BE PREPARED TO STOP (W3-4) sign. The portable temporary rumble strips shall be monitored and adjusted as necessary during the work shift to ensure proper placement on the roadway. When the PTRS are installed, the RUMBLE STRIPS AHEAD (W20-V26) sign shall also be utilized.

1: Revision 1 – 4/1/2015 2: Revision 2 – 9/1/2019

MDW CHECKED BY: 7/21/2022

PROJECT NO.

LONG.

DRAWN BY:

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7/21/2022

**APPROVED FOR** CONSTRUCTION

> **BRWA JOB NO.** 2021-004

HURT&PROFFITT SHEET NO.

C-501