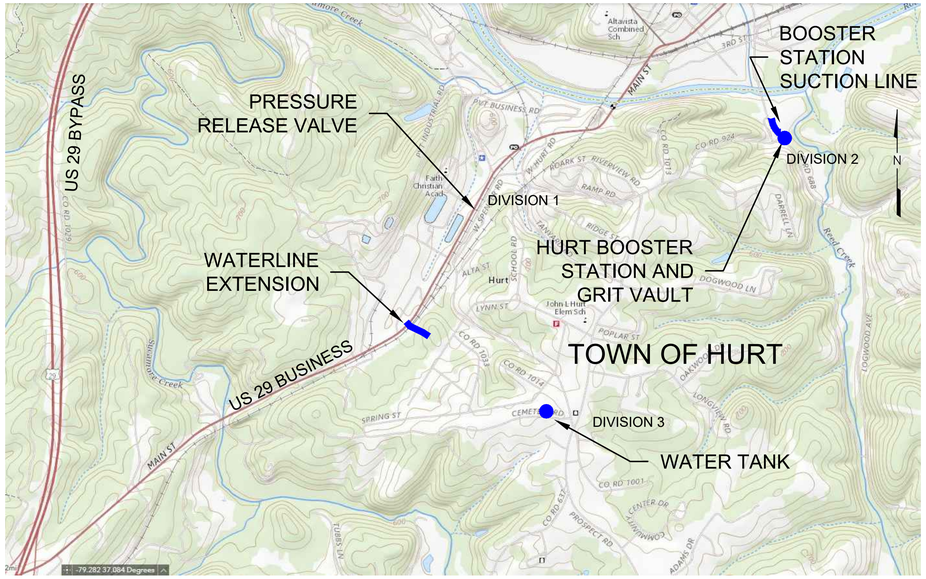
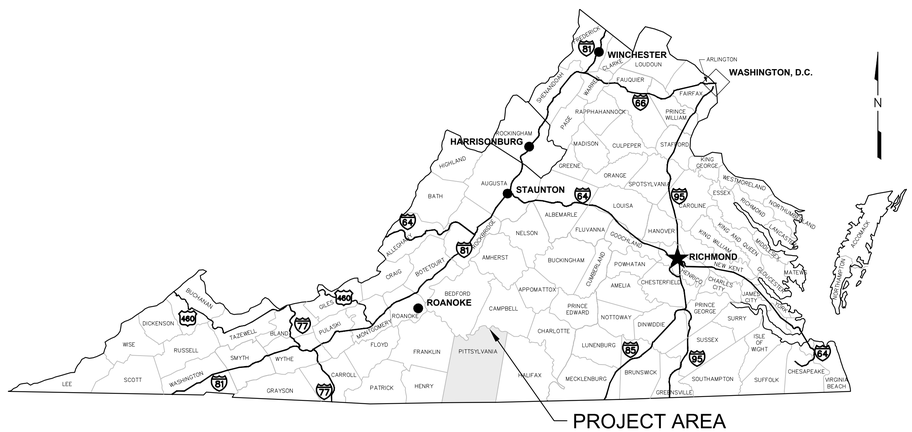
DBP REMEDIATION & WATER IMPROVEMENTS - PHASE II

TOWN OF HURT, VIRGINIA



VICINITY MAP
SCALE: 1"=1 MILE



LOCATION MAP
N.T.S.

PREPARED FOR:
Town of Hurt
533 Pocket Road
Hurt, VA 24563
Gary Hodnett, Mayor

PROJECT INFORMATION:
OWNER: TOWN OF HURT
ATTN: JOE SMITH - PUBLIC WORKS DIRECTOR
P.O. BOX 760
HURT, VA 24563
(434)-608-0054
LINEAR DISTURBANCE: 1700 LF
LATITUDE/LONGITUDE: 37.1376; -79.2691

Sheet List Table	
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G01	COVER
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C06	HURT BOOSTER STATION SECTIONS
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D04	E&SC NARRATIVE

Peed & Bortz, L.L.C.
CIVIL & ENVIRONMENTAL ENGINEERS
20 MIDWAY PLAZA DRIVE - SUITE 100
CHRISTIANSBURG, VIRGINIA 24073
PHONE: (540) 394 - 3214 FAX : (540) 394 - 3215

DBP REMEDIATION & WATER IMPROVEMENTS - PHASE II
TOWN OF HURT **VIRGINIA**

SEAL
COMMONWEALTH OF VIRGINIA
SCOTT BORTZ
Lic. No. 032379
2/3/2025
CERTIFIED PROFESSIONAL ENGINEER

DRAWN BY: B. MILLER
REVIEW BY: S. BORTZ
DATE: 3 FEB 2025
REVISION:

SHEET DESCRIPTION: COVER

G01

JN: 20-13

LEGEND

EXISTING WATERLINE

EXISTING FIRE HYDRANT

EXISTING EDGE OF PAVEMENT

PROPERTY LINE/ VDOT RIGHT OF WAY

EXISTING UTILITY POLE

EXISTING CULVERT

EXISTING TREE LINE

RAILROAD TRACK

EXISTING BUILDING

EXISTING UNDERGROUND GAS LINE

EXISTING CONCRETE SLAB

PROPOSED WATERLINE

FIRE HYDRANT (COMPLETE)

REDUCER

AIR RELEASE VALVE

GATE VALVE

STEEL CASING

PERMANENT UTILITY EASEMENT

EXISTING UNDERGROUND FIBER OPTIC CABLE

EXISTING UNDERGROUND ELECTRIC/CABLE

EXISTING UNDERGROUND RAW WATERLINE

EXISTING OVERHEAD POWER LINE

UNDERGROUND UTILITY EROSION CONTROL NOTES:

UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH MS-16 REQUIREMENTS:

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

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

C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE OR BOTH AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.

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

E. RE-STABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.

F. APPLICABLE SAFETY REGULATTIONS SHALL BE COMPLIED WITH.

VDOT GENERAL NOTES:

1. ALL WORK PERFORMED IN THE PUBLIC RIGHT OF WAY SHALL CONFORM TO THE MOST CURRENT ROAD AND BRIDGE STANDARDS, THE MOST CURRENT ROAD AND BRIDGE SPECIFICATIONS, AND THE MOST CURRENT WORK AREA PROTECTION MANUAL.
2. IF THE ROAD STRUCTURE BECOMES UNDERMINED, OR THE PAVEMENT IS OTHERWISE DAMAGED, THE LOOSENED MATERIAL WILL NEED TO BE REMOVED AND REPLACED AND PROPERLY COMPACTED, AND THE ROAD SURFACE WILL NEED TO BE CUT AND PATCHED IN ACCORDANCE WITH THE SPECIAL PROVISIONS FOR OPEN CUTS, LUP-OCPR. AT LOCATIONS THAT REQUIRE PATCHING.
3. FIRE HYDRANTS AND OTHER ABOVEGROUND APPURTENANCES WILL NEED TO BE PLACED BEHIND THE DITCH IN CUT SECTIONS, JUST BEYOND THE TOP OF SLOPE IN FILL SECTIONS. COORDINATE FIELD LOCATIONS WITH PROJECT INSPECTOR AND VDOT PRIOR TO SETTING HYDRANTS & VALVES.
4. RECESS TOP OF VALVES, MANHOLES AND METERS. MINIMUM 2 INCHES BELOW EXISTING GRADE AND CONFORM TO EXISTING CONTOURS. VALVES, MANHOLES, METERS AND OTHER APPURTENANCES SHALL NOT BE PLACED IN DITCH LINE.
5. ALL VDOT CROSSINGS ARE TO BE BORED AND ENCASED.
6. ALL WATERLINES CROSSING UNDER VDOT DRAINAGE CULVERTS AND DRIVEWAY CULVERTS SHALL BE A MINIMUM OF 18" BELOW THE CULVERT. ALL AREAS WHERE WATERLINES ARE INSTALLED AROUND VDOT CULVERTS SHALL BE A MINIMUM OF 36" DEEP BELOW THE BOTTOM OF THE CULVERT.
7. THE COUNTY IS RESPONSIBLE FOR OBTAINING EASEMENTS ON ANY VDOT ROAD WITH 30' PRESCRIPTIVE EASEMENT AND ALL PRIVATE PROPERTY EASEMENTS.
8. THE CONTRACTOR SHALL PROVIDE A THIRD-PARTY GEOTECHNICAL FIRM FOR COMPACTION TESTING ON ALL UTILITY WORK IN THE RIGHT OF WAY. COMPACTION TESTING SHALL MEET THE LATEST VDOT REQUIREMENTS AND METHODS. COMPACTION SHALL MEET OR EXCEED 95% COMPACTION AND COPIES OF THE REPORTS SHALL BE FORWARDED TO VDOT.
9. THE CONTRACTOR SHALL PROVIDE, TO VDOT, A LAND USE PERMIT APPLICATION WITH THE FEE AND BOND AMOUNTS ALONG WITH ALL TRAFFIC CONTROL PLANS THAT MAY BE NEEDED FROM THE LATEST REVISION OF THE VIRGINIA WORK AREA PROTECTION MANUAL.
10. THE CONTRACTOR SHALL HAVE AT LEAST ONE PERSON ON SITE AT ALL TIMES THAT HAS A CURRENT VIRGINIA WORK ZONE INSTALLATION/REMOVAL CERTIFICATION, AND ALL FLAGGERS SHALL HAVE CURRENT VIRGINIA FLAGGING CERTIFICATIONS.
11. ALL ROADWAYS SHALL BE PROTECTED AT ALL TIMES FROM METAL TRACKED AND ALL OTHER EQUIPMENT.
12. A MAXIMUM OF 500 FEET OF OPEN TRENCH SHALL BE ALLOWED AT ONE TIME. A MAXIMUM OF 1000 FEET SHALL BE ALLOWED BEFORE ALL RECLAMATION OF SHOULDERS, DITCHES, CLEANUP, SEED, AND STRAW, ETC. IS COMPLETED UNLESS ADVISED OTHERWISE BY THE COUNTY, TOWN OF HURT OR VDOT.
13. ROADWAY SHALL BE CLEANED FREE FROM MUD AND DEBRIS AT THE END OF EACH WORKDAY, THIS MAY INCLUDE SWEEPING OR WASHING.
14. ALL WATERLINES SHALL BE A MINIMUM OF 3 FEET FROM THE EDGE OF PAVEMENT UNLESS OTHERWISE APPROVED BY VDOT.
15. AT NO TIME WILL ANY AREA BE LEFT OPEN AT THE END OF EACH WORKDAY INCLUDING BORE PITS UNLESS APPROVED BY VDOT.
16. ALL GRAVEL DRIVEWAYS AND MAILBOX TURNOUTS SHALL BE REPAIRED DAILY WITH STONE. ALL PAVED DRIVEWAYS SHALL BE RESTORED TO THEIR ORIGINAL STATE. ALL MAILBOXES, IF REMOVED, SHALL BE RE-INSTALLED BY THE END OF THE WORKDAY.
17. ON ROADWAYS WITH A 2 FEET WIDE SHOULDER OR MORE, AND THE UTILITY IS PLACED WITHIN THAT SHOULDER SHALL HAVE THE FINAL 6 INCHES BACKFILLED WITH #25 OR #26 STONE.

STANDARD ABBREVIATIONS

ADJ	ADJACENT	MON	MONUMENT
BC	BACK OF CURB	MTL	METAL
BLDG	BUILDING	N	NORTHING
BM	BENCHMARK	NIC	NOT IN CONTRACT
BSMT	BASEMENT	NO.	NUMBER
CF	CUBIC FOOT	NTS	NOT TO SCALE
CI	CAST IRON	O/C	ON CENTER
CL	CENTERLINE	O/S	OFFSET
CLR	CLEAR	OD	OUTSIDE DIAMETER
CMP	CORRUGATED METAL PIPE	PE	POLYETHYLENE
CMU	CONCRETE MASONRY UNIT	PERF	PERFORATED
CO	CLEANOUT	PL	PROPERTY LINE
CONC	CONCRETE	PSI	POUNDS PER SQUARE INCH
COR	CORNER	PVC	POLYVINYL CHLORIDE
CULV	CULVERT	R	RADIUS
CY	CUBIC YARD	ROW	RIGHT OF WAY
D	DEPTH, DEGREE OF CURVE	RCP	REINFORCED CONCRETE PIPE
DEPT	DEPARTMENT	RD	ROAD, ROOF DRAIN
DI	DUCTILE IRON, DROP INLET	REINF	REINFORCE, REINFORCEMENT
DIA	DIAMETER	REQ'D	REQUIRED
DIP	DUCTILE IRON PIPE	REV	REVISION
DIV.	DIVISION	RMV	REMOVE
DR	DRIVE	RR	RAILROAD
DWG	DRAWING	RT	RIGHT
DWL	DWELLING	RTE	ROUTE
E	EASTING	S	SOUTH
EP	EDGE OF PAVEMENT	SAN	SANITARY
EOP	EDGE OF PAVEMENT	SD	STORM DRAIN
EA	EACH	SDWK	SIDEWALK
EG	EXISTING GRADE	SMH	SANITARY MANHOLE
ELEV	ELEVATION	SPEC	SPECIFICATION
ESMT	EASEMENT	SQ	SQUARE
EW	END WALL	SS	SANITARY SEWER
EX.	EXISTING	ST	STREET
EXIST.	EXISTING	STA	STATION
EXT	EXTERIOR	STD	STANDARD
FC	FACE OF CURB	STL	STEEL
FF	FINISHED FLOOR	STM	STORM
FG	FINISHED GRADE	STY	STORY
FNC	FENCE	SUR	SURVEY
FT	FOOT	SWR	SEWER
GAL	GALLON(S)	TC	TOP OF CURB
GALV	GALVANIZED	TEL	TELEPHONE
GND	GROUND	TEMP	TEMPORARY
GOVT	GOVERNEMENT	TMP	TEMPORARY
HDPE	HIGH DENSITY POLYETHYLENE PIPE	TYP.	TYPICAL
HYD	HYDRANT	UE	UNDERGROUND ELECTRIC
ID	INSIDE DIAMETER	UG	UNDERGROUND
IN	INCH	VDOT	VIRGINIA DEPARTMENT OF TRANSPORTATION
INV	INVERT	VERT	VERTICAL
JB	JUNCTION BOX	W/	WITH
L	LENGTH	W/I	WITHIN
L.F.	LINEAR FOOT	W/O	WITHOUT
LT	LEFT	WL	WATERLINE
MAX	MAXIMUM	WWF	WOVEN WIRE FABRIC
MFR	MANUFACTURER	XING	CROSSING
MH	MANHOLE	XFMR	TRANSFORMER
MIN	MINIMUM	Z	ELEVATION
MJ	MECHANICAL JOINT	GV	GATE VALVE
ARV	AIR RELEASE VALVE		

EROSION CONTROL SYMBOLS

NO.	TITLE	KEY
C-PCM-01	SILT FENCE	(SF)
C-SSM-02	TOPSOILING	(TO)
C-SSM-09/10	TEMPORARY/PERMANENT SEEDING	(TS)(PS)
C-SSM-11	MULCHING	(RR)
C-SSM-05	SLOPE MATTING (EC 2/TYPE 1)	(BM)

* NUMBER REFERS TO THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY STORMWATER MANAGEMENT HANDBOOK VERSION 1.1 UPDATED 2025

Peed & Bortz , L.L.C.
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DBP REMEDIATION & WATER IMPROVEMENTS - PHASE II

TOWN OF HURT **VIRGINIA**

SEAL
COMMONWEALTH OF VIRGINIA
SCOTT BORTZ
Lic. No. 032379
2/3/2025
CERTIFIED PROFESSIONAL ENGINEER

DRAWN BY: B. MILLER
REVIEW BY: S. BORTZ
DATE: 3 FEB 2025
REVISION:

SHEET DESCRIPTION: LEGENDS & NOTES

G02

JN: 20-13

INSTALL PRV VAULT
2500 LINEAR FEET
(SEE D02)

Ex. Blowoff

SEE DETAIL C02

DRY TAP EXISTING 10" WATERLINE

12"X12" TEE WITH CAP WITH 12"X10" REDUCER AND 10" GATE VALVE

Ex. Concrete Vaults

Ex. 10"x8" Tee

Ex. 10" DI CL 350 Waterline

PARCEL# 2545-68-3738
INDUSTRIAL DEVELOPMENT AUTHORITY OF PITTS CO

Ex. Hydrant

Main Street (Rt. 29 Bus.)

NORFOLK SOUTHERN RAILROAD

Ex. 24"x36" Box Culvert
6' Cover

Ex. Conc Pad

22.5 DEGREE 12" BEND

12" WATERLINE

20' PUE CENTERED ON 12" WATERLINE

22.5 DEGREE 12" BEND

PARCEL# 2545-67-9915
TOWN OF HURT

9' Gravel Road w/ 50' Private Ingress/Egress Easement

Ex. Trees

REMOVE TREES WITHIN EASMENT

INSTALL EC-2 MATTING ENTIRE LENGTH OF WATER MAIN

511

PARCEL# 2545-78-4721
BARKER, THADDEUS A
BARKER, DEBRA S

GARAGE

LAUNCHING BORE PIT ELEV: 652.1'

PARCEL# 2545-77-3887
THOMAS, JAMES LEWIS JR

32 LF OF 24" STEEL CASING (JACK & BORE)

517

LYNN ST

PARCEL# 2545-77-7971
PAGGANS, SHIRLEY J LIFE
TENANT ET ALS; CARROLL, KEVIN M REMAINDERMEN ET ALS

506

Concrete Driveway

WET TAP EX. 6" WATERLINE SEE CONNECTION DETAIL THIS SHEET

12"X6" REDUCER WITH 6" GATE VALVE AND 12"X12" TEE WITH CAP

Ex. Fire Hydrant (Complete)

PARCEL# 2545-77-7611
STARK, LARRY A;

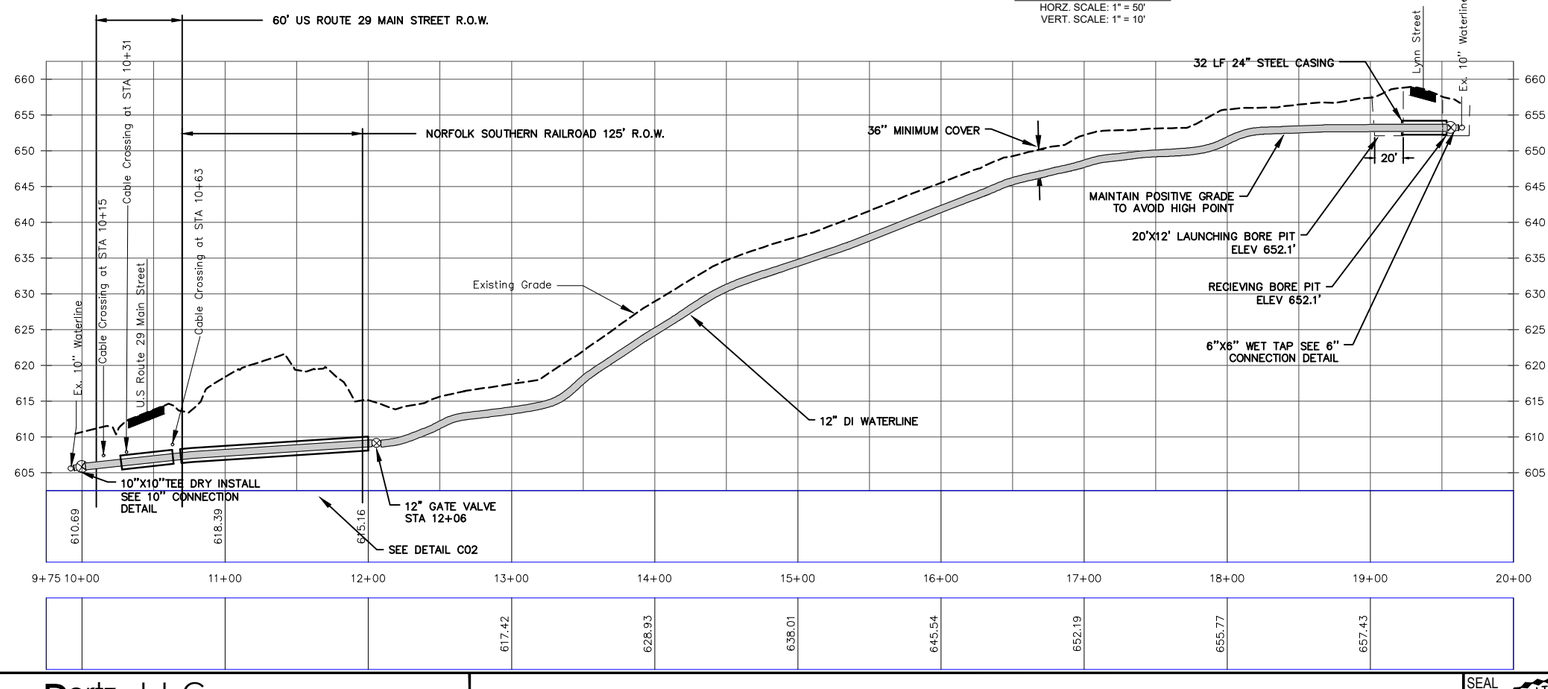
Ex. 6" Waterline

512

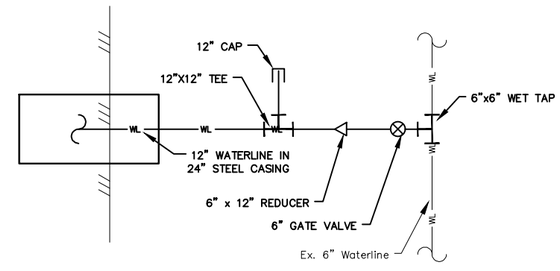
50 25 0 50 100 150
SCALE IN FEET

WATERLINE PROFILE

HORZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 10'



6" CONNECTION DETAIL
NOT TO SCALE



10" CONNECTION DETAIL
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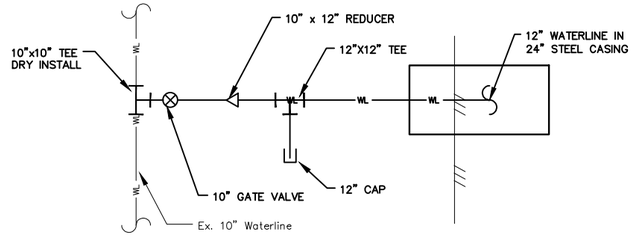

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PHONE: (540) 394 - 3214 FAX : (540) 394 - 3215

DBP REMEDIATION & WATER IMPROVEMENTS - PHASE II

TOWN OF HURT **S. BORTZ**

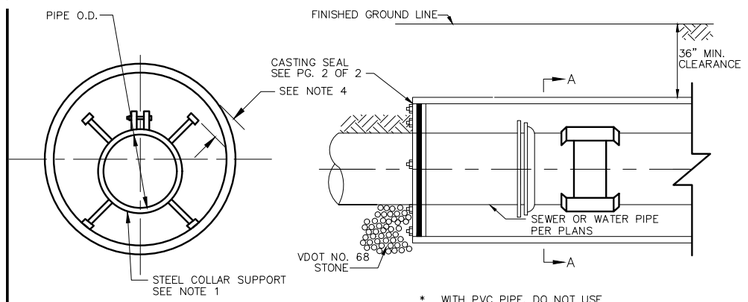
SEAL
COMMONWEALTH OF VIRGINIA
SCOTT BORTZ
Lic. No. 032379
2/3/2025
CERTIFIED PROFESSIONAL ENGINEER

DRAWN BY:	B. MILLER
REVIEW BY:	S. BORTZ
DATE:	3 FEB 2025
REVISION:	

SHEET DESCRIPTION:
RAILROAD WATERLINE PLAN PROFILE

C01

JN: 20-13

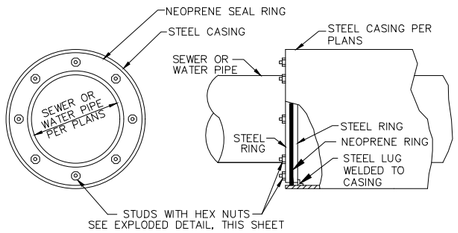


SECTION A-A

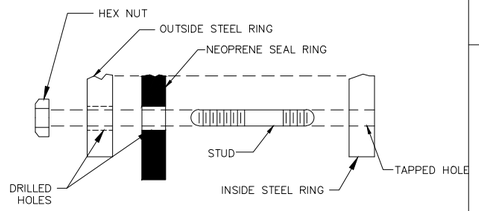
* WITH PVC PIPE, DO NOT USE PETROLEUM PRODUCTS (OIL OR GREASE) OR CREOSOTE TREATED WOODS.

NOTES

1. SINGLE PIECE COLLAR SHOWN 2 PIECE COLLAR USED FOR CARRIER PIPES 18" OR LARGER
2. DIMENSION AS NECESSARY TO PROVIDE MINIMUM CLEARANCE NEEDED TO SLIDE PIPE THROUGH CASING
3. PROVIDE MINIMUM 1 SPACER FOR EACH CARRIER PIPE JOINT WITHIN CASING
4. THIS STANDARD APPLICABLE FOR 4" DIAMETER AND LARGER PIPE INSTALLED UNDER CONTROLLED ACCESS HIGHWAYS
5. CORRUGATED METAL PIPE SHALL NOT BE USED AS CASING



CASING SEAL DETAIL
NOT TO SCALE



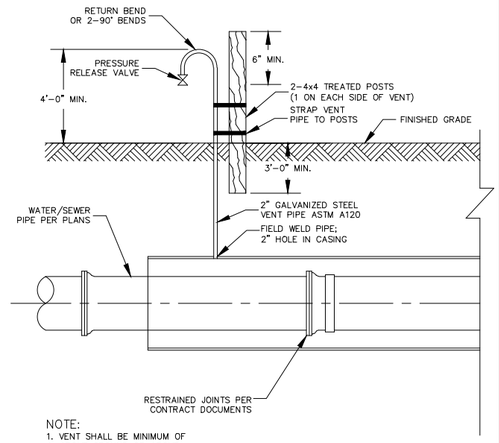
SEAL EXPLODED DETAIL
NOT TO SCALE

PIPELINE AND CASING INFORMATION	Carrier Pipe	Casing Pipe
Contents to be handled	WATER	CARRIER PIPE
Max allowable operating pressure	111 psi	Ambient
Outside diameter	13.20".	24.00" O.D.
Nominal size of pipe	12"	24"
Inside diameter	12.64"	23"
Pipe material	DUCTILE IRON	STEEL
Weight per foot	49.2 LBS	94.62 LBS
Process of manufacture	ANSI C151	ANSI B16
Details of cathodic protection	NONE	NONE
Specifications & Grade	CLASS 350	20 Ex Hvy
Wall thickness	0.28"	0.500"
Actual working pressure (test pressure)	250 psi	Ambient (vented casing)
Type of joint	Mechanical/Restrained	Weld
End of casing protections	Neoprene seal	
Character of subsurface material	Clay	
Approximate ground water level	N/A	
Source of information for subsurface	Filed data	
Method of installation	Spider spacers	Jack and Bore
Vents: 1 (East side of crossing)		
Seal: (Both Ends) One end		
Bury: base of rail to top of casing	9 ft. 9 in.	
Bury: (Not beneath tracks)	3 ft. 0 in.	
Bury: (Railway ditches)	5 ft. 0 in.	
Cathodic protection:	None	
Type, size and spacing of insulators or supports.	See attached detail	

NOTES:

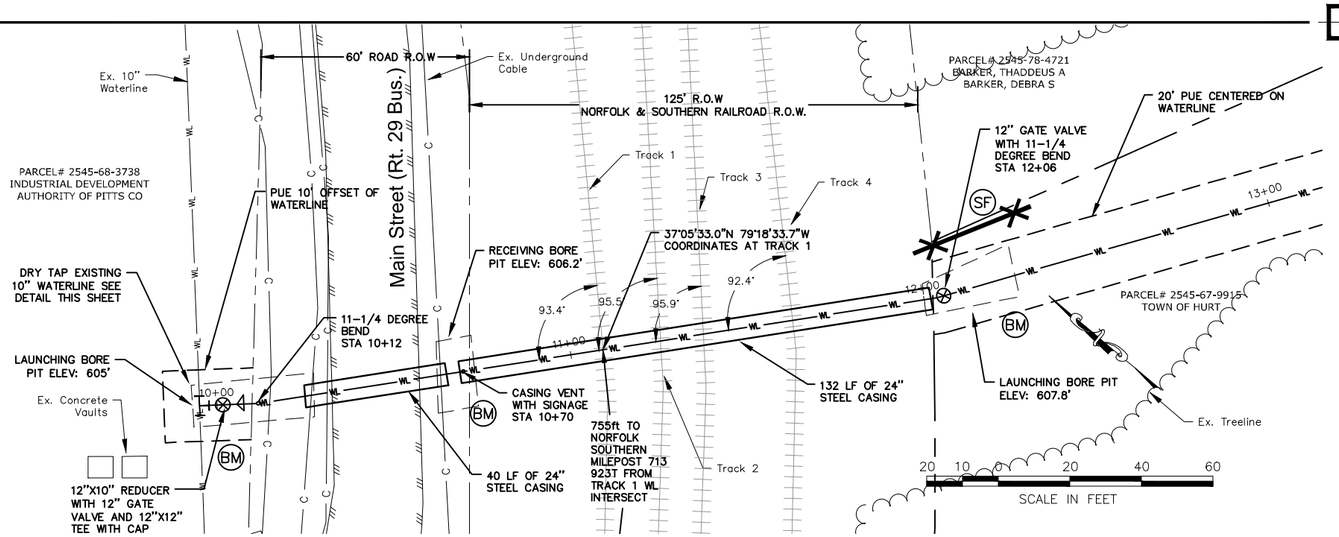
1. Contractor shall follow all requirements of Norfolk Southern's NSCE-8 Specifications
2. Pipeline and crossing to be installed and maintained in accordance with last approved AMERICAN RAILWAY ENGINEERING AND MAINTENANCE OF RAILWAY ASSOCIATION Specifications for Pipelines Conveying Flammable and Non-flammable Substances.
3. Blasting not permitted.

TOWN OF HURT
WATERLINE CONNECTION
NS RAILROAD CROSSING



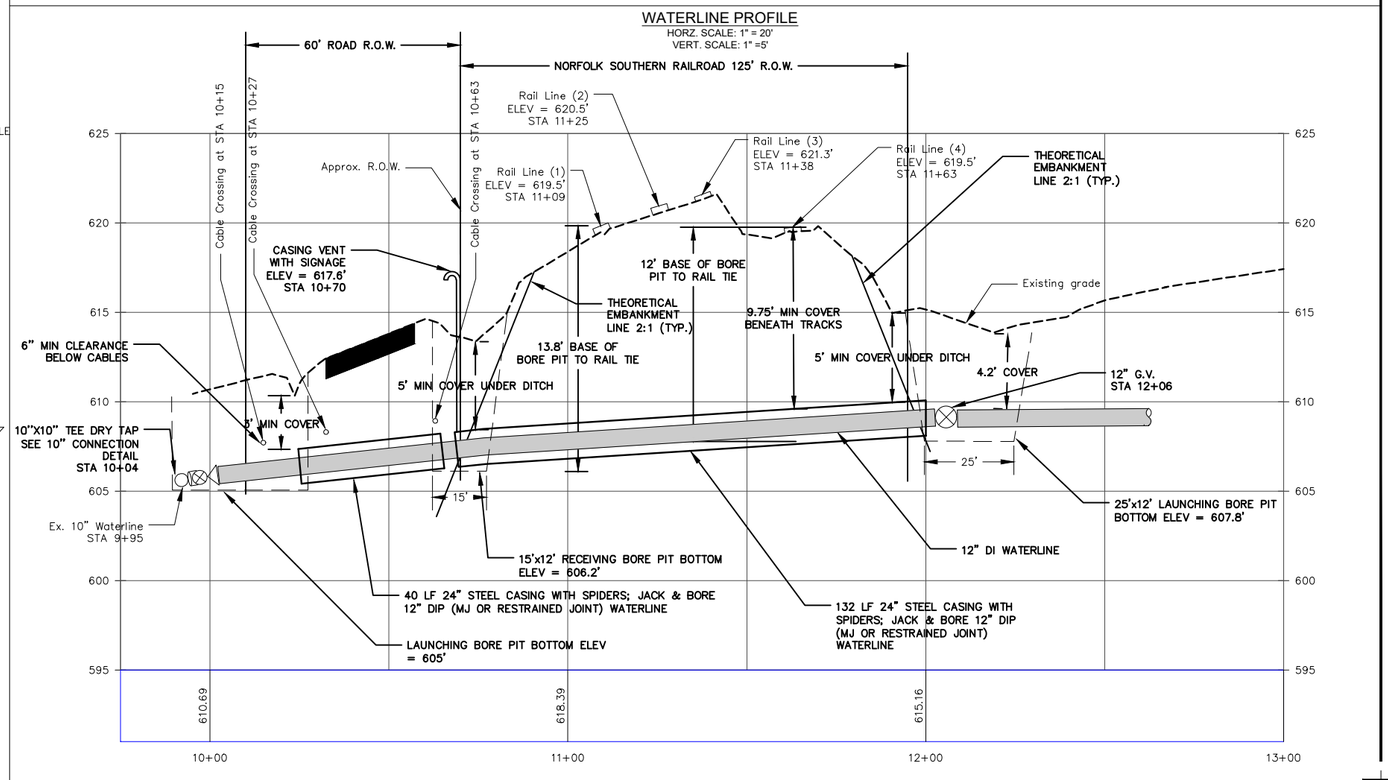
NOTE:
1. VENT SHALL BE MINIMUM OF 4' ABOVE GROUND OR ABOVE 100 YEAR FLOOD ELEVATION.

CASING VENT DETAIL
N.T.S.



RAILROAD CROSSING SITE PLAN
SCALE: 1" = 20'

WATERLINE PROFILE
HORZ. SCALE: 1" = 20'
VERT. SCALE: 1" =5'



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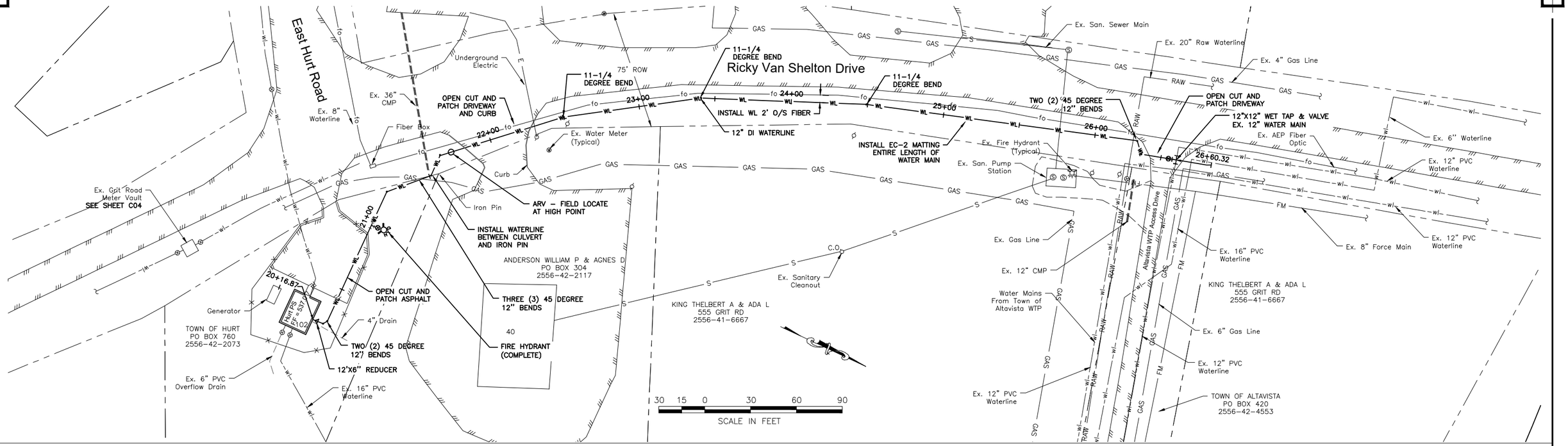
SEAL
COMMONWEALTH OF VIRGINIA
SCOTT BORTZ
Lic. No. 032379
2/3/2025
CERTIFIED PROFESSIONAL ENGINEER

DRAWN BY:	B. MILLER
REVIEW BY:	S. BORTZ
DATE:	3 FEB 2025
REVISION:	

SHEET DESCRIPTION:
RAILROAD CROSSING DETAILS

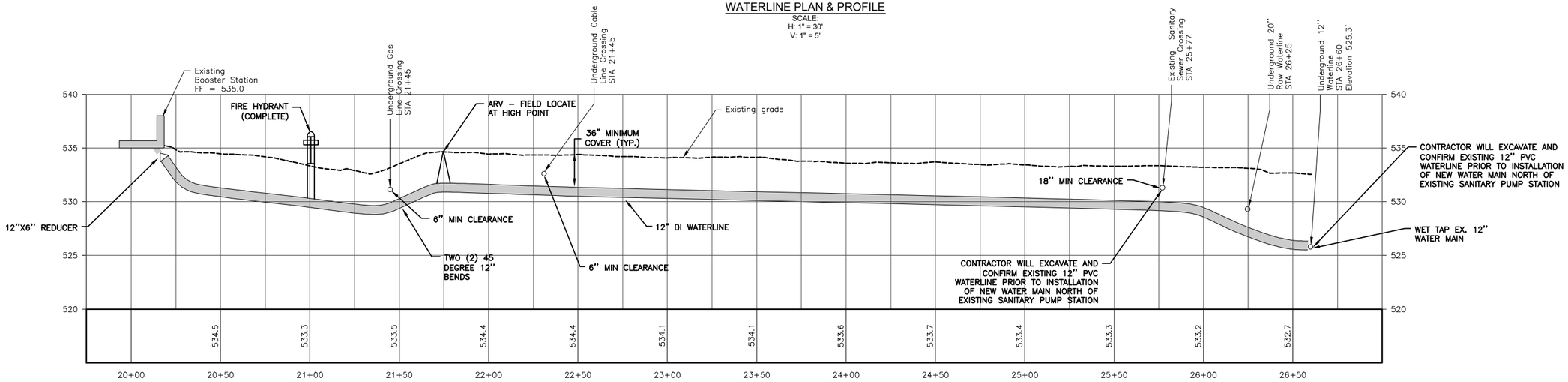
C02

JN: 20-13



WATERLINE PLAN & PROFILE

SCALE:
H: 1" = 30'
V: 1" = 5'



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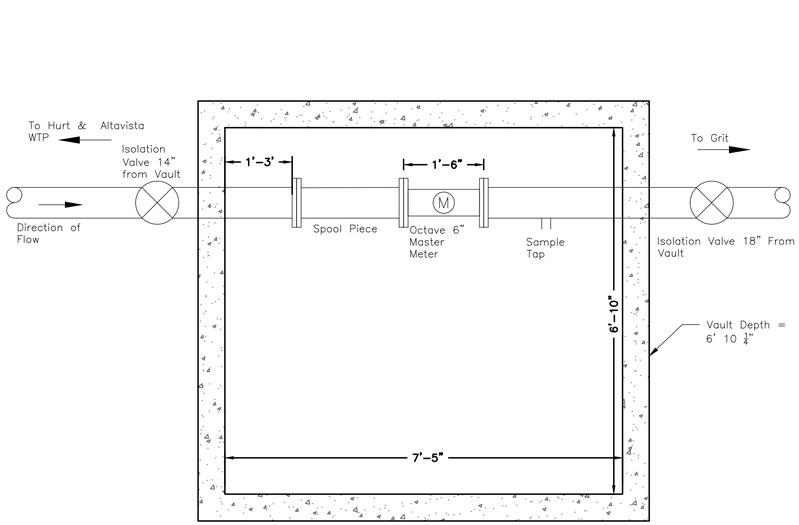
DRAWN BY:	B. MILLER
REVIEW BY:	S. BORTZ
DATE:	3 FEB 2025
REVISION:	

SHEET DESCRIPTION:
BOOSTER STATION SUCTION LINE PLAN AND PROFILE

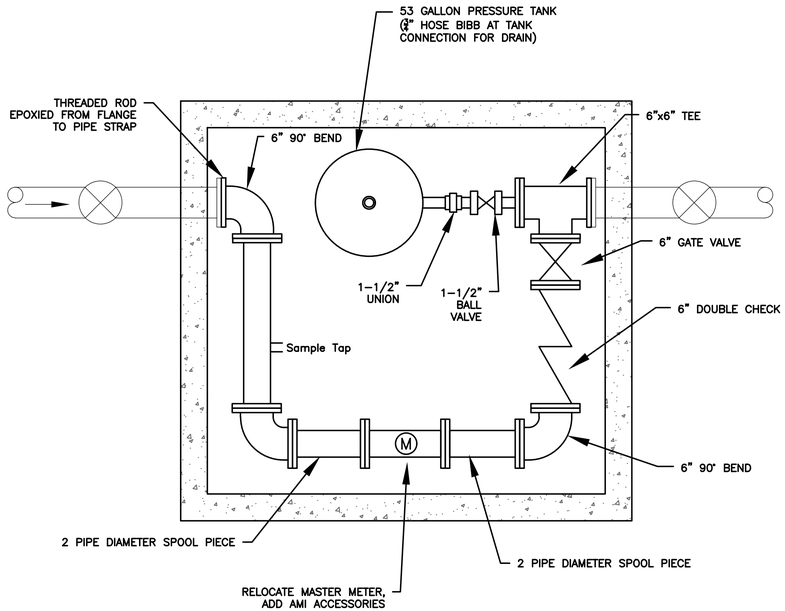
C03

JN: 20-13



EXISTING VAULT LAYOUT

3/4" = 1'-0"



PROPOSED VAULT LAYOUT

3/4" = 1'-0"

NOTES:
1) GRIT PEAK FLOW CALCULATED AT 143GPM.
2) PEAK HEADLOSS THROUGH 6" DOUBLE CHECK DETECTOR CHECK = 6 PSI

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DRAWN BY:	B. MILLER
REVIEW BY:	S. BORTZ
DATE:	3 FEB 2025
REVISION:	

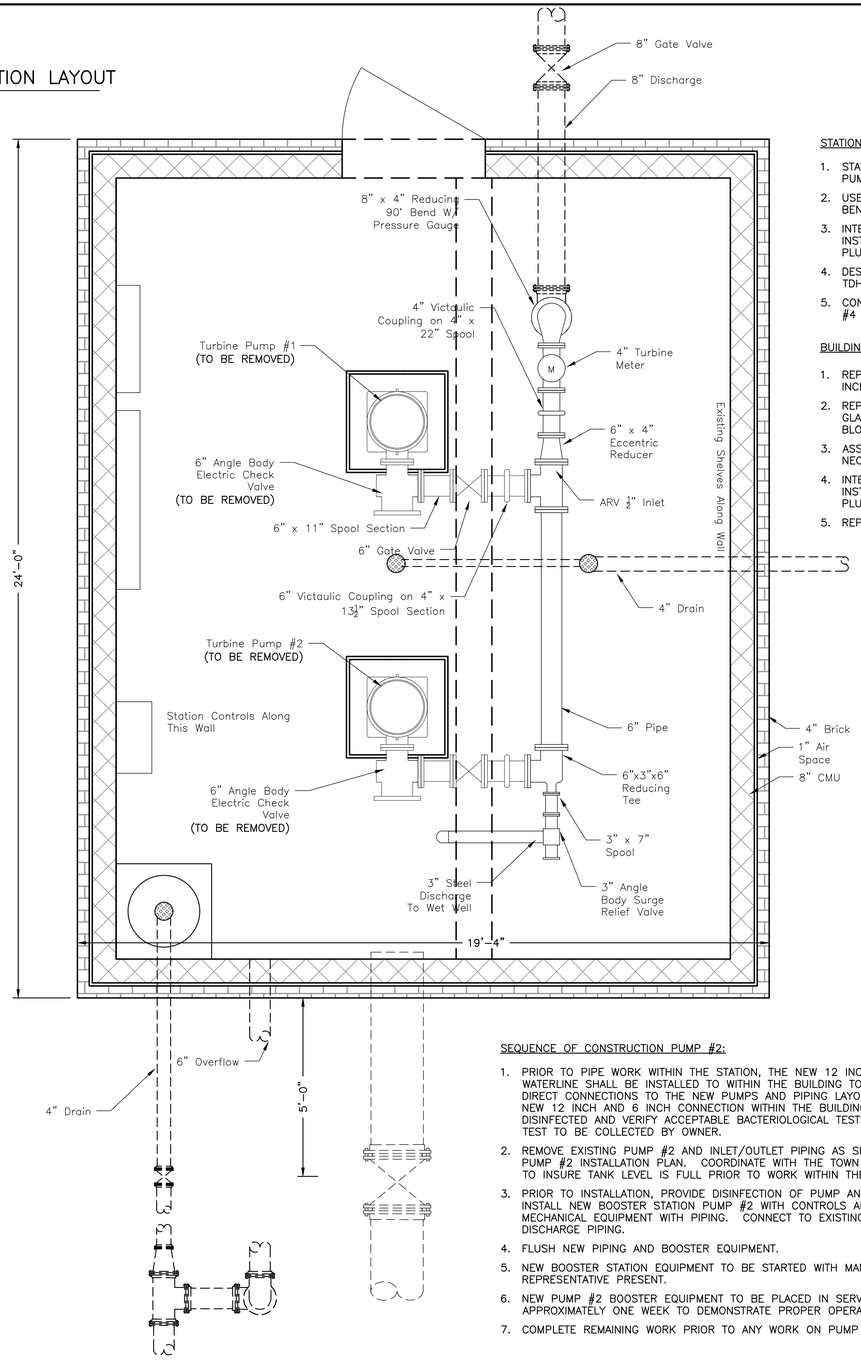
SHEET DESCRIPTION: GRIT VAULT MODIFICATIONS

C04

JN: 20-13

EXISTING STATION LAYOUT

1/2" = 1'-0"



STATION NOTES:

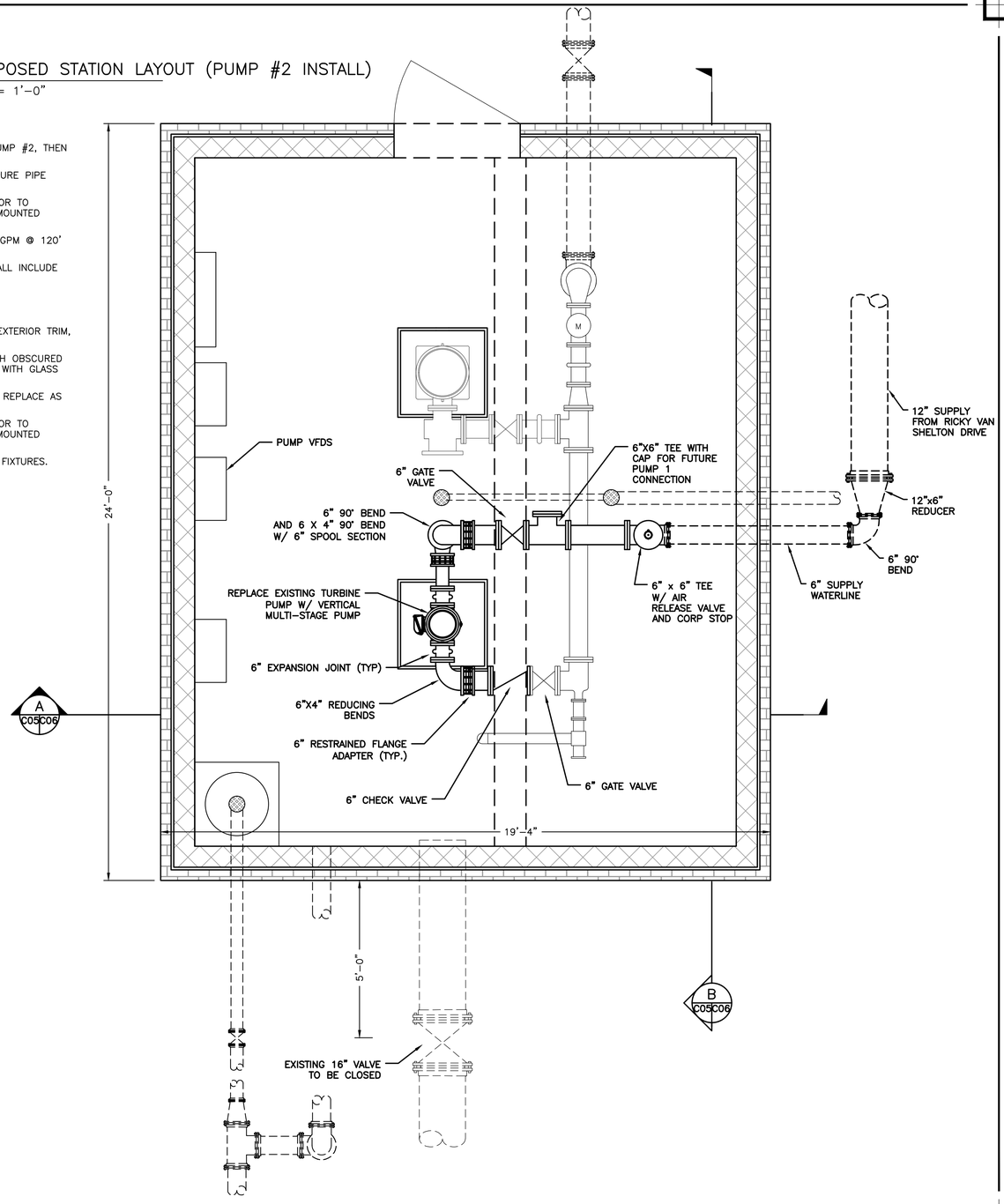
1. STATION MUST REMAIN IN SERVICE. REPLACE PUMP #2, THEN PUMP #1
2. USE RESTRAINED JOINT FITTINGS ON ALL PRESSURE PIPE BENEATH SLAB.
3. INTERIOR WALLS & CEILING TO BE PAINTED PRIOR TO INSTALLING CONDUIT, FIXTURES, OR ANY WALL MOUNTED PLUMBING OR EQUIPMENT.
4. DESIGN POINT OF EACH PUMP SYSTEM IS 320 GPM @ 120' TDH. BASIS OF DESIGN IS GRUNDFOS CR95-1.
5. CONCRETE SUPPORT BASE FOR PUMP SKID SHALL INCLUDE #4 REBAR AT 12" ON CENTER EACH WAY.

BUILDING REFURBISHMENT NOTES:

1. REPLACE OR REFINISH (SAND AND PAINT) ALL EXTERIOR TRIM, INCLUDING CUPOLA.
2. REPLACE ALL WINDOWS WITH NEW WINDOWS WITH OBSCURED GLASS AND SECURITY BARS OR FILL OPENINGS WITH GLASS BLOCK.
3. ASSESS CONDITION OF EXISTING SHINGLES AND REPLACE AS NECESSARY.
4. INTERIOR WALLS & CEILING TO BE PAINTED PRIOR TO INSTALLING CONDUIT, FIXTURES, OR ANY WALL MOUNTED PLUMBING OR EQUIPMENT.
5. REPLACE EXISTING OVERHEAD LIGHTS WITH LED FIXTURES.

PROPOSED STATION LAYOUT (PUMP #2 INSTALL)

1/2" = 1'-0"



SEQUENCE OF CONSTRUCTION PUMP #2:

1. PRIOR TO PIPE WORK WITHIN THE STATION, THE NEW 12 INCH WATERLINE SHALL BE INSTALLED TO WITHIN THE BUILDING TO ALLOW DIRECT CONNECTIONS TO THE NEW PUMPS AND PIPING LAYOUT. THE NEW 12 INCH AND 6 INCH CONNECTION WITHIN THE BUILDING SHALL BE DISINFECTED AND VERIFY ACCEPTABLE BACTERIOLOGICAL TESTS. BACT TEST TO BE COLLECTED BY OWNER.
2. REMOVE EXISTING PUMP #2 AND INLET/OUTLET PIPING AS SHOWN IN PUMP #2 INSTALLATION PLAN. COORDINATE WITH THE TOWN OF HURT TO INSURE TANK LEVEL IS FULL PRIOR TO WORK WITHIN THE STATION.
3. PRIOR TO INSTALLATION, PROVIDE DISINFECTION OF PUMP AND PIPING. INSTALL NEW BOOSTER STATION PUMP #2 WITH CONTROLS AND MECHANICAL EQUIPMENT WITH PIPING. CONNECT TO EXISTING 6 INCH DISCHARGE PIPING.
4. FLUSH NEW PIPING AND BOOSTER EQUIPMENT.
5. NEW BOOSTER STATION EQUIPMENT TO BE STARTED WITH MANUFACTURER REPRESENTATIVE PRESENT.
6. NEW PUMP #2 BOOSTER EQUIPMENT TO BE PLACED IN SERVICE FOR APPROXIMATELY ONE WEEK TO DEMONSTRATE PROPER OPERATION.
7. COMPLETE REMAINING WORK PRIOR TO ANY WORK ON PUMP #1.

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DBP REMEDIATION & WATER IMPROVEMENTS - PHASE II

TOWN OF HURT **VIRGINIA**

SEAL
COMMONWEALTH OF VIRGINIA
SCOTT BORTZ
Lic. No. 032379
2/3/2025
CERTIFIED PROFESSIONAL ENGINEER

DRAWN BY:	B. MILLER
REVIEW BY:	S. BORTZ
DATE:	3 FEB 2025
REVISION:	

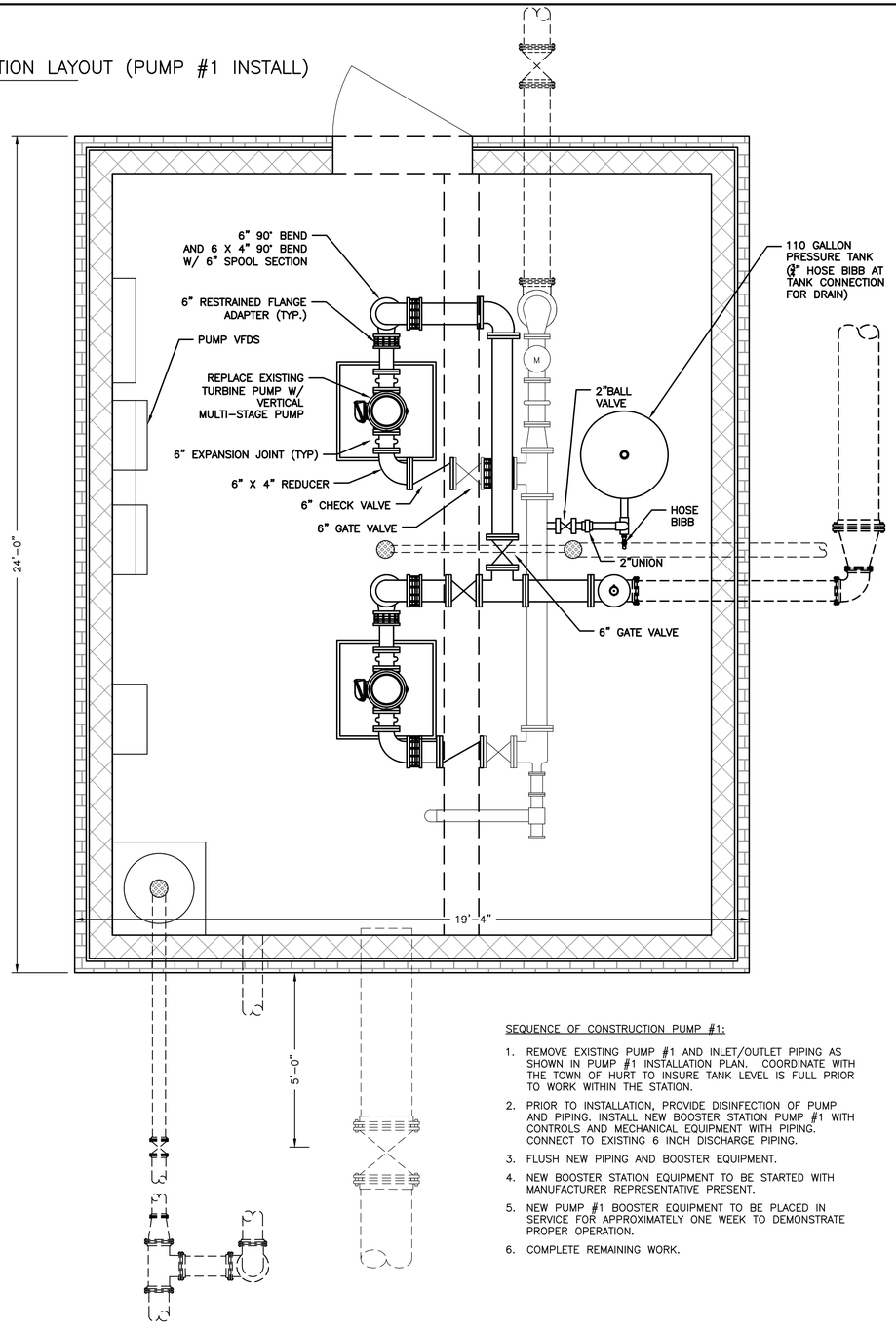
SHEET DESCRIPTION:
HURT BOOSTER STATION IMPROVEMENTS

C05

JN: 20-13

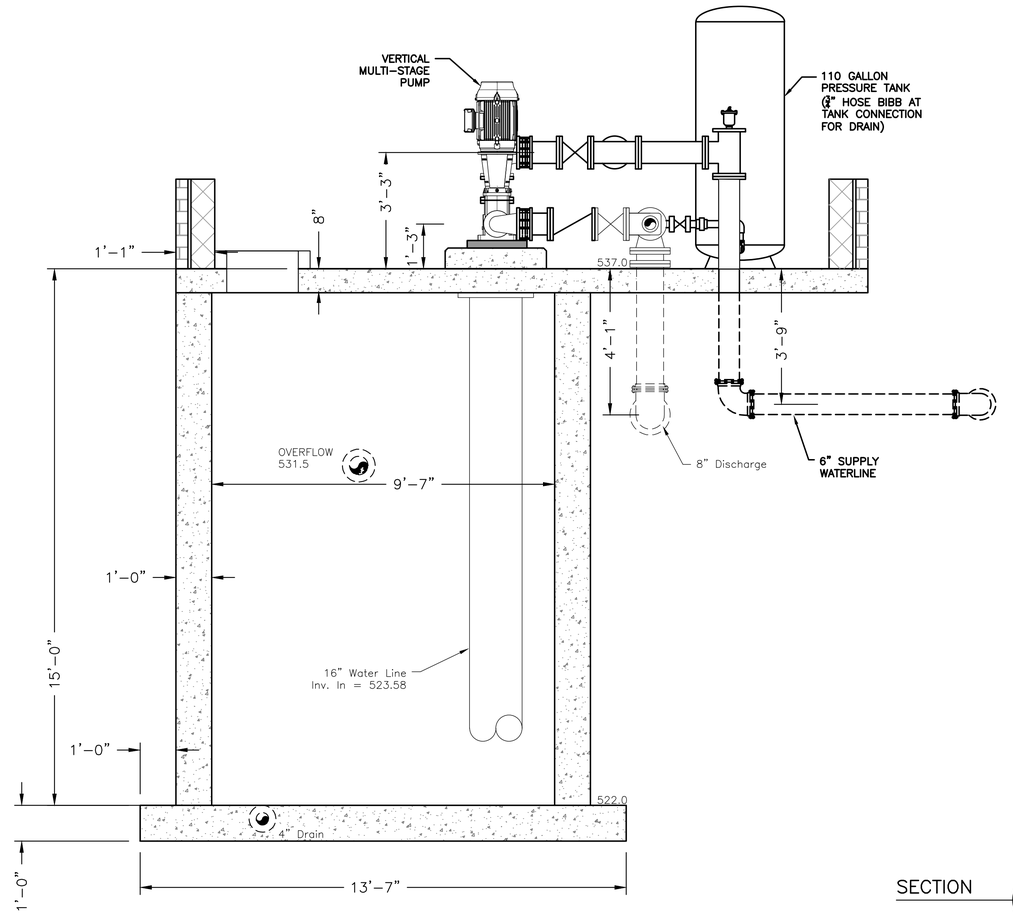
PROPOSED STATION LAYOUT (PUMP #1 INSTALL)

1/2" = 1'-0"

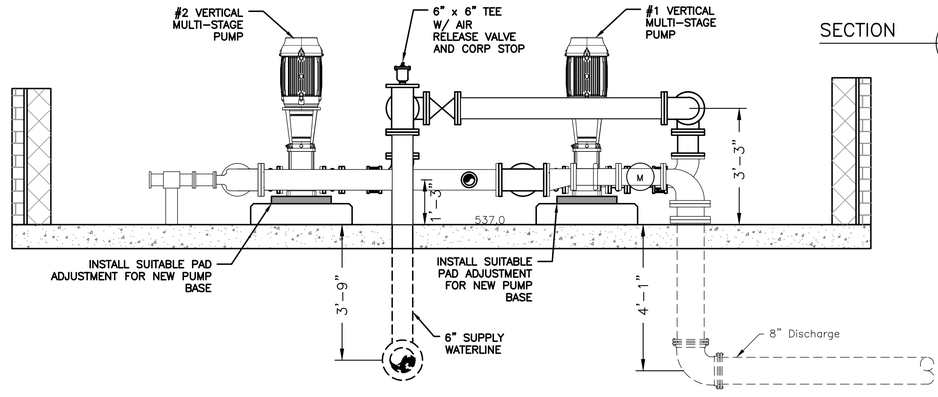


SEQUENCE OF CONSTRUCTION PUMP #1:

1. REMOVE EXISTING PUMP #1 AND INLET/OUTLET PIPING AS SHOWN IN PUMP #1 INSTALLATION PLAN. COORDINATE WITH THE TOWN OF HURT TO INSURE TANK LEVEL IS FULL PRIOR TO WORK WITHIN THE STATION.
2. PRIOR TO INSTALLATION, PROVIDE DISINFECTION OF PUMP AND PIPING. INSTALL NEW BOOSTER STATION PUMP #1 WITH CONTROLS AND MECHANICAL EQUIPMENT WITH PIPING. CONNECT TO EXISTING 6 INCH DISCHARGE PIPING.
3. FLUSH NEW PIPING AND BOOSTER EQUIPMENT.
4. NEW BOOSTER STATION EQUIPMENT TO BE STARTED WITH MANUFACTURER REPRESENTATIVE PRESENT.
5. NEW PUMP #1 BOOSTER EQUIPMENT TO BE PLACED IN SERVICE FOR APPROXIMATELY ONE WEEK TO DEMONSTRATE PROPER OPERATION.
6. COMPLETE REMAINING WORK.



SECTION A C05C06



SECTION B C05C06

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DBP REMEDIATION & WATER IMPROVEMENTS - PHASE II

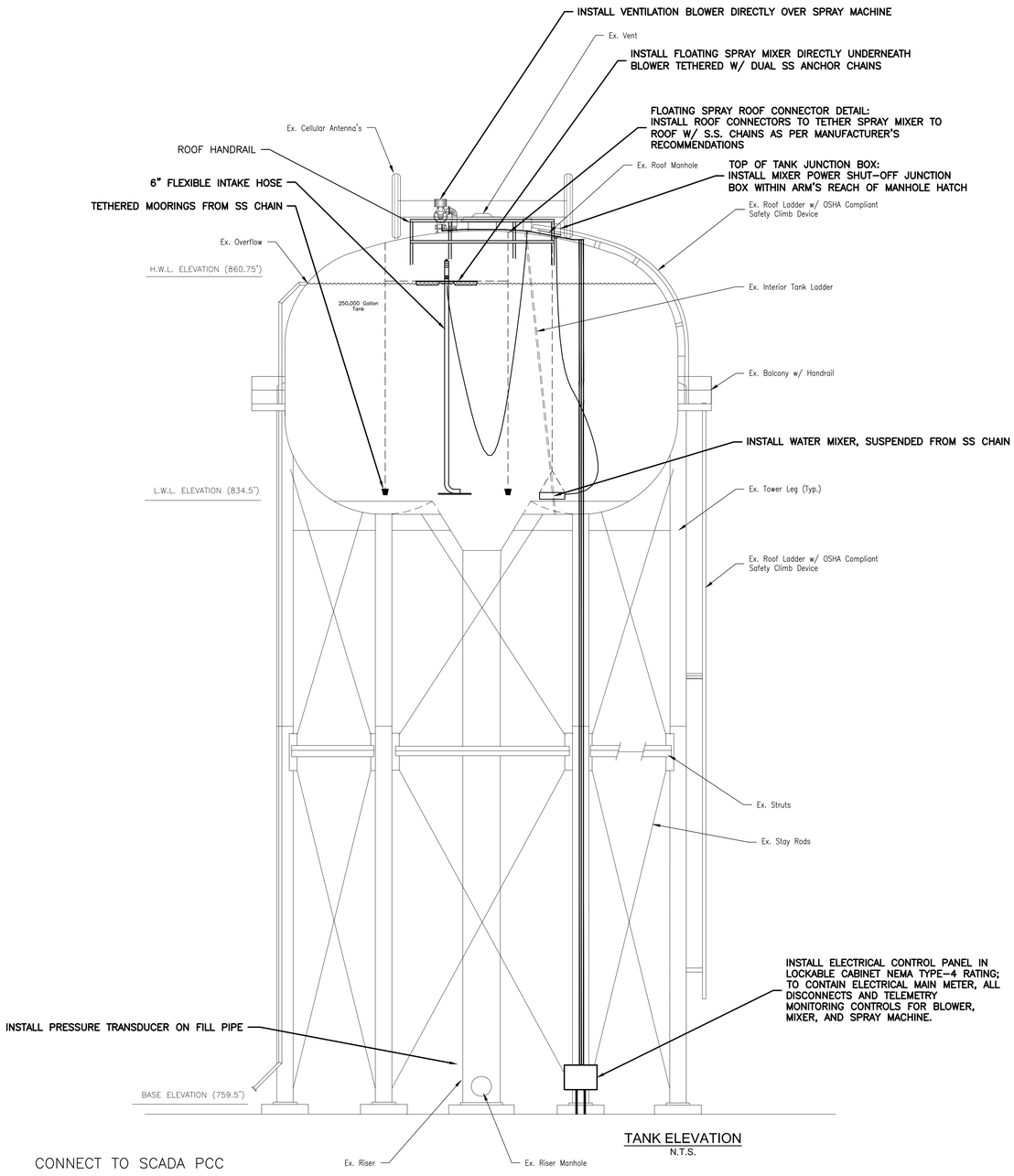
TOWN OF HURT **VIRGINIA**

SEAL: COMMONWEALTH OF VIRGINIA — SCOTT BORTZ, Lic. No. 032379, 2/3/2025 — CERTIFIED PROFESSIONAL ENGINEER

DRAWN BY: B. MILLER	SHEET DESCRIPTION: HURT BOOSTER STATION SECTIONS
REVIEW BY: S. BORTZ	
DATE: 3 FEB 2025	
REVISION:	

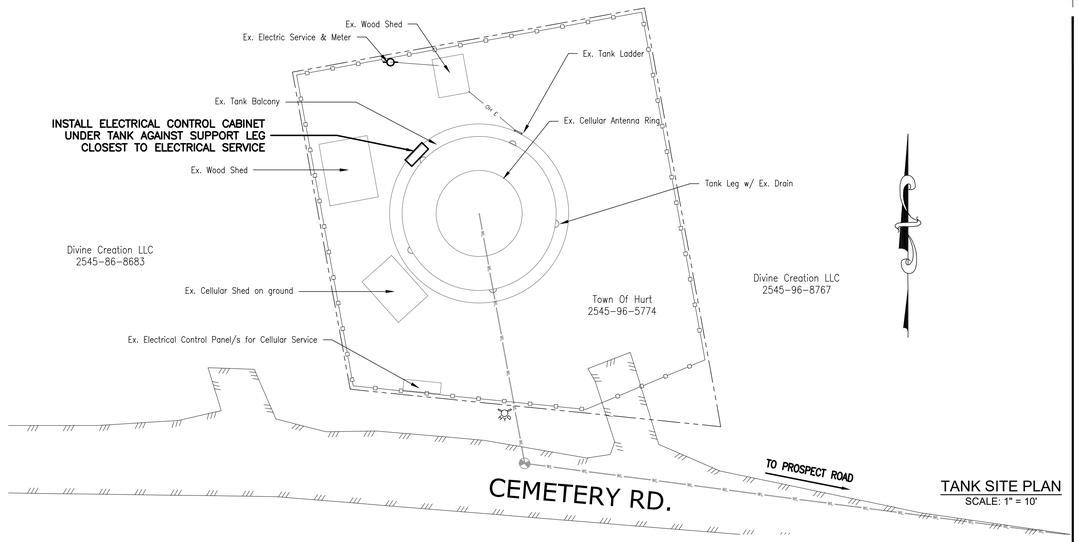
C06

JN: 20-13

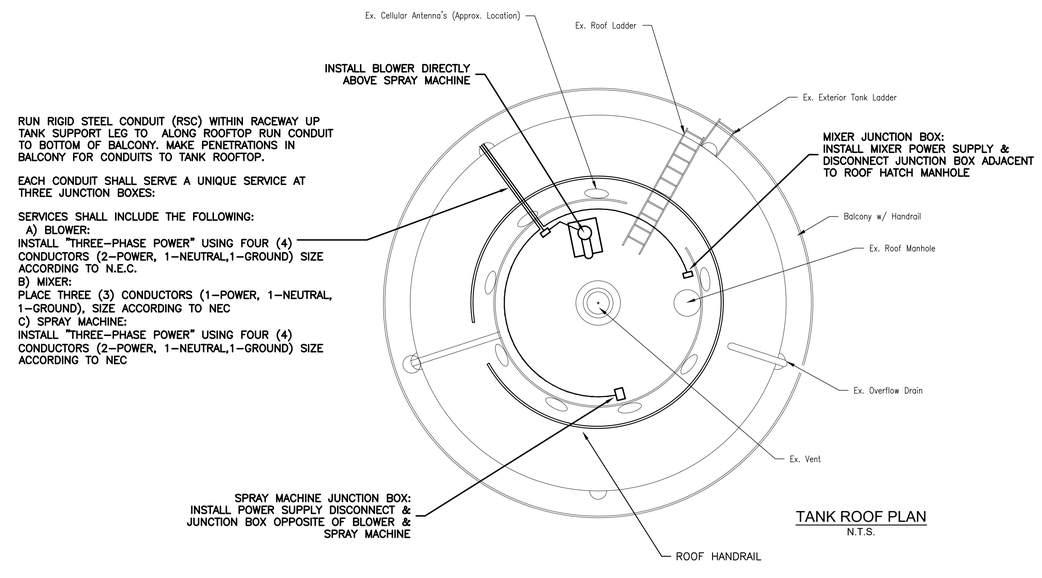


TANK ELEVATION
N.T.S.

CONNECT TO SCADA PCC



TANK SITE PLAN
SCALE: 1" = 10'



TANK ROOF PLAN
N.T.S.

SCADA

1. MONITOR TANK LEVEL
2. MIXING SYSTEM STATUS AND REMOTE OPERATION
3. REMOTE ON/OFF FOR BLOWER, MIXER AND SPRAYER

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DBP REMEDIATION & WATER IMPROVEMENTS - PHASE II

TOWN OF HURT **VIRGINIA**

SEAL
COMMONWEALTH OF VIRGINIA
SCOTT BORTZ
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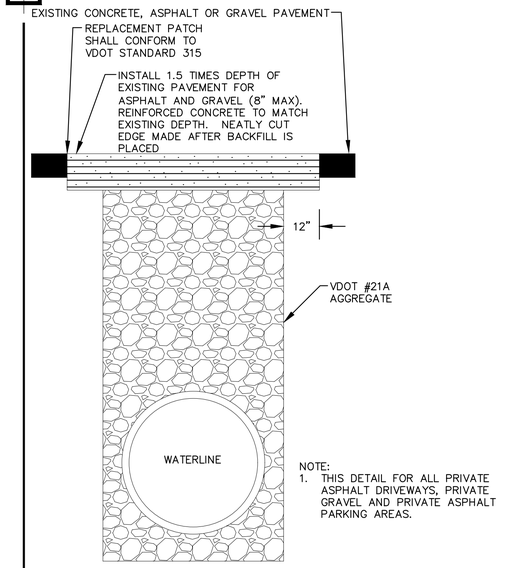
2/3/2025
CERTIFIED PROFESSIONAL ENGINEER

DRAWN BY:	B. MILLER
REVIEW BY:	S. BORTZ
DATE:	3 FEB 2025
REVISION:	

SHEET DESCRIPTION:
TANK MODIFICATIONS

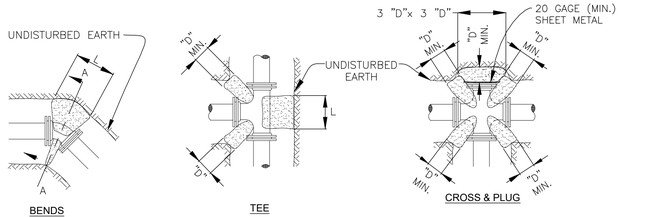
C07

JN: 20-13



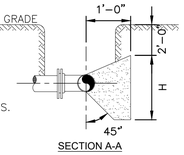
NOTE:
1. THIS DETAIL FOR ALL PRIVATE ASPHALT DRIVEWAYS, PRIVATE GRAVEL AND PRIVATE ASPHALT PARKING AREAS.

STANDARD PAVEMENT REPAIR
NOT TO SCALE



NOTES:
1. ALL CONCRETE WILL BE 3000 P.S.I. COMPRESSIVE STRENGTH AT 28 DAYS.
2. ALL BEARING SURFACES OF ANCHOR BLOCKS WILL BE POURED AGAINST UNDISTURBED EARTH.
3. PROVIDE 10 MIL PLASTIC BARRIER BETWEEN THRUST BLOCKS AND PIPE FITTINGS. PROTECT ALL NUTS AND BOLTS FROM CONCRETE WITH PLASTIC BARRIER.
4. BLOCKS ARE DESIGNED FOR 150 P.S.I PRESSURE AND SOIL WITH A BEARING CAPACITY OF 2000 POUNDS/SQUARE FOOT. OTHER CONDITIONS REQUIRE SPECIAL DESIGN.
5. CONCRETE TO CURE A MINIMUM OF 7 DAYS BEFORE SUBJECTING SAME TO TEST PRESSURE.
6. "D"= NOMINAL DIAMETER OF PIPE, "O.D.= ACTUAL OUTSIDE DIAMETER OF PIPE.
7. HEIGHT OF CONCRETE ANCHOR BLOCK ABOVE PIPE CENTERLINE IS 1/3: THE H DIMENSION.

PIPE SIZE	11¼° BEND		22½° BEND		45° BEND		90° BEND	
	L	H	L	H	L	H	L	H
6	1'–6"	1'–0"	1'–6"	1'–0"	2'–6"	1'–0"	2'–6"	2'–0"
8	2'–0"	1'–0"	2'–6"	1'–0"	2'–6"	2'–0"	4'–0"	2'–0"
10	2'–0"	1'–6"	2'–6"	1'–0"	3'–6"	2'–0"	4'–6"	2'–6"
12	2'–0"	1'–6"	2'–6"	1'–0"	4'–0"	2'–6"	5'–0"	4'–0"
16	4'–6"	3'–0"	3'–0"	3'–0"	5'–0"	3'–6"	7'–6"	4'–6"
20	4'–6"	3'–0"	4'–6"	3'–0"	6'–0"	4'–6"	8'–6"	6'–0"



STANDARD ANCHOR BLOCKING DETAILS
NOT TO SCALE

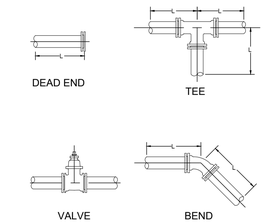
NOTES:
1. RESTRAINING DEVICES OR RESTRAINED JOINTS SHALL HAVE A WORKING PRESSURE OF 250 PSI WITH A MINIMUM SAFETY FACTOR OF 2.0
2. RESTRAINED LENGTH SHOWN IS BASED ON 3' OF COVER, SOIL TYPE CL, TRENCH TYPE 2, 2:1 SAFETY FACTOR, AND DUCTILE IRON PIPE AT A TEST PRESSURE OF 150 PSI. IF FIELD CONDITIONS DIFFER FROM THOSE LISTED, CONTACT ENGINEER TO DETERMINE REQUIRED RESTRAINED LENGTH.
3. RESTRAINED LENGTHS SHOWN IN CHART WERE CALCULATED USING METHODOLOGY DEVELOPED BY THE DUCTILE IRON PIPE RESEARCH ASSOCIATION (DIPRA) AND ARE INTENDED AS A GENERAL GUIDE BASED ON CONDITIONS SHOWN IN NOTE 2. FOR FITTINGS AND/OR FIELD CONDITIONS NOT SHOWN, ENGINEER SHALL SUBMIT CALCULATIONS USING DIPRA METHODOLOGY TO THE TOWN FOR APPROVAL.
4. EXISTING PIPE ADJACENT TO PROPOSED BENDS, WYES, VALVES, TEES, AND PLUGS SHALL BE UNCOVERED AND THE JOINTS RESTRAINED FOR THE LENGTHS INDICATED. IF THE EXISTING PIPE IS UNABLE TO ACCEPT THE MECHANICAL JOINT RESTRAINING MECHANISM, THE EXISTING PIPE SHALL BE REPLACED WITH DUCTILE IRON WATER MAIN IN ACCORDANCE WITH THE SPECIFICATIONS AND RESTRAINED LENGTH INDICATED. IN LIEU OF RESTRAINING JOINTS OF EXISTING PIPE, A BULKHEAD ANCHOR AS SHOWN IN DETAILS CA–1 AND CA–2 MAY BE USED.
5. FIRE HYDRANTS SHALL BE RESTRAINED AT EACH JOINT IN THE ASSEMBLY.
6. ALL JOINTS WITHIN CASING PIPES SHALL BE RESTRAINED.
7. IF A CASING PIPE FALLS WITHIN THE RESTRAINED LENGTH "L", THE REQUIRED RESTRAINED LENGTH SHALL BE INCREASED BY THE LENGTH OF THE CASING.
8. THRUST RESTRAINTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND SHALL CONFORM TO THE FOLLOWING TABLE OR APPROVED EQUAL. SHOP DRAWINGS FOR ALTERNATE RESTRAINTS SHALL BE SUBMITTED TO THE TOWN FOR APPROVAL PRIOR TO CONSTRUCTION.

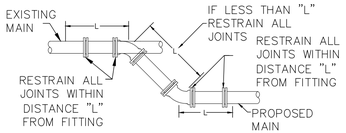
MINIMUM LENGTH OF PIPE WITH RESTRAINED JOINTS (L) IN FEET

PIPE SIZE	HORIZONTAL BEND				VERTICAL BEND UP			VERT. BEND DOWN			DEAD END OR VALVE	UNIFORM SIZE TEE OR WYE	REDUCER LARGER Ø TO SMALLER Ø
	11.25°	22.5°	45°	90°	11.25°	22.5°	45°	11.25°	22.5°	45°			
4"	2	5	10	24	2	5	10	4	7	15	18	13	13
6"	3	7	15	35	3	7	15	5	10	21	26	21	14
8"	5	9	19	46	5	9	19	7	14	28	34	29	14
10"	6	11	23	56	6	11	23	8	17	34	42	37	14
12"	7	13	28	67	7	13	28	10	20	41	50	45	15
14"	8	15	32	77	8	15	32	11	23	48	57	52	15
16"	9	17	36	87	9	17	36	13	26	54	65	60	15
18"	10	19	40	97	10	19	40	14	29	61	73	68	15
20"	11	21	45	108	11	21	45	16	32	67	81	76	29
24"	13	25	53	128	13	25	53	19	38	80	97	92	

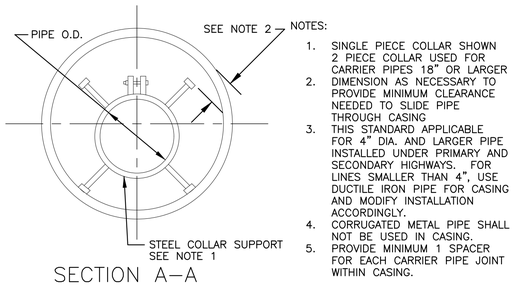
MECHANICAL RESTRAINING DEVICES FOR PIPES
NOT TO SCALE

MECHANICAL RESTRAINING DEVICE DETAILS



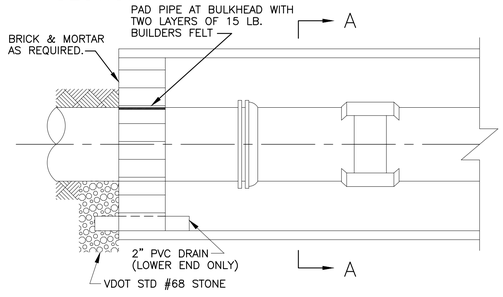


CONNECTION TO EXISTING MAIN

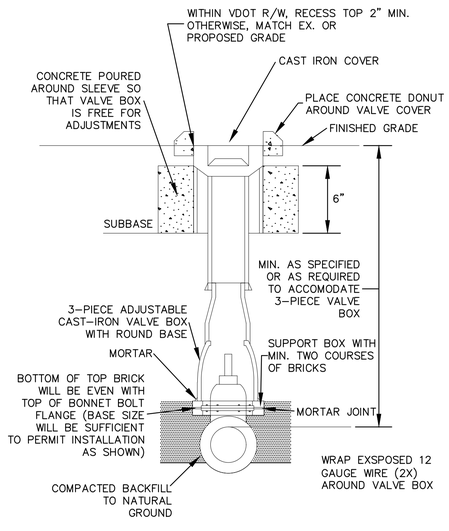


NOTES:
1. SINGLE PIECE COLLAR SHOWN 2 PIECE COLLAR USED FOR CARRIER PIPES 18" OR LARGER
2. DIMENSION AS NECESSARY TO PROVIDE MINIMUM CLEARANCE NEEDED TO SLIDE PIPE THROUGH CASING
3. THIS STANDARD APPLICABLE FOR 4" DIA. AND LARGER PIPE INSTALLED UNDER PRIMARY AND SECONDARY HIGHWAYS. FOR LINES SMALLER THAN 4", USE DUCTILE IRON PIPE FOR CASING AND MODIFY INSTALLATION ACCORDINGLY.
4. CORRUGATED METAL PIPE SHALL NOT BE USED IN CASING.
5. PROVIDE MINIMUM 1 SPACER FOR EACH CARRIER PIPE JOINT WITHIN CASING.

SECTION A–A

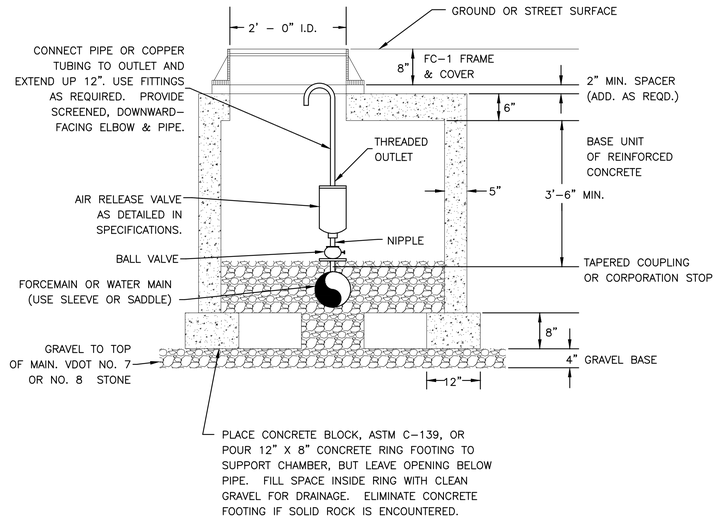


SEALED CASING INSTALLATION WITH STEEL COLLAR FOR VDOT CROSSING
NOT TO SCALE



VALVE & BOX DETAIL
NOT TO SCALE

NOTE:
MATERIALS AND FABRICATION IN ACCORDANCE WITH MH–2 MANHOLE.
SIZE OF AIR RELEASE VALVE AND SIZE OF BALL VALVE AS SPECIFIED.



PRECAST CHAMBER FOR AIR RELEASE VALVE
NOT TO SCALE

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DBP REMEDIATION & WATER IMPROVEMENTS - PHASE II

TOWN OF HURT **VIRGINIA**

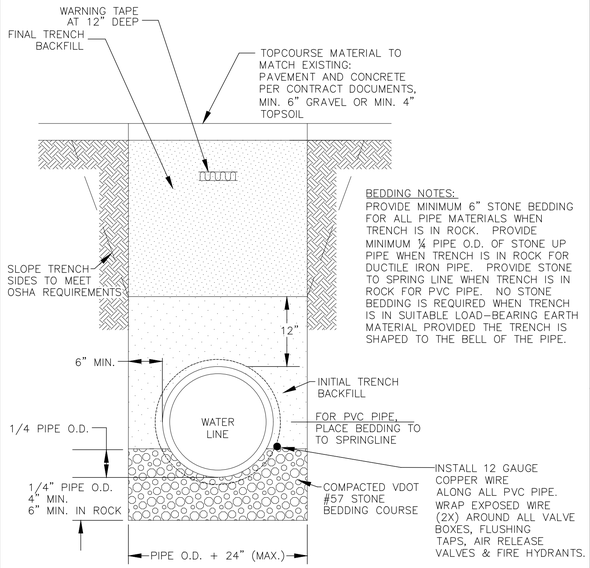
SEAL
COMMONWEALTH OF VIRGINIA
SCOTT BORTZ
Lic. No. 032379
2/3/2025
CERTIFIED PROFESSIONAL ENGINEER

DRAWN BY: B. MILLER
REVIEW BY: S. BORTZ
DATE: 3 FEB 2025
REVISION:

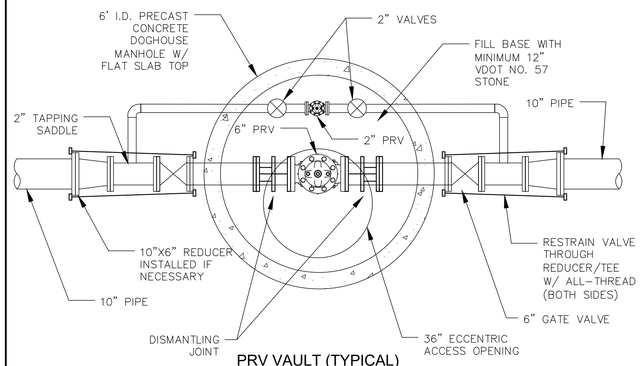
SHEET DESCRIPTION: STANDARD DETAILS

D01

JN: 20-13

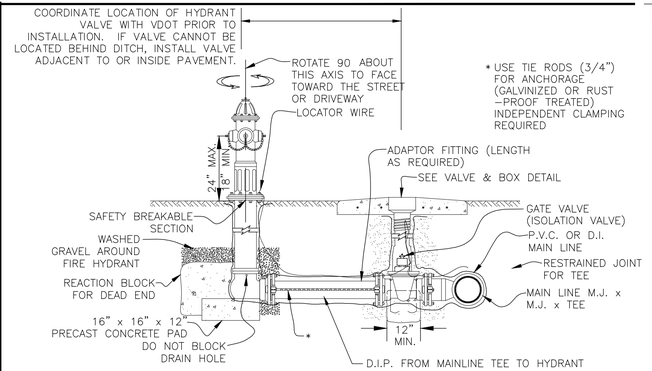


WATERLINE TRENCH DETAIL
NOT TO SCALE



PRV VAULT (TYPICAL)
NOT TO SCALE

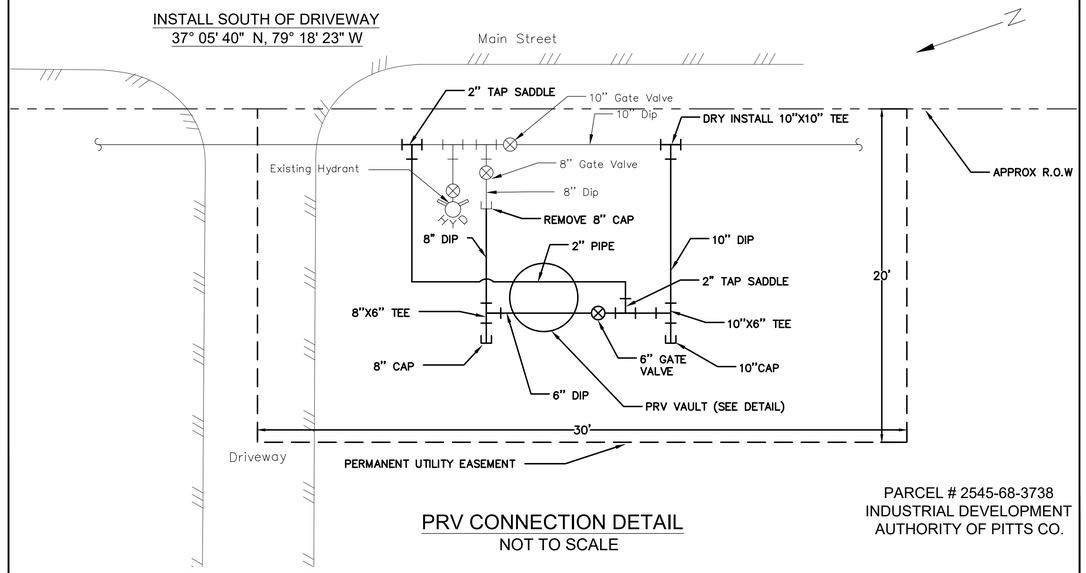
SEE DETAIL THIS SHEET FOR VALVING LOCATIONS FOR THIS APPLICATION



NOTES:

1. HYDRANT PUMPER & HOSE THREAD CONNECTIONS SHALL MATCH LOCAL STANDARDS.
2. PUMPER NOZZLE TO BE FACED TOWARD THE STREET OR THE ADJACENT DRIVEWAY (TYP.)
3. FIRE HYDRANTS, VALVES, VALVE BOXES, TEES, BENDS & ALL D.I. PIPES WILL BE WRAPPED W/ 0.2mm. THICKNESS GEOTEXTILE FABRIC WRAP.
4. SPECIAL CARE TO BE TAKEN NOT TO BLOCK HYDRANT DRAIN HOLE.
5. NUTS & BOLTS FOR D.I. FITTINGS WILL BE COR-TEN BOLTS AS MANUFACTURED BY NSS INDUSTRIES.
6. SEE REACTION BLOCK DETAILS FOR BLOCKINGS.
7. FIRE HYDRANTS AND THE ASSOCIATED ISOLATION VALVES SHALL NOT BE LOCATED WITHIN DITCHLINES.
8. FIRE HYDRANTS SHALL BE BEHIND THE CLEAR ZONE WHEN IN VDOT ROW.
9. IN LIEU OF TIE RODS, THE CONTRACTOR HAS THE OPTION OF USING GRIP RING OR MEG-A-LUG JOINT RESTRAINTS. APPROVED LOCK JOINT SYSTEM MAY BE USED IN LIEU OF RODS AND CLAMPS.

FIRE HYDRANT ASSEMBLY (TYPICAL ELEVATION)
NOT TO SCALE



PRV CONNECTION DETAIL
NOT TO SCALE

PARCEL # 2545-68-3738
INDUSTRIAL DEVELOPMENT AUTHORITY OF PITTS CO.

LONGITUDINAL PAVEMENT PATCHING FOR PAVEMENT FAILURES RESULTING FROM UTILITY INSTALLATIONS IN ROADWAY SHOULDERS
EFFECTIVE 09 SEPTEMBER 2015

GENERAL NOTES:

1. SUB-BASE PREPARATION SHALL EXTEND A MINIMUM OF 12 INCHES BEYOND THE LIMITS OF DISTURBANCE (BOTH LENGTH AND WIDTH) FOR ALL PATCHES, BUT IN NO CASE SHALL THE WIDTH BE LESS THAN 2 FEET.
2. A LIQUID ASPHALT TACK COAT SHALL BE APPLIED TO ALL SAW-CUT OR MILLED EDGES OF EXISTING PAVEMENT PRIOR TO PLACING ASPHALT PATCHES.
3. FOR ASPHALT PATCHES LESS THAN 25 FT IN LENGTH, THE EXISTING ASPHALT SHALL BE SAW-CUT TO PROVIDE A UNIFORM PAVEMENT JOINT:
4. A: THE PATCH WIDTH SHALL BE A MINIMUM OF 12 INCHES BEYOND THE LIMITS OF DISTURBANCE, BUT IN NO CASE SHALL IT BE LESS THAN 2 FEET. B: THE PATCH LENGTH SHALL BE A MINIMUM OF 12 INCHES BEYOND THE LIMITS OF DISTURBANCE ON EACH END.
5. FOR ASPHALT PATCHES 25 FT IN LENGTH OR GREATER, THE EXISTING ASPHALT SHALL BE SAW-CUT OR MILLED TO PROVIDE A UNIFORM PAVEMENT JOINT:
   - 5.1. THE PATCH WIDTH SHALL BE A MINIMUM OF 12 INCHES BEYOND THE LIMITS OF DISTURBANCE, BUT IN NO CASE SHALL IT BE LESS THAN ONE-HALF OF THE LANE WIDTH.
   - 5.2. THE PATCH LENGTH SHALL BE A MINIMUM OF 12 INCHES BEYOND THE LIMITS OF DISTURBANCE ON EACH END.
6. VDOT MAY MODIFY THE MINIMUM TYPICAL PAVEMENT SECTION GIVEN HEREIN BASED ON THE TYPE OF ROADWAY, THE AMOUNT OF PAVEMENT DAMAGE, AND/OR THE EXISTING PAVEMENT TYPICAL SECTION.
7. DENSITY REQUIREMENTS FOR SUB-BASE MATERIAL AND ASPHALT CONCRETE SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE
8. VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD & BRIDGE SPECIFICATIONS.
9. ANY DISTURBED PAVEMENT MARKINGS SHALL BE REPLACED IMMEDIATELY UPON COMPLETION OF THE ASPHALT PATCHING AND SHALL BE IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD & BRIDGE SPECIFICATIONS AND THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD & BRIDGE STANDARDS.
10. THE AMOUNT OF PATCHING REQUIRED SHALL BE DETERMINED BY VDOT PERSONNEL BASED UPON A FIELD INSPECTION

MINIMUM TYPICAL PAVEMENT SECTION NOTES:

NOTE A: DEPTH OF ASPHALT PATCH SHALL A MINIMUM OF 1.5 TIMES THE DEPTH OF THE EXISTING ASPHALT LAYERS, BUT IN NO CASE SHALL IT BE LESS THAN 3 INCHES. ASPHALT SHALL BE TYPE SM12.5A OR SM19.0A

NOTE B: THE CONTRACTOR SHALL EXCAVATE THE DISTURBED AREA AND RE-COMPACT WITH A MINIMUM OF 6 INCHES OF AGGREGATE TYPE 21B

NOTE C: FOR PATCHES 25 FT OR GREATER IN LENGTH, THE CONTRACTOR MAY ELECT TO MILL THE EXISTING SURFACE ASPHALT TO A DEPTH NO LESS THAN TWO INCHES AND A WIDTH NO LESS THAN ONE-HALF THE LANE WIDTH. HOWEVER, SHOULD THE CONTRACTOR ELECT TO TO SAW-CUT AND REMOVE EXISTING ASPHALT DOWN TO THE SUB-BASE, THE SUB-BASE MUST BE PREPARED IN ACCORDANCE WITH NOTE B. SURFACE ASPHALT SHALL BE TYPE SM12.5A OR SM19.0A

NOTE D: FOR PATCHES 25 FT OR GREATER, THE CONTRACTOR SHALL PLACE A MINIMUM OF 3 INCHES BASE MIX ASPHALT TYPE BM25.0. THE COMBINED DEPTH OF THE BASE ASPHALT AND THE SURFACE ASPHALT SHALL BE A MINIMUM OF 1.5 TIMES THE DEPTH OF THE EXISTING ASPHALT LAYERS.

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DBP REMEDIATION & WATER IMPROVEMENTS - PHASE II

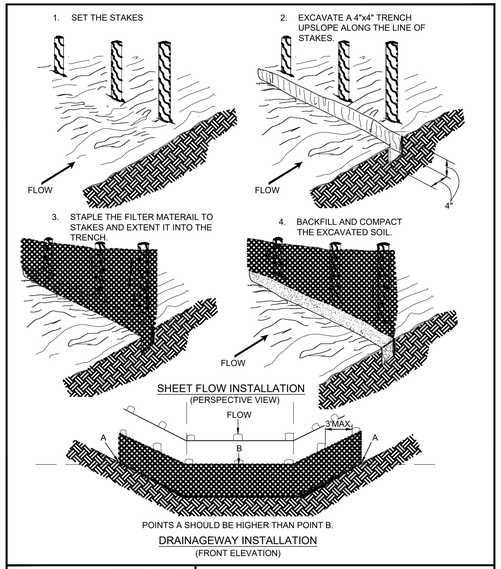
TOWN OF HURT **VIRGINIA**

SEAL
COMMONWEALTH OF VIRGINIA
SCOTT BORTZ
Lic. No. 032379
2/3/2025
CERTIFIED PROFESSIONAL ENGINEER

DRAWN BY: B. MILLER	SHEET DESCRIPTION: STANDARD DETAILS
REVIEW BY: S. BORTZ	
DATE: 3 FEB 2025	
REVISION:	

D02

JN: 20-13

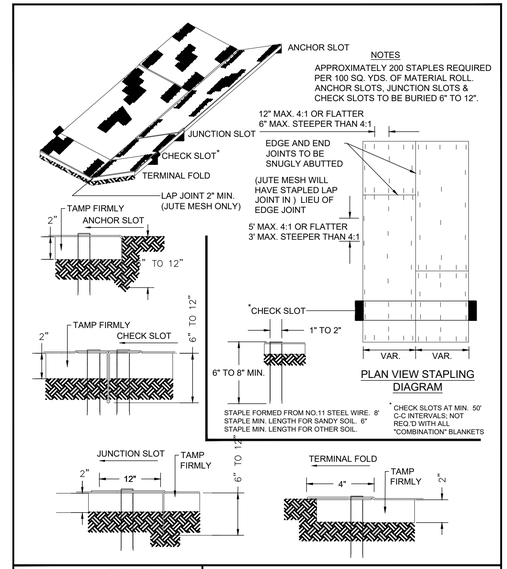


VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

CONSTRUCTION OF SILT FENCE WITHOUT WIRE SUPPORT

v1.1 SOURCE: ADAPTED FROM STRAW & FAB. BARRIERS, SHERWOOD & WYANT

C-PCM-04-2B

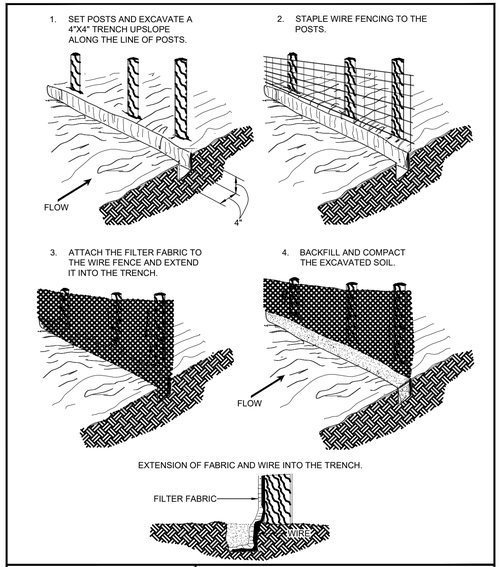


VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TYPICAL TREATMENT - 1 (SOIL STABILIZATION BLANKET) INSTALLATION CRITERIA

v1.1 SOURCE: VDOT ROAD & BRIDGE STDS.

C-SSM-05-2

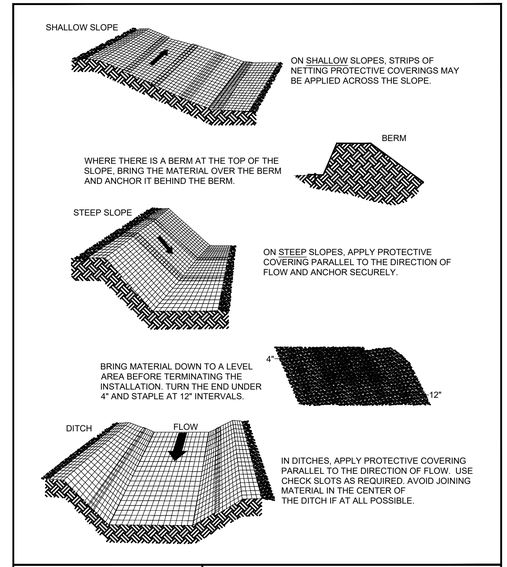


VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

CONSTRUCTION OF SILT FENCE WITH WIRE SUPPORT INSTALLATION

v1.1 SOURCE: ADAPTED FROM STRAW & FAB. BARRIERS, SHERWOOD & WYANT

C-PCM-04-2



VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

TYPICAL ORIENTATION OF TREATMENT - 1 (SOIL STABILIZATION BLANKET)

v1.1 SOURCE: ADAPTED FROM LUDLOW PRODUCTS BROCHURE

C-SSM-05-1

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DRAWN BY:	B. MILLER
REVIEW BY:	S. BORTZ
DATE:	3 FEB 2025
REVISION:	

SHEET DESCRIPTION: E&SC DETAILS

D03

JN: 20-13

VIRGINIA EROSION AND SEDIMENT MINIMUM STANDARDS

1. Permanent or temporary soil stabilization shall be applied to denuded areas within seven days after final grade is reached on any portion of the site. Temporary soil stabilization shall be applied within seven days to denuded areas that may not be at final grade but will remain dormant for longer than 14 days. Permanent stabilization shall be applied to areas that are to be left dormant for more than one year.
2. During construction of the project, soil stock piles and borrow areas shall be stabilized or protected with sediment trapping measures. The applicant is responsible for the temporary protection and permanent stabilization of all soil stockpiles on site as well as borrow areas and soil intentionally transported from the project site.
3. A permanent vegetative cover shall be established on denuded areas not otherwise permanently stabilized. Permanent vegetation shall not be considered established until a ground cover is achieved that is uniform, mature enough to survive and will inhibit erosion.
4. Sediment basins and traps, perimeter dikes, sediment barriers and other measures intended to trap sediment shall be constructed as a first step in any land–disturbing activity and shall be made functional before upslope land disturbance takes place.
5. Stabilization measures shall be applied to earthen structures such as dams, dikes and diversions immediately after installation.
6. Sediment traps and sediment basins shall be designed and constructed based upon the total drainage area to be served by the trap or basin.
   - 6.a. The minimum storage capacity of a sediment trap shall be 134 cubic yards per acre of drainage area and the trap shall only control drainage areas less than three acres.
   - 6.b. Surface runoff from disturbed areas that is comprised of flow from drainage areas greater than or equal to three acres shall be controlled by a sediment basin. The minimum storage capacity of a sediment basin shall be 134 cubic yards per acre of drainage area. The outfall system shall, at a minimum, maintain the structural integrity of the basin during a 25–year storm of 24–hour duration. Runoff coefficients used in runoff calculations shall correspond to a bare earth condition or those conditions expected to exist while the sediment basin is utilized.
7. Cut and fill slopes shall be designed and constructed in a manner that will minimize erosion. Slopes that are found to be eroding excessively within one year of permanent stabilization shall be provided with additional slope stabilizing measures until the problem is corrected.
8. Concentrated runoff shall not flow down cut or fill slopes unless contained within an adequate temporary or permanent channel, flume or slope drain structure.
9. Whenever water seeps from a slope face, adequate drainage or other protection shall be provided.
10. All storm sewer inlets that are made operable during construction shall be protected so that sediment–laden water cannot enter the conveyance system without first being filtered or otherwise treated to remove sediment.
11. Before newly constructed stormwater conveyance channels or pipes are made operational, adequate outlet protection and any required temporary or permanent channel lining shall be installed in both the conveyance channel and receiving channel.
12. When work in a live watercourse is performed, precautions shall be taken to minimize encroachment, control sediment transport and stabilize the work area to the greatest extent possible during construction. Nonerodible material shall be used for the construction of causeways and cofferdams. Earthen fill may be used for these structures if armored by nonerodible cover materials.
13. When a live watercourse must be crossed by construction vehicles more than twice in any six–month period, a temporary vehicular stream crossing constructed of nonerodible material shall be provided.
14. All applicable federal, state and local requirements pertaining to working in or crossing live watercourses shall be met.
15. The bed and banks of a watercourse shall be stabilized immediately after work in the watercourse is completed.
16. Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria:
    - 16.a. No more than 500 linear feet of trench may be opened at one time.
    - 16.b. Excavated material shall be placed on the uphill side of trenches.
    - 16.c. Effluent from dewatering operations shall be filtered or passed through an approved sediment trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off–site property.
    - 16.d. Material used for backfilling trenches shall be properly compacted in order to minimize erosion and promote stabilization.
    - 16.e. Restabilization shall be accomplished in accordance with this chapter.
    - 16.f. Applicable safety requirements shall be complied with.
17. Where construction vehicle access routes intersect paved or public roads, provisions shall be made to minimize the transport of sediment by vehicular tracking onto the paved surface. Where sediment is transported onto a paved or public road surface, the road surface shall be cleaned thoroughly at the end of each day. Sediment shall be removed from the roads by shoveling or sweeping and transported to a sediment control disposal area. Street washing shall be allowed only after sediment is removed in this manner. This provision shall apply to individual development lots as well as to larger land–disturbing activities.
18. All temporary erosion and sediment control measures shall be removed within 30 days after final site stabilization or after the temporary measures are no longer needed, unless otherwise authorized by the VESCP authority. Trapped sediment and the disturbed soil areas resulting from the disposition of temporary measures shall be permanently stabilized to prevent further erosion and sedimentation.
19. Properties and waterways downstream from development sites shall be protected from sediment deposition, erosion and damage due to increases in volume, velocity and peak flow rate of stormwater runoff for the stated frequency storm of 24–hour duration in accordance with the following standards and criteria. Stream restoration and relocation projects that incorporate natural channel design concepts are not man–made channels and shall be exempt from any flow rate capacity and velocity requirements for natural or man–made channels:
    - 19.a. Concentrated stormwater runoff leaving a development site shall be discharged directly into an adequate natural or man–made receiving channel, pipe or storm sewer system. For those sites where runoff is discharged into a pipe or pipe system, downstream stability analyses at the outfall of the pipe or pipe system shall be performed.
    - 19.b. Adequacy of all channels and pipes shall be verified in the following manner:
      - 19.b.1. The applicant shall demonstrate that the total drainage area to the point of analysis within the channel is 100 times greater than the contributing drainage area of the project in question; or
      - 19.b.2.
        - 19.b.2.a. Natural channels shall be analyzed by the use of a two–year storm to verify that stormwater will not overtop channel banks nor cause erosion of channel bed or banks;
        - 19.b.2.b. All previously constructed man–made channels shall be analyzed by the use of a 10–year storm to verify that stormwater will not overtop its banks and by the use of a two–year storm to demonstrate that stormwater will not cause erosion of channel bed or banks; and
        - 19.b.2.c. Pipes and storm sewer systems shall be analyzed by the use of a 10–year storm to verify that stormwater will be contained within the pipe or system.
    - 19.c. If existing natural receiving channels or previously constructed man–made channels or pipes are not adequate, the applicant shall:
      - 19.c.1. Improve the channels to a condition where a 10–year storm will not overtop the banks and a two–year storm will not cause erosion to the channel, the bed, or the banks;
      - 19.c.2. Improve the pipe or pipe system to a condition where the 10–year storm is contained within the appurtenances;
      - 19.c.3. Develop a site design that will not cause the pre–development peak runoff rate from a two–year storm to increase when runoff outfalls into a natural channel or will not cause the pre–development peak runoff rate from a 10–year storm to increase when runoff outfalls into a man–made channel; or
      - 19.c.4. Provide a combination of channel improvement, stormwater detention or other measures which is satisfactory to the VESCP authority to prevent downstream erosion.
    - 19.d. The applicant shall provide evidence of permission to make the improvements.
    - 19.e. All hydrologic analyses shall be based on the existing watershed characteristics and the ultimate development condition of the subject project.
    - 19.f. If the applicant chooses an option that includes stormwater detention, he shall obtain approval from the VESCP of a plan for maintenance of the detention facilities. The plan shall set forth the maintenance requirements of the facility and the person responsible for performing the maintenance.
    - 19.g. Outfall from a detention facility shall be discharged to a receiving channel, and energy dissipators shall be placed at the outfall of all detention facilities as necessary to provide a stabilized transition from the facility to the receiving channel.
    - 19.h. All on–site channels must be verified to be adequate.
    - 19.i. Increased volumes of sheet flows that may cause erosion or sedimentation on adjacent property shall be diverted to a stable outlet, adequate channel, pipe or pipe system, or to a detention facility.
    - 19.j. In applying these stormwater management criteria, individual lots or parcels in a residential, commercial or industrial development shall not be considered to be separate development projects. Instead, the development, as a whole, shall be considered to be a single development project. Hydrologic parameters that reflect the ultimate development condition shall be used in all engineering calculations.
    - 19.k. All measures used to protect properties and waterways shall be employed in a manner which minimizes impacts on the physical, chemical and biological integrity of rivers, streams and other waters of the state.
    - 19.l. Any plan approved prior to July 1, 2014, that provides for stormwater management that addresses any flow rate capacity and velocity requirements for natural or man–made channels shall satisfy the flow rate capacity and velocity requirements for natural or man–made channels if the practices are designed to (i) detain the water quality volume and to release it over 48 hours; (ii) detain and release over a 24–hour period the expected rainfall resulting from the one year, 24–hour storm; and (iii) reduce the allowable peak flow rate resulting from the 1.5, 2, and 10–year, 24–hour storms to a level that is less than or equal to the peak flow rate from the site assuming it was in a good forested condition, achieved through multiplication of the forested peak flow rate by a reduction factor that is equal to the runoff volume from the site when it was in a good forested condition divided by the runoff volume from the site in its proposed condition, and shall be exempt from any flow rate capacity and velocity requirements for natural or man–made channels as defined in any regulations promulgated pursuant to § 62.1–44.15:54 or 62.1–44.15:65 of the Act.
    - 19.m. For plans approved on and after July 1, 2014, the flow rate capacity and velocity requirements of § 62.1–44.15:52 A of the Act and this subsection shall be satisfied by compliance with water quantity requirements in the Stormwater Management Act (§ 62.1–44.15:24 et seq. of the Code of Virginia) and attendant regulations, unless such land–disturbing activities (i) are in accordance with provisions for time limits on applicability of approved design criteria in 9VAC25–870–47 or grandfathering in 9VAC25–870–48 of the Virginia Stormwater Management Program (VSMP) Regulation, in which case the flow rate capacity and velocity requirements of § 62.1–44.15:52 A of the Act shall apply, or (ii) are exempt pursuant to § 62.1–44.15:34 C 7 of the Act.
    - 19.n. Compliance with the water quantity minimum standards set out in 9VAC25–870–66 of the Virginia Stormwater Management Program (VSMP) Regulation shall be deemed to satisfy the requirements of this subdivision 19.

GRADING / EROSION CONTROL NOTES:

LINEAR DISTURBED AREA: 1,700 LF
EXPECTED DISTURBED AREA: 0.78 ACRES (34,000 SQFT)
NET IMPERVIOUS AREA CHANGE: NONE

PROJECT OWNER:
TOWN OF HURT
ATTN: GARY HODNETT, MAYOR
533 POCKET ROAD,
HURT VA, 24563

UTILITY CONTACT:
JOE SMITH – DIRECTOR OF UTILITIES
434–546–5435

PROJECT LOCATION: LAT: 37.091652 LONG: –79.311136

PROPERTY IMPACTED: PIN: 2545–68–3738
2545–67–9915
2556–42–2073

APPROVAL BLOCK

DEQ PLAN #_____

_____
Dept. of Environmental Quality

_____
Date

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION:
The purpose of this plan is to construct water line extensions and water booster station improvements along Main Street (route 29 Bus) and Ricky Van Shelton Drive in the town of Hurt, Virginia. The water booster station improvements will not increase the area of disturbance. The installation of 1,700 LF underground utilities will be a linear disturbance that does not significantly alter the predevelopment runoff characteristics of the area.

EXISTING SITE CONDITIONS:
The construction area runs along existing roadways for the bulk of the project. The disturbed areas drain into roadside ditches and ultimately into Reed Creek.

ADJACENT PROPERTY:
The adjacent areas of the construction site are mostly roadways, rural residential development, and undeveloped pastures. At one point the waterline parallels Big Survey Wildlife Management Area

OFF–SITE AREAS:
Any off–site area disturbed by the contractor will have to be protected with any required erosion control measures. There are no off–site areas planned at this time.

SOILS:
The soils of the pump station are Matneflat gravelly sandy loam.
The soils of this project area are primarily of the Hagerstown–Rock, Frederick, and Marbie–Wyrick complex.

CRITICAL EROSION AREAS:
The critical erosion areas will be those disturbed areas along the steep roadside ditches, and the two areas where the waterline leaves the roadside to allow a looping connection. The areas off the road will be covered in slope matting.

EROSION AND SEDIMENT CONTROL MEASURES:
The purpose of the control measures will be to prevent sediment deposition off the roadside ditches. Unless otherwise indicated, all vegetative and structural erosion and sediment control practices shall be constructed and maintained according to minimum standards and specifications of the DEQ handbook. The minimum standards of the VESCR shall be adhered to unless otherwise waived or approved by a variance.

COMPLY WITH MINIMUM STANDARD 16 (MS–16) FROM VESCH
MS–16: Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria:
a. No more than 500 linear feet of trench may be opened at one time.
b. Excavated material shall be placed on the uphill side of trenches.
c. Effluent from dewatering operations shall be filtered or passed through an approved sediment trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off–site property.
d. Material used for backfilling trenches shall be properly compacted in order to minimize erosion and promote stabilization.
e. Restabilization shall be accomplished in accordance with these regulations.
f. Applicable safety regulations shall be complied with.

STRUCTURAL PRACTICES:
1. Construction Entrance – 3.02: Install construction entrance at any marshal locations as required by the plans and Wythe County Erosion Control department
2. Silt Fence Barrier– 3.05: Install silt fence downstream of disturbed areas if not in compliance with MS–16 or as required due to poor stabilization of surface.
3. Storm Drain Inlet Protection – 3.07: Install inlet protection over storm grate and curb inlets as shown on the plan.
4. Culvert Inlet Protection – 3.08: Install inlet protection at culverts as shown on the plan.
5. Rip rap – 3.19: Install rip rap for slope stabilization as shown on plans.
6. Check Dam – 3.20: Install rock check dams along drainage ditches as shown on the plan.
7. Erosion Control Matting (Treatment 1/VDOT EC 2)– 3.36: Install matting in disturbed areas to ensure permanent vegetative stabilization. Install within ditches when flow line of the ditch is disturbed by construction.

VEGETATIVE PRACTICES:
1. Topsoiling – C–SSM–02: Topsoil shall be stripped from all the trench area and respread after backfill of the trench. Approval of the inspector will be required for the location of any stockpiles
2. Temporary and Permanent Seeding (C–SSM–09, C–SSM–10): Permanent or temporary seeding shall be applied to any denuded areas left dormant within 15 days of disturbance. Seed mix shall depend upon the recommendations of the VESC Handbook and the time of year.
3. Mulching – C–SSM–11: Mulch shall be applied as required to all areas with grass seeding or landscape plantings.
4. Soil Stabilization Blankets and Matting– C–SSM–05: Install matting as shown on steep slopes and to revegetate stream banks as labeled on the plans.

MANAGEMENT STRATEGIES:
1. Construction will be sequenced so that grading operations can begin and end as quickly as possible.
2. Runoff from disturbed areas not stabilized per MS–16 will be directed into sediment traps, check dams, or through silt fence.
3. Temporary seeding or other stabilization will follow immediately after backfill of trench.
4. The job superintendent will be responsible for the installation and maintenance of all erosion and sediment control practices.
5. After achieving adequate stabilization, the select temporary E&S controls will be cleaned up and removed. The inspector will determine when measures may be removed.

CONSTRUCTION SCHEDULE:
1. Install all temporary measures as practical.
2. Excavate trench, install pipe, and backfill trench.
3. Stabilize trench in accordance with MS–16.
4. Prepare stream crossings in accordance with USC.
5. Final grading and permanent stabilization.

All temporary E&S controls will remain in place until specified by the Engineer.

PERMANENT STABILIZATION:
All areas disturbed by construction and not paved will be stabilized with permanent seeding as soon as final grading of each area is complete. Seeding mix will consist of seeds as required by standard 3.32. Mulch per standard 3.35 will be used to protect permanent seeding areas.

MAINTENANCE:
All erosion and sediment control measures will be checked weekly and after each significant rainfall. The following areas will be checked in particular.
1. Stabilized areas will be checked weekly to ensure that the surface coating (grass seed, stone, asphalt) is sufficient to minimize erosion runoff.
2. The silt fence barrier will be checked regularly for undermining or deterioration of the fabric. Sediment shall be removed when the level of sediment deposition reaches half way to the top of the barrier.
3. The seeded areas will be checked regularly to ensure that a good stand of grass is maintained. Areas should be fertilized and re–seeded as necessary.

STORMWATER MANAGEMENT:
The linear portion of this plan meets the requirements of GM15–2003 criteria and a SWM plan waiver and declination to permit is requested.

The booster station improvements disturbs no new area. Stormwater Quantity compliance is accomplished through 9VAC25–870–66 D. Stormwater Quality compliance will be met through nutrient credit purchasing. See the VRRM Compliance sketch and spreadsheet included in this report.

SWPP ADDITIONAL INFORMATION:
CONTRACTOR WILL COMPLY WITH ALL THE PROVISIONS OF THE VSMP AND/OR SWPP PERMIT INCLUDING INSPECTION, MAINTENANCE, AND REPORTING REQUIREMENTS.

Possible additional pollution sources:
Vehicle fueling
Oil seals on pumps
Concrete curing compounds

Construction and Waste materials to be stored on–site
Pipe –no discharge associated
Bedding and base stone–protected with silt fence

Contractor may not discharge or waste materials into water bodies.

Structural erosion control methods and practices have been selected based on availability to the contractor, cost of construction & maintenance, and practical use in this particular application.

Contractors will comply with the following GM15–2003 Requirements for the waterline work:

Contractor will comply with the following requirements:
- The project is managed so that less than one (1) acre of land disturbance occurs on a daily basis;
- The disturbed land where work has been completed is adequately stabilized on a daily basis;
- The environment is protected from erosion and sedimentation damage associated with the land–disturbing activity
- The construction activity operator designs, installs, implements, and maintains pollution prevention measures to:
  - o Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters;
  - oMinimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on–site to precipitation and to stormwater;
  - o Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures;
  - oProhibit the discharge of wastewater from the washout of concrete;
  - o Prohibit the discharge of wastewater from the washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials; and
  - o Prohibit the discharge of fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance.
- The project does not significantly alter the predevelopment runoff characteristics of the land surface after the completion of construction and final stabilization.

C–SSM–10–6 SITE–SPECIFIC SEEDING MIXTURES FOR PIEDMONT AREA

SITE CONDITION	SEED MIX		APPLICATION RATE (POUNDS PER ACRE)
MINIMUM–CARE LAWN COMMERCIAL OR RESIDENTIAL	TURF–TYPE TALL FESCUE	90–100%	150–200
	IMPROVED PERENNIAL RYEGRASS*	0–10%	
	KENTUCKY BLUEGRASS	0–10%	
HIGH–MAINTENANCE LAWN	IMPROVED VCIA TURF–TYPE TALL FESCUE		150–200
GENERAL SLOPE (3H:1V OR LESS)	TALL FESCUE****		50–75
	RED TOP AND/OR HARD FESCUE		10–20
	WHITE CLOVER AND/OR BIRDSFOOT TREFOIL***		10–20
	SEASONAL NURSE CROP **		30–40
LOW–MAINTENANCE SLOPE (> 3:1) OR INACCESSIBLE AREA***	TALL FESCUE****		50–75
	RED TOP OR HARD FESCUE		5–10
	ANNUAL LESPEDEZA		10–15
	WHITE CLOVER AND/OR BIRDSFOOT TREFOIL***		15–20
	SEASONAL NURSE/COVER CROP**		20–30

* PERENNIAL RYEGRASS WILL GERMINATE FASTER AND AT LOWER SOIL TEMPERATURES THAN FESCUE, THEREBY PROVIDING COVER AND EROSION RESISTANCE FOR SEEDBED.

** USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:

MARCH 1 THROUGH MAY 15 – ANNUAL/CEREAL RYE

MAY 16 THROUGH AUGUST 15 – FOXTAIL/GERMAN MILLET

AUGUST 16 THROUGH FEBRUARY 28 – ANNUAL/CEREAL RYE

*** ALL LEGUME SEED MUST BE PROPERLY INOCULATED. LEGUMES RECOMMENDED UNLESS PERIODIC N FERTILIZATION MAINTENANCE INTENDED.

FLATPEA AT 20 LBS/ACRE MAY BE UTILIZED WHERE WARRANTED. ALL LEGUME SEED MUST BE PROPERLY INOCULATED. WEEPING LOVEGRASS MAY ALSO BE INCLUDED IN ANY SLOPE OR LOW–MAINTENANCE MIXTURE DURING WARMER SEEDING PERIODS; ADD 10 TO 20 LBS/ACRE IN MIXES.

**** INCREASE SEEDING RATE IF KENTUCKY 31 IS USED RATHER THAN VCIA/VDOT IMPROVED VARIETIES.

NOTE: SEED MIXES ARE SUGGESTED AND SUBJECT TO MODIFICATION BASED ON SITE–SPECIFIC CONDITIONS BY AN AGRONOMIST OR OTHER QUALIFIED REVEGETATION PROFESSIONALS. ALL SEED RATES EXPRESSED AS PLS (PURE LIVE SEED; SEE TABLE C–SSM–10–9).

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REVIEW BY: S. BORTZ
DATE: 3 FEB 2025
REVISION:

SHEET DESCRIPTION: E&SC NARRATIVE

D04

JN: 20-13