AGENDA
Board of Public Works Meeting
Tuesday, January 26, 2016 – 7:00 P.M.
Jackson Village Hall
N168W20733 Main Street

1. Call to Order and Roll Call.

2. Approval of Minutes for November 24, 2015, meeting.

3. Engineering proposal for Jackson Sewer Utility SCADA System Upgrade.

4. Review of Engineering Services for GIS Mapping Conversion

5. Review of Building Inspection Annual Report

6. Acceptance of Work - West Shore Pipeline Water Extension Project.

7. Review of Jackson Storm Water Management Plan.

8. Review of Georgetown Drive Reconstruction Project Special Assessment.

9. Review of Jackson Drive Sidewalk Project Special Assessment.

10. Wilshire Drive Reconstruction Project update.

11. Review of 2016 Spring Cleanup Day and Yard Waste/Brush Pickup Schedule.

12. Director of Public Works Report.

13. Citizens/Village Staff to address the Board.

14. Adjourn.

Persons with disabilities requiring special accommodations for attendance at the meeting should contact the Village Hall at least one (1) business day prior to the meeting.

It is possible that members of the Village Board may attend the above meeting. No action will be taken by any governmental body at this meeting other than the governmental body specifically referred to in this meeting notice. This notice is given so that members of the Village Board may attend the meeting without violating the open meeting law.

DRAFT MINUTES
Board of Public Works Meeting
Tuesday, November 24, 2015 – 7:00 P.M.
Jackson Village Hall
N168W20733 Main Street

1. Call to Order and Roll Call.

Chairman Tr. Don Olson called the meeting to order at 7:00 p.m.
Members present: Tr. Scott Mittelsteadt, Linda Granec, Brian Heckendorf, and Tr. Jack Lippold.
Members excused: Scott Thielmann.
Not Present: Corinne Benson.
Staff present: Brian Kober

2. Approval of Minutes for October 27, 2015 meeting.

Motion by Brian Heckendorf, second by Tr. Lippold to approve the minutes of the October 27, 2015, Board of Public Works meeting.
Vote: 5 ayes, 0 nays. Motion carried.

3. Review of Bids for Stonewall Connector Trail Project.

Brian Kober presented information on the Stonewall Connector Trail Project. The Project is now an eight foot wide sidewalk that narrows to six feet when the trail connects to Eagle Drive. It is now called a sidewalk or trail. The DOT no longer has design requirements on the project. Brian will confirm that the Village still qualifies for the grant. Johnson's Paving is reviewing the new quantities for a new base bid proposal. Brian commented he needs a firm number from Johnson's Paving to complete the contract. The Board of Public Works does not meet in December. There will be an update at the January meeting. Brian commented that the best is to lock in this year's asphalt prices.
Motion by Tr. Olson, second by Tr. Lippold to place on the Village Board Agenda for possible action and update the Board of Public Works at the January meeting.
Vote: 5 ayes, 0 nays. Motion carried.

4. Acceptance of Work – West Shore Pipeline Water Extension Project.

Brian reported on the project. The exhibits have not been submitted.
He reported that the flushing station issues were due to a filter that was incorrectly installed backwards at the factory. The flushing station does have a two year warranty.
Motion by Linda Granec, second by Brian Heckendorf to refer the Acceptance of Work – West Shore Pipeline Water Extension Project to the January Board of Public Works meeting.
Vote: 5 ayes, 0 nays. Motion carried.

5. Pay Request #3 – Georgetown Dr. Reconstruction Project.

Brian Kober reviewed the project with the Board. Brian commented to hold back less than the $34,803 for the retainage. The Village Board pay request may differ due to holding less for the retainage. Motion by Tr. Mittelsteadt, second by Tr. Lippold to recommend the Village Board approve the Pay Request #3 to Advance Construction Company for Georgetown Drive Reconstruction Project in an amount not to exceed $147,684.66.
Vote: 5 ayes, 0 nays. Motion carried.

6. Pay Request #2 Jackson Dr. Sidewalk Project.

Brian Kober reviewed the project with the Board. This is not the final pay request as there may be adjustment for the landscaping. Tr. Lippold questioned if We Energies is aware that they are responsible to clear the sidewalk on their property. Discussion ensued of the We Energies items and their assessment. Brian commented that a couple properties have paid their assessments based on the preliminary estimates. Motion by Tr. Lippold, second by Linda Granec, to recommend the Village Board approve the Pay Request #2 to Gremmer & Associates for the Jackson Drive Sidewalk Project in an amount not to exceed $39,325.28. Brian Heckendorf questioned if the full amount was utilized for the inspections. Brian commented that the inspections were at about ½ - ¾ of the time.
Vote: 5 ayes, 0 nays. Motion carried.

7. Review of Jackson Sewer Utility Pumper Truck Upgrade.

Brian Kober reviewed the Sewer Utility Pumper Truck Upgrade with the Board. He commented that the 2016 budget reflected the purchase of a vac truck for $35,000. This would replace the 1980 vac truck. The pump portion was replaced last year. The Hanson and Young auction showed a 2005 sterling truck at a very good price. The plan was to find a truck 2007 or older because of emissions. The truck was $20,625. Jackson Truck Body proposal is to shorten the axle and drive train. The flat bed portion will be used as a trade-in to reduce the cost. The conversion proposal will be at $5,535 or less. This is a good fix for the next 35 years. The replacement fund will be used for the truck and the upgrade item and will then be reimbursed with the 2016 budget.
Motion by Tr. Mittelsteadt, second by Tr. Lippold, to recommend the Village Board approve the Sewer Utility Truck Upgrade for $5,535.
Vote: 5 ayes, 0 nays. Motion carried.

8. Purchase of Hurco Spin Doctor Valve Turner.

Brian Kober gave information on the Hurco Spin Doctor to be used on water valves for exercising. The monies from the West Shore Pipeline reimbursements will be utilized. He commented that this has a counter and boom that works from the back off a truck instead of lifting off a trailer. Discussion of selling the old one ensued.
Motion by Linda Granec, second by Tr. Olson to Recommend the Village Board approve the purchase of the Hurco Spin Doctor in an amount not to exceed $11,675.
Vote: 5 ayes, 0 nays. Motion carried.

9. Engineering Proposal for Jackson Sewer Utility SCADA System Upgrade.

Brian Kober reported on the SCADA System Upgrade. He pointed out details from the memorandum, stating that the system is made up of eight panels and the additional panel for the remote lift station. The system has Ethernet connections, fiber optics and the DH plus. There is a nightmare of communication throughout the plant. The computers were going bad in the lab; the server was upgraded to a 2012 Server format and the old SCADA system was run under 2003 Sever format. The SCADA system upgrade of Intellisys approved last year has 28 screens done and 5 more to go. The PLCs are going down and loosing pump communication. Basically, the systems are not communicating with one another causing them not to work properly.
Brian is proposing to look to another program. The fiber optic is not being utilized in the plant due to additional adapters for the system. The proposal is to create a project scope and a plan to revamp the PLCs and utilize the fiber optic that is already at the plant. The overall project cost is $300,000-$500,000.

The engineering service proposal from Town and Country for the project is estimated to cost between $46,000 to $54,000 based on time and material. Due to confusion of the project and the explanation, Brian recommended to have Greg Droessler from Town and Country Engineering give a presentation at the next Board of Public Works meeting.
Motion by Tr. Olson, second by Tr. Lippold to refer the item to the January Board of Public Works Meeting.
Vote: 5 ayes, 0 nays. Motion carried.

10. Jackson Storm Water Management Plan Update.

Brian Kober distributed a memo from Graef in regards to the Storm Water Management Program. He reported that the data for the ponds is still being compiled for an update to the DNR. The memorandum details that 47 existing ponds were evaluated to determine a baseline condition. A review period of all ponds is recommended every five years to recertify the pond. This will be an additional village ordinance. The Village has the general permit and will recertify with the DNR next year. No ponds are failing at this time. Brian will work with Kelly Valentino on a community outreach program.

11. Director of Public Works Report.

Brian Kober reviewed the Public Works Report.
Motion by Tr. Mittelsteadt, second by Linda Granec to place the report on file.
Vote: 5 ayes, 0 nays. Motion carried.

10. Citizens/Village Staff to address the Board.

A Thank You note for the installation of Street Lights on Glen Brooke Drive was read.

12. Adjourn.

Motion by Tr. Lippold, second by Linda Granec to adjourn at 8:22 p.m.
Vote: 5 ayes, 0 nays. Motion carried.

Respectfully submitted by: Deanna L. Boldrey, Village Clerk-Treasurer

MEMORANDUM

Date: November 18, 2015

To: Brian Kober, P.E. – Village of Jackson

From: Greg Droessler, P.E.

Subject: Village of Jackson – WWTP SCADA Upgrades

Project Scope and Understanding

The Village of Jackson has an aging SCADA system at the WWTF, portions of which dates back to the 1990's. The system has recently seen failures of various PLCs and the Village has struggled to maintain this system in a useable form. The Village contracted with Town and Country Engineering in August, 2015 to complete a Preliminary Engineering Study of this system to evaluate the existing system and to develop a plan to either maintain or replace the existing system. The recommendation of this Study was the Village should consider replacing the PLCs and other major components in panels throughout the WWTF and lift station while maintaining the fiber optic backbone of the existing system for future use.

Our approach will allow flexibility and owner control of the SCADA system improvements project, and the system integrator will be selected using a base-bid proposal format. This format will allow the Village to receive comparable competitive bids in accordance with applicable bidding laws, while providing maximum owner control of the selection process. This process allows the Owner to select the overall best value offered to the Village, not just the low bid for a project.

1. Initial Investigation Phase

This phase was completed as part of the Study.

2. Developing Project Scope and Alternatives

The overall project would include as a base, replacing or upgrading the existing PLCs and displays in the control panels (and vendor provided panels) throughout the WWTF and lift station. The new PLCs will be equipped with more communication ports and several ports depending on what is needed now and in the future. The Input / Output (I/O) cards can remain to keep costs lower, but will also be evaluated.

The main PLC controller will be located at the Administration building utilizing a new Compactlogix PLC controller. This controller is more robust, will be capable of handling all future needs, and is the latest technology and programming. It is recommended that the equipment be ethernet capable, so it can communicate with either radio or fiber. Also located at the Administration Building will be the Hach WIMS management software, new computer, firewalls and set up for remote connections. We can also assist the staff in setting up the Hach's WIM management systems.

The system will be set up to trend all operating points that are collected by the SCADA system, monitor status of equipment, develop sequence of operation, and allow the operator to change set points for equipment to be controlled. All this data collected will be transferred to the management software. It is assumed that Wonderware would be used as the base bid for evaluating systems with other programs offered as alternates.

3. Document Preparation

An overall system architecture drawing will be prepared. The purpose of this document will be to clearly identify hardware requirements, communication system methodology, and HMI requirements (hardware and software). Specific product quality will be required in the base bid.

Photographic elements will be used in the procurement document to identify installation requirements in each of the control panels or motor control centers, as well as any other specific work items which require clear definition.

Text based requirements will be prepared for proposal/bidding requirements, selection process, documentation requirements, hardware and software technical requirements, and any other necessary work items.

4. Owner Review and Final Document Preparation

After preparation of the procurement document, an owner review meeting will be scheduled. During this meeting with Village staff, technical aspects of the design will be discussed in detail. Probable cost estimates will be developed for this project. The proposal/bidding process will also be clearly defined.

Any comments or corrections will be incorporated into final documents and copies will be prepared for circulation to prospective bidders. Documents will be submitted to regulatory agencies if deemed necessary.

The final bid proposals will require specific brand of equipment to be furnished as part of the base bid. Alternatives with a lower cost will be allowed to be submitted with the bid. The Engineer, along with the Owner, will decide if the alternatives are comparable in quality to the base bid. This allows the Owner to obtain the highest quality equipment and service and overall best value to the Village. The lowest cost bid will not be taken in all cases.

5. Procurement and Bidding Phase

A pre-proposal walk-through for all perspective bidders will be scheduled and conducted by the owner and engineer. Any clarifications will be issued to bidders by addendum.

Bid proposals will be received by the owner and evaluated by the engineer. After initial evaluation a meeting will be scheduled with the owner to discuss proposals and select qualified bidders for interviews.

Interviews will be conducted with 1-2 qualified bidders, depending on cost and quality of submittals with the bid package. These interviews will consist of demonstrations of system functionality, discussion of qualifications, review of expected end product, review of O&M manuals, and questions. Site visits to existing systems of each qualified bidder may be arranged if the owner and engineer deem it necessary to aid in their selection of the most beneficial proposal.

The proposal most beneficial to the Village, as determined by the Village and Engineer, will be selected and a contract will be awarded for construction of the project. It should be noted that the low bidder may not be the most beneficial proposal and, therefore, not the selected bidder.

6. Construction Phase

Submittal drawings will be prepared by the successful bidder and reviewed by the engineer. A meeting will be scheduled with the owner to "walk-through" the submittal which will ensure owner understanding of all project components and will allow for any additional modifications to be implemented. This allows the Owner additional input into the project.

A factory test demonstration will be witnessed by the owner and engineer to verify system functionality. This factory test will allow the Owner to review the screens, review the sequence of operation and allow the bidder to make changes before sending to the site. This factory test is intended to substantially cut the amount of startup problems, and allow the Owner another opportunity for input before delivery to site.

Installation work will be reviewed. Start-up and testing will be witnessed by the engineer and a punch list of items to be corrected will be compiled. Periodic site inspections will take place as deemed necessary.

The Engineer will review as-built documentation prior to close out of the project. Final payment will not be issued until all controls are operating properly.

The Engineer will perform normal construction administration duties, including attending meetings with the Owner, and negotiate changes during construction, if they occur.

Owner Responsibilities

The Village will be expected to provide Town & Country Engineering with drawings, O & M Manuals, etc. relating to the existing facility to aid in the design of the project. In addition, facility

staff will be involved in design meetings to identify control system strategies, and to assist in developing construction sequence strategies.

Items Not Included in the Above Scope

The following items have not been included in the scope of work. These items may or may not be required or needed for the project. If needed, an estimate can be provided before proceeding.

- Operation services relating to the existing treatment processes or equipment
- Costs for bid advertisements
- Our scope of work does not include generating the graphic screens on the chosen software.

Engineering Costs

The design, preparation of bidding documents, bidding and construction administration for the SCADA is estimated to cost between $46,000 and $54,000 and costs will be invoiced on a Time and Material basis.

The major advantage that Town & Country Engineering, Inc. offers is having both a wastewater engineer and instrumentation and control (I&C) engineer involved. This approach maximizes the plant efficiencies and operations, while implementing the controls upgrade required. Greg Droessler will be involved on the process side, while Steve Muther (Muermann Engineering) will be the I&C engineer.

cc: Mr. Steve Muther, P.E., Muermann Engineering, LLC *(W227 N16867 Tillie Lake Court, Suite 202, Jackson, WI 53037)*

GJD
J:\JOB#S\Jackson\JK-00-00\O&E\2015 Preliminary Design Study for WWTP SCADA Upgrades\Final SCADA Design Scope.docx

Computer Problem Log.

7:00am 11-18-15 unable to change flow rates on old SCADA
new SCADA reading all zero's
old SCADA crashed when trying to shut it down on old server. removed Paradox on old server sys-view folder
real-time/ServerAB not responding - Task Manager - end task. tried restarting real-time/Server AB - DbiOpenTable Error
keep getting Paradox Error 78 when trying to restart old SCADA - can't find any more LCK files.
Restarting old Server
Service Control Manager "at least one service or driver failed during system startup."
real-time display crashed again
restarting old server again ← Can't restart old SCADA
Srvwin.exe not responding
- restarted ethernet bridge - no red lights - values back on new SCADA but now PLC in WAS room needs to be restarted, reading zeroes
tried changing RAS flow value + old SCADA crashed again - App Error, FMTDSP caused a general protection fault in module DV_LIB.DLL
real-time/server AB not responding
restarting old server again
tried closing everything + running start-app on oldserver old SCADA back up. Not trying to adjust anything until WAS PLC is restarted

NOTE: old SCADA read both septage tanks had over 2ft in them before being restarted. Afterwards reading zero which is correct. CC

1/18/15 – Lead RAW Pump Froze At 4.52 would not ramp up. Lag pump would turn ON AND off At set points. Reset Lead pump turned back ON AND would not ramp up. Turn on Lag pump on then Lead would ramp up run normal until 4.2 ft in wet well AND then Lock into 45.4 MHertz JD

11-18-15 10:00am last import data is from 7am. Contacted Randy to restart HDServer Import Service CC

10:17am noticed that trending data on new SCADA ended @ 10pm 11-17-15 and came back when ethernet bridge was reset. CC

11-18-15 1:00pm new SCADA had a glitch in trending data from @10:54am to @12:02pm. values dropped to zero >10 times CC

11-18-15 2:00pm Lab PC #2 needed power turned off + back on — was unresponsive with blank screen

- Lab PC #2 "Backup was unsuccessful on 11/18/2015, 2:59pm" not sure if the auto backup ever succeeded on this PC

also - Kaspersky Security reports "databases are extremely out of date" on PC 2

11/19/15 – 10:00pm 11/18/15 Blower lock into ~~Middle~~ Current mode of running. Blower 3 was on and Blower 1 was off all night. Try to reset converter AND Nothing happen. Reset Allen Bradley AND Blowers started to run in normal operation. Did this around 10:45 AM JLD

Last time this happen was 11/7/2015

MEMORANDUM

Date: November 2, 2015

To: Brian Kober, P.E.

From: Greg Droessler, P.E.

Subject: Jackson WWTF – Preliminary SCADA System Assessment

Copy: Steve Muther, Muermann Engineering, LLC

Introduction

The original WWTF control system was installed in 1980 as part of the plant construction. This system received a major upgrade in 1998, and was updated and expanded again in 2005 as part of a large WWTF facilities upgrade. Since that time, a series of minor upgrades or component replacements have been completed for this Supervisory Control And Data Acquisition (SCADA) system to maintain it in working order, largely through the use of gateway adapters (signal convertors) to allow new components to communicate with the older platform.

The SCADA system is made up of a total of 8 panels located throughout the WWTF, as well as 1 additional panel located at a remote lift station. Similar to most electrical or control systems, much of the SCADA equipment installed in 2005 or earlier has served its useful life and is now due for replacement. As identified in our memo dated June 5, 2015, the cost of maintaining the existing system is rising and the Village should consider a replacement of the PLCs, SCADA platform and other components of the SCADA system with more current models to avoid the continued rising cost of individual component replacement of this outdated equipment.

This study is intended to outline the overall scope of improvements required or desired at the WWTF, and develop the overall general scope and preliminary opinion of probable cost for the project. Once the study is complete and the scope of the improvements is approved by the staff and Village Board, a detailed design may begin for the preparation of bidding documents.

The purpose of this document is to inventory the condition of the existing equipment, and to define the approach and technical requirements applicable to an upgrade of the SCADA system for the WWTF and Sanitary Sewer Collection System. The approach and technical requirements defined herein serve as the basis for the Preliminary Construction Cost opinions.

Existing System Overview

Wastewater Facility Supervisory Control and Data Acquisition System (SCADA) - The wastewater facility SCADA system consists of the following Local Control Panels (LCPs):

- LCP-A – Service Building, Main PLC
- LCP-B – Tertiary Filter Building
- LCP-C – Pre-treatment Building
- LCP-D – Digester Control Building (Also Labeled as 100-LCP-1
- LCP-E – Blower Building
- LCP-F – Sludge Recirculation Building
- LCP-G – Aeration Basin Control Building
- LCP-H – Secondary Sludge Building
- LCP-3-1-HMI – Septage Hauler Graphic Interface Only

Each Area Control Panel is typically equipped with:

- A Programmable Logic Controller (PLC)
- A graphical Human Machine Interface (HMI) touch screen/keypad.
- Hand-Off-Auto selector switches and Pilot Lights (most locations)
- Uninterruptible Power Supply (UPS) units.

In addition to the above which comprise the WWTF's main PLC control network, the following vendor panels are also present. These panels and the process they control are either stand alone, or monitored only via basic hardwired status connections (On, Off, Trouble) to the Building LCP in the area.

- LCP-1-4 – Screen Control Panel
- LCP-1-5 – Screenings Compactor Control Panel
- LCP-2-3 – Grit Washer Control Panel
- LCP-3-1 – Septage Receiving Control Panel
- LCP-3-X – Septage Receiving Odor Control Panel
- LCP-4-1/-4-2 – Aeration Turbo Compressor Control Panel
    - Note: An attempt was made to interface these panels to the plant PLC network, with limited success.
- LCP-X-X – Sludge Boiler Control Panel
- LCP-X-1/-2 – Digester Mixing Pumps Control Panels
- LCP-X-1/-2 – Tertiary Filters Controls Panels
- LCP-X-X – Digester Gas Flare Control Panel

The primary plant-wide SCADA PLC communication network between the respective Building LCPs is a fiber-optic based system utilizing modules manufactured by Phoenix Digital. These units communicate to Plant PLCs via an Allen Bradley protocol know as Data Highway Plus (DH+), a proprietary serial type communication protocol. Communication between this DH+ communication based PLC network and the SCADA PC (Personal Computer) system had originally been via a special communication card installed in the computer.

A PC based, real-time Human-Machine Interface (HMI) software package (Intellisys) depicts the entire plant's processes and displays the current status. This software also provides operator access to certain operator adjustable control parameters. An additional module of this software provides reporting capability, as well as the ability to enter laboratory test data and file regulatory reports.

The SCADA PCs are presently connected on the Village managed local Ethernet network which serves the WWTF's lab and office area. This local network is integrated into the Village's wide area network serving Village administrative services.

Sanitary Sewer Collection System - The existing collection system is primarily gravity flow, with only one sanitary lift station serving a limited service area. This station had been monitored utilizing a wireless network, but is no longer functioning and the station is presently not monitored.

Discussion of Considerations

Wastewater Facility SCADA System

- The existing PLC control network was last upgraded in 1998 and utilized high quality industrial components. Technology, however, has continued to evolve. PLC components to support the existing system will be available for years to come. However, as it is now obsolete equipment, the cost of replacement components has increased significantly. The basic PLC programming language has evolved to a new standard as well.
- Network communication has moved from the proprietary serial communication type system (think dial-up modem speed) to a high speed Ethernet based system.
- Fiber optic technology has changed. The interface cards presently used on this network are now obsolete. Replacement components are available, but at a relatively high cost, with long lead times. The fiber optic cable itself, can still be used.
- New equipment installed at the plant is equipped with Ethernet based PLC controllers. At present, however, it is not practical to interface those newer vendor panels to the control network, which means monitoring of new equipment is limited to the very basics (On/Off/Fail). Many of these newer vendor panels can easily be integrated into an upgraded Ethernet based PLC network.
- There are a number of process control panels which are not integrated into the plant's SCADA system. They are only minimally monitored, or not monitored at all. There is little or no ability to optimize their functioning in the overall plant control, potentially hampering process efficiency, energy efficiency, or both.
- Certain new instruments have not been integrated into the SCADA system (such as a recently added Phosphorus Analyzer). This typically limits the ability to optimize the treatment process, or collect data which can be used for further process improvements.
- We saw some instances where manual control of process motors required that the PLC was functioning. Typically at a wastewater plant, Hand operation of a process motor does not involved a PLC, so that if the PLC becomes inoperative, an operator can still manually operate the process. This was noticed in the digester building, however we do not know how prevalent this approach is. We would recommend that it be investigated and remedied in an upgrade.
- The existing SCADA software (Intellisys) has been in the process of being upgraded to a version which will run on the current Windows platform. Our understanding is that this has taken nearly the entire year, and is not yet complete. The Intellisys software is not widely supported by the majority of System Integrators in Wisconsin which typically service municipal water and wastewater plants.
- It appeared that the ability to access something as relatively simple as trending on the SCADA software was not straightforward. This came up during a recent visit with an attempt to trouble shoot a problem with influent wetwell pumps not running at speed during the previous night. Fortunately, the programmer working on the SCADA software upgrade was on site and able to temporarily add trend lines for the parameters of interest. Normally, this is a simple task that any operator should have ready access to.
- We observed the routine process of entering lab data into work sheets and the same value had to be entered into different locations. It appears that data entry was more cumbersome than it should be.

- In our experience, utilizing SCADA software which combines the visualization (real-time display of conditions) and the management/reporting functions typically results in a compromise of one, or both functions.
- The co-mingling of the SCADA network and the Village's enterprise network cannot continue. These networks have differences and serve different purposes. The liabilities and potential for damage on the industrial side are significant. With a SCADA and PLC network upgrade, the plant's entire control network will operate on an Ethernet communication system. Exposing the industrial network to the business enterprise network can have disastrous results. It will be important for the Village's IT resources and the System Integrator which would be involved in the SCADA upgrade to clearly identify lines of responsibility to ensure the integrity of the control network.

Sanitary Collection System

- There is presently no monitoring of the lift station.
- Remote telemetry link options will need to be explored, including various types of telemetry radios (licensed UHF, license-free 900 Spread Spectrum), as well as a cellular based link.
- The addition of an Ethernet based PLC at this station would open up the possibility of monitoring additional status points at this station, as well making remote set-point adjustment and control possible. Pump control would remain local to the station.

Recommended General System Improvements

Upgrade the existing system components as needed to implement a new SCADA system which will reliably control and monitor the wastewater treatment plant and the sanitary sewer collection system.

PLC/Hardware

- Provide a communication link to the Sanitary Lift Station and upgrade the controller to permit monitoring of all status conditions, and provide access to all control parameters.
- Upgrade the plant's local control panel PLCs with Ethernet PLCs. Replace existing LCP touch screen HMIs with current generation, Ethernet connected units.
- As an alternative to upgrading the HMIs at LCPs, consider using tablet computers which can be used throughout the plant for control system access.
- Integrate vendor panels into the SCADA network to the fullest extent possible to provide monitoring of all available parameters.
    - Integrate PLC equipped vendor panels via an Ethernet connection to the SCADA network.
    - Retrofit non-PLC equipped vendor panels with Ethernet PLCs to permit integration into the SCADA network.
- Re-use and expand the existing fiber optic infrastructure. Replace the Phoenix Digital fiber optic modules with Ethernet switches.
- Integrate all process instrumentation presently not connected to the SCADA system.
- Provide a Master HMI in the service building to provide access to the entire SCADA network and provide back-up monitoring and control in the event of a SCADA computer(s) failure.

- Revisit all control sequences and update as necessary to integrate new process and instruments. Provide enhances process control and flexibility.

SCADA Computer/Software

- Upgrade SCADA computer hardware platform to ensure the integrity of the industrial control network and proper isolation from the business enterprise network.
- Upgrade SCADA visualization software to include expanded process control and monitoring.
    - Evaluate available options and enhance or replace software as necessary to provide the needed functionality.
- Upgrade wastewater management software to include expanded process control and monitoring.
    - Evaluate available options and enhance or replace software as necessary to provide the needed data management functions.
- Provide remote access system for staff which allows access from a variety of remote devices such as smartphone, tablet, or desktop/laptop PC. System must be compatible with the Village's remote access security policies.
- The control network and computer system will be expandable to incorporate future system expansion as well as any other future facilities that may be added to the system.

System Improvement Recommendations

The followings recommendations are made for the WWTF and Collection System SCADA systems:

Wastewater Treatment Facility – Building LCPs

Improvements common to all Building LCPs

- Replace existing PLC with a current technology PLC platform, Allen Bradley (AB) CompactLogix. Replace processor, existing I/O cards and I/O card chassis with new. Convert PLC programming to new programming platform.
- Provide new UPS with battery fail monitoring via SCADA system and by-pass relay system to reconnect to normal power in the event of a UPS failure.
- Install industrial Ethernet switch to replace existing Phoenix Digital fiber optic cable interface. Re-use existing fiber optic cable. Re-test all terminations and replace as necessary.
- Replace existing OIT touchscreen/keypad with new Ethernet connected AB PanelView Plus 6/7 12" touchscreen. Provide graphic screens and capability to utilize this screen as the back-up operator interface to monitor and control all critical processes in the even the SCADA PC equipment is not functioning.

Options common to all Building LCPs

- Option - Re-use existing I/O cards and card chassis for cost savings.
- Option – Eliminate existing OIT touchscreen. Replace functionality with tablet computers (e.g. Apple iPad). Replace existing PLC with a current technology PLC platform.

Location Specific Recommendations

LCP-A (Main PLC)
- Utilize existing Hardwired dialer as the back-up alarm dialer.
- Additional Integration: None

LCP-B (Tertiary Filter Building)
- Additional Integration:
  - Integrate (2) Tertiary Filter Control panels into the SCADA network at this LCP.
  - Integrate phosphorous analyzer and chemical dosing pump control.

LCP-C (Pre-Treatment Building)
- Additional Integration:
  - Integrate Grit Washer panel into the SCADA network through this LCP.
  - Integrate Septage Receiving panel into the SCADA network through this LCP; extend fiber optic Ethernet to Septage Receiving panel.
  - Integrate Screen panel into the SCADA network through this LCP.
  - Integrate the Screenings Compactor panel into the SCADA network through this LCP.
  - Integrate odor control system into the SCADA network through this LCP.

LCP-D (Digester Control Building)
- Extend fiber optic cable to this location from main fiber optic panel at Service Building.
- Replace existing OIT touchscreen/keypad with new Ethernet connected AB PanelView Plus 6/7 12" touchscreen.
- Additional Integration:
  - Modify or replace (2) digester floating cover level switches to level transducers for continuous cover level monitoring.
  - Integrate Sludge Boiler control panel into the SCADA network via Ethernet network connection to this panel.
  - Revise pump interconnect wiring and logic to ensure that process in "Hand" at the MCC does not pass through PLC I/O.
  - Integrate (2) sludge digester mixing pump control panels into the SCADA network via hard-wired interconnect to this panel. Provide process control set-points and timers via PLC logic.
  - Integrate Digester Gas control panel monitoring into the SCADA network via hard-wired interconnects.

LCP-E (Blower Building)
- Additional Integration:
  - Integrate Turbo Compressor panels into the SCADA network through this LCP; extend Ethernet network connections to the Turbo Compressor panels.

LCP-F (Sludge Recirculation Building)
- Additional Integration:
  - Integrate Sludge Load-out new magnetic flow meter into the SCADA network through this LCP.

LCP-G (Aeration Basin Control Building)
- Additional Integration: None

LCP-H (Secondary Sludge Building)

- Additional Integration:
    - Replace existing VFDs with current technology VFDs incorporating Ethernet communication to PLC for control and monitoring.
    - Provide logic and control wiring interface to control hoists to automatically re-position (2) RAS screw pumps. Provide position monitoring instruments to monitor position of screw pumps and prevent over-travel of the hoist position system.

LCP-1-4 (Screen Control Panel)

- Provide interposing relays as necessary to monitor desired status points.

LCP-1-5 (Screenings Compactor Control Panel)

- Revise programming to interface to SCADA network.
- Extend Ethernet cable connection to LCP-C.

LCP-2-3 (Grit Washer Control Panel)

- Revise programming to interface to SCADA network.

LCP-3-1 (Septage Receiving Control Panel)

- Revise programming to interface to SCADA network.
- Provide Industrial Ethernet switch
- Provide media converter (fiber optic to Ethernet). Install fiber optic cable to LCP-C.

LCP-3-1-HMI (Septage Hauler HMI)

- Provide media converter (fiber optic to copper Ethernet). Install fiber optic cable to Ethernet switch in LCP-3-1.

LCP-3-X Septage Receiving Odor Control Panel

- Provide interposing relays as necessary to monitor desired status points through LCP-C

LCP-4-1/-2 Turbo Compressor Control Panels

- Revise programming to interface to SCADA network.
- Extend Ethernet cable connection to LCP-E.

LCP-X-X Sludge Boiler Control Panel

- Extend Ethernet cable connection to LCP-D.

LCP-X-1/-2 digester Mixing Pumps Control Panels

- Provide interposing relays as necessary to monitor desired status points through LCP-D.

LCP-X-1/-2 Tertiary Filter Control Panels

- Revise programming to interface to SCADA network.
- Extend Ethernet cable connection to LCP-B.
- Provide Industrial Ethernet switch for panel -1.

LCP-X-X Digester Gas Flare Control Panel

- Provide interposing relays as necessary to monitor desired status points through LCP-D.

Lift Station Improvements

- New PLC based controller to manage communication and pump station monitoring and control functions. Move control power transformer to panel exterior. Install PLC, radio, power supply, and relays within existing cabinet.
- Provide new UPS with battery fail monitoring via SCADA system and by-pass relay system to reconnect to normal power in the event of a UPS failure.
- Communication device (as determined after review of available options).
- Run/Fail/Moisture/High Temp monitoring of the pumps.
- VFD Monitoring.
- Excessive Run-time Alarming.
- Wet well level alarm monitoring.
- Discrete float status monitoring.
- Existing Level transducer with set-point control via new PLC
- Existing floats and controller for back-up operation.
- Power Fail monitoring.
- **Optional** – Touch screen for local set-point control at station.

SCADA Programming, Computer, and Software Recommendations

- Process Control Sequences.
    - Prepare a revised Sequence of Operation specification to be used to guide the programmers in the upgrade.
    - This will be a collaborative effort involving the staff, the process engineer and the controls engineer.

- SCADA Visualization Software
    - Replace Intellisys software with software more widely adopted and supported in the municipal water and wastewater industry in Wisconsin.
    - Wonderware is recommended. Other options include Rockwell RSView and GE iFix.
    - Provide licensing to allow for multiple users to remotely access the SCADA system concurrently, from either within the plant or remotely. Remote access shall support smartphones, tablet devices, and conventional laptop and desktop computers. Wonderware InTouch Access Anywhere is recommended.
    - SCADA computers furnished and configured by the System Integrator

- Wastewater Management Software
    - Replace Intellisys software with software more widely adopted and supported in the municipal water and wastewater industry in Wisconsin
    - Hach WIMS is recommended. Other options include Allmax Operator 10.
    - Integrate the Septage hauler invoicing into the reporting system.

- Alarm Notification Software
    - Provide PC based alarm notification software integrated tightly into the SCADA visualization software.
    - Utilized existing hardware dialer as a PLC based back-up alarm dialer.

- Industrial Control Network
    - Establish an industrial control network for plant process control.
    - Provide fire-walling and access control consistent with industrial control practices.
    - Coordinate with the Village's IT consultant to maintain security and establish remote access for wastewater staff and System Integrator support.

Design and Procurement Approach

The traditional approach used by engineering firms and municipal utilities for capital improvement projects follows the Design-Bid-Build sequence. While we believe this approach is appropriate for projects primarily involving the construction trades, we also feel that it unnecessarily limits the potential for success of purely SCADA system projects. In particular, when a Village undertakes replacement of its entire water and wastewater utility control system, many factors in addition to cost should play an important role in the selection of a control system provider.

To this end, we have developed an innovative approach to SCADA system projects where the Design-Bid-Build sequence is abandoned in favor of an evaluated proposal process consisting of the following steps:

Owner Education – Engineer assists the Owner in identifying the required and the desired system features by touring and discussing successful SCADA projects that have been implemented by other communities.

Baseline System Requirements – Engineer prepares documents identifying the Owner's minimum system requirements after complete review of the existing facilities, application of the technical features identified above, and a thorough review of cost impacts.

Proposals- Engineer and Owner review and rank proposals solicited from SCADA system providers against pre-defined criteria (including but not limited to such items as technical merit, creativity, staff capabilities, experience, service capabilities, knowledge of existing facilities, and cost).

Presentation/Interview – Engineer and Owner select providers that will be asked to present the merits of their proposal and organization to the Owner and Engineer. As part of the presentations, it may be appropriate to visit additional systems that were implemented by the providers.

Selection – Based on the highest overall value to the Owner, a SCADA provider is selected.

Construction Phase – Traditional services such as shop drawing review, construction observation, and start-up are performed. During this phase it is extremely important for the Owner and Engineer to attend a factory demonstration of the system before it is installed.

We strongly believe that the above approach encourages all of the aspects critical to the long-term success of a SCADA system project: Owner involvement and understanding throughout the process, creativity and cooperation on the part of the provider, and flexibility regarding costs.

We have successfully implemented SCADA projects using this approach with several communities including Rhinelander, Tomah, Reedsburg, Viroqua, and others.

Memo

To: Board of Public Works

From: Brian W. Kober, P. E., Director of Public Works

Subject: Engineering Services for GIS Mapping Conversion

Date: January 22, 2016

CC: Village Board

The Village of Jackson has been implementing the GIS program starting in 2003. There has been challenges during the period, but the Village used what was available in order to complete utility locations for digger's hotline, and reconstruction projects.

Now, we are at a standstill and need help to move the program to the next level. The Village had requested proposals from three Engineering Firms: R.A. Smith National, Symbiont, and Town & Country Engineering. Please find the breakdown of the three engineering firms that were interviewed for proposals:

	Conversion Cost	**Staff Rate**
1) R.A. Smith National	$5,675.00	$85.66 per hr
2) Symbiont	$8,200.00	
3) Town & Country Engineering	$6,000 to $8,000	$80.00 per hr

Recommend using Town & Country Engineering since they have the understanding in charge time and material for the conversion cost. Also, they are providing the availability to use their Trimble Geo7x for locating curbstops in the field.

If you have any questions please let me know.

Brian W. Kober, P.E.

R.A. Smith National
Beyond Surveying and Engineering

January 15, 2016

Brian Kober, P.E.
Director of Public Works
N168 W20733 Main Street
Jackson, WI 53037

Re: Proposal for Professional Services

Dear Mr. Kober:

Thank you for this opportunity to provide a quotation for professional services. The contents of this proposal letter spell out the Scope of Services to be provided, the Services Not Included, the proposed Completion Schedule, the Professional Fees, and the Assumptions and Conditions under which this proposal is being made.

I. PROJECT NAME:

VILLAGE OF JACKSON GIS SERVICES

II. DESCRIPTION OF SERVICES TO BE PERFORMED:

The services to be performed are based on our understanding of this project. This understanding has been developed from information provided to access the existing GIS website, pre-proposal meeting discussions with you, and our team's personal experience providing similar services for other clients.

A. Develop a phased approach to revitalize the Village's GIS operations.
   1. **Assessment** – R.A. Smith National geospatial staff will become familiar with the existing datasets, mapping, system interconnections, and the Village's GIS management system (Integrator). The effort involved in this service will produce a document that identifies the gaps in currency of datasets in use and their products (maps, tables, reports), and priority for updating. Document quantities will be identified for scanning and linking to the mapped features.

   2. **Phasing** – Based on the outcomes of the assessment, a timeframe will be established to update and implement datasets to the GIS. Datasets to be incorporated into a phasing timeframe include:

Sanitary Sewer	Storm Sewer
Water Distribution	Work Orders
Trees	Building Inspection Permits
Signs	Zoning
Electric	Fiber

B. Migration to Esri's GIS software platform
   1. **Licensing Options** – Approaches to software licensing will be discussed and evaluated to best suit the Village's ongoing GIS management.
      a) ArcGIS for Desktop, Basic license, Single Use
         - Installed on a single PC

16745 W. Bluemound Rd., Suite 200 • Brookfield, WI 53005 • (262) 781-1000 • Fax (262) 781-8466
Appleton, WI • Madison, WI • Naperville, IL • Irvine, CA • Pittsburgh, PA • rasmithnational.com

- $1,400 for the license, annual maintenance fee $400 (estimated)
- One ArcGIS Online user and 100 credits

b) ArcGIS for Desktop, Basic license, Concurrent Use

- Installed on multiple PCs, but used once at a time
- Can be borrowed to a laptop for a short term period
- $3,200 for the license, annual maintenance fee $700 (estimated)
- One ArcGIS Online user and 100 credits

c) ArcGIS Online Subscription

- Multi-user viewing and editing using a web browser
- Lacks the map layout functionality of desktop
- $2,500 Annually
- 5 users and 2,500 credits

ArcGIS Online is Esri's online mapping platform where datasets can be stored, viewed, and modified using the desktop software, browser or free to download applications like Collector for ArcGIS and Explorer for ArcGIS.

2. **Installation and Configuration** – Upon selection of software licensing, the software will be installed on a Village designated PC(s).
   a) Includes the desktop software, database, and ArcGIS Online
   b) Configuring the use of an iPad for field operations requires ArcGIS Online

3. **Migration** – The existing GIS platform will be migrated to the Esri platform. Based on the assessment above, the existing system interconnections to other data tables of the Village will be evaluated and, if advantageous, maintained in the current form. With a desktop license a GIS Database will be established and the Village's spatial datasets will be maintained within that environment.

***Upon completion of the above services the prioritized datasets can be updated. Prior to beginning a dataset update, an estimate of effort will be furnished to the Village for that specific dataset. Once approved, the dataset updates will be performed on a time and expense basis. Any datasets updated will remain in the control and ownership of the Village.**

C. Training and Technical Support.

1. **Training and technical support** will be provided to the Village at time and expense basis.

III. COMPLETION SCHEDULE:

The services authorized by this Agreement will begin immediately upon authorization. Professional intends to complete the project within 3 weeks from notice of authorization.

Client shall grant the Professional additional time to complete services which have been delayed due to circumstances beyond the control of the Professional.

IV. PROFESSIONAL FEES:

The above-described services will be provided for on a time and expense basis. Fees will be invoiced monthly as the project proceeds.

We estimate our fee to be $5,675 based on 65 hours of effort. A breakdown of staff rates and services outlined above is as follows:

GIS Technician I $70/hour
GIS Technician II $85/hour
GIS Project Manager $103/hour
Document Scanning $1.25/sheet

Usual and customary expenses such as mileage, postage, delivery, printing, telephone charges and applicable taxes are not included in the above fee, and will be invoiced at cost.

We will bill you monthly with an itemized statement for the time and expenses incurred on the project.

A. As your project progresses, additional work beyond the scope of this agreement may be required. Please initial below how you would like us to proceed with such work:

_____ Time is critical. Proceed with any additional work and notify me with the details as soon as possible. I understand that this work will be performed on an hourly, time-and-material basis.

_____ Contact me to obtain my verbal authorization and to discuss fees prior to performing any additional work. I understand that this could delay the progress of my project.

_____ Contact me to obtain my written authorization and to discuss fees prior to performing any additional work. I understand that this could delay the progress of my project.

V. ASSUMPTIONS AND CONDITIONS:

Our estimated fees are based on the following set of assumptions and conditions. Deviations from these may result in additional fees:

A. The terms and conditions set forth herein are valid for 30 days from the date of this proposal and are conditioned upon our completion of all services within ___ days of this date.

B. The hourly rates shown above are subject to change on an annual basis.

C. After work has commenced, any revisions requested or necessitated by conditions beyond our control, will be considered extra work requiring additional compensation.

VI. SERVICES NOT INCLUDED:

Unless specified elsewhere in this proposal, the following services are not included as part of this project and, therefore, are not reflected in our estimate of fees. If requested, these services will be performed on an hourly, time-and-material basis according to the attached Professional Fees Rate Schedule, unless other arrangements are agreed upon.

A. Additional or extended services beyond those specifically described in the Scope of Services

The attached Standard General Contract Terms for Professional Services are hereby made part of this Agreement. If there are any questions concerning those, or the terms as presented, please contact us. To authorize R.A. Smith National, Inc. to proceed please sign in duplicate and return one original to our office.

We look forward to a very successful project!

Sincerely,
R.A. Smith National, Inc.

Kyle M. Belott, GISP
Geospatial Project Manager

Enclosures

R.A. Smith National

STANDARD GENERAL CONTRACT TERMS
FOR PROFESSIONAL SERVICES

1. All of the work described herein shall be completed in accordance with generally and currently accepted engineering and surveying principles and practices.

2. Unless otherwise specifically included in the proposal, PROFESSIONAL'S scope of work shall not include geotechnical or environmental audits for the identification of hazardous wastes, wetlands, floodplains or any other structural or environmental qualities of land or air. It is understood that the Scope and the Completion Schedule defined in the Proposal are based on the information provided by the CLIENT. Verification of the accuracy and completeness of any information provided by others is beyond the scope of this agreement. Therefore, PROFESSIONAL cannot be held responsible for any design or construction problems resulting from the use of this information.

3. PROFESSIONAL strongly recommends that a geotechnical ENGINEER be engaged in the preliminary phases of the work to conduct field investigations, and analysis and prepare a report on the soils conditions.

4. PROFESSIONAL shall not be responsible for the means, methods, techniques, sequences or procedures of construction selected by the Contractor or CLIENT, or the safety precautions and programs incident to the work of the Contractor, nor shall he be responsible for the failure of the Contractor to perform the construction work in accordance with the Contract Documents.

5. All original papers, electronic files, and documents, and copies thereof, produced as a result of this contract shall remain the property of the PROFESSIONAL.

6. In the event all or any portion of the work prepared or partially prepared by the PROFESSIONAL is suspended, abandoned, or terminated, the CLIENT shall pay the PROFESSIONAL all fees, charges and expenses incurred to date. Professional may suspend or terminate this Agreement upon seven (7) days written notice if the CLIENT fails to substantially perform in accordance with this Agreement. Failure to make payments in accordance herewith shall constitute substantial nonperformance.

7. PROFESSIONAL cannot be held responsible for project schedule delays caused by weather, violence, acts of God, and public agencies or private businesses over which it has no control. PROFESSIONAL shall act only as an advisor in all governmental relations. Such delays as caused by said occurrences, if not solely the result of PROFESSIONAL'S failure to meet submittal deadlines, may result in adjustments to said schedules and estimates/fees.

8. All electronic files transferred to CLIENT or his DESIGNEE by PROFESSIONAL are provided solely for the convenience of the CLIENT and are warranted only to the extent that they conform to the original document(s) produced by PROFESSIONAL. All electronic file(s) are transmitted in trust for the sole use of the CLIENT and his DESIGNEE and acceptance constitutes assumption of responsibility for its use and safekeeping. Any use by third parties shall be at the sole risk of the CLIENT. Any alterations to or tampering with the files shall constitute the agreement of the CLIENT to release, defend and hold harmless PROFESSIONAL from all claims and causes of action by said CLIENT and third parties.

9. Payment for invoices is due upon receipt; amounts outstanding after 30 days from the date of invoice will be considered delinquent and subject to a service charge at the rate of 1% compounded monthly. Invoices will usually be sent monthly for work performed during the previous month. CLIENT understands, and agrees to pay for all services rendered regardless of CLIENT's ability or inability to proceed with the project for any reason, gain governmental approvals or permits, or secure financing for the project. The CLIENT shall provide PROFESSIONAL with a clear, written statement within twenty (20) days of the date of the invoice of any objections to the invoice. Failure to provide such a written statement shall constitute acceptance of the invoice as submitted. PROFESSIONAL reserves the right to immediately suspend work and/or terminate this agreement due to lack of timely payment of uncontested invoices by CLIENT.

The CLIENT further agrees to pay PROFESSIONAL any and all expenses incurred in recovering any delinquent amounts due, including attorney's fees and court costs.

10. The CLIENT agrees to limit PROFESSIONAL, by its agents or employees, total liability to the CLIENT and to all Construction Contractors and Subcontractors on the Project, due to PROFESSIONAL'S professional negligent acts, errors, omissions, strict liability, breach of contract, or breach of warranty and for any and all injuries, claims, losses, expenses, damages, or claim expenses arising out of this Agreement from any cause or causes, such that the total aggregate liability of PROFESSIONAL to those named shall not exceed the percentage share that PROFESSIONAL'S negligence bears to the total negligence of all negligent entities and individuals, and shall not exceed Fifty Thousand Dollars ($50,000.00) or the total fee for services rendered under this Agreement, whichever is less.

11. Both parties agree that all disputes, including, but not limited to errors, liability, claims for services and fees, expenses, losses, etc., shall, at the sole and exclusive option of PROFESSIONAL, be submitted for non-binding mediation, a prerequisite to further legal proceedings. PROFESSIONAL shall have the sole and exclusive right to choose the mediator. Any fees and/or expenses charged by the mediator shall be shared equally between PROFESSIONAL and CLIENT.

12. Nothing contained in this Agreement shall create a contractual relationship with or a cause of action in favor of a third party against either the CLIENT or the PROFESSIONAL. The PROFESSIONAL'S services under this Agreement are being performed solely for the CLIENT'S benefit, and no other entity shall have any claim against the PROFESSIONAL because of this Agreement or the performance or nonperformance of services hereunder. The CLIENT agrees to include a provision in all contracts with contractors and other entitles involved in this project to carry out the intent of this paragraph.

13. AS REQUIRED BY THE WISCONSIN LIEN LAW, PROFESSIONAL HEREBY NOTIFIES CLIENT THAT PERSONS OR COMPANIES FURNISHING LABOR FOR ENGINEERING OR SURVEYING FOR THE CONSTRUCTION ON OWNER'S LAND, MAY HAVE LIEN RIGHTS ON OWNER'S LAND AND BUILDING IF NOT PAID. THOSE ENTITLED TO LIEN RIGHTS, IN ADDITION TO THE UNDERSIGNED, ARE THOSE WHO GIVE THE CLIENT NOTICE WITHIN 60 DAYS AFTER THEY FIRST FURNISH LABOR OR MATERIALS FOR THE CONSTRUCTION. ACCORDINGLY, CLIENT PROBABLY WILL RECEIVE NOTICES FROM THOSE WHO FURNISH LABOR OR MATERIALS FOR THE SURVEYING OR ENGINEERING SERVICES, AND SHOULD GIVE A COPY OF EACH NOTICE RECEIVED TO THE OWNER AND MORTGAGE LENDER, IF ANY. PROFESSIONAL AGREES TO COOPERATE WITH THE CLIENT AND THE CLIENT'S LENDER, IF ANY, TO SEE THAT ALL POTENTIAL LIEN CLAIMANTS ARE DULY PAID, IF APPLICABLE.

****

R.A. Smith National, Inc.
16745 West Bluemound Road, Suite 200
Brookfield, WI 53005
Kyle M. Belott, GISP PROFESSIONAL
Geospatial Project Manager

By:_____

Date:_____

PROJECT: Project Name

The above and foregoing proposal is hereby accepted and PROFESSIONAL is authorized to proceed with the work.

Village of Jackson
N168 W20733 Main Street
Jackson, WI 53037 CLIENT

By: _____

Printed Name: _____

CLIENT and R.A. Smith National, Inc. agree that digital and electronically reproduced signatures such as by facsimile transmission or email are valid for execution or amendment of this Agreement and that electronic transmission/ facsimile is an authorized form of notice to proceed.

Title: _____ Date: _____

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6737 West Washington Street : Suite 3440 : Milwaukee, WI 53214

January 4, 2016

Mr. Brian Kober P.E.
Director of Public Works
Village of Jackson, Wisconsin
N168 W20733 Main Street
Jackson, WI. 53037

RE: Proposal for Geographic Information System (GIS) Update and Implementation
Village of Jackson, Wisconsin
Symbiont Proposal No. 34179

Dear Mr. Kober:

Symbiont Science, Engineering and Construction, Inc. (Symbiont) is pleased to submit this proposal to the Village of Jackson Wisconsin (Village) to provide consulting services for GIS System Updates and Implementation for the Village's public works department.

Symbiont is committed to becoming a long-term consulting partner with the Village. We understand your needs and will work collaboratively to provide exceptional services and solutions. Symbiont brings the following key strengths to the Village's GIS project.

- We understand the vision, the technologies, the opportunities, and the challenges faced by the Village, and we are prepared to help transition the Village to its desired level of GIS capabilities on multiple levels.
- We bring successful, relevant real-world project experience. Our team members are nationally recognized and hold various awards including the USEPA Best New Technology Award for our e-Atlas system (GIS-Web Mapping Application/Laserfiche Integration).
- Our implementation approach provides the Village with the necessary GIS framework to expand capabilities into the future. The Village will own all of the GIS software and will maintain complete control.
- Our ESRI-based ArcGIS Online and JavaScript viewer application development approach provides the Village with increased functionality at a substantial cost savings.

PROJECT UNDERSTANDING / BACKGROUND

The Village is currently in need of a GIS consultant to restructure their existing geospatial data resources into an Environmental Systems Research Institute (ESRI) centralized database which is accessible by multiple Village departments.

The Village currently uses an M-Power™ GIS website. This website was built for Village employees to view their GIS assets. Specifically, cadastral, utilities, and transportation data.

It is Symbiont's understanding that the asset information which displays through the website, is in need of updates, to align with today's available technologies, including database improvements and standardization. In addition, the Village would like to take ownership of their GIS data through cloud-based hosting. This approach will provide the Village a more direct approach to updating their GIS database substantiality reducing reliance on an outside consultant.

It is Symbiont's understanding that the Village is looking to increase use of their GIS website through a more intuitive design and functionality. Going forward, the Village would also like Symbiont to develop a two year GIS strategy plan that would continue the process of bringing the Village's GIS system more in line with current municipal GIS practices. This plan will also include the identification of additional data, in digital and/or paper form, to be included in the GIS system.

SCOPE OF WORK

Included in our scope of work are three tasks: 1) Update the existing data into a modern GIS database. 2) Develop a new GIS website for the Village. 3) Develop a 3 year GIS strategy for the Village.

Task 1 will involve migrating the existing data into ArcGIS Online which will provide increased functionality and accessibility. The data will be organized into groups based on village departments. Designing the database in this way will facilitate a more village-wide approach to GIS data management and use. Task 2 will involve the building of a new GIS website with a more intuitive design and increased functionality. The website will be accessible on all web browsers and will be mobile device friendly. The third and final task will be to develop a two year GIS plan to continue the process of modernizing the Village's GIS.

To streamline application development, improve usability, speed, and access to GIS content, Symbiont proposes utilizing ArcGIS Online as the foundation for hosting and deploying maps and applications. Symbiont recommends that the Village purchase a five user subscription for ESRI's ArcGIS Online.

When ArcGIS Online is available to host data and applications for the Village, Symbiont will assist in migration of datasets to the ArcGIS Online server and will work to configure the applications discussed below.

Task 1 – Data Development/Conversion

Geodatabase Creation

As previously stated, Symbiont recommends that the Village purchase a five user subscription for ESRI's ArcGIS Online. ArcGIS Online is a widely used cloud-based mapping and data storage system which will allow Village employees the ability to add, remove, edit, and share map layers between departments and users within the Village. The five employees who will be actively interacting with the GIS data will have their own unique login information.

Symbiont will conduct a review of the existing GIS database, and design an updated version which will allow the Village to share their GIS data between departments more efficiently. All of the Village's existing layers will be uploaded to ArcGIS Online. Within this cloud-based geodatabase, Symbiont will create groups for the relevant Village departments. These groups include, but are not limited to, Public Works, Planning, Engineering, Parks, Administration, and Telecom. The final Geodatabase design will be derived through a collaborative process with the Village.

Task 2 –GIS Website Deployment/Training

Symbiont will expand upon the Village's existing GIS website. The updated site will contain all of the layers present in the current GIS site. The website will also be accessible from all major web browsers and will be mobile device friendly.

Beyond the creation of an updated GIS website, the Village's purchase of an ArcGIS Online subscription will grant them access to ArcGIS Web AppBuilder. Web AppBuilder is a powerful tool which allows users the ability to:

- Easily create and publish GIS websites without the assistance of a Consultant
- Create Webmaps for specific uses such as data collection on mobile devices.
- Generate Webmaps designed for editing and/or adding data to layers.
- Design Webmaps to gather information for the community, such as pothole locations, or other citizen requests.

ArcGIS Online Training

Symbiont will conduct a training session for Village employees who will be actively using the new GIS. This training will cover logging into ArcGIS Online, creating and sharing webmaps with other users, editing existing GIS layers, and loading new GIS layers into the database. Symbiont will also be available to remotely help the Village GIS users through problems as they occur.

Monthly Meetings

Symbiont recommends to meet with the Village in February, March, and April. These meeting are anticipated to be between one to three hours long. Meeting time can then be spent on training if the Village desires.

Task 3 – Develop a Two Year GIS Strategy

Symbiont will conduct interviews with Village staff members to identify important additional datasets to be digitized and included in the GIS. From the results of the interviews, Symbiont will create a two year GIS strategic plan. Symbiont recommends limiting the strategic plan to two years based on the rapid advancements which are occurring within the GIS industry.

Symbiont suggests appending to the current plan each year to take into consideration these technological advancements.

PROJECT TEAM

The following project team has been assembled to work on this project.

Stephen Schmidt will serve as Project Manager for this project. His roles will include client communication, budget and schedule management, and web application development. He has over 12 years of experience managing GIS projects for a diverse set of clients. Mr. Schmidt has extensive experience with ArcGIS Server and web-based mapping application design, development, and implementation including creation of JavaScript map viewers, widgets, tools, map configuration and feature services. He is also competent in the deployment and customization of ArcGIS Online. Mr. Schmidt has built numerous customized versions of Microsoft Access to store and retrieve client data.

Ryan Eckdale-Dudley, GISP will be responsible for quality assurance and control (QA/QC) for this project and will be responsible for project oversight of all GIS work products prior to release to the Village. He has over 15 years of experience in managing, designing and implementing various geographic information systems (GIS) databases for wastewater, storm water, watercourse, and Brownfields projects. Mr. Eckdale-Dudley has extensive experience overseeing custom GIS application development and implementation projects including web-based and desktop mapping applications.

Mr. Eckdale-Dudley was recently awarded by the Governor of Illinois, as the winner of the 2013 Illinois Open Technology Project, where his team submitted a web-based GIS application for scoring, ranking, and prioritizing potential housing projects for redevelopment funding. His expertise includes ArcGIS Server, Desktop, ArcGIS Online, Mobile GIS, Geodatabase Design, Application Development, Asset Management, and Spatial Analysis.

Kyle Engelking is the GIS Specialist for this project. He will be responsible for updating and maintaining the Village GIS datasets upon request. He is experienced with mapping conveyance and process systems for wastewater treatment facilities, creating custom map interfaces, and maintaining databases. He converted Village of Watertown municipal features from CAD format to GIS format, linked features with Asset Management Database and displayed data using custom ArcGIS Silverlight application. He also surveyed municipal features for the Village of Platteville for GIS format and displayed them using ArcGIS Online.

PROJECT SCHEDULE

After contract execution, Symbiont will complete the activities outlined in this proposal by April 6, 2016. The detailed project schedule is outline below:

Tasks	Date
Task 1 - Data Development/Conversion	
Kick-Off Meeting	TBD
Data Review	February 12, 2016
Database Design	February 12, 2016
Convert CAD Layers to Feature Class (46 layers) and Import into new database	February 26, 2016
Link existing attribute data tables to the appropriate layers	February 6, 2016
QA/QC	March 4, 2016
Task 2 – GIS Website Deployment/Training	
ArcGIS Online Data Import	March 18, 2016
Design and Deploy Webmap with ArcGIS Web Appbuilder	April 1, 2016
QA/QC	April 4, 2016
ArcGIS Online Training Session with Jackson Staff	TBD
Monthly Meetings	TBD
Task 3 – Develop a 3 Year GIS Strategy/Training	
Plan Development	April 6, 2016

PROPOSED SOFTWARE EXPENSE

Software	Cost
ARGIS Online (5 User Organizational Account)	$2,500/YR

Symbiont proposes that the Village purchase a 5 user subscription for ESRI's ArcGIS Online. Symbiont will assist the Village in this process if required.

COMPENSATION

Symbiont will complete the above-described Scope of Work for a lump sum fee of $19,800. A breakdown of the project fee by task is provided below. Symbiont will bill the Village monthly on a percent complete basis.

Task	Total Cost
Task 1: Data Development/Software Installation	$8200
Task 2: GIS Website Development/Training	$7800
Task 3: Three Year GIS Strategy	$3800
	$19,800

Compensation for services outlined within this proposal are for fiscal year 2016 only. Tasks planned for 2017 will be addressed in a new proposal specific to those responsibilities.

TERMS AND CONDITIONS

Provided within this proposal are our Terms and Conditions of Agreement (Form S-1 10/2013), which are an integral part of our contract for professional services. Please indicate your acceptance of this proposal (and the Terms and Conditions herein) by having an authorized representative sign one copy and returning it to Symbiont.

Symbiont's clients frequently issue purchase orders (P.O.s) as a matter of convenience for tracking their accounts payable. However, it is expressly understood by your Village and Symbiont that none of the terms and conditions associated with your company's P.O. shall be deemed effective and that in the case of such conflict, the terms and conditions set forth in Symbiont's Terms and Conditions of Agreement (insert appropriate reference based on Contract Policy and Procedure) shall be deemed effective and agreed to between your Village and Symbiont and that Symbiont's acceptance of a P.O. shall not be deemed to be an acceptance of the terms or conditions of such P.O.

Symbiont does not warrant the accuracy of the data to be uploaded to the GIS system. The data uploaded will be provided by the Village of Jackson or other sources.

Symbiont's designated contact person is Stephen Schmidt. He can be contacted at 414-755-1113 or stephen.schmidt@symbiontonline.com. Please contact us if you have any questions regarding this proposal. We look forward to working with you.

Sincerely,

SYMBIONT®

Stephen M. Schmidt
Project Manager

SYMBIONT®

Edward T. Manning Jr., P.E.
President

PROPOSAL NO. 34179 ACCEPTED BY:

CLIENT: _____

SIGNATURE: _____

TITLE: _____

DATE: _____

MEMORANDUM

Date: January 21, 2016

To: Brian Kober, P.E. – Village of Jackson

From: Greg Droessler, P.E.

Subject: Proposal for GIS Mapping Conversion

Town & Country Engineering, Inc. is pleased to present this proposal to the Village of Jackson to convert the Village's existing maps and GIS system to a locally-hosted GIS solution. As the Village continues to grow and expand both their mapping and technology, this Geospatial Information System (GIS) is critical to the Village's plans to equip their staff and residents with more readily available data and user friendly tools.

The Village has been using mPower Integrator ® for a number of years, but recognizes that most Public Works and Utility Departments in Wisconsin have been utilizing ESRI ArcReader and ArcGIS software platforms. The ESRI platform is seen by many in business and government to be a more user friendly software platform and is the "industry standard" taught at many universities. This platform is utilized by the DOT, DNR, and communities throughout the state as the ArcReader license is free for download.

Primary Project Goals:

The Village has identified the following primary goals for this GIS system update:

1. Convert the existing mPower based system to ESRI and update the current maps to this platform to allow for more efficient and widespread access to these maps.

2. Create a static link between the Building Department records to this GIS based system. This includes the building permits, building records, and drawings currently stored with the Village's Building Dept.

3. In the future, possibly link the water meter data to each address.

4. Add cadastral map information from the County.

Project Understanding:

The Village of Jackson has a population of about 6,850 residents and approximately 3,000 residences. The Village may add an additional 300 – 500 homes as early as January, 2016 pending the annexation of a number of homes currently in the Town of Jackson that were recently extended water service by the Village.

The Village is looking for a phased or a la carte approach to address their mapping needs; a process that will allow them to update and expand their mapping and data access over the next 2 to 3 years. The Village is also looking to add or link to this GIS database additional public works and building department records so as to allow ready access for the Village's Public Works, Building, Police, Fire, and other departments.

The Water Utility has implemented an Advanced Metering Infrastructure (AMI) program that gathers and stores water use data for each meter and stores this information at an offsite server. The Village would like to link access to this data in the future. The data would be stored

separately, but the staff would like to be able to “click to list” current data by selecting a property.

The Village currently has water main, sanitary sewer, zoning and tree inventory maps in an on-line GIS format. These maps were created and maintained using the mPower Integrator® software that is owned by the Village and their current GIS mapping consultant, Gremmer and Associates. These maps appear to have been created in AutoCAD and converted to fit the GIS database format by “rubber sheet” methods, supplemented by GPS readings gathered over time by the consultant.

Existing Maps:

The water features include hydrants, valves, curb stops, and pipes. Sanitary features include manholes, pipes, laterals, and the lift station. Storm sewer features include pipes, outfalls, and structures. Trees (or planting sites) are shown in their respective locations. While not all the curb stops and laterals are included in these maps, the Village believes that more than 90% of these features have been located and the staff intends to complete this inventory over the next few years.

In addition to the Utility maps listed, the Village maintains zoning and planning maps with the existing database and intends to continue this practice with the new software as well.

The maps were originally maintained by Village Staff to reflect changes to object attributes, but due to staff reductions the maps are now maintained by Gremmer. System additions are accomplished by submitting changes to the Village’s map host and supplier.

Town and Country’s Approach:

The Village has requested a proposal to convert their existing GIS maps to a locally-hosted format and integrate these maps with new databases. Making these changes offers several advantages:

- Utilizing a locally-hosted GIS platform allows viewing and use of the data without an internet connection. This can provide faster speeds, and eliminates the need to be tethered to a cable or continually paying for a mobile data plan. **There are <u>no</u> hosting fees**.

- All of the data is owned and controlled by the Village. Utilizing an overnight cloud-based exchange, data changes made each day are combined and distributed to all users. This process also allows for daily data backups to our office.

- The Village can easily enter and maintain data using customized user interface, with as many (or few) attributes as desired. There are no “app” fees. The only costs are those to set up or modify the forms. Note that costs can be minimized by utilizing previously created forms for this application.

- The Village can easily add new map features such as zoning, building permits, sign inventories, etc.

- Pdf maps of different (or multiple) layers can be made and posted on the Village website.

- This mapping platform is completely scalable to allow simple deployment to on-line and handheld uses (an additional software license would need to be purchased by the Village from ESRI, Inc.)

Scope of Services:

In order to upgrade the maps and GIS system, several specific tasks are required for each of the existing map layers. The scope of each of these tasks is as follows:

1. Convert the existing mPower based system to ESRI and update the current maps to this platform to allow for more efficient and widespread access to these maps.

    a. Data Conversion Phase

    The existing maps will be imported into the ESRI software, using geodatabase format. Data entry forms and reports will be initially created. There will be no field verification of feature locations, sizes, etc.

    b. Deployment Phase

    The next phase is the deployment of the preliminary maps. ArcReader map viewing software will be installed on as many Village desktops and laptops as necessary, along with the user interface at locations requested by the Village. The overnight cloud backups and data updates will be set up during this phase. Training will be provided to Village staff for map viewing and data entry.

    c. Customization Phase

    During this phase the map symbology (colors, icons, line types, etc.) and data entry interfaces will be adjusted according to staff direction. Object attributes (size, age, condition, etc.) can be added/removed and customized according to data format (free type, drop-down selection, check box, etc.). The mapping system will be supplied to the Village in both hard copy and digital file.

    Included in this phase is providing the Village with large-scale paper maps once customization is complete. These large-scale paper maps will show the entire system on one sheet. If requested, the Village will also be provided with 11 x 17-inch scaled mapping booklets that will show each system in greater detail.

2. Link the Building Department records to this GIS based system. This includes the building permits, building records, and drawings currently stored with the Village's Building Dept.

    a. A static link by address would be created between the Building Department records and the GIS system. The daily, weekly, monthly, or quarterly update of this information would need to be addressed based on the volume of data stored or managed once the initial system has been updated.

3. Link the water meter data to each address.

    a. This "link" would require coordination and possible connection of the 2 data bases. As these are currently housed on separate servers at separate locations, a static link in lieu of a live link may be preferred. A live link to an outside sourced database may create issues. Town and Country would want to review this alternative with the Village in the future.

4. Add cadastral map information from the County.

    a. Update the County cadastral information for the Village GIS system on an annual basis. This typically includes importing new data from the County to replace the existing data. This would typically be handled on a Time and Materials basis for existing clients. More frequent updates can be provided, but are typically not required for most communities.

Estimated Fees:

The estimated cost for converting the existing water main, sanitary sewer, storm sewer, and tree inventory maps to a locally-hosted format is $6,000 to $8,500. Included is one day of software installation and staff training on the use of the GIS system.

Additional Services:

Please note that the map objects would be placed exactly where the existing GIS maps shows them. This cost does not include any field verification of the existing maps, which we assume has already been completed. If needed, Village staff may perform its own field verification, or Town & Country Engineering, Inc. can provide the field verification required as an extra cost on per diem basis. The billing rates for these services is $80 / hr., plus GIS equipment costs of $15 / hr. as applicable.

Our Trimble Geo7x (mapping grade survey) equipment is available for rent to our existing clients on a weekly basis. The rate for this rental is $250 / week. If you are interested in trying out the equipment for a day prior to purchasing your own equipment, please let us know and we will let you use this equipment at no charge. The advantage of using the same equipment (Village and Town and Country) is that our staff is very familiar with the Geo7x equipment and software and it saves time and money to be able to share knowledge instead of worrying about equipment compatibility.

At this time, the exact numbered of Building Department files to be scanned is not known. If Village building department records are to be scanned to create .PDF files, Town and Country Engineering can provide this service at a rate of $2.00 / sheet for each full size drawing scanned. These files would then be linked by address to the GIS system on a Time and Materials basis.

Software and Equipment:

As the Village looks to budget for mapping expenditures, consideration will need to be given to the additional capital and annual costs (beyond consultant fees) for maintaining a GIS system. The Village has expressed an interest in buying software and survey equipment to support the ESRI GIS platform, thus the following are budgetary costs for hardware and software to be considered:

- ESRI ArcReader: This is a FREE viewer software that can be installed on as many computers or tablets as the Village would like.

- ESRI ArcGIS: This software “add on” is available through a variety of 3rd party vendors at a cost of approximately $1,500 per license for the initial capital cost, with an estimated maintenance or renewal cost of $500 / license per year.

- Tablets: A variety of tablets, laptops, and other technology is available through 3rd party

vendors. Costs typically range from $500 - $1,500 per unit, but vary greatly depending on the expectations of these units by the community. It is recommended that the Village budget $5,000 to $7,000 for this investment, but may consider combining this investment with the SCADA upgrade also pending.

- Trimble Survey Equipment (Geo7x): The estimated cost of this portable mapping unit is $7,000 to $10,000. Price varies on the software and various other features typically listed as options by vendors.

Data Gathering Alternatives:

The Village will need to consider how they intend to gather additional data you intend to include in the database, as well as how you intend to continue to gather and manage that data in the future. An advantage of utilizing internal Village staffing is the cost may be lower by performing only small parts of the work whenever schedules allow. The Village will need to determine if they would prefer to 1) purchase their own GIS surveying system, 2) rent equipment from Town and Country or Seiler Instruments, or 3) hire out the survey. This would be done with mapping grade survey equipment accurate to within 1 meter (typically to within 1 foot with good satellite conditions). Alternatively, Town & Country Engineering staff could survey locations to within one inch (vertical and horizontal) accuracy. The better accuracy can be very useful when determining pipe slopes.

Thank you for the opportunity to present this proposal to you. If you have any questions regarding this proposal, please feel free to contact us at your convenience.

GJD
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Agenda item documents were not received in time to be part of the packet.

The information will be distributed at the meeting.

BILL OF SALE

The undersigned, **WEST SHORE PIPELINE COMPANY** ("**Grantor**"), for good and valuable consideration, the receipt and sufficiency of which Grantor hereby acknowledges, hereby sells, assigns, conveys, transfers and sets over unto **THE VILLAGE OF JACKSON**, a municipal corporation of the State of Wisconsin ("**Grantee**"), all of Grantor's right, title and interest in and to the water distribution system extension more particularly described on **Exhibit A** attached hereto and incorporated herein (the "**Project**"), located in the Town of Jackson, County of Washington, State of Wisconsin.

The Project shall specifically exclude any water laterals conveyed to the landowners listed on **Exhibit B** attached hereto and incorporated herein, which water laterals have been conveyed to such landowners by separate bills of sale in the form on **Exhibit C** attached hereto and incorporated herein.

Except as expressly set forth in Article X of that certain Development Agreement (Village of Jackson – Water Distribution System) dated March 13, 2014 by and between Grantor and Grantee, Grantor makes no representations, warranties or covenants whatsoever with respect to the Project, and Grantee hereby accepts the Project in its "AS IS-WHERE IS" condition. GRANTEE FURTHER ACKNOWLEDGES AND AGREES THAT GRANTOR DOES NOT MAKE OR GIVE, AND SHALL NOT BE DEEMED TO HAVE MADE OR GIVEN, AND GRANTOR EXPRESSLY DISCLAIMS, ANY WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, AS TO THE CONDITION, MERCHANTABILITY, OR FITNESS FOR USE OR FOR ANY PURPOSE OF ALL OR ANY PART OF THE PROJECT.

Date: ~~_____~~December ____, 2015

GRANTOR:

WEST SHORE PIPELINE COMPANY

By: _____
Name: _____
Title: _____

GRANTEE:

THE VILLAGE OF JACKSON

By:
Name:
Title:

813-7727-9529.19529.2

EXHIBIT A

Description of the Project

~~*See attached*~~

The "Project" shall mean the Project as defined in certain Development Agreement (Village of Jackson – Water Distribution System) dated March 13, 2014 by and between Grantor and Grantee.

EXHIBIT B

List of Landowners

See attached.

EXHIBIT C

Form of Landowner Bill of Sale

See attached.

Document comparison by Workshare Compare on Thursday, December 10, 2015 2:47:01 PM

Input:	
Document 1 ID	\\foleylaw.com\userdata\home\05615\UserProfile\My Documents\NDEcho\West Shore Pipeline - Village Bill of Sale(1).doc
Description	\\foleylaw.com\userdata\home\05615\UserProfile\My Documents\NDEcho\West Shore Pipeline - Village Bill of Sale(1).doc
Document 2 ID	\\foleylaw.com\userdata\home\05615\UserProfile\My Documents\NDEcho\West Shore Pipeline - Village Bill of Sale.doc
Description	\\foleylaw.com\userdata\home\05615\UserProfile\My Documents\NDEcho\West Shore Pipeline - Village Bill of Sale.doc
Rendering set	standard

Legend:	
Insertion	
~~Deletion~~	
~~Moved from~~	
Moved to	
Style change	
Format change	
~~Moved deletion~~	
Inserted cell	
Deleted cell	
Moved cell	
Split/Merged cell	
Padding cell	

Statistics:	
	Count
Insertions	14
Deletions	4
Moved from	0
Moved to	0
Style change	0
Format changed	0
Total changes	18

ASSIGNMENT AND ASSUMPTION OFEASEMENTS

Document Number

Recording Area

Name and Return Address

Matthew K. Impola
Foley & Lardner LLP
777 E. Wisconsin Ave.
Milwaukee, WI 53202-5306

Parcel Identification Number (PIN)

ASSIGNMENT AND ASSUMPTION OF EASEMENTS

THIS ASSIGNMENT AND ASSUMPTION OF EASEMENTS (this "Assignment") is made and effective as of _____, 2015, by and between WEST SHORE PIPE LINE COMPANY, a foreign corporation registered to transact business in the State of Wisconsin ("Assignor"), and THE VILLAGE OF JACKSON, a municipal corporation of the State of Wisconsin ("Assignee").

W I T N E S S E T H :

WHEREAS, Assignor and Assignee are parties to a Development Agreement (Village of Jackson – Water Distribution System Extension) dated as of March 13, 2014 (the "Development Agreement"); and

WHEREAS, pursuant to the Development Agreement, among other matters, Assignor agreed to assign to Assignee all easements, leases, licenses, permits, access agreements or other authorizations or occupancy agreements, if any (collectively, the "Easements") reasonably necessary for the construction, use, operation and maintenance of the Project (as defined in the Development Agreement).

NOW, THEREFORE, for and in consideration of the mutual covenants, terms, and provisions of the Purchase Agreement, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, IT IS AGREED:

Section 1. ASSIGNMENT.

Section 1.1. Assignment. Assignor does hereby sell, transfer, set over, quitclaim and assign, unto Assignee, without warranty of any kind, all of Assignor's right, title, and interest, if any, in, to, and under the Easements.

Section 1.2. Assumption. Assignee accepts the foregoing assignment and hereby assumes, and hereby covenants and agrees to fully and faithfully perform and discharge, each and every covenant, duty, obligation, liability, and term on the part of the grantee, licensee, or other recipient of rights under the Easements, arising or accruing on or after the date hereof.

Section 2. MISCELLANEOUS.

Section 2.1. Development Agreement. This Assignment is intended to give effect to certain of the transactions contemplated by the Development Agreement. This Assignment is made without representation or warranty except as provided in and by the Development Agreement.

Section 2.2. Successors and Assigns. This Assignment and the rights and liabilities contained herein shall be binding upon and shall inure to the benefit of the parties hereto and their respective successors and assigns.

Section 2.3. Counterparts. This Assignment may be executed in multiple counterparts, each of which shall be deemed an original, and all of which together shall constitute one and the same instrument.

[Signature pages follow this page.]

IN WITNESS WHEREOF, the parties have executed and delivered this instrument as of the day, month, and year first above written.

Assignor:

WEST SHORE PIPE LINE COMPANY

By: _____

Name: _____

Its: _____

STATE OF _____)

) ss.

COUNTY OF_____)

This instrument was acknowledged before me on _____ _____, 2015, by _____ _____, as _____ of WEST SHORE PIPE LINE COMPANY.

[Notarial Seal]

_____

Name printed: _____

Notary Public, State of _____

My commission expires: _____

Assignee:

THE VILLAGE OF JACKSON

By: _____

Name: _____

Its: _____

STATE OF WISCONSIN)
) ss.
COUNTY OF JACKSON)

This instrument was acknowledged before me on _____, 2015, by _____, as _____ of THE VILLAGE OF JACKSON.

[Notarial Seal]

_____

Name printed: _____

Notary Public, State of _____

My commission expires: _____

This instrument drafted by

Matthew K. Impola
Foley & Lardner LLP
777 East Wisconsin Ave.
Milwaukee, Wisconsin 53202

QUIT CLAIM BILL OF SALE

The undersigned, **WEST SHORE PIPELINE COMPANY** ("**Grantor**"), for good and valuable consideration, the receipt and sufficiency of which Grantor hereby acknowledges, hereby sells, assigns, conveys, transfers and sets over unto **[LANDOWNER]** ("**Grantee**"), all of Grantor's right, title and interest, if any, in and to the water laterals and related improvements constructed by Grantor (collectively, the "**Water Facilities**") located in or upon, or immediately adjacent to, the following described real property situated in the Town of Jackson, County of Washington, State of Wisconsin:

See **EXHIBIT A** attached hereto and incorporated herein by this reference.

For the avoidance of doubt, the Water Facilities shall (i) *include* any portion of the water laterals (up to and including the point of connection with the water main) located in the public right of way adjacent to the Property, and (ii) *exclude* the water main, curb stop or curb box constructed within the public right of way adjacent to the Property).

Grantor makes no representations, warranties or covenants whatsoever with respect to the Water Facilities, and Grantee hereby accepts the Water Facilities in their "AS IS-WHERE IS" condition. GRANTEE FURTHER ACKNOWLEDGES AND AGREES THAT GRANTOR DOES NOT MAKE OR GIVE, AND SHALL NOT BE DEEMED TO HAVE MADE OR GIVEN, AND GRANTOR EXPRESSLY DISCLAIMS, ANY WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, AS TO THE CONDITION, MERCHANTABILITY, OR FITNESS FOR USE OR FOR ANY PURPOSE OF ALL OR ANY PART OF THE WATER FACILITIES.

Date: _____ ____, 2015

GRANTOR:

WEST SHORE PIPELINE COMPANY

By: _____

Name: _____
Title: _____

EXHIBIT A

Address and/or Tax Parcel Identification Number

[See attached.]

ARCADIS

Properties Receiving Service Connections

10/2/2015

Property Location		Tax Key	Last Name	First Name	Notes
2418	Crosswind Cir	T7 0767 015	Dahlberg	Philip & Amy	
Lot 16	Crosswind Cir	T7 0767 016	Heidtke Living Trust		Ray Heidtke
Lot 17	Crosswind Cir	T7 0767 017	Winfield Homes LLC		
Lot 18	Crosswind Cir	T7 0767 018	Winfield Homes LLC		
2430	Crosswind Trl	T7 0767 014	Birchbauer	Brian & Stacey	
2913	Crosswind Trl	T7 0767 001	Selk	Darren & Barbara	New Owner: Bryan Sachs
2926	Crosswind Trl	T7 0767 025	Kazmierczak	Kevin	
2938	Crosswind Trl	T7 0767 024	Repka	Joseph & Sandy	
2945	Crosswind Trl	T7 0767 004	Sulok	Mark & Christina	
2948	Crosswind Trl	T7 0767 023	Ortiz	Carlos & Norma	
2961	Crosswind Trl	T7 0767 005	Starzman	Michael & Jennifer	
2985	Crosswind Trl	T7 0767 006	Mack	Joseph & Tammy	
3053	Crosswind Trl	T7 0767 011	Prochnow	Jeremy	
3073	Crosswind Trl	T7 0767 013	Holter	Carl & Janet	
Lot 2	Crosswind Trl	T7 0767 002	Crosswind Farms LLC	Dirk Wildt (Builder)	House has been built
Lot 3	Crosswind Trl	T7 0767 003	Crosswind Farms LLC		
Lot 12	Crosswind Trl	T7 0767 012	Ragsdale	Greg	
Lot 19	Crosswind Trl	T7 0767 019	Crosswind Farms LLC		House under construction
Lot 20	Crosswind Trl	T7 0767 020	Crosswind Farms LLC		
Lot 21	Crosswind Trl	T7 0767 021	Crosswind Farms LLC		House has been built
Lot 22	Crosswind Trl	T7 0767 022	Crosswind Farms LLC		
Lot 26	Crosswind Trl	T7 0767 026	Crosswind Farms LLC		House has been built
2881	Division Road	T7 0841	St. John's Lutheran Church	c/o Keith Heidtke	
2933	Division Road	T7 0748 00J	Larsen	Ervin & Mary	
2950	Division Road	T7 0712 00A	McKean	Philip & Roseann Family Trust	
2955	Division Road	T7 0748 00A	Rusch	Keith & Elaine	
2963	Division Road	T7 0747 00A	Blank	Gustav	
2971	Division Road	T7 0747 00B	Luedtke	Charles	
2985	Division Road	T7 0747 00C	Swiecichowski	Cyril	
2987	Division Road	T7 0747 00D	Olszewski	Timothy & Nicole	
2992	Division Road	T7 0712 00C	Liebl	Dennis & Barbara	
3166	Division Road	T7 0706 00A	Wichmann	Herbert	
3174	Division Road	T7 0706	Schmitt	Kenneth	
3186	Division Road	T7 0706 00B	Kaschner	Blanca Rosa	
3204	Division Road	T7 0705 00B	Holtsclaw	Lewis & Rosemary	
3207	Division Road	T7 0723 00A	Zandi	Jon	
3282	Division Road	T7 0705 00C	Boppre Trust		Tim & Dawn Boppre
3296	Division Road	T7 0705 00A	Dobberfuhl	Robert	
2459	Golden Harvest Ln	T7 0767 007	Ball	Martin & Michelle	
Lot 8	Golden Harvest Ln	T7 0767 008	Crosswind Farms LLC		
Lot 9	Golden Harvest Ln	T7 0767 009	Crosswind Farms LLC		
Lot 10	Golden Harvest Ln	T7 0767 010	Crosswind Farms LLC		
1957	Hummingbird Dr	T7 0848 010	Dano	Tim & Patricia	
1960	Hummingbird Dr	T7 0848 009	Brzezinski	Jody	
1969	Hummingbird Dr	T7 0848 011	Dzik	Richard & Carrie	
1974	Hummingbird Dr	T7 0848 008	Koenen	Gary	
1983	Hummingbird Dr	T7 0848 012	Koenke	Mark & Kristy	
1990	Hummingbird Dr	T7 0848 007	Holt	Gregory & Jennifer	
1995	Hummingbird Dr	T7 0848 013	Pleugers	Warren & Judy	
2007	Hummingbird Dr	T7 0848 014	Tetzlaff	Robert & Tammy	
2014	Hummingbird Dr	T7 0848 005	Stiemke	John	
2019	Hummingbird Dr	T7 0848 015	Herrmann	Joseph & Theresa	New Owner: Frank Pizzitola
2026	Hummingbird Dr	T7 0848 004	Kons	Nathan & Deanna	
2031	Hummingbird Dr	T7 0848 016	Baker Fahey	Sara	
2042	Hummingbird Dr	T7 0848 003	Baumann	Eric & Jodi	
2043	Hummingbird Dr	T7 0848 017	Busse	Doyle	
2812	Maple Road	T7 0850 00D	Heerhold	Michael & Tracy	
2979	Maple Road	T7 0769	Berggren Farms I LLC		New Owner: Ross Bishop?
3020	Maple Road	T7 0737 00E	Wisinski	Florian & Kara	
3060	Maple Road	T7 0737 00Z	Heckendorf	Gary	

ARCADIS

Properties Receiving Service Connections

10/2/2015

Property Location		Tax Key	Last Name	First Name	Notes
3115	Maple Road	T7 0752 00Z	Liesener	Roger & Martha Trust	
3209	Maple Road	T7 0749 00C	Wagenknecht	Jerold	
3223	Maple Road	T7 0749 00E	Leak	Carrie & Andre	
3252	Maple Road	T7 0731 00A	Maciejewski	Gail, Guy and Geanine	
3255	Maple Road	T7 0749	Harry	Gregory & Carla	
3279	Maple Road	T7 0749 00J	Heidtke	Ronald & Julie	
Lot	Maple Road	T7 0850 00A	Dytchkowsky	David & Holly	
1859	Mill Road	T7 0744 00B	Beeler	Curtis & Wanda Living Trust	
1870	Mill Road	T7 0726 00Z	LeSac	Joseph & Jodi	
1891	Mill Road	T7 0744 00A	Schreck	Paul & Karen	
1969	Mill Road	T7 0736 00A	Smith	Jeffrey	
1987	Mill Road	T7 0736	Henke	Robert & Janice	
2011	Mill Road	T7 0737 00B	Heckendorf	Raymond & Eulora	
2045	Mill Road	T7 0737 00A	Frank Manchester	Beth	
2097	Mill Road	T7 0738	Behm	Kevin	
2857	Mockingbird Dr	T7 0848 002	Falbo	Jeffrey	
2864	Mockingbird Dr	T7 0848 006	Greseth	Gary & Rhea Jane	
2869	Mockingbird Dr	T7 0848 001	Bukovic	Kevin & Mary	
1710	Sherman Road	T7 0576 00	Jackson	Roland	
1732	Sherman Road	T7 0576 00C	Callum Jr.	Harold	
1752	Sherman Road	T7 0576 00E	Lober	Paul	
1782	Sherman Road	T7 0576 002	Hill	Jack	New Owner: Michael & Janie Cain
1796	Sherman Road	T7 0575 00A	Vorwerk	Michael & Sandra	
1818	Sherman Road	T7 0575 00C	Peplinski	Michael	
1845	Sherman Road	T7 0725 00A	Sierra	Patrick & Janis	
1876	Sherman Road	T7 0575	Greifenhagen	Kenneth & Marian	
1930	Sherman Road	T7 0572 00Z	Olson	Robin Rev. Trust	
1986	Sherman Road	T7 0572 00A	Braeger	Matthew & Jessica	
1997	Sherman Road	T7 0730 00A	Heckendorf	Melvin	
1998	Sherman Road	T7 0571 00A	Okruhlica	Thomas & Jean	
2018	Sherman Road	T7 0571	Sherman Heights LP		Thomas & Jean Okruhlica
2039	Sherman Road	T7 0730	Heckendorf	Melvin	
2135	Sherman Road	T7 0749 00F	Heller	John & Toni	
2165	Sherman Road	T7 0749 00D	Heller	John & Toni	
2409	Sherman Road	T7 0755 00A	Steitz	Robert & Donna Living Trust	
Lot	Sherman Road	T7 0576 00A 001	Jackson	Roland	
1646	Western Ave	T7 0712	Mutz	Thomas & Kim	
1666	Western Ave	T7 0712 00D	Lajoice	Robert	
1676	Western Ave	T7 0713 00A	Rosbeck	Thomas & Lynn	
1708	Western Ave	T7 0748 00B	LaSage	Peter & Jennifer	
1730	Western Ave	T7 0748 00F	Flanders	Daniel & Vicki	
1740	Western Ave	T7 0748 00H	Kilbourn	Christine	
1750	Western Ave	T7 0748 00C	Brandt	Robert & Susan	
1760	Western Ave	T7 0748 00D	Wanty	Francis	
1770	Western Ave	T7 0748 00E	Oestreich	Richard & Gladys Rev. Living Trust	
1780	Western Ave	T7 0748 00G	Lukes	Allan & Barbara	
1790	Western Ave	T7 0748	Ninedorf	James	
1824	Western Ave	T7 0745	Wagner	Thomas & Gwendolyn	
1836	Western Ave	T7 0745 00D	Fenton	John	
1880	Western Ave	T7 0745 00A	West Shore Pipe Line Co		
1885	Western Ave	T7 0842 00A	Vogel	William & Joyce Trust	
1915	Western Ave	T7 0847 00C	Feilbach	James & Nicolle	
1930	Western Ave	T7 0742 00A	Bishop	Ross & Marcella	New Owner: Kyle Morris
1961	Western Ave	T7 0848 00B	Fitzgerald	Mark & Tammy	
1964	Western Ave	T7 0741	Wood	Peter & Ruth	
1971	Western Ave	T7 0848 00A	Bournelis	James & Donna	
1985	Western Ave	T7 0849 00D 002	Pipkorn	Kevin	
2004	Western Ave	T7 0739 00C	Ciha	Mary	
2005	Western Ave	T7 0849 00D 001	Fulton	Lloyd	
2015	Western Ave	T7 0849 00C	Barz	Ryan	

ARCADIS

Properties Receiving Service Connections

10/2/2015

Property Location		Tax Key	Last Name	First Name	Notes
2025	Western Ave	T7 0849 00B	Block	Norman	
2035	Western Ave	T7 0849 00A	Corlette	Daniel & Linda	
2060	Western Ave	T7 0739 00A	Wheeler	Lyle	
2090	Western Ave	T7 0740	Holcomb	Gregory	
2245	Western Ave	T7 0814 00B	Koeller	Clifford & Doris	
2250	Western Ave	T7 0768 00A	Heidtke Living Trust		Ray Heidtke
2305	Western Ave	T7 0815	Boldt	Richard & Sharon	
3115	Wildflower Ln	T7 0734 002	Mielke	Robert & Judi	
3116	Wildflower Ln	T7 0734 012	Goniu	Brian	
3127	Wildflower Ln	T7 0734 003	Johnson	Chad & Melissa	
3128	Wildflower Ln	T7 0734 011	Moore	David & Kathryn	
3133	Wildflower Ln	T7 0734 004	Long	Jami	New Owner: Peter & Jennifer Mueller
3134	Wildflower Ln	T7 0734 010	Campbell	Robert & Kathryn	
3151	Wildflower Ln	T7 0734 005	Carr	James & Karen	
3152	Wildflower Ln	T7 0734 009	Gallitz (Utech)	Jordan (Karen)	
3159	Wildflower Ln	T7 0374 006	Yorkey-Peters (Micech)	Lisa (Jim)	
3165	Wildflower Ln	T7 0734 014	Uutala	Michael & Michelle	
3166	Wildflower Ln	T7 0734 016	Strobel	Thomas & Lora	
Lot 15	Wildflower Ln	T7 0734 015	Strobel/Uutala	Thomas/Michael	

Note: Curb stops/curb boxes were installed to all lots listed in the table above. Laterals were not installed as part of the Village of Jackson Water System Extension Project.

Ordinances for Construction Site Erosion and Sediment Control and Post-Construction Storm Water Management

CONSTRUCTION SITE EROSION AND SEDIMENT CONTROL ORDINANCE

TABLE OF CONTENTS

MODEL CONSTRUCTION SITE EROSION AND SEDIMENT CONTROL ORDINANCE

AN ORDINANCE TO CREATE CHAPTER 24 OF THE CODE OF THE VILLAGE OF JACKSON RELATING TO THE CONTROL OF CONSTRUCTION SITE EROSION AND SEDIMENTATION RESULTING FROM LAND DISTURBING CONSTRUCTION ACTIVITIES

Comment [TN1]: Ordinance set up to be added to the Village Code as Chapter 24, rather than a modification of Chapter 15 where existing erosion control ordinances exist. This can be renumbered as requested.

FOREWORD.

Use of this ordinance will foster consistent, statewide application of the construction site performance standards for new development and redevelopment contained in subchapters III and IV of ch. NR 151, Wis. Adm. Code.

The Village Board of the Village of Jackson does hereby ordain that Chapter 24 of the code of the Village of Jackson is created to read as follows:

[CHAPTER 24.00]
CONSTRUCTION SITE EROSION AND SEDIMENT CONTROL

S. 01 AUTHORITY.

(1) This ordinance is adopted under the authority granted by s. 61.354, Wis. Stats. This ordinance supersedes all provisions of an ordinance previously enacted under s. 61.35, Wis. Stats., that relate to construction site erosion control. Except as otherwise specified in s. 61.354, Wis. Stats., s. 61.35, Wis. Stats., applies to this ordinance and to any amendments to this ordinance.

(2) The provisions of this ordinance are deemed not to limit any other lawful regulatory powers of the same governing body.

(3) The Village Board hereby designates the Village Engineer to administer and enforce the provisions of this ordinance.

(4) The requirements of this ordinance do not pre-empt more stringent erosion and sediment control requirements that may be imposed by any of the following:
   (a) Wisconsin Department of Natural Resources administrative rules, permits or approvals, including those authorized under ss. 281.16 and 283.33, Wis. Stats.
   (b) Targeted non-agricultural performance standards promulgated in rules by the Wisconsin Department of Natural Resources under s. NR 151.004, Wis. Adm. Code.

S. 02 FINDINGS OF FACT.

The Village Board acknowledges that runoff from land disturbing construction activity carries a significant amount of sediment and other pollutants to the waters of the state in Village of Jackson.

S. 03 PURPOSE.

It is the purpose of this ordinance to maintain safe and healthful conditions; prevent and control water pollution; prevent and control soil erosion and sediment discharge; protect spawning grounds, fish and aquatic life; control building sites, placement of structures and land uses; preserve ground cover and scenic beauty; and promote sound economic growth by minimizing the amount of sediment and other pollutants carried by runoff or discharged from land disturbing construction activity to waters of the state in the Village of Jackson.

S. 04 APPLICABILITY AND JURISDICTION.

(1) APPLICABILITY.

(a) Except as provided under par. (b), this ordinance applies to any construction site as defined under S. 05 (6).

(b) This ordinance does not apply to the following:

1. Transportation facilities, except transportation facility construction projects that are part of a larger common plan of development such as local roads within a residential or industrial development.
2. A construction project that is exempted by federal statutes or regulations from the requirement to have a national pollutant discharge elimination system permit issued under chapter 40, Code of Federal Regulations, part 122, for land disturbing construction activity.
3. Nonpoint discharges from agricultural facilities and practices.
4. Nonpoint discharges from silviculture activities.
5. Routine maintenance for project sites that have less than 5 acres of land disturbance if performed to maintain the original line and grade, hydraulic capacity or original purpose of the facility.

(c) Notwithstanding the applicability requirements in par. (a), this ordinance applies to construction sites of any size that, as determined by the Village Engineer, are likely to result in runoff that exceeds the safe capacity of the existing drainage facilities or

receiving body of water, that causes undue channel erosion, or that increases water pollution by scouring or transporting of particulate.

(2) JURISDICTION.

This ordinance applies to [land disturbing construction activity on lands within the boundaries and jurisdiction of the [name of municipality];

or

land disturbing construction activities on lands within the boundaries and jurisdiction of the ~~[name of municipality]~~Village of Jackson, as well as the extraterritorial division of land subject to an ordinance enacted pursuant to s. 236.45 (2) and (3), Wis. Stats.;

or

land disturbing construction activities on lands within the boundaries and jurisdiction of the [name of municipality], as well as all lands located within the extraterritorial plat approval jurisdiction of [name of municipality], even if plat approval is not involved].

Note to Users: *These options differ in the amount of land area covered by this ordinance and may have ramifications for enforcement authority. For counties, the first option is the only option since counties do not have extraterritorial authority. Under s. 59.693 (10), Wis. Stats., if a county ordinance exists at the time of annexation, then the municipal ordinance must be at least as restrictive as the county ordinance.*

(3) EXCLUSIONS.

This ordinance is not applicable to activities conducted by a state agency, as defined under s. 227.01 (1), Wis. Stats.

S. 05 DEFINITIONS.

(1) "Administering authority" means a governmental employee, or a regional planning commission empowered under s. 61.354, Wis. Stats., that is designated by the Village Board to administer this ordinance.

(2) "Agricultural facilities and practices" has the meaning in s. 281.16 (1), Wis. Stats.

(3) "Best management practice" or "BMP" means structural or non-structural measures, practices, techniques or devices employed to avoid or minimize soil, sediment or pollutants carried in runoff to waters of the state.

(4) "Business day" means a day the office of the Village Engineer is routinely and customarily open for business.

(5) "Cease and desist order" means a court-issued order to halt land disturbing construction activity

Comment [TN2]: Confirm with Jackson the desired jurisdiction, only 1 of 3 definitions should be included in ordinance. Second or third definition may be most appropriate. Decision on jurisdiction may impact definitions (8) and (11)

that is being conducted without the required permit or in violation of a permit issued by the Village Engineer.

(6) "Construction site" means an area upon which one or more land disturbing construction activities occur, including areas that are part of a larger common plan of development or sale where multiple separate and distinct land disturbing construction activities may be taking place at different times on different schedules but under one plan. A long-range planning document that describes separate construction projects, such as a 20-year transportation improvement plan, is not a common plan of development.

(7) "Design Storm" means a hypothetical discrete rainstorm characterized by a specific duration, temporal distribution, rainfall intensity, return frequency and total depth of rainfall.

(8) "Division of land" means the creation from one parcel of [~~number~~]five or more parcels or building sites of [~~number~~]one and one half or fewer acres each in area where such creation occurs at one time or through the successive partition within a 5-year period.

Note to Users: *This definition is only needed depending on the type of jurisdiction selected under S. 04 (2) above.*

Comment [TN3]: Definition from Chapter 15.00 "subdivision". Confirm with Jackson the number of parcels and size of parcels are the correct number.

Definition also exists for "minor subdivision" in Chapter 15.

Confirm which definition is appropriate.

(9) "Erosion" means the process by which the land's surface is worn away by the action of wind, water, ice or gravity.

(10) "Erosion and sediment control plan" means a comprehensive plan developed to address pollution caused by erosion and sedimentation of soil particles or rock fragments during construction.

(11) "Extraterritorial" means the unincorporated area within 3 miles of the corporate limits of a first, second, or third class city, or within 1.5 miles of a fourth class city or village.

(12) "Final stabilization" means that all land disturbing construction activities at the construction site have been completed and that a uniform perennial vegetative cover has been established with a density of at least 70 percent of the cover for the unpaved areas and areas not covered by permanent structures or that employ equivalent permanent stabilization measures.

(13) "Governing body" means town board of supervisors, county board of supervisors, city council, village board of trustees or village council.

(14) "Land disturbing construction activity" means any man-made alteration of the land surface resulting in a change in the topography or existing vegetative or non-vegetative soil cover, that may result in runoff and lead to an increase in soil erosion and movement of sediment into waters of the state. Land disturbing construction activity includes clearing and grubbing, demolition, excavating, pit trench dewatering, filling and grading activities.

(15) "Landowner" means any person holding fee title, an easement or other interest in property, which allows the person to undertake cropping, livestock management, land disturbing construction activity or maintenance of storm water BMPs on the property.

(16) "Maximum extent practicable" means the highest level of performance that is achievable but is

not equivalent to a performance standard identified in this ordinance as determined in accordance with S. 055 of this ordinance.

(17) “Performance standard” means a narrative or measurable number specifying the minimum acceptable outcome for a facility or practice.

(18) “Permit” means a written authorization made by the Village Engineer to the applicant to conduct land disturbing construction activity or to discharge post-construction runoff to waters of the state.

(19) “Pollutant” has the meaning given in s. 283.01 (13), Wis. Stats.

(20) “Pollution” has the meaning given in s. 281.01 (10), Wis. Stats.

(21) “Responsible party” means the landowner or any other entity performing services to meet the requirements of this ordinance through a contract or other agreement.

(22) “Runoff” means storm water or precipitation including rain, snow or ice melt or similar water that moves on the land surface via sheet or channelized flow.

(23) “Sediment” means settleable solid material that is transported by runoff, suspended within runoff or deposited by runoff away from its original location.

(24) "Silviculture activity" means activities including tree nursery operations, tree harvesting operations, reforestation, tree thinning, prescribed burning, and pest and fire control. Clearing and grubbing of an area of a construction site is not a silviculture activity.

(25) “Site” means the entire area included in the legal description of the land on which the land disturbing construction activity is proposed in the permit application.

(26) “Stop work order” means an order issued by the Village Engineer which requires that all construction activity on the site be stopped.

(27) "Technical standard" means a document that specifies design, predicted performance and operation and maintenance specifications for a material, device or method.

(28) “Transportation facility” means a highway, a railroad, a public mass transit facility, a public-use airport, a public trail or any other public work for transportation purposes such as harbor improvements under s. 85.095 (1)(b), Wis. Stats. “Transportation facility” does not include building sites for the construction of public buildings and buildings that are places of employment that are regulated by the Department pursuant to s. 281.33, Wis. Stats.

(29) “Waters of the state” includes those portions of Lake Michigan and Lake Superior within the boundaries of this state, and all lakes, bays, rivers, streams, springs, ponds, wells, impounding reservoirs, marshes, watercourses, drainage systems and other surface water or groundwater, natural or artificial, public or private, within this state or its jurisdiction.

S. 055 APPLICABILITY OF MAXIMUM EXTENT PRACTICABLE.

Maximum extent practicable applies when a person who is subject to a performance standard of this ordinance demonstrates to the Village Engineer’s satisfaction that a performance standard is not achievable and that a lower level of performance is appropriate. In making the assertion that a

performance standard is not achievable and that a level of performance different from the performance standard is the maximum extent practicable, the responsible party shall take into account the best available technology, cost effectiveness, geographic features, and other competing interests such as protection of public safety and welfare, protection of endangered and threatened resources, and preservation of historic properties.

S. 06 TECHNICAL STANDARDS.

All BMPs required for compliance with this ordinance shall meet design criteria, standards and specifications based on any of the following:

(1) Design guidance and technical standards identified or developed by the Wisconsin Department of Natural Resources under subchapter V of chapter NR 151, Wis. Adm. Code.

(2) Soil loss prediction tools (such as the Universal Soil Loss Equation (USLE)) when using an appropriate rainfall or runoff factor (also referred to as the R factor) or an appropriate design storm and precipitation distribution, and when considering the geographic location of the site and the period of disturbance.

Note to Permittees: *The USLE and its successors RUSLE and RUSLE2, utilize an R factor which has been developed to estimate annual soil erosion, averaged over extended time periods. The R factor can be modified to estimate monthly and single-storm erosion.*

(3) Technical standards and methods approved by the Village Engineer.

S. 07 PERFORMANCE STANDARDS FOR CONSTRUCTION SITES UNDER ~~ONE ACRE~~4000 SQUARE FEET.

(1) RESPONSIBLE PARTY. The responsible party shall comply with this section.

(2) EROSION AND SEDIMENT CONTROL PRACTICES. Erosion and sediment control practices at each site where land disturbing construction activity is to occur shall be used to prevent or reduce all of the following:

(a) The deposition of soil from being tracked onto streets by vehicles.

(b) The discharge of sediment from disturbed areas into on-site storm water inlets.

(c) The discharge of sediment from disturbed areas into adjacent waters of the state.

(d) The discharge of sediment from drainage ways that flow off the site.

Comment [TN4]: Section 15.06 E (3) Applicability appears to indicate erosion control plan is necessary for land disturbing activities greater than 4000 square feet.

This is substantially more stringent than required by WDNR. Confirm with Jackson that this is the point they want to require erosion control plan submittal.

(e) The discharge of sediment by dewatering activities.

(f) The discharge of sediment eroding from soil stockpiles existing for more than 7 days.

(g) The transport by runoff into waters of the state of chemicals, cement, and other building compounds and materials on the construction site during the construction period. However, projects that require the placement of these materials in waters of the state, such as constructing bridge footings or BMP installations, are not prohibited by this subdivision.

(3) LOCATION. The BMPs shall be located so that treatment occurs before runoff enters waters of the state.

(4) IMPLEMENTATION. The BMPs used to comply with this section shall be implemented as follows:

(a) Erosion and sediment control practices shall be constructed or installed before land disturbing construction activities begin.

(b) Erosion and sediment control practices shall be maintained until final stabilization.

(c) Final stabilization activity shall commence when land disturbing activities cease and final grade has been reached on any portion of the site.

(d) Temporary stabilization activity shall commence when land disturbing activities have temporarily ceased and will not resume for a period exceeding 14 calendar days.

(e) BMPs that are no longer necessary for erosion and sediment control shall be removed by the responsible party.

S. 08 PERFORMANCE STANDARDS FOR CONSTRUCTION SITES OF ~~ONE ACRE~~4000 SQUARE FEET OR MORE.

Comment [TN5]: See comment above in section S.07.

Confirm with Jackson 4000 square feet is the correct land disturbing area for requiring erosion control plan.

(1) RESPONSIBLE PARTY. The responsible party shall comply with this section and implement the erosion and sediment control plan developed in accordance with S. 10.

(2) EROSION AND SEDIMENT CONTROL PLAN. A written site-specific erosion and sediment control plan shall be developed in accordance with S. 10 of this ordinance and implemented for each construction site.

(3) EROSION AND OTHER POLLUTANT CONTROL REQUIREMENTS. The erosion and sediment control plan required under sub. (2) shall include the following:

(a) EROSION AND SEDIMENT CONTROL PRACTICES. Erosion and sediment control practices at each site where land disturbing construction activity is to occur shall be used to prevent or reduce all of the following:

1. The deposition of soil from being tracked onto streets by vehicles.

2. The discharge of sediment from disturbed areas into on-site storm water inlets.
3. The discharge of sediment from disturbed areas into adjacent waters of the state.
4. The discharge of sediment from drainage ways that flow off the site.
5. The discharge of sediment by dewatering activities.
6. The discharge of sediment eroding from soil stockpiles existing for more than 7 days.
7. The discharge of sediment from erosive flows at outlets and in downstream channels.
8. The transport by runoff into waters of the state of chemicals, cement, and other building compounds and materials on the construction site during the construction period. However, projects that require the placement of these materials in waters of the state, such as constructing bridge footings or BMP installations, are not prohibited by this subdivision.
9. The transport by runoff into waters of the state of untreated wash water from vehicle and wheel washing.

(b) SEDIMENT PERFORMANCE STANDARDS. In addition to the erosion and sediment control practices under par. (a), the following erosion and sediment control practices shall be employed:

1. BMPs that, by design, discharge no more than 5 tons per acre per year, or to the maximum extent practicable, of the sediment load carried in runoff from initial grading to final stabilization.
2. No person shall be required to employ more BMPs than are needed to meet a performance standard in order to comply with maximum extent practicable. Erosion and sediment control BMPs may be combined to meet the requirements of this paragraph. Credit may be given toward meeting the sediment performance standard of this paragraph for limiting the duration or area, or both, of land disturbing construction activity, or for other appropriate mechanisms.
3. Notwithstanding subd. 1., if BMPs cannot be designed and implemented to meet the sediment performance standard, the erosion and sediment control plan shall include a written, site-specific explanation of why the sediment performance standard cannot be met and how the sediment load will be reduced to the maximum extent practicable.

(c) PREVENTIVE MEASURES. The erosion and sediment control plan shall incorporate all of the following:

1. Maintenance of existing vegetation, especially adjacent to surface waters whenever possible.

2. Minimization of soil compaction and preservation of topsoil.
3. Minimization of land disturbing construction activity on slopes of 20 percent or more.
4. Development of spill prevention and response procedures.

(d) LOCATION. The BMPs used to comply with this section shall be located so that treatment occurs before runoff enters waters of the state.

(4) IMPLEMENTATION. The BMPs used to comply with this section shall be implemented as follows:

(a) Erosion and sediment control practices shall be constructed or installed before land disturbing construction activities begin in accordance with the erosion and sediment control plan developed in S. 08 (2).

(b) Erosion and sediment control practices shall be maintained until final stabilization.

(c) Final stabilization activity shall commence when land disturbing activities cease and final grade has been reached on any portion of the site.

(d) Temporary stabilization activity shall commence when land disturbing activities have temporarily ceased and will not resume for a period exceeding 14 calendar days.

(e) BMPs that are no longer necessary for erosion and sediment control shall be removed by the responsible party.

S. 09 PERMITTING REQUIREMENTS, PROCEDURES AND FEES.

(1) PERMIT REQUIRED. No responsible party may commence a land disturbing construction activity subject to this ordinance without receiving prior approval of an erosion and sediment control plan for the site and a permit from the Village Engineer.

(2) PERMIT APPLICATION AND FEES. The responsible party that will undertake a land disturbing construction activity subject to this ordinance shall submit an application for a permit and an erosion and sediment control plan that meets the requirements of S. 10, and shall pay an application fee to the Village Engineer in the amount specified in S. 11. By submitting an application, the applicant is authorizing the Village Engineer to enter the site to obtain information required for the review of the erosion and sediment control plan.

(3) PERMIT APPLICATION REVIEW AND APPROVAL. The Village Engineer shall review any permit application that is submitted with an erosion and sediment control plan, and the required fee. The following approval procedure shall be used:

Comment [TN6]: From 15.06 E 4 (e) 5 (f) 3 Review of Control Plan

Confirm with Jackson the review periods should be in reference to the planning commission meeting.

(a) Applications, control plans, and control plan statements shall be submitted to the Village at least twenty-one (21) days in advance of the Planning Commission meeting at which action is expected.

(b) Within three (3) days of receipt of the application, a copy thereof together with a copy of the control plan for activities covering more than one (1) acre shall be delivered to the Village Engineer for initial review. Within three (3) days of the Village receipt of the application, a copy thereof together with a copy of the control plan statement for activities covering less than one (1) acre, shall be delivered to the Village Building Inspector for initial review. If the Village Engineer or Village Building Inspector finds the application or control plan or statement to be lacking necessary information or not in compliance with this Code, the applicant shall be notified of the inadequacy as soon as practical after review.

(c) All initial reviews shall be filed with the Village seven (7) days in advance of the Planning Commission meeting, along with the application and control plans or control plan statements.

~~(a)~~(d) Within ~~[number]~~45 ~~business~~ days of the ~~receipt of a complete permit application~~filing deadline for the application, control plan, or control plan statement and fee for the Planning Commission meeting, as required by sub. (2), the Village Engineer shall inform the applicant whether the application and erosion and sediment control plan are approved or disapproved based on the requirements of this ordinance.

~~(b)~~(e) If the permit application and erosion and sediment control plan are approved, the Village Engineer shall issue the permit.

~~(c)~~(f) If the permit application or erosion and sediment control plan is disapproved, the Village Engineer shall state in writing the reasons for disapproval.

~~(d)~~(g) The Village Engineer may request additional information from the applicant. If additional information is submitted, the Village Engineer shall have ~~[number] business~~45 days from the date the additional information is received to inform the applicant that the erosion and sediment control plan is either approved or disapproved.

~~(e)~~(h) Failure by the Village Engineer to inform the permit applicant of a decision within ~~[number] business~~45 days of a required submittal shall be deemed to mean approval of the submittal and the applicant may proceed as if a permit had been issued.

(4) SURETY BOND. As a condition of approval and issuance of the permit, the Village Engineer may require the applicant to deposit a surety bond or irrevocable letter of credit to guarantee a good faith execution of the approved erosion and sediment control plan and any permit conditions.

Comment [TN7]: Is the requirement for erosion control plan 1 acre or 4000 square feet? Make sure this is consistent with S.07 and S.08.

(5) PERMIT REQUIREMENTS. All permits shall require the responsible party to:

(a) Notify the Village Engineer 48 hour in advance of commencing any land disturbing construction activity.

(b) Notify the Village Engineer of completion of any BMPs within 14 days after their installation.

(c) Obtain permission in writing from the Village Engineer prior to any modification pursuant to S. 10 (3) of the erosion and sediment control plan.

(d) Install all BMPs as identified in the approved erosion and sediment control plan.

(e) Maintain all road drainage systems, storm water drainage systems, BMPs and other facilities identified in the erosion and sediment control plan.

(f) Repair any siltation or erosion damage to adjoining surfaces and drainage ways resulting from land disturbing construction activities and document repairs in a site inspection log.

(g) Inspect the BMPs within 24 hours after each rain of 0.5 inches or more which results in runoff during active construction periods, and at least once each week. Make needed repairs and install additional BMPs as necessary, and document these activities in an inspection log that also includes the date of inspection, the name of the person conducting the inspection, and a description of the present phase of the construction at the site.

(h) Allow the [administering authority] to enter the site for the purpose of inspecting compliance with the erosion and sediment control plan or for performing any work necessary to bring the site into compliance with the erosion and sediment control plan. Keep a copy of the erosion and sediment control plan at the construction site.

(6) PERMIT CONDITIONS. Permits issued under this section may include conditions established by Village Engineer in addition to the requirements set forth in sub. (5), where needed to assure compliance with the performance standards in S. 07 or S. 08.

(7) PERMIT DURATION. Permits issued under this section shall be valid for a period of 180 days, or the length of the building permit or other construction authorizations, whichever is longer, from the date of issuance. The Village Engineer may grant one or more extensions not to exceed 180 days cumulatively. The Village Engineer may require additional BMPs as a condition of an extension if they are necessary to meet the requirements of this ordinance.

(8) MAINTENANCE. The responsible party throughout the duration of the construction activities shall maintain all BMPs necessary to meet the requirements of this ordinance until the site has undergone final stabilization.

S. 10 EROSION AND SEDIMENT CONTROL PLAN, STATEMENT AND AMENDMENTS.

(1) EROSION AND SEDIMENT CONTROL PLAN STATEMENT. For each construction site identified under S. 04 (1)(c), an erosion and sediment control plan statement shall be prepared. This statement shall be submitted to the Village Engineer. The erosion and sediment control plan statement shall briefly describe the site, the development schedule, and the BMPs that will be used to meet the requirements of the ordinance. A site map shall also accompany the erosion and sediment control plan statement.

(2) EROSION AND SEDIMENT CONTROL PLAN REQUIREMENTS.

(a) An erosion and sediment control plan shall be prepared and submitted to the Village Engineer.

(b) The erosion and sediment control plan shall be designed to meet the performance standards in S. 07, S. 08 and other requirements of this ordinance.

(c) The erosion and sediment control plan shall address pollution caused by soil erosion and sedimentation during construction and up to final stabilization of the site. The erosion and sediment control plan shall include, at a minimum, the following items:

1. Name(s) and address(es) of the owner or developer of the site, and of any consulting firm retained by the applicant, together with the name of the applicant's principal contact at such firm. The application shall also include start and end dates for construction.
2. Description of the construction site and the nature of the land disturbing construction activity, including representation of the limits of land disturbance on a United States Geological Service 7.5 minute series topographic map.
3. Description of the intended sequence of major land disturbing construction activities for major portions of the construction site, including stripping and clearing; rough grading; construction of utilities, infrastructure, and buildings; and final grading and landscaping. Sequencing shall identify the expected date on which clearing will begin, the estimated duration of exposure of cleared areas, areas of clearing, installation of temporary erosion and sediment control measures, and establishment of permanent vegetation.
4. Estimates of the total area of the construction site and the total area of the construction site that is expected to be disturbed by land disturbing construction activities.
5. Calculations to show the compliance with the performance standard in S. 08 (3)(b)1.
6. Existing data describing the surface soil as well as subsoils.

7. Depth to groundwater, as indicated by Natural Resources Conservation Service soil information where available.
8. Name of the immediate named receiving water from the United States Geological Service 7.5 minute series topographic maps.

(d) The erosion and sediment control plan shall include a site map. The site map shall include the following items and shall be at a scale not greater than 100 feet per inch and at a contour interval not to exceed five feet.

1. Existing topography, vegetative cover, natural and engineered drainage systems, roads and surface waters. Lakes, streams, wetlands, channels, ditches and other watercourses on and immediately adjacent to the site shall be shown. Any identified 100-year flood plains, flood fringes and floodways shall also be shown. Location of predominant soil types shall also be shown.
2. Boundaries of the construction site.
3. Drainage patterns and approximate slopes anticipated after major grading activities.
4. Areas of soil disturbance.
5. Location of major structural and non-structural controls identified in the erosion and sediment control plan.
6. Location of areas where stabilization BMPs will be employed.
7. Areas which will be vegetated following land disturbing construction activities.
8. Area(s) and location(s) of wetland on the construction site, and locations where storm water is discharged to a surface water or wetland within one-quarter mile downstream of the construction site.
9. Areas(s) used for infiltration of post-construction storm water runoff.
10. An alphanumeric or equivalent grid overlying the entire construction site map.

(e) Each erosion and sediment control plan shall include a description of appropriate control BMPs that will be installed and maintained at the construction site to prevent pollutants from reaching waters of the state. The erosion and sediment control plan shall clearly describe the appropriate erosion and sediment control BMPs for each major land disturbing construction activity and the timing during the period of land disturbing construction activity that the erosion and sediment control BMPs will be implemented. The description of erosion and sediment control BMPs shall include, when appropriate, the following minimum requirements:

1. Description of interim and permanent stabilization practices, including a BMP implementation schedule. The erosion and sediment control plan shall ensure that existing vegetation is preserved where attainable and that disturbed portions of the site are stabilized.

2. Description of structural practices to divert flow away from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from the site. Unless otherwise specifically approved in writing by the [administering authority], structural measures shall be installed on upland soils.
3. Management of overland flow at all areas of the construction site, unless otherwise controlled by outfall controls.
4. Trapping of sediment in channelized flow.
5. Staging land disturbing construction activities to limit exposed soil areas subject to erosion.
6. Protection of downslope drainage inlets where they occur.
7. Minimization of tracking at all vehicle and equipment entry and exit locations of the construction site.
8. Clean up of off-site sediment deposits.
9. Proper disposal of building and waste material.
10. Stabilization of drainage ways.
11. Installation of permanent stabilization practices as soon as possible after final grading.
12. Minimization of dust to the maximum extent practicable.

(f) The erosion and sediment control plan shall require that velocity dissipation devices be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected.

(3) EROSION AND SEDIMENT CONTROL PLAN AMENDMENTS. The applicant shall amend the erosion and sediment control plan if any of the following occur:

(a) There is a change in design, construction, operation or maintenance at the site which has the reasonable potential for the discharge of pollutants to waters of the state and which has not otherwise been addressed in the erosion and sediment control plan.

(b) The actions required by the erosion and sediment control plan fail to reduce the impacts of pollutants carried by construction site runoff.

(c) The Village Engineer notifies the applicant of changes needed in the erosion and sediment control plan.

S. 11 FEE SCHEDULE.

The fees referred to in other sections of this ordinance shall be established by the Village Engineer and may from time to time be modified by resolution. A schedule of the fees established by the Village Engineer shall be available for review in [location].

Comment [TN8]: Where is a schedule of fees located?

15.07 K refers to Erosion Control Fee but not amount or location of fee schedule

S. 12 INSPECTION.

If land disturbing construction activities are occurring without a permit required by this ordinance, the Village Engineer may enter the land pursuant to the provisions of ss. 66.0119 (1), (2), and (3), Wis. Stats.

S. 13 ENFORCEMENT.

(1) The [administering authority] may post a stop work order if any of the following occurs:

(a) Land disturbing construction activity regulated under this ordinance is occurring without a permit.

(b) The erosion and sediment control plan is not being implemented in good faith.

(c) The conditions of the permit are not being met.

Note to Permittees: *The Village Engineer should inspect any construction site that holds a permit under this chapter at least once a month between March 1 and October 31, and at least 2 times between November 1 and February 28 to ensure compliance with the approved erosion and sediment control plan.*

(2) If the responsible party does not cease activity as required in a stop work order posted under this section or fails to comply with the erosion and sediment control plan or permit conditions, the Village Engineer may revoke the permit.

(3) If the responsible party, where no permit has been issued or the permit has been revoked, does not cease the activity after being notified by the Village Engineer, or if a responsible party violates a stop work order posted under sub. (1), the Village Engineer may request the village attorney to obtain a cease and desist order in any court with jurisdiction.

(4) The Village Engineer may retract the stop work order issued under sub. (1) or the permit revocation under sub. (2).

(5) After posting a stop work order under sub. (1), the Village Engineer may issue a notice of intent to the responsible party of its intent to perform work necessary to comply with this ordinance. The Village Engineer may go on the land and commence the work after issuing the notice of intent. The costs of the work performed under this subsection by the Village Engineer, plus interest at

the rate authorized by Village Engineer shall be billed to the responsible party. In the event a responsible party fails to pay the amount due, the clerk shall enter the amount due on the tax rolls and collect as a special assessment against the property pursuant to subch. VII of ch. 66, Wis. Stats.

(6) Any person violating any of the provisions of this ordinance shall be subject to a forfeiture of not less than [amount] nor more than [amount] and the costs of prosecution for each violation. Each day a violation exists shall constitute a separate offense.

Comment [TN9]: 15.06 E 4 (e) 5 (f) 4 (g) 6 does not state a specific amount, rather "as set forth by resolution". Consult Jackson on specific amount or changing language to match existing language.

(7) Compliance with the provisions of this ordinance may also be enforced by injunction in any court with jurisdiction. It shall not be necessary to prosecute for forfeiture or a cease and desist order before resorting to injunctional proceedings.

S. 14 APPEALS.

(1) BOARD OF APPEALS. The board of appeals created pursuant to section 1.04 D of the village's ordinance pursuant to s. 61.354 (4)(b), Wis. Stats.:

(a) Shall hear and decide appeals where it is alleged that there is error in any order, decision or determination made by the Village Engineer in administering this ordinance except for cease and desist orders obtained under S. 13 (3).

(b) May authorize, upon appeal, variances from the provisions of this ordinance which are not contrary to the public interest and where owing to special conditions a literal enforcement of the provisions of the ordinance will result in unnecessary hardship; and

(c) Shall use the rules, procedures, duties and powers authorized by statute in hearing and deciding appeals and authorizing variances.

(2) WHO MAY APPEAL. Appeals to the board of appeals may be taken by any aggrieved person or by any office, department, board, or bureau of the Village of Jackson affected by any decision of the Village Engineer.

S. 15 SEVERABILITY.

If a court of competent jurisdiction judges any section, clause, provision or portion of this ordinance unconstitutional or invalid, the remainder of the ordinance shall remain in force and not be affected by such judgment.

S. 16 EFFECTIVE DATE.

This ordinance shall be in force and effect from and after its adoption and publication. The above and foregoing ordinance was duly adopted by the Village Board of the Village of Jackson on the [number] day of [month], [year].

Comment [TN10]: Updated with correct date

Approved: _____

Attested: _____

Published on [day, month, and year].

Chapter 26. - ILLICIT DISCHARGE PROHIBITION AND DISCONNECTION

Comment [TN1]: No WDNR model ordinance exists for Illicit Discharge. Used Mequon ordinance as base. Authority, Findings of Fact, appeals, severability, and effective date borrowed from WDNR model ordinance to create standalone section

Illicit discharge ordinance is required for an MS4 community under NR216.07(3)(a) and WPDES permit condition 2.3.1

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S. 01 AUTHORITY.

(1) This ordinance is adopted under the authority granted by s. 61.354, Wis. Stats. This ordinance supersedes all provisions of an ordinance previously enacted under s 61.35, Wis. Stats., that relate to illicit discharge prohibition and disconnection. Except as otherwise specified in s. 61.354,], Wis. Stats., s61.35, Wis. Stats., applies to this ordinance and to any amendments to this ordinance.

(2) The provisions of this ordinance are deemed not to limit any other lawful regulatory powers of the same governing body.

(3) The Village Board hereby designates the Village Engineer to administer and enforce the provisions of this ordinance.

(4) The requirements of this ordinance do not pre-empt more stringent illicit discharge prohibition and disconnection requirements that may be imposed by any other lawful regulatory power.

S. 02 FINDINGS OF FACT.

The Village Board acknowledges that illicit discharges have potential to deteriorate water quality of waters of the state in the Village of Jackson.

S.03. - PURPOSE.

The purpose of this article is to establish methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with requirements of the national pollutant discharge elimination system (NPDES) permit process.

S.04 - APPLICABILITY OF ARTICLE.

This section shall apply to all water entering the MS4 generated on any developed and undeveloped lands unless explicitly exempted by the village engineer.

S.05 - RESPONSIBILITY FOR ADMINISTRATION.

The Village engineer shall administer, implement, and enforce the provisions of this section. Any powers granted or duties imposed upon may be delegated to persons or entities acting in the beneficial interest of or in the employ of the village.

S.06 - ILLICIT DISCHARGE PROHIBITIONS.

(a) No person shall discharge or cause to be discharged into the MS4 or watercourses any materials, including but not limited, to pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards, other than storm water.

(b) Exemptions. The commencement, conduct or continuance of any illegal discharge to the MS4 is prohibited except as described as follows:

(1) The following discharges are exempt from discharge prohibitions established by this section: water line flushing or other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising groundwater, groundwater infiltration to storm drains, uncontaminated pumped groundwater, discharges from potable water sources, foundation or footing drains (not including active groundwater dewatering systems), crawl space pumps, air conditioning condensation, springs, non-commercial washing of vehicles, natural riparian habitat or wetland flows, swimming pools (if dechlorinated - typically less than one PPM chlorine), firefighting activities, and any other water source not containing Pollutants.

(2) Discharges specified in writing by the village as being necessary to protect public health and safety.

(3) Dye testing is an allowable discharge, but requires a verbal notification to the Village prior to the time of the test.

(4) The prohibition shall not apply to any non-storm water discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the

authority of the Federal Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the storm drain system.

S.07 - ILLICIT CONNECTION PROHIBITIONS.

The construction, use, maintenance, or continued existence of illicit connections to the MS4 is prohibited. This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

S.08 - SUSPENSION OF MS4 ACCESS.

(a) Suspension due to illicit discharges in emergency situations. The village may, without prior notice, immediately suspend MS4 discharge access to a person when such suspension is necessary to stop an actual or threatened discharge which presents or may present imminent and substantial danger to the environment, to the health or welfare of persons, or to the MS4 or waters of the United States. If the violator fails to comply with a suspension order issued in an emergency, the village may take such steps as deemed necessary to prevent or minimize damage to the MS4 or waters of the United States, or to minimize danger to persons.

(b) Suspension due to the detection of illicit discharge. Any person discharging to the MS4 in violation of this section may have their MS4 access terminated if such termination would abate or reduce an illicit discharge. The village will notify a violator of the proposed termination of its MS4 access. The violator has a maximum of 72 hours (or less if the village engineer believes necessary) from written notification to correct the illicit discharge before access is terminated.

S.09 - MONITORING OF DISCHARGES.

(a) The village (or appointed representative) shall be permitted to enter and inspect facilities subject to regulation under this section as often as may be necessary to determine compliance with this section.

(b) Facility operators shall allow the village (or appointed representative) ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under the conditions of an NPDES permit to discharge storm water, and the performance of any additional duties as defined by state and federal law.

(c) Unreasonable delays in allowing the village (or appointed representative) access to a permitted facility is a violation of a storm water discharge permit and of this section. A person who is the operator of a facility with a NPDES permit to discharge storm water associated with industrial activity commits an offense if the person denies the village (or appointed representative) reasonable access to the permitted facility for the purpose of conducting any activity authorized or required by this section.

(d) If the village (or appointed representative) has been refused access to any part of the premises from which storm water is discharged, and he/she is able to demonstrate probable cause to believe that there may be a violation of this section, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this section or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community, then the village may seek issuance of a search warrant from any court of competent jurisdiction.

Comment [TN2]: Verify duration with Jackson.

WPDES permit requires the illicit connection to be removed within 30 days or notify the WDNR to discuss appropriate action and timeframe.

S.10 - REQUIREMENT TO PREVENT, CONTROL, AND REDUCE STORM WATER POLLUTANTS BY THE USE OF BEST MANAGEMENT PRACTICES.

The owner or operator of a commercial or industrial establishment shall provide, at their own expense, reasonable protection from accidental discharge of prohibited materials or other wastes into the MS4 or watercourses through the use of structural and non-structural BMPs. Further, any person responsible for a property or premise, may be required to implement, at said person's expense, additional structural and non-structural BMPs to prevent the further discharge of pollutants to the MS4.

S.11 - WATERCOURSE PROTECTION.

Every person owning property through which a watercourse passes, or such person's lessee, shall keep and maintain that part of the watercourse within the property free of trash, debris, excessive vegetation, and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the watercourse. In addition, the owner or lessee shall maintain existing privately owned structures within or adjacent to a watercourse, so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse.

Comment [TN3]: This section is not required by WPDES permit or NR 216, but it is included by Mequon. Consult Jackson if should be included or removed.

S.12 - NOTIFICATION OF SPILLS.

Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of any known or suspected release of materials which are resulting or may result in illegal discharges or pollutants discharging into storm water, the storm drain system, or water of the U.S. said person, shall take all necessary steps to ensure the discovery, containment, and cleanup of such release. In the event of such a release of hazardous materials, said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services. In the event of a release of non-hazardous materials, said person shall notify the village in person or by phone or facsimile no later than the next business day. Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the village within three business days of the phone notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years. If the spill threatens waters of the state, the spill hotline should be notified at 1-800-943-0003.

S.13 - NOTICE OF ILLICIT DISCHARGE/CONNECTION VIOLATION.

(a) Whenever the Village of Jackson finds that a person (or entity) has violated a prohibition or failed to meet a requirement of this section, the village may order compliance by written notice of violation to the responsible person. Such notice may require without limitation:

(1) The performance of monitoring, analyses, and reporting;

(2) The elimination of illicit connections or discharges;

(3) That violating discharges, practices, or operations shall immediately cease and desist;

(4) The immediate abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property;

(5) The implementation of source control or treatment BMPs. If abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline within which such remediation or restoration must be completed within 72 hours of notification. Said notice shall further advise that, should the violator fail to remediate or restore within the established deadline, the work will be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator.

Comment [TN4]: Verify duration with Jackson. As above, WPDES permit requires the illicit connection to be removed within 30 days or notify the WDNR to discuss appropriate action and timeframe.

(b) Any person violating any of the provisions of this section shall be subject to a forfeiture as provided in chapter 2 of this Code of Ordinances, and the village may recover all attorneys' fees, court costs, and other expenses associated with enforcement of this section, including sampling and monitoring expenses. Each day a violation exists shall constitute a separate offense.

S. 15 APPEALS.

(1) BOARD OF APPEALS. The board of appeals, created pursuant to section 1.04D of the Village of Jackson ordinances pursuant to s. 61.354 (4)(b), Wis. Stats., shall hear and decide appeals where it is alleged that there is error in any order, decision or determination made by the Village Engineer in administering this ordinance. The board shall also use the rules, procedures, duties, and powers authorized by statute in hearing and deciding appeals. Upon appeal, the board may authorize variances from the provisions of this ordinance that are not contrary to the public interest, and where owing to special conditions a literal enforcement of the ordinance will result in unnecessary hardship.

(2) WHO MAY APPEAL. Appeals to the board of appeals may be taken by any aggrieved person or by an officer, department, board, or bureau of the Village of Jackson affected by any decision of the Village Engineer.

S. 16 SEVERABILITY.

If any section, clause, provision or portion of this ordinance is judged unconstitutional or invalid by a court of competent jurisdiction, the remainder of the ordinance shall remain in force and not be affected by such judgment.

S. 17 EFFECTIVE DATE.

This ordinance shall be in force and effect from and after its adoption and publication. The above and foregoing ordinance was duly adopted by the Village Board of the Village of Jackson on the [number] day of [month], [year].

Comment [TN5]: Add date when known.

Approved: _____
Attested: _____
Published on [day, month, year].

POST-CONSTRUCTION STORM WATER MANAGEMENT ORDINANCE

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POST-CONSTRUCTION STORM WATER MANAGEMENT ORDINANCE

AN ORDINANCE TO CREATE CHAPTER 25 OF THE CODE OF THE VILLAGE OF JACKSON RELATING TO THE CONTROL OF POST-CONSTRUCTION RUNOFF

Comment [TN1]: Ordinance set up to be added to the Village Code as Chapter 25. This can be renumbered as requested.

FOREWORD.

The intent of this ordinance is to reduce the discharge of pollutants carried in storm water runoff to waters of the state. Use of this ordinance by municipalities will foster the consistent, statewide application of post-construction performance standards for new development and redevelopment contained in subchapters III and IV of chapter NR 151, Wis. Adm. Code.

The Village Board of the Village of Jackson does hereby ordain that Chapter 25 of the code of the Village of Jackson is created to read as follows:

[CHAPTER 25.00]
POST-CONSTRUCTION STORM WATER MANAGEMENT

S. 01 AUTHORITY.

(1) This ordinance is adopted by the Village Board under the authority granted by s. 61.354, Wis. Stats. This ordinance supersedes all provisions of an ordinance previously enacted under s. 61.35, Wis. Stats., that relate to storm water management regulations. Except as otherwise specified in s. 61.354, Wis. Stats., s. 61.35, Wis. Stats., applies to this ordinance and to any amendments to this ordinance.

(2) The provisions of this ordinance are deemed not to limit any other lawful regulatory powers of the same governing body.

(3) The Village Board hereby designates the Village Engineer to administer and enforce the provisions of this ordinance.

(4) The requirements of this ordinance do not pre-empt more stringent storm water management requirements that may be imposed by any of the following:

(a) Wisconsin Department of Natural Resources administrative rules, permits or approvals including those authorized under ss. 281.16 and 283.33, Wis. Stats.

(b) Targeted non-agricultural performance standards promulgated in rules by the Wisconsin Department of Natural Resources under s. NR 151.004, Wis. Adm. Code.

S. 02 FINDINGS OF FACT.

The Village Board acknowledges that uncontrolled, post-construction runoff has a significant impact upon water resources and the health, safety and general welfare of the community and diminishes the public enjoyment and use of natural resources. Specifically, uncontrolled post-construction runoff can:

(1) Degrade physical stream habitat by increasing stream bank erosion, increasing streambed scour, diminishing groundwater recharge, diminishing stream base flows and increasing stream temperature.

(2) Diminish the capacity of lakes and streams to support fish, aquatic life, recreational and water supply uses by increasing pollutant loading of sediment, suspended solids, nutrients, heavy metals, bacteria, pathogens and other urban pollutants.

(3) Alter wetland communities by changing wetland hydrology and by increasing pollutant loads.

(4) Reduce the quality of groundwater by increasing pollutant loading.

(5) Threaten public health, safety, property and general welfare by overtaxing storm sewers, drainage ways, and other minor drainage facilities.

S. 03 PURPOSE AND INTENT.

(1) PURPOSE. The general purpose of this ordinance is to establish long-term, post-construction runoff management requirements that will diminish the threats to public health, safety, welfare and the aquatic environment. Specific purposes are to:

(a) Further the maintenance of safe and healthful conditions.

(b) Prevent and control the adverse effects of storm water; prevent and control soil erosion; prevent and control water pollution; protect spawning grounds, fish and aquatic life; control building sites, placement of structures and land uses; preserve ground cover and scenic beauty; and promote sound economic growth.

(c) Control exceedance of the safe capacity of existing drainage facilities and receiving water bodies; prevent undue channel erosion; and control increases in the scouring and transportation of particulate matter.

(d) Minimize the amount of pollutants discharged from the separate storm sewer to protect the waters of the state.

(2) INTENT. It is the intent of the Village Board that this ordinance regulates post-construction storm water discharges to waters of the state. This ordinance may be applied on a site-by-site basis.

The Village Board recognizes, however, that the preferred method of achieving the storm water performance standards set forth in this ordinance is through the preparation and implementation of comprehensive, systems-level storm water management plans that cover hydrologic units, such as watersheds, on a municipal and regional scale. Such plans may prescribe regional storm water devices, practices or systems, any of which may be designed to treat runoff from more than one site prior to discharge to waters of the state. Where such plans are in conformance with the performance standards developed under s. 281.16, Wis. Stats., for regional storm water management measures and have been approved by the Village Board, it is the intent of this ordinance that the approved storm water management plan be used to identify post-construction management measures acceptable for the community.

S. 04 APPLICABILITY AND JURISDICTION.

(1) APPLICABILITY.

(a) Except as provided under par. (b), this ordinance applies to a post-construction site whereupon one acre or more of land disturbing construction activity occurs during construction.

(b) A site that meets any of the criteria in this paragraph is exempt from the requirements of this ordinance:

1. A post-construction site with less than ten percent connected imperviousness, based on the area of land disturbance, provided the cumulative area of all impervious surfaces is less than one acre. However, the exemption of this paragraph does not include exemption from the protective area standard of this ordinance.
2. Agricultural facilities and practices.
3. Underground utility construction, but not including the construction of any above ground structures associated with utility construction.

(c) Notwithstanding the applicability requirements in par. (a), this ordinance applies to post-construction sites of any size that, as determined by the Village Engineer, are likely to result in runoff that exceeds the safe capacity of the existing drainage facilities or receiving body of water, causes undue channel erosion, or increases water pollution by scouring or the transportation of particulate matter.

(2) JURISDICTION.

This ordinance applies to [post construction sites within the boundaries and jurisdiction of the [name of the municipality];

or

Comment [TN2]: Confirm with Jackson the desired jurisdiction, only 1 of 3 definitions should be included in ordinance. Second or third definition may be most appropriate. Decision on jurisdiction may impact definitions (8) and (11)

post construction sites within the boundaries and jurisdiction of the [name of municipality], as well as the extraterritorial division of land subject to an ordinance enacted pursuant to s. 236.45 (2) and (3), Wis. Stats.;

or

post construction sites within the boundaries and jurisdiction of the [name of the municipality], as well as all lands located within the extraterritorial plat approval jurisdiction of the [name of municipality], even if plat approval is not involved].

Note to Users: *These options differ in the amount of land area covered by this ordinance and may have ramifications for enforcement authority. For counties, the first option will be the only option since counties do not have extraterritorial authority. Under s. 59.693 (10), Wis. Stats., if a county storm water management ordinance exists at the time of annexation, then the municipal ordinance must be at least as restrictive as the county ordinance.*

(3) EXCLUSIONS.
This ordinance is not applicable to activities conducted by a state agency, as defined under s. 227.01 (1), Wis. Stats.

S. 05 DEFINITIONS.

(1) "Adequate sod, or self-sustaining vegetative cover" means maintenance of sufficient vegetation types and densities such that the physical integrity of the streambank or lakeshore is preserved. Self-sustaining vegetative cover includes grasses, forbs, sedges and duff layers of fallen leaves and woody debris.

(2) "Administering authority" means a governmental employee, or a regional planning commission empowered under s. 61.354 Wis. Stats., that is designated by the Village Board to administer this ordinance.

(3) "Agricultural facilities and practices" has the meaning given in s. 281.16 (1), Wis. Stats.

(4) "Atlas 14" means the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Precipitation-Frequency Atlas of the United States, Volume 8 (Midwestern States), published in 2013.

(5) "Average annual rainfall" means a typical calendar year of precipitation as determined by the Wisconsin Department of Natural Resources for users of models such as WinSLAMM, P8 or equivalent methodology. The average annual rainfall is chosen from a department publication for the location closest to the municipality.

(6) “Best management practice” or “BMP” means structural or non-structural measures, practices, techniques or devices employed to avoid or minimize sediment or pollutants carried in runoff to waters of the state.

(7) “Business day” means a day the office of the Village Engineer is routinely and customarily open for business.

(8) “Cease and desist order” means a court-issued order to halt land disturbing construction activity that is being conducted without the required permit or in violation of a permit issued by the Village Engineer.

(9) “Combined sewer system” means a system for conveying both sanitary sewage and storm water runoff.

(10) “Connected imperviousness" means an impervious surface connected to the waters of the state via a separate storm sewer, an impervious flow path, or a minimally pervious flow path.

(11) "Design storm" means a hypothetical discrete rainstorm characterized by a specific duration, temporal distribution, rainfall intensity, return frequency and total depth of rainfall.

(12) “Development” means residential, commercial, industrial or institutional land uses and associated roads.

(13) “Direct conduits to groundwater” means wells, sinkholes, swallets, fractured bedrock at the surface, mine shafts, non-metallic mines, tile inlets discharging to groundwater, quarries, or depressional groundwater recharge areas over shallow fractured bedrock.

(14) “Division of land” means the creation from one parcel of ~~[number]~~five or more parcels or building sites of ~~[number]~~ one and one half or fewer acres each in area where such creation occurs at one time or through the successive partition within a 5-year period.

Note to Users: *This definition is only needed depending on the type of jurisdiction selected under S. 04 (2) above.*

(15) “Effective infiltration area” means the area of the infiltration system that is used to infiltrate runoff and does not include the area used for site access, berms or pretreatment.

(16) “Erosion” means the process by which the land’s surface is worn away by the action of wind, water, ice or gravity.

(17) "Exceptional resource waters" means waters listed in s. NR 102.11, Wis. Adm. Code.

(18) “Extraterritorial” means the unincorporated area within three miles of the corporate limits of a first, second, or third class city, or within one and a half miles of a fourth class city or village.

(19) "Filtering layer" means soil that has at least a 3-foot deep layer with at least 20 percent fines; or at least a 5-foot deep layer with at least 10 percent fines; or an engineered soil with an equivalent level of protection as determined by the regulatory authority for the site.

(20) "Final stabilization" means that all land disturbing construction activities at the construction site have been completed and that a uniform perennial vegetative cover has been established with a

Comment [TN3]: Definition from Chapter 15.00 “subdivision”

Definition also exists for “minor subdivision”

Confirm which definition is appropriate.

density of at least 70 percent of the cover for the unpaved areas and areas not covered by permanent structures or that employ equivalent permanent stabilization measures.

(21) “Financial guarantee” means a performance bond, maintenance bond, surety bond, irrevocable letter of credit, or similar guarantees submitted to the Village Engineer by the responsible party to assure that requirements of the ordinance are carried out in compliance with the storm water management plan.

(22) “Governing body” means town board of supervisors, county board of supervisors, city council, village board of trustees or village council.

(23) “Impervious surface” means an area that releases as runoff all or a large portion of the precipitation that falls on it, except for frozen soil. Rooftops, sidewalks, driveways, gravel or paved parking lots and streets are examples of areas that typically are impervious.

(24) “In-fill” means an undeveloped area of land located within an existing urban sewer service area, surrounded by development or development and natural or man-made features where development cannot occur.

(25) “Infiltration” means the entry of precipitation or runoff into or through the soil.

(26) “Infiltration system” means a device or practice such as a basin, trench, rain garden or swale designed specifically to encourage infiltration, but does not include natural infiltration in pervious surfaces such as lawns, redirecting of rooftop downspouts onto lawns or minimal infiltration from practices, such as swales or road side channels designed for conveyance and pollutant removal only.

(27) “Land disturbing construction activity” means any man-made alteration of the land surface resulting in a change in the topography or existing vegetative or non-vegetative soil cover, that may result in runoff and lead to an increase in soil erosion and movement of sediment into waters of the state. Land disturbing construction activity includes clearing and grubbing, demolition, excavating, pit trench dewatering, filling and grading activities.

(28) "Landowner" means any person holding fee title, an easement or other interest in property, which allows the person to undertake cropping, livestock management, land disturbing construction activity or maintenance of storm water BMPs on the property.

(29) “Maintenance agreement” means a legal document that provides for long-term maintenance of storm water management practices.

(30) “Maximum extent practicable” means the highest level of performance that is achievable but is not equivalent to a performance standard identified in this ordinance as determined in accordance with S. 055 of this ordinance.

(31) “New development” means development resulting from the conversion of previously undeveloped land or agricultural land uses.

(32) “NRCS MSE3 or MSE4 distribution” means a specific precipitation distribution developed by the United States Department of Agriculture, Natural Resources Conservation Service, using precipitation data from Atlas 14.

(33) “Off-site” means located outside the property boundary described in the permit application.

(34) “On-site” means located within the property boundary described in the permit application.

(35) "Ordinary high-water mark" has the meaning given in s. NR 115.03 (6), Wis. Adm. Code.

(36) “Outstanding resource waters” means waters listed in s. NR 102.10, Wis. Adm. Code.

(37) "Percent fines" means the percentage of a given sample of soil, which passes through a # 200 sieve.

(38) “Performance standard” means a narrative or measurable number specifying the minimum acceptable outcome for a facility or practice.

(39) “Permit” means a written authorization made by the Village Engineer to the applicant to conduct land disturbing construction activity or to discharge post-construction runoff to waters of the state.

(40) “Permit administration fee” means a sum of money paid to the Village Engineer by the permit applicant for the purpose of recouping the expenses incurred by the authority in administering the permit.

(41) “Pervious surface” means an area that releases as runoff a small portion of the precipitation that falls on it. Lawns, gardens, parks, forests or other similar vegetated areas are examples of surfaces that typically are pervious.

(42) “Pollutant” has the meaning given in s. 283.01 (13), Wis. Stats.

(43) “Pollution” has the meaning given in s. 281.01 (10), Wis. Stats.

(44) “Post-construction site" means a construction site following the completion of land disturbing construction activity and final site stabilization.

(45) “Pre-development condition” means the extent and distribution of land cover types present before the initiation of land disturbing construction activity, assuming that all land uses prior to development activity are managed in an environmentally sound manner.

(46) “Preventive action limit” has the meaning given in s. NR 140.05 (17), Wis. Adm. Code.

(47) “Protective area” means an area of land that commences at the top of the channel of lakes, streams and rivers, or at the delineated boundary of wetlands, and that is the greatest of the following widths, as measured horizontally from the top of the channel or delineated wetland boundary to the closest impervious surface.

(48) "Redevelopment” means areas where development is replacing older development.

(49) “Responsible party” means the landowner or any other entity performing services to meet the requirements of this ordinance through a contract or other agreement. “Runoff” means storm water or precipitation including rain, snow or ice melt or similar water that moves on the land surface via sheet or channelized flow.

(50) “Separate storm sewer” means a conveyance or system of conveyances including roads with drainage systems, streets, catch basins, curbs, gutters, ditches, constructed channels or storm drains, which meets all of the following criteria:

(a) Is designed or used for collecting water or conveying runoff.

(b) Is not part of a combined sewer system.

(c) Is not part of a publicly owned wastewater treatment works that provides secondary or more stringent treatment.

(d) Discharges directly or indirectly to waters of the state.

(51) "Silviculture activity" means activities including tree nursery operations, tree harvesting operations, reforestation, tree thinning, prescribed burning, and pest and fire control. Clearing and grubbing of an area of a construction site is not a silviculture activity.

(52) “Site” means the entire area included in the legal description of the land on which the land disturbing construction activity occurred.

(53) “Stop work order” means an order issued by the Village Engineer which requires that all construction activity on the site be stopped.

(54) “Storm water management plan” means a comprehensive plan designed to reduce the discharge of pollutants from storm water, after the site has under gone final stabilization, following completion of the construction activity.

(55) “Storm water management system plan” is a comprehensive plan designed to reduce the discharge of runoff and pollutants from hydrologic units on a regional or municipal scale.

(56) "Technical standard" means a document that specifies design, predicted performance and operation and maintenance specifications for a material, device or method.

(57) “Top of the channel” means an edge, or point on the landscape landward from the ordinary high-water mark of a surface water of the state, where the slope of the land begins to be less than 12 percent continually for at least 50 feet. If the slope of the land is 12 percent or less continually for the initial 50 feet landward from the ordinary high-water mark, the top of the channel is the ordinary high-water mark.

(58) "Total maximum daily load" or "TMDL" means the amount of pollutants specified as a function of one or more water quality parameters, that can be discharged per day into a water quality limited segment and still ensure attainment of the applicable water quality standard.

(59) “TP-40“ means Technical Paper No. 40, Rainfall Frequency Atlas of the United States, published in 1961.

(60) "TR-55" means the United States department of agriculture, natural resources conservation service (previously soil conservation service), Urban Hydrology for Small Watersheds, Second Edition, Technical Release 55, June 1986, which is incorporated by reference for this chapter.

(61) “Transportation facility” means a highway, a railroad, a public mass transit facility, a public-use airport, a public trail or any other public work for transportation purposes such as harbor

improvements under s. 85.095 (1)(b), Wis. Stats. “Transportation facility” does not include building sites for the construction of public buildings and buildings that are places of employment that are regulated by the Department pursuant to s. 281.33, Wis. Stats.

(62) “TSS” means total suspended solids.

(63) “Type II distribution” means a rainfall type curve as established in the “United States Department of Agriculture, Soil Conservation Service, Technical Paper 149, published in 1973”.

(64) “Waters of the state” includes those portions of Lake Michigan and Lake Superior within the boundaries of this state, and all lakes, bays, rivers, streams, springs, ponds, wells, impounding reservoirs, marshes, watercourses, drainage systems and other surface water or groundwater, natural or artificial, public or private, within this state or its jurisdiction.

S. 055 APPLICABILITY OF MAXIMUM EXTENT PRACTICABLE.

Maximum extent practicable applies when a person who is subject to a performance standard of this ordinance demonstrates to the Village Engineer’s satisfaction that a performance standard is not achievable and that a lower level of performance is appropriate. In making the assertion that a performance standard is not achievable and that a level of performance different from the performance standard is the maximum extent practicable, the responsible party shall take into account the best available technology, cost effectiveness, geographic features, and other competing interests such as protection of public safety and welfare, protection of endangered and threatened resources, and preservation of historic properties.

S. 06 TECHNICAL STANDARDS.

The following methods shall be used in designing the water quality, peak discharge, and infiltration components of storm water practices needed to meet the water quality standards of this ordinance:

(1) Consistent with the technical standards identified, developed or disseminated by the Wisconsin Department of Natural Resources under subchapter V of chapter NR 151, Wis. Adm. Code.

(2) Where technical standards have not been identified or developed by the Wisconsin Department of Natural Resources, other technical standards may be used provided that the methods have been approved by the Village Engineer.

Note to Permittees: *Pollutant loading models such as DETPOND, WinSLAMM, P8, or equivalent methodology may be used to evaluate the efficiency of the design in reducing total suspended solids. Use the most recent version of the model and the rainfall files and other parameter files identified for Wisconsin users unless directed otherwise by the regulatory authority.*

S. 07 PERFORMANCE STANDARDS.

(1) RESPONSIBLE PARTY. *RESPONSIBLE PARTY. The responsible party shall comply with this section.*

(2) STORM WATER MANAGEMENT PLAN. A written storm water management plan in accordance with S. 09 shall be developed and implemented for each post-construction site.

(3) MAINTENANCE OF EFFORT. For redevelopment sites where the redevelopment will be replacing older development that was subject to post-construction performance standards of NR 151 in effect on or after October 1, 2004, the responsible party shall meet the total suspended solids reduction, peak flow control, infiltration, and protective areas standards applicable to the older development or meet the redevelopment standards of this ordinance, whichever is more stringent.

(4) REQUIREMENTS. The storm water management plan required under sub. (2) shall include the following:

a. TOTAL SUSPENDED SOLIDS. BMPs shall be designed, installed and maintained to control total suspended solids carried in runoff from the post-construction site as follows:

1. BMPs shall be designed in accordance with Table 1. or to the maximum extent practicable as provided in subd. 2. The design shall be based on an average annual rainfall, as compared to no runoff management controls.

Table 1. TSS Reduction Standards

Development Type	**TSS Reduction**
New Development	80 percent
In-fill development	80 percent
Redevelopment	40 percent of load from parking areas and roads

2. Maximum Extent Practicable. If the design cannot meet a total suspended solids reduction performance standard of Table 1., the storm water management plan shall include a written, site-specific explanation of why the total suspended solids reduction performance standard cannot be met and why the total suspended solids load will be reduced only to the maximum extent practicable.

Note to Permittees: *Pollutant loading models such as DETPOND, WinSLAMM, P8 or equivalent methodology may be used to evaluate the efficiency of the design in reducing total suspended solids. Use the most recent version of the model and the rainfall files and other parameter files identified for Wisconsin users unless directed otherwise by the regulatory authority.*

3. Off-Site Drainage. When designing BMPs, runoff draining to the BMP from off-site shall be taken into account in determining the treatment efficiency of the practice. Any impact on the efficiency shall be compensated for by increasing the size of the BMP accordingly.

b. PEAK DISCHARGE.

1. By design, BMPs shall be employed to maintain or reduce the ~~1-year~~5-year, 24-hour; and the ~~2-year~~100-year, 24-hour post-construction peak runoff discharge rates to the ~~1-year~~2-year, 24-hour; and the ~~2-year~~5-year, 24-hour pre-development peak runoff discharge rates respectively, or to the maximum extent practicable. The runoff curve numbers in Table 2. shall be used to represent the actual pre-development conditions. Peak discharges shall be calculated using TR-55 runoff curve number methodology, Atlas 14 precipitation depths, and the appropriate NRCS Wisconsin MSE3 or MSE4 precipitation distribution. On a case-by-case basis, the Village Engineer may allow the use of TP-40 precipitation depths and the Type II distribution.

Note to Permittees: *For determining compliance with the peak flow requirement, the Department recommends use of the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Precipitation Frequency Estimates for precipitation depth. The Natural Resources Conservation Service (NRCS) – Wisconsin has calculated county-specific Atlas 14 precipitation depths and they are to be used in combination with the appropriate NRCS MSE3 or MSE4 precipitation distribution. The NRCS calculated county-specific Atlas 14 precipitation depths and MSE3 and MSE4 precipitation distributions are available at:* *http://www.nrcs.usda.gov/wps/portal/nrcs/detail/wi/technical/engineering/?cid=nrcs142p2_025417*.

Table 2. Maximum Pre-Development Runoff Curve Numbers

Comment [TN4]: Current standards are more stringent the WDNR requirement, taken from 1997 Stormwater Management guide, E. Design Criteria, 4 Stormwater Quality Ponds.

Confirm with Village of Jackson that these are the requirements they want to use.

Runoff Curve Number	Hydrologic Soil Group			
	A	B	C	D
Woodland	30	55	70	77
Grassland	39	61	71	78
Cropland	55	69	78	83

Note to Permittees: *Where the pre-development condition is a combination of woodland, grassland, or cropland, the runoff curve number should be pro-rated by area.*

2. This subsection of the ordinance does not apply to any of the following:
   a. A post-construction site where the discharge is directly into a lake over 5,000 acres or a stream or river segment draining more than 500 square miles.
   b. Except as provided under S. 07 (3), a redevelopment post-construction site.
   c. An in-fill development area less than 5 acres.

(c) TOTAL PHOSPHORUS. BMPs shall be designed, installed and maintained to control total phosphorus carried in runoff from the post-construction site as follows:

1. BMPs shall be designed to achieve 60 percent reduction in total phosphorus or to the maximum extent practicable as provided in subd. 2. The design shall be based on an average annual rainfall, as compared to no runoff management controls.
2. Sizing and design of the nutrient pond shall be based on the Walker Pond Net model, SLAMM, DET POND, P8 or other appropriate water quality model.
3. The Village may, at its own discretion, require the construction of one or more ponds even when such ponds do meet the 60% phosphorus removal efficiency criteria. The Village shall require said ponds when it is determined that they are necessary to maintain the integrity of water quality in downstream priority water bodies. In priority districts, additional water quality treatment ponds may be required if necessary to maintain the integrity of the downstream priority water body.

~~(c)~~(d) INFILTRATION.

Comment [TN5]: Language taken from 1997 Stormwater Management Guide as much as possible. Phosphorus control is not currently required in the WDNR model ordinances. Phosphorus control will be required when WDNR begins enforcing TMDLs. It is recommended that this section be EXCLUDED from the ordinance at this time, and then added back in when the TMDL information is available.

1. Best Management Practices. BMPs shall be designed, installed, and maintained to infiltrate runoff in accordance with the following or to the maximum extent practicable:
   a. *Low imperviousness*. For development up to 40 percent connected imperviousness, such as parks, cemeteries, and low density residential development, infiltrate sufficient runoff volume so that the post-development infiltration volume shall be at least 90 percent of the pre-development infiltration volume, based on an average annual rainfall. However, when designing appropriate infiltration systems to meet this requirement, no more than one percent of the post-construction site is required as an effective infiltration area.
   b. *Moderate imperviousness.* For development with more than 40 percent and up to 80 percent connected imperviousness, such as medium and high density residential, multi-family development, industrial and institutional development, and office parks, infiltrate sufficient runoff volume so that the post-development infiltration volume shall be at least 75 percent of the pre-development infiltration volume, based on an average annual rainfall. However, when designing appropriate infiltration systems to meet this requirement, no more than 2 percent of the post-construction site is required as an effective infiltration area.
   c. *High imperviousness.* For development with more than 80 percent connected imperviousness, such as commercial strip malls, shopping centers, and commercial downtowns, infiltrate sufficient runoff volume so that the post-development infiltration volume shall be at least 60 percent of the pre-development infiltration volume, based on an average annual rainfall. However, when designing appropriate infiltration systems to meet this requirement, no more than 2 percent of the post-construction site is required as an effective infiltration area.
2. Pre-development. The pre-development condition shall be the same as specified in Table 2 of the Peak Discharge section of this ordinance.
3. Source Areas.
   a. *Prohibitions.* Runoff from the following areas may not be infiltrated and may not qualify as contributing to meeting the requirements of this section unless demonstrated to meet the conditions identified in S. 07 (4)(c)6.:

i. Areas associated with a tier 1 industrial facility identified in s. NR 216.21 (2)(a), including storage, loading and parking. Rooftops may be infiltrated with the concurrence of the regulatory authority.

ii. Storage and loading areas of a tier 2 industrial facility identified in s. NR 216.21 (2)(b).

Note to Permittees: *Runoff from the employee and guest parking and rooftop areas of a tier 2 facility may be infiltrated but runoff from the parking area may require pretreatment.*

iii. Fueling and vehicle maintenance areas. Runoff from rooftops of fueling and vehicle maintenance areas may be infiltrated with the concurrence of the regulatory authority.

b. *Exemptions*. Runoff from the following areas may be credited toward meeting the requirement when infiltrated, but the decision to infiltrate runoff from these source areas is optional:

i. Parking areas and access roads less than 5,000 square feet for commercial development.

ii. Parking areas and access roads less than 5,000 square feet for industrial development not subject to the Prohibitions under par a.

iii. Except as provided under S. 07 (3), redevelopment post-construction sites.

iv. In-fill development areas less than 5 acres.

v. Roads on commercial, industrial and institutional land uses, and arterial residential roads.

4. Location of Practices.

a. *Prohibitions*. Infiltration practices may not be located in the following areas:

i. Areas within 1000 feet upgradient or within 100 feet downgradient of direct conduits to groundwater.

ii. Areas within 400 feet of a community water system well as specified in s. NR 811.16 (4) or within the separation distances listed in s. NR 812.08 for any private well or non-community well for runoff infiltrated from commercial, including multi-family residential, industrial and institutional land uses or regional devices for one- and two-family residential development.

iii. Areas where contaminants of concern, as defined in s. NR 720.03 (2), are present in the soil through which infiltration will occur.

b. *Separation distances.*

i. Infiltration practices shall be located so that the characteristics of the soil and the separation distance between the bottom of the infiltration system and the elevation of seasonal high groundwater or the top of bedrock are in accordance with Table 3:

Table 3. Separation Distances and Soil Characteristics

Source Area	**Separation Distance**	**Soil Characteristics**
Industrial, Commercial, Institutional Parking Lots and Roads	5 feet or more	Filtering Layer
Residential Arterial Roads	5 feet or more	Filtering Layer
Roofs Draining to Subsurface Infiltration Practices	1 foot or more	Native or Engineered Soil with Particles Finer than Coarse Sand
Roofs Draining to Surface Infiltration Practices	Not Applicable	Not Applicable
All Other Impervious Source Areas	3 feet or more	Filtering Layer

ii. Notwithstanding par. b., applicable requirements for injection wells classified under ch. NR 815 shall be followed.

c. *Infiltration rate exemptions*. Infiltration practices located in the following areas may be credited toward meeting the requirements under the following conditions, but the decision to infiltrate under these conditions is optional:

i. Where the infiltration rate of the soil measured at the proposed bottom of the infiltration system is less than 0.6 inches per hour using a scientifically credible field test method.

ii. Where the least permeable soil horizon to 5 feet below the proposed bottom of the infiltration system using the U.S. Department of Agriculture method of soils analysis is one of the following: sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, or clay.

5. Alternate Use. Where alternate uses of runoff are employed, such as for toilet flushing, laundry, or irrigation or storage on green roofs where an equivalent portion of the runoff is captured permanently by rooftop vegetation, such alternate use shall be given equal credit toward the infiltration volume required by this section.

6. Groundwater Standards.
   a. Infiltration systems designed in accordance with this section shall, to the extent technically and economically feasible, minimize the level of pollutants infiltrating to groundwater and shall maintain compliance with the preventive action limit at a point of standards application in accordance with ch. NR 140. However, if site specific information indicates that compliance with a preventive action limit is not achievable, the infiltration BMP may not be installed or shall be modified to prevent infiltration to the maximum extent practicable.
   b. Notwithstanding par. a., the discharge from BMPs shall remain below the enforcement standard at the point of standards application.
7. Pretreatment. Before infiltrating runoff, pretreatment shall be required for parking lot runoff and for runoff from new road construction in commercial, industrial and institutional areas that will enter an infiltration system. The pretreatment shall be designed to protect the infiltration system from clogging prior to scheduled maintenance and to protect groundwater quality in accordance with subd. 6. Pretreatment options may include, but are not limited to, oil and grease separation, sedimentation, biofiltration, filtration, swales or filter strips.
8. Maximum Extent Practicable. Where the conditions of subd. 3. and 4. limit or restrict the use of infiltration practices, the performance standard of S. 07 (4)(c) shall be met to the maximum extent practicable.

~~(d)~~(e) PROTECTIVE AREAS.

1. Definition. In this section, “protective area” means an area of land that commences at the top of the channel of lakes, streams and rivers, or at the delineated boundary of wetlands, and that is the greatest of the following widths, as measured horizontally from the top of the channel or delineated wetland boundary to the closest impervious surface. However, in this section, “protective area” does not include any area of land adjacent to any stream enclosed within a pipe or culvert, so that runoff cannot enter the enclosure at this location.
   a. For outstanding resource waters and exceptional resource waters, 75 feet.
   b. For perennial and intermittent streams identified on a U.S. Geological Survey 7.5-minute series topographic map, or a county soil survey map, whichever is more current, 50 feet.
   c. For lakes, 50 feet.
   d. For wetlands not subject to par. e. or f., 50 feet.

e. For highly susceptible wetlands, 75 feet. Highly susceptible wetlands include the following types: calcareous fens, sedge meadows, open and coniferous bogs, low prairies, coniferous swamps, lowland hardwood swamps, and ephemeral ponds.

f. For less susceptible wetlands, 10 percent of the average wetland width, but no less than 10 feet nor more than 30 feet. Less susceptible wetlands include: degraded wetland dominated by invasive species such as reed canary grass; cultivated hydric soils; and any gravel pits, or dredged material or fill material disposal sites that take on the attributes of a wetland.

g. In pars. d. to f., determinations of the extent of the protective area adjacent to wetlands shall be made on the basis of the sensitivity and runoff susceptibility of the wetland in accordance with the standards and criteria in s. NR 103.03.

h. Wetland boundary delineation shall be made in accordance with s. NR 103.08 (1m). This paragraph does not apply to wetlands that have been completely filled in compliance with all applicable state and federal regulations. The protective area for wetlands that have been partially filled in compliance with all applicable state and federal regulations shall be measured from the wetland boundary delineation after a fill has been placed. Where there is a legally authorized wetland fill, the protective area standard need not be met in that location.

i. For concentrated flow channels with drainage areas greater than 130 acres, 10 feet.

j. Notwithstanding pars. a. to i., the greatest protective area width shall apply where rivers, streams, lakes and wetlands are contiguous.

Note to Permittees: *A stream or lake is not eligible for a lower protective area width even if contiguous to a less susceptible wetland.*

2. Applicability. This section applies to post-construction sites located within a protective area, except those areas exempted pursuant to subd. 4.

3. Requirements. The following requirements shall be met:

a. Impervious surfaces shall be kept out of the protective area entirely or to the maximum extent practicable. If there is no practical alternative to locating an impervious surface in the protective area, the storm water management plan shall contain a written, site-specific explanation.

b. Where land disturbing construction activity occurs within a protective area, adequate sod or self-sustaining vegetative cover of 70 percent or greater shall be established and maintained where no impervious surface is present. The adequate sod or self-sustaining vegetative cover shall be sufficient to provide for bank stability, maintenance of fish habitat, and filtering of pollutants from upslope overland flow areas under sheet flow conditions. Non-vegetative materials, such as rock riprap, may be employed on the bank as necessary to prevent erosion such as on steep slopes or where high velocity flows occur.

Note to Permittees: *It is recommended that seeding of non-invasive vegetative cover be used in the protective areas. Some invasive plants that should not be used are listed in ch. NR 40, Wis. Adm. Code. Flood and drought-tolerant vegetation that can provide long-term bank stability because of an extensive root system is preferable. Vegetative cover may be measured using the line transect method described in the University of Wisconsin extension publication number A3533, titled "Estimating Residue Using the Line Transect Method".*

c. BMPs such as filter strips, swales, or wet detention ponds, that are designed to control pollutants from non-point sources, may be located in the protective area.

Note to Permittees: *Other laws, such as ch. 30, Wis. Stats., and chs. NR 103, 115, 116 and 117, Wis. Adm. Code, and their associated review and approval processes may apply in the protective area.*

4. Exemptions. This section does not apply to any of the following:
   a. Except as provided under S. 07 (3), redevelopment post-construction sites.
   b. In-fill development areas less than 5 acres.
   c. Structures that cross or access surface water such as boat landings, bridges, and culverts.
   d. Structures constructed in accordance with s. 59.692 (1v), Stats.
   e. Areas of post-construction sites from which the runoff does not enter the surface water, including wetlands, without first being treated by a BMP to meet the local ordinance requirements for total suspended solids and

peak flow reduction, except to the extent that vegetative ground cover is necessary to maintain bank stability.

Note to Permittees: *A vegetated protective area to filter runoff pollutants from post−construction sites described in par. (e) is not necessary since the runoff at that location is treated prior to entering the surface water. Other practices necessary to meet the requirements of this section, such as a swale or pond, will need to be designed and implemented to reduce runoff pollutants prior to runoff entering a surface water of the state.*

(e) FUELING AND MAINTENANCE AREAS. Fueling and vehicle maintenance areas shall have BMPs designed, installed, and maintained to reduce petroleum within runoff, so that the runoff that enters waters of the state contains no visible petroleum sheen, or to the maximum extent practicable.

Note to Permittees: *A combination of the following BMPs may be used: oil and grease separators, canopies, petroleum spill cleanup materials, or any other structural or non-structural method of preventing or treating petroleum in runoff.*

(f) SWALE TREATMENT FOR TRANSPORTATION FACILITIES.

Comment [TN6]: This section is optional. Confirm with Jackson if this should be included or deleted.

1. Requirement. Except as provided in subd. 2., transportation facilities that use swales for runoff conveyance and pollutant removal are exempt from the requirements of local ordinance requirements for peak flow control, total suspended solids control, and infiltration, if the swales are designed to do all of the following or to the maximum extent practicable:

   a. Swales shall be vegetated. However, where appropriate, non-vegetative measures may be employed to prevent erosion or provide for runoff treatment, such as rock riprap stabilization or check dams.

   Note to Users: *It is preferred that tall and dense vegetation be maintained within the swale due to its greater effectiveness at enhancing runoff pollutant removal.*

   b. Swales shall comply with sections V.F. (Velocity and Depth) and V.G. (Sale Geometry Criteria) with a swale treatment length as long as that

specified in section V.C. (Pre-Treatment) of the Wisconsin Department of Natural Resources technical standard 1005 “Vegetated Infiltration Swales”, dated May 2007, or a superseding document. Transportation facility swale treatment does not have to comply with other sections of technical standard 1005.

2. Other requirements.

a. Notwithstanding subd. 1., the Village Engineer may, consistent with water quality standards, require that other requirements, in addition to swale treatment, be met on a transportation facility with an average daily traffic rate greater than 2,500 and where the initial surface water of the state that the runoff directly enters is one of the following:

i. An outstanding resource water.

ii. An exceptional resource water.

iii. Waters listed in section 303 (d) of the Federal Clean Water Act that are identified as impaired in whole or in part, due to non-point source impacts.

iv. Water where targeted performance standards are developed pursuant to s. NR 151.004, Wis. Adm. Code.

b. The transportation facility authority shall contact the Village Engineer to determine if additional BMPs beyond a water quality swale are needed under this subsection.

(5) GENERAL CONSIDERATIONS FOR STORM WATER MANAGEMENT MEASURES. The following considerations shall be observed in on-site and off-site runoff management:

(a) Natural topography and land cover features such as natural swales, natural depressions, native soil infiltrating capacity, and natural groundwater recharge areas shall be preserved and used, to the extent possible, to meet the requirements of this section.

(b) Emergency overland flow for all storm water facilities shall be provided to prevent exceeding the safe capacity of downstream drainage facilities and prevent endangerment of downstream property or public safety.

(6) BMP LOCATION.

(a) To comply with the performance standards required under S. 07 of this ordinance, BMPs may be located on−site or off−site as part of a regional storm water device, practice or system, but shall be installed in accordance with s. NR 151.003, Wis. Adm. Code.

(b) The Village Engineer may approve off-site management measures provided that all of the following conditions are met:

1. The Village Engineer determines that the post-construction runoff is covered by a storm water management system plan that is approved by the Village of Jackson and that contains management requirements consistent with the purpose and intent of this ordinance.
2. The off-site facility meets all of the following conditions:
    a. The facility is in place.
    b. The facility is designed and adequately sized to provide a level of storm water control equal to or greater than that which would be afforded by on-site practices meeting the performance standards of this ordinance.
    c. The facility has a legally obligated entity responsible for its long-term operation and maintenance.

(c) Where a regional treatment option exists such that the Village Engineer exempts the applicant from all or part of the minimum on-site storm water management requirements, the applicant shall be required to pay a fee in an amount determined in negotiation with the Village Engineer. In determining the fee for post-construction runoff, the Village Engineer shall consider an equitable distribution of the cost for land, engineering design, construction, and maintenance of the regional treatment option.

(7) ADDITIONAL REQUIREMENTS. The Village Engineer may establish storm water management requirements more stringent than those set forth in this ordinance if the Village Engineer determines that the requirements are needed to control storm water quantity or control flooding, comply with federally approved total maximum daily load requirements, or control pollutants associated with existing development or redevelopment.

S. 08 PERMITTING REQUIREMENTS, PROCEDURES AND FEES.

(1) PERMIT REQUIRED. No responsible party may undertake a land disturbing construction activity without receiving a post-construction runoff permit from the Village of Jackson prior to commencing the proposed activity.

(2) PERMIT APPLICATION AND FEES. Unless specifically excluded by this ordinance, any responsible party desiring a permit shall submit to the Village Engineer a permit application on a form provided by the Village Engineer for that purpose.

(a) Unless otherwise excluded by this ordinance, a permit application must be accompanied by a storm water management plan, a maintenance agreement and a non-refundable permit administration fee.

(b) The storm water management plan shall be prepared to meet the requirements of S. 07 and S. 09, the maintenance agreement shall be prepared to meet the requirements of S. 10, the financial guarantee shall meet the requirements of S. 11, and fees shall be those established by the Village Board as set forth in S. 12.

(3) PERMIT APPLICATION REVIEW AND APPROVAL. The Village Engineer shall review any permit application that is submitted with a storm water management plan, maintenance agreement, and the required fee. The following approval procedure shall be used:

(a) Applications, control plans, and control plan statements shall be submitted to the Village at least twenty-one (21) days in advance of the Planning Commission meeting at which action is expected.

(b) Within three (3) days of receipt of the application, a copy thereof together with a copy of the stormwater management plan shall be delivered to the Village Engineer for initial review. Within three (3) days of the Village receipt of the application, a copy thereof together with a copy of the stormwater management plan shall be delivered to the Village Building Inspector for initial review. If the Village Engineer or Village Building Inspector finds the application or stormwater management plan or statement to be lacking necessary information or not in compliance with this Code, the applicant shall be notified of the inadequacy as soon as practical after review.

(c) All initial reviews shall be filed with the Village seven (7) days in advance of the Planning Commission meeting, along with the application and control plans or control plan statements.

(~~a~~d) Within ~~[number] business~~45 days of the filing deadline for the application, control plan, or control plan statement and fee for the Planning Commission meeting~~receipt of a complete permit application~~, including all items as required by sub. (2), the Village Engineer shall inform the applicant whether the application, storm water management plan and maintenance agreement are approved or disapproved based on the requirements of this ordinance.

(~~b~~e) If the storm water permit application, storm water management plan and maintenance agreement are approved, or if an agreed upon payment of fees in lieu of storm water management practices is made, the Village Engineer shall issue the permit.

(~~c~~f) If the storm water permit application, storm water management plan or maintenance agreement is disapproved, the Village Engineer shall detail in writing the reasons for disapproval.

(~~d~~g) The Village Engineer may request additional information from the applicant. If additional information is submitted, the Village Engineer shall have ~~[number] business~~ 45days from

Comment [TN7]: Taken from erosion control plan review and approval process. Confirm with Jackson if these are the same review periods that they want to use.

the date the additional information is received to inform the applicant that the storm water management plan and maintenance agreement are either approved or disapproved.

(eh) Failure by the Village Engineer to inform the permit applicant of a decision within ~~[number] business~~45 days of a required submittal shall be deemed to mean approval of the submittal and the applicant may proceed as if a permit had been issued.

(4) PERMIT REQUIREMENTS. All permits issued under this ordinance shall be subject to the following conditions, and holders of permits issued under this ordinance shall be deemed to have accepted these conditions. The Village Engineer may suspend or revoke a permit for violation of a permit condition, following written notification of the responsible party. An action by the Village Engineer to suspend or revoke this permit may be appealed in accordance with S. 14.

(a) Compliance with this permit does not relieve the responsible party of the responsibility to comply with other applicable federal, state, and local laws and regulations.

(b) The responsible party shall design and install all structural and non-structural storm water management measures in accordance with the approved storm water management plan and this permit.

(c) The responsible party shall notify the Village Engineer at least ~~[number] business~~ ~~days~~48 hours before commencing any work in conjunction with the storm water management plan, and within ~~[number] business~~14 days upon completion of the storm water management practices. If required as a special condition under sub. (5), the responsible party shall make additional notification according to a schedule set forth by the Village Engineer so that practice installations can be inspected during construction.

Comment [TN8]: Same durations as erosion permit. Verify with Jackson.

(d) Practice installations required as part of this ordinance shall be certified "as built" or “record” drawings by a licensed professional engineer. Completed storm water management practices must pass a final inspection by the Village Engineer or its designee to determine if they are in accordance with the approved storm water management plan and ordinance. The Village Engineer or its designee shall notify the responsible party in writing of any changes required in such practices to bring them into compliance with the conditions of this permit.

(e) The responsible party shall notify the Village Engineer of any significant modifications it intends to make to an approved storm water management plan. The Village Engineer may require that the proposed modifications be submitted to it for approval prior to incorporation into the storm water management plan and execution by the responsible party.

(f) The responsible party shall maintain all storm water management practices in accordance with the storm water management plan until the practices either become the

responsibility of the Village Board, or are transferred to subsequent private owners as specified in the approved maintenance agreement.

(g) The responsible party authorizes the Village Engineer to perform any work or operations necessary to bring storm water management measures into conformance with the approved storm water management plan, and consents to a special assessment or charge against the property as authorized under subch. VII of ch. 66, Wis. Stats., or to charging such costs against the financial guarantee posted under S. 11.

(h) If so directed by the Village Engineer, the responsible party shall repair at the responsible party's own expense all damage to adjoining municipal facilities and drainage ways caused by runoff, where such damage is caused by activities that are not in compliance with the approved storm water management plan.

(i) The responsible party shall permit property access to the Village Engineer or its designee for the purpose of inspecting the property for compliance with the approved storm water management plan and this permit.

(j) Where site development or redevelopment involves changes in direction, increases in peak rate and/or total volume of runoff from a site, the Village Engineer may require the responsible party to make appropriate legal arrangements with affected property owners concerning the prevention of endangerment to property or public safety.

(k) The responsible party is subject to the enforcement actions and penalties detailed in S. 13, if the responsible party fails to comply with the terms of this permit.

(5) PERMIT CONDITIONS. Permits issued under this subsection may include conditions established by Village Engineer in addition to the requirements needed to meet the performance standards in S. 07 or a financial guarantee as provided for in S. 11.

(6) PERMIT DURATION. Permits issued under this section shall be valid from the date of issuance through the date the Village Engineer notifies the responsible party that all storm water management practices have passed the final inspection required under sub. (4)(d).

S. 09 STORM WATER MANAGEMENT PLAN.

(1) STORM WATER MANAGEMENT PLAN REQUIREMENTS. The storm water management plan required under S. 07 (2) shall contain at a minimum the following information:

(a) Name, address, and telephone number for the following or their designees: landowner; developer; project engineer for practice design and certification; person(s) responsible for installation of storm water management practices; and person(s) responsible for

maintenance of storm water management practices prior to the transfer, if any, of maintenance responsibility to another party.

(b) A proper legal description of the property proposed to be developed, referenced to the U.S. Public Land Survey system or to block and lot numbers within a recorded land subdivision plat.

(c) Pre-development site conditions, including:

1. One or more site maps at a scale of not less than 1 inch equals ~~[number]~~100 feet. The site maps shall show the following: site location and legal property description; predominant soil types and hydrologic soil groups; existing cover type and condition; topographic contours of the site at a scale not to exceed ~~[number]~~2 feet; topography and drainage network including enough of the contiguous properties to show runoff patterns onto, through, and from the site; watercourses that may affect or be affected by runoff from the site; flow path and direction for all storm water conveyance sections; watershed boundaries used in hydrology determinations to show compliance with performance standards; lakes, streams, wetlands, channels, ditches, and other watercourses on and immediately adjacent to the site; limits of the 100 year floodplain; location of wells and wellhead protection areas covering the project area and delineated pursuant to s. NR 811.16, Wis. Adm. Code.
2. Hydrology and pollutant loading computations as needed to show compliance with performance standards. All major assumptions used in developing input parameters shall be clearly stated. The geographic areas used in making the calculations shall be clearly cross-referenced to the required map(s).

(d) Post-development site conditions, including:

1. Explanation of the provisions to preserve and use natural topography and land cover features to minimize changes in peak flow runoff rates and volumes to surface waters and wetlands.
2. Explanation of any restrictions on storm water management measures in the development area imposed by wellhead protection plans and ordinances.
3. One or more site maps at a scale of not less than 1 inch equals ~~[number]~~100 feet showing the following: post-construction pervious areas including vegetative cover type and condition; impervious surfaces including all buildings, structures, and pavement; post-construction topographic contours of the site at a scale not to exceed ~~[number]~~2 feet; post-construction drainage network including enough of the contiguous properties to show runoff patterns onto, through, and from the site; locations and dimensions of drainage easements; locations of maintenance

Comment [TN9]: Taken from Design and Drafting Handbook

Confirm with Jackson on minimum scale and contour density.

Comment [TN10]: Taken from Design and Drafting Handbook

Confirm with Jackson on minimum scale and contour density.

easements specified in the maintenance agreement; flow path and direction for all storm water conveyance sections; location and type of all storm water management conveyance and treatment practices, including the on-site and off-site tributary drainage area; location and type of conveyance system that will carry runoff from the drainage and treatment practices to the nearest adequate outlet such as a curbed street, storm drain, or natural drainage way; watershed boundaries used in hydrology and pollutant loading calculations and any changes to lakes, streams, wetlands, channels, ditches, and other watercourses on and immediately adjacent to the site.

4. Hydrology and pollutant loading computations as needed to show compliance with performance standards. The computations shall be made for each discharge point in the development, and the geographic areas used in making the calculations shall be clearly cross-referenced to the required map(s).

5. Results of investigations of soils and groundwater required for the placement and design of storm water management measures. Detailed drawings including cross-sections and profiles of all permanent storm water conveyance and treatment practices.

(e) A description and installation schedule for the storm water management practices needed to meet the performance standards in S. 07.

(f) A maintenance plan developed for the life of each storm water management practice including the required maintenance activities and maintenance activity schedule.

(g) Cost estimates for the construction, operation, and maintenance of each storm water management practice.

(h) Other information requested in writing by the Village Engineer to determine compliance of the proposed storm water management measures with the provisions of this ordinance.

(i) All site investigations, plans, designs, computations, and drawings shall be certified by a ~~[~~licensed professional engineer~~]~~ to be prepared in accordance with accepted engineering practice and requirements of this ordinance.

(2) ALTERNATE REQUIREMENTS. The Village Engineer may prescribe alternative submittal requirements for applicants seeking an exemption to on-site storm water management performance standards under S. 07 (5).

S. 10 MAINTENANCE AGREEMENT.

(1) MAINTENANCE AGREEMENT REQUIRED. The maintenance agreement required under S. 08 (2) for storm water management practices shall be an agreement between the Village Engineer

and the responsible party to provide for maintenance of storm water practices beyond the duration period of this permit. The maintenance agreement shall be filed with the County Register of Deeds as a property deed restriction so that it is binding upon all subsequent owners of the land served by the storm water management practices.

(2) AGREEMENT PROVISIONS. The maintenance agreement shall contain the following information and provisions and be consistent with the maintenance plan required by S. 09 (1)(f):

(a) Identification of the storm water facilities and designation of the drainage area served by the facilities.

(b) A schedule for regular maintenance of each aspect of the storm water management system consistent with the storm water management plan required under S. 08 (2).

(c) Identification of the responsible party(s), organization or city, county, town or village responsible for long term maintenance of the storm water management practices identified in the storm water management plan required under S. 08 (2).

(d) Requirement that the responsible party(s), organization, or city, county, town or village shall maintain storm water management practices in accordance with the schedule included in par. (b).

(e) Authorization for the Village Engineer to access the property to conduct inspections of storm water management practices as necessary to ascertain that the practices are being maintained and operated in accordance with the agreement.

(f) A requirement on the Village Engineer to maintain public records of the results of the site inspections, to inform the responsible party responsible for maintenance of the inspection results, and to specifically indicate any corrective actions required to bring the storm water management practice into proper working condition.

(g) Agreement that the party designated under par. (c), as responsible for long term maintenance of the storm water management practices, shall be notified by the Village Engineer of maintenance problems which require correction. The specified corrective actions shall be undertaken within a reasonable time frame as set by the Village Engineer.

(h) Authorization of the Village Engineer to perform the corrected actions identified in the inspection report if the responsible party designated under par. (c) does not make the required corrections in the specified time period. The Village Engineer shall enter the amount due on the tax rolls and collect the money as a special charge against the property pursuant to subch. VII of ch. 66, Wis. Stats.

S. 11 FINANCIAL GUARANTEE.

(1) ESTABLISHMENT OF THE GUARANTEE. The Village Engineer may require the submittal of a financial guarantee, the form and type of which shall be acceptable to the Village Engineer. The financial guarantee shall be in an amount determined by the Village Engineer to be the estimated cost of construction and the estimated cost of maintenance of the storm water management practices during the period which the designated party in the maintenance agreement has maintenance responsibility. The financial guarantee shall give the Village Engineer the authorization to use the funds to complete the storm water management practices if the responsible party defaults or does not properly implement the approved storm water management plan, upon written notice to the responsible party by the Village Engineer that the requirements of this ordinance have not been met.

(2) CONDITIONS FOR RELEASE. Conditions for the release of the financial guarantee are as follows:

(a) The Village Engineer shall release the portion of the financial guarantee established under this section, less any costs incurred by the Village Engineer to complete installation of practices, upon submission of "as built plans" or “record” drawings by a licensed professional engineer. The Village Engineer may make provisions for a partial pro-rata release of the financial guarantee based on the completion of various development stages.

(b) The Village Engineer shall release the portion of the financial guarantee established under this section to assure maintenance of storm water practices, less any costs incurred by the Village Engineer, at such time that the responsibility for practice maintenance is passed on to another entity via an approved maintenance agreement.

S. 12 FEE SCHEDULE.

The fees referred to in other sections of this ordinance shall be established by the Village Engineer and may from time to time be modified by resolution. A schedule of the fees established by the Village Engineer shall be available for review in [location].

Comment [TN11]: Consult Jackson regarding location of fee schedule

S. 13 ENFORCEMENT.

(1) Any land disturbing construction activity or post-construction runoff initiated after the effective date of this ordinance by any person, firm, association, or corporation subject to the ordinance provisions shall be deemed a violation unless conducted in accordance with the requirements of this ordinance.

(2) The Village Engineer shall notify the responsible party by certified mail of any non-complying land disturbing construction activity or post-construction runoff. The notice shall describe the nature of the violation, remedial actions needed, a schedule for remedial action, and additional enforcement action which may be taken.

(3) Upon receipt of written notification from the Village Engineer under sub. (2), the responsible party shall correct work that does not comply with the storm water management plan or other provisions of this permit. The responsible party shall make corrections as necessary to meet the specifications and schedule set forth by the Village Engineer in the notice.

(4) If the violations to a permit issued pursuant to this ordinance are likely to result in damage to properties, public facilities, or waters of the state, the Village Engineer may enter the land and take emergency actions necessary to prevent such damage. The costs incurred by the Village Engineer plus interest and legal costs shall be billed to the responsible party.

(5) The Village Engineer is authorized to post a stop work order on all land disturbing construction activity that is in violation of this ordinance, or to request the municipal attorney to obtain a cease and desist order in any court with jurisdiction.

(6) The Village Engineer may revoke a permit issued under this ordinance for non-compliance with ordinance provisions.

(7) Any permit revocation, stop work order, or cease and desist order shall remain in effect unless retracted by the Village Engineer or by a court with jurisdiction.

(8) The Village Engineer is authorized to refer any violation of this ordinance, or a stop work order or cease and desist order issued pursuant to this ordinance, to the municipal attorney for the commencement of further legal proceedings in any court with jurisdiction.

(9) Any person, firm, association, or corporation who does not comply with the provisions of this ordinance shall be subject to a forfeiture of not less than [number] dollars or more than [number] dollars per offense, together with the costs of prosecution. Each day that the violation exists shall constitute a separate offense.

Comment [TN12]: Consult Jackson on specific amounts

(10) Compliance with the provisions of this ordinance may also be enforced by injunction in any court with jurisdiction. It shall not be necessary to prosecute for forfeiture or a cease and desist order before resorting to injunctional proceedings.

(11) When the Village Engineer determines that the holder of a permit issued pursuant to this ordinance has failed to follow practices set forth in the storm water management plan, or has failed to comply with schedules set forth in said storm water management plan, the Village Engineer or a party designated by the Village Engineer may enter upon the land and perform the work or other operations necessary to bring the condition of said lands into conformance with requirements of the approved storm water management plan. The Village Engineer shall keep a detailed accounting of the costs and expenses of performing this work. These costs and expenses shall be deducted from any financial security posted pursuant to S. 11 of this ordinance. Where such a security has not been established, or where such a security is insufficient to cover these costs, the costs and expenses shall be entered on the tax roll as a special charge against the property and collected with any other taxes levied thereon for the year in which the work is completed.

S. 14 APPEALS.

(1) BOARD OF APPEALS. The board of appeals, created pursuant to section 1.04D of the Village of Jackson ordinances pursuant to s. 61.354 (4)(b), Wis. Stats., shall hear and decide appeals where it is alleged that there is error in any order, decision or determination made by the Village Engineer in administering this ordinance. The board shall also use the rules, procedures, duties, and powers authorized by statute in hearing and deciding appeals. Upon appeal, the board may authorize variances from the provisions of this ordinance that are not contrary to the public interest, and where owing to special conditions a literal enforcement of the ordinance will result in unnecessary hardship.

(2) WHO MAY APPEAL. Appeals to the board of appeals may be taken by any aggrieved person or by an officer, department, board, or bureau of the Village of Jackson affected by any decision of the Village Engineer.

S. 15 SEVERABILITY.

If any section, clause, provision or portion of this ordinance is judged unconstitutional or invalid by a court of competent jurisdiction, the remainder of the ordinance shall remain in force and not be affected by such judgment.

S. 16 EFFECTIVE DATE.

This ordinance shall be in force and effect from and after its adoption and publication. The above and foregoing ordinance was duly adopted by the Village Board of the Village of Jackson on the [number] day of [month], [year].

Comment [TN13]: Add date when known.

Approved: _____

Attested: _____

Published on [day, month, year].

Agenda item documents were not received in time to be part of the packet.

The information will be distributed at the meeting.

Agenda item documents were not received in time to be part of the packet.

The information will be distributed at the meeting.

Wilshire Drive - Village of Jackson
Preliminary Estimate of Probable Costs
1/22/2016

Item No.	Description	Units	Total	Unit Price	Bid Total
	ROADWAY ITEMS				
100.01	Clearing & Grubbing	LS	1	$1,000.00	$1,000.00
100.02	Removing Concrete	SY	1895	$5.00	$9,475.00
100.03	Removing Curb & Gutter	LF	2595	$3.00	$7,785.00
100.04	Excavation Common	CY	2862	$10.00	$28,620.00
100.05	Base Aggregate Dense 3/4"	TON	815	$15.00	$12,225.00
100.06	Base Aggregate Dense 1-1/4"	TON	3440	$12.00	$41,280.00
100.07	Breaker Run	TON	100	$10.00	$1,000.00
100.08	7” Concrete Driveway	SY	1275	$40.00	$51,000.00
100.09	HMA Pavement, Type E-0.3	TON	1545	$60.00	$92,700.00
100.10	Asphaltic Surface Driveway	TON	7	$100.00	$700.00
100.11	Concrete Curb & Gutter 30-Inch Type D	LF	2595	$11.00	$28,545.00
100.12	4” Concrete Sidewalk	SF	10260	$3.50	$35,910.00
100.13	4" Screened Topsoil, Seeding Mixture No. 40, Fertilizer Type B & Erosion Mat Urban Class I Type B	SY	3105	$5.00	$15,525.00
100.14	Erosion Control	LS	1	$1,000.00	$1,000.00
100.15	Traffic Control	LS	1	$7,500.00	$7,500.00
100.16	Sawing Asphalt	LF	365	$2.00	$730.00
100.17	Sawing Concrete	LF	480	$3.00	$1,440.00
				SUBTOTAL ROADWAY ITEMS	**$336,435.00**
	STORM SEWER ITEMS				
200.01	Removing Manholes	Each	6	$500.00	$3,000.00
200.02	Removing Inlets	Each	8	$250.00	$2,000.00
200.03	Removing Storm Sewer	LF	1100	$15.00	$16,500.00
200.04	Storm Sewer Pipe PVC 4-Inch	LF	1585	$40.00	$63,400.00
200.05	Storm Sewer Pipe Reinforced Concrete Class III 12-Inch	LF	170	$50.00	$8,500.00
200.06	Storm Sewer Pipe Reinforced Concrete Class III 15-Inch	LF	790	$55.00	$43,450.00
200.07	Storm Sewer Pipe Reinforced Concrete Class III 18-Inch	LF	75	$60.00	$4,500.00
200.08	Storm Sewer Pipe Reinforced Concrete Class III 24-Inch	LF	445	$65.00	$28,925.00
200.09	Catch Basins 2x3-FT w/ Casting	Each	10	$1,750.00	$17,500.00
200.10	Manholes 4-FT Diameter w/ Casting	Each	6	$2,500.00	$15,000.00
200.11	Manholes 6-FT Diameter w/ Casting	Each	3	$3,500.00	$10,500.00
200.12	Manholes 6-FT Diameter "Doghouse" w/ Casting	Each	1	$3,500.00	$3,500.00
200.13	Concrete Collar	Each	3	$500.00	$1,500.00
				SUBTOTAL STORM SEWER ITEMS	**$218,275.00**

SANITARY SEWER ITEMS					
300.01	Removing Sanitary Manholes	Each	2	$500.00	$1,000.00
300.02	Abandoning Sanitary Sewer	LS	1	$2,500.00	$2,500.00
300.03	Adjusting Sanitary Manhole	Each	6	$500.00	$3,000.00
300.04	Connect to Existing Sanitary Sewer	Each	4	$1,000.00	$4,000.00
300.05	Sanitary Sewer Pipe PVC 6-Inch	LF	225	$70.00	$15,750.00
300.06	Sanitary Sewer Pipe PVC 8-Inch	LF	465	$80.00	$37,200.00
300.07	Sanitary Sewer Manhole w/ Casting	Each	3	$3,000.00	$9,000.00
				SUBTOTAL SANITARY SEWER ITEMS	**$72,450.00**
WATER MAIN ITEMS					
400.01	Removing Hydrant	Each	3	$500.00	$1,500.00
400.02	Abandoning Water Main	LS	1	$5,000.00	$5,000.00
400.03	Connect to Existing Water Main	Each	4	$1,000.00	$4,000.00
400.04	Water Main Pipe HDPE 1 1/4-Inch	LF	960	$40.00	$38,400.00
400.05	Water Main Pipe PVC 6-Inch	LF	40	$60.00	$2,400.00
400.06	Water Main Pipe PVC 8-Inch	LF	1455	$70.00	$101,850.00
400.07	6" Gate Valve	Each	3	$1,250.00	$3,750.00
400.08	8" Gate Valve	Each	6	$1,750.00	$10,500.00
400.09	8" x 6" Reducer	Each	2	$300.00	$600.00
400.10	8" x 6" Anchor Tee	Each	3	$500.00	$1,500.00
400.11	8" x 8" Cross	Each	2	$600.00	$1,200.00
400.12	8" 11.25 Degree Bend	Each	6	$300.00	$1,800.00
400.13	8" 45 Degree Bend	Each	6	$300.00	$1,800.00
400.14	Hydrant	Each	3	$3,000.00	$9,000.00
				SUBTOTAL WATER MAIN ITEMS	**$183,300.00**
				TOTAL	**$810,460.00**
				5% PRELIMINARY ESTIMATING CONTINGENCY	**$40,523.00**
				TOTAL	**$850,983.00**

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details
~~Section No.~~	~~3~~	~~Estimate of Quantities~~
~~Section No.~~	~~3~~	~~Miscellaneous Quantities~~
~~Section No.~~	~~4~~	~~Right of Way Plat~~
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
~~Section No.~~	~~7~~	~~Sign Plates~~
~~Section No.~~	~~8~~	~~Structure Plans~~
Section No.	9	Computer Earthwork Data
Section No.	9	Cross Sections

TOTAL SHEETS =

VILLAGE OF JACKSON

PLAN OF PROPOSED IMPROVEMENT

WILSHIRE DRIVE

JACKSON DR. - GEORGETOWN DR.

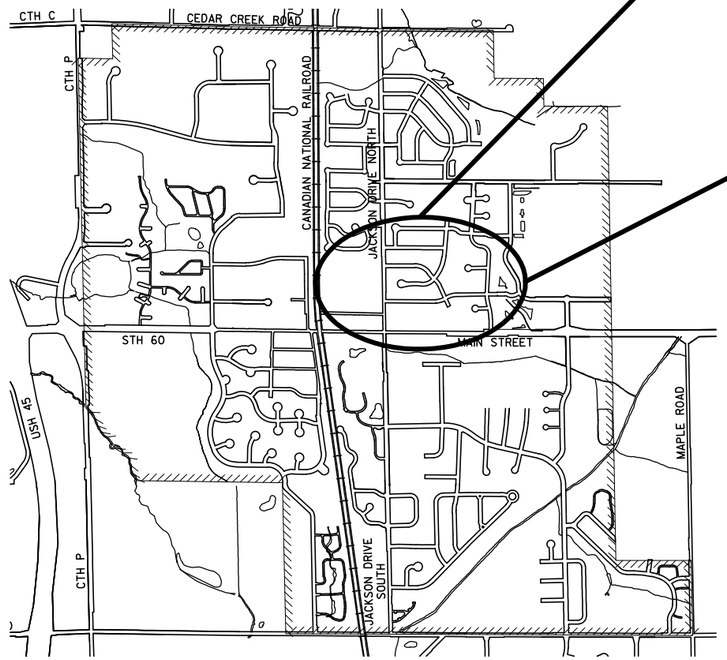
2016

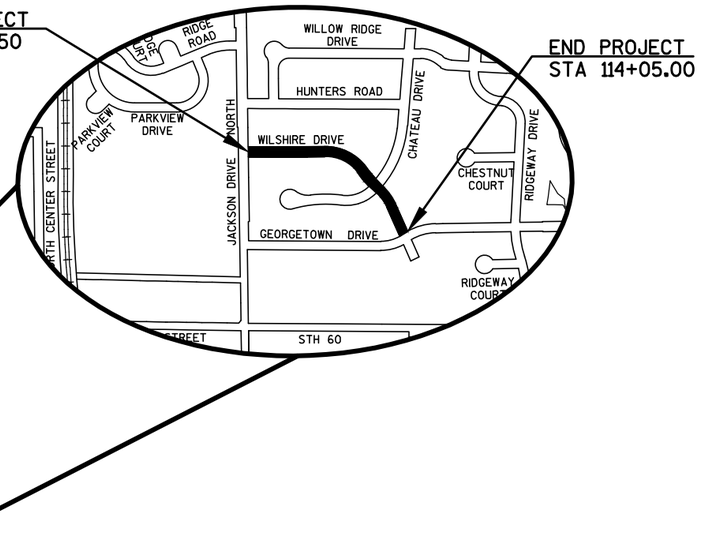
PROJECT 151021

PRELIMINARY
January 22, 2016

BEGIN PROJECT
STA 100+41.50

END PROJECT
STA 114+05.00





LAYOUT
SCALE 0 0.5 MI

TOTAL NET LENGTH OF CENTERLINE = 0.41 MI

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- WOODED OR SHRUB AREA

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES

- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

ORIGINAL PLANS PREPARED BY

GREMMER & ASSOCIATES, INC.
CONSULTING ENGINEERS
Stevens Point • Fond du Lac
95 South Pioneer Road, Suite 300 • Fond du Lac, WI 54935
(920) 924-5720 • fax (920) 924-5725

(Date) JEFFREY A. CHVOSTA, PE

PRE_1

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GENERAL NOTES

ALL CURB AND GUTTER RADII ARE MEASURED TO FACE OF CURB.

DEGREE OF CURVE IS BASED ON ARC DEFINITION.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

A VERTICAL SAWCUT SHALL BE MADE THROUGH EXISTING DRIVEWAYS, SIDEWALKS AND PAVEMENTS AT THE REMOVAL LIMITS.

SAWCUT LOCATIONS SHOWN ON THE PLANS ARE SUBJECT TO ADJUSTMENT BY THE ENGINEER IN THE FIELD.

WHEN THE QUANTITY OF THE ITEMS OF BASE AGGREGATE DENSE, HMA PAVEMENT OR ASPHALTIC SURFACE IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE MATERIAL SHOWN ON THE PLAN IS APPROXIMATE, AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

THE EXACT LOCATION AND LAYOUT OF PRIVATE ENTRANCES IS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

EXISTING TREES NOT MARKED FOR REMOVAL SHALL BE PRESERVED AND PROTECTED FROM CONSTRUCTION DAMAGE. AVOID DAMAGE TO ROOTS AND OVERHEAD BRANCHES.

TOPSOIL, FERTILIZER, SEED AND EROSION MAT AS SHOWN IN PLANS OR AS DIRECTED BY THE ENGINEER SHALL BE PLACED ON ALL DISTURBED AREAS, EXCLUSIVE OF THE AREA OCCUPIED BY THE NEW PAVEMENTS, SIDEWALKS, ENTRANCES, AND RELATED STRUCTURES.

SECTIONS AS SHOWN ON THE CROSS-SECTIONS INCLUDE THE THICKNESS OF TOPSOIL WHERE REQUIRED.

ANY EXISTING SIGN IMPACTED DUE TO CONSTRUCTION ACTIVITIES SHALL BE REMOVED, STORED AND REPLACED IN ITS ORIGINAL LOCATION BY THE CONTRACTOR INCIDENTAL TO OTHER ITEMS.

CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND STORAGE OF EXISTING MAILBOXES, COORDINATION WITH THE VILLAGE OF JACKSON AND THE U.S. POST OFFICE FOR TEMPORARY MAILBOXES, INSTALLATION OF TEMPORARY MAILBOXES AND RE-INSTALLATION OF MAILBOXES AFTER CONSTRUCTION IS COMPLETE. ALL COTS ASSOCIATED WITH MAILBOX REMOVAL AND REPLACEMENT SHALL BE INCIDENTAL TO OTHER ITEMS.

INLET PROTECTION SHALL BE USED ON ALL NEW INLETS AND THE FIRST SET OF EXISTING INLETS DOWNSTREAM OF THE PROJECT.

EROSION CONTROL ITEMS SHOWN ARE APPROXIMATE, THE EXACT LOCATION SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

ALL "+" STATIONS REFERENCED ON PLANS ARE REFERENCE LINE STATION VALUES.

REMOVAL OF EXISTING SANITARY SEWER AND WATER MAIN PIPE SHALL BE INCIDENTAL TO NEW SANITARY AND WATER MAIN CONSTRUCTION.

SANITARY SEWER MAIN SHALL BE PVC SDR-35.

SANITARY SEWER LATERALS SHALL BE 6" PVC SDR-35 AND SHALL BE RECONNECTED TO EXISTING LATERAL AT THE R/W LINE.

STORM SEWER MAIN SHALL BE RCP CLASS III (MINIMUM) OR AS NOTED ON THE PLANS.

STORM SEWER LATERALS SHALL BE 4" PVC SDR-35 AND SHALL BE CONSTRUCTED TO THE SUMP PUMP DISCHARGE LOCATION AT THE HOUSE. CONTRACTOR TO VERIFY LATERAL LOCATION WITH THE PROPERTY OWNER AND VILLAGE PRIOR TO CONSTRUCTION.

WATER MAIN SHALL BE AWWA C-900.

WATER SERVICES SHALL BE 1-1/4" HDPE AND SHALL BE RECONNECTED TO THE EXISTING SERVICE AT THE R/W LINE. THE CURB STOP SHALL BE PLACED AT THE R/W LINE. TRACER WIRE IS REQUIRED ON ALL SERVICES AND SHALL RISER UP TO THE FINISHED GRADE AT THE CURB STOP.

REMOVAL OF EXISTING HYDRANTS SHALL BE INCIDENTAL TO NEW WATER MAIN CONSTRUCTION. THE HYDRANTS SHALL REMAIN PROPERTY OF THE VILLAGE.

ALL GRADE BREAKS OR DEFLECTIONS IN THE WATER MAIN GREATER THAN 1% SHALL BE ACHIEVED BY MECHANICAL FITTING.

ALL VALVE BOXES SHALL BE INSTALLED UPON THE VALVE WITH THE USE OF A VALVE BOX "ADAPTOR II" AS MANUFACTURED BY ADAPTOR INC., OR AN APPROVED EQUAL. THE ADAPTOR SHALL BE INSTALLED IN LIEU OF HARDWOOD BLOCKING AND SHALL BE INCIDENTAL TO THE VALVE BOX INSTALLATION.

ABBREVIATIONS

AEW	APRON ENDWALL
AGG	AGGREGATE
AH	AHEAD
ASP	ASPHALT
BK	BACK
BAD	BASE AGGREGATE DENSE
BM	BENCH MARK
CC	CENTER OF CURVATURE
CE	COMMERCIAL ENTRANCE
C&G	CURB AND GUTTER
C/L	CENTER OR CONSTRUCTION LINE
CONC	CONCRETE
CP	CULVERT PIPE
CPCM	CULVERT PIPE CORRUGATED METAL
CPCS	CULVERT PIPE CORRUGATED STEEL
CPRC	CULVERT PIPE REINFORCED CONCRETE
CS	CURVE SPIRAL, THE POINT OF CHANGE IN ALIGNMENT FROM CURVE TO SPIRAL
CSD	CONCRETE SURFACE DRAIN
CY	CUBIC YARD
D	DEGREE OF CURVE
Δ	DELTA
DISCH	DISCHARGE
E	EXTERNAL DISTANCE FROM MIDPOINT OF CIRCULAR CURVE FROM ANGLE INTERSECTION
EB	EASTBOUND
ELEV	ELEVATION
FE	FIELD ENTRANCE
HMA	HOT MIX ASPHALT
HP	HIGH POINT
HT	HEIGHT
INV	INVERT
L	LENGTH OF CURVE
LHF	LEFT HAND FORWARD
LP	LOW POINT
Ls	LENGTH OF SPIRAL
LT	LEFT
MAX	MAXIMUM
MIN	MINIMUM
M/L	MATCHLINE
NB	NORTHBOUND
NC	NORMAL CROWN
NOM	NOMINAL
NORM	NORMAL
PAVT	PAVEMENT
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PE	PRIVATE ENTRANCE
PI	POINT OF INTERSECTION
PLE	PERMANENT LIMITED EASEMENT
PT	POINT OF TANGENT
R	RADIUS OF CURVE
R/L	REFERENCE LINE
R/W	RIGHT OF WAY
RC	REVERSE CROWN
RCAEW	APRON ENDWALL FOR CULVERT PIPE REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
REQ'D	REQUIRED
RHF	RIGHT HAND FORWARD
RO	RUN OFF LENGTH
RT	RIGHT
SALV	SALVAGED
SB	SOUTHBOUND
SC	SPIRAL CURVE, THE POINT OF CHANGE IN ALIGNMENT FROM SPIRAL TO CURVE
SDD	STANDARD DETAIL DRAWING
SE	SUPER ELEVATION
SEG	SEGMENT
SF	SQUARE FOOT
SS	STORM SEWER
ST	SPIRAL TANGENT, THE POINT OF CHANGE IN ALIGNMENT FROM SPIRAL TO TANGENT
STA	STATION
SY	SQUARE YARD
T	TANGENT LENGTH
TLE	TEMPORARY LIMITED EASEMENT
TS	TANGENT SPIRAL, THE POINT OF CHANGE IN ALIGNMENT FROM TANGENT TO SPIRAL
TYP	TYPICAL
V	VELOCITY OR DESIGN SPEED
VC	VERTICAL CURVE
VCL	VERTICAL CURVE LENGTH
VPC	POINT OF VERTICAL CURVE
VPI	POINT OF VERTICAL INTERSECTION
VPRC	POINT OF VERTICAL REVERSE CURVE
VPT	POINT OF VERTICAL TANGENT
WB	WESTBOUND
WCL	WISCONSIN CENTRAL LTD.

UTILITIES

COMMUNICATIONS

* CHARTER COMMUNICATIONS
2312 CONTINENTAL DRIVE
WEST BEND, WI 53095
PHONE: (262) 306-8756 EXT. 20702
MOBILE: (920) 375-6194
ATTN: TOM HARYCKI
EMAIL: THARYCKI@CHARTERCOM.COM

COMMUNICATIONS

* AT&T - WISCONSIN
2005 PEWAUKEE ROAD
WAUKESHA, WI 53188
PHONE: (262) 896-7669
MOBILE: (414) 491-2855
ATTN: JAY BULANEK
EMAIL: JB5175@ATT.COM

SANITARY SEWER & WATER MAIN

* VILLAGE OF JACKSON
N168, W20733 MAIN STREET
JACKSON, WI 53037
PHONE: (262) 677-9001
ATTN: BRIAN KOBER
EMAIL: DIRPUBWKS@VILLAGEOFJACKSON.COM

GAS & ELECTRIC

* WE ENERGIES - CORPORATE
333 W EVERETT ST - A299
MILWAUKEE, WI 53203
PHONE: (414) 221-5617
ATTN: LATROY BRUMFIELD
EMAIL: LATROY.BRUMFIELD@WE-ENERGIES.COM

ELECTRIC

* WE ENERGIES - LOCAL
245 SAND DRIVE
WEST BEND, WI 53095
PHONE: (262) 338-7662
MOBILE: (262) 322-1824
ATTN: AL SCHMITT
EMAIL: ALAN.SCHMITT@WE-ENERGIES.COM

GAS

* WE ENERGIES - LOCAL
5400 NORTH GREEN BAY AVENUE
MILWAUKEE, WI 53209
PHONE: (414) 944-5574
ATTN: NICK ERNSTER
EMAIL: NICHOLAS.ERNSTER@WE-ENERGIES.COM

* DENOTES MEMBER OF DIGGERS HOTLINE

DIGGERS HOTLINE
Dial 811 or (800)242-8511
www.DiggersHotline.com

DESIGN CONTACT

GREMMER & ASSOCIATES, INC.
93 S. PIONEER ROAD, SUITE 300
FOND DU LAC, WI 54935
PHONE: (920) 924-5720
ATTN: JEFFREY CHVOSTA, PE
EMAIL: J.CHVOSTA@GREMMERASSOCIATES.COM

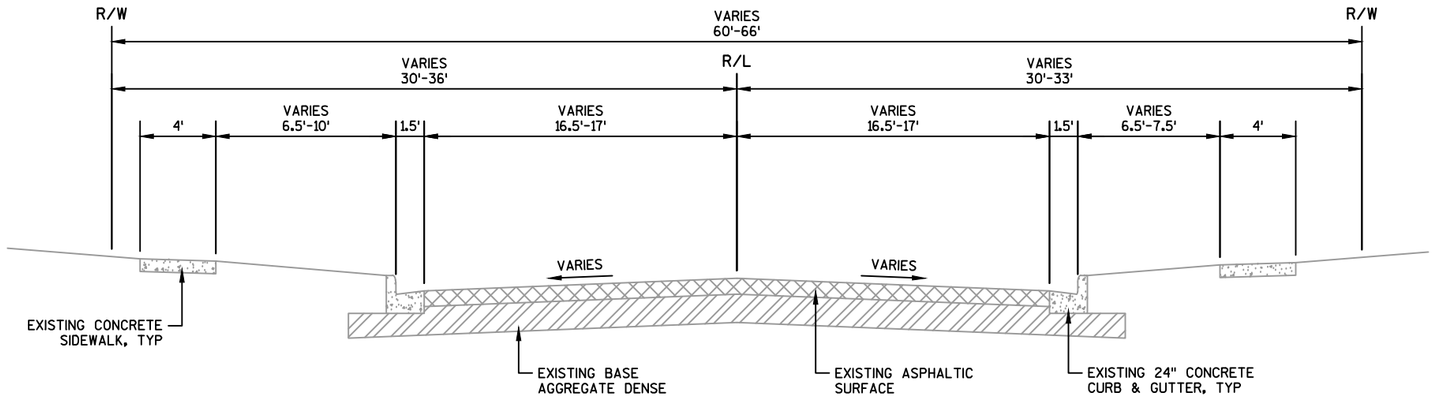
VILLAGE OF JACKSON CONTACT

N168, W20733 MAIN STREET
JACKSON, WI 53037
PHONE: (262) 677-9001
ATTN: BRIAN KOBER
EMAIL: DIRPUBWKS@VILLAGEOFJACKSON.COM

BENCH MARKS

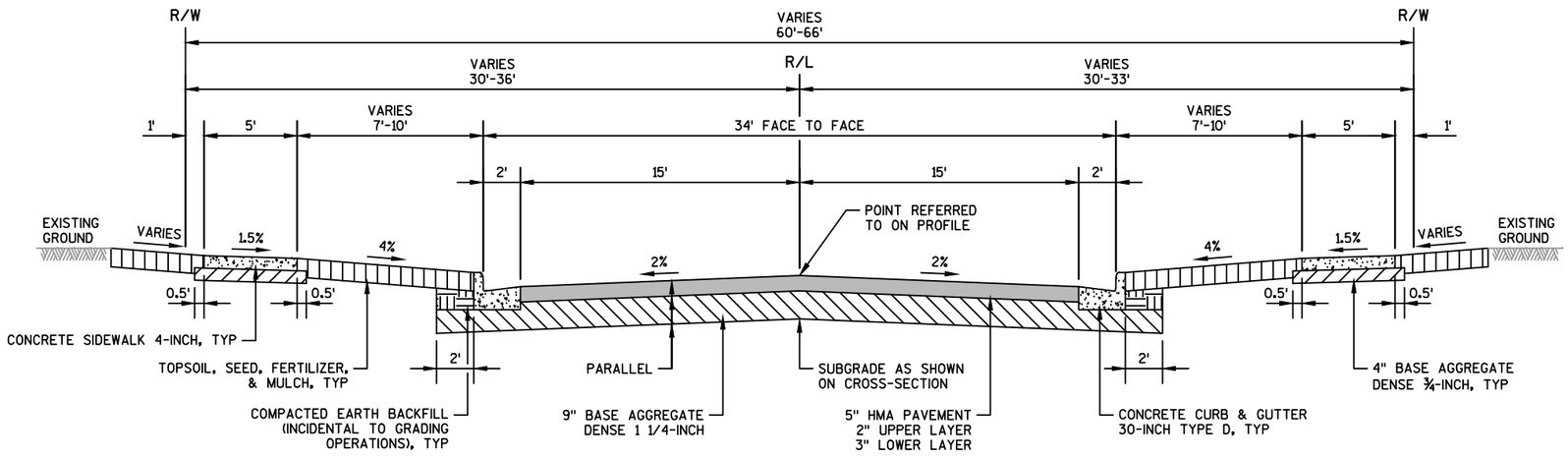
BM	DESCRIPTION	ELEVATION
F	NE BOLT ON FLANGE OF HYD, W. SIDE OF JACKSON DR. 200' S. OF WILSHIRE DR.	888.87
G	NW BOLT ON FLANGE OF HYD, N. SIDE OF WILSHIRE DR. AT SW CORNER OF HOUSE N169 W20262	883.84
H	NW BOLT (BURY) ON FLANGE OF HYD, NE CORNER OF WILSHIRE DR. AND CHATEAU DR.	878.18
I	NW BOLT (BURY) ON FLANGE OF HYD, NE CORNER OF WILSHIRE DR. AND GEORGETOWN DR.	869.94

**VERTICAL DATUM REFERENCED TO NGVD29.



TYPICAL EXISTING SECTION

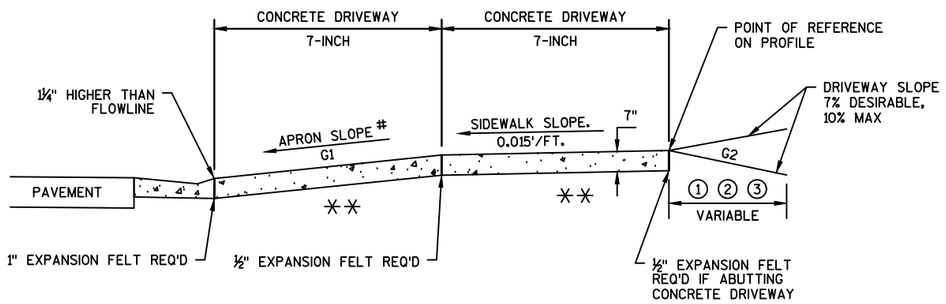
WILSHIRE DRIVE
STA 100+41.50 - STA 114+05.00



TYPICAL FINISHED SECTION

WILSHIRE DRIVE
STA 100+41.50 - STA 114+05.00

PROJECT NO:151021	WILSHIRE DRIVE	VILLAGE OF JACKSON	TYPICAL SECTIONS:	SHEET PRE_3 E



TYPICAL SIDEWALK SECTION

① — 7" CONCRETE DRIVEWAY

② — 6" BASE AGG. DENSE 3/4-INCH

③ — 6" BASE AGG. DENSE 3/4-INCH
BASE WITH 3" ASPHALTIC SURFACE

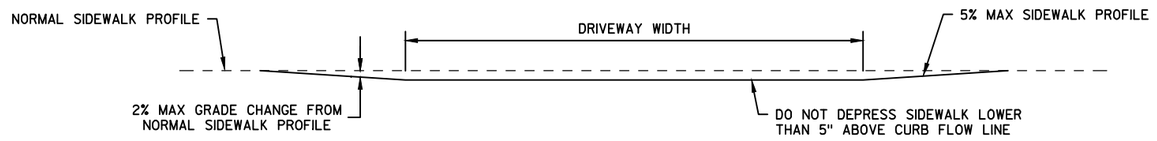
✳✳ = 6" BASE AGG. DENSE 3/4-INCH
REQ'D UNDER CONCRETE DRWY

#

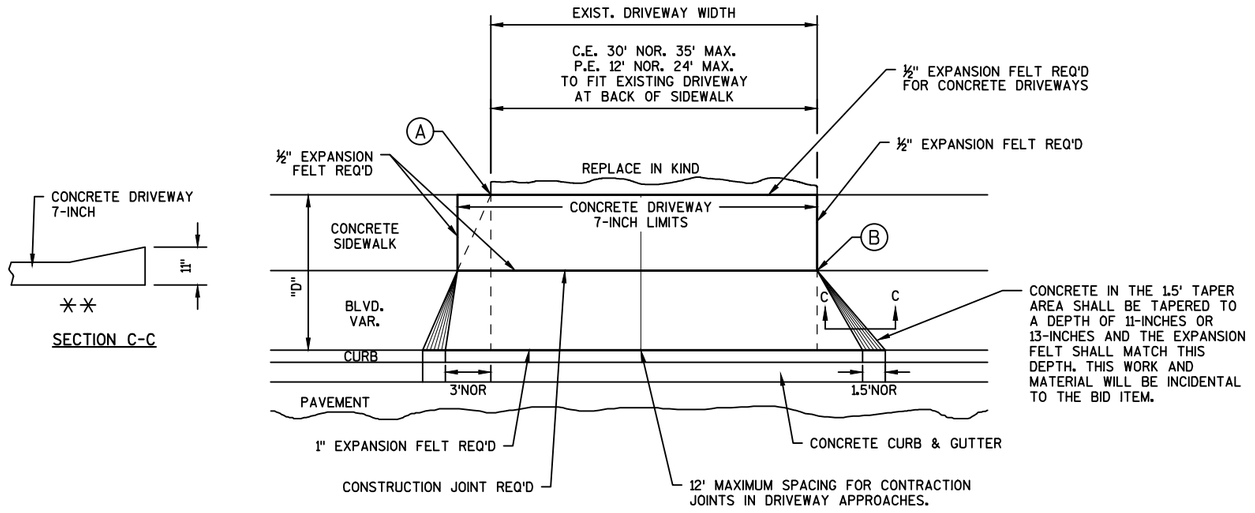
TERRACE WIDTH	APRON SLOPE (G1)		
	MIN %	DESIRABLE %	MAX %
3 FT	7.0	8.5	9.0
4 FT	5.0	7.0	9.0
5 FT	4.0	7.0	9.0
6 FT	4.0	7.0	9.0
7 FT	3.5	7.0	9.0
8 FT	3.0	7.0	9.0

NOTE: ALGEBRAIC DIFFERENCE BETWEEN TANGENT GRADES G1 & G2 TO NOT EXCEED 15%

DEPRESS SIDEWALK PROFILE IF DRIVEWAY APRON EXCEEDS MAX SLOPE



DEPRESSED SIDEWALK PROFILE DETAIL



PLAN VIEW

SECTION C-C

Ⓐ WHEN "D" IS 13' OR LESS, ALIGN TAPER WITH BACK OF SIDEWALK

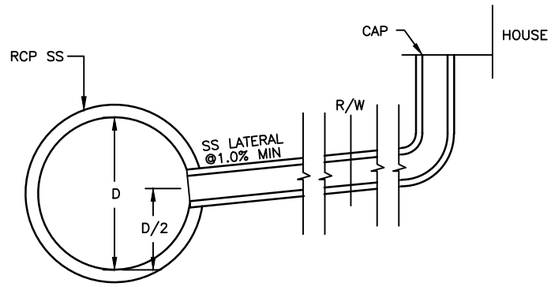
Ⓑ WHEN "D" IS GREATER THAN 13', ALIGN TAPER WITH FRONT OF SIDEWALK

URBAN ENTRANCE DETAIL WITH SIDEWALK, CURB & GUTTER

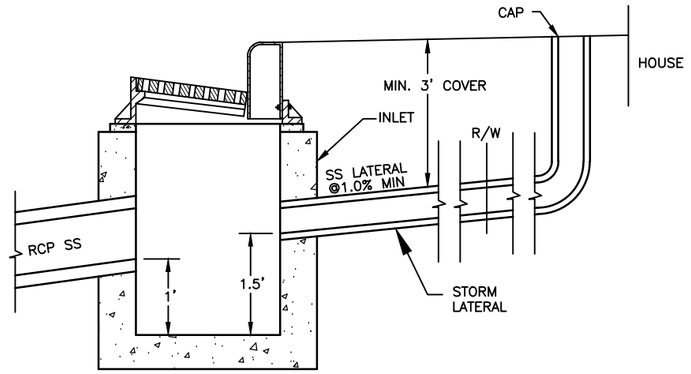
PROJECT NO: 151021	WILSHIRE DRIVE	VILLAGE OF JACKSON	CONSTRUCTION DETAILS	SHEET PRE_4 E

NOTE: ALL LABOR AND MATERIALS NECESSARY FOR CONNECTION TO SS SHALL BE INCIDENTAL TO THE BID ITEM OF STORM SEWER LATERAL.

MINIMUM 3 FEET OF COVER OVER STORM SEWER LATERAL.

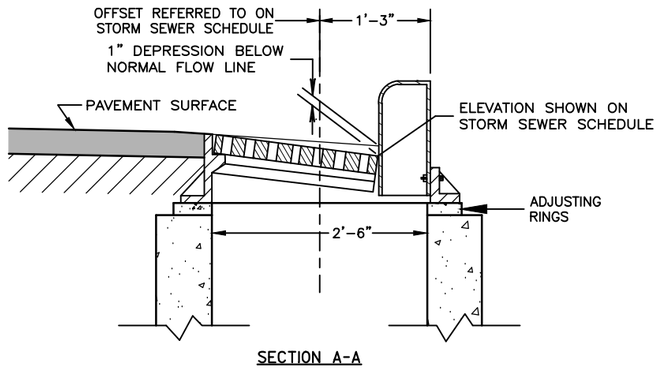


STORM SEWER PIPE CONNECTION

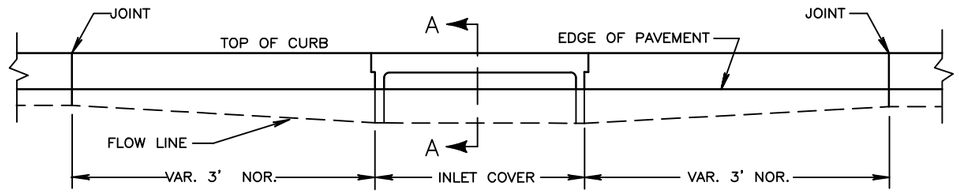


INLET CONNECTION

STORM LATERAL DETAIL



SECTION A-A

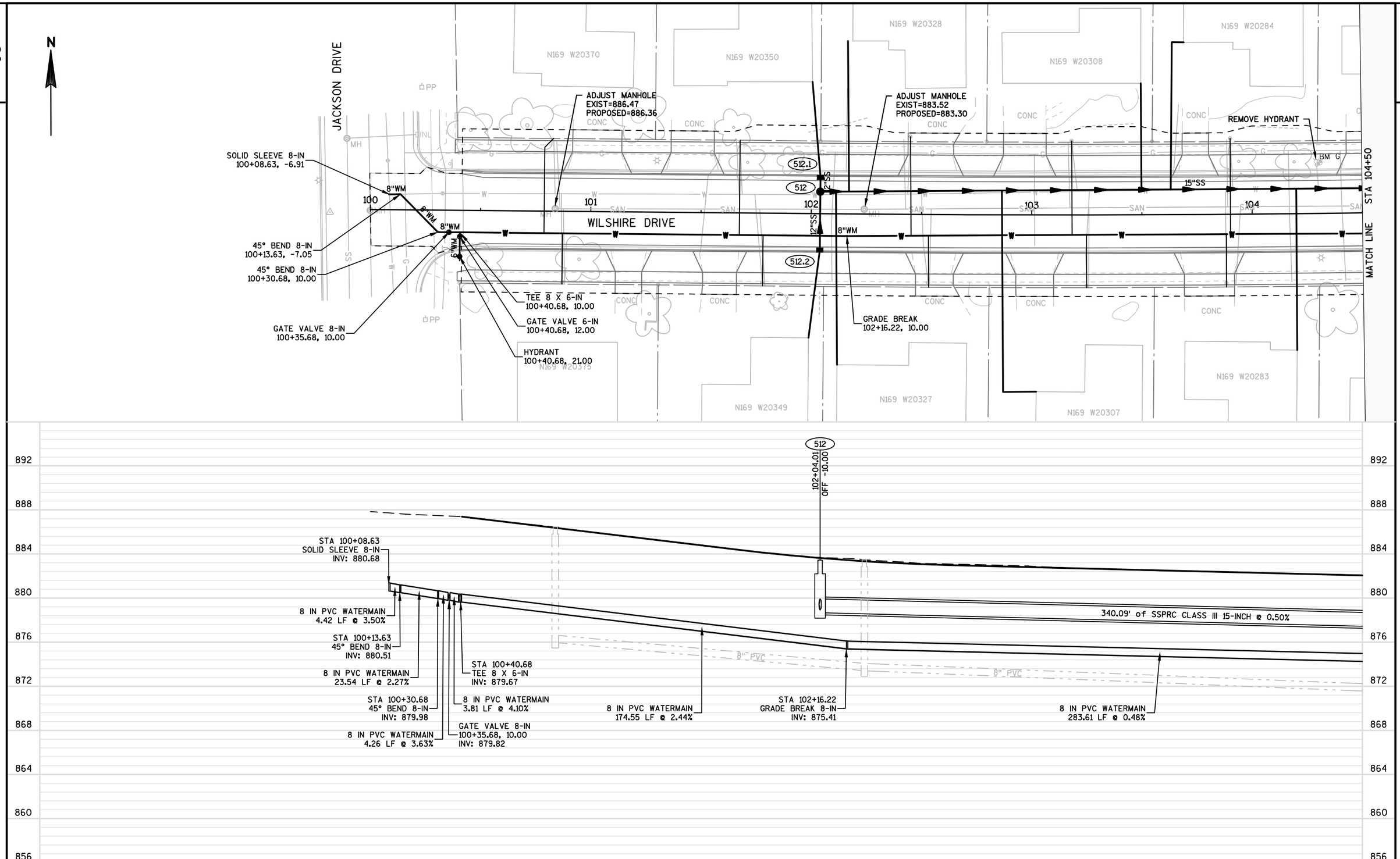


ELEVATION

DETAIL OF CURB AND GUTTER AT INLETS

PROJECT NO: 151021	WILSHIRE DRIVE	VILLAGE OF JACKSON	CONSTRUCTION DETAILS	SHEET PRE_5 E

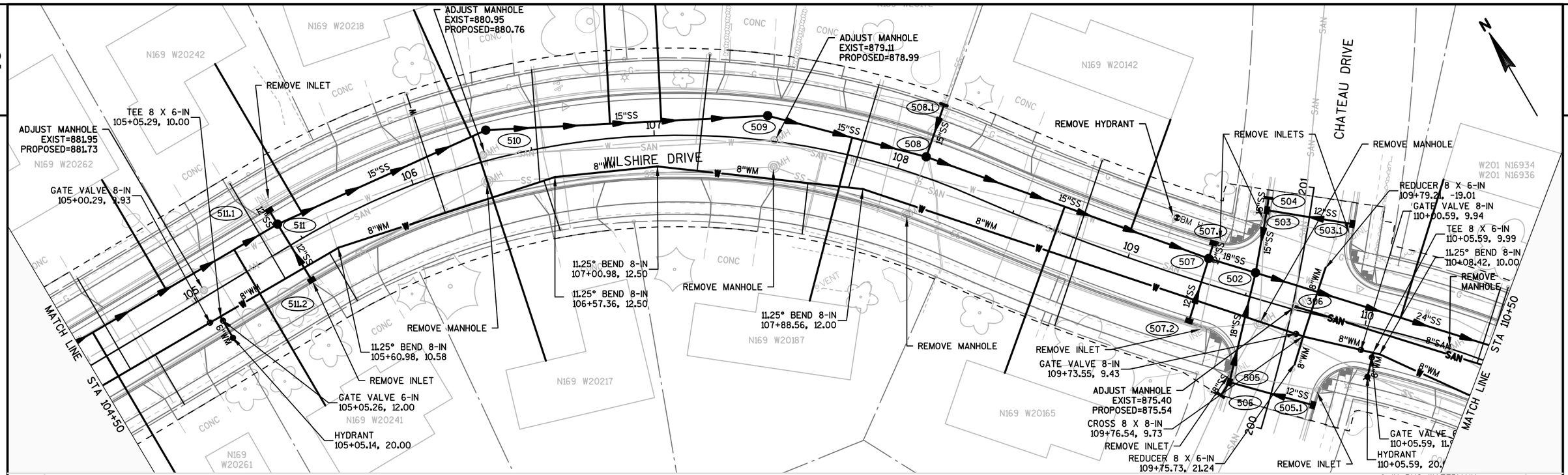
FILE NAME : S:\CURRPROJ\WASHINCO\JACKSON\WILSHIRE_DR\CIVIL3D\WILSHIRE\SHEETSPLAN\WILSHIRE-021001-CD.DWG
LAYOUT NAME - WILSHIRE-021001-CD - SHEET-02
PLOT DATE : 1/22/2016 12:10 PM PLOT BY : AARON SARAUER PLOT NAME : PLOT SCALE : 1:1
WISDOT/CADDS SHEET 42

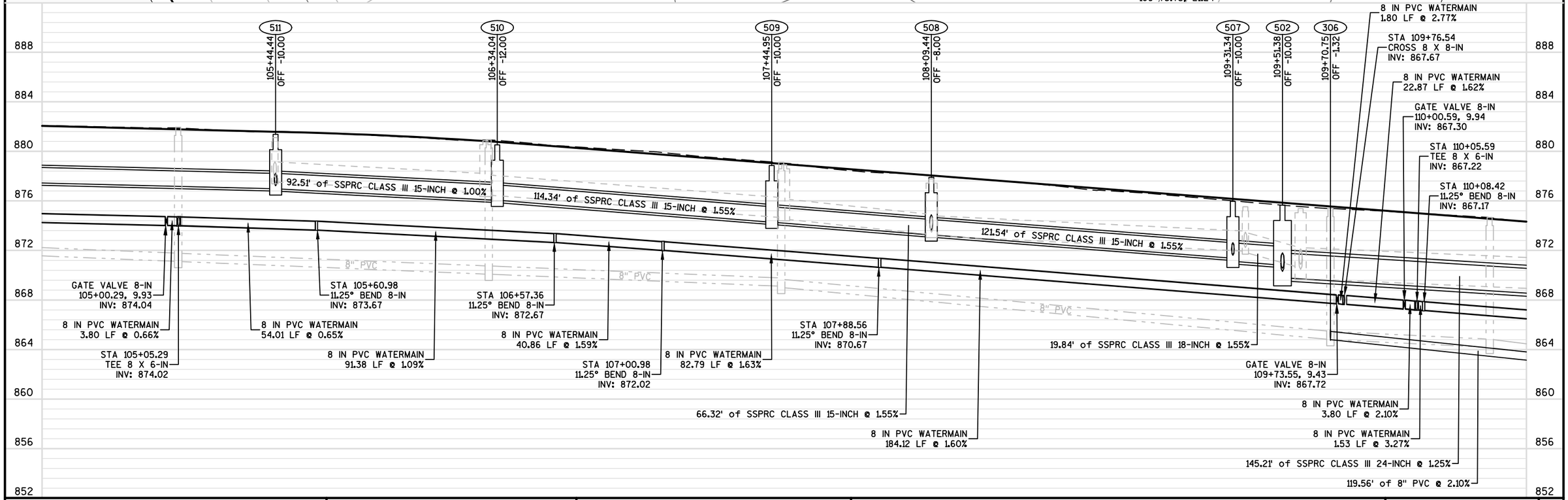


PROJECT NO: 151021	WILSHIRE DRIVE	VILLAGE OF JACKSON	UTILITY PLAN	SHEET PRE_6 E

FILE NAME : S:\CURRPROJ\WASHINCO\JACKSON\WILSHIRE_DR\CIVIL3D\WILSHIRE\SHEETSPLAN\WILSHIRE-023001-UP.DWG
LAYOUT NAME - WILSHIRE-023001-UP - SHEET-01

PLOT DATE : 1/22/2016 12:10 PM PLOT BY : AARON SARAUER PLOT NAME : PLOT SCALE : 1 IN:40 FT

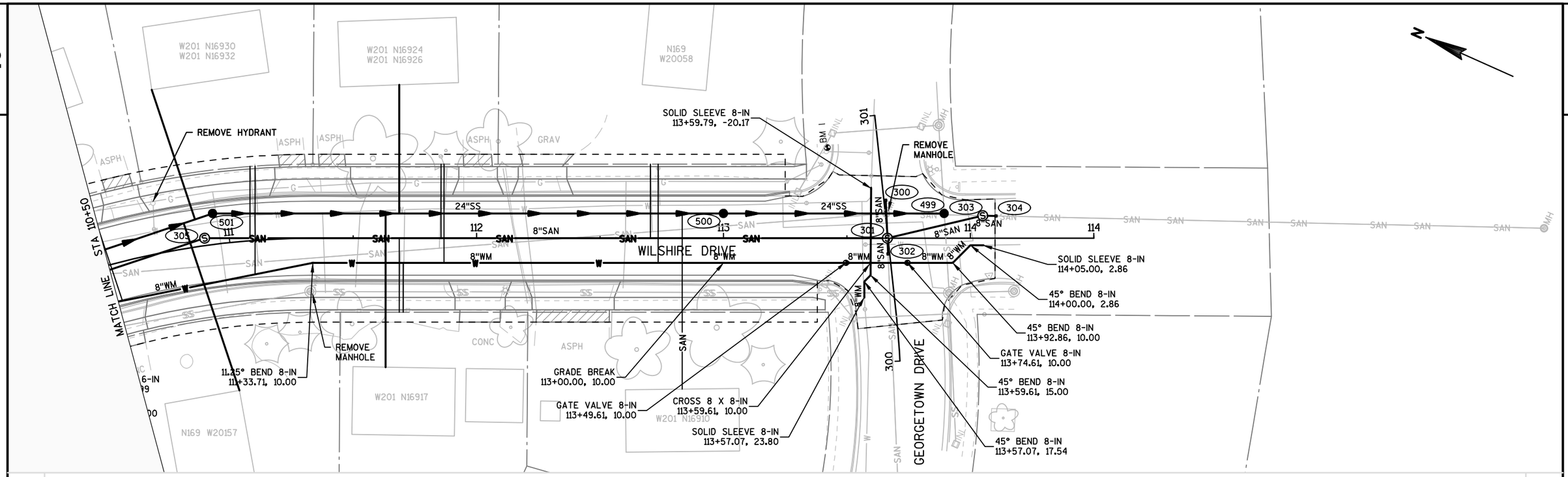


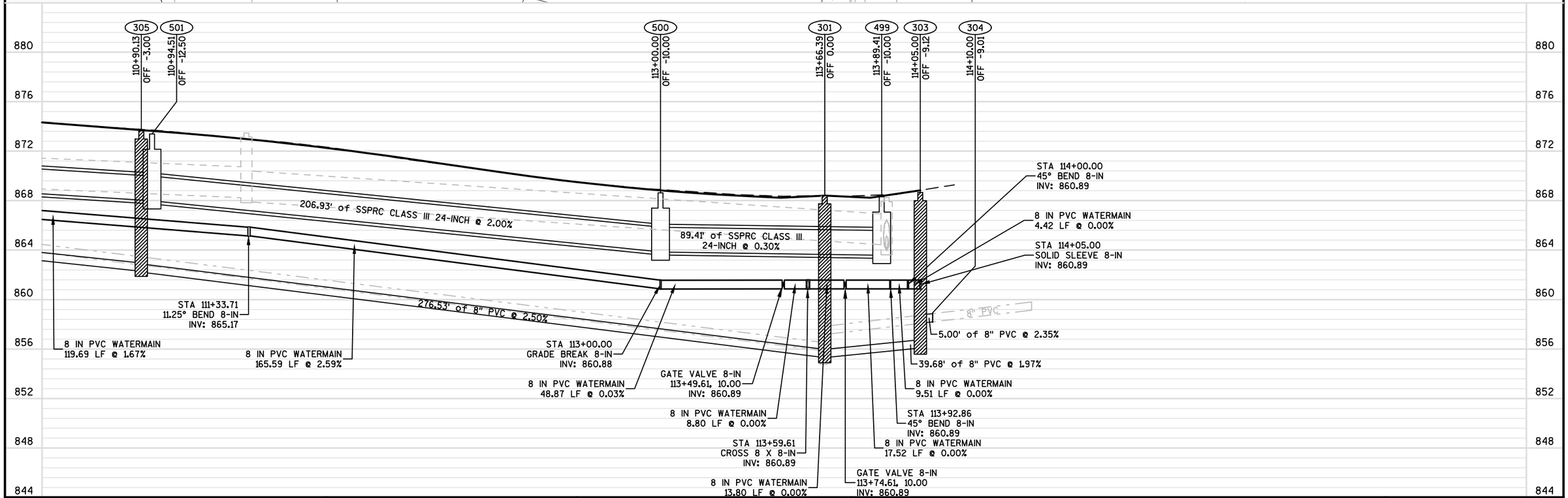


PROJECT NO: 151021	WILSHIRE DRIVE	VILLAGE OF JACKSON	UTILITY PLAN	SHEET PRE_7 E

FILE NAME : S:\CURRPROJ\WASHINCO\JACKSON\WILSHIRE_DR\CIVIL3D\WILSHIRE\SHEETSPLAN\WILSHIRE-023001-UP.DWG
LAYOUT NAME - WILSHIRE-023001-UP - SHEET-02
PLOT DATE : 1/22/2016 12:11 PM PLOT BY : AARON SARAUER PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 41

2





PROJECT NO: 151021	WILSHIRE DRIVE	VILLAGE OF JACKSON	UTILITY PLAN	SHEET PRE_8 E

FILE NAME : S:\CURRPROJ\WASHINCO\JACKSON\WILSHIRE_DR\CIVIL3D\WILSHIRE\SHEETSPLAN\WILSHIRE-023001-UP.DWG
LAYOUT NAME - WILSHIRE-023001-UP - SHEET-03
PLOT DATE : 1/22/2016 12:11 PM PLOT BY : AARON SARAUER PLOT NAME : PLOT SCALE : 1 IN:40 FT
WISDOT/CADDS SHEET 41

N

JACKSON DRIVE

BP: 100+00.00

EXISTING R/W

N169 W20370

N169 W20350

N169 W20328

N169 W20308

CURVE 1
PI 103+81.11
Δ 1° 53' 22"
D 0° 34' 23"
T 164.89
L 329.76
R 10000.00
SE ---
RO ---

+03
22' PE
CONC

+46
20' PE
CONC

TREES TO REMAIN

+54
21' PE
CONC

+97
19' PE
CONC

+74
12' PE
CONC

TREES TO REMAIN

+52
19' PE

EXISTING R/W

5' CONCRETE SIDEWALK

BM G

100

216.22'
S89° 20' 11.83"E

101

102

103

CURVE-1

104

STA 104+50

MATCH LINE

WILSHIRE DRIVE

5' CONCRETE SIDEWALK

EXISTING R/W

TREES TO REMAIN

+17
12' PE
CONC

+59
15' PE
CONC

PC: 102+16.22

SLOPE INTERCEPT, TYP

+56
17' PE
CONC

+01
17' PE
CONC

+80
23' PE
CONC

EXISTING R/W

N169 W20375

N169 W20349

N169 W20327

N169 W20307

N169 W20283

5

5

BEGIN PROJECT
STA 100+00.00
MATCH EXISTING
SAWCUT REQUIRED
Y=489112.958
X=489123.339

890
888
886
884
882
880
878
876

VCL = 100.00'
K = 52.63

VPC STA 101+65.00
VPC EL 884.43

VPT STA 102+65.00
VPT EL 882.98

VPI STA 100+41.50
VPI EL 887.40

-2.40%

VPI STA 102+15.00
VPI EL 883.23

EXISTING R/L PROFILE

FINISHED R/L PROFILE

-0.50%

FINISHED R/L PROFILE ELEVATIONS
EXISTING R/L PROFILE ELEVATIONS

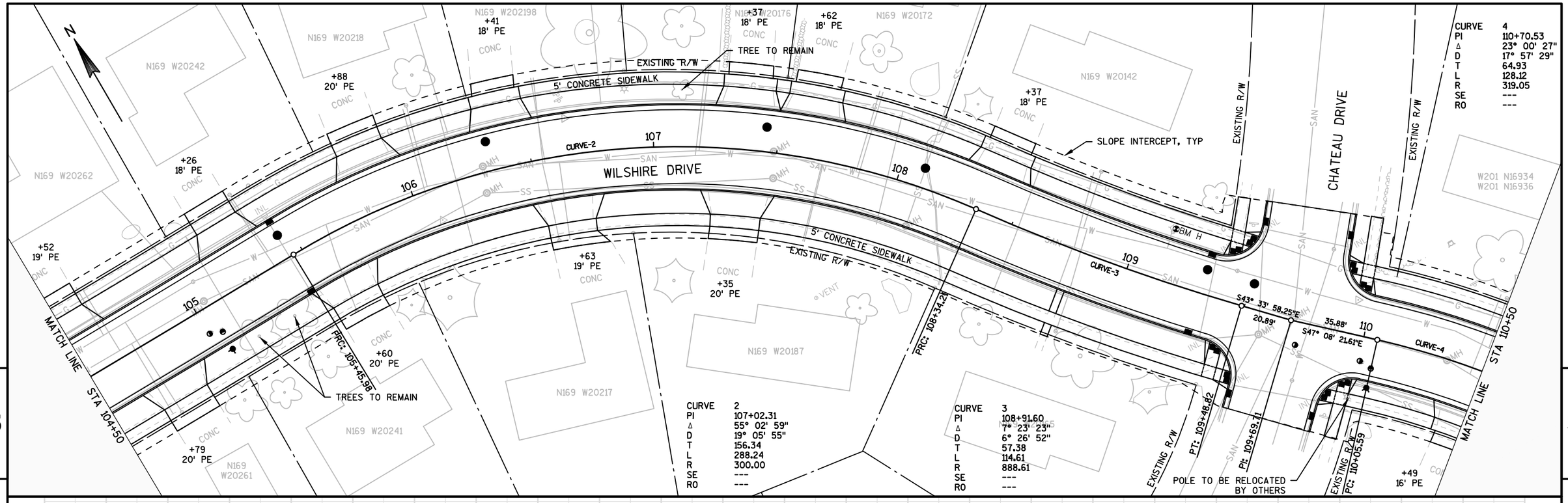
887.85 887.54 887.17 **887.19** 886.64 **886.59** 885.99 **885.99** 885.41 **885.39** 884.83 **884.79** 884.19 **884.20** 883.70 **883.71** 883.47 **883.33** 883.14 **883.08** 883.04 **882.93** 882.89 **882.81** 882.67 **882.68** 882.52 **882.56** 882.42 **882.43** 882.33 **882.31** 882.20 **882.18** 882.09 **882.06**

99 100 101 102 103 104

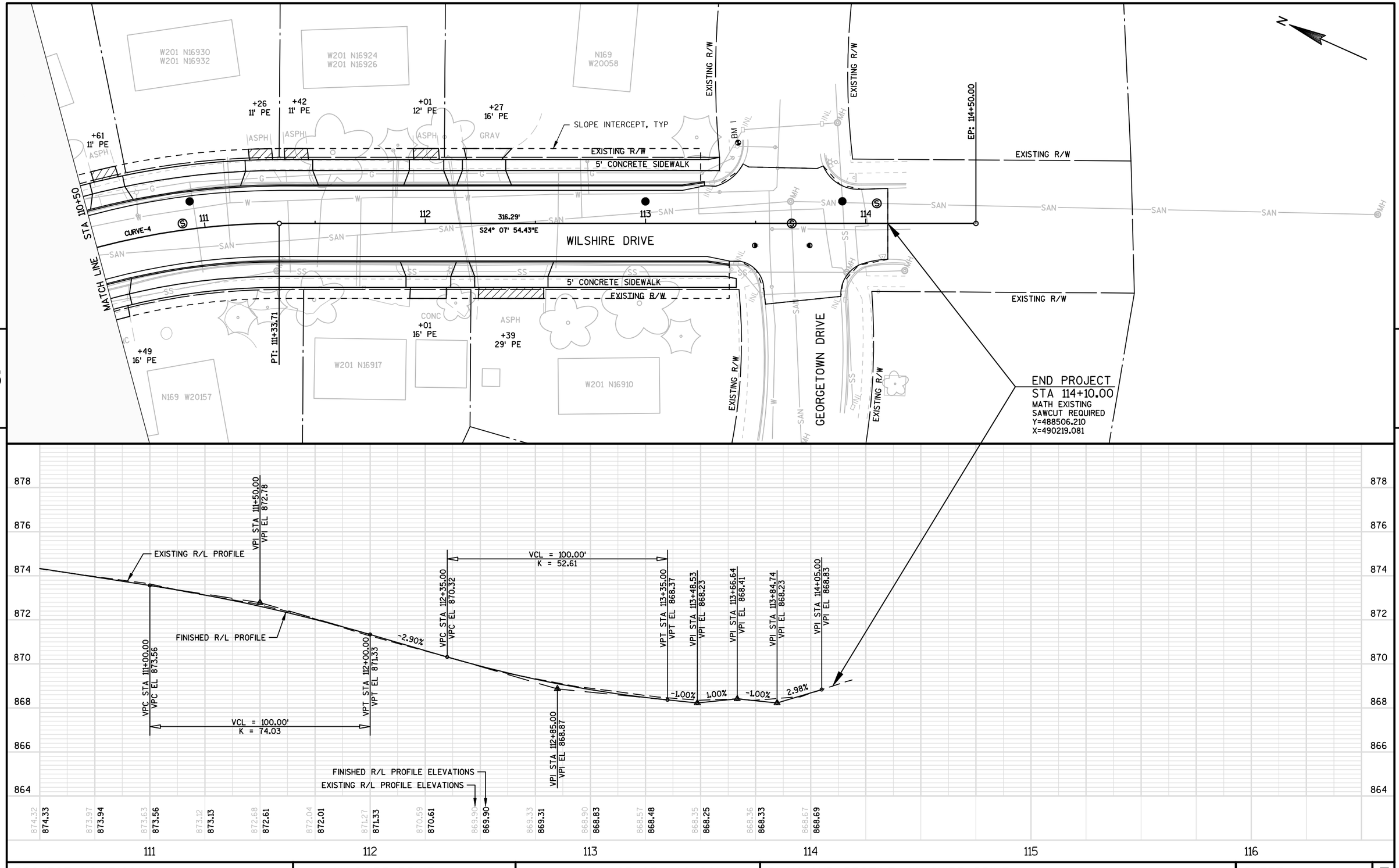
PROJECT NO: 151021	WILSHIRE DRIVE	VILLAGE OF JACKSON	PLAN AND PROFILE: WILSHIRE DRIVE	SHEET PRE_9 E

FILE NAME : S:\CURRPROJ\WASHINCO\JACKSON\WILSHIRE_DR\CIVIL3D\WILSHIRE\SHEETSPLAN\WILSHIRE-050101-PP.DWG
LAYOUT NAME - WILSHIRE-050101-PP - SHEET-01

PLOT DATE : 1/22/2016 12:12 PM PLOT BY : AARON SARAUER PLOT NAME : PLOT SCALE : 1 IN:40 FT



PROJECT NO: 151021	WILSHIRE DRIVE	VILLAGE OF JACKSON	PLAN AND PROFILE: WILSHIRE DRIVE	SHEET PRE_10 E



5

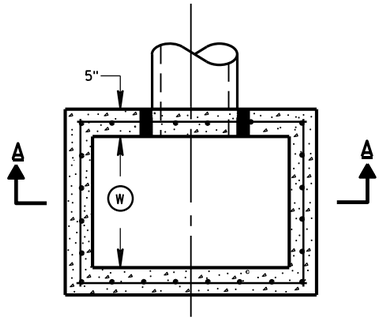
5

PROJECT NO: 151021	WILSHIRE DRIVE	VILLAGE OF JACKSON	PLAN AND PROFILE: WILSHIRE DRIVE	SHEET PRE_11 E

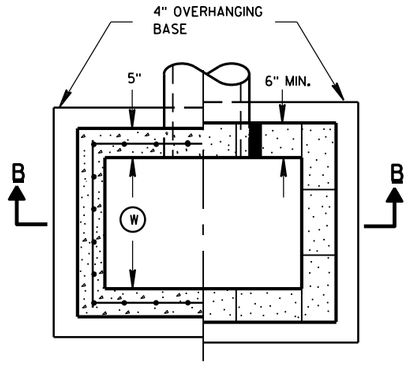
FILE NAME : S:\CURRPROJ\WASHINCO\JACKSON\WILSHIRE_DR\CIVIL3D\WILSHIRE\SHEETSPLAN\WILSHIRE-050101-PP.DWG
LAYOUT NAME - WILSHIRE-050101-PP - SHEET-03

PLOT DATE : 1/22/2016 12:12 PM PLOT BY : AARON SARAUER PLOT NAME : PLOT SCALE : 1 IN:40 FT

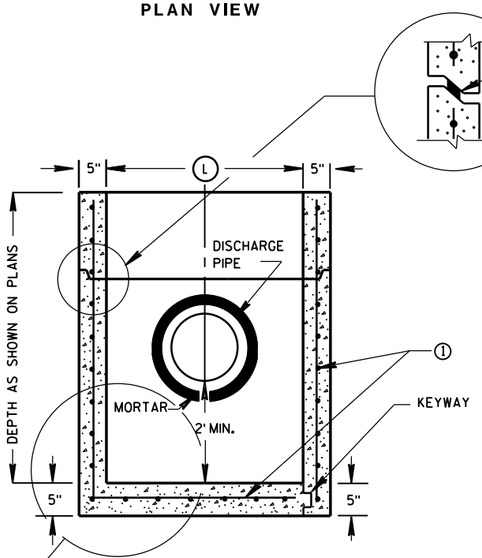
8A9: Catch Basins 2x3-FT & 2.5x3-FT



PLAN VIEW



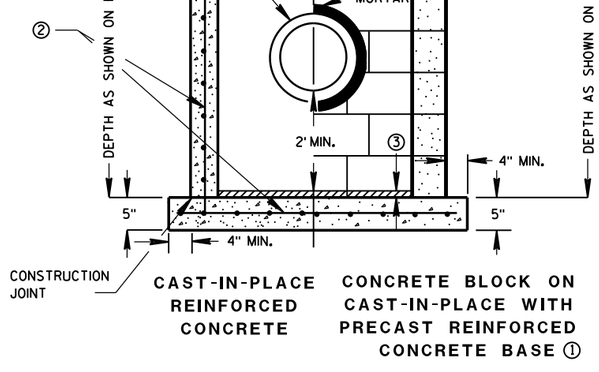
PLAN VIEW



PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE

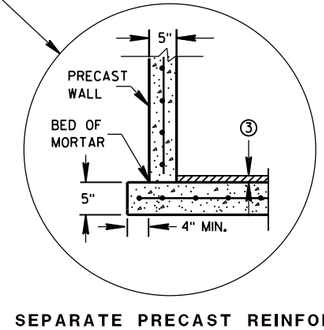
SECTION A-A



CAST-IN-PLACE REINFORCED CONCRETE

CONCRETE BLOCK ON CAST-IN-PLACE WITH PRECAST REINFORCED CONCRETE BASE ①

SECTION B-B



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST CATCH BASIN UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL PRECAST CATCH BASIN UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATES THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS.
4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED.
OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3" CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

① FOR PRECAST CATCH BASINS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

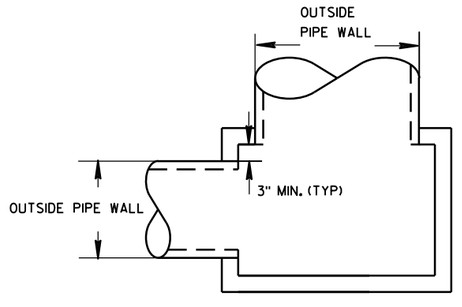
③ 1" CONCRETE KEY POURED AFTER INSTALLATION. 2' SUMP MEASURED FROM TOP OF KEY.

CATCH BASIN COVER MATRIX

CATCH BASIN SIZE		INLET COVER TYPE	F	ALL H'S
	WIDTH (W) (FT)	LENGTH (L) (FT)		
2X3-FT	2	3		X
2.5X3-FT	2.5	3	X	

PIPE MATRIX

CATCH BASIN SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	WIDTH (IN)	LENGTH (IN)
2X3-FT	12	24
2.5X3-FT	18	24



DETAIL "A"

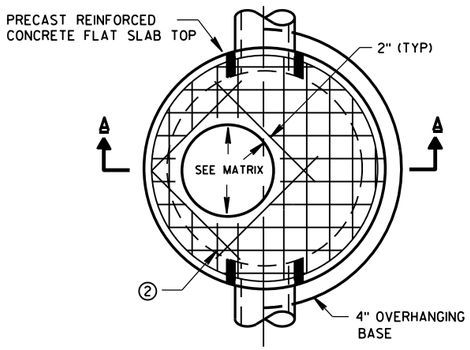
CATCH BASINS 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

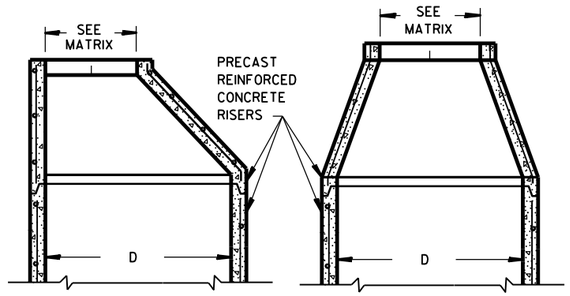
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

6
S.D.D. 8 A 9-1

8B9: Manholes 3-FT, 4-FT, 5-FT, 6-FT, 7-FT, & 8-FT Diameter

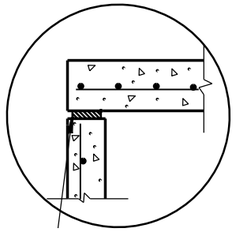


PLAN VIEW CIRCULAR OPENING

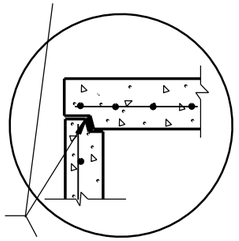


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP

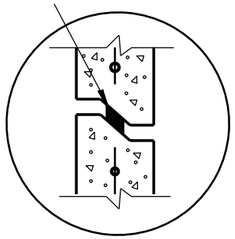


TOP WITH PLAIN END JOINT



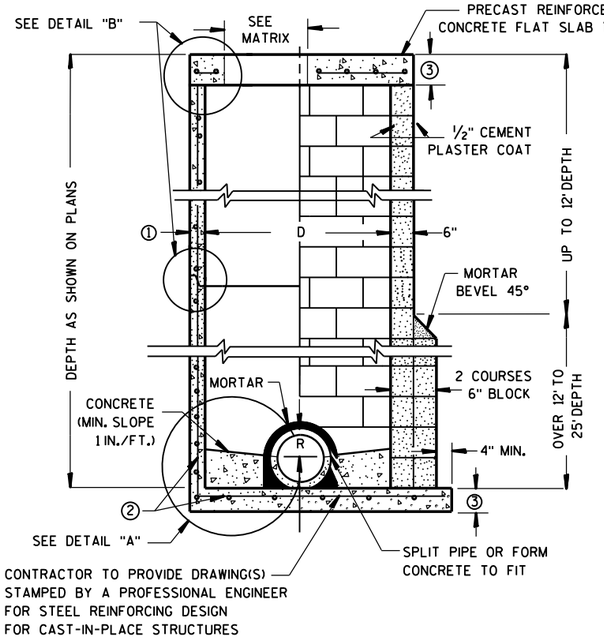
JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

TOP WITH TONGUE AND GROOVE JOINT



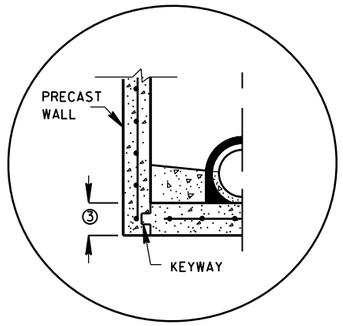
RISER WITH TONGUE AND GROOVE JOINT

DETAIL "B"

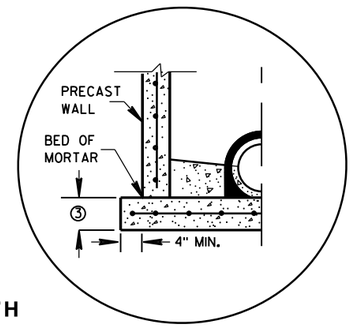


PRECAST REINFORCED CONCRETE WITH MONOLITHIC BASE

CONCRETE BLOCK WITH CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

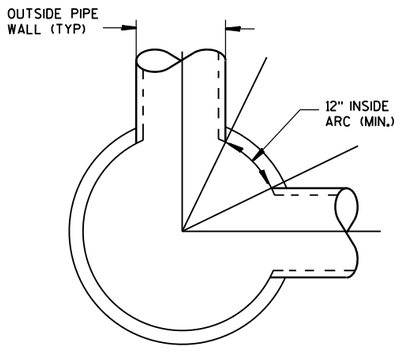


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST MANHOLE UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATE THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES. THE CONE TOPS SHALL BE INSTALLED ON A BED OF MORTAR.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF ½" AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

CONCRETE BLOCK WILL NOT BE PERMITED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT, 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.

② FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.

③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

MANHOLE COVER OPENING MATRIX

MANHOLE COVER TYPE	C	ALL J'S	K	L	M
OPENING SIZE (FT)					
2 DIA.	X	X		X	
3 DIA.			X		X

PIPE MATRIX

MANHOLE SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	36
7-FT	48	36
8-FT	60	42

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

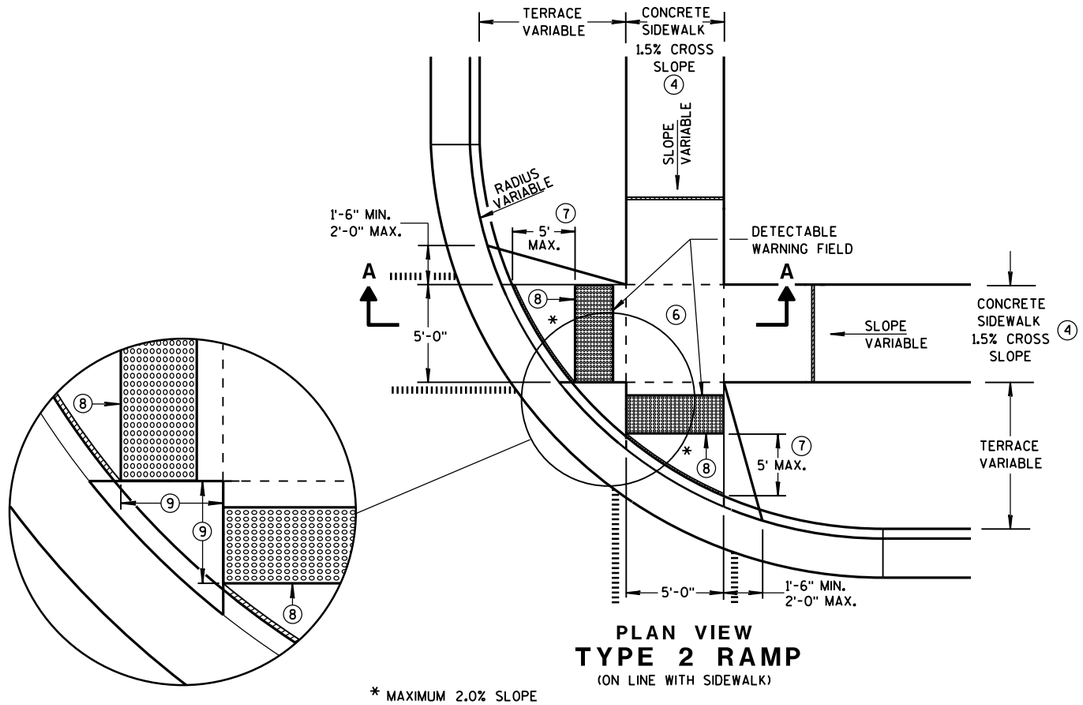
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGR
FHWA

PRE_13

S.D.D. 8 B 9-1

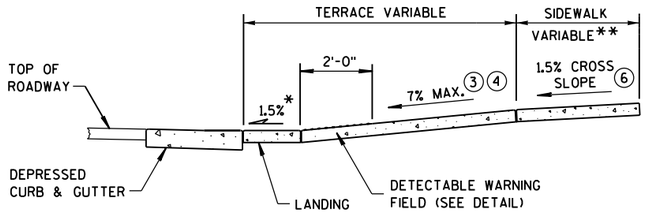
S.D.D. 8 B 9-1

8D5 sheet b: Curb Ramps Types 2 and 3



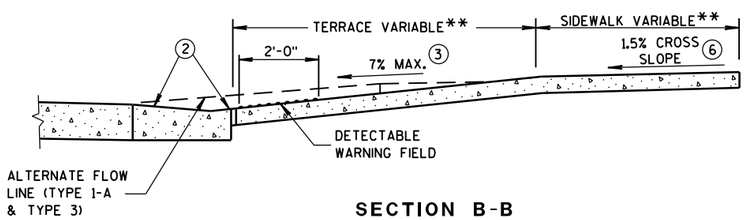
PLAN VIEW
TYPE 2 RAMP
(ON LINE WITH SIDEWALK)

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK



SECTION A-A

** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B-B

GENERAL NOTES

USE THE TYPE 3 RAMP ONLY WHEN A TYPE 1 OR TYPE 2 CANNOT BE ACHIEVED BECAUSE OF FIELD CONDITIONS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE DRAINAGE AWAY FROM CURB RAMP AT GUTTER FLAG INTERFACE. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

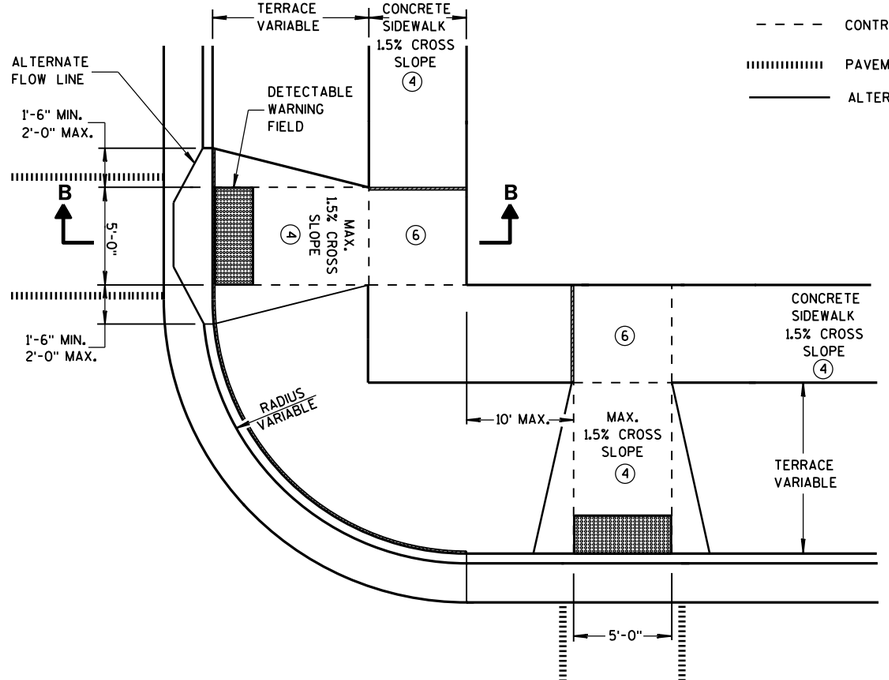
(7) WHEN THIS DISTANCE EXCEEDS 5 FEET, USE MULTIPLE DETECTABLE WARNING PANELS ACROSS THE RAMP AND STAGGER ADDITIONAL DETECTABLE WARNING PANEL(S) FORWARD TO REDUCE THIS DISTANCE.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

(9) WHEN THIS DISTANCE IS LESS THAN 6'-0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. 2" MINIMUM CURB HEIGHT.

LEGEND

- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



PLAN VIEW
TYPE 3 RAMP
(OUTSIDE OF CROSSWALK AREA)

CURB RAMPS TYPES 2 AND 3

STATE OF WISCONSIN
DEPARTMENT OF TRAN

PRE_14

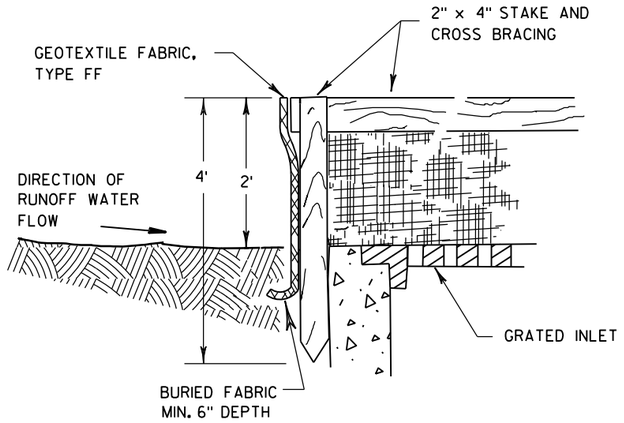
6

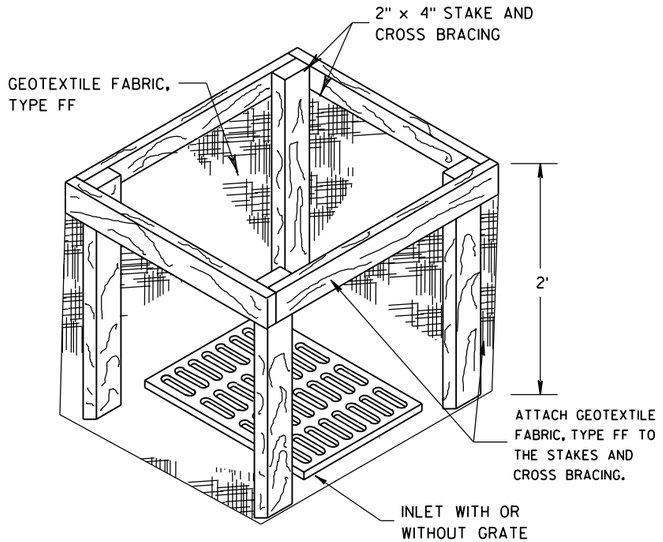
S.D.D. 8 D 5-16b

6

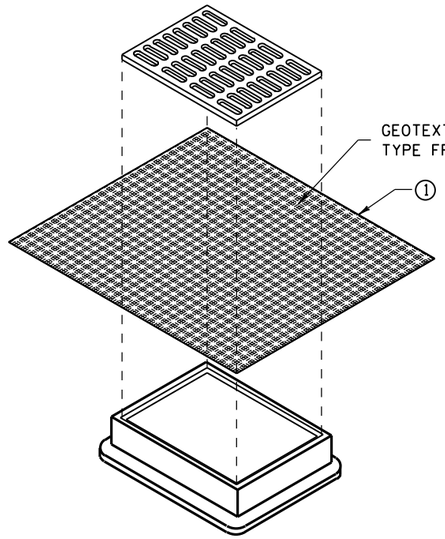
S.D.D. 8 D 5-16b

8E10: Inlet Protection Type A, B, C and D



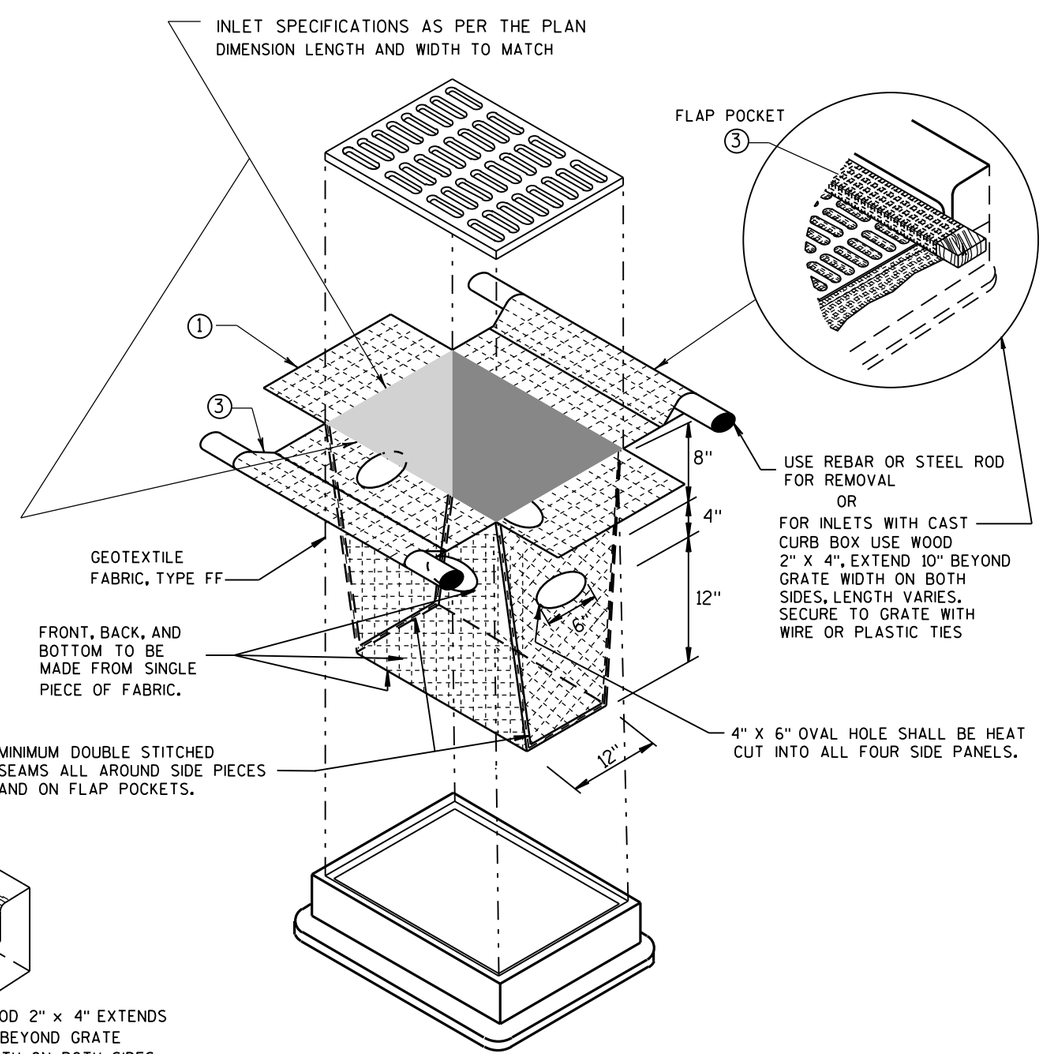


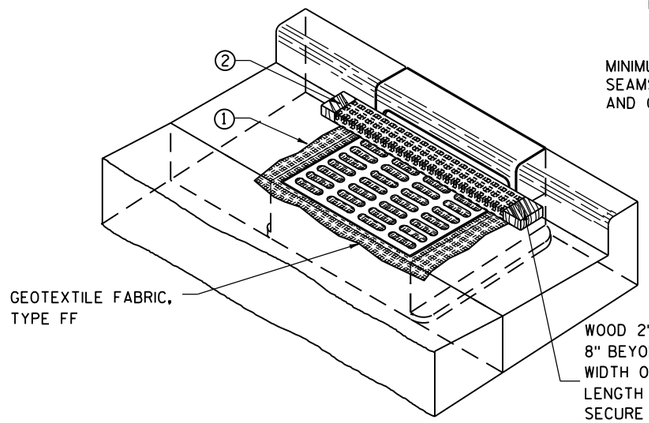
INLET PROTECTION, TYPE A



INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)





INLET PROTECTION, TYPE C (WITH CURB BOX)

INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH
OR WITHOUT A CURB BOX AS PER NOTE ②)

GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10-16-02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVI[illegible]EER

FHWA

PRE_15

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S.D.D. 8 E 10-2

6

S.D.D. 8 E 10-2

Division	From / To Station	Location	Common Excavation	Salvaged / Unusable Pavement Material (2)	Available Material (3)	Unexpanded Fill	Expanded Fill (4)	Mass Ordinate + / -	Waste
Division 1			Cut (1)				Factor 1.25		
Wilshire Drive	100+00/114+00		2,862	610	2,252	45	56	2,195	2,195
Division 1 Subtotal			2,862	610	2,252	45	56	2,195	2,195
Grand Total			2,862	610	2,252	45	56	2,195	2,195

1) Salvaged/Unsuable Pavement Material is included in Cut.
2) Salvaged/Unusable Pavement Material = Existing Pavement Area * Typical Depth (4")
3) Available Material = Cut - Salvaged/Unusuable Pavement Material
4) Expanded Fill = Unexpanded Fill * Fill Factor

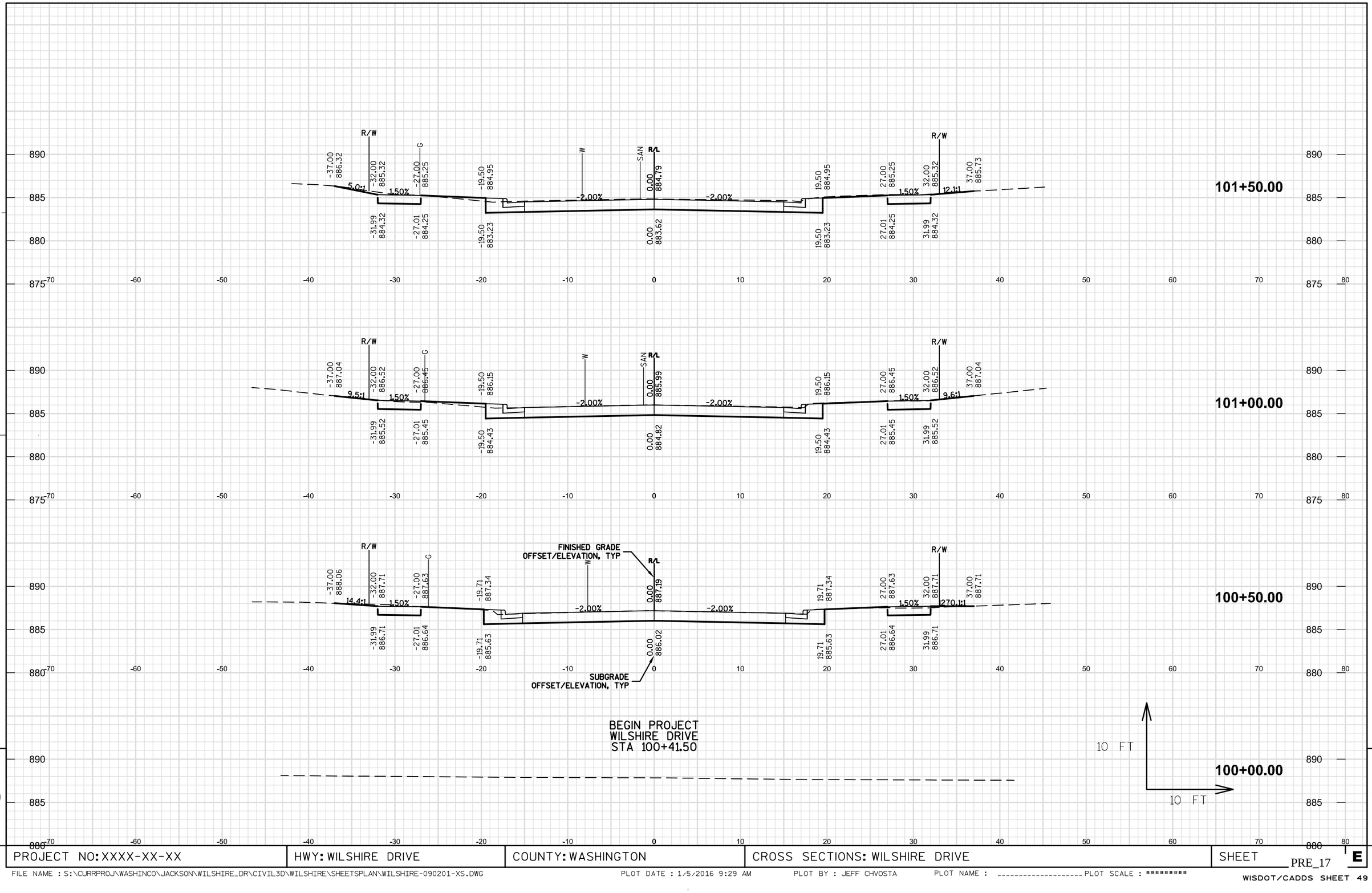
9

FOR INFORMATIONAL PURPOSES ONLY

9

PROJECT NO: 151021	WILSHIRE DRIVE	VILLAGE OF JACKSON	COMPUTER EARTHWORK DATA	SHEET PRE_16	E

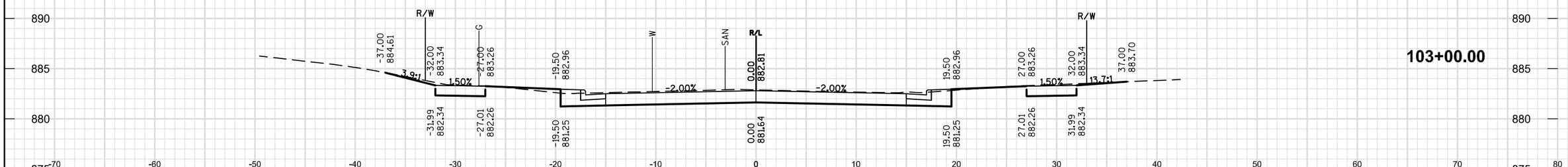
FILE NAME : 022601_ss.ppt PLOT DATE : PLOT BY : gaajs PLOT NAME : PLOT SCALE : 1:1



PROJECT NO: XXXX-XX-XX	HWY: WILSHIRE DRIVE	COUNTY: WASHINGTON	CROSS SECTIONS: WILSHIRE DRIVE	SHEET PRE_17 E

FILE NAME : S:\CURRPROJ\WASHINCO\JACKSON\WILSHIRE_DR\CIVIL3D\WILSHIRE\SHEETSPLAN\WILSHIRE-090201-XS.DWG PLOT DATE : 1/5/2016 9:29 AM PLOT BY : JEFF CHVOSTA PLOT NAME : _____ PLOT SCALE : *********

103+50.00



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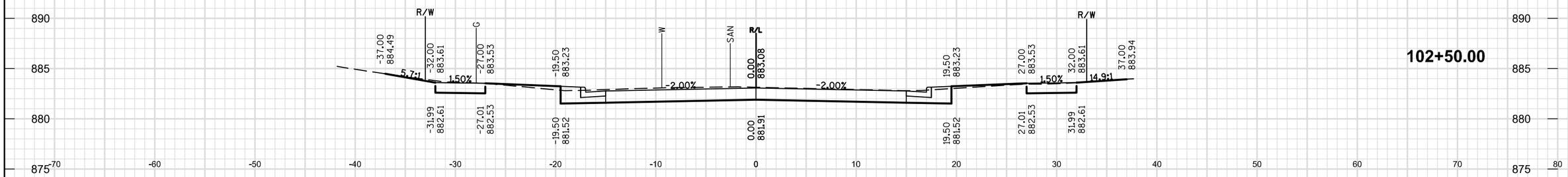

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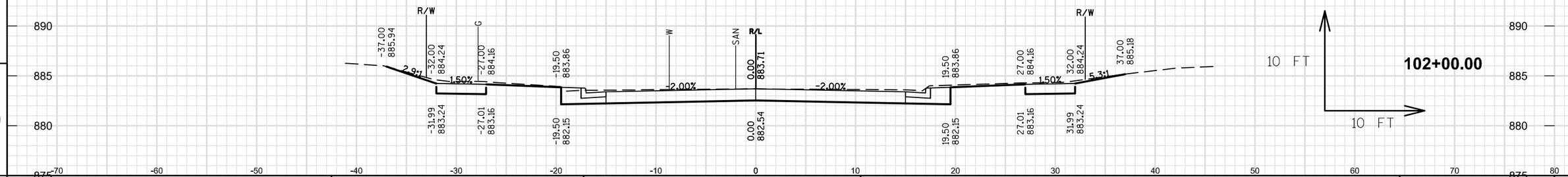

102+00.00

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PROJECT NO: XXXX-XX-XX	HWY: WILSHIRE DRIVE	COUNTY: WASHINGTON	CROSS SECTIONS: WILSHIRE DRIVE	SHEET PRE_18 E

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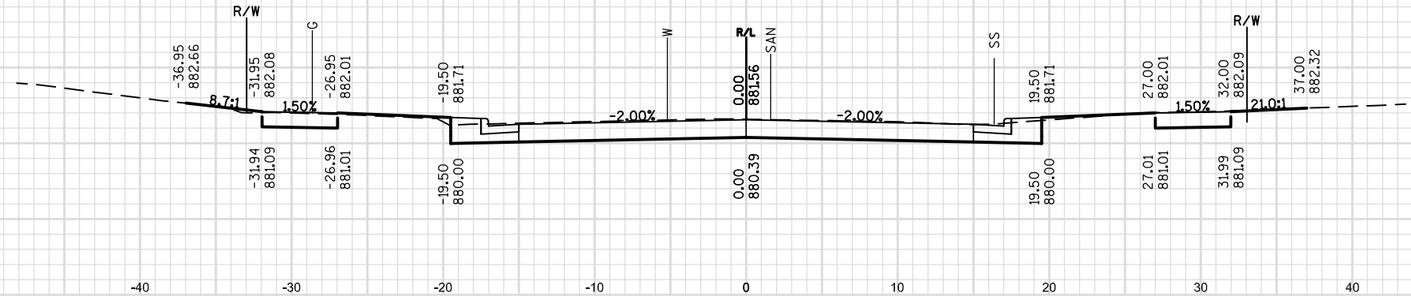

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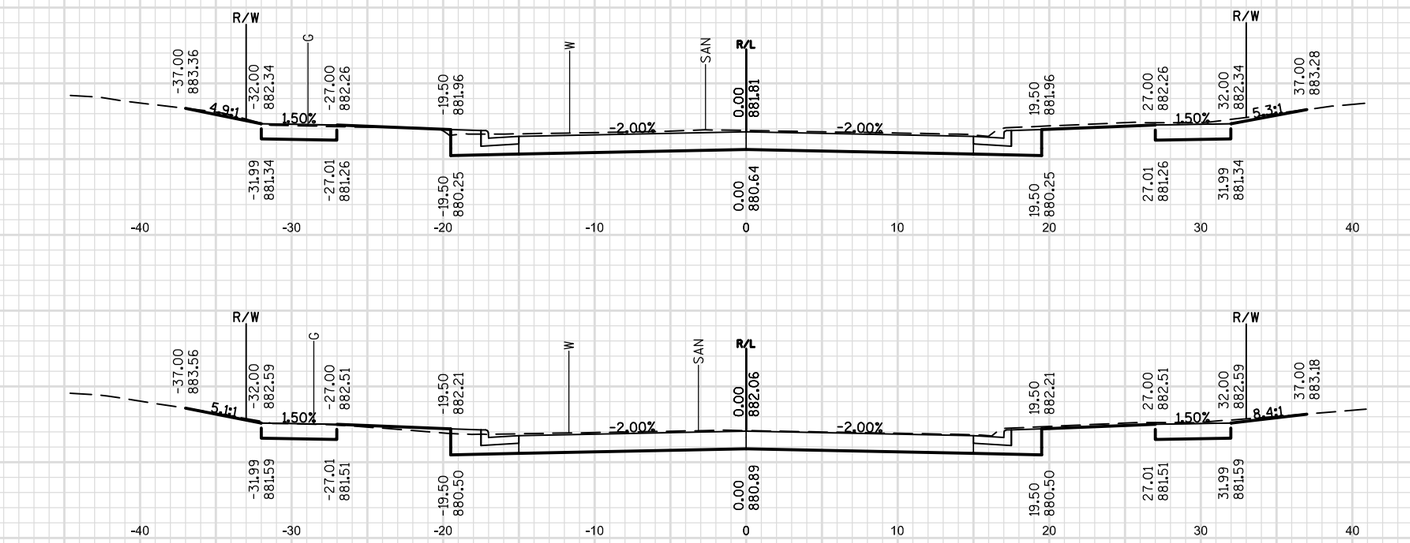
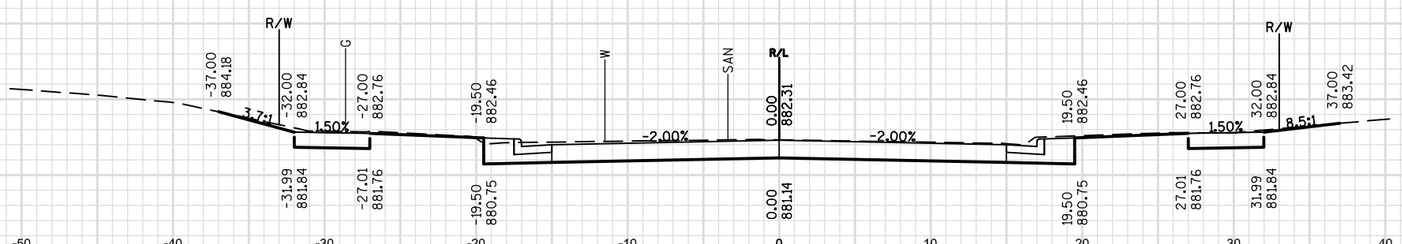


105+00.00

104+50.00



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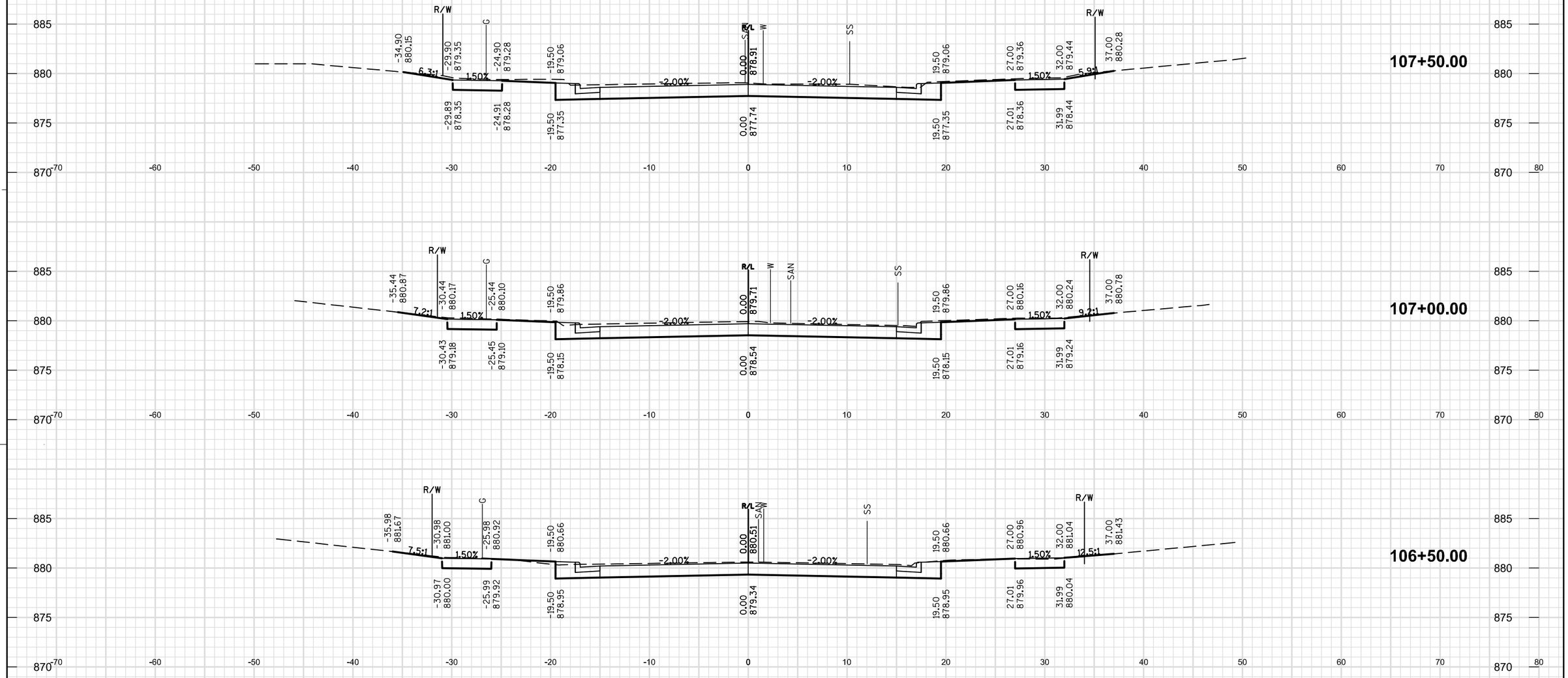
PROJECT NO: XXXX-XX-XX	HWY: WILSHIRE DRIVE	COUNTY: WASHINGTON	CROSS SECTIONS: WILSHIRE DRIVE	SHEET PRE_19 E



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PROJECT NO: XXXX-XX-XX	HWY: WILSHIRE DRIVE	COUNTY: WASHINGTON	CROSS SECTIONS: WILSHIRE DRIVE	SHEET PRE_20 E

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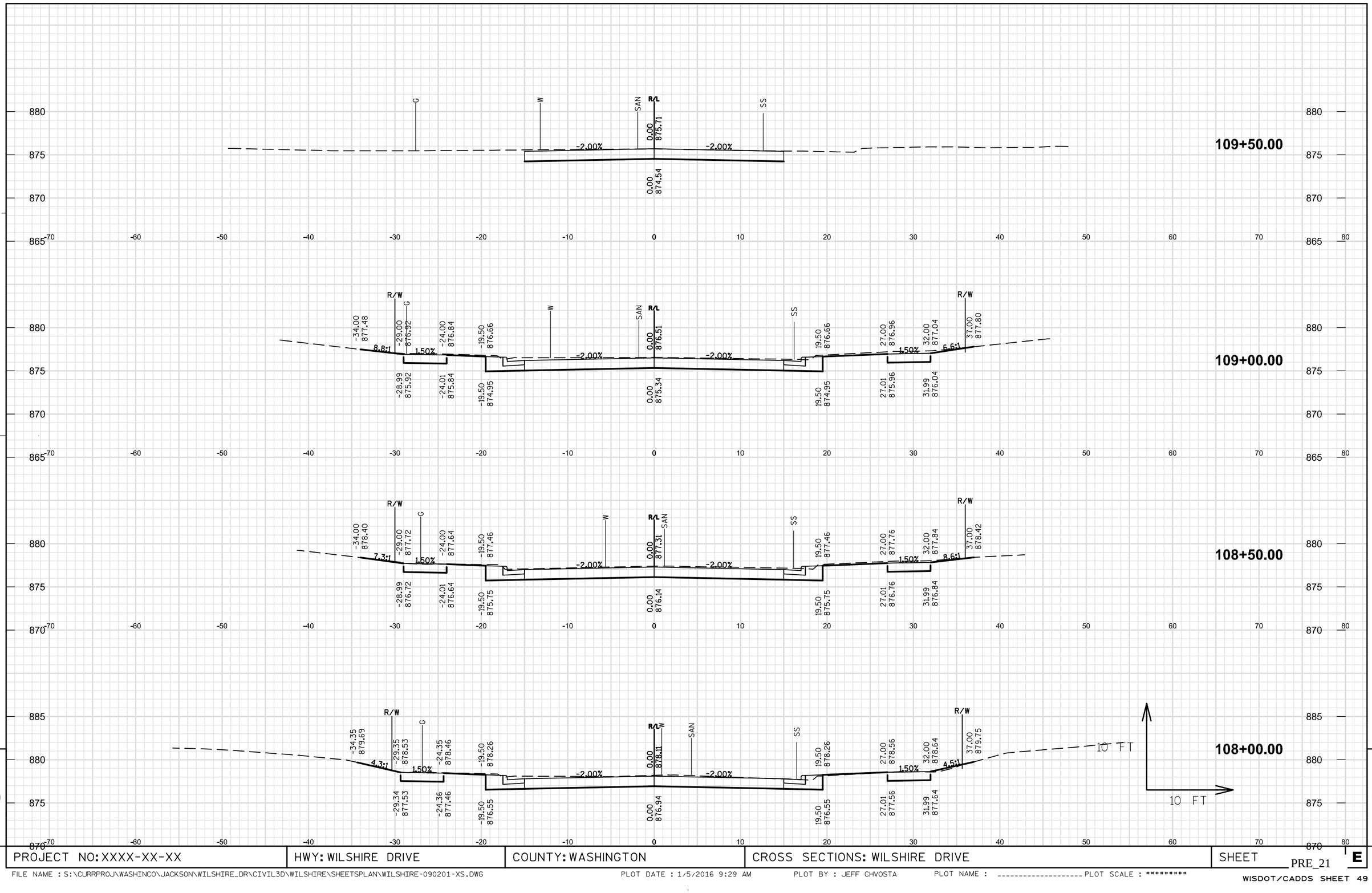

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PROJECT NO: XXXX-XX-XX	HWY: WILSHIRE DRIVE	COUNTY: WASHINGTON	CROSS SECTIONS: WILSHIRE DRIVE	SHEET PRE_21 E

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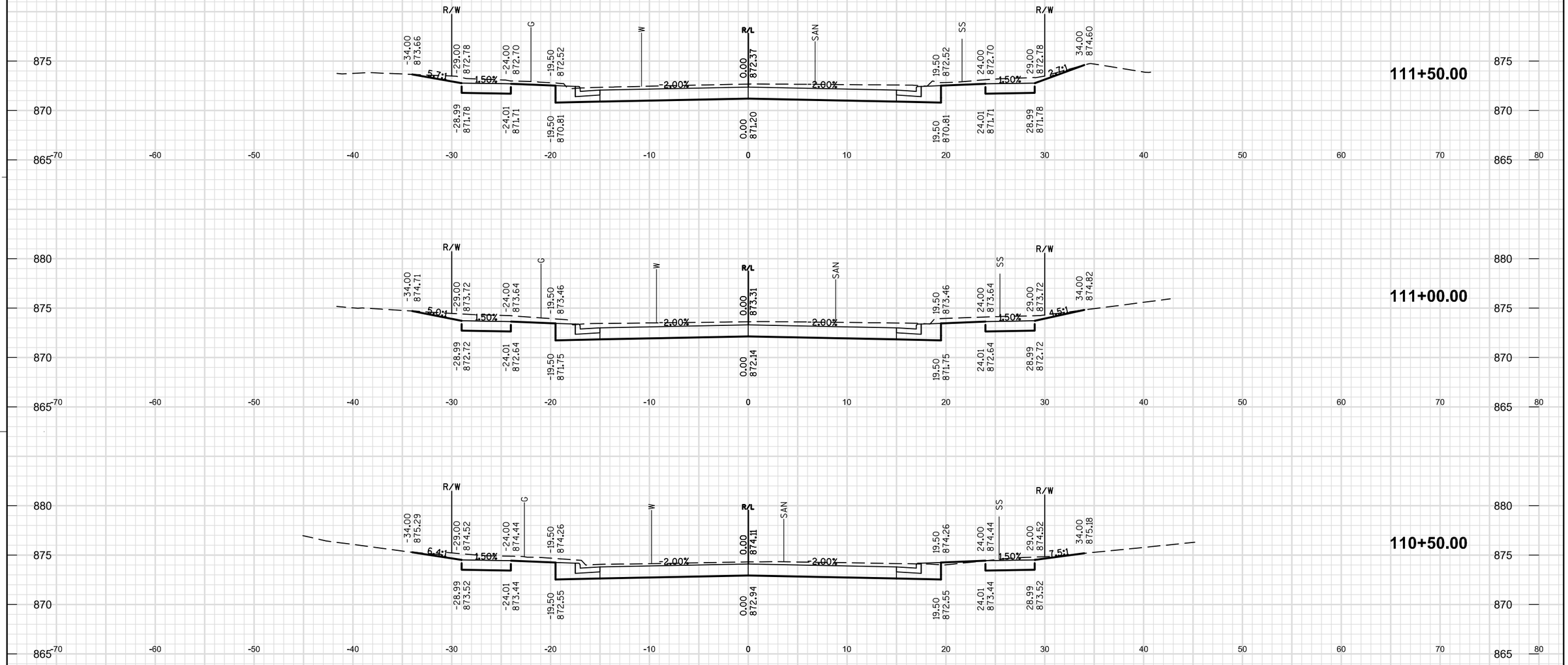

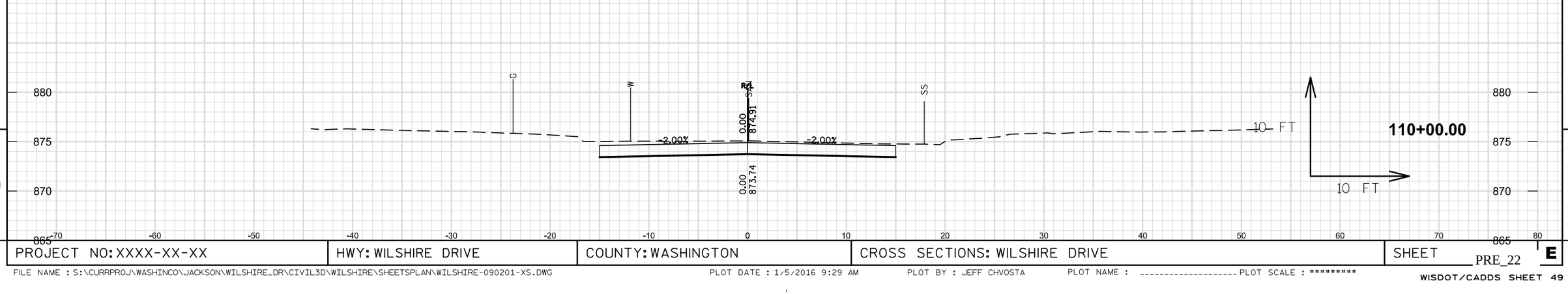

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PROJECT NO: XXXX-XX-XX	HWY: WILSHIRE DRIVE	COUNTY: WASHINGTON	CROSS SECTIONS: WILSHIRE DRIVE	SHEET PRE_22 E

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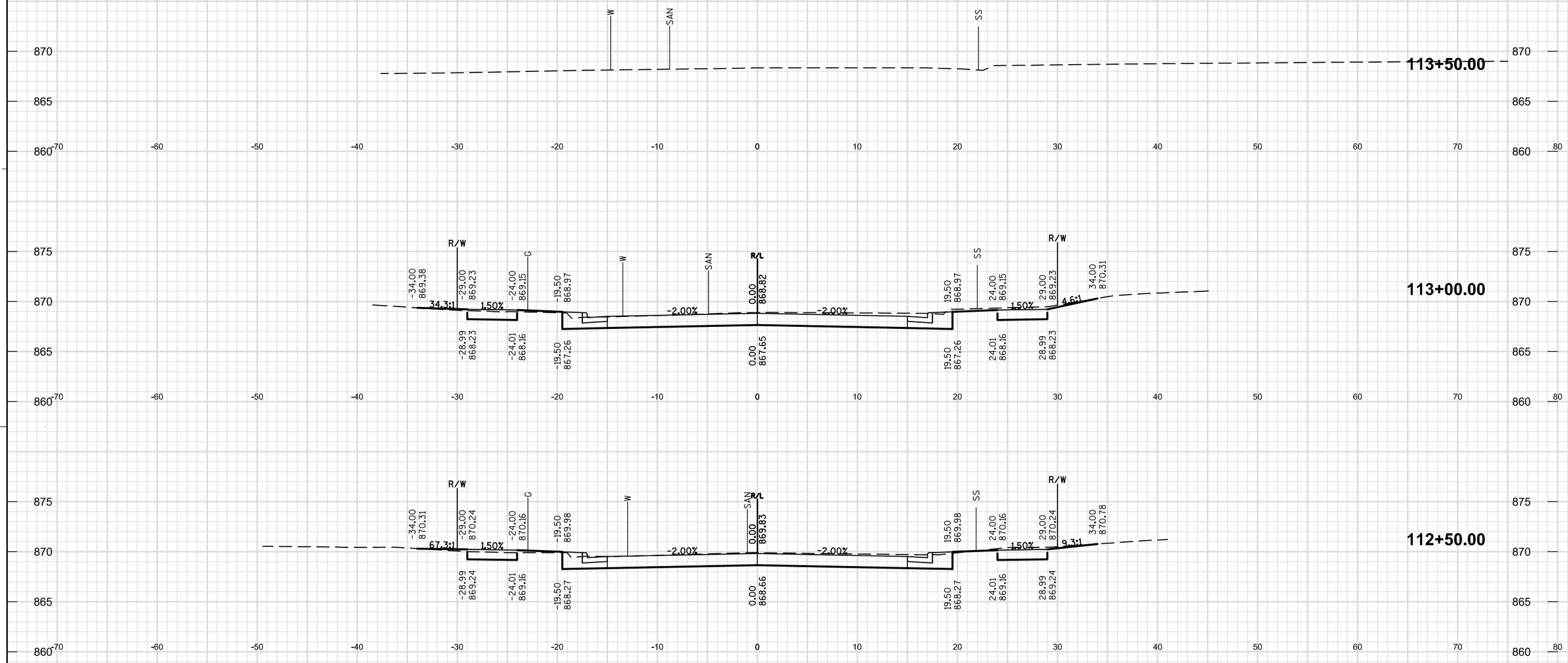

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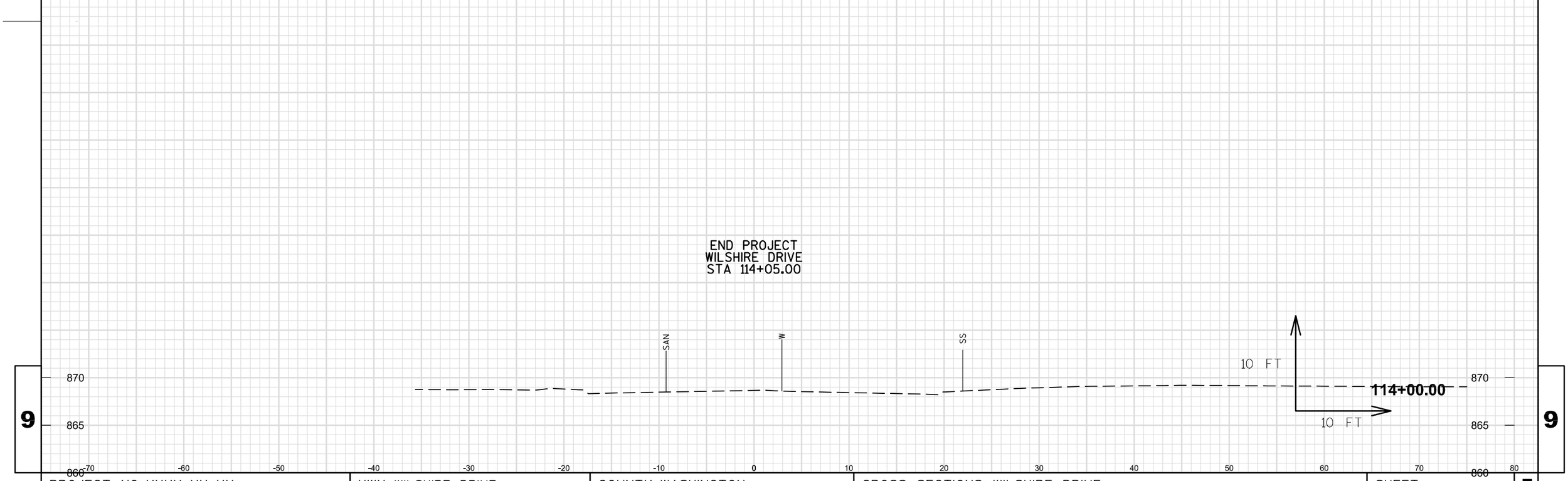
PROJECT NO: XXXX-XX-XX	HWY: WILSHIRE DRIVE	COUNTY: WASHINGTON	CROSS SECTIONS: WILSHIRE DRIVE	SHEET PRE_23 E

FILE NAME : S:\CURRPROJ\WASHINCO\JACKSON\WILSHIRE_DR\CIVIL3D\WILSHIRE\SHEETSPLAN\WILSHIRE-090201-XS.DWG PLOT DATE : 1/5/2016 9:29 AM PLOT BY : JEFF CHVOSTA PLOT NAME : ---------- PLOT SCALE : *********

END PROJECT
WILSHIRE DRIVE
STA 114+05.00



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PROJECT NO: XXXX-XX-XX	HWY: WILSHIRE DRIVE	COUNTY: WASHINGTON	CROSS SECTIONS: WILSHIRE DRIVE	SHEET PRE_24 E

Memo

To: Board of Public Works

From: Brian W. Kober, P. E., Director of Public Works

Subject: Spring Cleanup Day and Yard Waste/Brush Pickup

Date: January 22, 2016

CC: Village Board

The 2016 Spring Clean-up day is scheduled for Saturday, April 30, 2016 from 9:00 AM to 12:00 PM. The residents will be able to drop off bags of leaves or yard waste, household waste (TV, microwaves, furniture, computers, etc.), and metal. The following is a breakdown of the proposed schedule for chipping and bag pick-up for the year:

Spring Season

Chipping and Bag Pick-up will start on Monday, May 2, 2016 and then each Monday until Tuesday, May 31st.

Fall Season

Chipping and Bag Pick-up will start again on Monday, October 3rd and then each Monday until Monday, November 21st. The crew will continue until the leaves are gone, or the snow flies.

Summer Season

Chipping will only be done during the summer months. Every third Monday has been scheduled: June 20th, July 18th, Aug 15th, and Sept 19th, or after a storm.

Notification will be done on the school sign, in the quarterly newsletter, and the website will be used to inform the residents. The money being saved on bag pick-up will be used for the cost associated with the Spring Cleanup Day.

If you have any questions please let me know.

Brian W. Kober, P.E.

Public Works Report
January 26, 2016

Treatment Plant - Designed Capacity – 1.67 million gallons per day
Peak Flow Capacity – 6.0 million gallons per day

Year 2013

January	Avg. Flow 944,193 g.p.d.	Min. Flow 699,000 g.p.d.	Max. 2.054 MGD
February	Avg. Flow 845,179 g.p.d.	Min. Flow 697,000 g.p.d.	Max. 1.394 MGD
March	Avg. Flow 1.028 MGD	Min. Flow 637,000 g.p.d.	Max. 1.028 MGD
April	Avg. Flow 1.473 MGD	Min. Flow 934,000 g.p.d.	Max. 3.042 MGD
May	Avg. Flow 1.167 MGD	Min. Flow 932,000 g.p.d.	Max. 1.908 MGD
June	Avg. Flow 1.1207 MGD	Min. Flow 859,000 g.p.d.	Max. 1.791 MGD
July	Avg. Flow 777,097 g.p.d.	Min. Flow 643,000 g.p.d.	Max. 1.337 MGD
August	Avg. Flow 673,677 g.p.d.	Min. Flow 551,000 g.p.d.	Max. 1.148 MGD
September	Avg. Flow 629,533 g.p.d.	Min. Flow 532,000 g.p.d.	Max. 761,000 g.p.d.
October	Avg. Flow 688,064 g.p.d.	Min. Flow 600,000 g.p.d.	Max. 884,000 g.p.d.
November	Avg. Flow 763,800 g.p.d.	Min. Flow 660,000 g.p.d.	Max. 1.122 MGD
December	Avg. Flow 697,677 g.p.d.	Min. Flow 564,000 g.p.d.	Max. 802,000 g.p.d.

Year 2014

January	Avg. Flow 695,355 g.p.d.	Min. Flow 626,000 g.p.d.	Max. 822,000 g.p.d.
February	Avg. Flow 659,286 g.p.d.	Min. Flow 581,000 g.p.d.	Max. 874,000 g.p.d.
March	Avg. Flow 941,613 g.p.d.	Min. Flow 611,000 g.p.d.	Max. 1.285 MGD
April	Avg. Flow 1.172 MGD	Min. Flow 814,000 g.p.d.	Max. 3.188 MGD
May	Avg. Flow 947,322 g.p.d.	Min. Flow 688,000 g.p.d.	Max. 1.474 MGD
June	Avg. Flow 1.199 MGD	Min. Flow 732,000 g.p.d.	Max. 2.223 MGD
July	Avg. Flow 846,226 g.p.d.	Min. Flow 670,000 g.p.d.	Max. 1.646 MGD
August	Avg. Flow 743,322 g.p.d.	Min. Flow 603,000 g.p.d.	Max. 1.039 MGD
September	Avg. Flow 646,567 g.p.d.	Min. Flow 532,000 g.p.d.	Max. 759,000 g.p.d.
October	Avg. Flow 707,484 g.p.d.	Min. Flow 584,000 g.p.d.	Max. 898,000 g.p.d.
November	Avg. Flow 698,267 g.p.d.	Min. Flow 581,000 g.p.d.	Max. 1.086 MGD
December	Avg. Flow 788,065 g.p.d.	Min. Flow 658,000 g.p.d.	Max. 1.228 MGD

Year 2015

January	Avg. Flow 667,774 g.p.d.	Min. Flow 617,000 g.p.d.	Max. 713,000 g.p.d.
February	Avg. Flow 620,893 g.p.d.	Min. Flow 591,000 g.p.d.	Max. 662,000 g.p.d.
March	Avg. Flow 753,484 g.p.d.	Min. Flow 597,000 g.p.d.	Max. 885,000 g.p.d.
April	Avg. Flow 1.203 MGD	Min. Flow 705,000 g.p.d.	Max. 3.759 MGD
May	Avg. Flow 775,323 g.p.d.	Min. Flow 584,000 g.p.d.	Max. 1.317 MGD
June	Avg. Flow 905,633 g.p.d.	Min. Flow 661,000 g.p.d.	Max. 1.409 MGD
July	Avg. Flow 696,290 g.p.d.	Min. Flow 571,000 g.p.d.	Max. 912,000 g.p.d.
August	Avg. Flow 726,935 g.p.d.	Min. Flow 558,000 g.p.d.	Max. 1.254 MGD
September	Avg. Flow 728,240 g.p.d.	Min. Flow 526,000 g.p.d.	Max. 1.364 MGD
October	Avg. Flow 505,516 g.p.d.	Min. Flow 409,000 g.p.d.	Max. 691,000 g.p.d.
November	Avg. Flow 696,800 g.p.d.	Min. Flow 494,000 g.p.d.	Max. 1.583 MGD
December	Avg. Flow 897,258 g.p.d.	Min. Flow 616,000 g.p.d.	Max. 1.799 MGD

Years Summary of Water Consumption

2004 Total Pumpage 216,055,000 gallons
2005 Total Pumpage 223,215,000 gallons
2006 Total Pumpage 207,719,000 gallons
2007 Total Pumpage 217,224,000 gallons
2008 Total Pumpage 229,613,000 gallons
2009 Total Pumpage 231,160,000 gallons
2010 Total Pumpage 239,326,000 gallons
2011 Total Pumpage 240,268,000 gallons
2012 Total Pumpage 253,492,000 gallons
2013 Total Pumpage 228,371,000 gallons
2014 Total Pumpage 230,973,000 gallons
2015 Total Pumpage 222,621,000 gallons

Year 2013

Jan.	Avg.	562,000 g.p.d.	Highest Day 837,000 gal.	Total	17,422,000 gallons
Feb	Avg	549,820 g.p.d.	Highest Day 718,000 gal	Total	15,395,000 gallons
March	Avg.	540,520 g.p.d.	Highest Day 725,000 gal	Total	16,756,000 gallons
April	Avg.	585,170 g.p.d.	Highest Day 981,000 gal	Total	17,555,000 gallons
May	Avg.	595,810 g.p.d.	Highest Day 752,000 gal.	Total	18,470,000 gallons
June	Avg.	681,400 g.p.d.	Highest Day 914,000 gal.	Total	20,442,000 gallons
July	Avg.	787,230 g.p.d.	Highest Day 1.039 MGD	Total	24,404,000 gallons
August	Avg.	796,580 g.p.d.	Highest Day 1.107 MGD	Total	24,694,000 gallons
Sept	Avg.	631,500 g.p.d.	Highest Day 838,000 gal.	Total	18,945,000 gallons
Oct	Avg.	850,000 g.p.d.	Highest Day 1.13 MGD	Total	26,310,000 gallons
Nov	Avg.	568,600 g.p.d.	Highest Day 731,000 gals.	Total	17,058,000 gallons
Dec	Avg.	588,230 g.p.d.	Highest Day 701,000 gals.	Total	18,235,000 gallons

Year 2014

Jan.	Avg.	620,550 g.p.d.	Highest Day 789,000 gals.	Total	19,237,000 gallons
Feb.	Avg.	612,390 g.p.d.	Highest Day 717,000 gals.	Total	17,147,000 gallons
March	Avg.	603,710 g.p.d.	Highest Day 678,000 gals.	Total	18,715,000 gallons
April	Avg.	602,600 g.p.d.	Highest Day 1.037 MGD	Total	18,078,000 gallons
May	Avg.	599,290 g.p.d.	Highest Day 729,000 gals.	Total	18,578,000 gallons
June	Avg.	658,000 g.p.d.	Highest Day 815,000 gals.	Total	19,740,000 gallons
July	Avg.	684,320 g.p.d.	Highest Day 881,000 gals.	Total	21,214,000 gallons
August	Avg.	703,320 g.p.d.	Highest Day 1.019 MGD	Total	21,803,000 gallons
Sept	Avg.	639,170 g.p.d.	Highest Day 747,000 gals.	Total	19,275,000 gallons
October	Avg.	658,940 g.p.d.	Highest Day 1.042 MGD	Total	20,427,000 gallons
Nov	Avg.	595,800 g.p.d.	Highest Day 733,000 gals.	Total	17,874,000 gallons
Dec	Avg.	610,970 g.p.d.	Highest Day 742,000 gals.	Total	18,940,000 gallons

Year 2015

Jan.	Avg.	599,680 g.p.d.	Highest Day 719,000 gals.	Total	18,590,000 gallons
Feb	Avg.	587,040 g.p.d.	Highest Day 736,000 gals.	Total	16,437,000 gallons
March	Avg.	582,970 g.p.d.	Highest Day 698,000 gals.	Total	18,072,000 gallons
April	Avg.	601,370 g.p.d.	Highest Day 928,000 gals.	Total	18,041,000 gallons
May	Avg.	585,260 g.p.d.	Highest Day 698,000 gals.	Total	18,143,000 gallons
June	Avg.	640,430 g.p.d.	Highest Day 779,000 gals.	Total	19,213,000 gallons
July	Avg.	722,550 g.p.d.	Highest Day 989,000 gals.	Total	22,399,000 gallons
August	Avg.	733,420 g.p.d.	Highest Day 1.197 MGD	Total	22,736,000 gallons
Sept	Avg.	615,700 g.p.d.	Highest Day 753,000 gals.	Total	18,471,000 gallons
Oct	Avg.	594,840 g.p.d.	Highest Day 945,000 gals	Total	18,440,000 gallons
Nov	Avg.	492,630 g.p.d.	Highest Day 599,000 gals	Total	14,779,000 gallons
Dec	Avg.	555,480 g.p.d.	Highest Day 637,000 gals	Total	17,220,000 gallons

Pump Capacity - Well #1- 400 g.p.m. Well #3 -900 g.p.m. Well #4 - 1200 g.p.m. Well #5 – 1,100 g.p.m. Well #6 – 800 g.p.m.

WWTP – Holding & Septage Receiving

2005	$ 87,562.01	**2006**	$101,115.11	**2007**	$152,201.07	**2008**	$210,441.47
2009	$183,815.34	**2010**	$197,653.66	**2011**	$220,576.28	**2012**	$236,224.70
2013	$235,336.46	**2014**	$203,938.32	**2015**	$210,644.47		

2013	**Holdings (gals)**	**Grease (gals)**	**G Decant (gals)**	**Septage (gals)**	**S Decant (gals)**	**Total Billings**
Jan	1,573,249	44,300	8,000	8,050	52,800	$15,821.33
Feb	1,403,100	47,400		6,450	46,300	$14,142.85
March	1,518,450	43,800	28,500	7,250	84,100	$16,957.58
April	1,764,000	68,200	28,500	38,300	294,900	$26,445.80
May	1,666,950	17,700	9,800	74,900	182,000	$21,263.19
June	1,432,600	11,400	4,000	85,750	193,200	$19,694.61
July	1,549,200	19,800		71,300	166,750	$19,560.46
August	1,483,850	13,900	24,000	64,300	170,100	$19,559.73
September	1,306,600	33,200	8,000	69,750	208,200	$19,658.31
October	1,441,750	52,900	17,000	95,550	335,550	$26,163.73

2014	**Holdings (gals)**	**Grease (gals)**	**G Decant (gals)**	**Septage (gals)**	**S Decant (gals)**	**Total Billings**
Jan	1,298,100	26,700	8,000	2,000	40,000	$12,377.30
Feb	1,214,100	42,400	8,000	9,450	16,250	$12,181.61
March	1,411,000	43,200	5,000	10,300	57,200	$14,633.31
April	1,634,000	21,800		39,350	191,100	$19,620.21
May	1,451,750			63,500	199,450	$18,414.39
June	1,553,200			30,900	253,600	$19,225.00
July	1,474,650			40,400	205,450	$17,812.13
August	1,344,650			35,250	187,250	$16,176.13
September	1,308,700		3,500	54,650	246,050	$18,292.51
October	1,431,150			89,350	351,950	$23,106.38
November	1,078,600			66,100	251,214	$17,013.86
December	1,400,900			12,650	162,910	$15,085.50

2015	**Holdings (gals)**	**Grease (gals)**	**G Decant (gals)**	**Septage (gals)**	**S Decant (gals)**	**Total Billings**
Jan	1,326,850			10,250	52,100	$11,663.89
Feb	1,191,500			2,500	45,400	$10,171.26
March	1,507,900			16,150	85,900	$14,102.76
April	1,668,450			35,250	398,200	$23,878.38
May	1,190,850			31,100	148,600	$13,890.38
June	1,407,600			37,750	349,100	$20,794.50
July	1,485,950			33,830	243,660	$18,589.33
August	1,255,600			28,050	290,860	$17,810.50
September	1,459,400			15,500	333,350	$19,899.26
October	1,273,400	7,200		37,150	369,300	$20,603.82
November	1,336,300			36,200	343,035	$20,046.14
December	1,610,500			31,200	234,700	$19,194.26

Cranberry Creek Phase 4
The access road connecting Jackson Drive has the first lift installed, and the sidewalk along Jackson Dr is completed.

Final Lift for Developed Subdivisions
Stonewall Ridge Development phase 2 will not be paved this year along with English Oaks Subdivision. The ownership of the various parcels in both areas need to be worked out before paving is started. Have made contact with English Oaks, and still working on Stonewall.

Rosewood Drive/TIF #4 Expansion Project
The property still has the potential of being Developed. The Village is pursuing taking ownership of the property.

Laurel Springs Subdivision
The Village has notified the Developer to install the final lift of asphalt in 2015. The Developer (Bielinski Homes) has requested an extension to pave in 2016 when phase 2 of the subdivision in construction.

GIS Program
The Jackson Utilities will start the discussion of upgrading the mapping program with Gremmer and Associates and other GIS Engineering Firms.

Digester Upgrade project
One item remains is the pressure gauges on the first mixing pump. All others items have been corrected and both tanks are being mixed with the new equipment.

West Shore Pipeline Break
The lawyers have finalized the necessary paperwork to accept the work for the project.

Storm Water Management Plan
Discussion has started on creating an outreach and education program for the plan. The data is being completed for the first review. The current Village ordinance needs to be modified for the Storm Water Management Plan.

Georgetown Drive Reconstruction Project
The special assessment report is being completed to close out the project.

Jackson Drive Sidewalk Project
The special assessment report is being completed to close out the project.

Wilshire Drive Project LRIP
The Village of Jackson has received $40,662.69 in grant money from the LRIP (Local Roads Improvement Program) for the reconstruction project of Wilshire Drive from Jackson Drive to Georgetown Drive. Plans are being developed for the reconstruction.

Respectfully submitted, Brian W. Kober, P.E.