

# MEMORANDUM

## FOCUS ENGINEERING, inc.

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Date: October 10, 2019

To: Ken Roberts, Planning Director  
Cc: Chad Isakson, Assistant City Engineer  
From: Jack Griffin, P.E., City Engineer

Re: Lake Elmo Senior Development  
Preliminary Plan Review

Engineering has reviewed the Preliminary Site Plan for the Lake Elmo Senior Development to be located along 39th Street North, just east of Arbor Glenn Senior Living. The submittal consisted of the following documentation received September 30, 2019:

- Preliminary Site Plan and PUD dated September 17, 2019, prepared by Ayres Associates.
- Storm Water Management Plan dated September 17, 2019 prepared by Ayres Associates.
- Traffic Impact Study dated August 30, 2019 prepared by Ayres Associates.

Engineering review comments are as follows:

Final Construction Plans and Specifications must be prepared in accordance with the latest version of the City Engineering Design Standards Manual, using City details, plan notes and specifications and meeting City Engineering Design Guidelines. A detailed construction plan review will be completed prior to the start of construction of the site improvements.

### STREETS AND TRANSPORTATION

- Site Access/Access Management is sufficient. With the potential for many new commercial buildings along 39th Street North, access management will need to be carefully implemented to ensure that 39th Street continues to function as intended. As parcels develop and subdivide, the access points to 39th Street will need to be coordinated and minimized. The site plan has been revised to show only one driveway access to the development. The proposed access meets the acceptable spacing guidelines from the existing driveway at Arbor Glen and maintains an adequate offset from the south leg of Laverne Avenue.
- 39th Street North Right-of-Way Dedication not required. No additional right-of-way dedication appears to be required along 39th Street North. The preliminary plan shows that the existing right-of-way provides a minimum of 40 feet from street centerline along the entire length of the property.
- 39th Street North Utility Easement Dedication. A 10-foot utility easement for small utilities has been dedicated to the City along the entire north boulevard of 39th Street North. The site plans must be prepared in a manner to preserves the full 10-feet for small utility installation with no obstructions (e.g. signs, trees, structures, etc.). The preliminary plan must be revised to show the utility easement graded as boulevard with maximum 4% slope.
- Construction parking and staging (preservation of 39th Street North). As part of any development or site improvement agreement the developer will be required to manage all construction parking, construction staging and material deliveries internal to the site. No parking and construction staging, including loading and unloading materials and equipment will be allowed along 39th Street North at any time during the construction of the site improvements and buildings. All street and boulevard damage caused by the construction activities must be repaired or replaced at no cost to the City and meeting City standards and specifications.

- Site easements/landscaping. The preliminary plans must be revised to maintain all tree plantings outside of the front, side and rear drainage and utility easements.
- Traffic Impact Study. A traffic impact study has been submitted as part of the site plan application. The Study findings indicate no additional travel lanes, turn lanes or other road improvements required.

#### STORMWATER MANAGEMENT

- A State and Valley Branch Watershed District (VBWD) permit will be required. The site plan is subject to a storm water management plan meeting State, VBWD and City rules and regulations.
- Storm water facilities proposed for meeting permitting requirements must be designed and constructed in accordance with the City Engineering Design Standards Manual available on the City website.
- Based on the plans received to date, plan revisions are required to conform the site design to VBWD and City rules and regulations.
- The storm water facilities constructed for this development should remain privately owned and maintained. The applicant will be required to execute and record a Stormwater Maintenance and Easement Agreement in the City's standard form of agreement.
- The storm water facility 100-year HWL must be fully contained within the subject property and must be a minimum of 2-feet below all adjacent low floor building elevations.
- The existing downstream drainage basins for the 39th Street storm sewer system do not have available treatment or storage capacity to accommodate new development. Therefore, any storm sewer connections to the 39th Street system must be at both reduced runoff rates and volumes.
- Connection to 39th Street storm sewer requires verification of existing capacity within all downstream storm sewer systems and availability of downstream storm sewer ponding at the discharge location(s). Detailed storm sewer calculations must be submitted demonstrating sufficient capacity and meeting all current City Engineering Design Standards.

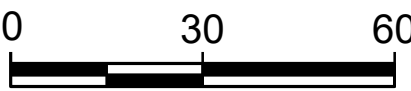
#### MUNICIPAL WATER SUPPLY

- The proposed property is located in the Old Village MUSA and intermediate water system pressure zone.
- Connection to the municipal water supply is readily available to serve this property. The applicant will be required to connect, at its sole cost, to the existing 8-inch DIP stub that was installed to serve this property. A minimum 8-inch diameter watermain will be required to be extended internal to the site with private water services stubbed for connection to each individual building.
- The applicant will be responsible to place hydrants and gate valves throughout the property at the direction of the Fire Department and Public Works Department (see attached hydrant and system valve locations). All fire hydrants and connecting watermains shall be owned and maintained by the City.
- Any watermain lines and hydrants placed internal to the site will require minimum 30-foot easements centered over the hydrant or pipe. Easements must be dedicated to the City and be provided in the City's standard form of easement agreement.
- Water availability charges and connection charges will apply to the service connections. A Met Council SAC determination will be required to determine the WAC/Connection charges for each building.

#### MUNICIPAL SANITARY SEWER

- The proposed property is located in the Old Village MUSA current Regional Sewer Staging Plan and would discharge to the MCES Cottage Grove Ravine Interceptor.
- Connection to the municipal sanitary sewer system is readily available to serve this property. The applicant will be required to connect, at its sole cost, to the existing 8-inch PVC stub that was installed to serve this property. An 8-inch diameter sanitary sewer main will be required to be extended internal to the site with private sewer service stubs installed for connection to each individual building.
- All sanitary sewer mains internal to the site shall remain privately owned and maintain.
- The sanitary sewer main along the south property line must be realigned to remain outside of the 10-foot drainage and utility easement (see attached sanitary sewer realignment).
- Sewer availability charges and connection charges will apply to the service connections. A Met Council SAC determination will be required to determine the SAC/Connection charges for each building.





## NEW UTILITY STRUCTURES

AEW1, 12" A.E., SEE DETAIL 7/C803  
S 937.15 SEE DETAIL 7/C803

AEW2, 12" A.E., SEE DETAIL 7/C803  
N 936.70

S01  
INL 2X3-FT  
CASTING - H  
TC 935.88  
N 933.80 (12")

S10  
MH 4-FT  
CASTING - J  
RIM 939.44  
S 933.17 (18")  
N 933.17 (18")

S26  
CONNECT TO EX SS  
CASTING -  
939.09  
N 932.50 (15")

S02  
INL 2X3-FT  
CASTING - H  
TC 935.91  
S 933.71 (12")  
NE 933.71 (15")

S11  
INL 2X3-FT  
CASTING - H  
TC 939.84  
SE 934.68 (12")

S30  
INL 2X3-FT  
CASTING - H  
TC 938.20  
W 933.97 (12")

S03  
INL 2X3-FT  
CASTING - H  
TC 937.01  
NW 933.72 (12")

S12  
INL 2X3-FT  
CASTING - H  
TC 940.98  
NW 934.33 (12")  
E 934.08 (15")

S31  
INL 2X3-FT  
CASTING - H  
TC 938.74  
SW 934.50 (12")  
NE 933.77 (15")

S04  
MH 4-FT  
CASTING - C  
RIM 937.76  
SE 933.58 (12")  
SW 933.58 (15")  
N 933.58 (18")

S13  
INL 2X3-FT  
CASTING - H  
TC 940.42  
SE 935.10 (12")

S05  
INL 2.5-FT  
CASTING - B6  
RIM 937.00  
W 934.46 (12")

S14  
MH 4-FT  
CASTING - H  
TC 940.30  
NW 934.57 (12")  
E 934.57 (12")  
SW 934.47 (15")

S06  
MH 4-FT  
CASTING - J  
RIM 937.96  
S 933.48 (18")  
E 933.98 (12")  
N 933.48 (18")

S15  
MH 4-FT  
CASTING - H  
TC 941.16  
W 933.54 (15")  
NE 933.54 (15")  
S 933.29 (18")

S07  
MH 4-FT  
CASTING - H  
TC 937.93  
S 933.35 (18")  
W 933.35 (18")  
E 933.85 (12")  
N 933.35 (18")

S17  
INL 2.5-FT  
CASTING - B6  
RIM 939.77  
W 936.70 (12")

S08  
INL 2.5-FT  
CASTING - B6  
RIM 938.00  
NE 935.03 (12")

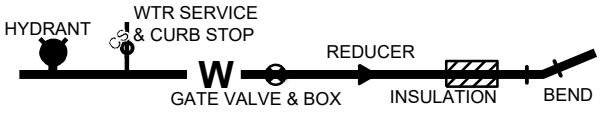
S18  
MH 4-FT  
CASTING - J  
RIM 939.83  
SW 933.17 (15")

S09  
INL 2X3-FT  
CASTING - H  
TC 938.71  
SW 933.68 (15")  
E 933.68 (18")

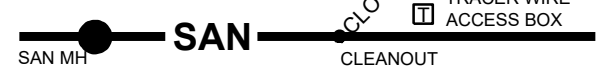
S19  
MH 4-FT  
CASTING - J  
RIM 939.76  
NE 933.02 (15")  
S 933.02 (15")

## SITE UTILITIES LEGEND

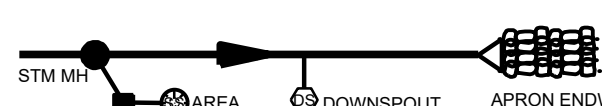
PROPOSED WATER MAIN, SEE DTLS  
207A/C800, 210/C800, 201/C800, &  
206/C800



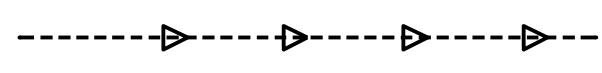
PROPOSED SANITARY SEWER,  
SEE DTLS 1/C803, & 2/C803



PROPOSED STORM SEWER,  
SEE DTLS 4/C803, 5/C803,  
6/C803, 7/C803, & 8/C803



PROPOSED 4" UNDERDRAIN,  
SEE DTL 4/C804



PED LIGHT BOLLARD, SEE ELECTRICAL PLANS



LIGHT POLES, BY OTHERS  
SEE ELECTRICAL PLANS



Private building service

End public watermain at north side of tee fitting

Relocate hydrant connection to north of  
Twin Home water service stubs.

Public Watermain

Private Service

## LAKE ELMO WATERMAIN STANDARD NOTES

- ALL WATERMAIN AND ACCESSORIES MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF LAKE ELMO STANDARD SPECIFICATIONS AND DETAILS.
- MANIPULATION OF EXISTING VALVES SHALL BE PERFORMED ONLY BY CITY PERSONNEL.
- WATERMAIN SHALL BE DUCTILE IRON PIPE, ENCASED IN POLYETHYLENE, CLASS-S2
- ALL FITTINGS SHALL COMPLY WITH CEAM SPEC. 2611.2.A.1. ALL FITTINGS SHALL BE DUCTILE IRON PIPE WITH POLYETHYLENE ENCASEMENT. ALL CONNECTIONS SHALL BE INSTALLED UTILIZING COR-BLUE NUTS & BOLTS.
- USE GATE VALVES FOR ALL APPLICATIONS UP THROUGH 12 INCHES.
- GATE VALVES SHALL BE RESILIENT WEDGE AMERICAN FLOW CONTROL SERIES 2500 OR APPROVED EQUAL. GATE VALVES MUST COMPLY WITH CEAM SPEC 2611.2.C.2.
- USE BUTTERFLY VALVES FOR ALL APPLICATIONS GREATER THAN 12 INCHES.
- BUTTERFLY VALVES SHALL BE MUELLER LINEAL III, OR APPROVED EQUAL. BUTTERFLY VALVES SHALL COMPLY WITH CEAM SPEC. 2611.2.C3.
- BOLTS AND NUTS ON ALL VALVES AND HYDRANTS SHALL BE STAINLESS STEEL.
- ALL HYDRANTS SHALL HAVE TWO OUTLET NOZZLES FOR 2-1/2 (I.D.) HOSE CONNECTIONS AND ONE 4" STORZ NOZZLE (MODEL WB-67) AND PENTAGON NUT END CAP.
- THE CURB STOP SERVICE ASSEMBLY SHALL HAVE A MINIMUM 1-FT ADJUSTMENT RANGE AND SHALL EXTEND 6 INCHES ABOVE FINISHED GRADE FULLY EXTENDED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING WATER TO HOMES AND BUSINESSES WHOSE WATER SUPPLY IS DISRUPTED DURING THE COURSE OF THE PROJECT.

## LAKE ELMO SANITARY SEWER STANDARD NOTES

- ALL SANITARY SEWER AND ACCESSORIES MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF LAKE ELMO STANDARD SPECIFICATIONS AND DETAILS.
- ALL SANITARY SEWER PVC PIPE SHALL BE INSTALLED ACCORDING TO CITY STANDARD DRAWING 103 "GRANULAR MATERIAL BEDDING METHOD (FOR PVC SANITARY SEWER PIPE)".
- UNLESS NOTED OTHERWISE, ALL SMOOTH WALLED SANITARY SEWER PVC PIPE AND FITTINGS SHALL BE SDR 35 WITH ELASTOMERIC GASKETED JOINTS.
- ALL SANITARY SEWER SERVICES SHALL BE 4-INCH PVC, SCH. 40.
- SMOOTH WALLED PVC PIPE AND FITTINGS SHALL CONFORM WITH THE REQUIREMENTS OF ASTM D-3034 FOR THE SIZE, STANDARD DIMENSION RATIO (SDR), AND STRENGTH REQUIREMENTS INDICATED ON THE PLANS, SPECIFICATIONS, AND SPECIAL PROVISIONS.
- REINFORCED CONCRETE PIPE AND FITTINGS SHALL CONFORM WITH THE REQUIREMENTS OF MMDOT SPEC 3236 (REINFORCED CONCRETE PIPE) FOR THE TYPE, SIZE, AND STRENGTH CLASS SPECIFIED HEREIN.
- JOINTS OF MANHOLE RISER SECTIONS SHALL BE TONGUE AND GROOVE WITH RUBBER "O" RING JOINTS PROVIDED ON ALL SANITARY SEWER MANHOLES.
- SANITARY SEWER INLET AND OUTLET PIPES SHALL BE JOINED TO THE MANHOLE WITH A GASKETED, FLEXIBLE, WATERTIGHT CONNECTION TO ALLOW DIFFERENTIAL SETTLEMENT OF THE PIPE AND MANHOLE TO TAKE PLACE.
- A 1'-0" TO 1'-4" MANHOLE SECTION SHALL BE INSTALLED UNDER THE CONE SECTION TO ALLOW FOR HEIGHT ADJUSTMENT WHENEVER POSSIBLE.
- ALL SERVICE LINE STUBS MUST HAVE A 2"x2" HARDWOOD MARKER WITH METAL SPIKE RUNNING FROM THE END OF PIPE TO FINISHED GRADE ELEVATION.
- UPON MAKING A CONNECTION TO AN EXISTING SANITARY SEWER STUB OR MANHOLE, DIRT AND DEBRIS SHALL BE PREVENTED FROM ENTERING THE EXISTING SEWER BY IMMEDIATELY INSTALLING WATERTIGHT PLUGS AS NEEDED IN THE EXISTING MANHOLE.
- ALL MAINLINE SANITARY SEWER AND SERVICES SHALL HAVE TRACER WIRE PER CITY SPECIFICATIONS AND DETAILS.

## LAKE ELMO STORM SEWER STANDARD NOTES

- ALL STORM SEWER AND ACCESSORIES MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF LAKE ELMO STANDARD SPECIFICATIONS AND DETAILS.
- REINFORCED CONCRETE PIPE AND FITTINGS SHALL CONFORM WITH THE REQUIREMENTS OF MMDOT SPEC 3236 (REINFORCED CONCRETE PIPE) FOR THE TYPE, SIZE, AND STRENGTH CLASS SPECIFIED HEREIN.
- PRECAST CONCRETE MANHOLE AND CATCH BASIN SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-477.
- A 1'-0" TO 1'-4" MANHOLE SECTION SHALL BE INSTALLED UNDER THE CONE SECTION TO ALLOW FOR HEIGHT ADJUSTMENT WHENEVER POSSIBLE.
- JOINTS OF MANHOLE RISER SECTIONS SHALL BE TONGUE AND GROOVE WITH RUBBER "O" RING JOINTS PROVIDED ON ALL STORM SEWER MANHOLES.
- RIP-RAP SHALL BE HAND-PLACED OVER GEOTEXTILE FABRIC AND CONFORM TO MMDOT SPEC. 3601, CLASS III, OR AS SPECIFIED HEREIN.
- THE GEOTEXTILE FABRIC USED UNDER RIP-RAP SHALL EXTEND 3 FT UNDER THE APRON.
- FURNISH & INSTALL TRASH GUARDS ON ALL FLARED END SECTIONS.
- ALL SILT SHALL BE CLEANED OUT FROM THE RIP-RAP AT THE END OF THE PROJECT.
- STORM SEWER STRUCTURES WITHIN 10 FT OF WATERMAIN ARE TO HAVE WATER TIGHT CONNECTIONS PER MDH REQUIREMENTS.
- ALL NEW STORM SEWER PIPE SHALL BE FLUSHED AND TELEVIEWED PRIOR TO SUBSTANTIAL COMPLETION - SEE SPECIFICATION SECTION 1700 - CLOSEOUT REQUIREMENTS.

LAKE ELMO INDEPENDENT LIVING, LLC

NEW INDEPENDENT LIVING FACILITY

LAKE ELMO, MINNESOTA

NOT FOR CONSTRUCTION - PRELIMINARY - CITY SUBMITTAL PACKAGE

**AVRES**  
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09.17.2019

PROJECT No: 08-1893.00

SITE UTILITIES PLAN

C500