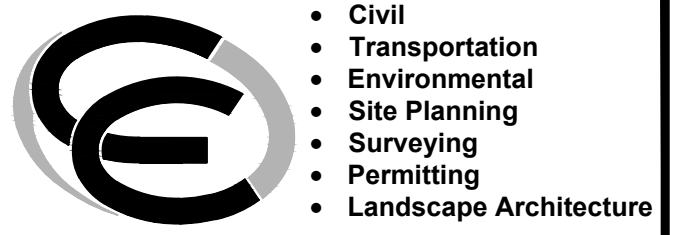




Queue Analysis

Although the project is not on a State road and RIDOT permitting is not required, the RIDOT Physical Alteration Permit (PAP) regulations Section 4.10.10 Drive-Thrus requirements have been utilized as a guide. Per the RIDOT regulations, the applicant for a car wash must demonstrate that there is adequate space available to stack a minimum of 10 vehicles on the site from the first point of contact to the business to diminish the likelihood of stacking out onto the roadway, Pleasant Valley Parkway. As shown in Figure C1, the project meets this requirement with stacking space for at least 18 vehicles beginning at the pay station.

Based on data from ITE Trip Generation 12th Edition, the proposed 4,612 SF car wash is expected to generate 74 entering trips during the Saturday peak hour which will result in 6-7 vehicles in queue. The proposed Scrub A Dub site configuration can accommodate a 24-vehicle queue from the entrance of the tunnel to the entrance on Pleasant Valley Parkway with no impact to site access, circulation or parking and would not impact Pleasant Valley Parkway as shown in Figure C1. The site is not expected to ever generate a 24-vehicle queue. Even during extreme washing demands, say in the winter after a snow storm, with an unusually high trip generation of 90 vehicles entering per peak hour, the 95th percentile queue would still only be a 14-vehicle queue for a standard vehicle service rate of 110 vehicles per hour. The 95th-percentile queue is defined to be the queue length (in vehicles) that has only a 5-percent probability of being exceeded during the analysis time period. The proposed car wash has a maximum service rate of 115 vehicles per hour that could be dialed up as needed based on demand. Using a maximum service rate of 115 vehicles per hour and an arrival rate of 90 vehicles per hour, the 95th percentile queue would still consist of only 11 vehicles. The proposed site is more than sufficient to accommodate the 95th percentile queue.



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PROJECT TITLE:

PROPOSED CAR WASH
PLAT MAP 27, LOTS 42 & 78
DISTRICT M-1
LIGHT INDUSTRIAL DISTRICT
68 PLEASANT VALLEY
PARKWAY
PROVIDENCE, RI

PREPARED FOR:

SCRUBADUB AUTO
CAR WASH CENTERS
172 WORCESTER ROAD
NATICK, MA 01760

DRAWING TITLE:

AUTOMOBILE QUEUE

DATE: OCTOBER 2025 SCALE: 1"=20'

DWG. NAME: 2922-06-SITE.dwg

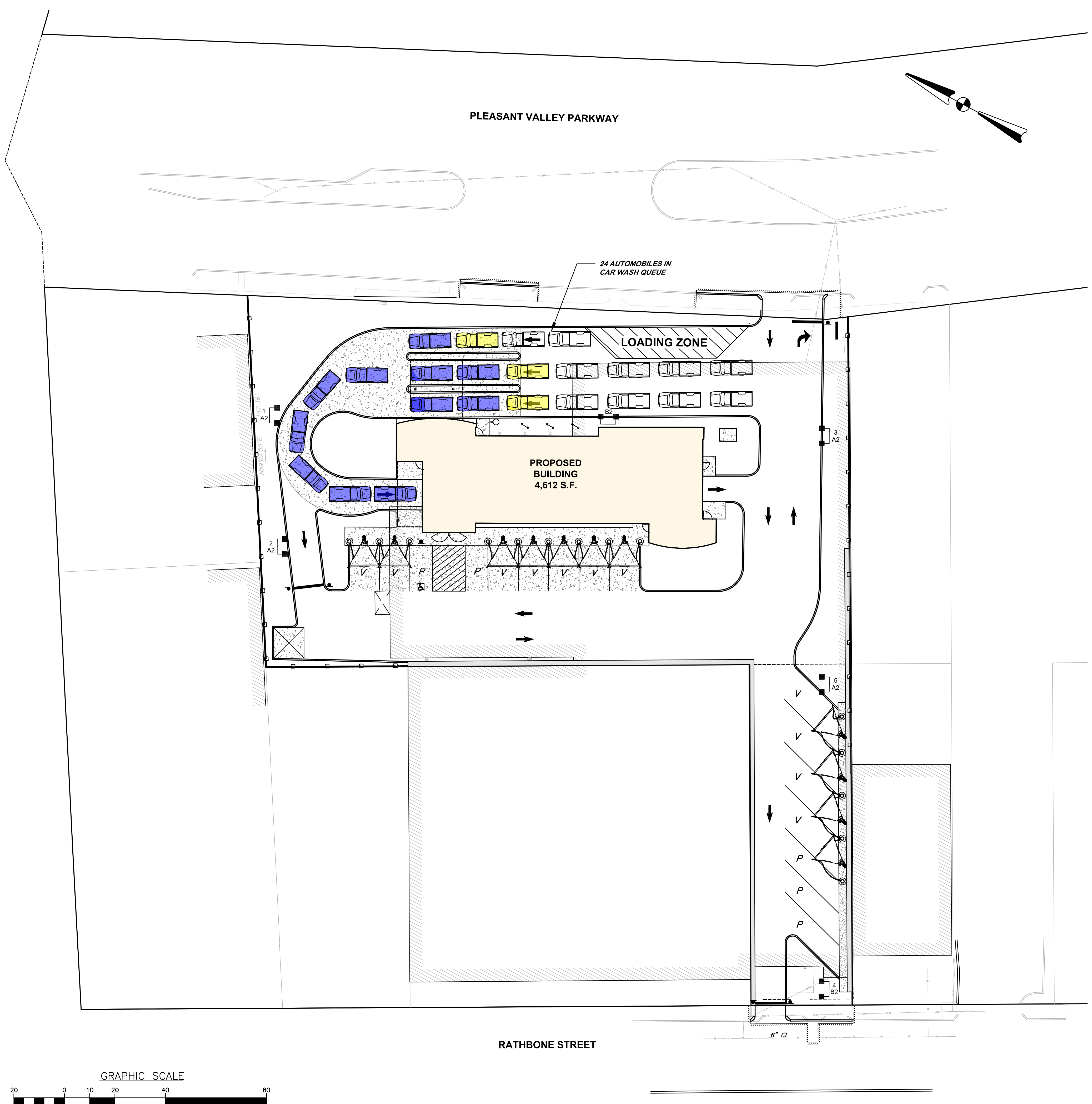
REVISIONS

NUMBER	REMARKS	DATE

DRAWING NUMBER

C1

SHEET: 1 OF 1



WORST CASE CONDITIONS ON SATURDAY AFTER A SNOWSTORM

	PEAK QUEUE WITH MAXIMUM 115 VEH/HR SERVICE RATE
	PEAK QUEUE WITH STANDARD 110 VEH/HR SERVICE RATE

