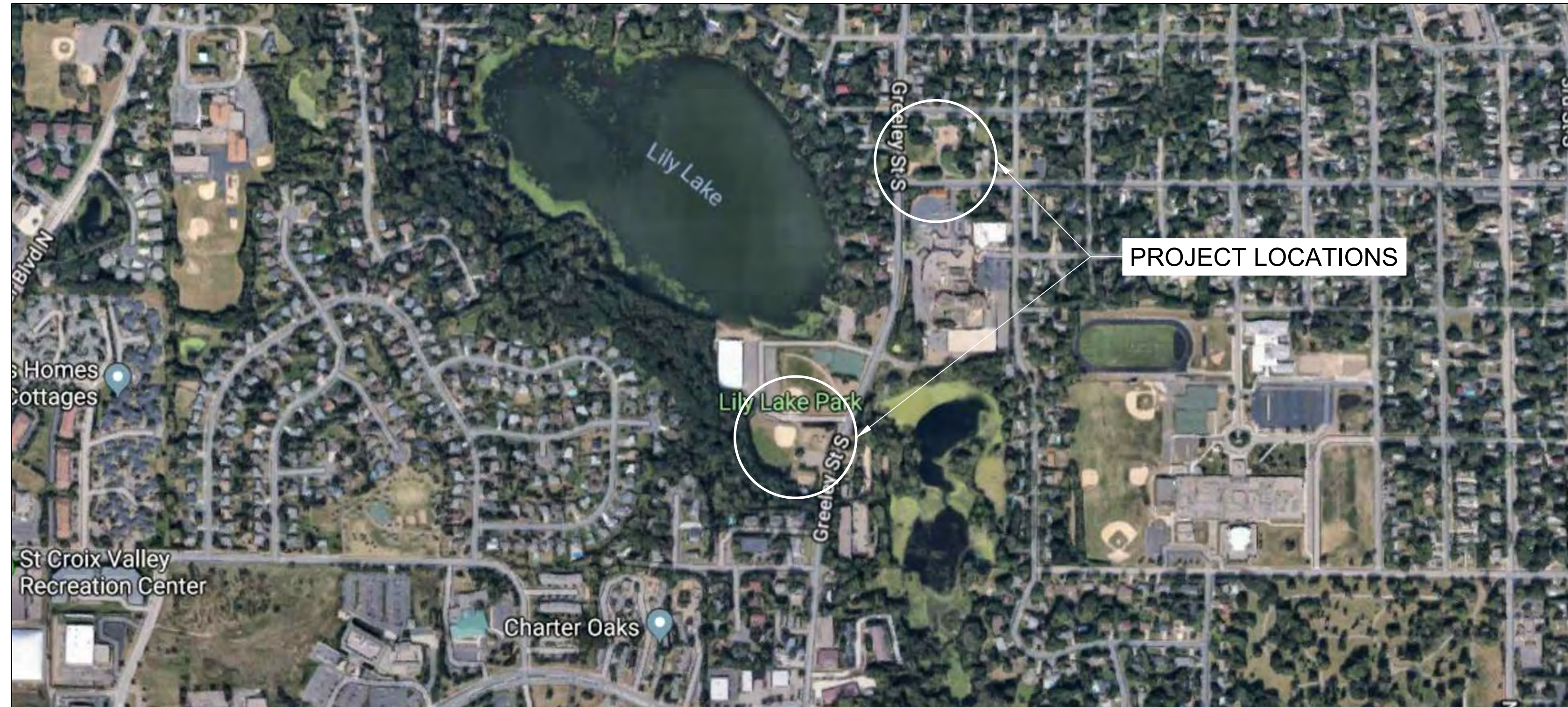


# MIDDLE ST. CROIX WATERSHED MANAGEMENT ORGANIZATION

## LILY LAKE FINAL 45 BMP'S

### STILLWATER, WASHINGTON COUNTY, MINNESOTA

FEATURE	EXISTING	PROPOSED
SILT FENCE		
CONSTRUCTION FENCE		
DELINEATED WETLAND		
WATERLINE/Shoreline		
OVERHEAD ELECTRIC LINES		
BURIED ELECTRIC LINES		
FIBER OPTIC LINES		
GAS LINES		
PIPELINE		
OVERHEAD TELEPHONE		
BURIED TELEPHONE		
TELEPHONE MANHOLE		
TELEPHONE CABLE PEDESTAL		
OVERHEAD CABLE TV		
BURIED CABLE TV		
TV CABLE PEDESTAL		
BARBED WIRE FENCE		
CHAIN LINK FENCE		
STOCKADE/WOOD FENCE		
GUARD RAIL		
CENTER LINE ROADWAY		
CENTER LINE RAILROAD		
SANITARY SEWER LINE		
SANITARY SEWER FORCEMAIN		
SANITARY SEWER MANHOLE		
STORM SEWER LINE		
STORM SEWER CULVERT		
STORM SEWER FORCEMAIN		
STORM SEWER MANHOLE		
WATERMAIN		
WATERMAIN MANHOLE		
HYDRANT		
WATER VALVE		



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\* THIS PLAN SET CONTAINS 12 PLAN SHEETS

#### GOVERNING SPECIFICATIONS

THE 2018 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING FIELD MANUAL FOR TEMPORARY CONTROL ZONE LAYOUTS.

#### EXISTING UTILITIES

THE LOCATION OF UNDERGROUND FACILITIES AND/OR STRUCTURES AS SHOWN ON THE PLANS ARE BASED ON AVAILABLE RECORD AT THE TIME THE PLANS WERE PREPARED AND ARE NOT GUARANTEED TO BE COMPLETE OR CORRECT. THE SUBSURFACE UTILITY INFORMATION SHOWN IS UTILITY QUALITY LEVEL D, AS DETERMINED USING THE GUIDELINES OF "CIVASCE 38-02 STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA." THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITIES 72 HOURS PRIOR TO CONSTRUCTION TO DETERMINE THE EXACT LOCATION OF ALL FACILITIES AND TO PROVIDE ADEQUATE PROTECTION OF SAID UTILITIES DURING THE COURSE OF WORK.

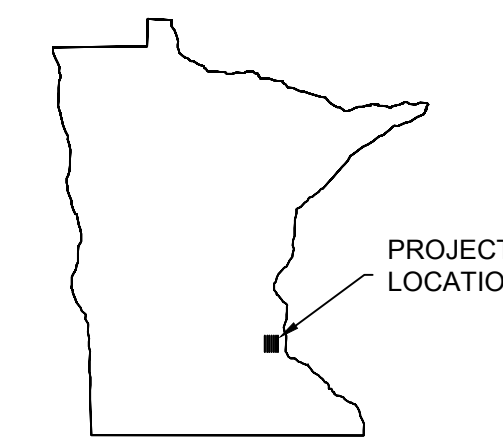
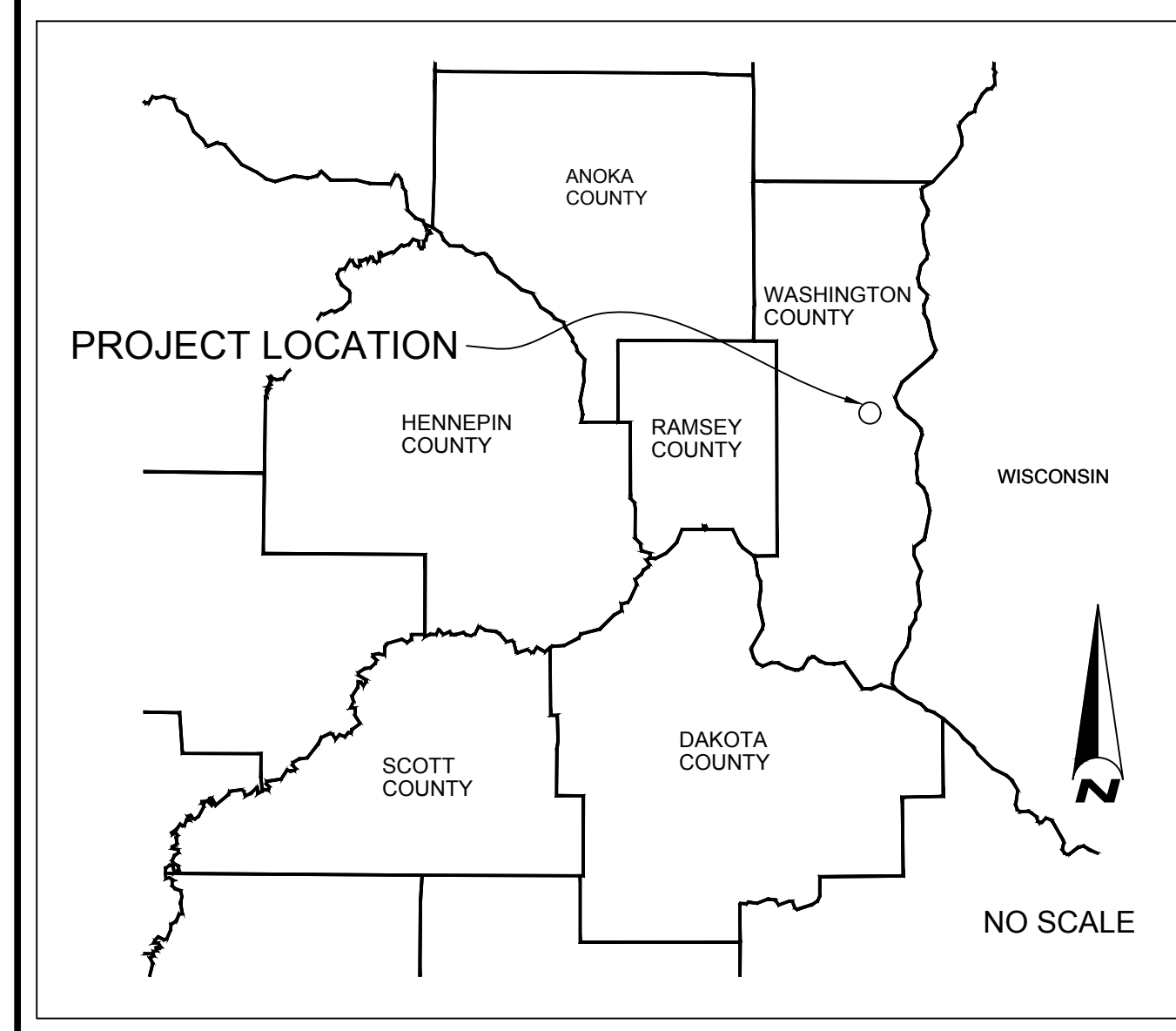
#### CONSTRUCTION NOTE

CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO MAINTAIN OPERATION OF EXISTING UTILITIES THROUGHOUT THE DURATION OF THE PROJECT. IN THE EVENT THAT AN INTERRUPTION OF SERVICE IS UNAVOIDABLE IN ORDER TO COMPLETE THE WORK, CONTRACTOR SHALL PROVIDE ADEQUATE NOTIFICATION TO ALL AFFECTED BUSINESSES A MINIMUM OF 3 WORKING DAYS IN ADVANCE OF ANY INTERRUPTION.

#### GOPHER STATE ONE-CALL

IT IS THE LAW THAT ANYONE EXCAVATING AT ANY SITE MUST NOTIFY GOPHER STATE ONE CALL (GSOC) SO THAT UNDERGROUND ELECTRIC, NATURAL GAS, TELEPHONE OR OTHER UTILITY LINES CAN BE MARKED ON OR NEAR YOUR PROPERTY BEFORE ANY DIGGING BEGINS. A 48-HOUR NOTICE, NOT INCLUDING WEEKENDS, IS REQUIRED. CALLS CAN BE MADE TO GSOC AT 1-800-252-1168 OR (651)454-0002, MONDAY THROUGH FRIDAY (EXCEPT HOLIDAYS) FROM 7 A.M. TO 5 P.M.

### LOCATION MAP



#### CLIENT

**MIDDLE ST. CROIX WATERSHED MANAGEMENT ORGANIZATION**  
45 HAYWARD AVE.  
OAKDALE, MN 55128

#### ENGINEER

EMMONS & OLIVIER RESOURCES, INC.  
7030 6TH STREET NORTH  
OAKDALE, MINNESOTA 55128-7534  
TELEPHONE: (651) 770-8448  
FAX: (651) 770-2552  
eorinc.com

Plot Date: 06/26/2018  
Drawing Name: X:\Clients\VM000009\_Lily\_Lake\_Ph1\_209\_GIMS\_ProjectName\dwg\405\_06\_CD\_COV.dwg  
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1	06/30/2018	KDC	60% PLAN SET - NOT FOR CONSTRUCTION
NO	DATE	BY	REVISION



SUBMISSION DATE:	06/30/2018
DESIGN BY	KDC
DRAWN BY	DEM
EOR PROJECT NO.	0405-0009

**EOR** Emmons & Olivier Resources, Inc.  
7030 6th Street North  
Oakdale, MN 55128  
Tel: 651.770.8448  
www.eorinc.com



LILY LAKE FINAL 45 BMP'S  
STILLWATER, WASHINGTON COUNTY,  
MINNESOTA  
STATE PROJECT NO. --- CITY PROJECT NO. ---

TITLE SHEET  
SHEET 01 OF 12 SHEETS

**GENERAL SITE WORK NOTES**

- VERIFY HORIZONTAL LOCATION AND ELEVATION WHERE A CONNECTION TO EXISTING PAVEMENT, STRUCTURE, PIPE OR OTHER SITE FEATURE IS TO BE MADE. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR VARIATIONS FROM THE PLANS.
- REFERENCE TO MN/DOT SPECIFICATIONS SHALL MEAN DIVISIONS II AND III OF THE 2018 SPECIFICATIONS FOR CONSTRUCTION.
- SITE ACCESS IS ONLY OFF GREELEY STREET SOUTH. KEEP DRIVE LANES OPEN AT ALL TIMES.
- SEE RESTORATION PLAN FOR TURF RESTORATION REQUIREMENTS.
- TOPOGRAPHIC SURVEY BY EOR, INC.
- ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE MMUTCD, INCLUDING FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS, JANUARY 2014.
- ALL CONSTRUCTION WORK SHALL BE COMPLETED WITHIN CITY APPROVED WORKING HOURS.
- PROPOSED WORK MUST BE IN COMPLIANCE WITH THE MSCWMO AND CITY OF STILLWATER AND CONTRACTOR IS EXPECTED TO OBTAIN ANY REQUIRED PERMITS.
- A PRECONSTRUCTION MEETING WILL BE REQUIRED WITH MSCWMO AND CITY OF STILLWATER PRIOR TO ANY MOBILIZATION OF CONSTRUCTION EQUIPMENT OR MATERIAL.
- CONTRACTOR SHALL RESTORE GREELEY STREET SOUTH TO PRE-CONSTRUCTION CONDITIONS. CONTRACTOR SHALL INSPECT AND PHOTOGRAPH ROAD DURING PRECONSTRUCTION MEETING WITH MSCWMO AND CITY OF STILLWATER.
- CONTRACTOR SHALL RESTORE ALL AREAS TO PRE-CONSTRUCTION CONDITIONS.

**GENERAL UTILITY NOTES**

- CONTRACTOR SHALL CONTACT 'GOPHER STATE ONE CALL' WITHIN TWO WORKING DAYS PRIOR TO EXCAVATION/CONSTRUCTION FOR UTILITY LOCATIONS. TWIN CITIES METRO AREA: 651-454-0002 OR TOLL-FREE: 1-800-252-1166.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS AND INVERTS, SHOWN OR NOT SHOWN. ANY DISCREPANCY BETWEEN PLANS AND FIELD CONDITIONS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
- ALL UTILITY WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF STILLWATER SPECIFICATIONS AND REQUIREMENTS.
- CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING ANY APPROPRIATE SEWER, WATER AND PLUMBING PERMITS FROM THE CITY'S BUILDING DEPARTMENT.
- UTILITY TRENCHES SHALL BE COMPACTED TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698.78 OR AASHTO T-99) FROM THE PIPE ZONE TO WITHIN THREE FEET OF THE GROUND SURFACE AND 100% STANDARD PROCTOR IN THE UPPER THREE FEET. COMPACTION IN GREEN SPACE AREAS SHALL BE AT LEAST 90% STANDARD PROCTOR OR AS DIRECTED BY THE ENGINEER.
- FIELD ADJUST ALL CASTINGS TO MATCH FINAL GRADES.

**SITE DEMOLITION & REMOVAL NOTES**

- ALL VEGETATION REMOVAL INCLUDING CATTAILS, SOD, WINDFALL/DEADFALL, AND/OR BRUSH REMOVAL SHALL BE CONSIDERED INCIDENTAL AS SPECIFIED IN THE CONTRACT DOCUMENTS.
- ALL REMOVED MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

**GRADING & EROSION CONTROL NOTES**

- CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO START OF SITE GRADING. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER OF ANY DISCREPANCIES OR VARIATIONS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL HORIZONTAL AND VERTICAL SURVEY, BEYOND INITIAL BENCHMARKS BY EOR.
- INSTALL PERIMETER EROSION CONTROL MEASURES AND PERFORM TREE CLEAN ROOT CUTTING (IF NECESSARY) BEFORE BEGINNING SITE GRADING ACTIVITIES. SOME EROSION CONTROL SUCH AS BALE CHECKS AND TEMPORARY SILT PONDS MAY BE INSTALLED AS GRADING OCCURS IN THE SPECIFIC AREA. MAINTAIN EROSION CONTROLS THROUGHOUT THE GRADING PROCESS AND REMOVE WHEN APPROVED BY THE OWNER.
- CONTRACTOR TO ADHERE TO ALL CITY AND WATERSHED PERMIT REQUIREMENTS, INCLUDING THE REQUIREMENT TO MINIMIZE THE AREA DISTURBED BY GRADING AT ANY GIVEN TIME AND TO COMPLETE TURF RESTORATION WITHIN THE TIME REQUIRED BY THE PERMIT AFTER COMPLETION OF GRADING OF AN AREA.
- ALL EXPOSED SOIL AREAS MUST BE STABILIZED WITHIN 14 DAYS, EXCEPT FOR CONNECTIONS WITHIN 200 FEET OF A WATER OF THE STATE OR ANY STORMWATER CONVEYANCE SYSTEM WHICH IS CONNECTED TO A WATER OF THE STATE WHICH MUST BE STABILIZED WITHIN 24 HOURS.
- ALL CONSTRUCTION ENTRANCES SHALL BE SURFACED WITH CRUSHED ROCK OR APPROVED EQUAL ACROSS FULL WIDTH FROM ENTRANCE POINT TO 50 FEET INTO THE CONSTRUCTION ZONE. SEE DETAIL.
- INLET PROTECTION IS TO BE USED DURING CONSTRUCTION. SEE DETAIL.
- ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH CITY AND WATERSHED DISTRICT PERMITS.
- THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES, INCLUDING THE REMOVAL OF ACCUMULATED SILT IN FRONT OF SILT FENCES OR FILTER LOGS DURING THE DURATION OF THE CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE ADDITIONAL TEMPORARY EROSION CONTROL MEASURES AS REQUIRED FOR CONSTRUCTION. SHALL BE CONSIDERED INCIDENTAL AS SPECIFIED IN THE CONTRACT DOCUMENTS.
- ANY EXCESS SEDIMENT IN PROPOSED BASINS SHALL BE REMOVED BY THE CONTRACTOR.
- REMOVE ALL EROSION CONTROL MEASURES AFTER THE WORK HAS BEEN ACCEPTED BY THE ENGINEER.
- THE CONTRACTOR SHALL REMOVE ALL SOILS AND SEDIMENT TRACKED ONTO EXISTING STREETS AND PAVED AREAS WITHIN 24 HOURS OF INCIDENT. INCIDENTAL TO THE CONTRACT.
- IF BLOWING DUST BECOMES A NUISANCE, THE CONTRACTOR SHALL APPLY WATER FROM A TANK TRUCK TO ALL CONSTRUCTION AREAS. INCIDENTAL TO THE CONTRACT.
- SWEEP ADJACENT STREETS IN ACCORDANCE WITH CITY REQUIREMENTS. INCIDENTAL TO THE CONTRACT.
- INSPECT EROSION CONTROL DEVICES AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. IMMEDIATELY REPAIR FAILED OR FAILING EROSION CONTROL DEVICES.
- SEDIMENT REMOVAL - SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT, AND WHENEVER 1/2 OF THE BMP CAPACITY OR DEPTH IS REACHED.
- ANY SEDIMENT REMAINING IN PLACE AFTER THE EROSION CONTROL DEVICE IS NO LONGER REQUIRED SHALL BE GRADED TO CONFORM WITH THE EXISTING GRADE, PREPARED, AND SEEDED WITH THE APPROPRIATE SEED MIX AS DIRECTED BY THE OWNER.
- SUITABLE GRADING MATERIAL SHALL CONSIST OF ALL SOIL ENCOUNTERED ON THE SITE WITH EXCEPTION OF TOPSOIL, DEBRIS, ORGANIC MATERIAL AND OTHER UNSTABLE MATERIAL. STOCKPILE TOPSOIL AND GRANULAR FILL AT LOCATIONS DIRECTED BY CONTRACTOR.

**GRADING & EROSION CONTROL NOTES (CONT)**

- EXISTING GRANULAR MATERIALS AND/OR TOPSOIL BORROW SHALL BE SEGREGATED AND STOCKPILED FOR REUSE ON-SITE.
- CONTRACTOR SHALL STRIP, STOCKPILE AND RE-SPREAD EXISTING ON-SITE TOPSOIL TO PROVIDE A UNIFORM 8" THICKNESS ON ALL DISTURBED AREAS TO BE SODDED OR SEEDED, EXCEPT IRON ENHANCED SAND AREAS.
- SUBGRADE EXCAVATION SHALL BE BACKFILLED IMMEDIATELY AFTER EXCAVATION TO HELP OFFSET ANY STABILITY PROBLEMS DUE TO WATER SEEPAGE OR STEEP SLOPES. WHEN PLACING NEW SURFACE MATERIAL ADJACENT TO EXISTING PAVEMENT, THE EXCAVATION SHALL BE BACKFILLED PROMPTLY TO AVOID UNDERMINING OF THE EXISTING PAVEMENT.
- GRADES SHOWN ARE FINISHED GRADES, CONTRACTOR SHALL ROUGH GRADE TO SUBGRADE ELEVATION, LEAVE TOPSOIL.
- COMPLETION OF SITE GRADING OPERATIONS SHALL RESULT IN ALL AREAS BEING GRADED TO 'PLAN GRADE ELEVATION'.
- FINAL GRADING TOLERANCES ARE ±0.1 FEET OF PLAN GRADES.
- ALL EXCESS MATERIAL, BITUMINOUS SURFACING, CONCRETE ITEMS, ANY ABANDONED UTILITY ITEMS, AND OTHER UNSTABLE MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OFF THE CONSTRUCTION SITE.
- CONTRACTOR IS RESPONSIBLE FOR GRADING AND SLOPING THE FINISHED GROUND SURFACE TO PROVIDE SMOOTH & UNIFORM SLOPES, WHICH PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS AND PREVENT PONDING IN LOWER AREAS. CONTACT ENGINEER IF FIELD ADJUSTMENTS TO GRADING PLANS ARE REQUIRED.
- SLOPES AT 3:1 OR STEEPER, AND/OR WHERE INDICATED ON THE PLANS SHALL BE SEEDED AND HAVE AN EROSION CONTROL BLANKET INSTALLED WHERE SPECIFIED.
- ALL SPOIL MATERIAL SHALL BE REMOVED FROM SITE AND BECOME RESPONSIBILITY OF CONTRACTOR. MATERIAL SHALL NOT BE REUSED FOR RESIDENTIAL USE. CONTRACTOR SHALL NOTIFY ENGINEER OF FINAL LOCATION OF HAULED SPOIL MATERIAL.
- CONTRACTOR SHALL DEWATER THE POND PRIOR TO BEGINNING WORK OR PREPARE ENGINEER-APPROVED ALTERNATE WORK PLAN BEFORE BEGINNING WORK. IF DEWATERING, CONTRACTOR SHALL PREPARE DEWATERING PLAN AND OBTAIN ALL PERMITS REQUIRED FOR DEWATERING.

LILY LAKE INFILTRATION BASIN  
SCHEDULE OF ESTIMATE QUANTITIES

Item No.	Item	MNDOT Reference #	Unit	Estimated
1	Mobilization	2021.501	LS	1
2	Clearing and Grubbing	2101.501	LS	1
3	Remove and replace Curb and Gutter	2104.503	LF	60
4	Remove and replace Roadway	2104.504	SY	105
5	Remove Gravel Driveway	2104.507	SF	250
6	Remove and replace 6" Concrete Sidewalk	2104.518	SY	20
7	Borrow - Bioretention Media (80/20 Mix)	2105.507	CY	440
8	Common Excavation	2106.507	CY	4000
9	Offsite Haul	2106.507	CY	4000
10	Storm Sewer, Class III RCP, 12"	2501.502	LF	70
11	Storm Sewer, Class III RCP, 15"	2501.502	LF	11
12	Storm Sewer, Class III RCP, 18"	2501.502	LF	63
13	RCP Apron, 18"	2501.502	EA	1
14	Forterra DSBB	SP	EA	1
15	Catch Basin	2506.502	EA	3
16	48" Outlet Control Structure	2506.502	EA	1
17	48" Storm Manhole	2506.502	EA	1
18	Core Drill into Existing Catch Basin	SP	EA	1
19	60" Storm Manhole w/ Weir Wall	2506.502	EA	1
20	Temporary Erosion Control	2573	LS	1
21	Traffic Control	2564	LS	1
22	Coniferous tree (6' B&B)	2571.524	EA	4
23	Deciduous tree (2" B&B)	2571.524	EA	9
24	Deciduous shrub (#5 Container)	2571.525	EA	77
25	Temporary Fence (Tree Protection)	2572.503	LF	375
26	Stabilized Construction Exit	2573.501	LS	1
27	Storm Drain Inlet Protection	2573.501	EA	4
28	Turf Establishment	2575.501	LS	1
29	Erosion Control Blanket, Category 3	2575.504	SY	1800
30	Turf Reinforcement Mat, Category III	2575.504	SY	8
31	Seeding	2575.505	ACRE	1.1
32	Hydraulic Bonded Fiber Matrix	2575.508	LB	3500
33	4" Pavement Markings	2582.503	LF	200
34	Seed, Mixture 25-131 (Low Maintenance Turf)	2575.508	LB	68
35	Seed, Mixture 33-261 (Stormwater South and West)	2575.508	LB	14
36	Seed, Mixture 35-241 (Mesic Prairie General)	2575.508	LB	14
37	Bench (in-ground mount)	SP	EA	1

**STORM SEWER NOTES**

- STORM SEWER CONSTRUCTION IS IN ACCORDANCE WITH MNDOT 2501-2511 SPECIFICATIONS.
- STORM SEWER SHALL BE AS SPECIFIED.
- MANHOLES SHALL BE PRECAST REINFORCED CONCRETE IN ACCORDANCE WITH ASTM C478. CASTING SHALL BE AS SPECIFIED. MANHOLES SHALL HAVE A MINIMUM OF 2 AND A MAXIMUM OF 4 ADJUSTMENT RINGS.
- CONNECTIONS TO EXISTING MANHOLES SHALL BE MADE BY CORE DRILLING OR SAW CUTTING THE EXISTING MANHOLE AT THE PROPOSED INVERT ELEVATION. USE NON-SHRINKABLE GROUT AND GROUT IN THE NEW PIPE AND REFORM THE INVERT.
- PIPE LENGTHS ON THE PLAN ARE APPROXIMATE, AND FROM CENTER TO CENTER OF STRUCTURES.

**GENERAL LANDSCAPE NOTES**

- CONTRACTOR SHALL INSPECT THE SITE AND BECOME FAMILIAR WITH EXISTING CONDITIONS RELATING TO THE NATURE AND SCOPE OF WORK.
- CONTRACTOR SHALL VERIFY PLAN LAYOUT AND BRING TO THE ATTENTION OF THE LANDSCAPE ARCHITECT OR ENGINEER DISCREPANCIES WHICH MAY COMPROMISE THE DESIGN OR INTENT OF THE LAYOUT.
- CONTRACTOR SHALL ASSURE COMPLIANCE WITH APPLICABLE CODES AND REGULATIONS GOVERNING THE WORK AND MATERIALS SUPPLIED.
- CONTRACTOR SHALL PROTECT EXISTING ROADS, CURBS/GUTTERS, TRAILS, TREES, IRRIGATION SYSTEM, LAWNS AND SITE ELEMENTS DURING CONSTRUCTION OPERATIONS. DAMAGE TO SAME SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR SHALL REVIEW THE SITE FOR DEFICIENCIES IN SITE CONDITIONS WHICH MIGHT NEGATIVELY AFFECT PLANT ESTABLISHMENT, SURVIVAL OR WARRANTY. UNDESIRABLE SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT OR ENGINEER PRIOR TO BEGINNING OF WORK.
- CONTRACTOR IS RESPONSIBLE FOR ONGOING MAINTENANCE OF NEWLY INSTALLED MATERIALS UNTIL TIME OF SUBSTANTIAL COMPLETION. REPAIR OF ACTS OF VANDALISM OR DAMAGE WHICH MAY OCCUR PRIOR TO SUBSTANTIAL COMPLETION SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.
- EXISTING TREES OR SIGNIFICANT SHRUB MASSINGS FOUND ON SITE SHALL BE PROTECTED AND SAVED UNLESS NOTED TO BE REMOVED OR ARE LOCATED IN AN AREA TO BE GRADED. QUESTIONS REGARDING EXISTING PLANT MATERIAL SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT OR ENGINEER PRIOR TO REMOVAL.
- ALL DISTURBED AREAS SPECIFIED TO RECEIVE VEGETATION RESTORATION WILL ONLY BE APPROVED FOR FINAL ACCEPTANCE WHEN 80% VEGETATION DENSITY / COVERAGE OF SPECIFIED SPECIES HAS BEEN SATISFIED.
- CARE SHALL BE GIVEN TO PROTECT ALL TREES, SHRUBS, AND VEGETATION NOT SPECIFIED FOR REMOVAL.

WASHINGTON PARK INFILTRATION GALLERY  
SCHEDULE OF ESTIMATE QUANTITIES

Item No.	Item	MNDOT Reference #	Unit	Estimated
1	Mobilization	2021.501	LS	1
2	Clearing and Grubbing	2101.501	LS	1
3	Remove 18" RCP Storm Sewer	2104.502	LF	50
4	Remove Storm Manhole	2104.502	EA	1
5	Remove and Replace Curb and Gutter	2104.503	LF	130
6	Remove and Replace Roadway	2104.504	SY	236
7	Remove Catch Basin	2104.502	EA	2
8	Remove and Replace 6" Concrete Sidewalk	2104.518	SY	75
9	Common Excavation	2105.507	CY	5000
10	Offsite Haul	2105.507	CY	1200
11	Drainage System Type : 120" CMP Underground	2502.501	LS	1
12	60" STMH w/ weir wall	2506.502	EA	1
13	Connect to Existing Pipe	2506	EA	3
14	Catch Basin Manhole	2506.502	EA	1
15	Traffic Control	2564	LS	1
16	Reset 18" FES	2501.502	EA	1
17	Forterra DSBB	SP	EA	1
18	Remove and Replace Park Bench	SP	EA	1
19	Remove and Replace Chain Link Fence	2557.503	LS	1
20	Deciduous tree (2" B&B)	2571.524	EA	2
21	Temporary Fence (Tree Protection)	2572.503	LF	175
22	Temporary Erosion Control	2573.501	LS	1
23	Stabilized Construction Exit	2573.501	LS	1
24	Storm Drain Inlet Protection	2573.501	EA	5
25	Turf Establishment	2575.501	LS	1
26	Seeding	2575.505	ACRE	0.40
27	Hydraulic Bonded Fiber Matrix	2575.508	LB	1200
28	Seed, Mixture 25-131 (Low Maintenance Turf)	2575.508	LB	64
29	Restore Garden	SP	LS	1
30	Restore Baseball Diamond	SP	LS	1

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1	06/30/2018	KDC	60% PLAN SET - NOT FOR CONSTRUCTION



SUBMISSION DATE:  
06/30/2018  
DESIGN BY: KDC  
DRAWN BY: DEM  
EOR PROJECT NO.  
0405-0009

**EOR** Emmons & Olivier Resources, Inc.  
7030 6th Street North  
Oakdale, MN 55128  
Tel: 651.770.8448  
www.eorinc.com



LILY LAKE FINAL 45 BMP'S  
STILLWATER, WASHINGTON COUNTY,  
MINNESOTA  
STATE PROJECT NO. --- CITY PROJECT NO.

NOTES & SEQ

SHEET 02 OF 12 SHEETS



Plot Date: 06/26/2018  
 Drawing name: X:\Clients\_X\BASE\_LILY\_WASH  
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NO	DATE	BY	REVISION	

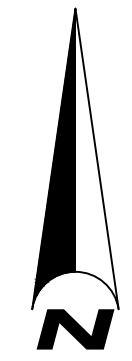
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SUBMISSION DATE:  
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 0405-0009

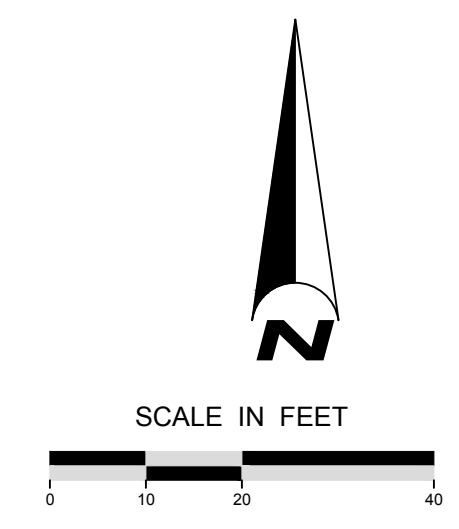
**EO** Emmons & Olivier  
 Resources, Inc.  
 7030 6th Street North  
 Oakdale, MN 55128  
 water ecology community  
 Tele: 651.770.8448  
 www.eorinc.com



LILY LAKE FINAL 45 BMP'S  
 STILLWATER, WASHINGTON COUNTY,  
 MINNESOTA  
 STATE PROJECT NO. --- CITY PROJECT NO. ---

SCALE IN FEET  
 0 100 200 400  
  
 SITE OVERVIEW  
 SHEET 03 OF 12 SHEETS

NOTES:  
 1. CONTRACTOR SHALL REFER TO SOIL BORING LOGS BY AMERICAN ENGINEERING TESTING FOR EXISTING SOIL CONDITIONS.



Plot Date: 06/26/2018  
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NO	DATE	BY	REVISION

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SUBMISSION DATE:  
 06/30/2018  
 DESIGN BY: KDC  
 DRAWN BY: DEM  
 EOR PROJECT NO.:  
 0405-0009

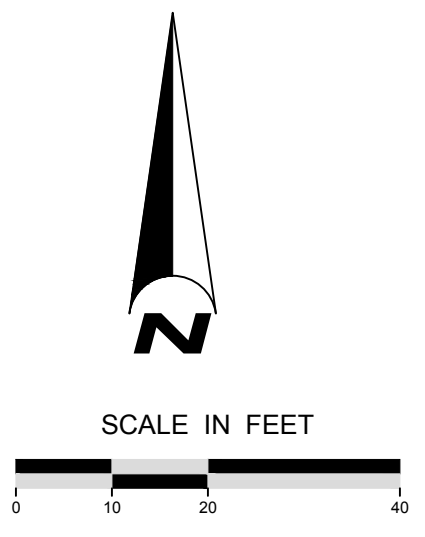
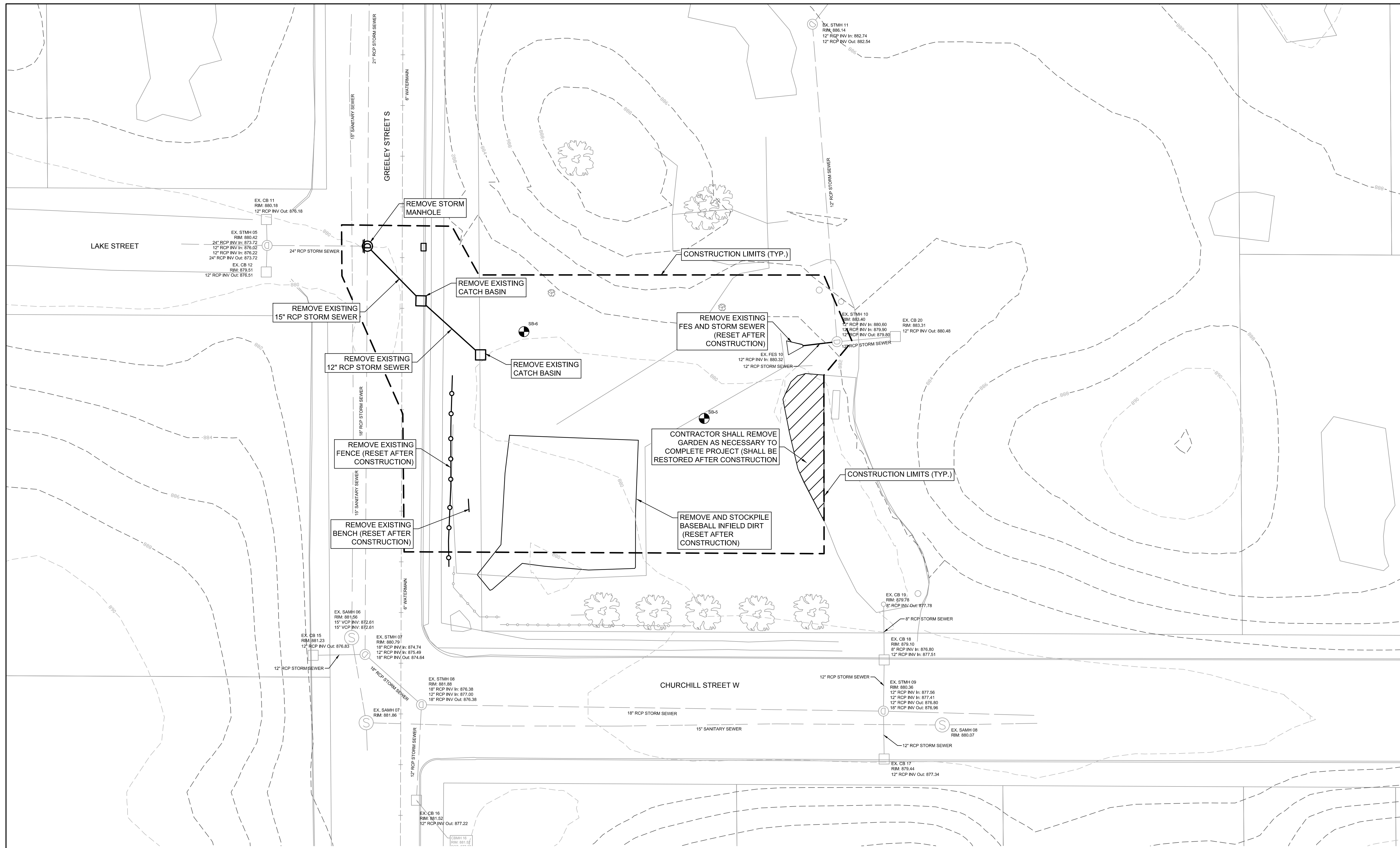
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LILY LAKE FINAL 45 BMP'S  
 STILLWATER, WASHINGTON COUNTY,  
 MINNESOTA  
 STATE PROJECT NO. --- CITY PROJECT NO. ---

EXISTING CONDITIONS AND REMOVALS 1  
 SHEET 04 OF 12 SHEETS

NOTES:  
 1. CONTRACTOR SHALL REFER TO SOIL BORING LOGS BY AMERICAN ENGINEERING TESTING FOR EXISTING SOIL CONDITIONS.



Plot Date: 06/30/2018  
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1	06/30/2018	KDC	60% PLAN SET - NOT FOR CONSTRUCTION	
NO	DATE	BY	REVISION	

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NOT FOR CONSTRUCTION

SUBMISSION DATE:  
06/30/2018

DESIGN BY: KDC    DRAWN BY: DEM

EOR PROJECT NO.  
0405-0009

**EOR** Emmons & Olivier Resources, Inc.  
 7030 6th Street North  
 Oakdale, MN 55128  
 Tele: 651.770.8448  
 www.eorinc.com



LILY LAKE FINAL 45 BMP'S  
 STILLWATER, WASHINGTON COUNTY,  
 MINNESOTA

STATE PROJECT NO. ---    CITY PROJECT NO. ---

EXISTING CONDITIONS AND REMOVALS 2

SHEET 05 OF 12 SHEETS

NOTES:  
 1. CONTRACTOR SHALL PROTECT ALL TREES NOT SPECIFIED FOR REMOVAL OR WITHIN TREE REMOVAL LIMITS.



Plot Date: 06/23/2018  
 Drawing Name: X:\Clients\VM\04045\_MSCW\04045\_Lily\_Lake\_Ph1\_2\09\_GIMS\_ProjectName\dwg\405\_06\_CD\_PLAN.dwg  
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NO	DATE	BY	REVISION

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SUBMISSION DATE:  
06/30/2018

DESIGN BY: KDC    DRAWN BY: DEM

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0405-0009

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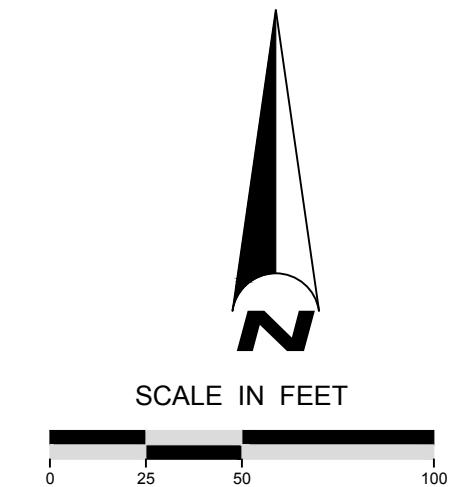


LILY LAKE FINAL 45 BMP'S  
 STILLWATER, WASHINGTON COUNTY,  
 MINNESOTA

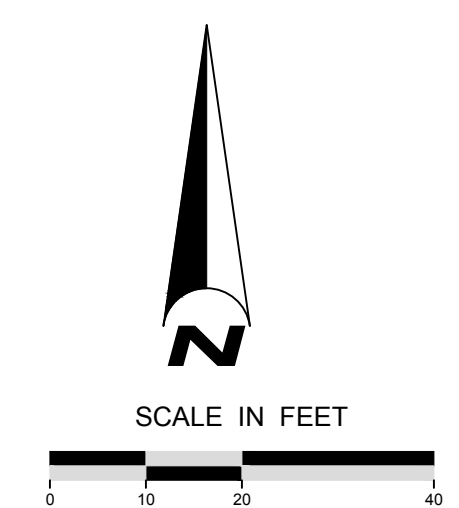
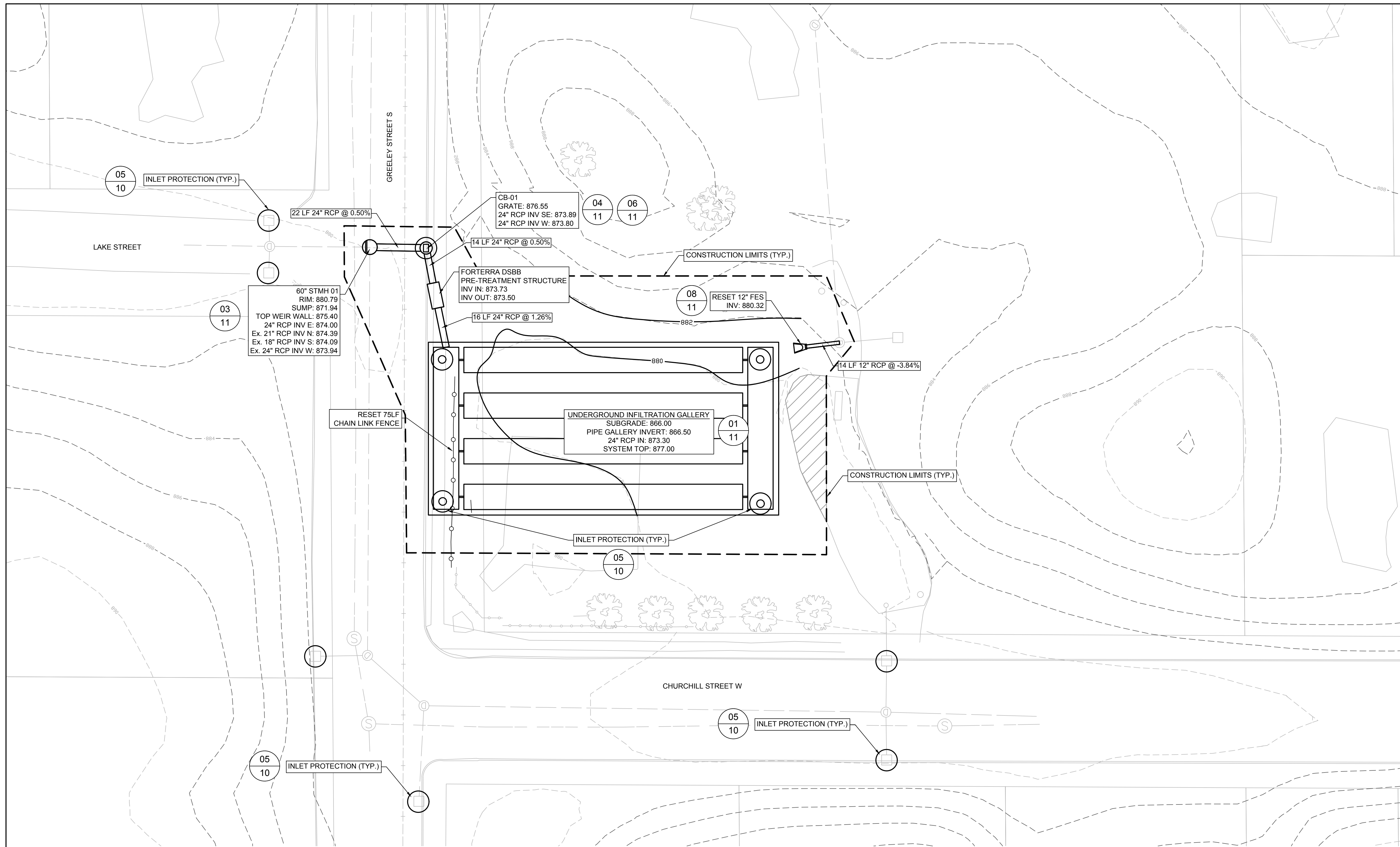
STATE PROJECT NO. ---    CITY PROJECT NO. ---

GRADING & DRAINAGE PLAN 1

SHEET 06 OF 12 SHEETS



NOTES:  
 1. CONTRACTOR SHALL PROTECT ALL TREES NOT SPECIFIED FOR REMOVAL OR WITHIN TREE REMOVAL LIMITS.



Plot Date: 06/30/2018  
 Drawing Name: X:\Clients\_VMO\0405\_MSCWMO\0405\_Lily\_Lake\_Ph1\_2\09\_GIMS\_ProjectName\dwg\405\_06\_CD\_PLAN.dwg  
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1	06/30/2018	KDC	60% PLAN SET - NOT FOR CONSTRUCTION
NO	DATE	BY	REVISION

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SUBMISSION DATE:  
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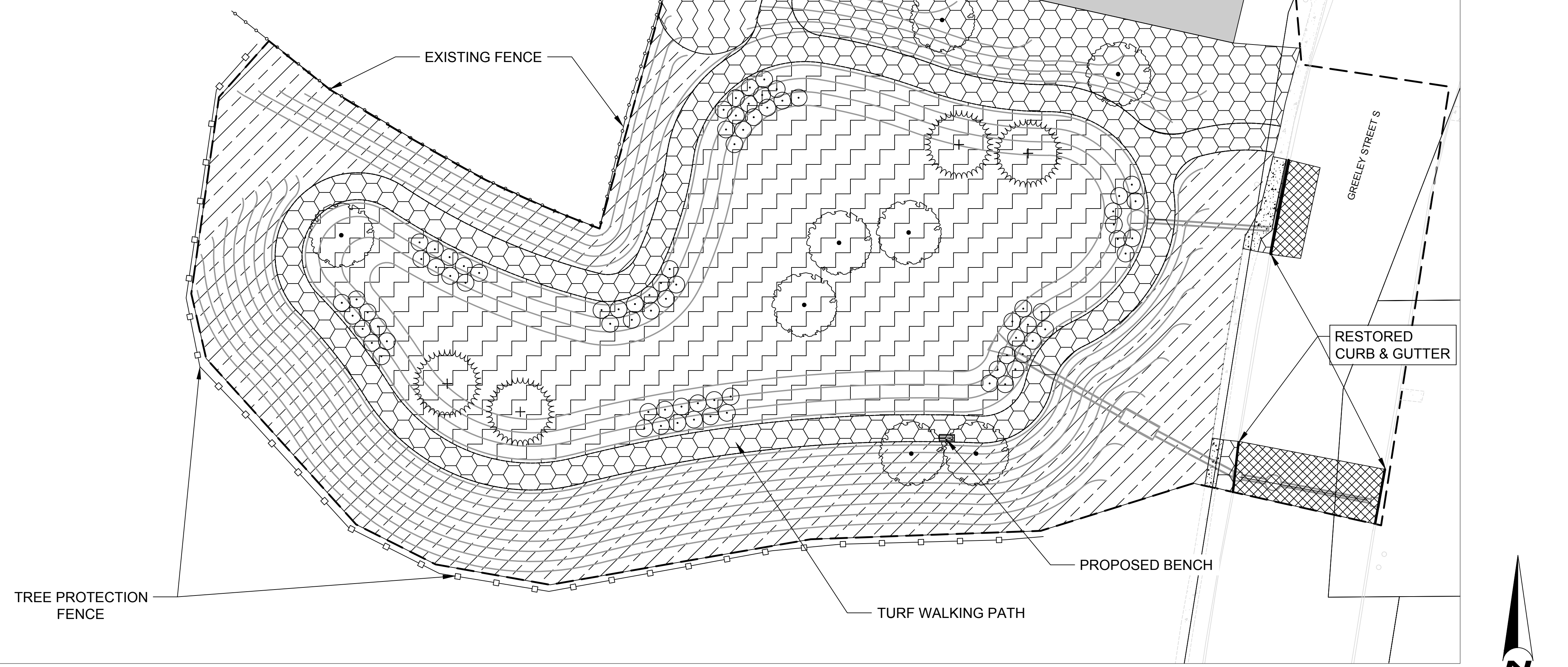
LILY LAKE FINAL 45 BMP'S  
 STILLWATER, WASHINGTON COUNTY,  
 MINNESOTA

STATE PROJECT NO. ---    CITY PROJECT NO. ---

GRADING & DRAINAGE PLAN 2

SHEET 07 OF 12 SHEETS

LEGEND:			
	TAMARACK TREE		SEED: STORMWATER SOUTH & WEST
	DECIDUOUS TREE		SEED: MESIC PRAIRIE GENERAL
	DECIDUOUS SHRUB		SEED: LOW MAINTENANCE TURF
	PERENNIAL PLUGS		RESTORED CONCRETE SIDEWALK
			RESTORED ASPHALT



Tree Planting Schedule					
Quantity	Scientific Name	Common Name	Size	Cont.	Type
4	<i>Larix laricina</i>	American Tamarack	2"	B&B	Multi Stem
3	<i>Celtis occidentalis</i>	Hackberry	2"	B&B	Single Stem
3	<i>Betula nigra</i>	Rivr Birch	2"	B&B	Single Stem
3	<i>Quercus bicolor</i>	White Oak	2"	B&B	Single Stem
13	<b>Tree Total</b>				

Shrub Planting Schedule					
Quantity	Scientific Name	Common Name	Size	Type	Spacing
22	<i>Aronia melanocarpa elata</i>	Black Chokeberry	18" Height	#2 Cont.	5' O.C.
17	<i>Diervilla lonicera</i>	Dwarf Bush Honeysuckle	18" Height	#2 Cont.	5' O.C.
11	<i>Cephalanthus occidentalis</i>	Buttonbush	18" Height	#2 Cont.	5' O.C.
27	<i>Cornus racemosa 'Bailey'</i>	Red Twiged Dogwood	18" Height	#2 Cont.	5' O.C.
77	<b>Shrub Total</b>				

Perennial Planting Schedule					
Quantity	Scientific Name	Common Name	Size	Type	Spacing
200	20% - <i>Asclepias incarnata</i>	Swamp Milkweed	3"	Pot	18" O.C.
200	20% - <i>Chelone glabra</i>	Turtlehead	3"	Pot	18" O.C.
200	20% - <i>Helenium autumnale</i>	Sneezeweed	3"	Pot	18" O.C.
200	20% - <i>Iris versicolor</i>	Blueflag	3"	Pot	18" O.C.
200	20% - <i>Panicum virgatum</i>	Switchgrass	3"	Pot	18" O.C.
1000	<b>Perennial Total</b>				

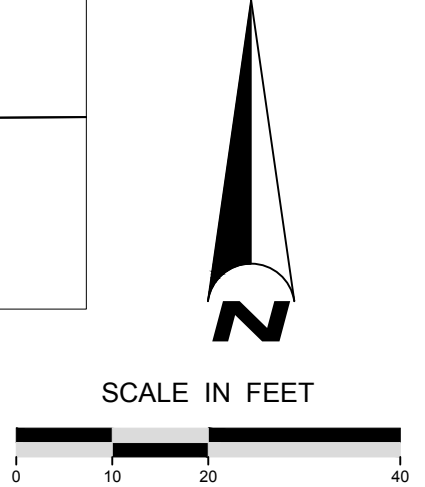
Mesic Prairie General					
Common Name	Scientific Name	Rate	% of Mix (by)	Seeds/ sq	
big bluestem	<i>Andropogon gerardii</i>	2.00	5.48%	7.35	
indian grass	<i>Sorghastrum nutans</i>	2.00	5.48%	8.82	
side-oats grama	<i>Bouteloua curtipendula</i>	1.50	4.39%	3.53	
little bluestem	<i>Schizachyrium scoparium</i>	1.60	4.39%	8.82	
nodding wild rye	<i>Elymus canadensis</i>	1.17	3.20%	2.23	
slender wheatgrass	<i>Elymus trachycaulus</i>	1.00	2.73%	2.53	
kalm's brome	<i>Bromus kalmii</i>	0.50	1.37%	1.47	
prairie dropseed	<i>Sporobolus heterotetis</i>	0.07	0.18%	0.39	
switchgrass	<i>Panicum virgatum</i>	0.06	0.17%	0.32	
Grasses Subtotal		10.00	27.39%	35.46	
black-eyed susan	<i>Rudbeckia hirta</i>	0.31	0.86%	10.56	
purple prairie clover	<i>Dalea purpurea</i>	0.19	0.51%	1.03	
Early Sunflower	<i>Helianthus scaberrimus</i>	0.13	0.34%	0.29	
blue giant hyssop	<i>Agastache foeniculum</i>	0.06	0.15%	1.82	
lead plant	<i>Amorpha canescens</i>	0.06	0.15%	0.25	
Canada milk vetch	<i>Astragalus canadensis</i>	0.06	0.17%	0.39	
white prairie clover	<i>Dalea candida</i>	0.06	0.17%	0.44	
Canada tick trefoil	<i>Desmodium canadense</i>	0.06	0.18%	0.13	
stiff sunflower	<i>Helianthus pauciflorus</i>	0.06	0.17%	0.09	
wiki bergamot	<i>Monarda fistulosa</i>	0.06	0.17%	1.61	
stiff goldenrod	<i>Oligoneuron rigidum</i>	0.06	0.17%	0.94	
smooth aster	<i>Symphoricarpos laevis</i>	0.06	0.17%	1.26	
heavy vervain	<i>Verbena stricta</i>	0.06	0.17%	0.64	
golden alexanders	<i>Zizia aurea</i>	0.06	0.15%	0.23	
common milkweed	<i>Asclepias syriaca</i>	0.04	0.10%	0.06	
butterfly milkweed	<i>Asclepias tuberosa</i>	0.04	0.10%	0.06	
blue vervain	<i>Verbena hastata</i>	0.04	0.12%	1.50	
rough blazing star	<i>Liatris aspera</i>	0.03	0.08%	0.18	
great blazing star	<i>Liatris pycnostachya</i>	0.03	0.09%	0.13	
heath aster	<i>Symphoricarpos ericoides</i>	0.03	0.09%	2.30	
Forbs Subtotal		1.50	4.11%	23.89	
Oats	<i>Avena sativa</i>	25.00	68.50%	11.14	
Cover Crop Subtotal		25.00	68.50%	11.14	
Total		36.50	100.00%	70.49	

Stormwater South & West					
Common Name	Scientific Name	Rate (lb/ac)	% of Mix (by weight)	Seeds/ sq ft	
big bluestem	<i>Andropogon gerardii</i>	2.00	5.72%	7.35	
fringed brome	<i>Bromus ciliatus</i>	2.00	5.73%	8.10	
Virginia wild rye	<i>Elymus virginicus</i>	1.50	4.28%	2.31	
fowl bluegrass	<i>Poa polystris</i>	1.06	3.03%	50.70	
slender wheatgrass	<i>Elymus trachycaulus</i>	1.00	2.85%	2.53	
switchgrass	<i>Panicum virgatum</i>	0.38	1.07%	1.93	
prairie cordgrass	<i>Spartina pectinata</i>	0.38	1.07%	0.91	
indian grass	<i>Sorghastrum nutans</i>	0.12	0.26%	0.55	
bluejoint	<i>Calamagrostis canadensis</i>	0.06	0.18%	6.40	
Grasses Subtotal		8.50	24.29%	80.78	
awl-fruited sedge	<i>Carex stipata</i>	0.25	0.71%	3.10	
dark green bulrush	<i>Scirpus atrovirens</i>	0.19	0.54%	31.70	
woolgrass	<i>Scirpus cyperinus</i>	0.06	0.18%	39.00	
Sedges & Rushes		0.50	1.43%	73.80	
golden alexanders	<i>Zizia aurea</i>	0.20	0.56%	0.79	
autumn sneezeweed	<i>Helenium autumnale</i>	0.13	0.36%	5.97	
marsh milkweed	<i>Asclepias incarnata</i>	0.11	0.32%	0.20	
lealy beggaricks	<i>Bidens frondosa</i>	0.11	0.31%	0.20	
Canada anemone	<i>Anemone canadensis</i>	0.07	0.19%	0.20	
opulent plant	<i>Physostegia virginiana</i>	0.07	0.21%	0.30	
tall coneflower	<i>Rudbeckia laciniata</i>	0.07	0.21%	0.37	
New England aster	<i>Symphoricarpos nova-angliae</i>	0.07	0.19%	1.56	
flat-topped aster	<i>Doellingeria umbellata</i>	0.06	0.17%	1.50	
spotted Joe pye weed	<i>Eutrochium maculatum</i>	0.06	0.18%	2.19	
blue vervain	<i>Verbena hastata</i>	0.05	0.15%	1.85	
Forbs Subtotal		1.00	2.85%	15.13	
Oats	<i>Avena sativa</i>	25.00	71.43%	11.14	
Cover Crop Subtotal		25.00	71.43%	11.14	
Total		35.00	100.00%	180.85	

Low Maintenance Turf					
Common Name	Scientific Name	Rate (lb/ac)	% of Mix (by weight)	Seeds/ sq ft	
red fescue	<i>Festuca rubra</i>	64.00	29.09%	667.00	
Cheewig's Fescue	<i>Festuca rubra ssp. commutata</i>	44.00	20.00%	458.60	
Low Maintenance Kentucky	<i>Poa pratensis Low Maintenance</i>	36.00	16.36%	1148.70	
Hard fescue	<i>Festuca trachyphylla</i>	30.00	13.64%	389.10	
Sheep Fescue	<i>Festuca ovina</i>	25.00	11.37%	304.22	
Perennial Ryegrass	<i>Lolium perenne</i>	21.00	9.54%	104.60	
Total		220.00	100.00%	3072.22	

- GENERAL NOTES**
- LANDSCAPE CONTRACTOR SHALL INSPECT THE SITE AND BECOME FAMILIAR WITH EXISTING CONDITIONS RELATING TO THE NATURE AND SCOPE OF WORK.
  - LANDSCAPE CONTRACTOR SHALL VERIFY PLAN LAYOUT AND BRING TO THE ATTENTION OF THE LANDSCAPE ARCHITECT DISCREPANCIES WHICH MAY COMPROMISE THE DESIGN OR INTENT OF THE LAYOUT.
  - LANDSCAPE CONTRACTOR SHALL ASSURE COMPLIANCE WITH APPLICABLE CODES AND REGULATIONS GOVERNING THE WORK AND MATERIALS SUPPLIED.
  - LANDSCAPE CONTRACTOR SHALL PROTECT EXISTING ROADS, CURBS/GUTTERS, TRAILS, TREES, LAWNS AND SITE ELEMENTS DURING CONSTRUCTION OPERATIONS. DAMAGE TO SAME SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER.
  - LANDSCAPE CONTRACTOR SHALL VERIFY ALIGNMENT AND LOCATION OF UNDERGROUND AND ABOVE GRADE UTILITIES AND PROVIDE THE NECESSARY PROTECTION FOR SAME BEFORE CONSTRUCTION BEGINS (MINIMUM 10' CLEARANCE).
  - LANDSCAPE CONTRACTOR SHALL COORDINATE THE PHASES OF CONSTRUCTION AND PLANTING INSTALLATION WITH OTHER CONTRACTORS WORKING ON SITE.
  - EXISTING CONTOURS, TRAILS, VEGETATION, CURB/GUTTER AND OTHER ELEMENTS ARE BASED UPON INFORMATION SUPPLIED TO THE LANDSCAPE ARCHITECT BY OTHERS. LANDSCAPE CONTRACTOR SHALL VERIFY DISCREPANCIES PRIOR TO CONSTRUCTION AND NOTIFY LANDSCAPE ARCHITECT OF SAME.
  - LANDSCAPE CONTRACTOR SHALL REVIEW THE SITE FOR DEFICIENCIES IN SITE CONDITIONS WHICH MIGHT NEGATIVELY AFFECT PLANT ESTABLISHMENT, SURVIVAL OR WARRANTY. UNDESIRABLE SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT PRIOR TO BEGINNING OF WORK.
  - LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR ONGOING MAINTENANCE OF NEWLY INSTALLED MATERIALS UNTIL TIME OF SUBSTANTIAL COMPLETION. REPAIR OF ACTS OF VANDALISM OR DAMAGE WHICH MAY OCCUR PRIOR TO SUBSTANTIAL COMPLETION SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.
  - EXISTING TREES TO REMAIN, UPON DIRECTION OF LANDSCAPE ARCHITECT, SHALL BE FERTILIZED AND PRUNED TO REMOVE DEAD WOOD, DAMAGED AND RUBBING BRANCHES.
  - LANDSCAPE CONTRACTOR SHALL PREPARE AND SUBMIT A WRITTEN REQUEST FOR THE SUBSTANTIAL COMPLETION INSPECTION OF LANDSCAPE AND SITE IMPROVEMENTS PRIOR TO SUBMITTING FINAL PAY REQUEST.

- PLANTING NOTES**
- NO PLANTS WILL BE INSTALLED UNTIL FINAL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
  - PROPOSED PLANT MATERIAL SHALL COMPLY WITH THE CURRENT EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1. UNLESS NOTED OTHERWISE, DECIDUOUS SHRUBS SHALL HAVE AT LEAST 5 CANES AT THE SPECIFIED HEIGHT. ORNAMENTAL TREES SHALL HAVE NO "Y" CROTCHES AND SHALL BEGIN BRANCHING NO LOWER THAN 3 FEET ABOVE THE ROOT BALL. STREET AND BOULEVARD TREES SHALL BEGIN BRANCHING NO LOWER THAN 6' ABOVE PAVED SURFACE.
  - PLANT SYMBOLS ON PLAN DRAWING TAKES PRECEDENCE OVER PLANT SCHEDULE IF DISCREPANCIES IN QUANTITIES EXIST. SPECIFICATIONS AND DETAILS TAKE PRECEDENCE OVER NOTES.
  - PROPOSED PLANT MATERIAL SHALL BE LOCATED AND STAKED AS SHOWN ON PLAN. LANDSCAPE ARCHITECT MUST APPROVE STAKING OF PLANT MATERIAL PRIOR TO DIGGING.
  - NO PLANT MATERIAL SUBSTITUTIONS WILL BE ACCEPTED UNLESS APPROVAL IS GRANTED BY THE LANDSCAPE ARCHITECT TO THE LANDSCAPE CONTRACTOR IN WRITING.
  - ADJUSTMENTS IN LOCATION OF PROPOSED PLANT MATERIALS MAY BE NEEDED IN FIELD. LANDSCAPE ARCHITECT MUST BE NOTIFIED PRIOR TO ADJUSTMENT OF PLANTS.
  - PLANT MATERIALS TO BE INSTALLED PER PLANTING DETAILS.
  - LANDSCAPE CONTRACTOR SHALL WARRANTY NEW PLANT MATERIAL THROUGH ONE CALENDAR YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION. NO PARTIAL ACCEPTANCE WILL BE CONSIDERED.
- SEEDING NOTES**
- SOW SEED MIXES AT TWICE THE STATE RECOMMENDED RATE.
  - REFER TO MN-DOT SEEDING MANUAL FOR ACCEPTABLE SEEDING DATES, SEED BED PREPARATION TECHNIQUES, AND SEEDING METHODS.
  - STABILIZE SEEDBED AREA WITH MN-DOT TYPE 6 HYDRAULIC SOIL STABILIZER.
  - DO NOT APPLY FERTILIZER.



Plot Date: 06/26/2018  
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1	06/30/2018	KDC	60% PLAN SET - NOT FOR CONSTRUCTION
NO	DATE	BY	REVISION

DRAFT

NO CONSTRUCTION

SUBMISSION DATE:  
06/30/2018

DESIGN BY: KDC DRAWN BY: DEM

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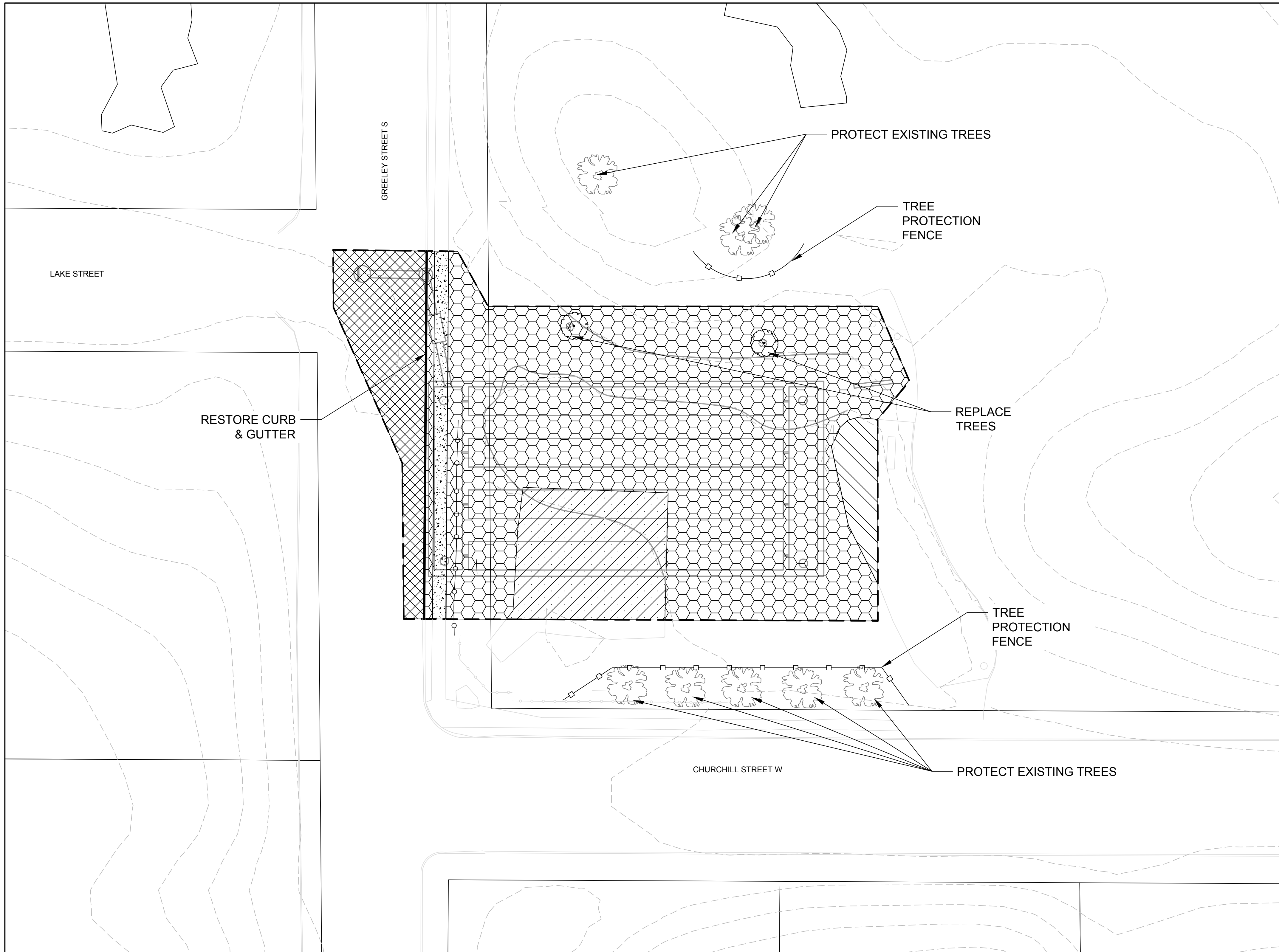
**EOR** Emmons & Olivier Resources, Inc.  
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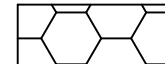
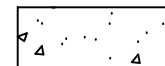
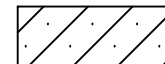


LILY LAKE FINAL 45 BMP'S  
STILLWATER, WASHINGTON COUNTY,  
MINNESOTA  
STATE PROJECT NO. --- CITY PROJECT NO. ---

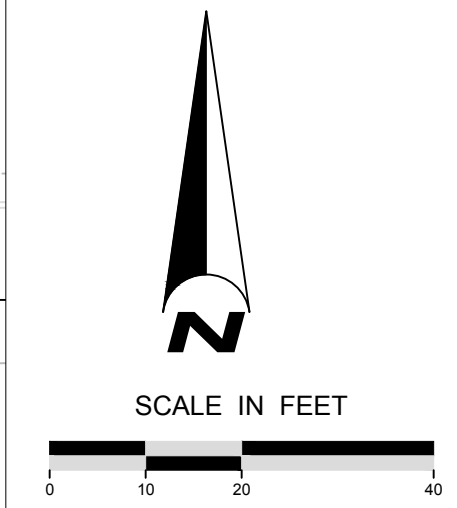
LANDSCAPE RESTORATION PLAN 1  
SHEET 08 OF 12 SHEETS





**LEGEND:**

-  SEED: LOW MAINTENANCE TURF
-  RESTORED CONCRETE SIDEWALK
-  RESTORED BASEBALL DIAMOND
-  RESTORED ASPHALT
-  RESTORED GARDEN



Plot Date: 06/26/2018  
 Drawing name: X:\Clients\_VMO\0405\_MSCW\0409\_Lily\_Lake\_Ph1\_2\09\_GIMS\_ProjectName.dwg\09 LANDSCAPE RESTORATION PLAN 2.dwg  
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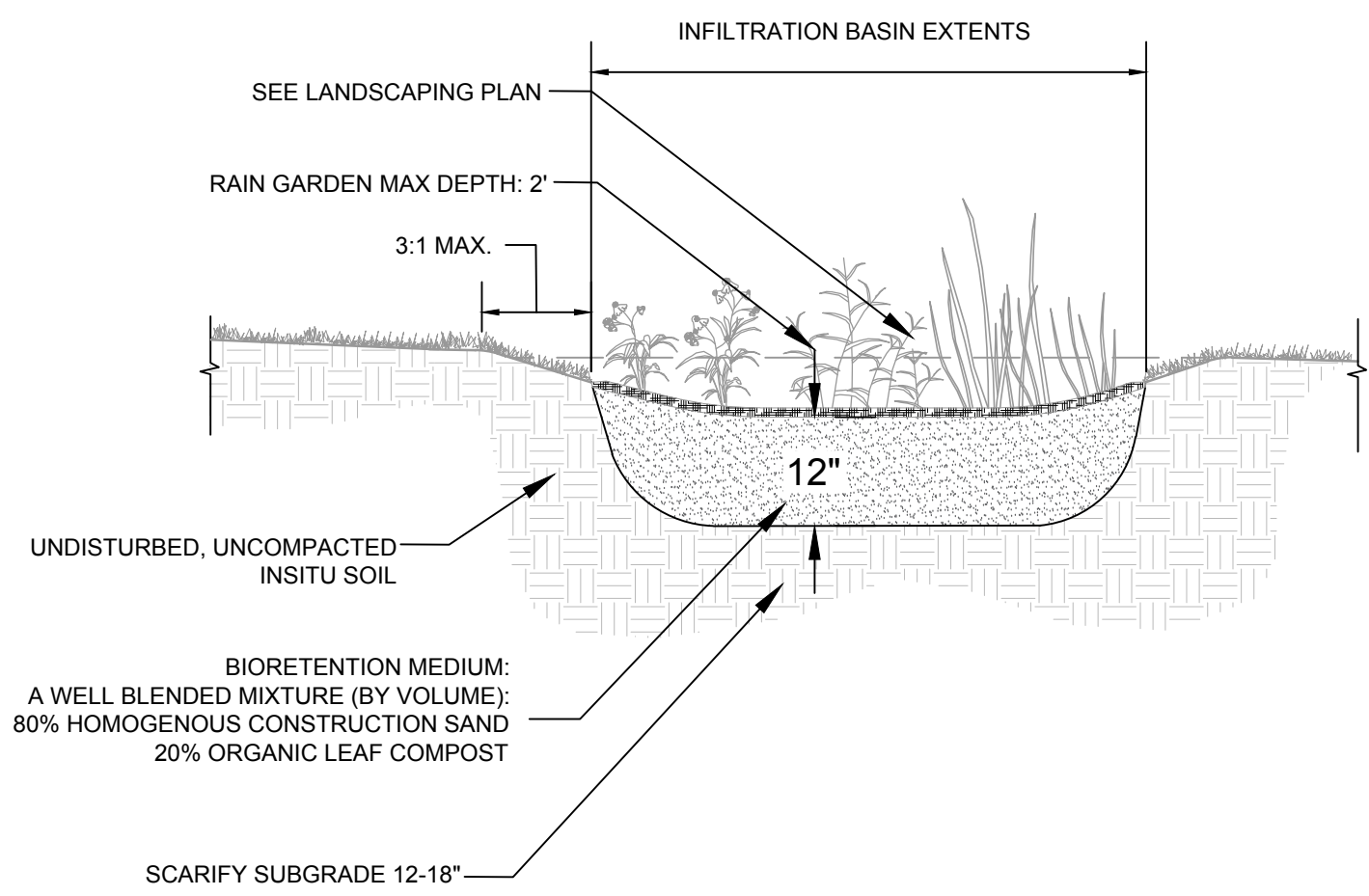


LILY LAKE FINAL 45 BMP'S  
 STILLWATER, WASHINGTON COUNTY,  
 MINNESOTA

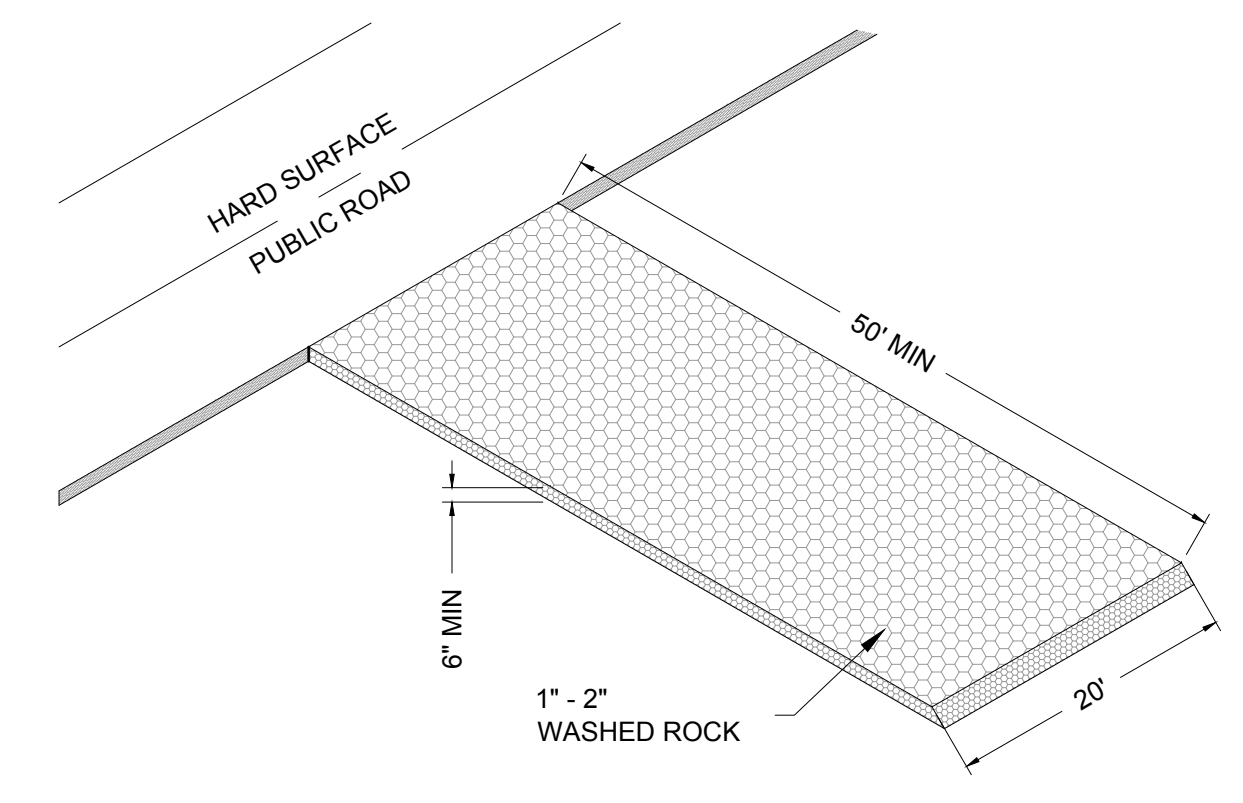
STATE PROJECT NO. ---      CITY PROJECT NO. ---

LANDSCAPE RESTORATION PLAN 2

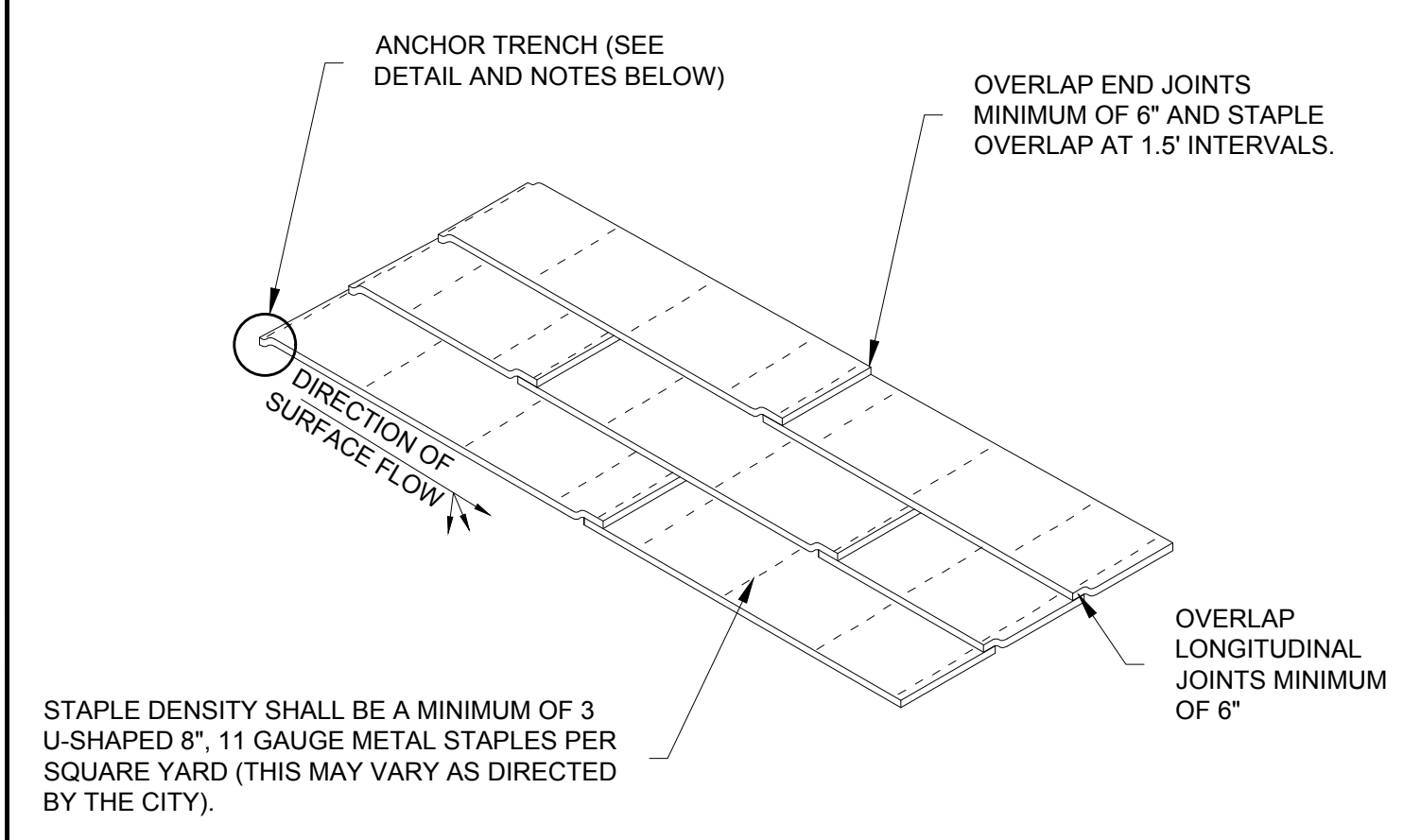
SHEET 09 OF 12 SHEETS



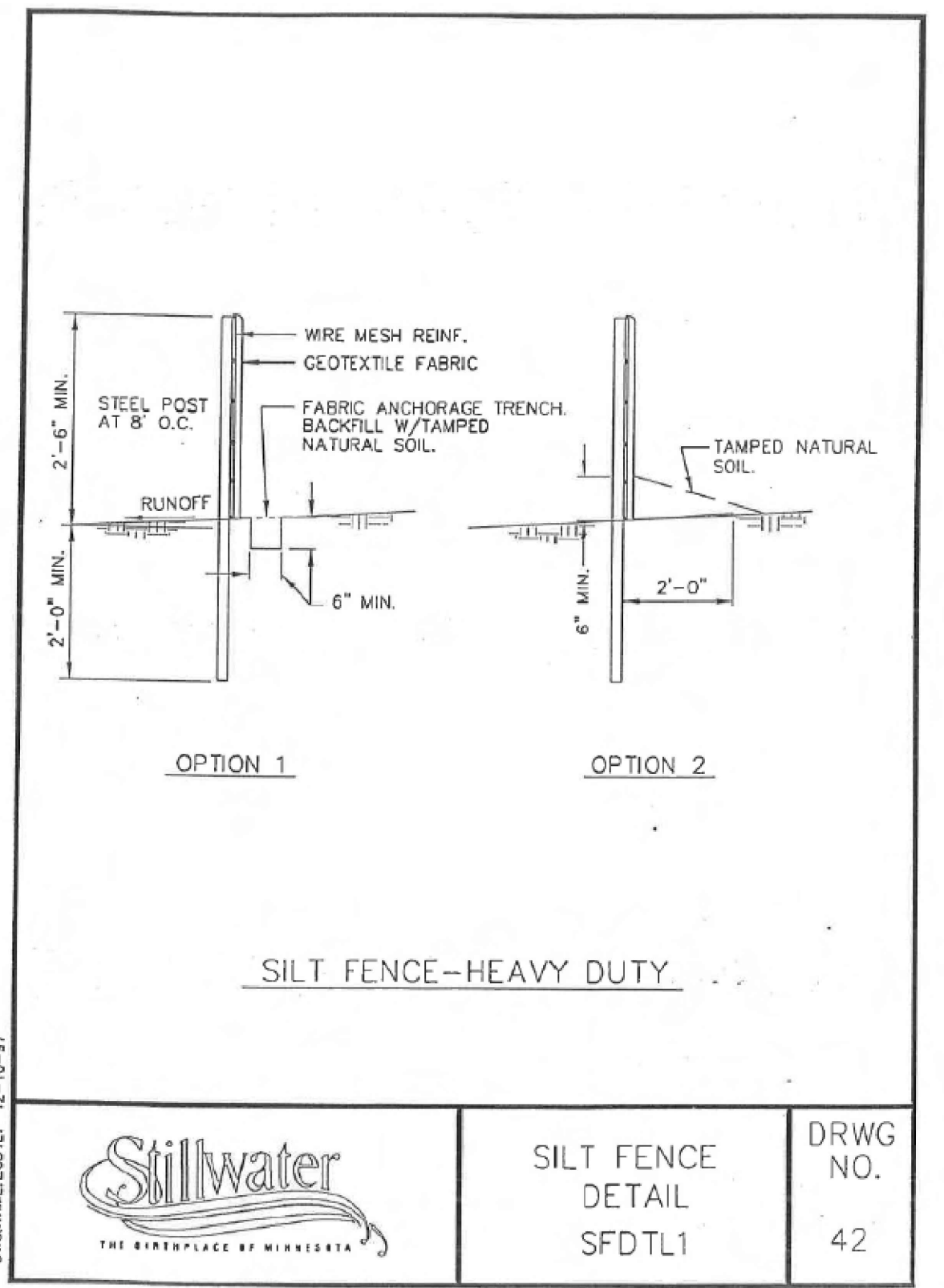
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**02 ROCK CONSTRUCTION ENTRANCE**  
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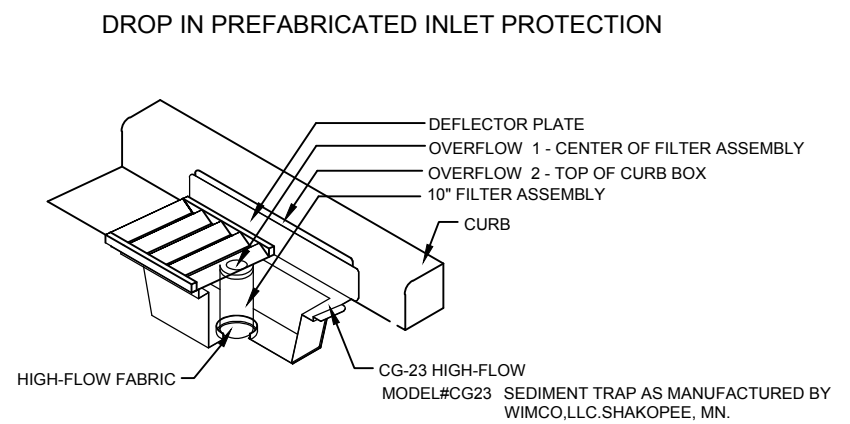


**03 EROSION CONTROL BLANKET DETAIL**  
10 (No Scale)



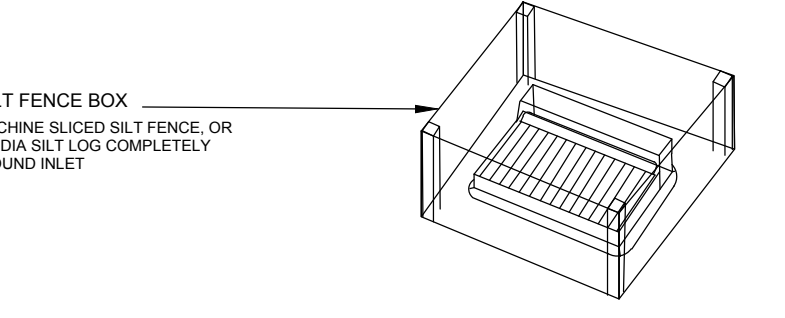
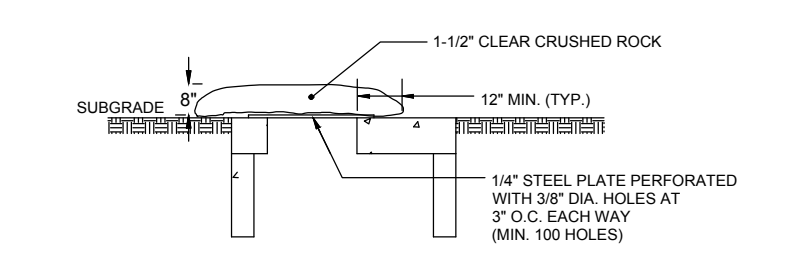
**04 SILT FENCE**  
10 (No Scale)

**CATCH BASIN INLET PROTECTION**



NOTES:  
1) CLEAN FILTER MEDIA AFTER EACH 1/2" OR GREATER RAIN EVENT AND REPLACE IF FILTER IS CLOGGED WITH SEDIMENT.  
2) REMOVE DEBRIS/SEDIMENT FROM RECEPTACLE AFTER EACH RAIN EVENT.

**STORM SEWER STRUCTURE PROTECTION PRIOR TO CURB & GUTTER PLACEMENT OR PAVING**



**05 INLET PROTECTION**  
10 (No Scale)

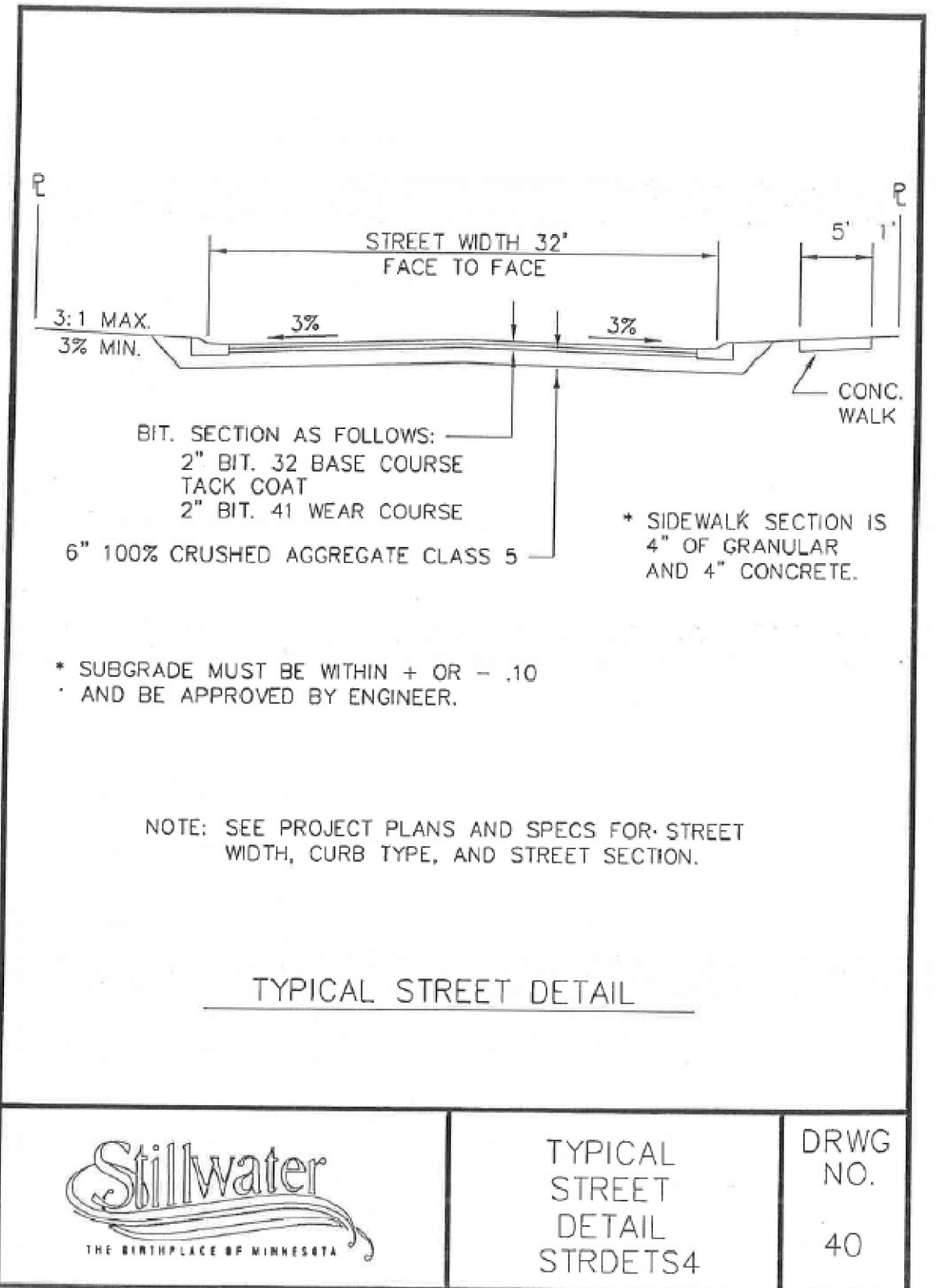
**INLET PROTECTION**

**SPECIFICATIONS:**

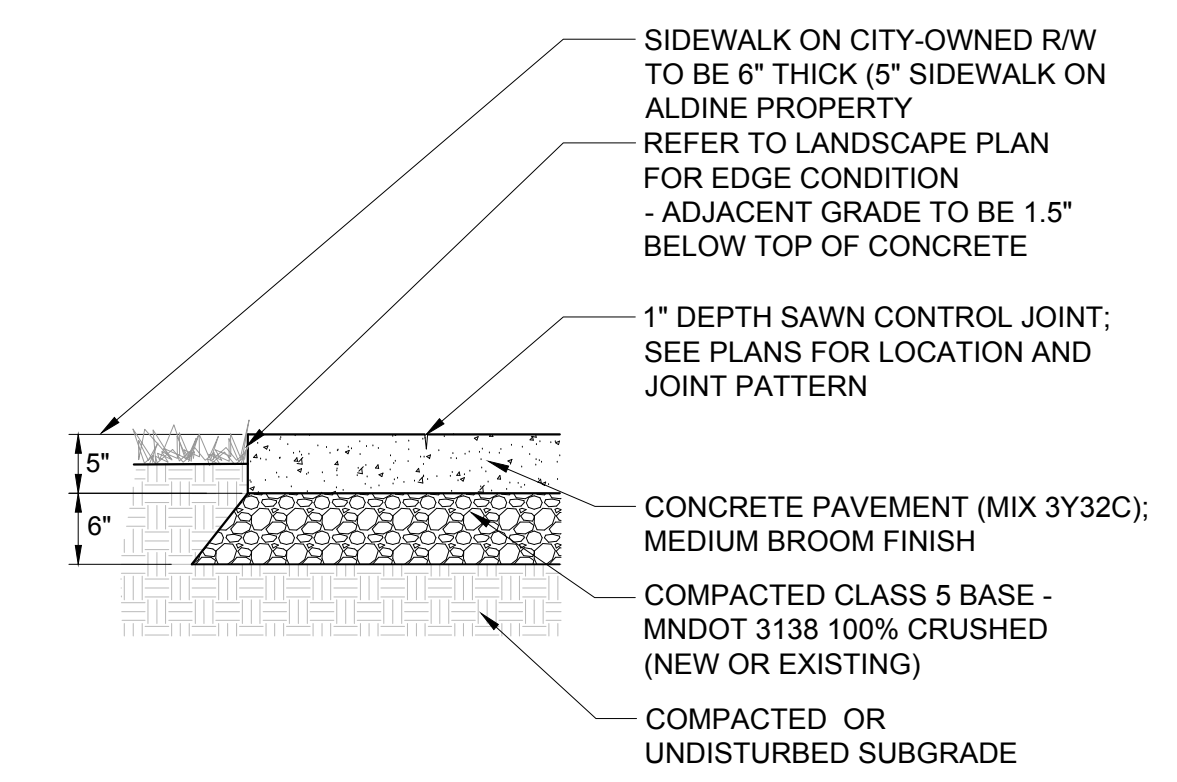
INLET PROTECTION SHALL BE IN ACCORDANCE WITH MN/DOT 3891. INLET PROTECTION WILL BE CLASSIFIED BY TYPE ACCORDING TO USE. TYPE WILL BE AS INDICATED HEREIN.  
TYPE A: INLET PROTECTION TO BE UTILIZED AROUND FIELD INLETS UNTIL PERMANENT STABILIZATION METHODS HAVE BEEN ESTABLISHED. INLET PROTECTION TYPE A MAY ALSO BE UTILIZED ON PAVEMENT INLETS PRIOR TO INSTALLATION OF CURB AND GUTTER OR PAVEMENT.  
TYPE B: INLET PROTECTION WILL BE UTILIZED ON STREET INLETS WITHOUT CURB HEADS.  
TYPE C: INLET PROTECTION WILL BE UTILIZED ON STREET INLETS WITH CURB HEADS.  
TYPE D: INLET PROTECTION TO BE UTILIZED AT CULVERT INLETS UNTIL PERMANENT STABILIZATION METHODS HAVE BEEN ESTABLISHED.

**APPROVED PRODUCTS FOR INLET PROTECTION:**

- TYPE A**  
ROAD DRAIN - WIMCO, LLC-799 THEIS DRIVE, SHAKOPEE, MN  
STREAM GUARDEXERT - FOSS EXPERIMENTAL - SEATTLE, WA  
EROSION CONTROL SHROUD - ROYAL CONCRETE PIPE - STACY, MN  
SILT SACK - ACF ENVIRONMENTAL - RICHMOND, VA  
STREAM GUARD - SEDIMENT ONLY- FOSS ENVIRONMENTAL - SEATTLE, WA  
VERTI'PRO - ALPINE STORMWATER MGT. - GROVE CITY, OH
- TYPE B**  
DANDYBAG - DANDY PRODUCTS - GROVE CITY, OH
- TYPE C**  
BEAVER DAM - DANDY PRODUCTS - GROVE CITY, OH  
ROAD DRAIN CURB AND GUTTER-WIMCO, LLC 799 THEIS DR.-SHAKOPEE, MN  
SILT SCREEN - ALPINE STORMWATER MGT. - GROVE CITY, OH
- TYPE D**  
AS APPROVED BY THE ENGINEER



**06 TYPICAL STREET CROSS SECTION**  
10 (No Scale)



**07 TYPICAL SIDEWALK CROSS SECTION**  
10 (No Scale)

Plot Date: 06/26/2018  
 Drawing Name: X:\Clients\WMO\0405\_MSCVMO\0009\_Lily\_Lake\_Ph1\_209\_GIMS\_ProjectName\dwg\0405\_06\_CD\_DET.dwg  
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1	06/30/2018	KDC	60% PLAN SET - NOT FOR CONSTRUCTION
NO	DATE	BY	REVISION

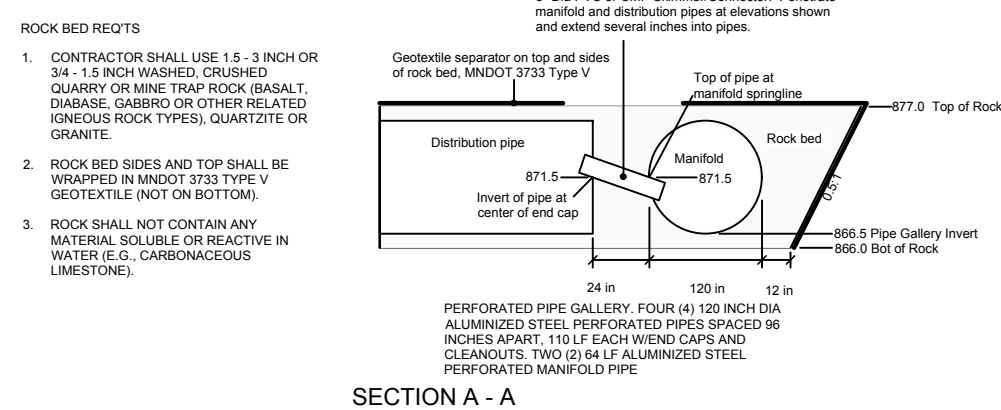
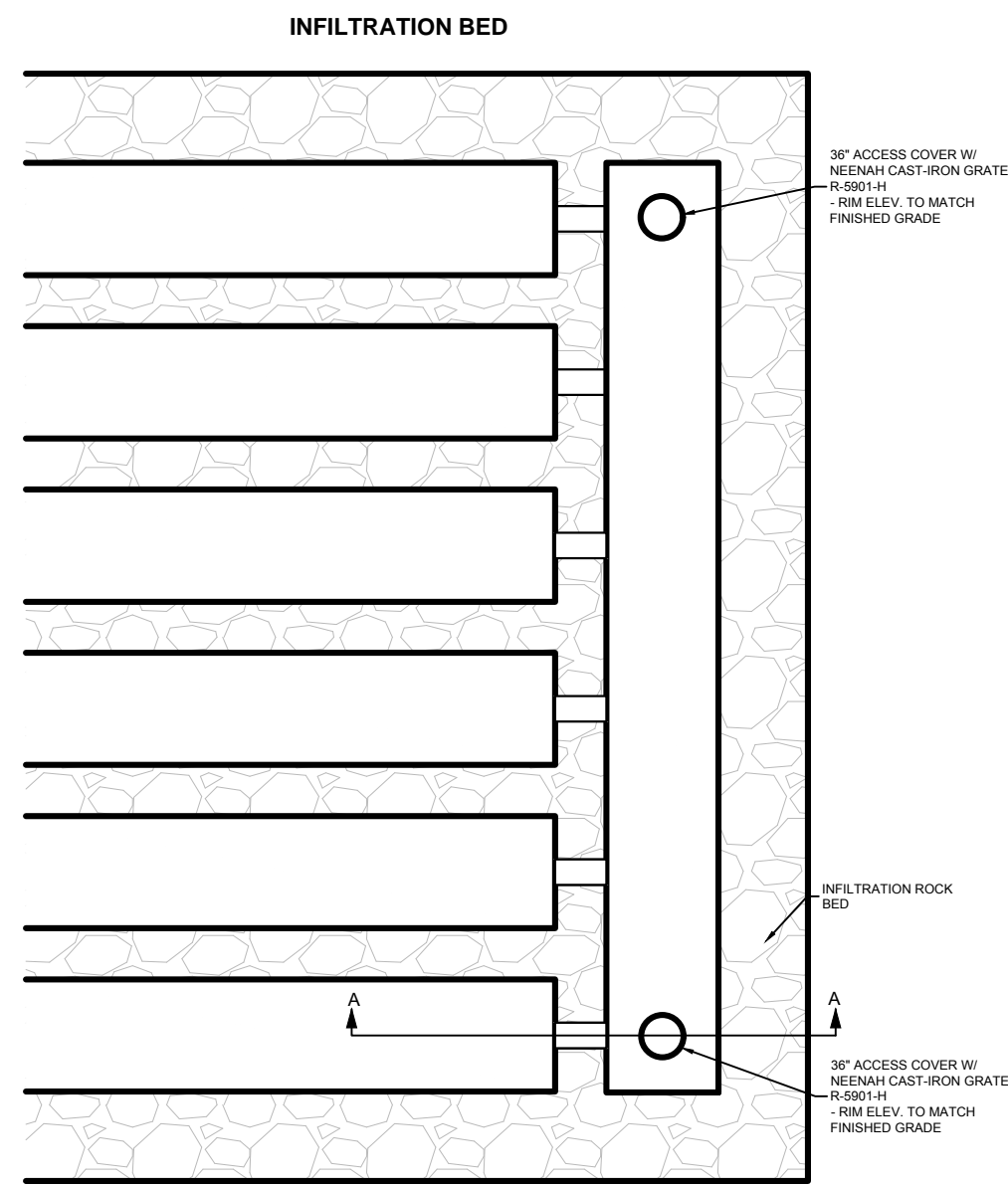


SUBMISSION DATE: 06/30/2018  
 DESIGN BY: KDC DRAWN BY: DEM  
 EOR PROJECT NO. 0405-0009  
**Emmons & Olivier Resources, Inc.**  
 7030 6th Street North  
 Oakdale, MN 55128  
 Tele: 651.770.8448  
 www.eorinc.com

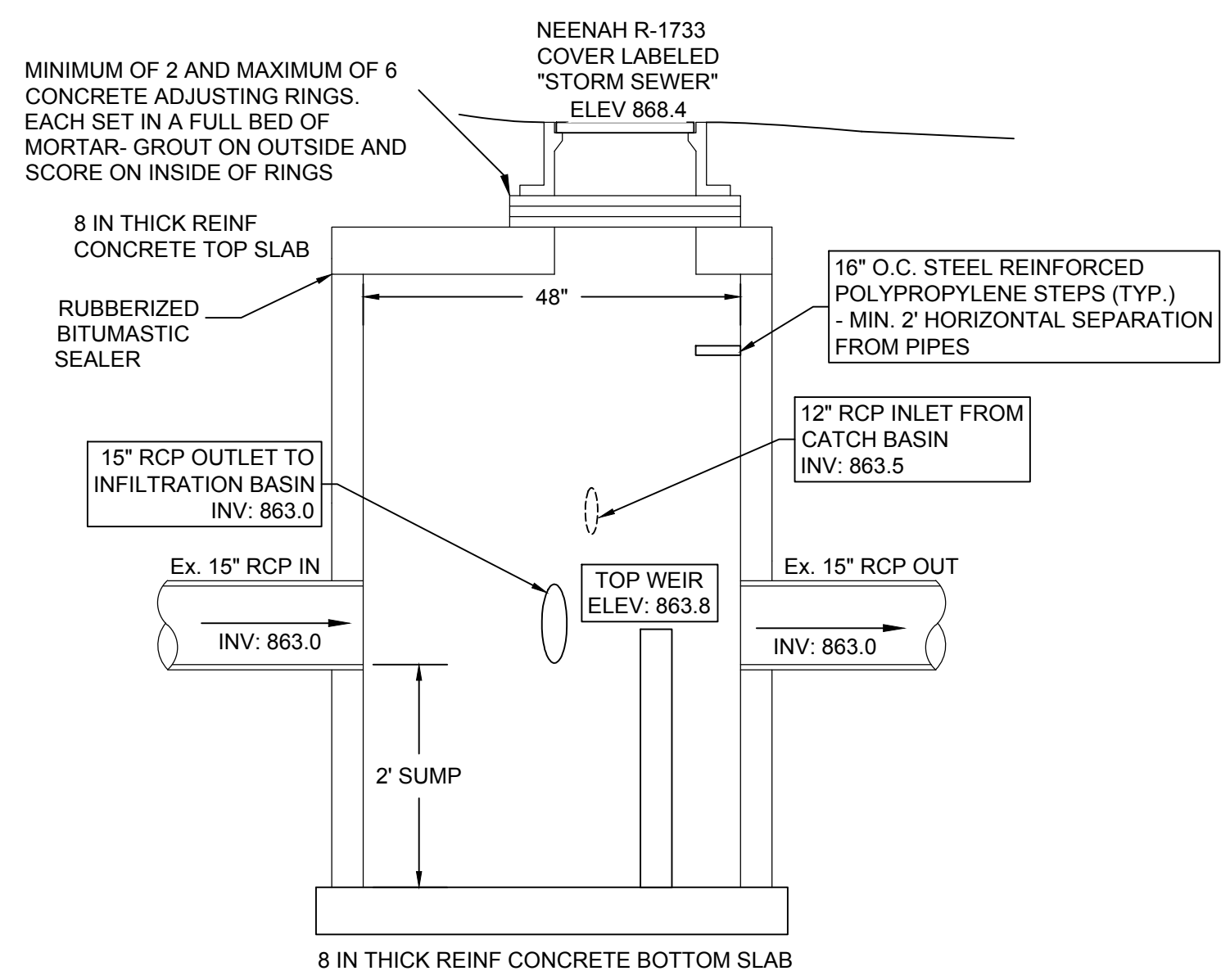


LILY LAKE FINAL 45 BMP'S  
 STILLWATER, WASHINGTON COUNTY,  
 MINNESOTA  
 STATE PROJECT NO. --- CITY PROJECT NO.

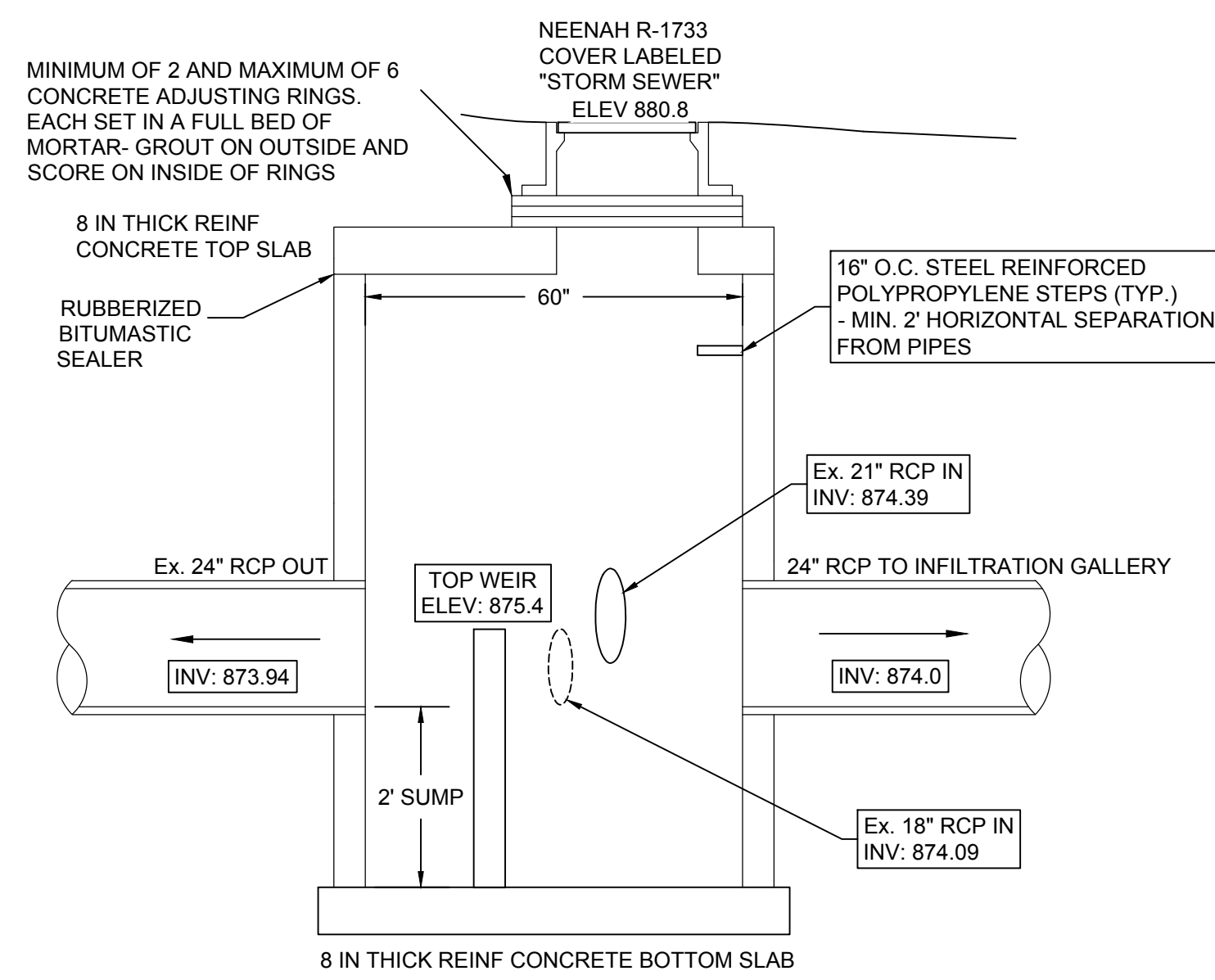
DETAILS 1  
 SHEET 10 OF 12 SHEETS



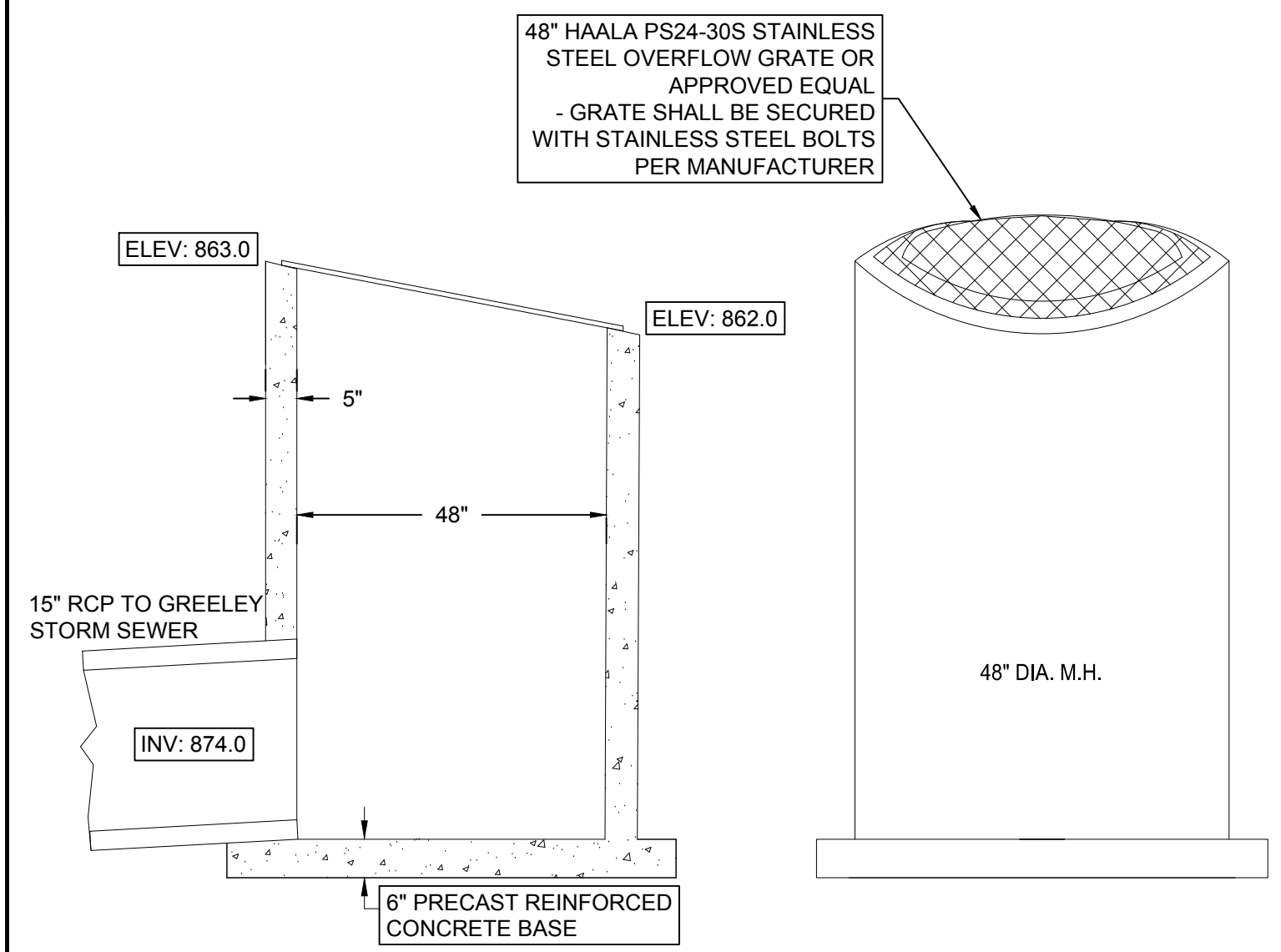
**01 UNDERGROUND INFILTRATION SYSTEM**  
11 (No Scale)



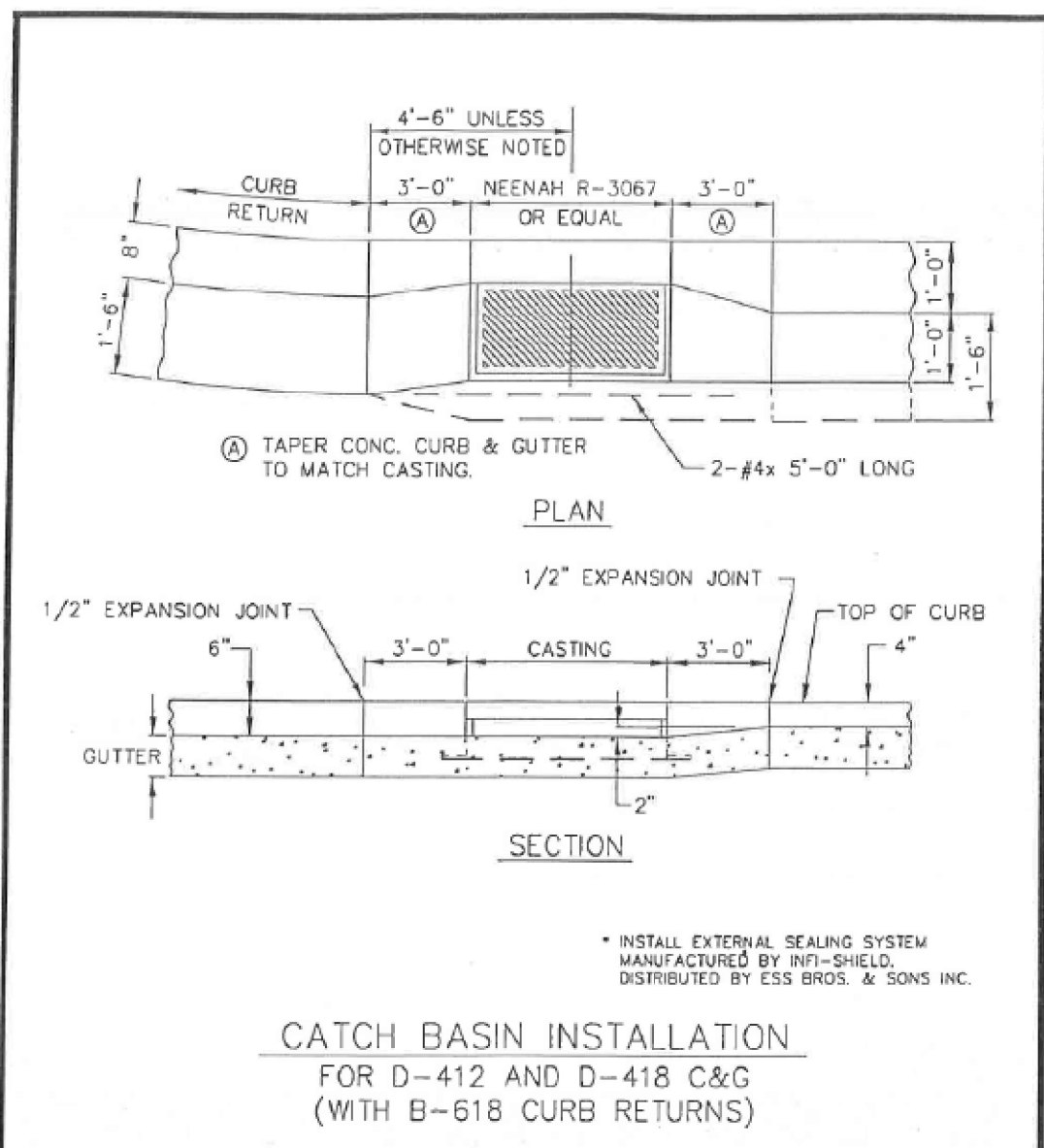
**02 FLOW DIVERSION MANHOLE STMH-01**  
11 (No Scale)



**03 FLOW DIVERSION MANHOLE STMH-02**  
11 (No Scale)

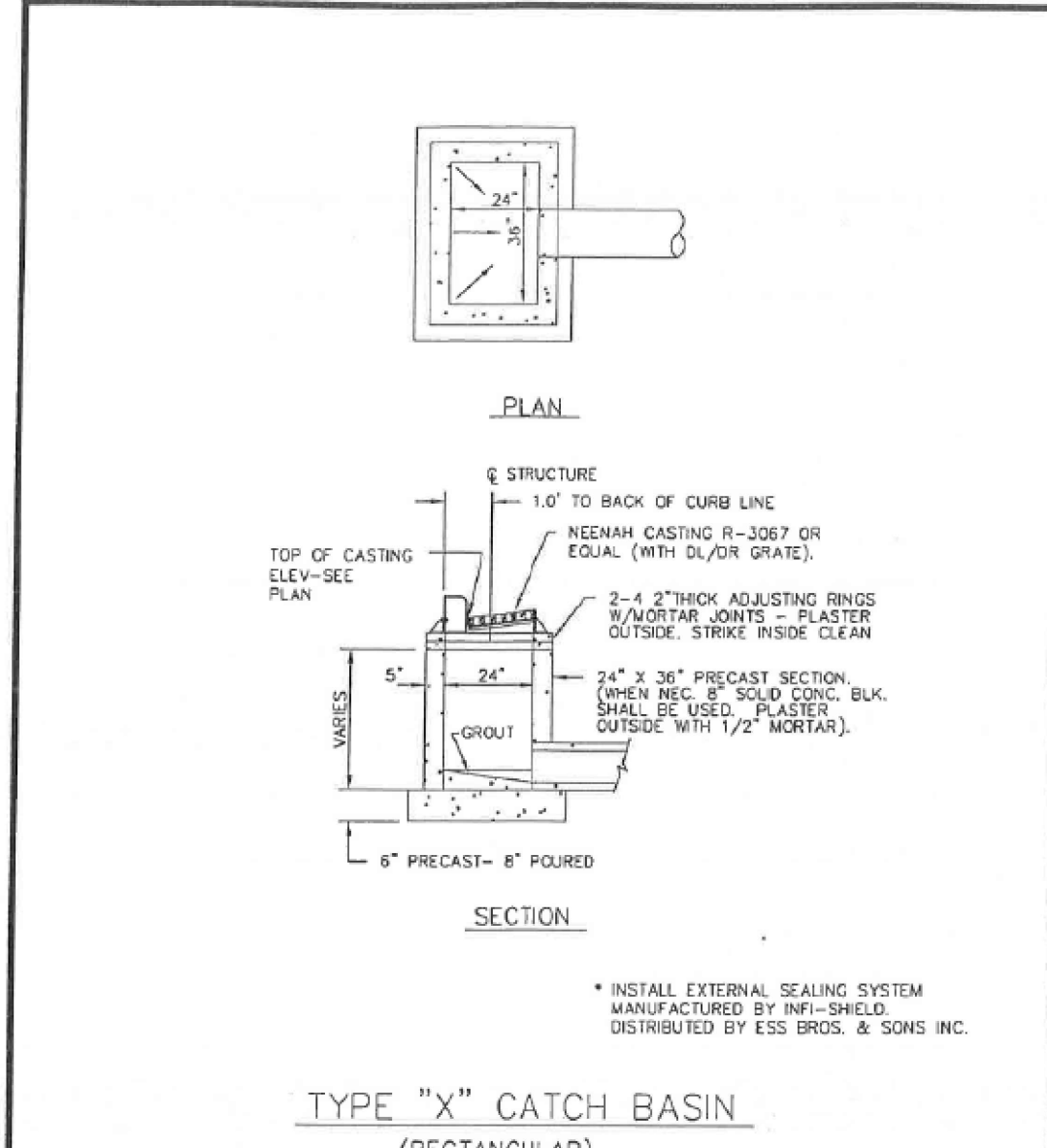


**04 OUTLET CONTROL STRUCTURE OCS-01**  
11 (No Scale)



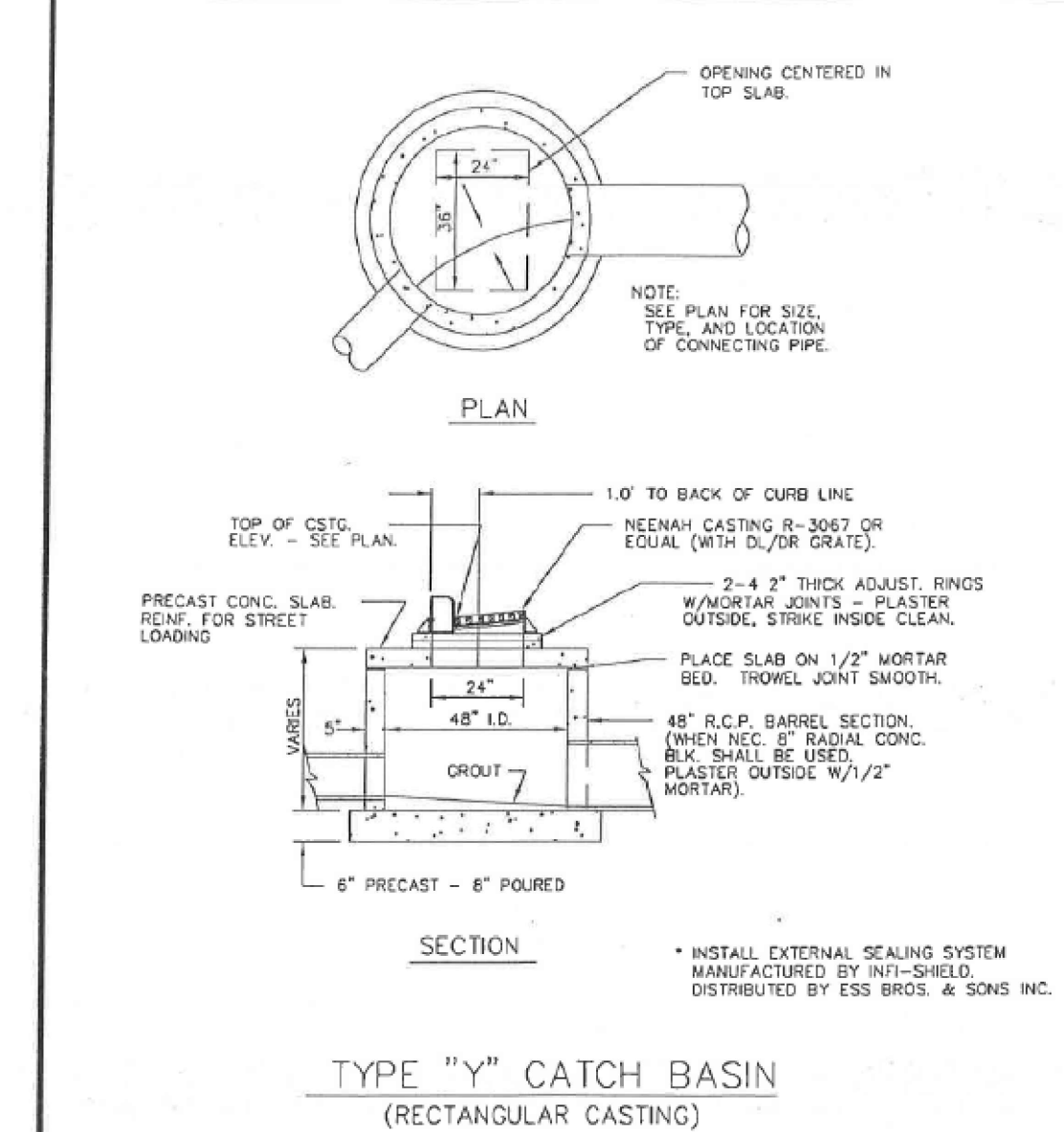
**Stillwater**  
CATCH BASIN  
DETAIL  
CBDTL10  
DRWG  
NO.  
20

**05 CATCH BASIN INSTALLATION**  
11 (No Scale)



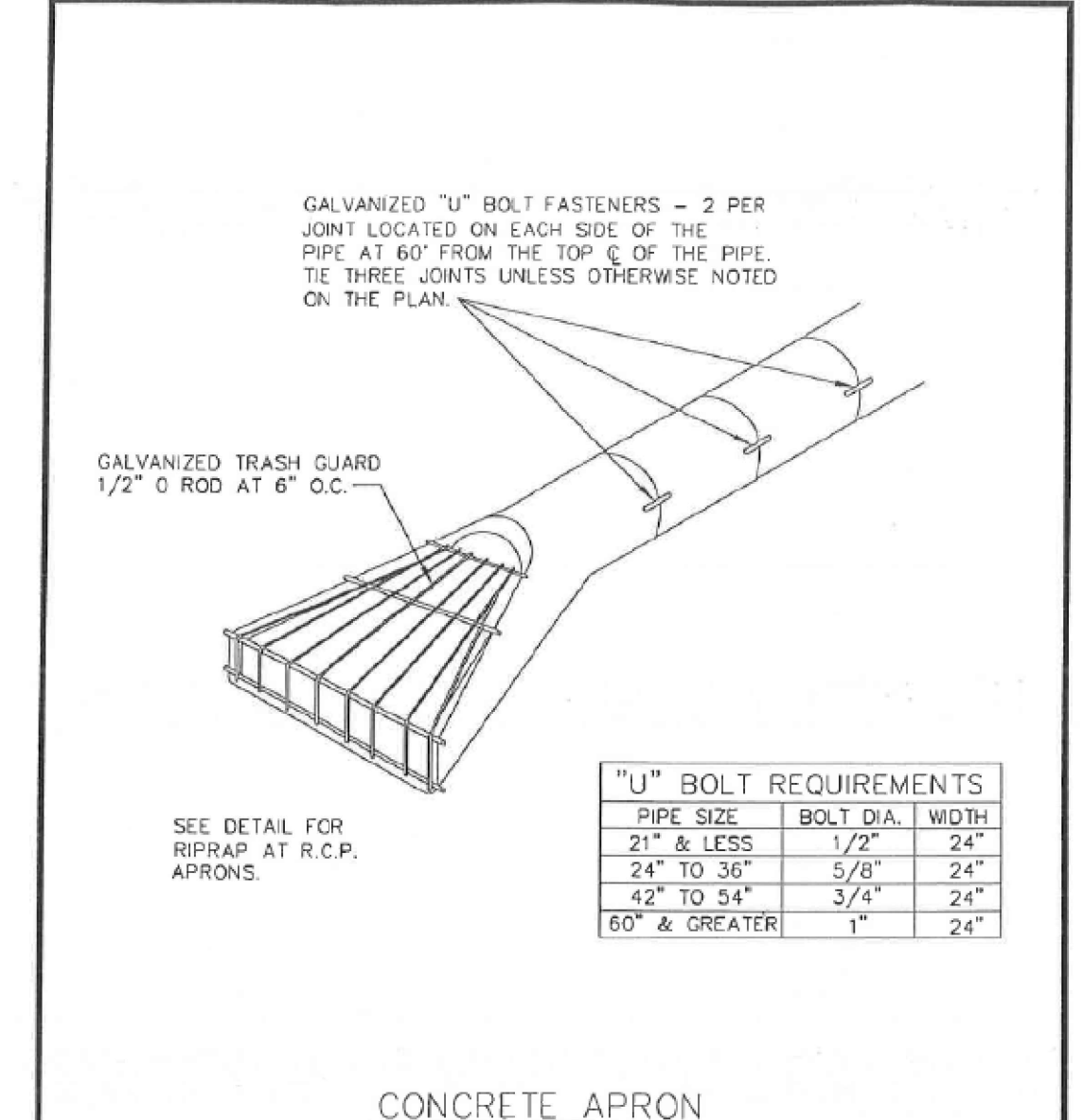
**Stillwater**  
CATCH BASIN  
DETAIL  
CBDTL3  
DRWG  
NO.  
21

**06 CATCH BASIN TYPE 'X'**  
11 (No Scale)



**Stillwater**  
CATCH BASIN  
DETAIL  
CBDTL1  
DRWG  
NO.  
22

**07 CATCH BASIN TYPE 'Y'**  
11 (No Scale)



**Stillwater**  
APRON  
DETAIL  
APDTL1  
DRWG  
NO.  
17

**08 FLARED END SECTION**  
11 (No Scale)

**DRAFT**

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www.eorinc.com

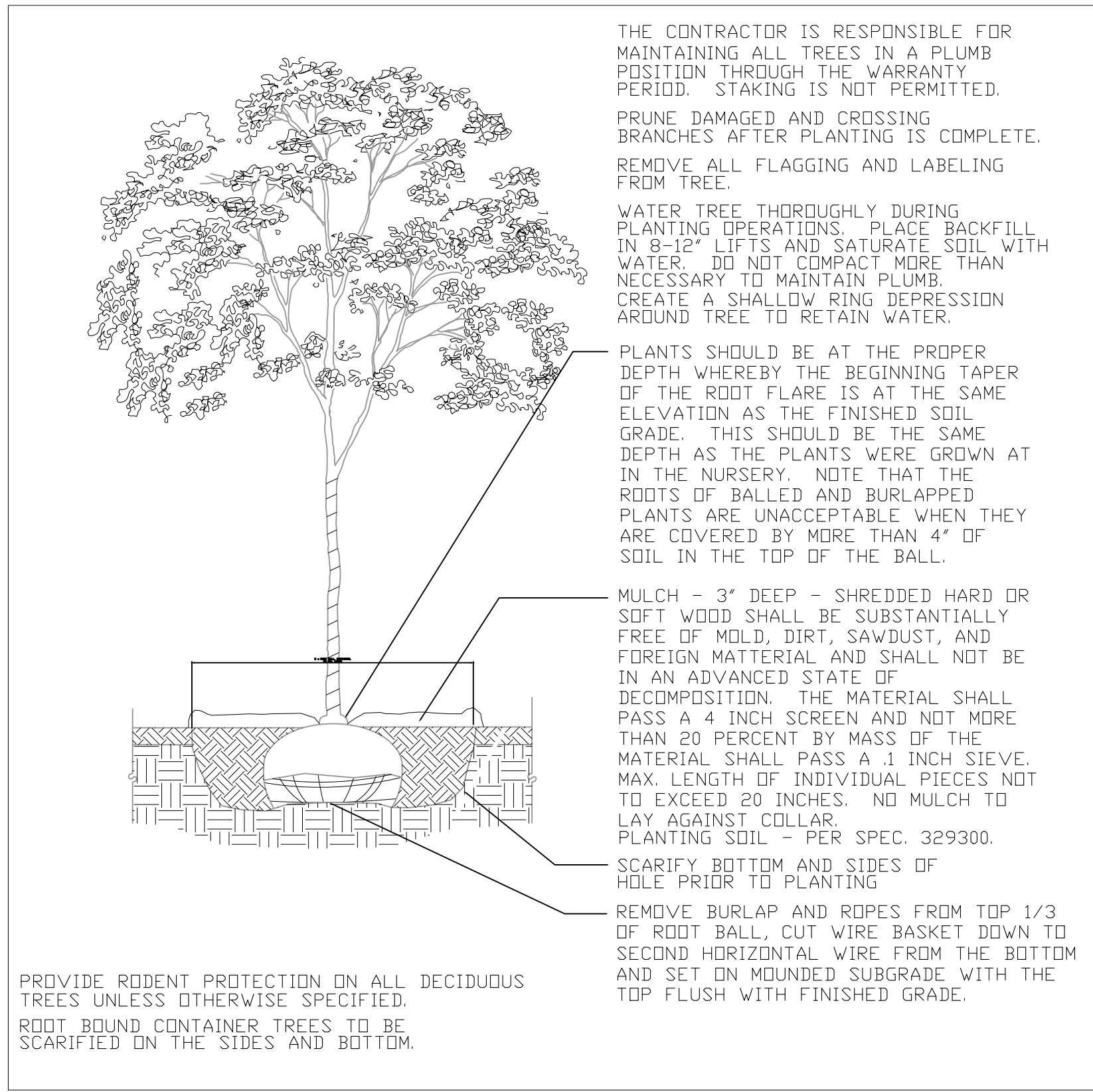


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MINNESOTA

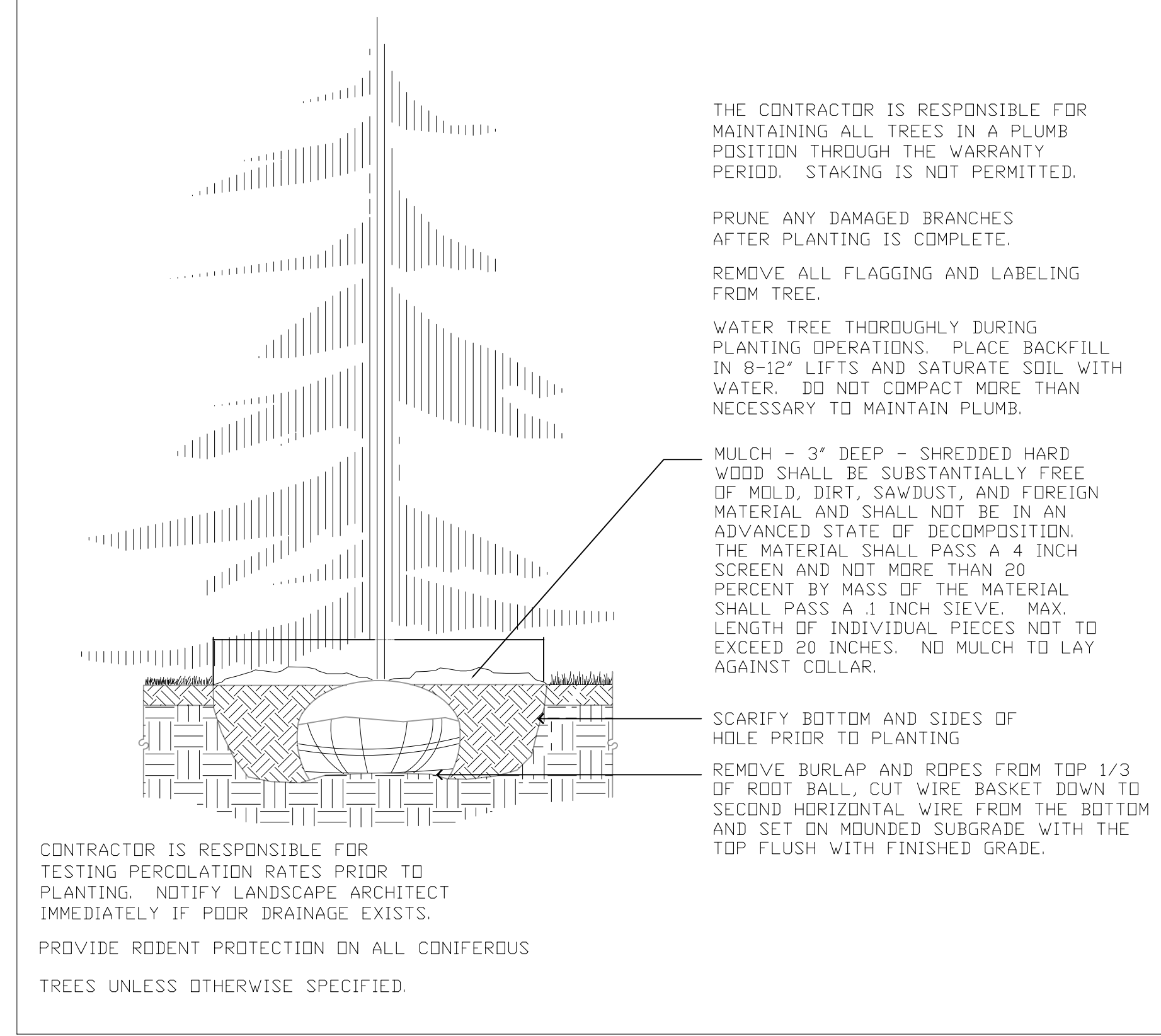
DETAILS 2  
SHEET 11 OF 12 SHEETS

Plot Date: 06/30/2018  
 Drawing Name: X:\Clients\MM000009\_Lily\_Lake\_Ph1\_209\_GIMS\_ProjectName\dwg\05\_06\_CD\_DET.dwg  
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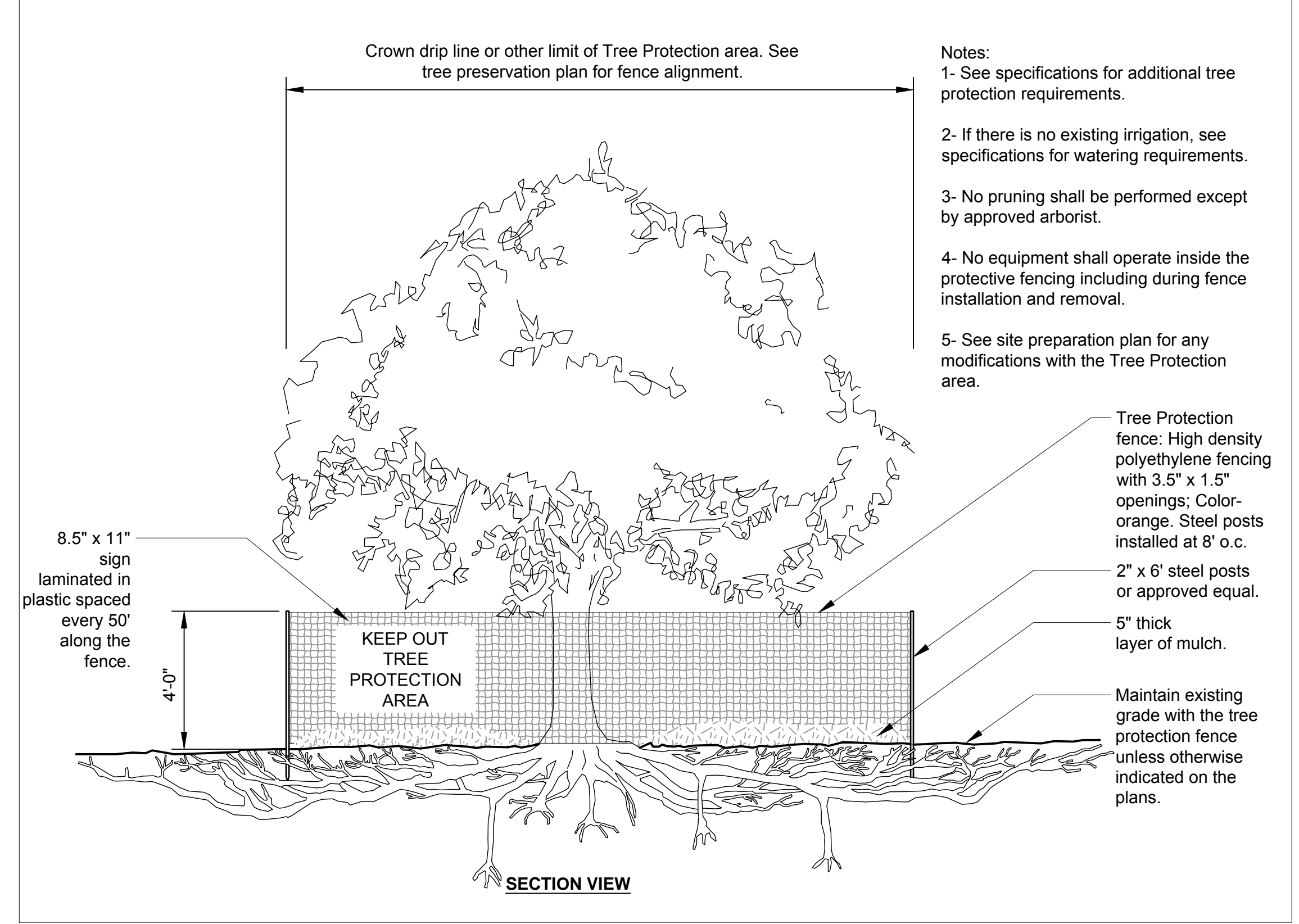
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NO	DATE	BY	REVISION	



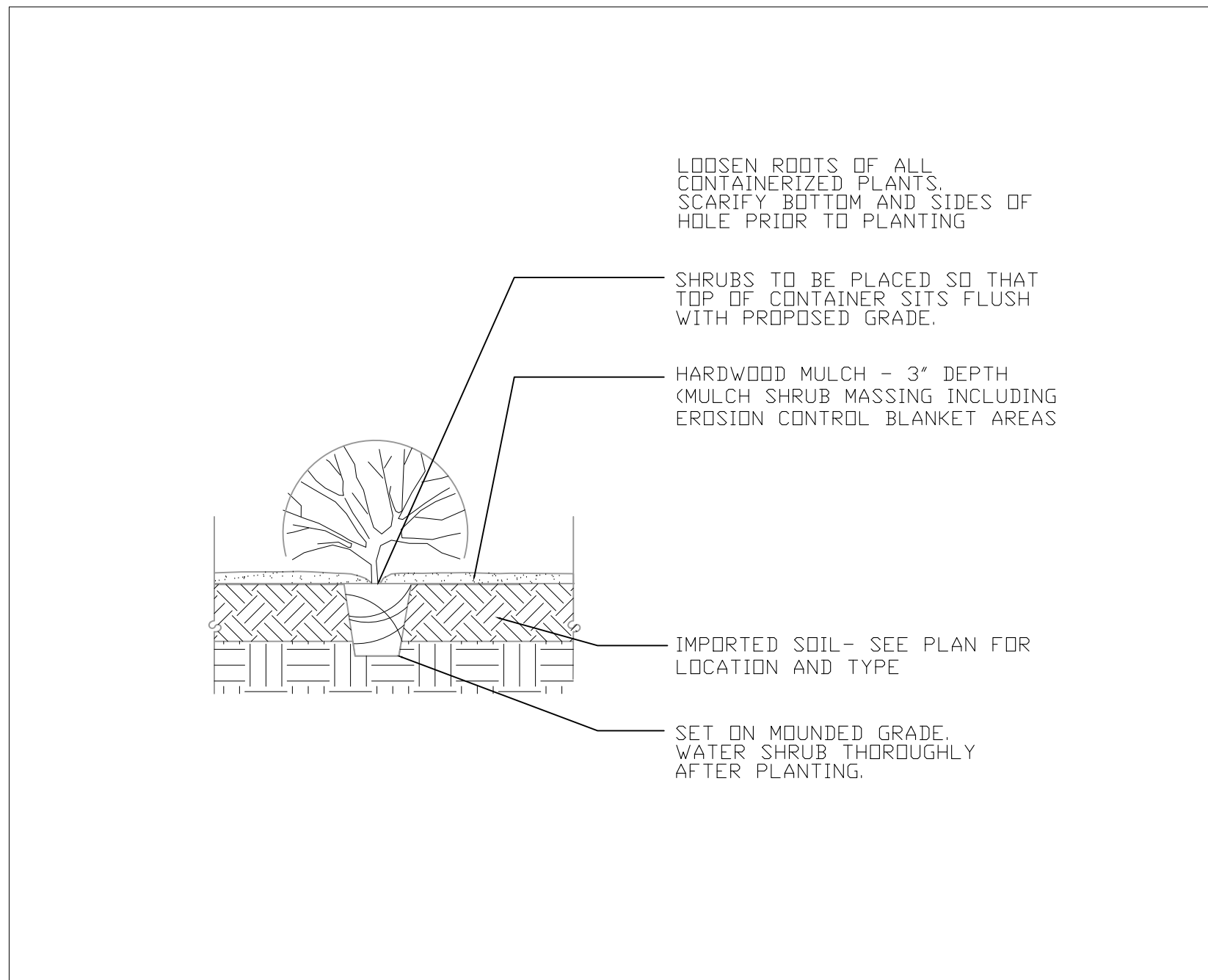
1 DECIDUOUS TREE PLANTING DETAIL  
12 No Scale



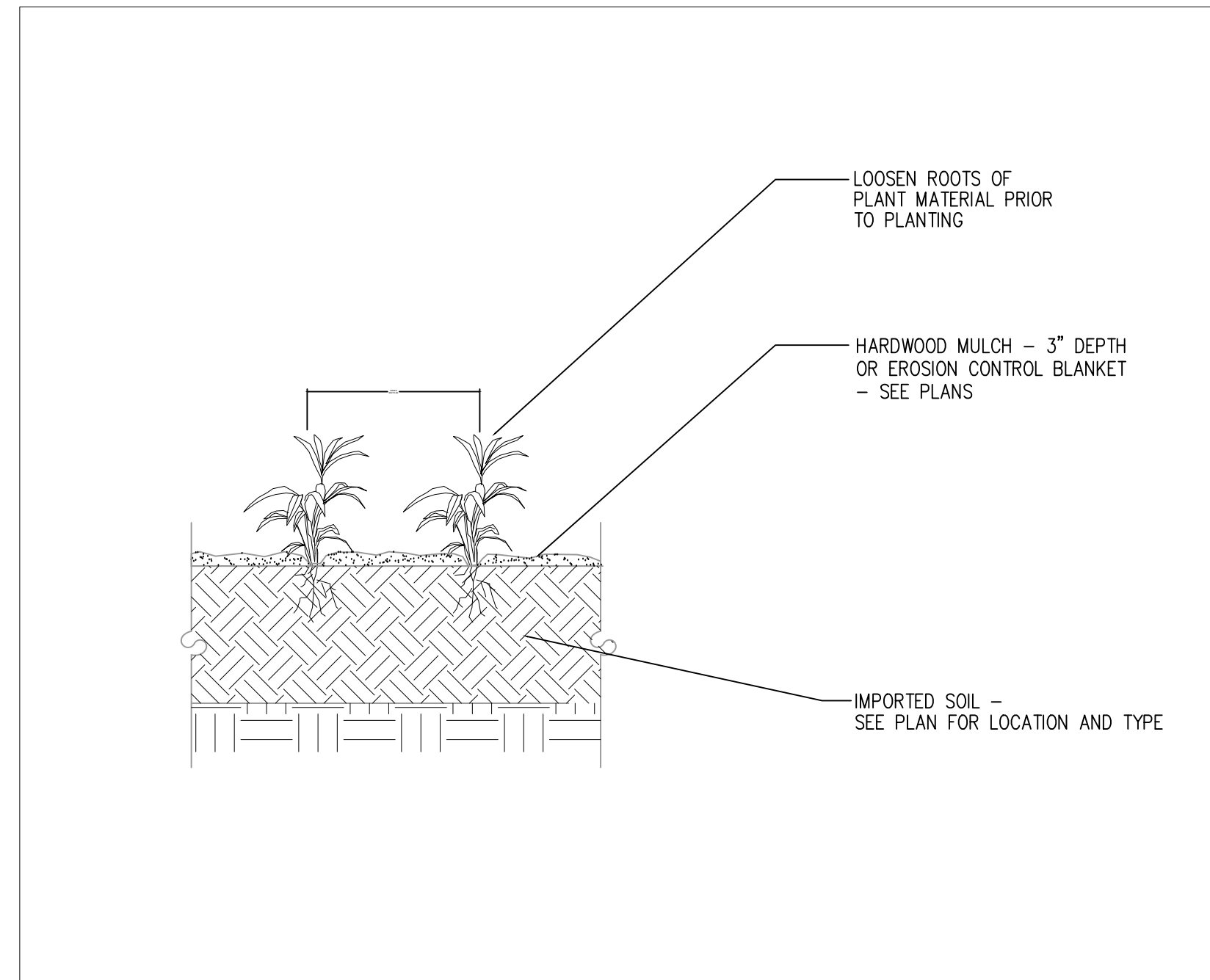
2 CONIFEROUS TREE PLANTING DETAIL  
12 No Scale



3 TREE PROTECTION DETAIL  
12 No Scale



4 SHRUB PLANTING DETAIL  
12 No Scale



5 PERENNIAL PLANTING DETAIL  
12 No Scale

Plot Date: 06/26/2018  
 Drawing name: X:\Clients\_VMO\0405\_MSCWMO0009\_Lily\_Lake\_Ph1\_209\_GIMS\_ProjectName.dwg\05\_06\_CD\_DET.dwg  
 Xrefs

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1	06/30/2018	KDC	60% PLAN SET - NOT FOR CONSTRUCTION
NO	DATE	BY	REVISION

DRAFT

SUBMISSION DATE: 06/30/2018	
DESIGN BY KDC	DRAWN BY DEM
EOR PROJECT NO. 0405-0009	

**EOR** Emmons & Olivier Resources, Inc.  
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LANDSCAPE DETAILS  
 SHEET 12 OF 12 SHEETS