

# CHESAPEAKE RIDGE SUBDIVISION CONSTRUCTION PLAN

## AQUIA MAGISTERIAL DISTRICT STAFFORD COUNTY, VIRGINIA

### APPROVED BY:

AGENT, STAFFORD COUNTY BOARD OF SUPERVISORS

DATE

EROSION AND SEDIMENT/SWM PROGRAM MANAGER

DATE

VIRGINIA DEPARTMENT OF TRANSPORTATION

DATE

FIRE MARSHAL

DATE

DEPARTMENT OF UTILITIES

DATE

### ENGINEER:

BAGBY, FOROUGH and GOODPASTURE, PLLC  
125 OLDE GREENWICH DRIVE, SUITE 115  
FREDERICKSBURG, VIRGINIA 22408  
PHONE (540) 373-5178  
FAX (540) 373-6281  
ATTN: RYAN K. FOROUGH

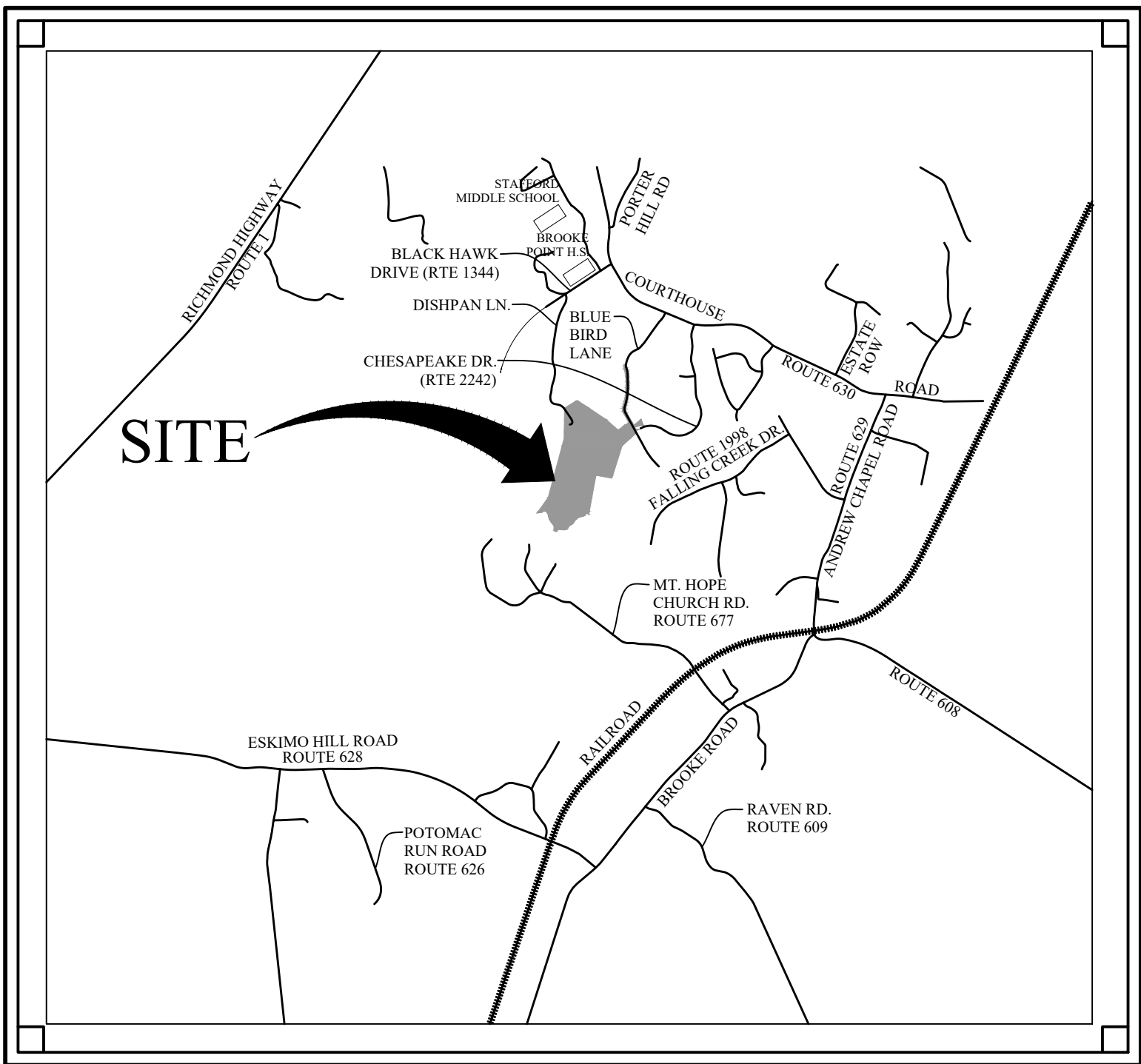
### OWNERS:

(T.M. 39-52)  
BROOKSTONE DEVELOPMENT AND BUILDING  
35 WALPOLE STREET, SUITE 205  
STAFFORD, VA. 22554  
LR# 210017368

### APPLICANT:

BROOKSTONE DEVELOPMENT  
AND BUILDING CORPORATION  
35 WALPOLE STREET, SUITE 205  
STAFFORD, VA. 22554  
(540) 659-9945

(T.M. 39N-A)  
BROOKSTONE DEVELOPMENT  
AND BUILDING CORPORATION  
35 WALPOLE STREET, SUITE 205  
STAFFORD, VA. 22554  
LR# 190022221



VICINITY MAP

SCALE: 1" = 2,640'

### CHESAPEAKE BAY PRESERVATION ACT STATEMENT:

I CERTIFY THAT I AM A LICENSED PROFESSIONAL IN THE COMMONWEALTH OF VIRGINIA AND THAT TO THE BEST OF MY KNOWLEDGE, HAVING COMPLETED A SITE-SPECIFIC EVALUATION AND DELINEATION OF PERENNIAL FLOW, IN MY OPINION, THE PROPOSED DEVELOPMENT MEETS THE REQUIREMENTS OF STAFFORD COUNTY CODE, CHAPTER 27B, CHESAPEAKE BAY PRESERVATION ACT.

| SIGNATURE: | DATE | LICENSE TYPE: |
|------------|------|---------------|
| NAME:      | DATE | LICENSE #:    |

### WETLANDS STATEMENT:

I CERTIFY THAT I AM A LICENSED PROFESSIONAL IN THE COMMONWEALTH OF VIRGINIA AND THAT TO THE BEST OF MY KNOWLEDGE, IN MY OPINION, THE PROPOSED DEVELOPMENT COMPLIES WITH THE CURRENT REQUIREMENT OF SECTIONS 401 AND 404 OF THE CLEAN WATER ACT, SECTION 10 OF THE RIVERS AND HARBORS ACT AND THE VIRGINIA NONTIDAL WETLANDS ACT WHICH INCLUDES THE REQUIREMENT THAT A WETLANDS DELINEATION BE PERFORMED AND SHOWN ON THE REQUISITE PLAN.

| SIGNATURE: | DATE | LICENSE TYPE: |
|------------|------|---------------|
| NAME:      | DATE | LICENSE #:    |

### OSE STATEMENT

THIS IS TO CERTIFY ACCORDING TO SECTION 32.1-163.5 OF THE CODE OF VIRGINIA, 1950 AS AMENDED, THAT WORK SUBMITTED FOR EACH LOT IN THIS SUBDIVISION IS IN ACCORDANCE TO AND COMPLIES WITH THE SEWAGE HANDLING AND DISPOSAL REGULATIONS (AND PRIVATE WELL REGULATIONS IF APPLICABLE) OF THE VIRGINIA DEPARTMENT OF HEALTH AND ALL LOCAL STAFFORD COUNTY CODES. ALL PROPOSED ONSITE SEWAGE DISPOSAL SYSTEMS AREAS (PRIMARY & RESERVE) WILL SUPPORT SYSTEMS THAT HAVE GENERAL APPROVAL UNDER, OR FOR WHICH DESIGN CRITERIA ARE CONTAINED IN, THE SEWAGE HANDLING AND DISPOSAL REGULATIONS (EXCLUDES PROVISIONAL SYSTEMS, EXPERIMENTAL SYSTEMS, AND SYSTEMS WITH CONDITIONS). I RECOMMEND APPROVAL OF THIS SUBDIVISION.

| SIGNATURE: | DATE | OSE #: |
|------------|------|--------|
| NAME:      | DATE |        |

DRAINFIELD NOTE  
THE OSE STATEMENT CERTIFIES THAT THE DRAINFIELDS DEPICTED ON THIS PLAN COMPLY WITH THE SEWAGE HANDLING AND DISPOSAL REGULATIONS OF THE VIRGINIA DEPARTMENT OF HEALTH AND ALL LOCAL STAFFORD COUNTY CODES. HOWEVER THE VIRGINIA DEPARTMENT OF HEALTH HAS NOT APPROVED THE DRAINFIELD SITES FOR THIS SUBDIVISION. THE APPROVAL OF THIS PLAN IS TO PROVIDE INFRASTRUCTURE ONLY AND NO LOTS AND/OR TAX MAP PARCELS ARE BEING CREATED WITH THE APPROVAL OF SAID PLAN.

### CHESAPEAKE RIDGE SHEET INDEX

| SHEET #: | TITLE:                                                |
|----------|-------------------------------------------------------|
| 1        | COVER SHEET                                           |
| 2        | GENERAL NOTES AND VDOT CONSTRUCTION NOTES             |
| 3        | EXISTING CONDITIONS PLAN                              |
| 4        | OVERALL PLAN                                          |
| 4A       | OVERALL EASEMENT PLAN                                 |
| 5-6      | LAYOUT PLANS                                          |
| 7-8      | GRADING PLANS                                         |
| 9-10     | ROAD PROFILES                                         |
| 11       | SIGHT DISTANCE PLAN & PROFILES                        |
| 12       | EROSION AND SEDIMENT CONTROL NARRATIVE                |
| 13-14    | EROSION AND SEDIMENT CONTROL PLANS - PHASE 1          |
| 15-16    | EROSION AND SEDIMENT CONTROL DETAILS AND CALCULATIONS |
| 17-18    | EROSION AND SEDIMENT CONTROL PLANS - PHASE 2          |
| 19       | CULVERT DRAINAGE MAP                                  |
| 20       | CULVERT 1 - CALCULATIONS AND DETAILS                  |
| 21       | CULVERT 2 - CALCULATIONS AND DETAILS                  |
| 22       | CULVERT 3 - CALCULATIONS AND DETAILS                  |
| 23       | WATERLINE A PLAN & PROFILE                            |
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| 28-30    | SWM AREA A - CALCULATIONS AND DETAILS                 |
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| 32       | SWM POND A2 - CALCULATIONS AND DETAILS                |
| 33       | SWM POND A3 - CALCULATIONS AND DETAILS                |
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| 44-45    | GEOTECHNICAL INFORMATION                              |
| 46       | CONCEPTUAL HOUSE GRADING                              |
| 47       | TOTAL SHEETS                                          |

### ENGINEER'S CERTIFICATE

I, RYAN K. FOROUGH, A PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF VIRGINIA, DO HEREBY CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THIS PLAN CONFORMS TO ALL APPLICABLE STATE AND LOCAL STANDARDS.

### RESPONSIBLE LAND DISTURBER NOTE:

UNTIL FURTHER NOTICE, THE RESPONSIBLE LAND DISTURBER FOR THIS PROJECT IS:

RYAN K. FOROUGH, PE      CERTIFICATION #: 41245      EXPIRATION DATE:

### LAND DISTURBANCE NOTE:

I HEREBY CERTIFY THAT \_\_\_\_\_ ACRES OF LAND DISTURBANCE WILL BE DISTURBED DURING THIS PROJECT AND \_\_\_\_\_ SQUARE FEET OF IMPERVIOUS AREA WILL BE CREATED

RYAN K. FOROUGH, PE      CERTIFICATION #: 41245      EXPIRATION DATE:

|                     |            |
|---------------------|------------|
|                     | 12/02/2022 |
| RYAN K. FOROUGH, PE | DATE       |

### GEOTECHNICAL ACKNOWLEDGEMENT

THE UNDERSIGNED PROFESSIONAL ENGINEER HAS REVIEWED PLAN PAGES \_\_\_\_\_ ASSOCIATED WITH THE STORMWATER PONDS DESIGN FOR THIS PROJECT AND FINDS THEM IN GENERAL ACCORDANCE WITH THE GEOTECHNICAL RECOMMENDATIONS PRESENTED IN THE REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING ANALYSIS DATED SEPTEMBER 26, 2022.

|                       |      |
|-----------------------|------|
| GEOTECHNICAL ENGINEER | DATE |
|-----------------------|------|

| DATE     | REVISIONS                   |
|----------|-----------------------------|
| 12/02/22 | REVISED PER COUNTY COMMENTS |
| 05/19/23 | REVISED PER COUNTY COMMENTS |
|          |                             |
|          |                             |
|          |                             |
|          |                             |
|          |                             |
|          |                             |
|          |                             |
|          |                             |

**BAGBY, FOROUGH and GOODPASTURE, PLLC**  
CIVIL ENGINEERS and LAND SURVEYORS  
125 OLDE GREENWICH DRIVE, SUITE 115  
FREDERICKSBURG, VIRGINIA 22408  
TELEPHONE: (540) 373-5178  
FAX: (540) 373-6281

**RYAN K. FOROUGH, PE**  
Lic. No. 41245  
05/19/2023  
PROFESSIONAL ENGINEER

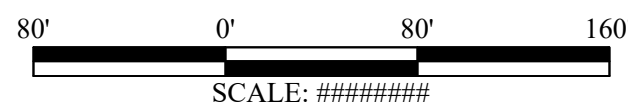
**COVER SHEET**

**CHESAPEAKE RIDGE  
SUBDIVISION CONSTRUCTION PLAN**

**AQUIA MAGISTERIAL DISTRICT**

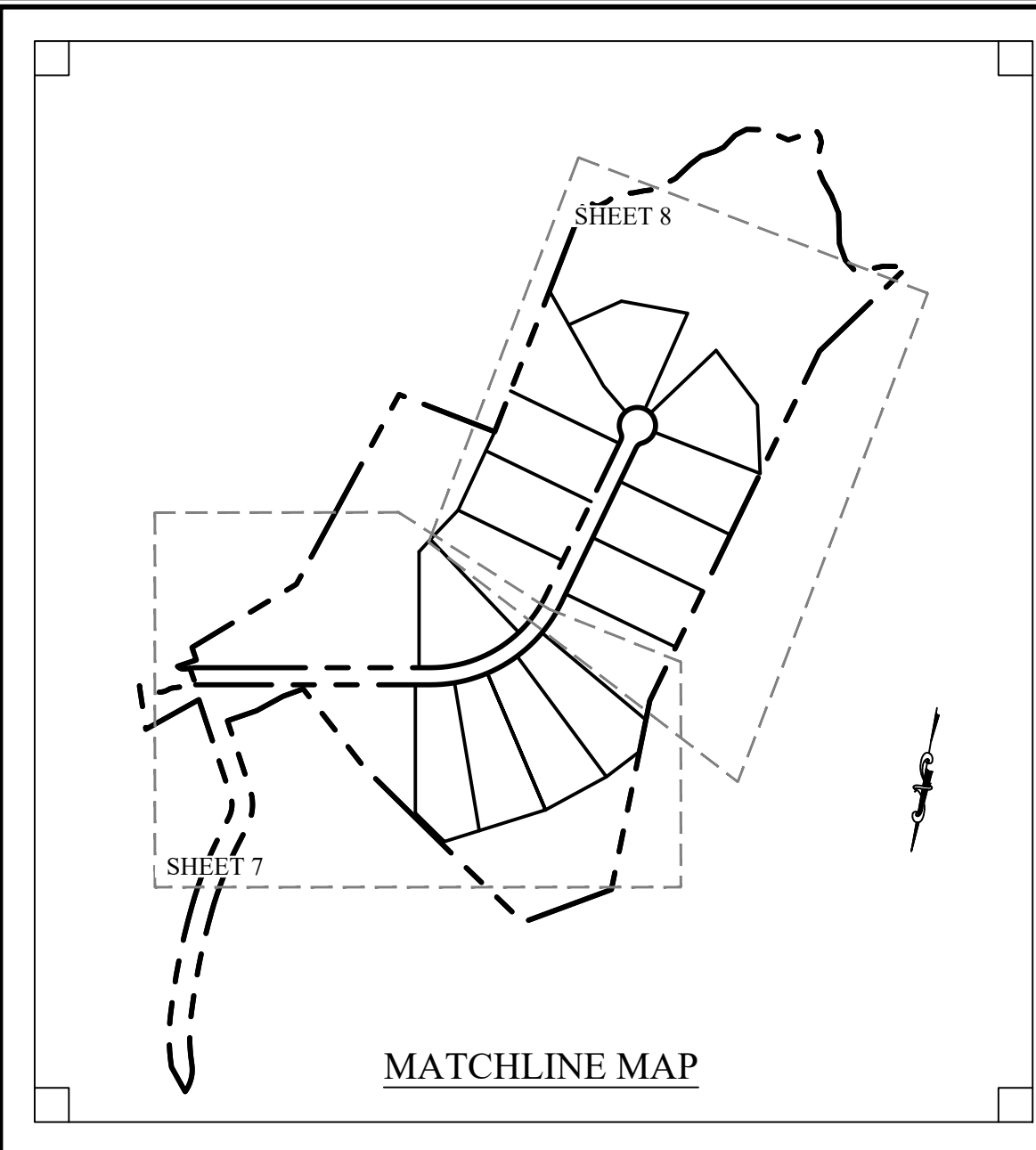
STAFFORD COUNTY VIRGINIA

|              |            |
|--------------|------------|
| DATE:        | 05/18/2022 |
| PRINT DATE:  | 5/25/2023  |
| SCALE:       | N/A        |
| DESIGNED BY: | BAC        |
| DRAWN BY:    | BAC        |
| CHECKED BY:  | RKF        |
| JOB NO.      | 20078-24   |
| PLAN NO.     | 22154515   |



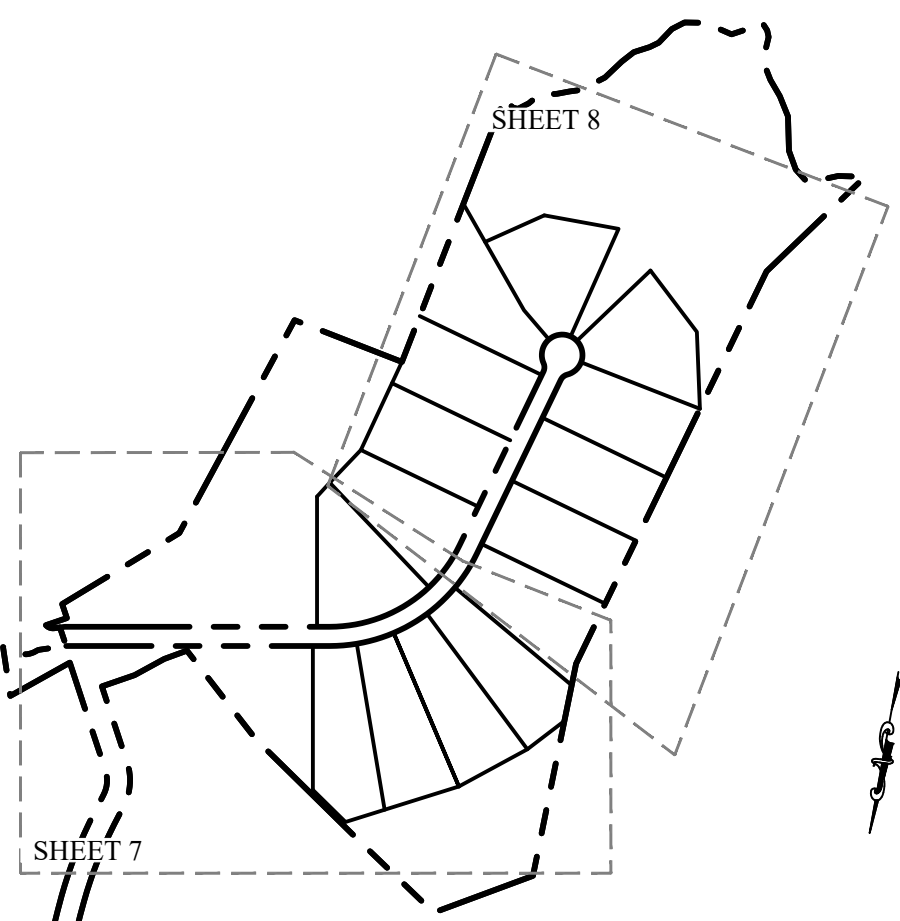
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7

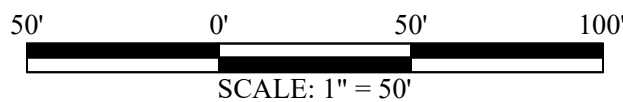


C:\Users\barcov\Documents\BFOI\_Projects\20079-24 Chesapeake Ridge\Engineering\Plans\Chesapeake Ridge - Plot Set.dwg Thu, May 25 2023 barcov



MATCHLINE MAP

N/F  
STAFFORD COUNTY  
BOARD OF SUPERVISORS  
TM, 39-22A  
(INSTR. #150009076)  
ZONING: A-1  
USE: VACANT



| REVISIONS |             |                 |
|-----------|-------------|-----------------|
| DATE      | REVISED PER | COUNTY COMMENTS |
| 12/02/22  |             |                 |
| 05/19/23  |             |                 |
|           |             |                 |
|           |             |                 |
|           |             |                 |
|           |             |                 |
|           |             |                 |

BFG

BAGBY, FOROUGH and GOODPASTURE, PLLC  
CIVIL ENGINEERS AND LAND SURVEYORS  
125 OLDE GREENWICH DRIVE, SUITE 115  
FREDERICKSBURG, VIRGINIA 22408  
TELEPHONE: (540) 373-8178  
FAX: (540) 373-6681

COMMONWEALTH OF VIRGINIA  
RYAN K. FOROUGH  
Lic. No. 41245  
05/19/2023  
PROFESSIONAL ENGINEER

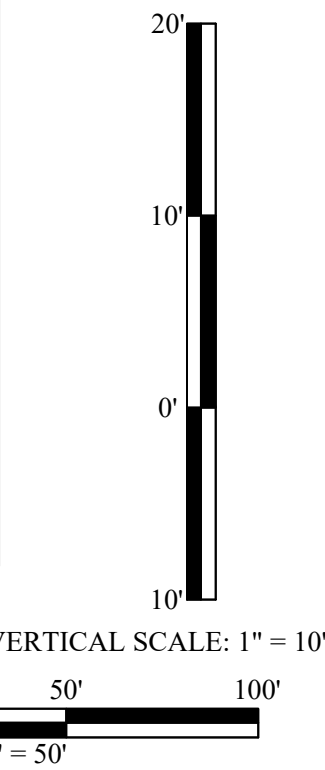
GRADING PLAN

CHESAPEAKE RIDGE  
SUBDIVISION CONSTRUCTION PLAN  
AQUIA MAGISTERIAL DISTRICT

STAFFORD COUNTY  
VIRGINIA

|              |            |
|--------------|------------|
| DATE:        | 05/18/2022 |
| PRINT DATE:  | 5/25/2023  |
| SCALE:       | 1"=50'     |
| DESIGNED BY: | BAC        |
| DRAWN BY:    | BAC        |
| CHECKED BY:  | RKF        |
| JOB NO.      | 20078-24   |
| PLAN NO.     | 22154515   |





50' 0' 50'

SCALE: 1" = 50'

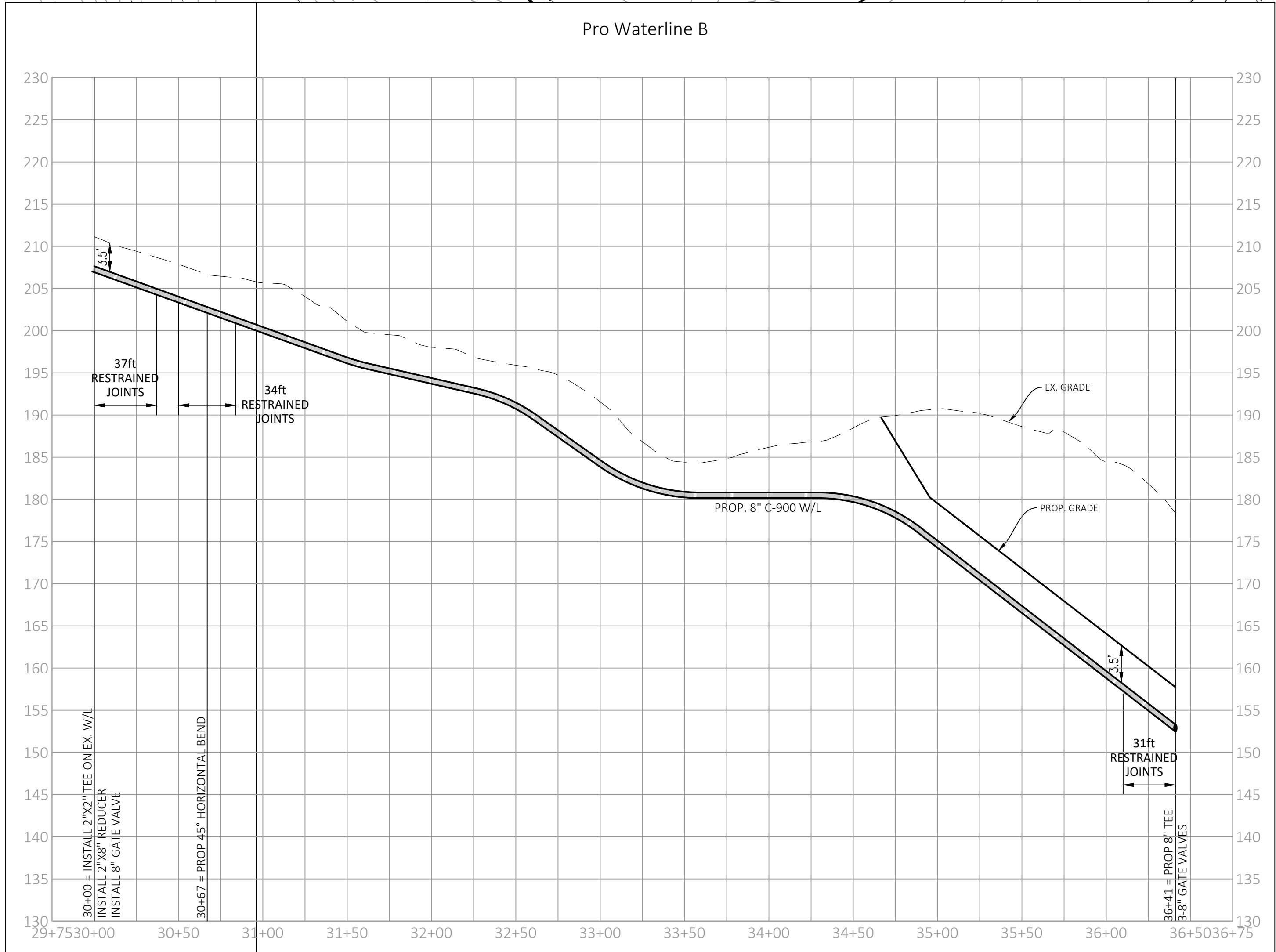
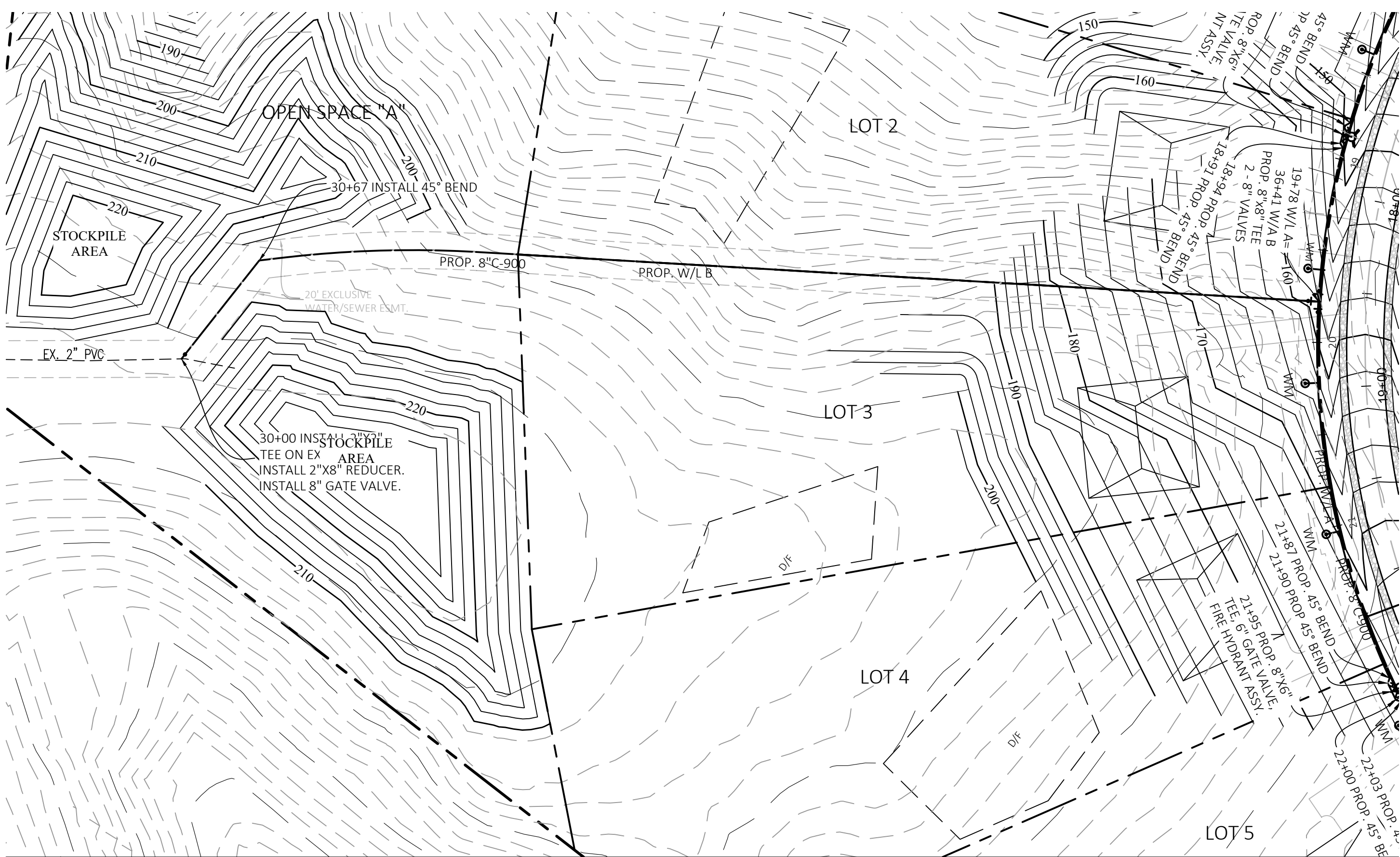
COMMONWEALTH OF VIRGINIA  
 RICE  
 RYAN K. FOROUGH  
 Lic. No. 41245  
 05/19/2023  
 PROFESSIONAL ENGINEER

## VIRGINIA

STAFFORD COUNTY

23

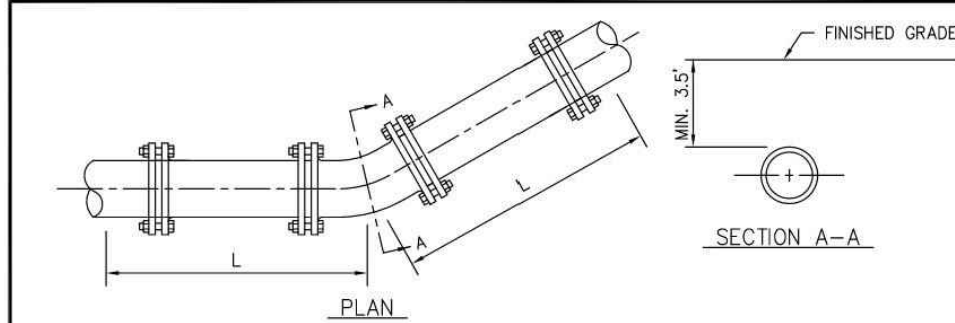




WATERLINE B

24



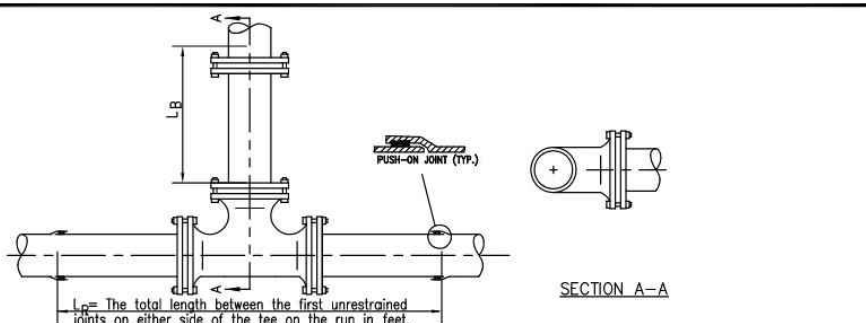


| L : RESTRAINED LENGTHS FOR PVC AND POLYWRAPPED PIPES (FEET) |     |     |     |     |      |      |      |      |      |      |      |  |  |  |  |
|-------------------------------------------------------------|-----|-----|-----|-----|------|------|------|------|------|------|------|--|--|--|--|
| DIAMETER OF PIPE                                            | 3"  | 4"  | 6"  | 8"  | 10"  | 12"  | 16"  | 18"  | 20"  | 24"  | 30"  |  |  |  |  |
| 11 1/4" HORIZ. BEND                                         | 2'  | 3'  | 4'  | 5'  | 6'   | 7'   | 9'   | 9'   | 11'  | 12'  | 15'  |  |  |  |  |
| 22 1/2" HORIZ. BEND                                         | 4'  | 5'  | 7'  | 10' | 12'  | 14'  | 18'  | 20'  | 21'  | 25'  | 30'  |  |  |  |  |
| 45° HORIZ. BEND                                             | 9'  | 11' | 15' | 20' | 24'  | 28'  | 37'  | 41'  | 45'  | 52'  | 63'  |  |  |  |  |
| 90° HORIZ. BEND                                             | 22' | 26' | 37' | 48' | 58'  | 69'  | 89'  | 98'  | 108' | 126' | 152' |  |  |  |  |
| DEAD ENDS & VALVES                                          | 43' | 52' | 75' | 98' | 119' | 141' | 184' | 205' | 225' | 267' | 326' |  |  |  |  |

| L : RESTRAINED LENGTHS FOR BARE DUCTILE IRON PIPES (FEET) |     |     |     |     |     |     |      |      |      |      |      |  |  |  |  |
|-----------------------------------------------------------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|--|--|--|--|
| DIAMETER OF PIPE                                          | 3"  | 4"  | 6"  | 8"  | 10" | 12" | 16"  | 18"  | 20"  | 24"  | 30"  |  |  |  |  |
| 11 1/4" HORIZ. BEND                                       | 2'  | 2'  | 3'  | 4'  | 6'  | 6'  | 8'   | 8'   | 9'   | 11'  | 13'  |  |  |  |  |
| 22 1/2" HORIZ. BEND                                       | 4'  | 5'  | 6'  | 8'  | 10' | 12' | 15'  | 17'  | 19'  | 22'  | 26'  |  |  |  |  |
| 45° HORIZ. BEND                                           | 8'  | 9'  | 13' | 17' | 21' | 25' | 32'  | 36'  | 39'  | 46'  | 56'  |  |  |  |  |
| 90° HORIZ. BEND                                           | 19' | 23' | 32' | 42' | 51' | 60' | 77'  | 86'  | 94'  | 110' | 133' |  |  |  |  |
| DEAD ENDS & VALVES                                        | 30' | 37' | 52' | 68' | 83' | 99' | 129' | 143' | 158' | 187' | 228' |  |  |  |  |

- 1) SOIL DESIGNATION IS COHESIVE GRANULAR
- 2) MINIMUM DEPTH OF COVER IS 3.5 FT.
- 3) USE TYPE 3 LAYING CONDITIONS.
- 4) DESIGN PRESSURE IS 100 PSI WORKING PRESSURE + 120 PSI SURGE ALLOWANCE
- 5) SAFETY FACTOR IS 1.5
- 6) THE ENGINEER SHALL INCREASE THE ABOVE LENGTHS FOR WORKING PRESSURES GREATER THAN 100 PSI
- 7) THE ENGINEER SHALL INDIVIDUALLY EVALUATE ALL COMBINED BENDS AND INDICATE THE REQUIRED LENGTHS ON THE PROFILE VIEW.

|                                            |                                                                |
|--------------------------------------------|----------------------------------------------------------------|
| DECEMBER 2004                              | 1.4.1-18                                                       |
| STAFFORD COUNTY<br>DEPARTMENT OF UTILITIES | RESTRAINED LENGTHS FOR<br>HORIZONTAL BENDS, DEAD ENDS & VALVES |

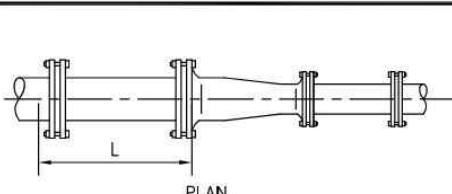


| L : RESTRAINED LENGTHS FOR BARE DUCTILE IRON PIPES (FEET) |     |     |     |     |     |     |      |      |      |      |      |  |  |  |  |
|-----------------------------------------------------------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|--|--|--|--|
| DIAMETER OF PIPE                                          | 3"  | 4"  | 6"  | 8"  | 10" | 12" | 16"  | 18"  | 20"  | 24"  | 30"  |  |  |  |  |
| 11 1/4" HORIZ. BEND                                       | 2'  | 2'  | 3'  | 4'  | 6'  | 6'  | 8'   | 8'   | 9'   | 11'  | 13'  |  |  |  |  |
| 22 1/2" HORIZ. BEND                                       | 4'  | 5'  | 6'  | 8'  | 10' | 12' | 15'  | 17'  | 19'  | 22'  | 26'  |  |  |  |  |
| 45° HORIZ. BEND                                           | 8'  | 9'  | 13' | 17' | 21' | 25' | 32'  | 36'  | 39'  | 46'  | 56'  |  |  |  |  |
| 90° HORIZ. BEND                                           | 19' | 23' | 32' | 42' | 51' | 60' | 77'  | 86'  | 94'  | 110' | 133' |  |  |  |  |
| DEAD ENDS & VALVES                                        | 30' | 37' | 52' | 68' | 83' | 99' | 129' | 143' | 158' | 187' | 228' |  |  |  |  |

| L : RESTRAINED LENGTHS FOR BARE DUCTILE IRON PIPES (FEET) |     |     |     |     |     |     |      |      |      |      |      |  |  |  |  |
|-----------------------------------------------------------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|--|--|--|--|
| DIAMETER OF PIPE                                          | 3"  | 4"  | 6"  | 8"  | 10" | 12" | 16"  | 18"  | 20"  | 24"  | 30"  |  |  |  |  |
| 11 1/4" HORIZ. BEND                                       | 2'  | 2'  | 3'  | 4'  | 6'  | 6'  | 8'   | 8'   | 9'   | 11'  | 13'  |  |  |  |  |
| 22 1/2" HORIZ. BEND                                       | 4'  | 5'  | 6'  | 8'  | 10' | 12' | 15'  | 17'  | 19'  | 22'  | 26'  |  |  |  |  |
| 45° HORIZ. BEND                                           | 8'  | 9'  | 13' | 17' | 21' | 25' | 32'  | 36'  | 39'  | 46'  | 56'  |  |  |  |  |
| 90° HORIZ. BEND                                           | 19' | 23' | 32' | 42' | 51' | 60' | 77'  | 86'  | 94'  | 110' | 133' |  |  |  |  |
| DEAD ENDS & VALVES                                        | 30' | 37' | 52' | 68' | 83' | 99' | 129' | 143' | 158' | 187' | 228' |  |  |  |  |

- 1) SOIL DESIGNATION IS COHESIVE GRANULAR
- 2) MINIMUM DEPTH OF COVER IS 3.5 FT.
- 3) USE TYPE 3 LAYING CONDITIONS.
- 4) DESIGN PRESSURE IS 100 PSI WORKING PRESSURE + 120 PSI SURGE ALLOWANCE
- 5) SAFETY FACTOR IS 1.5
- 6) THE ENGINEER SHALL INCREASE THE ABOVE LENGTHS FOR WORKING PRESSURES GREATER THAN 100 PSI
- 7) THE ENGINEER SHALL INDIVIDUALLY EVALUATE ALL COMBINED BENDS AND INDICATE THE REQUIRED LENGTHS ON THE PROFILE VIEW.

|                                            |                                                                       |
|--------------------------------------------|-----------------------------------------------------------------------|
| DECEMBER 2004                              | 1.4.1-11A                                                             |
| STAFFORD COUNTY<br>DEPARTMENT OF UTILITIES | RESTRAINED LENGTHS FOR TEES<br>SHEET 1 OF 3<br>RUN DIAMETER 6" TO 12" |



| L : RESTRAINED LENGTHS FOR BARE DUCTILE IRON PIPES (FEET) |     |     |     |     |     |     |      |      |      |      |      |  |  |  |  |
|-----------------------------------------------------------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|--|--|--|--|
| DIAMETER OF PIPE                                          | 3"  | 4"  | 6"  | 8"  | 10" | 12" | 16"  | 18"  | 20"  | 24"  | 30"  |  |  |  |  |
| 11 1/4" HORIZ. BEND                                       | 2'  | 2'  | 3'  | 4'  | 6'  | 6'  | 8'   | 8'   | 9'   | 11'  | 13'  |  |  |  |  |
| 22 1/2" HORIZ. BEND                                       | 4'  | 5'  | 6'  | 8'  | 10' | 12' | 15'  | 17'  | 19'  | 22'  | 26'  |  |  |  |  |
| 45° HORIZ. BEND                                           | 8'  | 9'  | 13' | 17' | 21' | 25' | 32'  | 36'  | 39'  | 46'  | 56'  |  |  |  |  |
| 90° HORIZ. BEND                                           | 19' | 23' | 32' | 42' | 51' | 60' | 77'  | 86'  | 94'  | 110' | 133' |  |  |  |  |
| DEAD ENDS & VALVES                                        | 30' | 37' | 52' | 68' | 83' | 99' | 129' | 143' | 158' | 187' | 228' |  |  |  |  |

- 1) SOIL DESIGNATION IS COHESIVE GRANULAR
- 2) MINIMUM DEPTH OF COVER IS 3.5 FT.
- 3) USE TYPE 3 LAYING CONDITIONS.
- 4) DESIGN PRESSURE IS 100 PSI WORKING PRESSURE + 120 PSI SURGE ALLOWANCE
- 5) SAFETY FACTOR IS 1.5
- 6) THE ENGINEER SHALL INCREASE THE ABOVE LENGTHS FOR WORKING PRESSURES GREATER THAN 100 PSI
- 7) THE ENGINEER SHALL INDIVIDUALLY EVALUATE ALL COMBINED BENDS AND INDICATE THE REQUIRED LENGTHS ON THE PROFILE VIEW.

|                                            |                                 |
|--------------------------------------------|---------------------------------|
| DECEMBER 2004                              | 1.4.1-12                        |
| STAFFORD COUNTY<br>DEPARTMENT OF UTILITIES | RESTRAINED LENGTHS FOR REDUCERS |

## CONSTRUCTION NOTES WATER & SEWER

1. A WATER AND SEWER CONSTRUCTION PERMIT MUST BE OBTAINED FROM THE STAFFORD COUNTY DEPARTMENT OF UTILITIES AT LEAST 48 HOURS PRIOR TO START OF WATER AND SEWER CONSTRUCTION, INCLUDING TAPS TO EXISTING LINES.
2. CONTACT THE DEPARTMENT OF UTILITIES AT 540-658-8630, 48 HOURS BEFORE BEGINNING WORK ON WATER OR SANITARY SEWER UTILITIES, INCLUDING SERVICE TAPS.
3. INSPECTION AND APPROVAL OF ALL WORK AND MATERIALS PERTAINING TO WATER SHALL BE UNDER THE JURISDICTION OF STAFFORD COUNTY, VIRGINIA.
4. ALL WATER LINES AND CONSTRUCTION THEREOF SHALL COMPLY WITH THE STANDARDS AND SPECIFICATIONS OF STAFFORD COUNTY, VIRGINIA AND THE VIRGINIA DEPARTMENT OF HEALTH. ALL SEWER LINES AND CONSTRUCTION THEREOF SHALL COMPLY WITH THE STANDARDS AND SPECIFICATIONS OF STAFFORD COUNTY VIRGINIA AND THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY.
5. USE APPLICABLE STANDARD DETAILS FROM STAFFORD COUNTY WATER AND SEWER DESIGN AND CONSTRUCTION STANDARDS.
6. WHEN THE STAFFORD COUNTY WATER AND SEWER DESIGN AND CONSTRUCTION STANDARDS CONTAINS A PROJECT CATEGORY IN THE APPROVED MATERIALS AND MANUFACTURERS LIST, ONLY THOSE PRODUCTS SPECIFICALLY LISTED MAY BE USED.
7. AFTER A DEPARTMENT OF UTILITIES CONSTRUCTION PERMIT HAS BEEN ISSUED, ALL CHANGES TO WATER AND SEWER FACILITIES TO BE CONSTRUCTED USING THESE PLANS MUST BE SUBMITTED TO THE DEPARTMENT OF UTILITIES IN WRITING AND APPROVED PRIOR TO CONSTRUCTION. CONTACT THE UTILITIES INSPECTION STAFF AT 540 658-8630. THIS PROJECT IS IN THE CENTRAL 570. PRESSURE ZONE. ANY STRUCTURE THAT HAS A FIRST FLOOR ELEVATION OF LESS THAN 302. WILL REQUIRE A PRESSURE REDUCING VALVE. ANY STRUCTURE THAT HAS A FIRST FLOOR ELEVATION ABOVE 248. WILL REQUIRE A BOOSTER PUMP.
9. CONTACT THE DEPARTMENTS OF UTILITIES CROSS CONNECTION/BACKFLOW INSPECTOR AT 540-373-2535 TO COORDINATE THE REQUIREMENTS FOR BACKFLOW PREVENTION.
10. DEVELOPER/OWNER IS RESPONSIBLE TO RESPOND TO MISS UTILITY REQUESTS UNTIL WATER AND SEWER LINES ARE ACCEPTED BY COUNTY. ANY DAMAGE TO WATER AND SEWER MAINS MUST BE REPAIRED BEFORE ACCEPTANCE BY THE COUNTY.
11. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY AS-BUILT INFORMATION ON ALL CONSTRUCTION. ALL LATERALS AND APPURTENANCES WILL BE REFERENCED FROM THE CLOSEST MANHOLE. THE CONTRACTOR SHALL MAINTAIN DAILY AS-BUILT DRAWINGS AT THE CONSTRUCTION SITE.
12. WATER AND SEWER IMPROVEMENTS WILL NOT BE ACCEPTED UNTIL THE COUNTY APPROVES AS-BUILT DRAWINGS AND EASEMENTS ARE RECORDED.
13. ALL SERVICES INTERRUPTIONS TO EXISTING WATER AND SEWER CUSTOMERS SHALL BE APPROVED BY AND COORDINATED WITH THE UTILITY INSPECTOR. ALL SERVICE INTERRUPTIONS TO EXISTING CUSTOMERS WILL REQUIRE A MINIMUM OF 48 HOURS CERTAIN SERVICE INTERRUPTIONS MAY REQUIRE WORK AT NIGHT.
14. ALL BACTERIOLOGICAL SAMPLES OF WATER LINES SHALL BE TAKEN BY DEPARTMENT OF UTILITIES PERSONNEL. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED TO SCHEDULE THESE SAMPLES.
15. PVC WATERLINES UP TO 10" DIA MAY BE USED IN NON-PAVED AREAS. PVC WATERLINES SHALL BE CLASS 200 (SDR-14) POLY-VINYL CHLORIDE PIPE MEETING THE REQUIREMENTS OF AWWA C900. WATER PIPE OVER 10" AND ALL WATER PIPE IN PAVED AREAS SHALL BE DUCTILE IRON (CLASS 52) PIPE. MEETING THE REQUIREMENTS OF AWWA C151 WITH PUSH-ON OR RESTRAINED MECHANICAL JOINTS. DIP MUST BE POLY ENCASED. PVC PIPE SHALL BE INSTALLED WITH INSULATED 10 GAUGE COPPER CLAD STEEL TRACING WIRE SECURED TO THE TOP OF THE PIPE. ALL PIPE SHALL HAVE BLUE WARNING TAPE BURIED 2" (TWO FEET) BELOW GRADE OVER THE TOP OF THE PIPE.
16. ALL WATER MAINS SHALL HAVE MINIMUM 42" COVER.
17. ALL SEWER PIPE AND FITTINGS 4" THROUGH 15" DIAMETER SHALL MEET ASTM D3034, SDR 35, MINIMUM. ALL SEWER PIPE AND FITTINGS 18" THROUGH 40" DIAMETER, SHALL MEET ASTM F679, APPENDIX - 5.
18. ALL SEWER LINES UNDER PAVEMENT SHALL HAVE A MINIMUM OF 48" COVER. ALL SEWER LINES INSTALLED IN EASEMENTS WITH NO VEHICULAR TRAFFIC SHALL HAVE A MINIMUM OF 36" COVER.
19. DUCTILE IRON SANITARY SEWER PIPE SHALL HAVE INTERIOR LINING OF PROTECTO 401 OR EQUAL AND BE POLY ENCASED, UNLESS NOTED OTHERWISE.
20. ALL MANHOLES IN PAVED AREAS, KEPT LAWNS AND OTHER GREEN AREAS SHALL HAVE STANDARD FRAMES AND SOLID COVERS UNLESS NOTED OTHERWISE. ALL OTHER MANHOLES SHALL HAVE WATERTIGHT FRAMES AND COVERS UNLESS NOTED OTHERWISE.
21. ALL MANHOLES SHALL HAVE FRAMES BOLTED TO CONE, UNLESS DIRECTED OTHERWISE BY THE UTILITIES INSPECTOR.
22. TAPERED ADJUSTING RINGS SHALL BE USED TO ADJUST THE SLOPE OF THE MANHOLE FRAME AND COVER TO THE SLOPE OF PAVEMENT.
23. ALL MANHOLES SHALL HAVE A LIQUID APPLIED ELASTOMERIC INTERNAL CHIMNEY SEALING MATERIAL APPLIED.
24. A WATERPROOF MANHOLE INSERT IN CONFORMANCE WITH DETAIL 3.2.3-3 SHALL BE INSTALLED IN EACH MANHOLE WITH A STANDARD FRAME AND COVER.
25. A CLEANOUT COVER ASSEMBLY IN CONFORMANCE WITH DETAIL 3.3.3-3A OR 3.3.3-3B SHALL BE INSTALLED ON EACH SEWER LATERAL CLEANOUT.
26. THERE SHALL BE A 10" HORIZONTAL SEPARATION BETWEEN WATER LINES AND SEWER LINES, AND A VERTICAL SEPARATION OF 18" BETWEEN THE BOTTOM OF THE WATER MAIN AND THE TOP OF THE SEWER. THIS APPLIES TO HOUSE SEWER LATERALS ALSO.
27. ALL WATERLINE AND SEWER SELECT BACKFILL, STRUCTURAL BACKFILL, AND PIPE BEDDING MATERIAL SHALL BE COMPACTED TO 95% VTM-1 MAXIMUM DRY DENSITY. ALL CONTROLLED FILL IN TRENCHES UNDER PAVEMENT SHALL BE COMPACTED TO 95% VTM-1 MAXIMUM DRY DENSITY.
28. WATER AND SANITARY SEWER DESIGN ELEMENTS, DETAILS AND PRODUCTS SHOWN ON THIS PLAN ARE VALID FOR A PERIOD OF 12 MONTHS AFTER PLAN APPROVAL, AFTER WHICH TIME CURRENT WATER AND SEWER STANDARDS WILL APPLY.
29. WATER AND SANITARY SEWER INFRASTRUCTURE IS SUBJECT TO COMPREHENSIVE INSPECTION AT TENTATIVE ACCEPTANCE, 12 MONTH ANNIVERSARY, AND FINAL ACCEPTANCE.

## WATER & SEWER NOTES ADMINISTRATIVE

### FINAL INSPECTION

- A. AT THE COMPLETION OF THIS PROJECT, THE DEVELOPER OR ENGINEER RESPONSIBLE FOR CONSTRUCTION SHALL NOTIFY THE PUBLIC UTILITIES ADMINISTRATOR, IN WRITING, THAT THE WORK HAS BEEN COMPLETED AND REQUEST A FINAL INSPECTION. THIS REQUEST SHALL INCLUDE THE REQUIREMENTS OF NOTE 2.
- B. ON RECEIPT OF THE REQUEST FOR FINAL INSPECTION, THE ADMINISTRATOR SHALL MAKE A FINAL COMPREHENSIVE INSPECTION OF THE CONSTRUCTED FACILITIES, EXAMINING IN DETAIL FOR CONFORMANCE OF THE WORK WITH APPROVED PLANS AND SPECIFICATION, ALIGNMENT OF SEWER LINES, INFILTRATION LEAKAGE, WORKMANSHIP, OPERATION OF EQUIPMENT AND OTHER FACTORS TO THE SATISFACTION OF THE ADMINISTRATOR AND THE BEST INTEREST OF THE COUNTY.

- C. IT SHALL BE REQUIRED THAT A RESPONSIBLE REPRESENTATIVE OF THE DEVELOPER ACCOMPANY THE ADMINISTRATOR OR HIS DESIGNEE ON THE FINAL INSPECTION. THE DEVELOPER SHALL FURNISH WHATEVER IS NECESSARY FOR CONDUCTING THE FINAL INSPECTION.

- D. DEFICIENCIES, WHICH ARE FOUND TO EXIST DURING THE FINAL INSPECTION, SHALL BE POINTED OUT TO THE DEVELOPER. SUBSEQUENT TO THE INSPECTION, THE DEVELOPER SHALL BE FURNISHED, IN WRITING, A SUMMARY OF THE DEFICIENCIES FOUND, THE CORRECTION OF WHICH IS REQUIRED. ON NOTIFICATION THAT ALL CONSTRUCTION DEFICIENCIES HAVE BEEN COMPLETED, THE ADMINISTRATOR SHALL RE-INSPECT ALL SUCH WORK.

### ACCEPTANCE BY COUNTY OF COMPLETED FACILITIES

- A. THE ADMINISTRATOR SHALL ACCEPT NEWLY CONSTRUCTED WATER AND SANITARY SEWER SERVICE FACILITIES TO BECOME A PART OF THE PUBLIC UTILITIES SYSTEM OF THE COUNTY, UPON SATISFACTION OF THE FOLLOWING CONDITIONS.

1. THAT, IN THE OPINION OF THE ADMINISTRATOR, ALL REQUIREMENTS OF NOTE 1 HAVE BEEN FULFILLED OR THE DEVELOPER HAS MADE ARRANGEMENTS SATISFACTORY TO THE ADMINISTRATOR TO HAVE THEM FULFILLED.

2. A SET OF RECORD DRAWINGS MEETING THE REQUIREMENTS OF NOTE 3 HAS BEEN SUBMITTED AND APPROVED BY THE ADMINISTRATOR.

3. THAT ALL MATTERS RELATIVE TO SPECIFIC CONTRACTS BETWEEN THE DEVELOPER AND THE COUNTY ARE IN ORDER.

4. THAT PAYMENT HAS BEEN MADE BY THE DEVELOPER FOR ALL FEES RELATIVE TO APPLICATIONS AND INSPECTIONS.

5. THAT A CIVIL ENGINEER REGISTERED AS A PROFESSIONAL ENGINEER IN THE STATE OF VIRGINIA CERTIFIES THAT THE WORK HAS BEEN COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.

6. THAT EXPLICIT UNDERSTANDING EXISTS BETWEEN THE DEVELOPER AND THE ADMINISTRATOR THAT THE DEVELOPER SHALL BE RESPONSIBLE FOR AND OBLIGATED TO CORRECT ANY DEFICIENCIES IN CONSTRUCTION FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE FACILITIES BY THE COUNTY. THIS CONDITION SHALL BE STIPULATED IN THE WRITTEN FORM OF ACCEPTANCE ISSUED BY THE ADMINISTRATOR.

- B. ACCEPTANCE OF THE NEWLY CONSTRUCTED FACILITIES, WHEN APPROVED BY THE ADMINISTRATOR SHALL BE MADE, IN WRITING, TO THE DEVELOPER RESPONSIBLE FOR THE CONSTRUCTION. THE ISSUANCE OF THE WRITTEN FORMS OF ACCEPTANCE OF ANY SUCH FACILITIES SHALL CONSTITUTE AND IRREVOCABLE AGREEMENT BETWEEN THE DEVELOPER RESPONSIBLE FOR CONSTRUCTION AND ADMINISTRATOR THAT THE BOARD OF SUPERVISORS, ACTING FOR THE COUNTY AND ANY OF ITS OFFICERS, AGENTS, SERVANTS, OR EMPLOYEES, SHALL BE SAVED HARMLESS BY THE DEVELOPER FROM LIABILITY AND RESPONSIBILITY OF ANY NATURE AND KIND FOR THE COST OF, OR PAYMENT ON, LABOR AND EQUIPMENT USED IN CONSTRUCTION OF THE ACCEPTED FACILITIES OR ON ACCOUNT OF ANY PATENTED OR UNPATENTED INVENTION, PROCESS, ARTICLE OR APPLIANCE MANUFACTURED FOR, OR USED IN CONSTRUCTION WITH, OR THE INTENDED OPERATION OF, THE ACCEPTED FACILITIES.
- C. CERTIFICATE OF OCCUPANCY PERMITS WILL NOT BE ISSUED FOR ANY BUILDINGS WITHIN THE DEVELOPMENT UNTIL THE WATER AND SEWER FACILITIES HAVE BEEN ACCEPTED IN ACCORDANCE WITH THIS NOTE.

### RECORD DRAWINGS

- A. A COMPLETE SET OF RECORD DRAWINGS AND CORRECTED KEY SHEETS SHALL BE SUBMITTED BY THE DEVELOPER RESPONSIBLE FOR THE CONSTRUCTION UPON COMPLETION OF CONSTRUCTION AND AT LEAST ONE WEEK PRIOR TO THE ANTICIPATED OCCUPANCY OF ANY BUILDING WITHIN THE PROJECT. RECORD DRAWINGS MUST BE DETERMINED BY ACTUAL FIELD SURVEY AND SEALED BY THE RESPONSIBLE SURVEYOR OR ENGINEER SHALL BE ON EACH SHEET, "I HEREBY STATE, TO THE BEST OF MY KNOWLEDGE AND PERSONAL BELIEF, THAT THE WORK SHOWN ON THESE PLANS WAS CONSTRUCTED TO THE DIRECTION AND GRADES SHOWN AND ARE EITHER INSTALLED WITHIN THE PUBLIC RIGHT-OF-WAY OR PROPERLY RECORDED EASEMENTS DEDICATED TO STAFFORD COUNTY." THE RECORD DRAWINGS SHALL SHOW ALL REVISIONS, SUBSTITUTIONS, VARIATIONS, OMISSIONS, AND DISCREPANCIES MADE OR DISCOVERED DURING CONSTRUCTION CONCERNING LOCATION AND DEPTH OF UTILITIES, PIPING, MANHOLES, PUMPS, AND OTHER FACILITIES. REVISIONS SHALL BE MADE AND SHOWN ON ALL DRAWING VIEWS WITH ACTUAL DIMENSIONS ESTABLISHED TO PERMANENT POINTS. THE CONTRACTOR SHALL KEEP DAILY AS-BUILT WORK PLANS AT THE CONSTRUCTION SITE AND SHALL FURNISH THEM TO THE DESIGN ENGINEER OR RECORD DRAWING PREPARATION.
- THE RECORD DRAWINGS SHALL SHOW, BUT MAY NOT BE LIMITED TO, THE FOLLOWING:

### 1. WATER LINE CONSTRUCTION:

- A. SCALE ACCURACY LOCATION IN PLANS OF THE LINE AND ALL INSTALLED VALVES AND FITTINGS, SUCH AS ELBOWS, TEES, CROSSES AND REDUCERS, AND ALL CRADLE ENCASEMENTS OR SPECIAL CONSTRUCTION.
- B. EXACT MEASUREMENTS TO SHOW POSITIVE LOCATIONS SHALL BE TAKEN FROM AT LEAST TWO REASONABLY ADJACENT AND AVAILABLE, FIXED AND PERMANENT OBJECTS, SUCH AS FIRE HYDRANTS, CENTERS OF SANITARY OR STORM SEWER MANHOLE CASTING COVERS, CORNERS OR LINES EXTENDING FROM BUILDINGS, POWER POLES, ETC.
- C. TYPE AND SIZES OF ALL PIPES.

### 2. SEWER LINE CONSTRUCTION:

- A. SCALE ACCURACY LOCATION OF MANHOLE INVERTS AND TOP CASTING ELEVATIONS AND NUMERICAL NOTATIONS OF THE EXACT ELEVATIONS OF SAME AS DETERMINED BY FIELD SURVEY AFTER CONSTRUCTION. ELEVATIONS SHALL BE IN DATUM OF THE COUNTY.
- B. SCALE ACCURACY INDICATION OF LENGTHS AND GRADES AND DIRECTION OF LINES BETWEEN MANHOLES AND NUMERICAL NOTATIONS OF THE EXACT LENGTH AND GRADES, AS DETERMINED AFTER CONSTRUCTION.
- C. SCALE ACCURACY LOCATION OF CONCRETE CRADLES, ENCASEMENTS OR SPECIAL CONSTRUCTION.
- D. LOCATION OF HOUSE SERVICES BY MEASUREMENT FROM THE MANHOLE IMMEDIATELY DOWNGRADES.
- E. TYPE AND SIZES OF ALL PIPES

### 3. WASTEWATER TREATMENT FACILITIES AND PUMPING STATIONS, WATER PUMPING STATIONS, ALL OTHER COMPARABLE CONSTRUCTION AND BUILDING STRUCTURES

- A. AS-BUILT PLANS AND SPECIFICATIONS SHALL ACCURATELY INDICATE ALL APPROVED DEVIATIONS FROM OR CHANGES IN LOCATIONS OR TYPE OF EQUIPMENT INSTALLED AND MATERIAL USED.
- B. ACCURATE LISTINGS OF THE NAME OF THE MANUFACTURER OF ALL OPERATING EQUIPMENT INSTALLED, TOGETHER WITH MODEL OR STYLE NUMBERS, RATINGS, CAPACITIES AND OTHER PERTINENT INFORMATION SHALL BE PROVIDED AS PART OF THE RECORD PLANS ON THE PROJECT.
- C. AT LEAST THREE (3) COMPLETE SETS OF OPERATION AND MAINTENANCE MANUALS FOR ALL OPERATING EQUIPMENT, MATERIALS AND THE INSTALLATION THEREOF, REQUIRED BY THE PROJECT SPECIFICATIONS WHICH ARE APPROVED BY THE ADMINISTRATOR, SHALL BE PROVIDED AS PART OF THE RECORD DRAWINGS ON THE PROJECT.

4. WHEN THE RECORD DRAWING INFORMATION DIFFERS FROM THE APPROVED CONSTRUCTION PLANS, A DESIGN ANALYSIS FOR THE EXISTING CONDITIONS MAY BE REQUIRED.

5. AFTER THE RECORD DRAWINGS ARE APPROVED IN WRITING BY THE DEPARTMENT OF UTILITIES, A SET REPRODUCIBLE MYLAR AND TWO BLUE LINE PRINTS SHALL BE SUBMITTED. PROJECTS THAT INCLUDE WATER AND/OR SEWER FACILITIES, WHICH ARE LOCATED WITHIN A VDOT RIGHT-OF-WAY, WILL REQUIRE FOUR ADDITIONAL SETS OF BLUE LINE PRINTS FOR THE REMAIN-IN-PLACE PERMIT.

## AVAILABLE FIRE FLOW

AVAILABLE FIRE FLOW TO THIS SITE IS 1,000+ GPM AT 52 PSI.

| REVISIONS |                             |                             |  |
|-----------|-----------------------------|-----------------------------|--|
| DATE      | REVISED PER COUNTY COMMENTS | REVISED PER COUNTY COMMENTS |  |
| 12/02/22  |                             |                             |  |
| 05/19/23  |                             |                             |  |

BEG

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COMMONWEALTH OF VIRGINIA  
RYAN K. FOROUGH  
Lic. No. 41245  
05/19/2023  
PROFESSIONAL ENGINEER

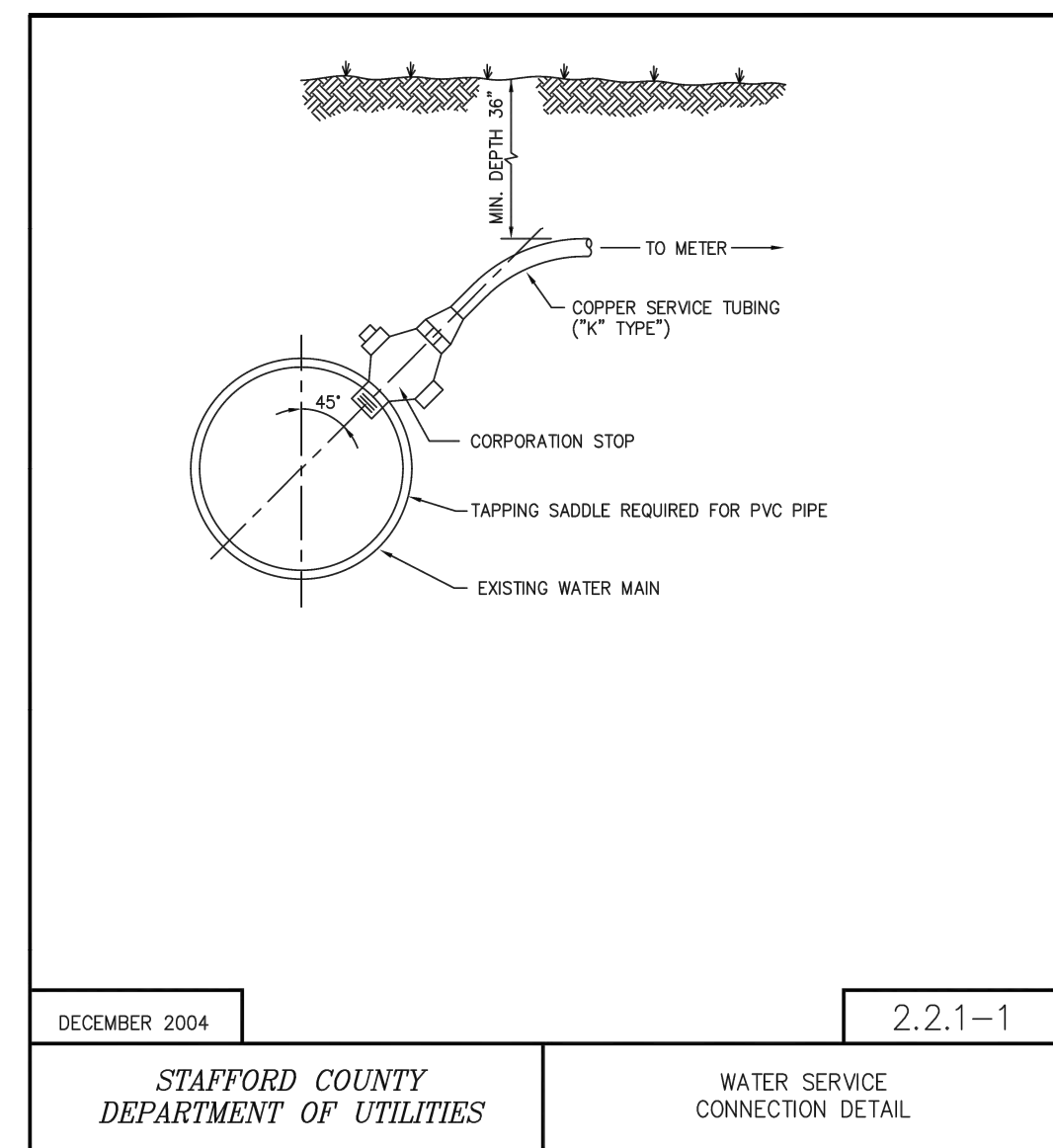
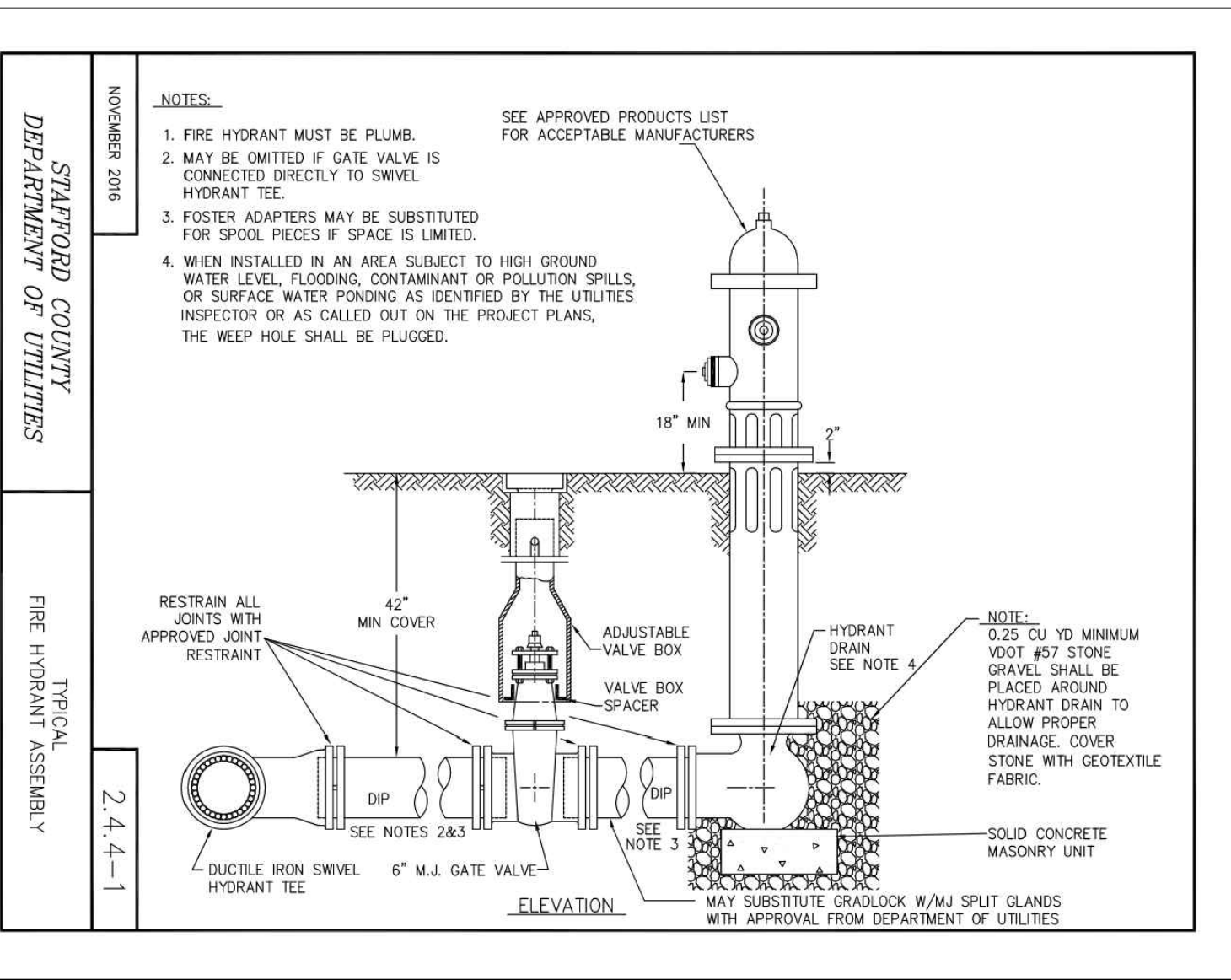
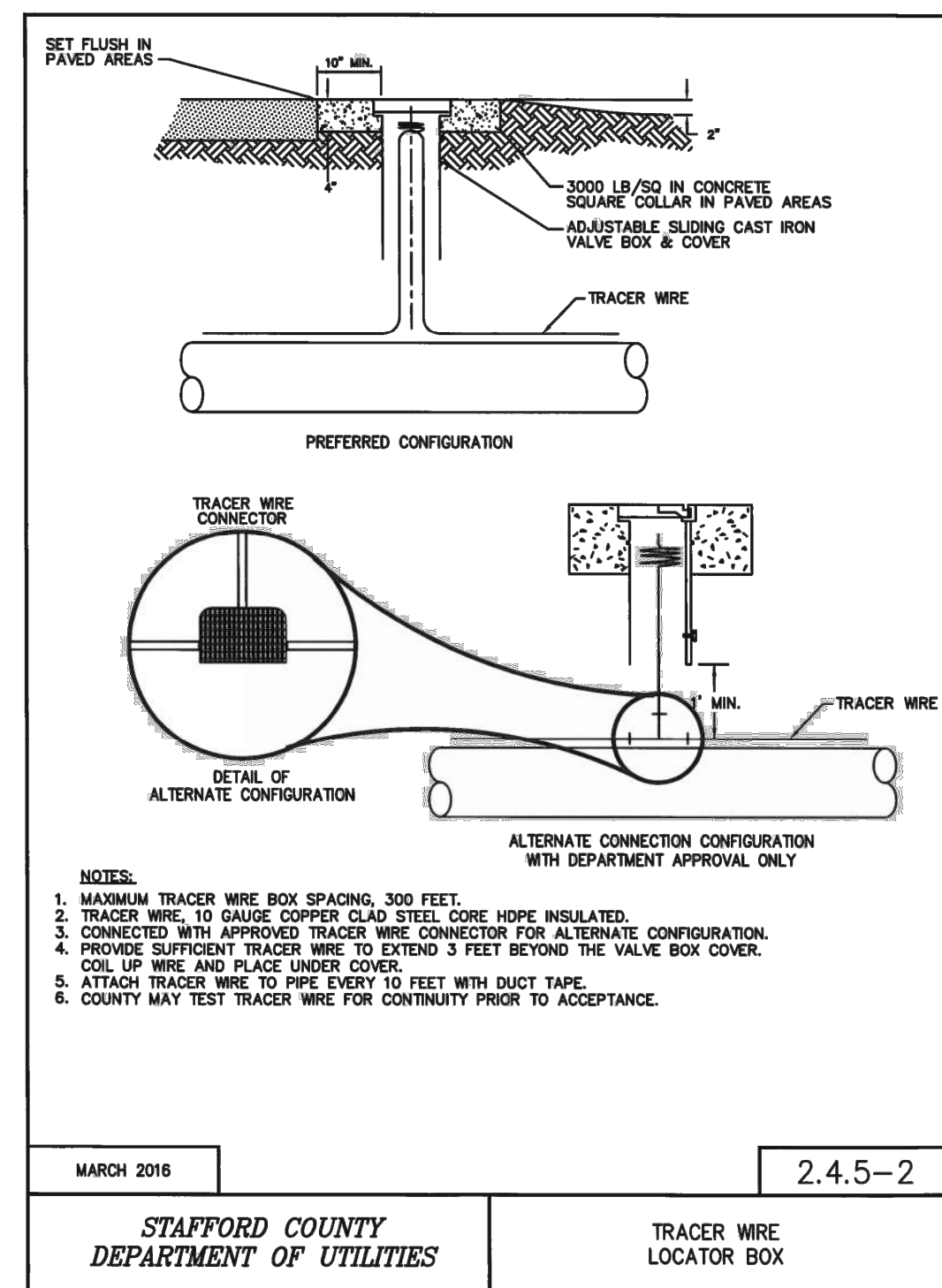
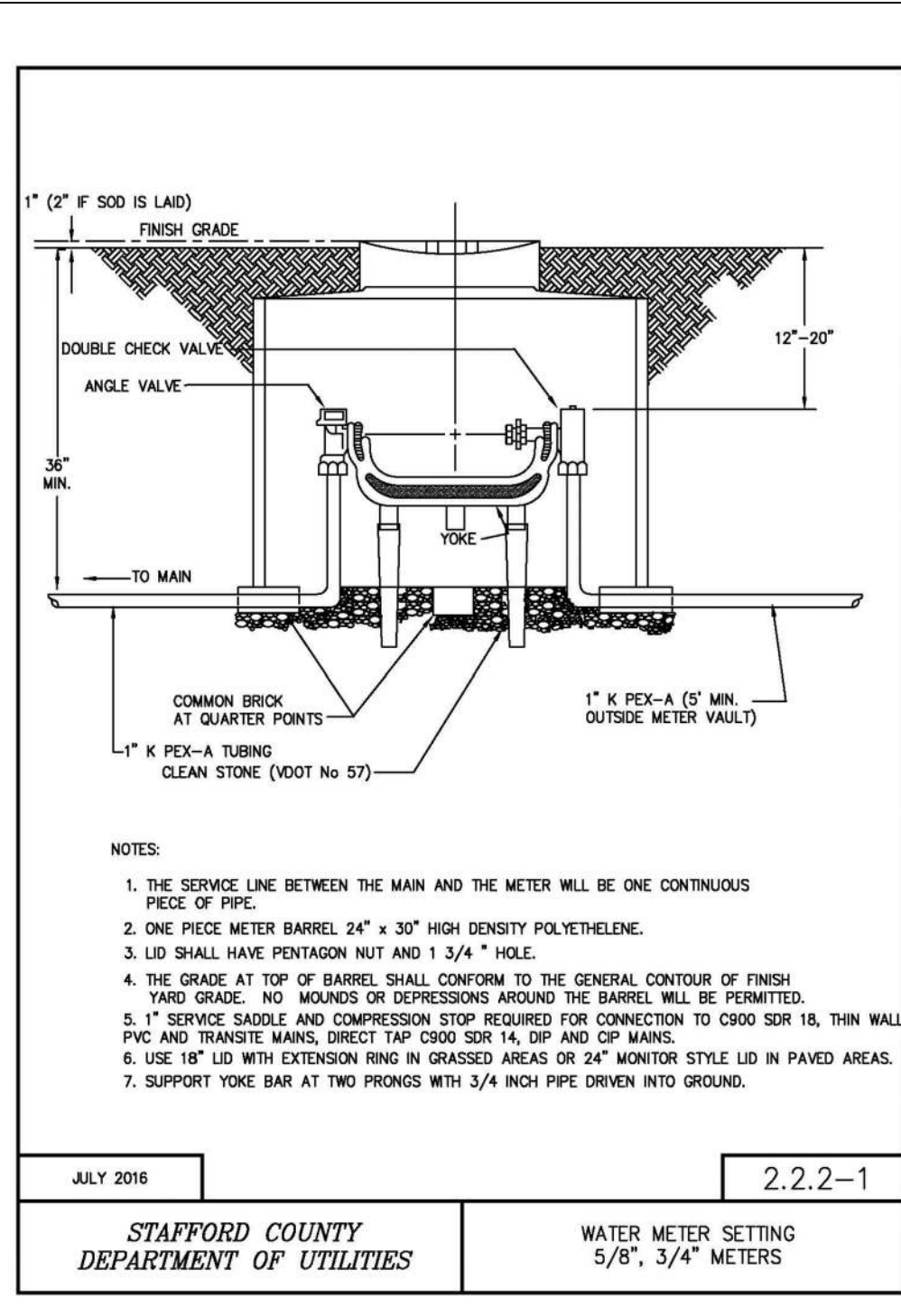
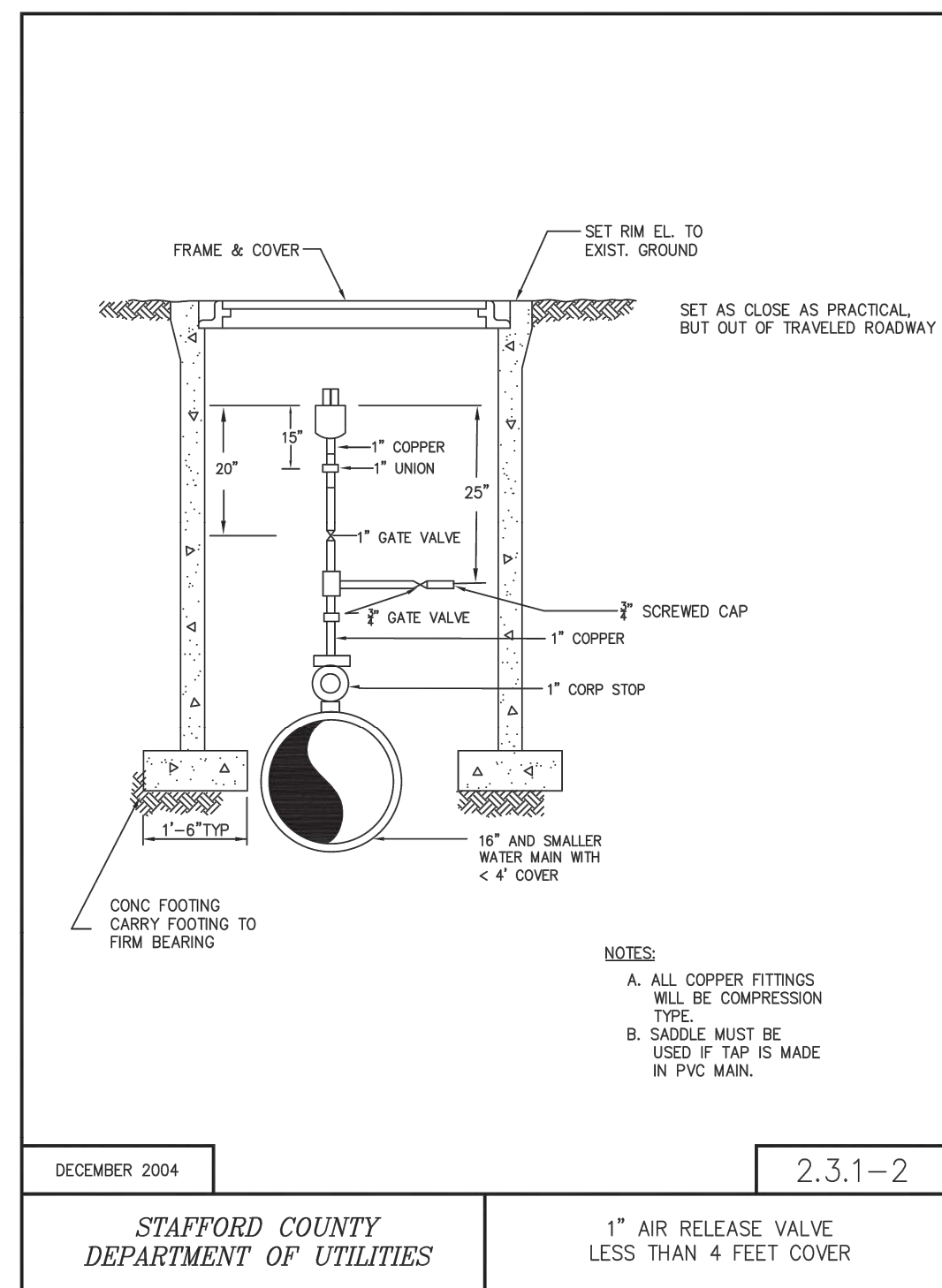
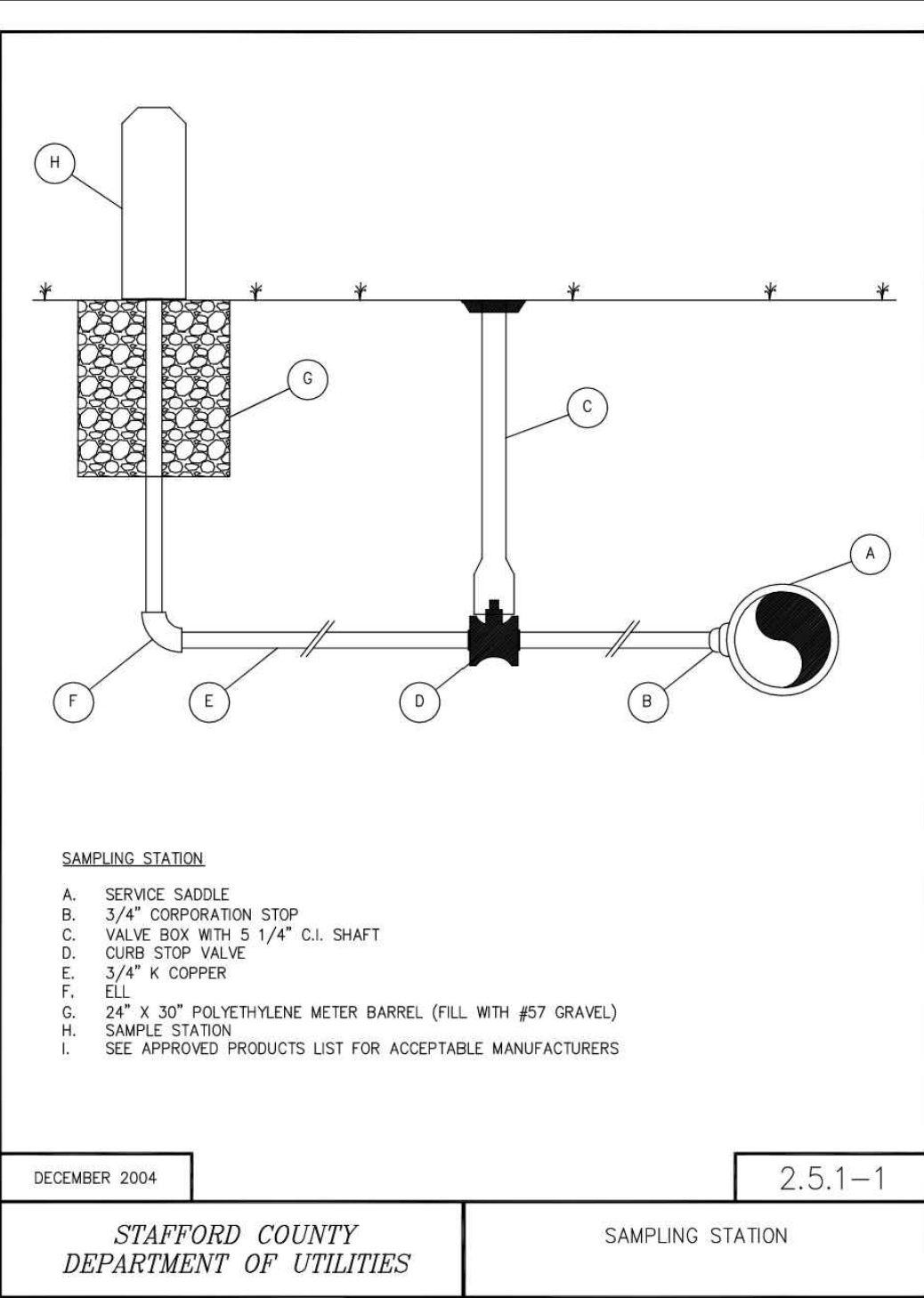
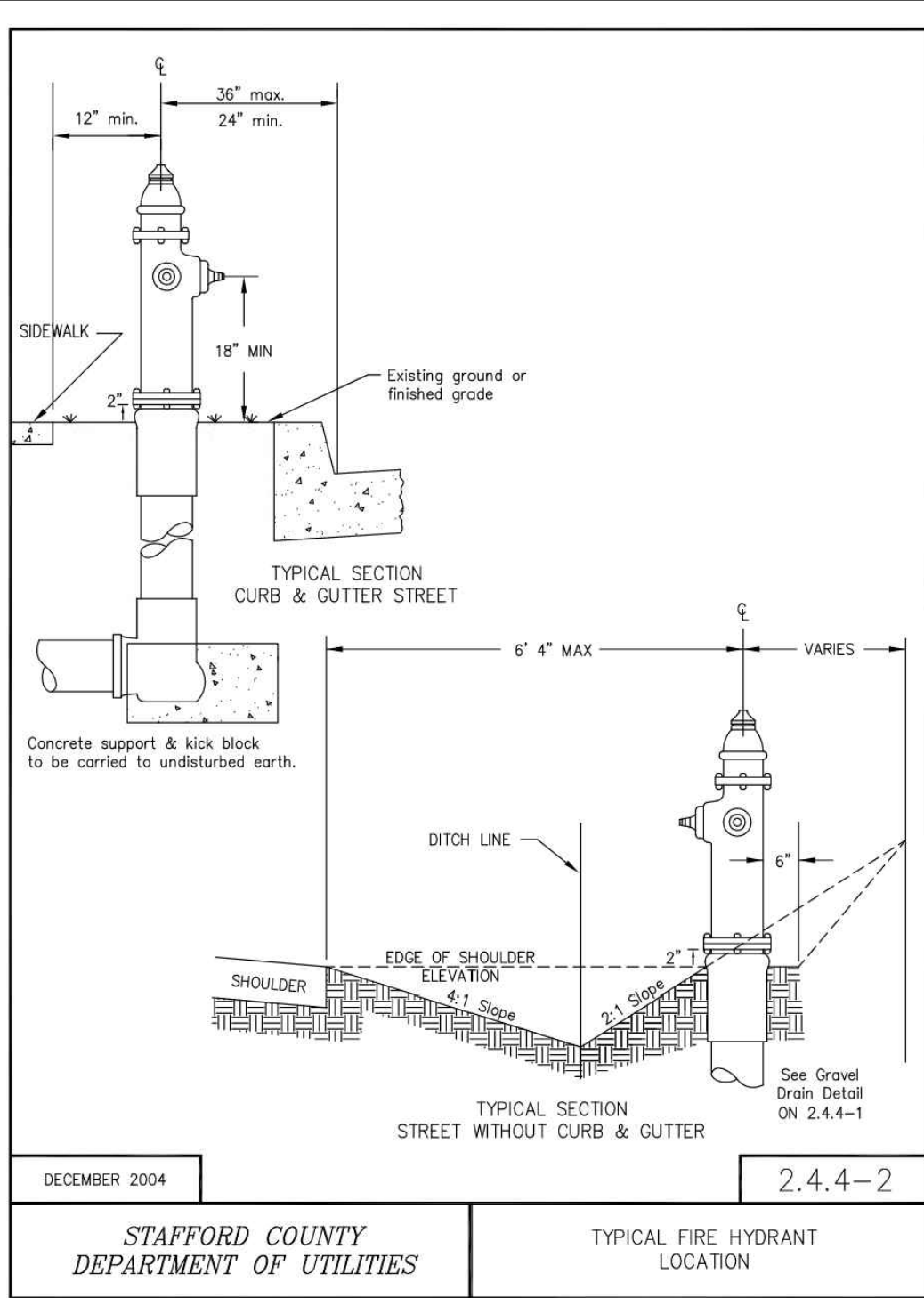
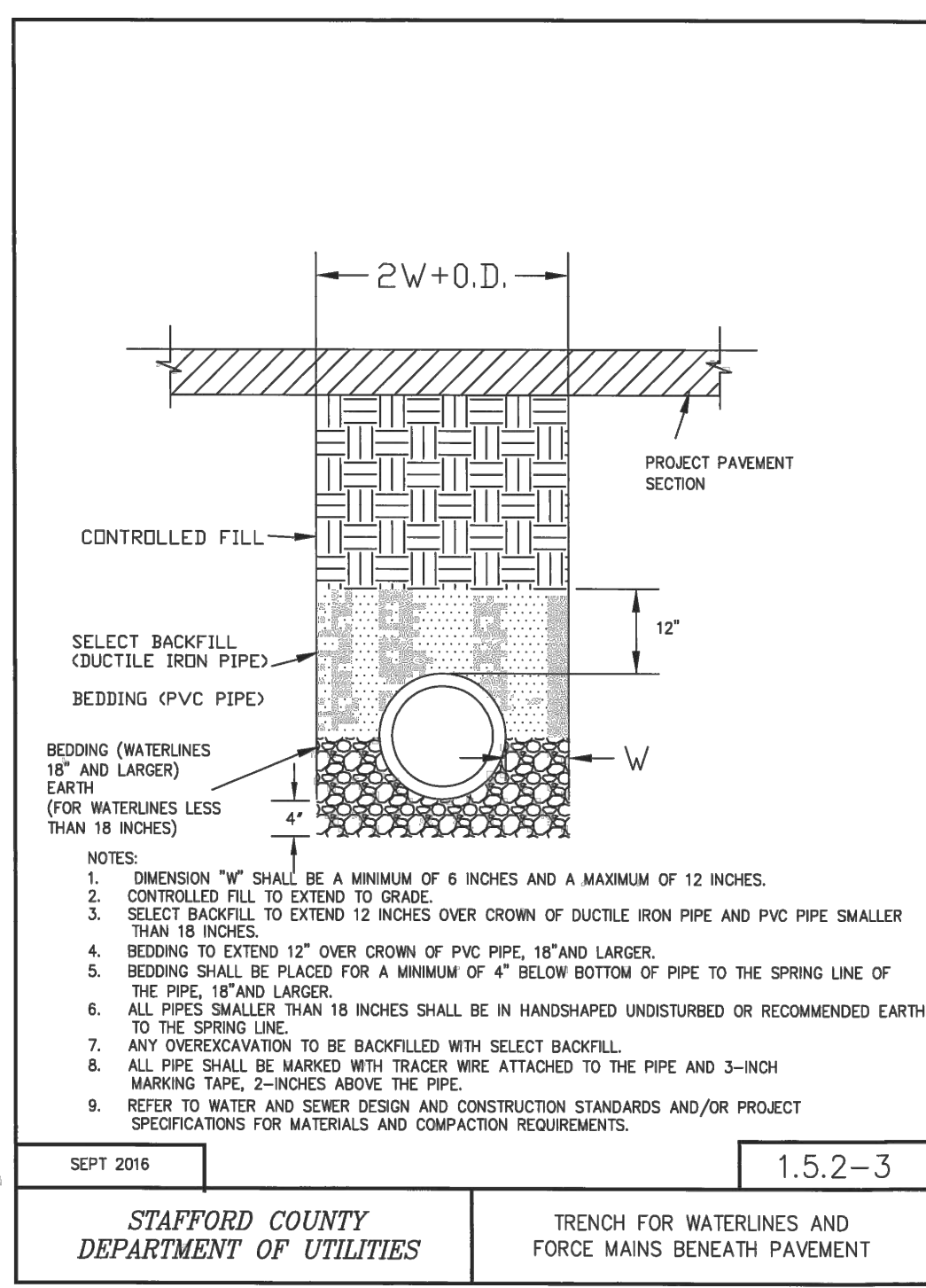
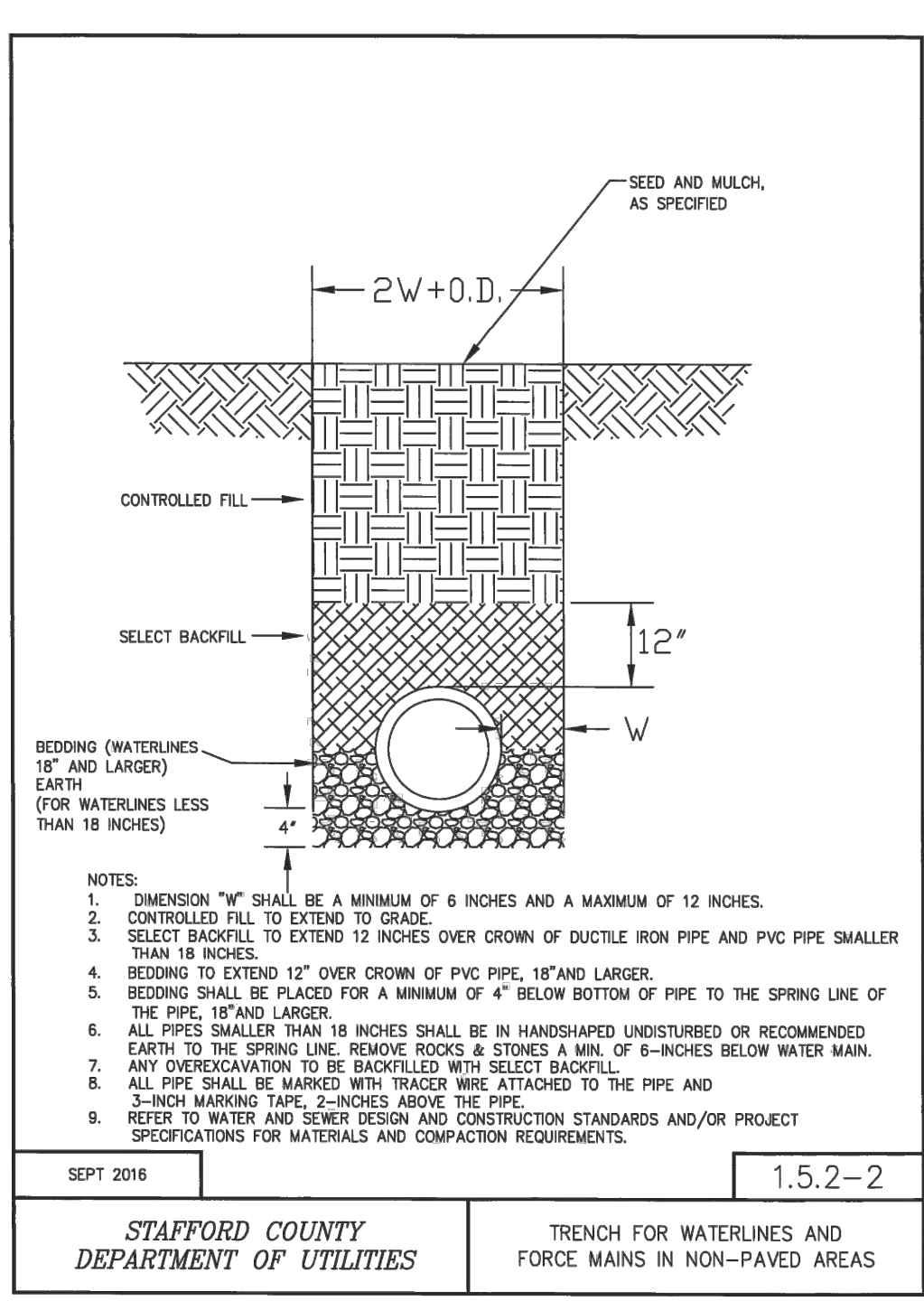
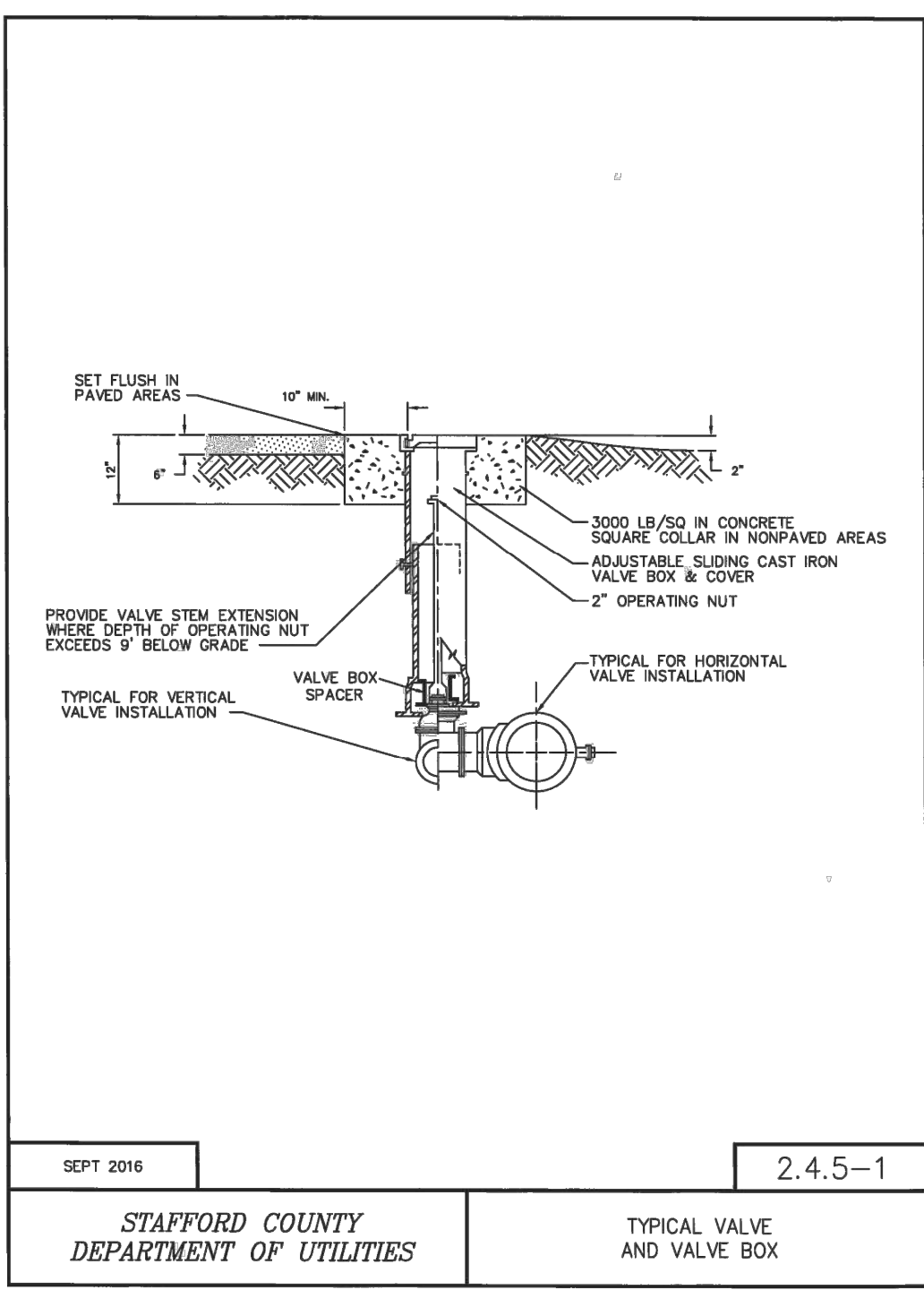
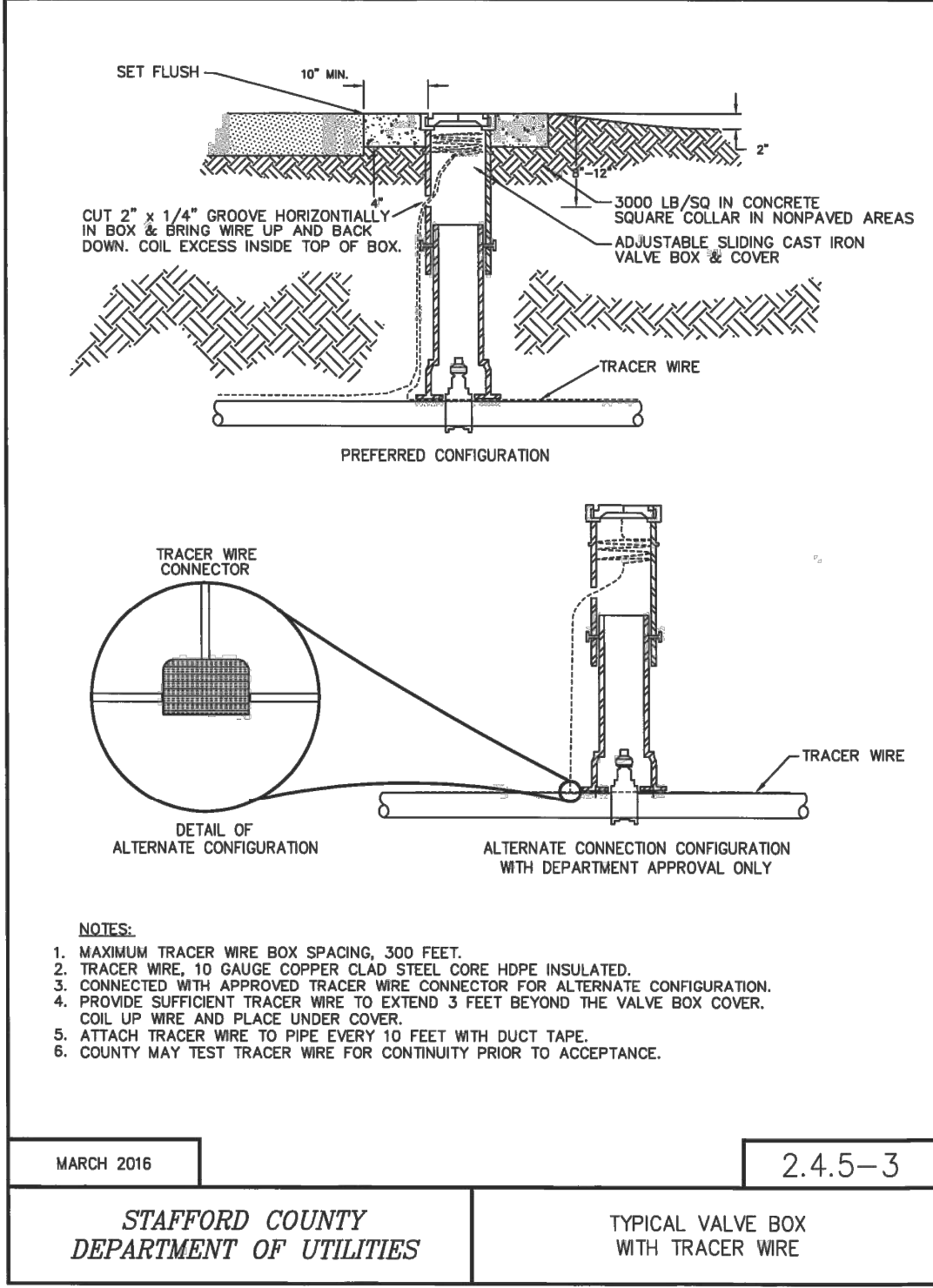
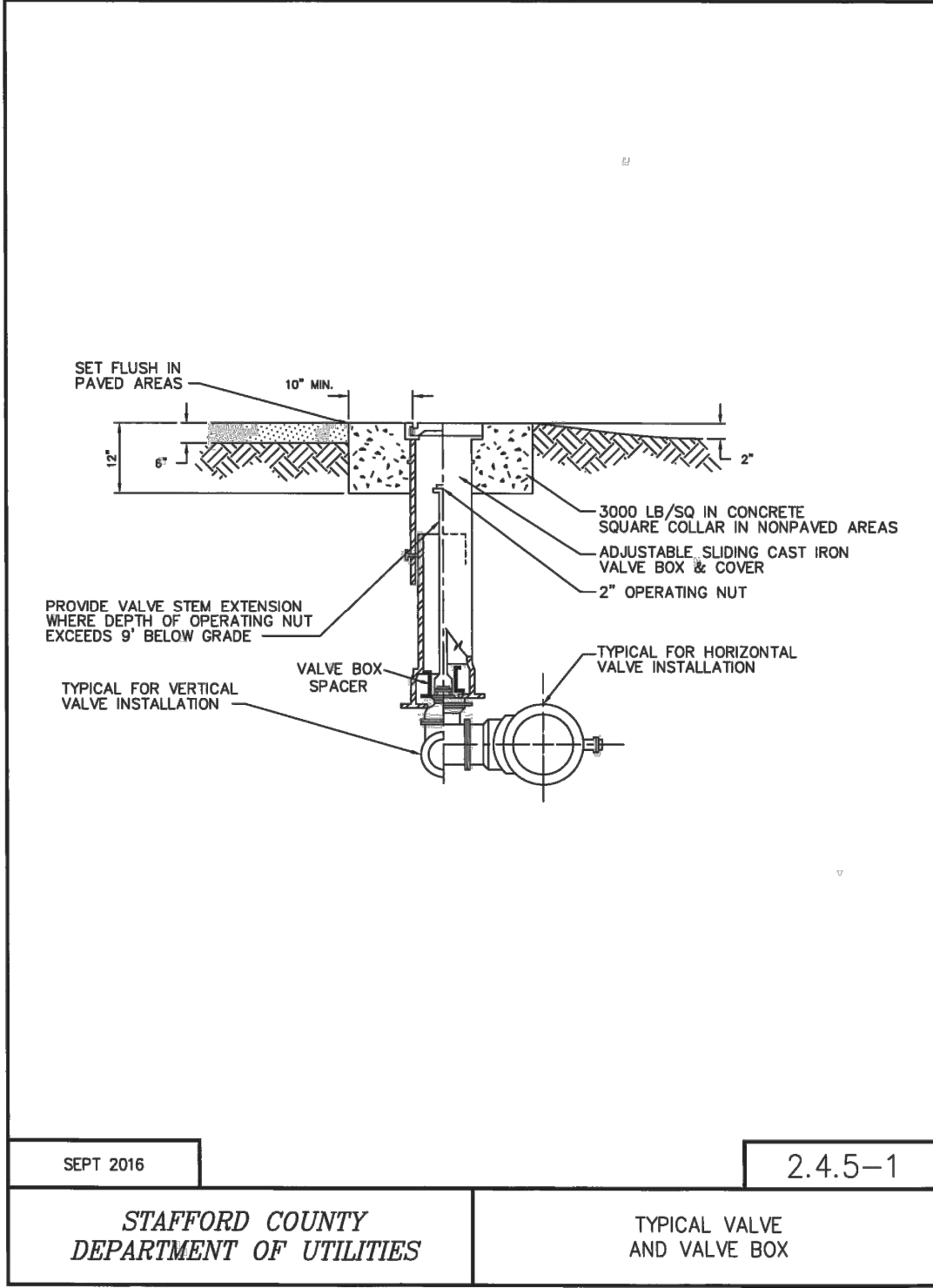
WATERLINE NOTES & DETAILS

CHESAPEAKE RIDGE  
SUBDIVISION CONSTRUCTION PLAN  
AQUIA MAGISTERIAL DISTRICT

STAFFORD COUNTY

|              |            |
|--------------|------------|
| DATE:        | 05/18/2022 |
| PRINT DATE:  | 5/25/2023  |
| SCALE:       | 1" = 50'   |
| DESIGNED BY: | BAC        |
| DRAWN BY:    | BAC        |
| CHECKED BY:  | RKF        |
| JOB NO.      | 20078-24   |
| PLAN NO.     | 22154515   |





| REVISIONS |                             |                             |
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| DATE      | REVISED PER COUNTY COMMENTS | REVISED PER COUNTY COMMENTS |
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**BFG**

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COMMONWEALTH OF VIRGINIA  
**RCR**  
RYAN K. FOROUGH  
Lic. No. 41245  
05/19/2023  
PROFESSIONAL ENGINEER

STAFFORD COUNTY WATERLINE DETAILS

CHESAPEAKE RIDGE  
SUBDIVISION CONSTRUCTION PLAN  
AQUA MAGISTERIAL DISTRICT

STAFFORD COUNTY VIRGINIA

|              |            |
|--------------|------------|
| DATE:        | 05/18/2022 |
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| SCALE:       | N/A        |
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