

Permit Application Review

Permit No. 2019-147
Received complete: January 23, 2020

Applicant: Josh Bowe: Three Rivers Park District
Consultant: Darren Amundsen; Stantec
Project: Bryant Lake Regional Park Parking Lot Expansion and ADA Compliance Improvements
Location: Bryant Lake Regional Park: Eden Prairie
Rule(s): 4,5,11,12
Reviewer: BCO

General Background & Comments

The project is to provide additional parking, ADA accessible sidewalk crossings, and an expanded picnic and gathering areas at Bryant Lake Regional Park. The park is owned and managed by the Three Rivers Park District.

The project site information is:

- Total Park Area: 158.6 acres
- Existing Total Site Impervious Area: 11.17 acres
- New Total Site Impervious Area : 12.32 acres
- Increase in the site impervious area: 1.153 acres (50,225 square feet)
- 10.3% increase in the Site Impervious Area
- Impervious Area to be Disturbed and Replaced: 0.642 acres (27,966 square feet)
- 9.9% of the existing site impervious area is to be disturbed and replaced
- New and Disturbed and Reconstructed Impervious Area: 78,191 square feet
- Total Area to be Disturbed: 4.262 acres (185,653 square feet)

The Nine Mile Creek Watershed District's Rule for Redevelopment, Rule 4.2.3, states, if a proposed activity will disturb more than 50% of the existing impervious surface on a parcel or will increase the imperviousness of the parcel by more than 50%, storm water management will apply to the entire project parcel. Otherwise, the storm water requirements will apply only to the disturbed areas and additional impervious area on the parcel. Since the increase in the on-site impervious area is 10.3% and 9.9% of the existing site impervious area is to be

disturbed and reconstructed, storm water management is required for the 185,653 square feet of disturbed area that includes 78,191 square feet of new and disturbed and reconstructed impervious area.

The District's requirements for both storm water management and erosion and sediment control apply to the project because more than 50 cubic yards of material will be disturbed and 5000 square feet or more surface area disturbed, Rules 4.2.1a and b and 5.2.1a and b.

Stormwater management is to be provided within 1) an existing stormwater basin that will provide rate control and water quality management, 2) a constructed basin that will provide water quality management, volume retention through an infiltration bench and rate control, 3) two stone infiltration areas, 4) vegetative swales and sump manholes (one that includes a SAFL baffle) for water quality.

The geotechnical report provided shows the underlying soils within the project area as primarily silty-sand (SM). The borings taken did not encounter groundwater to a depth of 10 feet+/- however no ground surface elevation(s) were provided at each boring for establishing a vertical datum. It has been assumed that the groundwater elevation will be the same as the O.H.W. determined for the lake, 852.6 M.S.L.

Bryant Lake is designated as a public water (67P) therefore the District's wetland buffer criteria is not applicable.

Silt fence is to be constructed at the limits of construction, inlet protection, and a rock construction entrance will be provided for erosion control.

Exhibits

1. Permit Application dated September 24, 2019, submitted to the District on December 23, 2019.
2. Plans dated December 20, 2019 prepared by Stantec.
3. Storm Water Management calculations dated December 9, 2019, revised January 16, 2020, prepared by Stantec.
4. Geotechnical Report dated June 13, 2000 prepared by Braun Intertec.
5. E-mail correspondence dated January 9, 2020 outlining 6 items that either required additional information or needed to be addressed for the application to be considered complete.
6. Stantec's response dated January 16, 2020 to our January 9, 2020 e-mail.

4.0 Stormwater Management

Storm water management as previously mentioned is to be provided by several different methods including an existing storm water basin, a proposed storm water basin, stone infiltration basins, vegetative swales and appurtenances within the storm sewer system (sump manholes).

The existing and proposed 2-, 10- and 100-year frequency discharges from the site are:

Peak Flow Rates

	Storm Recurrence Interval	2-yr, 24-hr.	10-yr., 24-hr.	100-yr., 24-hr.
Total Site	Pre-Development (cfs)	5.2	21.5	71.2
	Post-Development (cfs)	4.3	16.2	54.1
Subcatchment 1A	Pre-Development (cfs)	1.2	5.5	20.7
	Post Development (cfs)	1.2	4.9	17.9
Subcatchment 1B	Pre-Development (cfs)	<1.0	2.1	6.7
	Post Development (cfs)	<1.0	2.1	6.7
Subcatchment 2A/2B	Pre-Development (cfs)	1.2	4.6	10.0
	Post Development (cfs)	1.2	3.6	7.0
Subcatchment 3	Pre-Development (cfs)	<1.0	1.5	4.7
	Post Development (cfs)	<1.0	1.5	4.7
Subcatchment 4	Pre-Development (cfs)	<1.0	1.8	6.2
	Post Development (cfs)	<1.0	1.7	5.9
Subcatchment 5	Pre-Development (cfs)	1.5	6.5	23.4
	Post Development (cfs)	1.5	6.5	23.2
Subcatchment 6	Pre-Development (cfs)	<1.0	3.1	9.9
	Post Development (cfs)	<1.0	<1.0	7.7
Subcatchment 7	Pre-Development (cfs)	<1.0	<1.0	2.0
	Post Development (cfs)	<1.0	<1.0	1.9

There are eight discharge points from the project area. Rule 4.3.1b is met.

An infiltration volume of 7,168 cubic feet is required from the proposed 78,191 square feet of new and disturbed and reconstructed impervious area. As previously stated, the underlying soils within the project area are primarily silty-sand (SM) having an infiltration rate of 0.8 inches/hour using the Minnesota Storm Water Manual. A volume of 21,180 cubic feet is proposed to be provided within the proposed infiltration/aquatic bench to be constructed around Pond 2 (7,168 cubic feet required) with an area of 25,416 square feet at an inundation depth of 10-inches (0.83 feet) over the aquatic bench. A minimum inundation area of 3,982 square feet at a depth of 1.8 foot depth is allowed, using the 0.8 inches/hour infiltration rate, for the retention volume to be drawn down within 48 hours, Rule 4.3.1a (ii). Rule 4.3.1a is met.

The District's water quality criterion requires a 60% annual removal efficiency for phosphorus and 90% annual removal efficiency for total suspended solids. The results of the MIDS calculator and P8 model show that the combined BMP's will provide an annual removal

efficiency of 91.6% for total suspended solids (1,739 lbs.) and an annual removal efficiency of 75.6% for total phosphorus (5.6 lbs.). Rule 4.3.1c is met.

District Rule 4.3.3c states that all new and reconstructed buildings must be constructed such that the low floor elevation is at least two feet above the 100-year high water elevation or one foot above the emergency overflow of a constructed facility. In addition, a stormwater management facility must be constructed at an elevation that ensures that no habitable building will be brought into noncompliance with a standard in subsection 4.3.3. The finished floor elevation and low opening of the picnic pavilion, being a slab on grade, is shown to be 869.0 M.S.L. The 100-year frequency flood elevation of the existing on-site storm water management basin, with the modifications as proposed, is 864 M.S.L. – a separation of 5 feet. The requirements of Rule 4.3.3c are met.

In accordance with Rule 4.3.1a (i), the pre-treatment of runoff prior to reaching the infiltration bench will be provided by a sediment fore bay, constructed as part of the basin, and sump manholes located throughout the project area.

Rule 4.5.4d (i), requires a minimum separation of 3 feet between the bottom of an infiltration facility, practice or system and groundwater. As previously stated, the geotechnical report provided shows the underlying soils within the project area as primarily silty-sand (SM). The borings taken did not encounter groundwater to a depth of 10 feet+/- however no vertical elevation(s) were provided. It has been assumed that the groundwater elevation will be the same as the O.H.W. determined for the lake, 852.6 M.S.L. The bottom of the infiltration bench is 892.2 M.S.L. - a separation of 39.6 feet +/- . The actual bottom of Pond 2 (with the depth and volume provided for water quality) is 887 M.S.L. – a separation of 34.4 feet.

If winter maintenance (snow plowing/ sand and salt application) is provided within the park, in accordance with Rule 4.3.4, a post-project chloride management plan must be provided that will, 1) designate an individual authorized to implement the chloride-use plan and 2) designate a MPCA certified salt applicator engaged in the implementation of the chloride-use plan for the site. Correspondence must be received from the applicant if this rule, winter maintenance, does not apply.

5.0 Erosion and Sediment Control

The submitted erosion and sediment control plan includes silt fence at the limits of construction, inlet control, and a gravel construction entrance. The project contact is Jacob Woelmer, Stantec.

11.0 Fees

Because the property owner is a public entity, no fees are charged.

Rules 2.0-6.0\$0

12.0 Sureties

Because the property owner is a public entity, the District's financial assurance requirements do not apply.

Sureties for the project are:

\$0

Findings

The proposed project includes the information necessary, plan sheets and erosion control plan, for review.

1. Rules 4 and 5 are met.

Recommendation

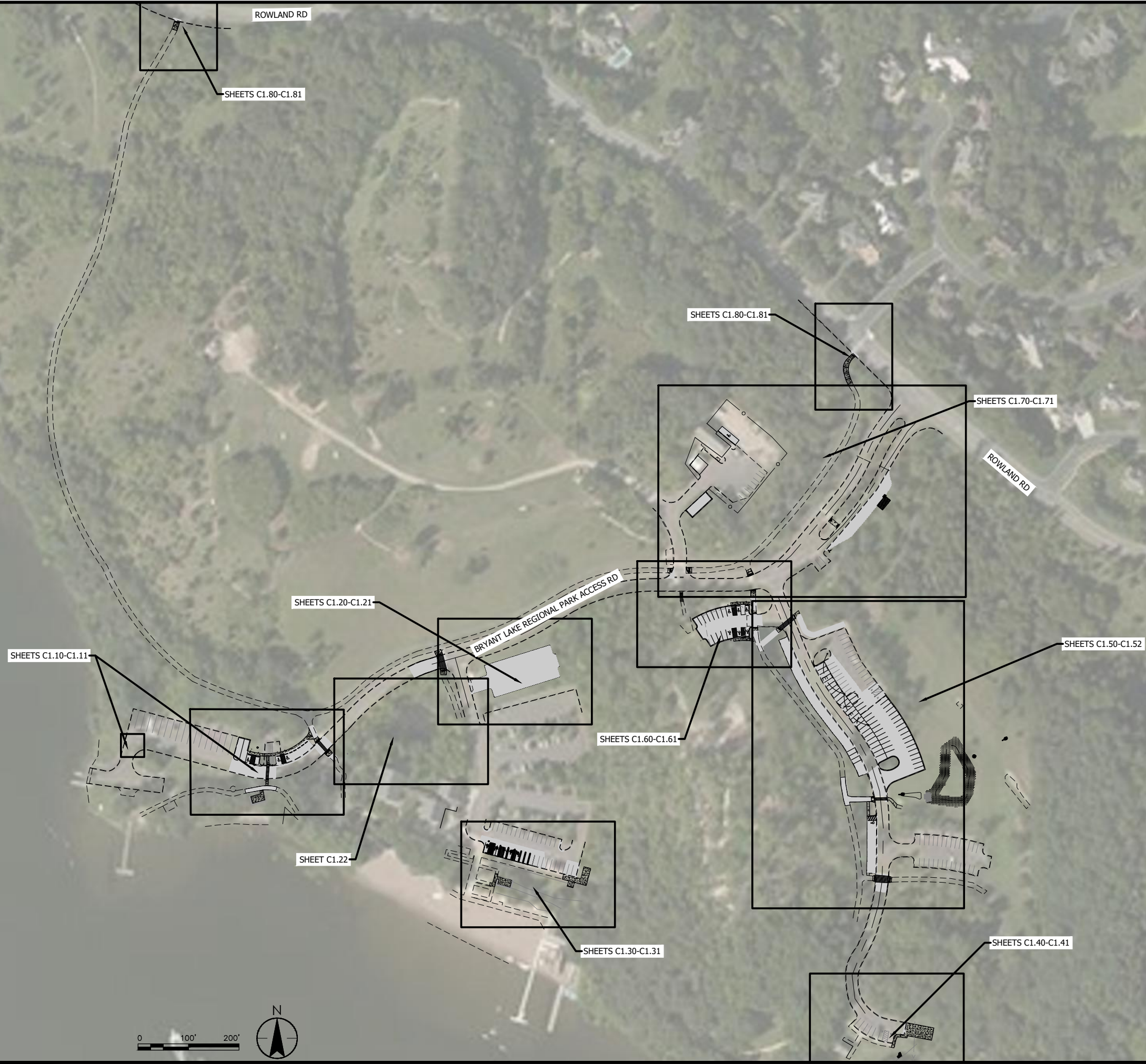
Approval, contingent upon:

1. General Conditions
2. In accordance with Rule 4.3.5, submission of a document signed by an official with authority with Three Rivers Park District assuming the maintenance obligation for the on-site storm water management facilities

By accepting the permit, when issued, the applicant agrees to the following stipulations:

1. Per Rule 4.5.6, an as-built drawing of the storm water facility conforming to the design specifications, including a stage volume relationship in tabular form for the storm water management facilities, as approved by the District must be submitted.
2. If winter maintenance by the Park District (snow plowing/ sand and salt application) is provided within the park, in accordance with Rule 4.3.4, a post-project chloride management plan must be provided that will, 1) designate an individual authorized to implement the chloride-use plan and 2) designate a MPCA certified salt applicator engaged in the implementation of the chloride-use plan for the site. Should winter maintenances of the roadways and parking lots within the park not be provided, correspondence must be received from the applicant informing the District that this rule does not apply.
3. Rule 12.4.1b requires demonstration and confirmation that the storm water management facility has been constructed or installed and is functioning as designed and permitted. Verification, through daily observation logs and photographs, must be provided showing the storm water facilities used for volume retention have drawn down within 48 hours from completion of two 1-inch (approximate) separate rainfall events.

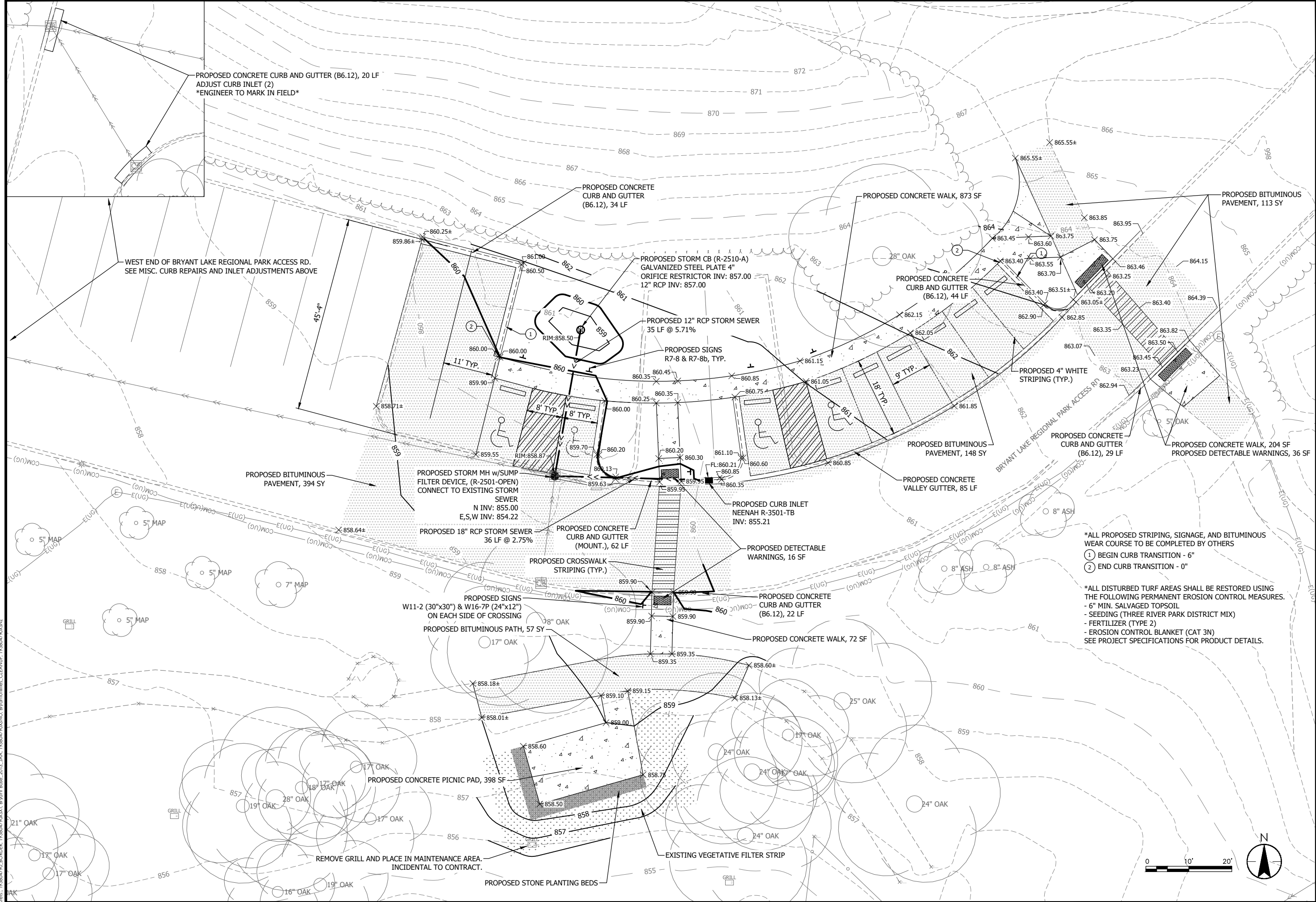
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THREE RIVERS PARK DISTRICT

BRYANT LAKE PARKING EXPANSION OVERALL SITE MAP

NO REVISION		DATE
SURVEY		TA
DRAWN		CMM
DESIGNED		JAW
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THREE RIVERS PARK DISTRICT

BRYANT LAKE PARKING EXPANSION

RAMP PARKING - SITE, GRADING & PERMANENT EROSION CONTROL PLAN

NO. _____

REVISION _____

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C1.11

DATE: 12/22/2019

UIC. NO. 55855

Stantec

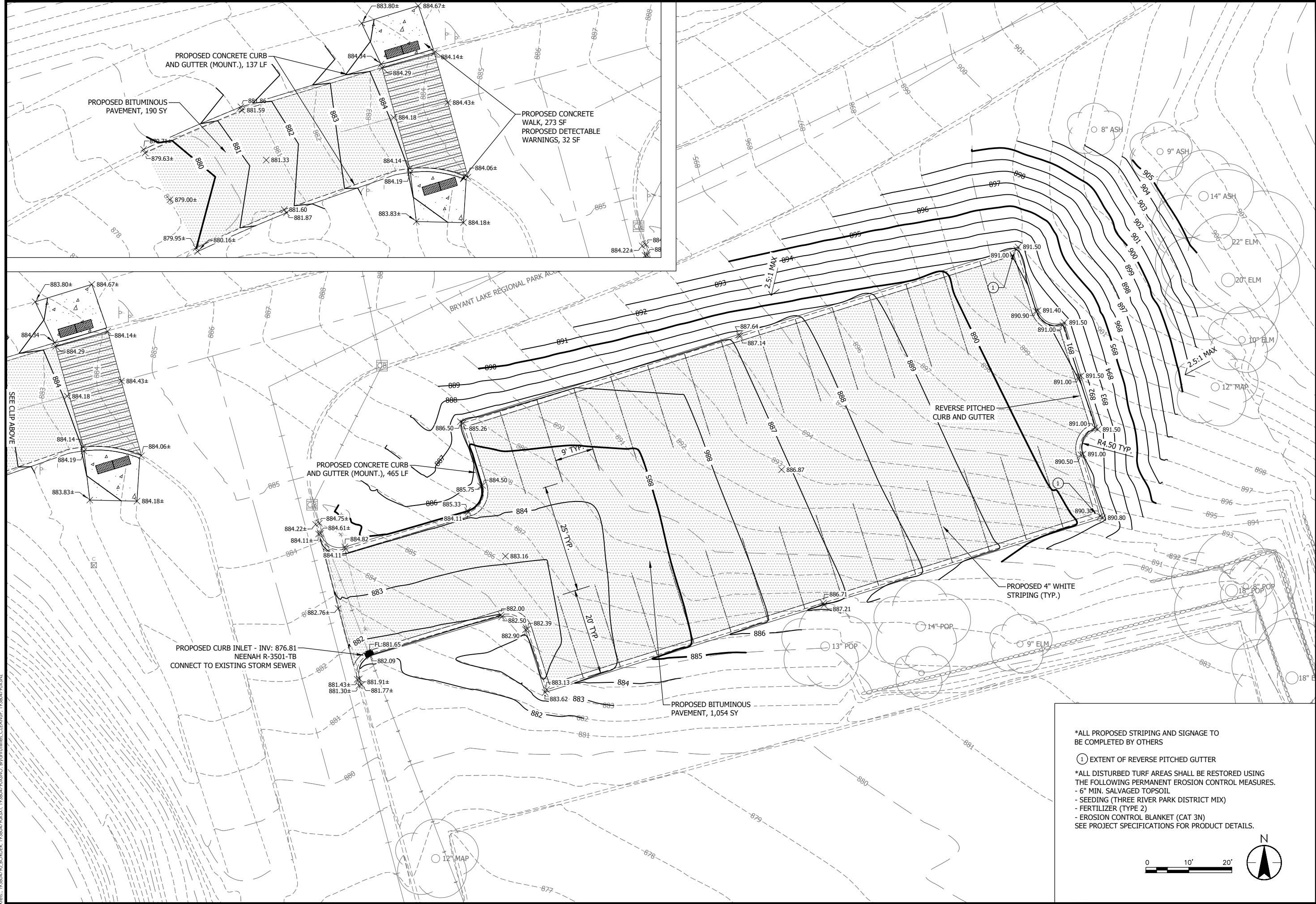
733 Marquette Ave., Suite 1000
 Minneapolis, MN 55402
www.stantec.com

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 ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: JACOB WOELMER

SIGNATURE: _____

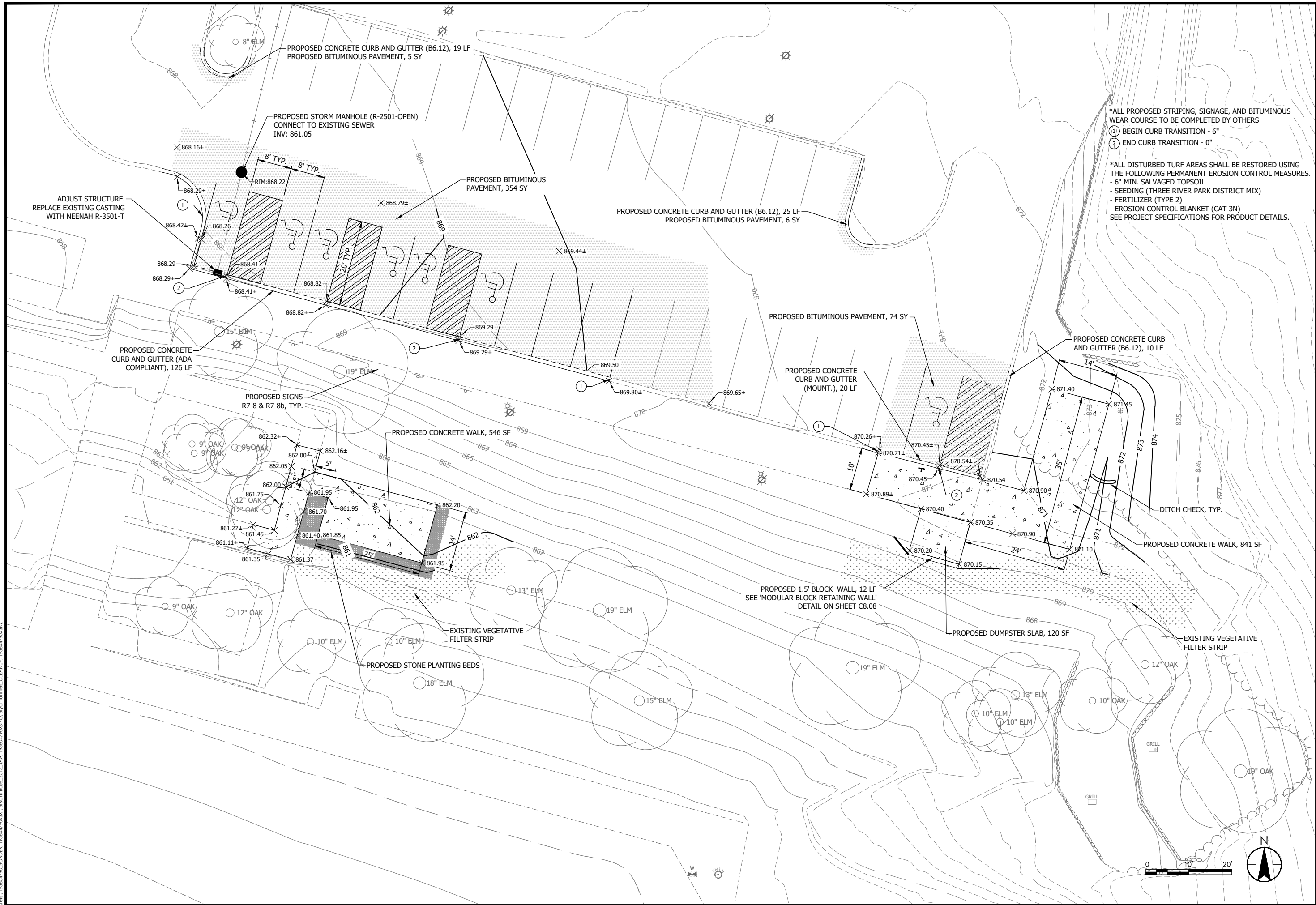
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THREE RIVERS PARK DISTRICT
BRYANT LAKE PARKING EXPANSION
BEACH PARKING - SITE, GRADING & PERMANENT EROSION CONTROL PLAN

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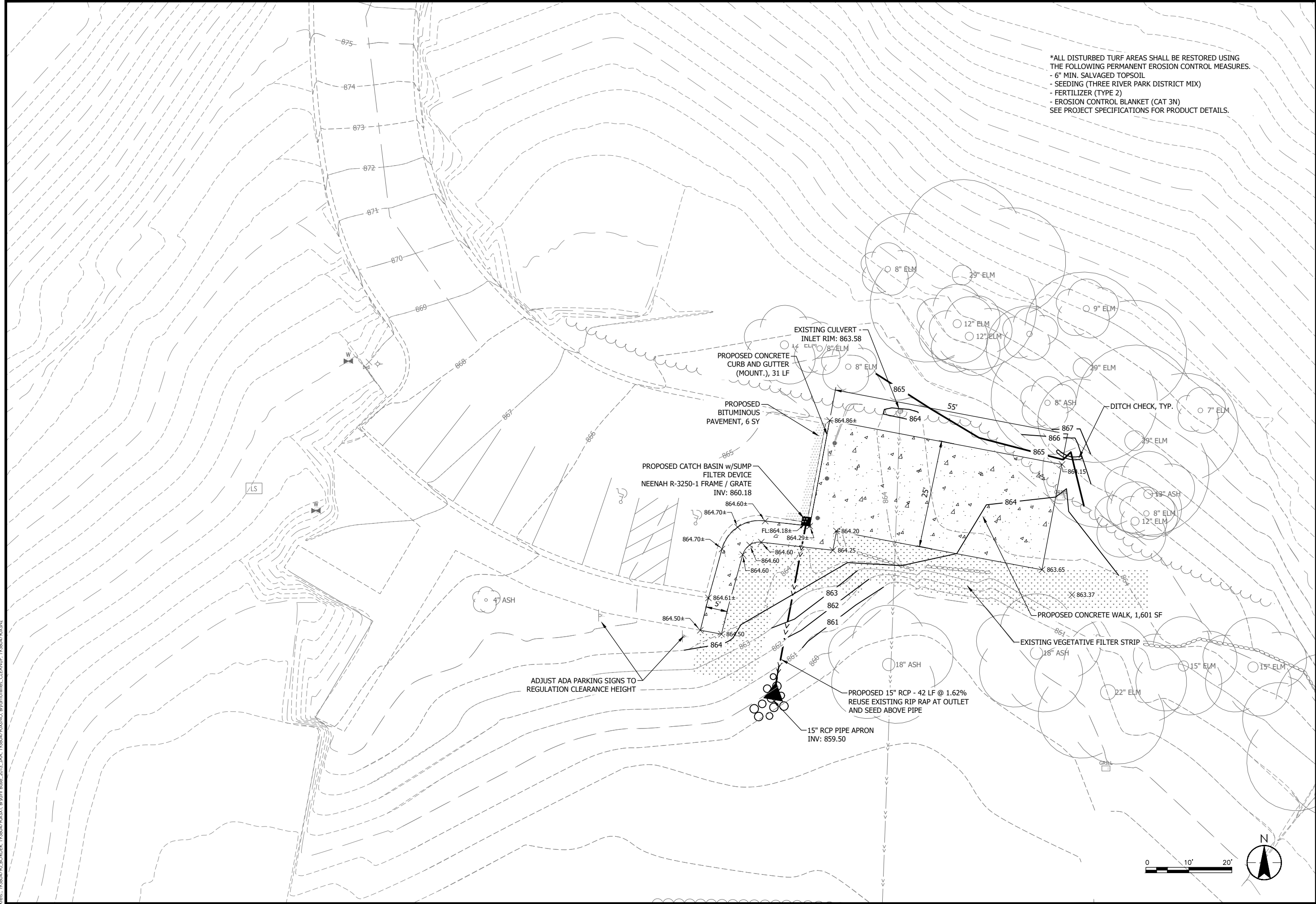
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THREE RIVERS PARK DISTRICT
BRYANT LAKE PARKING EXPANSION
BEACH ADA - SITE, GRADING & PERMANENT EROSION CONTROL PLAN

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
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SIGNATURE: 

DATE: 12/20/2019 LIC. NO.: 55856

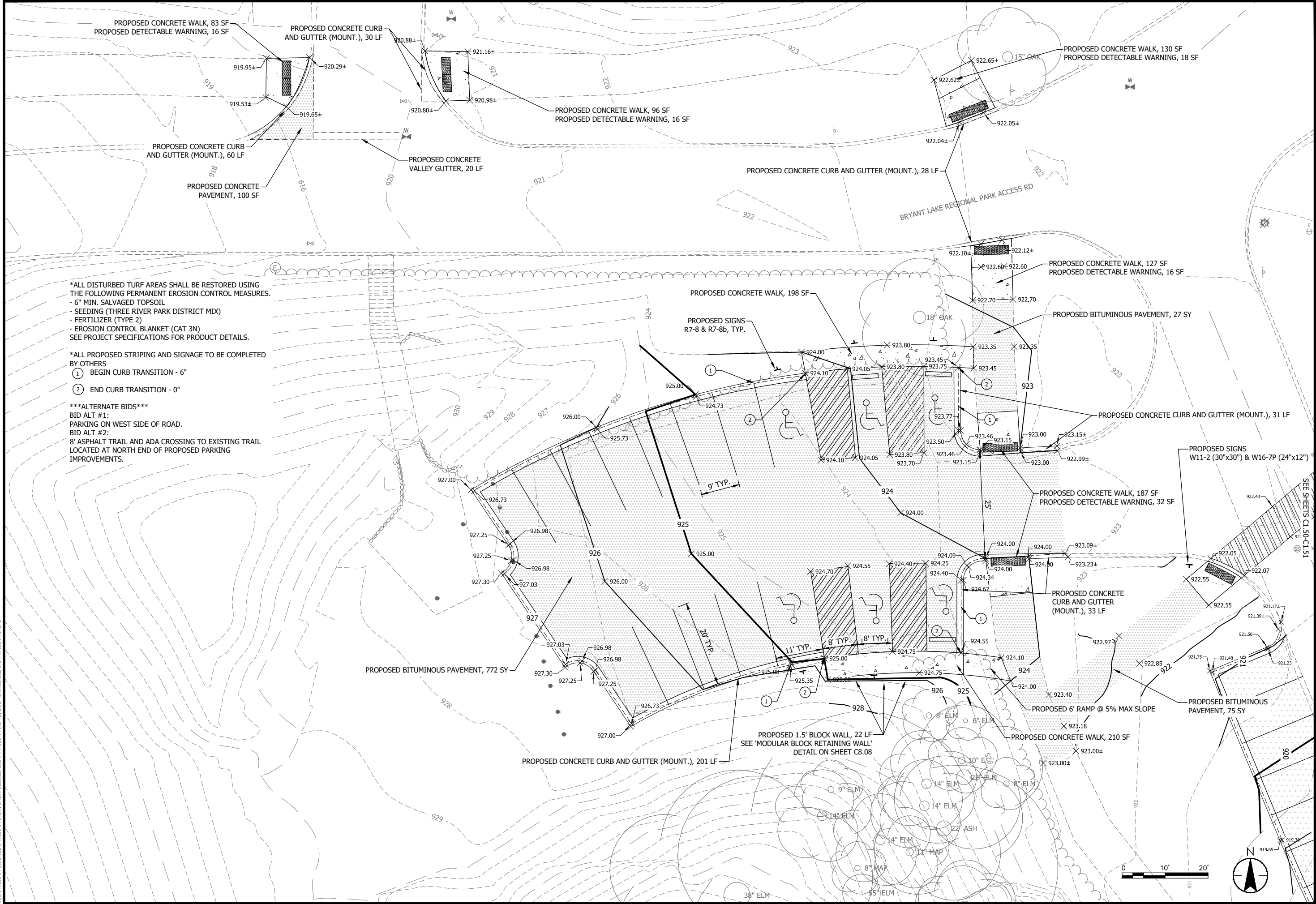
THREE RIVERS PARK DISTRICT
BRYANT LAKE PARKING EXPANSION
WATERS EDGE - SITE, GRADING & PERMANENT EROSION CONTROL PLAN

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PRINT NAME: JACOB WOELMER

Jacob Woelmer

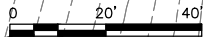
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THREE RIVERS PARK DISTRICT
BRYANT LAKE PARKING EXPANSION
DISK GOLF LOT 2 - SITE, GRADING & PERMANENT EROSION CONTROL PLAN


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DATE: 12/20/2019 UC NO: 55856

THREE RIVERS PARK DISTRICT
BRYANT LAKE PARKING EXPANSION
BOAT INSPECTION- SITE, GRADING & PERMANENT EROSION CONTROL PLAN

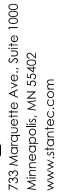
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PRINT NAME: JACOB WOELMER

DATE: 12/20/2019 UC. NO. 55856



THREE RIVERS PARK DISTRICT
BRYANT LAKE PARKING EXPANSION
MISC. CURB RAMPS - SITE PLAN

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