

**PRELIMINARY ENGINEERING REPORT
STREET IMPROVEMENT DISTRICT 2017-4
(Bituminous Seal Coat at Various Street Locations)
HORACE, NORTH DAKOTA
May, 2017
W17-00-061**

INTRODUCTION

Horace is located in east central North Dakota along the Sheyenne River between Cass County Highway 14 and 52nd Avenue South on Cass County Highway 17. The area economy is based upon agriculture, light manufacturing and commercial business. The 2010 population was 2,430 residents. This report reviews street improvement district 2017-4 within the City. A project location map is included at the end of this report.

EXISTING CONDITIONS

- Street Improvement District 2017-4 – Chip Seal Improvements

This area consists of the following residential subdivisions and city streets within the City of Horace:

- Greyhawk Estates Subdivision

Greyhawk Estates subdivision consists of 60th Street, 61st Avenue and 74th Street. This area currently has 24 homes. The existing streets are a rural section with a bituminous surface. The pavement width is 20' wide with no curb and gutter. The roadway is in fair condition.

- Riverdale Subdivision

Riverdale subdivision consists of Riverdale Drive. This area has 22 homes. The existing streets are a rural section with a bituminous surface. The pavement width is 20' wide with no curb and gutter. The roadway and is in fair condition.

- Sunnyside Drive

Sunnyside Drive has 27 homes. It also services a baseball diamond and Horace Lions Park. The existing streets are a rural section with a bituminous surface. The pavement width is 20' wide with no curb and gutter. The roadway is in fair condition.

- Sunnyside Street

Sunnyside Street has 40 homes. The existing streets are a rural section with a bituminous surface. The pavement width is 22' wide with no curb and gutter. The roadway is in fair condition.

- Woodland Circle

Woodland Circle has 26 homes. The existing streets are a rural section with a bituminous surface. The pavement width is 20' wide with no curb and gutter. The roadway is in fair condition.

- Dreamfields Subdivision

Dreamfields subdivision consists of Memory Lane, Carrol Court and Aquarius Court. This area has 16 residential lots. There are currently 11 homes constructed or in the process of being constructed and 5 empty lots. The existing streets are an urban section with concrete curb and gutter and a bituminous surface. The pavement width is 28' back of curb to back of curb. The base lift of bituminous was constructed in 2015. The top 1.5" lift of bituminous pavement was constructed in 2016. Complexity

PROPOSED IMPROVEMENTS

The purpose of the project is to seal and rejuvenate the pavement section with a bituminous seal coat at various locations in the City of Horace. The proposed project would utilize normal construction techniques. An Opinion of Probable Project Cost and Proposed Improvement maps for each area are attached at the end of this report.

- Street Improvement District 2017-4 – Chip Seal Improvements

Areas that have curb and gutter would have the joint between the concrete curb and gutter and the pavement routed and sealed. Deteriorated pavement areas would be removed and patched. The pavement would receive a chip seal coat.

ATTACHMENTS

- Opinion of Probable Project Cost
- Project Location Map
- Proposed Improvements Maps
- Benefitting Area Maps

APPROVALS

All improvements will be designed in accordance with current engineering standards.

The Horace City Council will need to approve the Preliminary Engineering Report for Street Improvement District 2017-4.

After approval of the Preliminary Engineering Report the Horace City Council would then direct the City Engineer to prepare Plans and Specifications for the Project.

After the Plans and Specifications are prepared by the City Engineer the Horace City Council will approve the Plans and Specifications for the Project and then the Horace City Council will need to pass a resolution to advertise the project for bidding.

After bids are received for the project and publically opened the Horace City Council would award the project to the lowest responsible, responsive bidder.

PERMITS

No permits will be required for this project.

METHOD OF CONSTRUCTION

The project would be bid competitively with a public bid opening.

PROJECT FINANCING

The Engineer's Opinion of Probable Total Project Cost is \$288,240.00 for all six (6) locations in the proposed project.

The project cost would be special assessed to the benefitting areas. A Benefitting Area map is attached at the end of this report for each district.

There are a total of 155 residential homes in the benefitting area for all of the projects combined.

- **Greyhawk Estates Subdivision**

Greyhawk Estates subdivision consists of 60th Street, 61st Avenue and 74th Street. This area currently has 24 homes. The existing streets are a rural section with a bituminous surface. The pavement width is 20' wide with no curb and gutter.

- The Estimated Cost for the project in Greyhawk Subdivision is \$86,100.60. If the total cost for the project is assessed equally to all 24 homes in the benefitting area the cost for each home would be approximately \$3,587.53. This approximate cost per home is based upon the estimated cost of the project of \$86,100.60.

- **Riverdale Subdivision**

Riverdale subdivision consists of Riverdale Drive. This area has 22 homes. The existing streets are a rural section with a bituminous surface. The pavement width is 20' wide with no curb and gutter.

- The Estimated Cost for the project in Riverdale Subdivision is \$33,668.21. If the total cost for the project is assessed equally to all 22 homes in the benefitting area the cost for each home would be approximately \$1,530.37. This approximate cost per home is based upon the estimated cost of the project of \$33,668.21.

- **Sunnyside Drive**

Sunnyside Drive has 27 homes. It also services a baseball diamond and Horace Lions Park. The existing streets are a rural section with a bituminous surface. The pavement width is 20' wide with no curb and gutter. The roadway is in fair condition.

- The Estimated Cost for the project in Sunnyside Drive is \$48,398.04. If the total cost for the project is assessed equally to all 27 homes in the benefitting area the cost for each home would be approximately \$1,792.52. This approximate cost per home is based upon the estimated cost of the project of \$48,398.04.

- **Sunnyside Street**

Sunnyside Street has 40 homes. The existing streets are a rural section with a bituminous surface. The pavement width is 22' wide with no curb and gutter. The roadway is in fair condition.

- The Estimated Cost for the project in Sunnyside Street is \$56,350.61. If the total cost for the project is assessed equally to all 40 homes in the benefitting area the cost for each home would be approximately \$1,408.77. This approximate cost per home is based upon the estimated cost of the project of \$56,350.61.

- **Woodland Circle**

Woodland Circle has 26 homes. The existing streets are a rural section with a bituminous surface. The pavement width is 20' wide with no curb and gutter. The roadway is in fair condition.

- The Estimated Cost for the project in Woodland Circle is \$34,669.30. If the total cost for the project is assessed equally to all 26 homes in the benefitting area the cost for each home would be approximately \$1,333.43. This approximate cost per home is based upon the estimated cost of the project of \$34,669.30.

- **Dreamfields Subdivision**

Dreamfields subdivision consists of Memory Lane, Carrol Court and Aquarius Court. This area has 16 residential lots. There are currently 11 homes constructed or in the process of being constructed and 5 empty lots. The existing streets are an urban section with concrete curb and gutter and a bituminous surface. The pavement width is 28' back of curb to back of curb. The base lift of bituminous was constructed in 2015. The top 1.5" lift of bituminous pavement was constructed in 2016. Complexity

- The Estimated Cost for the project in Dreamfields Subdivision is \$29,053.25. If the total cost for the project is assessed equally to all 16 lots in the benefitting area the cost for each home would be approximately \$1,815.83. This approximate cost per lot is based upon the estimated cost of the project of \$29,053.25.

If the total cost for the project is assessed equally to all 155 lots in the benefitting area the cost for each home would be approximately \$1808.06. This approximate cost per home is based upon the estimated cost of the project of \$288,000.

If you have any questions concerning this report, please do not hesitate to contact me.

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APPENDIX A
PROJECT LOCATION MAP

Street Improvement District 2017-4

Chip Seal Improvements

Greyhawk/Riverdale Dr./Sunnyside St./Sunnyside Dr./Woodland Cir./Dreamfields



APPENDIX B
OPINION OF PROBABLE PROJECT COST

Engineer's Opinion of Probable Project Cost
 Northwest District Street Improvement
 Horace, North Dakota
 May 31, 2017
 Street Improvement District 2017-4
 Chip Seal and Patching
 Greyhawk (60th St, 61st Ave & 74th St), Dreamfields, Riverdale
 Sunnyside Dr, Sunnyside St. & Woodland Circle
 TOTAL PROJECT INCLDUING ALL AREAS

Item No.	Item	Unit	No. of Units	Probable Unit Cost	Probable Total Cost
1	Bituminous Seal Coat CRS-2P	GAL	21,825	\$ 2.00	\$ 43,650.00
2	Seal Aggregate (Class 41)	TON	785	\$ 55.00	\$ 43,175.00
3	Route and Seal	LF	11,100	\$ 2.00	\$ 22,200.00
4	Patching	TON	95	\$ 150.00	\$ 14,250.00
5	Testing Laboratories Services	LS	1	\$ 10,000.00	\$ 10,000.00
6	Traffic Control	LS	1	\$ 10,000.00	\$ 10,000.00
7	Mobilization	LS	1	\$ 75,000.00	\$ 75,000.00

Opinion of Probable Bid Cost	\$ 218,275.00
Contingencies (10%)	\$ 21,925.00
Opinion of Probable Construction Cost	<u>\$ 240,200.00</u>
Engineering, Legal, Administrative and Bonding (20%)	\$ 48,040.00
Opinion of Probable Project Cost	<u>\$ 288,240.00</u>

Engineer's Opinion of Probable Project Cost
 Northwest District Street Improvement
 Horace, North Dakota
 May 31, 2017
 Street Improvement District 2017-4
 Chip Seal and Patching
 Greyhawk (60th St, 61st Ave & 74th St)

Item No.	Item	Unit	No. of Units	Probable Unit Cost	Probable Total Cost
1	Bituminous Seal Coat CRS-2P	GAL	5,850	\$ 2.00	\$ 11,700.00
2	Seal Aggregate (Class 41)	TON	215	\$ 55.00	\$ 11,825.00
3	Route and Seal	LF	4,400	\$ 2.00	\$ 8,800.00
4	Patching	TON	30	\$ 150.00	\$ 4,500.00
5	Testing Laboratories Services	LS	1	\$ 2,987.00	\$ 2,987.00
6	Traffic Control	LS	1	\$ 2,987.00	\$ 2,987.00
7	Mobilization	LS	1	\$ 22,402.50	\$ 22,402.50

Opinion of Probable Bid Cost	\$ 65,201.50
Contingencies (10%)	\$ 6,549.00
Opinion of Probable Construction Cost	<u>\$ 71,750.50</u>
Engineering, Legal, Administrative and Bonding (20%)	\$ 14,350.10
Opinion of Probable Project Cost	<u>\$ 86,100.60</u>

Engineer's Opinion of Probable Project Cost
 Northwest District Street Improvement
 Horace, North Dakota
 May 31, 2017
 Street Improvement District 2017-4
 Chip Seal and Patching
 Dreamfields

Item No.	Item	Unit	No. of Units	Probable Unit Cost	Probable Total Cost
1	Bituminous Seal Coat CRS-2P	GAL	2,600	\$ 2.00	\$ 5,200.00
2	Seal Aggregate (Class 41)	TON	95	\$ 55.00	\$ 5,225.00
3	Route and Seal	LF	1,000	\$ 2.00	\$ 2,000.00
4	Patching	TON	0	\$ 150.00	\$ -
5	Testing Laboratories Services	LS	1	\$ 1,008.00	\$ 1,008.00
6	Traffic Control	LS	1	\$ 1,008.00	\$ 1,008.00
7	Mobilization	LS	1	\$ 7,560.00	\$ 7,560.00

Opinion of Probable Bid Cost	\$	22,001.00
Contingencies (10%)	\$	2,210.04
Opinion of Probable Construction Cost	\$	24,211.04
Engineering, Legal, Administrative and Bonding (20%)	\$	4,842.21
Opinion of Probable Project Cost	\$	29,053.25

Engineer's Opinion of Probable Project Cost
 Northwest District Street Improvement
 Horace, North Dakota
 May 31, 2017
 Street Improvement District 2017-4
 Chip Seal and Patching
 Riverdale

Item No.	Item	Unit	No. of Units	Probable Unit Cost	Probable Total Cost
1	Bituminous Seal Coat CRS-2P	GAL	2,300	\$ 2.00	\$ 4,600.00
2	Seal Aggregate (Class 41)	TON	80	\$ 55.00	\$ 4,400.00
3	Route and Seal	LF	1,200	\$ 2.00	\$ 2,400.00
4	Patching	TON	20	\$ 150.00	\$ 3,000.00
5	Testing Laboratories Services	LS	1	\$ 1,168.00	\$ 1,168.00
6	Traffic Control	LS	1	\$ 1,168.00	\$ 1,168.00
7	Mobilization	LS	1	\$ 8,760.00	\$ 8,760.00

Opinion of Probable Bid Cost	\$ 25,496.00
Contingencies (10%)	\$ 2,560.84
Opinion of Probable Construction Cost	\$ 28,056.84
Engineering, Legal, Administrative and Bonding (20%)	\$ 5,611.37
Opinion of Probable Project Cost	\$ 33,668.21

Engineer's Opinion of Probable Project Cost
 Northwest District Street Improvement
 Horace, North Dakota
 May 31, 2017
 Street Improvement District 2017-4
 Chip Seal and Patching
 Sunnyside Dr,

Item No.	Item	Unit	No. of Units	Probable Unit Cost	Probable Total Cost
1	Bituminous Seal Coat CRS-2P	GAL	3,875	\$ 2.00	\$ 7,750.00
2	Seal Aggregate (Class 41)	TON	140	\$ 55.00	\$ 7,700.00
3	Route and Seal	LF	1,500	\$ 2.00	\$ 3,000.00
4	Patching	TON	15	\$ 150.00	\$ 2,250.00
5	Testing Laboratories Services	LS	1	\$ 1,679.00	\$ 1,679.00
6	Traffic Control	LS	1	\$ 1,679.00	\$ 1,679.00
7	Mobilization	LS	1	\$ 12,592.50	\$ 12,592.50

Opinion of Probable Bid Cost	\$	36,650.50
Contingencies (10%)	\$	3,681.20
Opinion of Probable Construction Cost	\$	<u>40,331.70</u>
Engineering, Legal, Administrative and Bonding (20%)	\$	8,066.34
Opinion of Probable Project Cost	\$	<u>48,398.04</u>

Engineer's Opinion of Probable Project Cost
 Northwest District Street Improvement
 Horace, North Dakota
 May 31, 2017
 Street Improvement District 2017-4
 Chip Seal and Patching
 Sunnyside St.

Item No.	Item	Unit	No. of Units	Probable Unit Cost	Probable Total Cost
1	Bituminous Seal Coat CRS-2P	GAL	4,525	\$ 2.00	\$ 9,050.00
2	Seal Aggregate (Class 41)	TON	160	\$ 55.00	\$ 8,800.00
3	Route and Seal	LF	2,000	\$ 2.00	\$ 4,000.00
4	Patching	TON	15	\$ 150.00	\$ 2,250.00
5	Testing Laboratories Services	LS	1	\$ 1,955.00	\$ 1,955.00
6	Traffic Control	LS	1	\$ 1,955.00	\$ 1,955.00
7	Mobilization	LS	1	\$ 14,662.50	\$ 14,662.50

Opinion of Probable Bid Cost	\$ 42,672.50
Contingencies (10%)	\$ 4,286.34
Opinion of Probable Construction Cost	<u>\$ 46,958.84</u>
Engineering, Legal, Administrative and Bonding (20%)	\$ 9,391.77
Opinion of Probable Project Cost	<u>\$ 56,350.61</u>

Engineer's Opinion of Probable Project Cost
 Northwest District Street Improvement
 Horace, North Dakota
 May 31, 2017
 Street Improvement District 2017-4
 Chip Seal and Patching
 Woodland Circle

Item No.	Item	Unit	No. of Units	Probable Unit Cost	Probable Total Cost
1	Bituminous Seal Coat CRS-2P	GAL	2,675	\$ 2.00	\$ 5,350.00
2	Seal Aggregate (Class 41)	TON	95	\$ 55.00	\$ 5,225.00
3	Route and Seal	LF	1,000	\$ 2.00	\$ 2,000.00
4	Patching	TON	15	\$ 150.00	\$ 2,250.00
5	Testing Laboratories Services	LS	1	\$ 1,203.00	\$ 1,203.00
6	Traffic Control	LS	1	\$ 1,203.00	\$ 1,203.00
7	Mobilization	LS	1	\$ 9,022.50	\$ 9,022.50

Opinion of Probable Bid Cost	\$ 26,253.50
Contingencies (10%)	\$ 2,637.58
Opinion of Probable Construction Cost	<u>\$ 28,891.08</u>

Engineering, Legal, Administrative and Bonding (20%)	\$ 5,778.22
Opinion of Probable Project Cost	<u>\$ 34,669.30</u>

APPENDIX C
PROPOSED IMPROVEMENTS MAPS

Street Improvement District 2017-4

Chip Seal Improvements

Greyhawk/Riverdale Dr./Sunnyside St./Sunnyside Dr./Woodland Cir./Dreamfields



APPENDIX D
BENEFITTING AREA MAPS

Street Improvement District 2017-4
Benefitting Area Map
Chip Seal Improvements

Greyhawk/Riverdale Dr./Sunnyside St./Sunnyside Dr./Woodland Cir./Dreamfields

