



CITY PLANNER'S REPORT

City of Maryland Heights

Tidal Wave Express Car Wash/Application CUP21-0004

Edison Real Estate, LLC is seeking review from the Planning Commission for their requested Conditional Use Permit at 2024 McKelvey Road. The project, if approved, would allow for demolition of the existing structure (formerly Taco Bell) and the construction of a new automated carwash at the .97 acre property. The proposed project, a *Tidal Wave Express Car Wash*, would encompass a 5,000 square foot automated car wash tunnel, 18 self-service vacuum stations, and 2 mat cleaning areas. Expected hours of operation are 7:00 A.M.— 8:00 P.M.

See the attached for the applicant's narrative, traffic study, site development plan, and landscaping plans.



NARRATIVE

Tidal Wave Luxury Car Wash 2024 McKelvey Road Maryland Heights, Missouri

Edison Real Estate, LLC dba Tidal Wave Express Car Wash, proposes to demolish the existing Taco Bell restaurant and site improvements and develop/construct a modern and attractive new car washing facility with operating hours of 7a-8pm daily. The development will include a conveyORIZED car wash tunnel, self-service vacuum stations, and mat cleaning areas.

Project Specifics

1. 5,500 s.f. conveyORIZED car wash tunnel
2. 3 stacking lanes
3. 18 self-service vacuum stations
4. 4 parking spaces
5. 1 ADA accessible parking space
6. 1 24' wide drive entrance at McKelvey
7. 2 Mat cleaning areas
8. 1 trash area with sight proof screening
9. 1 business sign at McKelvey frontage
10. Exterior lighting to meet City ordinance

The property is located within the Dorset Road West Roadway Corridor which functions as the central business district of the city. This intersection is composed of retail and service-oriented uses serving the residential population. The project will provide a much needed service for the residents in this area.

The Dorsett/McKelvey Commercial Planning District is composed 146 acres making up 6% of the planning area. This planning district is developed as predominantly commercial service and multi-family residential land uses.

The governing ordinance is the Article 23 Motor Vehicle Orientated Business. Below is a summary of the requirements compared to the proposed project:

Sec. 25-23.3. - Location requirements.

Required:

1. All MVOBs must be a minimum of three hundred (300) feet from other motor vehicle oriented businesses, which distances shall be computed as follows:
 - a. For such businesses on the same side of the street, a minimum of three hundred (300) feet shall be provided between the two (2) closest property lines, said minimum distance, however, being subject to the effect of the additional requirements set forth in subsections B. and C. of this section.
 - b. For such businesses on opposite sides of the street, no such business shall be allowed on a lot where a line, drawn from either front corner of said proposed lot across the street and perpendicular to the street right-of-way on which the proposed lot fronts, crosses the right-of-way on the opposite side of the street at a point less than three hundred (300) feet from the closest property corner of an already existing or approved MVOB lot on said opposite side of the street.
 - c. For four-corner intersections, only two (2) MVOBs may be allowed at such an intersection but only on diagonally opposite corners, regardless of their distance from one another. For "T" intersections, only two (2) MVOBs may be allowed.
2. The planning commission may waive or reduce the minimum distance requirements set forth above when the MVOB is located in the "M-1", "C-2", "RD-C", "RD-M", or "PD" zoning districts. The planning commission shall, prior to deciding on the request for said waiver, receive and review a report from the city engineer or city's traffic consultant. The report shall include the impact on existing traffic of the waiver of said requirement along with the traffic consultant's recommendations for the mitigation of said impact through the installation of traffic control devices such as turning lanes, shared access drives, traffic signals, and signage.
3. The city planner may request that an applicant for a waiver provide, at the applicant's expense, a traffic study to ascertain the project's impact and effect of any proposed traffic control devices. Said study shall be prepared by a registered professional engineer prequalified by the city to perform such studies and said study shall be in accordance with guidelines established by the city

Proposed:

1. The proposed development is replacing a MVOB with a new MVOB with lower peak traffic count
2. Proximity to the nearest MVOB
 - a. North: 245 feet to the Dairy Queen
 - b. Southwest on opposite side of McKelvey: 130 feet to the Steak & Shake
 - c. South: Adjacent to Jimmy Johns
3. The restaurants within the 300 foot range are Jimmy Johns, Dairy Queen and Steak & Shake which empirically have a much lower traffic peak volume than other fast food restaurant
4. A traffic study is submitted with this proposal.

Sec. 25-23.4. - Site design standards.

1. Minimum lot area.
 - a. Required: Twenty thousand (20,000) square feet.
 - b. Proposed: 42,441 square feet
2. Minimum lot width.
 - a. Required: The minimum lot width at the building line shall be one hundred fifty (150) feet.
 - b. Proposed: 99.94 feet. Please note that this is an existing lot and the proposed development meets or exceeds all set back requirements.
3. Yard requirements:
 - a. Front yard.
 - i. Required: There shall be a front yard having a depth of not less than thirty (30) feet. No accessory building, service island, or other service or pickup facilities shall project beyond the front building setback line except as noted in subsection 25-13.5.D, structural projections.
 - ii. Proposed: 70 feet
 - b. Side yard.
 - i. Required: There shall be a side yard on each side of the building of not less than five (5) feet. Said yard requirements shall be twenty-five (25) feet where abutting any non-urban or residential zoning district.
 - ii. Proposed: 12 feet
 - c. Rear yard.
 - i. Required: MVOBs shall maintain the same rear yard requirements as the zoning district in which the business is located.
 - ii. Proposed: 200 feet

4. Ingress and egress:
 - a. Driveway Width
 - i. Required: The minimum width of driveways at the property line shall be twenty-four (24) feet, and shall not exceed forty (40) feet.
 - ii. Proposed: 24 feet
 - b. Driveway Radius
 - i. Required: The radius used to increase the driveway opening at the curb or pavement edge shall not be less than ten (10) feet nor more than forty (40) feet. The edges of the opening shall not project beyond the side property line extended normal to the pavement.
 - ii. Proposed: 20 feet
 - c. Driveway Width
 - i. Required: Driveway openings shall be limited to one (1) drive per two hundred (200) feet of lot frontage. On a corner lot, one (1) entrance from each street shall be permitted and located as far as possible from the street intersection corner.
 - ii. Proposed: one
 - d. Driveway Angle
 - i. Required: The angle of driveway intersection with the street shall be based upon reasonable criteria for safe traffic movements and subject to the review and approval of the city engineer.
 - ii. Proposed: 90 degrees

Sec. 25-23.5. - Drive-thru lanes standards.

1. Storage length
 - a. Required: Stacking spaces equivalent to ten (10) times the capacity of the car wash shall be provided. One (1) stacking space is equal to twenty-two (22) feet of pavement length. There are 4 cars in tunnel at one time; therefore 40 stacking spaces required
 - b. Proposed: 40 stacking spaces
2. Exclusive use
 - c. Required: The drive-thru lane shall be used exclusively for drive-thru vehicles for a distance equivalent to fifty (50) percent of the required storage length of the car wash.
 - d. Proposed: 65%

Sec. 25-23.6. - Site design.

1. Off-street parking:
 - a. Required: All MVOBs shall provide for off-street parking in accordance with the requirements of [article 14](#) of this chapter, except as otherwise noted elsewhere.
Office area of 500 s.f. at 4.5/1,000 requires 3 parking spaces
 - b. Proposed: 3 parking spaces plus 1 ADA parking space
2. Parking stall width
 - a. Required: The minimum width of a parking stall shall be ten (10) feet.
 - b. Proposed 10 feet
3. Locations
 - a. Required: No internal parking stall, cross drive aisle, or loading space shall be located closer to the street right-of-way than twenty (20) feet or within any side yard setback.
 - b. Proposed: 78 feet to vacuum station
4. Utilities
 - a. Required: All utility, power and telephone lines, except those located in designated overhead utility corridors, shall be located underground.
 - b. Proposed: all new utilities will be underground

January 28, 2021

Mr. Mace Nosovitch
Tidal Wave Car Wash
1154 Greystone Manor Parkway
Chesterfield, Missouri 63005

RE: MVOB Review and Trip Comparison
Proposed Tidal Wave Car Wash – 2024 McKelvey Road
Maryland Heights, Missouri
CBB Job No. 008-21

Dear Mr. Nosovitch:

In accordance with your request, CBB has completed a traffic assessment and MVOB review for the proposed Tidal Wave Car Wash at 2024 McKelvey Road in Maryland Heights, Missouri. The site generally located on the east side of McKelvey Road north of Dorsett Road, generally opposite the Mod Pizza in the outlot of Dorsett Village. The site was previously occupied by a 3,270 square-foot (SF) Taco Bell fast-food restaurant with drive-thru. The site currently has one inbound-only access from McKelvey Road on the south side of the site and one outbound-only access to McKelvey Road on the north side of the site, see an aerial view of the site shown in **Figure 1**.

It is our understanding the Maryland Heights Motor Vehicle Oriented Business (MVOB) ordinance does not allow more than one MVOB within 300 feet of another MVOB without a waiver from the Planning Commission, whose decision is supported by the findings of a traffic report analyzing the potential impacts of multiple MVOB's.

There are several MVOB's currently within 300 feet of the subject site property including: Dairy Queen, Jimmy Johns Sandwiches, Walgreens's Pharmacy and Steak 'N' Shake

Based on direction from City staff, the purpose of this traffic assessment and MVOB review was to estimate the number of trips that would be generated by the proposed Tidal Wave Car Wash in comparison to the previous Taco Bell fast-food restaurant and review the conformance of the MVOB to the applicable requirements of Maryland Heights MVOB, Section 25, Article 23.



Figure 1: Site Location Map

The existing site includes a Taco Bell fast-food restaurant that is approximately 2,530 SF with a drive-thru, which is considered a MVOB. The proposed 4,956 SF Tidal Wave Car Wash is also considered a MVOB on the same site.

The Preliminary Site Plan, dated January 28, 2021, provided by Civil Engineering Design Consultants (CEDC) combines the two existing taco bell access drives into one drive on the south end of the site and serves both inbound and outbound flow at one location. **Figure 2** illustrates the current site plan layout and proposed access.

Traffic Assessment

As mentioned, the site was previously occupied by 2,530 SF fast-food restaurant with drive-thru, and a 4,956 SF Tidal Wave Car Wash is proposed. In order to determine potential traffic impacts of changing land use from a fast-food restaurant to a car wash, the trip generation of each land use was estimated.

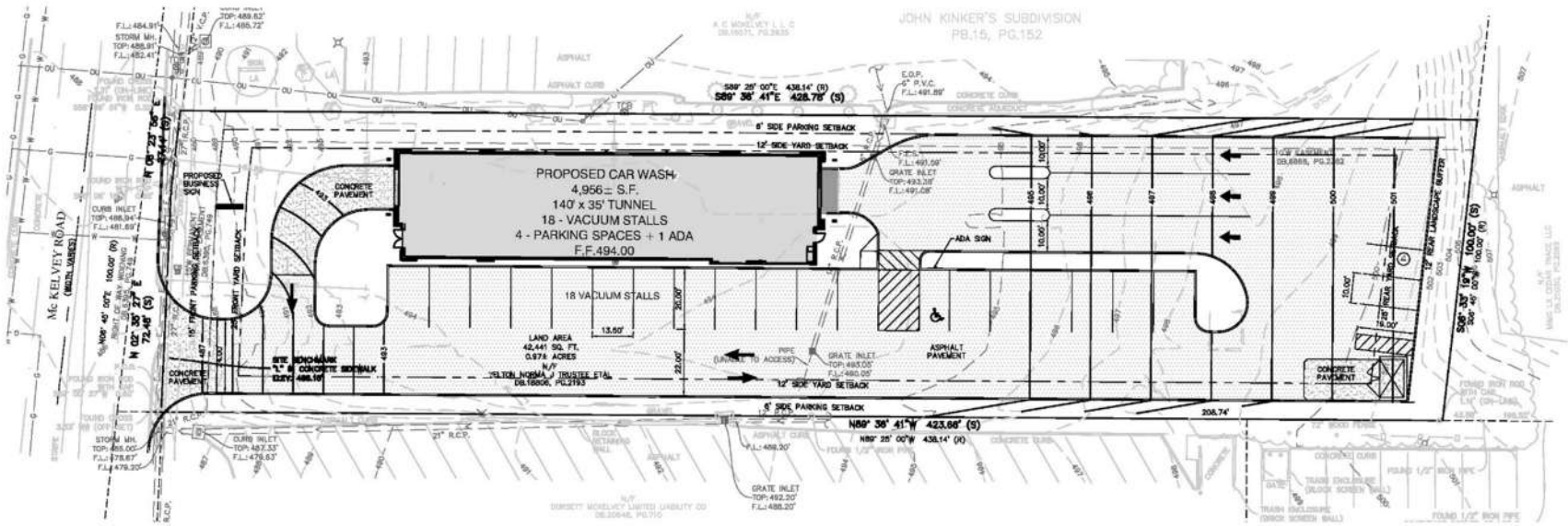


Figure 2: Conceptual Site plan (Provided by others)



Trip Generation Comparison - Previous Fast-Food Restaurant & Proposed Car Wash

Traffic forecasts were prepared to estimate the amount of traffic the previous fast-food restaurant with drive-thru would generate during the weekday lunch period and the PM commuter peak hour. These forecasts were based upon information provided in the *Trip Generation Manual*, 10th Edition, published by the Institute of Transportation Engineers (ITE). This manual, which is a standard resource for transportation engineers, is based on a compilation of nationwide studies documenting the characteristics of various land uses.

ITE Code 834 – Fast-Food Restaurant with Drive-Through Window was utilized for the previous Taco Bell restaurant, while ITE Code 937 – Automated Car Wash was used for the proposed Tidal Wave car wash. It should be noted that ITE does not provide any midday trip estimates for an automated car wash, therefore, information from the operator was used to estimate the midday (lunch) peak hour trips for the car wash.

Based on the owner’s expected operating conditions, the car wash is heavily reliant on the traffic already driving past the site and expects the trips for the proposed site to draw approximately 0.05% to 1% of the traffic along the roadways adjacent to the site to use the car wash on a typical day. Since McKelvely Road carries approximately 15,000 vehicles per day, the car wash is estimated to have about 75 to 150 customers per day. The owner indicates a relatively even distribution of washes throughout the day with the PM commuter peak hour heavier than most hours of the day. As a result, approximately 15 washes (15 vehicles inbound and 15 vehicles outbound) were assumed during the midday (lunch) peak hour for the car wash. The owner also indicates that the 35 inbound and 35 outbound trips estimated by ITE trip estimate is a reasonable, if not a little high, with approximately 25% of the daily trips occurring during the PM peak hour. **Table 1** summarizes the trip generation for each land use.

Table 1: Trip Generation Comparison – Previous Fast Food Restaurant and Automated Car Wash

LAND USE	SIZE	WEEKDAY MIDDAY (LUNCH) PEAK HOUR			WEEKDAY PM PEAK HOUR		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Fast-Food Restaurant with Drive-Through Window (ITE Land Use 934)	2,530 SF	65	65	130	45	40	85
Automated Car Wash (ITE Land Use 937)	4,956 SF	15	15	30	35	35	70

* Trips rounded to nearest 5

As can be seen, the proposed car wash is expected to generate slightly fewer trips (15 fewer trips) than the fast-food restaurant during the PM commuter Peak Hour and considerably less trips (100 fewer trips) during the midday (lunch) peak hour. As can be seen, the proposed Tidal Wave Car Wash is expected to have less impact on traffic than the previous fast-food restaurant at the same location.



Maryland Heights' Motor Vehicle Oriented Business Requirements

Per the City's governing ordinances, a MVOB land use, such as the proposed Tidal Wave Car Wash, must comply with all applicable requirements of Section 25, Article 23. The ordinance requirements are shown in italics below and the determined compliance (and supporting explanation, where warranted) are shown in bold.

The site plan for the Tidal Wave Car Wash was compared to the MVOB standards for an automatic car wash.

Section 25-23.1 Conditional Use

Motor vehicle oriented businesses (MVOB) shall require a conditional use permit in all districts as indicated in appendix B, land use and required parking matrix, of this chapter. When approved as a conditional use, the MVOB must comply with all applicable requirements of this section.

Section 25-23.2 Nonconforming Motor Vehicle Oriented Business

*Existing MVOBs which do not comply with the regulations and conditions of this chapter shall be considered to be nonconforming and allowed to continue; however, all nonconforming MVOBs shall comply with the following requirements within one (1) year after written notification by the building commissioner of items which must be corrected. **Not Applicable.***

Section 25-23.3 Location Requirements

All MVOBs must be a minimum of three hundred (300) feet from other motor vehicle oriented businesses, which distances shall be computed as follows:

- A. *For such businesses on the same side of the street, a minimum of three hundred (300) feet shall be provided between the two (2) closest property lines, said minimum distance, however, being subject to the effect of the additional requirements set forth in paragraphs B. and C. of this subsection. **Not Satisfied. Several MVOB's are currently on the same side of the street as the subject site (i.e., Dairy Queen, Jimmy John's and Walgreens), including the previous use (i.e., Taco Bell) on the subject site***
- B. *For such businesses on opposite sides of the street, no such business shall be allowed on a lot where a line, drawn from either front corner of said proposed lot across the street and perpendicular to the street right-of-way on which the proposed lot fronts, crosses the right-of-way on the opposite side of the street at a point less than three hundred (300') feet from the closest property corner of an already existing or approved MVOB lot on said opposite side of the street. **Not Satisfied. The Steak 'N' Shake which only has access through Dorsett Village is an MVOB.***



- C. For four-corner intersections, only two (2) MVOBs may be allowed at such an intersection but only on diagonally opposite corners, regardless of their distance from one another. For "T" intersections, only two (2) MVOBs may be allowed. **Not Applicable.**
- D. The Planning Commission may waive or reduce the minimum distance requirements set forth above when the MVOB is located in the "M-1", "C-2", "RD-C", "RD-M", or "PD" zoning districts. The Planning Commission shall, prior to deciding on the request for said waiver, receive and review a report from the City Engineer or City's traffic consultant. The report shall include the impact on existing traffic of the waiver of said requirement along with the traffic consultant's recommendations for the mitigation of said impact through the installation of traffic control devices such as turning lanes, shared access drives, traffic signals, and signage. **The planning commission can waive this location requirement at their discretion. The preceding trip comparison has identified the proposed MVOB (Car Wash) is expected to generate fewer trips than the previous fast-food restaurant MVOB use.**
- E. The City Planner may request that an applicant for a waiver provide, at the applicant's expense, a traffic study to ascertain the project's impact and effect of any proposed traffic control devices. Said study shall be prepared by a registered professional engineer pre-qualified by the City to perform such studies and said study shall be in accordance with guidelines established by the City. **A full traffic impact study was not requested by the City, since the proposed use is expected to generate less traffic when compared to the previous fast-food restaurant.**

Sec. 25-23.4. - Site design standards

The following site design standards shall be met for all MVOBs except as otherwise noted:

- A. **Minimum Lot Area.** Twenty thousand (20,000) square feet. **Satisfied. The Lot Area is ± 0.97 acres or more than 42,000 SF.**
- B. **Minimum Lot Width.** The minimum lot width at the building line shall be one hundred fifty (150) feet. **Not Satisfied. The lot width is approximately 100 feet.**
- C. **Yard Requirements:**
1. **Front Yard.** There shall be a front yard having a depth of not less than thirty (30) feet. No accessory building, service island, or other service or pickup facilities shall project beyond the front building setback line except as noted in Section 25-13.5.D, Structural Projections. **Satisfied.**
 2. **Side Yard.** There shall be a side yard on each side of the building of not less than five (5) feet. Said yard requirements shall be twenty-five (25) feet where abutting any Non-Urban or residential zoning district. **Satisfied. Adjacent side yard properties are C-2 or PD-C so a 5 feet side yard is required and 6 feet or more is provided.**



3. *Rear Yard.* MVOBs shall maintain the same rear yard requirements as the zoning district in which the business is located. No rear yard is required in the “C-2” Zoning except where the rear line abuts a lot in any non-urban or residential zoning district, then a rear yard of not less than twenty-five (25) feet shall be provided. Adjacent Property to the rear yard is R6, therefore a 25-foot rear yard shall be provided. **Partially Satisfied.** **The trash enclosure is within approximately 12-15 feet of the rear property line.**

D. Ingress and Egress:

1. *The minimum width of driveways at the property line shall be twenty-four (24) feet, and shall not exceed forty (40) feet.* **Satisfied.** **The proposed entrance is proposed to be 24 feet wide.**

2. *The radius used to increase the driveway opening at the curb or pavement edge shall not be less than ten (10) feet nor more than forty (40) feet. The edges of the opening shall not project beyond the side property line extended normal to the pavement.* **Satisfied.** **The radius at the driveway openings are 20 feet.**

3. *Driveway openings shall be limited to one (1) drive per two hundred (200) feet of lot frontage. On a corner lot, one (1) entrance from each street shall be permitted and located as far as possible from the street intersection corner.* **Satisfied.** **One driveway is proposed.**

4. *The angle of driveway intersection with the street shall be based upon reasonable criteria for safe traffic movements and subject to the review and approval of the City Engineer.* **Satisfied.** **The access is generally perpendicular to McKelvey Road.**

5. *Motor vehicle oriented businesses integrated in a shopping center or cluster of commercial facilities shall use the common access with other business establishments in that center.* **Not applicable.** **Location is not a shopping center.**

Section 25-23.5 Drive-Thru Lanes Standards

Except as otherwise noted elsewhere in this section, all drive-thru facilities shall be designed to meet the minimum requirements indicated.

A. *Storage length.* If not specifically specified herein, storage length will be determined by the City Planner with the input of the City’s traffic consultant and/or City Engineer based upon an evaluation of the company’s projected sales for a ten (10) year period and the volume of adjacent street traffic. **See Section F1 below.**



B. *Exclusive Use.* The drive-thru lane shall be used exclusively for drive-thru vehicles. **See Section F2 below.**

C. *C. Lane Width.* The drive-thru lane must be a minimum of twelve (12) feet in width, except that a ten (10) foot wide lane will be permitted within the pick-up/service area to guide motorists adjacent to the drive-up facility. **Satisfied.**

D. *Minimum Distance from a Public Roadway.* When the drive-thru lane is oriented parallel to a public roadway, there must be a minimum distance of fifty (50) feet measured between the public road curb or edge of pavement and the nearest curb or edge of the drive-thru lane. **Not Applicable.** The drive-thru lane is not parallel to the public Road.

E. *Banking facilities...* **Not applicable**

F. **Automated car washes shall meet the following standards:**

1. *Storage Length.* Stacking spaces equivalent to ten (10) times the capacity of the car wash shall be provided. One (1) stacking space is equal to twenty-two (22) feet of pavement length. **Satisfied.** Based on information from the owner, there is typically a maximum capacity of 4 vehicles in the tunnel. Based on the code, 40 stacking spaces (or 880 feet) of storage should be provided with half exclusive use. The site plan includes enough stacking to accommodate approximately 915 feet of total stacking (or 41 vehicles) on the site before potentially impacting McKelvey Road, see Figure 3.

The owner indicates that it only takes every two and a half minutes for the vehicle to get a complete wash, which results in a new vehicle entering the car was every 30 to 40 seconds. Assuming a service time of 30-40 seconds, approximately 90-120 vehicles could be washed in one hour.

Assuming a service rate of one vehicle every 40 seconds and 35 vehicles entering the wash during the p.m. peak hour of the day as indicated by the trip table above, queuing theory estimates approximately 1 vehicle queue, see the formula below:

$$\text{Expected Number in Queue} = \frac{\text{Total Peak Hour Arrivals}}{\text{Capacity Flow}-\text{Total Peak Hour Arrivals}} = \frac{35}{90-(35)} = 0.636 \text{ vehicle}$$

In order for the expected queues to extend beyond the exclusive use area proposed (24 vehicles), approximately 86 to 115 vehicles would need to enter the car wash during one hour, assuming a 40 second service rate (90 washes/hour) and 30 second service rate (120 washes/hour), respectively. Considering 86 to 115 vehicles to the car wash is 2 to three times the typical



amount of typical traffic expected (35 vehicles), queues beyond the exclusive use area are expected to be rare.

- 2. *Exclusive use. The drive-thru lane shall be used exclusively for drive-thru vehicles for a distance equivalent to fifty (50%) percent of the required storage length of the car wash. Satisfied. The exclusive use area includes three lanes to accommodate approximately 24 vehicles (528 feet), see Figure 3.*

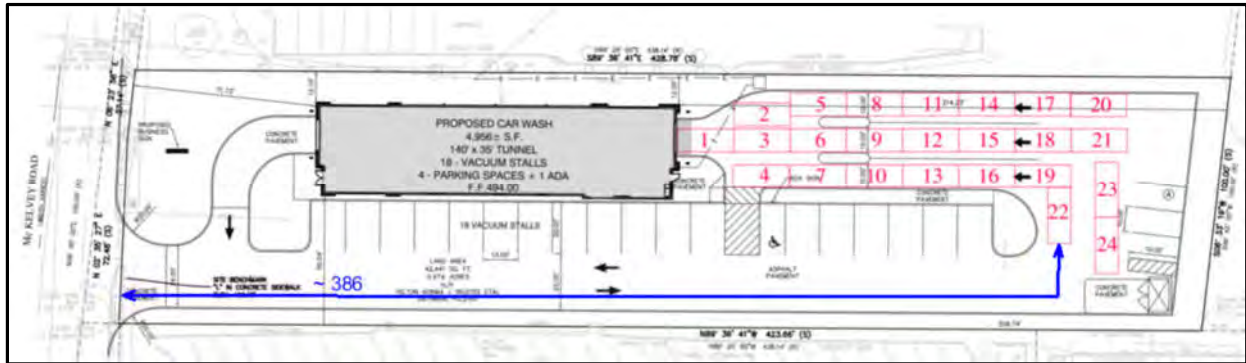


Figure 3: Drive-Thru Storage

- G. *Fast Food restaurants...Not applicable*
- H. *Retail Fuel Dispensing Facilities...Not applicable*
- I. *Retail Pharmacy ...Not applicable*

Section 25-23.6 Site Design

A. *Off-street parking:*

- 1. *All MVOBs shall provide for off-street parking in accordance with the requirements of Section 25 Article 14 Parking and Loading Regulations, except as otherwise noted elsewhere.*

Appendix B - Land Use and Required Parking Matrix refers back to the MVOB code and does not have specific parking space requirements. The site plan includes 18 vacuum stalls 13.5 feet wide, as well as one handicap space and three employee parking stalls.

- 2. *The minimum width of a parking stall shall be ten (10) feet for MVOB Uses. Satisfied. The handicap and employee spaces are 10 feet wide, while the vacuum stalls are 13.5' wide.*
- 3. *No internal parking stall, cross drive aisle, or loading space shall be located closer to the street right-of-way than twenty (20) feet or within any side yard setback. Satisfied.*



B. Vehicular areas:

1. *The entire area used by vehicles for parking, storage, service, etc., shall be paved with concrete or asphaltic concrete. **All parking will be on asphalt, concrete pavement or pervious pavement.***
2. *A raised six-inch concrete curb shall be provided at the edge of all pavement. **Satisfied. A raised curb is provided around the paved areas.***
3. *When the rental of equipment, automobiles, trucks, and trailers is to be conducted on an MVOB site, additional land area and paved area shall be provided in addition to the driveway, parking area, and landscape areas required by this section. An additional one thousand (1,000) square feet of site area shall be provided for each five (5) rental units. No parking of rental units shall be permitted on landscaped areas or within driveways. All rental storage areas shall be paved and landscaped as approved by the city planner. Such rental equipment shall be stored in rear yard except when being picked up by customers. **Not applicable.***

D. Performance standards:

1. *Products for use in motor vehicles may be displayed or sold from an appropriate rack or compartment at the gasoline station pump islands for the convenience of the customer and station attendant. All other merchandise and material for sale and all vending machines shall be displayed adjacent to or within an enclosed building. **Not applicable.***
2. *Flammable materials used in the conduct of MVOBs shall be stored according to the building code. **Not applicable.***
3. *All lubrication, washing, repair, and service of vehicles shall be conducted entirely within a building. The grease or wash racks, hydraulic hoists, pits, and other equipment used to perform these services shall be contained within a building. **The washing of vehicles will occur inside the building and all equipment for washing vehicles will be within the building.***
4. *The planning commission may recommend, and the city council may require, other conditions which will tend to eliminate or reduce public nuisance caused by noise, heat, odors, smoke, dust, vibration, glare, flooding, and traffic congestion and promote the purpose of this chapter.*



5. *No service bay and/or loading zone shall face any street right-of-way. **Not applicable.***
 6. *All paved and landscaped areas shall, at all times, be kept in good repair in accordance with this and other ordinances of the city and the continuous maintenance of said areas shall be the responsibility of the owners and lessees of the property.*
- E. *Utilities. All utility, power and telephone lines, except those located in designated overhead utility corridors, shall be located underground. **Satisfied. Overhead utilities are located underground.***

Although internal site circulation is not a specific requirement of the MVOB ordinance, a cursory review of site circulation was performed. The following summarizes our review of the site circulation:

- The circulation and layout are acceptable. Consolidation of the existing separate inbound and outbound access drives to McKelvey Road is preferred. Adding an additional exit only directly onto McKelvey Road from the car wash tunnel is not advised.
- Although the consolidated drive is shifted slightly to the south, this shift will not cause undesirable left-turn overlaps issues with the access to Dorsett Village on the opposite side of McKelvey Road.
- The site civil engineer should perform AUTOTURN on the turns within the site to verify appropriate turning radii are provided. Specifically, the route exiting the car wash tunnel to McKelvey Road. The vehicles exiting the wash should not cross the centerline of the main drive aisle, see **Figure 4**.
- Signing and/or pavement marking could be installed at the tunnel connection to the main drive aisle to clearly convey the car wash tunnel exit (one way) so that patrons do not attempt to enter the car wash backwards, see **Figure 4**.

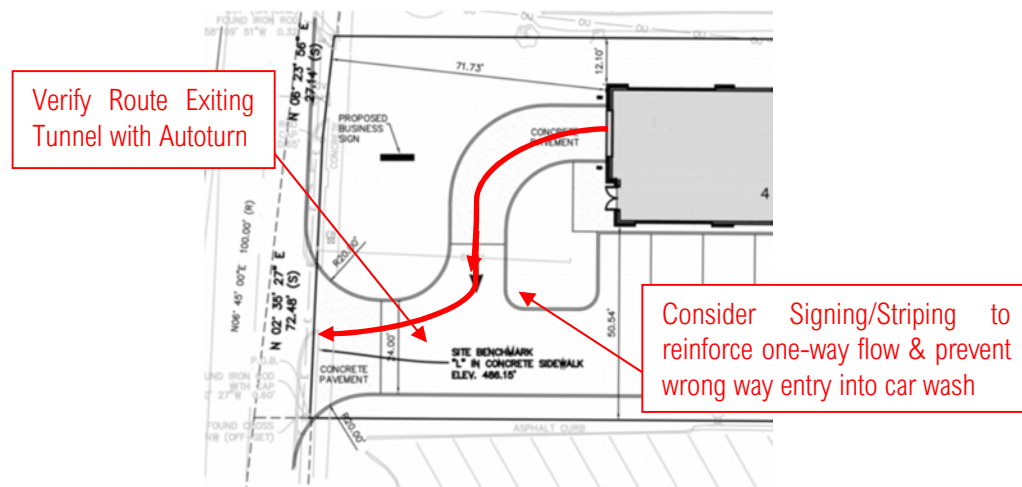


Figure 4: Reinforce One-Way Traffic Flow at Drive-Thru Exit

- Careful consideration should be given to sight distance obstructions when planning aesthetics enhancements, such as signs, berms, parking, fencing and landscaping, to ensure that these improvements do not obstruct the view of vehicles entering or exiting the site. It is generally recommended that all improvements higher than 3 ½ feet above the elevation of the nearest pavement edge be held back at least 20 feet from the traveled roadway. It is the responsibility of the site designer to ensure proper sight distance.

Summary

The following summarize CBB’s Traffic Assessment and MOV B review:

- The proposed car wash is expected to generate slightly fewer trips (15 fewer trips) than the fast-food restaurant during the PM commuter peak hour and considerably less trips (100 fewer trips) during the midday (lunch) peak hour. Thus, the proposed Tidal Wave Car Wash is expected to have less impact on traffic than the previous fast-food restaurant at the same location.
- All MVOBs must be a minimum of three hundred (300) feet from other MVOB’s. This site was previously a MVOB and is proposed to be a lower intensity MVOB.
- A MVOB requires a minimum lot width of 150 feet, while the lot is approximately 100 feet wide.
- A trash enclosure is within the 25-foot rear yard. The trash enclosure approximately 12-15 feet of the rear property line.
- Careful consideration should be given to sight distance obstructions when planning aesthetics enhancements, such as signs, berms, parking, fencing and landscaping, to ensure that these improvements do not obstruct the view of vehicles entering or exiting the site. It is the responsibility of the site designer to ensure proper sight distance.



- The circulation and layout are acceptable. Consolidation of the existing separate inbound and outbound access drives to McKelvey Road is preferred. Adding an additional exit only directly onto McKelvey Road from the car wash tunnel is not advised.
 - Although the consolidated drive is shifted slightly to the south, this shift will not cause undesirable left-turn overlaps issues with the access to Dorsett Village on the opposite side of McKelvey Road.
- The site civil engineer should perform AUTOTURN on the turns within the site to verify appropriate turning radii are provided internal to the site.
- Signing and/or pavement marking could be installed at the tunnel connection to the main drive aisle to clearly convey the car wash tunnel exit (one way) so that patrons do not attempt to enter the car wash backwards.

We trust that you will find our input useful with respect to the traffic assessment, site circulation and MVOB review for the proposed Tidal Wave Car Wash in Maryland Height, Missouri. If additional information is desired, please feel free to contact me at 314-479-5022 or brensing@cbbtraffic.com.

Sincerely,

Brian Rensing, P.E., PTOE
Associate, Senior Transportation Engineer

LEGEND

EXISTING CONTOURS	---
PROPOSED CONTOURS	—+—+—+—
EXISTING STORM SEWER	—S—S—
PROPOSED STORM SEWER	—ST—ST—
EXISTING SANITARY SEWER	—S—S—
PROPOSED SANITARY SEWER	—SAN—SAN—
RIGHT-OF-WAY	—+—+—+—
EASEMENT	—+—+—+—
CENTERLINE	—+—+—+—
EXISTING TREE	⊕
EXISTING SPOT ELEVATION	+ 433.20
PROPOSED SPOT ELEVATION	+ 433.20
SWALE	—+—+—+—
TO BE REMOVED	T.B.R.
TO BE REMOVED & RELOCATED	T.B.R. & R.
TO BE USED IN PLACE	U.I.P.
ADJUST TO GRADE	A.T.G.
BACK OF CURB	B.C.
FACE OF CURB	F.C.
WATER MAIN	—W—W—
GAS MAIN	—G—G—
UNDERGROUND TELEPHONE	—T—T—
OVERHEAD WIRE	—OHE—
UNDERGROUND ELECTRIC	—E—E—
SILTATION CONTROL	X
FIRE HYDRANT	⊕
POWER POLE	⊕
WATER VALVE	⊕
LIGHT STANDARD	⊕

SITE BENCHMARK

NAVD88 ELEV. - 486.15' FTUS
 "L" CUT IN CONCRETE SIDEWALK ALONG THE EAST RIGHT OF WAY LINE OF McKEVELY ROAD, AS SHOWN ON SURVEY.

ST. LOUIS COUNTY BENCHMARK

8334 NAVD88(SLC2011A) ELEV = 495.02 FTUS (OR) 150.883 METER NAVD29 ELEV = 495.30 FTUS CUT "L" ON THE NORTHEAST CORNER OF THE CONCRETE BASE FOR THE NORTH LEG OF "SHELL" SIGN WITHIN A LAWN AREA IN THE NORTHEAST CORNER OF THE SHELL GAS STATION ADDRESSED AS #1999 MCKEVELY ROAD; ROUGHLY 80 FEET WEST OF THE CENTERLINE OF MCKEVELY ROAD AND 60 FEET SOUTH OF THE CENTERLINE OF DORSETT ROAD.

LAND DESCRIPTION

PART OF LOT 5 OF JOHN KINKER'S SUBDIVISION ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT BOOK 15 PAGE 152, AS DESCRIBED IN BOOK 18806 PAGE 2193 OF THE ST. LOUIS COUNTY, MISSOURI, RECORDS AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A FOUND 1/2" IRON PIPE AT THE SOUTHEAST CORNER OF LOT 5 OF JOHN KINKER'S SUBDIVISION, THENCE ALONG THE SOUTHERN LINE OF LOT 5 OF SAID SUBDIVISION, NORTH 89 DEGREES 36 MINUTES 41 SECONDS WEST A DISTANCE OF 243.40 FEET TO THE POINT OF BEGINNING OF THE HEREIN DESCRIBED PARCEL; THENCE CONTINUING ALONG THE SOUTHERN LINE OF SAID LOT 5, NORTH 89 DEGREES 36 MINUTES 41 SECONDS WEST A DISTANCE OF 423.66 FEET TO A POINT ON THE EASTERN RIGHT OF WAY LINE OF MCKEVELY ROAD (VARIABLE WIDTH) AS ESTABLISHED BY ST. LOUIS COUNTY HIGHWAYS AND TRAFFIC PROJECT # 5WK-1058; THENCE ALONG SAID RIGHT OF WAY LINE, NORTH 02 DEGREES 35 MINUTES 27 SECONDS EAST A DISTANCE OF 72.48 FEET TO A FOUND REBAR WITH CAP "COUNTY H/T"; THENCE CONTINUING ALONG SAID RIGHT OF WAY LINE, NORTH 06 DEGREES 23 MINUTES 56 SECONDS EAST A DISTANCE OF 27.14 FEET TO A POINT; THENCE LEAVING SAID RIGHT OF WAY LINE, SOUTH 89 DEGREES 36 MINUTES 41 SECONDS EAST A DISTANCE OF 428.78 FEET TO A POINT; THENCE SOUTH 06 DEGREES 33 MINUTES 19 SECONDS WEST A DISTANCE OF 100.00 FEET TO THE POINT OF BEGINNING CONTAINING 42,441 SQUARE FEET OR 0.97 ACRES MORE OR LESS AS SURVEYED BY MARLER SURVEYING COMPANY INC. DURING JANUARY 2021.

SURVEYORS NOTES OF INTEREST

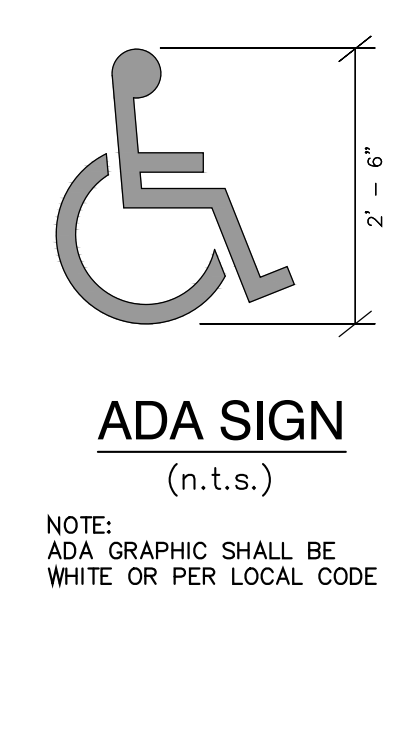
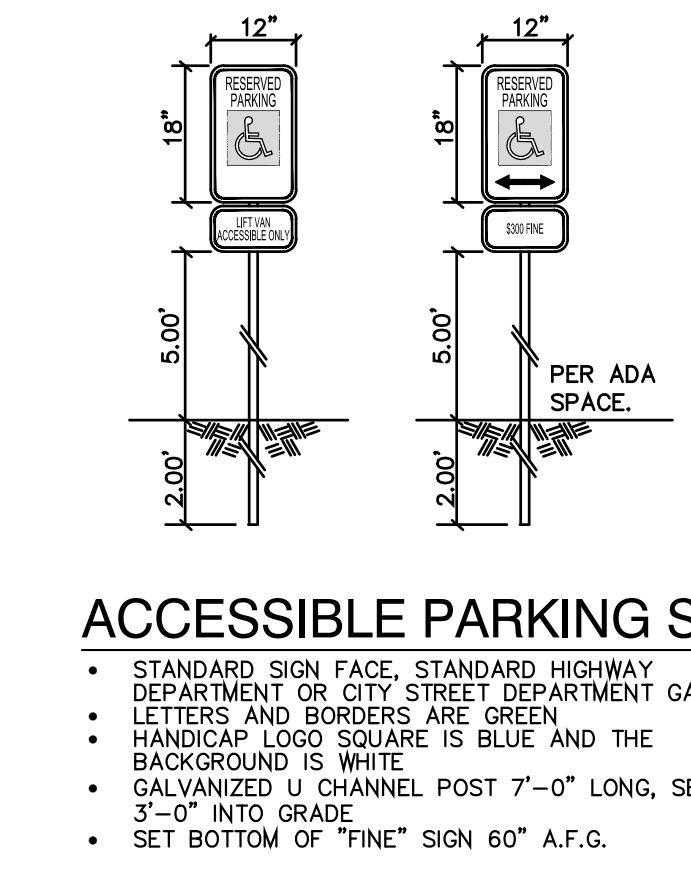
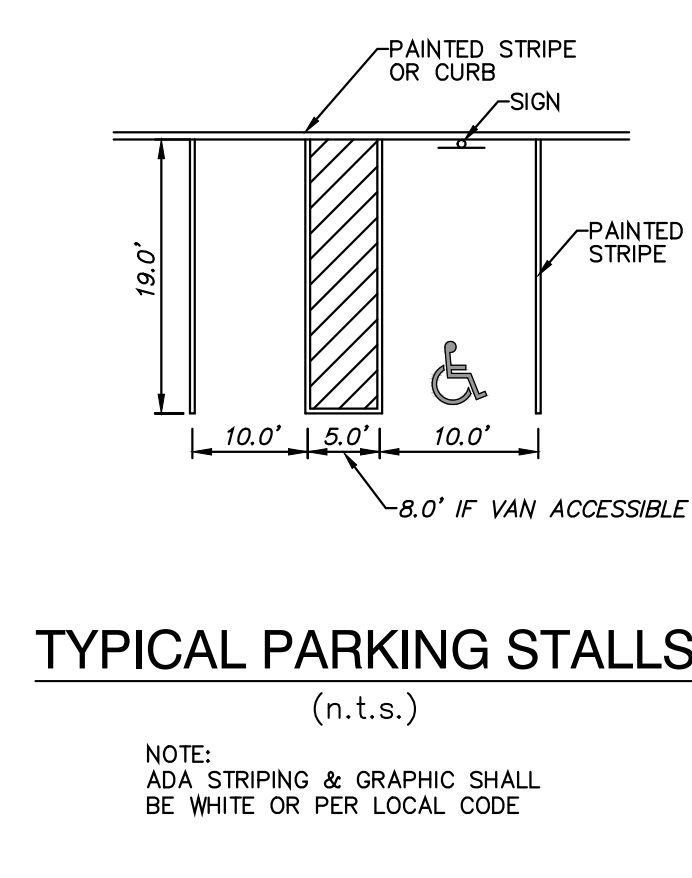
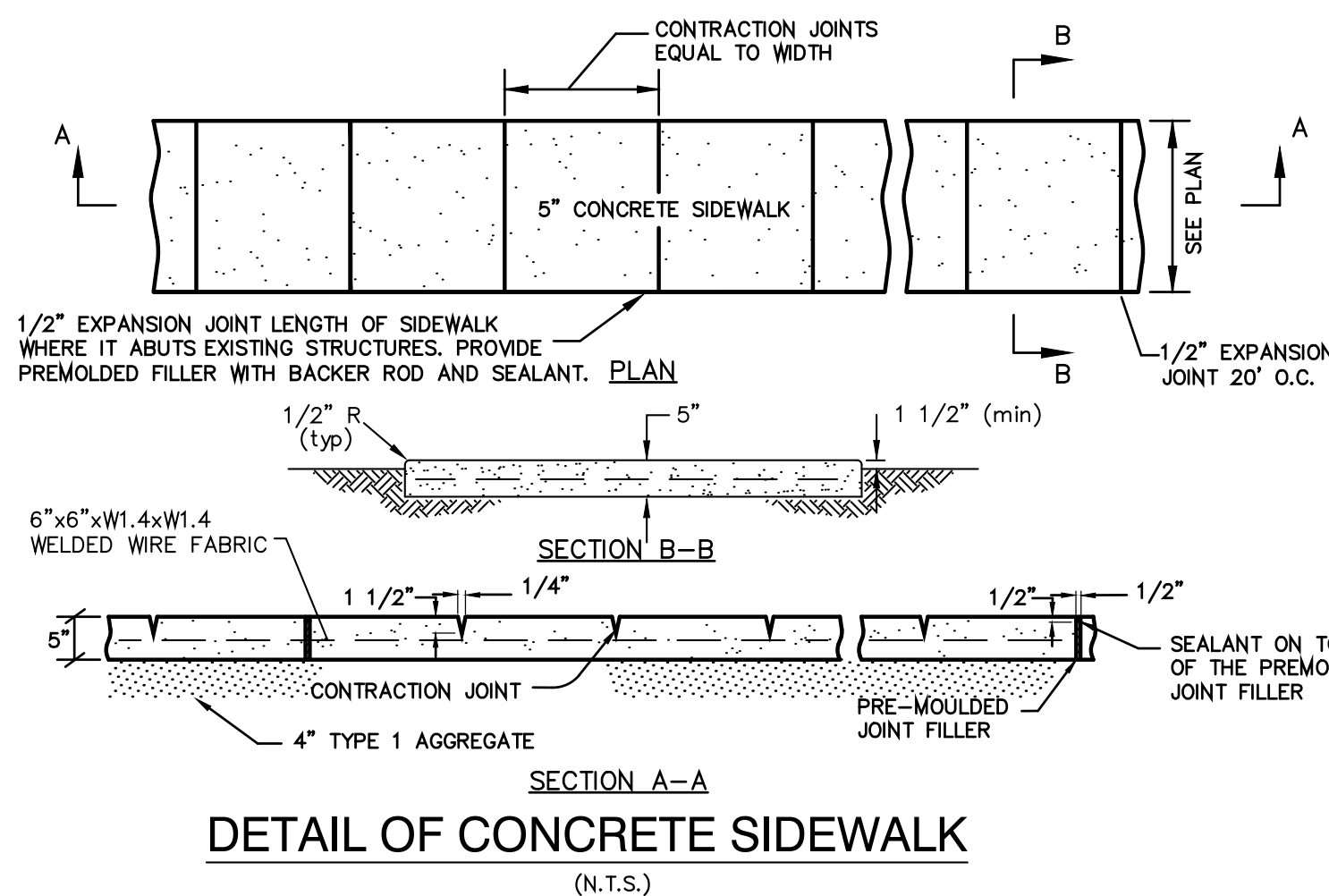
- ADJOINER'S RETAINING WALL EXTENDS OVER PROPERTY LINE, AS SHOWN ON SURVEY.
- EASMENT NOT PROVIDED FOR UTILITY, AS SHOWN ON SURVEY.
- EASMENT NOT PROVIDED FOR SIDEWALK, AS SHOWN ON SURVEY.

PREPARED FOR:

TIDAL WAVE LUXURY WASH
 C/O EDISON REAL ESTATE, LLC
 158 Long Road
 Chesterfield, Missouri 63005
 (636) 236-9946
 Contact: Mace Nosovitch

PREPARED BY:

CEDC
 CIVIL ENGINEERING
 DESIGN CONSULTANTS
 10820 Sunset Office Drive
 Suite 200
 St. Louis, Missouri 63127
 314.729.1400
 Fax: 314.729.1404
 www.cedc.net

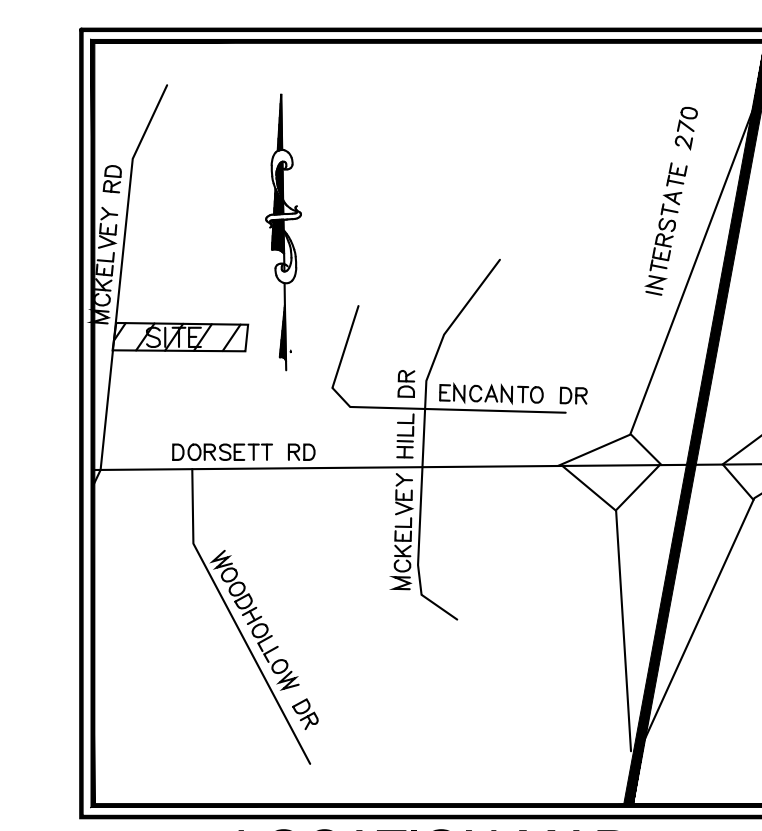


SITE DEVELOPMENT PLAN

for

TIDAL WAVE LUXURY WASH

PART OF LOT 5 OF JOHN KINKER'S SUBDIVISION ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT BOOK 15 PAGE 152 OF THE ST. LOUIS COUNTY, MISSOURI, RECORDS IN ST. LOUIS COUNTY, MISSOURI



PROPERTY DATA

OWNER	= YELTON NORMA J TRUSTEE ETAL
ADDRESS	= 2024 MCKEVELY ROAD
LOC. #	= 140530131
ACREAGE	= 0.97± AC.
ZONED	= C-2 (GENERAL COMMERCIAL)
FIRM	= 29189C0179K
WATER SHED	= MISSOURI RIVER
SCHOOL DISTRICT	= PARKWAY
FIRE DISTRICT	= MARYLAND HEIGHTS
SEWER DISTRICT	= METROPOLITAN ST. LOUIS SEWER DISTRICT
ELECTRIC COMPANY	= AMEREN UE
GAS COMPANY	= SPIRE
TELEPHONE	= AT&T
WATER COMPANY	= MISSOURI AMERICAN WATER

UTILITIES / AGENCIES

ELECTRIC COMPANY	= AMERENUE-DORSETT DISTRICT 12121 DORSETT ROAD MARYLAND HEIGHTS, MO 63043 PH. (314) 344-9560 ATTN: ENGINEERING	WATER COMPANY	= MISSOURI AMERICAN WATER COMPANY 1050 RESEARCH BLVD. ST. LOUIS, MO 63132 PH. (314) 996-2465 ATTN: ENGINEERING
PHONE COMPANY	= AT&T 164 CRESTWOOD PLAZA, SUITE 200 ST. LOUIS, MO 63126 PH. (314) 963-3846 ATTN: ENGINEERING	CABLE	= CHARTER COMMUNICATIONS MAPPING & DESIGN DEPARTMENT 941 CHARTER COMMONS TOWN & COUNTRY, MO 63017 PH. (636) 387-6633
GAS COMPANY	= LACLEDE GAS COMPANY 720 OLIVE STREET ROOM 1408 ST. LOUIS, MO 63101 PH. (314) 342-0687 ATTN: JIM TRAVIS EMAIL: jtravis@lacledegas.com	FIRE DISTRICT	= MARYLAND HEIGHTS FIRE PROTECTION DISTRICT 2600 SCHUETZ ROAD MARYLAND HEIGHTS, MO 63043 PH. (314) 298-4400 ATTN: FIRE MARSHAL DROWZKOWSKI
		SEWER SERVICE	= METROPOLITAN ST. LOUIS SEWER DISTRICT 2350 MARKET STREET ST. LOUIS, MO 63103 PH. (314) 768-6200

GENERAL NOTES

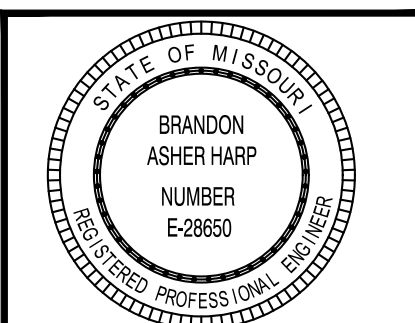
- ALL UTILITIES SHOWN HAVE BEEN LOCATED BY THE ENGINEER FROM AVAILABLE RECORDS. THEIR LOCATION SHOULD BE CONSIDERED APPROXIMATE. THE CONTRACTOR HAS THE RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES, PRIOR TO CONSTRUCTION, TO HAVE EXISTING UTILITIES FIELD LOCATED. THE CONTRACTOR SHALL BE ON RECORD WITH THE MISSOURI ONE CALL SYSTEM. ALL PROPOSED UTILITIES SHALL BE UNDERGROUND.
- ALL ELEVATIONS ARE BASED ON BENCHMARK SHOWN.
- BOUNDARY AND TOPOGRAPHIC SURVEY BY MARLER SURVEYING COMPANY, INC.
- ALL ON-SITE MATERIALS AND METHODS OF CONSTRUCTION TO MEET THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF MARYLAND HEIGHTS AND M.S.D.
- ALL GRADED AREAS SHALL BE PROTECTED FROM EROSION BY EROSION CONTROL DEVICES AND/OR SEEDING AND MULCHING AS REQUIRED BY THE CITY OF MARYLAND HEIGHTS.
- PRIOR TO BEGINNING ANY WORK ON THE SITE, THE SUBCONTRACTOR SHALL CONTACT THE GENERAL CONTRACTOR FOR SPECIFIC INSTRUCTIONS RELEVANT TO THE SEQUENCING OF WORK.
- GRADING CONTRACTOR SHALL INSTALL SILTATION CONTROL PRIOR TO STARTING THE GRADING. ADDITIONAL SILTATION CONTROL DEVICES SHALL BE INSTALLED AS DIRECTED BY THE CITY OF MARYLAND HEIGHTS.
- ALL FILLS AND BACKFILLS SHALL BE MADE OF SELECTED EARTH MATERIALS, FREE FROM BROKEN MASONRY, ROCK, FROZEN EARTH, RUBBISH, ORGANIC MATERIAL AND DEBRIS.
- GRADING CONTRACTOR SHALL KEEP EXISTING ROADWAYS CLEAN OF MUD AND DEBRIS AT ALL TIMES.
- PROPOSED CONTOURS SHOWN ARE EXISTING ELEVATIONS ON PAVED AREAS.
- ALL GRADING AND DRAINAGE TO BE IN CONFORMANCE WITH THE CITY OF MARYLAND HEIGHTS AND M.S.D.
- THE DRIVE ENTRANCES ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CITY OF MARYLAND HEIGHTS.
- SEEDING, SODDING, MULCHING AND PLANTINGS FOR ALL DISTURBED AREAS SHALL BE SPECIFIED ON THE LANDSCAPE PLAN.
- SIDEWALKS ALONG THE ACCESSIBLE ROUTE SHALL NOT HAVE A SLOPE EXCEEDING 1":20"H. SLOPES GREATER THAN 1":20"H MUST BE DESIGNED AS A RAMP. SIDEWALKS TO BE CONSTRUCTED TO ST. LOUIS COUNTY ADA STANDARDS.
- SIDEWALKS, CURB RAMPS, RAMPS AND ACCESSIBLE PARKING SPACES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT APPROVED "AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES" (ADAAG) ALONG WITH THE REQUIRED GRADES, CONSTRUCTION MATERIALS, SPECIFICATIONS AND SIGNAGE. IF ANY CONFLICT OCCURS BETWEEN THE ADAAG GUIDELINES AND THE INFORMATION ON THE PLANS, THE ADA GUIDELINES SHALL TAKE PRECEDENCE AND THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER PRIOR TO ANY CONSTRUCTION.
- A PERMIT IS REQUIRED BY THE CITY OF MARYLAND HEIGHTS DEPARTMENT OF PUBLIC WORKS FOR ALL WORK WITHIN THE RIGHT-OF-WAY. APPROVAL OF THIS PLAN DOES NOT CONSTITUTE RIGHT-OF-WAY USE PERMIT APPROVAL. A SEPERATE PLAN SUBMITTAL WITH PERMIT APPLICATION IS REQUIRED TO INITIATE PERMIT REVIEW.
- A PERMIT IS REQUIRED BY THE CITY OF MARYLAND HEIGHTS DEPARTMENT OF PUBLIC WORKS FOR ALL GRADING AND EXCAVATION WORK ON SITE AND WITHIN THE RIGHT-OF-WAY. APPROVAL OF THIS PLAN DOES NOT CONSTITUTE GRADING PERMIT APPROVAL. A SEPERATE PLAN SUBMITTAL WITH PERMIT APPLICATION IS REQUIRED TO INITIATE PERMIT REVIEW.
- NO GRADE SHALL EXCEED 3:1 SLOPE UNLESS APPROVED BY GEOTECHNICAL ENGINEER
- STORM WATER SHALL BE DISCHARGED AT AN ADEQUATE NATURAL DISCHARGE POINT. SINKHOLES ARE NOT ADEQUATE NATURAL DISCHARGE POINTS.
- ALL LANDSCAPED AREAS TO BE FILLED WITH A MINIMUM OF 6" OF TOPSOIL.
- ALL LANDSCAPED AREAS DISTURBED BY OFF-SITE WORK SHALL BE IMMEDIATELY SEEDED OR SODDED, AS DIRECTED BY THE CITY OF MARYLAND HEIGHTS DEPARTMENT OF PUBLIC WORKS UPON COMPLETION OF WORK IN THE AREA AFFECTED.
- ADEQUATE TEMPORARY OFF-STREET PARKING FOR CONSTRUCTION EMPLOYEES SHALL BE PROVIDED. PARKING ON NON-SURFACED AREAS SHALL BE PROHIBITED IN ORDER TO ELIMINATE THE CONDITION WHEREBY MUD FROM CONSTRUCTION AND EMPLOYEES' VEHICLES IS TRACKED ONTO THE PAVEMENT CAUSING HAZARDOUS ROADWAY AND DRIVEWAY CONDITIONS.
- ALL SEWER CONSTRUCTION AND MATERIALS TO BE IN ACCORDANCE WITH THE METROPOLITAN ST. LOUIS SEWER DISTRICT STANDARD CONSTRUCTION SPECIFICATIONS FOR SEWER AND DRAINAGE FACILITIES, 2009.
- STRUCTURE SETBACKS
 A. FRONT: 25'
 B. SIDE: 12'
 C. REAR: 25'
 D. SETBACKS FOR ANY NEW ACCESSORY STRUCTURES, DUMPSTER ENCLOSURES, FENCES, WALLS, LIGHT STANDARDS, SIGNAGE OR OTHER SIMILAR STRUCTURES SHALL BE APPROVED BY THE CITY PLANNER ON THE SITE IMPROVEMENT PLAN
- PARKING SETBACKS
 A. FIFTEEN (15) FEET FROM ANY ROAD RIGHT-OF-WAY LINE
 B. FIVE (5) FEET FROM ANY ADJACENT PROPERTY LINE
 C. TWELVE (12) FEET FROM REAR PROPERTY LINE ADJACENT TO RESIDENTIAL
- PARKING CALCULATIONS
 A. PARKING REQUIRED
 BUILDING USABLE AREA: 4.5 SPACES PER 1,000 S.F. OF FLOOR AREA
 BUILDING AREA = 500 S.F.
 PARKING REQUIRED = 500 S.F. / 1,000 x 4.5 = 3 SPACES
 LOADING SPACES = (0) 10'x40' LOADING SPACES PROVIDED
 B. PARKING PROVIDED: 4 SPACES + 1 ADA SPACE = 5 SPACES
- SITE LIGHTING SHALL COMPLY WITH ARTICLE 18, 'LIGHTING DESIGN STANDARDS' OF THE ZONING CODE.
- SIGNAGE SHALL BE ERECTED IN ACCORDANCE WITH ARTICLE 15, 'SIGN REGULATIONS' OF THE ZONING CODE EXCEPT AS FOLLOWS:
 THE PROPERTY OWNER MAY SUBMIT A SIGN PACKAGE FOR THE REVIEW AND APPROVAL OF THE CITY PLANNER. SAID SIGN PACKAGE SHALL INCLUDE THE ITEMS CONTAINED IN SECTION 25-15.5.B.2.b, 'SUBMITTAL REQUIREMENTS' OF THE ZONING CODE.
- ALL SIDEWALKS TO BE CONSTRUCTED TO ST. LOUIS COUNTY ADA STANDARDS.
- ALL PROPOSED IMPROVEMENTS SHALL BE CONSTRUCTED TO THE CITY OF MARYLAND HEIGHTS STANDARDS.
- NO SLOPES WITHIN THE CITY OF MARYLAND HEIGHTS RIGHT-OF-WAY SHALL EXCEED 3 (HORIZONTAL) TO 1 (VERTICAL).
- CONTRACTOR REQUIRED TO COORDINATE WORK WITH FEE FEE ROAD SIDEWALK PROJECT.

NOTE:
 THE UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SOURCES AND THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE ACTUAL LOCATIONS OF ALL UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THIS DRAWING, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE LOCATED PRIOR TO GRADING OR CONSTRUCTION OF IMPROVEMENTS.

MISSOURI ONE CALL TICKET NUMBER 21012482

Call BEFORE you DIG
 TOLL FREE
1-800-DIG-RITE
 MISSOURI ONE-CALL SYSTEM, INC.

UTILITIES CONTACT BY MISSOURI ONE CALL HERE:
 AMEREN MISSOURI ELECTRIC, ATT DISTRIBUTION, CABLE AMERICA, CHARTER COMMUNICATIONS, EDWARDS JONES, MISSOURI AMERICAN WATER CO, MCI, SPIRE MO EAST, ST LOUIS METROPOLITAN SEWER



BRANDON A. HARP, P.E. E-28650
 PROFESSIONAL ENGINEER
 CEDC LICENSE NO.: 2003004674

10820 Sunset Office Drive
 Suite 200
 Saint Louis, Missouri 63127
 314.729.1400
 Fax: 314.729.1404
 www.cedc.net

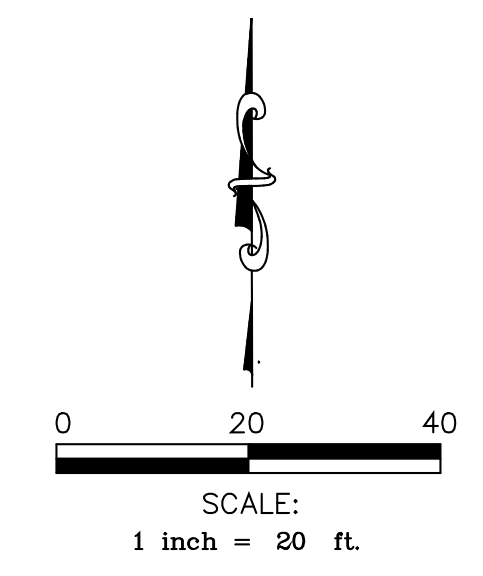
CEDC
 CIVIL ENGINEERING
 DESIGN CONSULTANTS

Site Development Plan for
TIDAL WAVE LUXURY WASH
 2024 McKelvey Road
 Maryland Heights, Missouri

Proj. #	2111
No. Description	Date
City Submittal	01-29-21

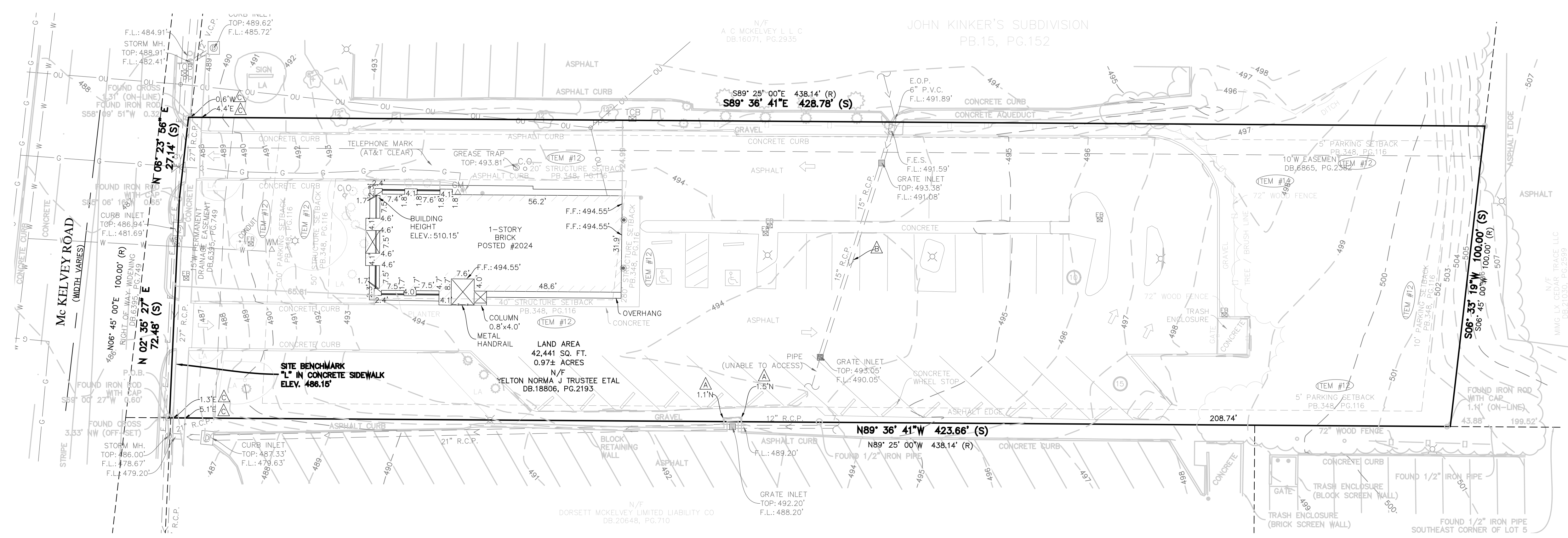
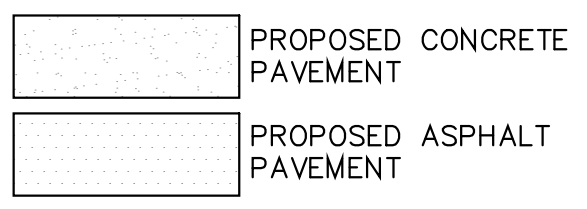
SITE DEVELOPMENT PLAN

C1

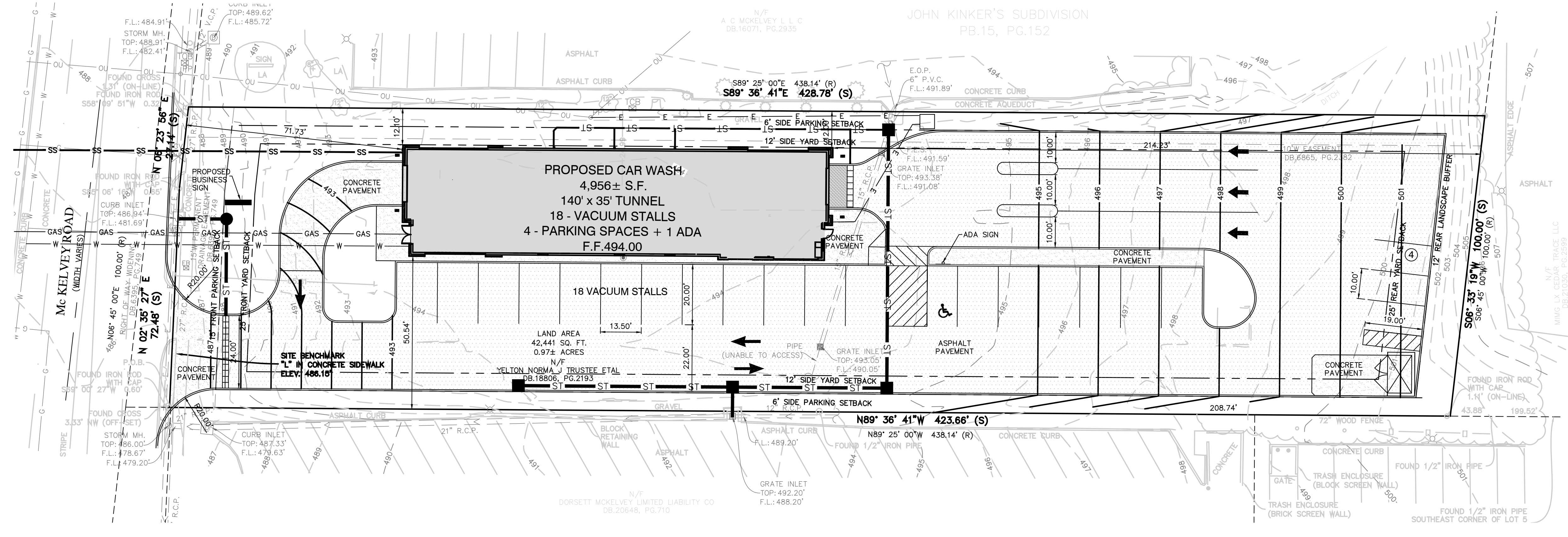


- - DENOTES SET 1/2" x 18" REBAR WITH CAP STAMPED "MARLER L.S.-347-0"
- - DENOTES FOUND IRON PIPE
- - DENOTES FOUND IRON ROD
- - DENOTES FOUND PK NAIL
- ⊕ - DENOTES FOUND CROSS

LEGEND



EXISTING CONDITIONS



PROPOSED SITE PLAN

REVISIONS	BY

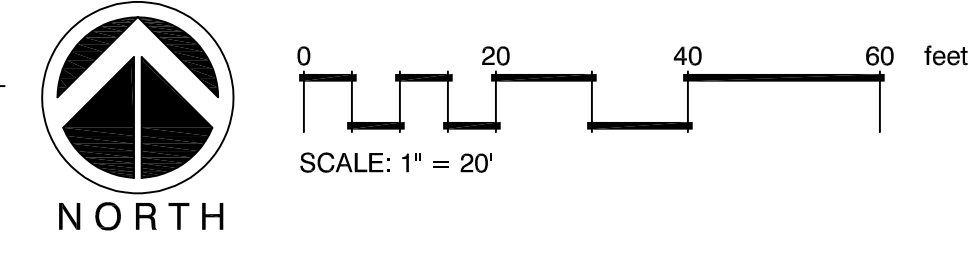
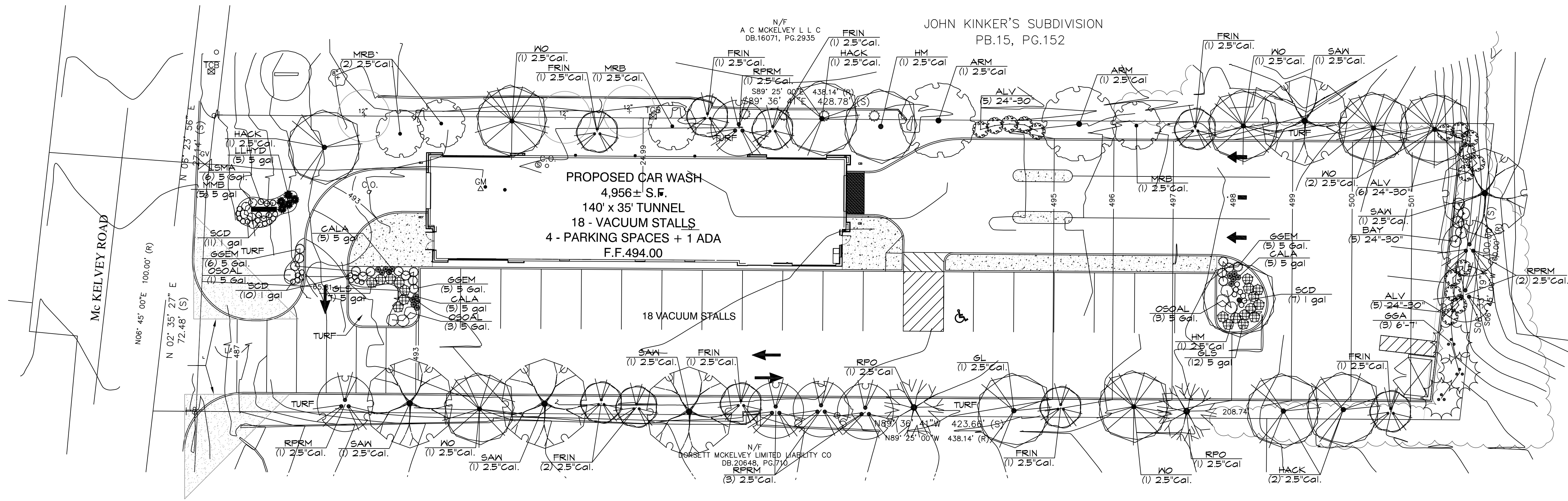
Landscape TECHNOLOGIES

67 Jacobs Creek Drive, Suite 100
Baltimore, MD 21286
(410) 426-2200
www.landscapetechnologies.com

RANDALL W. MARDIS
REGISTERED ARCHITECT #000014
DATE: 12/21/2021

PLANTING PLAN FOR THE PROPOSED:
Tidal Wave Luxury Car Wash
 MARYLAND HEIGHTS, MISSOURI

DRAWN: R. MARDIS
 CHECKED: RHM/SJB
 DATE: 1/24/2022
 SCALE: 1"=20'-0"
 JOB No. 2021-104
 SHEET
1-1
 OF TWO SHEETS



'Little MO' says
CALL BEFORE YOU DIG!

1-800-DIG-RITE

NOTE: ADJUST TREE/SHRUB LOCATIONS TO WORK WITH LIGHT STANDARDS, HYDRANTS, ETC. ALL SHRUB MASSES ARE TO BE PLANTED IN CONTINUOUS MULCHED PLANTING BEDS

50% OF ALL SHRUBS SHALL BE EVERGREEN VARIETIES
 37 OF 52 SHRUBS IN THIS PROJECT ARE EVERGREEN (71%)

UNDERGROUND UTILITIES AND OSHA SAFETY NOTE:
 Underground utilities and structures have been plotted from available information and therefore, their location must be considered approximate only. It is the responsibility of the individual contractors to notify the utility companies before actual construction. All O.S.H.A. rules and regulations established for the type of construction required by these plans shall be strictly followed (ie. trenching, blasting, etc.)

PLANT_SCHEDULE

TREES	QTY	COMMON / BOTANICAL NAME	SIZE	CREDITS
ARM	2	Armstrong Red Maple / <i>Acer rubrum</i> 'Armstrong'	2.5"Cal	4.00
HACK	4	Common Hackberry / <i>Celtis occidentalis</i>	2.5"Cal.	8.00
GL	1	Greenspire Littleleaf Linden / <i>Tilia cordata</i> 'Greenspire'	2.5"Cal.	1.00
HM	2	Hedge Maple / <i>Acer campestre</i>	2.5"Cal	3.00
RPRM	7	Redpointe Red Maple / <i>Acer rubrum</i> 'Redpointe'	2.5"Cal.	14.00
RPO	2	Regal Prince Oak / <i>Quercus warei</i> 'Long' TM	2.5"Cal	3.00
SAW	5	Santooth Oak / <i>Quercus acutissima</i>	2.5"Cal.	10.00
WO	6	Willow Oak / <i>Quercus phellos</i>	2.5"Cal.	12.00
EVERGREEN TREES	QTY	COMMON / BOTANICAL NAME	SIZE	CREDITS
GGA	3	Green Giant Arborvitae / <i>Thuja plicata</i> 'Green Giant'	6'-7'	2.25
FLOWERING TREES	QTY	COMMON / BOTANICAL NAME	SIZE	CREDITS
MRB	4	Merlot Redbud / <i>Cercis x</i> 'Merlot'	2.5"Cal.	4.00
FRIN	9	White Fringetree / <i>Chionanthus virginicus</i>	2.5"Cal.	9.00
SHRUBS	QTY	COMMON / BOTANICAL NAME	SIZE	CREDITS
ALV	16	Alleghany Leatherleaf Viburnum / <i>Viburnum rhytidophyllum</i> 'Alleghany'	24"-30"	2.40
GGEM	16	Green Gem Boxwood / <i>Buxus x</i> 'Green Gem'	5 Gal.	2.40
GLS	19	Gro-Low Fragrant Sumac / <i>Rhus aromatica</i> 'Gro-Low'	5 gal	3.80
LLHYD	5	Little Lime Hydrangea / <i>Hydrangea paniculata</i> 'Little Lime'	5 gal	0.75
LSMA	6	Low Scope Mound Chokeberry / <i>Aronia melanocarpa</i> 'Low Scope Mound'	5 Gal.	1.20
MMB	5	Morris Midget Boxwood / <i>Buxus microphylla japonica</i> 'Morris Midget'	5 gal	0.75
BAY	5	Northern Bayberry / <i>Myrica pensylvanica</i>	24"-30"	0.75
ANNUALS/PERENNIALS	QTY	COMMON / BOTANICAL NAME	SIZE	CREDITS
SCD	28	Strawberry Candy Daylily / <i>Hemerocallis x</i> 'Strawberry Candy' TM	1 gal	0.19
GRASSES	QTY	COMMON / BOTANICAL NAME	SIZE	CREDITS
CALA	15	Foerster's Reed Grass / <i>Calamagrostis acutifolia</i> 'Karl Foerster'	5 gal	2.25
ROSES	QTY	COMMON / BOTANICAL NAME	SIZE	CREDITS
OSOAL	7	OSO Easy At Last Rose / <i>Rosa x</i> 'OSO Easy At Last'	5 Gal.	1.05

85.79

LANDSCAPE GUIDELINE SPECS:

GENERAL:

- All natural vegetation shall be maintained where it does not interfere with construction or the permanent plan of operation. Every effort possible shall be made to protect existing structures or vegetation from damage due to equipment usage. Contractor shall at all times protect all materials and work against injury to public.
- The landscape contractor shall be responsible for any coordination and sequencing with other site related work being performed by other contractors. Refer to additional drawings for further coordination of work to be done.
- Underground facilities, structures and utilities must be considered approximate only. There may be others not presently known or shown. It shall be the landscape contractor's responsibility to determine or verify the existence of and exact location of the above (Call utility location services in municipality).
- Plant material are to be planted in the same relationship to grade as was grown in nursery conditions. All planting beds shall be cultivated to 6" depth minimum and graded smooth immediately before planting of plants. Plant groundcover to within 12" of trunk of trees or shrubs planted within the area.
- It shall be the landscape contractor's responsibility to:
 - Verify all existing and proposed features shown on the drawings prior to commencement of work.
 - Report all discrepancies found with regard to existing conditions or proposed design to the landscape architect immediately for a decision.
 - Stake the locations of all proposed plant material and obtain the approval of the owner's representative or landscape architect ten (10) days prior to installation.
- Items shown on this drawing take precedence over the material list. It shall be the landscape contractor's responsibility to verify all quantities and conditions prior to implementation of this plan. No substitutions of types or size of plant materials will be accepted without written approval from the landscape architect.
- Provide single-stem trees unless otherwise noted in plant schedule.
- All plant material shall comply with the recommendations and requirements of ANSI Z60.1 "American Standards for Nursery Stock".
- It shall be the contractor's responsibility to provide for inspection of the plant material by the Landscape Architect (or Owners' Representative) prior to acceptance. Inspections may take place before, during or after installation. Plants not conforming exactly to the plant list will not be accepted and shall be replaced at the landscape contractor's expense.
- All bids are to have unit prices listed. The Owner has the option to delete any portion of the contract prior to signing the contract or beginning work. This will be a unit price contract; quotes shall be valid for 12 months.
- Should auger equipment be utilized in excavating any plant pits, vertical sides of plant pits shall be thoroughly scarified to avoid creation of "polished side walls" prior to plant material installation.
- All excess topsoil, rocks, debris and/or tainted soils shall be removed by the general contractor prior to point project is turned over to the landscape contractor to commence landscape installation.
- Keep all plant material (except turf) a minimum of 36" clear of fire hydrants.
- Landscape contractor shall kill & remove all existing weeds within the project site.
- All tags, nursery stakes, labels, etc. shall be removed by the landscape contractor at completion of all landscape installation.
- Landscape contractor shall be in compliance with all federal, state and local laws / regulations relating to insect infestation and/or plant diseases.
- All substitutions of plant material shall be submitted to landscape architect for approval.

PRUNING:

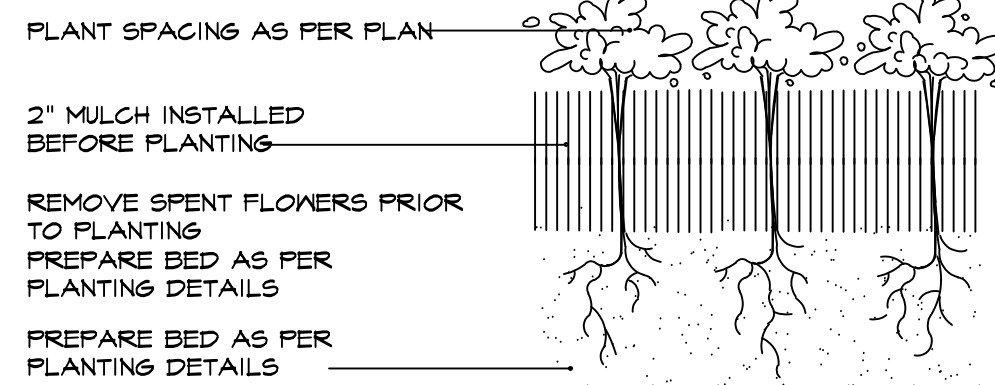
- Lightly prune trees at time of planting. Prune only the crossover limbs, intermingled leaders and/or any broken branches. Some interior twigs and lateral branches may be pruned. However, do not remove the terminal buds of branches that extend to the edge of the crown.
- All pruning shall comply with ANSI A300 standards.

INSURANCE:

- The landscape contractor shall submit certificates of insurance for workman's compensation and general liability.

MULCH:

- All mulch to be shredded oak bark mulch at 3" depth (after compaction) unless otherwise noted. Mulch shall be clean and free of all foreign materials, including weeds, mold, deleterious materials, etc.
- No plastic sheeting or filter fabric shall be placed beneath shredded bark mulch beds. Mirafi fabric shall be used beneath all gravel mulch beds. Lap fabric 6" over adjacent coverages.
- Edge all beds with spade-cut edge unless otherwise noted.



PERENNIAL / ANNUAL PLANTING

N.T.S.

MAINTENANCE:

- Landscape Contractor shall provide a separate proposal to maintain all plants, shrubs, groundcover, perennials and annuals for a period of 12 months after acceptance.
- Contractor shall ensure that only competent and trained personnel shall provide such services and that such services be provided in a timely manner.
- Watering of seeded or sodded lawns shall begin immediately and shall continue to be provided continuously for the following 12 hours. Regardless, the landscape contractor shall be responsible for all landscape maintenance until project turnover.

SIGHT TRIANGLES:

- No landscape material or other obstructions shall be placed or be maintained within the sight distance area so as not to impede the vision between a height of thirty inches (30") and ten feet (10') above the adjacent street or paving surfaces.
- Sight triangles at the intersection of a public street and a private access way (except for single family residences) shall also be formed by measuring from the point of intersection of the street frontage curbs and the entrance curb lines a distance of 35' and connecting the points so established to form the sight triangle area.

TOPSOIL:

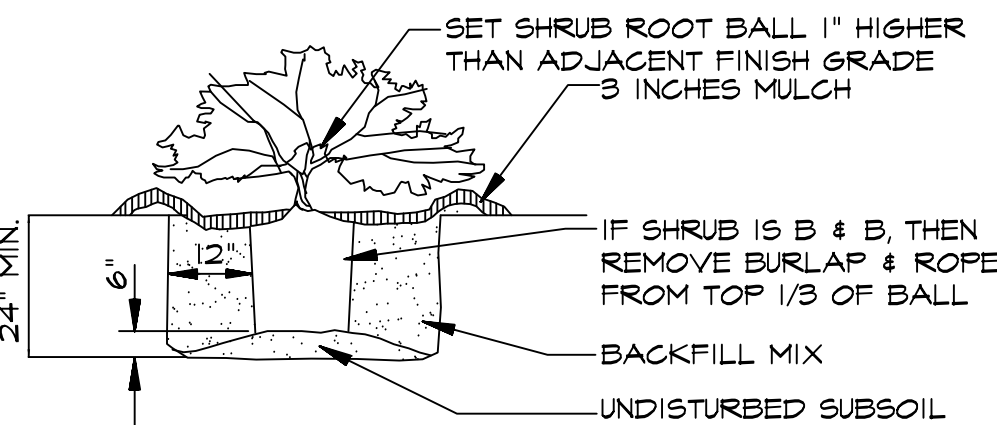
- Topsoil mix for all proposed landscape plantings shall be five (5) parts well-drained screened organic topsoil to one (1) part Canadian sphagnum peat moss as per planting details. Roto-till topsoil mix to 3" depth of 6" minimum and grade smooth.
- Provide a soil analysis, as requested, made by an independent soil-testing agency outlining the % of organic matter, inorganic matter, deleterious material, pH and mineral content.
- Any foreign topsoil used shall be free of roots, stumps, weeds, brush, stones (larger than 1"), litter or any other extraneous or toxic material. Landscape contractor shall be fully responsible for correcting all negative soil issues prior to plant installation. Killing and removal of all weeds shall be the responsibility of the landscape contractor as part of this task.
- Landscape contractor to apply pre-emergent herbicide to all planting beds upon completion of planting operations and before application of shredded bark mulch.
- Install siltation controls prior to commencement of any grading operations. Inspect and maintain all siltation fences on a weekly basis until vegetation is established.

TURF:

- All disturbed lawn areas to be seeded with a mixture of Turf-Type fescue (300# per acre) and bluegrass (18# per acre). Lawn areas shall be unconditionally warranted for a period of 90 days from date of final acceptance. Bare areas more than one square foot per any 50 square feet shall be replaced.
- Seed and fertilization operations shall occur between May 1 and June 15th or between September 1 and October 15th unless directed by others in writing AND irrigation system is operating. Granular or pelleted fertilizer consisting of 50% water-insoluble slow release nitrogen, phosphorous and potassium in a 12-12-12 composition.
- The turf contractor shall be responsible for protection of finished grade; restore and repair any erosion or water damage and obtain owners' approval prior to seeding or sod installation.
- Landscape contractor shall offer an alternate price for sod in lieu of seed. Sod shall be cut at a uniform thickness of 3/4". No broken pieces, irregular pieces or torn pieces will be accepted. Any points carrying concentrated water loads and all slopes of 15% or greater shall be sodded.
- All sod shall be placed a maximum of 24 hours after harvesting.
- Recondition existing lawn areas damaged by Contractor's operations including equipment/material storage and movement of vehicles.
- Sod Contractor to ensure sod is placed below sidewalk and all paved area elevations to allow for proper drainage.

WARRANTY:

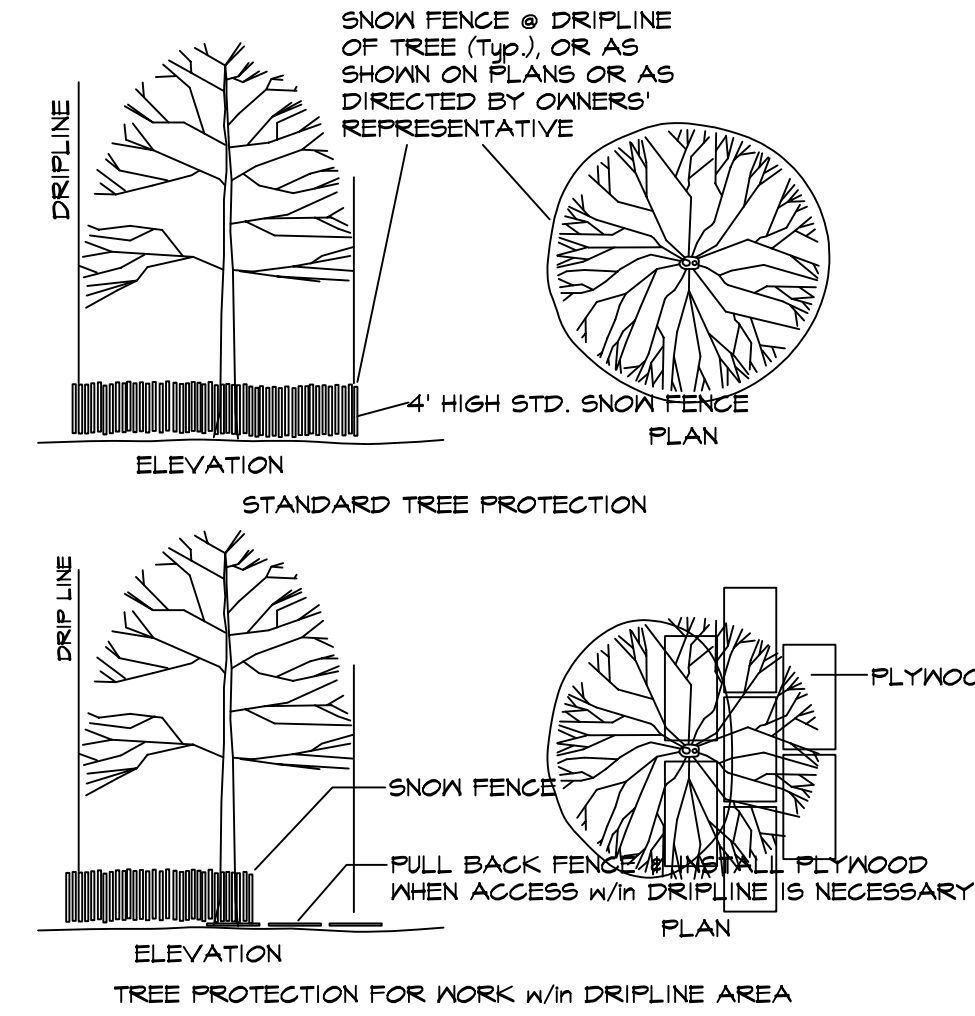
- All plant material (excluding ground cover, perennials and annuals) are to be warranted for a period of 12 months after complete installation of all landscape material at 100% of the installed price.
- Any plant material found to be defective shall be removed and replaced within 30 days of notification or in growth season determined to be best for that plant.
- Only one replacement per tree or shrub shall be required at the end of the warranty period, unless loss is due to failure to comply with the warranty.
- Lawn establishment period will be in effect once the lawn has been mowed three times. Plant establishment period shall commence on the date of acceptance and 100% completion.
- A written guarantee shall be provided to the owner per conditions outlined in #1 above.



PRUNE ANY BROKEN BRANCHES AFTER PLANTING. DAMAGED SHRUBS OR BROKEN / CRUMBLING ROOT BALLS WILL BE REJECTED.

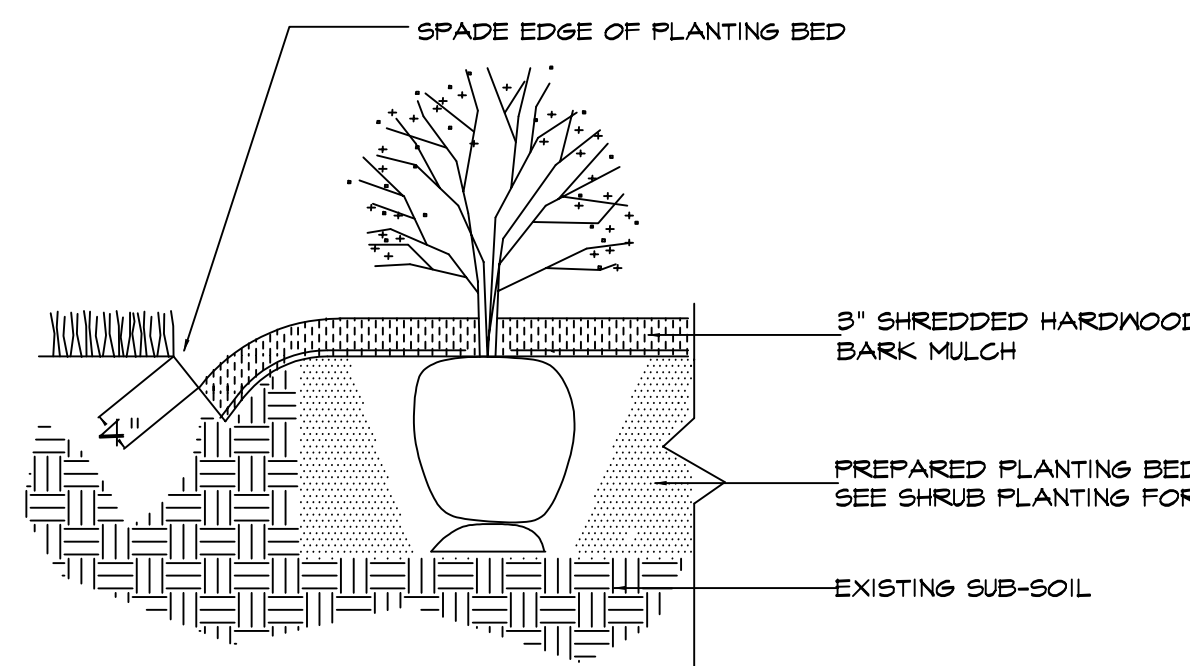
SHRUB PLANTING

N.T.S.



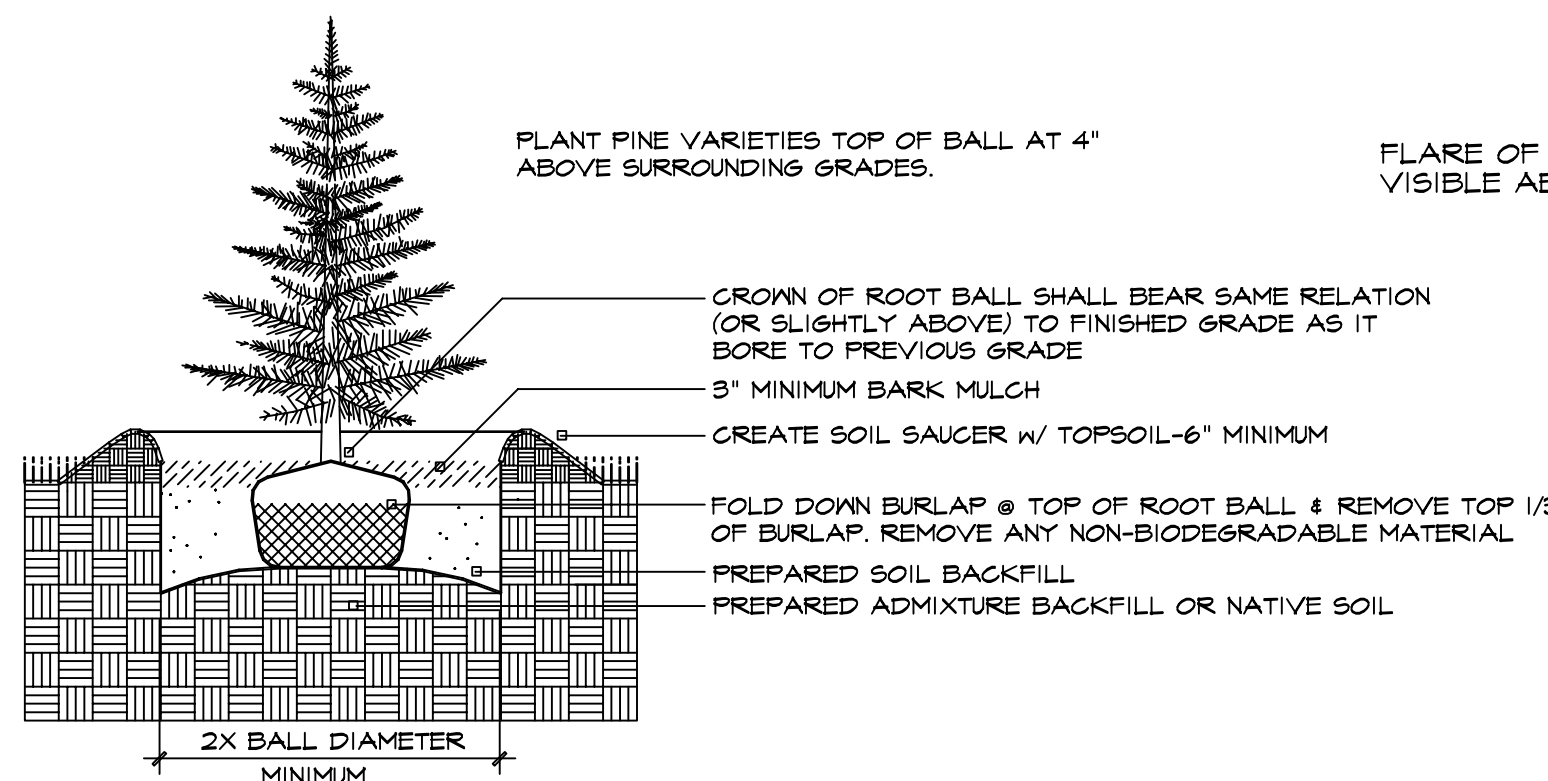
TREE PROTECTION DETAIL

N.T.S.



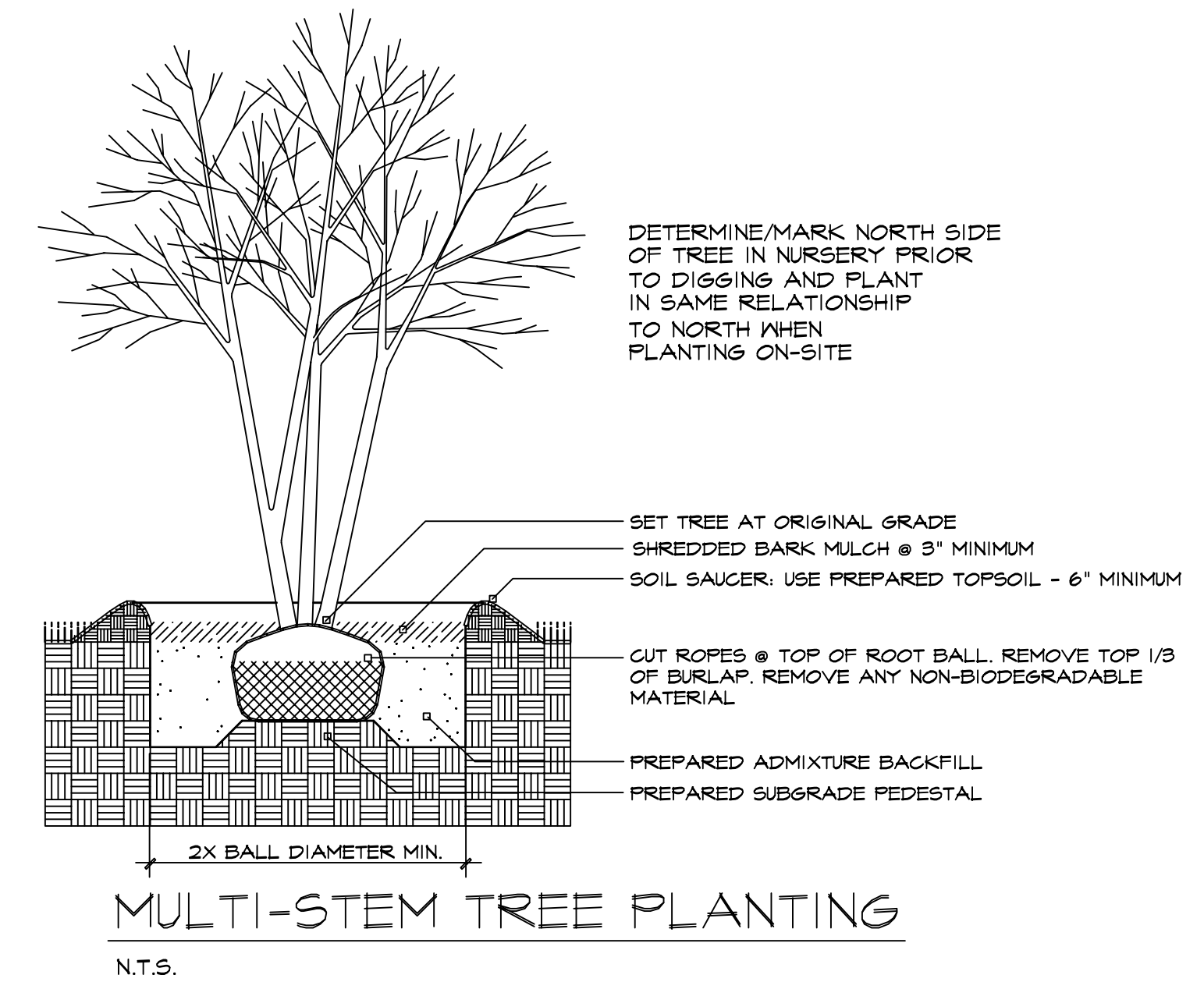
SPADE-CUT EDGE DETAIL

N.T.S.



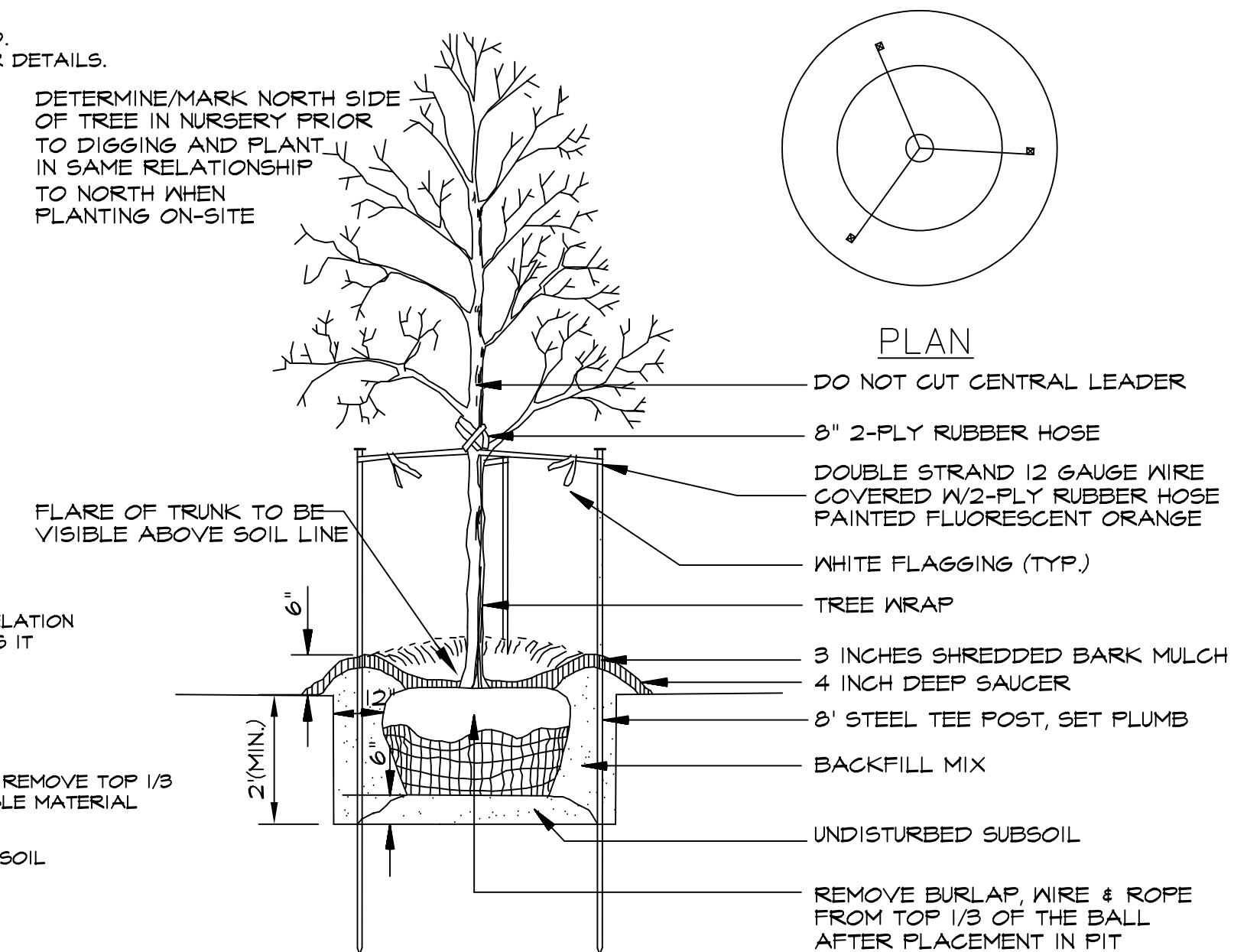
EVERGREEN TREE PLANTING

N.T.S.



MULTI-STEM TREE PLANTING

N.T.S.



DECIDUOUS TREE PLANTING

N.T.S.

REVISIONS	BY

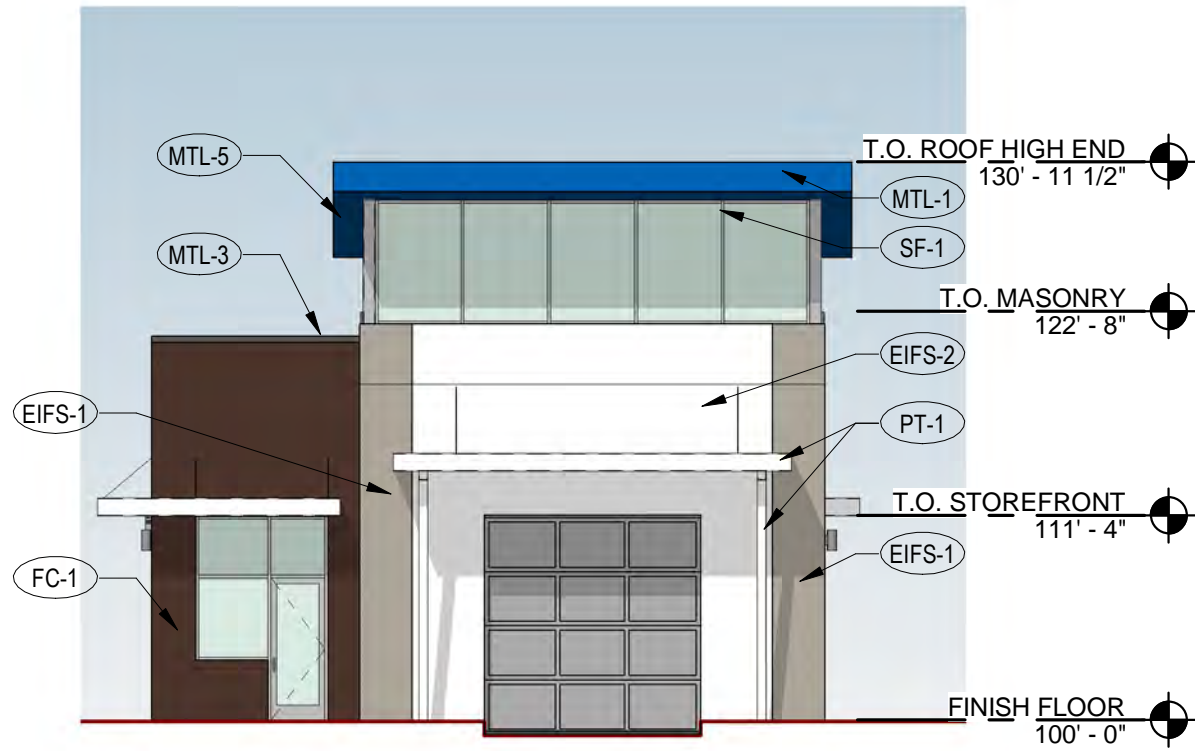
Landscape TECHNOLOGIES

67 Jacobs Creek Drive, Suite 100
St. Louis, MO 63114
(314) 432-1200
www.landscapearchitect.com

REGISTERED PROFESSIONAL ARCHITECT #000014
RANDALL A. HARDS
MARCH 10, 2011
NUMBER 019
DATE 12/17/2021

PLANTING PLAN FOR THE PROPOSED :
Tidal Wave Luxury Car Wash
 MARYLAND HEIGHTS, MISSOURI

DRAWN	R. HARDS
CHECKED	R.M./S.B.
DATE	1/21/2021
SCALE	N.A.
JOB No.	2021-104
SHEET	L-2
OF	TWO SHEETS



1 EAST ELEVATION

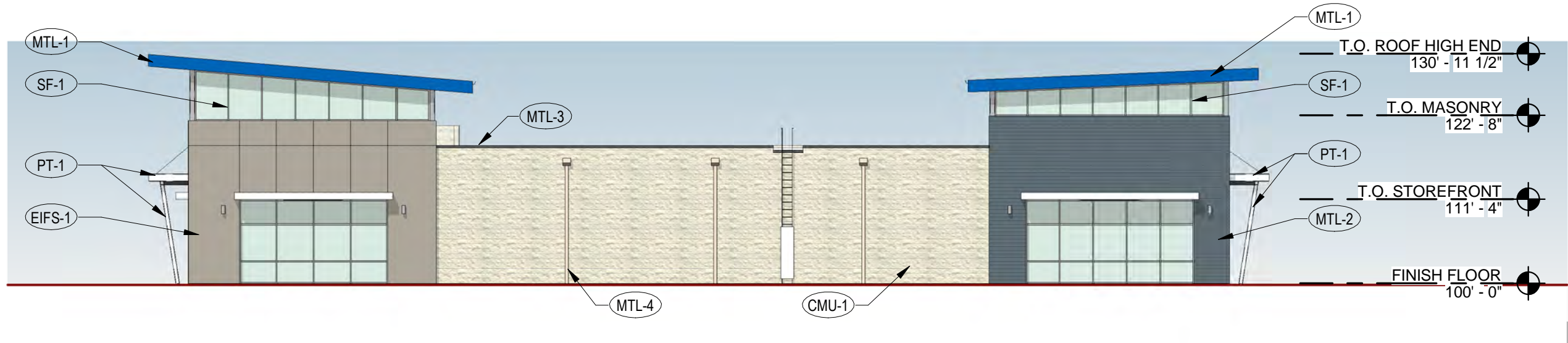
SCALE: 3/32" = 1'-0"



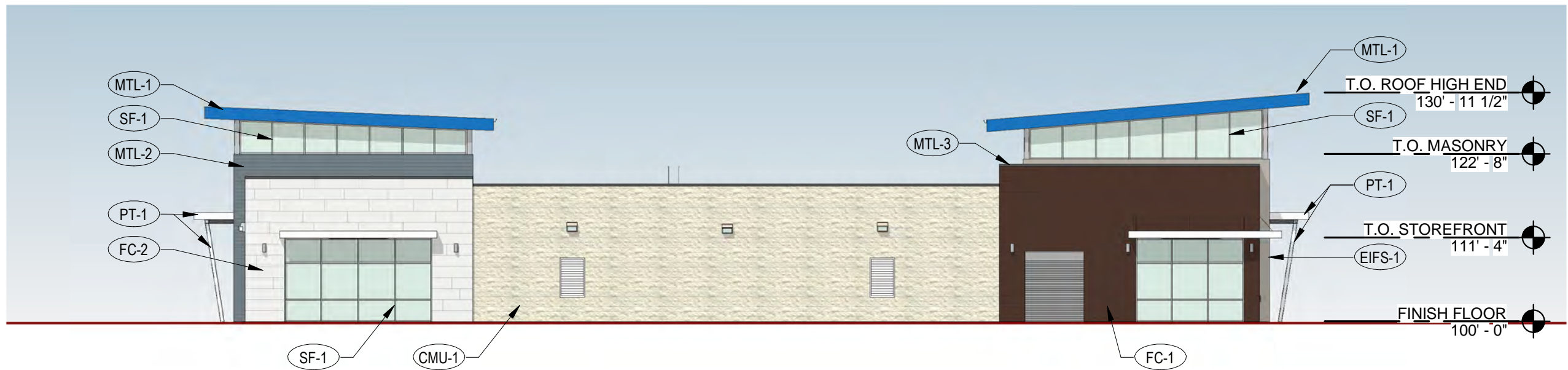
2 WEST ELEVATION

SCALE: 3/32" = 1'-0"

MATERIALS LIST		
CODE	MATERIAL	TYPE/COLOR
AL-1	ALUMINUM	CLEAR ANODIZED ALUMINUM STOREFRONT
CMU-1	CONC. MASONRY UNIT	CAPITOL BUILDING PROTECTS, REGULAR SPLIT FACE 190 OR SIM.
EIFS-1	EIFS	617A WINTER EVE
EIFS-2	EIFS	612 MOONLIGHT
FC-1	FIBER CEMENT	NICHIHA VINTAGE WOOD, BARK
FC-2	FIBER CEMENT	NICHIHA ILLUMINATION SERIES, COLOR: TO MATCH EIFS-2
MTL-1	METAL	PRE-FINISHED METAL FASCIA, COLOR: AWARD BLUE
MTL-2	METAL	PAC CLAD M36 PANEL, WEATHERED ZINC
MTL-3	METAL	PREFINISHED METAL COPINGS AND TRIMS TO MATCH ADJACENT SURFACE
MTL-4	METAL	PREFINISHED GUTTERS AND DOWNSPOUTS TO MATCH ADJACENT SURFACE
MTL-5	METAL	PAC CLAD FLUSH SOFFIT PANEL, COLOR: AWARD BLUE
PT-1	PAINT	SHERWIN WILLIAMS SUPER PAINT, SW 7647 CRUSHED ICE
PT-2	PAINT	PAINT TO MATCH ADJACENT WALL FINISH
SF-1	ALUMINUM	CLEAR ANODIZED ALUMINUM STOREFRONT SYSTEM



1 NORTH ELEVATION
SCALE: 1/16" = 1'-0"



2 SOUTH ELEVATION
SCALE: 1/16" = 1'-0"