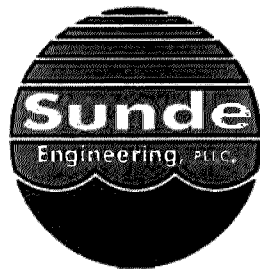


Park 'N Go  
Bloomington, MN

2022 Site Re-Development Conceptual  
Stormwater Management Design

June 2022



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## Narrative

Park 'N Go is proposing a redevelopment of its current parking lot located at 7901 International Drive in Bloomington, MN. The site is currently comprised of parking stalls and an associated building. The site was originally designed in 1991 and a NURP stormwater quality pond is located on the west side of the site to capture the runoff from the surface asphalt parking area. Park 'N Go is proposing a high-rise building with parking levels over the southern portion of the site. This work will disturb roughly 194,500 square feet of which 149,250 square feet is impervious asphalt surface that will be re-constructed back as building roof top or newly created impervious asphalt surfacing. The City of Bloomington will require that the impacted impervious area be treated; a volume of 1.1" over the newly created impervious area will have to be infiltrated.

According to the WebSoilSurvey, the site is comprised of Dorset Complex which is rated as a Hydrologic Soil Group (HSG) 'A'. The Minnesota Pollution Control Agency (MPCA) recommends an infiltration rate of 0.8 in/hr to be used in calculations.

Stormwater treatment for the project will be provided in a Subsurface ADS StormTech MC-7200 Chamber System.

The site's hydrology was modeled using HydroCAD software, which utilizes the TR-55 methodology. The times of concentration for TR-55 are a minimum of 6 minutes for each subbasin. Storm events were modeled using Atlas 14 rainfall data.

### ADS StormTech MC-7200

The subsurface infiltration chamber system will be comprised of 4-Rows of 45-Chambers per Row of ADS Stormtech MC-7200 chambers. The system will approximately be 304.1' in length and 37.6' in width while being 7.0' high. There will be 180 total chambers with associated end caps and connecting pipes. A diversion weir is included in this design to divert the runoff into an isolator row, this row will aid in pretreatment of the runoff before infiltrating. The system will be designed with 12" of stone base and cover.

#### Preliminary Design:

Bottom of Stone = 812.50

Bottom of Chambers = 813.50

Top of Stone = 819.50

Outlet Elevation = 814.30

Surface Area,provided = 804.09 ft. x 37.58 ft = 11,429 sq. ft.

\*Volume,provided (Below 814.30) = 18,349 cu. ft.

\*Total Volume,provided = 51,185 cu. ft.

\*\*2-YR HWL = 814.94

\*\*10-YR HWL = 815.83

\*\*100-YR HWL = 818.82

\*See attached Stage-Storage Table

\*\*See attached HydroCAD Report

### Preliminary Stormwater Management Requirements:

The proposed work will disturb roughly 194,500 square feet of impervious area.

Volume,required = (1.1"/12) \* (Disturbed Impervious Area)

Volume,required = (1.1"/12) \* 149,250 sq. ft. = 13,681 cu. ft.

Volume,provided = 18,349 cu. ft.

18,349 cu. ft. > 13,681 cu. ft.

Surface Area,required = Volume,required / (Infiltration Rate \* 48 hours)

Surface Area,required = (13,681 cu. ft.) / (0.8 in/hr \* 48 hours\*1/12) = 4,278 sq. ft.

Surface Area,provided = 11,429 sq. ft.

11,429 sq. ft. > 4,278 sq. ft.

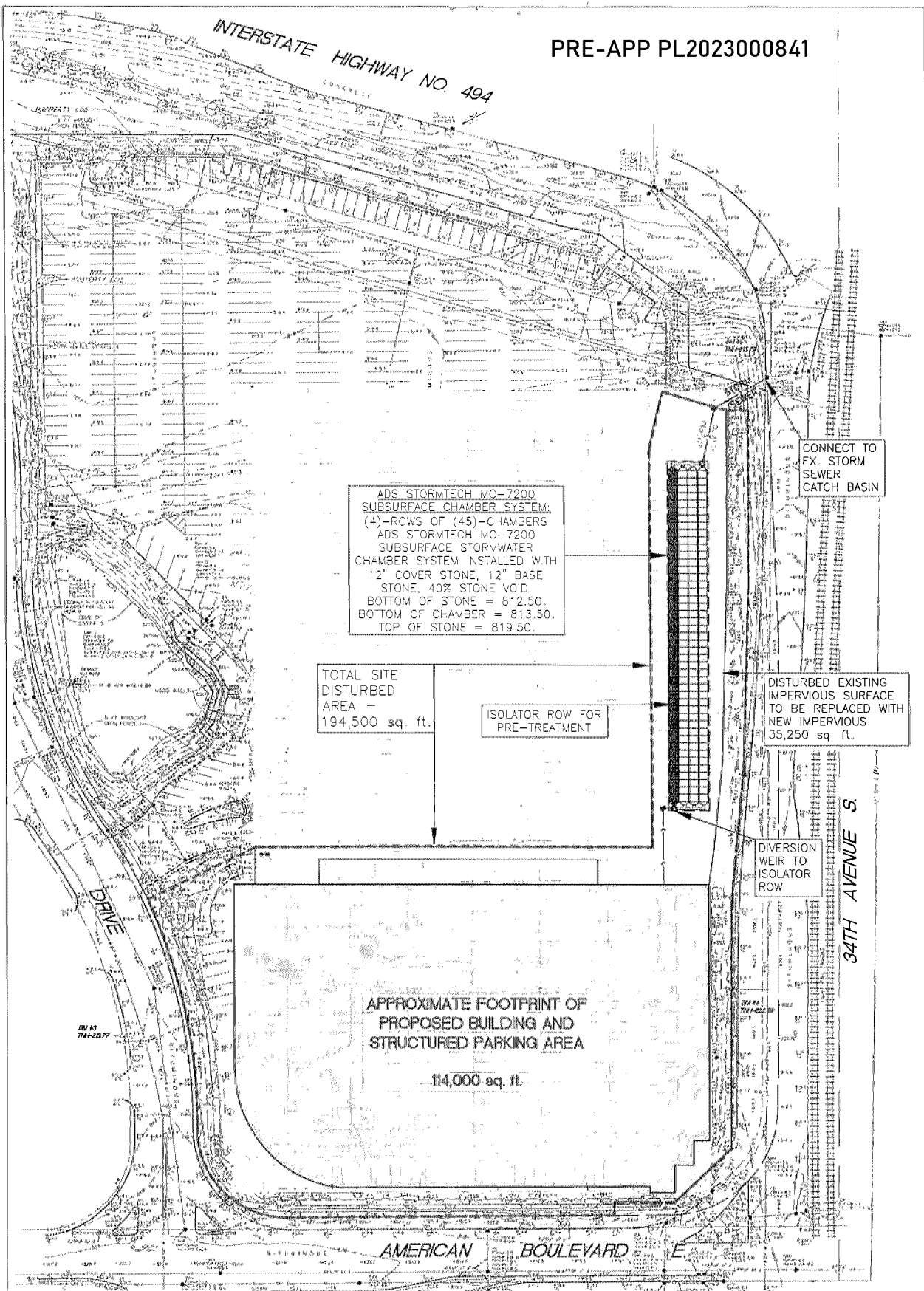
The infiltration basin will need to infiltrate the volume of water below the outlet within 48 hours to meet City Requirements.

Drawdown Time,provided = Vol,provided / (SA,provided \* Infiltration Rate)

Drawdown Time,provided = (18,349 cu. ft.) / (11,429 sq. ft.\*0.8 in/hr\*1/12) = 24 Hours

24 Hours < 48 Hours

INTERSTATE HIGHWAY NO. 494



ADS STORMTECH MC-7200  
 SUBSURFACE CHAMBER SYSTEM:  
 (4)-ROWS OF (45)-CHAMBERS  
 ADS STORMTECH MC-7200  
 SUBSURFACE STORMWATER  
 CHAMBER SYSTEM INSTALLED W/TH  
 12" COVER STONE, 12" BASE  
 STONE, 40% STONE VOID.  
 BOTTOM OF STONE = 812.50,  
 BOTTOM OF CHAMBER = 813.50,  
 TOP OF STONE = 819.50.

TOTAL SITE  
 DISTURBED  
 AREA =  
 194,500 sq. ft.

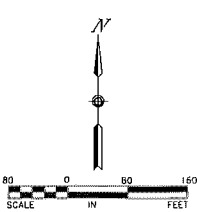
ISOLATOR ROW FOR  
 PRE-TREATMENT

CONNECT TO  
 EX. STORM  
 SEWER  
 CATCH BASIN

DISTURBED EXISTING  
 IMPERVIOUS SURFACE  
 TO BE REPLACED WITH  
 NEW IMPERVIOUS  
 35,250 sq. ft.

DIVERSION  
 WEIR TO  
 ISOLATOR  
 ROW

APPROXIMATE FOOTPRINT OF  
 PROPOSED BUILDING AND  
 STRUCTURED PARKING AREA  
 114,000 sq. ft.



PARK 'N GO  
 CONCEPT STORMWATER  
 MANAGEMENT FIGURE

JUNE 2022

