



**TOWN OF BLACKFALDS
COUNCIL MEETING
REQUEST FOR DECISION**

MEETING DATE: January 25, 2022

PREPARED BY: Preston Weran, Director of Infrastructure and Property Services

SUBJECT: Panorama / Parkwood Drive Intersection Traffic Improvements

BACKGROUND:

During the 2021 budget deliberations funds were allocated in the amount of \$5.66 million dollars to re-face the downtown area around the new Twin Arena facility plaza and parking lot. This Womacks Road and Gregg Street realignment/Plaza project also included associated underground works, the closure of Broadway Avenue and CP rail crossing, extending Gregg Street to Waghorn from Lawton Avenue, repave Lawton and connect improvements to the intersection of Highway 2A and Gregg Street. This project is currently in construction and with the traffic being improved in this area, the Town has recognized that a small improvement to the adjacent intersection in front of FasGas and A&W; Panorama and Parkwood Drive would be recommended. As part of the 2022 capital budget, funds of \$175,000 were allocated to the intersection change of scope to be part of the original project construction contract.

DISCUSSION:

The intersection of Panorama and Parkwood has seen the volume of traffic and pedestrians increase with the growth along the commercial corridor. In 2020/2021 we have received two complaints from the public regarding the northern most crosswalk, which is currently the main route for pedestrian traffic. The drivers are not yielding to pedestrians.

The vehicles who turn off the Highway eastbound on Panorama quickly turn left (north) onto the Parkwood service roadway inside the intersection. As they are making this turning movement, the pedestrians crossing this intersection are being ignored or cut off by the vehicle, sometimes mid-road. There are also concerns with the speed that vehicles going eastbound to get to the traffic signals in time to make the green light from the residential area. This intersection is further impacted as the traffic coming southbound along Parkwood does not always stop at the stop sign. Administration has discussed this situation with our engineering consultants, and we have prepared two options presented in detail tonight for final consideration.

Note that both options would reduce the main concern of pedestrian safety at the crosswalk, while option 2 would also provide a dedicated left turning lane and be closer to the ultimate configuration until Highway 2A is widened. The major difference between these two options would be cost and the ability to stack traffic into the dedicated left lanes. If Council agrees to either option or some other cost option, we plan to add to the scope of the Womacks Road and Gregg Street realignment/Plaza project anticipating using the existing contract to complete the work.

Separate from the options, as part of the 2021 sidewalk program, we have added a sidewalk to the orphan curb line and improved the pedestrian movements with west crosswalk on the intersection. Staff have also included the addition of a pararamp at the north end of the proposed crosswalk. These improvements were planned under the 2021 sidewalk repair and replacement program. We have also added one set of flashing push button beacons in this area. Please see attached sketch for reference.



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FINANCIAL IMPLICATIONS:

The \$175k allocated for this project under the 2022 Capital Program will be funded through the Canada Community Building Fund. Pedestrian push buttons already bought out of this capital project cost us \$15,000. We will use existing contingency in project to cover those costs.

Option 1 and Option 2 costs are under the Opinion of Probable Costs (OPC) provided by Stantec in the attached memo in the amounts of \$270k and \$360k, respectively. The west side of the Highway 2A intersection is scheduled under the existing contract in the amount of \$140,592.

The table below shows the estimated funding for each option:

	Option 1	Option 2
Opinion of Probable Costs	\$270,000	\$360,000
West Side Contribution	(\$140,592)	(\$140,592)
Canada Community Building Grant	(\$175,000)	(\$175,000)
Street Reserves	\$0	(\$44,408)
Balance	\$45,592	\$0

If option 2 is selected, the amount drawn from the reserve will vary based on the usage of the contingency, inflationary factors and professional services rendered. The \$44,000 reserve contribution is the upset limit if the contingency, inflationary factors and professional services rendered are 100% expended.

ADMINISTRATIVE RECOMMENDATION:

1. That Council accepts the recommendation of Administration in support of moving forward with Option 2 for the Panorama/Parkwood Road/Hwy 2A intersection improvements.
2. That Council instruct Administration to prepare a change order for the anticipated work through the existing Border Paving Contract for the Womacks/Gregg Project using the capital funds allocated of \$175,000 and allocate an upset amount of \$45,000 to be drawn from Streets Reserves.

ALTERNATIVES:

- A. Council does not award this work at this time and monitors the situation for 2023 budget discussions.
- B. That this item be referred back to Administration for more information.

ATTACHMENTS:

- *Stantec Drawings and Opinion of Probable Costs*

Approvals:



CAO Myron Thompson



Department Director/Author

To:	Preston Weran	From:	Patrick Wong, P.Eng., PTOE Brad Vander Heyden, P.Eng.
File:	Town of Blackfalds 1162 39396	Date:	Stantec Consulting Ltd. January 19, 2022

Reference: Town of Blackfalds Gregg Street & Highway 2A Intersection Review – Technical Memo

1 INTRODUCTION

This technical memorandum intends to evaluate the potential adjustments to the Highway 2A and Gregg Street intersection to improve traffic flow and accommodate pedestrians crossing on the south side of the intersection. The intersection location is illustrated in **Figure 1**.

Figure 1 – Intersection Location



Two intersection improvement options were discussed at the December 2001 meeting between Stantec and the Town. The two options are as follows:

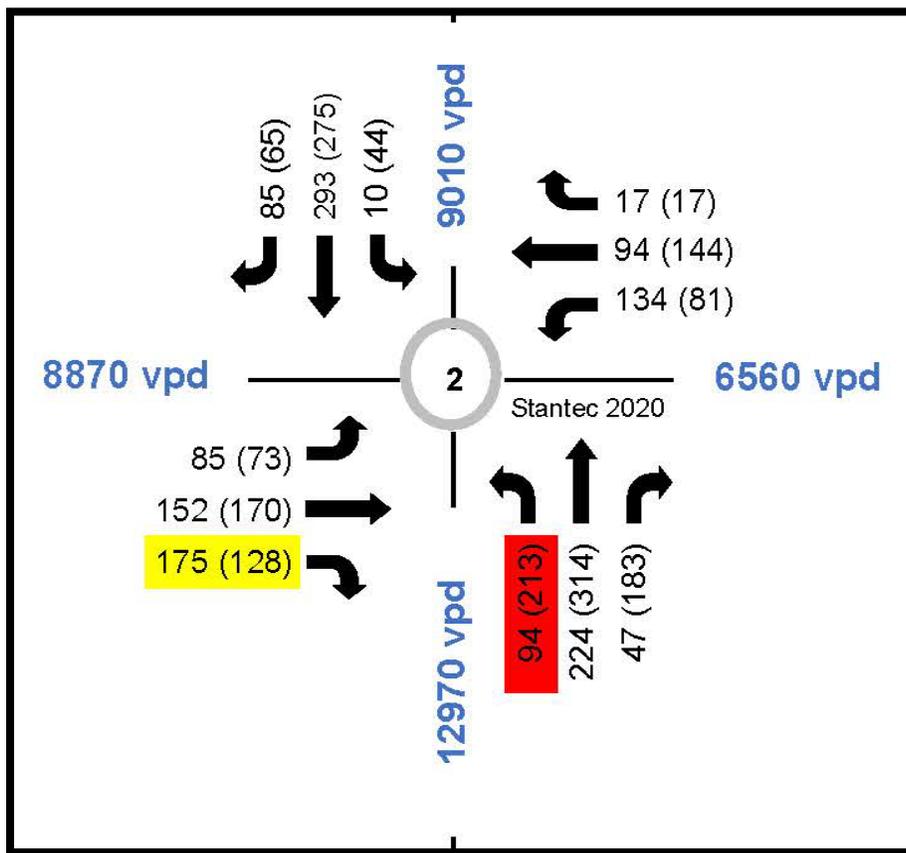
- **Option 1** - Maintaining the current intersection geometry (with minor adjustment on the west leg), but having the sidewalks on the west and south sides of the intersection; and
- **Option 2** – Having eastbound and westbound configurations that have designated left turn, designated through, and designated right turn lanes. The crosswalks will also be on the west and south sides of the intersection.

Reference: Town of Blackfalds Gregg Street & Highway 2A Intersection Review – Technical Memo

2 EXISTING VOLUMES

AM Peak and PM Peak traffic turning movement counts were collected in September 2020 at the intersection. A study was carried out previously to evaluate the traffic impact with the closure of Broadway Ave at the railway crossing, the updated volumes for the intersection are illustrated in **Figure 2**.

Figure 2 – Adjusted Design Volumes



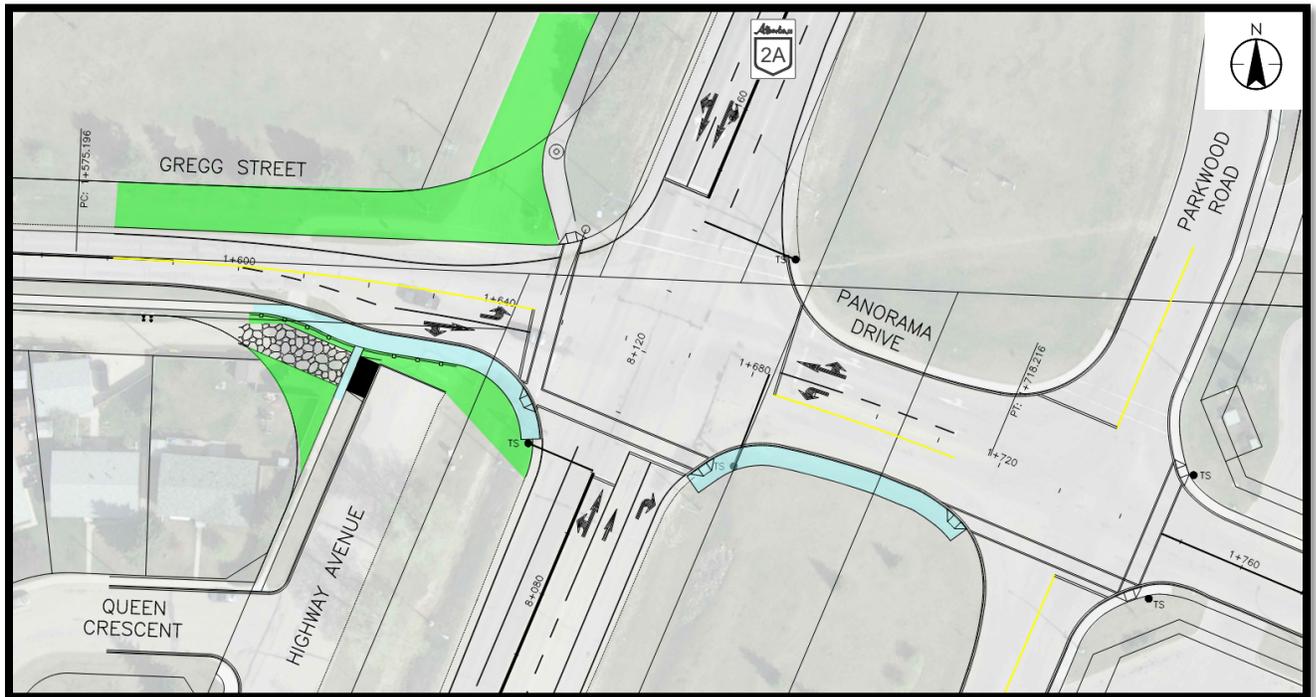
Reference: Town of Blackfalds Gregg Street & Highway 2A Intersection Review – Technical Memo

3 OPTION 1 – TRAFFIC ANALYSIS AND EVALUATION

3.1 INTERSECTION CONFIGURATION

Figure 3 below shows the option 1 intersection configuration.

Figure 3 – Option 1 Intersection Configuration Adjustments



Intersection adjustments are as follows:

- 1) Remove existing pedestrian crosswalk on the north side of the intersection;
- 2) Install new pedestrian crosswalks on the west and south sides of the intersection; and
- 3) Re-configure eastbound configuration to one dedicated left turn lane and a shared through and right turn lane.

Reference: Town of Blackfalds Gregg Street & Highway 2A Intersection Review – Technical Memo

3.2 TRAFFIC OPERATION ANALYSIS

Tables 1 & 2 summarized the analysis results, with the existing timing plans and phases (no advanced left turn phases).

Table 1 – Intersection of Gregg Street & Highway 2A – Option 1 AM Peak

	Intersection Movements											
	EB			WB			NB			SB		
	L / TR			L / TR			LT / T / R			L / TR		
	L	T	R	L	T	R	L	T	R	L	T	R
Volumes	85	152	175	134	94	17	94	224	47	10	293	85
V/C Ratio	0.28	0.72	-	1.06	0.25	-	-	0.26	0.06	0.02	0.43	-
Lane LOS	C	C	-	F	B	-	-	A	A	A	B	-
Control Delay (s)	20.7	25	-	116	17.6	-	-	9.7	3.5	9.9	11.5	-
Queue Length 95 th (m)	18.9	53.9	-	#46.5	20.9	-	-	25.5	4.8	3.4	63.1	-

Table 2 – Intersection of Gregg Street & Highway 2A – Option 1 PM Peak

	Intersection Movements											
	EB			WB			NB			SB		
	L / TR			L / TR			LT / T / R			L / TR		
	L	T	R	L	T	R	L	T	R	L	T	R
Volumes	73	170	128	81	144	17	213	314	183	44	275	65
V/C Ratio	0.32	0.74	-	0.70	0.41	-	-	0.44	0.21	0.12	0.37	-
Lane LOS	C	C	-	D	C	-	-	B	A	A	A	-
Control Delay (s)	24.4	30.8	-	50.1	23.6	-	-	10	1.9	8.7	9.2	-
Queue Length 95 th (m)	18.7	57	-	25	33.2	-	-	39.9	7.0	8.8	48	-

The Synchro results indicated that by converting the eastbound configuration to a single left turn lane and a shared through and right turn lane, the westbound left turn movement will fail with a V/C Ratio of 1.06, LOS F and control delay of 116s. An advanced westbound left turn phase will be needed in order to allow the intersection to function adequately. Table 3 summarized the analysis results with the added advanced westbound left turn phase.

Table 3 – Intersection of Gregg Street & Highway 2A – Option 1 AM Peak (with Advanced Westbound Left turn Phase)

	Intersection Movements											
	EB			WB			NB			SB		
	L / TR			L / TR			LT / T / R			L / TR		
	L	T	R	L	T	R	L	T	R	L	T	R
Volumes	85	152	175	134	94	17	94	224	47	10	293	85
V/C Ratio	0.31	0.77	-	0.51	0.16	-	-	0.38	0.08	0.03	0.57	-
Lane LOS	C	C	-	B	B	-	-	B	A	B	C	-
Control Delay (s)	25	32.4	-	19.1	11.8	-	-	18.1	2.3	16.4	21	-
Queue Length 95 th (m)	21.9	64.6	-	22.6	17.6	-	-	34.2	3	4.4	82.5	-

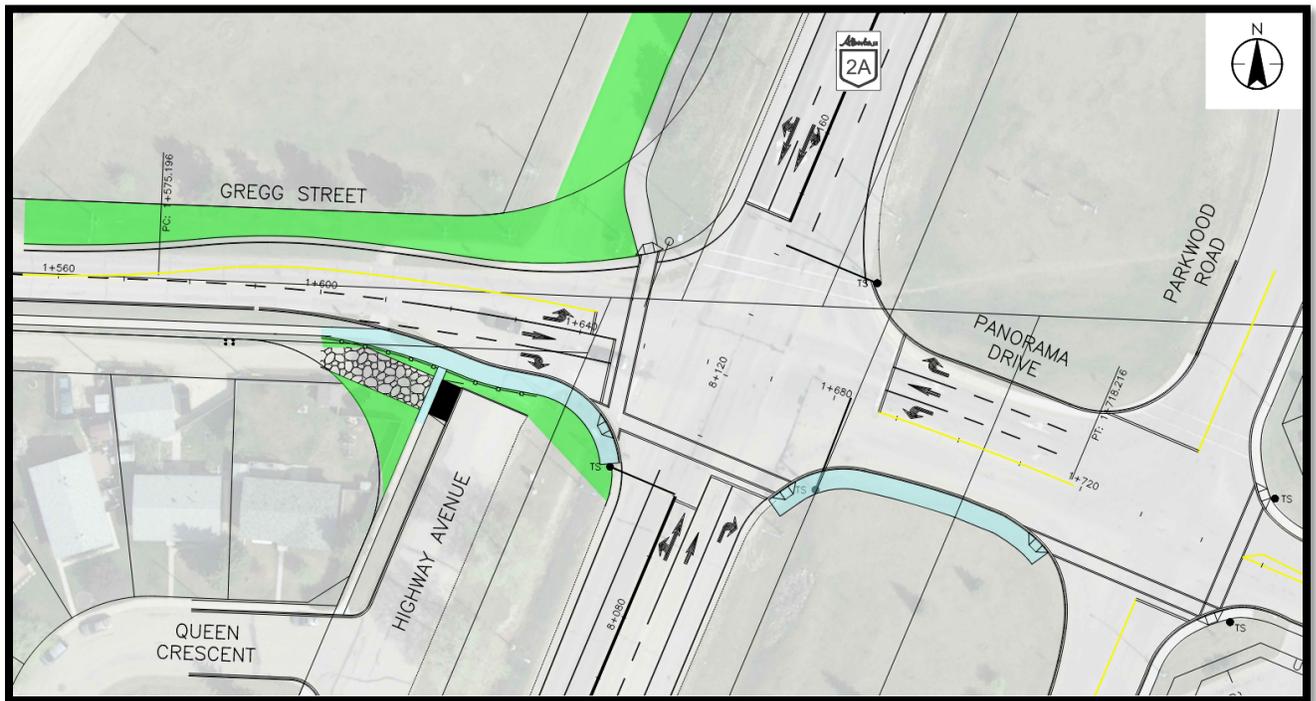
Reference: Town of Blackfalds Gregg Street & Highway 2A Intersection Review – Technical Memo

4 OPTION 2 – TRAFFIC ANALYSIS AND EVALUATION

4.1 INTERSECTION CONFIGURATION

Figure 4 below shows the option 2 intersection configuration.

Figure 4 – Option 2 Intersection Configuration Adjustments



Intersection adjustments are as follows:

- 1) Remove existing pedestrian crosswalk on the north side of the intersection;
- 2) Install new pedestrian crosswalks on the west and south sides of the intersection; and
- 3) Re-configure both eastbound and westbound configurations to one dedicated left turn lane, one through lane and one dedicated right turn lane.

Reference: Town of Blackfalds Gregg Street & Highway 2A Intersection Review – Technical Memo

4.2 TRAFFIC OPERATION ANALYSIS

Tables 4 & 5 summarized the analysis results, with the existing timing plans and phases (no advanced left turn phases).

Table 4 – Intersection of Gregg Street & Highway 2A – Option 2 AM Peak

	Intersection Movements											
	EB			WB			NB			SB		
	L / T / R			L / T / R			LT / T / R			L / TR		
	L	T	R	L	T	R	L	T	R	L	T	R
Volumes	85	152	175	134	94	17	94	224	47	10	293	85
V/C Ratio	0.36	0.44	0.41	0.65	0.27	0.05	-	0.23	0.06	0.02	0.39	-
Lane LOS	C	C	A	D	C	A	-	A	A	A	A	-
Control Delay (s)	25.4	25.7	6	36.2	22.8	8.1	-	6.5	2.3	6.3	7.8	-
Queue Length 95th (m)	20.5	32.1	10.7	31.8	21.2	3.5	-	18	3.6	2.5	44.8	-

Table 5 – Intersection of Gregg Street & Highway 2A – Option 2 PM Peak

	Intersection Movements											
	EB			WB			NB			SB		
	L / T / R			L / T / R			LT / T / R			L / TR		
	L	T	R	L	T	R	L	T	R	L	T	R
Volumes	73	170	128	81	144	17	213	314	183	44	275	65
V/C Ratio	0.40	0.56	0.35	0.51	0.47	0.06	-	0.4	0.19	0.1	0.34	-
Lane LOS	C	C	A	C	C	A	-	A	A	A	A	-
Control Delay (s)	29.9	31.4	6.9	34.7	29.1	9.1	-	6.9	1.4	5.8	6.3	-
Queue Length 95th (m)	20	38.5	10.2	22.3	32.8	3.8	-	29.3	5.4	6.6	35.5	-

The Synchro results indicated both AM Peak and PM Peak are expected to function adequately with the adjustments at the east and west sides of the intersection. However, with the added lanes on both the east and west approaches, additional signal heads and traffic signs on the signal arms will be needed.

At the December meeting, the idea of having the pork chop islands installed on the northwest and southwest corners was brought up to determine whether it will enhance pedestrian safety. There are some advantages and disadvantages with the pork chop islands and they are listed in **Table 6**.

Table 6 – Advantages and Disadvantages of the Pork Chop Islands

Advantages	Disadvantages
Shorter crossing distance hence improves pedestrian safety.	Added obstruction in roadway; can be an obstacle to snow plowing and removal.
Provides a safe place for pedestrians to stand when they do not have sufficient time to complete the full crossing.	Visually impaired pedestrians may be unaware of the presence of the pork chop islands and find the accessible pedestrian way difficult to follow.
Improves visibility and sightlines for pedestrians and for drivers.	Force pedestrians to cross a lane of right-turning vehicles with no signal control.
Improves signal timing (shorter pedestrian clearance time needed) and overall operations for intersection.	May encourage drivers to speed around corners.

Reference: Town of Blackfalds Gregg Street & Highway 2A Intersection Review – Technical Memo

5 OPINION OF PROBABLE COST

To compliment each of the above-mentioned intersection improvement options, conceptual opinion of probable cost estimates were prepared. The table below provides a high level summary of each option.

Table 7 – Opinions of Probable Cost (Rounded to Nearest \$10,000)

	Option 1	Option 2
Intersection Improvements Construction	\$200,000	\$270,000
Inflation, Contingency, and Professional Services (35%)	\$70,000	\$90,000
Total (Rounded to nearest \$10,000)	\$270,000	\$360,000
Cost Difference (Compared to Current Contract Amount of \$140,592.87)	~\$130,000	~\$220,000

6 CONCLUSIONS

This technical memorandum intends to evaluate the potential adjustments to the Highway 2A and Gregg Street intersection to improve traffic flow and accommodate pedestrians crossing on the south side of the intersection.

Two options were evaluated and the options are as follows:

- **Option 1** - .Maintaining the current intersection geometry (with minor adjustment on the west leg), but having the sidewalks on the west and south sides of the intersection; and
- **Option 2** – Having eastbound and westbound configurations that have designated left turn, designated through, and designated right turn lanes. The crosswalks will also be on the west and south sides of the intersection.

Option 1 traffic analysis results revealed that an advanced westbound left turn phase will be needed in order to allow the intersection to function adequately. (A new four-section signal head, new wiring, new programming and new traffic signs will be required for this improvement)

Option 2 is expected to function adequately with the adjustments at the east and west sides of the intersection. However, with the added lanes on both the east and west approaches, additional signal heads and traffic signs on the signal arms will be needed.

January 19, 2022

Preston Weran

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Reference: Town of Blackfalds Gregg Street & Highway 2A Intersection Review – Technical Memo

Should you have any further questions or comments, please feel free to contact the undersigned.

Sincerely,

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Attachments: Opinion of Probable Cost Option 1 and Option 2

Town of Blackfalds - Highway 2A and Gregg Street Intersection Improvements

Option 1 - Westbound and Eastbound Combined Through/Right Turn and Dedicated Left Turn Lane

Item	Item of Work	Unit	Estimated Quantity	Unit Price	Total
Part 1: General Requirements					
1.1	Mobilization and Demobilization	L.S.	1	\$14,200.00	\$14,200.00
1.2	Traffic Accommodation Strategy and Temporary Road	L.S.	1	\$3,600.00	\$3,600.00
1.3	Hydrovac (Provisional)	P.C.S	1	\$5,000.00	\$5,000.00
Subtotal Part 1:					\$22,800.00
Part 2: Site Work, Demolition, and Removals					
2.1	Sawcut, Remove, and Dispose Existing Asphalt including asphalt trail	sq. m	190	\$12.80	\$2,432.00
2.2	Asphalt Concrete Pavement Milling - up to 150mm Depth	sq. m	902	\$10.30	\$9,290.60
2.3	Sawcut, Remove, and Dispose Existing Pinned Curb and/or Curb and Gutter	lin. m	34	\$18.00	\$612.00
2.4	Sawcut, Remove, and Dispose Existing Concrete Sidewalk/Monowalk including granular base	sq. m	28	\$30.00	\$840.00
2.5	Remove and Salvage Existing Sign(s) - One Post	unit	6	\$75.00	\$450.00
2.6	Remove and Relocate Existing Sign(s) - One Post	unit	1	\$325.00	\$325.00
2.7	Remove and Dispose Existing Catch Basin Manhole/Catch Basins	each	1	\$105.00	\$105.00
2.8	Salvage Existing Gravel, assume 75mm depth	cu. m	100	\$20.00	\$2,000.00
Subtotal Part 2:					\$16,054.60
Part 3: Storm Sewer					
3.1	Supply and Install Type F-51 Catch Basin	each	2	\$5,403.10	\$10,806.20
3.2	Supply and Install 250mm Concrete Flared End including trash grate	each	1	\$3,083.10	\$3,083.10
3.3	Tie Into Existing Storm Sewer	each	2	\$841.50	\$1,683.00
3.4	Culvert Extension - 600mm CSP	lin. m	10	\$319.30	\$3,193.00
Subtotal Part 3:					\$18,765.30
Part 4: Concrete Work					
4.1	250mm Standard, Reversed, Depressed Curb & Gutter excluding granular base	lin. m	112	\$113.30	\$12,689.60
4.2	15M Rebar Addition for Reinforcing Depressed Curb at Concrete Apron	lin. m	8	\$25.75	\$206.00
4.3	Pinned Curb	lin. m	11	\$66.95	\$736.45
4.4	1.5m Separate Sidewalk including granular base	lin. m	12	\$238.75	\$2,865.00
4.5	15M Rebar Addition For Reinforcing Concrete Sidewalk at Concrete Apron	sq. m	18	\$42.25	\$760.50
4.6	Curb Ramps including granular base (Paraplegic)	each	0	\$1,072.50	\$0.00
4.7	Reinforced Concrete Apron, 150mm Depth with 15M Reinforcement	sq. m	22	\$214.25	\$4,713.50
Subtotal Part 4:					\$21,971.05
Part 5: Roadway Excavation, Subgrade, Sub Base and Base Preparation					
5.1	Topsoil Stripping - Excavation, Hauling, Stockpiling (assume 250mm depth)	cu. m	130	\$26.00	\$3,380.00
5.2	Waste Excavation and Dispose Off-site (Provisional)	cu. m	220	\$32.00	\$7,040.00
5.3	Woven Geotextile	sq. m	295	\$2.25	\$663.75
5.4	Des. 2 Class 25 Granular Base, 200 mm depth	sq. m	205	\$15.60	\$3,198.00
5.5	Des. 2 Class 25 Granular Base, 250 mm depth (gravel lane)	sq. m	93	\$19.50	\$1,813.50

Town of Blackfalds - Highway 2A and Gregg Street Intersection Improvements

Option 1 - Westbound and Eastbound Combined Through/Right Turn and Dedicated Left Turn Lane

Item	Item of Work	Unit	Estimated Quantity	Unit Price	Total
5.6	75mm Minus Granular Sub-base, 350mm Depth	sq. m	295	\$27.95	\$8,245.25
Subtotal Part 5:					\$24,340.50
Part 6: Asphaltic Concrete Paving					
6.1	Asphalt Top/Overlay Lift, 50mm Type H2	sq. m	1,060	\$14.35	\$15,211.00
6.2	Asphalt Bottom Lift, 75mm Type H2	sq. m	160	\$33.95	\$5,432.00
6.3	Asphalt Trail, 75mm Type 5b(1), 3.00m wide including Granular Base	lin. m	100	\$156.00	\$15,600.00
Subtotal Part 6:					\$36,243.00
Part 7: Pavement Markings and Signage					
7.1	Painted Pavement Markings and Signage	L.S.	1	\$7,500.00	\$7,500.00
Subtotal Part 7:					\$7,500.00
Part 8: Landscaping and Fine Grading					
8.1	Topsoil Replacement, Fine Grading, and Seeding	L.S.	1	\$10,000.00	\$10,000.00
Subtotal Part 8:					\$10,000.00
Part 9: Electrical					
9.1	Remove Pedestrian Push Buttons, Signs, and Pedestrian Heads from Poles on the NE corner	L.S.	1	\$1,000.00	\$1,000.00
9.2	Remove Existing Signal Pole and Base on NW Corner	L.S.	1	\$5,000.00	\$5,000.00
9.3	Add Pedestrian Push Button, Sign, and Pedestrian Heads for SW corner	L.S.	1	\$2,000.00	\$2,000.00
9.4	New Pole on the NW Corner to Suit Optimized Intersection Alignment	L.S.	1	\$30,000.00	\$30,000.00
9.5	Wiring to New Pole	L.S.	1	\$4,000.00	\$4,000.00
Subtotal Part 9:					\$42,000.00
Option 1					
	Part 1: General Requirements				\$22,800.00
	Part 2: Site Work, Demolition, and Removals				\$16,054.60
	Part 3: Storm Sewer				\$18,765.30
	Part 4: Concrete Work				\$21,971.05
	Part 5: Roadway Excavation, Subgrade, Sub Base and Base Preparation				\$24,340.50
	Part 6: Asphaltic Concrete Paving				\$36,243.00
	Part 7: Pavement Markings and Signage				\$7,500.00
	Part 8: Landscaping and Fine Grading				\$10,000.00
	Part 9: Electrical				\$42,000.00
SUBTOTAL					\$199,674.45
	Inflation, Contingency, and Professional Services			35%	\$69,886.06
TOTAL					\$269,560.51
Total Rounded (to nearest \$10,000)					\$270,000.00

Town of Blackfalds - Highway 2A and Gregg Street Intersection Improvements

Option 2 - Westbound and Eastbound Dedicated Left Turn/Through/Right Turn Lanes

Item	Item of Work	Unit	Estimated Quantity	Unit Price	Total
Part 1: General Requirements					
1.1	Mobilization and Demobilization	L.S.	1	\$19,200.00	\$19,200.00
1.2	Traffic Accommodation Strategy and Temporary Road	L.S.	1	\$4,800.00	\$4,800.00
1.3	Hydrovac (Provisional)	P.C.S	1	\$5,000.00	\$5,000.00
Subtotal Part 1:					\$29,000.00
Part 2: Site Work, Demolition, and Removals					
2.1	Sawcut, Remove, and Dispose Existing Asphalt including asphalt trail	sq. m	216	\$12.80	\$2,764.80
2.2	Asphalt Concrete Pavement Milling - up to 150mm Depth	sq. m	1,100	\$10.30	\$11,330.00
2.3	Sawcut, Remove, and Dispose Existing Pinned Curb and/or Curb and Gutter	lin. m	34	\$18.00	\$612.00
2.4	Sawcut, Remove, and Dispose Existing Concrete Sidewalk/Monowalk including granular base	sq. m	28	\$30.00	\$840.00
2.5	Remove and Salvage Existing Sign(s) - One Post	unit	6	\$75.00	\$450.00
2.6	Remove and Relocate Existing Sign(s) - One Post	unit	1	\$325.00	\$325.00
2.7	Remove and Dispose Existing Catch Basin Manhole/Catch Basins	each	2	\$105.00	\$210.00
2.8	Salvage Existing Gravel, assume 75mm depth	cu. m	100	\$20.00	\$2,000.00
Subtotal Part 2:					\$18,531.80
Part 3: Storm Sewer					
3.1	Supply and Install Type F-51 Catch Basin	each	3	\$5,403.10	\$16,209.30
3.2	Supply and Install 250mm Concrete Flared End including trash grate	each	1	\$3,083.10	\$3,083.10
3.3	Tie Into Existing Storm Sewer	each	2	\$841.50	\$1,683.00
3.4	Culvert Extension - 600mm CSP	lin. m	20	\$319.30	\$6,386.00
Subtotal Part 3:					\$27,361.40
Part 4: Concrete Work					
4.1	250mm Standard, Reversed, Depressed Curb & Gutter excluding granular base	lin. m	166	\$113.30	\$18,807.80
4.2	15M Rebar Addition for Reinforcing Depressed Curb at Concrete Apron	lin. m	8	\$25.75	\$206.00
4.3	Pinned Curb	lin. m	11	\$66.95	\$736.45
4.4	1.5m Separate Sidewalk including granular base	lin. m	12	\$238.75	\$2,865.00
4.5	15M Rebar Addition For Reinforcing Concrete Sidewalk at Concrete Apron	sq. m	18	\$42.25	\$760.50
4.6	Curb Ramps including granular base (Paraplegic)	each	0	\$1,072.50	\$0.00
4.7	Reinforced Concrete Apron, 150mm Depth with 15M Reinforcement	sq. m	22	\$214.25	\$4,713.50
Subtotal Part 4:					\$28,089.25
Part 5: Roadway Excavation, Subgrade, Sub Base and Base Preparation					
5.1	Topsoil Stripping - Excavation, Hauling, Stockpiling (assume 250mm depth)	cu. m	320	\$26.00	\$8,320.00
5.2	Waste Excavation and Dispose Off-site (Provisional)	cu. m	460	\$32.00	\$14,720.00
5.3	Woven Geotextile	sq. m	555	\$2.25	\$1,248.75
5.4	Des. 2 Class 25 Granular Base, 200 mm depth	sq. m	465	\$15.60	\$7,254.00
5.5	Des. 2 Class 25 Granular Base, 250 mm depth (gravel lane)	sq. m	93	\$19.50	\$1,813.50

Town of Blackfalds - Highway 2A and Gregg Street Intersection Improvements

Option 2 - Westbound and Eastbound Dedicated Left Turn/Through/Right Turn Lanes

Item	Item of Work	Unit	Estimated Quantity	Unit Price	Total
5.6	75mm Minus Granular Sub-base, 350mm Depth	sq. m	555	\$27.95	\$15,512.25
Subtotal Part 5:					\$48,868.50
Part 6: Asphaltic Concrete Paving					
6.1	Asphalt Top/Overlay Lift, 50mm Type H2	sq. m	1,510	\$14.35	\$21,668.50
6.2	Asphalt Bottom Lift, 75mm Type H2	sq. m	420	\$33.95	\$14,259.00
6.3	Asphalt Trail, 75mm Type 5b(1), 3.00m wide including Granular Base	lin. m	100	\$156.00	\$15,600.00
Subtotal Part 6:					\$51,527.50
Part 7: Pavement Markings and Signage					
7.1	Painted Pavement Markings and Signage	L.S.	1	\$10,000.00	\$10,000.00
Subtotal Part 7:					\$10,000.00
Part 8: Landscaping and Fine Grading					
8.1	Topsoil Replacement Landscaping and Fine Grading	L.S.	1	\$12,500.00	\$12,500.00
Subtotal Part 8:					\$12,500.00
Part 9: Electrical					
9.1	Remove Pedestrian Push Buttons, Signs, and Pedestrian Heads from Poles on the NE corner	L.S.	1	\$1,000.00	\$1,000.00
9.2	Remove Existing Signal Pole and Base on NW Corner	L.S.	1	\$5,000.00	\$5,000.00
9.3	Add Pedestrian Push Button, Sign, and Pedestrian Heads for SW corner	L.S.	1	\$2,000.00	\$2,000.00
9.4	New Pole on the NW Corner to Suit Optimized Intersection Alignment	L.S.	1	\$30,000.00	\$30,000.00
9.5	Wiring to New Pole	L.S.	1	\$4,000.00	\$4,000.00
Subtotal Part 9:					\$42,000.00
Option 2					
	Part 1: General Requirements				\$29,000.00
	Part 2: Site Work, Demolition, and Removals				\$18,531.80
	Part 3: Storm Sewer				\$27,361.40
	Part 4: Concrete Work				\$28,089.25
	Part 5: Roadway Excavation, Subgrade, Sub Base and Base Preparation				\$48,868.50
	Part 6: Asphaltic Concrete Paving				\$51,527.50
	Part 7: Pavement Markings and Signage				\$10,000.00
	Part 8: Landscaping and Fine Grading				\$12,500.00
	Part 9: Electrical				\$42,000.00
SUBTOTAL					\$267,878.45
	Inflation, Contingency, and Professional Services			35%	\$93,757.46
TOTAL					\$361,635.91
Total Rounded (to nearest \$10,000)					\$360,000.00

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ORIGINAL SHEET - ANSI B

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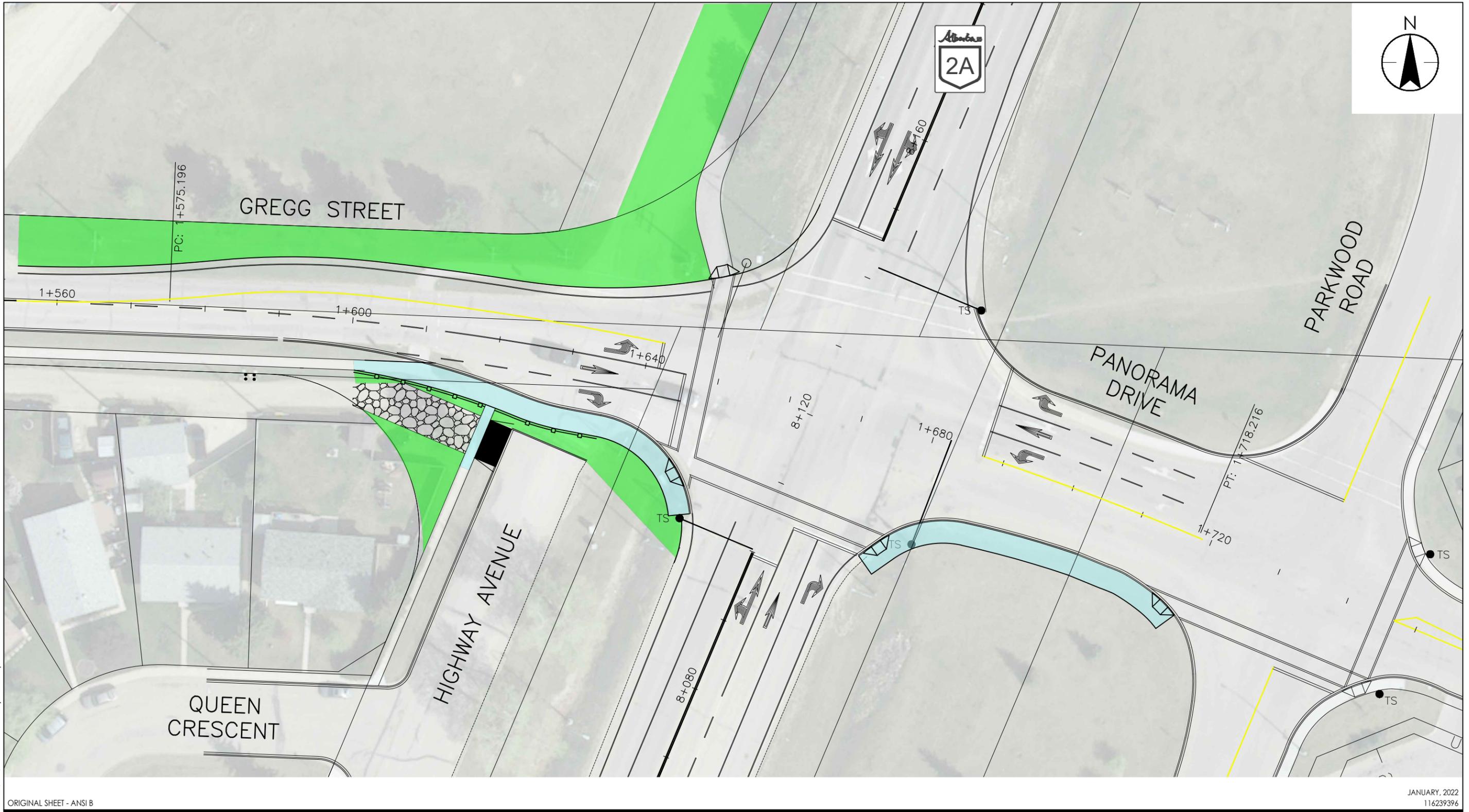


Client/Project
TOWN OF BLACKFALDS
WOMACKS ROAD/GREGG STREET AND PLAZA
PARKING LOT

Figure No.
SK-1

Title
INTERSECTION OPTION 1

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PRELIMINARY
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Client/Project
TOWN OF BLACKFALDS
WOMACKS ROAD/GREGG STREET AND PLAZA
PARKING LOT

Figure No.
SK-2

Title
INTERSECTION OPTION 2

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