“H” Street Corridor Study

Fairbury, Nebraska

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OLSSON ®
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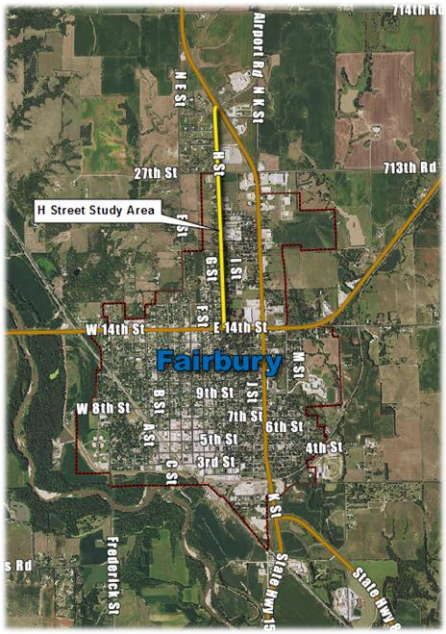
I. INTRODUCTION

The H Street corridor between US Highway 136 / 14th Street and Nebraska Highway 15 serves as one of the major arterial roadways in the northern part of Fairbury. It provides access to residential areas, the hospital, an assisted living center, churches, a funeral home, and Walmart. The City has identified portions along this corridor as likely future growth areas. Portions of the roadway are in need of repair, and improvements to drainage in the area are needed as well. For these reasons, the City of Fairbury has contracted Olsson Associates to perform a study of the corridor.



The purpose of this study is to evaluate the H Street corridor from US Highway 136 / 14th Street to Nebraska Highway 15. Specific goals of this study are to:

- Identify existing conditions such as right-of-way, utilities, and pedestrian access
- Propose improvements based on a conceptual evaluation of the corridor
- Pinpoint key design considerations that could have a major impact to the completion of improvements
- Determine an estimated opinion of cost based on the conceptual evaluation
- Determine a timeframe for completion
- Identify next steps the City should take to work toward completion of the improvements

II. EXISTING CONDITIONS

Site visits were made to determine the visible existing conditions of the corridor. GIS mapping provided by the City was referenced to determine existing utility information, a topographical survey was taken for the entire study area, and surveyed property corners and City records were used to verify right-of-way information.

A. Roadway

From US Highway 136 / 14th Street to 16th Street, the existing roadway consists of concrete curb and gutter, with an asphalt travel-way. This segment is in relatively poor condition in a few areas, particularly near the intersection with 14th Street.

From 16th Street to halfway between 17th Street and 18th Street, the existing roadway is a concrete section with curb and gutter. This segment is in poor condition, with many panels exhibiting longitudinal cracking. The photo to the left is looking south toward 17th Street.

From between 17th and 18th Streets to 20th Street, the existing section is concrete with some stretches of curb and gutter on one or both sides, but is primarily a rural section. This segment is in fair condition, with some panels exhibiting longitudinal cracking. The photo to the right is looking north toward 20th Street.

From 20th Street to 22nd Street, the existing section is a concrete rural section with well-defined ditches on either side. This segment is in poor condition, with many panels exhibiting longitudinal cracking. This section provides the primary access to the hospital. The photo to the left is looking south from 22nd Street.

From 22nd Street to 27th Street, the existing section is an asphalt rural section with generally poorly defined ditches on the west side and generally no ditch on the east side. Overall, this segment of H Street is in poor condition, with edge break-up and potholes throughout. The photo to the right is looking south toward 24th Street.

From 27th Street to Nebraska Highway 15, the existing section is a gravel rural section with ditches on either side. The condition of this segment varies depending on when it was last graded, but it typically exhibits significant washboarding, particularly at the intersection of 27th Street and H Street. The photo to the right is looking north from 27th Street.

B. Pavement Cores

Cores of the existing pavement were taken along the length of the corridor to determine the material and thickness of the existing pavement surfaces.

Table 1: Pavement Core Summary

Core #	Location	Material & Thickness
6	14th/15th	2.25" Asphalt
7	17th/17th	6.25" Concrete
8	N of 20th	7" Concrete
9	S of 23rd	1" Asphalt
10	S of 27th	1.75"/3" Asphalt

A location map and photos of the all cores taken are available in Appendix B.

C. Right-of-Way (ROW)

The "H" Street right-of-way from 14th Street to 17th Street is 80 feet wide. The right-of-way from 17th Street to Nebraska Highway 15 is 60 feet wide. "H" Street is approximately centered in the right-of-way over the entire length of the study area, with the exception of the far north end where the street curves to the east to intersect with Nebraska Highway 15.

D. Utilities

The scope of this study does not include an in-depth analysis of all of the existing utilities throughout the corridor. The intent is to include those utility systems that are visible, included in the City's GIS system, were located prior to the topographical survey, or could have a major impact to potential improvements to the roadway.

The locations of the known existing utilities are described below. Maps of the utilities are also available in Appendix A.

1. Water
   Throughout the entire length of the study area, a water main runs along the west side of H Street. There are also water main crossings at 17th Street (north), south of 20th Street, at 22nd Street, at 23rd Street, at 27th Street, at the south edge of Walmart, and at 30th Street.

2. Sanitary Sewer
   There is a short stretch of sanitary sewer that runs along the east side of H Street from the alley between 22nd Street and 23rd Street to 24th Street. In addition, there is a sanitary sewer crossing approximately 310 feet north of 24th Street, and another approximately 175 feet north of 20th Street.

3. Storm Drainage
   There are two curb inlets at the intersection of 14th and H Streets. There are also culvert pipe crossings 205 feet north of 20th Street, halfway between 27th Street and 30th Street, and just north of 32nd Street. In addition, there are culvert pipes underneath many of the driveways that connect to H Street north of 20th Street.

   A drainage study was prepared by Olsson Associates for the City in 2010. One of the main findings of the report along H Street is that the current 18" culvert crossing north of 20th Street is undersized, which results in water backing up in the drainage way to the east. The findings and recommendations of the drainage study were referenced to determine the proposed drainage improvements in this report.

4. Electric
   There is an overhead power crossing at 17th Street (south). There are also a small number of overhead lighting power lines between 17th Street and just south of 20th Street. From just south of 20th Street to 330 feet north of 24th Street, there is overhead power on the west side of H Street, with a crossing at 22nd Street. From that point to 27th Street, there is overhead power on both the east and west sides of H Street. From 27th Street to Hwy 15, there is overhead power on the west side of H Street, with a crossing at 30th Street.

5. Gas
   Natural gas within the City is provided by Black Hills Energy. Prior to the topographical survey, a utility locate was ordered, and the located gas lines were collected by the surveyors. According to this information, there is a gas main running from the south extents of the survey (17th Street) all the way to Highway 15. In addition, there are service line crossings throughout the length of the corridor. This information will need to be verified during final design and construction to determine any necessary modifications to the gas

infrastructure. Costs for relocating gas lines are not included in the estimates, as the costs would be borne by Black Hills.

6. Communication
Prior to the topographical survey, a utility locate was ordered, and the located communication lines were collected by the surveyors. The only communication lines located at the time of the survey were one crossing H Street on the south side of 27th Street and one running along the west side of H Street just south of 27th Street. This information will need to be verified during final design and construction to determine any necessary modifications to communication infrastructure.

E. Pedestrian Access

Currently there is sidewalk on the west side of "H" Street from 14th Street to just south of 16th Street, and on the east side of "H" Street from 15th Street to just south of 16th Street. There is no other existing sidewalk along either side of H Street within the study area.

According to City staff, "H" Street is relatively heavily used by pedestrians. During several site visits made during while performing this study, Olsson observed pedestrians walking along "H" street on the roadway in sections where no sidewalk was present.

F. Speed Limit

The current speed limit on "H" Street South of 27th Street is 25 mph. The current speed limit north of 27th Street is 35 mph.

III. PUBLIC INVOLVEMENT

A. Public Open House

An informational open house was held on April 26, 2017 in a conference room at the Jefferson Community Health Center to provide information about the preliminary findings and recommendations of this study and to gather feedback about the proposed improvements from the public. The open house was held from 6:00pm to 7:30pm. The event was well attended, with 44 attendees, including local residents and representatives of public agencies and civic organizations.

B. Public Comments and Frequently Asked Questions

The questions and comments that arose during and following the open house and the answers that were given were compiled into a list that was provided to the City and included in a press release about the project. They are also listed in this section.

1. "Why is the City looking at reconstruction of H Street?"
   H Street is an arterial that connects Hwy 15 to Hwy 136 and provides access to various facilities, including the Hospital, Walmart, and churches. This street is made up of various surfacing types, ranging between 7-inch concrete with curb and gutter to 1 inch asphalt without curb and gutter. Overall, the corridor pavement is less than the industry standard for this type of street and the street has out lived its useful life. There are not adequate sidewalks or storm water drainage.

2. "Will my trees or landscaping be removed?"
   The project will be constructed within the existing right-of-way (ROW). Efforts will be made to preserve trees and landscaping, however trees or landscaping within the ROW may be removed.

3. "Where will the sidewalk go?"
   The proposal is to add or improve sidewalks on both sides of H street beginning at 14th Street going north to 20th Street, and to add sidewalk to the east side of H Street from 20th to 30th. The sidewalk will typically be located 4 feet behind the curb, but the location will vary to avoid conflicts with utilities and trees, and may be placed directly next to the curb in some areas. The sidewalk will be a standard sidewalk between 4 and 6 feet wide.

4. "What is the estimated cost of the project?"
   The preliminary cost estimate for the improvements to the entire corridor as shown at the time of the open house is $3.3 Million.

5. "Will the cost to construct sidewalk be assessed to my property?"
   Currently, a sidewalk assessment is not being proposed.

6. "Will a pavement assessment district be established to pay for these improvements?"
   Financing for the project will be determined with the City's 2017-2018 Fiscal Year budget. The city is considering a general obligation bond and seeking a community development block grant to help with a portion of the project.

7. "When will construction start?"
   Once the study is completed and approved, the City will select the project improvements and advance them to final design. After the final design is completed the City will seek bids for construction. The soonest that construction improvements could take place is the Spring of 2018.

IV. DESIGN CONSIDERATIONS

One of the goals of this study was to determine design considerations that could have a major impact on the design and construction of improvements along the corridor. Some of these considerations are listed below.

A. Flat Existing Grades and Drainage

The existing topography along much of the corridor is very flat, making achieving positive drainage challenging. The new roadway profile will need to be set in such a way as to provide sufficient slope for gutters to drain. The profile of urban sections with curb and gutter will need to be set to allow surface runoff to run onto the street and into the gutter. The 2010 Drainage Study provides an analysis of the drainage patterns along much of the study area. The findings of the drainage study were used to inform the proposed improvements in this study.

B. Conflicts with Existing Utilities

Existing utility records were acquired from the City, and the topographical survey picked up locates for water, sanitary sewer, storm sewer, electrical, communication, and gas lines. Locations where proposed improvements conflict with known existing utilities are called out in this report, and anticipated utility relocations are captured in the opinions of cost. However, during the design and construction phases, additional utility information may arise, prompting modifications to the final design.

C. Access to Businesses and Residences during Construction

Maintaining access to critical locations along the corridor during construction is essential. Additionally, minimizing the impact of construction on access for homeowners along the corridor is also highly desirable. Detailed phasing and access requirements will need to be determined and accommodated during the final design phase. Figure 7 in Appendix A displays the alternate access routes around the project area, and Figures 1 through 6 in Appendix A show more detailed construction phasing information.

1. <u>Hospital / Health Center</u>

   The health center has two entrances on H Street, and one back entrance on 22nd Street. During the public open house, representatives of the health center expressed a strong desire for one of the entrances on H Street to be open at all times during construction, in order to ease congestion and better facilitate emergency vehicles. This can be accommodated with the construction phasing illustrated in Figure 3 in Appendix A.

   Health center representatives also emphasized the importance of communication of alternative access routes with the public during construction. Prior to and during construction, the City should coordinate with the health center to provide clear and consistent information to the public.

D. Pavement Material

The existing pavement material varies by location, including concrete, asphalt, and gravel. Asphalt pavement typically has a lower initial cost than concrete pavement, but higher maintenance costs. However, as asphalt prices have risen and the typical expected service life of concrete has increased, concrete has become the better option in most cases.

E. Roadway Section

Consideration must be given to the type of roadway section to be constructed at each location within the study area. The two main types of roadway section are the urban section, which consists of a hard pavement surface with curb & gutter and typically storm sewer infrastructure, and the rural section, which consists of either an aggregate or hard pavement surface and drainage ditches and culverts along the sides of the road.

F. Obstacles within Right-of-Way

1. Trees and Landscaping

   The topographical survey captured the location of trees and landscaping within the right-of-way north of 20th Street. Every effort was made during the preliminary layout to minimize impacts. However, some landscaped areas will inevitably need to be removed in order to accommodate the new design. At this time, it is not anticipated that any major tree removals will be required north of 20th Street.

   South of 20th Street, a small number of tree removals may be required to accommodate the installation of new sidewalks where adjustment of the sidewalk alignment is not sufficient to avoid the trees.

2. Signage and Other Obstacles

   At the open house, questions about the signs at the hospital, Presbyterian church, and funeral home were raised. These signs are all located just outside the right-of-way, and the proposed improvements would not have any impact on them.

G. Pedestrian Access

The connectivity of the overall network of sidewalks and trails within the City should be considered when determining improvements to be made to pedestrian access. When possible, sidewalks on both sides of a major arterial road like "H" Street are desirable. However, if space is limited, sidewalk on only one side of the road still represents a major improvement. This is especially true in the case of "H" Street, where the proposed sidewalk would provide access to major facilities such as the hospital / health center, churches, and Walmart.

Crossings are a major consideration when it comes to pedestrian access. At the south end of the study area, a crossing of US Highway 136 / 14th Street exists of the west side of "H" Street. Highway 136 is currently a four-lane roadway with a

median and turn lanes at this crossing location. Pedestrian crossing signage is in place for westbound traffic, but not for eastbound traffic. A pedestrian crossing with a median "refuge island" is currently located one block to the west, at the intersection of "G" Street and US Highway 136. Highway 136 is slated for a future "road diet" or lane reduction, which would reduce the highway to a three-lane section. At the time of the road diet project, the crossing at "G" Street will change since the median would be removed. The crossing at "H" Street should be considered for additional signage and a marked crossing. Coordination with NDOR is required for these improvements.

V. RECOMMENDED IMPROVEMENTS

This section describes the proposed improvements to the H Street corridor from 14th Street to Highway 15. Figures 1 through 6 in Appendix A illustrate these improvements. Opinions of Probable Cost for the various proposed improvements, broken up into projects, are provided in Section VI (pg. 15).

A. Roadway and Intersection Improvements

Various roadway and intersection improvements have emerged from the study results. These conceptual improvements are illustrated in the Figures at the end of this report.

1. Removal and Replacement of Pavement from 14th Street to 17th Street
   From 14th Street to 17th Street, the existing pavement section is a concrete curb and gutter with 2.25" thick asphalt lanes. The existing curb and gutter appears to be in fair condition. The proposed improvement in this area is to remove the asphalt pavement, and replace it with 8" concrete pavement, leaving the existing curb & gutter in place.

2. Construction of Concrete Urban Section from 17th Street to 30th Street
   From 17th Street to 30th Street, the existing street cross-section, pavement material, and condition vary (as described in Section II.A, pg. 2). In general, the pavement is in need of repair and the profile needs to be lowered to accommodate an urban cross-section. For these reasons, a complete removal of the existing pavement and replacement with an 8" thick, 32' wide concrete urban section is being proposed. The urban section is desirable because it matches the surrounding roads, provides for better and lower-maintenance storm infrastructure, and allows for sidewalks within limited right-of-way.

3. Roadway Profile Adjustment
   In general, the new roadway profile from 17th Street north is being proposed to be lowered by an amount sufficient to result in the new top-of-curb elevation in a given location being at or slightly below existing grade, so that each area can be graded to direct surface runoff into the gutter. This also minimizes the amount of grading that is required outside the extents of the pavement. The shown profile was then adjusted slightly to ensure sufficient longitudinal slope to allow for proper flow in the gutter to either a storm sewer inlet or a ditch or swale.

B. Drainage Improvements

This section provides a brief explanation of the proposed overall drainage patterns. Figures 1 through 6 in Appendix A provide a graphical depiction of the proposed improvements.

1. 14th Street to 200 Feet North of 17th Street
   On the section of H Street south of the high point that is 200 feet north of 17th Street, the drainage pattern will be unaltered. The gutter will flow to the south to the storm inlets at 14th Street.

2. 200 Feet North of 17th Street to 27th Street
   The section of H Street from this high point to 27th Street will all drain to the swale north of 20th Street (south of the hospital) through new storm sewer pipe. South of the swale, this water will all flow in the gutter, and north of the swale, it will be picked up by new storm inlets and flow through new storm sewer piping. The 18" culvert that crosses under H Street north of 20th Street will be replaced with a 42" reinforced concrete pipe (RCP), per the recommendations in the 2010 Olsson Associates Drainage Study.

   Some artificial high and low spots are shown in the proposed roadway profile to provide sufficient slope to drain runoff to inlets. There is a potential conflict of the proposed storm sewer pipe on the east side of H Street between 23rd Street and 24th Street with an existing sanitary sewer main and manhole. During the final design phase, the alignments of the road or storm sewer will need to be slightly adjusted to avoid this conflict. Other potential conflicts in this area are minimal, so accommodating the storm sewer without needing to relocate it should be possible.

3. 27th Street to 30th Street
   The section of H Street from 27th Street to 30th Street will drain to the swale halfway between 27th Street and 30th Street. Runoff from the street will flow in the gutter to inlets that will be installed at the existing culvert crossing. Runoff from Walmart, which discharges south of 30th Street, will be redirected into new storm sewer piping that will run along the east side of H Street to the culvert crossing. The existing drainage pattern at 30th Street on the west side will remain unaltered, flowing through a swale to the west just south of 30th Street.

4. 30th Street to Highway 15
   The section of H Street from 30th Street to Highway 15 is proposed to be a rural section with ditches on both sides of the road. The existing drainage pattern will remain unaltered; runoff will flow off the road into the ditches, then to the swale just north of 32nd Street.

C. Right-of-Way and Easements

The proposed roadway improvements are not anticipated to require additional right-of-way or easements. Some minor construction easements may be required, depending on the exact details of the final design, but these should not hinder the planned progress of the project.

D. Utility Improvements

1. Electrical

City staff expressed a desire to modify the existing electrical distribution line that runs along "H" Street from an overhead installation to an underground installation. The estimated cost of this work, including replacement of all transformers and installation of pad-mounted switches/junctions is approximately $360,000. A detailed breakdown of this cost is provided in Section VI.E (pg.18).

2. Water

During the study kick-off meeting, City officials provided utility information, and pointed out that the section of water main between 14th Street and 16th Street is undersized, at only 4". Upsizing this water main to a 6" during the roadway construction minimizes the construction impact on the surrounding area and is more cost-effective than completing the two projects separately. An opinion of cost for this work is included in the estimated project costs, which are detailed in Section VI.A (pg. 15).

E. Pedestrian Access Improvements

City officials have observed that this corridor experiences a fair amount of pedestrian traffic. Since there is currently no sidewalk along most of the corridor, pedestrians often walk on the roadway, which presents a safety concern. It is desirable to have sidewalk on both sides of a street when possible, but even providing sidewalk on only one side provides a major safety improvement.

The existing grades and right-of-way width just north of 20th Street would not accommodate sidewalks on both sides of the street. Therefore, new sidewalk is only proposed on the east side (to serve the hospital and Walmart) from 20th Street to 30th Street. New sidewalk is proposed along both sides of the road south of 20th Street. The sidewalk proposed is 4 feet wide, and typically set 4 feet from the back of curb, with a few exceptions to avoid obstacles.

F. Speed Limit

The speed limit will need to be evaluated during the preliminary design to ensure that it is appropriate for the new conditions. However, at this time, no warrant for a change in speed limit is anticipated.

G. Phasing & Construction Access

The improvements proposed in this report are broken into four phases which could be completed in any order, or simultaneously, depending on the City's priorities and budget. Areas with similar proposed improvements were grouped into projects of a manageable scope and cost. The projects are shown in the table below and on the map to the right.

	Project A	14th Street – 17th Street
	Project B	17th Street – 20th Street
	Project C	20th Street – 27th Street
	Project D	27th Street – Hwy 15

There are 57 driveways along the study area that act as a primary access for residences or businesses. During design and construction of each project, detailed construction phasing will need to be determined in order to minimize disruption of traffic flow for residents and to maintain access for the hospital and other businesses. Figure 7 in Appendix A identifies potential construction access routes for businesses and residents along H Street.

Figures 1 through 6 in Appendix A provide more detailed information about the work proposed for each project, including more detailed construction phasing information.

VI. OPINION OF COST AND FINANCING

This section provides detailed opinions of cost for the various improvements proposed in Section IV of this report, as well as potential funding and financing options available to the City.

A. Project A: 14th Street to 17th Street

Item	Unit	Quantity	Unit Cost	Total
Pavement Removal	SY	4500	$ 10.00	$ 245,000.00
8" Concrete Pavement	SY	4500	$ 55.00	$ 247,500.00
Upsize 4" Water Main to 6" *	LF	824	$ 125.00	$ 103,000.00
4" Sidewalk	SY	328	$ 40.00	$ 13,120.00
			Construction Subtotal:	$ 408,600.00
			Mobilization (8%):	$ 32,700.00
			Construction Contingency (15%):	$ 61,300.00
			Total Estimated Construction:	**$ 502,600.00**
			Preliminary Engineering (8%):	$ 40,200.00
			Construction Engineering (12%):	$ 60,300.00
			Engineering Subtotal:	**$ 100,500.00**
			GRAND TOTAL:	**$ 603,100.00**

* Includes water main, fittings, hydrants, valves, service line, curb stops, and other project costs.

B. Project B: 17th Street to 20th Street

Item	Unit	Quantity	Unit Cost	Total
Pavement Removal	SY	4018	$ 10.00	$ 40,177.78
Driveway Removal	SY	283	$ 10.00	$ 2,833.33
8" Concrete Pavement	SY	4565	$ 55.00	$ 251,075.00
6" Concrete Driveway	SY	283	$ 50.00	$ 14,166.67
4" Sidewalk	SY	1707	$ 40.00	$ 68,266.67
Earthwork Cut	CY	1540	$ 10.00	$ 15,400.00
Earthwork Fill	CY	25	$ 20.00	$ 500.00
			Construction Subtotal:	$ 392,400.00
			Mobilization (8%):	$ 31,400.00
			Construction Contingency (15%):	$ 58,900.00
			Total Estimated Construction:	**$ 482,700.00**
			Preliminary Engineering (8%):	$ 38,600.00
			Construction Engineering (12%):	$ 57,900.00
			Engineering Subtotal:	**$ 96,500.00**
			GRAND TOTAL:	**$ 579,200.00**

C. Project C: 20th Street to 27th Street

Item	Unit	Quantity	Unit Cost	Total
Pavement Removal	SY	6020	$ 10.00	$ 60,200.00
Driveway Removal	SY	317	$ 10.00	$ 3,166.67
8" Concrete Pavement	SY	9611	$ 55.00	$ 528,629.44
6" Concrete Driveway	SY	317	$ 50.00	$ 15,833.33
4" Sidewalk	SY	1156	$ 40.00	$ 46,222.22
Storm Sewer Pipe, 18" RCP	LF	2296	$ 55.00	$ 126,280.00
Storm Sewer Pipe, 42" RCP	LF	50	$ 175.00	$ 8,750.00
Curb Inlets	EA	8	$ 4,500.00	$ 36,000.00
Earthwork Cut	CY	5500	$ 10.00	$ 55,000.00
Earthwork Fill	CY	200	$ 20.00	$ 4,000.00
			Construction Subtotal:	$ 884,100.00
			Mobilization (8%):	$ 70,700.00
			Construction Contingency (15%):	$ 132,600.00
			Total Estimated Construction:	**$ 1,087,400.00**
			Preliminary Engineering (8%):	$ 87,000.00
			Construction Engineering (12%):	$ 130,500.00
			Engineering Subtotal:	**$ 217,500.00**
			GRAND TOTAL:	**$ 1,304,900.00**

D. Project D: 27th Street to Highway 15

This phase is divided into two sub-phases for the purposes of cost estimation.

27th Street to 30th Street (139+00-148+50)				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Driveway Removal	SY	67	$ 10.00	$ 670.00
8" Concrete Pavement	SY	3378	$ 55.00	$ 185,777.78
6" Concrete Driveway	SY	67	$ 50.00	$ 3,350.00
4" Sidewalk	SY	422	$ 40.00	$ 16,888.89
Storm Sewer Pipe, 24" RCP	LF	320	$ 65.00	$ 20,800.00
Storm Sewer Pipe, 36" RCP	LF	55	$ 150.00	$ 8,250.00
Curb Inlets	EA	2	$ 4,500.00	$ 9,000.00
Earthwork Cut	CY	800	$ 10.00	$ 8,000.00
Earthwork Fill	CY	200	$ 20.00	$ 4,000.00
			Construction Subtotal:	$ 256,700.00
			Mobilization (8%):	$ 20,500.00
			Construction Contingency (15%):	$ 38,500.00
			Total Estimated Construction:	**$ 315,700.00**
			Preliminary Engineering (8%):	$ 25,300.00
			Construction Engineering (12%):	$ 37,900.00
			Engineering Subtotal:	**$ 63,200.00**
			GRAND TOTAL:	**$ 378,900.00**

30th Street to Hwy 15 (148+50-161+50)				
Item	**Unit**	**Quantity**	**Unit Cost**	**Total**
Driveway Removal	SY	33	$ 10.00	$ 333.33
8" Concrete Pavement	SY	5120	$ 55.00	$ 281,612.22
6" Concrete Driveway	SY	33	$ 50.00	$ 1,666.67
Storm Sewer Pipe, 36" RCP	LF	60	$ 150.00	$ 9,000.00
Earthwork Cut	CY	1420	$ 10.00	$ 14,200.00
Earthwork Fill	CY	200	$ 20.00	$ 4,000.00
			Construction Subtotal:	$ 310,800.00
			Mobilization (8%):	$ 24,900.00
			Construction Contingency (15%):	$ 46,600.00
			Total Estimated Construction:	**$ 382,300.00**
			Preliminary Engineering (8%):	$ 30,600.00
			Construction Engineering (12%):	$ 45,900.00
			Engineering Subtotal:	**$ 76,500.00**
			GRAND TOTAL:	**$ 458,800.00**

E. Replacement of Overhead Power Lines with Underground Power Lines

Item	Unit	Quantity	Unit Cost	Total
4/0 Areas				
3-Phase 4/0 (basis/trenched cost)	LF	3700	$ 20.00	$ 74,000.00
Conduit Adder	LF	3700	$ 10.00	$ 37,000.00
Bore Adder	LF	1000	$ 20.00	$ 20,000.00
Equipment				
New S&C PMH-9	EA	2	$ 30,000.00	$ 60,000.00
New Junction Cabinet	EA	4	$ 5,000.00	$ 20,000.00
New Riser	EA	2	$ 6,000.00	$ 12,000.00
New Transformer w/ Pad & UG svcs/risers	EA	7	$ 5,000.00	$ 35,000.00
Removals				
Remove Transformer	EA	7	$ 250.00	$ 1,750.00
Remove Overhead Line	LS	1	$ 15,000.00	$ 15,000.00
Miscellaneous				
Surface Restoration	LS	1	$ 7,500.00	$ 7,500.00
			Construction Subtotal:	$ 282,300.00
			Mobilization (10%):	$ 28,200.00
			Construction Contingency (5%):	$ 15,000.00
			Total Estimated Construction:	**$ 325,500.00**
			Engineering:	**$ 35,000.00**
			GRAND TOTAL:	**$ 360,500.00**

F. Summary of Costs

The table below provides a summary of the grand totals from the opinions of costs for each of the projects listed above.

Project	From	To	Project Cost
A	14th St	17th St	$ 603,100.00
B	17th St	20th St	$ 579,200.00
C	20th St	27th St	$ 1,304,900.00
D (south)	27th St	30th St	$ 378,900.00
D (north)	30th St	Hwy 15	$ 458,800.00
Electrical System Improvements:			$ 360,500.00
		GRAND TOTAL:	**$ 3,685,400.00**

G. Funding and Financing Options

Several potential funding options are available to the City, including CDBG, Special Assessment Districts, General Obligation Bonds, and the US Department of Agriculture (USDA) Rural Development (RD) program.

1. CDBG Funding

CDBG is a competitive grant program administered by the NeDED with funds from Housing and Urban Development (HUD). To be eligible for a CDBG grant, a community must have a maximum population less than 50,000 and a minimum of 51% of household be low- to moderate-income (LMI) families. The City is currently eligible for CDBG funds by current income survey. Application deadlines are typically in summer of each year. See http://www.neded.org/community/grants/applications/cdbg-forms for the most recent information and forms.

Table 2: 2017 CDBG Schedule

Public Works Application Due (Cycle 1)	July 30
Anticipated Award	September
Release of Funds	90 Days After Notice of Award

The maximum grant amount provided in the Public Works program is $250,000. The grant requires at least 25% local match and written documentation from the matching funds source will be required to show the commitment of the funds. Leverage is one of the scoring criteria for the Public Works Application, so increasing the local match percentage can increase the probability of being awarded a grant. The scoring system is such that 2 points are awarded for every 1% that exceeds the required match (50 points maximum).

2. Special Assessment Districts

Special Assessment Districts can be set up to finance improvements such as paving improvements. Property owners that benefit from the improvements would be taxed a portion of the costs of the improvements. The City should consult with its financial agent to determine more details on the process involved with Special Assessment Districts. At the time of the writing of this report, the City was not considering the creation of special assessment districts to pay for the proposed improvements.

3. General Obligation Bonds

General obligation bonds are backed by the full faith and credit of the taxing authority. Tax revenues can be used to pay the annual debt service, and/or a tax can be levied on properties within the City. These are more secure than revenue bonds. As with revenue bonds, voter approval is often required prior to issuance. General obligation bonds typically have an interest rate lower than revenue bonds. The City should consult with its financial agent to determine if general obligation bonds are the best funding option.

4. USDA RD Program
   Communities with a population less than 20,000 may apply for community facilities direct and guaranteed loans through USDA. Loan funds may be used to construct or improve community facilities for public safety and public service. Contact your RD State Office to get more details on their loan programs. Their website can also be visited for more details.
   http://www.rurdev.usda.gov/NEHome.html

5. Funding Evaluation and Recommendation
   CDBG funding may be the best funding source available to the City at the current time. Grant programs such as CDBG are very competitive. There is no guarantee that the full grant amount will be awarded or if any grant amount will be awarded. This street study is a powerful planning tool for the City and will also help the City be more competitive for grants.

VII. NEXT STEPS AND TIMEFRAMES

The goal of this section is to outline the next steps the City should take in order to complete the improvements proposed in this study.

The first step the City should take is to establish the priority of each of the given projects and decide which project(s) should be completed first. As outlined in Section VI.G, the potential CDBG funds will not cover more than the total construction costs, so it is advantageous from a timing standpoint to initiate final design on the highest priority project(s) prior to the awarding of CDBG funds. The City should then submit a CDBG application. The table below provides an approximate schedule for completion of the highest priority project(s).

Table 3: Approximate Project Timeline

June 2017	Begin Final Design
July 30, 2017	CDBG Application Deadline
September 2017	CDBG Recipients Announced
January 2018	Bid Project
Spring / Summer 2018	Begin Construction
Summer / Fall 2018	Complete Construction

During or following this process, subsequent projects could be designed and constructed depending on the City's budget and priorities.

APPENDIX A
Figures

14TH STREET / US HWY 136

15TH STREET

16TH STREET

17TH STREET

17TH STREET

PROJECT A

PROJECT B

REPLACE 2 BLOCKS OF EXISTING 4" WATER MAIN WITH NEW 6" WATER MAIN.

REMOVE ASPHALT TRAVELWAY AND REPLACE WITH 8" THICK CONCRETE. EXISTING CURB & GUTTER TO REMAIN.

PROPOSED NEW SIDEWALK

CONFLICT WITH LANDSCAPING. POSTS TO REMAIN.

POTENTIAL CONFLICT WITH TREES

86+61.15 87+00 88+00 89+00 90+00 91+00 92+00 93+00 94+00 95+00 96+00 97+00 98+00 99+00 100+00 101+00 102+00

LEGEND

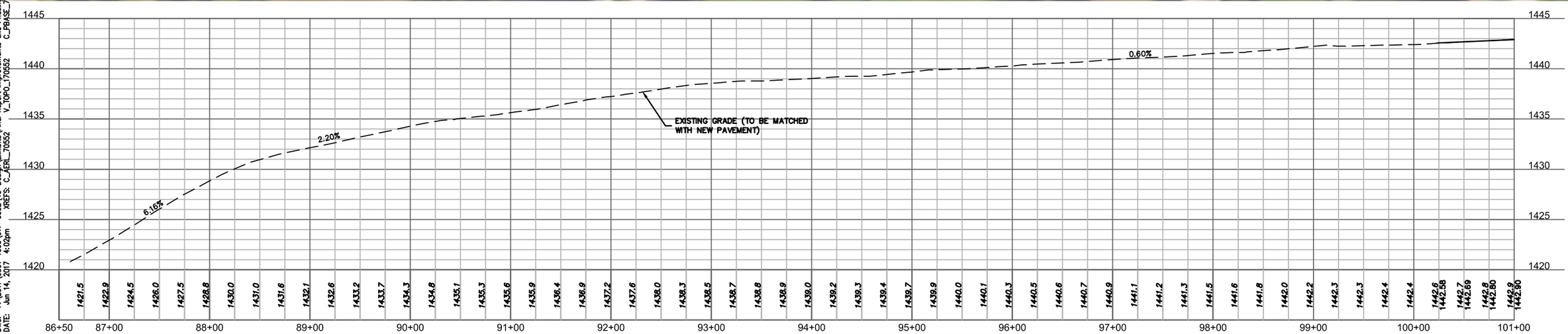
- PROPERTY LINE
- EXISTING POWER LINE
- EXISTING WATER LINE
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- PROPOSED STORM SEWER

NOTE: TREES TO REMAIN EXCEPT WHERE OTHERWISE INDICATED.

N

0' 25' 50' 100'

SCALE IN FEET



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USER: pmalcolm

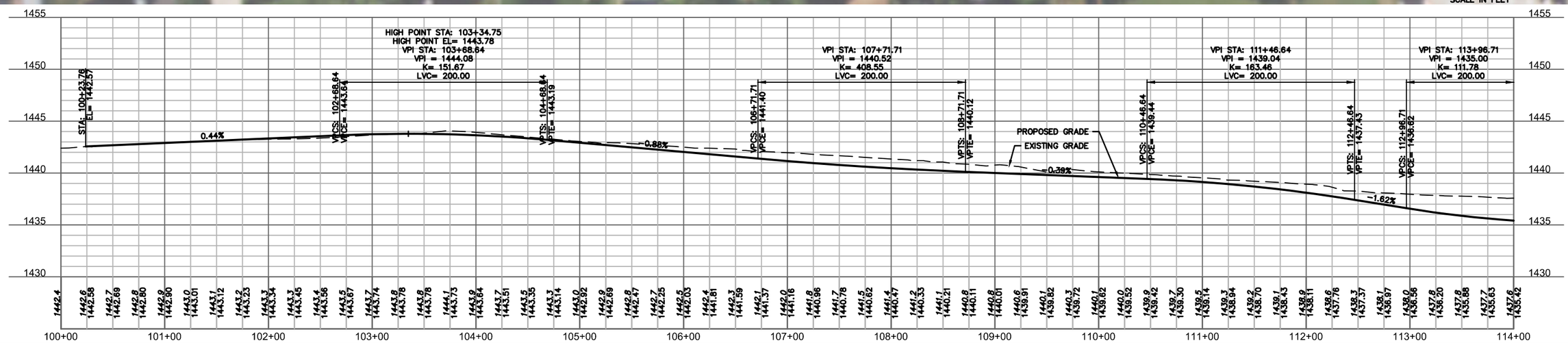
PROJECT NO: 017-0552	PROJECT A FAIRBURY H STREET CORRIDOR STUDY	OLSSON ASSOCIATES	FIGURE 1
DRAWN BY: PLM		601 P Street, Suite 200 P.O. Box 84608 Lincoln, NE 68508 TEL 402.474.6311 FAX 402.474.5160	
DATE: 05/12/2017			

PROJECT A
PROJECT B
17TH STREET
99+00
100+00
101+00
102+00
103+00
104+00
105+00
106+00
107+00
108+00
109+00
110+00
111+00
112+00
113+00
114+00
17TH STREET
PROJECT B
PROJECT C
20TH STREET
32' WIDE URBAN SECTION
CONFLICT WITH LANDSCAPING
PROPOSED SIDEWALK
CONFLICT WITH LANDSCAPING

LEGEND
PROPERTY LINE
EXISTING POWER LINE
EXISTING WATER LINE
EXISTING STORM SEWER
EXISTING SANITARY SEWER
PROPOSED STORM SEWER

NOTE: TREES TO REMAIN EXCEPT WHERE OTHERWISE INDICATED.

N
0' 25' 50' 100'
SCALE IN FEET



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USER: pmalcolm

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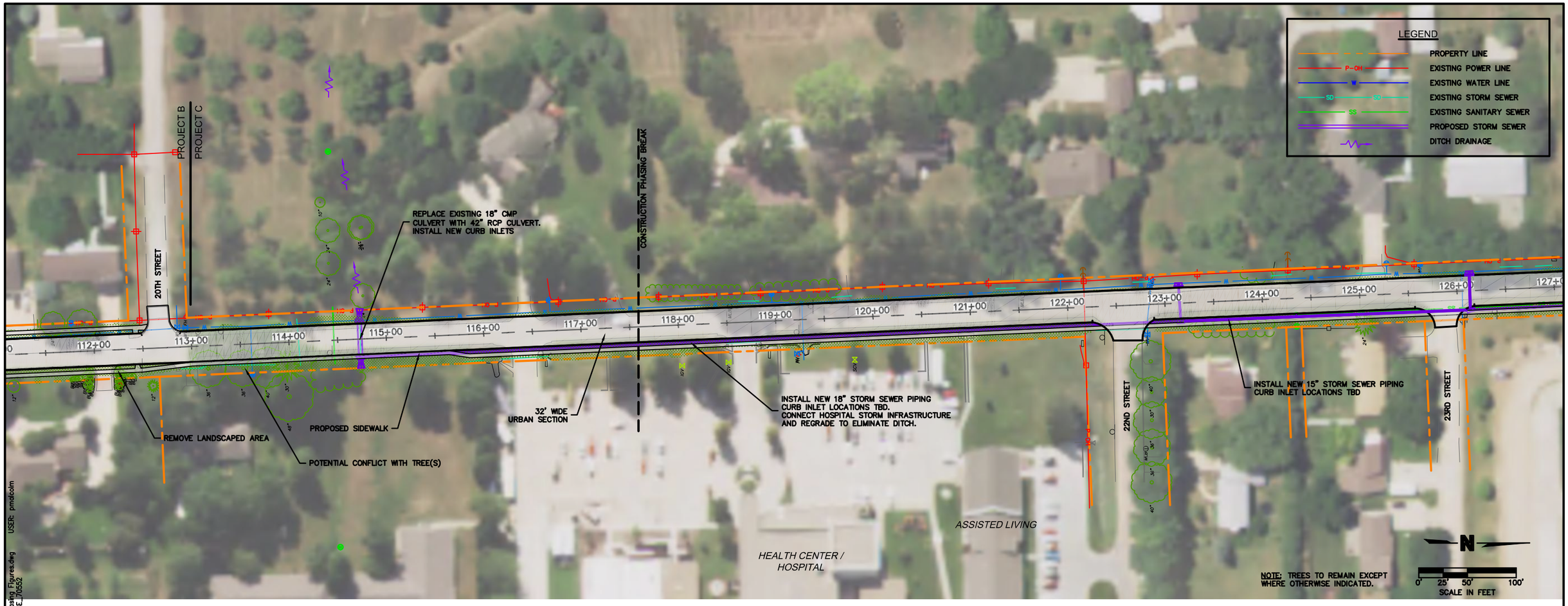
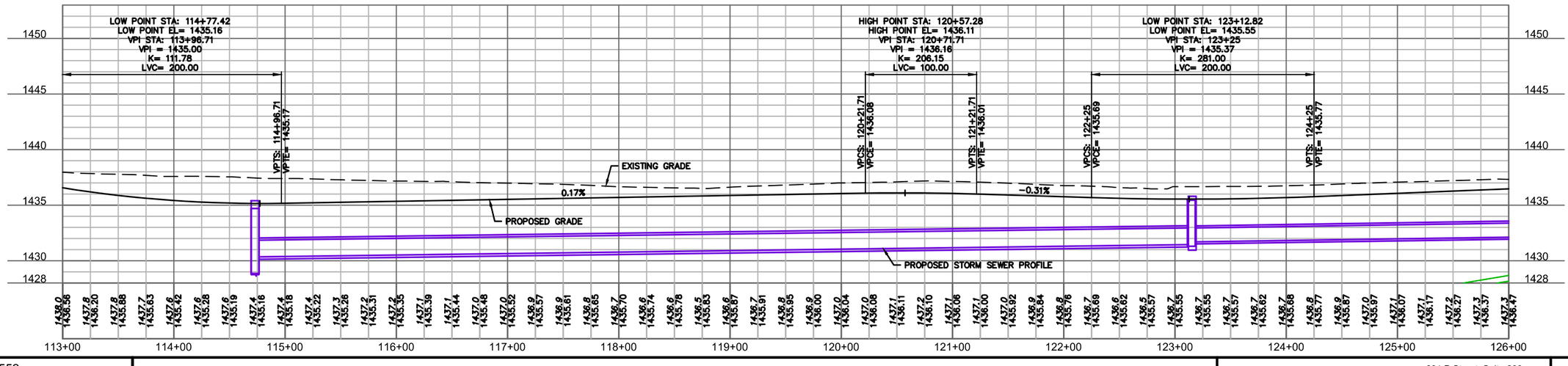
DRAWN BY: PLM		
DATE: 05/12/2017		

OLSSON ASSOCIATES
601 P Street, Suite 200
P.O. Box 84608
Lincoln, NE 68508
TEL 402.474.6311
FAX 402.474.5160





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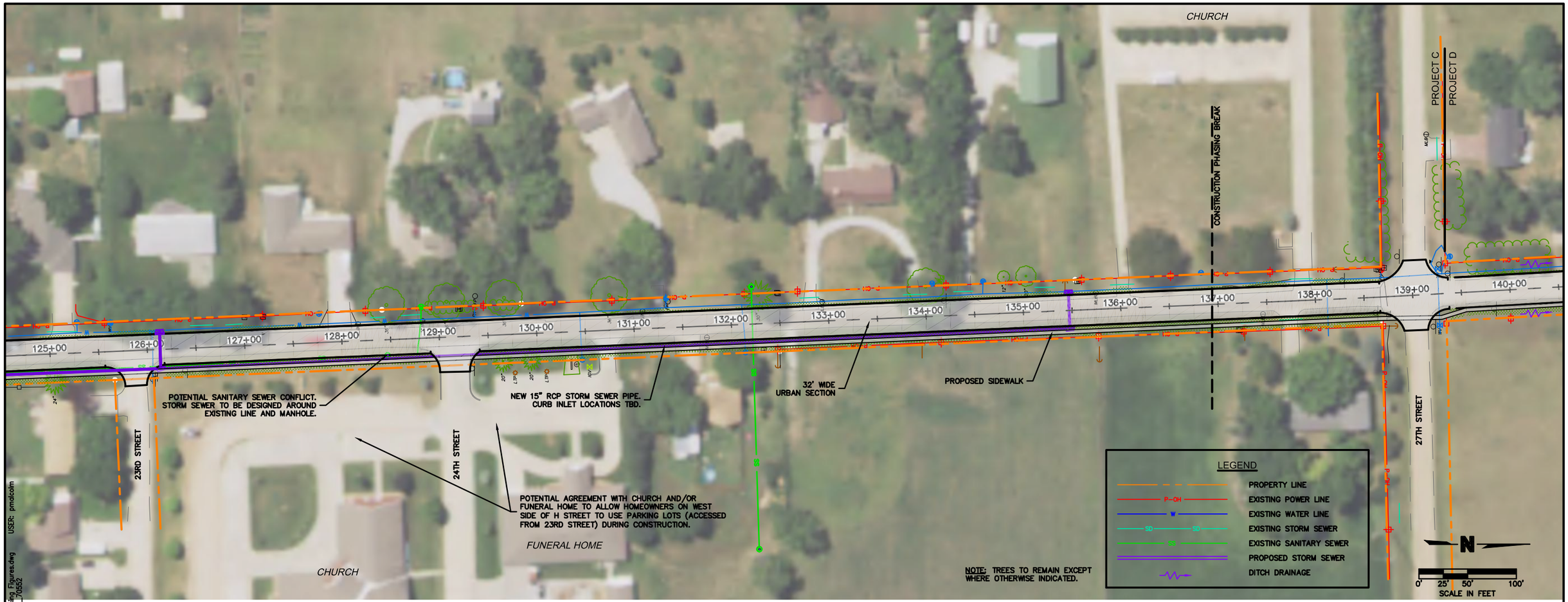
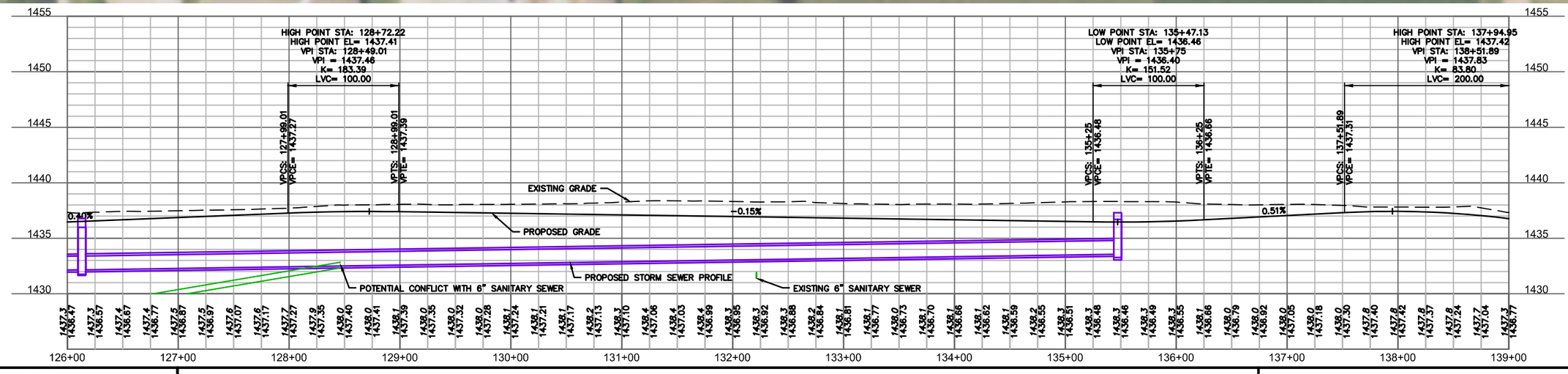
PROJECT NO:	017-0552
DRAWN BY:	PLM
DATE:	05/12/2017

PROJECT C
FAIRBURY H STREET CORRIDOR STUDY

OLSSON ASSOCIATES
601 P Street, Suite 200
P.O. Box 84608
Lincoln, NE 68508
TEL 402.474.6311
FAX 402.474.5160

FIGURE
3





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USER: pmdcolm

PROJECT NO: 017-0552	PROJECT C FAIRBURY H STREET CORRIDOR STUDY	FIGURE 4
DRAWN BY: PLM		
DATE: 05/12/2017		

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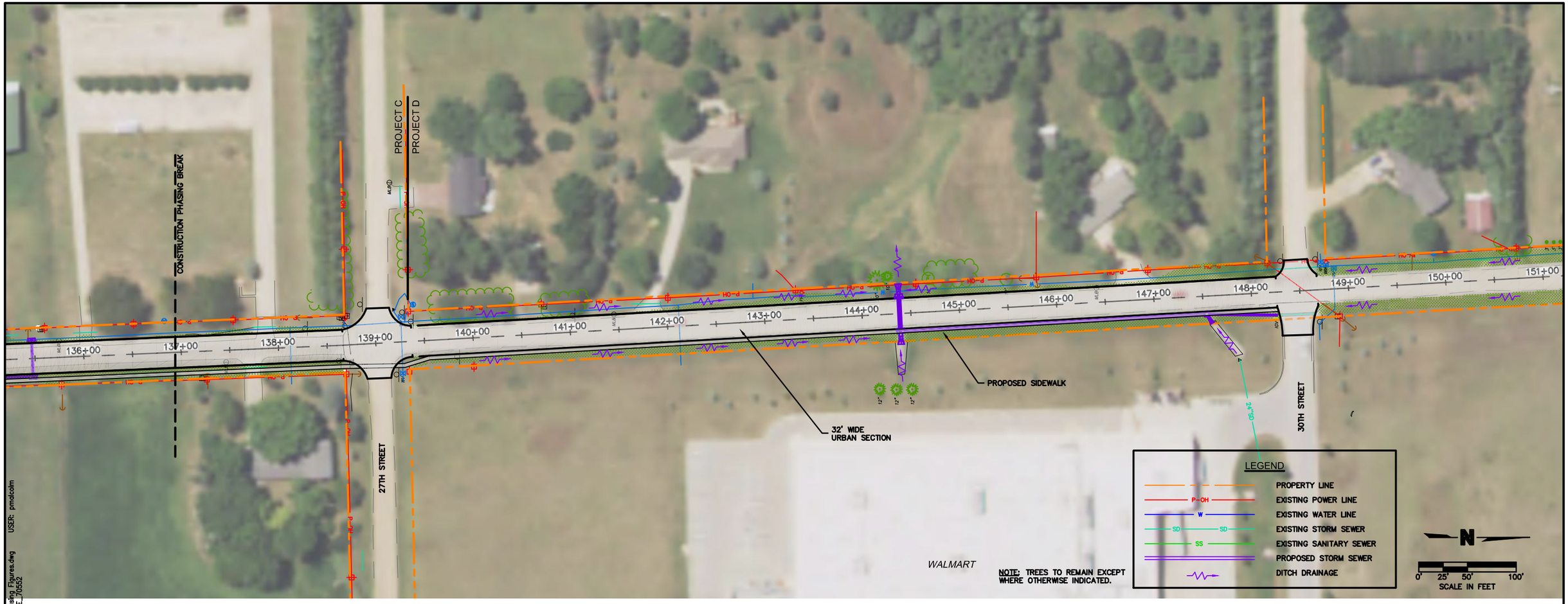
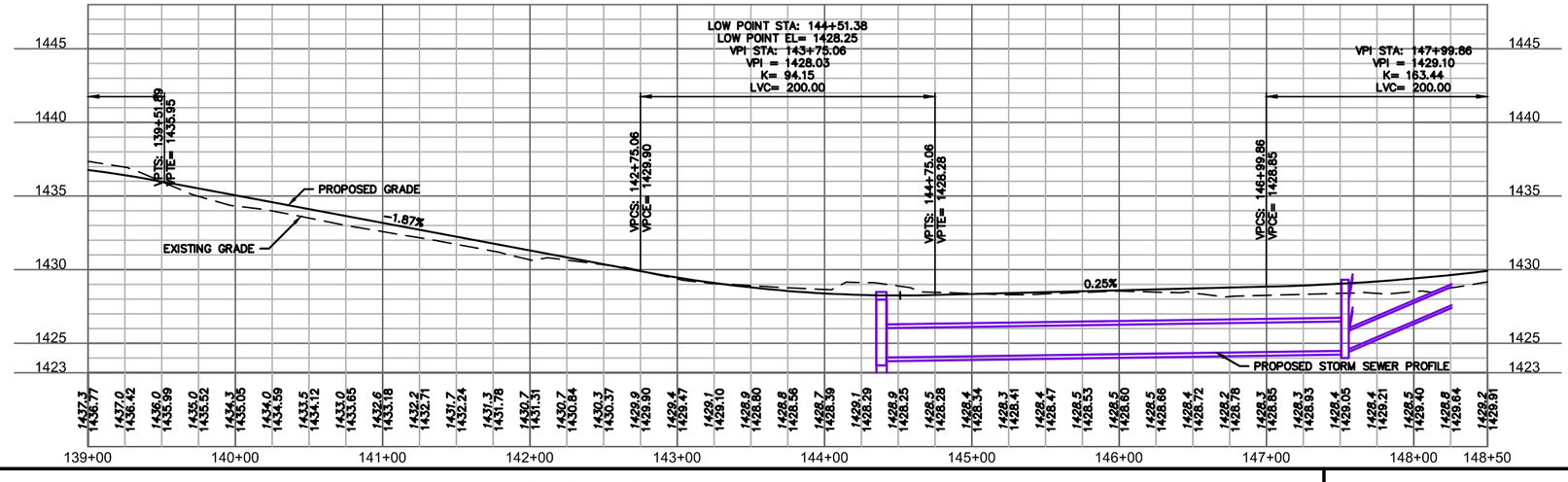
601 P Street, Suite 200
P.O. Box 84608
Lincoln, NE 68508
TEL 402.474.6311
FAX 402.474.5160





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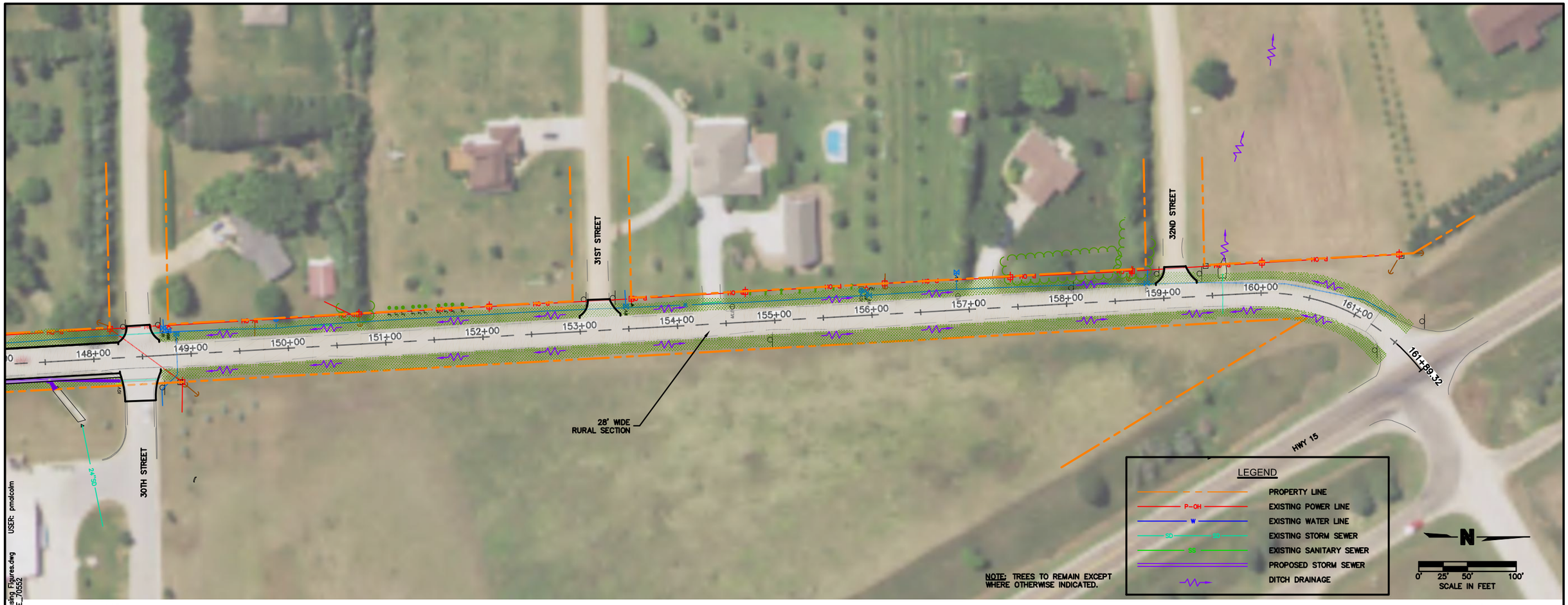
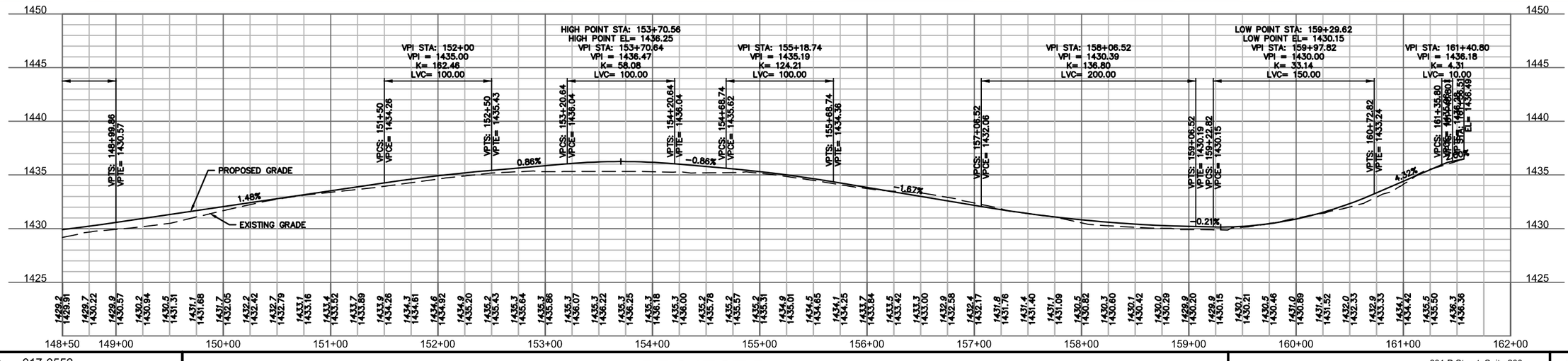
DRAWN BY: PLM		5
DATE: 05/12/2017		

OLSSON ASSOCIATES
601 P Street, Suite 200
P.O. Box 84608
Lincoln, NE 68508
TEL 402.474.6311
FAX 402.474.5160





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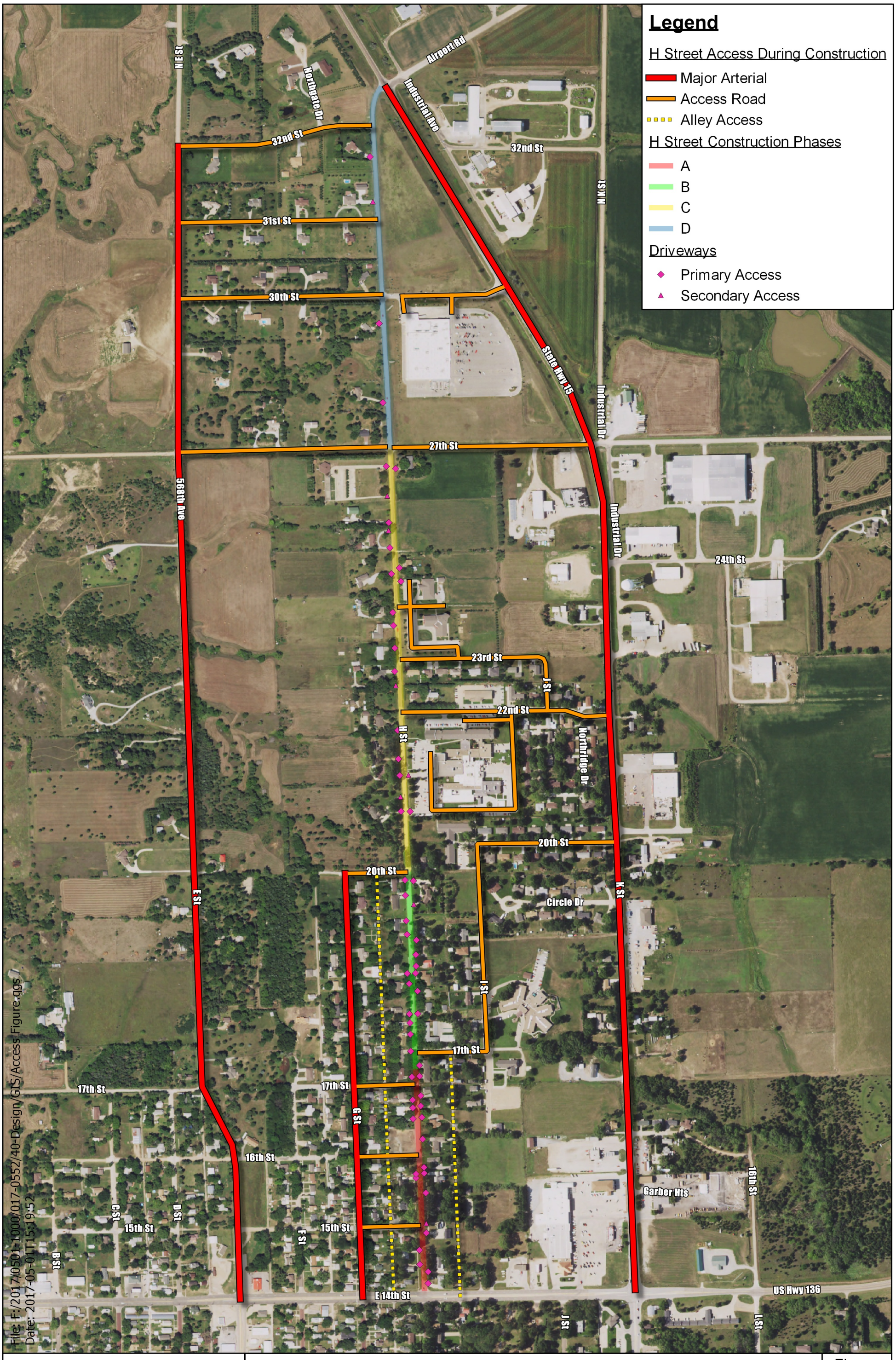
DRAWN BY: PLM		6
DATE: 05/12/2017		

OLSSON ASSOCIATES
601 P Street, Suite 200
P.O. Box 84608
Lincoln, NE 68508
TEL 402.474.6311
FAX 402.474.5160

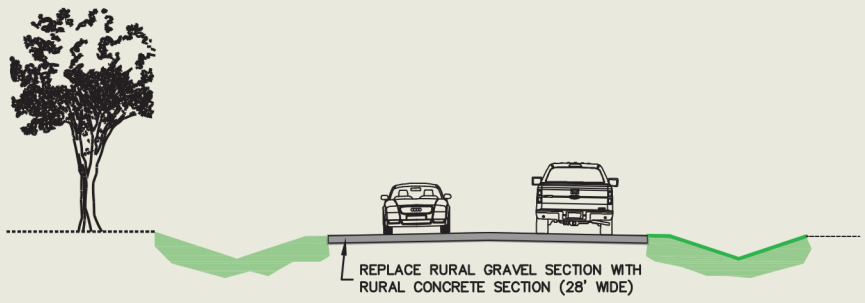


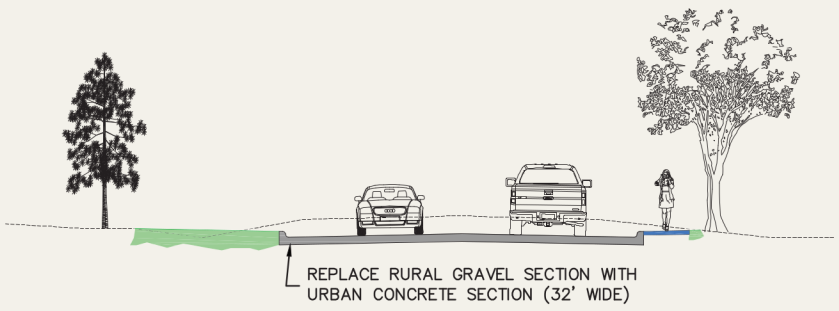
OLSSON ASSOCIATES	Access During Construction H Street Corridor Study	Figure 7

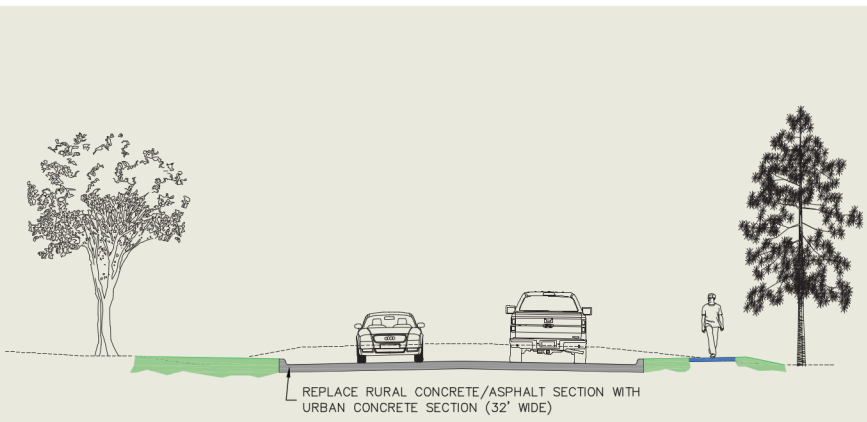
H Street Corridor Study

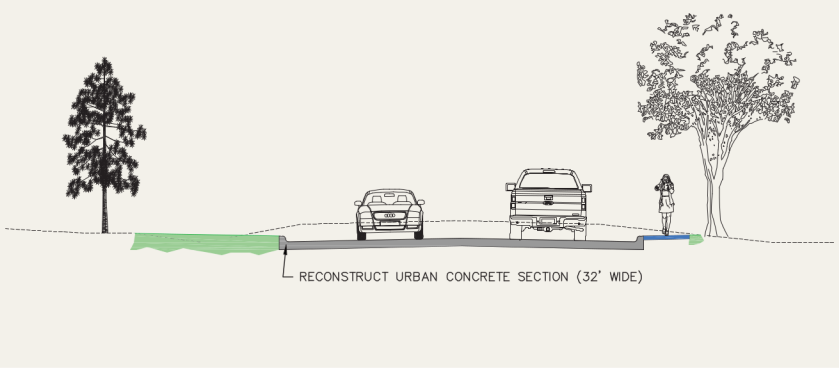
FAIRBURY NEBRASKA

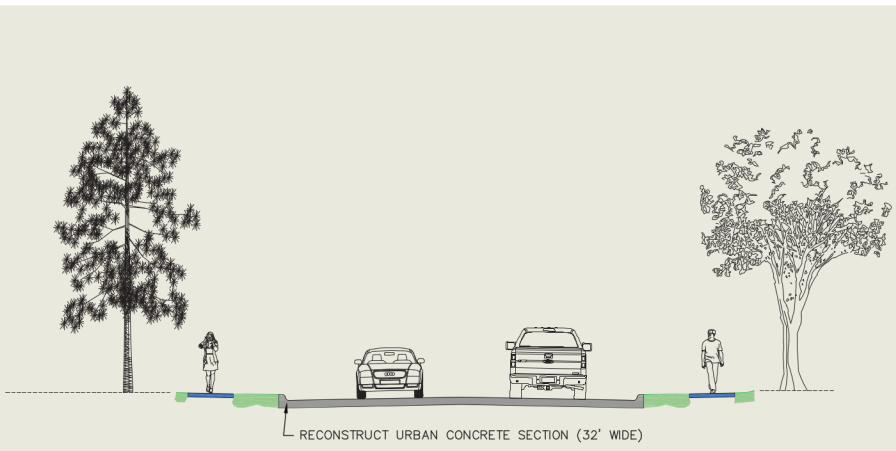
OLSSON ASSOCIATES

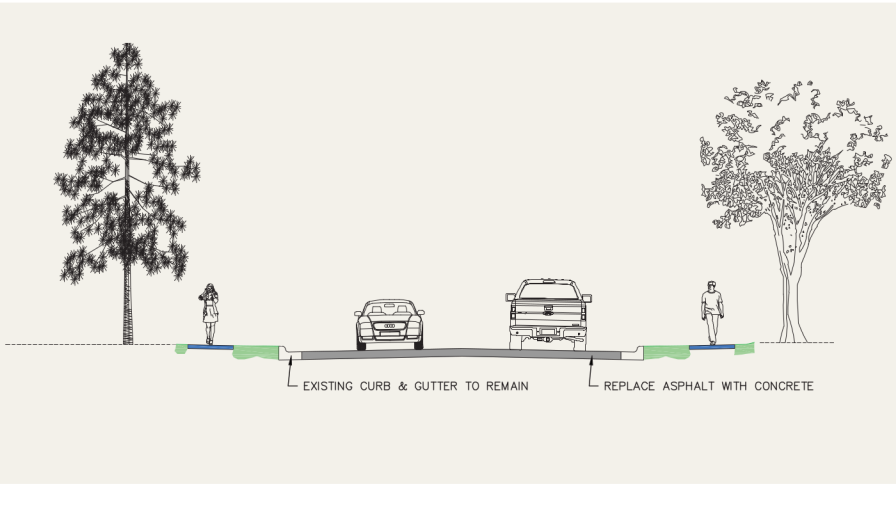












APPENDIX B
Pavement Core Results

OLSSON ASSOCIATES

Pavement Core Locations
H Street Corridor Study

Figure
B1

3/20/2017
OA Project # 017-0552

(H Street Corridor) - Photolog

PHOTO 1: B-6
Recovered: 2.25”
Field Thickness: 2.25”

PHOTO 2: B-7
Recovered: 6.25”
Field Thickness: 6.25”

PHOTO 3: B-8
Recovered: 7.0”
Field Thickness: 7.0”

PHOTO 4: B-9
Recovered: 1.0”
Field Thickness: 1.0”

3/20/2017
OA Project # 017-0552

PHOTO 5: B-10
Recovered: 1.75”
Field Thickness: 3.0”