DRAINAGE REPORT

FOR

Toyota of North Austin

8400 Research Boulevard
City of Austin
Travis County, Texas 78758

PREPARED FOR:

GROUP 1 AUTOMOTIVE®

800 Gessner Road, Suite 500
Houston, TX 77024

PREPARED BY:

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TABLE OF CONTENTS

EXHIBITS

Exhibit 1 – Vicinity Map

Exhibit 2 – Overall Site Plan

Exhibit 3 – Existing Drainage Area Map

Exhibit 4 – Proposed Drainage Area Map

Exhibit 5 – Storm Sewer Plans

Exhibit 6 – Water Quality Plan and Details

Exhibit 7 – Erosion/Sedimentation Control & Tree Protection Plan and Details

APPENDICES

Appendix A – Calculations

- Existing and Proposed Time of Concentrations
- Existing and Proposed Peak Flows for 2-Year, 10-Year, 25-Year, and 100-Year Storm Events (City of Austin)
- Existing and Proposed Peak Flows for 2-Year, 5-Year, 10-Year, 25-Year, 50-Year, and 100-Year Storm Events (TxDOT)
- Water Quality Pond Calculations
- Sizing of Weir Openings and Overflow Weir
- Drawdown Calculations

Project Information:
Toyota of North Austin
8400 Research Boulevard
Austin, TX 78758

Permittee Information:
Group 1 Realty, Inc.
800 Gessner Road, Suite 500
Houston, TX 77024

Prepared by:
Cool Breeze Consultants LLC
1314 Avenue A, Suite A
Katy, TX 77493

SECTION 1 – SITE DESCRIPTION

1.1 Site Location

The project is the development of a 13.268-acre site in the City of Austin, Travis County, Texas. The project address is 8400 Research Boulevard, Austin, TX 78758 and is within the City of Austin limits. More specifically, the site is located at the northwest corner of Lazy Lane and US Highway 183. The project can be referenced by Travis County ID #0239100418 and #0239100316. Refer to *Exhibit 1 – Vicinity Map*.

1.2 Owner Information

Group 1 Realty, Inc.
800 Gessner Road, Suite 500
Houston, TX 77024

1.3 New Development Description

The existing Toyota of North Austin dealership is comprised of five (5) buildings totaling 103,689 square feet and is proposed to be redeveloped as one (1) 130,967 square foot building. The development will include the construction of one (1) building, a parking lot, landscaping, underground utilities, and a water quality pond. Refer to *Exhibit 2 – Overall Site Plan*.

1.4 Activities

All land use and general tasks/services associated with this project shall by typical of those associated with commercial developments in this area. These activities generally include landscaping maintenance, parking lot maintenance, and commercial waste disposal. The Storm Drainage and Detention Plans for the development consists of an on-site storm sewer collection system that conveys storm water from the site through inlets and routes the storm water to an on-site water quality. The storm water from the water quality ultimately outfalls into an existing manhole within the US Highway 183 right-of-way. Refer to *Exhibit 5 – Storm Drainage Plans*.

1.5 Total Site Area and Affected Area

The total site area of the development is 13.268 acres consisting of a car dealership with one (1) building, a parking lot, underground utilities, and a water quality pond. The total 13.268 acres of the site area will be affected by the development. Per existing site conditions, 10.136 acres drains to the existing manhole within the US Highway 183 right-of-way. Refer to *Exhibit 3 – Existing Drainage Area Map*. The redevelopment of the site will result in a decrease of impervious cover from existing to proposed conditions; therefore, detention will not be required. Drainage for this development has been designed such that there will be no adverse impacts on the capacity, function, or integrity of the existing downstream storm sewer facilities. The proposed on-site storm sewer system and water quality pond have been designed for the entire 13.268-acre site, and the proposed peak flows are designed to be less than the existing peak flows for 2-year, 10-year, 25-year, and 100-year storm events. See *Appendix A – Calculations* for appropriate calculations of existing and proposed peak flows.

1.6 Site and Vicinity Maps and Associated Information

A. Vicinity Map

The project is the development of a 13.268-acre site in the City of Austin, Travis County, Texas. The project address is 8400 Research Boulevard, Austin, TX 78758 and is within the City of Austin limits. More specifically, the site is located at the northwest corner of Lazy Lane and US Highway 183. The project can be referenced by Travis County ID #0239100418 and #0239100316. Refer to *Exhibit 1 – Vicinity Map*.

B. Areas of Development

The existing Toyota of North Austin dealership is comprised of five (5) buildings totaling 103,689 square feet and is proposed to be redeveloped as one (1) 130,967 square foot building. The development will include the construction of one (1) building, a parking lot, landscaping, underground utilities, and a water quality pond. Refer to *Exhibit 2 – Overall Site Plan*.

C. Drainage Areas

Per existing site conditions, 10.136 acres drains to an existing creek. Refer to *Exhibit 3 – Existing Drainage Area Map*. All land use and general tasks/services associated with this project shall by typical of those associated with commercial developments in this area. These activities generally include landscaping maintenance, parking lot maintenance, and commercial waste disposal. The Storm Drainage and Detention Plans for the development consists of an on-site storm sewer collection system that conveys storm water from the site through inlets and routes the storm water to an on-site water quality pond. The storm water from the water quality pond passes ultimately outfalls into an existing manhole within the US Highway 183 right-of-way. Refer to *Exhibit 5 – Storm Drainage Plans* and *Exhibit 6 – Water Quality Plan.*

D. Wetlands and Surface Waters

Per the U.S. Fish and Wildlife National Wetlands Inventory Map, there is wetlands specified as Riverine habitat located at the site. No proposed development will encroach the wetlands area; therefore, no predischarge notification will be required.

E. Potential Pollutant Activities

All land use and general tasks/services associated with this project shall be typical of those associated with commercial developments. These activities generally include landscaping maintenance, parking lot maintenance, and commercial waste disposal. These activities will be generally located around the parking lot. Refer to *Exhibit 7 – Erosion/Sedimentation Control & Tree Protection Plan and Details.*

F. Non-Structural Controls and Structural Controls

Non-structural controls for the storm water quality and detention in this development will include proper waste disposal and landscaping practices by employees and visitors. Public awareness of storm water quality is also affected using public signage on inlet covers and grates.

The structural controls for the storm water quality and detention in this development are comprised of a water quality pond. The water quality is designed to treat all the on-site storm drainage for the entire development and consists of a splitter box located at the influent of the pond, a sedimentation basin, and biofiltration basin. The splitter box consists of two (2) weir openings designed to pass the peak flow rate for the 25-year storm event and provide a maximum velocity entering the water quality pond to not exceed two (2) feet per second based on the 25-year storm event and an overflow weir designed to pass the peak flow rate for the 100-year storm event with a head not to exceed one (1) foot. The water quality is designed to allow enough freeboard to pass the peak flow rate for 100-year storm event over the splitter box without overtopping the walls of the pond.

Non-structural and structural controls are depicted in *Exhibit 5 – Storm Drainage Plans* and *Exhibit 6 – Water Quality Plan.*

G. Storm Water Discharge Locations

Storm water discharges into various on-site storm sewer inlets in this development, and the on-site storm sewer system outfalls into an on-site water quality pond. The storm water from the water quality pond ultimately outfalls into an existing manhole within the US Highway 183 right-of-way. Refer to *Exhibit 5 – Storm Drainage Plans* and *Exhibit 6 – Water Quality Plan.*

SECTION 2 – STORMWATER CONTROL MEASURES

2.1 Non-Structural Stormwater Control Measures

A. Landscaping Practices

The purpose of this SCM is to reduce fertilizer, pesticide, and water use by trying to use low maintenance type plants. The SCM has been designed to produce no increase to the respective average annual pollutant load of suspended solids, organic compounds, pesticides, and herbicides from the site. A Professional Landscaper will recommend proper planting for this subject site. The Facility Manager will be responsible for maintaining the development.

B. Commercial Waste

The Facility Manager will be responsible for proper handling of commercial solid waste. Solid waste materials should be stored in a trash bin or dumpster with a functional lid or kept under cover.

C. Hazardous Materials Storage/Disposal

The Facility Manager will be responsible for proper storage and disposal of hazardous materials.

D. Sanitary Waste

The building in this development is connected to sanitary sewer lines that drain to an on-site sewage facility operated by the Facility Manager. Grease traps will be on-site and are provided to collect on-site waste. Sampling wells are on-site to test the sanitary waste once it has passed through the grease traps.

E. Public Signage

Storm inlets in this development shall be marked to identify the inlet as a storm drain. The message will remind employees and customers to not dump pollutants into the storm sewers or contribute to ordinary storm water runoff by littering, over-fertilizing, or sweeping yard debris into the parking areas.

2.2 Structural Stormwater Control Measures

A. Water Quality Pond

The structural controls for the storm water quality and detention in this development are comprised of a water quality pond. The water quality is designed to treat all the on-site storm drainage for the entire development and consists of a splitter box located at the influent of the pond, a sedimentation basin, and biofiltration basin. The splitter box consists of two (2) weir openings designed to pass the peak flow rate for the 25-year storm event and provide a maximum velocity entering the water quality pond to not exceed two (2) feet per second based on the 25-year storm event and an overflow weir designed to pass the peak flow rate for the 100-year storm event with a head not to exceed one (1) foot. The water quality is designed to allow enough freeboard to pass the peak flow rate for 100-year storm event over the splitter box without overtopping the walls of the pond.

SECTION 3 – MAINTENANCE

3.1 Major Maintenance Requirements

The following maintenance activities shall be performed on all stormwater control measures (SCM), in addition to the requirements listed for the individual SCM types, to ensure proper function.

- Accumulated paper, trash, and debris shall be removed every six (6) months or as necessary to maintain proper operation.

- Structural integrity shall be maintained at all times. Ponds and all appurtenances shall be inspected annually, or more frequently if specified, and repairs shall be made if necessary. When maintenance or repairs are performed, the SCM shall be restored to the original lines and grades.

- Corrective maintenance shall occur any time drawdown does not occur within twenty-four (24) hours from the detention pond.

- The inlet and outlet of SCMs shall be maintained unimpeded in order to convey flow at all times. Observed blockages to the inlet and outlet, due to vegetation, sediment, debris, or any other cause, shall be removed.

- No unvegetated area shall exceed ten (10) square feet. This performance requirement applies to the entire detention pond including the pond bottom, side slopes, and areas adjacent to the pond and is intended to limit erosion.

- Integrated pest management shall be performed and shall adhere to the City of Austin Integrated Pest Management Guidelines.

- The minimum vegetation height shall be four (4) inches in the SCM and all appurtenances, including the toe of the berm of wall outside the SCM, where applicable.

- Sediment build-up shall be removed when the accumulation exceeds six (6) inches in the stormwater quality device and detention pond and when sediment, of any amount, causes standing water conditions or reduces detention pond storage by more than ten percent (10%).

- Vegetation within the SCM shall not exceed eighteen (18) inches in height at any time.

- Vegetation that is mowed or cut shall be removed from the SCM.

3.2 Routine Maintenance

The following maintenance items shall be performed depending on frequency and time of year:

- **Monthly:** Check for accumulated sediments. Remove as needed.
- Quarterly: Remove debris and accumulated sediment. Replace soil media in void areas caused by settlement. Repair eroded areas. Remulch by hand any void areas.
- Semi-annually: Remove and replace dead or diseased vegetation that is considered beyond treatment. Treat all diseased trees and shrubs mechanically or by hand depending on the insect or disease infestation. If drawdown for detention pond exceeds twenty-four (24) hours, lightly scarify soil with hand cultivator. If standing water remains for greater than twenty-four (24) hours, remove top layer of sediment, mulch, and potentially vegetation, de-compact soil by scarification, and replace mulch and disturbed vegetation.
- Late winter: Trim bunch grasses, mow turf grasses, and harvest other types of vegetation according to recommendations in the planting specifications.
- Spring: Remove previous mulch layer and apply new mulch layer by hand (option) once every two (2) to three (3) years.