

Master Corridor Study

North Industrial/Commercial Park

Worthington, MN

SEH No. AWORTC0802.00

February 4, 2008

March 6, 2008

RE: North Industrial/Commercial Park
Master Corridor Study
Worthington, MN
SEH No. AWORTC0802.00

Mr. Dwayne Haffield
City of Worthington
303 9th St
Worthington, MN 56187

Dear Mr. Haffield:

In accordance with the City's request, we have prepared this Master Corridor Study for the North Industrial/Commercial Park for the City of Worthington. This document will serve as an outline for the development of the tract of land, north of Interstate 90, which is currently designated as Commercial/Industrial Reserve in the City's Land Use Plan.

This Study outlines several aspects of developing the area including preliminary street, sanitary sewer, water main, and storm sewer layouts. Necessary improvements to Trunk Highway 59 and relocation of Okabena Creek/County Ditch 12 were also analyzed.

We would be pleased to review this draft report with you in detail at your convenience.

We also wish to thank you and Brad for your assistance in preparing this report.

If you have any questions, or wish to discuss, please contact me at 605.330.7013 or 877.214.4370.

Respectively submitted,

Sincerely,

Michael R. Kuno, PE
Project Manager

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North Industrial/Commercial Park
Master Corridor Study
Worthington, MN

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I hereby certify that this report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Michael R. Kuno, PE

Date: 2/4/2008 Lic. No.: 45195

Reviewed by: Steve Robinson 2/8/2008
Date

Short Elliott Hendrickson Inc.

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Master Corridor Study

North Industrial/Commercial Park

Prepared for the City of Worthington, Minnesota

1.0 Introduction

The Worthington City Council authorized the preparation of this Corridor Study for the North Industrial/Commercial Park (NICP). The purpose of this effort is to provide the City of Worthington with a plan that examines the area outlined as future Commercial/Industrial Reserve from the Land Use Plan in the current City of Worthington Comprehensive Plan. This study will provide the City with guidance for systematically developing the area in a practical and rational method. In addition to providing an outline for the improvements, project cost estimates have been determined and provided to help the City prepare for the process.

The NICP area examined in this report is generally located north of Interstate 90 and west of Trunk Highway 59. The area includes approximately 750 acres of currently undeveloped land that lies in a one-half mile strip between 27th Street and I-90. The land in this area is mainly used for agricultural purposes and there is a small amount of elevation change over the area. The

entire area included in the study is outlined in Figure 1 - “Study Areas Corridor Study”.

The study area is broken into three regions based on the anticipated development timeline for the region. Sanitary service for the study area will be extended from two existing mains, located on the east end of the study area at the intersection of TH 59 and 27th Street and the intersection of TH 59 and Bioscience Drive. The City of Worthington recently agreed to purchase approximately 115 acres of undeveloped land located on the east end of the study area. This property is generally located in the section northwest of the intersection of I-90 and TH 59 and provides the City with property adjacent to 27th Street and TH 59. This property will be referred to as the Industrial Park area for purposes of this study.

Utility services will continue to be extended from east to west within the study area so development should generally follow that pattern. The next logical region for the study includes all of the property located within the boundaries of Diagonal Road, 27th Street, TH 59, and I-90. This area includes the three 160-acre sections of land immediately west of TH 59 and the half section created by Diagonal Road. The region is approximately 2 miles long on the north boundary, 1.5 miles south on the south boundary, and a half mile wide for a total area of approximately 560 acres. This region will be referred to as the Master Plan area for purposes of this report and includes the Industrial Park area referred to on the paragraph above.

The third region of land analyzed in this study includes the remainder of the area outlined as Commercial/Industrial Reserve in the current Land Use Plan.

This area lies west of Diagonal Road and will be the last region of the study area to be developed, based on utility extensions. Development of this region may not occur for decades. Due to the lengthy timeline and the fact that many of the variables/conditions outlined in the design for the Industrial Park and Master Plan areas may change prior to the development of this land, much less detail is included for this region. This area will be referred to as the Long Term Growth area for purposes of this report.

The City has been working with a local business to develop a site within the Industrial Park area. This business requires a twenty acre site and does not require frontage or visibility to TH 59 or I-90. Based on these considerations, and ease of extending utility services to the proposed site, a location was proposed along 27th Street, within the property that has already been purchased by the City. The proposed site will be referred to as the 20 Acre Site for purposes of this report.

This study provides recommendations on a number of design features related to developing the park including:

1. Corridor Layout and Land Use – The study provides a master streets and utilities corridor plan that was developed to maximize the development potential and City’s investment in the property with an additional focus on providing a degree of flexibility within the development.
2. TH 59 Intersection Layouts - During the development of the study, SEH met with City and Mn/DOT representatives to develop

conceptual intersection plans for TH 59 at 27th Street and Bioscience Drive.

3. Sanitary Sewer Plan – The study includes a master sanitary sewer plan to guide ultimate development of the Master Plan area in the most feasible manner.
4. Water Distribution Plan - The study includes a master water service plan that is focused on providing a level of service generally regarded as adequate for industrial/commercial service and fire suppression.
5. Storm Water Plan - A conceptual storm water master plan, including necessary detention capacity and basin locations, was developed to provide systematic regional storm water management for the study area. This plan includes a benefit analysis to determine whether a relocation of the Okabena Creek/County Ditch 12 is practical and feasible.

Project cost estimates were developed from the recommended layouts and are included in this report to assist the City in planning capital improvements in the future. This plan does not take the place of detailed feasibility studies that are typically prepared prior to the design and construction of improvement projects. Due to the global nature of this study, it is general and less specific than detailed feasibility studies. Recommended improvements should be verified by a detailed feasibility study to confirm existing conditions, sizes, locations, costs, and staging for improvements.

2.0 Corridor Layout and Land Use

The Master Plan area is surrounded by Diagonal Road on the west, 27th Street on the north, TH 59 on the east, and I-90 on the south. There are on and off ramps for I-90 at both Diagonal Road and TH 59. Paul Street is an existing north-south gravel road that connects 27th Street to Rowe Avenue via an I-90 underpass located between the Diagonal Road and TH 59 underpasses. Paul Street also extends to the east, immediately north of the Rowe Avenue underpass, and acts as a service road to serve a number of residential properties located between Rowe Street and TH 59.

The Master Plan Area was analyzed and a number of factors were determined in developing the corridor layout for the Master Plan area, including:

1. The long, linear quality of the Master Plan site.
2. Functionality and traffic flow of proposed routes.
3. Location and mix of land uses.
4. Flexibility in final street and land use layouts.
5. Location of Okabena Creek/County Ditch 12 along the west and east ends of the park.
6. Preserving the few remaining tree windrows within the area.

The proposed corridor layout and land use recommendation for the Master Plan area are shown in Figure 2 “Corridor Layout/Land Use Master Plan Area”. The layout recognizes the linear aspect of the site by providing two main east-west thoroughfares that provide two points of access at both Diagonal Road and TH 59.

Street A will act as the main arterial for the interior park area sites and provide access to all commercial and industrial sites adjacent to I-90. A new intersection will need to be developed at both Diagonal Road and TH 59 to provide access for Street A. 27th Street will act as the second arterial for the Master Plan site and will provide access to sites located along the north and south sides of 27th Street. The existing intersection of 27th Street and TH 59 will need to be improved to accommodate the increased traffic anticipated from the developed areas. The existing intersection of 27th Street and Diagonal Road will need to be revised to provide a 90 degree intersection with Diagonal Road. A one hundred foot wide right of way corridor is recommended for both main arterial thoroughfares. This will provide enough space to develop a three lane street section with 16’ wide through lanes, a 14’ wide center opposing left turn lane, right turn lanes at major intersections, and sidewalk or trail separated from the street by a boulevard section.

Streets B, C, D, and E will act as minor arterials for the interior of the park. Street B will serve as a secondary east-west street, providing access to sites that do not front 27th Street or Street A and directing vehicles to either 27th Street or Street A for access to Diagonal Road or TH 59. Streets C, D, and E provide the north-south movements necessary to intersect the east-west

streets. The layout proposes construction of the north-south streets at even spacing, located at the property section lines. A fifth access to the Master Plan site will be created by extending Street D south, through the existing I-90 underpass, and connecting it to Rowe Ave. This access will provide an access point for individuals not wanting to use Diagonal Road or TH 59, as well as function as a natural connection to the businesses along Industrial Lane and Ryans Road. An eighty foot right of way is recommended for the secondary streets. This will allow for the same street section as the major arterials, minus the right turn lanes and wider boulevard sections.

The street layouts were developed to provide some degree of flexibility within the Master Plan area. It is recommended that 27th Street remain on the section line. The intersections of Street A at TH 59 and Diagonal Road are locked with respect to necessary spacing and geographical features, however once the street is constructed beyond Okabena Creek on both sides of the park, the alignment can shift slightly to accommodate specific site requirements as they may arise. Continuous alignment variations to accommodate businesses are discouraged but if the decision is made to shift Street A or Street B one hundred feet north or south of the proposed alignment, this should not greatly affect the general intent of the corridor layout. A review of the proposed utility layouts must be conducted prior to making any final decisions in regards to street alignment revisions as the utility alignments will also need to be revised accordingly.

The proposed land use plan includes developing commercial businesses at the outskirts of the Master Plan area and industrial businesses within the

interior of the area. A third designation, Commercial/Industrial, is also included in the land use drawing to provide some degree of flexibility based on the opportunities presented to the City. This layout makes strategic sense for both the businesses and the City as it allows commercial properties frontage/visibility along TH 59, Diagonal Road, and I-90 at the exit/entrance locations while the center of the site retains the feel of an industrial campus. The commercial properties and interstate traffic will benefit from the easy access at the exit/entrance ramps, providing quick, profitable, stops from interstate travelers. The commercial businesses will also benefit from the trip generations provided by employees of the interior industrial campus going to and from work.

This layout also provides the City with a good mix of land use in the Industrial Park site that the City already owns. The City can choose to attract additional job growth opportunities within the remaining Industrial and Commercial/Industrial area while generating revenue from the sale of the higher value commercial areas. The City will have to resist the urge to use designated Commercial property for Industrial uses, should the Industrial sites fill quicker than the commercial sites in the Industrial park area. This is to be expected as Commercial businesses may wait for the Industrial base to develop before moving north of the Interstate. Allowing Industrial businesses to set up shop within the designated Commercial area to simply “fill the gaps” may create a shortage of commercial property and/or create a number of land mix problems within the park if additional commercial property is needed in the future.

One final feature of the proposed corridor layout involves a guiding principle of promoting Okabena Creek and the few remaining tree windrows as amenities for the site. These will be the only remnants of the agricultural heritage and rural farmsteads that populated this area in the first place as there are few other natural features that define this site. It is recommended that the City develop these areas into planned green spaces to provide a recreational element to the Master Plan area.

3.0 TH 59 Intersection Improvements

TH 59 reduces from a four-lane divided highway immediately north of I-90 to a two-lane highway as the highway continues north. Based on Mn/DOT's 2006 Traffic Volumes, TH 59 carries approximately 8200 vehicles per day. That number drops to 3800 vehicles per day north of 27th Street and 2800 vehicles per day north of 230th Street. Based on these volumes, the existing layout of TH 59 provides adequate capacity.

The increase in traffic movements at the intersection of TH 59 and 27th Street, along with the creation of a new intersection at TH 59 and Street A, will necessitate improvements to TH 59 in this area. A meeting with a Mn/DOT representative was conducted to determine specific requirements in regards to necessary improvements. It was determined that proposed improvements will be required at both intersections on an as needed basis.

TH 59 and 27th Street – The existing intersection includes single Northbound (NB) and Southbound (SB) through lanes with a developed right-turn lane for SB traffic. Mn/DOT feels that this layout will be adequate for the increase in traffic movements initially expected by development of

the proposed 20 Acre Site and Mn/DOT will not require that any immediate improvements be made at the intersection. Mn/DOT has suggested that both Mn/DOT and the City monitor the increasing traffic generation at the intersection and work together to determine when additional improvements will be needed. Mn/DOT is currently developing a number of warrants that, when triggered, would require the construction of turn lanes but the guidelines are still in draft form. Based on the draft version, some warrants that may trigger additional improvements at 27th Street include heavy-vehicles turning movements, crash history, and total vehicle volume at the intersection. Based on this information, improvements should be staged over a number of years to provide additional capacity on an as needed basis.

Based on current Mn/DOT standards, Mn/DOT has to consider roundabouts for intersection control treatments. Due to the fact that improvements at TH 59 and 27th Street will be made in the future, it is unknown whether a roundabout is the correct intersection control treatment at this time. Mn/DOT is suggesting that the City retain space in the southwest and northwest corners of the intersection to provide enough land for a potential roundabout, should that be needed. The construction of a roundabout at this location would likely require the removal of existing structures east of the intersection. The City should hold additional discussions with Mn/DOT prior to approving developments immediately west of this intersection to make a final determination on the required intersection control treatment at 27th Street. If it is determined that a traditional intersection is adequate, staging of the improvements on TH 59 at 27th Street should be made based on the actual traffic movements but the following order is suggested:

-
1. Introduction of opposing left-turn lanes for NB and SB TH 59
 2. Develop full right-turn lanes for NB and SB TH 59
 3. Develop additional through lane for both NB and SB TH 59, add center raised median in turn lane areas.

27th Street, west of TH 59, should be improved to a minimum of 36 feet wide to provide enough room for an Eastbound (EB) through/right, EB left, and Westbound (WB) through lanes. 27th Street, east of TH 59, should be improved on an as needed basis. The ultimate development of this intersection is shown in Figure 5 “Hwy 59 and 27th Street Intersection”.

TH 59 and Street A/Bioscience Drive – Mn/DOT has agreed to allow one new public street intersection on TH 59 between I-90 and 27th Street. We are proposing to create this intersection at a point that matches the existing alignment stub of Bioscience Drive in the Bioscience Industrial Park. The distance of this intersection from the westbound I-90 ramps should provide adequate spacing for vehicles to make the necessary movements on TH 59 to get into the Master Plan Area. The proposed intersection will be created by extending Street A, the main east-west thoroughfare for the NICP, to meet Bioscience Drive at this location. Street A will act as the southerly east-west thoroughfare and provide access to the properties that are adjacent the interstate.

Mn/DOT has determined that expectations have been set and improvements have already been made for a traditional intersection at the proposed location

of TH 59 and Street A. Based on this, they will not push for consideration of a roundabout at this location.

Mn/DOT is requiring that all proposed turn lanes be constructed as part of the initial intersection improvements. This will require the construction of opposing left-turn lanes and right-turn lanes for NB and SB TH 59 traffic. Bioscience Drive will need to be extended to TH 59, creating the east leg of the intersection. Street A should be constructed with a right-turn and through/left-turn lanes for the EB traffic. A raised median should be constructed to separate directional traffic and prevent left-turn access into properties immediately west of TH 59. Raised center medians and a second through-lane for NB and SB TH 59 traffic should be added as traffic counts on TH 59 warrant. The fully developed intersection plan is shown in Figure 4 - “Hwy 59 and Street A Intersection”. It should be noted that additional property needs to be purchased prior to the construction of this intersection as the City does not currently own the land immediately adjacent to the highway right-of-way (see Figure 15).

Figure 6 – “Highway 59 Layout” shows the lane layouts for the entire stretch of TH 59 from I-90 to where the improvements will tie back into the existing two-lane layout, north of 27th Street. This figure represents the fully developed TH 59, with dual NB and SB through lanes and two fully developed traditional intersections.

4.0 Sanitary Sewer Plan

There are currently two sanitary sewer mains located on the east end of the NICP area that are designed to provide service to the NICP area. There is a

10” stub located at the intersection of TH 59 and 27th Street with enough capacity to provide service for some distance west along 27th Street. The second main is a 24” stub located at Bioscience Drive, east of TH 59. This main will provide service to the remainder of the NICP area.

Anticipated wastewater flows are calculated by applying the unit flow rates for a land use type to the developable acreages associated with that land use. The flow capacities for trunk sewer main facilities are calculated using recommended guidelines based on pipe size and slope. The generally accepted design unit flow rate for Industrial/Commercial land use areas is 2,000 gallons per acre per day. Based on the proposed unit flow rate and recommended pipe guidelines, the following maximum service areas were calculated for PVC pipe installed at minimum grade:

Table 1 - Maximum Service Areas Based on PVC at Minimum Grade

Pipe Diameter	24.00	21.00	18.00	15.00	12.00	10.00	8.00
Min Slope, S (ft/ft)	0.08%	0.10%	0.12%	0.15%	0.22%	0.28%	0.40%
Flow, Q (cfs)	6.950	5.443	3.953	2.718	1.815	1.259	0.830
Flow, Q (gpm)	3120	2443	1774	1220	815	565	373
Flow, Q (gpd)	4492196	3517779	2554668	1756465	1173217	813947	536563
Design Flow (Gal/Ac/Day)	2000	2000	2000	2000	2000	2000	2000
Peak Hour Factor	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Peak Flow (Gal/Ac/Day)	6000	6000	6000	6000	6000	6000	6000
Max Service Area (acres)	749	586	426	293	196	136	89

The NICP area, including the Long Term Growth area, represents roughly 705 acres of developable land. Figure 7 – “Sanitary Sewer Maximum Gravity Service Area” shows the proposed service areas for both existing sewer stubs, based on the service areas calculated above.

The table above shows that the existing 24" main has enough capacity to serve the entire NICP study area. This area is indicated on Figure 7 in red. The areas in dark blue represent unserviceable areas (detention ponds or Okabena Creek) and these areas were removed from the service area total. Based on the design criteria outlined above, the 24" has roughly 40 acres of additional capacity. This additional capacity could serve an area anywhere outside of the proposed 24" Main Capacity area (red) and is represented on Figure 7 by the area labeled 24" Main Additional Capacity (green).

Table 1 indicates that a 10" main has 136 acres of Industrial/Commercial capacity. The proposed service area for the 10" main at TH 59 and 27th Street includes property on both sides of 27th Street for approximately one half mile and is shown in Figure 7 in brown. A second sanitary main will need to be extended north, along the west side of TH 59, to provide service to a second tier of property (shown north of the property adjacent to 27th Street).

An analysis was performed on the Industrial/Commercial users in the City's existing service area to determine the accuracy of the proposed unit flow rate. The Swift Processing Plant was removed from the analysis due to the extraordinarily large volume of wastewater produced at their facility. The analysis of all remaining Industrial/Commercial users determined that the existing unit flow rate from this land use type averages roughly 1000 gallons per acre per day, or roughly one half of the proposed design unit flow. Based on these details, a master service area was determined based on ground elevation to show the additional property that could be serviced with any excess capacity (shown in light blue).

The existing ground generally rises in elevation across the NICP site from east to west. The two exceptions to this occurrence include the Okabena Creek area and a second low area that exists within the Master Plan site. An analysis was done to determine whether lift stations were needed at either location. Based on the existing ground elevations and the proposed sanitary sewer grades, a lift station will be required to serve the Long Term Growth area west of Diagonal Road. The analysis also determined that a second lift station within the Master Plan area was not necessary but if installed, would allow the downstream sewer mains to be constructed at shallower elevations, potentially providing a cost savings to the City. Based on this, two sanitary sewer layouts were created and studied.

Figures 8, 9, and 10 show the proposed layouts for the sanitary sewer. Generally, the 10" main is shown being extended west along 27th Street for approximately one half mile. This extension will provide service to the 20 Acre Site currently proposed along 27th Street. The 24" sanitary main will be extended underneath TH 59 from Bioscience Drive, following Street A in a westerly direction to MH 104 (intersection of Street A and Street E). At this point, one trunk main will continue running west along Street A. This will serve all properties adjacent to and south of Street A, as well as the area west of Diagonal Road. The second trunk main will extend north of out MH 104 and continue running along Street E up to 27th Street. This main will serve lots adjacent to Street B and 27th Street, west of Street E.

Figure 8 - "Sanitary Sewer Master Plan Area (Single Lift Station)" shows the sanitary sewer layout with a single lift station located adjacent to Diagonal

Road. This lift station is required to provide service to the area west of Diagonal Road and will pump into the 24" system via a forcemain under Okabena Creek. Figure 9 - "Sanitary Sewer Master Plan Area (Dual Lift Stations)" shows the same layout with an additional lift station added between MH 107E and MH 108. Comparing the two figures shows that construction of this lift station eliminates the need to install the gravity sewer at a depth to provide service in the low area and allows the sewer main between MH 104 and MH 107 to be constructed at a considerably shallower depth.

Figure 10 - "Sanitary Sewer East Industrial Park Area" shows the sanitary sewer layout within the Industrial Park area. This layout is the same for both of the options outlined above as the depth of MH 104 is necessary to provide service to the west end of 27th Street. As figure 10 shows, the extension of sanitary service from Bioscience drive must take place prior to any additional development within the Industrial Park area.

5.0 Water Distribution Plan

There are a number of potential locations along the south and east sides of the park including tying into the existing water facilities including:

1. Along Diagonal Road, south of I-90.
2. At the intersection of Industrial Lane and Rowe Ave.
3. The existing main stubbed under I-90, west of TH 59.

-
4. The 8” main that runs along the west side of TH 59 from I-90 to 27th Street.

The proposed water improvements in this plan have been designed to provide a minimum of 3000 gallons per minute of flow, a level of service generally considered adequate for Industrial/Commercial service and fire protection, throughout the entire NICP system. An analysis of flow data tests, taken at locations in the proximity of the NICP, was performed and a system was modeled based on the data provided. The pipes within the proposed system were sized to provide the target flow levels outlined above. Based on the system as a whole, larger diameter pipes (12” and 16”) are needed along the outer border of the park, with smaller diameter mains (8” and 12”) providing loops within the interior of the park.

The proposed flows shown in Figure 11 – “Water Distribution System Master Plan” and Figure 12 – “Water Distribution System Industrial Park” are based on the construction of the entire system as a whole. A distribution system that is constructed in a loop provides much greater flows than does a single main extended. Based on this, it is recommended that the City pursue construction of water main loops (connections at both ends) when proceeding with the improvements. It is understood that this may not always be feasible and that main extensions, without secondary connections, may take place during the process. This may be the case in providing service to the 20 Acre Site as looping this main would require a large amount of additional water main construction. Due to these circumstances, it is recommended that the further analysis be conducted to determine

whether extending the recommended pipe size provides adequate flow. If this is not the case, a larger diameter water main may need to be extended.

The results of this study were compared to the recommendations provided in the recent water study provided by Banner Engineering. Generally, the water mains recommended in this report are one size larger than the mains recommended in the Banner report. While it's difficult to determine where the difference lies, based on the limited amount of data provided for modeling in this study, a conservative approach was taken in the modeling and associated recommendations for the proposed system. Further testing should be conducted at locations immediately surrounding the park to provide a more accurate model.

6.0 Storm Water Plan

All of the existing storm water from the NICP area currently runs overland into Okabena Creek/County Ditch 12, which runs along both the west and east sides of the Master Plan area. There is a small amount of existing impervious surface within the Master Plan area with a majority of the land being used for agricultural purposes.

The storm water plan for the Master Plan area was developed to provide systematic regional storm water management for the entire study area. This includes design of regional detention ponds and storm water mains that may serve multiple properties. This design will prevent the need for detention facilities on each separate site.

The storm sewer system was designed using the rational method to calculate hydrology and Manning's equation to calculate the hydraulics based on the Master Plan area being completely developed. The storm sewer was designed for no surcharge conditions in the system during a 10-year design event.

A National Pollutant Discharge Elimination System (NPDES) Storm Water Permit is required for all projects that disturb one or more acre(s), or are a part of a common plan of development disturbing more than one acre collectively. Where a project's ultimate development creates one or more acres of impervious surface, a permanent storm water treatment system is required, which is typically accomplished with a wet sedimentation pond.

The design criteria for the wet sedimentation pond include a permanent pool volume of 1800 cubic feet (66.7 cubic yards) per acre of contributing watershed, a water quality volume of ½ inch of runoff from the new impervious surfaces created by the project, water quality discharge of no more than 5.66 cfs per acre of surface area of the pond, a stabilized emergency overflow to accommodate storm events in excess of the basin's hydraulic design, and energy dissipation of basin outlets. Additionally, ponds were designed to provide flow attenuation such that peak discharge rates are limited to the existing peak runoff rates of the drainage area for the 10-year (4.2 inch) and 100-year (6.0 inch), 24-hour rainfall events.

In addition to the NPDES permit, a Heron Lake Watershed District (HLWD) permit is required. The HLWD has adopted the same rules as the Minnesota Pollution Control Agency's (MPCA) NPDES Construction Storm Water

Permit. Both permits require temporary erosion and sediment control Best Management Practices (BMP) during construction in order to minimize sediment loss from the site and into downstream water bodies.

Figure 13 – “Storm Sewer Master Plan” shows the storm sewer design for the Master Plan area, including drainage basin areas, structure locations, invert depths, pipe sizes, and detention pond locations. The detention ponds were designed based on low points within basin areas and proximity to Okabena Creek. Ponds were also located in low lying, flood prone areas to discourage development in these locations.

Figure 14 – “Storm Sewer Industrial Park” shows the improvements that are needed for development within the Industrial Park area. Basin A3-B will transport the storm water runoff from the 27th Street area, including the proposed 20 Acre Site. Additional property will need to be purchased to create the detention pond, as designed, for Basin A3-B. Alternatives could be pursued; however they would likely require footage along a major street that could be better served with a business. Figure 14 also shows the proposed CR 12 Ditch relocation that will be discussed in more detail in the following section.

This is a planning level design based on ten foot USGS contours. Further detailed investigation will need to be conducted during final construction design to provide adequate facilities.

7.0 County Ditch 12 Relocation

County Ditch (CD) 12 runs under TH 59 immediately north of the proposed intersection of TH 59 and Street A. A recent hydraulic study of the ditch has determined that the existing box culvert located under TH 59 at this location is significantly undersized to handle the flows experienced during large rain events. The study recommended the construction of a 120” concrete culvert that would run alongside the existing 10’ box culvert.

The existing ditch generally runs in a north-south alignment behind the businesses located west of Prairie Drive and eventually meanders to a southwest to northeast skew in the vicinity of TH 59. The existing alignment will require that the existing concrete box culvert under TH 59 be extended for the construction of Street A at the intersection. The angle of the existing ditch, relative to TH 59 and Street A, requires that additional culvert be installed to provide the necessary roadway area near the intersection. Figure 15 - “Storm Sewer Culvert Options” shows the proposed improvements for extending the existing culvert and installing the additional parallel culvert. Based on this option, the existing 10’ box culvert under TH 59 would need to be extended an additional 190 feet for the construction of Street A. 380 feet of 120” concrete pipe culvert would also need to be installed parallel to the existing and new box culvert extension. As shown in Figure 15, the existing alignment of CD 12 does not provide adequate area to develop any commercial business south of Street A near TH 59. This area could be used as green space however this is potentially very costly real estate for the development of green space.

This alignment provides 10.2 acres of developable Commercial property north of Street A and west of TH 59, labeled Lot A in the Extend Existing Culvert drawing in Figure 15. It also provides 6.5 acres of Commercial property south of CD 12 and west of TH 59, labeled Lot B in Figure 15. Based on the configuration of the property east of Lot B, this lot does not possess access to Street A or TH 59. A second crossing of CD12 would be required to provide access to Street A. This crossing would be a costly endeavor, requiring a dual set of 10' box culverts at an additional cost of approximately \$150,000. A second option would be negotiating with adjacent property owners to purchase enough property to construct an access street from one of the existing TH 59 access points. Even if this street was created at an existing access, this option would not be viewed as favorable by Mn/DOT as this would create additional turning movements between the Street A intersection and the westbound I-90 ramps. The costs associated with providing access to this lot are not included in the cost estimate.

A second option would be to relocate the ditch channel to create perpendicular crossings of Street A and TH 59. This would require extensive earthwork and the removal of the existing box culvert under TH 59 but would reduce the total length of new culverts constructed by 250 feet and provide access to all of the lots adjacent to TH 59. Figure 15 shows the proposed ditch relocation in the drawing on the left. The ditch relocation would create Lot A, which would require access from 27th Street, across property that the City currently owns. Lot B and Lot C would provide nearly 12 acres of commercial property with access to either TH 59 or Street A.

The City has adopted the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program (NFIP) and is required to adopt by ordinance and enforce the floodplain management standards which regulate development and alterations in floodplain areas. The standards set forth by FEMA are the minimum requirements and state and local requirements may be more stringent.

FEMA's NFIP requires a Conditional Letter of Map Revision (CLOMR) to comment on whether proposed projects meet floodplain management standards. When any portion of a stream channel is altered or relocated, three forms are required for a CLOMR request including:

1. Overview & Concurrence Form
2. Riverine Hydrology & Hydraulics Form
3. Riverine Structures Form

As part of the forms, and CLOMR requests, the following submissions are also required:

1. A project narrative
2. Hydrologic/hydraulic computations and digital model files
3. Floodplain and floodway delineations on a certified topographic map

-
4. Annotated FEMA Flood Insurance Rate Map (FIRM) to show any changes
 5. Channel design criteria
 6. Engineering drawings of the channelization/accessory structures
 7. A sediment transport analysis

Construction of the project cannot begin until the CLOMR is accepted.

There are also documentation requirements during construction and once the construction is complete, an as-built survey must be completed. The as-built condition is then built into the modeling and documentation in order to determine that the conditions are consistent with the CLOMR. A LOMR request is then submitted to FEMA to reflect the new conditions.

This process can be lengthy and often delays construction. The process normally takes 6 months, and in many cases even longer, as a result of the multiple reviews and processes. Some form of this process will be required to develop the property along TH 59 or relocate the creek channel..

A Minnesota Department of Natural Resources Public Waters Work Permit (PWWP) is required for any work that is done below the Ordinary High Water Level (OHWL) of a Public Water. The PWWP will be required for any relocation of the creek.

8.0 Estimated Project Costs

Preliminary cost estimates for the proposed improvements were developed to assist the City in developing financial plans. Detailed estimates for the improvements included in Appendix A.

The estimated project costs for the Industrial Park improvements include:

Table 2 - Industrial Park Estimated Costs Summary

	Extend Existing TH 59 Culvert	Relocate CD 12
Sanitary Sewer System	\$1,336,000	\$1,336,000
Water Distribution Facilities	\$1,263,900	\$1,263,900
Storm Sewer System	\$3,636,400	\$3,636,400
Street Improvements	\$2,833,600	\$2,833,600
County Ditch 12	\$3,056,800	\$1,560,400
TH 59 at Street A Intersection	\$1,109,300	\$1,109,300
TH 59 at 27th Street Intersection	\$1,601,600	\$1,601,600
Total Estimated Project Cost	\$14,837,600	\$13,341,200

The estimated project costs for the remainder of the Master Plan Area include:

Table 3 - Remainder of Master Plan Area Estimated Costs Summary

	Sanitary Sewer Single Lift Station	Sanitary Sewer Dual Lift Stations
Sanitary Sewer System	\$3,600,600	\$3,775,600
Water Distribution Facilities	\$5,529,400	\$5,529,400
Storm Sewer System	\$9,438,600	\$9,438,600
Street Improvements	\$11,471,600	\$11,471,600
Total Estimated Project Cost	\$30,040,200	\$30,215,200

The estimated project costs for the entire Master Plan Area include:

Table 4 - Master Plan Area Estimated Costs Summary

	Extend Existing TH 59 Culvert	Relocate CD 12
Sanitary Sewer System Single Lift Station	\$4,936,600	\$4,936,600
Water Distribution Facilities	\$6,793,300	\$6,793,300
Storm Sewer System	\$13,075,000	\$13,075,000
Street Improvements	\$14,305,200	\$14,305,200
County Ditch 12	\$3,056,800	\$1,560,400
TH 59 at Street A Intersection	\$1,109,300	\$1,109,300
TH 59 at 27th Street Intersection	\$1,601,600	\$1,601,600
Total Estimated Project Cost	\$44,877,800	\$43,381,400

Based on the estimated project cost for the Master Plan area, the City would anticipate the following annual costs for developing the Master Plan area in the following time frames:

Table 5 - Estimated Annual Costs to Develop Master Plan Area

2008 Estimated Project Cost	Years to Develop Master Plan Area	Average Annual Inflation Rate	Estimated Annual Cost
\$43,381,400	25	2.5%	\$2,354,565
\$43,381,400	50	2.5%	\$1,529,544
\$43,381,400	75	2.5%	\$1,286,414
\$43,381,400	100	2.5%	\$1,184,828
\$43,381,400	25	3.5%	\$2,632,125
\$43,381,400	50	3.5%	\$1,849,510
\$43,381,400	75	3.5%	\$1,642,819
\$43,381,400	100	3.5%	\$1,568,640

These costs are strictly project related construction costs and do not include any considerations for land acquisition or debt interest on the financing.

9.0 Recommendations

It is recommended that the Master Corridor Study for the North Industrial/Commercial Park be used as the basis for future development of the Master Plan area. This report identifies proposed improvements necessary to develop the Master Plan area. The following steps are a list of recommendations for the City to pursue to continue the development process moving forward:

1. Construct utility and street improvements along 27th Street for the proposed 20 Acre Site.
2. Purchase land for the CD 12 Relocation and construction of detention ponds for sub-regions A3-B and A-5.
3. Obtain the 20' strip of land adjacent to TH 59 in the southwest corner of the intersection of TH 59 and 27th Street.
4. Begin necessary environmental assessment work for development of Master Plan Area.
5. Begin necessary floodplain revisions for development along TH 59 and ditch relocation.
6. Purchase remaining land necessary for the construction of the intersection of TH 59 and Street A.
7. Relocate Okabena Creek/County Ditch 12.
8. Extend utilities from Bioscience Industrial Park.
9. Construct intersection of TH 59 and Street A.
10. Construct remaining Industrial Park area improvements.
11. Construct remaining Master Plan area improvements.

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TABLE 6 - SANITARY SEWER STRUCTURE SCHEDULE (SINGLE LIFT STATION)
WORTHINGTON NORTH INDUSTRIAL/COMMERCIAL PARK
WORTHINGTON, MN
AWORTC0802.00
3/6/2008

Structure No.	Invert Elevation (ft)	Upstream Structure No.	Distance to Upstream Structure (ft)	Slope (%)	Elevation at Existing Grade (ft)	Depth of Manhole (ft)	Service Area into MH (AC)	Minimum Pipe Diameter Based on Flows (in)
100	1553	101	1340	1.04	1569	16	705	24
101	1567	102	310	0.97	1581	14		
102	1570	103	490	0.61	1584	14		
103	1573	104	910	0.15	1587	14	633	24
103	1573	133	870	0.40	1587	14		
104	1574	105	1320	0.45	1595	21	483	21
104	1574	112	620	0.15	1595	21		
104	1574	134	910	1.14	1595	21		
105	1580	106	1320	0.15	1602	22	420	18
105	1580	135	920	1.16	1602	22		
106	1582	107	630	0.15	1610	28		
106	1582	124	1100	0.79	1610	28		
106	1582	136	480	2.04	1610	28		
107	1583	108	700	0.15	1618	35	354	18
108	1584	109	600	1.31	1598	14		
108	1584	127	1100	0.40	1598	14		
108	1584	138	920	0.40	1598	14		
109	1592	110	1080	0.28	1610	18	278	15
110	1595	111	1140	0.60	1610	15		
110	1595	139	1200	0.40	1610	15		
111	1602	140	480	-2.50	1607	5		
112	1575	113	1130	0.15	1592	17	127	10
112	1575	121	1100	1.01	1592	17		
113	1577	114	1320	0.45	1588	11		
114	1583	115	1300	0.23	1596	13	56	8
114	1583	142	530	0.47	1596	13		
115	1586	116	1320	0.38	1601	15		
116	1591	117	1310	0.25	1607	16	34	8
117	1594	118	1480	0.22	1618	24		
117	1594	130	650	0.40	1618	24		
118	1597	119	610	0.41	1610	13		
118	1597	120	630	0.40	1610	13		
119	1600	-	-	-	1610	10		
120	1600	-	-	-	1610	10		
121	1586	122	610	1.08	1598	12		
122	1593	123	590	0.51	1607	14		
123	1596	-	-	-	1610	14		
124	1591	125	510	2.55	1605	14		
124	1591	126	590	0.85	1605	14		
125	1604	-	-	-	1618	14		
126	1596	-	-	-	1610	14		
127	1589	128	690	2.50	1600	11		
127	1589	129	620	3.11	1600	11		
128	1606	-	-	-	1620	14		
129	1608	-	-	-	1618	10		
130	1597	131	440	0.42	1607	10		
130	1597	132	580	1.58	1607	10		
131	1599	-	-	-	1610	11		
132	1606	-	-	-	1620	14		
133	1576	-	-	-	1588	12		
134	1585	-	-	-	1595	10		
135	1591	-	-	-	1605	14		
136	1592	137	720	0.40	1610	18		
137	1595	-	-	-	1605	10		
138	1588	-	-	-	1598	10		
139	1600	-	-	-	1610	10		
140	1590	141	330	3.03	1600	10	237	15
141	1600	-	-	-	1610	10		
142	1586	-	-	-	1598	13		
150	1560	151	700	0.29	1574	14		
151	1562	152	580	0.40	1574	12		
152	1564	153	1110	0.40	1579	15		
153	1569	-	-	-	1582	13		

TABLE 7 - SANITARY SEWER STRUCTURE SCHEDULE (DUAL LIFT STATIONS)
WORTHINGTON NORTH INDUSTRIAL/COMMERCIAL PARK
WORTHINGTON, MN
AWORTC0802.00
3/6/2008

Structure No.	Invert Elevation (ft)	Upstream Structure No.	Distance to Upstream Structure (ft)	Slope (%)	Elevation at Existing Grade (ft)	Depth of Manhole (ft)	Service Area into MH (AC)	Minimum Pipe Diameter Based on Flows (in)
100	1553	101	1340	1.04	1569	16	705	24
101	1567	102	310	0.97	1581	14		
102	1570	103	490	0.61	1584	14		
103	1573	104	910	0.15	1587	14	633	24
103	1573	133	870	0.40	1587	14		
104	1574	105	1320	1.08	1595	21	483	21
104	1574	112	620	0.15	1595	21		
104	1574	134	910	1.14	1595	21		
105	1589	106	1320	0.12	1602	13	420	18
105	1589	135	920	0.40	1602	13		
106	1590	107E	630	2.19	1610	20		
106	1590	124	1100	0.40	1610	20		
106	1590	136	480	0.40	1610	20		
107E	1604	108	700	-2.81	1618	14	354	18
107W	1604	-	700	-	1618	14		
108	1584	109	600	1.31	1598	14		
108	1584	127	1100	0.40	1598	14		
108	1584	138	920	0.40	1598	14		
108	1584	107W	700	2.81	1598	14		
109	1592	110	1080	0.28	1610	18	278	15
110	1595	111	1140	0.60	1610	15		
110	1595	139	1200	0.40	1610	15		
111	1602	140	480	-2.50	1607	5		
112	1575	113	1130	0.15	1592	17	127	10
112	1575	121	1100	1.01	1592	17		
113	1577	114	1320	0.45	1588	11		
114	1583	115	1300	0.23	1596	13	56	8
114	1583	142	530	0.47	1596	13		
115	1586	116	1320	0.38	1601	15		
116	1591	117	1310	0.25	1607	16	34	8
117	1594	118	1480	0.22	1618	24		
117	1594	130	650	0.40	1618	24		
118	1597	119	610	0.41	1610	13		
118	1597	120	630	0.40	1610	13		
119	1600	-	-	-	1610	10		
120	1600	-	-	-	1610	10		
121	1586	122	610	1.08	1598	12		
122	1593	123	590	0.51	1607	14		
123	1596	-	-	-	1610	14		
124	1595	125	510	1.84	1605	10		
124	1595	126	590	0.41	1605	10		
125	1604	-	-	-	1618	14		
126	1597	-	-	-	1610	13		
127	1589	128	690	2.50	1600	11		
127	1589	129	620	3.11	1600	11		
128	1606	-	-	-	1620	14		
129	1608	-	-	-	1618	10		
130	1597	131	440	0.42	1607	10		
130	1597	132	580	1.58	1607	10		
131	1599	-	-	-	1610	11		
132	1606	-	-	-	1620	14		
133	1576	-	-	-	1588	12		
134	1585	-	-	-	1595	10		
135	1592	-	-	-	1605	13		
136	1592	137	720	0.40	1610	18		
137	1595	-	-	-	1605	10		
138	1588	-	-	-	1598	10		
139	1600	-	-	-	1610	10		
140	1590	141	330	3.03	1600	10	237	15
141	1600	-	-	-	1610	10		
142	1586	-	-	-	1598	13		
150	1560	151	700	0.29	1574	14		
151	1562	152	580	0.40	1574	12		
152	1564	153	1110	0.40	1579	15		
153	1569	-	-	-	1582	13		

TABLE 8 - STORM SEWER STRUCTURE SCHEDULE
WORTHINGTON NORTH INDUSTRIAL/COMMERCIAL PARK
WORTHINGTON, MN
AWORTC0802.00
3/6/2008

Structure Number	Invert Elevation	Existing Grade Elevation	Depth from Invert to Existing Grade (ft)	Upstream Structure No.	Distance to Upstream Structure (ft)	Slope (%)	Pipe Size (in)
FES 100	1592.00	1592	0	100	176	0.2	72
100	1592.35	1610	18	101	400	0.2	72
101	1593.15	1610	17	102	400	0.2	72
102	1593.95	1611	17	103	400	0.2	72
103	1594.75	1612	17	104	400	0.2	72
104	1595.55	1614	18	105	212	0.2	72
105	1595.98	1618	22	106	186	0.2	72
105	1595.98	1618	22	110	294	0.2	60
106	1596.35	1618	22	107	400	0.2	54
107	1597.15	1617	20	108	400	0.2	54
108	1597.95	1611	13	109	400	0.2	54
109	1598.75	1608	9	-	-	-	-
110	1596.56	1610	13	111	348	0.2	60
111	1597.26	1608	11	112	400	0.2	60
112	1598.06	1617	19	113	400	0.2	48
113	1598.86	1614	15	114	400	0.2	48
114	1599.66	1604	4	115	400	0.2	48
115	1600.46	1605	5	-	-	-	-
FES 200	1593.00	1593	0	200	201	0.5	48
200	1594.01	1607	13	201	400	0.5	48
201	1596.01	1620	24	202	400	0.5	30
202	1598.01	1613	15	203	400	0.5	30
203	1600.01	1607	7	204	375	0.5	30
204	1601.88	1608	6	205	227	0.5	30
205	1603.02	1610	7	-	-	-	-
FES 300	1593.00	1593	0	300	366	0.2	48
300	1593.73	1596	2	301	351	0.2	48
301	1594.43	1598	4	302	400	0.2	42
301	1594.43	1598	4	303	202	0.2	42
302	1595.23	1605	10	-	-	-	-
303	1594.84	1599	4	304	202	0.2	42
304	1595.24	1608	13	-	-	-	-
FES 400	1582.00	1582	0	400	141	0.5	54
400	1582.71	1590	7	401	400	0.5	54
401	1584.71	1595	10	402	400	0.5	54
402	1586.71	1597	10	403	400	0.5	48
403	1588.71	1597	8	404	400	0.5	48
404	1590.71	1598	7	405	400	0.5	42
405	1592.71	1601	8	406	400	0.5	42
406	1594.71	1609	14	-	-	-	-
FES 500	1582.00	1582	0	500	285	0.5	54
500	1583.43	1591	8	501	245	0.5	54
501	1584.65	1593	8	502	400	0.5	54
502	1586.65	1595	8	503	400	0.5	54
503	1588.65	1597	8	504	391	0.5	54
504	1590.61	1600	9	505	421	0.5	54
505	1592.71	1600	7	506	400	0.5	48
506	1594.71	1603	8	507	400	0.5	48
507	1596.71	1609	12	508	400	0.5	42
508	1598.71	1607	8	509	400	0.5	42
509	1600.71	1613	12	-	-	-	-
FES 600	1593.00	1593	0	600	150	0.5	42
600	1593.75	1608	14	601	274	0.5	24
600	1593.75	1608	14	602	227	0.5	42
601	1595.12	1606	11	-	-	-	-
602	1594.89	1611	16	603	372	0.5	42
603	1596.75	1610	13	604	364	0.5	30
603	1596.75	1610	13	605	400	0.5	36
603	1596.75	1610	13	606	400	0.5	36
604	1598.57	1608	9	-	-	-	-
605	1598.75	1615	16	-	-	-	-
606	1598.75	1608	9	-	-	-	-
FES 700	1572.00	1572	0	700	374	0.5	54
700	1573.87	1580	6	701	350	0.5	54
701	1575.62	1583	7	702	398	0.5	54
702	1577.61	1586	8	703	275	0.5	48
703	1578.99	1588	9	704	400	0.5	48
704	1580.99	1592	11	705	400	0.5	48
705	1582.99	1594	11	706	400	0.5	48
706	1584.99	1596	11	707	400	0.5	48
707	1586.99	1599	12	708	400	0.5	48
708	1588.99	1602	13	709	400	0.5	48
709	1590.99	1604	13	-	-	-	-
FES 800	1559.00	1579	20	800	339	0.5	60
800	1560.70	1576	15	801	270	0.5	60
801	1562.05	1578	16	802	400	0.5	60
802	1564.05	1582	18	803	400	0.5	60
803	1566.05	1584	18	804	400	0.5	60
804	1568.05	1586	18	805	400	0.5	42
805	1570.05	1588	18	FES 801	189	4.74	42
FES 801	1579.00	1579	0	-	-	-	42
FES 900	1564.50	1564.5	0	900	133	0.5	36
900	1565.17	1576	11	901	399	0.5	36
901	1567.16	1572	5	-	-	-	-

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Figure 8 – Sanitary Sewer Master Plan Area (Single Lift Station)

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Figure 15 – Storm Sewer Culvert Options

Appendix A

Table 1 – Street Improvements Cost Estimate

Table 2 – TH 59 Improvements Cost Estimate

Table 3 – Sanitary Sewer Cost Estimate

Table 4 – Water Distribution System Cost Estimate

Table 5 – Stormwater Cost Estimate

Table 6 – Industrial Park Cost Estimate

Table 7 – Project Cost Estimate

Appendix A

Table 1 – Street Improvements Cost Estimate

Table 2 – TH 59 Improvements Cost Estimate

Table 3 – Sanitary Sewer Cost Estimate

Table 4 – Water Distribution System Cost Estimate

Table 5 – Stormwater Cost Estimate

Table 6 – Industrial Park Cost Estimate

Table 7 – Project Cost Estimate

TABLE 1 - STREET IMPROVEMENTS COST ESTIMATE
WORTHINGTON NORTH INDUSTRIAL/COMMERCIAL PARK
WORTHINGTON, MN
AWORTC0802.00
3/7/2008

MASTER PLAN AREA TOTALS						STREET CONSTRUCTION			
ITEM NUMBER	BID ITEM DESCRIPTION	UNIT	UNIT PRICE	TOTAL EST. QUANTITY	TOTAL COST	INDUSTRIAL PARK QUANTITY	INDUSTRIAL PARK COST	REMAINDER OF MASTER PLAN QUANTITY	REMAINDER OF MASTER PLAN COST
2021.501	MOBILIZATION	LS	\$420,000.00	1.0	\$420,000	1.0	\$83,200	1.0	\$336,800
2105.501	COMMON EXCAVATION	C Y	\$5.00	100361.0	\$501,805	20249.0	\$101,245	80112.0	\$400,560
2105.604	GEOTEXTILE FABRIC TYPE IV MODIFIED	S Y	\$2.50	310810.0	\$777,025	63699.0	\$159,248	247111.0	\$617,778
2112.501	SUBGRADE PREPARATION	RDST	\$100.00	306.0	\$30,600	60.0	\$6,000	246.0	\$24,600
2123.610	STREET SWEEPER W/PICK-UP BROOM	HOURL	\$150.00	225.0	\$33,750	45.0	\$6,750	180.0	\$27,000
2130.501	WATER	MGAL	\$25.00	1224.0	\$30,600	240.0	\$6,000	984.0	\$24,600
2211.501	AGGREGATE BASE CLASS 5	TON	\$25.00	52506.0	\$1,312,650	10574.0	\$264,350	41932.0	\$1,048,300
2211.609	OPEN GRADED AGGREGATE BASE	TON	\$48.00	19093.0	\$916,464	3845.0	\$184,560	15248.0	\$731,904
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL	\$2.00	7565.0	\$15,130	1524.0	\$3,048	6041.0	\$12,082
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (C)	TON	\$65.00	24964.0	\$1,622,660	5028.0	\$326,820	19936.0	\$1,295,840
2360.502	TYPE SP 12.5 NON WEARING COURSE MIXTURE (C)	TON	\$65.00	24964.0	\$1,622,660	5028.0	\$326,820	19936.0	\$1,295,840
2502.541	4" PERF PVC PIPE DRAIN	L F	\$4.00	61638.0	\$246,552	12405.0	\$49,620	49233.0	\$196,932
2531.501	CONCRETE CURB & GUTTER DESIGN B624	L F	\$14.00	61638.0	\$862,932	12405.0	\$173,670	49233.0	\$689,262
2563.601	TRAFFIC CONTROL	LS	\$168,000.00	1.0	\$168,000	1.0	\$33,300	1.0	\$134,700
2573.502	SILT FENCE, TYPE MACHINE SLICED	L F	\$3.00	31313.0	\$93,939	6293.0	\$18,879	25020.0	\$75,060
2575.571	RAPID STABILIZATION METHOD 3 MODIFIED	ACRE	\$5,000.00	61.4	\$307,000	6.4	\$32,000	55.0	\$275,000
2575.601	EROSION CONTROL	LS	\$168,000.00	1.0	\$168,000	1.0	\$33,300	1.0	\$134,700
2582.501	PAVEMENT MESSAGE (LT ARROW) EPOXY	EACH	\$120.00	38.0	\$4,560	10.0	\$1,200	28.0	\$3,360
2582.501	PAVEMENT MESSAGE (RT ARROW) EPOXY	EACH	\$120.00	28.0	\$3,360	2.0	\$240	26.0	\$3,120
2582.501	PAVEMENT MESSAGE (THRU ARROW) EPOXY	EACH	\$120.00	16.0	\$1,920	2.0	\$240	14.0	\$1,680
2582.502	4" SOLID LINE WHITE-EPOXY	L F	\$0.20	61386.0	\$12,277	12106.0	\$2,421	49280.0	\$9,856
2582.502	24" STOP LINE WHITE-EPOXY	L F	\$10.00	336.0	\$3,360	56.0	\$560	280.0	\$2,800
SUBTOTAL					\$9,155,300		\$1,813,500		\$7,341,800
25% CONTINGENCY					\$2,288,800		\$453,400		\$1,835,500
TOTAL ESTIMATED CONSTRUCTION COST					\$11,444,100		\$2,266,900		\$9,177,300
25% INDIRECT COSTS (ENGINEERING, LEGAL, ADMIN)					\$2,861,000		\$566,700		\$2,294,300
TOTAL ESTIMATED PROJECT COST					\$14,305,100		\$2,833,600		\$11,471,600

TABLE 2 - TH 59 IMPROVEMENTS COST ESTIMATE
WORTHINGTON NORTH INDUSTRIAL/COMMERCIAL PARK
WORTHINGTON, MN
AWORTC0802.00
3/7/2008

MASTER PLAN AREA TOTALS						TRUNK HIGHWAY 59			
ITEM NUMBER	BID ITEM DESCRIPTION	UNIT	UNIT PRICE	TOTAL EST. QUANTITY	TOTAL COST	INTERSECTION IMPROVEMENTS AT TH 59 AND BIOSCIENCE DRIVE QUANTITIES	INTERSECTION IMPROVEMENTS AT TH 59 AND BIOSCIENCE DRIVE COST	INTERSECTION IMPROVEMENTS AT TH 59 AND 27TH STREET QUANTITIES	INTERSECTION IMPROVEMENTS AT TH 59 AND 27TH STREET COST
2021.501	MOBILIZATION	LS	\$77,500.00	1.0	\$77,500	1.0	\$31,700	1.0	\$45,800
2105.501	COMMON EXCAVATION	C Y	\$5.00	16698.0	\$83,490	7598.0	\$37,990	9100.0	\$45,500
2105.521	GRANULAR BORROW (CV)	C Y	\$6.00	18308.0	\$109,848	7727.0	\$46,362	10581.0	\$63,486
2105.523	COMMON BORROW (CV)	C Y	\$4.00	13797.0	\$55,188	5396.0	\$21,584	8401.0	\$33,604
2105.525	TOPSOIL BORROW (CV)	C Y	\$21.00	1812.0	\$38,052	676.0	\$14,196	1136.0	\$23,856
2105.604	GEOTEXTILE FABRIC TYPE IV MODIFIED	S Y	\$2.50	11525.0	\$28,813	4983.0	\$12,458	6542.0	\$16,355
2112.501	SUBGRADE PREPARATION	RDST	\$100.00	44.0	\$4,400	17.0	\$1,700	27.0	\$2,700
2123.610	STREET SWEEPER W/PICK-UP BROOM	HOURL	\$150.00	37.0	\$5,550	17.0	\$2,550	20.0	\$3,000
2130.501	WATER	MGAL	\$25.00	25.0	\$625	11.0	\$275	14.0	\$350
2211.501	AGGREGATE BASE CLASS 5	TON	\$25.00	13703.0	\$342,575	5700.0	\$142,500	8003.0	\$200,075
2211.609	OPEN GRADED AGGREGATE BASE	TON	\$48.00	1490.0	\$71,520	788.0	\$37,824	702.0	\$33,696
2301.502	CONCRETE PAVEMENT STANDARD WIDTH 8.0"	S Y	\$13.00	21534.0	\$279,942	9498.0	\$123,474	12036.0	\$156,468
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL	\$2.00	553.0	\$1,106	216.0	\$432	337.0	\$674
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (C)	TON	\$65.00	1772.0	\$115,180	642.0	\$41,730	1130.0	\$73,450
2360.502	TYPE SP 12.5 NON WEARING COURSE MIXTURE (C)	TON	\$65.00	1772.0	\$115,180	642.0	\$41,730	1130.0	\$73,450
2502.541	4" PERF PVC PIPE DRAIN	L F	\$4.00	3756.0	\$15,024	1852.0	\$7,408	1904.0	\$7,616
2504.602	RELOCATE HYDRANT & VALVE	EACH	\$3,000.00	2.0	\$6,000	2.0	\$6,000	0.0	\$0
2531.501	CONCRETE CURB & GUTTER DESIGN B618	L F	\$12.00	3579.0	\$42,948	1296.0	\$15,552	2283.0	\$27,396
2531.501	CONCRETE CURB & GUTTER DESIGN B624	L F	\$14.00	5898.0	\$82,572	2086.0	\$29,204	3812.0	\$53,368
2531.503	CONCRETE MEDIAN	S Y	\$45.00	2218.0	\$99,810	668.0	\$30,060	1550.0	\$69,750
2563.601	TRAFFIC CONTROL	LS	\$77,500.00	1.0	\$77,500	1.0	\$31,700	1.0	\$45,800
2573.502	SILT FENCE, TYPE MACHINE SLICED	L F	\$3.00	9521.0	\$28,563	3761.0	\$11,283	5760.0	\$17,280
2530.530	INLET PROTECTION	EACH	\$200.00	0.0	\$0	0.0	\$0	0.0	\$0
2575.523	EROSION CONTROL BLANKETS CATEGORY 1	S Y	\$2.50	0.0	\$0	0.0	\$0	0.0	\$0
2575.571	RAPID STABILIZATION METHOD 3 MODIFIED	ACRE	\$5,000.00	2.2	\$11,000	0.8	\$4,000	1.4	\$7,000
2575.601	EROSION CONTROL	LS	\$31,000.00	1.0	\$31,000	1.0	\$12,700	1.0	\$18,300
2582.501	PAVEMENT MESSAGE (LT ARROW) EPOXY	EACH	\$120.00	16.0	\$1,920	8.0	\$960	8.0	\$960
2582.501	PAVEMENT MESSAGE (RT ARROW) EPOXY	EACH	\$120.00	16.0	\$1,920	8.0	\$960	8.0	\$960
2582.501	PAVEMENT MESSAGE (THRU ARROW) EPOXY	EACH	\$120.00	8.0	\$960	4.0	\$480	4.0	\$480
2582.502	4" SOLID LINE WHITE-EPOXY	L F	\$0.20	16620.0	\$3,324	6730.0	\$1,346	9890.0	\$1,978
2582.502	24" STOP LINE WHITE-EPOXY	L F	\$10.00	192.0	\$1,920	96.0	\$960	96.0	\$960
2582.502	24" SOLID LINE YELLOW-EPOXY	L F	\$10.00	116.0	\$1,160	60.0	\$600	56.0	\$560
2582.502	4" DOUBLE SOLID LINE YELLOW-EPOXY	L F	\$0.40	656.0	\$262	356.0	\$142	300.0	\$120
SUBTOTAL					\$1,734,900		\$709,900		\$1,025,000
25% CONTINGENCY					\$433,700		\$177,500		\$256,300
TOTAL ESTIMATED CONSTRUCTION COST					\$2,168,600		\$887,400		\$1,281,300
25% INDIRECT COSTS (ENGINEERING, LEGAL, ADMIN)					\$542,200		\$221,900		\$320,300
TOTAL ESTIMATED PROJECT COST					\$2,710,800		\$1,109,300		\$1,601,600

TABLE 3 - SANITARY SEWER COST ESTIMATE
WORTHINGTON NORTH INDUSTRIAL/COMMERCIAL PARK
WORTHINGTON, MN
AWORTC0802.00
3/7/2008

				SANITARY SEWER - OPTION #1 (GRAVITY)						SANITARY SEWER - OPTION #2 (LIFT STATION)					
ITEM NUMBER	BID ITEM DESCRIPTION	UNIT	UNIT PRICE	TOTAL EST. QUANTITY	PROJECT TOTAL COST	INDUSTRIAL PARK QUANTITY	INDUSTRIAL PARK COST	REMAINDER OF MASTER PLAN QUANTITY	REMAINDER OF MASTER PLAN COST	TOTAL EST. QUANTITY	PROJECT TOTAL COST	INDUSTRIAL PARK QUANTITY	INDUSTRIAL PARK COST	REMAINDER OF MASTER PLAN QUANTITY	REMAINDER OF MASTER PLAN COST
2021.501	MOBILIZATION	LS		1.0	\$144,900	1.0	\$39,200	1.0	\$105,700	1.0	\$150,000	1.0	\$39,200	1.0	\$110,800
2451.507	GRANULAR BEDDING (CV)	TON	\$22.00	3286.0	\$72,292	1278.0	\$28,116	2008.0	\$44,176	3198.0	\$70,356	1278.0	\$28,116	1920.0	\$42,240
2503.511	8" PVC PIPE SEWER, 11' - 15' DEPTH	L F	\$36.00	11045.0	\$397,620	1993.0	\$71,748	9052.0	\$325,872	11940.0	\$429,840	1993.0	\$71,748	9947.0	\$358,092
2503.511	8" PVC PIPE SEWER, 16' - 20' DEPTH	L F	\$38.00	2265.0	\$86,070	303.0	\$11,514	1962.0	\$74,556	2860.0	\$108,680	303.0	\$11,514	2557.0	\$97,166
2503.511	8" PVC PIPE SEWER, 21' - 25' DEPTH	L F	\$40.00	955.0	\$38,200	303.0	\$12,120	652.0	\$26,080	520.0	\$20,800	303.0	\$12,120	217.0	\$8,680
2503.511	8" PVC PIPE SEWER, 26' - 30' DEPTH	L F	\$42.00	435.0	\$18,270	0.0	\$0	435.0	\$18,270	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	10" PVC PIPE SEWER, 11' - 15' DEPTH	L F	\$40.00	700.0	\$28,000	700.0	\$28,000	0.0	\$0	700.0	\$28,000	700.0	\$28,000	0.0	\$0
2503.511	12" PVC PIPE SEWER, 11' - 15' DEPTH	L F	\$47.00	4384.0	\$206,048	0.0	\$0	4384.0	\$206,048	4384.0	\$206,048	0.0	\$0	4384.0	\$206,048
2503.511	12" PVC PIPE SEWER, 16' - 20' DEPTH	L F	\$49.00	1809.0	\$88,641	0.0	\$0	1809.0	\$88,641	1809.0	\$88,641	0.0	\$0	1809.0	\$88,641
2503.511	12" PVC PIPE SEWER, 21' -25' DEPTH	L F	\$51.00	1149.0	\$58,599	0.0	\$0	1149.0	\$58,599	1149.0	\$58,599	0.0	\$0	1149.0	\$58,599
2503.511	15" PVC PIPE SEWER, 0' - 10' DEPTH	L F	\$47.00	1123.0	\$52,781	565.0	\$26,555	558.0	\$26,226	1123.0	\$52,781	565.0	\$26,555	558.0	\$26,226
2503.511	15" PVC PIPE SEWER, 11' - 15' DEPTH	L F	\$50.00	793.0	\$39,650	565.0	\$28,250	228.0	\$11,400	793.0	\$39,650	565.0	\$28,250	228.0	\$11,400
2503.511	15" PVC PIPE SEWER, 16' - 20' DEPTH	L F	\$53.00	2411.0	\$127,783	875.0	\$46,375	1536.0	\$81,408	2411.0	\$127,783	875.0	\$46,375	1536.0	\$81,408
2503.511	15" PVC PIPE SEWER, 21' -25' DEPTH	L F	\$56.00	538.0	\$30,128	310.0	\$17,360	228.0	\$12,768	538.0	\$30,128	310.0	\$17,360	228.0	\$12,768
2503.511	18" PVC PIPE SEWER, 11' - 15' DEPTH	L F	\$58.00	300.0	\$17,400	0.0	\$0	300.0	\$17,400	300.0	\$17,400	0.0	\$0	300.0	\$17,400
2503.511	18" PVC PIPE SEWER, 16' - 20' DEPTH	L F	\$62.00	475.0	\$29,450	0.0	\$0	475.0	\$29,450	300.0	\$18,600	0.0	\$0	300.0	\$18,600
2503.511	18" PVC PIPE SEWER, 21' -25' DEPTH	L F	\$66.00	175.0	\$11,550	0.0	\$0	175.0	\$11,550	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	18" PVC PIPE SEWER, 26' -30' DEPTH	L F	\$75.00	175.0	\$13,125	0.0	\$0	175.0	\$13,125	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	18" PVC PIPE SEWER, 31' -35' DEPTH	L F	\$98.00	175.0	\$17,150	0.0	\$0	175.0	\$17,150	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	21" PVC PIPE SEWER, 11' -15' DEPTH	L F	\$61.00	0.0	\$0	0.0	\$0	0.0	\$0	1415.0	\$86,315	0.0	\$0	1415.0	\$86,315
2503.511	21" PVC PIPE SEWER, 16' -20' DEPTH	L F	\$69.00	0.0	\$0	0.0	\$0	0.0	\$0	1415.0	\$97,635	0.0	\$0	1415.0	\$97,635
2503.511	21" PVC PIPE SEWER, 21' -25' DEPTH	L F	\$71.00	1980.0	\$140,580	0.0	\$0	1980.0	\$140,580	440.0	\$31,240	0.0	\$0	440.0	\$31,240
2503.511	21" PVC PIPE SEWER, 26' -30' DEPTH	L F	\$75.00	975.0	\$73,125	0.0	\$0	975.0	\$73,125	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	21" PVC PIPE SEWER, 31' -35' DEPTH	L F	\$85.00	315.0	\$26,775	0.0	\$0	315.0	\$26,775	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	24" PVC PIPE SEWER, 11' - 15' DEPTH	L F	\$88.00	1773.0	\$156,024	1773.0	\$156,024	0.0	\$0	1773.0	\$156,024	1773.0	\$156,024	0.0	\$0
2503.511	24" PVC PIPE SEWER, 16' - 20' DEPTH	L F	\$92.00	973.0	\$89,516	973.0	\$89,516	0.0	\$0	973.0	\$89,516	973.0	\$89,516	0.0	\$0
2503.511	24" PVC PIPE SEWER, 21' -25' DEPTH	L F	\$96.00	303.0	\$29,088	303.0	\$29,088	0.0	\$0	303.0	\$29,088	303.0	\$29,088	0.0	\$0
2503.602	6" SANITARY SEWER SERVICE	LF	\$28.00	10440.0	\$292,320	2430.0	\$68,040	8010.0	\$224,280	10440.0	\$292,320	2430.0	\$68,040	8010.0	\$224,280
2503.602	LIFT STATION	EACH	\$150,000.00	1.0	\$150,000	0.0	\$0	1.0	\$150,000	2.0	\$300,000	0.0	\$0	2.0	\$300,000
2503.602	CONNECT TO EXISTING SANITARY SEWER	EACH	\$750.00	2.0	\$1,500	2.0	\$1,500	0.0	\$0	2.0	\$1,500	2.0	\$1,500	0.0	\$0
2503.603	6" PVC FORCE MAIN	L F	\$22.00	480.0	\$10,560	0.0	\$0	480.0	\$10,560	1100.0	\$24,200	0.0	\$0	1100.0	\$24,200
2504.603	16" STEEL CASING PIPE (JACKED)	L F	\$300.00	100.0	\$30,000	0.0	\$0	100.0	\$30,000	100.0	\$30,000	0.0	\$0	100.0	\$30,000
2506.516	CASTING ASSEMBLY	EACH	\$650.00	116.0	\$75,400	27.0	\$17,550	89.0	\$57,850	116.0	\$75,400	27.0	\$17,550	89.0	\$57,850
2506.521	INSTALL CASTING	EACH	\$200.00	116.0	\$23,200	27.0	\$5,400	89.0	\$17,800	116.0	\$23,200	27.0	\$5,400	89.0	\$17,800
2506.602	CONSTRUCT SANITARY SEWER MH	EACH	\$3,600.00	116.0	\$417,600	27.0	\$97,200	89.0	\$320,400	116.0	\$417,600	27.0	\$97,200	89.0	\$320,400
2563.601	TRAFFIC CONTROL	LS		1.0	\$58,000	0.0	\$15,700	0.0	\$42,300	0.0	\$60,000	0.0	\$15,700	0.0	\$44,300
2575.601	EROSION CONTROL	LS		1.0	\$58,000	1.0	\$15,700	1.0	\$42,300	1.0	\$60,000	1.0	\$15,700	1.0	\$44,300
SUBTOTAL					\$3,159,400		\$855,000		\$2,304,400		\$3,271,400		\$855,000		\$2,416,400
25% CONTINGENCY					\$789,900		\$213,800		\$576,100		\$817,900		\$213,800		\$604,100
TOTAL ESTIMATED CONSTRUCTION COST					\$3,949,300		\$1,068,800		\$2,880,500		\$4,089,300		\$1,068,800		\$3,020,500
25% INDIRECT COSTS (ENGINEERING, LEGAL, ADMIN)					\$987,300		\$267,200		\$720,100		\$1,022,300		\$267,200		\$755,100
TOTAL ESTIMATED PROJECT COST					\$4,936,600		\$1,336,000		\$3,600,600		\$5,111,600		\$1,336,000		\$3,775,600

TABLE 4 - WATER DISTRIBUTION SYSTEM COST ESTIMATE
WORTHINGTON NORTH INDUSTRIAL/COMMERCIAL PARK
WORTHINGTON, MN
AWORTC0802.00
3/7/2008

MASTER PLAN AREA TOTALS						WATER DISTRIBUTION FACILITIES			
ITEM NUMBER	BID ITEM DESCRIPTION	UNIT	UNIT PRICE	TOTAL EST. QUANTITY	TOTAL COST	INDUSTRIAL PARK QUANTITY	INDUSTRIAL PARK COST	REMAINDER OF MASTER PLAN QUANTITY	REMAINDER OF MASTER PLAN COST
2021.501	MOBILIZATION	LS	\$199,400.00	1.0	\$199,400	1.0	\$37,100	1.0	\$162,300
2451.507	GRANULAR BEDDING (CV)	TON	\$22.00	22539.0	\$495,858	3863.0	\$84,986	18676.0	\$410,872
2504.602	CONNECT TO EXISTING WATER MAIN	EACH	\$2,000.00	5.0	\$10,000	3.0	\$6,000	2.0	\$4,000
2504.602	INSTALL HYDRANT & VALVE	EACH	\$2,400.00	209.0	\$501,600	38.0	\$91,200	171.0	\$410,400
2504.602	BOX)	EACH	\$2,500.00	116.0	\$290,000	27.0	\$67,500	89.0	\$222,500
2504.603	6" PVC WATERMAIN	L F	\$35.00	11077.0	\$387,695	2014.0	\$70,490	9063.0	\$317,205
2504.603	8" PVC WATERMAIN	L F	\$40.00	12535.0	\$501,400	3360.0	\$134,400	9175.0	\$367,000
2504.603	12" PVC WATERMAIN	L F	\$42.00	28650.0	\$1,203,300	6135.0	\$257,670	22515.0	\$945,630
2504.603	14" PVC WATERMAIN	L F	\$48.00	6280.0	\$301,440	0.0	\$0	6280.0	\$301,440
2504.603	16" PVC WATERMAIN	L F	\$58.00	4615.0	\$267,670	0.0	\$0	4615.0	\$267,670
2504.603	16" STEEL CASING PIPE (JACKED)	L F	\$300.00	100.0	\$30,000	100.0	\$30,000	0.0	\$0
2563.601	TRAFFIC CONTROL	LS	\$79,700.00	1.0	\$79,700	1.0	\$14,800	1.0	\$64,900
2575.601	EROSION CONTROL	LS	\$79,700.00	1.0	\$79,700	1.0	\$14,800	1.0	\$64,900
SUBTOTAL							\$808,900		\$3,538,800
25% CONTINGENCY							\$202,200		\$884,700
TOTAL ESTIMATED CONSTRUCTION COST							\$1,011,100		\$4,423,500
25% INDIRECT COSTS (ENGINEERING, LEGAL, ADMIN)							\$252,800		\$1,105,900
TOTAL ESTIMATED PROJECT COST							\$1,263,900		\$5,529,400

TABLE 5 - STORM WATER COST ESTIMATE
WORTHINGTON NORTH INDUSTRIAL/COMMERCIAL PARK
WORTHINGTON, MN
AWORTC0802.00
3/7/2008

MASTER PLAN AREA TOTALS						STORM WATER MANAGEMENT							
ITEM NUMBER	BID ITEM DESCRIPTION	UNIT	UNIT PRICE	TOTAL EST. QUANTITY	TOTAL COST	INDUSTRIAL PARK QUANTITY	INDUSTRIAL PARK COST	REMAINDER OF MASTER PLAN QUANTITY	REMAINDER OF MASTER PLAN COST	CULVERT ADDITION AND EXTENSION AT TH 59 QUANTITIES	CULVERT ADDITION AND EXTENSION AT TH 59 COST	DITCH RELOCATION AT TH 59 QUANTITIES	DITCH RELOCATION AT TH 59 COST
2021.501	MOBILIZATION	LS	\$376,900.00	1.0	\$376,900	1.0	\$104,800	1.0	\$272,100	1.0	\$85,100	1.0	\$42,300
2104.501	REMOVE CONCRETE CULVERT	LS	\$0.00	1.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	1.0	\$25,000
2105.501	COMMON EXCAVATION	C Y	\$5.00	248400.0	\$1,242,000	82300.0	\$411,500	166100.0	\$830,500	0.0	\$0	37000.0	\$185,000
2105.523	COMMON BORROW (CV)	C Y	\$4.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	37000.0	\$148,000
2412.511	10 X 10 PRECAST CONCRETE BOX CULVERT	LF	\$1,000.00	0.0	\$0	0.0	\$0	0.0	\$0	190.0	\$190,000	320.0	\$320,000
2412.512	10 X 10 PRECAST CONCRETE BOX CULVERT END SECT.	EACH	\$12,000.00	0.0	\$0	0.0	\$0	0.0	\$0	4.0	\$48,000	8.0	\$96,000
2451.507	GRANULAR BEDDING (CV)	TON	\$22.00	18937.0	\$416,614	4972.0	\$109,384	13965.0	\$307,230	0.0	\$0	0.0	\$0
2501.511	12" RC PIPE CULVERT	L F	\$48.00	5284.0	\$253,632	1176.0	\$56,448	4108.0	\$197,184	0.0	\$0	0.0	\$0
2501.511	15" RC PIPE CULVERT	L F	\$48.00	5340.0	\$256,320	1980.0	\$95,040	3360.0	\$161,280	0.0	\$0	0.0	\$0
2501.511	24" RC PIPE CULVERT	L F	\$52.00	274.0	\$14,248	0.0	\$0	274.0	\$14,248	0.0	\$0	0.0	\$0
2501.511	30" RC PIPE CULVERT	L F	\$75.00	1766.0	\$132,450	0.0	\$0	1766.0	\$132,450	0.0	\$0	0.0	\$0
2501.511	36" RC PIPE CULVERT	L F	\$85.00	1332.0	\$113,220	533.0	\$45,305	799.0	\$67,915	0.0	\$0	0.0	\$0
2501.511	42" RC PIPE CULVERT	L F	\$120.00	3742.0	\$449,040	0.0	\$0	3742.0	\$449,040	0.0	\$0	0.0	\$0
2501.511	48" RC PIPE CULVERT	L F	\$160.00	6793.0	\$1,086,880	589.0	\$94,240	6204.0	\$992,640	0.0	\$0	0.0	\$0
2501.511	54" RC PIPE CULVERT	L F	\$200.00	5405.0	\$1,081,000	2842.0	\$568,400	2563.0	\$512,600	0.0	\$0	0.0	\$0
2501.511	60" RC PIPE CULVERT	L F	\$240.00	2851.0	\$684,240	1809.0	\$434,160	1042.0	\$250,080	0.0	\$0	0.0	\$0
2501.511	72" RC PIPE CULVERT	L F	\$310.00	2174.0	\$673,940	0.0	\$0	2174.0	\$673,940	0.0	\$0	0.0	\$0
2501.511	120" RC PIPE CULVERT	L F	\$850.00	0.0	\$0	0.0	\$0	0.0	\$0	380.0	\$323,000	0.0	\$0
2501.515	36" RC PIPE APRON	EACH	\$1,200.00	1.0	\$1,200	1.0	\$1,200	0.0	\$0	0.0	\$0	0.0	\$0
2501.515	42" RC PIPE APRON	EACH	\$1,875.00	2.0	\$3,750	0.0	\$0	2.0	\$3,750	0.0	\$0	0.0	\$0
2501.515	48" RC PIPE APRON	EACH	\$1,975.00	2.0	\$3,950	0.0	\$0	2.0	\$3,950	0.0	\$0	0.0	\$0
2501.515	54" RC PIPE APRON	EACH	\$2,000.00	3.0	\$6,000	1.0	\$2,000	2.0	\$4,000	200.0	\$400,000	0.0	\$0
2501.515	60" RC PIPE APRON	EACH	\$2,200.00	1.0	\$2,200	1.0	\$2,200	0.0	\$0	0.0	\$0	0.0	\$0
2501.515	72" RC PIPE APRON	EACH	\$2,400.00	1.0	\$2,400	0.0	\$0	1.0	\$2,400	300.0	\$720,000	0.0	\$0
2501.515	120" RC PIPE APRON	EACH	\$10,000.00	0.0	\$0	0.0	\$0	0.0	\$0	2.0	\$20,000	0.0	\$0
2506.601	CONSTRUCT DRAINAGE STRUCTURE SPEC - SKIMMER	EACH	\$4,000.00	8.0	\$32,000	3.0	\$12,000	5.0	\$20,000	0.0	\$0	0.0	\$0
2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN 2' X 3'	EACH	\$1,500.00	216.0	\$324,000	48.0	\$72,000	168.0	\$252,000	0.0	\$0	0.0	\$0
2506.502	CONSTRUCT STORM MH DESIGN 48-4020	EACH	\$3,500.00	69.0	\$241,500	17.0	\$59,500	52.0	\$182,000	0.0	\$0	0.0	\$0
2506.516	CASTING ASSEMBLY	EACH	\$650.00	285.0	\$185,250	65.0	\$42,250	220.0	\$143,000	0.0	\$0	0.0	\$0
2506.521	INSTALL CASTING	EACH	\$200.00	285.0	\$57,000	65.0	\$13,000	220.0	\$44,000	0.0	\$0	0.0	\$0
2506.602	CONSTRUCT SANITARY SEWER MH	EACH	\$3,600.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2511.501	RANDOM RIPRAP CLASS III	C Y	\$55.00	345.0	\$18,975	114.0	\$6,270	231.0	\$12,705	0.0	\$0	0.0	\$0
2511.515	GEOTEXTILE FILTER TYPE IV	S Y	\$2.50	833.0	\$2,083	280.0	\$700	553.0	\$1,383	0.0	\$0	0.0	\$0
2563.601	TRAFFIC CONTROL	LS	\$75,400.00	1.0	\$75,400	1.0	\$21,000	1.0	\$54,400	1.0	\$85,100	1.0	\$42,300
2573.502	SILT FENCE, TYPE MACHINE SLICED	L F	\$3.00	20650.0	\$61,950	6550.0	\$19,650	14100.0	\$42,300	0.0	\$0	3400.0	\$10,200
2530.530	INLET PROTECTION	EACH	\$200.00	285.0	\$57,000	65.0	\$13,000	220.0	\$44,000	0.0	\$0	0.0	\$0
2575.523	EROSION CONTROL BLANKETS CATEGORY 1	S Y	\$2.50	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	17000.0	\$42,500
2575.571	RAPID STABILIZATION METHOD 3 MODIFIED	ACRE	\$5,000.00	27.2	\$136,000	7.7	\$38,500	19.5	\$97,500	0.0	\$0	9.0	\$45,000
2575.601	EROSION CONTROL	LS	\$376,900.00	1.0	\$376,900	1.0	\$104,800	1.0	\$272,100	1.0	\$85,100	1.0	\$42,300
SUBTOTAL					\$8,368,000			\$2,327,300	\$6,040,700			\$1,956,300	\$998,600
25% CONTINGENCY					\$2,092,000			\$581,800	\$1,510,200			\$489,100	\$249,700
TOTAL ESTIMATED CONSTRUCTION COST					\$10,460,000			\$2,909,100	\$7,550,900			\$2,445,400	\$1,248,300
25% INDIRECT COSTS (ENGINEERING, LEGAL, ADMIN)					\$2,615,000			\$727,300	\$1,887,700			\$611,400	\$312,100
TOTAL ESTIMATED PROJECT COST					\$13,075,000			\$3,636,400	\$9,438,600			\$3,056,800	\$1,560,400

TABLE 6 - INDUSTRIAL PARK COST ESTIMATE
WORTHINGTON NORTH INDUSTRIAL/COMMERCIAL PARK
WORTHINGTON, MN
AWORTC0802.00
3/7/2008

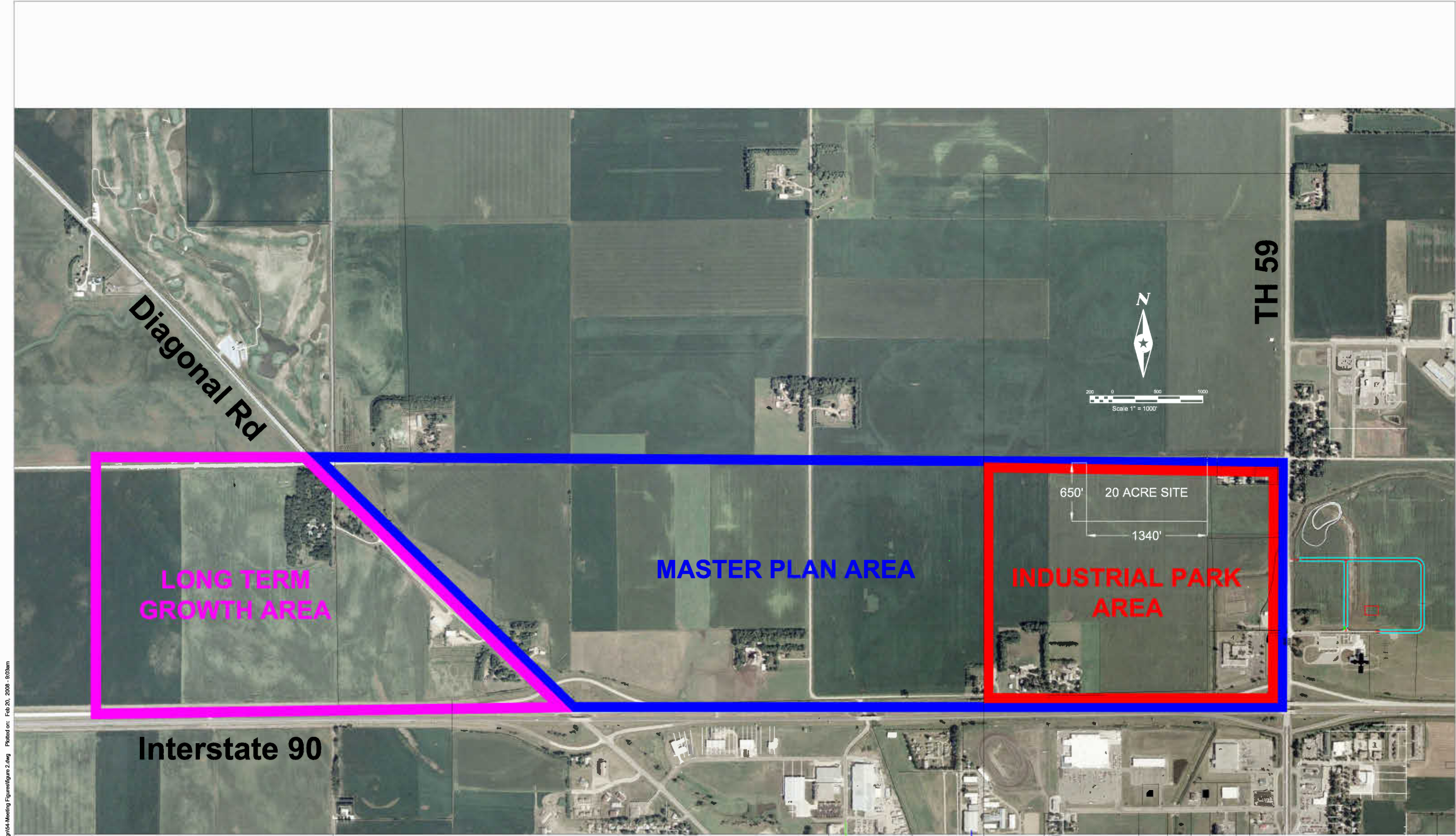
INDUSTRIAL PARK AREA TOTALS						SANITARY SEWER		STORM WATER MANAGEMENT				WATER DISTRIBUTION FACILITIES		STREET IMPROVEMENTS		TRUNK HIGHWAY 59			
ITEM NUMBER	BID ITEM DESCRIPTION	UNIT	UNIT PRICE	TOTAL EST. QUANTITY	TOTAL COST	INDUSTRIAL PARK QUANTITY	INDUSTRIAL PARK COST	INDUSTRIAL PARK QUANTITY	INDUSTRIAL PARK COST	DITCH RELOCATION AT TH 59 QUANTITIES	DITCH RELOCATION AT TH 59 COST	INDUSTRIAL PARK QUANTITY	INDUSTRIAL PARK COST	INDUSTRIAL PARK QUANTITY	INDUSTRIAL PARK COST	INTERSECTION IMPROVEMENTS AT TH 59 AND BIOSCIENCE DRIVE QUANTITIES	INTERSECTION IMPROVEMENTS AT TH 59 AND BIOSCIENCE DRIVE COST	INTERSECTION IMPROVEMENTS AT TH 59 AND 27TH STREET QUANTITIES	INTERSECTION IMPROVEMENTS AT TH 59 AND 27TH STREET COST
2021.501	MOBILIZATION	LS	\$384,100.00	1.0	\$384,100	1.0	\$38,200	1.0	\$104,800	1.0	\$42,300	1.0	\$37,100	1.0	\$83,200	1.0	\$31,700	1.0	\$45,800
2104.501	REMOVE CONCRETE CULVERT	LS	\$25,000.00	1.0	\$25,000	0.0	\$0	0.0	\$0	1.0	\$25,000	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2105.501	COMMON EXCAVATION	C Y	\$5.00	156247.0	\$781,235	0.0	\$0	82300.0	\$411,500	37000.0	\$185,000	0.0	\$0	20249.0	\$101,245	7598.0	\$37,990	9100.0	\$45,500
2105.521	GRANULAR BORROW (CV)	C Y	\$6.00	18308.0	\$109,848	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	7727.0	\$46,362	10581.0	\$63,486
2105.523	COMMON BORROW (CV)	C Y	\$4.00	50797.0	\$203,188	0.0	\$0	0.0	\$0	37000.0	\$148,000	0.0	\$0	0.0	\$0	5396.0	\$21,584	8401.0	\$33,604
2105.525	TOPSOIL BORROW (CV)	C Y	\$21.00	1812.0	\$38,052	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	676.0	\$14,196	1136.0	\$23,856
2105.604	GEOTEXTILE FABRIC TYPE IV MODIFIED	S Y	\$2.50	75224.0	\$188,060	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	63699.0	\$159,248	4983.0	\$12,458	6542.0	\$16,355
2112.501	SUBGRADE PREPARATION	RDST	\$100.00	104.0	\$10,400	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	60.0	\$6,000	17.0	\$1,700	27.0	\$2,700
2123.610	STREET SWEEPER W/PICK-UP BROOM	HOURL	\$150.00	82.0	\$12,300	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	45.0	\$6,750	17.0	\$2,550	20.0	\$3,000
2130.501	WATER	MGAL	\$25.00	265.0	\$6,625	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	240.0	\$6,000	11.0	\$275	14.0	\$350
2211.501	AGGREGATE BASE CLASS 5	TON	\$25.00	24277.0	\$606,925	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	10574.0	\$264,350	5700.0	\$142,500	8003.0	\$200,075
2211.609	OPEN GRADED AGGREGATE BASE	TON	\$48.00	5335.0	\$256,080	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	3845.0	\$184,560	788.0	\$37,824	702.0	\$33,696
2301.502	CONCRETE PAVEMENT STANDARD WIDTH 8'0"	S Y	\$13.00	21534.0	\$279,942	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	9498.0	\$123,474	12036.0	\$156,468
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL	\$2.00	2077.0	\$4,154	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	1524.0	\$3,048	216.0	\$432	337.0	\$674
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (C)	TON	\$65.00	6800.0	\$442,000	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	5028.0	\$326,820	642.0	\$41,730	1130.0	\$73,450
2360.502	TYPE SP 12.5 NON WEARING COURSE MIXTURE (C)	TON	\$65.00	6800.0	\$442,000	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	5028.0	\$326,820	642.0	\$41,730	1130.0	\$73,450
2412.511	10 X 10 PRECAST CONCRETE BOX CULVERT	LF	\$1,000.00	320.0	\$320,000	0.0	\$0	0.0	\$0	320.0	\$320,000	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2412.512	10 X 10 PRECAST CONCRETE BOX CULVERT END SECT.	EACH	\$12,000.00	8.0	\$96,000	0.0	\$0	0.0	\$0	8.0	\$96,000	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2451.507	GRANULAR BEDDING (CV)	TON	\$22.00	10113.0	\$222,486	1278.0	\$28,116	4972.0	\$109,384	0.0	\$0	3863.0	\$84,986	0.0	\$0	0.0	\$0	0.0	\$0
2501.511	12" RC PIPE CULVERT	LF	\$48.00	1176.0	\$56,448	0.0	\$0	1176.0	\$56,448	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2501.511	15" RC PIPE CULVERT	LF	\$48.00	1980.0	\$95,040	0.0	\$0	1980.0	\$95,040	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2501.511	24" RC PIPE CULVERT	LF	\$52.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2501.511	30" RC PIPE CULVERT	LF	\$75.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2501.511	36" RC PIPE CULVERT	LF	\$85.00	533.0	\$45,305	0.0	\$0	533.0	\$45,305	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2501.511	42" RC PIPE CULVERT	LF	\$120.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2501.511	48" RC PIPE CULVERT	LF	\$160.00	589.0	\$94,240	0.0	\$0	589.0	\$94,240	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2501.511	54" RC PIPE CULVERT	LF	\$200.00	2842.0	\$568,400	0.0	\$0	2842.0	\$568,400	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2501.511	60" RC PIPE CULVERT	LF	\$240.00	1809.0	\$434,160	0.0	\$0	1809.0	\$434,160	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2501.511	72" RC PIPE CULVERT	LF	\$310.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2501.515	36" RC PIPE APRON	EACH	\$1,200.00	1.0	\$1,200	0.0	\$0	1.0	\$1,200	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2501.515	42" RC PIPE APRON	EACH	\$1,875.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2501.515	48" RC PIPE APRON	EACH	\$1,975.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2501.515	54" RC PIPE APRON	EACH	\$2,000.00	1.0	\$2,000	0.0	\$0	1.0	\$2,000	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2501.515	60" RC PIPE APRON	EACH	\$2,200.00	1.0	\$2,200	0.0	\$0	1.0	\$2,200	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2501.515	72" RC PIPE APRON	EACH	\$2,400.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2502.541	4" PERF PVC PIPE DRAIN	LF	\$4.00	16161.0	\$64,644	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	12405.0	\$49,620	1852.0	\$7,408	1904.0	\$7,616
2503.511	8" PVC PIPE SEWER, 11' - 15' DEPTH	LF	\$36.00	1993.0	\$71,748	1993.0	\$71,748	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	8" PVC PIPE SEWER, 16' - 20' DEPTH	LF	\$38.00	303.0	\$11,514	303.0	\$11,514	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	8" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$40.00	303.0	\$12,120	303.0	\$12,120	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	8" PVC PIPE SEWER, 26' - 30' DEPTH	LF	\$42.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	10" PVC PIPE SEWER, 11' - 15' DEPTH	LF	\$40.00	700.0	\$28,000	700.0	\$28,000	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	12" PVC PIPE SEWER, 11' - 15' DEPTH	LF	\$47.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	12" PVC PIPE SEWER, 16' - 20' DEPTH	LF	\$49.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	12" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$51.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	15" PVC PIPE SEWER, 0' - 10' DEPTH	LF	\$47.00	565.0	\$26,555	565.0	\$26,555	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	15" PVC PIPE SEWER, 11' - 15' DEPTH	LF	\$50.00	565.0	\$28,250	565.0	\$28,250	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	15" PVC PIPE SEWER, 16' - 20' DEPTH	LF	\$53.00	875.0	\$46,375	875.0	\$46,375	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$56.00	310.0	\$17,360	310.0	\$17,360	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	18" PVC PIPE SEWER, 11' - 15' DEPTH	LF	\$58.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	18" PVC PIPE SEWER, 16' - 20' DEPTH	LF	\$62.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	18" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$66.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	18" PVC PIPE SEWER, 26' - 30' DEPTH	LF	\$75.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	18" PVC PIPE SEWER, 31' - 35' DEPTH	LF	\$98.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	21" PVC PIPE SEWER, 11' - 15' DEPTH	LF	\$61.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	21" PVC PIPE SEWER, 16' - 20' DEPTH	LF	\$69.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	21" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$71.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	21" PVC PIPE SEWER, 26' - 30' DEPTH	LF	\$75.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	21" PVC PIPE SEWER, 31' - 35' DEPTH	LF	\$85.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	24" PVC PIPE SEWER, 11' - 15' DEPTH	LF	\$88.00	1773.0	\$156,024	1773.0	\$156,024	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	24" PVC PIPE SEWER, 16' - 20' DEPTH	LF	\$92.00	973.0	\$89,516	973.0	\$89,516	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.511	24" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$96.00	303.0	\$29,088	303.0	\$29,088	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.602	6" SANITARY SEWER SERVICE	LF	\$28.00	2430.0	\$68,040	2430.0	\$68,040	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.602	LIFT STATION	EACH	\$150,000.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.602	CONNECT TO EXISTING SANITARY SEWER	EACH	\$750.00	2.0	\$1,500	2.0	\$1,500	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2503.603	6" PVC FORCE MAIN	LF	\$22.00	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0
2504.602	CONNECT TO EXISTING WATER MAIN	EACH	\$2,000.00	3.0	\$6,000	0.0	\$0	0.0	\$0	0.0	\$0	3.0	\$6,000	0.0	\$0	0.0	\$0	0.0	\$0
2504.602	RELOCATE HYDRANT & VALVE	EACH	\$3,000.00	2.0	\$6,000	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	0					

TABLE 7 - PROJECT COST ESTIMATE
WORTHINGTON NORTH INDUSTRIAL/COMMERCIAL PARK
WORTHINGTON, MN
AWORTC0802.00
3/10/2008

MASTER PLAN AREA TOTALS						SANITARY SEWER - SINGLE LIFT STATION (INCLUDED IN TOTAL COST)				SANITARY SEWER - DUAL LIFT STATIONS (NOT INCLUDED IN TOTAL COST)				STORM WATER MANAGEMENT							
ITEM NUMBER	BID ITEM DESCRIPTION	UNIT	UNIT PRICE	TOTAL EST. QUANTITY	TOTAL COST	INDUSTRIAL PARK QUANTITY	INDUSTRIAL PARK COST	REMAINDER OF MASTER PLAN QUANTITY	REMAINDER OF MASTER PLAN COST	INDUSTRIAL PARK QUANTITY	INDUSTRIAL PARK COST	REMAINDER OF MASTER PLAN QUANTITY	REMAINDER OF MASTER PLAN COST	INDUSTRIAL PARK QUANTITY	INDUSTRIAL PARK COST	REMAINDER OF MASTER PLAN QUANTITY	REMAINDER OF MASTER PLAN COST	CULVERT ADDITION AND EXTENSION AT TH 59 QUANTITIES	CULVERT ADDITION AND EXTENSION AT TH 59 COST	DITCH RELOCATION AT TH 59 QUANTITIES (IN TOTAL)	DITCH RELOCATION AT TH 59 COST (IN TOTAL)
2021.501	MOBILIZATION	LS	\$1,261,000.00	1.0	\$1,261,000	1.0	\$39,200	1.0	\$105,700	1.0	\$39,200	1.0	\$110,800	1.0	\$104,800	1.0	\$272,100	1.0	\$85,100	1.0	\$42,300
2104.501	REMOVE CONCRETE CULVERT	LS	\$25,000.00	1.0	\$25,000																\$25,000
2105.501	COMMON EXCAVATION	C Y	\$5.00	402459.0	\$2,012,295									82300.0	\$411,500	166100.0	\$830,500			37000.0	\$185,000
2105.521	GRANULAR BORROW (CV)	C Y	\$6.00	18309.0	\$109,848																
2105.523	COMMON BORROW (CV)	C Y	\$4.00	50797.0	\$203,188																
2105.525	TOPSOIL BORROW (CV)	C Y	\$21.00	1812.0	\$38,052															37000.0	\$148,000
2105.604	GEOTEXTILE FABRIC TYPE IV MODIFIED	S Y	\$2.50	322335.0	\$805,838																
2112.501	SUBGRADE PREPARATION	RDST	\$100.00	350.0	\$35,000																
2123.610	STREET SWEEPER W/PICK-UP BROOM	HOURL	\$150.00	262.0	\$39,300																
2130.501	WATER	MGAL	\$25.00	1249.0	\$31,225																
2211.501	AGGREGATE BASE CLASS 5	TON	\$25.00	66209.0	\$1,655,225																
2211.609	OPEN GRADED AGGREGATE BASE	TON	\$48.00	20593.0	\$987,864																
2301.502	CONCRETE PAVEMENT STANDARD WIDTH 8.0"	S Y	\$13.00	21534.0	\$279,942																
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL	\$2.00	8118.0	\$16,236																
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (C)	TON	\$65.00	26736.0	\$1,737,840																
2360.502	TYPE SP 12.5 NON WEARING COURSE MIXTURE (C)	TON	\$65.00	26736.0	\$1,737,840																
2412.511	10 X 10 PRECAST CONCRETE BOX CULVERT	LF	\$1,000.00	320.0	\$320,000																
2412.512	10 X 10 PRECAST CONCRETE BOX CULVERT END SECT.	EACH	\$12,000.00	8.0	\$96,000													190.0	\$190,000	320.0	\$320,000
2451.507	GRANULAR BEDDING (CV)	TON	\$22.00	44762.0	\$984,764	1278.0	\$28,116	2008.0	\$44,176	1278.0	\$28,116	1920.0	\$42,240	4972.0	\$109,384	13965.0	\$307,230	4.0	\$48,000	8.0	\$96,000
2501.511	12" RC PIPE CULVERT	LF	\$48.00	5284.0	\$253,632									1176.0	\$56,448	4108.0	\$197,184				
2501.511	15" RC PIPE CULVERT	LF	\$48.00	5340.0	\$256,320									1980.0	\$95,040	3360.0	\$161,280				
2501.511	24" RC PIPE CULVERT	LF	\$52.00	274.0	\$14,248											274.0	\$14,248				
2501.511	30" RC PIPE CULVERT	LF	\$75.00	1766.0	\$132,450											1766.0	\$132,450				
2501.511	36" RC PIPE CULVERT	LF	\$85.00	1332.0	\$113,220											799.0	\$67,915				
2501.511	42" RC PIPE CULVERT	LF	\$120.00	3742.0	\$449,040									533.0	\$45,305	3742.0	\$449,040				
2501.511	48" RC PIPE CULVERT	LF	\$160.00	6793.0	\$1,086,880											6204.0	\$992,640				
2501.511	54" RC PIPE CULVERT	LF	\$200.00	4301.0	\$860,200											\$568,400	\$512,800				
2501.511	60" RC PIPE CULVERT	LF	\$240.00	2851.0	\$684,240									2842.0	\$684,400	2563.0	\$611,400				
2501.511	72" RC PIPE CULVERT	LF	\$310.00	2174.0	\$673,940									1809.0	\$434,160	2174.0	\$673,940				
2501.511	120" RC PIPE CULVERT	LF	\$850.00															380.0	\$323,000		
2501.515	36" RC PIPE APRON	EACH	\$1,200.00	1.0	\$1,200									1.0	\$1,200						
2501.515	42" RC PIPE APRON	EACH	\$1,875.00	2.0	\$3,750											2.0	\$3,750				
2501.515	48" RC PIPE APRON	EACH	\$1,975.00	2.0	\$3,950											2.0	\$3,950				
2501.515	54" RC PIPE APRON	EACH	\$2,000.00	3.0	\$6,000									1.0	\$2,000	2.0	\$4,000	200.0	\$400,000		
2501.515	60" RC PIPE APRON	EACH	\$2,200.00	1.0	\$2,200									1.0	\$2,200						
2501.515	72" RC PIPE APRON	EACH	\$2,400.00	1.0	\$2,400											1.0	\$2,400	300.0	\$720,000		
2501.515	120" RC PIPE APRON	EACH	\$10,000.00															2.0	\$20,000		
2502.541	4" PERF PVC PIPE DRAIN	LF	\$4.00	65394.0	\$261,576																
2503.511	8" PVC PIPE SEWER, 11' - 15' DEPTH	LF	\$36.00	11045.0	\$397,620	1993.0	\$71,748	9052.0	\$325,872	1993.0	\$71,748	9947.0	\$358,092								
2503.511	8" PVC PIPE SEWER, 16' - 20' DEPTH	LF	\$38.00	2265.0	\$86,070									303.0	\$11,514	2557.0	\$97,166				
2503.511	8" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$45.00	945.0	\$42,525									303.0	\$12,120	217.0	\$8,660				
2503.511	8" PVC PIPE SEWER, 26' - 30' DEPTH	LF	\$42.00	435.0	\$18,270																
2503.511	10" PVC PIPE SEWER, 11' - 15' DEPTH	LF	\$40.00	700.0	\$28,000	700.0	\$28,000														
2503.511	12" PVC PIPE SEWER, 11' - 15' DEPTH	LF	\$47.00	4384.0	\$206,048											4384.0	\$206,048				
2503.511	12" PVC PIPE SEWER, 16' - 20' DEPTH	LF	\$49.00	1809.0	\$88,641											1809.0	\$88,641				
2503.511	12" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$51.00	1149.0	\$58,599											1149.0	\$58,599				
2503.511	15" PVC PIPE SEWER, 0' - 10' DEPTH	LF	\$47.00	1123.0	\$52,781																
2503.511	15" PVC PIPE SEWER, 11' - 15' DEPTH	LF	\$50.00	783.0	\$39,150									565.0	\$26,555	558.0	\$26,226				
2503.511	15" PVC PIPE SEWER, 16' - 20' DEPTH	LF	\$50.00	2111.0	\$105,550											228.0	\$11,400				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$55.00	538.0	\$29,590											1536.0	\$81,408				
2503.511																					

TABLE 7 - PROJECT COST ESTIMATE
WORTHINGTON NORTH INDUSTRIAL/COMMERCIAL PARK
WORTHINGTON, MN
AWORTC0802.00
3/7/2008

MASTER PLAN AREA TOTALS						WATER DISTRIBUTION FACILITIES				STREET IMPROVEMENTS				TRUNK HIGHWAY 59			
ITEM NUMBER	BID ITEM DESCRIPTION	UNIT	UNIT PRICE	TOTAL EST. QUANTITY	TOTAL COST	INDUSTRIAL PARK QUANTITY	INDUSTRIAL PARK COST	REMAINDER OF MASTER PLAN QUANTITY	REMAINDER OF MASTER PLAN COST	INDUSTRIAL PARK QUANTITY	INDUSTRIAL PARK COST	REMAINDER OF MASTER PLAN QUANTITY	REMAINDER OF MASTER PLAN COST	INTERSECTION IMPROVEMENTS AT TH 59 AND BIOSCIENCE DRIVE QUANTITIES	INTERSECTION IMPROVEMENTS AT TH 59 AND BIOSCIENCE DRIVE COST	INTERSECTION IMPROVEMENTS AT TH 59 AND 27TH STREET QUANTITIES	INTERSECTION IMPROVEMENTS AT TH 59 AND 27TH STREET COST
2021.501	MOBILIZATION	LS	\$1,261,000.00	1.0	\$1,261,000	1.0	\$37,100	1.0	\$162,300	1.0	\$83,200	1.0	\$336,800	1.0	\$31,700	1.0	\$45,800
2104.501	REMOVE CONCRETE CULVERT	LS	\$25,000.00	1.0	\$25,000												
2105.501	COMMON EXCAVATION	C Y	\$5.00	402459.0	\$2,012,295					20249.0	\$101,245	80112.0	\$400,560	7598.0	\$37,990	9100.0	\$45,500
2105.521	GRANULAR BORROW (CV)	C Y	\$6.00	18308.0	\$109,848									7727.0	\$46,362	10581.0	\$63,486
2105.523	COMMON BORROW (CV)	C Y	\$4.00	50797.0	\$203,188									5396.0	\$21,584	8401.0	\$33,604
2105.525	TOPSOIL BORROW (CV)	C Y	\$21.00	1812.0	\$38,052									676.0	\$14,196	1136.0	\$23,856
2105.804	GEOTEXTILE FABRIC TYPE IV MODIFIED	S Y	\$2.50	322335.0	\$805,838					63699.0	\$159,248	247111.0	\$617,778	4983.0	\$12,458	6542.0	\$16,355
2112.501	SUBGRADE PREPARATION	ROST	\$100.00	350.0	\$35,000					90.0	\$6,000	246.0	\$24,600	17.0	\$1,700	27.0	\$2,700
2123.610	STREET SWEEPER W/PICK-UP BROOM	HOURL	\$150.00	262.0	\$39,300					45.0	\$6,750	180.0	\$27,000	17.0	\$2,550	20.0	\$3,000
2130.501	WATER	MGAL	\$25.00	1249.0	\$31,225					240.0	\$6,000	984.0	\$24,600	11.0	\$2,75	14.0	\$350
2211.501	AGGREGATE BASE CLASS 5	TON	\$25.00	66209.0	\$1,655,225					10574.0	\$264,350	41932.0	\$1,048,300	5700.0	\$142,500	8003.0	\$200,075
2211.609	OPEN GRADED AGGREGATE BASE	TON	\$48.00	20583.0	\$987,984					3845.0	\$184,560	15248.0	\$731,904	788.0	\$37,824	702.0	\$33,696
2301.502	CONCRETE PAVEMENT STANDARD WIDTH 8'0"	S Y	\$13.00	21534.0	\$279,942									9498.0	\$123,474	12036.0	\$156,468
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAJ	\$2.00	8118.0	\$16,236					1524.0	\$3,048	6041.0	\$12,082	216.0	\$432	337.0	\$674
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (C)	TON	\$85.00	26736.0	\$1,737,840					5028.0	\$326,820	19936.0	\$1,295,840	642.0	\$41,730	1130.0	\$73,450
2360.502	TYPE SP 12.5 NON WEARING COURSE MIXTURE (C)	TON	\$85.00	26736.0	\$1,737,840					5028.0	\$326,820	19936.0	\$1,295,840	642.0	\$41,730	1130.0	\$73,450
2412.511	10 X 10 PRECAST CONCRETE BOX CULVERT	LF	\$1,000.00	320.0	\$320,000												
2412.512	10 X 10 PRECAST CONCRETE BOX CULVERT END SECT.	EACH	\$12,000.00	8.0	\$96,000												
2451.507	GRANULAR BEDDING (CV)	TON	\$22.00	44762.0	\$984,764	3863.0	\$84,986	18676.0	\$410,872								
2501.511	12" RC PIPE CULVERT	LF	\$48.00	5284.0	\$253,632												
2501.511	15" RC PIPE CULVERT	LF	\$48.00	5340.0	\$256,320												
2501.511	24" RC PIPE CULVERT	LF	\$52.00	274.0	\$14,248												
2501.511	30" RC PIPE CULVERT	LF	\$75.00	1766.0	\$132,450												
2501.511	36" RC PIPE CULVERT	LF	\$85.00	1332.0	\$113,220												
2501.511	42" RC PIPE CULVERT	LF	\$120.00	3742.0	\$449,040												
2501.511	48" RC PIPE CULVERT	LF	\$180.00	6793.0	\$1,086,880												
2501.511	54" RC PIPE CULVERT	LF	\$200.00	5405.0	\$1,081,000												
2501.511	60" RC PIPE CULVERT	LF	\$240.00	2851.0	\$684,240												
2501.511	72" RC PIPE CULVERT	LF	\$310.00	2174.0	\$673,940												
2501.511	120" RC PIPE CULVERT	LF	\$850.00														
2501.515	36" RC PIPE APRON	EACH	\$1,200.00	1.0	\$1,200												
2501.515	42" RC PIPE APRON	EACH	\$1,875.00	2.0	\$3,750												
2501.515	48" RC PIPE APRON	EACH	\$1,975.00	2.0	\$3,950												
2501.515	54" RC PIPE APRON	EACH	\$2,000.00	3.0	\$6,000												
2501.515	60" RC PIPE APRON	EACH	\$2,200.00	1.0	\$2,200												
2501.515	72" RC PIPE APRON	EACH	\$2,400.00	1.0	\$2,400												
2501.515	120" RC PIPE APRON	EACH	\$10,000.00														
2502.541	4" PERF PVC PIPE DRAIN	LF	\$4.00	65394.0	\$261,576					12405.0	\$48,620	49233.0	\$196,932	1852.0	\$7,408	1904.0	\$7,616
2503.511	8" PVC PIPE SEWER, 11' - 15' DEPTH	LF	\$36.00	11045.0	\$397,620												
2503.511	8" PVC PIPE SEWER, 16' - 20' DEPTH	LF	\$38.00	2265.0	\$86,070												
2503.511	8" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$40.00	955.0	\$38,200												
2503.511	8" PVC PIPE SEWER, 26' - 30' DEPTH	LF	\$42.00	435.0	\$18,270												
2503.511	10" PVC PIPE SEWER, 11' - 15' DEPTH	LF	\$40.00	709.0	\$28,000												
2503.511	12" PVC PIPE SEWER, 11' - 15' DEPTH	LF	\$47.00	4384.0	\$206,048												
2503.511	12" PVC PIPE SEWER, 16' - 20' DEPTH	LF	\$49.00	1809.0	\$88,641												
2503.511	12" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$51.00	1149.0	\$58,599												
2503.511	15" PVC PIPE SEWER, 0' - 10' DEPTH	LF	\$47.00	1123.0	\$52,781												
2503.511	15" PVC PIPE SEWER, 11' - 15' DEPTH	LF	\$50.00	793.0	\$39,650												
2503.511	15" PVC PIPE SEWER, 16' - 20' DEPTH	LF	\$53.00	2411.0	\$127,783												
2503.511	15" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$56.00	538.0	\$30,128												
2503.511	18" PVC PIPE SEWER, 11' - 15' DEPTH	LF	\$58.00	200.0	\$11,400												
2503.511	18" PVC PIPE SEWER, 16' - 20' DEPTH	LF	\$62.00	475.0	\$29,450												
2503.511	18" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$66.00	175.0	\$11,550												
2503.511	18" PVC PIPE SEWER, 26' - 30' DEPTH	LF	\$75.00	175.0	\$13,125												
2503.511	18" PVC PIPE SEWER, 31' - 35' DEPTH	LF	\$98.00	175.0	\$17,150												
2503.511	21" PVC PIPE SEWER, 11' - 15' DEPTH	LF	\$61.00														
2503.511	21" PVC PIPE SEWER, 16' - 20' DEPTH	LF	\$69.00														
2503.511	21" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$71.00														
2503.511	21" PVC PIPE SEWER, 26' - 30' DEPTH	LF	\$75.00	1980.0	\$140,580												
2503.511	21" PVC PIPE SEWER, 31' - 35' DEPTH	LF	\$85.00	315.0	\$26,775												
2503.511	24" PVC PIPE SEWER, 11' - 15' DEPTH	LF	\$88.00	1773.0	\$156,024												
2503.511	24" PVC PIPE SEWER, 16' - 20' DEPTH	LF	\$92.00	973.0	\$89,516												
2503.511	24" PVC PIPE SEWER, 21' - 25' DEPTH	LF	\$96.00	303.0	\$29,088												
2503.602	6" SANITARY SEWER SERVICE	LF	\$28.00	10440.0	\$292,320												
2503.602	LIFT STATION	EACH	\$150,000.00	1.0	\$150,000												
2503.602	CONNECT TO EXISTING SANITARY SEWER	EACH	\$750.00	2.0	\$1,500												
2503.603	6" PVC FORCE MAIN	LF	\$22.00	480.0	\$10,560												
2504.602	CONNECT TO EXISTING WATER MAIN	EACH	\$2,000.00	5.0	\$10,000	3.0	\$6,000	2.0	\$4,000								
2504.602	RELOCATE HYDRANT & VALVE	EACH	\$3,000.00	2.0	\$6,000												
2504.602	INSTALL HYDRANT & VALVE	EACH	\$2,400.00	209.0	\$501,600	38.0	\$91,200	171.0	\$410,400					2.0	\$6,000		
2504.602	BOX	EACH	\$2,500.00	116.0	\$290,000	27.0	\$67,500	89.0	\$222,500								
2504.603	6" PVC WATERMAIN	LF	\$35.00	11077.0	\$387,695	2014.0	\$70,490	9063.0	\$317,205								
2504.603	8" PVC WATERMAIN	LF	\$40.00	12535.0	\$501,400	3360.0	\$134,400	9175.0	\$367,000								
2504.603	12" PVC WATERMAIN	LF	\$42.00	28650.0	\$1,203,300	6135.0	\$257,670	22515.0	\$945,630								
2504.603	14" PVC WATERMAIN	LF	\$48.00	6280.0	\$301,440			6280.0	\$301,440								
2504.603	16" PVC WATERMAIN	LF	\$58.00	4615.0	\$267,670			4615.0	\$267,670								
2504.603	16" STEEL CASING PIPE (JACKED)	LF	\$300.00	200.0	\$60,000	100.0	\$30,000										
2504.603	30" STEEL CASING PIPE (JACKED)	LF	\$500.00	100.0	\$50,000												
2506.601	CONSTRUCT DRAINAGE STRUCTURE SPEC - SKIMMER	EACH	\$4,000.00	8.0	\$32,000												
2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN 2' X 3'	EACH	\$1,500.00	216.0	\$324,000												
2506.502	CONSTRUCT STORM MH DESIGN 48-4020	EACH	\$3,500.00	69.0	\$241,500												
2506.516	CASTING ASSEMBLY	EACH	\$650.00	401.0	\$260,650												
2506.521	INSTALL CASTING	EACH	\$200.00	401.0	\$80,200												
2506.602	CONSTRUCT SANITARY SEWER MH	EACH	\$3,600.00	116.0	\$417,600												
2511.501	RANDOM RIPRAP CLASS III	C Y	\$55.00	345.0	\$18,975												
2511.515	GEOTEXTILE FILTER TYPE IV	S Y	\$2.50	833.0	\$2,083												
2531.501	CONCRETE CURB & GUTTER DESIGN B618	LF	\$12.00	3579.0	\$42,948												
2531.501	CONCRETE CURB & GUTTER DESIGN B624	LF	\$14.00	67536.0	\$945,504					12405.0	\$173,670	49233.0	\$689,282	1296.0	\$15,552	2283.0	\$27,396
2531.503	CONCRETE MEDIAN	S Y	\$45.00	2218.0	\$99,810									2086.0	\$29,204	3812.0	\$53,368
2563.601	TRAFFIC CONTROL	LS	\$500,900.00	1.0	\$500,900	1.0	\$14,800	1.0	\$64,900								



Drawing name: P:\UZ\W\Wor\08020015.dgn Plotted on: Feb 20, 2008 - 9:03am



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PARK

STUDY AREAS
CORRIDOR STUDY

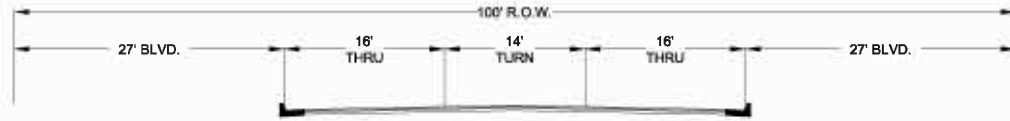
SEH NO. A-WORTC0802.00

DATE: FEB 8, 2008

FIGURE 1

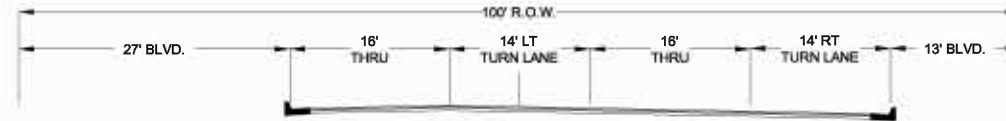
TYPICAL ROADWAY SECTION

100' RIGHT OF WAY
-NOT TO SCALE-



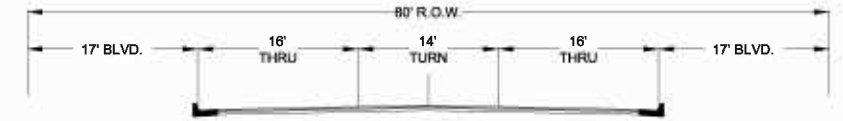
TYPICAL ROADWAY SECTION

INTERSECTION - 100' RIGHT OF WAY
-NOT TO SCALE-



TYPICAL ROADWAY SECTION

80' RIGHT OF WAY
-NOT TO SCALE-



COLLECTOR STREET (100' ROW)



COLLECTOR STREET (80' ROW)



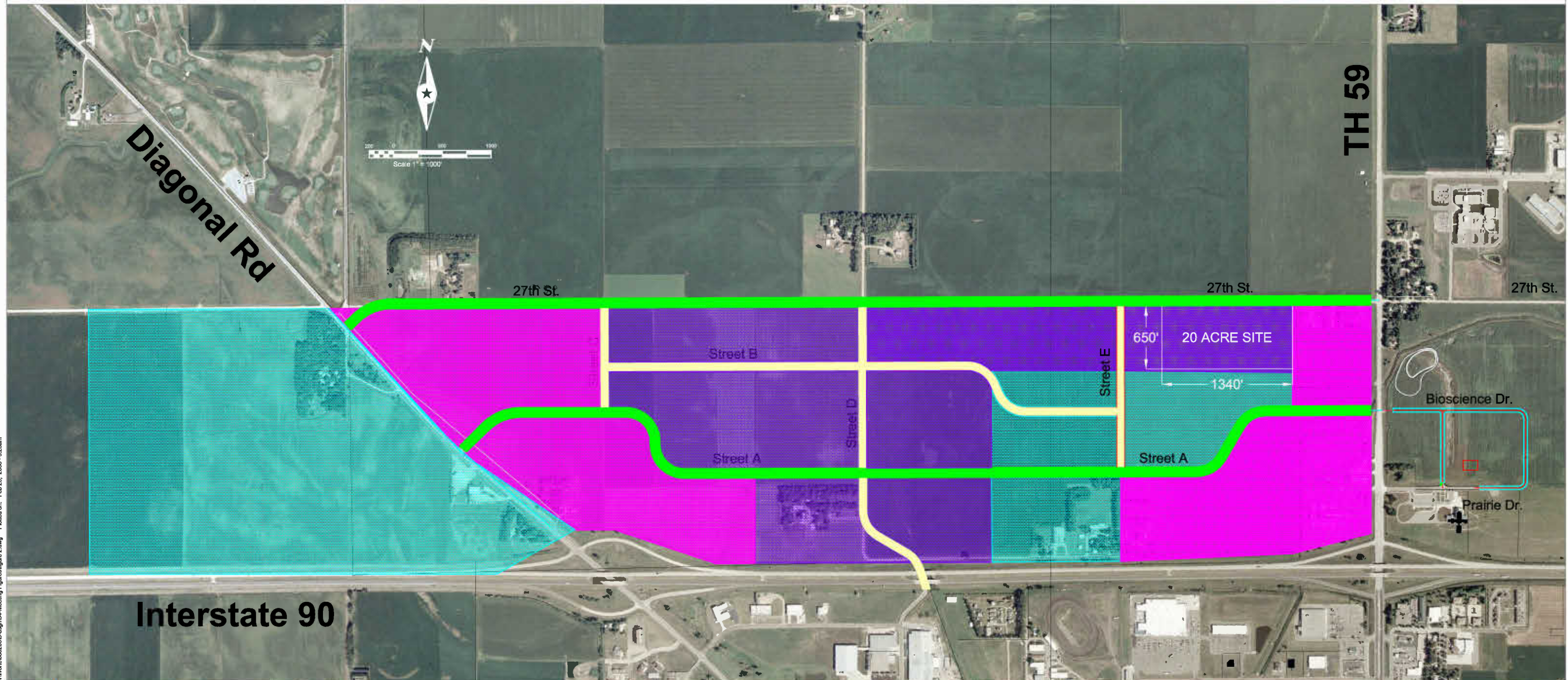
COMMERCIAL



INDUSTRIAL



COMMERCIAL / INDUSTRIAL



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PARK

CORRIDOR LAYOUT/LAND USE
MASTER PLAN AREA

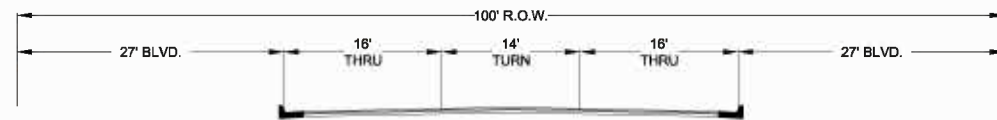
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DATE: FEB 8, 2008

FIGURE 2

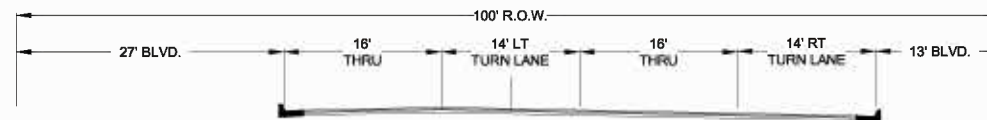
TYPICAL ROADWAY SECTION

100' RIGHT OF WAY
-NOT TO SCALE-



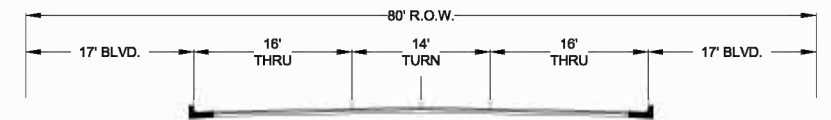
TYPICAL ROADWAY SECTION

INTERSECTION - 100' RIGHT OF WAY
-NOT TO SCALE-

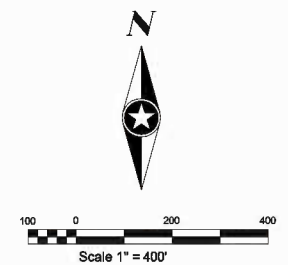


TYPICAL ROADWAY SECTION

80' RIGHT OF WAY
-NOT TO SCALE-



- COLLECTOR STREET (100' ROW)
- COLLECTOR STREET (80' ROW)
- INDUSTRIAL
- COMMERCIAL
- COMMERCIAL / INDUSTRIAL



Drawing name: P:\UZ\W\Work\0802005-46p\54-Meeting Figures\Figure 2.dwg Plotted on: Feb 20, 2008 - 9:31am



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*NORTH INDUSTRIAL/COMMERCIAL
PARK*

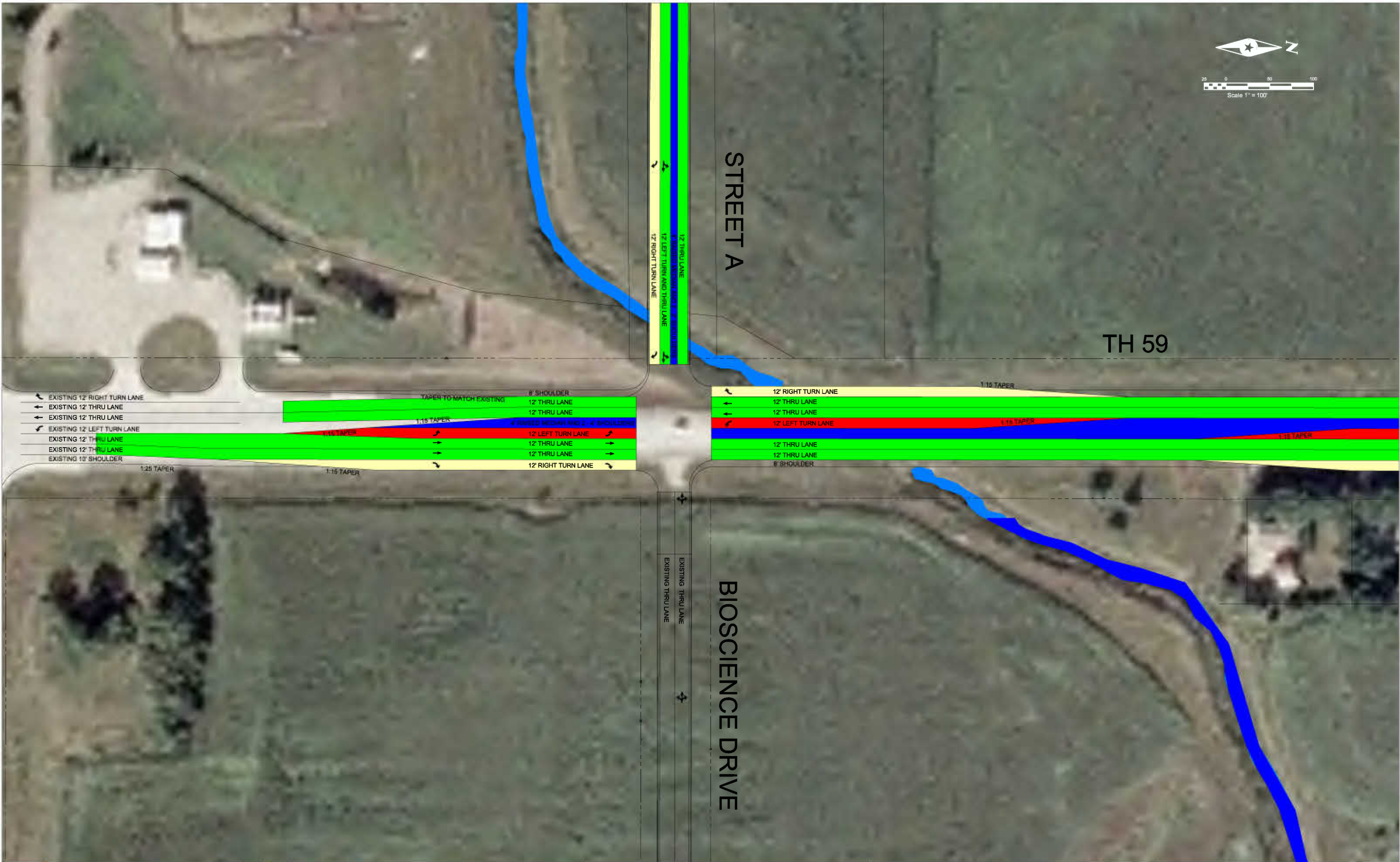
*CORRIDOR LAYOUT/LAND USE
INDUSTRIAL PARK AREA*

SEH NO. A-WORTC0802.00

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FIGURE 3

Drawing name: P:\UZ\W\Work\0802005.dgn\54-Meeting Figures\Intersection.dwg Plotted on: Feb 20, 2008 - 9:38am



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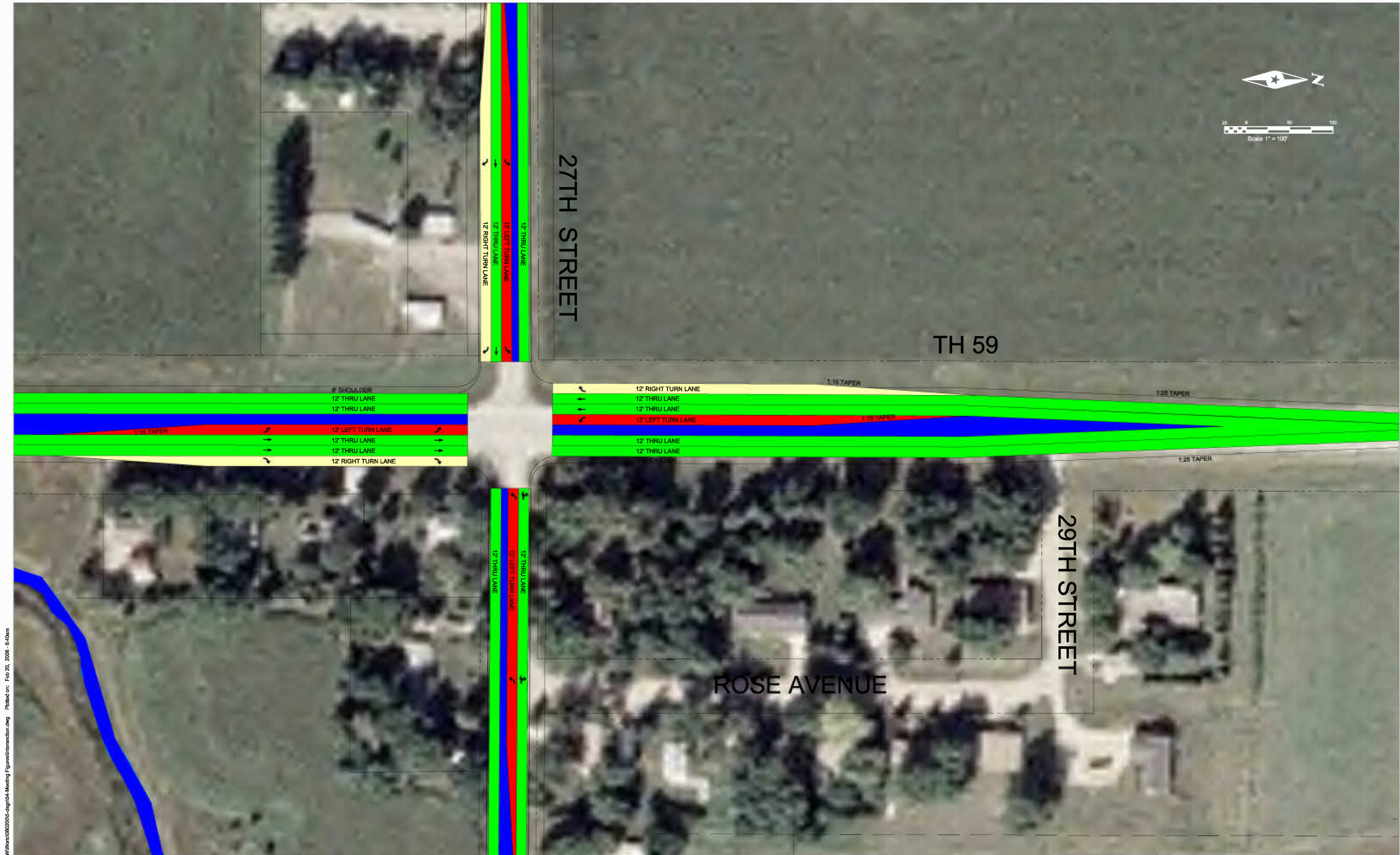
NORTH INDUSTRIAL/COMMERCIAL
PARK

HWY 59 & STREET A
INTERSECTION

SEH NO. A-WORTC0802.00

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FIGURE 4



Drawing name: P:\UZ\W\Work\0802005-dgn\54-Meeting Figures\Intersection.dwg Plotted on: Feb 20, 2008 - 9:40am



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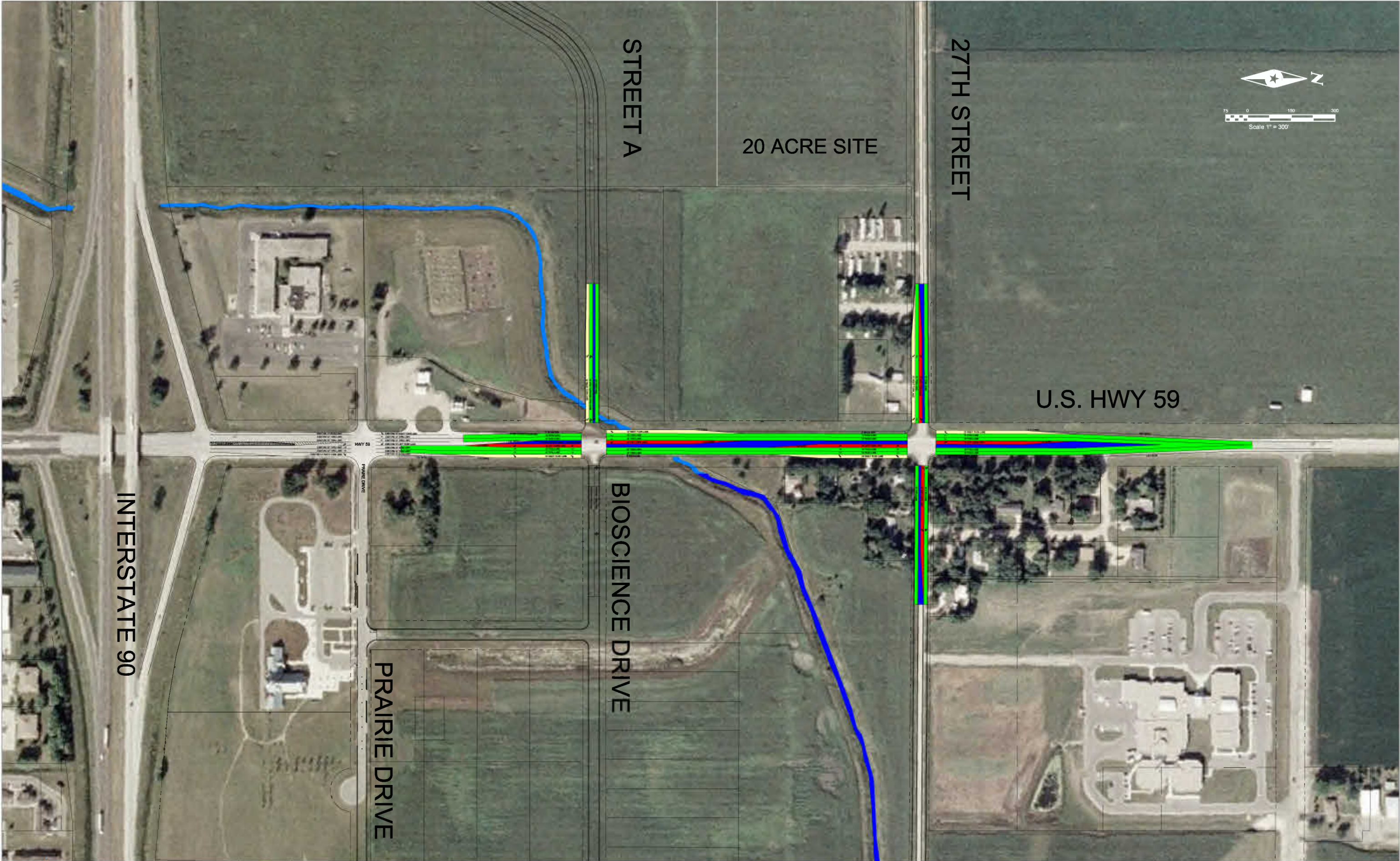
HWY 59 & 27TH STREET
INTERSECTION

SEH NO. A-WORTC0802.00

DATE: FEB 8, 2008

FIGURE 5

Drawing name: P:\U2\Work\080200\54-Meeting Figures\Intersection.dwg Plotted on: Feb 20, 2008 9:46am



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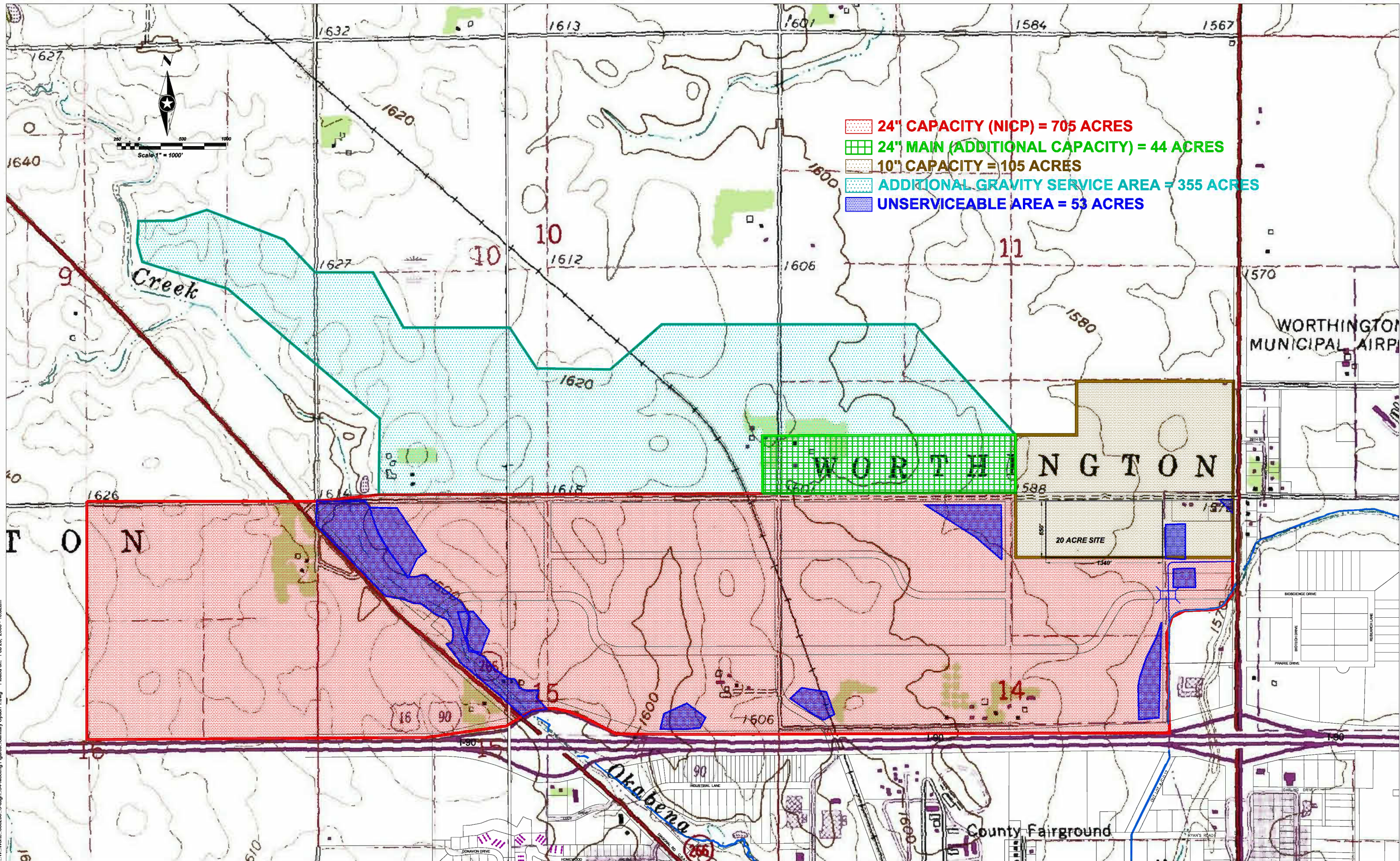
NORTH INDUSTRIAL/COMMERCIAL
PARK

HIGHWAY 59 LAYOUT

SEH NO. A-WORTC0802.00

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FIGURE 6



Drawing name: P:\02\W\Work\080200-15.dgn\154-Meeting Figures\Sanitary Option 1.dwg Plotted on: Feb 20, 2008 - 10:02am



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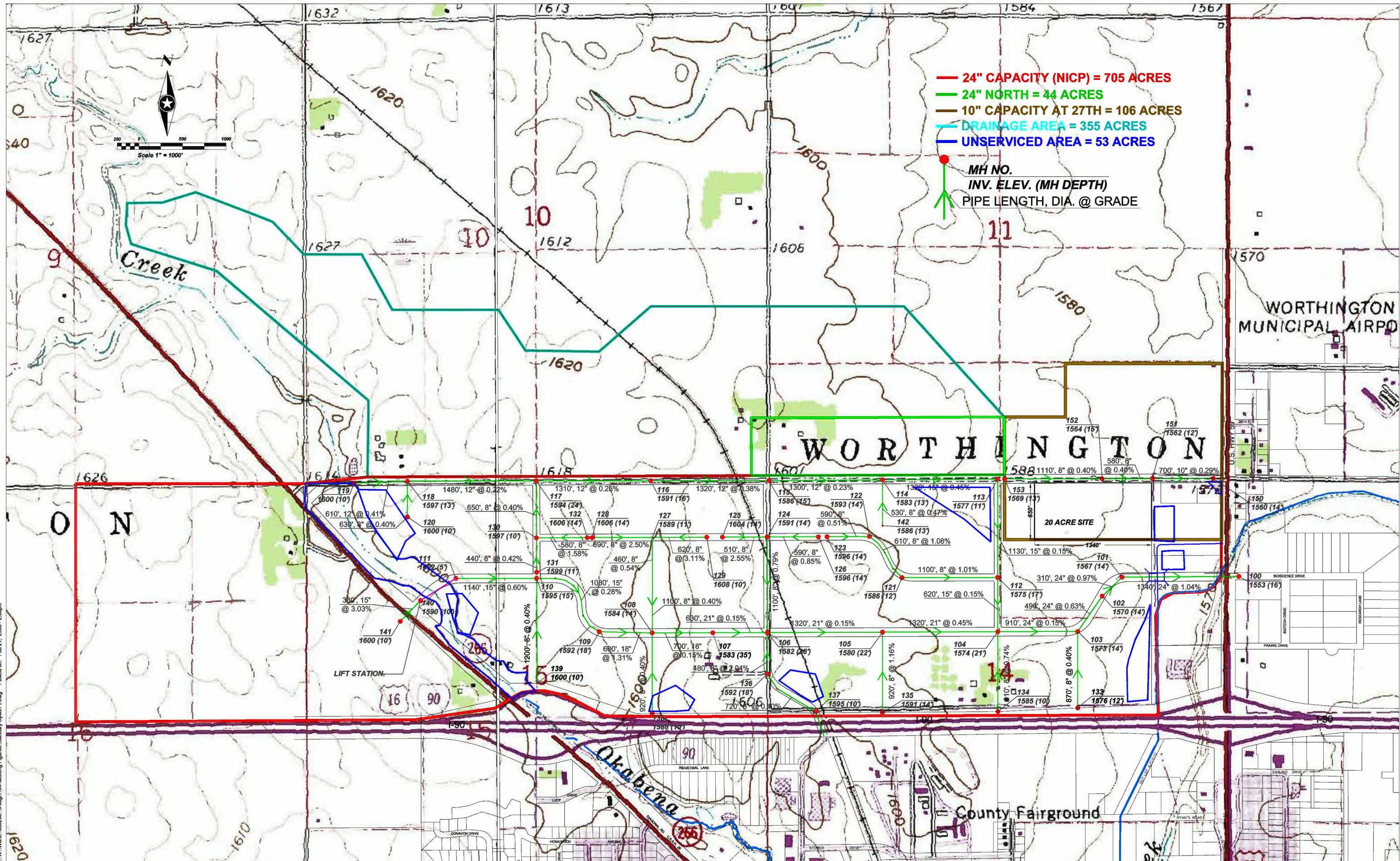
NORTH INDUSTRIAL/COMMERCIAL
PARK

SANITARY SEWER MAXIMUM
GRAVITY SERVICE AREA

SEH NO. A-WORTC0802.00

DATE: FEB 8, 2008

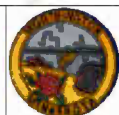
FIGURE 7



Drawing name: P:\02\W\Work\080200-15-dgn\154-Meeting Figures\Sanitary Option 1.dwg Plotted on: Feb 21, 2008 - 2:30pm



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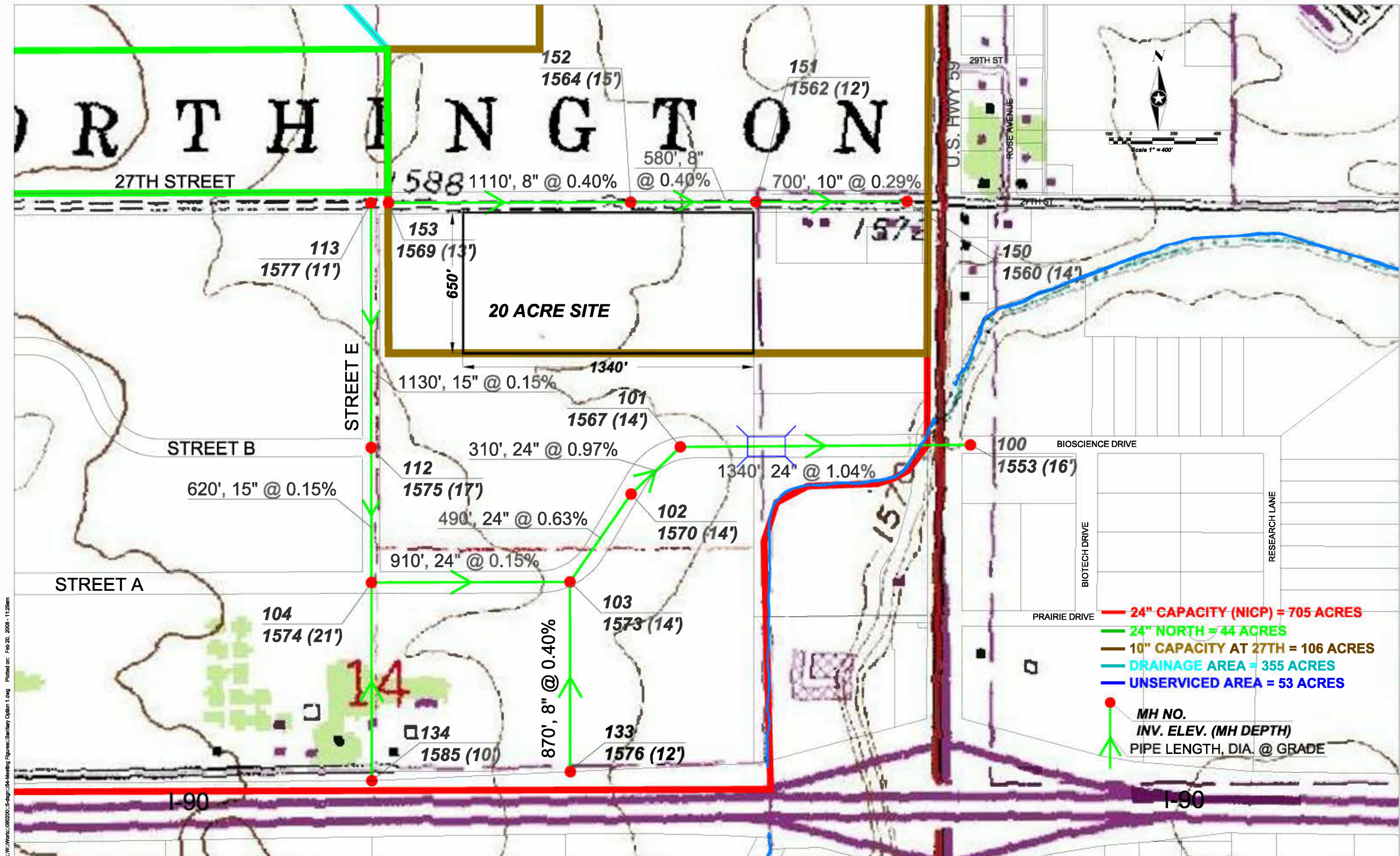
**NORTH INDUSTRIAL/COMMERCIAL
 PARK**

**SANITARY SEWER MASTER PLAN
 AREA (SINGLE LIFT STATION)**

SEH NO. A-WORTC0802.00

DATE: FEB 8, 2008

FIGURE 8



Drawing name: P:\U\Z\W\Work\080200\15-dgn\154-Meeting Figures\Sanitary Option 1.dwg Plotted on: Feb 20, 2008 - 11:29am



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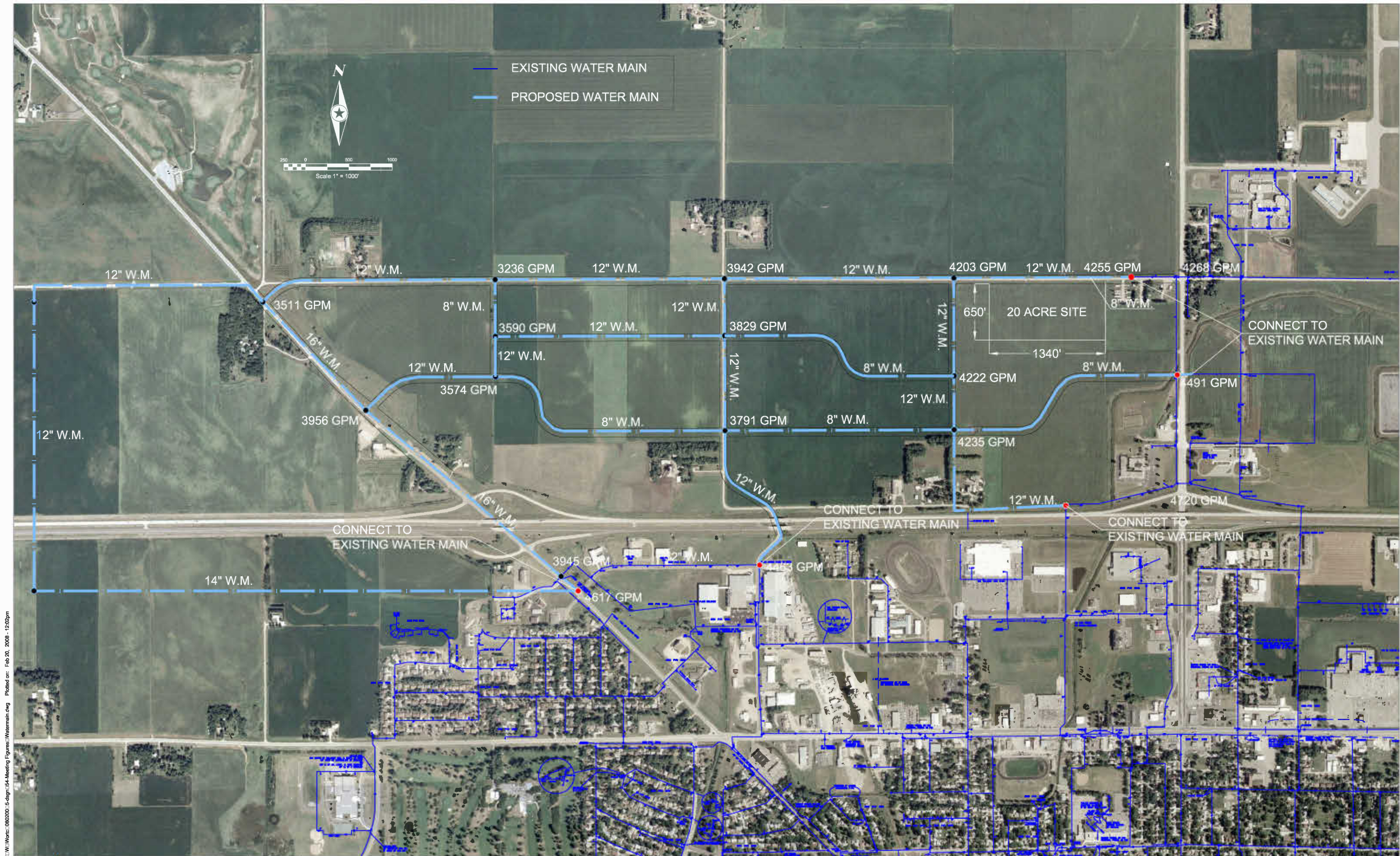
NORTH INDUSTRIAL/COMMERCIAL
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SANITARY SEWER
INDUSTRIAL PARK AREA

SEH NO. A-WORTC0802.00

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FIGURE 10



Drawing name: P:\02\W\Work\080200\5-dgn\54-Meeting Figures\Watermain.dwg Plotted on: Feb 20, 2008 - 12:02pm



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**NORTH INDUSTRIAL/COMMERCIAL
PARK**

**WATER DISTRIBUTION SYSTEM
MASTER PLAN**

SEH NO. A-WORTC0802.00

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FIGURE 11



Drawing name: P:\UZ\W\Work\0802005-46gm\54-Meeting Figures\Watermain.dwg Plotted on: Feb 20, 2008 - 1:09pm



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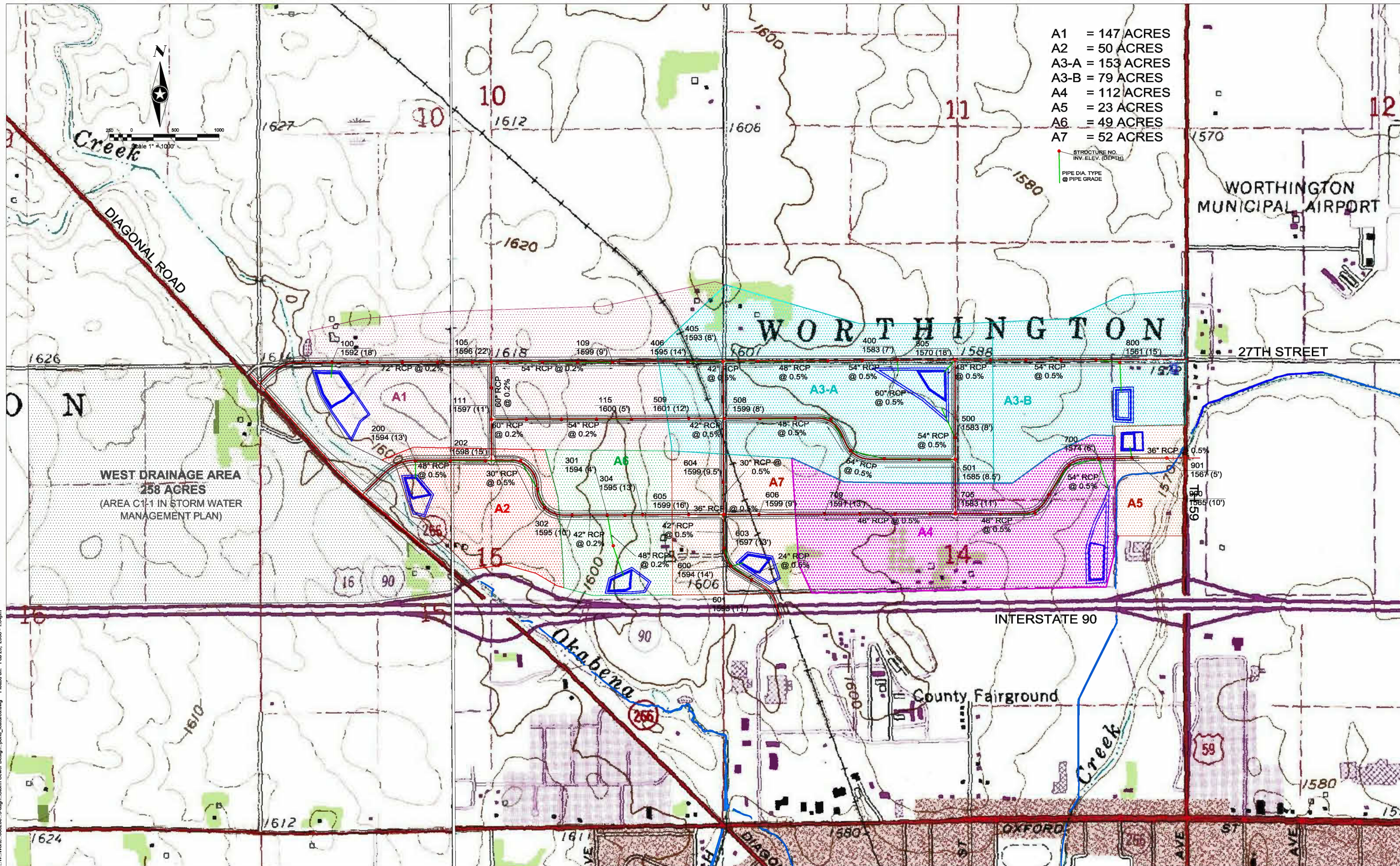
CITY OF WORTHINGTON

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PARK**

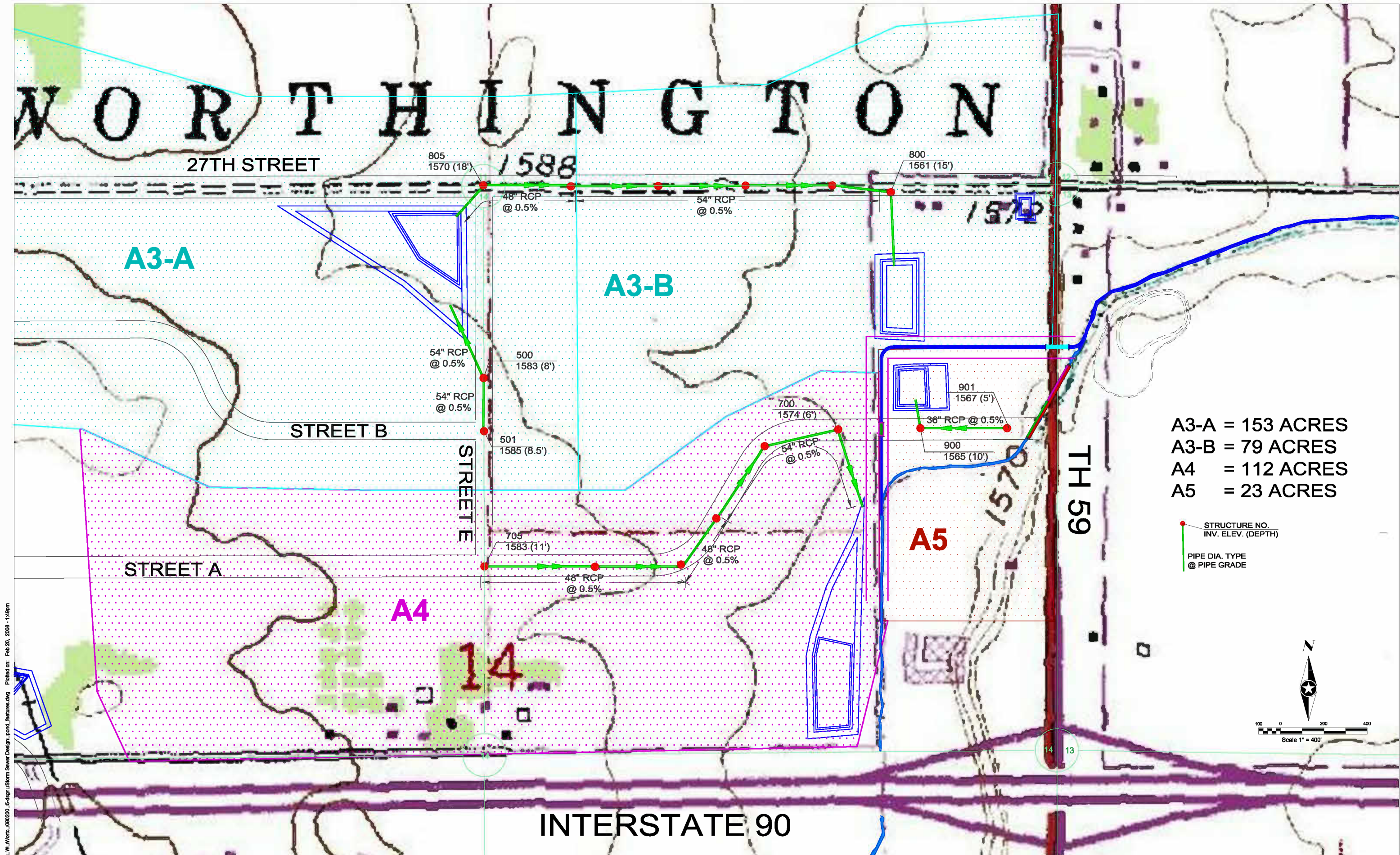
**WATER DISTRIBUTION SYSTEM
INDUSTRIAL PARK**

SEH NO. A-WORTC0802.00
DATE: FEB 8, 2008

FIGURE 12



Drawing name: P:\02\W\Work\080200-15-Design\Storm Sewer Design\pond_features.dwg Plotted on: Feb 20, 2008 - 1:04pm



Drawing name: P:\U\Z\W\Work\060200\15-dgn\Storm Sewer Design\pond_features.dwg Plotted on: Feb 20, 2008 - 1:49pm



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STORM SEWER
INDUSTRIAL PARK

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FIGURE 14

Drawing name: P:\U\U\W\Work\08020015-dgn\Storm Sewer Design\pond_features.dwg Plotted on: Feb 20, 2008 - 5:17pm



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PARK

STORM SEWER CULVERT
OPTIONS

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FIGURE 15

