



Memorandum

To: Environmental Board Members

From: Marty Asleson

Date: July 27, 2016

Re: Pre-Board Meeting

As in the past, the Board has met before the scheduled monthly board meeting to review new, and old projects. I have chosen the new project proposal Chavez Preserve.



I will be at Laurene Ave and White Pine Road at 5:45 before the meeting on 07.27.16

**City of Lino Lakes
Environmental Board Meeting
July 27, 2016
6:30 P.M.
Pre-Board Field Meeting will be at Chavez Preserve Site
5:45 P.M.**

AGENDA

1. Call to Order
2. Approval of Agenda
3. Approval of Minutes – Postponed
4. Open Mike
5. Action Items
 - A. Chavez Preserve, Site Plan Review
 - B. Eagle Brook Church, Addition Review
6. Discussion Items
 - A. Lino Lakes Bird Talk
 - B. Peltier Lake Draw-Down
 - C. Recycling Updates
7. Adjourn

**ENVIRONMENTAL BOARD
AGENDA ITEM 5A**

STAFF ORIGINATOR: Marty Asleson, Environmental Coordinator

MEETING DATE: July 27, 2016

REQUEST: Preliminary Plat and Site Plan Review
Chavez Preserve

APPLICANT: Marcel Eibensteiner
Royal Oaks Realty
1000 County Road E
Suite 150
Shoreview Minnesota 55126

PROPOSED DEVELOPMENT/BACKGROUND

The proposed Chavez Preserve development is a 2.40 acre proposed Residential development. The project is located north of White Pine Road, west of Laurene Avenue, and south of Baldwin Lake. The submitted survey is showing six single family lots, of an average size of 15, 854 sq. ft.

The project is located in the shoreland overlay district of Baldwin Lake.

The project is in a Moderate amount of vulnerability to ground water pollution - Drinking Water Service Management Area

SITE CHARACTERISTICS

ANALYSIS

Soils

Soil boring information was not provided at the application time. Soil boring information must be made available to the city for review.

Shoreland Overlay District

Set back is not an issue with this project. The proposed constructed houses meets the % impervious requirements for the district.

Threatened and Endangered/Unique Resource Considerations

There are no Threatened and Endangered species on this property. There are no indicators that we would ever find Threatened and endangered plants on the property.

Stormwater Pollution Prevention Plan

Before ground disturbance occurs, all Minnesota Pollution Control issues for Construction Permit must be in place including a designated and certified inspector for the project.

Threatened and Endangered/Unique Considerations.

None.

Stormwater Management

There are two ponds proposed for the north side of the property, and a rain garden proposed for the south side of the property. None of the ponds are suitable for infiltration in that the water tables are too high. The developer is proposing NURP and drainage to the NW in the NW corner pond and to the North in the East side pond. Drainage must not exceed existing rates of discharge from the site or allowable volumes. Proof that water leaving the site on the north side will not create wetter conditions for residents down stream.

The south side has a rain garden designed into it. This rain garden is for rate control only. Staff is proposing they move this rain garden between the two ponds on the north.

Floodplain Review

The Floodplain model completed in the resources management Plan shows this area as highly suitable to development

Drinking Water Protection

The eastern half of the site falls into the “moderately-suseptable to groundwater contamination” designation. Precautions should be taken to contain fuels, and dispose of concrete wash out for the entire site. Water tables are high enough in this area to make infiltration infeasible. Standards call for at least a 3 foot separation from the bottom of infiltration ponds to the water table. The developer is calling the ponds on the north side

NURP. Since these ponds will be designed into the water table, a clay liner should be applied to prevent surface water contamination to the ground water.

Tree Preservation

The following list of trees are proposed for removal. The trees are all in the basic use area and are allowed to be removed without replacement.

Tree Species Codes

CT=Cottonwood MA=Maple
 AR=Aborvitae PO=Poplar
 OAK=Oak BC=Black Cherry
 PI=Pine

Tag #	species	dbh	# trunks	Trees to be removed
4003	AR	9	4	X
4005	AR	8	1	X
4007	AR	6	5	X
4008	AR	10	1	X
4010	AR	7	1	X
4012	AR	10	1	X
4014	AR	9	1	X
4016	AR	5	4	X
4022	OAK	12	4	
4023	AR	4	6	X
4031	AR	5	4	X
4032	AR	4	4	X
4033	AR	6	4	X
4034	AR	4	4	X
4035	AR	3	4	X
4036	AR	10	1	X
4037	PINE	5	1	X
4038	PINE	3	1	X
4039	MA	18	1	X
4040	CT	2	1	X
4041	PO	12	2	X
4042	OAK	8	1	X
4043	OAK	20	1	X
4044	OAK	20	1	X
4045	OAK	14	1	X
4046	OAK	18	1	X
4047	OAK	10	4	
4048	PO	16	1	X
4049	BC	10	1	X

4050	OAK	30	1	X
4051	CT	24	1	X

Wetlands

There may be a small sliver of wetlands on the NW side of the parcel. Given the area of concern is in a wetland preservation corridor, it is possible that RCWD may require appropriate replacement and buffer, unless the area meets a de minimus threshold. The developer needs to submit a wetland delineation for the site. If there is wetland in a wetland preservation corridor on the site then a 50 foot buffer will be needed. Pond 1 is shown in the hypothetical buffer area. This is allowable.

Landscape Plan Discussion and Recommendations

As with all past projects the City has required the escrow of enough money to plant one boulevard tree per lot frontage.

Seed mix 33-641 is a seed mix that is specified as a native plant for stormwater facilities, in SE Minnesota that will have a mesic condition. The exact seed content must be approved by the City. Forb enhancement has been required in past projects. A higher level of forb seed as a percentage of the seed mix will be required.

The seed must be applied by a contractor approved by the city that is knowledgeable in the cultural practices of native plants. A three year maintenance plan must be submitted for the native seed area. The plan must be approved by the City. A contractor that is knowledgeable in the cultural practices for native seeded areas must be used and approved by the city.

Trees planted in the native seed areas must be fire tolerant. Burr Oak, and Swamp White Oak should be used.

RECOMMENDATION

Approve Chavez Preserve with clarification of wetland issues, and recommendations presented in this report and additional recommendations of the Environmental Board.

ATTACHMENTS

1. Preliminary Plat
2. Grading Drainage and ESC Plan
3. Landscape Plan
4. Utility Plan

PRELIMINARY PLAT, RESOURCE INVENTORY and CERTIFICATE OF SURVEY

~for~ ROYAL OAKS REALTY
~of~ CHAVEZ PRESERVE

PROPERTY OWNERS

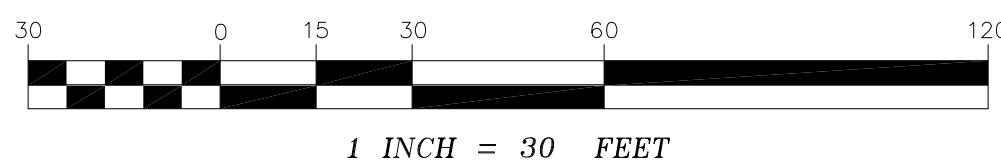
Royal Oaks Realty, Inc.

BUILDING SETBACKS

R-1, SINGLE FAMILY RESIDENTIAL DISTRICT

Setbacks: Front = 30 feet
Rear = 30 feet
Side = 10 feet house, 5 feet garage

GRAPHIC SCALE



LOT STANDARDS

Minimum lot width = 80 feet (interior), 100 feet (corner)

Minimum lot depth = 135 feet, 145 feet double frontage

Minimum lot area = 10,800 square feet buildable land as defined by §1007.001 (2).

Minimum lowest opening to be 1.0 foot above EOF.

Minimum Basement Floor to be 4.0 feet above water table.

Minimum Basement Floor to be 2.0 feet above HWL.

DEVELOPMENT INFORMATION

TOTAL NUMBER OF SINGLE FAMILY LOTS = 6

APPROXIMATE PARCEL AREA = 95,124 S.F./2.18 Acres

AVERAGE SINGLE FAMILY LOT SIZE = 15,854 S.F.

PROPOSED DENSITY = 2.75 LOTS / ACRE

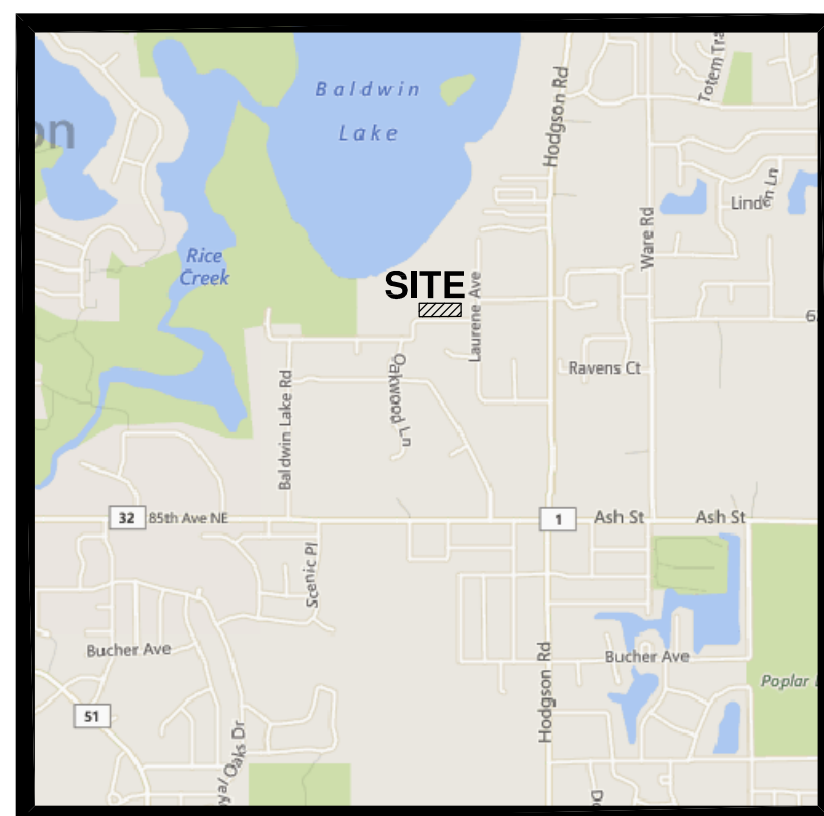
CHAVEZ PRESERVE				
TABLE A				
LOT AREA SUMMARY				
11-Jul-16				
Block No.	Lot No.	Gross Lot Area Sq. Ft.	Unbuildable Lot Area Sq. Ft.	Net Lot Area Sq. Ft.
1	1	13,945	3,142	10,803
	2	15,681	4,768	10,913
	3	14,802	1,363	13,439
	4	16,709	1,275	15,434
	5	15,656	4,292	11,364
	6	18,331	7,340	10,991
Total Boundary		95,124		Average Lot Size= 15,854

LEGEND

- DENOTES IRON MONUMENT FOUND AS LABELED
- DENOTES CATCH BASIN
- CS DENOTES CURB STOP
- X 952.36 DENOTES EXISTING SPOT ELEVATION
- DENOTES GUY WIRE
- DENOTES HYDRANT
- DENOTES POWER POLE
- DENOTES SANITARY SEWER MANHOLE
- DENOTES WATER VALVE
- DENOTES PIEZOMETER BY CARL ANDERSON
- DENOTES OVERHEAD WIRES
- DENOTES EXISTING WATERMAIN
- DENOTES EXISTING SANITARY SEWER
- DENOTES EXISTING STORM SEWER
- DENOTES RETAINING WALL
- DENOTES EXISTING CONTOURS
- DENOTES BITUMINOUS SURFACE
- DENOTES CONCRETE SURFACE
- DENOTES ADJACENT PARCEL OWNER INFORMATION (PER ANOKA COUNTY TAX INFORMATION)

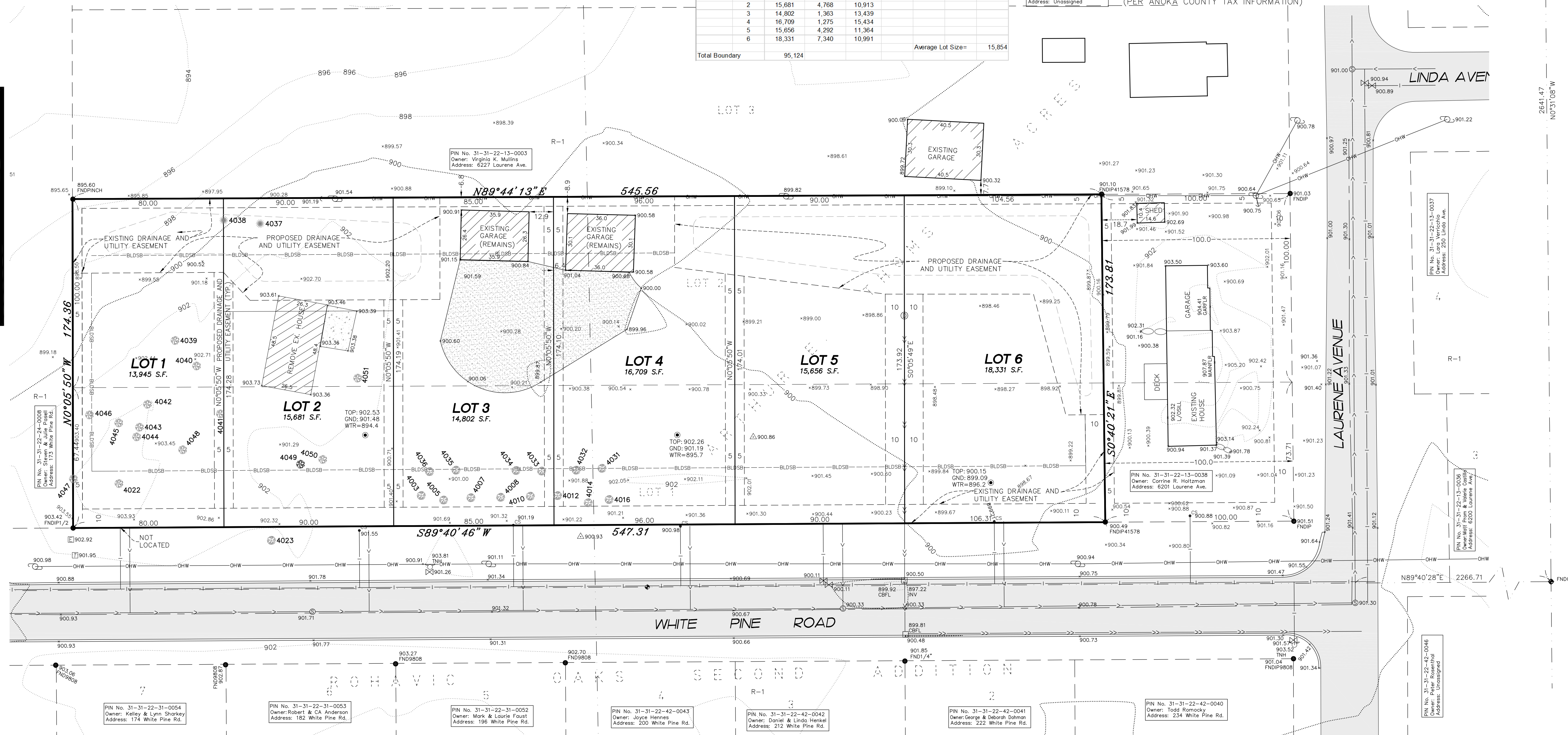
NORTH VICINITY MAP

PART OF SEC. 31, TWP. 31, R1G. 22



ANOKA COUNTY, MINNESOTA
(NO SCALE)

Tree Species Codes				
CT=Cottonwood	MA=Maple			
AR=Abrorvitae	PO=Poplar			
OAK=Oak	BC=Black Cherry			
PI=Fine	Trees to be removed			
Tag #	species	dbh	# trunks	be removed
4003	AR	9	4	X
4005	AR	8	1	X
4007	AR	6	5	X
4008	AR	10	1	X
4010	AR	7	1	X
4012	AR	10	1	X
4014	AR	9	1	X
4016	AR	5	4	X
4022	OAK	12	4	X
4023	AR	4	6	X
4031	AR	5	4	X
4032	AR	4	4	X
4033	AR	6	4	X
4034	AR	4	4	X
4035	AR	3	4	X
4036	AR	10	1	X
4037	PINE	5	1	X
4038	PINE	3	1	X
4039	MA	18	1	X
4040	CT	2	2	X
4041	PO	12	1	X
4042	OAK	8	1	X
4043	OAK	20	1	X
4044	OAK	20	1	X
4045	OAK	14	1	X
4046	OAK	18	1	X
4047	OAK	10	4	X
4048	PO	16	1	X
4049	BC	10	1	X
4050	OAK	30	1	X
4051	CT	24	1	X



NOTES

- Field survey was completed by E.G. Rud and Sons, Inc. on 5/20/16.
- Bearings shown are on Anoka County datum.
- Curb shots are taken at the top and back of curb.
- This survey was prepared without the benefit of title work. Additional easements, restrictions and/or encumbrances may exist other than those shown hereon. Survey subject to revision upon receipt of a current title commitment or an attorney's title opinion.
- See Grading, Utility, Landscape plans by Plowe Engineering which accompany these plans.

LEGAL DESCRIPTION

That part of Lots 1 and 2, Block 1, ARTHUR E. THOM ACRES, Anoka County, Minnesota, lying westerly of the East 100 feet thereof.

I hereby certify that this survey, plan or report was prepared by me or under my direct supervision and that I am a duly Registered Land Surveyor under the laws of the State of Minnesota.

Daniel W. Obermiller
DANIEL W. OBERMILLER
Date: 7/11/16 License No. 25341

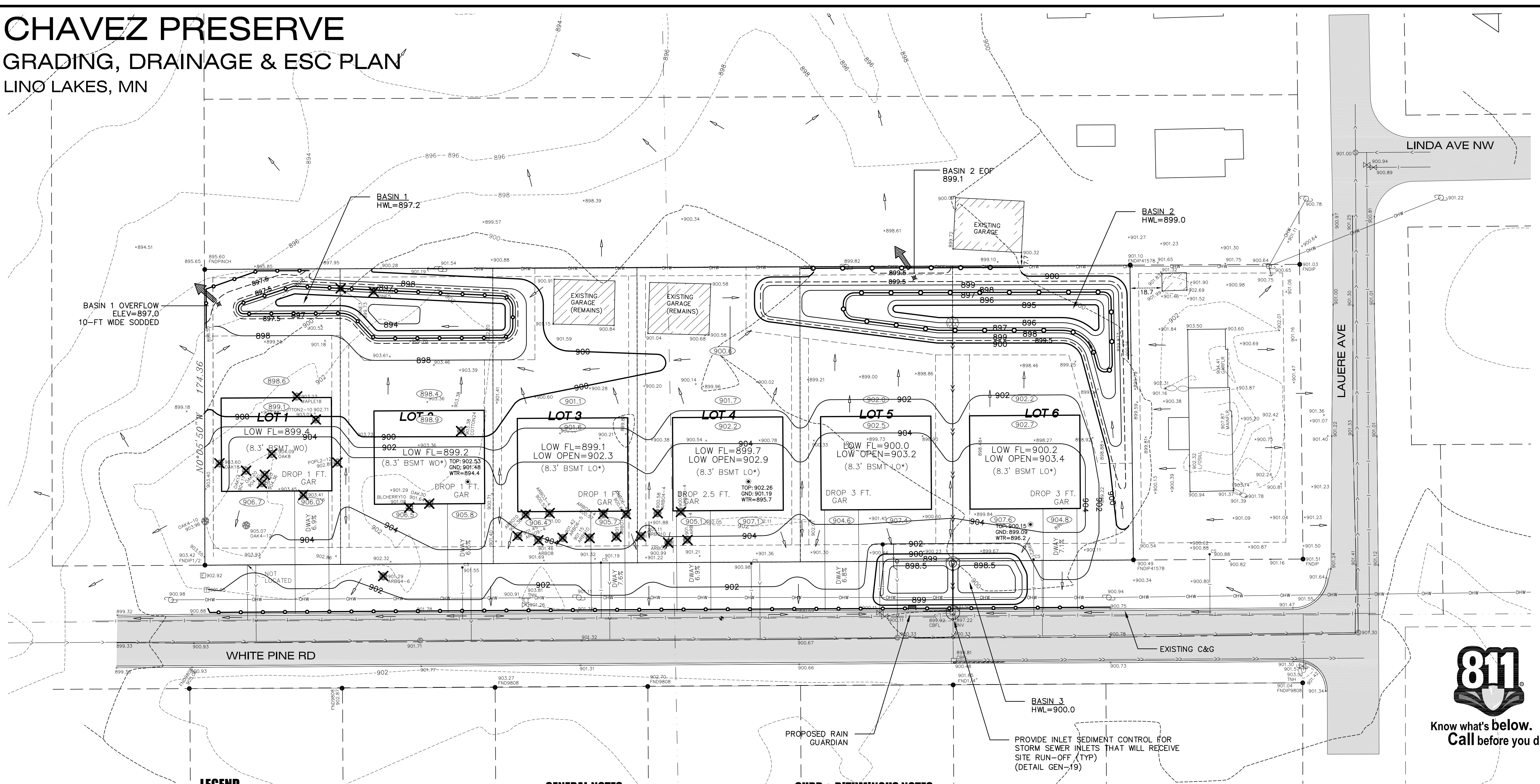
E. G. RUD & SONS, INC.
Professional Land Surveyors
6776 Lake Drive NE, Suite 110
Lino Lakes, MN 55014
Tel. (651) 361-8200 Fax (651) 361-8701

DRAWN BY: BFN	JOB NO: 16136PP	DATE: 7/11/16	
CHECK BY: DWO	SCANNED <input type="checkbox"/>		
1			
2			
3			
NO.	DATE	DESCRIPTION	BY

CHAVEZ PRESERVE

GRADING, DRAINAGE & ESC PLAN

LINO LAKES, MN



LEGEND

— OHW —	EXISTING OVERHEAD ELECTRIC	—>—>	PROPOSED STORM SEWER PIPE
□	EXISTING TELEPHONE PEDESTAL	⊙	PROPOSED STORM MANHOLE
□	EXISTING ELECTRICAL PEDESTAL	□	PROPOSED CATCH BASIN
⊙	EXISTING UTILITY POLE	△	PROPOSED FLARED-END SECTION
—>—>	EXISTING STORM SEWER	— 928 —	PROPOSED CONTOUR
— 1 —	EXISTING WATER MAIN	— 930 —	PROPOSED CONTOUR
—>	EXISTING SANITARY SEWER	— 4.0% —	PROPOSED SILT FENCE
⊙	EXISTING STORM MANHOLE	—>	PROPOSED DIRECTION OF DRAINAGE
◀	EXISTING FLARED-END SECTION	⊠	PROPOSED RIP-RAP
⊗	EXISTING GATE VALVE	⊙	PROPOSED INLET PROTECTION
⊗	EXISTING HYDRANT	⊙	PROPOSED SPOT ELEVATION (GUTTERLINE, BITUMINOUS SURFACE, OR GROUND SURFACE UNLESS OTHERWISE INDICATED)
⊙	EXISTING SANITARY SEWER MANHOLE	---	EXISTING CONTOUR
---	EXISTING CONTOUR	×	EXISTING SPOT ELEVATION datum???
---	EXISTING SPOT ELEVATION datum???	— x —	EXISTING FENCE
---	EXISTING FENCE	— wet —	DELINEATED WETLAND EDGE NO WETLANDS PRESENT

GENERAL NOTES

- 1) THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF EXISTING UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO TYPE AND LOCATION OF UTILITIES AS NECESSARY TO AVOID DAMAGE TO THESE UTILITIES.
- 2) CALL "811" FOR EXISTING UTILITIES LOCATIONS PRIOR TO ANY EXCAVATIONS.
- 3) INSTALLATIONS SHALL CONFORM TO THE CITY STANDARD SPECIFICATIONS AND DETAIL PLATES.
- 4) THE CONTRACTOR SHALL NOTIFY CITY PUBLIC WORKS DEPARTMENT A MINIMUM OF 48 HOURS PRIOR TO THE INTERRUPTION OF ANY SEWER OR WATER SERVICES TO EXISTING HOMES OR BUSINESSES.
- 5) STORAGE OF MATERIALS OR EQUIPMENT SHALL NOT BE ALLOWED ON PUBLIC STREETS OR WITHIN PUBLIC RIGHT-OF-WAY.
- 6) NOTIFY CITY A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
- 7) ALL MATERIALS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CITY'S 2016 GENERAL SPECIFICATIONS AND STANDARD DETAIL PLATES.

CURB & BITUMINOUS NOTES

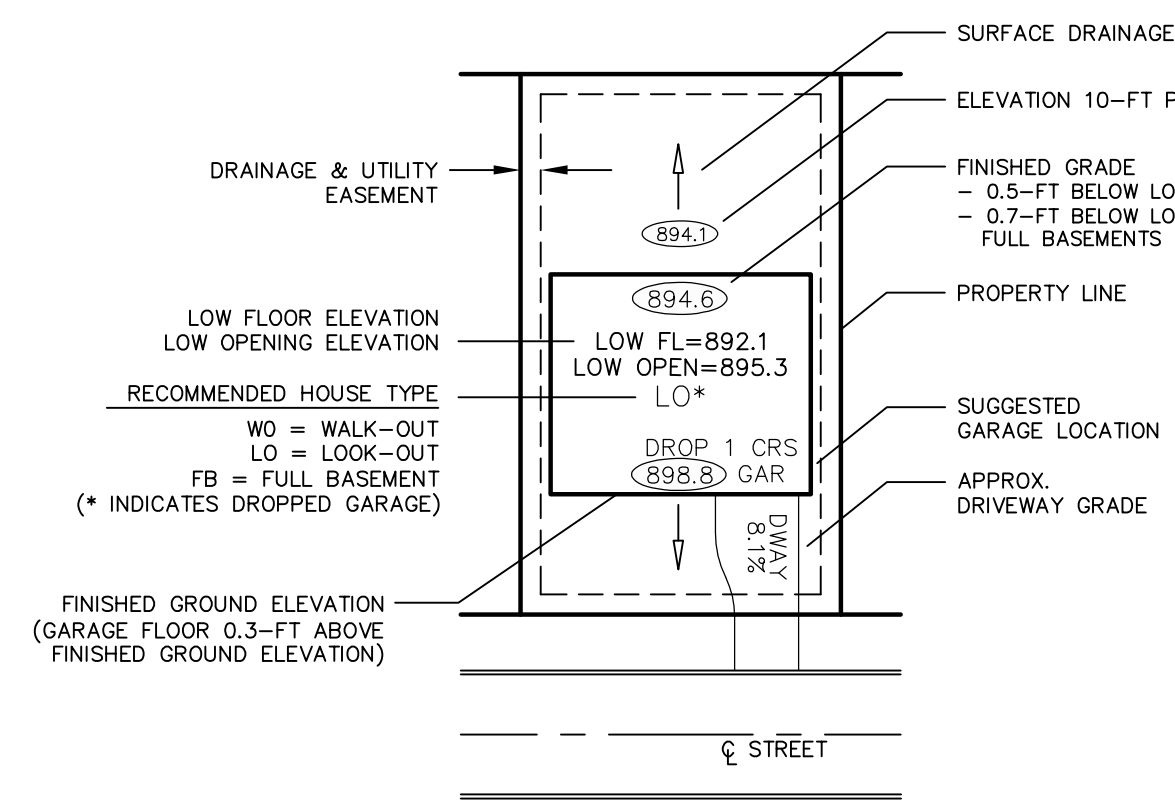
- 1) REMOVAL AND DISPOSAL OF EXISTING STREET MATERIALS AS REQUIRED FOR CONSTRUCTION IS CONSIDERED INCIDENTAL.
- 2) SAW-CUT EXISTING BITUMINOUS AND CONCRETE CURB TO PROVIDE BUTT-JOINT.
- 3) RESTORE DISTURBED STREET TO EXISTING OR BETTER SECTION.

GRADING, DRAINAGE & EROSION CONTROL NOTES

- 1) PRIOR TO ANY GRADING OPERATIONS, THE CONTRACTOR SHALL INSTALL ROCK CONSTRUCTION ENTRANCE (LOCATIONS TO BE DETERMINED - COORDINATE WITH OWNER) AND PERIMETER SILT FENCE AS SHOWN ON PLAN. ADDITIONAL SILT FENCE MAY BE NECESSARY IF LOCAL CONDITIONS REQUIRE.
- 2) CONTACT MARTY ASLESON, CITY ENVIRONMENTAL COORDINATOR, FOR INSPECTION OF ALL EROSION CONTROL MEASURES PRIOR TO ANY GRADING.
- 3) THE CONTRACTOR SHALL PERFORM SITE GRADING ON AN AREA-BY-AREA BASIS TO MINIMIZE UNSTABILIZED AREAS. AS EACH AREA IS COMPLETED, ALL EXPOSED SOILS MUST HAVE TEMPORARY EROSION CONTROL PROTECTION OR PERMANENT COVER WITHIN SEVEN (7) DAYS.
- 4) SEE SHEET C2.1 AND C2.2, STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR ADDITIONAL EROSION CONTROL NOTES AND SITE SEQUENCING.
- 5) EXISTING WELL AND SEPTIC SYSTEM TO BE FIELD LOCATED. WELL TO BE ABANDONED PER ALL LOCAL AND STATE REQUIREMENTS. SEPTIC SYSTEM TO BE REMOVED PER ALL LOCAL AND STATE REQUIREMENTS.

BASIN 3
HWL=900.0

PROVIDE INLET SEDIMENT CONTROL FOR STORM SEWER INLETS THAT WILL RECEIVE SITE RUN-OFF (TYP) (DETAIL GEN-19)



TYPICAL LOT LAYOUT

DRAWN BY:	DESIGN BY:
A.G.	A.G.
CHKCD BY:	PROJ. NO.
C.W.P.	16-1623
ORIGINAL DATE:	
JULY 11, 2016	

DATE	REVISION DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRELIMINARY

ADAM GINKEL
LIC. NO. 43963
DATE: 07.11.2016

CHAVEZ PRESERVE

LINO LAKES, MINNESOTA

GRADING, DRAINAGE & EROSION CONTROL PLAN

PREPARED FOR:
ROYAL OAKS REALTY

811

Know what's below.
Call before you dig.

SITE PLANNING & ENGINEERING

PLOWE

ENGINEERING, INC.

6776 LAKE DRIVE
SUITE 110
LINO LAKES, MN 55014

PHONE: (651) 361-8210
FAX: (651) 361-8701

NORTH

0 15 30

1 INCH = 30 FEET

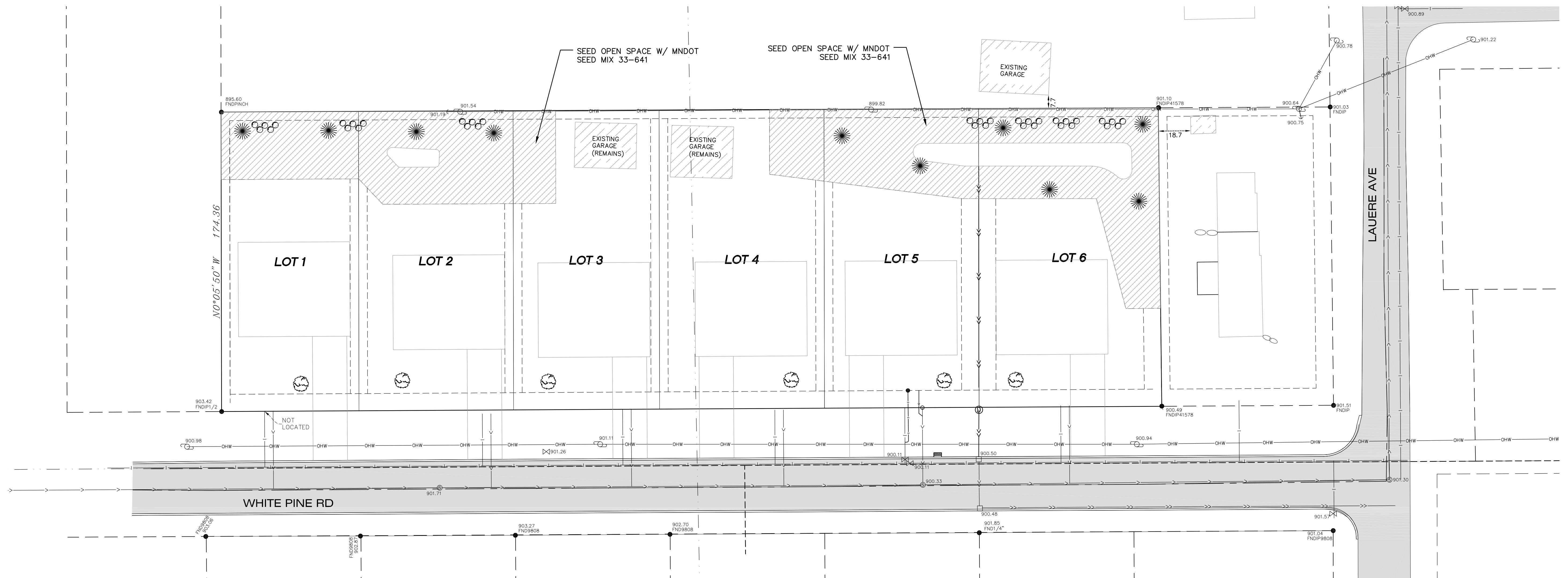
C1

CHAVEZ PRESERVE

LANDSCAPE PLAN

LINO LAKES, MN

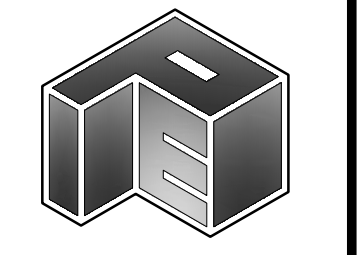
DRAWN BY: A.G.
 DESIGN BY: A.G.
 CHCKD BY: C.W.P.
 PROJ. NO. 16-1623
 ORIGINAL DATE: JULY 11, 2016



DATE	REVISION DESCRIPTION

CHAVEZ PRESERVE
 LINO LAKES, MINNESOTA
 LANDSCAPE PLAN

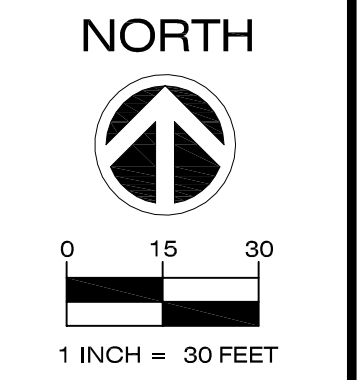
PREPARED FOR:
ROYAL OAKS REALTY



SITE PLANNING & ENGINEERING

PLOWE
 ENGINEERING, INC.
 6776 LAKE DRIVE
 SUITE 110
 LINO LAKES, MN 55014

PHONE: (651) 361-8210
 FAX: (651) 361-8701



L1

LEGEND

- DENOTES APPROX. LOCATION OF PROPOSED BOULEVARD TREE
- DENOTES APPROX. LOCATION OF PROPOSED OPEN SPACE TREE
- DENOTES APPROX. LOCATION OF PROPOSED LARGE SHRUB
- DENOTES OPEN AREA LANDSCAPE

- NOTES**
- TREES ARE TO BE 1-1/2"-2" AT 4' BH WITH 1 YEAR GUARANTY
 - TREES ARE TO BE IN ACCORDANCE WITH CITY'S TREE ORDINANCE

BOULEVARD TREES	
BOULEVARD TREES REQUIRED: 1 TREE PER LOT 2 TREES PER CORNER LOT	
SYMBOL	COMMON NAME BOTANICAL NAME
	SWAMP WHITE OAK
	Quercus bicolor
	AUTUMN GOLD GINKGO
	Ginkgo biloba 'Autumn Gold' (male only)
	FALL FIESTA SUGAR MAPLE
	Acer saccharum 'Balista'
	NORTHWOOD MAPLE
	Acer rubrum 'Northwood'
	HACKBERRY
	Callis occidentalis
	BUR OAK
	Quercus macrocarpa
	NORTHERN RED OAK
	Quercus rubra
	AMERICAN LINDEN
	Tilia Americana
	RIVER BIRCH
	Betula Nigra
	RED SUNSET MAPLE
	Acer rubrum 'Franksred'
38 PROPOSED BOULEVARD TREES SHOWN	

- NOTES:**
- EXAMPLE SPECIES SHOWN - VERIFY SPECIES REQUIREMENTS WITH CITY'S ENVIRONMENTAL COORDINATOR PRIOR TO ANY INSTALLATIONS
 - VERIFY TREE LOCATIONS WITHIN BOULEVARD WITH CITY'S ENVIRONMENTAL COORDINATOR PRIOR TO ANY INSTALLATIONS
 - NO MORE THAN 30% OF BOULEVARD TREES CAN BE OF ONE SPECIES

OPEN AREA LANDSCAPE CALCULATIONS			
OPEN SPACE REQUIREMENTS: LARGE TREES - 1 PER/2000 SF LARGE SHRUBS - 3 PER/2000 SF			
	SQUARE FOOTAGE	LARGE TREES REQUIRED	LARGE SHRUBS REQUIRED
NORTHWEST	10,000	5	15
NORTHEAST	12,000	6	20
TOTAL		11	35

OPEN AREA - TREES	
SYMBOL	COMMON NAME BOTANICAL NAME
	SWAMP WHITE OAK
	Quercus bicolor
	AUTUMN GOLD GINKGO
	Ginkgo biloba 'Autumn Gold' (male only)
	FALL FIESTA SUGAR MAPLE
	Acer saccharum 'Balista'
	NORTHWOOD MAPLE
	Acer rubrum 'Northwood'
	HACKBERRY
	Callis occidentalis
	BUR OAK
	Quercus macrocarpa
	NORTHERN RED OAK
	Quercus rubra
	AMERICAN LINDEN
	Tilia Americana
	RIVER BIRCH
	Betula Nigra
	RED SUNSET MAPLE
	Acer rubrum 'Franksred'
33 PROPOSED OPEN AREA TREES	

OPEN AREA - SHRUBS		
SYMBOL	QUANTITY	ROOT TYPE
	SEE NOTES	POT
SIZE #5	NANNYBERRY VIBURNUM	
	Viburnum lentago	
SIZE #5	CARDINAL DOGWOOD	
	Cornus sericea 'Cardinal'	
SIZE 36" HT.	BLACK CHOKECHERRY	
	Aronia melanocarpa elata	
99 PROPOSED OPEN AREA SHRUBS SHOWN		

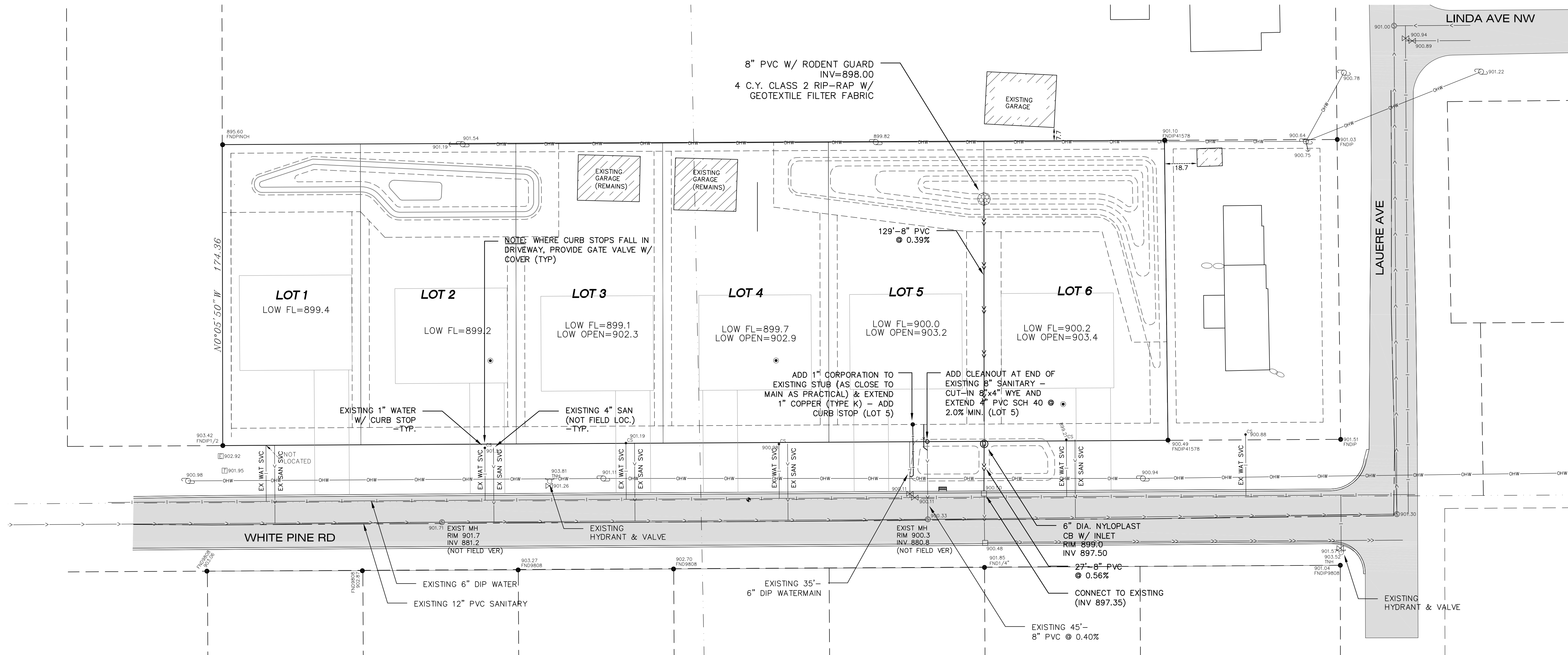
- NOTES:**
- EXAMPLE SPECIES SHOWN - VERIFY SPECIES REQUIREMENTS WITH CITY'S ENVIRONMENTAL COORDINATOR PRIOR TO ANY INSTALLATIONS
 - VERIFY TREE AND SHRUB LOCATIONS WITHIN OPEN AREAS WITH CITY'S ENVIRONMENTAL COORDINATOR PRIOR TO ANY INSTALLATIONS
 - NO MORE THAN 30% OF OPEN AREA TREES OR SHRUBS CAN BE OF ONE SPECIES

811
 Know what's below.
 Call before you dig.

CHAVEZ PRESERVE

UTILITY PLAN

LINO LAKES, MN



LEGEND

— OHW —	EXISTING OVERHEAD ELECTRIC	—>—>—	PROPOSED STORM SEWER PIPE
□	EXISTING TELEPHONE PEDESTAL	⊙	PROPOSED STORM MANHOLE
□	EXISTING ELECTRICAL PEDESTAL	□	PROPOSED CATCH BASIN
⊙	EXISTING UTILITY POLE	△	PROPOSED FLARED-END SECTION
—>—>—	EXISTING STORM SEWER	—928—	PROPOSED CONTOUR
— — —	EXISTING WATER MAIN	—930—	PROPOSED CONTOUR
—>—>—	EXISTING SANITARY SEWER	—○—○—	PROPOSED SILT FENCE
⊙	EXISTING STORM MANHOLE	—4.0%	PROPOSED DIRECTION OF DRAINAGE
◀	EXISTING FLARED-END SECTION	▨	PROPOSED RIP-RAP
⊗	EXISTING GATE VALVE	⊙	PROPOSED INLET PROTECTION
⊗	EXISTING HYDRANT	⊙	PROPOSED SPOT ELEVATION (GUTTERLINE, BITUMINOUS SURFACE, OR GROUND SURFACE UNLESS OTHERWISE INDICATED)
⊙	EXISTING SANITARY SEWER MANHOLE		
---	EXISTING CONTOUR		
×	EXISTING SPOT ELEVATION datum???		
—x—	EXISTING FENCE		
—wet—	DELINEATED WETLAND EDGE NO WETLANDS PRESENT		

GENERAL NOTES

- 1) THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF EXISTING UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO TYPE AND LOCATION OF UTILITIES AS NECESSARY TO AVOID DAMAGE TO THESE UTILITIES.
- 2) CALL "811" FOR EXISTING UTILITIES LOCATIONS PRIOR TO ANY EXCAVATIONS.
- 3) INSTALLATIONS SHALL CONFORM TO THE CITY STANDARD SPECIFICATIONS AND DETAIL PLATES.
- 4) THE CONTRACTOR SHALL NOTIFY CITY PUBLIC WORKS DEPARTMENT A MINIMUM OF 48 HOURS PRIOR TO THE INTERRUPTION OF ANY SEWER OR WATER SERVICES TO EXISTING HOMES OR BUSINESSES.
- 5) STORAGE OF MATERIALS OR EQUIPMENT SHALL NOT BE ALLOWED ON PUBLIC STREETS OR WITHIN PUBLIC RIGHT-OF-WAY.
- 6) NOTIFY CITY A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
- 7) ALL MATERIALS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CITY'S 2016 GENERAL SPECIFICATIONS AND STANDARD DETAIL PLATES.

WATER MAIN NOTES

- 1) EXISTING WATER MAIN LOCATION AND SIZE SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO ANY INSTALLATIONS.
- 2) PROVIDE PIPE INSULATION WHERE SEWER (SANITARY OR STORM) CROSSES WITHIN 18" OF WATER MAIN.
- 3) MAINTAIN MINIMUM 7.5-FT COVER TO TOP OF ALL WATER MAIN PIPE.

SANITARY SEWER NOTES

- 1) EXISTING SANITARY SEWER LOCATION, SIZE, AND ELEVATION SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO ANY INSTALLATIONS.

STORM SEWER NOTES

- 1) FIELD VERIFY SIZE, ELEVATION, AND LOCATION OF EXISTING STORM SEWER AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO ANY INSTALLATIONS.
- 2) STORM SEWER PIPES TO BE JOINED TO THE CATCH BASIN MANHOLES W/ APPROVED RESILIENT RUBBER JOINTS TO MAKE THEM GASTIGHT OR WATERTIGHT. CEMENT MORTAR JOINTS ARE PERMITTED ONLY FOR REPAIRS AND CONNECTIONS OF EXISTING LINES CONSTRUCTED WITH SUCH JOINTS.

DRAWN BY:	DESIGN BY:
A.G.	A.G.
CHCKD BY:	PROJ. NO.
C.W.P.	16-1623
ORIGINAL DATE:	
JULY 11, 2016	

DATE	REVISION DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRELIMINARY

ADAM GINKEL LIC. NO. 43963

DATE: 07.11.2016

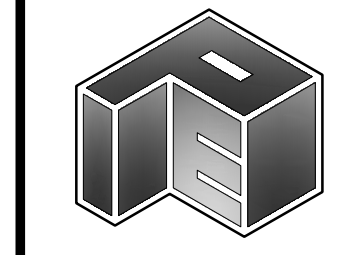
CHAVEZ PRESERVE

LINO LAKES, MINNESOTA

UTILITY PLAN

PREPARED FOR:

ROYAL OAKS REALTY

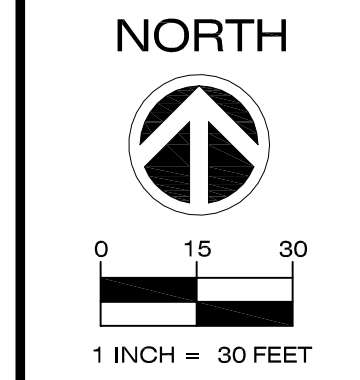


PLOWE

ENGINEERING, INC.

6776 LAKE DRIVE
SUITE 110
LINO LAKES, MN 55014

PHONE: (651) 361-8210
FAX: (651) 361-8701



C3



Know what's below.
Call before you dig.

**ENVIRONMENTAL BOARD
AGENDA ITEM 5B**

STAFF ORIGINATOR: Marty Asleson, Environmental Coordinator

MEETING DATE: July 27, 2016

REQUEST: Eagle Brook Church Addition
7775 20th Ave North
Lino Lakes, MN. 55038

APPLICANT: Eagle Brook Church

PROPOSED DEVELOPMENT

The proposal is for a 5574 sf addition to the existing church campus. The addition will support the Church technical services. No additional seats will be added to the church worship area.

BACKGROUND

An EAW for the original Eagle Brook Church Project in 2002, was prepared, and the City Council approved the EAW distribution with Resolution 02-142.

On May 12, 2003, the Lino Lakes City Council adopted Resolution No. 03-44 making a negative declaration on the need for an Environmental Impact Statement

The Environmental Board did the original Site Plan review for Eagle Brook Church on October 29, 2003. All recommendations of the environmental Board were incorporated into the site plan and construction process.

Since that time, an AUAR Study for the entire area on the NE side, City and RCWD rules have changed, city code for new standards for landscape and tree preservation established, and new protocols established to mitigate impacts to surface waters.

ANALYSIS

Existing Site Conditions:

Property.....91.2 Acres
Impervious Cover.....15.77 Acres
Impervious %.....17.2 %

Proposed changes to site:

Impervious Cover.....15.9 Acres
Impervious %.....17.43%

No changes to property size, parking provided, worship seats.

This is a small addition to the original church project approved in 2003. Surface water rules will be reviewed for stormwater runoff treatment by RCWD and our City Engineer. Meeting the new rule requirements means that the project also meets TMDL requirements.

The location of the addition is on the Northwest side of the existing church and will not be seen from 20th Avenue or any adjacent properties to the south. The addition is approximately 260 feet from the north property line and currently there are no structures that would have visibility of the addition. The footprint of the addition is completely inside the existing fire road that surrounds the west side of the church.

AUAR

The addition to Eagle Brook Church is being reviewed for consistency with the AUAR by WSB.

One of the concerns in 2003 was construction during the nesting period and that sequencing construction and observing nesting behavior during construction and the nesting period would be implemented. I would make the same recommendation here. It is anticipated that major construction will be done by that time, but just in case it's not the original recommendation should apply.

Stormwater

The area today has a curve number of 62, and after building it changes to 67. A small stormwater pond is proposed for the site to compensate for the difference in runoff. RCWD, and WSB will review for pond design performance requirements.

Wetlands

There are no wetland impacts.

Landscaping

Landscape materials submitted include Freeman maples, Honeylocust, Pink Spire Crab apple, Hydrangea, and Sea Green Junipers. These are all appropriate materials. None of the materials are invasive. There is also a Sod and Turf-seed mixture seed for proposed ground cover. All sodded and turf-seed areas must be irrigated.

RECOMMENDATION

Forward staff and environmental comments on to Planning & Zoning Board and the City Council.

ATTACHMENTS

1. Location Map
2. Rendering
3. Site Plan
4. Landscape Plan
5. Grading Plan



380 St. Peter Street, Ste. 600
Saint Paul, MN 55102
651.222.3701
bwbr.com

LOUCKS
PLANNING
CIVIL ENGINEERING
LAND SURVEYING
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL
7200 Hemlock Lane, Suite 300
Maple Grove, MN 55369
www.loucksinc.com

Loucks Project No. _____
This document may be an electronic file or may be printed from an electronic file provided to the user. It is the sole responsibility of the user to ensure that the content and quality is consistent with the content and quality of the paper documents on file at BWBR.

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the law of the State of Minnesota.

Valerita M. Anderson - PE
License No. 43423
Date _____

Item	Date
CITY SUBMITTAL	07-11-16
CITY RESUBMITTAL	07-15-16

NOT FOR CONSTRUCTION

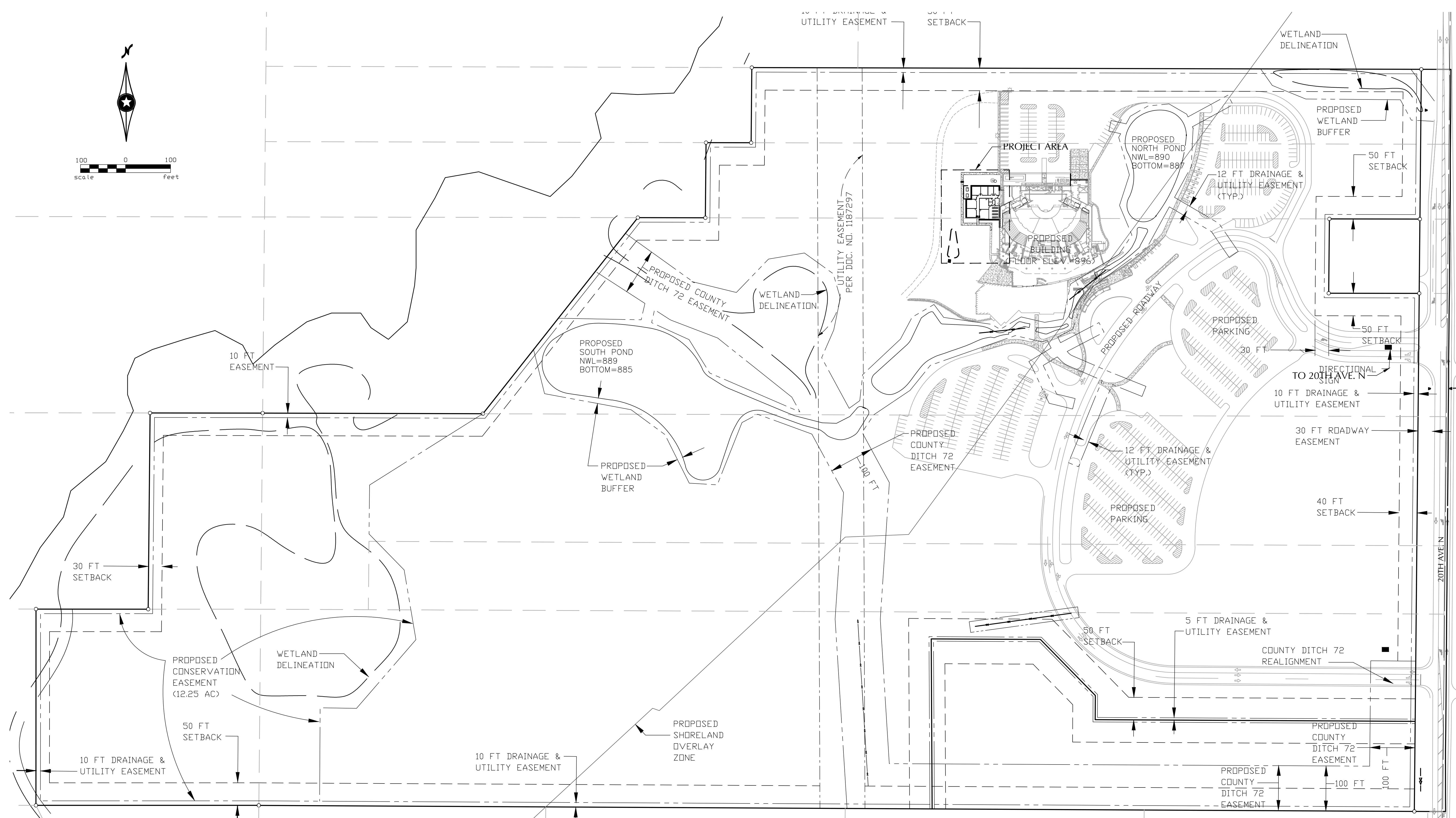
This Sheet may be a Reduced Copy.
The bar above is 1" long on a Full Size Sheet.
Drawing Scales apply to Full Size Sheets.

Sheet Index	EXISTING CONDITIONS	DEMOLITION PLAN	OVERALL SITE PLAN	CIVIL SITE PLAN	GRADING AND DRAINAGE PLAN	CIVIL DETAILS	LANDSCAPE PLAN
200.EX							
210.SD							
220.0CS							
220.1CS							
230.CG							
250.CD							
260.LP							

Comm. No. 1519400
Drawn VMA

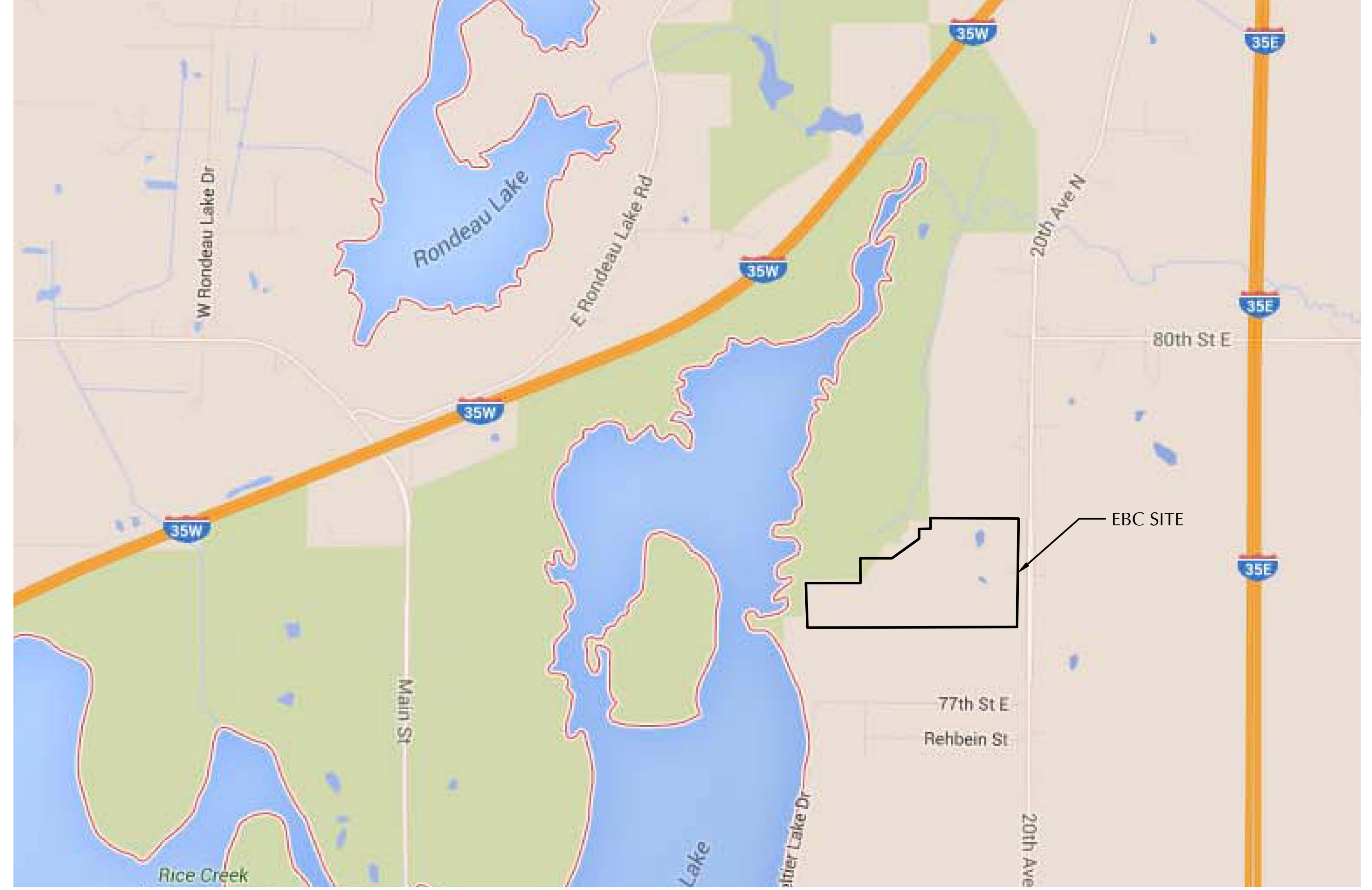
Sheet Title **OVERALL SITE PLAN**

Sheet No. **220.0CS**

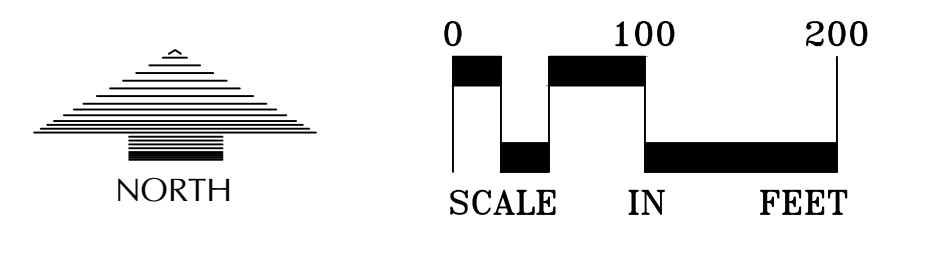
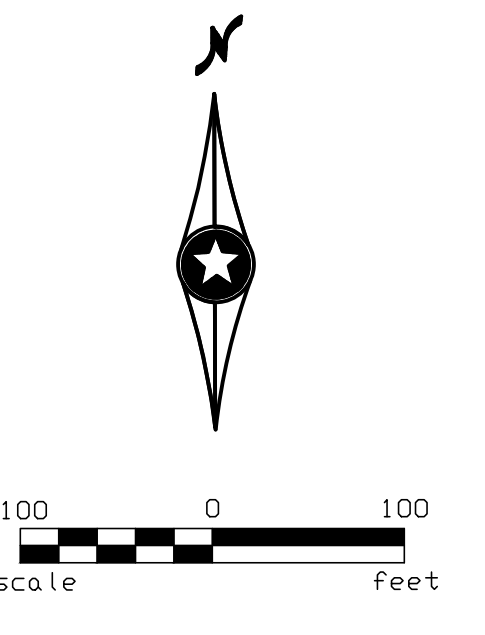


SITE PLAN GENERAL NOTES

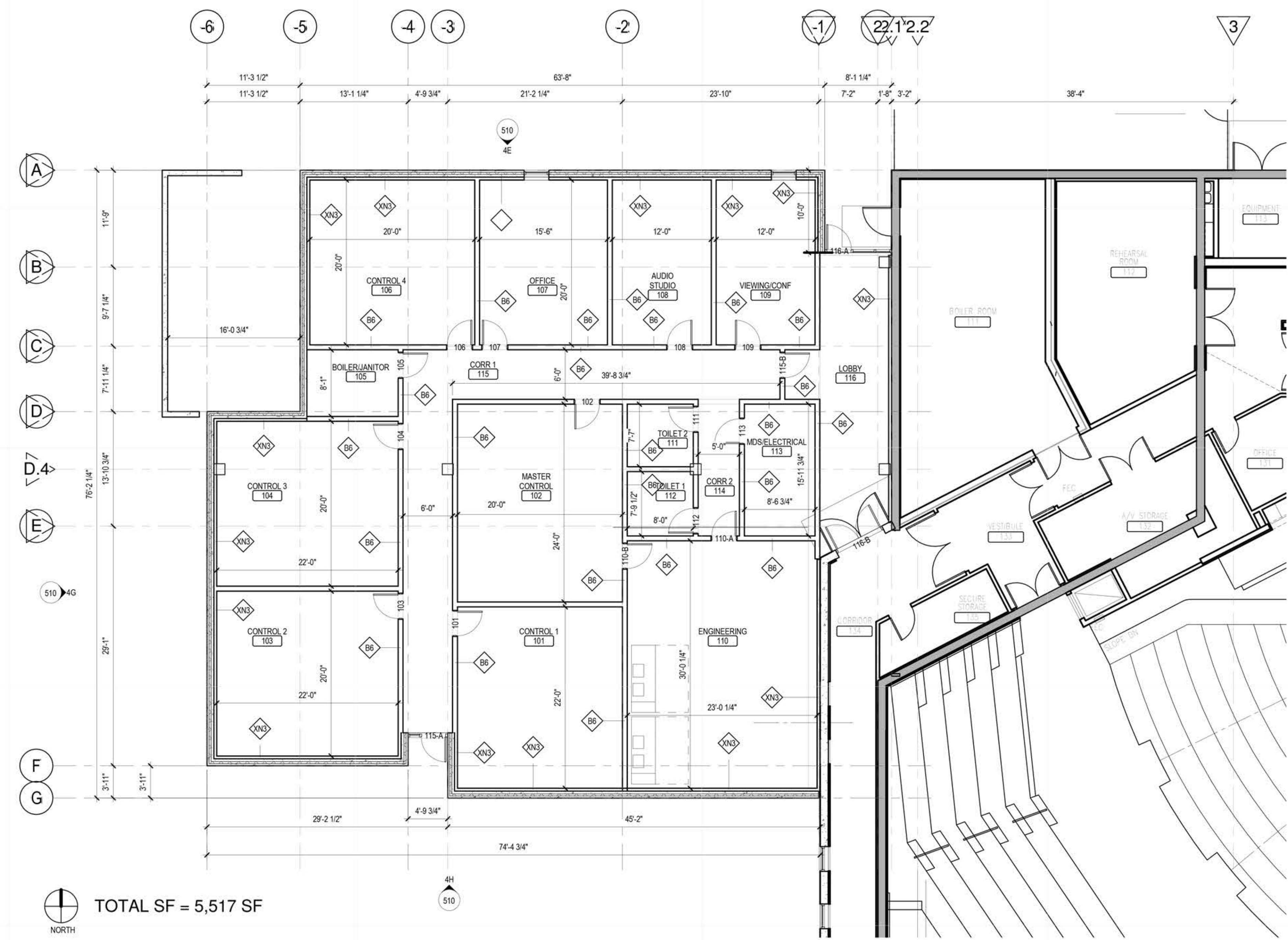
- AREADENSITY**
TOTAL DISTURBED AREA = 0.43 AC. = 100%
EX. IMPERVIOUS SURFACE AREA = 0.014 AC. = 3.26%
PROP. IMPERVIOUS SURFACE AREA = 0.14 AC. = 32.56%
BUILDING SURFACE AREA = 0.13 AC. = 30.23%
PERVIOUS SURFACE AREA = 0.29 AC. = 67.44%
- ALL PAVING, CONCRETE CURB, GUTTER AND SIDEWALK SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN PER SHEET C8-1 AND THE REQUIREMENTS OF THE CITY. SEE LANDSCAPE AND ARCHITECTURAL PLANS FOR ANY ADDITIONAL HARDSCAPE APPLICATIONS.
 - THE CITY DEPARTMENT OF ENGINEERING AND BUILDING INSPECTIONS DEPT. AND THE CONSTRUCTION ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO ANY WORK WITHIN THE STREET RIGHT OF WAY (SIDEWALK, STREET OR DRIVEWAYS)
 - MINNESOTA STATE STATUTE REQUIRES NOTIFICATION PER "GOPHER STATE ONE CALL" PRIOR TO COMMENCING ANY GRADING, EXCAVATION OR UNDERGROUND WORK.
 - ANY SIGN OR FIXTURES REMOVED WITH IN THE RIGHT OF WAY OR AS PART OF THE SITE WORK SHALL BE REPLACED BY THE CONTRACTOR IN ACCORDANCE WITH THE CITY REQUIREMENTS. THE CONTRACTOR SHALL PRESERVE AND MAINTAIN ANY EXISTING STREET LIGHTS AND TRAFFIC SIGNS PER THE REQUIREMENTS OF THE CITY.
 - CLEAR AND GRUB AND REMOVE ALL TREES, VEGETATION AND SITE DEBRIS PRIOR TO GRADING. ALL REMOVED MATERIAL SHALL BE HAULED FROM THE SITE DAILY AND DISPOSED OF PROPERLY BY CONTRACTOR. ALL CLEARING AND GRUBBING AND REMOVALS SHALL BE PERFORMED PER THE CONTRACT SPECIFICATIONS. EROSION CONTROL MEASURES SHALL BE IMMEDIATELY ESTABLISHED UPON REMOVAL. (SEE SHEET C3-1)
 - THE CONTRACTOR SHALL BE REQUIRED TO OBTAIN ALL PERMITS FROM THE CITY AS REQUIRED FOR ALL WORK WITH THE STREET AND PUBLIC RIGHT OF WAY.
 - A SIGNIFICANT PORTION OF SITE IMPROVEMENTS NOT SHOWN ON THIS SHEET AREA DESCRIBED AND PROVIDED IN FURTHER DETAIL ON THE ARCHITECTURAL AND LANDSCAPE PLANS. THIS INCLUDES LANDSCAPING, LIGHTING AND OTHER FIXTURES.
 - CONSTRUCTION NOTES:
PEDESTRIAN RAMPS SHALL BE PROVIDED AT THE LOCATIONS SHOWN AND AS SHOWN PER THE CIVIL DETAILS.
 - SEE SHEETS C3-1 FOR GRADING AND DRAINAGE.



EXISTING	CIVIL LEGEND	PROPOSED
	SANITARY MANHOLE	
	STORM MANHOLE	
	CATCH BASIN	
	CULVERT	
	HYDRANT	
	GATE VALVE	
	POST INDICATOR VALVE	
	LIGHT POLE	
	POWER POLE	
	SIGN	
	BENCHMARK	
	SOIL BORINGS	
	WATER MANHOLE	
	TELEPHONE MANHOLE	
	UTILITY MANHOLE	
	ELECTRIC MANHOLE	
	WATER SERVICE	
	SANITARY SERVICE	
	HANDICAP PARKING	
	DIRECTION OF FLOW	
	SPOT ELEVATION	
	CONTOURS	
	SANITARY SEWER	
	STORM SEWER	
	WATER MAIN	
	FORCE MAIN	
	DRAIN TILE	
	SILT FENCE	
	CURB & GUTTER	
	RETAINING WALL	
	TREE LINE	
	EASEMENT LINE	
	SETBACK LINE	
	FENCE LINE	
	UNDER GROUND TELE	
	UNDER GROUND GAS	
	OVER HEAD UTILITY	



WARNING:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING FOR LOCATIONS OF ALL EXISTING UTILITIES. THEY SHALL COOPERATE WITH ALL UTILITY COMPANIES IN MAINTAINING THEIR SERVICE AND / OR RELOCATION OF LINES.
THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL AT 651-454-0002 AT LEAST 48 HOURS IN ADVANCE FOR THE LOCATIONS OF ALL UNDERGROUND WIRES, CABLES, CONDUITS, PIPES, MANHOLES, VALVES OR OTHER BURIED STRUCTURES BEFORE DIGGING. THE CONTRACTOR SHALL REPAIR OR REPLACE THE ABOVE WHEN DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.



2E FLOOR PLAN - FIRST LEVEL - ZONE 1
 401.1FL 1/8" = 1'-0"

FLOOR PLAN SYMBOLS LEGEND			
	WALL	M100	EQUIPMENT NUMBER
	EXISTING WALL TO REMAIN		WORKING POINT
	DOOR	1A 500	INTERIOR SECTION REFERENCE TAG
	EXISTING DOOR AND FRAME TO REMAIN	1A 500	EXTERIOR SECTION REFERENCE TAG
	INTERIOR BORROWED LIGHT	1A 605 2A	INTERIOR ELEVATION REFERENCE TAG
	DIMENSION LINE NOMINAL	1A 510	EXTERIOR ELEVATION REFERENCE TAG
	EXTENDED DIMENSION LINE NOMINAL	1A 620	PLAN DETAIL REFERENCE TAG
	ROOM NAME AND NUMBER		
	FLOOR ELEVATION	FL01	KEYNOTE
	REVISION CLOUD		GROMMET
	NEW GRIDLINE	A	EXISTING GRIDLINE
	WALL TAG		

This document may be an electronic file or may be printed from an electronic file provided to the user. It is the sole responsibility of the user to ensure that the content and quality is consistent with the content and quality of the paper documents on file at BWBR.

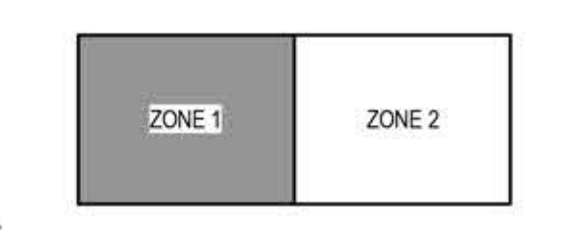
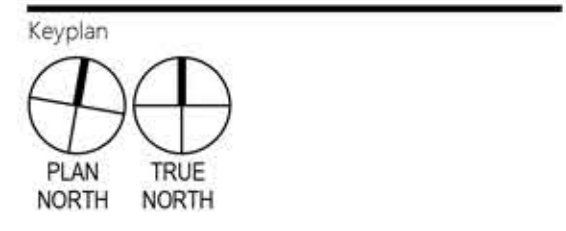
I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of Minnesota.

Name _____
 Date **7/11/2016** Reg. No. _____

Issued For _____
 Item _____ Date _____
 City Submittal _____ 2016.07.11

NOT FOR CONSTRUCTION

This Sheet may be a Reduced Copy.
 The bar above is 1" long on a Full Size Sheet.
 Drawing Scales apply to Full Size Sheets.



Comm. No. 1519400 Drawn _____
 Author _____
 Sheet Title
FIRST LEVEL ZONE 1 - FLOOR PLAN

Sheet No. _____

401.1FL



RENDERING WITH EXISITNG BUILDING LOOKING NORTH



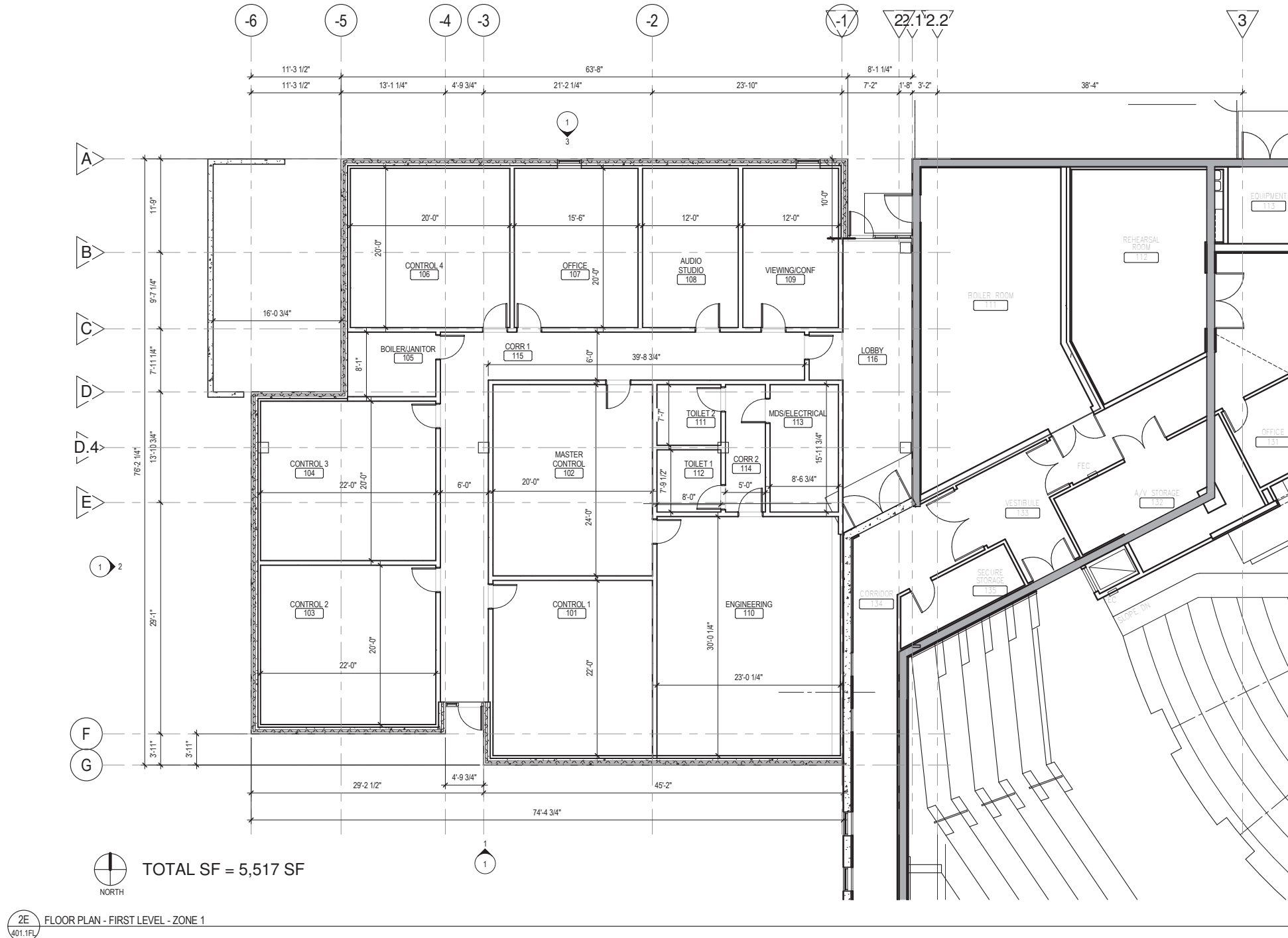
PHOTO REFERENCE AT THE NORTH END OF THE EXISTING BUILDING LOOKING EAST



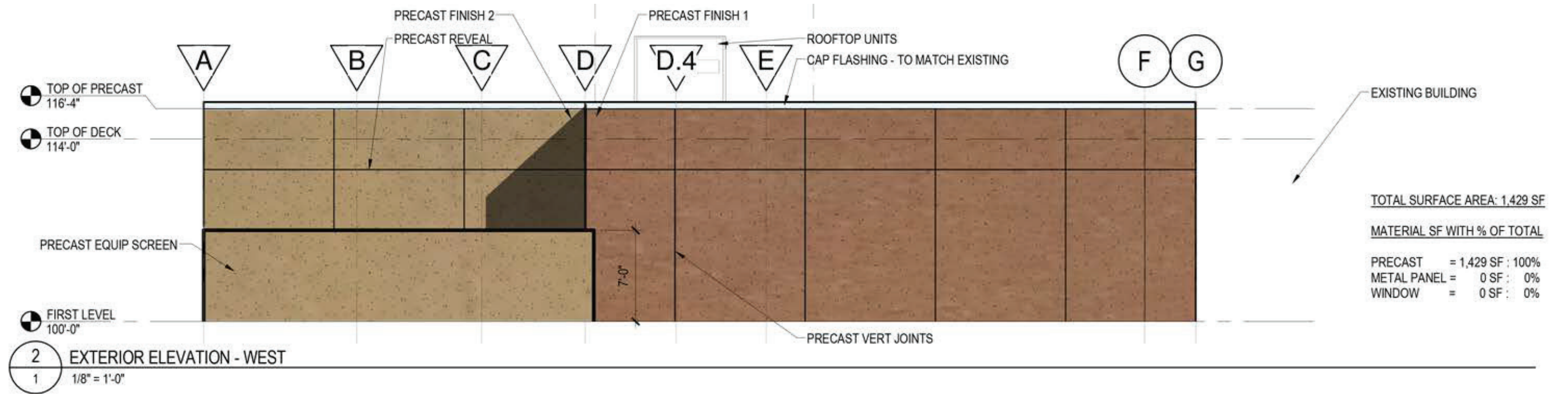
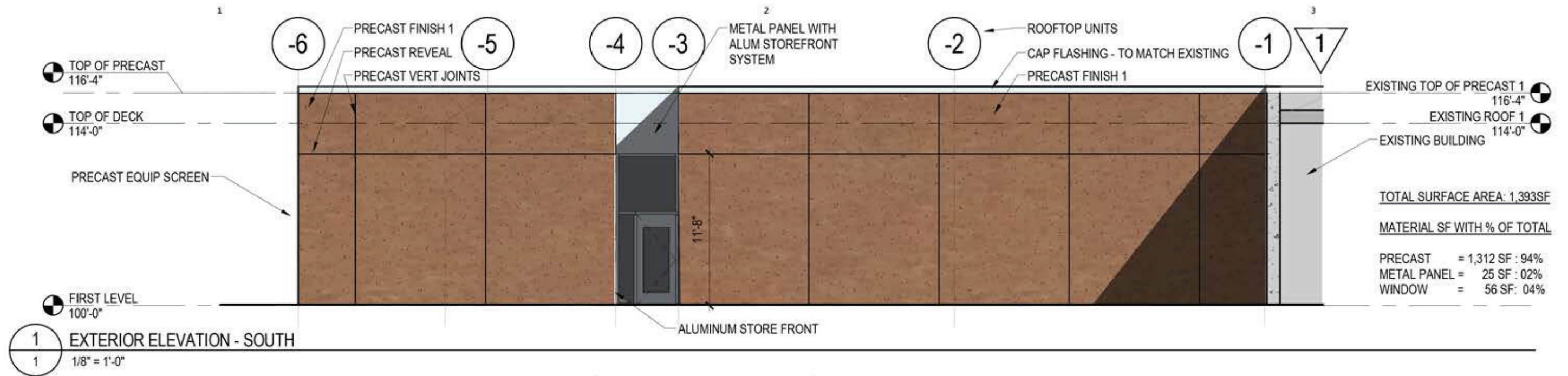
RENDERING WITH EXISITNG BUILDING LOOKING SOUTH

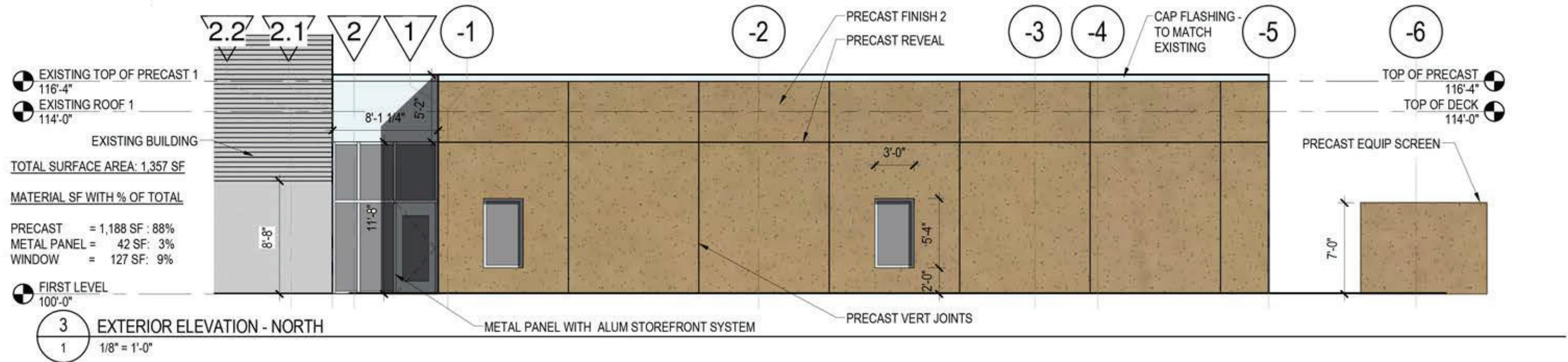


PHOTO REFERENCE AT THE NORTH END OF THE EXISTING BUILDING LOOKING SOUTH



1/16" = 1'-0" FLOOR PLAN

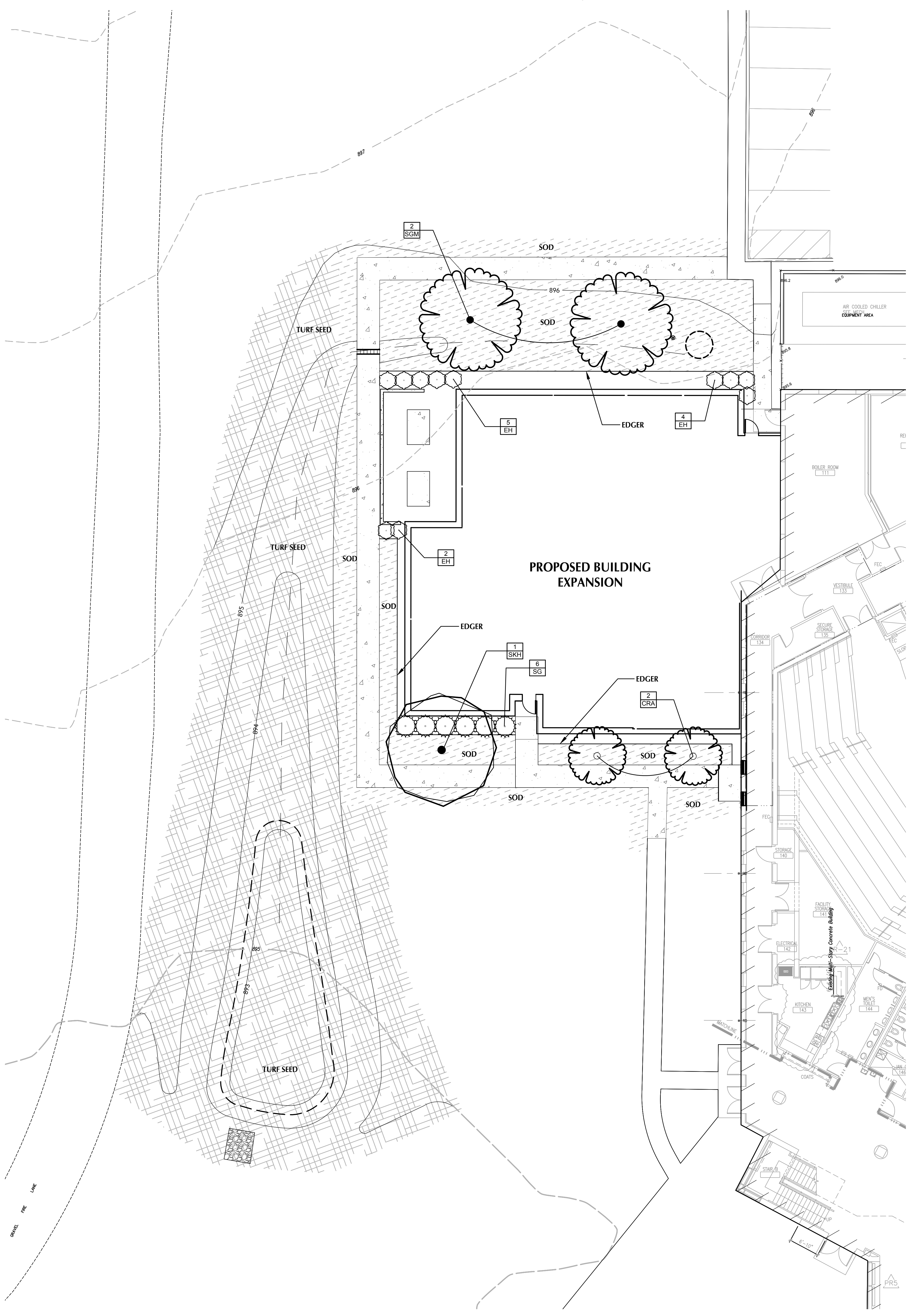
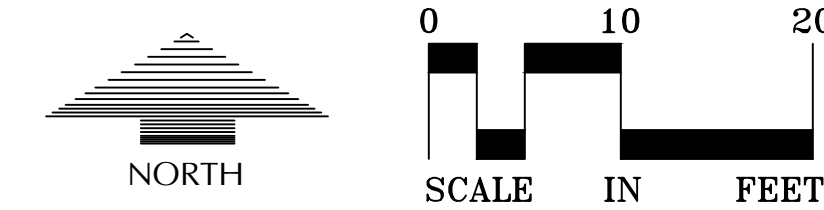




PLANT SCHEDULE

DECIDUOUS TREES	QTY	COMMON NAME	BOTANICAL NAME	CONT	CAL
SGM	2	SIENNA GLEN MAPLE	Acer freemanii 'Sienna Glen'	B & B	2.5'Cal
SKH	1	SKYLINE HONEYLOCUST	Gleditsia triacanthos 'Skycoke'	B & B	2.5'Cal
ORNAMENTAL TREES	QTY	COMMON NAME	BOTANICAL NAME	CONT	CAL
CRA	2	PINK SPIRES CRABAPPLE	Malus x 'Pink Spires'	B & B	1.5'Cal
SHRUBS	QTY	COMMON NAME	BOTANICAL NAME	CONT	SIZE AT PLANTING
EH	12	ENDLESS SUMMER HYDRANGEA	Hydrangea macrophylla 'Endless Summer' TM	5 gal	24" HGT
CONIFEROUS SHRUBS	QTY	COMMON NAME	BOTANICAL NAME	CONT	SIZE AT PLANTING
SG	6	SEA GREEN JUNIPER	Juniperus chinensis 'Sea Green'	5 gal	18" SPRD

SOIL SOD TURF SEED MIXTURE - MNDOT 25-131 - RATE: 220 LBS/ACRE



GENERAL NOTES

CONTRACTOR SHALL VISIT SITE PRIOR TO SUBMITTING BID. HE SHALL INSPECT SITE AND BECOME FAMILIAR WITH EXISTING CONDITIONS RELATING TO THE NATURE AND SCOPE OF WORK.

VERIFY LAYOUT AND ANY DIMENSIONS SHOWN AND BRING TO THE ATTENTION OF THE LANDSCAPE ARCHITECT ANY DISCREPANCIES WHICH MAY COMPROMISE THE DESIGN AND/OR INTENT OF THE PROJECT'S LAYOUT.

ASSURE COMPLIANCE WITH ALL APPLICABLE CODES AND REGULATIONS GOVERNING THE WORK OR MATERIALS SUPPLIED.

CONTRACTOR SHALL PROTECT ALL EXISTING ROADS, CURBS/GUTTERS, TRAILS, TREES, LAWNS AND SITE ELEMENTS DURING PLANTING OPERATIONS. ANY DAMAGE TO SAME SHALL BE REPAIRED AT NO COST TO THE OWNER.

CONTRACTOR SHALL VERIFY ALIGNMENT AND LOCATION OF ALL UNDERGROUND AND ABOVE GRADE UTILITIES AND PROVIDE THE NECESSARY PROTECTION FOR SAME BEFORE CONSTRUCTION / MATERIAL INSTALLATION BEGINS (MINIMUM 10' - 0" CLEARANCE).

ALL UNDERGROUND UTILITIES SHALL BE LAID SO THAT TRENCHES DO NOT CUT THROUGH ROOT SYSTEMS OF ANY EXISTING TREES TO REMAIN.

EXISTING CONTOURS, TRAILS, VEGETATION, CURB/GUTTER AND OTHER EXISTING ELEMENTS BASED UPON INFORMATION SUPPLIED TO LANDSCAPE ARCHITECT BY OTHERS. CONTRACTOR SHALL VERIFY ANY AND ALL DISCREPANCIES PRIOR TO CONSTRUCTION AND NOTIFY LANDSCAPE ARCHITECT OF SAME.

THE ALIGNMENT AND GRADES OF THE PROPOSED WALKS, TRAILS AND/OR ROADWAYS ARE SUBJECT TO FIELD ADJUSTMENT REQUIRED TO CONFORM TO LOCALIZED TOPOGRAPHIC CONDITIONS AND TO MINIMIZE TREE REMOVAL AND GRADING. ANY CHANGE IN ALIGNMENT MUST BE APPROVED BY LANDSCAPE ARCHITECT.

IRRIGATION NOTES

VERIFY EXISTING/PROPOSED IRRIGATION SYSTEM LAYOUT AND CONFIRM COMPLETE LIMITS OF IRRIGATION PRIOR TO SUPPLYING SHOP DRAWINGS.

LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AN IRRIGATION LAYOUT PLAN AND SPECIFICATION AS A PART OF THE SCOPE OF WORK WHEN BIDDING. THESE SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO ORDER AND/OR INSTALLATION. IT SHALL BE THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO INSURE THAT ALL SODDED/SEED AND PLANTED AREAS ARE IRRIGATED PROPERLY, INCLUDING THOSE AREAS DIRECTLY AROUND AND ADJUTING BUILDING FOUNDATION.

THE LANDSCAPE CONTRACTOR SHALL PROVIDE THE OWNER WITH AN IRRIGATION SCHEDULE APPROPRIATE TO THE PROJECT SITE CONDITIONS AND TO PLANT MATERIAL GROWTH REQUIREMENTS.

IRRIGATION SYSTEM IS NOT TO SPRINKLE ACROSS PAVEMENT. THE SYSTEM SHALL INCORPORATE A RAIN SENSOR INTO IRRIGATION SYSTEM.

PLANTINGS OUTSIDE THE LIMITS OF IRRIGATION ARE TO BE WATERED REGULARLY UNTIL PLANTING/SOD/SEED HAS BEEN ESTABLISHED.

LANDSCAPE INSTALLATION:

COORDINATE THE PHASES OF CONSTRUCTION AND PLANTING INSTALLATION WITH OTHER CONTRACTORS WORKING ON SITE.

NO PLANTING WILL BE INSTALLED UNTIL COMPLETE GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.

WHERE SOD/SEED ABUTS PAVED SURFACES, FINISHED GRADE OF SOD/SEED SHALL BE HELD 1" BELOW SURFACE ELEVATION OF TRAIL, SLAB, CURB, ETC.

SEED ALL AREAS DISTURBED DUE TO GRADING OTHER THAN THOSE AREAS NOTED TO RECEIVE SOD. SEED SHALL BE INSTALLED AND MULCHED AS PER AND/OT SPECS.

SOD ALL DESIGNATED AREAS DISTURBED DUE TO GRADING. SOD SHALL BE LAID PARALLEL TO THE CONTOURS AND SHALL HAVE STAGGERED JOINTS. ON SLOPES STEEPER THAN 3:1 OR IN DRAINAGE SWALES, THE SOD SHALL BE STAKED TO THE GROUND.

ALL PLANT MATERIAL SHALL COMPLY WITH THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, AMERICAN ASSOCIATION OF NURSERYMEN. UNLESS NOTED OTHERWISE, ALL SHRUBS SHALL HAVE AT LEAST 5 CANES AT THE SPECIFIED MINIMUM SHRUB HEIGHT OR WIDTH. ORNAMENTAL TREES SHALL HAVE NO Y CROTCHES AND SHALL BEGIN BRANCHING NO LOWER THAN 3' ABOVE ROOT BALL STREET AND BOULEVARD TREES SHALL BEGIN BRANCHING NO LOWER THAN 5' ABOVE FINISHED GRADE.

ANY CONIFEROUS TREE PREVIOUSLY PRUNED FOR CHRISTMAS TREE SALES SHALL NOT BE USED. ALL CONIFEROUS TREES SHALL BE FULL FORM, NATURAL TO THE SPECIES, WITHOUT PRUNING.

PLAN TAKES PRECEDENCE OVER PLANT SCHEDULE IF DISCREPANCIES IN QUANTITIES EXIST. SPECIFICATIONS TAKE PRECEDENCE OVER NOTES.

NO PLANT MATERIAL SUBSTITUTIONS WILL BE ACCEPTED UNLESS APPROVAL IS REQUESTED OF THE LANDSCAPE ARCHITECT BY THE LANDSCAPE CONTRACTOR PRIOR TO THE SUBMISSION OF A BID AND/OR QUOTATION.

ALL PROPOSED PLANTS SHALL BE LOCATED AND STAKED AS SHOWN ON PLAN. ADJUSTMENTS IN LOCATION OF PROPOSED PLANT MATERIALS MAY BE NEEDED IN FIELD. SHOULD AN ADJUSTMENT BE ADVISED, THE LANDSCAPE ARCHITECT MUST BE NOTIFIED.

ALL PLANT MATERIALS SHALL BE FERTILIZED UPON INSTALLATION WITH A 27-3-3 SLOW RELEASE FERTILIZER MIXED IN WITH THE PLANTING SOIL PER THE MANUFACTURER'S INSTRUCTIONS. PLANTS MAY BE TREATED FOR SUMMER AND FALL INSTALLATION WITH AN APPLICATION OF GRANULAR 27-3-3 AT 6 OZ PER 2.5' CALIPER PER TREE AND 3 OZ PER SHRUB WITH AN ADDITIONAL APPLICATION OF 27-3-3 THE FOLLOWING SPRING IN THE TREE SAUCER.

ALL PLANTING AREAS RECEIVING GROUND COVER, PERENNIALS, ANNUALS, AND/OR VINES SHALL RECEIVE A MINIMUM OF 12" DEPTH OF PLANTING SOIL CONSISTING OF AT LEAST 45 PARTS TOPSOIL, 45 PARTS PEAT OR MANURE AND 10 PARTS SAND.

ALL PLANTS TO BE INSTALLED AS PER PLANTING DETAILS. REMOVE ALL FLAGGING AND LABELS FROM PLANTS.

WRAPPING MATERIAL SHALL BE CORRUGATED PVC PIPING 1" GREATER IN CALIPER THAN THE TREE BEING PROTECTED OR QUALITY, HEAVY, WATERPROOF

CREPE PAPER MANUFACTURED FOR THIS PURPOSE. WRAP ALL DECIDUOUS TREES PLANTED IN THE FALL PRIOR TO 12-1 AND REMOVE ALL WRAPPING AFTER 5-1.

BLACK STEEL EDGER TO BE USED TO CONTAIN SHRUBS WHERE BED MEETS SOD/SEED UNLESS NOTED OTHERWISE.

ALL SHRUB BED MASSINGS TO RECEIVE 3" DEEP SHREDDED HARDWOOD MULCH AND FIBER MAT WEED BARRIER.

ALL TREES TO RECEIVE 4" DEEP SHREDDED HARDWOOD MULCH WITH NO MULCH IN DIRECT CONTACT WITH TREE TRUNK.

SPREAD GRANULAR PRE EMERGENT HERBICIDE (PREEN OR EQUAL) PER MANUFACTURER'S RECOMMENDATIONS UNDER ALL MULCHED AREAS.

MAINTENANCE STRIPS TO HAVE EDGER AND MULCH AS SPECIFIED/INDICATED ON DRAWING OR IN SPECIFICATION.

IF THE LANDSCAPE CONTRACTOR IS CONCERNED OR PERCEIVES ANY DEFICIENCIES IN THE PLANT SELECTIONS, SOIL CONDITIONS OR ANY OTHER SITE CONDITION WHICH MIGHT NEGATIVELY AFFECT PLANT ESTABLISHMENT, SURVIVAL OR GUARANTEE, HE MUST BRING THESE DEFICIENCIES TO THE ATTENTION OF THE LANDSCAPE ARCHITECT PRIOR TO PROCUREMENT AND/OR INSTALLATION.

CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST FOR THE OWNER ACCEPTANCE INSPECTION OF ALL LANDSCAPE AND SITE IMPROVEMENTS.

CONTRACTOR IS RESPONSIBLE FOR ON-GOING MAINTENANCE OF ALL NEWLY INSTALLED MATERIALS UNTIL TIME OF OWNER ACCEPTANCE. ANY ACTS OF VANDALISM OR DAMAGE WHICH MAY OCCUR PRIOR TO OWNER ACCEPTANCE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL PROVIDE THE OWNER WITH A MAINTENANCE PROGRAM INCLUDING, BUT NOT NECESSARILY LIMITED TO, PRUNING, FERTILIZATION AND DISEASE/PEST CONTROL.

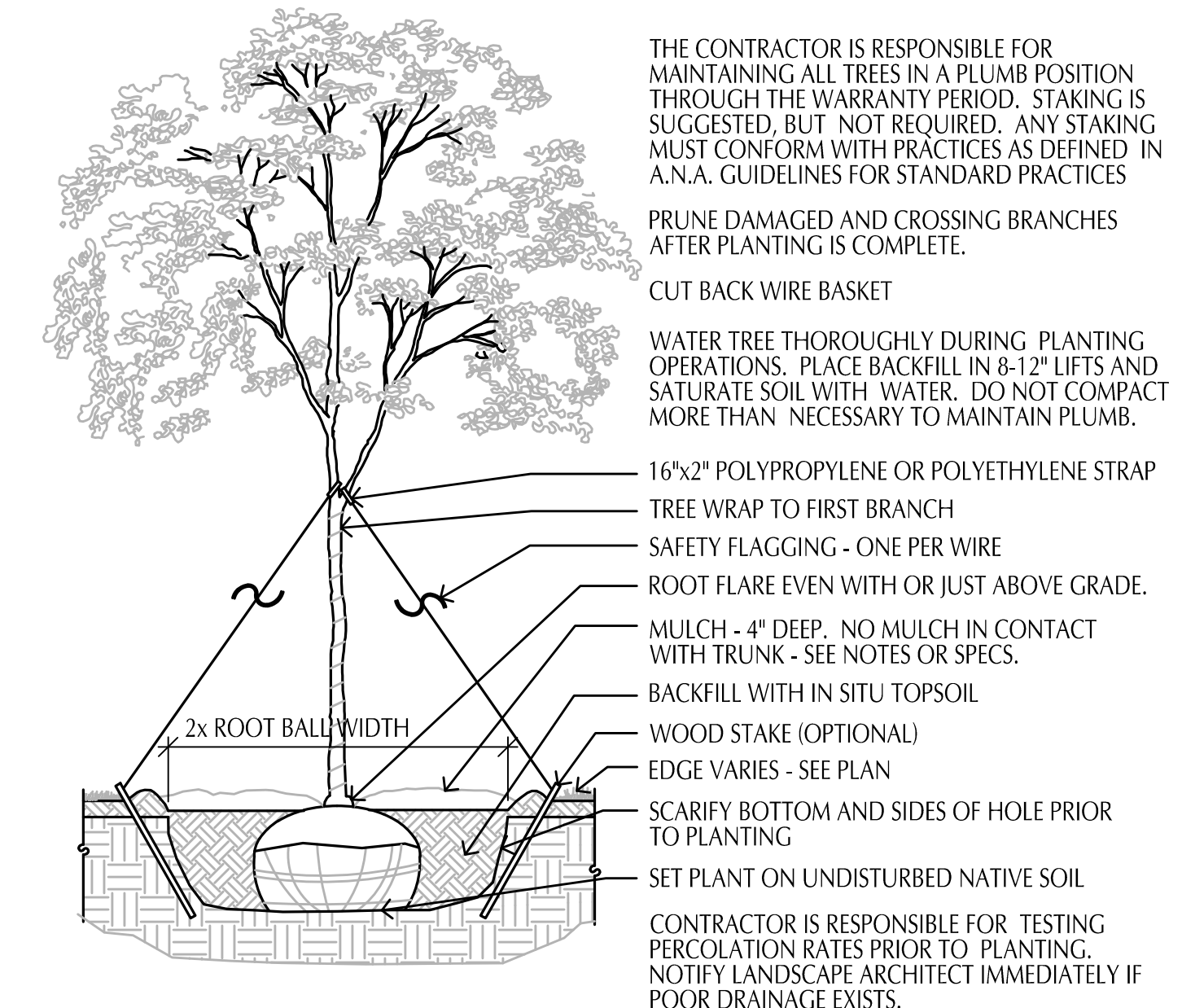
CONTRACTOR SHALL GUARANTEE NEW PLANT MATERIAL THROUGH ONE CALENDAR YEAR FROM THE DATE OF OWNER ACCEPTANCE.

WARRANTY (ONE FULL GROWING SEASON) FOR LANDSCAPE MATERIALS SHALL BEGIN ON THE DATE OF ACCEPTANCE BY THE LANDSCAPE ARCHITECT AFTER THE COMPLETION OF PLANTING OF ALL LANDSCAPE MATERIALS. NO PARTIAL ACCEPTANCE WILL BE CONSIDERED.

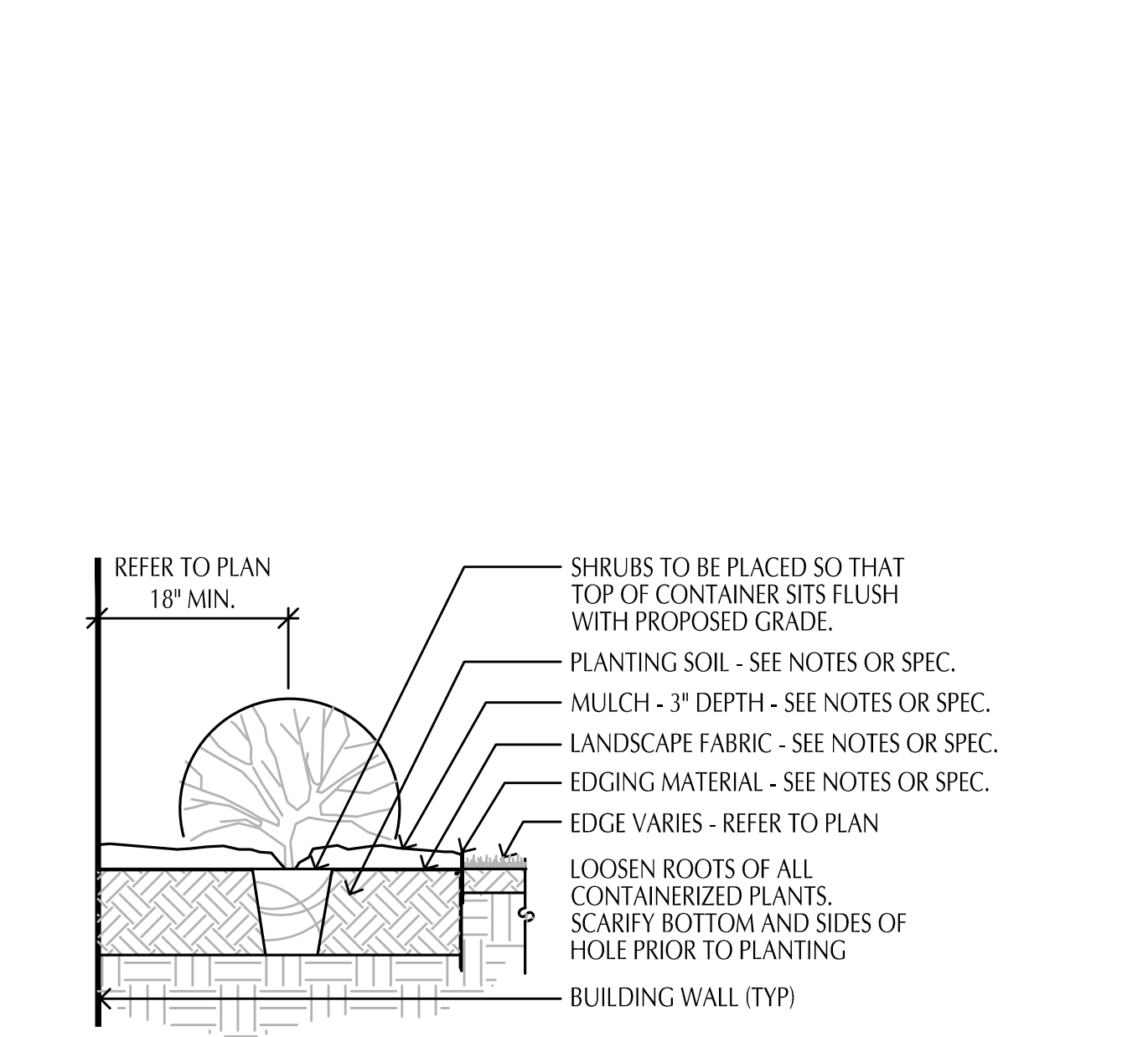
UNLESS NOTED OTHERWISE THE APPROPRIATE DATES FOR SPRING PLANT MATERIAL INSTALLATION AND SEED/SOD PLACEMENT IS FROM THE TIME GROUND HAS THAWED TO JUNE 15.

FALL SODDING IS GENERALLY ACCEPTABLE FROM AUGUST 15 - NOVEMBER 1. FALL SEEDING FROM AUGUST 15 - SEPTEMBER 15; DORMANT SEEDING IN THE FALL SHALL NOT OCCUR PRIOR TO NOVEMBER 1. FALL CONIFEROUS PLANTING MAY OCCUR FROM AUGUST 15 - OCTOBER 1 AND DECIDUOUS PLANTING FROM THE FIRST FROST UNTIL NOVEMBER 15. PLANTING OUTSIDE THESE DATES IS NOT RECOMMENDED. ANY ADJUSTMENT MUST BE APPROVED IN WRITING BY THE LANDSCAPE ARCHITECT.

LANDSCAPE CONTRACTOR SHALL ESTABLISH TO HIS SATISFACTION THAT SOIL AND COMPACTION CONDITIONS ARE ADEQUATE TO ALLOW FOR PROPER DRAINAGE AT AND AROUND THE BUILDING SITE.



1 L1-1 DECIDUOUS TREE PLANTING DETAIL SCALE: 1/2" = 1'-0"



2 L1-1 SHRUB PLANTING DETAIL SCALE: 3/4" = 1'-0"

NOT FOR CONSTRUCTION

This sheet may be a Reduced Copy. The bar above is 1" long on a Full Size Sheet. Drawing Scales apply to Full Size Sheets.

Sheet Index

200.EX	EXISTING CONDITIONS
210.SD	DEMOLITION PLAN
220.OC	OVERALL CIVIL SITE PLAN
220.IC	CIVIL SITE PLAN
230.CG	GRADING AND DRAINAGE PLAN
250.CD	CIVIL DETAILS
260.LP	LANDSCAPE PLAN

Comm. No. 1519400 Drawn VMA

LANDSCAPE PLAN

Sheet No.

260.LP



WARNING: THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING FOR LOCATIONS OF ALL EXISTING UTILITIES. THEY SHALL COOPERATE WITH ALL UTILITY COMPANIES IN MAINTAINING THEIR SERVICE AND / OR RELOCATION OF LINES.

THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL AT 651-454-0002 AT LEAST 48 HOURS IN ADVANCE FOR THE LOCATIONS OF ALL UNDERGROUND WIRES, CABLES, CONDUITS, PIPES, MANHOLES, VALVES OR OTHER BURIED STRUCTURES BEFORE DIGGING. THE CONTRACTOR SHALL REPAIR OR REPLACE THE ABOVE WHEN DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.

COPYRIGHT BWB



380 St. Peter Street, Ste. 600
Saint Paul, MN 55102
651.222.3701
bwbr.com

Consultants



PLANNING
CIVIL ENGINEERING
LAND SURVEYING
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL
7200 Hemlock Lane, Suite 300
Maple Grove, MN 55369
763.424.5505
www.louckshinc.com

Loucks Project No.

This document may be an electronic file or may be printed from an electronic file provided to the user. It is the sole responsibility of the user to ensure that the content and quality is consistent with the content and quality of the paper documents on file at BWBR.

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the law of the State of Minnesota.

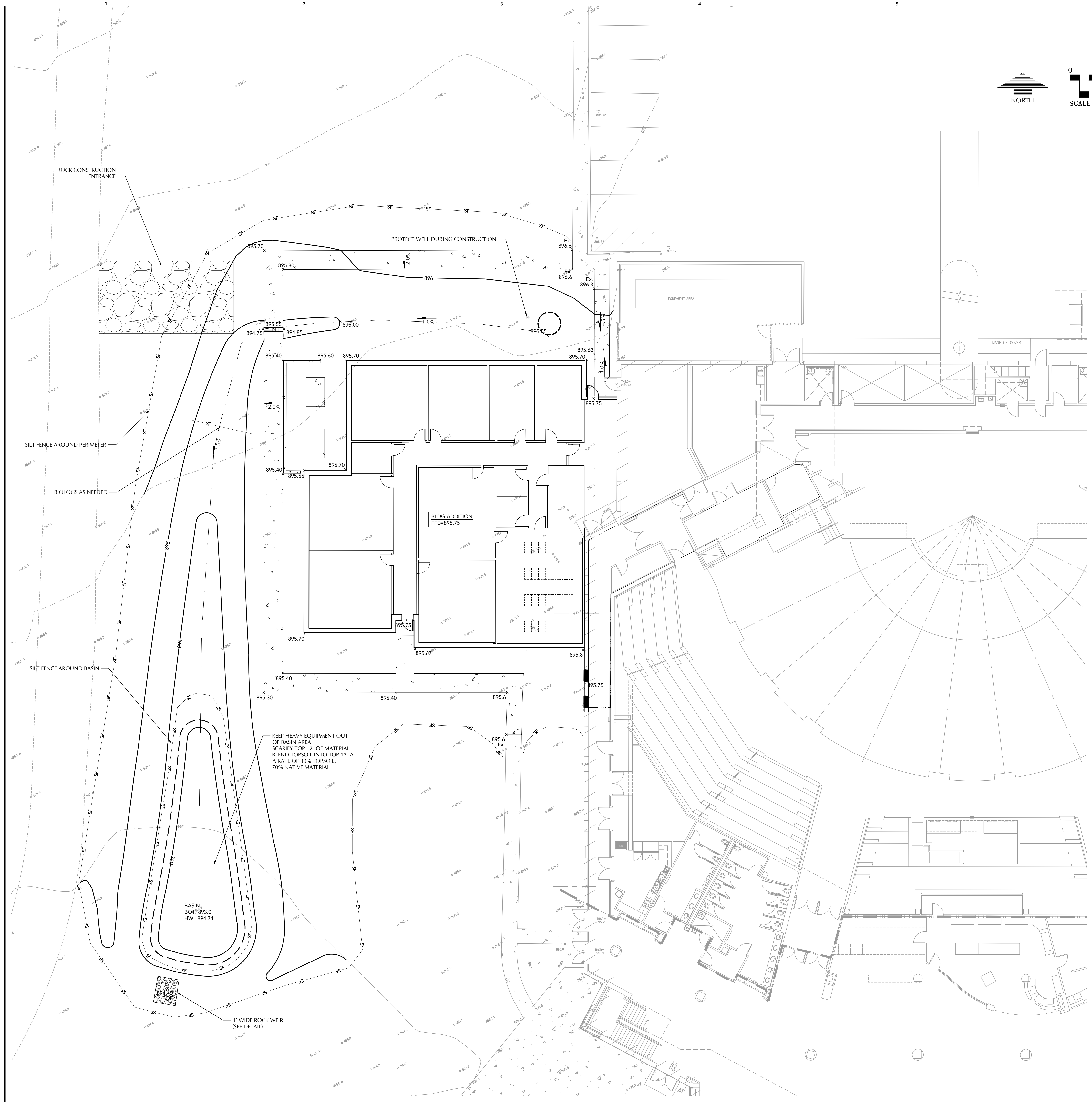
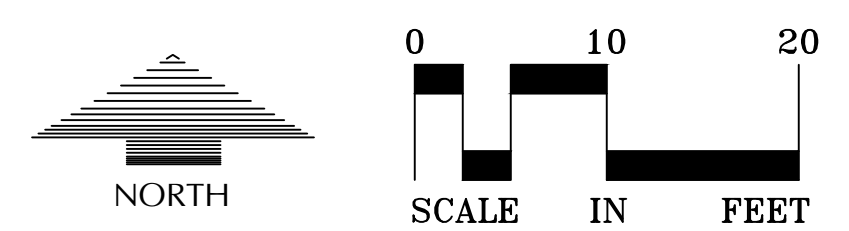
Valerina M. Anderson - PE
License No. 43423
Date

Issued For

Item Date

CITY SUBMITTAL 07-11-16

EXISTING	CIVIL LEGEND	PROPOSED
	SANITARY MANHOLE	
	STORM MANHOLE	
	CATCH BASIN	
	CULVERT	
	HYDRANT	
	GATE VALVE	
	POST INDICATOR VALVE	
	LIGHT POLE	
	POWER POLE	
	SIGN	
	BENCHMARK	
	SOIL BORINGS	
	WATER MANHOLE	
	TELEPHONE MANHOLE	
	UTILITY MANHOLE	
	ELECTRIC MANHOLE	
	WATER SERVICE	
	SANITARY SERVICE	
	HANDICAP PARKING	
	DIRECTION OF FLOW	
	SPOT ELEVATION	
	CONTOURS	
	SANITARY SEWER	
	STORM SEWER	
	WATERMAIN	
	FORCEMAIN	
	DRAINTILE	
	SILT FENCE	
	CURB & GUTTER	
	RETAINING WALL	
	TREELINE	
	EASEMENT LINE	
	SETBACK LINE	
	FENCE LINE	
	UNDERGROUND TELE	
	UNDERGROUND GAS	
	OVERHEAD UTILITY	



GRADING, DRAINAGE & EROSION CONTROL NOTES

- SPOT ELEVATIONS REPRESENT FINISHED SURFACE GRADES, GUTTER/FLOW LINE, FACE OF BUILDING, OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
- CATCH BASINS AND MANHOLES IN PAVED AREAS SHALL BE SUMPED 0.04 FEET. ALL CATCH BASINS IN GUTTERS SHALL BE SUMPED 0.16 FEET. RIM ELEVATIONS SHOWN ON PLANS DO NOT REFLECT SUMPED ELEVATIONS.
- GRADING OF THE INFILTRATION AREAS SHALL BE ACCOMPLISHED USING LOW-IMPACT EARTH-MOVING EQUIPMENT TO PREVENT COMPACTION OF THE UNDERLYING SOILS. SMALL TRACKED DOZERS AND BOBCATS WITH RUNNER TRACKS ARE RECOMMENDED.
- ALL DISTURBED UNPAVED AREAS ARE TO RECEIVE MINIMUM OF 4 INCHES OF TOP SOIL AND SEED/MULCH OR SOD. THESE AREAS SHALL BE WATERED/MAINTAINED BY THE CONTRACTOR UNTIL VEGETATION IS ESTABLISHED.
- FOR SITE RETAINING WALLS "TW" EQUALS SURFACE GRADE AT TOP FACE OF WALL (NOT TOP OF WALL), "GW" EQUALS SURFACE GRADE AT WALL GRADE TRANSITION, AND "BW" EQUALS SURFACE GRADE AT BOTTOM FACE OF WALL (NOT BOTTOM OF BURIED WALL COURSES).
- STREETS MUST BE CLEANED AND SWEEPED WHENEVER TRACKING OF SEDIMENTS OCCURS AND BEFORE SITES ARE LEFT IDLE FOR WEEKENDS AND HOLIDAYS. A REGULAR SWEEPING SCHEDULE MUST BE ESTABLISHED.
- DUST MUST BE ADEQUATELY CONTROLLED.
- SEE UTILITY PLAN FOR WATER, STORM AND SANITARY SEWER INFORMATION.

SITE PLAN LEGEND

	SILT FENCE
	INLET PROTECTION
	NEW CONCRETE PAVEMENT

NOT FOR CONSTRUCTION

This Sheet may be a Reduced Copy.
The bar above is 1" long on a Full Size Sheet.
Drawing Scales apply to Full Size Sheets.

Sheet Index

200.EX	EXISTING CONDITIONS
210.SD	DEMOLITION PLAN
220.OC	OVERALL CIVIL SITE PLAN
220.1CS	CIVIL SITE PLAN
230.CG	GRADING AND DRAINAGE PLAN
250.CD	CIVIL DETAILS
260.LP	LANDSCAPE PLAN



CALL BEFORE YOU DIG!
Gopher State One Call
TWIN CITY AREA: 651-454-0002
TOLL FREE: 1-800-292-1166

WARNING:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING FOR LOCATIONS OF ALL EXISTING UTILITIES. THEY SHALL COOPERATE WITH ALL UTILITY COMPANIES IN MAINTAINING THEIR SERVICE AND / OR RELOCATION OF LINES.

THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL AT 651-454-0002 AT LEAST 48 HOURS IN ADVANCE FOR THE LOCATIONS OF ALL UNDERGROUND WIRES, CABLES, CONDUITS, PIPES, MANHOLES, VALVES OR OTHER BURIED STRUCTURES BEFORE DIGGING. THE CONTRACTOR SHALL REPAIR OR REPLACE THE ABOVE WHEN DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.

Comm. No. 1519400
Drawn VMA

Sheet Title

GRADING AND DRAINAGE PLAN

Sheet No.

230.CG

COPYRIGHT BWBR



Memorandum

To: Lino Lakes Environmental Board

From: Marty Asleson

Date: July 27th, 2016

Re: Birds and Climate Change

The following information was submitted to the City by Liz Kaufenberg for Environmental Board discussion, for the purpose of public outreach. The discussion is what do we want the outreach information to say about the September meeting visit with Monica Bryand ?

Liz and I did a conference call to Ms. Bryand and I think it will be an interesting presentation to whoever wants to listen.

From Liz:

Birds Home to Lino Lakes

Over 100 birds call Lino Lakes home - including the black-crowned night heron, Baltimore oriole, and the marsh wren. Many of these same birds live in threatened habitat. Come learn about the birds that live here and what simple things we can do to help!

St. Paul Audubon member Monica Bryand worked on a special project through National and Minnesota Audubon to capture through photos, these 166 species. It is a work in progress but she currently has over 100 and will share her photos and some of her stories of her travels along with why she is so passionate about working to protect the environment for people and the birds.

Monica is a Latina birder/photographer that focuses on mainly urban birds but manages to travel up north and across the state to find special feathered friends.

monica-bryand



Artist Statement

I was born and raised in St. Paul and have lived on the West Side for 35+ years. I'm a Latina who is passionate about many issues and how they intersect, including the environment and immigration. The Mississippi enfolds my neighborhood like a hug. Its influence is profound.

Taking pictures from my kayak on the Mississippi gives me a whole new vantage point. The many back-channels reveal species and habitats I'd otherwise miss (with bonus exercise value).

I have been a "birder" for close to twelve years. My real interest in taking bird photos and sharing them is to let others see the beauty that is right in front of them (ok, maybe above them). I want people to understand the connection of all things to the earth, and how important it is to protect the habitats for all animals all over this planet. I want kids to enjoy the amazing natural environments (parks, lakes, rivers) we have here in the Twin Cities and Minnesota. By letting kids experience nature I hope that they too will want to protect it for themselves and the next generation.

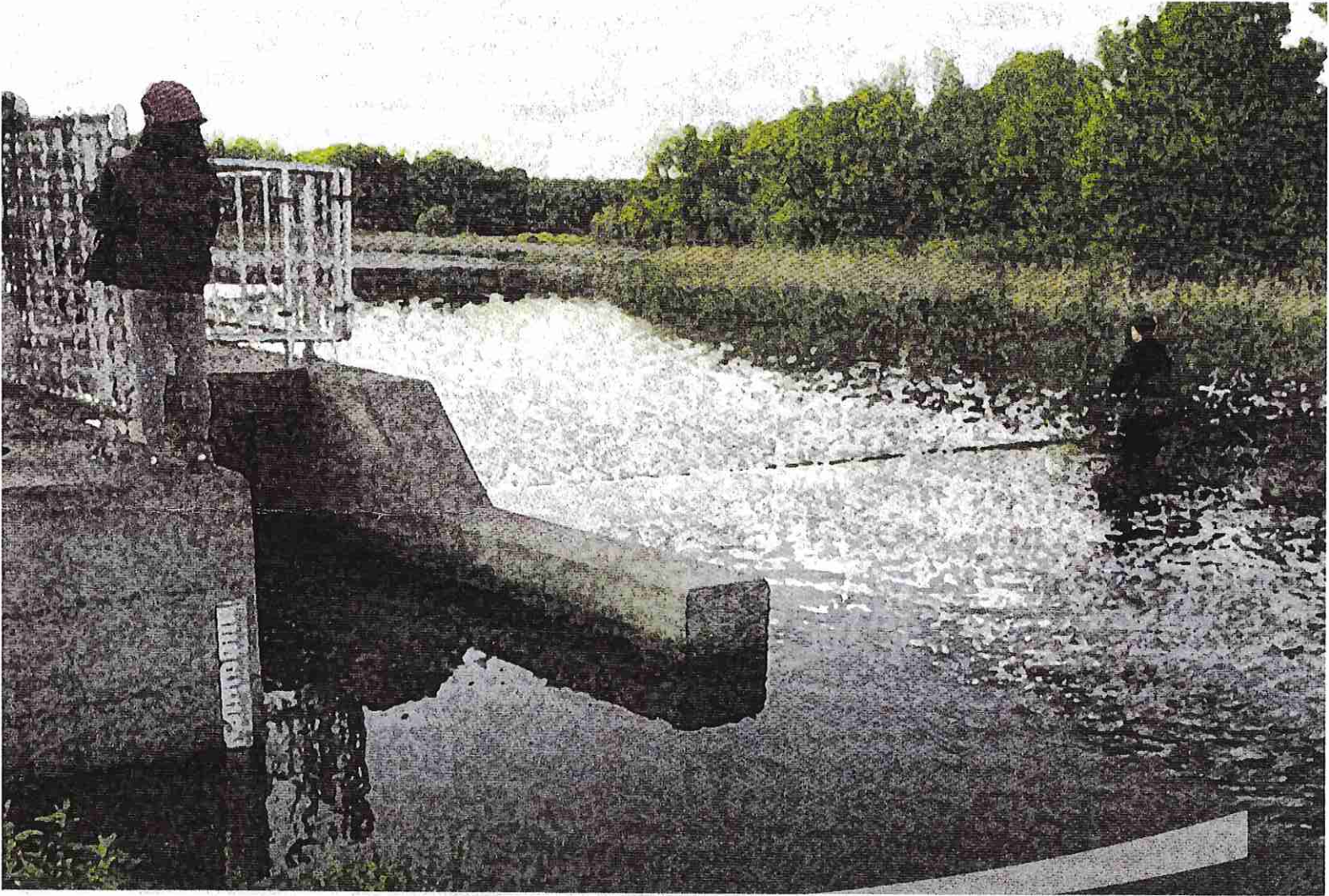
We need to think about big picture opportunities to stop the destruction. While we are doing that, we can individually do things that will support habitats instead of destroying them. It's not just about planting a tree or flower; it's about planting trees and flowers that are truly beneficial to the birds, bees, and butterflies. When we think about protecting the Mississippi river we need to make sure we do our part here... and also think about how it flows through this country and beyond, touching so many communities and supporting so much life. Let's protect it!

I have so much so close to me here on the West Side of St. Paul. I'm sure you have great beauty where you live... get out and enjoy it!



Website: www.monocabryandphotography.com

All artwork is for sale. For prices, please contact Tim Lingenfelder at tll@wilder.org with the name of the piece you are interested in.



PELTIER LAKE DRAWDOWN LANDOWNER APPROVAL PACKET



PROJECT DESCRIPTION & INTENT

In 2002, Peltier Lake was listed as impaired by the Minnesota Pollution Control Agency (MPCA) and placed on the 303(d) list. The impairment is based on excess phosphorus, which creates more frequent and more intense algae blooms. Algae blooms interfere with recreation, and negatively impact ecological health. In 2013, a total maximum daily load (TMDL) was approved by the MPCA and the US Environmental Protection Agency (USEPA) for Peltier Lake (EOR, 2013). The TMDL indicates that the majority of phosphorus loading to Peltier Lake is occurring internally. The internal phosphorus loading contributes to plant and algae growth. This cycle reoccurs on an annual basis. The TMDL identifies a plant, curlyleaf pondweed, as a contributor to internal loading of phosphorus. One of the projects identified in the TMDL is a water level drawdown. Performing the drawdown over the winter months can kill curlyleaf pondweed turions by exposing them to freezing and desiccation. Turions are buds that deposit on the lake bottom and are able to grow into a new plant during the next season. Additionally, drawing down the lake consolidates exposed sediments, promoting the germination and rooting of healthy, native plant seeds rather than nuisance plants such as curlyleaf pondweed and Eurasian watermilfoil.

In 2015, the Rice Creek Watershed District (RCWD) retained Houston Engineering, Inc. (HEI) to conduct a feasibility study for the drawdown of Peltier Lake (HEI, 2015). The study included the analysis of three drawdown scenarios. The scenarios ranged from simply removing the stop logs at the dam outlet structure to removing the stop logs combined with various degrees of pumping water from the lake, over the dam. Each scenario produced in a different drawdown level. The feasibility analysis examined drawdown effects on downstream elevation and flows, probable oxygen depletion in Peltier Lake, and cost to achieve the drawdown. The scenario ultimately chosen for the drawdown involves only removing the stop logs in the lake dam outlet structure and allowing the lake level to drop approximately 3 feet.

The drawdown is proposed to occur in the fall of 2016, following the aquatic recreation season, and continue through the winter into the spring of 2017. Once the stop logs are removed, the lake will take approximately 51 days to drawdown to its target (design) elevation, anticipated to be approximately 882 feet NAVD88. This drawdown elevation is based on hydraulic modeling of the removal of the stop logs in the dam outlet structure. The drawdown time could be affected by any rain events that occur during the drawdown, which would increase the drawdown time. Once the lake has reached its final drawdown elevation, approximately 200 acres (34%) of the lake bottom area will be exposed along the shoreline. Figure 1 shows estimates of the footprint of the water surface at both the ordinary high water (OHW) elevation (884.88 NAVD88) and at the proposed drawdown elevation (882.06 NAVD88). The OHW is similar to a "typical" level during the spring. Based on plant surveys performed by the RCWD, the drawdown will expose a significant portion of the shoreline lake bottom affected by curlyleaf pondweed. Once the lake and shoreline freeze during the winter season, exposed curlyleaf pondweed plants and turions within the exposed sediment will freeze, desiccate, and be unable to regrow during the next summer season. Fish will be protected from winterkill by an aeration system operated by Anoka County Parks. Once ice-out occurs in the spring, the stop logs will be placed back in the dam outlet structure and the lake inflow from Rice Creek will begin to gradually refill the lake. The lake will very likely refill within a few weeks, dependent upon the amount of snowmelt and the size of spring rainfall events occurring during the refill period. Once the lake has refilled, the dam will continue to function as normal. The effect of the drawdown on curlyleaf pondweed abundance, algal blooms, and overall water quality will be monitored over the 2017 season to assess the success of the drawdown. The current proposal is a one-time occurrence. However, as the results of



the drawdown are assessed, the RCWD may explore the use of periodic drawdowns in the future to manage curlyleaf pondweed.

The RCWD has involved various local governmental units (LGUs), state government agencies, and stakeholder groups throughout the drawdown feasibility study. Outreach and involvement has included presentations by the RCWD, sharing of feasibility study information, and solicitation of comments and concerns to be taken into consideration as part of the drawdown. As a result, the drawdown project has received constructive input and significant support by various groups including:

- Minnesota Pollution Control Agency;
- Minnesota Department of Natural Resources;
- Anoka County Parks and Recreation; and
- City of Lino Lakes Environmental Board.

Members of the various groups see the drawdown as both an effort to improve water quality in the lake and a research opportunity to study curlyleaf pondweed management. Peltier Lake is a MnDNR "sentinel lake". The Sentinel Lakes program is a cooperative effort between the MnDNR and the MPCA. The goals of the program are to monitor chemical, physical, and biological changes over time, determine the mechanisms that drive these changes, and identify long-term management solutions that are sustainable based on the ecosystem. The wealth of data collected on Peltier Lake through the Sentinel Lake program, before and after the drawdown, will provide a very detailed dataset for studying how lakes like Peltier respond to nutrient stressors and drawdown as a management option.

Additional information about the Peltier Lake TMDL can be found in the TMDL report (EOR, 2013); information about the drawdown feasibility study can be found on the drawdown in the technical memorandum developed during the study (HEI, 2015).



LANDOWNER APPROVAL

In order to drawdown Peltier Lake, the RCWD must first apply for and be granted a Minnesota Department of Natural Resources (MnDNR) Public Waters Work Permit. This is the standard permit required by the MnDNR for all work within public waters and wetlands. The permit submittal requires that several requirements are met, including:

1. The permit applicant has conducted, or will conduct, a public hearing according to MN Statutes 103G.408, paragraph (d).

The hearing notice for a public hearing under paragraph (a), clause (2), item (iii), must:

(1) include the date, place, and time for the hearing;

(2) include the waters affected and a description of the proposed project;

(3) be mailed to the director, the county auditor, the clerk or mayor of a municipality, the lake improvement district if one exists, the watershed district or water management organization, the soil and water conservation district, and all riparian owners of record affected by the application; and

(4) be published in a newspaper of general circulation in the affected area.

2. The permit applicant has obtained, or will obtain, permission from at least 75% of the riparian landowners.

The first requirement is addressed through the establishment and holding of the public meeting at which this document is presented. The second is fulfilled with the drawdown approval signature page included within this document.

The attached landowner approval signature page should be signed and returned to the RCWD by July 15, 2016. The signature page may be returned to the RCWD using the enclosed postage-paid envelope, or in person at the public meeting being held on July 7, 2016, 6:30pm, at Wargo Nature Center (7701 Main Street, Lino Lakes, MN).

If you have any additional questions, comments, or concerns, please contact:

Matt Kocian, Lake and Stream Specialist
Rice Creek Watershed District
4325 Pheasant Ridge Drive NE #611
Blaine, MN 55449
(763) 398-3075
mkocian@ricecreek.org

FREQUENTLY ASKED QUESTIONS

WHAT IS THE PURPOSE OF THE DRAWDOWN?

The purpose of the drawdown is to improve the overall water quality in Peltier Lake by allowing near-shore sediments to freeze, dry out, and kill curlyleaf pondweed, as well as reoxygenate and consolidate sediments for native plants.

WHEN WILL THE DRAWDOWN BEGIN?

The drawdown is tentatively planned to begin after Labor Day weekend. It is likely the drawdown will begin on or around September 19th.

WHAT IS THE RATE OF THE DRAWDOWN?

The drawdown is expected to occur slowly, at a rate of just under 1 inch per day.

HOW FAR WILL THE LAKE BE DRAWN DOWN?

The lake will be drawn down approximately 3 feet below the ordinary high water elevation.

WHAT IS THE AMOUNT OF LAKE BOTTOM THAT WILL BE EXPOSED AFTER THE DRAWDOWN?

Approximately 199 acres of the near-shore lake bottom will be exposed once the drawdown is completed. This represents about 34% of the lake bottom area. Figure 1 shows an estimate of what the drawn down lake footprint will look like.

WILL THE ICE BE SAFE DURING THE WINTER?

Once the drawdown is completed, the lake will freeze over as normal. The same ice safety precautions apply to the area of the lake near the aeration system.

HOW LONG WITH THE DRAWDOWN LAST?

The drawdown is anticipated to begin after Labor Day weekend (approximately September 19, 2016). It is expected that the lake will take approximately 51 days to reach its lowest level. The lake will remain at this level until ice out (typically mid-March to mid-April), when the stop logs will be replaced in the dam and the lake will be allowed to fill to its normal water level.

HOW WILL THE DRAWDOWN AFFECT BOAT REMOVAL?

The drawdown has been scheduled to begin and take place at the end of the typical recreational boating season (after Labor Day). Although the drawdown rate is low (about 1 inch per day), it is highly likely that the Peltier Lake boat launch will become unusable at some point (i.e. the ramp will not extend far enough into the lake). Some preplanning should be taken by boat owners and lakeshore residents prior to ensure that boat removal is completed prior to the start of the drawdown.

HOW LONG WILL THE LAKE TAKE TO REFILL?

The lake will very likely refill within a few weeks, dependent upon the amount of snowmelt and the size of spring rainfall events occurring during the refill period.

WILL THE DRAWDOWN RESULT IN ANY FLOODING IMPACTS, EITHER DURING THE DRAWDOWN OR DURING THE REFILLING?



The feasibility study performed by RCWD has indicated that there is little to no impact downstream of Peltier Lake as a result of the drawdown. The drawdown will not cause any flooding to occur. The refilling will not cause any flood issues.

WHAT IMPACT WILL THE DRAWDOWN HAVE ON FISH AND WILDLIFE?

Anoka County currently operates a reaeration system within Peltier Lake to minimize fish kill during the winter. The aerator will be used to minimize winterkill during the drawdown. Since the drawdown is proposed during fall and winter months, there should be no impact to the seasonal heron rookery.

WILL THE DRAWDOWN OF PELTIER LAKE IMPACT THE LAKE LEVELS IN CENTERVILLE LAKE?

St. Paul Regional Water Services owns a culvert and small dam under Main Street that connects Peltier to Centerville. Stop logs will be used in this structure to maintain current water levels on Centerville Lake and therefore Centerville Lake will not be drawn down. The structure will also ensure water does not flow from Peltier to Centerville, during the refilling of Peltier Lake in the spring of 2017.

WILL THE DRAWDOWN RESULT IN SEDIMENT BUILDUP BEHIND THE PELTIER LAKE DAM OR DOWNSTREAM OF THE DAM?

The RCWD is evaluating the sediment behind the dam and will implement the necessary actions during the drawdown to minimize sediment buildup behind the dam and sediment transport downstream of the dam.

WILL THE DRAWDOWN HAVE ANY EFFECT ON LOCAL GROUNDWATER LEVEL AND WELLS?

The lake drawdown depth is approximately 3 feet. The Minnesota County Well Index indicates that domestic groundwater wells within the vicinity of Peltier Lake typically range from 60 to 100 feet deep and are accessing deeper, water bearing aquifers. The bottom of these wells are much deeper than the drawdown elevation of the lake. Therefore, the drawdown is not expected to affect the nearby groundwater wells.

WILL THE EXISTING DAM BE REMOVED OR ALTERED?

No, the drawdown will be performed by removing stop logs from an outlet structure that is part of the dam. This will create a small section of the dam that is approximately 3 feet lower than the top of the dam, allowing the lake water to outlet through this section until the lake level is even with the bottom of the outlet structure.

HOW IS THE DRAWDOWN PROJECT BEING FUNDED AND WHAT WILL IT COST?

A feasibility study of the drawdown was funded and completed by the Rice Creek Watershed District (RCWD) in 2015, costing approximately \$19,000. The actual drawdown will also be funded by the RCWD and will cost approximately \$25,000. The RCWD pays for this using District tax revenue and projects of this nature are considered part of the RCWD normal operating budget. No new money or additional assessment were made to pay for this work.

WILL THERE BE ANY ADDITIONAL PUBLIC MEETINGS?

Other than the July 7, 2016 public meeting referenced in the Landowner Approval Packet, no additional public meetings are expected at this time.



REFERENCES

Emmons & Olivier Resources, Inc. (EOR), 2013. Peltier Lake and Centerville Lake TMDL. Prepared for the Minnesota Pollution Control Agency. July 2013.

Houston Engineering, Inc. (HEI). 2015 Technical Memorandum – Peltier Lake Drawdown Feasibility – Peltier Lake Drawdown Feasibility Technical Memorandum. October 7, 2015.





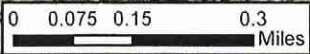
-  Pellier Lake Dam & Outlet
-  Pellier Lake to Centerville Lake Connection
-  Ordinary High Water Level (884.88 ft NAVD88)
-  Estimated Water Surface After Drawdown (882.06 ft NAVD88)



Figure 1. Pellier Lake Water Surfaces

DATE	DESIGNED BY	APPROVED BY	DATE	SCALE
01/20/2014	6/10/14	8/23/14	8/27/2014	AS SHOWN



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroVista, Swire, IGN, IGP, swisstopo, and the GIS User Community

Improving Peltier Lake

June 30, 2016

Hello Peltier Lake residents,

You should have received a packet from the Rice Creek Watershed District (RCWD) about a Peltier Lake drawdown planned for September, 2016. Please sign the approval form and return it to RCWD by July 15 because 75% approval is needed to accomplish the drawdown which should help improve Peltier Lake.

I live at 1677 Peltier Lake Drive and have been very active in water quality improvement for Peltier Lake and the watershed for the past 35 years. I am currently chairman of the Rice Creek Watershed District Citizen Advisory Committee and participate in monitoring Peltier Lake and the watershed with water quality and macroinvertebrate creek monitoring measures. I also help support the nearby great blue heron colony among other activities.

This letter is from me, personally, to give further information about the drawdown and Peltier Lake in general and to offer to answer any questions and listen to any suggestions people may have.

If you would like periodic information on Peltier Lake and RCWD, please send an email to wayneleblanc@comcast.net or call me at 651-426-0168.

The RCWD packet explains many factors concerning the drawdown. Here is a little more information from my perspective and experience.

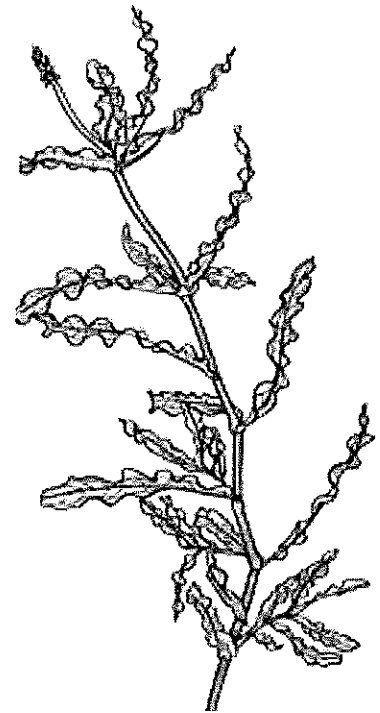
DRAWDOWN GOAL

Studies have shown that the invasive aquatic plant, curlyleaf pondweed, is a significant factor in poor Peltier Lake water quality. (There are other factors such as carp in the lake and excessive phosphorus nutrients coming into the lake, but those factors are not part of this drawdown action.) The curlyleaf typically dies the first part of July, decomposes, and causes algae blooms for the rest of the summer. Before it dies, it produces seeds called turions which sprout and grow the next year. Lowering the water will expose more turions to freezing over winter which kills them. With this, native aquatic plants will hopefully better dominate the curlyleaf.

Native aquatic plants do not die in July and instead, continue to absorb excess nutrients already in the lake and those coming into the lake. Although native plants may make it more difficult to boat through them, they provide a way to keep Peltier Lake from becoming a blue-green algae stinky toxic mess. Plants will grow in the excess nutrients. You can either have toxic stinky blue-green algae plants or healthy native aquatic plants.

In the last 10 years or so, many native aquatic plants have begun to appear and the blue-green algae blooms have been reduced in number. This is a good sign and hopefully, this trend will continue.

For those who may not know what curlyleaf pondweed looks like, see the illustration at right. All other aquatic plants in Peltier Lake seem to be beneficial in regards to water quality.



Curlyleaf Pondweed

OTHER INFORMATION

Here is some other information which may be of interest.

- The drawdown is not the only improvement action being considered by the RCWD. It is a first step.
- Chemicals or herbicides of any kind are not permitted in Peltier Lake because the DNR classifies it a "Natural Lake". (In some lakes, herbicides are used to try to control curlyleaf pondweed, but Peltier Lake is a widening in Rice Creek and has a flow which would carry away an herbicide, and in addition, herbicides are not permitted by the DNR.)
- Residents may remove up to 2500 square feet (e.g. 50'x50') of aquatic vegetation but it must be totally removed from the lake. (Commercial harvesting on a large scale is generally not effective or desirable.)
- The yellow floating vegetation you see is filamentous algae and is not considered dangerous like blue-green algae. It produces oxygen which causes it to float.
- Keep as many native aquatic plants as possible. A progression from invasive to native plant communities seems to be in progress. Because Eurasian Watermilfoil (another invasive exotic) is not causing any problems at the moment, and because it has potential to absorb nutrients, it seems beneficial. (Enclosures in the lake are studies of Eurasian Watermilfoil.)
- If you use fertilizer, make sure it has ZERO phosphorus, the middle number, e.g. 10-0-10.
- If you have a septic system, make sure it is in good order and nothing is getting to the lake.
- If you don't have one, consider establishing a buffer of native or stable plants on your shoreline to reduce erosion, phosphorus and sediment entering the lake. Mowed grass is not an effective buffer. RCWD offers cost share programs on shoreline restoration and raingardens.
- Don't mow next to the lake or a wetland. Mowing next to a lake or wetland increases phosphorus and sediment loads on the lake.
- If you see zebra mussels, contact me. Anoka Parks has given me a kit to detect zebra mussels (which are upstream in White Bear Lake).
- Also see: www.PeltierLake.Org for more information.

Again, if you would like periodic information on Peltier Lake and the Rice Creek Watershed District, please send an email to wayneleblanc@comcast.net or call me at 651-426-0168.

If you have any questions or suggestions, contact me. I have an Aquatic Invasive Species kit from Anoka Parks and usually can identify plants or critters in question. If I can't, I can try to contact an expert. If you would like to help in some way, contact me.

The Rice Creek Watershed District is the organization in the best position to improve Peltier Lake, and, in fact, they have a mandate to improve the lake since it does not meet water quality standards. Residents just do not have the resources to significantly improve Peltier Lake. I have tried. Let's hope RCWD is able to do the drawdown and hope that it improves Peltier Lake. Let's hope more action is taken by RCWD to improve Peltier Lake.

Thank you.

Wayne LeBlanc
wayneleblanc@comcast.net
651-426-0168
June 30, 2016