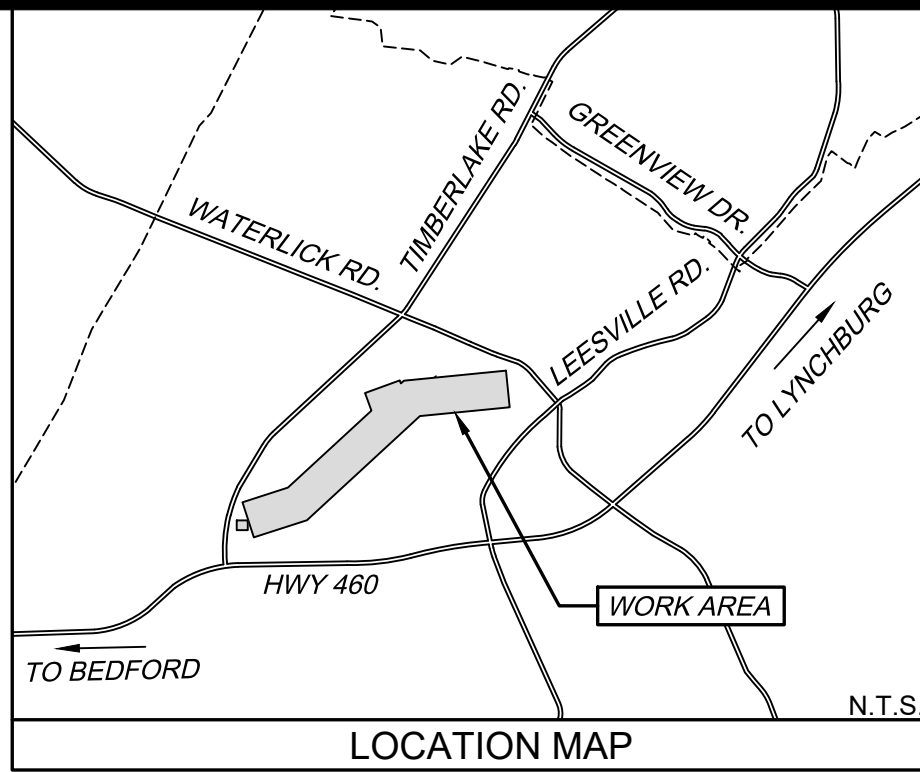


THIS SHEET IS INTENDED TO BE REPRODUCED AT 24"X36". REPRODUCTION OF THIS SHEET AT A DIFFERENT SIZE THAN INTENDED SHALL VOID THE SCALE SHOWN ON THE SHEET.

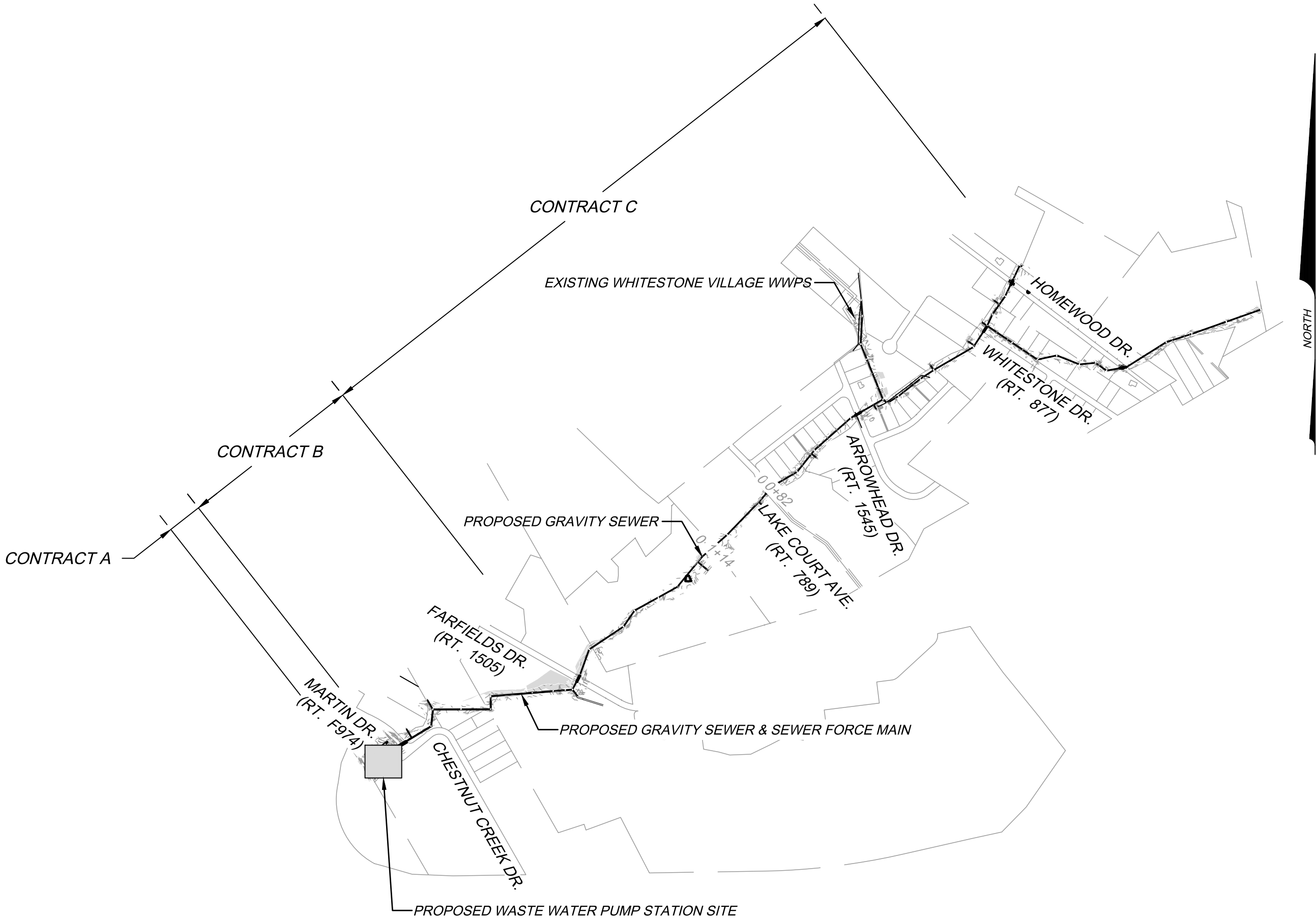
# MARTIN DRIVE REGIONAL W.W.P.S. CAMPBELL COUNTY, VIRGINIA CCUSA PROJECT NO. 80-2304

CONTRACT A: MARTIN DRIVE WWPS SITE AND PARALLEL GRAVITY SEWER / FORCE MAIN TO STATION 8+60  
CONTRACT B: PARALLEL GRAVITY SEWER / FORCE MAIN STATION 8+60 TO STATION 26+60 PLUS 74 LF EAST  
CONTRACT C: GRAVITY SEWER NORTH OF STATION 26+60



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- G-102 - NOTES
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- C-100 - SANITARY SEWER PLAN AND PROFILE STA. 6+50 - 11+00
- C-101 - SANITARY SEWER PLAN AND PROFILE STA. 11+00 - 23+50
- C-102 - SANITARY SEWER PLAN AND PROFILE STA. 23+50 - 35+50
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- C-104 - SANITARY SEWER PLAN AND PROFILE STA. 49+50 - 63+50
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- C-503 - PUMP STATION DETAILS
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- LEGEND**
- RF® REBAR FOUND
  - PF® PIPE FOUND
  - △ LIGHT POLE
  - CONTROL POINT
  - COMPUTED POINT
  - REBAR SET
  - UT UNDERGROUND TELEPHONE
  - EDGE OF PAVEMENT
  - ⚡ FIRE HYDRANT
  - SMALL DECIDUOUS TREE

- FM — SANITARY FORCE MAIN
- SS — SANITARY LINE (GRAVITY)
- ⊙ SANITARY MANHOLE
- ⊙ SANITARY CLEANOUT
- ⊕ FORCE MAIN PLUG VALVE
- ⊙ SANITARY STRUCTURE MARKER

VIRGINIA UNIFORM CODING SYSTEM FOR EROSION  
AND SEDIMENT CONTROL PRACTICES  
\* CHART TAKEN FROM THE VIRGINIA EROSION AND SEDIMENT  
CONTROL HANDBOOK (JULY 1992)

- SSF SUPER SILT FENCE (3.05)
- TS TEMPORARY SEEDING (3.31)
- PS PERMANENT SEEDING (3.32)
- MU MULCHING (3.35)
- SA SOIL STABILIZATION BLANKETS & MATTING (3.36)

### VIRGINIA CERTIFIED RESPONSIBLE LAND DISTURBER

NAME - PRINTED SIGNATURE DATE  
PHONE # COMPANY  
ADDRESS

## GENERAL NOTES

OWNER: CAMPBELL COUNTY UTILITIES AND SERVICE AUTHORITY (C.C.U.S.A.)  
CONTACT: TIM WAGNER, PE  
ADDRESS: 20644 TIMBERLAKE RD. LYNCHBURG, VA 24502  
PHONE: 434-239-8654

- THIS PROJECT CONSISTS OF THE CONSTRUCTION OF APPROXIMATELY 10,400 L.F. OF SANITARY SEWER, APPROXIMATELY 2,000 L.F. OF SANITARY SEWER FORCE MAIN, AND A WASTE WATER PUMP STATION, WITH ASSOCIATED APPURTENANCES.
- TOTAL DISTURBED AREA: 7.9 AC. NO VIRGINIA STORMWATER PERMIT WILL BE REQUIRED.
- ALL DISTURBED AREAS SHALL RECEIVE PERMANENT SEEDING AND MULCH/EROSION CONTROL MATTING.
- ACTIVE CONSTRUCTION AND LAYDOWN AREAS ARE TO BE PROTECTED WITH TEMPORARY FENCING.
- CONTRACTOR MUST CONTACT MISS UTILITY AT VA811 PRIOR TO CONSTRUCTION.
- ALL TEMPORARY EROSION CONTROL DEVICES MUST BE REMOVED WITHIN 30 DAYS OF PERMANENT STABILIZATION OF THE SITE.
- ALL CONSTRUCTION STAGING, LOADING, TEMPORARY PARKING, AND LAYDOWN AREAS SHALL BE COORDINATED WITH THE OWNER PRIOR TO ANY CONSTRUCTION OR DEMOLITION ACTIVITIES.
- CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE DUST CONTROL TO PREVENT DAMAGING AND/OR NUISANCE AIRBORNE DUST FROM LEAVING THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING WHATEVER MEASURES ARE NECESSARY TO CORRECT AND/OR COMPENSATE BORDERING PROPERTY OWNERS AND THE OWNER FOR ALL DAMAGES DUE TO DUST.
- THIS PROJECT IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK.
- CONTRACTOR SHALL VERIFY MARKING OF EXISTING UTILITY SERVICES BEFORE ANY CONSTRUCTION ACTIVITY.
- ALL MATERIAL REMOVED DURING CONSTRUCTION SHALL BE DISPOSED OF PROPERLY.
- ALL WORK SHALL BE SUBJECT TO INSPECTION BY STATE AND THE OWNER'S ENGINEER.

## VDOT NOTES:

- A PRE-CONSTRUCTION MEETING IS REQUIRED WITH VDOT PARTICIPATION PRIOR TO PERMIT ISSUANCE.
- A VDOT PERMIT IS REQUIRED PRIOR TO BEGINNING WORK WITHIN THE RIGHT-OF-WAY

ACCEPTABLE TO VDOT  
VDOT REPRESENTATIVE DATE:

VDOT'S REVIEW IS NOT INTENDED TO BE EITHER COMPLETE OR COMPREHENSIVE AS IT IS THE RESPONSIBILITY OF THE SUBMITTING ENGINEER/SURVEYOR THAT SIGNS AND SEALS THESE PLANS TO ENSURE THE COMPLETENESS AND ACCURACY OF THEIR PLANS IN ACCORDANCE WITH GOVERNING LAWS, REGULATIONS, SPECIFICATIONS AND STANDARDS. PLAN ERRORS AND OR OMISSIONS DISCOVERED DURING CONSTRUCTION REMAIN THE RESPONSIBILITY OF THE SUBMITTING ENGINEER/SURVEYOR.

APPROVED BY CAMPBELL COUNTY UTILITIES AND SERVICE AUTHORITY  
(C.C.U.S.A.) FOR WATER AND SANITARY SEWER SYSTEM CONSTRUCTION.

C.C.U.S.A. DATE

C.C.U.S.A. HAS REVIEWED THESE PLANS IN GOOD FAITH FOR GENERAL COMPLIANCE WITH ITS STANDARDS AND SPECIFICATIONS. HOWEVER, C.C.U.S.A. MAKES NO CLAIMS AS TO THE ACCURACY OR COMPLETENESS OF THESE PLANS. C.C.U.S.A. RESERVES THE RIGHT TO MAKE CHANGES AS NECESSARY DURING CONSTRUCTION TO RESPOND TO FIELD CONDITIONS AND ANY ERRORS OR OMISSIONS IN THESE PLANS.

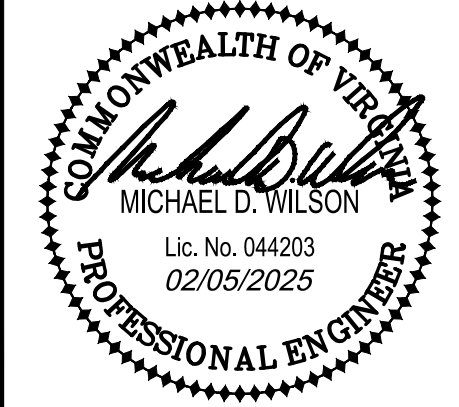
**HURT & PROFFITT**  
INSPIRED / RESPONSIVE / TRUSTED



HANDP.COM  
LYNCHBURG, VA 24501  
2524 LANGHORNE ROAD  
434-847-7796  
ENGINEERING • SURVEYING • LAND DEVELOPMENT • ENVIRONMENTAL  
GEOTECHNICAL • CONSTRUCTION TESTING & INSPECTION • CULTURAL RESOURCES

COVER  
FOR  
MARTIN DRIVE REGIONAL W.W.P.S.  
CAMPBELL COUNTY, VIRGINIA

PROJECT NO. 20230622  
LAT. 37.313701  
LONG. -79.260669  
DATE: 02/05/2025  
DRAWN BY: MSF  
CHECKED BY: MDW



BID SET

CCUSA # 80-2304

**HURT & PROFFITT**

SHEET NO. G-101 REV. ---

THE ENGINEER AND/OR SURVEYOR TAKES NO RESPONSIBILITY FOR THE LOCATION OR ACCURACY OF THE UTILITIES AS SHOWN HEREON OR ANY UTILITIES WITHIN THE PROJECT THAT MAY NOT BE SHOWN HEREON. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE UTILITY COMPANIES TO SEE IF ANY UTILITIES EXIST WITHIN THE AREA OF THE PROJECT BEFORE ANY CONSTRUCTION BEGINS. ANY COST INCURRED BY DAMAGING ANY UTILITY WITHIN THE PROJECT SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

48 WORKING HOURS PRIOR TO STARTING THE WORK, THE CONTRACTOR SHALL CALL VIRGINIA 811 AT PHONE NUMBER 811 AND ADVISE THE NATURE AND LOCATION OF THE WORK.





THIS SHEET IS INTENDED TO BE REPRODUCED AT 24X36". REPRODUCTION OF THIS SHEET AT A DIFFERENT SIZE THAN INTENDED SHALL VOID THE SCALE SHOWN ON THE SHEET.  
Feb 07, 2025 - 9:57am Z:\020320230622Engineering\CAD\230622\_COVER.dwg

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.THESE INCLUDE COUNTY PERMIT AND VDOT PERMIT.
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 THE CONTRACTOR SHALL MAINTAIN RED LINE SET OF AS-BUILT DRAWINGS THROUGHOUT THE PROJECT AND SHALL TURN THEM OVER TO THE OWNER PRIOR TO FINAL PAYMENT.
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, 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.

ALL CLEARED MATERIALS TO BE REMOVED FROM SITE AND DISPOSED OF LEGALLY AT THE CONTRACTOR'S EXPENSE.
12.

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.
13.

ALL UNSUITABLE MATERIAL AND OTHER CONSTRUCTION DEBRIS SHALL BE HAULED OFF SITE AND DISPOSED OF LEGALLY.
14.

PRIOR TO DISCONNECTION AND/ OR RELOCATION OF UTILITY SERVICES, CONTRACTOR TO CONTACT OWNERS REPRESENTATIVE TO COORDINATE SUCH ACTIVITIES WITH UTILITY COMPANIES.
15.

CONTRACTOR SHALL COMPLY WITH ALL OSHA STANDARDS AND REGULATIONS FOR OPEN TRENCH EXCAVATIONS.
16.

ALL EXCAVATION SHALL BE UNCLASSIFIED. CONTRACTOR RESPONSIBLE FOR EXCAVATING ALL MATERIALS INCLUDING ROCK.
17.

CONTRACTOR RESPONSIBLE FOR COORDINATING WITH THE VIRGINIA DEPARTMENT OF TRANSPORTATION, CAMPBELL COUNTY, AND OTHER GOVERNING BODIES FOR PERMITS AND INSPECTIONS AS REQUIRED.
18.

THE AREA SHOWN HEREON IS LOCATED IN FLOOD HAZARD ZONE 'X' AND IS NOT LOCATED WITHIN FLOOD HAZARD ZONE 'A' FOR A 100 YEAR FLOOD AS DETERMINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY AS SHOWN ON COMMUNITY-PANEL MAP #51031C0085D & 51031C0103D DATED AUGUST 28, 2008.

18A.

FOR PLANNING PURPOSES ONLY, AN APPROXIMATE 100 YEAR FLOODPLAIN ELEVATION HAS BEEN ESTIMATED FOR SANITARY SEWER IMPROVEMENT DESIGN. THIS ELEVATION HAS NOT BEEN SUBMITTED TO NOR APPROVED BY FEMA.
19.

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.
20.

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.
21.

THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL CONFINED SPACE ENTRY REGULATIONS.
22.

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.
23.

THE CONTRACTOR SHALL MAINTAIN SURFACE DRAINAGE AND SUBSURFACE DEWATERING DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL PUMPS AND PIPING REQUIRED TO MAINTAIN SURFACE DRAINAGE.
24.

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.
25.

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.
26.

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.
27.

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.
28.

TREES AND SHRUBS TO REMAIN IN PLACE SHALL BE ROPED OFF DURING GRADING OPERATIONS TO KEEP EQUIPMENT AWAY FROM ROOT SYSTEMS. ALL TREES WITHIN PERMANENT EASEMENT AND PUMP STATION LIMITS OF CONSTRUCTION SHALL BE REMOVED AND GRUBBED. IN TEMPORARY EASEMENT THE CONTRACTOR SHALL MAKE SELECT CUTTING OF TREES, TAKING THE SMALLEST TREES FIRST, THAT ARE MANDATORY FOR SANITARY SEWER CONSTRUCTION. TREES NOT REQUIRING REMOVAL FOR SANITARY SEWER INSTALLATION SHALL BE PROTECTED AND REMAIN UNDISTURBED.
29.

VDOT 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.
30.

THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES OR EROSION/SEDIMENT CAUSED BY THE TESTING OF THE SANITARY SEWER. THE CONTRACTOR IS TO MAKE EVERY EFFORT TO MINIMIZE IMPACTS.
31.

THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH: THESE PLANS, CAMPBELL COUNTY UTILITIES AND SERVICE AUTHORITY SPECIFICATIONS, THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD AND BRIDGE SPECIFICATIONS, DATED 2020; THE VDOT ROAD AND BRIDGE STANDARDS, DATED 2016; THE VIRGINIA WORK AREA PROTECTION MANUAL, DATED 2011, REVISION DATED NOVEMBER, 2020.
32.

WHERE STANDARD SLOPE ROUNDOFFS WOULD DAMAGE TREES, BUSHES OR OTHER DESIRABLE VEGETATION, THEY SHALL BE OMITTED WHEN SO ORDERED BY THE ENGINEER.
33.

CONSTRUCT EXCAVATION SUPPORT SYSTEMS AS REQUIRED BY OSHA AND U.S. ARMY CORPS OF ENGINEERS SAFETY & HEALTH REQUIREMENTS MANUAL EM 385-1-1, AND SECTIONS 23 A AND 23 B TO ADEQUATELY SUPPORT EXISTING SOIL AND ADJACENT STRUCTURES DURING EXCAVATION ACTIVITIES.

SANITARY NOTES:

1.

ALL SANITARY SEWER LINES TO BE INSTALLED AND TESTED PER CCUSA STANDARDS AND SPECIFICATIONS AT THE CONTRACTORS EXPENSE.
2.

ANY CHANGES TO THE PLANS MUST BE APPROVED BY CCUSA PRIOR TO CONSTRUCTION.
3.

ANY CRUSHED, OVAL SHAPED, OR OTHERWISE UNACCEPTABLE PIPE WILL BE REPLACED BY THE CONTRACTOR AT CONTRACTORS EXPENSE.
4.

SANITARY SEWER TRENCH SHALL BE PER CCUSA STANDARD DETAIL C-150.
5.

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.
5.

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 GRAVITY SANITARY SEWER LINES SHALL BE SDR 35 PVC UNLESS OTHERWISE NOTED.
9.

ALL PROPOSED SEWER SERVICE LATERALS SHALL BE SDR 26 PVC PER CCUSA STANDARD DETAILS S-110 & S-120.
10.

ALL MANHOLES SHALL BE PRECAST CONCRETE UNLESS OTHERWISE NOTED.
11.

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.
12.

ALL EXISTING SURFACE IMPROVEMENTS DAMAGED DURING INSTALLATION OF THE SEWER MAIN AND LATERALS SHALL BE REPLACED IN LIKE KIND.
13.

LIMITS OF PAVEMENT DISTURBANCE IN PAVEMENT IS DEFINED BY THE LIMITS OF THE UTILITY TRENCH.
14.

ALL ABANDONED SEWER MAINS ARE TO BE FILLED WITH FLOWABLE FILL.

CONSTRUCTION SEQUENCE

1.

INSTALL TRAFFIC CONTROL DEVICES PRIOR TO WORK IN VDOT RIGHT-OF-WAY.
2.

INSTALL E&S CONTROLS AS REQUIRED BEFORE STARTING WORK.
3.

INSTALL PUMP STATION, FORCE MAIN, GRAVITY SANITARY SEWER LINE, AND ALL APPURTENANCES.
4.

INSTALL SEEDING AND ALL RESTORE DISTURBED AREAS AS WORK PROGRESSES.
5.

CONTRACTOR TO RESTORE ALL AREAS BACK TO EITHER PROPOSED GRADES OR EXISTING CONDITIONS AS WORK PROGRESSES, A MAXIMUM OF 500 LF CAN BE UNRESTORED AT ONE TIME. ALL DISTURBED AREAS, HAUL ROADS, CONSTRUCTION ROADS, LAY DOWN AREAS, ETC. SHALL BE RESTORED. MEASURES MUST BE REMOVED WITHIN 30 DAYS OF PERMANENT STABILIZATION OF THE SITE.

VDOT UTILITY INSTALLATION GENERAL NOTES:

(THESE NOTES ONLY APPLY TO WORK IN VDOT RIGHT-OF-WAY)

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) 2016 ROAD AND BRIDGE STANDARDS AND 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 2.1: NOVEMBER 1, 2020.
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.
5.

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. LYNCHBURG DISTRICT VDOT LAND USE SECTION POINTS OF CONTACT ARE LISTED BELOW BY COVERAGE AREA:

• AMHERST AND NELSON COUNTIES: PATRICIA MARTIN 434-856-8152

• APPOMATTOX AND CAMPBELL COUNTIES: DANIEL NEWLAND 434-841-6863

• BUCKINGHAM, CHARLOTTE, CUMBERLAND, AND PRINCE EDWARD COUNTIES: CHARLES EDWARDS 434-505-3262

• HALIFAX AND PITTSYLVANIA COUNTIES: DAVID SHELTON 434-433-3135
7.

PRIOR TO INITIATING WORK WITHIN STATE RIGHT-OF-WAY, THE CONTRACTOR SHALL HOLD A PRE-CONSTRUCTION CONFERENCE WITH OWNER, ENGINEER, LOCALITY, SUBCONTRACTORS, AND VDOT.
8.

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.
9.

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 2011 VIRGINIA WORK AREA PROTECTION MANUAL, REVISION 2.1: NOVEMBER 1, 2020 OR AS DIRECTED BY THE AREA LAND USE ENGINEER.
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 2009 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 2011 VIRGINIA SUPPLEMENT TO THE MUTCD AND THE 2011 VIRGINIA WORK AREA PROTECTION MANUAL, REVISION 2.1: NOVEMBER 1, 2020.
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 INBASIC 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 3:30 PM, MONDAY THROUGH FRIDAY, IN THE LYNCHBURG DISTRICT. PUBLIC ROADS CLASSIFIED AS "LOCAL" ROADS SHALL HAVE UNRESTRICTED WORK HOURS AND DAYS, UNLESS OTHERWISE DIRECTED BY THE VDOT AREA LAND USE ENGINEER.
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.
16.

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 2011 VIRGINIA WORK AREA PROTECTION MANUAL, REVISION 2.1: NOVEMBER 1, 2020 (APPENDIX A, PAGE A-4) FOR CLEAR ZONE DEFINITIONS.
18.

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 UNTR. UPSTREAM STABILIZATION HAS BEEN ADEQUATELY ACHIEVED.
21.

ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL CONFORM TO THE VDOT 2016 ROAD AND BRIDGE STANDARDS, 2020 ROAD AND BRIDGE SPECIFICATIONS, AND 1992 DCR 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 (JAMES HOLT: 434-856-8158) 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, FLOWING, OR BORING.
24.

PLACEMENT OF FIBER OPTIC CABLE SHALL BE LIMITED TO THE AREAS OF THE STATE RIGHT-OF-WAY DESCRIBED BELOW:

• 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:

a. NO CLOSER THAN 4.0 FEET FROM THE EDGE OF PAVEMENT, OR WHITE LINE, AND NO CLOSER THAN 2.0 FEET FROM THE FACE OF GUARDRAIL.

b. IF MINIMUM 4.0 AND 2.0 FOOT OFFSETS CANNOT BE ACHIEVED, VDOT LAND USE SECTION POINT OF CONTACT SHALL BE NOTIFIED TO AUTHORIZE ANY DEVIATIONS TO THE PERMITTED ACTIVITY.

c. IF MINIMUM 4.0 FOOT OFFSET FROM EDGE OF PAVEMENT IS ACHIEVABLE BUT RESULTS IN THE PLACEMENT OF FIBER INSIDE THE ROADSIDE DITCHLINE, BORING WILL BE REQUIRED BENEATH THE DITCH CENTERLINE.

d. NO CLOSER THAN 3.0 FEET FROM THE BACK OF POST IN GUARDRAIL SECTIONS.
25.

FOR AERIAL CROSSINGS, MINIMUM VERTICAL CLEARANCES OF 18 FEET (NON-LIMITED ACCESS) AND 21 FEET (LIMITED ACCESS) SHALL BE MAINTAINED OVER ROADWAYS.
26.

ALL BURIED UTILITIES WITHIN LIMITED ACCESS RIGHT-OF-WAY SHALL MAINTAIN A MINIMUM OF 36 INCHES OF COVER.
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 OF COVER.
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 BUNCHED TIGHTLY TOGETHER WITH EXISTING UTILITY MARKERS OR PEDESTALS.
29.

JUNCTION BOXES SHALL MEET OR EXCEED VDOT STANDARDS JB-R1 & R2 AND JB-S1, S2, S3, S4. JUNCTION BOXES INSTALLED BETWEEN EDGE OF PAVEMENT AND DITCHLINE SHALL BE LOAD BEARING IN NATURE AND HAVE CONCRETE COLLARS PER VDOT STANDARD.
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.
33.

THE COMMONWEALTH TRANSPORTATION BOARD, MEMBERS OF THE BOARD, THE 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 PERMIT APPROVAL.

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LYNCHBURG, VA 24501

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NOTES

FOR

MARTIN DRIVE REGIONAL W.W.P.S.

CAMPBELL COUNTY, VIRGINIA

PROJECT NO.

20230622

LAT.

37.313701

LONG.

-79.260669

DATE:

02/05/2025

DRAWN BY:

MSF

CHECKED BY:

MDW

COMMONWEALTH OF VIRGINIA

Michael D. Wilson

Lic. No. 044203

02/05/2025

PROFESSIONAL ENGINEER

BID SET

CCUSA # 80-2304

HURT&PROFFITT

SHEET NO.

G-102

REV.

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THIS SHEET IS INTENDED TO BE REPRODUCED AT 24X36. REPRODUCTION OF THIS SHEET AT A DIFFERENT SIZE THAN INTENDED SHALL VOID THE SCALE SHOWN ON THE SHEET.  
Feb 07, 2025 - 9:57am Z:\020310230622\Engineering\CAD\020622\_COVER.dwg

EROSION AND SEDIMENT CONTROL NARRATIVE

I. PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF THE CONSTRUCTION OF APPROXIMATELY 10,400 LF OF SANITARY SEWER, APPROXIMATELY 2,000 L.F. OF SANITARY SEWER FORCE MAIN, AND A WASTE WATER PUMP STATION, WITH ASSOCIATED APPURTENANCES. A TOTAL OF APPROXIMATELY 7.9 ACRES WILL BE DISTURBED AS A RESULT OF CONSTRUCTION ACTIVITIES.

II. EXISTING SITE CONDITIONS

THIS SITE LOCATED IN A COMBINATION OF VDOT RIGHT-OF-WAY, PARTIALLY WOODED PRIVATE PROPERTY, AND PRIVATE RIGHT-OF-WAY.

III. ADJACENT PROPERTY

THE SURROUNDING PROPERTIES ARE ZONED (R-SF) RESIDENTIAL SINGLE FAMILY, (R-MH) RESIDENTIAL MULTIFAMILY, (B-GC) GENERAL COMMERCIAL, AND (B-HC) HEAVY COMMERCIAL. ALL MEASURE SHALL BE TAKEN TO ENSURE THAT THE SITE IS STABILIZED AND NO ADDITIONAL SEDIMENT IS DEPOSITED INTO THE DRAINAGE CHANNEL.

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 CAMPBELL COUNTY, VIRGINIA, VERSION 16, DATED SEPTEMBER 5, 2023 INDICATES THAT THIS SITE CONSISTS OF CHEWACLA-TOCCOA COMPLEX; WORSHAM SOILS, 0 TO 4 PERCENT SLOPES; CECIL FINE SANDY LOAM, 6 TO 15 PERCENT SLOPES,ERODED; MANTEO CHANNERY LOAM, 25 TO 60 PERCENT SLOPES; TALLAPOOSA LOAM, 15 TO 25 PERCENT SLOPES; APPLING FINE SANDY LOAM, 6 TO 15 PERCENT SLOPES,ERODED; TALLAPOOSA LOAM, 6 TO 15 PERCENT SLOPES; CECIL FINE SANDY LOAM, 15 TO 25 PERCENT SLOPES,ERODED.

VI. STORMWATER

A VIRGINIA STORMWATER PERMIT WILL NOT BE REQUIRED.

VII. CRITICAL AREAS

CRITICAL AREAS ARE CREEK CROSSING, ROAD CROSSINGS, AND STEEP SLOPES.

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 SUPER SILT FENCE (SSF) - 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.
- 3.19 RIPRAP (RR) - A PERMANENT EROSION-RESISTANT GROUND COVER OF LARGE, LOOSE, ANGULAR STONE WITH FILTER FABRIC OR GRANULAR UNDERLINING.
- 3.31 TEMPORARY SEEDING (TS) - THE CONTRACTOR IS TO IMPLEMENT TEMPORARY SEEDING IF DISTURBED LAND IS LEFT EXPOSED FOR OVER 30 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 PLANT 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. EC-2 SHALL BE USED AS MULCHING MATERIAL FOR THIS PROJECT.

B. VEGETATIVE PRACTICES

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 SHALL 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.

C. MINIMUM STANDARDS (MS):

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

- MS-1 STABILIZATION OF DENUDED AREAS:  
PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO BARE AREAS WITHIN 7 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE UNLESS OTHERWISE SHOWN. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN 7 DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE, BUT WILL REMAIN DORMANT OR UNDISTURBED FOR LONGER 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 APPLICATOR IS RESPONSIBLE FOR TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
- MS-3 PERMANENT VEGETATIVE COVER:  
A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPINION OF THE CCUSA 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 DISTURBANCE TAKES PLACE.

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 BUILD UP SHALL BE REMOVED. DISTURBED AREAS DUE TO THIS CLEANUP OPERATION SHALL BE REPAIRED, RESEEDED AND REMULCHED.

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.

- 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 STRUCTURE.
- MS-9 WATER SEEPS FROM A SLOPE FACE:  
WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.
- MS-10 STORM SEWER INLET PROTECTION:  
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 PLACED 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 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.
- 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 CCUSA 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 SHALL 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 SHALL BE INSTALLED AS A FIRST STEP IN GRADING AND SHALL BE SEEDED AND MULCHED IMMEDIATELY FOLLOWING INSTALLATION. SEEDING OR OTHER STABILIZATION SHALL FOLLOW IMMEDIATELY AFTER GRADING. AREAS WHICH ARE NOT TO BE DISTURBED SHALL BE CLEARLY MARKED BY FLAGS, SIGNS, ETC. AFTER ACHIEVING ADEQUATE STABILIZATION, THE TEMPORARY E&S CONTROLS SHALL BE CLEANED AND REMOVED.

D. MAINTENANCE

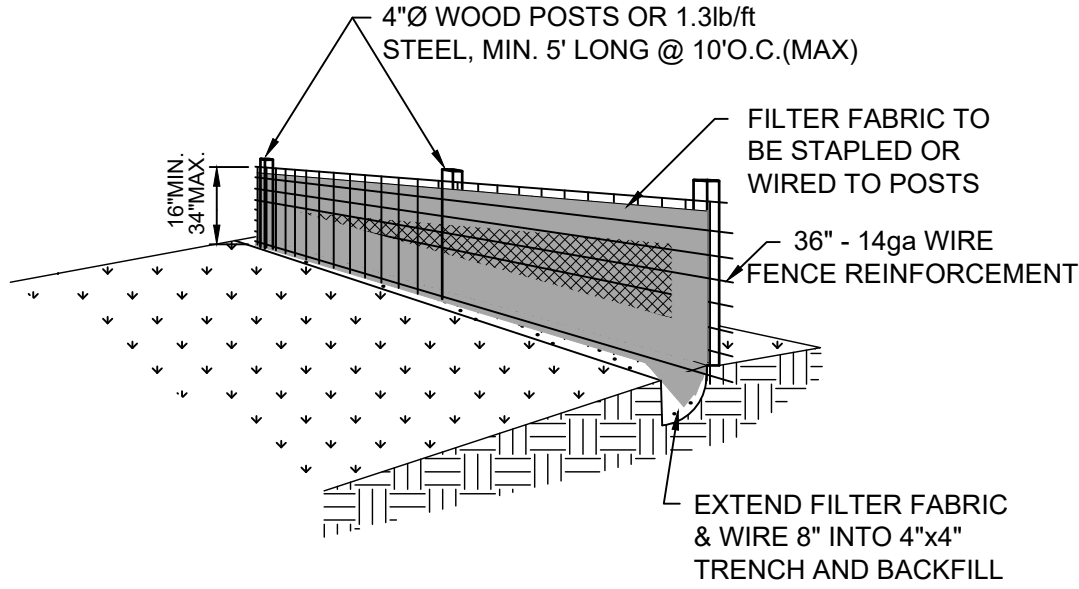
THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL EROSION AND SEDIMENT CONTROL MEASURES. THESE SHALL BE CHECKED DAILY AND AFTER EACH SIGNIFICANT RAINFALL; ANY DEFICIENCIES SHALL BE REPAIRED IMMEDIATELY IN ACCORDANCE WITH THE LATEST EDITION OF THE VESCH OR AS DEEMED NECESSARY BY THE LOCAL APPROVING AUTHORITY.

IX. CONSTRUCTION SEQUENCE

1. INSTALL TRAFFIC CONTROL DEVICES BEFORE STARTING ANY WORK IN VDOT RIGHT-OF-WAY.
2. INSTALL E&S CONTROLS AS NECESSARY BEFORE STARTING WORK.
3. INSTALL PERIMETER CONTROLS AND ALL APPURTENANCES AS SHOWN ON PLANS.
4. INSTALL THE SANITARY SEWER LINE AND APPURTENANCES.
5. REPLACE PAVEMENT SECTION WHERE UTILITY LINE HAS CROSSED DRIVEWAYS AND ROADS.
6. INSTALL SEEDING AND RESTORE ALL DISTURBED AREAS.
7. CONTRACTOR TO RESTORE ALL AREAS BACK TO EITHER PROPOSED GRADES OR EXISTING CONDITIONS AFTER COMPLETION OF THE PROJECT. ALL DISTURBED AREAS, HAUL ROADS, CONSTRUCTION ROADS, LAY DOWN AREAS, ETC. SHALL BE RESTORED. MEASURES SHALL BE REMOVED WITHIN 30 DAYS OF PERMANENT STABILIZATION OF THE SITE.

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 SHALL 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, CCUSA DETERMINES THAT THEY ARE REQUIRED.
- E10. THE PLANNING 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 SHALL 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.
- E16. 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 CCUSA.
- E17. 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.
- E18. CONTRACTOR TO TAKE SPECIAL CARE IN EXECUTING THE EROSION AND SEDIMENT CONTROL PLAN. THE CONTRACTOR SHALL 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.
- E19. EROSION AND SEDIMENT CONTROL AND STORM WATER MANAGEMENT SHALL CONFORM TO THE CAMPBELL COUNTY STANDARDS AND REGULATIONS AND SHALL BE ENFORCED BY THE CAMPBELL COUNTY EROSION AND SEDIMENT CONTROL OFFICERS.
- E20. 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 CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CORRECTIVE MEASURES.



"SUPER" SILT FENCE (SS)  
(WITH WIRE SUPPORT)  
VESCH STD. 3.05  
N.T.S.

TABLE 3.31-B (Revised June 2003) (TS) TEMPORARY SEEDING SPECIFICATIONS QUICK REFERENCE FOR ALL REGIONS		
SEED		
APPLICATION DATES	SPECIES	APPLICATION RATES
Sept. 1 - Feb. 15	50/50 Mix of Annual Ryegrass (lolium multi-florum) & Cereal (Winter) Rye (Secale cereale)	50 - 100 (lbs/acre)
Feb. 16 - Apr. 30	Annual Ryegrass (lolium multi-florum)	60 - 100 (lbs/acre)
May 1 - Aug. 31	German Millet	50 (lbs/acre)
FERTILIZER & LIME		
<ul style="list-style-type: none"><li>• Apply 10-20-10 fertilizer at a rate of 450 lbs. / acre (or 10 lbs. / 1,000 sq. ft.)</li><li>• Apply Pulverized Agricultural Limestone at a rate of 2 tons/acre (or 90 lbs. / 1,000 sq. ft.)</li></ul>		
<b>NOTE:</b> - A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site. - Incorporate the lime and fertilizer into the top 4 – 6 inches of the soil by disking or by other means. - When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin #4, 2003 Nutrient Management for Development Sites at <a href="http://www.dcr.state.va.us/sw/e&amp;s.htm#pubs">http://www.dcr.state.va.us/sw/e&amp;s.htm#pubs</a>		

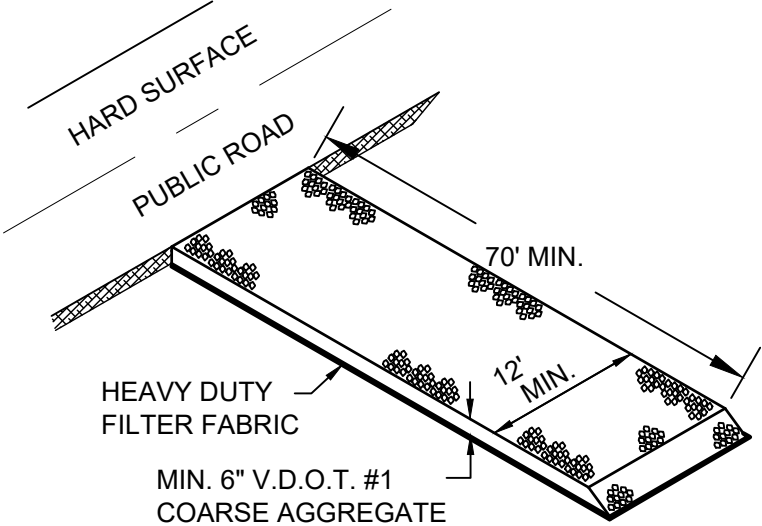
TABLE 3.32-D (Revised June 2003) (PS) PERMANENT SEEDING SPECIFICATIONS FOR PIEDMONT AREA		
SEED <sup>1</sup>		
LAND USE	SPECIES	APPLICATION PER ACRE
Minimum Care Lawn (Commercial or Residential)	Tall Fescue <sup>1</sup>	95-100%
	Perennial Ryegrass	0-5%
	Kentucky Bluegrass <sup>1</sup>	0-5%
		TOTAL: 175-200 lbs.
High-Maintenance Lawn	Tall Fescue <sup>1</sup>	TOTAL: 200-250 lbs.
General Slope (3:1 or less)	Tall Fescue <sup>1</sup>	128 lbs
	Red Top Grass or Creeping Red Fescue	2 lbs
	Seasonal Nurse Crop <sup>2</sup>	20 lbs
		TOTAL: 150 lbs
Low-Maintenance Slope (Steeper than 3:1)	Tall Fescue <sup>1</sup>	108 lbs
	Red Top Grass or Creeping Red Fescue	2 lbs
	Seasonal Nurse Crop <sup>2</sup>	20 lbs
		TOTAL: 150 lbs
<sup>1</sup> - When selecting varieties of turfgrass, use the Virginia Crop Improvement Association (VCIA) recommended turfgrass variety list. Quality seed will bear a label indicating that they are approved by VCIA. A current turfgrass variety list is available at the local County Extension office or through VCIA at 804-746-4884 or at <a href="http://sudan.cses.vt.edu/html/Turf/turf/publications/publication2.2.html">http://sudan.cses.vt.edu/html/Turf/turf/publications/publication2.2.html</a>		
<sup>2</sup> - Use seasonal nurse crop in accordance with seeding dates as stated below: <div>February 16<sup>th</sup> - April ..... Annual Rye</div> <div>May 1<sup>st</sup> - August 15<sup>th</sup> ..... Foxtail Millet</div> <div>August 16<sup>th</sup> - October ..... Annual Rye</div> <div>November - February 15<sup>th</sup> ..... Winter Rye</div>		
<sup>3</sup> - Substitute Sericea lespedeza for Crownvetch east of Farmville, VA (May through September use hulled seed, at other periods, use unhulled Sericea). If Flatpea is used, increase rate to 30 lbs./acre. If Weeping Lovegrass is used include in any slope or low maintenance mixture during warmer seeding periods, increase to 30-40		
FERTILIZER & LIME		
<ul style="list-style-type: none"><li>• Apply 10-20-10 fertilizer at a rate of 500 lbs. / acre (or 12 lbs. / 1,000 sq. ft.)</li><li>• Apply Pulverized Agricultural Limestone at a rate of 2 tons/acre (or 90 lbs. / 1,000 sq. ft.)</li></ul>		
<b>NOTE:</b> - A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site. - Incorporate the lime and fertilizer into the top 4 – 6 inches of the soil by disking or by other means. - When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin #4, 2003 Nutrient Management for Development Sites at <a href="http://www.dcr.state.va.us/sw/e&amp;s.htm#pubs">http://www.dcr.state.va.us/sw/e&amp;s.htm#pubs</a>		

\*FOR WETLAND AREAS, PERMANENT SEED MIX SHALL BE ERNST-865 VA SOUTHERN PIEDMONT FACW MIX

TABLE 3.35-A (MU)		
ORGANIC MULCH MATERIALS AND APPLICATION RATES		
MULCHES	RATES:	
	Per Acre	Per 1,000 sq. ft.
Straw or Hay	1 ½ - 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 CONTROL HANDBOOK (JULY 1992)

- (TS) TEMPORARY SEEDING
- (PS) PERMANENT SEEDING
- (MU) MULCH
- (CIP) CULVERT INLET PROTECTION
- (SSF) "SUPER" SILT FENCE W/ WIRE SUPPORT (3.05)



TEMPORARY  
CONSTRUCTION ENTRANCE (CE)  
VESCH STD. 3.02  
N.T.S.

HURT&PROFFITT

INSPIRED / RESPONSIVE / TRUSTED

434.947.7796

2524 LANGHORNE ROAD

LYNCHBURG, VA 24501

HP

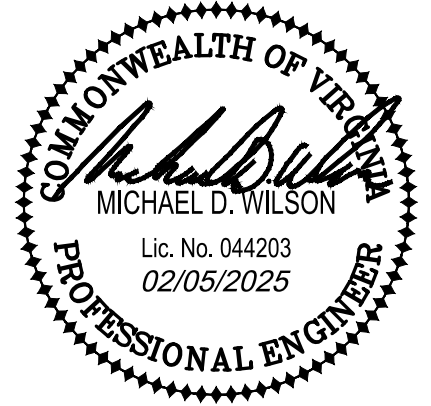
LAND DEVELOPMENT • ENVIRONMENTAL  
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GEOTECHNICAL • CONSTRUCTION TESTING & INSPECTION • CULTURAL RESOURCES

ESC NOTES  
FOR  
MARTIN DRIVE REGIONAL W.W.P.S.  
CAMPBELL COUNTY, VIRGINIA

PROJECT NO.	20230622
LAT.	37.313701
LONG.	-79.260669
DATE:	02/05/2025
DRAWN BY:	MSF
CHECKED BY:	MDW



BID SET

CCUSA # 80-2304

HURT&PROFFITT

SHEET NO. G-103

REV.

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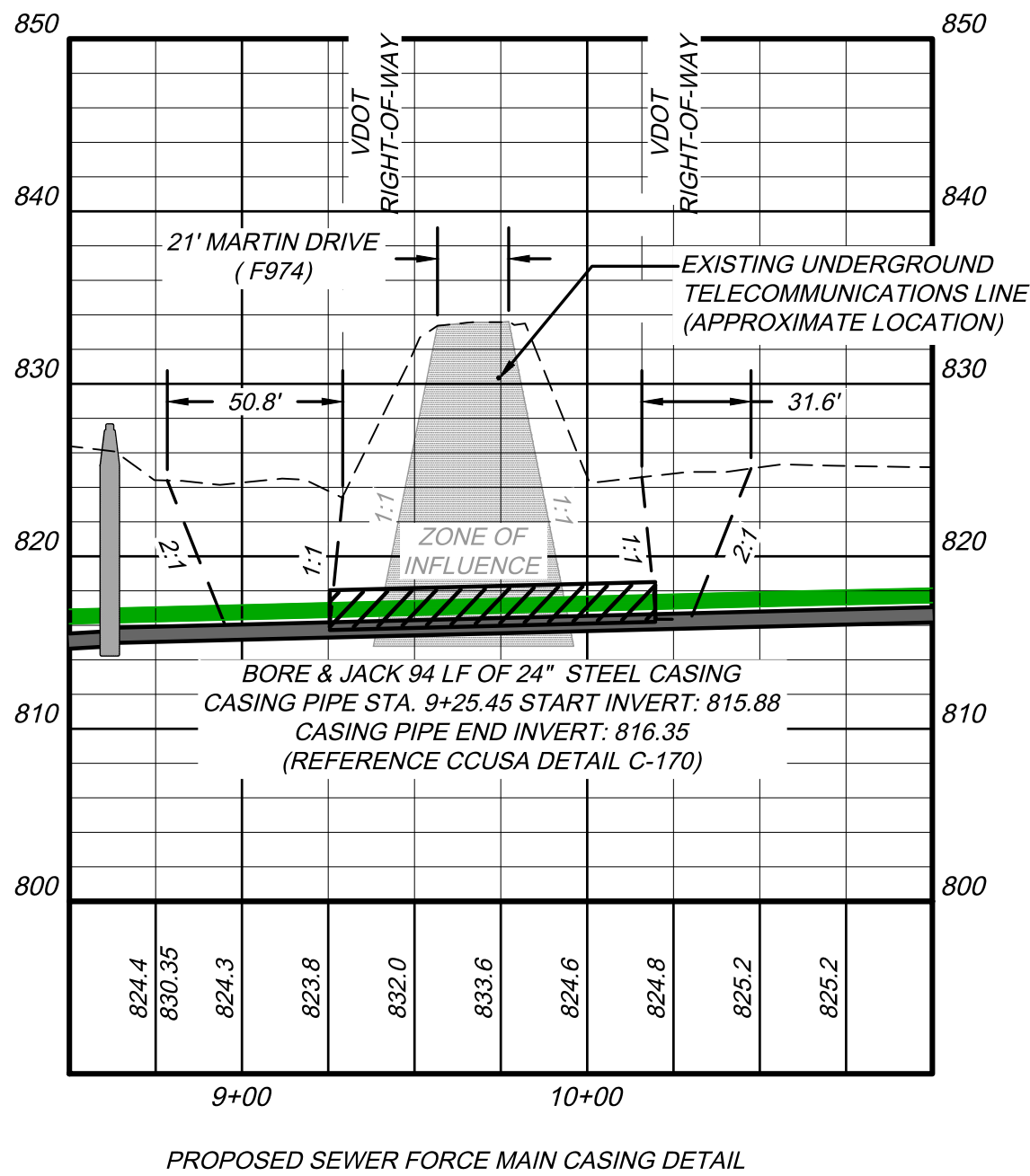


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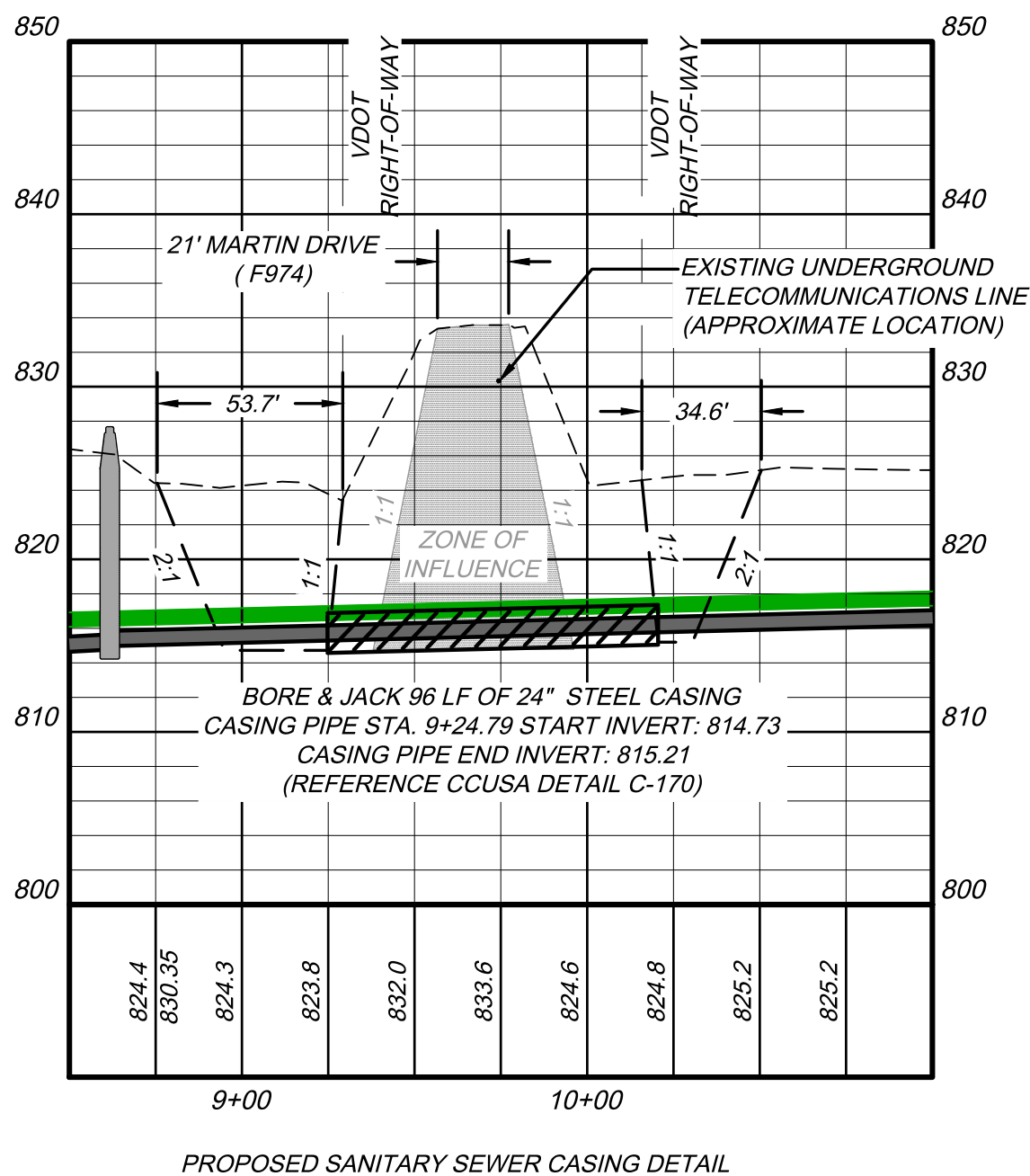
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CASING NOTE:

1. BASE OF BORE PIT SHOWN AS 30 LF. ACTUAL LENGTH TO BE DETERMINED BY CONTRACTOR.
2. BASE OF RECIEVING PIT SHOWN AS 10 LF ACTUAL LENGTH TO BE DETERMINED BY CONTRACTOR.



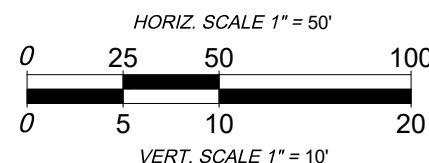
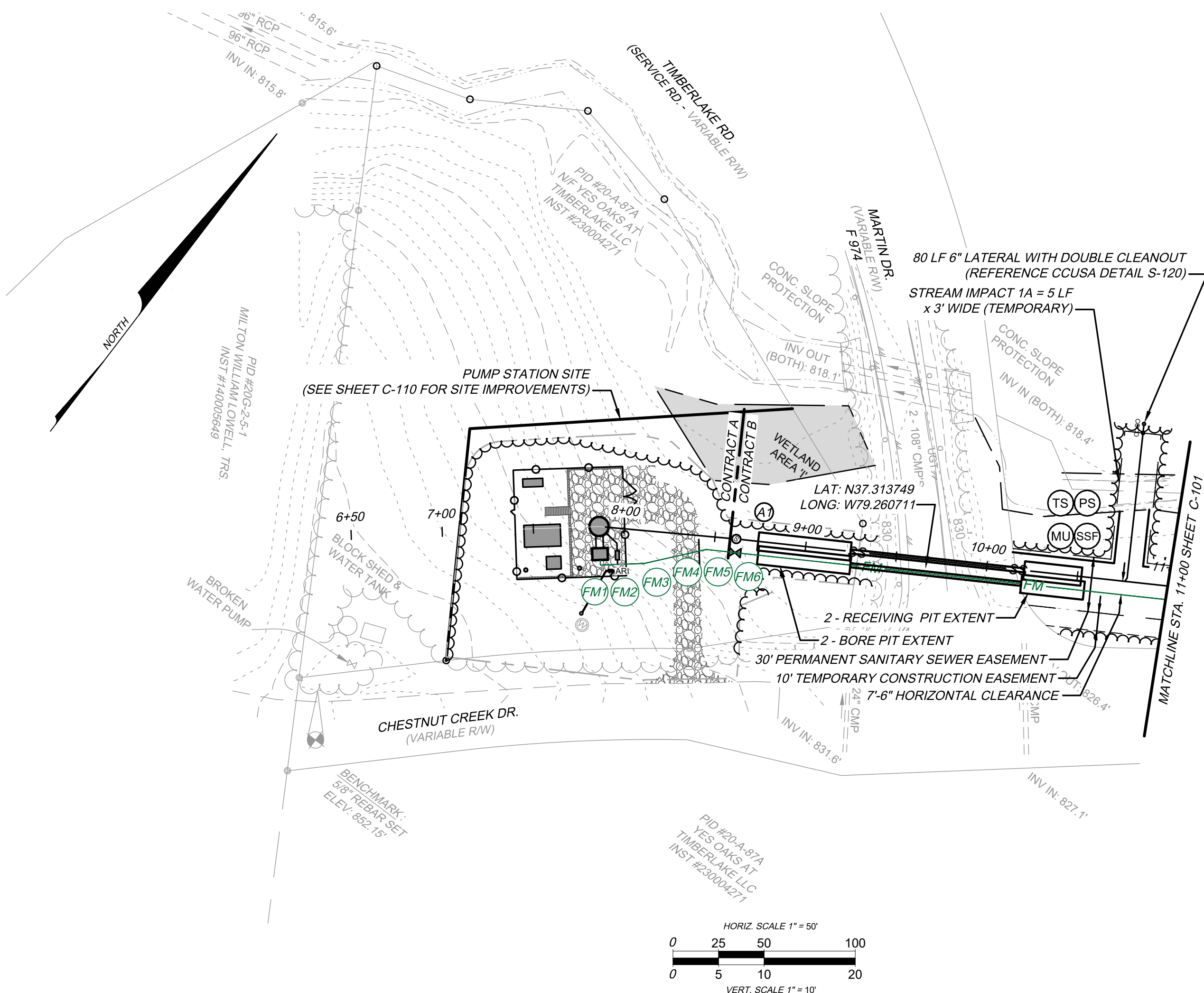
PROPOSED SEWER FORCE MAIN CASING DETAIL



PROPOSED SANITARY SEWER CASING DETAIL

CASING NOTE:

1. BASE OF BORE PIT SHOWN AS 30 LF. ACTUAL LENGTH TO BE DETERMINED BY CONTRACTOR.
2. BASE OF RECIEVING PIT SHOWN AS 10 LF ACTUAL LENGTH TO BE DETERMINED BY CONTRACTOR.



SANITARY STRUCTURE SCHEDULE

NEW SANITARY MANHOLE  
WITH WATERTIGHT FRAMES AND COVERS  
1' EXTENDED BASE  
48" DIA.; H = 12.80'  
STA: 8+61.71  
N: 3638632.23  
E: 11261602.62  
TOP: 827.60  
INV IN=815.00 FROM A2  
INV OUT=814.80

SEWER FORCE MAIN SCHEDULE

10" AIR / VACUUM RELEASE VALVE  
PER CCUSA DETAIL S-220  
AIR / VACUUM RELEASE VALVE SHALL BE ARI D-025L

FM1  
STA: 8+00.39  
INV= 825.10  
N: 3638583.13  
E: 11261581.02

(1) 10" 11.25° BEND  
STA: 8+12.45  
INV= 824.87  
N: 3638590.82  
E: 11261570.43

(1) 10" 45° VERTICAL BEND  
STA: 8+31.93  
INV= 824.51  
N: 3638606.47  
E: 11261583.62

(1) 10" 45° VERTICAL BEND  
STA: 8+40.41  
INV= 816.05  
N: 3638613.29  
E: 11261589.35

(1) 10" 22.5° BEND  
STA: 8+45.94  
INV= 816.15  
N: 3638617.73  
E: 11261593.10

(1) 10" PLUG VALVE & BOX  
STA: 8+61.58  
INV= 816.07  
N: 3638625.81  
E: 11261608.49

PUMP STATION:

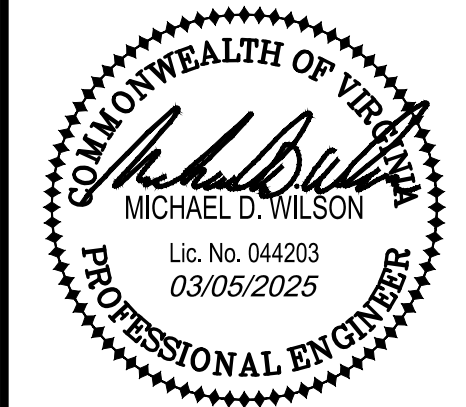
STATION: 7+70.42  
N: 3638583.85  
E: 11261509.36  
TOP: 830.00  
INV IN: 814.00 (GRAVITY SANITARY SEWER)  
INV IN: 823.75 (VALVE MH DRAIN)  
INV OUT: 825.00 (X2 FORCE MAIN)  
INV OUT: 825.00 (PUMP BY PASS)

FORCE MAIN NOTES

1. MAINTAIN POSITIVE GRADE THROUGHOUT THE LENGTH OF THE FORCE MAIN SO THAT NO HIGH SPOTS WILL BE FORMED.
2. ALL FORCE MAIN FITTINGS SHALL BE PROTECTO 401 LINED DUCTILE IRON WITH MECHANICAL JOINT RESTRAINTS. ALL PIPE WITHIN 50 FEET OF VALVES AND FITTINGS SHALL HAVE EXTERNAL BELL JOINT RESTRAINTS.

SANITARY SEWER PLAN AND PROFILE STA. 6+50 - 11+00  
FOR  
MARTIN DRIVE REGIONAL W.W.P.S.  
CAMPBELL COUNTY, VIRGINIA

PROJECT NO. 20230622  
LAT. 37.313701  
LONG. -79.260669  
DATE: 03/05/2025  
DRAWN BY: MSF  
CHECKED BY: MDW

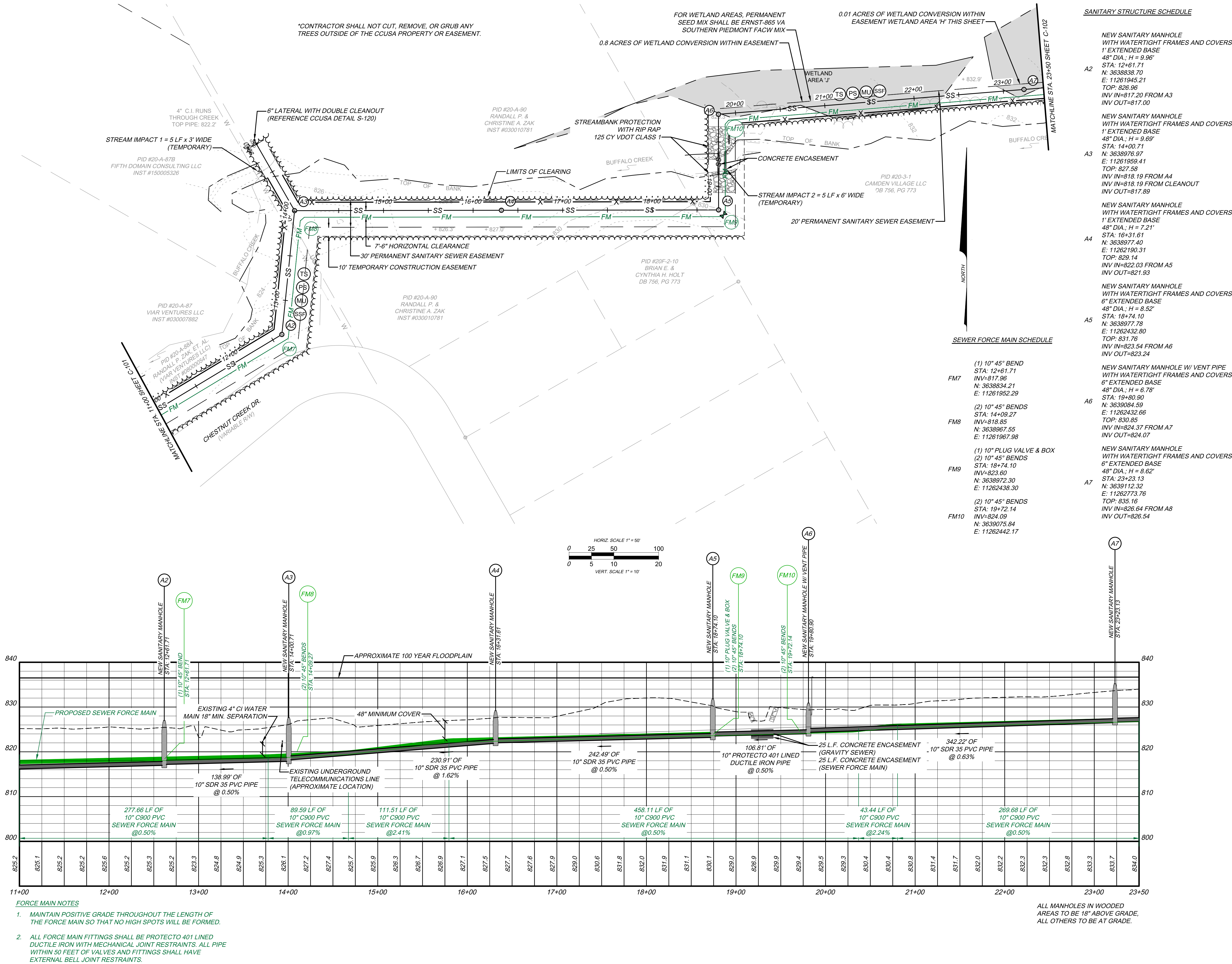


BID SET

CCUSA # 80-2304



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HURT&PROFFITT

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SANITARY SEWER PLAN AND PROFILE STA. 11+00 - 23+50

FOR

MARTIN DRIVE REGIONAL W.W.P.S.

CAMPBELL COUNTY, VIRGINIA

PROJECT NO. 20230622

LAT. 37.313701

LONG. -79.260669

DATE: 03/05/2025

DRAWN BY: MSF

CHECKED BY: MDW

COMMONWEALTH OF VIRGINIA

MICHAEL D. WILSON

Lic. No. 044203

03/05/2025

PROFESSIONAL ENGINEER

BID SET

CCUSA # 80-2304

HURT&PROFFITT

SHEET NO. C-101

REV. ----



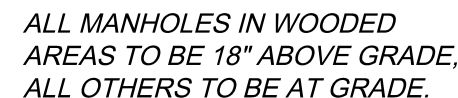
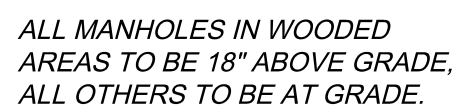
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SANITARY STRUCTURE SCHEDULE

**NEW SANITARY MANHOLE  
WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 8.54'  
STA: 0+74.00  
N: 3639079.64  
E: 11263147.88  
TOP: 837.31  
INV OUT=828.77**

1. MAINTAIN POSITIVE GRADE THROUGHOUT THE LENGTH OF THE FORCE MAIN SO THAT NO HIGH SPOTS WILL BE FORMED.
2. ALL FORCE MAIN FITTINGS SHALL BE PROTECTO 401 LINED DUCTILE IRON WITH MECHANICAL JOINT RESTRAINTS. ALL PIPE WITHIN 50 FEET OF VALVES AND FITTINGS SHALL HAVE EXTERNAL BELL JOINT RESTRAINTS.



*SANITARY SEWER PLAN AND PROFILE STA. 23+50 - 35+50  
FOR  
MARTIN DRIVE REGIONAL W.W.P.S.  
CAMPBELL COUNTY, VIRGINIA*

COMMONWEALTH OF VIRGINIA  
MICHAEL D. WILSON  
Lic. No. 044203  
03/05/2025  
PROFESSIONAL ENGINEER

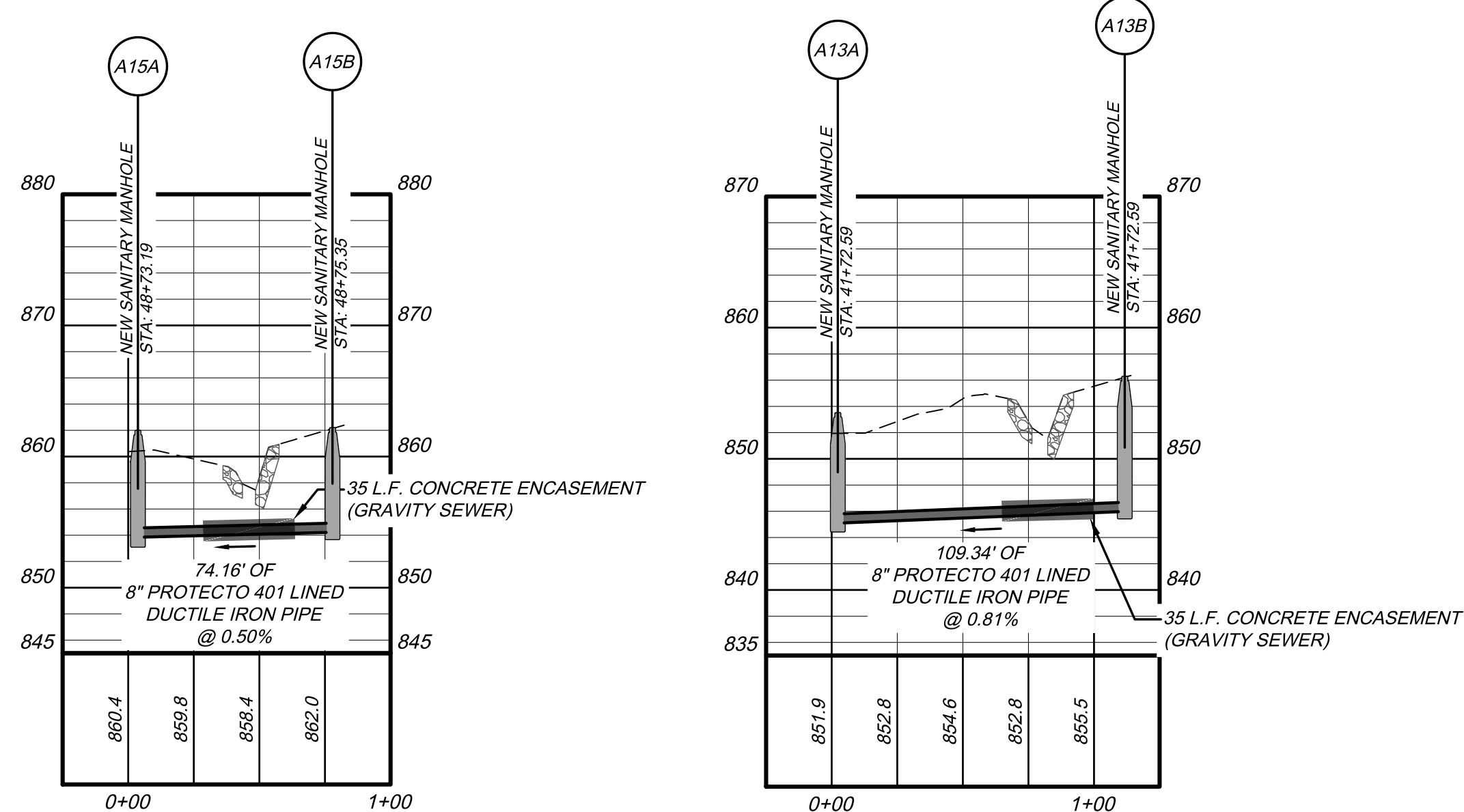
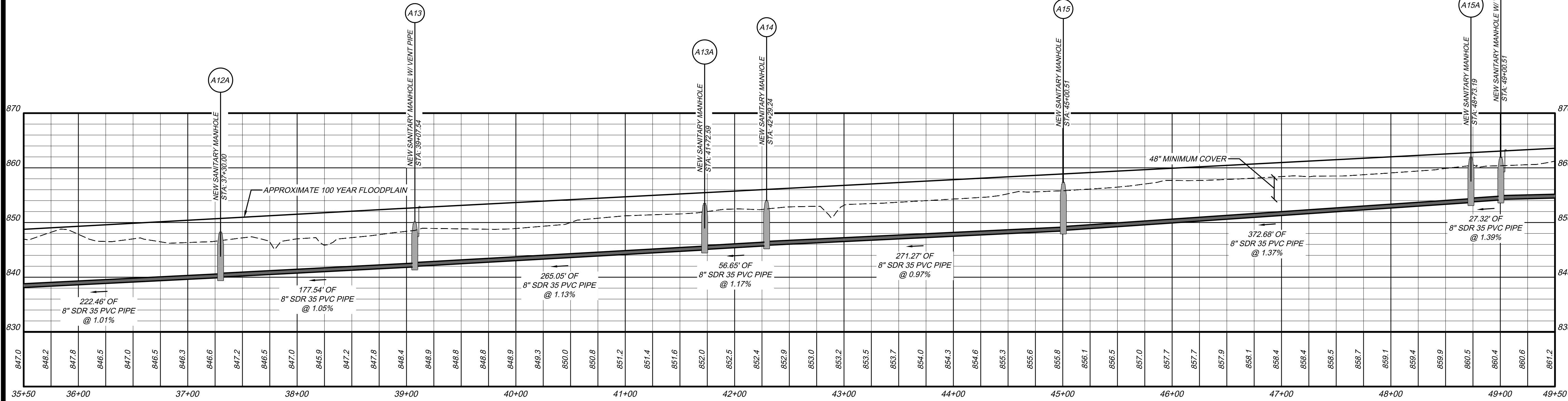
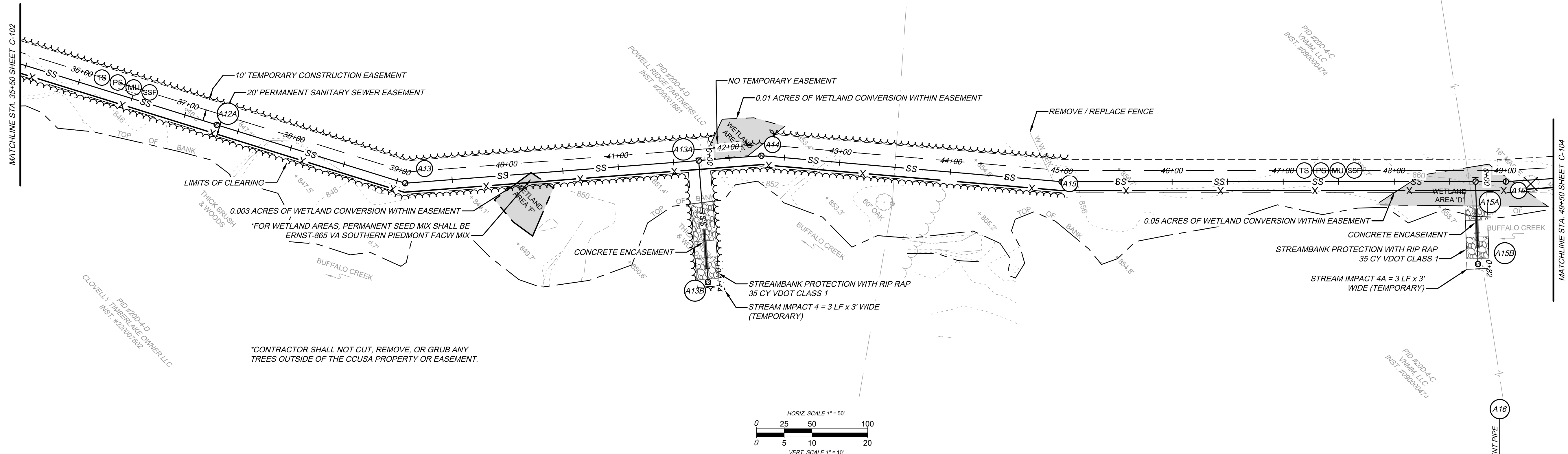
**CCUSA # 80-2304**

<b>HURT&amp;PROFFITT</b>	
SHEET NO. C-102	REV. ----



THIS SHEET IS INTENDED TO BE REPRODUCED AT 20X36". REPRODUCTION OF THIS SHEET AT A DIFFERENT SIZE THAN INTENDED SHALL VOID THE SCALE SHOWN ON THE SHEET.

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#### SANITARY STRUCTURE SCHEDULE

- NEW SANITARY MANHOLE  
WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 10.22'  
STA: 41+72.59  
N: 3640114.31  
E: 11264214.56  
TOP: 856.22  
INV OUT=846.00
- NEW SANITARY MANHOLE  
WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 7.90'  
STA: 48+75.35  
N: 3640025.03  
E: 11264683.53  
TOP: 862.14  
INV OUT=854.24

#### SANITARY STRUCTURE SCHEDULE

- NEW SANITARY MANHOLE  
WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 8.26'  
STA: 37+30.00  
N: 3639893.35  
E: 11263806.27  
TOP: 848.20  
INV IN=840.04 FROM A13  
INV OUT=839.94
- NEW SANITARY MANHOLE W/ VENT PIPE  
WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 8.15'  
STA: 39+07.54  
N: 3639979.19  
E: 11263961.67  
TOP: 850.05  
INV IN=842.00 FROM A13A  
INV OUT=841.80
- NEW SANITARY MANHOLE  
WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 8.44'  
STA: 41+72.59  
N: 3640183.81  
E: 11264130.15  
TOP: 853.44  
INV IN=845.10 FROM A14  
INV IN=845.11 FROM A13B  
INV OUT=845.00
- NEW SANITARY MANHOLE  
WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 8.22'  
STA: 42+29.24  
N: 3640227.55  
E: 11264166.16  
TOP: 853.98  
INV IN=845.86 FROM A15  
INV OUT=845.76
- NEW SANITARY MANHOLE  
WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 8.83'  
STA: 45+00.51  
N: 3640406.15  
E: 11264370.34  
TOP: 857.31  
INV IN=848.58 FROM A15A  
INV OUT=848.48
- NEW SANITARY MANHOLE  
WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 8.26'  
STA: 48+73.19  
N: 3640674.84  
E: 11264628.59  
TOP: 861.93  
INV IN=853.77 FROM A16  
INV IN=853.87 FROM A15B  
INV OUT=853.67
- NEW SANITARY MANHOLE W/ VENT PIPE  
WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 7.73'  
STA: 49+00.51  
N: 3640694.54  
E: 11264647.52  
TOP: 861.89  
INV IN=854.25 FROM A17  
INV OUT=854.15

ALL MANHOLES IN WOODED  
AREAS TO BE 18" ABOVE GRADE,  
ALL OTHERS TO BE AT GRADE.

SANITARY SEWER PLAN AND PROFILE STA. 35+50 - 49+50  
FOR  
MARTIN DRIVE REGIONAL W.W.P.S.  
CAMPBELL COUNTY, VIRGINIA

PROJECT NO. 20230622  
LAT. 37.313701  
LONG. -79.260669  
DATE: 02/05/2025  
DRAWN BY: MSF  
CHECKED BY: MDW

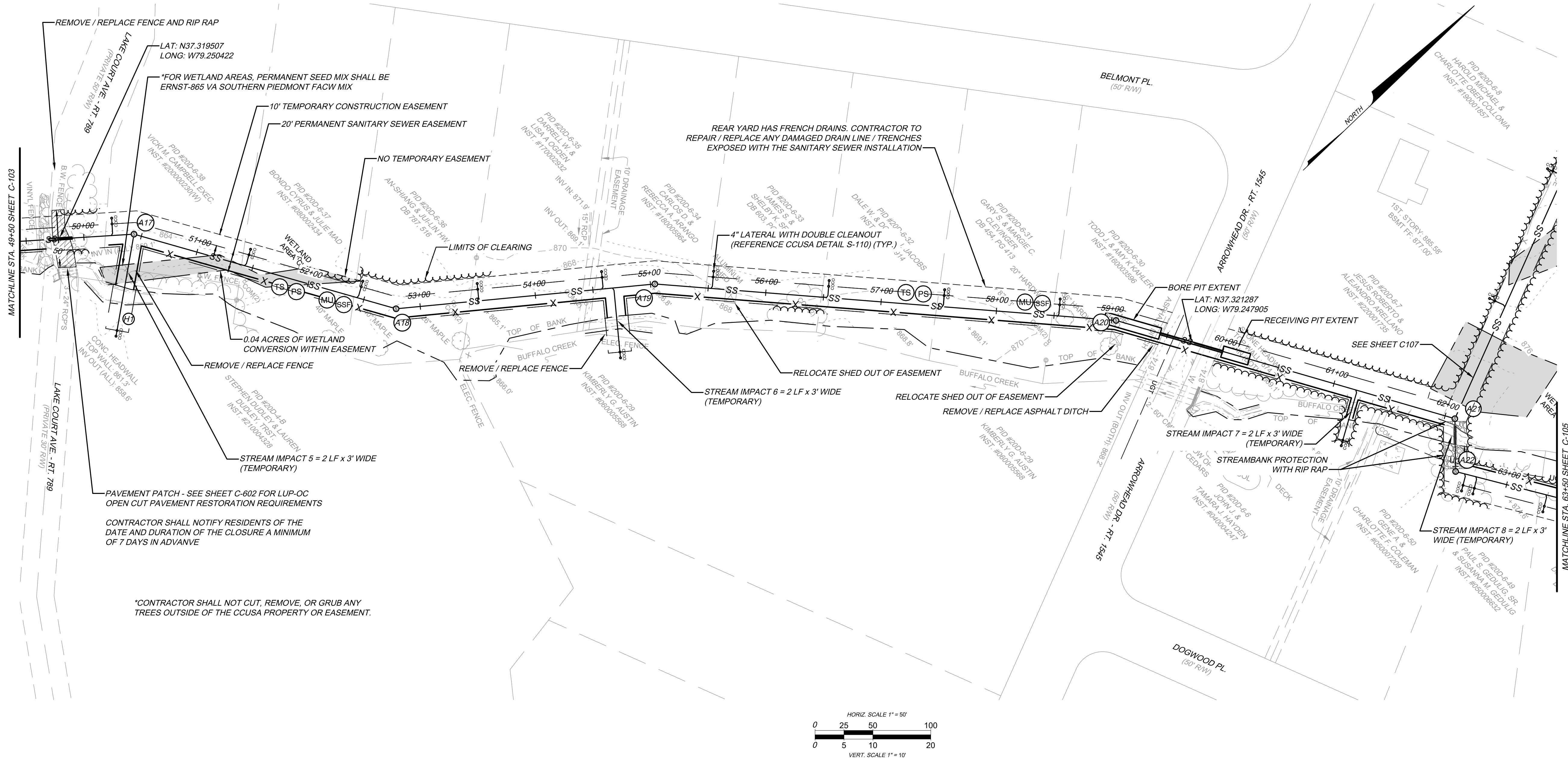


BID SET

CCUSA # 80-2304

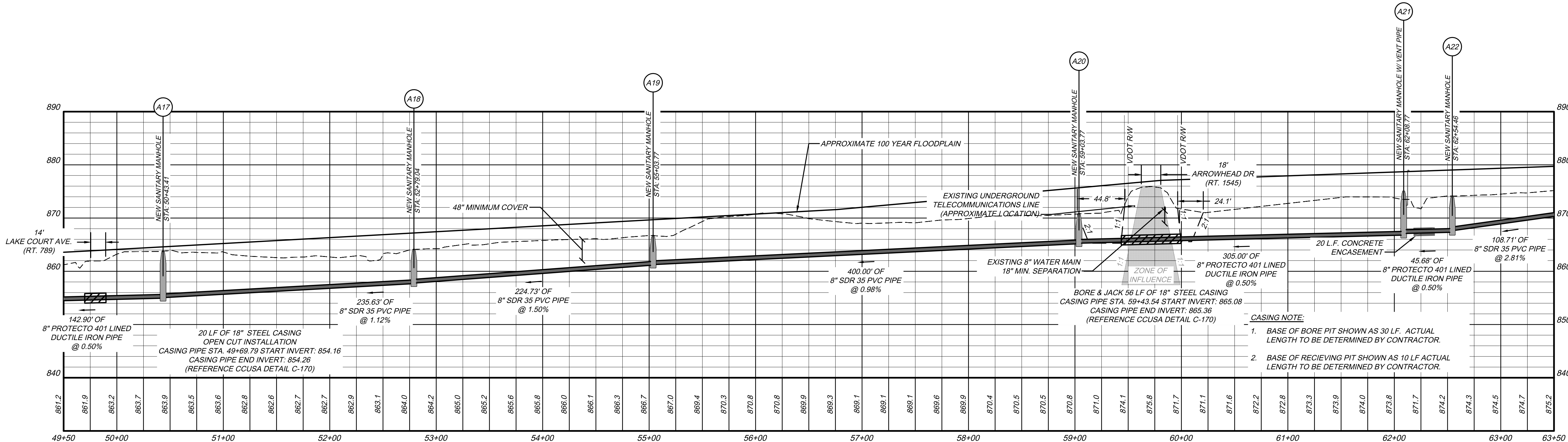


THIS SHEET IS INTENDED TO BE REPRODUCED AT 20X30". REPRODUCTION OF THIS SHEET AT A DIFFERENT SIZE THAN INTENDED SHALL VOID THE SCALE SHOWN ON THE SHEET.



SANITARY STRUCTURE SCHEDULE

- NEW SANITARY MANHOLE WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 8.82'  
STA: 50+43.41  
N: 3640803.55  
E: 11264739.91  
TOP: 863.78  
INV IN=855.06 FROM A18  
INV IN=855.06 FROM CLEANOUT  
INV OUT=854.96
- NEW SANITARY MANHOLE WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 6.40'  
STA: 52+79.04  
N: 3640922.18  
E: 11264943.50  
TOP: 864.10  
INV IN=857.80 FROM A19  
INV OUT=857.70
- NEW SANITARY MANHOLE WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 5.51'  
STA: 55+03.77  
N: 3641098.29  
E: 11265083.10  
TOP: 866.69  
INV IN=861.28 FROM A20  
INV OUT=861.18
- NEW SANITARY MANHOLE WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 5.59'  
STA: 59+03.77  
N: 3641363.86  
E: 11265382.22  
TOP: 870.79  
INV IN=865.30 FROM A21  
INV OUT=865.20
- NEW SANITARY MANHOLE W/ VENT PIPE WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 8.20'  
STA: 62+08.77  
N: 3641516.11  
E: 11265646.51  
TOP: 875.02  
INV IN=867.12 FROM A22  
INV IN=867.12 FROM J1  
INV OUT=866.82
- NEW SANITARY MANHOLE WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 6.76'  
STA: 62+54.46  
N: 3641484.90  
E: 11265679.87  
TOP: 874.11  
INV IN=867.65 FROM A23  
INV OUT=867.35



ALL MANHOLES IN WOODED AREAS TO BE 18" ABOVE GRADE.  
ALL OTHERS TO BE AT GRADE.

SANITARY SEWER PLAN AND PROFILE STA. 49+50 - 63+50  
FOR  
MARTIN DRIVE REGIONAL W.W.P.S.  
CAMPBELL COUNTY, VIRGINIA

PROJECT NO. 20230622  
LAT. 37.313701  
LONG. -79.260669  
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DRAWN BY: MSF  
CHECKED BY: MDW



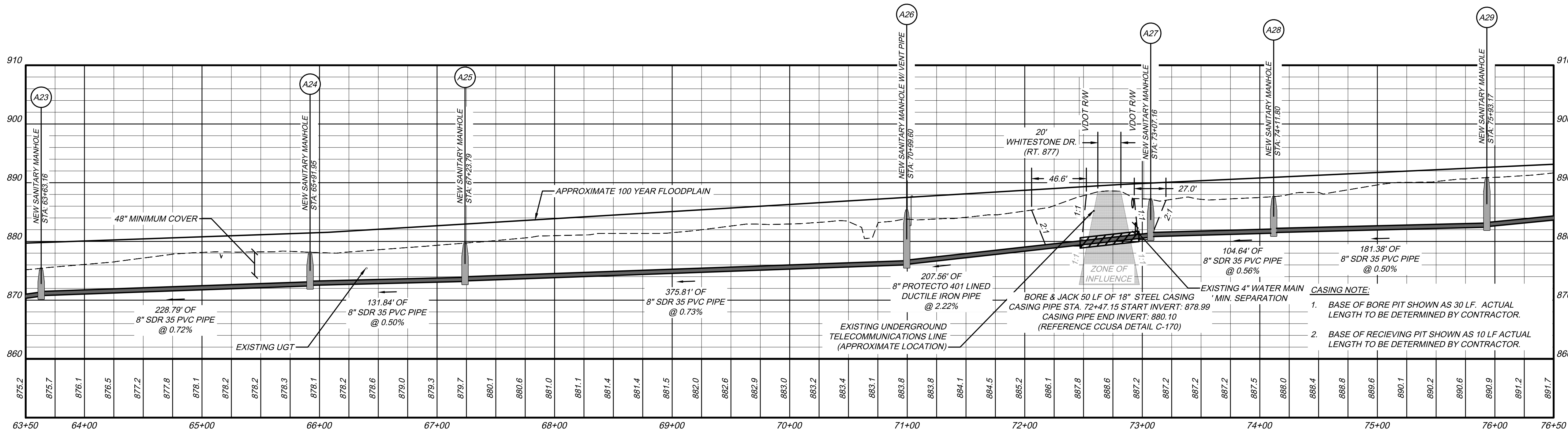
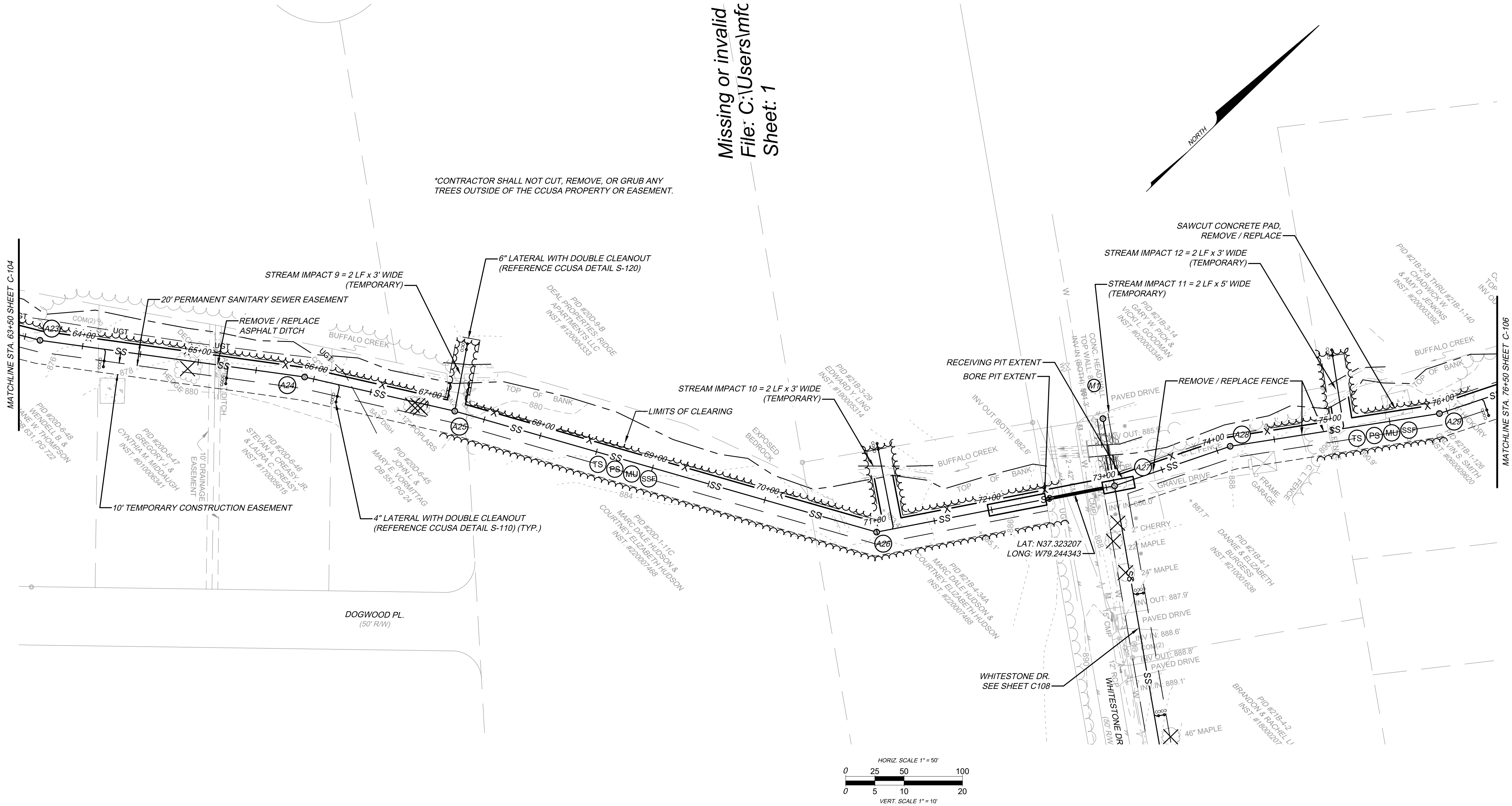
BID SET

CCUSA # 80-2304



THIS SHEET IS INTENDED TO BE REPRODUCED AT 24X36". REPRODUCTION OF THIS SHEET AT A DIFFERENT SIZE THAN INTENDED SHALL VOID THE SCALE SHOWN ON THE SHEET.

Feb 07, 2025 - 10:00am - Z:\02\20230622\Engineering\CAD\230622 - PLAN AND PROFILE.dwg



SANITARY STRUCTURE SCHEDULE

- NEW SANITARY MANHOLE WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 4.71'  
STA: 63+63.16  
N: 3641542.03  
E: 11265772.35  
TOP: 875.41  
INV IN=870.80 FROM A24  
INV OUT=870.70
- NEW SANITARY MANHOLE WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 5.71'  
STA: 65+91.95  
N: 3641683.60  
E: 11265952.07  
TOP: 878.15  
INV IN=872.54 FROM A25  
INV OUT=872.44
- NEW SANITARY MANHOLE WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 6.52'  
STA: 67+23.79  
N: 3641756.01  
E: 11266062.25  
TOP: 879.72  
INV IN=873.30 FROM A26  
INV IN=873.30 FROM CLEANOUT  
INV OUT=873.20
- NEW SANITARY MANHOLE W/ VENT PIPE WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 9.28'  
STA: 70+99.60  
N: 3641944.61  
E: 11266387.30  
TOP: 885.31  
INV IN=876.13 FROM A27  
INV OUT=876.03
- NEW SANITARY MANHOLE WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 6.45'  
STA: 73+07.16  
N: 3642118.90  
E: 11266500.01  
TOP: 887.19  
INV IN=880.84 FROM A28  
INV IN=881.04 FROM M1  
INV IN=881.04 FROM N1  
INV OUT=880.74
- NEW SANITARY MANHOLE WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 6.20'  
STA: 74+11.80  
N: 3642213.75  
E: 11266544.20  
TOP: 887.63  
INV IN=881.53 FROM A29  
INV OUT=881.43
- NEW SANITARY MANHOLE WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 8.43'  
STA: 75+93.17  
N: 3642362.35  
E: 11266648.21  
TOP: 890.87  
INV IN=882.54 FROM A30  
INV OUT=882.44

**HURT & PROFFITT**  
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SANITARY SEWER PLAN AND PROFILE STA. 63+50 - 76+50  
FOR  
MARTIN DRIVE REGIONAL W.W.P.S.  
CAMPBELL COUNTY, VIRGINIA

PROJECT NO. 20230622  
LAT. 37.313701  
LONG. -79.260669  
DATE: 02/05/2025  
DRAWN BY: MSF  
CHECKED BY: MDW



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CCUSA # 80-2304

**HURT & PROFFITT**

SHEET NO.  
C-105

REV.  
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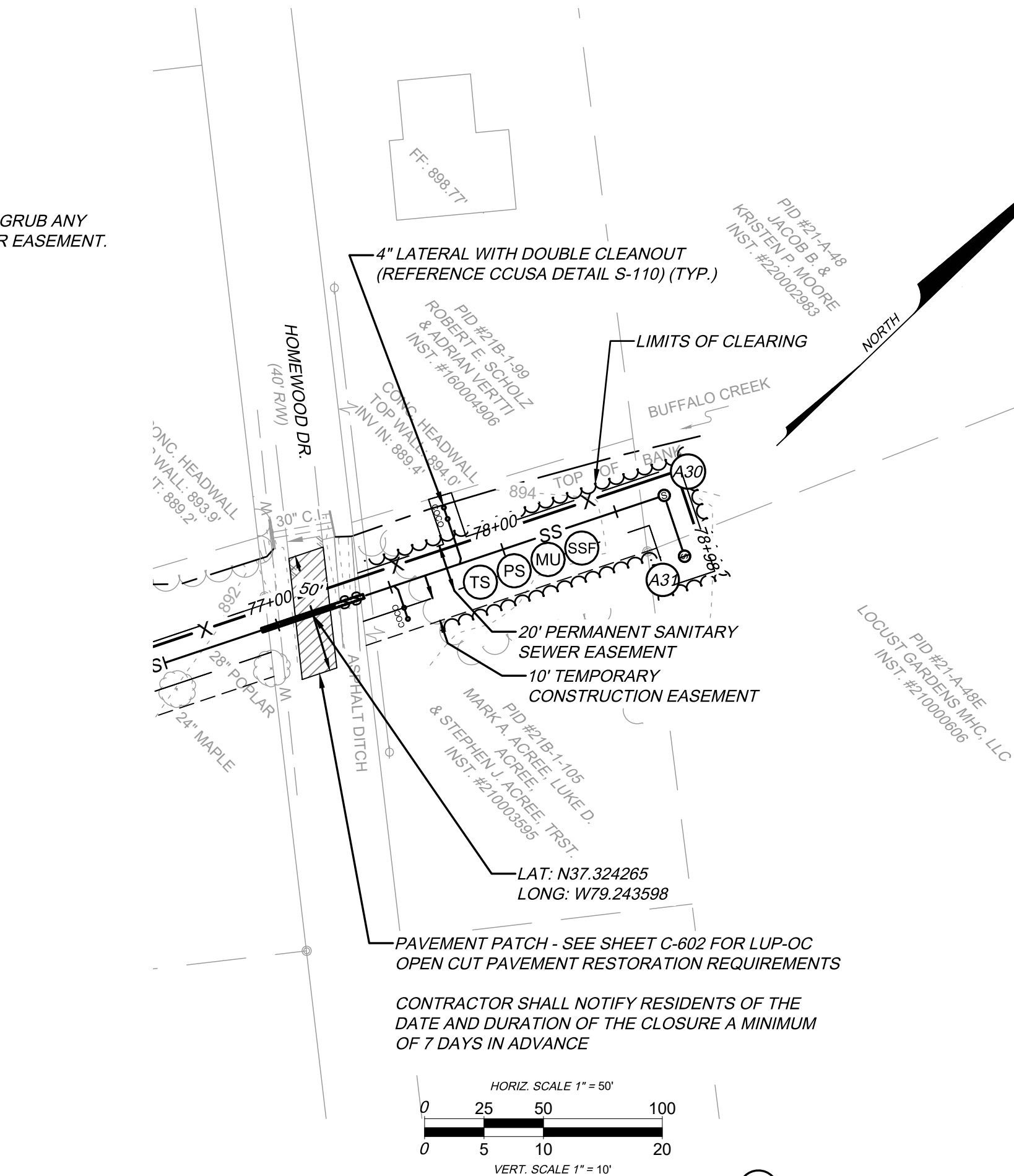
ALL MANHOLES IN WOODED AREAS TO BE 18" ABOVE GRADE. ALL OTHERS TO BE AT GRADE.



THIS SHEET IS INTENDED TO BE REPRODUCED AT 24X36". REPRODUCTION OF THIS SHEET AT A DIFFERENT SIZE THAN INTENDED SHALL VOID THE SCALE SHOWN ON THE SHEET.

Feb 07, 2025 - 10:08am Z:\2023\030622\Engineering\CAD\33602 - PLAN AND PROFILE.dwg

\*CONTRACTOR SHALL NOT CUT, REMOVE, OR GRUB ANY TREES OUTSIDE OF THE CCUSA PROPERTY OR EASEMENT.

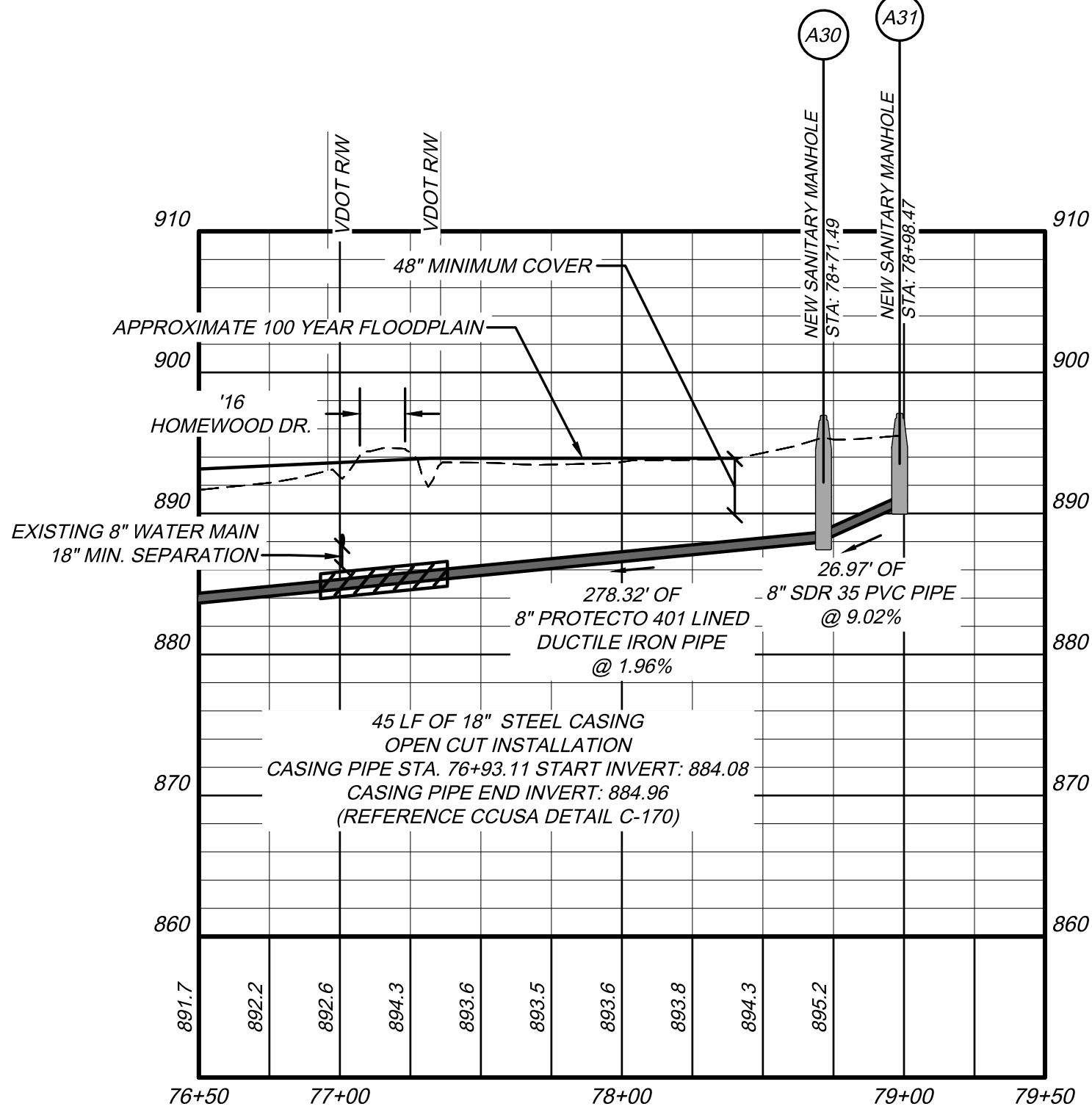


SANITARY STRUCTURE SCHEDULE

- NEW SANITARY MANHOLE  
WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 8.88'  
STA: 78+71.49  
N: 3642613.87  
E: 11266767.36  
TOP: 896.88  
INV IN=888.10 FROM A31  
INV OUT=888.00
- NEW SANITARY MANHOLE  
WITH WATERTIGHT FRAMES AND COVERS  
6" EXTENDED BASE  
48" DIA.; H = 6.48'  
STA: 78+88.47  
N: 3642602.33  
E: 11266791.74  
TOP: 897.01  
INV OUT=890.53

NOTE:

- ONE LANE OF TRAFFIC MUST BE MAINTAINED AT ALL TIMES.
- DURING NON-WORKING HOURS ALL OPEN ROAD CUTS SHALL BE PROTECTED BY STEEL PLATES OR BACKFILLED WITH VDOT #21A OR #21B STONE. IF STEEL PLATES ARE TO BE USED, CONSPICUITY MARKINGS AND "STEEL PLATE AHEAD" SIGNS ARE REQUIRED PER SECTION 6G.15 "STEEL PLATE AND CONSPICUITY AND WARNING" OF THE VIRGINIA WORK AREA PROTECTION MANUAL.



ALL MANHOLES IN WOODED AREAS TO BE 18" ABOVE GRADE, ALL OTHERS TO BE AT GRADE.

**HURT & PROFFITT**  
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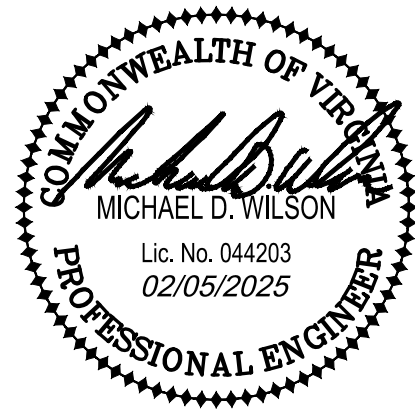


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SANITARY SEWER PLAN AND PROFILE STA. 76+50 - 79+50

FOR  
MARTIN DRIVE REGIONAL W.W.P.S.  
CAMPBELL COUNTY, VIRGINIA

PROJECT NO.	20230622
LAT.	37.313701
LONG.	-79.260669
DATE:	02/05/2025
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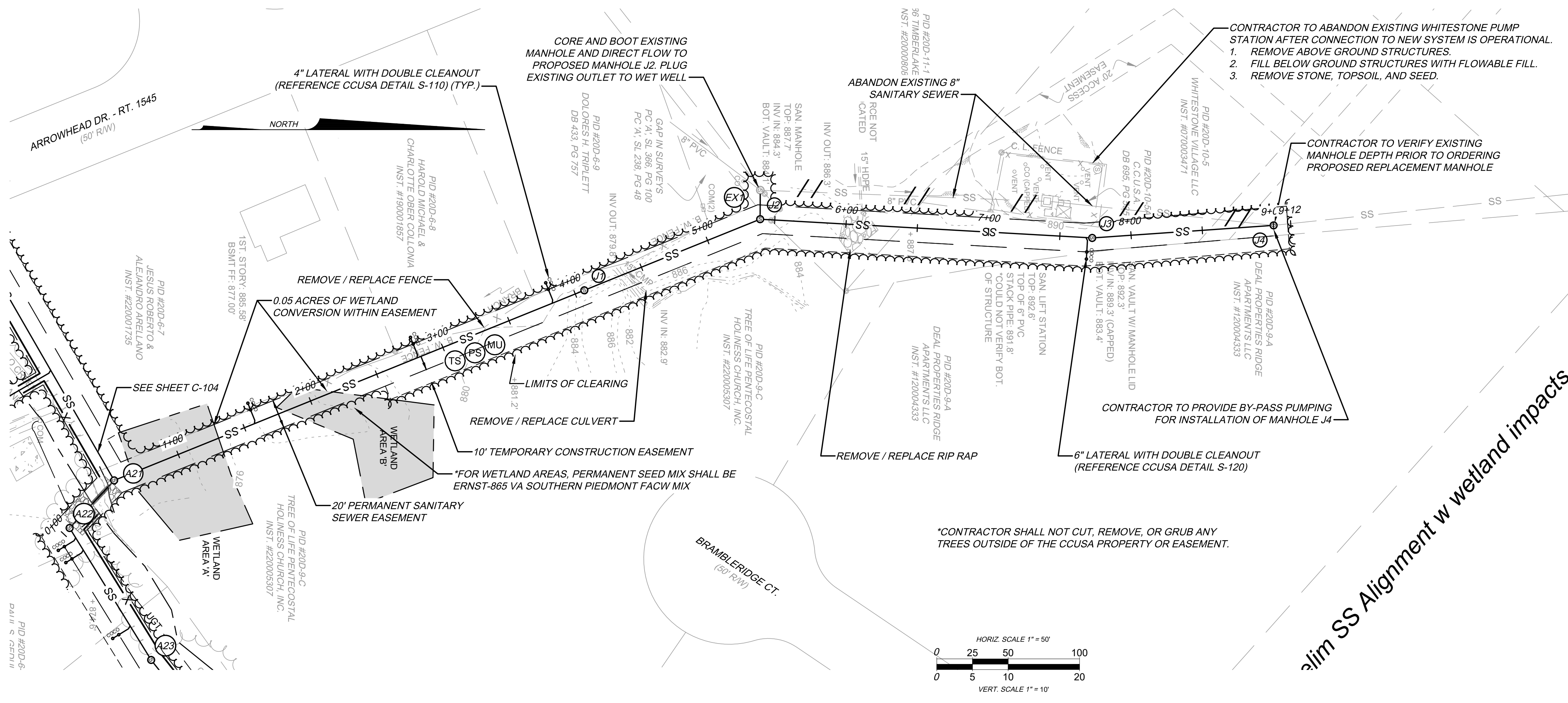
CCUSA # 80-2304

**HURT & PROFFITT**

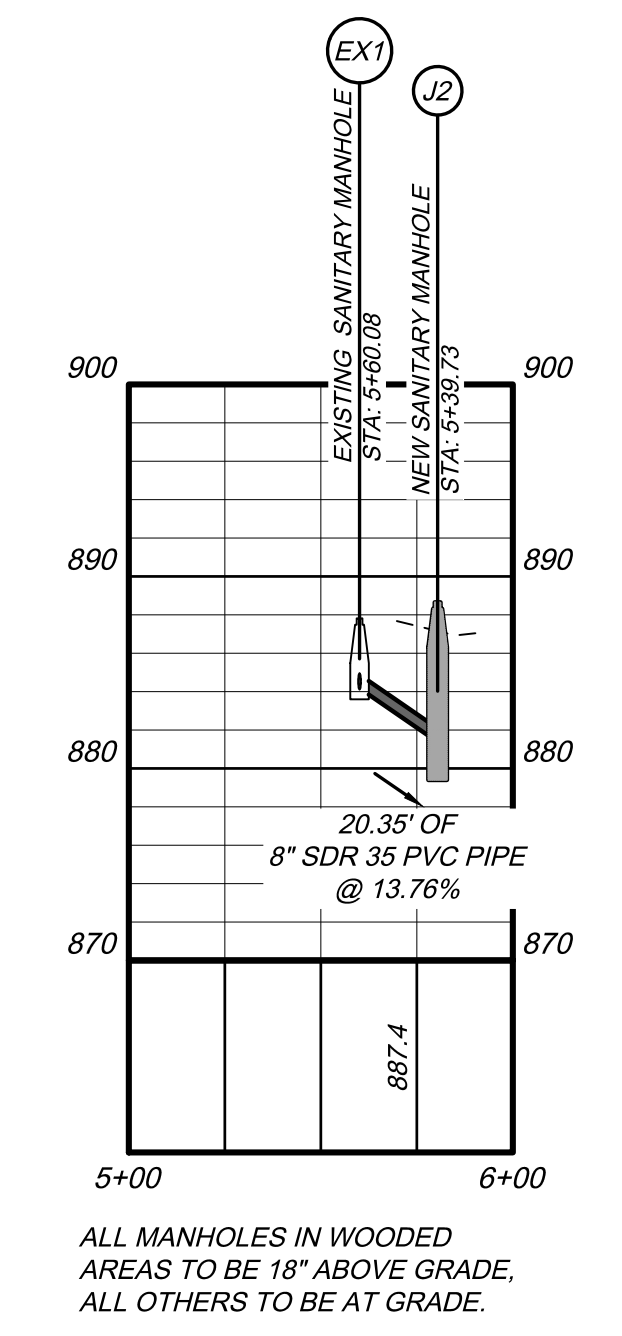
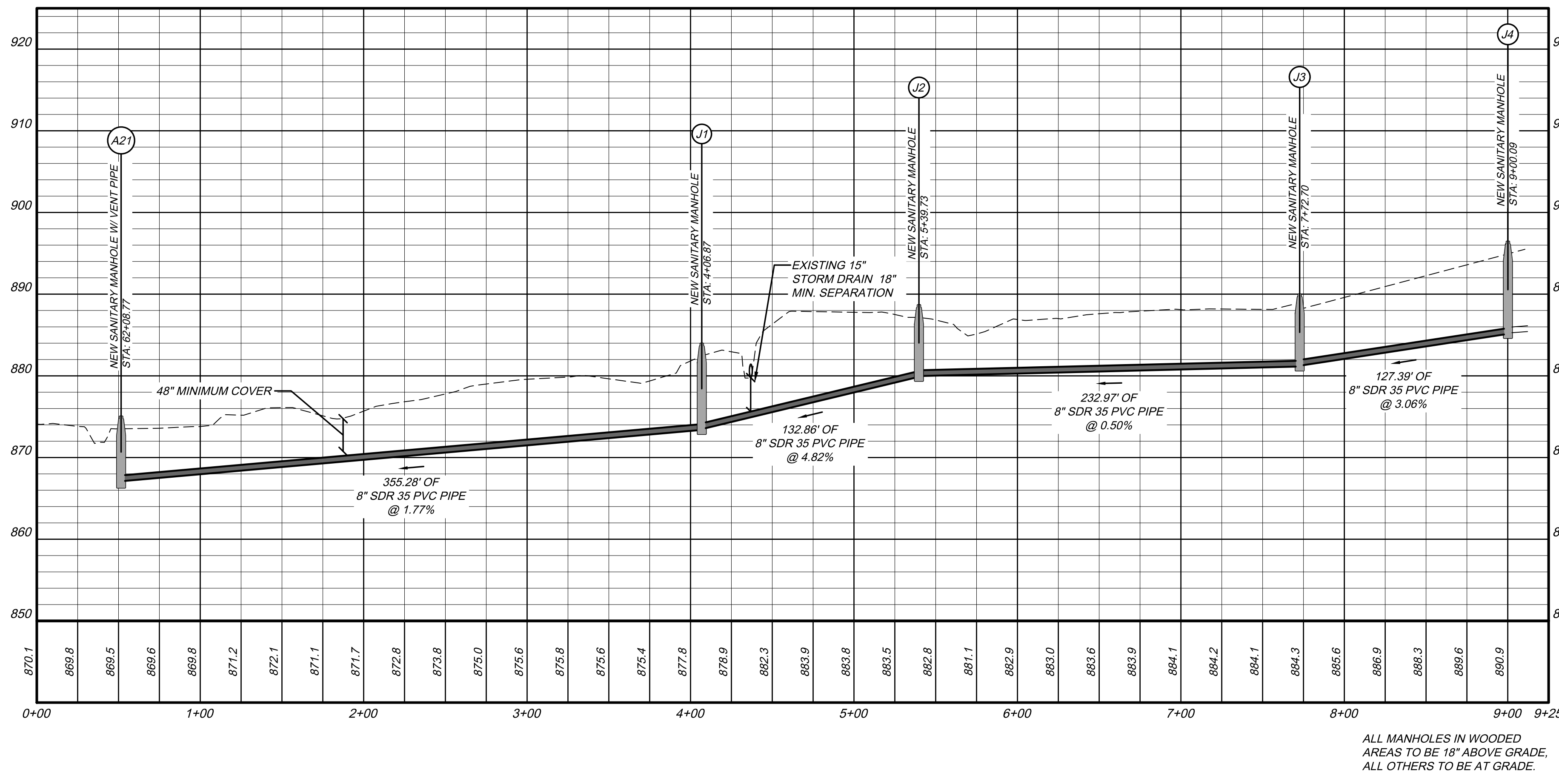
SHEET NO.	REV.
C-106	----



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SANITARY STRUCTURE SCHEDULE	
EXISTING	SANITARY MANHOLE 48" DIA.; H = 3.72'
STA:	5+60.08
N:	3641968.70
E:	11265443.11
TOP:	887.82
INV IN=	884.30 FROM EXISTING 8" PVC SANITARY SEWER
INV OUT=	884.20 TO BE PLUGGED
INV OUT=	884.10
NEW SANITARY MANHOLE WITH WATERTIGHT FRAMES AND COVERS	
6" EXTENDED BASE	
48" DIA.; H = 10.54'	
STA:	4+06.87
N:	3641845.46
E:	11265513.28
TOP:	883.94
INV IN=	873.50 FROM J2
INV OUT=	873.40
NEW SANITARY MANHOLE WITH WATERTIGHT FRAMES AND COVERS	
6" EXTENDED BASE	
48" DIA.; H = 8.73'	
STA:	5+39.73
N:	3641968.63
E:	11265463.46
TOP:	888.65
INV IN=	881.40 FROM EX1
INV IN=	880.00 FROM J3
INV OUT=	879.90
NEW SANITARY MANHOLE WITH WATERTIGHT FRAMES AND COVERS	
6" EXTENDED BASE	
48" DIA.; H = 8.81'	
STA:	7+72.70
N:	3642201.23
E:	11265476.59
TOP:	889.97
INV IN=	881.26 FROM J4
INV OUT=	881.16
NEW SANITARY MANHOLE WITH WATERTIGHT FRAMES AND COVERS	
6" EXTENDED BASE	
48" DIA.; H = 11.27'	
STA:	9+00.00
N:	3642328.31
E:	11265467.79
TOP:	896.43
INV IN=	885.26 FROM EX3
INV OUT=	885.16



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SANITARY SEWER PLAN AND PROFILE STA. 0+00 - 9+25

FOR

MARTIN DRIVE REGIONAL W.W.P.S.

CAMPBELL COUNTY, VIRGINIA

PROJECT NO. 20230622

LAT. 37.313701

LONG. -79.260669

DATE: 02/05/2025

DRAWN BY: MSF

CHECKED BY: MDW

COMMONWEALTH OF VIRGINIA

MICHAEL D. WILSON

Lic. No. 044203

02/05/2025

PROFESSIONAL ENGINEER

BID SET

CCUSA # 80-2304

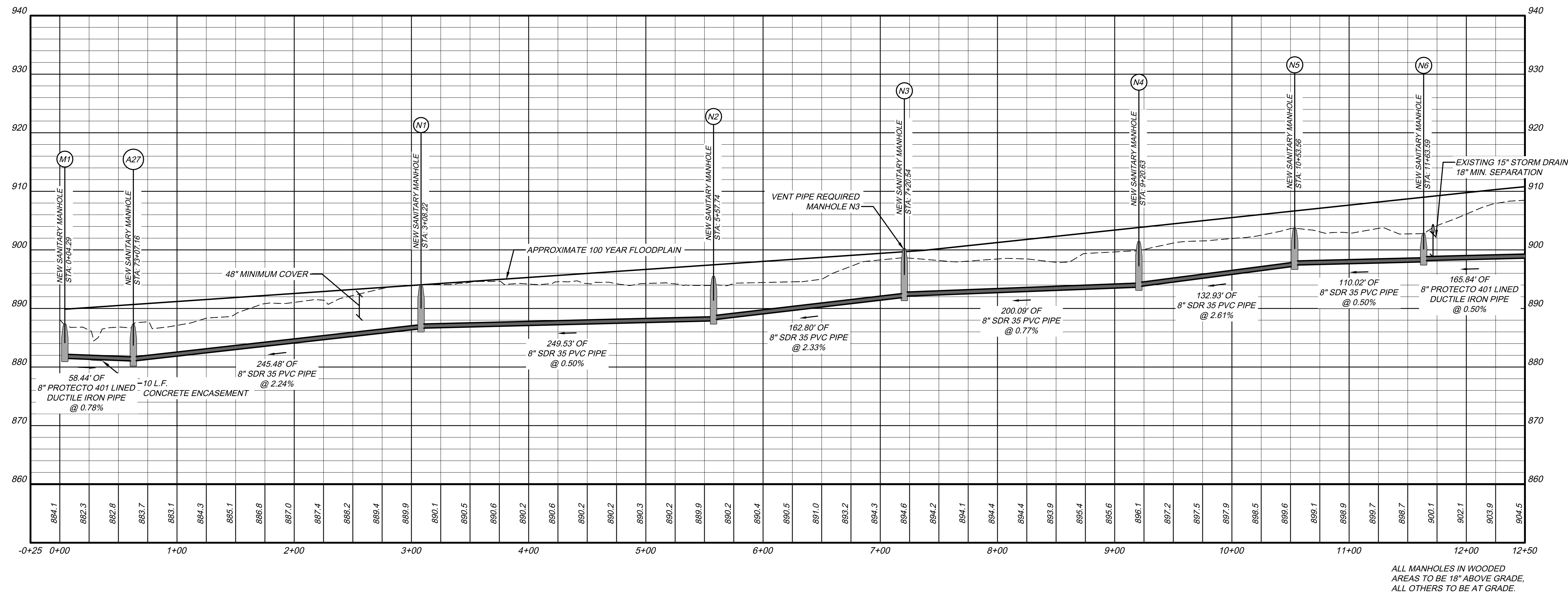
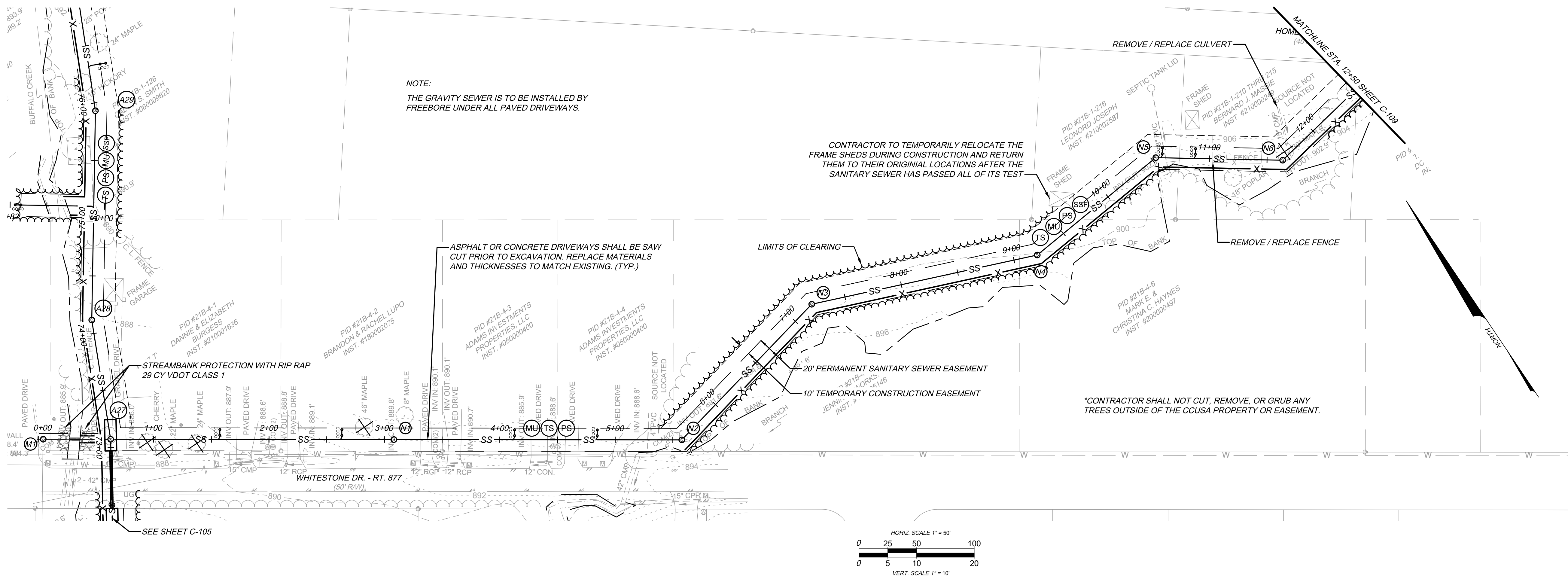
HURT & PROFFITT

SHEET NO. C-107

REV. ----

Feb 07, 2025 - 10:00am Z:\2023\030622\Engineering\CAD\30622\_Plan and Profile.dwg

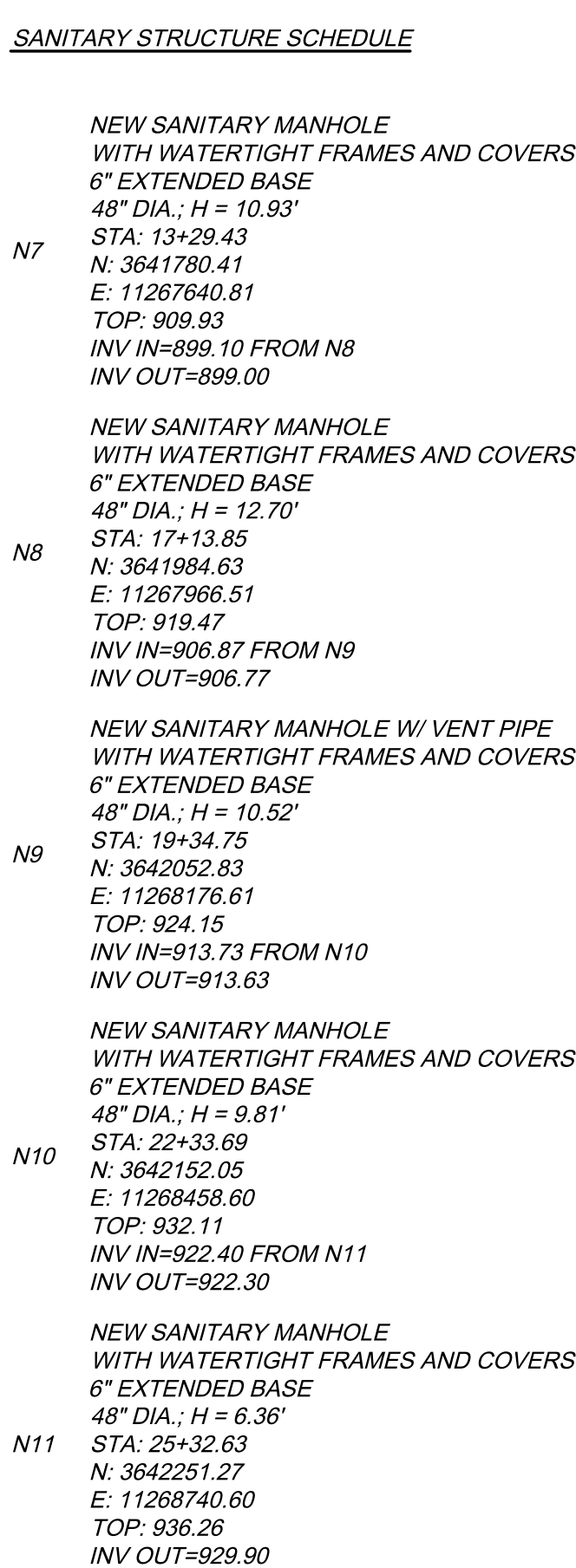




SANITARY STRUCTURE SCHEDULE

M1	NEW SANITARY MANHOLE WITH WATERTIGHT FRAMES AND COVERS 6" EXTENDED BASE 48" DIA.; H = 5.78' STA: 0+04.29 N: 3642151.62 E: 11268451.59 TOP: 887.28 INV OUT=881.49
	NEW SANITARY MANHOLE WITH WATERTIGHT FRAMES AND COVERS 6" EXTENDED BASE 48" DIA.; H = 7.44' STA: 3+08.22 N: 3641981.46 E: 11266703.42 TOP: 893.99 INV IN=886.65 FROM N2 INV OUT=886.55
	NEW SANITARY MANHOLE WITH WATERTIGHT FRAMES AND COVERS 6" EXTENDED BASE 48" DIA.; H = 7.51' STA: 5+57.74 N: 3641841.75 E: 11266910.17 TOP: 895.41 INV IN=888.10 FROM N3 INV OUT=887.90
	NEW SANITARY MANHOLE WITH WATERTIGHT FRAMES AND COVERS 6" EXTENDED BASE 48" DIA.; H = 8.26' STA: 7+20.54 N: 364176.25 E: 11267069.27 TOP: 900.16 INV IN=892.10 FROM N4 INV OUT=891.90
	NEW SANITARY MANHOLE WITH WATERTIGHT FRAMES AND COVERS 6" EXTENDED BASE 48" DIA.; H = 7.71' STA: 9+20.63 N: 3641802.33 E: 11267255.20 TOP: 901.36 INV IN=893.75 FROM N5 INV OUT=893.65
N5	NEW SANITARY MANHOLE WITH WATERTIGHT FRAMES AND COVERS 6" EXTENDED BASE 48" DIA.; H = 6.49' STA: 10+53.56 N: 3641814.87 E: 11267387.54 TOP: 903.71 INV IN=897.42 FROM N6 INV OUT=897.22
	NEW SANITARY MANHOLE WITH WATERTIGHT FRAMES AND COVERS 1" EXTENDED BASE 48" DIA.; H = 4.81' STA: 11+63.59 N: 3641751.53 E: 11267477.50 TOP: 902.78 INV IN=898.17 FROM N7 INV OUT=897.97



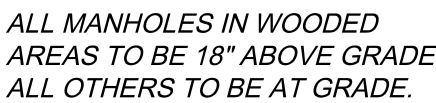


HORIZ. SCALE 1" = 50'

0 25 50 100

0 5 10 20

VERT. SCALE 1" = 10'



*SANITARY SEWER PLAN AND PROFILE STA. 12+50 - 25+50*  
*FOR*  
*MARTIN DRIVE REGIONAL W.W.P.S.*  
*CAMPBELL COUNTY, VIRGINIA*

COMMONWEALTH OF VIRGINIA  
MICHAEL D. WILSON  
Lic. No. 044203  
02/05/2025  
PROFESSIONAL ENGINEER

**BID SET**

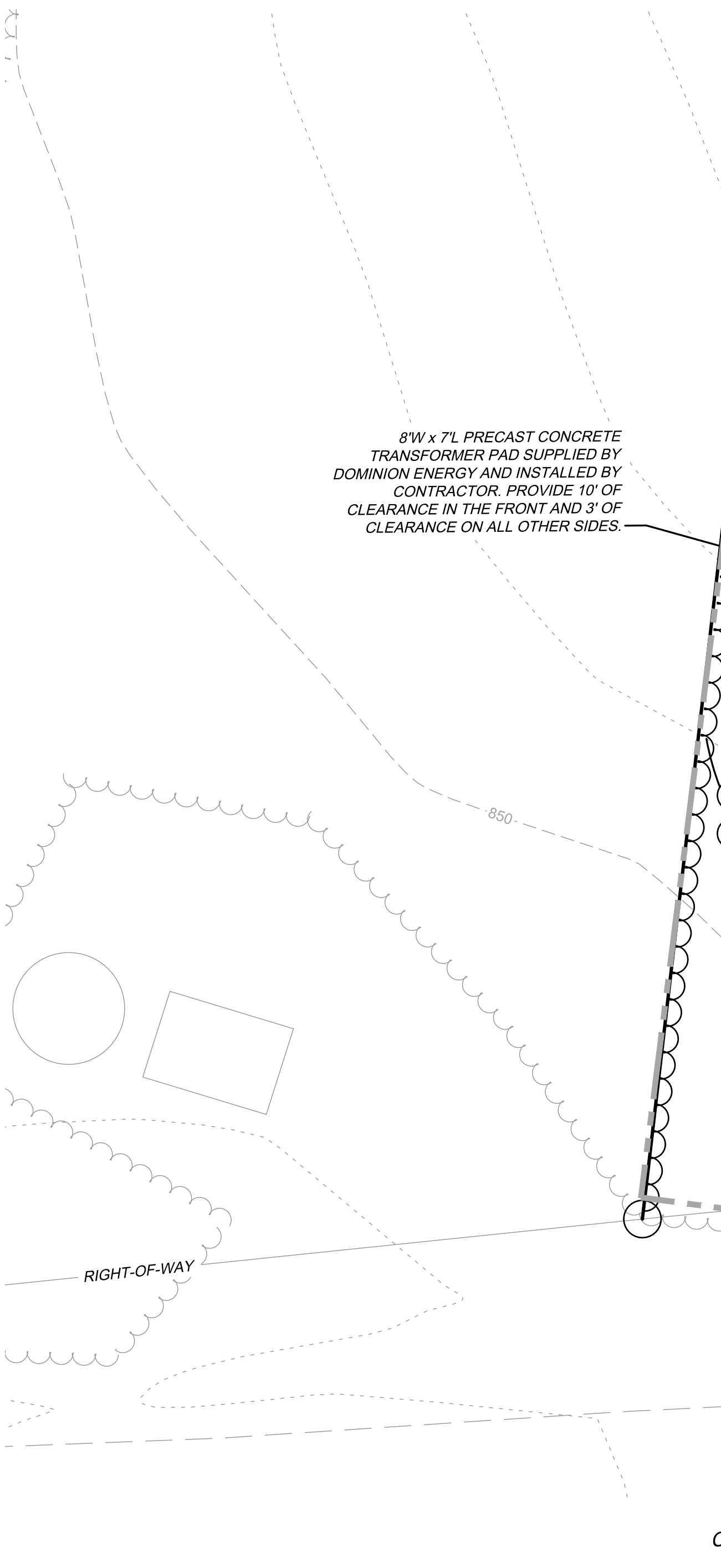
**CCUSA # 80-2304**

**HURT & PROFFITT**

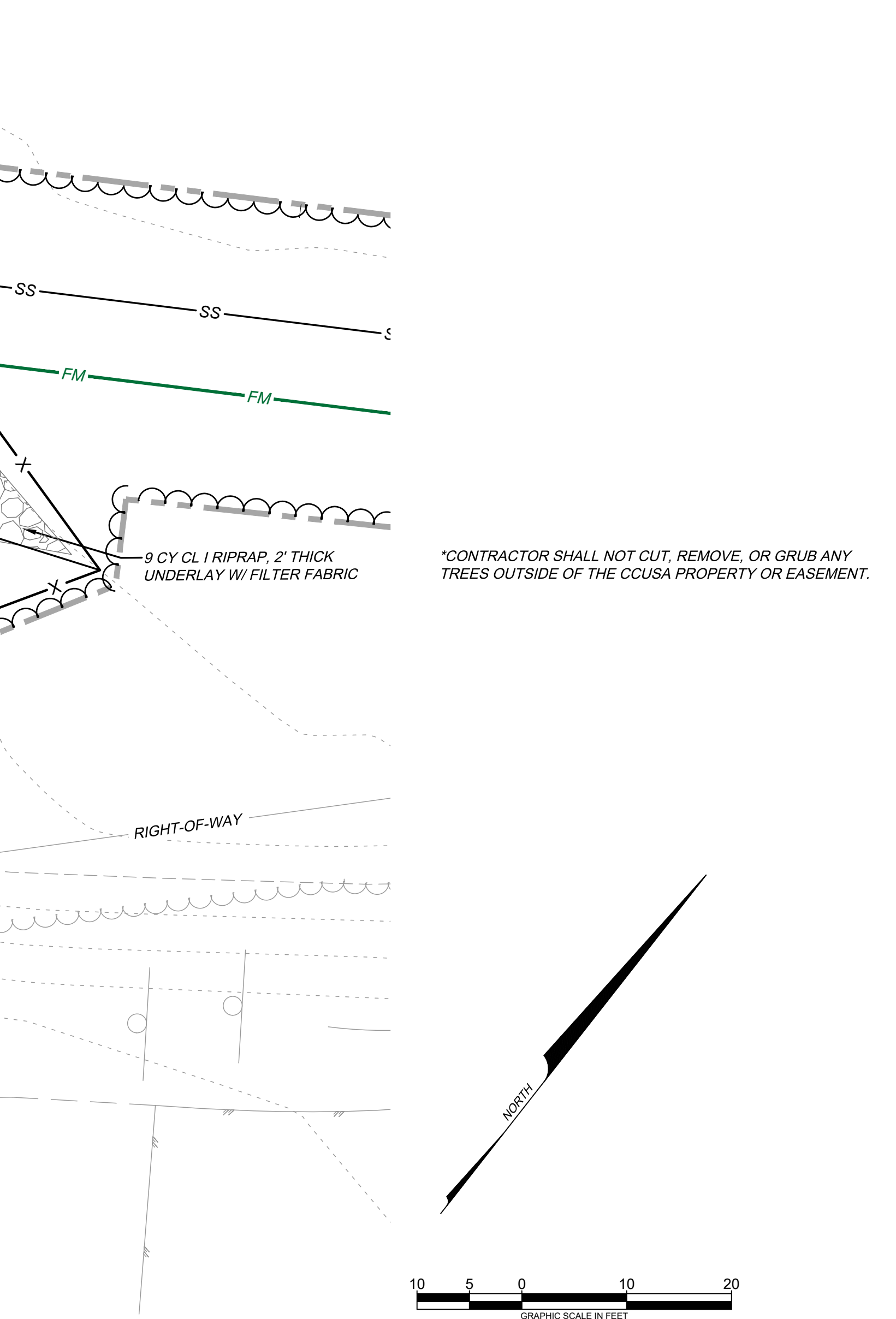
<i>SHEET NO.</i> <i>C-109</i>	<i>REV.</i> ----
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Feb 07, 2025 - 10:01am Z:\2023\20230622\Engineering\CAD\230622\_PUMP STATION SITE PLAN.dwg



WATER QUANTITY CONTROL FOR THIS DEVELOPMENT IS SATISFIED THROUGH COMPLIANCE WITH SWAC25-870-66(D) BY DISCHARGING SITE RUNOFF AS SHEET FLOW. THE RECEIVING AREA BELOW THE SITE HAS BEEN ANALYZED TO SHOW THAT THE FLOW DEPTH IS NO MORE THAN 0.10' FOR STORMS UP TO AND INCLUDING THE 10-YEAR EVENT. THERE IS NO EVIDENCE OF EROSION IN THE AREAS WHERE SITE RUNOFF WILL DISCHARGE. THE SHEET FLOW VELOCITIES ARE NON-EROSIVE. THUS, THE SHEET FLOW WILL NOT CAUSE OR CONTRIBUTE TO EROSION, SEDIMENTATION, OR FLOODING OF DOWN GRADIENT PROPERTIES OR RESOURCES.



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PROJECT NO.	20230622
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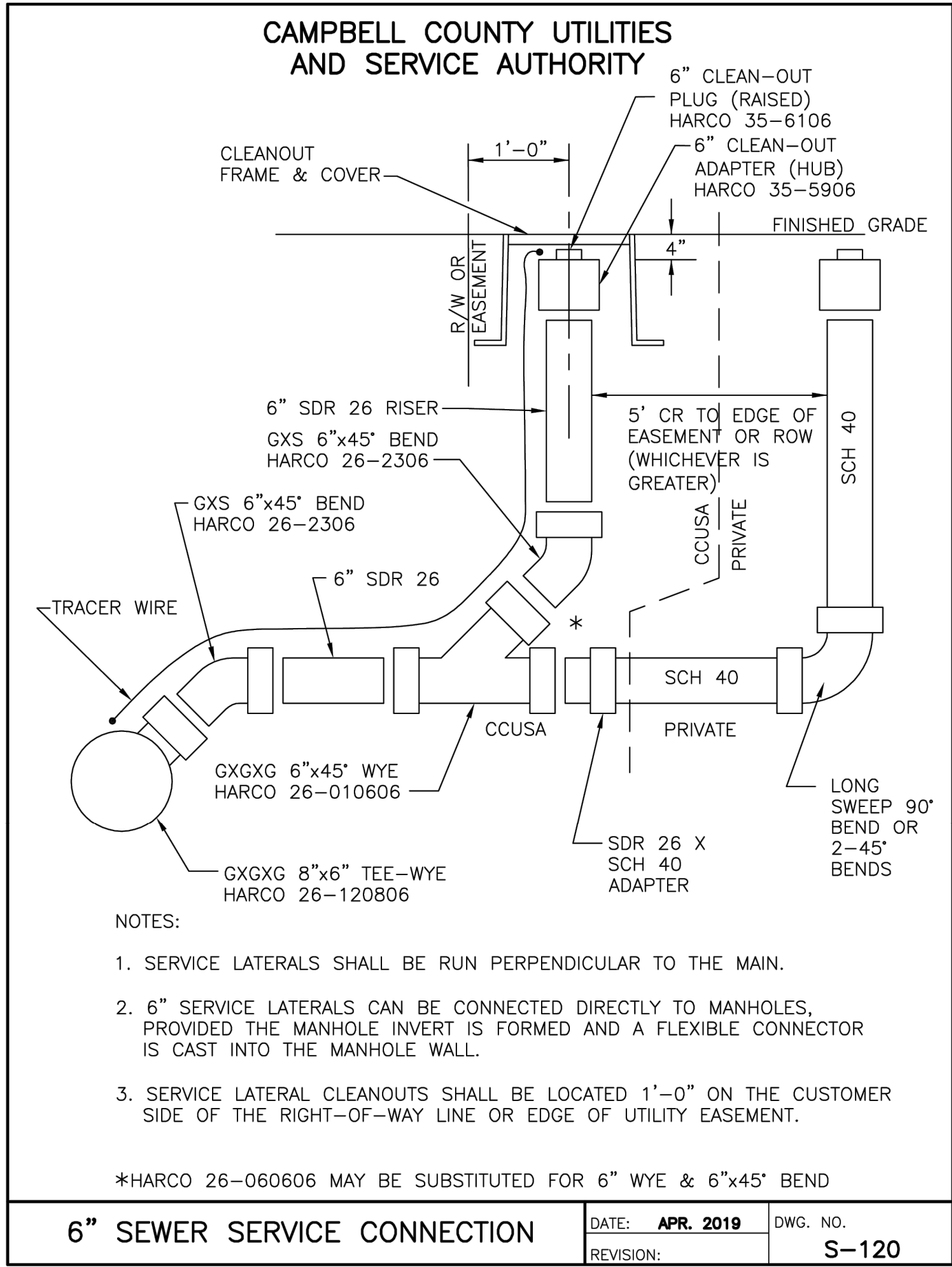
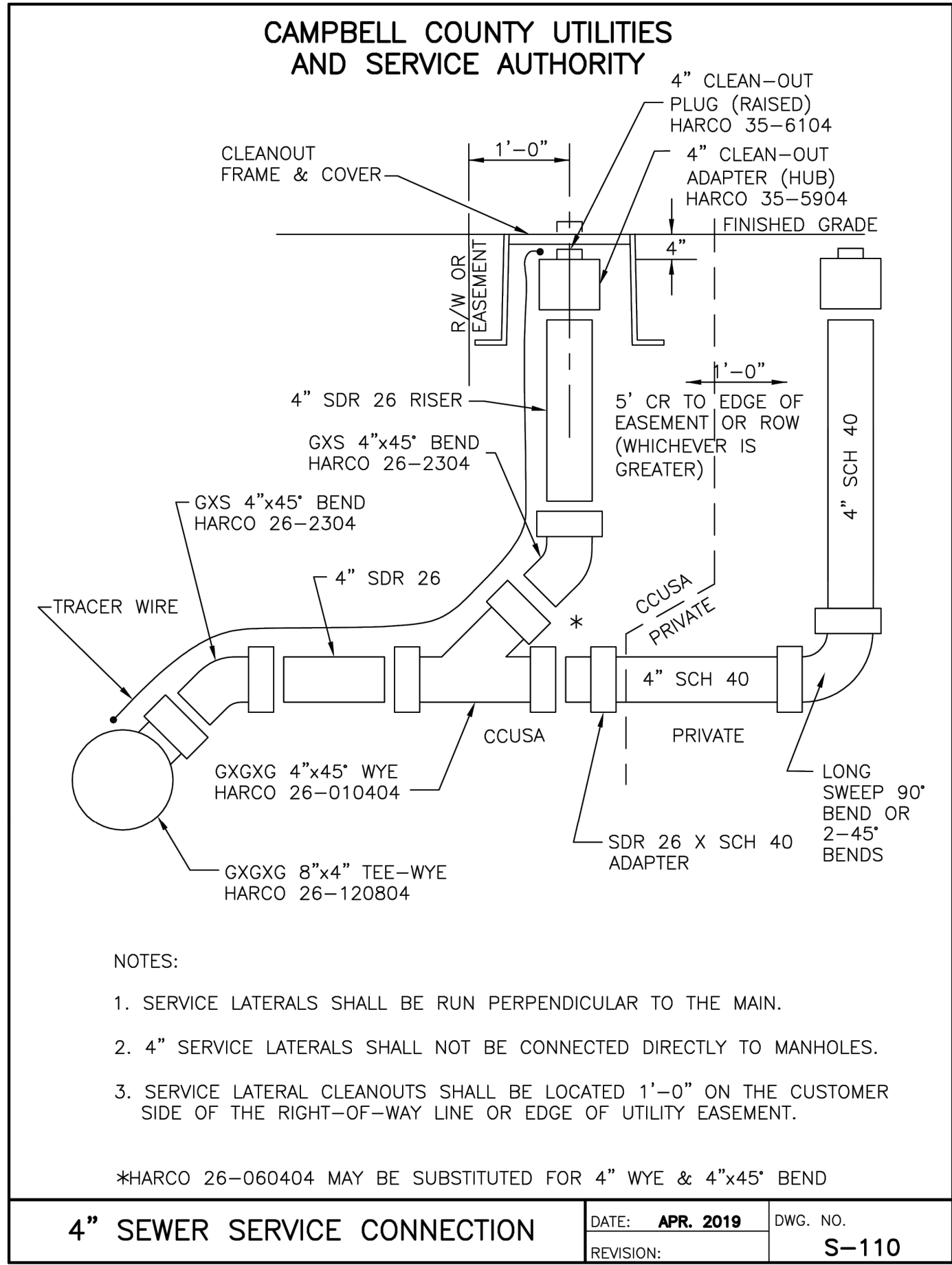
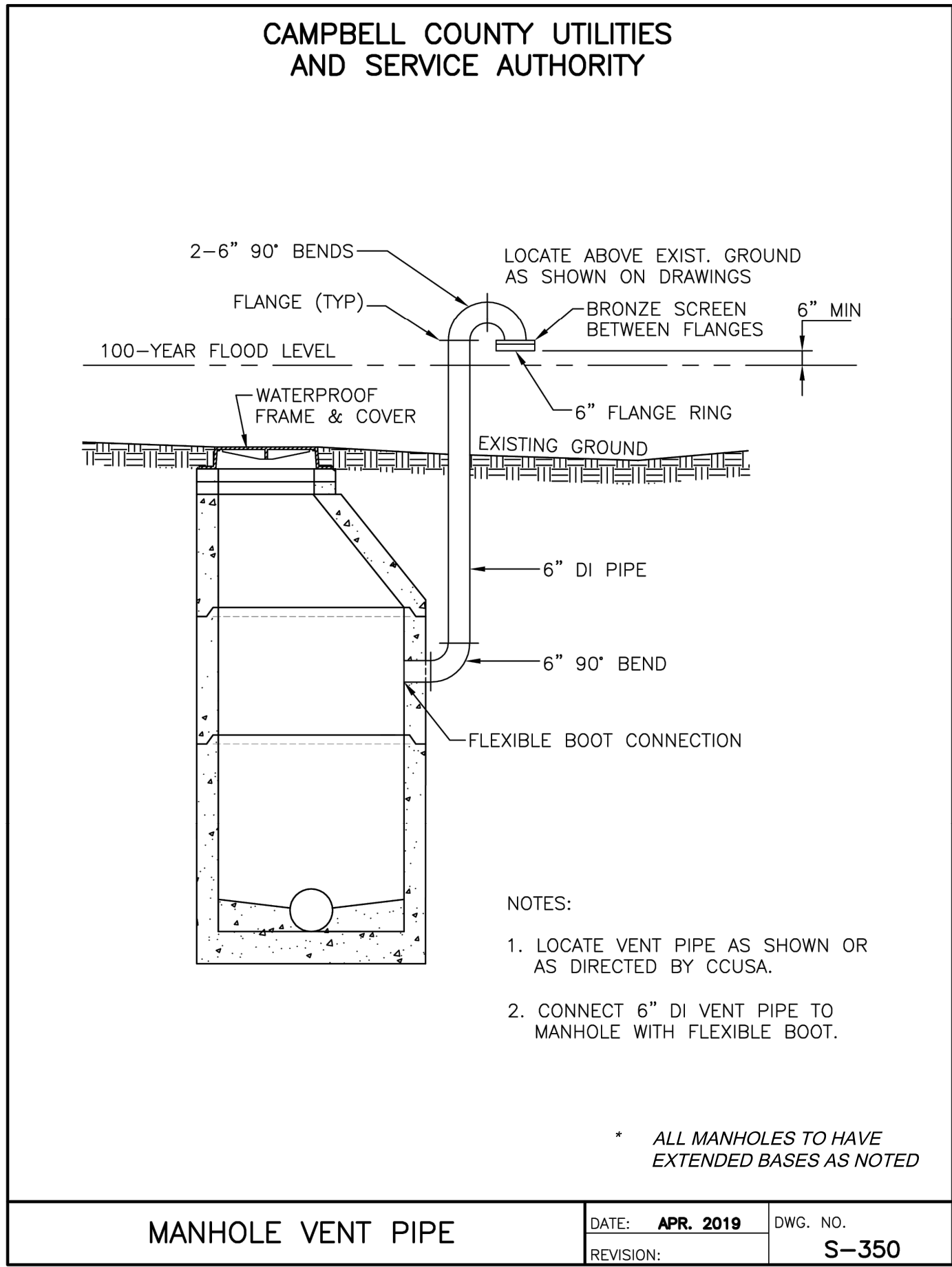
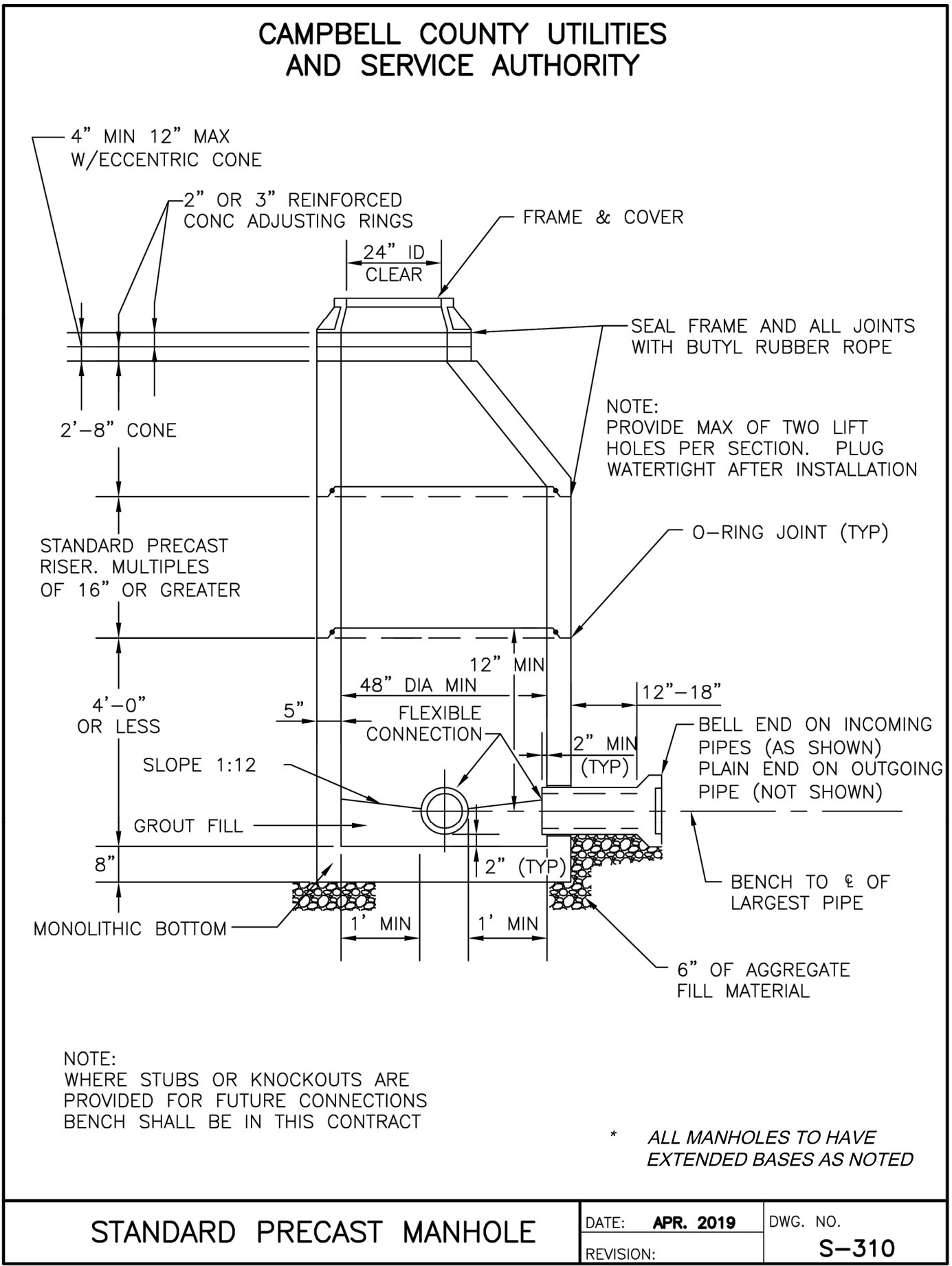
**CCUSA # 80-2304**

SHEET NO. C-110	REV. ----
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Feb 07, 2025 - 10:04am Z:\2023\0303622\Engineering\CAD\33622\_COVER.dwg



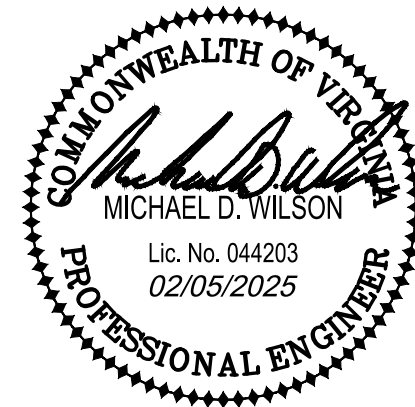
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DETAILS  
FOR  
MARTIN DRIVE REGIONAL W.W.P.S.  
CAMPBELL COUNTY, VIRGINIA

PROJECT NO. 20230622  
LAT. 37.313701  
LONG. -79.260669  
DATE: 02/05/2025  
DRAWN BY: MSF  
CHECKED BY: MDW



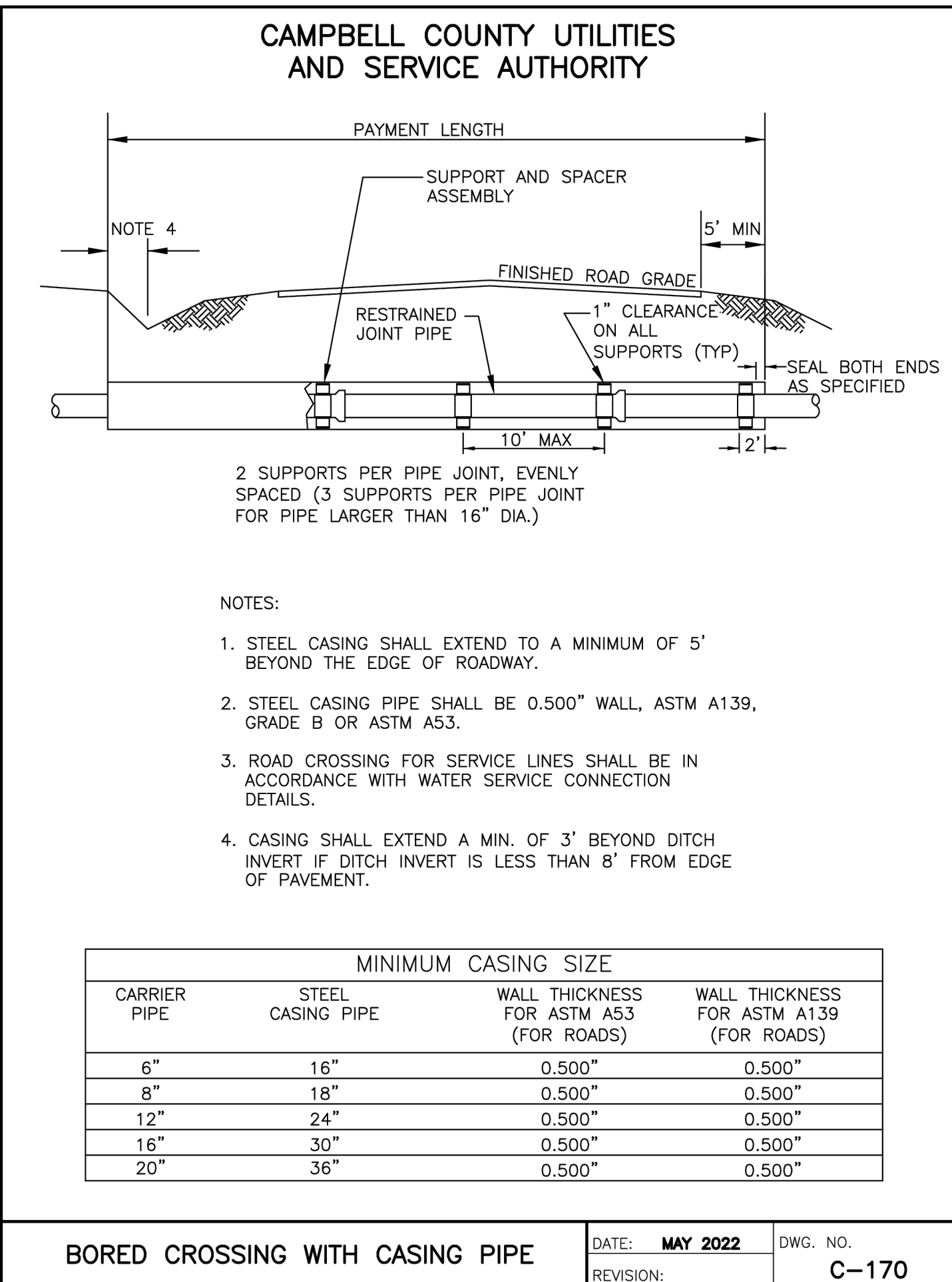
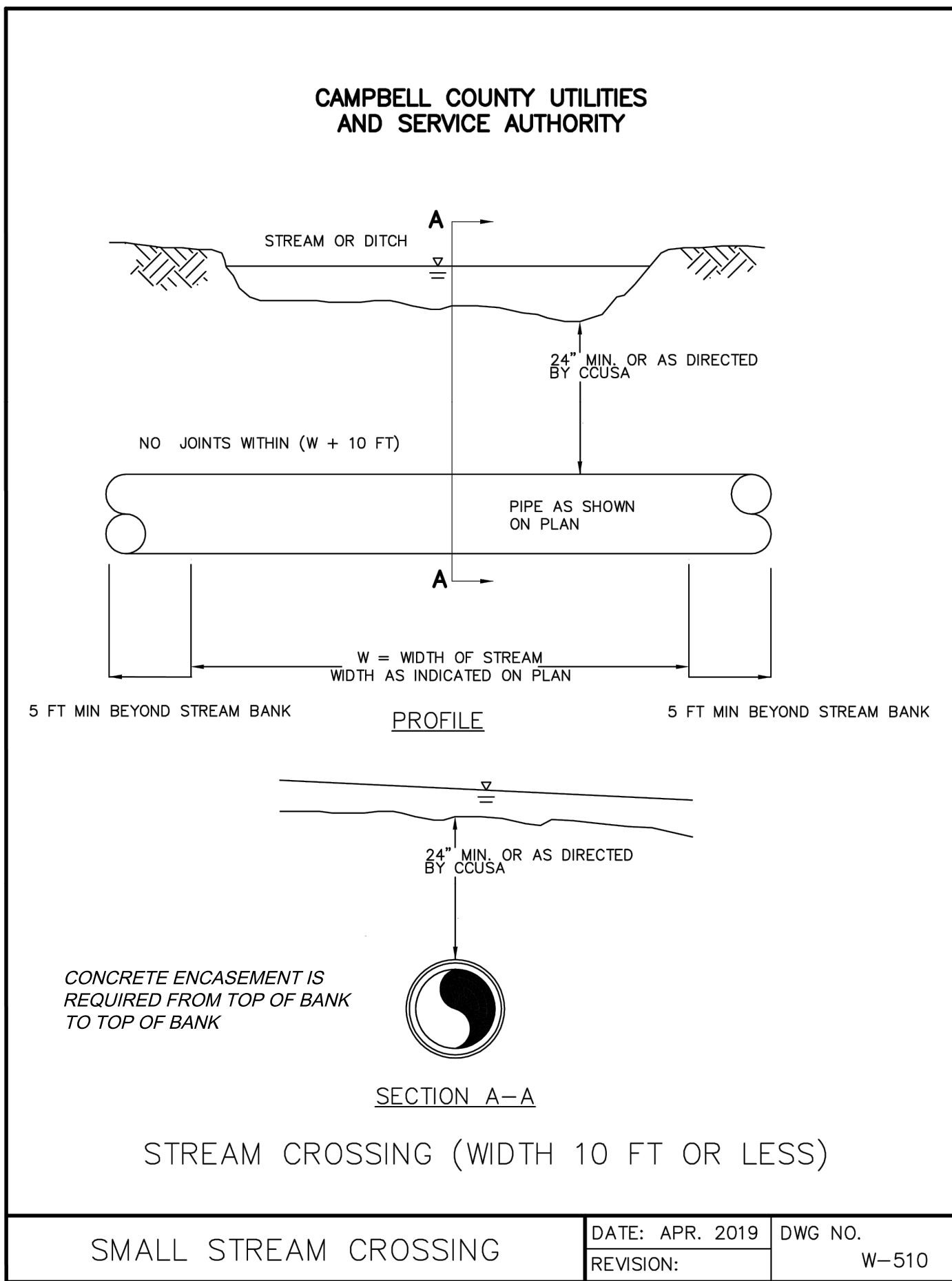
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CCUSA # 80-2304

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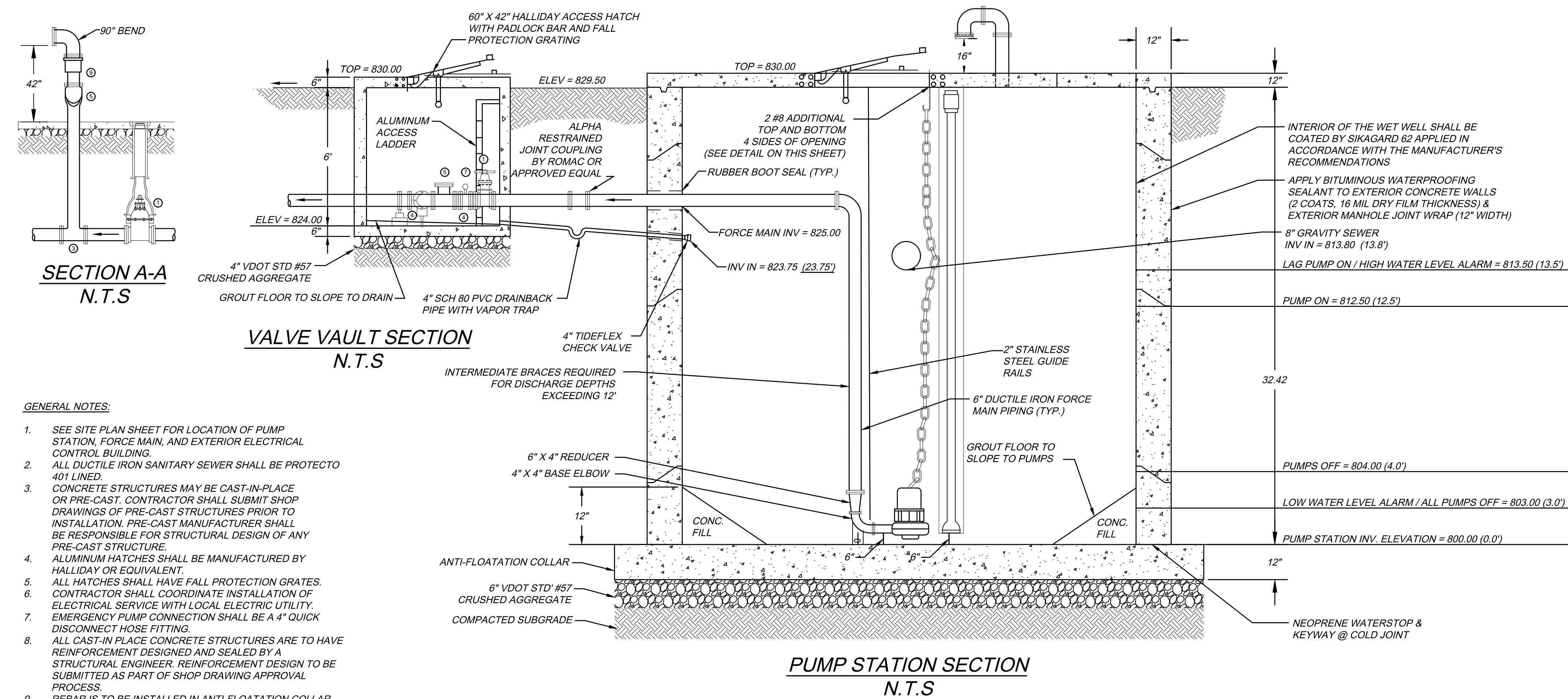
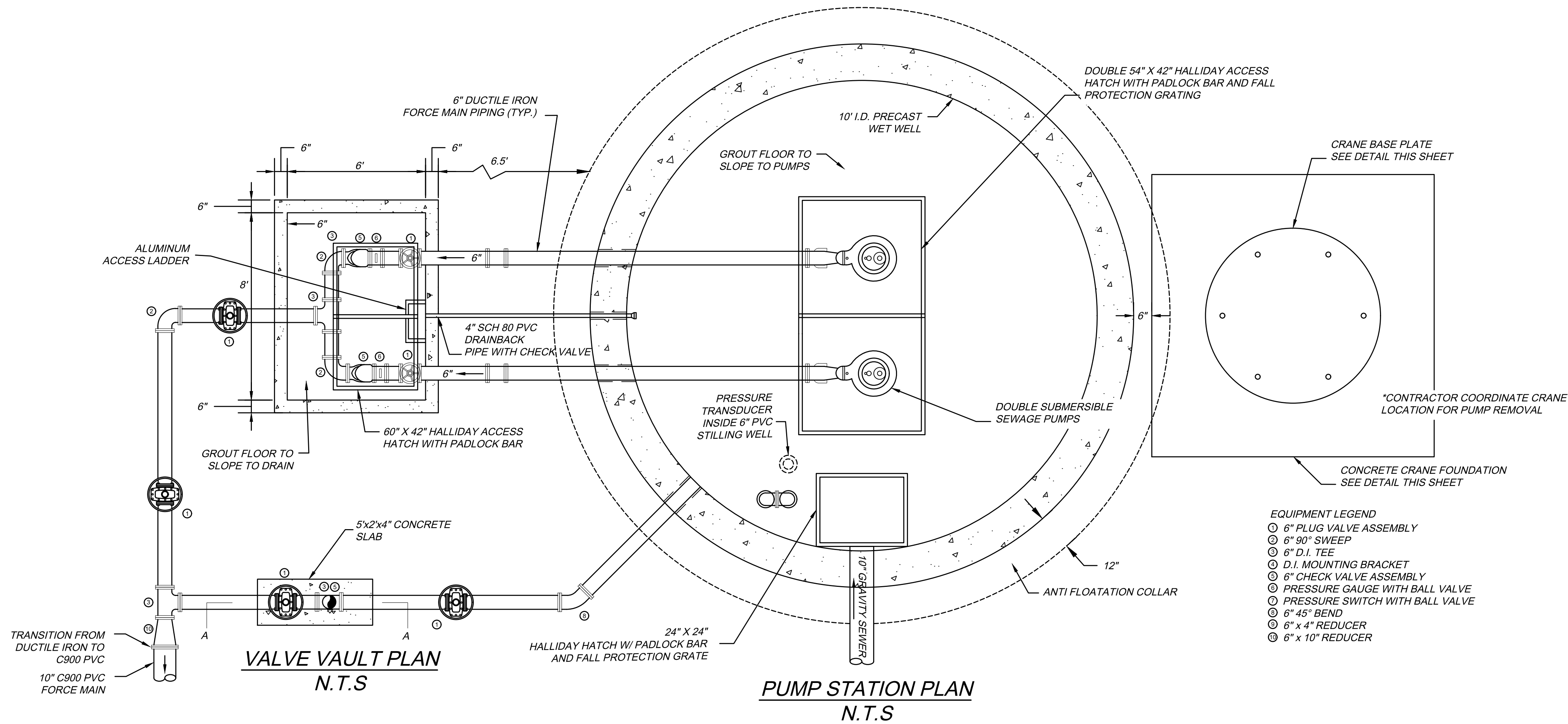
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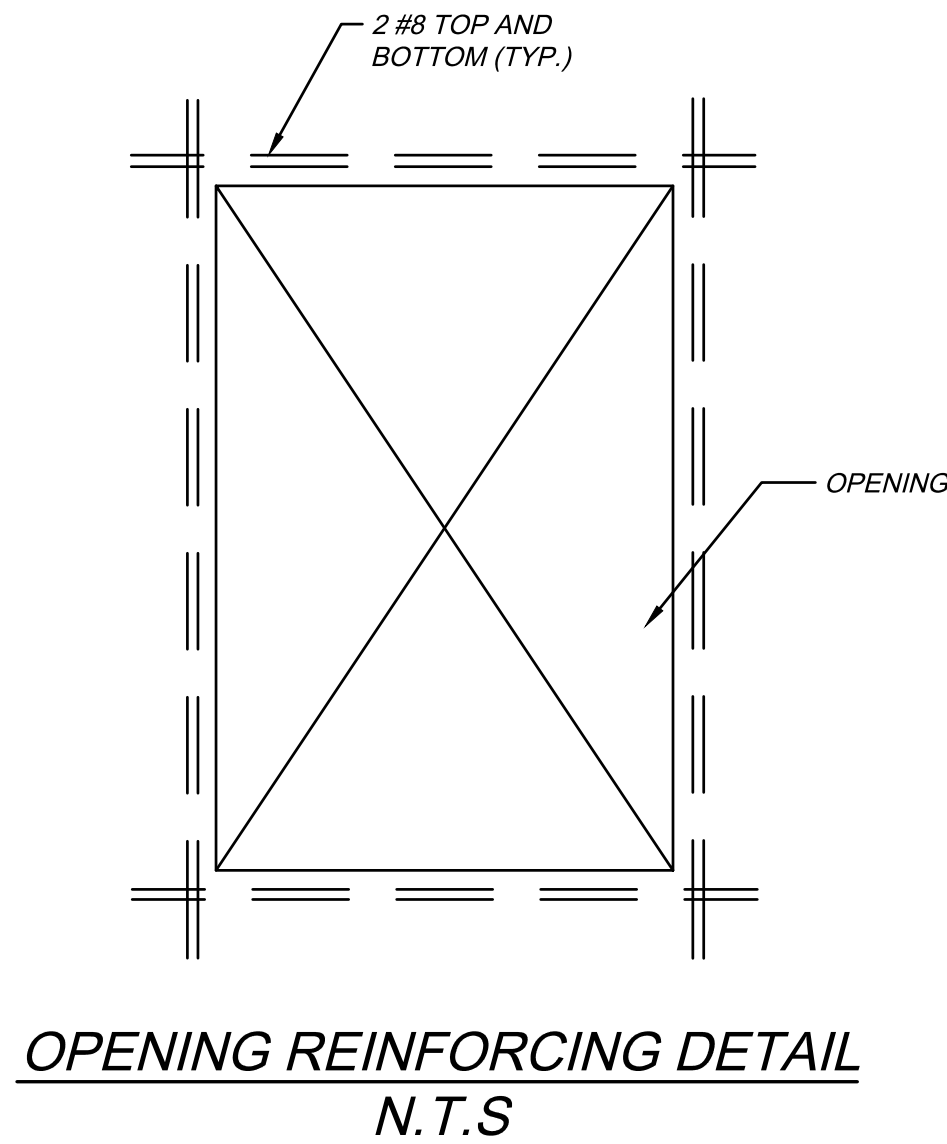
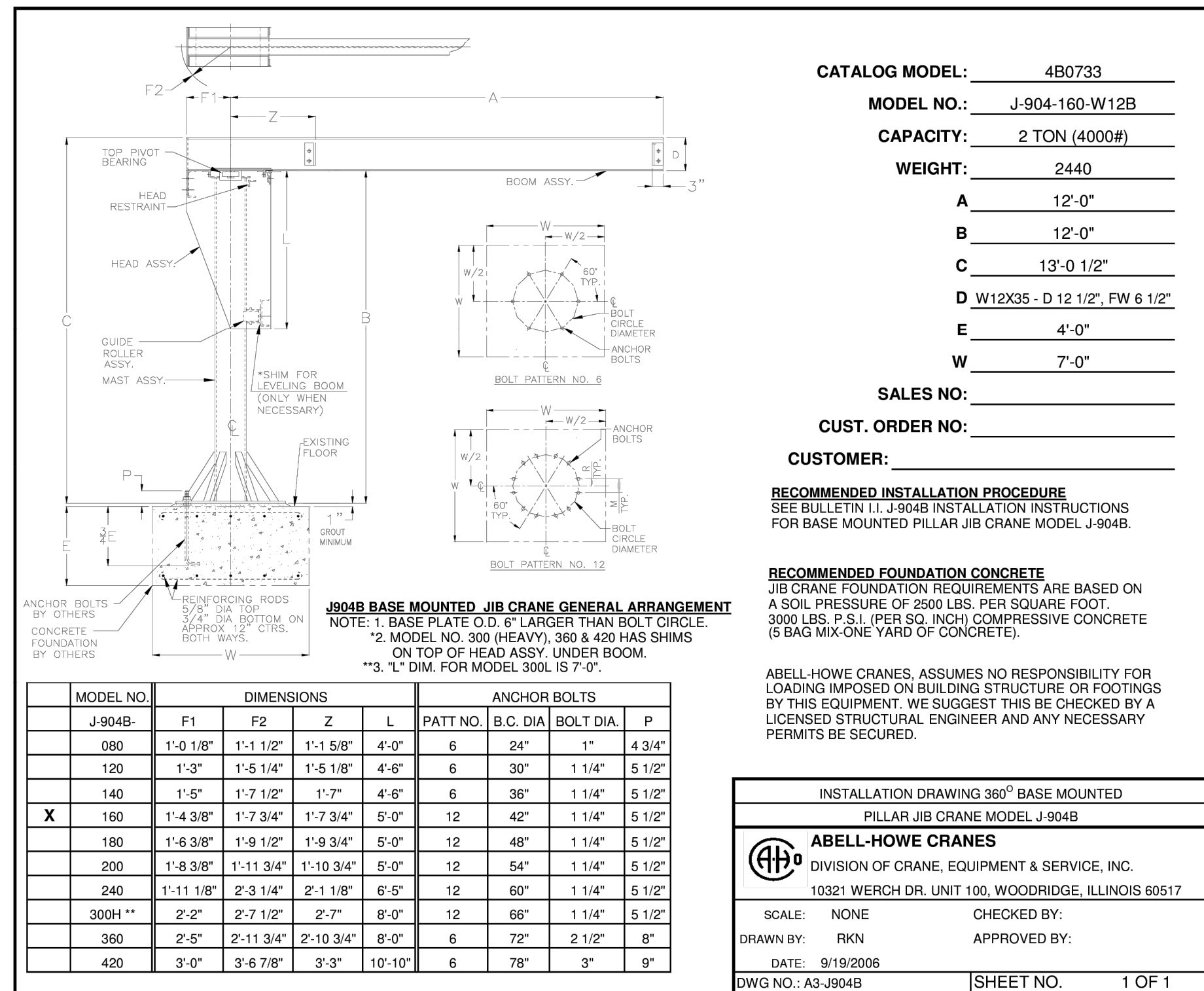


THIS SHEET IS INTENDED TO BE REPRODUCED AT 20X36". REPRODUCTION OF THIS SHEET AT A DIFFERENT SIZE THAN INTENDED SHALL VOID THE SCALE SHOWN ON THE SHEET.



GENERAL NOTES:

- SEE SITE PLAN SHEET FOR LOCATION OF PUMP STATION, FORCE MAIN, AND EXTERIOR ELECTRICAL CONTROL BUILDING.
- ALL DUCTILE IRON SANITARY SEWER SHALL BE PROTECTO 401 LINED.
- CONCRETE STRUCTURES MAY BE CAST-IN-PLACE OR PRE-CAST. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF PRE-CAST STRUCTURES PRIOR TO INSTALLATION. PRE-CAST MANUFACTURER SHALL BE RESPONSIBLE FOR STRUCTURAL DESIGN OF ANY PRE-CAST STRUCTURE.
- ALUMINUM HATCHES SHALL BE MANUFACTURED BY HALLIDAY OR EQUIVALENT.
- ALL HATCHES SHALL HAVE FALL PROTECTION GRATES. CONTRACTOR SHALL COORDINATE INSTALLATION OF ELECTRICAL SERVICE WITH LOCAL ELECTRIC UTILITY.
- EMERGENCY PUMP CONNECTION SHALL BE A 4" QUICK DISCONNECT HOSE FITTING.
- ALL CAST-IN PLACE CONCRETE STRUCTURES ARE TO HAVE REINFORCEMENT DESIGNED AND SEALED BY A STRUCTURAL ENGINEER. REINFORCEMENT DESIGN TO BE SUBMITTED AS PART OF SHOP DRAWING APPROVAL PROCESS.
- REBAR IS TO BE INSTALLED IN ANTI-FLOATATION COLLAR - #5 AT 12" ON CENTER EACH WAY.



PUMP SCHEDULE	
DESIGNATION	LEAD/LAG PUMPS
DESCRIPTION	SUBMERSIBLE SOLIDS HANDLING
MANUFACTURER	PENTAIR HYDROMATIC
MODEL NUMBER	S4T
VOLTAGE	480 VOLTS - 3 PHASE
FLOW CAPACITY - GPM	675.0
TOTAL DYNAMIC HEAD - FT.	205.0
MOTOR HORSEPOWER	125.0
PUMP SPEED - RPM	1,750
IMPELLER DIAMETER	14.13"

PUMP LEVEL CONTROL SEQUENCE		
CONDITION	LEVEL	ELEVATION
LAG PUMP ON / HIGH WATER LEVEL ALARM (CONTROLLED BY FLOAT SWITCH)	13.5'	813.50
PUMP ON (CONTROLLED BY PRESSURE TRANSDUCER)	12.5'	812.50
PUMP OFF (CONTROLLED BY PRESSURE TRANSDUCER)	4.0'	804.00
LOW WATER LEVEL ALARM / ALL PUMPS OFF (CONTROLLED BY FLOAT SWITCH)	3.0'	803.00
PUMP STATION INV. ELEVATION	0.0'	800.00

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**PUMP STATION DETAILS**  
FOR  
**MARTIN DRIVE REGIONAL W.W.P.S.**  
**CAMPBELL COUNTY, VIRGINIA**

PROJECT NO. 20230622  
LAT. 37.313701  
LONG. -79.260669  
DATE: 02/05/2025  
DRAWN BY: MSF  
CHECKED BY: MDW



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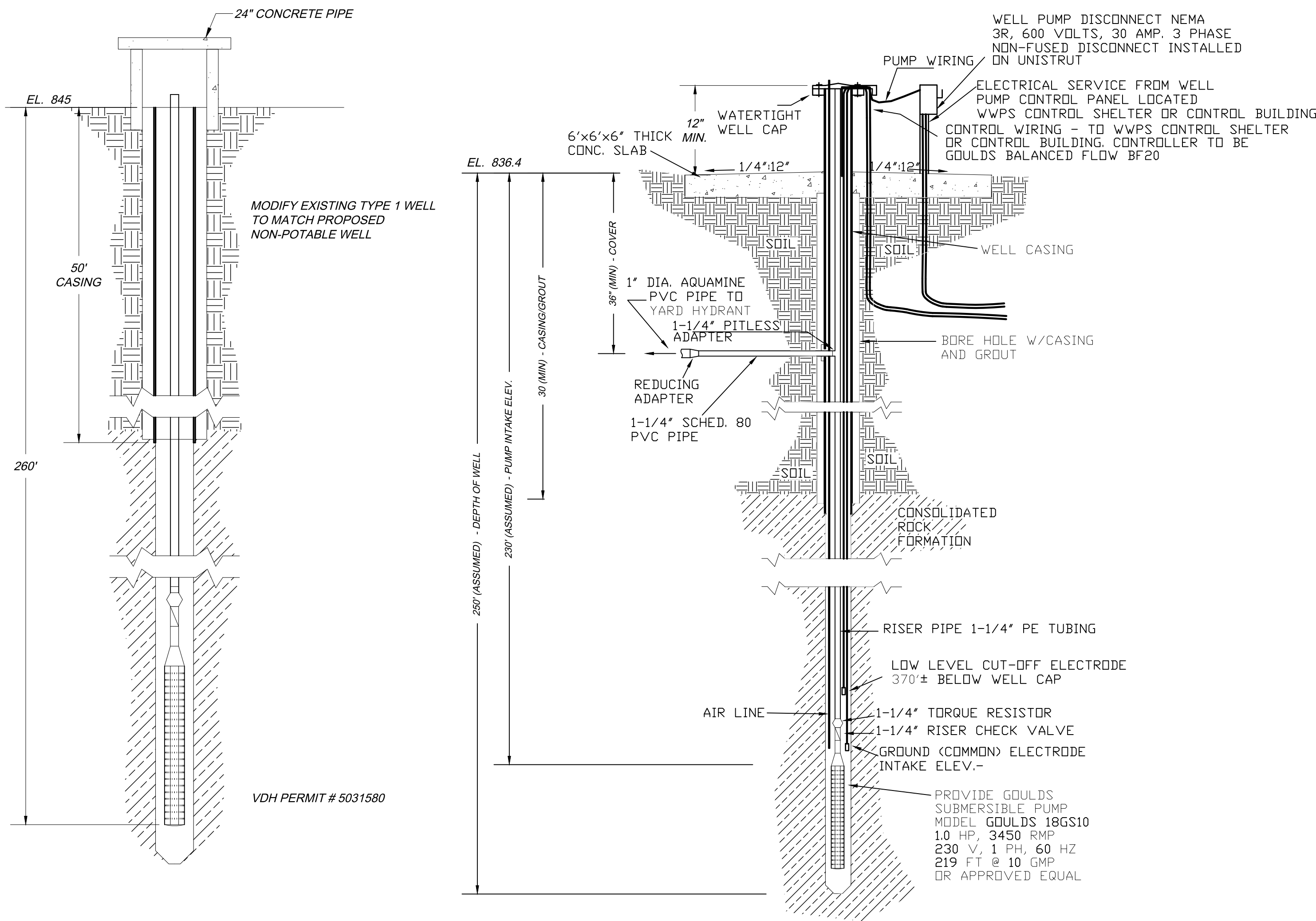
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**HURT & PROFFITT**

SHEET NO. C-503  
REV. ----

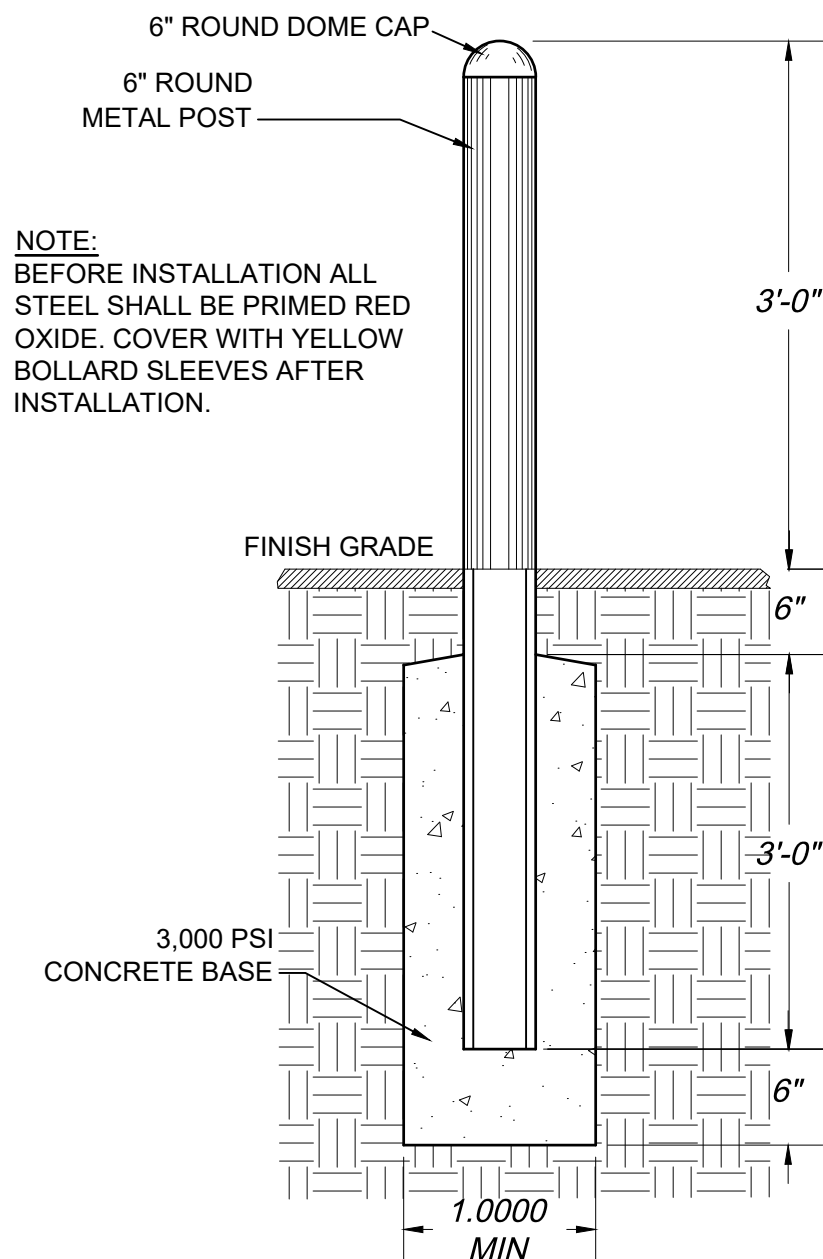
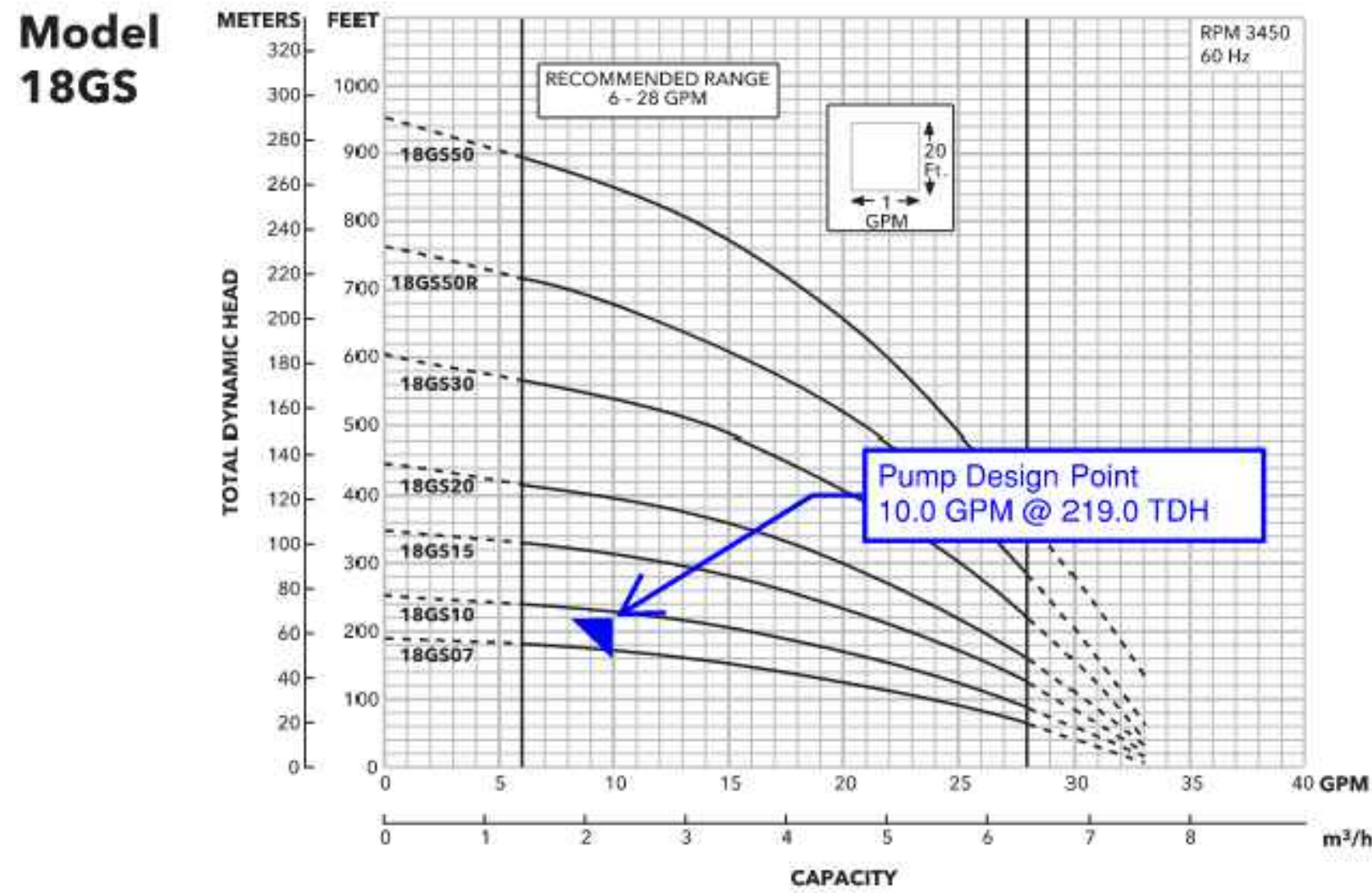


THIS SHEET IS INTENDED TO BE REPRODUCED AT 24"X36". REPRODUCTION OF THIS SHEET AT A DIFFERENT SIZE THAN INTENDED SHALL VOID THE SCALE SHOWN ON THE SHEET.

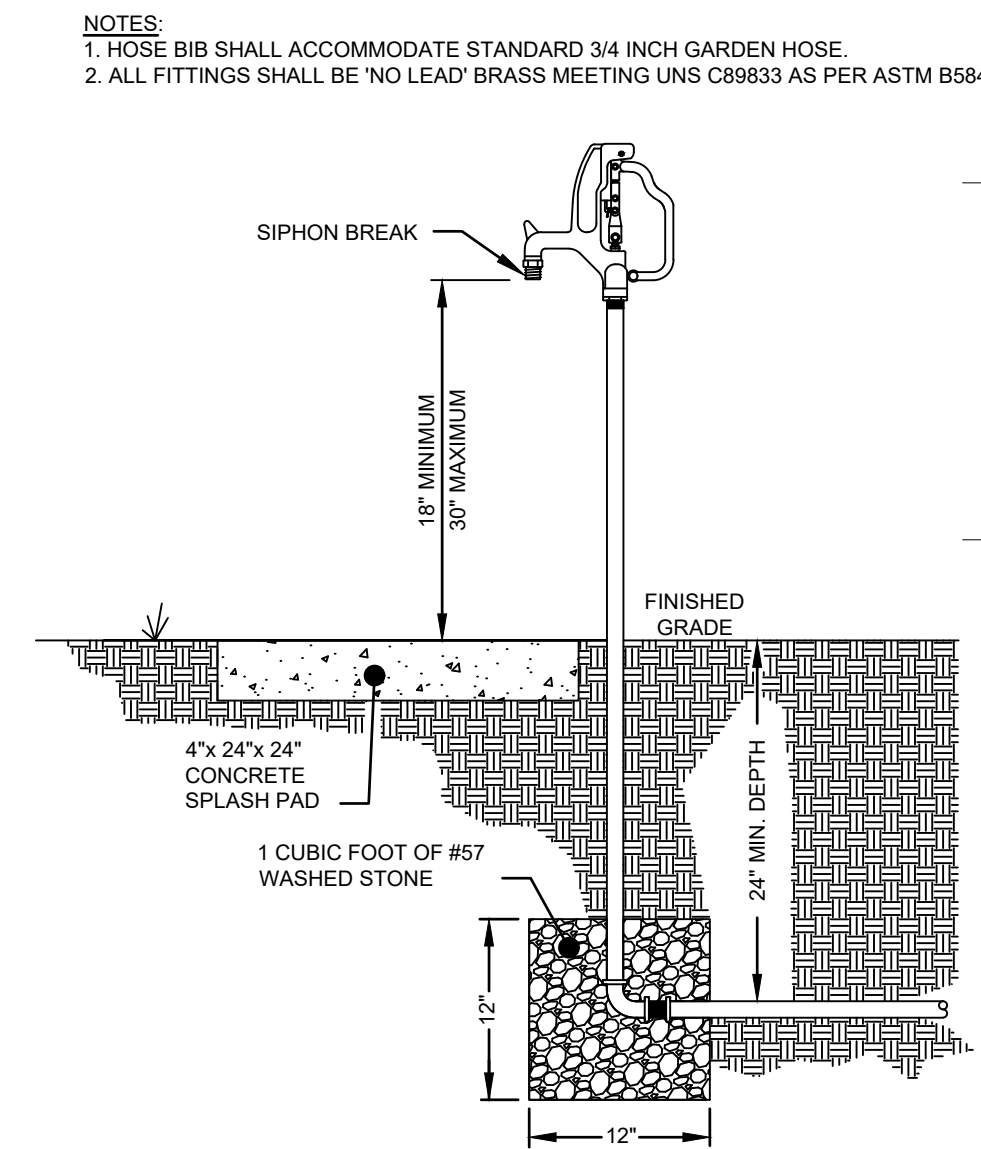


EXITING WELL  
N.T.S.

PROPOSED NON-POTABLE WELL DETAIL  
N.T.S.



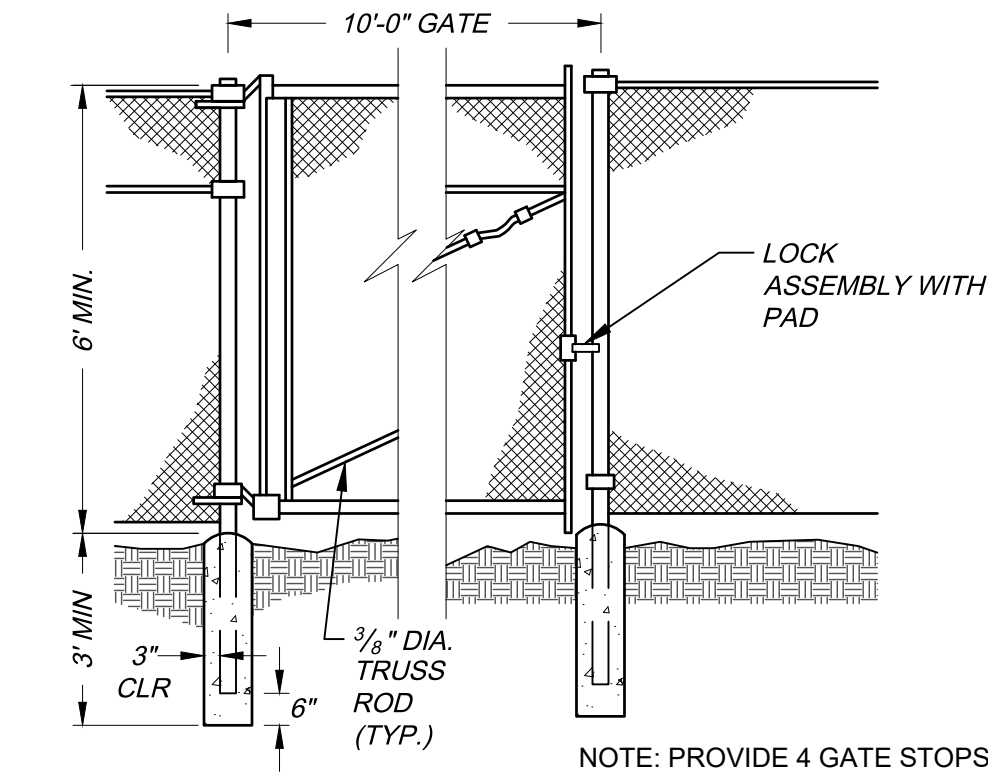
STANDARD STEEL BOLLARD DETAIL  
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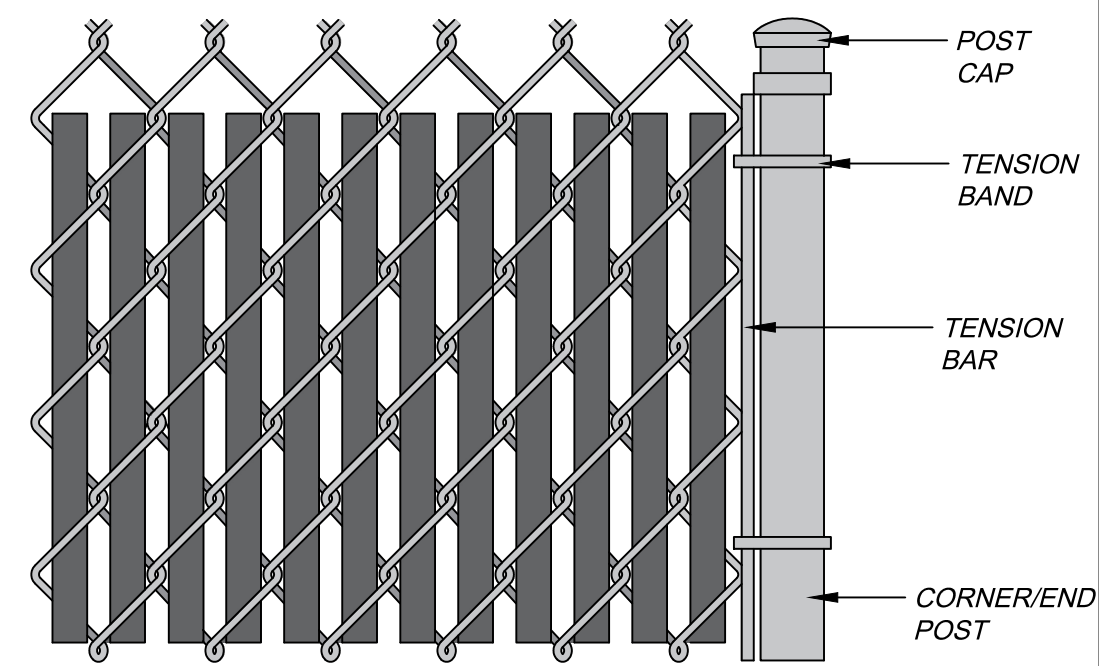
STANDARD YARD HYDRANT  
(NON-FREEZE)



NON POTABLE WATER  
SIGN TO BE POSTED  
AT YARD HYDRANT

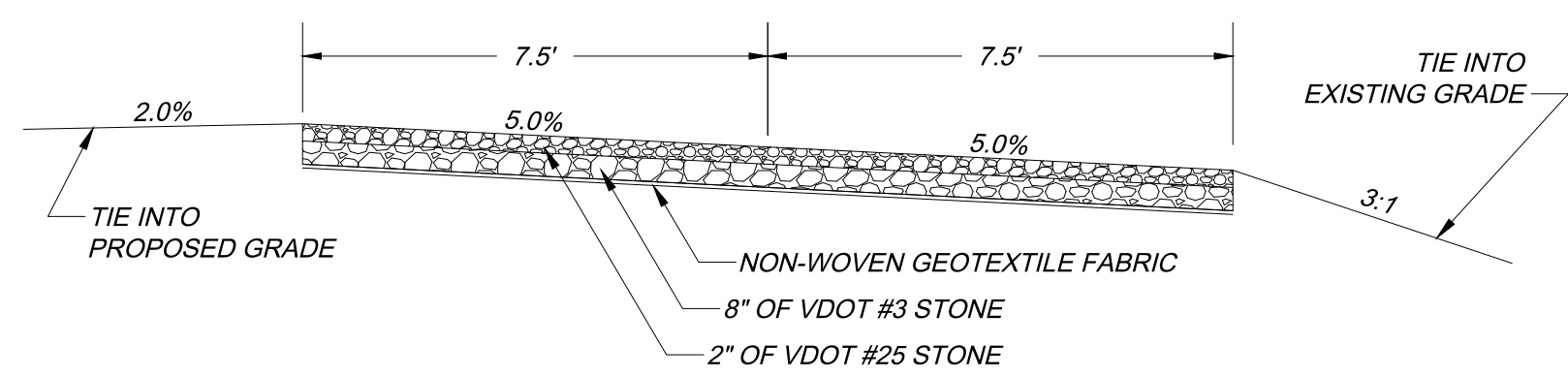


SINGLE GATE  
NOT TO SCALE

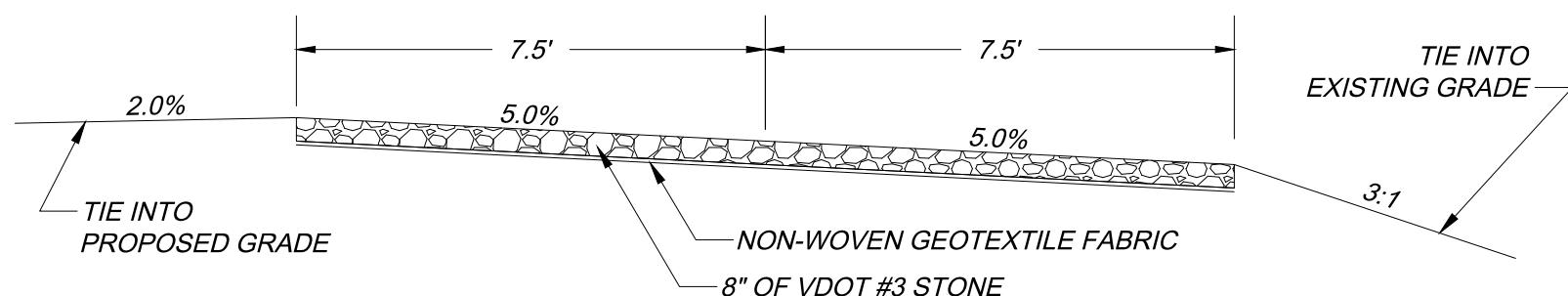


FRONT ELEVATION  
3 1/2 IN. X 5 IN. MESH W/ PRIVACY SLATS  
SLAT COLOR DETERMINED BY OWNER

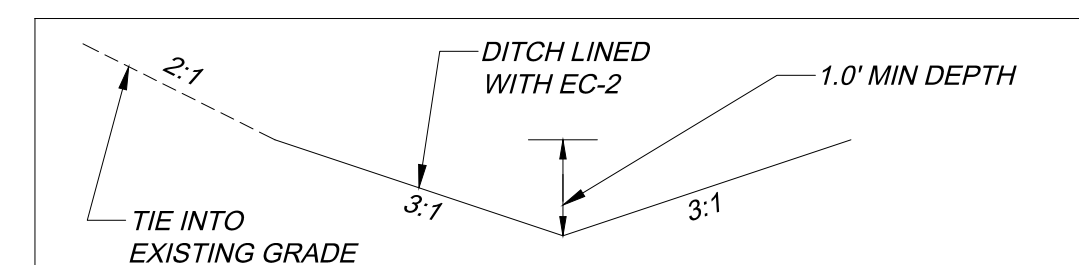
SCREEN FENCE DETAIL  
NOT TO SCALE



NEW ACCESS ROAD WITHIN VDOT RIGHT-OF-WAY DETAIL  
NTS



NEW ACCESS ROAD DETAIL  
NTS



NEW DITCH DETAIL  
NTS

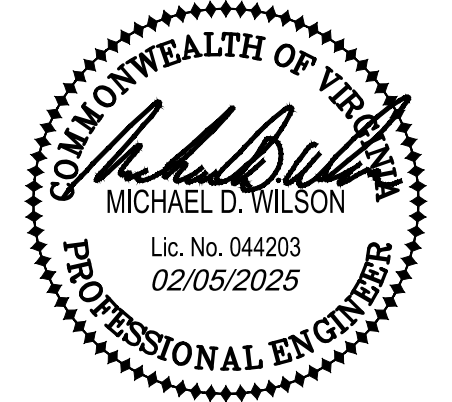
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PUMP STATION SITE DETAILS

FOR  
MARTIN DRIVE REGIONAL W.W.P.S.  
CAMPBELL COUNTY, VIRGINIA

PROJECT NO.	20230622
LAT.	37.313701
LONG.	-79.260669
DATE:	02/05/2025
DRAWN BY:	MSF
CHECKED BY:	MDW



BID SET

CCUSA # 80-2304

**HURT & PROFFITT**

SHEET NO.	REV.
C-504	---



THIS SHEET IS INTENDED TO BE REPRODUCED AT 24X36". REPRODUCTION OF THIS SHEET AT A DIFFERENT SIZE THAN INTENDED SHALL VOID THE SCALE SHOWN ON THE SHEET.

FEB 07, 2025 - 10:03am, Z:\2023\20230622\Engineering\CAD\230622\_COVER.dwg

CORNERSTONE 100

>>>>OUTSIDE CORNER

90 DEGREE CORNER

CORNERSTONE STRAIGHT FACE

GEORIG LAYERS SHOULD NOT OVERLAP

GEORIG ORIENTATION

CORNERSTONE STRAIGHT FACE

90 DEGREE CORNER TURNED AND FLIPPED

CORNERSTONE STRAIGHT FACE

CORNERSTONE STRAIGHT FACE

CORNERSTONE STRAIGHT FACE

These preliminary details are intended solely to act as an aid when designing a wall. This drawing should not be used for final design or construction. Each site-specific wall should be certified and signed by a registered geotechnical engineer in the State or Province that it is being built. The accuracy and use of the details in this document are the sole responsibility of the user.

CORNERSTONE WALL SOLUTIONS INC.

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CORNERSTONE 100

>>>>INSIDE CORNER

BASE UNIT CENTERED

CORNERSTONE STRAIGHT FACE

CORNERSTONE STRAIGHT FACE

CORNERSTONE STRAIGHT FACE

CORNERSTONE STRAIGHT FACE

HEIGHT OF WALL 1/4 OVERLAP THROUGH BACKFILL

H/4

FIRST GEORIG LAYER

APPROVED BACKFILL MATERIAL COMPACTED IN 6"-8" LIFTS

CORNERSTONE STRAIGHT FACE

SECOND GEORIG LAYER

APPROVED BACKFILL MATERIAL COMPACTED IN 6"-8" LIFTS

CLEAR CRUSH DRAINAGE GRAVEL

CORNERSTONE STRAIGHT FACE

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CORNERSTONE 100

>>>>STEEL REINFORCED

SECURE CAP WITH CONCRETE ADHESIVE

CLEAR CRUSHED DRAIN ROCK BEHIND WALL

STEEL REINFORCEMENT DESIGNED BY STRUCTURAL ENGINEER

PERFORATED DRAIN PIPE SURROUNDED BY CLEAR CRUSHED DRAIN ROCK WRAPPED WITH FILTER FABRIC

DRAIN PIPE OUTLET

COMPACTED IMPERVIOUS MATERIALS AT TOE OF WALL

PLANTING SOIL

CONCRETE LEVELING PAD

FOUNDATION SOIL

SOIL SEPARATING FILTER FABRIC

PLANTING SOIL

RETAINED SOIL

EXCAVATION CUT LINE

COMPACTED BACKFILL

COMPACTED IMPERVIOUS MATERIALS

Date:  
Designed By:  
Company:

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CORNERSTONE 100

>>>>FENCE IN WALL

FENCE POST PLACED IN CONCRETE FILLED HOLLOW CORE NO LOADING

SOIL SEPARATING FILTER FABRIC

PLANTING SOIL

GEORIG PLACED MIN 4.0FT L TYP

COMPACTED BACKFILL

SECURE CAP WITH CONCRETE ADHESIVE

CORNERSTONE 100 UNITS

CONCRETE FILLED HOLLOW CORE

CLEAR CRUSHED DRAIN ROCK IN UNIT VOIDS AND BEHIND THE WALL

NOTE: CONCRETE CORE FILL MIN 3 UNITS DEEP ALONG THE FULL LENGTH OF WALL WITH A 4.0FT MIN LENGTH GEORIG AT THE SECOND LAYER.  
WIND LOADS AND LATERAL LOADS HAVE NOT BEEN CONSIDERED. CONSULT A QUALIFIED ENGINEER

CORNERSTONE WALL SOLUTIONS INC.

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CORNERSTONE 100

>>>>OUT STAIR DETAIL

7' RISER x 12' TREAD

COPING WITH OVERLAP

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CornerStone 100

>>>>THROUGH WALL DRAINAGE

\*water is approximately 2H/3

SOIL SEPARATING FILTER FABRIC

PLANTING SOIL

GEORIG LAYERS LENGTH AND SPACING SPECIFIED BY DESIGN

EXCAVATION CUT LINE

WELL COMPACTED APPROVED REINFORCED BACKFILL

RETAINED SOIL

IMPERVIOUS MATERIALS

FOUNDATION SOIL

IMPERVIOUS MATERIAL AT TOE

BASE STABILIZATION FABRIC (OPTIONAL)

SLOPE

DRAIN PIPE DAYLIGHT

FILTER FABRIC (OPTIONAL)

CLEAR CRUSH DRAIN ROCK

CORNERSTONE 100

SECURE LUG CONNECTION

CAP

WATER

2H/3

H

Date:  
Designed By:  
Company:

These preliminary details are intended solely to act as an aid when designing a wall. This drawing should not be used for final design or construction. Each site-specific wall should be certified and signed by a registered geotechnical engineer in the State or Province that it is being built. The accuracy and use of the details in this document are the sole responsibility of the user.

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NOTE:

CONTRACTOR TO PROVIDE A WALL DESIGN SUBMITTAL

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RETAINING WALL DETAILS

FOR

MARTIN DRIVE REGIONAL W.W.P.S.

CAMPBELL COUNTY, VIRGINIA

PROJECT NO.

20230622

LAT.

37.313701

LONG.

-79.260669

DATE:

02/05/2025

DRAWN BY:

MSF

CHECKED BY:

MDW

COMMONWEALTH OF VIRGINIA

MICHAEL D. WILSON

Lic. No. 044203

02/05/2025

PROFESSIONAL ENGINEER

BID SET

CCUSA # 80-2304

HURT&PROFFITT

SHEET NO.

C-505

REV.

----



NARRATIVE

GENERAL NOTES

1. Estimate 12 week(s) required to complete the work within VDOT right of way.
2. Contractor is responsible for notifying Regional Traffic Operations Center at (540) 375-0170 upon entering and exiting the roadway.
3. VDOT Land Use Regulations require that work within the right of way be performed during non-peak hours of 9:00 AM to 3:30 PM Monday – Friday on all public roads classified as "arterial" or "collector", unless otherwise approved by VDOT.
4. All public roads classified as "local" roads are allowed unrestricted work hours and days.
5. Permitted nonemergency 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.
6. Provisions shall be taken to ensure the safe passage of emergency vehicles at all times.
7. Work zones requiring flagging operations at signalized intersections shall involve coordination with law enforcement agencies and VDOT prior to work commencing.
8. All traffic control devices used shall conform to:
  - a. The latest version of the 2011 Virginia Work Area Protection Manual,
  - b. The 2009 Manual on Uniform Traffic Control Devices (MUTCD), and the 2011 Virginia Supplement to the 2009 Manual on Uniform Traffic Control Devices for Streets and Highways 2011 Edition
  - c. The National Cooperative Highway Research Program (NCHRP) Report 350.

PUBLIC COMMUNICATIONS PLAN\*\*

\*\*This section only necessary if detour is proposed, or if significant impacts to traffic are expected.

TRANSPORTATION OPERATIONS PLAN

1. The process to notify the Regional Traffic Operations Center (TOC) of planned lane closures on Virginia Traffic Information Management System (VaTraffic) is:
  - a. The Contractor shall notify the TOC at (540) 375-0170 of all planned lane closure information by 8:00 a.m. of the Thursday prior to the week the lane closure is to be executed.
  - b. The Contractor shall submit planned lane closure information to VDOT Permit Specialist Daniel Newland at (434) 841-6863 by 8:00 a.m. of the Thursday prior to the week the lane closure is to be executed.
  - c. The Contractor shall notify the TOC, by a method or system specified by VDOT, thirty (30) minutes before a planned or approved lane, road, or shoulder closure is installed and within thirty (30) minutes after the closure is removed.
  - d. The TOC operator will enter closure data in VaTraffic and monitor lane closure information.
  - e. The Contractor shall notify the TOC at (540) 375-0170 of all traffic backups related to the lane closure.

INCIDENT RESPONSE

The following is a list of local emergency contact agencies:

- Emergency: 911
- Virginia State Police: 1 (800) 552-0962 or (434) 946-7101
- Campbell County Sheriff: (434) 332-9580
- Haz-Mat Center (if spill involved): 911

Procedures to respond to traffic incidents that may occur in the Work Zone:

- Contractor to notify Virginia State Police (VSP).
- Contractor to notify VDOT Permit Specialist Daniel Newland, at (434) 841-6863.
- Depending upon severity of incident, Contractor may be required to shut down work.
- Upon arrival on scene, VSP will take control of the incident and direct its clearing and restoration to normal traffic conditions.
- VDOT Permit Specialist will notify the Traffic Operations Center, Appomattox Assistant Resident Engineer, District Work Zone Safety Coordinator and District Safety Manager of incident and take pictures as necessary, especially pictures of work zone to document the setup.

Process of notification of incident, to be followed by VDOT Permit Specialist, is to notify:

- Appomattox Assistant Resident Engineer: Daniel Brown (434) 215-9162
- District Work Zone Safety Coordinator: Danny Cruff (434) 856-8160
- District Safety Manager: Amanda Wilimink (434) 841-4225
- District Traffic Engineer: Donald Logan (540) 607-6427
- District Communications Manager: Len Stevens (434) 856-8176

The State Police Report of the incident will be reviewed by the District Work Zone Safety Coordinator to determine if any modification of the Temporary Traffic Control Plan is necessary. If it is determined that it is necessary to alter the plan, then a meeting will be called with the Responsible Charge Engineer, District Safety Manager, District Traffic Engineering representatives and the State Police (if necessary) to discuss modification and implementation of an improved traffic control plan.

TABLE 6H-3 BUFFER SPACE/FLAGGER DISTANCE FROM WORK AREA		
POSTED SPEED LIMIT (MPH)	DISTANCE (FEET)	
0 – 20	115 – 120	
25	155 – 165	
30	200 – 210	
35	250 – 260	
40	305 – 325	
45	360 – 380	
50	425 – 445	
55	500 – 530	
60	570 – 600	
65	645 – 675	
70	730 – 760	

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'

MAINTENANCE OF TRAFFIC NARRATIVE  
THIS MAINTENANCE OF TRAFFIC PLAN IS INTENDED TO PROVIDE A BASIC OVERVIEW OF THE TYPES OF TRAFFIC CONTROL MEASURES NECESSARY FOR THE MAJOR WORK ZONES ON THE PROJECT. THIS PLAN IS NOT INTENDED TO SHOW EVERY FEATURE OF THE TRAFFIC CONTROL PLAN. THE CONTRACTOR SHALL ULTIMATELY BE RESPONSIBLE 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.

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TRAFFIC CONTROL DETAILS

FOR  
MARTIN DRIVE REGIONAL W.W.P.S.  
CAMPBELL COUNTY, VIRGINIA

PROJECT NO. 20230622  
LAT. 37.313701  
LONG. -79.260669  
DATE: 02/05/2025  
DRAWN BY: MSF  
CHECKED BY: MDW



BID SET

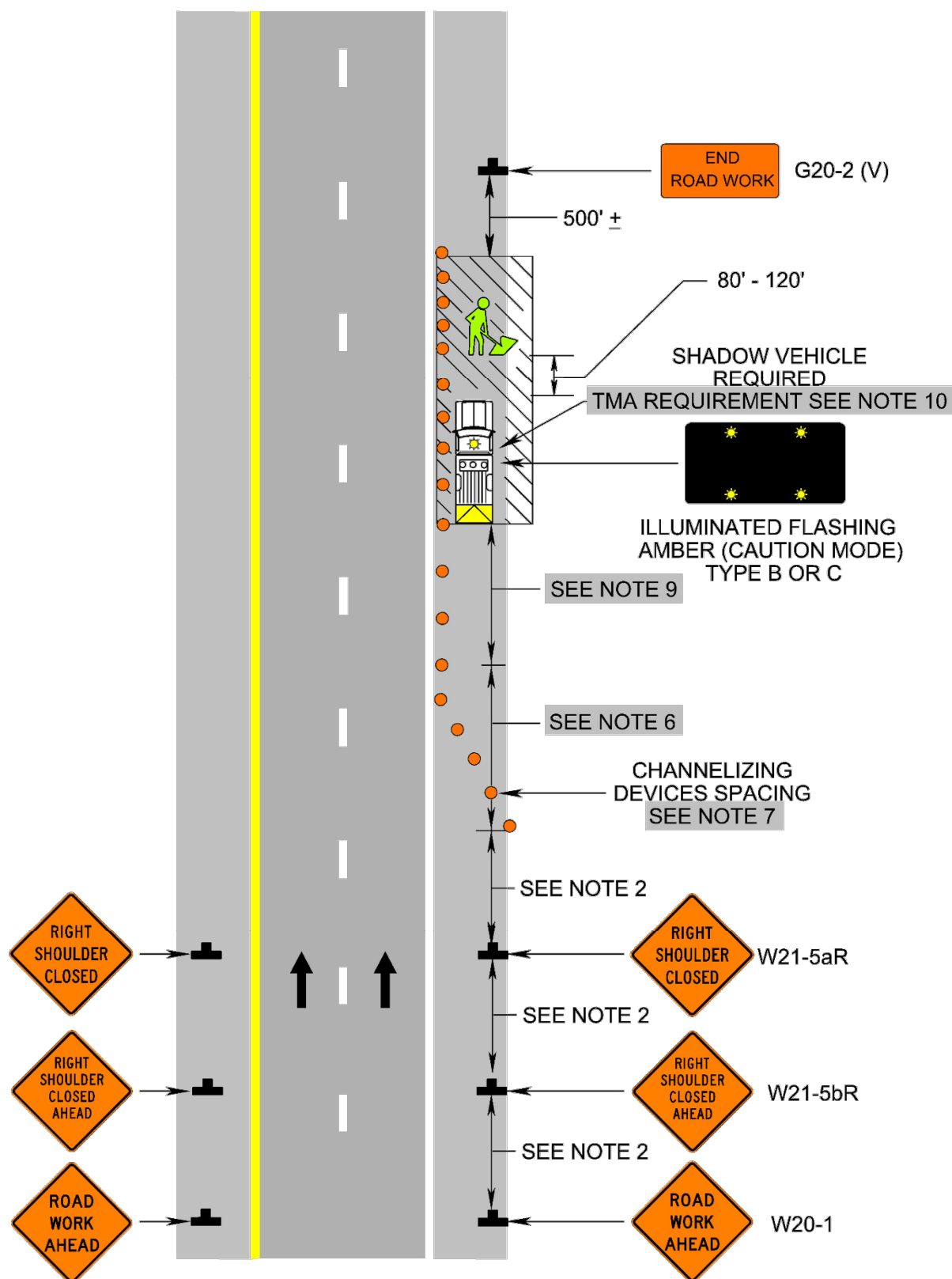
CCUSA # 80-2304

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SHEET NO.  
C-601

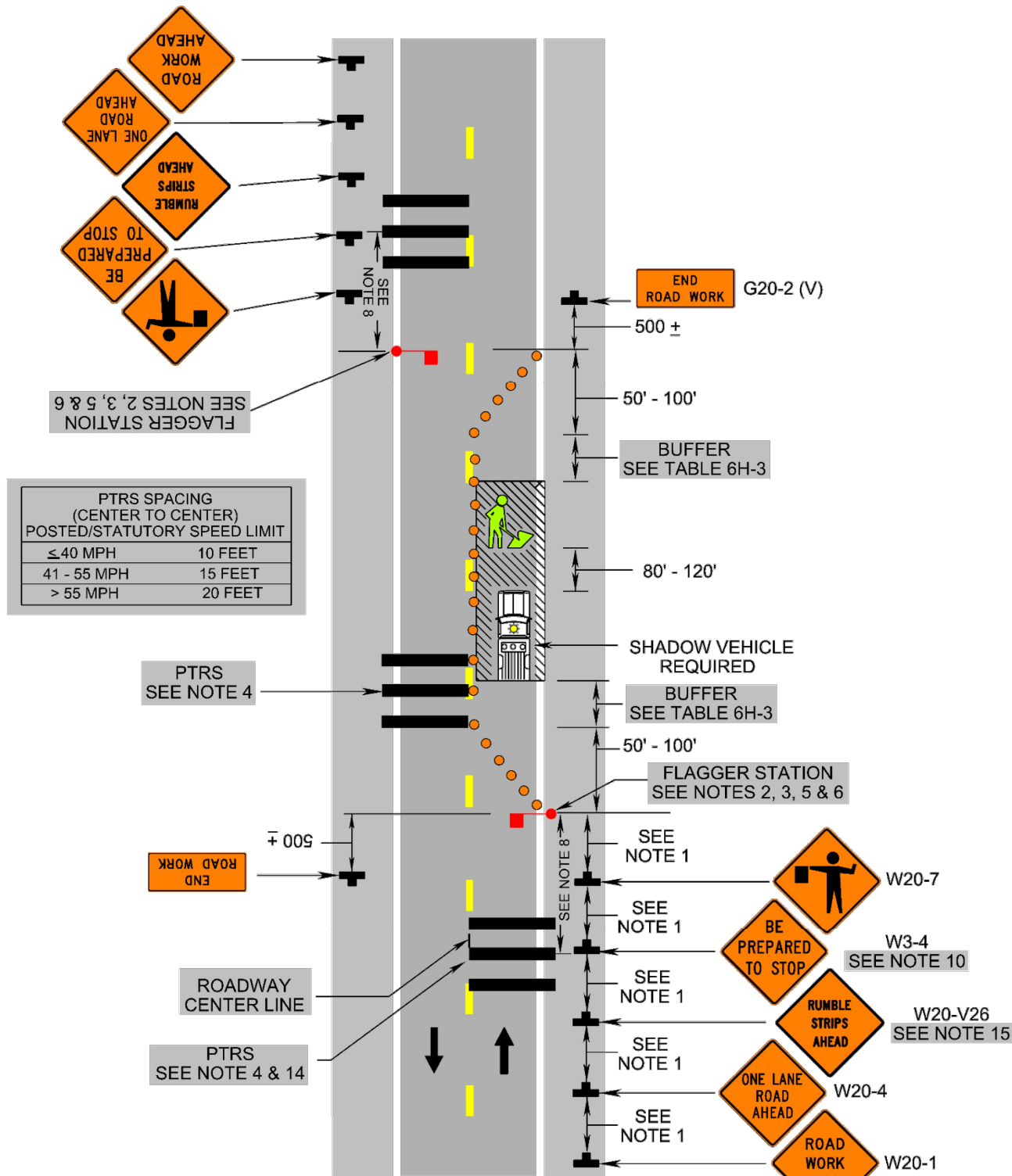
REV.  
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Stationary Operation on a Shoulder  
(Figure TTC-4.2)



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

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



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

Typical Traffic Control  
Stationary Operation on a Shoulder  
(Figure TTC-4.2)

NOTES

Standard

1. For long-term stationary work (more than 3 days) on divided highways having a median wider than 8', sign assemblies on both sides of the roadway shall be required as shown (ROAD WORK AHEAD (W20-1), RIGHT SHOULDER CLOSED AHEAD (W21-5bR), RIGHT SHOULDER CLOSED (W21-5aR)), even though only one shoulder is being closed. For operations less than 3 days in duration, sign assemblies will only be required on the side where the shoulder is being closed.

Guidance

2. Sign spacing should be 1300'-1500' for Limited Access highways. For all other roadways, the sign spacing should be 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limit is 45 mph or less.

Option:

3. The SHOULDER WORK (W21-5) 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.
4. For short duration operations of 60 minutes or less, all signs and channelizing devices may be eliminated if a vehicle with activated high-intensity amber rotating, flashing, or oscillating lights is used.

Standard:

5. Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity amber rotating, flashing, or oscillating lights. Vehicle hazard warning signals can be used to supplement high-intensity amber rotating, flashing, or oscillating lights.
6. Taper length (L) shall be at the following:

Taper Length L					
Speed Limit (mph)	Lane Width (Feet)				Remarks
	9	10	11	12	
25	95	105	115	125	L=S*W/60
30	135	150	165	180	L=S*W/60
35	185	205	225	245	L=S*W/60
40	240	270	295	320	L=S*W/60
45	405	450	495	540	L=SW
Limited Access highways shall use a 1000' merging taper regardless of the posted speed, for shifting taper see Table 6H-2					
Shoulder Taper = 1/2 L Minimum					

7. Channelizing device spacing shall be at the following:

Channelizing Device Spacing					
Location Spacing	Speed Limit (mph)	Location Spacing	Speed Limit (mph)	Location Spacing	Speed Limit (mph)
	0-35		36+		
Transition	20'	40'	Travelway	40'	80'
*Construction access spacing may be increased to this distance, but shall not exceed one access per 1/2 mile.					

8. 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.
9. The buffer space length shall be as shown in Table 6H-3 on Page 6H-5 for the posted speed limit.
10. A truck-mounted attenuator (TMA) shall be used on the shadow vehicle on Limited Access highways and multi-lane roadways with posted speed limit equal to or greater than 45 mph for operations with a duration greater than 60 minutes.
11. When a side road intersects the highway within the temporary traffic control zone, additional traffic control devices shall be placed as needed.

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

Typical Traffic Control  
Lane Closure on a Two-Lane Roadway Using Flaggers  
(Figure TTC-23.2)

NOTES

Guidance:

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.

Standard:

4. Portable Temporary Rumble 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.

Option:

8. A SLOW (W21-V10) sign<sup>1</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.

Guidance:

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 queues 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 or less.
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:<sup>1</sup>

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

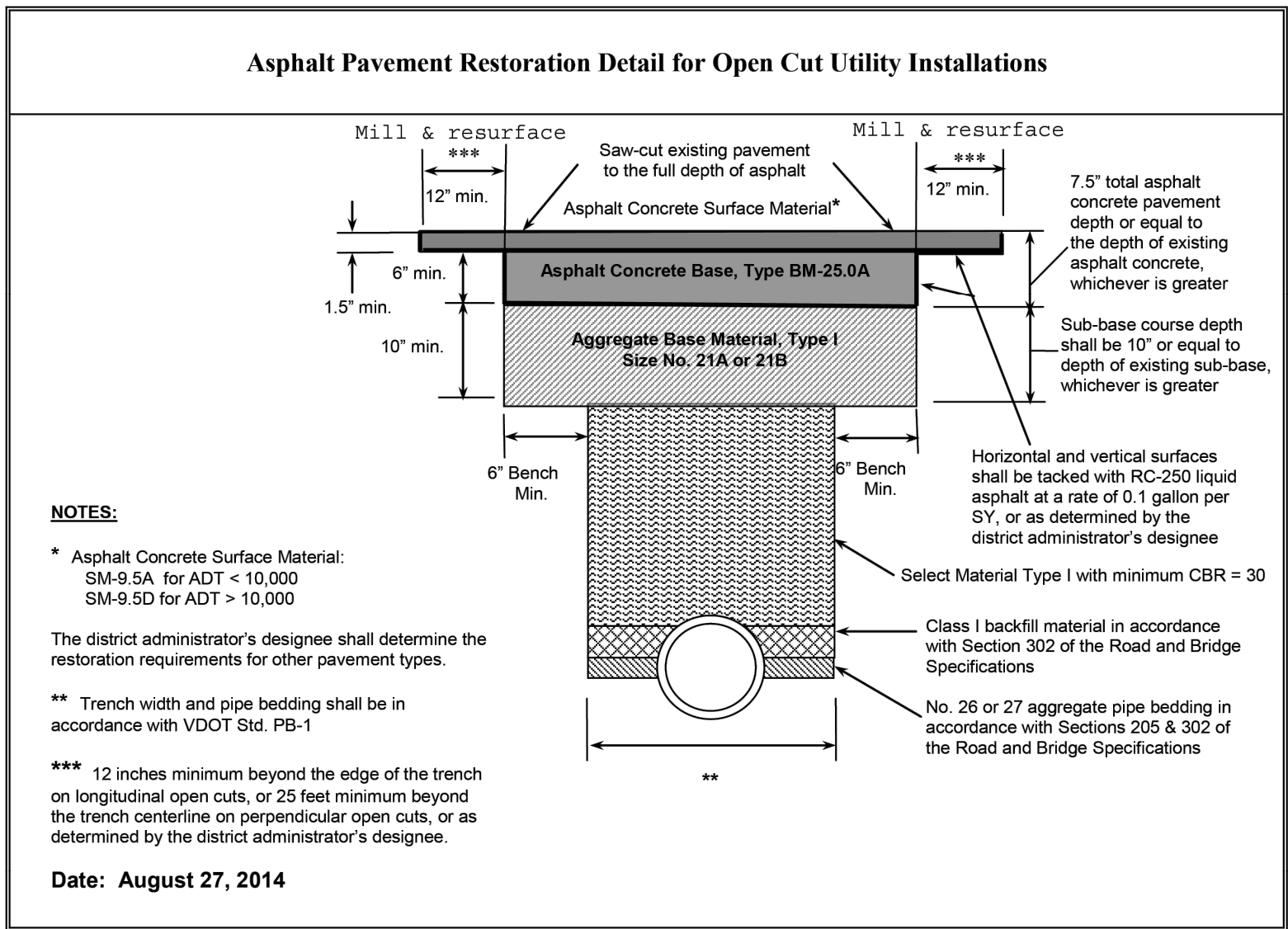


April 1, 2017



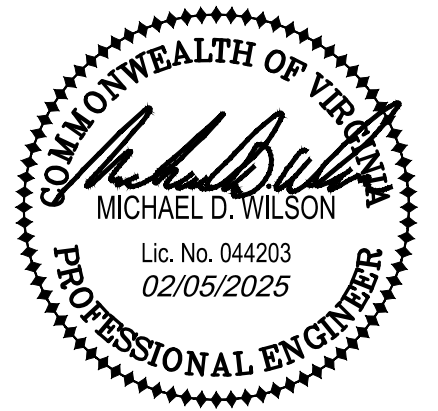
Any of the following provisions that may apply, shall apply:

1. The permittee shall be responsible for the restoration of pavement on state maintained highways in accordance with all applicable sections of the VDOT Road and Bridge Specifications, VDOT Road and Bridge Standards and this document.
2. Whenever existing pavement is permitted to be cut, not over one-half of the roadway width shall be disturbed at one time and the first open cut trench section shall be satisfactorily restored to allow for the passage of traffic prior to the second half of the roadway surface can be disturbed.
3. All trench backfill material shall be Select Material Type I having a minimum CBR of 30 and free from any wood, decaying material, asphalt, concrete, ice, frost, large clods, stone or debris.
4. Trench backfill material shall be compacted to a minimum of 95% of the theoretical maximum density at optimum moisture content, as determine by VDOT testing procedures (VTM1), using mechanical tamping throughout the depth of the trench in 6-inch lifts to ensure that the adequate support is provided for the aggregate sub-base layer is adequately supported.
5. For roadways with a bituminous concrete asphalt pavement section the compacted trench backfill shall be capped with 10 inches (10") of Type I, Size 21-A or 21-B aggregate compacted to 100% of the theoretical maximum density at optimum moisture content covering the entire trench width and a minimum six inch (6") bench on each side of the excavated trench or as determined by the district administrator's designee.
6. A bituminous concrete asphalt base course (BM-25) having a minimum thickness of six inches (6"), or matching the existing base course thickness, shall be placed over the benched aggregate sub-base to the bottom elevation of the existing asphalt concrete surface course.
7. All sides of the excavated trench shall be saw-cut trimmed to neat straight lines and a tack coat of RC-250 liquid asphalt applied at a rate of 0.1 gallon per square yard (or as determined by the district administrator's designee) prior to placing the bituminous concrete asphalt base course (BM-25.0) and/or replacement of the bituminous concrete asphalt surface course (SM-9.5A or SM-9.5D).
8. The existing pavement surface course adjacent to the excavated trench shall be milled and repaved with bituminous concrete asphalt (SM-9.5A or SM-9.5D) having of a minimum thickness of 1-1/2 inches (1.5"). This operation shall cover the entire trench width and extend 12 inches (12") beyond the edge of the trench on longitudinal open cuts and 25 feet (25') beyond the trench centerline on perpendicular open cuts, or as determined by the district administrator's designee.
9. Open cuts in surface treated roadway sections with an aggregate base course shall be replaced with the same layer(s) as roadway sections with a bituminous concrete asphalt pavement structure except the sub-base layer (Type I, Size 21-A or 21-B) may be reduced to six inches (6") and the bituminous concrete asphalt base layer (BM-25.0) may be reduced to four inches (4") while maintaining the required six inch (6") bench on both sides of the excavated trench. The surface course restoration material and thickness shall match the existing surface.
10. Replacement of all bituminous concrete asphalt and surface treated courses shall be rolled with equipment having a manufacturer's rating of ten (10) tons until the aggregate is keyed into the bitumen. Where rolling is not possible, a mechanical tamper shall be utilized.
11. Full depth aggregate stone may be placed in the trench daily up to maximum length of 500 feet, at which time either temporary or permanent pavement restoration procedures must be implemented.
12. Should the application of the bituminous concrete asphalt surface course be delayed due to adverse weather conditions, the contractor shall provide and maintain a temporary pavement section that is acceptable to the district administrator's designee until such time as the appropriate permanent pavement restoration can be achieved.
13. The permittee shall be responsible for any settlement in the backfill or pavement for a period of two (2) years after the completion date of permit and for the continuing maintenance of the facilities placed within the highway right-of-way.
14. A one-year restoration warranty period may be considered, provided the permittee adheres to the following criteria:
  - The permittee retains the services of a professional engineer (or certified technician under the direction of the professional engineer) to observe the placement of all fill embankments, pavement, and storm sewer and utility trench backfill.
  - The professional engineer (or certified technician under the direction of the professional engineer) performs any required inspection and testing in accordance with all applicable sections of VDOT's Road and Bridge Specifications.
  - The professional engineer submits all testing reports for review and approval, and provides written certification that all restoration procedures have been completed in accordance with all applicable sections of VDOT's Road and Bridge Specifications prior to completion of the work authorized by the permit.
15. The district administrator's designee may request and review the backfill compaction test results and/or authorize an inspector to monitor the trench backfill and compaction operations.
16. The use of steel plates to provide a temporary riding surface will not be allowed between November 1 and April 1. The use of steel plates between April 2 and October 31 shall be in accordance with VDOT standards and specifications.
17. Traffic shall be maintained at all times in accordance with the Virginia Work Area Protection Manual and a VDOT approved Maintenance of Traffic (MOT) plan.
18. The permittee shall notify the district administrator's designee a minimum of 72 hours prior to initiating any pavement open cutting operations.
19. The trench to be backfilled shall be made as dry as practicable at the time of backfilling by pumping, bailing, draining, or other approved dewatering method.
20. All asphalt pavement restoration activities shall be in accordance with the Asphalt Pavement Restoration Detail for Open Cut Utility Installations contained herein.



PAVEMENT RESTORATION  
FOR  
MARTIN DRIVE REGIONAL W.W.P.S.  
CAMPBELL COUNTY, VIRGINIA

PROJECT NO. 20230622  
LAT. 37.313701  
LONG. -79.260669  
DATE: 02/05/2025  
DRAWN BY: MSF  
CHECKED BY: MDW



BID SET

CCUSA # 80-2304

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SHEET NO. C-602  
REV. ----



THIS SHEET IS INTENDED TO BE REPRODUCED AT 24"x36". REPRODUCTION OF THIS SHEET AT A DIFFERENT SIZE THAN INTENDED SHALL VOID THE SCALE SHOWN ON THE SHEET.

Feb 07, 2025 - 10:04am - Z:\2023\20230622\Engineering\CAD\230622 - ELECTRICAL\_NEW.dwg

ABBREVIATIONS

A,AMP	AMPERES
AEP	AMERICAN ELECTRIC POWER
AF	AMPERE FRAME
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AHU	AIR HANDLING UNIT
AIC	AMPERES INTERRUPTING CAPACITY
APPROX	APPROXIMATELY
AS	AMPERE SENSOR
AT	AMPERE TRIP
BAS	BUILDING AUTOMATION SYSTEM
BCSD	BARE COPPER SOFT DRAWN
BKR	BREAKER
C	CONDUIT
CKT	CIRCUIT
COMP	COMPRESSOR
CONN	CONNECTED
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRANSFORMER
CU	COPPER
CWB	COLD WEATHER BALLAST
D	DEEP
DISC	DISCONNECT
DIV	DIVISION
DWG	DRAWING
EGC	EQUIPMENT GROUNDING CONDUCTOR
EL-ELEV	ELEVATION
EMT	ELECTRICAL METALLIC TUBING
EQPT	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
FDR	FEEDER
FLA	FULL LOAD AMPERES
FRACT	FRACTIONAL
FVNR	FULL VOLTAGE NON-REVERSING
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
GRS	GALVANIZED RIGID STEEL
H	HIGH
HAL	HALOGEN
HD	HEAVY DUTY
HO-A	HAND-OFF-AUTO
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
INTER	INTERMEDIATE
kcmil	THOUSANDS OF CIRCULAR MILS
KV	KILOVOLTS
KVA	KILOVOLT AMPERE
KW	KILOWATTS
L	LONG
LED	LIGHT EMETTING DIODE
LBS	LOAD BREAK SWITCH
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MCCB	MOLDED CASE CIRCUIT BREAKER
MCP	MOTOR CIRCUIT PROTECTOR
MH	METAL HALIDE
MIN	MINIMUM
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NEUT	NEUTRAL
OL	OVERLOAD
P	POLES
PH	PHASE
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
R	RADIUS
RCPT(S)	RECEPTACLE(S)
RM	ROOM
RMS	ROOT MEAN SQUARE
RSC	RIGID STEEL CONDUIT
SCH	SCHEDULE
SQ FT	SQUARE FEET
SPKR	SPEAKER
SUB	SUBSTATION
SWBD	SWITCHBOARD
SYM	SYMMETRICAL
TWSP	TWISTED SHIELDED PAIR
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES, INC.
UON	UNLESS OTHERWISE NOTED
V	VOLT
VA	VOLT AMPERES
VFD	VARIABLE FREQUENCY DRIVE
W	WATT(S), WIRE, WIDE, (AS APPLICABLE)
WP	WEATHERPROOF
XFMR	TRANSFORMER
ø, PH	PHASE
Δ	ONE CONDUCTOR
Δ	DELTA CONNECTED
Δ	GROUNDWED WYE CONNECTED

LEGEND

	CONDUIT RUN EXPOSED
	CONDUIT RUN UNDER CONCRETE FLOOR OR CONCEALED IN WALL
	CONDUIT TURNING UP
	CONDUIT TURNING DOWN
	TICK MARKS: INDICATE NUMBER OF CONDUCTORS IN A CONDUIT IN ADDITION TO EGC. NO TICK MARKS INDICATE TWO CONDUCTORS IN ADDITION TO EGC
	HOMERUN TO PANELBOARD
	DIRECT BURIED GROUND CONDUCTOR
	FLEXIBLE CONDUIT
	LED LIGHTING FIXTURE
	LIGHTING FIXTURE, WALL MOUNTED
	SINGLE POLE SWITCH
	OCCUPANCY SENSOR
	NEMA 5-20R DUPLEX RECEPTACLE, 18" AFF UON
	NEMA 5-20R DUPLEX RECEPTACLE, 18" AFF UON
	MOTOR
	JUNCTION BOX
	NON-FUSED DISCONNECT SWITCH
	COMBINATION MAGNETIC STARTER/DISCONNECT SWITCH W/ HOA ON COVER
	MANUAL STARTER
	208/120 VOLT PANELBOARD, SURFACE MOUNTED
	480/277 VOLT PANELBOARD, SURFACE MOUNTED
	PANEL OR CABINET AS INDICATED
	TRANSFORMER
	GROUND ROD, 3/4" DIA x 10' COPPER CLAD

	EXOTHERMIC BOND CONDUCTOR TO CONDUCTOR
	EXOTHERMIC BOND CONDUCTOR TO COLUMN OR TANK
	BOLTED GROUND CONNECTION
	MOLDED CASE CIRCUIT BREAKER, TRIP RATING AS INDICATED
	TRANSFORMER
	GROUND
	CURRENT TRANSFORMER
	POTENTIAL TRANSFORMER
	NORMALLY OPEN CONTACTS
	STARTER COIL

ELECTRICAL SPECIFICATIONS:

RACEWAYS AND BOXES

- MATERIALS:  
RSC - ANSI C80.1, THREADED COUPLINGS ONLY, MIN SIZE 3/4-INCH  
PVC COATED RSC - ANSI C80.1, THREADED COUPLINGS ONLY, MIN SIZE 1".  
LFMC - MIN SIZE 3/4".  
RNC - NEMA TC2 WITH TC3 FITTINGS, MIN SIZE 3/4".  
WIREWAYS - SHEET METAL WITH SCREW COVERS  
SET SCREW FITTINGS SHALL NOT BE USED
- INDOOR RACEWAY APPLICATIONS:  
EXPOSED OR CONCEALED: PVC COATED RSC, UON  
EMBEDDED IN CONCRETE: SCHEDULE 40 RNC  
BOXES AND ENCLOSURES: NEMA 250, TYPE 1, UON
- OUTDOOR RACEWAY APPLICATIONS:  
ABOVEGROUND: PVC COATED RSC,  
BOXES AND ENCLOSURES: NEMA 250 TYPE 3R, UON
- UNDERGROUND RACEWAY APPLICATIONS: USE DIRECT BURIED SCHEDULE 80 TYPE DB RNC. MINIMUM DEPTH IS 24 INCHES OR GREATER AS REQUIRED BY NATIONAL ELECTRICAL CODE. USE FABRICATED LONG RADIUS RSC ELBOWS FOR TURNS APPROACHING 90 DEGREES. TRANSITION TO RSC BEFORE TURNING UP TO COME OUT OF GROUND.
- LEAVE 1-INCH MINIMUM CONCRETE COVER FOR EMBEDDED RACEWAY. USE MANUFACTURED RSC ELBOW TO TURN OUT OF CONCRETE.
- USE UP TO 72 INCHES OF LFMC FOR CONNECTION TO VIBRATING EQUIPMENT INCLUDING MOTOR-DRIVEN EQUIPMENT.
- PROVIDE 65-LB TEST PULL STRING TIED OFF AT EACH END IN ALL EMPTY CONDUITS.

WIRING METHODS

- SINGLE CONDUCTORS SHALL BE COPPER, #12 MINIMUM CONDUCTOR SIZE, SOLID FOR #10 AWG AND SMALLER, STRANDED FOR #8 AWG AND LARGER. FOR ABOVE-GROUND APPLICATIONS USE THHN-THWN, 600VAC INSULATION. FOR CIRCUITS WHERE ANY PART OF THE CIRCUIT IS BELOW GRADE USE CONDUCTORS WITH XHHW-2, 600 VAC RATED INSULATION.
- RACEWAY APPLICATIONS:  
FEEDER CONDUCTORS: SINGLE CONDUCTORS IN RACEWAY, UON  
BRANCH CIRCUITS: SINGLE CONDUCTORS IN RACEWAY, UON  
CLASS 2 CONTROL CIRCUITS: SINGLE CONDUCTORS IN RACEWAY, UON.
- MINIMIZE SPLICES AND PLACE ONLY IN ACCESSIBLE JUNCTION BOXES AND ENCLOSURES THAT ARE SIZED AND RATED FOR SUCH. NO BELOW GRADE SPLICES.

ELECTRICAL IDENTIFICATION

- EQUIPMENT IDENTIFICATION: PROVIDE LABELS FOR PANELBOARDS, ELECTRICAL CABINETS, MOTOR STARTERS, AND AS ADDITIONALLY INDICATED. LABELS SHALL BE LAMINATED ACRYLIC, WITH 1/2-INCH ENGRAVED BLACK LETTERING ON 1-1/2-INCH WHITE STOCK ATTACHED WITH SCREWS.
- MARK EACH DISCONNECTING MEANS TO INDICATE ITS CIRCUIT SOURCE. MARK DISCONNECTING MEANS TO INDICATE WHAT LOAD IS SERVED.
- RACEWAY AND CABLE LABELS: PROVIDE PRE-TENSIONED, PRE-PRINTED, WRAPAROUND PLASTIC SLEEVES THAT ARE SIZED TO SUIT THE DIAMETER OF THE ITEM IDENTIFIED.
- USE VINYL OR VINYL-CLOTH, SELF-ADHESIVE, WRAPAROUND TYPE TAPE MARKERS FOR WIRE. FOLLOW THESE WIRE COLOR CODING CONVENTIONS.

PENETRATIONS AND SLEEVES

- MASONRY WALLS AND FLOORS: IN CONCRETE SLABS AND WALLS, INSTALL SLEEVES FOR PENETRATIONS UNLESS CORE-DRILLED HOLES OR FORMED OPENINGS ARE USED. INSTALL SLEEVES DURING ERECTION OF SLABS AND WALLS. EXTEND SLEEVES INSTALLED IN FLOORS 2 INCHES ABOVE FINISHED FLOOR LEVEL. SELECT SLEEVE SIZE TO ALLOW FOR 1/2-INCH ANNULAR CLEAR SPACE BETWEEN RACEWAY AND SLEEVES.
- BELOW-GRADE EXTERIOR WALL PENETRATIONS: SEAL PENETRATIONS USING SLEEVES AND MECHANICAL SLEEVE SEALS.
- ABOVE-GRADE EXTERIOR WALL PENETRATIONS: SEAL PENETRATIONS USING SLEEVES AND CAULK, UON.

GENERAL NOTES:

- THESE DRAWINGS MAY NOT INDICATE ALL FITTINGS, PARTS AND ACCESSORIES THAT ARE REQUIRED FOR A COMPLETE AND FUNCTIONAL SYSTEM. NO EXCLUSION FROM OR LIMITATION IN THE SYMBOLISM USED ON THE DRAWINGS FOR THE WORK, OR THE LANGUAGE USED IN THE SPECIFICATIONS FOR THE WORK SHALL BE INTERPRETED AS A REASON FOR OMITTING THE APPURTENANCES OR ACCESSORIES NECESSARY TO COMPLETE AND REQUIRED WORK, SYSTEM, OR ITEM OF EQUIPMENT.
- ALL ELECTRICAL WORK ON THIS PROJECT SHALL BE INSTALLED IN ACCORDANCE WITH THE 2018 VIRGINIA UNIFORM STATEWIDE BUILDING CODE AND THE NFPA 70-2018 (NATIONAL ELECTRICAL CODE).
- MATERIALS, EQUIPMENT, AND SYSTEMS SHALL MEET ALL PERTINENT REQUIREMENTS OF THE AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM), THE UNDERWRITERS LABORATORY (UL), THE NATIONAL ELECTRIC MANUFACTURER'S ASSOCIATION (NEMA), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), AND OTHER NATIONALLY RECOGNIZED AGENCIES.
- COORDINATE ARRANGEMENT, MOUNTING, AND SUPPORT OF ELECTRICAL EQUIPMENT TO AVOID INTERFERENCES WITH ELECTRICAL AND OTHER TRADES. COORDINATE WORK WITH EXISTING CONDITIONS INCLUDING BEAMS, COLUMNS, SITE FEATURES, AND OTHER CONSTRUCTION WHETHER OR NOT SUCH IS SHOWN ON THE DRAWINGS. COORDINATE AMPACITY, VOLTAGE, PHASING, OVERCURRENT PROTECTION, AND LOCAL DISCONNECT REQUIREMENTS WITH ACTUAL EQUIPMENT PROVIDED.
- MAINTAIN A SET OF AS-BUILT RED-LINE MARKUPS INDICATING ACTUAL INSTALLATION. DELIVER TO OWNER AT CONCLUSION OF PROJECT.
- PROVIDE PRODUCT DATA SUBMITTALS FOR THE FOLLOWING EQUIPMENT: MOTOR CONTROL CENTER BUCKETS, CIRCUIT BREAKERS, PULL BOXES, AND DEVICES. MATERIALS INSTALLED PRIOR TO OBTAINING AN APPROVED SUBMITTAL ARE AT CONTRACTOR'S RISK.
- CONTRACTOR SHALL ADVISE A/E IMMEDIATELY OF DISCREPANCIES WITHIN DRAWINGS. MINOR DEVIATIONS FROM THE PLANS MAY BE MADE TO AVOID MINOR CONFLICTS. WHEN MAJOR CONFLICTS ARE ENCOUNTERED, THE AFFECTED WORK SHALL NOT BE INSTALLED UNTIL THE CONFLICT HAS BEEN RESOLVED. THE A/E IS NOT RESPONSIBLE FOR THE CONSEQUENCES OF PROCEEDING WITH WORK BASED ON CONTRACTOR INTERPRETATION OR ON DIRECTION FROM OTHER PARTIES.

- ROOF PENETRATIONS: SEAL PENETRATIONS OF INDIVIDUAL RACEWAYS AND CABLES WITH FLEXIBLE BOOT-TYPE FLASHING UNITS OR PITCH POCKETS APPLIED IN COORDINATION WITH ROOFING.

SUPPORT AND ANCHORAGE

- PROVIDE SUPPORT AND ANCHORAGE THAT ARE ADEQUATE IN TENSION, SHEAR, AND PULLOUT FORCE TO RESIST MAXIMUM LOADS CALCULATED OR IMPOSED WITH A MINIMUM STRUCTURAL SAFETY FACTOR OF FIVE.
- STEEL SLOTTED SUPPORT SYSTEMS: COMPLY WITH MFMA-3 FACTORY FABRICATED COMPONENTS FOR FIELD ASSEMBLY WITH FINISH SUITABLE FOR THE ENVIRONMENT.
- FOR ATTACHMENT TO CONCRETE AND SOLID MASONRY, USE WEDGE-TYPE, ZINC-COATED STEEL EXPANSION ANCHOR FASTENERS. DRILL HOLES AT LOCATIONS AND DEPTHS THAT AVOID REINFORCING BARS. FOR CONNECTIONS TO HOLLOW MASONRY USE ALL-STEEL SPRINGHEAD TYPE TOGGLE BOLTS.
- FOR CLAMPING TO STEEL STRUCTURAL ELEMENTS USE WELDED STEEL STUDS, BEAM CLAMPS OR SPRING-TENSION CLAMPS.
- FOR CONNECTIONS TO WOOD USE LAG SCREWS OR THROUGH BOLTS.
- HANGER RODS TO BE THREADED STEEL.
- FOR CONNECTIONS TO LIGHT STEEL USE SHEET METAL SCREWS.
- FASTEN HANGERS AND SUPPORTS SECURELY IN PLACE WITH PROVISIONS FOR STRUCTURAL AND THERMAL MOVEMENT.
- SEPARATE DISSIMILAR METALS AND METAL PRODUCTS FROM CONTACT WITH WOOD OR CEMENTITIOUS MATERIALS BY PAINTING EACH METAL SURFACE IN AREA OF CONTACT WITH A BITUMINOUS COATING OR BY OTHER PERMANENT SEPARATION.
- RSC MAY BE SUPPORTED BY OPENINGS THROUGH STRUCTURAL MEMBERS AS PERMITTED IN NFPA-70.
- RACEWAY SUPPORT INTERVALS SHALL BE PER THE NATIONAL ELECTRICAL CODE.

ENCLOSED SWITCHES

- NEMA KS 1, TYPE HD, WITH LOCKABLE HANDLE, INTERLOCKED WITH COVER. IF INDICATED, PROVIDE SPECIFIED ENCLOSED CIRCUIT BREAKERS.

PANELBOARDS

- PANELBOARDS SHALL BE MANUFACTURED BY EATON, SQUARE-D, CUTLER HAMMER OR GENERAL ELECTRIC.
- PROVIDE CIRCUIT BREAKERS AS SCHEDULED.

- PROVIDE TYPED PANELBOARDS INDEXES.

DIESEL STANDBY GENERATORS

- SEE SPECIFICATION SECTION 263213.

AUTOMATIC TRANSFER SWITCHES

- SEE SPECIFICATION SECTION 263600.

PUMP STATION CONTROL PANEL

SEE SPECIFICATION SECTION 262420.

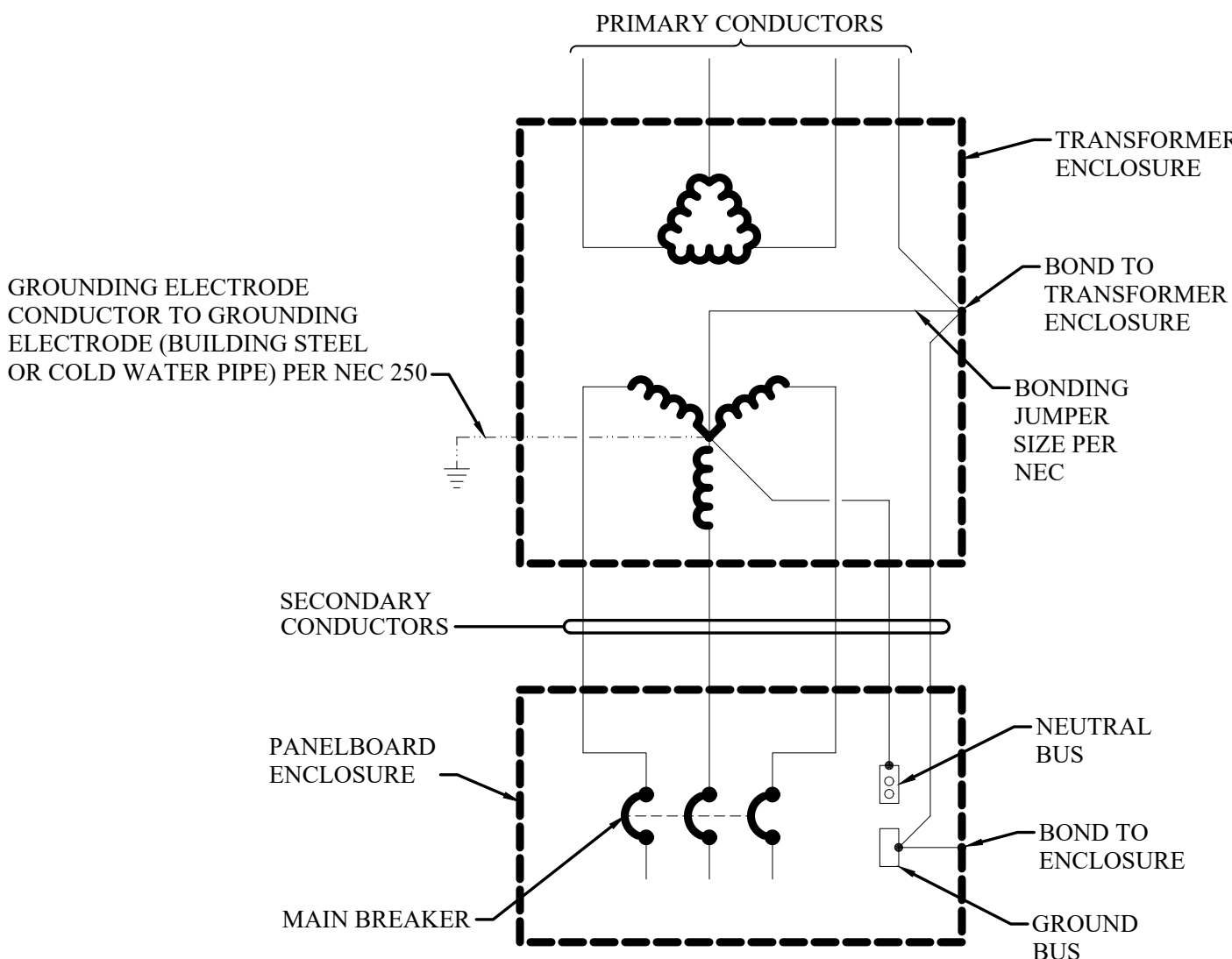
GROUNDING

- PROVIDE GROUNDING IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE AND ADDITIONALLY AS INDICATED.

EXCAVATIONS

- CONTACT MISS UTILITY AT 811, 1-800-552-7001, OR [HTTP://WWW.MISSUTILITYOFVIRGINIA.COM](http://www.missutilityofvirginia.com) NO LESS THAN 72 HOURS PRIOR TO EXCAVATION AND DO NOT DISTURB THE SOIL UNTIL THE DIG TICKET HAS BEEN PROCESSED.
- MISS UTILITY WILL NOT MARK PRIVATE UTILITIES WHICH MAY BE PRESENT ON THIS SITE. ENSURE THAT ALL UTILITIES, PUBLIC AND PRIVATE, ARE MARKED PRIOR TO EXCAVATION.

CONDUCTOR COLOR CODE		
CONDUCTOR	120/240V	480/277V
PH A	BLACK	BROWN
PH B	RED	ORANGE
PH C	-	YELLOW
NEUTRAL	WHITE	GRAY
GROUND	GREEN	GREEN



DRY TYPE TRANSFORMER WIRING DIAGRAM

SCALE: NONE

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**LEGEND, ABBREVIATIONS, AND GENERAL NOTES**  
**FOR**  
**MARTIN DRIVE REGIONAL W.W.P.S.**  
**CAMPBELL COUNTY, VIRGINIA**

PROJECT NO.	20230622
LAT.	37.313701
LONG.	-79.260689
DATE:	02/05/2025
DRAWN BY:	MSF
CHECKED BY:	WKH / MDW



**BID SET**

**CCUSA # 80-2304**

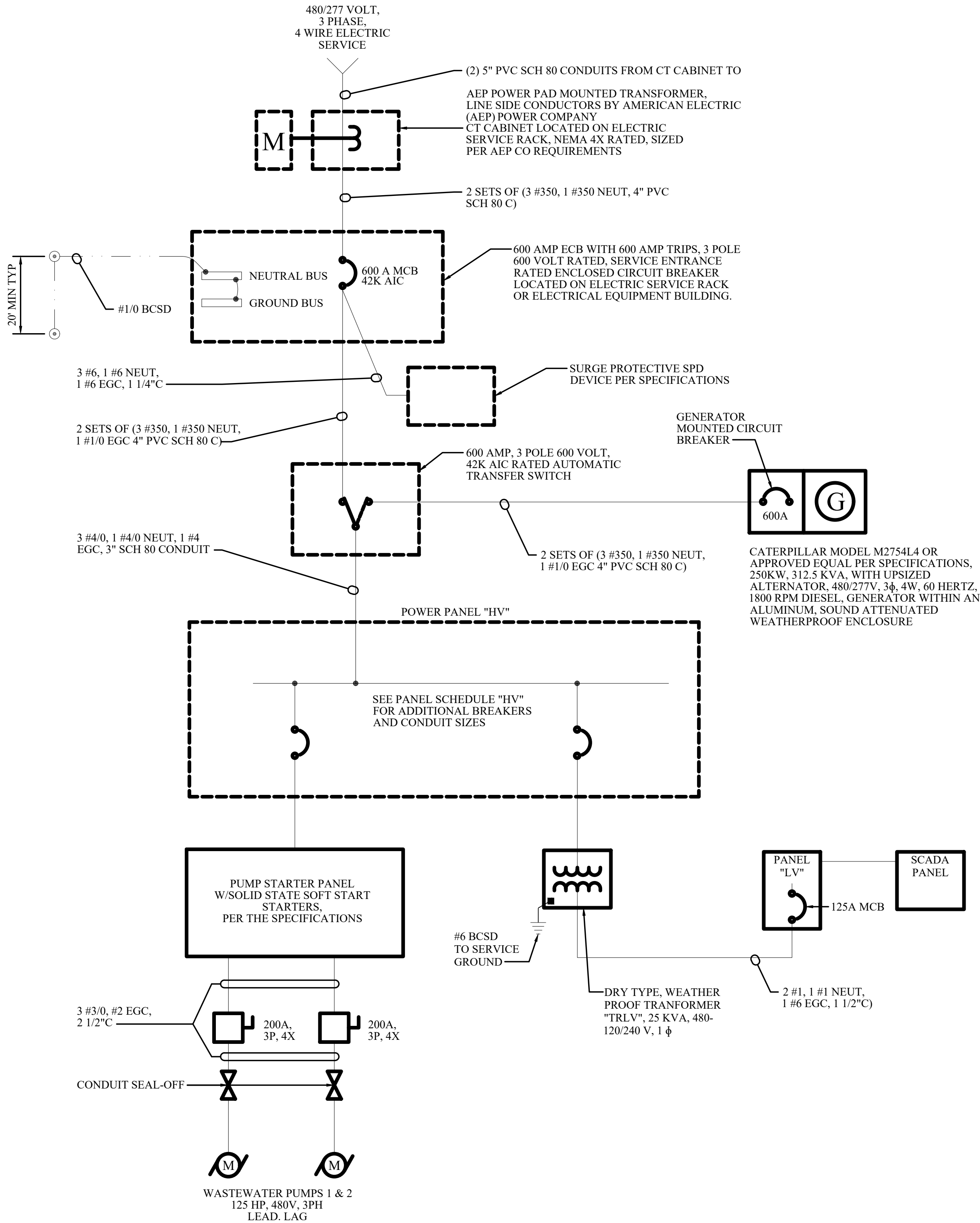
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SHEET NO. E-001	REV. ---
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THIS SHEET IS INTENDED TO BE REPRODUCED AT 24X36". REPRODUCTION OF THIS SHEET AT A DIFFERENT SIZE THAN INTENDED SHALL VOID THE SCALE SHOWN ON THE SHEET.

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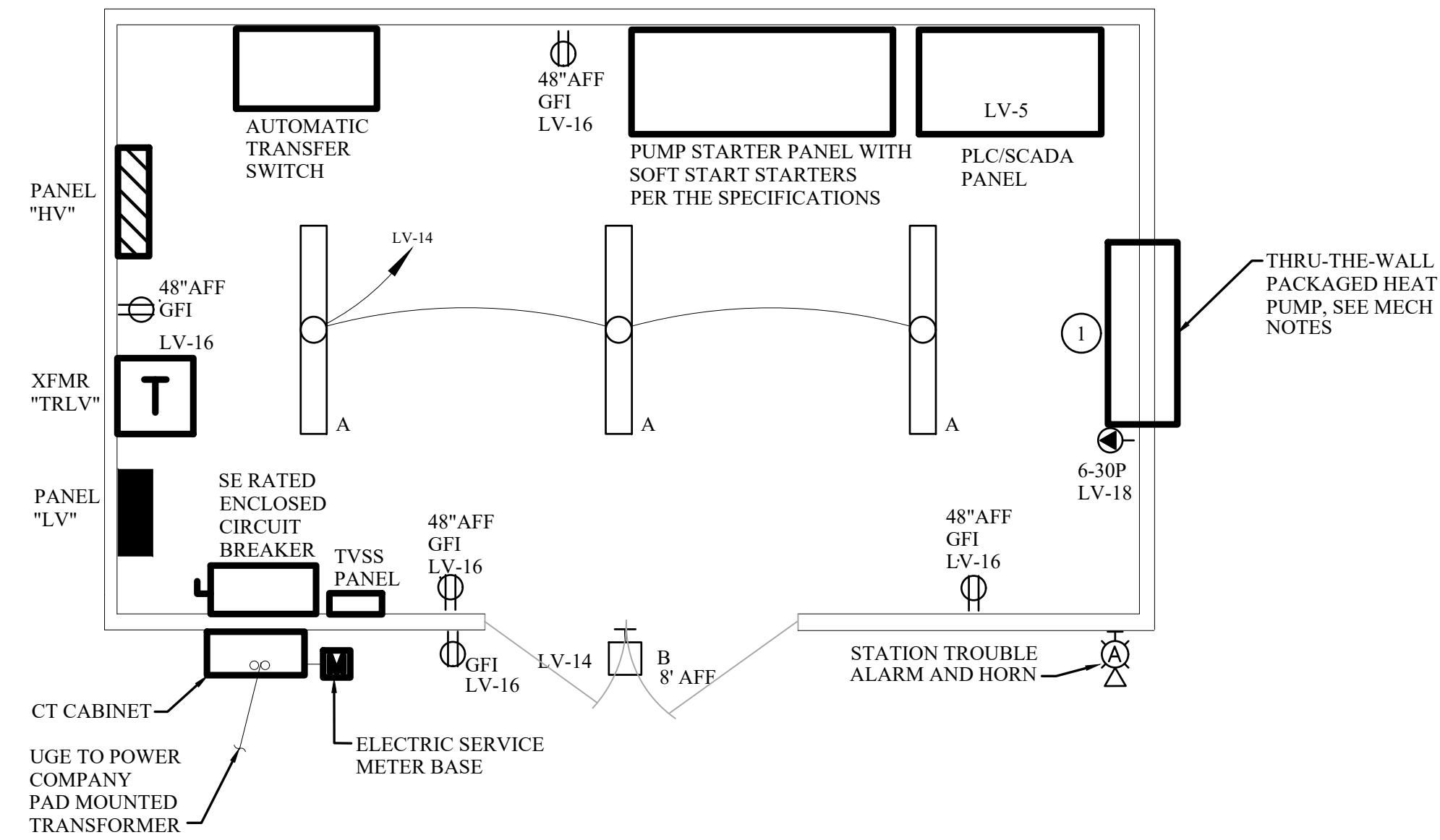


SERVICE AND DISTRIBUTION SINGLE LINE DIAGRAM

SCALE: NONE

MECHANICAL NOTES:

- THRU-THE-WALL PTAC UNIT SHALL BE MANUFACTURED BY FRIEDRICH, MODEL #PDE07K3SG, 13.0 EER OR APPROVED EQUAL. PROVIDE COMPLETE WITH WALL SLEEVE AND PER MANUFACTURER'S INSTRUCTIONS. VERIFY LOCATION OF UNIT WITH ALL OTHER UTILITIES PRIOR TO ROUGHING IN FOR UNIT.

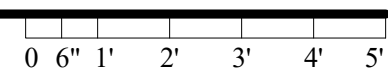


NORTH



PUMP STATION CONTROL BUILDING PLAN

SCALE: 3/8"=1'-0"



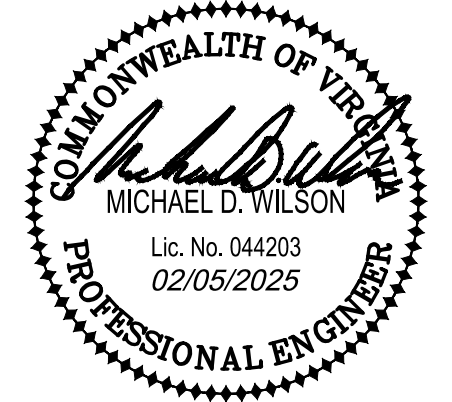
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POWER DISTRIBUTION DIAGRAM AND PLAN  
FOR  
MARTIN DRIVE REGIONAL W.W.P.S.  
CAMPBELL COUNTY, VIRGINIA

PROJECT NO.	20230622
LAT.	37.313701
LONG.	-79.260669
DATE:	02/05/2025
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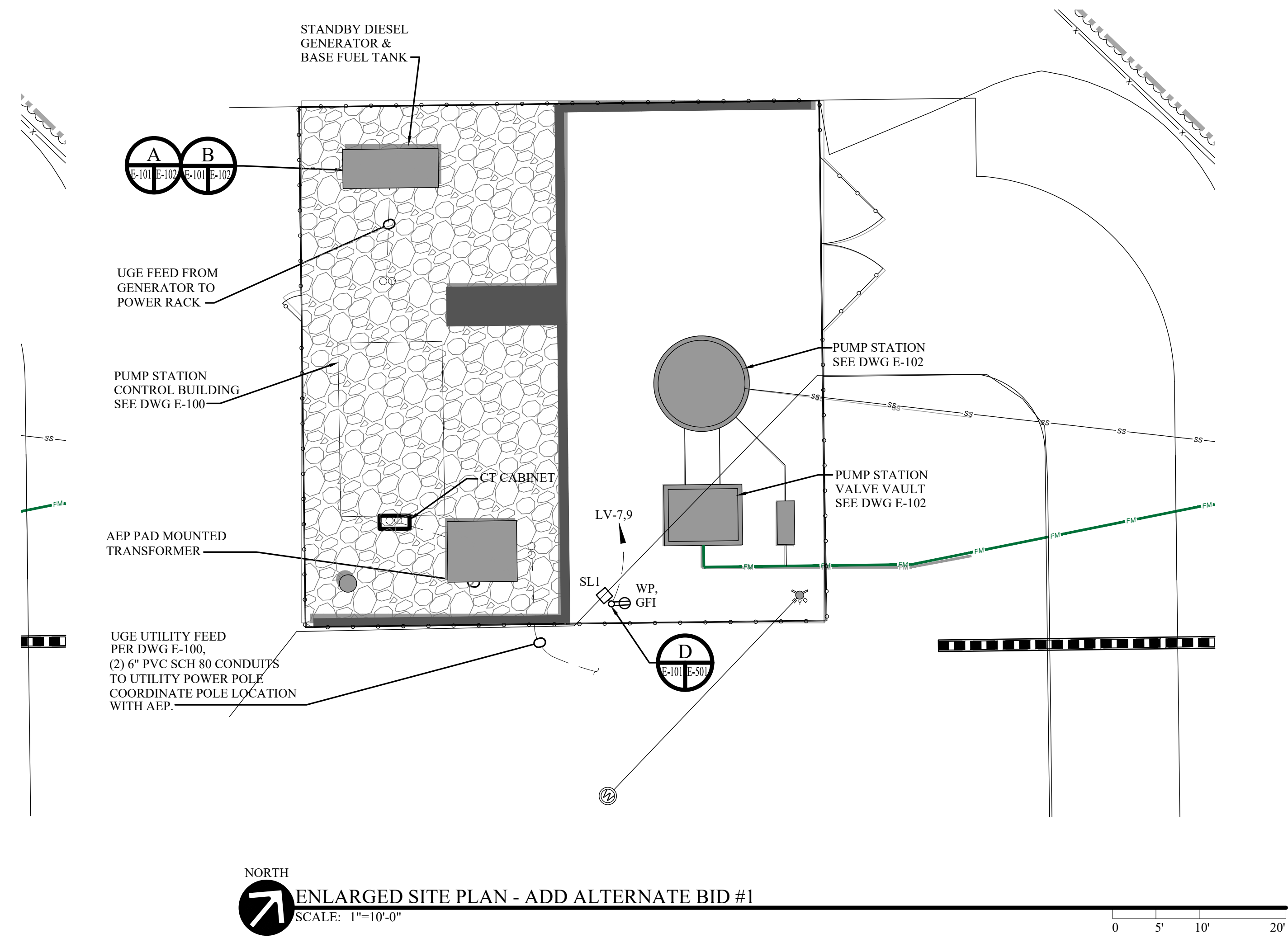
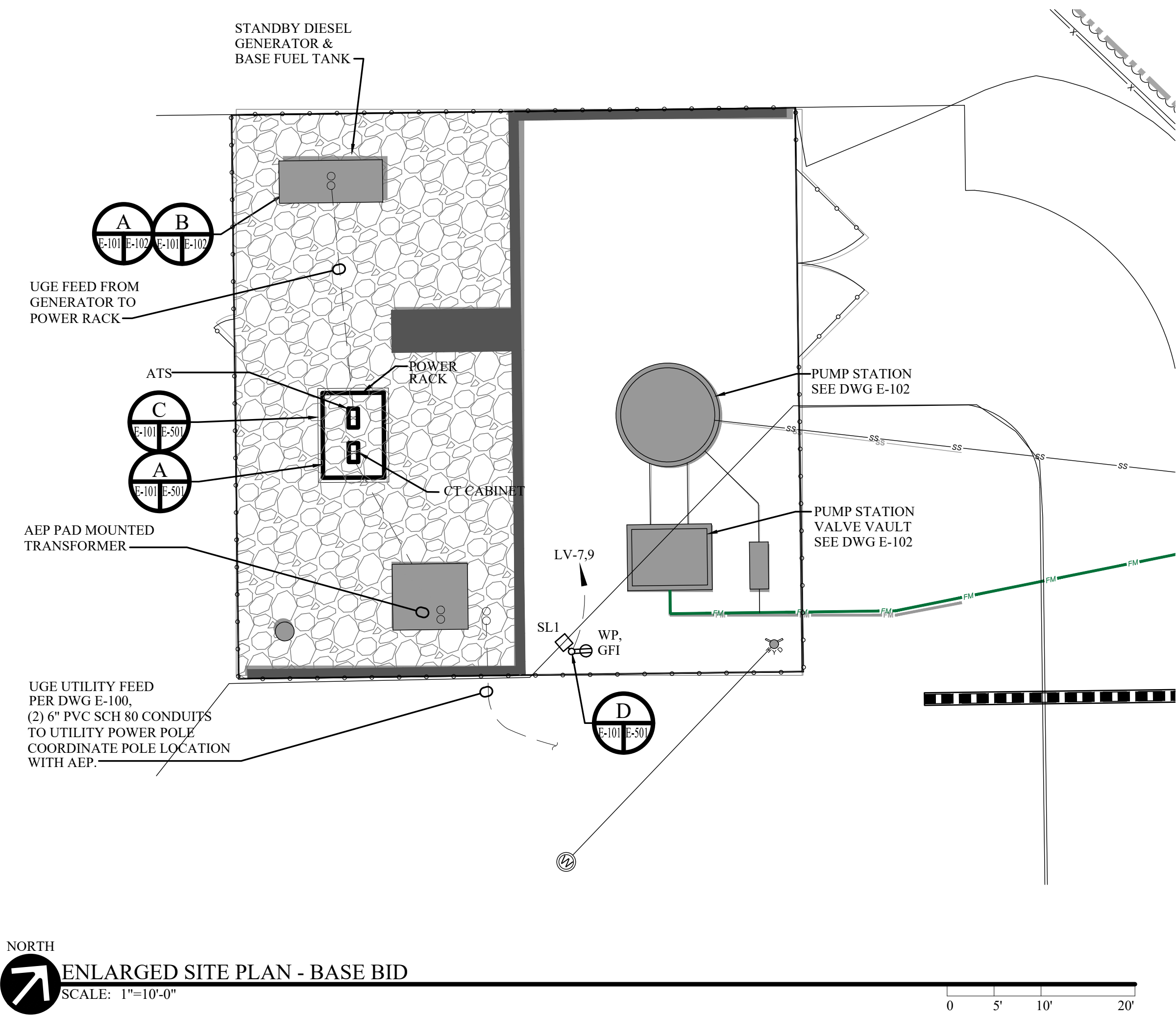
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SHEET NO.	REV.
E-100	---



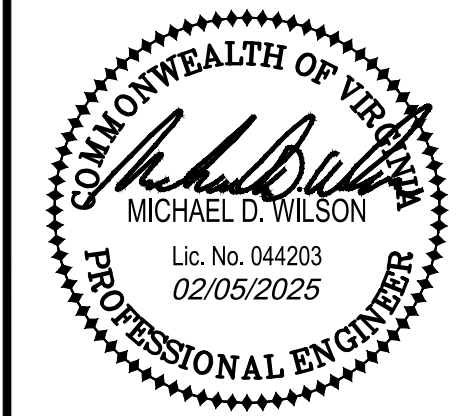
THIS SHEET IS INTENDED TO BE REPRODUCED AT 24X36". REPRODUCTION OF THIS SHEET AT A DIFFERENT SIZE THAN INTENDED SHALL VOID THE SCALE SHOWN ON THE SHEET.

Feb 07, 2025 - 10:04am Z:\02030203022\Engineering\CAU\030622\_ELECTRICAL\_NEW.dwg



**ENLARGED SITE PLANS**  
FOR  
**MARTIN DRIVE REGIONAL W.W.P.S.**  
**CAMPBELL COUNTY, VIRGINIA**

PROJECT NO.	20230622
LAT.	37.313701
LONG.	-79.260669
DATE:	02/05/2025
DRAWN BY:	MSF
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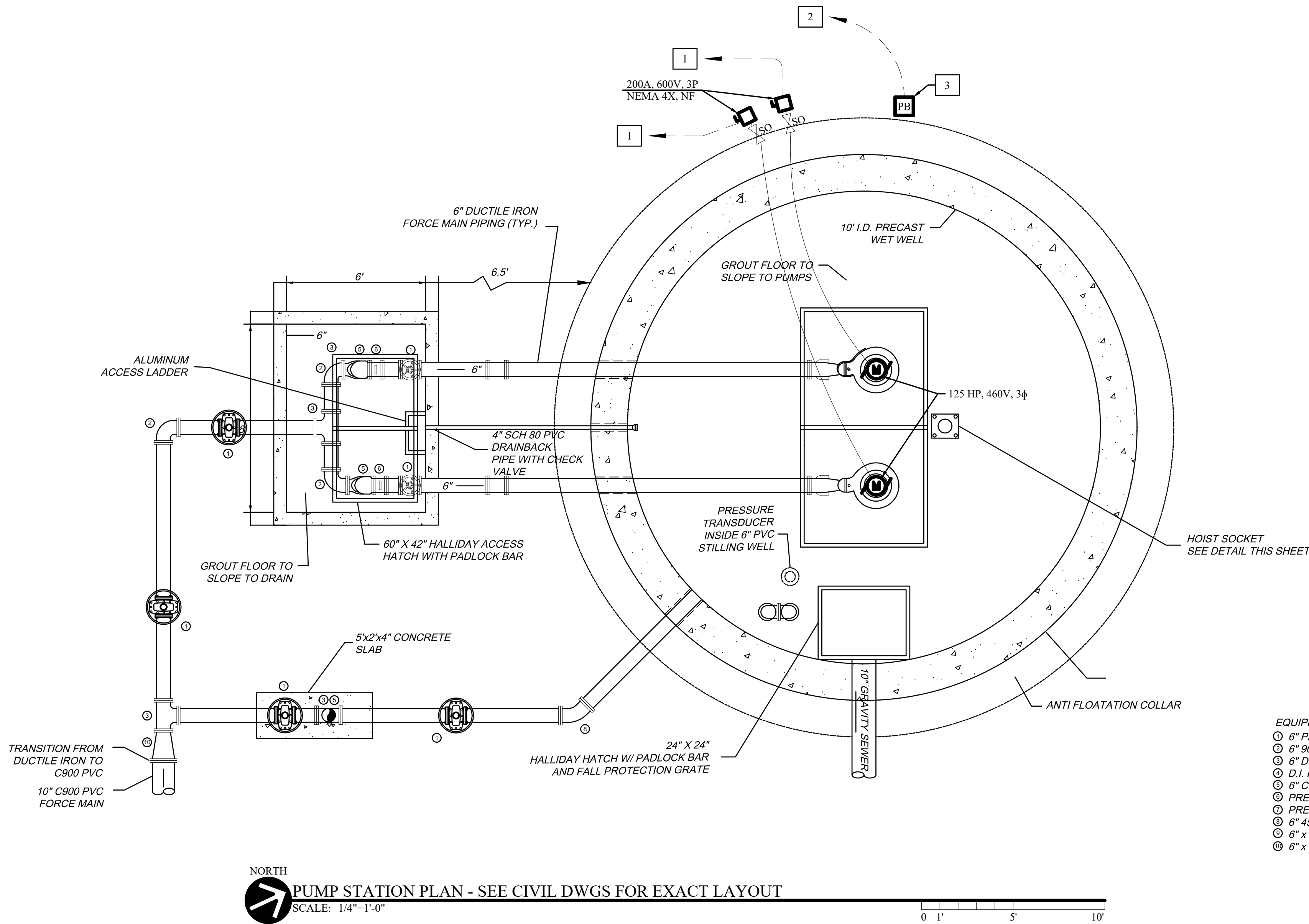


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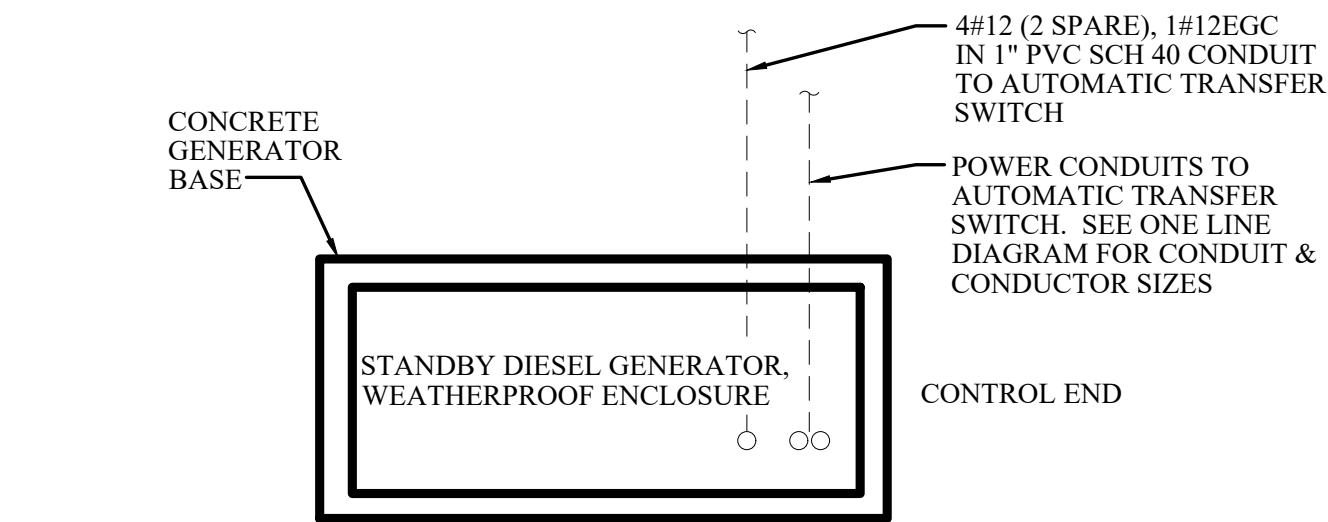


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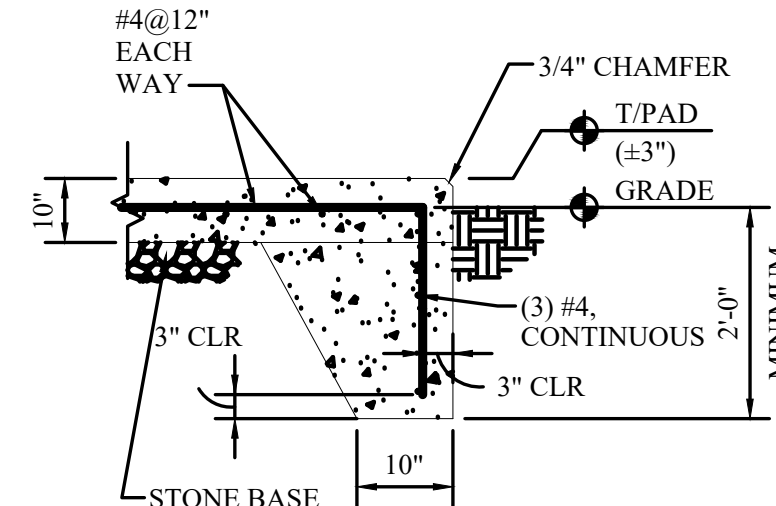


- EQUIPMENT LEGEND
- ① 6" PLUG VALVE ASSEMBLY
  - ② 6" 90° SWEEP
  - ③ 6" D.I. TEE
  - ④ D.I. MOUNTING BRACKET
  - ⑤ 6" CHECK VALVE ASSEMBLY
  - ⑥ PRESSURE GAUGE WITH BALL VALVE
  - ⑦ PRESSURE SWITCH WITH BALL VALVE
  - ⑧ 6" 45° BEND
  - ⑨ 6" x 4" REDUCER
  - ⑩ 6" x 10" REDUCER

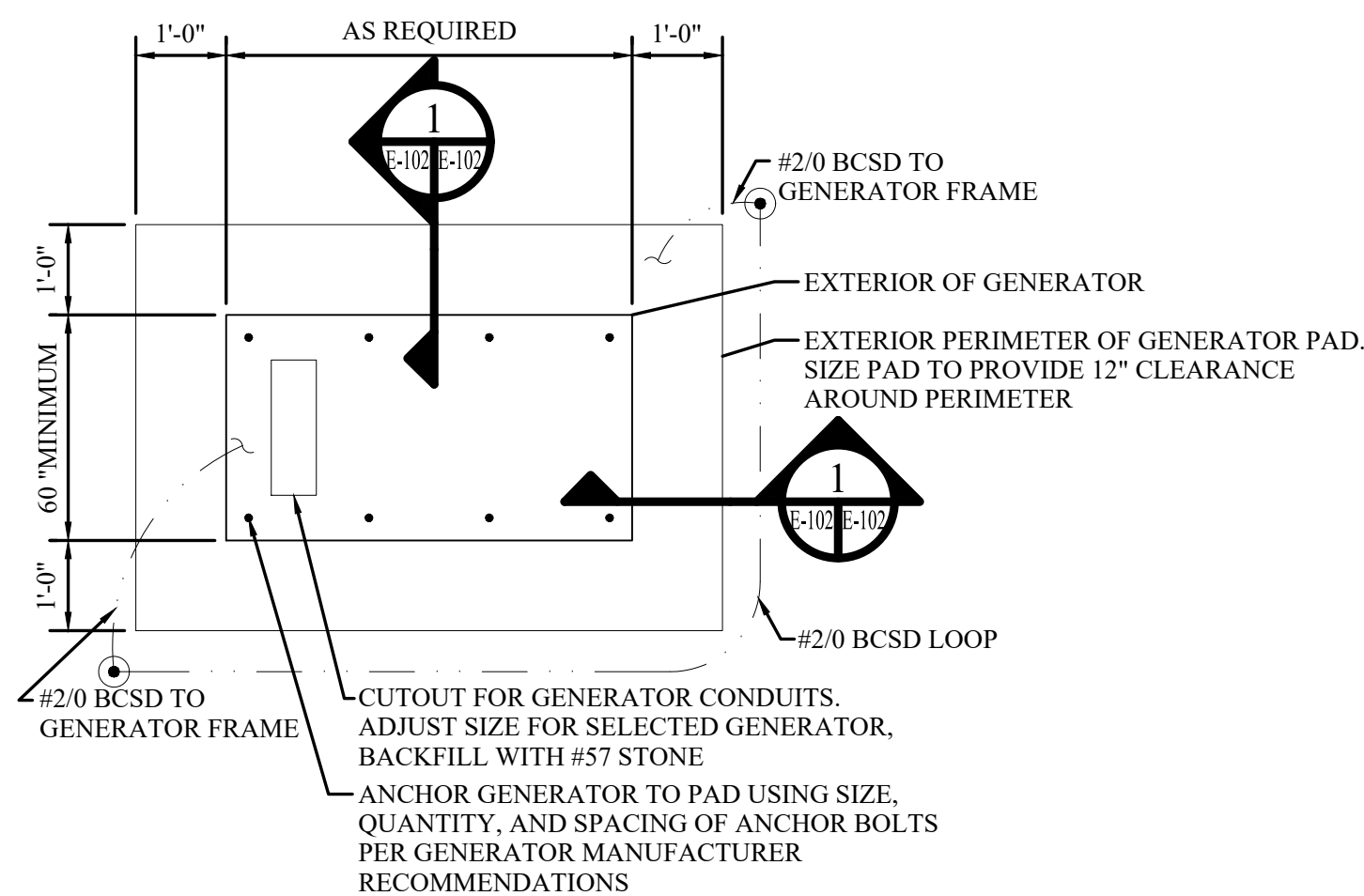
- XX CONSTRUCTION NOTES:
1. PROVIDE UGE PER DRAWING E-100.
  2. PROVIDE 2" PVC SCH 80 CONDUIT TO PUMP STARTER PANEL FOR WET WELL LEVEL CONTROL CABLES.
  3. 12"x12"x6"D NEMA 4X PULL BOX INSTALLED 24" AFG FOR WET WELL LEVEL CONTROL CABLES.



B GENERATOR PLAN  
E-100 E-100 SCALE: NONE



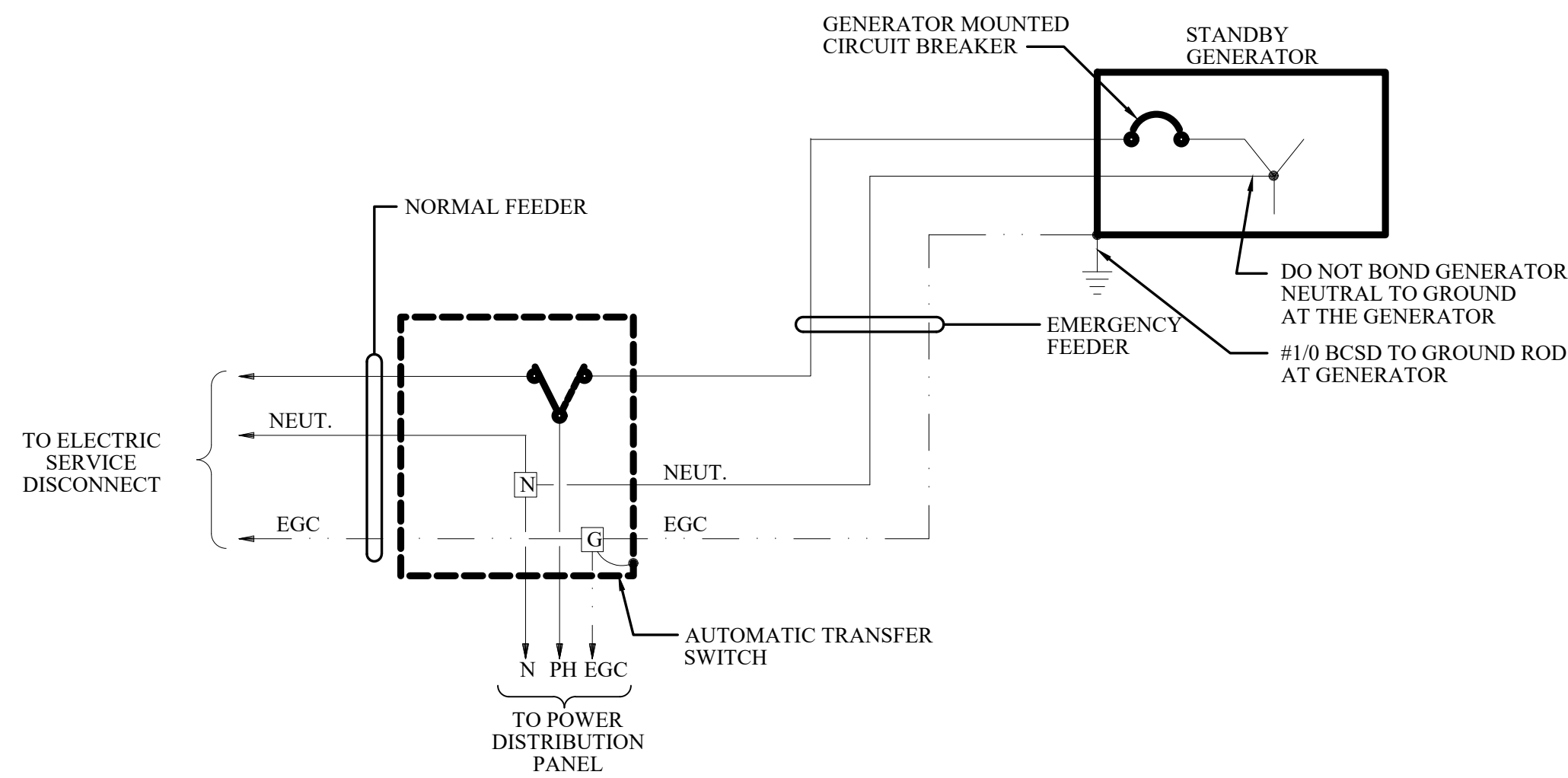
1 GENERATOR PAD SECTION  
E-100 E-100 SCALE: NONE



A GENERATOR PAD DETAIL  
E-100 E-100 SCALE: NONE

CONCRETE AND REINFORCEMENT NOTES:

1. GENERATOR PAD SOIL BEARING CAPACITY SHALL BE A MINIMUM 1,500 PSF. CONTRACTOR SHALL ENGAGE INSPECTOR TO VERIFY SOIL BEARING CAPACITY AND REINFORCEMENT PLACEMENT PRIOR TO CONCRETE PLACEMENT. SUBMIT INSPECTION REPORT TO A/E FOR REVIEW.
2. CONCRETE SHALL BE NORMAL WEIGHT 145 PCF WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS.
3. REINFORCING BARS SHALL BE ROLLED FROM NEW BILLET STEEL CONFORMING WITH ASTM A615/A615M, GRADE 60, UNLESS OTHERWISE NOTED.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR ALL REINFORCEMENT, UNLESS OTHERWISE NOTED:  
A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3"  
B. CONCRETE EXPOSED TO EARTH OR WEATHER: #5 BAR AND SMALLER: 1 1/2"
5. LAP ALL REINFORCING SPLICES AT LEAST 48 BAR DIAMETERS (24" MINIMUM) UNLESS OTHERWISE NOTED.
6. ALL REINFORCING SHALL BE SECURELY WIRED TOGETHER IN FORMS AS CALLED FOR IN "PLACING REINFORCING BARS" BY CRSI.
7. STONE BASE SHALL BE 4" THICK, #57 STONE.



CONNECTION DIAGRAM - NEUTRAL & GROUND CONDUCTORS  
SCALE: NONE

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**PUMP STATION PLANS AND DETAILS**  
FOR  
**MARTIN DRIVE REGIONAL W.W.P.S.**  
**CAMPBELL COUNTY, VIRGINIA**

PROJECT NO. 20230622  
LAT. 37.313701  
LONG. -79.260669  
DATE: 02/05/2025  
DRAWN BY: MSF  
CHECKED BY: WKH / MDW

COMMONWEALTH OF VIRGINIA  
MICHAEL D. WILSON  
Lic. No. 044203  
02/05/2025  
PROFESSIONAL ENGINEER

**BID SET**

CCUSA # 80-2304

**HURT&PROFFITT**

SHEET NO. E-102  
REV. ---



<i>SHEET NO.</i> <i>E-501</i>	<i>REV.</i> ---
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THIS SHEET IS INTENDED TO BE REPRODUCED AT 1/8"=1'-0". REPRODUCTION OF THIS SHEET AT A DIFFERENT SIZE THAN INTENDED SHALL VOID THE SCALE SHOWN ON THE SHEET.

LIGHTING FIXTURE SCHEDULE						
TYPE	MANUFACTURER	CATALOG NUMBER	FIXTURE VOLTAGE	LAMPS		REMARKS
				WATTS/LUMENS	TYPE	
A	LITHONIA	VAP LED 4000LM PLC WD 120 GZ10 40K 80CRI	120	33/4000	LED	CEILING
						INTERIOR VAPOR RESISTANT
B	LITHONIA	MRW LED P3 40K SR4 PE PIR DDBXD	120	40/4600	LED	WALL
						WALL MOUNTED, MOTION AND PE CONTROLLED
SL1	LITHONIA	LIGHT FIXTURE: DSX1 LED P4 40K T4M 240 SPA PIRH PER HS DF DDBXD	240	125/14,100	LED	POLE
SL1	LITHONIA	POLE: SSS 25 4G DM19AS DDBXD	-	-	-	CONCRETE BASE
						25' TALL POLE

PANEL "HV" SCHEDULE					PHASE TO PHASE VOLTS: 480									
PANELBOARD CHARACTERISTICS:					PHASE TO NEUT. VOLTS: 277									
VOLTS: 480/277					600 AMP MAIN LUGS ONLY									
PHASES: 3					MINIMUM SHORT CIRCUIT RATING: 42,000 RMS SYM AMPS									
WIRES: 4					NEMA 4X ENCLOSURE, DOOR IN DOOR CONSTRUCTION									
SOLID NEUTRAL, GROUND BAR														
CKT. NO.	POLE NO.	DESCRIPTION	LOAD TYPE	CONN. KVA	CONN. AMPS			BREAKER		NO. & WIRE SIZE			COND. SIZE	
					A	B	C	P	AT	PHASE	NEUT.	GND		
1	1	SPARE						1	20					
3	3	SPARE						1	20					
7	5	PUMP STARTER PANEL FOR (2) 125HP PUMPS	E	248.0			312.0	3	400		500	500	2	4"
	7					500								
	9	PUMPS WITH SOFT START STARTERS			312.0	500								
13	11													
	13	SPARE						3	225					
	15													
17	17	SPACE						1						
19	19	SPACE						1						
21	21	SPACE						1						
23	23	SPACE						1						
25	25	SPACE						1						
27	27	SPACE						1						
29	29	SPACE						1						
2	2	PANEL "LV" TRANSFORMER "TRLV"	E	25.0		52.1		2	70	6	-	8	1 1/4"	
	4				52.1	6								
6	6	SPARE						2	70					
	8													
10	10	SPACE						1						
12	12	SPACE						1						
14	14	SPACE						1						
16	16	SPACE						1						
18	18	SPACE						1						
20	20	SPACE						1						
22	22	SPACE						1						
24	24	SPACE						1						
26	26	SPACE						1						
28	28	SPACE						1						
30	30	SPACE						1						
TOTALS				273.0	312.0	364.1	364.1							

PANEL "LV" SCHEDULE					PHASE TO PHASE VOLTS: 240								
PANELBOARD CHARACTERISTICS:					PHASE TO NEUT. VOLTS: 120								
VOLTS: 120/240					125 AMP MAIN CIRCUIT BREAKER								
PHASES: 1					MINIMUM SHORT CIRCUIT RATING: 14,000 RMS SYM AMPS								
WIRES: 3					NEMA 4X ENCLOSURE, DOOR IN DOOR CONSTRUCTION								
SOLID NEUTRAL, GROUND BAR													
CKT. NO.	POLE NO.	DESCRIPTION	LOAD TYPE	CONN. KVA	CONN. AMPS		BREAKER		NO. & WIRE SIZE			COND. SIZE	
					A	B	P	AT	PHASE	NEUT.	GND		
1	1	RACK LIGHTING	L	0.5	4.2		1	20	10	10		1"	
3	3	RACK RECEPTACLE	R	0.4		3.3	1	20	10	10			
5	5	PLC /PUMP CONTROL PANEL	E	0.5	4.2		1	20	10	10	10	3/4"	
7	7	LIGHT POLE RECEPTACLES	R	0.4		3.3	1	20	10	10			
9	9	SITE AREA LIGHTING	L	0.2	0.8		2	20	10	-	10	1 1/4"	
	11					0.8			10				
13	13	SPARE					2	20					
15	15												
17	17	SPARE					2	30					
	19												
21	21	SPARE					1	20 GFCI					
23	23	SPARE					1	20 GFCI					
2	2	GENERATOR BATTERY CHARGER	E	1.2	10.0		1	20	10	10			
4	4	GENERATOR BLOCK HEATER	E	6.0		25.0	2	40	8	-	8	2"	
	6				25.0				8				
8	8	SPARE					2	30					
	10												
12	12	SPARE					1	20					
14	14	CONTROL BUILDING LIGHTING	L	1.0	8.3		1	20	12	12	12	3/4"	
16	16	CONTROL BUILDING RECEPTACLES	R	0.4		3.3	1	20	12	12			
18	18	THRU THE WALL HVAC UNIT	M	3.4	14.2		2	30	10	10	10	1"	
	20					14.2			10				
22	22	SPARE					1	20					
24	24	SPARE					1	20					
		TOTALS		14	66.7	50.0							

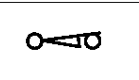
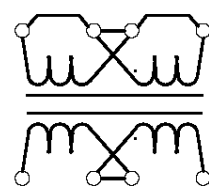


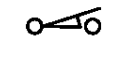
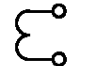
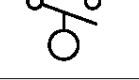

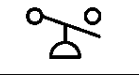
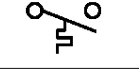
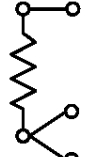
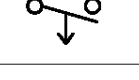
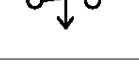



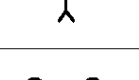

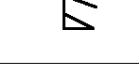

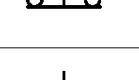

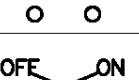

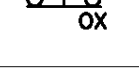
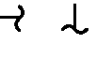
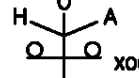
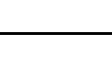
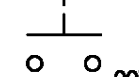
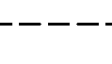
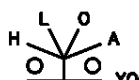
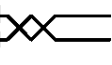
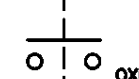
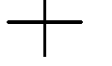
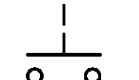

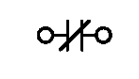

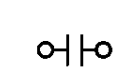
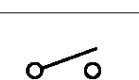
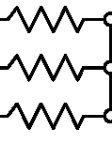

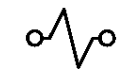
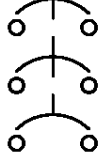


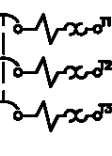


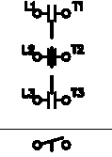
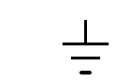
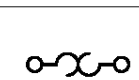
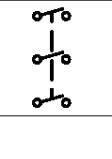

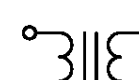
MARTIN DRIVE WWPS			K24006
18-Jun-24			WKH
SHORT CIRCUIT CALCULATIONS - BUSSMANN METHOD			
Overall Service Size	600		AMPS
Estimated Utility Transformer Size	300		kVA
<b>Service Transformer</b>	<b>LL Calc</b>	<b>LN Calc</b>	<b>Comments</b>
Secondary Voltage (Vsp)	480		V
Transformer Size (kVA)	300		kVA
Transformer Impedance (%Z)	4.00		
Minimum Impedance (%Zmin)	2.00	0.00	
Multiplier = 100/%Zmin	50	#DIV/0!	
Transformer Ifla	451	451	A
Transformer Isca = Ifla * Multiplier	22550	#DIV/0!	A
L-N Multiplier (Bussmann)	1.5		
Adjusted Transformer Isc	33825.0	#DIV/0!	A
Estimated Motor Amperage	325		A
Motor Multiplier	6		
Total Motor Contribution	1950	0	A
Isc Total	35775	#DIV/0!	A
<b>At the Facility</b>	<b>LL</b>	<b>LN</b>	<b>Comments</b>
Isc from line side source	35775		A
Voltage Line to Line (VLL)	480		V
Distance from source (L) in feet	20		FT
Raceway	PVC		
Conductor	300		
Conductors per Phase (N)	2		
C (from tables)	29,036		
f = ( 1.732 x L x Isca ) / ( VLL x N x C )	0.044		
f = ( 2 x L x Isca ) / ( VLL x N x C )	0.051		
f = ( 2 x L x Isca ) / ( VLL x N x C )	0.051	#DIV/0!	
M= 1 / ( 1 + f )	0.951	#DIV/0!	
Isc from line (Iscl) = M x Isca	34028	#DIV/0!	A
Largest of LLL, LL, and LN			A
Suggested Minimum Rating	42000		AIC

Voltage Drop Calculation			
Project Name:	MARTIN DRIVE PUMP STATION		
Commission Number:	K24006		
Date:	June 1, 2024		
Calculated by:	WKH		
Circuit Name/Number:	PUMP FEEDERS FROM STARTER PANEL		
Circuit Data:			
System Voltage (V):	480Y/277		
Circuit Voltage (V):	480		
Circuit Length (feet):	50.0		
Number of Phases:	3		
Circuit Amps:	936.0	STARTING	
Conductor Size:	3/0 AWG		
Number of Sets of Conductors:	1		
Power Factor (%):	90		
Conduit Type:	nonmagnetic		
Max. Allowable Voltage Drop (%)	5	ALLOW 10% ON STARTING	
Voltage Drop Data:			
Max. Allowable Voltage Drop (V):	24	48	
Actual Voltage Drop (V):	7.0	GOOD	
Actual Voltage Drop (%):	1.5	GOOD	



THIS SHEET IS INTENDED TO BE REPRODUCED AT 2X/3X. REPRODUCTION OF THIS SHEET AT A DIFFERENT SIZE THAN INTENDED SHALL VOID THE SCALE SHOWN ON THE SHEET.

Jan 23, 2025 - 10:03am "acacrhda6ACUkda6h5G6r CCUSA Martin Drive WPMSTDrawings3 Working5 Final 100%final CAG Saved01 001 - Legends and Notes.dwg

ELECTRICAL SYMBOLS				PANEL NOTES	FIELD NOTES
	LIMIT SWITCH NORMALLY CLOSED		TRANSFORMER	<div>1) INCLUDE A DRAWING POCKET INSIDE THE PANEL LARGE ENOUGH TO STORE A COMPLETE SET OF SYSTEM DIAGRAMS, AND DRAWINGS.</div> <div>2) ANALOG CABLES: 2-CONDUCTOR WITH SHIELD. BELDEN #8760 OR EQUAL.</div> <div>3) LEAVE FREE SPACE ABOVE PLC FOR VENTILATION.</div> <div>4) IDENTIFY ALL WIRES AS SPECIFIED BY THE NATIONAL ELECTRICAL CODE HANDBOOK AND THE FOLLOWING:</div> <div><div>POWER DISTRIBUTION WIRES.....BLACK NEUTRAL WIRES.....WHITE AC CONTROL CIRCUIT WIRES.....RED DC CONTROL CIRCUIT WIRES.....BLUE DC COMMON WIRES.....WHITE W/BBLUE STRIPE GROUND WIRES.....GREEN W/YELLOW STRIPE WIRES THAT MAY REMAIN.....ORANGE ENERGIZED WHEN THE MAIN DISCONNECT IS IN THE OFF POSITION</div></div>	<div>1) TAKE CARE WHEN CONDUIT ENTRY PENETRATIONS ARE MADE INTO ENCLOSURE TO PREVENT SCATTERING OF DRILL CHIPS &amp; KNOCK-OUT SLUGS. DE-BUR PENETRATIONS AND REMOVE DEBRIS. SEAL ALL CONDUIT ENTRIES INTO ENCLOSURE FROM LIQUIDS &amp; CONTAMINANTS. AVOID CONDUIT ENTRIES OVER CRITICAL COMPONENTS, SUCH AS PLCs AND DRIVES.</div> <div>2) ANALOG CABLES: 2 CONDUCTOR WITH SHIELD. BELDEN #8760 OR EQUAL.</div> <div>3) IDENTIFY ALL WIRES AS SPECIFIED BY THE NATIONAL ELECTRICAL CODE HANDBOOK AND THE FOLLOWING:</div> <div><div>460 VAC</div><div>(L1).....BROWN (L2).....ORANGE (L3).....YELLOW (NEUT)....GREY</div><div>120/208 VAC</div><div>(L1).....BLACK (L2).....RED (L3).....BLUE (NEUT)....WHITE</div><div>24 VDC</div><div>(ALL).....BLUE</div><div>INTRINSICALLY SAFE</div><div>(ALL).....LIGHT BLUE</div></div>
	LIMIT SWITCH HELD CLOSED				
	LIMIT SWITCH NORMALLY OPEN				
	LIMIT SWITCH HELD OPEN		CURRENT TRANSFORMER		
	FLOAT SWITCH NORMALLY OPEN		THERMOCOUPLE		
	PRESSURE SWITCH NORMALLY OPEN				
	TEMPERATURE SWITCH NORMALLY OPEN		RTD SENSOR		
	TIME SWITCH (OFF DELAY) NORMALLY OPEN				
	TIME SWITCH (OFF DELAY) NORMALLY CLOSED		MOTOR		
	TIME SWITCH (ON DELAY) NORMALLY OPEN		MUSHROOM PUSH BUTTON NORMALLY OPEN		
	TIME SWITCH (ON DELAY) NORMALLY CLOSED		REVISION REFERENCE		
	FLOW SWITCH NORMALLY OPEN		ITEM REFERENCE		
	PUSH BUTTON NORMALLY CLOSED		NOTE REFERENCE		
	PUSH BUTTON NORMALLY OPEN		TERMINAL NUMBER		
	SELECTOR SWITCH 2 POSITION		BREAK		
	SELECTOR SWITCH 3 POSITION		PANEL WIRING		
	SELECTOR SWITCH 4 POSITION		FIELD WIRING		
			SHIELDED CABLE		
			WIRES CROSSING		
			WIRES CONNECTING		
	CONTACT NORMALLY CLOSED		3 PHASE HEATER (DELTA)		
	CONTACT NORMALLY OPEN				
	SWITCH		3 PHASE HEATER (WYE)		
	PILOT LIGHT (W/ LENS COLOR)				
	SOLENOID		3-POLE CIRCUIT BREAKER		
	COIL				
	HORN		MOTOR PROTECTOR		
	CIRCUIT BREAKER				
	FUSE		3-POLE CONTACTOR		
	CHASSIS GROUND				
	THERMAL OVERLOAD		3-POLE DISCONNECT		
	120 VAC RECEPTACLE				
	TRANSFORMER				

1) INCLUDE A DRAWING POCKET INSIDE THE PANEL LARGE ENOUGH TO STORE A COMPLETE SET OF SYSTEM DIAGRAMS, AND DRAWINGS.

2) ANALOG CABLES: 2-CONDUCTOR WITH SHIELD. BELDEN #8760 OR EQUAL.

3) LEAVE FREE SPACE ABOVE PLC FOR VENTILATION.

4) IDENTIFY ALL WIRES AS SPECIFIED BY THE NATIONAL ELECTRICAL CODE HANDBOOK AND THE FOLLOWING:

POWER DISTRIBUTION WIRES.....BLACK  
NEUTRAL WIRES.....WHITE  
AC CONTROL CIRCUIT WIRES.....RED  
DC CONTROL CIRCUIT WIRES.....BLUE  
DC COMMON WIRES.....WHITE W/BBLUE STRIPE  
GROUND WIRES.....GREEN W/YELLOW STRIPE  
WIRES THAT MAY REMAIN.....ORANGE  
ENERGIZED WHEN THE MAIN  
DISCONNECT IS IN THE OFF  
POSITION

5) SIZE ALL WIRE IN ACCORDANCE WITH NEC CODES. SINGLE CONDUCTORS: STRANDED COPPER WITH THWN INSULATION, RATED FOR 600 VAC, AND UL LISTED AS MTW, UNLESS NOTED OTHERWISE. MINIMUM CONDUCTOR SIZE: #14AWG. #16 AWG MAY BE USED ONLY FOR THE INDIVIDUAL WIRES CONNECTING DIRECTLY TO AN I/O TERMINAL ON THE PLC SWING ARM. THE HOT AND NEUTRAL CONDUCTOR SUPPLYING EACH SWING ARM SHALL REMAIN #14 AWG. GROUND CONDUCTOR SIZE: AS INDICATED ON THE DRAWINGS. WHERE NOT INDICATED, THEY SHALL BE #14 AWG OR LARGER.

6) BOND PLC CHASSIS, PANEL DOORS, SIDE PANELS, BACK PANELS AND GROUND BUS TOGETHER WITH WIRES SIZED AS SHOWN ON THE DRAWING.

7) TAG ALL WIRES AT EVERY TERMINATION POINT. SHORT WIRE LENGTHS, (LESS THAN 8") WHERE THE ENTIRE CONDUCTOR IS VISIBLE MAY BE TAGGED AT JUST ONE END. WIRE LABELS FOR WIRES SMALLER THAN NO. 4, SHALL BE VINYL, SELF ADHESIVE, WRAPAROUND, WITH MACHINE PRINTED NUMBERS AND LETTERS. WIRE SIZES NO. 4 AND LARGER AND MULTI CONDUCTOR CABLES SHALL BE MARKED WITH ONE-PIECE, NYLON LOCKING MACHINE PRINTED MARKER TIES EQUAL TO PANDUIT PLM SERIES. WIRE TAG NUMBER SHALL BE AS INDICATED ON THE DRAWINGS

8) DO NOT ROUTE ANY COMMUNICATION CABLES IN WIREWAYS WITH 120 VAC WIRING. ROUTE ALL THESE CABLES AWAY FROM 120 VAC WIRING. WHERE 120 VAC CONDUCTORS MUST BE CROSSED, DO SO AT RIGHT ANGLES AND PROVIDE AT LEAST 1" SEPARATION.

9) CONNECT NO MORE THAN TWO WIRES TO ANY ONE TERMINAL. PROVIDE TERMINAL BLOCKS WITH A SAFETY COVER OR BE FINGER SAFE TO PROTECT PERSONNEL FROM SHOCK. MOUNT ALL TERMINAL BLOCKS ON DIN RAILS. SUPPLY ALL HARDWARE NEEDED TO PROVIDE A COMPLETE TERMINAL STRIP ASSEMBLY, INCLUDING BUT NOT LIMITED TO: MISCELLANEOUS SEPARATORS, TOP JUMPER BARS, SIDE JUMPER BARS, MACHINE PRINTED TERMINAL BLOCK TAGS, FASTENERS, BRACKETS FOR RAISING 35MM RAIL, ETC

10) RAISE AND CENTER ALL TERMINAL STRIPS SET BETWEEN WIRE WAYS TO FACILITATE WIRING, UNLESS OTHERWISE NOTED. PROVIDE A MINIMUM OF 1-1/2 INCH BETWEEN TERMINALS AND WIRE WAY ON BOTH SIDES OF TERMINAL STRIP. INSTALL END BARRIERS FOR EACH STYLE OF TERMINAL. INSTALL END STOPS ON EACH SECTION OF TERMINALS OR RELAYS. USE MACHINE PRINTED TAGS TO MARK TERMINAL STRIPS. WHEREVER POSSIBLE, MAKE ALL TERMINAL BLOCK CONNECTIONS FOR THE PANEL WIRING ON THE TOP OR RIGHT SIDE OF THE TERMINAL STRIP AND LEAVE THE BOTTOM OR LEFT SIDE FREE FOR FIELD TERMINATIONS, UNLESS NOTED OTHERWISE.

11) PROVIDE ENGRAVED PLASTIC NAMEPLATES. EITHER PAINT FILLED ENGRAVINGS OR 2 COLOR LAMINATIONS ARE ACCEPTABLE.

12) ALL OPERATOR CONTROL DEVICES (BUTTONS, SWITCHES, METERS, DISPLAYS, ETC.) SHALL HAVE NAMEPLATES.

13) PROVIDE A SET OF AS-BUILT DRAWINGS WITH THE PANEL. THESE SHALL BE COMPLETE, ALLOWING ENGINEER TO PRODUCE A SET OF "RECORD" DRAWINGS SHOWING ALL WIRE NUMBERS WITHIN THE PANEL AND THE DEVICE TERMINAL NUMBERS TO WHICH THEY CONNECT. REQUIRED INFORMATION SHALL INCLUDE BUT NOT BE LIMITED TO:

A. ALL WIRE TAG NUMBERS.  
B. TERMINAL CONNECTION POINTS FOR POWER AND NEUTRAL FEEDS.  
C. ANY DEVIATIONS FROM THE EQUIPMENT LOCATIONS SHOWN ON THE DRAWINGS. PRIOR APPROVAL SHOULD BE OBTAINED BEFORE MAKING SUCH CHANGES.

14) SAVE ALL MATERIAL DATA SHEETS AND LITERATURE. WHERE PRODUCT DATA IS PROVIDED ON THE PACKAGE, MAKE A CLEAR COPY OF THE DATA AND INCLUDE WITH OTHER DATA SHEETS. INCLUDE ALL THIS MATERIAL WITH THE PANEL DURING DELIVERY.

15) EQUIPMENT LOCATIONS SHALL BE AS SHOWN ON THE DRAWINGS. THE PANEL BUILDER SHALL NOTIFY ENGINEER OF ANY PHYSICAL CONFLICTS OR OTHER PROBLEMS THAT COULD CAUSE PROBLEMS WITH THE INSTALLATION OR OPERATION OF THE PANEL BEFORE ASSEMBLING THE PANEL. RESOLUTION OF SUCH CONFLICTS SHALL BE APPROVED BY ENGINEER PRIOR TO PANEL ASSEMBLY.

16) PROVIDE ALL EQUIPMENT AS SHOWN ON THE BILL OF MATERIALS INCLUDED IN THIS DRAWING PACKAGE. SUBMIT ANY DEVIATION FROM THE BILL OF MATERIALS FOR APPROVAL IN WRITING PRIOR TO FABRICATION.

NOTE: EVERY EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND A COMPREHENSIVE BILL OF MATERIALS FOR THE CONSTRUCTION OF THIS CONTROL PANEL, BASED ON THE MANUFACTURERS RECOMMENDATIONS. HOWEVER, IT IS THE RESPONSIBILITY OF THE CONTROL PANEL BUILDER TO VERY THAT THE PANEL IS PROPERLY SIZED AND CONSTRUCTED IN ACCORDANCE WITH BOTH THE MANUFACTURER'S GUIDELINES AND THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC).

BID-ALTERNATE

BID-ALTERNATE CALL OUT

BID-ALTERNATE # OR LETTER

DETAIL TITLE

1

X-0X

DETAIL CALL OUT

B

80.01

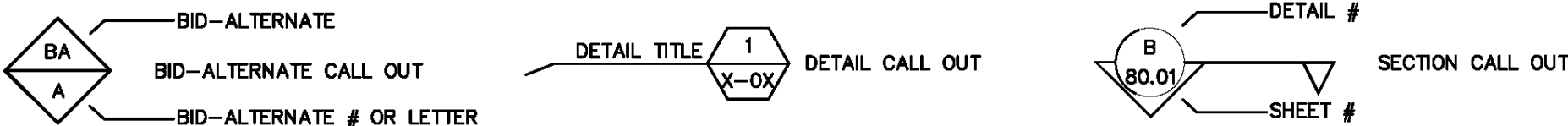
DETAIL #

SHEET #

SECTION CALL OUT

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#### MISCELLANEOUS SYMBOLS



**LEGEND AND NOTES**  
FOR  
**MARTIN DRIVE REGIONAL W.W.P.S.**  
**CAMPBELL COUNTY, VIRGINIA**

PROJECT NO. 20230622  
FILE NO. .  
LAT. .  
LONG. .  
DATE: 2/5/2025  
DRAWN BY: KRC  
CHECKED BY: MWB



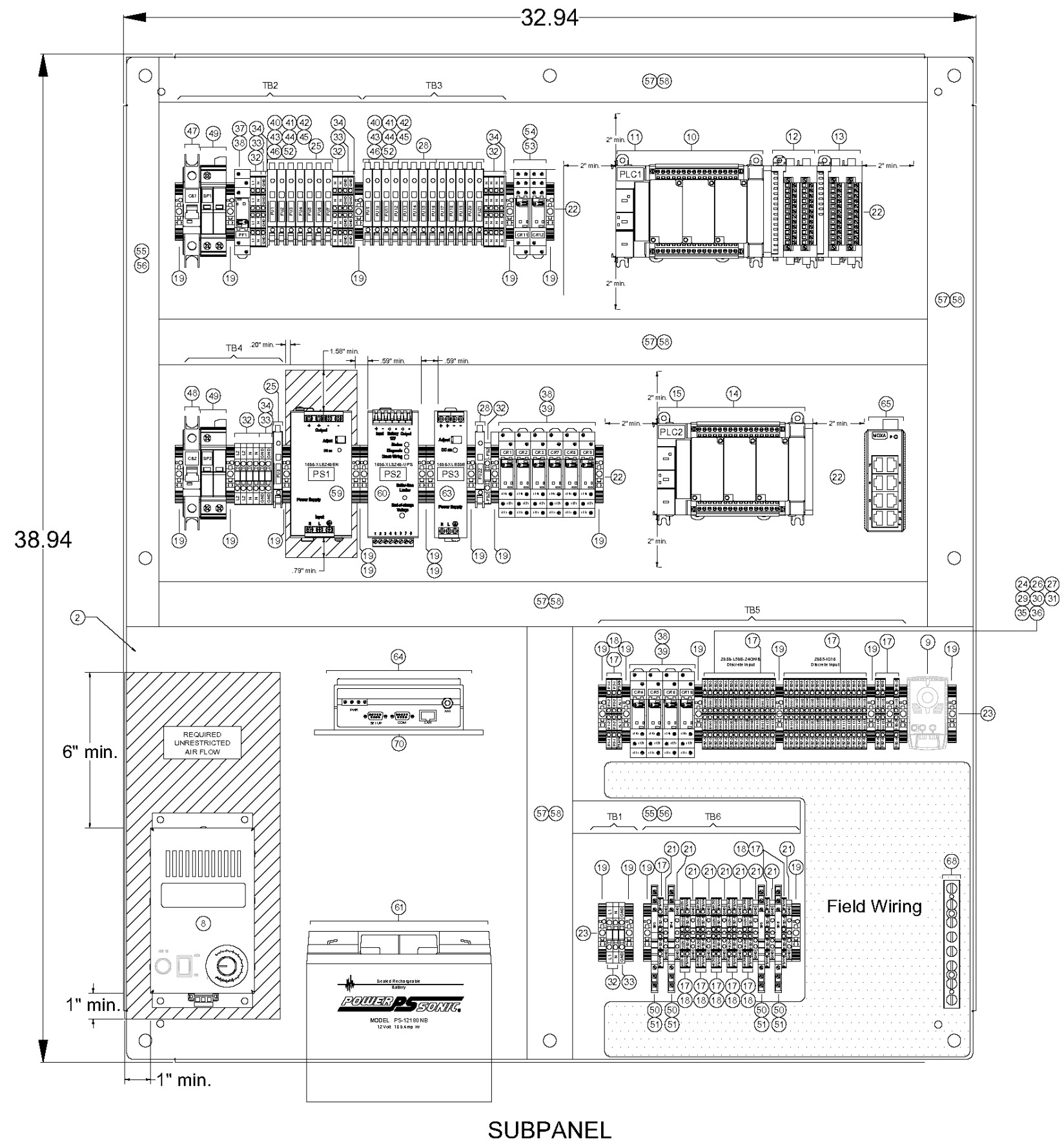
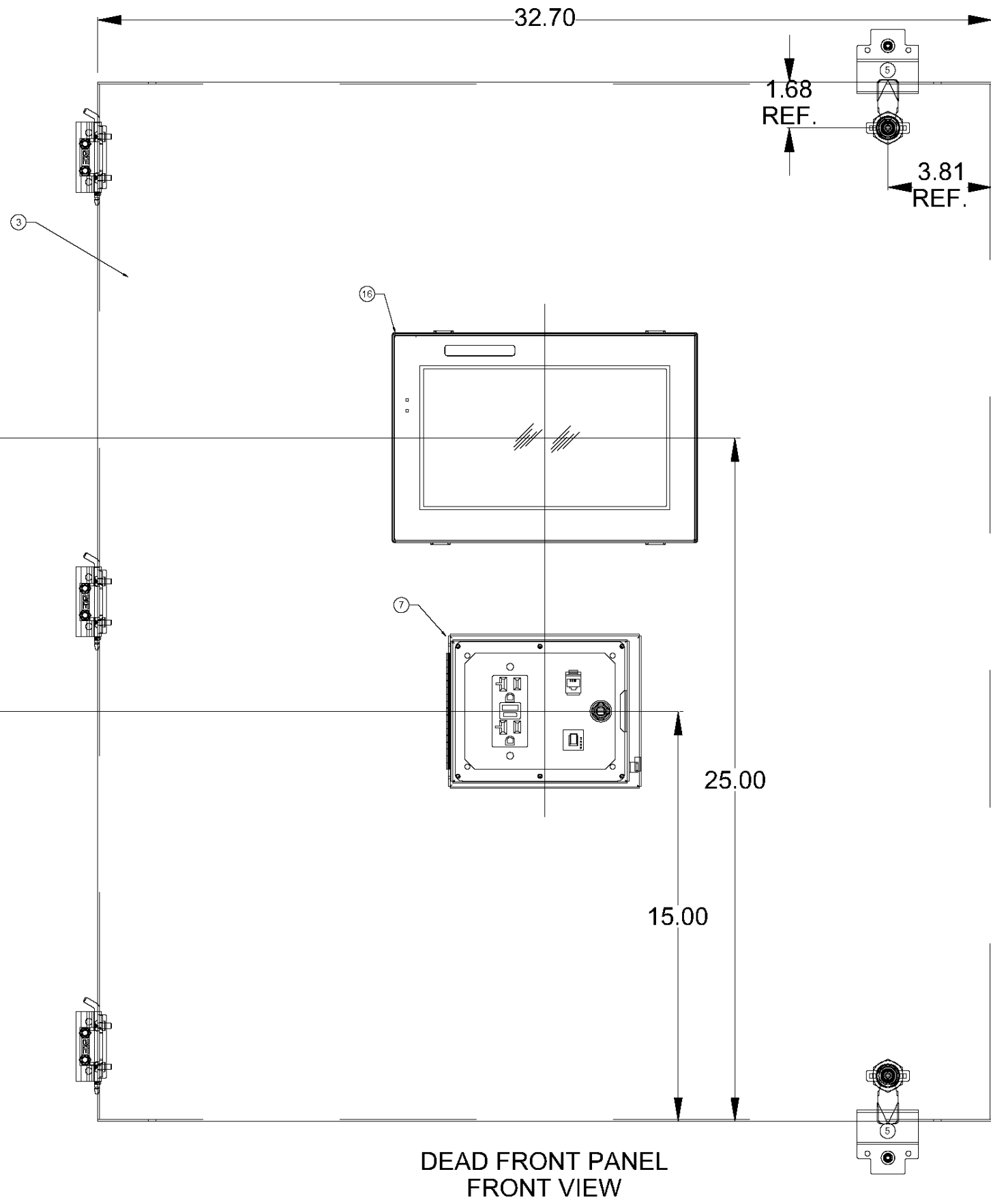
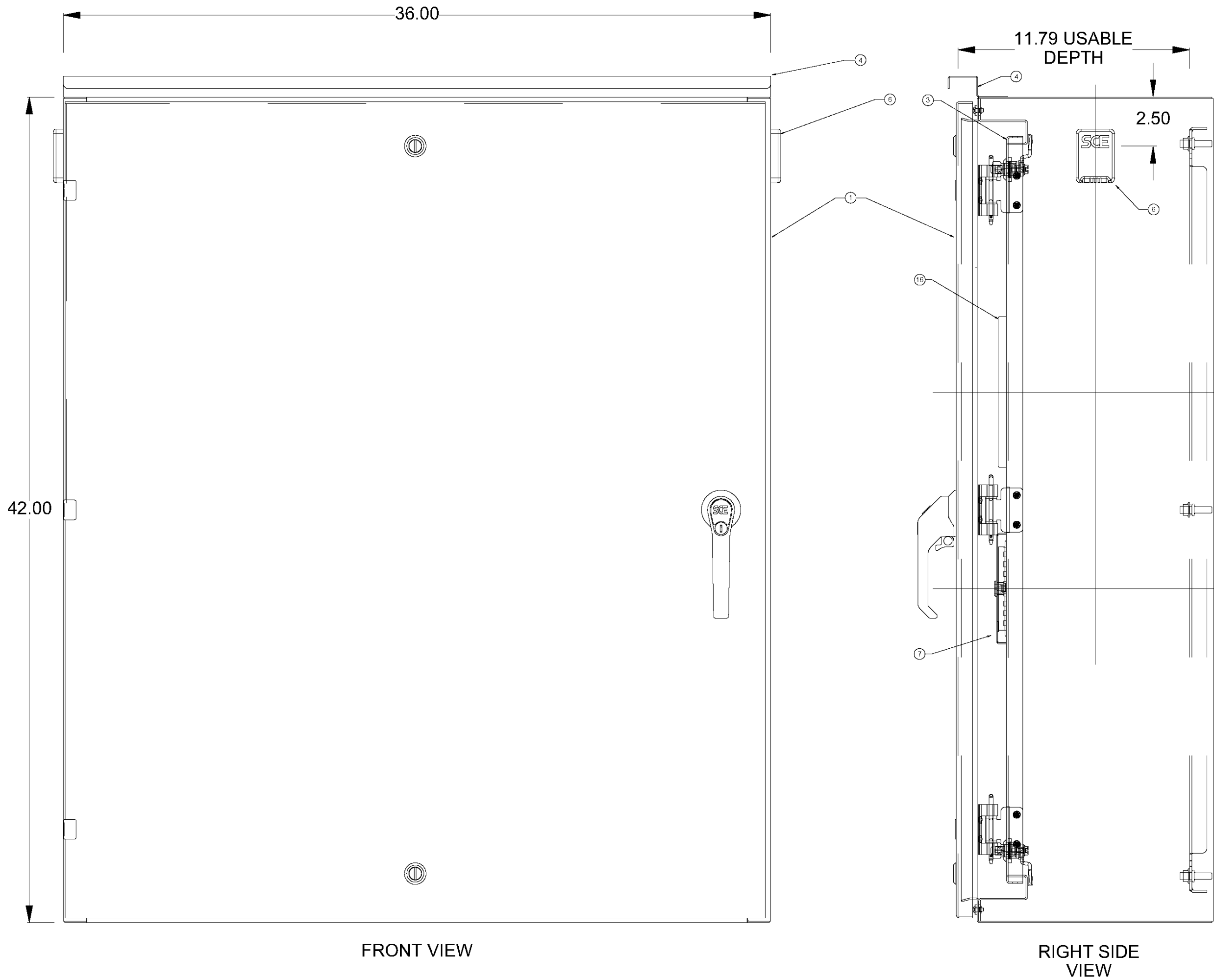
**BID SET**

CCUSA # 80-2304



\*THIS SHEET IS INTENDED TO BE REPRODUCED AT 24"X36" - REPRODUCTION OF THIS SHEET AT A DIFFERENT SIZE THAN INTENDED SHALL VOID THE SCALE SHOWN ON THE SHEET.

NOTE: EVERY EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND A COMPREHENSIVE BILL OF MATERIALS FOR THE CONSTRUCTION OF THIS CONTROL PANEL, BASED ON THE MANUFACTURERS RECOMMENDATIONS. HOWEVER, IT IS THE RESPONSIBILITY OF THE CONTROL PANEL BUILDER TO VERIFY THAT THE PANEL IS PROPERLY SIZED AND CONSTRUCTED IN ACCORDANCE WITH BOTH THE MANUFACTURER'S GUIDELINES AND THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC).





NOTE: EVERY EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND A COMPREHENSIVE BILL OF MATERIALS FOR THE CONSTRUCTION OF THIS CONTROL PANEL, BASED ON THE MANUFACTURERS RECOMMENDATIONS. HOWEVER, IT IS THE RESPONSIBILITY OF THE CONTROL PANEL BUILDER TO VERY THAT THE PANEL IS PROPERLY SIZED AND CONSTRUCTED IN ACCORDANCE WITH BOTH THE MANUFACTURER'S GUIDELINES AND THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC).



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FOR  
MARTIN DRIVE REGIONAL W.W.P.S.  
CAMPBELL COUNTY, VIRGINIA



COMMONWEALTH OF VIRGINIA  
MARSHALL BOWLING  
Lic. No. 0402064247  
2/5/2025  
PROFESSIONAL ENGINEER  
*Marshall Bowling*

CCUSA # 80-2304

SHEET NO. I-100.2.	REV 0
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THIS SHEET IS INTENDED TO BE REPRODUCED AT APPROX. REDUCTION OF THIS SHEET AT A DIFFERENT SIZE THAN INTENDED SHALL VOID THE SCALE SHOWN ON THE SHEET.

# BILL OF MATERIALS

ITEM	QTY	MANUFACTURER	CATALOG	DESCRIPTION	TAG
1	1	Saginaw Controls	SCE-42EL3612SSLPP	S.S. LPPL Enclosure	
2	1	Saginaw Controls	SCE-42P36	Subpanel, Bent, Galvanized	
3	1	Saginaw Controls	SCE-DF42EL36LP	Dead Front	
4	1	Saginaw Controls	SCE-DS36SS	Drip Shield	
5	1	Saginaw Controls	SCE-ELMFK4SS6-OS	Foot Kit	
6	2	Saginaw Controls	SCE-BVK	Breather Vent	
7	1	Hoffman	HGF5ETH	InterSafe Data Interface Port for Ethernet/ProfiNet, GFCI, Black, Steel	
8	1	Pfannenberg	PN: 17040015407	Enclosure, Heater, 400 Watt with Thermostat (FLH-TF400)	
9	1	Pfannenberg	PN: 17111000010	Temperature Switch	
10	2	Allen Bradley	2080-L70E-24QWB	Micro870 EtherNet/IP Controller, 14 24 VDC/VAC Inputs, 10 Relay Output, 24 DC Power ( MAIN PLC)	PLC1
11	2	Allen Bradley	2080-MEMBAK-RTC2	2080 Micro800 System, Memory Plug In Module, With 4 MB RTC Plug-In	
12	1	Allen Bradley	2085-IQ16	2080 Micro800 System, Micro850 Input Module, Digital, 16 Point, 12/24VDC, Sink/Source , IEC	
13	1	Allen Bradley	2085-IF8	2080 Micro800 System, Micro850 Input Module, Analog, Voltage/Current, 8 Channels, Bipolar, +-10V, 0-20mA	
14	1	Allen Bradley	2080-L50E-24QWB	Micro 850 PLC, 24VDC, 14 Digital In / 10 Relay Out (BACKUP PLC)	PLC 2
15	1	Allen Bradley	2080-MEMBAK-RTC2	PLC Memory Backup & High Accuracy RTC	
16	1	Automation Direct	EA9-T10WCL	C-more Operator Interface (OIT), 24VDC	
17	46	Allen Bradley	1492-JD3	Terminal Block 2 Tier	
18	13	Allen Bradley	1492-EBJD3	1492 Terminal Block Accessories End Barrier , Grey (Standard), Qty. 20	
19	8	Allen Bradley	1492-EAJ35	1492 Terminal Block Accessories End Anchor, End Anchor	
20	2	Allen Bradley	1492-CJJ5-10	1492 Terminal Block Accessories Plug-In Center Jumper , 5 mm Center to Center , 10 Pole , Gray ,	
21	9	Allen Bradley	1492-JG3	1492-J IEC Terminal Block, One-Circuit Feed-Through Ground Block, 2.5 mm (# 24 AWG - # 12 AWG), Standard Feedthrough, Green / Yellow Stripe (Standard),	
22	1	Allen Bradley	199-DR1	DIN Mounting Rail, Zinc Plated, Chromated Steel, 35mm x 7.5mm DIN Rail, 1 Meter (Pkg. Qty. 10)	
23	2	Allen Bradley	1492-DR6	DIN Mounting Rail, Aluminum, 35mm x 7.5mm x 57.4mm Raised DIN Rail, 1 Meter (Pkg. Qty. 2)	
24	1	Allen Bradley	1492-M5X12	1492 Terminal Block Accessories Snap-In Individual Marker Card5 mm x 12 mmNo Text	
25	8	Allen Bradley	1492-H4	1492-H Finger-Safe Terminal Blocks, H-Block,Single Circuit Fuse Block, Code 4,Neon Blown Fuse Indicator, #30 - #10 AWG, Black (Standard),No Bulk Pack (Single Block) 300V AC	
26	2	Allen Bradley	1492-N49	Side Jumper, 9 mm center-to-center, 10 Pole, Pkg. Qty. of 10	
27	2	Allen Bradley	1492-SJS	Side Jumper Insulating Sleeve, Pkg. Qty. of 10	
28	14	Allen Bradley	1492-H5	1492-H Finger-Safe Terminal Blocks, H-Block,Single Circuit Fuse Block, Code 5,LED Blown Fuse Indicator, #30 - #10 AWG, Black (Standard),No Bulk Pack (Single Block) 57VDC	
29	5	Allen Bradley	1492-N37	1492 Terminal Block Accessories End Barrier , Grey (Standard)	
30	1	Allen Bradley	1492-MS8X12	1492 Terminal Block Accessories Snap-In Individual Marker Card5 mm x 12 mmNo Text	
31	2	Allen Bradley	1492-M5X8	1492 Terminal Block Accessories Snap-In Individual Marker Card5 mm x 8 mmNo Text	
32	5	Allen Bradley	1492-J4	1492-J IEC Terminal Block, One-Circuit Feed-Through Block, 4 mm (# 22 AWG - # 10 AWG) or 2.5 mm (# 22 AWG - # 12 AWG), Standard Feedthrough, Gray (Standard),	
33	3	Allen Bradley	1492-JG4	1492-J IEC Terminal Block, One-Circuit Feed-Through Ground Block, 4 mm (# 22 AWG - # 10 AWG) or 2.5 mm (# 22 AWG - # 12 AWG), Standard Feedthrough, Green / Yellow Stripe (Standard),	
34	3	Allen Bradley	1492-EBJ3	1492 Terminal Block Accessories End Barrier , Grey (Standard), Qty. 50	
35	1	Allen Bradley	1492-M6X12	1492 Terminal Block Accessories Snap-In Individual Marker Card6 mm x 12 mmNo Text	
36	2	Allen Bradley	1492-CJJ6-2	1492 Terminal Block Accessories Plug-In Center Jumper , 6 mm Center to Center , 2 Pole , Gray ,	

37	1	Allen Bradley	700-HK36A1-4	700-HK General Purpose Slim Line Relay, 16 Amp Contact, SPDT, 120V 50/60Hz, Pilot Light	PF1
38	11	Allen Bradley	700-HN121	700-H General Purpose Accessories, Mini 5-Blade Base Socket, Screw Terminals, Guarded Touch Safe Terminal Construction (Pkg. Qty. 10, hence minimum order quantity is 10 pcs and must be ordered in multiples of 10 pcs) , 700-HN121	
39	10	Allen Bradley	700-HK36Z24-4	700-HK General Purpose Slim Line Relay, 16 Amp Contact, SPDT, 24V DC, Pilot Light	CR1, CR2, CR3, CR4, CR5, CR6
40	10	Bussmann	AGC-3-R	3 Amp, 250V, Fast Acting Glass Tube Fuse	
41	18	Bussmann	AGC-1-R	1 Amp, 250V, Fast Acting Glass Tube Fuse	
42	2	Bussmann	AGC-2-R	2 Amp, 250V, Fast Acting Glass Tube Fuse	
43	2	Bussmann	MDL-5-R	5 Amp, 250V, Time-Delay Glass Tube Fuse	
44	2	Bussmann	MDL-7-R	7 Amp, 250V, Time-Delay Glass Tube Fuse	
45	2	Bussmann	AGC-15	15 Amp, 250V, Fast Acting Glass Tube Fuse	
46	4	Bussmann	MDL-3-R	3 Amp, 250V, Time-Delay Glass Tube Fuse	
47	1	Allen Bradley	1489-M1C200	Bulletin 1489-M Thermal-magnetic Circuit Breakers, Standard configuration, AC, 1 Pole Configuration, Trip Curve C, UL/CSA Max. Voltage: 277V AC, 48V DC ; IEC/EN Max. Voltage: 230V AC,20A	
48	1	Allen Bradley	1489-M1C050	Bulletin 1489-M Thermal-magnetic Circuit Breakers, Standard configuration, AC, 1 Pole Configuration, Trip Curve C, UL/CSA Max. Voltage: 277V AC, 48V DC ; IEC/EN Max. Voltage: 230V AC,5A	
49	3	Phoenix Contact	2905348	Type 2 Surge Arrestor, 250VAC, 125VDC, (VAL-SEC-T2-1S-175-FM)	
50	5	Phoenix Contact	2906798	Analog Surge Protection Device, 24VDC, (TTC-6-1X2-24DC-UT)	
51	1	Phoenix Contact	808710	Blank Terminal Marking Strip for Analog Surge Protection Device	
52	2	Bussmann	MDL-3-R	3 Amp, 250V, Time-Delay Glass Tube Fuse	
53	2	Allen Bradley	700-HK32Z24-4	700-HK General Purpose Slim Line Relay, 8 Amp Contact, DPDT, 24V DC, Pilot Light	CR11, CR12
54	2	Allen Bradley	700-HN122	700-H General Purpose Accessories, Mini 8-Blade Base Socket with 5A rating, Screw Terminals, Guarded Touch Safe Terminal Construction (Pkg. Qty. 10, hence minimum order quantity is 10 pcs and must be ordered in multiples of 10 pcs) , 700-HN122	CR11, CR12
55	6	Panduit	F1X4LG6	Panduct 1"x4" Wiring Duct	
56	6	Panduit	C1LG6	Panduct 1" Flush Duct Cover	
57	12	Panduit	F1.5X4LG6	Panduct 1.5"x4" Wiring Duct	
58	12	Panduit	C1.5X4LG6	Panduct 1.5" Flush Duct Cover	
59	1	Allen Bradley	1606-XLE240EN	1606-XLE240EN: Essential Power Supply, 24-28V DC, 240 W, 120V AC Input Voltage	PS1
60	1	Allen Bradley	1606-XLS240-UPS	1606-XLS240-UPS: Performance Power Supply w/ UPS, 22.5-30V DC, 240W, 22.5-30V DC Input Voltage	PS2
61	1	Powersonic	PS-12180F2	Sealed Rechargeable Lead-Acid Battery, 12V, 18.0AH	PS3
62	2	Amp	4-520448-2	Faston .250 Series Crimp-On Insulated Receptacle Type Lug	
63	1	Allen Bradley	1606-XLE80E	1606-XLE80E: Essential Power Supply, 24-28V DC, 80 W, 120/240V AC Input Voltage	
64	1	NextGen RF Design	140-5028-504	215-240 MHZ Viper SC+200 Licensed IP Router Radio Modem	
65	1	MOXA	EDS-208	Ethernet Switch, 8 Port Unmanaged	ES1
66	3	Blackbox	EVNSL641-0003	CAT6 Ethernet Standard Patch Cord Length 3Ft.	
67	1	Blackbox	EVNSL641-0007	CAT6 Ethernet Standard Patch Cord Length 7Ft.	
68	1	Panduit	UGB2/0-414-6	Ground Bar	
69	1	Panel Fabricator		Lot Phenolic Nameplates	
70	1	Panel Fabricator		Radio Support Shelf	
71	1	EMEDCO	QS3743	Warning Label "Arc Flash and Shock Hazard	
72	1	EMEDCO	SQS110	Warning Label "Device Powered From Several Sources"	
73	1	Edwards Signaling	51XBRFA24D	Beacon with Horn (Supply Loose, Shall be Installed in the Field)	Supply Loose, Shall be Installed in the Field

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SCADA PANEL BILL OF MATERIALS

FOR

MARTIN DRIVE REGIONAL W.W.P.S.  
CAMPBELL COUNTY, VIRGINIA

PROJECT NO. 20230622

FILE NO. -

LAT. -

LONG. -

DATE: 2/5/2025

DRAWN BY: KRC

CHECKED BY: MWB



BID SET

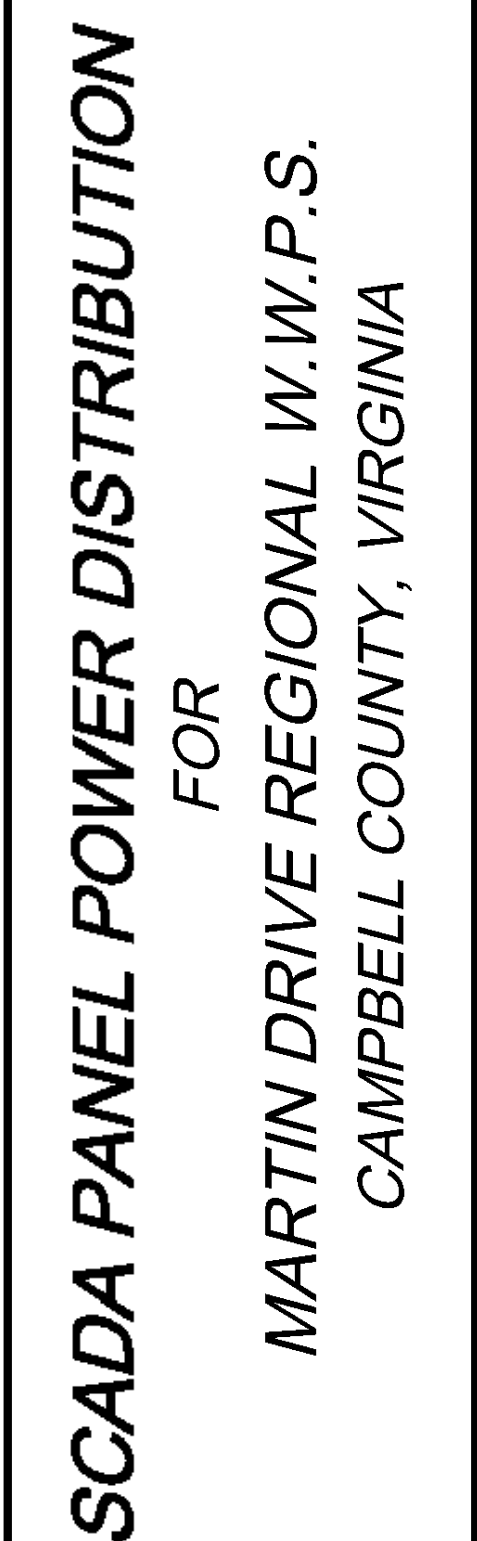
CCUSA # 80-2304

HURT & PROFFITT

SHEET NO. I-101

REV. 0





COMMONWEALTH OF VIRGINIA  
MARSHALL BOWLING  
Lic. No. 0402064247  
2/5/2025  
PROFESSIONAL ENGINEER  
*Marshall Bowling*

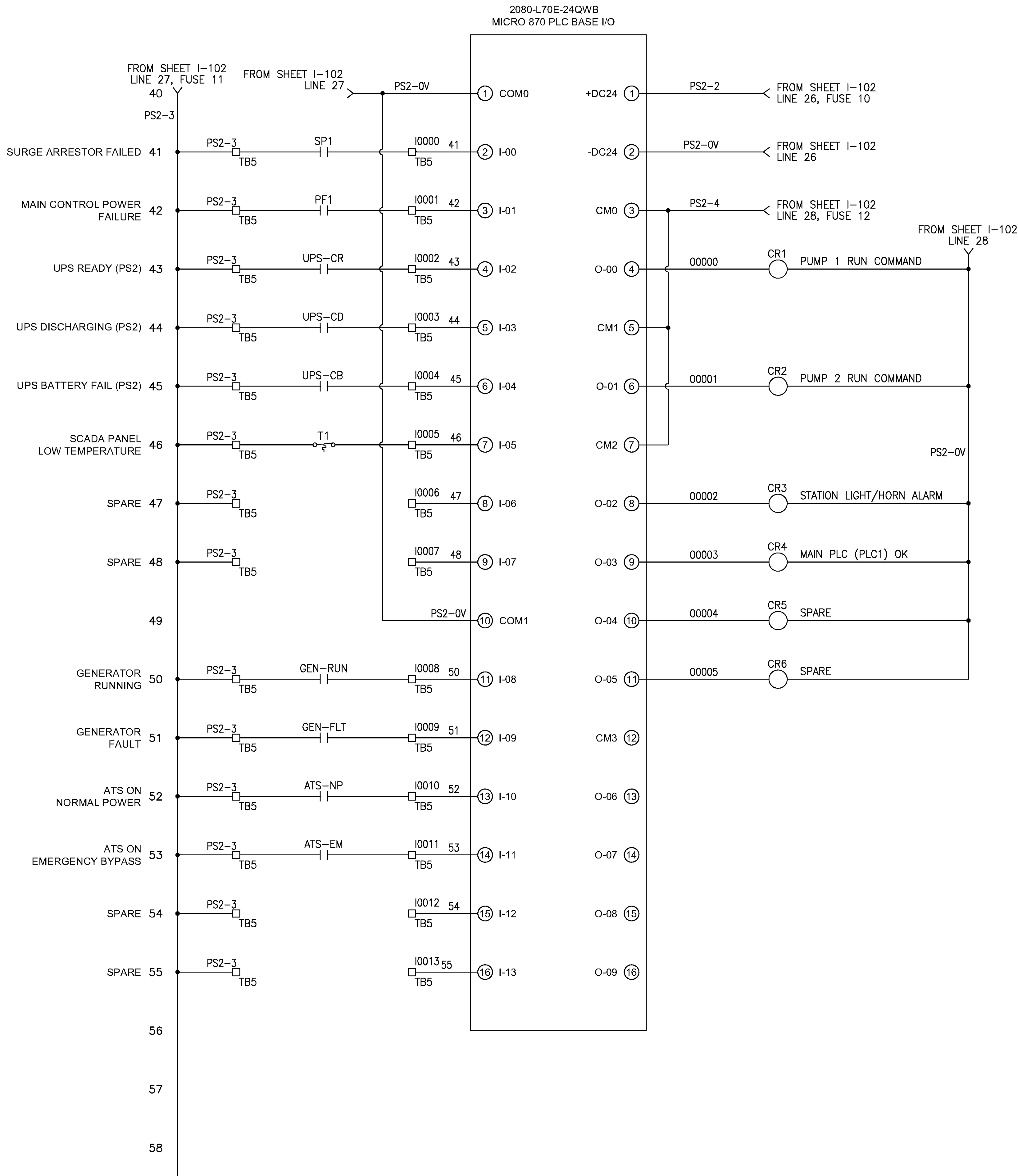
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SHEET NO.	REV.
<b>I-102</b>	0

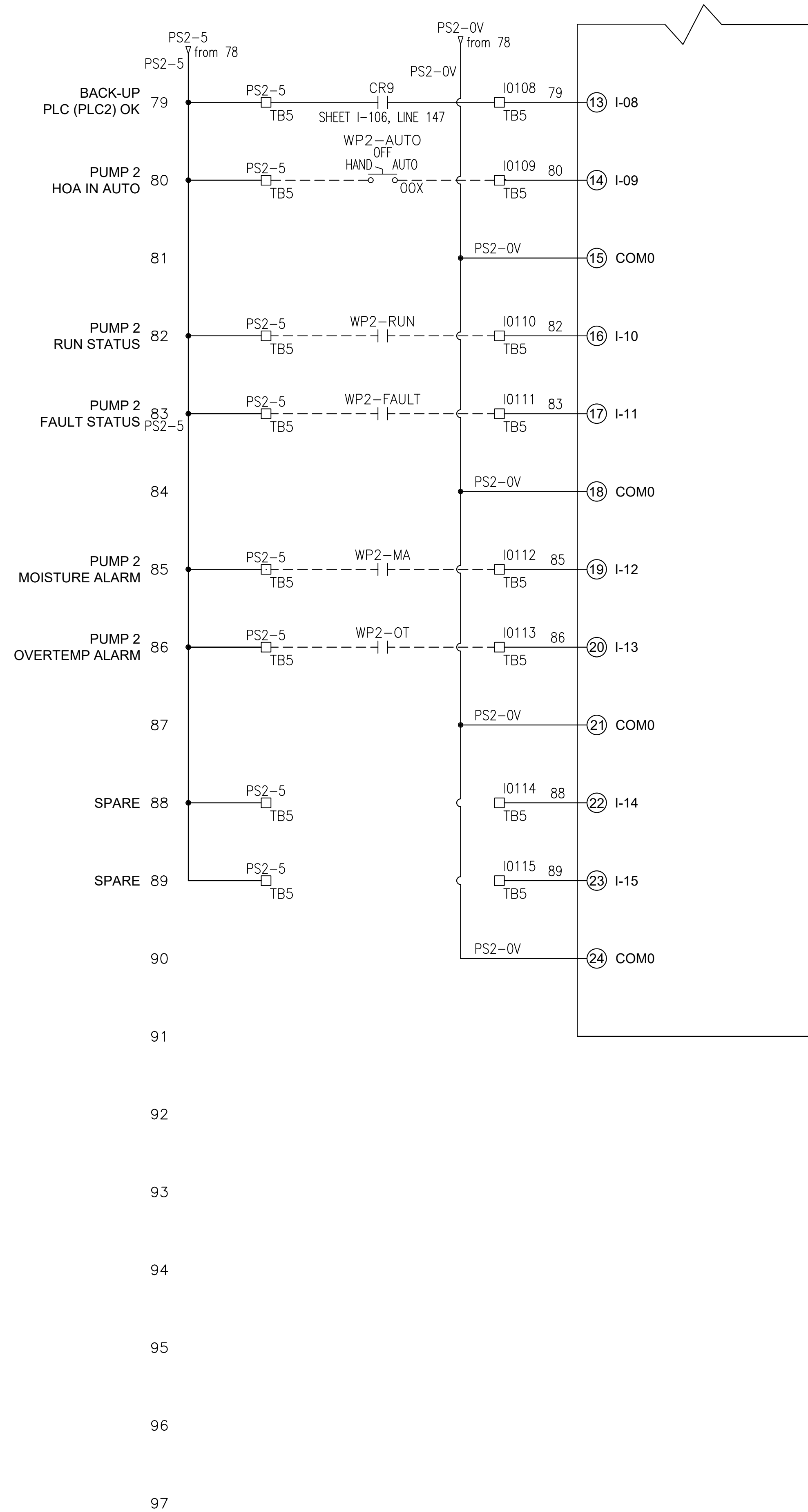


THIS SHEET IS INTENDED TO BE REPRODUCED AT 22x36" REPRODUCTION OF THIS SHEET AT A DIFFERENT SIZE THAN INTENDED SHALL VOID THE SCALE SHOWN ON THE SHEET

Jan 23, 2025 - 01:00am - I:\architect\ACLib\Drawings\2025\CCUS\Main Draw\MWSP\Drawings\3\Working\5 - Final.dwg (100) (Final CAD) Sheet 1 of 10 - Main PLC Base I/O.dwg



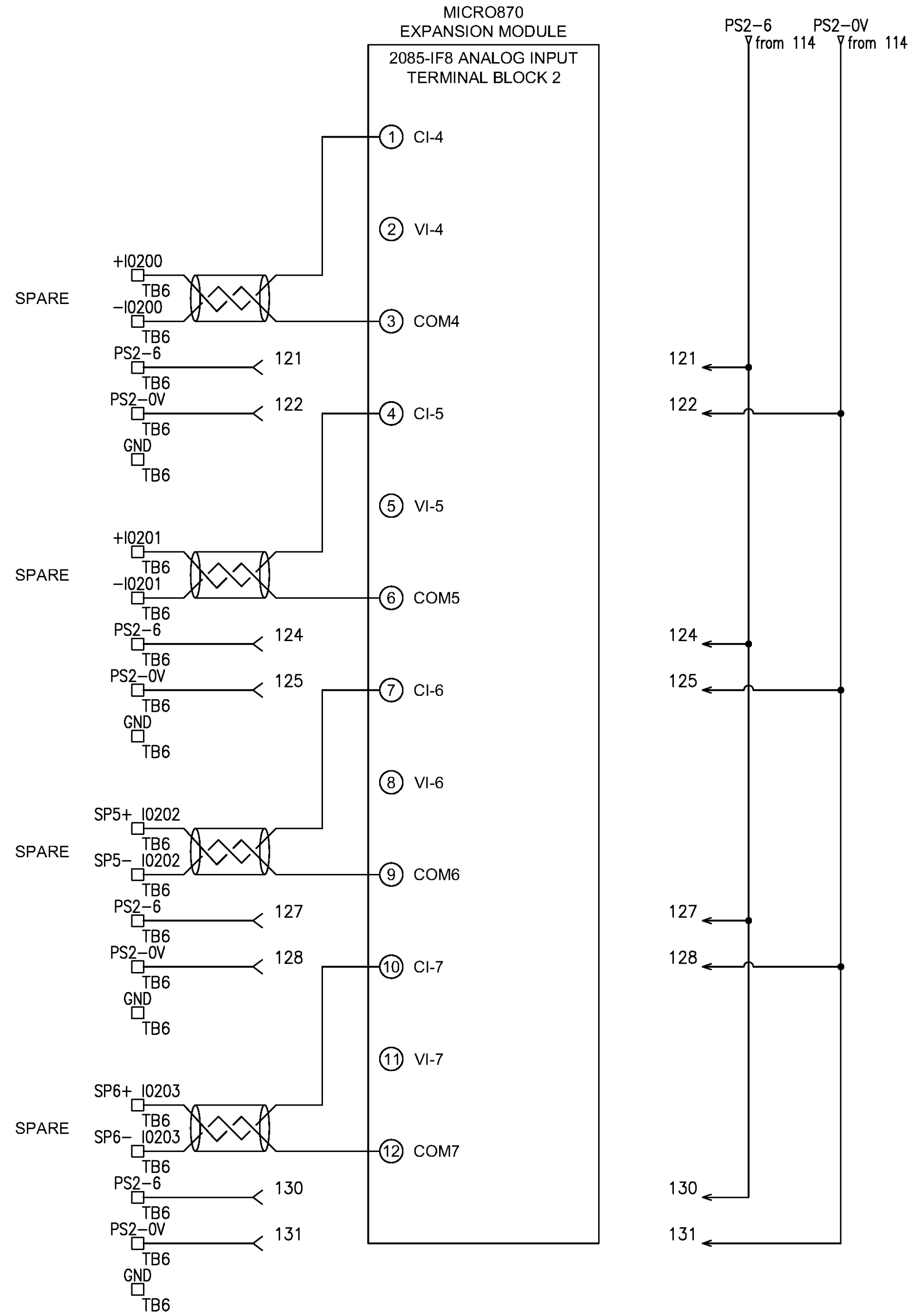
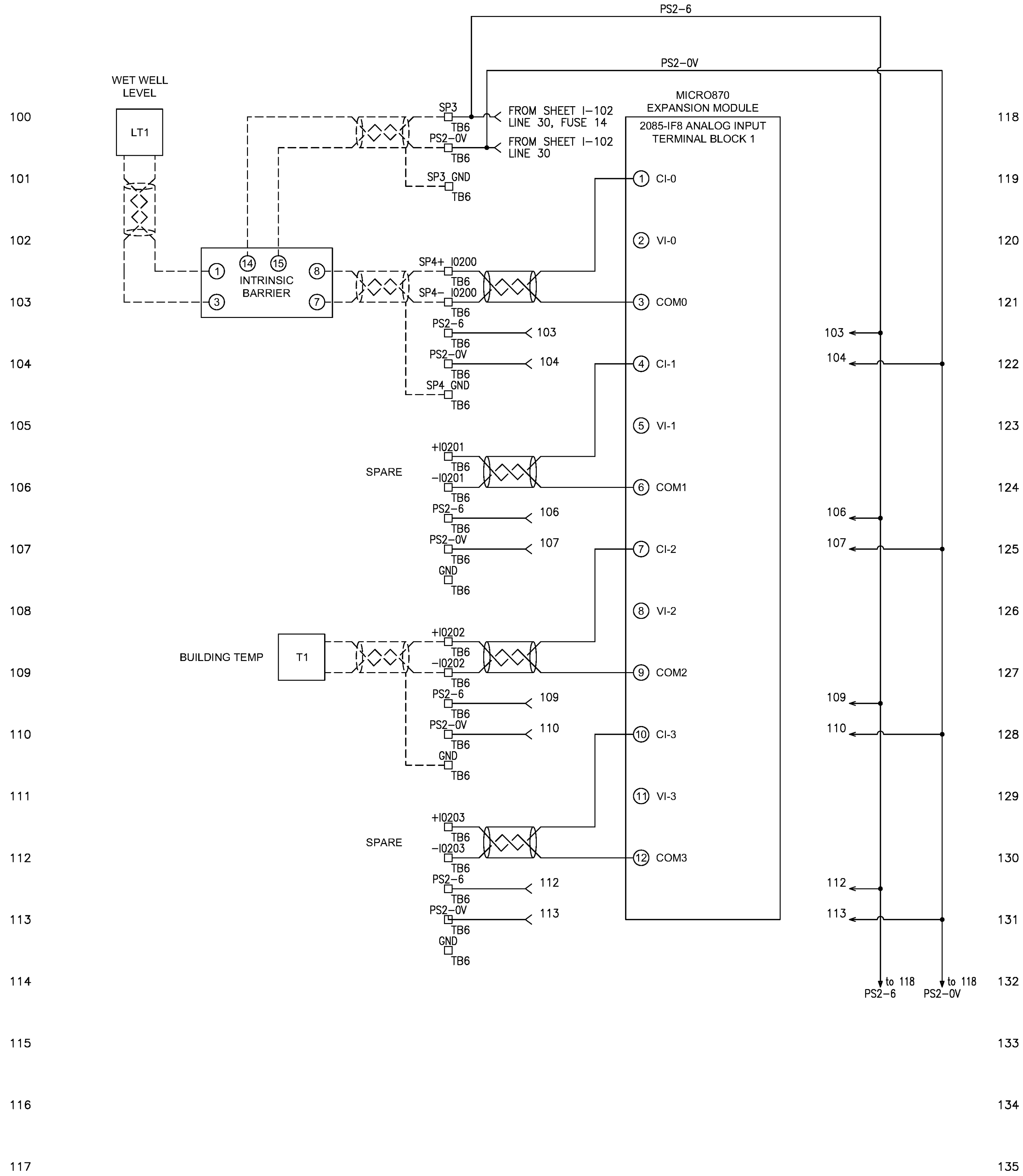






Jan 22, 2025 - 10:57am \\valentia\alac\cubel\p41420\CD\USA Martin Drive\WHS\Drawings\3\Workings\ Final 100%Final CAD Sealed\116 - Analog I/O Expansion Module (I-105).dwg

\*THIS SHEET IS INTENDED TO BE REPRODUCED AT 24"x36". REPRODUCTION OF THIS SHEET AT A DIFFERENT SIZE THAN INTENDED SHALL VOID THE SCALE SHOWN ON THE SHEET.



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**ANALOG I/O EXPANSION MODULE**  
FOR  
**MARTIN DRIVE REGIONAL W.W.P.S.**  
CAMPBELL COUNTY, VIRGINIA

PROJECT NO. 20230622  
FILE NO.  
LAT.  
LONG.  
DATE: 2/5/2025  
DRAWN BY: KRC  
CHECKED BY: MWB

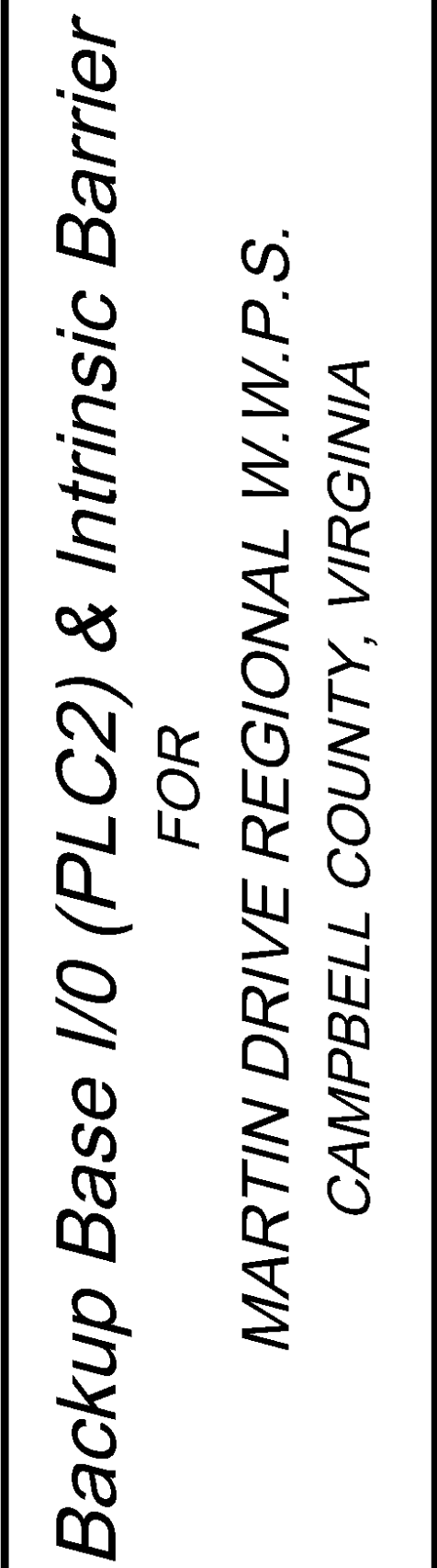
COMMONWEALTH OF VIRGINIA  
MARSHALL BOWLING  
Lic. No. 0402064241  
2/5/2025  
PROFESSIONAL ENGINEER  
Marshall Bowling

**BID SET**

**CCUSA # 80-2304**

**HURT & PROFFITT**  
SHEET NO. I-105  
REV. 0



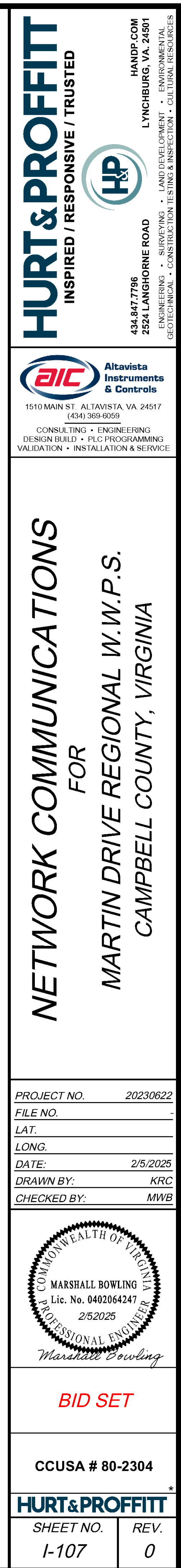


Marshall Bowling

CCUSA # 80-2304

<i>SHEET NO.</i>	<i>REV.</i>
<i>I-106</i>	<i>0</i>



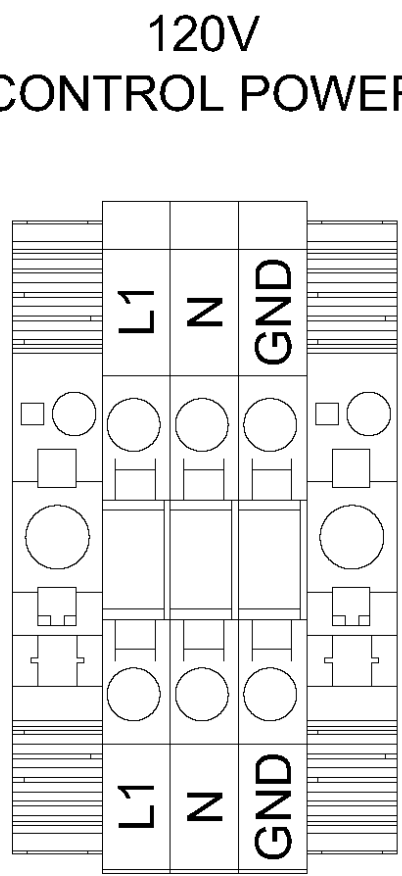




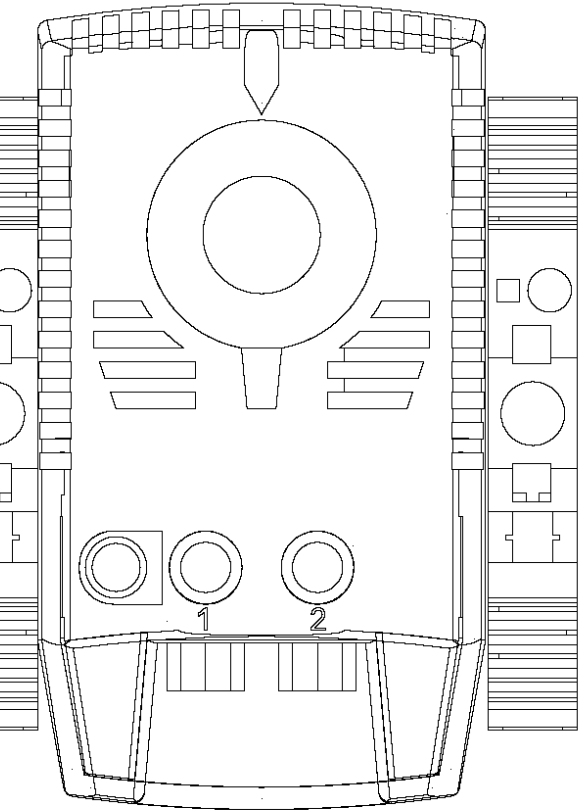
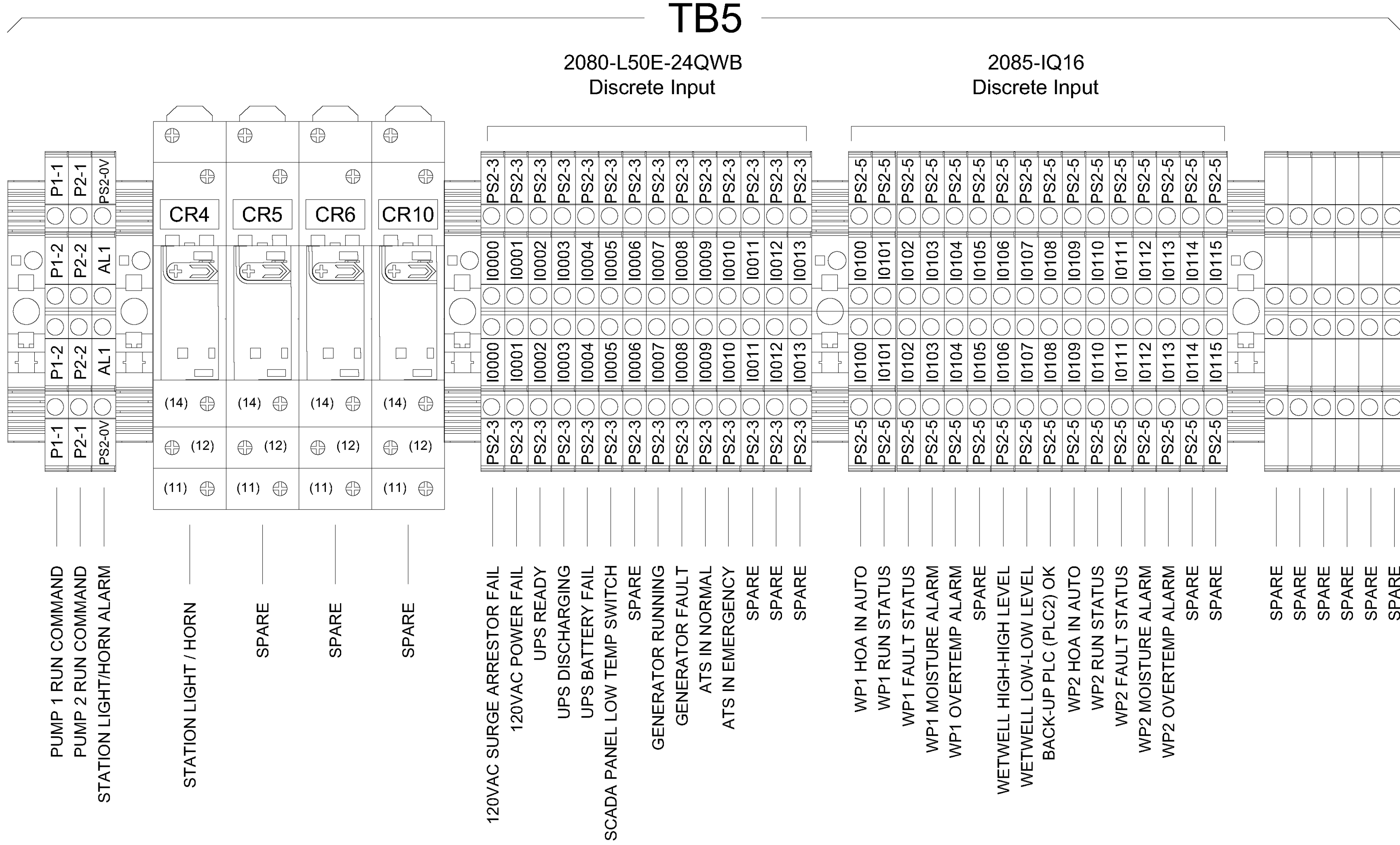
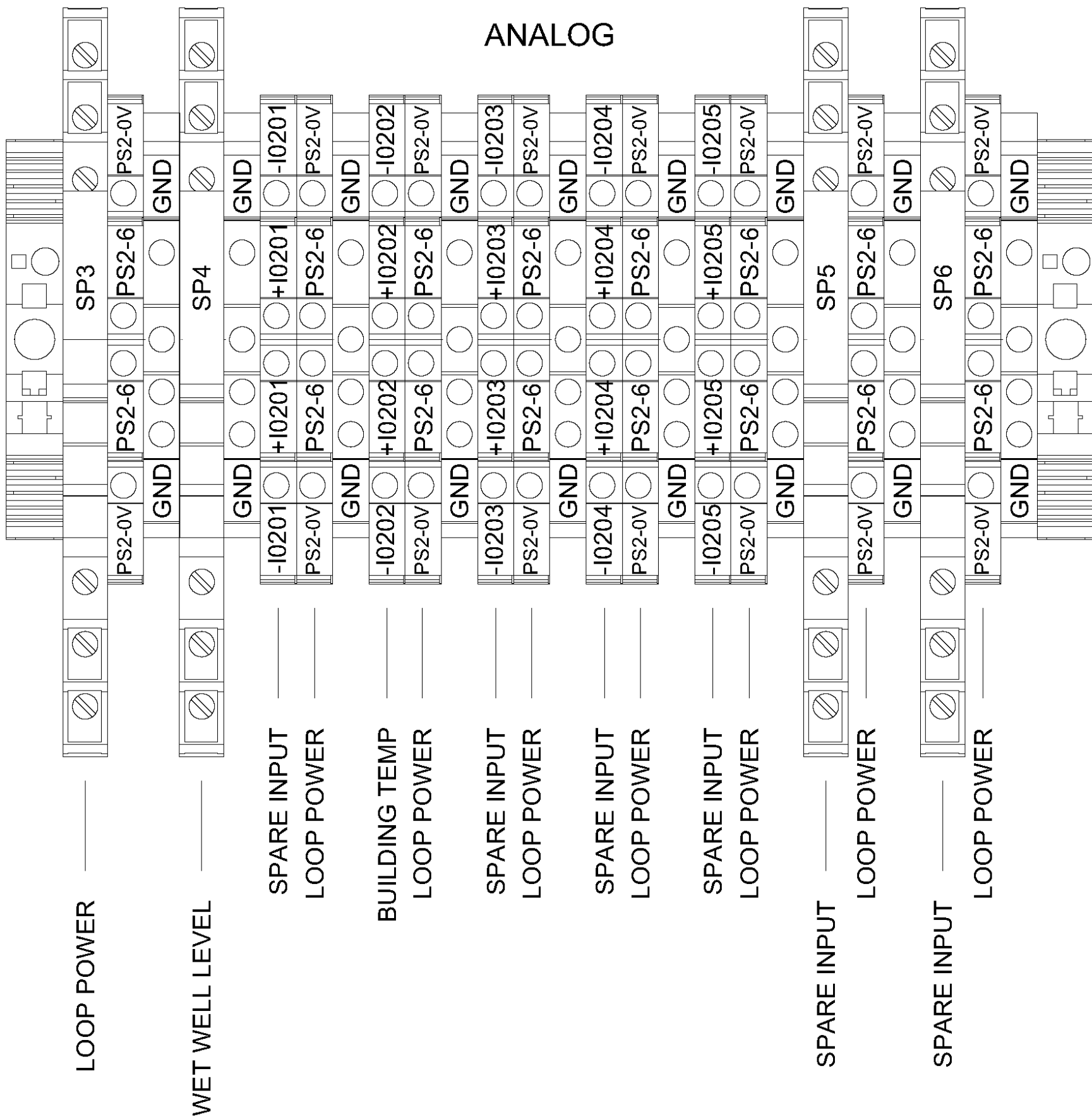
Jan 21, 2025: 11:30am \\va\enr\delia\A\CC\delia\H200-02105A Martin Drive WWP\SS\Drawings\3 Work\g15: Final 100%final CAD Svelled 108 - Field Terminations.dwg

\*THIS SHEET IS INTENDED TO BE REPRODUCED AT 24"x36". REPRODUCTION OF THIS SHEET AT A DIFFERENT SIZE THAN INTENDED SHALL VOID THE SCALE SHOWN ON THE SHEET.

TB1  
120V  
CONTROL POWER



TB6  
ANALOG



FIELD TERMINATIONS  
FOR  
MARTIN DRIVE REGIONAL W.W.P.S.  
CAMPBELL COUNTY, VIRGINIA

PROJECT NO. 20230622  
FILE NO. -  
LAT. -  
LONG. -  
DATE: 2/5/2025  
DRAWN BY: KRC  
CHECKED BY: MWB



BID SET

CCUSA # 80-2304

HURT&PROFFITT  
SHEET NO. I-108  
REV. 0





THIS SHEET IS INTENDED TO BE REPRODUCED AT 24"X36". REPRODUCTION OF THIS SHEET AT A DIFFERENT SIZE THAN INTENDED SHALL VOID THE SCALE SHOWN ON THE SHEET.

Jan 23, 2025 - 11:36am - larsen@hdp.com - C:\Users\larsen\OneDrive\Documents\Projects\2025\01\23\250101\Antenna Installation.dwg - Final 100% End CAD Scale 1:100 - Antenna Installation.dwg

ANTENNA INSTALLATION & GROUNDING NOTES

INSTALL ANTENNA AND RELATED EQUIPMENT ACCORDING TO THE FOLLOWING GUIDLINES AND PER "ANTENNA MOUNTING & GROUNDING DETAIL ON THIS SHEET. DETAILS IS SHOWN AS A GUIDE ONLY. ACTUAL INSTALLATION MAY VARY DEPENDING ON SITE CONDITIONS, NATIONAL AND LOCAL CODES. SITE SHALL BE EVALUATED, CONDITIONS VERIFIED, AND ADJUSTMENTS MADE ACCORDINGLY

1. RUN ANTENNA CABLE THROUGH THE WEATHER CAP ON GALVANIZED STEEL CONDUIT TO THE JUNCTION BOX AND CONNECT IT TO "POLYPHASER" SURGE SUPPRESSOR. SECURE "POLYPHASER" TO THE INSIDE OF THE JUNCTION BOX AND GROUND IT WITH #6 COPPER GROUND WIRE. #6 GROUND WIRE SHALL EXIT JUNCTION BOX THROUGH  $\frac{3}{4}$ " GRS CONDUIT AND BOND TO A DRIVEN GROUND ROD OR OTHER ACCEPTABLE GROUNDING GRID. CONNECT A #6 COPPER GROUND WIRE FROM THE GROUND ROD TO THE ELECTRICAL SERVICE ENTRANCE GROUND. WRAP ANTENNA CABLE CONNECTION AT THE ANTENNA IN ALL-WEATHER INSULATION TAPE. (#3 PART #SUPER33+ OR APPROVED EQUAL) PROVIDE GUY WIRES ON ANTENNA MAST AS NECESSARY FOR STABILITY. NOTE: ALL COMPONENTS FROM ANTENNA TO CONTROL PANEL SHALL BE BONDED ACCORDING NATIONAL ELECTRICAL CODE REQUIREMENTS AS STATED IN ARTICLE 810. LOCAL CODES MAY ALSO APPLY.
2. THE FOLLOWING COMPONENTS PROVIDED BY ELECTRICAL CONTRACTOR:

2.1. ALL CONDUIT AND WIRING

2.2. WEATHER PROTECTION CAP (HEAD)

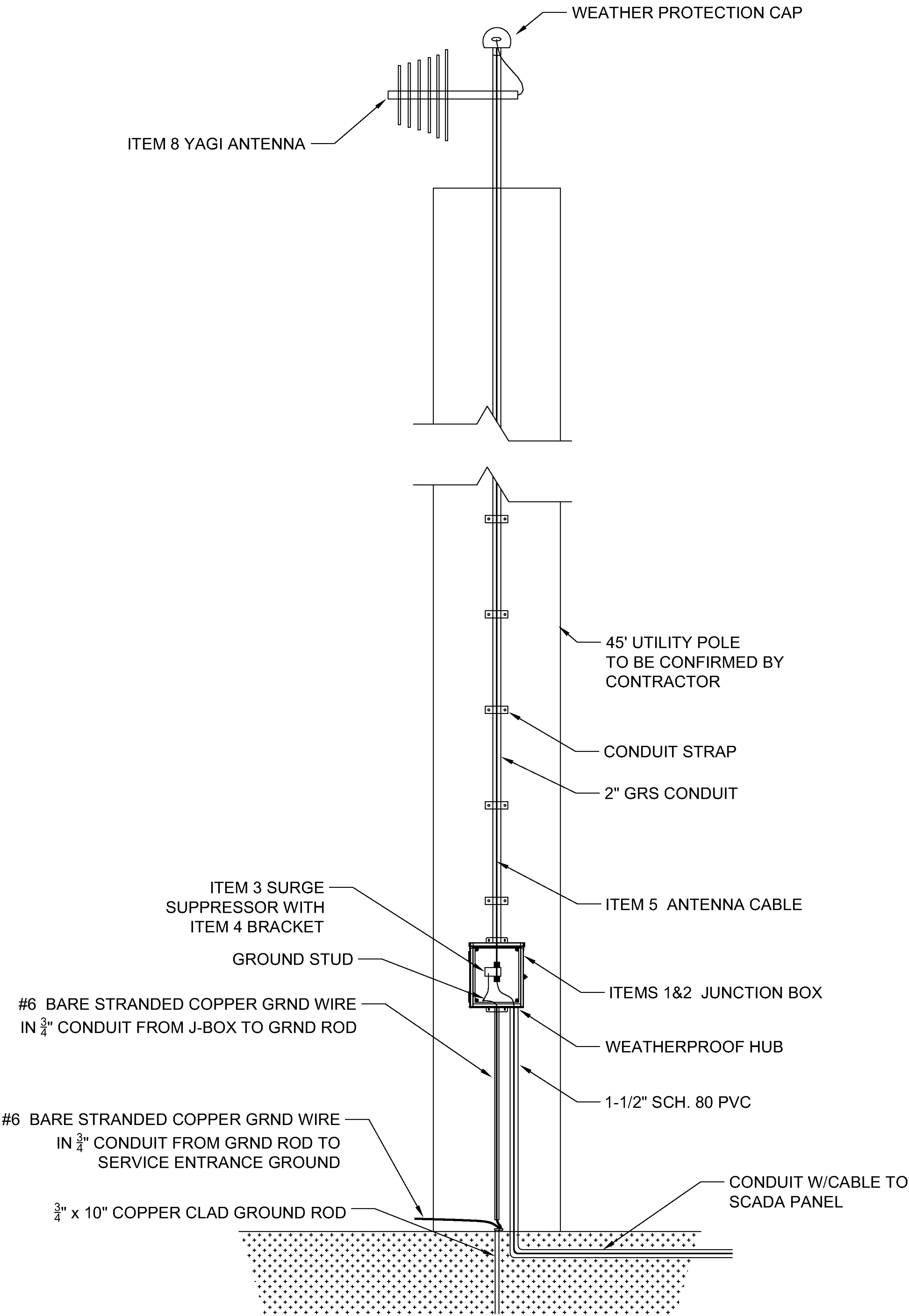
2.3. #6 STRANDED GROUND WIRE

2.4.  $\frac{3}{4}$ " x 10' COPPER GROUND ROD

2.5. ALL RELATED HARDWARE FOR ABOVE ITEMS
3. COORDINATE WITH OWNER PRIOR TO INSTALLING GROUND ROD

ANTENNA BILL OF MATERIALS

ITEM	QTY	MANUFACTURER	CATALOG	DESCRIPTION	TAG
1	1	HOFFMANN	A12R106HCR	NEMA 3R W/PADLOCK PROVISION JUNCTION BOX, 12" x 10" x 6"	
2	1	HOFFMANN	A12N10P	JUNCTION BOX SUBPANEL	
3	1	POLYPHASER	VHF50HN-B	ANTENNA SURGE SUPRESSOR	
4	1	LCOM	HGX-LPMOUNT01	ANTENNA SURGE SUPRESSOR MOUNTING BRACKET	
5	100'	TIMES FIBER COMM	LMR-400	ANTENNA CABLE	
6	3	TIMES FIBER COMM	EZ-400-NMH-X	TYPE N MALE CONNECTOR FOR LMR-400 CABLE	
7	1	TIMES FIBER COMM	EZ-400-TM-RA-X	TYPE N MALE CONNECTOR FOR LMR-400 CABLE	
8	1	MOBILE MARK	Y3313A-C	YAGI 6db ANTENNA 156-162 MHz	



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ANTENNA INSTALLATION  
FOR  
MARTIN DRIVE REGIONAL W.W.P.S.  
CAMPBELL COUNTY, VIRGINIA

PROJECT NO.	20230622
FILE NO.	
LAT.	
LONG.	
DATE:	2/5/2025
DRAWN BY:	CTH
CHECKED BY:	MWB

COMMONWEALTH OF VIRGINIA  
MARSHALL BOWLING  
Lic. No. 0402064247  
2/5/2025  
PROFESSIONAL ENGINEER  
Marshall Bowling

BID SET

CCUSA # 80-2304

**HURT & PROFFITT**  
SHEET NO. 1-109  
REV. 0