



Report  
**Village of Dryden**

# Capital Improvements Plan

130-10658-002

5602 Main Street  
Dryden, MI 48428

May 2016



**Lockwood, Andrews  
& Newnam, Inc.**  
A LEO A DALY COMPANY

**TABLE OF CONTENTS**

I. Introduction	1
II. Village Facilities	2
A. Roadways	2
1. Streets	2
2. Sidewalks	2
3. Lighting	2
B. Water System	2
1. Wells and Water Quality	2
2. Pumps	3
3. Water Treatment	3
4. Storage	3
5. Distribution	3
6. Service Lines and Meters	4
7. Power	4
C. Sanitary System	4
1. Waste Water Treatment Lagoons	4
2. Pump Stations	4
3. Collection	4
4. Service Leads	4
D. Drainage System	5
E. Buildings	5
III. Funding Sources	6
A. Rural Task Force Transportation Improvements Program (Roads)	6
B. MDOT Programs (Roads)	6
1. State Infrastructure Bank	6
2. Transportation Alternatives Program	6
3. Local Agency Program	6
C. USDA Rural Development (Water, Sanitary and Storm)	6
D. MDEQ Programs (Water and Sanitary)	6
E. Assessments (Storm)	7
1. Drainage District Assessment	7
2. Special Assessment	8
F. Village Funds (Roads, Water, Sanitary and Storm)	8
IV. Recommended Improvements and Prioritization	9
A. Prioritization Approach	9
B. Roadways	9
1. Special Considerations	9
a) Extent of Use	9
b) Cause of Pavement Distress	9
c) Coordination of Work	9
2. Funding Considerations	9
C. Water System	10
D. Sanitary System	10
E. Drainage System	11

## TABLE OF CONTENTS

F. Combined Recommendations	11
1. 6 Year	11
a) Project 1 – Main Street Part A and Mill Street	11
b) Project 2 – Atwell Street	11
c) Project 3 – Union Street	12
d) Project 4 – Pleasant Street	12
e) Project 5 – Main Street Part B	12
f) Project 6 – Storm Sewer Phase 1	12
2. Future	13
a) WWTL Improvements	13
b) Storm Sewer Phase 2	13
c) Water Main Replacements	14
d) Local Streets	14

### Figures

1. Village Streets, Sidewalks & Lighting	
2. Water System Map	
3. Sanitary System Map	
4. Existing Storm Sewer System	
5. Streets Condition Map	
6. Recommended Water System Improvements	
7. 1 <sup>st</sup> Priority Storm Sewer Improvements	
8. 2 <sup>nd</sup> Priority Storm Sewer Improvements	
9. Collective Improvement Needs & Proposed Project Limits	

### List of Tables

1. Existing Wells Data	2
2. Existing Pump Data	3
3. Existing Water Mains	3
4. Water Main Replacements Priority List	10

### Appendices

A. Detailed Cost Estimates	
B. PASER Road Rating and Specific Scoring	
C. Downstream Dryden Drain Potential Improvements Estimate	

## I. INTRODUCTION

The Village of Dryden is a small village located in Lapeer County, south of I-69 between Flint and Port Huron. The Village provides a number of public services and therefore owns and maintains assets such as streets; sidewalks; a drinking water system; sanitary sewers and treatment; storm sewers; parks; and buildings for operations. The costs can be burdensome in terms of operation and maintenance of the aforementioned facilities, particularly without proper planning. The intent of this Capital Improvements Plan is to provide the following:

- Inventory of Village owned facilities
- Assessment of the condition of Village owned facilities
- Information for possible funding options
- Recommendations and prioritization for capital improvements to maximize use of revenues
- Estimated costs for recommended improvements

In accordance with Michigan Compiled Laws (MCL) Act 33 of 2008, the Capital Improvements described in this report are for a six year planning period.

**II. VILLAGE FACILITIES**

**A. ROADWAYS**

All streets, alleys, sidewalks and Village street lights are shown on Figure 1.

**1. Streets**

All streets and alleys within the Village limits are owned and maintained by the Village except for Main Street which is owned by the Lapeer County Road Commission but maintained by the Village. In early October 2015, LAN conducted a condition assessment of all streets within Village limits utilizing the Pavement Surface Evaluation and Rating (PASER) methodology. The PASER asphalt road condition grading procedure involves rating roads on a scale from 1-10 where a score of 1 indicates street failure and 10 indicates excellent condition. The PASER rating system was developed by the University of Wisconsin Transportation Information Center and is the selected rating system of the Michigan Transportation Asset Management Council. Appendix B includes additional details about the PASER system and tabulated information used to score each street in the Village. Figure 5 shows the PASER scores for all streets in the Village.

**2. Sidewalks**

The Village repairs broken sidewalk sections routinely on an as-needed basis. Consequently, there are no lengthy sections of sidewalk in need of replacement.

**3. Street Lighting**

The Village has lights on both sides of Main Street from Union Street to Pleasant Street. The lights are functional however the Village is interested in possibly reducing the number of lights to limit considerable maintenance costs.

**B. WATER SYSTEM**

The existing water system is shown on Figure 2. Information presented in this section has been taken from the 2015 Water Reliability Study and General Plan.

**1. Wells and Water Quality**

The Village of Dryden has 2 active wells numbered 3 and 4. Wells 1 & 2 were taken out of service and abandoned in 2008. The wells are Type I wells and both are drilled to the same aquifer. The wells exhibit the same raw water quality characteristics: arsenic exceeding the maximum contaminant level (MCL) established by the EPA, high iron and high total hardness. The Village has had no problems meeting water quality requirements established in the Safe Drinking Water Act 399. A table showing well information is shown below.

Well	Year Installed	Last Cleaned	Static Water Elevation	Casing Size (in)	Screen Length (ft)	Total Depth (ft)	Permit Capacity (gpm)
3	1996	8/2012	933.17	18	30	156	400
4	2008	-	927.00	12	30	151	420

## 2. Pumps

TABLE 2 EXISTING PUMP DATA				
Well	Pump Capacity	Size	Date Installed	Type
3	400	5"	1999	Vertical Turbine
4	450	4"	2008	Submersible

Both wells are equipped with variable frequency drives (VFD) which allow the motor speeds to be slowed to decrease the pumping rate and more efficiently meet a range of demands. Well pumps are pulled and serviced on a regular basis and with continued routine maintenance should last through the planning period.

## 3. Water Treatment

In general, water from both wells is high in iron and total hardness. Iron levels from each well are typically near 1.0 mg/l and arsenic levels are near 15 parts per billion (ppb). In 2009, the Village constructed an oxidation/filtration arsenic removal WTP which also reduces iron. The WTP consists of 2 pressure filtration tanks with space in the building to add one additional tank in the future. Treated water iron levels are generally around 0.19 mg/l. Chlorine is added for oxidation purposes in the treatment process and for disinfection.

## 4. Storage

A 100,000 gallon water tower was constructed in 1982 to meet demands and provide increased reliability for the system. The water tower is steel and is equipped with a cathodic protection system to prevent corrosion. The height to the bottom of bowl is 100' and the bowl operating range is from 0' to 21'-4". Well pumps are set to maintain the water level between 16' and 19' for an average system pressure of 50 to 60 psi. The tank overflow elevation is at 21'-4". The 100,000 gallon tower is the only storage tank active in the Village. The last inspection conducted showed the tank to be in good condition. The tank interior is an epoxy coat system and was last painted in 1999. The tank exterior is an epoxy urethane system and is scheduled for repainting this year. With routine maintenance, the tank is expected to last throughout the project planning period.

## 5. Distribution

The distribution system is shown in Figure 2, which includes age of mains where known. The system is composed of 6" through 12" water mains made of AC cement, cast iron, ductile iron or PVC pipe. A summary of the existing Village water mains is shown in Table 3 below.

TABLE 3 EXISTING WATER MAINS		
Size	Total Amount (ft)	Material
6"	5,725	AC, PVC, CI
8"	16,923	AC, PVC, CI, DI
12"	9,916	AC, PVC, DI
Total=	32,563	

Water mains are well looped and the Village has had no pressure or flow problems within the distribution system nor have there been excessive main break problems. The foundation of the distribution system is a 12" loop that extends south and east from the WTP and the water tower. The 12" water mains combined with a short section of 8" water main loop the downtown area. Sections of asbestos cement and cast iron pipe are presumed to be near their end of useful life.

#### **6. Service Lines and Meters**

The majority of service lines are residential ¾" copper and are in good condition. There are three (3) 2" meters, (2) 1 ½" meters and (20) to (25) 1" meters. Services meters are not equipped with radio read devices.

#### **7. Power**

A stationary 85 kW, 106 kVA generator was installed in 2008 as part of the WTP project. The generator is wired to and capable of powering the WTP and each of the wells.

### **C. SANITARY SYSTEM**

The entire sanitary system was constructed in 1989-1990 and is shown as Figure 3.

#### **1. Wastewater Treatment Lagoons (WWTL)**

The WWTL consist of 2 nearly equally sized cells, transfer piping, 2 SolarBee aerators, and a discharge metering manhole that is not fully equipped to function. The WWTL were originally constructed with a working volume of 19.07 million gallons (MG) or an average flow of 104,000 gallons per day (gpd) with discharge periods in the spring and fall: March 1st through May 31st, and October 1st through December 31<sup>st</sup> respectively. However, in 2006 the MDEQ notified the Village that the month of May would be revoked from the discharge period. A detailed analysis of the WWTL capacity completed in August 2006 by Workhorse Civil Design (WCD) concluded that the WWTL had nearly reached capacity and the Village placed a hold on allowing any new sanitary service connection purchases. The WWTL berms are protected by rip rap and the lagoons are clay lined. The sludge depth in both lagoons was checked the summer of 2009 and sludge accumulation did not warrant removal at that time.

#### **2. Pump Station**

There is 1 pump station that pumps all flow from the Village through a 6" ductile iron force main to the WWTL. The pump station is equipped with 2 pumps and a permanent generator. The pump station does not have a flow meter and no flow meter is in place at the inlet to the WWTL. The wet well and pumps are in good condition.

#### **3. Collection**

All sewers other than the ductile iron force main are 8" or 12" PVC pipes. Sewer pipes are assumed to be in good condition based on age.

#### **4. Service Leads**

Similar to the sewers, service leads from the sewer to the right of way/property lines are assumed to be PVC and in good condition. Material, age, and condition of service leads on private property is unknown.

#### **D. DRAINAGE SYSTEM**

Existing storm sewers in the Village are shown on Figure 4. Three outfalls drain the entire Village to an open channel named the Dryden Drain that starts in the northeast part of the Village, just east of the old Grand Trunk railroad. Also part of the Dryden Drain, two enclosed pipes called Dryden Drain #1 and Dryden Drain #2 receive and convey runoff from the majority of the Village north of Dryden Road. To avoid confusion, the open channel portion of the Dryden Drain will be referred to as the 'Dryden Drain OC' in this report. Dryden Drain OC and Drains #1 and #2 are owned and maintained by the Lapeer County Drain Commission (LCDC). The majority of the Village south of Dryden Road drains through an enclosed pipe commonly referred to as the Allen Drain. According to Village records, Dryden Drain #1 was constructed in 1908, Dryden Drain #2 was constructed in 1920 and the Allen Drain, originally constructed in the early 1950's, was replaced in 1976 by Village staff. Other than the Dryden Drain, all storm sewers in the Village, including the Allen Drain, are owned and maintained by the Village.

A storm sewer evaluation report was completed in August 2010 by WCD. The report demonstrated that the majority of enclosed storm sewers throughout the Village are undersized including Dryden Drains #1 and #2 and the Allen Drain. Dryden Drains #1 and #2 are of particular concern because flooding of homes occurs frequently due to the lack of drainage capacity.

#### **E. BUILDINGS**

The Village owns the Village Hall, the DPW building, the well house / WTP building, the abandoned well house, and the old cider mill on the corner of RR Street and Main Street. The Village Hall, DPW building and WTP building are in fair condition. The old well house was previously the control station for abandoned Wells 1 and 2, and no longer serves any purpose. The old cider mill was donated to the Village and is currently used for storage. The building is in need of a new roof.



### III. FUNDING

#### A. RURAL TASK FORCE TRANSPORTATION IMPROVEMENTS PROGRAM (Roads)

The Genesee-Lapeer-Shiawassee Region V Planning and Development Commission administers funding from MDOT through the Rural Task Force (RTF) Transportation Improvement Program (TIP). Funding is available every 9 years for road projects within small cities and villages in Region V and covers up to 80% of eligible project costs. The next cycle of funds will be available in fiscal year 2018. Eligible work includes road improvements and drainage associated with the road work for roads classified as Rural Minor Collector or greater. Main Street is the only street in the Village eligible for RTF funding.

#### B. MDOT PROGRAMS (Roads)

##### 1. State Infrastructure Bank (SIB)

The SIB Program established in 2015 offers loans to public road entities for highway projects defined in Title 23, U.S.C. which includes local streets. The application process is relatively simple, the interest rate is typically 3%, maximum loan term is 25 years, and loans are generally capped at \$2 million.

##### 2. Transportation Alternatives Program (TAP)

The TAP is a grant program primarily intended for non-driver type facilities such as bike lanes, sidewalks, and trails for pedestrian traffic. Road work that is eligible under the TAP is specialized and would not apply to road improvements needed in Dryden.

##### 3. Local Agency Program (LAP)

The LAP is intended to assist small communities like Dryden with road improvements. However, LAP funding is part of the funding contributing to the RTF and therefore is not available separately for individual community use.

#### C. USDA RURAL DEVELOPMENT (Water, Sanitary and Storm)

The United States Department of Agriculture (USDA) Rural Development program offers loan and grant assistance for water and sewer projects. The median income in Dryden is too high for the Village to qualify for grant money within the program. Loans offered through Rural Development are 30-40 year loans and the interest rate is also set according to the median income. The interest rate for Dryden at this time is 2.5 - 3.5% and the rate changes quarterly. Applications are taken at any time and require submittal of basic project information. Funding through the USDA RD Program would be appropriate for drainage, sanitary, or water projects.

#### D. MDEQ PROGRAMS (Water and Sanitary)

The MDEQ administers loans through the State Revolving Fund (SRF) and Drinking Water Revolving Fund (DWRF) Programs for sanitary sewer and drinking water projects. Loans are generally a 20 year period with an interest rate of 2.5 – 3.0%. Applications are taken one time per year and require an in depth report and cost effective analysis. DWRF or SRF loans would be ideal for water or sanitary projects.

Grant programs such as the S2 or SAW grants arise occasionally through the MDEQ, typically resulting from federal legislation. However, currently there are no grant opportunities available or known to be coming.

## E. ASSESSMENTS (Storm)

Assessments offer a means of funding drainage projects. Nearly all drainage from the Village either passes through or outlets to the Dryden Drain which is owned and maintained by the LCDC. Should the Village pursue drainage improvements within the Village there would be direct or indirect impacts on the Dryden Drain and therefore the project would be subject to LCDC review, approval, and potential additional costs for downstream drain improvements deemed necessary by the LCDC. After meeting with the LCDC to discuss potential drainage improvements, there appear to be 2 logical approaches the Village could take to accomplish the work. Option 1 would be to petition the LCDC as the drain owner to address the flooding issues in the Village. The Village would provide information regarding need for the project and any past work completed such as the 2010 Storm Sewer Evaluation report and if the LCDC agreed there is a need, would take responsibility for the project. Under Option 1, the LCDC would be responsible for planning, designing, constructing and financing the project through a drainage district assessment. The Village could offer input to the LCDC, but technically would have no control over project decisions like schedule or pipe route and sizing. Plus, future turnover of the Drain Commissioner position could result in project changes. Option 2 would be for the Village to request that the LCDC relinquish ownership of the enclosed portions of the Dryden Drain (Dryden Drains #1 and #2) to the Village. Upon taking ownership of Drains #1 and #2, the Village would then be responsible for maintaining those segments and could complete improvements under Village control. With either option, the LCDC might require upgrades on the Dryden Drain OC downstream of the Village to accommodate the Village improvements and would assess those costs to the Village and/or the drainage district.

### 1. Drainage District Assessment

By legal authority, the LCDC has established a drainage district for the Dryden Drain and can assess maintenance and improvement costs across the entire district. The Dryden Drain district includes entities other than the Village of Dryden such as Lapeer County, Dryden and Almont Townships, and private residents downstream of the Village. Therefore, the advantage of Option 1 to the Village is that project costs may be shared by others outside the Village of Dryden. At LAN's request, the LCDC provided an assessment roll for the Dryden Drain for past work. The information provided would need to be updated for new projects, but provides some insight into how costs might be assessed. The percentages assigned from the assessment role indicate the following:

Lapeer County (Including RC)	14.91%
Dryden Township	4.00%
Almont Township	1.00%
Village of Dryden at large	10.00%
Direct Private Parcels within Village	44.94%
Direct Private Parcels outside Village	25.15%

The allocation percentages presented above are set by the LCDC and would be updated by the LCDC for Dryden Drain improvement projects.

## **2. Special Assessment**

If the Village took ownership of Dryden Drains #1 & #2, discussed as Option 2 above, then the Village would also be fiscally responsible for maintenance and improvement costs associated with those sections of the drain. The typical means of paying for such work would be to establish a special assessment district from parcels deriving benefit from the proposed work to distribute the costs across. In such a case, special assessment districts commonly have members of primary benefit and members of limited benefit based on the physical watershed boundaries and costs are allocated accordingly. The advantage of Option 2 is that the Village would have control over when and how drain improvements would be completed.

## **F. VILLAGE FUNDS (Roads, Water, Sanitary and Storm)**

The Village water and sewer fund can be used to pay for water system and sanitary system projects. The Village local streets fund can be used to pay for road projects and drainage associated with road improvements. The Village does not have a separate storm sewer fund and there are legal implications with establishing such a fund. The Village is advised to consult with an attorney prior to utilization of a storm sewer fund.

## IV. RECOMMENDED IMPROVEMENTS AND PRIORITIZATION

### A. PRIORITIZATION APPROACH

Aging infrastructure in the US is slowly but surely developing into a quiet national disaster due to the fact that the issue is generally not being addressed. From an economic and social perspective, circumstances today are not conducive for spending on failing infrastructure that is not obvious to the average citizen. Therefore, it is important that municipalities plan projects carefully to get the most 'bang for the buck' while also taking advantage of any funding opportunities that are available. To that end, recommendations defined in this section are spelled out for each category of infrastructure but are also overlaid with one another to help define specific areas for improvement that will address multiple needs. For example, more priority is given to replacement of a failing roadway if the water main under that roadway also needs to be replaced.

### B. ROADWAYS

Figure 5 depicts road conditions with PASER ratings and a simplified prioritization of road improvements by color coding. A table showing typical road conditions for a given PASER score is shown in Appendix B. On Figure 5, roads colored red are severely deteriorated, roads colored yellow are slightly to moderately deteriorated, and roads colored green are in good condition.

#### 1. Special Considerations

Factors to consider other than pavement condition include usage volume, the cause and nature of the pavement deterioration, and timing of other projects.

##### a) Extent of Use

The paved portions of Holmes Alley and the segment of Pleasant Street south of Liberty are in poor condition, but the low volume of use may not warrant that these sections be considered as high priority improvements. Considering the usage, Holmes Alley and the southernmost segment of Pleasant could function effectively as gravel rather than paved.

##### b) Cause of Pavement Distress

The section of Main Street from Union to Mulholland is known to have concrete pavement overlaid with asphalt which has led to 'speed bump' like transverse cracks due to differential expansion and contraction. Although the PASER score of this roadway section indicates the overall condition of the road is not critical, significant structural problems remain but are somewhat hidden by past overlays. Additionally, the nature of the issue creates an objectionable experience on what is a high use road. Unfortunately, the solution requires full depth pavement replacement as opposed to surficial treatment.

##### c) Coordination of Work

If recommended storm sewer improvements are delayed due to financial reasons or LCDC delays, the Village may want to delay road work in the areas of proposed sewer to avoid multiple disturbances to the pavement.

#### 2. Funding Considerations

Funding from the RTF is available for Main Street road work projects to be constructed in 2018. The portion of Main Street from the west Village limits to Mulholland is in need of repair and although the condition of the road is not as bad

as other streets in the Village, Main Street experiences by far the most traffic volume. Also, as discussed in the paragraph above the section of Main Street from Union to Mulholland has problems that are more serious than the PASER ratings indicate. Therefore, available funding coupled with need add priority to Main Street improvements.

**C. WATER SYSTEM**

Most if not all AC mains remaining in the system were likely installed in the 1950's or earlier and have exceeded their life expectancy. Similarly, there is a 'cross' portion of 8" CI water main in the downtown area that probably was installed prior to 1970. CI pipe can also contribute to water discoloration due to rust. To date, the Village has had very few water main breaks suggesting that mains are still in reasonable condition. Therefore, LAN recommends replacement of AC and CI mains over an extended period of time, as mains begin to show signs of deterioration or when opportunities such as road replacement or funding availability arise. The following table of suggested prioritized water main replacements is taken from the 2015 Water Reliability Study.

TABLE 4 WATER MAIN REPLACEMENTS PRIORITY LIST						
Priority	Size / Mat'l	Street	From	To	Length	Est. Cost
1	12" AC	N/A	Water tower	Mill	690	\$ 150,100
2	8" CI	Main	Union	E/ Pleasant	820	\$ 286,600
3	8" CI	Mill	North	Holmes Alley	580	\$ 186,300
4	6" AC	Atwell	N/ Monroe	South	960	\$ 277,100
5	6" AC	Gill	Union	Mill	460	\$ 132,700
6	6" AC	Pleasant	Pleasant end	North	460	\$ 139,700
7	6" AC	Union	N/ Monroe	South	860	\$ 235,900
8	6" AC	Monroe	Atwell	Union	380	\$ 103,300
9	8" AC	Main	E/ Belle Ridge	E Village limit	2,040	\$ 299,900
10	6" AC	Main	E Village limit	E end	730	\$ 109,400

Estimated construction costs shown in Table 4 assume half width road replacement and include 10% construction contingency, and 15% engineering/planning. The ENR index at the time the Reliability Study was written (July 2015) was 10,037. Note that the water main listed as priority #10 serves a very limited number of residents and other options should be considered before replacement of the water main.

The recommended water main replacements listed above are shown on Figure 6, categorized into first and second priorities.

**D. SANITARY SYSTEM**

As part of the 2009 WWTL discharge permit renewal process, the MDEQ required the Village to hire a consultant to complete a WWTL analysis. The 2009 WWTL Study completed by WCD recommended the following WWTL and pump station improvements:

- Installation of an improved transfer structure and piping between Cell 1 and Cell 2
- Construction of a 3<sup>rd</sup> cell to increase capacity and facilitate discharge meeting permit requirements regarding isolation and timing
- Install flow metering for both WWTL inflow and outflow
- Addition of chemical feed and settling basin to assist with phosphorous removal

For purposes of this Capital Improvements Plan, LAN has assumed sanitary sewers and manholes are in good condition and no improvements are required. However, prior to any road construction, LAN recommends the Village televise sanitary sewers within the project limits to determine pipe condition and if repair or replacement is needed.

## E. DRAINAGE SYSTEM

Recommendations from the 2010 Storm Sewer Evaluation by WCD have been updated based on input from the Village and LCDC. Updated proposed storm sewer improvements are shown on Figures 7 and 8. First priority was assigned to storm sewers that are known to have been installed in 1954 or earlier and also to replacement of Dryden Drains #1 and #2 because of severe flooding associated with those drains. Second priority replacements consist of replacement of the Allen drain and tributary branches that are thought to be fairly old or undersized.

## F. COMBINED RECOMMENDATIONS

Figure 9 shows priority areas for each type of infrastructure owned by the Village combined onto one drawing to help clarify where the Village can concentrate efforts to rectify numerous issues with a given project.

### 1. 6 Year

Projects recommended for completion within the next 6 years are described below. General limits for Projects 1-5 are shown on Figure 9 and the layout for Project 6 is shown on Figure 7 as the proposed storm sewer interceptor. Details for all costs presented are included in Appendix A. The current (May 2016) ENR index is 10,315.

#### a) Project 1 – Main Street Part A and Mill Street

Project 1 addresses 1<sup>st</sup> priority water main, 1<sup>st</sup> priority storm sewer and 1<sup>st</sup> and 2<sup>nd</sup> priority pavement improvement needs. Additionally, RTF funding is available for roadway and drainage work items on Main Street. A loan through the MDOT SIB program could be used in conjunction with RTF funding.

Project Cost: \$1,612,700

Estimated amount covered by RTF: \$600,000

Estimated Village cost for ineligible work: \$191,800

SIB Loan amount: \$820,900

Estimated SIB Loan annual payment: \$47,200

#### b) Project 2 – Atwell Street

Project 2 addresses 1<sup>st</sup> priority road work, 2<sup>nd</sup> priority water main replacement and 2<sup>nd</sup> priority storm sewer replacement. Funding options – SIB loan.

Project Cost: \$378,800  
Estimated Village cost for ineligible work: \$120,200  
SIB Loan amount: \$258,600  
Estimated SIB Loan annual payment: \$14,900

**c) Project 3 – Union Street**

Project 3 addresses 1<sup>st</sup> priority road work, 2<sup>nd</sup> priority water main replacement and 2<sup>nd</sup> priority storm sewer replacement. Funding options – SIB loan.

Project Cost: \$395,600  
Estimated Village cost for ineligible work: \$91,900  
SIB Loan amount: \$303,700  
Estimated SIB Loan annual payment: \$17,500

**d) Project 4 – Pleasant Street**

Project 4 addresses 1<sup>st</sup> priority road work, 2<sup>nd</sup> priority water main replacement and a small portion of 1<sup>st</sup> priority storm sewer replacement. Funding options – SIB loan.

Project Cost: \$171,100  
Estimated Village cost for ineligible work: \$48,900  
SIB Loan amount: \$122,200  
Estimated SIB Loan annual payment: \$7,100

**e) Project 5 – Main Street Part B**

Project 5 only addresses 2<sup>nd</sup> priority road work, but is eligible for RTF grant money. However, if RTF funding is limited or not available, the Village may want to consider delaying Project 5. Funding options – RTF grant and SIB loan.

Project Cost: \$131,600  
Estimated amount covered by RTF: \$91,520  
Estimated Village cost for match or ineligible work: \$40,080  
SIB Loan amount: \$40,080  
Estimated SIB Loan annual payment: \$2,400

**f) Project 6 – Storm Sewer Phase 1**

Project 6 is a critical storm sewer improvement to address numerous flooding issues in the Village caused by severely undersized Dryden Drains #1 and #2. The proposed new storm route runs down North Street from Mill to RR Street and therefore, addresses 2<sup>nd</sup> priority road work. Ideally, Project 6 would be constructed prior to Projects 1 and 4 so the new storm interceptor would be in place for connection of tributary branches from those projects. Of the costs shown below, the 'Project Cost' refers to Project 6 shown in red on Figure 7 and 'Downstream Cost' refers to downstream drain improvement costs that are anticipated to be imposed by the LCDC. Derivation of the downstream cost is provided in Appendix C. Funding options – LCRC assessment, special assessment, USDA-RD loan.

Project Cost: \$953,000  
Estimated assessment to Village at large: \$142,950  
Estimated assessment to Direct Village Parcels: \$571,800  
Estimated assessment to others: \$238,250

Downstream Cost: \$455,400

Estimated assessment to Village at large: \$45,540

Estimated assessment to Direct Village Parcels: \$204,700

Estimated assessment to others: \$205,160

Combined estimated average annual assessment to Village household: **\$140**

The average assessment shown above is an estimate only and is intended to provide the Village some perspective of potential impact to a typical household. The actual assessment largely depends on LCDC decisions and would vary from parcel to parcel. The following assumptions were made in order to estimate the annual assessment to a Dryden Village household:

- Project is completed through LCDC as described in Section III (E) (1).
- Downstream Cost is estimated based on drain clean out and limited reshaping of the drain for the full length from the Village to Herpolschiemer's Pond.
- The LCDC will hold past assessment percentages for Downstream Costs
- For Project Costs in the Village, the LCDC will increase Village at large percentage to 15%, increase Direct Village Parcel percentage to 60%, and decrease all others proportionally to past allocation
- 378 total parcels in the Village

## 2. Future

There is an immediate need for a number of other projects not listed as 6 year projects, but the Village simply does not have the revenue stream to pay for every project. Additional recommended projects are listed in this section for future consideration.

### a) WWTL Improvements

Construction of an entirely new 3<sup>rd</sup> lagoon cell; chemical storage and injection facilities; a settling basin and transfer piping modifications are recommended in order to address capacity limitations, water quality requirements and operability issues discussed in detail in Section IV (D). Funding options – SRF loan, USDA-RD loan.

Project Cost: \$1,204,300

Loan amount: \$1,204,300

Estimated SRF or USDA-RD Loan annual payment: \$67,500

### b) Storm Sewer Phase 2

The second recommended storm sewer interceptor project is shown in pink on Figure 8. The improvements would address flooding issues associated with the Allen Drain. Similar to Storm Sewer Phase 1, it would be best to construct the Storm Sewer Phase 2 interceptor before constructing Projects 2 and 3 so that the interceptor is in place for connection of the lateral sewers.

Project Cost: \$865,300

Loan amount: \$865,300

Estimated SRF or USDA-RD Loan annual payment: \$67,500



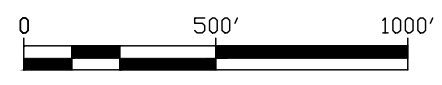
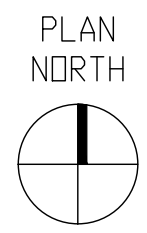
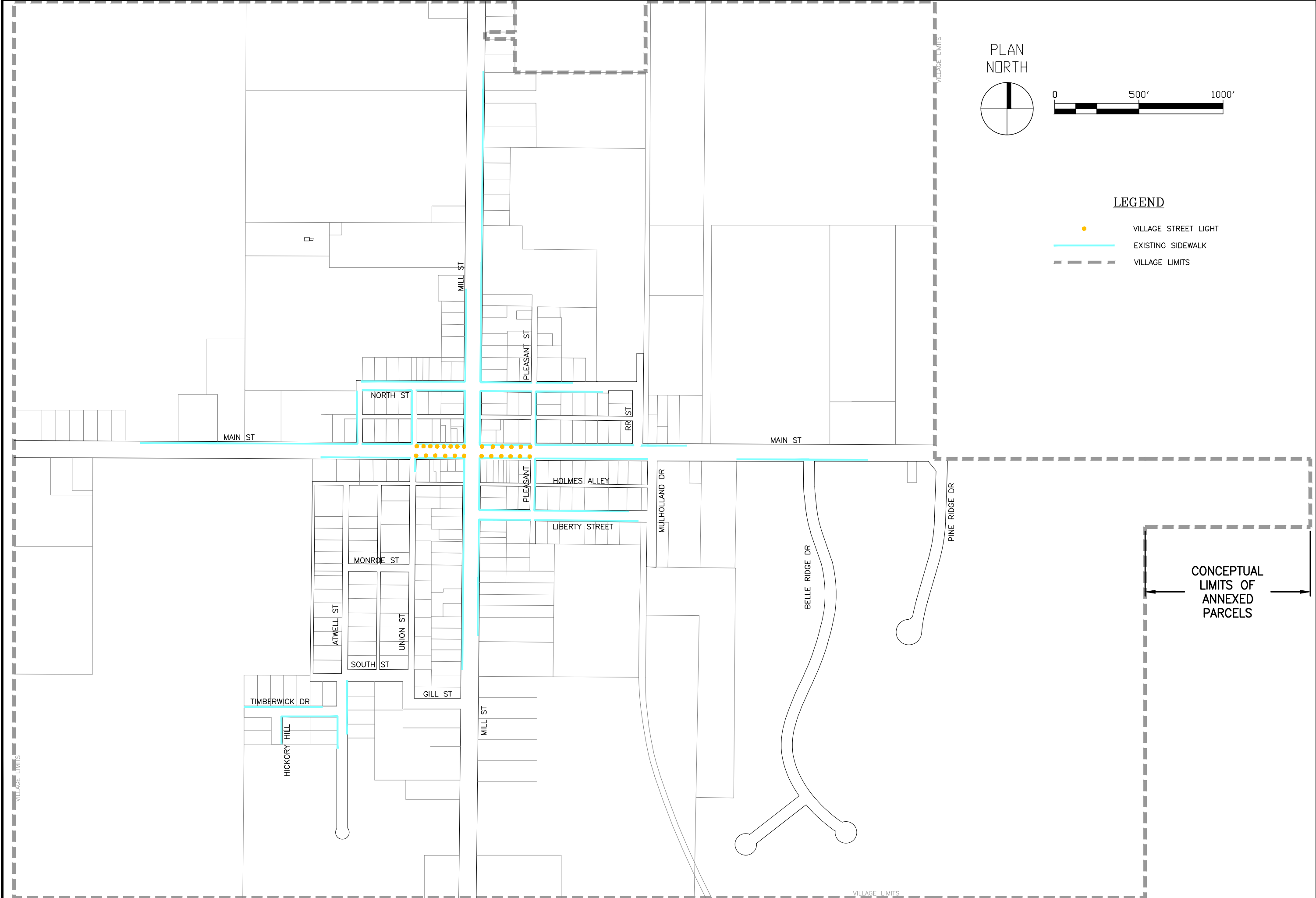
Note that an alternate route for the proposed Allen Drain replacement is shown on Figure 8. The alternate route presented could decrease the project cost by over \$250,000 if the appropriate easements can be acquired and elevations permit gravity flow. Due to these unknowns, costs for the primary route are used in this report, but further investigation of the alternate route is recommended during the design phase. Elevations seem to be suitable based on USGS mapping but detailed survey information would be needed to confirm.

**c) Water Main Replacements**

Recommended water main replacements from the 2015 Reliability Study that are not included in other projects listed are Segments 1, 5, and 8-10 from Table 4. Costs shown in Table 4 still apply as of the date of this report.

**d) Local Streets**

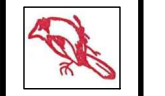
Streets categorized as severely deteriorated on Figure 9 that are not included in specific projects are recommended to be rehabilitated as funding allows. The streets include Mill Street north of North Street, Timberwick, Hickory Hill, Mulholland, and the northernmost block of Union Street.



**LEGEND**

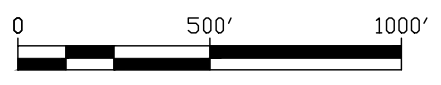
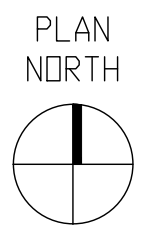
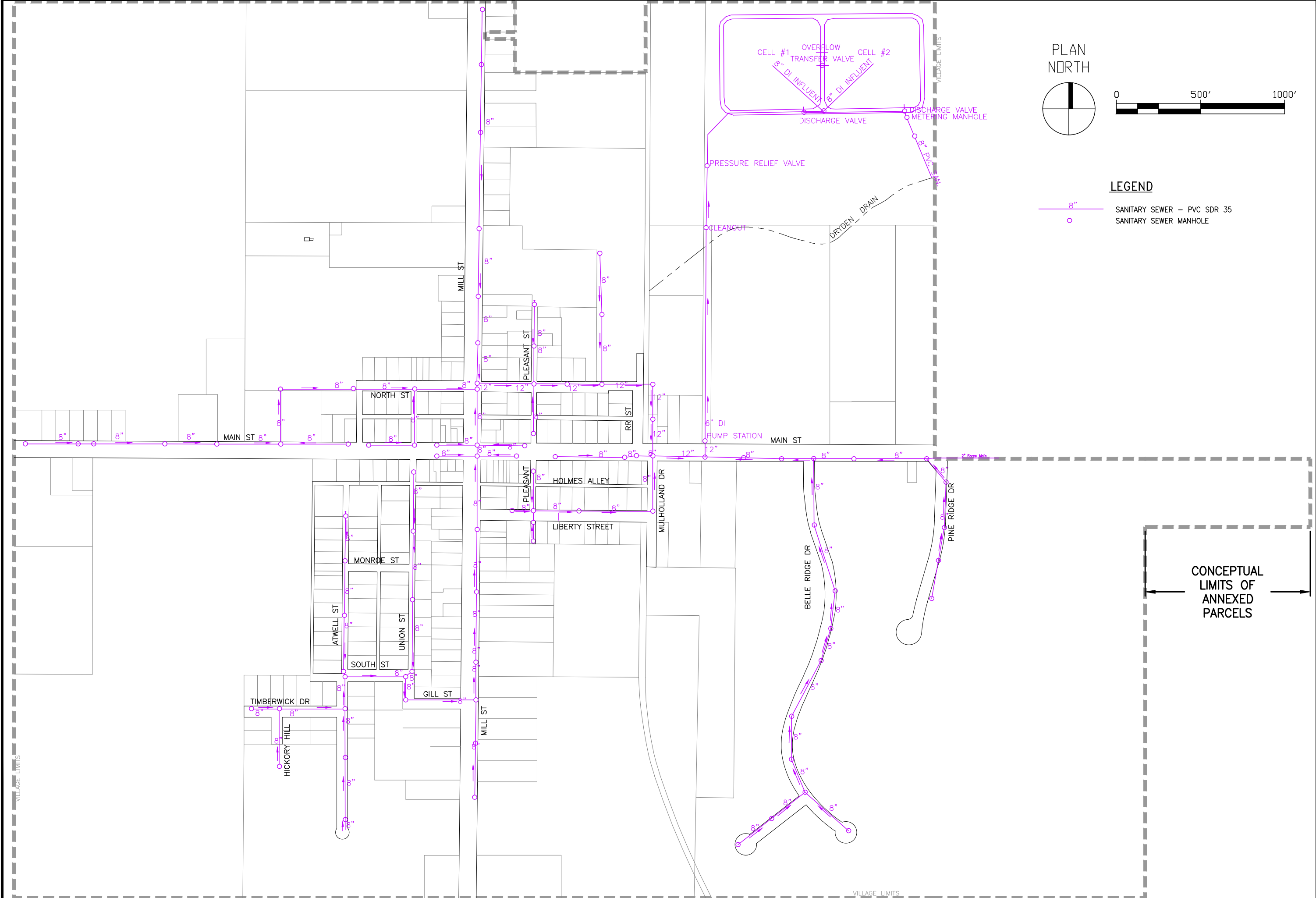
- VILLAGE STREET LIGHT
- EXISTING SIDEWALK
- VILLAGE LIMITS

CONCEPTUAL  
LIMITS OF  
ANNEXED  
PARCELS



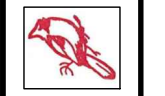
C:\pro\_jectwise\jphansen\00317399\Dryden-utlis-pla.tmap.DWG



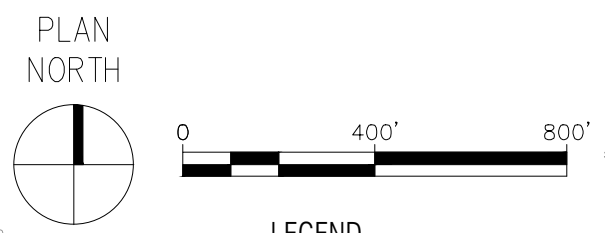
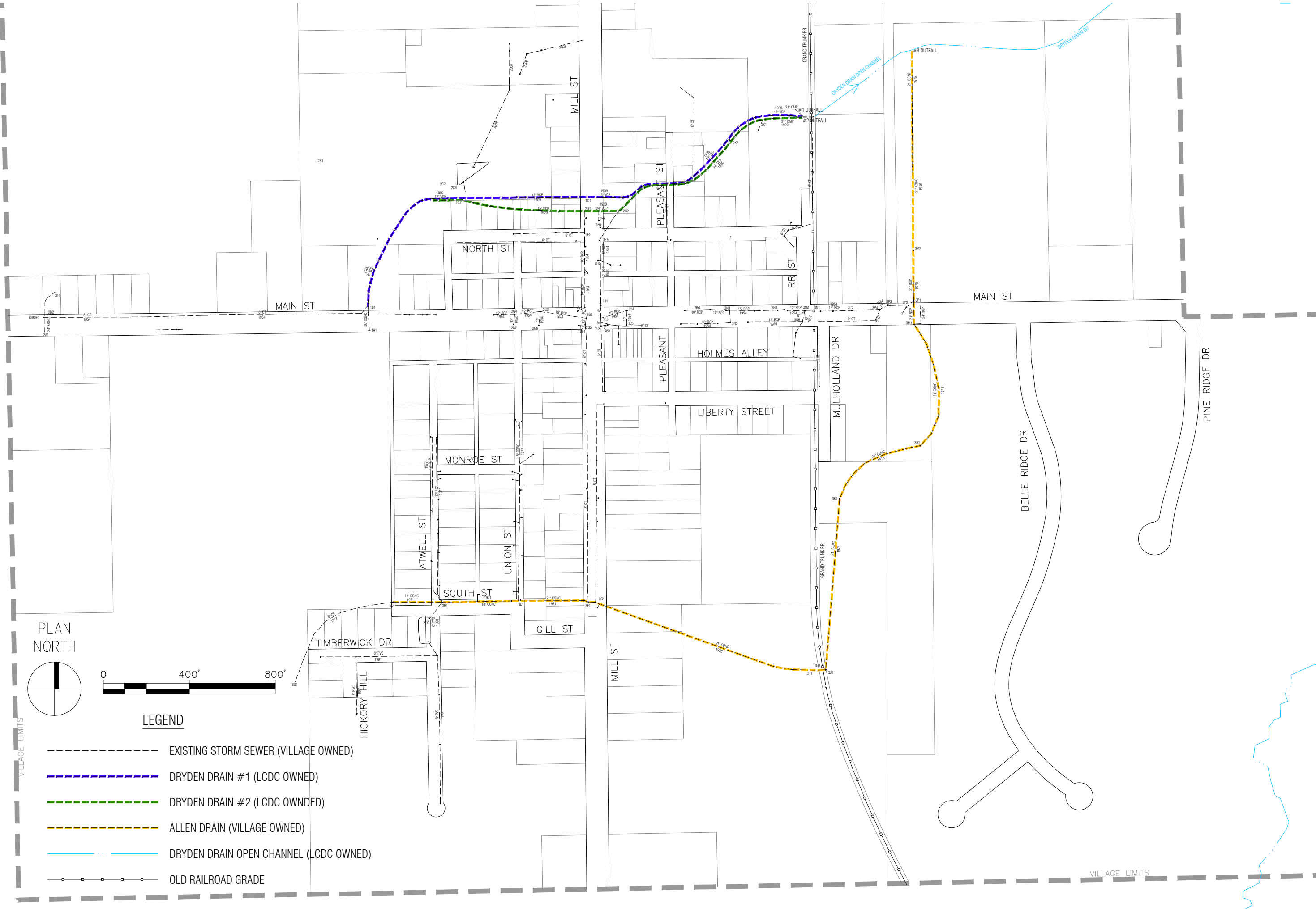


**LEGEND**

- 8" SANITARY SEWER — PVC SDR 35
- SANITARY SEWER MANHOLE



C:\pro\_jectwise\jphansen\00317399\Dryden-utlis-pla.tmap.DWG



**LEGEND**

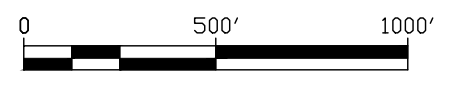
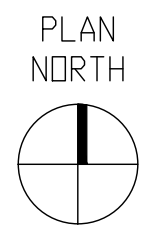
- EXISTING STORM SEWER (VILLAGE OWNED)
- - - DRYDEN DRAIN #1 (LCDC OWNED)
- - - DRYDEN DRAIN #2 (LCDC OWNED)
- - - ALLEN DRAIN (VILLAGE OWNED)
- - - DRYDEN DRAIN OPEN CHANNEL (LCDC OWNED)
- - - OLD RAILROAD GRADE



**2016 CAPITAL IMPROVEMENTS PLAN**  
**EXISTING STORM SEWER SYSTEM**

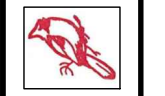
Job No. 130-10658-001
Date 11/11/15

C:\projectwise\jphansen\gd317399\storm-map.dwg

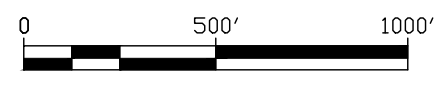
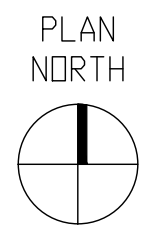
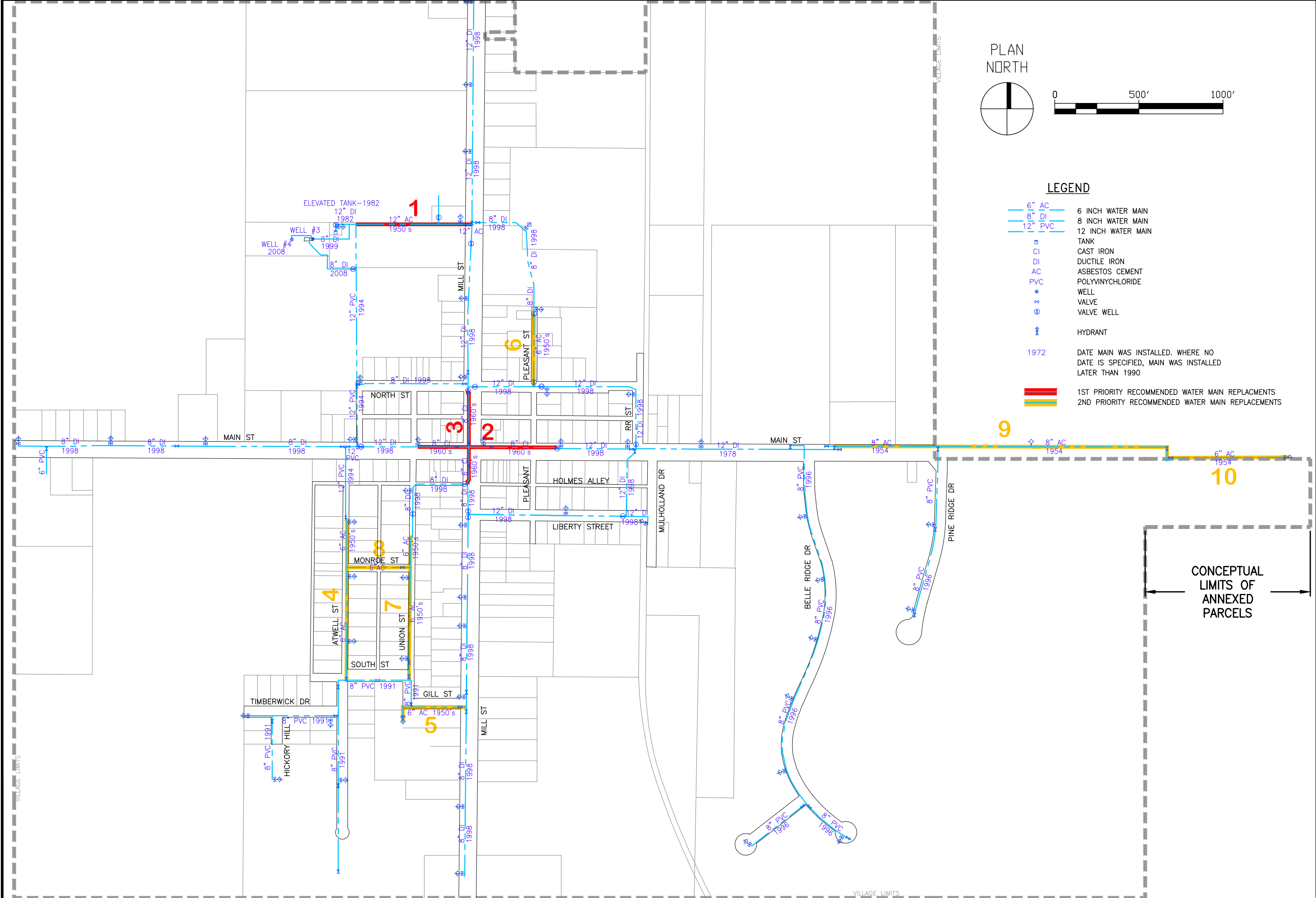


**LEGEND**

- GOOD CONDITION - NO IMPROVEMENTS RECOMMENDED
- FAIR CONDITION - 2ND PRIORITY IMPROVEMENTS
- POOR CONDITION - 1ST PRIORITY IMPROVEMENTS



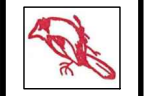
C:\pro\_lectwise\jphansen\00317399\Dryden-utills-pla.tmap.DWG



**LEGEND**

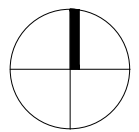
- 6" AC      6 INCH WATER MAIN
- 8" DI      8 INCH WATER MAIN
- 12" PVC    12 INCH WATER MAIN
- TANK
- CI      CAST IRON
- DI      DUCTILE IRON
- AC      ASBESTOS CEMENT
- PVC    POLYVINYLCHLORIDE
- WELL
- × VALVE
- ⊗ VALVE WELL
- + HYDRANT
- 1972    DATE MAIN WAS INSTALLED. WHERE NO DATE IS SPECIFIED, MAIN WAS INSTALLED LATER THAN 1990
- 1ST PRIORITY RECOMMENDED WATER MAIN REPLACEMENTS
- 2ND PRIORITY RECOMMENDED WATER MAIN REPLACEMENTS

CONCEPTUAL  
LIMITS OF  
ANNEXED  
PARCELS



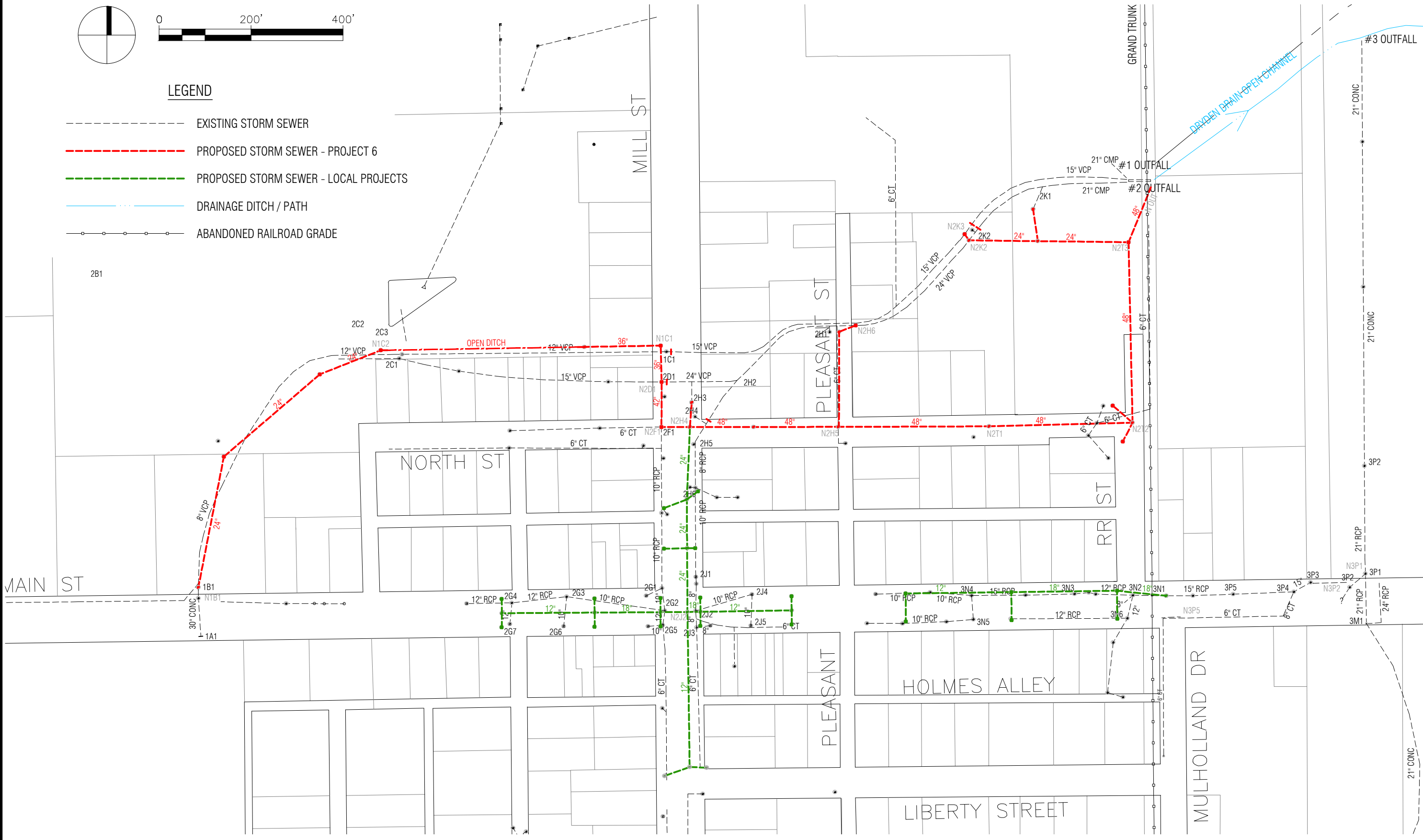
C:\pro jectwise \jphansen\00317399\dryden-utilis-pla.tmap.dwg

PLAN NORTH



LEGEND

- - - - - EXISTING STORM SEWER
- - - - - PROPOSED STORM SEWER - PROJECT 6
- - - - - PROPOSED STORM SEWER - LOCAL PROJECTS
- - - - - DRAINAGE DITCH / PATH
- - - - - ABANDONED RAILROAD GRADE



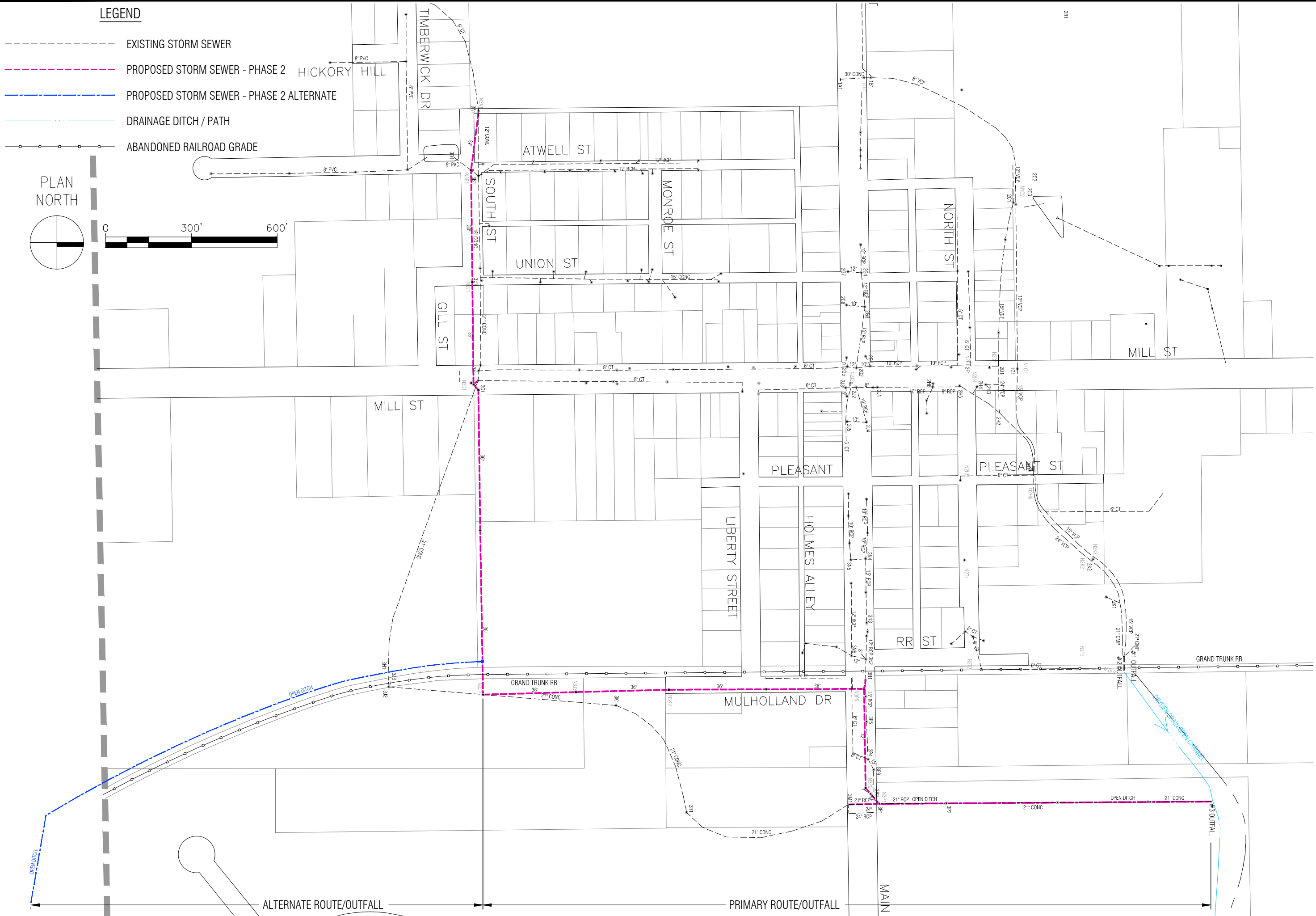
C:\projectwise\jphansen\gd317399\storm-map.dwg



**LEGEND**

- EXISTING STORM SEWER
- - - PROPOSED STORM SEWER - PHASE 2
- PROPOSED STORM SEWER - PHASE 2 ALTERNATE
- DRAINAGE DITCH / PATH
- ABANDONED RAILROAD GRADE

PLAN NORTH



ALTERNATE ROUTE/OUTFALL

PRIMARY ROUTE/OUTFALL



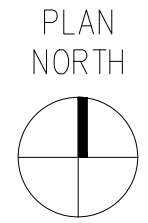
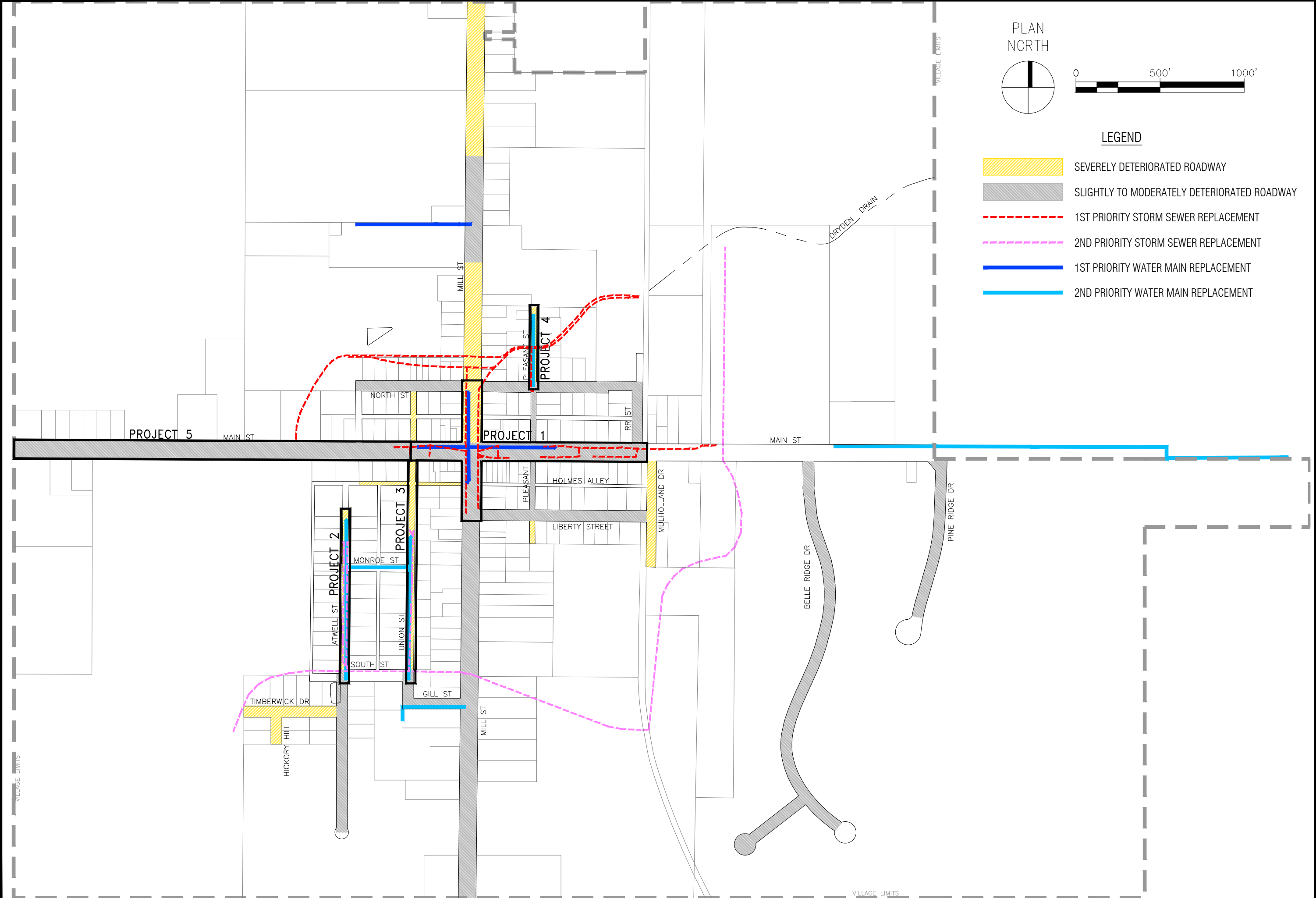
**2015 CAPITAL IMPROVEMENTS PLAN  
 2ND PRIORITY STORM SEWER  
 IMPROVEMENTS**

Job No. 130-10658-001

Date 12/02/15

Figure:  
 8

C:\projectwise\jhanzen\gd0317399\storm-map.dwg



**LEGEND**

- SEVERELY DETERIORATED ROADWAY
- SLIGHTLY TO MODERATELY DETERIORATED ROADWAY
- 1ST PRIORITY STORM SEWER REPLACEMENT
- 2ND PRIORITY STORM SEWER REPLACEMENT
- 1ST PRIORITY WATER MAIN REPLACEMENT
- 2ND PRIORITY WATER MAIN REPLACEMENT



**2016 CAPITAL IMPROVEMENTS PLAN**  
**COLLECTIVE IMPROVEMENT NEEDS OVERLAIN**  
**& PROPOSED PROJECT LIMITS**

Job No. 130-10658-001

Date 12/02/15

Figure:  
9

## **APPENDIX A** **DETAILED COST ESTIMATES**

VILLAGE OF DRYDEN  
 CAPITAL IMPROVEMENTS PLAN  
 RECOMMENDED PROJECTS  
 Construction Cost Estimate Summary




Portion	Project 1 - Main St (Part A)			Project 1 - Mill St (Part C)			Project 2 - Atwell			Project 3 - Union		
	Total	Village	RTF	Total	Village	RTF	Total	Village	Loan	Total	Village	Loan
Roadway	\$616,400	20.0% \$123,280	80.0% \$493,120	\$295,800	100.0% \$295,800	0.0% \$0	\$128,700	0.0% \$0	100.0% \$128,700	\$167,200	0.0% \$0	100.0% \$167,200
Storm Sewer	\$196,200	20.0% \$39,240	80.0% \$156,960	\$102,200	100.0% \$102,200	0.0% \$0	\$80,500	0.0% \$0	100.0% \$80,500	\$84,900	0.0% \$0	100.0% \$84,900
Water Main	\$136,300	100.0% \$136,300	0.0% \$0	\$55,500	100.0% \$55,500	0.0% \$0	\$120,200	100.0% \$120,200	0.0% \$0	\$91,900	100.0% \$91,900	0.0% \$0
Sanitary Sewer	\$0	100.0% \$0	0.0% \$0	\$0	100.0% \$0	0.0% \$0	\$0	100.0% \$0	0.0% \$0	\$0	100.0% \$0	0.0% \$0
Construction Cost =	\$948,900	\$298,820	\$650,080	\$453,500	\$453,500	\$0	\$329,400	\$120,200	\$209,200	\$344,000	\$91,900	\$252,100
15% Planning/Eng./Legal =	\$142,300			\$68,000			\$49,400			\$51,600		
<b>PROJECT TOTAL =</b>	<b>\$1,091,200</b>			<b>\$521,500</b>			<b>\$378,800</b>			<b>\$395,600</b>		
Participating Total =		\$441,120	\$650,080		\$521,500	\$0		\$169,600	\$209,200		\$143,500	\$252,100
Non Participating (Village) Total =												

VILLAGE OF DRYDEN  
 CAPITAL IMPROVEMENTS PLAN  
 RECOMMENDED PROJECTS  
 Construction Cost Estimate Summary



Portion	Project 4 - Pleasant			Project 5 - Main St (Part B)			Project 6 - Storm Sewer Ph 1			Storm Sewer Ph 2		
	Total	Village	Loan	Total	Village	RTF	Total	Village	Other	Total	Village	Loan
Roadway	\$77,400	0.0%	100.0%	\$114,400	20.0%	80.0%	\$828,700	\$124,305	\$704,395	\$752,400	\$0	\$752,400
Storm Sewer	\$22,500	0.0%	100.0%	\$0	20.0%	80.0%	\$0	\$0	\$0	\$0	\$0	\$0
Water Main	\$48,900	100.0%	0.0%	\$0	100.0%	0.0%	\$0	\$0	\$0	\$0	\$0	\$0
Sanitary Sewer	\$0	100.0%	0.0%	\$0	100.0%	0.0%	\$0	\$0	\$0	\$0	\$0	\$0
Construction Cost =	\$148,800	\$48,900	\$99,900	\$114,400	\$22,880	\$91,520	\$828,700	\$124,305	\$704,395	\$752,400	\$0	\$752,400
Planning/Eng./Legal =	\$22,300			\$17,200			\$18,600	\$105,700		\$112,900		
<b>PROJECT TOTAL =</b>	<b>\$171,100</b>			<b>\$131,600</b>			<b>\$953,000</b>			<b>\$865,300</b>		
Participating Total =		\$71,200	\$99,900		\$40,080	\$91,520		\$142,905	\$810,095		\$0	\$865,300
Non Participating (Village) Total =												


Estimated percentages - true percentages will be determined by the LCDC

VILLAGE OF DRYDEN																						
CAPITAL IMPROVEMENTS PLAN																						
Recommended Road Projects																						
Opinion of Probable Costs																						
		Project 1 - Main St (Part A)						Project 1 - Mill (Part C)				Project 2 - Atwell		Project 3 - Union		Project 4 - Pleasant		Project 5 - Main St (Part B)				
		Union - Pleasant		Pleasant - RR		RR - Mulholland		North - Main		Main - Liberty		N. End - South		Main - South		N. End - North		Union - Atwell		Atwell - Vill. Limit		
		L =	780	L =	575	L =	150	L =	360	L =	345	L =	890	L =	1280	L =	500	L =	300	L =	2040	
w =	67.2	w =	44	w =	22	w =	64	w =	54	w =	21	w =	21	w =	21	w =	32	w =	26			
Item	Unit	Unit Price	Qnt	Total	Qnt	Total	Qnt	Total	Qnt	Total	Qnt	Total	Qnt	Total	Qnt	Total	Qnt	Total	Qnt	Total		
	[Paved Area]	Syd	5824		2812		367		2560		2070		2077		2987		1167		1067		5894	
Mobilization	LS	\$20,000.00	0.5	\$10,000.00	0.5	\$10,000.00	0	\$0.00	0.25	\$5,000.00	0.25	\$5,000.00	0.15	\$3,000.00	0.15	\$3,000.00	0.15	\$3,000.00		\$0.00		\$0.00
Culvert, Rem, Less than 24 inch	Ea	\$300.00	2	\$600.00	2	\$600.00		\$0.00	0	\$0.00	2	\$600.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
Pavt, Rem	Syd	\$6.50	5824	\$37,856.00	2812	\$18,278.00	367	\$2,385.50	2560	\$16,640.00	2070	\$13,455.00	2077	\$13,500.50	2987	\$19,415.50	1167	\$7,585.50		\$0.00		\$0.00
Excavation (sand), Rem	Cyd	\$5.00	324	\$1,620.00	157	\$785.00	21	\$105.00	143	\$715.00	115	\$575.00		\$0.00		\$0.00		\$0.00	0	\$0.00	0	\$0.00
Sidewalk, Rem	Syd	\$10.00	139	\$1,390.00	103	\$1,030.00		\$0.00	64	\$640.00	62	\$620.00		\$0.00		\$0.00		\$0.00	0	\$0.00	0	\$0.00
Cold Milling HMA Surface	Syd	\$4.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	1067	\$4,268.00	5894	\$23,576.00
Machine Grading	Sta	\$272.50	8	\$2,180.00	6	\$1,635.00	2	\$545.00	4	\$1,090.00	4	\$1,090.00	9	\$2,452.50	13	\$3,542.50	5	\$1,362.50		\$0.00		\$0.00
Subgrade Undercutting, Type I	Cyd	\$22.65		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
Subgrade Undercutting, Type II, Mod	Cyd	\$26.78	388	\$10,390.64	187	\$5,007.86	24	\$642.72	171	\$4,579.38	138	\$3,695.64	138	\$3,695.64	199	\$5,329.22	78	\$2,088.84	0	\$0.00	0	\$0.00
Erosion Control, Check Dam, Stone	Ft	\$17.83	50	\$891.50	20	\$356.60	5	\$89.15	10	\$178.30	10	\$178.30	20	\$356.60	20	\$356.60	10	\$178.30	20	\$356.60		\$0.00
Erosion Control, Inlet Protection, Fabric Drop	Ea	\$80.95	15	\$1,214.25	6	\$485.70	2	\$161.90	4	\$323.80	4	\$323.80	12	\$971.40	12	\$971.40	4	\$323.80	6	\$485.70		\$0.00
Erosion Control, Inlet Protection, Geotextile and Stone	Ea	\$67.18	15	\$1,007.70	6	\$403.08	2	\$134.36	4	\$268.72	4	\$268.72	12	\$806.16	12	\$806.16	4	\$268.72	6	\$403.08	0	\$0.00
Erosion Control, Maintenance, Sediment Removal	Cyd	\$17.41	20	\$348.20	8	\$139.28	3	\$52.23	5	\$87.05	5	\$87.05	20	\$348.20	20	\$348.20	10	\$174.10	5	\$87.05		\$0.00
Erosion Control, Silt Fence	Ft	\$1.27	200	\$254.00	100	\$127.00	100	\$127.00	200	\$254.00	200	\$254.00	200	\$254.00	200	\$254.00	200	\$254.00	200	\$254.00		\$0.00
Aggregate Base	Ton	\$13.95	1835	\$25,598.25	886	\$12,359.70	116	\$1,618.20	807	\$11,257.65	653	\$9,109.35	655	\$9,137.25	941	\$13,126.95	368	\$5,133.60	0	\$0.00	0	\$0.00
Geotextile, Stabilization	Syd	\$3.10	1165	\$3,611.50	563	\$1,745.30	74	\$229.40	512	\$1,587.20	414	\$1,283.40	416	\$1,289.60	598	\$1,853.80	234	\$725.40	0	\$0.00	0	\$0.00
Geotextile, Slope Protection	Syd	\$4.30		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
Maintenance Gravel, LM	Cyd	\$20.56	229	\$4,708.24	111	\$2,282.16	15	\$308.40	101	\$2,076.56	82	\$1,685.92	82	\$1,685.92	118	\$2,426.08	46	\$945.76	0	\$0.00	0	\$0.00
Approach, CI I, 4 inch	Syd	\$5.21	45	\$234.45	134	\$698.14	45	\$234.45	23	\$119.83	23	\$119.83	334	\$1,740.14	320	\$1,667.20	134	\$698.14	0	\$0.00	0	\$0.00
Shoulder, CI II	Ton	\$22.99		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
Shoulder, CI II, LM	Cyd	\$40.61		\$0.00		\$0.00	17	\$690.37		\$0.00		\$0.00	44	\$1,786.84	64	\$2,599.04	25	\$1,015.25	12	\$487.32	76	\$3,086.36
Culvert, CI A, 12 inch	Ft	\$22.97	48	\$1,102.56	48	\$1,102.56	0	\$0.00	0	\$0.00	48	\$1,102.56	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Culvert End Sect, 12 inch	Ea	\$143.36	4	\$573.44	4	\$573.44	0	\$0.00	0	\$0.00	4	\$573.44	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Culvert Bedding	Cyd	\$19.75	2	\$39.50	2	\$39.50	0	\$0.00	0	\$0.00	2	\$39.50	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Util Structure Cover, Adj, Case 1	Ea	\$500.00	7	\$3,500.00	5	\$2,500.00	1	\$500.00	3	\$1,500.00	4	\$2,000.00	5	\$2,500.00	5	\$2,500.00	4	\$2,000.00	3	\$1,500.00	6	\$3,000.00
Dr Structure Cover, Adj, Case 1	Ea	\$500.00		\$0.00		\$0.00		\$0.00	2	\$1,000.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
Dr Structure, Tap, 6 inch	Ea	\$202.05	4	\$808.20	2	\$404.10	2	\$404.10	2	\$404.10	2	\$404.10	4	\$808.20	4	\$808.20	4	\$808.20		\$0.00		\$0.00
Gate Box, Adj	Ea	\$215.00	3	\$645.00	3	\$645.00	1	\$215.00	1	\$215.00	1	\$215.00	2	\$430.00	2	\$430.00	2	\$430.00	1	\$215.00	4	\$860.00
Underdrain, Subgrade, 6 inch	Ft	\$6.00	1560	\$9,360.00	1150	\$6,900.00	300	\$1,800.00	720	\$4,320.00	690	\$4,140.00	1780	\$10,680.00	2560	\$15,360.00	1000	\$6,000.00		\$0.00		\$0.00
Underdrain Outlet, 6 inch	Ft	\$15.00	200	\$3,000.00	100	\$1,500.00	100	\$1,500.00	100	\$1,500.00	100	\$1,500.00	80	\$1,200.00	80	\$1,200.00	80	\$1,200.00	0	\$0.00	0	\$0.00
Hand Patching	Ton	\$87.46	26	\$2,273.96	13	\$1,136.98	2	\$174.92	12	\$1,049.52	10	\$874.60	5	\$437.30	7	\$612.22	3	\$262.38	2	\$174.92	7	\$612.22
HMA, 3C	Ton	\$65.95	650	\$42,867.50	310	\$20,444.50	50	\$3,297.50	290	\$19,125.50	230	\$15,168.50	230	\$15,168.50	330	\$21,763.50	130	\$8,573.50	120	\$7,914.00	650	\$42,867.50
HMA, 4C	Ton	\$71.26	1950	\$138,957.00	930	\$66,271.80	150	\$10,689.00	870	\$61,996.20	690	\$49,169.40	230	\$16,389.80	330	\$23,515.80	130	\$9,263.80		\$0.00		\$0.00
HMA Approach	Ton	\$116.28	10	\$1,162.80	30	\$3,488.40	10	\$1,162.80	6	\$697.68	6	\$697.68	74	\$8,604.72	71	\$8,255.88	30	\$3,488.40	0	\$0.00	0	\$0.00
Driveway, Reinf Conc, 6 inch	Syd	\$58.70	45	\$2,641.50	45	\$2,641.50	0	\$0.00	23	\$1,350.10	23	\$1,350.10	27	\$1,584.90	27	\$1,584.90	14	\$821.80		\$0.00		\$0.00
Curb and Gutter, Conc, Det C4	Ft	\$21.90	156	\$3,416.40	115	\$2,518.50	30	\$657.00	72	\$1,576.80	69	\$1,511.10		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
Spillway, Conc	Ft	\$47.58		\$0.00		\$0.00	1	\$47.58		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
Sidewalk, Conc, 4 inch	Sft	\$6.85	251	\$1,719.35	83	\$568.55	0	\$0.00	116	\$794.60	50	\$342.50	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00
Post, Mailbox	Ea	\$68.95	2	\$137.90	2	\$137.90		\$0.00		\$0.00		\$0.00	2	\$137.90	2	\$137.90	2	\$137.90		\$0.00		\$0.00
Pavt Mrkg, Regular Dry, 4 inch, White	Ft	\$0.34	2500	\$850.00	2295	\$780.30	1870	\$635.80	840	\$285.60	585	\$198.90		\$0.00		\$0.00		\$0.00	600	\$204.00	4080	\$1,387.20
Pavt Mrkg, Regular Dry, 4 inch, Yellow	Ft	\$0.34	975	\$331.50	718.75	\$244.38	187.5	\$63.75	450	\$153.00	431	\$146.54	1780	\$605.20	2560	\$870.40	1000	\$340.00	600	\$204.00	4080	\$1,387.20
Pavt Mrkg, Polyurea, 18 inch Stop Bar	Ft	\$18.48	40	\$739.20	30	\$554.40		\$0.00	20	\$369.60	20	\$369.60		\$0.00	12	\$221.76	12	\$221.76	10	\$184.80	0	\$0.00
Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	Ea	\$114.30	4	\$457.20	3	\$342.90		\$0.00	2	\$228.60	3	\$342.90	2	\$228.60	2	\$228.60	2	\$228.60	3	\$342.90		\$0.00
Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	Ea	\$35.59	4	\$142.36	3	\$106.77	0	\$0.00	2	\$71.18	3	\$106.77	2	\$71.18	2	\$71.18	2	\$71.18	3	\$106.77	0	\$0.00
Dust Palliative, Applied	Ton	\$218.77	20	\$4,375.40	10	\$2,187.70	5	\$1,093.85	5	\$1,093.85	5	\$1,093.85	10	\$2,187.70	10	\$2,187.70	5	\$1,093.85	0	\$0.00	0	\$0.00
Minor Traf Devices	LS	\$4,800.00	1	\$4,800.00		\$0.00		\$0.00	0.5	\$2,400.00		\$0.00	1	\$4,800.00	1	\$4,800.00	1	\$4,800.00		\$0.00		\$0.00
Pavt Mrkg, Type NR, Tape, 4 inch, White, Temp	Ft	\$1.00	780	\$780.00	575	\$575.00	150	\$150.00	360	\$360.00	345	\$345.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
Flag Control	LS	\$7,766.81	1	\$7,766.81		\$0.00		\$0.00	0.5	\$3,883.41		\$0.00	0.5	\$3,883.41	0.5	\$3,883.41	0.2	\$1,553.36		\$0.00		\$0.00
Lighted Arrow, Type C, Furn	Ea	\$322.65	2	\$645.30		\$0.00		\$0.00	2	\$645.30		\$0.00		\$0.00		\$0.00		\$0.00	2	\$645.30		\$0.00
Lighted Arrow, Type C, Oper	Ea	\$146.																				





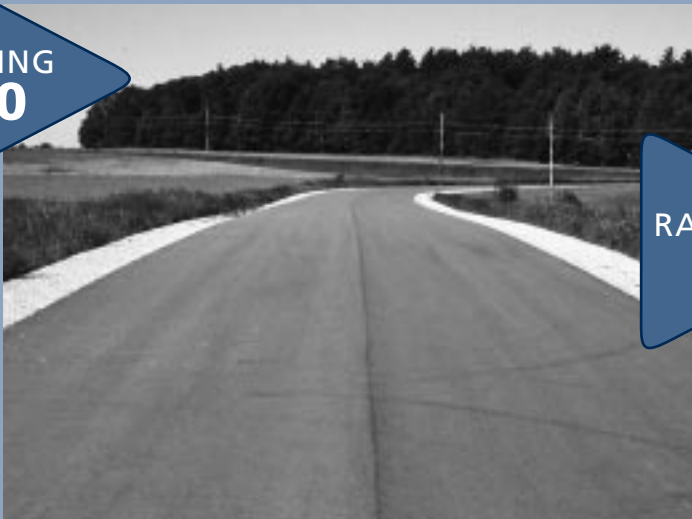


VILLAGE OF DRYDEN				
CAPITAL IMPROVEMENTS PLAN				
WWTL Improvements - Construct 3rd Storage Cell and Phosphorous Removal				
Opinion of Probable Costs				
				
Item	Unit	Unit Price	Qty	Total
Mobilization / Demobilization	Ls	\$10,000	1	\$10,000
Excavation - Reusable Material	Cyd	\$2.50	8,314	\$20,785
Excavation - Cut and Dispose	Cyd	\$3.50	3,690	\$12,914
Excavation - Clean Fill	Cyd	\$4.00	3,690	\$14,759
Geocomposite Clay Layer (Bentonite)				
Material	Sft	\$0.35	298,472	\$104,465
Installation	Sft	\$0.30	298,472	\$89,541
Flexible Membrane Liner (PVC, HDPE)				
Material	Sft	\$0.35	298,472	\$104,465
Installation	Sft	\$0.25	298,472	\$74,618
Piping Penetrations / Modifications	Ea	\$1,200	10	\$12,000
New Piping & Structures	LS	\$75,000	1	\$75,000
Sludge Removal, Dewatering, Disposal	Gal	\$0.12	174,545	\$20,945
Berm Erosion Protection - Rip rap	Syd	\$20.00	5,681	\$113,616
Berm Erosion Protection - Rip rap Liner	Syd	\$0.80	5,681	\$4,545
Rapid Mix Structure	Ea	\$50,000	1	\$50,000
Building / Chem feed / storage	LS	\$200,000	1	\$200,000
Inlet Flow Metering	LS	\$20,000	1	\$20,000
Outfall Flow Metering	LS	\$6,000	1	\$6,000
Restoration	Syd	\$1.25	14,667	\$18,334
			Subtotal =	\$951,987
	10%	Construction Contingency =		\$95,198.70
		<b>CONSTRUCTION COST TOTAL =</b>		<b>\$1,047,200</b>
	15%	Engineering, Legal, Admin. =		\$157,100
		<b>PROJECT TOTAL =</b>		<b>\$1,204,300</b>

## **APPENDIX B** **PASER ROAD RATING & SPECIFIC SCORING**

# PASER Asphalt Roads Manual

RATING  
**10**



RATING  
**7**



RATING  
**4**



RATING  
**1**



## Rating system

Surface rating	Visible distress*	General condition/ treatment measures
<b>10</b> Excellent	None.	New construction.
<b>9</b> Excellent	None.	Recent overlay. Like new.
<b>8</b> Very Good	No longitudinal cracks except reflection of paving joints. Occasional transverse cracks, widely spaced (40' or greater). All cracks sealed or tight (open less than 1/4").	Recent sealcoat or new cold mix. Little or no maintenance required.
<b>7</b> Good	Very slight or no raveling, surface shows some traffic wear. Longitudinal cracks (open 1/4") due to reflection or paving joints. Transverse cracks (open 1/4") spaced 10' or more apart, little or slight crack raveling. No patching or very few patches in excellent condition.	First signs of aging. Maintain with routine crack filling.
<b>6</b> Good	Slight raveling (loss of fines) and traffic wear. Longitudinal cracks (open 1/4"–1/2"), some spaced less than 10'. First sign of block cracking. Slight to moderate flushing or polishing. Occasional patching in good condition.	Shows signs of aging. Sound structural condition. Could extend life with sealcoat.
<b>5</b> Fair	Moderate to severe raveling (loss of fine and coarse aggregate). Longitudinal and transverse cracks (open 1/2") show first signs of slight raveling and secondary cracks. First signs of longitudinal cracks near pavement edge. Block cracking up to 50% of surface. Extensive to severe flushing or polishing. Some patching or edge wedging in good condition.	Surface aging. Sound structural condition. Needs sealcoat or thin non-structural overlay (less than 2")
<b>4</b> Fair	Severe surface raveling. Multiple longitudinal and transverse cracking with slight raveling. Longitudinal cracking in wheel path. Block cracking (over 50% of surface). Patching in fair condition. Slight rutting or distortions (1/2" deep or less).	Significant aging and first signs of need for strengthening. Would benefit from a structural overlay (2" or more).
<b>3</b> Poor	Closely spaced longitudinal and transverse cracks often showing raveling and crack erosion. Severe block cracking. Some alligator cracking (less than 25% of surface). Patches in fair to poor condition. Moderate rutting or distortion (1" or 2" deep). Occasional potholes.	Needs patching and repair prior to major overlay. Milling and removal of deterioration extends the life of overlay.
<b>2</b> Very Poor	Alligator cracking (over 25% of surface). Severe distortions (over 2" deep) Extensive patching in poor condition. Potholes.	Severe deterioration. Needs reconstruction with extensive base repair. Pulverization of old pavement is effective.
<b>1</b> Failed	Severe distress with extensive loss of surface integrity.	Failed. Needs total reconstruction.

\* Individual pavements will not have all of the types of distress listed for any particular rating. They may have only one or two types.







- #1) Cracks mostly sealed, 1/2 road width to all the way across
- 2) Minor long. along E & E/R
- 3) Isolated ~~spot~~ small area of alligator cracking
- 4) Long. along E almost full length. 50-75% sealed
- 5) 20-30' stretch of moderate alligator cracks along E/R
- 6) Along E mostly sealed
- 7) Mod. alligator cracking - mostly along E side of Rd.
- 8) Approach @ Main (from main st project) is worst condition, mod. raveling all,
- 9) Very few, minor width & short length
- 10) Cracks not sealed
- 11) Distortion (sunk) area 2" + depth - ~30' long East 5-6' width
- 12) Sunk areas - multiple, over 2" depth, 1 section sunk looks like trench width of utility  
Edges breaking away, long. joint N side of alley.
- 13) ~~No sink as bad as section from main alley, but close~~ Sections have been repaired, but results are uneven, ~~edges~~ sunken sides more accurate than rutting
- 14) Large portion of W lane was sunken w/ lots of block/alligator cracks. E (side not nearly as bad. Noticeable improvement at joint N side of South St.
- 15) Near edges
- 16) Along E
- 17) Sunken along E
- 18) Short Rd. has a significant sunken section in failure - looks like drainage issue
- 19) Overly extends to ~100-200' S. of Timberwick. PACER to N of E w/ S. of S. of has sunken sides so drainage probably doesn't get to gutter.
- 20) mostly sealed
- 21) overlaid
- 22) Sunken along edges - drainage issues
- 23) Looks like N. lane was replaced or overlaid later than S. lane. S. lane in poor condition w/ lots of alligator cracking.
- 24) Pavement starts ~100' W of Union - bad shape
- 25) Mostly along edge of East lane / wheel path.
- 26) 1 bad spot @ cone. culvert.
- 27) Bad areas @ cut-da-sac & approaching T intersection, but overall in OK shape
- 28) Dip/distortions at occasional transverse crack. Every 2nd or 3rd one.
- 29) Particularly bad in middle low section where City drain cross. Bad drainage -
- 30) No major cracks discernable, but Rd is nearly ~~poor~~ gravel reduced
- 31) Mostly associated w/ transverse cracks
- 32) Along outside lane edges
- 33) patches
- 34) Isolated small spots along edge
- 35) Very few
- 36) both wheel paths, both lanes

**APPENDIX C**  
**DOWNSTREAM DRYDEN DRAIN**  
**POTENTIAL IMPROVEMENTS ESTIMATE**



**VILLAGE OF DRYDEN**  
**CAPITAL IMPROVEMENTS PLAN**  
**Potential Downstream Dryden Drain Improvements**  
 Opinion of Probable Costs

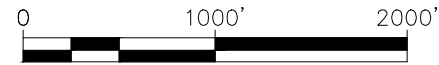
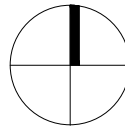


Ditch clean-out and reshaping estimate

Description	Unit	Unit Price	L	Total
Village to Dryden Drain Merge Point	ft	\$35	4543	\$159,005
Dryden Drain Merge to Herpolscheimer's Pond	ft	\$35	6770	\$236,950

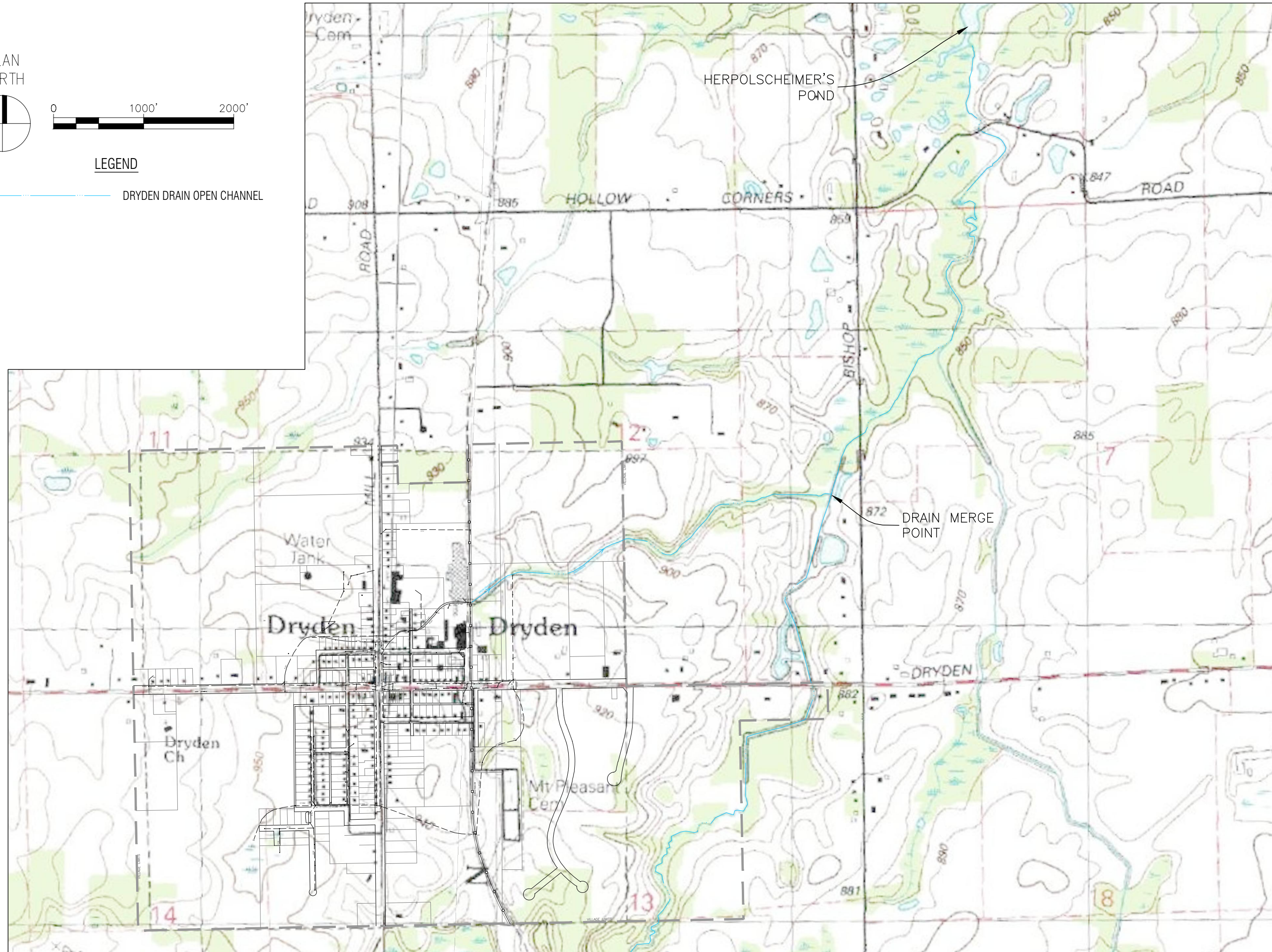
Construction Cost Subtotal = \$396,000  
 15% PLANNING/ENG./LEGAL = \$59,400  
 PROJECT TOTAL = \$455,400

PLAN  
NORTH



LEGEND

— DRYDEN DRAIN OPEN CHANNEL



C:\projectwise\jrhansen\gd317399\storm-map.dwg

# Capital Improvements Plan

## Headquarters

2925 Briarpark Drive  
Suite 400  
Houston, TX 77042  
713.266.6900

[info@lan-inc.com](mailto:info@lan-inc.com)

## Texas

Austin  
College Station  
Corpus Christi  
Dallas  
Fort Worth  
Houston  
San Antonio  
San Marcos  
Waco

## California

Los Angeles  
Milpitas  
Orange  
Sacramento

## Florida

Miami  
Tampa Bay

## Illinois

Chicago

## Michigan

Flint  
Lansing

[www.lan-inc.com](http://www.lan-inc.com)



Lockwood, Andrews  
& Newnam, Inc.  
A LEO A DALY COMPANY