

KEYSTONE PIPELINE PROJECT
Revision 1 - North Dakota Route Variations Since Keystone's Application for Permit
April 17, 2008

Route Variation Number	Begin MP	End MP	Drawing Number	Reason for Route Variation	Easement Acquired	Agency Concurrence	Comments
233-ND-39.2-40.5-S	39.2	40.5	ND-233-1	Increase clearance from 497 ft to 551 ft from Lenhardt Almen residence, eliminate clearing of shelter belt	Yes	N/A	
234-ND-67.2-68.9-S	67.2	68.9	ND-234-1	Landowner request (Kruger) shift alignment to west property line staying minimum of 60 ft east of tree drip line	Yes	N/A	
235-ND-96.4-97.2-S-rev1	96.4	97.2	ND-235-1-rev1	Rev1 of previous re-route for MP 96.4 to MP 97.5. Increase clearance from residence (Vig) from 176 ft to 501 ft	Yes	N/A	
236-ND-205.7-208.1-S	205.7	208.1	ND-236-1	Increase clearance off residence (Mathews) at MP 206.33 from 228 ft to 645 ft, and residence (Hemminger) at MP 207.78 from 373 ft to 585 ft.	No	N/A	This route variation voided and replaced by route variation 336-ND-204.5-208.9-S per landowner request.
239-XX-80.2-363.0-S	80.2	81.1	ND-239-1	This variation avoids USFW wetland easements after field surveys were conducted with the USFW.	Yes	Yes	
239-XX-80.2-363.0-S	92.5	93.1	ND-239-2	This variation avoids USFW wetland easements after field surveys were conducted with the USFW.	Yes	Yes	
239-XX-80.2-363.0-S	109.4	110.1	ND-239-3	This variation avoids USFW wetland easements after field surveys were conducted with the USFW.	Yes	Yes	
239-XX-80.2-363.0-S	137.3	138	ND-239-4	This variation avoids USFW wetland easements after field surveys were conducted with the USFW.	Yes	Yes	
239-XX-80.2-363.0-S	170.6	171.4	ND-239-5	This variation avoids USFW wetland easements after field surveys were conducted with the USFW.	Yes	Yes	
239-XX-80.2-363.0-S	175.7	177.6	ND-239-6	This variation avoids USFW wetland easements after field surveys were conducted with the USFW.	Yes	Yes	
240-ND-141.8-142.8-S	141.8	142.8	ND-240-1	Variation to avoid 500' clearance from residence (Wittenberg)	Yes	N/A	
245-XX-XX.X-XX.X-S	16.7	15.7	ND-245-1	V-03 (mainline) Was moved off of HWY 5, 1 mile north to the north side of 94th St. New MP 15.7	Yes	N/A	
246-XX-XX.X-XX.X-S	100.1	100.1	ND-246-1	Requested by TCPL to place a valve between pump station locations which do not contain intermediate valves, added V-55: MP 100.1, Steele County, on south side of 12th St.	Yes	N/A	
260-XX-XX.X-XX.X-S	5.7	8.1	ND-260-1	This variation accounts for adjustments to the centerline to accommodate an HDD Pembina River. This variation removes P.1. out of drill and places pullback along ROW	Yes	N/A	
267-ND-89.7-90.3-I	89.7	90.3	ND-267-1	Moved back to original alignment due to landowner (Larson) draining wetland, shorten length for less impact	Yes	N/A	
269-ND-164.6-167.0-S	164.6	167	ND-269-1	Landowner, Vaughn Zacharias, suggested route to avoid potential additional arch sites and to increase offset from residence.	Yes	N/A	
270-ND-46.0-47.0-I	46	47	ND-270-1	Landowner Request to avoid burial mounds (Bures) moved back to original Sept '06 centerline	Partial	N/A	Landowner Kratochvil to south Bures tract was not agreeable to original pipeline route nor to this route variation.
276-ND-39.5-41.3-I	39.5	41.3	ND-276-1	Landowner request to avoid newly planted trees (Almen)	Yes	N/A	
276-ND-33.1-34.2-PS	33.1	34.2	ND-276-1	PS-15 This pump station was moved due to hydraulics and then on to a willing landowner. Associated pipeline reroute to accommodate pump station inlet and outlet.	Yes	N/A	
277-ND-217.6-216.6-PS	217.6	216.6	ND-277-1	PS-19 The pump station was moved on to a willing landowner.	Yes	N/A	
279-ND-123.5-123.5-PS	123.5	123.5	ND-279-1	PS-17 Move off of two landowners on onto one landowner willing to sell five acres.	Yes	N/A	
280-ND-170.9-171.0-PS	170.9	171.0	ND-280-1	PS-18 Moved across the street. The landowner preferred pump station across the street.	Yes	N/A	
288-ND-76.2-76.0-PS	76.2	76.0	ND-288-1	PS-16 This pump station was moved due to wetlands residing within pump station footprint and to a location with a willing landowner. Associated pipeline reroute to accommodate pump station inlet and outlet.	Yes	N/A	
291-ND-176.5-177.5-I	176.5	177.5	ND-291-1	Landowner (Lutt) has requested keystone move at least 500' away from the grave yard located next to his property.	Yes	N/A	
300-XX-XX.X-XX.X-I	41.4	41.6	ND-300-1	Accommodate HDD design. The centerline was extended north of the entry point in order to move entry further north of river. This will accommodate additional depth determined from scour analysis.	Yes	N/A	
309-XX-XX.X-XX.X-S	19.5	19.8	ND-309-1	Valve was relocated from private drive to north-south 127th ave.	Yes	N/A	
309-XX-XX.X-XX.X-S	49.7	49.7	ND-309-2	Relocated Valve V-47 off of condemnation track from south side of east-west 61st Street NE to north side	Yes	N/A	
309-XX-XX.X-XX.X-S	185.2	185.9	ND-309-3	This Route Variation shifts the location of valve V-07 to a location where the Ransom County requirement of 100 ft clearance is in compliance.	Yes	N/A	
309-XX-XX.X-XX.X-S	203.4	202.4	ND-309-4	Current location of Valve V-51 at dirt 2-track road, therefore all season access is not provided. Relocated site at a high point isolating additional drainage areas to large lake to southwest and provide all season access	Yes	N/A	
315-ND-131.0-131.0-S	131.0	131.0	ND-315-1	Per a settlement with the City of Fargo during the North Dakota PSC hearings, an additional check valve will be placed near the Lake Ashlabula area	Yes	N/A	
320-ND-163.9-166.0-I	163.9	165.0	ND-320-1	Reroute to move the pipeline ROW and workspace out of a cultural site. (A-MA2A-ND-BA-02)	Yes	N/A	
321-ND-41.3-41.8-I-rev1	41.3	41.4	ND-321-1-rev1	Reroute to move the pipeline ROW and workspace out of a cultural site. Revision to 321, kept reroute on one landowner. (A-MA2A-ND-WA-01)	Yes	N/A	
327-ND-142.0-142.7-S-rev1	142.1	142.4	ND-327-1-rev1	Revision to 327-ND-142.0-142.7-S which moves route to a 42' offset from Wittenberg residence in order to accommodate condition of signed waiver	Yes	N/A	
330-ND-18.1-18.6-S	18.1	18.8	ND-330-1	This variation is to account for an added HDD at the Tongue River crossing.	Yes	N/A	
331-XX-XX.X-XX.X-I	23.65	23.77	ND-331-1	This route variation contains multiple minor variations which avoid obstructions and also reroutes to revise stream crossings after results from the stream scour and migration analysis	Yes	N/A	
331-XX-XX.X-XX.X-I	29.25	29.62	ND-331-2	Revised stream crossing to minimize crossing length	Yes	N/A	
331-XX-XX.X-XX.X-I	31.00	31.12	ND-331-3	Revised North Branch Park River crossing to minimize scour and stream migration issues	Yes	N/A	
331-XX-XX.X-XX.X-I	31.74	31.97	ND-331-4	Revised stream crossing to minimize crossing length and avoid structure @ MP 31.04	Yes	N/A	
331-XX-XX.X-XX.X-I	34.26	34.46	ND-331-5	Revised stream crossing to minimize crossing length	Yes	N/A	
331-XX-XX.X-XX.X-I	35.21	35.45	ND-331-6	Avoid grain bin	Yes	N/A	
331-XX-XX.X-XX.X-I	49.99	50.12	ND-331-7	Revised stream crossing to minimize crossing length	No	N/A	Landowner Capp was not agreeable to original pipeline route nor to this route variation.
331-XX-XX.X-XX.X-I	54.69	54.81	ND-331-8	Revised stream crossing to minimize crossing length	Yes	N/A	
331-XX-XX.X-XX.X-I	62.69	62.87	ND-331-9	Revised Middle Branch Forest River crossing to minimize scour and stream migration issues	Yes	N/A	
331-XX-XX.X-XX.X-I	86.83	86.84	ND-331-10	Revised stream crossing to minimize crossing length	Yes	N/A	
331-XX-XX.X-XX.X-I	109.08	109.43	ND-331-11	Eliminate 84'-02'-26" side bend at MP 86.3	Yes	N/A	
331-XX-XX.X-XX.X-I	153.21	153.33	ND-331-12	Avoid power poles and guy wires	Yes	N/A	
335-ND-180.1-180.1-I	180.1	180.1	ND-335-1	Avoid power transmission line tower	Yes	N/A	
336-ND-204.5-208.9-S	204.5	208.9	ND-336-1	ND Township Chairman has indicated that 5 landowners would sign if alignment shifted east to 1/4 section line	Pending	N/A	Three of the five landowners have signed easements. Mr. Mathews, the landowner who demanded the reroute, has not agreed to sign at this time.
341-ND-185.9-186.1-I	185.9	186.1	ND-341-1	Relocated Valve Site V-07 so that access road could be constructed in permanent easement north of 72nd Street.	Yes	N/A	