

**City of Lino Lakes  
Environmental Board Meeting**

**September 28, 2016  
6:30 p.m.**

**AGENDA**

**MN Bird Presentation**

1. Call to Order
2. Approval of Agenda
3. Approval of Minutes
4. Open Mike
5. Action Items
  - A. Lino Lakes Elementary Renovation
6. Discussion Items
  - A. Birds in our Backyard, Monica Bryand of the National and Minnesota Audubon/Presentation and Discussion
  - B. Peltier Lake Drawdown, Update
7. Adjourn

**CITY OF LINO LAKES  
ENVIRONMENTAL BOARD MINUTES**

<b>DATE</b>	<b>: August 31, 2016</b>
<b>TIME STARTED</b>	<b>: 6:32 P.M.</b>
<b>TIME ENDED</b>	<b>: 8:01 P.M.</b>
<b>MEMBERS PRESENT</b>	<b>: Steve Heiskary, Barbra Bor, Paula Andrzejewski, Liz Kaufenberg , Nancy Klebba, Alex Schwartz, John Sullivan</b>
<b>MEMBERS ABSENT</b>	<b>: None</b>
<b>STAFF PRESENT</b>	<b>: Marty Asleson, Nan Jia</b>

Pre-meeting at Lino Lakes Fire Station #2 1710 Birch St.

**1. CALL TO ORDER AND ROLL CALL:**

Mr. Heiskary called the Lino Lakes Environmental Board meeting to order at 6:32 p.m. on August 31, 2016.

**2. APPROVAL OF AGENDA**

Ms. Sullivan made a MOTION to approve the agenda. Motion was seconded by Ms. Kaufenberg. Motioned carried 7 – 0.

**3. APPROVAL OF MINUTES:**

July 27, 2016

Ms. Andrzejewski made a MOTION to approve the July 27, 2016 Meeting Minutes. Motion was supported by Ms. Kaufenberg. Motion carried 7 - 0.

**4. OPEN MIKE**

Mr. Heiskary declared Open Mike at 6:34 p.m.

There was no one present for Open Mike.

Mr. Heiskary closed Open Mike at 6:35 p.m.

**DRAFT MINUTES**

**5. ACTION ITEMS**

A. **No Action Items**

**6. DISCUSSION ITEMS**

A. **Presentation on Anoka County Organics Waste Recycling, Sue Doll**

Ms.Doll who has worked at Anoka County for 27 years and with the Recycling Department she does programming on recycling and composting with schools, residents, events and business.

The County Recycling Department also does Solid Waste Planning, policy and reporting to MN Pollution Control Agency.

Provide funding for city recycling and organics programs from SCORE. There is a 17% state tax on garbage which helps to fund the recycling and organics programs.

Waste in Anoka County for 2015 was as follows:

- Landfilled 95+ tons
- Recycled 166+ tons
- Yard Waste 22+ tons
- Organics 11+ tons
- Household 450+ tons
- Processed 103+ tons

There is a state law to recycle 75% of our waste by 2030, Anoka County currently at 51% (42% recycling, 9% organics ) and hoping with increase in organics recycling we can move above the 51%..

The reasons to compost is it reduces the need for fertilizers and pesticides, use water more efficiently because compost adds great mositure retenion abilities and improves the quality of the soil.

SMSC in Shakopee and SET in Empire Township are the only two Source Separated Organics (SSO) facilities sites that have their solid waste permits issued through MPCA. SSO sites are less restrictive than landfills sites and more restrictive than yard waste sites.

The ways to introduce organic recycling is to have collections at special events, also having curbside collection, drop off sites and organics recycling at businesses. Education is needed to communicate what is acceptable. Also using the ASTM certified compostable bags which you can find at most stores now.

Some of the success stories are the National Sports Center and 8 McDonald's are reporting that they are breaking even financially. Culver's in Anoka is also starting a program.

Organics recycling potential cost savings incentives are that trash is taxed by the state at 17%, recycling is not. There would be a decrease in trash size and frequency and may be able to reduce waste disposal costs.

To reduce collection costs for haulers, route density is needed.

Mr. Sullivan asked where is our organics going if Becker is now closed.

Ms. Doll said that it probably going to Empire Township. They have just asked if they double their recycling permits. Both SSO facisliates are about the same distance from our area.

Ms. Kaufenberg asked about Walters recycling with the blue bags as a pilot program in Coon Rapids and what is the number of people that are participating? And what is the route density that the haulers need to have a program successful?

Ms. Doll was unsure of the answers.

Compost sites and yard waste managers wish that there were no bags used at all. If the winds blow the bags are then a litter problem. And the bags also take time to break down.

Mr. Schwartz was wondering why can't garabage haulers pick up curb side recycling every week. It seems that people's recycling containers are always overfilled.

Ms. Doll mentioned that was you could ask your hauler for another cart or the city can negotite that issue when the haulers contract are being renewed.

#### **B. Blue Heron Days Review**

Blue Heron Days Parade was a rainy day but there was 10 students from Centennil School that helped collected 5.6 lbs of organics.

Mr. Heiskary was present and said that the students seemed enthusiastic and hope we have them help out again.

#### **C. Bird Talk**

The information for the Bird Talk is posted on the City's web page, reader board and it will be mentioned during the upcoming Council Meeting. Ms. Kaufenberg did

contact the Quad and they will place the information in Community Briefs and also send a reporter to the September 28 meeting.

The talk will be the first item on the agenda of the Environmental Board Meeting on September 28 in which Ms. Kaufenberg will introduce Monica Bryand.

Ms. Andrzejewski suggested that Centennial Schools should be contacted with the information.

Ms. Bor also suggested that the Lino Lakes Stem School should be contacted about this event.

**7. ADJOURNMENT**

Ms. Andrzejewski made a MOTION to adjourn the meeting at 8:01 p.m. Motion was supported by Ms. Kaufenberg. Motion carried 6 - 0.

Respectfully submitted,

Mary Fogarty  
Office Specialist

**ENVIRONMENTAL BOARD  
AGENDA ITEM 5A**

**STAFF ORIGINATOR:** Marty Asleson, Environmental Coordinator

**MEETING DATE:** September 28, 2016

**REQUEST:** Review: Lino Lakes Elementary-Site Plan  
Review/Conditional Use Permit

**APPLICANT:** Forest Lake School District 831

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**PROPOSED Project**

Lino Lakes Elementary School was originally built in 1957, and has received multiple additions in 1960, 1975, and most recently 1999. This renovation project will result in an additional 4 classrooms totaling 7800sf to the building. There will also be a large gathering space at the front/south side of the building and an outdoor classroom to the west side of the building currently not in existence. The school's primary, current curriculum focus is STEM (Science, Technology, Engineering, and Math) and there is a trend and expectation for an increased student population. Much of the school's HVAC systems are outdated, inefficient, and provide only limited climate control. The current, proposed project submitted for review intends to address several objectives of the school district:

- A major HVAC renovation throughout the 1960 and 1975 portions of the building
- A replacement of the 1957 portion of the building
- Additional classrooms to serve a growing student population
- A design aesthetic and physical space to reflect the STEM focus of the school's curriculum and provide learning spaces appropriate for STEM focused education.
- A complete storm water collection system including underground piping from building and parking areas towards a new infiltration basin

This staff report is based on the followings plan sets:

- Civils submitted by Loucks dated 09/12/16
- Hydrology report submitted by Loucks dated 08/19/2016
- Lighting fixture details submitted by Lithonia Lighting on 09/12/16

## ANALYSIS

The property is zoned PSP, Public and Semi-Public and allows for schools (public and private) with a conditional use permit. The school is considered to have an existing conditional use permit because it was constructed prior to the July 1997 ordinance update. Any change involving a structural enlargement of the facility requires an amendment to the conditional use permit.

In order for approval a conditional use permit, the District must show consistency with the Lino Lakes Comprehensive Plan including:

- a. Land Use Plan.
- b. Transportation Plan.
- c. Utility (Sewer and Water) Plans.
- d. Local Water Management Plan.
- e. Capital Improvement Plan.
- f. Policy Plan.
- g. Natural Environment Plan.

### Grading Plan and Stormwater Management

On the 19.99 acre site, a drainage area of about 6.01 acres was included in the site hydrological analysis. 1.34 acres of the disturbed area is pervious area that will be replaced to match existing conditions. The existing runoff pattern will be maintained in this area. These areas primarily include the ball field relocations.

The proposed site BMP's will consist of an infiltration basin for treatment, volume control and rate control prior to discharging to the wetland to the north. The reconstructed parking lot and the building addition will convey stormwater to the infiltration basin using a storm sewer pipe system. The proposed site contains 46.3 % impervious surface area. The impervious area for this site includes the reconstructed portion of the parking lot and roof drains that are being captured by the storm sewer system.

The proposed site contains two drainage areas. One area is the area where the new infiltration pond will be placed. There will be a storm manhole directly upstream of the infiltration basin and will include a 3 foot sump and energy dissipater with skimmer for pretreatment. The other drainage area will sheet flow offsite to the north.

In terms of volume control, the infiltration pond will capture the required 1.1 inches of rainfall over the new/reconstructed impervious surfaces on the site with a maximum drawdown time of 48 hours.

A City storm water grading, erosion and sediment control permit, and a Stormwater Management Plan are required. A RCWD and MPCA permits are also required. No construction shall occur until the requirements of the MPCA permit are in order. A stormwater pollution prevention plan was submitted. A certified stormwater site supervisor must be identified before any ground is disturbed. Weekly and post rainfall event inspections, and follow up correction sheets must be emailed to the City Engineer and the Environmental Coordinator.

A stormwater maintenance agreement shall be required.

The Site Plan indicates “Relocate ball fields and benches”. The plan should show where these ballfields are moving to.

### Soils

The site consists of Solderville Sand, and Zimmerman Fine Sand. Both soil types are conducive to good infiltration Rain garden/infiltration pond. Soil borings in the basic use area show water tables down 12 to 13 feet. This water table depth conforms to the water separation requirement for 3 feet of separation between the ground water and the bottom of the pond/raingarden.

The soils also meet the infiltration standards for infiltration ponds. That is, it has an assumed infiltration rate of 0.45 inches per hour based on the soil borings.

### Significant Resources

There are no significant resources in the basic use area of the site plan. There are many Threatened and Endangered plant species potential restoration opportunities in the wetland portion of the school property on the north part of the site. Construction does not appear to be affecting this area.

### Wetlands

The project does not appear to be impacting any wetlands.

### Floodplain

There is Zone A floodplain along the east side of the site but there are no impacts.



## Tree Preservation

Trees in the windrow on the west side will have stormwater perimeter control fence which will also act as tree protection fence. Trees on the east side of the parking lot will have tree protection fence.

The school was built in 1992 prior to the regulations of the current landscape ordinance. However, new tree replacement standards were applied to Rice Lake Elementary and may apply here. The City Planner is looking at this.

All of the trees on the west side of the school, except for the windrow trees on the wetland border, and all of the trees in the parking lot island are scheduled for removal. Many of these trees were Arbor Day plantings, and some of them are trees that were dedicated to people.

In order to save these trees from destruction, it is proposed to move these trees out of grading areas to a stockpile area until the grading is completed. The trees would then be moved back into the pond and the outdoor classroom locations. The removal and replacement of these trees could be done with the city tree spade. Recommend moving the Arbor Day trees.

## Landscaping

Landscape plan calls out structural soils in the parking lot area. Structural soils need to be supplemented with a drainage, watering, and nutrient delivery system.

A structural soil area could also be designed to capture stormwater runoff (about 30% pore space available). This could reduce the infiltration pond size need, and rain water could be used to water the trees.

The sandy soils underneath the parking lot area are very pervious and would infiltrate much of the stormwater runoff directed to it.

Storm water from the school rooftop or the parking lot could be used. Roof top stormwater would have to be piped into the structural soils.

Parking lot water would need to have curb cuts and clean-out devices installed, such as the Anoka County Conservation District's "Rain Guardian" devices,

Without watering and nutrient delivery considerations, the trees will be short term trees, or stunted for a long period of time

Proposed landscape plants (trees and shrubs) are all appropriate plant materials.

Native seed mixes for the pond and upland areas must be approved by the city. Recommend a short native mix for the upland area.

## Lighting

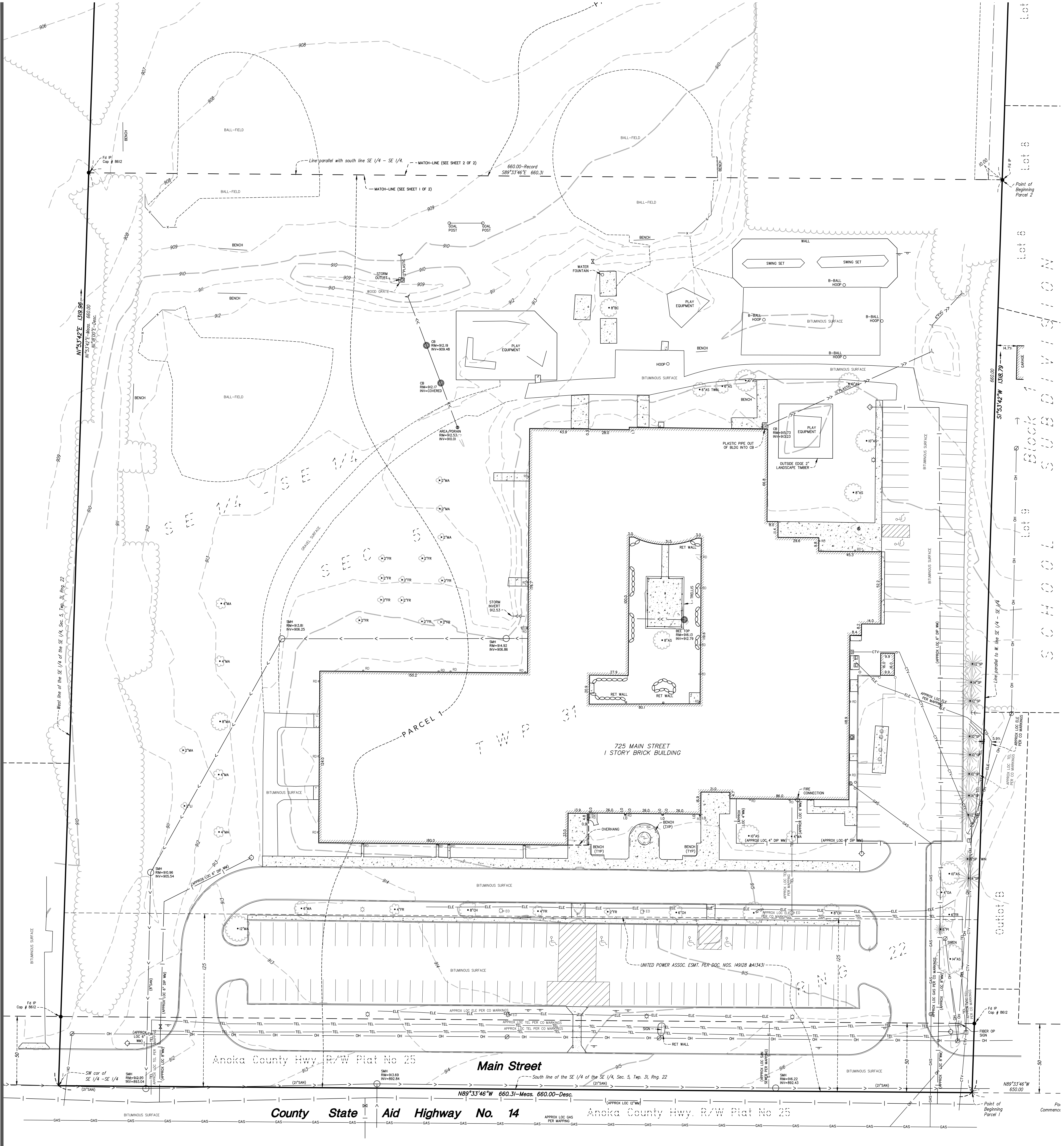
As in the past, the Environmental Board has pursued the “Dark Sky” approach to lighting. The recommendations of the past included downward focused, cut-off type, no glare light fixtures. The proposed fixtures are of that order only have the additional benefit of LED design.

## **RECOMMENDATION**

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

## **ATTACHMENTS**

1. Existing Conditions
2. Demolition Plan
3. Site Plan
4. Grading Plan
5. SWPPP Plan
6. SWPPP Notes
7. Utility Plan
8. Landscape Plan
9. Landscape Details
10. Tree Preservation Plan
11. Lighting Fixture Detail



**SURVEY LEGEND - EXISTING CONDITIONS**

☐ CATCH BASIN	— STORM SEWER
○ STORM MANHOLE	— SANITARY SEWER
○ SANITARY MANHOLE	— WATERMAIN
○ WATER MANHOLE	— UNDERGROUND ELECTRIC
⊕ HYDRANT	— UNDERGROUND GAS
⊗ GATE VALVE	— UNDERGROUND TELEPHONE
⊕ TELEPHONE PEDESTAL	— OVERHEAD UTILITY
⊕ POWER POLE	— CHAIN LINK FENCE
⊕ LIGHT POLE	— CONCRETE CURB
⊕ SIGN	— CONCRETE
▽ SPOT ELEVATION	— CONTOUR

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**SUBMITTAL REVISIONS**

08/19/16	RCWD Submittal
09/12/16	CUP City Submittal

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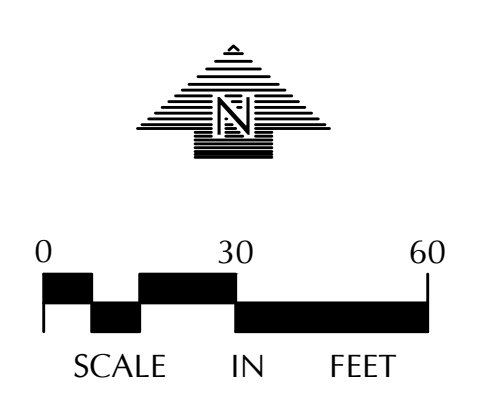
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Date: 09/12/16  
License No. 45861

**QUALITY CONTROL**

Loucks Project No.	15328A
Project Lead	NMM
Drawn By	ZHW
Checked By	NMM
Review Date	09/12/16

**SHEET INDEX**

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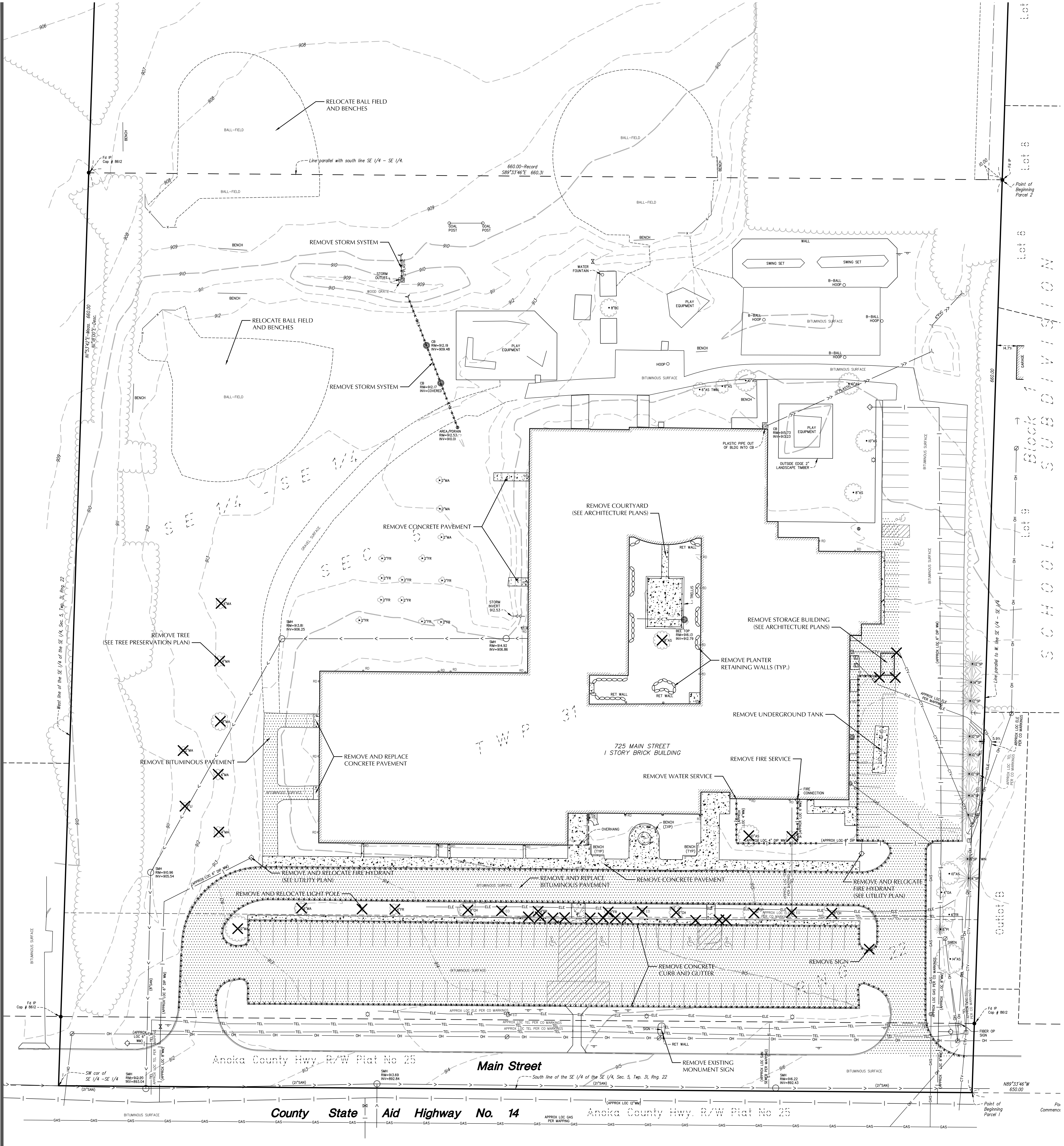
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**EXISTING CONDITIONS**  
**C1-1**

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**SURVEY LEGEND - EXISTING CONDITIONS**

☐ CATCH BASIN	— STORM SEWER
○ STORM MANHOLE	— SANITARY SEWER
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⊗ LIGHT POLE	— CONCRETE CURB
⊗ SIGN	— CONCRETE
• SPOT ELEVATION	— CONTOUR

- SITE DEMOLITION NOTES**
- CONTRACTOR SHALL REMOVE AND/OR RELOCATE EXISTING PRIVATE UTILITIES AS NECESSARY. CONTRACTOR TO COORDINATE ACTIVITIES WITH UTILITY COMPANIES.
  - CONTRACTOR SHALL PROTECT SURFACE AND SUBSURFACE FEATURES NOT NOTED FOR REMOVAL.
  - CONTRACTOR TO CLEAR AND GRUB EXISTING VEGETATION WITHIN CONSTRUCTION LIMITS. STRIP TOP SOIL, AND STOCKPILE ON-SITE. REFER TO GRADING PLAN AND SWPPP FOR SEDIMENT AND EROSION CONTROL REQUIREMENTS.
  - CLEAR AND GRUB AND REMOVE ALL TREES, VEGETATION AND SITE DEBRIS PRIOR TO GRADING. ALL REMOVED MATERIAL SHALL BE HAULLED FROM THE SITE DAILY. ALL CLEARING AND GRUBBING AND REMOVALS SHALL BE PERFORMED PER THE CONTRACT SPECIFICATIONS. EROSION CONTROL MEASURES SHALL BE IMMEDIATELY ESTABLISHED UPON REMOVAL. SEE THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
  - CONTRACTOR SHALL REMOVE ALL SITE SURFACE FEATURES WITHIN REMOVAL LIMITS UNLESS OTHERWISE NOTED.

**DEMOLITION SYMBOLS**

SYMBOL	DESCRIPTION
— / — / — / — / — / —	CONSTRUCTION LIMIT LINE
*****	REMOVE UTILITIES
⊗	TREE
⊗	REMOVE STRUCTURE
⊗	REMOVE CONCRETE
⊗	REMOVE BITUMINOUS
⊗	REMOVE CURB AND GUTTER

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**SUBMITTALS/REVISIONS**

08/19/16	RCWD Submittal
09/12/16	CUP City Submittal

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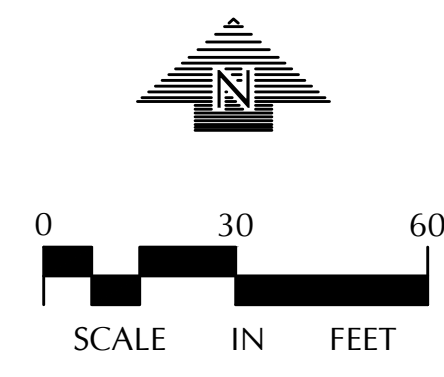
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**QUALITY CONTROL**

Loucks Project No.	15328A
Project Lead	NMM
Drawn By	ZHW
Checked By	NMM
Review Date	09/12/16

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**DEMOLITION PLAN**  
**C1-2**

Plotted: 09/12/2016 12:09 PM W:\301015\15328A\CADD\DATA\CADD\_Sheet\Sheet File\C1-2 Demolition Plan

**SITE DATA**

ZONING: PUBLIC SEMI PUBLIC (PSP)

PROPERTY AREA: 19.99 AC  
DISTURBED AREA: 7.35 AC  
EXISTING IMPERVIOUS AREA: 2.77 AC (40.5%)  
PROPOSED IMPERVIOUS AREA: 3.09 AC (45.2%)

**OFF-STREET PARKING CALCULATIONS**

PARKING REQUIREMENT FOR ELEMENTARY SCHOOLS

ONE (1) SPACE FOR EACH CLASSROOM PLUS ONE (1) ADDITIONAL SPACE FOR EACH THREE HUNDRED (300) STUDENT CAPACITY, PLUS ONE (1) SPACE FOR EACH EMPLOYEE, PLUS ONE (1) SPACE FOR EACH FOUR (4) SEATS IN AUDITORIUM.

33 CLASSROOMS (1 STALL PER CLASSROOM = 33 STALLS)  
550 STUDENTS (1 STALL PER EACH 300 STUDENT CAPACITY = 2 STALLS)  
50 EMPLOYEES (1 STALL PER EMPLOYEE = 50 STALLS)  
NO AUDITORIUM (0 STALLS)

TOTAL PARKING REQUIRED = 85 STALLS

EXISTING PARKING = 145 STALLS  
PARKING REMOVED = -116 STALLS  
PROPOSED PARKING = 120 STALLS  
TOTAL PARKING PROVIDED = 149 STALLS

**SITE NOTES**

- ALL PAVING, CONCRETE CURB, GUTTER AND SIDEWALK SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE DETAILS SHOWN PER THE DETAIL SHEET(S) AND STATE/LOCAL JURISDICTION REQUIREMENTS.
- ACCESSIBLE PARKING AND ACCESSIBLE ROUTES SHALL BE PROVIDED PER CURRENT ADA STANDARDS AND LOCAL/STATE REQUIREMENTS.
- ALL CURB DIMENSIONS SHOWN ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
- ALL BUILDING DIMENSIONS ARE TO THE OUTSIDE FACE OF WALL UNLESS OTHERWISE NOTED.
- TYPICAL FULL SIZED PARKING STALL IS 9' X 18' UNLESS OTHERWISE NOTED.
- ALL CURB RADII SHALL BE 3.0' UNLESS OTHERWISE NOTED.
- BITUMINOUS IMPREGNATED FIBER BOARD TO BE PLACED AT FULL DEPTH OF CONCRETE ADJACENT TO EXISTING STRUCTURES AND BEHIND CURB ADJACENT TO DRIVEWAYS AND SIDEWALKS.
- SEE SITE ELECTRICAL PLAN FOR SITE LIGHTING.

**SIGNAGE AND STRIPING NOTES**

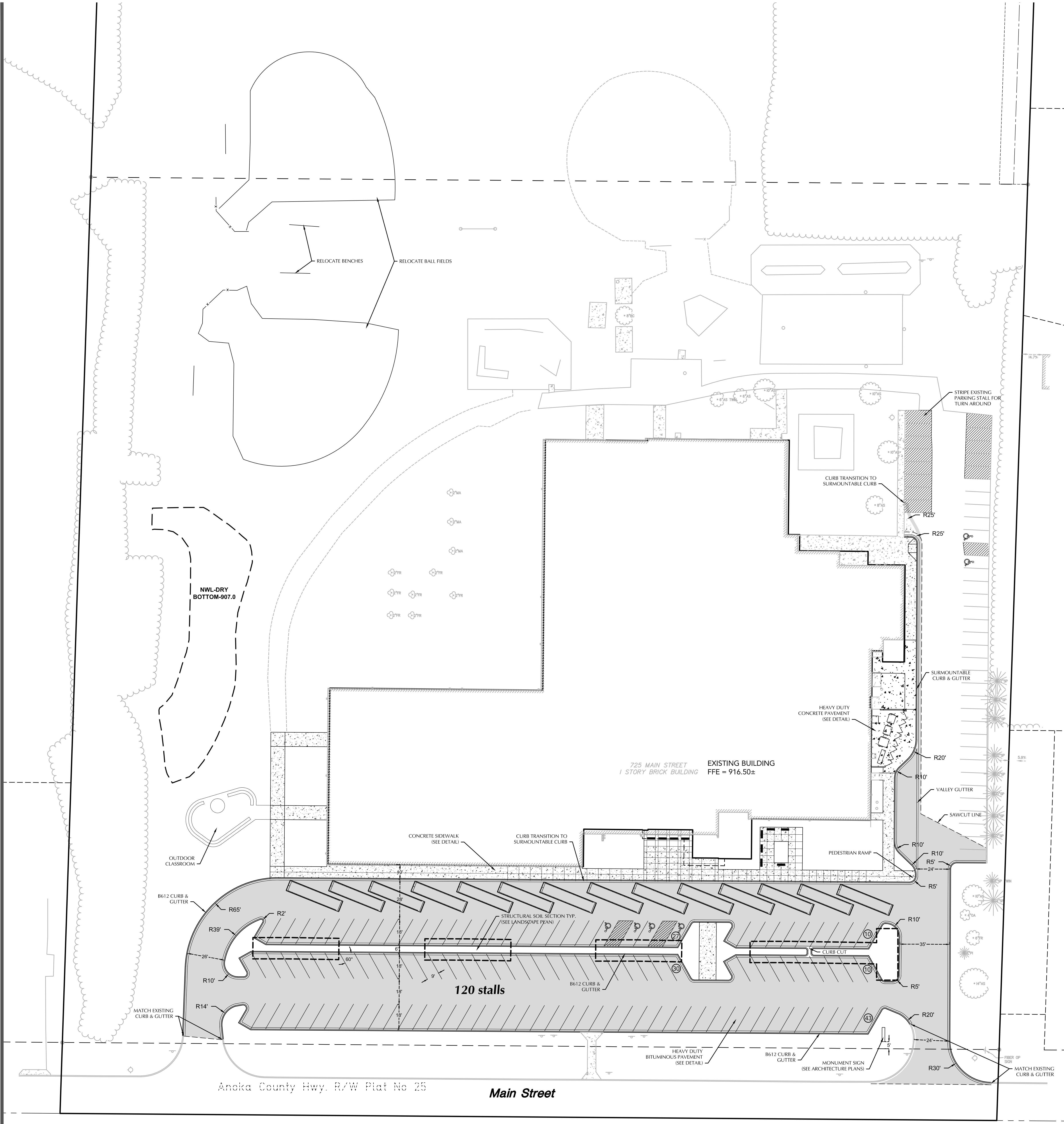
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SITE SIGNAGE AND STRIPING AS SHOWN ON THIS PLAN.
- CONTRACTOR SHALL PAINT ALL ACCESSIBLE STALLS, LOGOS AND CROSS HATCH LOADING AISLES WITH WHITE PAVEMENT MARKING PAINT, 4" IN WIDTH.
- CONTRACTOR SHALL PAINT ANY/ALL DIRECTIONAL TRAFFIC ARROWS, AS SHOWN, IN WHITE PAINT.
- ALL SIGNAGE SHALL INCLUDE POST, CONCRETE FOOTING AND STEEL CASING WHERE REQUIRED.
- ALL SIGNAGE NOT PROTECTED BY CURB, LOCATED IN PARKING LOT OR OTHER PAVED AREAS TO BE PLACED IN STEEL CASING, FILLED WITH CONCRETE AND PAINTED YELLOW, REFER TO DETAIL.
- ANY/ALL STOP SIGNS TO INCLUDE A 24" WIDE PAINTED STOP BAR IN WHITE PAINT, PLACED AT THE STOP SIGN LOCATION, A MINIMUM OF 4' FROM CROSSWALK IF APPLICABLE. ALL STOP BARS SHALL EXTEND FROM DIRECTIONAL TRANSITION BETWEEN LANES TO CURB.
- ALL SIGNS TO BE PLACED 18" BEHIND BACK OF CURB UNLESS OTHERWISE NOTED.

**CIVIL LEGEND**

EXISTING	PROPOSED

**SITE PLAN LEGEND**

	CONCRETE PAVEMENT/SIDEWALK
	HEAVY DUTY CONCRETE PAVEMENT
	HEAVY DUTY BITUMINOUS PAVEMENT
	SAW CUT LINE



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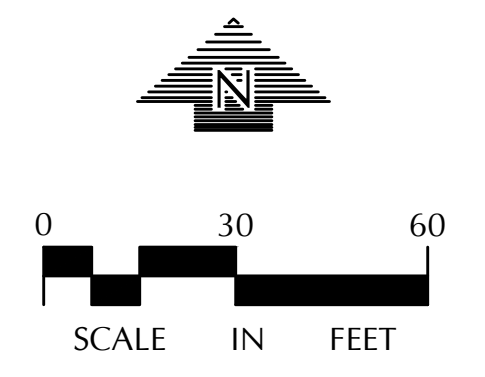
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EXISTING	CIVIL LEGEND	PROPOSED
	SANITARY MANHOLE	
	STORM MANHOLE	
	CATCH BASIN	
	CULVERT	
	HYDRANT	
	GATE VALVE	
	POST INDICATOR VALVE	
	LIGHT POLE	
	POWER POLE	
	SIGN	
	BENCHMARK	
	SOIL BURINGS	
	WATER MANHOLE	
	TELEPHONE MANHOLE	
	UTILITY MANHOLE	
	ELECTRIC MANHOLE	
	WATER SERVICE	
	SANITARY SERVICE	
	HANDICAP PARKING	
	DIRECTION OF FLOW	
	SPOT ELEVATION	
	CONTOURS	
	SANITARY SEWER	
	STORM SEWER	
	WATERMAIN	
	FIREMAN	
	DRAIN TILE	
	SILT FENCE	
	CURB & GUTTER	
	RETAINING WALL	
	TREE LINE	
	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).
- REFER TO THE REPORT OF GEOTECHNICAL EXPLORATION AND REVIEW (REPORT NO. B1603156), DATED MAY 18, 2016 AS PREPARED BY BRAUN INTERTEC CORPORATION FOR AN EXISTING SUBSURFACE SITE CONDITION ANALYSIS AND CONSTRUCTION RECOMMENDATIONS.
- 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 SWPPP FOR ADDITIONAL EROSION CONTROL NOTES AND REQUIREMENTS.
- SEE UTILITY PLAN FOR WATER, STORM AND SANITARY SEWER INFORMATION.
- SEE SITE PLAN FOR CURB AND BITUMINOUS TAPER LOCATIONS.
- PER ADA STANDARDS, SIDEWALK CROSS SLOPES SHALL NOT EXCEED 2% AND RUNNING SLOPES SHALL NOT EXCEED 5% ALONG THE ACCESSIBLE ROUTES.

**SOIL AMENDMENT NOTES**

- REMOVE SOIL AND STOCKPILE IN AN APPROVED LOCATION PRIOR TO GRADING. COVER SOIL WITH WOVEN WEED BARRIER (AVAILABLE FROM NURSERY SUPPLY STORES) THAT SHEDS MOISTURE YET ALLOWS AIR FLOW.
- REAPPLY STOCKPILED SOIL TO LANDSCAPE AREAS TO MINIMUM 8-INCH DEPTH AFTER GRADING AND OTHER DISTURBANCES ARE COMPLETED. IN SOME CASES, PURCHASING ADDITIONAL TOPSOIL WILL BE NEEDED TO ACHIEVE THE 8-INCH DEPTH.
- PLOW OR TILL COMPACTED SUBSOIL AT LEAST 3-INCHES DEEP BEFORE REPLACING STOCKPILED SOIL, AND/OR ROTOTILL SOME OF THE REPLACED SOIL INTO THE SUBSOIL.
- APPLY A LAYER OF COMPOST TO THE REAPPLIED SOIL AT A DEPTH OF 2.5-INCHES. USE THE WORKSHEET ON THE RICE CREEK WATERSHED DISTRICTS WEBSITE TO CALCULATE THE AMOUNT OF COMPOST NEEDED. RETAIN RECEIPTS FOR COMPOST DELIVERED TO THE SITE, AS THEY WILL BE USED DURING INSPECTION TO VERIFY THE SOIL REQUIREMENTS HAVE BEEN MET.
- ROTOTILL COMPOST INTO THE SITE TO A DEPTH OF AT LEAST 8 INCHES. NOTE THAT TILLING TO THIS DEPTH WILL REQUIRE REPEATED PASSES WITH A LARGE MACHINE, SUCH AS A TRACTOR OR HEAVY REAR-TINE ROTOTILLER.

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**SUBMITTAL/REVISIONS**

08/19/16	RCWD Submittal
09/12/16	CUP City Submittal

**NOT FOR CONSTRUCTION**

**PROFESSIONAL SIGNATURE**

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*[Signature]*  
Nicholas M. Hammer

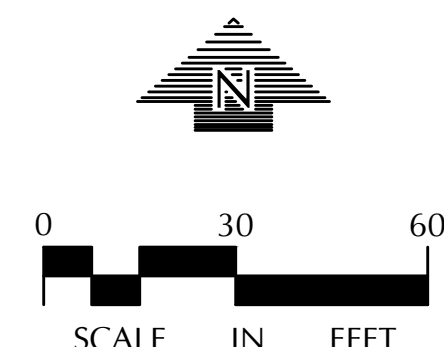
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Date 09/12/16

**QUALITY CONTROL**

Loucks Project No.	15328A
Project Lead	NMM
Drawn By	ZHW
Checked By	NMM
Review Date	09/12/16

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C3-3	SWPPP NOTES
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L1-2	LANDSCAPE DETAILS
L2-1	TREE PRESERVATION PLAN



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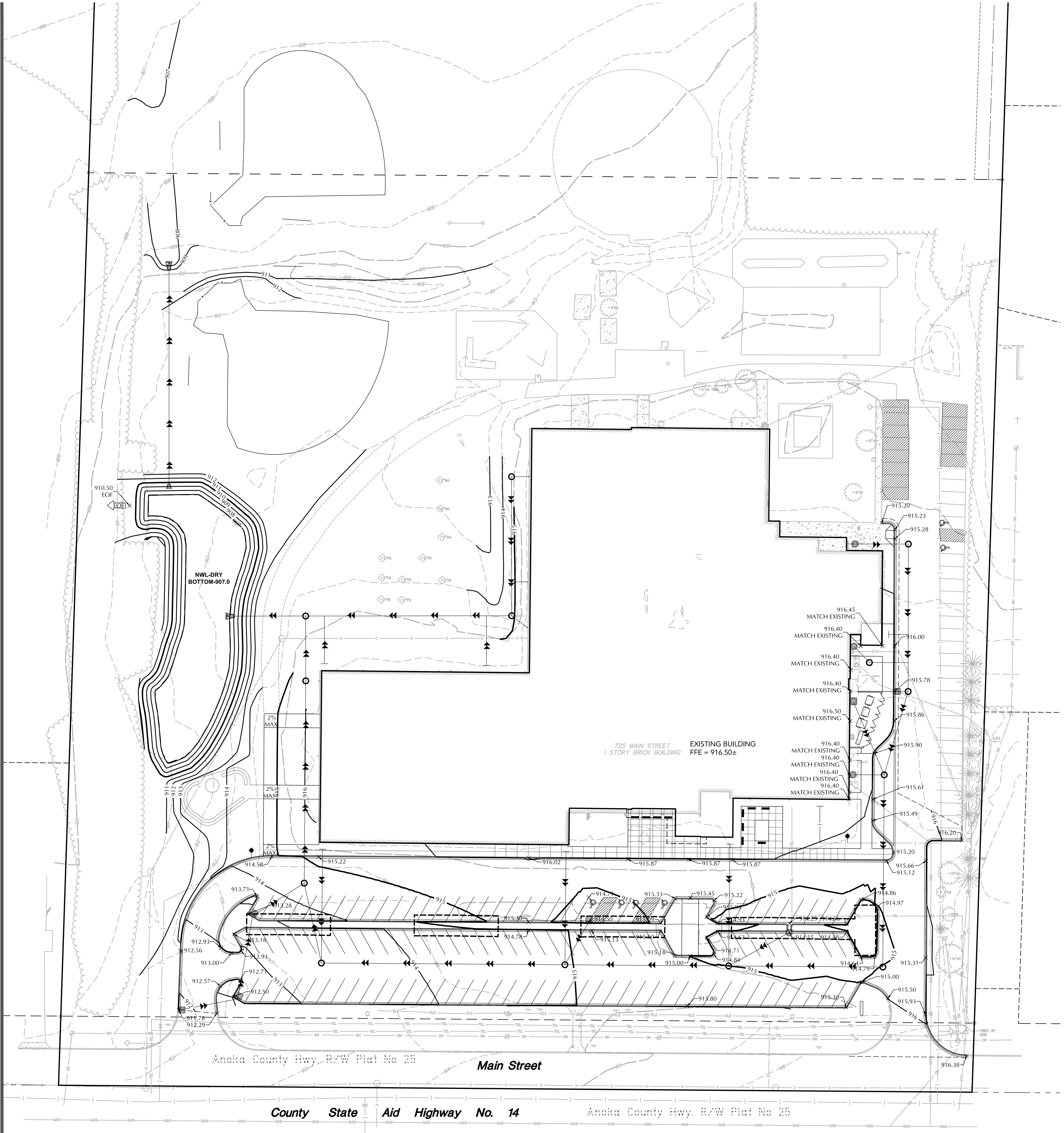
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**GRADING PLAN**

**C3-1**

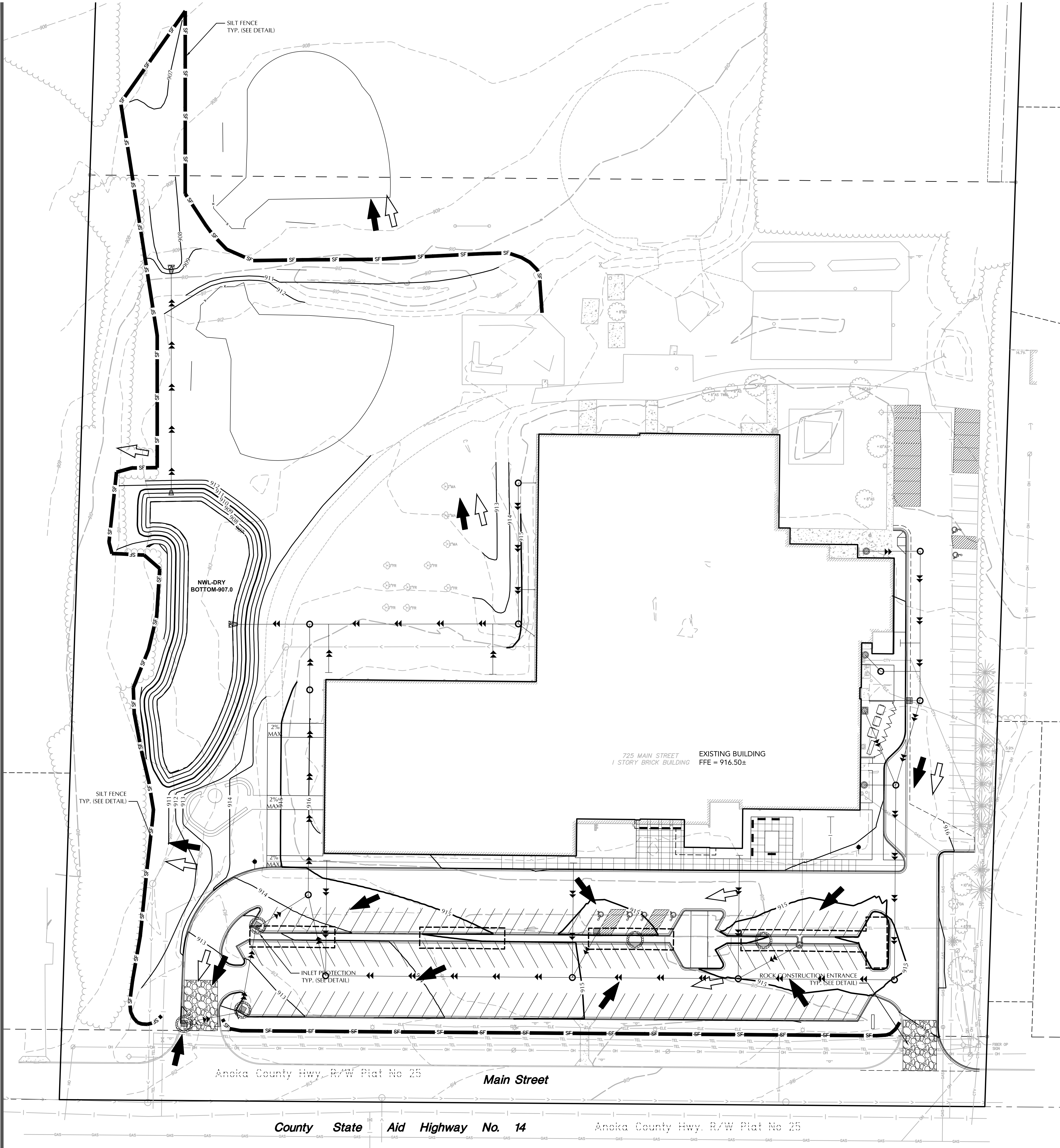


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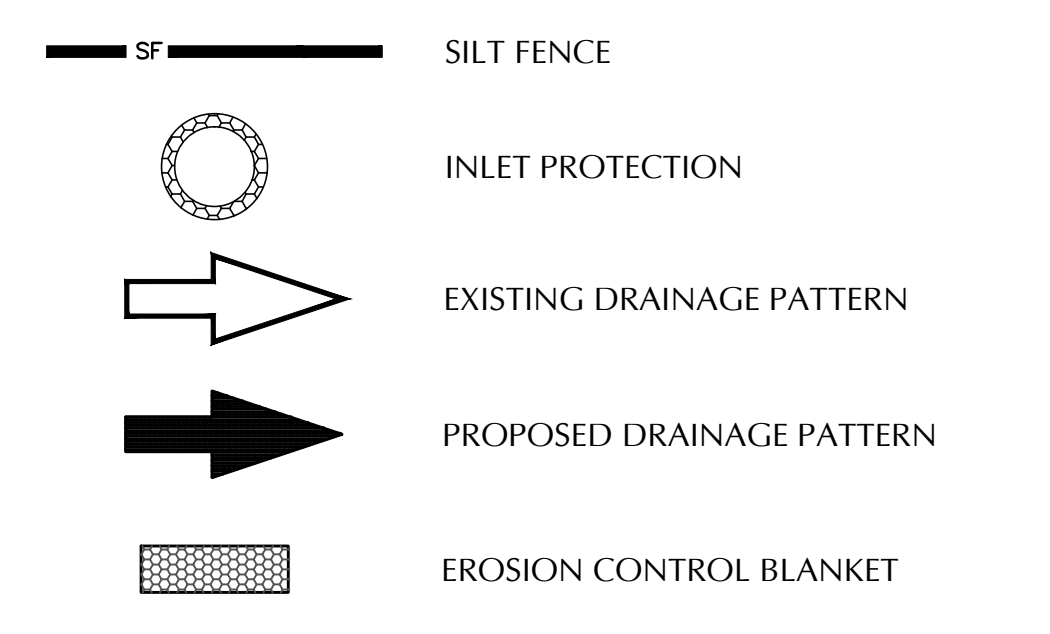
County State Aid Highway No. 14

Anoka County Hwy. R/W Plat No 25

Nancy Drive



**SITE PLAN LEGEND**



**ESTIMATED QUANTITIES**

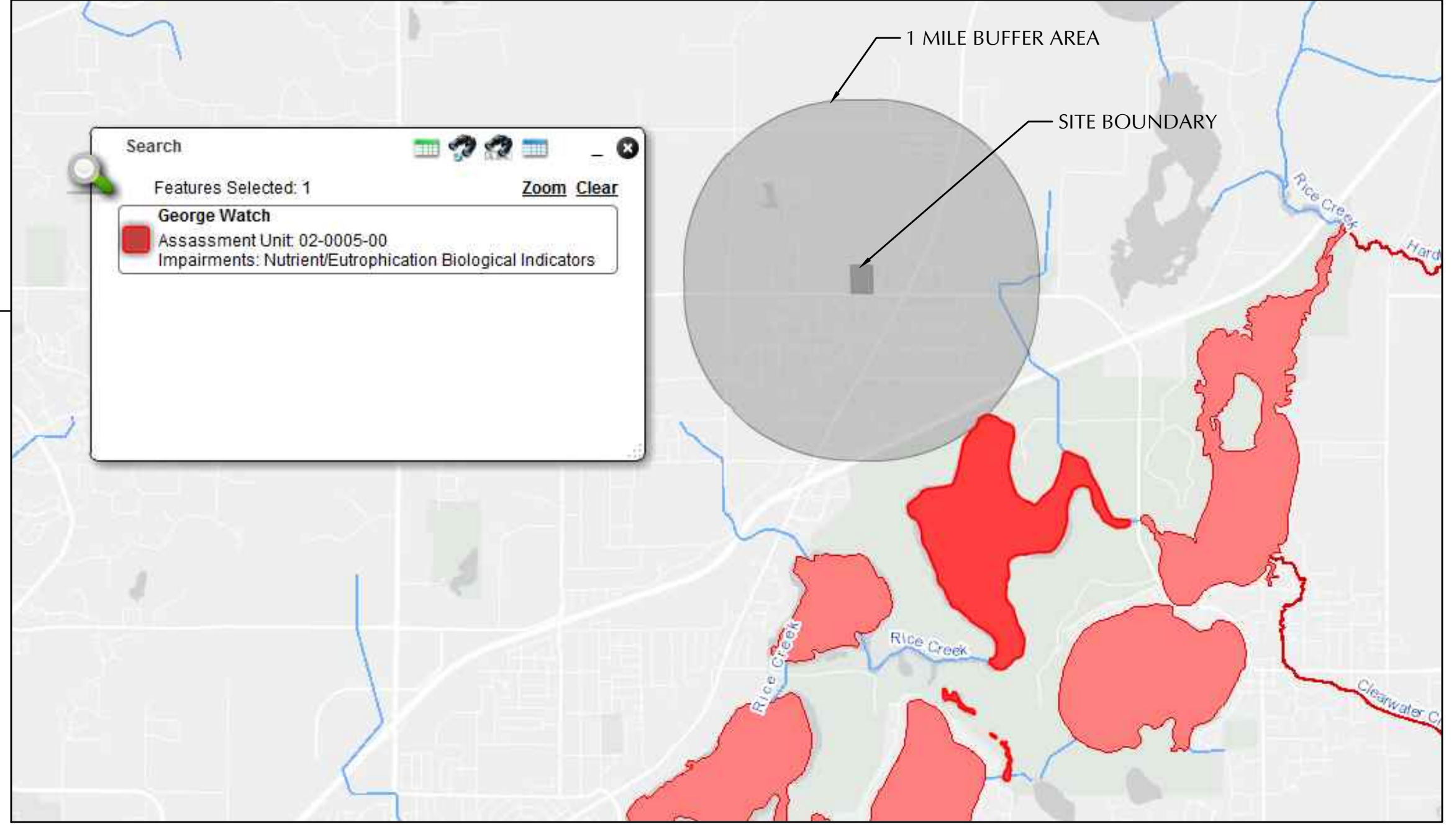
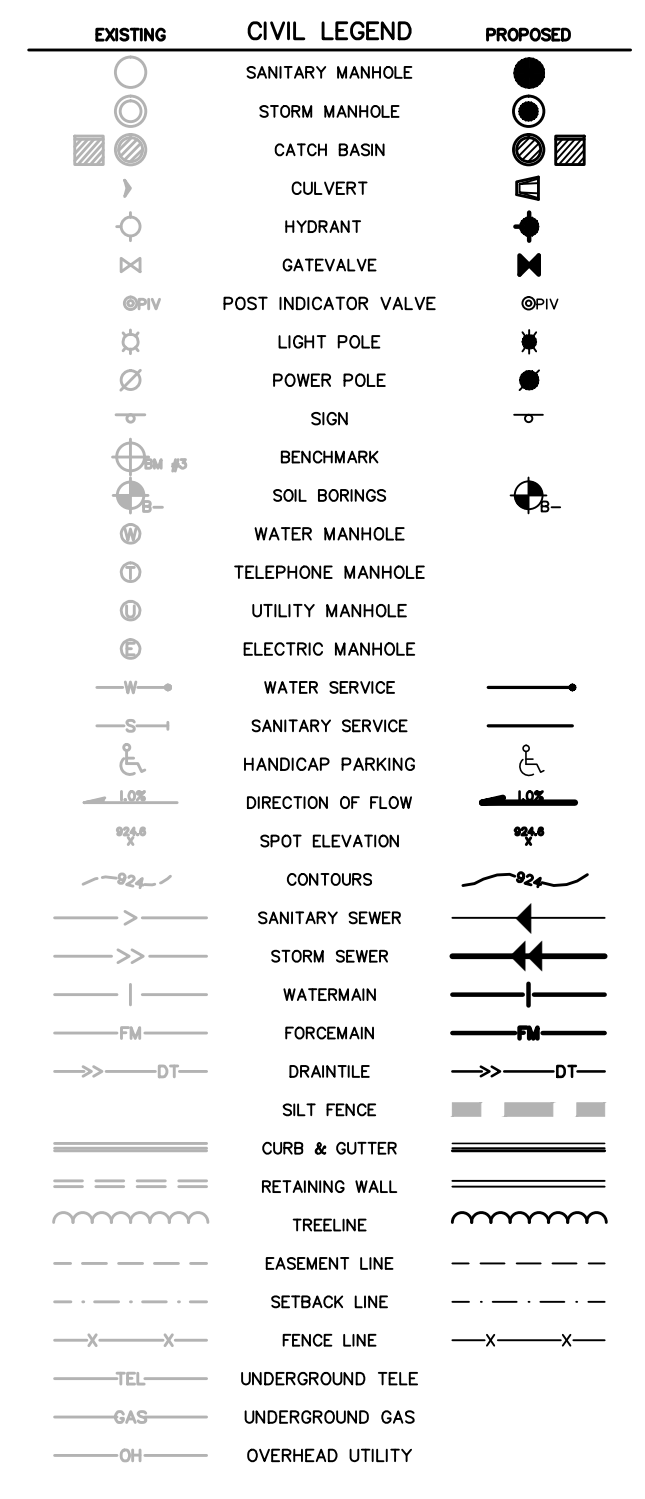
DESCRIPTION	UNIT	QUANTITY
TEMPORARY ROCK CONSTRUCTION ENTRANCE	EA	2
SILT FENCE (STANDARD)	LF	±1,800
INLET PROTECTION	EA	5
WOODFIBER BLANKET	SF	±0

**PERMANENT STORMWATER MANAGEMENT**

X	INFILTRATION
	STORMWATER HARVEST AND REUSE
	FILTRATION
	WET SEDIMENTATION BASIN
	ONSITE PONDING

**RECEIVING WATERS**

NAME OF WATER BODY	TYPE OF WATER BODY	SPECIAL WATER	IMAIRED WATER	TYPE OF SPECIAL WATER



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LINO LAKES, MN

**LOUCKS**  
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CIVIL ENGINEERING  
LAND SURVEYING  
LANDSCAPE ARCHITECTURE  
ENVIRONMENTAL  
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Maple Grove, MN 55369  
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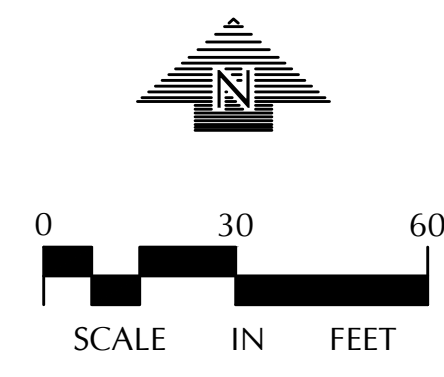
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**SWPPP PLAN**  
**C3-2**

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County State Aid Highway No. 14

Nancy Drive

**SWPPP NOTES**

- PROJECT DESCRIPTION**  
THE NATURE OF THIS PROJECT WILL CONSIST OF A BUILDING ADDITION TO THE EXISTING ELEMENTARY SCHOOL, RECONSTRUCTING THE EXISTING PARKING LOT, AND CONSTRUCTING AN INFILTRATION BASIN.
- SEQUENCING OF MAJOR CONSTRUCTION ACTIVITIES ARE AS FOLLOWS:**
  - INSTALL VEHICLE TRACKING BMP
  - INSTALL SILT FENCE AROUND SITE
  - INSTALL PROTECTIVE FENCE AROUND INFILTRATION AREAS
  - CLEAR AND GRUB SITE
  - STRIP AND STOCKPILE TOPSOIL
  - REMOVE PAVEMENTS AND UTILITIES
  - CONSTRUCT STORMWATER MANAGEMENT BASINS
  - INSTALL SILT FENCE AROUND BASINS
  - ROUGH GRADE SITE
  - IMPORT CLEAN FILL FOR REPLACEMENT AND BALANCE
  - INSTALL UTILITIES
  - INSTALL BUILDING FOUNDATIONS
  - INSTALL CURB AND GUTTER
  - INSTALL PAVEMENTS AND WALKS
  - FINAL GRADE SITE
  - REMOVE ACCUMULATED SEDIMENT FROM BASINS
  - CONSTRUCT INFILTRATION BASIN
  - SEED AND MULCH
  - WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND THE SITE IS STABILIZED, REMOVE SILT FENCE AND RESEED ANY AREAS DISTURBED BY THE REMOVAL.
- SITE DATA:**

AREA OF DISTURBANCE: ±7.35 AC  
 PRE-CONSTRUCTION IMPERVIOUS AREA: ±2.77 AC  
 POST-CONSTRUCTION IMPERVIOUS AREA: ±3.09 AC

GENERAL SOIL TYPE: HSG B
- THE LOCATION OF AREAS NOT TO BE DISTURBED MUST BE IDENTIFIED WITH FLAGS, STAKES, SIGNS, SILT FENCE, ETC. BEFORE CONSTRUCTION BEGINS.
- ALL DISTURBED GROUND LEFT INACTIVE FOR SEVEN (7) OR MORE DAYS SHALL BE STABILIZED BY SEEDING OR SODDING (ONLY AVAILABLE PRIOR TO SEPTEMBER 15) OR BY MULCHING OR COVERING OR OTHER EQUIVALENT CONTROL MEASURE. AT A RATE OF 1.5 TIMES STANDARD SEEDING FINAL STABILIZATION TO BE DONE PER LANDSCAPE PLAN, SEE SHEET L1-1.
- ON SLOPES 3:1 OR GREATER MAINTAIN SHEET FLOW AND MINIMIZE RILLS AND/OR GULLIES. SLOPE LENGTHS CAN NOT BE GREATER THAN 75 FEET.  
 DENOTES SLOPES GREATER THAN 3:1. ALL 3:1 SLOPES TO BE STABILIZED WITH EROSION CONTROL BLANKET.
- ALL STORM DRAINS AND INLETS MUST BE PROTECTED UNTIL ALL SOURCES OF POTENTIAL DISCHARGE ARE STABILIZED.
- TEMPORARY SOIL STOCKPILES MUST HAVE EFFECTIVE SEDIMENT CONTROL AND CAN NOT BE PLACED IN SURFACE WATERS OR STORM WATER CONVEYANCE SYSTEMS. TEMPORARY STOCKPILES WITHOUT SIGNIFICANT AMOUNT OF SILT, CLAY, OR ORGANIC COMPOUNDS ARE EXEMPT EX. CLEAN-GREASED STOCK PILES, DEMOLITION CONCRETE STOCKPILES, SAND STOCKPILES.
- SEDIMENT LADEN WATER MUST BE DISCHARGED TO A SEDIMENTATION BASIN WHENEVER POSSIBLE. IF NOT POSSIBLE, IT MUST BE TREATED WITH THE APPROPRIATE BMP'S.
- SOLID WASTE MUST BE DISPOSED OF PROPERLY AND MUST COMPLY WITH MPCA DISPOSAL REQUIREMENTS.
- THE WATERSHED DISTRICT OR THE CITY MAY HAVE REQUIREMENTS FOR INSPECTIONS OR AS-BUILT DRAWINGS VERIFYING PROPER CONSTRUCTION OF THE BMP'S.
- THE OWNER WHO SIGNS THE NPDES PERMIT APPLICATION IS A PERMITEE AND IS RESPONSIBLE FOR COMPLIANCE WITH ALL TERMS AND CONDITIONS OF THE PERMIT. THE OPERATOR (CONTRACTOR) WHO SIGNS THE NPDES PERMIT APPLICATION IS A PERMITEE FOR PARTS II.B., PART II.C., PART II.B., PART IV AND APPLICABLE CONSTRUCTION ACTIVITY REQUIREMENTS FOUND IN APPENDIX A, PART C. OF THE NPDES PERMIT AND IS JOINTLY RESPONSIBLE WITH THE OWNER FOR COMPLIANCE WITH THOSE PORTIONS OF THE PERMIT.
- TERMINATION OF COVERAGE-PERMITEES WISHING TO TERMINATE COVERAGE MUST SUBMIT A NOTICE OF TERMINATION (NOT) TO THE MPCA. ALL PERMITEES MUST SUBMIT A NOT WITHIN 30 DAYS AFTER ONE OR MORE OF THE FOLLOWING CONDITIONS HAVE BEEN MET:
  - FINAL STABILIZATION, PER NPDES PERMIT PART IV.G. HAS BEEN ACHIEVED ON ALL PORTIONS OF THE SITE FOR WHICH THE PERMITEE IS RESPONSIBLE.
  - TRANSFER OF OWNERSHIP AS DESCRIBED IN THE PERMIT.
- INSPECTIONS**
  - INITIAL INSPECTION FOLLOWING SILT FENCE INSTALLATION BY CITY REPRESENTATIVE IS REQUIRED.
  - EXPOSED SOIL AREAS: ONCE EVERY 7 DAYS AND WITHIN 24 HOURS FOLLOWING A 0.5" OVER 24 HOUR RAIN EVENT.
  - STABILIZED AREAS: ONCE EVERY 30 DAYS
  - FROZEN GROUND: AS SOON AS RUNOFF OCCURS OR PRIOR TO RESUMING CONSTRUCTION.
  - INSPECTION AND MAINTENANCE RECORDS MUST BE RETAINED FOR 3 YEARS AFTER FILING OF THE NOTIFICATION AND MUST INCLUDE: DATE AND TIME OF ACTION, NAME OF PERSON(S) CONDUCTING WORK, FINDINGS OF INSPECTIONS AND RECOMMENDATIONS FOR CORRECTIVE ACTION, DATE AND AMOUNT OF RAINFALL EVENTS GREATER THAN 0.5 INCHES IN A 24 HOUR PERIOD.
- MINIMUM MAINTENANCE**
  - SILT FENCE TO BE REPAIRED, REPLACED, SUPPLEMENTED WHEN NONFUNCTIONAL, OR 1/3 FULL WITHIN 24 HOURS
  - SEDIMENT BASINS DRAINED AND SEDIMENT REMOVED WHEN REACHES 1/2 STORAGE VOLUME. RECORDS MUST BE COMPLETE WITHIN 72 HOURS OF DISCOVERY.
  - SEDIMENT REMOVED FROM SURFACE WATERS WITHIN 72 HOURS
  - CONSTRUCTION SITE EXITS INSPECTED, TRACKED SEDIMENT REMOVED WITH 24 HOURS.
  - PROVIDE COPIES OF EROSION INSPECTION RESULTS TO CITY ENGINEER FOR ALL EVENTS GREATER THAN 0.5" IN 24 HOURS
- THE SWPPP, INCLUDING ALL CHANGES TO IT, AND INSPECTIONS AND MAINTENANCE RECORDS MUST BE KEPT AT THE SITE DURING CONSTRUCTION ACTIVITY BY THE PERMITEE(S) WHO HAVE OPERATIONAL CONTROL OF THE SITE.
- OWNER MUST KEEP RECORDS OF ALL PERMITS REQUIRED FOR THE PROJECT. THE SWPPP, ALL INSPECTIONS AND MAINTENANCE, PERMANENT OPERATION AND MAINTENANCE AGREEMENTS, AND REQUIRED CALCULATIONS FOR TEMPORARY AND PERMANENT STORM WATER MANAGEMENT SYSTEMS. THESE RECORDS MUST BE RETAINED FOR THREE YEARS AFTER FILING NPDES NOTICE OF TERMINATION.
- SWPPP MUST BE AMENDED WHEN:**
  - THERE IS A CHANGE IN DESIGN, OPERATION, MAINTENANCE, WEATHER OR SEASONAL CONDITIONS THAT HAS A SIGNIFICANT EFFECT ON DISCHARGE
  - INSPECTIONS INDICATE THAT THE SWPPP IS NOT EFFECTIVE AND DISCHARGE IS EXCEEDING WATER QUALITY STANDARDS
  - THE BMP'S IN THE SWPPP ARE NOT CONTROLLING POLLUTANTS IN DISCHARGES OR IS NOT CONSISTENT WITH THE TERMS AND CONDITIONS OF THE PERMIT.
  - AT ANY TIME AFTER PERMIT COVERAGE IS EFFECTIVE, THE MPCA MAY DETERMINE THAT THE PROJECT'S STORMWATER DISCHARGES MAY CAUSE, HAVE REASONABLE POTENTIAL TO CAUSE, OR CONTRIBUTE TO NON-ATTAINMENT OF ANY APPLICABLE WATER QUALITY STANDARD, OR THAT THE SWPPP DOES NOT INCORPORATE THE APPLICABLE REQUIREMENTS IN PART II.A. (IMPAIRED WATERS AND TRIBUT), IF A WATER QUALITY STANDARD CHANGES DURING THE TERM OF THIS PERMIT, THE MPCA WILL MAKE A DETERMINATION AS TO WHETHER A MODIFICATION OF THE SWPPP IS NECESSARY TO ADDRESS THE NEW STANDARD. IF THE MPCA MAKES SUCH DETERMINATIONS OR ANY OF THE DETERMINATIONS IN PARTS II.B.1.-3., THE MPCA WILL NOTIFY THE PERMITEE(S) IN WRITING. IN RESPONSE, THE PERMITEE(S) MUST AMEND THE SWPPP TO ADDRESS THE IDENTIFIED CONCERNS AND SUBMIT INFORMATION REQUESTED BY THE MPCA, WHICH MAY INCLUDE AN INDIVIDUAL PERMIT APPLICATION, IF THE MPCA'S WRITTEN NOTIFICATION REQUIRES A RESPONSE. FAILURE TO RESPOND WITHIN THE SPECIFIED TIMEFRAME CONSTITUTES A PERMIT VIOLATION.
- CONCRETE WASHOUT AREA**
  - CONTRACTOR TO PROVIDE PREFABRICATED CONCRETE WASH-OUT CONTAINER WITH RAIN PROTECTION PER PLAN.
  - CONCRETE WASH-OUT TO BE IDENTIFIED WITH SIGNAGE STATING "CONCRETE WASHOUT AREA DO NOT OVERFILL"
  - CONCRETE WASHOUT WATER NEEDS TO BE PUMPED WITHIN 24 HOURS OF STANDING WATER IN WASHOUT AREA.

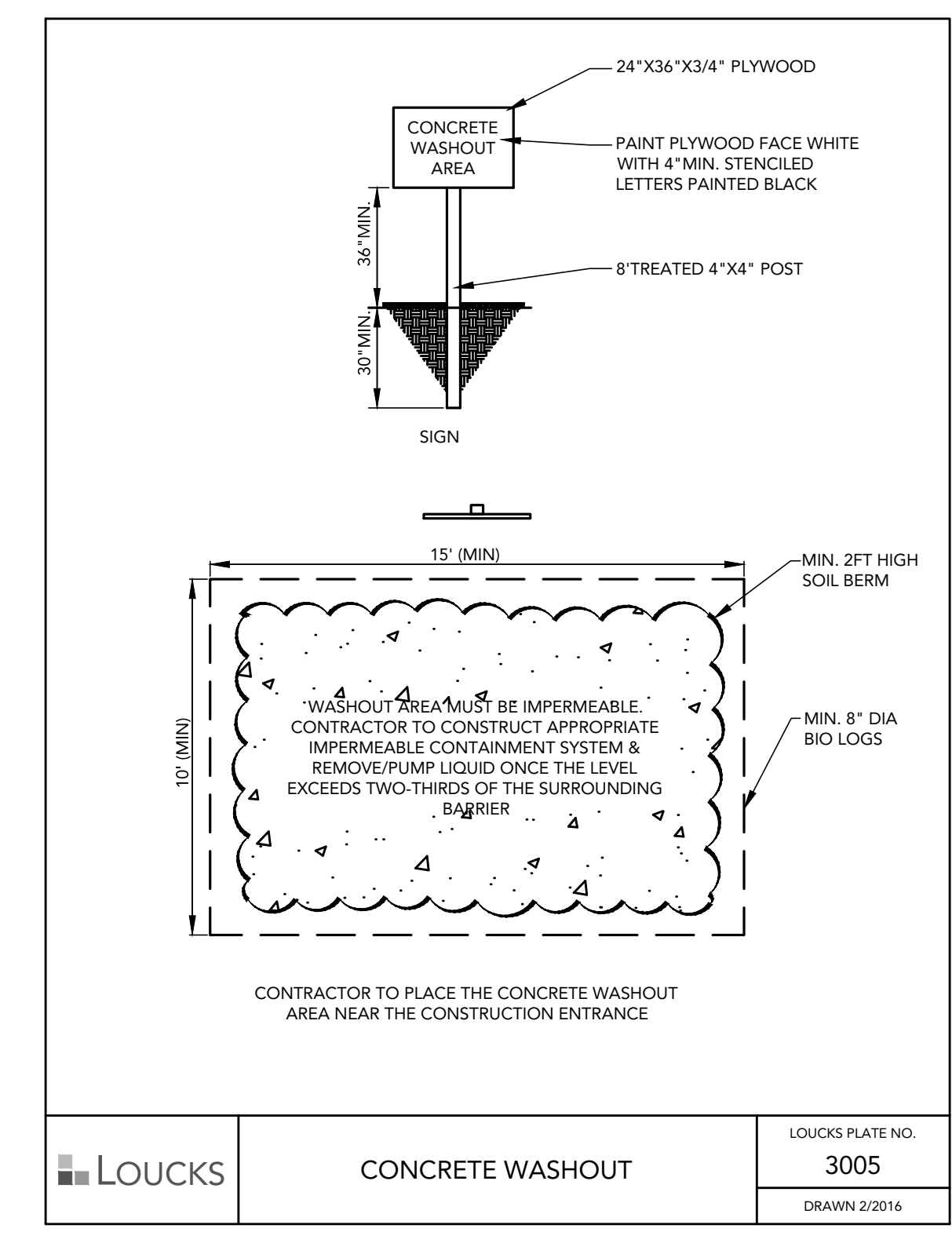
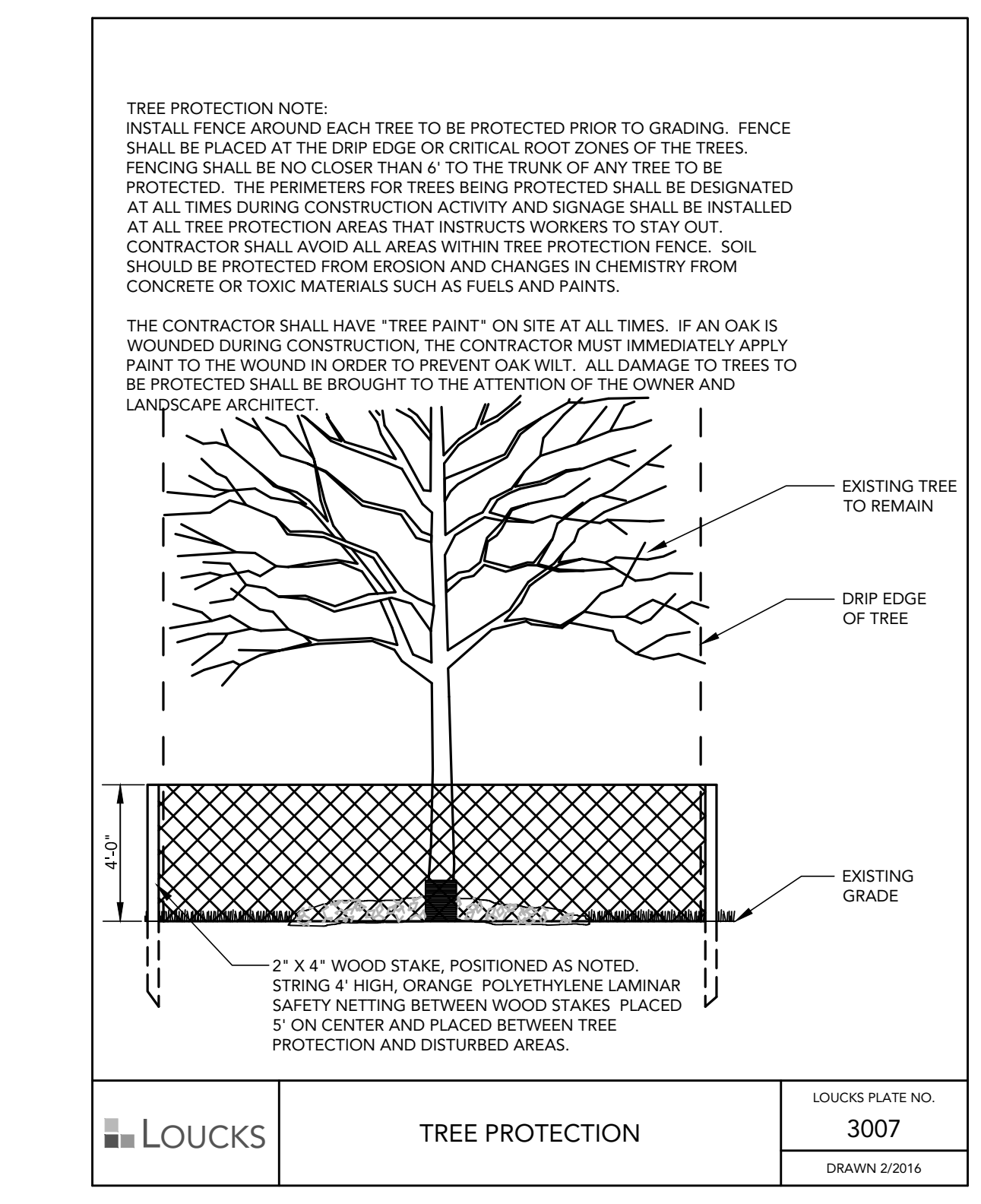
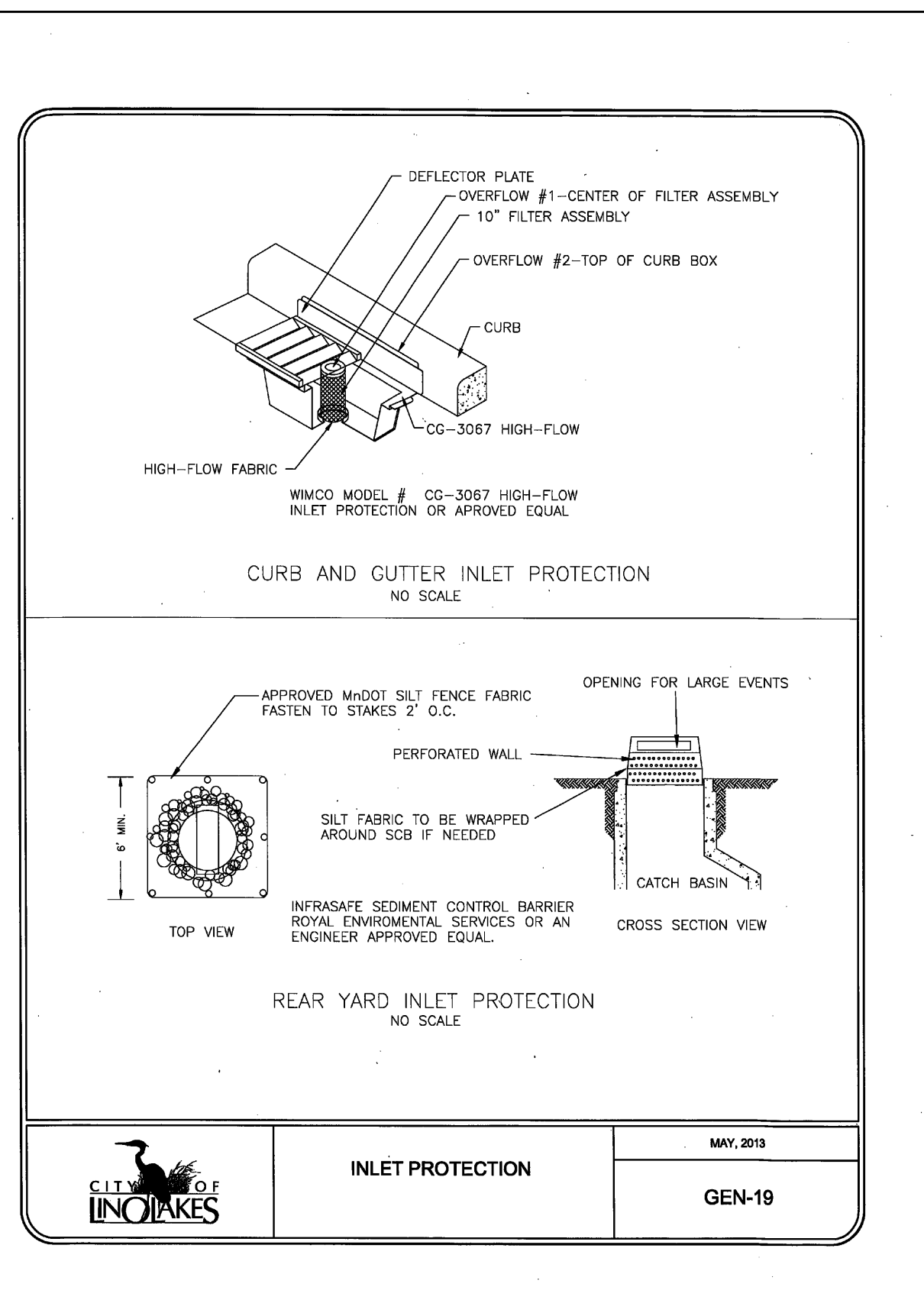
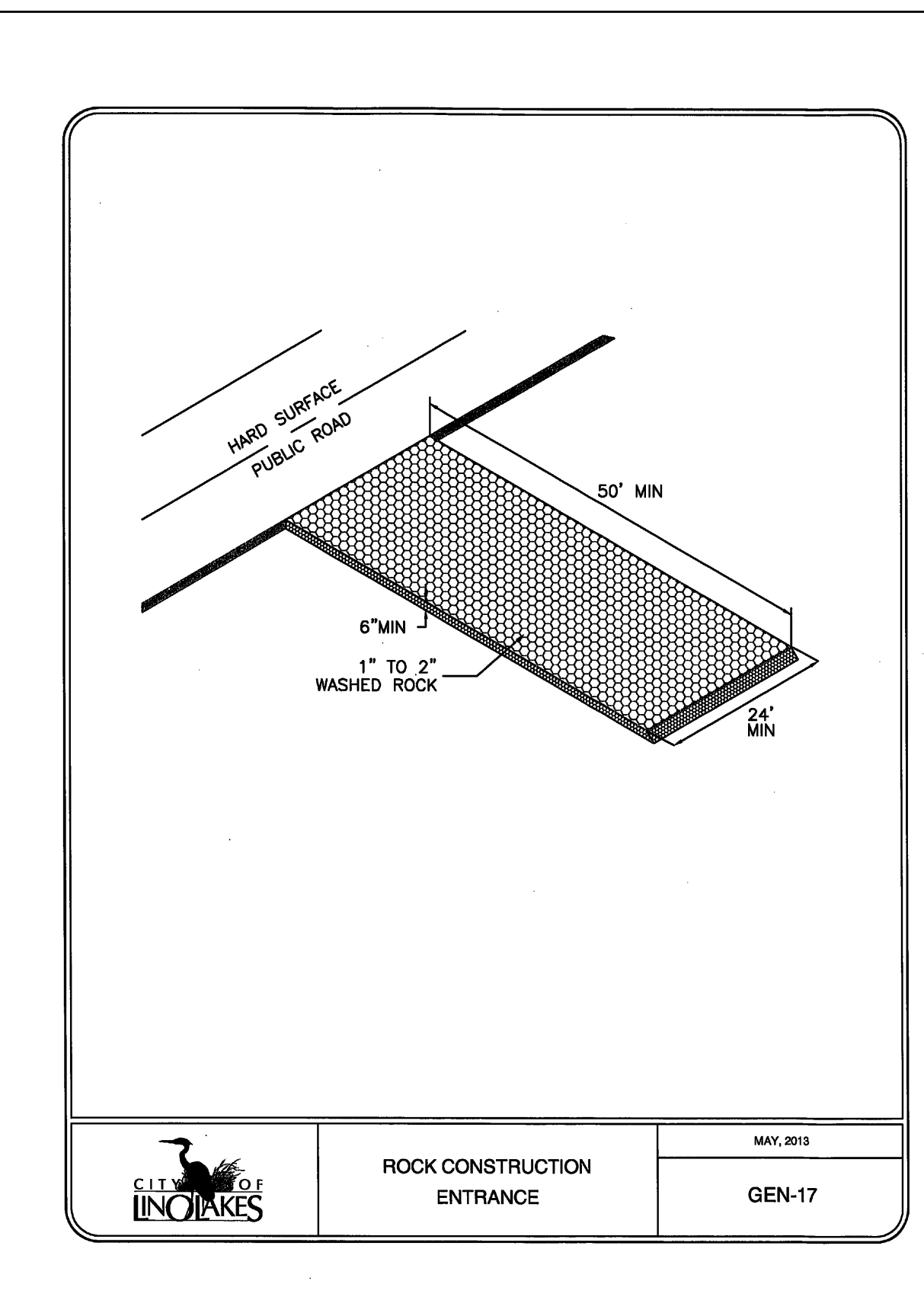
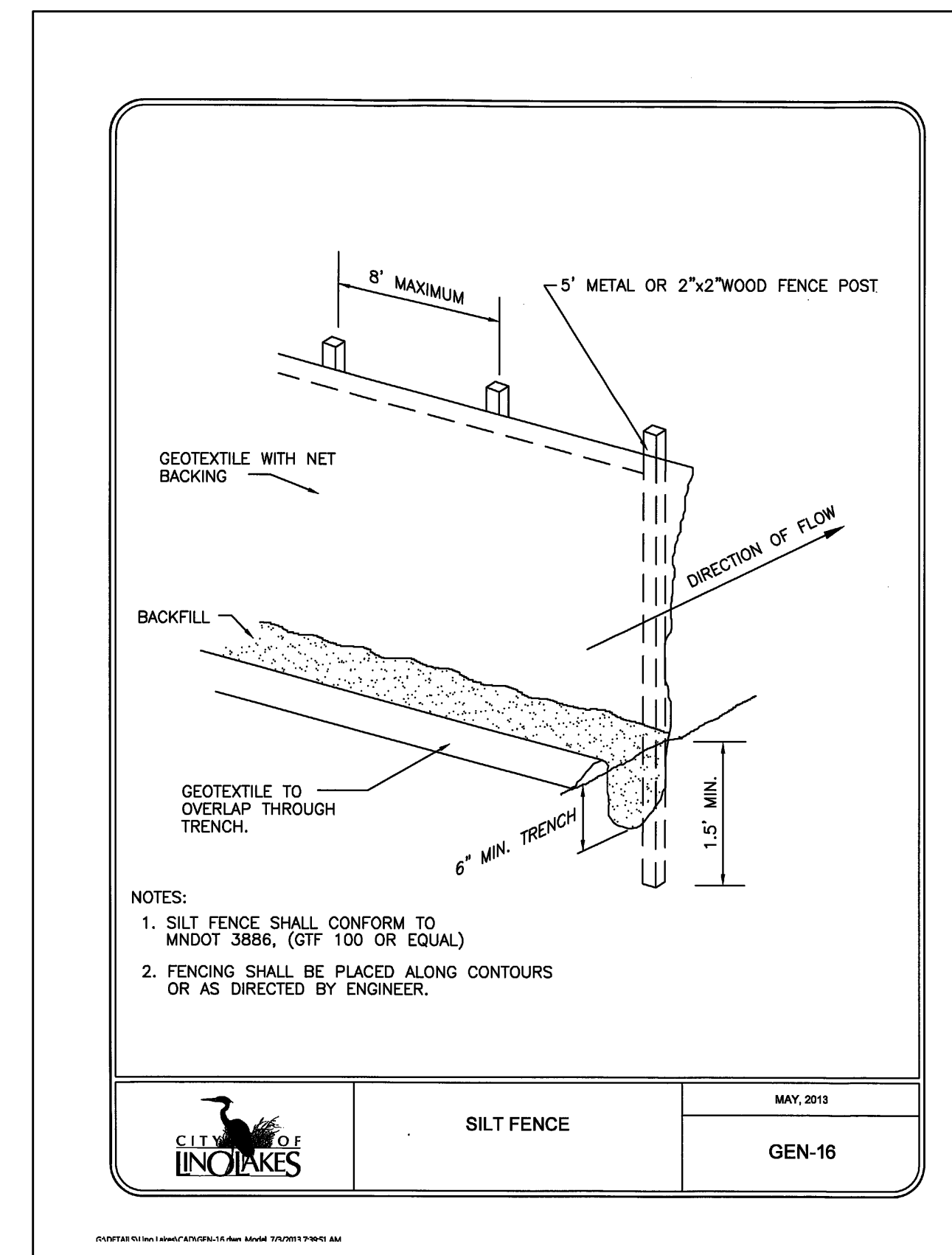
STATE, FEDERAL AGENCIES, PROFESSIONAL OR OTHER ENTITIES WITH EXPERTISE IN EROSION PREVENTION, SEDIMENT CONTROL, PERMANENT STORMWATER MANAGEMENT AND THE MINNESOTA NPDES/DS CONSTRUCTION STORMWATER PERMIT. AN UPDATE REFRESHER TRAINING MUST BE ATTENDED EVERY THREE (3) YEARS STARTING THREE (3) YEARS FROM THE ISSUANCE DATE OF THIS PERMIT.

UNIVERSITY OF MINNESOTA  
**Zachary Webber**  
 Design of Construction SWPPP (May 31 2018)

2. **LIST OF CONTACTS**

TILE	CONTACT	COMPANY	PHONE NUMBER
OWNER		FOREST LAKE AREA SCHOOLS	
PROJECT MANAGER	NICK MANNEL	LOUCKS	763-496-6757
SWPPP DESIGNER	ZACHARY WEBBER	LOUCKS	763-496-6753
CONTRACTOR	TBD		
SITE MANAGER	TBD		

\* MPCA 24HR. HAZARDOUS SPILL HOTLINE: 651-649-5457 OR 80420798



**LINO LAKES ELEMENTARY**  
 LINO LAKES, MN

**LOUCKS**  
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 CIVIL ENGINEERING  
 LAND SURVEYING  
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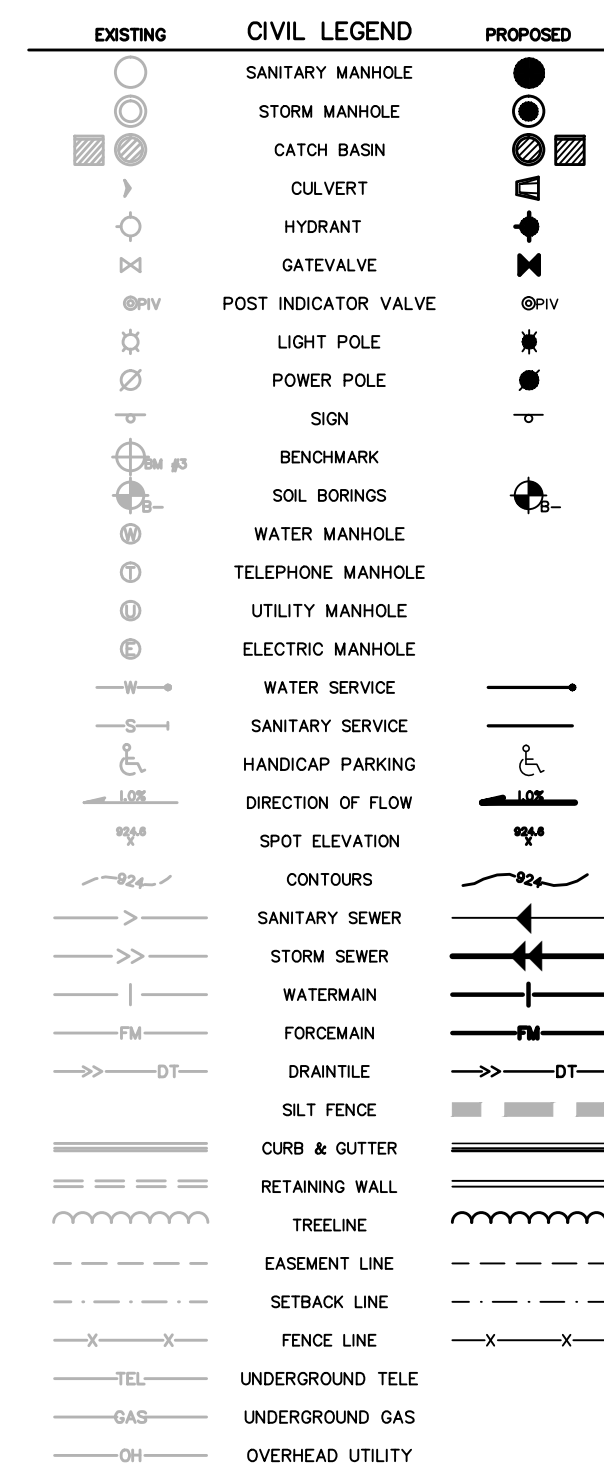
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**SWPPP NOTES**  
**C3-3**





**UTILITY NOTES**

- ALL SANITARY SEWER, STORM SEWER AND WATERMAIN UTILITIES SHALL BE FURNISHED AND INSTALLED PER THE REQUIREMENTS OF THE SPECIFICATIONS, THE MINNESOTA PLUMBING CODE, THE LOCAL GOVERNING UNIT, AND THE STANDARD UTILITIES SPECIFICATION OF THE CITY ENGINEERS ASSOCIATION OF MINNESOTA (CEAM), 2013 EDITION.
- ALL UTILITY PIPE BEDDING SHALL BE COMPACTED SAND OR FINE GRANULAR MATERIAL. ALL COMPACTION SHALL BE PERFORMED PER THE REQUIREMENTS OF THE CEAM SPECIFICATION AND THE GEOTECHNICAL REPORT.
- ALL CONNECTIONS TO EXISTING UTILITIES SHALL BE PERFORMED PER THE REQUIREMENTS OF THE STATE AND LOCAL JURISDICTIONS. THE CITY DEPARTMENT OF ENGINEERING AND BUILDING INSPECTIONS DEPARTMENT AND THE CONSTRUCTION ENGINEER MUST BE NOTIFIED AT LEAST 48 HOURS PRIOR TO ANY WORK WITHIN THE PUBLIC RIGHT OF WAY, OR WORK IMPACTING PUBLIC UTILITIES.
- ALL STORM SEWER, SANITARY SEWER AND WATER SERVICES SHALL TERMINATE 5' FROM THE BUILDING FACE UNLESS OTHERWISE NOTED.
- A MINIMUM OF 18 INCHES OF VERTICAL SEPARATION AND 10 FEET OF HORIZONTAL SEPARATION IS REQUIRED FOR ALL UTILITIES UNLESS OTHERWISE NOTED.
- ALL FIRE HYDRANTS SHALL BE LOCATED 5 FEET BEHIND BACK OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
- PROPOSED PIPE MATERIALS:  
WATERMAIN: DIP 6" TO 8" DIAMETER  
STORM SEWER: RCP/DUAL WALL HDPE 12" TO 21" DIAMETER
- ALL PORTIONS OF THE STORM SEWER SYSTEM, INCLUDING CATCH BASINS, LOCATED WITHIN 10 FEET OF THE BUILDING OR WATER SERVICE LINE MUST BE TESTED ACCORDANCE WITH MINNESOTA RULES, PART 4715.0220.
- ALL JOINTS AND CONNECTIONS IN THE STORM SEWER SYSTEM SHALL BE GASTIGHT OR WATER TIGHT (SEE MINNESOTA RULES, PART 4715.0700). APPROVED RESILIENT RUBBER JOINTS MUST BE USED TO MAKE WATER TIGHT CONNECTIONS TO MANHOLES, CATCHBASINS, AND OTHER STRUCTURES.
- HIGH-DENSITY POLYETHYLENE (HDPE) STORM DRAINS MUST COMPLY WITH MINNESOTA RULES, PART 4715.0540:
  - PIPES 4-INCH TO 10-INCH IN SIZE MUST COMPLY WITH AASHTO M252.
  - PIPES 12-INCH TO 60-INCH IN SIZE MUST COMPLY WITH ASTM F2306.
  - ALL FITTINGS MUST COMPLY WITH ASTM D3212.
  - WATER-TIGHT JOINTS MUST BE USED AT ALL CONNECTIONS INCLUDING STRUCTURES.

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**SUBMITTAL REVISIONS**

08/19/16	RCVD Submittal
09/12/16	CUP City Submittal

**NOT FOR CONSTRUCTION**

**PROFESSIONAL SIGNATURE**

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 laws of the State of Minnesota.

Signature: [Signature]  
Date: 09/12/16

License No. 45861  
Date 09/12/16

**QUALITY CONTROL**

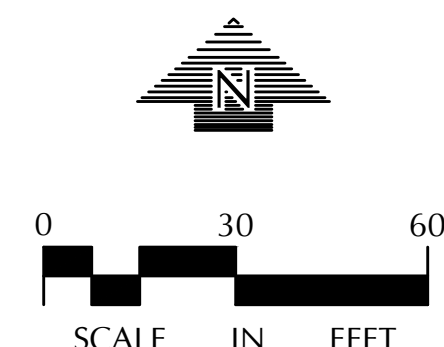
Loucks Project No. 15328A  
Project Lead NMM  
Drawn By ZHW  
Checked By NMM  
Review Date 09/12/16

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**STORM SEWER SCHEDULE**

STRUCTURE NO.	CASTING	MANHOLE SIZE
CB 1	R-2534	48" PRECAST
CB 2	R-2534	48" PRECAST
STMH 10	R-1642	48" PRECAST
STMH 20	R-1642	48" PRECAST
CB 30	R-3067	2' X 3' PRECAST
CBMH 40	R-3067	48" PRECAST
CBMH 50	R-3067	48" PRECAST
STMH 60	R-1642	48" PRECAST
STMH 70	R-1642	48" PRECAST
STMH 80	R-1642	48" PRECAST
STMH 90	R-1642	48" PRECAST
STMH 100	R-1642	48" PRECAST

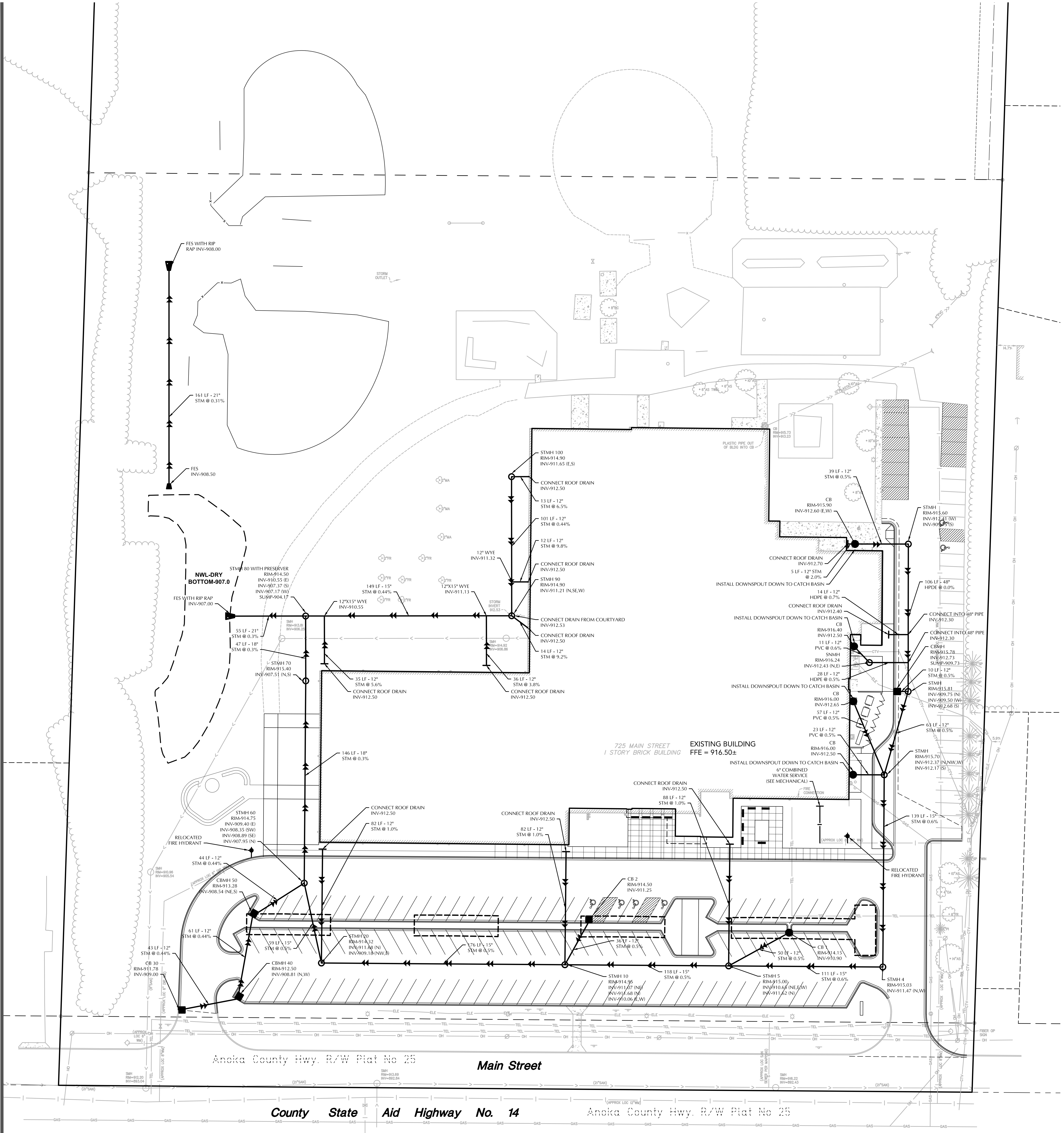


**CALL BEFORE YOU DIG!**  
**Gopher State One Call**  
TWIN CITY AREA: 651-454-0002  
TOLL FREE: 1-800-252-1166

**WARNING:**  
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**UTILITY PLAN**  
**C4-1**



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County State Aid Highway No. 14

Nancy Drive

PLANT SCHEDULE						
DECIDUOUS TREES	QTY	COMMON NAME	BOTANICAL NAME	CONT	SIZE	
AE	8	ACCOLADE ELM	Ulmus 'Morton'	B & B	2.5" Cal	
SGM	1	SIENNA GLEN MAPLE	Acer freemanii 'Sienna Glen'	B & B	2.5" Cal	
SKH	10	SKYLINE HONEYLOCUST	Gleditsia triacanthos 'Skycolé'	B & B	2.5" Cal	
SHRUBS	QTY	COMMON NAME	BOTANICAL NAME	MIN CONT	MIN SIZE	SPACING
DH	11	DWARF BUSH HONEYSUCKLE	Diervilla lonicera	5 gal	18" HGT	36" o.c.
GF	36	GRO-LOW FRAGRANT SUMAC	Rhus aromatica 'Gro-Low'	5 gal	24" SPRD	48" o.c.
CONIFEROUS SHRUBS	QTY	COMMON NAME	BOTANICAL NAME	MIN CONT	MIN SIZE	SPACING
TY	53	TAUNTON YEW	Taxus x media 'Taunton'	5 gal	18" SPRD	48" o.c.
GRASSES	QTY	COMMON NAME	BOTANICAL NAME	MIN CONT	MIN SIZE	SPACING
FG	16	FEATHER REED GRASS	Calamagrostis x acutiflora 'Karl Foerster'	1 gal		24" o.c.
PERENNIALS	QTY	COMMON NAME	BOTANICAL NAME	MIN CONT	MIN SIZE	SPACING
MNS	40	MAY NIGHT SAGE	Salvia x sylvestris 'May Night'	1 gal		24" o.c.
SD	34	STELLA D' ORO DAYLILY	Hemerocallis x 'Stella de Oro'	1 gal		24" o.c.
GROUND COVERS	CODE	COMMON NAME	BOTANICAL NAME			
	SEED 1	NATIVE SEED MIX UPLAND MIX				
	SEED 2	NATIVE SEED MIX WET MIX				
	SM 1	STONE MULCH				
	SOD	TURF SOD				

**OPEN AREA LANDSCAPE REQUIREMENTS**

DISTURBED OPEN AREA ABOVE THE NORMAL WATER LEVEL = 19,750 SF

**TREE REQUIREMENT**

1 TREE PER 2,000 SF  
10 TREES REQUIRED

**SHRUB REQUIREMENT**

3 SHRUBS PER 2,000 SF  
30 SHRUBS REQUIRED

**TREE PRESERVATION REQUIREMENTS**

8 TREES REQUIRED, SEE TREE PRESERVATION PLAN

**TOTAL LANDSCAPE REQUIRED**

TREES REQUIRED = 18  
TREES PROVIDED = 19

SHRUBS REQUIRED = 30  
SHRUBS PROVIDED = 100

**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.

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**SUBMITTAL/REVISIONS**

08/19/16 RCWD Submittal  
09/12/16 CUP City Submittal

**NOT FOR CONSTRUCTION**

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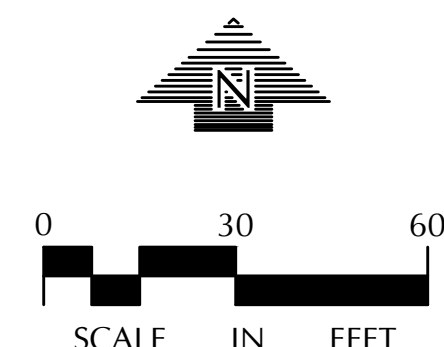
*Nathan Estlin, P.L.A.*  
License No. 52050  
Date 09/12/16

**QUALITY CONTROL**

Loucks Project No. 15328A  
Project Lead NMM  
Drawn By ZHW  
Checked By NMM  
Review Date 09/12/16

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L1-2 LANDSCAPE DETAILS  
L2-1 TREE PRESERVATION PLAN



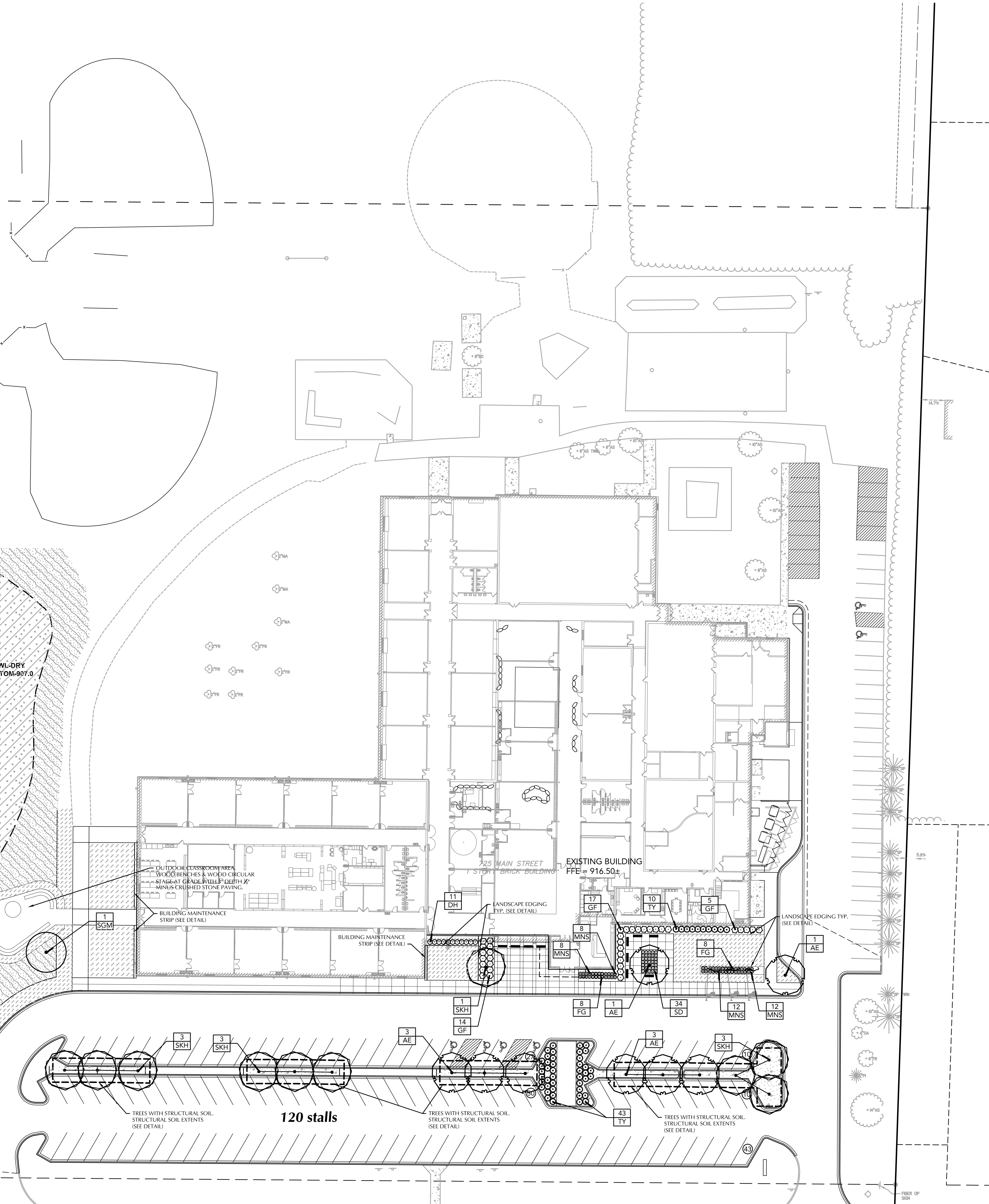
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Plotted: 09/12/2016 12:25 PM W:\2015\15328A\CADD\DATA\LANDSCAPE.dwg Sheet File#L1-1 Landscape Plan



Anoka County Hwy. R/W Plat No 25  
**Main Street**  
County State Aid Highway No. 14  
Anoka County Hwy. R/W Plat No 25

**Nancy Drive**

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*Nathan Estlin - PLA*  
License No. 52050  
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Drawn By	ZHW
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**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 MNDOT 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, DECIDUOUS SHRUBS SHALL HAVE AT LEAST 5 CANES AT THE SPECIFIED SHRUB HEIGHT. ORNAMENTAL TREES SHALL HAVE NO V CROTCHES AND SHALL BEGIN BRANCHING NO LOWER THAN 3' ABOVE ROOT BALL. STREET AND BOULEVARD TREES SHALL BEGIN BRANCHING NO LOWER THAN 6' 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.

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

ALL PROPOSED PLANTS SHALL BE LOCATED AND STAKED AS SHOWN ON PLAN. LANDSCAPE ARCHITECT MUST APPROVE ALL STAKING OF PLANT MATERIAL PRIOR TO ANY AND ALL DIGGING.

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.

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 DRIED BONE MEAL. OTHER APPROVED FERTILIZER MIXED IN WITH THE PLANTING SOIL PER THE MANUFACTURER'S INSTRUCTIONS OR MAY BE TREATED FOR SUMMER AND FALL INSTALLATION WITH AN APPLICATION OF GRANULAR 0-20-20 OF 12 OZ PER 2.5" CALIPER PER TREE AND 6 OZ PER SHRUB WITH AN ADDITIONAL APPLICATION OF 10-10-10 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 AREAS RECEIVING SEED OR SOD MUST RECEIVE A MINIMUM OF 12" DEPTH OF TOPSOIL. TOPSOIL TO BE INCORPORATED INTO THE UNDERLYING SOIL DURING FINAL SITE GRADING.

SOIL SURFACES COMPACTED DURING CONSTRUCTION AND REMAINING PERVIOUS UPON COMPLETION OF CONSTRUCTION MUST BE DECOMPACTED THROUGH SOIL AMENDMENT AND/OR RIPPING TO A DEPTH OF 18". AVOID DISTURBING UTILITIES, TREE ROOTS AND OTHER EXISTING VEGETATION.

ALL PLANTS TO BE INSTALLED AS PER PLANTING DETAILS.

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 METAL EDGER TO BE USED TO CONTAIN SHRUBS, PERENNIALS, AND ANNUALS 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 NOT IN PLANTING BEDS TO RECEIVE 4" DIA. TREE RING WITH 4" DEEP SHREDDED HARDWOOD MULCH. NO MULCH IN DIRECT CONTACT WITH TREE TRUNK.

ALL ANNUAL AND PERENNIAL PLANTING BEDS TO RECEIVE 3" DEEP SHREDDED HARDWOOD MULCH WITH NO WEED BARRIER.

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. IRRIGATION IS NOT INCLUDED IN THIS PROJECT SO THE CONTRACTOR WILL NEED TO PROVIDE ON-GOING WEEKLY WATERING TO ENSURE PROPER ESTABLISHMENT FOR ALL NEWLY PLANTED MATERIAL.

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.

REPRODUCIBLE AS-BUILT DRAWING(S) OF ALL LANDSCAPE INSTALLATION AND SITE IMPROVEMENTS UPON COMPLETION OF CONSTRUCTION INSTALLATION AND PRIOR TO PROJECT ACCEPTANCE.

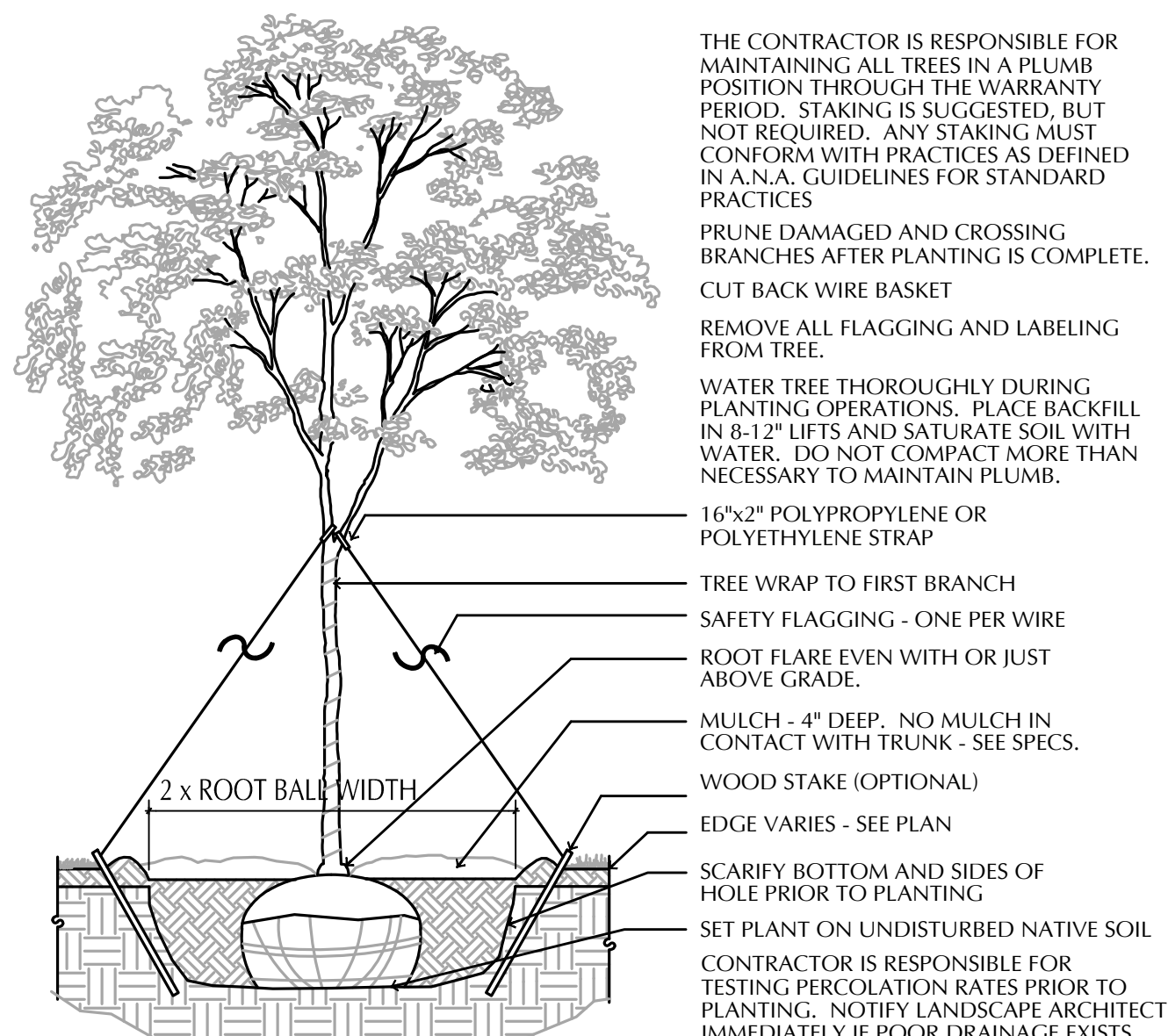
UNLESS NOTED OTHERWISE THE APPROPRIATE DATES FOR SPRING PLANT MATERIAL INSTALLATION AND SEED/SOD PLACEMENT IS FROM THE TIME GROUND HAS THAWED TO JUNE 15.

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. PLANTING OUTSIDE THESE DATES IS NOT RECOMMENDED. ANY ADJUSTMENT MUST BE APPROVED IN WRITING BY THE LANDSCAPE ARCHITECT.

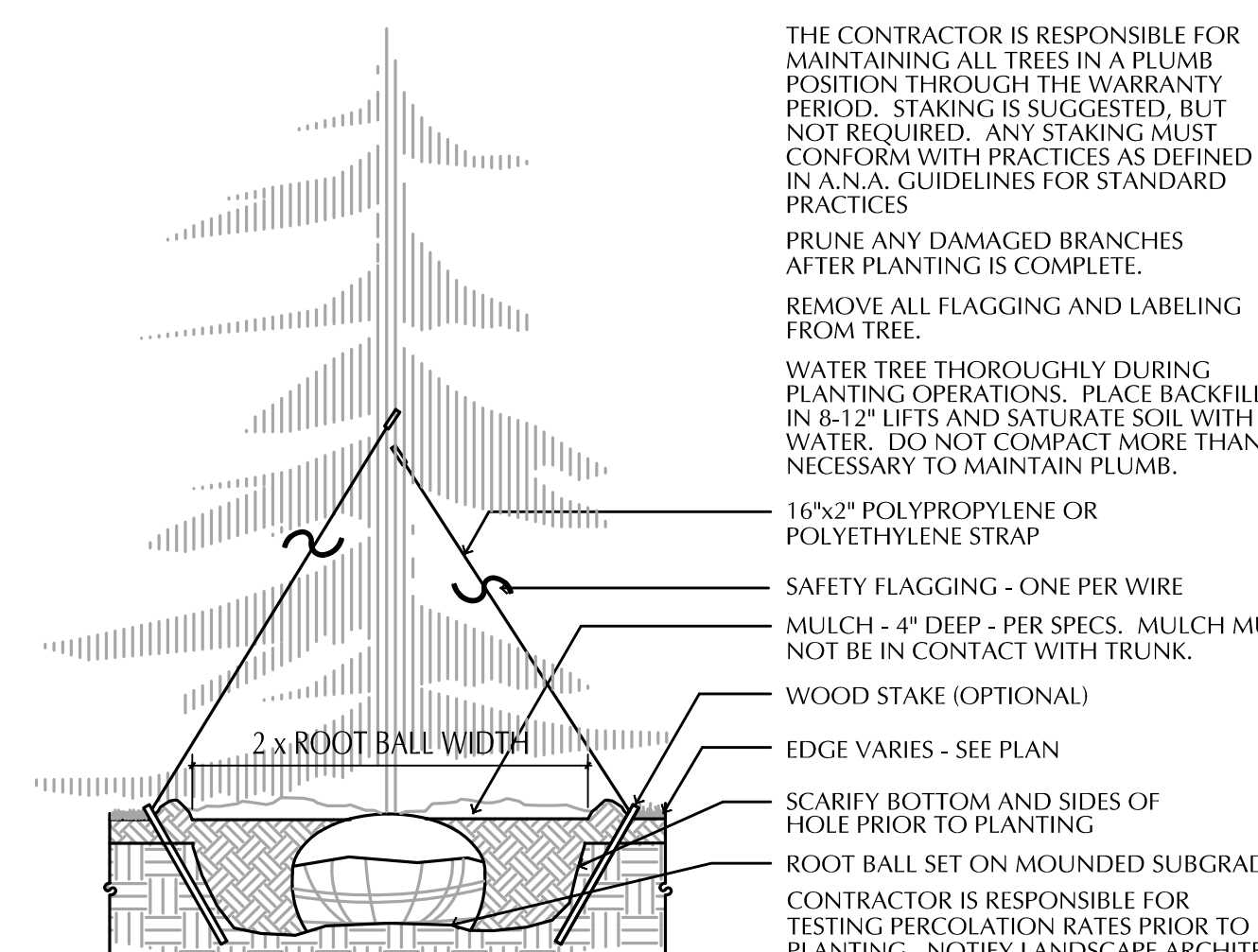
CONIFEROUS PLANTING MAY OCCUR FROM AUGUST 15 - OCTOBER 1 AND FALL DECIDUOUS PLANTING FROM THE FIRST FROST UNTIL NOVEMBER 15. PLANTING OUTSIDE THESE DATES IS NOT RECOMMENDED. ANY ADJUSTMENT MUST BE APPROVED IN WRITING BY THE LANDSCAPE ARCHITECT.

PROTECT ALL EXISTING OAKS ON SITE SCHEDULED TO REMAIN. IF EXISTING OAKS ARE DAMAGED IN ANY MANNER, ABOVE OR BELOW GROUND IN THE ROOT SYSTEM, AN ASPHALTIC TREE PRUNING PAINT SHOULD BE APPLIED IMMEDIATELY AFTER WOUNDING. OAKS ARE NOT TO BE PRUNED, REMOVED OR TRANSPLANTED BETWEEN APRIL 15 AND JULY 1. NOTIFY LANDSCAPE ARCHITECT IF THESE DATES ARE UNAVOIDABLE.

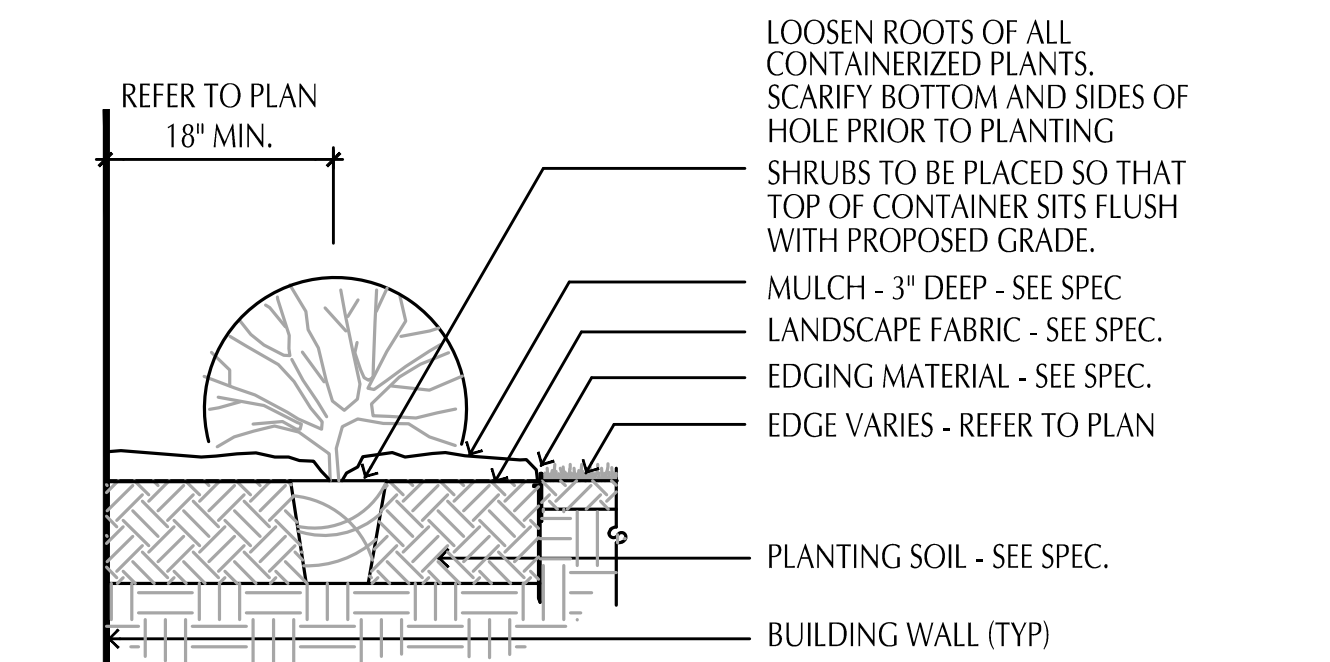
LANDSCAPE CONTRACTOR SHALL ESTABLISH TO HIS SATISFACTION THAT SOIL AND COMPACTION CONDITIONS ARE ADEQUATE TO ALLOW FOR PROPER DRAINAGE AT AND AROUND THE BUILDING SITE.



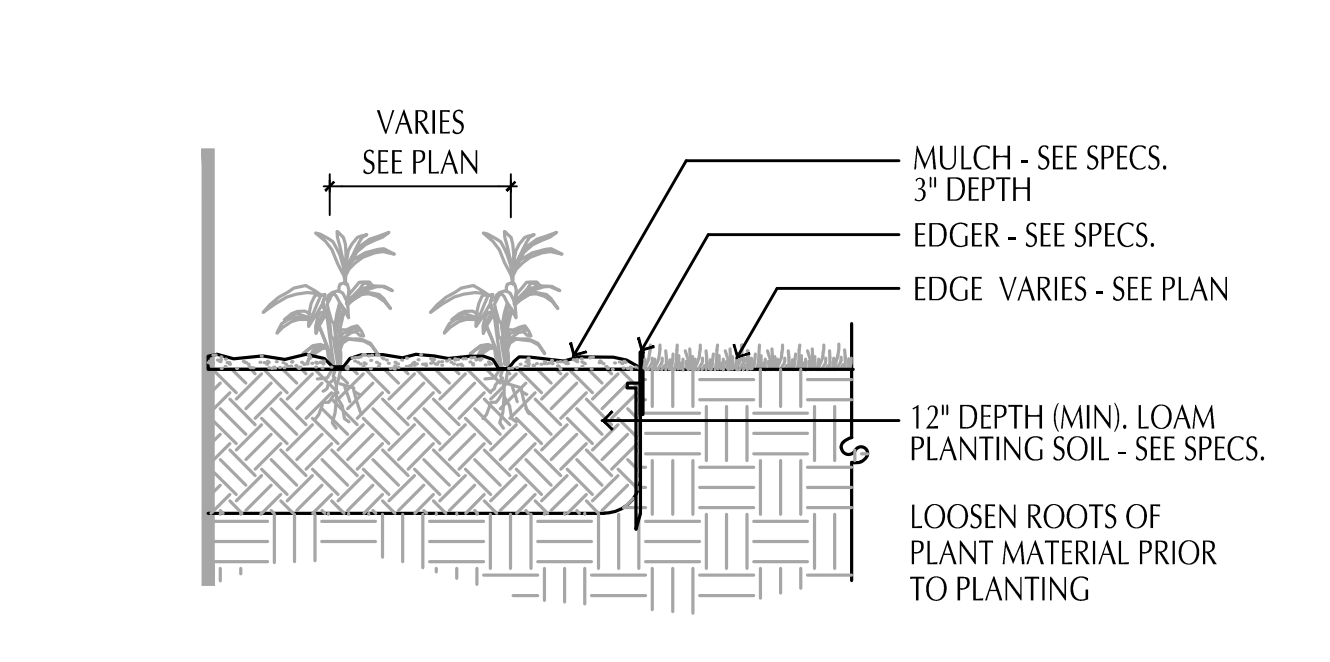
**1**  
L1-2  
SCALE: 1/2" = 1'-0"  
Deciduous Tree.DWG



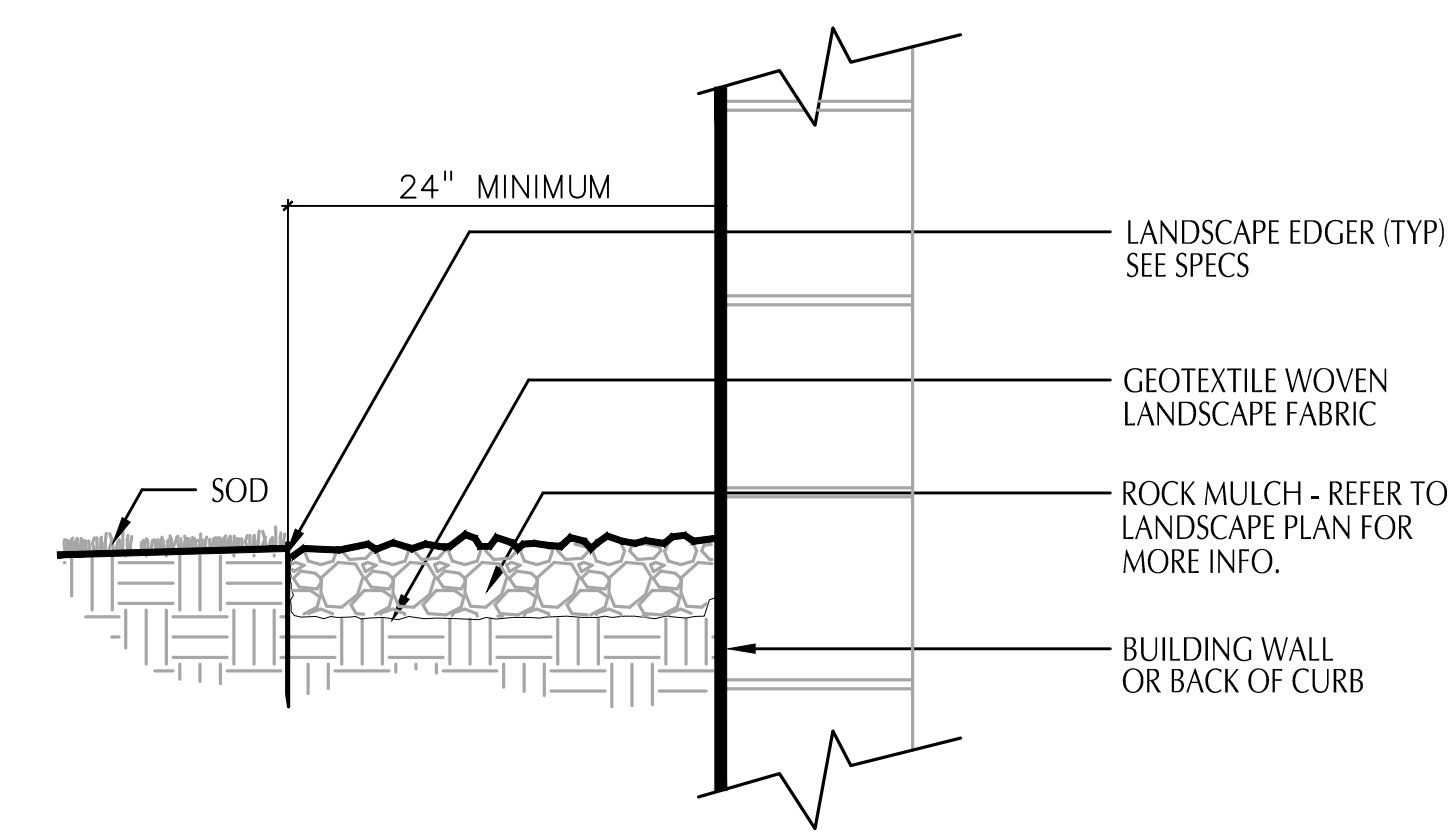
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L1-2  
SCALE: 1/2" = 1'-0"  
Coniferous Tree.DWG



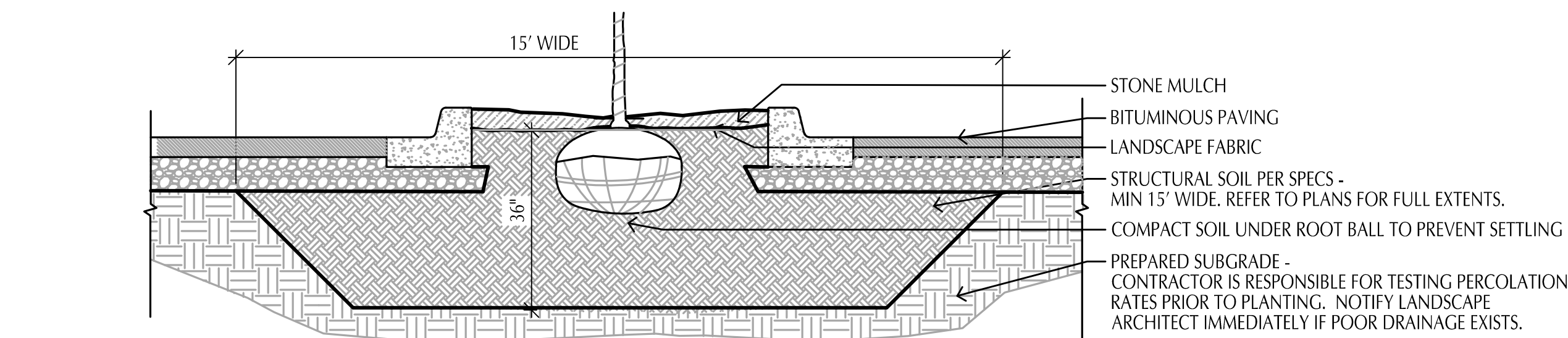
**3**  
L1-2  
SCALE: 3/4" = 1'-0"



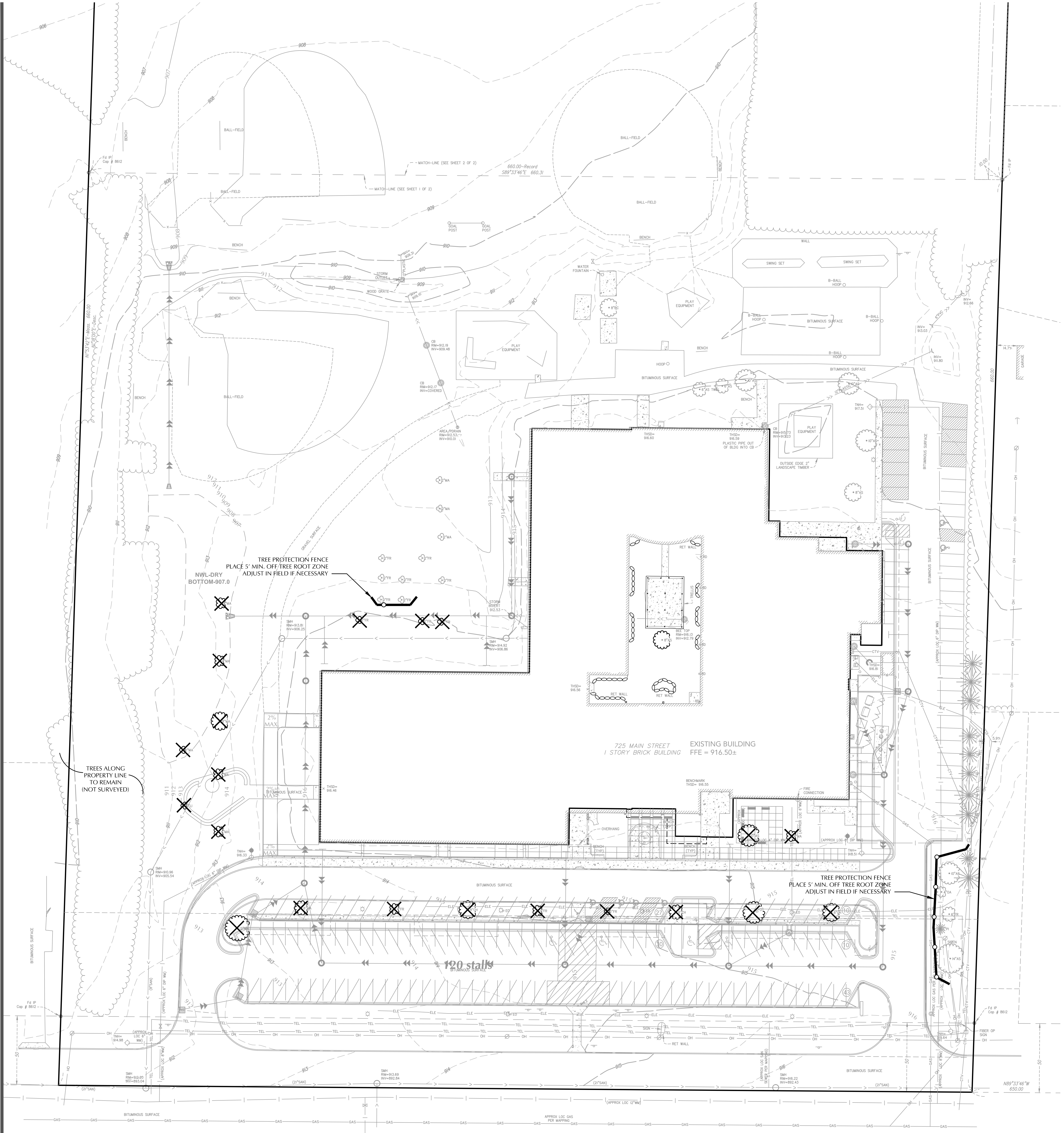
**4**  
L1-2  
SCALE: 3/4" = 1'-0"  
Perennial.Dwg



**5**  
L1-2  
SCALE: 1 1/2" = 1'-0"



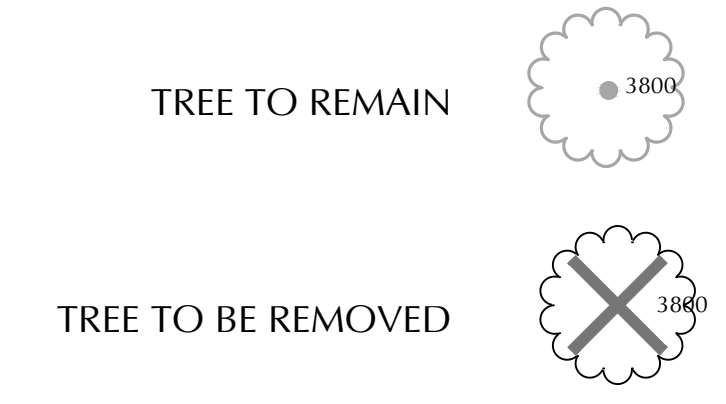
**6**  
L1-2  
SCALE: 1/2" = 1'-0"



**TREE INVENTORY**

TREE COUNT	POINT NUMBER	DIA. INCHES	SPECIES	STATUS
1	5018	4	MAPLE	REMOVED
2	5019	4	MAPLE	REMOVED
3	5020	4	MAPLE	REMOVED
4	5021	4	MAPLE	REMOVED
5	5022	2	MAPLE	REMOVED
6	5023	2	LINDEN	REMOVED
7	5080	10	ASH	TO REMAIN
8	5089	6	ASH	TO REMAIN
9	5090	6	ASH	TO REMAIN
10	5149	2	FRUIT	REMOVED
11	5150	2	FRUIT	TO REMAIN
12	5151	2	FRUIT	TO REMAIN
13	5152	2	FRUIT	TO REMAIN
14	5153	2	FRUIT	TO REMAIN
15	5154	2	FRUIT	TO REMAIN
16	5155	2	FRUIT	REMOVED
17	5156	2	FRUIT	REMOVED
18	5157	2	FRUIT	TO REMAIN
19	5158	2	FRUIT	TO REMAIN
20	5159	2	MAPLE	TO REMAIN
21	5160	2	MAPLE	TO REMAIN
22	5161	2	MAPLE	TO REMAIN
23	5201	4	FRUIT	REMOVED
24	5202	4	FRUIT	REMOVED
25	5203	2	FRUIT	REMOVED
26	5322	10	ASH	REMOVED
27	5323	4	MAPLE	REMOVED
28	5330	6	PINE	TO REMAIN
29	5331	6	FRUIT	TO REMAIN
30	5332	4	OAK	TO REMAIN
31	5333	14	SPRUCE	TO REMAIN
32	5334	10	ASH	TO REMAIN
33	5335	8	SPRUCE	TO REMAIN
34	5429	12	SPRUCE	TO REMAIN
35	5430	14	SPRUCE	TO REMAIN
36	5431	12	SPRUCE	TO REMAIN
37	5432	10	SPRUCE	TO REMAIN
38	5433	10	SPRUCE	TO REMAIN
39	5434	10	SPRUCE	TO REMAIN
40	5435	14	SPRUCE	TO REMAIN
41	5436	12	SPRUCE	TO REMAIN
42	5539	10	FRUIT	TO REMAIN
43	5532	8	ASH	TO REMAIN
44	5574	10	ASH	TO REMAIN
45	5632	8	FRUIT	TO REMAIN
46	10191	14	ASH	TO REMAIN
47	10275	8	FRUIT	REMOVED
48	10284	10	FRUIT	REMOVED
49	10297	6	FRUIT	REMOVED
50	10325	8	FRUIT	REMOVED
51	10335	6	MAPLE	REMOVED
52	10340	12	MAPLE	REMOVED
53	10439	8	MAPLE	REMOVED
54	10927	8	ASH	TO REMAIN

**LEGEND**

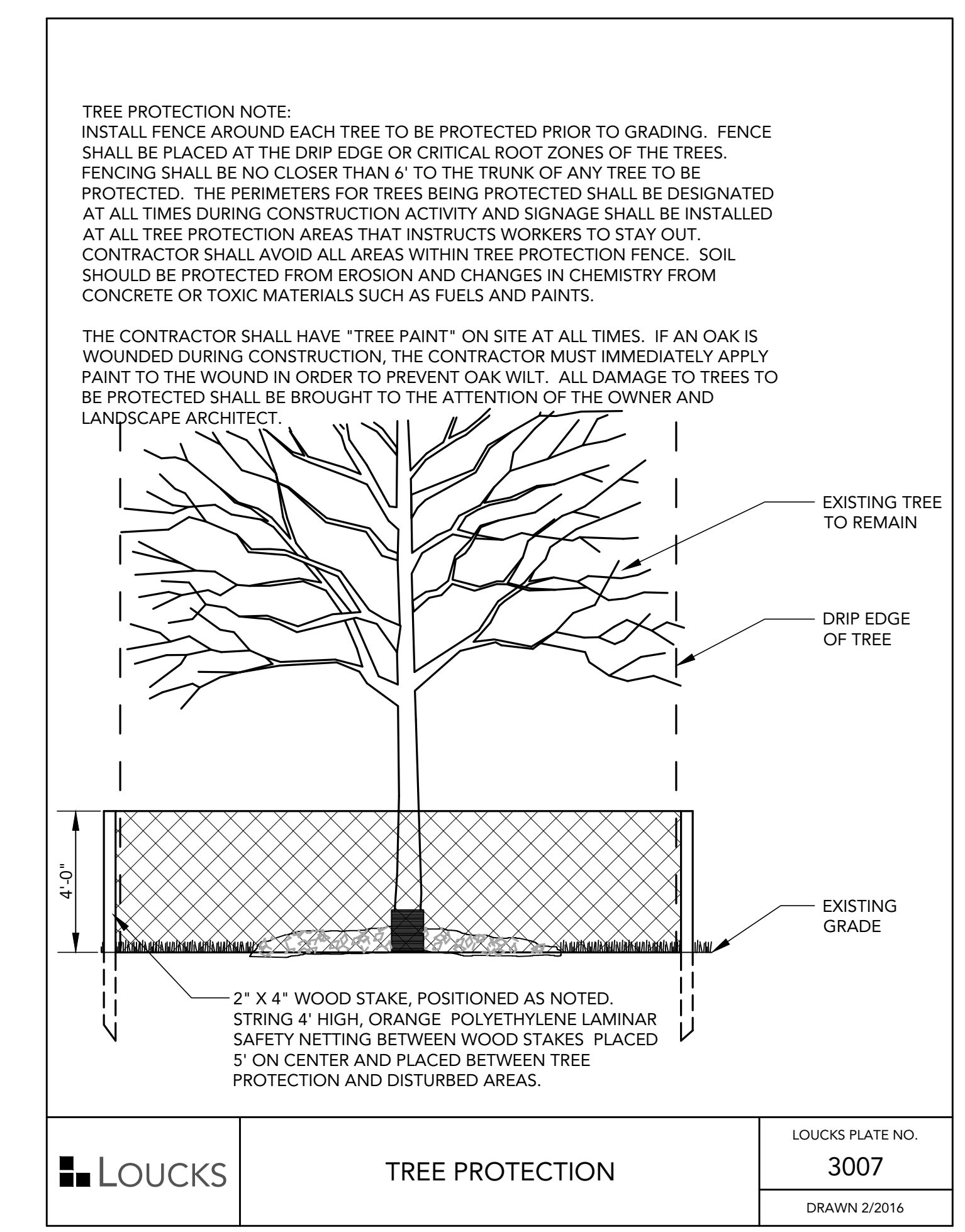


**TREE DATA:**

TOTAL TREES SURVEYED ON SITE	54
TOTAL TREES REMOVED (ALL SIZES)	16
TOTAL TREES (MIN. 6" DBH AND 12' HEIGHT)	30
TOTAL TREES REMOVED (MIN. 6" DBH AND 12' HEIGHT)	8
CONIFEROUS TREES REMOVED (12" 20" HEIGHT)	0
DECIDUOUS TREES REMOVED (OVER 12" DBH)	0
CONIFEROUS TREES REMOVED (OVER 20" TALL)	0
TOTAL TREE REPLACEMENT	8

**TREE REQUIREMENTS:**

**(8) DECIDUOUS TREES ARE BEING REMOVED IN THIS PROJECT. THESE TREES ARE NOT IN AN ENVIRONMENTALLY SENSITIVE AREA. CITY REQUIRES (1) REPLACEMENT TREE FOR EACH OF THE (8) TREES REMOVED.**



**LINO LAKES ELEMENTARY**  
LINO LAKES, MN

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Maple Grove, MN 55369  
763.424.5505  
www.louckscinc.com

**CADD QUALIFICATION**  
CADD files prepared by the Consultant for this project are prepared by the Consultant's professional services for use solely with respect to this project. These CADD files shall not be used on other projects, for additions to this project, or for completion of this project for others without written approval by the Consultant, with the Consultant's approval, others may be permitted to obtain copies of the CADD drawing files for information and reference only. All intellectual or copyrighted material, additions, or deletions to these CADD files shall be made at the risk of the party making such revisions, additions or deletions and the party shall remain solely liable to the Consultant from any & all responsibilities, claims, and liabilities.

**SUBMITTAL/REVISIONS**  
08/19/16 RCWD Submittal  
09/12/16 CUP City Submittal

**NOT FOR CONSTRUCTION**

**PROFESSIONAL SIGNATURE**  
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 Landscape Architect under the laws of the State of Minnesota.  
Nathan Estoh - PLA

License No. 52050  
Date 09/12/16

**QUALITY CONTROL**  
Loucks Project No. 15328A  
Project Lead NMM  
Drawn By ZHW  
Checked By NMM  
Review Date 09/12/16

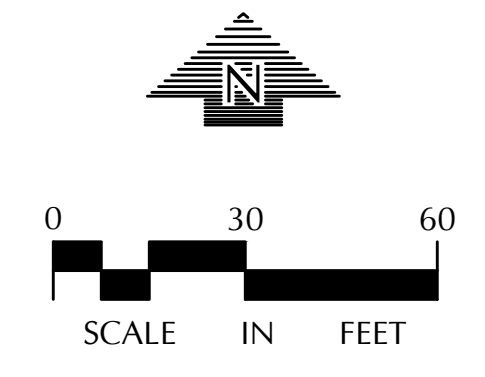
**SHEET INDEX**  
C1-1 EXISTING CONDITIONS  
C1-2 DEMOLITION PLAN  
C2-1 SITE PLAN  
C3-1 GRADING PLAN  
C3-2 SWPPP PLAN  
C3-3 SWPPP NOTES  
C4-1 UTILITY PLAN  
C8-1 DETAILS  
L1-1 LANDSCAPE PLAN  
L1-2 LANDSCAPE DETAILS  
L2-1 TREE PRESERVATION PLAN



**CALL BEFORE YOU DIG!**  
**Gopher State One Call**  
TWIN CITY AREA: 651-454-0002  
TOLL FREE: 1-800-252-1166

**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.



**TREE PRESERVATION PLAN**  
**L2-1**



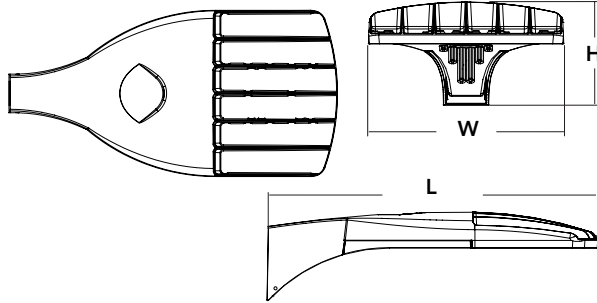
# D-Series Size 0 LED Area Luminaire



d#series

## Specifications

<b>EPA:</b>	0.95 ft <sup>2</sup> (.09 m <sup>2</sup> )
<b>Length:</b>	26" (66.0 cm)
<b>Width:</b>	13" (33.0 cm)
<b>Height:</b>	7" (17.8 cm)
<b>Weight (max):</b>	16 lbs (7.25 kg)



Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

## Introduction

The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment.

The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire. The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing up to 400W metal halide with typical energy savings of 65% and expected service life of over 100,000 hours.

## Ordering Information

**EXAMPLE: DSX0 LED 40C 1000 40K T3M MVOLT SPA DDBXD**

DSX0 LED	Series	LEDs	Drive current	Color temperature	Distribution	Voltage	Mounting
	DSX0 LED	<b>Forward optics</b> 20C 20 LEDs (one engine) 40C 40 LEDs (two engines) <b>Rotated optics<sup>1</sup></b> 30C 30 LEDs (one engine)	530 530 mA 700 700 mA 1000 1000 mA (1 A) <sup>2</sup>	30K 3000 K 40K 4000 K 50K 5000 K AMBPC Amber phosphor converted <sup>3</sup>	T1S Type I short T2S Type II short T2M Type II medium T3S Type III short T3M Type III medium T4M Type IV medium TFTM Forward throw medium T5VS Type V very short T5S Type V short T5M Type V medium T5W Type V wide BLC Backlight control <sup>2,4</sup> LCCO Left corner cutoff <sup>2,4</sup> RCCO Right corner cutoff <sup>2,4</sup>	MVOLT <sup>5</sup> 120 <sup>5</sup> 208 <sup>5</sup> 240 <sup>5</sup> 277 <sup>5</sup> 347 <sup>6</sup> 480 <sup>6</sup>	<b>Shipped included</b> SPA Square pole mounting RPA Round pole mounting WBA Wall bracket SPUMBA Square pole universal mounting adaptor <sup>7</sup> RPUMBA Round pole universal mounting adaptor <sup>7</sup> <b>Shipped separately</b> KMA8 DDBXD U Mast arm mounting bracket adaptor (specify finish) <sup>8</sup>

Control options	Other options	Finish (required)
<b>Shipped installed</b> PER NEMA twist-lock receptacle only (no controls) <sup>9</sup> PER5 Five-wire receptacle only (no controls) <sup>9,10</sup> PER7 Seven-wire receptacle only (no controls) <sup>9,10</sup> DMG 0-10V dimming driver (no controls) <sup>11</sup> DCR Dimmable and controllable via ROAM <sup>®</sup> (no controls) <sup>12</sup> PIR Bi-level, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 5fc <sup>13</sup> PIRH Bi-level, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 5fc <sup>13</sup> PIR1FC3V Bi-level, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc <sup>13</sup>	PIRH1FC3V Bi-level, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc <sup>13</sup> BL30 Bi-level switched dimming, 30% <sup>14,15</sup> BL50 Bi-level switched dimming, 50% <sup>14,15</sup> PNMTDD3 Part night, dim till dawn <sup>16</sup> PNMT5D3 Part night, dim 5 hrs <sup>16</sup> PNMT6D3 Part night, dim 6 hrs <sup>16</sup> PNMT7D3 Part night, dim 7 hrs <sup>16</sup> FAO Field adjustable output <sup>17</sup>	<b>Shipped installed</b> HS House-side shield <sup>18</sup> SF Single fuse (120, 277, 347V) <sup>19</sup> DF Double fuse (208, 240, 480V) <sup>19</sup> L90 Left rotated optics <sup>1</sup> R90 Right rotated optics <sup>1</sup> DDL Diffused drop lens <sup>18</sup> BS Bird spikes <sup>20</sup> DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DDBTXD Textured dark bronze DBLTXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white

## Controls & Shields

<b>Accessories</b> <small>Ordered and shipped separately.</small>	DLL127F 1.5 JU Photocell - SSL twist-lock (120-277V) <sup>21</sup>
	DLL347F 1.5 CUL JU Photocell - SSL twist-lock (347V) <sup>21</sup>
	DLL480F 1.5 CUL JU Photocell - SSL twist-lock (480V) <sup>21</sup>
	DSH0T SBK U Shorting cap <sup>21</sup>
	DSX0HS 20C U House-side shield for 20 LED unit <sup>18</sup>
	DSX0HS 30C U House-side shield for 30 LED unit <sup>18</sup>
	DSX0HS 40C U House-side shield for 40 LED unit <sup>18</sup>
	DSX0DDL U Diffused drop lens (polycarbonate) <sup>17</sup>
	PUMBA DDBXD U* Square and round pole universal mounting bracket adaptor (specify finish) <sup>7</sup>
	KMA8 DDBXD U Mast arm mounting bracket adaptor (specify finish) <sup>8</sup>
DSX0BS U Bird spikes	

## NOTES

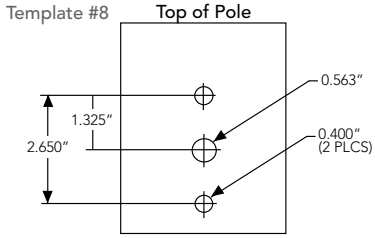
- 30 LEDs (30C option) and rotated options (L90 or R90) only available together.
- Not available with AMBPC.
- Only available with 530mA or 700mA.
- Not available with HS or DDL.
- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120V, 208V, 240V or 277V options only when ordering with fusing (SF, DF options).
- Not available with single board, 530mA product (20C 530 or 30C 530). Not available with BL30, BL50 or PNMT options.
- Existing drilled pole only. Available as a separate combination accessory; for retrofit use only: PUMBA (finish) U; 1.5 G vibration load rating per ANCI C136.31.
- Must order fixture with SPA mounting. Must be ordered as a separate accessory; see Accessories information. For use with 2-3/8" mast arm (not included).
- Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories.
- If ROAM<sup>®</sup> node required, it must be ordered and shipped as a separate line item from Acuity Brands Controls. Not available with DCR. Node with integral dimming.
- DMG option for 347V or 480V requires 1000mA.
- Specifies a ROAM<sup>®</sup> enabled luminaire with 0-10V dimming capability; PER option required. Additional hardware and services required for ROAM<sup>®</sup> deployment; must be purchased separately. Call 1-800-442-6745 or email: [sales@roamservices.net](mailto:sales@roamservices.net). N/A with PIR options, PER5, PER7, BL30, BL50 or PNMT options. Node without integral dimming.

- PIR and PIR1FC3V specify the [SensorSwitch SBGR-10-ODP](#) control; PIRH and PIRH1FC3V specify the [SensorSwitch SBGR-6-ODP](#) control; see [Outdoor Control Technical Guide](#) for details. Dimming driver standard. Not available with PER5 or PER7. Ambient sensor disabled when ordered with DCR. Separate on/off required. Not available with PNMT options.
- Requires an additional switched circuit.
- Dimming driver standard. MVOLT only. Not available with 347V, 480V, DCR, PER5, PER7 or PNMT options. Not available with PIR1FC3V and PIRH1FC3V.
- Dimming driver standard. MVOLT only. Not available with 347V, 480V, DCR, PER5, PER7, BL30 or BL50. Not available with PIR1FC3V and PIRH1FC3V. Separate on/off required.
- Dimming driver standard. Not available with PER5, PER7, DMG, DCR, BL30, BL50, PNMT, PIR, PIRH, PIR1FC3V and PIRH1FC3V.
- Not available with BLC, LCCO and RCCO distribution. Also available as a separate accessory; see Accessories information.
- Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V.
- Also available as a separate accessory; see accessories information.
- Requires luminaire to be specified with PER option. Ordered and shipped as a separate line item from Acuity Brands Controls.
- For retrofit use only.

For more control options, visit [DTL](#) and [ROAM](#) online.



## Drilling



DSX0 shares a unique drilling pattern with the AERIS™ family. Specify this drilling pattern when specifying poles, per the table below.

<b>DM19AS</b>	Single unit	<b>DM29AS</b>	2 at 90°**
<b>DM28AS</b>	2 at 180°	<b>DM39AS</b>	3 at 90°**
<b>DM49AS</b>	4 at 90°**	<b>DM32AS</b>	3 at 120°**

**Example:** SSA 20 4C DM19AS DDBXD

Visit Lithonia Lighting's **POLES CENTRAL** to see our wide selection of poles, accessories and educational tools.

\*Round pole top must be 3.25" O.D. minimum.

\*\*For round pole mounting (RPA) only.

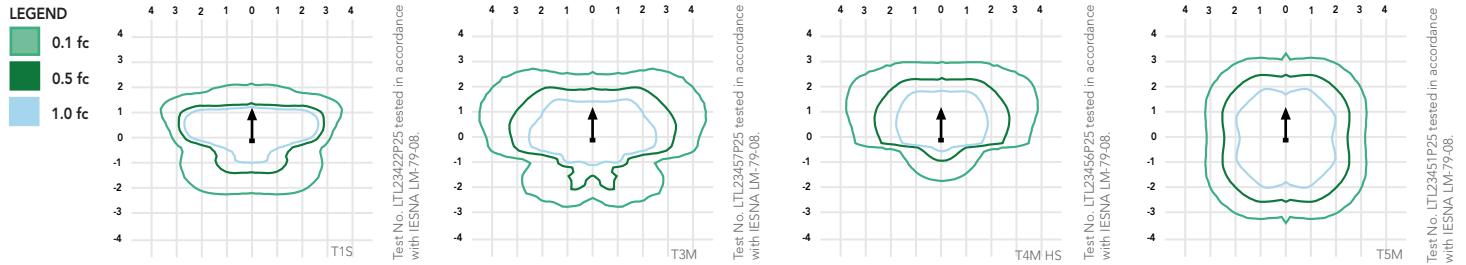
## Tenon Mounting Slipfitter\*\*

Tenon O.D.	Single Unit	2 at 180°	2 at 90°	3 at 120°	3 at 90°	4 at 90°
2-3/8"	AST20-190	AST20-280	AST20-290	AST20-320	AST20-390	AST20-490
2-7/8"	AST25-190	AST25-280	AST25-290	AST25-320	AST25-390	AST25-490
4"	AST35-190	AST35-280	AST35-290	AST35-320	AST35-390	AST35-490

## Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [D-Series Area Size 0 homepage](#).

Isofootcandle plots for the DSX0 LED 40C 1000 40K. Distances are in units of mounting height (20').



## Performance Data

### Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.02
10°C	50°F	1.01
20°C	68°F	1.00
<b>25°C</b>	<b>77°F</b>	<b>1.00</b>
30°C	86°F	1.00
40°C	104°F	0.99

### Electrical Load

Number of LEDs	Drive Current (mA)	System Watts	Current (A)					
			120	208	240	277	347	480
20C	530	35	0.34	0.22	0.21	0.20	--	--
	700	45	0.47	0.28	0.24	0.22	0.18	0.14
	1000	72	0.76	0.45	0.39	0.36	0.36	0.26
30C	530	52	0.51	0.31	0.28	0.25	--	--
	700	70	0.72	0.43	0.37	0.34	0.25	0.19
	1000	104	1.11	0.64	0.56	0.49	0.47	0.34
40C	530	68	0.71	0.41	0.36	0.33	0.25	0.19
	700	91	0.94	0.55	0.48	0.42	0.33	0.24
	1000	138	1.45	0.84	0.73	0.64	0.69	0.50

### Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	DSX0 LED 20C 1000			
	1	0.98	0.96	0.93
	DSX0 LED 40C 1000			
	1	0.98	0.95	0.90
	DSX0 LED 40C 700			
	1	0.99	0.99	0.99