

DISTRIBUTION:

Trustee Guy Franzese,
Chairperson
Trustee Al Paveza
Trustee Tony Schiappa
Nancy Montelbano
Alice Krampits
David Allen
Vacant
Doug Pollock
David Preissig

AGENDA**STORMWATER COMMITTEE**

Tuesday, November 13th, 2018

7:00 p.m.

**Public Works Conference Room
451 Commerce Street**

- 1) CALL TO ORDER**
- 2) ROLL CALL**
- 3) APPROVAL OF MAY 8, 2018 MINUTES**
- 4) STATUS OF PROPOSAL TO DEVELOP 7950 DREW AVENUE**
- 5) STATUS OF COUNTY LINE ROAD AT DEER PATH TRAIL STORM SEWER REPLACEMENT PROJECT**
- 6) UPDATE ON DRAFT STUDY OF CULVERT PIPE AT KATHERINE LEGGE MEMORIAL PARK**
- 7) UPDATE ON REVISED FLOOD PLAIN MAPPING IN DUPAGE COUNTY**
- 8) STATUS OF STORMWATER STORAGE FACILITY EVALUATION AND ALLOCATION OF STORMWATER MANAGEMENT FUNDS FOR MAINTENANCE**
- 9) PRESENTATION OF PUBLIC WORKS DEPARTMENT SNOW SEASON CHLORIDE-REDUCING OPERATIONS AND ENVIRONMENTAL BENEFITS**
- 10) CONSIDERATION OF CY 2019 COMMITTEE MEETING DATES**
- 11) AUDIENCE DISCUSSION**
- 12) ADJOURNMENT. Next meeting is February 12, 2019.**



M E M O

To: Chairperson Guy Franzese
Members of the Village of Burr Ridge Stormwater Committee

From: David Preissig, P.E., Director of Public Works & Village Engineer

Date: November 9, 2018

Subject: Agenda Summary for Stormwater Committee Meeting on November 13, 2018

1) CALL TO ORDER

2) ROLL CALL

3) APPROVAL OF MINUTES FROM THE MAY 8, 2018 STORMWATER COMMITTEE MEETING

Please see attached minutes for consideration [*Attachment A*].

4) DISCUSSION REGARDING PROPOSAL TO DEVELOP 7950 DREW AVENUE

Following a Plan Commission recommendation, the Village Board approved the variance and special use for a Planned Unit Development at the southwest corner of 79th Street and Drew Avenue on 8.87 acres, which approvals occurred at meetings on August 27, 2018, and September 10, 2018 (Z-04-2018: 7950 Drew Avenue – Patera). [*For an excerpt of petitioner's documents, please see Attachment B*]. The P.U.D. provides eight units. The petitioner is proposing to provide its public benefit by retaining an additional 20% above the required stormwater detention and releasing it at a slower rate, thereby limiting the amount of stormwater that would flow into the abutting wetland.

Village staff anticipated sharing more information after a pre-application meeting with DuPage County Stormwater Management; however, this meeting which had been scheduled for November 6, 2018, was cancelled. Therefore, no new information is available at this time.

During the recent delineation of wetlands on the subject parcel, a violation of wetland and wetland buffer disturbance was recorded. It appears this disturbance is an encroachment from a neighbor, but Village staff will be issuing a citation to the property owner on which the disturbance was observed. As part of the notice, within the next 12 months the property owner will be required to obtain a separate stormwater permit with plans to remove the material,

provide elevations around the existing floodplain, restore the area with wetland plants, and provide a three-year guarantee for performance standards of planted materials. [For documentation of the encroachment and disturbance, please see Attachment C]

5) STATUS OF COUNTY LINE ROAD AT DEER PATH TRAIL STORM SEWER REPLACEMENT PROJECT

At its regular meeting on August 13, 2018, the Village Board of Trustees approved a contract with Unique Plumbing Co., Inc., of Brookfield, Illinois, in the amount of \$286,817.08, for the County Line Road at Deer Path Trail Storm Sewer Improvement Project. This project constructs a reinforced concrete storm sewer between the ponds at Deer Path Trail and an outfall near Hidden Lake Drive, to replace the pipe that failed on October 14-15, 2017. Construction began on September 4, 2018.

A notice was hand-delivered to all homeowners on Deer Path Trail and Hidden Lake Drive, and one homeowner on County Line Road. This notice provided residents with the project's purpose, schedule, and the anticipated impacts to access. The phone number for the on-site engineering inspector, as well as the Village's contact, were also provided.

As part of this project, the ponds' outlet control is more accessible for maintenance, and lowers the water levels under both normal and flooded conditions. The purpose of adjusting the water levels is to alleviate roadway flooding and increase stormwater detention storage. Below is a summary of the existing/proposed detention provided in the two ponds on Deer Path Trail:

	Existing	Proposed
Normal Water Level (NWL)	678.38	677.88
High Water Level (HWL)	680.70	680.50
NWL Surface Area	1.21 acres	0.85 acres
HWL Surface Area	2.55 acres	2.37 acres
Detention volume lost between elevation 680.7 & 680.5 = 0.49 acre-feet		
Detention volume gained between elevation 678.38 & 677.88 = 0.52 acre-feet		
Net detention volume increased 0.03 acre-feet		

Since the NWL is being lowered to provide the additional stormwater detention volume and to lower the overflow weir located within the Outlet Control Structure, additional shoreline has been exposed around the perimeter of the north pond contained within 1 - 11 Deer Path Trail. The new Outlet Control Structure also provides the ability to drain this north pond if these homeowners need to maintain the pond bottom. The homeowners have been advised of the lower water level, new shoreline conditions, and enhanced maintenance capability, and are thus far pleased with these arrangements.

Work has been substantially completed. Restoration remains, including topsoil and sodding, and minor landscaping modifications at 2 Hidden Lake Drive. Work should be completed within the next two weeks. The overall project costs are anticipated to be approximately \$15,000 (5.2%) under budget. [For construction photographs, see Attachment D]



6) UPDATE ON DRAFT STUDY OF CULVERT PIPE AT KATHERINE LEGGE MEMORIAL PARK

As discussed at the May 2018 Committee meeting, the Villages of Hinsdale and Burr Ridge share maintenance responsibilities for a 66-inch diameter culvert pipe that originates in the Katherine Legge Memorial Park. Both Villages are providing measures to ensure safety and adequate drainage for the grate at the upstream end of the culvert pipe. The Village of Hinsdale installed a fence around the upstream end, with the Village of Burr Ridge sharing equally in the cost of materials for its construction. The Village of Burr Ridge selected the firm of Hampton, Lenzini and Renwick, Inc. of Woodridge, Illinois, to analyze the upstream grate and channel within Katherine Legge Memorial Park and determine if it could be modified to improve safety without compromising its current function.

Preliminary concepts were proposed by the consultant and both Villages for analysis, which have been detailed in the draft report. Village representatives met at the site on Friday, July 6, 2018, to review the proposed concepts and analyses. The report has been refined based on discussions at that meeting, which have been included in the pre-final report attached [*For excerpt of the pre-final report, see Attachment E*]

To summarize, fence around the upstream end restricts access and should prevent most encroachment into this area. This fencing renews a tort immunity status and may be sufficient to protect against liability. It is also supposed that dangers are expected to be understood and appreciated by any child of an age to be allowed at large. Any subsequent improvements to this channel may underscore the safety aspect, so long as fencing and restricted access stays in place. The Village of Hinsdale is considering its options within KLM Park and if improvements to the channel would be included in a future budget.

7) UPDATE ON REVISED FLOOD PLAIN MAPPING IN DUPAGE COUNTY

As reported previously to this Committee at its May 2018 meeting, the current effective Flood Insurance Rate Maps (FIRM), issued by the Federal Emergency Management Agency (FEMA), had been revised for all of DuPage County and re-issued for review and comment in June 2017. FIRM data is used for identification of flood zones and also utilized by the National Flood Insurance Program (NFIP) for rating flood insurance policies and enforcing federal mandatory insurance purchase requirements. With the latest mapping, Village staff noted significant discrepancies concerning the Zone AE Special Flood Hazard Area (SFHA) and floodway delineation on the 63rd Street Ditch within the limits of the Village of Burr Ridge.

FEMA acknowledged receipt of the Village's comments as submitted in March 2018 and May 2018. FEMA will evaluate the issues raised in these comments. If additional data or information are required to resolve the comments, FEMA will contact the Village.

It was anticipated that the final map updates would be released in Summer 2018. FEMA will issue a Letter of Final Determination (LFD), which is now expected in February 1, 2019, with an effective date of August 1, 2019, for the new maps. Municipalities like the Village of Burr



Ridge must adopt the new FIRM/FIS panels by Ordinance after the LFD but before the effective date. [See attached memo from DuPage County in Attachment F]

8) STATUS OF STORMWATER STORAGE FACILITY EVALUATION AND ALLOCATION OF STORMWATER MANAGEMENT FUNDS FOR MAINTENANCE

As discussed at the May 2018 meeting of the Stormwater Committee, one of the strategic goals of the Village Board over the next two (2) years is to provide a mechanism that ensures adequate maintenance of stormwater storage facilities. These facilities could be retention (lakes or ponds), wetland bottom, or dry-bottom basins, but the open land they occupy is known to add value to the adjacent homeowners, businesses, and Village neighborhoods generally for both their aesthetic appeal and stormwater benefit.

This first step in this process has been tedious, but also the most critical, which includes an accurate update to the inventory of stormwater storage facilities. This past summer, the engineering intern combed through the 2013 inventory, the Village's existing geographic information system (GIS), as well as all the scanned as-built subdivision plans. This process was done to ensure a thorough database on which to evaluate and rank all facilities. The 2008/2013 inventory contained a total of 99 basins. The database now contains 109 retention ponds (wet-bottom) and 87 detention ponds (dry-bottom), for a total of 196 facilities.

The large increase in the number of identified facilities consumed the time allotted for this task to the engineering intern this past summer. The next step in the process would specify evaluation criteria. Other steps will include determining facility ownership and maintenance rights-of-way, as well as geospatial placement and data entry into the GIS system. It should be noted that the Village is currently transitioning its GIS provider.

As part of this consideration is how to handle older subdivision language regarding maintenance responsibility for "public" storm sewer infrastructure located on private property (ex. easements). As background, newer subdivisions have text on the recorded plat that specifies responsibility for maintenance of the stormwater facilities. Older plats vary in specifying responsibility for maintenance but generally leave a lot to be desired. The Village takes the position that all stormwater facilities on private property have to be maintained by the HOA or a property owner. The Village staff is consulting with the Village attorney to amend the Municipal Code and/or Subdivision Code to be clear that stormwater facilities on private property are the responsibility of the individual property owners or homeowners' association, where one exists.

Staff is considering options for how the Village could help to fund the maintenance of stormwater detention/retention basins and private stormwater infrastructure. One possibility is a dedicated fund that could provide "seed money" directly to businesses and HOAs or partially fund a cost-shared arrangement. As another option, the Village could procure a contractor with fixed hourly labor and equipment rates for businesses and HOAs interested in changing the operation and maintenance routines for their existing detention/retention ponds or stormwater management facilities.



9) PRESENTATION OF PUBLIC WORKS DEPARTMENT SNOW SEASON CHLORIDE-REDUCING OPERATIONS AND ENVIRONMENTAL BENEFITS

Mr. Stephen McCracken, Director of Watershed Protection for The Conservation Foundation/DuPage River Salt Creek Workgroup, will provide a presentation on the topic “Anti-Icing – Part of a Sensible Salt Diet!”. Public Works Director David Preissig will follow with an overview of how anti-icing is anticipated to be utilized for the first time this season.

Chloride has become a significant storm water pollutant in Illinois. In the last few years, it held up permitting of the Tollway’s Elgin O’Hare Western Access project, subjected large areas of Cook County to an onerous and expensive water quality variance process, and is referenced several times in the State’s storm water permit. However, chlorides, whose principle source in urban areas is winter deicing compounds, can be managed to reduce pollution, costs, and infrastructure corrosion, while improving program effectiveness. The gold standard of chloride management is anti-icing, the pre-storm application of a liquid brine to a road surface, and has been used by local winter programs to reduce their winter salt use. A short presentation will look at the evolution of regulations and management techniques in chloride (road salt) management from a municipal perspective.

The Burr Ridge Public Works Department is excited to announce the start of its anti-icing program as one of its tools this winter season. Unit 30 is the Department’s new anti-icing truck and will be on display following this meeting. The F550 was purchased in FY17-18 from Currie Motors, up-fitted by Monroe Truck Equipment, and has been a valuable addition to our fleet. It is the Department’s multi-use workhorse that also functions as a chipper truck and watering truck, and was recently highlighted at a truck equipment exposition in Schaumburg.

10) CONSIDERATION OF CY 2019 COMMITTEE MEETING DATES

The following dates in 2019 are proposed for regular Stormwater Committee meetings:

- February 12
- May 14
- August 13
- November 12

ATTACHMENTS

A: Minutes, Stormwater Management Committee Meeting, May 8, 2018

B: Preliminary Engineering Plan: 7950 Drew Avenue P.U.D.

C: Wetland Disturbance at 7950 Drew Avenue

D: Photographs of County Line Rd. at Deer Path Tr. Storm Sewer Replacement Project

E: Pre-final Technical Memo - KLM Park Culvert Modification Study

F: Memo from DuPage County; Floodplain Mapping Update



**MINUTES
STORMWATER MANAGEMENT COMMITTEE
REGULAR MEETING**

May 8, 2018

CALL TO ORDER

Chairperson Guy Franzese called the meeting to order at 7:00 p.m.

ROLL CALL

Present: Chairperson Guy Franzese, Trustee Al Paveza, Nancy Montelbano, Alice Krampits, Dave Allen

Absent: Trustee Tony Schiappa

Also Present: Public Works Director/Village Engineer David Preissig

APPROVAL OF FEBRUARY 13, 2018 MINUTES

A **MOTION** was made by Trustee Paveza to approve the minutes of the February 13, 2018 meeting. The motion was seconded by Committee Person Allen and approved by a vote of 5-0.

DISCUSSION REGARDING PROPOSAL TO DEVELOP 7950 DREW AVENUE

Mr. Preissig reviewed that the Stormwater Committee had been informed of the pending proposal at its February meeting, which was a petition to develop a P.U.D. at 7950 Drew Avenue. The petition was considered at the March 5, 2018, Plan Commission hearing but continued to May 7 for further discussion. After much discussion at the May 7 meeting, the item was tabled to the July 16 meeting of the Plan Commission. Chairperson Franzese and Committee Person Krampits were present at the May 7 meeting, and they described for the Committee several points that were raised by the Commissioners and residents in opposition to the proposed P.U.D.

Chairperson Franzese requested Village staff to send out to the Stormwater Committee any of the petitioner's revised submittals because the proposed hearing precedes the next regular Stormwater Committee meeting in August.

DISCUSSION REGARDING REVISED FLOODPLAIN MAPPING OF THE 63RD ST. DITCH

Mr. Preissig stated that the revised Flood Insurance Rate Maps (FIRM) for DuPage County, re-issued for review in June 2017 by the Federal Emergency Management Agency (FEMA), were found to have some discrepancies around the floodplain and floodway delineation of the 63rd Street Ditch in Burr Ridge. The Village requested a re-evaluation to the Illinois State Water Survey, which is conducting the studies for DuPage County. After much coordination with ISWS, DuPage County, and the Illinois Department of Natural Resources,

a re-delineation of the effective Base Flood Elevations will be completed between west of Grant Avenue to Garfield Avenue.

STATUS OF FINAL GRADING AT 7600 COUNTY LINE RD (SHIRLEY RYAN ABILITYLAB)

Mr. Preissig reviewed the status of the site development and stormwater systems as they relate to questions from Mr. Mark Thoma, 7515 Drew Avenue, at the November 14, 2017 Committee meeting. This development is substantially completed and the Village had requested “as-built” survey of the site and utilities. Preliminary as-built drawings indicate the storm sewer has been constructed to the grades and slopes as designed. With pictures and information provided by Mr. Thoma and after reviewing the as-built drawings, the Village Engineer will request additional survey in the ditch, adjustments to the rock-lined ditch, and scoping the 24” pipe to verify it is clean and free-flowing.

Mr. Mark Thoma, 7515 Drew Avenue, was present and asked 1) if silt fence could be installed around the landscape mulch until it was removed to protect the rock-lined ditch, and 2) verify the new parking lot light pole and foundation installed in the vicinity of the drain tile has not impacted the tile.

Mr. Preissig stated that in addition to other requests to the builder regarding the as-built plans, the Village will follow up in its request for prompt removal of the landscape mulch, as well as verifying the light pole has not broken the drain tile.

STATUS OF DRAINAGE PROJECTS AND STUDIES

- MODIFICATIONS TO CULVERT PIPE ORIGINATING IN KATHERLINE LEGGE MEMORIAL PARK

Mr. Preissig reviewed the status of safety measures taken the Villages of Hinsdale and Burr Ridge for the 66-inch diameter culvert pipe that originates in the Katherine Legge Memorial Park. The Village of Hinsdale installed a fence around the upstream end. Burr Ridge has selected the engineering firm of Hampton, Lenzini and Renwick, Inc. of Woodridge, Illinois, to analyze the upstream grate and determine if it could be modified to improve safety without compromising its current function. Concepts for modifications have been proposed, which will be analyzed and discussed at a meeting with Hinsdale this month. Following this meeting, the final report will be shared with the Village Board in June and the Stormwater Committee at its next meeting in August.

Chairperson Franzese and Committee Person Montelbano asked if the grate could be lowered or a fine mesh added. Mr. Preissig stated these options could be considered, but have a higher potential for blockage with the large trees nearby.

- COUNTY LINE ROAD AT DEER PATH TRAIL STORM SEWER REPLACEMENT

Mr. Preissig reviewed the status of the project to replace the outfall pipe along County Line Road that drains the ponds at Deer Path Trail. The Village selected Robinson Engineering, Ltd., of Itasca, Illinois, and the firm has already begun with land surveyors on-site last week. The project is on an expedited schedule to begin construction in late in July 2018. However, the feasibility of using trenchless construction will be assessed if it may be more economical than conventional excavation by avoiding removal and replacement of the concrete sidewalk.

- I-55 MANAGED LANES STUDY BY ILLINOIS DEPARTMENT OF TRANSPORTATION

Mr. Preissig stated that this project was not a normal topic for this Committee, but information is provided regarding the many drainage issues that IDOT will be investigating during preliminary engineering and environmental studies for the improvement of I-55. IDOT and Village staff met on Wednesday, May 2, 2018, and exchanged information related to floodplain, existing drainage, highest known water levels, reports of flooding, and outlet conditions. However, no new impervious area is proposed along the section through Burr Ridge, so it would not seem that drainage conditions would be impacted. Mr. Preissig advised that only an initial project study is continuing because future stages of development or construction are not yet funded by the State. The State legislature is considering passage of a resolution to create a Public-Private Partnership (P3) as a possible funding source for this vital project.

DISCUSSION REGARDING ALLOCATION OF FUNDS IN THE STORMWATER MANAGEMENT FUND FOR MAINTENANCE OF DETENTION BASINS

Mr. Preissig described stated that the Village Board has established a strategic goal to provide a means that ensures adequate maintenance of stormwater storage facilities. Village staff is committed to fulfill this goal and is considering options for how the Village could help to fund or organize this program. In 2011, Village staff looked at methods to impose maintenance standards on homeowners' associations (HOAs), which had been reviewed at that time by the Village Attorney.

Chairperson Franzese described how he proposed this goal to the Board because these ponds and open spaces add value to our homeowners, business and Village neighborhoods generally for their aesthetic appeal and stormwater benefit. Village staff is seeking direction on how to fund this beneficial program and promote its adoption to businesses, residents, and homeowners' associations (HOAs).

Committee Person Allen described how the Village Board had previously reviewed the "lowest rated" list of ponds around the Village for possible enforcement of maintenance standards.

Trustee Paveza requested that ponds be identified by ownership or responsibility.

Committee Person Montelbano stated that an escrow account could be created to help fund future maintenance improvements where HOAs or businesses had none previously.

After some discussion, Village Engineer Preissig stated that the Engineering Division will update its database of stormwater storage facilities and will provide additional information for Committee review regarding rating and evaluation systems. He advised that the new updates must also include a category of ponds that would include “wetland bottom” as is being required in recent subdivision improvements. This information will be available for review and discussion at the next Stormwater Committee meeting on August 14, 2018.

AUDIENCE DISCUSSION

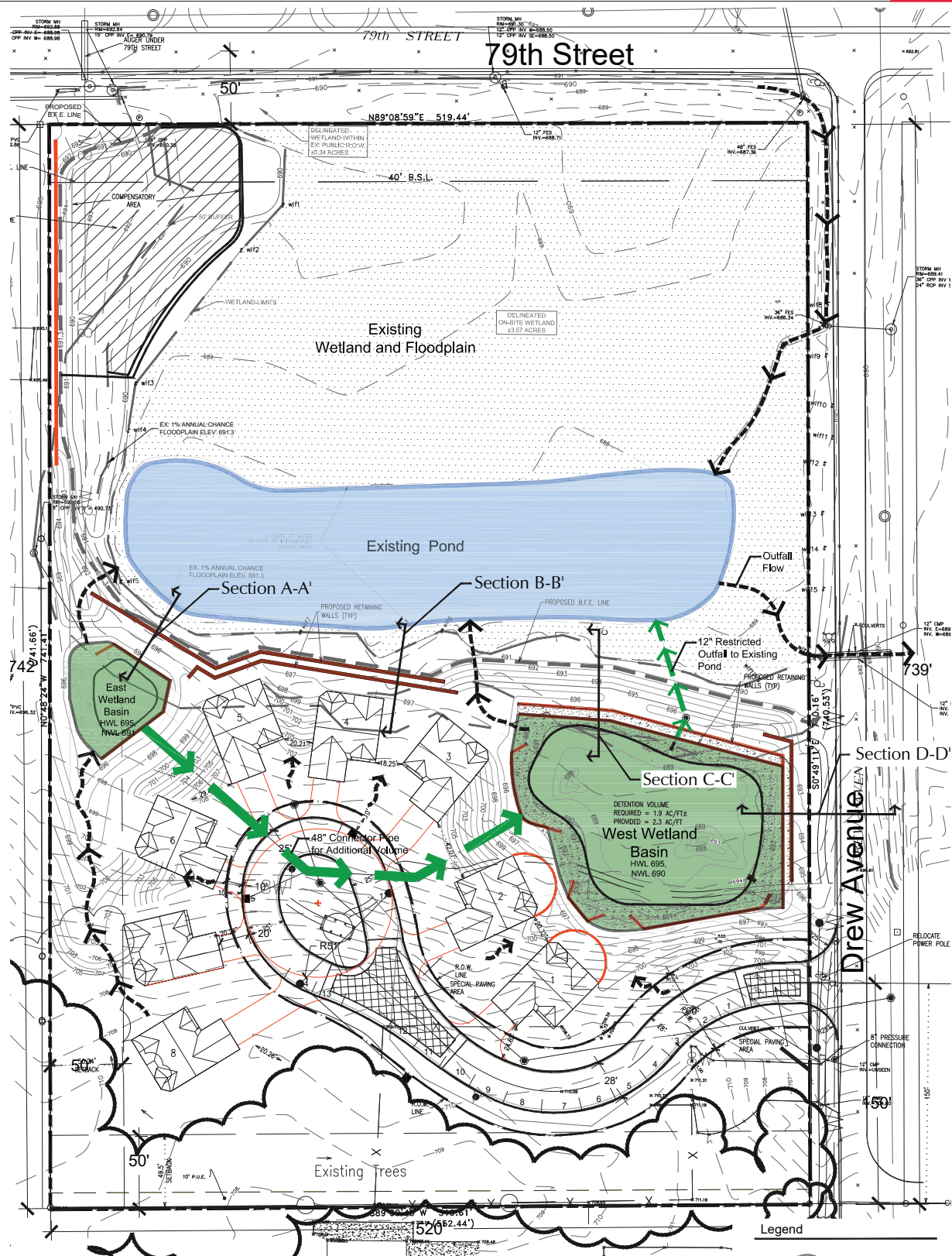
There was no audience discussion.

ADJOURNMENT

There being no further business, a **motion** was made by Committee Person Montelbano to adjourn the meeting. The motion was **seconded** by Committee Person Krampits and **approved** by a vote of 5-0. The meeting was adjourned at 7:45 p.m.

Respectively submitted,

David Preissig, P.E.
Director of Public Works/Village Engineer

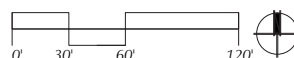


Stormwater Management

Required Detention Volume = 1.9 acre/feet

Proposed Detention Volume = 2.3 acre/feet

Additional Volume of Onsite Detention =
.40 acre/feet or 21% above required volume



Stormwater Management Diagram

7950 Drew Avenue

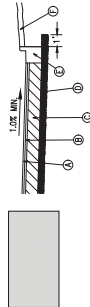
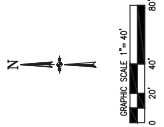
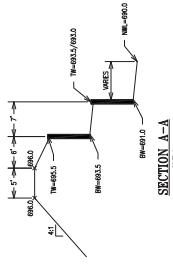
Burr Ridge, IL

SHEET L-10

JARPER PROPERTIES, LLC
16 W. 231 S. Frontage Road #17
Burr Ridge, IL 60527

June 22, 2018





- 1.5" BITUMINOUS CONCRETE SURFACE COURSE, HOT MIX ASPHALT, MIX. C, NSO
2" BITUMINOUS CONCRETE BINDER COURSE, HOT MIX ASPHALT, L19, NSO
4" BITUMINOUS CONCRETE BASE COURSE, HOT MIX ASPHALT, L19, NSO
6" C-6 SUB-BASE, TV. B.
CONC. CURB AND GUTTER, TYPE M-312 (UNLESS NOTED OTHERWISE)
E* TOP SOIL, AND SIZING

ASPHALT PAVEMENT SECTION

NOTE: SPECIAL PAVING AREAS TO BE DESIGNED BY OTHERS.

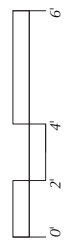
- INTERNAL NOTES:**
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, AS ADOPTED BY THE MISSOURI DEPARTMENT OF TRANSPORTATION. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, AS ADOPTED BY THE MISSOURI DEPARTMENT OF TRANSPORTATION. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, AS ADOPTED BY THE MISSOURI DEPARTMENT OF TRANSPORTATION.
1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, AS ADOPTED BY THE MISSOURI DEPARTMENT OF TRANSPORTATION.
 2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, AS ADOPTED BY THE MISSOURI DEPARTMENT OF TRANSPORTATION.
 3. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, AS ADOPTED BY THE MISSOURI DEPARTMENT OF TRANSPORTATION.
 4. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, AS ADOPTED BY THE MISSOURI DEPARTMENT OF TRANSPORTATION.
 5. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, AS ADOPTED BY THE MISSOURI DEPARTMENT OF TRANSPORTATION.
 6. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, AS ADOPTED BY THE MISSOURI DEPARTMENT OF TRANSPORTATION.
 7. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, AS ADOPTED BY THE MISSOURI DEPARTMENT OF TRANSPORTATION.
 8. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, AS ADOPTED BY THE MISSOURI DEPARTMENT OF TRANSPORTATION.
 9. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, AS ADOPTED BY THE MISSOURI DEPARTMENT OF TRANSPORTATION.
 10. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, AS ADOPTED BY THE MISSOURI DEPARTMENT OF TRANSPORTATION.

PROPOSED	DESCRIPTION	EXISTING
	STONE SEALER	
	STONE WASH WITH SEALER	
	RIGHT-OF-WAY	
	CONTOUR	
	STONY MANHOLE	
	STONE INLET	
	STORM DRAIN	
	FIRE HYDRANT	
	BUFFALO BOX	
	GATE VALVE W/ WALL	
	STREET LIGHT W/ MAST	
	OVERHEAD DIRECTION	
	CURB	
	SALT FENCE	
	ROAD SIGN	
	GAS	
	UTILITY POLE	
	EXPRESSED CURB FOR RAMP/DRAINAGE	
	TOP OF CHURN, EXPRESSED	
	TOP WALL, BOTTOM OF WALL	
	RM FOR STRUCTURES	
	HIGH/HYDRO-SPRINKLER WATER LEVEL	
	CLEAN OUT	
	FIRE EQUIPMENT CONNECTION	



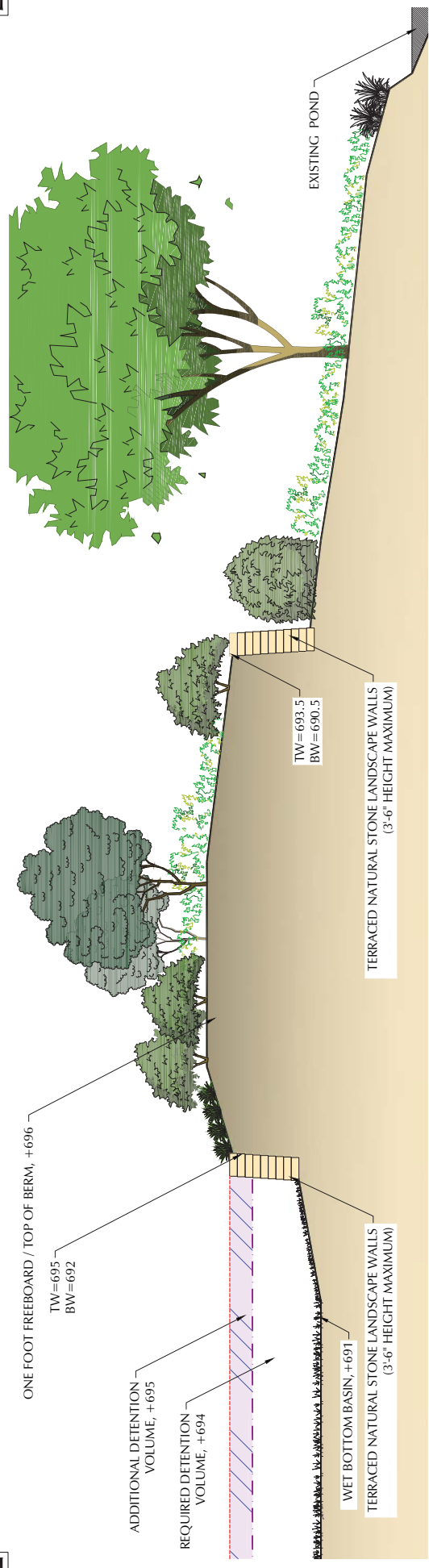
JARPER PROPERTIES, LLC
16 W. 231 S. Frontage Road #17
Burr Ridge, IL 60527

June 22, 2018

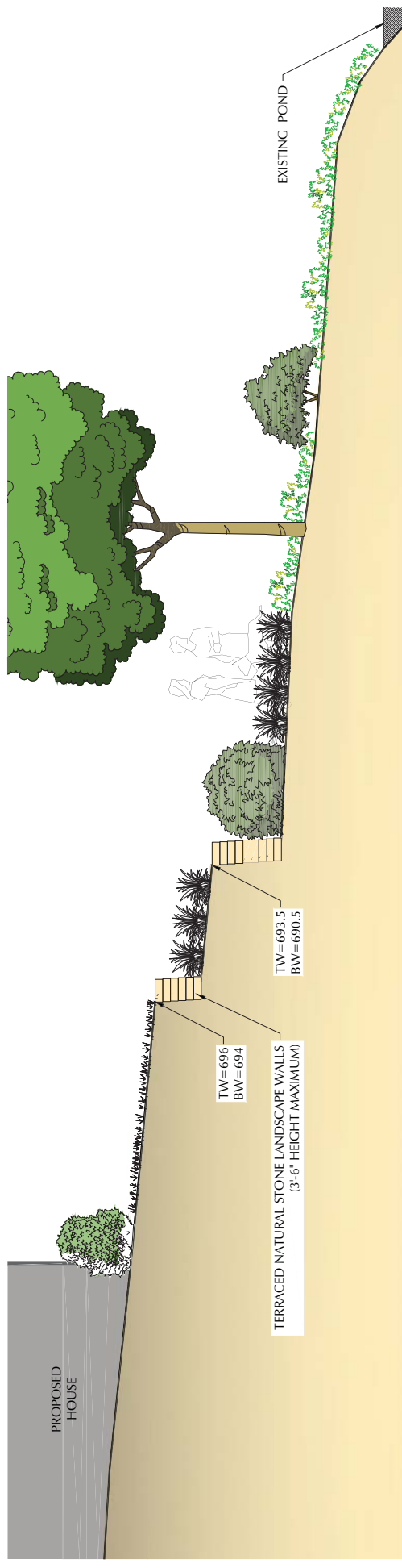


SHEET L-11

Stormwater Management Sections
7950 Drew Avenue
Burr Ridge, IL



SECTION A-A', EAST WETLAND BASIN TO EXISTING POND

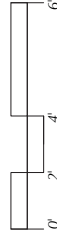


SECTION B-B', PROPOSED HOUSING TO EXISTING POND



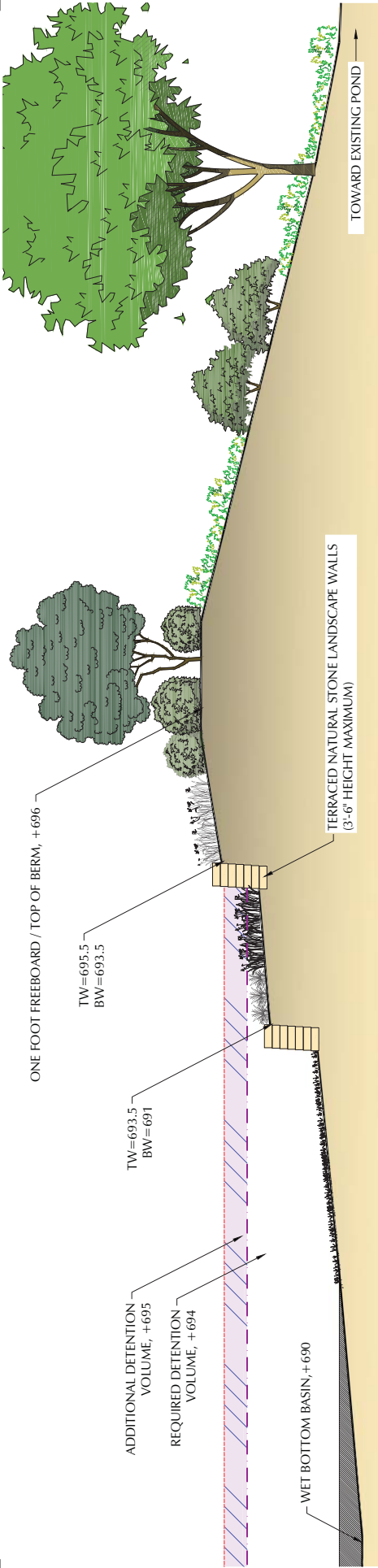
JARPER PROPERTIES, LLC
16 W. 231 S. Frontage Road #17
Burr Ridge, IL 60527

June 22, 2018

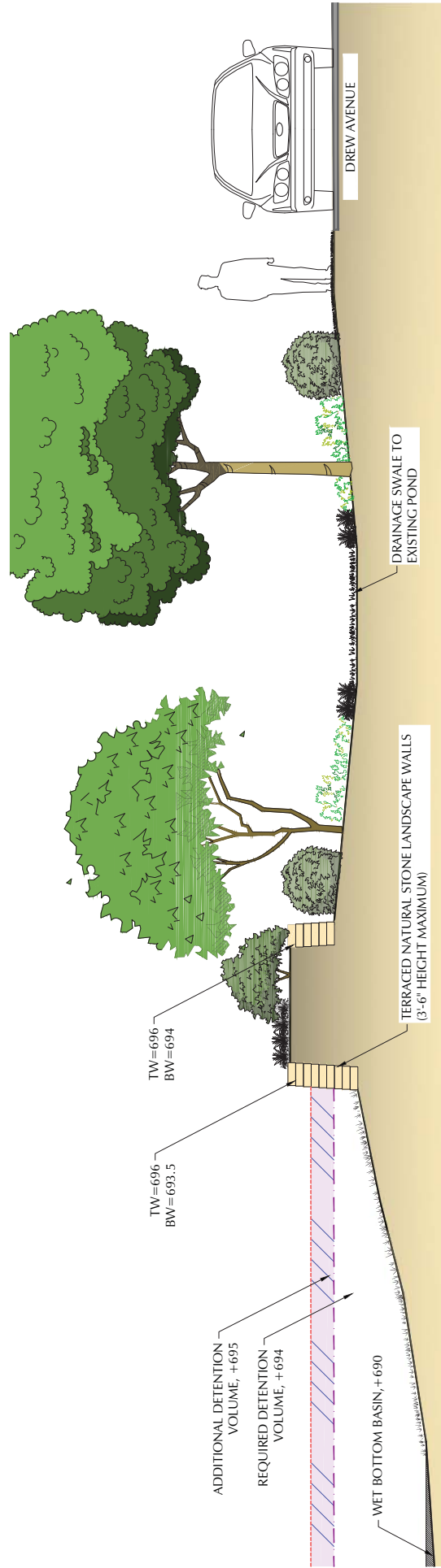


SHEET L-12

Stormwater Management Sections
7950 Drew Avenue
Burr Ridge, IL



SECTION C-C', WEST WETLAND BASIN TO EXISTING POND



SECTION D-D', EAST WETLAND BASIN TO DREW AVENUE



79TH AND DREW AVE

BURR RIDGE, IL

AERIAL PHOTOGRAPH

Provided by: Google Earth

LEGEND:

Project Area —

Wetland Boundary —

Sample Points A-J





Photo 1. Ground disturbance near edge of open water within Wetland 1. Facing southwest.



Photo 2. Ground disturbance adjacent to neighbor on 79th St. Facing west.



Photo 3. Piles of debris and cleared vegetation. Facing west.



Photo 4. Buffer disturbance and off-parcel landscaping from 79th St neighbor.



Photo 5. Buffer and wetland disturbance. Debris and piled vegetation. Facing west.

County Line Road at Deer Path Trail



Outlet Control Structure, Facing Northwest



Control Structure, Internal Piping (Outfall to the Right)



New Sidewalk at Control Structure, Facing South



New Sidewalk at 2 Hidden Lake Drive



South Pond (Outfall Concealed 18" below surface)



Pipe Outfall (18" RCCP w/6" PVC to Old CMP)

Tech Memo

Katherine Legge Memorial Park

Culvert Modification Study

Prepared for: Village of Burr Ridge
451 Commerce Street
Burr Ridge, Illinois 60527

Date: April 2018, Revised July 2018

Prepared by:



Hampton, Lenzini and Renwick, Inc.
Civil Engineers • Structural Engineers • Land Surveyors
380 Shepard Drive
Elgin, Illinois 60123

TABLE OF CONTENTS

COVER

TABLE OF CONTENTS

NARRATIVE

EXHIBIT 1	KLM Culvert Modification – Velocity Reduction by Channel Widening
EXHIBIT 2	KLM Culvert Modification – Safety Bollards
EXHIBIT 3	Graph – Knock Down Potential – Velocity vs Depth
EXHIBIT 4	Historic Culvert and Channel Construction Documents
EXHIBIT 5	EOPC – Alternate 1 – Velocity Reduction by Channel Widening
EXHIBIT 6	EOPC – Alternate 2 – Safety Bollards
APPENDIX A	Hydrology Analysis (USGS StreamStats)
APPENDIX B	Channel Analysis (Hydraulic Toolbox)
APPENDIX C	Culvert Analysis (HY-8)

Project Summary

On two unique occasions, a person or pet was swept into the park's drainage culvert and, fortunately, were able to escape on the other side. To reduce the chance of someone being knocked down and swept away by the water, the channel should be widened to reduce the velocity through the channel. Bollards may also be added upstream of the culvert to provide a last line of safety for someone that is caught in the channel.

Project Background

Katherine Legge Memorial (KLM) Park is 52-acre park located in the southeast corner of the Village of Hinsdale. The park is tributary to an urbanized 0.98-square mile watershed that drains eastward through the 59th Street Ditch. Toward the east side of the park, the ditch changes from a natural meandering creek into a steep drainage channel with an 8' concrete lined bottom. This channel discharges into a 590-foot long 66-inch concrete culvert. The upstream face of the culvert is located within the Village of Hinsdale municipal boundaries, the remainder of the culvert is located within the Village of Burr Ridge. The downstream end of the culvert outlets to Illinois Tollway property at the Hinsdale Oasis.

On October 14-15, 2017, there were two separate instances of people or pets being swept by the rushing water through the channel into the culvert and washed through to the Tollway side of the culvert. The upstream end of the culvert is fitted with a reinforced concrete end section with a steel grate that covers a portion of the opening. Typical steel grating covers the upper diagonal portion of the end section, leaving the lower section open. For a 66-inch end section, the lower 30-inches are open and not protected by the steel grading.

Following these two incidents, the grating was removed from the downstream end section by the Tollway and the downstream channel was regraded. A fence was added in the park around the steep upstream channel to restrict access to the side banks and area around the channel.

This document explores additional actions to improve the safety at the upstream end of this culvert in the park.

Analysis of the Drainage Channel and Culvert

Peak discharge rates were obtained from the IL Streamstats GIS web application using the USGS regression equations. Using the peak discharges rates and design data, the culvert was analyzed using the FHWA's HY-8 Culvert Analysis Program. Analysis of the existing culvert indicates that it will convey the 10-year event without overtopping. However, to convey the 50 year and larger events, flow will overtop the spillway and will be conveyed overland eastward toward Laurie Lane.

An analysis of the channel upstream of the culvert was performed using FHWA's Hydraulic Toolbox. Using the peak flow rates and a representative cross section, the depth and velocity of flow through the channel was calculated. Based off of data from the Oregon Department of Geology and Mineral Industries, water that is 1-foot deep moving at 6.7 mph can knock a person over. Deeper water requires less velocity. Using this information, Exhibit 3 was developed to show depths and velocities that could be unsafe. For all storms, the existing channel produces flows with enough velocity to knock a person from their feet.

Recommended Improvements

The capacity of the existing culvert was analyzed and determined that it has capacity to convey the 10-year event without flow overtopping the spillway. Since there is limited excess capacity for the culvert to drain the upstream areas, the approaches taken aimed to not significantly alter the culvert or its drainage characteristics. Both recommendations assume that the existing fence remains in place after the desired improvements is constructed.

Alternate One – Decrease Upstream Channel Velocities

Velocity of water through a channel is related to the amount of flow and the flow area. To decrease the velocities, a larger area may be used. For this project, to increase the area, the channel may be widened. Increasing the width of the channel by 15' in both directions would decrease the velocity and height of flow through the channel such that only the largest storms (100-year) produce flow velocities that would knock a person over (see Exhibit 1).

For calculation purposes, only the removal of the concrete channel and widening of the channel was considered. However, this option presents an opportunity to naturalize the channel, creating more of a meandering profile, riffle pools, etc. Taking this approach would provide natural area enhancement, decrease water velocities and improve water quality.

Alternate Cost = \$70,000

Alternate Two – Safety Bollards

A different approach to improve the safety would be to construct safety bollards in a triangle formation upstream of the culvert's end section. Water would flow through and around the bollards and would not significantly impact the hydraulic performance of the culvert.

The bollards would provide something to grasp onto by a person that is being carried by rushing water in the channel. The bollards are placed so that a person would be able to maneuver themselves to the side of the channel, beyond the areas of highest flow.

Some drawbacks are that people would be able to grasp the bollards, but there would be no benefit for animals. There is a chance of injury if rushing water carries a person squarely into a bollard. The bollards will need periodic maintenance to remove branches or other debris that gets caught.

Alternate Cost = \$10,000

Alternate Three – No Additional Changes

The last alternate is to consider making no additional changes. The placement of a fence around the high velocity channel should prevent most access into this area. With the removal of the grate from the downstream end section, should something unfortunately enter into the culvert, it should pass out the other side within 1-2 minutes. The fence and landscaping could be improved to present more a natural, aesthetic barrier. Signs could be added near the channel to warn park-goers about the dangers of rushing water.

Summary

Reducing the channel velocity presents a compelling option when combined with the water quality and natural area enhancement benefits. Providing a more naturalized channel will serve to reduce velocities which will allow someone being carried through the channel an opportunity to reach the side and safety.

CONCEPT: REMOVE CONCRETE CHANNEL
WIDEN CHANNEL BY 30'

BENEFIT: DECREASES VELOCITY TO
REDUCE CHANCE OF A PERSON
BEING KNOCKED OVER

WATER QUALITY IMPROVEMENTS

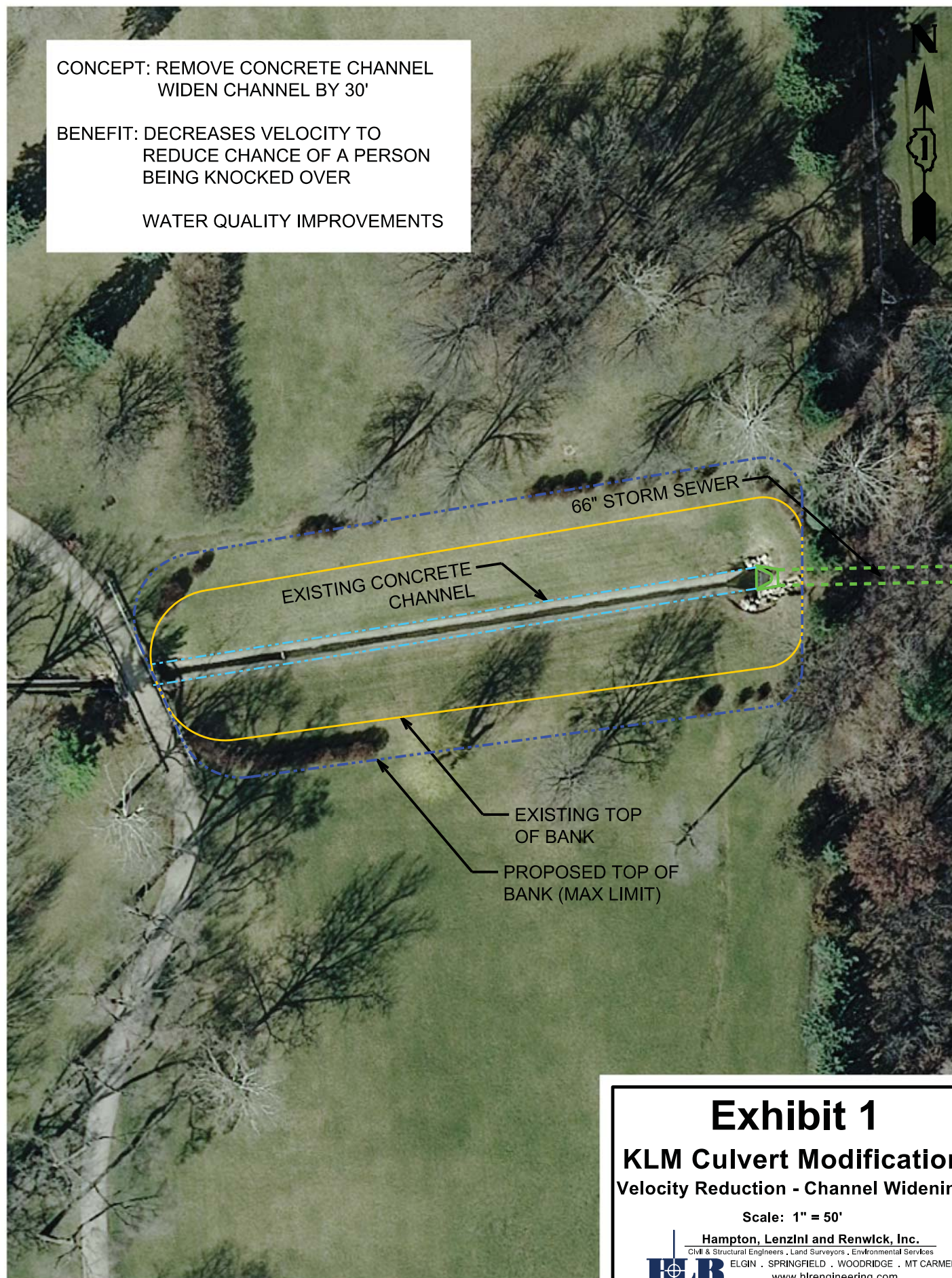


Exhibit 1

KLM Culvert Modification Velocity Reduction - Channel Widening

Scale: 1" = 50'

Hampton, Lenzini and Renwick, Inc.
Civil & Structural Engineers, Land Surveyors, Environmental Services
HLR ELGIN • SPRINGFIELD • WOODBRIDGE • MT CARMEL
www.hltreengineering.com

CONCEPT: ADD BOLLARDS ACROSS THE CHANNEL
TO BE GRASPED BY A PERSON IN AN
EMERGENCY.

BENEFIT: ADDITIONAL SAFETY WITHOUT A
SIGNIFICANT CHANGE IN HYDRAULIC
PERFORMANCE OF THE SYSTEM.

DRAWBACKS: ADDITIONAL MAINTENANCE
REQUIRED TO CLEAR TRAPPED DEBRIS.

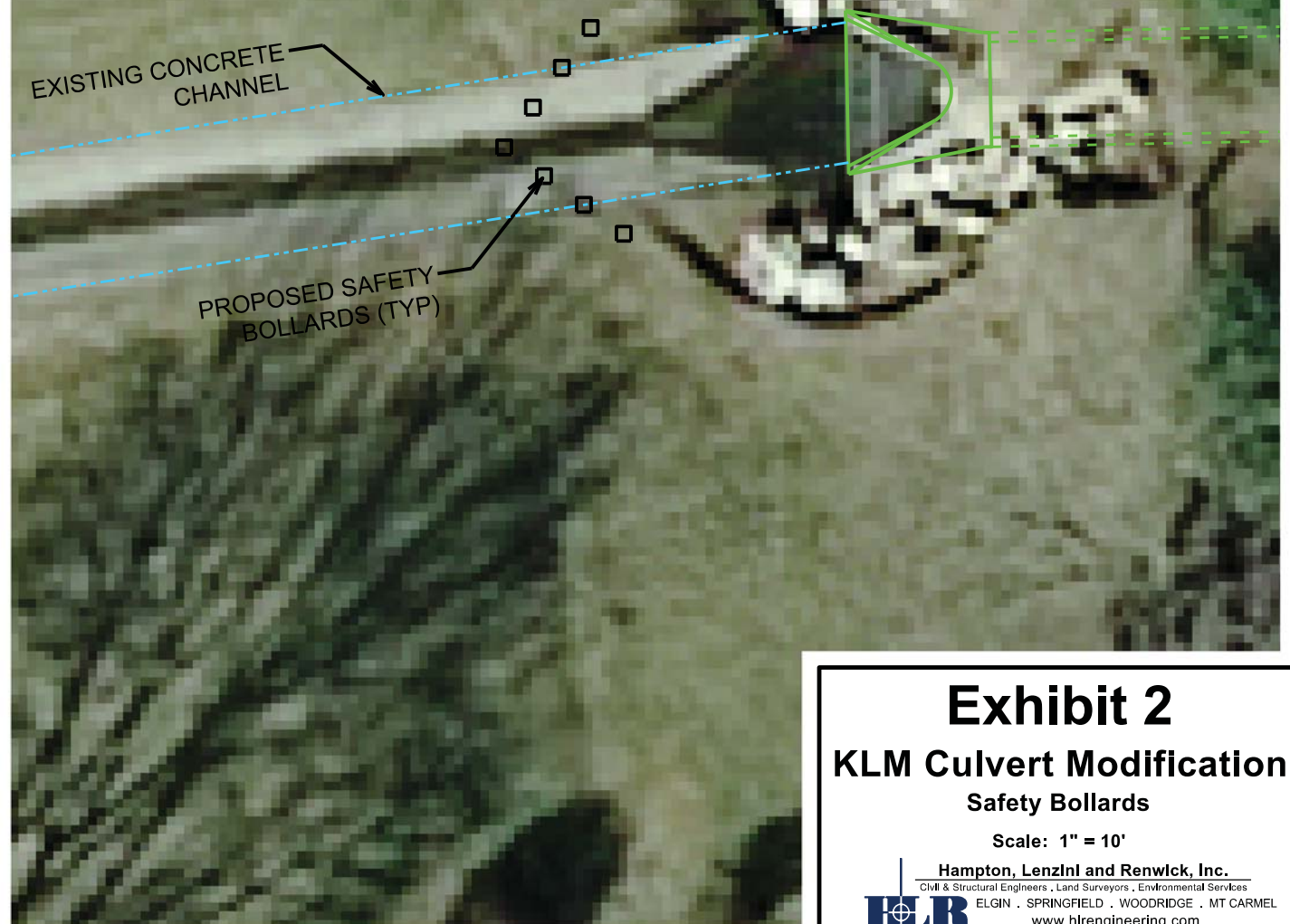


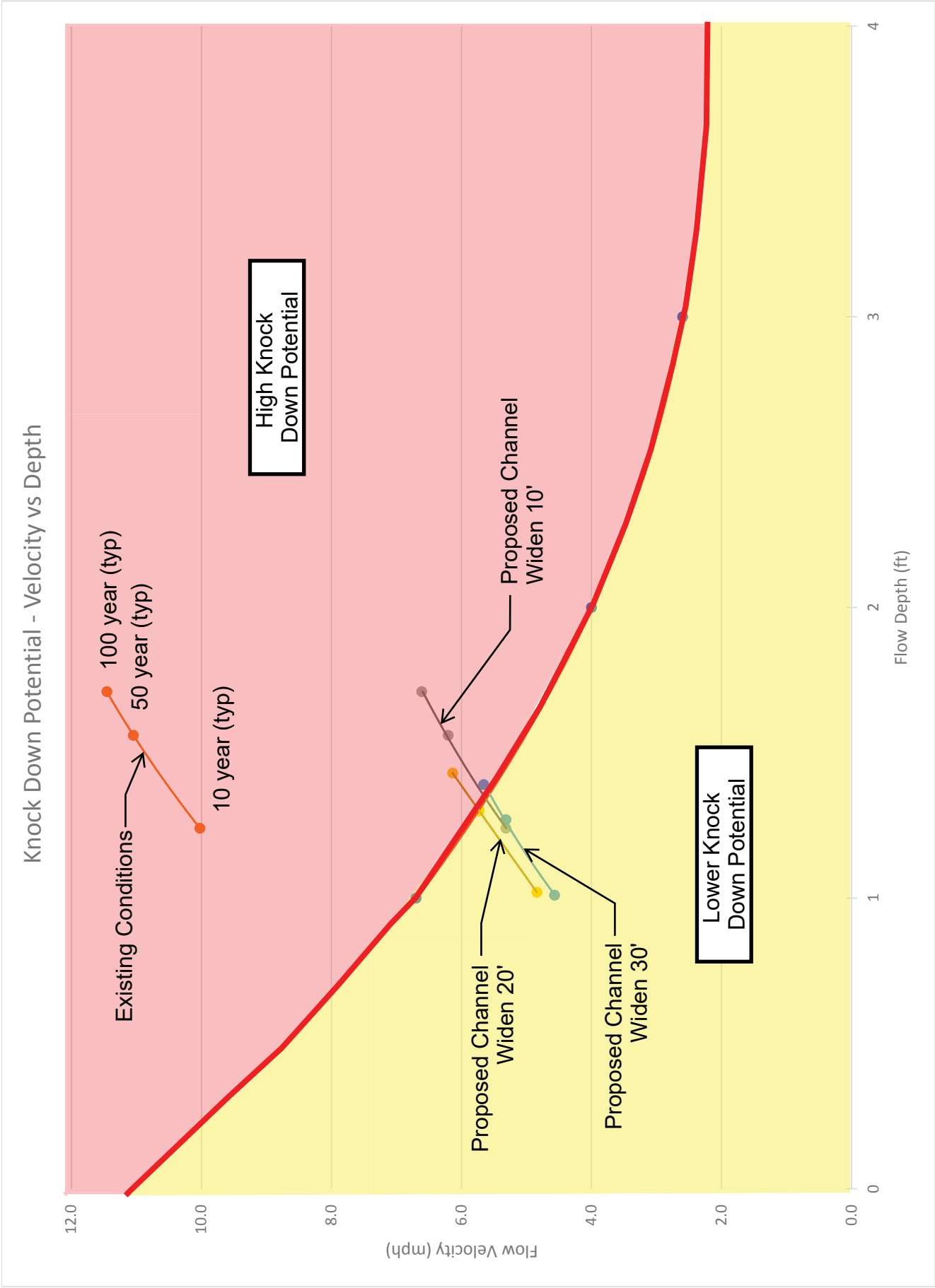
Exhibit 2

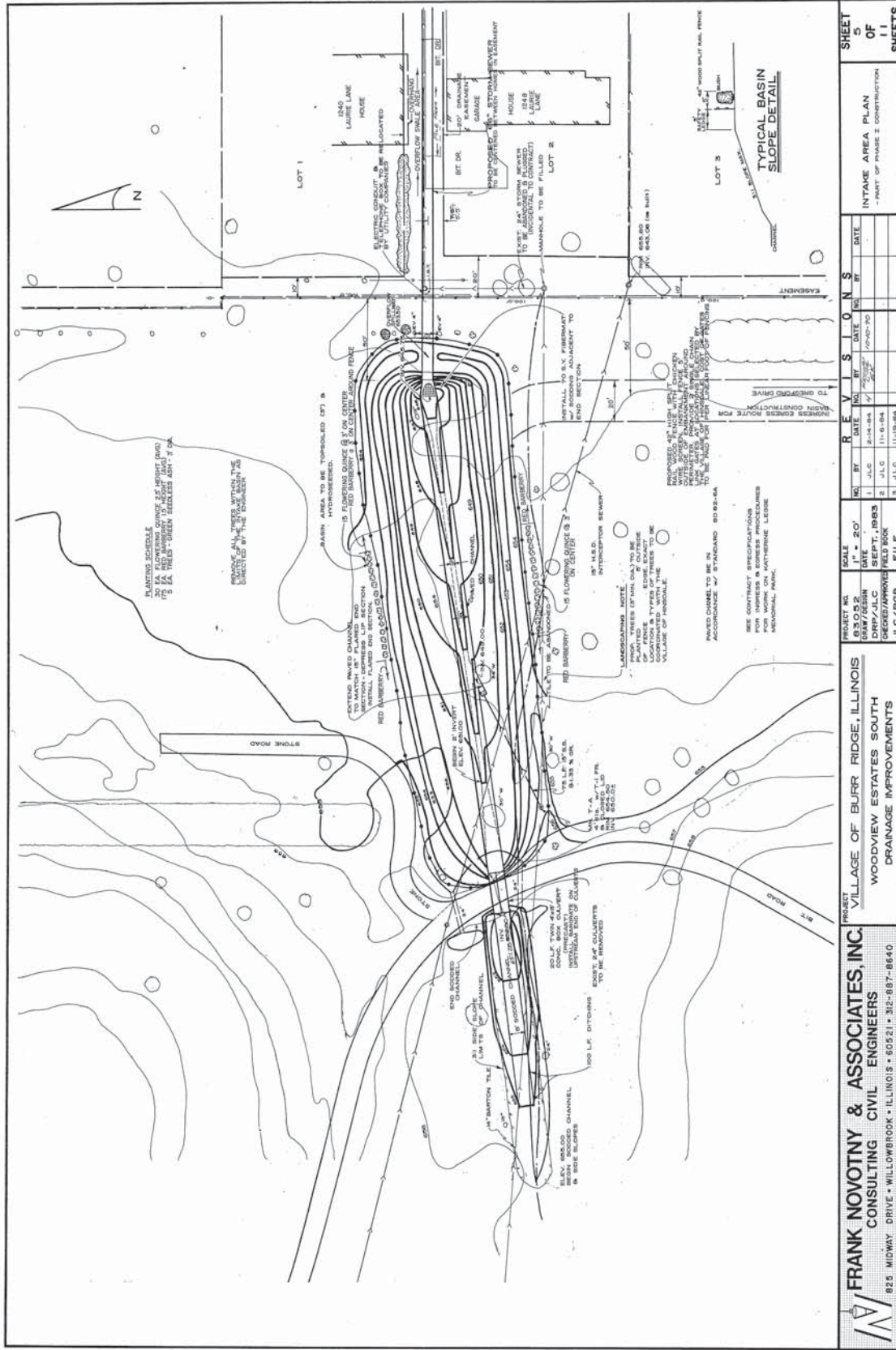
KLM Culvert Modification

Safety Bollards

Scale: 1" = 10'

Hampton, Lenzini and Renwick, Inc.
Civil & Structural Engineers, Land Surveyors, Environmental Services
HLR ELGIN • SPRINGFIELD • WOODBRIDGE • MT CARMEL
www.hltreengineering.com





PROJECT		VILLAGE OF BURR RIDGE, ILLINOIS		SHEET	
FRANK NOVOTNY & ASSOCIATES, INC.		WOODVIEW ESTATES SOUTH		OF	
CONSULTING CIVIL ENGINEERS		DRAINAGE IMPROVEMENTS		1	
825 MIDWAY DRIVE • WILLOWBROOK • ILLINOIS • 60521 • 312-887-8640				SHEETS	
DATE		REVISION		INTAKE AREA PLAN	
8/30/92		1		- PART OF PHASE 2 CONSTRUCTION	
DRAWN BY		DATE			
DRP/JLC		8/30/92			
CHECKED BY		DATE			
JLC/ROB		8/30/92			
SCALE		DATE			
1" = 20'		8/30/92			
FILE		DATE			
JLC/ROB		8/30/92			

655.557
6734
PAGE NO. 83.32

**Engineer's Opinion of Probable Cost
KLM Culvert Modifications
April 2018**

[illegible]

General Notes:

- EXHIBIT 5

**Engineer's Opinion of Probable Cost
KLM Culvert Modifications
April 2018**

[illegible]

General Notes:

- EXHIBIT 5

**Engineer's Opinion of Probable Cost
KLM Culvert Modifications
April 2018**

[illegible]

General Notes:

- EXHIBIT 5

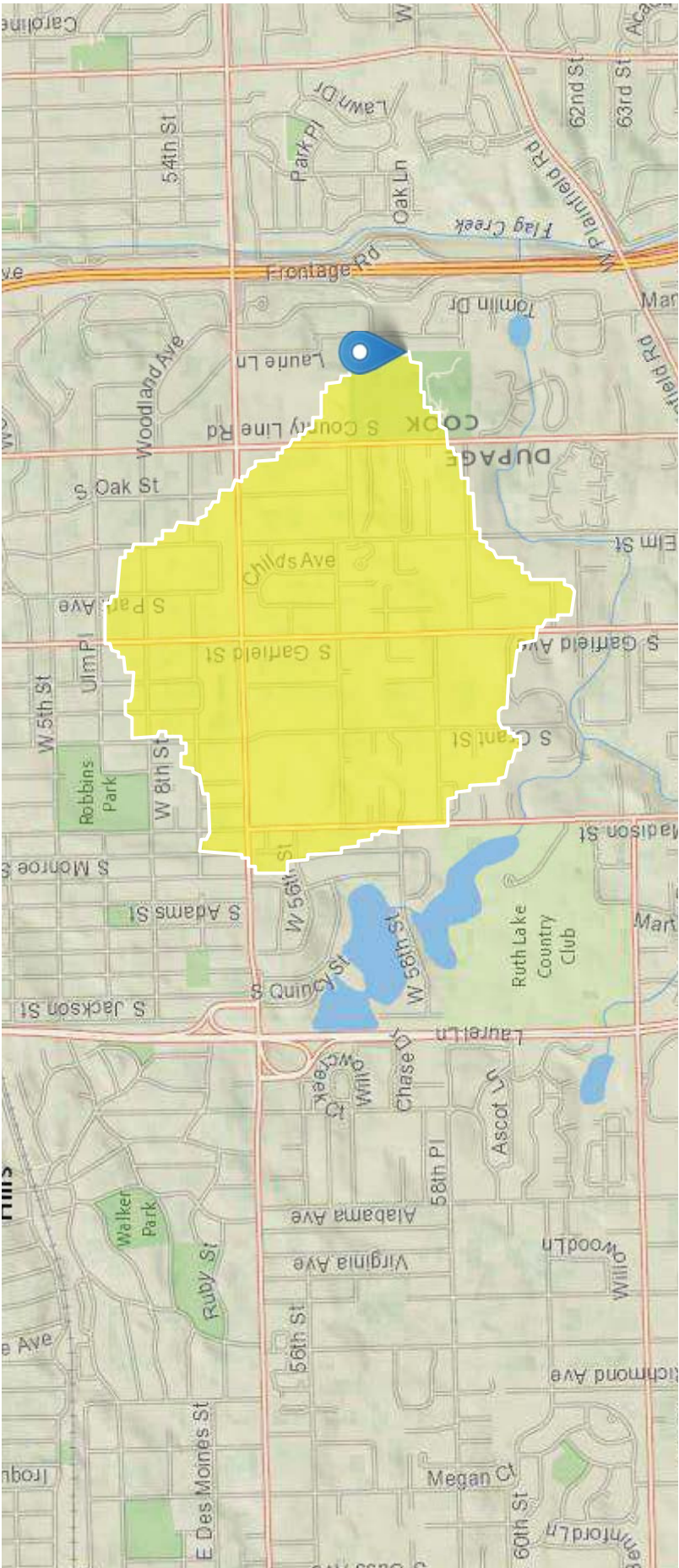
**Engineer's Opinion of Probable Cost
KLM Culvert Modifications
April 2018**

[illegible]

EXHIBIT 6

StreamStats Report - Katherine Legge Culvert Modification Study

Region ID: IL
Workspace ID: IL20180403184704569000
Clicked Point (Latitude, Longitude): 41.78296, -87.91210
Time: 2018-04-03 13:47:20 -0500



Basin Characteristics



DUPAGE COUNTY MEMORANDUM

To: Stormwater Management Committee
From: Christine Klepp, Sr Project Engineer
Subject: Floodplain Mapping Update
Date: September 24th, 2018

Countywide Map Update:

The ISWS anticipates that the Letters of Final Determination (LFD) will be issued by FEMA on February 1, 2019. The LFD notifies communities that flood hazard determinations are final and that the floodplain maps and FIS must be adopted by ordinance. The LFD also provides the level of regulation required for continued NFIP participation and provides the map/FIS effective date. The effective date for the new maps is August 1, 2019. This is 60 days later than the estimate provided at the Open House.

Most of the comment resolution letters were mailed on September 21, 2018. All that remain are the citizen comments from the Village of Roselle. The ISWS anticipates that those resolution letters will be sent in early October. For those wanting to see how a FIRM panel and the FIS have been updated with comment and appeal resolutions they can use the following link: <http://www.illinoisfloodmaps.org/dfirm.aspx?county=dupage>. This link will be posted on the County's website.

The City of Elmhurst's appeal regarding a non-levee embankment (Rt. 83) is now an appeal of the floodplain delineation on the east side of Rt. 83. This appeal has been resolved and the appeal process requirements are complete. The City of Elmhurst has confirmed receipt of and concurs with the appeal resolution letter from FEMA.

Staff continues to work with its consultants and in-house staff to work on model updates per comments received from the communities. A summary of the study areas already in progress are as follows:

- Bronswood Tributary (Lake Charles) - staff has received revised modeling and results from our consultant and is working on preparing a submittal package to send to the IDNR-OWR for review and approval.
- Spring Brook Creek which includes Meacham Creek and Meacham Creek Tributary No.1 - work on these updates is on-going with our consultant. A status update is expected this week.

Other areas where model updates are pending include:

- Spring Brook No. 1 - Hawthorne Lane Bridge area; in-house staff will be looking at this area.
- St. Joseph Creek model - a meeting has been scheduled this week with our consultant to discuss potential model updates along the Northeast and Southwest tributaries.
- East Branch Tributary No. 2 (EBE2) - incorporation of the North Avenue Flood Alleviation Project near North Avenue and the James Court Detention Pond; in-house staff will be looking at this area.

When the updated models are completed, DuPage County will prepare and submit a revised data package to the Illinois Department of Natural Resources-Office of Water Resources (IDNR-OWR) for state concurrence. Once obtained, a submittal must be prepared and sent to the Federal Emergency Management Agency (FEMA) through the MT-2 map change process for a Letter of Map Revision (LOMR) or Physical Map Revision (PMR), as appropriate, based on the size of the revision area. This step will require community concurrence and assures that due process is provided for the proposed changes.

West Branch Tributary No. 5:

Hydraulic modeling and floodplain mapping of this watershed was recently completed by in-house staff. A LOMR request for this tributary watershed, per FEMA's MT-2 map change process, was recently submitted to the IDNR-OWR and the ISWS for review and approval. Recall that the ISWS reviews such map change requests in the State of Illinois on behalf of FEMA. Concurrence from the IDNR-OWR was received in a letter dated July 31, 2018. Two comments were received from the ISWS and must be addressed by November 19, 2018. Those comments and our action follow.

1. Certified letters are to be mailed to all affected landowners in the watershed describing the proposed changes to the floodplain. Each landowner has been sent a letter along with a map showing a comparison of the effective floodplain boundary and the proposed floodplain boundary.
2. Concurrence from the City of West Chicago and the Village of Winfield is required since the proposed map revision impacts these two communities. Forms for these communities to sign have been mailed.

Future Floodplain Map Submittals:

County staff will be working with the ISWS to establish a standard operating procedure for all future DuPage MT2 submittals. In the absence of any additional federal funding by FEMA for floodplain mapping updates, all future floodplain mapping updates will be performed by in-house staff or consultants as necessary.

Our next conference call with the ISWS has been scheduled for Friday October 26, 2018.