REVIEWER'S NOTES:

I. ROW EASEMENTS NEEDED.

2. SEWER RELOCATION IS ANTICIPATED.

3. WATERLINE RELOCATION IS ANTICIPATED.

- 4. OVERHEAD UTILITY RELOCATION IS REQUIRED.
- 5. HYDRAULIC INFORMATION TO BE ADDED AFTER PRELIMINARY PLANS.
- 6. DURING FINAL DESIGN, DESIGN TEAM WILL WORK WITH THE TOWN TO DEFINE ACCEPTABLE DURATIONS FOR THE TEMPORARY CLOSURE OF BEECH STREET AND MORGAN STREET AND WILL ADJUST TC NOTES AS APPROPRIATE.

PROJECT L	OCATION:	THE EAS STF
PROJECT D	ESCRIPTION:	THI: NEW
LENGTH OF LENGTH OF LENGTH OF	STRUCTURE: Roadway: project:	6 13 20
BEGI Sta.	<u>N BRIDGE</u> 12+27.10	<b>`</b>
<u>begin project</u> sta. 11+75.00		
VT RTE 9 TO NEW YORK	 	) ) 
	<del>ب</del> گ	

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2018, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON APRIL 13, 2018 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

QUALITY ASSURANCE PROGRAM : LEVEL 2 SURVEYED BY : C. CYR SURVEYED DATE : 3/2017 DATUM VERTICAL NAVD88 HORIZONTAL NAD83 (2011)

# STATE OF VERMONT

## AGENCY OF TRANSPORTATION



## PROPOSED IMPROVEMENT

## BRIDGE REPLACEMENT PROJECT TOWN OF BENNINGTON COUNTY OF BENNINGTON VERMONT ROUTE 9 PRINCIPAL ARTERIAL BRIDGE NO.6

BRIDGE IS LOCATED ON TOWN HIGHWAY 2 (VT ROUTE 9/MAIN STREET, MILE MARKER 4.955), APPROXIMATELY 0.5 MILES AST OF THE INTERSECTION OF TOWN HIGHWAY 2 (VT ROUTE 9/MAIN STREET) WITH TOWN HIGHWAY I (US ROUTE 7/NORTH REET/SOUTH STREET).

IS PROJECT INVOLVES REPLACEMENT OF THE EXISTING BRIDGE, NEW SEWER MANHOLES, SEWER MAIN LINING, NEW WATER, EW STORM DRAINAGE, NEW TRAFFIC SIGNAL AND RELATED WORK.

N

61.80 FEET 138.20 FEET 200.00 FEET







	HIGHWAY DIVISION, CHIEF ENGINEER
() Stantec	APPROVED DATE
	PROJECT MANAGER : ROB YOUNG, PE
Stantec Consulting Services Inc.	
55 Green Mountain Drive South Burlington VT U.S.A. 05403 Phone: (802) 864-0223 Fax: (802) 864-0165	PROJECT NAME : BENNINGTON PROJECT NUMBER : BF 1000 (20)
www.stantec.com	SHEET I OF 49 SHEETS

### **STATE OF VERMONT** AGENCY OF TRANSPORTATION

		I	NDEX OF SHEETS									FI
PLAN SHEETS				STANDARDS LIS	бт							
		B-5	SLOPE GRADING, EMBANKMENTS, M	UCK		6/1/1994						
YPICAL SECTIONS		C-2A	PORTLAND CEMENT CONCRETE SID	ES DEWALK DRIVE ENTRANCES '	WITH SIDEWALK ADJACENT TO (	CURB 10/14/2005						
AISCELLANEOUS DETAILS 1-2		C-2B	PORTLAND CEMENT CONCRETE SID	EWALK DRIVE ENTRANCES	WITH SIDEWALK AND GREEN ST	RIP 10/14/2005						
E SHEET	SHEET	C-3B	SIDEWALK RAMPS AND MEDIAN ISLA	NDS		4/7/2020						
ALIGNMENT SHEET		C-10				2/11/2008						
PAVEMENT MARKING SHEET		D-8	REINFORCED CONCRETE DROP INL	ET WITH PRECAST COVER 8	GRATE	1/3/2000						
PROFILE SHEET 1-2		D-9	REINFORCED CONCRETE DROP INL	ET WITH VERTICAL CURB & T	THROAT ADAPTER	6/1/1994			-			
YPICAL PHASING SECTIONS & NOTES	5	D-10 D-11	STEEL OR IRON GRATES& COVERS	(TYPE A)	DINCINETE COND & GRANITE SEC	6/1/1994						
PHASING LAYOUT SHEET		D-15	PRECAST REINF CONC. MH-GRATES	, CAST IRON GRATE WITH FF	RAME, TYPE D & E	6/1/1994 3/10/1995						
PEDESTRIAN DETOUR		E-10	ROLLED EROSION CONTROL PROD	UCT, TYPE I		4/7/2020		-				
BORING PLAN		E-12 E-15	STABILIZED CONSTRUCTION ENTRA	NCE		4/7/2020 4/7/2020						
ROUTE 9 CROSS SECTION SHEET 1-3		E-121	STANDARD SIGN PLACEMENT - CON	VENTIONAL ROAD		8/8/1995						
MORGAN STREET CROSS SECTION SH BEECH STREET CROSS SECTION SHE	IEET FT	E-136B F-145A	STATE ROUTE MARKER SIGN DETAIL REGULATORY SIGN DETAILS - LANE L	.S USE CONTROL SIGNS		8/8/1995 12/23/1994						
CHANNEL CROSS SECTION SHEET 1-4		E-145B	REGULATORY SIGN DETAILS - LANE	USE CONTROL SIGNS		12/23/1994		-				
EXISTING CONDITIONS PLAN WATER AND SEWER GENRAL NOTES		E-161 E-162	W-SHAPED STEEL SIGN POST TUBULAR ALUMINUM SIGN POST			8/18/1995 5/20/1999						
EMPORARY WATER & SEWER UTILITY	PLAN	E-163	TUBULAR STEEL SIGN POST			4/7/2020						
PERMANENT WATER & SEWER UTILITY PERM. POWER & COMM. UTILITY PLAN	PLAN	E-170 E-171A	TRAFFIC CONTROL SIGNALS PEDES TRAFFIC CONTROL SIGNALS GENER	TAL POST MOUNTED AL NOTES & DETAILS		11/4/1999 8/9/1995				_		
WATER MAIN PROFILE		E-171B	TRAFFIC CONTROL SIGNALS MISC. D	DETAILS		8/9/1995						
SANITARY SEWER PROFILE TEMPORARY WATER & SEWER DETAIL	_S 1-3	E-171C E-173	TRAFFIC CONTROL SIGNALS CANTILI PULL BOXES AND JUNCTION BOXES	EVER MOUNTING DETAILS		8/9/1995 8/9/1995						
WATER DETAILS 1-4		E-175	POWER DROP STANCHIONS			6/8/2009						
SEWER DETAILS 1-3		E-193 G-1	PAVEMENT MARKING DETAILS STEEL BEAM GUARDRAIL DETAILS (P	POST, DELINEATOR, TYPICAL	S)	8/18/1995 3/10/2017						
		G-1D	STEEL BEAM GUARDRAIL DETAILS (E	END TERMINAL, ANCHOR, MEI	DIAN)	3/10/2017						
		G-15 HSD400.01	SAFETY EDGE DETAILS	ISIEEL POSIS		6/1/1994 1/5/2018						
		HSD621.06	MISCELLANEOUS GUARDRAIL DETAIL	_S		2/27/2017						
		SD-501.00 SD-502.00	CONCRETE DETAILS AND NOTES			10/10/2012						
		SD-516.10	BRIDGE JOINT ASPHALTIC PLUG	<u>c</u>		8/29/2011						
		T-2	TRAFFIC SIGN GENERAL NOTES	5		4/23/2018			_			
		T-10 T-30	CONVENTIONAL ROADS CONSTRUCT	TION APPROACH SIGNING		8/6/2012 8/6/2012						
		T-35	CONSTRUCTION ZONE LONGITUDINA	AL DROP-OFFS		8/6/2012			-			
		T-36 T-45	CONSTRUCTION ZONE LONGITUDINA SQUARE TUBE SIGN POST AND ANCH	AL DROP-OFFS FOR PAVING		8/6/2012 1/2/2013						
		T-56	STANDARD SIGN PLACEMENT			10/26/2015						
												-
								LRFF	RLOAD	RATING F	ACTORS	
							LOADING LEVELS		111.02	362		
							TONNAGE	20	36	36	66 3	<b>30 34</b> .
							INVENTORY					
								++				
							COMMENTS:	+				
								<u>.</u>				
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			, 0040 to 0000 to 0055555	LEVEL I	LEVEL II	LEVEL III						
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uu aou 5/	3.1	40 year ESAL for flexible pavement from	ັບບານ ເບັບບານ ເບັບບານ 10 - 2058 - 5727000	GRADE.	GRADE.	GRADE.	1					

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6	CONSTRUCTION ZONE LONGITUDINAL
5	SOLIARE TURE SIGN POST AND ANCHO

STANDARD SIGN DI ACEMENT	

					I	NDEX OF SHEETS									FI
		PLAN S	SHEETS				STANDARDS	LIST							
1	TITLE S				B-5	SLOPE GRADING, EMBANKMEN	TS, MUCK			6/1/1994					
2 3	TYPICA	L SECTIONS			C-2A	PORTLAND CEMENT CONCRET	E SIDEWALK DRIVE ENTRANC	ES WITH SIDEWALK ADJACENT TO	CURB 10	2/14/2005					
4-5 6	MISCEL CONVE	LANEOUS DET	AILS 1-2 OLOGY LEGEND	SHEET	C-2B C-3A	PORTLAND CEMENT CONCRET SIDEWALK RAMPS	E SIDEWALK DRIVE ENTRANC	ES WITH SIDEWALK AND GREEN S	STRIP 10	0/14/2005 4/7/2020					
7	TIE SHE	ET			C-3B	SIDEWALK RAMPS AND MEDIAN	ISLANDS			4/7/2020					
8 9	ALIGNIV LAYOU	IENT SHEET			C-10 D-6	CURBING REINFORCED CONCRETE DRC	P INLET W/GRATE (DITCHES)		2	2/11/2008 6/1/1994					
10			SHEET		D-8		OP INLET WITH PRECAST COVE	ER & GRATE		1/3/2000					
13	TRAFFI	C CONTROL NO	TES		D-10	REINFORCED CONCRETE DRC	P INLET TOP FOR BITUMINOU	S CONCRETE CURB & GRANITE SLO	OPE EDGING	6/1/1994 6/1/1994					
14 15	TYPICA PHASIN	L PHASING SEC IG LAYOUT SHE	TIONS & NOTES		D-11 D-15	STEEL OR IRON GRATES& COV PRECAST REINF CONC. MH-GR	/ERS (TYPE A) ATES, CAST IRON GRATE WIT	H FRAME, TYPE D & E		6/1/1994 6/1/1994					
16	TRAFFI	C DETOUR			D-22	SANITARY SEWER SYSTEMS			:	3/10/1995					
17 18	BORING	GRIAN DETOUR GPLAN			E-10 E-12	STABILIZED CONSTRUCTION E	NTRANCE			4/7/2020 4/7/2020					
19-23 24-26		GLOGS 1-5			E-15 F-121	SILT FENCE STANDARD SIGN PLACEMENT -	CONVENTIONAL ROAD			4/7/2020 8/8/1995					
27	MORGA	N STREET CRO	SS SECTION SH	IEET	E-136B	STATE ROUTE MARKER SIGN D	ETAILS			8/8/1995					
28 29-32	BEECH CHANN	STREET CROS	S SECTION SHE TION SHEET 1-4	ET	E-145A E-145B	REGULATORY SIGN DETAILS - L REGULATORY SIGN DETAILS - L	ANE USE CONTROL SIGNS		12	2/23/1994 2/23/1994					
33		IG CONDITIONS	PLAN		E-161	W-SHAPED STEEL SIGN POST	r		8	8/18/1995					
34 35	TEMPO	RARY WATER &	SEWER UTILITY	PLAN	E-162 E-163	TUBULAR STEEL SIGN POST	I			4/7/2020					
36 37	PERMA PERM	NENT WATER & POWER & COMI	SEWER UTILITY M UTILITY PLAN	' PLAN	E-170 F-171A	TRAFFIC CONTROL SIGNALS PE	EDESTAL POST MOUNTED			11/4/1999 8/9/1995					
38	WATER	MAIN PROFILE			E-171B	TRAFFIC CONTROL SIGNALS MI	ISC. DETAILS	_		8/9/1995					
39 40 - 4	2 SANITA 2 TEMPO	RY SEWER PRO RARY WATER &	OFILE « SEWER DETAIL	.S 1-3	E-171C E-173	TRAFFIC CONTROL SIGNALS C/ PULL BOXES AND JUNCTION BC	ANTILEVER MOUNTING DETAIL: DXES	5		8/9/1995 8/9/1995					
43 - 4	6 WATER	DETAILS 1-4			E-175	POWER DROP STANCHIONS				6/8/2009					
47 - 4	9 SEVVER	DETAILS 1-3			E-193 G-1	STEEL BEAM GUARDRAIL DETA	ILS (POST, DELINEATOR, TYPI	CALS)		3/18/1995 3/10/2017					
					G-1D G-15	STEEL BEAM GUARDRAIL DETA	ILS (END TERMINAL, ANCHOR, WITH STEEL POSTS	MEDIAN)	;	3/10/2017 6/1/1994					
					HSD400.01	SAFETY EDGE DETAILS				1/5/2018					
					HSD621.06 SD-501.00	MISCELLANEOUS GUARDRAIL D CONCRETE DETAILS AND NOTE	DETAILS ES			2/27/2017 2/9/2012					
					SD-502.00	CONCRETE DETAILS AND NOTE	ES			10/10/2012					
					T-1	TRAFFIC CONTROL GENERAL N	NOTES		2	4/25/2016					
					T-2 T-10	TRAFFIC SIGN GENERAL NOTES	S TRUCTION APPROACH SIGNING	3		4/7/2020 8/6/2012					
					T-30	CONSTRUCTION SIGN DETAILS		-		8/6/2012					
					T-35 T-36	CONSTRUCTION ZONE LONGIT	UDINAL DROP-OFFS UDINAL DROP-OFFS FOR PAVI	NG		8/6/2012 8/6/2012					
					T-45	SQUARE TUBE SIGN POST AND	ANCHOR		11	1/2/2013					
					06-1	STANDARD SIGN PLACEMENT			Ю	J/20/2015					
												LRFR LC	AD RATING F	ACTORS	
											LOADING LEVELS	H-20 HI-5	3 352		STR 44 ST
											TONNAGE	20 36	36	66 G	30 34.
											INVENTORY				
											COMMENTS:				
				TRAFFIC	DATA			AS BUILT "REBAR" DETA	<b>NIL</b>		1				
YFAR	ADT	DHV	% D	% т	20 year ESAL for flexible pavement from	n 2018 to 2038 - 235500				Ш					
2018	8800	Q30	57	31	40 year ESA1 for flevible pavement from	n 2018 to 2059 · 572700			GRADE						
2010	0000	200		J.1	bindwi 20 mah	·· 2010 ·· 2036 · 5/2/00					1				
2038	9800	1000	57	4.6	ucayloped. 30 mpn										



# PRELIMINARY INFORMATION SHEET (BRIDGE)

	Version	
LRFD	RFD	

NAL HYDRA	AULIC REPORT	
		_
		_
		_
	TRAFFIC MAINTENANCE NOTES	
	1. MAINTAIN TRAFFIC ON AN OFF SITE DETOUR. 2. TRAFFIC SIGNALS ARE NOT NECESSARY.	
	3. SIDEWALKS ARE NOT NECESSARY	
	DESIGN VALUES	
	1. DESIGN LIVE LOAD	HL-93
	3. DESIGN SPAN	L: 0.00 FT
	4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ:
	PRESTRESSING STRAND (0.60 INCH DIAMETER - LOW RELAX)     PRESTRESSED CONCRETE STRENGTH	fy: 270 KSI f'c: 6.0 KSI
	7. PRESTRESSED CONCRETE RELEASE STRENGTH 8. HIGH PERFORMANCE CONCRETE, CLASS PCD	f'ci: 5.0 KSI f'c: 4.0 KSI
	9. HIGH PERFORMANCE CONCRETE, CLASS PCS 10. CONCRETE HIGH PERFORMANCE, CLASS PSS	f'c: 3.5 KSI f'c: 40 KSI
	11. CONCRETE, CLASS C	f'c: 3.0 KSI
	12. REINFORCING STEEL 13. STRUCTURAL STEEL AASHTO M270	fy: 60 KSI fy:
	14. NOMINAL BEARING RESISTANCE OF SOIL	<b>q</b> n: 4.0 KSF
	15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) 16. NOMINAL BEARING RESISTANCE OF ROCK	φ: <b>g</b> _n: 10.0 KSF
	17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ:
TR. 5A SEMI	18. PILE RESISTANCE FACTOR 19. LATERAL PILE DEFLECTION	φ: Λ:
5 50	20. BASIC WIND SPEED	V3s:
	22. SEISMIC DATA <b>PGA</b> :	<i>pg</i> Ss:
	23	<u>S1:</u>
	24. 25.	
		26/2021
	PROJECT LEADER: T. KNIGHT DRAWN BY:	J. BURKE
	DESIGNED BY:T. KNIGHTCHECKED BY:PRELIMINARY INFORMATION SHEETSHEET2	T. KNIGHT OF 49









PROJECT NAME:	BENNINGTON		
PROJECT NUMBER:	BF 1000(20)		
FILE NAME: z12j606 PROJECT LEADER: -	det.dgn F. KNIGHT	PLOT DATE: DRAWN BY:	8/31/2021 G. BURGMEIER
DESIGNED BY: P MISCELLANEOUS DE	K.RICHARDSON T <b>ails Sheet 2</b>	CHECKED BY: SHEET 5	 OF 49

SYMPOLOCY LECEND NOTE			
STMBULUGT LEGEND NUTE	PUINI		
THE SYMBOLOGY ON THIS SHEET IS INTENDED TO COVER		APL	BOUND APPARENT LOCATION
STANDARD CONVENTIONAL STMBULUGT. THE STMBULUGT IS		BM	BENCHMARK
LINEWEIGHT, IN COMBINATION WITH PROJECT ANNOTATION.		BND	BOUND
AS NOTED ON PROJECT PLAN SHEETS. THIS LEGEND		СВ	CAICH BASIN
SHEET COVERS THE BASICS. SYMBOLOGY ON PLANS MAY		COMB	COMBINATION POLE
VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE		DITHR	DROP INLET THROATED DNC
USED TO CLARIFY AS NEEDED.	¢	EL	ELECTRIC POWER POLE
	0	FPOLE	FLAGPOLE
	$\odot$	GASFIL	GAS FILLER
	$\odot$	GP	GUIDE POST
	M	GSO	GAS SHUT OFF
	O	GUY	GUY POLE
	$\odot$	GUYW	GUY WIRE
	×	GV	GATE VALVE
	E.	Н	IREE HARDWOOD
		HCIRL	CONTROL HORIZONTAL
		HVCIRL	CONTROL HORIZ. & VERTICAL
	Ŷ	HYD	HYDRANT
	۲	IP	IRON PIN
	© /	IPIPE	IRON PIPE
	¢ P		LIGHT - STREET OR YARD
	Ø	MB	MAILBOX
ADDITIONAL WATER AND SEWER SYMBOLS	0	MH	MANHOLE (MH)
		MM	MILE MARKER
🌀 = NEW SANITARY SEWER MANHOLE	Θ	PM	PARKING METER
		PMK	PRUJECT MARKER
$\mathbf{P}$ = NEW MANUAL AIR RELEASE/		PUSI	PUST STUNE/WUUD
• CHEORTNE TRISECTION FOTINT (MAR/CTT)		KKSIG DDCI	RAILRUAD SIGNAL
- NEW DUCTILE IRON 90°BEND	↓ ↓	KKSL	RAILRUAD SWITCH LEVER
$\rightarrow$ = NEW DUCTUE IRON 45°BEND (OR AS REQUIRED)		S	IREE SUFIWOOD
$\perp$	l (C)		SATELLITE DISH
MAR = MANUAL AIR RELEASE VALVE			
	C A		
	0		
K. U. W. ABBREVIATIONS (CODES) & SYMBOLS		TSICN	SIGN W/DALIRE PAST
POINT CODE DESCRIPTION			CONTROL VERTICAL
BE BARRIER FENCE		WEII	WELL
CH CHANNEL EASEMENT		WSO	WATER SHUT OFF
CONST CONSTRUCTION FASEMENT		11 0 0	HATEN SHOT OF

<u> </u>	~ ~ ~			
OINT	CODE	DESCRIPTION		٧C
	BF	BARRIER FENCE	o	WE
	СН	CHANNEL EASEMENT	Þď	WS
	CONST	CONSTRUCTION EASEMENT		
	CUL	CULVERT EASEMENT	THESE A	RF
	D&C	DISCONNECT & CONNECT		
	DIT	DITCH EASEMENT	FFATURE	
	DR	DRAINAGE EASEMENT	WITH PR	0P0
	DRIVE	DRIVEWAY EASEMENT		
	EC	EROSION CONTROL		
	HWY	HIGHWAY EASEMENT	PROPOS	SED
	1&M	INSTALL & MAINTAIN EASEMENT	CODE	Г
	LAND	LANDSCAPE EASEMENT	PC	F
	PDF	PROJECT DEMARCATION FENCE	PI	F
	R&RES	REMOVE & RESET		' (
	R&REP	REMOVE & REPLACE	PT	F
	R.T.&I.	RIGHT, TITLE, AND INTEREST	PCC	F
	SR	SLOPE RIGHT	PRC	F
	UE	UTILITY EASEMENT	POB	F
	(P)	PERMANENT EASEMENT	POE	F
	(T)	TEMPORARY EASEMENT	STA	S
	BNDNS	BOUND SET	АН	A
	BNDNS	BOUND TO BE SET	ВК	Е
$\bigcirc$	IPNF	IRON PIN FOUND	D	C
•	IPNS	IRON PIN TO BE SET	R	C
$\boxtimes$	CALC	EXISTING ROW POINT	Т	C
$\bigcirc$	PROW	PROPOSED ROW POINT	L	C
[LENC	GTΗ]	LENGTH CARRIED ON NEXT SHEET	E	C
	—		l CB	C

SE ARE COMMON VAOT SURVEY POINT SYMBOLS EXISTING FEATURES, ALSO USED FOR PROPOSED TURES WITH HEAVIER LINEWEIGHT, IN COMBINATION I PROPOSED ANNOTATION.

#### OPOSED GEOMETRY CODES

DESCRIPTION
POINT OF CURVATURE
POINT OF INTERSECTION
CENTER OF CURVE
POINT OF TANGENCY
POINT OF COMPOUND CURVE
POINT OF REVERSE CURVE
POINT OF BEGINNING
POINT OF ENDING
STATION PREFIX
AHEAD STATION SUFFIX
BACK STATION SUFFIX
CURVE DEGREE OF (IOOFT)
CURVE RADIUS OF
CURVE TANGENT LENGTH
CURVE LENGTH OF
CURVE EXTERNAL DISTANCE
CHORD BEARING

### UTILITY SYMBOLOGY

UNDERGROUND UTILITIES
G GAS LINE
— s — · · — · · - SANITARY SEWER (SEPTIC)
ABOVE GROUND UTILITIES (AERIAL)
— T — · · — · · - TELEPHONE
E ··- ELECTRIC
- C - · · - CABLE (TV)
EC ··- ELECTRIC+CABLE
- ET - ·· - ELECTRIC+TELEPHONE
— AER E&T — ·· — · ELECTRIC+TELEPHONE
— CT — · · — · · - CABLE+TELEPHONE
- ECT - · · - ELECTRIC+CABLE+TELEPHONE
PROJECT CONSTRUCTION SYMBOLOGY
PROJECT DESIGN & LAYOUT SYMBOLOGY

PROJECI	DESIGN	&	LAYOU	I SYN
	- CZ —	_	CLEAR	ZONE

- PLAN LAYOUT MATCHLINE

### PROJECT CONSTRUCTION FEATURES

	TOP OF CUT SLOPE
0 <del>000</del>	TOE OF FILL SLOPE
8 8 8 8 8 8	STONE FILL
	BOTTOM OF DITCH €
=========:	CULVERT PROPOSED
	STRUCTURE SUBSURFACE
PDF PDF	PROJECT DEMARCATION FENCE
BF	BARRIER FENCE
****	TREE PROTECTION ZONE (TPZ)
///////////////////////////////////////	STRIPING LINE REMOVAL
$\sim \sim \sim \sim \sim \sim$	SHEET PILES

#### CONVENTIONAL BOUNDARY SYMBOLOGY

BOUNDARY LINE	ES
TOWN LINE	TOWN BOUNDARY LINE
COUNTY LINE	COUNTY BOUNDARY LINE
STATE LINE	STATE BOUNDARY LINE
— <i>///</i> — — —	PROPOSED STATE R.O.W. (LIMITED ACCESS
	PROPOSED STATE R.O.W.
	STATE ROW
	TOWN ROW
· · ·	- PERMANENT EASEMENT LINE (P)
	— TEMPORARY EASEMENT LINE (T)
+ +	
$\frac{P}{L} - \frac{P}{L}$	PROPERTY LINE (P/L)
<u>∧ SR → SR</u>	SR ⊖ SLOPE RIGHTS
6f 6f	- 6F PROPERTY BOUNDARY
4f 4f	- 4F PROPERTY BOUNDARY
HAZ ——— HAZ	HAZARDOUS WASTE

	FILTER CURTAIN
<u> </u>	SILT FENCE SILT FENCE WOVEN WIRE
•—•—•—	CHECK DAM
	REQUIRING RE-VEGETATION
	EROSION MATTING
SEE EPSC DETAIL	SHEETS FOR ADDITIONAL SYMBOLOGY
ENVIRONMENTAL	RESOURCES
· · · · · · · · · · · · · · · · · · ·	WETLAND BOUNDARY
	RIPARIAN BUFFER ZONE WETLAND BUFFER ZONE
	SOIL TYPE BOUNDARY
———— Т&Е ——— НАТ ——— НАТ ———	THREATENED & ENDANGERED SPECIES
AG	AGRICULTURAL LAND
HABITAT	FISH & WILDLIFE HABITAT
— <i>flood plain</i> — —	ORDINARY HIGH WATER (OHW)
<b>• • •</b>	STORM WATER
 	USDA FOREST SERVICE LANDS WILDLIFE HABITAT SUIT/CONN
ARCHEOLOGICAL	& HISTORIC
ARCH	ARCHEOLOGICAL BOUNDARY
	HISTORIC DISTRICT BOUNDARY
	HISTORIC AREA
CONVENTIONAL	TOPOGRAPHIC SYMBOLOGY
FXISTING FFAT	URES
	$\cdots$
	ROAD EDGE GRAVEL
	ROAD EDGE GRAVEL DRIVEWAY EDGE
	ROAD EDGE GRAVEL DRIVEWAY EDGE DITCH FOUNDATION
xx	ROAD EDGE GRAVEL DRIVEWAY EDGE DITCH FOUNDATION -× FENCE (EXISTING)
x	ROAD EDGE GRAVEL DRIVEWAY EDGE DITCH FOUNDATION -× FENCE (EXISTING) -□ FENCE WOOD POST -○ FENCE STEEL POST
	ROAD EDGE GRAVEL DRIVEWAY EDGE DITCH FOUNDATION -× FENCE (EXISTING) FENCE WOOD POST FENCE STEEL POST GARDEN
	<ul> <li>ROAD EDGE GRAVEL</li> <li>DRIVEWAY EDGE</li> <li>DITCH</li> <li>FOUNDATION</li> <li>FENCE (EXISTING)</li> <li>FENCE WOOD POST</li> <li>FENCE STEEL POST</li> <li>GARDEN</li> <li>ROAD GUARDRAIL</li> </ul>
	<ul> <li>ROAD EDGE GRAVEL</li> <li>DRIVEWAY EDGE</li> <li>DITCH</li> <li>FOUNDATION</li> <li>FENCE (EXISTING)</li> <li>FENCE WOOD POST</li> <li>FENCE STEEL POST</li> <li>GARDEN</li> <li>ROAD GUARDRAIL</li> <li>RAILROAD TRACKS</li> </ul>
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	ROAD EDGE GRAVEL DRIVEWAY EDGE DITCH FOUNDATION FENCE (EXISTING) FENCE (EXISTING) FENCE STEEL POST GARDEN ROAD GUARDRAIL RAILROAD TRACKS CULVERT (EXISTING) STONE WALL WOOD LINE BRUSH LINE HEDGE BODY OF WATER EDGE LEDGE EXPOSED BENNINGTON BE LOOO(20)
PROJECT NAME: PROJECT NAME: PROJECT NUMBER: FILE NAME: zI2 i606ie	ROAD EDGE GRAVEL DRIVEWAY EDGE DITCH FOUNDATION FENCE (EXISTING) FENCE (EXISTING) FENCE STEEL POST GARDEN ROAD GUARDRAIL RAILROAD TRACKS CULVERT (EXISTING) STONE WALL WOOD LINE BRUSH LINE HEDGE BODY OF WATER EDGE LEDGE EXPOSED BENNINGTON BF 1000(20)



DP6153' TO REACH FROM THE INTERSECTION OF VT ROUTE 9 AND US ROUTE 7 GO EAST DP6153'ALONG VT ROUTE 9 FOR 2.0 MI (3.2 KM) TO THE SITE OF THE MARK ON THE DP6153'LEFT. THE MARK IS LOCATED IN THE GRASSY TRIANGLE FORMED BY THE VT DP6153'ROUTE 279 SOUTHBOUND OFF-RAMPS AND VT ROUTE 9. THE MARK IS SET 5 CM DP6153' (2 INCHES) ABOVE GROUND SURFACE IN THE TOP OF AN 20 CM (8 INCH) DP6153' DIAMETER CONCRETE MONUMENT IN A PLASTIC FOOTING TUBE. THE MARK IS DP6153'II.6 M (38.1 FT) NORTH OF AND ABOUT O.1 M (O.3 FT) HIGHER THAN THE VT DP6153'ROUTE 9 NORTH EDGE OF PAVEMENT, 19.5 M (64.0 FT) NORTHWEST OF A DP6153' TRAFFIC SIGNAL, 13.7 M (44.9 FT) WEST-SOUTHWEST OF THE CENTERLINE OF DP6153' THE OFF-RAMP TO VT ROUTE 9 EAST, 15.6 M (51.2 FT) SOUTH-SOUTHWEST OF DP6153' THE NORTH TIP OF THE TRIANGLE, 7.9 M (25.9 FT) EAST OF THE CENTERLINE DP6153' OF THE OFF-RAMP TO VT ROUTE 9 WEST, 13.2 M (43.3 FT) NORTHEAST OF THE DP6153' CENTER OF A 40 CM (16 INCH) SQUARE DRAIN AND 0.2 M (0.7 FT)

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	PROJECT NAME: BENNINGION	
	project number: BF 1000(20)	
	FILE NAME: XIZJOUSTI.dgn PRA IECT I EADER, T. KNICHT	TLUI DAIL: 8/31/2021
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DURABLE 8 INCH WHITE LINE STA. II+80, RT TO STA. 12+14, RT (DONT BLOCK THE BOX MARKINGS) <u>Durable 24 inch stop bar</u> STA. 12+72, RT (12 LF) STA. 13+66, LT (12 LF) MORGAN ST STA. 40+96, RT (14 LF) (MORGAN STREET) BEECH ST STA. 30+99, RT (II LF) (BEECH STREET) DURABLE LETTER IOR SYMBOL MORGAN ST STA. 40+87, RT "STOP" (MORGAN STREET) BEECH ST STA. 30+90, RT "STOP" (BEECH STREET) DURABLE CROSSWALK MARKING STA. 13+23, LT TO STA. 13+24, RT (43 LF) STA. II+79, RT TO STA. I2+I5, RT (35 LF) (MORGAN STREET) STA. 13+27, RT TO STA. 13+54, RT (30 LF) (BEECH STREET) OOMSAC STA 14+25 MATCH EXISTING PAVEMENT MARKINGS RIVER 8.5′ 12' +29 – +64 - +96.5 13+00 R=20' 39 112′ <u>∼</u>14+00 R=12′. 8.5′ 8.5′ +13.5 .....









	project name: BENNINGTON	
	project number: BF 1000(20)	
	FILE NAME: zI2j606pro.dgn PROJECT LEADER: T.KNIGHT	PLOT DATE: 8/31/2021 DRAWN BY: G. BURGMEIER
ntec	DESIGNED BY: I. MAYNARD PROFILE SHEET I	CHECKED BY: T. KNIGHT SHEET II OF 49



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	project name: BENNINGTON	
	project number: BF 1000(20)	
antec	FILE NAME: zI2j606pro.dgn PROJECT LEADER: T.KNIGHT DESIGNED BY: G.BURGMEIER <b>PROFILE SHEET 2</b>	PLOT DATE: 8/31/2021 DRAWN BY: G.BURGMEIER CHECKED BY: T.KNIGHT SHEET I2 OF 49

INTRODUCTION:

I. THE FOLLOWING TRAFFIC CONTROL INFORMATION IS INTENDED TO BE A GENERAL OUTLINE FOR HOW THE WORK SHOULD PROCEED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE SPECIFIC DETAILS TO ADDRESS SPECIFIC SITUATIONS. THIS RESPONSIBILITY INCLUDES PROVIDING A PLAN DETAILING THE USE AND PLACEMENT OF SIGNS, CHANNELING DEVICES, ARROW PANELS, FLAGGERS AND UNIFORMED TRAFFIC OFFICERS (UTO'S) DURING LANE CLOSURES. ALL TRAFFIC CONTROL DETAILS MUST BE DESIGNED AND IMPLEMENTED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND IT'S LATEST REVISIONS AS WELL AS VTRANS STANDARD SHEETS. WHERE CONFLICTS EXIST. THE MUTCD SHALL GOVERN. THE COST OF PREPARING THIS PLAN (AND MAKING CHANGES IF NECESSARY) SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 641.11 TRAFFIC CONTROL. ALL-INCLUSIVE.

#### TEMPORARY PEDESTRIAN TRAFFIC CONTROL NOTES:

- I. THE CONTRACTOR SHALL PROVIDE A TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) FOR REVIEW AND WRITTEN APPROVAL BY THE RESIDENT ENGINEER A MINIMUM OF THREE WEEKS BEFORE SUCH PLAN IS IMPLEMENTED. THIS PLAN SHALL DETAIL THE CONSTRUCTION PHASING AND SCHEDULE AND THE SPECIFIC METHODS OF MAINTAINING SAFE PEDESTRIAN ACCESS THROUGHOUT THE CONSTRUCTION AREA. THIS PLAN SHALL PROVIDE THE LOCATION AND DETAILS OF TEMPORARY CONSTRUCTION SIGNING, MARKINGS, BARRICADES, CHANNELIZING DEVICES, TPARS AND METHODS TO MAINTAIN ACCESS TO ADJACENT PROPERTIES, BUSINESSES, RESIDENCES, ETC.
- 2. THE CONTRACTOR SHALL MAINTAIN PEDESTRIAN THROUGH MOVEMENTS FROM ONE END OF THE CONSTRUCTION AREA TO THE OTHER, ON AT LEAST ONE SIDE OF THE STREET DURING CONSTRUCTION. ANY SIDEWALK CLOSURES SHALL MEET THE REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), PART 6.
- 3. PEDESTRIAN ACCESS SHALL BE PROVIDED TO ALL ADJACENT PROPERTIES, BUILDINGS, RESIDENCES, COMMERCIAL PROPERTIES AND TRANSIT STOPS. THIS MAY INCLUDE TEMPORARY WALKWAYS SPANNING THE CONSTRUCTION AREA.
- 4. IF SIDEWALKS ARE CLOSED. A TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) SHALL BE PROVIDED ON THE SAME SIDE OF THE ROAD AS THE CLOSED SIDEWALK, IF POSSIBLE. SIGNS AND BARRICADES SHALL BE USED TO PROVIDE ADVANCE NOTICE OF THE CLOSURE AND THE ROUTE OF ANY PEDESTRIAN DETOURS. THE TPAR SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4 FEET. IF THE TPAR IS LESS THAN 5 FEET IN WIDTH. A 5 FOOT BY 5 FOOT PASSING SPACE MUST BE PROVIDED AT LEAST EVERY 200 FEET. THE SURFACE OF THE TPAR SHALL BE FIRM. STABLE AND SLIP-RESISTANT AND CONTINUOUS WITH A MINIMUM 80 INCHES OVERHEAD CLEARANCE FOR THE LENGTH OF THE TPAR. THE TPAR SHALL MAINTAIN THE SAME LEVEL OF ACCESSIBILITY AND DETECTABILITY AS THE FACILITY THAT IS BEING CLOSED. THE TPAR SHALL NOT LEAD PEDESTRIANS INTO CONFLICTS WITH VEHICLES. EQUIPMENT. OR CONSTRUCTION OPERATIONS.
- 5. WHEN TEMPORARY CROSSWALKS ARE UTILIZED FOR THE TPAR. TEMPORARY DETECTABLE WARNINGS SHALL BE PLACED AT EACH END OF THE TEMPORARY CROSSWALKS. THE TEMPORARY CROSSWALK SHALL BE DELINEATED WITH TEMPORARY PAVEMENT MARKINGS OR TAPE. THE MARKINGS SHALL BE PARALLEL 12-INCH-WIDE WHITE LINES PLACE 7 FEET ON CENTER APART. IT SHOULD BE NOTED THAT CURB PARKING SHALL BE PROHIBITED FOR AT LEAST 20 FEET IN ADVANCE OF MIDBLOCK CROSSWALKS. TEMPORARY CROSSWALK SIGNS SHALL BE PROVIDED FOR THE CROSSWALK.
- 6. IF THERE IS WORK OCCURRING OVER AN OPEN SIDEWALK, PROTECTIVE OVERHEAD COVERING MUST BE PROVIDED AS NECESSARY TO ENSURE PROTECTION FROM FALLING OBJECTS AND DRIPPING FROM OVERHEAD STRUCTURES. COVERED WALKWAYS SHOULD BE STURDILY CONSTRUCTED AND ADEQUATELY LIGHTED FOR NIGHTTIME USE.
- 7. INDIVIDUAL CHANNELIZING DEVICES, TAPE, OR ROPE USED TO CONNECT INDIVIDUAL DEVICES AND OTHER DISCONTINUOUS BARRIERS AND DEVICES, PAVEMENT MARKINGS ARE NOT DETECTABLE BY PERSONS WITH VISUAL DISABILITIES. THESE MEASURES DO NOT PROVIDE ACCEPTABLE PATH GUIDANCE ON TEMPORARY OR RE-ALIGNED SIDEWALKS OR OTHER PEDESTRIAN FACILITIES. PEDESTRIAN CHANNELIZING DEVICES SHALL INCLUDE A CONTINUOUSLY DETECTABLE BOTTOM AND TOP EDGE THROUGHOUT THE LENGTH OF THE FACILITY SUCH THAT IT CAN BE FOLLOWED BY PEDESTRIANS USING LONG CANES FOR GUIDANCE.
- 8. CHANNELIZING DEVICES ON BOTH SIDES OF THE TPAR SHALL INCLUDE A CONTINUOUS SOLID TOP AND BOTTOM RAILS. THE TOP EDGE OF THE TOP RAIL SHALL BE BETWEEN 32 INCHES AND 38 INCHES ABOVE THE GROUND LEVEL. THE BOTTOM RAIL SHALL BE AT LEAST 6 INCHES WIDE, WITH THE BOTTOM EDGE OF THE BOTTOM RAIL SURFACE NO HIGHER THAN 2 INCHES ABOVE THE GROUND.
- 9. IF THE TPAR IS ADJACENT TO MOVING TRAFFIC. CONSTRUCTION OPERATIONS/EQUIPMENT. OR DROP- OFFS. THEN CRASHWORTHY CHANNELIZING DEVICES THAT MEET THE REQUIREMENTS OF THE MUTCD SHALL BE USED.
- IO. THE CONTRACTOR SHALL NOT STORE OR PLACE ANY CONSTRUCTION MATERIALS. EQUIPMENT OR SIGNS IN THE PEDESTRIAN PATH OF TRAVEL.
- IL PROVISION OF THE TPAR AND ALL ITS ELEMENTS. INCLUDING BUT NOT LIMITED TO SIGNS. CHANNELIZING DEVICES. BARRICADES. TEMPORARY CURB RAMPS. TEMPORARY PAVEMENT MARKINGS AND OTHER TRAFFIC CONTROL DEVICES IS TO BE PAID FOR INCIDENTAL TO TRAFFIC CONTROL (ITEM 641.10.)
- 12. THE CONTRACTOR SHALL REVIEW AND USE THE 1/32 VERMONT BICYCLE AND PEDESTRIAN WORK ZONE TRAFFIC CONTROL GUIDE, 1/32 AVAILABLE ON VTRANS WEBSITE TO DESIGN AND IMPLEMENT TRAFFIC CONTROL FOR BICYCLE AND PEDESTRIAN INTO THEIR SITE-SPECIFIC TRAFFIC CONTROL PLAN FOR ALL STAGES OF CONSTRUCTION.

#### TRAFFIC CONTROL NOTES

- I. THE CONTRACTOR MUST PROVIDE ACCESS THROUGH THE WORK ZONE FOR EMERGENCY VEHICLES AT ALL TIMES OR COORDINATE EMERGENCY ROUTES PRIOR TO THE START OF CONSTRUCTION.
- 2. SIGNS SHALL ONLY BE VISIBLE TO MOTORIST AT THE TIMES WHEN THE MESSAGE IS PERTINENT, I.E. A "FLAGGER AHEAD" SIGN SHALL ONLY BE VISIBLE TO MOTORIST WHEN THE FLAGGER IS ACTUALLY PRESENT PERFORMING THEIR DUTIES.
- 3. A MINIMUM LANE WIDTH OF 10 FT. SHALL BE MAINTAINED UNLESS NOTED OTHERWISE. IF TEMPORARY TRAVEL LANE WIDTHS ARE REDUCED BELOW II FT DMV WILL NEED TO BE CONTACTED FOR SUPER LOAD PERMITS THAT WILL REQUIRE REROUTING. ONCE A PERMIT HAS BEEN ISSUED THE APPLICANT / HAULER HAS IO DAYS TO MOVE THEIR LOAD SO ADDITIONAL NOTICE WILL BE REQUIRED TO CAPTURE THE IO DAY WINDOW. ALSO, IF LANE WIDTHS ARE REDUCED BELOW HIFT, BICYCLES SHOULD BE HELD TO THE END OF THE QUEUE WHEN TRAFFIC IS STOPPED SO THEY DO NOT COMPETE FOR LANE SPACE.
- 4. BICYCLIST ACCOMMODATIONS SHOULD BE CONSIDERED TO ENSURE THAT OBSTACLES, EQUIPMENT, CONSTRUCTION MATERIALS, TRAFFIC CONTROL DEVICES, ETC. DO NOT ENCROACH INTO THE CYCLIST'S PATH OF TRAVEL, IT IS IMPORTANT THAT CYCLIST'S ROUTES ARE FREE OF RUTS, SAND AND MUD TO PREVENT CYCLIST'S CRASHES.
- 5. WHEN COARSE-MILLED BITUMINOUS PAVEMENT IS OPEN TO TRAFFIC. A "MOTORCYCLES USE CAUTION" SIGN, AS PER VTRANS STANDARDS T-17 AND T-30, SHALL BE PROVIDED.
- 6. THE CONTRACTOR SHOULD LEAVE NO LONGITUDINAL DROP-OFFS DURING THE OVERNIGHT HOURS. THEREFORE, THE FULL ROADWAY WIDTH SHOULD BE COLD PLANED OR PAVED DURING THE DAILY WORK PERIOD. WHEN NECESSARY. DROP-OFF PROTECTION IN THESE AREAS SHALL CONFORM TO VTRANS STANDARDS T-35 AND T-36.

#### TRAFFIC CONTROL NOTES (CONTINUED)

- SIGNING AND SIGNAL WORK ARE COMPLETED. ANY CONFLICTING MARKINGS SHALL BE REMOVED.
- ENGINEER.
- 9. ALL PERMANENT SIGNS WHICH CONFLICT WITH TEMPORARY TRAFFIC CONTROL MUST BE COMPLETELY COVERED.
- UNIT PRICE BID FOR ITEM 641.11 TRAFFIC CONTROL. ALL-INCLUSIVE.
- UNIFORMED TRAFFIC OFFICERS OR FLAGGERS AS REQUIRED.
- LANES ARE NOT IN NORMAL OPERATION.
- THEIR RELOCATION IF NECESSARY WILL BE PAID UNDER ITEM 641.15. PORTABLE CHANGEABLE MESSAGE SIGN.
- FOR SEPARATELY: 630.10 UNIFORMED TRAFFIC OFFICER. 630.15 FLAGGERS.
- PLACEMENT OR REPAIR SHALL CONFORM WITH SUCH STANDARDS.
- TEMPORARY TRAFFIC CONTROL SHALL BE COMPLETELY COVERED OR REMOVED.
- OUTLINED IN THE SPECIAL PROVISIONS.
- ABOVE THE TOP OF GUARDRAIL.
- TRAFFIC WHEN FLAGGING OPERATIONS CEASE FOR LONGER THAN 15 MINUTES.
- MOTORIST NAVIGATING THE WORK ZONE.

24. FOR ADDITIONAL TRAFFIC CONTROL GENERAL NOTES. SEE VTRANS STANDARD T-I. T-IO AND T-I7.

7. TRAFFIC SHALL NOT BE CHANGED FROM ONE TRAFFIC PATTERN TO THE NEXT TRAFFIC PATTERN UNTIL ALL TEMPORARY MARKINGS.

8. ALL NON-OPERATING SIGNAL HEADS AND PEDESTRIAN HEADS SHALL BE REMOVED OR COMPLETELY COVERED AS DIRECTED BY THE

IO. PLEASE NOTE THAT THE UTO (UNIFORMED TRAFFIC OFFICER), UNDER AUTHORITY GRANTED BY LAW (TITLE 23 VSA) MAY DIRECT AND CONTROL TRAFFIC. SUITABLE EXAMPLES IN WORK MIGHT INCLUDE THE DIRECTION AND CONTROLS OF TRAFFIC AT INTERSECTIONS WHERE SIGNALS ARE NOT FUNCTIONING OR ARE MALFUNCTIONING. IN THESE CASES. THE PRESENCE OF THE BLUE LIGHT MAY NOT BE SUITABLE OR NECESSARY. THE WEARING OF DEPARTMENTALLY REQUIRED AND APPROVED REFLECTIVE GARMENTS IS REQUIRED.

II. THE CONTRACTOR SHALL SUBMIT A SITE SPECIFIC TRAFFIC CONTROL PLAN TO THE ENGINEER PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL INCLUDE A CONSTRUCTION SIGN PACKAGE FOR EXPECTED LANE CLOSURES, WORK ZONE SPEED REDUCTIONS AND PEDESTRIAN ACCESS IN COMPLIANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). THE COST OF PREPARING THIS PLAN (AND MAKING CHANGES IF NECESSARY) SHALL BE INCLUDED IN THE

12. MAINTAIN ACCESS TO ENTRANCES AND DRIVEWAYS TO PROPERTIES AT ALL TIMES FOR EMERGENCY VEHICLES. MAINTAIN ACCESS TO ALL COMMERCIAL AND MUNICIPAL PROPERTIES DURING BUSINESS HOURS. ACCESS TO RESIDENTIAL PROPERTIES SHALL BE COORDINATED WITH THE OWNER. COORDINATE MAJOR WORK ON COMMERCIAL OR MUNICIPAL ACCESSES WITH THE OWNER AT LEAST ONE WEEK PRIOR TO STARTING THE WORK. ALL ACCESSES SHALL ALSO BE KEPT FREE OF WORK AND TRAFFIC CONTROLLED BY

13. SIGNALIZED INTERSECTIONS SHALL BE IN RED FLASH MODE AND MUST BE CONTROLLED BY UNIFORMED TRAFFIC OFFICERS WHEN

14. THE CONTRACTOR SHALL POSITION PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) WARNING MOTORISTS OF THE EXPECTED ROADWAY CONDITIONS AHEAD. THE MESSAGE TO BE DISPLAYED. AND THEIR PROPOSED LOCATIONS SHALL BE SUBMITTED TO THE ENGINEER IN ADVANCE FOR APPROVAL. THE PCMS SHOULD BE RELOCATED AS DETERMINED BY THE ENGINEER TO PROVIDE WORK ZONE TRAVEL INFORMATION THAT IS OTHERWISE DIFFICULT TO CONVEY WITH STATIC SIGNS. THE COST OF PROVIDING THESE MESSAGE SIGNS AND

15. THE BID PRICE FOR ITEM 641.11 TRAFFIC CONTROL, ALL-INCLUSIVE SHALL INCLUDE BUT IS NOT LIMITED TO ALL OF THE FOLLOWING, AS NEEDED: ANY TEMPORARY TRAFFIC BARRIERS, ENERGY ABSORPTION ATTENUATORS, PAVEMENT SAWCUTS, TEMPORARY PAVEMENT MARKINGS, ON-PROJECT CONSTRUCTION SIGNING, PORTABLE FLASHING ARROW BOARDS, BARRELS, CONES, BARRICADES, TEMPORARY REGULATORY AND WARNING SIGNS, AND POSTS AS DETAILED IN THE MUTCD AND VTRANS STANDARDS. ALL ADJUSTING, RELOCATING AND REMOVING OF THESE DEVICES AS DIRECTED BY THE ENGINEER SHALL ALSO BE INCLUDED. THE FOLLOWING ITEMS WILL BE PAID

16. THE LATEST EDITION OF THE MUTCD SHALL BE THE STANDARD FOR ALL TRAFFIC CONTROL DEVICES. EXISTING SIGNS AND MARKINGS SHALL BE VALID UNTIL SUCH TIME AS THEY ARE REPLACED OR RECONSTRUCTED. WHEN NEW TRAFFIC DEVICES ARE ERECTED OR PLACED, OR EXISTING TRAFFIC CONTROL DEVICES ARE REPLACED OR REPAIRED. THE EQUIPMENT, DESIGN, METHOD OF INSTALLATION.

17. NO CONSTRUCTION SIGNS SHALL BE INSTALLED AS TO INTERFERE OR OBSTRUCT THE VIEW OF EXISTING TRAFFIC CONTROL DEVICES. STOPPING SIGHT DISTANCE, AND CORNER SIGHT DISTANCE FROM DRIVES AND TOWN HIGHWAYS. EXISTING SIGNS WHICH CONFLICT WITH

18. CONSTRUCTION ZONE SIGN LAYOUT SHALL BE IN ACCORDANCE WITH SECTION 6 OF THE LATEST EDITION OF THE MUTCD. AND AS

19. CONSTRUCTION SIGNS SHALL BE IN NEW OR LIKE NEW CONDITION PER VTRANS STANDARDS AND SPECIAL PROVISIONS.

21. WHERE TEMPORARY SIGNS ARE PLACED BEHIND GUARDRAIL. THEY SHALL BE ADJUSTED SUCH THAT THE BOTTOMS OF THE SIGNS ARE

22. AS THE CONSTRUCTION OPERATION MOVES, FLAGGER SIGNS SHALL BE MOVED ACCORDINGLY. AT NO TIME SHOULD THE FLAGGER SYMBOL SIGN BE MORE THAN 500 FEET FROM THE FLAGGER STATION. FLAGGER SIGNS SHALL BE COVERED OR REMOVED FROM

23. BARRELS AND CONES SHALL BE USED TO CLEARLY DEFINE THE TRAVEL SPACE AND PROVIDE SEPARATION FROM THE WORK SPACE ALONG ITS ENTIRE LENGTH. BARRELS SHOULD BE USED TO CHANNELIZE OR DELINEATE ROAD USERS FLOW AND CONES SHOULD BE USED TO DELINEATE THE COMMERCIAL DRIVES WITHIN THE WORK ZONE. THE TWO SHOULD NOT BE MIXED AS IT COULD CONFUSE THE

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<b>Stantec</b>	FILE NAME: zI2j606frm.dgn PROJECT LEADER: T.KNIGHT DESIGNED BY: G.EDWARDS TRAFFIC CONTROL NOTES	PLOT DATE: 8/31/2021 DRAWN BY: G.BARRETT CHECKED BY:D.YOULEN SHEET 13 OF 49



### TRAFF<u>IC</u> CONTROL NOTES

- 30 MPH.
- DEVICES (MUTCD).
- ACCESS.





I. SEE TRAFFIC CONTROL SHEET FOR GENERAL TRAFFIC CONTROL NOTES. 2. REFER TO STANDARD T-IO FOR CONSTRUCTION APPROACH SIGNS CRITERIA. 3. ENERGY ABSORPTION ATTENUATORS SHALL BE DESIGNED FOR POSTED SPEED OF

4. PHASE I SHALL INCLUDE THE INSTALLATION OF MICROPILES WHILE MAINTAINING ALTERNATING ONE LANE OF TRAFFIC WITH FLAGGERS OR UNIFORMED OFFICERS ON THE EXISTING BRIDGE. CONTRACTOR SHALL DEVELOP AND IMPLEMENT A SITE SPECIFIC TRAFFIC CONTROL FOR ONE LANE CLOSURES PER THE LATEST VERSION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL

5. PHASE 2 CONSTRUCTION SHALL INCLUDE BRIDGE REPLACEMENT CONSTRUCTION BY IMPLEMENTING A DETOUR AS SHOWN ON THE TRUCK DETOUR AND PEDESTRIAN DETOUR PLAN SHEETS AND CLOSING THE EXISTING BRIDGE AS LIMITED BY THE SPECIAL PROVISIONS. THE CONTRACTOR SHALL PROVIDE FOR STOP CONTROL AT THE MORGAN AND BEECH STREET INTERSECTIONS. DURING PHASE 2 TEMPORARY CLOSURES OF THE SIDE STREETS MAY BE REQUIRED. THESE CLOSURES SHALL MEET THE REQUIREMENTS OF THE SPECIAL PROVISIONS.

6. PHASE 3 CONSTRUCTION SHALL INCLUDE COMPLETING THE BRIDGE REPLACEMENT WHILE MAINTAINING TWO LANES OF TRAFFIC AND PEDESTRIAN ACCESS ON THE NEW BRIDGE. THE CONTRACTOR SHALL PROVIDE A TEMPORARY TRAFFIC SIGNAL SYSTEM AT THE BEECH STREET INTERSECTION AND SHALL PROVIDE A TEMPORARY ACCESS ROUTE FOR PEDESTRIANS ACROSS THE BRIDGE BY PHASING THE CONSTRUCTION AS SHOWN AND UTILIZING THE OPPOSITE SIDE FOR PEDESTRIAN

ntec	FILE NAME: zI2j606typ_phasing.dgn PROJECT LEADER: T.KNIGHT DESIGNED BY: G.EDWARDS TYPICAL PHASING SECTIONS & NOTES	PLOT DATE: 8/31/2021 DRAWN BY: G.BARRETT CHECKED BY:D.YOULEN SHEET 14 OF 49
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- I. TEMPORARY TRAFFIC SIGNAL SYSTEM SHALL BE IN ACCORDANCE WITH ITEM 678.40, "TEMPORARY TRAFFIC SIGNAL SYSTEM".
- 2. DESIGN OF THE SIGNAL SUPPORTS AND ANY REQUIRED GUYING IS THE RESPONSIBILITY OF THE CONTRACTOR.
- 3. SIGNAL PHASING/TIMING ADJUSTMENTS REQUESTED BY THE ENGINEER SHALL BE ACCOMPLISHED WITHIN A 48 HOUR PERIOD.
- 4. SIGNAL FACES SHALL BE LED AND CONSIST OF 12" LENSES. (RED. YELLOW. AND GREEN)
- 5. THE BOTTOM OF THE HOUSING OF A SIGNAL FACE SUSPENDED OVER A ROADWAY SHALL NOT BE LESS THAN 16.5 FEET NOR MORE THAN 19 FEET ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY. THE BOTTOM OF A SIGNAL FACE NOT MOUNTED OVER A ROADWAY SHALL NOT BE LESS THAN 8 FEET NOR MORE THAN 15 FEET ABOVE THE GROUND. CAUTION SHOULD BE USED TO ENSURE COMPLIANCE WITH THE HEIGHT REQUIREMENTS IN THE EVENT THE NEW APPROACH GRADES DIFFER SIGNIFICANTLY FROM THE OLD ROAD GRADE.
- 6. SIGNAL FACES FOR ANY ONE APPROACH SHALL NOT BE LESS THAN 8 FEET APART MEASURED HORIZONTALLY BETWEEN CENTER FACES.
- 7. SIGNAL HEADS MAY BE HUNG ON A SPAN WIRE OR ON A CANTILEVER MAST ARM HOWEVER. THE USE OF PORTABLE SIGNALS IS ENCOURAGED. AT LEAST ONE SIGNAL HEAD SHALL BE UNMISTAKABLY IN LINE WITH THE CENTER OF APPROACHING TRAFFIC AT ALL TIMES. THE SECOND SIGNAL HEAD MAY BE POST MOUNTED, LOCATED AT A DISTANCE OF NO GREATER THAN 14.5 FEET FROM THE CENTER OF THE APPROACH LANE WHEN THE STOP BAR IS 40 FEET FROM THE SIGNAL HEAD. CONSULT THE CURRENT EDITION OF THE MUTCD FOR ADDITIONAL INFORMATION CONCERNING SIGNAL PLACEMENT.
- 8. SIGNAL HEAD PLACEMENT IS CRITICAL. HEADS SHALL BE ADJUSTED TO REFLECT LANE LOCATION CHANGES.
- 9. THE SIGNAL SYSTEM SHALL CONSIST OF POLES, SIGNS AND POSTS, WARNING SIGNS, FLASHING BEACONS, ASSOCIATED PAVEMENT MARKINGS, AND SIGNAL EQUIPMENT TO PROVIDE FOR AN ADEQUATE DESIGN. IT ALSO INCLUDES PERMITS AND COSTS ASSOCIATED WITH PROVIDING ELECTRICAL POWER.
- IO. INSTALL WIRING BETWEEN SIGNAL POLES TO PROVIDE FOR A SAFE INSTALLATION. ATTACHMENT TO UTILITY POLES TO BE COORDINATED BY THE CONTRACTOR WITH THE UTILITY COMPANY.
- II.PLACE TEMPORARY POLES BEHIND GUARDRAIL OR OUTSIDE OF THE CLEAR ZONE.
- 12. POLES SUPPORTING SPAN WIRES AND/OR MAST ARMS SHALL BE ADEQUATELY BRACED OR GUYED AND SHALL NOT BE PLACED SO AS TO CREATE A HAZARD TO THE TRAVELING PUBLIC.
- 13. ALL TEMPORARY SIGNAL EQUIPMENT, SIGNS, ETC., SHALL BELONG TO THE CONTRACTOR AT THE END OF THE PROJECT AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR REMOVAL INCLUDING ANY TEMPORARY PAVEMENT MARKINGS, UTILITY POLES, WIRES, ETC.

DESIGNED BY: G. EDWARDS

PHASING LAYOUT SHEET



CHECKED BY: D. YOULEN

SHEET IS OF 49









<u>AASHTO</u> <u>AASHTO</u> AI Gravel and Sand A3 Fine Sand A2 Silty or Clayey Gravel and Sand A4 Silty Soil - Low Compressibility A5 Silty Soil - Highly Compressible A6 Clayey Soil - Low Compressibility A7 Clayey Soil - Highly Compressible	<ul> <li>COMMONLY USED SYMBOLS</li> <li>Water Elevation</li> <li>Standard Penetration Boring</li> <li>Auger Boring</li> <li>Rod Sounding</li> <li>Sample</li> <li>N Standard Penetration Test Blow Count Per Foot For: 2" O. D. Sampler</li> <li>I'%" I. D. Sampler</li> <li>Hammer Weight Of 140 Lbs.</li> <li>Hammer Fall Of 30"</li> </ul>	
ROCK QUALITY DESIGNATIONR.O.D. (%)ROCK DESCRIPTION Very Poor25 to 50Poor Fair Good >9051 to 75Fair Good Excellent	VS Field Vane Shear Test US Undisturbed Soil Sample B Blast DC Diamond Core MD Mud Drill WA Wash Ahead HSA Hollow Stem Auger AX Core Size 1 <sup>1</sup> / <sub>8</sub> " BX Core Size 2 <sup>1</sup> / <sub>8</sub> " NX Core Size 2 <sup>1</sup> / <sub>8</sub> " M Double Tube Core Barrel Used LL Liquid Limit PL Plastic Limit PL Plastic Limit PI Plasticity Index NP Non Plastic W Moisture Content (Dry Wgt.Basis)	AER E&T
SHEAR STRENGTHUNDRAINEDSHEAR STRENGTHIN P.S.F.(250)(250-500)500-1000Med. Stiff1000-20002000-4000Very Stiff>4000Hard	D Dry M Moist MTW Moist To Wet W Wet Sat Saturated Bo Boulder Gr Gravel Sa Sand Si Silt CI Clay HP Hardpan Le Ledge NLTD No Ledge To Depth CNPF Can Not Penetrate Further TLOB Top of Ledge Or Boulder NR No Recovery Rec. Recovery ZBec. Percent Recovery	
CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCYDENSITY (GRANULAR SOILS)CONSISTENCY (COHESIVE SOILS)DESCRIPTIVE TERM        	ROD Rock Quality Designation CBR California Bearing Ratio ( Less Than Creater Than R Refusal (N > 100) VTSPG NAD83 - See Note 7 <u>COLOR</u> blk Black pnk Pink bl Blue pu Purple brn Brown rd Red dk Dark tn Tan gry Gray wh White gn Green yel Yellow It Light mltc Multicolored or Orange	N
	NS (AASHTO)	-
<ul> <li>BEDROCK (LEDGE) - Rock in its native location of indefinite thickness.</li> <li>BOULDER - A rock fragment with an average dimension &gt; 12 inches.</li> <li>COBBLE - Rock fragments with an average dimension between 3 and 12 inches.</li> <li>GRAVEL - Rounded particles of rock &lt; 3" and &gt; 0.0787" (#10 sieve).</li> <li>SAND - Particles of rock &lt; 0.0787" (#200 sieve)</li> <li>SILT - Soil &lt; 0.0029" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.</li> <li>CLAY - Fine grained soil, exhibits plasticity when moist and consider</li> </ul>	<ul> <li>VARVED - Alternate layers of silt and clay.</li> <li>HARDPAN - Extremely dense soil, cemented layer, not softened when wet.</li> <li>MUCK - Soft organic soil (containing &gt; 10% organic material.</li> <li>MOISTURE CONTENT - Weight of water divided by dry weight of soil.</li> <li>FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.</li> <li>STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.</li> </ul>	<ol> <li>I. The su herein 2020 an England the su</li> <li>2. Soil and ties an enginee availabl the Ag reflect surfac encoun boring</li> <li>3. Observ conditi</li> </ol>

DIP - Inclination of bed with a horizontal plane.

able strength when air-dried.

ved water levels and/or ions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.



Boring Contractors under upervision of Stantec. d rock classifications, proper-

nd descriptions are based on ering interpretation from ble subsurface information by gency and may not necessarily actual variations in subce conditions that may be ntered between individual or sample locations.

4.Engineering judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.

- only and may not accurately portray final contract details.
- 6. Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manualon Subsurface Investigations, 1988.
- 7. Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

![](_page_17_Picture_10.jpeg)

_	BORING CHART										
	SURVEY STATION	OFFSET	NORTHING	EASTING	GROUND ELEVATION	TOP OF BEDROCK EL.					
T	12+30.94	17.73′ RT	138801.53	1456422.58	730.49′	716.49′					
T	12+18.86	II.17′ L T	138826.55	1456403.72	730.61′						
	12+15.86	II.I7′ L T	138825.81	1456400.81	730.56′						
	12+15.86	9.17′ L T	138823.87	1456401.31	730.58′						
	12+13.86	9.17′ L T	138823.37	1456399.37	730.56′						
T	12+20.86	9.17′ L T	138825.10	1456406.15	730.67′						
	13+23.48	32 <b>.</b> 24′ RT	138810.02	1456515.30	730.81′	717.81					
' ?S	5										
					LEGEND Bridge	E BORING					
		PROJECT NAME: PROJECT NUMBER	BENNIN R: BF 100	GTON 0(20)							
a	ntec	FILE NAME: ZI2j6 PROJECT LEADEF DESIGNED BY: BORING PLAN	06borpin.dgn R: T.KNIGHT T.DYKSTRA		PLOT DATE: 8/ DRAWN BY: J. CHECKED BY: T. SHEET 18 (	/31/2021 BURKE DYKSTRA DF 49					

	V	<b>Frans</b>	STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SEC SUBSURFACE INFORMATION	ON CTION N	BOR BEN BF 1 VT Rt 9, Bridge N	ING LO ININGTON 1000 (20 No. 6 Ov
	Boring Date S VTSPG Station Ground	Crew: _  tarted: NAD83: :12+ Elevation:	New England Boring, Derry, NH, LGH (Stantec)           10/13/20         Date Finished:         10/15/20           N 138801.53 ft         E 1456422.58 ft           ·30.94         Offset:         17.73' RT           730.49 ft         E	- Type: _ I.D.: - Hammer Hammer Rig: <u>T</u>	Casing WASH BORE 4 in r Wt: <u>300 lb.</u> r Fall: <u>24 in</u> r/Rod Type: <u>S</u> ruck/Mobile B-53	Sampl SS <u>1.38</u> <u>140 II</u> <u>30 ir</u> Safety/N <u>CE =</u>
	Depth (ft)	Strata (1)	CLASSIFICATION OF MAT (Description)	FERIALS		Run (Dip deg.)
			Asphalt Pavement, 0.0 ft — 0.5 ft Visual Classification, GrSa, brn, Dry, Rec. =	1.0 ft, -FILL		
	- 2.5 — -	-	Visual Classification, GrSa, brn, Dry, Rec. =	1.1 ft, -FILL	-	
5. 705.00	- - 5.0 —	-	Visual Classification, SiGrSa, brn, Dry, Rec. =	= 1.5 ft, -FI	ILL-	
ABUTMENT A SOT. OF PILE CAP		-	Visual Classification, SiGrSa, brn, Dry, Rec. =	= 1.3 ft, -Fl	ILL-	
	- 7.5 — -		Field Note:, Boulder at 8 feet could not advo	ance roller o	r casing, offset	
	- - 10.0 — -		Visual Classification, Rock Fragments, Rec. = -COBBLE/BOULDER LAYER-	: 0.1 ft,		
GDT 12/3/20	- - 12.5 —		Field Note:, Based on drill action cobbles an from approximately 8 to 14 feet., -COBBLE/	d boulders c BOULDER LAY	ire present (ER-	
GPJ VERMONT AOT.			14.0 ft — 15.0 ft, Advanced roller bit throug	gh bedrock f	rom 14 to 15 feet.	
ON BRIDGE REPLACEMENT.			15.0 ft — 20.0 ft, Light gray, Dolomite, Mod weathered, Poor rock, NQDC, Joints are mod slightly discolored, partly open. Highly fract feet. RMR = 27	erately hard, erately dippir ured zone fr	Slightly ng, rough, om 17 to 18	1 (45)
9450053 - BENNINGTO	17.5 — - -					
2010 COPY 17	Notes:	<ol> <li>Stratification</li> <li>N Values H</li> <li>Water level were made</li> </ol>	on lines represent approximate boundary between material type nave not been corrected for hammer energy. CE is the ham readings have been made at times and under conditions sto	es. Transition mo mer energy corre ated. Fluctuations	ay be gradual. ection factor. : of groundwater may occi	ur due to a

GBoring No.: $B-1$ Page No.:1 of 2Page No.:212j606Pin No.: $z12j606$ Checked By:TADerGroundwater ObservationsinDateDepth(ft)Notes10/12/207.510/13/208.0	Boring Crew:Boring Meter Ages of Transportation MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATIONBORING LOGBoring No.:B-1Boring Crew:New England Boring, Derry, NH, LGH (Stantec) Date Started:Materials & RESEARCH Section SUBSURFACE INFORMATIONBENNINGTON BF 1000 (20) VT Rt 9, Bridge No. 6 Over WalloomsacBoring No.:B-1Page No.:2 of 2Pin No.:2 of 2Pin No.:2 12j606Casing SamplerCasing SamplerType:MASH BOREVSPG NAD83:N 138801.53 ftE 1456422.58 ftI.D.:Station:12+30.94Offset:17.73' RTGround Elevation:730.49 ft
Core Rec. % (RQD %) Drill Rate minutes/ft Blows/6" (N Value) Moisture Content % Sand % Fines %	Depth (ff) (ff)     Depth (ff)       Strata (1)     Strata (1)       Strata (1)     Strata (1)       Blows/6"     (Dip deg.)       Moisture Content %     Moisture (N Value)       Sand %     Sand %
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Z25.00         25.0         ft - 25.0 ft - 25.0 ft, Light gray, Dolomite, Moderately dipping, rough, slightly discolored, tight to partly open. RMR = 46         2         100         2           22.5         25.0         25.0         2
Top of Bedrock @ 14.0 ft         84 (38)       2.5         1.5	32.5 - Slightly discolored, fight to partly open. Highly tractured zone from 33 2 2 2 2 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5
1.5       2       2       2       2       2       bother factors than those present at the time measurements	37.5       -         37.5       -         1       Stratification lines represent approximate boundary between material types. Transition may be gradual.         Notes:       1. Stratification lines represent approximate boundary between material types. Transition may be gradual.         2. N Values have not been corrected for hammer energy. CE is the hammer energy correction factor.         3. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements

![](_page_18_Picture_2.jpeg)

	project name: BENNINGTON	
	project number: BF 1000(20)	
antec	FILE NAME: zI2j606borlogs.dgn PROJECT LEADER: T.KNIGHT DESIGNED BY: VTRANS	PLOT DATE: 8/31/2021 DRAWN BY: VTRANS CHECKED BY: VTRANS
	BORING LOGS I	SHEET 19 OF 49

	VTrans	ting to Get You There nt Alency of Transportation	STATE OI AGENCY OF T MATERIALS & R SUBSURFACE	F VERMONT RANSPORTATION ESEARCH SECTIO INFORMATION	N	BOF BE BF VT Rt 9, Bridge	NNINGTON 1000 (20) No. 6 Over W	/alloomsac	Pag Pin Che	ing N ge No. No.: ecked	o.: .: By:	<u>B-2</u> <u>1 of</u> <u>z12j60</u> T/	<u>2A</u> 1 16 AD		
Bo Da VT St Gr	oring Crew: <u>Ne</u> ate Started: <u>1</u> SPG NAD83: ation: <u>12+1</u> round Elevation:	ew England Bori 0/14/20 Dat <u>N 138826.</u> 8.86_ 730.61	ng, Derry, NH, L( te Finished: .55 ft E 1456 Offset: ft	GH (Stantec) 10/14/20 6403.72 ft 1.17' LT	Type: I.D.: Hammer Hammer Hammer Rig: Tr	Casing WASH BOR 4 in Wt: <u>300 lb.</u> Fall: <u>24 in</u> /Rod Type: uck/Mobile B-53	Sampler E <u>SS</u> <u>1.38 in</u> <u>140 lb.</u> <u>30 in.</u> Safety/N CE = 1	Gr Date	Groundwater Observation			tions lotes	es		
Depth	(ft) Strata (1)			CLASSIFICATION (Descr	I OF MATEI ription)	RIALS			Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %		
EL. 725.00 ABUTMENT A BOT. OF PILE CAP 7. 10 11 12 15 15 15 15 15 17 17 17		Refusal on cond	crete, 0.3 ft	Hole stoppe	ed @ 0.3	ft									

ЭG		Bor	ing	No	.:	B-2A			
N			Pag	je No	o.:		1 of	1	
:0)			Pin	No.	•		z12j60	6	
)ver W	alloomsac	;	Che	Checked By: TAD					
oler		Gro	oundw	ater	01	oservat	ions		
in in	Date		Dept (ft)	th )	Notes				
<u>lb.</u> in.									
1									
= 1									
		"3/10	biows/o (N Value)	Moisture	CONTENT &	Gravel %	Sand %	Fines %	

	Boring Crew Date Started VTSPG NAD8 Station: Ground Eleve	New England Bor           :         10/14/20         Data           3:         N 138826           12+15.86         730.56	STATE AGENCY OF MATERIALS & SUBSURFAC ing, Derry, NH, ite Finished: 5.55 ft E 14 Offset: 6 ft	OF VERMONT TRANSPORTATION RESEARCH SECTIO CE INFORMATION <u>LGH (Stantec)</u> <u>10/14/20</u> 56403.72 ft 11.17' LT	DN Type: I.D.: Hamme Hamme Rig: <u>1</u>	BORING LOG BENNINGTON BF 1000 (20) VT Rt 9, Bridge No. 6 Over V Casing Sampler WASH BORE SS 4 in 1.38 in 1.38 in 1.40 lb. r Fall: 24 in 30 in. r/Rod Type: Safety/N Truck/Mobile B-53 CE = 1	/alloomsac Date	Bor Pag Pin Che Groundw Dep (ft	ring N ge No.: ecked rater ( th )	o.: .: By: Dbserva  N	<u> </u>	<u>2B</u> <u>1</u> <u>6</u> <u>AD</u>
EL. 725.00 ABUTMENT A BOT. OF PILE CAP	f(=)	Asphalt Paveme Refusal on stee	ent, 0.0 ft — 0.3 el plate, 0.3 ft	CLASSIFICATION (Desc 3 ft Hole stopp	N OF MATE ription)	ft		Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
2010 COPY 179450053 -	- Notes: Notes:	atification lines represent app Values have not been correcte ter level readings have been e made.	roximate boundary be ed for hammer energ made at times and u	etween material types. y. CE is the hammer under conditions stated	Transition m r energy corr I. Fluctuations	ay be gradual. ection factor. s of groundwater may occur due to other	factors than	those pres	sent at ·	the time	measuren	nents

![](_page_19_Picture_3.jpeg)

BORING LOG	Bor	ing No	.:	B-2	2B	
BENNINGTON		Ρας	ge No.:	_	1 of	1
BF 1000 (20)		Pin	No.:		z12j60	6
Rt 9, Bridge No. 6 Over W	alloomsac	Che	ecked I	By:	TA	D
Casing Sampler	G	roundw	ater O	bservat	ions	
WASH BORE SS 4 in 1.38 in	Date	Dep (ft	th )	N	otes	
300 lb.         140 lb.           24 in         30 in.			,			
Type: <u>Safety/N</u>						
Mobile $B-53$ CE = 1						
		Blows/6" (N Value)	Moisture Content %	Gravel %	Sand %	Fines %

	project name: BENNINGTON	
	project number: BF 1000(20)	
	FILE NAME: zI2j606borlogs.dgn	PLOT DATE: 8/31/2021
	PROJECT LEADER: T.KNIGHT	DRAWN BY: VTRANS
antec	DESIGNED BY: VTRANS	CHECKED BY: VTRANS
	BORING LOGS 2	SHEET 20 OF 49

	V	Trans	STA Morking to Get You There Vermont Agency of Transportation SUBSUF	TE OF VERMONT OF TRANSPORTATION & RESEARCH SECTION RFACE INFORMATION	Л	BORING LOO BENNINGTON BF 1000 (20 VT Rt 9, Bridge No. 6 Ove
	Boring Date S VTSPG Station Groun	Crew: Started: NAD83: n: d Elevation	<u>New England Boring, Derry, N</u> <u>10/14/20</u> Date Finished: <u>N 138826.55 ft E</u> +15.86Offset: :730.58 ft	H, LGH (Stantec) 10/14/20 1456403.72 ft 9.17' LT	Type: I.D.: Hamme Hamme Rig:	Casing         Sample           WASH BORE         SS           4 in         1.38 i           ar Wt:         300 lb.         140 lb           br Fall:         24 in         30 in           br/Rod Type:         Safety/N           Truck/Mobile         B-53         CE =
	Depth (ft)	Strata (1)		CLASSIFICATIOI (Desc	N OF MATI ription)	ERIALS
		- - - - - - - - - - - - - - - - - - -	Asphalt Pavement, 0.0 ft — 5 inches of Concrete, 0.3 f 22 inch diameter void, part	0.3 ft ft — 0.7 ft ially filled with soil,	0.7 ft -	2.5 ft
	2.5 -	-	Refusal on concrete, 2.5 ft	Hole stopp	ed @ 2.5	ft
EL. 725.00 Abutment A	5.0 -	-				
BOT. OF PILE CAP	7.5 -	-				
	10.0 -	-				
	MONT A01.GDT 11/4/20 - 5.21					
	EPLACEMENT.GPJ VER	-				
	50053 - BENNINGTON BRIDGE R					
	2010 COPY 17945 Notes:	1. Stratifica 2. N Values 3. Water le were ma	ion lines represent approximate boundar have not been corrected for hammer e el readings have been made at times a le.	ry between material types. energy. CE is the hammen nd under conditions stated	Transition m r energy corr 1. Fluctuation:	ay be gradual. ection factor. s of groundwater may occur due to o

OG				Bor	ing	No.:		<u> </u>	-2C	
				Pac	ie N	0.:		1 0	f 1	
אוי רחל				. ut	Na	•	-			
)ver W	alloon	nsaa			юл 1	•		<u>ZIZ]0</u> -		
				Che	ecked	1 By	/:		IAD	
pier S			Gro	undw	ater	0b:	servo	itions		
in	Do	ate		Dep	th \		١	lotes		
lb.				(11	)					
in.			_							
<u> </u>										
= 1					1					
			""	o le)	e e	~	%	~	~	
			1	Valt	oistu		ave	pur	nes	
					, ₹		50	S		
othar f	actors	then	the		ont -	tha	time	mage:	omonto	
onner T	401015	mun	110	se huez	en di	ine	iiiiie	measur	entents	

	NTrans	STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTI SUBSURFACE INFORMATION	1 ON	BORING LOG BENNINGTON BF 1000 (20) VT Rt 9, Bridge No. 6 Over Wallooms Casing Sampler	Boring Page N Pin No. ac Checke Groundwater	No.: <u>B-2D</u> o.: <u>1 of 1</u> : <u>z12j606</u> d By: <u>TAD</u> Observations
	Date Started: VTSPG NAD83: Station: <u>1</u> Ground Elevatio	<u>10/14/20</u> Date Finished: <u>10/14/20</u> <u>N 138826.55 ft E 1456403.72 ft</u> <u>2+13.86</u> Offset: <u>9.17' LT</u> n: <u>730.56 ft</u>	Type: I.D.: Hamme Hamme Rig: <u>1</u>	WASH BORE         SS         Date           4 in         1.38 in         1.38 in           r Wt:         300 lb.         140 lb.           r Fall:         24 in         30 in.           r/Rod Type:         Safety/N	Depth (ft)	Notes
	Depth (ft) Strata (1)	CLASSIFICATIO (Desc	N OF MATE cription)	ERIALS	Blows/6" (N Value) Moisture	Content % Gravel % Sand % Fines %
EL. 725.00 ABUTMENT A BOT. OF PILE CAP	- - - - - - - - - - - - - - - - - - -	Asphalt Pavement, 0.0 ft - 0.3 ft Refusal on concrete, 0.3 ft Hole stopp	bed @ 0.3	ft		
	- - 10.0 - - -					
NI ADT.GDT 11/4/20	- - 12.5 — - -					
REPLACEMENT.GPJ VERMC	- - 15.0 - - -					
179450053 - BENNINGTON BRIDGE	- - - - - - - - - - - - - -					
2010 COPY	Notes: 1. Stratific 2. N Value 3. Water low were mo	ation lines represent approximate boundary between material types. as have not been corrected for hammer energy. CE is the hamme evel readings have been made at times and under conditions stated ade.	Transition mo er energy corr d. Fluctuations	ay be gradual. ection factor. s of groundwater may occur due to other factors the	n those present a	t the time measurements

![](_page_20_Picture_3.jpeg)

BORIN	G LOG			Bor	ing No	».:	B-2	D.
BENNI	NGTON			Pag	je No.:	: <u> </u>	1 of	1
BF 100	0 (20)			Pin	No.:		z12j60	6
9, Bridge No.	6 Over W	alloomsaa	;	Che	ecked	Ву:	TA	D
Casing S	Sampler		Gro	undw	ater O	bservat	ions	
WASH BORE	SS 1.38 in	Date		Dept (ft)	th )	N	otes	
<u>    300  lb.                                 </u>	<u>140 lb.</u> 30 in.							
/pe:Safe	ety/N							
bile B-53	CE = 1							
			Blows /6"	(N Value)	Moisture Content %	Gravel %	Sand %	Fines %

	project name: BENNINGTON	
	project number: BF 1000(20)	
	FILE NAME: zI2j606borlogs.dgn	PLOT DATE: 8/31/2021
	PROJECT LEADER: T.KNIGHT	DRAWN BY: VTRANS
antec	DESIGNED BY: VTRANS	CHECKED BY: VTRANS
	BORING LOGS 3	SHEET 21 OF 49

![](_page_21_Picture_0.jpeg)

![](_page_21_Figure_1.jpeg)

![](_page_21_Picture_2.jpeg)

BORING LOG		Bor	ing N	0.:	B-2	2E
BENNINGTON		Ρα	ge No	.: _	1 of	1
BF 1000 (20)		Pin	No.:		z12j60	6
dge No. 6 Over W	alloomsac	Che	ecked	By:	TA	D
ing Sampler	G	roundw	ater (	Observat	ions	
BORE SS	Date	Dep	ţh	N	otes	
lb. 140 lb.		(ft	)			
in 30 in.						
Safety/N						
-53 <u>CE = 1</u>						
		/6" Ilue)	ure 11 %	%	%	%
		Blows N Vo	Moist	Grave	Sand	Fines
		-0				
.7 ft – 1.0 ft						
م الــــ الـــــ ال	actors Hannell		ort -1	the the-	No	
ay occur due to other f	uctors than th	iose pres	ent at	ine time r	neasuren	nents

	project name: BENNINGTON	
	project number: BF 1000(20)	
ntec	FILE NAME: zI2j606borlogs.dgn PROJECT LEADER: T.KNIGHT DESIGNED BY: VTRANS BORING LOGS 4	PLOT DATE: 8/31/2021 DRAWN BY: VTRANS CHECKED BY: VTRANS SHEET 22 OF 49

	VTrans	STATE OF VERMONT AGENCY OF TRANSPORTATION MATERIALS & RESEARCH SECTION SUBSURFACE INFORMATION	DN BF VT Rt 9, Bridge	RING LO INNINGTON 1000 (20 No. 6 Ov
	Boring Crew: Date Started: VTSPG NAD83: Station:13- Ground Elevation:	New England Boring, Derry, NH, LGH (Stantec) <u>10/12/20</u> Date Finished: <u>10/12/20</u> <u>N 138810.02 ft E 1456515.30 ft</u> +23.48 Offset: <u>32.24' RT</u> <u>730.81 ft</u>	Casing Type: WASH BOR I.D.: <u>4 in</u> Hammer Wt: <u>300 Ib.</u> Hammer Fall: <u>24 in</u> Hammer/Rod Type: Rig: <u>Truck/Mobile B-53</u>	Sampl <u>E SS</u> <u>1.38 i</u> <u>140 lt</u> <u>30 in</u> <u>Safety/N</u> <u>CE =</u>
	Depth (ff) Strata (1)	CLASSIFICATION OF MATER (Description)	RIALS	Run (Dip deg.)
		Asphalt Pavement, 0.0 ft — 0.5 ft Visual Classification, GrSa, brn, Dry, Rec. = 0.7	75 ft, -FILL-	-
	2.5 -	Visual Classification, GrSa, brn, Dry, Rec. = 0.3	3 ft, -FILL-	_
		Visual Classification, SiGrSa, brn, Moist, Rec. =	0.25 ft, -FILL-	_
EL. 725.30 ABUTMENT B BOT. OF PILE CAP	5.0 -	Visual Classification, SiGrSa, brn, Wet, Rec. =	0.25 ft, -FILL-	-
	7.5 -	Field Note:, Cobbles/boulders		_
		Visual Classification, GrSa, brn, Wet, Rec. = 0. —COBBLE/BOULDER LAYER—	3 ft,	-
12/3/20	12.5 -	Field Note:, Based on drill action cobbles and from approximately 11 to 13 feet., Rec. = 0.0 LAYER-	boulders are present ft, —COBBLE/BOULDER	-
VERMONT AOT.GDT		13.0 ft — 15.0 ft, Advanced roller bit through	bedrock from 13 to 15 feet	F.
IDGE REPLACEMENT.GPJ	15.0 -	15.0 ft — 20.0 ft, Light gray, Dolomite, Moderc weathered, Poor rock, NQDC, Joints are low an dipping, rough, slightly discolored, partly open.	ately hard, Slightly gle to moderately RMR = 32	1 (30)
53 - BENNINGTON BR	17.5 -			
010 COPY 1794500:	Notes: Notes: 1. Stratificati 2. N Values 3. Water leve were made	on lines represent approximate boundary between material types. have not been corrected for hammer energy. CE is the hammer el readings have been made at times and under conditions stated e.	Transition may be gradual. r energy correction factor. I. Fluctuations of groundwater may oc	cur due to c

.00	3				Bor	ing	No	.:	B	3
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ipie S	1:			Gro	bundw	ater	0	bservat	ions	
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>	ec. %	(%	Rate es/ft	""	i/b alue)	ure	% 10	%	%	%
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				10	)-9-					
				5	10- 0/3"					
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				5	0/0" (R)					
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		STATE OF VERMONT		BOR	ING LO	G		Bor	ing No.	.:	B	3
	VTrans	Working to Get You There Vermont Agency of Transportation MATERIALS & RESEARCH SEC	)N TION	BEN DE 1		١		Pag	je No.:		2 of	2
		SUBSURFACE INFORMATIO	1	VT Rt 9, Bridge N	No. 6 Ov	) er Wal	loomsad	Che	cked E	 }y:	<u>TA</u>	<u>o</u> 4D
	Boring Crew:	New England Boring, Derry, NH, LGH (Stantec)	Tupot	Casing	Sample ss	er		Groundw	ater Ob	servat	ions	
	Date Started:	10/12/20 Date Finished: 10/12/20	I.D.:	<u>4 in</u>	1.38 i	in	Date	Dep <sup>.</sup> (ft)	th   )	No	otes	
	VTSPG NAD83:	<u>N 138810.02 ft</u> <u>E 1456515.30 ft</u>	Hamme Hamme	er Wt: <u>300 lb.</u> er Fall: <u>24 in</u>	<u>   140   lt</u> <u>    30   in</u>	<u>).</u>						
	Ground Elevation:	:	Hamme Ria:	er/Rod Type: <u>S</u> Truck/Mobile B-53	Safety/N CE =	1						
	E				g.)	 %(%	/ft	6, (e)		%	%	~
	Depth (ft) Strata	CLASSIFICATION OF MAT (Description)	ERIALS		Run (Dip de	Core Rec (RQD ;	Drill Ro minutes	Blows/ (N Valı	Moistur Content	Gravel	Sand	Fines
		20.0 ft — 25.0 ft, Light gray, Dolomite, Mod rock, NQDC, Joints are low angle to moderat tight to partly open. RMR = 42	erately hard ely dipping,	, Fresh, Fair rough, fresh,	2 (15)	100 (83)	2.5					
							2					
	22.5 -						2.5					
	25.0						2					
EL. 725.30 Abutment b		25.0 ft — 29.0 ft, Advanced roller bit throug	h bedrock	from 25 to 29 feet.								
BOT. OF PILE CAP												
	27 5											
		29.0 ft — 34.0 ft, Light gray, Dolomite, Mod	erately hard	, Fresh, Fair	3	96	3.5					
	30.0	rock, NQDC, Joints are low angle to moderat tight. RMR = 42	ely dipping,	rough, fresh,	(15)	(87)	3.5					
							2.5					
3/20							2.5					
	32.5 -						2					
INT AOT.C							2					
L VERMC		34.0 ft — 39.0 ft, Light gray, Dolomite, Mod rock, NQDC, Joints are low angle to moderat	erately hard ely dipping,	, Fresh, Fair rough, fresh,	4 (15)	98 (92)	2.5					
.MENT.GP.	35.0	tight. RMR = 46					2.5					
REPLACE							2.5					
4 BRIDGE							2					
ENNINGTOR	37.5 -						2					
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179450	-	Hole stopped @ 39.	J TT									
о сорч	1. Stratificati 2. N Values 3. Water leve	ion lines represent approximate boundary between material typ have not been corrected for hammer energy. CE is the ham el readings have been made at times and under conditions sto	s. Transition m ner energy corr ted. Fluctuation	nay be gradual. rection factor. s of groundwater may occu	ur due to o	other fac	tors than	those pres	ent at th	e time n	neasuren	nents
2011	were mad	le.		- ,	-							

![](_page_22_Picture_3.jpeg)

	project name: BENNINGTON	
	PROJECT NUMBER: BF 1000(20)	
ntec	FILE NAME: zI2j606borlogs.dgn PROJECT LEADER: T.KNIGHT DESIGNED BY: VTRANS	PLOT DATE: 8/31/2021 DRAWN BY: VTRANS CHECKED BY: VTRANS
	BORING LOGS 5	SHELT 25 01 45

![](_page_23_Figure_0.jpeg)

![](_page_23_Figure_1.jpeg)

|2+00

![](_page_23_Picture_3.jpeg)

00		
	project name: BENNINGTON project number: BF 1000(20)	
Stantec	FILE NAME: zI2j606xs.dgn PROJECT LEADER: T.KNIGHT DESIGNED BY: K.RICHARDSON ROUTE 9 CROSS SECTION SHEET I	PLOT DATE: 8/31/2021 DRAWN BY: G.BURGMEIER CHECKED BY:K.RICHARDSON SHEET 24 OF 49

![](_page_24_Figure_0.jpeg)

![](_page_24_Figure_2.jpeg)

![](_page_24_Picture_3.jpeg)

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![](_page_25_Figure_0.jpeg)

![](_page_25_Figure_1.jpeg)

![](_page_25_Picture_3.jpeg)

	<pre>project name: BENNINGTON project number: BF 1000(20)</pre>	
ntec	FILE NAME: zI2j606xs.dgn PROJECT LEADER: T.KNIGHT DESIGNED BY: K.RICHARDSON ROUTE 9 CROSS SECTION SHEET 3	PLOT DATE: 8/31/2021 DRAWN BY: G. BURGMEIER CHECKED BY: K. RICHARDSON SHEET 26 OF 49

![](_page_26_Figure_0.jpeg)

![](_page_26_Figure_1.jpeg)

![](_page_27_Figure_0.jpeg)

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![](_page_28_Figure_0.jpeg)

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![](_page_30_Figure_0.jpeg)

![](_page_31_Figure_0.jpeg)

![](_page_31_Picture_2.jpeg)

	project name: BENNINGTON	
	project number: BF 1000(20)	
tec	FILE NAME: zI2j606xs.dgn PROJECT LEADER: T.KNIGHT DESIGNED BY: I.MAYNARD CHANNEL CROSS SECTION SHEET 4	PLOT DATE: 8/31/2021 DRAWN BY: I.MAYNARD CHECKED BY: T.KNIGHT SHEET 32 OF 49

![](_page_32_Figure_0.jpeg)

	project name: BENNINGTON	
	project number: BF 1000(20)	
	FILE NAME: zI2j606bdr.dgn	PLOT DATE: 8/31/2021
	PROJECT LEADER: T.KNIGHT	DRAWN BY: G.BURGMEIER
ntec	DESIGNED BY: K. RICHARDSON	CHECKED BY: T.KNIGHT
	EXISTING CONDITIONS PLAN	SHEET 33 OF 49

### WATER AND SEWER GENERAL NOTES

- 1. THE CONTRACTOR SHALL PERFORM EXPLORATORY EXCAVATION TO VERIFY LOCATION, ORIENTATION, SIZES, INVERTS, STATUS OF THE EXISTING PIPE, WHETHER ACTIVE OR ABANDONED, AND ASSOCIATED BURIED FITTINGS OF ALL EXISTING SEWER MAINS ENTERING SANITARY SEWER MANHOLE SMH #696 PRIOR TO CONSTRUCTION OF THE MANHOLE. THE CONTRACTOR SHALL USE EXTREME CAUTION TO PREVENT DAMAGE TO EXISTING UTILITIES. PAYMENT FOR EXPLORATORY EXCAVATION FOR CONFIRMING EXISTING SANITARY SEWER MAIN DATA SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.645 SPECIAL PROVISION (TRANSFER TO NEW SYSTEM, SEWER). PAYMENT FOR ALL OTHER REQUIRED EXPLORATORY EXCAVATION, AS DEPICTED ON THE PLANS OR AS DIRECTED BY THE ENGINEER, SHALL BE MADE UNDER ITEM 204.22 TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.).
- 2. THE EXACT LOCATIONS AND DEPTHS OF EXISTING WATER AND SEWER SERVICES ARE UNKNOWN. CONTRACTOR SHALL ANTICIPATE AT LEAST ONE WATER AND ONE SEWER SERVICE FOR EACH BUILDING AND/OR PARCEL, OR AS DEPICTED OTHERWISE ON THE PLANS. WHEN ABLE, THE TOWN OF BENNINGTON, PUBLIC WORKS DEPARTMENT PERSONNEL WILL TRY TO ASSIST THE CONTRACTOR IN LOCATING EXISTING WATER AND SEWER SERVICES DURING CONSTRUCTION. HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE LOCATIONS AND SIZES OF ALL EXISTING WATER AND SEWER BUILDING SERVICES AT THE RIGHT-OF-WAY LINE BY EXPLORATORY EXCAVATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING WATER AND SEWER MAINS AND SERVICES. PAYMENT FOR EXPLORATORY EXCAVATION TO DETERMINE LOCATIONS AND DEPTHS OF EXISTING WATER AND SEWER BUILDING SERVICES SHALL BE MADE UNDER ITEM 204.22 TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.).
- 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF EXISTING WATER AND SANITARY SEWER FLOWS AT ALL TIMES DURING CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, BYPASS PUMPING, TEMPORARY RELOCATION OF EXISTING PIPING, AND INSTALLATION OF NEW PIPING AS REQUIRED. PAYMENT FOR MAINTENANCE OF EXISTING WATER AND SANITARY SEWER FLOWS SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.645 SPECIAL PROVISION (TRANSFER TO NEW SYSTEM, WATER) AND ITEM 900.645 SPECIAL PROVISION (TRANSFER TO NEW SYSTEM, SEWER), RESPECTIVELY.

THE CONTRACTOR'S SCHEDULE SHALL TAKE INTO CONSIDERATION THE TIME TO CROSS AND, IF REQUIRED, TO RELOCATE EXISTING SANITARY SEWER/WATER MAINS AND SERVICES AFFECTED BY THE WORK OR TO INSTALL NEW PIPING AS REQUIRED. AND THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL TIME OR COSTS ASSOCIATED WITH THESE ROUTINE RELOCATIONS.

- 4. CONTRACTOR SHALL ESTABLISH CONSTRUCTION PHASING SUCH THAT THE EXISTING SANITARY SEWER MAINS INCLUDING ALL MANHOLES AND LATERAL PIPES REMAIN IN SERVICE DURING RELINING OF THE EXISTING SANITARY SEWER MAIN AND CONSTRUCTION OF THE NEW MANHOLE. IN LOCATIONS OF CONFLICT BETWEEN NEW SANITARY SEWER MAINS AND EXISTING LATERAL SERVICES, CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY SEWER SERVICE PIPING. PAYMENT FOR TEMPORARY SEWER SERVICE PIPING SHALL BE INCIDENTAL TO ITEM 900.645 SPECIAL PROVISION (TRANSFER TO NEW SYSTEM, SEWER). UPON SUCCESSFUL TESTING OF NEW SANITARY SEWER MAIN AND MANHOLE, EXISTING LATERAL SERVICES MAY BE TRANSFERRED OVER TO THE NEW SYSTEM AND THE EXISTING SYSTEM PIPING DECOMMISSIONED AS REQUIRED.
- 5. THE LOCATION OF EXISTING PIPES, DUCTS, AND OTHER UNDERGROUND STRUCTURES SHOWN ON THESE PLANS ARE NOT WARRANTED TO BE EXACT NOR IS IT WARRANTED THAT ALL UNDERGROUND STRUCTURES ARE SHOWN.
- 6. ALL WORK TO BE COMPLETED, UNLESS OTHERWISE NOTED, SHALL BE WITHIN THE PUBLIC RIGHT OF WAY (ROW) OR EASEMENT.

- 7. THE CONTRACTOR SHALL INSTALL 4" POLYSTYRENE RIGID INSULATION (2 LAYERS AT 2" THICK EACH) AT ALL WATER MAIN/WATER SERVICE AND STORM DRAIN CROSSINGS, AND AS DIRECTED BY THE ENGINEER. PAYMENT FOR POLYSTYRENE RIGID INSULATION AND SAND BEDDING SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.640, SPECIAL PROVISION (DUCTILE IRON PIPE, CEMENT LINED, ALL INCLUSIVE) AND ITEM 900.640, SPECIAL PROVISION (SEAMLESS COPPER WATER TUBE, ALL INCLUSIVE), RESPECTIVELY. SEE DETAIL ON SHEET XX.
- 8. ALL NEW DUCTILE IRON WATER MAIN PIPE SHALL BE CLASS 52. THE CONTRACTOR SHALL FURNISH AND INSTALL NITRILE GASKETS AT ALL NEW WATER PIPING JOINTS AND FITTINGS. ALL BRASS FITTINGS, INCLUDING CORPORATIONS AND CURB STOPS, SHALL BE FURNISHED WITH NITRILE O-RINGS.
- 9. ALL NEW COPPER WATER SERVICE TUBING SHALL BE 1" COPPER UNLESS OTHERWISE NOTED ON THE PLANS.
- 10. ALL NEW PVC SANITARY SEWER PIPE SHALL BE SDR 35 UNLESS OTHERWISE NOTED ON THE PLANS.
- 11. THE CONTRACTOR SHALL INSTALL ALL WATER AND SEWER PIPE WITH THE SEPARATION REQUIREMENTS, BOTH HORIZONTALLY AND VERTICALLY, IN ACCORDANCE WITH THE VERMONT ENVIRONMENTAL PROTECTION RULES, CHAPTER 1, WASTEWATER SYSTEM AND POTABLE WATER SUPPLY RULES, EFFECTIVE APRIL 12, 2019 (OR LATEST EDITION), AND CHAPTER 21, WATER SUPPLY RULE, AS REVISED ON APRIL 12, 2019 (OR LATEST EDITION).
- 12. THE LOCATION OF NEW SANITARY SEWER, OR WATER MAINS, AND SERVICES SHALL NOT DISTURB ROOT SYSTEMS OF EXISTING TREES OR SHRUBS. CONTRACTOR SHALL EXERCISE CARE TO PREVENT DAMAGE THERETO.
- 13. WHEN REPLACING STRUCTURES AND/OR CONNECTING TO EXISTING PIPING SYSTEMS, CONFIRM EXISTING LOCATIONS, SIZES, AND ELEVATIONS OF INVERTS PRIOR TO ORDERING PRECAST CONCRETE STRUCTURES.
- 14. EXISTING GATE VALVES AND CURB STOPS OPEN RIGHT OR CLOCKWISE (CW). THE CONTRACTOR SHALL NOT BE ALLOWED TO OPERATE ANY EXISTING GATE VALVES OR CURB STOPS. THE TOWN OF BENNINGTON WATER RESOURCES DEPARTMENT PERSONNEL WILL PERFORM THIS TASK IN ALL CASES. THE CONTRACTOR SHALL COORDINATE HIS/HER ACTIVITIES FOR VALVE CLOSURE AND OPENING WITH THE TOWN OF BENNINGTON WATER RESOURCES DEPARTMENT. IN THE EVENT OF A PLANNED TEMPORARY WATER SERVICE SHUTDOWN, THE CONTRACTOR SHALL NOTIFY ALL CUSTOMERS TO BE TEMPORARILY OUT OF WATER A MINIMUM OF 48 HOURS PRIOR TO THE SHUTDOWN ACTIVITY. AT NO TIME SHALL A CUSTOMER BE WITHOUT WATER FOR MORE THAN 4 HOURS.
- 15. THE CONTRACTOR SHALL PROVIDE A TEMPORARY 4" BLOWOFF FOR FLUSHING ALL NEW WATER MAIN PIPING AS NOTED ON THE PLANS. FLUSHING SHALL BE PERFORMED IN ACCORDANCE WITH AWWA C651 (LATEST EDITION), DISINFECTING WATER MAINS. THE CONTRACTOR SHALL ALSO INSTALL A NEW TEMPORARY 1" CHLORINATION INJECTION POINT (CIP) AT ALL WATER MAIN INTERCONNECTION POINTS INCLUDING VALVES V1, V2, V3, AND V4.

INTERCONNECTION PIPING, VALVES, AND FITTINGS AT NEW WATER MAIN TIE-IN POINTS INCLUDING TEMPORARY END CAPS AND COUPLINGS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C651(LATEST EDITION), DISINFECTING WATER MAINS.

UPON SUCCESSFUL FLUSHING, PRESSURE TESTING, AND DISINFECTION OF THE NEW WATER MAINS IN ACCORDANCE WITH AWWA C651, CLOSE CIP CORPORATION STOP AND REMOVE CIP COPPER TUBING. INSTALL 1" COPPER CAP ON A 6" LONG STUB OF COPPER TUBING AT THE 'CLOSED' CORPORATION STOP PRIOR TO BACKFILL.

PAYMENT FOR ALL WORK NECESSARY TO COMPLETE THE FINAL INTERCONNECTION OF NEW TO EXISTING WATER MAIN PIPING (EXCLUDING NEW GATE VALVES AND NEW DUCTILE IRON PIPE AS DEPICTED ON THE DRAWINGS) SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.645 SPECIAL PROVISION (TRANSFER TO NEW SYSTEM, WATER)

ALL TEMPORARY WATER SYSTEM SHUTDOWNS REQUIRED FOR COMPLETION OF WATER MAIN INTERCONNECTIONS AT VALVES V1, V3 AND V4, INCLUDING CUTTING EXISTING WATER MAIN PIPING AND INSTALLING NEW PIPING, COUPLINGS, GATE VALVES, PIPE RESTRAINTS AND END CAPS, SHALL BE COMPLETED AT NIGHT BETWEEN 11:00 PM AND 3:00 AM UNLESS PROVIDED PRIOR WRITTEN APPROVAL BY THE TOWN OF BENNINGTON, OR THE ENGINEER.

- THE TOWN.

- WORK.

- ALLOWED.

![](_page_33_Picture_29.jpeg)

16. UPON SUCCESSFUL TESTING, CHLORINATION, AND TRANSFER TO NEW SYSTEM, ALL EXISTING SANITARY SEWER AND WATER MAIN PIPING TO BE ABANDONED OR NO LONGER REMAINING ACTIVE SHALL BE REMOVED. PAYMENT FOR REMOVAL OF EXISTING PIPING SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.645 SPECIAL PROVISION (TRANSFER TO NEW SYSTEM, WATER) AND ITEM 900.645 SPECIAL PROVISION (TRANSFER TO NEW SYSTEM, SEWER), RESPECTIVELY.

17. ALL EXISTING CAST IRON FRAMES, GRATES, COVERS, AND POST FLUSHING HYDRANTS SHALL BE SALVAGED BY THE CONTRACTOR AND TURNED OVER TO THE TOWN OF BENNINGTON, PUBLIC WORKS DEPARTMENT, AT A LOCATION TO BE DESIGNATED BY

18. THE CONTRACTOR SHALL PROMPTLY RESTORE ALL GRASS AREAS DISTURBED AS DIRECTED BY THE ENGINEER.

19. UPON COMPLETION OF SUCCESSFUL RELINING OF THE EXISTING 8" CORRUGATED METAL PIPE (CMP) SEWER MAIN LOCATED UNDER THE WALLOOMSAC RIVER STREAMBED, THE CONTRACTOR SHALL PROVIDE VTRANS AND THE VILLAGE OF BENNINGTON WITH A COPY OF THE CALIBRATED TELEVISION INSPECTION REPORTS AND ASSOCIATED VIDEO RECORDINGS.

20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AS-BUILT RECORDS TO VTRANS AND THE TOWN OF BENNINGTON FOR NEW UTILITY INSTALLATIONS INCLUDING ALL NEW WATER, SANITARY SEWER, ELECTRICAL, AND COMMUNICATIONS

21. CONTRACTOR SHALL MAINTAIN DETOURED TRAFFIC AND ACCESS TO AFFECTED COMMERCIAL AND RESIDENTIAL PROPERTIES AT ALL TIMES DURING CONSTRUCTION. SEE TRAFFIC CONTROL PLANS FOR FURTHER DETAILS.

22. THE CONTRACTOR SHALL ORIENT NEW SANITARY SEWER MANHOLE CAST IRON FRAME AND COVER AS DEPICTED ON THE DRAWINGS SUCH THAT THEY WILL NOT BE LOCATED IN THE NORMAL WHEEL PATH OF VEHICLES.

23. FLOW FROM EXISTING SANITARY SEWER MAINS AND SERVICE CONNECTIONS SHALL BE MAINTAINED AT ALL TIMES BY PUMPING OR OTHER METHODS APPROVED BY THE ENGINEER. UNDER NO CIRCUMSTANCES WILL THE DUMPING OF RAW SEWAGE ON PRIVATE PROPERTY, IN MUNICIPAL STREETS, EXCAVATIONS, OR INTO WATERWAYS, BE

	project name: BENNINGTON project number: BF 1000(20)	
ntec	FILE NAME: zI2j606notes_util.dgn PROJECT LEADER: T.KNIGHT DESIGNED BY: D.CAMPBELL WATER AND SEWER GENERAL NOTES	PLOT DATE: 8/31/2021 DRAWN BY: J.BURKE CHECKED BY: T.KNIGHT SHEET 34 OF 49

**STATE OF** VERMONT STA. 12+01, LT. EXISTING SMH #696 TO BE REMOVED AND REPLACED BY CONTRACTOR. SEE L. MAPLE SHEET (XX )FOR DETAIL. M. ASH STA. II+90, LT. AND STA. II+95, LT. INSTALL TWO-6" SEWER SADDLES ON EXISTING 8" CI SEWER MAIN FOR MAINTENANCE OF EXISTING SEWAGE SYSTEM FLOWS. SEE SPECIAL PROVISIONS AND SHEET XX FOR DETAIL. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.645 SPECIAL PROVISION (TRANSFER TO NEW SYSTEM, SEWER). **PRUE, JACQUELINE R.** J J & J, INC. **REDDBIDD, LLC** S. CEDAF EXISTING TOWN R.O.W. WSQNWSQ APPROX.107' TO SMH #694 )+00 - VT ROUTE 9 TO NY STATE ||+00 HVCTRL 5&7 EXISTING TOWN R.O.W. **BEAUDOIN, JOSEPH R. JR.** '15-717 MAIN & CAROL L. STREET, LLC STA. 11+52, RT. - STA. 11+80, LT./ NEW PERMANENT I'' COPPER WATER SERVICE. SEE A A SHEET { XX }FOR DETAILS. TRANSITION TO 3/4" COPPER WATER TUBING AT CONNECTION TO EXISTING. EXISTING BRIDGE DATA Built 1923, single 46' span CONCRETE T- BEAM/ ENCASED STEEL BEAM CIP CONCRETE DECK STA. | | +60, RT. (VALVE VI) TH-476 PRCAN ST CUT EXISTING IO" CI WATER MAIN AND INSTALL NEW IO" GATE VALVE, IO" DI SPOOL, MAR/CIP, CONCRETE PIPE RESTRAINT, AND TEMPORARY IO" DI END CAP. SEE SHEET (XX) FOR DETAILS. STA. 11+95, LT. - STA. 11+98, RT. STA. II+80, RT. (VALVE V3) INSTALL TEMPORARY 6" SDR 35 PVC CUT EXISTING 6" CI WATER MAIN AND SEWER PIPE TO CONVEY EXISTING INSTALL NEW 6" GATE VALVE, 6" DI FLOWS FROM MORGAN STREET AROUND SPOOL, MAR/CIP, CONCRETE PIPE RESTRAINT , AND TEMPORARY 6" DI END SMH #696. CONNECT TO EXISTING 6" CAP. SEE SHEET { XX } FOR DETAILS. CI SEWER AND NEW 6" SEWER SADDLE. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.645 SPECIAL PROVISION (TRANSFER JQ NEW SYSTEM, SEWER). SEE SHEET{ XX }FOR DETAILS.

![](_page_34_Figure_1.jpeg)

NSTA. 12+01, LT. REMOVE EXISTING SMH #696 AND REPLACE WITH NEW 6' DIAMETER INSIDE DROP SANITARY SEWER MANHOLE INCLUDING TWO NEW 8" SDR 35 PVC SPOOL PIECES (APPROX. 8' LONG) AND TWO NEW 6" SDR 35 PVC SPOOL PIECES (APPROX. 8' LONG) FOR CONNECTION TO THE EXISTING SEWER PIPING. CONNECT TO EXISTING WITH FLEXIBLE RUBBER COUPLINGS. SEE PROFILE AND SHEET { XX }FOR DETAILS. UPON SUCCESSFUL TESTING AND TRANSFER TO NEW SYSTEM, REMOVE TEMPORARY GRAVITY AND FORCE MAIN SEWER BYPASS PIPING. **STATE OF** STA. 11+67, RT. - STA. 12+19, RT. VERMONT (INTERCONNECTION AT VALVE VI) REMOVE TEMPORARY IO" DI END CAP AND INSTALL NEW PERMANENT IO" CLASS 52 DI WATER MAIN. CONNECT TO VALVE VI SPOOL PIECE WITH LONG SOLID SLEEVE L. MAPLE M. ASH COUPLING AND 2-10" DI 45° ELBOWS FOR VERTICAL DOWNWARD TRANSITION. INSTALL I-IO'' X 6'' DI TEE, 2-10" DI 45° ELBOWS FOR HORIZONTAL TRANSITION. AND 2-10" DI 45° ELBOWS FOR VERTICAL ELEVATION ADJUSTMENT INTO NEW 24" STEEL SLEEVE AT BRIDGE. FURNISH PRE-INSULATED PIPE FOR NEW DI WATER MAIN WITH LESS THAN 6' OF COVER AT VERTICAL ELEVATION ADJUSTMENT. STA. 11+80, RT. NEW IO"×6" DI TEE **PRUE, JACQUELINE R.** J J & J, INC. REDDBIDD, LLC EXISTING TOWN R.O.W. WSQNWSQ STA. 11+60, RT. → APPROX.107′TO SMH #694 VALVE VI )+00 - VT ROUTE 9 TO NY STATE 11+00 ₩00 STA. 11+80, RT. EC 1+00 FOR PRESSURE ZONE ISOLATION. NORMALLY CLOSED. + / TRISTART UI+80, RT. 4/ EXISTING TOWN R.O.W. MEW DI ELBOW (TYP.) '15-717 MAIN I II A C STREET, LLC & CAROL L. STA. ||+8|, RT. - STA. ||+83, RT. (INTERCONNECTION AT VALVE V3) REMOVE TEMPORARY 6" DI END CAP AND INSTALL NEW PERMANENT 6" CLASS 52 DI WATER MAIN. CONNECT TO VALVE V3 SPOOL PIECE WITH LONG SOLID SLEEVE COUPLING AND 2-6" DI 45° ELBOWS FOR VERTICAL DOWNWARD TRANSITION. INSTALL I-6" DI 45° ELBOW AND I-6" DI 22.5° ELBOW FOR HORIZONTAL TRANSITION AND 6" GATE VALVE (VALVE V5). INSTALL 20/ 00 TH- 47 MORCAN 6" X 4" DI TEE AND 4" GATE VALVE (VALVE V6) FOR FLUSHING HYDRANT. STA. 11+80, RT. INSTALL 6" X 4" DI TEE WITH 4" STA. 11+80, RT. GATE VALVE (VALVE V6), 4" DI PIPE, VALVE V3 AND 2-1/2" POST FLUSHING HYDRANT WITH 4" M.J. INLET. STA. 12+26, RT. - STA. 12+31, RT. TWO NEW IO" DI 45° ELBOWS FOR VERTICAL TRANSITION (TYP. 2 LOCATIONS) STA. 12+34, RT. - STA. 12+44, RT. NEW 24" STEEL SLEEVE, 10'-0" LONG (TYP. OF 2). SEE DETAIL ON SHEET {XX.

![](_page_35_Figure_1.jpeg)

![](_page_36_Figure_0.jpeg)

SCALE IN FEET

PERM. POWER & COMM. UTILITY PLAN

SHEET 37 OF 49

![](_page_37_Figure_0.jpeg)

STA. 12+01, 3' LT. NEW 6' I.D. SANITARY SEWER MANHOLE (SMH # 696) WITH INSIDE DROP RIM ELEVATION = 730.47NEW 8" SDR 35 PVC INV. IN = 719.75 (EAST) NEW 6" SDR 35 PVC INV. IN = 726.60 (SOUTH) AT UPPER CLEANOUT INVERT NEW 6" SDR 35 PVC INV. IN = 723.70 (SOUTH, ACTIVE MORGAN STREET SEWER MAIN) AT UPPER CLEANOUT INVERT NEW 6" SDR 35 PVC INV. IN = 720.25 (SOUTH) AT LOWER INVERT NEW 8" SDR 35 PVC INV. OUT = 719.70 (WEST) NEW 6" SDR 35 PVC SEWER PIPE (8' LONG, OR AS REQUIRED) CONNECT TO EXISTING 6" VC SEWER PIPE FROM MORGAN STREET WITH FLEXIBLE RUBBER COUPLING. FURNISH AND INSTALL NEW 6" - 45° PVC ELBOW(S) AS REQUIRED. NOTE THAT THE EXISTING 6" VC SEWER PIPE ENTERS THE EXISTING SMH #696 HIGH IN THE MANHOLE FROM THE SOUIH. NEW INSIDE DROP NOT SHOWN FOR CLARILY (SEE DETAIL ON SHEET (XX)-740 -----BEGIN PROJECT STA. 11+75.00 NEW 6" SDR 35 PVC SEWER PIPE (8' LONG, OR AS REQUIRED). CONNECT TO EXISTING 6" VC ACTIVE SEWER MAIN FROM MORGAN STREET WITH FLEXIBLE RUBBER BEGIN APPROACH COUPLING. FURNISH AND INSTALL NEW 6" - 45° PVC STA. 11+25.00 ELBOW(S) AS REQUIRED. NOTE THAT THE ACTIVE MORGAN STREET SEWER MAIN ENTERS THE EXISTING SMH #696 730 -HIGH IN THE MANHOLE FROM THE WEST AND HAS TWO OR MORE ELBOWS PRIOR TO ENTRY INTO THE EXISTING MANHOLE. SEE DETAIL ON SHEET (XX.) 720 NEW I'' COPPER WATER SERVICE. MAINTAIN 18" MINIMUM SEPARATION -710 -0 + വ  $\sim$ 0 0 ALL STATION REFERENCES ARE WITH RESPECT TO ROADWAY CONSTRUCTION CENTERLINE.

![](_page_38_Figure_1.jpeg)

![](_page_38_Picture_3.jpeg)

### TEMPORARY WATER

### MAINTENANCE NOTES:

- I. THE PROPOSED TEMPORARY WATER MAINTENANCE PLAN CONFIGURATION DOES NOT, AND IS NOT INTENDED TO, COVER ALL REQUIREMENTS FOR MAINTAINING TEMPORARY WATER SERVICE DURING CONSTRUCTION AND IS PROVIDED TO ASSIST THE CONTRACTOR IN DEVELOPING HIS/HER COMPREHENSIVE MAINTENANCE OF WATER FLOW PLAN.
- 2. THE FOLLOWING IS INTENDED TO BE A SUGGESTED CONSTRUCTION SEQUENCE FOR THE MAINTENANCE OF WATER SERVICE DURING CONSTRUCTION OF WATER MAIN ISOLATION VALVE INSTALLATIONS:
- THE TOWN OF BENNINGTON WATER DISTRIBUTION SYSTEM IS 'LOOPED' IN THE AREA OF THE BRIDGE #6 CONSTRUCTION INCLUDING MAIN STREET, MORGAN STREET, AND BEECH STREET.
- INSTALL A NEW I'' PERMANENT COPPER WATER SERVICE FROM STA. 11+52, RT., TO STA. II+80, LT., AND FROM STA. II+79, RT., TO STA. 12+40, RT., TO THE COMMERCIAL BUILDING LOCATED AT 716 MAIN STREET AND TO THE RESIDENTIAL BUILDING LOCATED AT 731 MAIN STREET, RESPECTIVELY.
- PRIOR TO DEMOLITION OF THE EXISTING BRIDGE #6 OVER THE WALLOOMSAC RIVER ON MAIN STREET, CUT THE EXISTING IO", 8", AND 6" WATER MAINS ALONG MAIN STREET, MORGAN STREET, AND BEECH STREET IN FOUR LOCATIONS AT SEPARATE TIMES AND INSTALL ONE (I) NEW GATE VALVE AND APPURTENANCES AT EACH LOCATION FOR ISOLATION OF THE EXISTING 'LOOPED' WATER DISTRIBUTION SYSTEM DURING GONSTRUCTION OF THE NEW BRIDGE. SEE SHEET (XX FOR DETAIL.
- CUT THE EXISTING IO" CAST IRON WATER MAIN ALONG MAIN STREET IN TWO LOCATIONS (STA. II+60, RT. AND STA. I3+74, RT.) AND INSTALL ONE (I) NEW IO'' GATE VALVES AT EACH LOCATION FOR ISOLATION OF THE EXISTING WATER DISTRIBUTION SYSTEM. NOTE THE FOLLOWING:
  - INSTALLATION OF THE NEW VALVE (VI) AT STA. II+60, RT., MAY BE ACCOMPLISHED WITH CUSTOMER INTERRUPTION BY ISOLATING THE EXISTING IO" CI PIPE SEGMENT BY CLOSING EXISTING VALVE EX-VI, AND THE NEAREST VALVE ON MAIN STREET WESTERLY OF MORGAN STREET. NOTE THAT VALVE 'EX-V3' ON BEECH STREET REMAINS NORMALLY CLOSED.
  - INSTALLATION OF THE NEW VALVE (V2) AT STA. 13+74, RT., MAY BE ACCOMPLISHED WITHOUT CUSTOMER INTERRUPTION BY ISOLATING THE EXISTING IO" CI PIPE SEGMENT BY CLOSING EXISTING VALVES 'EX-VI'. 'EX-V2'. AND 'EX-V4'.

- AND INSTALL ONE (I) NEW 6" GATE VALVE FOR SYSTEM. NOTE THE FOLLOWING:
- FOLLOWING:
- THE EXISTING WATER MAIN PIPING.
- ALL NEW ISOLATION VALVES SHALL BE LEFT IN THE BRIDGE AND ASSOCIATED NEW WATER MAIN.
- THE DRAWINGS.
- 3. ALL NEW DUCTILE IRON WATER MAIN PIPE SHALL BE CLASS 52. NEW GATE VALVES SHALL BE RESILIENT WEDGE TYPE.
- 4. COORDINATE SYSTEM SHUTDOWN WITH THE TOWN OF ENGINEER PRIOR TO SHUTDOWN AND VALVE HOURS WILL BE ALLOWED TO PERFORM THE RESTRAINT, MAR/CIP, AND END CAP.
- 5. DISINFECTION OF NEW GATE VALVES, PIPING AND APPUTENANCES INSTALLED FOR MAINTENANCE OF TEMPORARY WATER SERVICE FLOWS SHALL BE EDITION).
- 6. ONCE THE PROJECT WORK SEGMENT HAS BEEN MAIN PIPE AND VALVES AS DEPICTED ON THE AND APPURTENANCES.
- 7. UPON SUCCESSFUL PRESSURE TESTING AND DISINFECTION OF ALL NEW WATER MAIN PIPING. 'NORMALLY OPEN' POSITION. VALVE V5 SHALL BE LEFT IN THE 'NORMALLY CLOSED' POSITION.

• CUT THE EXISTING 6" CAST IRON WATER MAIN ALONG MORGAN STREET IN ONE LOCATION (STA. 11+80, RT.) ISOLATION OF THE EXISTING WATER DISTRIBUTION

- INSTALLATION OF THE NEW VALVE (V3) AT STA. II+80, RT., MAY BE ACCOMPLISHED WITH CUSTOMER INTERRUPTION BY ISOLATING THE EXISTING 6" CI PIPE SEGMENT BY LEAVING EXISTING VALVE 'EX-V3' CLOSED, AND CLOSING THE NEAREST VALVE ON MORGAN STREET SOUTHERLY OF MAIN STREET.

• CUT THE EXISTING 8" DUCTILE IRON WATER MAIN ALONG BEECH STREET IN ONE LOCATION (STA. 13+40, RT.) AND INSTALL ONE (I) NEW 8" GATE VALVE FOR ISOLATION OF THE EXISTING WATER DISTRIBUTION SYSTEM. NOTE THE

- INSTALLATION OF THE NEW VALVE (V4) AT STA. 13+40, RT., MAY BE ACCOMPLISHED WITH CUSTOMER INTERRUPTION BY ISOLATING THE EXISTING 8" DI PIPE SEGMENT BY CLOSING EXISTING VALVE 'EX-V4' . AND CLOSING THE NEAREST VALVE ON BEECH STREET SOUTHERLY OF MAIN STREET.

• EACH ISOLATION VALVE INSTALLATION SHALL INCLUDE A NEW GATE VALVE, DUCTILE IRON PIPE SPOOL, CONCRETE RESTRAINT, TEMPORARY END CAP, MANUAL AIR RELEASE / TEMPORARY CHLORINATION INJECTION POINT (MAR/CIP) . AND A LONG SOLID SLEEVE COUPLING FOR CONNECTION TO

CLOSED POSITION DURING CONSTRUCTION OF THE NEW

• REMOVE EXISTING WATER MAIN PIPING AS DEPICTED ON

BENNINGTON DEPARTMENT OF PUBLIC WORKS AND THE INSTALLATIONS. A MAXIMUM SHUTDOWN PERIOD OF 4 INSTALLATION OF EACH NEW GATE VALVE, CONCRETE

PERFORMED IN ACCORDANCE WITH AWWA C651 (LATEST

SUCCESSFULLY ISOLATED, REMOVE EXISTING WATER DRAWINGS AND CONSTRUCT NEW WATER MAIN PIPING

VALVES VI, V2, V3, AND V4 SHALL BE LEFT IN THE

8. PAYMENT FOR ALL WORK REQUIRED FOR TEMPORARY MAINTANENCE OF WATER FLOWS SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.645 SPECIAL PROVISION (TRANSFER TO NEW SYSTEM, WATER).

### TEMPORARY SEWER MAINTENANCE NOTES:

- I. THE PROPOSED TEMPORARY SEWER MAINTENANCE PLAN CONFIGURATION DOES NOT, AND IS NOT INTENDED TO, COVER ALL REQUIREMENTS FOR MAINTAINING TEMPORARY SEWER SERVICE DURING CONSTRUCTION AND IS PROVIDED TO ASSIST THE CONTRACTOR IN DEVELOPING HIS/HER COMPREHENSIVE SEWER MAINTENANCE PLAN.
- 2. THE FOLLOWING IS INTENDED TO BE A SUGGESTED CONSTRUCTION SEQUENCE FOR THE MAINTENANCE OF EXISTING SEWAGE FLOWS DURING CONSTRUCTION OF SEWER MAIN RELINING AND REPLACEMENT OF EXISTING SANITARY SEWER MANHOLES:

SEWER MAIN RELINING FROM STA. 12+01. LT. - STA. 13+14, LT. (SMH #696 TO SMH #713)

- INSTALL ONE NEW 6" SEWER SADDLE AT STA. 11+90, LT., ON THE EXISTING 8" CI SEWER MAIN TO FACILITATE DISCHARGE OF EXISTING SEWAGE ELOWS ORIGINATING FROM SMH #713. SEE SHEET (XX)FOR DETAIL.
- INSTALL TEMPORARY 4" HDPE SEWER FORCE MAIN FROM STA. II+90, LT, INTO SMH #713. CONNECT TEMPORARY 4" HDPE FORCE MAIN INTO NEW 6" SEWER SADDLE.
- THE CONTRACTOR SHALL NOTE THAT INSTALLATION OF THE TEMPORARY FORCE MAIN MAY BE SCHEDULED SUCH THAT THE EXISTING BRIDGE MAY BE USED TO SUPPORT THE TEMPORARY PIPING. OTHERWISE. A STEEL BEAM MAY BE REQUIRED TO SUPPORT THE PIPING ACROSS THE WALLOOMSAC RIVER. AT NO TIME SHALL ACTIVE TEMPORARY SEWER PIPING BE ALLOWED TO BE LAYED IN THE RIVER BED.
- FURNISH TRAILER MOUNTED SUBMERSIBLE BYPASS PUMP SIZED APPROPRIATLY TO HANDLE ALL ANTICIPATED UPSTREAM SEWAGE FLOWS. PUMP SHALL REMAIN IN SERVICE 24 HOURS/DAY AND 7 DAYS/WEEK DURING RELINING OF EXISTING 8" CMP SEWER MAIN LOCATED UNDER THE WALLOOMSAC RIVER AND REPLACEMENT OF SMH #696. PROTECT TRAILER MOUNTED PUMP AND ASSOCIATED PIPING FROM VEHICULAR TRAFFIC AT ALL TIMES. SEE SPECIAL PROVISIONS FOR DETAIL.
- INSTALL BARRIER INSIDE SMH #713 TO PREVENT FLOW INTO THE EXISTING DOWNSTREAM 8" CMP.
- RELINE EXISTING 8" CMP SEWER MAIN BETWEEN SMH #696 TO SMH #713 FROM STA. 12+01, LT., - STA. 13+14, LT.

![](_page_39_Picture_45.jpeg)

REPLACEMENT OF EXISTING SANITARY SEWER MANHOLE SMH #696 AT STA. 12+01, LT. SEE SHEET(XX)FOR DETAIL.

- INSTALL ONE NEW 6" SEWER SADDLE AT STA. II+95, LT., ON TH EXISTING 8" CI SEWER MAIN TO FACILITATE DISCHARGE OF EXISTING SEWAGE FLOWS ORIGINATING FROM MORGAN STREET INCLUDING UPLAND SMH #697.
- INSTALL NEW TEMPORARY 6" SDR 35 PVC SEWER PIPE FROM STA. II+95, LT. - STA. II+98, RT. CONNECT TO EXISTING 6" CI SEWER MAIN AND NEW 6" SEWER SADDLE.
- PROVIDE FOR 6" X 6" PVC WYE AS REQUIRED TO CONNECT IN EXISTING 6" VC SEWER PIPE ENTERING HIGH INTO SMH #696 FROM THE SOUTHWEST.
- REMOVE EXISTING SMH #696 AND ANCILLARY PIPING AS REQUIRED.
- INSTALL NEW SMH #696 AND RECONNECT ALL ACTIVE PIPING.

DEMOBILIZE TEMPORARY SANITARY SEWER PIPING

- UPON SUCCESSFUL INSTALLATION AND TESTING OF SMH #696 AND THE RELINED 8" SEWER PIPE, REMOVE TEMPORARY 6" SDR 35 GRAVITY PIPING, 4" HDPE FORCE MAIN PIPING. BARRIER WALL WITHIN SMH #713. AND TEMPORARY BYPASS PUMP. INSTALL CAPPED STUB AT EACH OF THE 6" SEWER SADDLES AND CONCRETE ENCASE BOTH 6" SEWER SADDLES PRIOR TO FINAL BACKFILL.
- 3. PAYMENT FOR ALL WORK REQUIRED FOR TEMPORARY MAINTANENCE OF EXISTING SEWAGE FLOWS AS NOTED ABOVE (EXCLUDING INSTALLATION OF THE NEW SMH #696) INCLUDING BYPASS PUMPING AND PUMP MAINTENANCE. INSTALLATION OF TEMPORARY GRAVITY AND FORCE MAIN PIPING, BARRIER WALLS, SEWER SADDLES, COUPLINGS, CONCRETE, AND APPURTENANCES AS REQUIRED TO COMPLETE THE WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.645, SPECIAL PROVISION (TRANSFER TO NEW SYSTEM. SEWER).

	project name: BENNINGTON	
	project number: BF 1000(20)	
ntec	FILE NAME: zI2j606utildets.dgn PROJECT LEADER: T.KNIGHT DESIGNED BY: D.CAMPBELL TEMPORARY WATER & SEWER DETAILS I	PLOT DATE: 8/31/2021 DRAWN BY: J.BURKE CHECKED BY: T.KNIGHT SHEET 40 OF 49

![](_page_40_Figure_0.jpeg)

### NOTES:

- I. THE CONTRACTOR SHALL SUBMIT FABRICATION DRAWINGS FOR ALL NEW CONCRETE PIPE RESTRAINTS INCLUDING DESIGN COMPUTATIONS FOR OVERALL CONCRETE BLOCK SIZING, STEEL REINFORCEMENT, STEEL STRAPPING AND/OR CLAMPING, AND PLACEMENT LOCATION OF THE CONCRETE BLOCK WITH RESPECT TO THE CORRESPONDING GATE VALVE AND WATER MAIN END CAP AS DEPICTED ON THE DRAWINGS. ALL COMPUTATIONS SHALL BE STAMPED BY A LICENSED PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE STATE OF VERMONT. SUBMITTALS SHALL BE REVIEWED BY THE ENGINEER FOR CONFORMANCE IN ACCORDANCE WITH SECTION 105.03 (b) (2) b. OF THE STANDARD SPECIFICATIONS.
- 2. NORMAL WATER PRESSURE AT THE MAIN STREET BRIDGE #6 IS APPROXIMATELY IIO PSI.

- 3. PAYMENT FOR NEW CONCRETE PIPE RESTRAINTS SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.645, SPECIAL PROVISION (TRANSFER TO NEW SYSTEM, WATER).
  - 4. PAYMENT FOR NEW PERMANENT DUCTILE IRON WATER PIPE SHALL BE MADE UNDER ITEM 900.640, SPECIAL PROVISION (DUCTILE IRON PIPE, CEMENT-LINED, ALL-INCLUSIVE) (LINE SIZE).
  - 5. PAYMENT FOR NEW LONG SOLID SLEEVE AND TEMPORARY DUCTILE IRON END CAP SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.645, SPECIAL PROVISION (DUCTILE IRON PIPE. CEMENT-LINED, ALL-INCLUSIVE) (LINE SIZE).
  - 6. PAYMENT FOR NEW TEMPORARY CHLORINATION INJECTION POINT (MAR/CIP) AND REMOVAL OF EXISTING WATER MAIN PIPING AND APPURTENANCES SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.645, SPECIAL PROVISION (TRANSFER TO NEW SYSTEM, WATER).

FILE NAME: zI2j606utildets.dgn	PLOT DATE: 8/31/2021
PROJECT LEADER: T.KNIGHT	DRAWN BY: J.BURKE
DESIGNED BY: D.CAMPBELL	CHECKED BY: T.KNIGHT
TEMPORARY WATER & SEWER DETAILS 2	SHEET 41 OF 49

![](_page_41_Picture_0.jpeg)

![](_page_41_Figure_1.jpeg)

![](_page_41_Picture_3.jpeg)

![](_page_42_Figure_0.jpeg)

- CONCRETE ROADWAY AND EXISTING BITUMINOUS PAVEMENT WILL BE CONSIDERED INCIDENTAL TO ITEM 900.640 SPECIAL PROVISION (DUCTILE IRON
  - POLYSTYRENE INSULATION IN CASES WHERE THE ITEM 900.640 SPECIAL PROVISION (DUCTILE IRON
  - 3. PAYMENT FOR PERMANENT DUCTILE IRON WATER SPECIAL PROVISION (DUCTILE IRON PIPE, CEMENT
    - 4. PAYMENT FOR REMOVAL OF EXISTING CONCRETE UNDER ITEM 203.16, SOLID ROCK EXCAVATION.
    - 5. PAYMENT FOR TRENCH EXCAVATION OF EARTH
    - BOULDERS GREATER THAN ICY SHALL BE MADE UNDER ITEM 203.16 SOLID ROCK EXCAVATION.

![](_page_42_Figure_9.jpeg)

![](_page_42_Figure_10.jpeg)

![](_page_42_Figure_11.jpeg)

![](_page_42_Figure_12.jpeg)

![](_page_42_Figure_13.jpeg)

![](_page_42_Picture_16.jpeg)

![](_page_43_Figure_0.jpeg)

													]
	THRUST BLOCK SCHEDULE SQUARE FEET OF CONCRETE THRUST BLOCKING BEARING ON UNDISTURBED MATERIAL												
RI	REACTION PIPE SIZE												
T	ŕPE	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"
SIG	(A)	0.89	2.19	3.92	5.57	8.62	10.91	15.41	18.02	24.06	34.64	53.83	77.39
100 F	B	0.65	1.55	2.76	4.19	6.09	8.37	10.89	13.87	17.01	24.49	38.06	54.72
	$\bigcirc$	0.48	1.19	2.12	3.01	4.66	5.91	8.34	9.71	13.02	18.75	29.13	41.88
SSUR	$\bigcirc$	0.25	0.60	1.08	1.54	2.37	3.01	4.25	4.97	6.64	9.56	14.85	21.35
D R E	E	0.13	0.30	0.54	0.77	1.19	1.52	2.12	2.51	3.33	4.79	7.45	10.71
TEST													
TEST PRESSURE TO BE 200 PSI MIN. AT LOW END OF THE TEST         OTHER TEST         SECTION. SEE SPECIAL PROVISIONS FOR ADDITIONAL DETAIL.													
PR   FO   AB   RE	ESSURES R THE OVE ACTIONS		SQUARE PRESSUF FOR INS NUMBERS	FEET OF RES IS D TANCE, J S DOUBL	F CONCR NRECTLY AT 200 E.	RETE THF PROPOF PSI TES	RUST BL RTIONAL T PRESS	OCKING TO THE URE FOF	FOR OTH ABOVE R ABOVE	HER TES TABLE. -	Т		

![](_page_43_Figure_4.jpeg)

<u>TEE OR BEND - SECTION</u>

## NOT TO SCALE

### NOTES:

SEE TRENCH

DETAIL—

- I. THRUST BLOCKS SHALL BE CONSTRUCTED WITH CLASS B CONCRETE. POUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL. WHERE TRENCH WALL HAS BEEN DISTURBED, EXCAVATE LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL. NO JOINTS SHALL BE COVERED WITH CONCRETE.
- 2. ON BENDS AND TEES, EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.
- 3. PLACE CONCRETE PATIO BLOCKS IN FRONT OF ALL PLUGS BEFORE POURING THRUST BLOCK.
- 4. REQUIREMENTS OF THE ABOVE TABLE PRESUME MINIMUM SOIL BEARING OF ONE TON PER SQUARE FOOT=13.9 psi, AND MAY BE VARIED BY THE ENGINEER TO MEET OTHER CONDITIONS ENCOUNTERED.
- 5. RETAINER GLANDS ARE REQUIRED FOR ALL MECHANICAL JOINTS. THESE GLANDS DO NOT REDUCE THE REQUIREMENTS FOR THRUST RESTRAINT.
- 6. ALL FITTINGS SHALL BE WRAPPED IN POLYETHYLENE OR BUILDING PAPER PRIOR TO INSTALLATION OF CONCRETE RESTRAINT.
- 7. THREADED ROD SHALL BE ANSI A242 FY50 PIPE RESTRAINT NUTS TO MATCH AWWA CIII. THREADED RODS AND NUTS TO BE FIELD COATED WITH BITUMINOUS PAINT.
- 8. THRUST RESTRAINT IS REQUIRED FOR ALL TEES, BENDS, REDUCERS, CAPS, PLUGS, OR CROSSES. ALL BENDS LESS THAN 22.5 DEGREES SHALL BE RESTRAINED BY USE OF RETAINER GLANDS AT EACH BEND, AND AT ALL JOINTS WITHIN THREE (3) PIPE LENGTHS ON EACH SIDE OF THE BEND WITH DUCTILE IRON PIPE JOINT RESTRAINT HARNESSES.
- 9. INSTALL LIFT HOOKS INTO THRUST BLOCKS AT END CAPS AND PLUGS.
- IO. PAYMENT FOR THRUST RESTRAINT INCLUDING CONCRETE, RETAINER GLANDS, JOINT RESTRAINT HARNESSES, AND REINFORCED THREADED RODS SHALL BE CONSIDERED INCIDENTAL TO ITEM 900.640 SPECIAL PROVISION (DUCTILE IRON PIPE, CEMENT-LINED, ALL-INCLUSIVE)

	project name: BENNINGTON project number: BF 1000(20)	
<b>Stantec</b>	FILE NAME: zI2j606utildets.dgn PROJECT LEADER: T.KNIGHT DESIGNED BY: D.CAMPBELL WATER DETAILS 2	PLOT DATE: 8/31/2021 DRAWN BY: J.BURKE CHECKED BY: T.KNIGHT SHEET 44 OF 49

![](_page_44_Figure_0.jpeg)

PICAL	INS	TALLATI	ION	FOR	PEF	MANEN	Т
ANUAL	AIR	RELEAS	SE A	ND -	TEMF	'ORARY	
RINAT	ION	INJECT	ION	POI	ΝT	(MAR/C	$ P\rangle$
		NOT TO	SCALE				

![](_page_44_Figure_4.jpeg)

![](_page_44_Figure_11.jpeg)

![](_page_45_Picture_1.jpeg)

# BRIDGE PIPE SUPPORT DETAIL NOT TO SCALE

# EXPANSION JOINT AND SUPPORT DETAIL NOT TO SCALE

DETAIL PENDING

Star

	project name: BENNINGTON	
	project number: BF 1000(20)	
ntec	FILE NAME: zI2j606utildets.dgn PROJECT LEADER: T.KNIGHT DESIGNED BY: D.CAMPBELL WATER DETAILS 4	PLOT DATE: 8/31/2021 DRAWN BY: J.BURKE CHECKED BY: T.KNIGHT SHEET 46 OF 49

![](_page_46_Figure_0.jpeg)

project name: BENNINGTON	
project number: BF 1000(20)	
FILE NAME: zI2j606utildets.dgn PROJECT LEADER: T.KNIGHT DESIGNED BY: D.CAMPBELL SEWER DETAILS I	PLOT DATE: 8/31/2021 DRAWN BY: J.BURKE CHECKED BY: T.KNIGHT SHEET 47 OF 49
	PROJECT NAME: BENNINGTON PROJECT NUMBER: BF 1000(20) FILE NAME: z12j606utildets.dgn PROJECT LEADER: T. KNIGHT DESIGNED BY: D. CAMPBELL SEWER DETAILS I

![](_page_47_Figure_0.jpeg)

![](_page_48_Figure_0.jpeg)

NOT TO SCALE		-	~ ·	<u> </u>	
NOT TO JUALL	NOT	ТО	SC	AL	E

![](_page_48_Figure_2.jpeg)

\* I/2" THICK X 2" WIDE 316 S.S. STRAP (2) 5/8" DIA. X3" MIN. EMBEDMENT HEX

- \* \* REMOVEABLE EXPANDING PLUG WITH IN UPPER HALF TO VENT.
  - INSIDE DROP MANHOL Not to scale
- NOTE: PAYMENT FOR ALL INTERIOR PVC PIPING, F STRAPS, ANCHORS, CONCRETE FOR INVERT BE CONSIDERED INCIDENTAL TO ITEM 900 (SANITARY SEWER MANHOLE WITH INSIDE D

![](_page_48_Picture_7.jpeg)

* * *	IEN THIS DIMENSION EXCEEDS 2'-0	= /23./(	<u>)</u>				
* 	NSTALL INSIDE DROP CON						
		6" \$	SDR 35	PVC			
- CLASS L	3′ Concre	ETE FILL	.   N — (	20.20			
) WALL WI )r bolts. Meter ho	ITH						
(IBLE COUF TENANCES PROVISION LUSIVE) (6/	PLINGS, Shall √ ′I.D.).						
O WALL WI R BOLTS. METER HO ↓ KIBLE COUF TENANCES PROVISION LUSIVE) (6′	PLINGS, Shall V						
ROJECT NAN	ие <b>:</b> В		GTON				
	AMETER HO AMETER HO L XIBLE COUP TENANCES PROVISION CLUSIVE) (6' PROJECT NAM PROJECT NAM FILE NAME: Z PROJECT LEA	AMETER HOLES AMETER HOLES L XIBLE COUPLINGS, TENANCES SHALL PROVISION LUSIVE) (6' I.D.). PROJECT NAME: B PROJECT NUMBER: B FILE NAME: z12j606u+i1 PROJECT LEADER: T. KI	AMETER HOLES AMETER HOLES L XIBLE COUPLINGS, TENANCES SHALL PROVISION CLUSIVE) (6' I.D.). PROJECT NAME: BENNING PROJECT NUMBER: BF 1000 FILE NAME: z12j606utildets.dgr PROJECT LEADER: T. KNIGHT	AMETER HOLES AMETER HOLES L XIBLE COUPLINGS, TENANCES SHALL PROVISION CLUSIVE) (6' I.D.). PROJECT NAME: BENNINGTON PROJECT NUMBER: BF 1000(20) FILE NAME: z12j606utildets.dgn PROJECT LEADER: T. KNIGHT	AMETER HOLES AMETER HOLES L XIBLE COUPLINGS, TENANCES SHALL PROVISION CLUSIVE) (6' I.D.). PROJECT NAME: BENNINGTON PROJECT NUMBER: BF 1000(20) TILE NAME: z12j606utildets.dgn PLOT PROJECT LEADER: T. KNIGHT	DR BOLTS. AMETER HOLES L XIBLE COUPLINGS, TENANCES SHALL PROVISION CLUSIVE) (6' I.D.). PROJECT NAME: BENNINGTON PROJECT NUMBER: BF 1000(20) FILE NAME: z12j606utildets.dgn PLOT DATE: 8 PROJECT LEADER: T. KNIGHT DRAWN BY: J.	DR BOLTS. AMETER HOLES L XIBLE COUPLINGS, TENANCES SHALL . PROVISION CLUSIVE) (6' I.D.). PROJECT NAME: BENNINGTON PROJECT NUMBER: BF 1000(20) FILE NAME: z12j606utildets.dgn PROJECT LEADER: T. KNIGHT PROJECT LEADER: T. KNIGHT PROJECT LEADER: T. KNIGHT PROJECT LEADER: T. KNIGHT