Exhibit VGS-AG-029 Part 1

■ Modification Bulletin

Project Name:	**Addison Natural Gas Project**		
CHA Project No:	**28757**	**Modification Bulletin No: Trans-09**	
To:	**Vermont Gas Systems, Inc.**		
Date:	**5/13/16**		

Description:

The following plan sets for the Addison Natural Gas Project are issued for construction:

- "Addison Natural Gas Project Transmission Mainline" (Construction) dated IFC 05/2016
- "Addison Natural Gas Project Transmission Mainline (EPSC)" dated IFC 05/2016

Updates have been made to the following sections of the document titled "Technical Specifications for ANGP Prepared by CHA" dated April 29, 2015:

- Section 137000 Welding
- Section 312333 Trenching, Pipe Laying, and Backfilling
- Section 138000 Coatings

Please note that all additions to the technical specifications documents are shown as ***bold and italicized.*** All deletions are shown as ~~strikethrough.~~

Attachments:

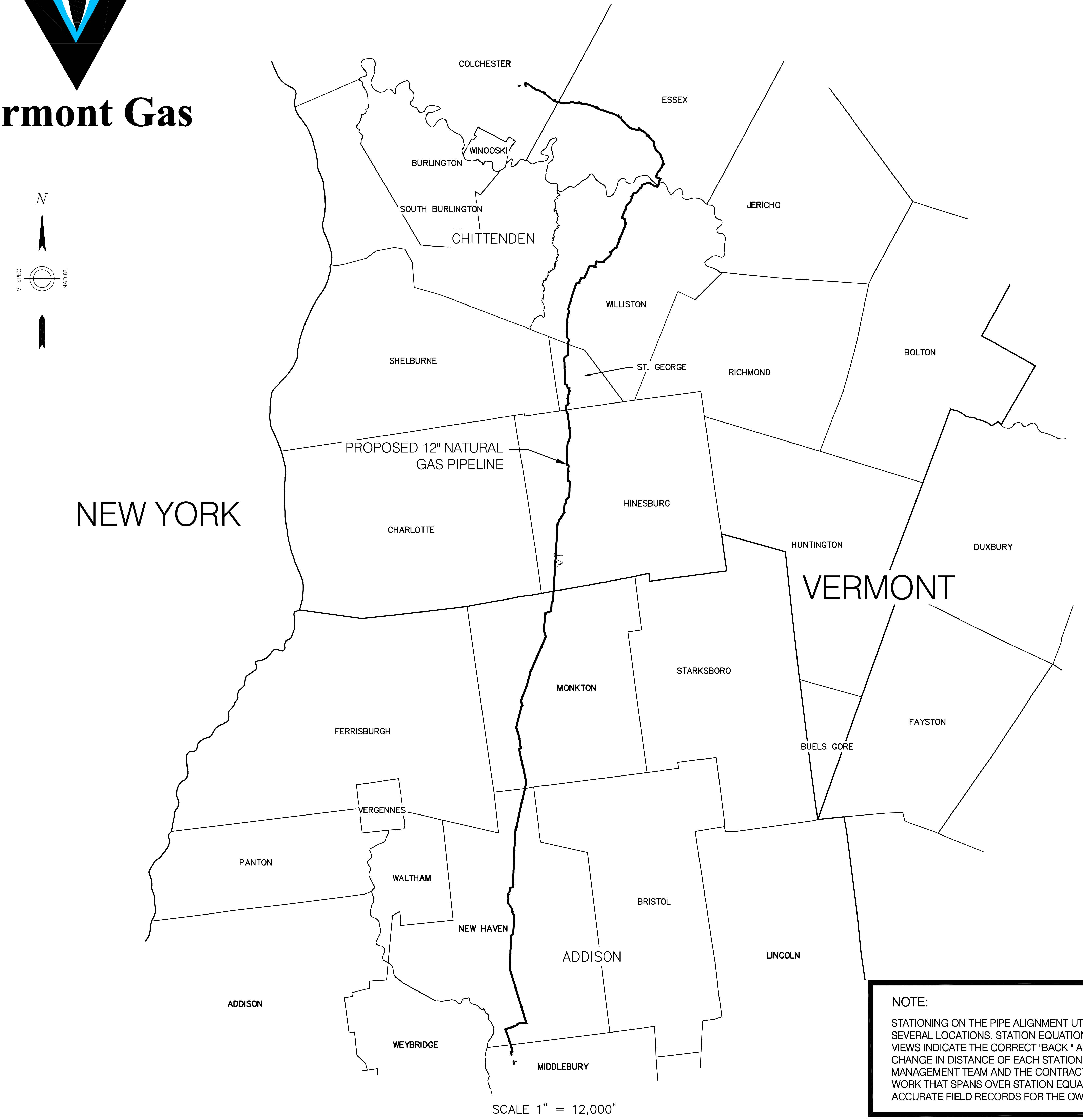
- **"Addison Natural Gas Project Transmission Mainline" (Construction) dated IFC 05/2016**
- **"Addison Natural Gas Project Transmission Mainline (EPSC)" dated IFC 05/2016**
- **"Technical Specifications for ANGP Prepared by CHA" dated April 29, 2015 (Entire document attached)**

Issued By: Brendan Kearns, CHA Engineer
V:\Projects\ANY\K3\28757\Construction\Clarifications

Vermont Gas

ADDISON NATURAL GAS PROJECT TRANSMISSION MAINLINE

CHITTENDEN AND ADDISON COUNTIES VERMONT



SCALE 1" = 12,000'

DRAWING INDEX

DRAWING NUMBER	DRAWING TITLE
ANGP-T-G-001	COVER SHEET
ANGP-T-G-002	INDEX SHEET
ANGP-T-G-003	LEGEND & NOTES
ANGP-T-G-004 TO 006	CONSTRUCTION CONFIGURATION DETAILS
ANGP-T-G-007 TO 010	ACCESS ROAD DETAILS
ANGP-T-G-011	NOT INCLUDED
ANGP-T-G-012 TO 020C	CONSTRUCTION DETAILS
ANGP-T-G-021	STATION AND VALVE DETAILS
ANGP-T-G-022	WILLISTON PIPEYARD
ANGP-T-G-023	PLANK ROAD PIPEYARD

DRAWING #	REV #	DRAWING TITLE
ANGP-T-C-001A	1	ALIGNMENT SHEET
ANGP-T-C-001B	1	ALIGNMENT SHEET
ANGP-T-C-002	2	ALIGNMENT SHEET
ANGP-T-C-003	1	ALIGNMENT SHEET
ANGP-T-C-004	1	ALIGNMENT SHEET
ANGP-T-C-005	2	ALIGNMENT SHEET
ANGP-T-C-006	1	ALIGNMENT SHEET
ANGP-T-C-007	1	ALIGNMENT SHEET
ANGP-T-C-008	1	ALIGNMENT SHEET
ANGP-T-C-009	1	ALIGNMENT SHEET
ANGP-T-C-010	1	ALIGNMENT SHEET
ANGP-T-C-011	1	ALIGNMENT SHEET
ANGP-T-C-012	2	ALIGNMENT SHEET
ANGP-T-C-013	1	ALIGNMENT SHEET
ANGP-T-C-014	2	ALIGNMENT SHEET
ANGP-T-C-015	3	ALIGNMENT SHEET
ANGP-T-C-016	2	ALIGNMENT SHEET
ANGP-T-C-017	1	ALIGNMENT SHEET
ANGP-T-C-018	0	ALIGNMENT SHEET
ANGP-T-C-019	0	ALIGNMENT SHEET
ANGP-T-C-020	1	ALIGNMENT SHEET
ANGP-T-C-021	1	ALIGNMENT SHEET
ANGP-T-C-022	0	ALIGNMENT SHEET
ANGP-T-C-023B	1	ALIGNMENT SHEET
ANGP-T-C-024	1	ALIGNMENT SHEET
ANGP-T-C-025	1	ALIGNMENT SHEET
ANGP-T-C-026	0	ALIGNMENT SHEET
ANGP-T-C-027	1	ALIGNMENT SHEET
ANGP-T-C-028	1	ALIGNMENT SHEET
ANGP-T-C-028A	0	STREAM CROSSING PROFILE
ANGP-T-C-029	0	ALIGNMENT SHEET
ANGP-T-C-030	0	ALIGNMENT SHEET
ANGP-T-C-031	1	ALIGNMENT SHEET
ANGP-T-C-032	0	ALIGNMENT SHEET
ANGP-T-C-033	1	ALIGNMENT SHEET
ANGP-T-C-034	1	ALIGNMENT SHEET
ANGP-T-C-035	1	ALIGNMENT SHEET
ANGP-T-C-036	1	ALIGNMENT SHEET
ANGP-T-C-037	0	ALIGNMENT SHEET
ANGP-T-C-038	0	ALIGNMENT SHEET
ANGP-T-C-039	0	ALIGNMENT SHEET
ANGP-T-C-039A	0	STREAM CROSSING PROFILE
ANGP-T-C-040	1	ALIGNMENT SHEET
ANGP-T-C-041	2	ALIGNMENT SHEET
ANGP-T-C-042	2	ALIGNMENT SHEET
ANGP-T-C-042A	0	STREAM CROSSING PROFILE
ANGP-T-C-043	2	ALIGNMENT SHEET
ANGP-T-C-044	0	ALIGNMENT SHEET
ANGP-T-C-045	0	ALIGNMENT SHEET
ANGP-T-C-046	0	ALIGNMENT SHEET
ANGP-T-C-047	1	ALIGNMENT SHEET
ANGP-T-C-048	1	ALIGNMENT SHEET
ANGP-T-C-049	2	ALIGNMENT SHEET
ANGP-T-C-050	2	ALIGNMENT SHEET
ANGP-T-C-051	3	ALIGNMENT SHEET
ANGP-T-C-051A	0	STREAM CROSSING PROFILE
ANGP-T-C-052	1	ALIGNMENT SHEET
ANGP-T-C-053	0	ALIGNMENT SHEET
ANGP-T-C-054	0	ALIGNMENT SHEET
ANGP-T-C-055	1	ALIGNMENT SHEET
ANGP-T-C-056	0	ALIGNMENT SHEET
ANGP-T-C-057	0	ALIGNMENT SHEET
ANGP-T-C-058	0	ALIGNMENT SHEET
ANGP-T-C-059	1	ALIGNMENT SHEET
ANGP-T-C-060	1	ALIGNMENT SHEET
ANGP-T-C-061A	2	ALIGNMENT SHEET
ANGP-T-C-061AA	0	STREAM CROSSING PROFILE
ANGP-T-C-061B	2	ALIGNMENT SHEET
ANGP-T-C-062	2	ALIGNMENT SHEET
ANGP-T-C-063	2	ALIGNMENT SHEET
ANGP-T-C-064	0	ALIGNMENT SHEET
ANGP-T-C-065	0	ALIGNMENT SHEET
ANGP-T-C-065A	0	STREAM CROSSING PROFILE
ANGP-T-C-066	0	ALIGNMENT SHEET
ANGP-T-C-067	0	ALIGNMENT SHEET
ANGP-T-C-068	1	ALIGNMENT SHEET
ANGP-T-C-069	1	ALIGNMENT SHEET
ANGP-T-C-070	1	ALIGNMENT SHEET
ANGP-T-C-071	0	ALIGNMENT SHEET
ANGP-T-C-072	0	ALIGNMENT SHEET
ANGP-T-C-073	0	ALIGNMENT SHEET
ANGP-T-C-074	3	ALIGNMENT SHEET
ANGP-T-C-075	5	ALIGNMENT SHEET
ANGP-T-C-076	2	ALIGNMENT SHEET
ANGP-T-C-077	1	ALIGNMENT SHEET
ANGP-T-C-078	1	ALIGNMENT SHEET
ANGP-T-C-079	2	ALIGNMENT SHEET
ANGP-T-C-080	0	ALIGNMENT SHEET
ANGP-T-C-081	2	ALIGNMENT SHEET
ANGP-T-C-082A	0	ALIGNMENT SHEET
ANGP-T-C-082B	0	ALIGNMENT SHEET
ANGP-T-C-083A	0	ALIGNMENT SHEET
ANGP-T-C-083B	0	ALIGNMENT SHEET
ANGP-T-C-084A	0	ALIGNMENT SHEET
ANGP-T-C-084B	1	ALIGNMENT SHEET
ANGP-T-C-085	0	ALIGNMENT SHEET

4

NOTE:

STATIONING ON THE PIPE ALIGNMENT UTILIZES STATION EQUATIONS IN SEVERAL LOCATIONS. STATION EQUATION CALL-OUTS NOTED ON THE PLAN VIEWS INDICATE THE CORRECT "BACK " AND "AHEAD" STATIONS AS WELL AS THE CHANGE IN DISTANCE OF EACH STATION EQUATION. THE CONSTRUCTION MANAGEMENT TEAM AND THE CONTRACTOR SHOULD PROPERLY DOCUMENT WORK THAT SPANS OVER STATION EQUATIONS IN ORDER TO PROVIDE ACCURATE FIELD RECORDS FOR THE OWNER.

NOTE:

THE ALIGNMENT AND EPSC PLAN SETS DATED 05/2016 SUPERSEDE ALL PREVIOUSLY "ISSUED FOR CONSTRUCTION" PLAN SETS AND INCORPORATE ALL PROJECT CHANGES SUBSEQUENT TO THE 2015 "ISSUED FOR CONSTRUCTION" PLAN SETS DATED 04/02/15. THE PLAN CHANGES ARE INDICATED BY REVISION CLOUDS AND/OR DENOTED IN THE REVISION BOX, WITH THE EXCEPTION OF THE FOLLOWING MODIFICATIONS: REMOVAL OF THE CATHODIC PROTECTION TEST LEAD LOCATIONS, THE ADDITIONAL SHEETS FOR TRENCH BREAKER LOCATIONS, THE ADDITIONAL SHEETS FOR DEPTH OF COVER, AND THE ADDITIONAL SHEETS FOR PIPE PROFILES AT JURISDICTIONAL STREAM CROSSINGS.

4

STATE OF VERMONT
MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

VHB Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
		4	GJM	BCK	IFC 2016 EDITS (05/2016)
		3	BCK	TDB	CP TEST LEAD EDIT (9/14/15)
		2	GJM	TDB	VHB HDD AREA REVISIONS (6/24/15)
		1	BCK	TDB	COMPLETE PLAN SET RE-ISSUE (6/15/15)

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
COVER SHEET

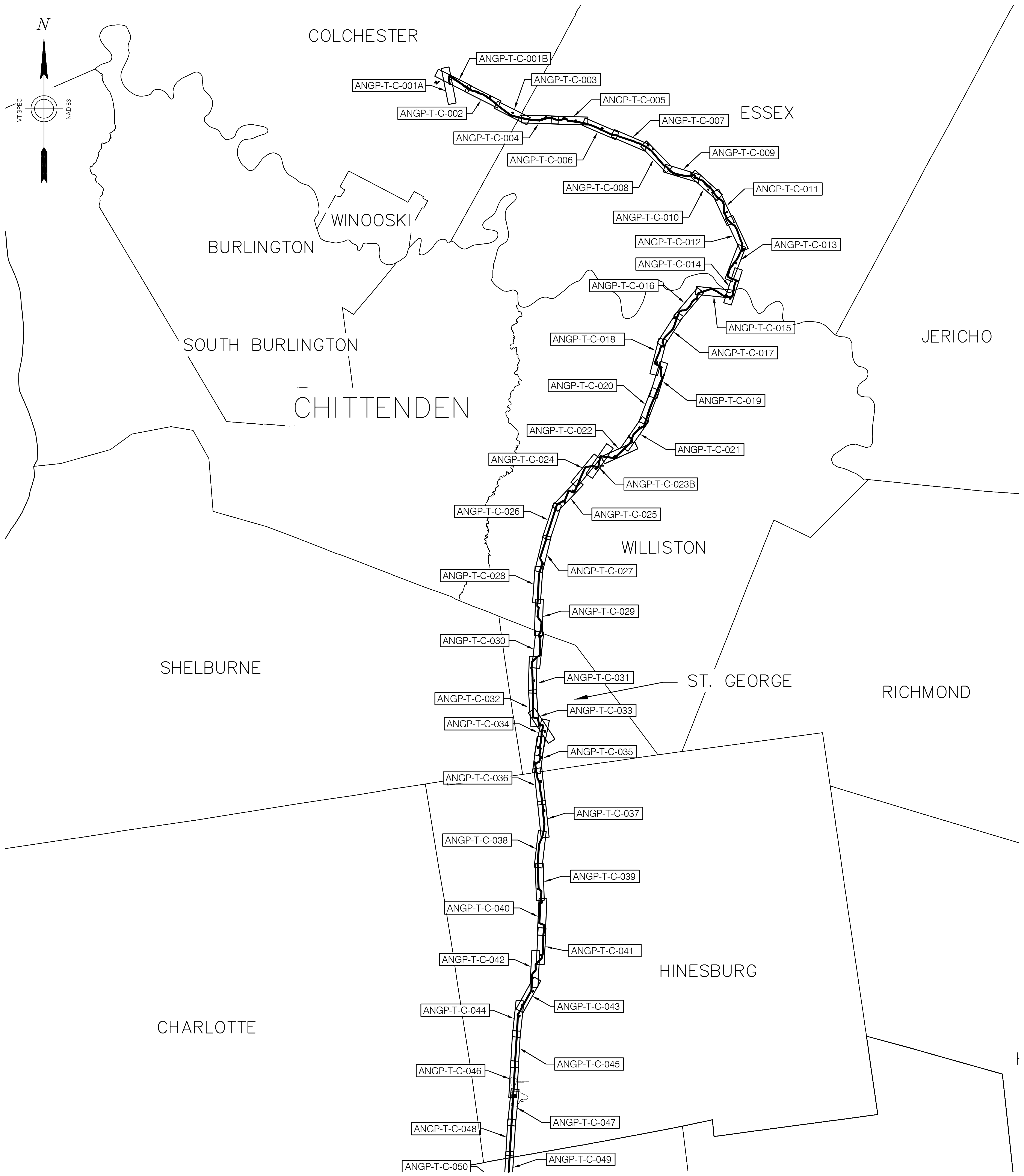
LOC. CHITTENDEN & ADDISON COUNTIES

Vermont Gas

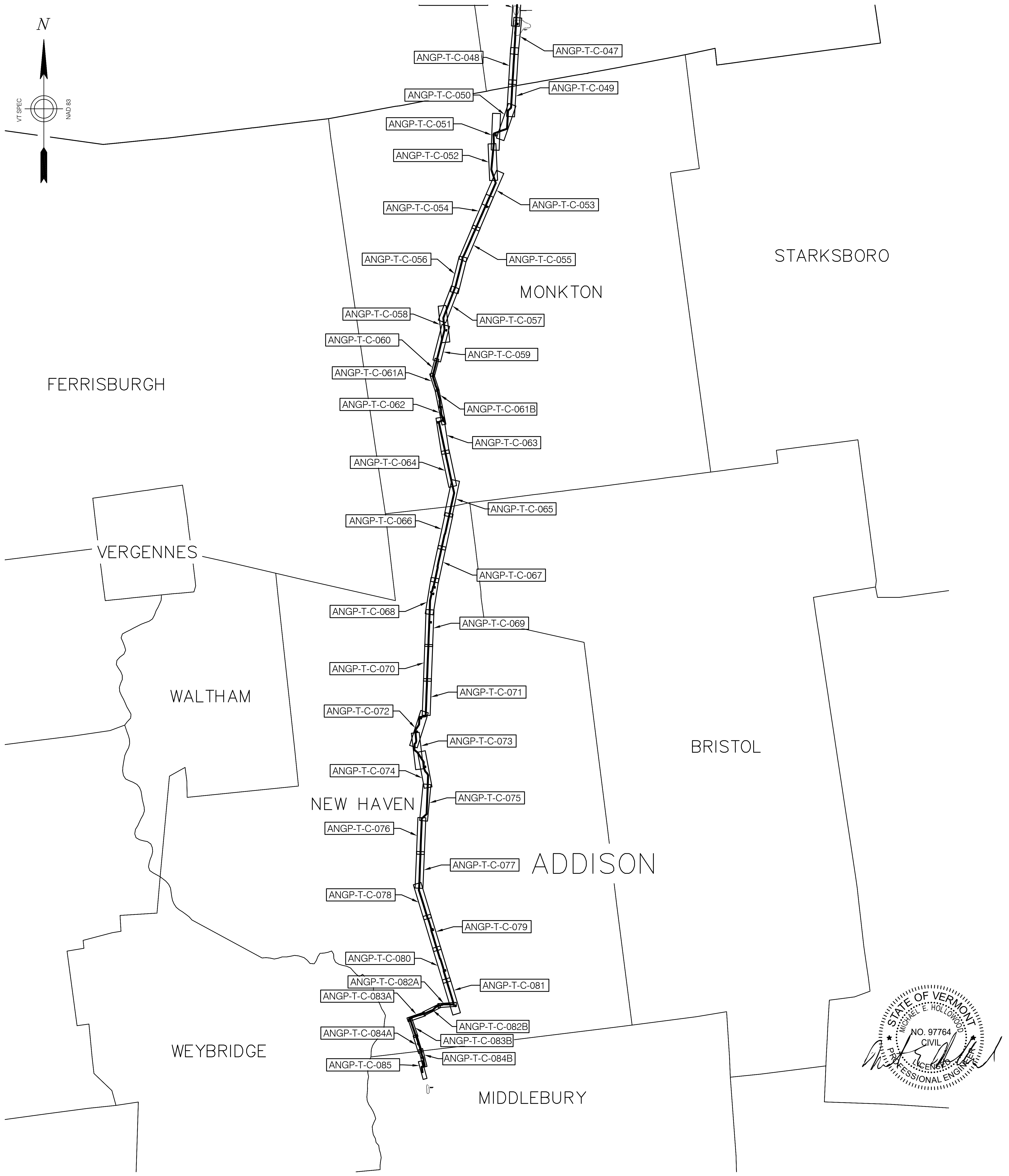
CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: NOTED | DWG. ANGP-T-G-001 | REV. 4

CHITTENDEN AND ADDISON COUNTIES
VERMONT



SCALE 1" = 500'



MICHAEL E. HOLLOWOOD
NO. 97764

SCALE 1" = 500'

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
INDEX SHEET

LOC. CHITTENDEN & ADDISON COUNTIES

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 • www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1"=500' | DWG. ANGP-T-G-002 | REV. 0

CHITTENDEN AND ADDISON COUNTIES
VERMONT

QUANTITIES

Vermont Gas

MATERIAL QUANTITIES (FT)

SHEET NUMBERS	**PIPE** 12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	**PIPE** 20" O.D. X 0.375" WT, API-5L, GR. B	**COATING** EPOXY POLYETHYLENE 10/40	**COATING** ABRASION RESISTANT COATING, 40 MILS, FBE W/ POWERCRETE OVERCOAT	**COATING** EPOXY POLYETHYLENE 10/40, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT³
	1	2	A	B	C
ANGP-T-C-001A	577'	0'	156'	0'	421'
ANGP-T-C-001B	1950'	0'	1637'	0'	313'
ANGP-T-C-002	2950'	0'	1385'	896'	669'
ANGP-T-C-003	2706'	0'	99'	2607'	0'
ANGP-T-C-004	2700'	0'	2090'	510'	100'
ANGP-T-C-005	2682'	0'	2215'	467'	0'
ANGP-T-C-006	2857'	0'	2857'	0'	0'
ANGP-T-C-007	2750'	0'	1689'	0'	1061'
ANGP-T-C-008	2694'	0'	2119'	0'	575'
ANGP-T-C-009	2806'	0'	2631'	0'	175'
ANGP-T-C-010	2250'	0'	1953'	0'	297'
ANGP-T-C-011	2604'	0'	2604'	0'	0'
ANGP-T-C-012	2900'	0'	2748'	0'	152'
ANGP-T-C-013	2977'	0'	2513'	0'	464'
ANGP-T-C-014	2160'	0'	757'	940'	463'
ANGP-T-C-015	2750'	121'	1788'	0'	962'
ANGP-T-C-016	3000'	0'	2618'	0'	382'
ANGP-T-C-017	2667'	0'	2165'	0'	502'
ANGP-T-C-018	2495'	0'	2148'	0'	347'
ANGP-T-C-019	2800'	0'	2714'	0'	86'
ANGP-T-C-020	2550'	0'	2031'	0'	519'
ANGP-T-C-021	2927'	0'	1962'	0'	965'
ANGP-T-C-022	2438'	0'	1315'	0'	1123'
ANGP-T-C-023B	1604'	0'	456'	880'	268'
ANGP-T-C-024	2350'	0'	2043'	0'	307'
ANGP-T-C-025	2966'	0'	2384'	0'	582'
ANGP-T-C-026	2900'	0'	2900'	0'	0'
ANGP-T-C-027	2970'	0'	2841'	0'	129'
ANGP-T-C-028	2650'	0'	2350'	0'	300'
ANGP-T-C-029	3000'	0'	2204'	0'	796'
ANGP-T-C-030	2437'	0'	1977'	0'	460'
ANGP-T-C-031	2869'	0'	2869'	0'	0'
ANGP-T-C-032	1950'	0'	1333'	0'	617'
ANGP-T-C-033	2050'	0'	1340'	0'	710'
ANGP-T-C-034	1887'	0'	1813'	0'	74'
ANGP-T-C-035	2018'	0'	1382'	0'	636'
ANGP-T-C-036	2850'	0'	2799'	0'	51'
ANGP-T-C-037	2579'	0'	2431'	0'	148'
ANGP-T-C-038	2900'	0'	2863'	0'	37'
ANGP-T-C-039	2961'	0'	1553'	0'	1408'
ANGP-T-C-040	2977'	0'	1699'	675'	603'
ANGP-T-C-041	2910'	0'	2711'	0'	199'
ANGP-T-C-042	2002'	0'	1748'	0'	254'
ANGP-T-C-043	2484'	0'	1475'	0'	1009'
ANGP-T-C-044	2111'	0'	1908'	0' TL	203'
ANGP-T-C-045	2700'	0'	2685'	0'	15'
ANGP-T-C-046	2350'	0'	485'	1245'	620'
ANGP-T-C-047	2561'	0'	326'	2235'	0'
ANGP-T-C-048	2700'	0'	1971'	380'	349'
ANGP-T-C-049	2450'	0'	1450'	0'	1000'
ANGP-T-C-050	2250'	0'	2012'	0'	238'
ANGP-T-C-051	1652'	0'	577'	0'	1075'
ANGP-T-C-052	2800'	0'	2187'	0'	613'
ANGP-T-C-053	2000'	0'	1773'	0'	227'
ANGP-T-C-054	2637'	0'	2369'	0'	268'
ANGP-T-C-055	2900'	0'	2671'	0'	229'
ANGP-T-C-056	2700'	0'	1281'	250'	1169'
ANGP-T-C-057	2500'	0'	0'	2500'	0'
ANGP-T-C-058	1000'	0'	575'	175'	250'
ANGP-T-C-059	2837'	0'	1411'	975'	451'
ANGP-T-C-060	1400'	0'	1295'	105'	0'
ANGP-T-C-061A	1300'	0'	997'	0'	303'
ANGP-T-C-061B	1525'	0'	1475'	0'	50'
ANGP-T-C-062	1225'	0'	1125'	0'	100'
ANGP-T-C-063	2942'	0'	2493'	0'	449'
ANGP-T-C-064	2850'	0'	1159'	0'	1691'
ANGP-T-C-065	2650'	0'	955'	0'	1695'
ANGP-T-C-066	2900'	0'	604'	0'	2296'
ANGP-T-C-067	2850'	0'	1462'	1150'	238'
ANGP-T-C-068	2767'	0'	1887'	529'	351'
ANGP-T-C-069	2949'	0'	2949'	0'	0'
ANGP-T-C-070	2888'	0'	1995'	0'	893'
ANGP-T-C-071	3000'	0'	2952'	0'	48'
ANGP-T-C-072	2834'	0'	2764'	0'	70'
ANGP-T-C-073	1600'	0'	1398'	0'	202'
ANGP-T-C-074	2734'	0'	1824'	615'	295'
ANGP-T-C-075	2950'	0'	1733'	425'	792'
ANGP-T-C-076	2900'	0'	0'	0'	2900'
ANGP-T-C-077	2900'	0'	981'	0'	1919'
ANGP-T-C-078	2700'	0'	2342'	0'	358'
ANGP-T-C-079	2860'	0'	2556'	0'	304'
ANGP-T-C-080	2879'	0'	2871'	0'	8'
ANGP-T-C-081	2240'	0'	1144'	530'	566'
ANGP-T-C-082A	1200'	0'	888'	0'	312'
ANGP-T-C-082B	1450'	0'	1218'	0'	232'
ANGP-T-C-083A	1496'	0'	974'	0'	522'
ANGP-T-C-083B	1450'	0'	1196'	0'	254'
ANGP-T-C-084A	1400'	0'	1400'	0'	0'
ANGP-T-C-084B	1496'	0'	1200'	0'	296'
ANGP-T-C-085	588'	0'	588'	0'	0'
TOTAL =	217575'	121'	157471'	18089'	42015'

NOTE:

STATIONING ON THE PIPE ALIGNMENT UTILIZES STATION EQUATIONS IN SEVERAL LOCATIONS. STATION EQUATION CALL-OUTS NOTED ON THE PLAN VIEWS INDICATE THE CORRECT "BACK " AND "AHEAD" STATIONS AS WELL AS THE CHANGE IN DISTANCE OF EACH STATION EQUATION. THE CONSTRUCTION MANAGEMENT TEAM AND THE CONTRACTOR SHOULD PROPERLY DOCUMENT WORK THAT SPANS OVER STATION EQUATIONS IN ORDER TO PROVIDE ACCURATE FIELD RECORDS FOR THE OWNER.

LEGEND

PROPOSED GAS LINE	━━━━━━
GAS LINE STATIONING	314+00
PROPERTY LINE	—— – – —— – – ——
TOWN LINE	— — · — — · — —
EDGE OF PAVEMENT	————
RAILROAD	┼┼┼┼┼┼┼┼
CONTOUR (10-FOOT INT.)	— — — 510 — — —
CONTOUR (2-FOOT INT.)	– – – – – – –
FENCE	—— x —— x ——
GUARDRAIL	·—·—·—·—·
OVERHEAD WIRES	—— OHW ——
DRAIN LINE	—— D ——
DRAIN LINE > 12" Ø	══ D ══
SEWER LINE	—— S ——
WATER LINE	—— W ——
GAS LINE	—— G ——
ELECTRICAL LINE	—— E ——
VELCO ACCESS ROADS	– – – – – – – – △3
TELEPHONE LINE	—— T ——
STONEWALL	○○○○○○○○
BRUSH LINE	‿‿‿‿‿‿
TREE LINE	◡◡◡◡◡◡
IRON PIN	◎
CONCRETE/GRANITE BOUND	⊡
UTILITY MANHOLE	Ⓔ Ⓓ Ⓢ (ST) Ⓒ
CATCH BASIN	☐ CTB
ELECTRIC POLE STRUCTURES	53
UTILITY POLE	⊙
LIGHT POST	☼
GUY ANCHOR	——<
WATER GATE	WV ⋈ WSO ○
WELL	Ⓦ
GAS GATE	GV ⋈
HYDRANT	HYD
MAIL BOX	▭ MB
TRAFFIC SIGN	—o—
TRAFFIC SIGNAL	⊗
GATE POST / BOLLARD	○
MARKER POST	◉ MP
VENT	◎
DECIDUOUS TREE	✿
CONIFEROUS TREE	●
EXISTING STRUCTURE	▨
DITCH LINE	– – – – – – – –
PROPOSED TEST STATION	△3 ⑤
PROPOSED GAS VALVE	GV ⋈
SPOT GRADE	X 546
SAND BAG	▭
GEOTECHNICAL SOIL BORINGS	◐ SB-1
MILE POST	◇ M.P. MILE
LINE LIST	XXXXXX
TEST LEAD (2-WIRE)	TL △2
TEST LEAD (4-WIRE)	4TL △2
WATER SURFACE INDICATOR	▽
PERMANENT EASEMENT	—— —— —— ——
TEMPORARY WORKSPACE	– – – – – – – –
FEMA BLSF ZONE	···················
CENTERLINE OF STREAM	——— – ——— – ———
TEMPORARY STREAM IMPACT	▨
50' WETLAND BUFFER	—·—··—·—··—
TEMPORARY WETLAND IMPACT	▩
TEMPORARY WETLAND BUFFER IMPACT	░
WETLAND AREA	—··—··—
PROPOSED EROSION AND SEDIMENT CONTROLS	—□—□—□—□—
WETLAND FLAG	WF 1 ┼
AS-BUILT 12" TRANSMISSION LINE	▬
BAT TREE	BT △2

ABBREVIATIONS

A.	ASSUMED
ABD.	ABANDON
ADJ.	ADJUST
AG, AGR	AGRICULTURAL
APPROX.	APPROXIMATE
ARCH.	ARCHAEOLOGICAL
ATWS	ADDITIONAL TEMPORARY WORKSPACE
BWF	BARBED WIRE FENCE
BND.	BOUND
BCC	BITUMINOUS CONCRETE CURB
BIT. CONC.	BITUMINOUS CONCRETE
℄B	BASELINE
BLDG.	BUILDING
BLSF	BORDERING LAND SUBJECT TO FLOODING
B.O.	BY OTHERS
B.W.	BOTTOM OF WALL
BWLL	BROKEN WHITE LANE LINE
CHH	CABLE HANDHOLE
CMK	CABLE MARK
CPED	CABLE PEDESTAL
C/O	CARE OF
CTB	CATCH BASIN
CTB/DI	CATCH BASIN WITH DROP INLET
CEM.	CEMENT
CLDI	CEMENT LINED DUCTILE IRON PIPE
CLFC	CHAIN LINK FENCE
C.I.	CURB INLET
℄	CENTERLINE
℄ CONST.	CENTERLINE OF CONSTRUCTION
CONC.	CONCRETE
CC	CONCRETE CURB
CDWY	CONCRETE DRIVEWAY
CHW	CONCRETE HEADWALL
CPD	CONCRETE PAD
CON	CONIFEROUS TREE
CONST.	CONSTRUCT(ION)
CU	CONTINUATION UNKNOWN
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED PLASTIC PIPE
DSWL	DASHED SINGLE WHITE LINE
DSYL	DASHED SINGLE YELLOW LINE
DEC	DECIDUOUS TREE
DDWY	DIRT DRIVEWAY
DDYL	DOUBLE DASHED YELLOW LINE
D	DRAIN
DMH	DRAINAGE MANHOLE
DTWY	DIRT TRAVELED WAY
DWY	DRIVEWAY
DYCL	DOUBLE YELLOW CENTERLINE
EOP	EDGE OF PAVEMENT
E	ELECTRIC
EBOX	ELECTRIC BOX
EHH	ELECTRIC HANDHOLE
EMK	ELECTRIC LINE – MARKED
ELEV. (OR EL)	ELEVATION
ELFC	ELECTRIC FENCE
EXIST. (OR EX.)	EXISTING
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FOMK	FIBER OPTIC MARK
FB	FLUSHING BASIN
GG	GAS GATE
GMK	GAS LINE – MARKED
GMP	GREEN MOUNTAIN POWER
GSO	GAS SHUT OFF
GRAN.	GRANITE
GC	GRANITE CURB
GRV	GRAVEL
GDWY	GRAVEL DRIVEWAY
GRL	GUARDRAIL
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HDD	HORIZONTAL DIRECTIONAL DRILL
HMA	HOT MIX ASPHALT
HOR.	HORIZONTAL
HSE	HOUSE
HYD.	HYDRANT
I. (OR INV.)	INVERT
IPL	INTERNATIONAL PAPER LATERAL
IPX	INTERNATIONAL PAPER EXTENTION
LT	LEFT
L	LENGTH OF CURVE/LEFT
LBS	POUNDS
L.P.	LIGHT POLE
L.F.	LINEAR FEET
MH	MANHOLE
MLV	MAIN LINE VALVE
M.P.	MILE POST
MHD	MASS HIGHWAY BOUND
MSE	MECHANICALLY STABILIZED EARTH
MPOST	METAL POST
MWELL	MONITORING WELL
NAD	NORTH AMERICAN DATUM
NTS	NOT TO SCALE
N/F	NOW OR FORMERLY
ODWY	OTHER DIRT DRIVEWAY
OTFC	OTHER FENCE
PAVT.	PAVEMENT
PED	PEDESTRIAN
PDWY	PAVED DRIVEWAY
P.C.	POINT OF CURVATURE
P.C.C.	POINT OF COMPOUND CURVATURE
PGL	PROFILE GRADE LINE
P.I.	POINT OF INTERSECTION
(PAS)	PRIME AGRICULTURAL SOIL
℄P, P/L	PROPERTY LINE
PM	PARKING METER
PWWY	PAVED WALKWAY
P.R.C.	POINT OF REVERSE CURVATURE
P.C.	POINT OF CURVATURE
PLA	PLANTER
P.T.	POINT OF TANGENCY
PCCSP	POLYMER COATED CORRUGATED STEEL PIPE
(P)	PROPOSED
R	RADIUS OF CURVATURE/RIGHT
(R)	RECORD
RCP	REINFORCED CONCRETE PIPE
RD.	ROAD
REC.	RECORD LOCATION
REM.	REMOVE
RET.	RETAIN
RET. WALL	RETAINING WALL
RMDL	REMODEL
RT	RIGHT
R.O.W., R/W	RIGHT–OF–WAY
RR	RAILROAD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
S.B.	STONE BOUND
SMH	SEWER MANHOLE
SMK	SEWER LINE – MARKED
S.W.	SIDEWALK
ST.	STREET
STA.	STATION
SWEL	SOLID WHITE EDGE LINE
SWLL	SOLID WHITE LANE LINE
SYCL	SINGLE YELLOW CENTERLINE
SYLL	SINGLE YELLOW LANE LINE
SHW	STONE HEADWALL
STPL	STOP LINE
T	TANGENT/TRUCK PERCENTAGE
TAN.	TANGENT DISTANCE OF CURVE
TEMP.	TEMPORARY
TMH	TELEPHONE MANHOLE
TMK	TELEPHONE LINE – MARKED
TPED	TELEPHONE PEDESTAL
TL	TEST LEAD
TWR	TOWER
TWY	TRAVELED WAY
TSP	TRAFFIC SIGNAL POLE
T.W.	TOP OF WALL
TYP.	TYPICAL
UTC	UTILITY COVER
UTP, UP	UTILITY POLE
VT SPC	VERMONT STATE PLANE COORDINATE
VEC	VERMONT ELECTRIC COOPERATIVE
VELCO	VERMONT ELECTRIC POWER COMPANY
VERT.	VERTICAL
WMK	WATER LINE – MARKED
W.M.	WATER METER/WATER MAIN
WSO	WATER SHUT OFF
WV	WATER VALVE
WIF	WIRE FENCE
WDFC	WOOD FENCE
WPOST	WOOD POST
X–ING	CROSSING

CONSTRUCTION NOTES

1. PROPOSED PIPE IS 12.75" O.D. ITS WALL THICKNESS AND PROTECTIVE COATINGS VARY DEPENDING ON CLASS DETERMINATION AND SITE CONDITIONS.

2. AREAS WHERE THE PIPE IS INSTALLED IN ROCK TRENCH SHALL REQUIRE THE EPOXY POLYETHYLENE 10/40 COATED PIPE TO BE WRAPPED WITH TUFF N NUFF ROCK SHIELD. CONTRACTOR TO IDENTIFY AND DOCUMENT THESE AREAS DURING INSTALLATION.

3. ALL CONSTRUCTION MUST CONFORM TO FEDERAL SPECIFICATIONS, PART 192 IN TITLE 49 CFR AND APPLICABLE, STATE AND LOCAL REGULATIONS.

4. ALL CONSTRUCTION SIGNING, DRUMS, BARRICADES AND OTHER DEVICES SHALL CONFORM WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) INCLUDING ALL REVISIONS AND ADENDA.

5. ALL VEHICLES ARE TO BE HIGHLY VISIBLE USING ROTATING BEACONS AND BE MARKED BY USE OF TRAFFIC CONES.

6. VERMONT GAS SYSTEMS SHALL NOTIFY EACH ABUTTER AT LEAST 48 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY OBSTRUCTION OF ACCESS.

7. CONTRACTOR SHALL MAINTAIN 1–FOOT MINIMUM CLEARANCE BETWEEN PROPOSED PIPELINES AND OTHER UTILITIES.

8. CONTRACTOR SHALL REMOVE AND REPLACE EXISTING RIGHT OF WAY FENCE AS NECESSARY.

9. CONTRACTOR SHALL SUPPLY TEMPORARY ROAD SIGNS AS NECESSARY.

10. ALL TRENCH EXCAVATION PROTECTION SYSTEMS SHALL BE IN COMPLIANCE WITH OSHA SPECIFICATIONS.

11. CONTRACTOR MUST CONFIRM WITH OWNER AND ENGINEER THAT ALL PERMITS AND RIGHTS OF WAY HAVE BEEN OBTAINED, REVIEWED, AND UNDERSTOOD BEFORE CONSTRUCTING IN ANY AREA.

12. THE PIPE COATING TYPE, LOCATION AND LENGTH IDENTIFIED ON THE DRAWINGS IS TO BE VERIFIED PRIOR TO CONSTRUCTION BASED ON ACTUAL FIELD CONDITIONS. THE CONTRACTOR SHALL PROVIDE THE APPROPRIATE PIPE COATING TYPE, LOCATION AND LENGTH AS DETERMINED BY THE CONSTRUCTION MANAGER BASED ON ACTUAL CONDITIONS.

GENERAL NOTES

1.TOPOGRAPHICAL DETAIL SHOWN HEREON IS THE RESULT OF SURVEY CONDUCTED BY CHA IN THE SUMMER AND FALL OF 2012 AND THE COMPILATION OF EXISTING TOPOGRAPHIC DATA PROVIDED BY THE VERMONT AGENCY OF TRANSPORTATION (VTRANS) AND THE VERMONT TRANSMISSION COMPANY (VELCO).

2. PROPERTY LINES SHOWN HEREON ARE BASED ON TAX MAP AND DO NOT REPRESENT A PROPERTY LINE RETRACEMENT SURVEY EFFORT.

3. LOCATION OF ANY IDENTIFIED UNDERGROUND UTILITIES IS APPROXIMATE ONLY, AND IS NOT WARRANTED TO BE CORRECT. ADDITIONAL UTILITIES MAY EXIST WHICH ARE NOT INDICATED ON THESE PLANS. ALL EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR FOR SERVICE, SIZE, INVERT ELEVATIONS, LOCATION, ETC. CONTRACTOR MUST NOTIFY DIG–SAFE VERMONT AT 811 AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION.

4. SURVEY WAS CONDUCTED IN VERMONT ZONE, NAD83 HORIZONTAL COORDINATE SYSTEM. ELEVATIONS ARE BASED ON NAVD 88 AND REFERENCED TO TEMPORARY BENCHMARKS AS SHOWN ON THE PLANS.

5. ENVIRONMENTAL CONDITIONS INFORMATION SHOWN IS THE RESULT OF SURVEY CONDUCTED BY VHB IN 2013 AND 2014.

6. THE LOCUS LIES IN VARIOUS FIRM ZONES, DESCRIBED ON THE FOLLOWING COMMUNITY PANEL NUMBERS:
5007C0143 D, 5007C0144 D, 5007C0163 D, 5007C0164 D, 5007C0277 D, 5007C0281 D, 5007C0279 D, 5007C0290 D, 5001670005 A, 5001670010 A, 5000090002 A, 5000090004 A, AND 5000080003 A

7. THE PURPOSE OF THIS PLAN SET IS TO IDENTIFY TO THE APPROPRIATE PERMITTING AGENCIES THE PROPOSED LOCATION FOR A NATURAL GAS PIPELINE AND ITS LOCATION RELATIVE TO TOPOGRAPHICAL FEATURES, EXISTING, AND PROPOSED UTILITIES.

8. CONTRACTOR MUST CONFIRM WITH OWNER AND ENGINEER THAT ALL PERMITS AND R.O.W. HAVE BEEN OBTAINED BEFORE CONSTRUCTING IN ANY AREA.

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
		3	GJM	BCK	IFC 2016 EDITS (05/2016)
		2	BCK	TDB	CP TEST LEAD EDIT (9/14/15)
		1	BCK	TDB	PILLSBURY REROUTE & REDMOND RD. HDD CHANGE (6/05/15)

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
LEGEND & NOTES

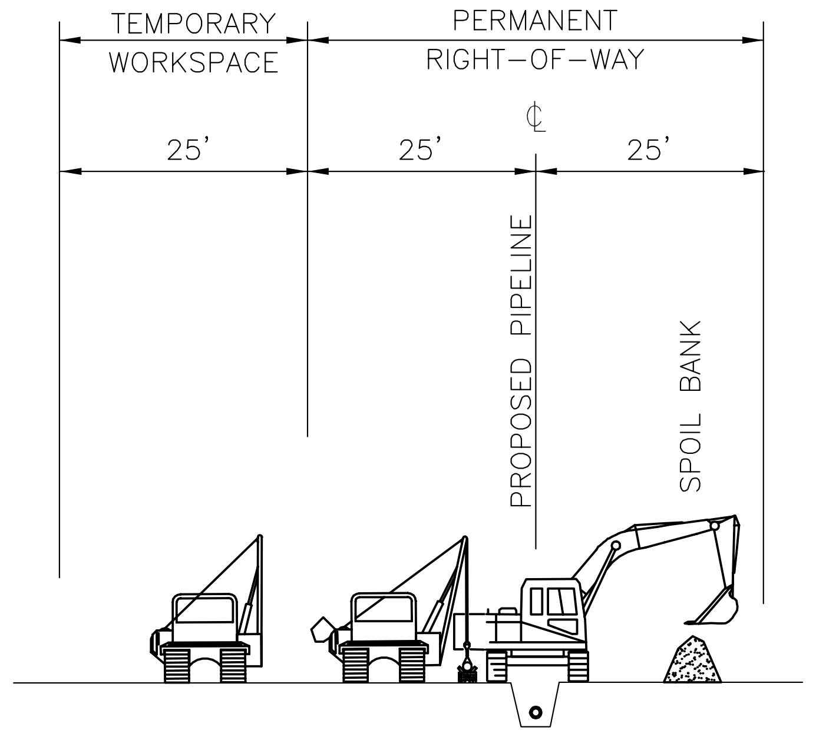
LOC. CHITTENDEN & ADDISON COUNTIES

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

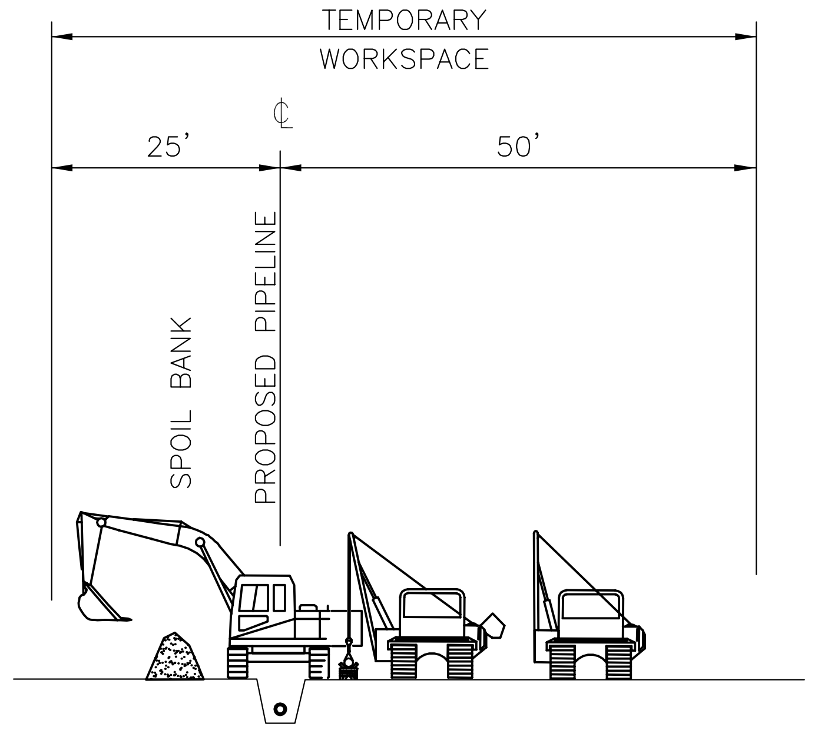
YEAR: 2016 | W.O. | SCALE: N/A | DWG. ANGP–T–G–003 | REV. 3



CONSTRUCTION TYPE 1A
NOT TO SCALE

NOTE:

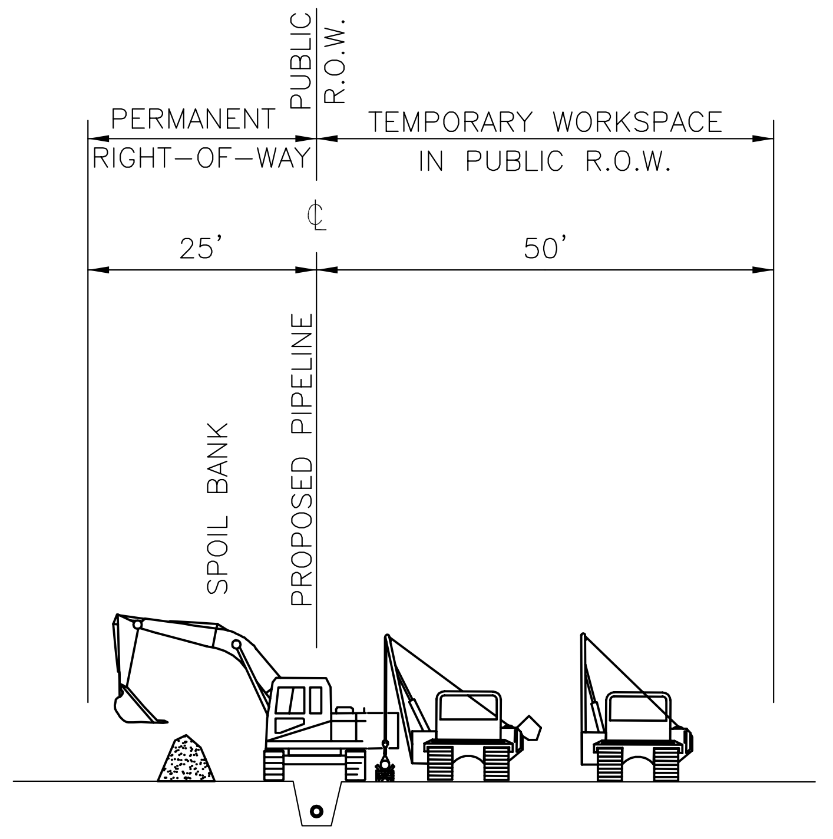
1. THIS CONFIGURATION IS FOR 75' CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP-T-G-015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 1B
NOT TO SCALE

NOTE:

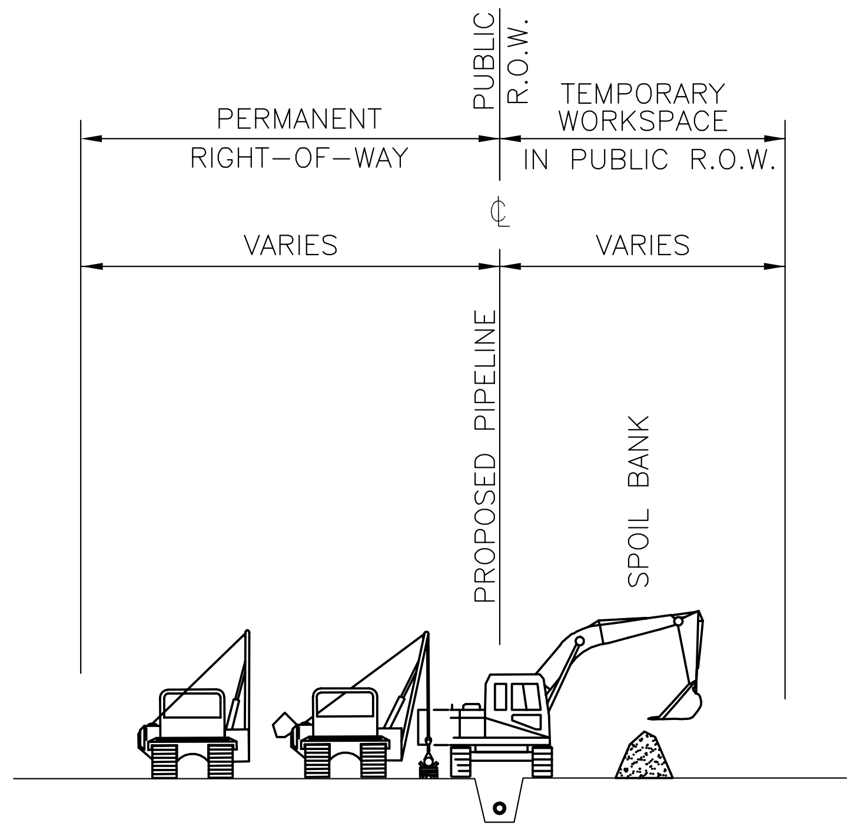
1. THIS CONFIGURATION IS FOR 75' CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP-T-G-015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 1C
NOT TO SCALE

NOTE:

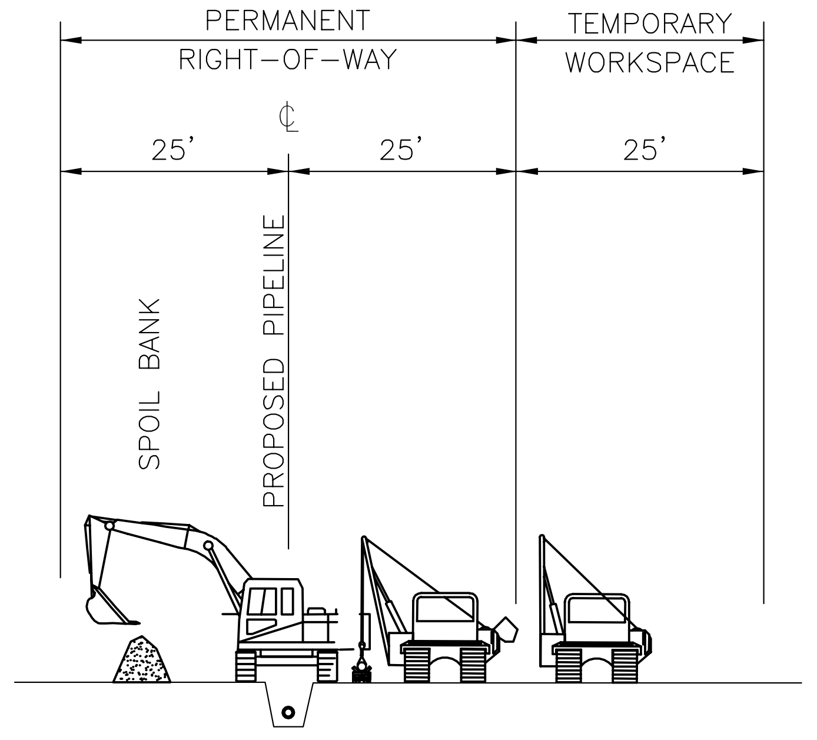
1. THIS CONFIGURATION IS FOR 75' CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP-T-G-015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 1D
NOT TO SCALE

NOTE:

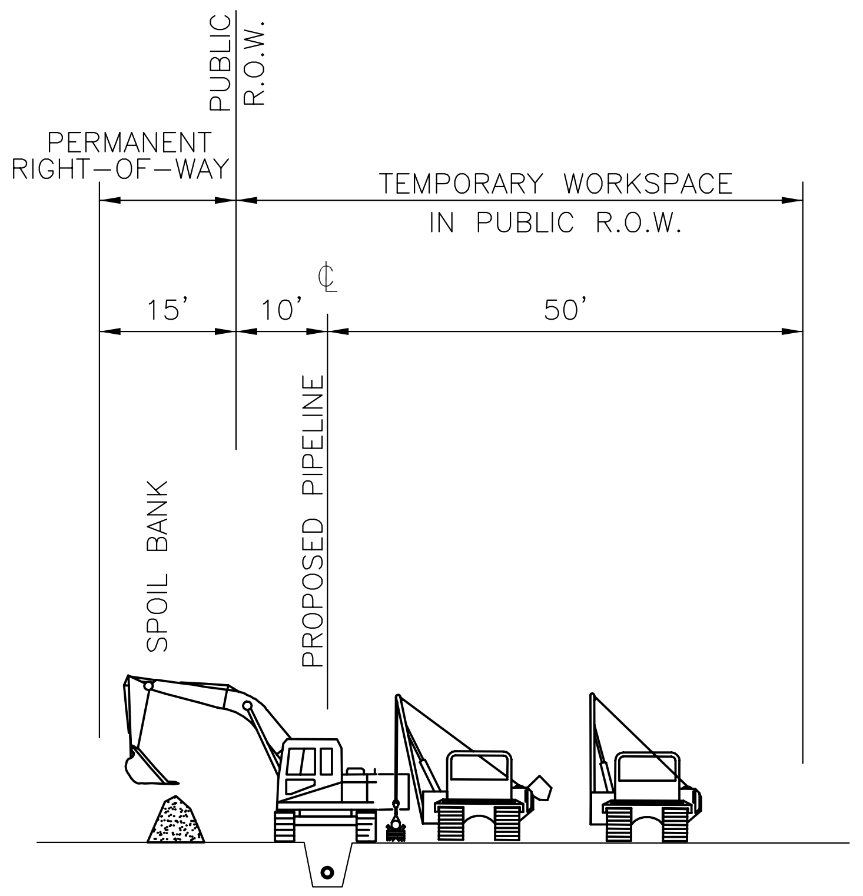
1. THIS CONFIGURATION IS FOR VARIABLE CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP-T-G-015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 1E
NOT TO SCALE

NOTE:

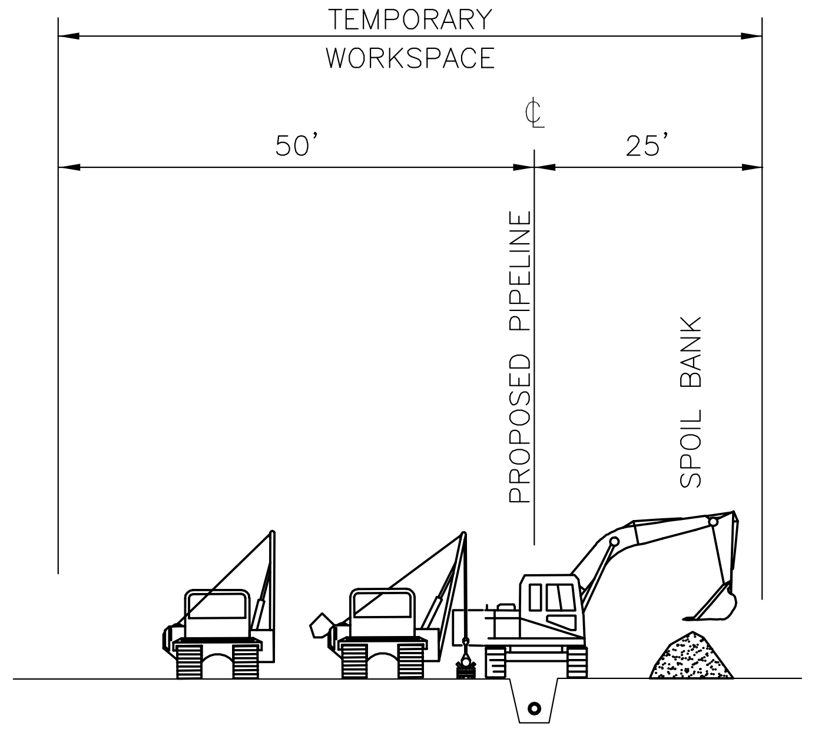
1. THIS CONFIGURATION IS FOR 75' CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP-T-G-015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 1F
NOT TO SCALE

NOTE:

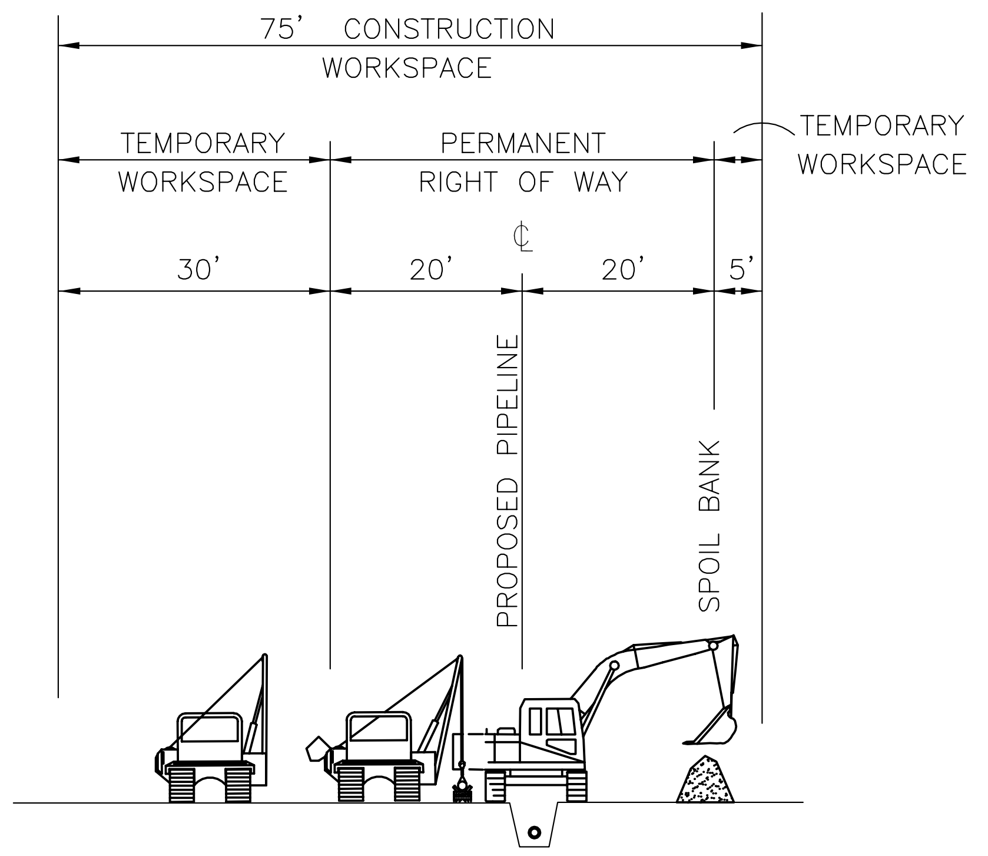
1. THIS CONFIGURATION IS FOR 75' CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP-T-G-015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 1G
NOT TO SCALE

NOTE:

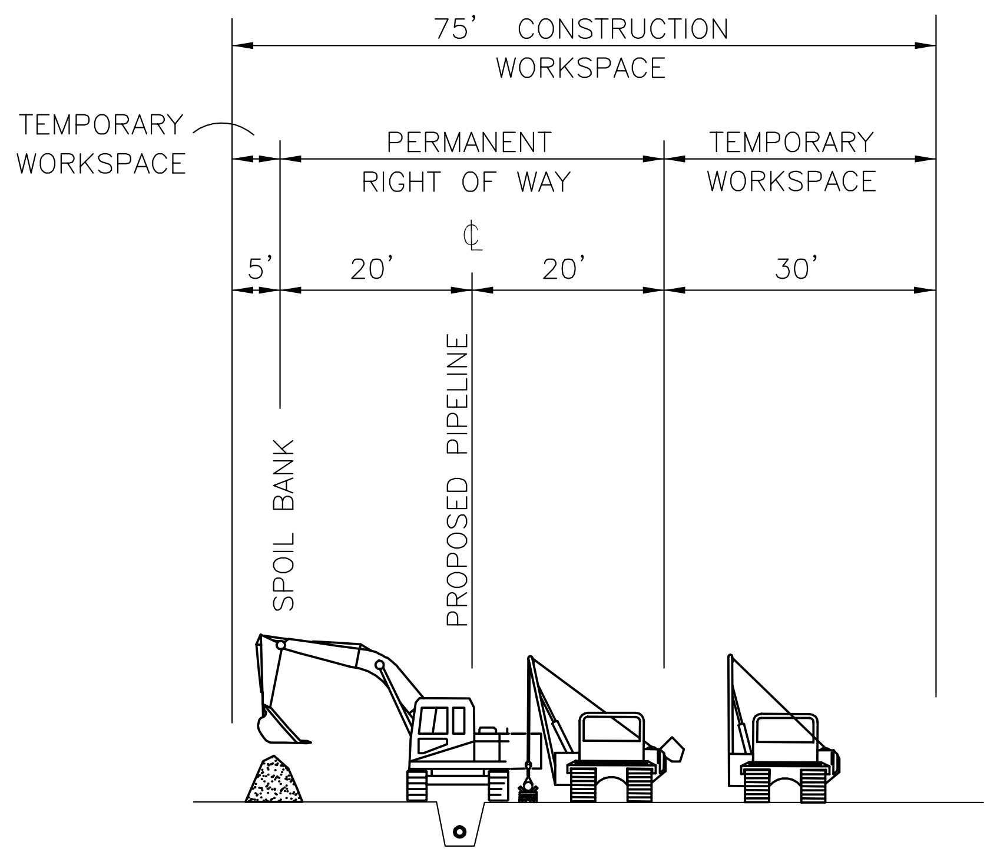
1. THIS CONFIGURATION IS FOR 75' CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP-T-G-015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 1H
NOT TO SCALE

NOTE:

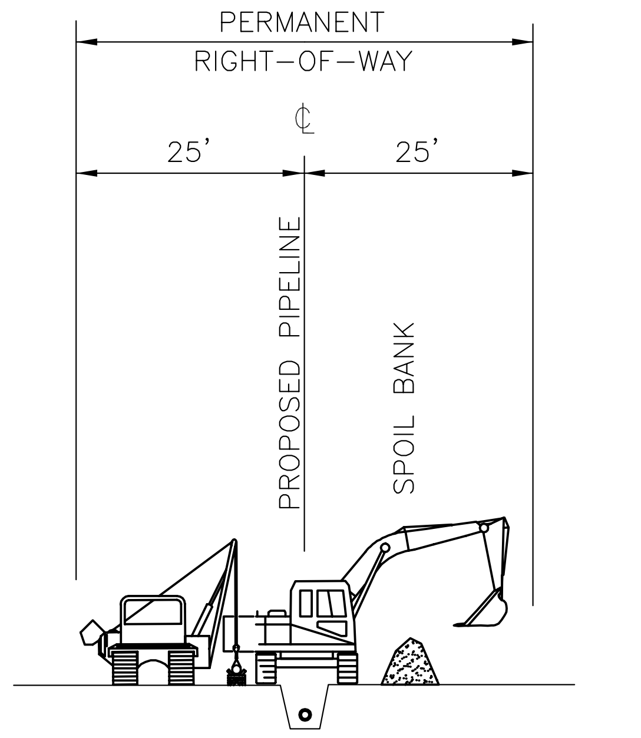
1. THIS CONFIGURATION IS FOR 75' CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP-T-G-015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 1J
NOT TO SCALE

NOTE:

1. THIS CONFIGURATION IS FOR 75' CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP-T-G-015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 2A
NOT TO SCALE

NOTE:

1. THIS CONFIGURATION IS FOR 50' CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP-T-G-015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.

MICHAEL E. HOLLOWOOD
NO. 97764

VHB Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION

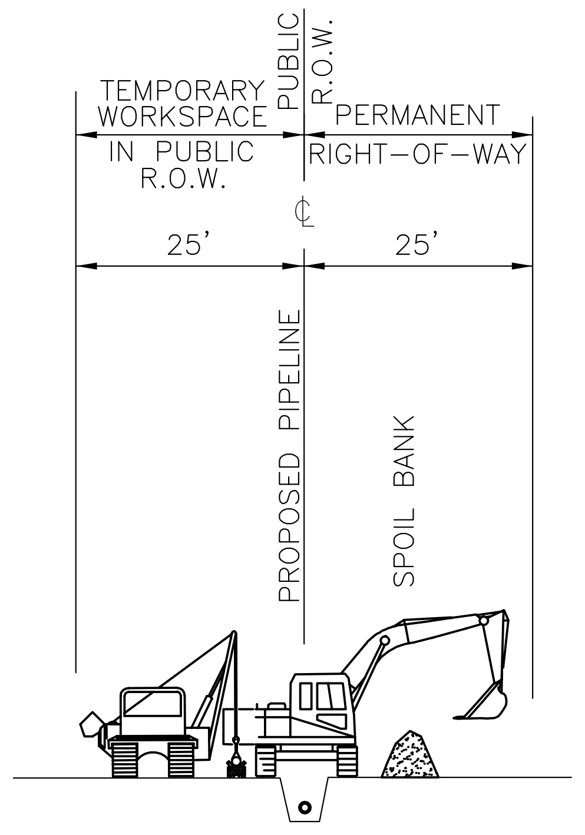
	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
CONSTRUCTION CONFIGURATION DETAILS
LOC. CHITTENDEN & ADDISON COUNTIES

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

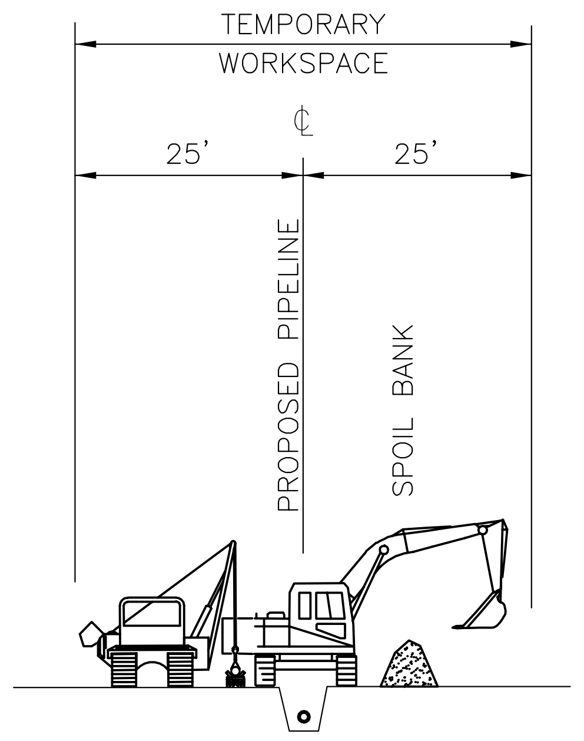
YEAR: 2016 | W.O. | SCALE: NOTED | DWG. ANGP-T-G-004 | REV. 0



CONSTRUCTION TYPE 2B
NOT TO SCALE

NOTE:

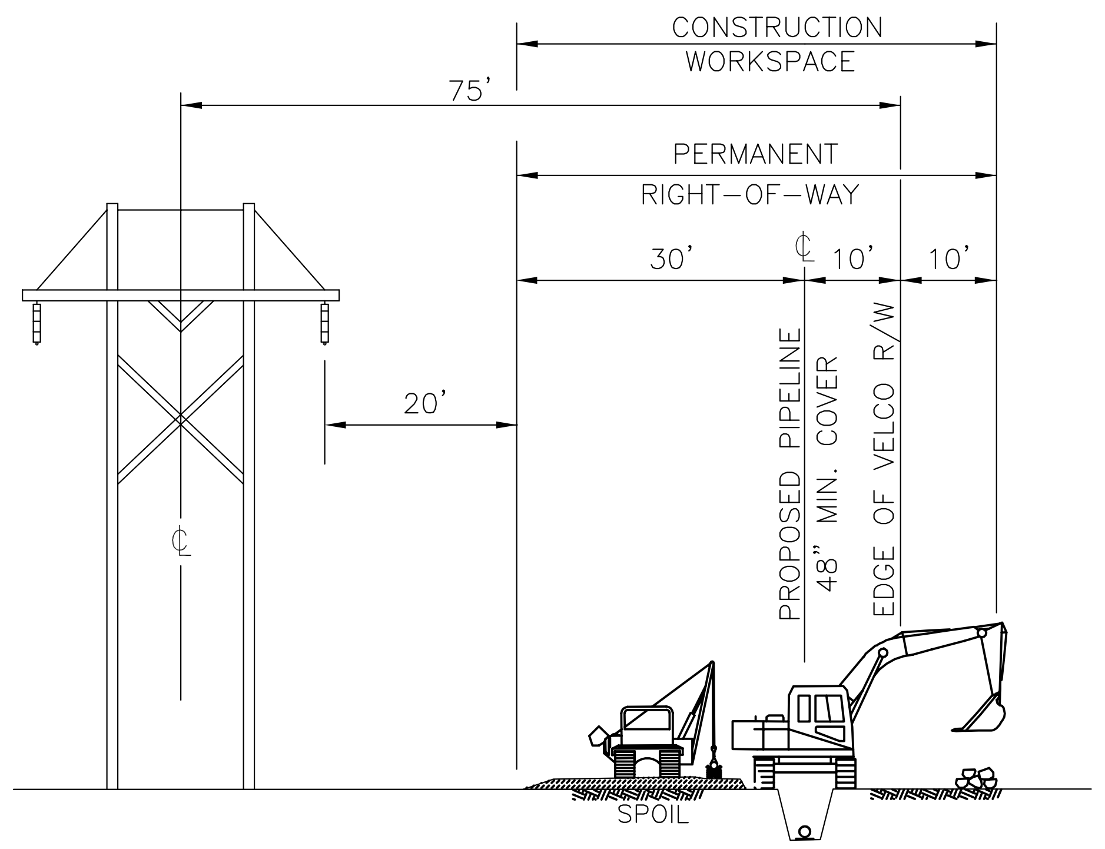
1. THIS CONFIGURATION IS FOR 50' CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP-T-G-015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 2C
NOT TO SCALE

NOTE:

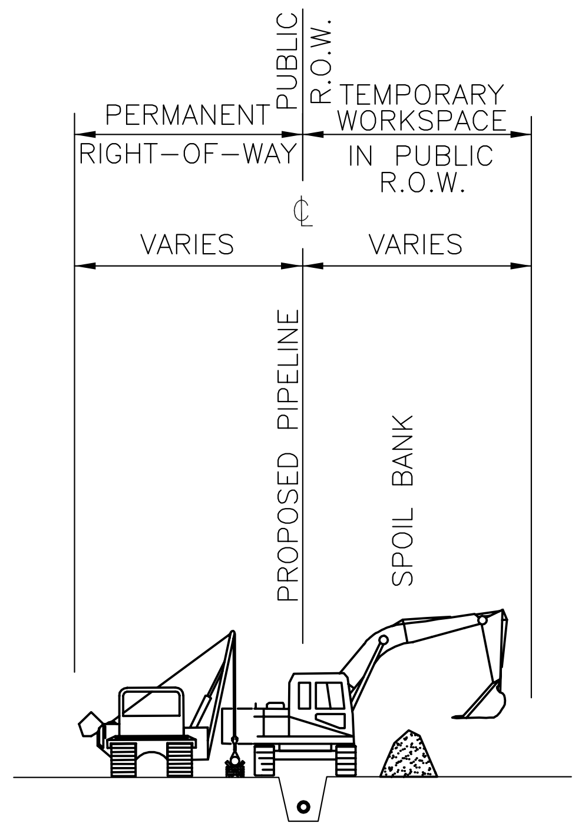
1. THIS CONFIGURATION IS FOR 50' CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP-T-G-015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 2D
NOT TO SCALE

NOTE:

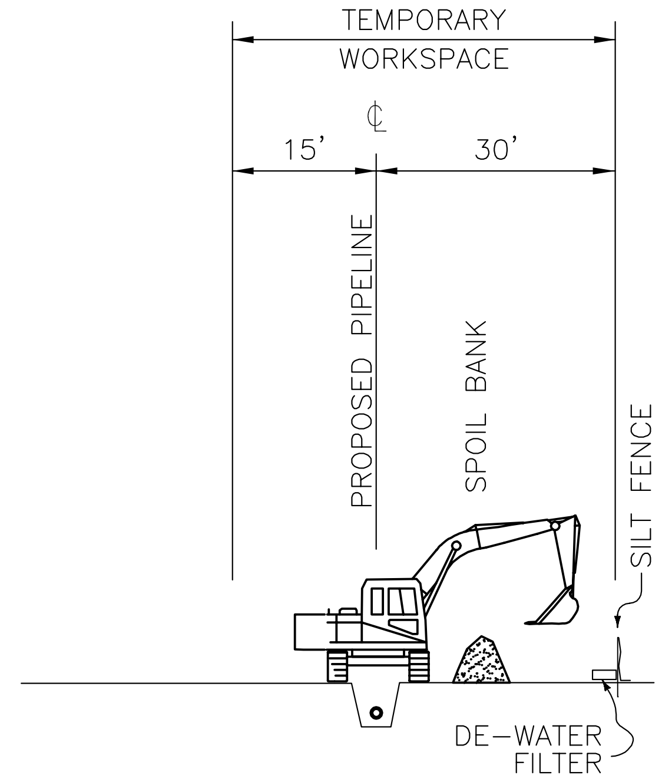
1. THIS CONFIGURATION IS FOR 50' CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. 10-FOOT TEMPORARY WORKSPACE TO THE WEST OF VELCO ROW REPLACED BY 20-FOOT WORKROAD CORRIDOR LOCATED TO THE EAST OF VELCO STRUCTURES FROM STATION 1639+90 TO 1666+50.



CONSTRUCTION TYPE 2E
NOT TO SCALE

NOTE:

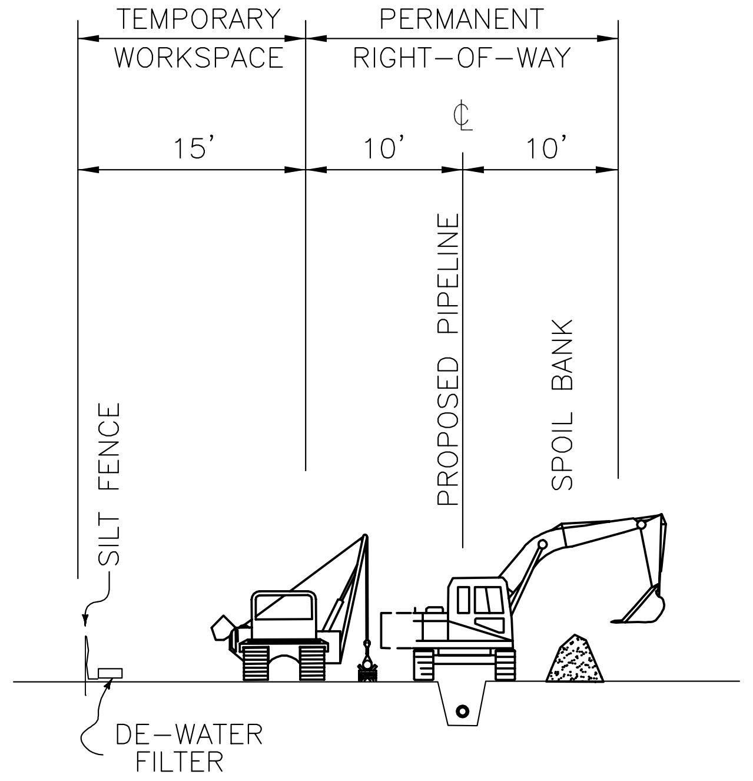
1. THIS CONFIGURATION IS FOR VARIABLE CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP-T-G-015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 3
NOT TO SCALE

NOTE:

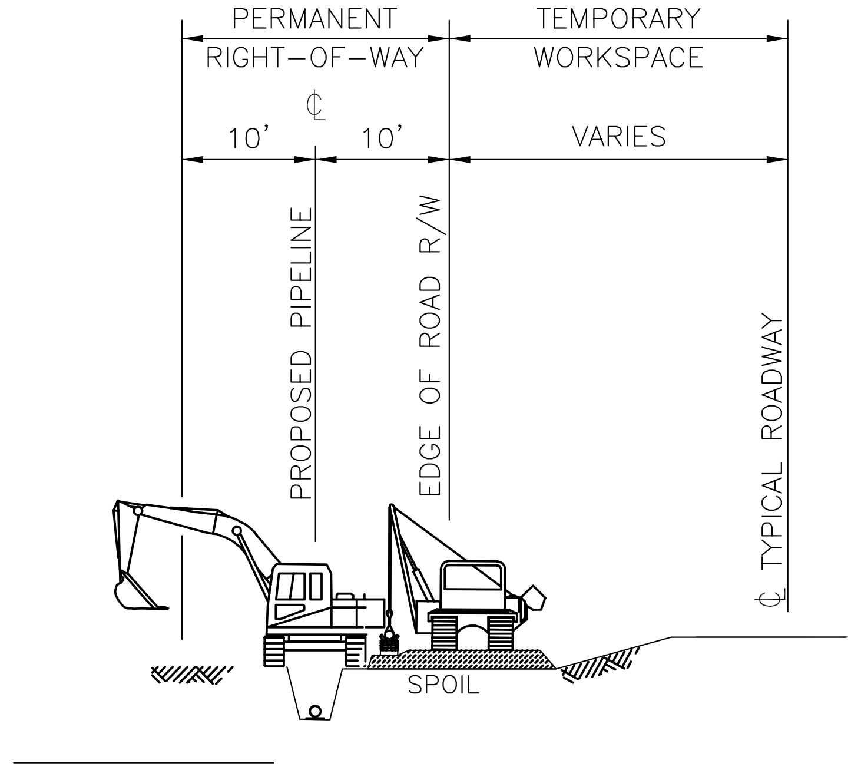
1. THIS CONFIGURATION IS FOR ROADSIDE CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP-T-G-015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 3A
NOT TO SCALE

NOTE:

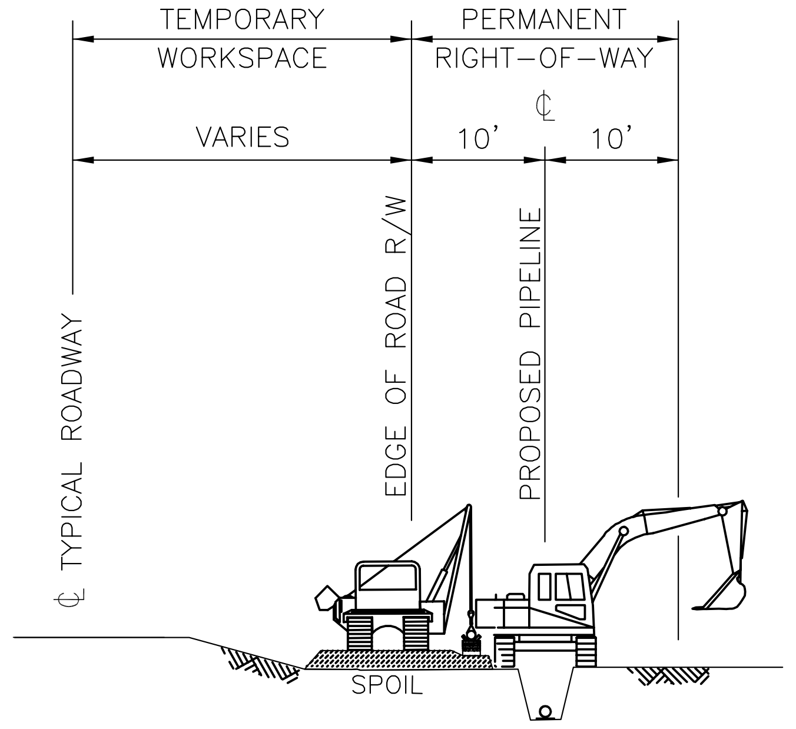
1. THIS CONFIGURATION IS FOR ROADSIDE CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP-T-G-015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 4A
NOT TO SCALE

NOTE:

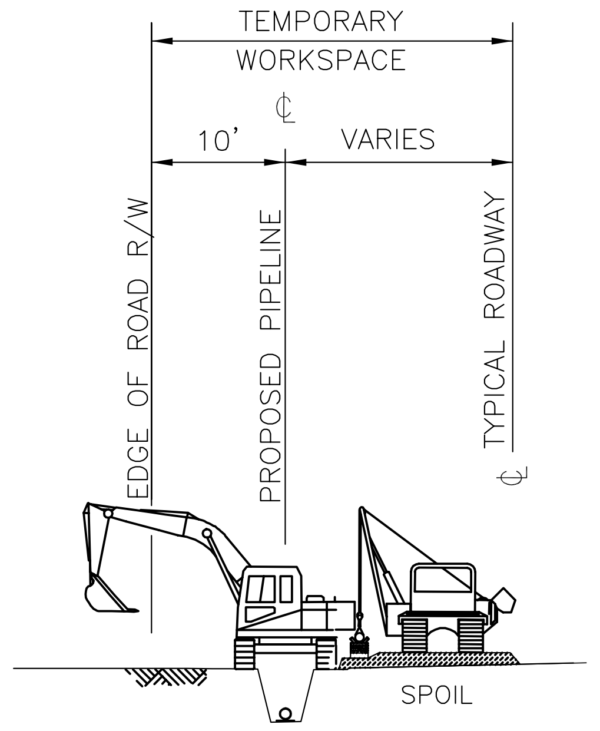
1. THIS CONFIGURATION IS FOR ROADSIDE CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP-T-G-015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 4B
NOT TO SCALE

NOTE:

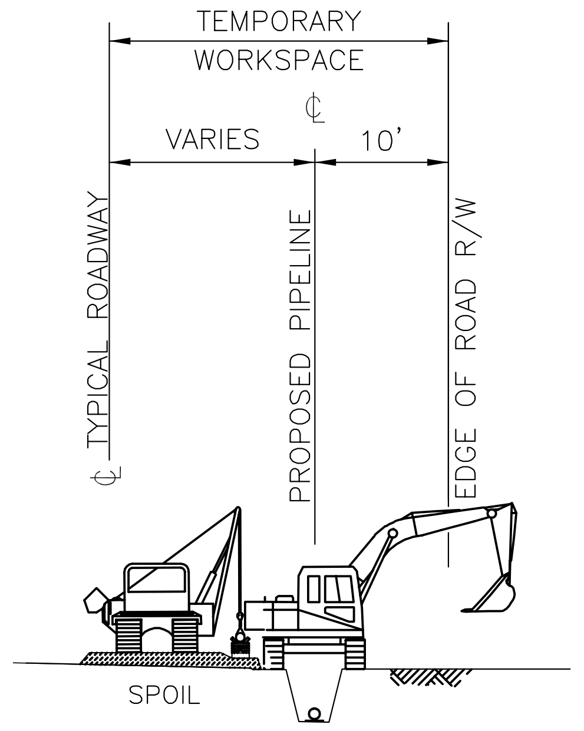
1. THIS CONFIGURATION IS FOR ROADSIDE CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP-T-G-015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 4C
NOT TO SCALE

NOTE:

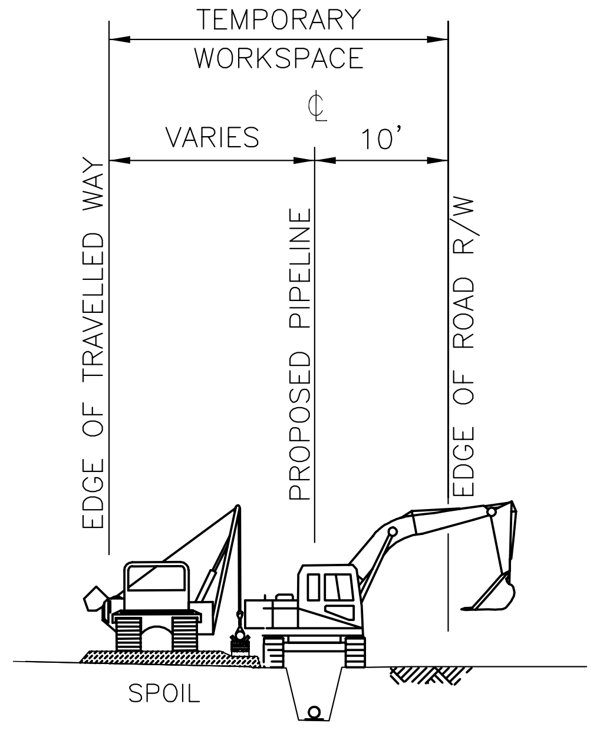
1. THIS CONFIGURATION IS FOR ROADSIDE CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP-T-G-015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 4D
NOT TO SCALE

NOTE:

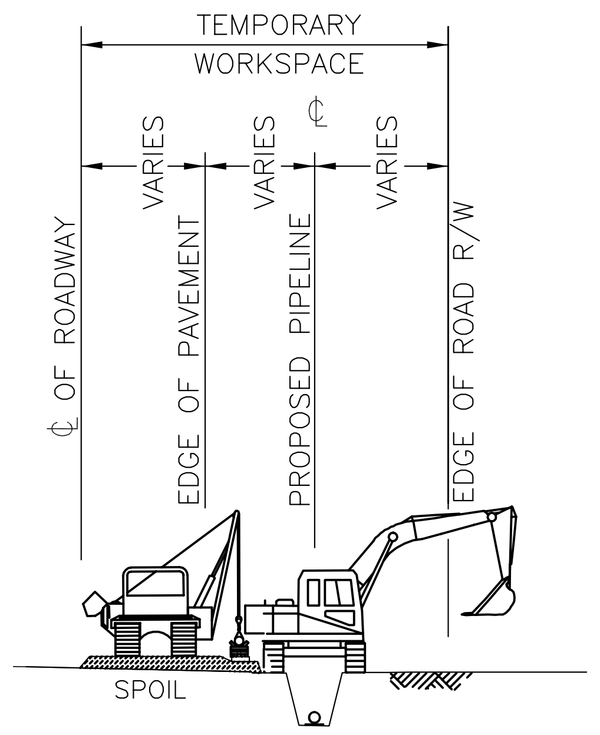
1. THIS CONFIGURATION IS FOR ROADSIDE CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP-T-G-015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 4E
NOT TO SCALE

NOTE:

1. THIS CONFIGURATION IS FOR ROADSIDE CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP-T-G-015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 4F
NOT TO SCALE

MICHAEL E. HOLLOWOOD
NO. 97764

NOTE:

1. THIS CONFIGURATION IS FOR ROADSIDE CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP-T-G-015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
CONSTRUCTION CONFIGURATION DETAILS

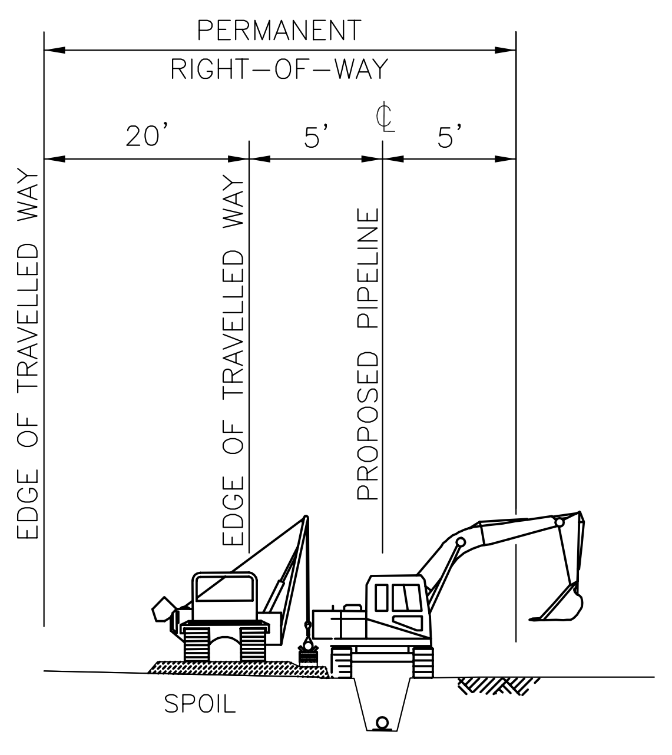
LOC. CHITTENDEN & ADDISON COUNTIES

YEAR: 2016
W.O.
SCALE: NOTED
DWG. ANGP-T-G-005
REV. 0

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

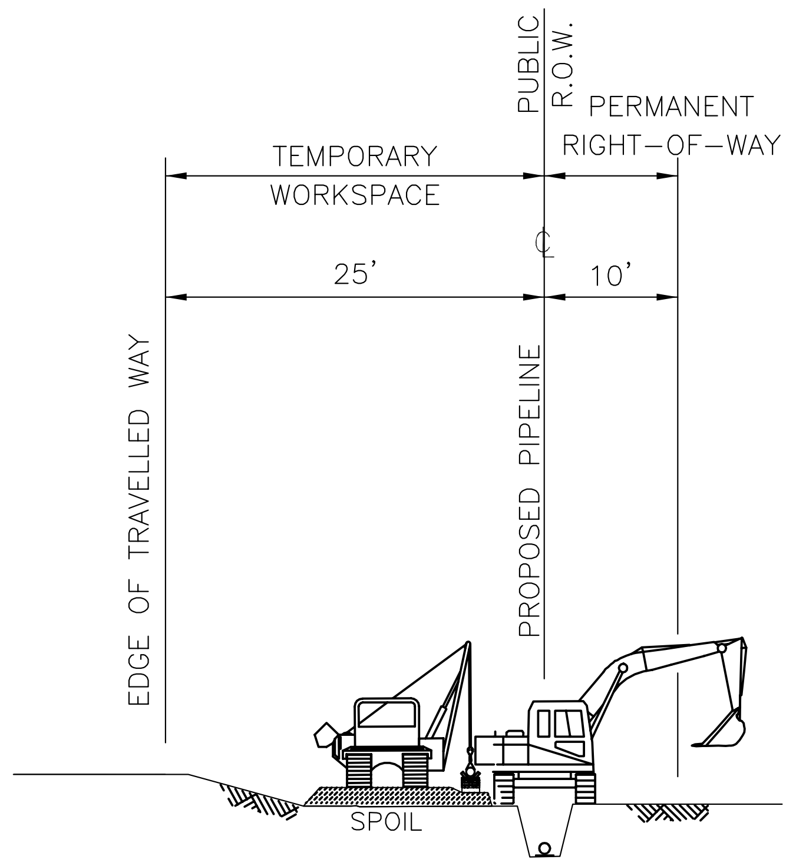
CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com



CONSTRUCTION TYPE 4G
NOT TO SCALE

NOTE:

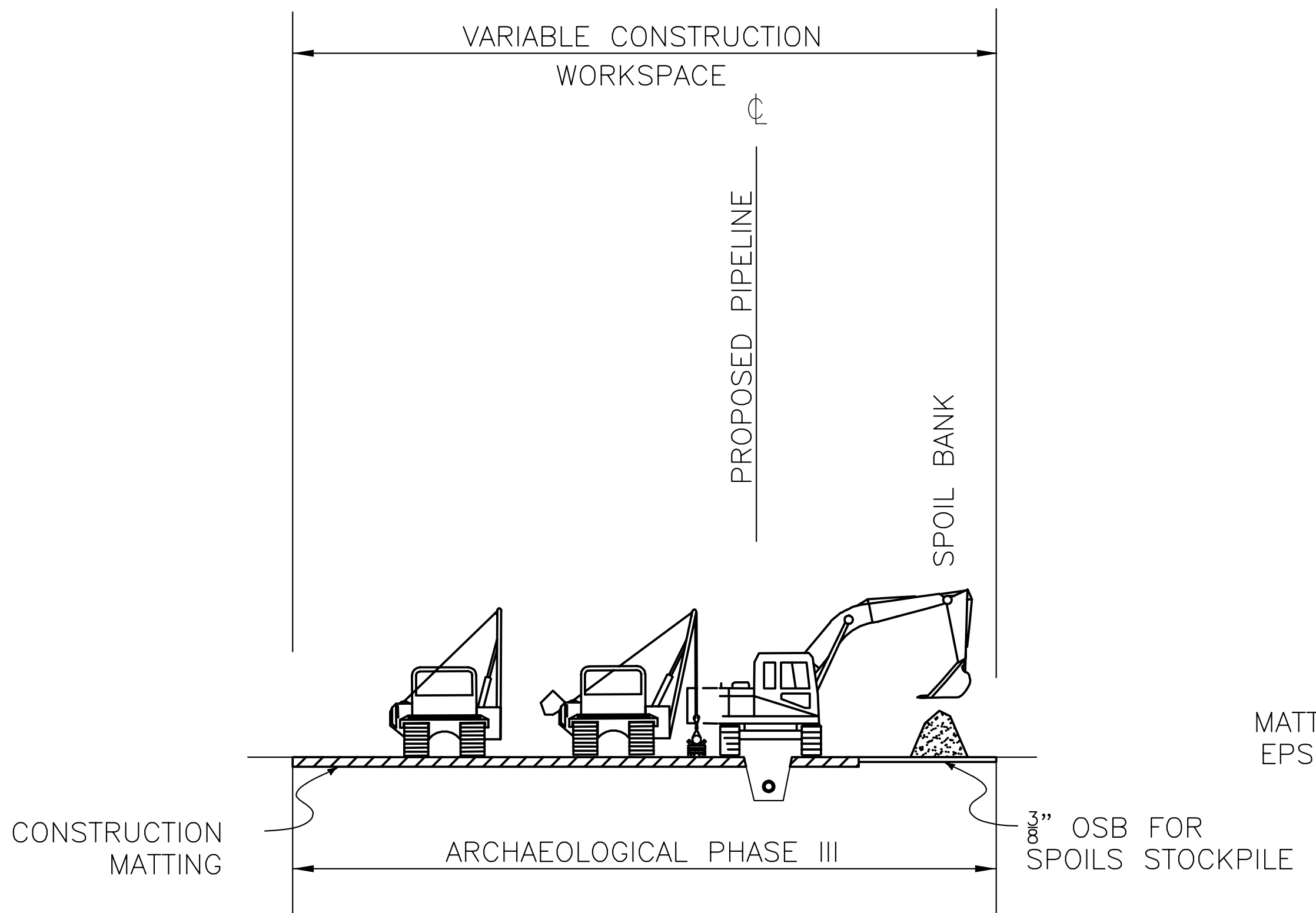
1. THIS CONFIGURATION IS FOR ROADSIDE CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP–T–G–015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 4H
NOT TO SCALE

NOTE:

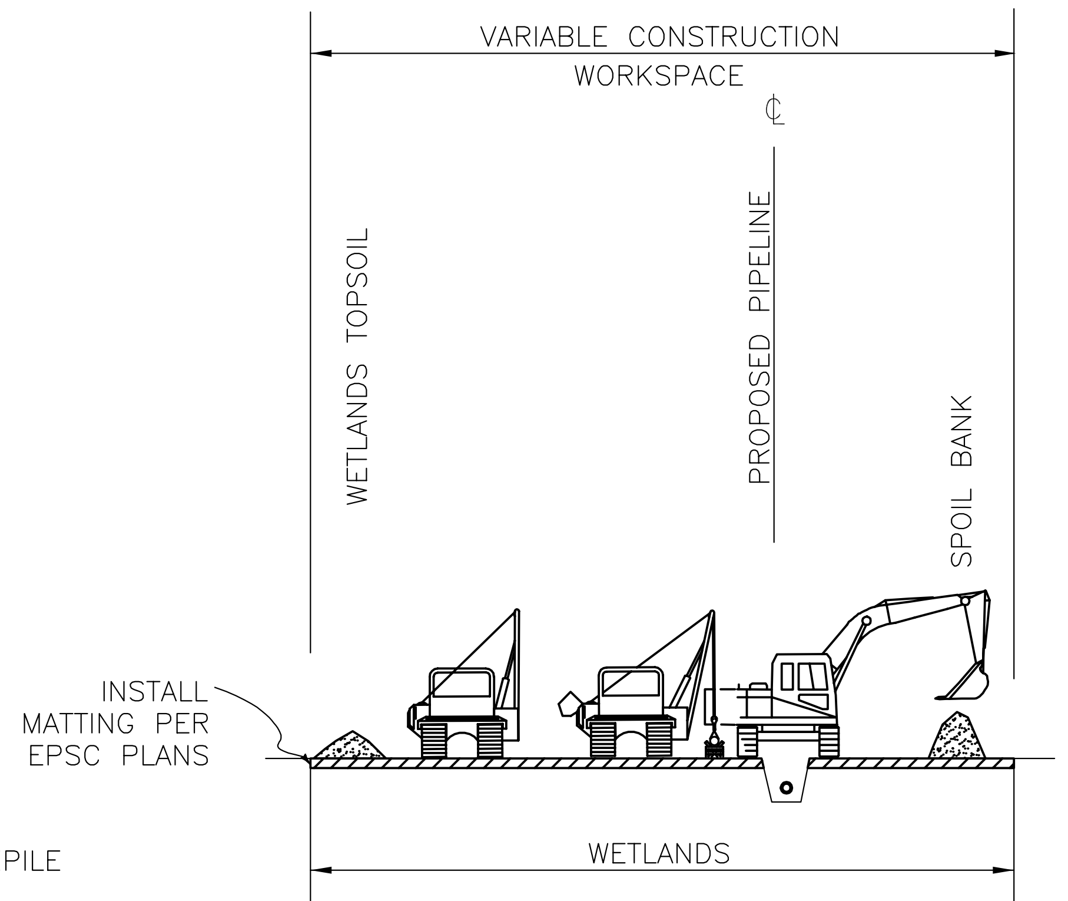
1. THIS CONFIGURATION IS FOR ROADSIDE CONSTRUCTION SPACE AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP–T–G–015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE A
NOT TO SCALE

NOTE:

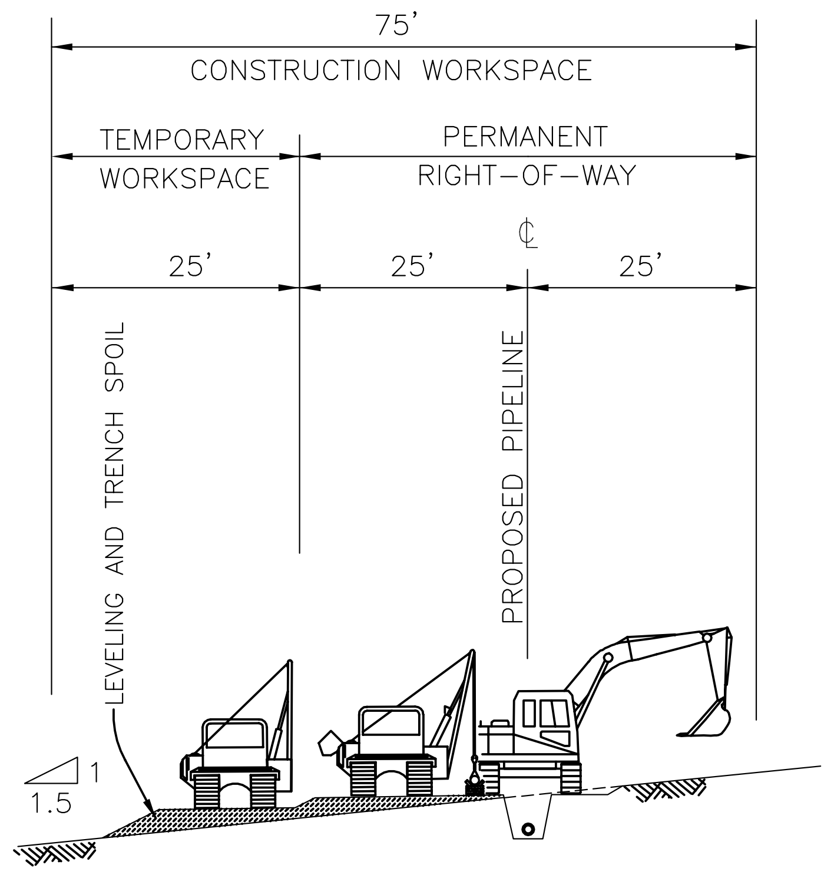
1. THIS CONFIGURATION IS FOR VARIABLE CONSTRUCTION SPACE IN "ARCHAEOLOGICAL PHASE III" AREAS AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE. THE PHASE III AREAS ARE AS FOLLOWS: VT–AD–483, LOCUS 2 (8/14/2013), VT–CH–414 (8/14/2013), VT–AD–456, LOCUS 3, VT–AD–1559, VT–AD–138, LOCUS 2 (8/14/2013), VT–AD–87, LOCUS 2 (8/14/2013), VT–AD–446, VT–AD–793, VT–AD–808 LOCUS 1 AND 2, VT–CH–103, VT–AD–1623 △1
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT & EPSC SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. SEE ALIGNMENT & EPSC SHEETS FOR LOCATIONS OF THIS CONSTRUCTION CONFIGURATION.
4. WHEN BACKFILLING, SOILS SHALL BE REPLACED IN ORDER THEY WERE EXCAVATED, WITH TOPSOIL AS UPPER LAYER FILL AND COMPACT SUBSOIL TO DEPTH OF ADJACENT NATIVE SUBSOIL/TOPSOIL INTERFACE. REPLACE TOPSOIL AS UPPER LAYER AND BLEND TO EXISTING GRADE OF UNDISTURBED SOILS. DISPOSE OF EXCESS SUBSOIL AT SUITABLE LOCATION AS APPROVED BY THE OSPC.
5. SEE EPSC PLAN "ADDITIONAL ENVIRONMENTAL NOTES" FOR ADDITIONAL INSTRUCTIONS RELATED TO CONSTRUCTION IN "ARCHAEOLOGICAL PHASE III" AREAS, INCLUDING FINAL STABILIZATION NOTES.
6. SEE DETAIL #7 ON ANGP–T–G–015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE W
NOT TO SCALE

NOTE:

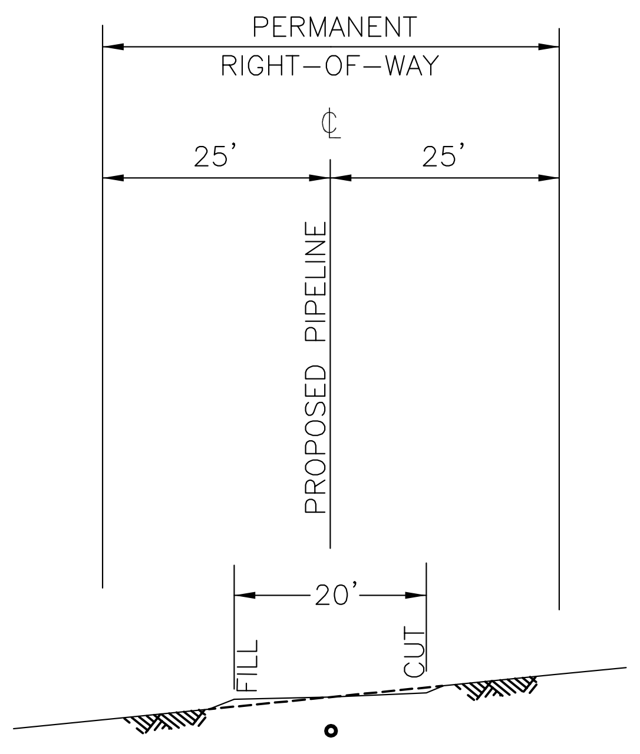
1. THIS CONFIGURATION IS FOR VARIABLE CONSTRUCTION SPACE IN WETLANDS AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT & EPSC SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. SEE ALIGNMENT & EPSC SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
4. WHEN BACK–PILING, SOILS SHALL BE REPLACED IN ORDER THEY WERE EXCAVATED, WITH TOPSOIL AS UPPER LAYER FILL AND COMPACT SUBSOIL TO DEPTH OF ADJACENT NATIVE SUBSOIL/TOPSOIL INTERFACE. REPLACE TOPSOIL AS UPPER LAYER AND BLEND TO EXISTING GRADE OF UNDISTURBED SOILS. DISPOSE OF EXCESS SUBSOIL AT SUITABLE LOCATION AS APPROVED BY THE OSPC.
5. SEE EPSC PLAN "ADDITIONAL ENVIRONMENTAL NOTES" FOR ADDITIONAL INSTRUCTIONS RELATED TO CONSTRUCTION IN WETLANDS, INCLUDING FINAL STABILIZATION NOTES.
6. SEE DETAIL #7 ON ANGP–T–G–015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 6A
NOT TO SCALE

NOTE:

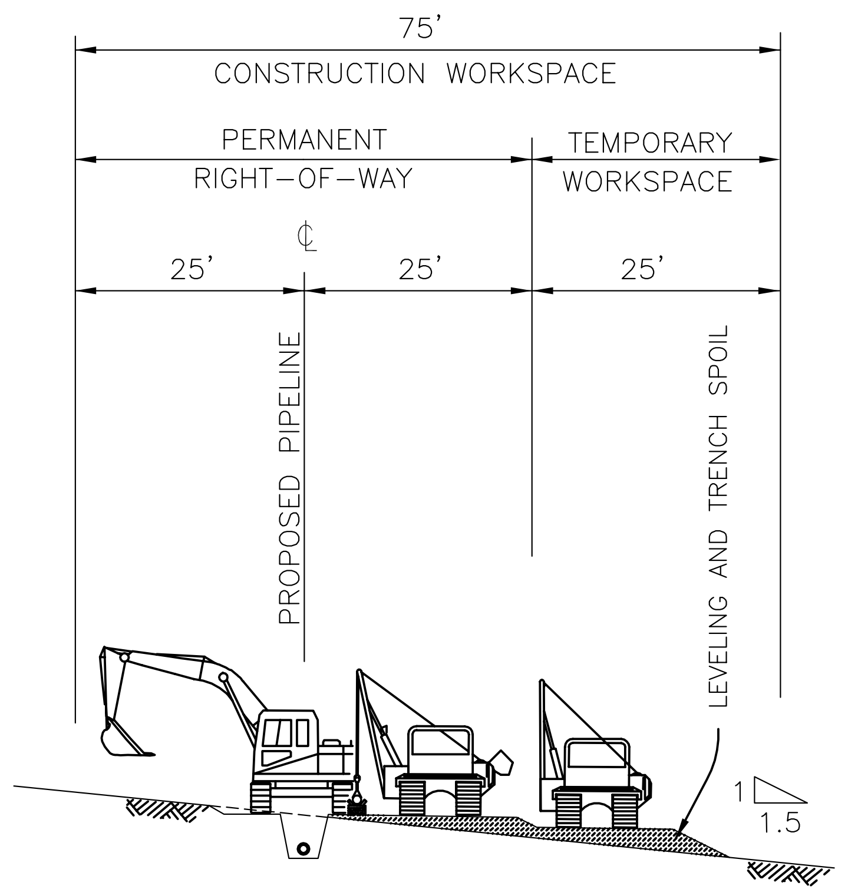
1. THIS CONFIGURATION IS FOR SIDE HILL SLOPE CONSTRUCTION AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP–T–G–015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 6B
NOT TO SCALE
POST CONSTRUCTION

NOTE:

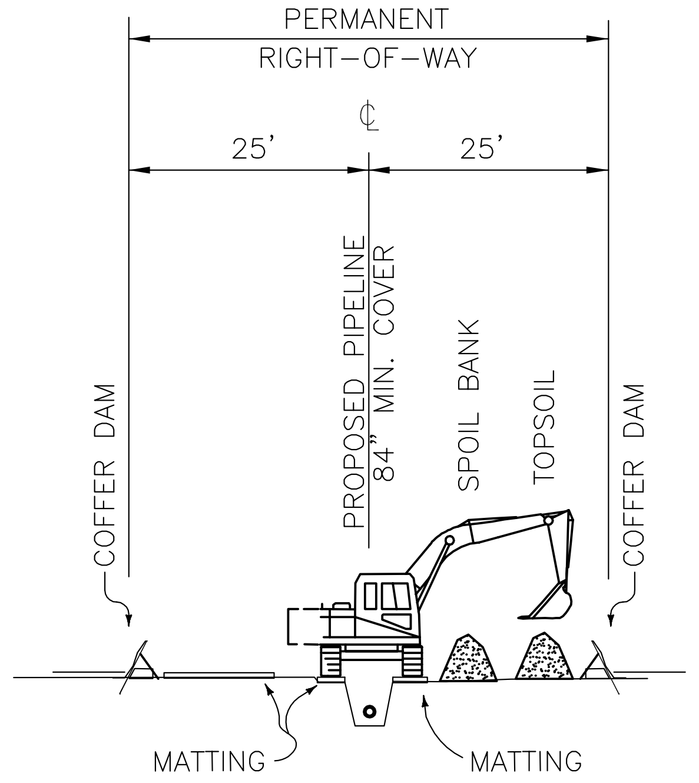
1. THIS CONFIGURATION IS FOR SIDE HILL SLOPE CONSTRUCTION AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. SEE DETAIL #7 ON ANGP–T–G–015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 6C
NOT TO SCALE

NOTE:

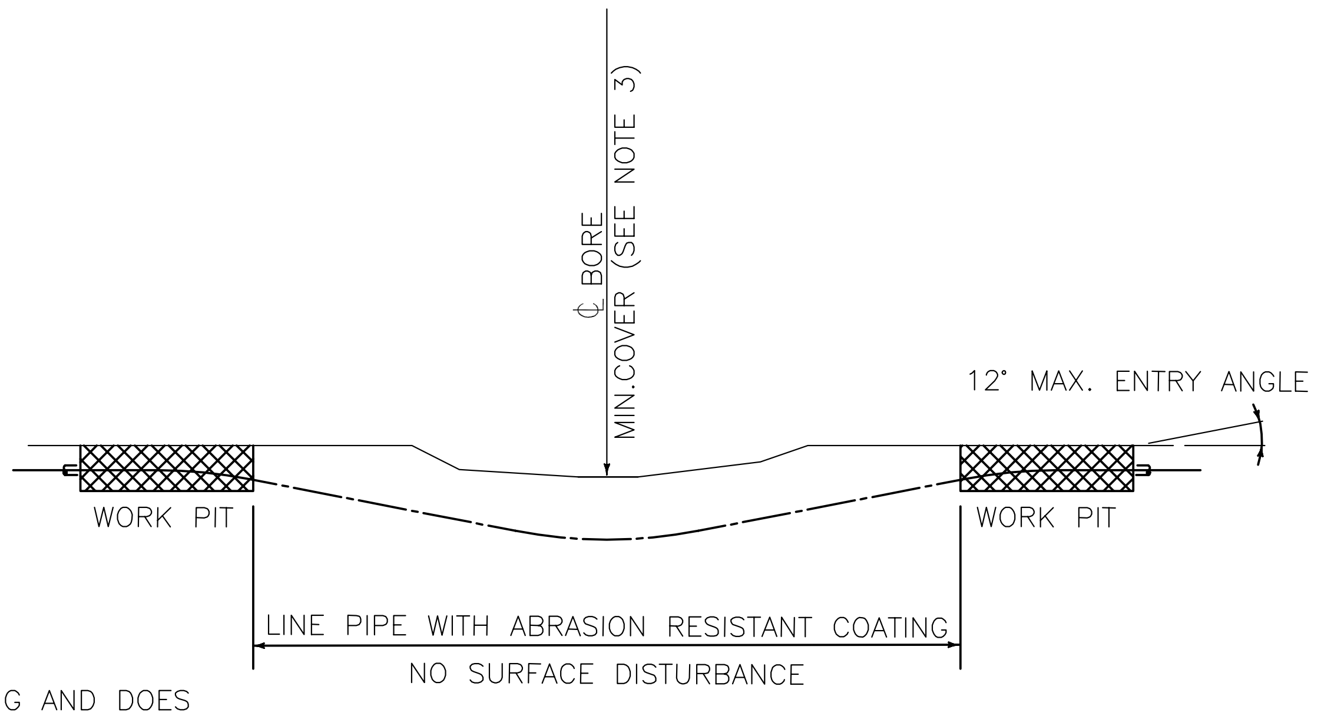
1. THIS CONFIGURATION IS FOR SIDE HILL SLOPE CONSTRUCTION AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
5. SEE DETAIL #7 ON ANGP–T–G–015 FOR PIPELINE MINIMUM COVER REQUIREMENTS.



CONSTRUCTION TYPE 7
NOT TO SCALE

NOTE:

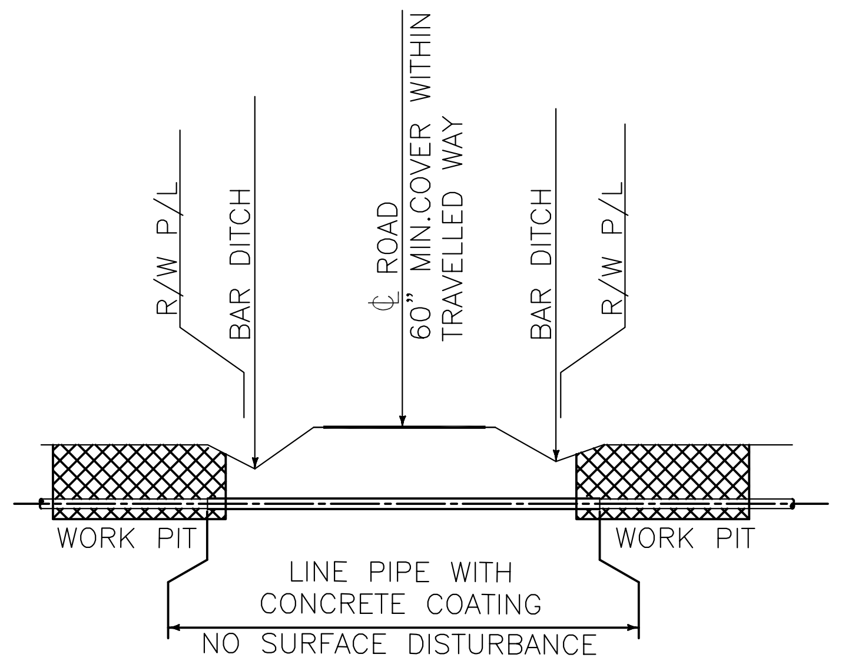
1. THIS CONFIGURATION IS FOR STREAM CROSSING AND DOES NOT DEPICT ADDITIONAL TEMP. WORKSPACE.
2. ADDITIONAL TEMP. WORKSPACE HAS BEEN TYPICALLY INCORPORATED ON THE ALIGNMENT SHEETS FOR AREAS SUCH AS ROAD, RIVER/STREAM/WATERBODY, AND ARCHEOLOGICAL SITE CROSSINGS WHERE HORIZONTAL DIRECTIONAL DRILL CONSTRUCTION HAS BEEN PROPOSED.
3. FOR AREAS DESIGNATED AS PRIME AGRICULTURAL SOILS (PAS) IN THE SOIL TYPE BAND OF THE EPSC SHEETS, SEE "CONSTRUCTION WITHIN PRIME AGRICULTURAL SOILS (PAS) AREAS" FOR SOIL SEGREGATION AND ASSOCIATED CONSTRUCTION PROCEDURES.
4. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.



CONSTRUCTION TYPE 8
NOT TO SCALE

NOTE:

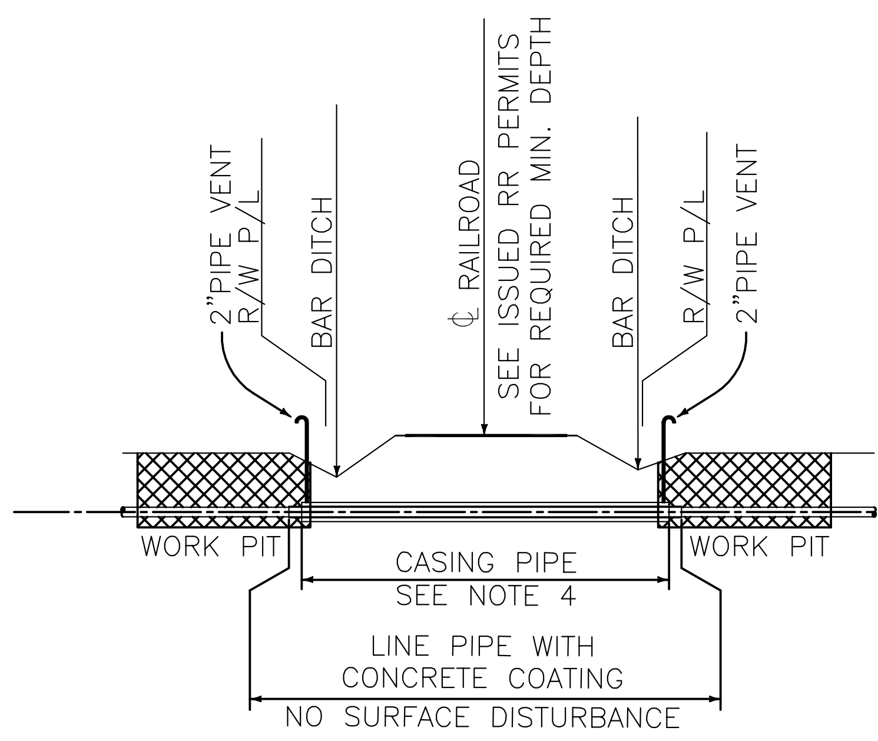
1. THIS CONFIGURATION IS FOR OPTIONAL STREAM OR ROAD CROSSING HORIZONTAL DIRECTIONAL DRILL.
2. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
3. SEE TABLE ON ANGP–T–G–020 FOR COVER REQUIREMENTS.



CONSTRUCTION TYPE 9
NOT TO SCALE

NOTE:

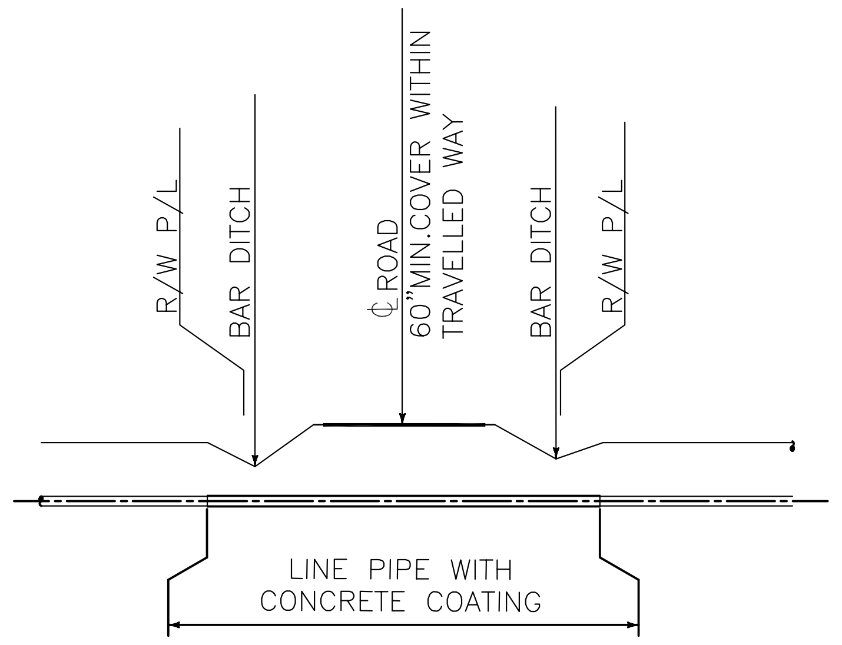
1. THIS CONFIGURATION IS FOR UNCASED ROAD CROSSING CONSTRUCTION.
2. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION AND MATERIAL SPECIFICATIONS.
3. SEE SITE SPECIFIC SOIL BORING DETAILS FOR ADDITIONAL INFORMATION.
4. BORE HOLE SHALL NOT EXCEED THE PIPE DIAMETER BY MORE THAN ONE AND ONE HALF (1–1/2) INCHES.



CONSTRUCTION TYPE 10
NOT TO SCALE

NOTE:

1. THIS CONFIGURATION IS FOR CASED ROAD AND RAILROAD CROSSING CONSTRUCTION.
2. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION AND MATERIAL SPECIFICATIONS.
3. SEE SITE SPECIFIC SOIL BORING DETAILS FOR ADDITIONAL INFORMATION.
4. ANNULUS FILLED WITH DIELECTRIC MATERIAL PER VT GAS SPECIFICATIONS FOR ABRASION RESISTANT COATED CARRYING PIPE ONLY. DIELECTRIC MATERIAL SHALL NOT FILL THE ANNULUS SPACE WHERE CONCRETE COATED CARRYING PIPE IS SPECIFIED.
5. THE BORE HOLE SHALL NOT EXCEED THE CASING DIAMETER BY MORE THAN ONE AND ONE HALF (1–1/2) INCHES.



CONSTRUCTION TYPE 11
NOT TO SCALE

NOTE:

1. THIS CONFIGURATION IS FOR OPEN CUT ROAD CROSSING CONSTRUCTION.
2. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION AND MATERIAL SPECIFICATIONS.
3. SEE SITE SPECIFIC SOIL BORING DETAILS FOR ADDITIONAL INFORMATION.
4. COMPACTION AND RESTORATION TO TOWN AND VT GAS SPECIFICATIONS.

NOTE:

1. CONSTRUCTION TYPE 5 NOT USED.

STATE OF VERMONT
MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL
LICENSED PROFESSIONAL ENGINEER

		1	BCK	TDB	ADDED ARCH. SITES (6/08/15)
DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION

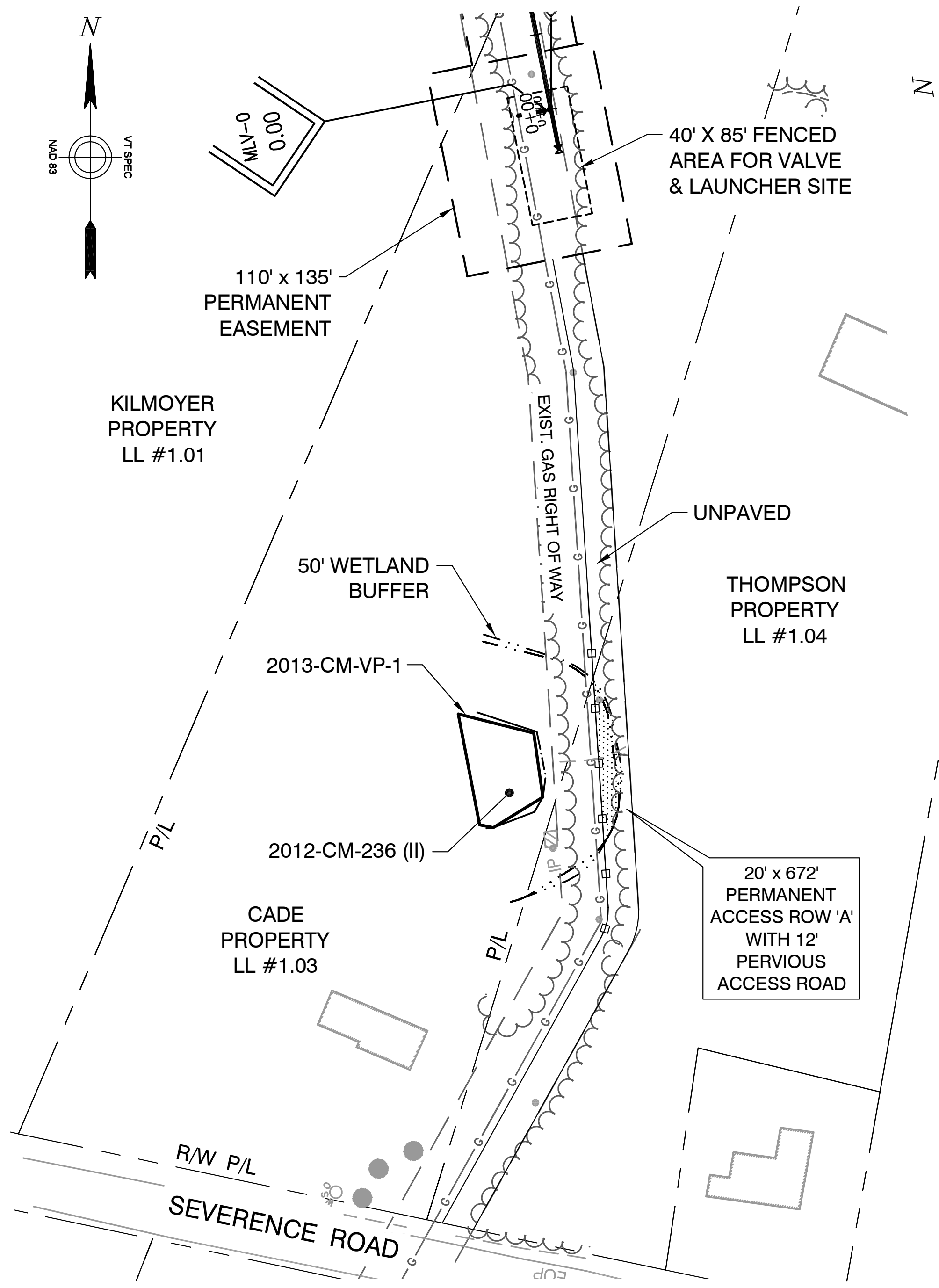
	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
CONSTRUCTION CONFIGURATION DETAILS
LOC. CHITTENDEN & ADDISON COUNTIES
YEAR: 2016 | W.O. | SCALE: NOTED | DWG. ANGP–T–G–006 | REV. 1

Vermont Gas

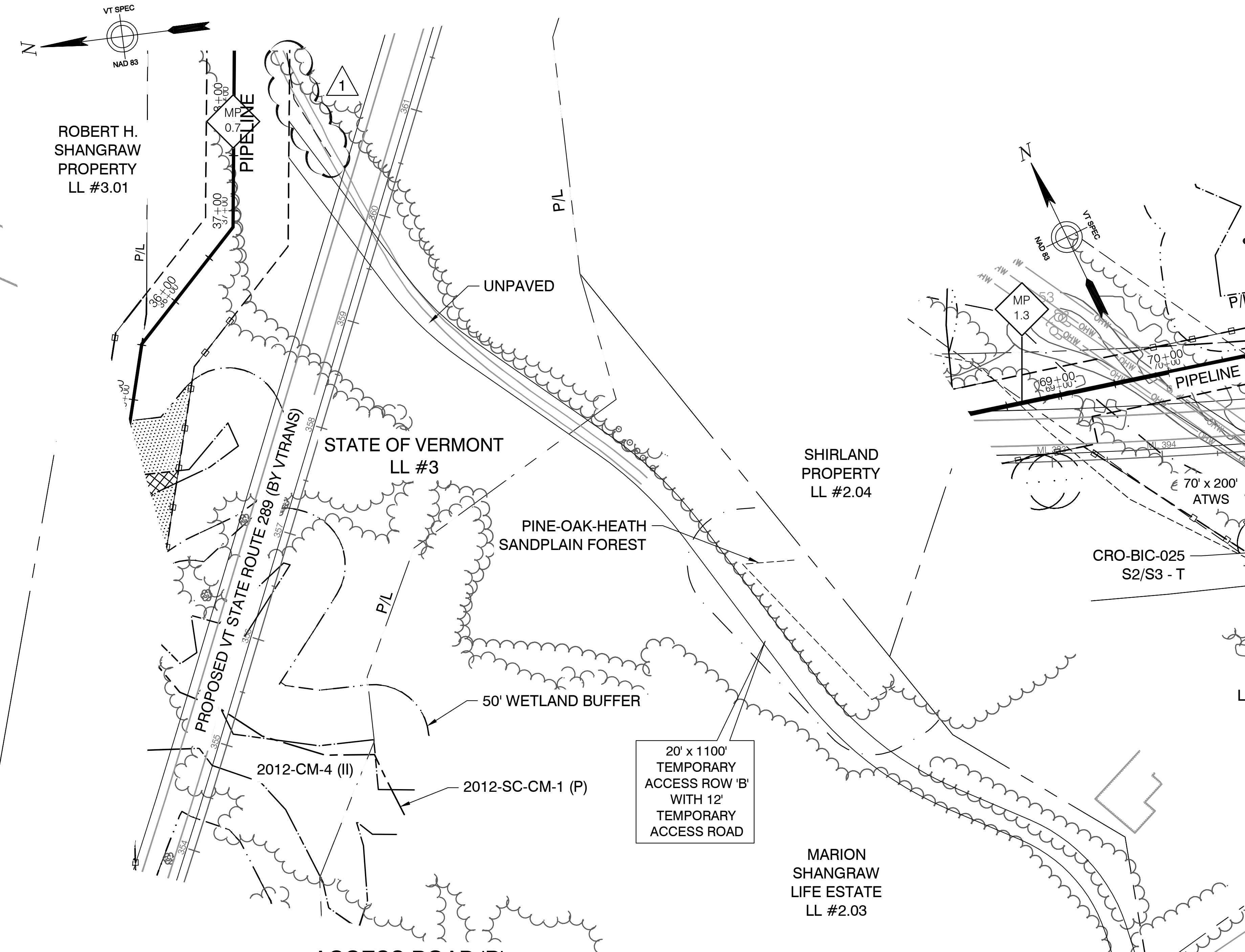
VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com



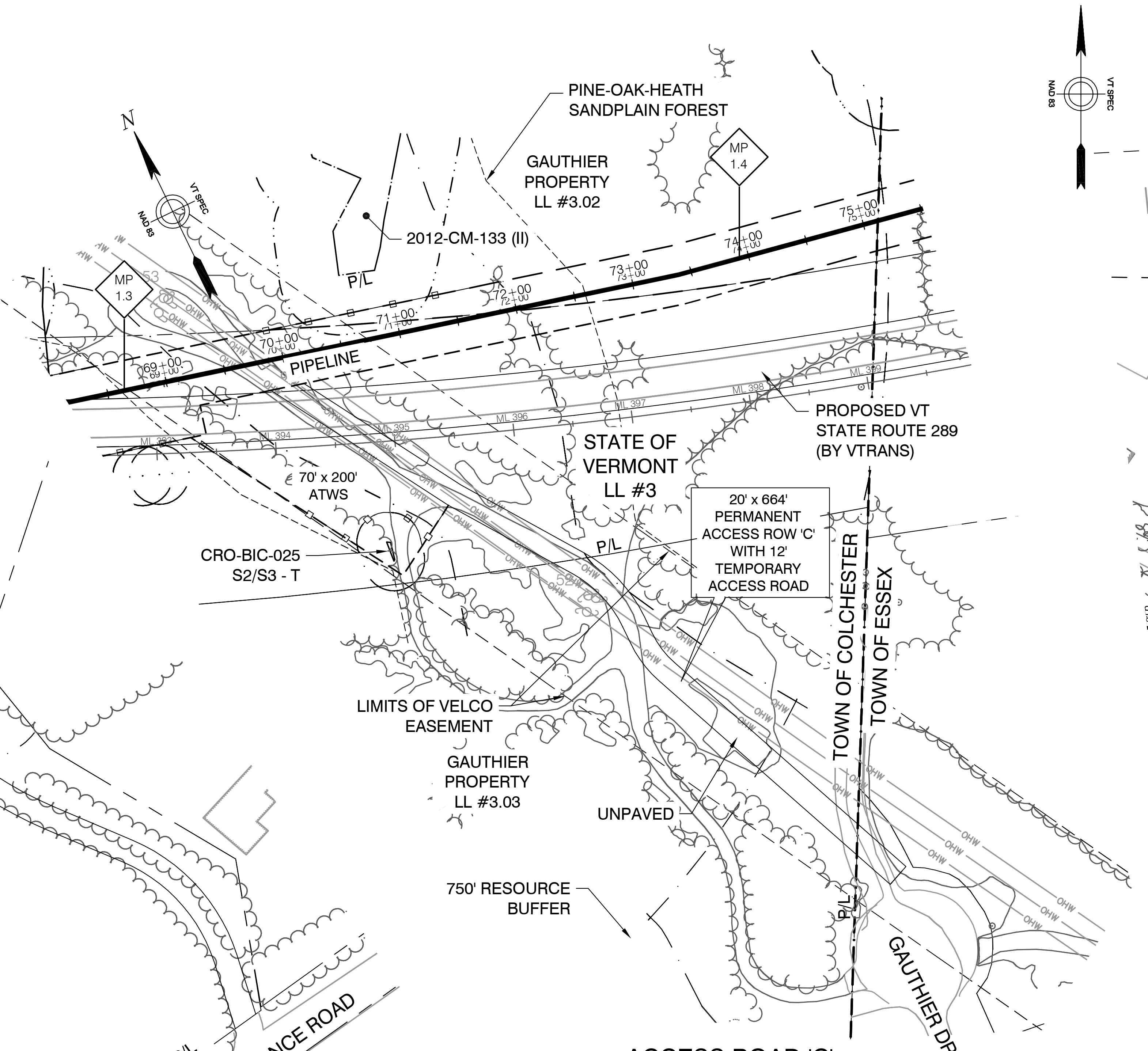
ACCESS ROAD 'A'
SEE SHEET ANGP-T-C-001A

100' 50' 0 100' 200'
GRAPHIC SCALE



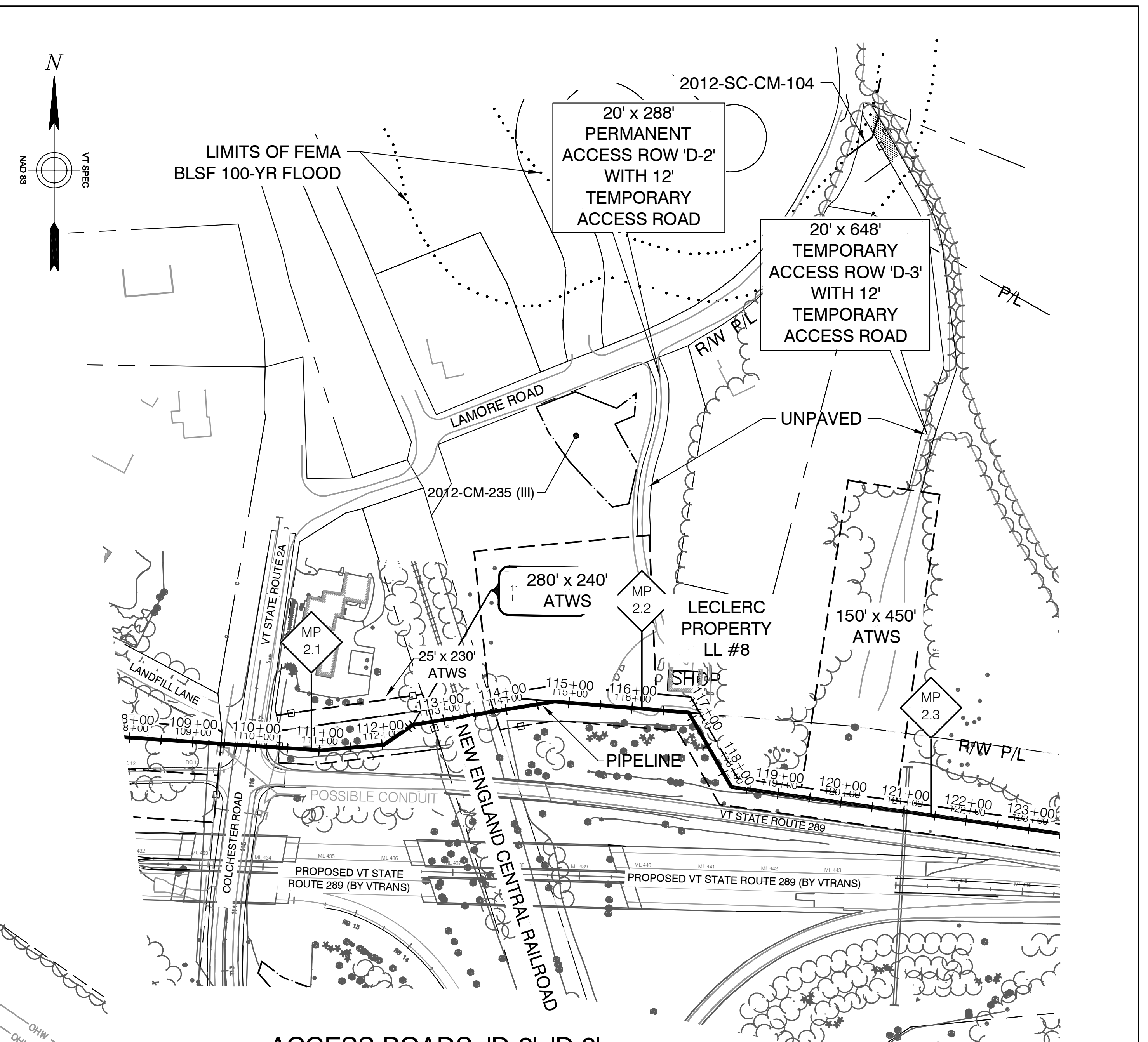
ACCESS ROAD 'B'
SEE SHEET ANGP-T-C-002

100' 50' 0 100' 200'
GRAPHIC SCALE



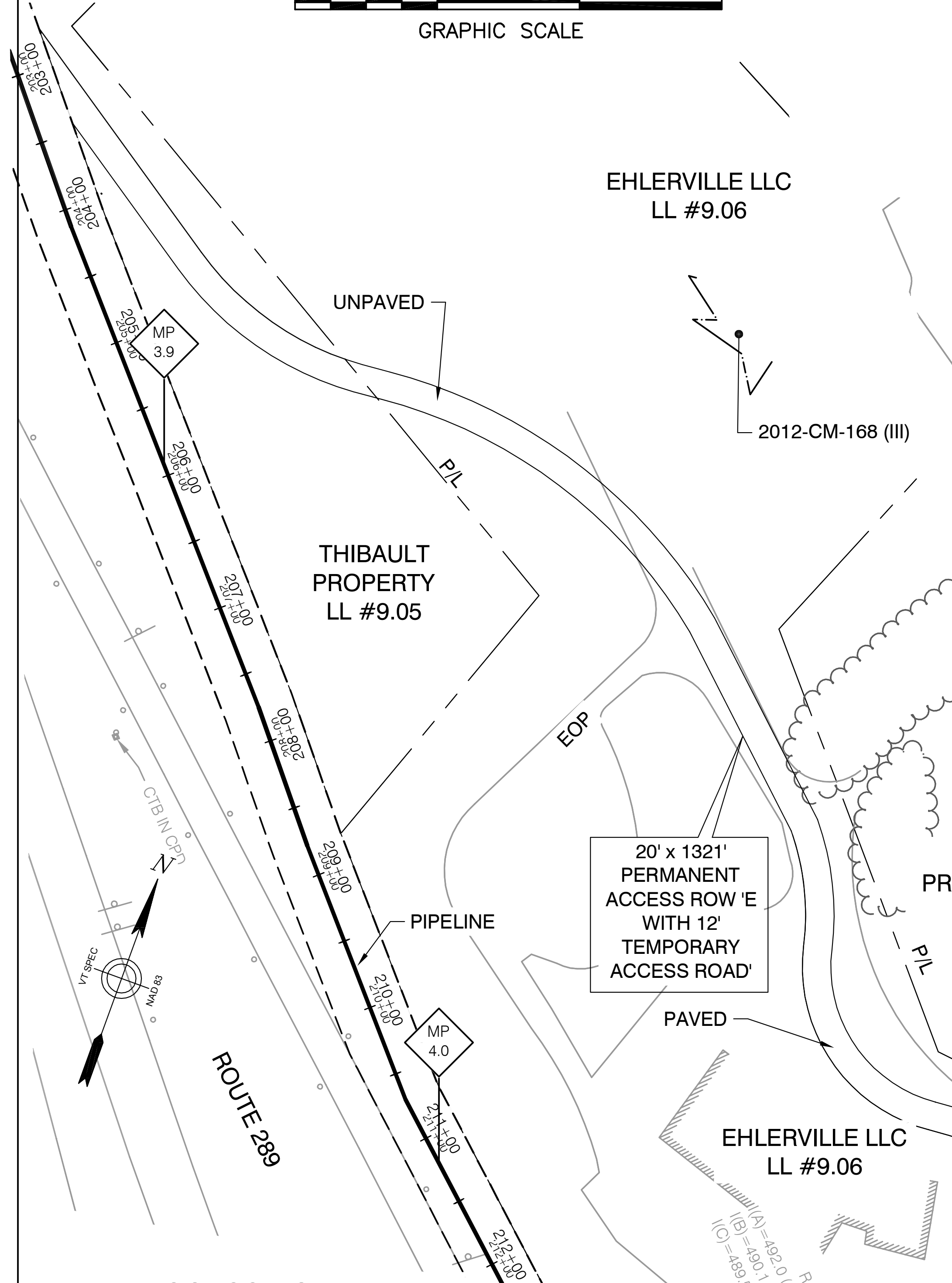
ACCESS ROAD 'C'
SEE SHEET ANGP-T-C-003

100' 50' 0 100' 200'
GRAPHIC SCALE



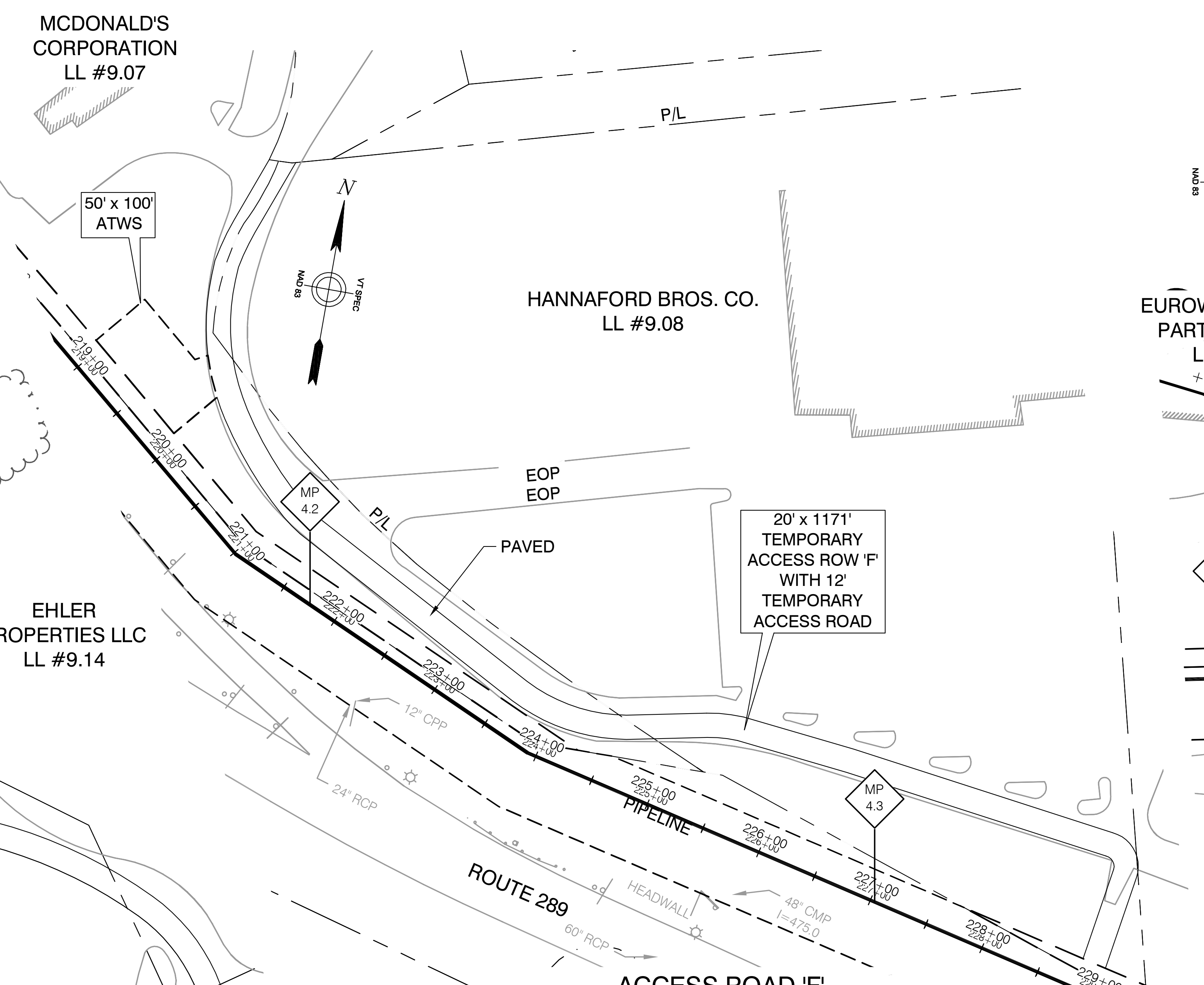
ACCESS ROADS 'D-2', 'D-3'
SEE SHEET ANGP-T-C-005

200' 100' 0 200' 400'
GRAPHIC SCALE



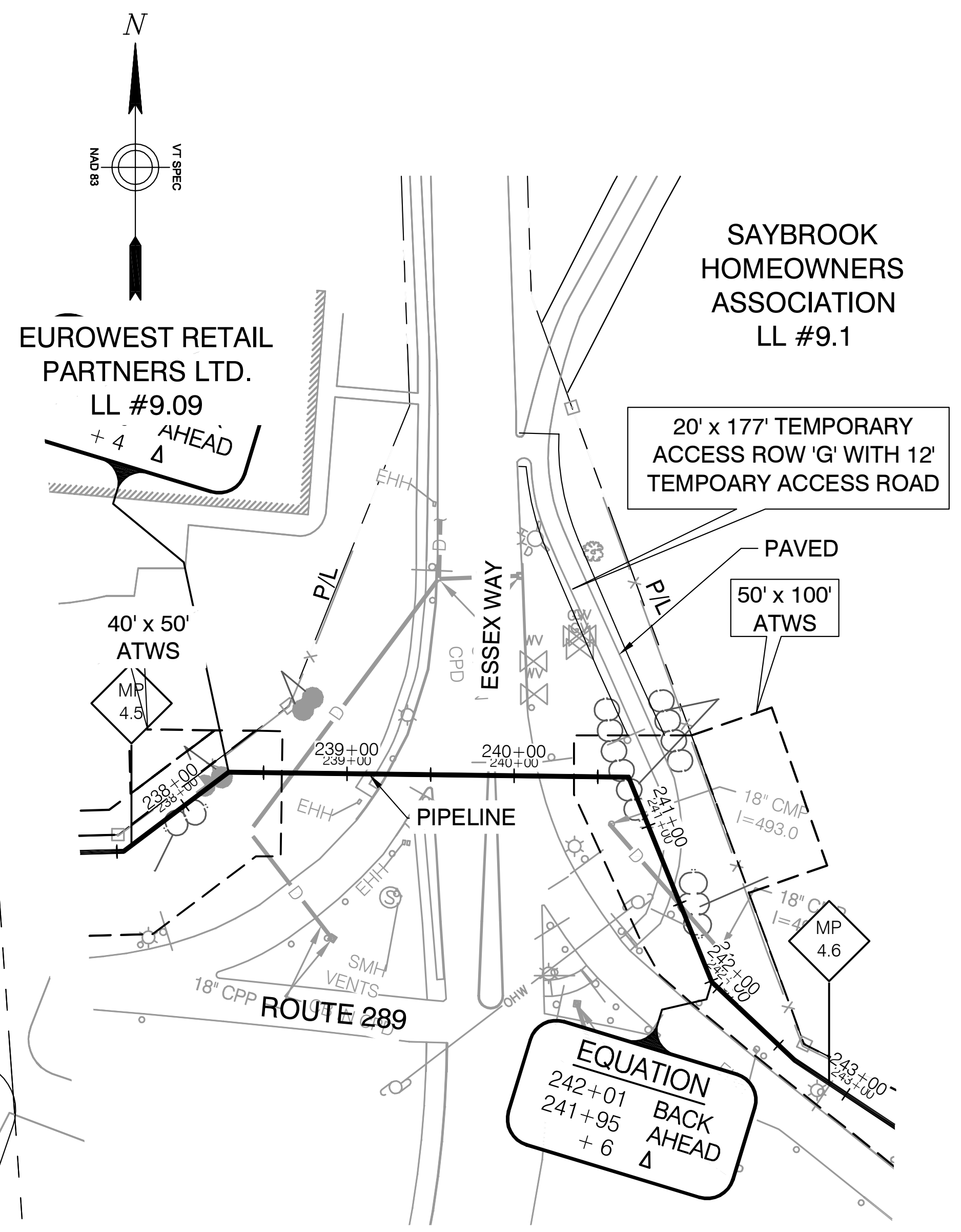
ACCESS ROAD 'E'
SEE SHEET ANGP-T-C-008

100' 50' 0 100' 200'
GRAPHIC SCALE



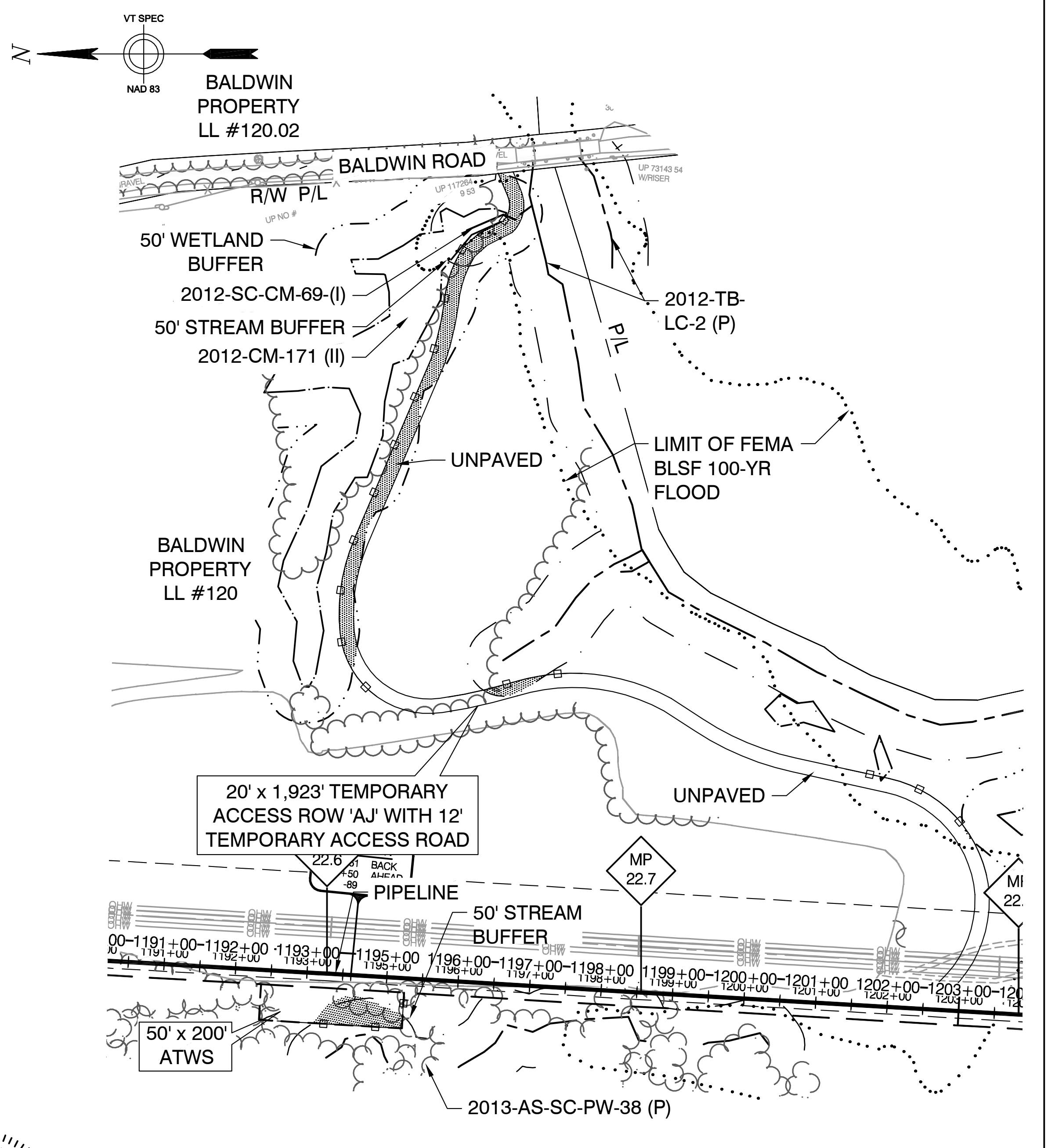
ACCESS ROAD 'F'
SEE SHEET ANGP-T-C-009

100' 50' 0 100' 200'
GRAPHIC SCALE



ACCESS ROAD 'G'
SEE SHEET ANGP-T-C-009

100' 50' 0 100' 200'
GRAPHIC SCALE



ACCESS ROADS 'AJ'
SEE SHEET ANGP-T-C-047

200' 100' 0 200' 400'
GRAPHIC SCALE

NO. 97764

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
		1	GJM	BCK	IFC 2016 EDITS (05/2016)

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ACCESS ROAD DETAILS

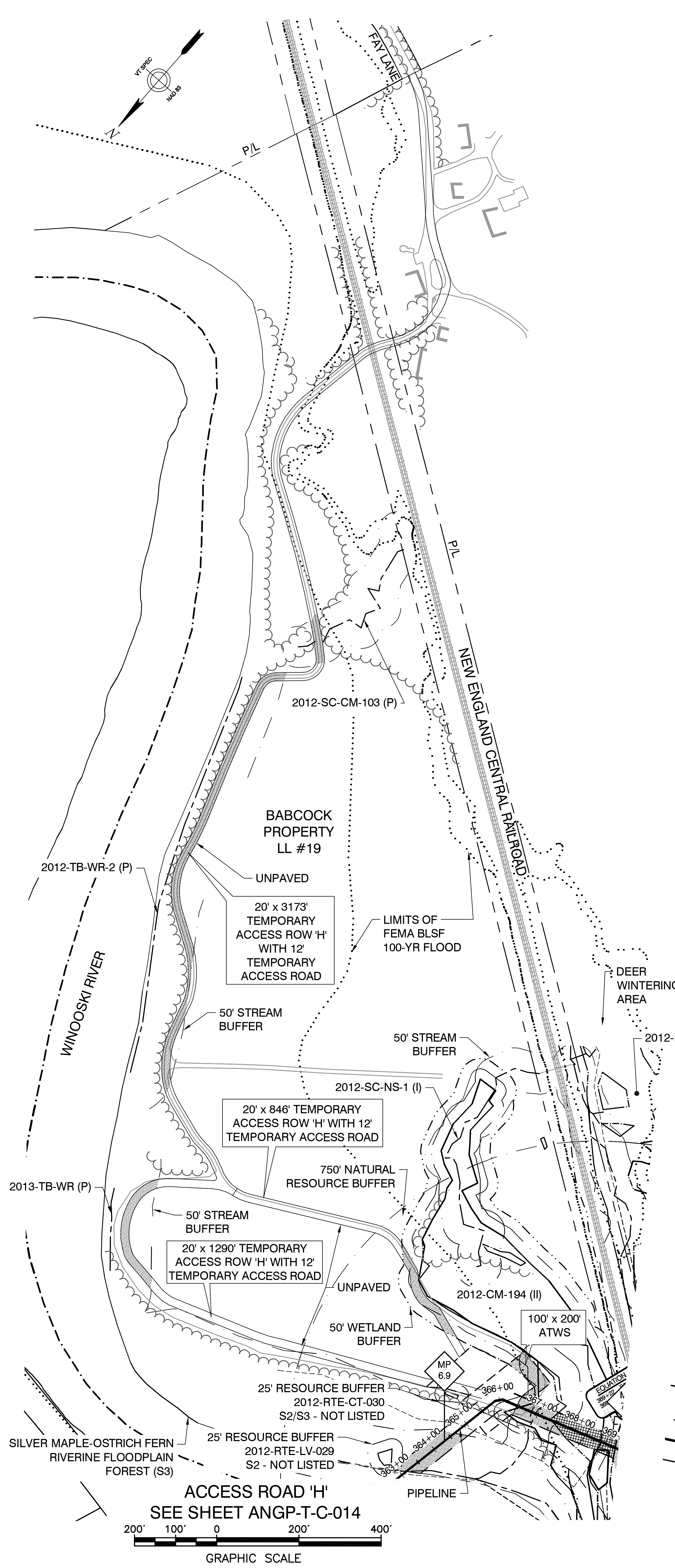
LOC. CHITTENDEN & ADDISON COUNTIES

YEAR: 2016 | W.O. | SCALE: AS NOTED | DWG. ANGP-T-G-007A | REV. 1

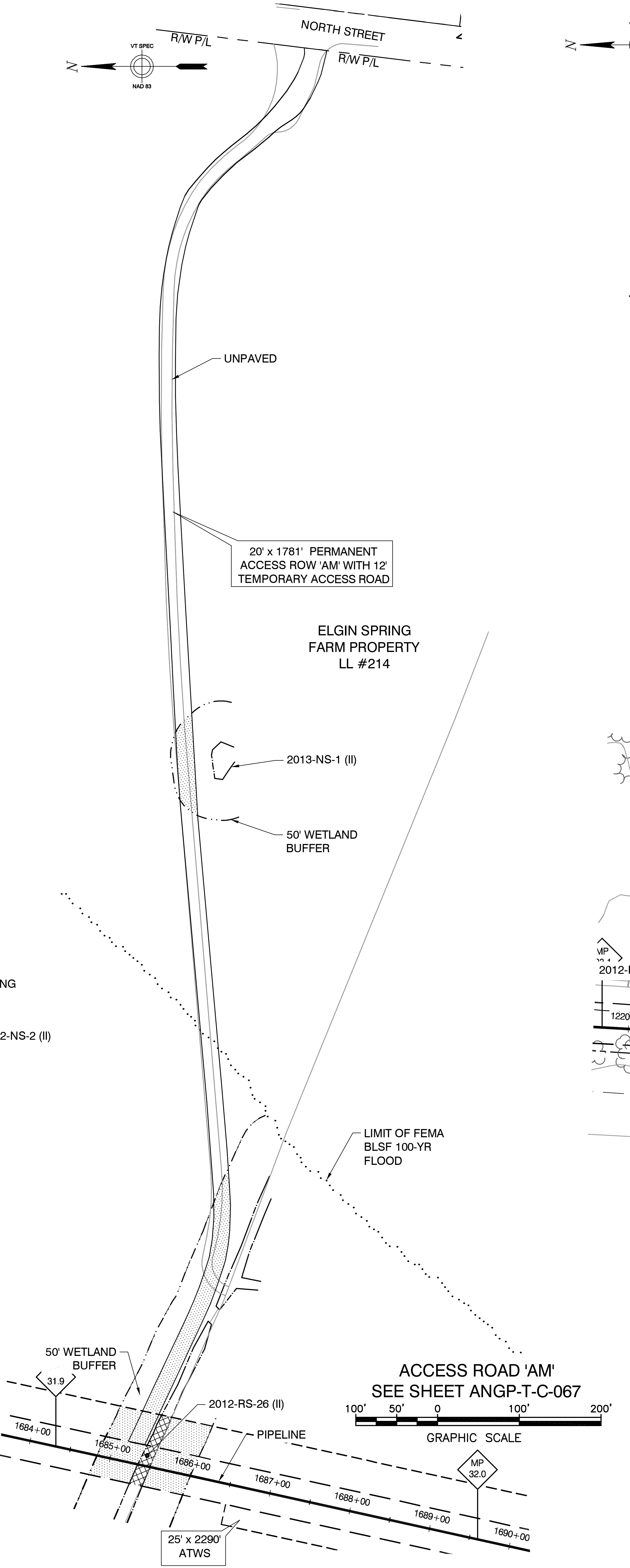
Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

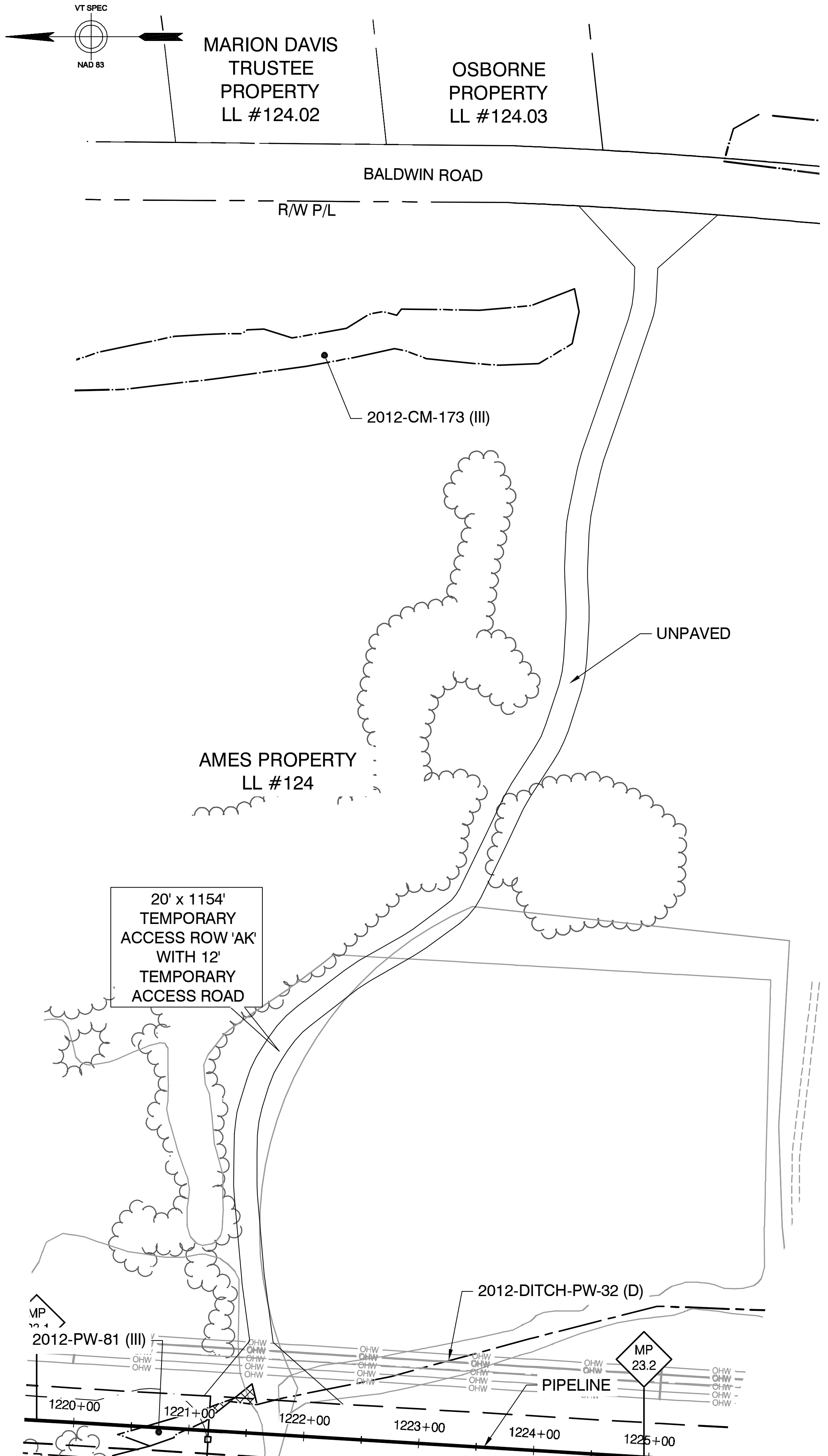
CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com



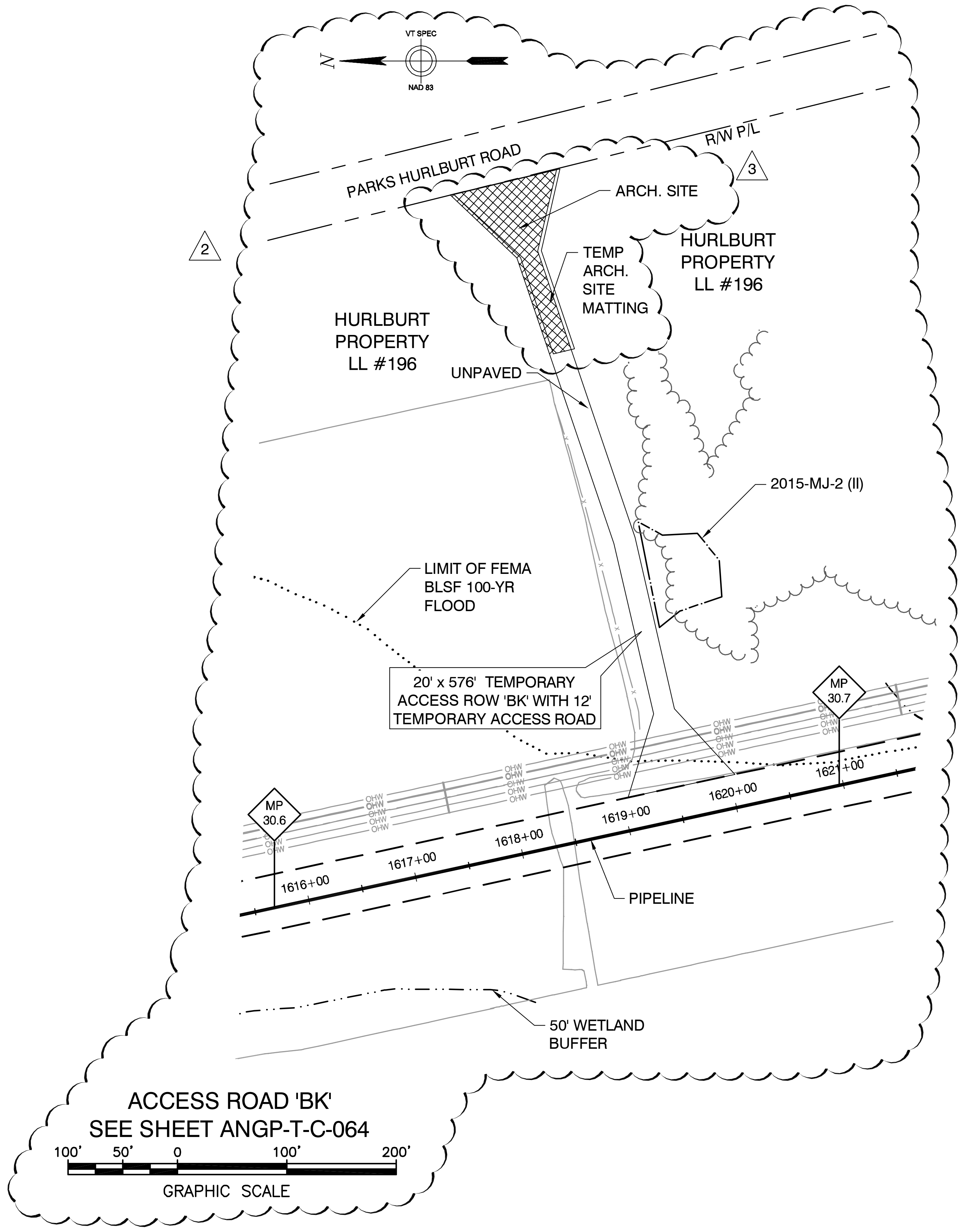
ACCESS ROAD 'H'
SEE SHEET ANGP-T-C-014



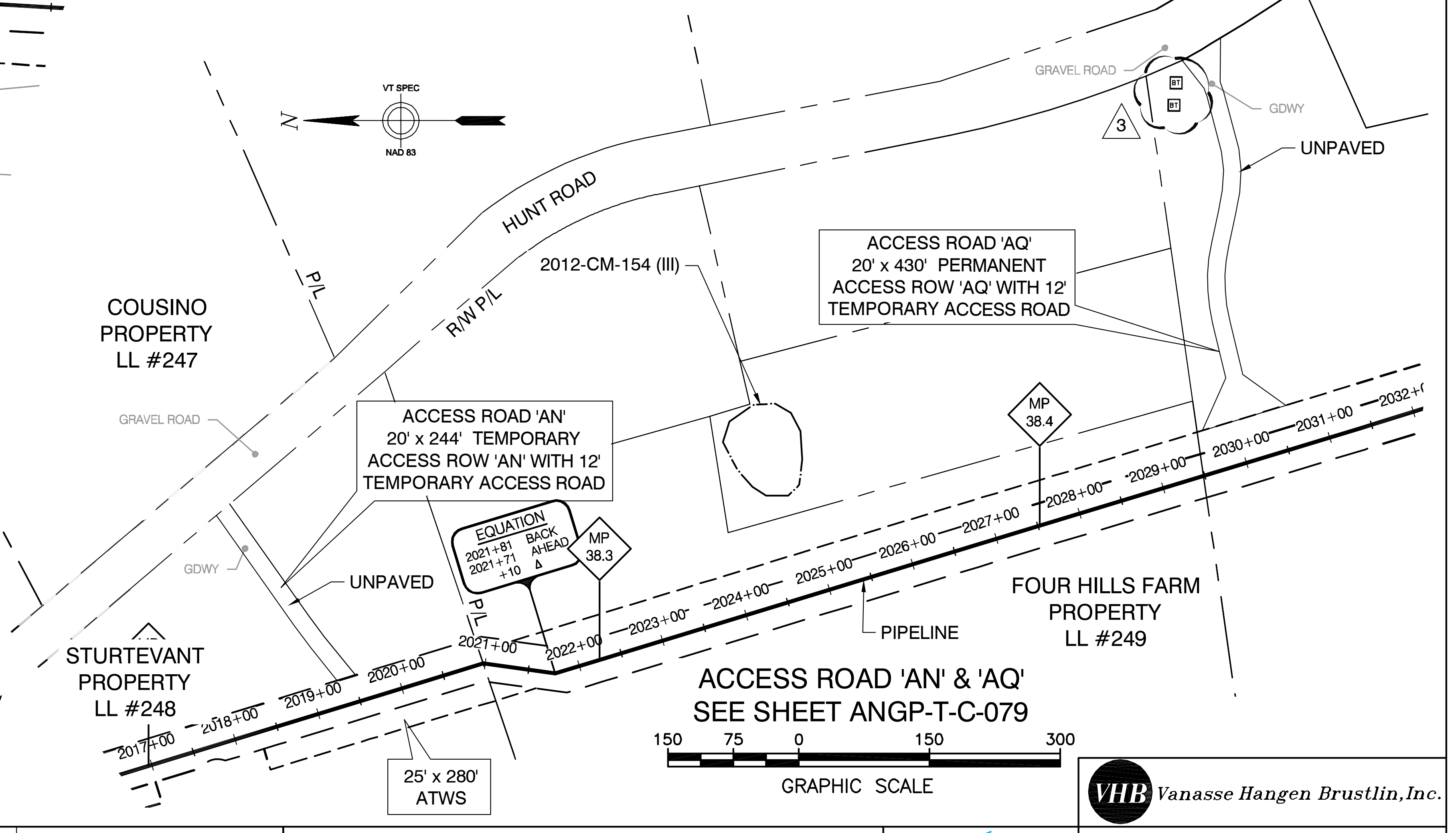
ACCESS ROAD 'AM'
SEE SHEET ANGP-T-C-067



ACCESS ROAD 'AK'
SEE SHEET ANGP-T-C-048



ACCESS ROAD 'BK'
SEE SHEET ANGP-T-C-064



ACCESS ROAD 'AN' & 'AQ'
SEE SHEET ANGP-T-C-079

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
		3	GJM	BCK	IFC 2016 EDITS (05/2016)
		2	VGS	VGS	ACCESS ROAD "BK" ADDED (11/13/15)
		1	BCK	TDB	VHB EDITS (6/09/15)

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ACCESS ROAD DETAILS

LOC. CHITTENDEN & ADDISON COUNTIES

YEAR: 2016 | W.O. | SCALE: AS NOTED | DWG. ANGP-T-G-007B | REV. 3

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

STATE OF VERMONT
MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL
LICENSED
PROFESSIONAL ENGINEER

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
		2	GJM	BCK	IFC 2016 EDITS (05/2016)
		1	BCK	TDB	PILLSBURY REROUTE AND ADDED NR DATA (6/05/15)

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ACCESS ROAD DETAILS

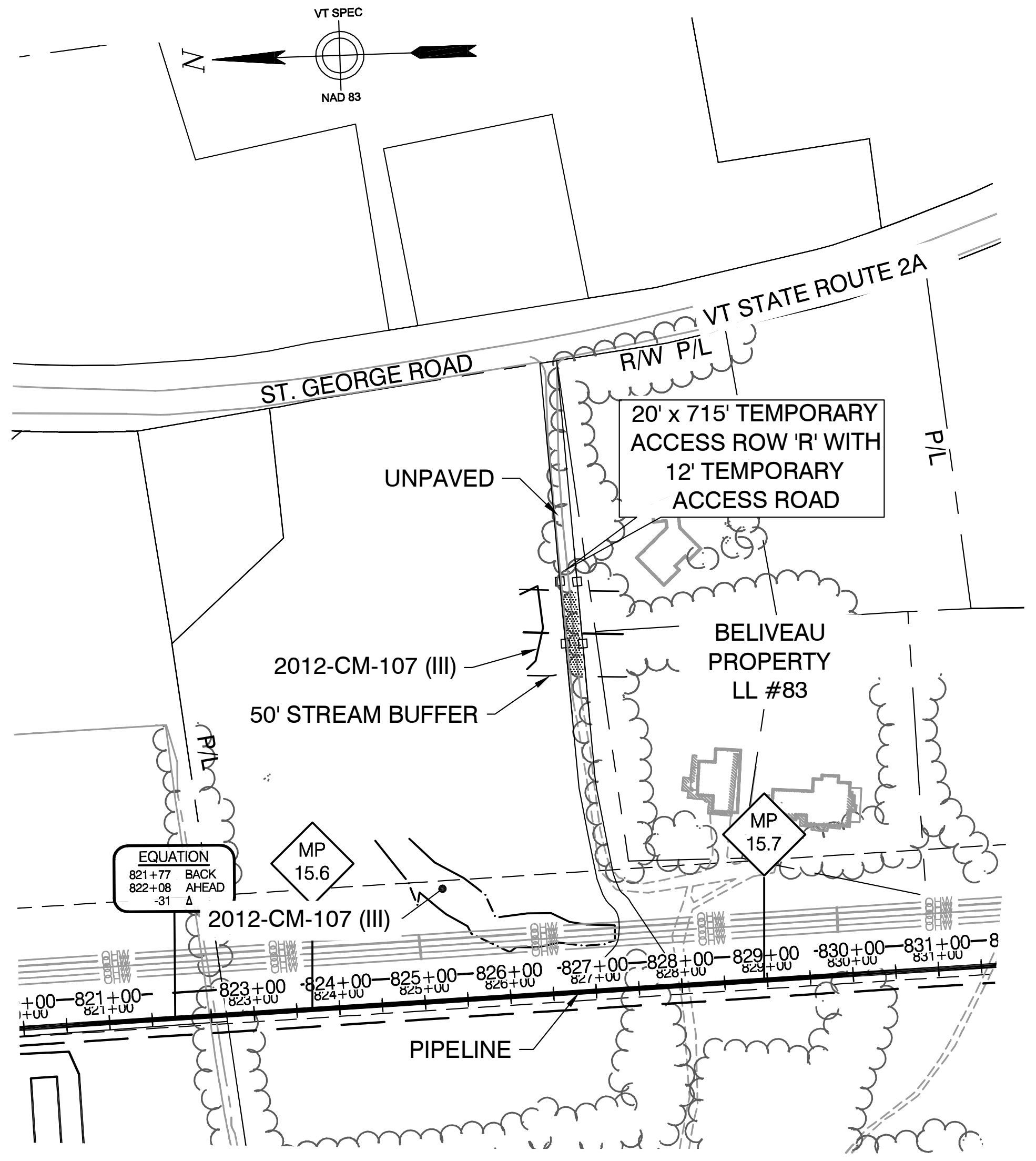
LOC. CHITTENDEN & ADDISON COUNTIES

YEAR: 2016 | W.O. | SCALE: AS NOTED | DWG. ANGP-T-G-008 | REV. 2

Vermont Gas

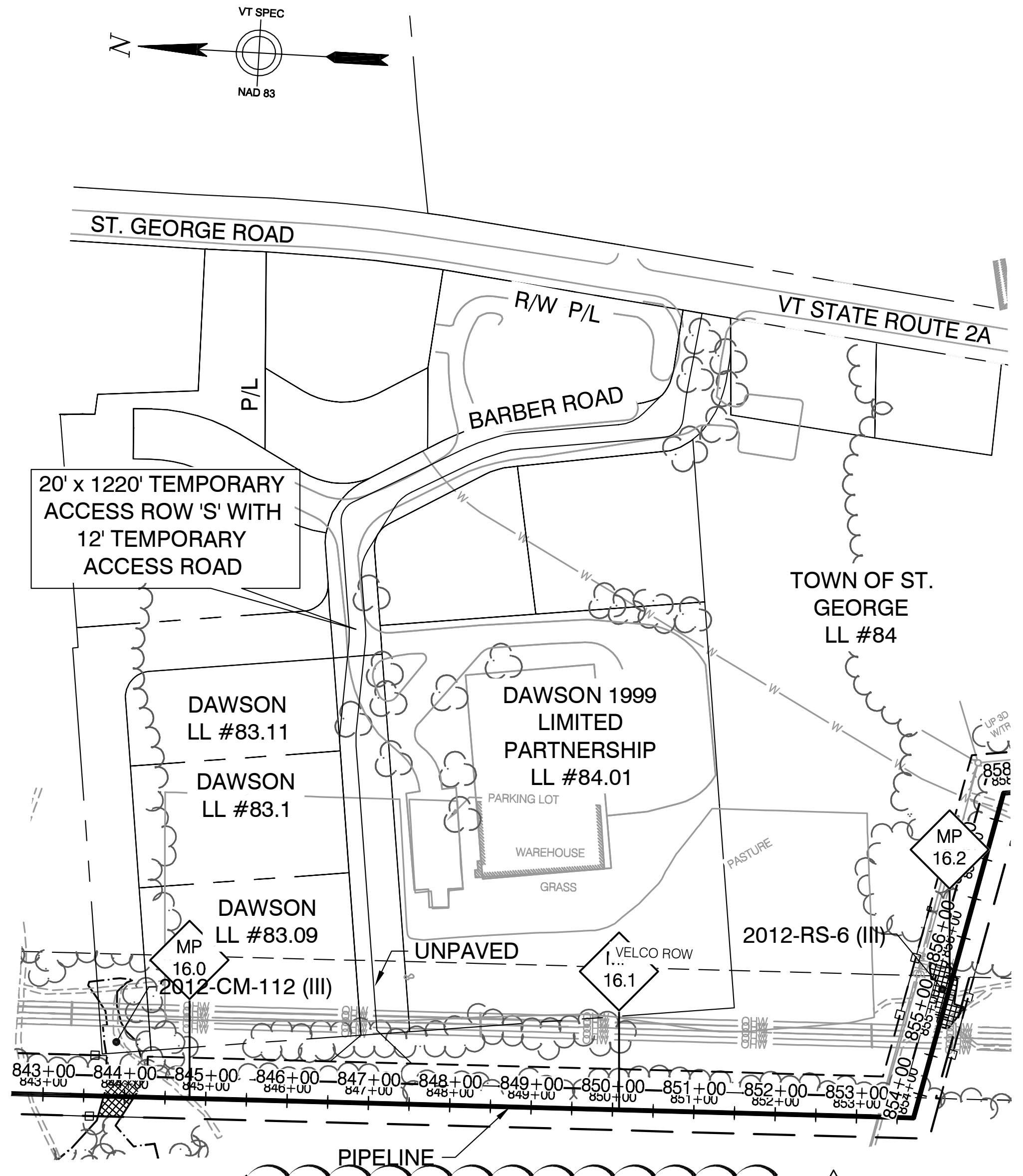
VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com



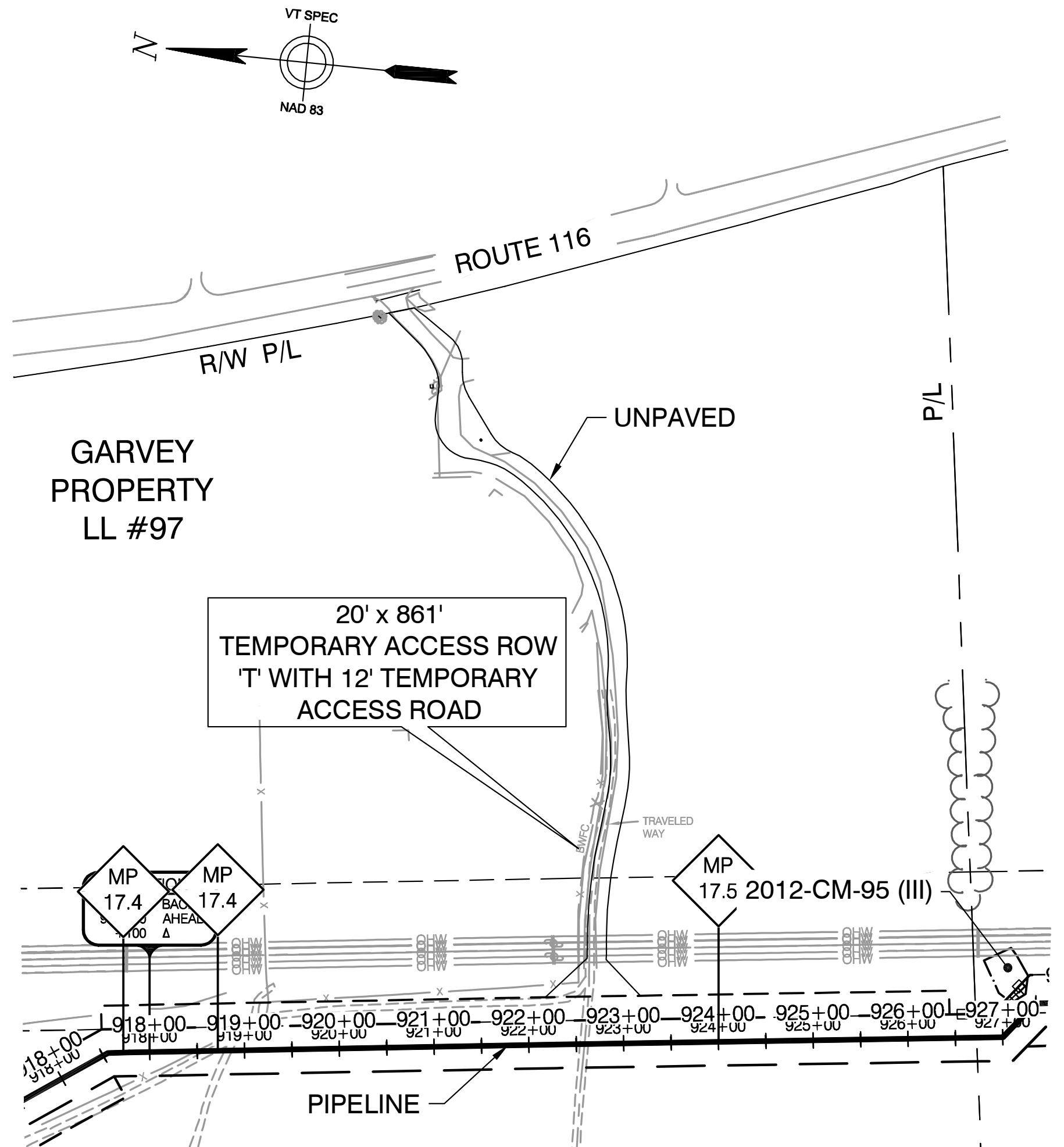
ACCESS ROAD 'R'
SEE SHEET ANGP-T-C-031

200' 100' 0 200' 400'
GRAPHIC SCALE



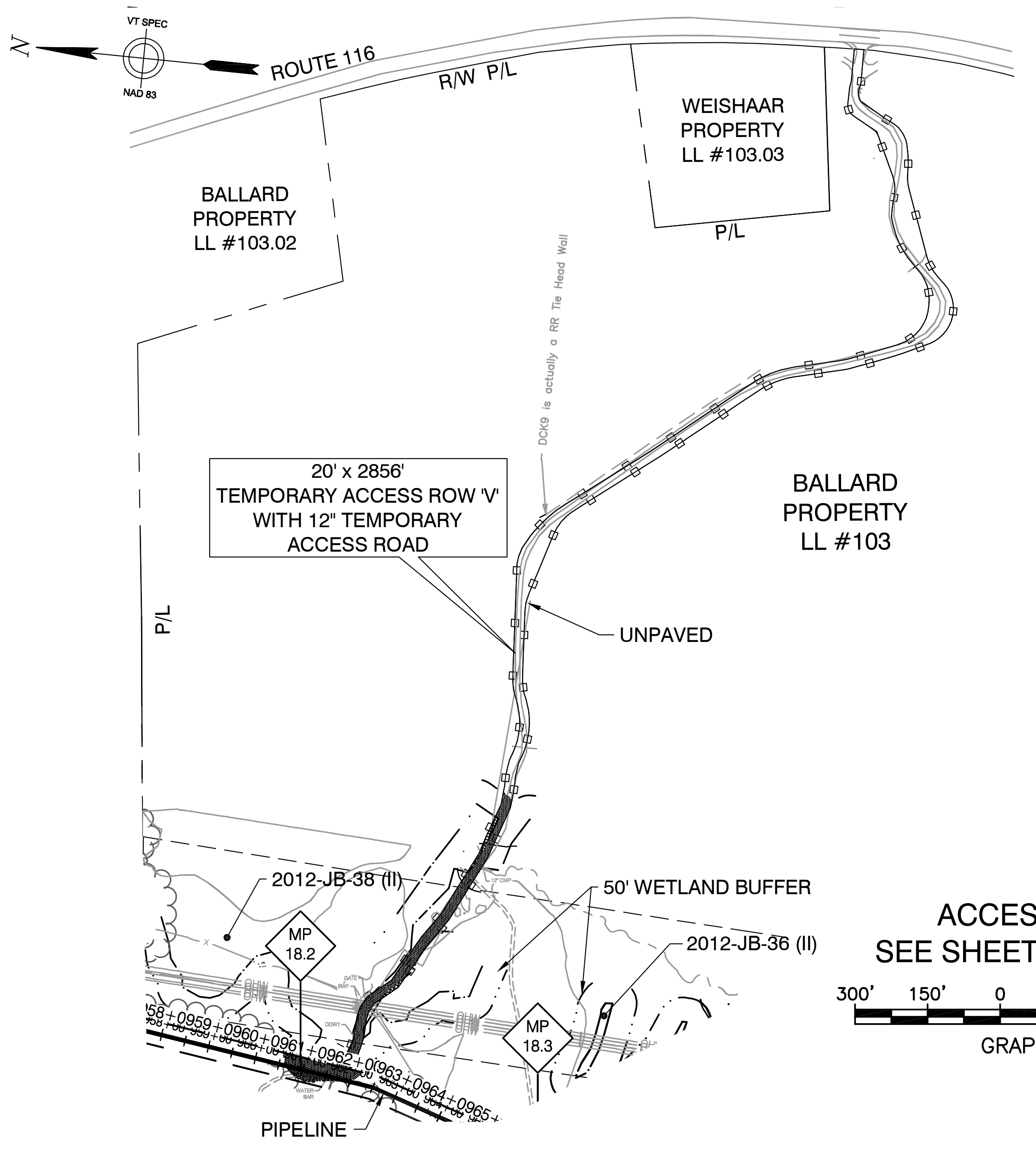
ACCESS ROAD 'S'
SEE SHEET ANGP-T-C-032

200' 100' 0 200' 400'
GRAPHIC SCALE



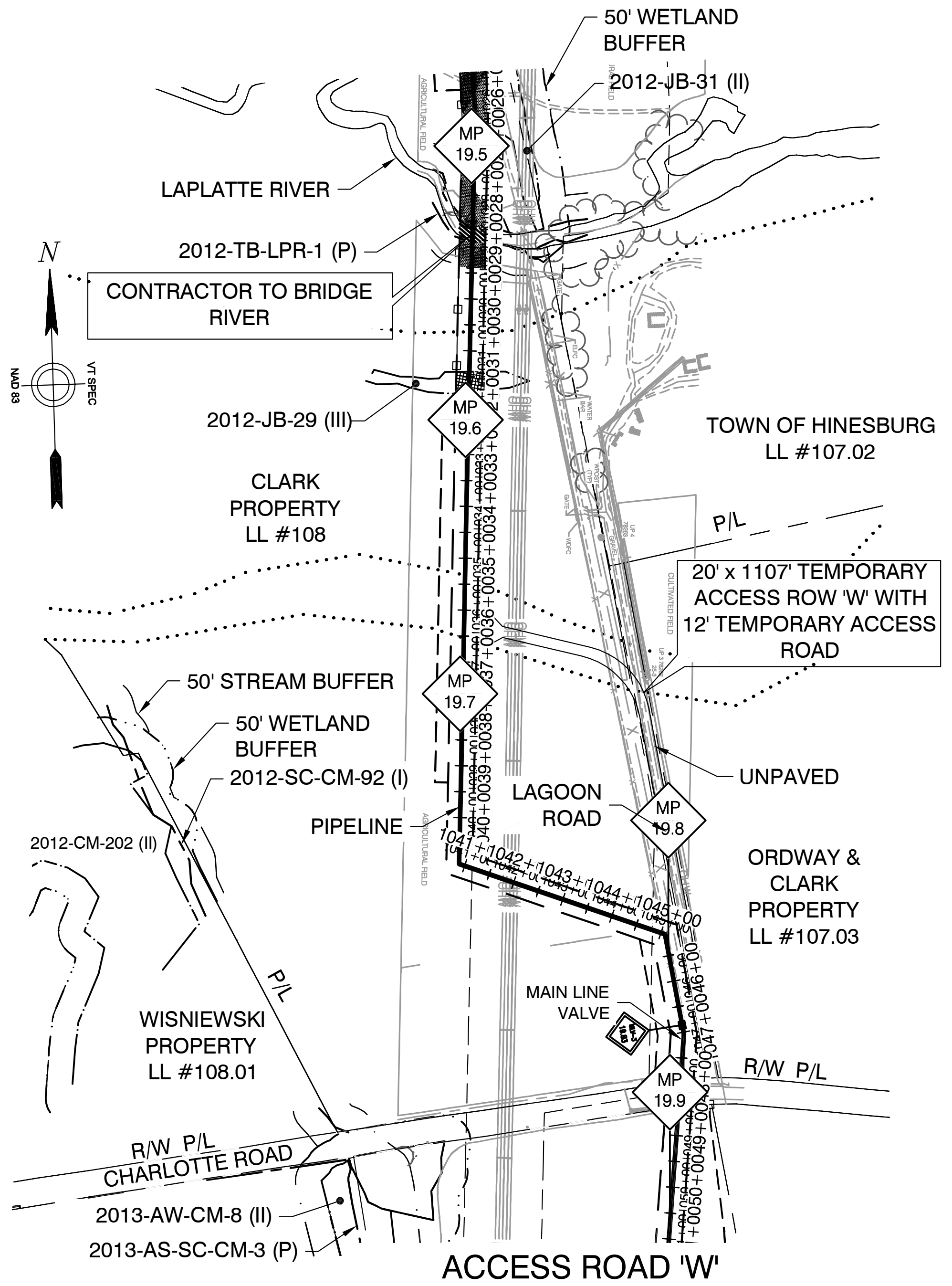
ACCESS ROAD 'T'
SEE SHEET ANGP-T-C-036

200' 100' 0 200' 400'
GRAPHIC SCALE



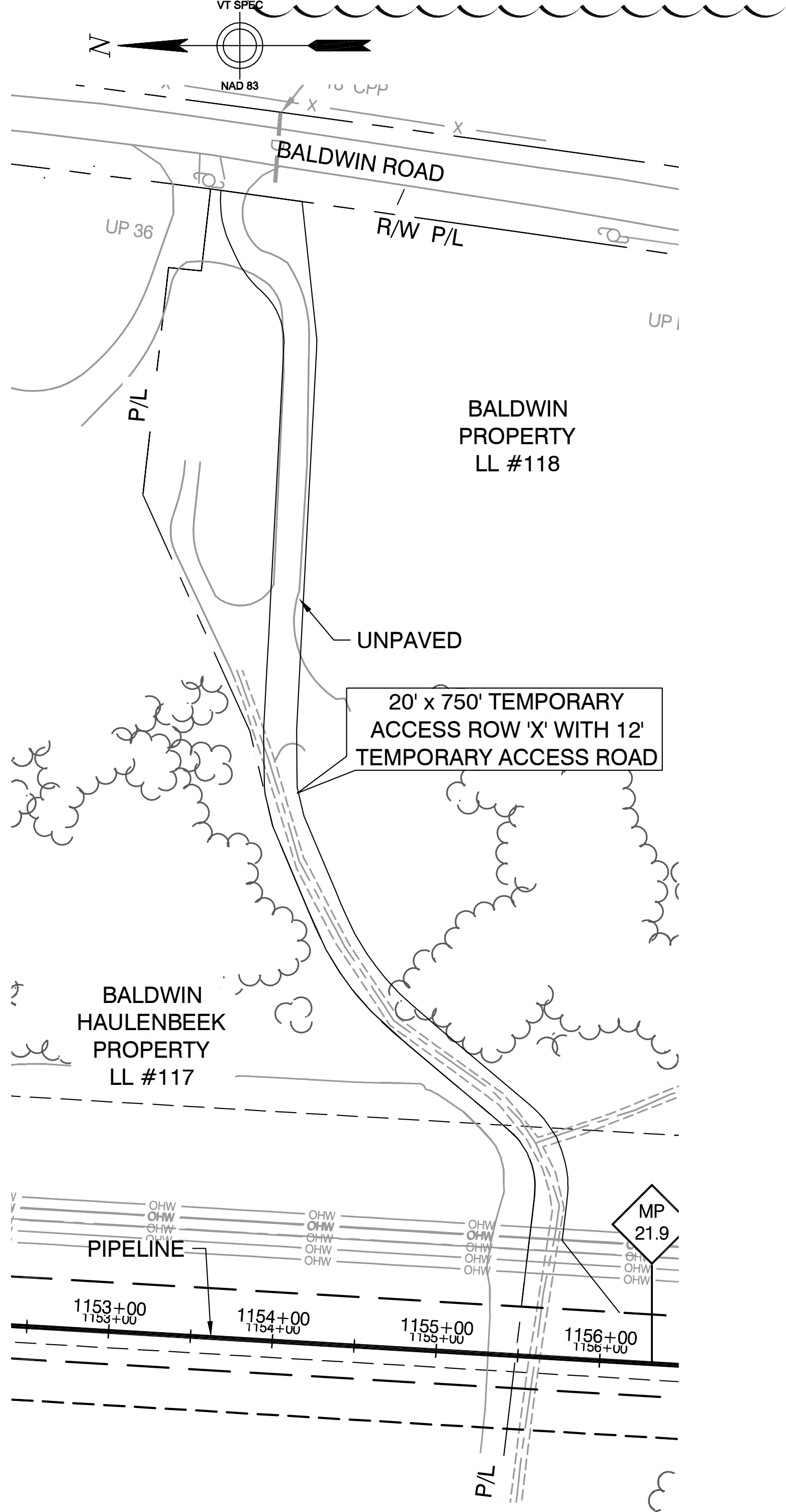
ACCESS ROAD 'V'
SEE SHEET ANGP-T-C-037

300' 150' 0 300' 600'
GRAPHIC SCALE



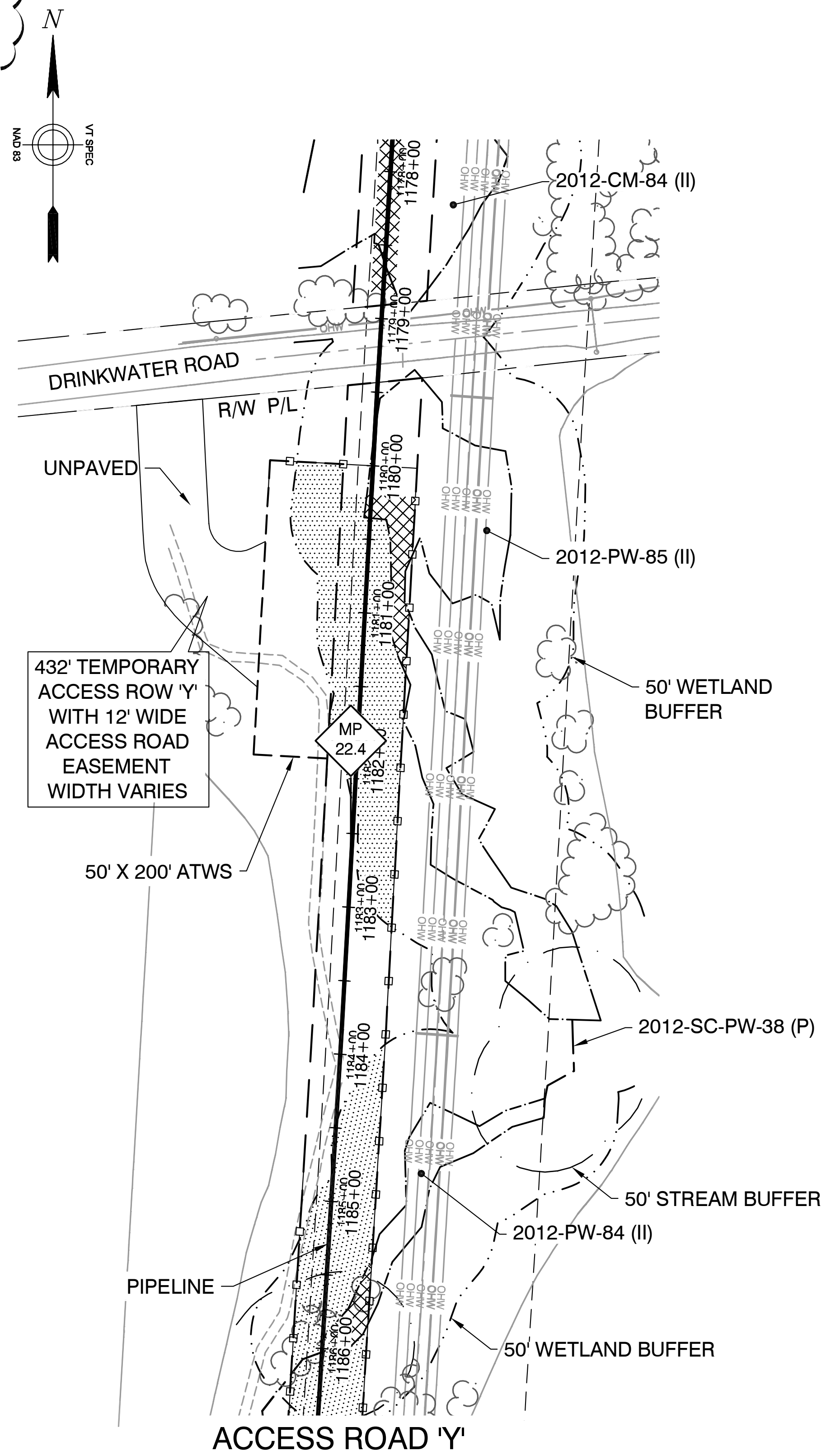
ACCESS ROAD 'W'
SEE SHEET ANGP-T-C-040

300' 150' 0 300' 600'
GRAPHIC SCALE



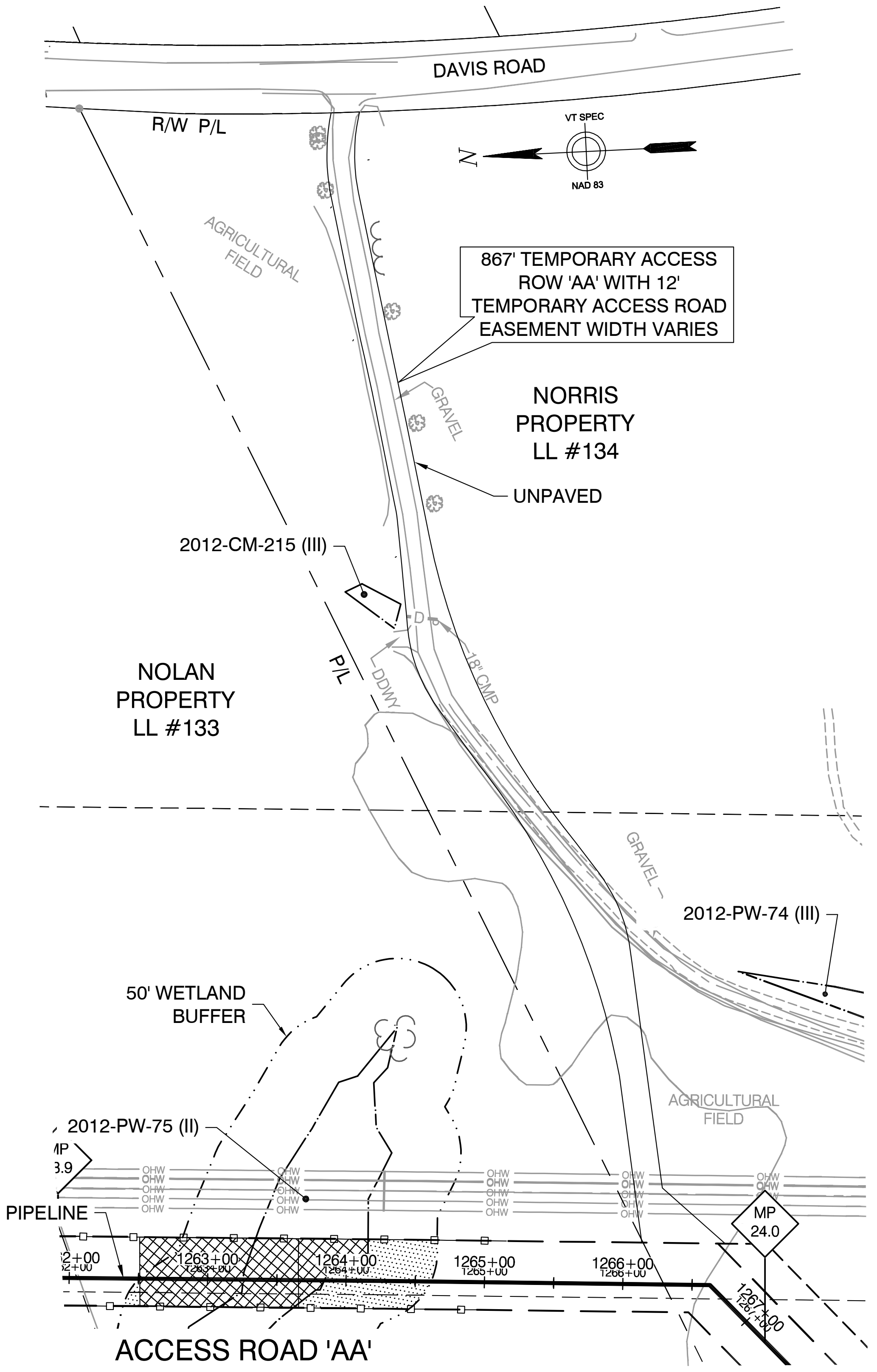
ACCESS ROAD 'X'
SEE SHEET ANGP-T-C-045

100' 50' 0 100' 200'
GRAPHIC SCALE



ACCESS ROAD 'Y'
SEE SHEET ANGP-T-C-046

100' 50' 0 100' 200'
GRAPHIC SCALE



STATE OF VERMONT
NO. 97764
CIVIL
LICENSED PROFESSIONAL ENGINEER

ACCESS ROAD 'AA'
SEE SHEET ANGP-T-C-049

100' 50' 0 100' 200'
GRAPHIC SCALE

VHB Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
		1	BCK	TDB	VHB EDITS (6/09/15)

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

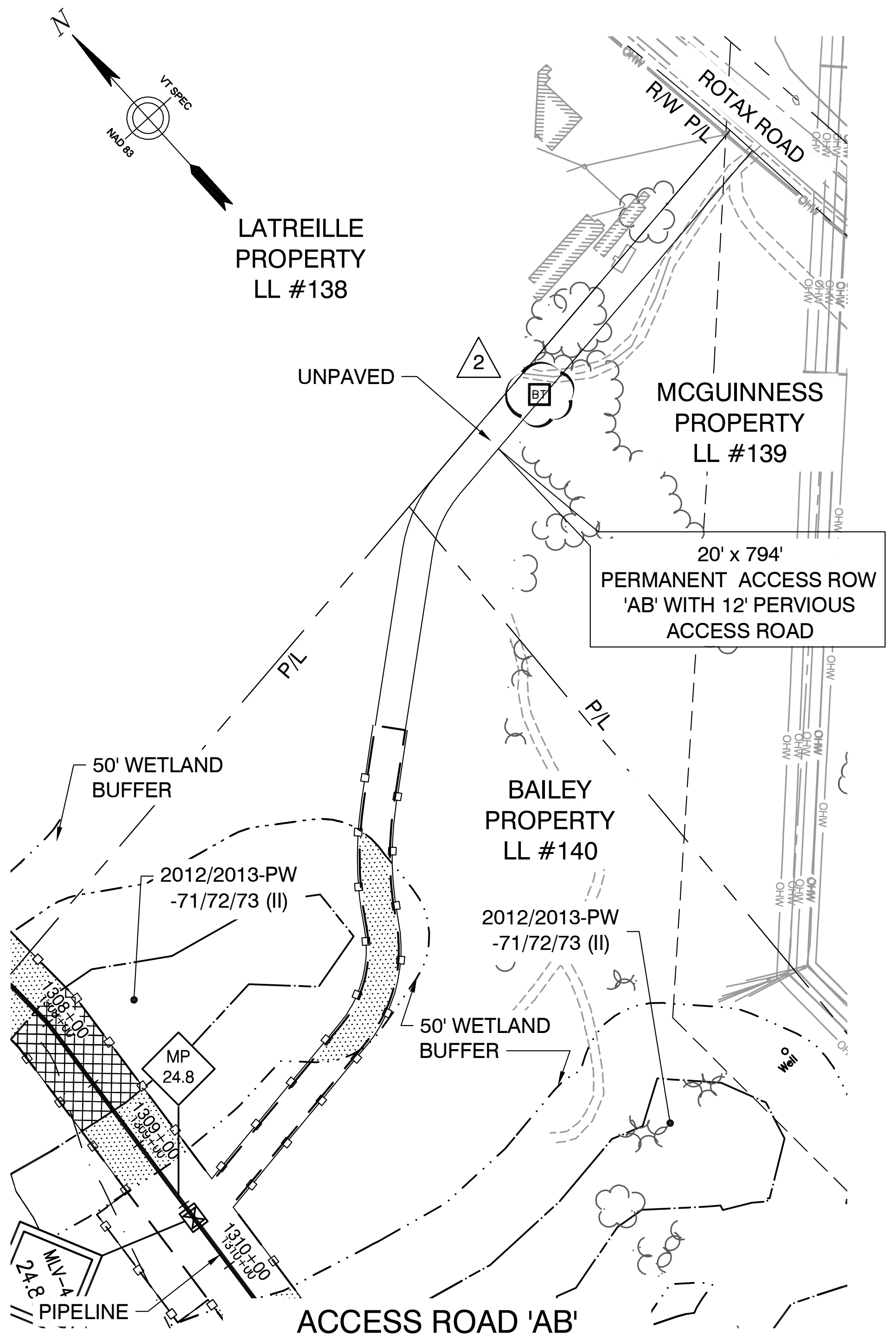
VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ACCESS ROAD DETAILS

LOC. CHITTENDEN & ADDISON COUNTIES

Vermont Gas

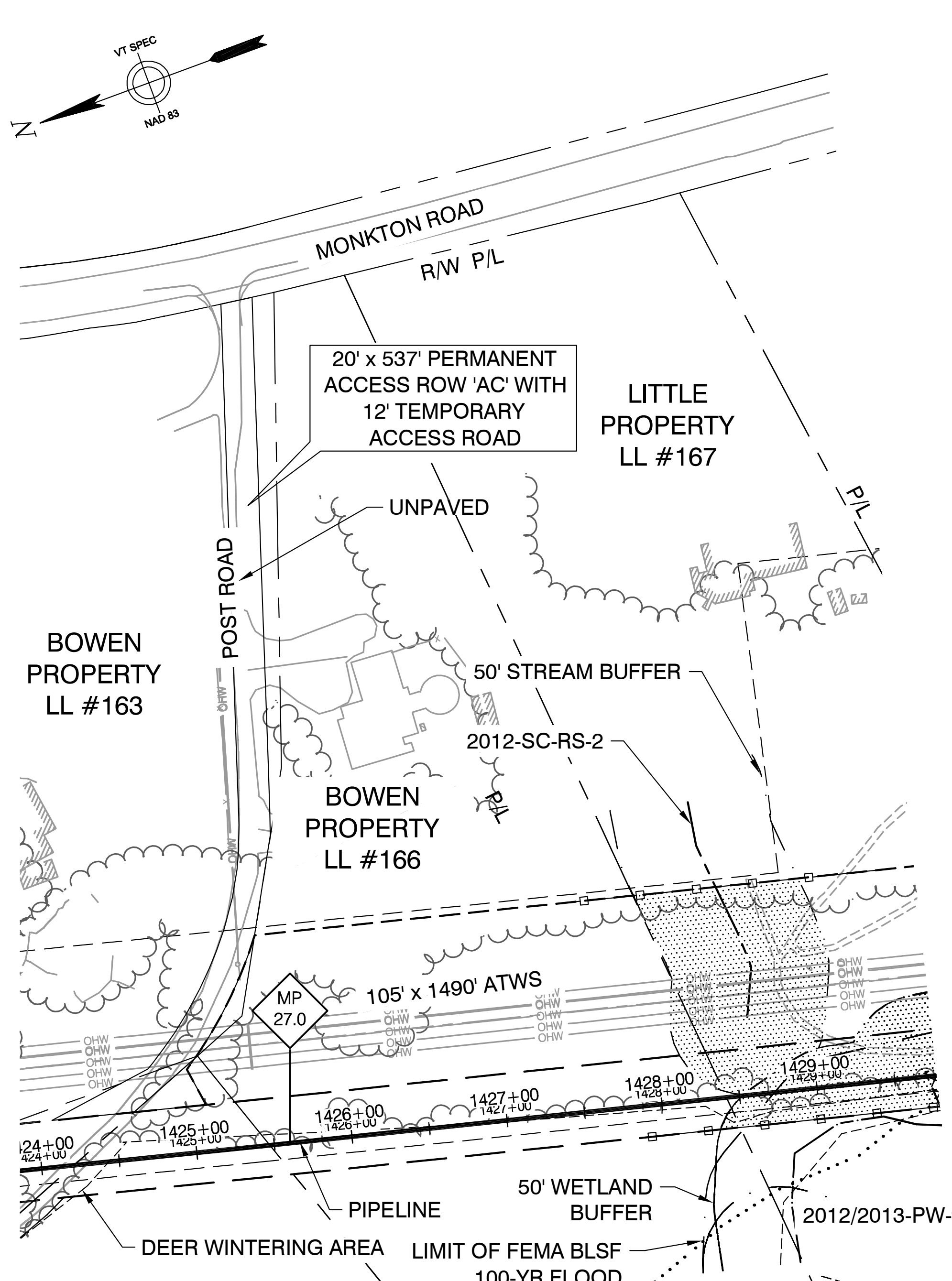
CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: AS NOTED | DWG. ANGP-T-G-009 | REV. 1



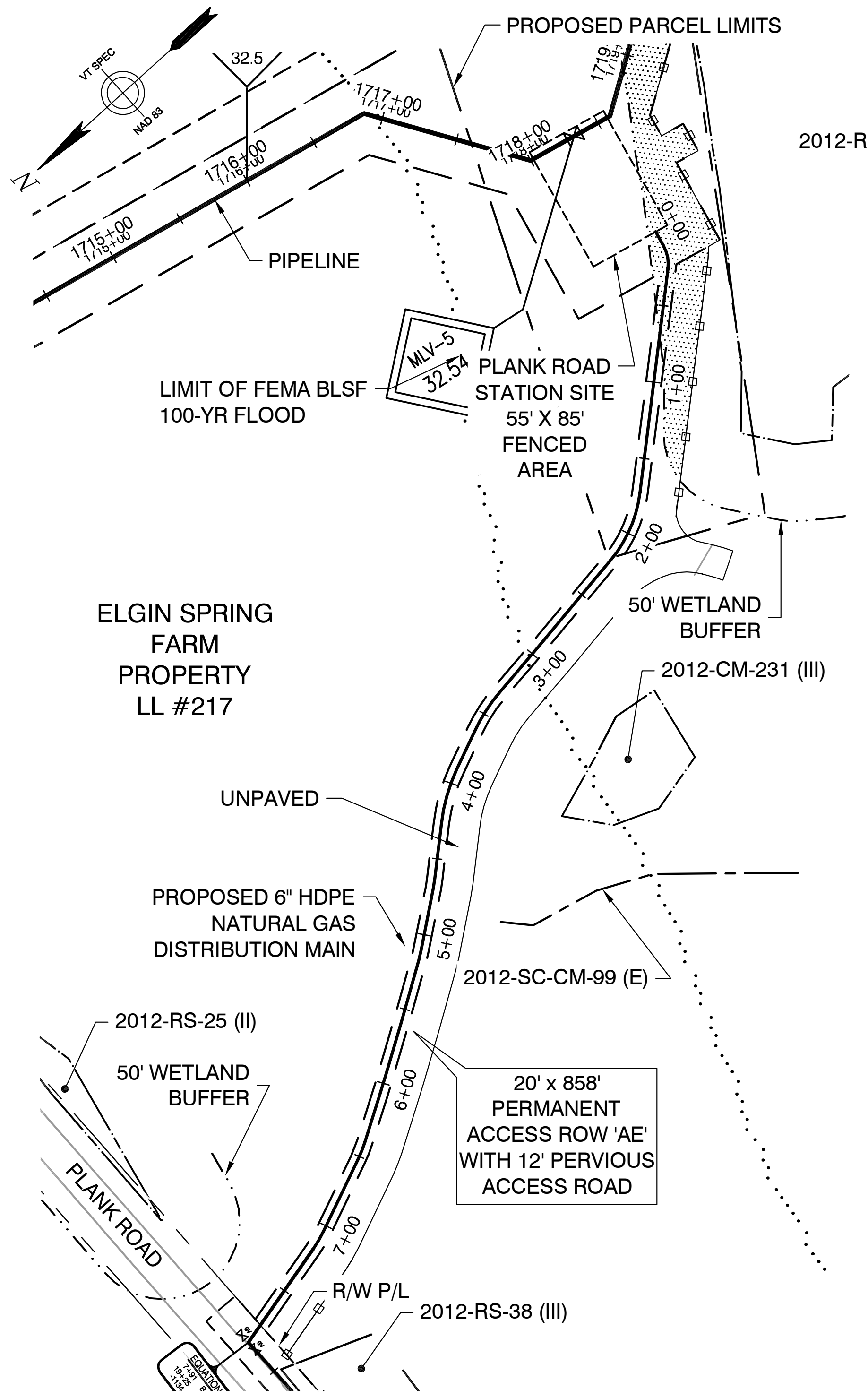
ACCESS ROAD 'AB'
SEE SHEET ANGP-T-C-051

100' 50' 0 100' 200'
GRAPHIC SCALE



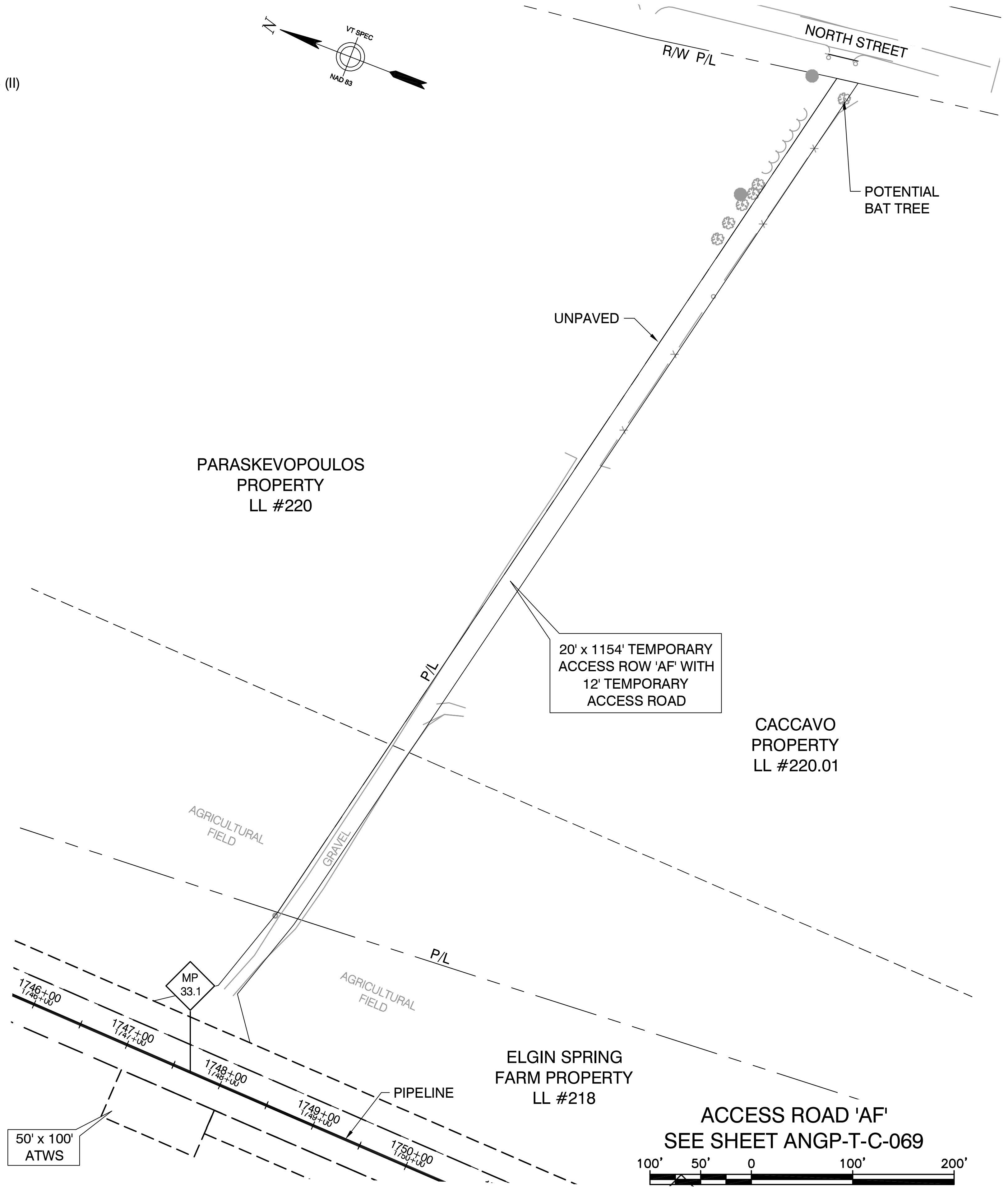
ACCESS ROAD 'AC'
SEE SHEET ANGP-T-C-056

100' 50' 0 100' 200'
GRAPHIC SCALE



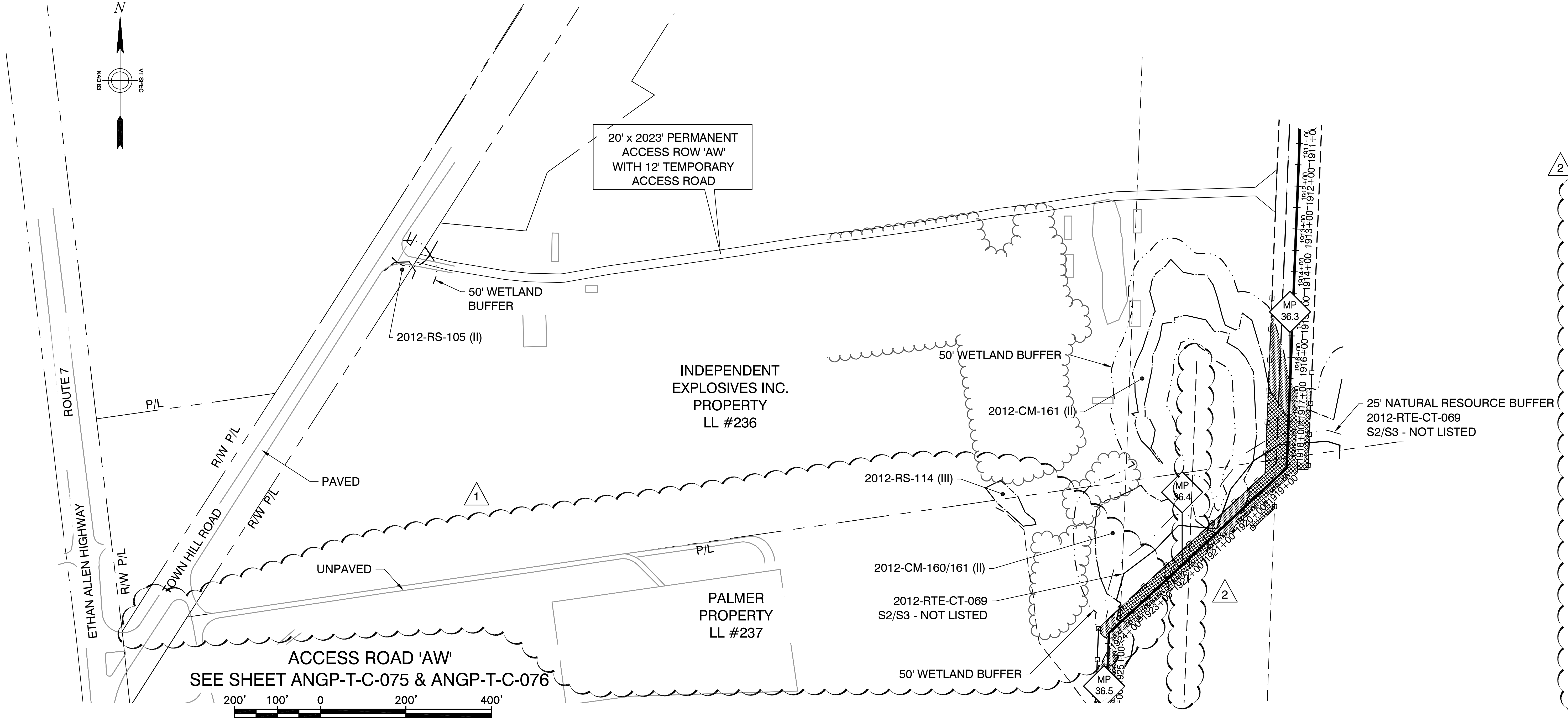
ACCESS ROAD 'AE'
SEE SHEETS ANGP-T-C-068 & ANGP-D1-C-001

100' 50' 0 100' 200'
GRAPHIC SCALE



ACCESS ROAD 'AF'
SEE SHEET ANGP-T-C-069

100' 50' 0 100' 200'
GRAPHIC SCALE



ACCESS ROAD 'AW'
SEE SHEET ANGP-T-C-075 & ANGP-T-C-076

200' 100' 0 200' 400'
GRAPHIC SCALE

2

MICHAEL E. HOLLOWOOD
NO. 97764

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
		2	GJM	BCK	IFC 2016 EDITS (05/2016)
		1	BCK	TDB	ACCESS ROAD "AG" REMOVED (5/14/15)

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ACCESS ROAD DETAILS

LOC. CHITTENDEN & ADDISON COUNTIES

YEAR: 2016 | W.O. | SCALE: AS NOTED | DWG. ANGP-T-G-010 | REV. 2

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

CONSTRUCTION DEMARCATION:

1. CONSTRUCTION DEMARCATION TO BE INSTALLED ALONG PERIMETER OF LIMITS OF DISTURBANCE PER THE EPSC PLAN.
2. DEMARCATION IS NOT TO CROSS ACTIVE ACCESS ROUTES.
3. WITHIN AT LEAST 50 FEET OF A WATER RESOURCE AREA, DEMARCATION MUST INCLUDE:
   a. 2 TO 3 ROWS OF STAKED (OR STAPLED) 3 INCH ORANGE BARRIER MESH TAPE OR ROPE,
   b. ORANGE CONSTRUCTION FENCE, OR
   c. ORANGE SNOW FENCE.
   d. OTHER INTERCHANGEABLE AND/OR DEC APPROVED MEASURE.
4. GREATER THAN AT LEAST 50 FEET FROM WATER RESOURCE AREAS, DEMARCATION MAY INCLUDE:
   a. ONE ROW OF STAKED (OR STAPLED) 3 INCH ORANGE BARRIER MESH TAPE OR ROPE, OR
   b. ORANGE FLAGGING OR PAINT.
   c. OTHER INTERCHANGEABLE AND/OR DEC APPROVED MEASURE.

1 Construction Demarcation Table

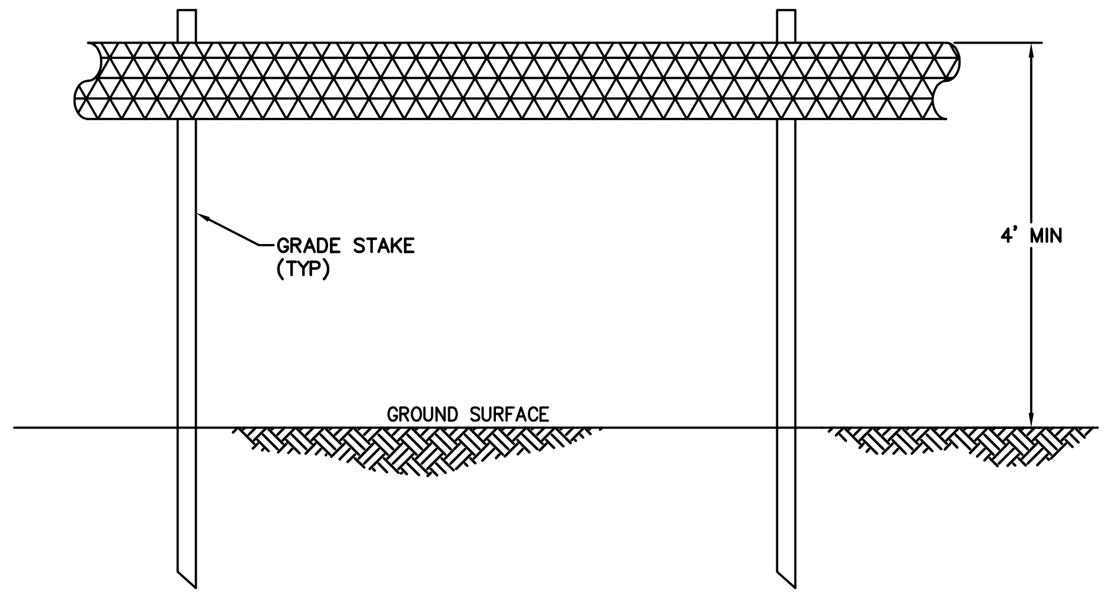
12/12
N.T.S.
Source: VHB
LD_

PERIMETER CONTROLS:

1. PERIMETER CONTROLS ARE TO BE INSTALLED ON DOWNSLOPE SIDE OF AREAS OF DISTURBANCE WHERE THERE IS POTENTIAL FOR SEDIMENT RUNOFF AND/OR SOIL EROSION.
2. PERIMETER CONTROLS ARE NOT TO CROSS ACTIVE ACCESS ROUTES (E.G., ROADS) OR ACTIVE FLOW PATHS (E.G., A STREAM).
3. PARTICULAR CARE IS TO BE TAKEN WHEN INSTALLING PERIMETER CONTROLS IN A WETLAND.
4. WITHIN AT LEAST 50 FEET OF WATER RESOURCE AREAS, PERIMETER CONTROLS MUST INCLUDE:
   a. REINFORCED SILT FENCE – TO BE REINFORCED WITH WIRE MESH, STAKED HAYBALES, STAKED FIBER ROLLS, EROSION CONTROL MIX BERMS, OR WOOD CHIP BERMS.
   b. STONE BERMS
   c. OTHER INTERCHANGEABLE AND/OR DEC–APPROVED MEASURE.
5. GREATER THAN AT LEAST 50 FEET FROM WATER RESOURCE AREAS, PERIMETER CONTROLS MAY INCLUDE:
   a. SILT FENCE (NON–REINFORCED)
   b. STAKED FIBER ROLLS
   c. EROSION CONTROL MIX BERMS
   d. OTHER INTERCHANGEABLE AND/OR DEC–APPROVED MEASURE.

2 Perimeter Control Table

12/12
N.T.S.
Source: VHB
LD_

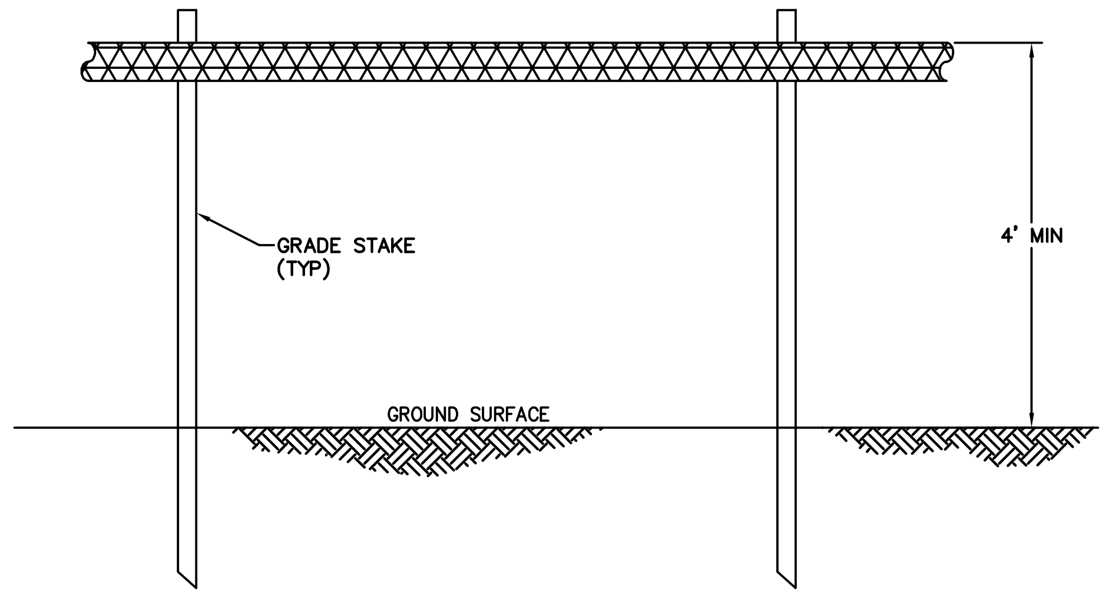


Notes:

1. BARRIER MESH TAPE OR ROPE SHALL BE INSTALLED ALONG THE PERIMETER OF THE PROJECT AREA TO DEMARCATE THE LIMIT OF DISTURBANCE. NO EARTHWORK OR STORAGE OF MATERIALS SHALL BE CONDUCTED BEYOND THIS LIMIT WITHOUT PRIOR APPROVAL FROM THE OSPC.
2. USE 3" ORANGE BARRIER MESH TAPE OR 1/2" YELLOW POLYPROPYLENE ROPE.
3. WITHIN 50' OF WATER RESOURCE AREAS, USE 2–3 ROWS OF TAPE OR ROPE. BEYOND 50' OF WATER RESOURCE AREAS USE 1 ROW OF TAPE OR ROPE.
4. TAPE OR ROPE MAY BE FASTENED TO STAKES, TREES, OR OTHER APPROPRIATE FIXED OBJECTS.
5. PROJECT DEMARCATION SHALL NOT CROSS ACTIVE ACCESS ROUTES (E.G. ROADS). PROJECT DEMARCATION MAY CROSS RESOURCES AREAS WITH EXCEPTION OF LARGER WATER BODIES WHERE IT IS NOT FEASIBLE OR ADVISABLE.
6. PROJECT DEMARCATION SHALL REMAIN IN PLACE AND BE MAINTAINED/REPLACED AS NEEDED UNTIL FINAL STABILIZATION IN THE AREA HAS BEEN ACHIEVED.

3 Barrier Mesh Tape or Rope

12/12
N.T.S.
Source: VHB
LD_

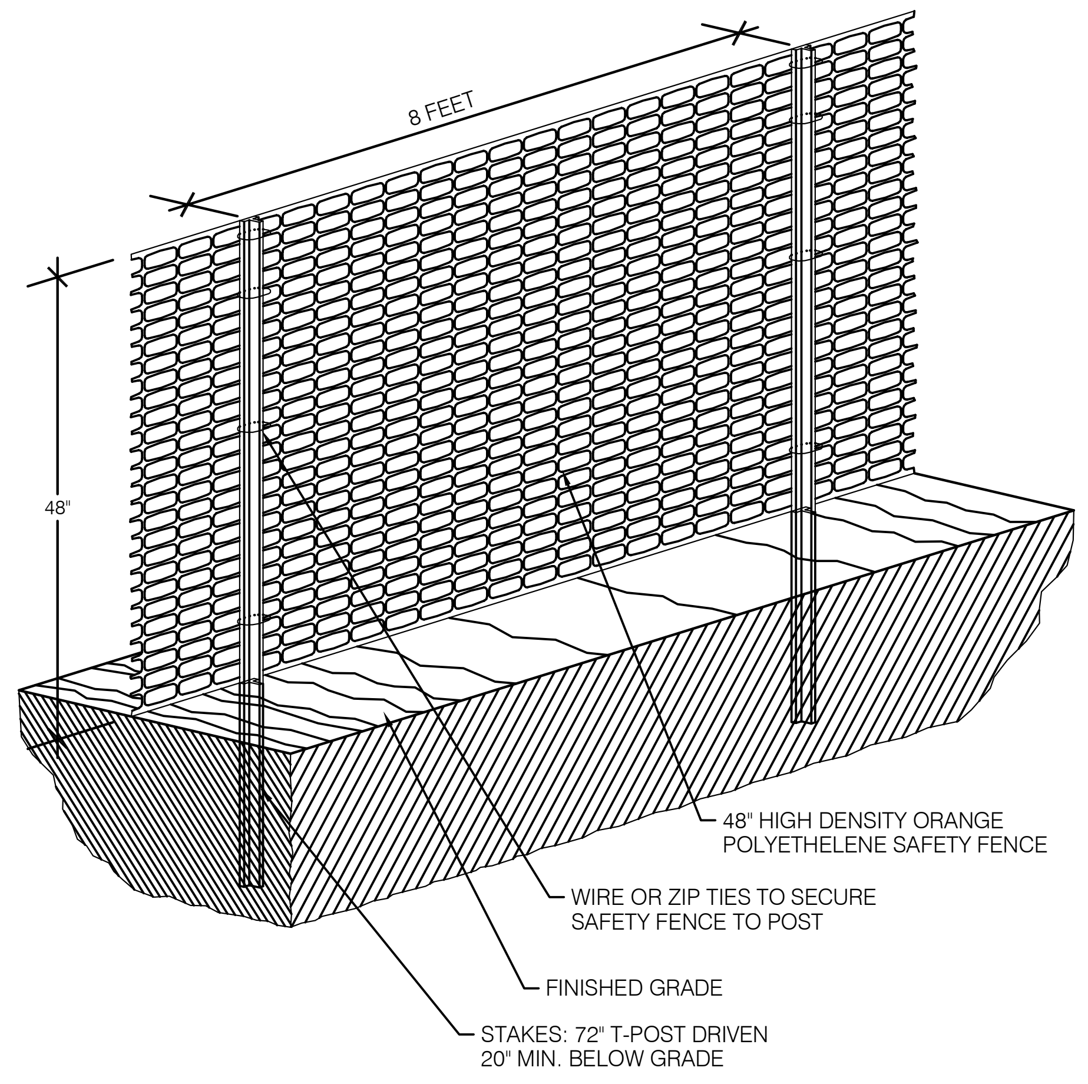


Notes:

1. BARRIER FLAGGING OR PAINT SHALL BE INSTALLED ALONG THE PERIMETER OF THE PROJECT AREA TO DEMARCATE THE LIMIT OF DISTURBANCE. NO EARTHWORK OR STORAGE OF MATERIALS SHALL BE CONDUCTED BEYOND THIS LIMIT WITHOUT PRIOR APPROVAL FROM THE OSPC.
2. FLAGGING OR PAINT MAY BE FASTENED TO STAKES, TREES, OR OTHER APPROPRIATE FIXED OBJECTS.
3. PROJECT DEMARCATION SHALL NOT CROSS ACTIVE ACCESS ROUTES (E.G. ROADS). PROJECT DEMARCATION MAY CROSS RESOURCE AREAS WITH THE EXCEPTION OF LARGER WATER BODIES WHERE IT IS NOT FEASIBLE OR ADVISABLE.
4. PROJECT DEMARCATION SHALL REMAIN IN PLACE AND BE MAINTAINED/REPLACED AS NEEDED UNTIL FINAL STABILIZATION IN THE AREA HAS BEEN ACHIEVED.

4 Barrier Flagging or Paint

12/12
N.T.S.
Source: VHB
LD_

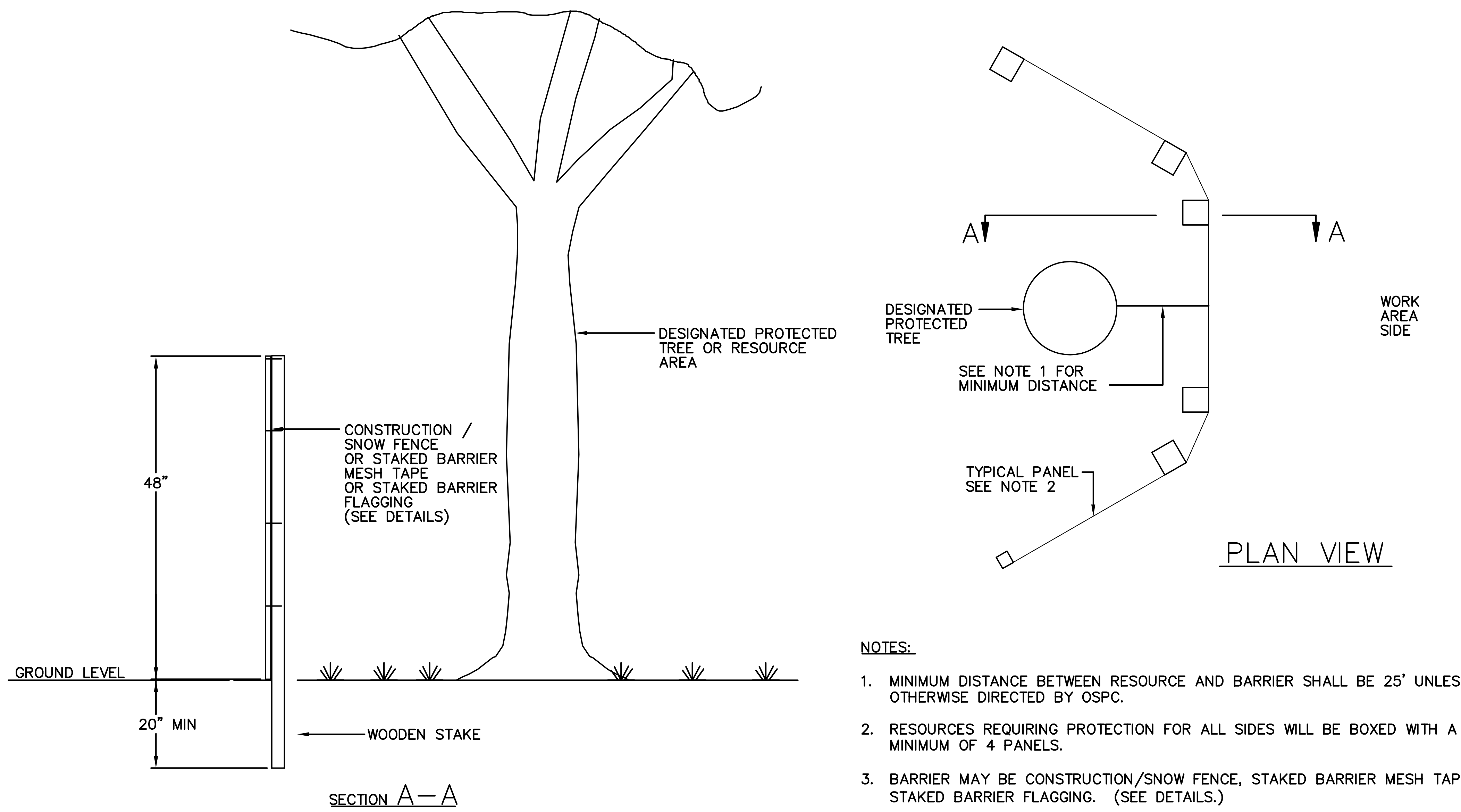


Notes:

1. CONSTRUCTION/SNOW FENCE SHALL BE INSTALLED WITHIN 50' OF A WATER RESOURCE, (STREAM, BROOK, LAKE, POND, ETC.) UNLESS THE AREA IS DENSELY WOODED, IN WHICH CASE 2 TO 3 ROWS OF ORANGE BARRIER MESH TAPE OR ROPE MAY BE USED.
2. CONSTRUCTION/SNOW FENCE SHALL NOT CROSS ACTIVE ACCESS ROUTES (E.G. ROADS). CONSTRUCTION/SNOW FENCE MAY CROSS RESOURCE AREAS WITH THE EXCEPTION OF LARGER WATER BODIES WHERE IT IS NOT FEASIBLE OR ADVISABLE.
3. CONSTRUCTION/SNOW FENCE SHALL REMAIN IN PLACE AND BE MAINTAINED/REPLACED AS NEEDED UNTIL FINAL STABILIZATION IN THE AREA HAS BEEN ACHIEVED.

5 Construction/Snow Fence

12/12
N.T.S.
Source: VHB
LD_651



SECTION A–A

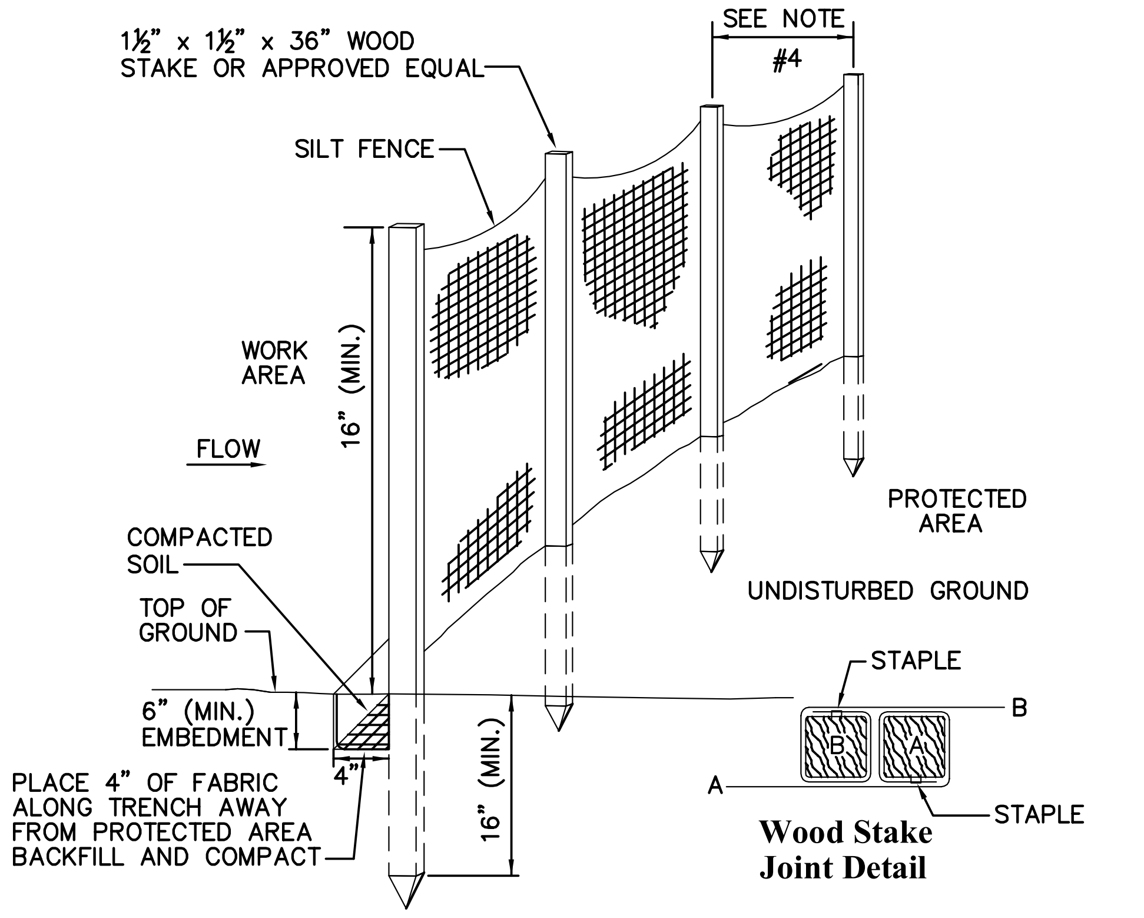
PLAN VIEW

NOTES:

1. MINIMUM DISTANCE BETWEEN RESOURCE AND BARRIER SHALL BE 25' UNLESS OTHERWISE DIRECTED BY OSPC.
2. RESOURCES REQUIRING PROTECTION FOR ALL SIDES WILL BE BOXED WITH A MINIMUM OF 4 PANELS.
3. BARRIER MAY BE CONSTRUCTION/SNOW FENCE, STAKED BARRIER MESH TAPE, OR STAKED BARRIER FLAGGING. (SEE DETAILS.)
4. BARRIER TO REMAIN IN PLACE UNTIL CONSTRUCTION ACTIVITIES IN AREA ARE COMPLETE OR AS AS OTHERWISE DIRECTED BY OSPC.

6 Wetland, RTE, and Vegetation Protection Barrier

12/12
N.T.S.
Source: CHA
LD_



Notes:

1. SEE DETAIL # 2 ON SHEET ANGP–T–G–012 FOR LIST OF APPROPRIATE PERIMETER CONTROLS TO USE.
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. FOR FILTER CLOTH FENCE WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4 FT. FOR FILTER CLOTH FENCE WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6 FT.
4. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER–LAPPED BY 6 INCHES AND FOLDED.
5. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE OR APPROVED EQUIVALENT.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT AND DISPOSED OF IN AN UPLAND AREA.
7. PERIMETER CONTROLS SHALL NOT CROSS ACTIVE ACCESS ROUTES (E.G., ROADS) OR ACTIVE FLOW PATHS (E.G., LARGER STREAMS/RIVERS).
8. PERIMETER CONTROLS SHALL REMAIN IN PLACE AND BE MAINTAINED/REPLACED AS NEEDED UNTIL FINAL STABILIZATION IN THE AREA HAS BEEN ACHIEVED.

7 Silt Fence

12/12
N.T.S.
Source: VHB
LD_650VT

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

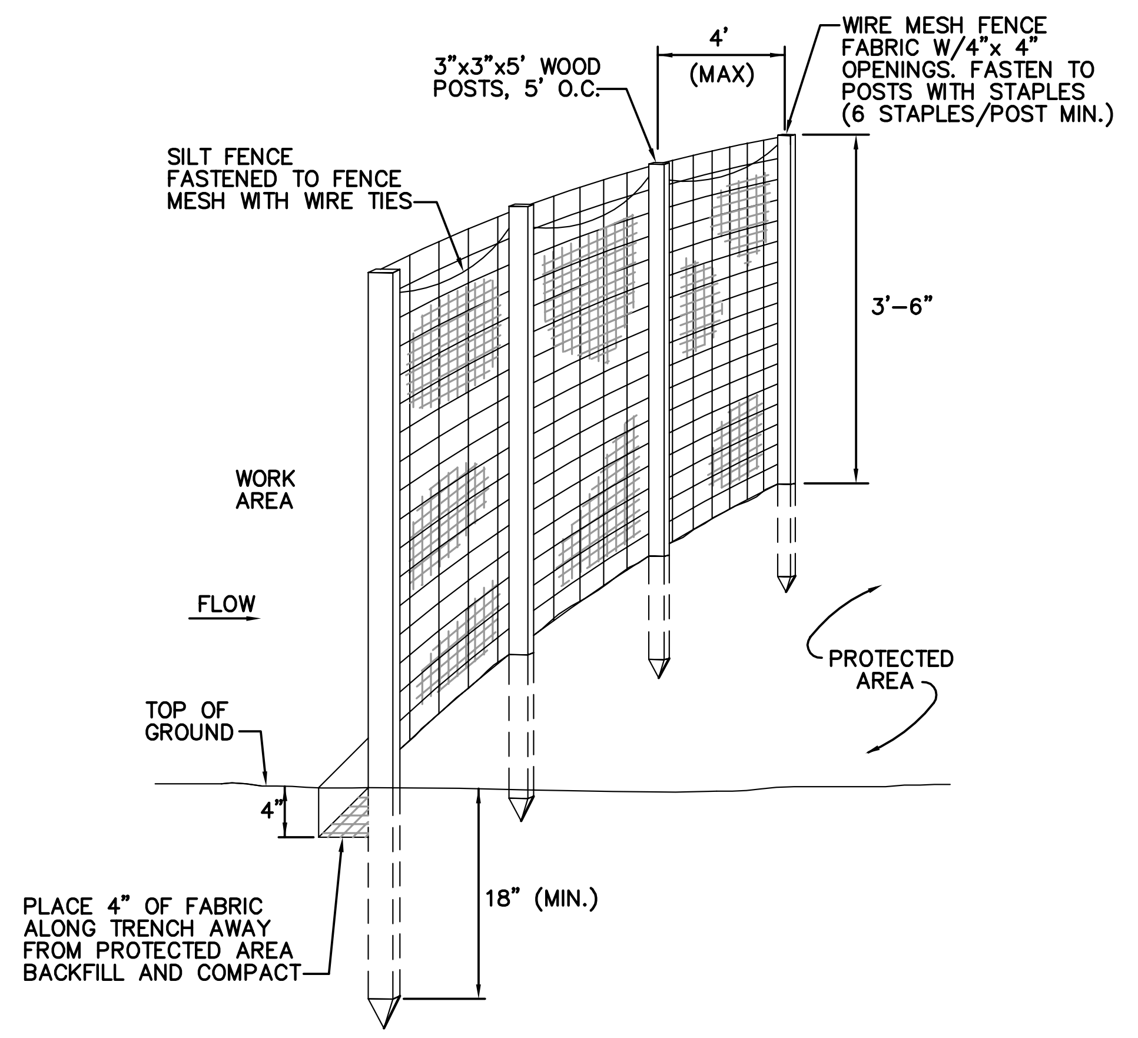
VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
CONSTRUCTION DETAILS

LOC. CHITTENDEN & ADDISON COUNTIES

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: NOTED | DWG. ANGP–T–G–012 | REV. 0

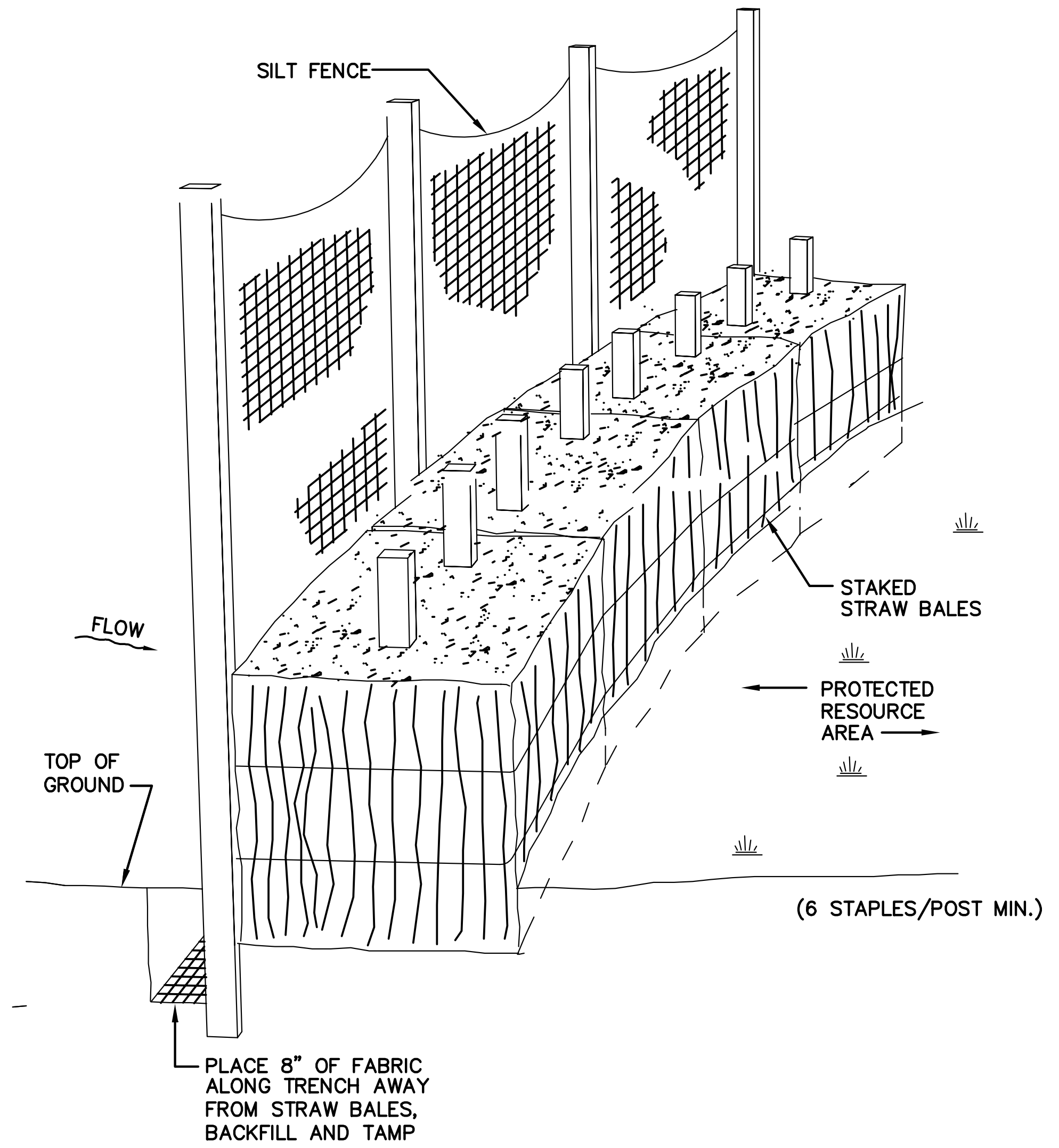


Notes:

1. SEE DETAIL #2 ON SHEET ANGP-T-G-012 FOR LIST OF APPROPRIATE PERIMETER CONTROLS TO USE
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. FOR FILTER CLOTH FENCE WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4 FT. FOR FILTER CLOTH FENCE WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6 FT.
4. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6 INCHES AND FOLDED.
5. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE OR APPROVED EQUIVALENT.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT AND DISPOSED OF IN AN UPLAND AREA.
7. PERIMETER CONTROLS SHALL NOT CROSS ACTIVE ACCESS ROUTES (E.G., ROADS) OR ACTIVE FLOW PATHS (E.G., LARGER STREAMS/RIVERS).
8. PERIMETER CONTROLS SHALL REMAIN IN PLACE AND BE MAINTAINED/REPLACED AS NEEDED UNTIL FINAL STABILIZATION IN THE AREA HAS BEEN ACHIEVED.

1 Reinforced Silt Fence with Wire Mesh

12/12
N.T.S.
Source: VHB
LD_651

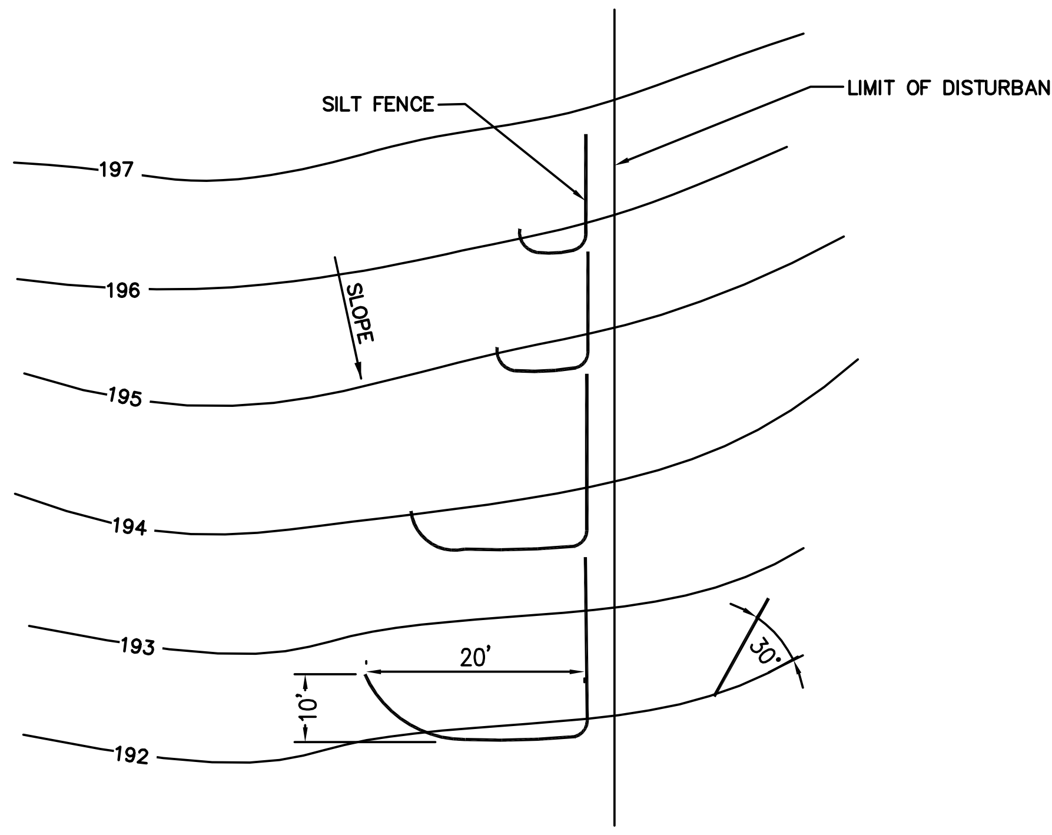


Notes:

1. SEE DETAIL # 2 ON SHEET ANGP-T-G-012 FOR LIST OF APPROPRIATE PERIMETER CONTROLS TO USE
2. SEE SILT FENCE DETAIL AND NOTES FOR INSTALLATION SPECIFICATIONS FOR SILT FENCE.
3. SEE STAKED HAY BALE DETAIL AND NOTES FOR INSTALLATION SPECIFICATIONS FOR STAKED STRAW BALES. SEEDLESS STRAW BALES ARE TO BE USED IN RESOURCE AREAS AND THEIR BUFFERS; DO NOT USE HAY BALES.
4. STAKED STRAW BALES MAY BE INTERCHANGED WITH STAKED FIBER ROLLS.
5. PERIMETER CONTROLS SHALL NOT CROSS ACTIVE ACCESS ROUTES (E.G., ROADS) OR ACTIVE FLOW PATHS (E.G., LARGER STREAMS/RIVERS).
6. PERIMETER CONTROLS SHALL REMAIN IN PLACE AND BE MAINTAINED/REPLACED AS NEEDED UNTIL FINAL STABILIZATION IN AREA HAS BEEN ACHIEVED.

2 Reinforced Silt Fence with Staked Straw Bales

12/12
N.T.S.
Source: VHB
LD_

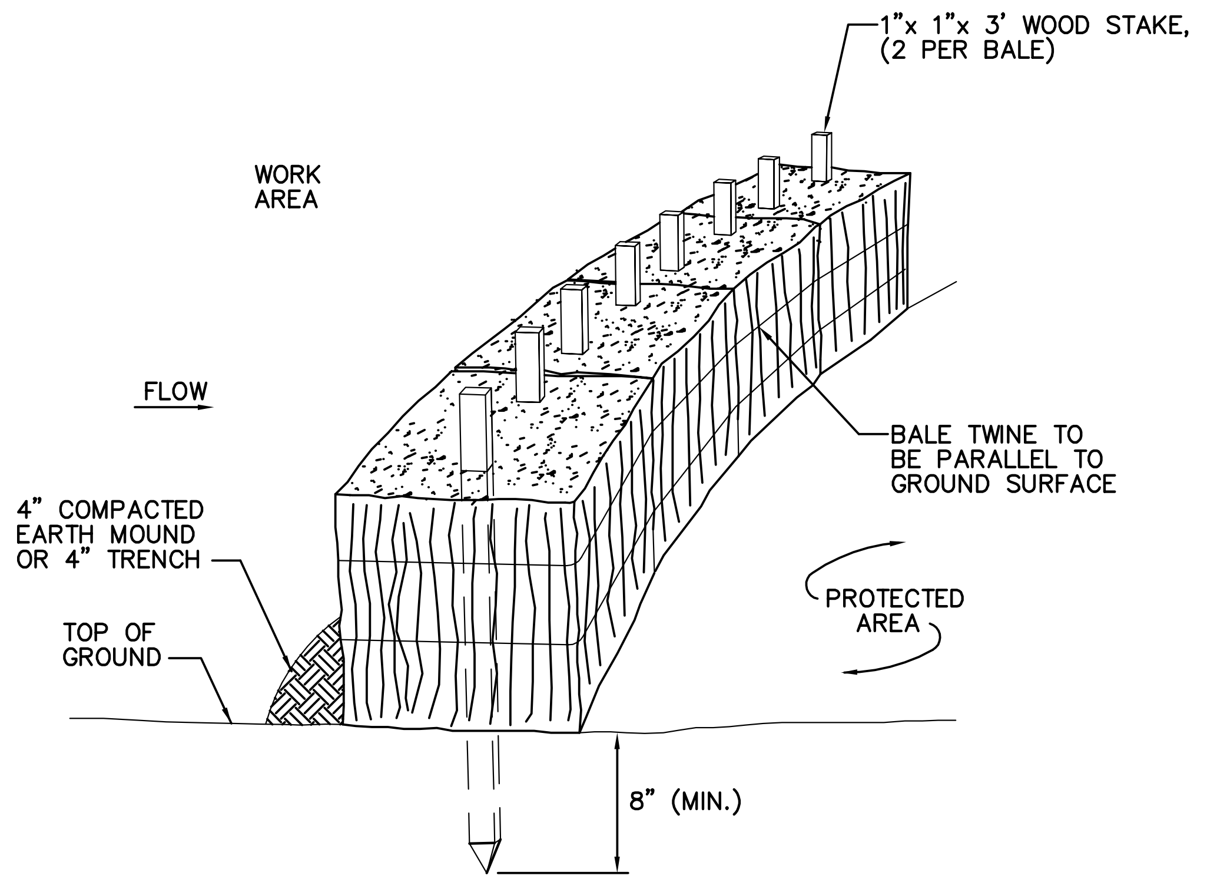


Notes:

1. SILT FENCE SHALL BE INSTALLED IN SHORTER RUNS WITH "J-HOOKS" TO AVOID CONCENTRATION OF FLOWS AT ONE LOCATION BY TRAPPING RUNOFF AT MULTIPLE POINTS ALONG A SLOPE.
2. MINIMUM WIDTH OF J-HOOK RECOMMENDED AT 20 FT WITH A DEPTH OF 10 FT. WHERE SPACE IS LIMITED (E.G., ALONG NARROW RIGHTS OF WAY), NARROWER HOOKS CAN BE USED WITH A HIGHER SPACING FREQUENCY.
3. START DOWN-GRADIENT SILT FENCE LINE AS CLOSE AS POSSIBLE TO UP-GRADIENT J-HOOK.
4. SEE SILT FENCE NOTES FOR INSTALLATION SPECIFICATIONS.

3 Silt Fence "J-Hooks"

12/12
N.T.S.
Source: VHB
LD_

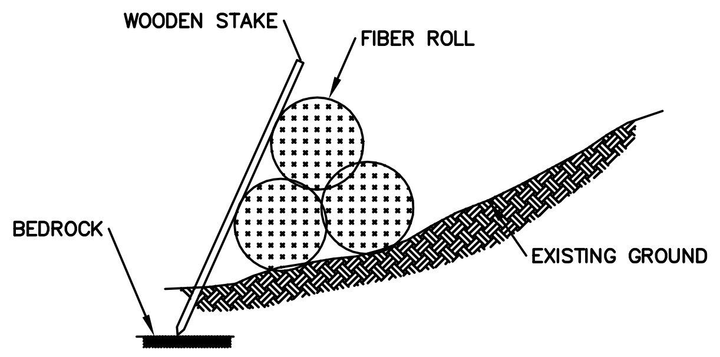


Notes:

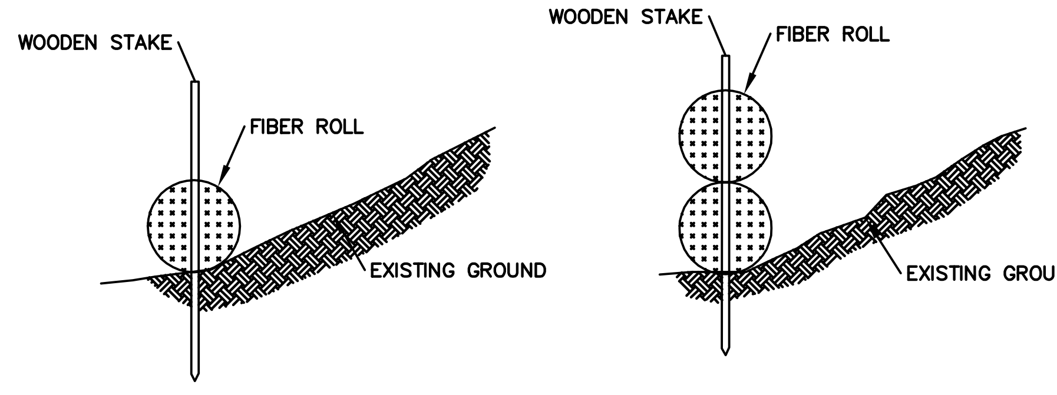
1. ENSURE BALES ARE TRENCHED INTO THE GROUND (4" MIN) OR A 4" COMPACTED EARTH MOUND IS PRESENT ON UP GRADIENT SIDE OF BARRIER.
2. ENSURE BALES ARE INSTALLED SO ROPE RUNS PARALLEL TO GROUND.
3. ENSURE STAKES ARE PROPERLY HAMMERED IN, LEAVING ~ 4" OF EXPOSURE ABOVE THE BALE.
4. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES $\frac{1}{2}$ OF THE OVERALL HEIGHT. DISPOSE OF IN AN UPLAND AREA AWAY FROM WATER FLOW.
5. MAINTAIN AND REPLACE HAY BALES AS NEEDED.

4 Staked Hay Bales

12/12
N.T.S.
Source: VHB
LD_653



SHALLOW BEDROCK / PYRAMID FIBER ROLL



SINGLE STAKED FIBER ROLL

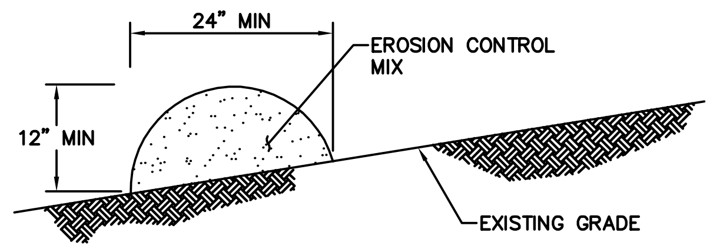
STACKED STAKED FIBER ROLL

Notes:

1. SEE DETAIL # 2 ON SHEET ANGP-T-G-012 FOR LIST OF APPROPRIATE PERIMETER CONTROLS TO USE.
2. FIBER ROLL SHALL BE PLACED IN SHALLOW TRENCH UP TO 4", WHERE FEASIBLE, PLACING SOIL REMOVED FROM TRENCH BEHIND THE ROLL.
3. FIBER ROLLS SHALL BE ANCHORED WITH 2" BY 2" WOODEN STAKES (36" LONG), OR SIMILAR, WHERE FEASIBLE, EITHER INSTALLED THROUGH CENTER OF ROLL (AS SHOWN) OR PLACED ON BOTH SIDES OF ROLL.
4. STAKES TO BE PLACED 4 FT APART, MINIMUM.
5. SINGLE OR DOUBLE STACKED STAKED FIBER ROLLS TO BE INSTALLED WHERE SOIL DEPTH ALLOWS. WHERE SHALLOW TO BEDROCK, PYRAMID FIBER ROLLS TO BE UTILIZED WITH STAKES, AS FEASIBLE.
6. FIBER ROLLS TO BE REPLACED OR REPLENISHED AS NEEDED DURING ACTIVE EARTH WORK.
7. PERIMETER CONTROLS SHALL NOT CROSS ACTIVE ACCESS ROUTES (E.G., ROADS) OR ACTIVE FLOW PATHS (E.G., STREAMS/RIVERS).
8. PERIMETER CONTROLS SHALL REMAIN IN PLACE AND BE MAINTAINED/REPLACED AS NEEDED UNTIL FINAL STABILIZATION IN AREA HAS BEEN ACHIEVED.

5 Staked Fiber Roll

12/12
N.T.S.
Source: VHB
LD_



Notes:

COMPOSITION

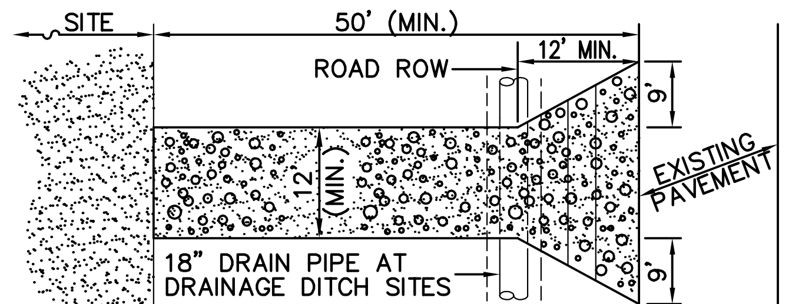
EROSION CONTROL MIX BERM SHALL CONSIST PRIMARILY OF ORGANIC MATERIAL AND MAY INCLUDE: SHREDDED BARK, STUMP GRINDINGS, COMPOSTED BARK AND/OR ACCEPTABLE MANUFACTURED PRODUCTS. WOOD AND BARK CHIPS, GROUND CONSTRUCTION DEBRIS, OR REPROCESSED WOOD PRODUCTS ARE NOT ACCEPTABLE AS THE ORGANIC COMPONENT OF THE MIX.

INSTALLATION

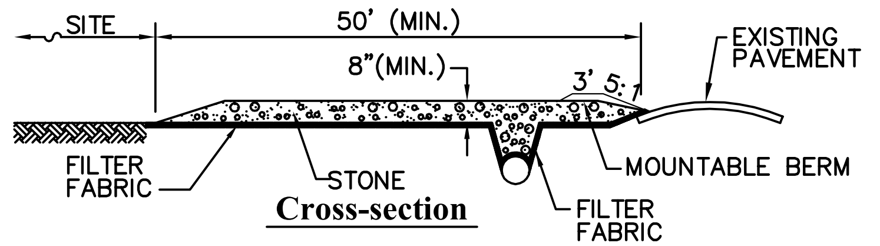
1. SEE DETAILS # 2 ON SHEET ANGP-T-G-012 FOR LIST OF APPROPRIATE PERIMETER CONTROLS TO USE.
2. THE BERM SHALL BE PLACED ALONG A RELATIVELY LEVEL CONTOUR.
3. EXISTING GROUND SHALL BE PREPARED AS NEEDED SUCH THAT THE BERM LIES NEARLY FLAT ALONG THE GROUND TO AVOID THE CREATION OF VOIDS AND BRIDGES IN ORDER TO MINIMIZE THE POTENTIAL OF WASH OUTS UNDER THE BERM.
4. ON SLOPES < 5% OR AT THE BOTTOM OF STEEPER SLOPES (<2:1) UP TO 20' LONG, THE BERM MUST BE A MINIMUM OF 12" HIGH, AS MEASURED ON THE UPHILL SIDE OF THE BERM, AND A MINIMUM OF 2 FT. WIDE. ON LONGER OR STEEPER SLOPES, THE BERM SHALL BE WIDER TO ACCOMMODATE ADDITIONAL FLOW.
5. BERM MAY BE INSTALLED IN PLACE OF SILT FENCE EXCEPT IN, BUT NOT LIMITED TO, THE FOLLOWING AREAS: WETLAND AREAS, AT POINTS OF CONCENTRATED FLOW, BELOW STORMWATER OUTFALLS, AROUND CATCH BASINS AND CLOSED STORM SYSTEMS AND AT THE BOTTOM OF STEEP SLOPES THAT ARE MORE THAN 50 FEET FROM TOP TO BOTTOM. BERM MAY BE USED IN WETLAND BUFFER AREAS BUT MAY NOT BE USED IN WETLANDS AREA.
6. PERIMETER CONTROLS SHALL NOT CROSS ACTIVE ACCESS ROUTES (E.G., ROADS) OR ACTIVE FLOW PATHS (E.G., LARGER STREAMS RIVERS).
7. PERIMETER CONTROLS SHALL REMAIN IN PLACE AND BE MAINTAINED/REPLACED AS NEEDED UNTIL FINAL STABILIZATION IN AREA HAS BEEN ACHIEVED.

6 Erosion Control Mix Berm

12/12
N.T.S.
Source: VHB
LD_



Plan View



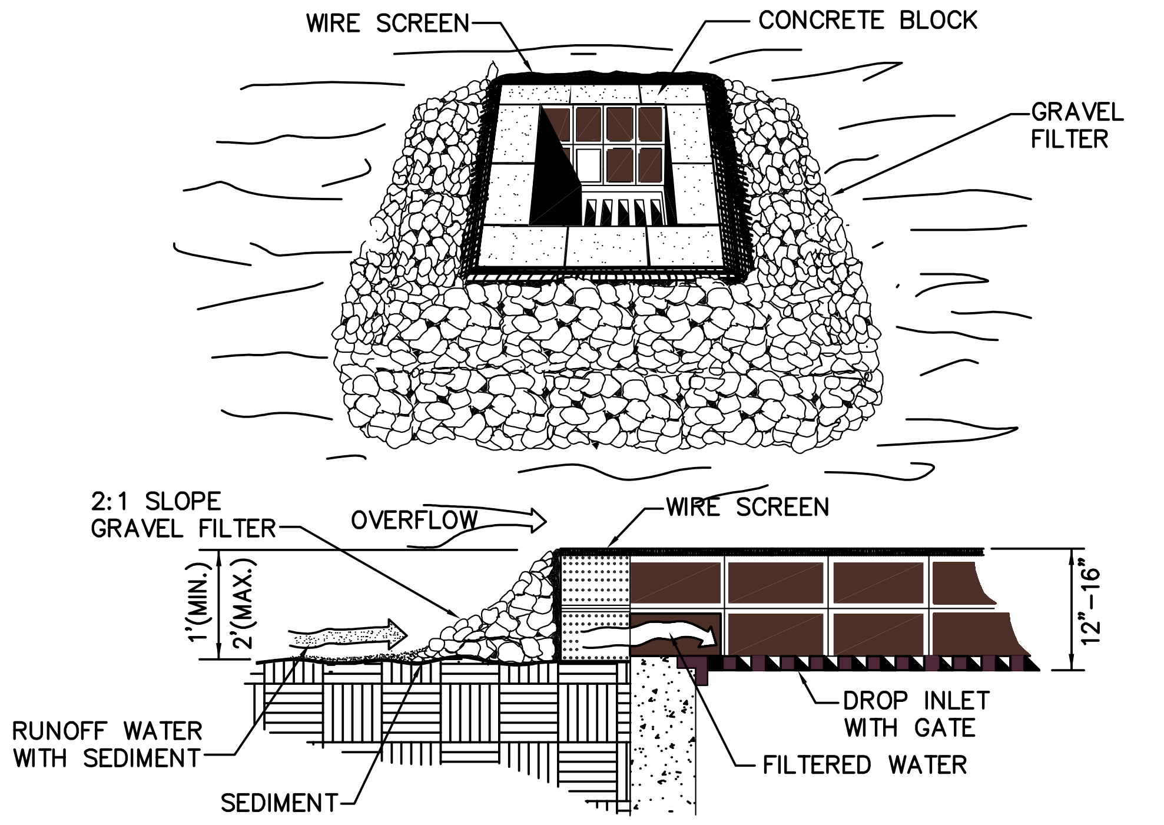
Cross-section

Notes:

1. STONE SIZE: USE 1 TO 4 INCH DIAMETER STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH: NOT LESS THAN 50 FEET.
3. THICKNESS: NOT LESS THAT 8 INCHES.
4. WIDTH: EXIT WIDTH SHALL BE A TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. GEOTEXTILE: MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
6. SURFACE WATER: ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION EXITS SHALL BE PIPED BENEATH THE EXIT. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE: THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY. MAINTENANCE MAY REQUIRE TOP DRESSING W/ADDITIONAL AGGREGATE.
8. WHEN WHEEL/EQUIPMENT WASHING IS REQUIRED IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.
10. STABILIZED CONSTRUCTION EXIT SHALL BE REMOVED PRIOR TO FINAL FINISH MATERIALS BEING INSTALLED.

7 Stabilized Construction Exit

12/12
N.T.S.
Source: VHB
LD_



Notes:

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2" MINIMUM BELOW THE REST OF THE INLET AND BLOCKS SHALL BE PLACED AGAINST THE INLET FOR SUPPORT.
2. CONCRETE BLOCKS SHOULD BE PLACED LENGTHWISE ON THEIR SIDES IN A SINGLE ROW AROUND THE PERIMETER OF THE INLET. THE ENDS OF EACH BLOCK SHOULD BE ABUTTING. THE HEIGHT OF THE BARRIER CAN BE VARIED DEPENDING ON THE DESIGN BY STACKING VARIOUS COMBINATIONS OF DIFFERENT SIZED BLOCKS. THE BARRIER SHOULD BE A MINIMUM OF 12 INCHES HIGH AND A MAXIMUM OF 16 INCHES HIGH.
3. HARDWARE CLOTH OR ½" WIRE MESH SHOULD BE PLACED OVER THE OPENINGS OF THE CONCRETE BLOCKS AND EXTENDED AT LEAST 12 INCHES AROUND THE OPENING TO PREVENT AGGREGATE FROM BEING TRANSPORTED THROUGH THE OPENINGS IN THE BLOCK.
4. USE CLEAN STONE OR GRAVEL ½" TO ¾" IN DIAMETER PLACED 2" BELOW TOP OF THE BLOCK ON A 2H:1V SLOPE OR FLATTER.
5. A 1 FOOT THICK LAYER OF FILTER STONE WILL BE PLACED AGAINST THE 3" STONE.
6. MAXIMUM DRAINAGE AREA PER SEDIMENT TRAP IS 1 ACRE.
7. BLOCK AND GRAVEL DROP INLET SEDIMENT FILTER SHALL BE CONSTRUCTED IN PAVED AREAS.

8 Block and Gravel Drop Inlet Sediment Filter (Paved Areas)

10/13
N.T.S.
Source: VHB
LD_

NO. 97764

Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

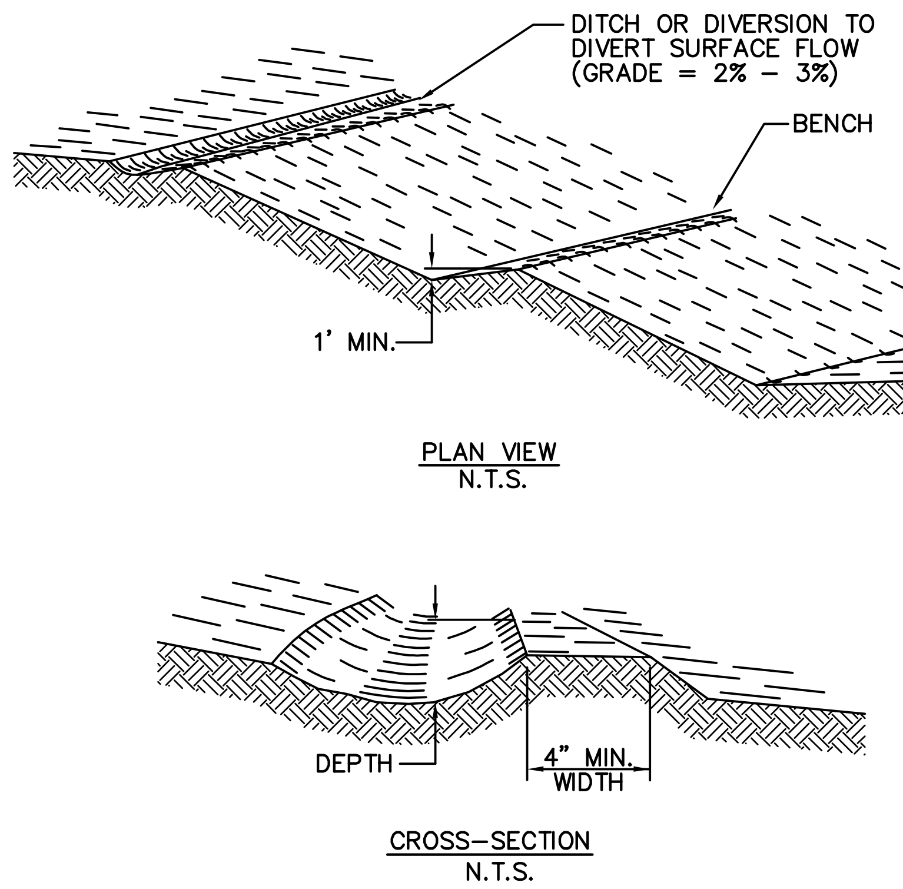
VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
CONSTRUCTION DETAILS

LOC. CHITTENDEN & ADDISON COUNTIES

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: NOTED | DWG. ANGP-T-G-013 | REV. 0

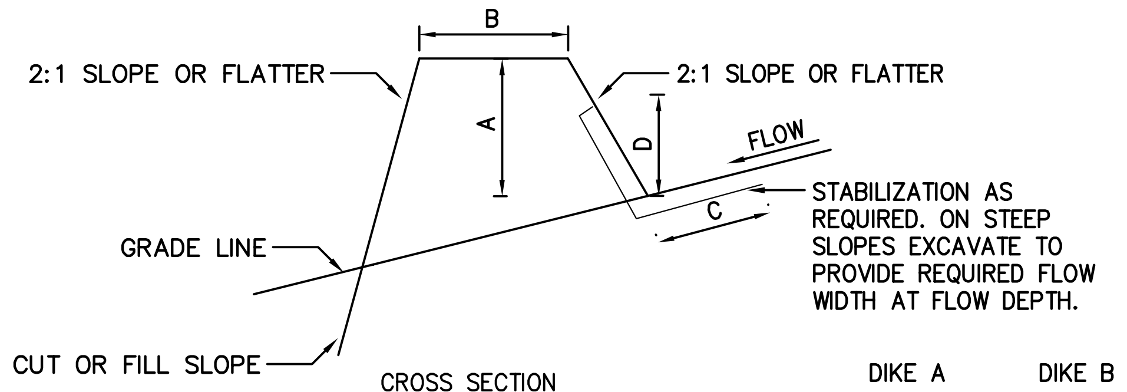


Notes:

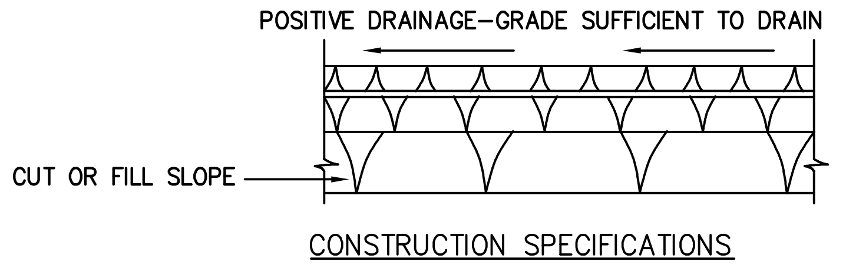
1. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE DIVERSION.
2. THE DIVERSION SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET CRITERIA SPECIFIED HEREIN, AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
3. FILLS SHALL BE COMPACTED AS NEEDED TO PREVENT UNEQUAL SETTLEMENT THAT WOULD CAUSE DAMAGE IN THE COMPLETED DIVERSION.
4. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED FOLLOWING FINISHED GRADING.
5. SILT FENCE OR HAY BALES SHALL BE PLACED AT THE OUTLET OF EACH STRUCTURE.

1 Diversion Swale and Bench

N.T.S. Source: VHB 12/12 LD_



	DIKE A (5 AC. OR LESS)	DIKE B (5–10AC.)
A – DIKE HEIGHT	18"	36"
B – DIKE WIDTH	24"	36"
C – FLOW WIDTH	48"	60"
D – FLOW DEPTH	8"	15"



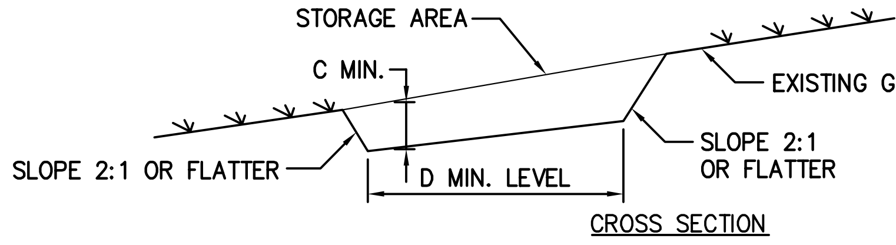
CONSTRUCTION SPECIFICATIONS

1. ALL DIKES SHALL BE COMPACTED BY EARTH–MOVING EQUIPMENT.
2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES BE FLATTER IF DESIRED TO FACILITATE CONSTRUCTION TRAFFIC.
4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. RUNOFF SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT ADEQUATELY STABILIZED.
6. STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR MULCH IF NOT IN SEEDING SEASON, (B) PER THE FOLLOWING CHART

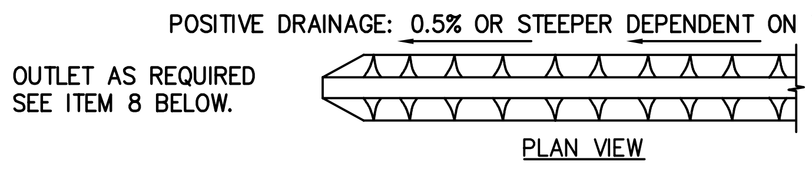
TYPE OF TREATMENT	CHANNEL GRADE	A(5 AC OR LESS)	B(5 AC – 10 AC)
1	0.5%–3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1%–5.0%	SEED AND STRAW MULCH	SEED AND COVER USING RECP
3	5.1%–8.0%	SEED AND COVER WITH RECP	LINED WITH 4–8" RIP–RAP OR
4	8.1%–20.0%	LINED WITH 4–8" RIP–RAP	ENGINEERED DESIGN

2 Earth Dike

N.T.S. Source: VHB / VT S+S EPSC 12/12 LD_



	SWALE A	SWALE B
C	1'	1'
D	4'	6'



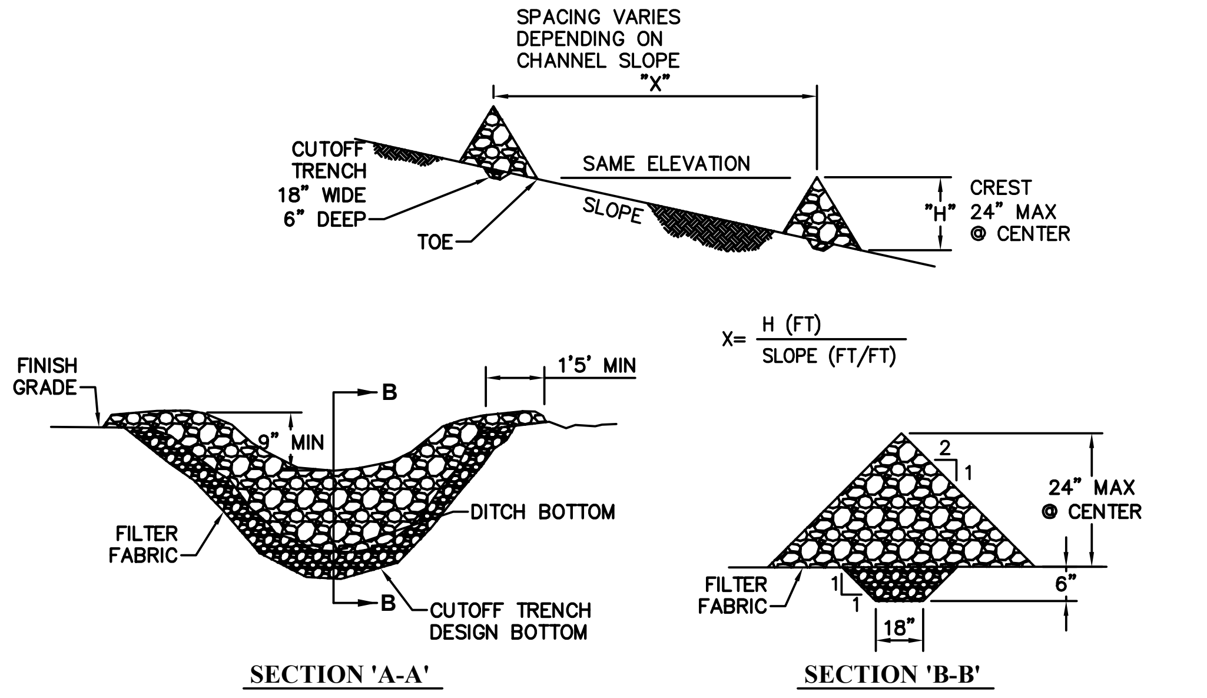
CONSTRUCTION SPECIFICATIONS

1. ALL TEMPORARY SWALES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
2. DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED STABILIZED AREA AT NON–EROSIVE VELOCITY.
4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE.
5. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
6. FILLS SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.
7. ALL EARTH REMOVED AND NOT NEEDED FOR CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE SWALE.
8. STABILIZATION SHALL BE AS PER THE FLOW CHANNEL STABILIZATION CHART BELOW:

TYPE OF TREATMENT	CHANNEL GRADE	A(5 AC OR LESS)	B(5 AC – 10 AC)
1	0.5%–3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1%–5.0%	SEED AND STRAW MULCH	SEED AND COVER USING RECP
3	5.1%–8.0%	SEED AND COVER WITH RECP	LINED WITH 4–8" RIP–RAP OR GEOTEXTILE
4	8.1%–20.0%	LINED WITH 4–8" RIP–RAP	ENGINEERED DESIGN

3 Temporary Swale

N.T.S. Source: VHB / VT S+S EPSC 12/12 LD_

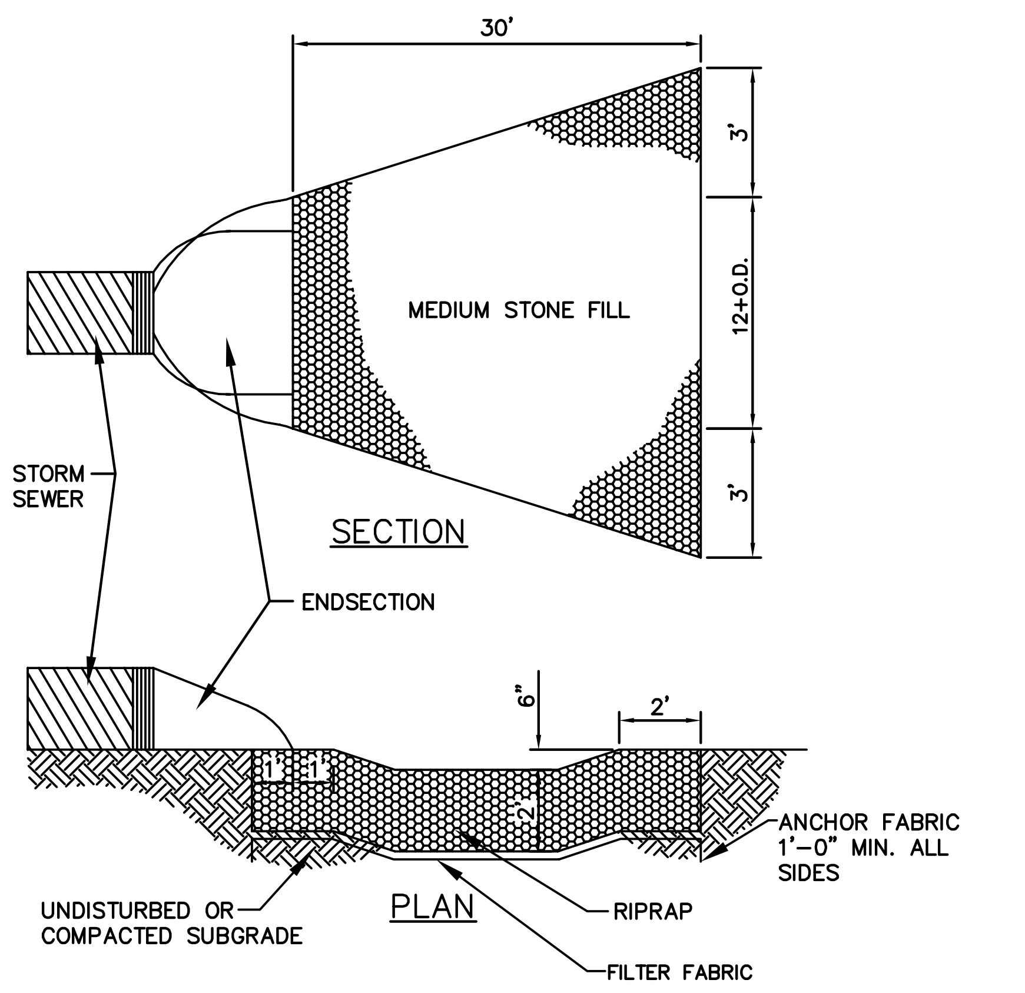


Notes:

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN USING A WELL GRADED STONE MATRIX 2 TO 9 INCHES IN SIZE.
2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.
6. MAXIMUM DRAINAGE AREA ABOVE CHECK DAM SHALL NOT EXCEED 2 AC.

4 Stone Check Dam

N.T.S. Source: VHB / VT S+S EPSC 12/12 LD_

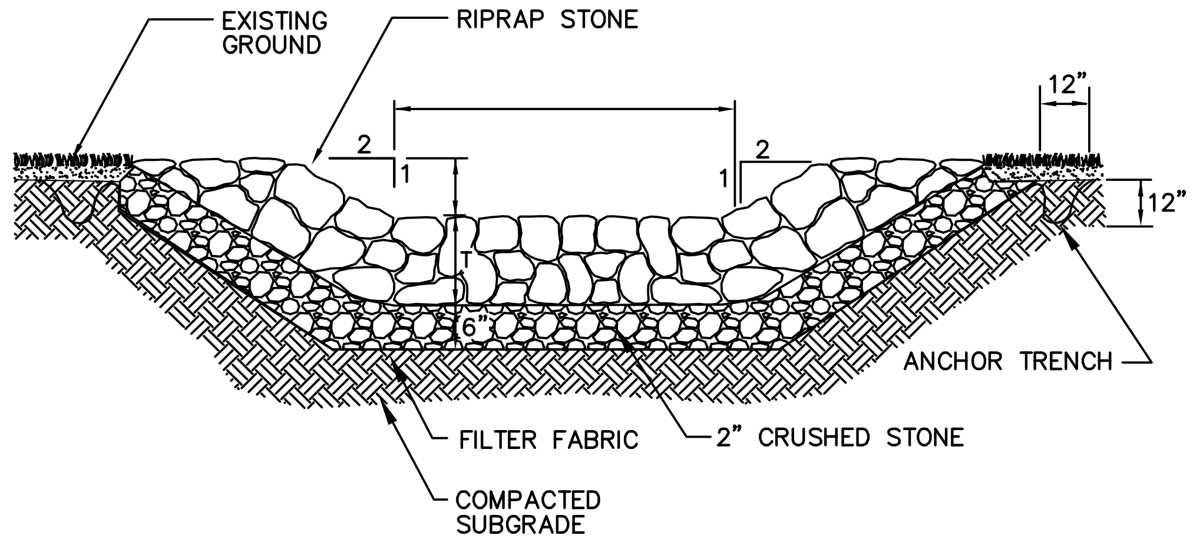


Notes:

1. OUTLET PROTECTION MAY BE DONE BY USING ROCK RIP–RAP, GROUTED RIP–RAP, OR GABIONS.
2. STONE SIZE SHALL BE A WELL GRADED MIXTURE SO THAT 50% OF THE STONE SIZE, BY WEIGHT, SHALL BE LARGER THAN THE d50 SIZE DETERMINED USING THE CHARTS.

5 Outlet Protection

N.T.S. Source: CHA 12/12 LD_



Notes:

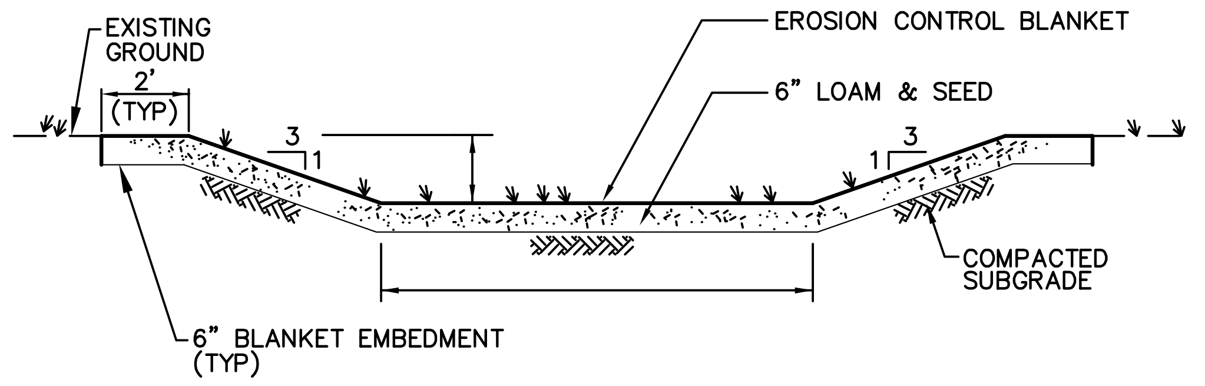
1. MIN. CAPACITY SHALL CARRY PEAK FLOW RATE DURING 10–YR, 24–HR STORM EVENT.
2. MAX SIZE OF RIPRAP STONE SHALL BE:

VEL. (FPS)	DMAX (IN.)
5.0	6
8.5	12
10	18
12	24
15	36

3. FOUNDATION AREA SHALL BE CLEARED OF TREES, STUMPS, ROOTS, SOD, LOOSE ROCK, OR OTHER OBJECTIONABLE MATERIAL.
4. OUTLET STABILIZATION MAY BE NEEDED TO PREVENT EROSION.

6 Stone-lined Swale

N.T.S. Source: VHB 12/12 LD_358

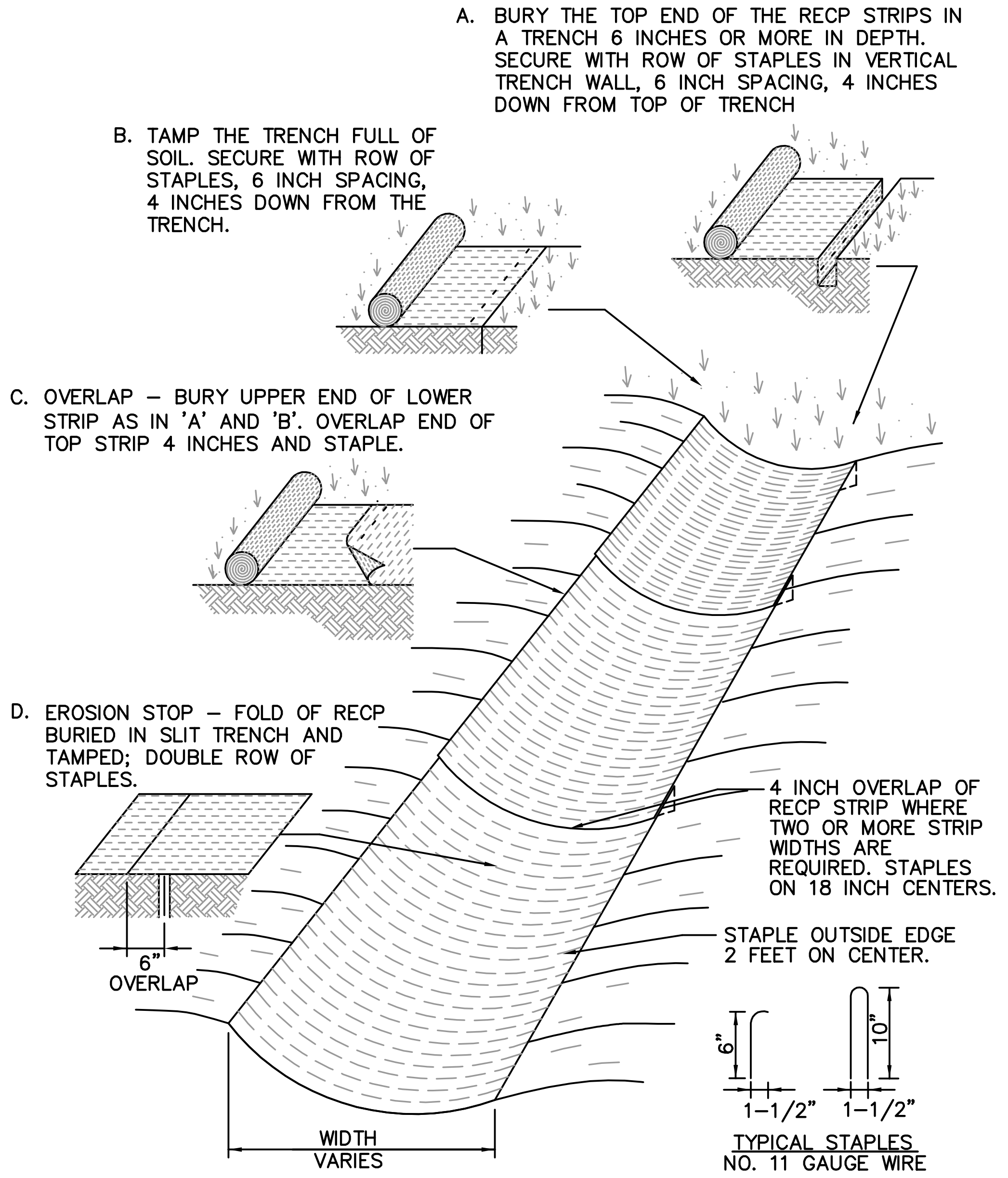


Notes:

1. NOT TO BE USED IN AREAS WHERE FLOW VOLUME AND RATES MAY CAUSE EROSION AND SHOULD OTHERWISE BE CONVEYED VIA STONE–LINED SWALE.
2. FOUNDATION AREA SHALL BE CLEARED OF TREES, STUMPS, ROOTS, SOD, LOOSE ROCK, OR OTHER OBJECTIONABLE MATERIAL.
3. INSTALL TEMPORARY COVER (E.G., MULCH) TO PROTECT AREA WHILE SEED IS GERMINATING.
4. SEE SEEDING SPECIFICATIONS FOR SEED TYPES AND SEED APPLICATION RATES.

7 Grassed Swale

N.T.S. Source: VHB 12/12 LD_171



1. INSTALLATION SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS
2. RECP TO BE BIODEGRADABLE; NO NYLON MESH. SEE SHEET ANGP–T–G–017 FOR RECP SPECIFICATIONS.

8 Rolled Erosion Control Blanket (RECP) - Swale Installation

N.T.S. Source: VHB 12/12

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

VHB Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

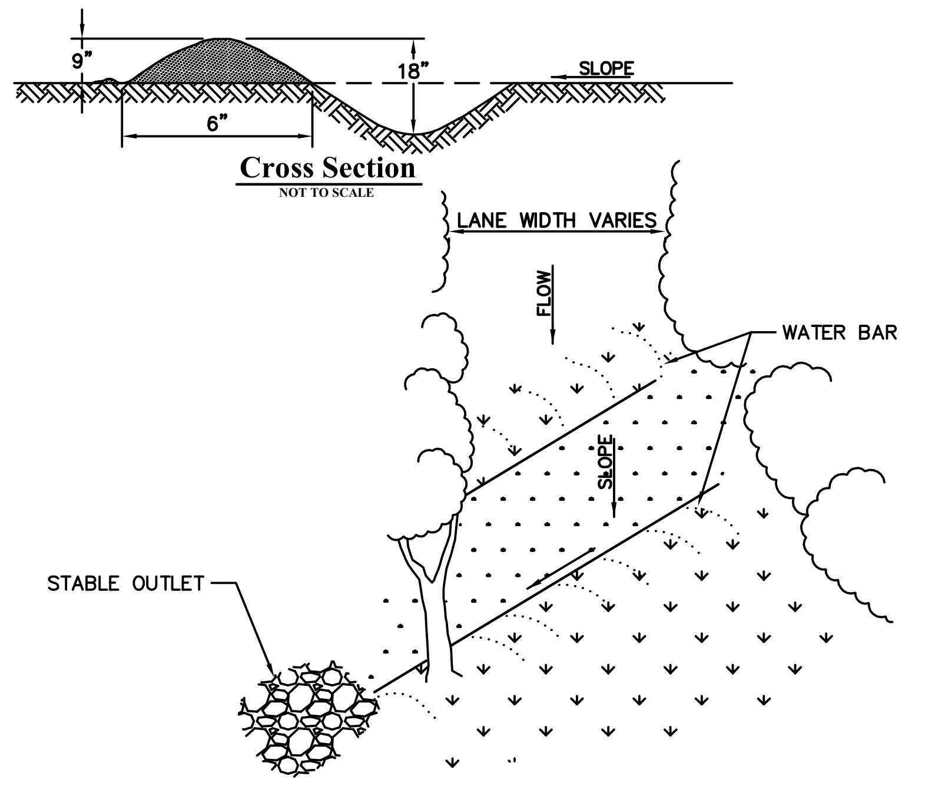
VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
CONSTRUCTION DETAILS

LOC. CHITTENDEN & ADDISON COUNTIES

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: NOTED | DWG. ANGP–T–G–014 | REV. 0



Construction Specifications

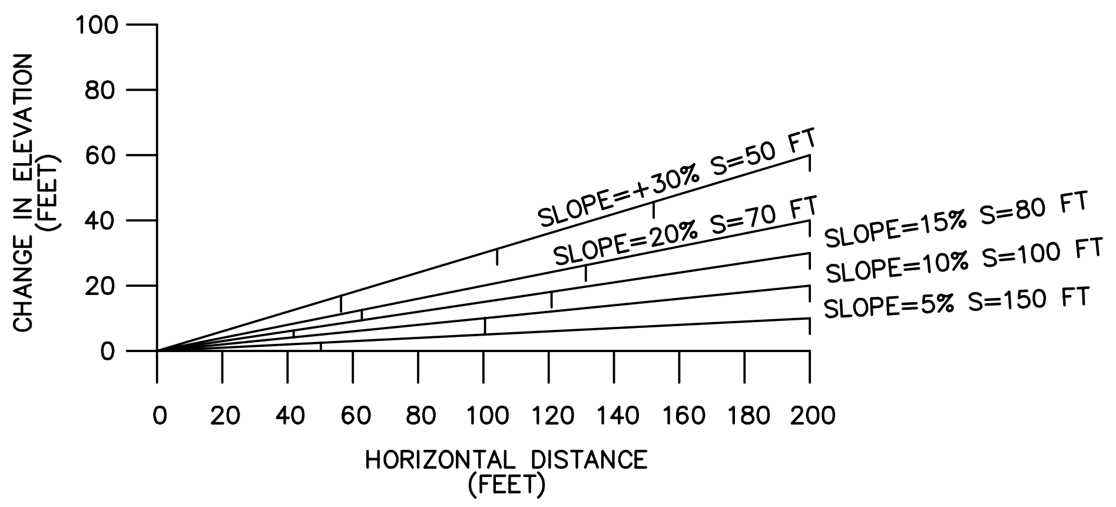
1. INSTALL THE WATER BAR AS SOON AS THE RIGHT OF WAY IS CLEARED AND GRADED.
2. DISK OR STRIP THE SOD FROM THE BASE FOR THE CONSTRUCTED RIDGE BEFORE PLACING FILL.
3. TRACK THE RIDGE TO COMPACT IT TO THE DESIGN CROSS SECTION.
4. THE OUTLET SHALL BE LOCATED ON AN UNDISTURBED AREA. FIELD SPACING WILL BE ADJUSTED TO USE THE MOST STABLE OUTLET AREAS. OUTLET PROTECTION WILL BE PROVIDED WHEN NATURAL AREAS ARE NOT ADEQUATE.
5. FOR PERMANENT WATER BARS, VEHICLE CROSSING SHALL BE STABILIZED WITH GRAVEL. EXPOSED AREAS SHALL BE SEEDED AND MULCHED. FOR TEMPORARY WATER BARS, VEHICLE CROSSING SHALL BE COMPACTED AND MAINTAINED PER THESE SPECIFICATIONS. FOLLOWING THEIR USE, WATER BARS SHALL BE REGRADED TO MATCH PRE-CONSTRUCITON CONDITIONS. TOPSOIL SHALL BE RE-APPLIED THEN ALL AREAS OF EXPOSED SOIL SHALL BE FULLY STABILIZED PER THE EPSC PLAN.
6. INSPECT WATER BARS FOR EROSION DAMAGE AND SEDIMENT. CHECK OUTLET AREAS AND MAKE REPAIRS AS NEEDED TO RESTORE OPERATION.
7. SPACING:

SLOPE (%)	SPACING (FT)
<5	125
5–10	100
10–20	75
20–35	50
>35	25

1 Water Bars

10/13

N.T.S. Source: Vermont Standards and Specs for EPSC 2006 LD_



NOTE: S = TRENCH BREAKER SPACING

NOTES:

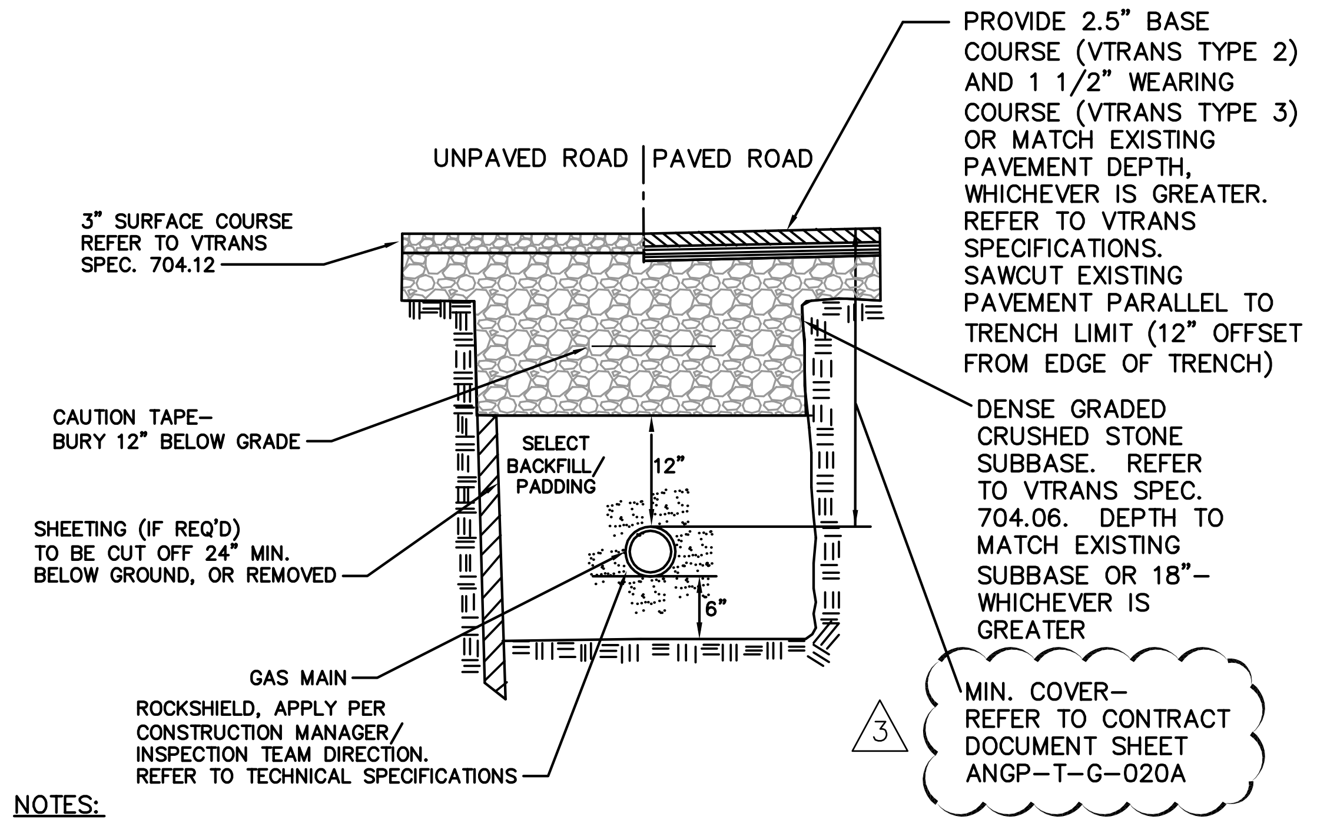
1. PERMANENT TRENCH BREAKER SANDBAGS SHALL NOT BE FILLED WITH TOPSOIL.
2. SPACINGS SHOWN ARE RECOMMENDED MINIMUM GUIDELINES. OSPC REPRESENTATIVE MAY ADJUST SPACING IN THE FIELD WITH PRIOR WRITTEN APPROVAL OF OWNER.
3. ONE TRENCH BREAKER IS REQUIRED AT ALL STREAM BANKS AND AT WETLAND BOUNDARIES.
4. REFER TO SHEETS ANGP-T-G-020B AND 020C FOR APPROXIMATE TRENCH BREAKER LOCATIONS.

3

2 Permanent Trench Break Spacing Guideline

12/12

N.T.S. Source: CHA LD_



NOTES:

1. REFER TO TECHNICAL SPECIFICATIONS FOR BOTH GENERAL AND SELECT/PADDING BACKFILL REQUIREMENTS.

2. IN RESOURCE AREAS (E.G. WETLANDS AND PAS AREAS) GENERAL BACKFILL SHALL BE NATIVE MATERIAL TO MATCH PROFILE DEPTH OF ADJACENT NATIVE, UNDISTURBED SUBSOIL/SURFACE SOIL INTERFACE. EXCESS SUBSOIL TO BE PROPERLY DISPOSED OF AND STABILIZED.

3. THE OWNER SHALL PROVIDE TESTING SERVICES TO INSURE THAT THE IN-PLACE DENSITY OF THE BACKFILL MEETS REQUIREMENTS DETERMINED IN THE SPECIFICATIONS.

4. ALL TRENCH CONSTRUCTION SHALL CONFORM TO APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

5. FOR PIPE SUPPORT METHODS AND OTHER PIPE-IN-TRENCH REQUIREMENTS, REFER TO TECHNICAL SPECIFICATIONS.

3 Typical Trench Detail-Roadways and Driveways

11/14

N.T.S. Source: CHA LD_

CHA PLAN SHEET #	TOWN	PROJECT COMPONENT	PLANT ID CODE	STATE RANK	MATTING LOCATIONS (STATION)
ANGP-EPSC-014	WILLISTON	TRANSMISSION (ACCESS ROAD)	2012-RTE-CT-031	S2/S3	366+50 TO 368+75 AND ON ACCESS ROAD
ANGP-EPSC-022	WILLISTON	TRANSMISSION	2012-RTE-CT-084	S2/S3	562+50 TO 563+75
ANGP-EPSC-039	HINESBURG	TRANSMISSION	2012-RTE-CT-080	S2/S3	992+80 TO 993+50
ANGP-EPSC-039	HINESBURG	TRANSMISSION	2012-RTE-CT-081	S2/S3	1001+20 TO 1002+20
ANGP-EPSC-039	HINESBURG	TRANSMISSION	2012-RTE-CT-082	S2/S3	1003+50 TO 1005+80
ANGP-EPSC-040	HINESBURG	TRANSMISSION	2012-RTE-CT-041	S2/S3	1021+20 TO 1023+00
ANGP-EPSC-051	MONKTON	TRANSMISSION	2012-RTE-ACT-083	S2/S3	1302+10 TO 1307+90
ANGP-EPSC-066	NEW HAVEN	TRANSMISSION	2012-RTE-CT-051	S2/S3	1649+50 TO 1652+00
ANGP-EPSC-066	NEW HAVEN	TRANSMISSION	2012-RTE-CT-061	S2/S3	1665+50
ANGP-EPSC-066	NEW HAVEN	TRANSMISSION	2012-RTE-AT-053	S1	1659+60
ANGP-EPSC-066	NEW HAVEN	TRANSMISSION	2012-RTE-LV-054	S2	1659+60
ANGP-EPSC-066	NEW HAVEN	TRANSMISSION	2012-RTE-AT-063	S1	1669+70 TO 1670+50
ANGP-EPSC-075, 079, 077	NEW HAVEN	TRANSMISSION	2012-RTE-CT-069	S2/S3	1918+00 TO 1966+50
ANGP-EPSC-V011	FERRISBURGH	DISTRIBUTION MAIN	2012-RTE-CT-068	S2/S3	118+80 TO 119+10

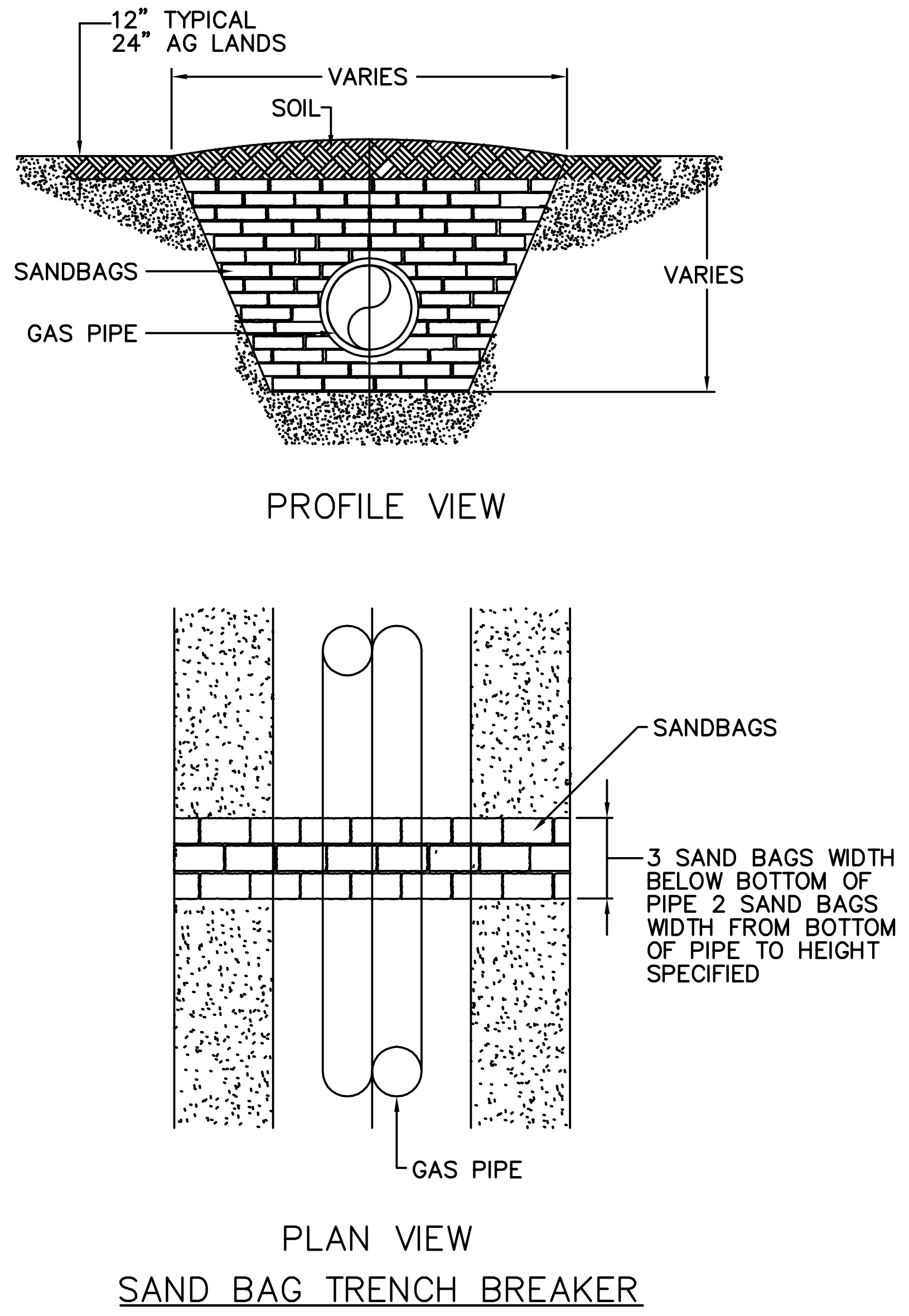
Notes:

1. INSTALL CONSTRUCTION MATS ON STATION LOCATIONS LISTED IN TABLE TO PROTECT RARE PLANT SPECIES.
2. LIMIT DURATION OF MATTING DURING GROWING SEASON TO EXTENT PRACTICABLE.
3. REMOVE MATTING IMMEDIATELY FOLLOWING THEIR USE. FOR EXAMPLE, WHERE MATTING IS USED FOR TEMPORARY STOCKPILING OF SOIL FROM TRENCHING OPERATIONS, REMOVE MATTING IMMEDIATELY FOLLOWING BACKFILL OPERATIONS.
4. AT A MINIMUM, MATTING IS NOT TO BE LEFT IN PLACE FOR MORE THAN 28 DAYS WHERE FEASIBLE.
5. REFER TO ADDITIONAL ENVIRONMENTAL NOTE 12 ON SHEET ANGP-T-G-011

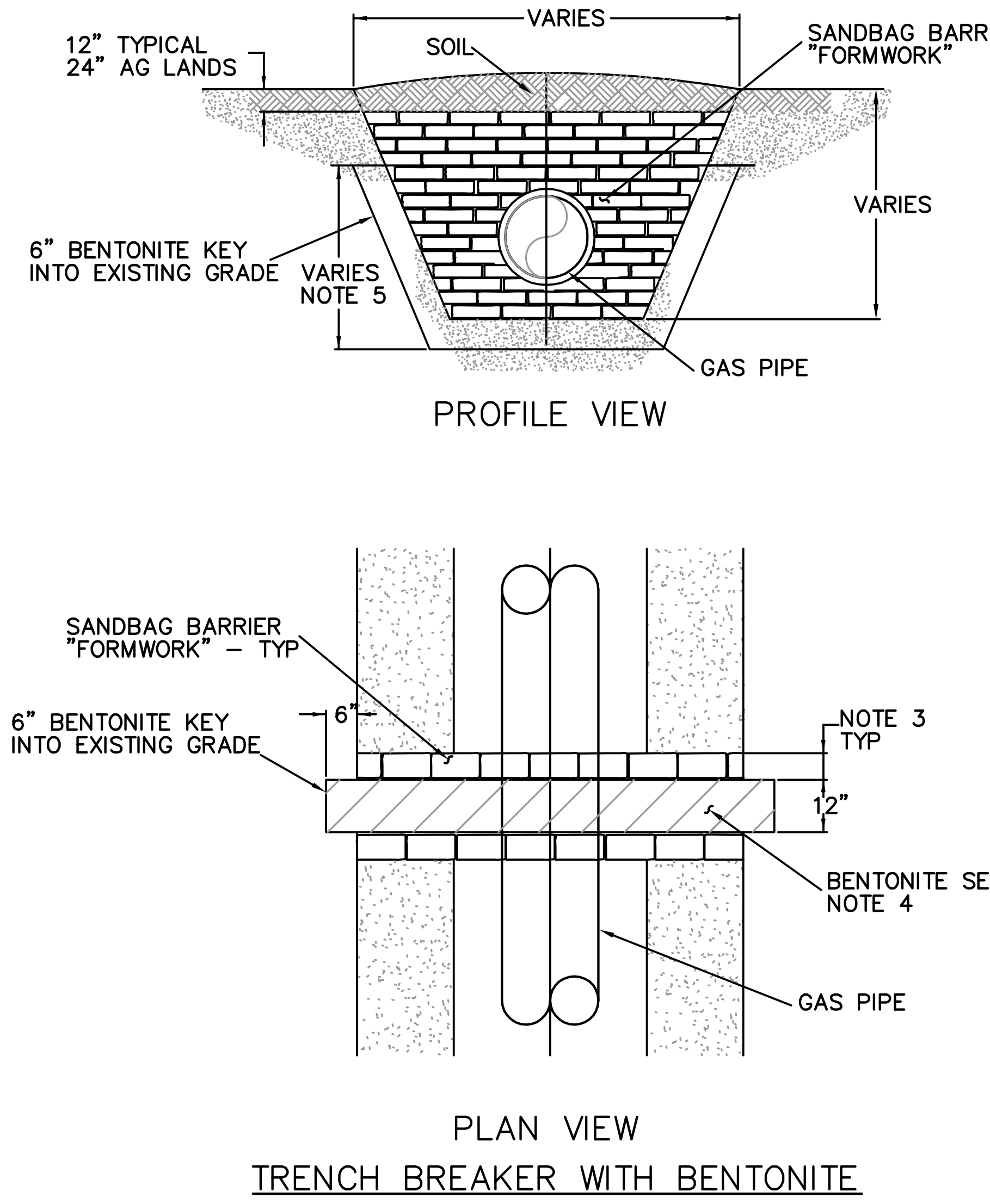
4 RTE Matting Table

09/13

N.T.S. Source: VHB



SAND BAG TRENCH BREAKER



TRENCH BREAKER WITH BENTONITE

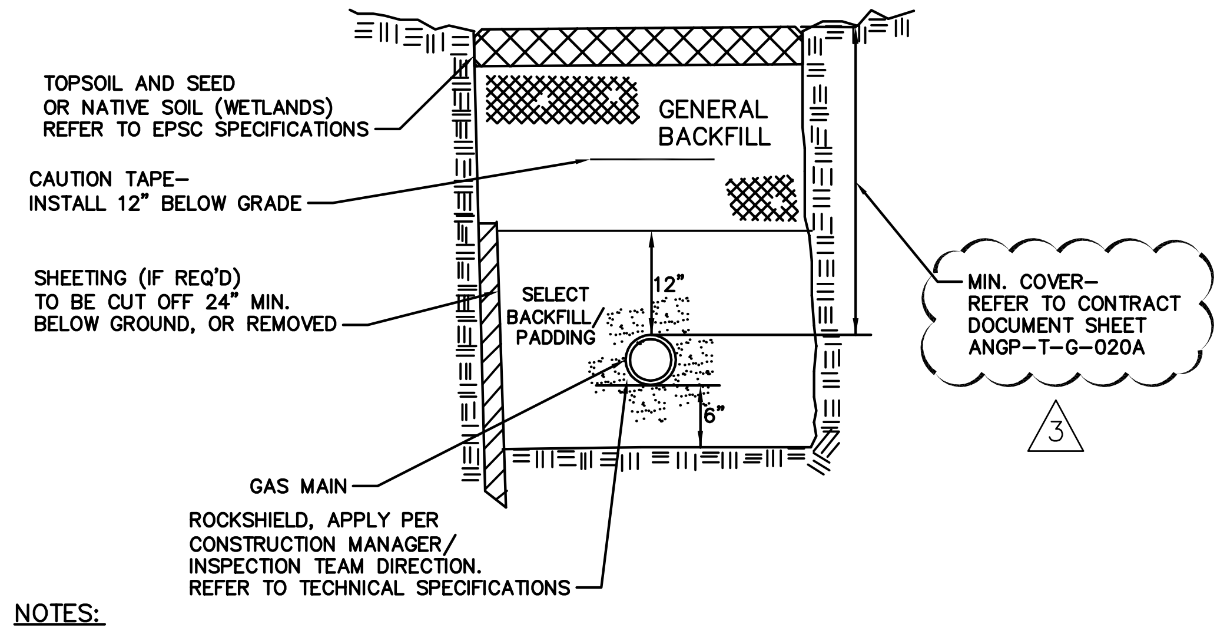
NOTES:

1. PERMANENT TRENCH BREAKER WITH BENTONITE SEAL IS INTENDED TO PROHIBIT WATER FLOW THROUGH THE BREAKER.
2. PERMANENT TRENCH BREAKER WITH BENTONITE SEAL TO BE INSTALLED AT EDGE OF WETLANDS AND STREAMS.
3. SAND BAG BARRIER WIDTH SHALL BE MINIMUM 1 BAG WIDE AND/OR AS FIELD DETERMINED TO PROVIDE STABILITY.
4. BENTONITE IS TO BE INSTALLED IN THE VOID SPACE BETWEEN THE SANDBAG BARRIER "FORMWORK" IN SUCH A MANNER TO COMPLETELY SURROUND THE PIPE AND FILL THE VOID FROM THE BOTTOM OF THE TRENCH TO A HEIGHT 6" ABOVE THE LEVEL OF IMPORTED PADDING MATERIAL WHICH IS INSTALLED ON THE EXTERIOR SIDE OF THE SANDBAG BARRIER IN THE WETLAND ZONE.
5. AFTER BENTONITE PLACEMENT, INSTALL SAND BAGS ON TOP OF THE PERMANENT TRENCH BREAKER AND BENTONITE SEAL TO THE REQUIRED HEIGHT PER DETAIL 2 AND BACKFILL EXTERIOR SIDES OF SAND BAG BARRIERS.

5 Permanent Trench Break or Sandbags

12/12

N.T.S. Source: CHA LD_



NOTES:

1. REFER TO TECHNICAL SPECIFICATIONS FOR BOTH GENERAL AND SELECT/PADDING BACKFILL REQUIREMENTS.

2. IN RESOURCE AREAS (E.G. WETLANDS AND PAS AREAS) GENERAL BACKFILL SHALL BE NATIVE MATERIAL TO MATCH PROFILE DEPTH OF ADJACENT NATIVE, UNDISTURBED SUBSOIL/SURFACE SOIL INTERFACE. EXCESS SUBSOIL TO BE PROPERLY DISPOSED OF AND STABILIZED.

3. THE OWNER SHALL PROVIDE TESTING SERVICES TO INSURE THAT THE IN-PLACE DENSITY OF THE BACKFILL MEETS REQUIREMENTS DETERMINED IN THE SPECIFICATIONS.

4. ALL TRENCH CONSTRUCTION SHALL CONFORM TO APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.

5. FOR PIPE SUPPORT METHODS AND OTHER PIPE-IN-TRENCH REQUIREMENTS, REFER TO TECHNICAL SPECIFICATIONS.

6 Typical Trench Detail-Cross Country

11/14

N.T.S. Source: CHA LD_

3

MICHAEL E. HOLLOWOOD
NO. 97764

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
		3	GJM	BCK	IFC 2016 EDITS (05/2016)
		2	BCK	TDB	TRENCH DETAIL UPDATE (1/6/16)
		1	BCK	TDB	DEPTH OF COVER UPDATE (6/11/15)

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
CONSTRUCTION DETAILS

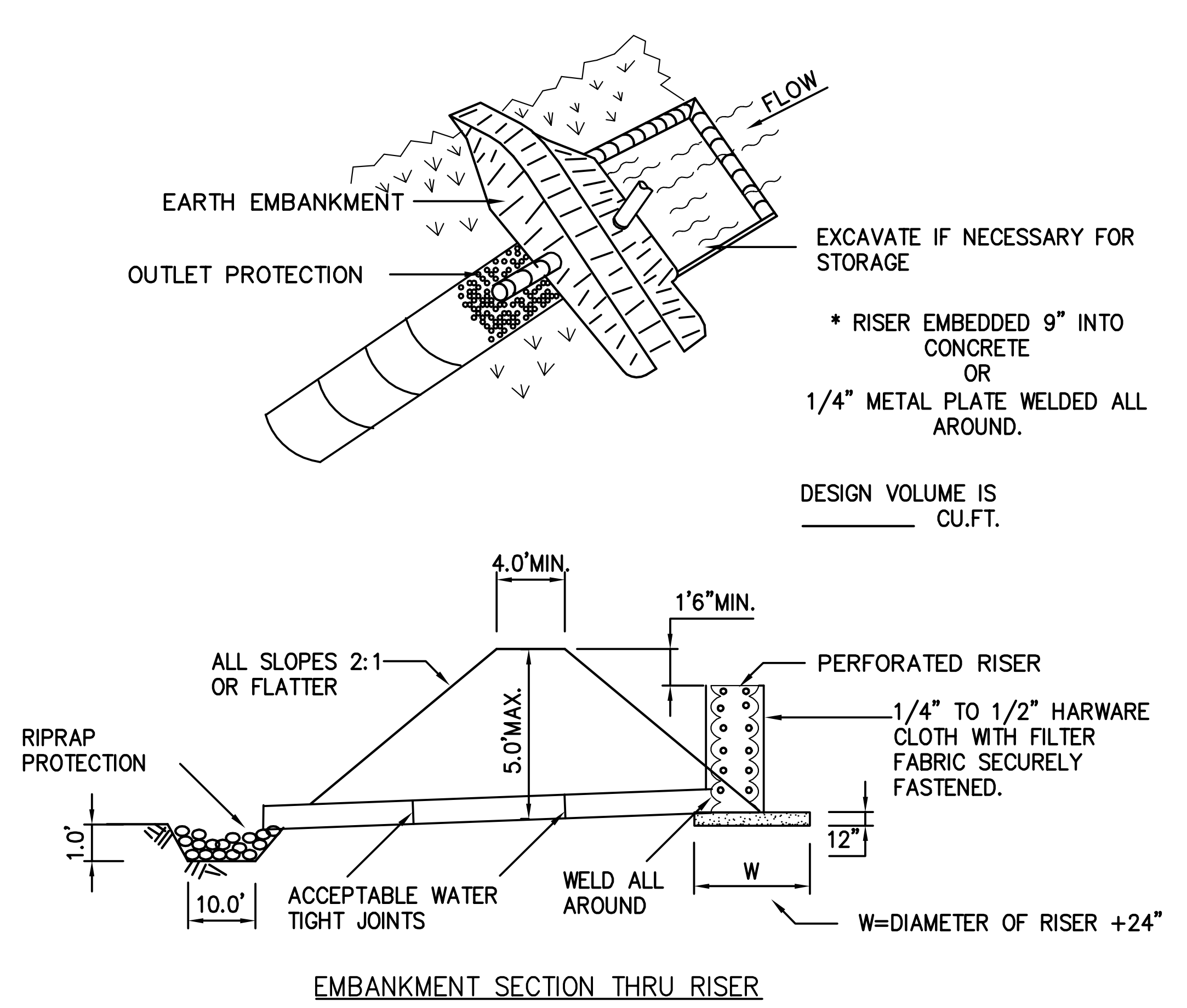
LOC. CHITTENDEN & ADDISON COUNTIES

Vermont Gas

Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: NOTED | DWG. ANGP-T-G-015 | REV. 3



EMBANKMENT SECTION THRU RISER

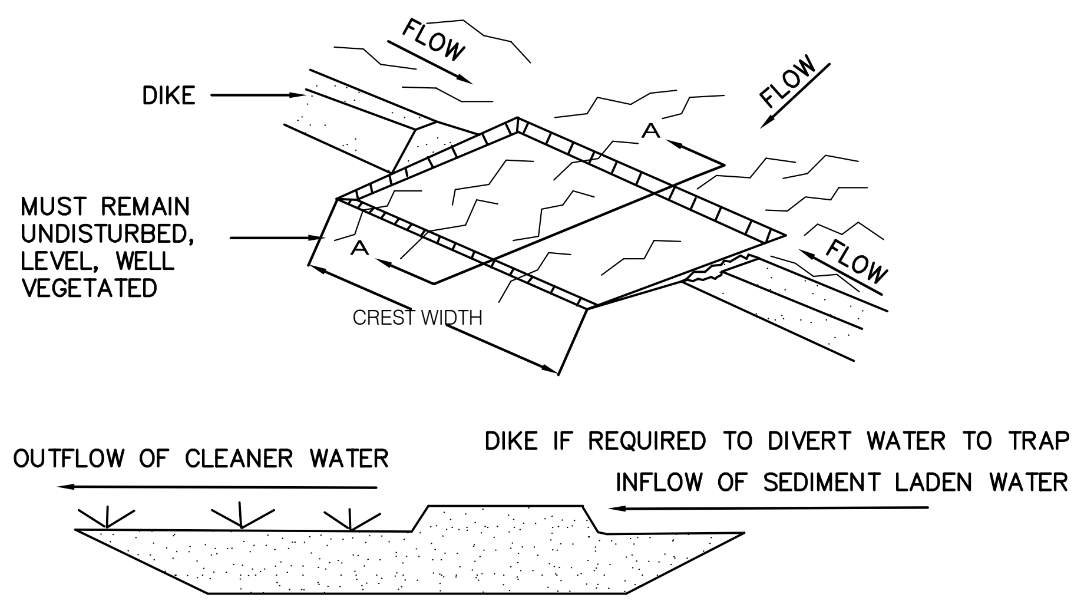
CONSTRUCTION SPECIFICATIONS

1. AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
3. VOLUME OF SEDIMENT STORAGE SHALL BE 3600 CUBIC FEET PER ACRE OF CONTRIBUTORY DRAINAGE.
4. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND STABILIZED.
5. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
6. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND SEDIMENT ARE CONTROLLED.
7. THE STRUCTURE SHALL BE REMOVED AND AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
8. ALL FILL SLOPES SHALL BE 2:1 OR FLATTER; CUT SLOPES 1:1 OR FLATTER.
9. ALL PIPE CONNECTIONS SHALL BE WATERTIGHT.
10. THE TOP 2/3 OF THE RISER SHALL BE PERFORATED WITH ONE (1) INCH DIAMETER HOLES OR SLITS SPACED SIX (6) INCHES VERTICALLY AND HORIZONTALLY AND PLACED IN THE CONCAVE PORTION OF PIPE. NO HOLES WILL BE ALLOWED WITHIN SIX (6) INCHES OF THE HORIZONTAL BARREL.
11. THE RISER SHALL BE WRAPPED WITH 1/4 TO 1/2 INCH HARDWARE CLOTH WIRE THEN WRAPPED WITH FILTER CLOTH (HAVING AN EQUIVALENT SIEVE SIZE OF 40-80). THE FILTER CLOTH SHALL EXTEND SIX (6) INCHES ABOVE THE HIGHEST HOLE AND SIX (6) INCHES BELOW THE LOWEST HOLE. WHERE ENDS OF THE FILTER CLOTH COME TOGETHER, THEY SHALL BE OVER-LAPPED, FOLDED AND STAPLED TO PREVENT BYPASS.
12. STRAPS OR CONNECTING BANDS SHALL BE USED TO HOLD THE FILTER CLOTH AND WIRE FABRIC IN PLACE. THEY SHALL BE PLACED AT THE TOP AND BOTTOM OF THE CLOTH.
13. FILL MATERIAL AROUND THE PIPE SPILLWAY SHALL BE HAND COMPACTED IN FOUR (4) INCH LAYERS. A MINIMUM OF TWO (2) FEET OF HAND COMPACTED BACKFILL SHALL BE PLACED OVER THE PIPE SPILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT.
14. THE RISER SHALL BE ANCHORED WITH EITHER A CONCRETE BASE OR STEEL PLATE BASE TO PREVENT FLOTATION. FOR CONCRETE BASED THE DEPTH SHALL BE TWELVE (12) INCHES WITH THE RISER EMBEDDED NINE (9) INCHES. A 1/4 INCH MINIMUM THICKNESS STEEL PLATE SHALL BE ATTACHED TO THE RISER BY A CONTINUOUS WELD AROUND THE BOTTOM TO FORM A WATERTIGHT CONNECTION AND THEN PLACE TWO (2) FEET OF STONE, GRAVEL, OR TAMPED EARTH ON THE PLATE.

1 Pipe Outlet Sediment Trap

12/12

N.T.S. Source: VHB / VT S+S EPSC LD_



CREST WIDTH (FT)=4xDRAINAGE AREA (ACRES)

SECTION A – A
EXCAVATED GRASS OUTLET SEDIMENT TRAP

CONSTRUCTION SPECIFICATIONS

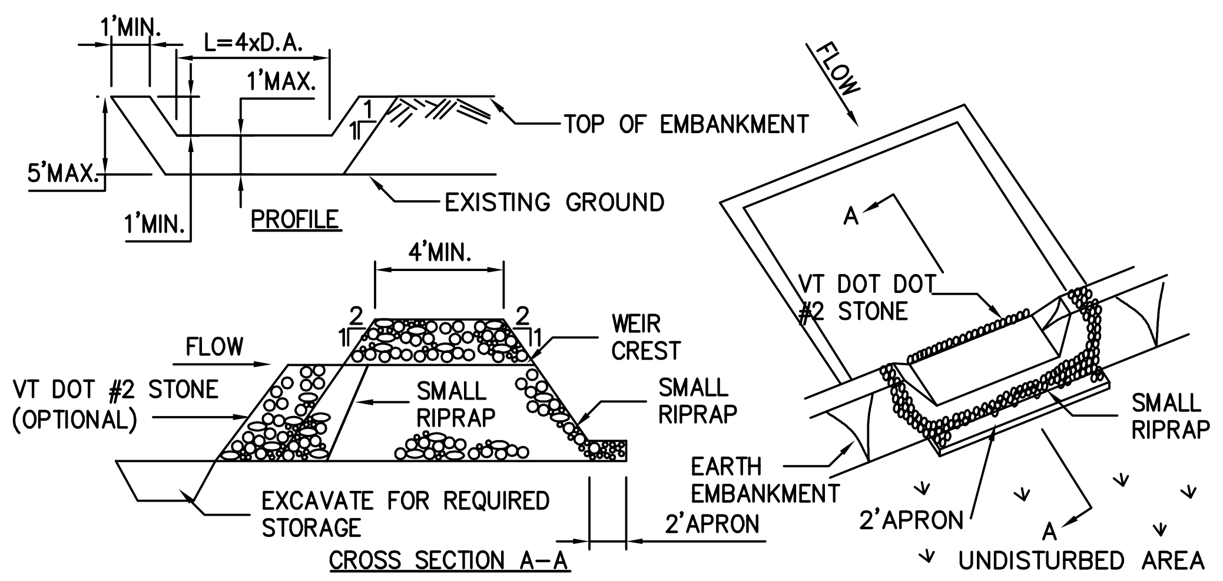
1. VOLUME OF SEDIMENT STORAGE SHALL BE 1800 CUBIC FEET PER ACRE OF CONTRIBUTORY DRAINAGE AREA.
2. MINIMUM CREST WIDTH SHALL BE 4 x DRAINAGE AREA
3. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
4. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
5. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION SHALL BE MINIMIZED.
6. THE SEDIMENT TRAP SHALL BE REMOVED AND AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
7. ALL CUT SLOPES SHALL BE 1:1 OR FLATTER.

MAXIMUM DRAINAGE AREA: 5 ACRES

2 Grass Outlet Sediment Trap

12/12

N.T.S. Source: VHB / VT S+S EPSC LD_



CONSTRUCTION SPECIFICATIONS

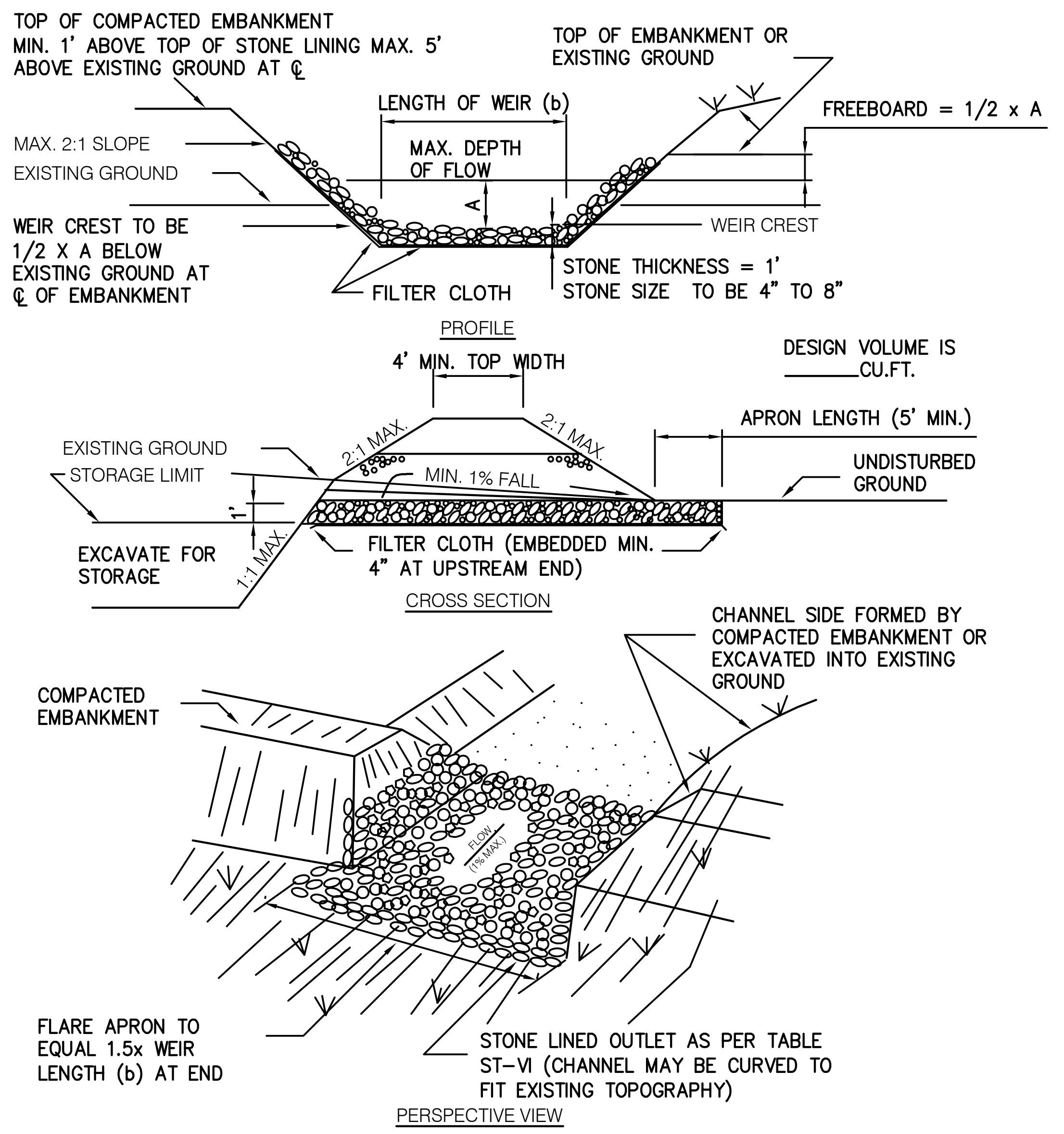
1. AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS AND OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
3. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER.
4. THE STONE USED IN THE OUTLET SHALL BE SMALL RIPRAP 4"-8" ALONG WITH A 1' THICKNESS OF 2" AGGREGATE PLACED ON THE UP-GRADE SIDE ON THE SMALL RIPRAP OR EMBEDDED FILTER CLOTH IN THE RIPRAP.
5. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMEN- SIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP.
6. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND AS REQUIRED BY THE PERMIT.
7. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION IS MINIMIZED.
8. THE STRUCTURE SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

MAXIMUM DRAINAGE AREA 5 ACRES

3 Stone Outlet Sediment Trap

12/12

N.T.S. Source: VHB / VT S+S EPSC LD_



MAXIMUM DRAINAGE AREA = 15 ACRES

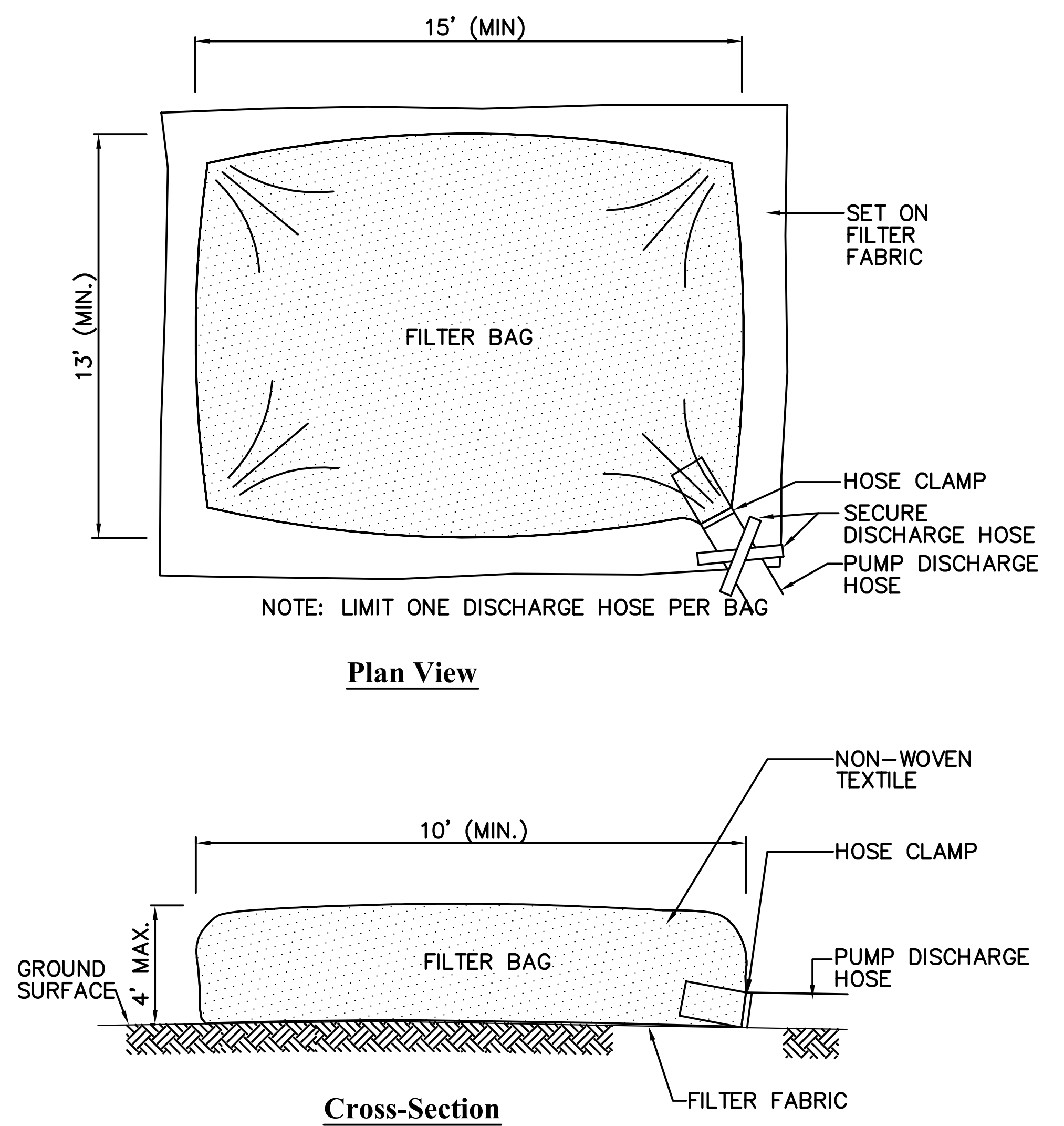
CONSTRUCTION SPECIFICATIONS

1. THE AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED. MAXIMUM HEIGHT OF EMBANKMENT SHALL BE FIVE (5) FEET, MEASURED AT CENTERLINE OF EMBANKMENT.
3. ALL FILL SLOPES SHALL BE 2:1 OR FLATTER, CUT SLOPES 1:1 OR FLATTER.
4. ELEVATION OF THE TOP OF ANY DIKE DIRECTING WATER INTO TRAP MUST EQUAL OR EXCEED THE HEIGHT OF EMBANKMENT.
5. STORAGE AREA PROVIDED SHALL BE FIGURED BY COMPUTING THE VOLUME AVAILABLE BEHIND THE OUTLET CHANNEL UP TO AN ELEVATION OF ONE (1) FOOT BELOW THE LEVEL WEIR CREST.
6. FILTER CLOTH SHALL BE PLACED OVER THE BOTTOM AND SIDES OF THE OUTLET CHANNEL PRIOR TO PLACEMENT OF STONE. SECTIONS OF FABRIC MUST OVERLAP AT LEAST ONE (1) FOOT WITH SECTION NEAREST THE ENTRANCE PLACED ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST SIX (6) INCHES INTO EXISTING GROUND AT ENTRANCE OUTLET CHANNEL.
7. STONE USED IN THE OUTLET CHANNEL SHALL BE FOUR (4) TO EIGHT (8) INCH RIPRAP. TO PROVIDE A FILTERING EFFECT, A LAYER OF FILTER CLOTH SHALL BE EMBEDDED ONE (1) FOOT WITH SECTION NEAREST ENTRANCE PLACED ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST SIX (6) INCHES INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL.
8. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
9. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRED AS NEEDED.
10. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND SEDIMENT ARE CONTROLLED.
11. THE STRUCTURE SHALL BE REMOVED AND THE AREA STABILIZED WHEN DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
12. DRAINAGE AREA FOR THIS PRACTICE IS LIMITED TO 15 ACRES OR LESS.

4 Riprap Outlet Sediment Trap

12/12

N.T.S. Source: VHB / VT S+S EPSC LD_



Cross-Section

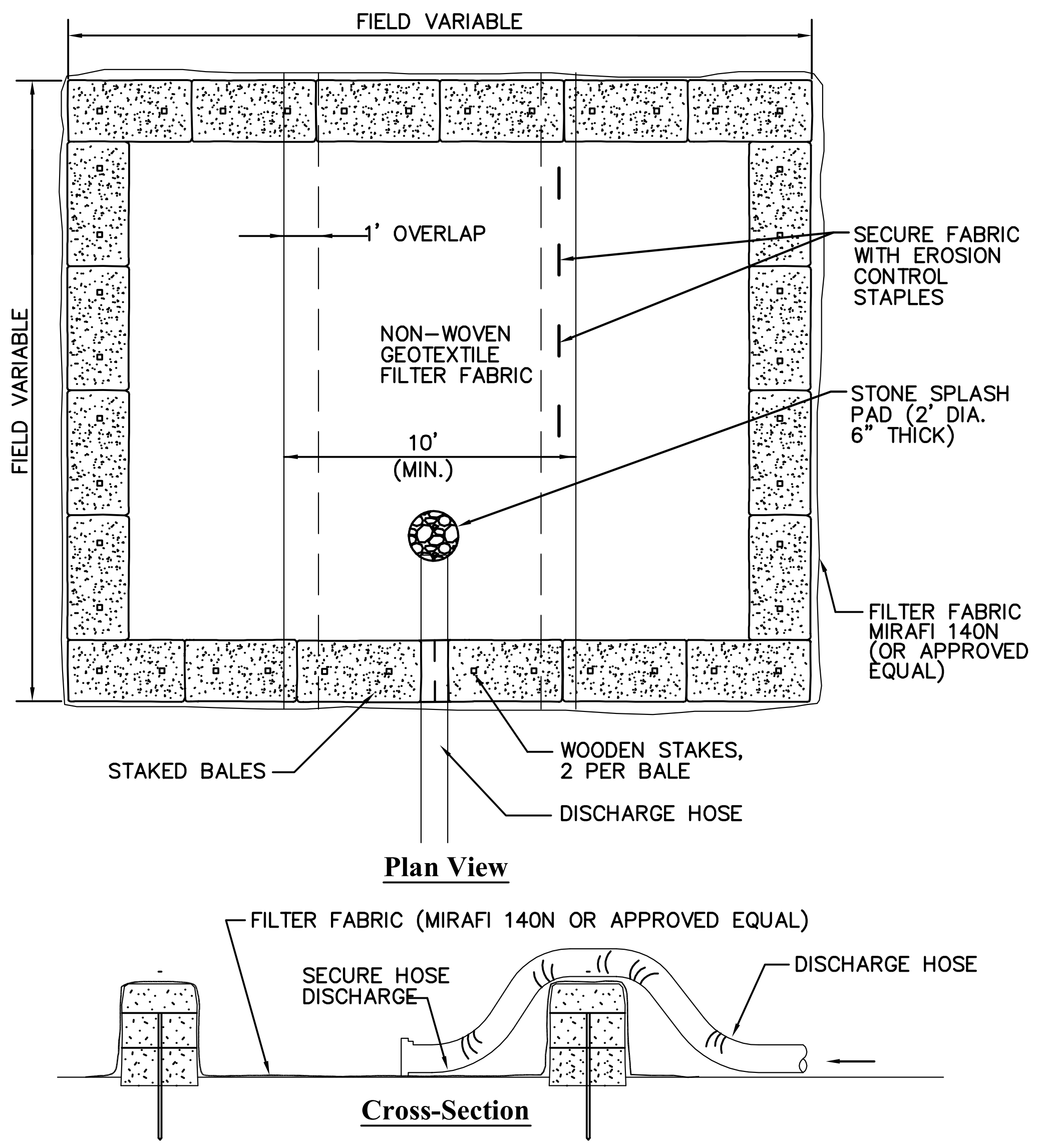
Notes:

1. BAG TO BE USED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
2. MUST BE PLACED MIN. OF 50' FROM WETLAND OR STREAM ON STONE PAD. INSTALL DOWNGRADIENT OF BMPS INCLUDING SILT FENCE OR COMPOST LOGS AS NECESSARY.
3. INSPECT AND MAINTAIN BAG AS NECESSARY. EXPOSE OF ACCUMULATED SEDIMENT IN AN UPLAND AREA > 50' FROM WETLAND OR STREAM. STABILIZE, SEED, AND MULCH IMMEDIATELY.

5 Dewatering Filter Bag

12/12

N.T.S. Source: VHB LD_



Cross-Section

Notes:

1. NUMBERS OF BALES MAY VARY DEPENDING ON SITE CONDITIONS.
2. BASIN TO BE SIZED TO PREVENT DISCHARGE WATER FROM OVERTOPPING BASIN.
3. MUST BE PLACED MIN OF 50' FROM WETLAND OR STREAM, PREFERABLY IN A VEGETATED AREA.

6 Dewatering Straw Bale Basin

12/12

N.T.S. Source: VHB LD_

NO. 97764

VHB Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

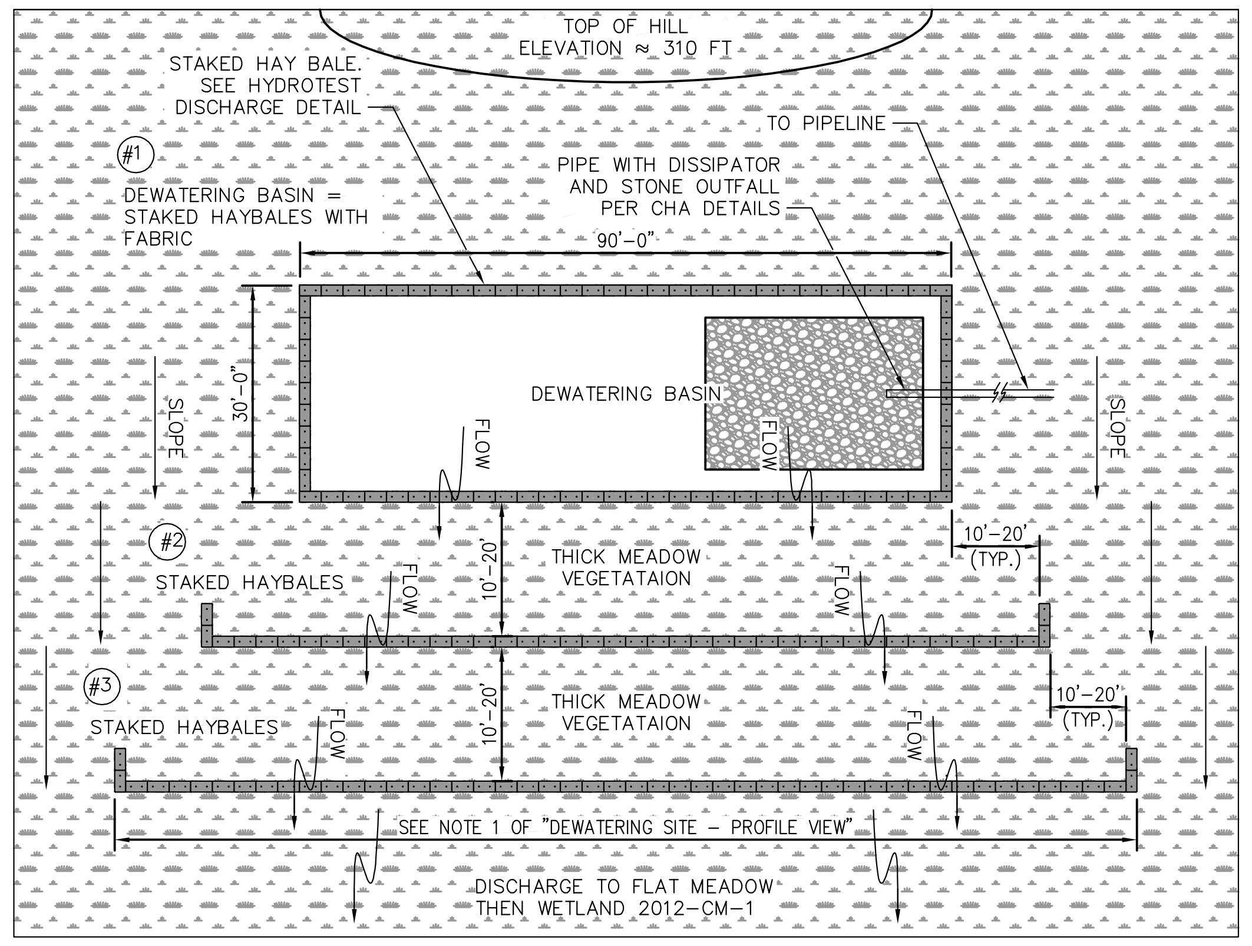
VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
CONSTRUCTION DETAILS

LOC. CHITTENDEN & ADDISON COUNTIES

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

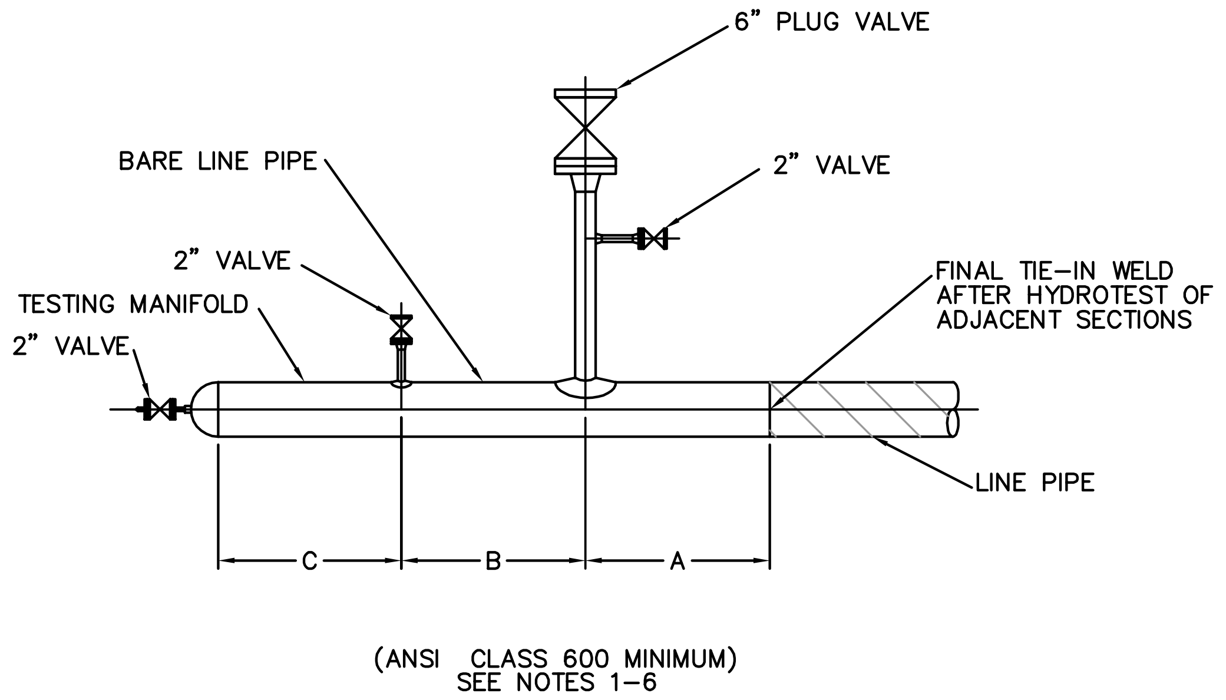
YEAR: 2016 | W.O. | SCALE: NOTED | DWG. ANGP-T-G-016 | REV. 0



1 Dewatering Site - Plan View

09/13

N.T.S. Source: VHB



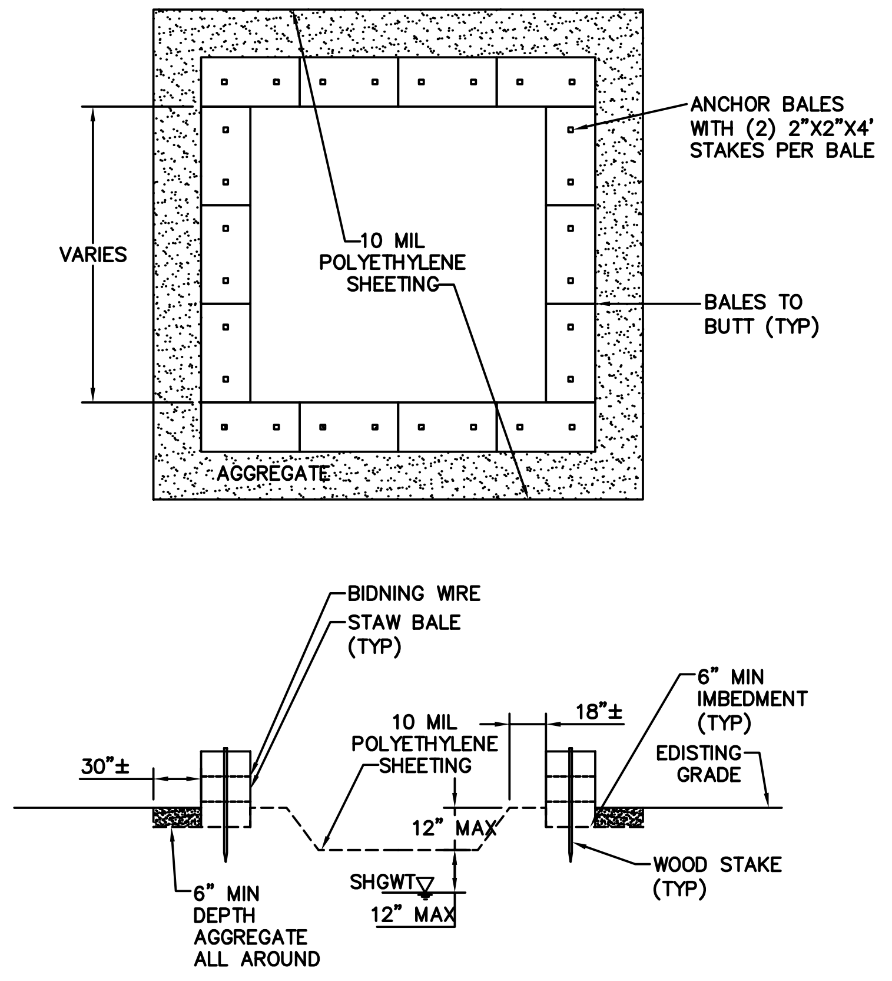
NOTES:

1. DIMENSIONS A, B & C ARE DEPENDENT ON PIPE DIAMETER & PIG LENGTH AND ARE TO BE DETERMINED BY CONTRACTOR.
2. FOR MANIFOLD TEST LOCATIONS & DISCHARGE LOCATIONS REFER TO EM&CP DRAWINGS.
3. TEST WATER SHALL BE TRANSFERRED BY PUMPING FROM ONE TEST SECTION TO THE NEXT ADJACENT TEST SECTION THROUGH THE 6" PIPE BRANCH AND MAKE-UP PIPING BETWEEN TEST SECTIONS. USE OF "HARD PIPING" & UNIONS IS RECOMMENDED.
4. FINAL TIE-IN WELD(S) BETWEEN TEST SECTIONS TO BE 100% RADIOGRAPHED.
5. TAP AND BRANCH SIZES AND VALVES FOR MANIFOLD ARE CONCEPTUAL AND SHALL BE DESIGNED BY CONTRACTOR TO BE COMPATIBLE WITH TEST EQUIPMENT AND PIPING.

2 Typical Hydrastatic Test Manifold

12/12

N.T.S. Source: CHA LD_



Notes:

1. CONTAINMENT MUST BE STRUCTURALLY SOUND AND LEAK FREE AND CONTAIN ALL LIQUID WASTES.
2. CONTAINMENT DEVICES MUST BE SUFFICIENT QUANTITY OR VOLUME TO COMPLETELY CONTAIN THE LIQUID WASTES GENERATED.
3. WASHOUT MUST BE CLEANED OR NEW FACILITIES CONSTRUCTED AND READY TO USE ONCE WASHOUT IS 75% FULL.
4. WASHOUT AREA(S) SHALL BE INSTALLED IN A LOCATION EASILY ACCESSIBLE BY CONCRETE TRUCKS.
5. ONE OR MORE AREAS MAY BE INSTALLED ON THE CONSTRUCTION SITE AND MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
6. AT LEAST WEEKLY REMOVE ACCUMULATION OF SAND AND AGGREGATE AND DISPOSE OF PROPERLY.
7. PLACE 50' FROM RIVER OR STREAM.

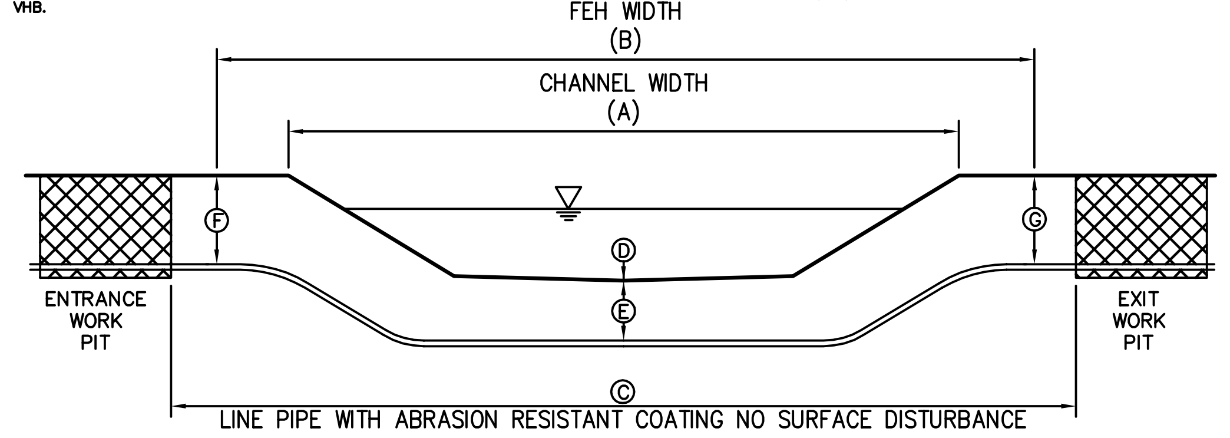
3 Concrete Washout Area

12/12

N.T.S. Source: VHB LD_

MILEPOST	STREAM NAME	CHANNEL WIDTH (A)	FEH WIDTH (B)	HDD LENGTH (C)	CHANNEL ELEV. (D)	ELEV. BELOW CHANNEL (E)	ENTRY ELEV. (F)	EXIT ELEV. (G)
0.99	INDIAN BROOK	4	100	2,339	208 [1]	< 198	< 208	< 208
1.52	INDIAN BROOK	15	125	1,530	188 [2]	< 178	< 188	< 188
6.75	WINOOSKI RIVER (SECTION 10 WATERS)	320	N/A (1,195)	900	263 [3]	< 238	< 275	< 275
19.47	LAPLATTE RIVER	30	360	640	317 [2]	< 307	< 317	< 317
22.86	LEWIS CREEK	80	435	2,500	310 [1]	< 300	< 310	< 310
32.30	LITTLE OTTER CREEK	35	240	1,680	267 [1]	< 260	< 267	< 267
35.85	UNNAMED TRIB. TO LITTLE OTTER CREEK	4	640	1,010	303 [2]	< 293	< 303	< 303
39.30	NEW HAVEN RIVER	120	785	530	245 [2]	< 235	< 245	< 245
DISTRIBUTION MAIN 30+00	UNNAMED TRIB TO LITTLE OTTER CREEK	8	N/A (108)	300	261 [1]	< 254	< 261	< 261

1. CHANNEL ELEVATION BASED ON CONTOURS SHOWN ON EPSC PLAN PROVIDED BY CHA, INC. DATED 02/28/2013 AND NOT ASSESSED IN THE FIELD BY VHB.
2. CHANNEL ELEVATION BASED ON CONTOURS SHOWN ON EPSC PLAN PROVIDED BY CHA, INC. DATED 02/28/2013 AND MODIFIED BASED ON FIELD ASSESSMENT BY VHB.
3. CHANNEL ELEVATION BASED ON BATHYMETRIC SURVEY PROVIDED BY COLER & COLANTONIO DATED 12/12/2012 AND NOT ASSESSED IN THE FIELD BY VHB.

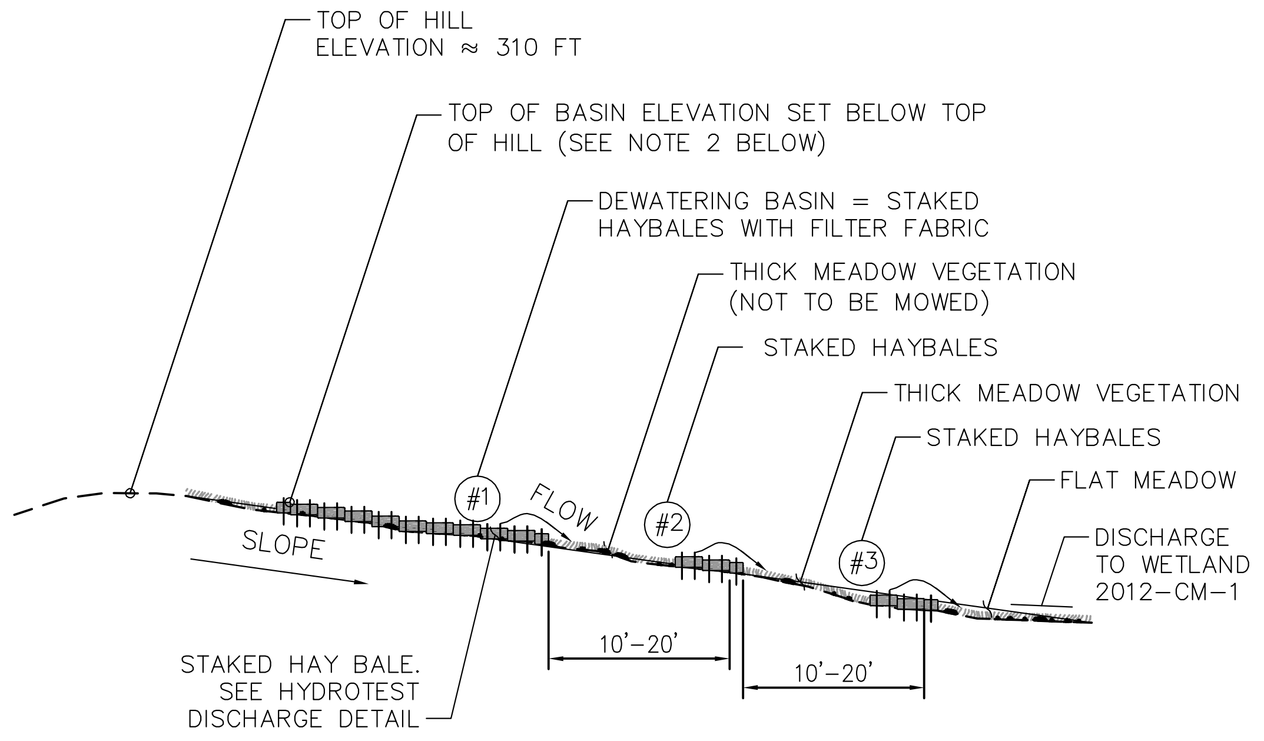


Notes:

1. THIS CONFIGURATION IS FOR HORIZONTAL DIRECTIONAL DRILL OF STREAM CROSSINGS AS SHOWN ON PROJECT PLANS. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
2. TOP OF PIPELINE MUST BE AT LEAST AS DEEP AS THE CHANNEL BOTTOM (DIMENSION D) THROUGHOUT THE FLUVIAL EROSION HAZARD (FEH) CORRIDOR.
3. MINIMUM SEPARATION BETWEEN THE TOP OF PIPELINE AND THE CHANNEL BOTTOM (DIMENSION E) MUST BE AT LEAST 7 FEET.
4. ELEVATIONS PROVIDED ARE BASED ON APPROXIMATE NAVD 88 DATUM AND MUST BE FIELD VERIFIED PRIOR TO INSTALLATION OF PIPELINE.
5. FEH CORRIDOR IS LISTED AS NOT APPLICABLE (N/A) WHERE THE STREAM CROSSES OR IS ADJACENT TO AN EXISTING ROADWAY OR OTHER INFRASTRUCTURE THAT RESULTS IN RIVER MANAGEMENT CONSTRAINTS AT THAT LOCATION. FEH CORRIDOR WIDTHS AT THESE LOCATIONS ARE SHOWN FOR INFORMATION PURPOSES ONLY.

4 Horizontal Directional Drill (HDD) Stream Crossing - Typical Section

N.T.S. SOURCE 4/13



Notes:

1. THE DEWATERING SITE SHALL CONSIST OF THREE ROWS OF STAKED HAYBALES. THE TOP ROW SHALL BE ENCLOSED TO ACT AS A BASIN WITH FILTER FABRIC AND STONE OUTFALL AT THE DISCHARGE OUTLET. EACH DOWNSLOPE ROW OF HAYBALES SHALL BE CONSECUTIVELY LONGER THAN THE ROW UPSLOPE OF IT AS PER THE PLAN VIEW DETAIL. THE BOTTOM ROW IS TO EXTEND ACROSS THE ENTIRE WIDTH OF THE DENSELY VEGETATED MEADOW
2. THE HIGHEST ELEVATION OF THE TOP ROW OF HAY BALES SHALL BE LOWER THAN THE ELEVATION AT THE TOP OF THE HILL TO ENSURE DISCHARGE DOES NOT FLOW OVER THE HILL.
3. DURING TESTING, THE CONTRACTOR SHALL HAVE ADDITIONAL STONE, HAYBALES, AND STAKES ON SITE FOR USE IF ADDITIONAL EPSC MEASURES ARE NEEDED.
4. SEE HYDROTEST DISCHARGE DETAIL FOR DEWATERING BASIN INSTALLATION SPECIFICATIONS.
5. SEE HAY BALE BARRIER DETAIL FOR STAKED HAYBALE INSTALLATION SPECIFICATIONS.
6. MEADOW IS NOT TO BE MOWED PRIOR TO USE FOR FILTERING FLOW.

5 Dewatering Site - Profile View

09/13

N.T.S. Source: VHB

PRODUCT DESCRIPTION	MATERIAL COMPOSITION	LONGEVITY (MONTHS)	SLOPE APPLICATIONS*		CHANNEL APPLICATIONS*	MINIMUM TENSILE STRENGTH 1 kN/m(lbs/ft)
			MAXIMUM GRADIENT (H: V)	C FACTOR 2,5	MAXIMUM SHEAR STRESS 3,4,6 Pa (lbs/ft²)	
MULCH CONTROL NETS	MESH OR WOVEN BIODEGRADABLE NATURAL FIBER NETTING.	3	5:1	≤ 0.10	12 (0.25)	0.073 (5)
		12	5:1	≤ 0.10	12 (0.25)	0.073 (5)
		24	5:1	≤ 0.10	12 (0.25)	0.36 (25)
NETLESS ROLLED EROSION CONTROL BLANKETS	NATURAL FIBERS MECHANICALLY INTERLOCKED TOGETHER TO FORM A RECP.	3	4:1	≤ 0.10	24 (0.5)	0.073 (5)
		12	4:1	≤ 0.10	24 (0.5)	0.073 (5)
SINGLE-NET EROSION CONTROL BLANKETS	PROCESSED BIODEGRADABLE NATURAL FIBERS MECHANICALLY BOUND TOGETHER BY A SINGLE NATURAL FIBER NETTING OF PROCESSED NATURAL YARNS OR TWINES WOVEN INTO A CONTINUOUS MATRIX.	3	3:1	≤ 0.15	72 (1.5)	0.73 (50)
		12	3:1	≤ 0.15	72 (1.5)	0.73 (50)
DOUBLE-NET EROSION CONTROL BLANKETS	PROCESSED BIODEGRADABLE NATURAL FIBERS MECHANICALLY BOUND TOGETHER BETWEEN TWO NATURAL FIBER NETTING OF PROCESSED NATURAL YARNS OR TWINES WOVEN INTO A CONTINUOUS MATRIX.	3	2:1	≤ 0.20	84 (1.75)	1.09 (75)
		12	2:1	≤ 0.20	84 (1.75)	1.09 (75)
		24	1.5:1	≤ 0.25	96 (2.00)	1.45 (100)
		36	1:1	≤ 0.25	108 (2.25)	1.82 (125)

* "C" FACTOR AND SHEAR STRESS FOR MULCH CONTROL NETTINGS MUST BE OBTAINED WITH NETTING USED IN CONJUNCTION WITH PRE-APPLIED MATERIAL.

1 MINIMUM AVERAGE ROLL VALUES, MACHINE DIRECTION USING EROSION CONTROL TECHNOLOGY COUNCIL (ECTC) MOD. ASTM D 5035.

2 "C" FACTOR CALCULATED AS RATIO OF SOIL LOSS FROM RECP PROTECTED SLOPE (TESTED AT SPECIFIED OR GREATER GRADIENT, H:V) TO RATIO OF SOIL LOSS FROM UNPROTECTED (CONTROL) PLOT IN LARGE-SCALE TESTING. THESE PERFORMANCE TEST VALUES SHOULD BE SUPPORTED BY PERIODIC BENCH SCALE TESTING UNDER SIMILAR TEST CONDITIONS AND FAILURE CRITERIA USING ECTC TEST METHOD #2.

3 REQUIRED MINIMUM SHEAR STRESS RECP (UNVEGETATED) CAN SUSTAIN WITHOUT PHYSICAL DAMAGE OR EXCESS EROSION (> 12.7mm (0.5 IN) SOIL LOSS) SURING A 30-MINUTE FLOW EVENT IN LARGE-SCALE TESTING. THESE PERFORMANCE TEST VALUES SHOULD BE SUPPORTED BY PERIODIC BENCH SCALE TESTING UNDER SIMILAR TEST CONDITIONS AND FAILURE CRITERIA USING ECTC TEST METHOD #3.

4 THE PERMISSIBLE SHEAR STRESS LEVELS ESTABLISHED FOR EACH PERFORMANCE CATEGORY ARE BASED ON HISTORICAL EXPERIENCE WITH PRODUCTS CHARACTERIZED BY MANNINGS ROUGHNESS COEFFICIENTS IN THE RANGE OF 0.01 - 0.05.

5 ACCEPTABLE LARGE SCALE TEST METHODS MAY INCULDE ASTM D 6459, ECTC TEST METHOD #2 OR OTHERINDEPENDENT TESTING DEEMED ACCEPTABLE BY THE DEC.

6 RECOMMENDED ACCEPTABLE LARGE-SCALE TESTING PROTOCOL MAY INCLUDE ASTM D 6440, ECTC TEST METHOD #3 OR OTHER INDEPENDENT TESTING DEEMED ACCEPTABLE BY THE DEC.

6 Specifications for Temporary RECP

N.T.S. Source: VT S+S EPSC

TYPE	PRODUCT DESCRIPTION	MATERIAL COMPOSITION	SLOPE APPLICATIONS	CHANNEL APPLICATIONS	MINIMUM TENSILE STRENGTH2,3 kN/m (lbs/ft)
			MAXIMUM GRADIENT	MAXIMUM SHEAR STRESS4,5 Pa(lbs/ft²)	
A	TURF REINFORCED MAT	NON-DEGRADABLE SYNTHETIC FIBERS, FILAMENTS, NETS, WIRE MESH AND/OR OTHER ELEMENTS, PROCESSED INTO A PERMANENT THREE-DIMENSIONAL MATRIX OF SUFFICIENT THICKNESS. TRM'S, WHICH MAY BE SUPPLEMENTED WITH DEGRADABLE COMPONENTS ARE DESIGNED TO IMPART IMMEDIATE EROSION PROTECTION, ENHANCED VEGETATION ESTABLISHMENT AND PROVIDE LONG-TERM FUNCTIONALITY BY PERMANENTLY REINFORCING VEGETATION DURING AND AFTER MATURATION. NOTE: TRM'S ARE TYPICALLY USED IN HYDRAULIC APPLICATIONS, SUCH AS HIGH FLOW DITCHES AND CHANNELS, STEEP SLOPES, STREAM BANKS, AND SHORELINES, WHERE EROSIVE FORCES MAY EXCEED THE LIMITS OF NATURAL, UNREINFORCED VEGETATION OR IN AREAS WHERE LIMITED VEGETATION ESTABLISHMENT IS ANTICIPATED.	0.5:1	288 (6.0)	1.82 (125)
B	TURF REINFORCED MAT		0.5:1	384 (8.0)	2.19 (150)
C	TURF REINFORCED MAT		0.5:1	480 (10.0)	2.55 (175)

PERMANENT1 - ALL CATEGORIES OF TURF REINFORCEMENT MAT (TRM) MUST HAVE A MINIMUM THICKNESS OF 6.35mm (0.25 INCHES) PER ASTM D 6525 AND U.V. STABILITY OF 80% PER ASTM D 4355 (500 HOURS EXPOSURE)

1. FOR TRMS CONTAINING DEGRADABLE COMPONENTS ALL PROPERTY VALUES MUST BE OBTAINED ON THE NON-DEGRADABLE PORTION OF THE MATTING ALONE.
2. MINIMUM AVERAGE ROLL VALUES, MACHINE DIRECTION ONLY FOR TENSILE STRENGTH DETERMINATION USING ASTM D 6818 (SUPERSEDES MOD. ASTM D 5035 FOR RECP'S).
3. FIELD CONDITIONS WITH HIGH LOADING AND/OR HIGH SURVIVABILITY REQUIREMENTS MAY WARRANT THE USE OF A TRM WITH A TENSILE STRENGTH OF 44 k/N/m(3,000 lb/ft) OR GREATER.
4. REQUIRED MINIMUM SHEAR STRESS TRM (FULLY VEGETATED) CAN SUSTAIN WITHOUT PHYSICAL DAMAGE OR EXCESS EROSION (>12.7mm (0.5 IN.) SOIL LOSS) DURING A 30-MINUTE FLOW EVENT IN LARGE SCALE TESTING. THESE PERFORMANCE TEST VALUES SHOULD BE SUPPORTED BY PERIODIC BENCH SCALE TESTING UNDER SIMILAR TEST CONDIDTIONS AND FAILURE CRITERIA USING ECTC TEST METHOD #3.
5. ACCEPTABLE LARGE-SCALE TESTING PROTOCOL MAY INCLUDE ASTM D 6460 ECTC TEST METHOD #3 OR OHER INDEPENDENT TESTING DEEMED ACCEPTABLE BY THE DEC.

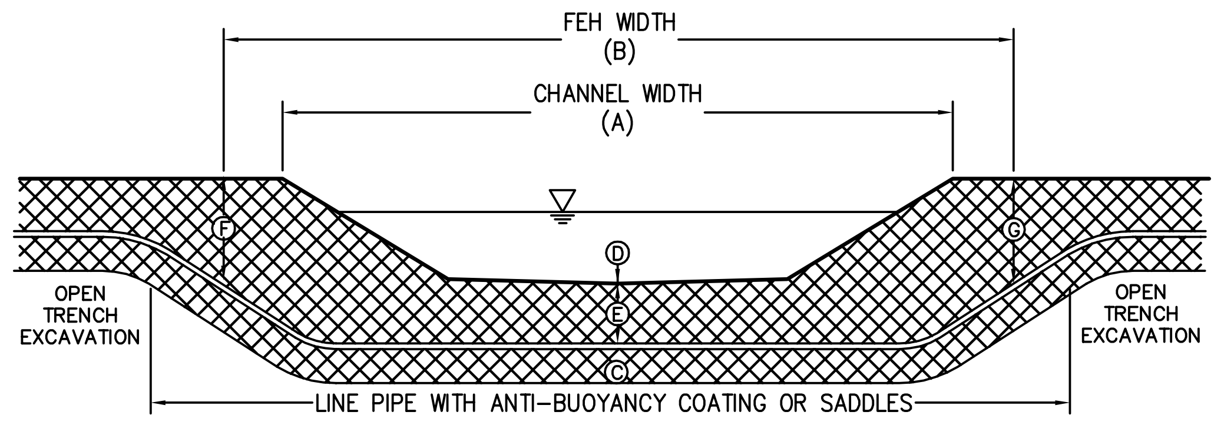
7 Specifications for Permanent RECP

N.T.S. Source: VT S+S EPSC

2

MILEPOST	STREAM NAME	CHANNEL WIDTH (A)	FEH WIDTH (B)	CHANNEL ELEV. (C)	ELEV. BELOW CHANNEL (D)	ENTRY ELEV. (E)	EXIT ELEV. (F)
3.62	INDIAN BROOK	7	N/A (185)	430 [2]	< 420	< 430	< 430
6.60	ALDER BROOK	35	N/A (150)	281 [1]	< 274	< 281	< 281
10.32	ALLEN BROOK	35	360	376 [2]	< 366	< 376	< 376
13.79	SUCKER BROOK	15	120	371 [2]	< 364	< 371	< 371
18.93	UNNAMED TRIBUTARY TO LAPLATTE RIVER	4	N/A (310)	328 [1]	< 321	< 328	< 328
20.45	UNNAMED TRIBUTARY TO LAPLATTE RIVER	4	185	364 [2]	< 357	< 364	< 364
24.40	UNNAMED TRIBUTARY TO LEWIS CREEK	6	106	437 [2]	< 430	< 437	< 437
29.11	UNNAMED TRIBUTARY TO LITTLE OTTER CREEK	8	N/A (400)	364 [2]	< 357	< 364	< 364
30.94	UNNAMED TRIBUTARY TO LITTLE OTTER CREEK	4	200	267 [2]	< 260	< 267	< 267

1. CHANNEL ELEVATION BASED ON CONTOURS SHOWN ON EPSC PLAN PROVIDED BY CHA, INC. DATED 02/28/2013 AND MODIFIED BASED ON FIELD ASSESSMENT BY VHB.
2. CHANNEL ELEVATION BASED ON CONTOURS SHOWN ON EPSC PLAN PROVIDED BY CHA, INC. DATED 02/28/2013 AND NOT ASSESSED IN THE FIELD BY VHB.



Notes:

1. THIS CONFIGURATION IS FOR OPEN TRENCH EXCAVATION OF STREAM CROSSINGS AS SHOWN ON PROJECT PLANS. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
2. THE INFORMATION PROVIDED IN THIS TABLE WAS UTILIZED FOR PERMITTING. ACCURATE PIPELINE PROFILE DRAWINGS HAVE BEEN CREATED THAT SHOW THE INTENT OF THIS TABLE USING FIELD VERIFIED SURVEY. CONTRACTOR SHALL REFERENCE SHEETS ANGPT-C-028A, 039A, 042A, 051A, 061AA, AND 065A FOR CONSTRUCTION.
3. TOP OF PIPELINE MUST BE AT LEAST AS DEEP AS THE CHANNEL BOTTOM (DIMENSION D) THROUGHOUT THE FLUVIAL EROSION HAZARD (FEH) CORRIDOR.
4. MINIMUM SEPARATION BETWEEN THE TOP OF PIPELINE AND THE CHANNEL BOTTOM (DIMENSION E) MUST BE AT LEAST 7 FEET.
5. ELEVATIONS PROVIDED ARE BASED ON APPROXIMATE NAVD 88 DATUM AND MUST BE FIELD VERIFIED PRIOR TO INSTALLATION OF PIPELINE.
6. FEH CORRIDOR IS LISTED AS NOT APPLICABLE (N/A) WHERE THE STREAM CROSSES OR IS ADJACENT TO AN EXISTING ROADWAY OR OTHER INFRASTRUCTURE THAT RESULTS IN RIVER MANAGEMENT CONSTRAINTS AT THAT LOCATION. FEH CORRIDOR WIDTHS AT THESE LOCATIONS ARE SHOWN FOR INFORMATION PURPOSES ONLY.
7. RESTORE DISTURBED CHANNEL, STREAM BANKS, AND APPROACHES FOLLOWING PIPELINE INSTALLATION PER EPSC PLAN.

8 Open Trench Stream Crossing - Typical Section

04/13

N.T.S. Source: VHB

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
		2	BCK	TDB	VHB EDITS (12/10/15)
		1	BCK	TDB	VHB EDITS (6/09/15)

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

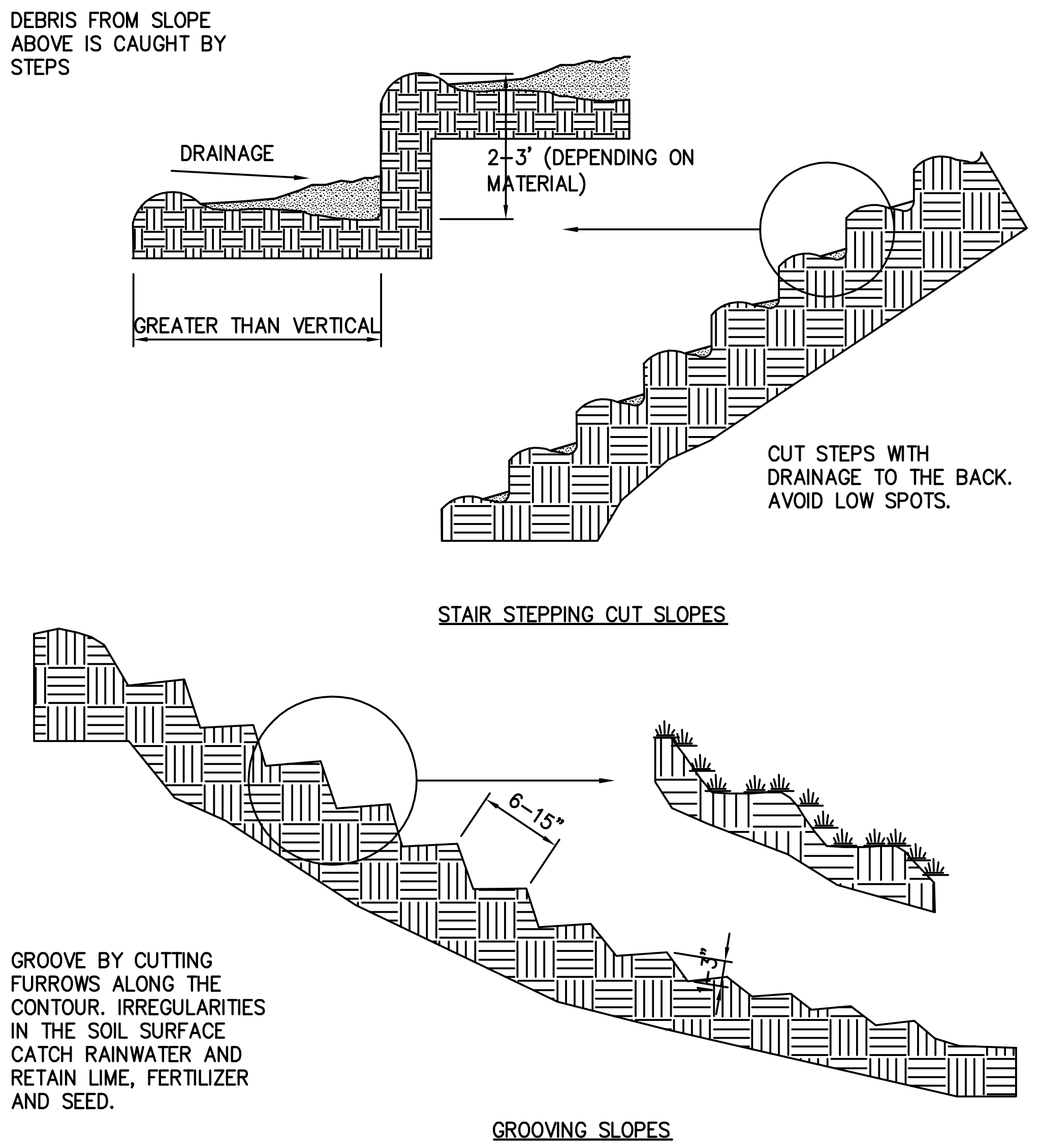
VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
CONSTRUCTION DETAILS

LOC. CHITTENDEN & ADDISON COUNTIES

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016
W.O.
SCALE: NOTED
DWG. ANGP-T-G-017
REV. 2



1 Surface Roughening

12/12
N.T.S.
Source: VHB
LD_

MULCH MATERIAL AND APPLICATION

MULCH MATERIAL	QUALITY STANDARDS	PER 1,000 SQ–FT	PER ACRE	DEPTH OF APPLICATION
WOOD CHIPS OR SHAVINGS	AIR DRIED, FREE OF OBJECTIONABLE MATERIAL	500 – 900 LBS	10 – 20 TONS	2" – 7"
WOOD FIBER CELLULOSE (PARTIALLY DIGESTED WOOD FIBERS)	MADE FROM NATURAL WOOD USUALLY WITH GREEN DYE AND DISPERSING AGENT	50 LBS	2,000 LBS	N/A
GRAVEL, CRUSHED STONE OR SLAG	WASHED; SIZE 2B OR 3A – 1 1/2"	9 CY	405 CY	3"
HAY OR STRAW	AIR–DRIED; FREE OF UNDESIRABLE SEEDS AND COARSE MATERIALS	90 – 100 LBS, 2–3 BALES	2 TONS (100–120 BALES)	COVER ABOUT 90% SURFACE
COMPOST	UP TO 3" PIECES, MODERATELY TO HIGHLY STABLE	3 – 9 CY	3 – 9 CY	1–3"
Erosion Control Mix	WELL–GRADED MIXTURE OF PARTICLE SIZES. ORGANIC CONTENT BETWEEN 80–100% DRY WEIGHT. PARTICLE SIZE SHALL PASS 6" SCREEN (100%)	*Slopes 3(Hz.):1(Vert.) = 2 inch depth plus additional 1/2 inch depth per 20 ft. of slope up to 100 ft. **Slopes between 3(Hz.):1(Vert.) and 2(Hz.):1(Vert.) = 4 inch depth plus additional 1/2 inch per 20 ft. of slope up to 100 ft. ***Slopes steeper than 2(Hz.):1(Vert.) applicability to specific site and mulch depth to be reviewed and approved prior to use by OPSC or EPSC Specialist		

Notes:

1. APPLY TACKIFIER AS NEEDED TO MINIMIZE POTENTIAL FOR MULCH TO BLOW AWAY.
2. MULCH MUST NOT CONTAIN INVASIVE PLANT SPECIES. (SEEDS OR SEEDLINGS)
3. TACKIFIER MAY BE WATER, NETTING, OR SIMILAR.
4. OTHER THAN EROSION CONTROL MIX, MULCH IS NOT TO BE INSTALLED ON SLOPES > 3:1.

2 Mulch Table

12/12
N.T.S.
Source: VHB
LD_

TEMPORARY SEEDING

1. AREA TO BE SEEDED MUST BE ROUGH GRADED AND SLOPES PHYSICALLY STABLE.
2. SEEDING METHOD TO RESULT IN GOOD SOIL TO SEED CONTACT.
3. AFTER SEEDING, MULCH THE AREA WITH HAY OR STRAW AT 2 TONS/AC (APPROX 90 LBS/1,000 SF OR 2 BALES/1,000 SF); SEE MULCH DETAIL AND SPECIFICATIONS.
4. MULCH ANCHORING MAY BE NEEDED WHERE WIND OR AREAS OF CONCENTRATED WATER ARE POSSIBLE.
5. WOOD FIBER HYDROMULCH OR OTHER SPRAYABLE PRODUCTS APPROVED FOR EROSION CONTROL MAY BE USED IF APPLIED ACCORDING TO MANUFACTURERS' SPECIFICATIONS.

PERMANENT SEEDING

1. SEE SEEDDING SPECIFICATIONS FOR RECOMMENDED SEED MIXES. USE RIPARIAN AND WETLAND SEEDING MIX WITHIN 50 FEET OF STREAM CROSSINGS AND IN DISTURBED WETLAND AREAS. USE UPLAND NATURAL COMMUNITY MIX WITHIN AREAS IDENTIFIED AS SIGNIFICANT NATURAL COMMUNITIES. USE PERMANENT SEEDING MIX FOR ALL OTHER DISTURBED.UPLAND AREAS. SEE VERMONT STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION AND SEDIMENT CONTROL FOR ADDITIONAL SEED MIXTURES.
2. AREA TO BE SEEDED MUST BE ROUGH GRADED AND SLOPES PHYSICALLY STABLE; CHISELING OR DISKING MAY BE NEEDED IF SOIL IS COMPACTED.
3. SEEDING METHOD TO RESULT IN GOOD SOIL TO SEED CONTACT.
4. PERMANENT SEEDING TO OCCUR PRIOR TO SEPTEMBER 15TH UNLESS WEATHER PERMITS SEEDING BEYOND SEPTEMBER 15TH.
5. AFTER SEEDING, MULCH THE AREA WITH HAY OR STRAW AT 2 TONS/AC (APPROX 90 LBS/1,000 SF OR 2 BALES/1,000 SF); SEE MULCH DETAIL AND SPECIFICATIONS.
6. MULCH ANCHORING MAY BE NEEDED WHERE WIND OR AREAS OF CONCENTRATED WATER ARE POSSIBLE.
7. WOOD FIBER HYDROMULCH OR OTHER SPRAYABLE PRODUCTS APPROVED FOR EROSION CONTROL MAY BE USED IF APPLIED ACCORDING TO MANUFACTURERS' SPECIFICATIONS.
8. IRRIGATION MAY BE NEEDED TO FACILITATE GRASS GROWTH AND ESTABLISH ADEQUATE GRASS COVER.

3 Seeding Notes

12/12
N.T.S.
Source: VHB
LD_

TEMPORARY SEEDING MIX

TYPE	SEASON	RATE (LBS/ACRE)
RYEGRASS (ANNUAL OR PERENNIAL)	APRIL 15 – SEPTEMBER 15	20
"AROOSTOOK" WINTER RYE	SEPTEMBER 15 – APRIL 15	90

PERMANENT SEEDING MIX*

TYPE	SEASON	RATE (LBS/ACRE)
BIRDSFOOT TREFOIL(1)**	APRIL 15 – SEPTEMBER 15	5
COMMON WHITE CLOVER (1)**	APRIL 15 – SEPTEMBER 15	8
TALL FESCUE (2)	APRIL 15 – SEPTEMBER 15	10
REDTOP (3)	APRIL 15 – SEPTEMBER 15	2
RYEGRASS (PERENNIAL) (3)	APRIL 15 – SEPTEMBER 15	5

*PERMANENT SEEDING MIX IS A COMBINATION OF BIRDSFOOT TREFOIL OR COMMON WHITE CLOVER PLUS TALL FESCUE PLUS REDTOP OR RYEGRASS (PERENNIAL). I.E. PERMANENT SEEDING MIX = (1) + (2) + (3). (SEE PAGE 4.27 OF THE VERMONT STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION AND SEDIMENT CONTROL.)
** ADD INOCULANT IMMEDIATELY PRIOR TO SEEDING

RIPARIAN AND WETLAND SEEDING MIX

TYPE	SEASON	RATE (LBS/ACRE)
"WET MEADOW AND DETENTION BASIN"* OR APPROVED EQUAL	APRIL 15 –SEPTEMBER 15	35

*SEED SPECIFIED IS FROM VERMONT WETLAND PLANT SUPPLY AND COMPOSED OF THE FOLLOWING SPECIES: PANICUM VIRGATUM, ELYMUS VIRGINICUS, FESTUCA RUBRA, CAREX VULPINOIDEA, CAREX SCOPARIA, SCIRPUS CYPERINUS, SCIRPUS ATROVIRENS, BIDENS CERNUA, EUPATORIUM PERFOLIATUM, EUPATORIADELPHUS MACULATUS, JUNCUS EFFUSUS, ONOCLEA SENSIBILIS, VERBENA HASTATA, SYMPHYOTRICHUM NOVAE–ANGLIAEA

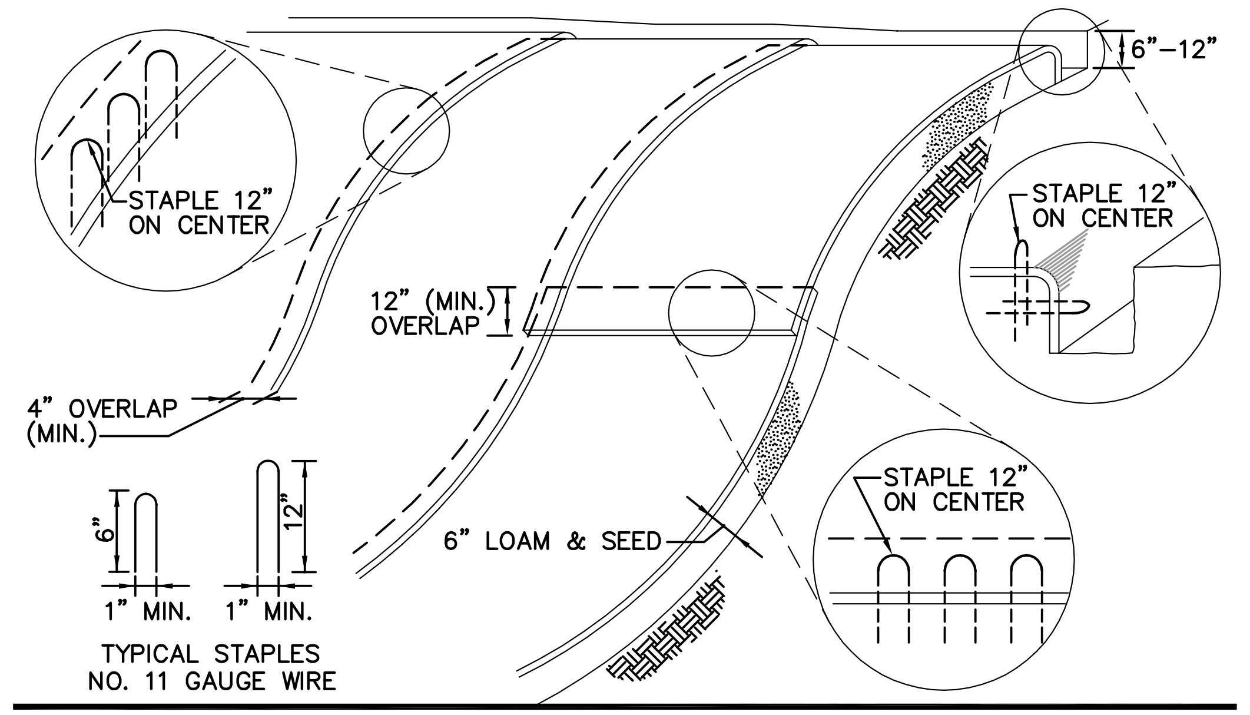
UPLAND NATURAL COMMUNITY MIX

TYPE	SEASON	RATE (LBS/ACRE)
"VERMONT CONSERVATION AND WILDLIFE"* OR APPROVED EQUIVALENT	APRIL 15 –SEPTEMBER 15	25

*SEED SPECIFIED IS, IN PART, FROM VERMONT WETLAND PLANT SUPPLY AND COMPOSED OF THE FOLLOWING SPECIES: ELYMUS VIRGINICUS, FESTUCA RUBRA, SCHIZACHYRIUM SCOPARIUM, ANDROPOGON GERARDII, PANICUM CLANDESTINUM, SORGHASTRUM NUTANS, ASCLEPIA SYRIACA, VERBENA HASTATA, EUPATORIUM FISTULOSUM, EUTHAMIA GRAMINIFOLIA, SOLIDAGO JUNCEA, SYMPHYOTRICHUM NOVAE–ANGLIAE
NOTE: SEE MIX SHOULD EXCLUDE BOTH CHAMAECRISTA FASCICULATA AND HELIOPSIS HELIANTHOIDES, WHICH ARE BOTH COMMONLY INCLUDED IN THIS COMMERCIAL MIX.

4 Seeding Specifications

06/13
N.T.S.
Source: VHB
LD_

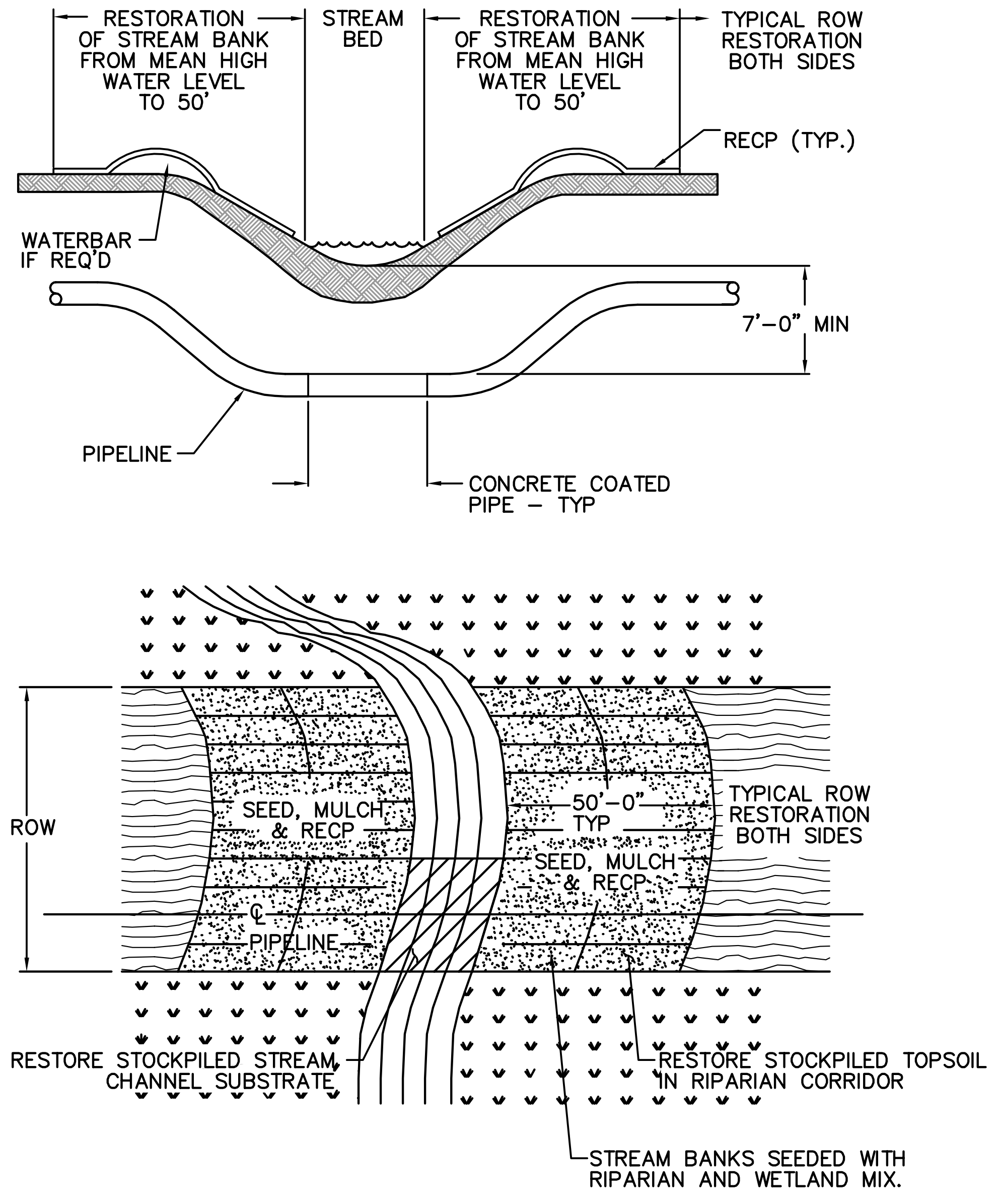


Notes:

1. APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY TOP SOIL, FERTILIZER, LIME AND SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'x225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'x150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION PREVENTION AND SEDIMENT CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE, DO NOT STRETCH AND ENSURE CLOSE CONTACT WITH THE GROUND SURFACE..
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.
6. BEGIN AT THE TOP OF BLANKET INSTALLATION AREA BY ANCHORING BLANKET IN A 6" TO 12" DEEP TRENCH BACKFILL AND COMPACT TRENCH AFTER STAPLING.
7. ROLL THE BLANKET DOWN IN THE DIRECTION OF THE WATER FLOW.
8. THE EDGES OF BLANKETS MUST BE STAPLED WITH APPROX. 4" OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
9. WHEN BLANKETS MUST BE SPLICED, PLACE UPPER BLANKET END OVER LOWER END WITH 12" (MIN.) OVERLAP AND STAPLE BOTH TOGETHER.
10. METHOD OF INSTALLATION SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS. SEE SHEET ANGP–T–G–017 FPR RECP SPECIFICATIONS

5 Rolled Erosion Control Blanket (RECP) - Slope Installation

12/12
N.T.S.
Source: VHB
LD_680–vt

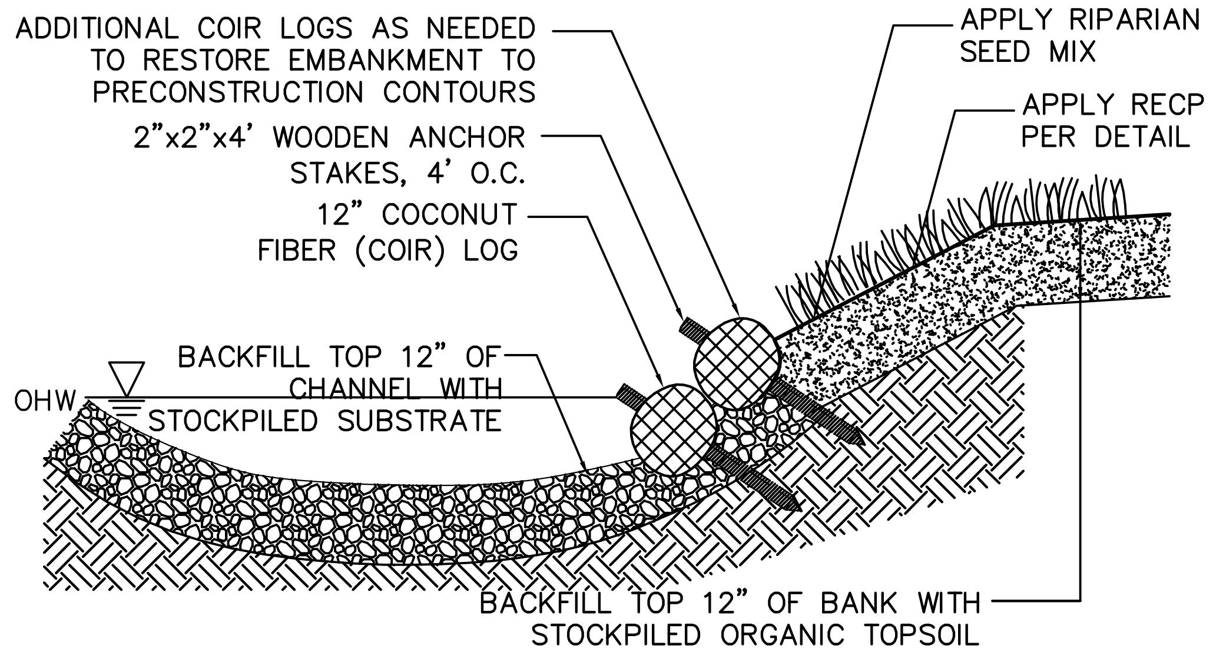


Notes:

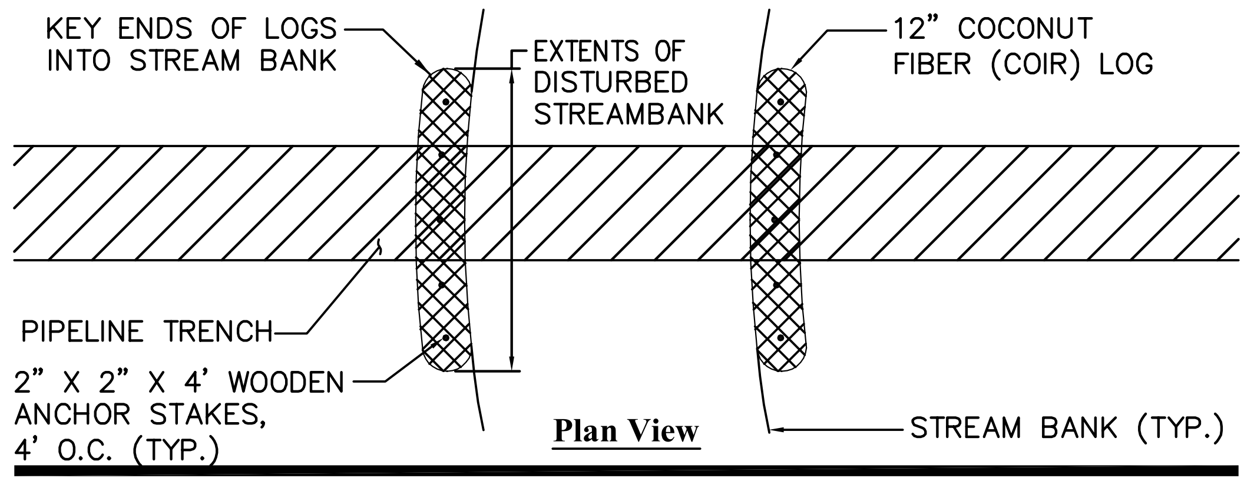
1. SEE SHEET ANGP–T–G–017 FOR RECP SPECIFICATIONS

6 Streambank Restoration with RECP

12/12
N.T.S.
Source: CHA
LD_



Channel Section



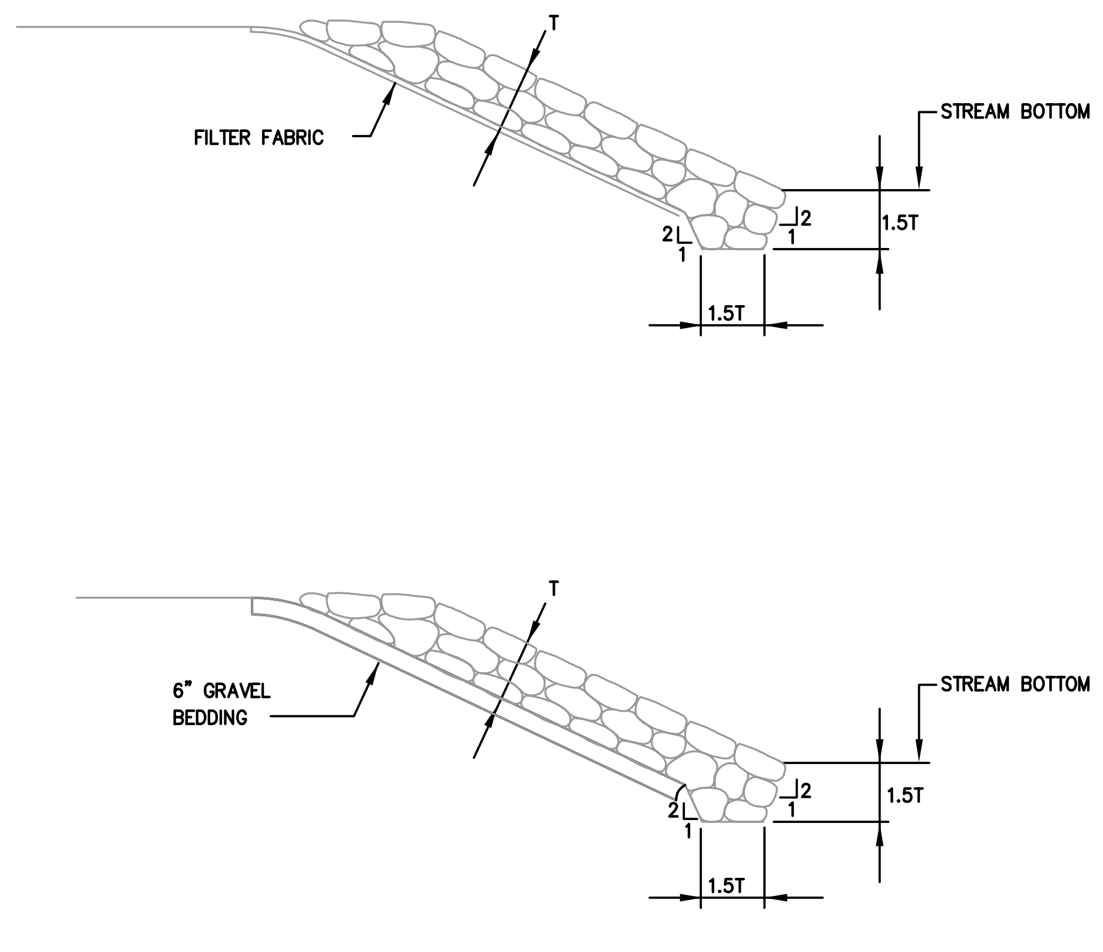
Plan View

Notes:

1. APPLY COIR LOG DETAIL TO SITES WHERE STREAMBANK IS DISTURBED OR TRENCHED THROUGH DURING PIPELINE INSTALLATION AND BANK COMPOSITION PERMITS STAKES TO BE DRIVEN
2. INSTALL ROLLED EROSION CONTROL PRODUCT (RECP) PRIOR TO INSTALLATION OF COIR LOGS
3. PLACE COIR LOG IN 2" DEEP TRENCH ALONG SLOPE OF EMBANKMENT AND STAKE INTO PLACE THROUGH RCEP
4. KEY–IN COIR LOG BOTH UPSTREAM AND DOWNSTREAM FROM PIPELINE TRENCH TO MAKE COIR LOG FLUSH WITH STREAMBANK IN ORDER TO PREVENT UNRAVELING OF BANK DURING HIGH FLOW EVENTS.
5. COIR LOG MESH TO CONSIST OF BIODEGRADABLE MATERIAL.

7 Streambank Restoration with Coir Logs

6/13
N.T.S.
Source: VHB



T = 1.5 TIMES THE MAXIMUM STONE DIAMETER, BUT NO LESS THAN 6 INCHES.

MICHAEL E. HOLLOWAY
NO. 97764

8 Streambank Stabilization with Rip Rap

12/12
N.T.S.
Source: VHB
LD_

VHB Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

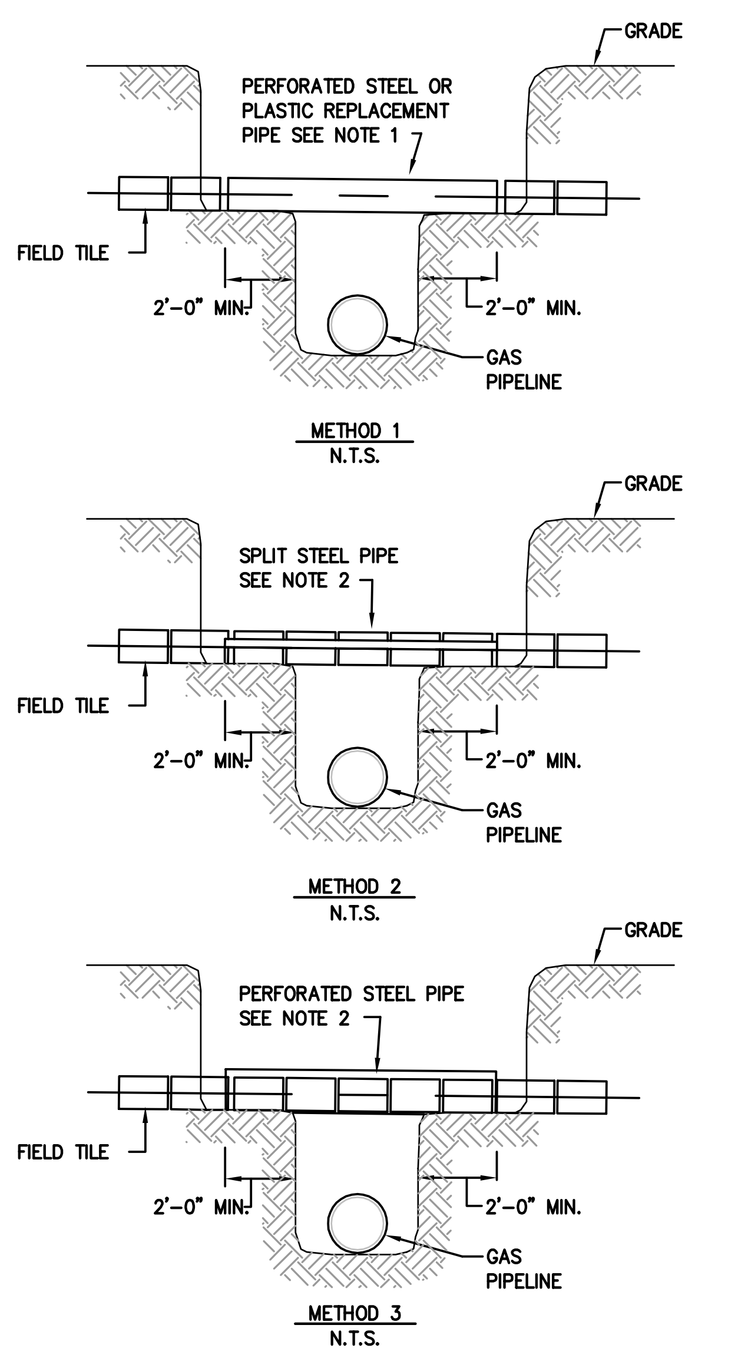
VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
CONSTRUCTION DETAILS

LOC. CHITTENDEN & ADDISON COUNTIES

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

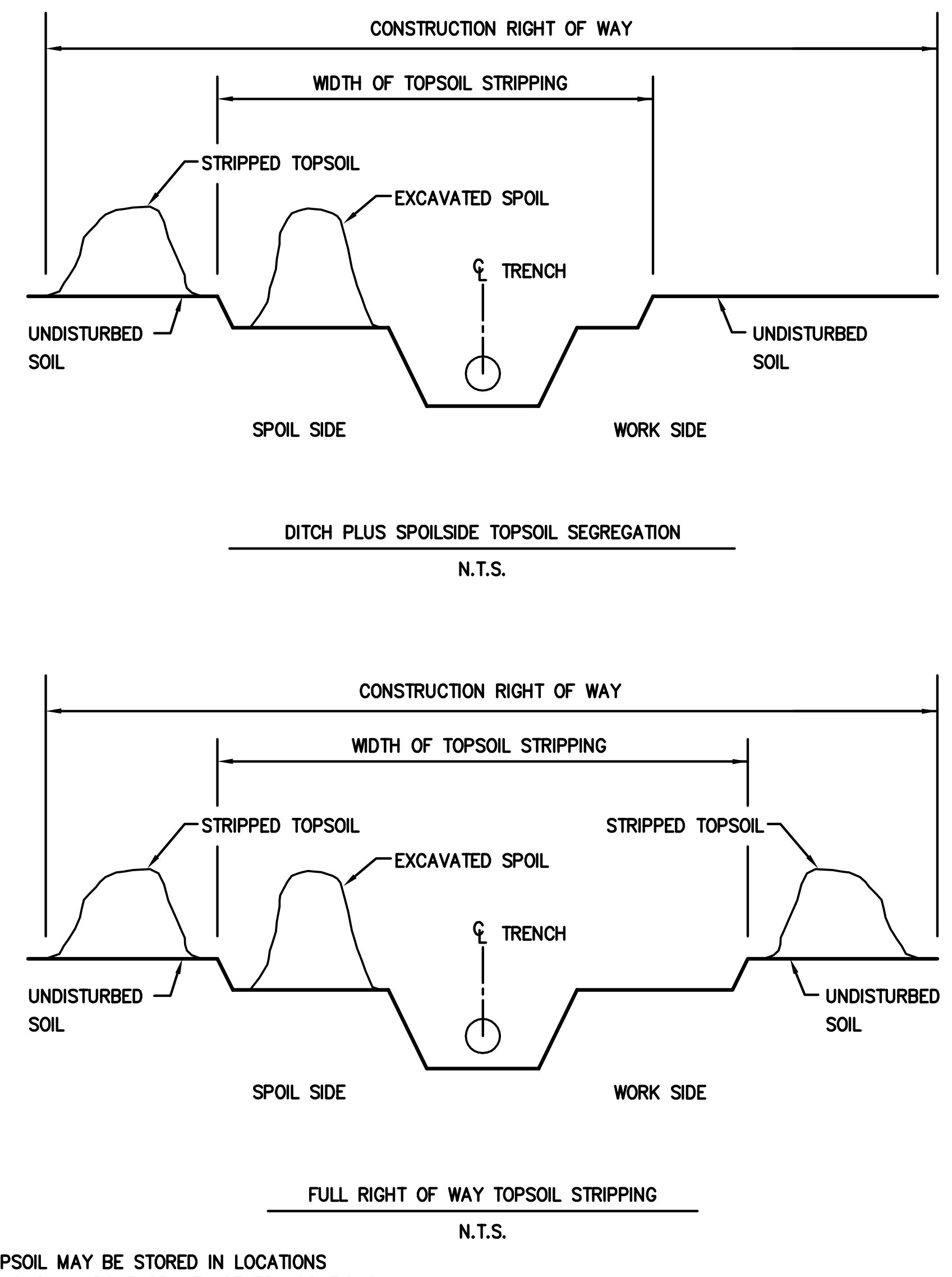
YEAR: 2016 | W.O. | SCALE: NOTED | DWG. ANGP–T–G–018 | REV. 0



NOTES:
1. REPLACEMENT PIPE TO BE AS NEAR AS POSSIBLE TO THE DIAMETER OF THE FIELD TILE.
2. STEEL CARRIER PIPE TO HAVE INSIDE DIAMETER AS NEAR AS POSSIBLE TO THE OUTSIDE DIAMTER OF THE FIELD TILE.
3. MAINTAIN ORIGINAL FLOW LINE OF FIELD TILE IN ALL METHODS.

1 Typical Drain Tile Protection

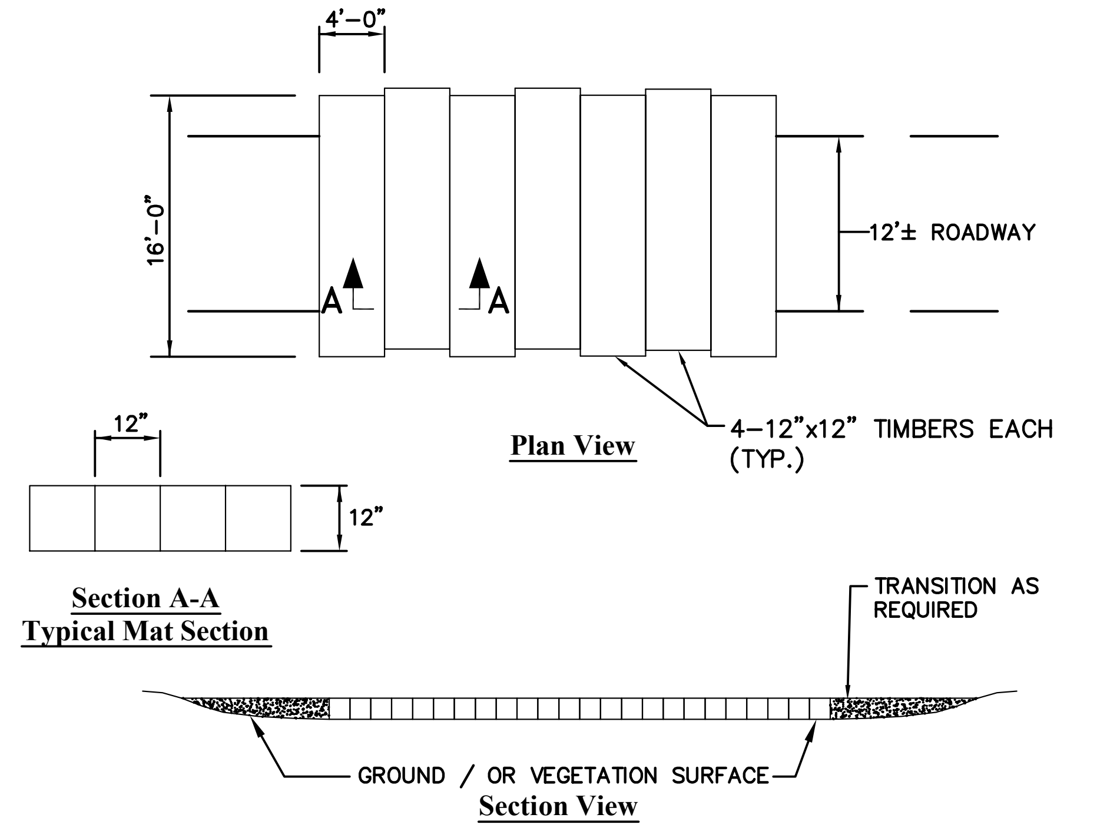
12/12
N.T.S.
Source: VHB
LD_



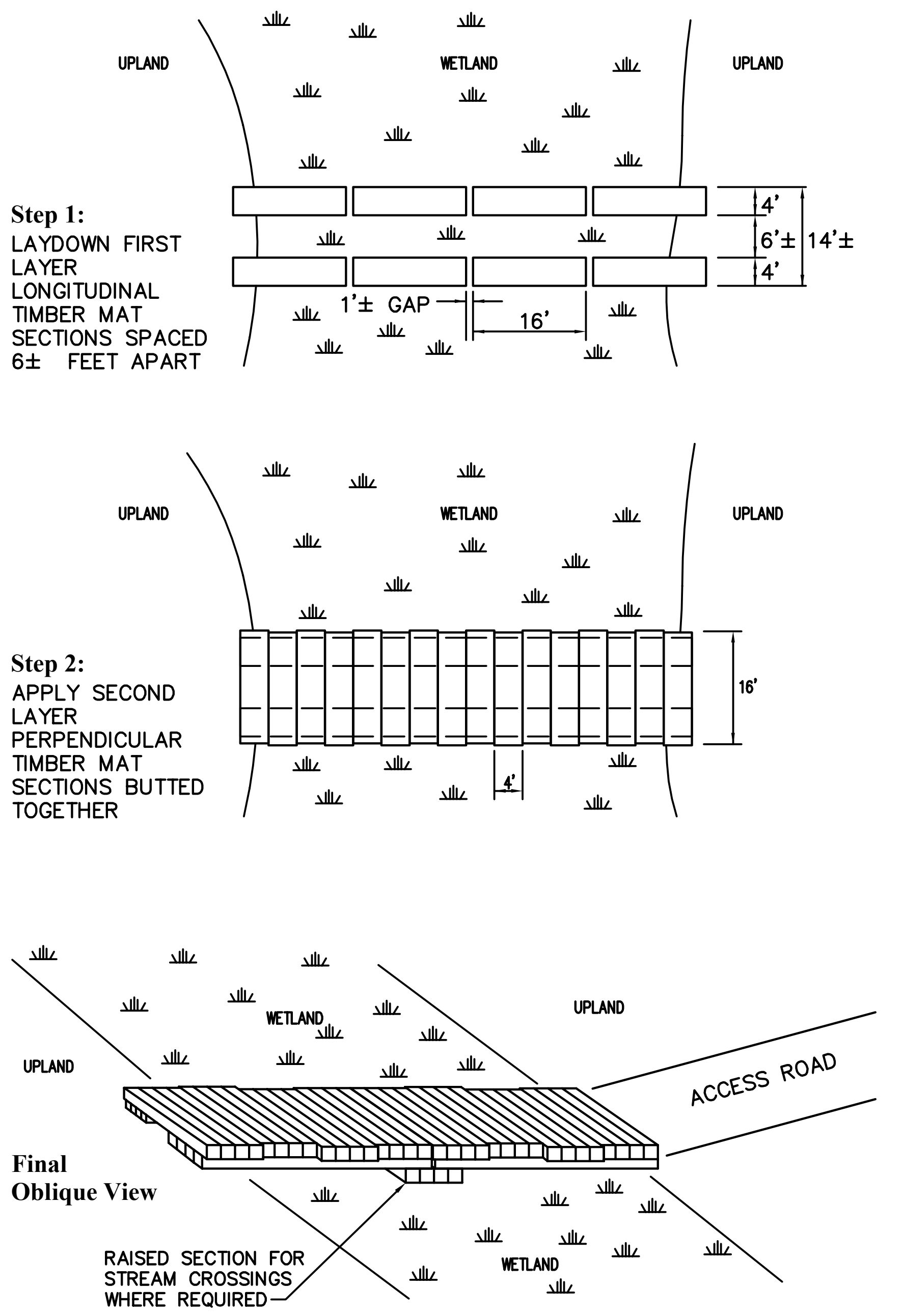
NOTES:
1. TOPSOIL MAY BE STORED IN LOCATIONS AS SHOWN ABOVE OR AT OTHER LOCATIONS WITHIN THE CONSTRUCTION ROW.
2. SEE SHEET ANGP-T-G-015 FOR TRENCH BACK-FILLING DETAIL AND SPECIFICATIONS

2 Topsoil Segregation

12/12
N.T.S.
Source: VHB
LD_



Notes:
1. TO BE INSTALLED WHERE NECESSARY IN WETLAND FOR ACCESS FOR CONSTRUCTION. ALTERNATIVE CONSTRUCTION MATTING (E.G., RUBBER MATS) MAY BE SUBSTITUTED FOR TIMBER MATTING.
2. PREPARATION FOR INSTALLATION OF TIMBER MATS WILL CONSIST OF CUTTING TALL WOODY SPECIES AND TRIMMING SHRUBS IF CONDITIONS REQUIRE. VEGETATION ROOT MASS IS TO REMAIN UNDISTURBED. MATS TO BE PLACED TO MAINTAIN NATURAL SOIL CONTOURS/CONDITIONS.
3. TIMBER SECTIONS TO BE SECURED TOGETHER WITH NO SPACES BY BOLTS, NAILS, STRAPS OR OTHER APPROPRIATE METHODS.
4. TIMBER MATS TO BE REMOVED UPON COMPLETION OF PROJECT AND AREA RESTORED TO NEAR ORIGINAL CONDITIONS PER EPSC PLANS
5. SNOW/ICE REMOVAL BY MECHANICAL METHODS: NO DEICING SALT OR CHEMICALS TO BE USED. LIGHT APPLICATION OF SAND FOR TRACTION ACCEPTABLE SO AS RESIDUE DOES NOT ACCUMULATE IN WETLAND.
6. MATS ARE TO BE IN PLACE FOR MINIMUM DURATION FEASIBLE.



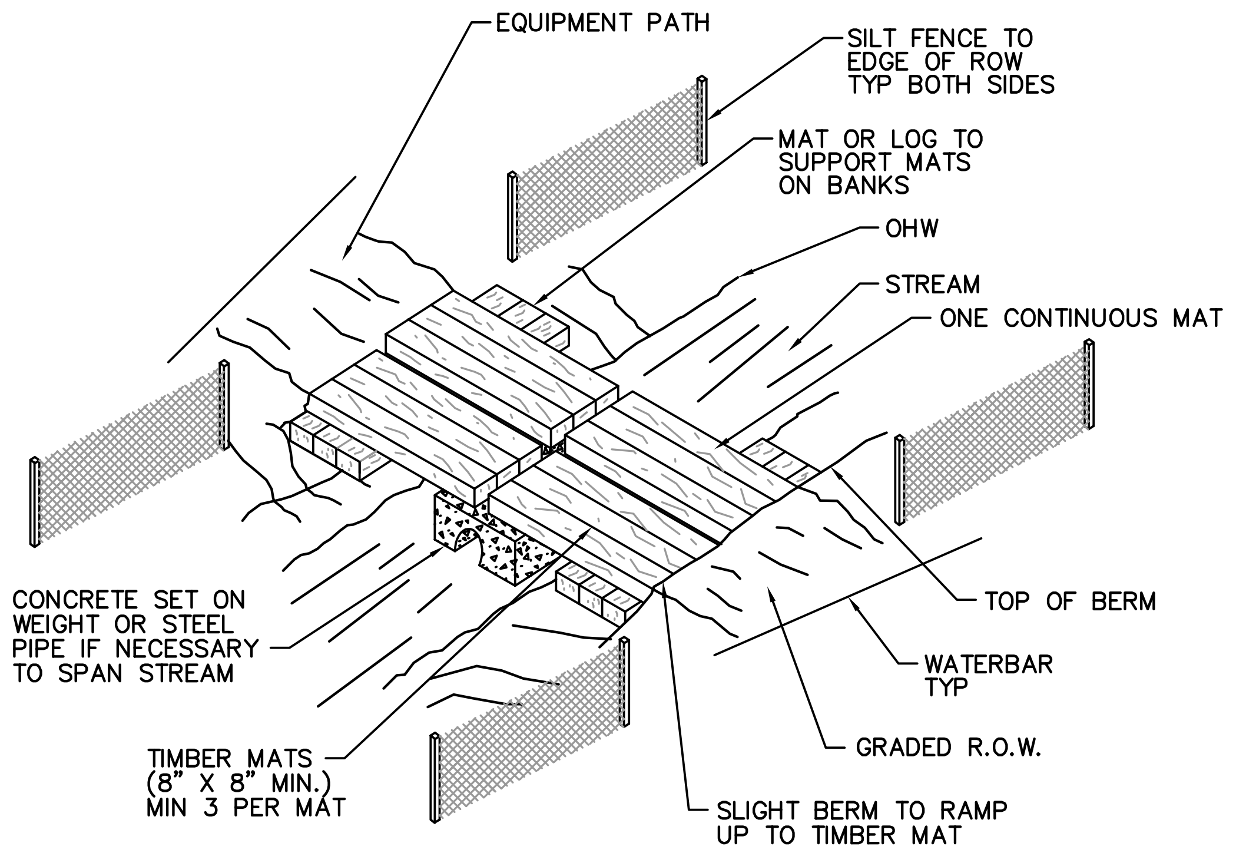
Step 1:
LAYDOWN FIRST LAYER LONGITUDINAL TIMBER MAT SECTIONS SPACED 6± FEET APART

Step 2:
APPLY SECOND LAYER PERPENDICULAR TIMBER MAT SECTIONS BUTTED TOGETHER

Final Oblique View

3 Construction Matting - Timber Mat Typ.

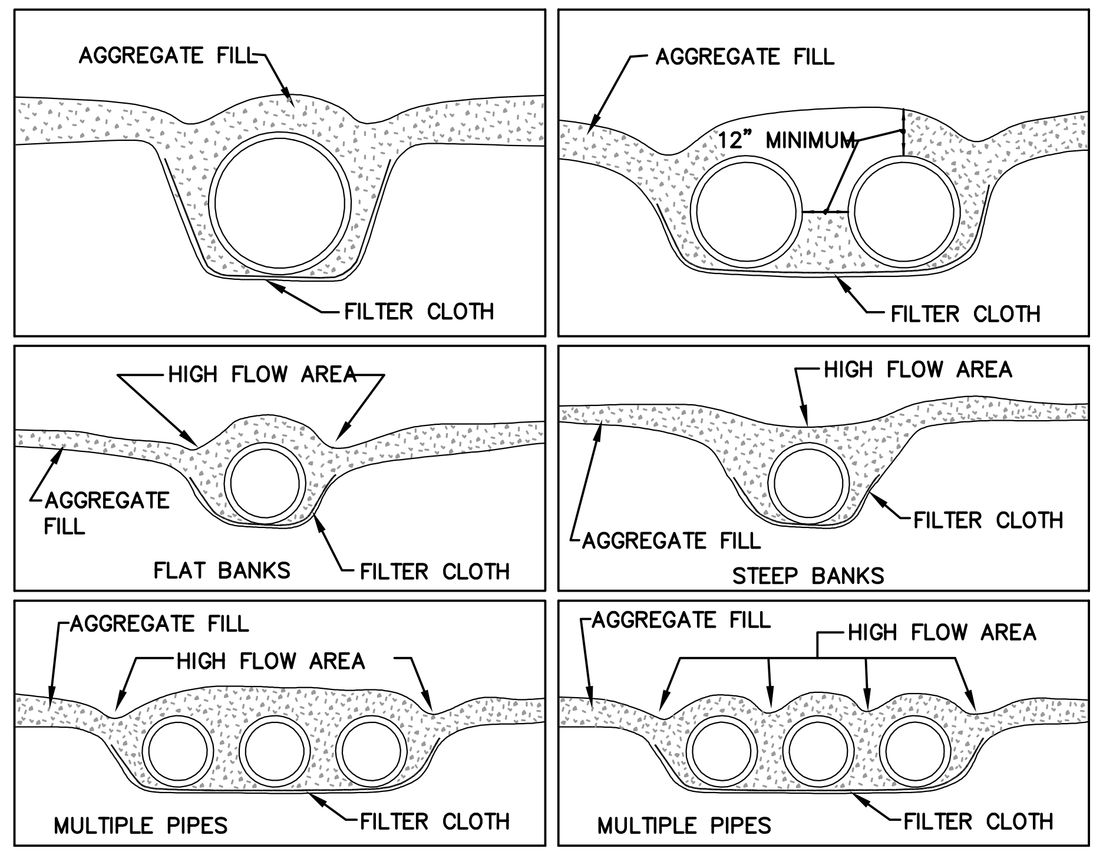
12/12
N.T.S.
Source: VHB
LD_



NOTES:
1. THERE IS TO BE NO UNNECESSARY MOVEMENT OF EQUIPMENT THROUGH WATER.
2. TIMBER MATS TO BE POSITIONED TO RUN FROM TOP OF BANK TO TOP OF BANK WHERE POSSIBLE. AT MINIMUM, THE TIMBER MAT BRIDGE SHALL SPAN THE ORDINARY HIGH WATER (OHW) WIDTH OF THE CHANNEL.
3. TIMBER MATS SHALL BE CLEANED OF SEDIMENT PRIOR TO EACH INSTALLATION.
4. TIMBER MATS SHOULD BE INSTALLED SO THERE ARE NO GAPS BETWEEN MATS.

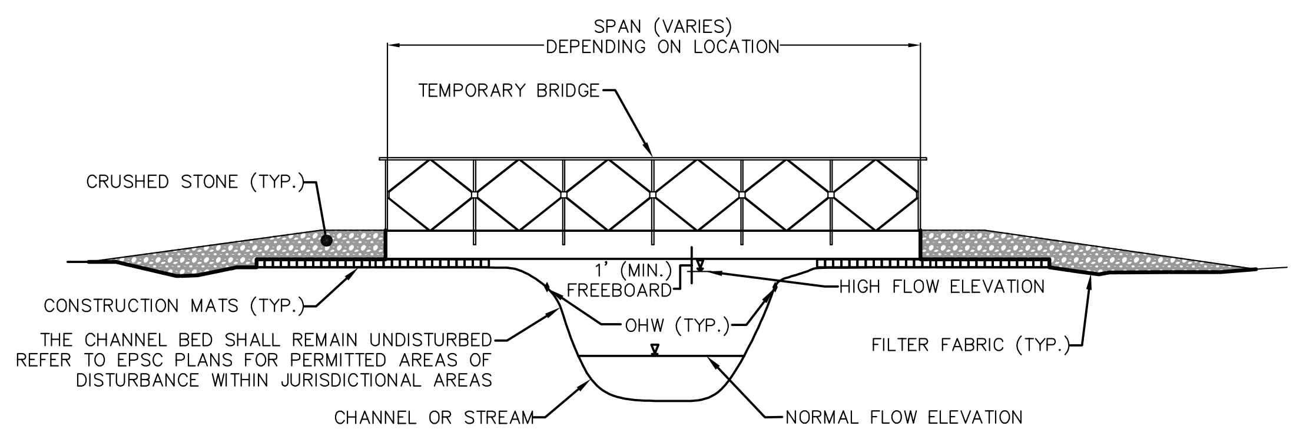
4 Construction Mat Bridge

12/12
N.T.S.
Source: CHA
LD_



5 Temporary Access Culverts

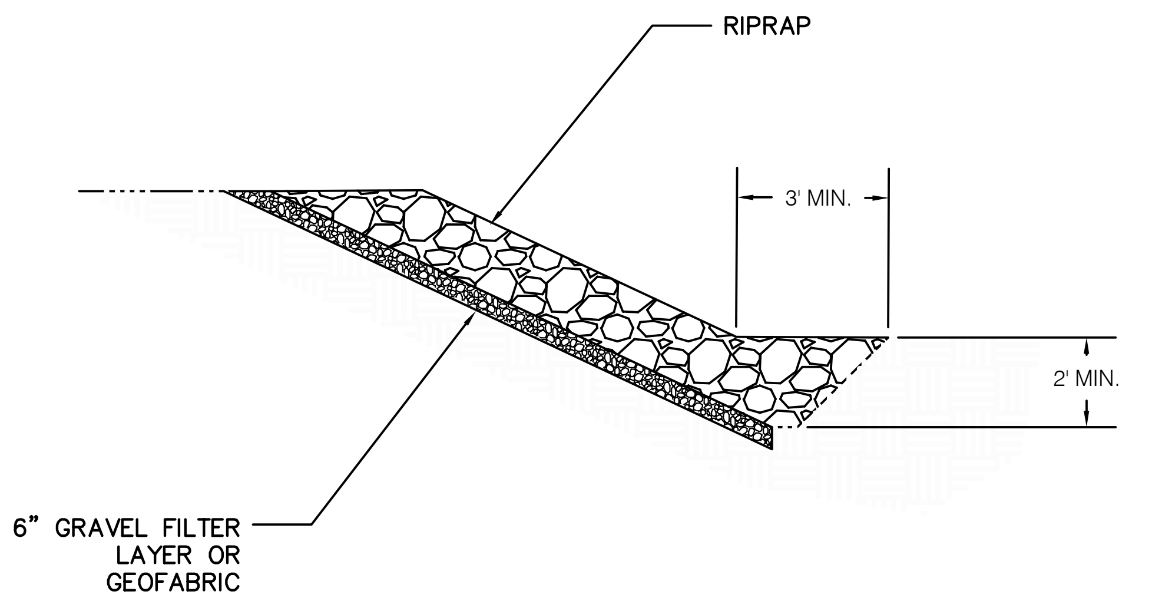
12/12
N.T.S.
Source: VHB
LD_



NOTES:
1. BRIDGE SHALL BE DESIGNED TO PROVIDE A CLEAR SPAN THAT IS EQUAL TO OR GREATER THAN OHW AT THE CROSSING SITE.
2. NO MATERIALS SHALL BE PLACED IN THE CHANNEL BELOW OHW WITHOUT PRIOR AUTHORIZATION.
3. BRIDGE SHALL BE DESIGNED TO CARRY THE MAXIMUM ANTICIPATED CONSTRUCTION LOADS. HOWEVER SHALL NOT BE LESS THAN AASHTO HS-25 LOADING CRITERIA.
4. BRIDGE SHALL BE DESIGNED SUCH THAT A MINIMUM ONE FOOT (1 FT) OF FREE BOARD EXISTS BETWEEN THE LOWEST MEMBER AND THE ANTICIPATED HIGH FLOW (Q25) WATER ELEVATION.
5. ADDITIONAL LOAD BEARING DEVICES BEYOND CONSTRUCTION MATTING MAY BE REQUIRED. THE CONTRACTOR SHALL CONDUCT A GEOTECHNICAL ANALYSIS OF EACH BRIDGE SITE TO DETERMINE THE NECESSARY BEARING CAPACITY OF SOILS AND TO DETERMINE THE MINIMUM DISTANCE BETWEEN BEARING SURFACES AND THE TOP OF STREAM/CHANNEL BANK.
6. APPROACH GRADES SHALL BE AS DEEMED NECESSARY BY THE CONTRACTOR.

6 Temporary Bridge Detail

N.T.S.
Source: VHB
LD_



Notes:
1. MINIMUM THICKNESS SHALL BE 1.5X MAX STONE DIAMETER, BUT IN NO CASE < 6".
2. THE TOE OF RIP RAP SHALL BE KEYED IN STABLE FOUNDATION @ IT'S BASE.
3. STONE SIZE SHOULD BE BASED ON ANGLE OF REPOSE FOR SPECIFIC SIZE. (FIG 4.3 P 4.38)

7 Riprap Slope Protection

12/12
N.T.S.
Source: VHB
LD_

NO. 97764

									BID		CONSTRUCTION	
							ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
							DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
							DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
							DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
							DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION		INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
CONSTRUCTION DETAILS
LOC. CHITTENDEN & ADDISON COUNTIES

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: NOTED | DWG. ANGP-T-G-019 | REV. 0

NOTES:

1. USE DIVERSION FLUME STREAM CROSSING ON WATER COURSES WITH LIMITED STREAM FLOW TO PREVENT SEDIMENTATION AND INTERRUPTION OF STREAM FLOW DURING CONSTRUCTION. THIS METHOD IS APPROPRIATE IN LOCATIONS WHERE FISH PASSAGE IS A CONCERN.

2. SCHEDULE CONSTRUCTION DURING LOW FLOW PERIOD, IF POSSIBLE.

3. THIS DETAIL REPRESENTS ONE POSSIBLE CONFIGURATION OF CONSTRUCTION ELEMENTS WITHIN THE TEMPORARY AND PERMANENT ROW. ALTERNATE CONFIGURATIONS OF CONSTRUCTION ELEMENTS BETWEEN THE UPSTREAM AND DOWNSTREAM DIVERSION STRUCTURES ARE ALLOWABLE SO LONG AS APPROPRIATE MEASURES ARE MAINTAINED TO PROTECT WATER QUALITY .

4. SET UP STEEL OR HDPE PIPE AS SHOWN, OR USE PRACTICAL ALTERNATIVES. PIPE (OR PIPES) MUST BE SIZED TO HAVE TWICE THE CAPACITY OF ANTICIPATED FLOW. DEPENDING ON STREAM FLOW, DIG SUMP HOLE TO CONCENTRATE WATER AT INTAKE.

5. INSTALL UPSTREAM DAM COMPOSED OF SANDBAGS, METAL PLATING OR A COMBINATION OF BOTH, INSTALL DOWNSTREAM DAM, IF REQUIRED, TO KEEP STREAM BED DRY.

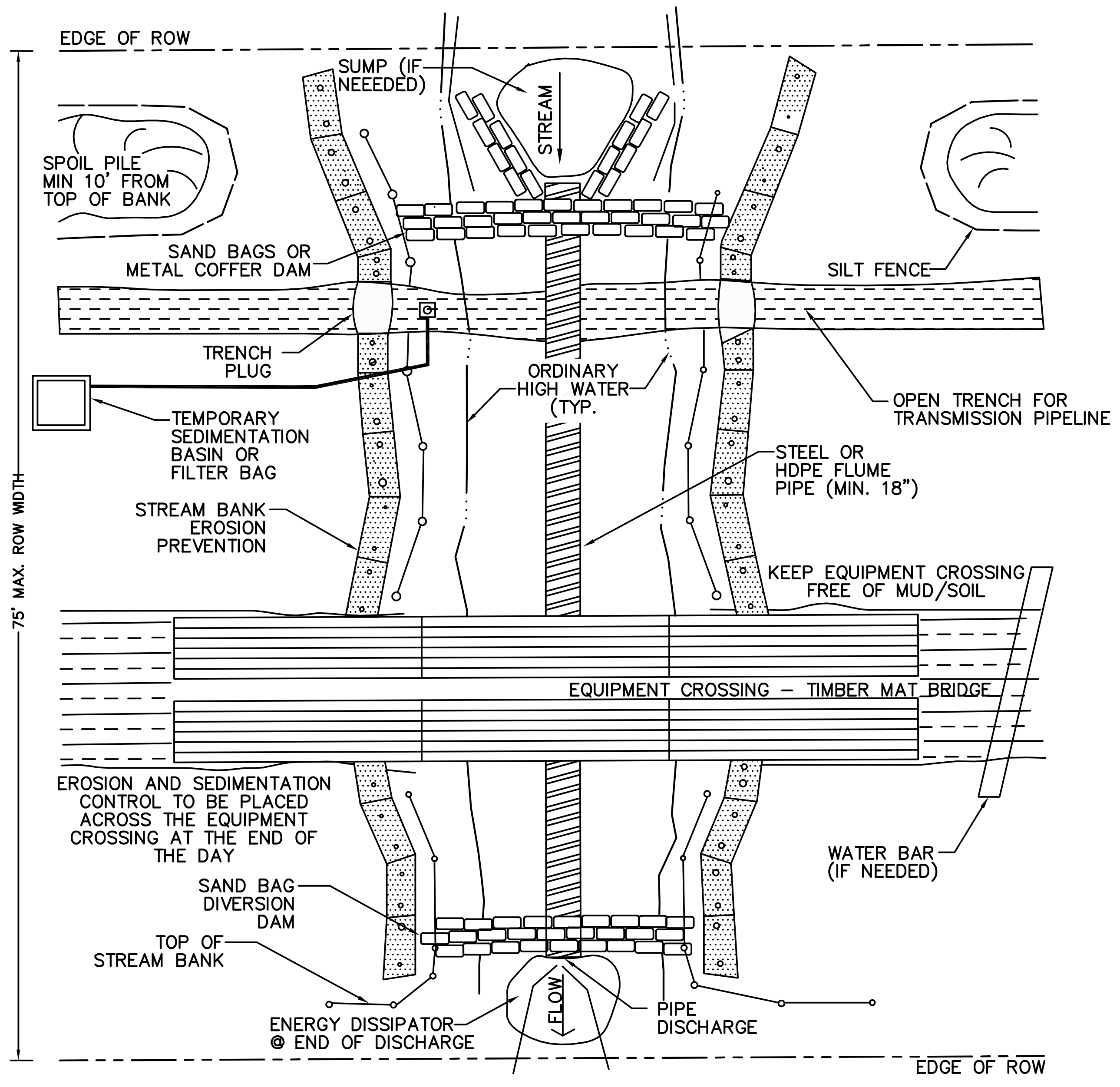
6. AFTER DAMS ARE IN PLACE, IT MAY BE NECESSARY TO USE A SUMP PUMP AND DEWATERING FILTER BAG TO KEEP WORK AREA DRY.

7. ALL MECHANIZED EQUIPMENT TO PERFORM WORK FROM ADJACENT TOP OF BANK AREAS. MAT STREAM IF WORK TO OCCUR IN STREAM CHANNEL.

8. EXCAVATE TRENCH AND LOWER IN PIPE UNDER DIVERSION FLUME. MOVE FLUME AS REQUIRED OR DISCONNECT IF TEMPORARY FLOW BLOCKAGE IS ACCEPTABLE. BACKFILL TRENCH.

9. DISMANTLE DOWNSTREAM DAM, THEN UPSTREAM DAM.

10. RESTORE DISTURBED CHANNEL, STREAM BANKS AND APPROACHES FOR A MINIMUM DISTANCE OF AT LEAST 50 FT. FROM THE STREAM EDGES AND PERMANENTLY STABILIZE WITHIN 1 DAY OF INITIAL RESTORATION. REFER TO THE STREAMBANK RESTORATION DETAIL FOR RESTORATION REQUIREMENTS.



1 Diversion Flume Stream Crossing

12/12

N.T.S.

Source: VHB

LD_

NOTES:

1. USE DAM AND PUMP METHOD ON WATER COURSES WITH LIMITED STREAM FLOW TO PREVENT SEDIMENTATION AND INTERRUPTION OF STREAM FLOW DURING CONSTRUCTION.

2. SCHEDULE CONSTRUCTION DURING LOW FLOW PERIOD, IF POSSIBLE.

3. THIS DETAIL REPRESENTS ONE POSSIBLE CONFIGURATION OF CONSTRUCTION ELEMENTS WITHIN THE TEMPORARY AND PERMANENT ROW. ALTERNATE CONFIGURATIONS OF CONSTRUCTION ELEMENTS BETWEEN THE UPSTREAM AND DOWNSTREAM DIVERSION STRUCTURES ARE ALLOWABLE SO LONG AS APPROPRIATE MEASURES ARE MAINTAINED TO PROTECT WATER QUALITY .

4. SET UP PUMP AND HOSE AS SHOWN, OR USE PRACTICAL ALTERNATIVES. PUMP SHOULD HAVE TWICE THE PUMPING CAPACITY OF ANTICIPATED FLOW. HAVE STANDBY PUMP ON SITE. DEPENDING ON STREAM FLOW, DIG SUMP HOLE TO CONCENTRATE WATER AT INTAKE.

5. USE TEMPORARY SEDIMENTATION BASIN OR FILTER BAG PRIOR TO DISCHARGING WATER BACK TO STREAM.

6. INSTALL UPSTREAM DAM COMPOSED OF SANDBAGS, METAL PLATING OR A COMBINATION OF BOTH, INSTALL DOWNSTREAM DAM, IF REQUIRED, TO KEEP STREAM BED DRY.

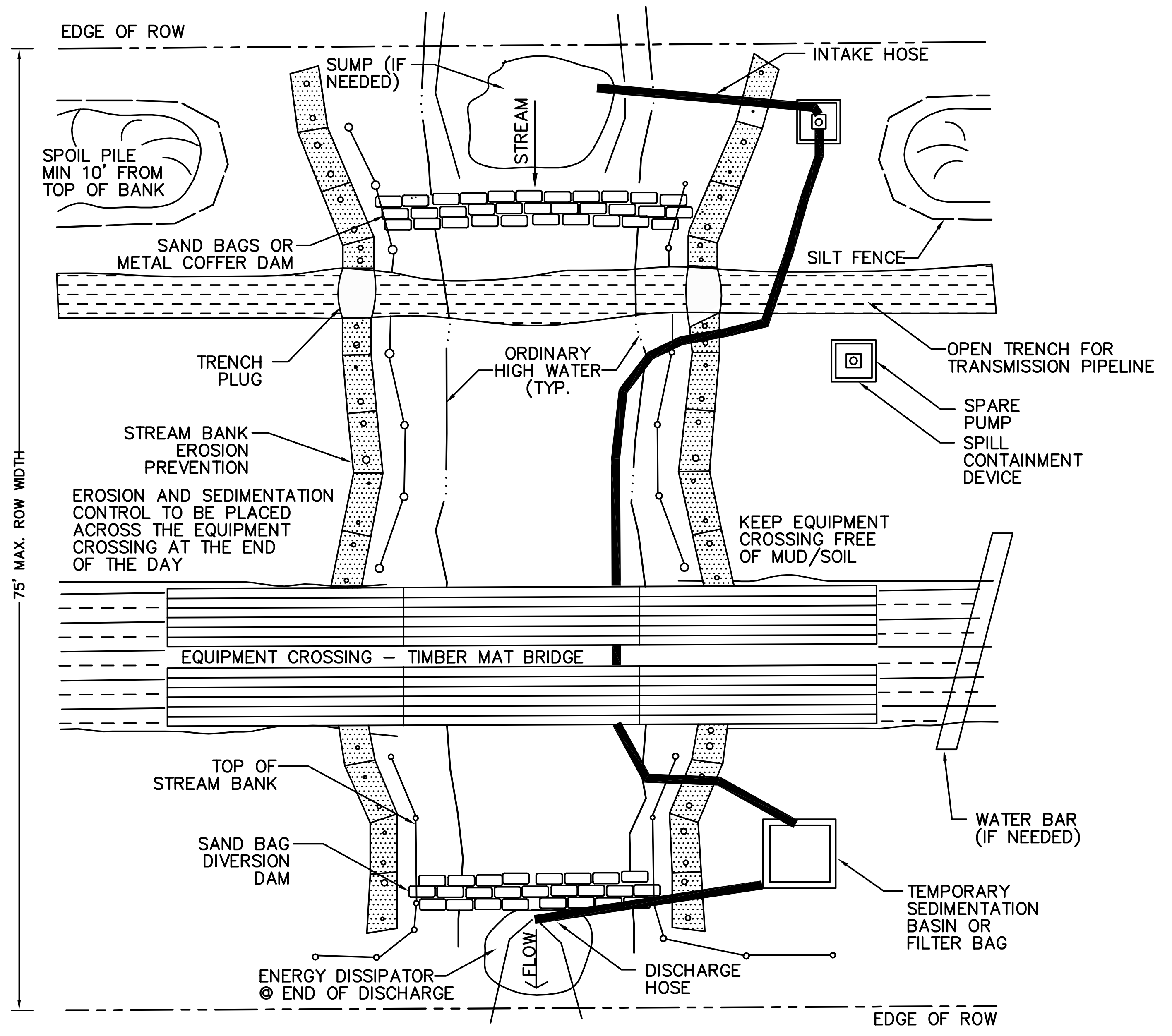
7. AFTER DAMS ARE IN PLACE, IT MAY BE NECESSARY TO USE ADDITIONAL PUMPS TO HANDLE STREAM FLOW.

8. EXCAVATE TRENCH AND LOWER IN PIPE UNDER HOSE. BACKFILL TRENCH.

9. ALL MECHANIZED EQUIPMENT TO PERFORM WORK FROM TEMPORARY BRIDGE OR ADJACENT TOP OF BANK AREAS. USE TIMBER MATS IS TO OCCUR IN STREAM CHANNEL.

10. DISMANTLE DOWNSTREAM DAM, THEN UPSTREAM DAM.

11. RESTORE DISTURBED CHANNEL, STREAM BANKS AND APPROACHES FOR A MINIMUM DISTANCE OF AT LEAST 50 FT. FROM THE STREAM EDGES AND PERMANENTLY STABILIZE WITHIN 1 DAY OF INITIAL RESTORATION. REFER TO THE STREAMBANK RESTORATION DETAIL FOR RESTORATION REQUIREMENTS.



2 Open Trench Stream Crossing - Dam and Pump Around

12/12

N.T.S.

Source: VHB

LD_

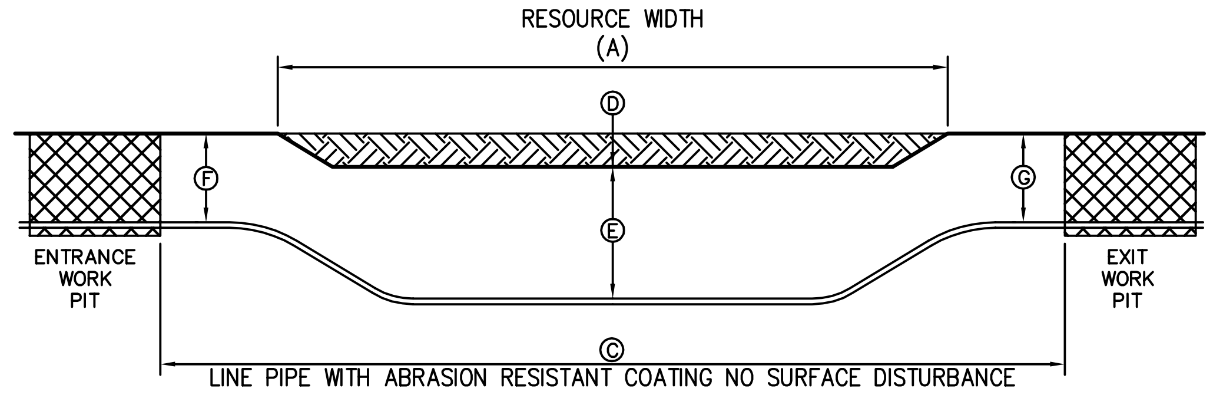
△1

MILEPOST	RESOURCE NAME	RESOURCE AREA WIDTH (A)	HDD LENGTH (C)	DEPTH OF RESOURCE AREA. (D)	ELEV. BELOW RESOURCE (E)	ENTRY ELEV. (F)	EXIT ELEV. (G)
28.2	VT–AD–1560 VT–AD–1561	300	775	400	< 393	396	396
28.57	VT–AD–1562	200	375	406	<399	412	412
35.77	VT–AD–806	160	950	310	< 303	323	323

MILEPOST	WETLAND ID	WETLAND WIDTH (A)	BUFFER WIDTH (B)	HDD LENGTH (C)	UNCON. MATERIAL ELEV. (D)	CONSOL. MATERIAL ELEV. (E)	ENTRY ELEV. (F)	EXIT ELEV. (G)
22.1	2012–CM–84 2012–PW–85	1,110	1,520	1,600	398	< 391	424	404
27.3	2012–PW–67 RTE–PS–045	2,300	2,450	2,270	358	< 356	< 376	< 400

SPACE INTENTIONALLY LEFT BLANK

SPACE INTENTIONALLY LEFT BLANK



Notes:

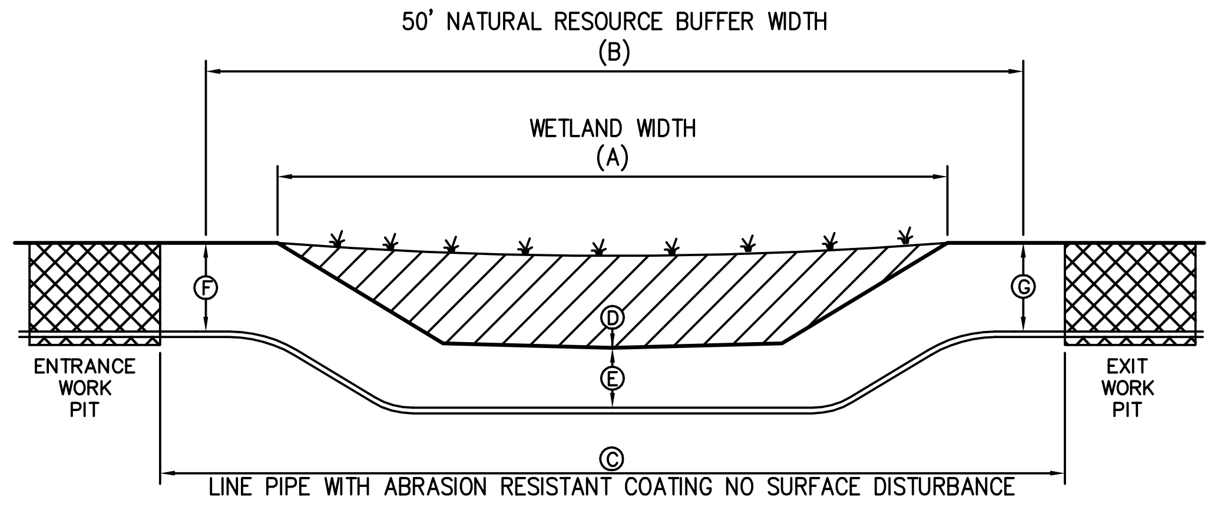
1. THIS CONFIGURATION IS FOR HORIZONTAL DIRECTIONAL DRILL OF UPLAND NATURAL AND CULTURAL (ARCHAEOLOGICAL) RESOURCE SITES AS SHOWN ON PROJECT PLANS. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
2. MINIMUM SEPARATION BETWEEN THE TOP OF PIPELINE AND THE CHANNEL RESOURCE BOTTOM (DIMENSION E) MUST BE AT LEAST 2 FEET.
3. ELEVATIONS PROVIDED ARE BASED ON APPROXIMATE NAVD 88 DATUM AND MUST BE FIELD VERIFIED PRIOR TO INSTALLATION OF PIPELINE.

3 Horizontal Directional Drill (HDD) Upland Natural / Cultural Resource - Typical Section

04/13

N.T.S.

Source: VHB



Notes:

1. THIS CONFIGURATION IS FOR HORIZONTAL DIRECTIONAL DRILL OF WETLAND CROSSINGS AS SHOWN ON PROJECT PLANS. SEE ALIGNMENT SHEETS FOR LOCATIONS OF THIS CONFIGURATION.
2. TOP OF PIPELINE MUST BE BELOW THE DEPTH OF PEAT OR OTHER UNCONSOLIDATED ORGANIC MATERIALS (DIMENSION D) THROUGHOUT THE LENGTH OF THE DRILL.
3. MINIMUM SEPARATION BETWEEN THE UNCONSOLIDATED MATERIAL AND THE TOP OF PIPELINE (DIMENSION E) MUST BE AT LEAST 2 FEET.
4. ELEVATIONS PROVIDED ARE BASED ON APPROXIMATE NAVD 88 DATUM AND MUST BE FIELD VERIFIED PRIOR TO INSTALLATION OF PIPELINE.

4 Horizontal Directional Drill (HDD) Wetland Crossing - Typical Section

04/13

N.T.S.

Source: VHB

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

VHB Vanasse Hangen Brustlin, Inc.

		1	BCK	TDB	ADDED ARCH. SITE (6/08/15)
DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
CONSTRUCTION DETAILS

LOC. CHITTENDEN & ADDISON COUNTIES

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: NOTED | DWG. ANGP–T–G–020 | REV. 1

Begin Station	End Station	Min. Depth (ft.)	Reason	Notes
553+00	584+87	4		
584+87	585+08	5	STREAM 2012-SC-CM-34 (I)	
585+08	587+96	4		
587+96	590+46	5	STREAMS 2012-TB-CM-35 (P) and 2012-TB/SC-CM-36 (P)	
590+46	596+50	4		
596+50	605+25	N/A	I-89 HDD	Refer to VTRANS Permit plans for depth of cover in this area
605+25	606+00	5	Paved/Travelled Way	
606+00	606+60	5	Paved Road/Driveway	
606+60	614+00	5	Paved/Travelled Way	
614+00	616+25	4	Paved Crossing/VELCO	Includes VELCO access point
616+25	617+22	4		
617+22	618+06	5	STREAMS 2013-SC-CM-3 (E) and 2013-SC-CM-2 (E)	
618+06	628+00	4		
628+00	645+00	4	VELCO Access	
645+00	651+25	4		
651+25	653+50	4	VELCO	
653+50	655+25	4	Agriculture	
655+25	656+25	N/A	State Road Crossing - St. George Road (Route 2A)	Refer to VTRANS Permit plans for depth of cover in this area
656+25	659+75	4		
659+75	662+25	4	VELCO	
662+25	673+00	4		
673+00	692+25	4		
692+25	712+75	4	VELCO	
712+75	718+25	4		
718+25	719+75	4	VELCO/VELCO Access	
719+75	723+43	4	Agriculture	
723+43	728+63	Varies	FEH STREAM 2012-TB-SB-01 (P) - Sucker Brook	See Detail - DWG. ANGP-T-C-028A
728+63	732+00	4	VELCO Access / Agriculture	
732+00	755+50	4		
755+50	756+25	4, 5	Road Crossing - Lincoln Road	4' in ditch line, 5' under road
756+25	767+75	4		
767+75	787+75	4	VTRANS/Agriculture/VELCO Access	
787+75	788+25	4, 5	Road Crossing - Breezy Valley Drive	4' in ditch line, 5' under road
788+25	792+25	4	Agricultural	
792+25	795+75	4	VTRANS	Along Route 2A
795+75	798+75	4		
798+75	832+81	4	VELCO/Agriculture	
832+81	832+91	5	STREAM 2012-DITCH-CM-40 (D)	
832+91	838+25	4	VELCO / Agriculture	
838+25	853+75	4		
853+75	855+50	4	VELCO	
855+50	863+75	4		
863+75	884+30	4	VELCO Access / VTRANS	See VTRANS Permit plans for details
884+30	887+00	5	Landowner Condition - Peet (LL #86)	
887+00	887+75	N/A	State Road Crossing - St. George Road (Route 2A)	Refer to VTRANS Permit plans for depth of cover in this area
887+75	892+75	4		
892+75	893+75	N/A	State Road Crossing - Hinesburg Road (Route 116)	Refer to VTRANS Permit plans for depth of cover in this area
893+75	900+75	4		
900+75	902+50	4	VELCO	
902+50	904+67	4		
904+67	904+83	5	STREAM 2012-SC-PW-42 (P)	
904+83	910+25	4		
910+25	911+25	4	Agricultural	
911+25	915+50	4		
915+50	927+25	4	Agricultural / Landowner Condition - Garvey (LL #97)	
927+25	943+25	4	VELCO / Agriculture	
943+25	947+75	4		
947+75	948+25	4,5	Road Crossing - Hickory Place	4' in ditch line, 5' under road
948+25	957+50	4		
957+50	979+50	4	Agricultural	
979+50	997+93	4		
997+93	999+01	Varies	FEH STREAM 2012-SC-JB-10 (P) - Unnamed tributary to Laplatte River	See Detail - DWG. ANGP-T-C-039A
999+01	999+25			
999+25	1000+25	4,5	Road Crossing - Shelburne Falls Road	4' in ditch line, 5' under road
1000+25	1004+50	4	Landowner Condition - Fortin (LL #106)	
1004+50	1010+50	4	VELCO Access / Landowner Condition - Fortin (LL #106)	Station Equation in area - 1004+50 is adjacent to LL111/LL112 Boundary
1010+50	1015+50	4	Landowner Condition - Fortin (LL #106)	
1015+50	1023+00	4	VELCO/Agriculture	
1023+00	1025+75	4	VELCO / Agriculture / Landowner Condition - Clark (LL #108)	
1025+75	1032+50	Varies	HDD - LaPlatte River	
1032+50	1047+75	4	VELCO / Agriculture / Landowner Condition - Clark (LL #108)	
1047+75	1048+50	4,5	Road Crossing - Charlotte Road	4' in ditch line, 5' under road
1048+50	1079+38	4	VELCO/Agriculture	
1079+38	1080+53	Varies	FEH STREAM 2015-SC-1 (P)	See Detail - DWG. ANGP-T-C-042A
1080+53	1104+80	4	VELCO/Agriculture	
1104+80	1113+00	4	VELCO / Agriculture / Landowner Condition - UVM and State Ag. College (LL #112)	
1113+00	1114+00	4	Landowner Condition - UVM and State Ag. College (LL #112)	
1114+00	1114+75	4,5	Road Crossing - Baldwin Road	4' in ditch line, 5' under road
1114+75	1117+25	4	Landowner Condition - Thibault (LL #116)	
1117+25	1123+25	4	VELCO / Landowner Condition - Thibault (LL #116)	
1123+25	1175+25	4	Landowner Condition - Thibault (LL #116)	
1125+75	1167+75	4	VELCO / Agriculture / Landowner Condition - Baldwin (LL #117) and Baldwin (LL #118)	
1167+75	1180+20	Varies	HDD - Drinkwater Road Complex / Landowner Condition - Baldwin (LL #117) and Baldwin (LL #118)	
1180+20	1185+97	4	VELCO/Agriculture	
1185+97	1186+20	5	STREAM 2012-SC-PW-38 (P)	
1186+20	1195+15	4	VELCO/Agriculture	
1195+15	1221+30	Varies	HDD - Lewis Creek / Landowner Condition - Mobbs (LL # 121)	
1221+30	1268+45	4	VELCO / Agriculture / Landowner Condition - Ames (LL #124)	
1268+45	1268+55	5	STREAM 2012-DITCH-PW-30 (D)	
1268+55	1270+74	4	VELCO/Agriculture	
1270+74	1271+88	5	STREAM 2012-SC-PW-29 (I)	
1271+88	1287+63	4	Agriculture	
1287+63	1288+71	Varies	STREAM 2012/2015-TB/SC-PW-28 (P)	See Detail - DWG. ANGP-T-C-051A
1288+71	1293+50	4	Agriculture	
1293+50	1294+25	4,5	Road Crossing - Rotax Road	4' in ditch line, 5' under road
1294+25	1320+00	4	Agriculture	
1320+00	1329+50	4		
1329+50	1340+25	4	Agriculture	
1340+25	1343+00	4		
1343+00	1357+75	4	VELCO / Agriculture	
1357+75	1361+30	4	VELCO / Agriculture / Landowner Condition - Mejia and Lauer (LL #151)	
1361+30	1378+25	4	VELCO / Agriculture	
1378+25	1378+75	4,5	Road Crossing - Stilson Road (Paper Street)	4' in ditch line, 5' under road
1378+75	1397+25	4	VELCO/Agriculture	
1397+25	1397+75	4,5	Road Crossing - Hollow Road	4' in ditch line, 5' under road
1397+75	1405+24	4	VELCO/Agriculture	
1405+24	1406+63	5	STREAM 2012-TB/SC-RS-3 (P)	
1406+63	1424+00	4	VELCO/Agriculture	
1424+00	1424+50	4,5	Road Crossing - Post Road	4' in ditch line, 5' under road
1424+50	1427+96	4	VELCO/Agriculture	
1427+96	1429+06	5	STREAM 2012-SC-RS-2 (I)	
1429+06	1433+51	4	VELCO/Agriculture	
1433+51	1434+92	5	STREAM 2012-TB/SC-RS-1 (P)	
1434+92	1439+50	4	VELCO/Agriculture	
1439+50	1468+75	Varies	HDD - Monkton Swamp / Landowner Condition -Boisse (LL #178.02, 178.04, 178.05)	
1468+75	1490+25	4	VELCO / Agriculture / Landowner Condition - Boisse (LL #178.02, 178.04, 178.05)	
1490+25	1497+75	Varies	HDD - Archaeology Site VT-AD-1560 and Monkton Road / Landowner Condition - Huizenga (LL #176)	
1497+75	1503+45	4	VELCO / Agriculture / Landowner Condition - Huizenga (LL #176)	
1503+45	1503+61	5	STREAM 2012-DITCH-PW-26 (D)	
1503+61	1508+75	4	VELCO / Agriculture / Landowner Condition - Huizenga (LL #176)	
1508+75	1512+04	Varies	HDD - Archaeology Site VT-AD-1562 / Landowner Condition - Huizenga (LL #176)	
1512+04	1514+82	4	VELCO / Agriculture / Landowner Condition - Huizenga (LL #176)	
1514+82	1525+50	5	VELCO / Agriculture / Landowner Condition - Hurlburt (LL #181)	
1525+50	1536+14	5	Landowner Condition - Hurlburt (LL #181)	
1536+14	1537+40	Varies	STREAM 2012-TB-JB-7 (P)	See Detail - DWG. ANGP-T-C-061AA, Minimum 5 feet deep
1537+40	1547+25	5	Landowner Condition - Hurlburt (LL #181)	
1547+25	1547+75	5	Road Crossing - Old Stage Road	
1547+75	1553+25	5	Landowner Condition - Hurlburt (LL #181)	
1553+25	1553+75	5	Road Crossing - Old Stage Road	
1553+75	1565+26	5	Landowner Condition - Hurlburt (LL #181)	
1565+26	1565+50	5	STREAM 2013-AS-SC-RS-1 (I)	
1565+50	1566+00	5	Road Crossing - Old Stage Road	
1566+00	1580+32	5	VELCO / Agriculture / Landowner Condition - Hurlburt (LL #192)	
1580+32	1588+00	5	VELCO / Agriculture / Landowner Condition - Hurlburt (LL #196)	
1588+00	1588+75	5	Road Crossing - Parks-Hurlburt Road	
1588+75	1633+35	5	VELCO/Agriculture / Landowner Condition - Hurlburt (LL #196)	
1633+35	1635+35	Varies	FEH Stream 2012-SC-RS-5a (P) and 2012-SC-RS-5 (P)	See Detail - DWG. ANGP-T-C-065A
1635+35	1642+50	5	VELCO/Agriculture / Landowner Condition - Hurlburt (LL #196)	
1642+50	1696+00	4	VELCO / Agriculture / Landowner Condition - Choiniere (LL #213)	
1696+00	1712+80	Varies	HDD - Little Otter Creek and Plank Road, VELCO	Landowner Condition - Smith (LL #215) and Four Hill Farms (LL #216) Minimum 4 feet
1712+80	1768+00	4	VELCO Access/Agriculture	
1768+00	1768+75	4,5	Road Crossing - Quary Road	4' in ditch line, 5' under road
1768+75	1775+00	4	Agriculture	
1775+00	1780+20	4		
1780+20	1784+00	4	Landowner Condition - Smith (LL #222)	
1784+00	1786+25	4	Agriculture / Landowner Condition - Smith (LL #222)	
1786+25	1787+25	4	Landowner Condition - Smith (LL #222)	
1787+25	1793+00	4	Agriculture / Landowner Condition - Smith (LL #222)	
1793+00	1794+25	4	Landowner Condition - Smith (LL #222)	
1794+25	1798+50	4	Agriculture / Landowner Condition - Smith (LL #222)	
1798+50	1799+50	4	Landowner Condition - Smith (LL #223)	
1799+50	1841+75	4	Agriculture / Landowner Condition - Smith (LL #223) and Four Hills Farm (LL #225)	
1841+75	1842+75	N/A	Road Crossing - VT State Route 117	Refer to VTRANS Permit plans for depth of cover in this area
1842+75	1863+47	4	VELCO/VELCO Access/Agricultural	
1863+47	1865+48	5	STREAM 2012-SC-CM-63 (I)	
1865+48	1881+50	4	VELCO/VELCO Access/Agricultural	
1881+50	1882+25	4,5	Road Crossing - Town Hill Road	4' in ditch line, 5' under road
1882+25	1888+85	4	VELCO/Agriculture	
1888+85	1899+25	Varies	HDD - Archaeology Site VT-AD-806	Need to be 5 feet under STREAM 2012-TB-CM-62 (P), Need to be 5 feet deep Landowner Condition - Independent Explosives (LL #236)
1899+25	1930+25	4	VELCO / VELCO Access / Agricultural / Landowner Condition - Independent Explosives (LL #236) and Palmer (LL #237)	
1930+25	1939+30	4	Landowner Condition - Middlebury Area Land Trust (LL #238)	
1939+30	1957+50	4		
1957+50	2001+92	4	Agriculture/VELCO Access	
2001+92	2001+99	5	STREAM 2012-SC-CM-61 (E)	
2001+99	2010+50	4	Agriculture/VELCO Access	
2010+50	2012+75	4,5	Road Crossing - Hunt Road	4' in ditch line, 5' under road
2012+75	2020+97	4	VELCO / Agriculture / Landowner Condition - Sturtevant (LL #248)	
2020+97	2029+49	5	VELCO / Agriculture / Landowner Condition - Four Hill Farms (LL #249)	
2029+49	2047+50	5	VELCO / Agriculture / Landowner Condition - Four Hill Farms (LL #252)	
2047+50	2058+00	4	VELCO / Agriculture	
2058+00	2058+69	4	Landowner Condition - Miller and Burke (LL #254)	
2058+69	2058+81	5	STREAM 2012-SC-CM-59 (E)	
2058+81	2059+00	4	Landowner Condition - Miller and Burke (LL #254)	
2059+00	2068+00	4	Agriculture / Landowner Condition - Miller and Burke (LL #254)	
2068+00	2069+50	4	Landowner Condition - Miller and Burke (LL #254)	
2069+50	2070+50	4	Agriculture / Landowner Condition - Miller and Burke (LL #254)	
2070+50	2071+75	4	Landowner Condition - Miller and Burke (LL #254)	
2071+75	2074+80	4	Agriculture / Landowner Condition - Miller and Burke (LL #254)	
2074+80	2080+10	Varies	HDD - New Haven River	Minimum 4 feet of cover Landowner Condition - Miller and Burke (LL #254), Minimum 5 feet of cover Landowner Condition - Four Hill Farms (LL #255)
2080+10	2087+50	5	Agriculture / Landowner Condition - Four Hill Farms (LL #255)	
2087+50	2091+85	5	Landowner Condition - Four Hill Farms (LL #255)	
2091+85	2092+15	5	STREAM 2012-TB/SC-PW-7 (P)	
2092+15	2096+35	5	Landowner Condition - Four Hill Farms (LL #255)	
2096+35	2096+65	5	STREAM 2012-TB/SC-PW-6 (P)	
2096+65	2105+28	5	Landowner Condition - Four Hill Farms (LL #255)	
2105+28	2109+10	4		
2109+10	2109+40	5	STREAM 2012-SC-PW-5 (I)	
2109+40	2113+00	5	Landowner Condition - Four Hill Farms (LL #255)	
2113+00	2113+30	5	STREAM 2012-TB-PW-4 (I)	
2113+30	2126+75	4		
2126+75	2179+88	N/A	Along Vermont State Road	Refer to VTRANS Permit plans for depth of cover in this area, 5 feet under streams

NO. 97764
CIVIL

1 DEPTH OF COVER TABLE

N.T.S.

05/2016

SOURCE: CHA/VHB/VGS

DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION
		1	GJM	BCK		IFC PLAN EDITS (05/2016)

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
CONSTRUCTION DETAILS

LOC. CHITTENDEN & ADDISON COUNTIES

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: NOTED | DWG. ANGP-T-G-020A | REV. 1

Station	Type	Comments
556+65	SAND	
558+16	SAND	
559+66	SAND	
560+63	SAND	
562+30	BENTONITE	
563+35	BENTONITE	
571+00	BENTONITE	
582+92	BENTONITE	
584+80	BENTONITE	
585+25	BENTONITE	
586+21	BENTONITE	
587+27	BENTONITE	
588+37	BENTONITE	
588+78	BENTONITE	
589+18	SAND	
590+00	BENTONITE	
590+39	BENTONITE	
591+87	SAND	
594+06	BENTONITE	
594+97	BENTONITE	
616+31	SAND	
617+76	SAND	
619+31	SAND	
620+81	SAND	
622+31	SAND	
623+79	SAND	
625+30	SAND	
626+80	SAND	
628+30	SAND	
629+81	SAND	
631+26	BENTONITE	
631+55	BENTONITE	
632+81	SAND	
634+30	SAND	
635+81	SAND	
637+31	SAND	
638+81	SAND	
640+57	SAND	
640+94	SAND	
641+95	SAND	
642+93	SAND	
643+94	SAND	
644+94	SAND	
646+17	SAND	
647+66	SAND	
649+17	SAND	
651+07	SAND	
652+52	BENTONITE	
653+16	BENTONITE	
654+84	SAND	
660+29	SAND	
661+29	SAND	
662+30	SAND	
683+77	SAND	
685+27	SAND	
686+78	SAND	
688+28	SAND	
689+79	SAND	
691+29	SAND	
692+77	SAND	
694+29	SAND	
695+77	SAND	
697+27	SAND	
698+78	SAND	
700+28	SAND	
701+78	SAND	
703+27	SAND	
704+27	SAND	
706+20	BENTONITE	
707+00	BENTONITE	
707+91	SAND	
709+27	SAND	
710+32	SAND	
726+82	BENTONITE	
728+11	BENTONITE	
731+39	SAND	
753+49	BENTONITE	
754+68	BENTONITE	
763+13	SAND	
765+50	BENTONITE	

Station	Type	Comments
766+70	BENTONITE	
779+19	BENTONITE	
780+18	BENTONITE	
787+68	SAND	
799+53	BENTONITE	
799+86	BENTONITE	
800+91	SAND	
802+40	SAND	
803+91	SAND	
805+41	SAND	
806+34	SAND	
810+67	SAND	
811+47	SAND	
812+25	SAND	
813+06	SAND	
813+86	SAND	
814+83	SAND	
815+41	SAND	
816+26	SAND	
832+77	BENTONITE	
833+64	BENTONITE	
838+50	BENTONITE	
840+36	BENTONITE	
843+67	BENTONITE	
844+20	BENTONITE	
854+78	BENTONITE	
855+66	BENTONITE	
866+91	SAND	
870+39	SAND	
871+95	SAND	
878+41	SAND	
879+93	SAND	
881+42	SAND	
882+92	SAND	
884+41	SAND	
885+90	SAND	
887+42	SAND	
888+96	SAND	
890+49	SAND	
893+44	SAND	
894+93	SAND	
896+45	SAND	
898+05	SAND	
899+56	SAND	
901+04	SAND	
902+55	BENTONITE	
905+65	BENTONITE	
945+26	SAND	
946+79	SAND	
948+29	SAND	
949+81	SAND	
951+30	SAND	
952+78	SAND	
955+18	SAND	
956+00	SAND	
957+03	SAND	
958+04	SAND	
959+01	SAND	
960+05	SAND	
961+02	SAND	
995+65	BENTONITE	
1004+23	BENTONITE	
1005+00	BENTONITE	
1014+16	BENTONITE	
1023+10	BENTONITE	
1078+51	BENTONITE	
1080+19	BENTONITE	
1087+77	BENTONITE	
1088+03	BENTONITE	
1100+77	BENTONITE	
1101+68	BENTONITE	
1102+05	BENTONITE	
1103+05	BENTONITE	
1103+88	SAND	
1104+68	SAND	
1105+50	SAND	
1106+30	SAND	
1107+14	SAND	
1107+91	SAND	
1108+70	SAND	

Station	Type	Comments
1109+50	SAND	
1110+32	SAND	
1111+14	SAND	
1111+92	SAND	
1112+71	SAND	
1113+22	SAND	
1114+02	SAND	
1114+82	SAND	
1116+37	BENTONITE	
1118+41	BENTONITE	
1119+95	SAND	
1121+44	SAND	
1122+93	SAND	
1124+44	SAND	
1124+89	SAND	
1126+58	SAND	
1128+12	SAND	
1129+08	SAND	
1130+59	SAND	
1131+70	SAND	
1135+40	SAND	
1136+43	SAND	
1137+41	SAND	
1138+40	SAND	
1139+39	SAND	
1140+40	SAND	
1141+41	SAND	
1142+41	SAND	
1143+55	BENTONITE	
1143+85	BENTONITE	
1149+73	SAND	
1150+57	SAND	
1158+77	SAND	
1159+93	SAND	
1161+19	SAND	
1162+42	SAND	
1163+68	SAND	
1164+93	SAND	
1166+20	SAND	
1167+12	SAND	
1180+41	BENTONITE	
1184+61	SAND	
1185+86	SAND	
1188+55	SAND	
1189+97	SAND	
1191+49	SAND	
1192+98	SAND	
1222+24	SAND	
1223+70	SAND	
1225+21	SAND	
1226+68	SAND	
1227+82	SAND	
1233+97	BENTONITE	
1234+25	BENTONITE	
1238+67	BENTONITE	
1240+03	BENTONITE	
1243+93	BENTONITE	
1246+28	BENTONITE	
1247+72	BENTONITE	
1249+97	BENTONITE	
1258+54	BENTONITE	
1260+25	BENTONITE	
1263+17	BENTONITE	
1263+93	BENTONITE	
1271+13	BENTONITE	ELEVATION DATA IS SPORADIC IN THIS LOCATION. VGS CONSTRUCTION MANAGEMENT TO DETERMINE LOCATION OF SAND TRENCH BREAKERS IN FIELD.
1271+45	BENTONITE	
1288+00	BENTONITE	
1288+29	BENTONITE	
1297+30	BENTONITE	
1301+00	BENTONITE	
1301+77	BENTONITE	
1302+70	BENTONITE	
1303+78	BENTONITE	
1306+46	BENTONITE	
1307+81	BENTONITE	
1308+77	BENTONITE	
1310+74	BENTONITE	
1313+38	BENTONITE	
1314+20	BENTONITE	
1314+92	BENTONITE	

Station	Type	Comments
1356+97	BENTONITE	
1357+42	BENTONITE	
1359+49	BENTONITE	
1360+35	BENTONITE	
1372+82	SAND	
1374+31	SAND	
1380+74	SAND	
1381+62	SAND	
1382+54	SAND	
1383+45	SAND	
1384+33	SAND	
1385+45	SAND	
1386+93	SAND	
1388+41	SAND	
1389+94	SAND	
1391+45	SAND	
1392+93	SAND	
1394+59	SAND	
1395+56	SAND	
1396+62	SAND	
1398+16	BENTONITE	
1399+18	BENTONITE	
1399+93	SAND	
1402+65	SAND	
1403+90	SAND	
1405+15	SAND	
1405+71	BENTONITE	
1405+95	BENTONITE	
1406+30	SAND	
1406+82	SAND	
1407+62	SAND	
1408+41	SAND	
1409+20	SAND	
1410+05	SAND	
1410+79	SAND	
1411+60	SAND	
1412+43	SAND	
1413+21	SAND	
1414+01	SAND	
1414+85	SAND	
1415+64	SAND	
1416+25	SAND	
1417+78	SAND	
1418+08	SAND	
1418+93	SAND	
1419+86	SAND	
1420+75	SAND	
1421+68	SAND	
1422+56	SAND	
1423+43	SAND	
1424+36	SAND	
1425+27	SAND	
1426+14	SAND	
1427+07	SAND	
1427+96	SAND	
1428+85	SAND	
1429+64	BENTONITE	
1433+85	BENTONITE	
1436+41	BENTONITE	
1439+00-1463+00	ELEVATION DATA IS SPORADIC IN THIS LOCATION. VGS CONSTRUCTION MANAGEMENT TO DETERMINE LOCATION OF SAND TRENCH BREAKERS IN FIELD.	
1472+42	BENTONITE	
1473+74	BENTONITE	
1503+85	BENTONITE	
1506+89	BENTONITE	
1536+26	BENTONITE	ELEVATION DATA IS SPORADIC IN THIS LOCATION. VGS CONSTRUCTION MANAGEMENT TO DETERMINE LOCATION OF SAND TRENCH BREAKERS IN FIELD.
1537+46	BENTONITE	
1538+20	SAND	
1539+73	SAND	
1541+20	SAND	
1541+95	SAND	
1544+02	SAND	
1545+51	SAND	
1547+05	SAND	
1548+52	SAND	
1549+35	SAND	
1550+87	SAND	
1552+35	SAND	
1553+86	SAND	
1555+35	SAND	

① TRENCH BREAKER LOCATION

05/2016

N.T.S.

SOURCE: CHA

NOTE: THE FOLLOWING APPROXIMATE STATIONS ARE THE MINIMUM LOCATIONS FOR BOTH SAND AND BENTONITE TRENCH BREAKERS FOR SEGMENT 2 & 3 OF THE ADDISON NATURAL GAS PROJECT. THIS LIST WAS CREATED USING INFORMATION FROM DETAILS #2 AND #5 ON DRAWING ANGP-T-G-015 REV. 2 FROM THE PLAN SET TITLED "ADDISON NATURAL GAS PROJECT TRANSMISSION MAINLINE" DATED 04-02-15. THE CONSTRUCTION MANAGEMENT TEAM/INSPECTORS SHOULD REVIEW ACTUAL FIELD CONDITIONS AND DIRECT THE CONTRACTOR TO INSTALL ADDITIONAL TRENCH BREAKERS AS NECESSARY TO SUPPLEMENT THE LISTED AREAS.

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
		1	GJM	BCK	IFC PLAN EDITS (05/2016)

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
CONSTRUCTION DETAILS

LOC. CHITTENDEN & ADDISON COUNTIES

Vermont Gas

Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: NOTED | DWG. ANGP-T-G-020B | REV. 1

Station	Type	Comments
1579+24	BENTONITE	
1579+89	BENTONITE	
1581+19	BENTONITE	
1581+45	BENTONITE	
1601+39	BENTONITE	
1610+06	BENTONITE	
1633+54	BENTONITE	
1635+00	BENTONITE	
1640+39	BENTONITE	
1667+50	BENTONITE	
1669+58	BENTONITE	
1670+48	BENTONITE	
1680+37	BENTONITE	
1680+71	BENTONITE	
1685+24	BENTONITE	
1685+61	BENTONITE	
1719+44	BENTONITE	
1720+47	SAND	
1721+33	BENTONITE	
1722+07	SAND	
1722+86	SAND	
1723+67	SAND	
1724+48	SAND	
1725+29	SAND	
1726+10	SAND	
1726+86	SAND	
1775+00	BENTONITE	
1776+08	BENTONITE	
1778+63	BENTONITE	
1779+70	BENTONITE	
1781+32	BENTONITE	
1782+58	BENTONITE	
1786+17	BENTONITE	
1787+25	BENTONITE	
1793+44	BENTONITE	
1794+12	BENTONITE	
1846+53	SAND	
1847+97	SAND	
1849+50	SAND	
1851+02	SAND	
1852+26	BENTONITE	
1852+79	BENTONITE	
1854+01	SAND	
1855+52	SAND	
1857+01	SAND	
1863+63	SAND	
1864+40	BENTONITE	
1864+56	BENTONITE	
1865+10	SAND	
1868+50	SAND	
1869+29	SAND	
1871+64	BENTONITE	
1872+00	BENTONITE	
1884+00-1919+29	ELEVATION DATA IS SPORADIC IN THIS LOCATION. VGS CONSTRUCTION MANAGEMENT TO DETERMINE LOCATION OF SAND TRENCH BREAKERS IN FIELD.	
1917+27	BENTONITE	
1923+24	BENTONITE	
1928+39	BENTONITE	
1965+95	BENTONITE	
1971+79	BENTONITE	
1973+50	BENTONITE	
1998+48	SAND	
1999+22	SAND	
2001+41	SAND	
2002+92	SAND	
2004+39	SAND	
2005+85	BENTONITE	
2006+22	BENTONITE	
2009+41	BENTONITE	
2010+30	BENTONITE	
2010+98	SAND	
2012+51	SAND	
2014+06	SAND	
2015+53	SAND	
2017+06	SAND	
2018+55	SAND	
2058+50	BENTONITE	
2058+75	BENTONITE	
2068+30	BENTONITE	

Station	Type	Comments
2069+16	BENTONITE	
2070+23	BENTONITE	
2072+87	BENTONITE	
2091+82	BENTONITE	ELEVATION DATA IS SPORADIC IN THIS LOCATION. VGS CONSTRUCTION MANAGEMENT TO DETERMINE LOCATION OF SAND TRENCH BREAKERS IN FIELD.
2092+18	BENTONITE	
2096+25	BENTONITE	
2096+48	SAND	
2096+67	BENTONITE	
2097+93	SAND	
2099+44	SAND	
2100+90	SAND	
2102+46	SAND	
2103+94	SAND	
2105+43	SAND	
2106+96	SAND	
2108+43	SAND	
2109+14	BENTONITE	
2109+39	BENTONITE	
2109+93	SAND	
2111+42	SAND	
2113+00	BENTONITE	
2113+24	BENTONITE	
2120+77	BENTONITE	
2121+38	BENTONITE	
2142+22	BENTONITE	
2144+64	BENTONITE	
2162+30	BENTONITE	
2162+48	BENTONITE	
2174+62	SAND	

1 TRENCH BREAKER LOCATION

05/2016

N.T.S.

SOURCE: CHA

NOTE: THE FOLLOWING APPROXIMATE STATIONS ARE THE MINIMUM LOCATIONS FOR BOTH SAND AND BENTONITE TRENCH BREAKERS FOR SEGMENT 2 & 3 OF THE ADDISON NATURAL GAS PROJECT. THIS LIST WAS CREATED USING INFORMATION FROM DETAILS #2 AND #5 ON DRAWING ANGP–T–G–015 REV. 2 FROM THE PLAN SET TITLED "ADDISON NATURAL GAS PROJECT TRANSMISSION MAINLINE" DATED 04–02–15. THE CONSTRUCTION MANAGEMENT TEAM/INSPECTORS SHOULD REVIEW ACTUAL FIELD CONDITIONS AND DIRECT THE CONTRACTOR TO INSTALL ADDITIONAL TRENCH BREAKERS AS NECESSARY TO SUPPLEMENT THE LISTED AREAS.

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION
		1	GJM	BCK		IFC PLAN EDITS (05/2016)

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
CONSTRUCTION DETAILS

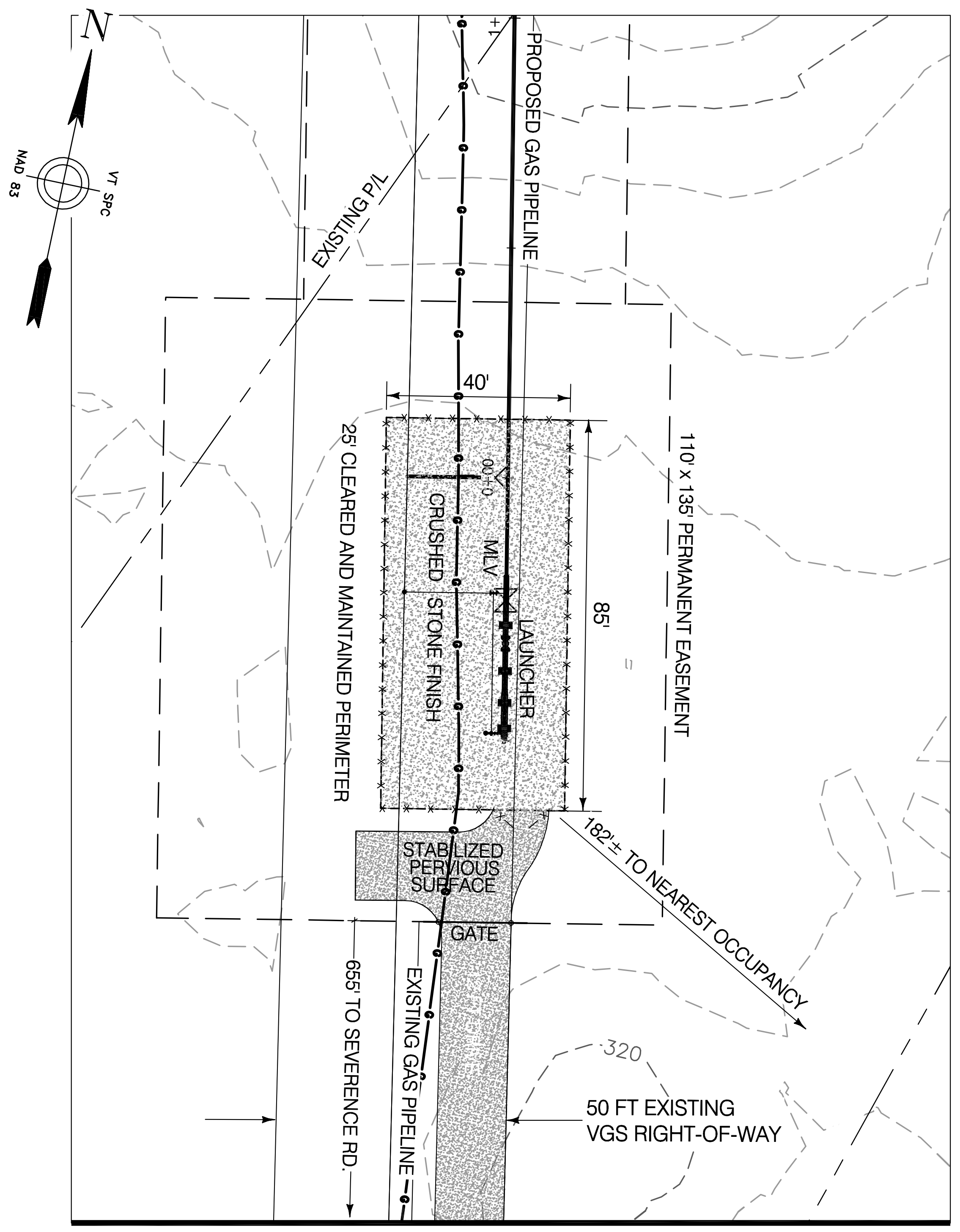
LOC. CHITTENDEN & ADDISON COUNTIES

Vermont Gas

Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: NOTED | DWG. ANGP–T–G–020C | REV. 1



① **Colchester Tie-In**

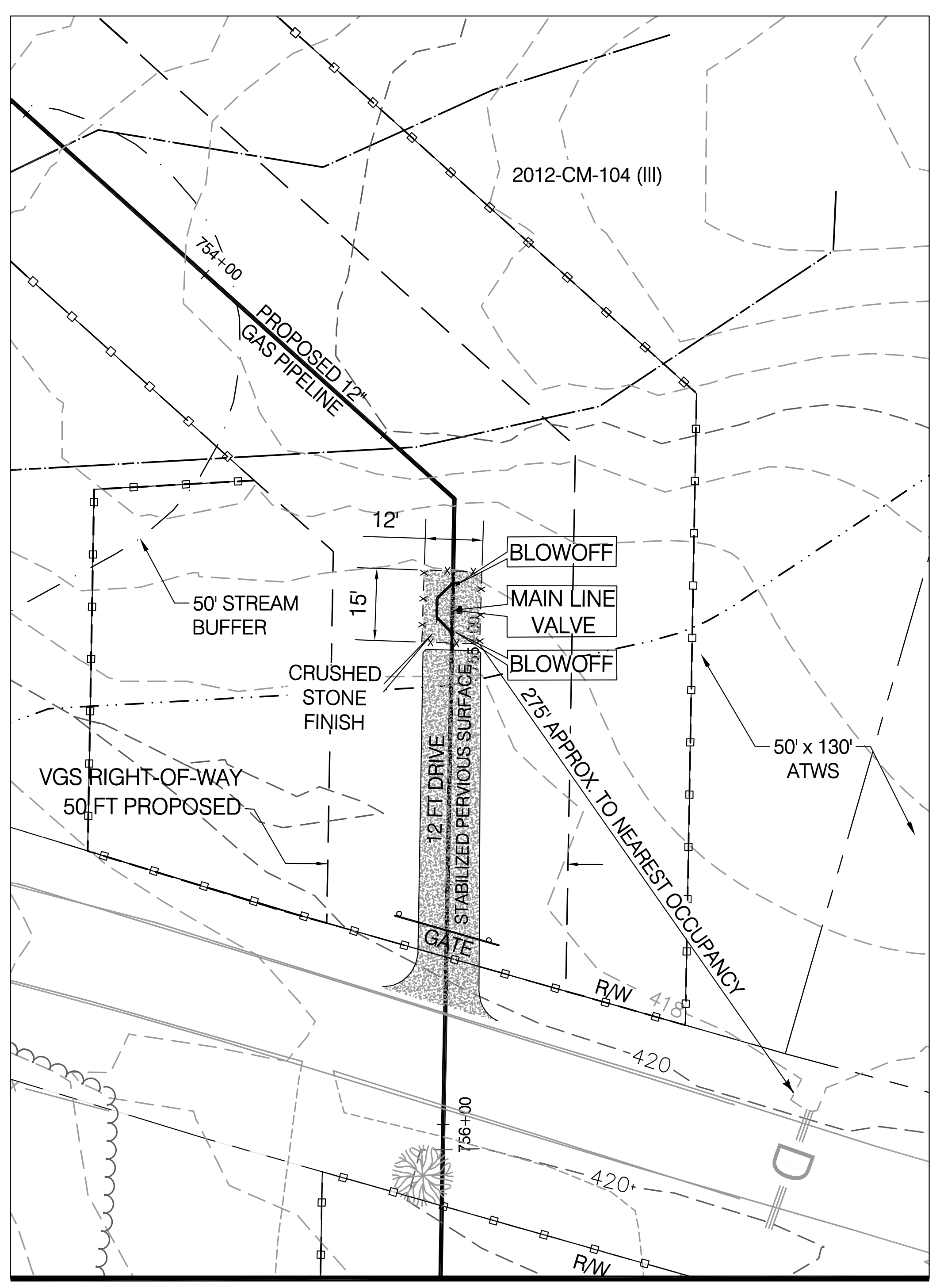
Scale: 1"=30'

4/30

② **Williston Road Station**

1"=30'

4/30

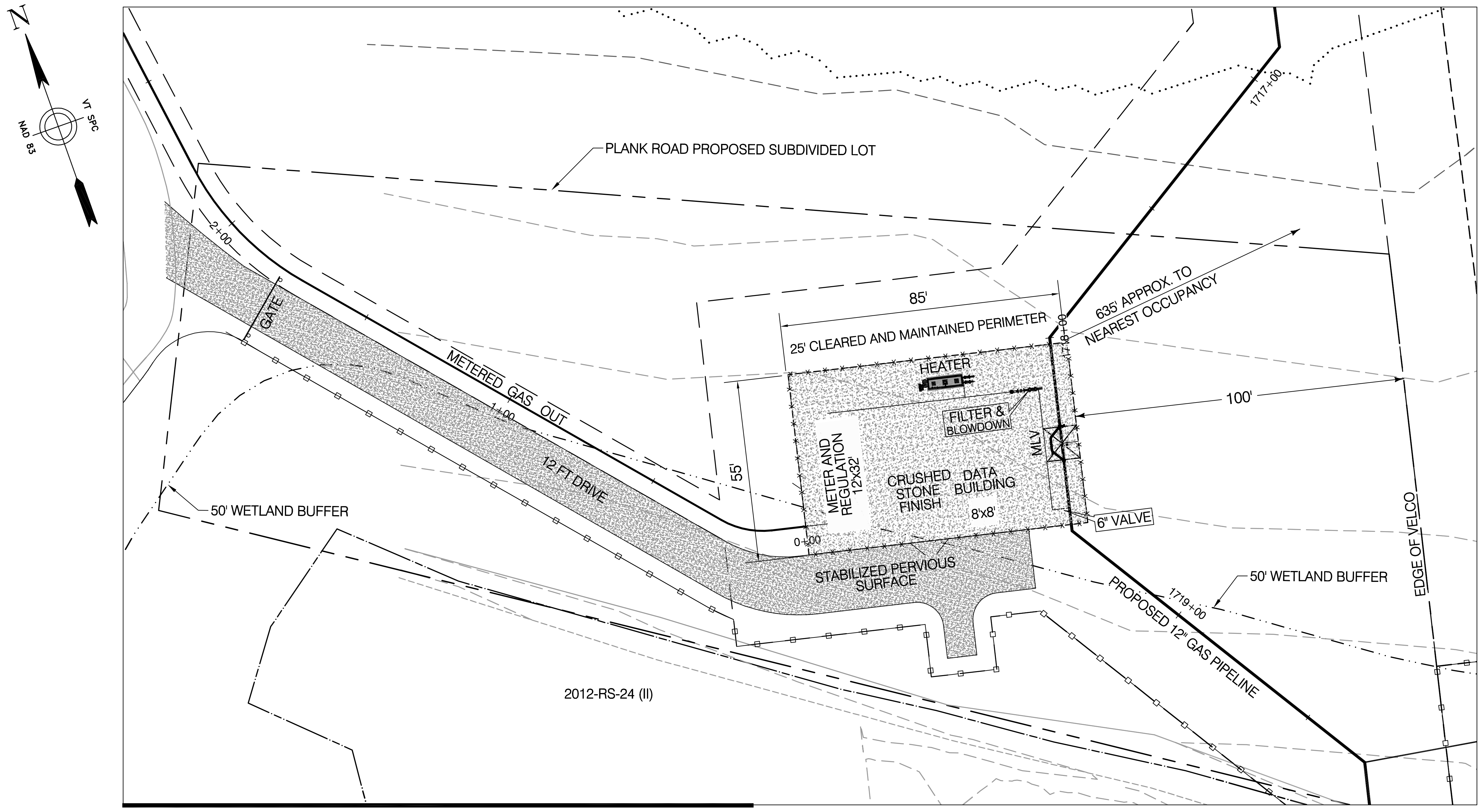


③ **Typical Main Line Valve**

1"=30'

4/30

LD_

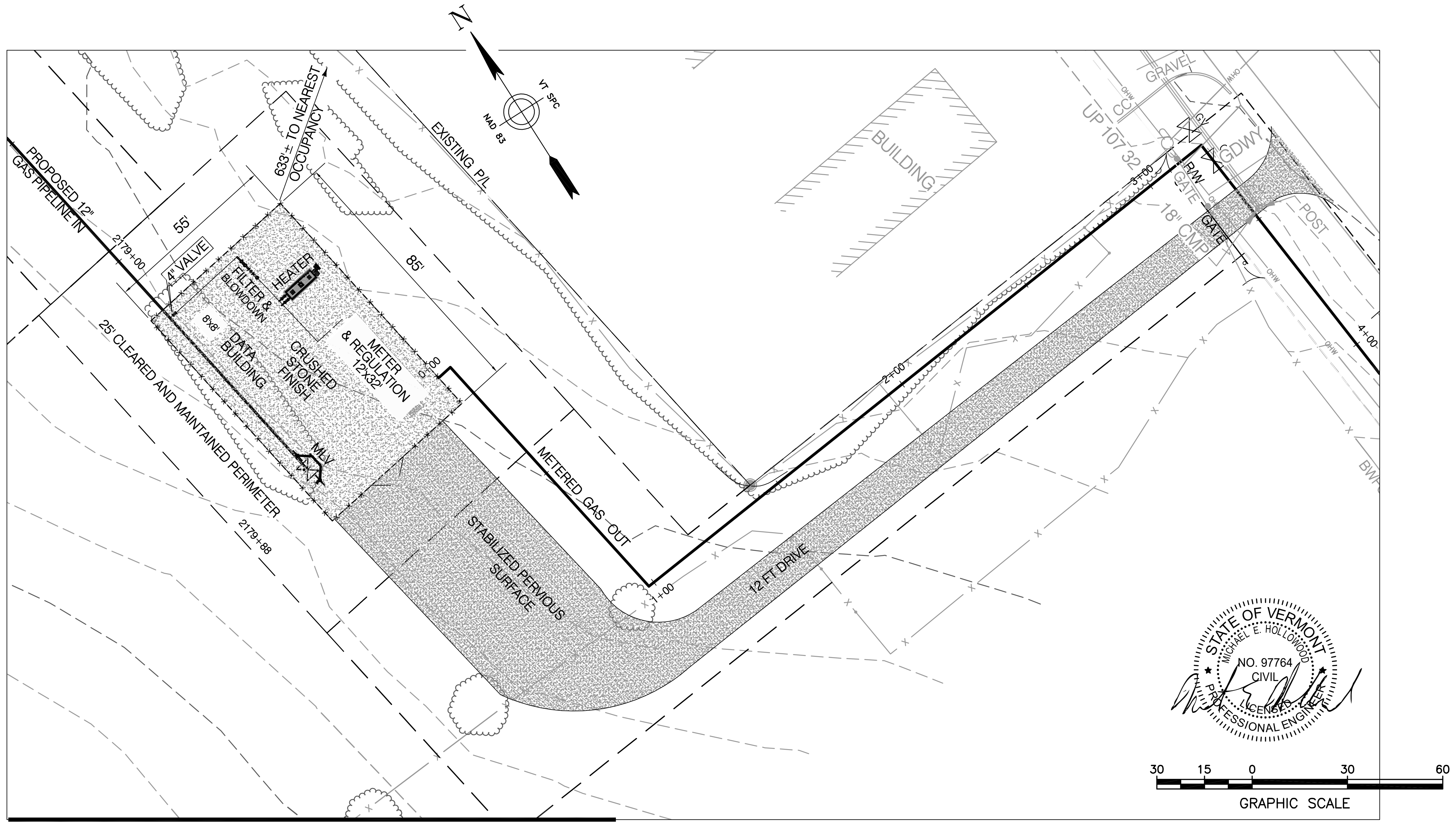


④ **Plank Road Station**

Scale: 1"=30'

4/30

LD_



STATE OF VERMONT
NO. 97764

⑤ **Middlebury Station RT 7**

Scale: 1"=30'

4/30

LD_

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
15-713-G-500	TYPICAL MAIN LINE VALVE				
15-713-G-400	COLCHESTER TIE IN				
15-713-G-300	MIDDLEBURY STATION RT 7				
15-713-G-200	PLANK ROAD STATION				
15-713-G-100	WILLISTON ROAD STATION				

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
STATION AND VALVE DETAILS

LOC. CHITTENDEN & ADDISON COUNTIES

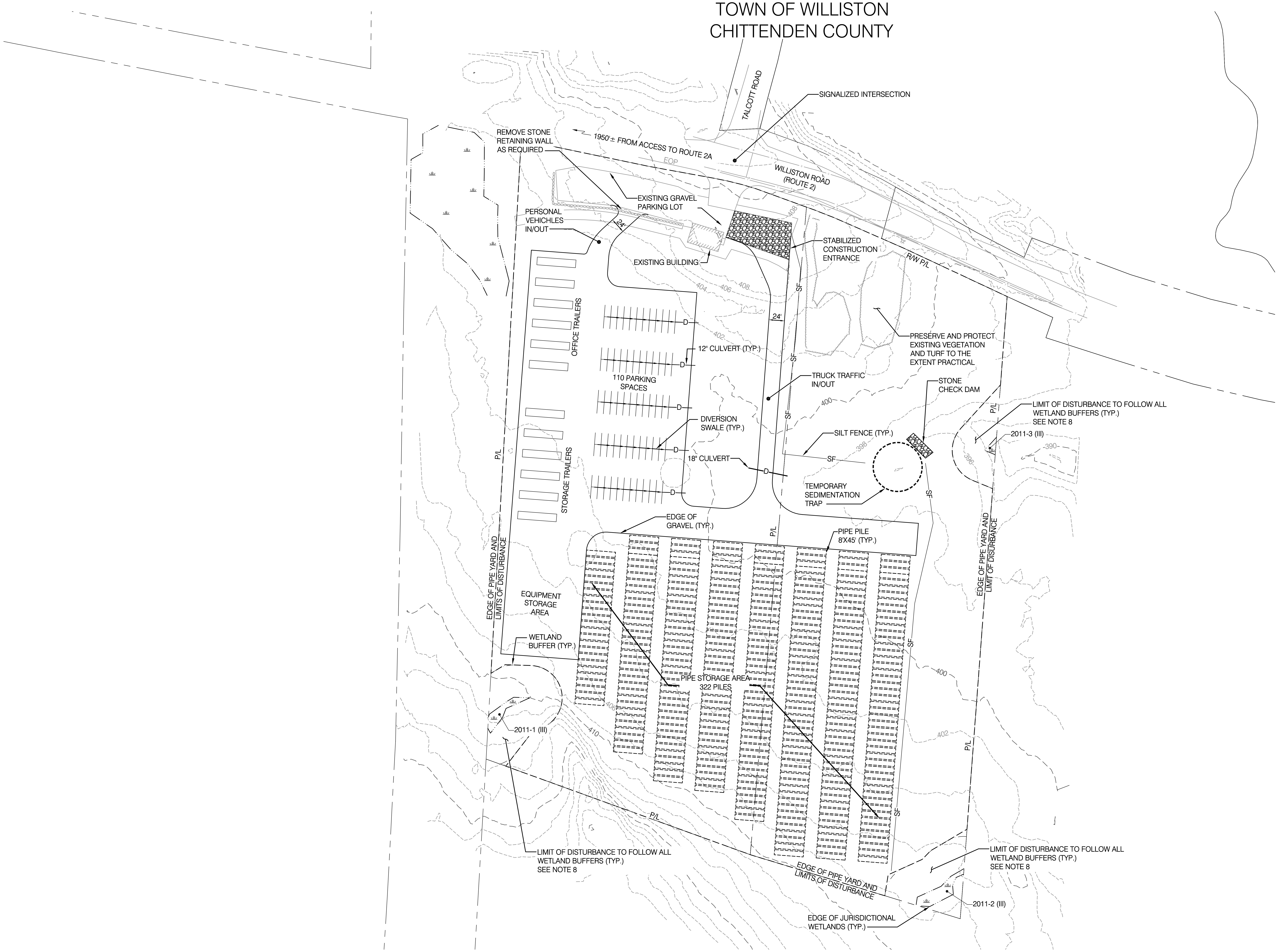
YEAR: 2016 | W.O. | SCALE: AS NOTED | DWG. ANGP-T-G-021 | REV. 0

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

TOWN OF WILLISTON
CHITTENDEN COUNTY



NOTES:

1. PURPOSE OF PLAN: TO SHOW A GENERAL LAYOUT CONFIGURATION OF A CONSTRUCTION LAYDOWN AREA (PIPE YARD) ON THE SHOWN PARCELS.

2. THE CONTRACTOR SHALL BE REPSPONSIBLE FOR SITE SECURITY AND JOB SAFETY, CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA AND LOCAL REQUIREMENTS.

3. THIS PROJECT FALLS WITHIN THE INDIVIDUAL NPDES CONSTRUCTION STORMWATER PERMIT PROGRAM. THE CONTRACTOR SHALL FOLLOW THE CONDITIONS OF THE INDIVIDUAL PERMIT AND EROSION AND SEDIMENT CONTROL PLAN (EPSC).

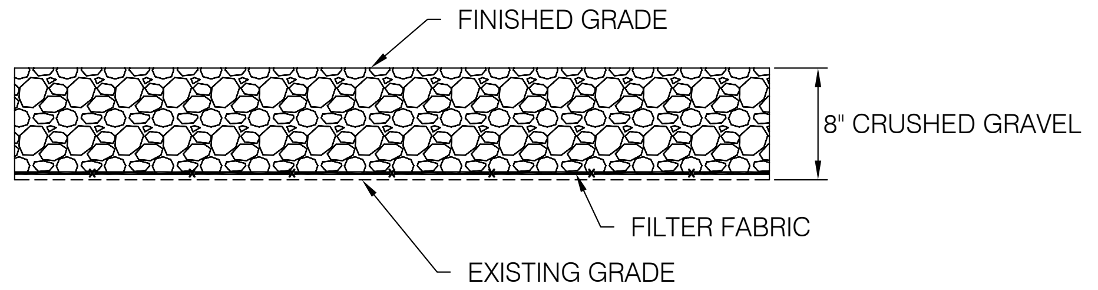
4. THE CONTRACTOR SHALL NOTIFY DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS BEFORE ANY EXCAVATION.

5. STORMWATER SHALL BE DIRECTED TO THE TEMPORARY SEDIMENT TRAP THROUGH THE USE OF DIVERSION SWALES, PIPES, WATERS, OR BY OTHER APPROVED METHODS AND MEANS.

6. LIMIT OF DISTURBANCE (LOD) TAPE AND/OR FENCE AND/OR FLAGGING SHALL BE INSTALLED PER DETAILS 1 AND 3-5, AS INDICATED ON EPSC PLAN SHEET ANGP-T-G-012.

7. LOD TAPE, FENCE, OR FLAGGING SHALL NOT CROSS ACTIVE ENTRANCE/EXITS OR IMPEDE DRAINAGE FLOW PATHS (E.G. SEDIMENT TRAP OUTFALL).

8. LOD SHALL BE EXTERNAL TO ANY JURISDICTIONAL WETLAND, WETLAND BUFFER, AND/OR OTHER NATURAL RESOURCE AREAS. THE CONTRACTOR SHALL PRESERVE AND PROTECT SAID AREAS TO THE EXTENT NECESSARY.



TYPICAL SECTION

(NTS)

80 40 0 80 160
GRAPHIC SCALE

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
WILLISTON PIPEYARD

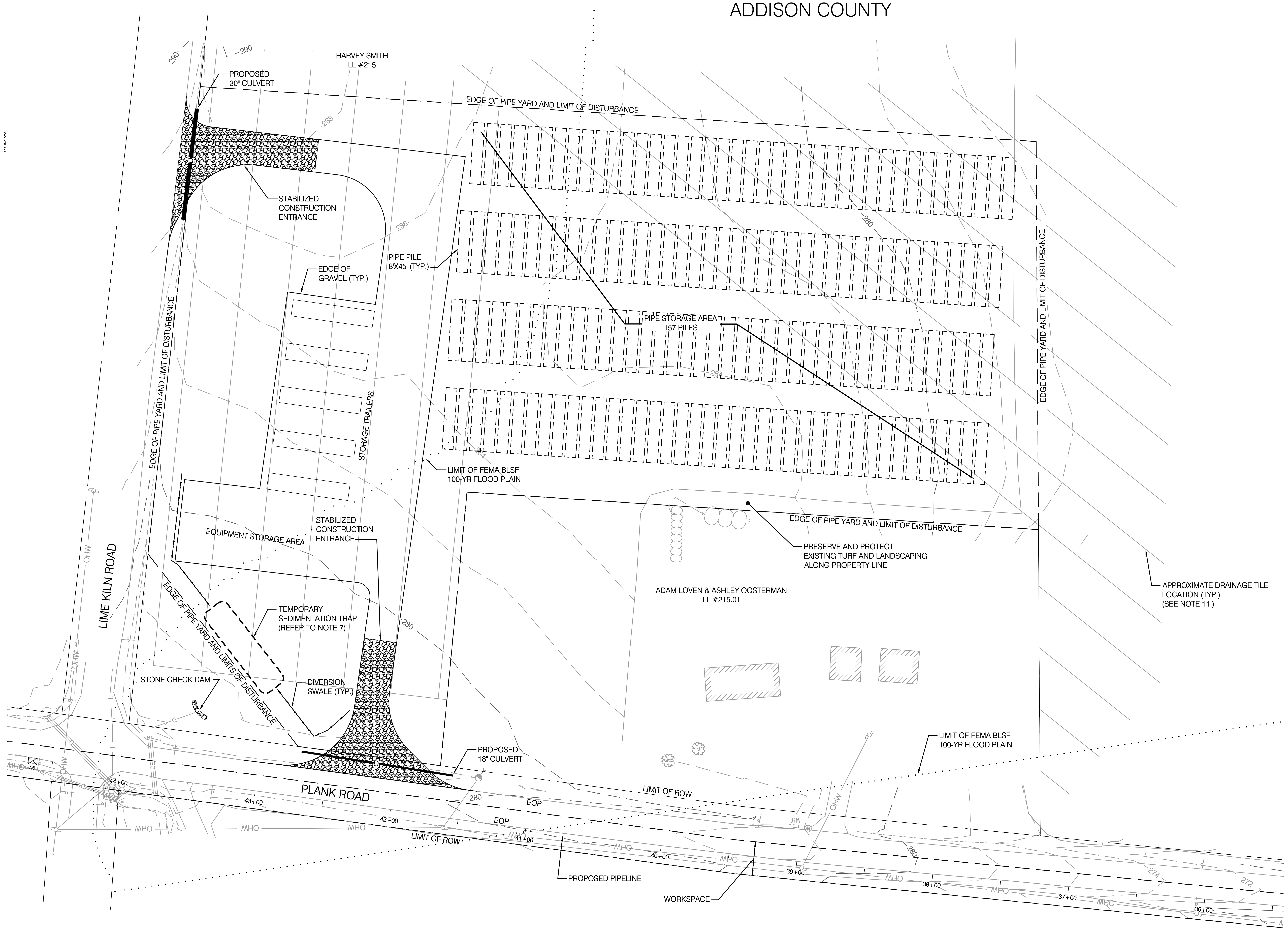
LOC. CHITTENDEN COUNTY

Vermont Gas

38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1"=80' | DWG. ANGP-T-G-022 | REV. 0

TOWN OF NEW HAVEN
ADDISON COUNTY



NOTES:

1. PURPOSE OF PLAN: TO SHOW A GENERAL LAYOUT CONFIGURATION OF A CONSTRUCTION LAYDOWN AREA (PIPE YARD) ON THE SHOWN PARCELS.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY, CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH OSHA AND LOCAL REQUIREMENTS.

3. THIS PROJECT FALLS WITHIN THE INDIVIDUAL NPDES CONSTRUCTION STORMWATER PERMIT PROGRAM. THE CONTRACTOR SHALL FOLLOW THE CONDITIONS OF THE INDIVIDUAL PERMIT AND EROSION PREVENTION AND SEDIMENT CONTROL PLAN (EPSC).

4. THE CONTRACTOR SHALL NOTIFY DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS BEFORE ANY EXCAVATION.

5. TOPSOIL IN ALL DISTURBED AREAS SHALL BE RESTORED TO IT'S ORIGINAL CONDITION UPON DECOMMISSIONING OF SITE, PER STABILIZATION NOTES ON EPSC PLAN SHEET ANGP-T-G-011.

6. THE EXISTING FIELD, CONTAINS UNDERDRAINAGE/DRAINAGE TILE WHICH SHALL BE PROTECTED DURING CONSTRUCTION, IF UNDERDRAINAGE SYSTEM IS DAMAGED, IT SHALL BE REPLACED UPON DECOMMISSIONING OF SITE.

7. THE TEMPORARY SEDIMENT TRAP SHALL BE A 'STONE OUTLET SEDIMENT TRAP' AS INDICATED ON EPSC PLAN SHEET ANGP-T-G-016. THE TRAP SHALL BE INSTALLED SUCH THAT THE BOTTOM ELEVATION OF THE TRAP IS NO LOWER, THAN THE BOTTOM ELEVATION OF THE EXISTING TOP SOIL, TO PREVENT DAMAGE TO THE EXISTING UNDERDRAINAGE SYSTEM.

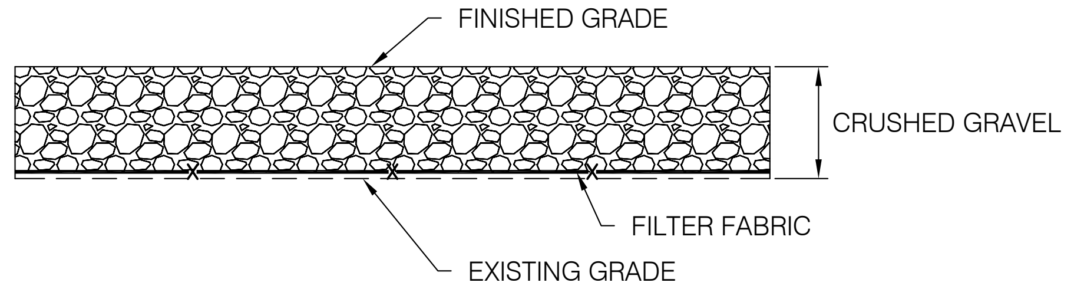
8. STORMWATER SHALL BE DIRECTED TO THE TEMPORARY SEDIMENT TRAP THROUGH THE USE OF DIVERSION SWALES, PIPES, WATER BARS OR BY OTHER APPROVED METHODS AND MEANS.

9. LIMIT OF DISTURBANCE (LOD) TAPE, AND/OR FENCE, AND/OR FLAGGING SHALL BE INSTALLED PER DETAILS 1 AND 3-5 AS INDICATED ON EPSC PLAN SHEET ANGP-T-G-012.

10. LOD TAPE, FENCE, OR FLAGGING SHALL NOT CROSS ACTIVE ENTRANCES/EXITS OR IMPEDE DRAINAGE FLOWPATHS (E.G. SEDIMENT TRAP OUTFALL).

11. DRAINAGE TILE LOCATIONS SHOWN HEREON ARE APPROXIMATE AND BASED ON INFORMATION PROVIDED BY THE LAND OWNER AND CONTRACTOR THAT INSTALLED THE DRAINAGE INFRASTRUCTURE.

12. DEPTH OF CRUSHED GRAVEL SHALL BE DETERMINED BY CONTRACTOR BASED ON EXISTING SOIL CONDITIONS AND PIPE YARD MEANS AND METHODS.



TYPICAL SECTION

(NTS)

NO. 97764
MICHAEL E. HOLLOWOOD

Vanasse Hangen Brustlin,Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

Vermont Gas

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
PLANK ROAD PIPEYARD

LOC. ADDISON COUNTY

		BID		CONSTRUCTION	
ENVIRONMENTAL		JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER		GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR		BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER		MDF	06/28/13	GEW	05/2016
DESIGN MANAGER		SAB	06/28/13	JEO	05/2016
		INITIALS	DATE	INITIALS	DATE

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION

YEAR: 2016 | W.O. | SCALE: 1"=40' | DWG. ANGP-T-G-023 | REV. 0

COATING	A	C
CLASSIFICATION	2	
DESIGN FACTOR	0.5	

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	600 FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	157 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0 FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	443 FT

STATE OF VERMONT
MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL
LICENSED
PROFESSIONAL ENGINEER

DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION
ANGP-T-G-007-010	ACCESS ROAD DETAILS					
ANGP-T-G-021	STATION AND VALVE DETAILS					
ANGP-EPSC-001A	EPSC PLAN					
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	GJM	BCK		IFC 2016 EDITS (05/2016)

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-001A | REV. 1

RIGHT-OF-WAY

MATCHLINE

1
N/F
THIBAULT, JO ANN

2
N/F
STATE OF VERMONT

MATCHLINE

SURVEY DATA

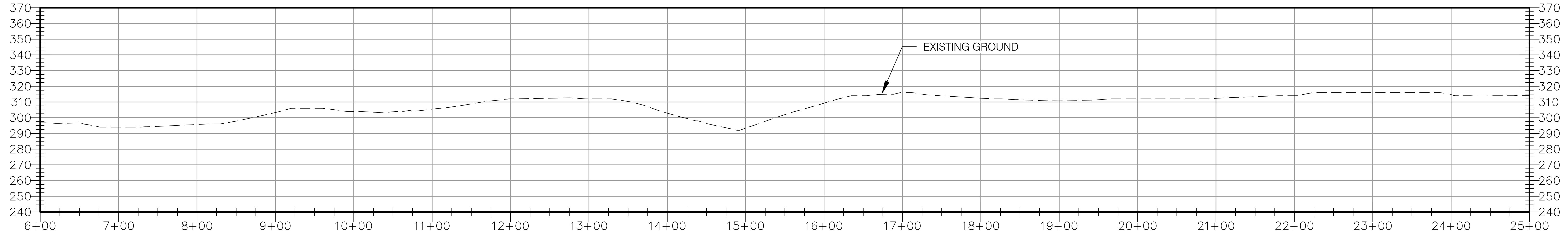
STATION	BEARING	DEFLECTION
6+51	N 22° 33' E	43°40' RT
6+69	N 66° 12' E	45°31' RT
7+08	S 68° 16' E	00°52' RT
7+49	S 67° 24' E	00°52' RT
7+89	S 66° 32' E	00°52' RT
8+29	S 65° 40' E	00°52' RT
8+69	S 64° 48' E	00°52' RT
9+09	S 63° 57' E	00°52' RT
9+49	S 63° 05' E	00°48' RT
9+83	S 62° 16' E	00°48' RT
10+29	S 61° 24' E	00°55' RT
10+69	S 60° 29' E	00°55' RT
11+09	S 59° 37' E	00°55' RT
11+49	S 58° 45' E	00°52' RT
11+89	S 57° 53' E	00°52' RT
12+29	S 57° 01' E	00°52' RT
12+69	S 56° 09' E	00°52' RT
12+98	S 55° 24' E	00°19' RT
	S 55° 05' E	
21+28	S 55° 38' E	00°33' RT
22+34	S 57° 37' E	01°59' RT

ALIGNMENT DETAIL

CONST. TYPE

W | 1G | 1B | W | 2C | 1B

PROFILE



MATERIALS

MATCHLINE

1	1	1	1
153 FT	680 FT	117 FT	950 FT

MATCHLINE

COATING	C	A	C	A
CLASSIFICATION	2			
DESIGN FACTOR	0.5			

HORIZONTAL SCALE
100 50 0 100 200 300 feet

50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	1,900 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	1,630 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	0 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	270 FT

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP–VAOT–001	VAOT ALIGNMENT SHEET				
ANGP–EPSC–001B	EPSC PLAN				
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	GJM	BCK	IFC 2016 EDITS (05/2016)

	BID INITIALS	BID DATE	CONSTRUCTION INITIALS	CONSTRUCTION DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–001B | REV. 1

Vermont Gas

Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

MATERIALS	1	1	1	1	1	1
	98 FT	83 FT	210 FT	590 FT	1,137 FT	831 FT
COATING	A	C	A	C	A	B

CLASSIFICATION	2	1
DESIGN FACTOR	0.5	

HORIZONTAL SCALE 100 50 0 100 200 300 feet
50 25 0 50 100 150 feet VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,949 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	1,445 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	831 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	673 FT

STATE OF VERMONT
MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL
LICENSED PROFESSIONAL ENGINEER

DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION
ANGP–VAOT–002	VAOT ALIGNMENT SHEET					
ANGP–VAOT–002A	VAOT PROFILE (MILL POND ROAD CROSSING)					
ANGP–T–G–007–010	ACCESS ROAD DETAILS					
ANGP–EPSC–002	EPSC PLAN	2	GJM	BCK		IFC 2016 EDITS (05/2016)
G–002 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	BCK	TDB		CP TEST LEAD EDIT (9/14/15)

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–002 | REV. 2

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,693 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	99 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	2,594 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	0 FT

STATE OF VERMONT
MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL
LICENSED PROFESSIONAL ENGINEER

VHB Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION
ANGP–VAOT–003	VAOT ALIGNMENT SHEET					
ANGP–T–G–007–010	ACCESS ROAD DETAILS					
ANGP–EPSC–003	EPSC PLAN					
G–002 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	GJM	BCK		IFC 2016 EDITS (05/2016)

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–003 | REV. 1

RIGHT-OF-WAY

MATCHLINE

4.01
N/F
TOWN OF ESSEX

5
N/F
STATE OF VERMONT

MATCHLINE

SURVEY DATA

Station	Bearing / Deflection
	S 78° 06' E
84+97	16°14' LT
	N 85° 40' E
88+48	13°16' RT
	S 81° 03' E
91+50	07°08' LT
	S 88° 12' E
93+00	21°49' LT
	N 69° 59' E
Bck: 99+25 Ahd: 99+23	24°06' RT 2' ft
	S 85° 55' E
103+75	18°15' RT
	S 67° 40' E

ALIGNMENT DETAIL

CONST. TYPE					
	8	2E	1C	W	1B

PROFILE

MATERIALS	MATCHLINE				MATCHLINE
		1	1	1	1
		547 FT	703 FT	99 FT	1,353 FT
COATING		B	A	C	A
CLASSIFICATION		1			3
DESIGN FACTOR		0.5			

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,702 FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	2,056 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	547 FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	99 FT

STATE OF VERMONT
MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL
LICENSED
PROFESSIONAL ENGINEER

VHB Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION
ANGP-VAOT-004	VAOT ALIGNMENT SHEET					
ANGP-EPSC-004	EPSC PLAN					
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	GJM	BCK		IFC 2016 EDITS (05/2016)

	BID INITIALS	BID DATE	CONSTRUCTION INITIALS	CONSTRUCTION DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-004 | REV. 1

RIGHT-OF-WAY

MATCHLINE

5
N/F
STATE OF VERMONT

5.01
COLCHESTER ROAD
VT STATE ROUTE 2A

6.01
N/F
SISTERS AND BROTHERS INVEST GROUP LLC

6
N/F
STATE OF VERMONT

7
N/F
NEW ENGLAND CENTRAL RAILROAD

8
N/F
LECLERC, LINDA & ARMAND A.

9
N/F
STATE OF VERMONT

MATCHLINE

SURVEY DATA

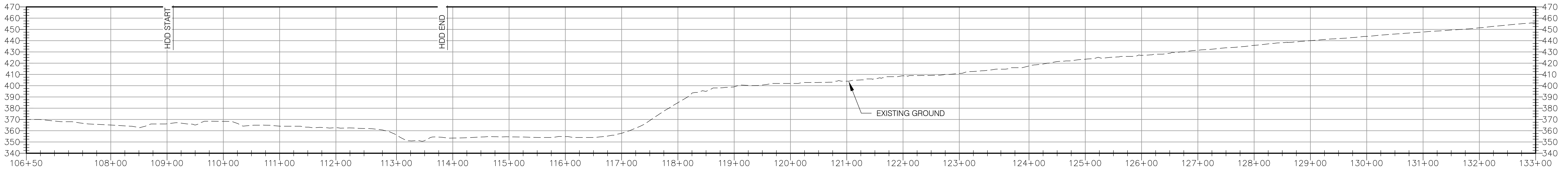
S 67° 40' E
107+40 18°31' LT
S 86° 11' E
111+02 08°53' LT
N 84° 55' E
112+02 29°31' LT
N 55° 23' E
Bck: 112+58 Ahd: 112+50 25°14' RT 7.6 ft.
N 80° 38' E
114+78 14°06' RT
N 85° 15' E
116+92 55°21' RT
S 29° 55' E
118+26 52°00' LT
S 81° 56' E
123+47 12°51' LT
S 82° 41' E
123+69 01°21' RT
S 81° 20' E
123+98 00°56' LT
S 82° 16' E
124+40 00°17' RT
S 81° 58' E
124+72 00°41' LT
S 82° 39' E
124+99 00°56' RT
S 81° 43' E
125+18 00°25' LT
S 82° 09' E
125+47 00°11' RT
S 81° 58' E
125+73 00°17' LT
S 82° 16' E
125+98 00°52' RT
S 81° 23' E
126+23 00°19' LT
S 81° 43' E
126+48 00°19' LT
S 82° 03' E
126+77 00°11' LT
S 82° 14' E
127+06 00°51' RT
S 81° 23' E
127+34 00°03' RT
S 81° 20' E
127+70 00°16' RT
S 81° 03' E
128+04 00°03' LT
S 81° 07' E
128+34 00°00' RT
S 81° 06' E
128+57 01°12' RT
S 79° 54' E
131+17 03°04' RT
S 76° 49' E

ALIGNMENT DETAIL

CONST. TYPE

1B | 8 | 2E 3 | 3

PROFILE



MATERIALS

MATERIALS	MATCHLINE	1 279 FT	1 467 FT	1 1,944 FT
COATING		A	B	A

CLASSIFICATION: 3 | 1

DESIGN FACTOR: 0.5

HORIZONTAL SCALE
100 50 0 100 200 300 feet

50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,682 FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	2,215 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	467 FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	0 FT

NO. 97764

DWG. NO.	REFERENCE DWG.
ANGP-VAOT-005	VAOT ALIGNMENT SHEET
ANGP-VAOT-005A	VAOT PROFILE (RTE. 2A (COLCHESTER ROAD) CROSSING DETAIL)
ANGP-T-C-005A	RAILROAD CROSSING DETAIL
ANGP-T-G-007-010	ACCESS ROAD DETAILS
ANGP-EPSC-005	EPSC PLAN
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS

REV	DSN	CK	DESCRIPTION
2	GJM	BCK	IFC 2016 EDITS (05/2016)
1	BCK	TDB	CP TEST LEAD EDIT (9/14/15)

	BID INITIALS	BID DATE	CONSTRUCTION INITIALS	CONSTRUCTION DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-005 | REV. 2

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

RIGHT-OF-WAY

MATCHLINE

9

N/F
STATE OF VERMONT

MATCHLINE

SURVEY DATA

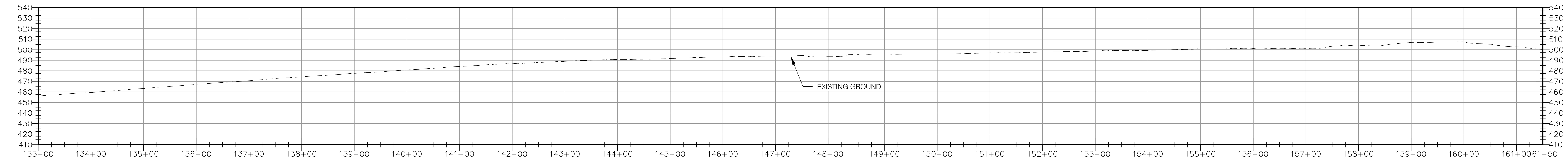
Station	Deflection	Bearing
		S 76° 49' E
133+10	02°01' RT	S 74° 48' E
135+03	02°01' RT	S 72° 46' E
136+97	02°01' RT	S 70° 45' E
138+90	02°01' RT	S 68° 44' E
140+83	02°01' RT	S 66° 42' E
142+76	01°51' RT	S 64° 50' E
146+49	00°11' RT	S 64° 39' E
147+54	45°00' RT	S 19° 39' E
147+66	45°00' LT	S 64° 39' E
148+26	45°00' LT	N 70° 21' E
Bck: 148+39 Ahd: 148+31	45°00' RT 7.3 ft.	S 64° 39' E
149+22	00°43' LT	S 65° 22' E
153+27	01°08' RT	S 64° 14' E
155+46	00°57' LT	S 65° 11' E
155+77	00°15' LT	S 65° 26' E
156+22	01°24' RT	S 64° 02' E
156+72	00°00' RT	S 64° 02' E
158+43	18°51' LT	S 82° 53' E
159+22	10°09' LT	N 86° 57' E
159+88	00°00' RT	N 86° 57' E
159+98	00°00' LT	N 86° 57' E
161+04	25°25' RT	S 67° 38' E

ALIGNMENT DETAIL

CONST. TYPE

③ ②A ②C

PROFILE



MATERIALS

MATCHLINE

①

2,857 FT

MATCHLINE

COATING	A
CLASSIFICATION	1
DESIGN FACTOR	0.5

HORIZONTAL SCALE
100 50 0 100 200 300 feet

50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,857 FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	2,857 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0 FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	0 FT

MICHAEL E. HOLLOWOOD
NO. 97764

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP-VAOT-006	VAOT ALIGNMENT SHEET				
ANGP-EPSC-006	EPSC PLAN				
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	GJM	BCK	IFC 2016 EDITS (05/2016)

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-006 | REV. 1

RIGHT-OF-WAY

MATCHLINE

9
N/F
STATE OF VERMONT

MATCHLINE

SURVEY DATA

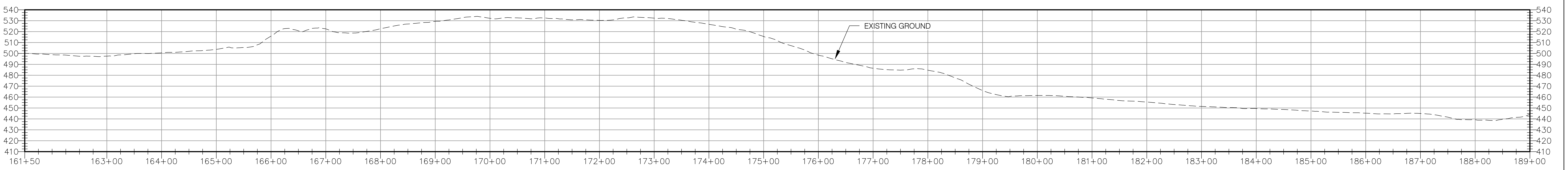
Bearing	Station	Deflection
S 67° 38' E	164+52	04°00' LT
S 71° 38' E	176+71	00°43' LT
S 71° 38' E	178+50	09°28' RT
S 62° 53' E	180+02	7°54' LT
S 70° 47' E	182+97	08°02' RT
S 62° 46' E		

ALIGNMENT DETAIL

CONST. TYPE

(2C) (W) (W)

PROFILE



MATERIALS

MATCHLINE

MATERIALS	① 1,561 FT	① 35 FT	① 128 FT	① 1,026 FT
COATING	A	C	A	C
CLASSIFICATION	1			
DESIGN FACTOR	0.5			

MATCHLINE

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,750 FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	1,689 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0 FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	1,061 FT

STATE OF VERMONT
MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL
LICENSED
PROFESSIONAL ENGINEER

Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION
ANGP-VAOT-007	VAOT ALIGNMENT SHEET					
ANGP-EPSC-007	EPSC PLAN					
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	GJM	BCK		IFC 2016 EDITS (05/2016)

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-007 | REV. 1

HORIZONTAL SCALE

100 50 0 100 200 300 feet

50 25 0 50 100 150 feet

VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,694	FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0	FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	2,119	FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0	FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	575	FT

MICHAEL E. HOLLOWOOD
NO. 97764

DWG. NO.	REFERENCE DWG.
ANGP-VAOT-008A	VAOT PROFILE (RTE. 15 (UPPER MAIN ST.) CROSSING DETAIL)
ANGP-VAOT-008	VAOT ALIGNMENT SHEET
ANGP-T-G-007-010	ACCESS ROAD DETAILS
ANGP-EPSC-008	EPSC PLAN
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS

REV	DSN	CK	DESCRIPTION
1	GJM	BCK	IFC 2016 EDITS (05/2016)

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-008 | REV. 1

COATING	A	C	A
CLASSIFICATION	3		
DESIGN FACTOR	0.5		

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,809 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	2,634 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	0 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	175 FT

NO. 97764

DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION
ANGP–VAOT–009A	VAOT PROFILE (ESSEX WAY CROSSING DETAIL)					
ANGP–VAOT–009	VAOT ALIGNMENT SHEET					
ANGP–T–G–007–010	ACCESS ROAD DETAILS					
ANGP–EPSC–009	EPSC PLAN					
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	GJM	BCK		IFC 2016 EDITS (05/2016)

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–009 | REV. 1

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

RIGHT-OF-WAY

MATCHLINE

9
N/F
STATE OF VERMONT

9.10
N/F
SAYBROOK HOMEOWNERS ASSOCIATION

MATCHLINE

SURVEY DATA

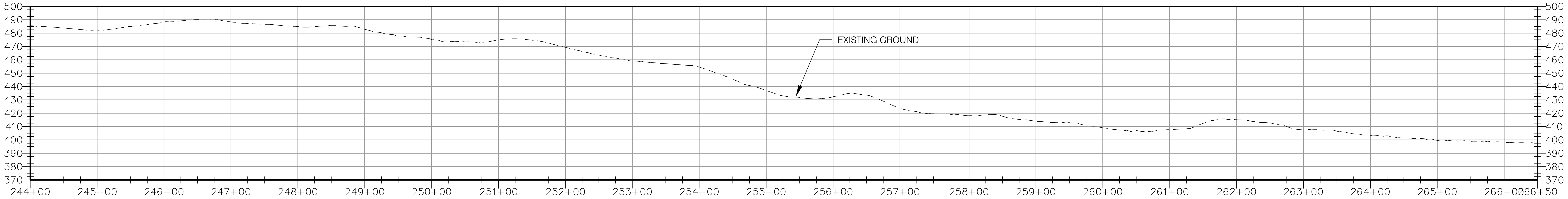
Station	244+96	248+83	250+97	254+35	Bck: 257+93 Ahd: 257+90 3' FE	261+31	263+06
Angle	13°22' LT	18°17' RT	09°48' RT	11°49' LT	14°04' RT	21°11' RT	21°26' LT

Bearing
S 56° 26' E
S 69° 49' E
S 51° 31' E
S 41° 42' E
S 53° 32' E
S 39° 28' E
S 18° 17' E
S 39° 43' E

ALIGNMENT DETAIL

CONST. TYPE	2C	1B

PROFILE



MATERIALS	MATCHLINE	1	1	1	MATCHLINE
		1,256 FT	311 FT	686 FT	
COATING		A	C	A	

CLASSIFICATION	3	1
DESIGN FACTOR	0.5	

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,253 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	1,942 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	0 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	311 FT

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

DWG. NO.	REFERENCE DWG.
ANGP–VAOT–010	VAOT ALIGNMENT SHEET
ANGP–EPSC–0010	EPSC PLAN
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS

REV	DSN	CK	DESCRIPTION
1	GJM	BCK	IFC 2016 EDITS (05/2016)

	BID INITIALS	BID DATE	CONSTRUCTION INITIALS	CONSTRUCTION DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–010 | REV. 1

Vermont Gas

Vanasse Hangen Brustlin, Inc.

38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

RIGHT-OF-WAY

MATCHLINE

9.13
N/F
BIRCHWOOD LAND
COMPANY C/O
OWEN JENKINS

9
N/F
STATE OF VERMONT

MATCHLINE

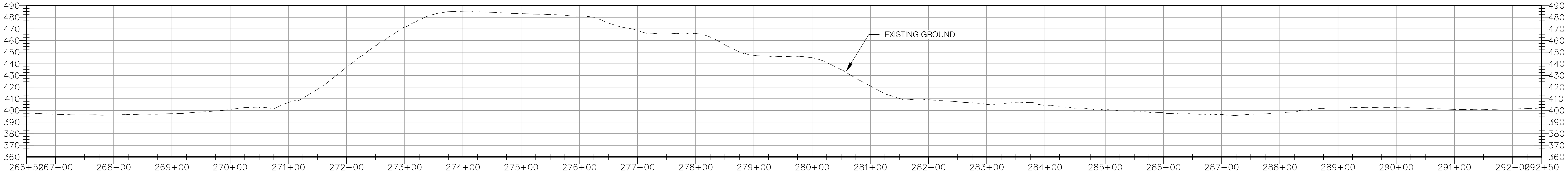
SURVEY DATA

Station	Offset	Bearing
		S 39° 42' E
269+34	17°31' LT	
		S 57° 13' E
273+85	36°43' RT	
		S 20° 30' E
277+19	17°44' RT	
		S 02° 46' E
283+80	21°21' LT	
		S 24° 07' E
Bck: 284+39 Ahd: 284+36 4 ft.		
		S 24° 07' E
289+01	06°48' LT	
		S 30° 55' E
290+40	13°37' LT	
		S 44° 32' E

ALIGNMENT DETAIL

CONST. TYPE: 1B | W | 2C | 1B

PROFILE



MATERIALS

MATCH LINE

①

2,604 FT

MATCHLINE

COATING	A
CLASSIFICATION	1
DESIGN FACTOR	0.5

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,604 FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	2,604 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0 FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	0 FT

STATE OF VERMONT
MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL
LICENSED PROFESSIONAL ENGINEER

DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION
ANGP-VAOT-011	VAOT ALIGNMENT SHEET					
ANGP-EPSC-011	EPSC PLAN					
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	GJM	BCK		IFC 2016 EDITS (05/2016)

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-011 | REV. 1

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

RIGHT-OF-WAY

MATCHLINE

9
N/F
STATE OF VERMONT

11
N/F
FORESTDALE GROUP, LLC

MATCHLINE

SURVEY DATA

Station	Deflection	Bearing
		S 44° 32' E
296+45	13°16' LT	S 57° 48' E
298+63	26°03' RT	S 31° 45' E
301+91	10°56' RT	S 20° 48' E
304+76	00°37' RT	S 20° 10' E
307+95	02°00' RT	S 18° 10' E
311+60	05°54' LT	S 24° 05' E
313+10	00°15' LT	S 24° 20' E
314+91	19°05' RT	S 02° 53' E
316+91	00°47' RT	S 00° 15' W
318+91	01°07' RT	S 05° 01' W
321+08	23°01' RT	S 29° 18' W

ALIGNMENT DETAIL

CONST. TYPE

1B | 7 | 1B | W | 2C | W | 1D | W

PROFILE

MATERIALS	MATCHLINE	①	①	①	①	①	①	①	MATCHLINE
		730 FT	31 FT	1,606 FT	40 FT	377 FT	81 FT	35 FT	
COATING		A	C	A	C	A	C	A	

CLASSIFICATION	1	3
DESIGN FACTOR	0.5	

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:	
1 12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,900 FT
2 20" O.D. X 0.375" WT, API–5L, GR. B	0 FT
PIPE COATING:	
A EPOXY POLYETHYLENE 10/40	2,748 FT
B FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	0 FT
C FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	152 FT

STATE OF VERMONT
MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL
LICENSED
PROFESSIONAL ENGINEER

VHB Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP–VAOT–012	VAOT ALIGNMENT SHEET				
ANGP–EPSC–012	EPSC PLAN	2	GJM	BCK	IFC 2016 EDITS (05/2016)
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	BCK	TDB	CP TEST LEAD EDIT (9/14/15)

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–012 | REV. 2

RIGHT-OF-WAY

MATCHLINE

11
N/F
FORESTDALE GROUP, LLC

9
N/F
STATE OF VERMONT

14.02
N/F
RAYMOND, FRANCIS E.
& ELAINE B.

14.03
N/F
RAYMOND,
FRANCIS E.,
ELAINE B. &
PETER W.

14.02
N/F
RAYMOND, FRANCIS E.
& ELAINE B.

14
N/F
STEINER,
PAUL M.

MATCHLINE

SURVEY DATA

Bearing	Station	Deflection
S 29° 18' W	321+52	18°40' RT
S 47° 59' W	322+37	13°20' LT
S 34° 38' W	324+01	24°10' LT
S 10° 27' W	324+52	13°01' RT
S 23° 29' W	327+52	02°38' RT
S 26° 08' W	328+12	01°58' RT
S 28° 06' W	328+71	01°58' RT
S 30° 05' W	329+30	01°58' RT
S 32° 03' W	329+89	01°58' RT
S 34° 02' W	330+48	01°58' RT
S 36° 00' W	331+07	09°00' RT
S 45° 01' W	332+11	08°38' LT
S 36° 23' W	Bck: 332+71 Ahd: 332+94	−23.1 ft.
S 36° 23' W	335+52	05°44' LT
S 30° 39' W	337+04	09°00' RT
S 39° 40' W	339+07	06°15' LT
S 33° 24' W	340+62	00°57' LT
S 32° 27' W	340+72	01°54' LT
S 30° 32' W	340+82	01°54' LT
S 28° 38' W	340+92	01°54' LT
S 26° 43' W	341+02	01°54' LT
S 24° 49' W	341+12	01°54' LT
S 22° 55' W	341+22	01°54' LT
S 21° 00' W	341+32	01°54' LT
S 19° 06' W	341+42	01°54' LT
S 17° 11' W	341+52	01°54' LT
S 15° 17' W	341+62	01°54' LT
S 13° 23' W	341+72	01°54' LT
S 11° 28' W	341+82	01°54' LT
S 09° 34' W	341+92	00°57' LT
S 08° 37' W	342+66	05°15' RT
S 13° 52' W	344+07	05°19' RT
S 19° 12' W	345+48	28°44' LT
S 09° 33' E	345+86	24°40' RT
S 15° 08' W	346+34	16°44' LT
S 01° 36' E	347+58	61°21' LT
S 62° 58' E	348+27	12°03' RT
S 50° 55' E	349+91	31°10' LT
S 82° 05' E	351+13	12°02' RT
S 70° 03' E		

ALIGNMENT DETAIL

CONST. TYPE: 1D | 1B | 2C | 1B | 2C | 1E | 7 | 1E

PROFILE

MATERIALS

MATERIALS	① 1,296 FT	① 158 FT	① 1,217 FT	① 306 FT
COATING	A	C	A	C
CLASSIFICATION	3			1
DESIGN FACTOR	0.5			

MATCHLINE

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,977 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	2,513 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	0 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	464 FT

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION
ANGP–VAOT–013	VAOT ALIGNMENT SHEET					
ANGP–EPSC–013	EPSC PLAN					
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	GJM	BCK		IFC 2016 EDITS (05/2016)

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–013 | REV. 1

RIGHT-OF-WAY

MATCHLINE

15 N/F ESSEX GREEN COMMON LAND	14.01 N/F MIKALONIS, DONNA & BESSIE	16 RIVER ROAD ROUTE 117	17 N/F ESSEX GREEN COMMON LAND	18 WINOOSKI RIVER	19 N/F BABCOCK, JAMES	20 N/F NEW ENGLAND CENTRAL RAILROAD
14 N/F STEINER, PAUL M.			17.01 N/F RAYMOND, FRANCIS E., ELAINE B., PETER W. & LINDA	TOWN OF ESSEX | TOWN OF WILLISTON		

MATCHLINE

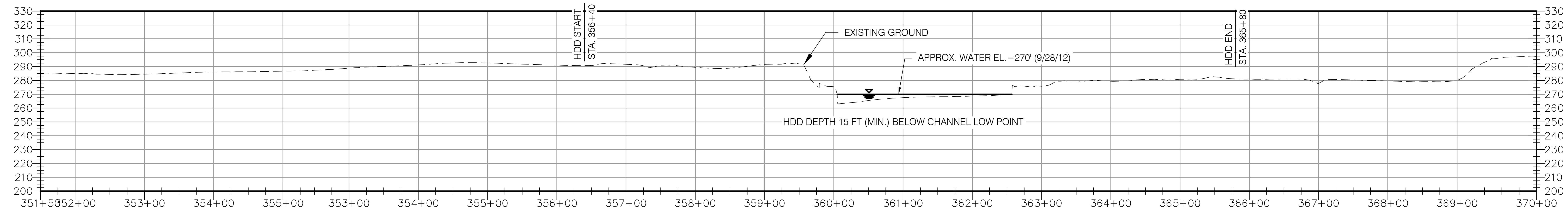
SURVEY DATA

Station	Bearing	Deflection / Distance
354+13	S 70° 03' E	00°10' LT
354+89	S 70° 13' E	45°00' RT
Bck: 355+29 Ahd: 352+34 44°59' RT	S 25° 13' E	295.4 ft.
	S 19° 47' W	
356+22		09°32' LT
	S 10° 15' W	
365+89		29°12' RT
	S 39° 27' W	
366+08		32°27' RT
	S 71° 55' W	
Bck: 369+22 Ahd: 369+07	N 55° 32' W	14.70 ft.

ALIGNMENT DETAIL

CONST. TYPE: 1E | 8 | 2A | W

PROFILE



MATERIALS

	MATCHLINE							MATCHLINE
MATERIALS	①	①	①	①	①	①	①	
LENGTH	12 FT	88 FT	52 FT	633 FT	940 FT	36 FT	399 FT	
COATING	C	A	C	A	B	A	C	
CLASSIFICATION	1							
DESIGN FACTOR	0.5							

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,160 FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	757 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	940 FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	463 FT

STATE OF VERMONT
MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL
LICENSED PROFESSIONAL ENGINEER

VHB Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.
ANGP-T-C-014A	ROUTE 117 (RIVER ROAD) AND WINOOSKI RIVER CROSSING DETAIL
ANGP-T-G-07-010	ACCESS ROAD DETAILS
ANGP-EPSC-014	EPSC PLAN
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS

REV	DSN	CK	DESCRIPTION
2	BCK	TDB	CP TEST LEAD EDIT (9/14/15)
1	BCK	TDB	MLV 1 RELOCATION (6/09/15)

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-014 | REV. 2

RIGHT-OF-WAY

MATCHLINE

19	20	21	22	23 / 23.01	23.01	23
N/F BABCOCK, JAMES	N/F NEW ENGLAND CENTRAL RAILROAD	N/F CHITTENDEN SOLID WASTE DISTRICT	N/F STATE OF VERMONT; AGENCY OF TRANSPORTATION	23 N/F CHITTENDEN SOLID WASTE DISTRICT 23.01 N/F BURLINGTON TRANSFER STATION	N/F BURLINGTON TRANSFER STATION	N/F CHITTENDEN SOLID WASTE DISTRICT

MATCHLINE

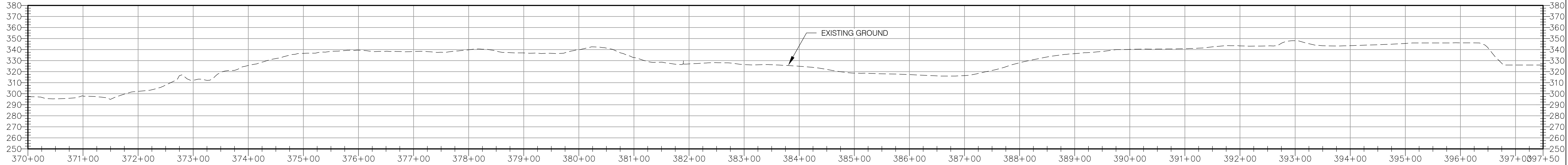
SURVEY DATA

Bearing	Deflection / Station
N 55° 32' W	81°05' LT 372+41
S 43° 23' W	80°47' RT 374+04
N 55° 50' W	06°56' LT 381+57
N 62° 46' W	45°42' LT 386+73
S 71° 31' W	

ALIGNMENT DETAIL

CONST. TYPE	W	2A	10	1A	W	2A	W	W	1A	1E	7	W

PROFILE



MATERIALS

MATCHLINE

MATERIALS	1	1	1 2	1	1	1	1
Length	179 FT	80 FT	121 FT	656 FT	557 FT	1,052 FT	105 FT
COATING	C	A	C	A	C	A	C

MATCHLINE

CLASSIFICATION	1	3
DESIGN FACTOR	0.5	

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:	
1 12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,750 FT
2 20" O.D. X 0.375" WT, API-5L, GR. B	121 FT
PIPE COATING:	
A EPOXY POLYETHYLENE 10/40	1788 FT
B FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0 FT
C FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	962 FT

STATE OF VERMONT
MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL
LICENSED PROFESSIONAL ENGINEER

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP-VAOT-015	VAOT ALIGNMENT SHEET				
ANGP-T-C-015A	RAILROAD CROSSING DETAIL	3	GJM	BCK	IFC 2016 EDITS (05/2016)
ANGP-EPSC-015	EPSC PLAN	2	BCK	TDB	CP TEST LEAD EDIT (9/14/15)
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	BCK	TDB	MLV 1 RELOC., PROP. LN. ADJ., CONST. TYPE CHNG. (6/09/15)

	BID INITIALS	BID DATE	CONSTRUCTION INITIALS	CONSTRUCTION DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-015 | REV. 3

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:
1 12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112 — 3,000 FT
2 20" O.D. X 0.375" WT, API-5L, GR. B — 0 FT

PIPE COATING:
A EPOXY POLYETHYLENE 10/40 — 2,618 FT
B FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL — 0 FT
C FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3 — 382 FT

1

STATE OF VERMONT
MICHAEL E. HOLLOWAY
NO. 97764
CIVIL
LICENSED PROFESSIONAL ENGINEER

Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP-T-G-021	STATION AND VALVE DETAILS				
ANGP-EPSC-016	EPSC PLAN	2	GJM	BCK	IFC 2016 EDITS (05/2016)
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	BCK	TDB	CONSTRUCTION TYPE CHANGE (6/09/15)

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-016 | REV. 2

RIGHT-OF-WAY

MATCHLINE

28	29	33	30	31	30
N/F CHITTENDEN SOLID WASTE DISTRICT	N/F CHITTENDEN SOLID WASTE DISTRICT	N/F VERMONT TRANSCO., LLC	N/F CHITTENDEN SOLID WASTE DISTRICT	N/F CHITTENDEN SOLID WASTE DISTRICT	N/F CHITTENDEN SOLID WASTE DISTRICT

30
N/F
CSWD

23.02
REDMOND ROAD

MATCHLINE

SURVEY DATA

Bearing	Station	Deflection
S 22° 39' W	427+18	00°00' LT
S 22° 38' W	427+46	02°35' LT
S 20° 03' W	427+70	45°00' RT
S 65° 03' W	427+97	44°38' LT
S 20° 24' W	429+11	45°21' LT
S 24° 57' E	Bck: 429+39 Ahd: 428+72 45°00' RT	67.2 ft.
S 20° 03' W	432+64	00°00' RT
S 20° 03' W	432+78	03°12' LT
S 16° 50' W	433+43	01°16' RT
S 18° 07' W	434+07	00°38' RT
S 18° 45' W	434+85	00°58' RT
S 19° 44' W	435+51	01°57' RT
S 21° 42' W	436+17	01°17' RT
S 22° 59' W	436+38	00°03' LT
S 22° 56' W	437+95	01°40' RT
	441+23	01°13' RT
S 44° 58' W	448+24	01°55' LT
S 43° 03' W	448+64	01°59' LT
S 41° 03' W	449+04	01°59' LT
S 39° 03' W	449+44	01°59' LT
S 37° 03' W	449+84	08°16' LT
S 28° 47' W	451+82	13°00' LT
S 15° 46' W	453+50	27°18' LT
S 11° 33' E		

ALIGNMENT DETAIL

CONST. TYPE						
	W	4A	W	7	4A	W

PROFILE

MATERIALS

MATCHLINE

MATERIALS	①	①	①	①	①	①	①	①	①	①	①
	192 FT	27 FT	799 FT	12 FT	294 FT	109 FT	254 FT	128 FT	259 FT	226 FT	367 FT
COATING	A	C	A	C	A	C	A	C	A	C	A
CLASSIFICATION	3				1						
DESIGN FACTOR	0.5										

MATCHLINE

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:	
1 12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,667 FT
2 20" O.D. X 0.375" WT, API-5L, GR. B	0 FT
PIPE COATING:	
A EPOXY POLYETHYLENE 10/40	2,165 FT
B FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0 FT
C FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	502 FT

STATE OF VERMONT
MICHAEL E. HOLLOWAY
NO. 97764
CIVIL
LICENSED PROFESSIONAL ENGINEER

DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION
ANGP-EPSC-017	EPSC PLAN					
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	BCK	TDB		CP TEST LEAD EDIT (9/14/15)

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016	W.O.	SCALE: 1" = 100'	DWG. ANGP-T-C-017	REV. 1

MATERIALS	1	1	1	1	1	1	1
	544 FT	167 FT	500 FT	136 FT	179 FT	44 FT	925 FT
COATING	A	C	A	C	A	C	A
CLASSIFICATION	1					3	
DESIGN FACTOR	0.5						

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:		
1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,495 FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0 FT
PIPE COATING:		
A	EPOXY POLYETHYLENE 10/40	2,148 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0 FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	347 FT

STATE OF VERMONT
MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL
LICENSED PROFESSIONAL ENGINEER

								BID		CONSTRUCTION	
							ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
							DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
ANGP-VAOT-018	VAOT ALIGNMENT SHEET						DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
ANGP-EPSC-018	EPSC PLAN						DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS						DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION		INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-018 | REV. 0

RIGHT-OF-WAY

MATCHLINE

35
N/F
STATE OF VERMONT

36
MOUNTAIN VIEW ROAD

37
N/F
BRENNAN WOODS HOMEOWNERS ASSOCIATION

36.01
N/F
THE BIG THREE

38
N/F
STATE OF VERMONT

MATCH LINE

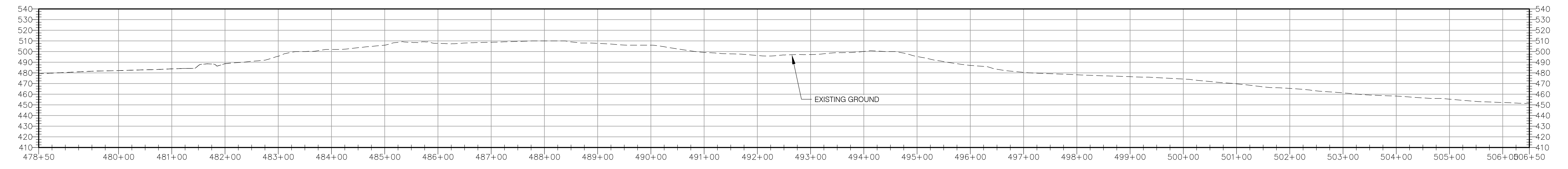
SURVEY DATA

Station	Deflection	Bearing
481+21	89°59' RT	S 61° 35' E
		S 28° 25' W
482+70	31°32' LT	S 03° 08' E
489+23	63°54' LT	
490+75	89°59' RT	S 67° 02' E
		S 22° 57' W

ALIGNMENT DETAIL

CONST. TYPE	4A	9	1A	2A	1A	1G	1B	2C

PROFILE



MATERIALS

	MATCHLINE			MATCHLINE
MATERIALS	1 281 FT	1 84 FT	1 2,435 FT	
COATING	A	C	A	
CLASSIFICATION	3			
DESIGN FACTOR	0.5			

HORIZONTAL SCALE
100 50 0 100 200 300 feet

50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,800 FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	2,716 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0 FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	84 FT

STATE OF VERMONT
NO. 97764
CIVIL
LICENSED
PROFESSIONAL ENGINEER

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

Vermont Gas

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP-VAOT-019	VAOT ALIGNMENT SHEET				
ANGP-EPSC-019	EPSC PLAN				
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS				

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-019 | REV. 0

RIGHT-OF-WAY

MATCHLINE

Parcel	Owner
36.01	N/F THE BIG THREE
36.02	N/F JEFFREY S. & AMANDA E. BOLIBA
36.03	N/F NGUYEN V. NGUYEN & LE T. HONG
36.04	N/F TONG & WINNY NGUYEN
36.05	N/F JAMIE K. & ALYSSA K. CHASE
36.06	N/F DAVID & MANDY BOISJOLI
36.07	N/F COMMON LAND
38	N/F STATE OF VERMONT; AGENCY OF TRANSPORTATION

MATCHLINE

SURVEY DATA

Station	Deflection	Bearing
		S 22° 57' W
511+97	00°00' RT	S 22° 57' W
513+30	00°13' RT	S 22° 44' W
515+19	00°42' LT	S 22° 02' W
516+38	00°41' LT	S 21° 21' W
518+04	00°33' LT	S 20° 48' W
518+52	29°48' RT	S 50° 36' W
518+97	30°16' LT	S 20° 20' W
519+95	00°22' LT	S 00° 00' W
520+18	30°30' LT	S 10° 29' E
520+63	30°39' RT	S 19° 40' W
521+03	00°12' LT	S 19° 28' W
521+43	00°12' LT	S 19° 17' W
521+83	00°12' LT	S 19° 05' W
522+23	00°12' LT	S 18° 54' W
522+63	00°12' LT	S 18° 42' W
523+03	00°12' LT	S 18° 31' W
523+43	00°12' LT	S 18° 19' W
523+83	00°12' LT	S 18° 08' W
524+23	00°12' LT	S 17° 56' W
524+63	00°12' LT	S 17° 45' W
525+03	00°11' LT	S 17° 34' W
Bck: 525+40 Ahd: 525+43 −3 ft.	00°58' LT	S 18° 32' W
529+87	21°59' RT	S 40° 31' W
530+05	21°59' LT	S 18° 31' W

ALIGNMENT DETAIL

CONST. TYPE	W	2C	W	1B	2C	W	1B

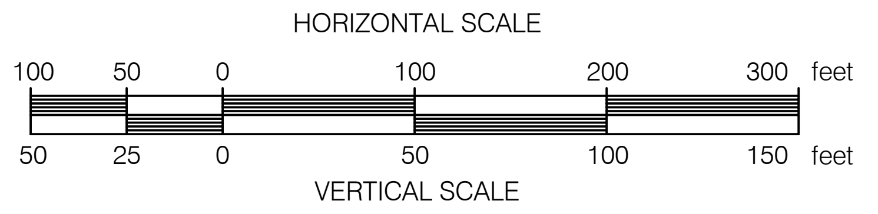
PROFILE

MATERIALS

MATCHLINE

MATERIALS	1	1	1	1	1	1
	176 FT	114 FT	295 FT	247 FT	58 FT	1,657 FT
COATING	C	A	C	A	C	A
CLASSIFICATION	3					
DESIGN FACTOR	0.5					

MATCHLINE



PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,547 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	2,018 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	0 FT
C	FBE 14–16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	529 FT

STATE OF VERMONT
MICHAEL E. HOLLOWELL
NO. 97764
CIVIL
LICENSED
PROFESSIONAL ENGINEER

DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION
ANGP–VAOT–020	VAOT ALIGNMENT SHEET					
ANGP–EPSC–020	EPSC PLAN					
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	BCK	TDB		CP TEST LEAD EDIT (9/14/15)

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–020 | REV. 1

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

RIGHT-OF-WAY

MATCHLINE

38.01
N/F
COMMON LAND

37.01
N/F
TOWN OF WILLISTON

38
N/F
STATE OF VERMONT

39
WILLISTON
ROAD
ROUTE 2

41.01
N/F
ARMS, STEVEN
& LISA

41
N/F
TOWN OF
WILLISTON

MATCH LINE

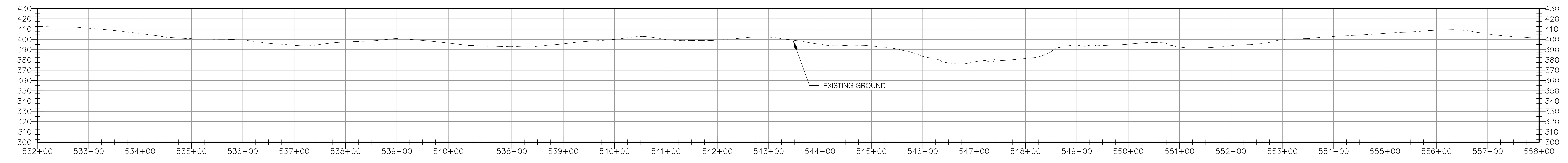
SURVEY DATA

Station	Deflection	Bearing (following)
530+65	22°00' LT	S 18° 31' W (preceding) / S 03° 29' E
530+84	22°00' RT	S 18° 31' W
531+14	01°40' LT	S 16° 51' W
537+24	89°51' RT	N 73° 17' W
538+99	64°04' LT	S 42° 39' W
538+99	64°01' LT	S 58° 40' W
Bck: 540+45 Ahd: 537+22 324 ft.		S 58° 40' W
539+29	16°05' LT	S 42° 34' W
541+82	06°22' RT	S 48° 56' W
544+60	09°17' LT	S 39° 39' W
545+38	18°42' LT	S 20° 57' W
551+13	00°00' RT	S 20° 57' W
553+38	26°00' RT	S 46° 58' W

ALIGNMENT DETAIL

CONST. TYPE: 1B | 1G | W | 2C | 1G | W | 7 | W | 9 | W | 2A | W | 1A

PROFILE



MATERIALS

MATCHLINE						MATCHLINE
	1	1	1	1	1	
	786 FT	160 FT	770 FT	797 FT	411 FT	
COATING	A	C	A	C	A	

CLASSIFICATION	3	1
DESIGN FACTOR	0.5	

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,924 FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	1,967 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0 FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	957 FT

STATE OF VERMONT
MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL
LICENSED PROFESSIONAL ENGINEER

VHB Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION
ANGP-T-C-023C	VAOT CROSSING DETAIL SHEET					
ANGP-VAOT-021A	VAOT PROFILE US ROUTE 2 (WILLISTON ROAD) CROSSING DETAIL					
ANGP-VAOT-021	VAOT ALIGNMENT SHEET					
ANGP-T-G-021	STATION AND VALVE DETAILS					
ANGP-EPSC-021	EPSC PLAN					
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	BCK	TDB		CP TEST LEAD EDIT (9/14/15)

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-021 | REV. 1

RIGHT-OF-WAY

MATCHLINE

41
N/F
TOWN OF WILLISTON

47
N/F
ALLEN BROOK DEVELOPMENT INC.

MATCHLINE

SURVEY DATA

S 46° 58' W

23°01' LT
568+56

S 23° 56' W

28°16' RT
570+79

S 52° 12' W

−1112.20 ft.
Bck: 571+38
Ahd: 582+50
45°00' RT

N 82° 48' W

ALIGNMENT DETAIL

CONST. TYPE

1A	W	2A	1A	2A	W	1E	2A	W	1E	2A

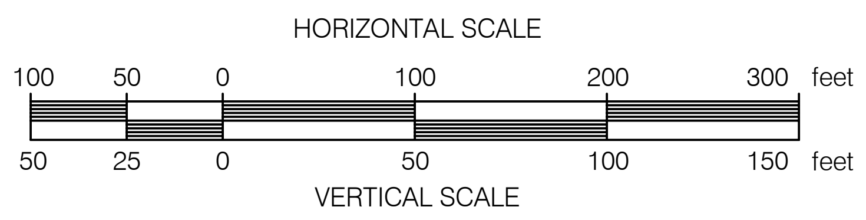
PROFILE

MATERIALS

MATERIALS	1	1	1	1	1	1	1
	377 FT	234 FT	595 FT	222 FT	111 FT	667 FT	232 FT
COATING	A	C	A	C	A	C	A

CLASSIFICATION 1 3

DESIGN FACTOR 0.5



PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,438 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	1,315 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	0 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	1,123 FT

STATE OF VERMONT
MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL
LICENSED
PROFESSIONAL ENGINEER

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

Vermont Gas

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP–EPSC–022	EPSC PLAN				
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS				

	BID INITIALS	BID DATE	CONSTRUCTION INITIALS	CONSTRUCTION DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–022 | REV. 0

RIGHT-OF-WAY

MATCHLINE

47	44	50.02 / 50.01	54.03	54.02	54.01
N/F ALLEN BROOK DEVELOPMENT INC.	N/F STATE OF VERMONT	N/F 291 HURRICANE LANE, LLC N/F DUNN, WILLIAM	N/F DUNN, WILLIAM	N/F HILLSIDE EAST CO.	N/F DUNN, WILLIAM
			53 HURRICANE LANE		

MATCH LINE

SURVEY DATA

595+58 N 82° 48' W 85°48' LT

S 11° 24' W

605+29 56°01' RT

S 67° 25' W

Bck: 605+49
Ahd: 605+45
606+29 44°59' RT N 67° 35' W 4.1 ft. 02°19' LT

607+28 N 69° 54' W 03°52' LT

608+00 N 73° 46' W 05°40' LT

608+80 N 79° 27' W 06°29' LT

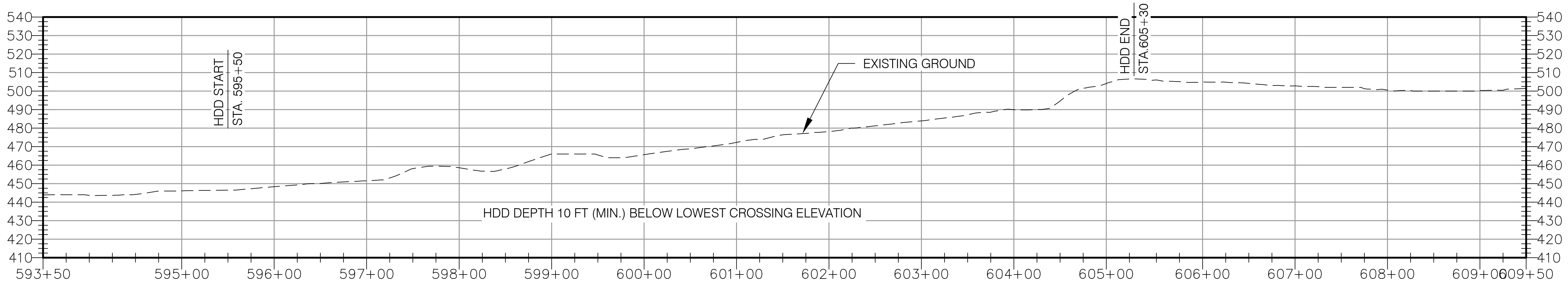
N 85° 56' W

ALIGNMENT DETAIL

CONST. TYPE

2A	1E	W	2A	8	4C

PROFILE



MATERIALS

MATCHLINE

MATERIALS	1	1	1	1	1	1
	13 FT	186 FT	19 FT	82 FT	880 FT	424 FT
COATING	A	C	A	C	B	A
CLASSIFICATION	3					
DESIGN FACTOR	0.5					

MATCHLINE

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:		
1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	1,604 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT
PIPE COATING:		
A	EPOXY POLYETHYLENE 10/40	456 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	880 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	268 FT

MICHAEL E. HOLLOWAY
NO. 97764

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP–T–G–07–010	ACCESS ROAD DETAILS				
ANGP–EPSC–023B	EPSC PLAN				
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	GJM	BCK	IFC 2016 EDITS (05/2016)

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–023B | REV. 1

MATERIALS	1	1	1	1	1	1
	1,537 FT	32 FT	267 FT	52 FT	239 FT	221 FT
COATING	A	C	A	C	A	C
CLASSIFICATION	3		2			
DESIGN FACTOR	0.5					

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:		
1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,350 FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0 FT
PIPE COATING:		
A	EPOXY POLYETHYLENE 10/40	2,043 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0 FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	307 FT

NO. 97764

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP-T-G-07-010	ACCESS ROAD DETAILS				
ANGP-EPSC-024	EPSC PLAN				
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	GJM	BCK	IFC 2016 EDITS (05/2016)

	BID INITIALS	BID DATE	CONSTRUCTION INITIALS	CONSTRUCTION DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-024 | REV. 1

Vermont Gas

Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

RIGHT-OF-WAY

MATCHLINE

56
N/F
BOSS, BRADLEY

57
N/F
OAK HILL ESTATES ASSOCIATION

58
ST. GEORGE ROAD
VT STATE ROUTE 2A

62.01
N/F
PALMER, DAVID

61
N/F
BLACKBERRY RIDGE
HOMEOWNERS ASSOCIATION

62
N/F
LUNNA, STEPHEN R.
& JENNIFER J.

MATCH LINE

SURVEY DATA

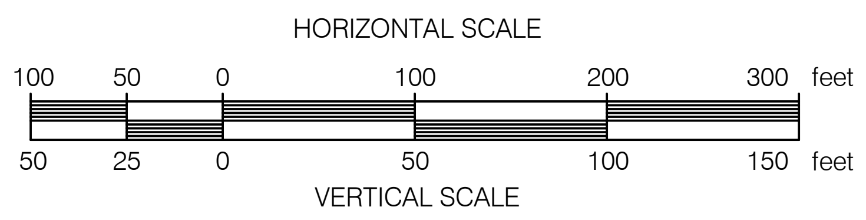
Station	Deflection	Bearing (following)
		S 24° 29' W
637+40	00°29' RT	S 24° 00' W
638+26	00°11' RT	S 23° 49' W
639+78	43°39' RT	S 67° 28' E
Bck: 640+12 Ahd: 640+38	-26 ft.	S 67° 28' E
640+93	44°09' RT	N 68° 23' W
644+91	45°10' LT	S 66° 26' W
645+47	44°46' LT	S 21° 39' W
645+93	00°28' LT	S 21° 10' W
646+79	00°21' LT	S 20° 49' W
648+48	00°42' RT	S 21° 31' W
651+91	00°15' RT	S 21° 46' W
655+19	44°59' RT	S 66° 46' W
Bck: 655+39 Ahd: 655+47	-8.1 ft.	N 68° 45' W
656+50	44°28' RT 48°36' LT	S 62° 38' W
661+71	22°59' LT	S 39° 38' W
662+84	22°07' LT	S 17° 31' W

ALIGNMENT DETAIL

CONST. TYPE														
	1E	2A	1A	2A	W	1H	W	1A	9	1A	1H	1A	

PROFILE

MATERIALS	MATCHLINE											MATCHLINE
Pipe	1	1	1	1	1	1	1	1	1	1	
Length	49 FT	137 FT	60 FT	414 FT	60 FT	1,006 FT	296 FT	187 FT	117 FT	640 FT	
COATING	C	A	C	A	C	A	C	A	C	A	
CLASSIFICATION	2										
DESIGN FACTOR	0.5										



PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,966 FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	2,384 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0 FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	582 FT

MICHAEL E. HOLLOWOOD
NO. 97764

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP-VAOT-025A	VAOT ALIGNMENT SHEET				
ANGP-EPSC-025	EPSC PLAN				
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	GJM	BCK	IFC 2016 EDITS (05/2016)

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-025 | REV. 1

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

RIGHT-OF-WAY

MATCHLINE

61 N/F BLACKBERRY RIDGE HOMEOWNERS ASSOCIATION	61.01 N/F POODIACK, ROBERT & JUNE	63 N/F MARCOTTE, NORMAN & RITA A.	64 N/F BRODERICK, CLAUDE R.	65 N/F ROBEAR, LEONARD P. & MARY D.	63 N/F MARCOTTE, NORMAN & RITA A.
62 N/F LUNNA, STEPHEN R. & JENNIFER J.					

MATCH LINE

SURVEY DATA

Bearing	S 17° 31' W	S 17° 56' W	S 18° 02' W	S 17° 54' W	S 17° 52' W	S 17° 39' W	S 18° 08' W	S 17° 42' W	S 27° 17' E
Deflection at end	00°25' RT	00°06' RT	00°07' LT	00°02' LT	00°13' LT	00°29' RT	00°26' LT	44°59' LT	
Station at end	665+47	670+61	673+98	679+46	684+37	687+53	691+35	692+00	

ALIGNMENT DETAIL

MATERIALS

MATCHLINE

1

2,900 FT

MATCHLINE

COATING	A
CLASSIFICATION	2
DESIGN FACTOR	0.5

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,900 FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	2,900 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0 FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	0 FT

STATE OF VERMONT
MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL
LICENSED
PROFESSIONAL ENGINEER

Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP-EPSC-026	EPSC PLAN				
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS				

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

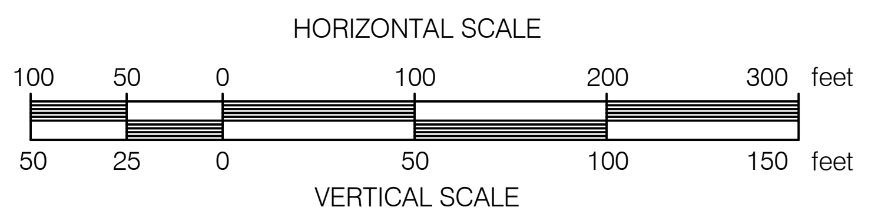
LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-026 | REV. 0

MATERIALS	1	1	1	1	1
	1,428 FT	53 FT	1,159 FT	76 FT	255 FT
COATING	A	C	A	C	A
CLASSIFICATION	2				
DESIGN FACTOR	0.5				



PIPE MATERIAL:
1 12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112 — 2,971 FT
2 20" O.D. X 0.375" WT, API-5L, GR. B — 0 FT

PIPE COATING:
A EPOXY POLYETHYLENE 10/40 — 2,842 FT
B FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL — 0 FT
C FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT³ — 129 FT

MICHAEL E. HOLLOWOOD
NO. 97764

DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION
ANGP-T-G-07-010	ACCESS ROAD DETAILS					
ANGP-EPSC-027	EPSC PLAN					
G-001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	GJM	BCK		IFC 2016 EDITS (05/2016)

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

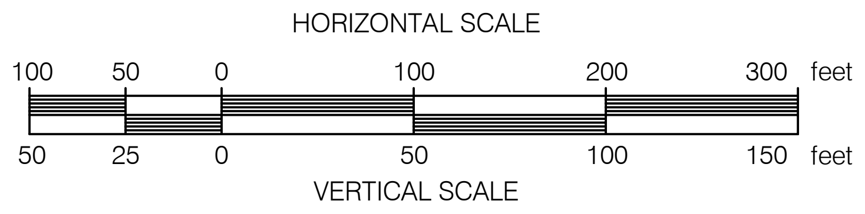
Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016	W.O.	SCALE: 1" = 100'	DWG. ANGP-T-C-027	REV. 1

COATING	A	C	A
CLASSIFICATION	2		
DESIGN FACTOR	0.5		



PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,650 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	2,350 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	0 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	300 FT

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION
ANGP–EPSC–028	EPSC PLAN					
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	GJM	BCK		IFC 2016 EDITS (05/2016)

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

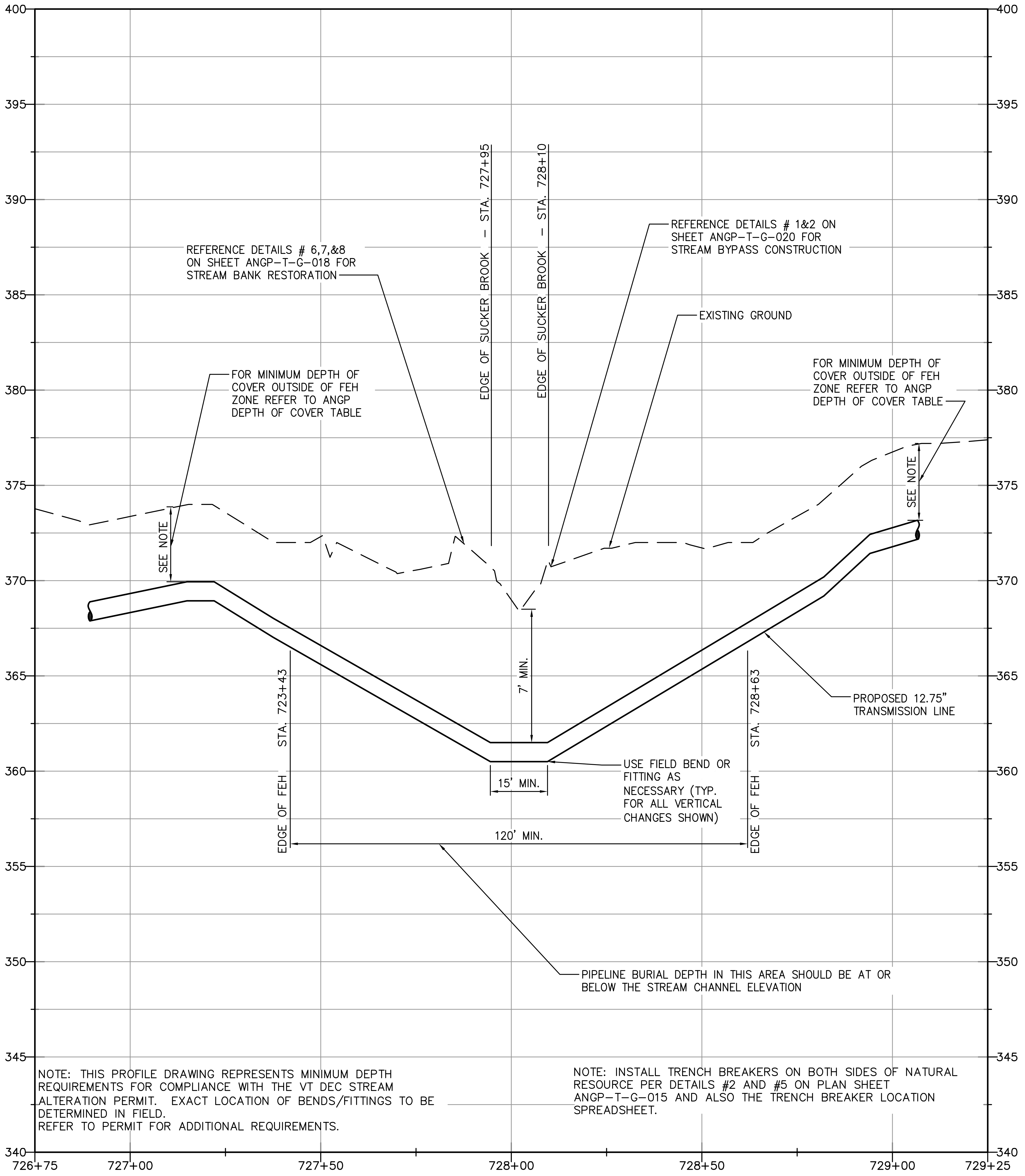
Vermont Gas

Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016	W.O.	SCALE: 1" = 100'	DWG. ANGP–T–C–028	REV. 1

PROFILE



NOTE: THIS PROFILE DRAWING REPRESENTS MINIMUM DEPTH REQUIREMENTS FOR COMPLIANCE WITH THE VT DEC STREAM ALTERATION PERMIT. EXACT LOCATION OF BENDS/FITTINGS TO BE DETERMINED IN FIELD.
REFER TO PERMIT FOR ADDITIONAL REQUIREMENTS.

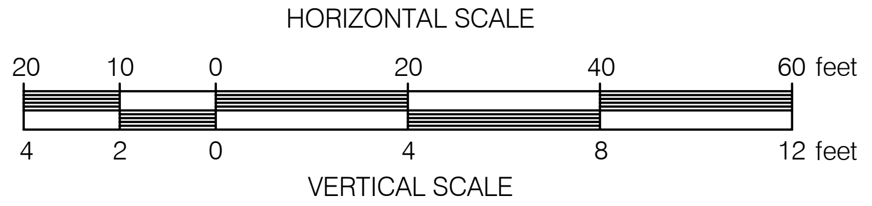
NOTE: INSTALL TRENCH BREAKERS ON BOTH SIDES OF NATURAL RESOURCE PER DETAILS #2 AND #5 ON PLAN SHEET ANGP–T–G–015 AND ALSO THE TRENCH BREAKER LOCATION SPREADSHEET.

STREAM CROSSING PROFILE
SUCKER BROOK
STATION 728+02±
MILE POST 13.79

SCALE: HORIZ. 1"=20'
VERT. 1"=4'

NOTE: STREAM CROSSING MUST BE CONSTRUCTED BETWEEN JUNE 1 AND OCTOBER 1

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL



	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
OPEN TRENCH STREAM CROSSING PROFILE

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: AS NOTED | DWG. ANGP–T–C–028A | REV. 0

RIGHT-OF-WAY

MATCHLINE

75	76	78 / 77	79	80	58 / 81	82
N/F TOWERS, LEE R. & JUDTH A.	N/F HAKIZIMANA, SEBASTIAN; MUKANDORI, MARTHA	78 N/F CHALOUX, YVETTE C/O FRENCH, MARY 77 N/F CAMPBELL, ELLEN	LINCOLN ROAD	N/F CAVANAUGH, WILLIAM F. & CHRISTINE	58 ST. GEORGE ROAD (RTE. 2A) 81 N/F ARMSTRONG, KEVIN & PHILLANE	N/F PILLSBURY, DANIEL

TOWN OF WILLISTON
TOWN OF ST. GEORGE

MATCH LINE

SURVEY DATA

Bearing	PI	Deflection
S 03° 04' W	750+64	00°05' LT
S 02° 59' W	752+95	45°02' LT
S 42° 04' E	754+70	49°04' RT
S 07° 00' W	757+69	02°10' RT
S 09° 11' W	762+50	45°00' LT
S 35° 49' E	768+50	41°04' RT
S 05° 15' W	768+72	00°42' RT
S 05° 58' W	769+75	00°34' LT
S 05° 24' W	770+74	00°34' RT
S 05° 58' W	771+24	00°46' RT
S 06° 45' W	772+74	00°16' RT
S 07° 02' W	774+18	00°00' LT
S 07° 02' W	774+24	00°28' LT
S 06° 33' W	775+60	00°20' RT
S 06° 53' W		

ALIGNMENT DETAIL

CONST. TYPE	1E	1A	W	7	W	1A	11	1A	2A	W	1A	4H	1E

PROFILE

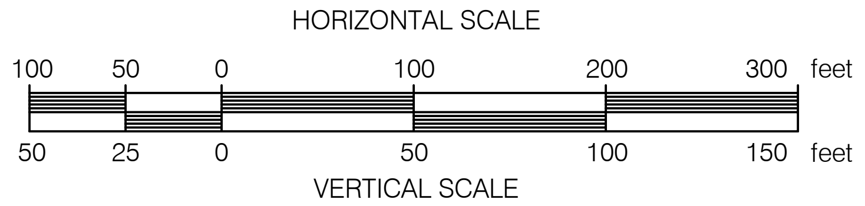
MATERIALS

MATCHLINE

MATERIALS	1	1	1	1	1	1	1	1	1
Length	456 FT	202 FT	57 FT	52 FT	478 FT	260 FT	97 FT	282 FT	1,116 FT
COATING	A	C	A	C	A	C	A	C	A

CLASSIFICATION	2	1
DESIGN FACTOR	0.5	

MATCHLINE



PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	3,000 FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	2,204 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0 FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	796 FT

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP-VAOT-029	VAOT ALIGNMENT SHEET				
ANGP-T-G-021	STATION AND VALVE DETAILS				
ANGP-EPSC-029	EPSC PLAN				
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS				

	BID INITIALS	BID DATE	CONSTRUCTION INITIALS	CONSTRUCTION DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-029 | REV. 0

RIGHT-OF-WAY

MATCHLINE	82 N/F PILLSBURY, DANIEL	ACCESS RIGHT OF WAY	82 N/F PILLSBURY, DANIEL	58.01 ST. GEORGE ROAD VT STATE ROUTE 2A	82.08 N/F PILLSBURY, LARRY & CAROLYN	82.09 N/F PILLSBURY, DANIEL	MATCHLINE

SURVEY DATA

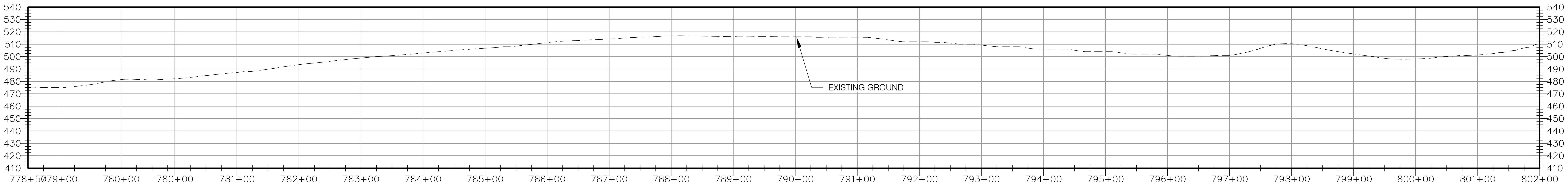
S 06° 53' W	
	777+51 03°17' RT
S 10° 11' W	
	777+54 00°09' LT
S 10° 01' W	
	777+56 00°09' LT
S 09° 51' W	
	777+59 00°09' LT
S 09° 41' W	
	777+61 30°11' RT
S 39° 53' W	
	779+09 44°59' LT
S 05° 07' E	
	Bck: 780+79 Ahd: 779+92 86.6 ft.
S 05° 07' E	
	781+57 00°01' LT
S 05° 08' E	
	783+63 00°08' LT
S 05° 16' E	
	785+58 00°13' LT
S 05° 30' E	
	787+36 13°56' RT
S 08° 27' W	
	789+13 00°11' RT
S 08° 38' W	
	791+18 38°27' LT
S 29° 50' E	
	792+37 34°20' RT
S 04° 31' W	
	792+86 00°54' LT
S 03° 36' W	
	793+43 01°48' LT
S 01° 48' W	
	794+00 01°48' LT
S 00° 00' W	
	794+57 01°48' LT
S 01° 49' E	
	795+14 01°48' LT
S 03° 37' E	
	795+71 27°49' RT
S 24° 12' W	
	797+02 38°52' RT
S 63° 04' W	
	798+46 14°44' LT
S 48° 20' W	

ALIGNMENT DETAIL

CONST. TYPE

1E	W 2A	1E	2A W	1E	11	1E	2A	1E	2A W	1A

PROFILE



MATERIALS

MATERIALS	MATCHLINE	1	1	1	1	1	1	1	1	1
		24 FT	187 FT	166 FT	78 FT	565 FT	54 FT	1,067 FT	141 FT	155 FT
COATING		A	C	A	C	A	C	A	C	A
CLASSIFICATION		1								
DESIGN FACTOR		0.5								

MATCHLINE

HORIZONTAL SCALE 100 50 0 100 200 300 feet

VERTICAL SCALE 50 25 0 50 100 150 feet

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,437 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	1,977 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	0 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	460 FT

STATE OF VERMONT
MICHAEL E. HOLLENBACH
NO. 97764
CIVIL
LICENSED PROFESSIONAL ENGINEER

DWG. NO.	REFERENCE DWG.
ANGP–VAOT–030	VAOT ALIGNMENT SHEET
ANGP–T–G–07–010	ACCESS ROAD DETAILS
ANGP–EPSC–030	EPSC PLAN
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS

REV	DSN	CK	DESCRIPTION

	BID INITIALS	BID DATE	CONSTRUCTION INITIALS	CONSTRUCTION DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

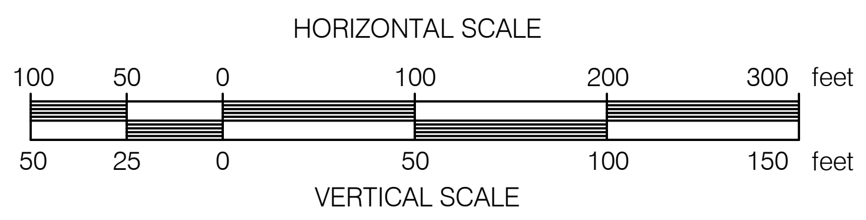
LOC. CHITTENDEN COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–030 | REV. 0

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com



PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,869 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	2,869 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	0 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	0 FT

1

NO. 97764

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP–T–G–07–010	ACCESS ROAD DETAILS				
ANGP–EPSC–031	EPSC PLAN				
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	BCK	TDB	PILLSBURY REROUTE (6/05/15)

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–031 | REV. 1

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

RIGHT-OF-WAY

MATCHLINE	83 N/F BELIVEAU, PHILIP	84 N/F TOWN OF ST. GEORGE	MATCH LINE

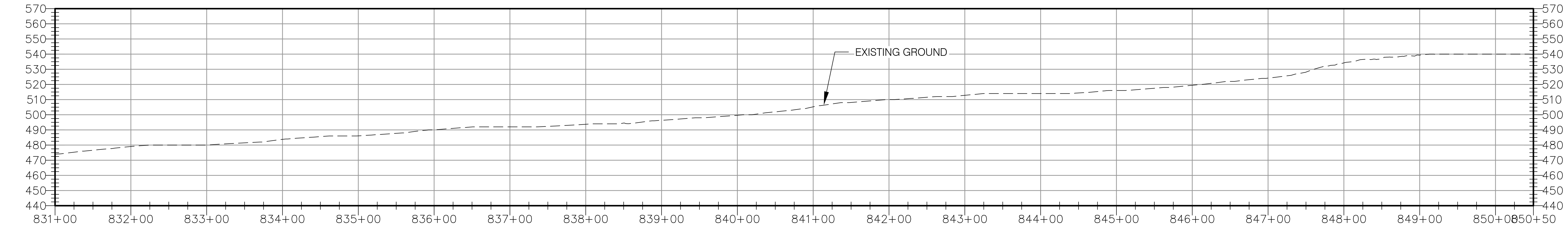
SURVEY DATA

Station	Deflection	Bearing (segment following)
(831+00)		S 01° 38' E
834+21	00°03' LT	S 01° 41' E
838+09	30°10' RT	S 28° 30' W
838+79	30°10' LT	S 01° 41' E
838+92	00°02' LT	S 01° 43' E
843+33	00°01' LT	S 01° 45' E
848+36	00°03' RT	S 01° 41' E

ALIGNMENT DETAIL

CONST. TYPE: (W) (2D) (W) (2A) (W) (1A)

PROFILE



MATERIALS

MATERIALS	① 225 FT	① 20 FT	① 383 FT	① 386 FT	① 87 FT	① 211FT	① 638 FT
COATING	A	C	A	C	A	C	A
CLASSIFICATION	2				3		
DESIGN FACTOR	0.5						

HORIZONTAL SCALE: 100 50 0 100 200 300 feet

VERTICAL SCALE: 50 25 0 50 100 150 feet

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	1,950 FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	1,333 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0 FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	617 FT

STATE OF VERMONT
MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL
LICENSED PROFESSIONAL ENGINEER

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP-T-G-07-010	ACCESS ROAD DETAILS				
ANGP-EPSC-032	EPSC PLAN	2	GJM	BCK	IFC 2016 EDITS (05/2016)
G-001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	BCK	TDB	VHB EDITS (6/09/15)

	BID INITIALS	BID DATE	CONSTRUCTION INITIALS	CONSTRUCTION DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-032 | REV. 2

RIGHT-OF-WAY

MATCHLINE

84
N/F
TOWN OF ST. GEORGE

84.03
N/F
PHELPS, LOUIS

84.02
N/F
PHELPS, LOUIS D. IV

58.01
ROUTE 2A

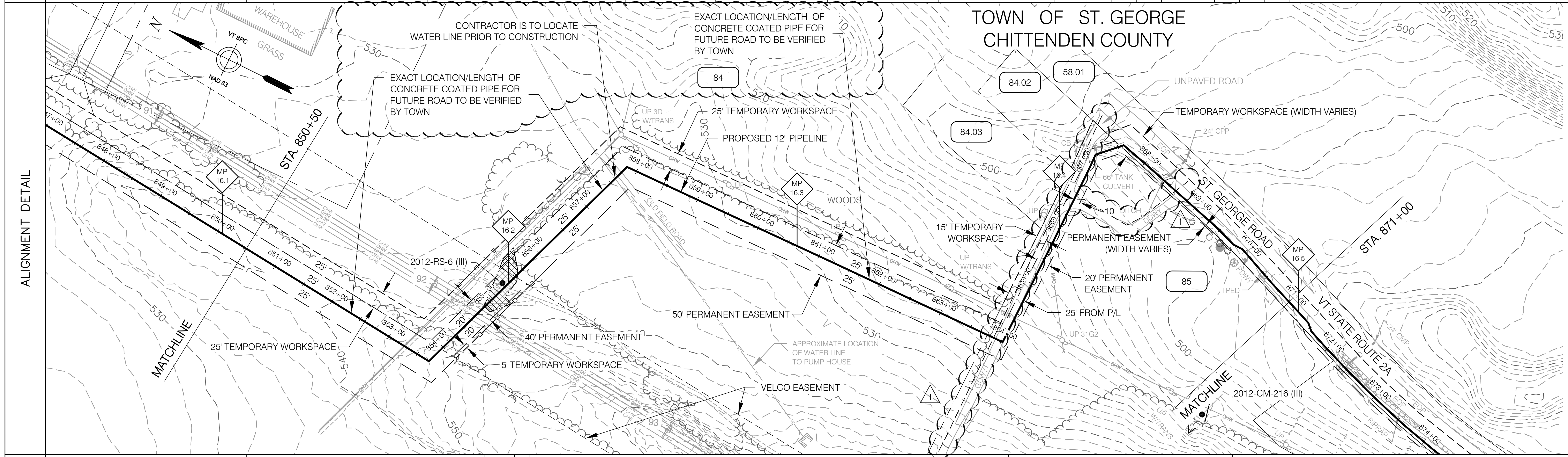
85
N/F
BOVAT, CLYDE & MARY ANN

MATCH LINE

SURVEY DATA

Station	Deflection	Bearing
		S 01° 41' E
853+17	00°05' RT	S 01° 36' E
853+70	76°09' LT	S 77° 46' E
857+84	69°23' RT	S 08° 23' E
859+33	00°07' LT	S 08° 30' E
861+17	00°18' RT	S 08° 11' E
862+99	00°09' LT	S 08° 21' E
864+03	88°16' LT	N 83° 23' E
865+80	00°17' LT	N 83° 06' E
866+87	01°50' LT	N 81° 15' E
867+14	46°50' RT	S 51° 54' E
867+59	59°27' RT	S 07° 33' W
868+09	00°50' RT	S 08° 24' W
869+43	03°51' RT	S 12° 15' W
869+79	18°54' LT	S 06° 40' E
869+95	22°29' RT	S 15° 50' W
870+62	01°55' LT	S 13° 54' W

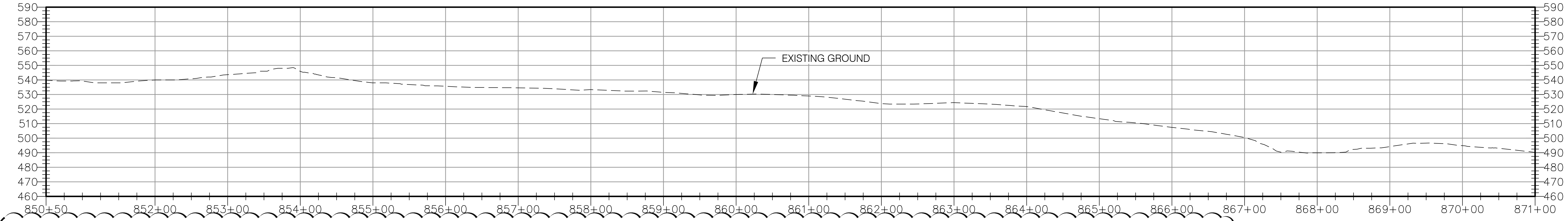
ALIGNMENT DETAIL



CONST. TYPE

1A | 1H | W | 1A | 3A | 4B | 4F

PROFILE



MATERIALS

MATCH LINE

MATERIALS	①	①	①	①	①	①	①
	150 FT	362 FT	142 FT	148 FT	198 FT	200 FT	850 FT
COATING	A	C	A	C	A	C	A
CLASSIFICATION	3						
DESIGN FACTOR	0.5						

MATCH LINE

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:	
1 12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,050 FT
2 20" O.D. X 0.375" WT, API–5L, GR. B	0 FT
PIPE COATING:	
A EPOXY POLYETHYLENE 10/40	1,340 FT
B FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	0 FT
C FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	710 FT

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP–VAOT–033	VAOT ALIGNMENT SHEET				
ANGP–T–G–07–010	ACCESS ROAD DETAILS				
ANGP–EPSC–033	EPSC PLAN				
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	GJM	BCK	IFC 2016 EDITS (05/2016)

	BID INITIALS	BID DATE	CONSTRUCTION INITIALS	CONSTRUCTION DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–033 | REV. 1

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

RIGHT-OF-WAY

MATCHLINE

58.01
ST. GEORGE ROAD
VT STATE ROUTE 2A

86.04
ROCKY
RIDGE
CIRCLE

85.05
N/F
BOVAT, CLYDE
& MARY ANN

85
N/F
BOVAT, CLYDE & MARY ANN

86
N/F
PEET, TIMOTHY

87
N/F
BISSONETTE, JOHN P. & MELISSA A.

86
N/F
PEET, TIMOTHY

90
N/F
FROST, ROBERT
& ANNE

58.01
ST. GEORGE ROAD
VT STATE ROUTE 2A

MATCH LINE

SURVEY DATA

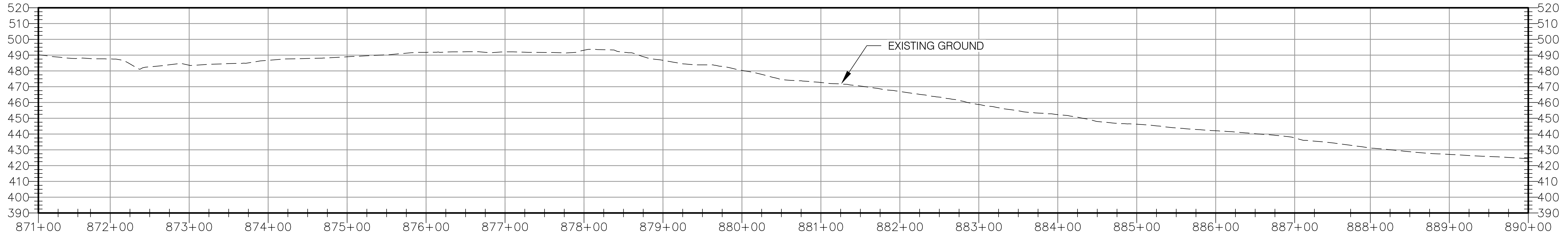
871+27	S 13° 54' W	01°05' RT
871+42	S 15° 00' W	22°29' RT
Bck: 871+56	S 37° 30' W	
Ahd: 871+65 22°29' LT 871+93	S 15° 00' W	-9.0 ft. 01°37' LT
872+43	S 13° 23' W	01°27' LT
872+91	S 11° 55' W	01°53' LT
873+29	S 10° 02' W	00°40' LT
873+62	S 09° 21' W	02°36' LT
874+17	S 06° 45' W	01°41' LT
875+07	S 05° 03' W	01°59' LT
875+44	S 03° 04' W	03°24' LT
876+01	S 00° 21' E	01°45' RT
876+53	S 01° 25' W	00°40' LT
877+30	S 00° 44' W	00°45' RT
877+78	S 01° 30' W	17°23' RT
877+78	S 18° 53' W	14°02' LT
877+91	S 04° 51' W	25°09' RT
878+11	S 30° 00' W	22°29' LT
878+43	S 07° 30' W	01°44' RT
878+60	S 09° 15' W	22°29' LT
878+83	S 13° 15' E	22°29' RT
878+95	S 09° 15' W	03°41' LT
879+06	S 05° 33' W	00°04' LT
879+25	S 05° 28' W	10°22' RT
879+27	S 15° 51' W	06°02' LT
880+14	S 09° 48' W	16°25' LT
880+46	S 06° 37' E	00°00' LT
880+49	S 06° 37' E	16°27' RT
883+02	S 09° 50' W	00°01' LT
884+27	S 09° 49' W	01°16' RT
885+66	S 11° 05' W	00°05' RT
886+84	S 11° 10' W	00°56' RT
886+96	S 12° 07' W	63°42' LT
Bck: 887+46	S 51° 36' E	
Ahd: 887+50 888+00	S 51° 36' E	-4.3 ft. 59°22' RT
888+76	S 07° 47' W	03°04' RT
888+88	S 10° 51' W	00°11' RT
	S 11° 02' W	

ALIGNMENT DETAIL

CONST. TYPE

4F | 4D | 9 | 1A

PROFILE

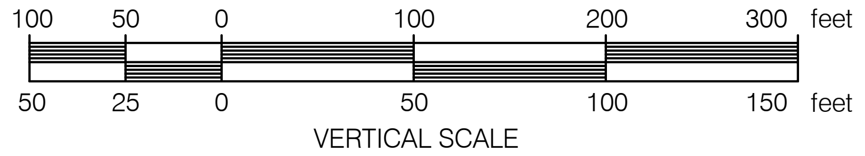


MATERIALS

MATCH LINE

MATERIALS	1 1,587 FT	1 74 FT	1 226 FT
COATING	A	C	A
CLASSIFICATION	3		
DESIGN FACTOR	0.5		

MATCH LINE



PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	1,887 FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	1,813 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0 FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	74 FT

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

VHB Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP-VAOT-034A	VAOT PROFILE RTE. 2A (ST. GEORGE ROAD) CROSSING DETAIL				
ANGP-VAOT-034	VAOT ALIGNMENT SHEET				
ANGP-EPSC-034	EPSC PLAN				
G-001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	GJM	BCK	IFC 2016 EDITS (05/2016)

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-034 | REV. 1

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

RIGHT-OF-WAY

MATCH LINE

85.05
N/F
BOVAT, CLYDE &
MARY ANN

58.01
ST. GEORGE ROAD
VT STATE ROUTE 2A

91
VT STATE
ROUTE 116

93
N/F
BURNETT, JENIFER M. &
NORMAN L.

95
N/F
LAJOICE, SUZANNE

MATCH LINE

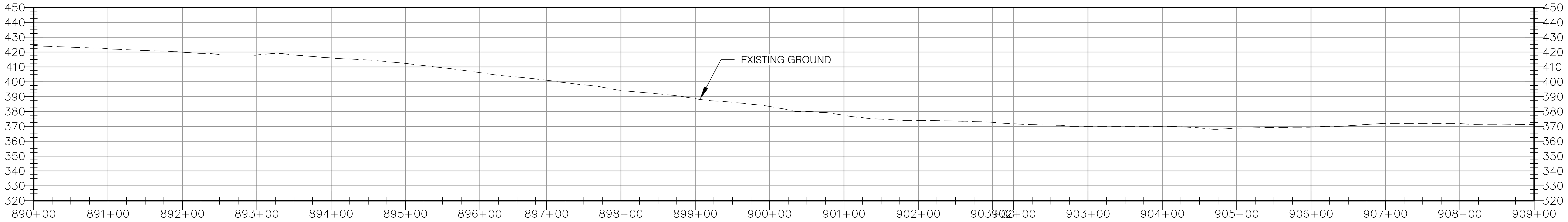
SURVEY DATA

Station	Deflection	Bearing
890+34	02°13' LT	S 11° 02' W
891+21	05°54' LT	S 08° 48' W
892+73	46°19' RT	S 02° 54' W
893+89	45°00' LT	S 49° 13' W
894+09	42°34' LT	S 04° 13' W
896+44	55°24' RT	S 38° 20' E
Bck: 896+87 Ahd: 896+97	-10 ft.	
900+74	49°45' RT	S 17° 04' W
901+77	25°01' LT	S 66° 49' W
903+64	50°00' LT	S 41° 47' W
		S 08° 26' E

ALIGNMENT DETAIL

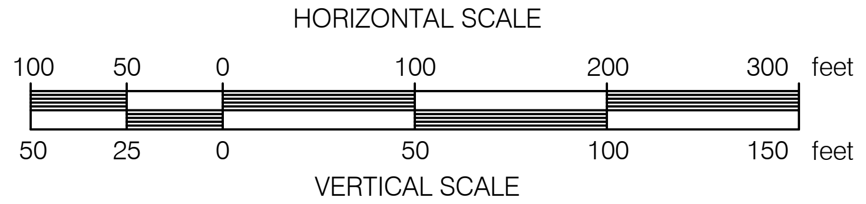
CONST. TYPE: 1A | 9 | 2A | 1J | W 2A | W

PROFILE



MATERIALS

MATERIALS	1	1	1	1	1	1
Length	291 FT	66 FT	973 FT	446 FT	118 FT	124 FT
COATING	A	C	A	C	A	C
CLASSIFICATION	3					
DESIGN FACTOR	0.5					



PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,018 FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	1,382 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0 FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	636 FT

MICHAEL E. HOLLOWOOD
NO. 97764

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP-VAOT-035A	VAOT PROFILE ROUT 116 CROSSING DETAIL				
ANGP-T-G-07-010	ACCESS ROAD DETAILS				
ANGP-EPSC-035	EPSC PLAN				
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	GJM	BCK	IFC 2016 EDITS (05/2016)

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

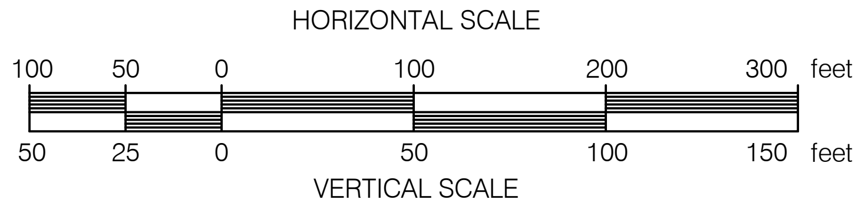
LOC. CHITTENDEN COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-035 | REV. 1

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com



PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,850 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	2,799 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	0 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	51 FT

STATE OF VERMONT
MICHAEL E. HOLLOWAY
NO. 97764
CIVIL
LICENSED
PROFESSIONAL ENGINEER

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP–T–G–07–010	ACCESS ROAD DETAILS				
ANGP–EPSC–036	EPSC PLAN				
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	GJM	BCK	IFC 2016 EDITS (05/2016)

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–036 | REV. 1

RIGHT-OF-WAY							
MATCH LINE	98 N/F LAFRENIERE, JOANNE T.	99 N/F LUMBRA, LINDA P.	100 N/F PRENGLER, HERSCHEL	101 N/F DATTILIO, DANA & KIMBERLY	102 N/F LAVALETTE, BERNARD & EI	103 N/F BALLARD, TIMOTHY & KAY	MATCH LINE

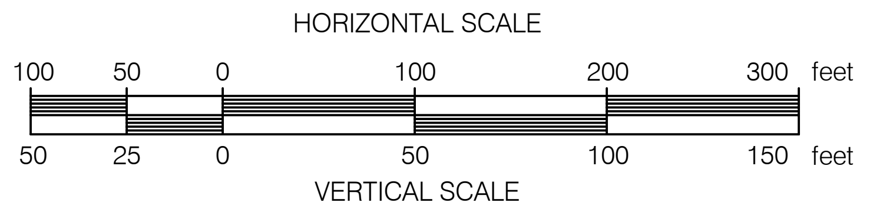
SURVEY DATA									
Bearing	S 07° 09' E	S 06° 38' E	S 38° 22' W	S 06° 38' E	S 07° 08' E	S 06° 47' E	S 08° 03' E	S 05° 24' W	S 08° 09' W
PI station	940+30	942+80	Bck: 943+29 Ahd: 943+00	945+37	948+87	952+30	954+44	957+50	
Deflection	00°31' RT	45°00' RT	29.1 ft. 45°00' LT	00°30' LT	00°21' RT	01°15' LT	13°26' RT	02°45' RT	

ALIGNMENT DETAIL

CONST. TYPE					
	2D	1A	11	1A	2A

PROFILE

MATERIALS						
	MATCH LINE	① 1,165 FT	① 13 FT	① 1,266 FT	① 135 FT	MATCH LINE
COATING		A	C	A	C	
CLASSIFICATION		1				
DESIGN FACTOR		0.5				



PIPE MATERIAL:	
1 12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,579 FT
2 20" O.D. X 0.375" WT, API–5L, GR. B	0 FT
PIPE COATING:	
A EPOXY POLYETHYLENE 10/40	2,431 FT
B FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	0 FT
C FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	148 FT

STATE OF VERMONT
MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL
LICENSED
PROFESSIONAL ENGINEER

Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

Vermont Gas

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP–T–G–07–010	ACCESS ROAD DETAILS				
ANGP–EPSC–037	EPSC PLAN				
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS				

	BID INITIALS	BID DATE	CONSTRUCTION INITIALS	CONSTRUCTION DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

YEAR: 2016	W.O.	SCALE: 1" = 100'	DWG. ANGP–T–C–037	REV. 0

RIGHT-OF-WAY		
MATCH LINE	103 N/F BALLARD, TIMOTHY	104 N/F TOWN OF HINESBURG	MATCH LINE

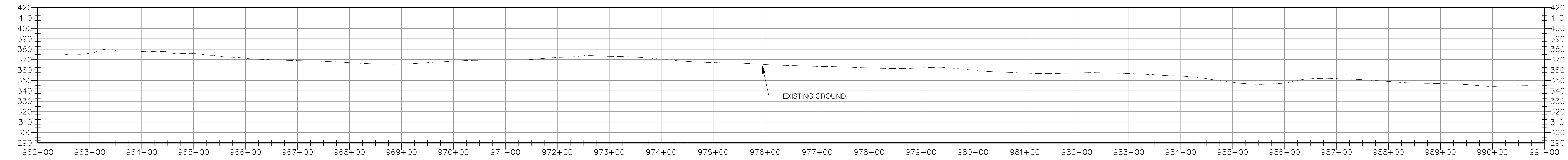
SURVEY DATA

962+50		966+76		972+51		989+78	
S 08° 09' W 10°12' RT	S 18° 22' W	04°48' RT	S 23° 11' W	19°02' LT	S 04° 08' W	06°28' LT	S 02° 19' E

ALIGNMENT DETAIL

CONST. TYPE	2A	1A	2A	1A	2A	1A

PROFILE



MATERIALS				
MATCH LINE	1 470 FT	1 37 FT	1 2,393 FT	MATCH LINE
COATING	A	C	A	
CLASSIFICATION	1			
DESIGN FACTOR	0.5			

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,900 FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	2,863 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0 FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	37 FT

STATE OF VERMONT
MICHAEL E. HOLLSTROM
NO. 97764
CIVIL
LICENSED PROFESSIONAL ENGINEER

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP-EPSC-038	EPSC PLAN				
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS				

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-038 | REV. 0

RIGHT-OF-WAY

MATCH LINE	104	105	105.01	106	107	MATCH LINE
	N/F TOWN OF HINESBURG	SHELBURNE FALLS ROAD	N/F NOONAN, ROBERT C. & MICHAEL L.	N/F FORTIN, MICHAEL A. & LINDA N.	N/F HAYSTACK CROSSING LLC	

SURVEY DATA

Station	Deflection	Bearing
		S 02° 19' E
1010+20	39°43' LT	S 41° 24' E
1013+21	00°00' RT	S 41° 24' E
1013+71	44°18' RT	S 02° 54' W
1017+79	03°04' RT	S 05° 59' W

ALIGNMENT DETAIL

CONST. TYPE: 1A | 2A | W | 7 | 9 | W | 1A | W | 2D

PROFILE

MATERIALS

MATERIALS	1	1	1	1	1	1	1	1
	170 FT	90 FT	163 FT	570 FT	335 FT	60 FT	896 FT	677 FT
COATING	A	C	A	C	A	C	A	C
CLASSIFICATION	1							
DESIGN FACTOR	0.5							

HORIZONTAL SCALE: 100 50 0 100 200 300 feet

VERTICAL SCALE: 50 25 0 50 100 150 feet

PIPE MATERIAL:	
1 12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,961 FT
2 20" O.D. X 0.375" WT, API-5L, GR. B	0 FT
PIPE COATING:	
A EPOXY POLYETHYLENE 10/40	1,553 FT
B FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0 FT
C FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	1,408 FT

MICHAEL E. HOLLOWOOD
NO. 97764

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP-EPSC-039	EPSC PLAN				
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS				

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

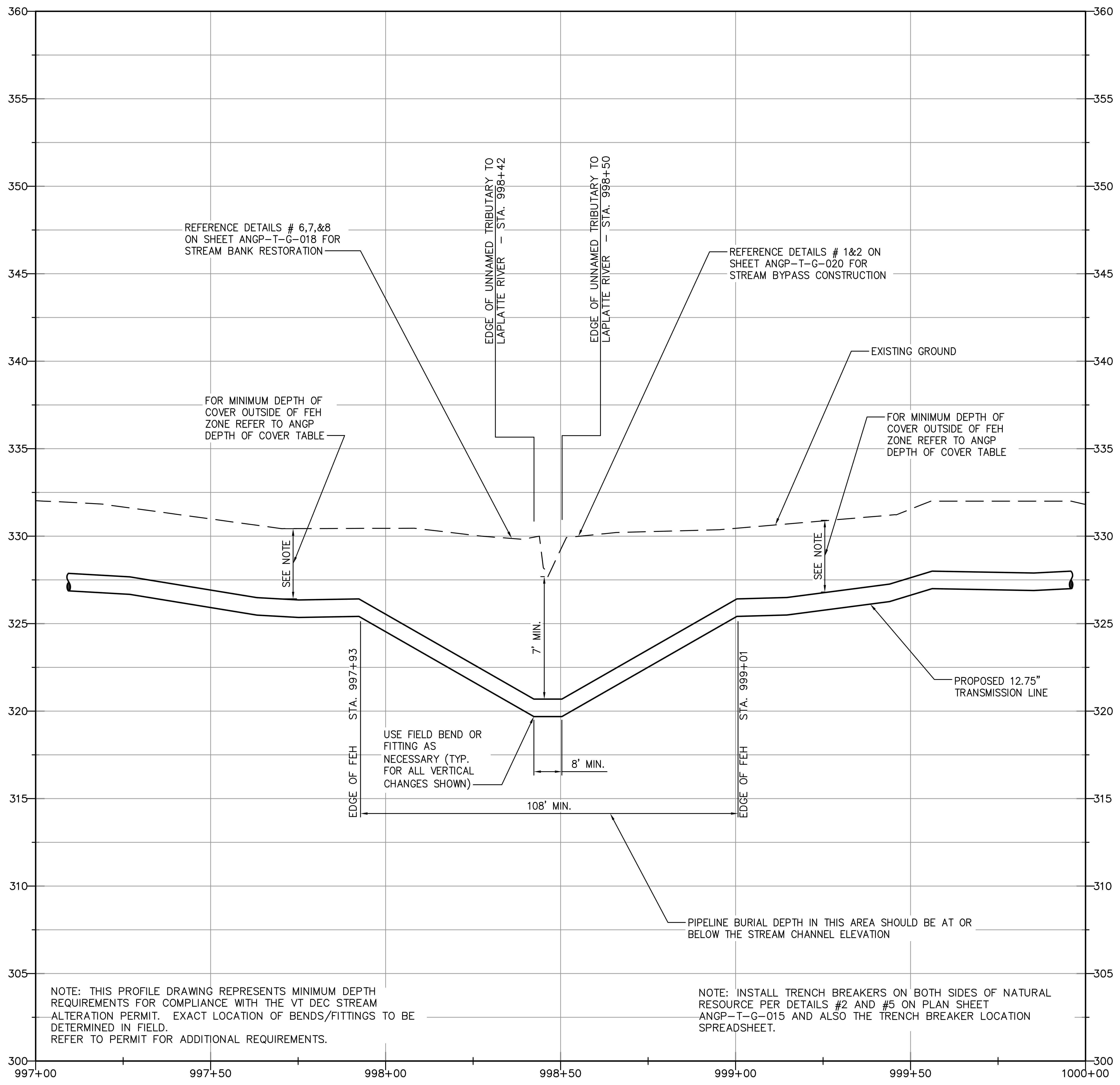
YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-039 | REV. 0

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

PROFILE



NOTE: THIS PROFILE DRAWING REPRESENTS MINIMUM DEPTH REQUIREMENTS FOR COMPLIANCE WITH THE VT DEC STREAM ALTERATION PERMIT. EXACT LOCATION OF BENDS/FITTINGS TO BE DETERMINED IN FIELD.
REFER TO PERMIT FOR ADDITIONAL REQUIREMENTS.

NOTE: INSTALL TRENCH BREAKERS ON BOTH SIDES OF NATURAL RESOURCE PER DETAILS #2 AND #5 ON PLAN SHEET ANGP-T-G-015 AND ALSO THE TRENCH BREAKER LOCATION SPREADSHEET.

STREAM CROSSING PROFILE
UNNAMED TRIBUTARY TO LAPLATTE RIVER
STATION 998+46±
MILE POST 18.91

SCALE: HORIZ. 1"=20'
VERT. 1"=4'

NOTE: STREAM CROSSING MUST BE CONSTRUCTED BETWEEN JUNE 1 AND OCTOBER 1

NO. 97764

HORIZONTAL SCALE
20 10 0 20 40 60 feet
4 2 0 4 8 12 feet
VERTICAL SCALE

Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
OPEN TRENCH STREAM CROSSING PROFILE

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016	W.O.	SCALE: AS NOTED	DWG. ANGP-T-C-039A	REV. 0

HORIZONTAL SCALE

100 50 0 100 200 300 feet

50 25 0 50 100 150 feet

VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,977 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	1,699 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	675 FT
C	FBE 14–16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	603 FT

STATE OF VERMONT
NO. 97764

Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

Vermont Gas

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP–T–G–07–010	ACCESS ROAD DETAILS				
ANGP–T–G–021	STATION AND VALVE DETAILS				
ANGP–EPSC–040	EPSC PLAN				
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	BCK	TDB	VHB EDITS (6/09/15)

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–040 | REV. 1

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2910 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	2711 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	0 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	199 FT

STATE OF VERMONT
NO. 97764
CIVIL

DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION
ANGP–T–G–021	STATION AND VALVE DETAILS					
ANGP–EPSC–041	EPSC PLAN	2	GJM	BCK		IFC 2016 EDITS (05/2016)
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	BCK	TDB		ENV. EDITS (6/08/15)

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–041 | REV. 2

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

RIGHT-OF-WAY

MATCH LINE	110 N/F CARSE, DAVID	111 N/F HAZEN, ELIZABETH M.	MATCH LINE

SURVEY DATA

S 45° 28' W	47°26' LT 1081+66	S 01° 58' E	42°10' RT 1086+51	S 40° 12' W	37°11' LT 1091+09	S 03° 11' W

ALIGNMENT DETAIL

CONST. TYPE: W | 2A | 1E | 2A | W | 1A | A

PROFILE

MATERIALS

	MATCH LINE					MATCH LINE
MATERIALS		① 141 FT	① 645 FT	① 113 FT	① 1,103 FT	
COATING		C	A	C	A	
CLASSIFICATION		1				
DESIGN FACTOR		0.5				

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,002 FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	1,748 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0 FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	254 FT

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

Vermont Gas

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP-EPSC-042	EPSC PLAN	2	GJM	BCK	IFC 2016 EDITS (05/2016)
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	BCK	TDB	ADDED ARCH. SITE AND ENV. EDITS (6/08/15)

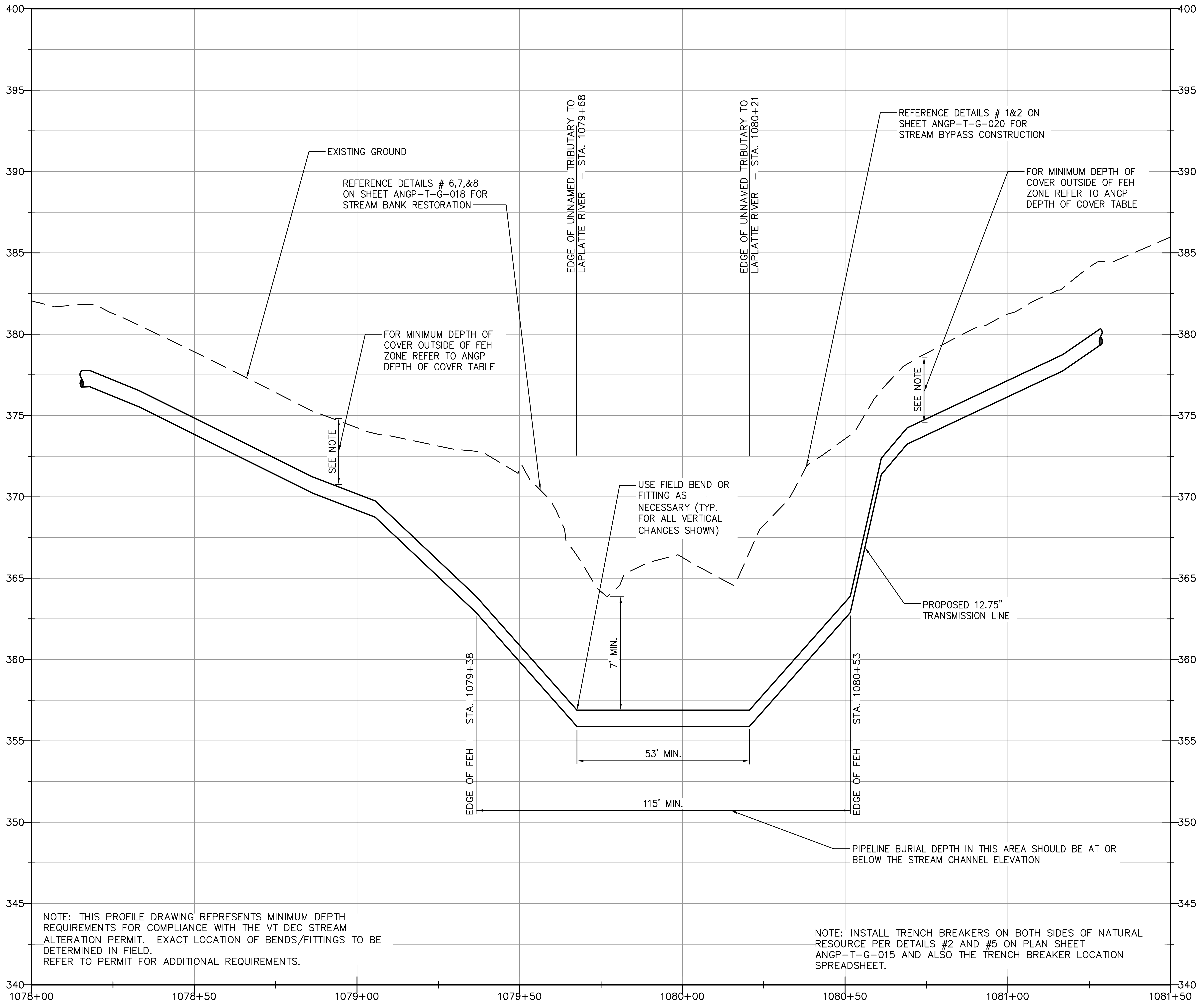
	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-042 | REV. 2

PROFILE



NOTE: THIS PROFILE DRAWING REPRESENTS MINIMUM DEPTH REQUIREMENTS FOR COMPLIANCE WITH THE VT DEC STREAM ALTERATION PERMIT. EXACT LOCATION OF BENDS/FITTINGS TO BE DETERMINED IN FIELD.
REFER TO PERMIT FOR ADDITIONAL REQUIREMENTS.

NOTE: INSTALL TRENCH BREAKERS ON BOTH SIDES OF NATURAL RESOURCE PER DETAILS #2 AND #5 ON PLAN SHEET ANGP–T–G–015 AND ALSO THE TRENCH BREAKER LOCATION SPREADSHEET.

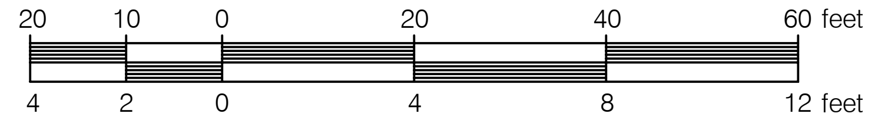
STREAM CROSSING PROFILE
UNNAMED TRIBUTARY TO
LAPLATTE RIVER
STATION 1079+97±
MILE POST 20.45

SCALE: HORIZ. 1"=20'
VERT. 1"=4'

NOTE: STREAM CROSSING MUST BE CONSTRUCTED BETWEEN JULY 1 AND OCTOBER 1

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

HORIZONTAL SCALE



VERTICAL SCALE

Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

Vermont Gas

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
OPEN TRENCH STREAM CROSSING PROFILE

LOC. CHITTENDEN COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: AS NOTED | DWG. ANGP–T–C–042A | REV. 0

RIGHT-OF-WAY

MATCH LINE						MATCH LINE
	111 N/F HAZEN, ELIZABETH M.	112 N/F CARSE LAND COMPANY, LLC	113 N/F LAVALLEE, RONALD & CONSTANCE	114 BALDWIN ROAD	116 N/F THIBAULT FARM PROPERTIES, LLC	

SURVEY DATA

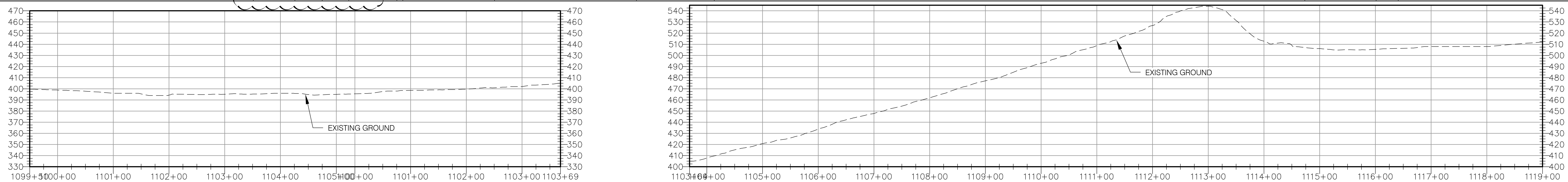
S 03° 11' W	Bck: 1105+17 Ahd: 1099+83 25'59" RT 534 ft.	S 29° 09' W	1104+06 00'14" LT	S 28° 54' W	1109+06 00'22" RT	S 29° 17' W	1112+85 29'58" RT	S 59° 16' W

1114+90 29'59" LT	S 29° 16' W	1115+30 30'00" LT	S 00° 44' E	1117+38 29'46" RT	S 29° 02' W

ALIGNMENT DETAIL

CONST. TYPE: 1A | A | W | 2A | W | 2D | 9 | W | 2D

PROFILE



MATERIALS	MATCH LINE						MATCH LINE
		1	1	1	1	1	1
		80 FT	275 FT	341 FT	236 FT	1,054 FT	498 FT
COATING		A	C	A	C	A	C
CLASSIFICATION		1					
DESIGN FACTOR		0.5					

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:	
1 12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,484 FT
2 20" O.D. X 0.375" WT, API-5L, GR. B	0 FT
PIPE COATING:	
A EPOXY POLYETHYLENE 10/40	1,475 FT
B FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0 FT
C FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	1,009 FT

STATE OF VERMONT
MICHAEL E. HOLLOWAY
NO. 97764
CIVIL
LICENSED PROFESSIONAL ENGINEER

DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION
ANGP-T-G-007-010	ACCESS ROAD DETAILS					
ANGP-EPSC-043	EPSC PLAN	2	GJM	BCK		IFC 2016 EDITS (05/2016)
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	BCK	TDB		ADDED ARCH. SITE AND ENV. EDITS (6/08/15)

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016	W.O.	SCALE: 1" = 100'	DWG. ANGP-T-C-043	REV. 2

RIGHT-OF-WAY

MATCHLINE

116
N/F
THIBAULT FARM PROPERTIES, LLC

117
N/F
BALDWIN-HAULENBEEK, ANDREA;
DONELLY-HAULENBEEK, FREDERICK

MATCHLINE

SURVEY DATA

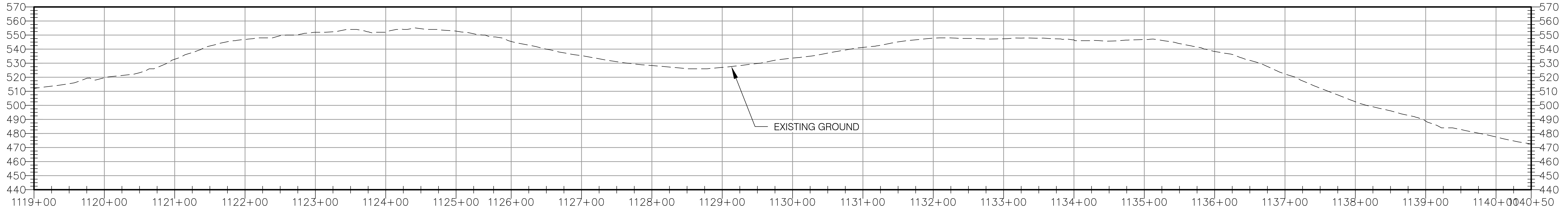
Station	Deflection	Bearing
		S 29° 02' W
1119+76	01°11' RT	S 30° 14' W
1123+00	22°30' RT	S 52° 44' W
1123+51	22°30' LT	S 30° 14' W
1124+17	27°34' LT	S 2° 40' W
1112+97	22°30' LT	S 19° 50' E
1125+70	22°30' RT	S 02° 39' W
1131+56	00°39' RT	S 03° 19' W
1135+94	00°02' RT	S 03° 21' W

ALIGNMENT DETAIL

CONST. TYPE

2D

PROFILE



	MATCHLINE					MATCHLINE
MATERIALS		1	1	1	1	
		50 FT	805 FT	153 FT	1,120 FT	
COATING		C	A	C	A	
CLASSIFICATION		1				
DESIGN FACTOR		0.5				

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:		
1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,128 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT
PIPE COATING:		
A	EPOXY POLYETHYLENE 10/40	1,925 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	0 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	203 FT

NO. 97764

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP–EPSC–044	EPSC PLAN				
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS				

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016	W.O.	SCALE: 1" = 100'	DWG. ANGP–T–C–044	REV. 0

RIGHT-OF-WAY

MATCHLINE

117
N/F
BALDWIN-HAULENBEEK, ANDREA;
DONELLY-HAULENBEEK, FREDERICK

118
N/F
BALDWIN, DANIEL P.

MATCHLINE

SURVEY DATA

Bearing	Deflection	Station
S 03° 21' W	00°10' LT	1141+81
S 03° 11' W	00°18' RT	1146+79
S 03° 29' W	00°00' LT	1148+04
S 03° 29' W	00°00' RT	1150+29
S 03° 29' W	00°06' LT	1151+71
S 03° 23' W	00°05' RT	1157+79
S 03° 28' W	00°09' LT	1162+27
S 03° 19' W	00°07' RT	1167+22
S 03° 26' W		

ALIGNMENT DETAIL

CONST. TYPE

2D

PROFILE

MATERIALS

MATCHLINE

MATERIALS	① 312 FT	① 15 FT	① 2,373 FT
COATING	A	C	A
CLASSIFICATION	1		
DESIGN FACTOR	0.5		

MATCHLINE

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:	
1 12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,700 FT
2 20" O.D. X 0.375" WT, API–5L, GR. B	0 FT
PIPE COATING:	
A EPOXY POLYETHYLENE 10/40	2,685 FT
B FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	0 FT
C FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	15 FT

NO. 97764

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

Vermont Gas

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP–T–G–07–010	ACCESS ROAD DETAILS				
ANGP–EPSC–045	EPSC PLAN				
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS				

	BID INITIALS	BID DATE	CONSTRUCTION INITIALS	CONSTRUCTION DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–045 | REV. 0

MATERIALS	MATCHLINE	1 25 FT	1 1,245 FT	1 210 FT	1 218 FT	1 410 FT	1 242 FT	MATCHLINE
COATING		A	B	C	A	C	A	
CLASSIFICATION	1							
DESIGN FACTOR	0.5							

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,350 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	485 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	1,245 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	620 FT

STATE OF VERMONT
MICHAEL E. HOLLOWAY
NO. 97764
CIVIL
LICENSED PROFESSIONAL ENGINEER

Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.
ANGP–T–G–07–010	ACCESS ROAD DETAILS
ANGP–EPSC–046	EPSC PLAN
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS

REV	DSN	CK	DESCRIPTION

	BID INITIALS	BID DATE	CONSTRUCTION INITIALS	CONSTRUCTION DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

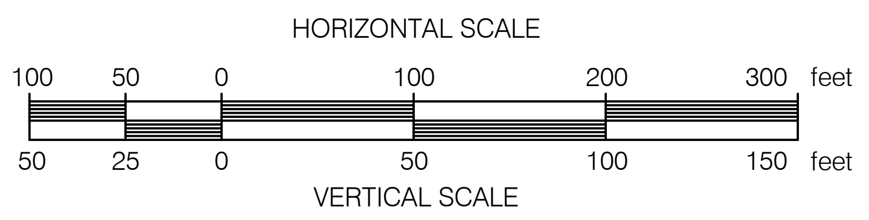
LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–046 | REV. 0

COATING	A	B
CLASSIFICATION	1	
DESIGN FACTOR	0.5	



PIPE MATERIAL:	
1 12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,561 FT
2 20" O.D. X 0.375" WT, API–5L, GR. B	0 FT
PIPE COATING:	
A EPOXY POLYETHYLENE 10/40	326 FT
B FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	2,235 FT
C FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	0 FT

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION
ANGP–T–G–07–010	ACCESS ROAD DETAILS					
ANGP–EPSC–047	EPSC PLAN					
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	GJM	TDB		VHB HDD AREA REVISIONS (6/24/15)

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

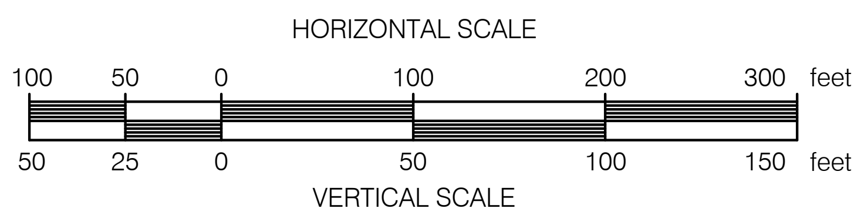
YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–047 | REV. 0

RIGHT-OF-WAY	MATCHLINE						MATCH LINE
		123 N/F DAVIS, REBECCA L.	124 N/F AMES, MARK A.	125 N/F MCCAY, CAROLE H.	126 N/F MENEILLEY, JILL	127 N/F LEUSCHNER, EDWARD T. JR. & DAWN	

SURVEY DATA						
Bearing	S 03° 29' W	S 03° 28' W	S 03° 13' W	S 03° 27' W	S 03° 19' W	S 03° 18' W
PI station	1219+98 (00°01' LT)	1225+08 (00°15' LT)	1229+07 (00°13' RT)	1235+09 (00°07' LT)	1241+33 (00°00' LT)	

CONST. TYPE	8	2D	W	W	A	W

MATERIALS	MATCHLINE								MATCHLINE
		① 380 FT	① 1,275 FT	① 13 FT	① 392 FT	① 238 FT	① 304 FT	① 98 FT	
COATING		B	A	C	A	C	A	C	
CLASSIFICATION		1							
DESIGN FACTOR		0.5							



PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,700 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	1,971 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	380 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	349 FT

STATE OF VERMONT
MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL
LICENSED
PROFESSIONAL ENGINEER

VHB Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP–T–G–07–010	ACCESS ROAD DETAILS				
ANGP–EPSC–048	EPSC PLAN				
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	GJM	TDB	VHB HDD AREA REVISIONS (6/24/15)

	BID INITIALS	BID DATE	CONSTRUCTION INITIALS	CONSTRUCTION DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. CHITTENDEN COUNTY, VERMONT

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 • www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–048 | REV. 1

RIGHT-OF-WAY

MATCH LINE	127 N/F LEUSCHNER, EDWARD T. JR. & DAWN	128 N/F DERRICK, DIANE M.	TOWN OF HINESBURG TOWN OF MONKTON	129 N/F WEAVER, TODD & TAMMY	130 N/F ALMOND, DAIVD	131 N/F STEIN, PHILIP J.	132 N/F MAY, PETER M. & SANDRA	133 N/F NOLAN, KATHLEEN	134 N/F NORRIS, NORMA	MATCH LINE

SURVEY DATA

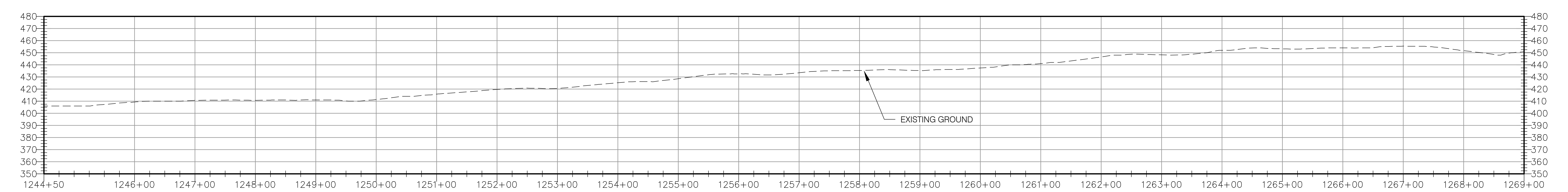
Bearing	Station	Angle
S 03° 18' W	1246+09	00°12' RT
S 03° 31' W	1250+75	00°11' LT
S 03° 19' W	1255+35	00°05' RT
S 03° 25' W	1259+97	00°07' LT
S 03° 17' W	1264+28	00°08' RT
S 03° 26' W	1266+63	45° 00' RT
S 45° 26' W		

ALIGNMENT DETAIL

CONST. TYPE

W | W | 2D | A | W | A | W | 1A | 1A

PROFILE



MATERIALS

MATERIALS	MATCH LINE	1	1	1	1	1	1	1	1	MATCH LINE
		223 FT	57 FT	311 FT	771 FT	257 FT	184 FT	212 FT	438 FT	
COATING		C	A	C	A	C	A	C	A	
CLASSIFICATION		1								
DESIGN FACTOR		0.5								

HORIZONTAL SCALE
100 50 0 100 200 300 feet

50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,450 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	1,450 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	0 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	1,000 FT

MICHAEL E. HOLLOWOOD
NO. 97764

DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION
ANGP–T–G–07–010	ACCESS ROAD DETAILS					
ANGP–EPSC–049	EPSC PLAN	2	GJM	BCK		IFC PLAN SET EDITS (05/2016)
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	BCK	TDB		ROTAX ROAD REROUTE (10/26/15)

	BID		CONSTRUCTION	
	INITIALS	DATE	INITIALS	DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. ADDISON COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–049 | REV. 2

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

RIGHT-OF-WAY

MATCH LINE

133
N/F
NORRIS,
NORMA

135
N/F
MAYO,
KEITH

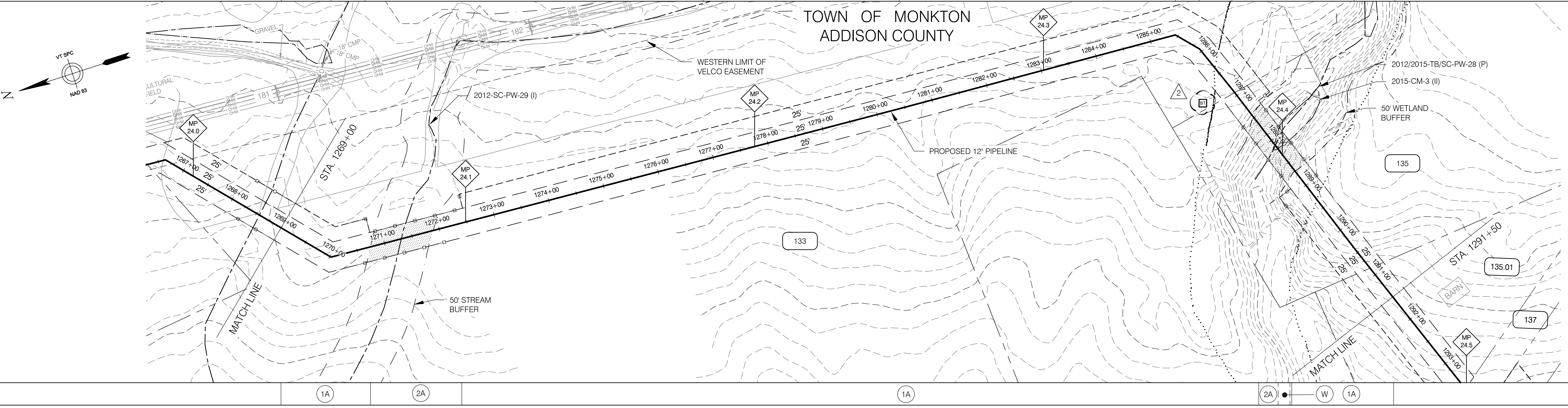
135.01
N/F
LATREILLE,
RAYMOND

MATCH LINE

SURVEY DATA

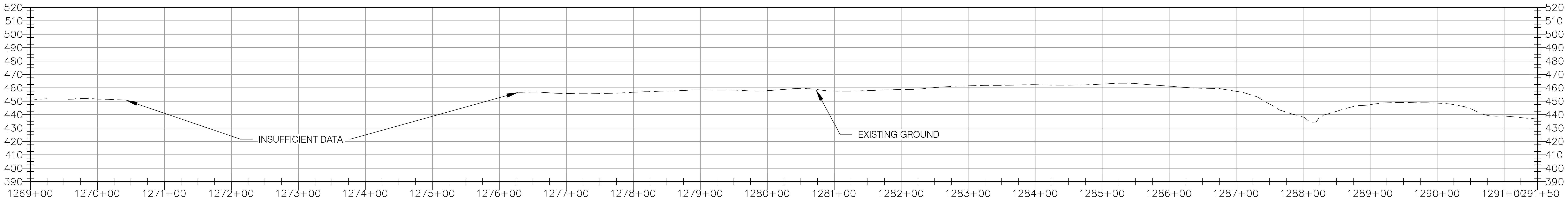
Station	Deflection	Bearing
		S 48° 26' W
1270+02	45°00' LT	S 03° 25' W
1270+64	00°02' RT	S 03° 23' W
1276+82	00°01' RT	S 03° 21' W
1280+41	00°19' RT	S 03° 02' W
1285+45	45°00' RT	S 48° 02' W
1285+95	21°03' RT	S 69° 06' W
1286+87	01°21' RT	S 70° 27' W
1290+43	00°49' RT	S 69° 38' W

ALIGNMENT DETAIL



CONST. TYPE: 1A | 2A | 1A | 2A | W | 1A

PROFILE



MATERIALS (MATCH LINE to MATCH LINE)

MATERIALS	1	1	1	1	1
	172 FT	115 FT	1,559 FT	123 FT	281 FT
COATING	A	C	A	C	A
CLASSIFICATION	1				
DESIGN FACTOR	0.5				

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,250 FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	2,012 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0 FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	238 FT

STATE OF VERMONT
MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP-EPSC-050	EPSC PLAN	2	GJM	BCK	IFC 2016 EDITS (05/2016)
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	BCK	TDB	ROTAX ROAD REROUTE (10/26/15)

	BID INITIALS	BID DATE	CONSTRUCTION INITIALS	CONSTRUCTION DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. ADDISON COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-050 | REV. 2

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

HORIZONTAL SCALE

100 50 0 100 200 300 feet

50 25 0 50 100 150 feet

VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	1,652 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	577 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	0 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	1,075 FT

STATE OF VERMONT
MICHAEL E. HOLLOWAY
NO. 97764
CIVIL
LICENSED
PROFESSIONAL ENGINEER

DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION
		3	BCK	GEW		MLV–4 RELOCATION (05/01/16)
ANGP–EPSC–051	EPSC PLAN	2	BCK	TDB		ROTAX ROAD REROUTE (10/26/15)
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	BCK	TDB		ADDED ARCH. SITE AND ENV. EDITS (6/08/15)

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. ADDISON COUNTY, VERMONT

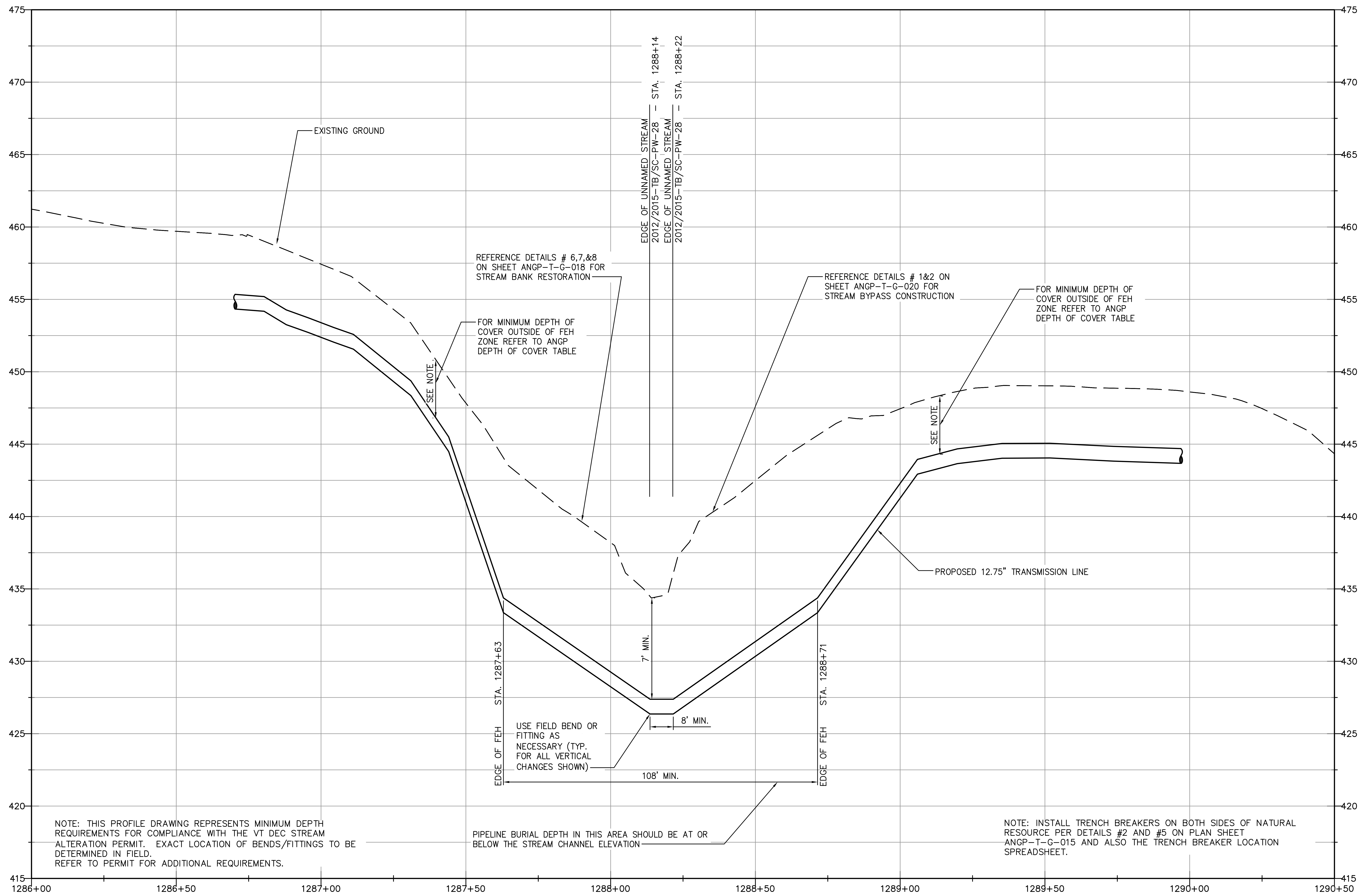
YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–051 | REV. 3

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

PROFILE



NOTE: THIS PROFILE DRAWING REPRESENTS MINIMUM DEPTH REQUIREMENTS FOR COMPLIANCE WITH THE VT DEC STREAM ALTERATION PERMIT. EXACT LOCATION OF BENDS/FITTINGS TO BE DETERMINED IN FIELD.
REFER TO PERMIT FOR ADDITIONAL REQUIREMENTS.

NOTE: INSTALL TRENCH BREAKERS ON BOTH SIDES OF NATURAL RESOURCE PER DETAILS #2 AND #5 ON PLAN SHEET ANGP–T–G–015 AND ALSO THE TRENCH BREAKER LOCATION SPREADSHEET.

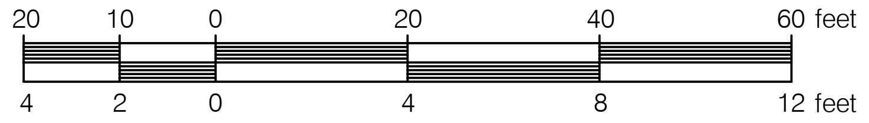
STREAM CROSSING PROFILE
STREAM 2012/2015–TB/SC–PW–28
STATION 1288+14±
MILE POST 24.39

SCALE: HORIZ. 1"=20'
VERT. 1"=4'

NOTE: STREAM CROSSING MUST BE CONSTRUCTED BETWEEN
JULY 1 AND OCTOBER 1

NO. 97764
CIVIL

HORIZONTAL SCALE



VERTICAL SCALE

Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

Vermont Gas

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
OPEN TRENCH STREAM CROSSING PROFILE

LOC. ADDISON COUNTY, VERMONT

YEAR: 2016	W.O.	SCALE: AS NOTED	DWG. ANGP–T–C–051A	REV. 0

RIGHT-OF-WAY

MATCH LINE

140
N/F
BAILEY, GEORGE

142
N/F
ADAMS, ERIC H.
& HEATHER

MATCH LINE

SURVEY DATA

S 05° 22' W

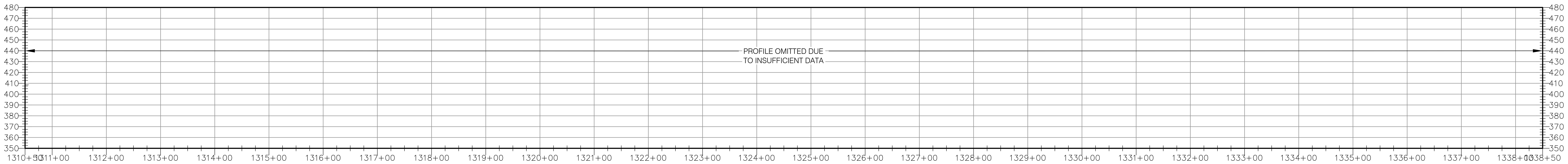
23°33' LT
1331+03

S 18° 11' E

ALIGNMENT DETAIL

CONST. TYPE: W | 2A | W | 1E | W | 2A | 1E

PROFILE



MATERIALS (MATCH LINE)	① 483 FT	① 1,313 FT	① 130 FT	① 874 FT
COATING	C	A	C	A
CLASSIFICATION	1			
DESIGN FACTOR	0.5			

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:
1 12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112 — 2,800 FT
2 20" O.D. X 0.375" WT, API–5L, GR. B — 0 FT

PIPE COATING:
A EPOXY POLYETHYLENE 10/40 — 2,187 FT
B FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL — 0 FT
C FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3 — 613 FT

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP–EPSC–052	EPSC PLAN				
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	GJM	BCK	IFC 2016 EDITS (05/2016)

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. ADDISON COUNTY, VERMONT

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–052 | REV. 1

RIGHT-OF-WAY

MATCH LINE

140	146	147	148	149	150	151
N/F BAILEY, GEORGE	N/F MALZAC, PAUL E. & KATHY	N/F BURRITT, MARK A. & MICHELLE	N/F NICOLAY, WILLIAM & HELENA	N/F BROUGHTON, CLAIRE TRUSTEE	N/F MORROW, JAMES F.	N/F MEJIA, JOHNY; LAUER, JESSE

MATCH LINE

SURVEY DATA

	1343+13	1345+54	1350+32	1355+09	
	41°55' RT	00°03' LT	00°05' RT	00°06' LT	
S 18° 11' E		S 23° 44' W	S 23° 41' W	S 23° 47' W	S 23° 40' W

ALIGNMENT DETAIL

MATERIALS

MATCH LINE

MATERIALS	① 1,545 FT	① 85 FT	① 173 FT	① 142 FT	① 55 FT
COATING	A	C	A	C	A
CLASSIFICATION	1				
DESIGN FACTOR	0.5				

MATCH LINE

HORIZONTAL SCALE

100 50 0 100 200 300 feet

50 25 0 50 100 150 feet

VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,000 FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	1,773 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	0 FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	227 FT

STATE OF VERMONT
MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL
LICENSED
PROFESSIONAL ENGINEER

VHB Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION		BID INITIALS	BID DATE	CONSTRUCTION INITIALS	CONSTRUCTION DATE
						ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
						DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
						DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
ANGP-EPSC-053	EPSC PLAN					DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS					DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. ADDISON COUNTY, VERMONT

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016	W.O.	SCALE: 1" = 100'	DWG. ANGP-T-C-053	REV. 0

HORIZONTAL SCALE

100 50 0 100 200 300 feet

50 25 0 50 100 150 feet

VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,637 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	2,369 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	0 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	268 FT

STATE OF VERMONT
MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP–EPSC–054	EPSC PLAN				
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS				

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. ADDISON COUNTY, VERMONT

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–054 | REV. 0

RIGHT-OF-WAY

MATCHLINE	155 N/F PEYSER, LOUISE SELINA 156 N/F MENARD, GERALD, NANCY	156 N/F MENARD, GERALD, NANCY	155 N/F PEYSER, LOUISE SELINA	156 N/F MENARD, GERALD & NANCY	159 HOLLOW ROAD	160 N/F COUSINO, VICKI A.	161 N/F WAGEMAN, EDWIN J. & CAROLE	162 N/F BEAUPRE, MARC & GRETCHEN	163 N/F HENDRY, MARTHA M.	MATCHLINE

SURVEY DATA

Station	Deflection	Bearing
		S 23° 51' W
1387+67	00°08' LT	S 23° 42' W
1391+99	00°01' RT	S 23° 43' W
1395+00	00°01' RT	S 23° 43' W
1396+58	00°01' LT	S 23° 42' W
1402+58	00°01' RT	S 23° 43' W
1410+50	01°08' RT	S 24° 51' W
1412+95	19°56' RT	S 44° 47' W
1413+81	24°52' LT	S 19° 55' W
1414+57	24°27' LT	S 04° 33' E

ALIGNMENT DETAIL

CONST. TYPE

2D	9	W	2D	

PROFILE

MATERIALS

MATERIALS	① 1,135 FT	① 229 FT	① 1,536 FT
COATING	A	C	A
CLASSIFICATION	1		2
DESIGN FACTOR	0.5		

HORIZONTAL SCALE 100 50 0 100 200 300 feet

VERTICAL SCALE 50 25 0 50 100 150 feet

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,900 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	2,671 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	0 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	229 FT

STATE OF VERMONT
MICHAEL E. HOLLOWGOOD
NO. 97764
CIVIL
LICENSED PROFESSIONAL ENGINEER

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP–EPSC–055	EPSC PLAN				
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	BCK	GEW	MLV–4 RELOCATION (05/01/16)

	BID INITIALS	BID DATE	CONSTRUCTION INITIALS	CONSTRUCTION DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. ADDISON COUNTY, VERMONT

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–055 | REV. 1

Vermont Gas

Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

RIGHT-OF-WAY

MATCHLINE	163	164	165	POST ROAD	166	167	168	169	170	MATCH LINE
	N/F HENDRY, MARTHA M.	N/F RADLER, ROBERT & BUSCAGLIA, CATHIE M.	N/F CHARNLEY, JACQUELINE & THOMAS A.		N/F BOWEN, MICHAEL H. & ELLEN L.	N/F LITTLE, ROBERT A. & FAITH E.	N/F COTA, ROGER & ALYSON	N/F CLARK, RICKY D. & MAREN E.	N/F ALDERMAN, MICHAEL J.	

SURVEY DATA

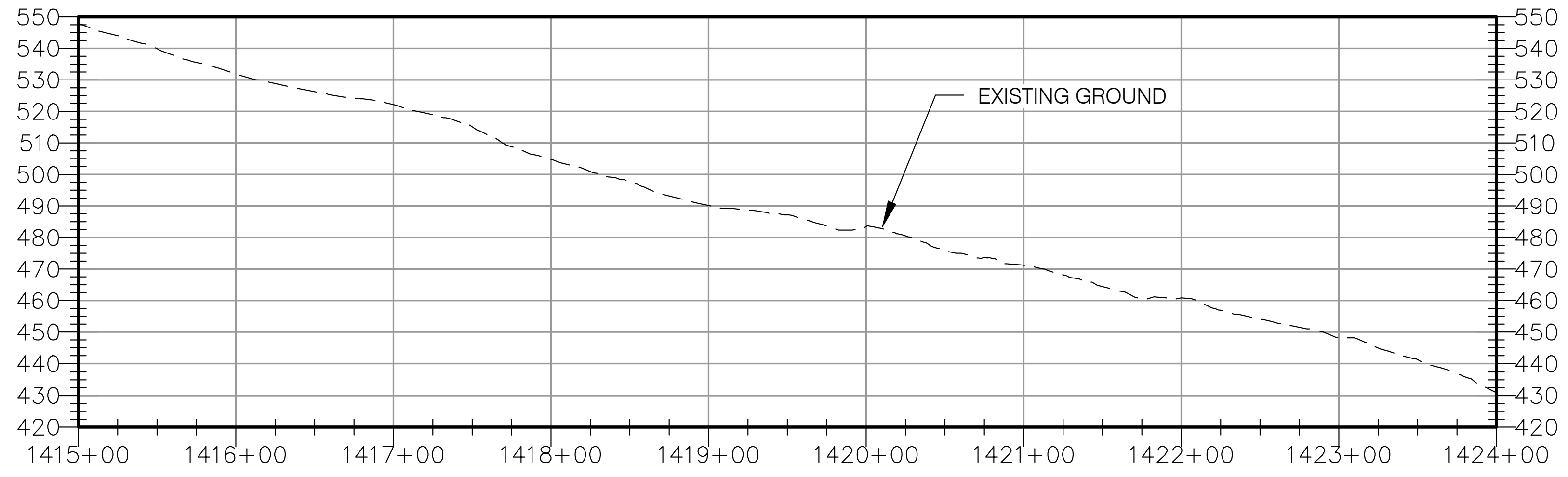
Station	Deflection	Bearing (following)
		S 04° 33' E
1415+63	17°08' RT	S 12° 36' W
1416+79	01°46' RT	S 14° 22' W
1421+53	00°03' RT	S 14° 26' W
1425+42	00°10' LT	S 14° 15' W
1433+18	00°02' RT	S 14° 18' W
1436+85	00°14' RT	S 14° 32' W
1438+22	01°25' RT	S 15° 58' W
1439+82	05°10' RT	S 21° 08' W

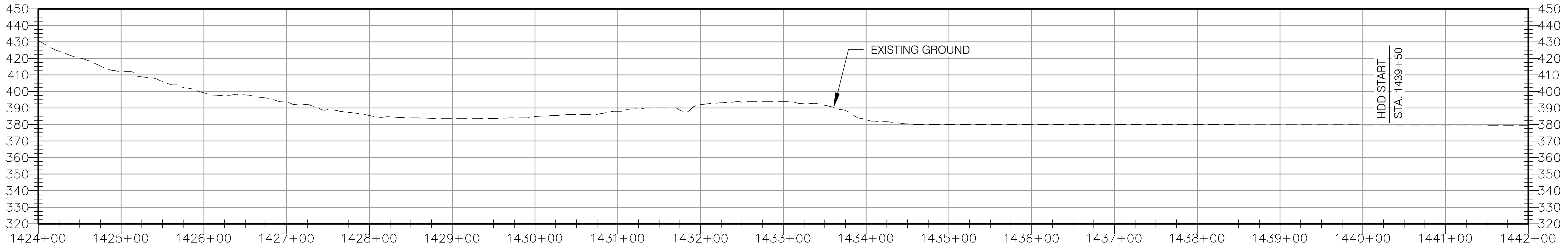
ALIGNMENT DETAIL

CONST. TYPE

2D	11	2D	W	A	A	W	8

PROFILE





MATERIALS

MATERIALS	MATCHLINE 1 891 FT	1 68 FT	1 390 FT	1 1,101 FT	1 250 FT MATCHLINE
COATING	A	C	A	C	B
CLASSIFICATION	2				
DESIGN FACTOR	0.5				

HORIZONTAL SCALE 100 50 0 100 200 300 feet

50 25 0 50 100 150 feet VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API-5L, GR. X65, PSL-2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,700 FT
2	20" O.D. X 0.375" WT, API-5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	1,281 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14-16 MILS/40 MILS, 54-56 MILS TOTAL	250 FT
C	FBE 14-16 MILS, W/ 1-1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	1,169 FT

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

VHB Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP-T-G-07-010	ACCESS ROAD DETAILS				
ANGP-EPSC-056	EPSC PLAN				
G-001 - 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS				

	BID INITIALS	BID DATE	CONSTRUCTION INITIALS	CONSTRUCTION DATE
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. ADDISON COUNTY, VERMONT

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP-T-C-056 | REV. 0

RIGHT-OF-WAY

MATCH LINE

170
N/F
ALDERMAN, MICHAEL J.

171
N/F
BOISSE, HENRY

171
N/F
BOISSE, HENRY

178.02
N/F
BOISSE, JOSEPH A.;
WILLIAMS, DAVID L.

MATCH LINE

SURVEY DATA

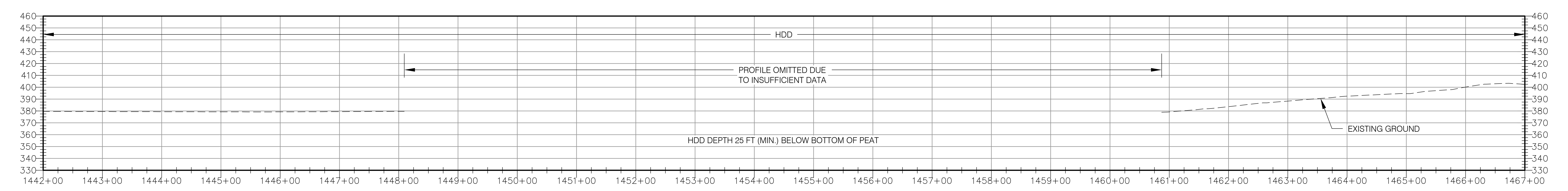
S 21° 08' W

ALIGNMENT DETAIL

CONST. TYPE

8

PROFILE



MATERIALS

MATCHLINE

1

2,500 FT

MATCHLINE

COATING	B	
CLASSIFICATION	2	1
DESIGN FACTOR	0.5	

HORIZONTAL SCALE

100 50 0 100 200 300 feet

50 25 0 50 100 150 feet

VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,500 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	0 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	2,500 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	0 FT

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

VHB Vanasse Hangen Brustlin, Inc.

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP–EPSC–057	EPSC PLAN				
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS				

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. ADDISON COUNTY, VERMONT

Vermont Gas

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016 | W.O. | SCALE: 1" = 100' | DWG. ANGP–T–C–057 | REV. 0

RIGHT-OF-WAY

MATCHLINE

178.02
N/F
BOISSE, JOSEPH A.
& WILLIAMS, DAVID L.

178.05
N/F
HUIZENGA, RAYMOND J.
& BONITA

MATCHLINE

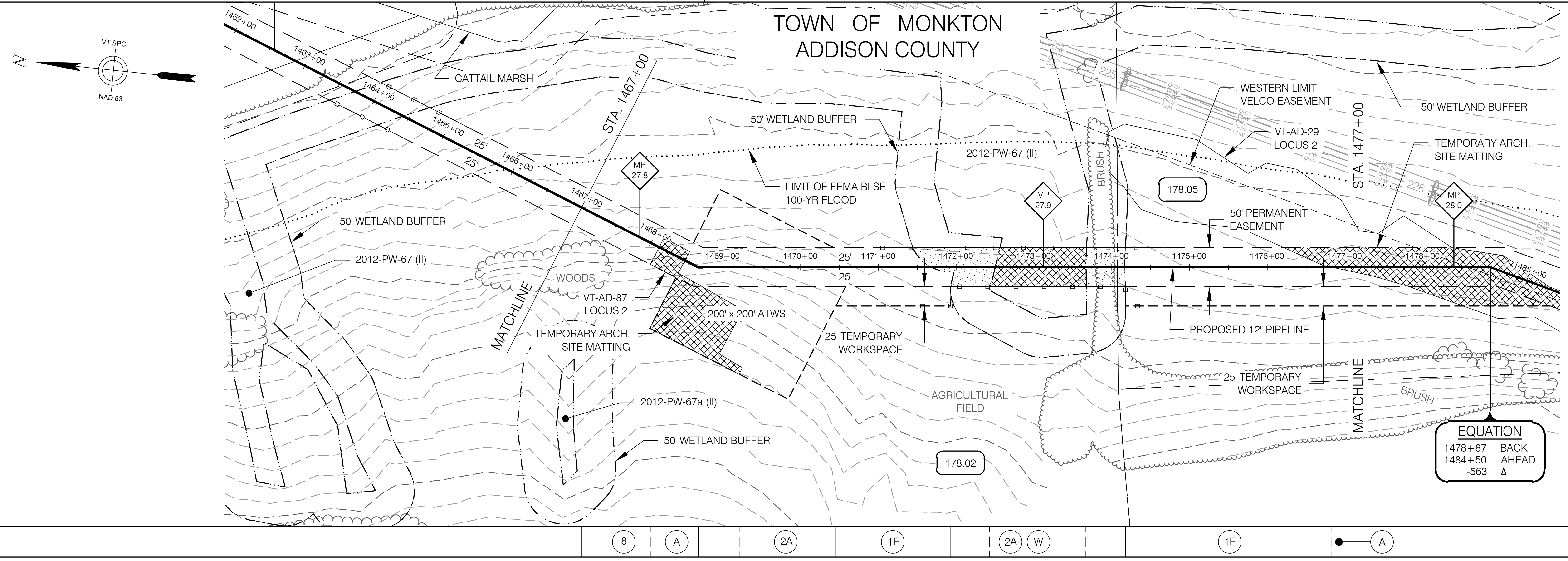
SURVEY DATA

S 21° 08' W

27°05' LT
1468+69

S 05° 57' E

ALIGNMENT DETAIL

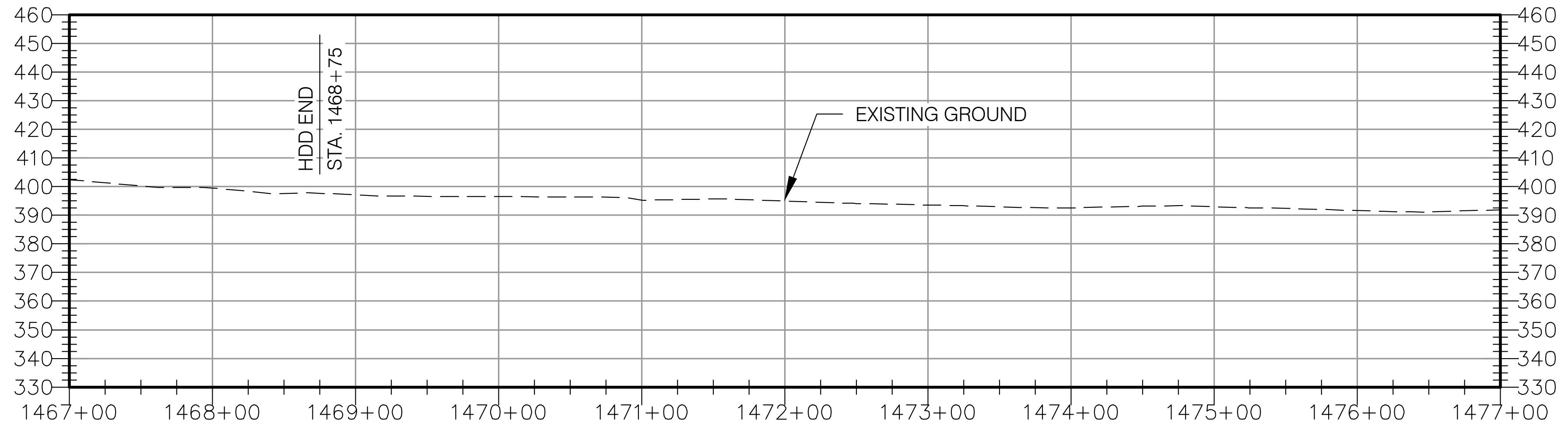


EQUATION
1478+87 BACK
1484+50 AHEAD
-563 Δ

CONST. TYPE

8	A	2A	1E	2A	W	1E	A

PROFILE



MATERIALS

MATERIALS	1	1	1	1
	175 FT	292 FT	250 FT	283 FT
COATING	B	A	C	A
CLASSIFICATION	1			
DESIGN FACTOR	0.5			

MATCHLINE

MATCHLINE

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	1,000 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	575 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	175 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT³	250 FT

MICHAEL E. HOLLOWOOD
NO. 97764
CIVIL

DWG. NO.	REFERENCE DWG.	REV	DSN	CK	DESCRIPTION
ANGP–EPSC–058	EPSC PLAN				
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS				

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. ADDISON COUNTY, VERMONT

Vermont Gas

Vanasse Hangen Brustlin, Inc.

38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 • www.chacompanies.com

YEAR: 2016	W.O.	SCALE: 1" = 100'	DWG. ANGP–T–C–058	REV. 0

HORIZONTAL SCALE
100 50 0 100 200 300 feet
50 25 0 50 100 150 feet
VERTICAL SCALE

PIPE MATERIAL:

1	12.75" O.D. X 0.312" WT, API–5L, GR. X65, PSL–2, AND ADDITIONAL SPECIFICATIONS IN 192.112	2,837 FT
2	20" O.D. X 0.375" WT, API–5L, GR. B	0 FT

PIPE COATING:

A	EPOXY POLYETHYLENE 10/40	1411 FT
B	FBE, ABRASION RESISTANT OVERCOAT, 14–16 MILS/40 MILS, 54–56 MILS TOTAL	975 FT
C	FBE 14–16 MILS, W/ 1–1/2" REINFORCED CONCRETE W/ 140 LBS/FT^3	451 FT

STATE OF VERMONT
NO. 97764
CIVIL

ANGP–EPSC–059	EPSC PLAN					
G–001 – 010	COVER, INDEX, LEGEND & NOTES, AND CONSTRUCTION DETAILS	1	GJM	BCK		IFC 2016 EDITS (05/2016)
DWG. NO.	REFERENCE DWG.	REV	DSN	CK		DESCRIPTION

	BID		CONSTRUCTION	
ENVIRONMENTAL	JLS	06/28/13	JLS	05/2016
DRAFTING DESIGNER	GIL	06/28/13	GJM	05/2016
DRAFTING SUPERVISOR	BZD	06/28/13	BCK	05/2016
DESIGN ENGINEER	MDF	06/28/13	GEW	05/2016
DESIGN MANAGER	SAB	06/28/13	JEO	05/2016
	INITIALS	DATE	INITIALS	DATE

VERMONT GAS
PROPOSED 12" PIPELINE
ADDISON NATURAL GAS PROJECT
ALIGNMENT SHEET

LOC. ADDISON COUNTY, VERMONT

Vermont Gas

VHB Vanasse Hangen Brustlin, Inc.

CHA
38 Eastwood Drive, Suite 105
South Burlington, VT 05403
Main: (802) 735-0372 · www.chacompanies.com

YEAR: 2016	W.O.	SCALE: 1" = 100'	DWG. ANGP–T–C–059	REV. 1