

## STAFF REPORT

DATE: June 16, 2020

**CONSENT** 

**AGENDA ITEM:** Authorize Preparation of Plans and Specifications for the Old Village

Phase 5 and 6 Street, Drainage and Utility Improvements

SUBMITTED BY: Jack Griffin, City Engineer

**REVIEWED BY:** Kristina Handt, City Administrator

Marty Powers, Public Works Director Chad Isakson, Assistant City Engineer

**ISSUE BEFORE COUNCIL:** Should the City Council authorize preparation of plans and specifications for the Old Village Phase 5 and 6 Street, Drainage and Utility Improvements?

**BACKGROUND:** The City of Lake Elmo is extending sanitary sewer to serve the existing properties in the Old Village area to replace the use of private on-site sewage treatment systems. The projects also include drainage improvements to continue addressing historic flooding issues in the Downtown area, the replacement of aged watermain pipes and reconstructing the public streets that are disturbed during the work. The Improvements are being constructed in phases and through separate projects. The first four phases were constructed in 2015, 2016, 2017, and 2018. As part of the Old Village Capital Improvement Plan, Phase 5 is programmed for construction in 2021 and Phase 6 is programmed for construction in 2022.

On July 2, 2019 the City Council authorized SEH to complete preliminary design and topographic survey of the area to identify the scope of improvements, temporary and permanent easement needs, and develop an estimate of cost for the improvements. The preliminary design has been completed with the design memo and exhibits attached to this item for reference, together with the preliminary estimates of project costs provided in this report. The Old Village Phase 5 and Old Village Phase 6 Improvements include the areas highlighted on the attached Location Map and including the remaining Old Village sewer service areas that were included in the Old Village Capital Improvement Plan presented imp 2016, with the exception of Legion Avenue North:

**PROPOSAL DETAILS/ANALYSIS:** City Staff has worked with SEH to finalize the preliminary design of Old Village Phase 5 and 6 which included a topographic survey of the area, identification of easement needs, recommendations on roadway widths and stormwater management, and development of an estimate of cost to complete the improvements. The detailed memo and preliminary design layout can be viewed in the attachment to this agenda item. The total project cost is estimated to be \$8,751,600.

Staff is recommending the improvements be designed in one bid package and constructed over a two-year period, including the 2021 and 2022 construction seasons. The phased work would begin by extending deep sanitary sewer along 32<sup>nd</sup> Street North from Lake Elmo Avenue to the Union Pacific Railroad tracks and a portion of 33<sup>rd</sup> Street. The remaining areas would likely be completed in 2022. The financial breakdown based on the current estimate is summarized in the table below. The assessable costs are based on a draft assessment roll that needs input from planning on buildable lots and commercial SAC determinations.

	Preliminary Design Estimate of Cost	2021	2022
Total Project Cost	\$8,751,600	\$4,415,400	\$4,336,200.00
Sanitary Sewer	\$3,698,500	\$2,298,100	\$1,400,400
City Share	\$2,461,000		
Assessable Parcels	99		
Assessment Amount	\$12,500		
Assessment Income	\$1,237,500		
Watermain	\$1,277,800	\$478,800	\$799,000
Street and Storm Sewer	\$3,775,300	\$1,638,400	\$2,136,900
Assessable Cost	\$1,132,590		
Assessable Parcels	89		
Assessment Amount	\$12,700		
City Share	\$2,642,710		

Staff is seeking Council approval to order preparation of the plans and specifications for Old Village Phase 5 and 6. The engineering fees will be funded through the project costs which will be part of the project assessments once the improvements proceed to construction.

## **FISCAL IMPACT**: \$478,100.

If authorized, SEH, Inc., together with FOCUS Engineering and a geotechnical engineer will prepare final plans and specifications in a not to exceed amount of \$478,100. If the improvements are ordered, the design costs will be charged against the project fund and become assessable to the benefitting properties once the improvements proceed into construction. Should the project not be constructed, these costs cannot be assessed.

**RECOMMENDATION**: Staff is recommending that the City Council authorize SEH, Inc. to prepare plans and specifications for the Old Village Phase 5 and 6 Street, Drainage and Utility Improvements. The recommended motion for this action is as follows:

"Move to authorize SEH, Inc. to prepare plans and specifications for the Old Village Phase 5 & 6 Street, Drainage and Utility Improvements in the not to exceed amount of \$374,400."

Staff is also recommending that the City Council authorize FOCUS Engineering, Inc. to complete final design services including conduct final design review, complete a feasibility report, easement acquisition, and public engagement in the not-to-exceed amount of \$83,700. The recommended motion for this action is as follows:

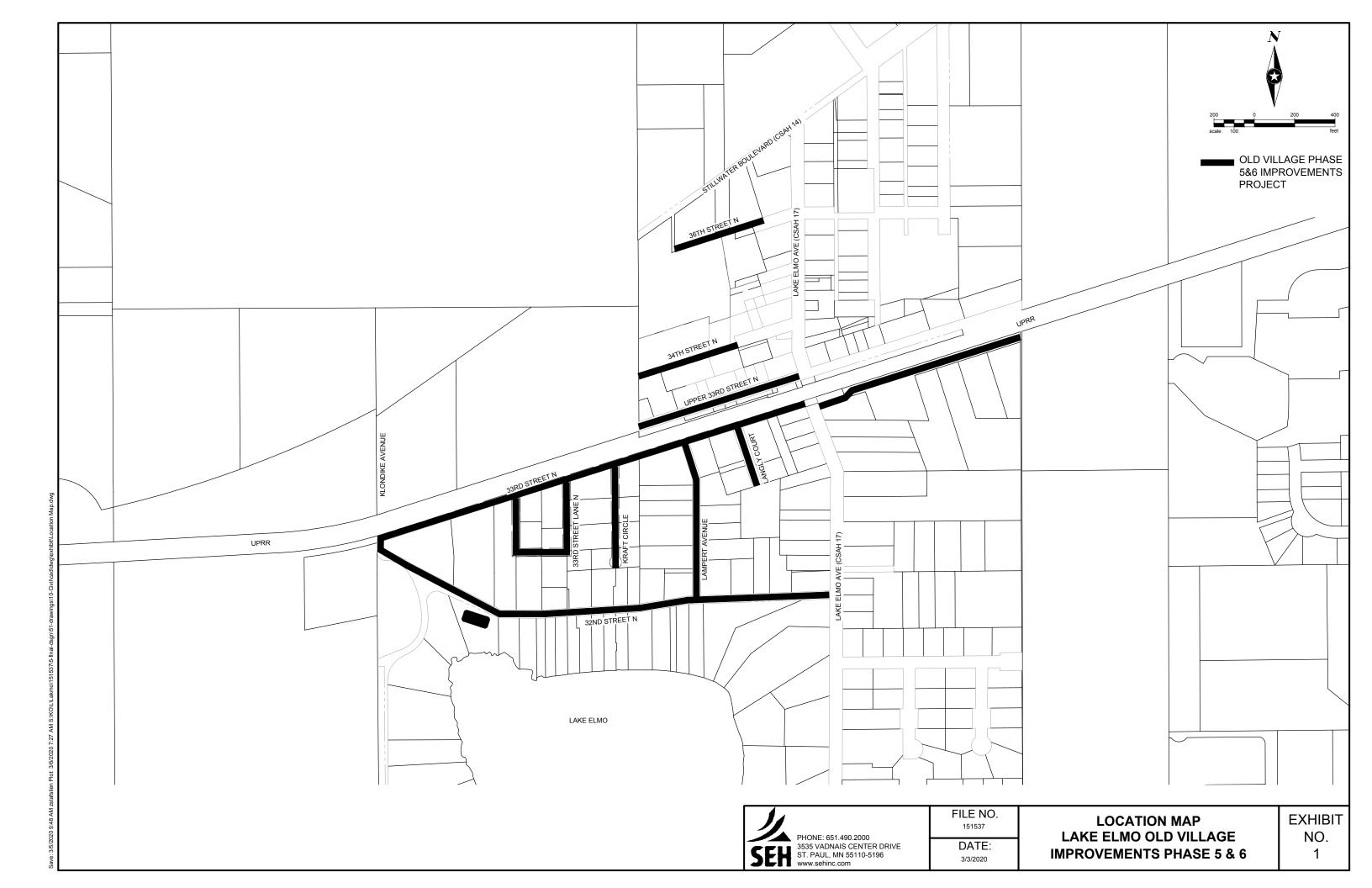
"Move to authorize FOCUS Engineering, Inc. to prepare plans and specifications for the Old Village Phase 5 & 6 Street, Drainage and Utility Improvements in the not to exceed amount of \$83,700."

Staff is also recommending that the City Council authorize the City Administrator to enter into a material testing contract in the not-to-exceed amount of \$20,000. The recommended motion for this action is as follows:

"Move to authorize the City Administrator to enter into a material testing contract in the not-to-exceed amount of \$20,000 for the Old Village Phase 5 & 6 Street, Drainage, and Utility Improvements."

## **ATTACHMENTS:**

- 1. Project Location Map.
- 2. Preliminary Design Memo.
- 3. Preliminary Design Layout.
- 4. Project Schedule.





Building a Better World for All of Us®

## **MEMORANDUM**

TO: Chad Isakson, PE

FROM: Zach Stafslien, PE (Lic. Mn)

Scott Haupt, PE (Lic. Mn)

DATE: March 6, 2020

RE: Lake Elmo Old Village Phase 5 & 6 Improvements Preliminary Design

SEH No. LAKMO 151537 14.00

This memo summarizes the assumptions used in the preliminary design of the above project.

#### **SANITARY SEWER**

- 201 sanitary systems exist on both 32<sup>nd</sup> Street N and 34<sup>th</sup> Street N, with drain fields on City owned lots. The
  201 system on 32<sup>nd</sup> Street N needs to remain in service during construction for those properties currently
  using the system; therefore a temporary sanitary sewer main will be installed to maintain service during
  construction. The 34<sup>th</sup> Street N system will not require a temporary system and will be able to be removed
  during construction (assuming 11098 34<sup>th</sup> Street N is connected or will be connected to existing City sewer by
  the time of construction).
- Per discussions with the City, 15" PVC sanitary sewer is proposed on 32<sup>nd</sup> Street N from Lake Elmo Avenue (CSAH 17) to 33<sup>rd</sup> Street N. The added capacity is intended to accommodate future development(s) north of the Union Pacific Railroad (UPRR) tracks.
- Due to the proposed pipe depth and limited right-of-way two 24" carrier pipes for the 15" PVC sanitary main are proposed to be jacked 500' east and 500' west of a jacking pit on 32<sup>nd</sup> Street N.
- A jacking pit is proposed in front of 11060 and 11090 32<sup>nd</sup> Street N which will require at minimum a 20' permanent easement on those properties.
- The eastern carrier pipe is assumed to be jacked to the outside of the existing sanitary manhole on Lake Elmo Avenue. The sewer connection is proposed to be made from the inside the manhole, to avoid shutting down Lake Elmo Avenue. This will need to be investigated further in final design.
- Since two portions of the proposed 15" PVC main on 32<sup>nd</sup> Street N will be in carrier pipes and deep, two
  secondary 8" PVC sanitary mains are proposed to be installed at higher elevations to serve adjacent
  properties. One secondary main is proposed west of Lampert Avenue, and the other is proposed east of
  Lampert Avenue.
- All other streets are proposed to be served with 8" PVC sanitary sewer mains.
- One sanitary service per lot is assumed, unless a lot has multiple dwellings, in which case one service per house is assumed. Several lots throughout the project area could potentially split into multiple lots in the future. These lots should be examined in final design to decide if multiple services should be included.
- On the south side of 32<sup>nd</sup> Street N from Lampert Avenue to the west, the majority of properties cannot be served by gravity services. The cost of supplying an E-One grinder pump station for each of those properties is included in the cost estimate.

 10823 and 10865 32<sup>nd</sup> Street N are assumed to require grinder pump stations; however, as the sanitary sewer main elevations are confirmed in final design, these may be able to be served with gravity service connections.

#### **WATER MAIN**

- Assumed replacing all existing water main with 8" DIP water main per City standards.
- The proposed water main on 32<sup>nd</sup> Street N was extended to 33<sup>rd</sup> Street N to complete a closed loop.
- All existing hydrants are assumed to be replaced. Hydrants at the intersection of 32<sup>nd</sup> Street N and Klondike Avenue and midblock on 32<sup>nd</sup> Street N between Lampert Avenue and Lake Elmo Avenue have been added to meet City spacing requirements.
- Hydrants on Upper 33<sup>rd</sup> Street N and 34<sup>th</sup> Street N meet the residential standards. If Upper 33<sup>rd</sup> Street and 34<sup>th</sup> Street are considered commercial, one additional hydrant will need to be added on each street.
- Gate valves have been proposed on each pipe at an intersection (i.e. 3 gate valves at a tee intersection).
- One water service per lot is assumed, unless a lot has multiple houses, in which case one service per house
  is assumed. Several lots throughout the project area could potentially split into multiple lots in the future.
  These lots should be examined in final design to decide if multiple services should be provided.
- 1" water services are assumed for all residential properties, and a 2" water services for all commercial properties. A 6" water service was assumed for the Lake Elmo Inn.

## **STORM SEWER**

- Storm water on 32<sup>nd</sup> Street N west of Lampert Avenue to 33<sup>rd</sup> Street N and the western 450' of 33<sup>rd</sup> Street N is proposed to be collected in new storm sewer facilities and routed to a proposed infiltration basin on the City owned parcel on 32<sup>nd</sup> Street N. Storm sewer on 32<sup>nd</sup> Street N east of Lampert Avenue is proposed to connect to the Lake Elmo Avenue storm sewer system.
- Storm water on 33<sup>rd</sup> Street N, Langly Court, Lampert Avenue, Kraft Circle, and 33<sup>rd</sup> Street Lane N is proposed to be collected in storm sewer facilities and culverts and routed to the existing drainage ditch on the north side of 33<sup>rd</sup> Street N. An existing 12" Corrugated Metal Pipe (CMP) currently conveys water collected in the ditch under 32<sup>nd</sup> Street N to the west and is proposed to remain in place. This CMP will need to have its condition evaluated and lined if necessary. Coordination with the Union Pacific Railroad will be necessary. A flared end is proposed to be connected to the 33<sup>rd</sup> Street N storm sewer system as an emergency overflow for the drainage ditch.
- Upper 33<sup>rd</sup> Street N storm sewer is proposed to connect to an existing 18" pipe installed with the Old Village Phase 2 project.
- Proposed storm sewer on 34<sup>th</sup> Street N is proposed to connect to an existing drainage structure installed with the Old Village Phase 2 project.

## STORMWATER MANAGEMENT

- A City owned lot on 32<sup>nd</sup> Street N is proposed to be utilized as an infiltration basin to meet Valley Branch
  Watershed District (VBWD) rules on treating storm water. The project will be required to capture 0.55" over
  the total proposed impervious surface area. The total proposed impervious surface area is estimated to be
  3.96 acres, resulting in a water quality volume to be captured of 7,950 cubic feet.
- A drainage divide between 32<sup>nd</sup> Street N and 33<sup>rd</sup> Street N splits the storm water to the north and south. The amount of roadway impervious being captured from 32<sup>nd</sup> Street N is approximately 1.21 acres with a water quality volume of 4,850 cubic feet at 1.1" over the impervious. This will not meet VBWD requirements of 7,950 cubic feet. Per a discussion with Valley Branch Watershed District, existing impervious areas from houses and driveways can be credited towards the water quality volume. The impervious surfaces from houses and driveways are estimated to be 0.93 acres with a water quality volume of 3,700 cubic feet at 1.1" over the

impervious area. This additional impervious being captured results in a total water quality volume of 8,550 cubic feet, which will exceed the required volume of 7,950 cubic feet.

- The regional basin constructed during the Old Village Phase 1 project will provide treatment for storm water collected on Upper 33<sup>rd</sup> Street N, 34<sup>th</sup> Street N, and 36<sup>th</sup> Street N. The amount of added impervious will need to be tracked during final design and submitted to the City to update the amount of credits from regional basin.
- The infiltration basin is proposed to be constructed on the City owned lot, which currently has an existing 201 drainfield system. After discussions with SEH environmental engineers and Valley Branch Watershed District, it is recommended that testing be conducted to verify that no heavy metals or VOC's are present in the drainfield. Obtaining soil samples via geoprobes is recommended to verify there are no contaminates. If any contaminates are found, additional geoprobe testing will be required to determine the limits of contamination. If present, there is a possibility to reuse contaminated soils on site, but would need to be verified with the MPCA. There may be additional requirements for abandonment of the drain field by the permitting agency.

### **STREETS**

• The following table summarizes existing and proposed street widths and assumed preliminary curb and gutter types proposed for each street:

Street Name	Existing Bituminous Width	Proposed Width (F-F)	Assumed Curb and Gutter Type
32 <sup>nd</sup> Street N	16'-20'	20'/24'	B618 and 18" Ribbon Curb
33 <sup>rd</sup> Street N	19'-20'	24'	B618 and 18" Ribbon Curb
33 <sup>rd</sup> Street Lane N	20'-21'	24'	B618
Kraft Circle	26'-28'	28'	B618
Lampert Avenue	19'-23'	24'	B618
Langly Court	21'-23'	28'	B618
Upper 33 <sup>rd</sup> Street N	18'-22'	24'	D412
34 <sup>th</sup> Street N	18'-23'	26' B-B	D412
36 <sup>th</sup> Street N	N/A	N/A	N/A

- The curb and gutter types are preliminary and may change in final design per City input.
- 32<sup>nd</sup> Street N east of Lampert Avenue is proposed to be 24' F-F, and the portion west of Lampert Avenue is proposed to be 20' F-F.
- The roadway section for all streets is proposed at 3.5" of bituminous, 6" of aggregate Cl. 6 and 24" of select granular borrow (mod-5%)
- Geotextile fabric has been estimated based on 35% of the roadway area.
- Preliminary common excavation volumes were calculated based on the proposed road section depth and proposed width of each street.
- A retaining wall (estimated 4' height) is proposed on the north side of 32<sup>nd</sup> Street from approximately station 124+00 to 125+00 for roadway widening and to minimize grading impacts.
- Driveways are assumed to be replaced in kind, and calculated based on payment to the right of way on each street.
- No costs have been included associated work within Union Pacific Rail Road's property.
- No costs have been included for any proposed temporary or permanent easements.

## **PRIVATE UTILITIES**

 A Gopher State One Call request for field markings and maps was submitted for the project area prior to the topographic survey; however, limited field markings were provided. The field markings were supplemented with information provided in maps received from private utility companies to generate the facilities shown in the exhibit drawings.

- The following private utilities did not provide field markings or send maps of their existing facilities: Arvig, MCI, Mastec, or Zayo.
- There will likely be impacts to existing power poles throughout the project area which will need to be held or moved to accommodate the installation of public utilities, road widening and minor shifting of road alignments.
- Impacts to telecommunication and gas main facilities are likely due to public utility improvements, minor shifting of road alignments and road widening. The full extent of the potential impacts will be determined during final design.

#### **EASEMENTS**

- Approximate temporary and permanent easements were identified in the project area based on preliminary
  construction limits. Temporary easements are drawn to the nearest 5' interval along the width of an entire
  property. Once construction limits are more clearly defined during final design, additional temporary easement
  needs may be identified.
- A review of the right of way and existing easements was completed on 36<sup>th</sup> Street N to determine what could be utilized for the sanitary sewer extension. No existing easements or right of way was found for the trail based on title work obtained for the abutting parcels. As a result, a 30' utility easement is proposed along the trail for the sanitary sewer.
- Per discussion with the City, a 45' radius cul-de-sac is proposed on the west end of Upper 33<sup>rd</sup> Street N on private property. This will require a permanent easement/ Right of Way dedication.
- At the west end of 32<sup>nd</sup> Street N, the existing roadway is outside of the existing right of way. A 40' permanent easement/right of way (20' from the proposed centerline) is proposed to maintain the proposed roadway in the right of way.
- All sanitary and water services impacts on private property are assumed to be handled with right of entries before construction.
- Along 33<sup>rd</sup> Street temporary and permanent easements were not shown on the exhibits which may be needed
  for multiple flared ends, storm pipe, and grading on rail road property. In final design it will need to be
  investigated further if any existing drainage and utility easements exist along the rail road property and could
  be utilized.

### **PERMITS**

- The following permits are anticipated to be required for the project:
  - Valley Branch Watershed District Permit
  - Washington County Right of Way Permit
  - Department of Health for water main replacement
  - MPCA for sanitary sewer extension
  - Union Pacific Railroad permit(s)

#### **SOIL BORINGS**

The following verbiage is proposed for the City to solicit proposals for soil boring/testing work:

- 1. The City of Lake Elmo is requesting proposals for drilling, testing and geotechnical recommendations for the Old Village Phase 5 & 6 project.
- 2. The project will consist of total street reconstruction, installation of water main, storm sewer, and sanitary sewer. It is anticipated that the sanitary sewer will be installed using pilot tube auger boring, or other trenchless methods as appropriate, from Lake Elmo Avenue North to 250 feet west of Lampert Avenue. Provide recommendations for pavement and subgrade, trench excavation and

Old Village Phase 5 & 6 Improvements – Preliminary Design Memorandum March 6, 2020 Page 5

backfill, and evaluation of the feasibility of using pilot tube auger boring methods. Ensure that the investigation can assess the presence of, and the probability of encountering cobble or boulders.

- 3. It is likely a retaining wall will be needed on the north side of 32nd Street N, approximately 150 to 300 feet west of Lampert Avenue. Provide recommendations for the retaining wall assuming it will consist of a modular block retaining wall using large, wet cast concrete block units.
- 4. An infiltration basin is proposed south of 32nd Avenue N and east of Klondike Avenue N. Two borings are shown at the proposed basin location. The basin design will follow the Minnesota Stormwater Manual guidance. Provide soil classification and testing necessary to determine the hydrologic soil group and an assessment of the site for infiltration.
- 5. A soil boring plan showing the minimum number of borings and depths is attached for your reference. For the proposal, please review the locations and depths and determine if additional borings are required. Include all testing deemed necessary to complete the geotechnical recommendations and report.

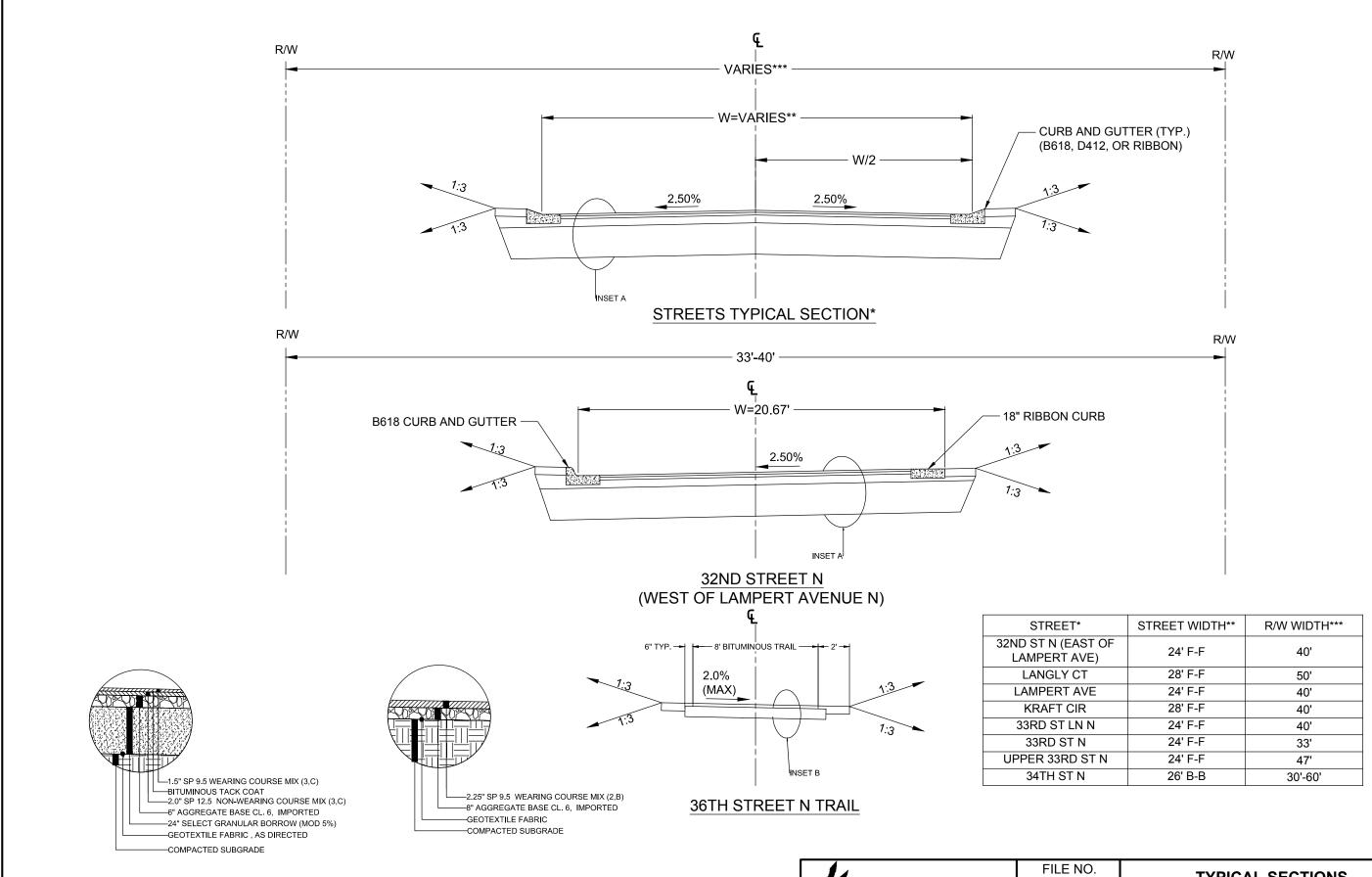
#### **ZTS**

c: Jeff Thene

s:\ko\l\lakmo\151537\4-prelim-dsgn-rpts\43-prelim-dsgn\design memo\ov 5-6 prelim design memo\_03-03-2020.docx

#### Attached:

Exhibit Drawings
Preliminary Opinion of Total Probable Cost
Boring Location Map



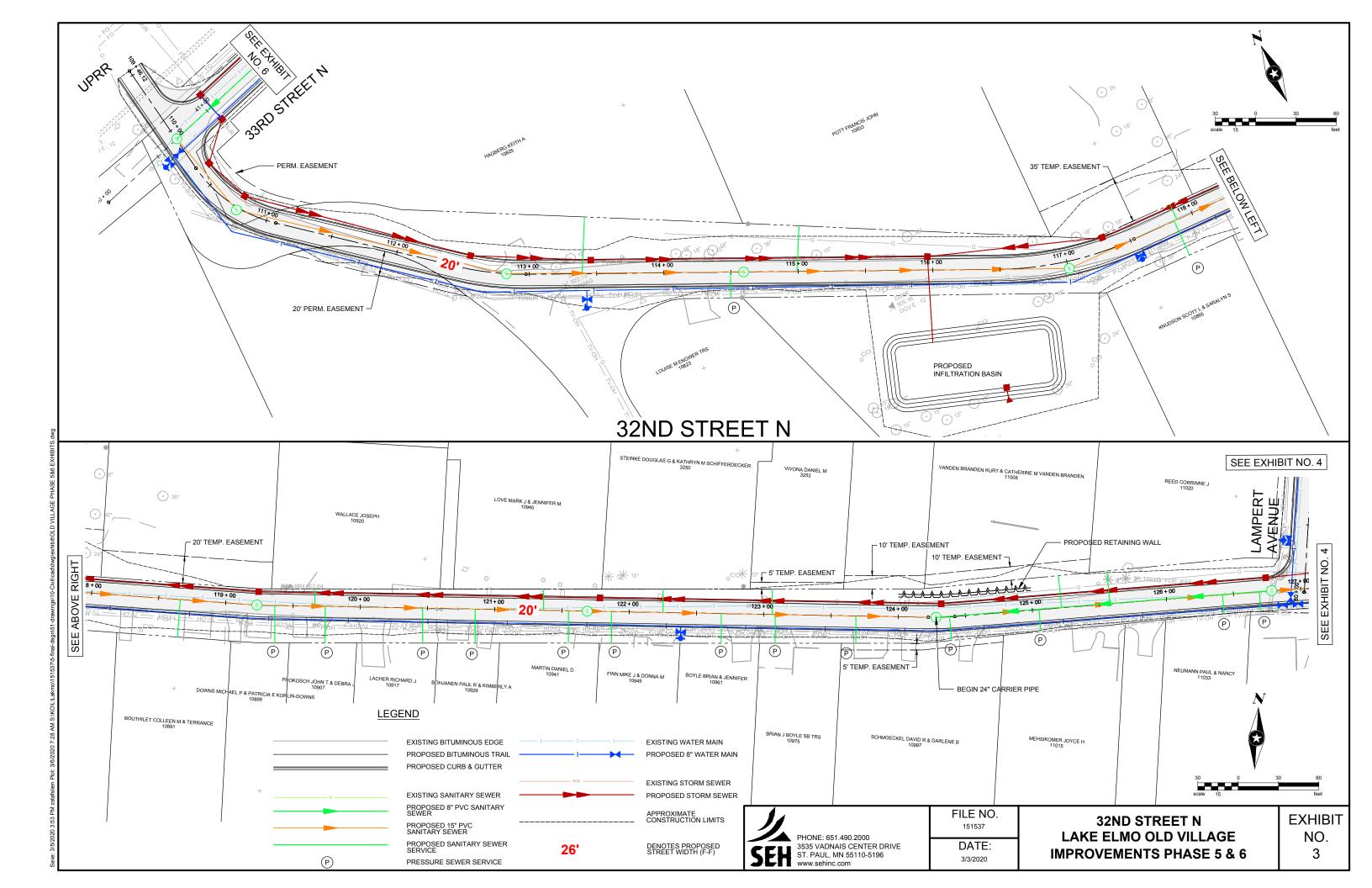
PHONE: 651.490.2000
3535 VADNAIS CENTER DRIVE
ST. PAUL, MN 55110-5196
www.sehinc.com

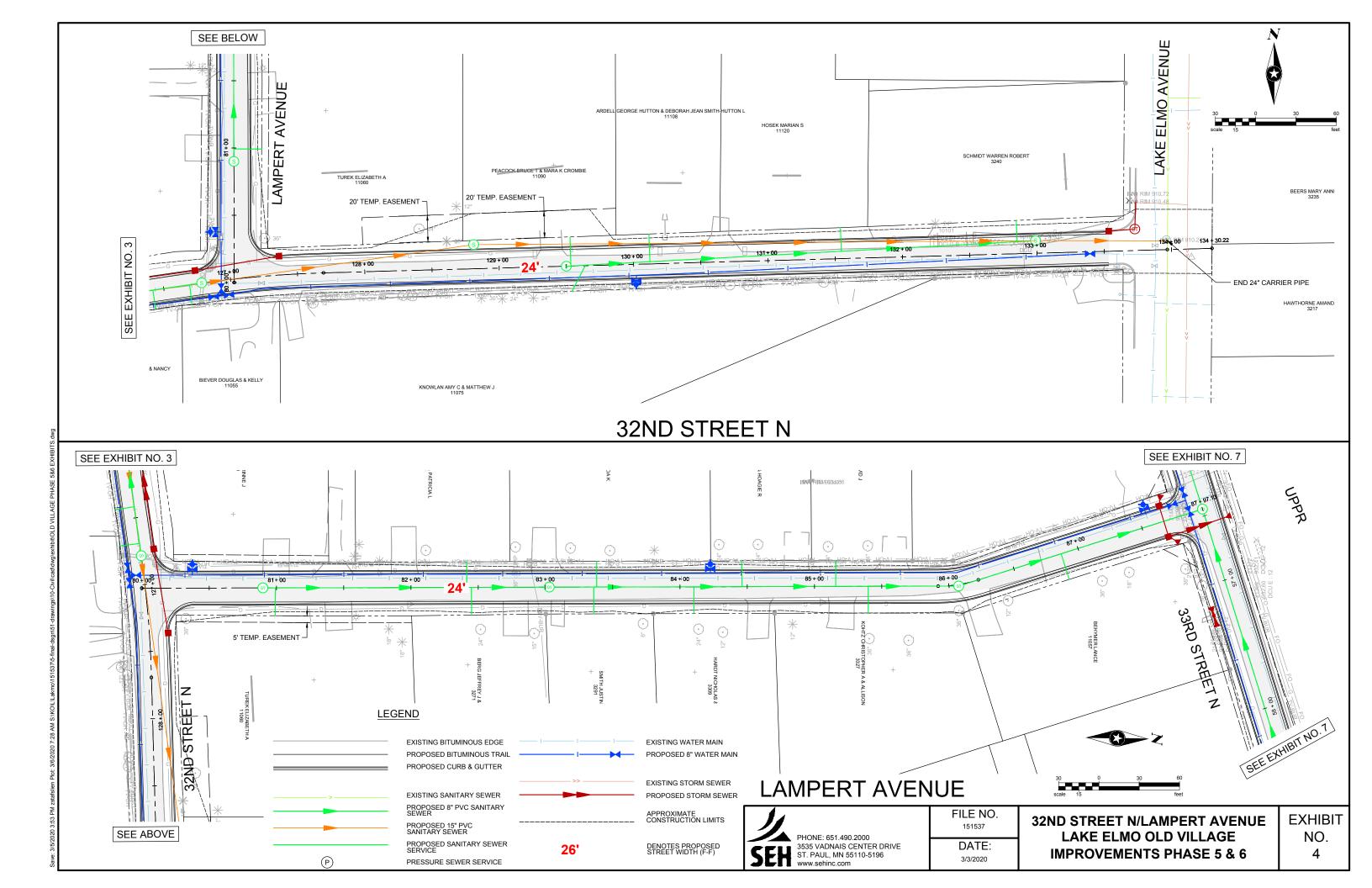
TYPICAL SECTIONS

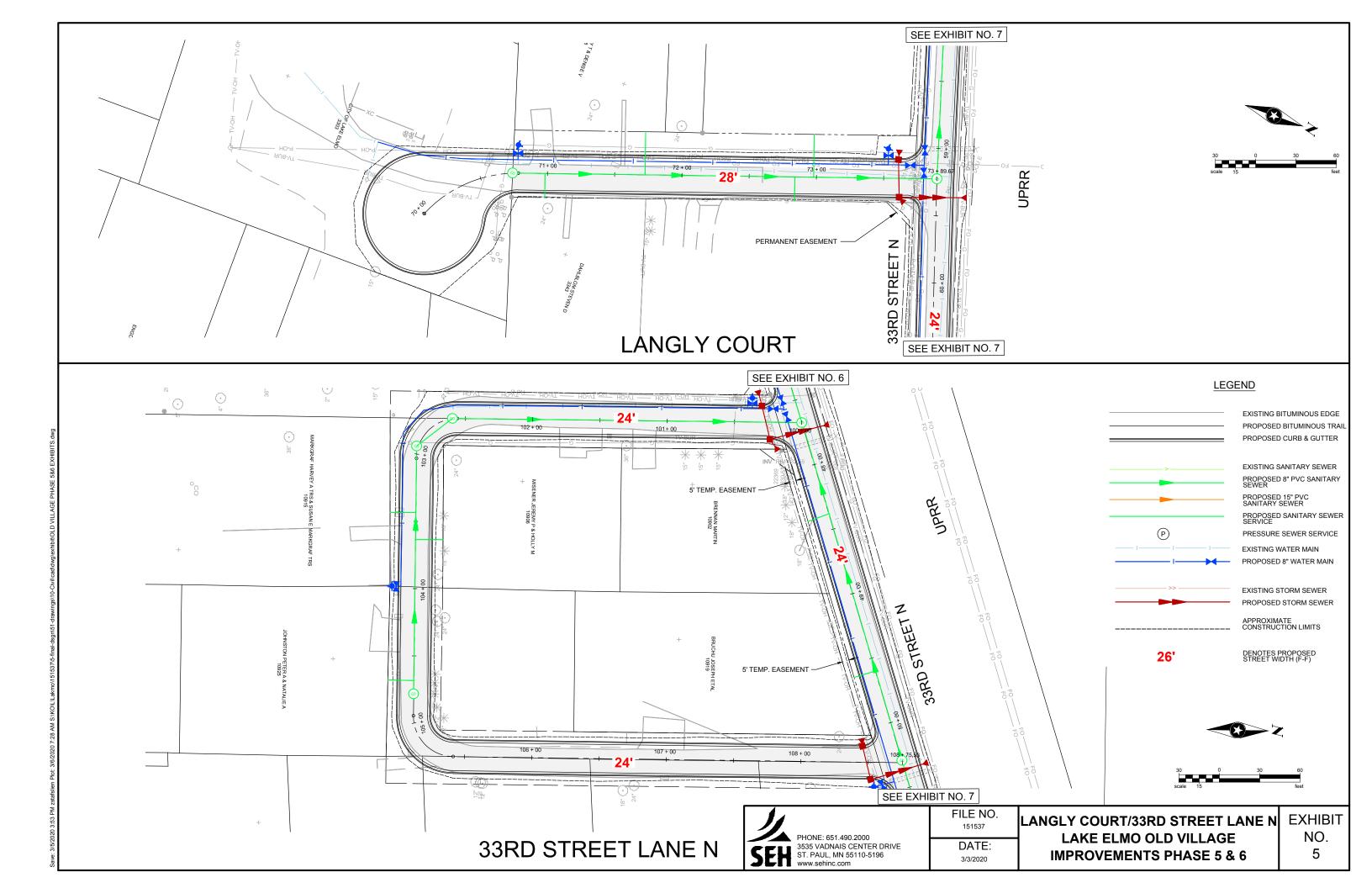
LAKE ELMO OLD VILLAGE

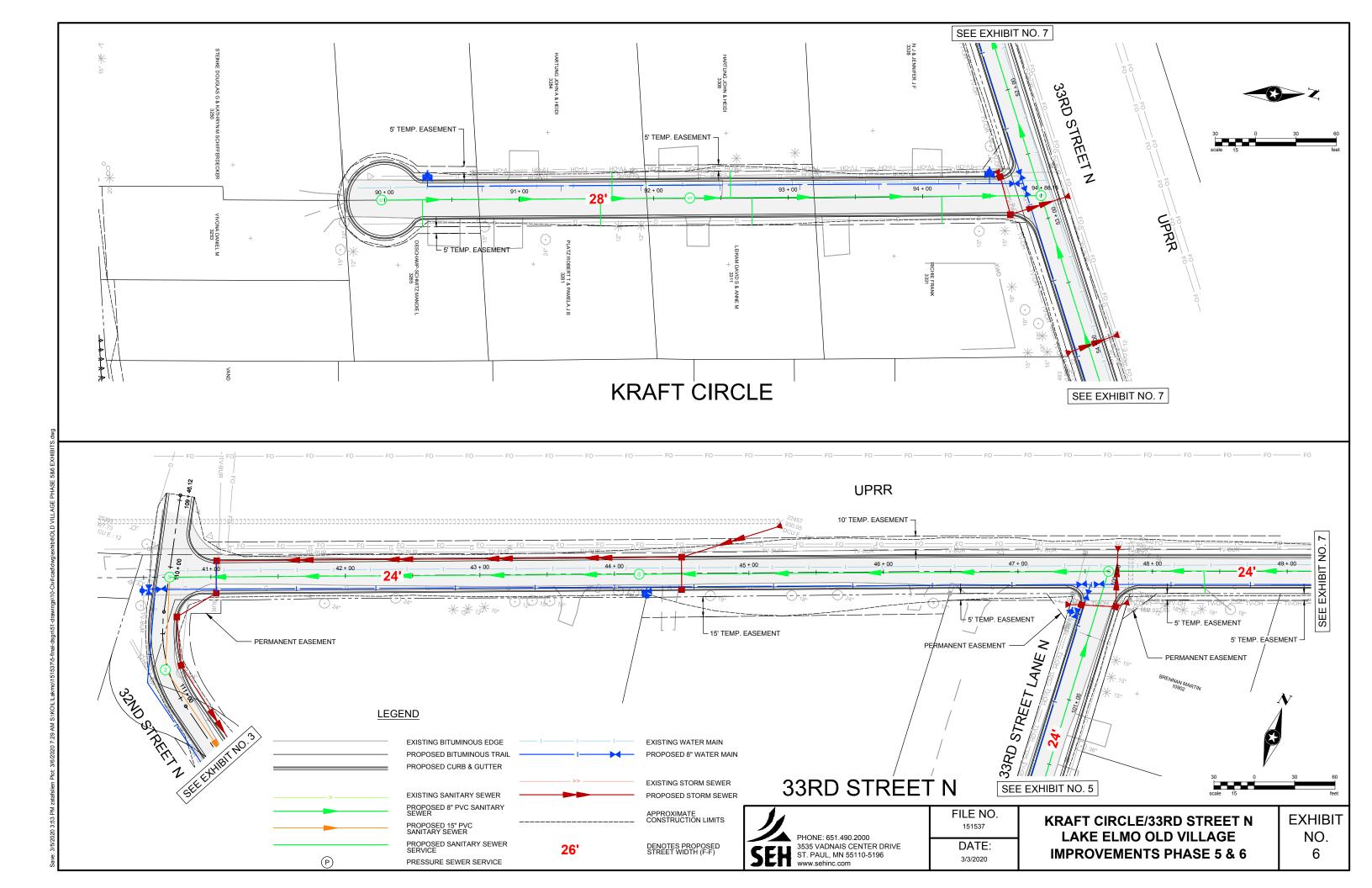
IMPROVEMENTS PHASE 5 & 6

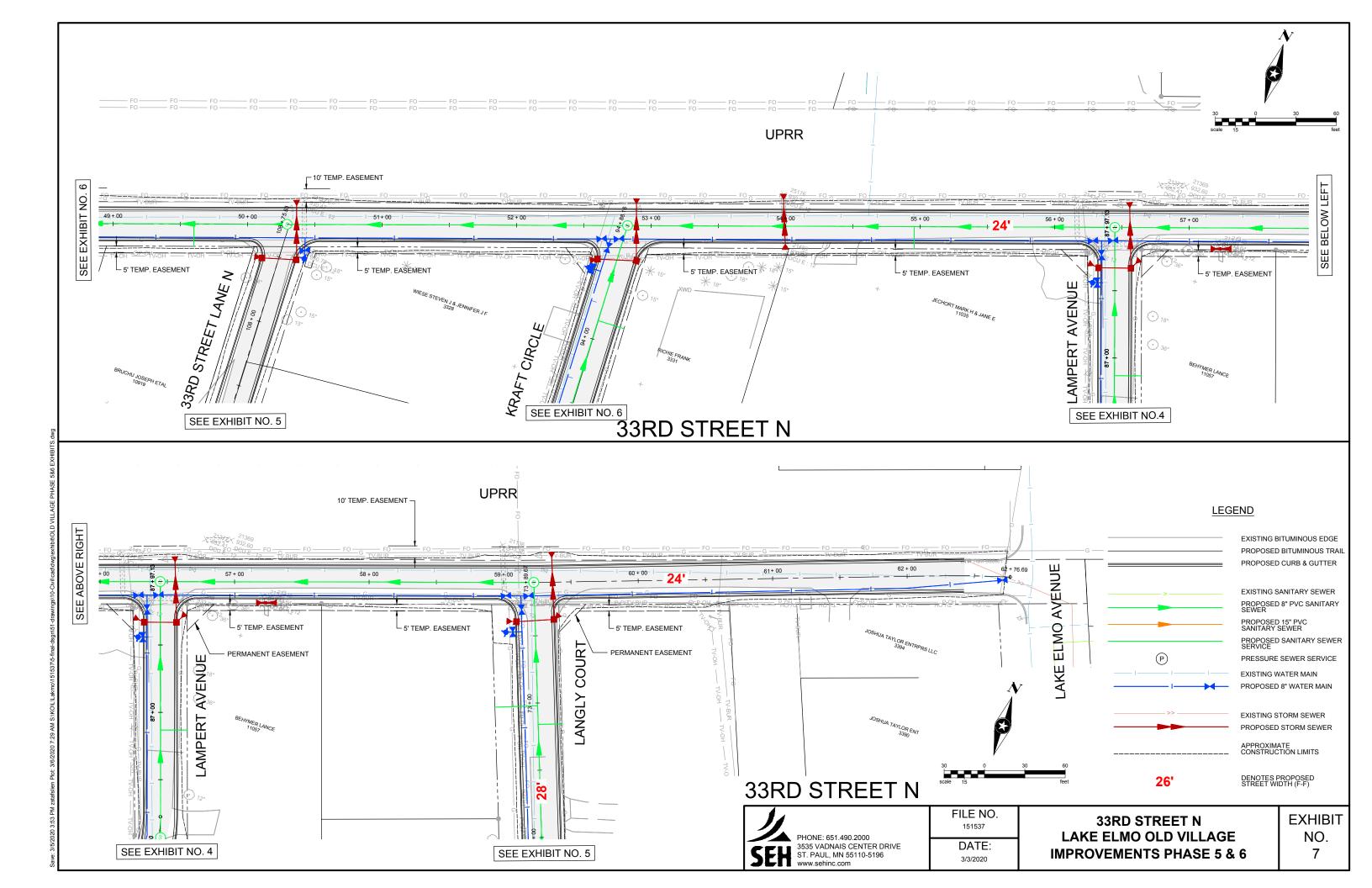
EXHIBIT NO. 2

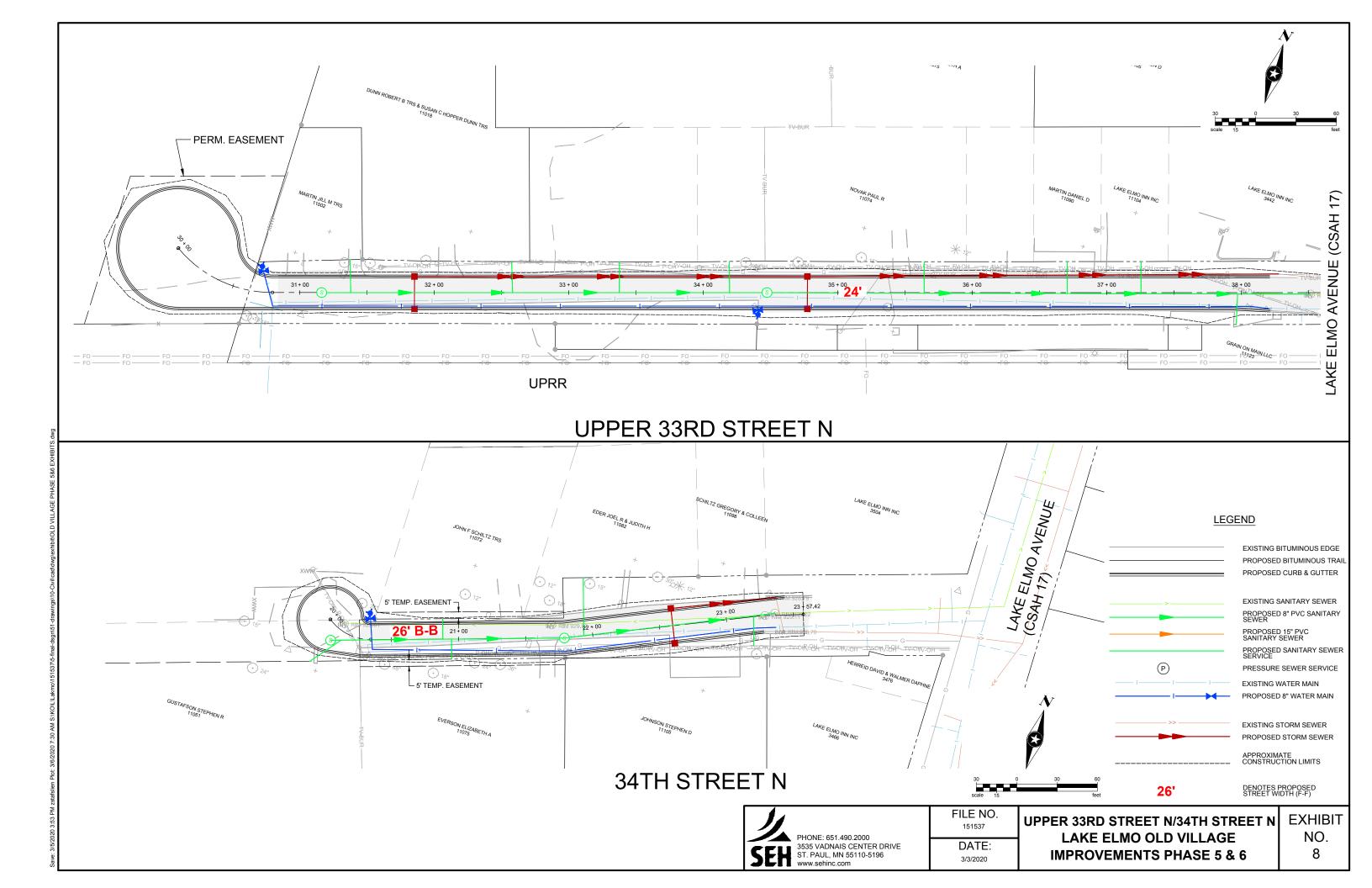


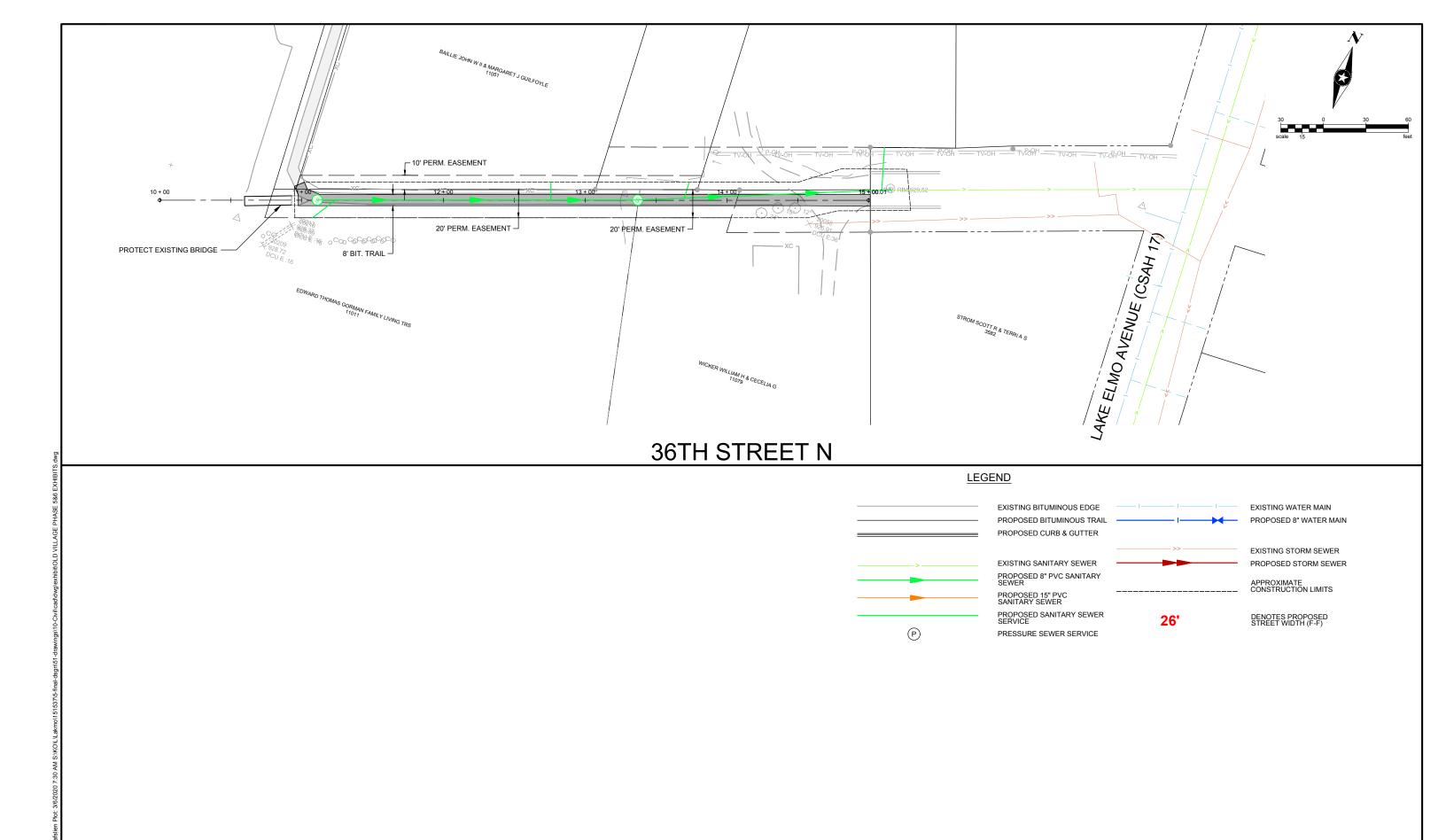














3/3/2020

36TH STREET N LAKE ELMO OLD VILLAGE IMPROVEMENTS PHASE 5 & 6

# PROJECT SCHEDULE CITY OF LAKE ELMO

## FOCUS ENGINEERING, inc.

Cara Geheren, P.E. Jack Griffin, P.E. Ryan Stempski, P.E. Chad Isakson, P.E. 651.300.4261 651.300.4264 651.300.4267 651.300.4283

## OLD VILLAGE PHASE 5 AND 6 IMPROVEMENTS PROJECT NO. 2019.116

JULY 2, 2019	Council orders preparation of Preliminary Design and Topographic Survey.		
JUNE 16, 2020	Presentation of Preliminary Design. Council orders preparation of plans and specifications.		
DECEMBER 16, 2020	Council approves Plans and Specifications and orders Advertisement for Bids.		
JANUARY 27, 2021	Receive Contractor Bids.		
FEBRUARY 16, 2021	Presentation of Feasibility Report. Council accepts Report and calls for Improvement Hearing; Declares Costs to be Assessed and Calls for Hearing on Assessment.		
MARCH 9 or 16, 2021	Final Assessment Hearing. Council Orders the Improvement; accepts Bids and awards Contract; and adopts the Final Assessment Roll.		
MAY 19, 2021	<ul> <li>Conduct Pre-Construction Meeting a</li> <li>OCTOBER 2020</li> <li>OCTOBER 2021</li> <li>JUNE 30, 2022</li> </ul>	and issue Notice to Proceed. Substantial Completion (Phase 1) Substantial Completion (Total Project) Final Completion.	