

LEGEND

EXISTING	
	PROPERTY LINE
	RIGHT-OF-WAY
	EASEMENT
	INDEX CONTOUR
	MINOR CONTOUR
	TREE LINE
	DRAINAGE DITCH
	FENCE - CHAIN LINK
	PAVED ROAD/DRIVE
	GRAVEL ROAD/DRIVE
	WATER
	DRAIN
	STORM SEWER
	UNDERGROUND ELECTRIC
	UNDERGROUND COMMUNICATION
	OVERHEAD WIRE
	SANITARY SEWER
	GAS
	HYDRANT
	CURB STOP
	VALVE
	MANHOLE
	SURVEY STATION - GPS
	BENCHMARK
	UTILITY POLE
	GUY POLE / WIRE
	COMMUNICATION BOX
	CATCH BASIN
	SIGN - DOUBLE POST
	SIGN - SINGLE POST
	MAIL BOX
	LIGHT POLE
	LUMINAIRE
	CONIFEROUS TREE
	DECIDUOUS TREE
	SHRUB
	BOULDER
PROPOSED	
	TEMP CONSTRUCTION EASEMENT
	INDEX CONTOUR
	MINOR CONTOUR
	PAVED ROAD/DRIVE
	WATER
	STORM SEWER
	SANITARY SEWER
	CURB STOP
	VALVE
	MANHOLE
	CATCH BASIN
	TEST PIT
	HYDRANT
	ELECTRICAL PANEL

BRISTOL, VT - PINE STREET

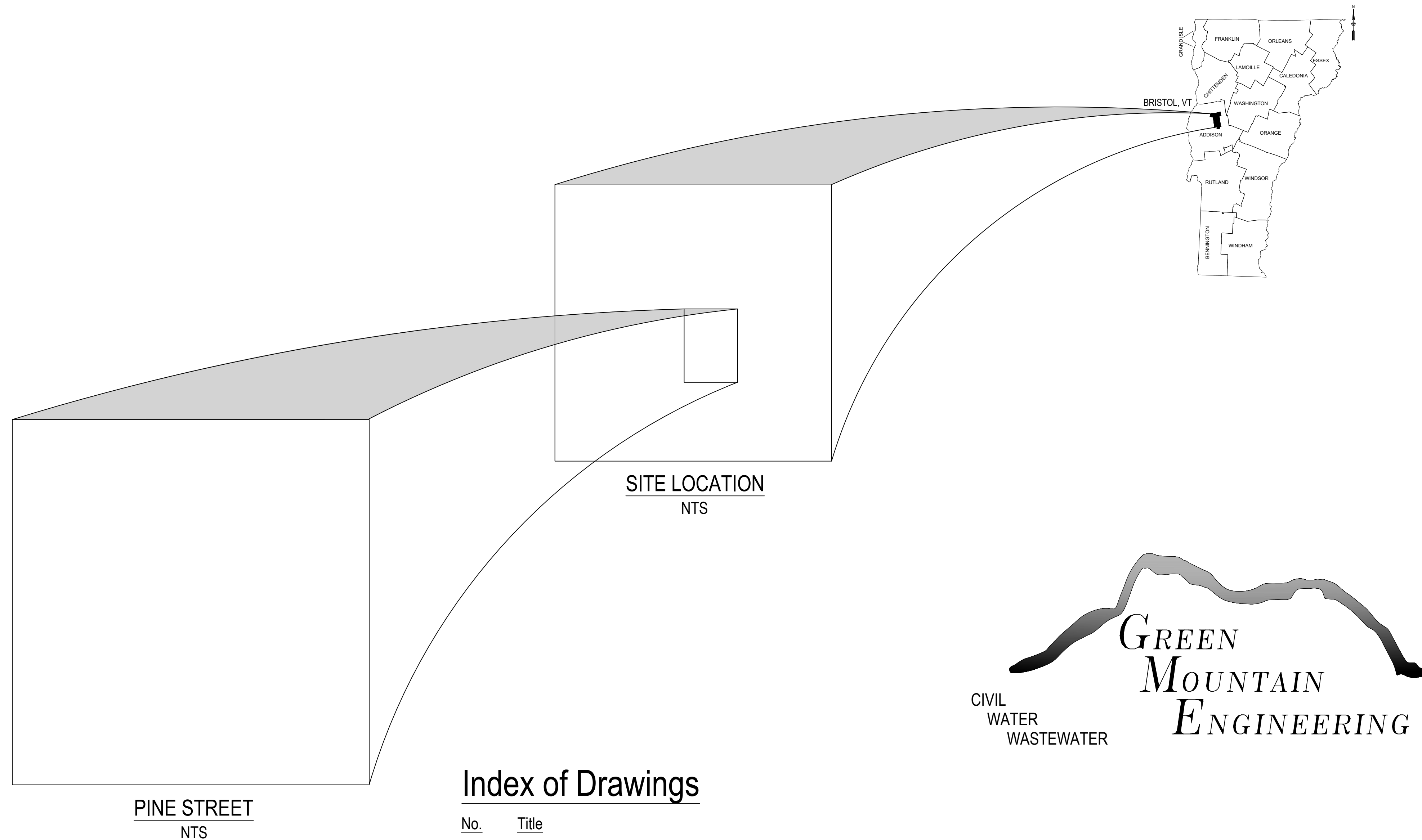
WATERLINE REPLACEMENT

TOWN OF BRISTOL, VERMONT

STATE OF VT DWSRF FUNDING LOAN # RF3-XXX

GME JOB NO. 29-021

XXXX 2022



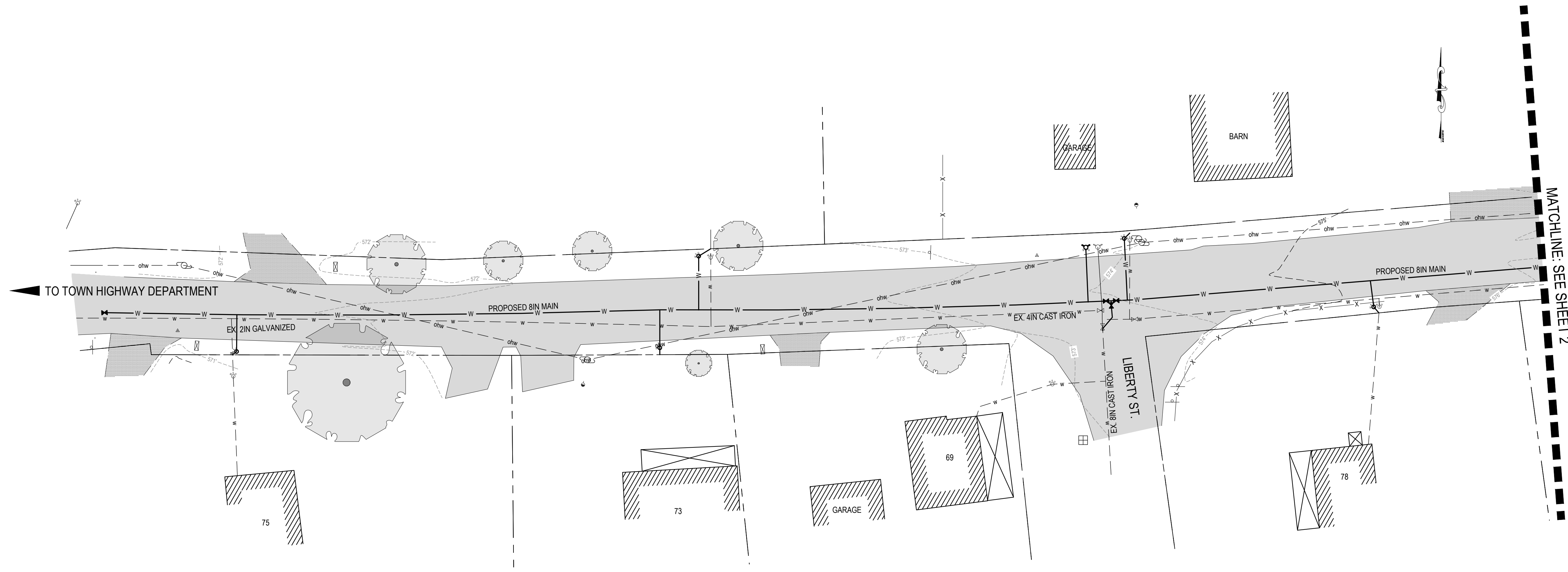
Index of Drawings

No.	Title
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6	Proposed Stormwater Improvements (2 of 2)
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8	Proposed Grading Plan (2 of 2)
9	Water System Details
10	Sanitary Sewer System Details
11	Stormwater System Details
12	Miscellaneous Construction Details

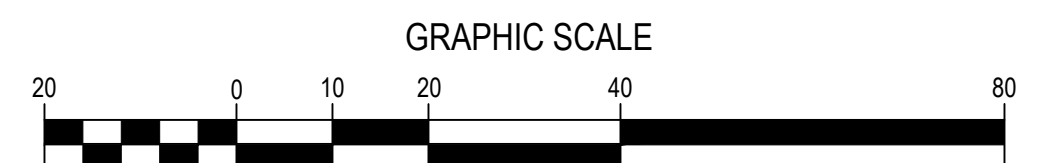
WILLISTON VERMONT LOCATION
1438 SOUTH BROWNELL ROAD (PHYSICAL)
P.O. BOX 159 (MAILING)
WILLISTON, VERMONT 05495
PHONE: (802)862-5590
FAX: (802)862-7598
EMAIL: AHUIZENGA@GMEINC.BIZ



<p>GREEN MOUNTAIN ENGINEERING CIVIL WATER WASTEWATER</p>	<p>1438 SOUTH BROWNELL ROAD WILLISTON, VT 05495 PHONE: (802)862-5590 FAX: (802)862-7598</p>
<p>DRAFT PRELIMINARY PROGRESS PRINT NOT FOR CONSTRUCTION</p>	
<p>COVER AND LEGEND</p>	<p>PINE STREET WATER LINE REPLACEMENT TOWN OF BRISTOL, VERMONT</p>
<p>DESIGNED: AH</p>	<p>PLANT DATE: 11/05/21</p>
<p>DRAWN: JJB / BPC</p>	<p>SCALE: 1" = 20'</p>
<p>CHECKED: AH</p>	<p>DATE: NOV. 2020</p>
<p>PROJECT NO. 29-021</p>	
<p>DRAWING NO. 00</p>	
<p>SHEET 2 OF XX</p>	



EXISTING CONDITIONS SITE PLAN
SCALE: 1"=20'



NOTE:
THE PROPERTY LINES, EASEMENTS, AND OTHER REAL PROPERTY DESCRIPTIONS PROVIDED IN THIS PERMIT APPLICATION ARE FOR THE USE OF THE ANR ONLY. THEY DO NOT DEFINE LEGAL RIGHTS OR MEET LEGAL REQUIREMENTS FOR A LAND SURVEY AS DESCRIBED IN 26V.S.A. S2502(4), AND SHALL NOT BE USED IN LIEU OF A SURVEY AS THE BASIS OF ANY LAND TRANSFER OR ESTABLISHMENT OF ANY PROPERTY RIGHT.

NOTE:
THE DEPICTED RIGHT-OF-WAY BOUNDARY IS THE ASSUMED EDGE OF RIGHT-OF-WAY FOR LOVERS LANE. THE PROPERTY LINES, EASEMENTS AND OTHER PROPERTY DESCRIPTIONS PROVIDED IN THESE PLANS ARE APPROXIMATE AND ARE FOR THE USE BY THE TOWN OF BRISTOL FOR PLANNING PURPOSES ONLY.

REV.	DATE	DESCRIPTION	BY

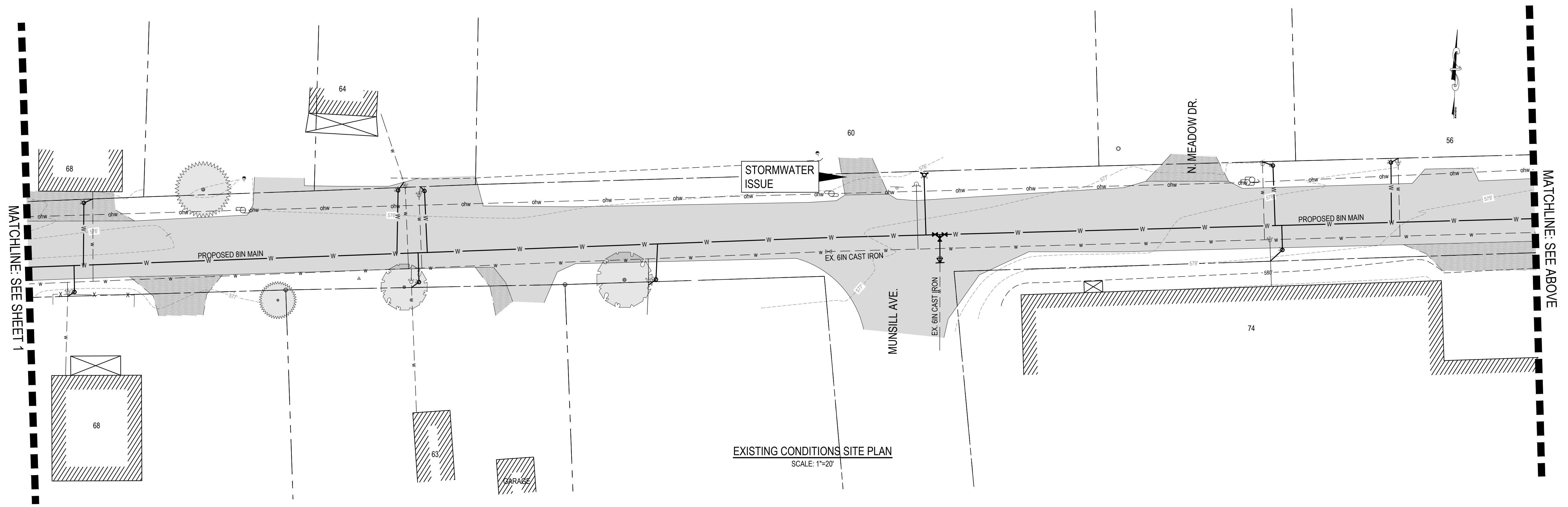
143 SOUTH BIRCHMOUNT ROAD
WALLSTON VERMONT 05640
PHONE: (802) 862-5590
FAX: (802) 862-7598

GREEN MOUNTAIN ENGINEERING
CIVIL WATER WASTEWATER

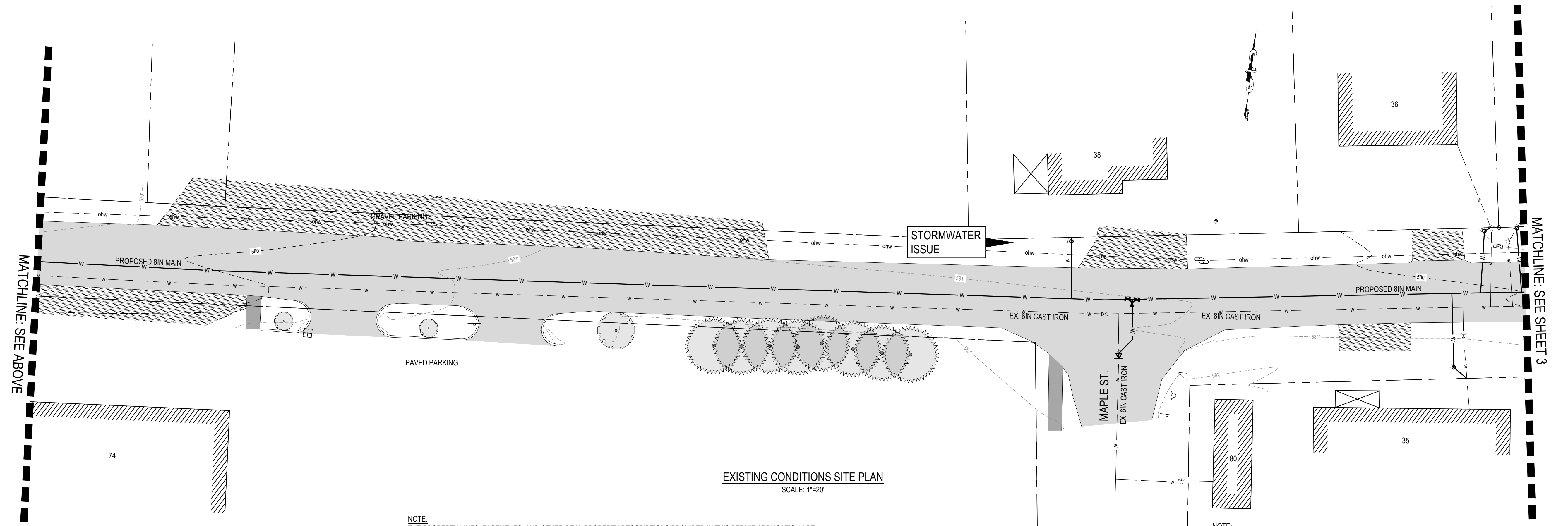
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DRAWING TITLE EXISTING CONDITIONS SITE PLAN	
PROJECT PINE STREET WATER LINE REPLACEMENT	CLIENT TOWN OF BRISTOL, VERMONT
DESIGNED AH	PILOT DATE 11/05/21
DRAWN JJB	SCALE 1" = 20'
CHECKED AH	DATE NOV. 2021
PROJECT NO. 29-021	
DRAWING NO. 1	
SHEET 1 OF XX	

FILE S:\ONE PROJECT FILES\29-021\BRISTOL WATERLINE REPLACEMENT\FIG. 180\DRAWING\2021\DRAWING\PINE STREET - BARNY TWEED.DWG



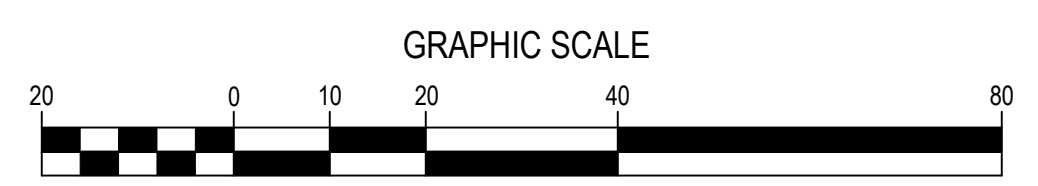
EXISTING CONDITIONS SITE PLAN
SCALE: 1"=20'



EXISTING CONDITIONS SITE PLAN
SCALE: 1"=20'

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REV.	DATE	DESCRIPTION	BY

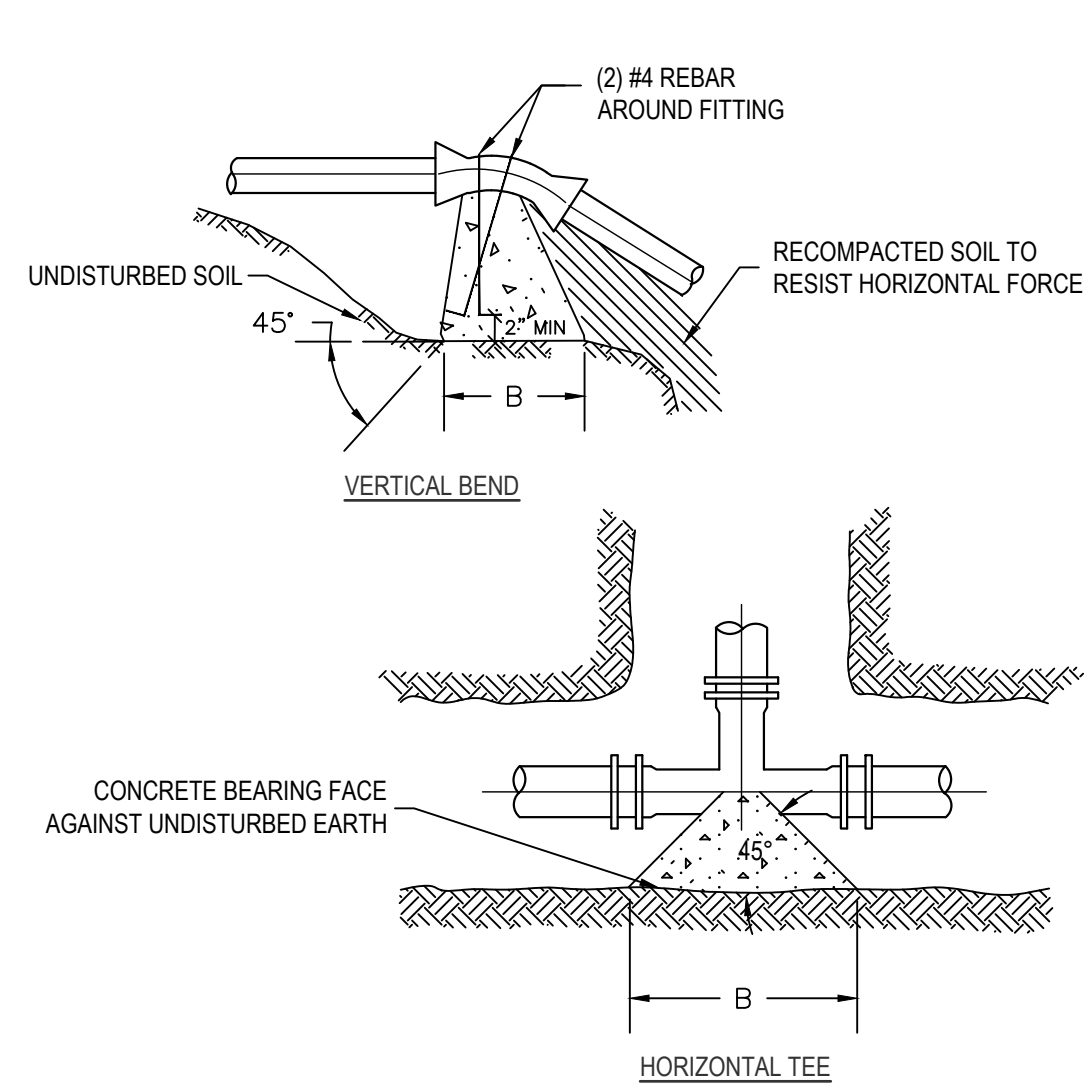
1438 SOUTH BURNHILL ROAD
WALLINGTON, VERMONT 05490
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GREEN MOUNTAIN ENGINEERING
CIVIL WATER WASTEWATER

EXISTING CONDITIONS
SITE PLAN

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NOT FOR CONSTRUCTION

DESIGNED	AH	PLLOT DATE	11/05/21
DRAWN	JJB	SCALE	1" = 20'
CHECKED	AH	DATE	NOV. 2021
PROJECT NO. 29-021			
DRAWING NO. 2			



**TYPICAL BEARING THRUST BLOCK
DETAILS AND SECTION**
SCALE: NONE

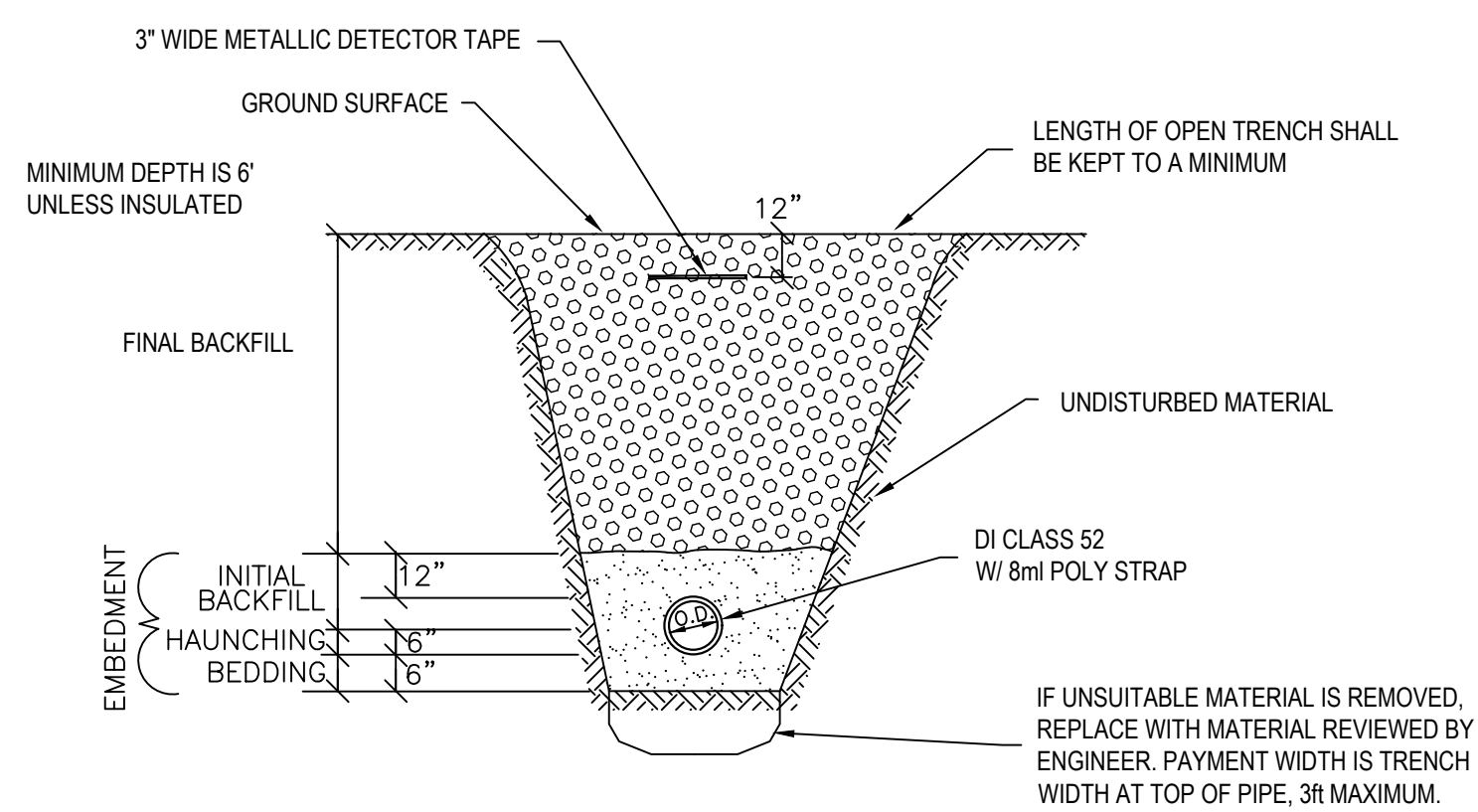
- NOTES:
 1. ALL THRUST BLOCKS SHALL BE CLASS "B" CONCRETE, SEE SPEC. SECTION 03300
 2. CONCRETE SHALL BE PLACED SO AS NOT TO HAMPER THE FUTURE REMOVAL OF A FITTING.
 3. WRAP FITTINGS IN (2) LAYERS POLYETHYLENE PLASTIC SHEET PRIOR TO FORMING AND POURING THRUST BLOCK.

**MINIMUM BEARING FACE 'HEIGHTS AND WIDTHS'
FOR CONCRETE THRUST BLOCKS (TEST PRESSURE = 250 PSI)**
HEIGHT (H) AND WIDTH (B) OF BEARING FACE FOR FITTING TO BE RESTRAINED

BEARING FACE MATERIALS 2	PIPELINE SIZE	11-1/4" BEND		22-1/2" BEND		45° BEND		90° BEND		TEES & PLUGS		WYES	
		H	B	H	B	H	B	H	B	H	B	H	B
WELL GRADED SANDS AND GRAVEL	4" & 6"	1.30	1.30	1.30	1.30	1.30	1.95	1.65	2.60	1.30	2.30	1.30	1.95
	8"	1.30	1.30	1.30	1.30	1.65	2.60	1.95	3.55	1.95	2.60	1.65	2.60
	10"	1.30	1.30	1.65	1.95	1.95	3.25	2.60	4.20	2.60	2.90	1.95	3.25
	12"	1.30	1.95	1.65	2.60	2.60	3.25	2.90	5.20	2.90	3.90	2.60	3.25
	16"	1.30	1.95	1.95	2.60	2.60	4.20	3.90	5.20	3.25	4.55	2.60	4.20
SILT	4" & 6"	1.30	1.30	1.30	1.30	1.30	2.30	1.65	3.25	1.95	1.95	1.30	2.30
	8"	1.30	1.30	1.30	1.95	1.95	2.60	2.30	4.20	2.30	2.90	1.95	2.60
	10"	1.30	1.65	1.65	2.60	2.30	3.55	3.25	4.55	2.30	4.55	2.30	3.55
	12"	1.30	2.30	2.30	2.60	2.30	5.20	3.25	6.45	3.25	4.55	2.30	5.20
	16"	1.30	1.95	2.30	3.60	2.30	5.20	4.20	6.45	3.55	5.50	2.65	5.20
COHESIVE GRANULAR	4" & 6"	1.30	1.30	1.30	1.30	1.30	2.60	1.95	3.25	1.95	2.30	1.30	2.60
	8"	1.30	1.30	1.30	2.30	1.95	2.90	2.60	4.20	1.95	3.90	1.95	2.90
	10"	1.30	1.95	1.65	2.90	2.60	3.55	3.25	5.20	2.60	4.55	2.60	3.55
	12"	1.30	2.60	2.30	2.90	2.60	5.20	3.90	6.15	3.25	5.20	2.60	5.20
	16"	1.30	1.95	2.30	3.90	3.25	5.50	4.55	7.10	3.90	6.85	3.25	5.50
CLAY	4" & 6"	1.30	1.30	1.30	1.30	1.30	2.60	2.30	2.60	1.65	2.60	1.30	2.60
	8"	1.30	1.30	1.30	2.30	1.95	2.90	2.30	4.55	1.95	3.90	1.95	2.90
	10"	1.30	1.95	1.60	2.90	2.30	3.90	2.90	5.50	2.90	3.90	2.30	3.90
	12"	1.30	2.60	1.95	3.25	2.60	4.85	3.55	6.45	2.90	5.50	2.60	4.85
	16"	1.30	1.95	2.30	3.90	3.25	5.20	4.20	7.45	3.90	6.85	3.25	5.20

1. HYDROSTATIC AND LEAKAGE TEST PRESSURE PER SPECIFICATIONS.
 2. UNDISTURBED EARTH: SIDE OF TRENCH OR OTHER EXCAVATION.
 3. SEE DIAGRAM FOR H AND B LOCATION REFERENCE: MEASURED IN FEET.

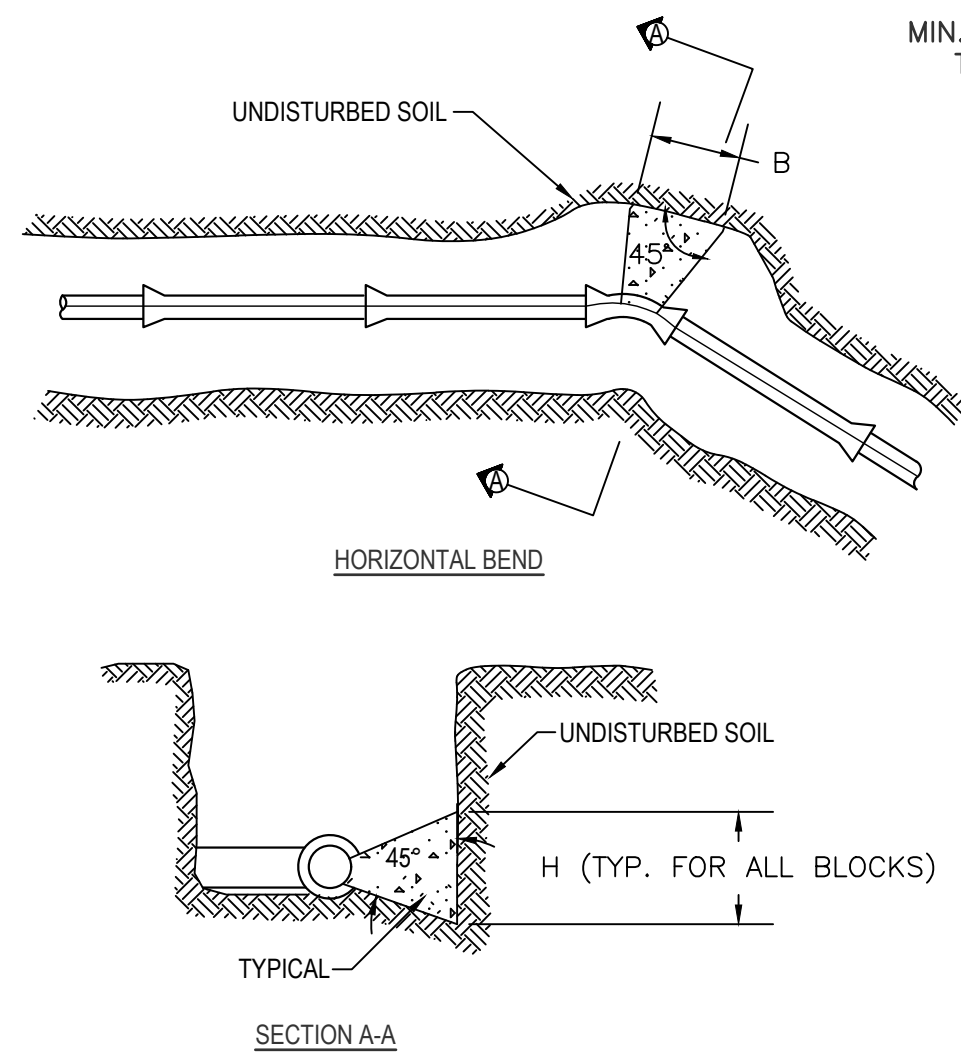
- NOTE: CONTRACTOR MAY SUBMIT OPTIONAL THRUST RESTRAINT DEVICES, SUCH AS "GRIPPER RINGS" OR RETAINER GLANDS, FOR REVIEW BY ENGINEER IN LIEU OF, OR IN ADDITION TO, THE THRUST BLOCK DETAILS SHOWN ABOVE.



**TYPICAL TRENCH DETAIL
BURIED WATER PIPE**
SCALE: NONE

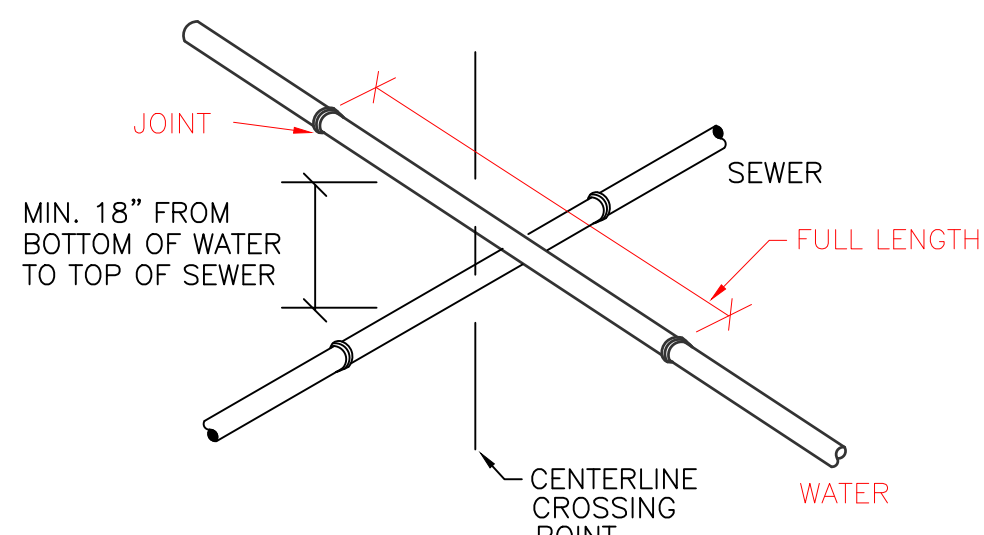
TRENCH NOTES

- NO MECHANICAL TAMPERS SHALL BE USED DIRECTLY OVER PIPE TO INSURE THE PIPE IS NOT DAMAGED.
- ROCK EXCAVATION PAY LIMITS: PIPE O.D. PLUS TWO FEET, MAX 3' WIDE AND PIPE O.D. PLUS 1' FOR DEPTH
- EMBEDMENT MATERIALS IN AREAS OF UNSUITABLE NATIVE SOILS SHALL BE TESTED AND SHOWN BY THE CONTRACTOR TO MEET REQUIREMENTS OF SPEC. SECTION 02220. MATERIALS SHALL BE PLACED IN MAXIMUM 6in LAYERS AND COMPACTED TO ACHIEVE NOT LESS THAN 90% (95% IN ROADS) OF MAXIMUM DENSITY (STANDARD PROCTOR DENSITY).
- FINAL BACKFILL (SUITABLE MATERIALS) SHALL NOT CONTAIN ANY STONES MORE THAN 12in IN LARGEST DIMENSION, BE GREATER THAN 50lbs, OR CONTAIN ANY FROZEN, WET, OR ORGANIC MATERIALS.
- WIDTH OF TRENCH AT SURFACE SHALL BE KEPT AS NARROW AS PRACTICAL.
- PAYMENT UNDER THE ITEMS OF WORK SPECIFIED IN THE CONTRACT DOCUMENTS IS TO THE LIMITS SHOWN.
- TRENCHES SHALL BE COMPLETELY DEWATERED PRIOR TO PLACEMENT OF PIPE BEDDING MATERIAL AND BE KEPT DEWATERED DURING INSTALLATION OF PIPE, EMBEDMENT MATERIALS, AND INITIAL BACKFILL.
- PERMANENT SHEETING SHALL BE INSTALLED ONLY IF REQUIRED BY JOB CONDITIONS. NOTIFY ENGINEER OF ANY PERMANENT SHEETING TO BE LEFT IN PLACE.
- SEE SPECIFICATIONS SECTION 02220; EXCAVATION, BEDDING, BACKFILL AND FILL FOR MORE COMPLETE MATERIALS SPECIFICATION.



TYPICAL HOUSE CONNECTION DETAIL (NEW)
SCALE: NONE

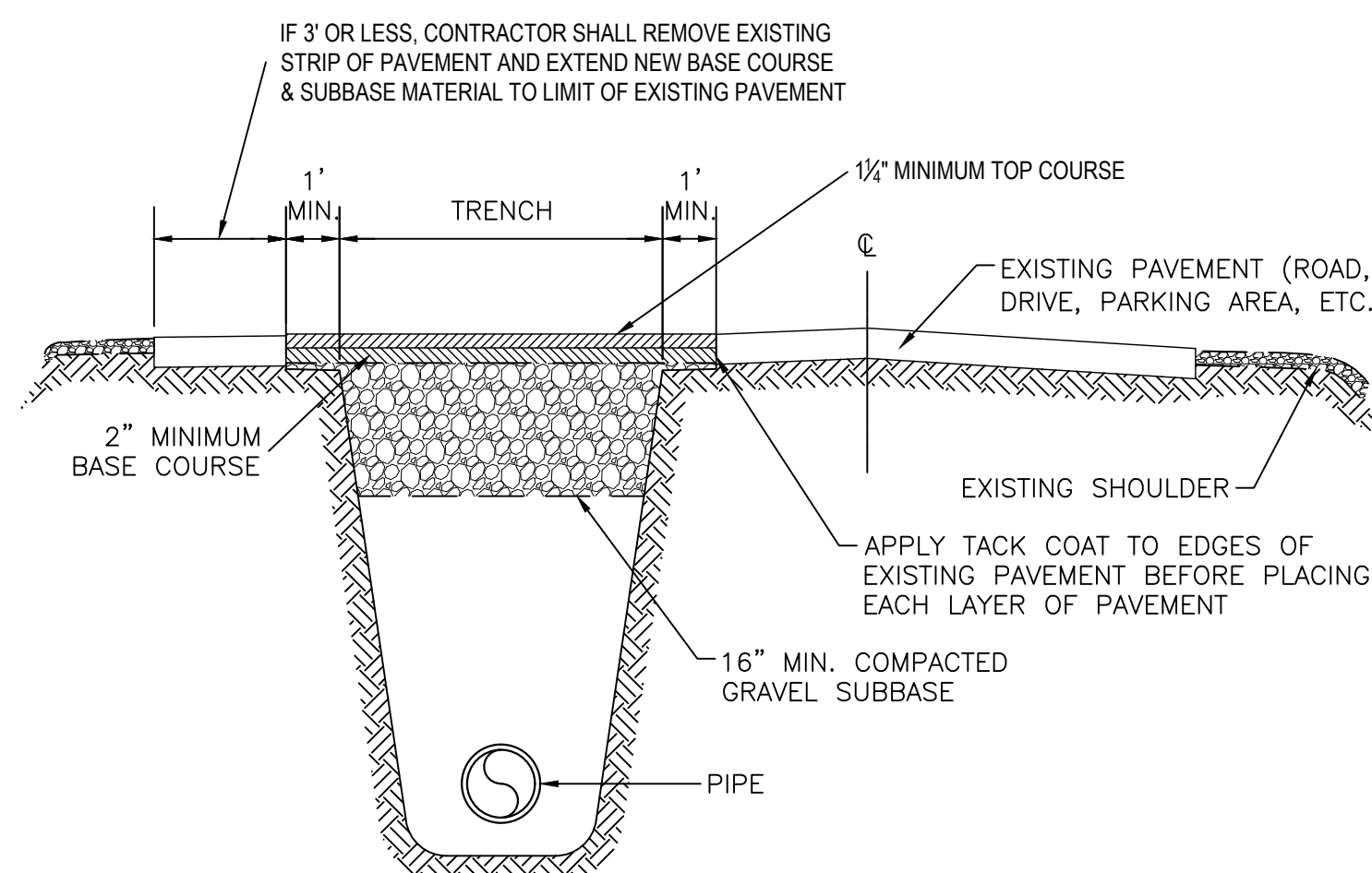
- NOTES:
 1. WHEN USING PVC WATERMAIN PROVIDE SERVICE CONNECTION SADDLES FOR SERVICE CONNECTION. SEE SPECIFICATIONS
 2. TEFLON THREAD SEALANT TAPE WILL BE USED ON ALL CORPORATION STOPS PRIOR TO INSERTION.
 a.) SPIRAL WRAP COMPLETELY COVERING THE THREAD AREA WITH TWO WRAPS.
 b.) PIPE DOPE OR OTHER LIQUID THREAD SEALANTS ARE NOT ACCEPTABLE. LEAVE ONE TO THREE THREADS SHOWING OUTSIDE OF PIPE.
 3. CORPORATION STOPS SHALL NOT BE PLACED LESS THAN 1' APART ALONG PIPE.



NOTES:

- NEW WATER MAINS SHALL BE LAID AT LEAST 10' FROM EXISTING SEWER LINES WHEN RUNNING PARALLEL AND AT SAME ELEVATION.
- WHERE A NEW WATER MAIN CROSSES OVER AN EXISTING SEWER LINE THERE WILL BE A MINIMUM VERTICAL SEPARATION DISTANCE OF 18" BETWEEN THE OUTSIDE OF THE WATER AND THE OUTSIDE OF THE SEWER. AT CROSSINGS, ONE FULL LENGTH OF WATER PIPE SHALL BE LOCATED SO AS BOTH JOINTS ARE AS FAR FROM THE SEWER AS POSSIBLE.
- WHERE A NEW WATER MAIN CROSSES UNDER AN EXISTING SEWER LINE THERE WILL BE A MINIMUM VERTICAL SEPARATION DISTANCE OF 18" BETWEEN THE OUTSIDE OF THE WATER AND THE OUTSIDE OF THE SEWER. AT CROSSINGS, ONE FULL LENGTH OF WATER PIPE SHALL BE LOCATED SO AS BOTH JOINTS ARE AS FAR FROM THE SEWER AS POSSIBLE. BOTH JOINTS OF THE CROSSING WATER LINE SECTION SHALL BE CONCRETE ENCASED AND THE SEWER PROPERLY SUPPORTED.

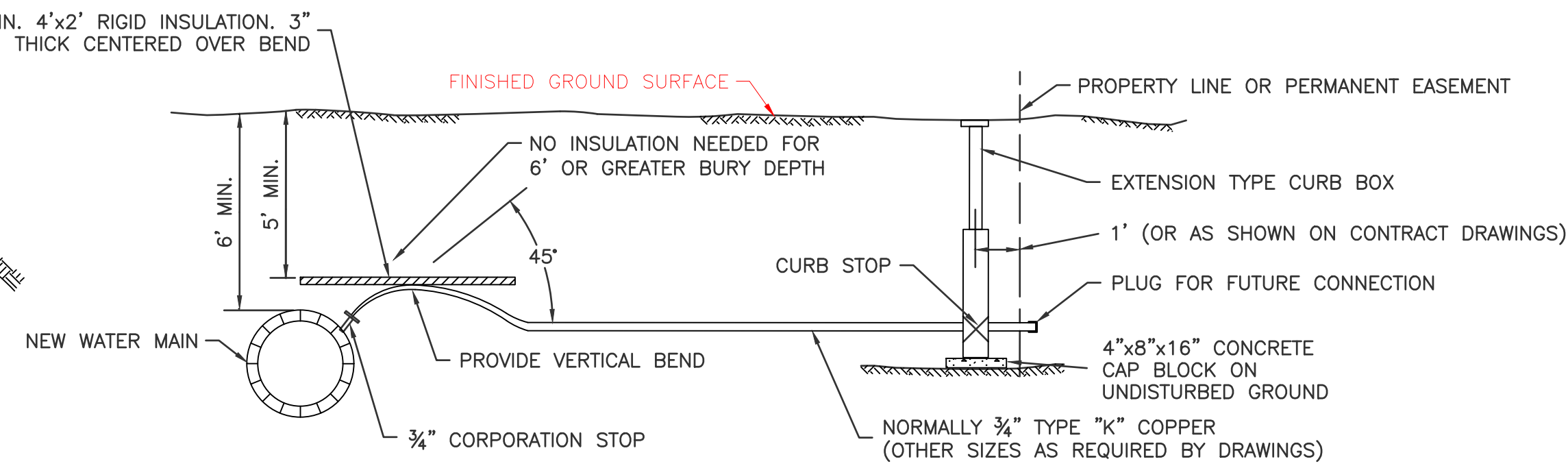
WATER/SEWER SEPARATION DETAIL
SCALE: NONE



TYPICAL TRENCH PAVEMENT REPAIR
SCALE: NONE

NOTES:

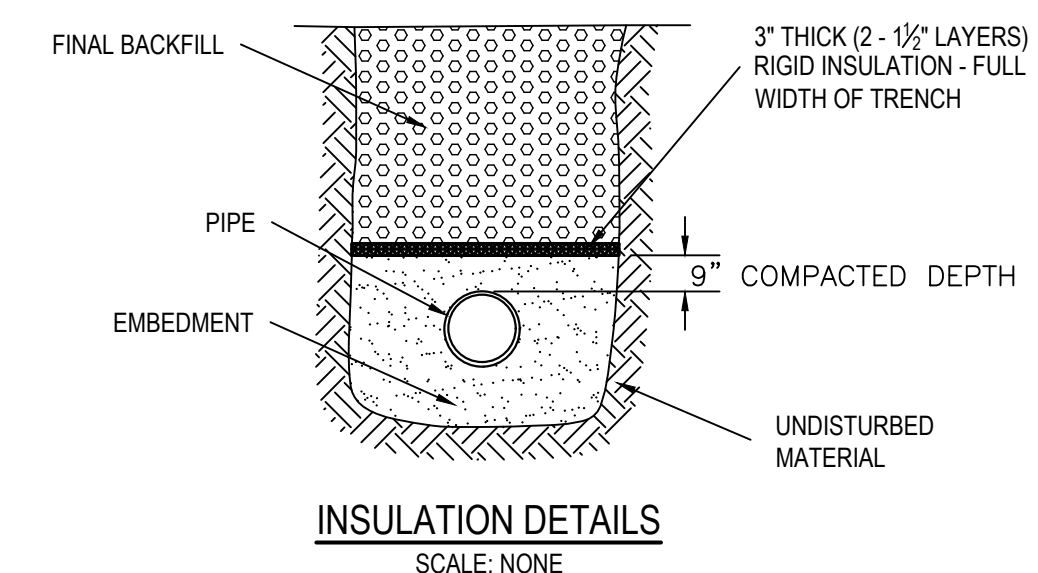
- ALL PAVEMENT SHALL HAVE A MINIMUM COMPACTED THICKNESS AS SHOWN.
- KEEP TRENCH SURFACE AS NARROW AS PRACTICAL.
- THE EDGE OF EXISTING PAVEMENT SHALL BE TRIMMED STRAIGHT AND SQUARE PRIOR TO PLACING EACH LAYER OF PAVEMENT. A MINIMUM OF 1' SHALL BE TRIMMED BACK FROM THE TOP EDGE OF THE TRENCH.
- SEE SPECIFICATION SECTION 02510 FOR FURTHER INFORMATION.
- ALL EXISTING ROAD LINES SHALL BE RE-MARKED AS NECESSARY.
- SHOULDER SHALL BE REPLACED IF NECESSARY TO AS IT EXISTED PRIOR TO CONSTRUCTION.



**TRENCH GRAVEL ROAD
OR DRIVE REPAIR**
SCALE: NONE

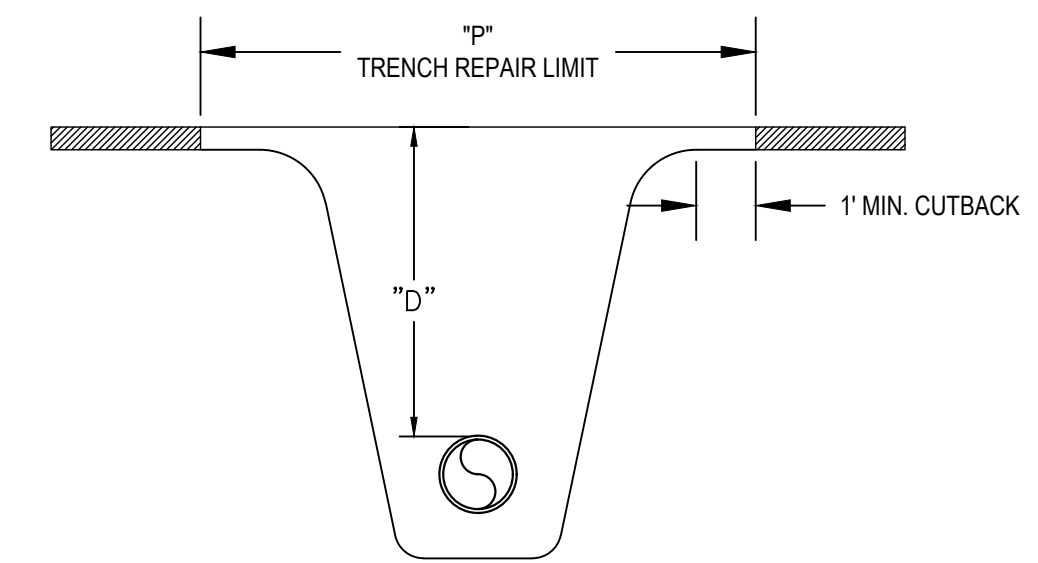
NOTES:

- CONTRACTOR TO INSTALL ROAD CONSTRUCTION FABRIC TO MATCH EXISTING ROAD. OVERLAP CUT EDGES OF FABRIC BY 12" MIN.
- KEEP TRENCH SURFACE AS NARROW AS PRACTICAL.
- SEE SPECIFICATION SECTION 02510 FOR MORE INFORMATION



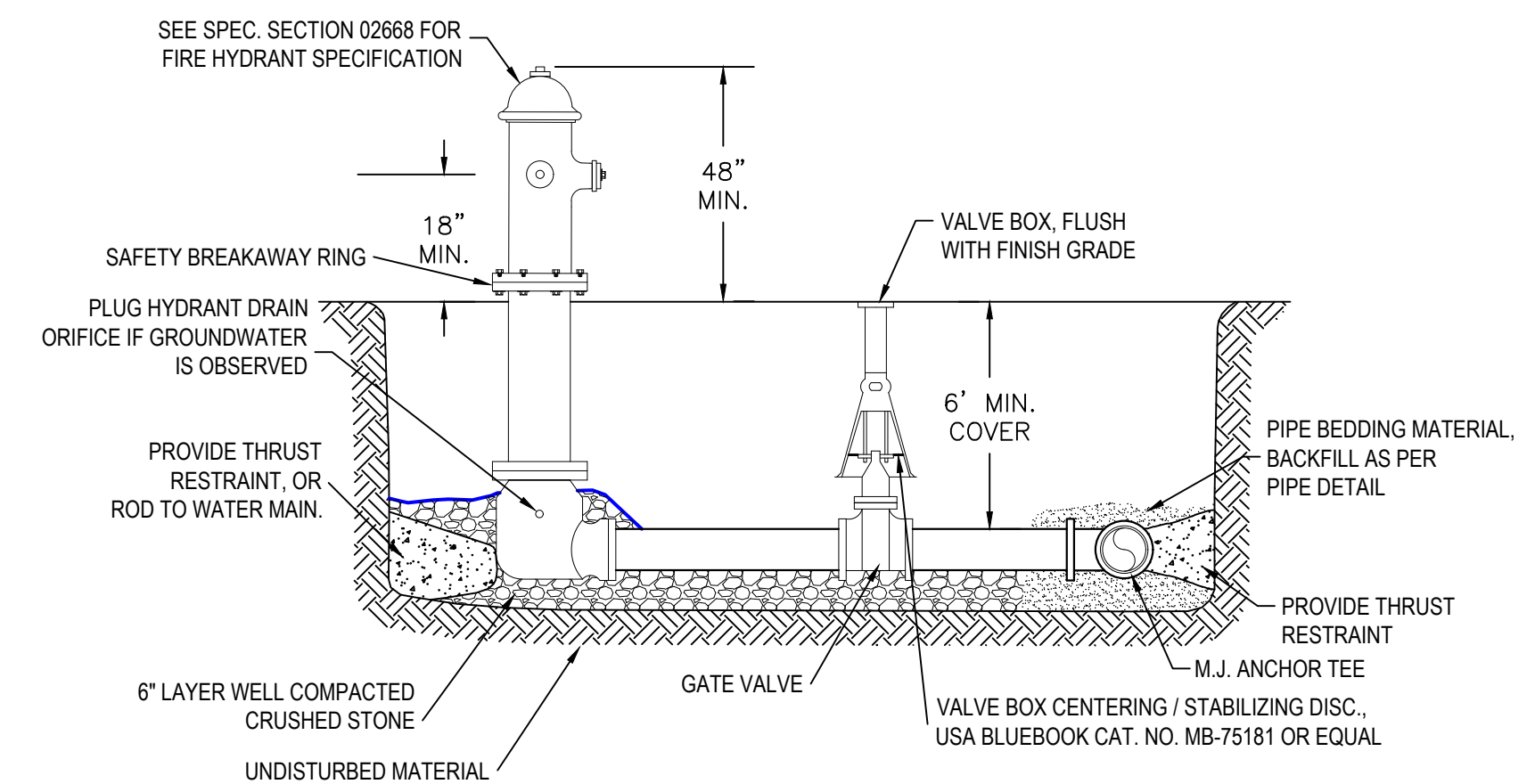
INSULATION DETAILS
SCALE: NONE

- NOTES:
 1. STAGGER INSULATION JOINTS SO THAT NO JOINTS OF THE TWO (2) LAYERS ARE ONE OVER THE OTHER
 2. SEE SPECIFICATION 07240 FOR MORE INFORMATION



D = DEPTH OF PIPE	P = PAVEMENT PAYMENT LIMIT, TRENCH REPAIR
0 TO 10 FEET	7 FEET
> 10 FEET	9 FEET

PAVEMENT PAYMENT LIMITS DETAIL
SCALE: NONE



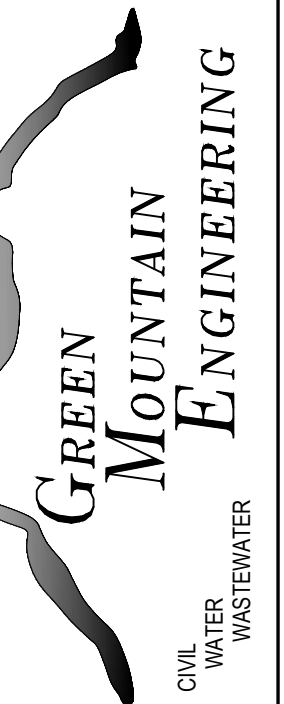
TYPICAL HYDRANT DETAIL
SCALE: NONE

NOTES:

- HYDRANT SHALL BE FULLY EXPOSED, OPEN LEFT, AND HAVE (2) 2 1/2" NTS HOSE CONNECTIONS AND (1) 4" PUMPER CONNECTION. HYDRANT SHALL BE 5" MAIN VALVE BY KENNEDY, OR EQUAL. GATE VALVE TO BE KENNEDY MODEL, KS-FW, OR EQUAL. SEE SPECIFICATIONS FOR ADDITIONAL INFO.
- ALL BRANCH PIPING AND FITTINGS SHALL BE MECHANICAL JOINT.
- HYDRANTS SHALL HAVE THE DRAIN PLUGGED IF GROUNDWATER IS FOUND TO BE PRESENT AT PROPOSED HYDRANT LOCATION.

REV.	DATE	DESCRIPTION	BY

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 WASHINGTON VERMONT 05690
 PHONE: (802) 862-5590
 FAX: (802) 862-7598



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 PRELIMINARY PROGRESS PRINT
 NOT FOR CONSTRUCTION

WATER DETAILS

DESIGNED	AH	PLLOT DATE	11/05/21
DRAWN	JJB	SCALE	1" = 20'
CHECKED	AH	DATE	OCT 2021

PROJECT NO.
29-021

DRAWING NO.
4
 SHEET 1 OF XX