

**CITY OF TEMPE  
DEVELOPMENT REVIEW COMMISSION**

**Meeting Date: 02/23/2021  
Agenda Item: 6**

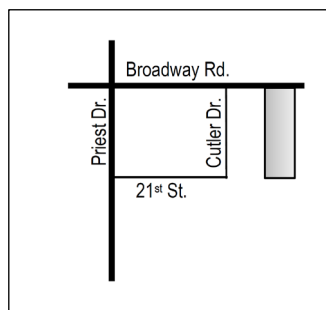
**ACTION:** Request a Use Permit to allow a car wash in the GID zoning district and a Development Plan Review consisting of a new 5,220 square-foot automatic car wash for **SUPER STAR CAR WASH**, located at 1139 West Broadway Road. The applicant is Cawley Architects.

**FISCAL IMPACT:** There is no fiscal impact on City funds.

**RECOMMENDATION:** Approve, subject to conditions

**BACKGROUND INFORMATION:** SUPER STAR CAR WASH (PL200232) is a proposed automatic car wash with self-serve vacuum canopies. This case was continued from the January 26, 2020 Development Review Commission at the applicant's request to allow for a voluntary neighborhood meeting. The request includes the following:

- ZUP200060 Use Permit to allow a car wash in the GID (General Industrial District) zoning district.
- DPR200135 Development Plan Review including site plan, building elevations, and landscape plan



Existing Property Owner	Broatch Family Survivors Trust
Applicant	Brian Tirko, Cawley Architects
Zoning District	GID (General Industrial District)
Site area	1.33 acres
Total Building Area	5,220 gross s.f. / 4,433 net s.f.
Lot Coverage	8.9% (NS)
Building Height	30'-6" (35' maximum allowed)
Building Setbacks	42' front, 111'-11" west side, 3'-5" east side, 187'-7" rear (25', 0', 0', 0' min.)
Landscape area	26% (10% minimum required)
Vehicle Parking	40 spaces (30 covered, 10 uncovered) (15 min. required, 19 max non-vacuum spaces allowed)
Bicycle Parking	4 spaces (4 min. required)
Hour of Operation	7:00 am to 8:00 pm, 7 days a week

**ATTACHMENTS:** Development Project File

**STAFF CONTACT(S):** Karen Stovall, Senior Planner (480) 350-8432

Department Director: Shelly Seyler, Interim Community Development Director  
 Legal review by: N/A  
 Prepared by: Karen Stovall, Senior Planner  
 Reviewed by: Suparna Dasgupta, Principal Planner

## COMMENTS:

This site is located on the south side of Broadway Road, approximately 930 feet east of Priest Drive and is located within the GID zoning district. The property is surrounded by retail and warehouse uses on the south side of Broadway and by restaurant uses on the north side of Broadway. To the north and east of the site, is an apartment complex. The applicant plans to demolish the existing restaurant with drive-through and construct a new automatic car wash.

This request includes the following:

1. Use Permit for a car wash in the GID zoning district.
2. Development Plan Review which includes a new 5,220 square-foot car wash tunnel and associated vacuum canopies.

The applicant is requesting the Development Review Commission take action on the two items listed above.

Due to the concerns expressed prior to the January 26, 2021 DRC hearing, the applicant submitted a noise assessment, which is included in the attachments.

## SITE PLAN REVIEW

Three preliminary and two formal site plan reviews were conducted in April, July, August, November, and December 2020. Significant comments made by staff pertained to the location of the refuse enclosure to avoid requiring the refuse truck to back into the queuing lane and inadequate clearance for turning; screen walls at the car wash tunnel exit parallel with Broadway Road or recessing the tunnel exit to better screen it from Broadway; reducing the number of vacuum stalls to reduce the amount of pavement on-site; and providing more variation in building materials and articulation.

The applicant addressed staff's concerns by relocating the refuse enclosure, giving the tunnel exit a recessed appearance by extending the side walls, and providing additional building materials. The number of vacuum stalls was not reduced. The applicant submitted a written explanation for the need of a minimum of 30 vacuum stalls to meet customer demand at peak times, which will be approximately 75 customers per hour using the self-serve vacuums. Due to aesthetic reasons, staff also recommended to change the color of the north wall at tunnel – B-deck metal panel. The applicant addressed the comment and provided a revised color as indicated in bold under DPR condition of approval number 7.

## PUBLIC INPUT

- Neighborhood meeting not required
- Following publication of the January 26, 2020 DRC staff report, staff received seven (7) emails and two (2) phone calls in opposition to the request. The concerns these individuals expressed included: use would not promote neighborhood walkability; preference for a different land use (grocer or restaurant); noise; traffic; contradictory to vision of Tempe Maker District; property values; no need for another car wash.
- The applicant held a voluntary neighborhood meeting on February 16, 2020 at 6:00 p.m. online via Zoom.
- Approximately 17 individuals attended the meeting, including the applicant's team.
- Planning staff attended the meeting. Concerns voiced by attendees included: an increase in traffic and accidents, an increase in noise, downgrading of property values, and if they could review the noise study.
- Also see attached summary of meeting provided by the applicant.

## PROJECT ANALYSIS

### USE PERMIT

The proposed use requires a use permit, to operate a car wash within the GID zoning district.

Section 6-308 E Approval criteria for Use Permit (*in italics*):

1. *Any significant increase in vehicular or pedestrian traffic.* As an automotive service, the use will generate an increased amount of vehicle traffic but its location on an arterial street is best suited to the use. The site currently has two driveways on Broadway and one driveway is being eliminated as part of this redevelopment. The long queuing distance provided by the curved drive that leads to the tunnel entrance is expected to prevent potential vehicle back up into the public right-of-way.

2. *Nuisance arising from the emission of odor, dust, gas, noise, vibration, smoke, heat or glare at a level exceeding that of ambient conditions.* The use will generate noise from the car wash tunnel, self-serve vacuums, and vehicles. The tunnel is enclosed on the sides with only an opening at the north and south ends for vehicles entering and exiting, and the vacuum equipment is contained within a room on the north end of the building. The uses on the south side of Broadway adjacent to this site are a hardware store with indoor lumber yard and equipment rental as well as a self-storage facility, all zoned GID. Directly to the north, across Broadway, are restaurants. The proposed use should not create a nuisance at a level exceeding that of ambient conditions.
3. *Contribution to the deterioration of the neighborhood or to the downgrading of property values, the proposed use is not in conflict with the goals objectives or policies for rehabilitation, redevelopment or conservation as set forth in the city's adopted plans or General Plan.* The General Plan 2040 identifies this site and others along the south side of Broadway as Mixed Use / Industrial, and the existing GID zoning district permits a car wash in this district, subject to use permit approval. The use should not contribute to the deterioration of the neighborhood or downgrading of property values.
4. *Compatibility with existing surrounding structures and uses.* The single-story building and car wash use are compatible with the existing structures and retail and warehouse uses that surround the site.
5. *Adequate control of disruptive behavior both inside and outside the premises which may create a nuisance to the surrounding area or general public.* Business hours are 7:00 am to 8:00 pm and three (3) to five (5) employees will be on-site during the hours of operation. Disruptive behavior is not expected to occur on-site, but employees will be present to address issues which create a nuisance to the surrounding area or general public.

The manner of conduct and the building for the proposed use will not be detrimental to persons residing or working in the vicinity, to adjacent property, to the neighborhood, or to the public welfare in general, and that the use will be in full conformity to any conditions, requirement or standards prescribed therefore by this code.

## **DEVELOPMENT PLAN REVIEW**

### **Site Plan**

The site is accessed by a single driveway on Broadway Road. The car wash tunnel is located along the east property line with self-serve vacuum canopies on the west side of the building. The lot is over 400 feet deep, and the queue lane for the car wash tunnel begins near the south property line, providing plenty of on-site stacking distance. A pedestrian path is provided from the sidewalk on Broadway Road to the building with striping and signage for drivers exiting the car wash tunnel. A restroom and vending area are located along the west elevation.

### **Building Elevations**

The single-story building is constructed of concrete masonry units and reaches a height of 30'-6". Exterior finishes include integral color masonry and stucco in shades of gray. Metal canopies above the windows and at the tunnel exit are a bright red. Building side walls extending 8'-8" and a feature wall extending 13'-4" are used on the north elevation to recess the tunnel exit and provide screening from Broadway. The vacuum canopies are constructed of metal tubing painted to match the building and red fabric to match the building's canopies. A condition of approval is included to change the north wall at the tunnel exit from red to gray, which maintains the red color as an accept for the canopies and better accentuates the angled canopy at the street front.

### **Landscape Plan**

The landscape plan proposes Sissoo Tree as the primary street tree with Texas Mountain Laurel used for accent. Mulga trees are used along the west property line, and Willow Acacia is along the queueing lane to the wash tunnel along the east. Within the parking lot, plans propose Southern Live Oak. Conditions are included to provide the required number of street trees and enhance the density of vegetative ground cover along Broadway.

Section 6-306 D Approval criteria for Development Plan Review (*in italics*):

1. *Placement, form, and articulation of buildings and structures provide variety in the streetscape;* due to its orientation, the 34-foot wide car wash building occupies a very narrow portion of the property frontage. The screen wall that extends from the north building wall is setback over 28 feet from the front property line, and the angled canopy projects beyond the screen wall to create variety in the streetscape.
2. *Building design and orientation, together with landscape, combine to mitigate heat gain/retention while providing shade for energy conservation and human comfort;* the property is narrow and deep, limiting the possible orientation of the new building and self-serve vacuum spaces; however, the spaces are shaded by fabric canopies to shade vehicles while customers use the vacuums.
3. *Materials are of a superior quality, providing detail appropriate with their location and function while complementing the surroundings;* the building is constructed of masonry with both stucco and decorative masonry veneer. Building finishes elsewhere in the neighborhood are stucco, concrete, and masonry. The proposed materials are similar to these developments and appropriate with their location.
4. *Buildings, structures, and landscape elements are appropriately scaled, relative to the site and surroundings;* The single-story building and on-site landscaping are in scale with the immediate surroundings.
5. *Large building masses are sufficiently articulated so as to relieve monotony and create a sense of movement, resulting in a well-defined base and top, featuring an enhanced pedestrian experience at and near street level;* as visible from Broadway, the building is very narrow and has variation in material, depth, and color. The east and west elevations are long, with sections of the building broken up by parapet heights, windows, and canopies. The building is sufficiently articulated.
6. *Building facades provide architectural detail and interest overall with visibility at street level (in particular, special treatment of windows, entries and walkways with particular attention to proportionality, scale, materials, rhythm, etc.) while responding to varying climatic and contextual conditions;* due to its narrowness, the building does not have windows facing the street, but the front façade is broken up with decorative walls projecting from the tunnel exit and an angled canopy. Side elevations are designed with windows, where appropriate, shade canopies, and varying materials to provide architectural detail.
7. *Plans take into account pleasant and convenient access to multi-modal transportation options and support the potential for transit patronage;* the site provides a pedestrian connection from the building to the public sidewalk, which leads to numerous bus routes on Broadway and Priest.
8. *Vehicular circulation is designed to minimize conflicts with pedestrian access and circulation, and with surrounding residential uses;* this is a vehicle-oriented business, but the pedestrian path that crosses the tunnel exit will be designed to alert drivers of the crossing.
9. *Plans appropriately integrate Crime Prevention Through Environmental Design principles such as territoriality, natural surveillance, access control, activity support, and maintenance;* plans comply with CPTED principles.
10. *Landscape accents and provides delineation from parking, buildings, driveways and pathways;* landscape materials are used to provide shade at the street frontage and along drive aisles.
11. *Signs have design, scale, proportion, location and color compatible with the design, colors, orientation and materials of the building or site on which they are located;* n/a
12. *Lighting is compatible with the proposed building(s) and adjoining buildings and uses, and does not create negative effects.* The light fixtures and locations are appropriate for the site and should not create negative effects.

### **REASONS FOR APPROVAL:**

1. The project meets the General Plan Projected Land Use for this site.
2. The project will meet the development standards required under the Zoning and Development Code.
3. The proposed project meets the approval criteria for a Use Permit and Development Plan Review.

Based on the information provided and the above analysis, staff recommends approval of the requested Use Permit and Development Plan Review. This request meets the required criteria and will conform to the conditions.

### **USE PERMIT CONDITIONS OF APPROVAL:**

EACH NUMBERED ITEM IS A CONDITION OF APPROVAL. THE DECISION-MAKING BODY MAY MODIFY, DELETE OR ADD TO THESE CONDITIONS.

1. This Use Permit is valid only after a Building Permit has been obtained, the required inspections have been completed and a Final Inspection has been passed.
2. The Use Permit is valid for the plans as submitted within this application. Any modifications may be submitted for review during the building plan check process.
3. Hours of operation to end no later than 8:00 p.m. on a daily basis.

### **DEVELOPMENT PLAN REVIEW CONDITIONS OF APPROVAL: (Non-standard conditions are identified in bold)**

EACH NUMBERED ITEM IS A CONDITION OF APPROVAL. THE DECISION-MAKING BODY MAY MODIFY, DELETE OR ADD TO THESE CONDITIONS.

#### **General**

1. Except as modified by conditions, development shall be in substantial conformance with the site plan, building elevations, and landscape plan dated December 21, 2020. Minor modifications may be reviewed through the plan check process of construction documents; major modifications will require submittal of a Development Plan Review.

#### **Site Plan**

2. Provide service yard and mechanical (cooling tower/generator) yard walls that are at least 8'-0" tall as measured from adjacent grade or are at least the height of the equipment being enclosed, whichever is greater. Verify height of equipment and mounting base to ensure that wall height is adequate to fully screen the equipment.
3. Provide gates of steel vertical picket, steel mesh, steel panel or similar construction. Where a gate has a screen function and is completely opaque, provide vision portals for visual surveillance. Provide gates of height that match that of the adjacent enclosure walls. Review gate hardware with Building Safety and Fire staff and design gate to resolve lock and emergency ingress/egress features that may be required.
4. Provide upgraded paving at the driveway, as identified on the site plan. Extend this paving in the driveway from the right-of-way line to 20'-0" on site and from curb to curb at the drive edges. From sidewalk to right-of-way line, extend concrete paving to match sidewalk.
5. Utility equipment boxes for this development shall be finished in a neutral color (subject to utility provider approval) that compliments the coloring of the buildings.
6. Place exterior, freestanding reduced pressure and double check backflow assemblies in pre-manufactured, pre-finished, lockable cages (one assembly per cage). If backflow prevention or similar device is for a 3" or greater water line, delete cage and provide a masonry or concrete screen wall following the requirements of Standard Detail T-214.

## Building Elevations

7. The materials and colors are approved as presented, except as identified below:
  - Primary Building – 12 x 8 x 16 smooth face, integral color, running bond CMU – Superlite – Black Canyon
  - Secondary Building - stucco – Dunn Edwards – Cold Morning DE6365
  - South wall at tunnel – stucco – Dunn Edwards – Silver Lined DE6353
  - North wall at tunnel – B-deck metal panel – ~~Dunn Edwards – Hot Jazz DEA107~~ **ATAS International – Slate Gray**
  - North Building Accent Wall – 8 x 4 x 16 smooth face, integral color, running bond every other joint raked – Superlite – Black Canyon
  - South Building Accent Wall – 8 x 8 x 16 smooth face, integral color running bond CMU – Superlite – Black Canyon
  - Steel canopies – Dunn Edwards – Hot Jazz DEA107
  - Windows – clear anodized aluminum frame
  - Glazing – gray tint
  - Canopy tubes – Dunn Edwards – Cold Morning DE6365
  - Canopy Fabric – Gale Pacific Commercial 95 – Cherry Red
8. Shade canopies:
  - a. Conceal lighting conduit in the canopy structure and finish conduit to match.
9. If provided, roof access shall be from the interior of the building. Do not expose roof access to public view.
10. Conceal roof drainage system within the interior of the building.
11. Incorporate lighting, address signs, and incidental equipment attachments (alarm klaxons, security cameras, etc.) where exposed into the design of the building elevations. Exposed conduit, piping, or related materials is not permitted.
12. Locate the electrical service entrance section (S.E.S.) inside the building or inside a secure yard that is concealed from public view.

## Landscape

13. Arterial street trees shall be a minimum of 36" box specimens and a minimum of 1 ½" caliper trunk.
14. **A minimum of five (5) street trees shall be provided along Broadway Road and within 20 feet of the sidewalk.**
15. **A minimum sixty percent (60%) vegetative ground cover shall be provided along Broadway Road, between the sidewalk and car wash maneuvering lane. Percentage ground cover shall be determined by the expected understory plant growth five (5) years after planting.**
16. Irrigation notes:
  - a. Provide dedicated landscape water meter.
  - b. Provide pipe distribution system of buried rigid (polyvinylchloride), not flexible (polyethylene). Use of schedule 40 PVC mainline and class 315 PVC ½" feeder line is acceptable. Class 200 PVC feeder line may be used for sizes greater than ½". Provide details of water distribution system.
  - c. Locate valve controller in a vandal resistant housing.
  - d. Hardwire power source to controller (a receptacle connection is not allowed).
  - e. Controller valve wire conduit may be exposed if the controller remains in the mechanical yard.
17. Include requirement to de-compact soil in planting areas on site and in public right of way and remove construction debris from planting areas prior to landscape installation.
18. Top dress planting areas with a rock or decomposed granite application. Provide rock or decomposed granite of 2" uniform thickness. Provide pre-emergence weed control application and do not underlay rock or decomposed granite application with plastic.

## **Building Address**

19. Provide address sign(s) on the building elevation facing the street to which the property is identified.
  - a. Conform to the following for building address signs:
    - 1) Provide street number only, not the street name
    - 2) Compose of 12" high, individual mount, metal reverse pan channel characters.
    - 3) Self-illuminated or dedicated light source.
    - 4) On multi-story buildings, locate no higher than the second level.
    - 5) Coordinate address signs with trees, vines, or other landscaping, to avoid any potential visual obstruction.
    - 6) Do not affix numbers or letters to elevation that might be mistaken for the address.
  - b. Utility meters shall utilize a minimum 1" number height in accordance with the applicable electrical code and utility company standards.

## **CODE/ORDINANCE REQUIREMENTS:**

THE BULLETED ITEMS REFER TO EXISTING CODE OR ORDINANCES THAT PLANNING STAFF OBSERVES ARE PERTINENT TO THIS CASE. THE BULLET ITEMS ARE INCLUDED TO ALERT THE DESIGN TEAM AND ASSIST IN OBTAINING A BUILDING PERMIT AND ARE NOT AN EXHAUSTIVE LIST.

### **USE PERMIT:**

- The Use Permit is valid for SUPER STAR CAR WASH and may be transferable to successors in interest through an administrative review with the Community Development Director, or designee.
- The use permit approval shall be void if the use is not commenced or if an application for a building permit has not been submitted, whichever is applicable, within twelve (12) months after the use permit is granted or within the time stipulated by the decision-making body.
- The decision-making body, upon finding that the applicant has not taken corrective actions to resolve issues related to the permit/approval and that a continuation of the permit/approval is not in the interest of the public health, safety and general welfare, can revoke the permit/approval after providing written notice of its intentions to the holder of the permit.
- Any intensification or expansion of use shall require a new Use Permit.
- All required Federal, State, County, and Municipal permits, licenses, and clearances shall be obtained, or the Use Permit is void.

**SITE PLAN REVIEW:** Verify all comments by all departments on each Preliminary Site Plan Review. If questions arise related to specific comments, they should be directed to the appropriate department, and any necessary modifications coordinated with all concerned parties, prior to application for building permit. Construction Documents submitted to the Building Safety Division will be reviewed by planning staff to ensure consistency with this Design Review approval prior to issuance of building permits.

**DEADLINE:** Development plan approval shall be void if the development is not commenced or if an application for a building permit has not been submitted, whichever is applicable, within twelve (12) months after the approval is granted or within the time stipulated by the decision-making body. The period of approval is extended upon the time review limitations set forth for building permit applications, pursuant to Tempe Building Safety Administrative Code, Section 8-104.15. An expiration of the building permit application will result in expiration of the development plan.

### **STANDARD DETAILS:**

- Access to Tempe Supplement to the M.A.G. Uniform Standard Details and Specifications for Public Works Construction, at this link: <http://www.tempe.gov/city-hall/public-works/engineering/standards-details> or purchase book from the Public Works Engineering Division.

- Access to refuse enclosure details DS116 and DS118 and all other Development Services forms at this link: <http://www.tempe.gov/city-hall/community-development/building-safety/applications-forms>. The enclosure details are under Civil Engineering & Right of Way.

**BASIS OF BUILDING HEIGHT:** Measure height of buildings from top of curb at a point adjacent to the center of the front property line.

**WATER CONSERVATION:** Under an agreement between the City of Tempe and the State of Arizona, Water Conservation Reports are required for landscape and domestic water use for the non-residential components of this project. Have the landscape architect and mechanical engineer prepare reports and submit them with the construction drawings during the building plan check process. Report example is contained in Office Procedure Directive # 59. Refer to this link: <http://www.tempe.gov/home/showdocument?id=5327> . Contact the Public Works Department, Water Conservation Division with questions regarding the purpose or content of the water conservation reports.

**HISTORIC PRESERVATION:** State and federal laws apply to the discovery of features or artifacts during site excavation (typically, the discovery of human or associated funerary remains). Contact the Historic Preservation Officer with general questions. Where a discovery is made, contact the Arizona State Historical Museum for removal and repatriation of the items.

**POLICE DEPARTMENT SECURITY REQUIREMENTS:**

- Refer to Tempe City Code Section 26-70 Security Plans.
- Design building entrance(s) to maximize visual surveillance of vicinity. Limit height of walls or landscape materials, and design columns or corners to discourage ambush.
- Maintain distances of 20'-0" or greater between a pedestrian path of travel and any hidden area to allow for increased reaction time and safety.
- Follow the design guidelines listed under appendix A of the Zoning and Development Code. In particular, reference the CPTED principal listed under A-II Building Design Guidelines (C) as it relates to the location of pedestrian environments and places of concealment.
- Provide a security vision panel at service and exit doors (except to rarely accessed equipment rooms) with a 3" wide high strength plastic or laminated glass window, located between 43" and 66" from the bottom edge of the door.

**TRAFFIC ENGINEERING:**

- Provide 8'-0" wide public sidewalk along arterial roadways, or as required by Traffic Engineering Design Criteria and Standard Details.
- Construct driveways in public right of way in conformance with Standard Detail T-320. Alternatively, the installation of driveways with return type curbs as indicated, similar to Standard Detail T-319, requires permission of Public Works, Traffic Engineering.
- Correctly indicate clear vision triangles at both driveways on the site and landscape plans. Identify speed limits for adjacent streets at the site frontages. Begin sight triangle in driveways at point 15'-0" in back of face of curb. Consult Intersection Sight Distance memo, available from Traffic Engineering if needed [www.tempe.gov/index.aspx?page=801](http://www.tempe.gov/index.aspx?page=801). Do not locate site furnishings, screen walls or other visual obstructions over 2'-0" tall (except canopy trees are allowed) within each clear vision triangle.

**FIRE:**

- Clearly define the fire lanes. Ensure that there is at least a 20'-0" horizontal width, and a 14'-0" vertical clearance from the fire lane surface to the underside of tree canopies or overhead structures. Layout and details of fire lanes are subject to Fire Department approval.
- Provide a fire command room(s) on the ground floor of the building(s). Verify size and location with Fire Department.



#### CIVIL ENGINEERING:

- An Encroachment Permit or License Agreement must be obtained from the City for any projections into the right of way or crossing of a public utility easement, prior to submittal of construction documents for building permit.
- Maintain a minimum clear distance of twenty-four (24) feet between the sidewalk level and any overhead structure.
- Any new or existing overhead utilities (if any) on or adjacent to site must be placed underground, including street crossings, per City of Tempe Code, Section 25-120 thru 25-126 & Ord # 88.85 except for transmission lines (greater than 12.5kv).
- Coordinate site layout with Utility provider(s) to provide adequate access easement(s).
- Clearly indicate property lines, the dimensional relation of the buildings to the property lines and the separation of the buildings from each other.
- Verify location of any easements, or property restrictions, to ensure no conflict exists with the site layout or foundation design.
- 100-year onsite retention required for this property, coordinate design with requirements of the Engineering Department.

#### SOLID WASTE SERVICES:

- Enclosure indicated on site plan is exclusively for refuse. Construct walls, pad and bollards in conformance with standard detail DS-116.
- Gates for refuse enclosure(s) are not required, unless visible from the street. If gates are provided, the property manager must arrange for gates to be open from 6:00am to 4:30pm on collection days.

#### PARKING SPACES:

- Verify conformance of accessible vehicle parking to the Americans with Disabilities Act and the Code of Federal Regulations Implementing the Act. Refer to Building Safety ADA Accessible Parking Spaces Marking/Signage on Private Development details.
- At parking areas, provide demarcated accessible aisle for disabled parking.
- Distribute bike parking areas nearest to main entrance(s). Provide parking loop/rack per standard detail T-578. Provide 2'-0" by 6'-0" individual bicycle parking spaces. One loop may be used to separate two bike parking spaces. Provide clearance between bike spaces and adjacent walkway to allow bike maneuvering in and out of space without interfering with pedestrians, landscape materials or vehicles nearby.

#### ZONING AND DEVELOPMENT CODE:

- Specific requirements of the **Zoning and Development Code (ZDC)** are not listed as a condition of approval, but will apply to any application. To avoid unnecessary review time and reduce the potential for multiple plan check submittals, become familiar with the ZDC. Access the ZDC through [www.tempe.gov/zoning](http://www.tempe.gov/zoning) or purchase from Community Development.

#### LIGHTING:

- Design site security light in accordance with requirements of ZDC Part 4 Chapter 8 (Lighting) and ZDC Appendix E (Photometric Plan).
- Indicate the location of all exterior light fixtures on the site, landscape and photometric plans. Avoid conflicts between lights and trees or other site features in order to maintain illumination levels for exterior lighting.

#### LANDSCAPE:

- Trees shall be planted a minimum of 16'-0" from any existing or proposed public utility lines. The tree planting separation requirements may be reduced to no less than 8'-0" from utility lines upon the installation of a linear root barrier. Per Detail T-460, the root barrier shall be a continuous material, a minimum of 0.08" thick, installed to a minimum depth of 4'-0" below grade. The root barrier shall extend 6'-0" on either side of the tree parallel to the utility line for a minimum length of 12'-0". Final approval is subject to determination by the Public Works, Water Utilities Division.

- Prepare an existing plant inventory for the site and adjacent street frontages. The inventory may be prepared by the Landscape Architect or a plant salvage specialist. Note original locations and species of native and “protected” trees and other plants on site. Move, preserve in place, or demolish native or “protected” trees and plants per State of Arizona Agricultural Department standards. File Notice of Intent to Clear Land with the Agricultural Department. Notice of Intent to Clear Land form is available at <https://agriculture.az.gov/plantsproduce/native-plants>. Follow the link to “applications to move a native plant” to “notice of intent to clear land”.

SIGNS: Separate plan review process is required for signs in accordance with requirements of ZDC Part 4 Chapter 9 (Signs). Refer to [www.tempe.gov/signs](http://www.tempe.gov/signs).

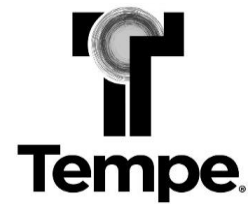
DUST CONTROL: Any operation capable of generating dust, include, but not limited to, land clearing, earth moving, excavating, construction, demolition and other similar operations, that disturbs 0.10 acres (4,356 square feet) or more shall require a dust control permit from the Maricopa County Air Quality Department (MCAQD). Contact MCAQD at <http://www.maricopa.gov/aq/>.

**HISTORY & FACTS:**

October 25, 1979	Board of Adjustment approved a use permit to allow a fast-food restaurant in the I-1 zoning district, located at 1139 West Broadway Road.
November 28, 1979	Board of Adjustment approved a variance for BURGER KING to construct a frame building instead of the required concrete or masonry construction in the I-1 zoning district, located at 1139 West Broadway Road.
February 6, 1980	Design Review Board approved a site plan, landscape plan, and building elevations for BURGER KING, located at 1139 West Broadway Road.
May 2, 2000	Hearing Officer approved a use permit to expand an existing 2,693 s.f. restaurant to 2,872 s.f. for BURGER KING (DRB00096), located at 1139 West Broadway Road.
June 6, 2000	Hearing Officer approved the variance for BURGER KING to allow the construction of a new facility to be wood frame structure with stucco and CMU wainscot exterior finish in lieu of masonry or concrete, located at 1139 West Broadway Road.
October 4, 2000	Design Review Board approved the site plan, landscape plan, and building elevations for BURGER KING, located at 1139 West Broadway Road.
January 26, 2020	Development Review Commission continued this project to the February 23, 2021 hearing at the applicant’s request to allow the applicant to hold a voluntary neighborhood meeting.

**ZONING AND DEVELOPMENT CODE REFERENCE:**

Section 6-306, Development Plan Review  
 Section 6-308, Use Permit



# DEVELOPMENT PROJECT FILE

for

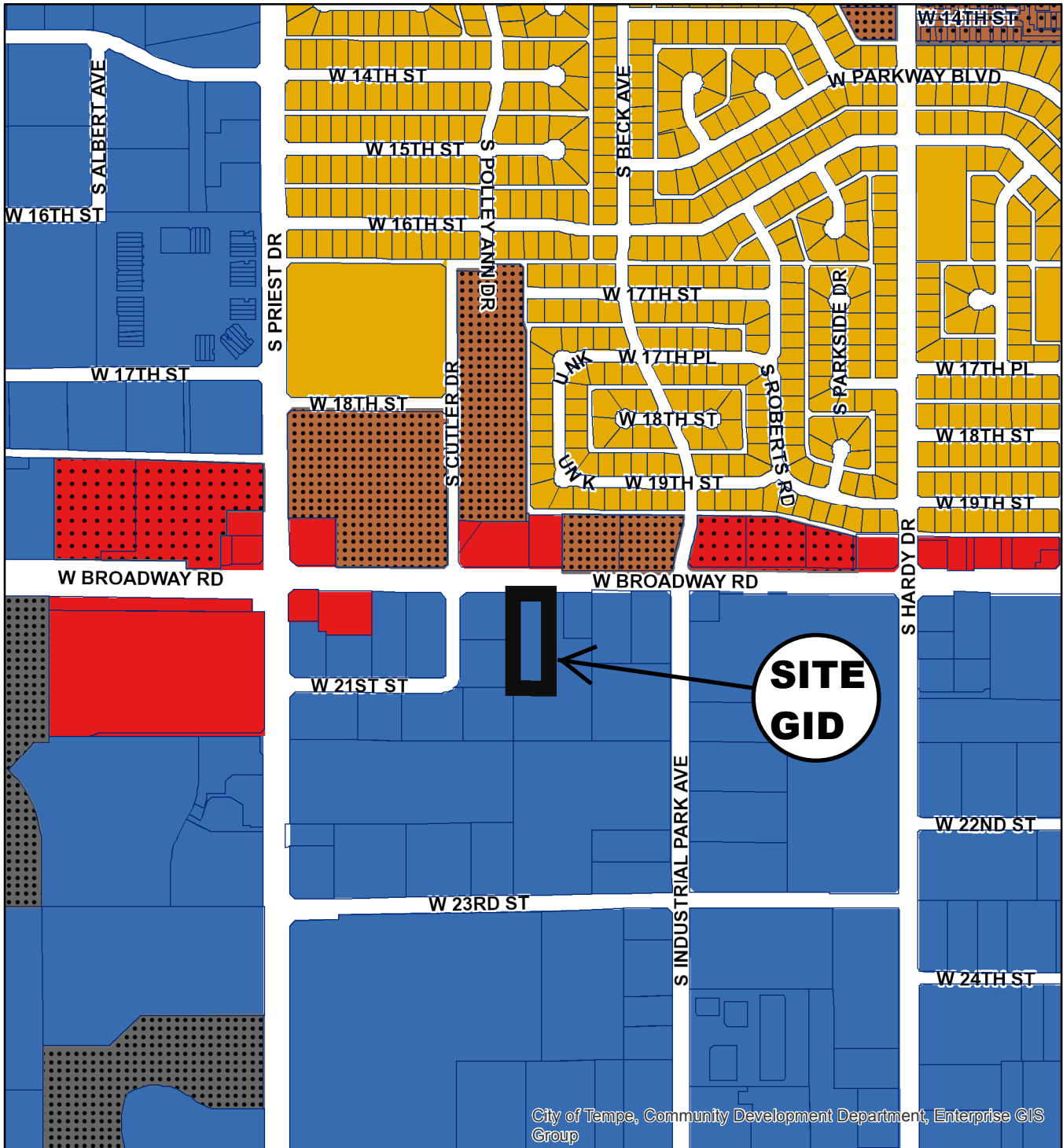
## SUPER STAR CAR WASH (PL200232)

### ATTACHMENTS:








- 1-13. Site Context (Location Map, Aerial and Aerial with Site Plan Overlay, Site Photos)
- 14-21. Applicant's Letters of Explanation
- 22-24. Site Design (Site Plan, Landscape Plan, Underground Utility and Lighting Plan)
- 25-31. Building Design (Blackline/Color Elevations, Sections, Renderings, Material Samples, Floor Plans)
- 32-69. Noise Assessment
- 70-77. Public Input
- 78-80. Neighborhood Meeting Summary

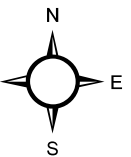
# SUPER STAR CAR WASH

PL200232



City of Tempe, Community Development Department, Enterprise GIS Group

- |  |  |
|--|--|
|  General Industrial District (GID)              |  Single-Family Residential (R1-6)           |
|  Mixed Use High (MU-4)                          |  Multi-Family Residential Restricted (R-3R) |
|  Commercial Shopping and Services (CSS)         |  Multi-Family Residential Limited (R-3)     |
|  Planned Commercial Center Neighborhood (PCC-1) |  |

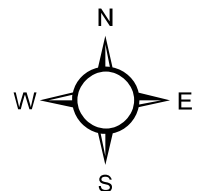


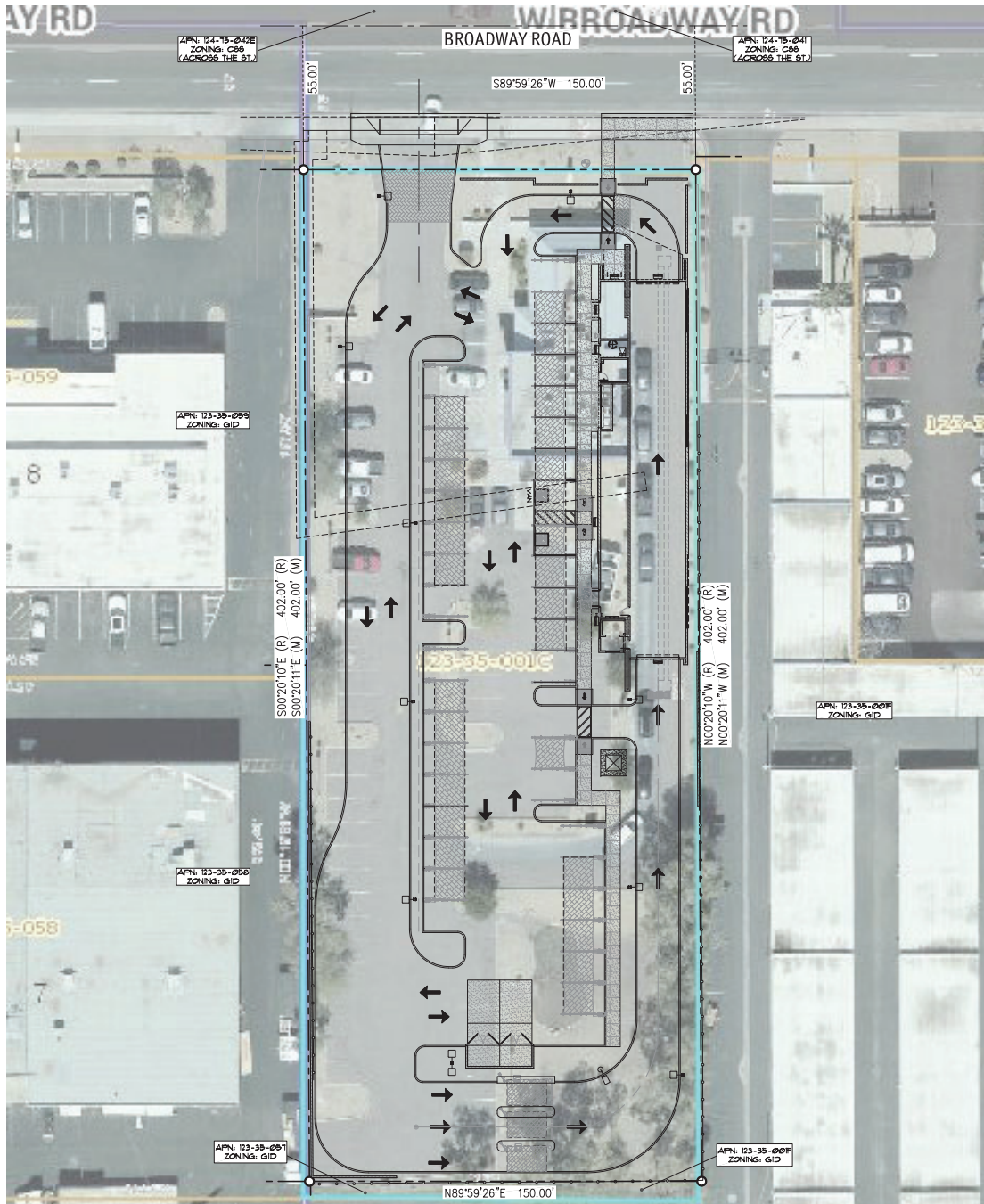
# SUPER STAR CAR WASH

PL200232



Aerial Map





ATTACHMENT 3



**SUPERSTAR  
CAR WASH**

1139 WEST  
BROADWAY  
ROAD  
TEMPE, AZ 85282

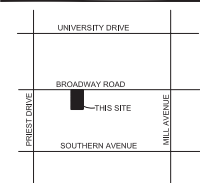
**DATE**

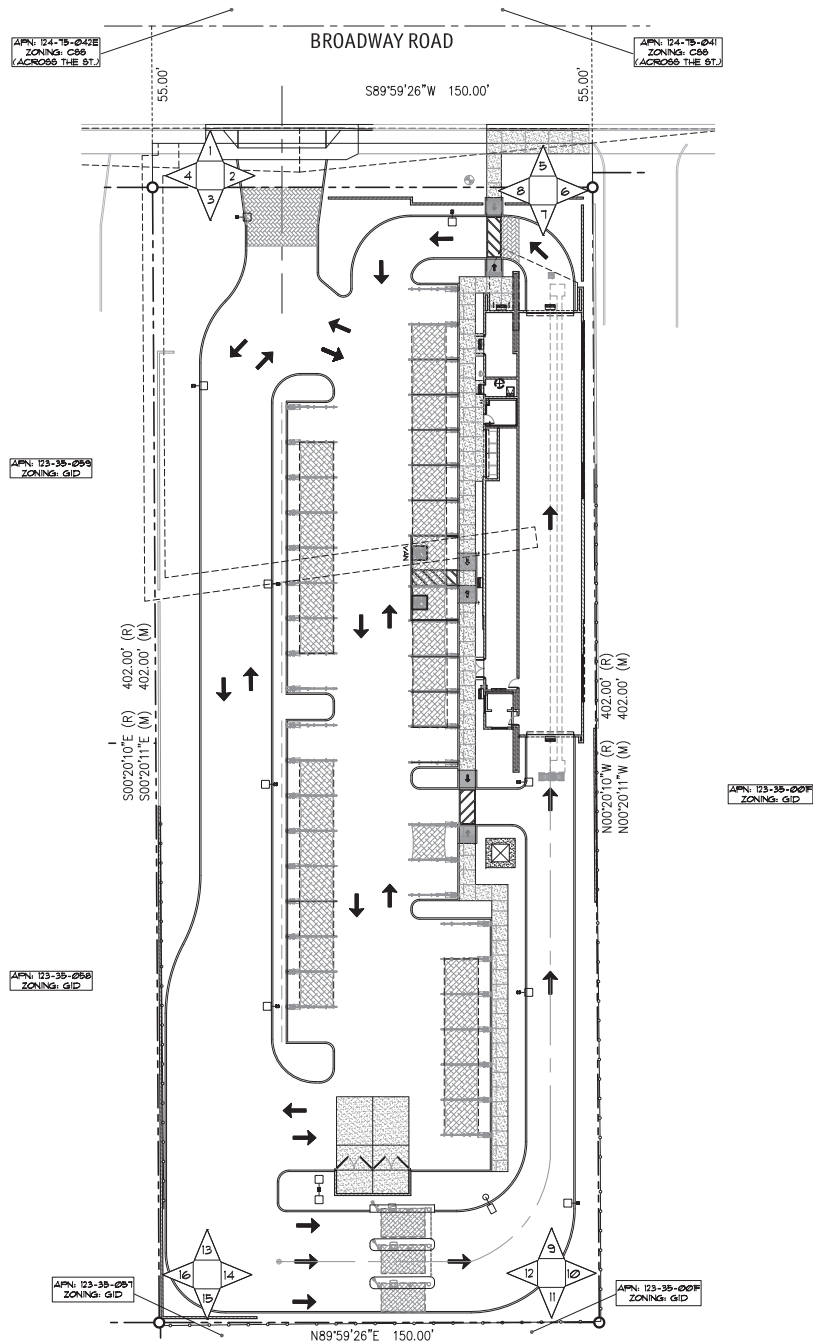
PRE-APP SUBMITTAL	3/30/2020
PRE-APP COMMENTS	4/28/2020
3RD PRE-APP RESUBMITTAL	8/5/2020
USE PERMIT SUBMITTAL	10/02/2020
MAJOR DEVELOPMENT PLAN REVIEW	10/02/2020
USE PERMIT RESUBMITTAL	12/21/2020
MAJOR DEVELOPMENT PLAN RESUBMITTAL	12/21/2020

**NOTICE OF ALTERNATE BILLING CYCLE:**

The architect shall bill the owner to include the cost of the architect's services and overhead for each other month. The architect shall bill the owner to include the cost of the architect's services and overhead for each other month. The architect shall bill the owner to include the cost of the architect's services and overhead for each other month.

**VICINITY MAP** N.T.S.





**SUPERSTAR**  
**CAR WASH**

1139 WEST  
 BROADWAY  
 ROAD  
 TEMPE, AZ 85282

**DATE**

- PRE-APP SUBMITTAL 3/30/2020
- PRE-APP COMMENTS 4/28/2020
- 3RD PRE-APP RESUBMITTAL 8/5/2020
- USE PERMIT SUBMITTAL 10/02/2020
- MAJOR DEVELOPMENT PLAN REVIEW 10/02/2020
- USE PERMIT RESUBMITTAL 12/21/2020
- MAJOR DEVELOPMENT PLAN RESUBMITTAL 12/21/2020

**NOTICE OF ALTERNATE BILLING CYCLE:**

The Architect shall bill the owner to include the cost of the alternate billing cycle for each month of the project. The cost of the alternate billing cycle shall be included in the project budget. The owner shall be responsible for the alternate billing cycle and shall pay the cost of the alternate billing cycle on a monthly basis. The owner shall be responsible for the alternate billing cycle and shall pay the cost of the alternate billing cycle on a monthly basis.

**VICINITY MAP** N.T.S.



**PHOTO LOCATION MAP**



# CONTEXT PHOTOS

Super Star Car Wash

1139 West Broadway Road  
Tempe, Arizona  
85282





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3



4



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12



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14



15



16



To: Community Development  
Department Planning Division  
City of Tempe, Arizona

From: Brian Tirko

Subject: **Use Permit Application** Narrative  
Super Star Express Carwash  
1139 West Broadway Road,  
Tempe, AZ 85282  
**PL200232**

Date: December 21, 2020

## NARRATIVE

---

This application is made to request a Use Permit for the new +/-5,220 S.F. 'Super Star Express Car Wash' located east of Priest Drive on Broadway Road. An express wash is basically a self-service operation with automated pay stations. Customers have the option to ride in the vehicle during the wash process. Exterior drying and interior vacuuming are typically done by the customer. During peak times, the facility can be operated with 2-3 people. The operational hours will be 7:00 am to 8:00 pm.

### **Site Description:**

The site is approximately 58,022 S.F. (+/-1.33 acres). The APN for the site is 123-35-001C. Burger King currently occupies the site and will be fully demolished.

### **Zoning, Use and Conformance:**

This site is zoned General Industrial District (GID). Across the street along Broadway Road north of our site location are properties that are zoned Commercial Shopping and Services (CSS) that is defined as service needs of Tempe's neighborhoods. The proposed car wash will be developed to comply with city of Tempe Development Standards and will follow city standard requirements. We are proposing a use permit to allow a car wash to be developed into this site. The carwash will correlate with the surrounding properties along with providing a service within the district.

### **Vehicular Access and Parking:**

The project is located on an arterial street; Broadway Road that will serve access point into the site.

Forty (40) parking total spaces are provided on site with thirty (30) covered vacuum bays to meet both ordinance and operational requirements for this use. Fire Truck and Refuse maneuvering and access are provided per the City of Tempe development standards.

Screening: Traffic queuing will be directed away from public streets. Screening is provided between the street and the project improvements along the north property line.

### **Landscape, R.O.W. and Offsite Improvements, Easements:**

The site is designed to utilize the drive access points and circulation within the overall development. All R.O.W. dedications and offsite improvements will comply with city of Tempe Development Standards.

### **Architecture and Building Design:**

The Super Star design model has been developed as a contemporary building that can be easily adapted to specific design requirements by interchanging building materials and colors.

The building forms are articulated with varying parapet heights with material and color changes to break up the longer facades. The tunnel exit, which faces the street, is pronounced with a masonry fin that is extruded from the building form. The additional height establishes the hierarchy of the building mass.

The exterior elevations will be comprised of a variety of materials and colors including glazing, smooth concrete masonry units, stucco, metal sunscreens and fabric covered canopies at the vacuum bays. Additional building articulation and pedestrian scale is provided through varied horizontal and vertical building elements.

The building will have a flat roof with roof top mechanical units that will be fully screened by parapet walls of varying height that will complement the building design.

The vacuum canopies are pre-engineered structures constructed with steel pipe frames and a knitted fabric shade cloth.

### **Approval Criteria.**

- A *use permit* shall be granted only upon a finding by the decision-making body, that the use covered by the permit, the manner of its conduct, and any *building* which is involved, will not be detrimental to persons residing or working in the vicinity, to adjacent property, to the neighborhood, or to the public welfare in general, and that the use will be in full conformity to any conditions, requirements, or standards prescribed therefore by this Code.

In arriving at the above determination, the following factors shall be considered, but not be limited to:

a. Any significant increase in vehicular or pedestrian traffic.

- Response: The existing use is a drive thru quick serve restaurant with operational hours from 7 Am to 11 PM. The new car wash has operational hours from 7:00 Am to 8:00 PM which is 3 hours less each day. Per the Super Star Car Wash, the maximum peak hour vehicles expected is 50 vehicles on a weekday afternoon and 75 vehicles during the Saturday peak at 11:00 AM. The proposed Super Star Car Wash development is anticipated to generate a total of 100 weekday PM Peak hour trips (entering and exiting) and 150 Saturday peak hour trips (entering and exiting). Not all of these trips will be "New" to the adjacent street system. A portion of the vehicles will already be on the street system passing by or making a short diversion.

b. Nuisance arising from the emission of odor, dust, gas, noise, vibration, smoke, heat, or glare at a level exceeding that of ambient conditions.

- Response: The new facility will utilize the most current state of the art equipment all of which is totally indoors to further reduce noise or vibration. The facility does not generate smoke, odor, or dust.

c. Contribution to the deterioration of the neighborhood or to the downgrading of property values which, conflicts with the goals, objectives or policies for rehabilitation, redevelopment or conservation as set forth in the city's adopted plans or General Plan.

- Response: The new Super Star car wash will be a needed addition providing a service to the surrounding neighborhood. This aligns with the General Plan theme to Introduce commercial development at sufficient densities to support the desired new neighborhood-oriented goods and services.

d. Compatibility with existing surrounding structures and uses.

- Response: The 2040 General Plan identifies this site as Mixed Use Industrial and the current zoning is General Industrial District (GID) which allows a car wash with a use permit. This proposed project is a single story building approximately 5,220 S.F. and the lot coverage is approximately 8.9% which is a very low ratio for commercial construction. Many of the surrounding structures are single story making this project compatible with its neighbors.

e. Adequate control of disruptive behavior both inside and outside the premises, which may create a nuisance to the surrounding area or public.

- Response: Quote from Super Star Management: This Super Star Car facility will provide Top Tier car washing service to the surrounding community in a State-of-the-Art building enhanced with beautiful landscaping and will use the latest technology and car wash equipment to satisfy the consumer's desire for a Fast

and Thorough car wash experience. Super Star will operate this facility from 7 am to 8 pm seven days a week. During slow to moderate business traffic, we will have a minimum of 3 employees on staff and at our busiest times we will have 5 employees on staff. We pride ourselves on always maintaining a clean and safe environment with well-maintained facilities for our customers.

As always, we look forward to a successful development that will bring another valued project to both the City and the surrounding neighborhood.

Sincerely,

Paul Devers  
Architect  
Cawley Architects, Inc.

To: City of Tempe  
Development Services

From: Paul Devers  
Cawley Architects, Inc.

Subject: **Major Development Plan Review**  
Submittal for Super Star Car Wash  
1139 West Broadway Road  
**PL200232**

Date: December 21, 2020

## DPR NARRATIVE AND LETTER OF EXPLANATION

---

This Narrative and letter of explanation is for the Major Development Plan Review Submittal of a new +/-5,220 square foot 'SuperStar Express Car Wash' located east of Priest Drive on Broadway Road. An express wash is basically a self-service operation with automated pay stations. Customers typically ride in the vehicle during the wash process. Exterior drying and interior vacuuming are done by the customer. During peak times, the facility can be operated with 2-3 people. The operational hours will be 7:30 am to 7:00 pm.

### **Zoning, Use and Conformance:**

This site is zoned General Industrial District (GID). A use permit application is being submitted in conjunction with this Major Development Plan Review submittal.

**Approval Criteria. Development Plan** approval shall be based on consideration of the following criteria:

1. Placement, form, and articulation of buildings and structures provide variety in the streetscape.
  - The building has been located to the front street property to create an urban feel and appearance. The building design has a large angular canopy that cantilevers toward the street creating visual interest and is supported by large masonry fins of varying heights providing additional articulation of the building mass.
2. Building design and orientation, together with landscape, combine to mitigate heat gain/retention while providing shade for energy conservation and human comfort.

- The car wash is utilitarian in purpose and the operational aspects are primarily outdoor functions. The car wash tunnel is open air but has a shade structure the entire length of the tunnel to provide sun screening for the vehicle occupants. The vacuum bays are covered with shade screening to; once again, provide the patrons with sun protection. These vacuum bay structures also mitigate heat gain for the 30 covered parking spaces. The remaining uncovered spaces, located at the landscape islands, are shaded by trees. The landscape area provided for the project is 26%.

3. Materials are of a superior quality, providing detail appropriate with their location and function while complementing the surroundings.

- The buildings materials selected for this project were chosen for durability, constructability, and design adaptability. The primary component is (CMU) concrete masonry units which provide both structural and aesthetic solutions for the building. The flexibility of CMU allows the material to be exposed, painted, and covered. This project utilizes an integral color block that is applied in varying course designs and sizes. To create a contemporary contrast and provide a visual hierarchy of materials; portions of the building are composed of Stucco over CMU.

4. Buildings, structures, and landscape elements are appropriately scaled, relative to the site and surroundings.

- This project is a single story building approximately 5,220 S.F. and the lot coverage is approximately 8.9% which is a very low ratio for commercial construction. Many of the surrounding structures are single story making this project compatible with its neighbors. The vacuum canopies are properly scaled for the intended use.

5. Large building masses are sufficiently articulated to relieve monotony and create a sense of movement, resulting in a well-defined base and top, featuring an enhanced pedestrian experience at and near street level.

- To break up the lengthy side of the building the mass has been divided both horizontally and vertically to create an interlocking pattern of color, materials and texture providing a well-defined base, and top. The interlocking pattern along with the horizontal sun canopies break up the static nature which adds movement to the lengthy walls. The entry and exit to the tunnel are both articulated with a higher feature wall to provide additional articulation and define the traffic circulation.

6. Building facades provide architectural detail and interest overall with visibility at street level (in particular, special treatment of windows, entries, and walkways with particular attention to proportionality, scale, materials, rhythm, etc.) while responding to varying climatic and contextual conditions.

- In addition to the items mentioned above, in #5, windows are provided along the eastern side of the building allowing some visibility into the car wash tunnel. The windows have sun canopies above to create additional architectural detail and visual scale. The west side is the pedestrian side of the building and is treated in similar fashion and the Vacuum canopies providing additional human scale.

7. Plans consider pleasant and convenient access to multi-modal transportation options and support the potential for transit patronage.

- Although the use is predominately a vehicular destination there is a pedestrian connection to the public sidewalk along Broadway.

8. Vehicular circulation is designed to minimize conflicts with pedestrian access and circulation, and with surrounding residential uses.

- The redevelopment of this site will include the removal of one of the existing driveways along Broadway and reduce the conflicts of pedestrians along the public sidewalk. The pedestrian access to the site has been located to provide a direct connection to the pedestrian and ADA connection to the building. Its location is near the tunnel exit, and because of the conveyor inside the tunnel the vehicular traffic is better controlled than other areas of the site.

9. Plans appropriately integrate *Crime Prevention Through Environmental Design* principles such as territoriality, natural surveillance, access control, activity support, and *maintenance*.

- This development has a singular driveway and pedestrian way from the street and is separated from the public way by a screen wall along the front property line to promote a sense of place. The building orientation and traffic circulation is linear and perpendicular allowing view corridors into the site. The overall site design integrates the exterior lighting and perimeter landscaping to distinguish the property from adjacent public areas. The Super Star operators have a good neighbor policy and operational and maintenance guidelines to minimize trash, noise, and unwanted activities on the property.

10. *Landscape* accents and provides delineation from *parking, buildings, driveways, and pathways*.

- The landscape design is an integral component of providing visual separation of vehicular and pedestrian circulation. The new streetscape provides a foreground for the building and were possible planting separate the building from adjacent circulation.

11. *Signs* have design, scale, proportion, location and color compatible with the design, colors, orientation and materials of the *building* or site on which they are located.

- A sign package has not been provided with this submittal. However, the provided renderings include a visual design, illustrating the current sign design used by the operator. The primary business identification will be located on the main feature walls.

12. Lighting is compatible with the proposed *building(s)* and adjoining *buildings* and uses and does not create negative effects.

- Exterior illumination will be provided with building lights, parking pole lights and vacuum canopy lights. Light sources will be shielded and oriented to prevent negative effects on adjacent properties.

### **Architecture and Building Design:**

The building forms are articulated with varying parapet heights with material and color changes to break up the longer facades. The tunnel exit, which faces the street, is pronounced with a masonry fin that is extruded from the building form. The additional height establishes the hierarchy of the building mass.

The exterior elevations will be comprised of a variety of materials and colors that have and include glazing, smooth concrete masonry units, stucco, metal sunscreens and fabric covered canopies at the vacuum bays. Additional building articulation and pedestrian scale is provided through varied horizontal and vertical building elements. The building will have a flat roof with roof top mechanical units that will be fully screened by parapet walls. The allowable building height per ordinance is 40'-0" and this building will comply.

The vacuum canopies are pre-engineered structures constructed with steel pipe frames and a knitted fabric shade cloth.

### **Vehicular Access and Parking:**

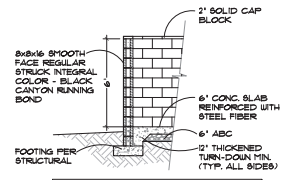
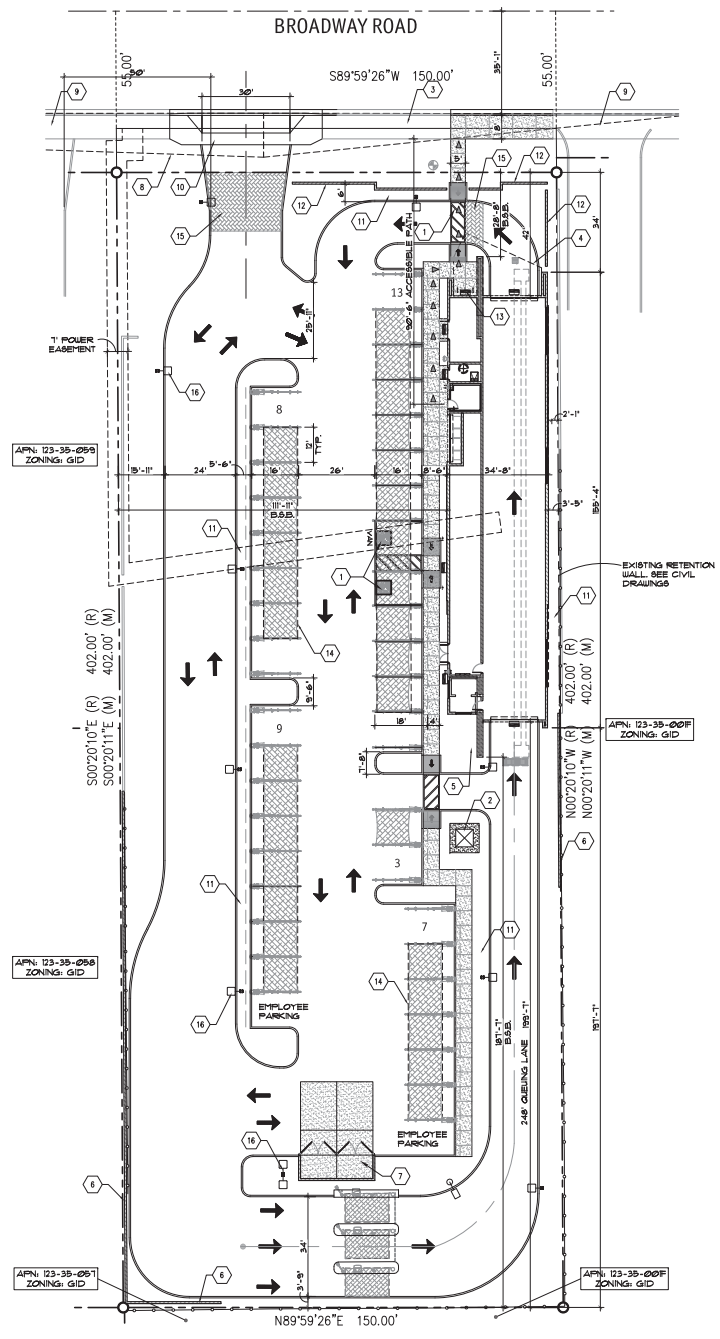
The project is located on an arterial street; Broadway Road and will have one access point into the site. Forty (40) parking total spaces are provided on site with thirty (30) covered vacuum bays to meet both ordinance and operational requirements for this use. Fire Truck and Refuse maneuvering and access are provided per the City of Tempe development standards.

Screening: Traffic queuing will be directed away from public streets. Screening is provided along the north property line.

Sincerely,

Paul Devers  
Architect  
Cawley Architects, Inc. ]





**TRASH ENCLOSURE WALL**  
SCALE: 1/4" = 1'-0"

**SHEET KEYNOTES**

- 1 PROVIDE PAINTED PARKING STRIPING, ADA SIGNAGE, AND WALKWAY STRIPING PER CITY STANDARDS
- 2 TRANSFORMER ON CONCRETE PAD WITH CLEAR SPACE PER UTILITY COMPANY
- 3 EXISTING SIDEWALK TO REMAIN
- 4 STEEL CANOPY
- 5 SERVICE ENTRANCE SECTION (S.E.S.) - SEE ELECTRICAL DRAWINGS
- 6 RETAINING WALL - SEE CIVIL DRAWINGS
- 7 REFUSE ENCLOSURE FOR SOLID WASTE AND RECYCLING BINS - PER CITY STANDARD 05-116
- 8 SITE VISIBILITY TRIANGLE TYP.
- 9 EXISTING DRIVEWAY TO REMAIN
- 10 DRIVEWAY, PER CITY STANDARD T-320
- 11 LANDSCAPING TYP. - SEE LANDSCAPE DRAWINGS
- 12 3'-4" HIGH CMU PARKING SCREEN WALL, TYP.
- 13 BIKE RACK - PER CITY STANDARD T-578
- 14 CANOPY ABOVE
- 15 INTEGRAL COLORED AND TEXTURED CONCRETE PAVING, TYP.
- 16 LIGHT POLE, TYP. SEE ELECTRICAL DRAWINGS

**SITE DATA**

PROJECT:	SUPER STAR CAR WASH
ADDRESS:	1139 WEST BROADWAY ROAD TEMPE, AZ 85282
DEVELOPER:	SUPERSTAR CAR WASH 1833 N. 95TH AVENUE SUITE 108 PHOENIX, ARIZONA 85037 PHONE: 602.421.6717 CONTACT: KEA ANDERSON
SCOPE:	A NEW 5,220 S.F. SUPERSTAR EXPRESS CAR WASH PROVIDING PROFESSIONAL AND AUTOMATED SERVICES
LEGAL DESCRIPTION:	SEE CIVIL
ASSESSOR PARCEL NO.:	12345-001C
ZONING:	GID (USE PERMIT REQUIRED)
SITE AREA:	4+-58,022 S.F. 1+-1.33 ACRES
BUILDING AREA:	5,220 S.F. GROSS
STORIES:	SINGLE STORY
LOT COVERAGE:	8.9 % (PROVIDED) - NS (REQUIRED)
LANDSCAPE AREA:	15,271 S.F. (PROVIDED)
LANDSCAPE COVERAGE:	29 % (PROVIDED)
MINIMUM LANDSCAPE COVERAGE REQUIRED:	10 % (3,054 S.F.)
OCCUPANCY:	B
CONSTRUCTION TYPE:	1-48 W/ A.F.E.S.
ALLOWABLE AREA:	39,000 S.F. (SINGLE STORY)
SLOPE DEPTH:	1/4" PER 1'-0" MIN.
BUILDING HEIGHT:	30'-0" (ALLOWED) 30'-4" (PROVIDED)

**PARKING CALCULATIONS**

AREA CALC.	TOTALS
OFFICE / VENDING / RESTROOM	382 S.F.
EQUIPMENT AREA	1,197 S.F.
WASH BAY	3,415 S.F.
VACUUM	285 S.F.
TOTAL:	5,220 S.F.

REQUIRED PARKING CALCULATIONS	USE	S.F.	FACTOR	TOTAL
CAR WASH	4,433 S.F. (NET)	1 SPACE / 300 S.F.	14.7	300
AUTOMATIC				15
TOTAL REQUIRED				315

PARKING PROVIDED	TOTAL REGULAR SPACES	TOTAL ACCESSIBLE SPACES	TOTAL COVERED SPACES (INCLUDING ACCESSIBLE SPACE)	TOTAL SPACES ON SITE
	30	2	30	40

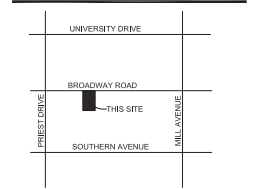
  

BIKE PARKING REQUIRED	BIKE PARKING PROVIDED
4	4

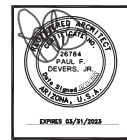
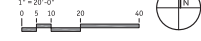
**LEGEND**

- PROPERTY LINE
- - - CENTER LINE / ROW
- CAR OVERHANG, MEASURED FROM FACE OF CURB AS DIMENSIONED ON SITE PLAN
- 6" CURB
- SITE WALL
- PERIMETER FENCING
- SALT FINISH CONCRETE SIDEWALK
- PAINT STRIPING ON PAVEMENT
- ⊕ NEW FIRE HYDRANT
- ⊕ EXISTING FIRE HYDRANT
- ⊕ FIRE DEPARTMENT CONNECTION
- ⊕ ACCESSIBLE ROUT / PATH OF TRAVEL
- ⊕ FIRE RISER

**VICINITY MAP** N.T.S.



**SITE PLAN**



**SUPERSTAR CAR WASH**

1139 WEST BROADWAY ROAD  
TEMPE, AZ 85282

**DATE**

PRE-APP SUBMITTAL 3/30/2020  
 PRE-APP COMMENTS 4/28/2020  
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 USE PERMIT SUBMITTAL 12/21/2020  
 MAJOR DEVELOPMENT PLAN SUBMITTAL 12/21/2020

**NOTICE OF ALTERNATE BIDDING CYCLE:**

If a contract is awarded to the owner to require the contractor to provide the site plan and utility information to the contractor, the contractor shall be responsible for providing the site plan and utility information to the contractor. The contractor shall be responsible for providing the site plan and utility information to the contractor. The contractor shall be responsible for providing the site plan and utility information to the contractor.

The architect design and data shall be the responsibility of the architect. The architect shall be responsible for providing the site plan and utility information to the contractor.












All documents found in these documents shall be the responsibility of the architect. The architect shall be responsible for providing the site plan and utility information to the contractor.

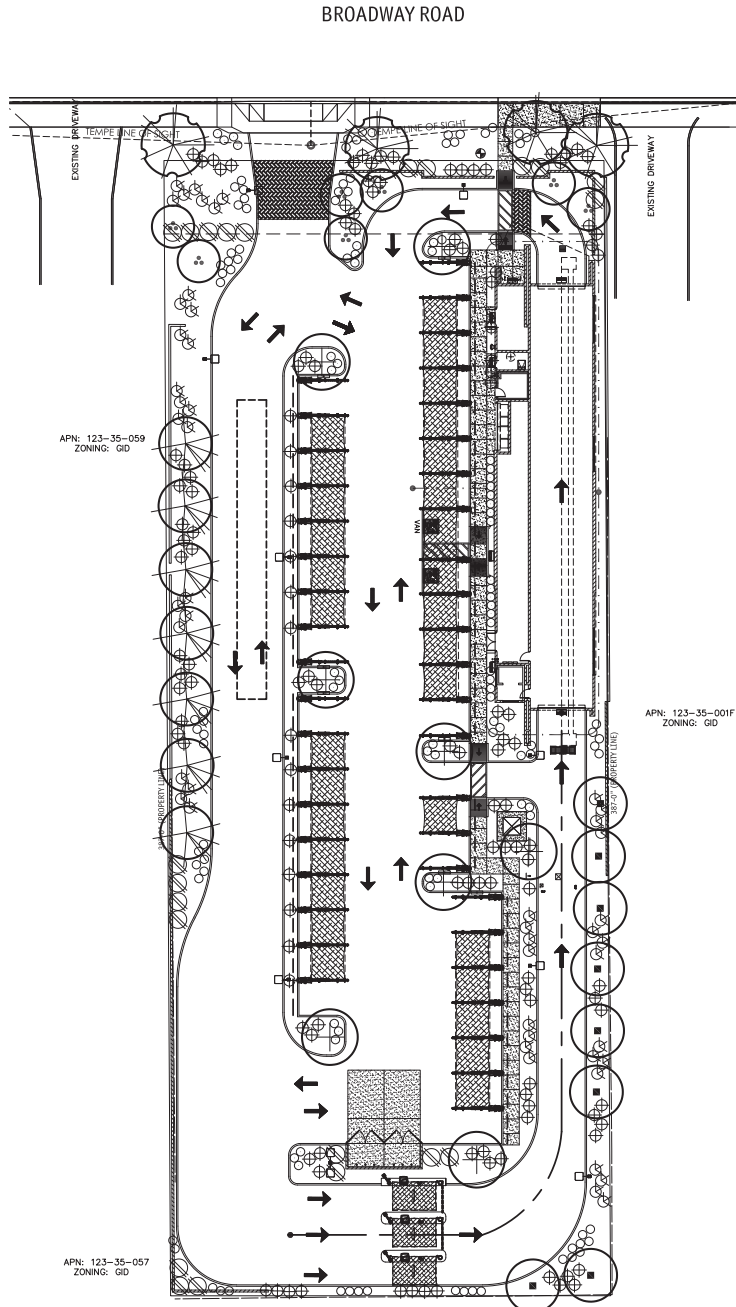
Discrepancies between the drawings and these documents shall be reported to the architect immediately.

Project: 2024/P7

**A1.1**

**LANDSCAPE LEGEND**

-  DALBERGIA SISSOO  
SISSOO TREE  
36" BOX (1.5" CALIP. MIN)
  -  QUERCUS VIRGINIANA  
LIVE OAK  
24" BOX
  -  ACACIA ANEURA  
MULGA (SRP/APFS APPROVED)  
24" BOX
  -  ACACIA SALICINA  
WILLOW ACACIA  
15 GALLON
  -  SOPHORA SECUNDFLORA  
TEXAS MOUNTAIN LAUREL  
15 GALLON
  -  CAESALPINIA MEXICANA  
MEXICAN BIRD OF PARADISE  
5 GALLON
  -  TECOMA 'ORANGE JUBILEE'  
ORANGE JUBILEE  
5 GALLON
  -  HESPERALOE PARVIFLORA  
RED YUCCA  
5 GALLON
  -  RUELLIA PENINSULARIS  
BAJA RUELLIA  
5 GALLON
  -  LANTANA MONTEVIDENSIS  
'GOLD MOUND'  
1 GALLON
  -  LANTANA MONTEVIDENSIS  
TRAILING PURPLE  
1 GALLON
- 1/2" SCREENED SADDLEBACK BROWN  
DECOMPOSED GRANITE  
2" DEPTH IN ALL LANDSCAPE AREAS



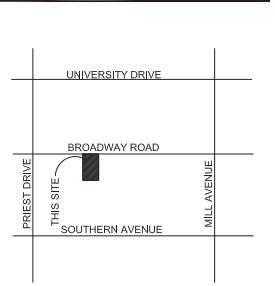
**CITY OF TEMPE NOTES:**

1. DE-COMPACT SOIL IN ALL PLANTING AREAS ON-SITE AND IN PUBLIC ROW AND REMOVE ANY CONSTRUCTION
2. TOP DRESS PLANTING AREAS WITH DECOMPOSED GRANITE APPLICATION. PROVIDE DG IN UNIFORM 2" THICKNESS. PROVIDE PRE-EMERGENCE WEED CONTROL APPLICATION AND DO NOT UNDERLAY ROCK OR DG APPLICATIONS W/ PLASTIC. PROVIDE CERTIFICATE OF PRE-EMERGENCE TO OWNER UPON COMPLETION.
3. TREES SHALL BE PLANTED A MIN OF 20' FROM ANY EXISTING OR PROPOSED PUBLIC WATER OR SEWER LINES. THE TREE PLANTING SEPARATION REQUIREMENT MAY BE REDUCE FROM THE WATERLINE UPON THE INSTALLATION OF A LINEAR ROOT BARRIER. A MIN. OF 6' PARALLEL FROM THE WATERLINE OR AROUND THE TREE. THE ROOT BARRIER SHALL BE A CONTINUOUS MATERIAL A MIN. OF 0.08" THICK. INSTALLED 2' ABOVE FINISH GRADE TO A DEPTH OF 8' BELOW GRADE. FINAL APPROVAL SUBJECT TO DETERMINATION BY THE PUBLIC WORKS, WATER UTILITIES DIVISION.
4. NO RIVER ROCK PERMITTED UNLESS 2/3 OF EACH STONE IS EMBEDDED IN CONCRETE.
5. NO PLANT SUBSTITUTIONS, TYPE, SIZE, OR QUANTITY DEVIATIONS FROM THE APPROVED LANDSCAPE OR IRRIGATION PLANS WITHOUT PRIOR APPROVAL FROM THE CITY OF TEMPE PLANNING DEPARTMENT.
6. THERE ARE NO EXISTING OVERHEAD ELECTRICAL LINES.
7. ALL LANDSCAPING INSTALLED WITH THIS PROJECT TO BE MAINTAINED BY OWNERS ASSOCIATION OF COMMERCIAL SUBDIVISION OR MANAGEMENT COMPANY IF COMMERCIAL RENTALS.
8. SIGHT DISTANCE TRIANGLE AREAS ARE TO BE CLEARED OF LANDSCAPING, SIGNS, OR OTHER VISIBILITY OBSTRUCTIONS BETWEEN 2' AND 7' IN HEIGHT.

**CITY OF TEMPE CLEAR VISION REQUIREMENTS**

1. Street Intersections and Driveway Entrances. Except as otherwise approved in writing by the Public Works Director, a wall, building, landscape, or other visual obstruction exceeding two (2) feet in height (measured from street curb, see Appendix B for a list of recommended shrubs) shall not be placed within a "clear vision triangle", including street intersections in single-family. Reference the "Corner Site Distance at Intersections" from the Public Works, Transportation Division. There shall be an exception for a reasonable number of trees pruned high enough to permit unobstructed vision.
2. Pathways. Groundcovers and shrubs within six (6) feet of pathways shall not exceed two (2) feet in height at maturity. Between six (6) feet and twelve (12) feet of the edge of pathways, groundcovers and shrubs shall not exceed three (3) feet in height at maturity. See Appendix B and C for a list of recommended plants. There shall be an exception for a reasonable number of trees pruned high enough to permit unobstructed vision.

**VICINITY MAP**




**CAWLEY ARCHITECTS**  
730 N. 52nd St. Ste. 203  
Phoenix, Arizona 85008  
P 602.393.5060  
CawleyArchitects.com

**SUPERSTAR CAR WASH**

1139 WEST BROADWAY ROAD  
TEMPE, AZ 85282

DATE  
PRE-APP SUBMITTAL 3/30/2020  
PRE-APP COMMENTS 4/29/2020  
3RD PRE-APP RESUBMITTAL 8/6/2020  
USE PERMIT SUBMITTAL 10/02/2020  
MAJOR DEVELOPMENT PLAN REVIEW 10/02/2020  
USE PERMIT SUBMITTAL 12/21/2020  
MAJOR DEVELOPMENT PLAN RESUBMITTAL 12/21/2020

NOTICE OF ALTERNATE BILLING CYCLE:  
The architect and/or consultants shall be responsible for the payment of bills rendered by the contractor. The contractor shall be responsible for the payment of bills rendered by the architect and/or consultants. The contractor shall be responsible for the payment of bills rendered by the architect and/or consultants. The contractor shall be responsible for the payment of bills rendered by the architect and/or consultants.



**T.J. McQUEEN & ASSOCIATES, INC.**  
LANDSCAPE ARCHITECTURE  
URBAN DESIGN  
SITE PLANNING  
10450 N. 74th Street, Suite 120  
Scottsdale, Arizona 85258  
P. (602) 265-0320  
EMAIL: timccqueen@tjma.net



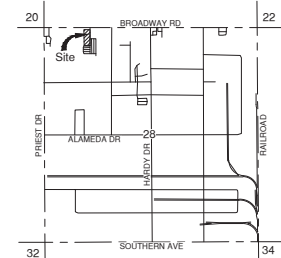
Project: 20047P  
La.01

# SUPER STAR CAR WASH

## PRELIMINARY UNDERGROUND UTILITY AND LIGHTING PLAN

### TEMPE, ARIZONA

A PORTION OF THE NORTHWEST QUARTER OF SECTION 28, TOWNSHIP 1 NORTH, RANGE 4 EAST  
OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA



VICINITY MAP

NORTHWEST CORNER, SECTION 28, T10N, R04E, FOUND BRASS CAP IN HANDHOLE

PRIEST DR

N.T.S.

#### DEVELOPER

SSCW COMPANIES  
14425 WEST MCDOWELL ROAD  
SUITE F-108  
SCOTTSDALE, ARIZONA 85395  
PHONE: 602.421.6717  
CONTACT: REZA MARREZVANI

#### ENGINEER

BOWMAN CONSULTING  
1295 WEST WASHINGTON STREET  
SUITE 108  
TEMPE, ARIZONA 85281  
PH: 480.629.8838  
CONTACT: DAVID MALDONADO-CAMOU

#### ARCHITECT

CAWLEY ARCHITECTS  
730 NORTH 50TH STREET  
SUITE 203  
PHOENIX, ARIZONA 85008  
PHONE: 602.363.5060  
CONTACT: BRIAN TRIKO

#### LANDSCAPE ARCHITECT

T.J. MCQUEEN AND ASSOCIATES INC.  
3633 EAST CHOLLA STREET  
SUITE 101  
SCOTTSDALE, ARIZONA 85260  
PHONE: 602.265.0320  
CONTACT: TIM MCQUEEN

#### BENCHMARK

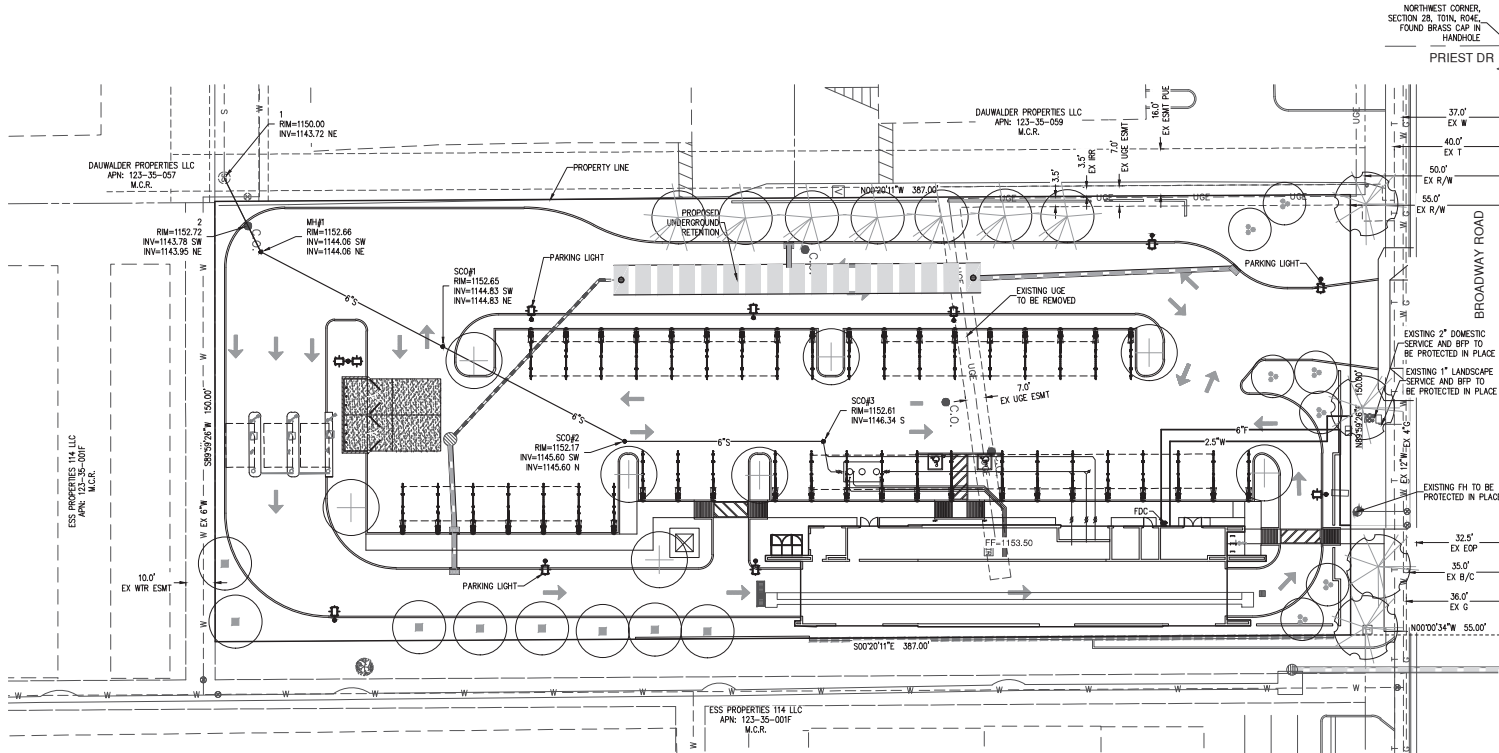
BRASS CAP IN HANDHOLE FOUND AT THE CENTERLINE INTERSECTION OF BROADWAY RD & PRIEST DR.  
ELEVATION=1148.29' NAVD83 DATUM PER CITY OF TEMPE SURVEY CONTROL.

#### BASES OF BEARING

NORTH 00°15'53" WEST ALONG THE WEST LINE OF THE NORTHWEST QUARTER OF SECTION 28, TOWNSHIP 1 NORTH, RANGE 4 EAST, OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA, ACCORDING TO PALO VERDE INDUSTRIAL PARK PER BOOK 105 OF MAPS, PAGE 31, RECORDS OF MARICOPA COUNTY, ARIZONA.

#### SITE INFO

EXISTING ZONING: GD  
PROPOSED ZONING: GD  
GROSS AREA: 1.33 AC  
NET AREA: 1.33 AC



NORTHEAST CORNER, NORTHWEST QUARTER, SECTION 28, T10N, R04E, FOUND ARIZONA HIGHWAY DEPARTMENT BRASS CAP IN HANDHOLE

HARDY DR

#### LEGEND

— (1200) —	EXISTING CONTOUR ELEVATION	R/W	RIGHT-OF-WAY
- - - (1200) - - -	PROPOSED CONTOUR ELEVATION	PUFE	PUBLIC UTILITIES & FACILITIES EASEMENT
— E —	ELECTRICAL LINE	CL	CENTER LINE
— 8"W —	WATER LINE	B/C	BACK OF CURB
— 8"S —	SEWER LINE	TC	TOP OF CURB
— 8"SM —	SEWER MANHOLE	G	GUTTER
— 8"SS —	STORM DRAIN PIPE	EOP	EDGE OF PAVEMENT
— 8"V —	VERTICAL CURB & GUTTER	INV	INVERT ELEVATION
— 8"R —	REINFORCED CONCRETE	EX	EXISTING
— 8"FF —	FINISHED FLOOR ELEVATION	FF	FINISHED FLOOR ELEVATION
— 8"FP —	FINISHED PAD ELEVATION	FP	FINISHED PAD ELEVATION
— 8"OE —	OVER HEAD ELECTRIC	OE	OVER HEAD ELECTRIC
— 8"UG —	UNDERGROUND ELECTRIC	EG	EXISTING GROUND ELEVATION
— 8"TE —	TELECOMMUNICATIONS LINE	UG	UNDERGROUND ELECTRIC
— 8"TS —	TRAFFIC SIGNAL	TE	TELECOMMUNICATIONS LINE
— 8"TL —	TRAFFIC LIGHT	TS	TRAFFIC SIGNAL

THIS SET OF CONSTRUCTION PLANS HAVE BEEN SUBMITTED TO THE FOLLOWING UTILITY COMPANIES FOR REVIEW AND TO DETERMINE ANY POTENTIAL CONFLICTS.

UTILITY COMPANY	COMPANY CONTACT	DATE SUBMITTED
SOUTHWEST GAS CORPORATION	NORMA JARDIN - 602-484.3857	12.18.20
CENTURY LINK	DARALL CLEMONS - 623.238.3444	12.18.20
COX COMMUNICATIONS	AMANDA HAMILTON - 623.328.4879	12.18.20
MO - (VERIZON BUSINESS)		12.18.20
SALT RIVER PROJECT - SRP	DAVID TSO - 602.236.8864	12.18.20
ARIZONA PUBLIC SERVICE - APS		12.18.20

CAD FILE NAME: P:\050852 - Super Star Car Wash - Broadway\050852-01-001 (ENG)\Engineering\Engineering Plans\Prelim\Utilities\050852-PR-001-UTP.dwg 12/21/2020



**Bowman Consulting**  
1205 West Washington, Ste. 108  
Tempe, Arizona 85281  
Phone: (480) 629-8838  
www.bowmanconsulting.com

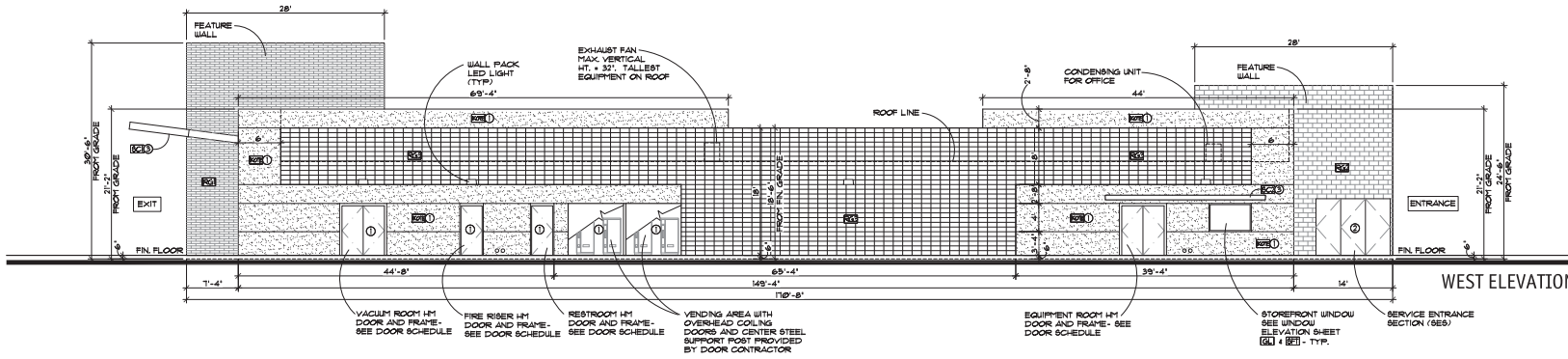
PRELIMINARY UNDERGROUND UTILITY PLAN  
**SUPER STAR CAR WASH**  
1139 W BROADWAY ROAD  
MARBICOPA COUNTY  
TEMPE, ARIZONA



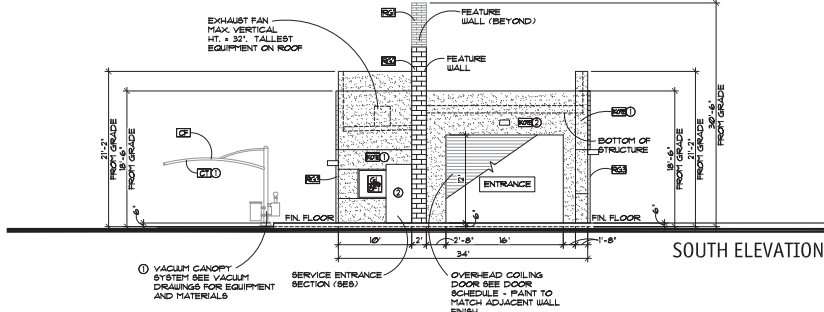
PROJECT NUMBER

DATE	DESCRIPTION

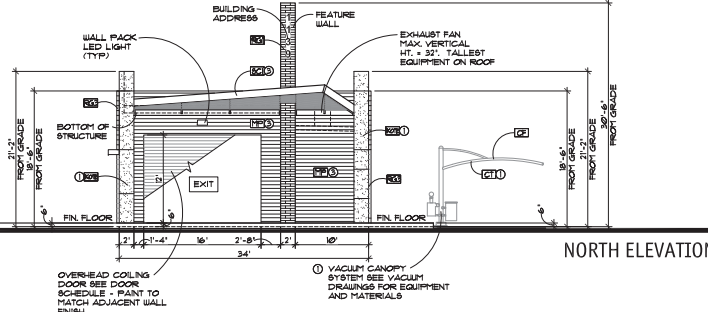
DATE: 12.18.20  
SHEET 01 OF 01



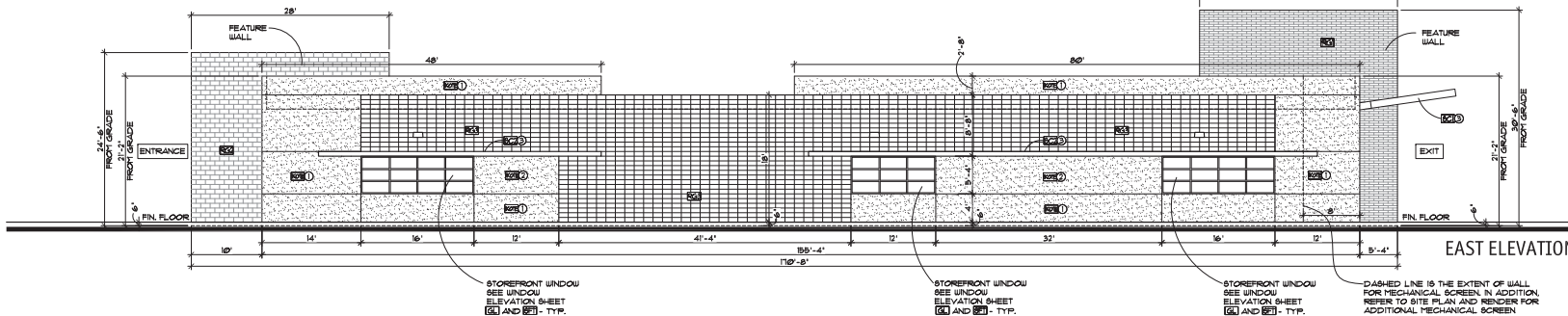
WEST ELEVATION



SOUTH ELEVATION



NORTH ELEVATION



EAST ELEVATION

MATERIAL KEYNOTE	
MATERIAL DESCRIPTION	
84x16 SMOOTH FACE REGULAR STRUCK INTEGRAL COLOR - BLACK CANYON RUNNING BOND EVERY OTHER JOINT RAKED	84
84x16 SMOOTH FACE REGULAR STRUCK INTEGRAL COLOR - BLACK CANYON RUNNING BOND	85
24x16 SMOOTH FACE REGULAR STRUCK INTEGRAL COLOR - BLACK CANYON RUNNING BOND	86
WESTERN ONE-KOTE STUCCO SYSTEM DIRECTLY APPLIED OVER CONCRETE UNIT MASONRY PAINTED 'COLD MORNING' DE6365 (LEV 13)	87
WESTERN ONE-KOTE STUCCO SYSTEM DIRECTLY APPLIED OVER CONCRETE UNIT MASONRY PAINTED 'SILVER LINED' DE6365	88
B-DECK METAL PANEL PAINTED 'HOT JAZZ' DEAD17	89
STEEL CANOPY 2" TUBE STEEL W/ PERFORATED B-DECK PAINTED 'HOT JAZZ' DEAD17	90
STEEL CANOPY 6" TUBE STEEL PAINTED 'HOT JAZZ' DEAD17	91
CANOPY TUBE - ARCHES PAINTED 'COLD MORNING' DE6365	92
CANOPY FABRIC COLOR: CHERRY RED	93
WINDOW FRAME COLOR: CLEAR ANODIZED ALUMINUM	94
GLAZING COLOR: 1/4" GRAY	95
SERVICE ENTRANCE SECTION (SES) PAINTED 'COLD MORNING' DE6365	96
HOLLOW METAL DOORS PAINTED 'SILVER LINED' DE6365	97

**CAWLEY ARCHITECTS**  
 730 N. 52nd St., Ste. 203  
 Phoenix, Arizona 85008  
 P 602.393.5060  
 CawleyArchitects.com

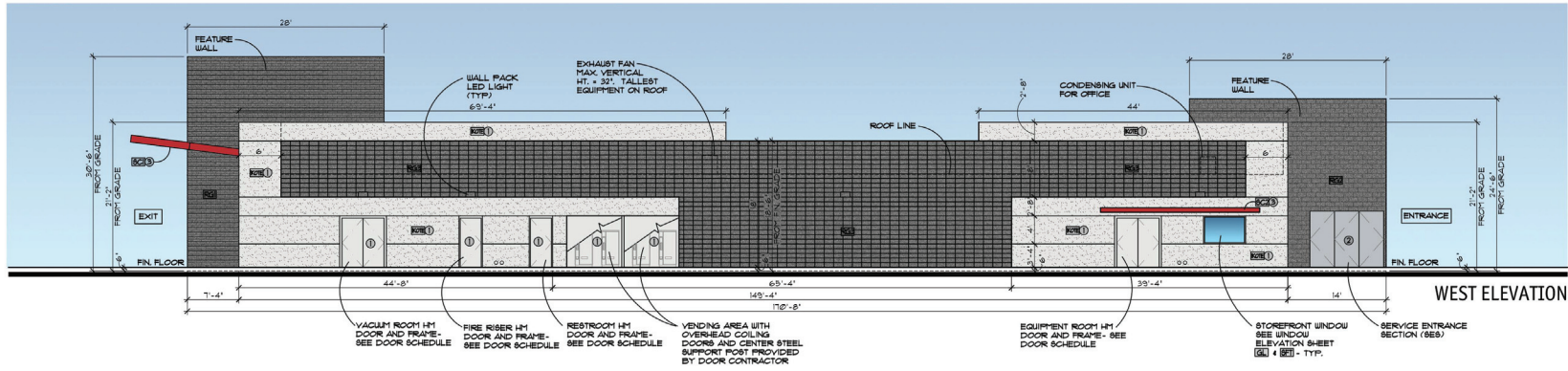
**SUPERSTAR CAR WASH**

1139 WEST BROADWAY ROAD  
 TEMPE, AZ 85282

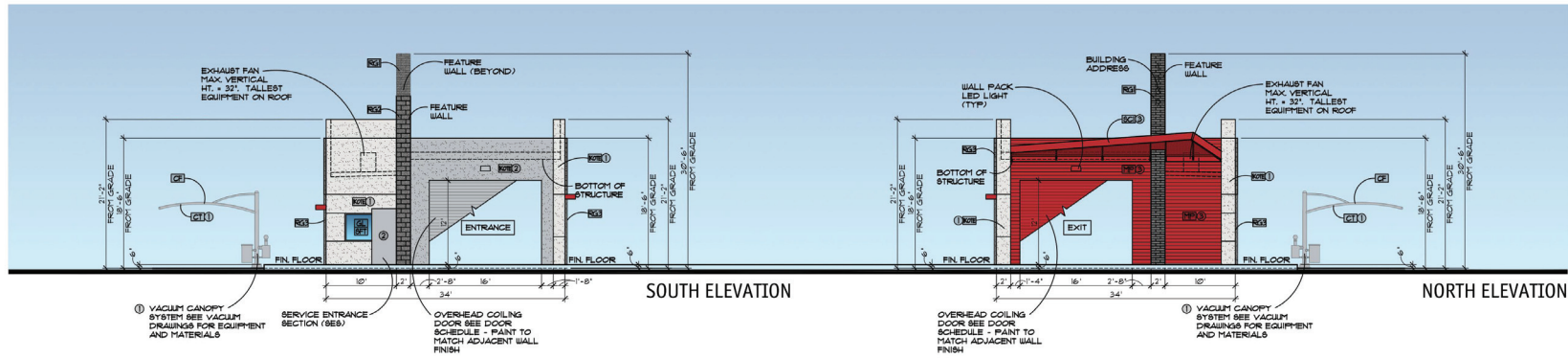
**DATE**  
 PRE-APP SUBMITTAL 3/30/2020  
 PRE-APP COMMENTS 4/29/2020  
 3RD PRE-APP RESUBMITTAL 8/5/2020  
 USE PERMIT SUBMITTAL 10/02/2020  
 MAJOR DEVELOPMENT PLAN REVIEW 12/21/2020  
 USE PERMIT SUBMITTAL 12/21/2020  
 MAJOR DEVELOPMENT PLAN RESUBMITTAL 12/21/2020

**NOTICE OF ALTERNATE BIDDING CYCLE:**  
 The contractor shall be the owner to receive and respond to all questions and requests for clarification from the contractor within 10 business days of the date of the request. The contractor shall be responsible for providing the answers to the contractor's questions and requests for clarification. The contractor shall be responsible for providing the answers to the contractor's questions and requests for clarification. The contractor shall be responsible for providing the answers to the contractor's questions and requests for clarification.



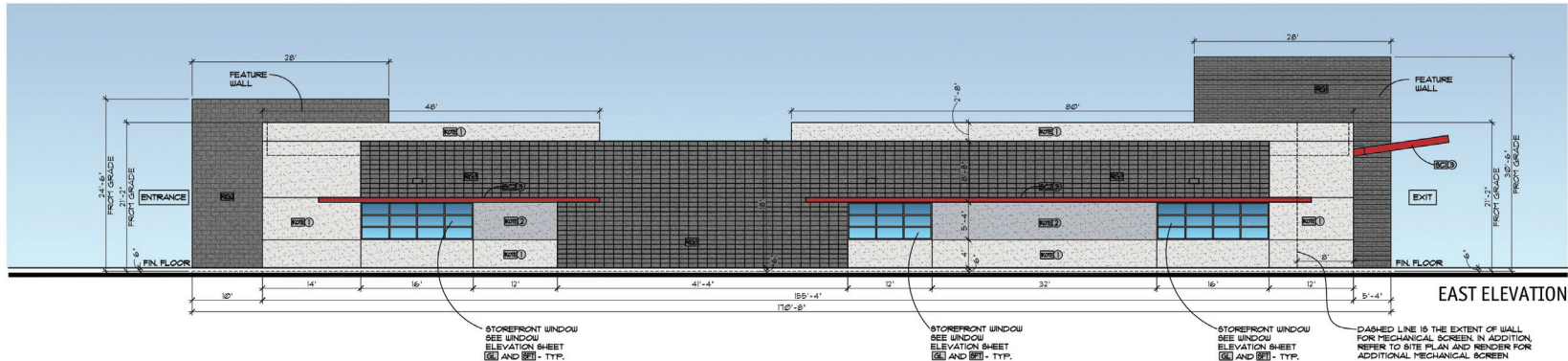


WEST ELEVATION



SOUTH ELEVATION

NORTH ELEVATION



EAST ELEVATION

MATERIAL KEYNOTE	
MATERIAL	DESCRIPTION
80	8x4x16 SMOOTH FACE REGULAR STRUCK INTEGRAL COLOR - BLACK CANYON RUNNING BOND EVERY OTHER JOINT RAKED
82	8x8x16 SMOOTH FACE REGULAR STRUCK INTEGRAL COLOR - BLACK CANYON RUNNING BOND
83	12x8x16 SMOOTH FACE REGULAR STRUCK INTEGRAL COLOR - BLACK CANYON STACK BOND
808(1)	WESTERN ONE-KOTE STUCCO SYSTEM DIRECTLY APPLIED OVER CONCRETE UNIT MASONRY PAINTED 'COLD MORNING' DE6365 (LVR 15)
808(2)	WESTERN ONE-KOTE STUCCO SYSTEM DIRECTLY APPLIED OVER CONCRETE UNIT MASONRY PAINTED 'SILVER LINED' DE6353
809	B-DECK METAL PANEL PAINTED 'HOT JAZZ' DE6101
823	STEEL CANOPY 2" TUBE STEEL W/ PERFORATED B-DECK PAINTED 'HOT JAZZ' DE6101
825	STEEL CANOPY 8" TUBE STEEL PAINTED 'HOT JAZZ' DE6101
821	CANOPY TUBE - ARCHES PAINTED 'COLD MORNING' DE6365
82	CANOPY FABRIC COLOR: 'CHERRY RED'
807	WINDOW FRAME COLOR: CLEAR ANODIZED ALUMINUM
84	GLAZING COLOR: 1/4" GRAY
806	SERVICE ENTRANCE SECTION (806) PAINTED 'COLD MORNING' DE6365
8	HOLLOW METAL DOORS PAINTED 'SILVER LINED' DE6353

EXTERIOR ELEVATIONS  
1/8" = 1'-0"  
0 4 8 16

**CAWLEY ARCHITECTS**  
730 N. 52nd St. Ste. 203  
Phoenix, Arizona 85008  
P. 602.393.5060  
CawleyArchitects.com

**SUPERSTAR CAR WASH**

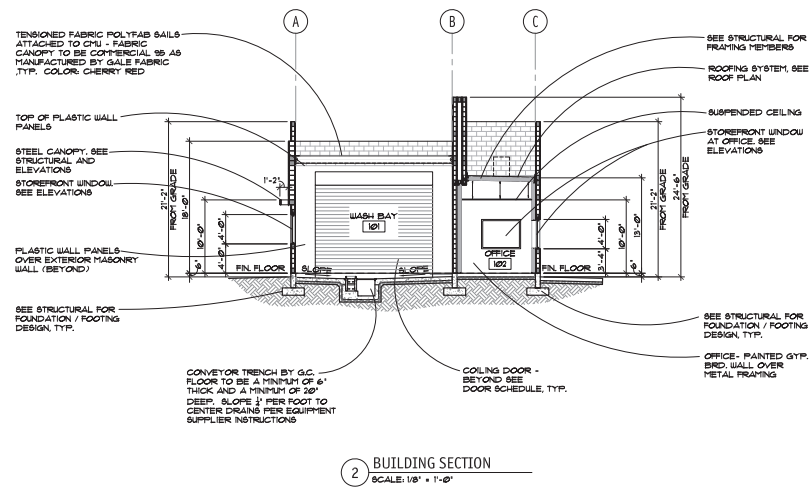
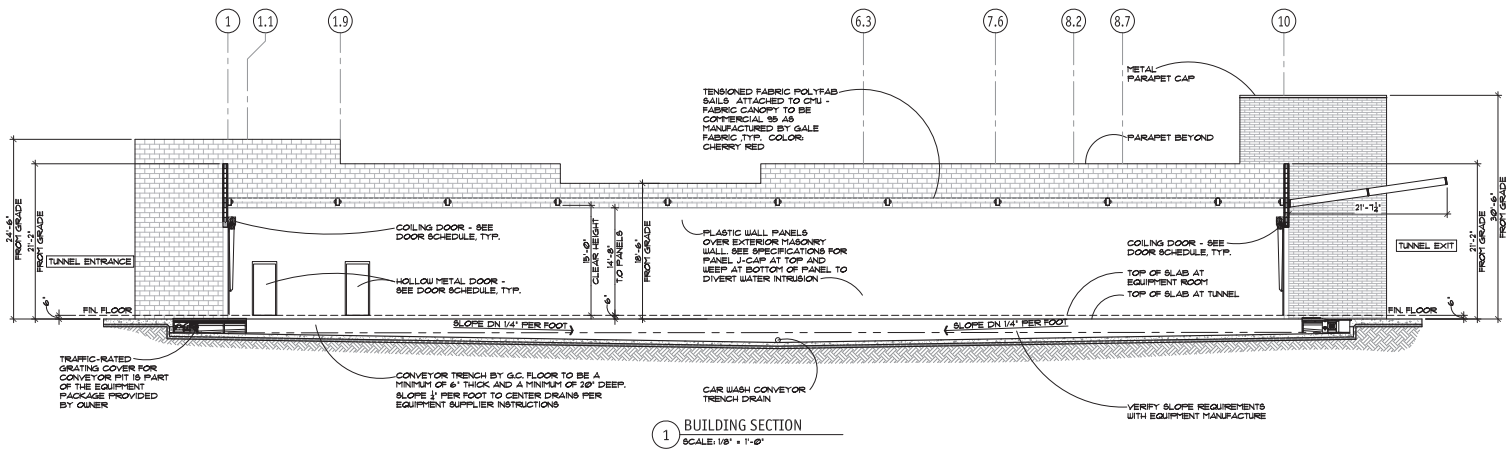
1139 WEST BROADWAY ROAD  
TEMPE, AZ 85282

DATE  
PRE-APP SUBMITTAL 3/30/2020  
PRE-APP COMMENTS 6/26/2020  
3RD PRE-APP RESUBMITTAL 8/6/2020  
USE PERMIT SUBMITTAL 10/02/2020  
MAJOR DEVELOPMENT PLAN REVIEW 10/02/2020

NOTICE OF ALTERNATE BILLING CYCLE  
The contract allows the owner to require a maximum of three alternate billing cycles other than thirty days. A written description of each other billing cycle applicable to the project is available from the owner. The owner's designated agent shall make the written notification and address on cover sheet and the name of its designated agent shall provide the written description upon request.

The architectural design and data presented in these documents is the instrument of service provided by Cawley Architects.  
All discrepancies found in these documents or conflicts between these documents and other related documents shall be reported to the architect immediately upon the commencement of the work.  
Discrepancies between bid amounts and these documents shall be reported to the General Contractor and be reported to the owner's consent of work.

Project: 20047P  
**A7.1**



**SUPERSTAR CAR WASH**

1139 WEST BROADWAY ROAD  
TEMPE, AZ 85282

DATE

PRE-APP SUBMITTAL	3/30/2020
PRE-APP COMMENTS	4/28/2020
3RD PRE-APP RESUBMITTAL	8/5/2020
USE PERMIT SUBMITTAL	10/02/2020
MAJOR DEVELOPMENT PLAN REVIEW	10/02/2020
USE PERMIT RESUBMITTAL	12/21/2020
MAJOR DEVELOPMENT PLAN RESUBMITTAL	12/21/2020

NOTICE OF ALTERNATE BILLING CYCLE:  
The architect shall be the owner to make all payments to the architect in accordance with the schedule of payments set forth in the contract documents. The architect shall not be responsible for any delay in payment of bills due to the owner's failure to make payments on time. The architect shall not be responsible for any delay in payment of bills due to the owner's failure to make payments on time. The architect shall not be responsible for any delay in payment of bills due to the owner's failure to make payments on time.

The architect shall be responsible for all design and construction documents prepared by the architect or its consultants. The architect shall not be responsible for any delay in payment of bills due to the owner's failure to make payments on time. The architect shall not be responsible for any delay in payment of bills due to the owner's failure to make payments on time. The architect shall not be responsible for any delay in payment of bills due to the owner's failure to make payments on time.



## Superstar Car Wash - Tempe/Broadway

This artist rendering is for conceptual design only and should not be referred to as a construction document.

Tempe, Arizona

2020 . 12 . 17





## Superstar Car Wash - Tempe/Broadway

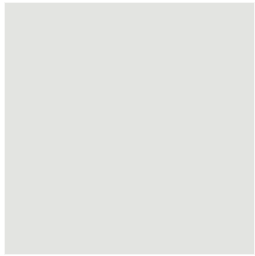
This artist rendering is for conceptual design only and should not be referred to as a construction document.

Tempe, Arizona

2020 . 12 . 17







①  
Material: Paint  
Manufacturer: Dunn Edwards  
Color: 'Cold Morning'  
Color Number: DE6365 (LRV 73)



②  
Material: Paint  
Manufacturer: Dunn Edwards  
Color: 'Silver Lined'  
Color Number: DE6353



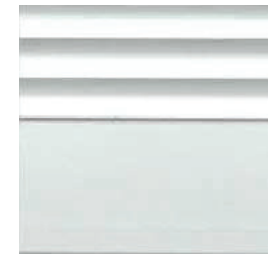
③  
Material: Paint  
Manufacturer: Dunn Edwards  
Color: 'Hot Jazz'  
Color Number: DEA107



④  
Material: Paint  
Manufacturer: Dunn Edwards  
Color: 'Sunflower'  
Color Number: DE5391



⑤  
Material: Integral Block  
Manufacturer: Superlite  
Style: Smooth Face  
Color: 'Black Canyon'  
Note: See Add. Materials for block Sizes



FI  
Material: Pre-Finished Storefront  
Manufacturer: Arcadia  
Color: Clear Anodized



MC 4

RG 5

STC 1

RG 5

EC 3

MP 3

STC 2

GL FI

SC 3

## Superstar Car Wash - Tempe/Broadway

1139 West Broadway Road Tempe, AZ 85282

JOB CODE: 20-047  
OCTOBER 02, 2020

### ADDITIONAL MATERIALS

- GL** Material: Insulated Glazing  
Manufacturer: VITRO  
Color: 'Clear Reflective'  
Refer to A7 Building Elevation  
Sheets for Glass specification
- RG** 8x4x16 Smooth Face Regular Struck  
Running Bond-Every Other Joint  
Raked
- RG** 8x8x16 Smooth Face Regular Struck  
Running Bond
- RG** 12x8x16 Smooth Face Regular Struck  
Stack Bond
- MP** B-Deck Metal Panel
- MC** Metal Cap
- EC** Steel Canopy-12" Tube Steel w/  
Perforated B-Deck
- SC** Steel Canopy-8" Tube Steel
- STC** Painted Stucco

The Artist Rendering & Material Specifications are for conceptual design only and should not be referred to as a construction document - See A7 Building Elevation Sheets for actual specifications



**SUPERSTAR CAR WASH**

1139 WEST BROADWAY ROAD  
TEMPE, AZ 85282

DATE	
PRE-APP SUBMITTAL	3/30/2020
PRE-APP COMMENTS	4/24/2020
3RD PRE-APP RESUBMITTAL	8/5/2020
USE PERMIT SUBMITTAL	10/02/2020
MAJOR DEVELOPMENT PLAN REVIEW	10/02/2020
USE PERMIT RESUBMITTAL	12/21/2020
MAJOR DEVELOPMENT PLAN RESUBMITTAL	12/21/2020

**NOTICE OF ALTERNATE BIDDING CYCLE:**  
The architect shall be the owner to make a decision on the alternate bidding cycle. The architect shall be the owner to make a decision on the alternate bidding cycle. The architect shall be the owner to make a decision on the alternate bidding cycle.

The architect shall be the owner to make a decision on the alternate bidding cycle. The architect shall be the owner to make a decision on the alternate bidding cycle. The architect shall be the owner to make a decision on the alternate bidding cycle.

**Project: 2024/P7**

**A2.1**

**GENERAL NOTES**

- DIMENSIONS AS NOTED IN THE DRAWINGS ARE TO THE CENTERLINE OF INTERIOR PARTITION WALLS AND TO THE INTERIOR FACE OF EXTERIOR MASONRY, UNO.
- REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR ALL EQUIPMENT LOCATIONS, DIMENSIONS, AND OTHER REQUIREMENTS.
- WHERE FLOORING MATERIALS CHANGE, THE CHANGE IS TO OCCUR AT THE CENTERLINE OF THE DOOR. FLOAT FLOOR AS REQUIRED PRIOR TO INSTALLATION OF FLOOR COVERING.
- MAINTAIN A MINIMUM OF 48" CLEAR UNOBSTRUCTED EMERGENCY EXIT AISLE TO DESIGNATED EXITS.
- PROVIDE LEVEL FLOOR OR LANDING ON EACH SIDE OF ALL DOORS. THRESHOLD SHALL BE LESS THAN 1/2" HIGH & BEVELED 1:2.
- ALL WALLS/FURRING IN TOILET ROOM AND OFFICE ROOM ARE TO HAVE R-11 BATT INSULATION/BOUND BATTLS, UNO.
- SEE SSMA NON-STRUCTURAL/NON-BEARING INTERIOR STEEL STUDS & TRACKS DETAIL FOR LIFTING HEIGHTS, GAUGE, SPACING, SEE SHEET A2.8.
- VAPOR BARRIER PER G.S.N. AT RESTROOM, EQUIPMENT ROOM, AND OFFICE.
- VACUUM SYSTEM BY OTHERS UNDER SEPARATE PERMIT AS REQUIRED.

**DRAWING LEGEND**

- CHU WALL - SEE ELEVATIONS
- INTERIOR CEILING WALL
- INTERIOR PARTITION
- DOOR NUMBER
- DOOR NUMBER
- SHEET KEYNOTE
- WINDOW TYPE
- PARTITION TYPE KEY, SEE SHEET A2.2
- VERIFY OWNER REQUIREMENTS FOR CASEWORK & EQUIPMENT
- 3A ABC FIRE EXTINGUISHER MOUNTED ON BRACKET @ 48" AFF.
- DETAIL NUMBER
- SHEET NUMBER
- SECTION NUMBER
- SECTION NUMBER
- SECTION NUMBER
- BUILDING SECTION
- GRID BUBBLE

**SHEET KEYNOTES**

- CHU WALL - SEE EXTERIOR ELEVATIONS
- ROOF LADDER AND HATCH - SEE DETAIL SHEETS
- ALUMINUM STOREFRONT SYSTEM - SEE EXTERIOR ELEVATIONS
- OVERHEAD DOOR TYP. SEE DOOR SCHEDULE
- CONVEYOR
- FLOOR DRAIN TYP. - SEE PLUMBING DRAWINGS
- FLOOR BINK TYP. - SEE PLUMBING DRAWINGS
- SERVICE ENTRANCE SECTION (SES) - SEE ELECTRICAL DRAWING
- ROOF DRAIN LEADERS - SEE PLUMBING TYP.
- ELECTRICAL PANEL - SEE ELECTRICAL DRAWINGS
- VENDING MACHINES BY EQUIPMENT MANUFACTURER
- FIRE DEPARTMENT CONNECTION (FDC) - SEE PLUMBING DRAWING
- CANOPY ABOVE
- FIRE RISER - SEE CIVIL AND PLUMBING DRAWINGS
- HOLLOW METAL DOOR TYP. - SEE DOOR SCHEDULE

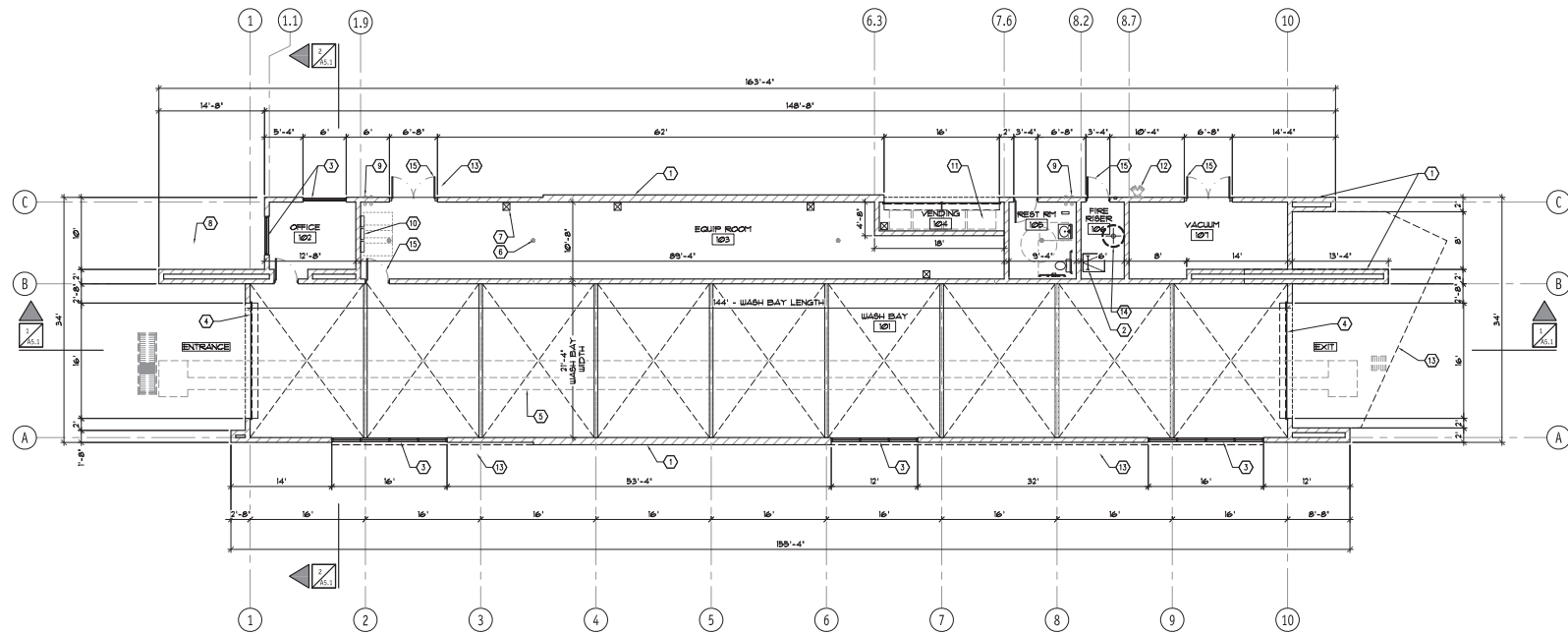
**NOTE:**  
FOR ALL FLOOR DRAINS & FLOOR SINKS SEE PLUMBING DRAWINGS

**NOTE:**  
AT CAR WASH BAY - ALL STEEL COLUMNS, BEAMS, ETC. SHALL BE PAINTED BEFORE UNWRAPPING OR ENCLING WITH EXTERIOR FINISH MATERIAL (TYP)

**BUILDING AREA**  
5,220 SF.

**WASH BAY INSIDE DIMS**  
L=144'-0", W=21'-4"

**FLOOR PLAN**  
1/8" = 1'-0"



January 25, 2021

Mr. Reza Amirrezvani  
SSCW Companies  
14425 W McDowell Road, Suite F-108  
Goodyear, AZ 85395

**Subject: SuperStar Express Car Wash @ 1139 Broadway – Noise Assessment – City of Tempe, AZ**

Dear Mr. Amirrezvani:

MD Acoustics, LLC (MD) has completed a noise assessment for the proposed SuperStar Express Car Wash located at 1139 Broadway, CA. This assessment reviews the projected car wash operational noise levels and compares to the City’s noise ordinance. The project proposes an approximately 155 foot car wash tunnel with 40 vacuum parking stalls.

**1.0 Assessment Overview**

This assessment evaluates the projections operational noise and compares to the City’s noise ordinance. The project location map is located in Exhibit A along with the exit of the tunnel’s distance to the sensitive receptors. The site plan utilized for the project is indicated in Exhibit B. A glossary of Acoustical Terms is located in Appendix A.

**2.0 Acoustical Requirements**

The City of Tempe outlines their noise regulations and standards within the Code of Ordinances from the Municipal Code. Chapter 20, Section 6 and 7 outlines the allowable noise levels and discusses special noise sources and is as follows:

**Sec 20-6. Allowable noise levels.**

- (a) Its unlawful for any person to create any noise which would cause the noise level measured at either the property line or the area of the property affected by the noise emission to exceed the following community noise standards:

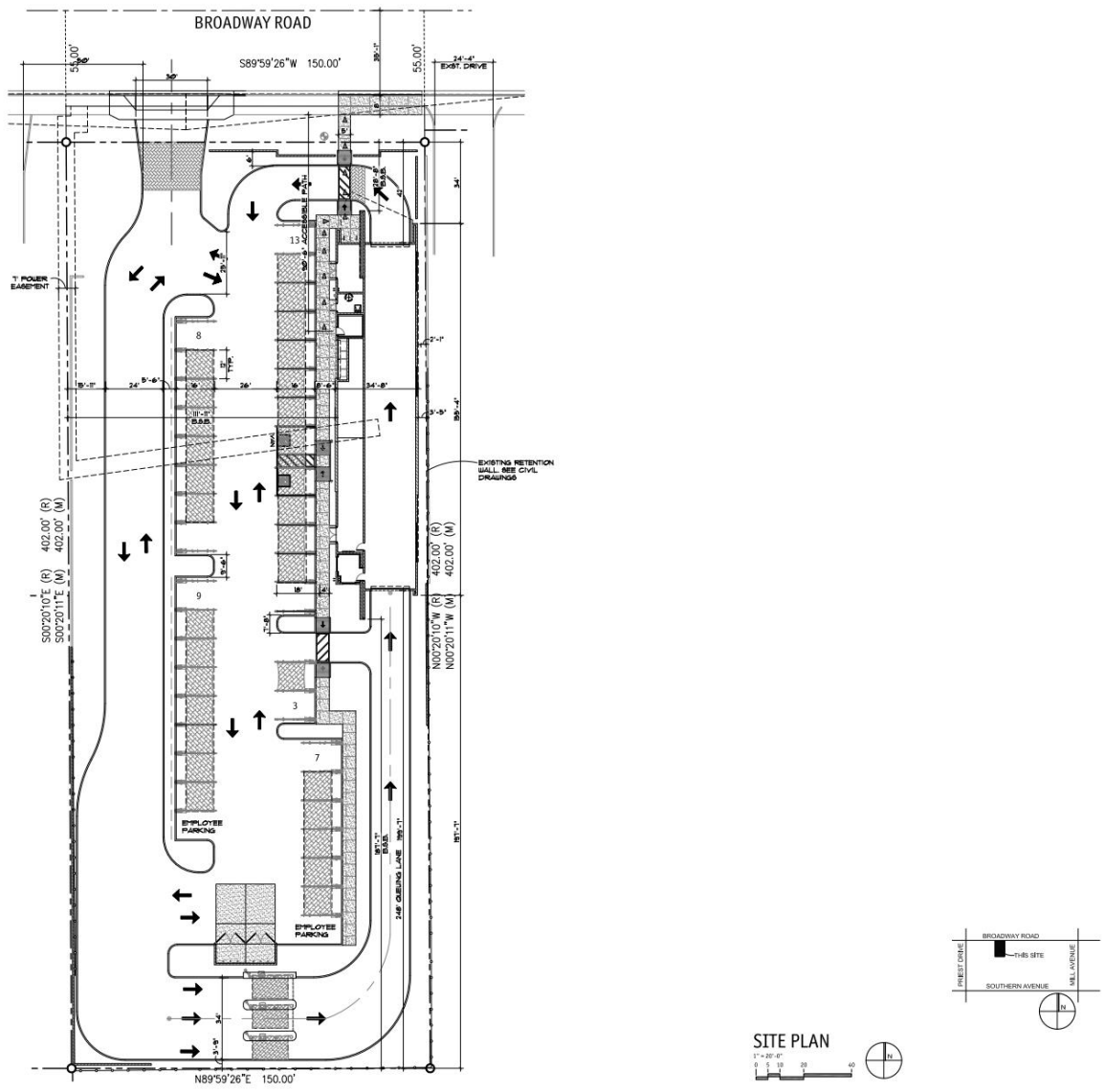
<i>Zone</i>	<i>Time</i>	<i>Noise Standard (dBA)</i>
Residential	10:00 p.m. – 7:00 a.m.	45
	7:00 a.m. – 10:00 p.m.	55
Commercial	10:00 p.m. – 7:00 a.m.	55
	7:00 a.m. – 10:00 p.m.	65
Industrial	10:00 p.m. – 7:00 a.m.	60
	7:00 a.m. – 10:00 p.m.	70

- (b) If the measurement location is on a boundary between two (2) zoning districts, the lower noise standard shall apply.

Exhibit A  
Location Map



# Exhibit B Site Plan



- (a) If the ambient noise level in a residential zoned location is measured and found to be forty (40) dB(A) or less between the hours of 10:00 p.m. and 7:00 a.m., then the actual ambient noise level will be community noise standard.
- (b) If the ambient noise level in any zoning district is measured and found at any time to be in excess of the community noise standards described in subsection (a) of this section, then the actual ambient noise level will be the community noise standard.
- (c) A noise level which exceeds the community noise standard by five (5) dB(A) or more, when measured at the affected area, the nearest property line, or, in the case of multiple-family residential buildings, when measured anywhere in one dwelling unit with respect to a noise emanating from another dwelling unit or from common space in the same building, shall be deemed a prima facie violation of this chapter.  
(Code 1967, 19A-4, Ord No. 2000.01, 1-20-00)

**Sec 20-7. Special noise levels.**

- (b) It shall be unlawful for any person to operate any machinery, equipment, pump, fan or similar mechanical device in such a manner as to disturb the peace, quiet and comfort of neighboring residents or any reasonable person of normal sensitiveness residing in the area. Any noise which would cause the noise level at either the property line or the affected area of any property to exceed the applicable community noise standard by more than five (5) decibels shall be deemed to be a prima facie evidence of a violation of the provisions of this section.

This study assesses the Project’s operational impact and compares the results to the City’s daytime (7:00 a.m. – 10:00 p.m.) commercial standard of 65 dBA and residential standard of 55 dBA limit.

**3.0 Study Method and Procedure**

***SoundPLAN Acoustic Model***

SoundPLAN (SP) acoustical modeling software was utilized to model future worst-case stationary noise impacts to the adjacent land uses. SP is capable of evaluating multiple stationary noise source impacts at various receiver locations. SP’s software utilizes algorithms (based on the inverse square law and reference equipment noise level data) to calculate noise level projections. The software allows the user to input specific noise sources, spectral content, sound barriers, building placement, topography, and sensitive receptor locations.

The future worst-case noise level projections were modeled using referenced sound level data for the various stationary on-site sources (vacuums, vacuum turbine motors and car wash blowers at the exit). The SP model assumes a total of 40 vacuums and the dryer system are operating simultaneously (worst-case scenario), when the noise will in reality be intermittent and lower in noise level.

In addition, the modeling takes into account existing property line walls, commercial buildings, and equipment enclosures proposed for the vacuum turbine. The reference vacuum equipment sound level data is provided in Appendix B.

All other noise producing equipment (e.g., compressors, pumps) will be housed within mechanical equipment rooms.

The following outlines the project design features:

1. The project will incorporate approximately twelve (12) 15-HP Sonny Blowers within the tunnel.
2. Project tunnel will incorporate approximately 15-feet of acoustic-blok lined tunnel at the exit.
3. The project proposes to house the vacuum turbine motors inside the attached fully enclosed equipment room.

SoundPlan input and output values are provided in Appendix C.

### ***Traffic Noise Prediction Modeling***

A version of the Federal Highway Administration's traffic noise modeling software was utilized to predict the existing ambient noise conditions at and within the vicinity of the project site and residences to the north. The software allows the user to input specific noise sources, average daily traffic (ADT) data, spectral content, sound barriers, building placement, topography, and sensitive receptor locations.

Roadway parameters inputted into the model include existing traffic volumes, speed and vehicle mix (auto, medium truck and heavy trucks). The following outlines key adjustments to the model.

- Roadway classification – (e.g. freeway, major arterial, arterial, secondary, collector, etc),
- Roadway Active Width – (distance between the center of the outer most travel lanes on each side of the roadway)
- Average Daily Traffic Volumes (ADT), Travel Speeds, Percentages of automobiles, medium trucks and heavy trucks
- Roadway grade and angle of view
- Site Conditions (e.g. soft vs. hard)
- Percentage of total ADT which flows each hour through-out a 24-hour period

MD utilized the traffic count data and the predicted noise levels are provided in Appendix D. The centerline of Broadway Avenue is located approximately 280-feet south from the residences to the north (Broadway and Priest Neighborhood).

It is estimated that the existing traffic day-night-level at the existing residences is 60 dBA.

### **4.0 Noise Level Projections and Recommendations**

As previously mentioned, the predicted baseline traffic noise level at the residential units to the north (280-feet north of Broadway Ave) is 60 dBA.

The worst-case stationary noise was modeled using SoundPLAN acoustical modeling software. Worst-case assumes the blowers, vacuums and equipment are always operational when in reality the noise will be intermittent and cycle on/off depending on the customer usage.

The project site's northern property line is approximately 335 feet south of the residences to the north where there is concern for noise impacts. The tunnel exit will be approximately 370 feet south of residences to the north.

The modeling takes into account the proposed tunnel and equipment design, enclosure for the vacuum turbines as well as the existing 5 to 6-foot tall walls along the residential property line. Project operations are anticipated to occur within the City's allowable daytime standards.

A total of four (4) receptors (R1 – R4) were modeled to evaluate the proposed project's operational impact. R1 represent the noise level at the nearest residential units to the north. R2 represents the noise level to the commercial use north (across the street of Broadway Ave). R3 represents the noise level to the apartment building to the northeast and R4 represents the noise level of the project site's northern property line.

All yellow dots represent either a property line or a sensitive receptor such as an outdoor sensitive area (e.g. courtyard, patio, backyard, etc).

Exhibit C illustrates the noise level projections associated with the car wash noise operations when all equipment is fully active (even though the noise will be intermittent). The noise projections demonstrate that the operational noise level to the residential uses will range between 42 to 55 dBA. Project operations are anticipated to be compliant with the City's residential noise ordinance.

When comparing the baseline predicted traffic noise level to the project's operational level, traffic will be approximately 15 dBA louder than the project.

## 5.0 Conclusions

MD is pleased to provide this noise assessment for the SuperStar Express Car Wash project. Project operations are anticipated to comply with the City's noise ordinance of 55 dBA. If you have any questions regarding this analysis please call our office at (602) 774-1950.

Sincerely,  
MD Acoustics, LLC



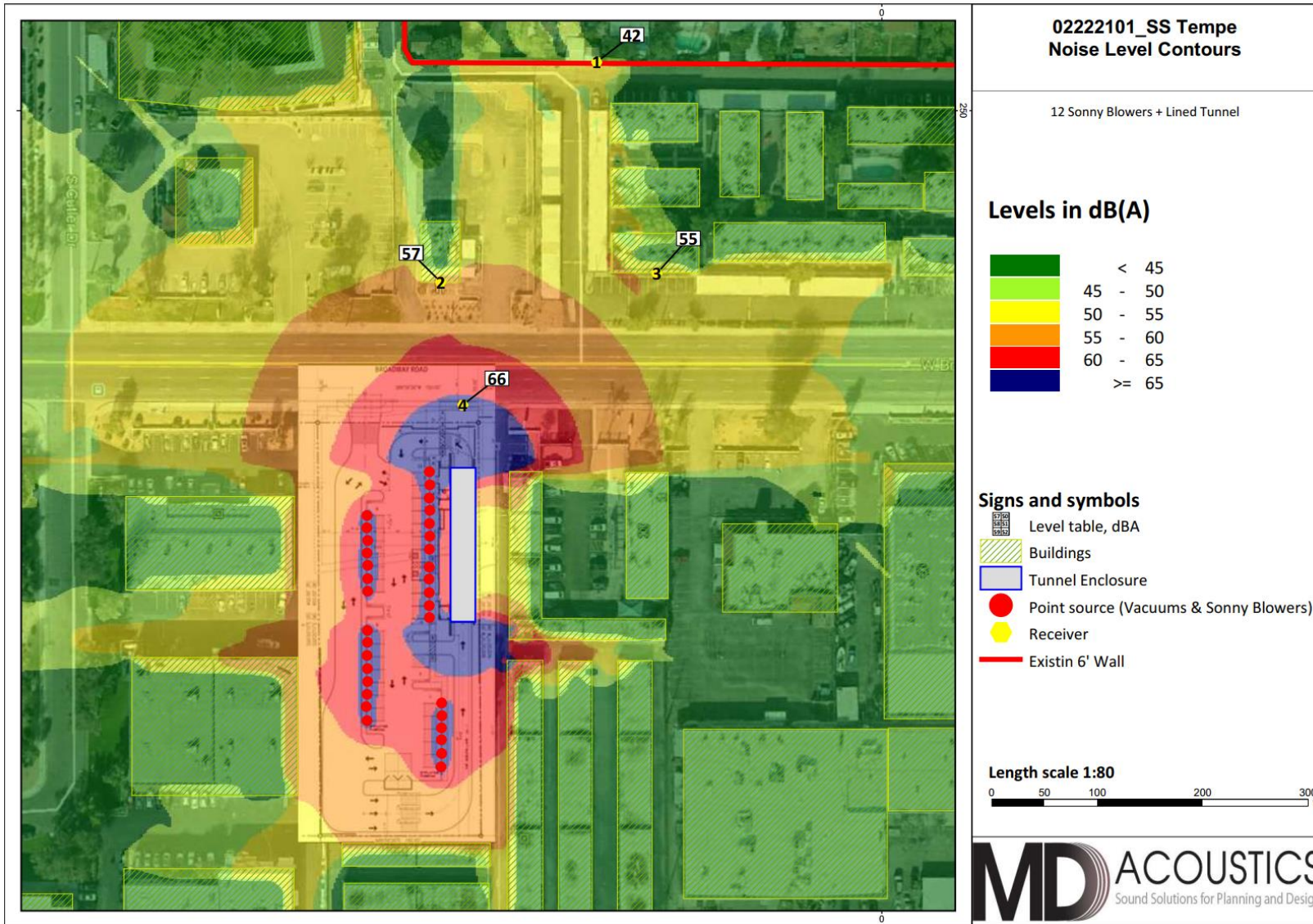
Mike Dickerson, INCE  
Principal



Robert Pearson  
Acoustical Consultant



**Exhibit C**  
**Operational Noise Levels**



**Appendix A**  
Glossary of Acoustical Terms

## **Glossary of Terms**

**A-Weighted Sound Level:** The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear. A numerical method of rating human judgment of loudness.

**Ambient Noise Level:** The composite of noise from all sources, near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

**Community Noise Equivalent Level (CNEL):** The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five (5) decibels to sound levels in the evening from 7:00 to 10:00 PM and after addition of ten (10) decibels to sound levels in the night before 7:00 AM and after 10:00 PM.

**Day-Night-Level (DNL or LDN):** The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of ten (10) decibels to sound levels in the night before 7:00 AM and after 10:00 PM.

**Decibel (dB):** A unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micro-pascals.

**dB(A):** A-weighted sound level (see definition above).

**Equivalent Sound Level (LEQ):** The sound level corresponding to a steady noise level over a given sample period with the same amount of acoustic energy as the actual time varying noise level. The energy average noise level during the sample period.

**Habitable Room:** Any room meeting the requirements of the Uniform Building Code or other applicable regulations which is intended to be used for sleeping, living, cooking or dining purposes, excluding such enclosed spaces as closets, pantries, bath or toilet rooms, service rooms, connecting corridors, laundries, unfinished attics, foyers, storage spaces, cellars, utility rooms and similar spaces.

**L(n):** The A-weighted sound level exceeded during a certain percentage of the sample time. For example, L10 in the sound level exceeded 10 percent of the sample time. Similarly L50, L90 and L99, etc.

**Noise:** Any unwanted sound or sound which is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying. The State Noise Control Act defines noise as "...excessive undesirable sound...".

**Noise Criteria (NC) Method:** This metric plots octave band sound levels against a family of reference curves, with the number rating equal to the highest tangent line value as demonstrated in Figure 1.

**Percent Noise Levels:** See L(n).

**Room Criterion (RC) Method:** When sound quality in the space is important, the RC metric provides a diagnostic tool to quantify both the speech interference level and spectral imbalance.

**Sound Level (Noise Level):** The weighted sound pressure level obtained by use of a sound level meter having a standard frequency-filter for attenuating part of the sound spectrum.

**Sound Level Meter:** An instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement and determination of noise and sound levels.

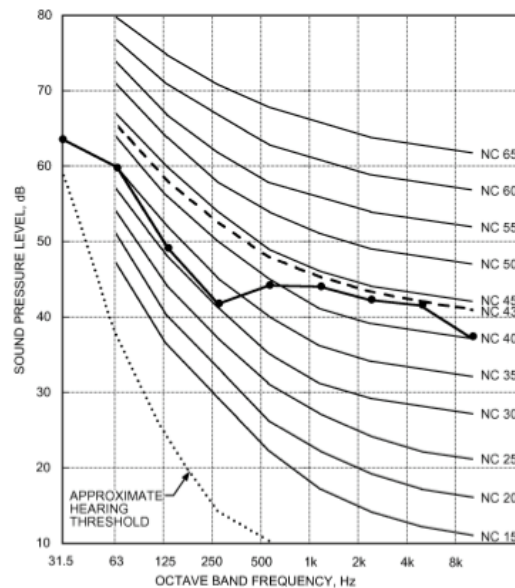
**Sound Transmission Class (STC):** To quantify STC, a Transmission Loss (TL) measurement is performed in a laboratory over a range of 16 third-octave bands between 125 – 4,000 Hertz (Hz). The average human voice creates sound within the 125 – 4,000 Hz  $1/3^{\text{rd}}$  octave bands.

STC is a single-number rating given to a particular material or assembly. The STC rating measures the ability of a material or an assembly to resist airborne sound transfer over the specified frequencies (see ASTM International Classification E413 and E90). In general, a higher STC rating corresponds with a greater reduction of noise transmitting through a partition.

STC is highly dependent on the construction of the partition. The STC of a partition can be increased by: adding mass, increasing or adding air space, adding absorptive materials within the assembly. The STC rating does not assess low frequency sound transfer (e.g. sounds less than 125 Hz). Special consideration must be given to spaces where the noise transfer concern has lower frequencies than speech, such as mechanical equipment and or/or music. The STC rating is a lab test that does not take into consideration weak points, penetrations, or flanking paths.

Even with a high STC rating, any penetration, air-gap, or “flanking path can seriously degrade the isolation quality of a wall. Flanking paths are the means for sound to transfer from one space to

**FIGURE 1: Sample NC Curves and Sample Spectrum Levels**



another other than through the wall. Sound can flank over, under, or around a wall. Sound can also travel through common ductwork, plumbing or corridors. Noise will travel between spaces at the weakest points. Typically, there is no reason to spend money or effort to improve the walls until all weak points are controlled first.

**Outdoor Living Area:** Outdoor spaces that are associated with residential land uses typically used for passive recreational activities or other noise-sensitive uses. Such spaces include patio areas, barbecue areas, jacuzzi areas, etc. associated with residential uses; outdoor patient recovery or resting areas associated with hospitals, convalescent hospitals, or rest homes; outdoor areas associated with places of worship which have a significant role in services or other noise-sensitive activities; and outdoor school facilities routinely used for educational purposes which may be adversely impacted by noise. Outdoor areas usually not included in this definition are: front yard areas, driveways, greenbelts, maintenance areas and storage areas associated with residential land uses; exterior areas at hospitals that are not used for patient activities; outdoor areas associated with places of worship and principally used for short-term social gatherings; and, outdoor areas associated with school facilities that are not typically associated with educational uses prone to adverse noise impacts (for example, school play yard areas).

**Percent Noise Levels:** See L(n).

**Sound Level (Noise Level):** The weighted sound pressure level obtained by use of a sound level meter having a standard frequency-filter for attenuating part of the sound spectrum.

**Sound Level Meter:** An instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement and determination of noise and sound levels.

**Single Event Noise Exposure Level (SENEL):** The dB(A) level which, if it lasted for one second, would produce the same A-weighted sound energy as the actual event.

**Appendix B**  
Referenced Equipment Noise Levels

**Project:** Sound Library  
**Job Number:** 0000-2020-02  
**Site Address/Location:** 1555 W Warner Rd, Gilbert, AZ 85233  
**Date:** 04/05/2020  
**Field Tech/Engineer:** Robert Pearson  
**Source/System:** Vacutec System Averaged

**General Location:** Measured @ 1.5'

**Sound Meter:** NTi XL2 **SN:** A2A-05967-E0

**Settings:** A-weighted, slow, 1-sec, 10-sec duration

**Meteorological Cond.:** 80 degrees, 2 mph wind

**Site Observations:**

Clear sky, measurements were performed within 1.5ft of source. Measurements were performed while the vacuum was positioned at three (3) different positions. Holstered, unholstered and inside a car. This data is utilized for acoustic modeling purposes and represents an average sound level at a vacuum station.

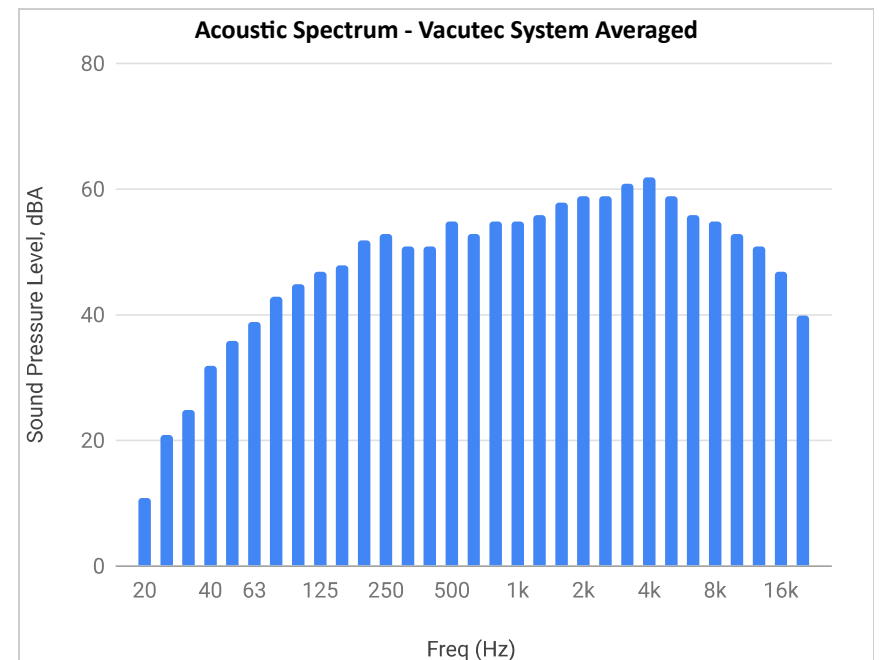
Leq	Lmin	Lmax
71.2	71.2	71.2

Ln 2	Ln 8	Ln 25	Ln 50	Ln 90	Ln 99
0.0	0.0	0.0	0.0	0.0	0.0

**Table 1: Summary Measurement Data**

Source/System	Overall Source	Overall dB(A)	3rd Octave Band Data (dBA)																														
			20	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1k	12.5k	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
Vacutec System Averaged	Car Wash Vacuu	71.2	11.0	21.0	25.0	32.0	36.0	39.0	43.0	45.0	47.0	48.0	52.0	53.0	51.0	51.0	55.0	53.0	55.0	55.0	56.0	58.0	59.0	59.0	61.0	62.0	59.0	56.0	55.0	53.0	51.0	47.0	40.0

**Figure 1: Vacutec System Averaged**



**Project:** Sound Library  
**Job Number:** 0000-2020-02  
**Site Address/Location:**  
**Date:** 04/05/2018  
**Field Tech/Engineer:** Michael Dickerson, INCE  
**Source/System:** Sonny 7-Blowers

**Site Observations:**  
 Measured @ 5' from units 7-Blowers on

**General Location:** Measured @ 5'  
**Sound Meter:** NTi XL2 **SN:** A2A-05967-E0  
**Settings:** A-weighted, fast, 1-sec, 10-sec duration  
**Meteorological Cond.:** 80 degrees, F

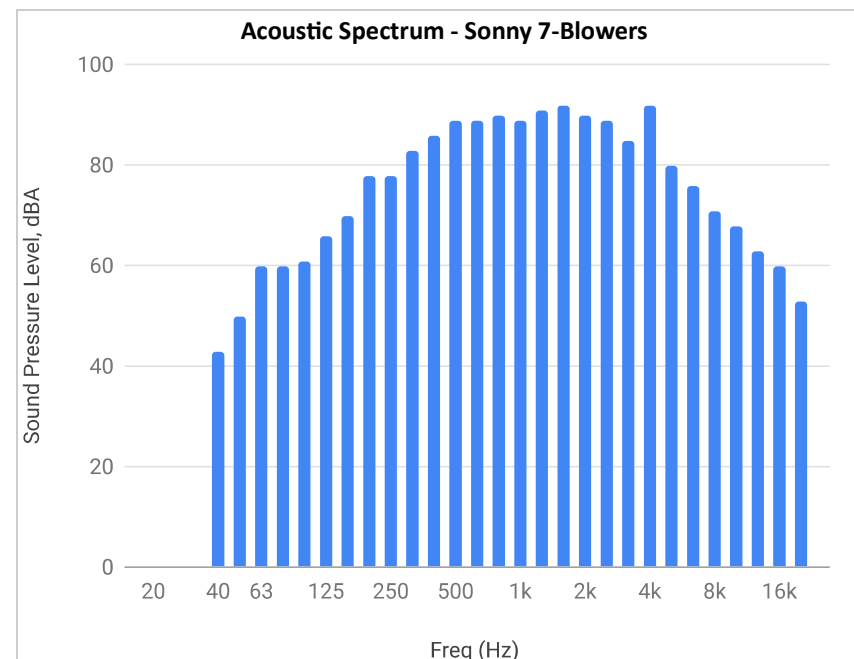
Leq	Lmin	Lmax
99.7	99.7	99.7

Ln 2	Ln 8	Ln 25	Ln 50	Ln 90	Ln 99
0.0	0.0	0.0	0.0	0.0	0.0

**Table 1: Summary Measurement Data**

Source/System	Overall Source	Overall dB(A)	3rd Octave Band Data (dBA)																														
			20	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1k	12.5k	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	20k
Sonny 7-Blowers	Car Wash Dyer	99.7	0.0	0.0	0.0	43.0	50.0	60.0	60.0	61.0	66.0	70.0	78.0	78.0	83.0	86.0	89.0	89.0	90.0	89.0	91.0	92.0	90.0	89.0	85.0	92.0	80.0	76.0	71.0	68.0	63.0	60.0	53.0

**Figure 1: Sonny Blower-7 Dryer System**





**Appendix C**  
SoundPlan Input/Output

## SS Tempe

### Octave spectra of the sources in dB(A) - Situation 2: Outdoor SP

3

Name	Source type	I or A	Li	R'w	L'w	Lw	KI	KT	LwMax	DO-Wall	Time histogram	Emission spectrum	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
		m,m <sup>2</sup>	dB(A)	dB	dB(A)	dB(A)	dB	dB	dB(A)	dB			dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Facade 01	Area	23.75	82.4	57.0	32.8	46.5	0.0	0.0		3	100%/24h	107_Facade 01_		39.7	44.2	39.1	30.4	18.3	5.4	
Facade 02	Area	179.45	77.0	57.0	28.4	50.9	0.0	0.0		3	100%/24h	109_Facade 02_		46.0	48.2	42.0	32.9	20.4	7.1	
Facade 03	Area	23.75	80.3	57.0	31.1	44.8	0.0	0.0		3	100%/24h	110_Facade 03_		38.6	42.4	36.9	27.9	15.3	1.8	
Facade 04	Area	179.45	77.0	57.0	28.4	50.9	0.0	0.0		3	100%/24h	112_Facade 04_		46.0	48.2	42.0	32.9	20.4	7.1	
Roof 01	Area	284.63	76.9	57.0	28.2	52.7	0.0	0.0		0	100%/24h	103_Roof 01_		47.6	50.1	44.0	34.8	22.2	8.8	
Transmissive area 01	Area	8.37	80.3	0.0	80.3	89.5	0.0	0.0		3	100%/24h	111_Transmissive area 01		78.1	83.9	84.3	84.3	75.8	65.2	
Transmissive area 01	Area	8.37	83.7	0.0	83.7	93.0	0.0	0.0		3	100%/24h	108_Transmissive area 01		79.7	86.8	88.0	88.3	80.2	70.4	
Transmissive area 03	Area	20.57	81.9	57.0	32.4	45.5	0.0	0.0		3	100%/24h	116_Transmissive area 03_		39.2	43.1	37.8	29.1	17.0	4.2	
Transmissive area 05	Area	20.57	81.9	57.0	32.3	45.5	0.0	0.0		3	100%/24h	118_Transmissive area 05_		39.2	43.0	37.8	29.1	17.0	4.1	
Transmissive area 07	Area	32.63	83.4	57.0	33.5	48.7	0.0	0.0		0	100%/24h	120_Transmissive area 07_		41.7	46.3	41.4	32.8	20.7	8.0	
Vac 1	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 2	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 3	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 4	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 5	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 6	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 7	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 8	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 9	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 10	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 11	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 12	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 13	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 14	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 15	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 16	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 17	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6

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**SS Tempe**  
**Octave spectra of the sources in dB(A) - Situation 2: Outdoor SP**

**3**

Name	Source type	I or A m,m <sup>2</sup>	Li dB(A)	R'w dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB(A)	DO-Wall dB	Time histogram	Emission spectrum	63Hz dB(A)	125Hz dB(A)	250Hz dB(A)	500Hz dB(A)	1kHz dB(A)	2kHz dB(A)	4kHz dB(A)	8kHz dB(A)
Vac 18	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 19	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 20	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 21	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 22	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 23	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 24	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 25	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 26	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 27	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 28	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 29	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 30	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 31	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 32	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6
Vac 33	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech - 3'	57.6	53.6	52.3	57.7	61.7	67.7	69.0	61.6

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## SS Tempe Contribution spectra - Situation 2: Outdoor SP

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Source	Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Receiver Receiver 1		FI GF	dB(A) Ldn 42.3 dB(A) Sigma(Ldn) 0.0 dB(A)																									
Facade 01	Ldn	-3.1								-8.9			-5.4			-11.8			-21.5			-35.5			-54.0			
Facade 02	Ldn	-10.6								-13.6			-14.2			-23.2			-33.1			-43.0			-62.5			
Facade 03	Ldn	-17.6								-21.6			-20.5			-28.8			-38.4			-52.2			-70.1			
Facade 04	Ldn	0.1								-4.0			-2.9			-10.3			-18.5			-33.4			-52.5			
Roof 01	Ldn	-3.3								-7.1			-6.2			-14.5			-23.9			-39.2			-59.0			
Transmissive area 01	Ldn	21.7								14.4			16.7			14.2			16.1			7.7			-6.7			
Transmissive area 01	Ldn	42.1								42.1			31.4			37.0			36.1			26.6			11.1			
Transmissive area 03	Ldn	-15.0								-19.0			-17.8			-25.8			-36.0			-44.2			-63.3			
Transmissive area 05	Ldn	-4.2								-9.4			-6.7			-13.3			-23.2			-37.4			-55.6			
Transmissive area 07	Ldn	-6.3								-11.6			-8.6			-15.7			-26.1			-40.4			-59.2			
Vac 1	Ldn	8.5	-12.5	-5.6	-2.5	0.2	1.0	-3.6	-9.1	-10.1	-12.8	-15.4	-13.9	-14.3	-12.2	-9.6	-9.2	-8.3	-10.8	-4.6	-2.3	-3.0	-2.6	-4.1	-9.5	-14.9	-24.2	-39.6
Vac 2	Ldn	8.9	-12.5	-5.5	-2.5	0.2	1.1	-3.6	-9.0	-10.0	-12.8	-15.4	-13.9	-14.3	-14.0	-9.6	-9.3	-8.3	-9.5	-3.6	-2.3	-3.0	-0.6	-2.1	-7.6	-13.1	-22.7	-38.3
Vac 3	Ldn	9.8	-12.4	-5.5	-2.4	0.3	1.1	-3.6	-9.0	-10.0	-12.8	-15.4	-13.9	-14.4	-14.0	-11.3	-9.4	-8.4	-9.5	-1.4	-0.1	-0.7	0.7	-0.8	-6.4	-12.1	-21.9	-37.5
Vac 4	Ldn	9.7	-12.3	-5.4	-2.4	0.3	1.1	-3.6	-9.0	-10.0	-12.8	-15.5	-14.0	-14.4	-14.1	-11.4	-9.4	-8.5	-9.6	-1.5	-0.1	-0.8	0.4	-0.9	-6.5	-12.2	-21.9	-37.3
Vac 5	Ldn	9.5	-12.2	-5.4	-2.3	0.3	1.1	-3.6	-9.0	-10.0	-12.8	-15.5	-14.1	-14.5	-14.2	-11.5	-9.5	-8.6	-9.6	-1.8	-0.5	-1.1	0.2	-1.1	-6.8	-12.5	-22.1	-37.2
Vac 6	Ldn	9.2	-12.2	-5.4	-2.3	0.3	1.0	-3.7	-9.0	-10.1	-12.9	-15.7	-14.2	-14.7	-14.3	-11.7	-11.3	-8.8	-11.3	-2.4	-1.0	-1.7	-0.3	-1.6	-7.2	-12.9	-22.5	-37.3
Vac 7	Ldn	8.0	-11.3	-4.5	-1.5	1.0	1.8	-3.0	-8.1	-9.2	-12.1	-14.9	-13.4	-13.9	-13.5	-10.9	-10.6	-9.8	-12.2	-7.8	-6.5	-7.0	-6.9	-7.9	-12.7	-17.0	-24.3	-36.9
Vac 8	Ldn	8.1	-11.2	-4.4	-1.4	1.2	1.9	-2.9	-7.9	-9.1	-11.9	-14.7	-13.2	-13.7	-13.4	-10.7	-10.4	-9.6	-12.1	-7.7	-6.3	-6.9	-6.7	-7.6	-12.4	-16.7	-23.9	-36.4
Vac 9	Ldn	8.3	-11.0	-4.2	-1.3	1.3	2.0	-2.7	-7.8	-8.9	-11.7	-14.5	-13.1	-13.6	-13.2	-10.6	-10.3	-9.5	-11.9	-7.5	-6.2	-6.7	-6.5	-7.4	-12.2	-16.4	-23.5	-35.8
Vac 10	Ldn	8.4	-10.9	-4.1	-1.1	1.5	2.2	-2.6	-7.6	-8.7	-11.5	-14.4	-12.9	-13.4	-13.1	-10.4	-10.1	-9.3	-11.7	-7.4	-6.0	-6.5	-6.3	-7.2	-11.9	-16.1	-23.0	-35.2
Vac 11	Ldn	8.6	-10.7	-3.9	-1.0	1.6	2.3	-2.5	-7.5	-8.6	-11.4	-14.2	-12.8	-13.3	-12.9	-10.3	-10.0	-9.2	-11.6	-7.3	-5.9	-6.4	-6.2	-7.0	-11.7	-15.8	-22.6	-34.6
Vac 12	Ldn	8.8	-10.5	-3.7	-0.8	1.8	2.5	-2.3	-7.2	-8.4	-11.2	-14.1	-12.6	-13.1	-12.8	-10.1	-9.8	-9.0	-11.5	-6.6	-5.3	-5.8	-5.6	-6.5	-11.1	-15.2	-21.8	-33.7
Vac 13	Ldn	8.9	-10.4	-3.6	-0.7	1.9	2.6	-2.2	-7.1	-8.2	-11.1	-13.9	-12.5	-13.0	-12.6	-10.0	-9.6	-8.9	-11.4	-6.5	-5.2	-5.7	-5.5	-6.3	-10.9	-14.9	-21.4	-33.1
Vac 14	Ldn	14.9	-9.1	-1.9	1.5	4.6	5.8	1.5	-2.8	-3.3	-5.6	-8.0	-5.9	-5.8	-5.0	-1.9	-1.1	0.0	-2.1	3.3	4.9	4.6	5.0	4.3	-0.2	-4.2	-11.5	-24.1
Vac 15	Ldn	15.1	-8.9	-1.7	1.7	4.7	5.9	1.7	-2.5	-3.1	-5.4	-7.8	-5.6	-5.6	-4.8	-1.6	-0.9	0.2	-1.9	3.5	5.1	4.8	5.3	4.5	0.1	-3.8	-11.1	-23.5
Vac 16	Ldn	15.3	-8.7	-1.6	1.9	4.9	6.1	1.9	-2.3	-2.9	-5.1	-7.5	-5.4	-5.4	-4.5	-1.4	-0.7	0.4	-1.7	3.7	5.3	5.1	5.5	4.8	0.4	-3.5	-10.6	-23.0
Vac 17	Ldn	15.5	-8.5	-1.4	2.0	5.1	6.3	2.0	-2.1	-2.7	-4.9	-7.3	-5.2	-5.2	-4.3	-1.2	-0.4	0.6	-1.5	3.9	5.5	5.3	5.7	5.1	0.7	-3.1	-10.1	-22.3
Vac 18	Ldn	15.8	-8.4	-1.2	2.2	5.2	6.4	2.2	-1.9	-2.4	-4.7	-7.0	-5.0	-4.9	-4.1	-0.9	-0.2	0.9	-1.2	4.1	5.8	5.5	6.0	5.4	1.0	-2.7	-9.7	-21.7
Vac 19	Ldn	8.8	-12.1	-5.1	-1.9	0.8	1.7	-2.9	-8.2	-9.2	-11.9	-14.5	-12.9	-13.3	-12.9	-10.2	-8.1	-7.2	-9.6	-4.3	-2.7	-3.4	-3.5	-5.0	-10.5	-15.9	-25.3	-40.8
Vac 20	Ldn	11.0	-11.9	-5.0	-1.8	0.9	1.8	-2.8	-8.1	-9.0	-11.7	-14.3	-12.8	-13.2	-12.8	-10.0	-4.2	-2.5	-4.7	0.2	1.6	1.1	1.2	-0.1	-5.4	-10.5	-19.7	-35.1
Vac 21	Ldn	13.4	-11.3	-4.1	-0.7	2.4	3.6	-0.7	-5.6	-6.1	-8.4	-10.9	-8.6	-8.6	-7.7	-4.6	-1.6	0.0	-2.2	2.5	4.1	3.6	3.8	2.7	-2.4	-7.3	-16.1	-31.0
Vac 22	Ldn	13.4	-11.1	-4.0	-0.5	2.5	3.7	-0.5	-5.4	-6.0	-8.2	-10.7	-8.5	-8.4	-7.6	-4.4	-1.4	-0.2	-2.3	2.3	3.9	3.5	3.7	2.7	-2.3	-7.1	-15.8	-30.5
Vac 23	Ldn	13.5	-11.0	-3.8	-0.4	2.6	3.8	-0.4	-5.2	-5.8	-8.0	-10.6	-8.3	-8.3	-7.4	-4.3	-1.3	0.0	-2.1	2.5	4.1	3.7	3.9	2.9	-2.1	-6.8	-15.4	-30.0
Vac 24	Ldn	12.6	-10.9	-3.7	-0.3	2.8	4.0	-0.3	-5.0	-5.6	-7.9	-10.4	-8.1	-8.1	-7.2	-4.1	-2.9	-1.7	-3.8	0.8	2.3	2.0	2.2	1.2	-3.6	-8.2	-16.6	-30.8
Vac 25	Ldn	12.8	-10.7	-3.6	-0.1	2.9	4.1	-0.1	-4.9	-5.4	-7.7	-10.2	-7.9	-7.9	-7.1	-3.9	-2.7	-1.5	-3.7	0.9	2.5	2.1	2.4	1.5	-3.4	-7.9	-16.2	-30.2

## SS Tempe Contribution spectra - Situation 2: Outdoor SP

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Source	Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Vac 26	Ldn	12.9	-10.6	-3.4	0.0	3.0	4.2	0.0	-4.7	-5.3	-7.5	-10.0	-7.8	-7.8	-6.9	-3.8	-2.6	-1.4	-3.5	1.1	2.7	2.3	2.6	1.7	-3.1	-7.6	-15.8	-29.7	
Vac 27	Ldn	13.3	-10.2	-3.0	0.4	3.5	4.7	0.4	-4.2	-4.7	-7.0	-9.5	-7.2	-7.2	-6.4	-3.2	-2.5	-1.3	-3.4	1.3	2.9	2.6	2.9	2.1	-2.6	-6.8	-14.7	-28.2	
Vac 28	Ldn	13.5	-10.0	-2.9	0.6	3.6	4.8	0.6	-4.0	-4.6	-6.8	-9.3	-7.1	-7.0	-6.2	-3.0	-2.3	-1.1	-3.2	1.4	3.1	2.7	3.1	2.3	-2.3	-6.5	-14.3	-27.7	
Vac 29	Ldn	13.7	-9.9	-2.7	0.7	3.7	5.0	0.7	-3.8	-4.4	-6.6	-9.1	-6.9	-6.8	-6.0	-2.8	-2.1	-0.9	-3.0	1.6	3.3	3.0	3.4	2.6	-2.0	-6.2	-13.8	-27.1	
Vac 30	Ldn	13.8	-9.7	-2.6	0.9	3.9	5.1	0.9	-3.6	-4.2	-6.4	-8.9	-6.7	-6.7	-5.8	-2.7	-1.9	-0.8	-2.9	1.8	3.4	3.2	3.6	2.8	-1.7	-5.8	-13.4	-26.5	
Vac 31	Ldn	14.0	-9.6	-2.4	1.0	4.0	5.2	1.0	-3.4	-4.0	-6.2	-8.7	-6.5	-6.5	-5.6	-2.5	-1.7	-0.6	-2.7	2.0	3.6	3.4	3.8	3.1	-1.5	-5.5	-13.0	-26.0	
Vac 32	Ldn	14.2	-9.4	-2.3	1.2	4.2	5.4	1.2	-3.2	-3.8	-6.0	-8.5	-6.3	-6.3	-5.4	-2.3	-1.5	-0.4	-2.5	2.2	3.8	3.6	4.0	3.3	-1.2	-5.2	-12.6	-25.4	
Vac 33	Ldn	14.4	-9.3	-2.1	1.3	4.3	5.5	1.3	-3.0	-3.6	-5.8	-8.3	-6.1	-6.1	-5.2	-2.1	-1.3	-0.2	-2.3	2.4	4.0	3.8	4.2	3.5	-0.9	-4.8	-12.1	-24.9	
Remaining contrib. of src "Facade 01"	Ldn																												
Remaining contrib. of src "Facade 02"	Ldn																												
Remaining contrib. of src "Facade 03"	Ldn																												
Remaining contrib. of src "Facade 04"	Ldn																												
Remaining contrib. of src "Roof 01"	Ldn																												
Remaining contrib. of src "Transmissive"	Ldn																												
Remaining contrib. of src "Transmissive"	Ldn																												
Remaining contrib. of src "Transmissive"	Ldn																												
Remaining contrib. of src "Transmissive"	Ldn																												
Remaining contrib. of src "Transmissive"	Ldn																												
Remaining contrib. of src "Vac 1"	Ldn																												
Remaining contrib. of src "Vac 2"	Ldn																												
Remaining contrib. of src "Vac 3"	Ldn																												
Remaining contrib. of src "Vac 4"	Ldn																												
Remaining contrib. of src "Vac 5"	Ldn																												

**SS Tempe**  
**Contribution spectra - Situation 2: Outdoor SP**

**23**

Source	Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Remaining contrib. of src "Vac 6"	Ldn																											
Remaining contrib. of src "Vac 7"	Ldn																											
Remaining contrib. of src "Vac 8"	Ldn																											
Remaining contrib. of src "Vac 9"	Ldn																											
Remaining contrib. of src "Vac 10"	Ldn																											
Remaining contrib. of src "Vac 11"	Ldn																											
Remaining contrib. of src "Vac 12"	Ldn																											
Remaining contrib. of src "Vac 13"	Ldn																											
Remaining contrib. of src "Vac 14"	Ldn																											
Remaining contrib. of src "Vac 15"	Ldn																											
Remaining contrib. of src "Vac 16"	Ldn																											
Remaining contrib. of src "Vac 17"	Ldn																											
Remaining contrib. of src "Vac 18"	Ldn																											
Remaining contrib. of src "Vac 19"	Ldn																											
Remaining contrib. of src "Vac 20"	Ldn																											
Remaining contrib. of src "Vac 21"	Ldn																											
Remaining contrib. of src "Vac 22"	Ldn																											
Remaining contrib. of src "Vac 23"	Ldn																											
Remaining contrib. of src "Vac 24"	Ldn																											

MD Acoustics 1197 E Los Angeles Ave, Unit C 256 Simi Valley, CA 93065 USA

## SS Tempe Contribution spectra - Situation 2: Outdoor SP

**23**

Source	Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz									
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)									
Remaining contrib. of src "Vac 25"	Ldn																																				
Remaining contrib. of src "Vac 26"	Ldn																																				
Remaining contrib. of src "Vac 27"	Ldn																																				
Remaining contrib. of src "Vac 28"	Ldn																																				
Remaining contrib. of src "Vac 29"	Ldn																																				
Remaining contrib. of src "Vac 30"	Ldn																																				
Remaining contrib. of src "Vac 31"	Ldn																																				
Remaining contrib. of src "Vac 32"	Ldn																																				
Remaining contrib. of src "Vac 33"	Ldn																																				
Receiver Receiver 2 FI GF		dB(A)	Ldn	56.8	dB(A)	Sigma(Ldn)		0.0	dB(A)																												
Facade 01	Ldn	10.2								3.7			7.5			3.2			-4.9			-17.1					-31.2										
Facade 02	Ldn	11.3								7.0			8.0			2.9			-5.2			-17.6					-32.9										
Facade 03	Ldn	-6.3								-10.7			-9.5			-15.3			-21.2			-32.8					-51.3										
Facade 04	Ldn	6.1								1.9			2.1			-1.2			-10.4			-23.6					-39.5										
Roof 01	Ldn	7.0								1.0			4.3			-0.3			-8.1			-19.7					-34.3										
Transmissive area 01	Ldn	36.8								26.5			28.2			27.5			34.2			26.7					11.2										
Transmissive area 01	Ldn	56.5								44.0			49.1			50.8			52.6			44.9					33.8										
Transmissive area 03	Ldn	8.7								3.0			5.8			1.2			-6.6			-18.5					-32.7										
Transmissive area 05	Ldn	4.0								-1.2			1.2			-4.1			-13.0			-26.5					-42.4										
Transmissive area 07	Ldn	5.2								-2.4			2.9			-1.4			-10.0			-21.9					-35.1										
Vac 1	Ldn	28.1	-5.1	2.1	5.6	8.7	10.0	5.9	2.2	1.8	-0.3	-4.4	-2.1	-1.8	2.4	5.9	7.1	13.0	12.0	17.3	19.3	19.8	21.0	21.0	17.4	14.2	7.6	-3.0									
Vac 2	Ldn	28.3	-4.8	2.4	5.9	9.0	10.3	6.2	2.4	2.0	0.0	-4.1	-1.9	-1.5	1.0	6.0	7.3	13.2	12.1	17.4	19.5	19.9	21.1	21.2	17.6	14.4	8.0	-2.4									
Vac 3	Ldn	28.5	-4.6	2.6	6.1	9.2	10.5	6.4	2.7	2.3	0.3	-3.9	-1.6	-1.2	1.3	6.2	7.4	13.4	12.3	17.6	19.6	20.1	21.3	21.4	17.8	14.8	8.4	-1.8									
Vac 4	Ldn	27.7	-4.3	2.9	6.4	9.5	10.8	6.6	2.9	2.5	0.5	-3.6	-1.3	-1.0	1.6	5.1	7.6	12.5	11.5	16.8	18.8	19.2	20.4	20.5	16.9	13.8	9.2	-2.2									
Vac 5	Ldn	28.0	-4.1	3.1	6.6	9.7	11.0	6.9	3.2	2.8	0.8	-3.3	-1.1	-0.7	1.8	5.4	8.5	12.6	11.6	17.0	19.1	19.5	20.7	20.8	17.2	14.1	9.6	-1.7									
Vac 6	Ldn	26.9	-3.8	3.4	6.9	10.0	11.3	7.1	3.5	3.1	1.0	-3.1	-0.8	-0.4	2.1	5.7	8.6	11.4	9.9	15.7	17.8	18.2	19.4	19.5	16.0	13.0	9.2	-1.7									
Vac 7	Ldn	28.8	-1.9	5.3	8.8	11.9	13.2	9.1	5.6	5.1	3.1	-0.8	1.4	1.8	4.3	7.8	9.1	11.9	11.0	17.4	19.5	20.0	21.3	21.6	18.3	15.8	10.4	0.5									
Vac 8	Ldn	29.1	-1.6	5.6	9.1	12.2	13.5	9.4	5.9	5.5	3.5	-0.5	1.8	2.2	4.6	8.2	9.4	12.3	11.3	17.7	19.7	20.2	21.5	21.9	18.6	16.2	11.0	1.2									

MD Acoustics 1197 E Los Angeles Ave, Unit C 256 Simi Valley, CA 93065 USA

## SS Tempe Contribution spectra - Situation 2: Outdoor SP

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Source	Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Vac 9	Ldn	29.4	-1.2	6.0	9.5	12.6	13.9	9.8	6.3	5.8	3.8	-0.1	2.2	2.6	5.0	8.6	9.8	12.6	11.6	17.9	20.0	20.5	21.9	22.2	19.0	16.7	11.6	2.0	
Vac 10	Ldn	29.7	-0.8	6.4	9.9	13.0	14.3	10.2	6.7	6.3	4.2	0.4	2.6	3.0	5.4	9.0	10.3	13.0	11.9	18.1	20.2	20.7	22.1	22.5	19.5	17.2	12.3	2.9	
Vac 11	Ldn	30.1	-0.5	6.7	10.2	13.3	14.6	10.5	7.0	6.6	4.6	0.8	3.1	3.4	5.8	9.4	10.7	13.4	11.9	18.4	20.5	21.1	22.5	22.9	19.9	17.7	12.9	3.6	
Vac 12	Ldn	30.7	0.1	7.3	10.8	13.9	15.2	11.1	7.6	7.2	5.2	1.4	3.7	4.1	6.5	10.0	11.3	14.0	13.1	19.0	21.1	21.7	23.1	23.6	20.6	18.5	13.8	4.8	
Vac 13	Ldn	31.2	0.5	7.7	11.2	14.3	15.6	11.5	8.1	7.7	5.7	1.9	4.2	4.6	6.9	10.5	11.8	14.4	13.5	19.3	21.4	22.0	23.5	24.0	21.1	19.1	14.5	5.6	
Vac 14	Ldn	31.5	1.0	8.2	11.7	14.8	16.1	12.0	8.6	8.2	6.1	2.4	4.7	5.1	7.4	11.0	12.3	14.9	13.7	19.5	21.7	22.3	23.8	24.3	21.5	19.7	15.2	6.5	
Vac 15	Ldn	32.0	1.4	8.6	12.1	15.2	16.5	12.4	9.1	8.7	6.7	3.0	5.3	5.7	8.0	11.5	12.8	15.4	14.2	19.9	22.1	22.7	24.2	24.9	22.1	20.3	16.0	7.4	
Vac 16	Ldn	32.5	1.9	9.1	12.6	15.7	17.0	12.9	9.6	9.2	7.2	3.6	5.9	6.2	8.5	12.1	13.4	15.9	14.7	20.3	22.5	23.2	24.7	25.4	22.7	21.0	16.7	8.3	
Vac 17	Ldn	33.0	2.5	9.7	13.2	16.3	17.6	13.4	10.1	9.7	7.7	4.2	6.5	6.9	9.1	12.7	14.0	16.4	15.2	20.8	23.0	23.6	25.2	25.9	23.3	21.7	17.5	9.3	
Vac 18	Ldn	33.7	3.0	10.2	13.7	16.8	18.1	14.0	10.8	10.3	8.3	4.9	7.2	7.6	9.8	13.3	14.6	17.0	15.8	21.3	23.5	24.2	25.8	26.5	23.9	22.4	18.4	10.3	
Vac 19	Ldn	27.4	-4.3	2.9	6.4	9.5	10.8	6.7	3.0	2.6	0.5	-3.6	-1.3	-1.0	1.6	5.1	9.3	12.3	11.0	16.3	18.4	18.8	20.1	20.2	16.7	13.7	7.5	-3.8	
Vac 20	Ldn	27.9	-4.0	3.2	6.7	9.8	11.0	6.9	3.3	2.8	0.8	-3.3	-1.0	-0.7	1.9	5.4	9.5	12.5	11.5	16.8	18.8	19.3	20.5	20.7	17.2	14.3	8.1	-3.1	
Vac 21	Ldn	28.1	-3.8	3.4	6.9	10.0	11.3	7.2	3.5	3.1	1.1	-3.0	-0.7	-0.4	2.1	5.7	9.1	12.7	11.6	16.9	19.0	19.5	20.7	20.9	17.4	14.6	8.5	-2.5	
Vac 22	Ldn	28.4	-3.5	3.7	7.2	10.3	11.6	7.5	3.8	3.4	1.4	-2.7	-0.4	-0.1	2.4	6.0	9.3	12.9	11.8	17.1	19.4	19.8	21.1	21.3	17.8	15.0	9.0	-1.9	
Vac 23	Ldn	28.8	-3.2	3.9	7.4	10.5	11.8	7.7	4.1	3.7	1.7	-2.4	-0.1	0.2	2.7	6.3	9.6	13.1	12.0	17.5	19.7	20.2	21.4	21.6	18.2	15.4	9.5	-1.2	
Vac 24	Ldn	28.9	-3.0	4.2	7.7	10.8	12.1	8.0	4.4	4.0	2.0	-2.1	0.2	0.6	3.1	6.6	9.9	13.4	12.2	17.5	19.8	20.3	21.5	21.8	18.4	15.7	10.0	-0.6	
Vac 25	Ldn	29.2	-2.7	4.5	8.0	11.1	12.4	8.3	4.7	4.3	2.3	-1.7	0.5	0.9	3.4	7.0	10.2	13.2	12.4	17.7	20.0	20.5	21.8	22.1	18.8	16.1	10.5	0.1	
Vac 26	Ldn	29.3	-2.4	4.8	8.3	11.4	12.7	8.6	5.0	4.6	2.6	-1.4	0.8	1.2	3.7	9.2	10.5	13.4	12.6	17.9	20.0	20.6	21.9	22.2	19.0	16.5	11.0	0.7	
Vac 27	Ldn	28.8	-1.4	5.8	9.3	12.4	13.7	9.6	6.1	5.6	3.6	-0.3	2.0	2.4	4.8	8.4	9.6	12.4	11.4	17.1	19.2	19.7	21.1	21.5	18.5	16.2	11.2	1.6	
Vac 28	Ldn	29.2	-1.1	6.1	9.6	12.7	14.0	9.9	6.4	6.0	4.0	0.1	2.4	2.7	5.2	8.7	10.0	12.8	11.7	17.5	19.6	20.2	21.6	22.0	18.9	16.8	11.8	2.3	
Vac 29	Ldn	29.6	-0.7	6.5	10.0	13.1	14.4	10.3	6.8	6.4	4.4	0.5	2.8	3.2	5.6	9.2	10.4	13.2	11.7	17.8	19.9	20.5	21.9	22.4	19.4	17.3	12.5	3.1	
Vac 30	Ldn	30.0	-0.3	6.9	10.4	13.5	14.8	10.7	7.2	6.8	4.8	0.9	3.2	3.6	6.0	9.5	10.8	13.6	12.1	18.1	20.2	20.8	22.3	22.8	19.8	17.8	13.1	3.9	
Vac 31	Ldn	30.4	0.1	7.3	10.8	13.8	15.1	11.0	7.6	7.2	5.2	1.4	3.7	4.0	6.4	10.0	11.3	14.0	12.5	18.5	20.6	21.2	22.6	23.2	20.3	18.3	13.7	4.7	
Vac 32	Ldn	30.8	0.5	7.7	11.1	14.2	15.5	11.4	8.0	7.6	5.6	1.8	4.1	4.5	6.9	10.4	11.7	14.4	12.9	18.7	20.9	21.5	23.0	23.6	20.8	18.9	14.4	5.5	
Vac 33	Ldn	31.2	0.9	8.1	11.6	14.7	16.0	11.8	8.4	8.0	6.0	2.3	4.6	5.0	7.3	10.9	12.2	14.8	13.3	19.1	21.3	21.9	23.4	24.1	21.3	19.5	15.0	6.3	
Remaining contrib. of src "Facade 01"	Ldn																												
Remaining contrib. of src "Facade 02"	Ldn																												
Remaining contrib. of src "Facade 03"	Ldn																												
Remaining contrib. of src "Facade 04"	Ldn																												
Remaining contrib. of src "Roof 01"	Ldn																												
Remaining contrib. of src "Transmissive"	Ldn																												



**SS Tempe**  
**Contribution spectra - Situation 2: Outdoor SP**

**23**

Source	Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	
Remaining contrib. of src "Transmissive	Ldn																												
Remaining contrib. of src "Transmissive	Ldn																												
Remaining contrib. of src "Transmissive	Ldn																												
Remaining contrib. of src "Transmissive	Ldn																												
Remaining contrib. of src "Vac 1"	Ldn																												
Remaining contrib. of src "Vac 2"	Ldn																												
Remaining contrib. of src "Vac 3"	Ldn																												
Remaining contrib. of src "Vac 4"	Ldn																												
Remaining contrib. of src "Vac 5"	Ldn																												
Remaining contrib. of src "Vac 6"	Ldn																												
Remaining contrib. of src "Vac 7"	Ldn																												
Remaining contrib. of src "Vac 8"	Ldn																												
Remaining contrib. of src "Vac 9"	Ldn																												
Remaining contrib. of src "Vac 10"	Ldn																												
Remaining contrib. of src "Vac 11"	Ldn																												
Remaining contrib. of src "Vac 12"	Ldn																												
Remaining contrib. of src "Vac 13"	Ldn																												
Remaining contrib. of src "Vac 14"	Ldn																												
Remaining contrib. of src "Vac 15"	Ldn																												

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## SS Tempe Contribution spectra - Situation 2: Outdoor SP

**23**

Source	Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz			
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)		
Remaining contrib. of src "Vac 16"	Ldn																														
Remaining contrib. of src "Vac 17"	Ldn																														
Remaining contrib. of src "Vac 18"	Ldn																														
Remaining contrib. of src "Vac 19"	Ldn																														
Remaining contrib. of src "Vac 20"	Ldn																														
Remaining contrib. of src "Vac 21"	Ldn																														
Remaining contrib. of src "Vac 22"	Ldn																														
Remaining contrib. of src "Vac 23"	Ldn																														
Remaining contrib. of src "Vac 24"	Ldn																														
Remaining contrib. of src "Vac 25"	Ldn																														
Remaining contrib. of src "Vac 26"	Ldn																														
Remaining contrib. of src "Vac 27"	Ldn																														
Remaining contrib. of src "Vac 28"	Ldn																														
Remaining contrib. of src "Vac 29"	Ldn																														
Remaining contrib. of src "Vac 30"	Ldn																														
Remaining contrib. of src "Vac 31"	Ldn																														
Remaining contrib. of src "Vac 32"	Ldn																														
Remaining contrib. of src "Vac 33"	Ldn																														
Receiver Receiver 3 FI GF		dB(A)	Ldn 54.5 dB(A)	Sigma(Ldn) 0.0 dB(A)																											
Facade 01	Ldn	7.2								3.0			2.9			0.2				-5.9											
Facade 02	Ldn	-2.5								-4.9			-7.0			-16.2				-17.5											

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## SS Tempe Contribution spectra - Situation 2: Outdoor SP

23

Source	Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz		
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	
Facade 03	Ldn	-12.1								-15.7			-15.3			-23.7			-31.8			-46.2						-63.2		
Facade 04	Ldn	7.2								4.5			2.2			-2.8			-7.5			-20.2						-35.7		
Roof 01	Ldn	5.2								0.6			2.4			-4.6			-12.1			-25.3						-41.3		
Transmissive area 01	Ldn	27.8								21.1			22.6			20.0			22.3			13.7						0.1		
Transmissive area 01	Ldn	54.4								43.4			44.3			47.2			51.7			43.8						32.2		
Transmissive area 03	Ldn	-3.4								-6.5			-7.0			-14.4			-24.1			-38.2						-54.5		
Transmissive area 05	Ldn	6.3								2.6			1.8			-1.6			-7.3			-19.3						-33.9		
Transmissive area 07	Ldn	3.9								-3.1			1.5			-3.5			-11.4			-23.7						-38.3		
Vac 1	Ldn	20.1	-6.5	0.5	3.7	6.5	7.4	2.8	-2.1	-3.2	-6.1	-9.3	-7.9	-8.4	-5.8	-3.1	-2.7	-1.7	-0.9	9.7	11.8	11.9	12.6	12.0	7.4	2.7	-6.0	-21.1		
Vac 2	Ldn	20.2	-6.3	0.7	3.9	6.7	7.6	3.0	-1.9	-3.0	-5.9	-9.2	-7.8	-8.3	-7.9	-3.1	-2.7	-1.7	-0.9	9.8	11.9	12.0	12.7	12.1	7.5	2.9	-5.7	-20.8		
Vac 3	Ldn	20.3	-6.1	0.9	4.1	6.9	7.8	3.1	-1.7	-2.8	-5.7	-9.1	-7.7	-8.3	-7.9	-3.1	-2.7	-1.7	-0.9	9.8	12.0	12.1	12.8	12.2	7.7	3.1	-5.5	-20.5		
Vac 4	Ldn	20.2	-5.9	1.0	4.2	7.0	7.9	3.3	-1.5	-2.7	-5.6	-9.0	-7.6	-8.2	-7.8	-5.1	-2.7	-1.7	-1.6	9.7	11.8	11.9	12.7	12.1	7.6	3.1	-5.4	-20.2		
Vac 5	Ldn	24.0	-5.8	1.2	4.4	7.2	8.1	3.4	-1.3	-2.5	-5.4	-8.9	-7.5	-8.1	-7.7	-5.1	-2.7	7.9	6.5	13.5	15.7	15.9	16.9	16.5	12.3	8.2	0.3	-13.7		
Vac 6	Ldn	22.6	-5.6	1.4	4.6	7.4	8.3	3.6	-1.1	-2.3	-5.2	-8.7	-7.4	-8.0	-7.6	-4.9	-4.7	8.0	6.6	11.7	14.0	14.2	15.2	14.9	10.8	6.9	-0.7	-14.3		
Vac 7	Ldn	25.3	-5.6	1.2	4.1	6.6	7.2	2.2	-2.6	-3.9	-7.0	-10.4	-9.0	-9.6	-9.2	-6.6	-6.3	10.8	9.2	14.5	16.9	17.2	18.3	18.2	14.3	10.6	3.4	-9.6		
Vac 8	Ldn	23.4	-5.4	1.4	4.4	6.9	7.4	2.4	-2.2	-3.6	-6.7	-10.1	-8.8	-9.4	-8.9	-6.2	-5.9	8.6	7.1	12.4	14.7	15.1	16.2	16.1	12.3	8.8	1.7	-11.0		
Vac 9	Ldn	23.5	-5.2	1.7	4.6	7.2	7.7	2.7	-1.9	-3.3	-6.4	-9.8	-8.6	-9.2	-8.7	-6.0	-5.7	8.7	7.2	12.5	14.8	15.2	16.3	16.2	12.4	9.0	1.9	-10.7		
Vac 10	Ldn	15.2	-4.5	2.4	5.6	8.3	9.1	4.5	0.2	-1.0	-4.0	-7.4	-6.2	-7.0	-6.8	-4.3	-4.1	-3.4	-5.8	-1.4	0.0	-0.3	0.2	-0.3	-4.4	-7.4	-13.1	-23.6		
Vac 11	Ldn	15.4	-4.3	2.6	5.7	8.5	9.3	4.6	0.4	-0.8	-3.8	-7.2	-6.1	-6.9	-6.7	-4.2	-4.0	-3.2	-5.7	-1.2	0.2	-0.1	0.4	-0.1	-4.2	-7.0	-12.6	-23.0		
Vac 12	Ldn	15.7	-4.0	2.9	6.0	8.8	9.6	4.9	0.8	-0.4	-3.5	-7.0	-5.8	-6.7	-6.4	-3.9	-3.8	-2.9	-5.3	-0.9	0.5	0.2	0.7	0.3	-3.7	-6.4	-11.9	-22.2		
Vac 13	Ldn	15.9	-3.8	3.1	6.3	9.0	9.8	5.1	1.0	-0.2	-3.2	-6.8	-5.6	-6.5	-6.2	-3.7	-3.6	-2.6	-5.0	-0.6	0.8	0.5	1.1	0.6	-3.3	-5.8	-11.3	-21.5		
Vac 14	Ldn	16.4	-3.4	3.5	6.7	9.4	10.2	5.5	1.5	0.4	-2.6	-6.4	-5.3	-6.1	-5.8	-3.3	-3.1	-1.9	-4.4	0.1	1.5	1.2	1.8	1.3	-2.5	-5.1	-10.5	-20.7		
Vac 15	Ldn	17.2	-3.0	4.0	7.2	9.9	10.8	6.2	2.3	1.3	-1.6	-5.7	-4.5	-5.3	-4.8	-2.4	-2.2	-0.6	-3.1	1.3	2.7	2.5	3.0	2.6	-1.2	-3.8	-9.3	-19.4		
Vac 16	Ldn	19.0	-2.5	4.6	7.9	10.7	11.7	7.3	3.7	2.8	0.3	-4.2	-2.7	-3.2	-2.2	0.4	0.6	3.0	0.6	5.1	6.5	6.2	6.8	6.4	2.6	-0.2	-5.9	-16.2		
Vac 17	Ldn	31.1	1.4	8.6	12.1	15.1	16.4	12.3	9.1	8.7	6.7	-1.0	1.3	1.7	5.2	8.8	10.0	14.9	13.4	18.8	21.3	21.9	23.4	23.9	21.0	19.0	14.1	4.6		
Vac 18	Ldn	31.4	1.6	8.8	12.3	15.4	16.7	12.6	9.4	8.9	6.9	-0.7	1.6	2.0	5.5	9.1	10.3	15.2	13.7	19.1	21.5	22.2	23.7	24.2	21.3	19.3	14.5	5.1		
Vac 19	Ldn	15.8	-6.6	0.4	3.6	6.3	7.1	2.5	-2.4	-3.5	-6.3	-9.3	-7.8	-8.2	-7.7	-5.0	-2.1	-1.1	-3.4	3.5	6.3	5.8	6.0	4.9	-0.1	-4.8	-13.1	-27.0		
Vac 20	Ldn	15.1	-6.4	0.6	3.8	6.5	7.4	2.7	-2.1	-3.2	-6.0	-9.1	-7.6	-8.0	-7.5	-4.8	-4.4	-1.0	-3.3	1.1	4.6	4.2	4.4	3.4	-1.4	-5.8	-13.6	-27.1		
Vac 21	Ldn	15.2	-6.2	0.8	4.0	6.7	7.6	2.9	-1.9	-3.0	-5.8	-8.9	-7.4	-7.9	-7.4	-4.7	-4.3	-0.9	-3.2	1.2	4.7	4.2	4.4	3.5	-1.3	-5.6	-13.4	-26.7		
Vac 22	Ldn	15.4	-6.0	1.0	4.2	6.9	7.8	3.1	-1.7	-2.7	-5.6	-8.7	-7.3	-7.7	-7.2	-4.5	-4.1	-0.7	-3.1	1.4	4.8	4.3	4.5	3.6	-1.2	-5.5	-13.2	-26.3		
Vac 23	Ldn	21.1	-5.8	1.2	4.4	7.1	8.0	3.4	-1.4	-2.5	-5.3	-8.5	-7.1	-7.5	-7.0	-4.3	-4.0	-0.6	5.0	10.1	12.6	12.8	13.6	13.3	9.0	4.8	-3.2	-17.3		
Vac 24	Ldn	21.5	-5.0	2.0	5.3	8.2	9.2	4.8	0.4	-0.3	-2.8	-5.7	-4.1	-4.5	-4.0	-1.2	-0.8	0.1	5.5	10.7	12.8	13.0	13.8	13.5	9.2	5.1	-2.9	-16.8		
Vac 25	Ldn	24.7	-4.8	2.2	5.4	8.3	9.4	5.0	0.6	-0.1	-2.7	-5.6	-4.0	-4.4	-3.9	3.8	4.8	9.4	7.9	13.7	16.0	16.3	17.3	17.2	13.3	9.8	2.8	-9.8		
Vac 26	Ldn	24.8	-4.7	2.3	5.6	8.5	9.5	5.2	0.8	0.0	-2.5	-5.5	-3.9	-4.3	-3.8	3.9	4.9	9.5	8.1	13.8	16.1	16.4	17.5	17.4	13.5	10.0	3.1	-9.4		
Vac 27	Ldn	24.9	-4.1	3.0	6.3	9.2	10.3	5.9	1.7	0.9	-1.6	-4.9	-3.4	-3.8	-3.2	4.3	5.3	9.9	8.3	13.6	15.9	16.3	17.4	17.4	13.7	10.5	3.8	-8.3		
Vac 28	Ldn	25.1	-3.8	3.3	6.6	9.6	10.7	6.4	2.2	1.5	-1.0	-4.6	-3.0	-3.4	-2.8	4.6	5.5	10.1	8.5	13.8	16.1	16.5	17.6	17.6	13.9	10.7	4.1	-7.9		

## SS Tempe Contribution spectra - Situation 2: Outdoor SP

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Source	Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Vac 29	Ldn	25.4	-3.5	3.6	7.0	10.0	11.2	6.9	2.9	2.2	-0.1	-4.0	-2.1	-2.4	-1.5	5.1	6.0	10.5	8.8	14.1	16.4	16.7	17.8	17.9	14.2	11.0	4.5	-7.5	
Vac 30	Ldn	26.2	-3.3	3.9	7.3	10.3	11.6	7.3	3.5	2.9	0.7	-3.7	-1.6	-1.4	2.8	6.1	7.1	11.4	9.7	14.9	17.2	17.5	18.6	18.6	15.0	11.8	5.4	-6.4	
Vac 31	Ldn	28.9	-0.1	7.1	10.6	13.6	14.9	10.8	7.1	6.7	4.7	-3.4	-1.1	-0.7	3.0	6.5	7.8	13.0	11.5	16.9	19.3	19.9	21.2	21.6	18.4	15.9	10.4	-0.1	
Vac 32	Ldn	29.1	0.0	7.2	10.7	13.8	15.1	11.0	7.3	6.9	4.9	-3.2	-0.9	-0.5	3.2	6.7	8.0	13.1	11.6	17.1	19.5	20.0	21.4	21.8	18.6	16.2	10.7	0.3	
Vac 33	Ldn	29.3	0.1	7.3	10.8	13.9	15.2	11.1	7.5	7.1	5.0	-2.9	-0.7	-0.3	3.4	6.9	8.2	13.3	11.8	17.2	19.6	20.2	21.6	22.0	18.9	16.5	11.0	0.8	
Remaining contrib. of src "Facade 01"	Ldn																												
Remaining contrib. of src "Facade 02"	Ldn																												
Remaining contrib. of src "Facade 03"	Ldn																												
Remaining contrib. of src "Facade 04"	Ldn																												
Remaining contrib. of src "Roof 01"	Ldn																												
Remaining contrib. of src "Transmissive"	Ldn																												
Remaining contrib. of src "Transmissive"	Ldn																												
Remaining contrib. of src "Transmissive"	Ldn																												
Remaining contrib. of src "Transmissive"	Ldn																												
Remaining contrib. of src "Vac 1"	Ldn																												
Remaining contrib. of src "Vac 2"	Ldn																												
Remaining contrib. of src "Vac 3"	Ldn																												
Remaining contrib. of src "Vac 4"	Ldn																												
Remaining contrib. of src "Vac 5"	Ldn																												
Remaining contrib. of src "Vac 6"	Ldn																												
Remaining contrib. of src "Vac 7"	Ldn																												

**SS Tempe**  
**Contribution spectra - Situation 2: Outdoor SP**

**23**

Source	Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Remaining contrib. of src "Vac 8"	Ldn																												
Remaining contrib. of src "Vac 9"	Ldn																												
Remaining contrib. of src "Vac 10"	Ldn																												
Remaining contrib. of src "Vac 11"	Ldn																												
Remaining contrib. of src "Vac 12"	Ldn																												
Remaining contrib. of src "Vac 13"	Ldn																												
Remaining contrib. of src "Vac 14"	Ldn																												
Remaining contrib. of src "Vac 15"	Ldn																												
Remaining contrib. of src "Vac 16"	Ldn																												
Remaining contrib. of src "Vac 17"	Ldn																												
Remaining contrib. of src "Vac 18"	Ldn																												
Remaining contrib. of src "Vac 19"	Ldn																												
Remaining contrib. of src "Vac 20"	Ldn																												
Remaining contrib. of src "Vac 21"	Ldn																												
Remaining contrib. of src "Vac 22"	Ldn																												
Remaining contrib. of src "Vac 23"	Ldn																												
Remaining contrib. of src "Vac 24"	Ldn																												
Remaining contrib. of src "Vac 25"	Ldn																												
Remaining contrib. of src "Vac 26"	Ldn																												

MD Acoustics 1197 E Los Angeles Ave, Unit C 256 Simi Valley, CA 93065 USA

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## SS Tempe Contribution spectra - Situation 2: Outdoor SP

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Source	Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz						
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)						
Remaining contrib. of src "Vac 27"	Ldn																																	
Remaining contrib. of src "Vac 28"	Ldn																																	
Remaining contrib. of src "Vac 29"	Ldn																																	
Remaining contrib. of src "Vac 30"	Ldn																																	
Remaining contrib. of src "Vac 31"	Ldn																																	
Remaining contrib. of src "Vac 32"	Ldn																																	
Remaining contrib. of src "Vac 33"	Ldn																																	
Receiver Receiver 4 FI GF		dB(A)	Ldn 66.5 dB(A)		Sigma(Ldn) 0.0 dB(A)																													
Facade 01	Ldn	19.6								13.9			16.7			12.3			4.7			-7.2						-20.6						
Facade 02	Ldn	11.1								8.4			6.8			-0.1			-8.4			-22.4						-38.7						
Facade 03	Ldn	-6.8								-9.8			-10.9			-17.0			-25.4			-31.8						-50.0						
Facade 04	Ldn	12.5								8.3			8.9			4.3			-3.2			-15.9						-30.7						
Roof 01	Ldn	11.5								7.0			8.6			2.2			-7.0			-20.9						-37.0						
Transmissive area 01	Ldn	34.8								27.6			27.2			26.8			28.3			28.6						13.3						
Transmissive area 01	Ldn	66.4								54.1			58.9			60.7			62.5			54.7						44.5						
Transmissive area 03	Ldn	12.9								8.3			9.8			4.5			-3.9			-16.9						-31.5						
Transmissive area 05	Ldn	12.8								8.2			9.6			4.3			-4.1			-17.2						-31.9						
Transmissive area 07	Ldn	13.4								7.3			10.9			5.7			-2.8			-15.8						-30.2						
Vac 1	Ldn	29.8	-2.2	5.0	6.8	9.5	10.3	5.7	1.7	0.7	-1.9	-7.8	-6.2	-6.6	-4.1	-1.3	6.4	12.9	13.2	18.5	21.0	21.6	22.9	23.0	23.0	19.5	16.6	10.6	-0.3					
Vac 2	Ldn	30.0	-1.9	5.3	7.0	9.7	10.5	5.9	1.9	1.0	-1.6	-7.5	-5.9	-6.3	-4.6	4.9	6.6	13.0	13.3	18.6	21.1	21.7	23.0	23.2	19.7	16.8	11.0	0.2						
Vac 3	Ldn	30.9	-1.7	5.5	7.2	9.9	10.7	6.1	2.3	1.3	-1.3	-7.1	-5.5	-5.9	-4.2	5.3	8.4	14.4	14.3	19.6	22.1	22.5	23.8	24.0	20.6	17.9	12.1	1.4						
Vac 4	Ldn	31.0	-1.5	5.7	7.4	10.1	10.9	6.3	2.5	1.6	-1.0	-6.8	-5.2	-5.6	-3.9	5.6	8.7	14.5	14.4	19.7	22.2	22.7	24.0	24.2	20.8	18.1	12.4	2.0						
Vac 5	Ldn	30.9	-1.2	6.0	7.6	10.3	11.2	6.6	2.8	1.9	-0.7	-6.5	-4.9	-5.3	-3.6	5.7	8.9	14.1	14.2	19.5	22.0	22.5	23.8	24.1	20.8	18.2	12.6	2.4						
Vac 6	Ldn	28.7	-0.8	6.4	7.9	10.7	11.5	7.0	3.2	2.3	-0.3	-6.0	-4.5	-4.8	-3.1	2.4	6.9	10.7	12.1	17.4	19.9	20.4	21.6	21.7	18.2	15.4	9.7	-0.9						
Vac 7	Ldn	31.1	0.2	7.2	10.6	13.6	14.7	10.4	7.2	6.6	4.3	-0.6	1.2	1.6	3.4	9.1	10.9	15.8	14.2	19.6	21.9	22.4	23.7	23.9	20.6	18.1	12.7	2.6						
Vac 8	Ldn	31.6	0.6	7.7	11.1	14.0	15.2	10.9	7.7	7.2	4.9	0.1	2.0	2.4	4.2	9.7	11.5	16.2	14.7	20.0	22.3	22.8	24.1	24.5	21.3	18.9	13.7	4.0						
Vac 9	Ldn	31.6	1.1	8.2	11.6	14.6	15.7	11.5	8.3	7.8	5.6	0.8	2.7	3.2	5.1	10.4	11.5	16.0	14.4	19.7	22.1	22.6	24.0	24.5	21.5	19.4	14.6	5.6						
Vac 10	Ldn	35.3	3.7	10.9	14.4	17.5	18.8	14.7	11.7	11.3	9.3	3.0	5.3	5.7	8.7	13.3	14.5	18.9	17.5	22.9	25.3	26.0	27.6	28.3	25.6	24.0	19.9	11.7						
Vac 11	Ldn	35.3	4.3	11.5	15.0	18.1	19.4	15.3	12.3	11.9	9.9	3.8	6.1	6.5	9.4	13.4	14.7	18.9	17.4	22.9	25.2	25.9	27.6	28.3	25.8	24.3	20.4	12.5						
Vac 12	Ldn	36.4	5.3	12.5	16.0	19.1	20.4	16.3	13.3	12.9	10.9	5.1	7.4	7.8	10.6	14.6	15.8	19.8	18.3	23.8	26.1	26.9	28.5	29.3	26.9	25.5	21.8	14.1						

## SS Tempe Contribution spectra - Situation 2: Outdoor SP

**23**

Source	Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Vac 13	Ldn	37.2	6.0	13.2	16.7	19.8	21.1	17.0	14.1	13.7	11.7	6.2	8.5	8.9	11.6	15.5	16.7	20.5	19.1	24.5	26.8	27.6	29.3	30.1	27.7	26.4	22.8	15.2
Vac 14	Ldn	38.0	6.9	14.1	17.6	20.7	22.0	17.9	15.0	14.6	12.6	7.3	9.6	10.0	12.6	16.5	17.7	21.3	19.9	25.3	27.6	28.4	30.1	31.0	28.6	27.4	23.9	16.5
Vac 15	Ldn	39.0	7.8	15.0	18.5	21.6	22.9	18.8	16.0	15.6	13.6	8.5	10.8	11.2	13.8	17.6	18.9	22.2	20.8	26.3	28.6	29.4	31.1	32.0	29.6	28.5	25.1	17.8
Vac 16	Ldn	40.0	8.7	15.9	19.4	22.5	23.8	19.7	17.0	16.6	14.5	9.8	12.1	12.5	14.9	18.7	20.0	23.1	21.7	27.2	29.4	30.2	32.0	32.9	30.6	29.6	26.3	19.2
Vac 17	Ldn	41.2	9.9	17.1	20.6	23.7	25.0	20.9	18.2	17.8	15.8	11.3	13.6	14.0	16.4	20.1	21.4	24.3	22.8	28.3	30.6	31.4	33.1	34.1	31.9	30.9	27.7	20.7
Vac 18	Ldn	42.5	11.2	18.4	21.9	25.0	26.3	22.2	19.5	19.1	17.1	13.0	15.3	15.6	17.9	21.6	22.9	25.5	24.1	29.6	31.8	32.6	34.4	35.4	33.2	32.3	29.2	22.4
Vac 19	Ldn	30.3	-1.6	5.6	9.1	12.2	13.5	9.4	6.0	5.6	3.6	-4.1	-1.9	-1.5	2.6	6.1	9.1	14.1	13.3	18.6	21.3	21.7	23.0	23.2	19.8	17.1	11.5	1.4
Vac 20	Ldn	30.4	-1.4	5.8	9.3	12.4	13.7	9.6	6.4	6.0	4.0	-3.7	-1.4	-1.1	3.0	6.5	9.4	14.3	13.2	18.6	21.3	21.8	23.1	23.3	20.0	17.4	12.0	2.1
Vac 21	Ldn	30.4	-1.0	6.2	9.7	12.8	14.1	10.0	6.7	6.3	4.3	-3.3	-1.0	-0.6	3.4	6.8	9.0	14.6	13.4	18.8	21.2	21.7	23.0	23.3	20.1	17.7	12.4	2.7
Vac 22	Ldn	30.7	-0.7	6.5	10.0	13.1	14.4	10.3	7.1	6.7	4.7	-2.8	-0.5	-0.2	3.8	7.3	9.2	14.7	13.6	19.0	21.4	21.9	23.3	23.6	20.5	18.1	13.0	3.4
Vac 23	Ldn	32.4	-0.3	6.9	10.4	13.5	14.8	10.7	7.5	7.1	5.1	-2.3	-0.1	0.3	3.8	9.0	10.8	16.6	15.4	20.8	23.2	23.7	25.1	25.5	22.4	20.1	15.0	5.3
Vac 24	Ldn	32.8	0.1	7.3	10.8	13.9	15.2	11.1	7.9	7.5	5.5	-1.8	0.4	0.8	4.2	9.4	11.2	16.8	15.7	21.0	23.4	24.0	25.4	25.8	22.8	20.5	15.5	6.1
Vac 25	Ldn	33.1	0.5	7.7	11.2	14.3	15.6	11.5	8.3	7.9	5.9	-1.3	1.0	1.4	6.2	9.8	11.6	17.1	15.9	21.3	23.7	24.3	25.7	26.2	23.2	21.0	16.1	6.8
Vac 26	Ldn	33.4	0.9	8.1	11.6	14.7	16.0	11.9	8.7	8.3	6.3	-0.8	1.5	1.9	6.6	10.2	12.0	17.2	16.2	21.6	24.0	24.6	26.0	26.5	23.5	21.4	16.6	7.5
Vac 27	Ldn	34.2	2.3	9.5	12.9	16.0	17.3	13.2	10.2	9.8	7.8	1.1	3.3	3.7	8.1	12.1	13.4	17.9	16.6	22.1	24.5	25.2	26.7	27.3	24.5	22.7	18.3	9.7
Vac 28	Ldn	34.7	2.7	9.9	13.4	16.5	17.8	13.7	10.7	10.3	8.3	1.7	4.0	4.4	8.6	12.6	13.9	18.2	16.9	22.5	24.9	25.6	27.1	27.7	25.0	23.3	19.0	10.5
Vac 29	Ldn	35.2	3.3	10.5	14.0	17.0	18.3	14.2	11.2	10.8	8.8	2.4	4.7	5.1	9.2	13.1	14.4	18.7	17.4	22.9	25.3	26.0	27.5	28.2	25.5	23.9	19.7	11.4
Vac 30	Ldn	35.6	3.7	10.9	14.4	17.5	18.8	14.7	11.7	11.3	9.3	3.1	5.4	5.7	9.7	13.7	14.9	19.1	17.8	23.3	25.7	26.4	28.0	28.7	26.0	24.4	20.3	12.1
Vac 31	Ldn	36.1	4.3	11.5	15.0	18.1	19.4	15.3	12.3	11.9	9.9	3.8	6.1	6.5	10.3	14.2	15.5	19.6	18.1	23.8	26.1	26.8	28.4	29.2	26.6	25.0	21.0	13.0
Vac 32	Ldn	35.9	4.8	12.0	15.5	18.6	19.9	15.8	12.9	12.5	10.4	4.5	6.8	7.2	10.1	14.1	15.3	19.2	17.7	23.4	25.8	26.5	28.1	28.9	26.4	25.0	21.1	13.4
Vac 33	Ldn	36.5	5.4	12.6	16.1	19.2	20.5	16.4	13.4	13.0	11.0	5.3	7.6	8.0	10.8	14.7	16.0	19.7	18.3	23.9	26.3	27.0	28.7	29.5	27.0	25.6	21.9	14.2
Remaining contrib. of src "Facade 01"	Ldn																											
Remaining contrib. of src "Facade 02"	Ldn																											
Remaining contrib. of src "Facade 03"	Ldn																											
Remaining contrib. of src "Facade 04"	Ldn																											
Remaining contrib. of src "Roof 01"	Ldn																											
Remaining contrib. of src "Transmissive"	Ldn																											
Remaining contrib. of src "Transmissive"	Ldn																											
Remaining contrib. of src "Transmissive"	Ldn																											

**SS Tempe**  
**Contribution spectra - Situation 2: Outdoor SP**

**23**

Source	Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	
Remaining contrib. of src "Transmissive	Ldn																												
Remaining contrib. of src "Transmissive	Ldn																												
Remaining contrib. of src "Vac 1"	Ldn																												
Remaining contrib. of src "Vac 2"	Ldn																												
Remaining contrib. of src "Vac 3"	Ldn																												
Remaining contrib. of src "Vac 4"	Ldn																												
Remaining contrib. of src "Vac 5"	Ldn																												
Remaining contrib. of src "Vac 6"	Ldn																												
Remaining contrib. of src "Vac 7"	Ldn																												
Remaining contrib. of src "Vac 8"	Ldn																												
Remaining contrib. of src "Vac 9"	Ldn																												
Remaining contrib. of src "Vac 10"	Ldn																												
Remaining contrib. of src "Vac 11"	Ldn																												
Remaining contrib. of src "Vac 12"	Ldn																												
Remaining contrib. of src "Vac 13"	Ldn																												
Remaining contrib. of src "Vac 14"	Ldn																												
Remaining contrib. of src "Vac 15"	Ldn																												
Remaining contrib. of src "Vac 16"	Ldn																												
Remaining contrib. of src "Vac 17"	Ldn																												

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**SS Tempe**  
**Contribution spectra - Situation 2: Outdoor SP**

**23**

Source	Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Remaining contrib. of src "Vac 18"	Ldn																											
Remaining contrib. of src "Vac 19"	Ldn																											
Remaining contrib. of src "Vac 20"	Ldn																											
Remaining contrib. of src "Vac 21"	Ldn																											
Remaining contrib. of src "Vac 22"	Ldn																											
Remaining contrib. of src "Vac 23"	Ldn																											
Remaining contrib. of src "Vac 24"	Ldn																											
Remaining contrib. of src "Vac 25"	Ldn																											
Remaining contrib. of src "Vac 26"	Ldn																											
Remaining contrib. of src "Vac 27"	Ldn																											
Remaining contrib. of src "Vac 28"	Ldn																											
Remaining contrib. of src "Vac 29"	Ldn																											
Remaining contrib. of src "Vac 30"	Ldn																											
Remaining contrib. of src "Vac 31"	Ldn																											
Remaining contrib. of src "Vac 32"	Ldn																											
Remaining contrib. of src "Vac 33"	Ldn																											

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**SS Tempe  
Contribution level - Situation 2: Outdoor SP**

**9**

Source	Source group	Source ty	Tr. lane	Ldn dB(A)	A dB	
Receiver Receiver 1	FI GF			dB(A) Ldn 42.3 dB(A)		Sigma(Ldn) 0.0 dB(A)
Vac 1	Default industrial noise	Point		8.5	0.0	
Vac 2	Default industrial noise	Point		8.9	0.0	
Vac 3	Default industrial noise	Point		9.8	0.0	
Vac 4	Default industrial noise	Point		9.7	0.0	
Vac 5	Default industrial noise	Point		9.5	0.0	
Vac 6	Default industrial noise	Point		9.2	0.0	
Vac 7	Default industrial noise	Point		8.0	0.0	
Vac 8	Default industrial noise	Point		8.1	0.0	
Vac 9	Default industrial noise	Point		8.3	0.0	
Vac 10	Default industrial noise	Point		8.4	0.0	
Vac 11	Default industrial noise	Point		8.6	0.0	
Vac 12	Default industrial noise	Point		8.8	0.0	
Vac 13	Default industrial noise	Point		8.9	0.0	
Vac 14	Default industrial noise	Point		14.9	0.0	
Vac 15	Default industrial noise	Point		15.1	0.0	
Vac 16	Default industrial noise	Point		15.3	0.0	
Vac 17	Default industrial noise	Point		15.5	0.0	
Vac 18	Default industrial noise	Point		15.8	0.0	
Vac 19	Default industrial noise	Point		8.8	0.0	
Vac 20	Default industrial noise	Point		11.0	0.0	
Vac 21	Default industrial noise	Point		13.4	0.0	
Vac 22	Default industrial noise	Point		13.4	0.0	
Vac 23	Default industrial noise	Point		13.5	0.0	
Vac 24	Default industrial noise	Point		12.6	0.0	
Vac 25	Default industrial noise	Point		12.8	0.0	
Vac 26	Default industrial noise	Point		12.9	0.0	
Vac 27	Default industrial noise	Point		13.3	0.0	
Vac 28	Default industrial noise	Point		13.5	0.0	
Vac 29	Default industrial noise	Point		13.7	0.0	
Vac 30	Default industrial noise	Point		13.8	0.0	
Vac 31	Default industrial noise	Point		14.0	0.0	
Vac 32	Default industrial noise	Point		14.2	0.0	
Vac 33	Default industrial noise	Point		14.4	0.0	
Roof 01	Default industrial noise	Area		-3.3	0.0	
Transmissive area 07	Default industrial noise	Area		-6.3	0.0	
Facade 01	Default industrial noise	Area		-3.1	0.0	
Transmissive area 01	Default industrial noise	Area		42.1	0.0	
Facade 02	Default industrial noise	Area		-10.6	0.0	
Transmissive area 03	Default industrial noise	Area		-15.0	0.0	
Facade 03	Default industrial noise	Area		-17.6	0.0	
Transmissive area 01	Default industrial noise	Area		21.7	0.0	
Facade 04	Default industrial noise	Area		0.1	0.0	
Transmissive area 05	Default industrial noise	Area		-4.2	0.0	

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**SS Tempe**  
**Contribution level - Situation 2: Outdoor SP**

**9**

Source	Source group	Source ty	Tr. lane	Ldn dB(A)	A dB	
Receiver Receiver 2	FI GF			dB(A) Ldn 56.8 dB(A)		Sigma(Ldn) 0.0 dB(A)
Vac 1	Default industrial noise	Point		28.1	0.0	
Vac 2	Default industrial noise	Point		28.3	0.0	
Vac 3	Default industrial noise	Point		28.5	0.0	
Vac 4	Default industrial noise	Point		27.7	0.0	
Vac 5	Default industrial noise	Point		28.0	0.0	
Vac 6	Default industrial noise	Point		26.9	0.0	
Vac 7	Default industrial noise	Point		28.8	0.0	
Vac 8	Default industrial noise	Point		29.1	0.0	
Vac 9	Default industrial noise	Point		29.4	0.0	
Vac 10	Default industrial noise	Point		29.7	0.0	
Vac 11	Default industrial noise	Point		30.1	0.0	
Vac 12	Default industrial noise	Point		30.7	0.0	
Vac 13	Default industrial noise	Point		31.2	0.0	
Vac 14	Default industrial noise	Point		31.5	0.0	
Vac 15	Default industrial noise	Point		32.0	0.0	
Vac 16	Default industrial noise	Point		32.5	0.0	
Vac 17	Default industrial noise	Point		33.0	0.0	
Vac 18	Default industrial noise	Point		33.7	0.0	
Vac 19	Default industrial noise	Point		27.4	0.0	
Vac 20	Default industrial noise	Point		27.9	0.0	
Vac 21	Default industrial noise	Point		28.1	0.0	
Vac 22	Default industrial noise	Point		28.4	0.0	
Vac 23	Default industrial noise	Point		28.8	0.0	
Vac 24	Default industrial noise	Point		28.9	0.0	
Vac 25	Default industrial noise	Point		29.2	0.0	
Vac 26	Default industrial noise	Point		29.3	0.0	
Vac 27	Default industrial noise	Point		28.8	0.0	
Vac 28	Default industrial noise	Point		29.2	0.0	
Vac 29	Default industrial noise	Point		29.6	0.0	
Vac 30	Default industrial noise	Point		30.0	0.0	
Vac 31	Default industrial noise	Point		30.4	0.0	
Vac 32	Default industrial noise	Point		30.8	0.0	
Vac 33	Default industrial noise	Point		31.2	0.0	
Roof 01	Default industrial noise	Area		7.0	0.0	
Transmissive area 07	Default industrial noise	Area		5.2	0.0	
Facade 01	Default industrial noise	Area		10.2	0.0	
Transmissive area 01	Default industrial noise	Area		56.5	0.0	
Facade 02	Default industrial noise	Area		11.3	0.0	
Transmissive area 03	Default industrial noise	Area		8.7	0.0	
Facade 03	Default industrial noise	Area		-6.3	0.0	
Transmissive area 01	Default industrial noise	Area		36.8	0.0	
Facade 04	Default industrial noise	Area		6.1	0.0	
Transmissive area 05	Default industrial noise	Area		4.0	0.0	

**SS Tempe**  
**Contribution level - Situation 2: Outdoor SP**

**9**

Source	Source group	Source ty	Tr. lane	Ldn dB(A)	A dB	
Receiver Receiver 3	FI GF			dB(A) Ldn 54.5 dB(A)		Sigma(Ldn) 0.0 dB(A)
Vac 1	Default industrial noise	Point		20.1	0.0	
Vac 2	Default industrial noise	Point		20.2	0.0	
Vac 3	Default industrial noise	Point		20.3	0.0	
Vac 4	Default industrial noise	Point		20.2	0.0	
Vac 5	Default industrial noise	Point		24.0	0.0	
Vac 6	Default industrial noise	Point		22.6	0.0	
Vac 7	Default industrial noise	Point		25.3	0.0	
Vac 8	Default industrial noise	Point		23.4	0.0	
Vac 9	Default industrial noise	Point		23.5	0.0	
Vac 10	Default industrial noise	Point		15.2	0.0	
Vac 11	Default industrial noise	Point		15.4	0.0	
Vac 12	Default industrial noise	Point		15.7	0.0	
Vac 13	Default industrial noise	Point		15.9	0.0	
Vac 14	Default industrial noise	Point		16.4	0.0	
Vac 15	Default industrial noise	Point		17.2	0.0	
Vac 16	Default industrial noise	Point		19.0	0.0	
Vac 17	Default industrial noise	Point		31.1	0.0	
Vac 18	Default industrial noise	Point		31.4	0.0	
Vac 19	Default industrial noise	Point		15.8	0.0	
Vac 20	Default industrial noise	Point		15.1	0.0	
Vac 21	Default industrial noise	Point		15.2	0.0	
Vac 22	Default industrial noise	Point		15.4	0.0	
Vac 23	Default industrial noise	Point		21.1	0.0	
Vac 24	Default industrial noise	Point		21.5	0.0	
Vac 25	Default industrial noise	Point		24.7	0.0	
Vac 26	Default industrial noise	Point		24.8	0.0	
Vac 27	Default industrial noise	Point		24.9	0.0	
Vac 28	Default industrial noise	Point		25.1	0.0	
Vac 29	Default industrial noise	Point		25.4	0.0	
Vac 30	Default industrial noise	Point		26.2	0.0	
Vac 31	Default industrial noise	Point		28.9	0.0	
Vac 32	Default industrial noise	Point		29.1	0.0	
Vac 33	Default industrial noise	Point		29.3	0.0	
Roof 01	Default industrial noise	Area		5.2	0.0	
Transmissive area 07	Default industrial noise	Area		3.9	0.0	
Facade 01	Default industrial noise	Area		7.2	0.0	
Transmissive area 01	Default industrial noise	Area		54.4	0.0	
Facade 02	Default industrial noise	Area		-2.5	0.0	
Transmissive area 03	Default industrial noise	Area		-3.4	0.0	
Facade 03	Default industrial noise	Area		-12.1	0.0	
Transmissive area 01	Default industrial noise	Area		27.8	0.0	
Facade 04	Default industrial noise	Area		7.2	0.0	
Transmissive area 05	Default industrial noise	Area		6.3	0.0	

**SS Tempe**  
**Contribution level - Situation 2: Outdoor SP**

**9**

Source	Source group	Source ty	Tr. lane	Ldn dB(A)	A dB	
Receiver Receiver 4	FI GF			dB(A) Ldn 66.5 dB(A)		Sigma(Ldn) 0.0 dB(A)
Vac 1	Default industrial noise	Point		29.8	0.0	
Vac 2	Default industrial noise	Point		30.0	0.0	
Vac 3	Default industrial noise	Point		30.9	0.0	
Vac 4	Default industrial noise	Point		31.0	0.0	
Vac 5	Default industrial noise	Point		30.9	0.0	
Vac 6	Default industrial noise	Point		28.7	0.0	
Vac 7	Default industrial noise	Point		31.1	0.0	
Vac 8	Default industrial noise	Point		31.6	0.0	
Vac 9	Default industrial noise	Point		31.6	0.0	
Vac 10	Default industrial noise	Point		35.3	0.0	
Vac 11	Default industrial noise	Point		35.3	0.0	
Vac 12	Default industrial noise	Point		36.4	0.0	
Vac 13	Default industrial noise	Point		37.2	0.0	
Vac 14	Default industrial noise	Point		38.0	0.0	
Vac 15	Default industrial noise	Point		39.0	0.0	
Vac 16	Default industrial noise	Point		40.0	0.0	
Vac 17	Default industrial noise	Point		41.2	0.0	
Vac 18	Default industrial noise	Point		42.5	0.0	
Vac 19	Default industrial noise	Point		30.3	0.0	
Vac 20	Default industrial noise	Point		30.4	0.0	
Vac 21	Default industrial noise	Point		30.4	0.0	
Vac 22	Default industrial noise	Point		30.7	0.0	
Vac 23	Default industrial noise	Point		32.4	0.0	
Vac 24	Default industrial noise	Point		32.8	0.0	
Vac 25	Default industrial noise	Point		33.1	0.0	
Vac 26	Default industrial noise	Point		33.4	0.0	
Vac 27	Default industrial noise	Point		34.2	0.0	
Vac 28	Default industrial noise	Point		34.7	0.0	
Vac 29	Default industrial noise	Point		35.2	0.0	
Vac 30	Default industrial noise	Point		35.6	0.0	
Vac 31	Default industrial noise	Point		36.1	0.0	
Vac 32	Default industrial noise	Point		35.9	0.0	
Vac 33	Default industrial noise	Point		36.5	0.0	
Roof 01	Default industrial noise	Area		11.5	0.0	
Transmissive area 07	Default industrial noise	Area		13.4	0.0	
Facade 01	Default industrial noise	Area		19.6	0.0	
Transmissive area 01	Default industrial noise	Area		66.4	0.0	
Facade 02	Default industrial noise	Area		11.1	0.0	
Transmissive area 03	Default industrial noise	Area		12.9	0.0	
Facade 03	Default industrial noise	Area		-6.8	0.0	
Transmissive area 01	Default industrial noise	Area		34.8	0.0	
Facade 04	Default industrial noise	Area		12.5	0.0	
Transmissive area 05	Default industrial noise	Area		12.8	0.0	

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**Appendix D**  
Traffic Noise Prediction Model

FHWA-RD-77-108 HIGHWAY NOISE PREDICTION MODEL

PROJECT:	SUPERSTAR EXPRESS CAR WASH @ 1139 BROADWAY	JOB #:	0222-21-01
ROADWAY:	BROADWAY	DATE:	25-Jan-21
LOCATION:	EXISTING - NOISE CONTOURS	ENGINEER:	M. DICKERSON

**NOISE INPUT DATA**

ROADWAY CONDITIONS		RECEIVER INPUT DATA	
ADT =	34,178	RECEIVER DISTANCE =	280
SPEED =	40	DIST C/L TO WALL =	270
PK HR % =	10	RECEIVER HEIGHT =	5.0
NEAR LANE/FAR LANE DIS	50	WALL DISTANCE FROM RECEIVER	10
ROAD ELEVATION =	0.0	PAD ELEVATION =	0.0
GRADE =	0.0 %	ROADWAY VIEW: LF ANGLE=	-90
PK HR VOL =	3,418	RT ANGLE=	90
		DF ANGLE=	180

SITE CONDITIONS		WALL INFORMATION	
AUTOMOBILES =	15	HTH WALL	5.0
MEDIUM TRUCKS =	15 (10 = HARD SITE, 15 = SOFT SITE)	AMBIENT=	0.0
HEAVY TRUCKS =	15	BARRIER =	0 (0 = WALL, 1 = BERM)

VEHICLE MIX DATA					MISC. VEHICLE INFO			
VEHICLE TYPE	DAY	EVENING	NIGHT	DAILY				
AUTOMOBILES	0.755	0.140	0.105	0.9742				
MEDIUM TRUCKS	0.489	0.022	0.489	0.0184				
HEAVY TRUCKS	0.473	0.054	0.473	0.0074				
VEHICLE TYPE	HEIGHT	SLE DISTANCE	GRADE ADJUSTMENT					
AUTOMOBILES	2.0	278.86	--					
MEDIUM TRUCKS	4.0	278.84	--					
HEAVY TRUCKS	8.0	278.90	0.00					

**NOISE OUTPUT DATA**

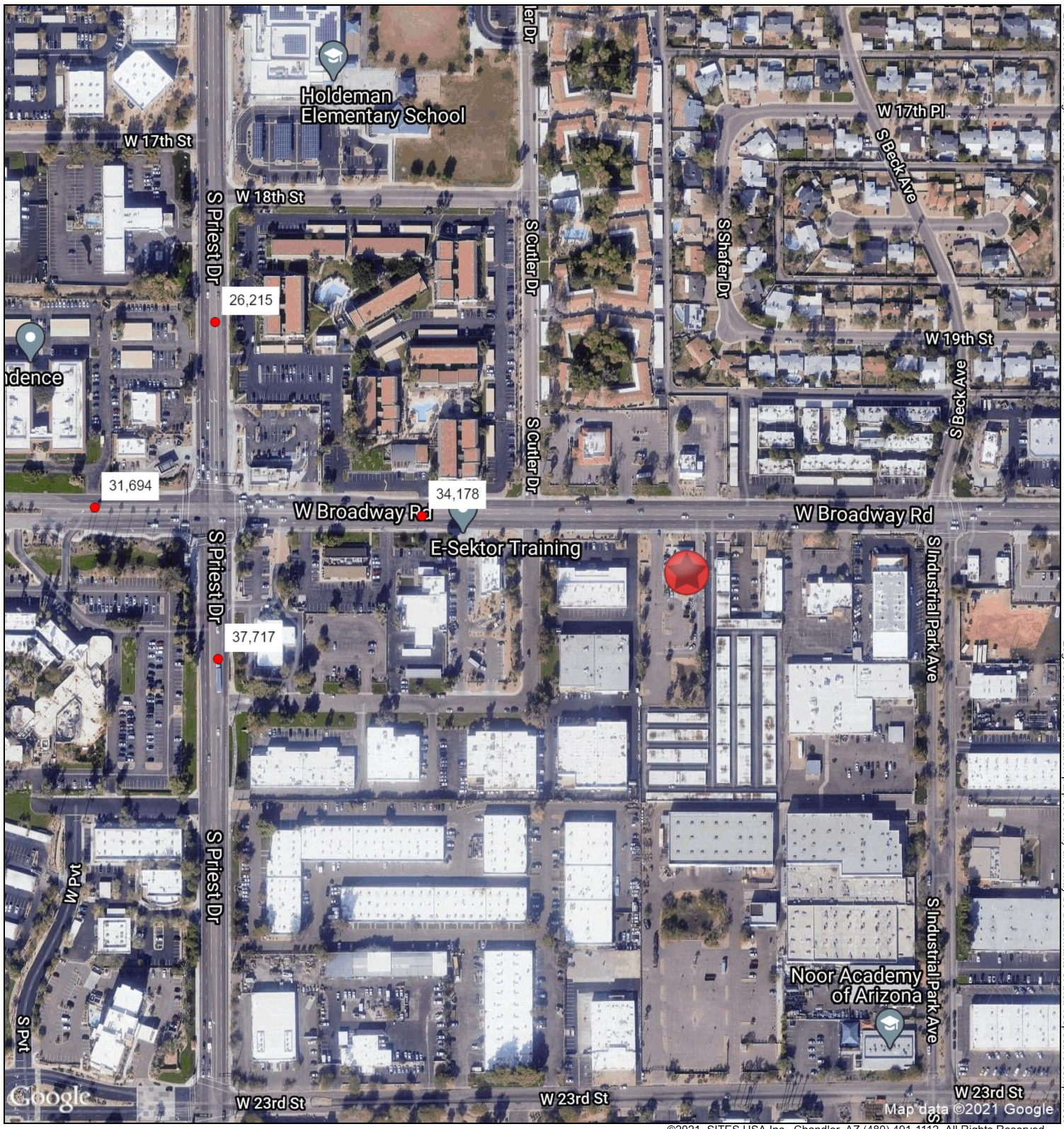
*NOISE IMPACTS (WITHOUT TOPO OR BARRIER SHIELDING)*

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	58.8	56.7	55.4	49.4	57.8	58.5
MEDIUM TRUCKS	50.5	46.6	39.1	47.8	54.0	54.0
HEAVY TRUCKS	51.4	47.3	43.9	48.6	54.8	54.9
NOISE LEVELS (dBA)	60.0	57.6	55.8	53.4	60.6	61.0

*NOISE IMPACTS (WITH TOPO AND BARRIER SHIELDING)*

VEHICLE TYPE	PK HR LEQ	DAY LEQ	EVEN LEQ	NIGHT LEQ	LDN	CNEL
AUTOMOBILES	53.8	51.8	50.5	44.5	52.9	53.5
MEDIUM TRUCKS	45.5	41.6	34.2	42.9	49.0	49.1
HEAVY TRUCKS	51.4	47.3	43.9	48.6	54.8	54.9
NOISE LEVELS (dBA)	56.9	54.4	52.7	50.3	57.5	57.9

NOISE CONTOUR (FT)				
NOISE LEVELS	70 dBA	65 dBA	60 dBA	55 dBA
CNEL	70	152	327	705
LDN	67	143	309	666



**1139 W Broadway Rd**

**Tempe, AZ 85282**

*January 2021*

ATTACHMENT 69



**From:** [Ben Blythe](#)  
**To:** [Stovall, Karen](#)  
**Subject:** SuperStar Car Wash  
**Date:** Tuesday, January 26, 2021 1:07:17 PM

---

I support my neighborhood association Chair in opposing the construction of a carwash at 1139 W Broadway Rd, Tempe, AZ.

My primary concern is that it does not promote walkability of the neighborhood. This part of the city has few food options within one mile, classifying it as a "food desert" according to the USDA.

This area has two Motel 6s nearby that clearly function as low income housing. The space, and neighborhood, would be much better serviced by a grocer or food provider.

Ben Blythe  
[REDACTED] Tempe, AZ 85281

**From:** [Charly Brems](#)  
**To:** [Stovall, Karen](#)  
**Subject:** Potential Car Wash 1139 W Broadway  
**Date:** Tuesday, February 2, 2021 1:17:45 PM

---

Hello Mrs. Stovall,

I'm sharing this in order to express my concerns about a potential car wash that could open at 1139 W Broadway Rd (former site of Burger King). I believe this car wash will be detrimental to our neighborhood for the following reasons:

(1) Noise: Per City Code Sec. 20-6, the allowable noise levels during daylight hours in a residential district is 55 decibels. This car wash will exceed this level on a regular basis. This will be a quality-of-life issue, as those that live on 19th Street, 18th Street, and Shafer Drive will regularly hear the sound of the car wash from your homes.

(2) Traffic: Runs contrary to the City's attempts to promote cycling, walking, and other methods of transportation that will take cars off of the road. Moreover, the City of Tempe highlighted in their Vision Zero Plan - that this section of Broadway Road is one of the most dangerous streets in Tempe.

(3) Tempe Maker District: This doesn't conform with the vision for the Tempe Maker District / Broadway Corridor Revitalization plan - in which the Development Review Commission and City Council passed unanimously just over a year ago. The Tempe Maker District / Broadway Corridor Revitalization plan consisted of changing the general plan for this section of Broadway Road with the hopes of attracting local Tempe-based businesses that would be cohesive to our neighborhood. A carwash is not compatible with this vision. It will only make it more challenging to attract more local businesses to this area.

(4) Property values: For the reasons cited above - this will be detrimental to the property values in the Holdeman Neighborhood. This is especially the case for the homes on 19th Street, Shafer Dr, and 18th Street - as these neighbors will be most affected by the noise from the car wash.

I live in Holdeman area on 18st and the United Dairy plant already is a constant noise nuisance. When I purchased the home I was unaware of the 24/7 operation would be so intrusive. The constant airhorns and back up annunciators at all hours of the night are extremely frustrating. There is already enough disruption to my area and I certainly don't want it from a car wash that ultimately bring no local value to the area.

**From:** [Larry Djinis](#)  
**To:** [Stovall, Karen](#)  
**Cc:** [Laughner, Maria](#); [Kennedy, Donna](#); [Aaron, Robbie](#); [Keating, Randy](#)  
**Subject:** Neighborhood Opposition to Super Star Car Wash  
**Date:** Sunday, January 24, 2021 7:00:34 PM

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Ms. Stovall,

On behalf of the Holdeman Neighborhood Association, I am writing to share our opposition to allow a use permit for Super Star Car Wash at 1139 W Broadway Rd.

The Holdeman Neighborhood is located north of Broadway Road—directly across the street from this site. Given it's close proximity to our neighborhood—we feel this is not an appropriate location for a car wash. Here are our four main concerns:

(1) **Noise.** Per City Code Sec. 20-6, the allowable noise levels during daylight hours in a residential district is 55 decibels. Today, I visited Super Star Car Wash's existing location in Tempe at 1335 W Warner Road. I stood across the street and recorded 75 decibels on my decibel reader. This was on a rainy day—in which hardly anyone was using the car wash.

(2) **Traffic.** Runs contrary to the City's attempts to promote cycling, walking, and other methods of transportation that will take cars off of the road. Moreover, the City of Tempe highlighted in their Vision Zero Plan - that this section of Broadway Road is one of the most dangerous streets in Tempe.

(3) **Tempe Maker District.** This doesn't conform with the vision for the Tempe Maker District / Broadway Corridor Revitalization plan - in which the DRC and City Council passed unanimously just over a year ago. The Tempe Maker District plan called for higher density mixed-use projects along Broadway Road with the hopes of encouraging more residential developments. A carwash is not compatible with this vision. It will only make it more challenging to build more residential units along Broadway Road.

(4) **Property values.** For the reasons cited above - this will be detrimental to the property values in our neighborhood. This is especially the case for the neighbors that live on 19th Street, Shafer Dr, and 18th Street - as they will be most affected by the noise from the car wash.

In conclusion, we respectfully urge the Development Review Commission and the City of Tempe to exercise concern for the community and cease any action that would allow Super Star Car Wash to occupy this space.

Thank you for your time and attention to this matter. Please don't hesitate to contact me should you have any questions.

Sincerely,

**Larry Djinis, Chair**  
**Holdeman Neighborhood Association**

**From:** [Robynne Madigan](#)  
**To:** [Stovall, Karen](#)  
**Subject:** Super Star Car Wash  
**Date:** Tuesday, February 2, 2021 8:18:19 PM

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Good evening,

I was recently made aware of a proposal to build a Super Star Car Wash at 1139 W. Broadway. I have concerns about the proposal, both regarding its impact on myself and my neighbors and regarding what it brings (or doesn't bring) to the larger Tempe community.

My husband and I have owned a home on W. 19th St for three and a half years now. While I love our home and our neighborhood, its positioning directly off of Broadway has left something to be desired. The businesses nearby, especially on the south side of Broadway, are generally large chains with very little personal feel. The previous business at 1139 W. Broadway was a Burger King, and my husband and I often mistook the Burger King sign for the moon out our back window, which is hardly a charming experience. Though there are numerous businesses nearby, none were ones I would choose to walk to and enjoy, with the exception of a taco shop on the north side of Broadway. Additionally, there is near-constant noise coming from Broadway into my home, especially because our bedroom is on the second floor, and much of that noise is the result of the many drivers who seem to want to drag race down Broadway whenever traffic is moderate to low.

I was intrigued when I saw that Burger King had closed, and not just because I wondered what life would be like without the Burger King moon. The former Hawaiian restaurant that closed right before we moved in is *finally* being filled, and with a coffee shop that I would consider walking to when I need a place to sit and work or read. That was encouraging, so I wondered how long it would take to fill the new vacancy, and whether it'd be a business I'd care to visit. I was shocked to see a proposal already slated, and for... a car wash? I cannot tell you how many new carwashes I have seen go up since I moved here, and I was already surprised by how common they were when we moved in. I frankly do not understand the need for another one, and think there must be far better options for our community. And, let's be honest, I don't want to spend the foreseeable future listening to vacuums and an automatic car wash when I leave for work in the morning and from the time I get home to the time I'm wrapping things up for the night. I already have conversations with my tutoring students about the sounds they can hear coming from Broadway during our Zoom sessions, and I'd really prefer not to add any more to the list.

In summary, I do not understand what value this car wash adds to our neighborhood, as there is an abundance of car washes in the surrounding areas, and I do believe it will decrease the quality of life for those of us who already experience the constant disruptions that come with living where we do.

Thank you for your work and your consideration,

Robynne Madigan  


**From:** [azoak2](#)  
**To:** [karen\\_stoval@tempe.gov](mailto:karen_stoval@tempe.gov)  
**Subject:** carwash  
**Date:** Tuesday, January 26, 2021 7:10:48 AM

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Dear Karen,

We have just been made aware of the plan to have a carwash on Broadway where BurgerKing once was located.

We live on Beck and 18th Street.

We do not find a carwash to be a good fit for what the city is purportedly planning for this area. We do think the coffee shop across the street makes a good addition to the area. A carwash is a carwash with a intense noise level.

Please rethink this plan. Thank you for your time and your work for Tempe.

Sincerely,

John and Linda OConnor

Sent from my Verizon, Samsung Galaxy smartphone

**From:** [Alex Otto](#)  
**To:** [Stovall, Karen](#); [CM - Council Communicator](#)  
**Subject:** Proposed car wash on Broadway Rd.  
**Date:** Monday, February 15, 2021 5:30:32 PM

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Greetings Karen,

I am writing to voice my opposition to the proposed car wash to be located on Broadway Road at the former location of the Burger King Restaurant. I have been a resident of Tempe since 1999 and I purchased my home on Hardy Drive in 2004. In that time I have seen the dairy processing plant grow beyond the corner of Broadway and Hardy to occupy other properties throughout the industrial area South of Broadway. With that growth has come the commensurate increase in noise produced by the dairy. The dairy was a known quantity when I decided to purchase my home, the proposed car wash was not. I hope that the City's attitude is in alignment with denying or suggesting alternate locations for projects that increase noise pollution on Broadway. The neighborly attitude is to reduce noise in this area not to say "well its already noisy , so why not one more". Gratefully, this area requires special use permits and as such the City is not obligated to pass every project solely because its legal. Through the review process we have the discretion to approve only those projects that are deemed a good fit. The addition of another noisy business, in an area that already suffers from excess noise isn't a good choice. The proposed car wash will do nothing to help with the quality of life issue of increased noise pollution along this very busy section of Broadway Rd. Further, it will do nothing to provide residents in the immediate area any benefit or services in which we are lacking. This area is already surrounded by car washes and this won't provide any enhancement of the walkability of the area nor will it improve the look and feel of Broadway Rd which is a major gateway to the city.

My understanding is that the drying tunnel will be facing the apartments and the Holdeman neighborhood directly across the street. Has the city conducted any noise surveys of actual completed car washes in operation? These types of facilities will easily produce over 70dBA sound pressure level across the street from the facility. For reference, 70dBA would be the equivalent of adults having a conversation. Imagine this going on outside the window of your home from 7AM onward, 7 days a week including Sundays. This exceeds the maximum level of 55dBA as outlined in the Tempe city code section 20-6. For reference, 55dBA is a typical level found in an indoor office setting. I defy anyone to drive by one of these car washes while its operating and sit across the street and imagine how this compares to your peaceful 55dbA office experience. I strongly encourage the city to do a noise survey of completed projects to gain a clear understanding of how loud these actually are and how they can negatively impact the quality of life for residents in close proximity. Will the operators be routinely inspected by the City to ensure they are in compliance with local noise ordinances? What penalties will be imposed If the operators are not be able to meet the specifications and noise levels they promised as part of obtaining approval to complete their project? Who will be responsible to draft and enforce these performance clauses as part of obtaining permits? When the project fails to meet performance standards who will be responsible for noise mitigation enhancements to the affected neighbors in the form of new windows, doors and insulation? Who will be the responsible party for ensuring the car wash operator upgrades all of their equipment to the quietest available and rework passive noise blocking strategies like landscaping enhancements, noise blocking walls and interior acoustic treatment to the inside of the tunnel especially in the area of the dryers. Perhaps the simplest solution is the most reasonable and

results in the least amount of risk to both the City and the car wash operator, simply build it somewhere else.

The Holdeman neighborhood is already impacted heavily by noise pollution. The serious increase in noise and negative impact on the quality of life that this project will inject into the neighborhood while not enhancing the walkability, look or vision for the Tempe Maker/Broadway Revitalization project provide sufficient justification to deny approval of this project. It is simply the wrong location. Thank you for your consideration.

Respectfully,  
Alexander Otto

Alexander Otto  
OSW AUDIO LLC



**From:** [Chin, Alex](#)  
**To:** [Edward Seiler](#); [CM - Council Communicator](#)  
**Cc:** [Stovall, Karen](#)  
**Subject:** RE: Car wash will wake up 100 people!  
**Date:** Tuesday, January 26, 2021 3:25:45 PM

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Hello Edward,

Thank you emailing the Mayor and Council regarding your opposition to the car wash. Please be assured they received your email and are copied on this reply.

I am copying the Project Planner assigned to this project so they can include your email as public comment. Also, this item is being discussed at the Development Review Commission tonight at 5:30 pm. Meeting information on how to attend can be found here:

<https://www.tempe.gov/government/community-development/planning/virtual-board-commission-meetings>

There is a button at the bottom for the Jan 26<sup>th</sup> meeting. Please also voice your opposition with the Development Review Commission.

Please let me know if I can further assist,

**Alex Chin**  
**Council Aide**

City of Tempe | Mayor and Council  
31 E 5<sup>th</sup> St, 3<sup>rd</sup> Floor Tempe, AZ 85281  
Phone: 480-350-8545

**From:** Edward Seiler [REDACTED]  
**Sent:** Sunday, January 24, 2021 4:38 PM  
**To:** CM - Council Communicator <councilcommunicator@tempe.gov>  
**Subject:** Car wash will wake up 100 people!

No to the car was on 1139 W. Broadway. The noise and extra cars coming onto a busy W. Broadway will wake up 100 people at Sanctuary Apartments and Broadway Park Apartments. These are working class people who have the right to sleep. This would never be done in Scottsdale or Paradise Valley, and the wealthy should not be favored here!

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**Edward Seiler**  
Tempe, Arizona, USA



## **02/16/2021 NEIGHBORHOOD MEETING SUMMARY**

### **SUPER STAR CAR WASH – 1139 West Broadway Road**

#### **Attendees**

Tim Varley, Super Star Car Wash  
Mark Sunkel, Super Star Car Wash  
Karen Stovall, City Planner  
Brennan Ray, Burch & Cracchiolo  
Leslie Chatburn, Burch & Cracchiolo  
15 Neighbors – See Zoom Attendees' List

#### **Introductions and Overview**

- Site is approximately 1.33 acres.
- Compatible with General Plan for Mixed-Use Industrial designation.
- Zoned GID (General Industrial District) which allows for car washes with the approval of a Use Permit.
- Compatible with surrounding area which is primarily industrial south of Broadway Road with various commercial and multi-residential on the north side of Broadway Road.
- Broadway Road is a major arterial street designed to carry a heavy amount of traffic with 3 lanes on the north and 2 lanes on the south and it eventually connects to the I-10.
- Circulation routes have been designed to move vehicles with ease throughout the property.
- It is a self-service facility.
- Operating hours 7:00 a.m. – 8:00 p.m. 7 days a week.
- Vacuum stalls will be located west of the tunnel.
- Have intentionally designed the blowers to be recessed into the tunnel at the exit point and have also extended the sidewalls to mitigate the noise.
- 15' of the tunnel will have acoustic blocked lining that will also mitigate the noise.
- State-of-the-art blowers will be installed with noise damping design and technology. They are three times more expensive than the traditional blowers.
- Vacuum motors will be in a fully enclosed equipment room that will also mitigate the noise.
- Car wash will generate less trips on average than the fast-food restaurant that closed last year.
- A noise study was performed by MD Acoustics to determine impact of the car wash on the surrounding area.
- Noise requirements can be found in the City's Zoning Ordinance.
- Existing noise from Broadway Road is about 60 decibels. Was measured about 280' north of Broadway Road.
- The highest amount of noise generated from the car wash ends at our property line.
- Further north of Broadway Road, the noise dissipates.
- Based upon the noise study conducted, the car wash is in compliance with the City's code for a Use Permit.
- The distance from the edge of the tunnel to the residential property line north of Broadway Road is approximately 370'.

- The impact on the adjacent single-family residences to the north are going to be mitigated by the design of the building and the state-of-the art technology being installed.

**Questions, Answers and Comments**

1. The Chair of the Homeowner’s Association (“the Chair”) recognizes that hosting a neighborhood meeting was not required and is appreciative for being given the opportunity for the neighbors to share their comments and concerns.
2. The Chair commented the neighbors fought against a very similar project, not a car wash, approximately two blocks from this Site on Broadway Road and won.
3. The Chair is not against car washes generally, but feels this location is too close to residential properties and not an appropriate location for a car wash.
4. The Chair commented he does not believe the car wash meets the criteria for a Use Permit nor does it meet the City’s vision for this area to be more pedestrian and bicycle friendly.
5. The Chair commented that this section of Broadway Road has been designated by the City as being one of the most dangerous roads for causing vehicle accidents and pedestrian deaths or injuries.
6. Are the state-of-the art blowers that are going in at this Site the same blowers that are being used at your other location in South Tempe on Warner Road?  
**A. We don’t believe they are. The closest location where you can find something similar are being used of Hunt Highway in San Tan Valley.**
7. Are the blowers going to be positioned at the northern portion of the building where the cars exit, so the noise will project towards Broadway Road?  
**A. The noise study has been provided to the City. Where the readings were taken, the study presumed all the blowers are running at the same time and all the vacuums were turned on, which is very unlikely would ever happen. The study looked at the worse-case scenario.**
8. Chair comments they are skeptical of this study as they measured the decibels across the street from the Super Star Car Wash on Warner Road and it measured over 70 decibels.  
**A. The car wash on Warner and Priest Roads was not built by Super Star Car Wash. It was bought from a different company and uses different equipment than what is going in on our Site.**
9. There was a question about whether there will be access to the Ace Hardware from the car wash.  
**A. We don’t have an answer on that right now, but we will get back to you with an answer to this question.**
10. A neighbor who had to leave the meeting expressed her opposition to the car wash because of the noise and that there are plenty of other good car washes nearby.
11. Who will address responsibility if the car wash’s design does not meet the City’s criteria for a Use Permit?  
**A. Tempe’s Code has provisions if the car wash violates the noise ordinance. If the code is not being complied with, a notice of violation will be issued. The car wash would then take the necessary steps to make sure it is in compliance with the City’s ordinances. If they do not comply, then the City could revoke the Use Permit.**

12. Will our property value be affected by the car wash going in?  
**A. From speaking with real estate professionals, we are told that the biggest impact on property values is the fear of the unknown. This is a known development in a developed area (industrial) where the closest single-family residence is 370± feet from the end of the tunnel.**
13. The Chair comments that it is his opinions, as a realtor, that the property values of the homes closest to the car wash, will be affected, as will the apartment complex across the street which, in his opinion, will affect their quality of living for its residents and less desirable for its tenants.  
**A. We believe we are meeting the noise criteria. Our tunnel is over a football field away to the nearest residential property line, so there is a considerable amount of distance between the car wash and the majority of the homes. The Site is also tucked in between two existing uses. We don't believe the car wash will contribute to deteriorating the neighborhood or decreasing property values. Our Site is consistent with the General Plan.**
14. Are you implying that the noise from the car wash will be equal to or less than the noise from the traffic on Broadway Road?  
**A. Our noise consultant has concluded that you will have more noise from Broadway Road than you will from this car wash based upon the decibel readings.**
15. What about water usage and disposal of the water?  
**A. I don't know the answer to that, so I will get back to you.**
16. Who do we contact for a copy of the traffic study report?  
**A. We will look into this and get back with you.**
17. Has the City already approved the car wash going in?  
**A. No, it hasn't been approved as of yet. As previously stated, we are not required to have a neighborhood meeting during this process. This was something that Super Star Car Wash elected to do so as to respond to some of your concerns. We filed two applications, one is a Use Permit and a Development Plan Review to approve the Site Plan, building elevations, landscape plan, etc. We were initially scheduled to be heard by the Development Review Commission on January 26, 2021, but that was continued to February 23, 2021. Because the Development Review Commission is a public hearing, there will be an opportunity to comment at that hearing.**
18. The Chair urges that the application for approval of the car wash be withdrawn because the neighborhood is going to fight this and are confident they are going to win. If the DRC does not make the right decision, then they plan to appeal it. The City Council already set a precedent couple of years ago ruling in favor of the neighborhood who opposed a car wash going in at a nearby location. A car wash should not be this close to a residential area.

End of Meeting.