

OFFICIAL RECORDS OF  
MARICOPA COUNTY RECORDER  
HELEN PURCELL  
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ELECTRONIC RECORDING  
ORDINANCE677-12-1-1--,N

**ORDINANCE NUMBER 677**

**AN ORDINANCE OF THE TOWN OF PARADISE VALLEY, ARIZONA, APPROVING AN INTERMEDIATE AMENDMENT TO THE SPECIAL USE PERMIT FOR PHOENIX COUNTRY DAY SCHOOL, 3901 E STANFORD DRIVE, PROVIDING FOR THE EXPANSION OF GYMNASIUM FACILITIES, AN ASSOCIATED SHADE STRUCTURE, PERIMETER FENCING AND LANDSCAPING; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.**

WHEREAS, the Town of Paradise Valley Planning Commission held a public hearing on May 6, 2014, in the manner prescribed by law, for the purpose of considering an amendment to the Special Use Permit for Phoenix Country Day School, and recommended approval to the Town Council; and

WHEREAS, the Town of Paradise Valley Council held a public hearing on June 26, 2014, in the manner prescribed by law, to hear and to take action on the amendment to the Special Use Permit for Phoenix Country Day School, as recommended by the Planning Commission; and

WHEREAS, the Town Council finds that the Applicant met the requirements of Section 2-5-2.F, Citizen Review Process, including holding a Citizen Review Session on Wednesday, April 16, 2014 to provide a reasonable opportunity for the Applicant, adjacent landowners, and other potentially affected citizens to discuss issues or concerns they may have with the Application.

**NOW, THEREFORE, BE IT ORDAINED BY THE MAYOR AND TOWN  
COUNCIL OF THE TOWN OF PARADISE VALLEY, ARIZONA THAT:**

**SECTION I. In General**

1. The Special Use Permit for the Phoenix Country Day School is on the land legally described as the northeast quarter of the southeast quarter of Section 13, Township 2 North, Range 3 East of the Gila and Salt River Base and Meridian, Maricopa County; except the north 33 feet and east 40 feet for roadways (Assessor's Parcel Numbers 170-09-001A and 170-09-001B).
2. The Special Use Permit for Phoenix Country Day School is hereby amended to permit the expansion of the school's gymnasium facilities, an associated shade structure, perimeter fencing and landscaping, subject to the stipulations set forth in Exhibit 'A', attached hereto.
3. The existing Special Use Permit for Phoenix Country Day School for use of such land as a private academic school and related educational facilities, providing instruction for Grades K through 12, with lower, middle and upper schools, along with its existing Special Use Permit stipulations as set forth in Exhibit 'A' and the summary of prior amendments listed in Exhibit 'B', attached hereto, shall remain in full force and effect.
4. This intermediate amendment to the Special Use Permit for Phoenix Country day School is in accordance with Section 1102.7 of the Zoning Ordinance.

SECTION 2. Severability. If any section, subsection, sentence, clause, phrase or portion of this ordinance is for any reason held invalid or unconstitutional by a court of competent jurisdiction, such portion shall be deemed a separate, distinct and independent provision and such holding shall not affect the validity of the remaining portions thereof.

SECTION 3. Effective Date. This ordinance shall become effective at the time and in the manner prescribed by law.

PASSED AND ADOPTED by the Mayor and Town Council of the Town of Paradise Valley, Arizona, this 26th day of June, 2014.

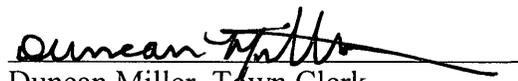


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Scott P. LeMarr, Mayor

SIGNED AND ATTESTED TO THIS 26 DAY OF June 2014

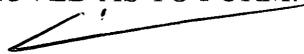
ATTEST:



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Duncan Miller, Town Clerk

APPROVED AS TO FORM:



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Andrew M. Miller, Town Attorney



**EXHIBIT A  
TO  
ORDINANCE NUMBER 677**

**Stipulations**

**TOWN OF PARADISE VALLEY  
SPECIAL USE PERMIT FOR PHOENIX COUNTRY DAY SCHOOL  
SUP-14-01**

**NEW STIPULATIONS**

1. All improvements to the property shall be in substantial compliance with the following:
  - a. Project Narrative, prepared by Rose Law Group and dated June 18, 2014;
  - b. Traffic Impact Statement, prepared by CivTech Inc. and dated April 21, 2014, Traffic Impact Statement, prepared by CivTech Inc. and dated June 16, 2014, and Traffic Impact Analysis, prepared by CivTech Inc. and dated June 18, 2014;
  - c. Sheet SUP-1, Campus Plan, prepared by Architekton and dated June 17, 2014;
  - d. Sheet SUP-2, Project Plan, prepared by Architekton and dated April 21, 2014;
  - e. Sheets SUP-3, SUP-3.1 and SUP-4, Fence Plan, prepared by Architekton and dated April 21, 2014 and June 17, 2014 (SUP-3.1);
  - f. Sheets SUP-5 and SUP-6, Section and Elevations, prepared by Architekton and dated April 21, 2014;
  - g. Finish Floor Elevation Plan prepared by Architekton, Knoell & Quidort, and CVL Consultants and print dated March 18, 2014;
  - h. Sheet PR100, Landscape Plan, prepared by Architekton, Knoell & Quidort, and CVL Consultants and print dated March 5, 2014;
  - i. Sheet ES-1, Electrical Site Photometry, prepared by Architekton and Henderson Engineers Inc. and dated April 8, 2014; and
  - j. Sheet ES-2, Photometric Lighting Cut Sheets, prepared by Architekton and Henderson Engineers Inc. and dated April 8, 2014.
2. Prior to issuance of any building permit for fencing or other structures within the Arizona Canal Diversion Channel, the applicant shall provide the Town's Building Official, or designee, verification that the Flood Control District of Maricopa County is acceptable to the type and details of structures proposed.
3. Special event(s), or multiple events occurring at the same time/date, that are expected to exceed the capacity of the 445 on-site parking spaces and the overflow capacity onto the adjoining property at 3902 E Stanford Drive (Camelback Bible Church) shall be prohibited, unless mitigation measures can be demonstrated to the Town's Community Development Director, or designee.
4. All existing Special Use Permit stipulations shall remain in full force and effect, unless changed or modified by the Intermediate Amendment SUP-14-01.

**EXISTING STIPULATIONS In the case of discrepancies between approved plans, those with a later date shall take precedence.**

**General Provisions**

1. The development, construction, and usage of the Property shall be in strict compliance with those certain documents and plans marked and certified by the Paradise Valley Town Clerk as:
  - a) Overall Campus Plan, prepared by Knoell & Quidort Architects, dated February 23, 2005 as amended by Sheet SUP-1, Overall Campus Plan, prepared by Knoell & Quidort Architects, dated February 19, 2010 , and Sheets SUP-1, Overall Campus Plan, prepared by Knoell & Quidort / Architekton dated October 30, 2013, December 31, 2013 and March 31, 2014;
  - b) Elevations of Athletic Facility (building 'W'), prepared by Peter A. Lendrum Associates, dated January 7, 1985;
  - c) Elevations of Music Building (building 'L'), prepared by Peter A. Lendrum Associates, dated January 7, 1985;
  - d) West elevation of Business Office Building (building 'A'), prepared by Peter A. Lendrum Associates, dated January 7, 1985;
  - e) Elevations for buildings 'S' and 'Q', prepared by Gabor Lorant Architects, Inc., dated July 21, 1983;
  - f) Elevations and Plan for building 'N', Sheet A.1.1, dated February 28, 1994 by Knoell & Quidort Architects;
  - g) Parking Lot Layout of Lots 1, 2, 3, and 7, dated February 9, 1994 by Evans, Kuhn, and Associates;
  - h) Parking Lot Landscaping Plan – Lots 1, 2, and 3, dated February 28, 1994, by the Planning Center;
  - i) Floor Plan and Elevations for building 'O', prepared by Knoell & Quidort Architects, dated May 3, 1996, revised on June 27, 1996;
  - j) Elevation and Plan for the monument entry sign located at the southwest corner of the Stanford Drive and 40<sup>th</sup> Street intersection, prepared by Mark Inc. Landscape Developers, dated August 21, 1985;
  - k) Floor Plan and Elevations for buildings 'P', 'Q', 'R', 'S', 'T', 'U', and 'V', Sheets A-2, A-3, A-4, 5, 6, and A-7, prepared by Knoell & Quidort Architects, dated March 30, 2000 and revised through January 16, 2001;
  - l) Landscaping of the Upper Campus, Sheets L-1.0 through L-1.5 and Sheets L-2.0 through L-2.3, prepared by Ten Eyck Landscape Architects, dated January 15, 2003;
  - m) New fencing, student drop off area, guardhouse, and overflow parking area located in and around Parking Lot 6, Sheet SUP 1 and Sheet A-1, prepared by Knoell & Quidort Architects, dated January 28, 2004;
  - n) Landscape Plan for Parking Lot 6 and overflow parking area, Sheet L1, prepared by Gordon Wayne Jones, dated January 26, 2004;
  - o) Project Narratives
    - i. Project Narrative dated January 24, 2005 submitted with the SUP Amendment approved April 4, 2005;
    - ii. Project Narrative prepared by Rose Law Group dated November 1, 2013;
    - iii. Project Narrative prepared by Rose Law Group dated January 2014 and April 23, 2014;
  - p) Landscape Plan along Stanford Drive and for the areas around buildings 'F', 'G', 'H', and 'M', Sheets L1 through L4, prepared by Gordon Wayne Jones ASLA Architects, dated March 8, 2005;

- q) Floor Plan and Elevations for buildings 'F', 'G', 'H' and 'M', prepared by Knoell & Quidort Architects, Sheet 2, dated December 16, 2004, and Sheets 3 and 4, dated November 9, 2004;
- r) Photometric Plan of the West Campus, Sheets PH-1 and PH-1.1, prepared by Knoell & Quidort Architects, dated November 11, 2004;
- s) Sheet A-1, Buildings B & C, prepared by Knoell & Quidort Architects, dated February 19, 2010;
- t) West Wall Screen Elevation of Building B, prepared by Knoell & Quidort Architects, submitted with the managerial amendment issued March 16, 2010;
- u) Building 'X', Aquatic Center, and nearby area
  - i. Sheet SUP-2, Project Area, prepared by Knoell & Quidort Architects and dated October 30, 2013;
  - ii. Sheet SUP-3, Elevations Plan, prepared by Knoell & Quidort Architects and dated October 30, 2013;
  - iii. Sheet LP.001, Preliminary Landscape Plan, prepared by CVL Consultants and dated October 31, 2013;
  - iv. Sheet GP-001, Preliminary Grading Plan, prepared by CVL Consultants and dated October 29, 2013;
  - v. Sheet DP-001, Demolition Plan, prepared by CVL Consultants and dated October 29, 2013;
  - vi. Sheet ES-100, Electrical Photometric Site Plan, prepared by Luminous Design Concepts, LLC and Neptune Engineering, and dated October 29, 2013;
  - vii. Sheet ES-101, Light Fixture Cut Sheets, prepared by Luminous Design Concepts, LLC and Neptune Engineering, and dated October 29, 2013;
  - viii. Sheet ES-102, Light Fixture Cut Sheets, prepared by Luminous Design Concepts, LLC and Neptune Engineering, and dated October 29, 2013;
  - ix. Sheet SUP-3, Elevation Plan (shade canopy for aquatic center), prepared by Knoell & Quidort / Architekton and dated January 10, 2014;
  - x. The Trenwyth masonry units material palette and the McNichols expanded metal fencing material palette (regarding the shade canopy).
  - xi. Sheet AE-101C, Shade Canopy Plan and Section, prepared by Knoell & Quidort Architekton, dated March 27, 2014 (updates the managerial amendment plan issued January 24, 2014);
  - xii. Sheet S100C, Shade Foundation & Roof Framing Plan, dated March 27, 2014, prepared by Knoell & Quidort Architekton;
  - xiii. Sheet ES-101C, Electrical Shade Canopy Plan, dated March 31, 2014, prepared by Knoell & Quidort Architekton; and
  - xiv. Grande RM4DOD Recessed Ceiling Outdoor lighting specification sheets, prepared by Metalume (regarding shade canopy).

- v) Parking and Traffic Studies
  - i. Parking Analysis, prepared by CivTech and dated October 30, 2013;
  - ii. Traffic Impact Analysis, prepared by CivTech and dated October 2013;
- w) Drainage Studies
  - i. Drainage Memorandum, prepared by CVL Consultants and dated October 2, 2013;

The above plans and documents are incorporated into this Special Use Permit and made an integral part hereof.

- 2. If the Property is used or developed in a manner inconsistent with the terms of this Special Use Permit, this Special Use Permit may be terminated in its entirety by the Paradise Valley Town Council, or the Council may in its discretion and in lieu of termination and revocation, upon determination that a violation of the terms and conditions has taken place, after fair notice, a hearing and a reasonable opportunity to correct, impose a sanction in an amount not to exceed the maximum amount allowed for violations of the Town Zoning Ordinance for each day such violation exists.
- 3. This Special Use permit shall be binding on the Grantee, its assigns and successors-in-interest.

#### **Permitted Uses**

- 4. The Property shall be used for a private academic school and related educational facilities only, providing instruction for Grades K through 12, with lower, middle and upper schools. The maximum upper school enrollment shall not exceed 50% of the total school enrollment. No changes, expansions, additions, or alterations to the property or improvements thereon shall be allowed without an express written amendment to this Special Use Permit
- 5. The pool and appurtenant dressing rooms will be used solely for the Grantee's physical education program and related uses and for not-for-profit intermittent group use and for not-for-profit scheduled group use only as a training facility. Grantee will not at any time sell or offer for sale memberships in a swim club or similar undertaking relating to the use of its pool and the appurtenant dressing rooms. There shall be no activities with regard to the swimming pool and related uses later than **9:30 p.m.**
- 6. The tennis courts will be used solely for Grantee's physical education program and related uses, and for non-commercial intermittent group use. Grantee will not at any time sell or offer for sale memberships in a tennis club or similar undertaking related to the use of the tennis courts.
- 7. Total potential enrollment at the School shall be limited to no more than 1000 students enrolled at any one time.
- 8. The use of the auditorium shall be restricted to school and school sponsored activities only.
- 9. The use of the Property shall at all times conform to all applicable State laws and Town ordinances, except that if there is a conflict between this Special Use Permit and any Town ordinance or other requirement, this Special Use Permit shall prevail.

### **Lighting**

10. Outdoor lighting is prohibited except as depicted on the approved plans listed under General Provisions, and as provided under Lighting of this Ordinance ~~is~~.
11. Outdoor lighting for building 'X', Aquatic Center, shall comply with the plans approved under General Provisions of this Ordinance. The aquatic center lights shall be turned off no later than 9:30 p.m..
12. The lights placed in parking lots 1, 2, and 3 must not be higher than ten feet, shall; be placed as shown in the plans dated February 9, 1994 by Evans, Kuhn, and Associates, shall be high pressure sodium lamps with the brightness and effective distance specified in the plans.
13. Except for security lights, all outside lighting must be off unless needed for activities.

### **Landscaping**

14. All landscaping shall be maintained in a healthy, neat, clean and weed-free condition. All dead plant materials shall be replaced with live plant materials of like kind and quality.
15. Undeveloped land shall be maintained in a neat condition at all times.

### **Phased Improvements**

16. A San Diego buff colored salt finished concrete recreation path per Town standards and landscaping consistent with Town Landscaping Guidelines in effect at the time the work is done shall be installed along Stanford Drive at such time as the Town directs.

### **Development Standards**

17. There shall be a parking setback of twenty (20) feet from any non-residential property line and sixty (60) feet from any residential property line with the exception of the parking adjacent to existing building 'Y' as shown on the Overall Campus Plan. The area within the setback shall be landscaped.
18. Grantee shall have a maximum of three (3) signs for a total of forty-five (45) square feet.
19. All construction shall be planned in such a way that all structures at any point shall not be farther than 150 feet from a hard surface, per the 1979 Uniform Fire Code, Section 10.207 as amended.
20. All buildings shall be one story and shall conform to the heights shown in the approved plans listed under stipulation 2.
21. Mechanical equipment shall not be visible from outside the property at ground level.
22. The surface material of parking lots 1, 2, and 3 must be asphalt.
23. The finished floor elevation of building 'N' must be measured from the lowest natural grade in the area of the building or the finished grade as prescribed by the Flood Control District improvements on the Grantee's campus. This is the same requirement established for building 'T'.
24. No permanent structures may be constructed within the drainage basin.
25. The applicant must provide the Town with a drawing including elevations and details of any proposed temporary structures before installation.
26. There shall be no outdoor storage of material located within the walled area adjoining the guardhouse and on the landscape tract where the guardhouse is located.
27. The drive aisles in the parking areas shall maintain a minimum 20-foot clearance at all times.

### **Ongoing Operations Restrictions**

28. The Grantee shall be required to maintain the landscaping along the right-of-way of both street frontages of its Property, and including the area of the wash crossing on Stanford Drive.

29. The overflow parking area shall be used only during special events, with the two access gates to remain closed when the overflow area is not in use.
30. The score board shall only be used for swim events.
31. The Aquatic Center P.A. System shall only be used for swim events and must comply with the Town of Paradise Valley noise ordinance.
32. There shall be at least one person at the School at all operational times who have been thoroughly briefed on the provisions of this Special Use Permit and who has the authority to resolve all problems related to compliance with this Special Use Permit. All calls from Town residents to the Town or School, regarding noise or disturbances shall be referred to and addressed by such person(s).

**EXHIBIT B  
TO  
ORDINANCE NUMBER 677**

**Summary of Prior SUP Amendments**

**TOWN OF PARADISE VALLEY  
SPECIAL USE PERMIT FOR PHOENIX COUNTRY DAY SCHOOL  
SUP-14-01**

- **July 27, 1972:** to alter the location of the swimming pool and related accessory buildings from its original location.
- **July 5, 1973:** to allow for the construction of eight tennis courts, to provide that the tennis courts be used solely for school purposes only, and to cap the maximum number of students at 460.
- **August 12, 1976:** to add a student lounge on site.
- **May 11, 1978:** to replace an existing frame storage structure with a new 76-foot block storage structure.
- **June 22, 1978:** to construct a new entrance to the school from Stanford Drive.
- **June 12, 1979:** to amend the “Nature of Use” section of the Special Use Permit to allow both the pool and appurtenant dressing rooms to be used solely for the school’s physical education program and related uses and for intermittent group use and for scheduled group use only as a training facility.
- **July 26, 1979:** to replace original exhibits with two new exhibits, including a site plan. This amendment also allowed the parking facilities and classroom facilities to be used by the Camelback Bible Church on Sundays.
- **December 20, 1979:** to clarify exhibits approved in the July 26, 1979 Special Use Permit.
- **June 26, 1980:** to substitute the site plan dated December 20, 1979 with a revised site plan dated May 1980.
- **June 25, 1981:** to replace exhibits from previous amendments, with plans dated March 1981 including a site plan, elevation plan, floor plan, and drainage and grading plan. The amendment also limited outdoor lighting for the pools for night swimming; the deck area around the pools; and the walkways to the parking lot. The amendment prohibits the school from selling memberships in a swim or tennis club and from holding swimming activities beyond 11:00 p.m.
- **August 25, 1983:** to amend the dates of “Exhibits A and B” from March 1981 to July 21, 1983.
- **June 24, 1984:** to amend the site plan to construct two outdoor covered sitting areas on the property.
- **January 10, 1985:** to replace exhibits approved in the 1983 Special Use Permit with new plans including a master plan and elevations.
- **November 12, 1992:** to add a proposed master plan development east of the wash that bisects the subject property; to allow enrollment for grades K through 12 with lower, middle, and upper schools, to cap the maximum upper school enrollment to 50% of the total school enrollment and the maximum number of all students to 1,200; to replace all dead plants and to maintain all new landscaping and undeveloped land; to place time deadlines for all landscaping and irrigation improvements, the construction of playing fields in the Cudia City Wash, the six-foot meandering recreation path, the construction of the new science building and parking lots, and the permanent paving of the then unpaved parking lots. The Special Use Permit also applied conditions including setbacks requirements; submission of a letter

from the Army Corp of Engineers and the Maricopa County Flood Control District authorizing construction in the wash area; adherence to 1979 Uniform Fire Code; and limitation on the height of lighting to two feet with proper shielding.

- **January 13, 1994:** to extend the deadline for the installation of interim paving to comply with Environmental Protection Agency requirements.
- **April 14, 1994:** to rescind approval of the proposed master plan development east of the wash from the 1985 Special Use Permit and the Parking Lot Landscaping Plan dated February 28, 1984; to add stipulations including the measurement of the finished floor for building 'N', the color and finish of the recreation path, parking lot lighting specifications, a time limit and surface materials for parking lot improvements, restrictions on lighting except for security lighting, and the development of a traffic plan for Stanford Drive between the school and the Camelback Bible Church.
- **August 29, 1996:** to approve "Exhibit I" as a new master plan dated May 3, 1996 and to authorize the relocation of two proposed buildings and construction of building 'O'.
- **September 10, 1998:** to construct a new fence around building 'H' on Stanford Drive for safety purposes and to allow an existing gate located southwest of building 'Y'.
- **June 20, 1999:** to reduce the number of playing fields in the drainage basin.
- **March 22, 2001:** to approve construction of building 'U' to be used for art instruction, to remodel the use of building 'P' from art instruction to a library, to add a computer lab in building 'R', to add administrative offices in building 'Q', and to construct building 'V' to be used as an auditorium.
- **February 17, 2004:** to approve a minor amendment for new 6-foot high wrought iron fencing along the south and east property line, replacement of an existing guardhouse in Parking Lot #6, a new student drop off drive in Parking Lot #6, and a stabilized decomposed granite overflow parking area south of Parking Lot #6.
- **April 4, 2005:** to amend the Special Use Permit providing for renovation of existing classroom buildings 'F', 'G', 'H', 'J' and 'M', installation of new playground equipment, installation of new outdoor tensile shade structures, improvements to existing landscaping and outdoor lighting, and improvements to site infrastructure.
- **September 18, 2007:** to approve a minor amendment to the Special Use Permit to replace building 'K'. Per the 2005 amendment to the Special Use Permit, building 'K' was to be remodeled. However, further evaluation exposed deficiencies in fire protection, restrooms, and accessibility that cannot be reasonably resolved in the existing structure.
- **March 16, 2010:** to approve a managerial amendment for additional screen wall height and tenant improvements on buildings 'B' and 'C'.
- **November 21, 2013:** to approve a minor amendment to the Special Use Permit to allow for the construction of a new aquatic center, building 'X', the relocation of the tennis courts, an updated parking lot, new fencing, new landscaping, new lights and rescinding building 'K' approved in 2007 to keep the proposed application as a minor amendment.
- **January 14, 2014:** to approve the addition of a shade canopy to the new aquatic center, building 'X', changes to the exterior of the aquatic center building and the change in pool barrier fence material.
- **March 16, 2014:** to approve a managerial amendment to the aquatic center, building 'X', approved in 2013 to add lights onto the aquatic center shade canopy.
- **June 26, 2014:** to approve building 'Z' for expansion of the school's gymnasium facilities on the location of the old aquatic center, an associated shade structure, perimeter fencing and landscaping.



June 16, 2014

Nick Labadie  
Senior Planner/Project Manager  
Rose Law Group  
7144 E. Stetson Drive, Suite 300  
Scottsdale, Arizona, 85251  
Phone: 480-240-5640  
Email: [nick@roselawgroup.com](mailto:nick@roselawgroup.com)

**RE: Phoenix Country Day School Afternoon Pick-up Circulation Statement – Phoenix, Arizona**

Dear Mr. Labadie:

The purpose of this letter is to address the proposed afternoon student pick-up circulation plan. Under current conditions the school has split pick-up circulation plans for students. The existing freshman/sophomore student pick-up area is located to the north in front of the administration office, while the junior/senior student pick-up area is located to the south near the existing pool.

With the modifications to the southeast portion of the campus the existing student/staff parking lot and pick-up area for the juniors/seniors is being reconstructed into one combined parking lot/pick-up area. The school intends to relocate the freshman/sophomore pick-up area to the reconstructed parking lot/pick-up area with the juniors/seniors. Graphics depicting the existing and proposed circulation plans are included as an **Attachment** to this statement.

**High School Student Enrollment**

**Table 1** summarizes the high school student enrollment numbers obtained from the school.

**Table 1 – High School Enrollment**

Grade	Number of Students
9 <sup>th</sup>	74
10 <sup>th</sup>	70
11 <sup>th</sup>	64
12 <sup>th</sup>	58
<b>TOTAL</b>	<b>266</b>

According to the school, there are 119 student drivers, leaving approximately 147 students to be picked up. For purposes of this analysis, 150 students will be assumed to be picked up.

### High School Queuing Length

Through observations at schools that require student pick-up and drop-off CivTech has identified an average peak queue length of 0.10 vehicles per student during the afternoon pick-up for high school students. With the Phoenix Country Day School expecting approximately 150 9<sup>th</sup> – 12<sup>th</sup> grade students to be picked up in the afternoons in the southeast parking lot/student pick-up area, this equates to approximately 15 vehicles. The average queue length of a vehicle is 25 feet, which results in a total queue length of 375 feet.

### Available On-site Queue Length

A review of the proposed site plan indicates that there is approximately 325 feet of sidewalk frontage along the pool and tennis courts for the loading of students and approximately 225 feet of queuing space between 40<sup>th</sup> Street and the loading area. The total queuing space available on site is approximately 550 feet, which exceeds the required queue storage of 375 feet.

### Conclusions

- Phoenix County Day School intends to combine the freshman/sophomore and junior/senior pick-up areas into a consolidated area in the revised parking lot in southeast portion of the campus. Graphics depicting the existing and proposed circulation plan are attached to this letter.
- The approximately 150 9<sup>th</sup> – 12<sup>th</sup> grade students that will be picked up in the afternoon will require approximately 375 feet of vehicle storage.
- The proposed parking lot will provide approximately 325 feet of sidewalk frontage along the pool and tennis courts for the loading of students and approximately 225 feet of queuing space between 40<sup>th</sup> Street and the loading area. The total queuing space available on site is approximately 550 feet, which exceeds the require queue storage of 375 feet. The queue storage is depicted on the graphics attached to this letter.

This circulation/queuing statement has been prepared to document the impact of combining the freshman/sophomore and junior/senior pick-up areas for the Phoenix Country Day School. Should you wish to discuss this information further, please contact me at (480) 659-4250.

Sincerely,

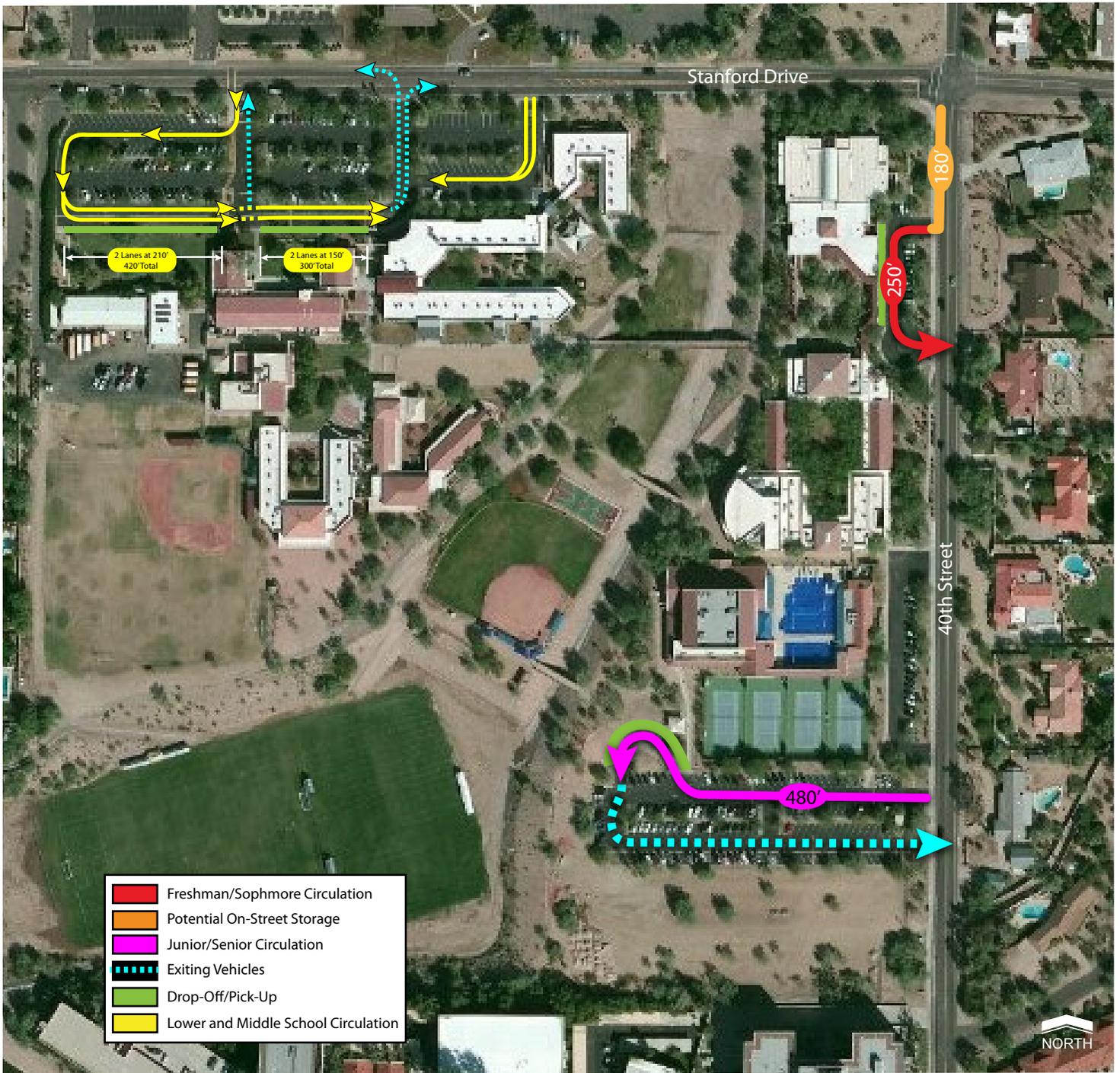
**CivTech**



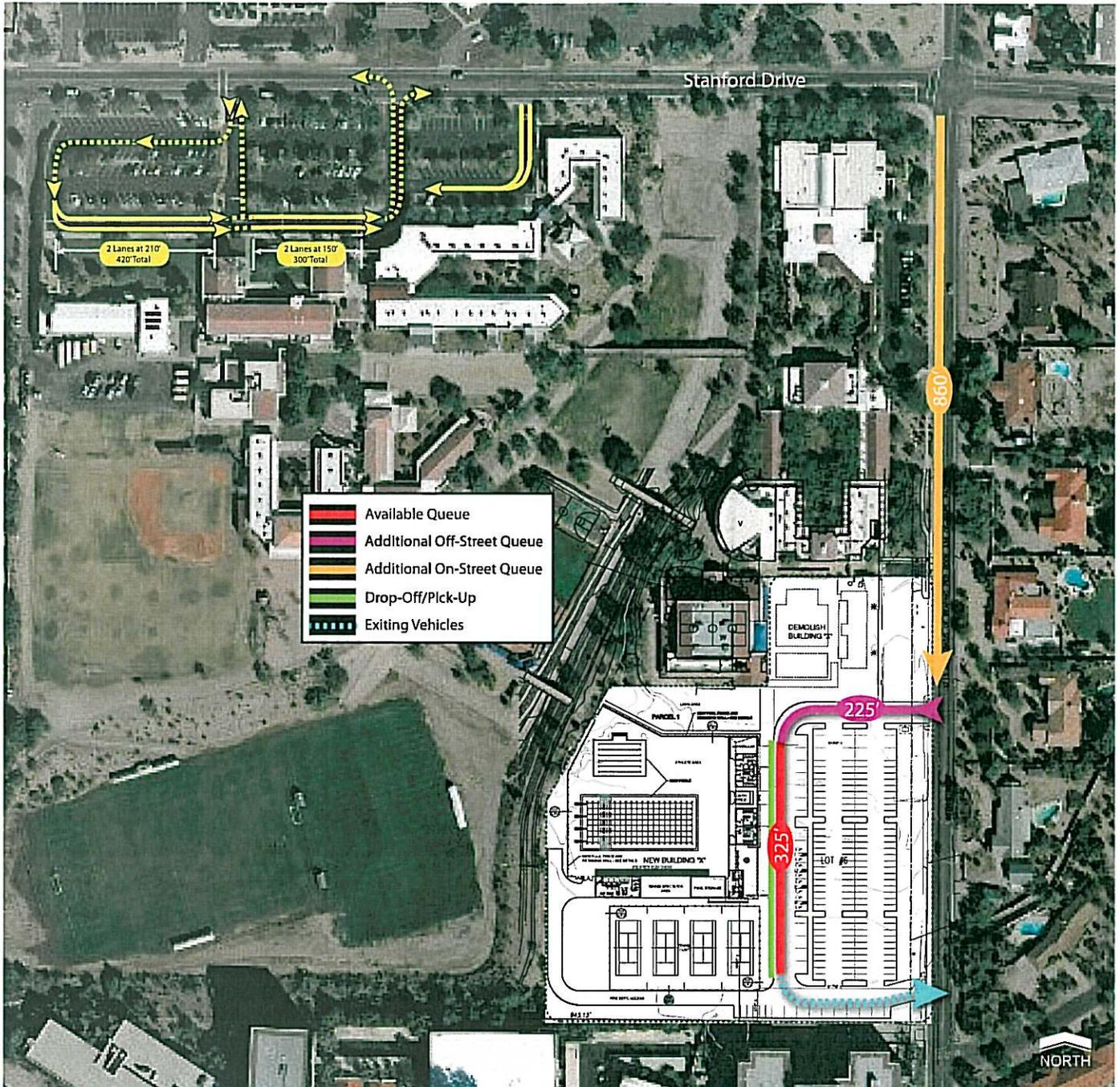
Dawn Cartier, P.E., PTOE  
Project Manager

Attachments

Existing and Proposed Circulation Plan



**Figure 4: Existing Circulation Plan**



Afternoon Pick-Up Circulation Plan



# Phoenix Country Day School

1st Submittal

Traffic Impact Analysis

Southwest Corner of 40th Street and  
Stanford Drive  
Paradise Valley, Arizona

June 2014  
Project No. 13-1134

Prepared For:  
**Knoell & Quidort Architects**  
3807 North 24th Street, Suite 200  
Phoenix, Arizona 85016

For Submittal To:  
**Town of Paradise Valley**

Prepared By:



10605 North Hayden Road  
Suite 140  
Scottsdale, Arizona 85260  
480-659-4250

# PHOENIX COUNTRY DAY SCHOOL EXPANSION TRAFFIC IMPACT STUDY

**Southwest Corner of 40<sup>th</sup> Street and Stanford Drive  
Paradise Valley, Arizona**

**Prepared for:**

Knoell & Quidort Architects  
3807 North 24<sup>th</sup> Street, Suite 200  
Phoenix, Arizona 85016

**For Submittal to:**

Town of Paradise Valley

---

**Prepared By:**



CivTech, Inc.  
10605 North Hayden Road  
Suite 140  
Scottsdale, Arizona 85260  
(480) 659-4250



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**June 2014**

CivTech Project No. 13-1134

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## EXECUTIVE SUMMARY

This report documents a traffic impact study (TIS) performed for the proposed improvements at Phoenix Country Day School. The school is located on the southwest corner of 40<sup>th</sup> Street and Stanford Drive in the Town of Paradise Valley, Arizona. The Upper School proposes improvements to the existing gymnasium and proposes a new circulation plan. Levels of service at study intersections were analyzed based on their existing and proposed conditions.

The following conclusions and recommendations have been documented in this study.

### Planned Improvements by the Town of Paradise Valley

- The Town of Paradise Valley plans to convert the all-way stop controlled intersection of 40<sup>th</sup> Street and Stanford Drive into a roundabout.
- The city planned roundabout at the intersection of 40<sup>th</sup> Street and Stanford Drive is anticipated to operate at LOS A. Except for atypical days at the beginning of the school year, traffic is not anticipated to queue back to the future roundabout at the intersection of 40<sup>th</sup> Street and Stanford Drive.

### Proposed School Improvements

- The Phoenix Country Day School proposes to expand the existing gymnasium to the east where the old aquatics center was located.
- At the request of the Town of Paradise Valley, the circulation plan is being changed to relocate the freshman and sophomore afternoon pick-up location to be at the curb within the new main parking lot so that all Upper School students are picked up within this parking lot.
- The maximum enrollment of students at the school is not proposed to change.

### Intersection Capacity Analysis

- Under the existing conditions, all study intersections were analyzed to operate with a LOS C or better during the peak school hours.
- Under proposed conditions, all study intersections are anticipated to operate with a LOS C or better during the peak school hours.

## INTRODUCTION

The Phoenix Country Day School is located on the southwest corner of 40<sup>th</sup> Street and Stanford Drive. The Upper School proposes expansion of the gymnasium and some changes to circulation. The school is not proposing an increase in the maximum enrollment. The lower and middle schools are not proposing any changes or modifications. A location map with intersection designations is illustrated in **Figure 1**.

CivTech Inc. was previously retained by Phoenix Country Day School, producing the *Phoenix Country Day School Traffic Impact Study*, dated October 31, 2013. The traffic impact study (TIS) considered improvements that are currently under construction including construction and/or relocation of ancillary buildings sports facilities as well as expanding their main parking lot.

CivTech Inc. has been retained by Phoenix Country Day School to perform a TIS for the gymnasium and circulation improvements. The scope of the TIS will include the intersection of 40<sup>th</sup> Street and Stanford Drive, all school driveways along 40<sup>th</sup> Street and the intersection of 40<sup>th</sup> Street and Colter Street.

The study intersections will be evaluated in the existing conditions and in the proposed conditions.

## EXISTING CONDITIONS

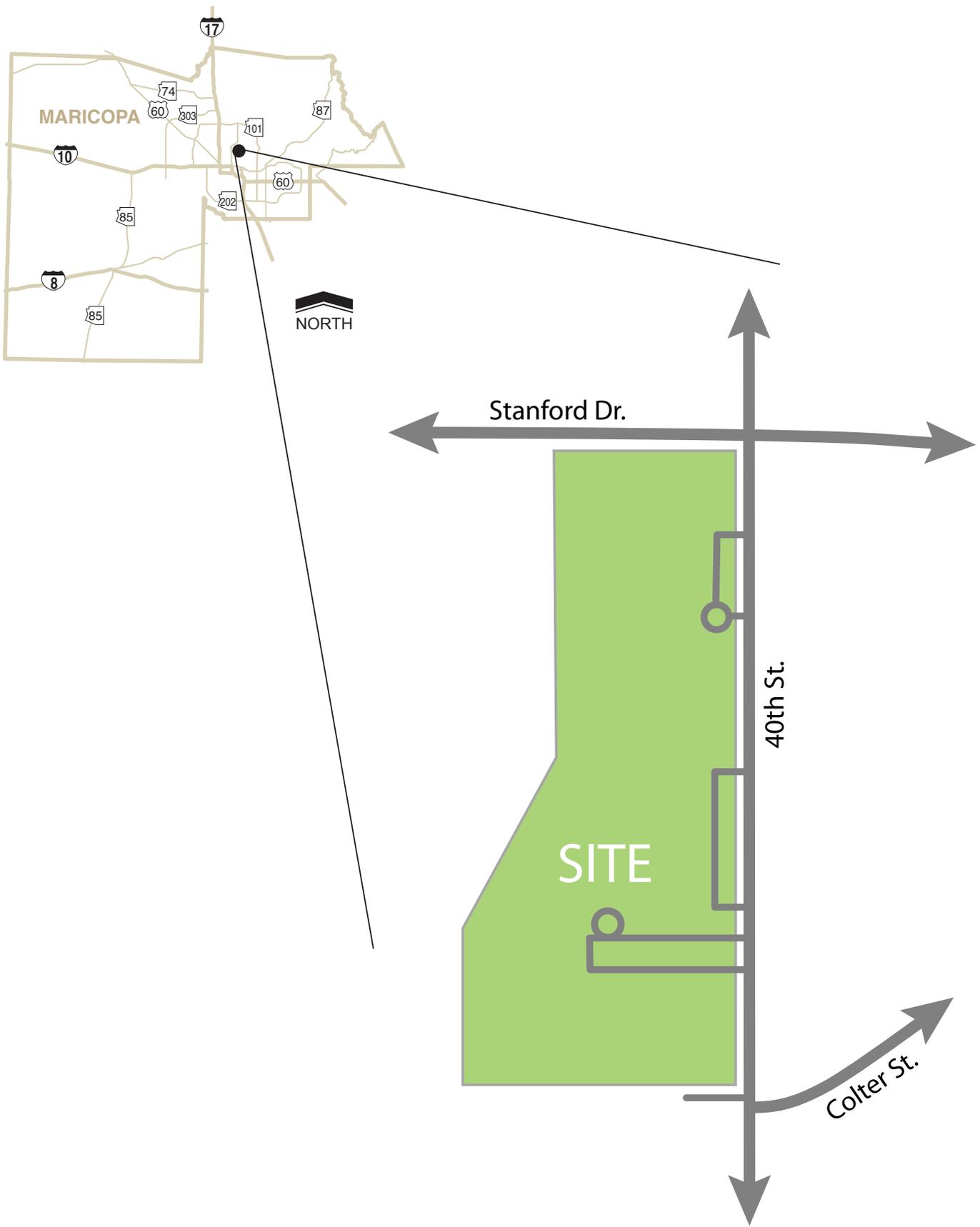
The Phoenix Country Day School is located on the southwest corner of 40<sup>th</sup> Street and Stanford Drive. The school is a private school that provides classes from pre-kindergarten to 12<sup>th</sup> grade. The lower school and middle school is located on the west side of the drainage facility that passes through the site. The upper school is located on the east side of the drainage facility. Vehicle cross access is restricted by the drainage facility; however, three (3) pedestrian bridges overpass the drainage facility to provide cross access for pedestrians.

### ***SURROUNDING LAND USE***

Camelback Bible Church is located to the north of Stanford Drive across from the lower school. Camelback Bible Church allows overflow parking on their lot when Phoenix Country Day School has hosted large events. Several commercial and office buildings exist along 40<sup>th</sup> Street to the south of the school. The Arizona Canal passes northwest-southeast forming the southwest border of the school. Phoenix Country Day School is otherwise surrounded by single family residences.

### ***ROADWAY NETWORK***

The study area includes sections of 40<sup>th</sup> Street and Stanford Drive. All site accesses that will be directly affected by the proposed mitigations located on 40<sup>th</sup> Street.



**Figure I:** Vicinity Map

**40<sup>th</sup> Street** is a north/south roadway that passes along the eastern border of the site. Paradise Valley's 2012 General Plan does not define a classification for 40<sup>th</sup> Street adjacent to the site. 40<sup>th</sup> Street is classified by the City of Phoenix as a minor collector roadway north of Camelback Road. Adjacent to and to the north of the site, 40<sup>th</sup> Street provides a bicycle lane and one (1) through lane in each direction of travel. To the south of the site, 40<sup>th</sup> Street provides a bicycle lane and one (1) through lane in each direction of travel, separated by a two-way left-turn lane. Within the study area, 40<sup>th</sup> Street has a posted speed limit of 25 miles per hour (mph).

**Stanford Drive** is an east-west roadway that passes along the northern border of the site. Paradise Valley's 2012 General Plan does not define a classification for Stanford Drive adjacent to the school. Stanford Drive is classified by the City of Phoenix as a minor collector roadway adjacent to the school. To the east of 40<sup>th</sup> Street, Stanford Drive provides one (1) through lane in each direction of travel a bicycle lane and one (1) through lane in each direction of travel. To the west of 40<sup>th</sup> Street, Stanford Drive provides a bicycle lane and one (1) through lane in each direction of travel, separated by a two-way left-turn lane.

### **INTERSECTION CONFIGURATIONS AND TRAFFIC CONTROLS**

The intersection of **40<sup>th</sup> Street and Stanford Drive** is a four-legged all-way stop controlled intersection. The north- and southbound approaches consist of a single general purpose lane. The eastbound approach consists of a shared left-turn/through lane and a dedicated right-turn lane. The westbound approach consists of a dedicated left-turn lane and a shared through/right-turn lane.

The intersection of **40<sup>th</sup> Street and the Office North Driveway** is an unsignalized ingress driveway. The north- and southbound approaches consist of a single general purpose lane.

The intersection of **40<sup>th</sup> Street and the Office South Driveway** is an unsignalized egress driveway. The north- and southbound approaches consist of a through lane. The eastbound approach consists of two unstriped general purpose lanes.

The intersection of **40<sup>th</sup> Street and the Faculty North Driveway** is an ingress driveway from 40<sup>th</sup> Street. The north- and southbound approaches consist of a single general purpose lane.

The intersection of **40<sup>th</sup> Street and the Faculty South Driveway** is an egress driveway to 40<sup>th</sup> Street. The north- and southbound approaches consist of a through lane. The eastbound approach consists of a single unstriped general purpose lane.

The intersection of **40<sup>th</sup> Street and the Parking North Driveway** is an ingress driveway to 40<sup>th</sup> Street. The north- and southbound approaches consist of a single general purpose lane.

The intersection of **40<sup>th</sup> Street and the Parking South Driveway** is an egress driveway to 40<sup>th</sup> Street. The north- and southbound approaches consist of a through lane. The eastbound approach consists of a single unstriped general purpose lane.

The intersection of **40<sup>th</sup> Street and Colter Street** is an unsignalized four-legged intersection with the east- and westbound approaches stop controlled. All approaches consist of a single general purpose lane.

The existing lane configurations and traffic controls are illustrated in **Figure 2**.

### **TRAFFIC VOLUMES**

The traffic counts that were obtained for the previously approved TIS were used in this study. The approved TIS did not include analysis or traffic counts of the office driveways as the access changes considered did not affect them. For this study, the vehicular traffic using the office driveways were approximated using student enrollment data and predicted volumes as detailed in the *Phoenix Country Day School Afternoon Pick-up Circulation Statement*, dated June 16. Existing traffic volumes conducted for this study are illustrated in **Figure 3**. Data sheets for the recorded volumes are provided in **Appendix B**.

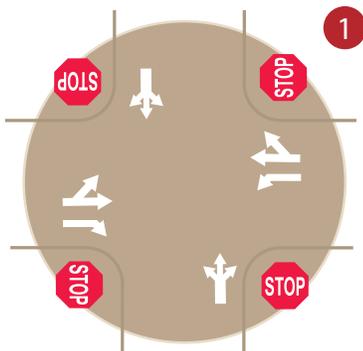
### **CAPACITY ANALYSIS**

The concept of level of service (LOS) uses qualitative measures that characterize operational conditions within the traffic stream. The individual levels of service are described by factors that include speed, travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six levels of service are defined for each type of facility for which analysis procedures are available. They are given letter designations A through F, with LOS A representing the best operating conditions and LOS F the worst. Each level of service represents a range of operating conditions. Levels of service for intersections are defined in terms of delay ranges. **Table 1** lists the level of service criteria for signalized and unsignalized intersections.

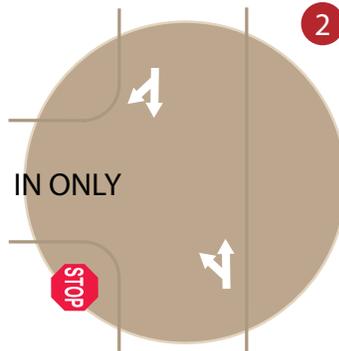
**Table 1: Level of Service Criteria**

Level of Service	Control Delay (seconds/vehicle)	
	Signalized Intersections	Unsignalized Intersections
A	≤ 10	≤ 10
B	> 10-20	> 10-15
C	> 20-35	> 15-25
D	> 35-55	> 25-35
E	> 55-80	> 35-50
F	> 80	> 50

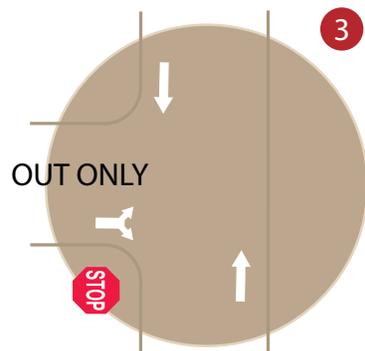
Source: Exhibit 18-4 and Exhibit 19-1, *Highway Capacity Manual 2010*



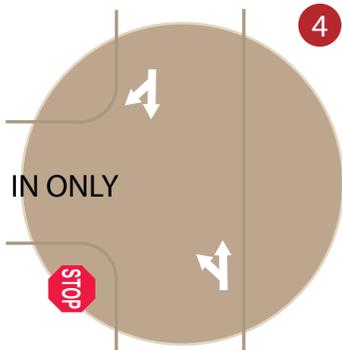
40th St. & Stanford Dr.



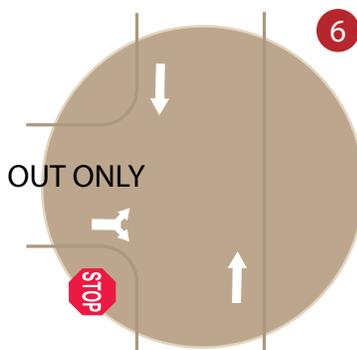
40th St. & Office North Driveway



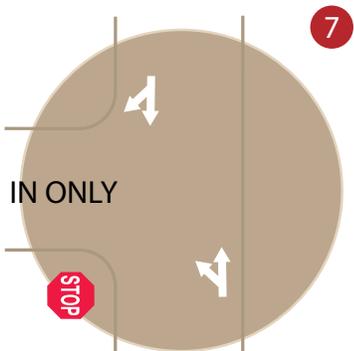
40th St. & Office South Driveway



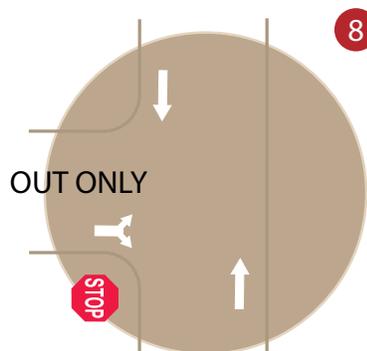
40th St. & Faculty North Driveway



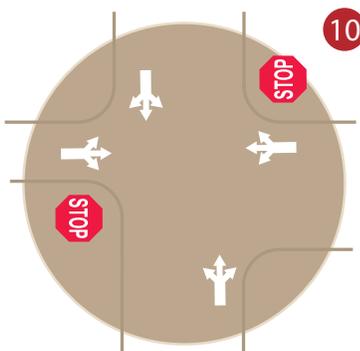
40th St. & Faculty South Driveway



40th St. & Student North Driveway



40th St. & Student South Driveway



40th St. & Colter St.

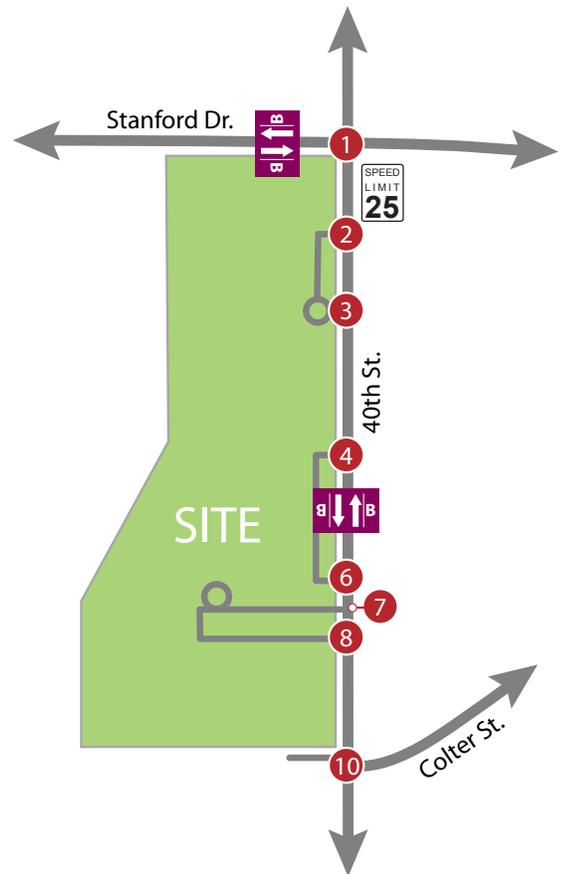
**LEGEND**

Thru or Turning Movement

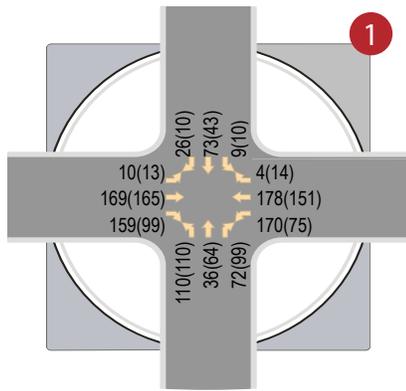
Stop Sign

B - Bike Lane

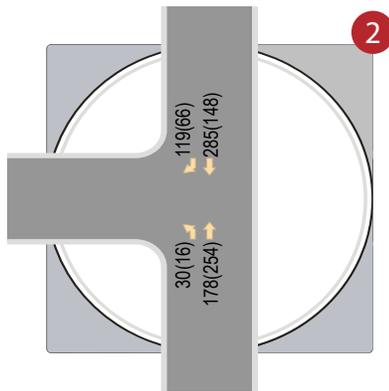
Speed Limit



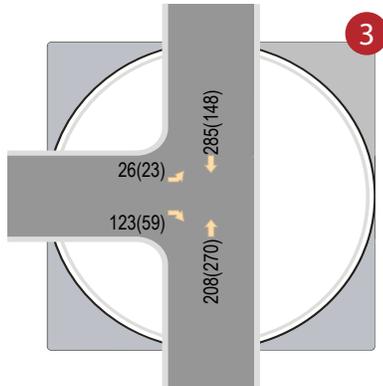
**Figure 2: Existing Intersections**



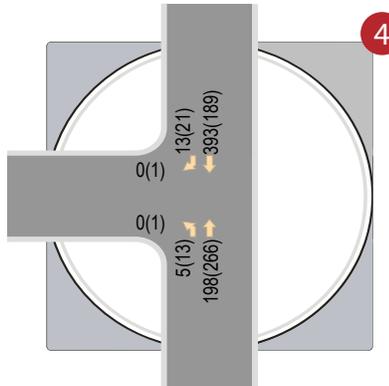
40th Street & Stanford Drive



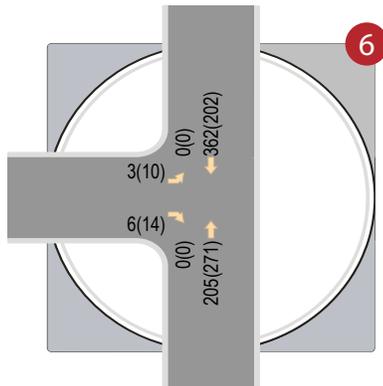
40th Street & Office North Driveway



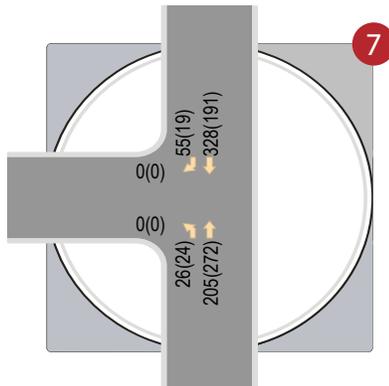
40th Street & Office South Driveway



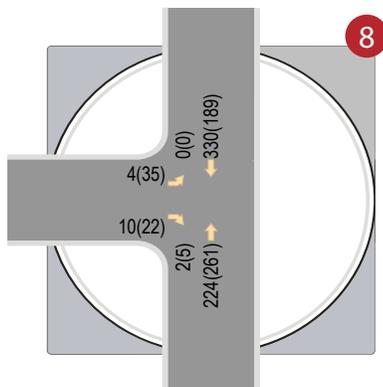
40th Street & Faculty North Driveway



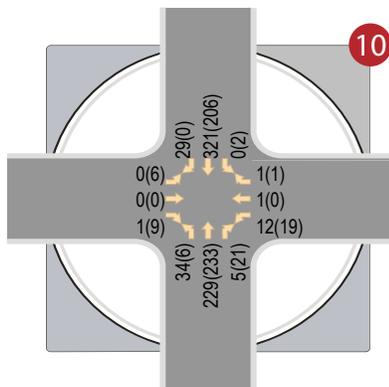
40th Street & Faculty South Driveway



40th Street & Student North Driveway

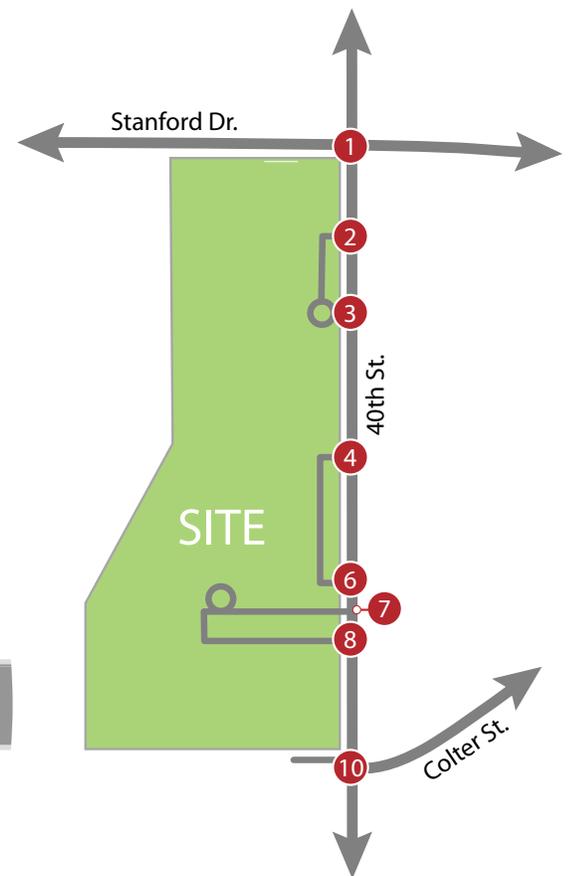


40th Street & Student South Driveway



40th Street & Colter Street

**LEGEND**  
XX(XX) - AM(PM) Peak Hour Traffic Volumes



**Figure 3: Existing Traffic Volumes**

Peak hour capacity analyses have been conducted for the study intersections based on existing intersection configurations and traffic volumes. All intersections have been analyzed using the methodologies presented in the Highway Capacity Manual (HCM), using Traffix 8.0 software. The overall and approach levels of service are reported for signalized intersections. The LOS for each stop-controlled movement is reported for unsignalized intersections. The resulting levels of service for the existing conditions are summarized in **Table 2**. The existing conditions analyses have been included in **Appendix C**.

**Table 2: Existing Peak Hour Levels of Service**

ID	Intersection	Stop Control	Approach	LOS	
				AM	School PM
1	40 <sup>th</sup> Street & Stanford Drive	All-way stop	NB shared	B	B
			SB shared	B	B
			EB left/thru	B	B
			EB right	B	A
			WB left	B	B
			WB thru/right	B	B
		<b>Overall</b>	<b>B</b>	<b>B</b>	
2	40 <sup>th</sup> Street & Office North Driveway	Ingress/1-way stop (EB)	NB shared SB shared	A A	A A
3	40 <sup>th</sup> Street & Office South Driveway	Egress/1-way stop (EB)	EB shared	B	B
4	40 <sup>th</sup> Street & Faculty North Driveway	Ingress/1-way stop (EB)	NB shared SB shared EB shared	A A --	A A B <sup>(1)</sup>
6	40 <sup>th</sup> Street & Faculty South Driveway	Egress/1-way stop (EB)	EB shared	B	B
7	40 <sup>th</sup> Street & Parking North Driveway	Ingress/1-way stop (EB)	NB shared SB shared	A A	A A
8	40 <sup>th</sup> Street & Parking South Driveway	Egress/1-way stop (EB)	NB shared SB shared EB shared	A <sup>(1)</sup> A B	A <sup>(1)</sup> A B
10	40 <sup>th</sup> Street & Colter Street	2-way stop (EB/WB)	NB shared SB shared EB shared WB shared	A A B C	A A B B

(1) Although this movement is restricted, some vehicles were recorded.

Under the existing conditions, all study intersections were analyzed to operate with a LOS C or better during the peak school hours.

## **EXISTING PARKING**

At the time the traffic counts were performed, the upper school had three (3) parking lots and dirt area used for overflow parking. All three (3) parking lots had a one-way configuration in the counter-clockwise direction. As the school is currently undergoing improvements, existing parking and circulation is in a temporary condition. The parking conditions at the time of the traffic counts is described below.

The north-most parking lot is referred to in this study as the office parking lot within the report and provides 14 total parking spaces, several of which are designated for visitors only. The egress driveway features a decorative circle allowing exiting vehicles to bypass vehicles parked along the curb. There are no proposed physical changes for the office lot.

The center parking lot is referred to in this study as the faculty parking lot within the previously approved report and provided 18 total parking spaces, all of which were designated for faculty only. The faculty parking lot was adjacent to the old aquatics center.

The southern-most parking lot is referred to in this study as the south parking lot and provided 145 total parking spaces. Students were permitted to park in the south lot, provided the cars display a school decal. Some faculty members would also park in the south lot if the faculty parking lot was fully occupied. A couple spaces were designated for visitor parking only. School staff indicated that the south lot only filled completely during large events occasionally hosted at the school. In a field review during school hours, approximately 40-55 parking stalls were empty.

The overflow parking area was a dirt lot directly to the south of the south parking lot. A gated access to the southwest corner of the south parking lot and a gated access to 40<sup>th</sup> Street provided entry/exit to the overflow when needed. Buses waiting at the school for sporting events were typically parked in the overflow. The *Phoenix Country Day School Traffic Impact Study*, dated September 27, 2004, indicated that the overflow would provide 50 parking spaces.

Phoenix Country Day School and Camelback Bible Church maintain a shared parking agreement additional parking for large events. Camelback Bible Church is located on Stanford Drive adjacent to the school. Since the church provides 307 parking spaces and the school has parking that peaks at different days of the week and times of the day, this agreement vastly increases the available parking for both uses for a large event. According to the *Camelback Bible Church Parking Summary and Matrix* letter, dated February 25, 2013 the church has a surplus of approximately 79 parking spaces during the church's typical Sunday parking peak. These 79 spaces are available for additional school parking on Sunday. A copy of the parking agreement is included in **Appendix E**.

## **EXISTING CIRCULATION**

The upper school has two official drop-off/pick-up zones. The drop-off/pick-up zone for freshmen and sophomores is approximately 225 feet in length along the west curb and the decorative circle of the parking lot in front of the office. School staff has indicated that parents dropping off students at this location will sometimes queue back onto 40<sup>th</sup> Street on days towards the beginning of the school year when some parents are not familiar with the circulation pattern. During a field review within the school's afternoon peak hour, a maximum of one vehicle was observed at any time on 40<sup>th</sup> Street waiting to enter the office parking lot. The relatively small queue was attributed to the distributed arrival pattern of the parents that was observed.

The drop-off/pick-up zone for juniors and seniors is approximately 150 feet along a one-way asphalt loop at the northwest corner of the south parking lot. A school security guard oversees the drop-off operation in the morning. A student indicated that the junior and senior drop-off queue in the morning usually does not reach midway through the parking lot and has never observed the queue reaching 40<sup>th</sup> Street. No queuing was observed on 40<sup>th</sup> Street at the south parking lot during the afternoon field review.

Although it is not sanctioned by the school, some parents will drop-off and/or pick-up students along the curb of the faculty parking lot.

The existing circulation plan is depicted in **Figure 4**.

## **PROPOSED IMPROVEMENTS**

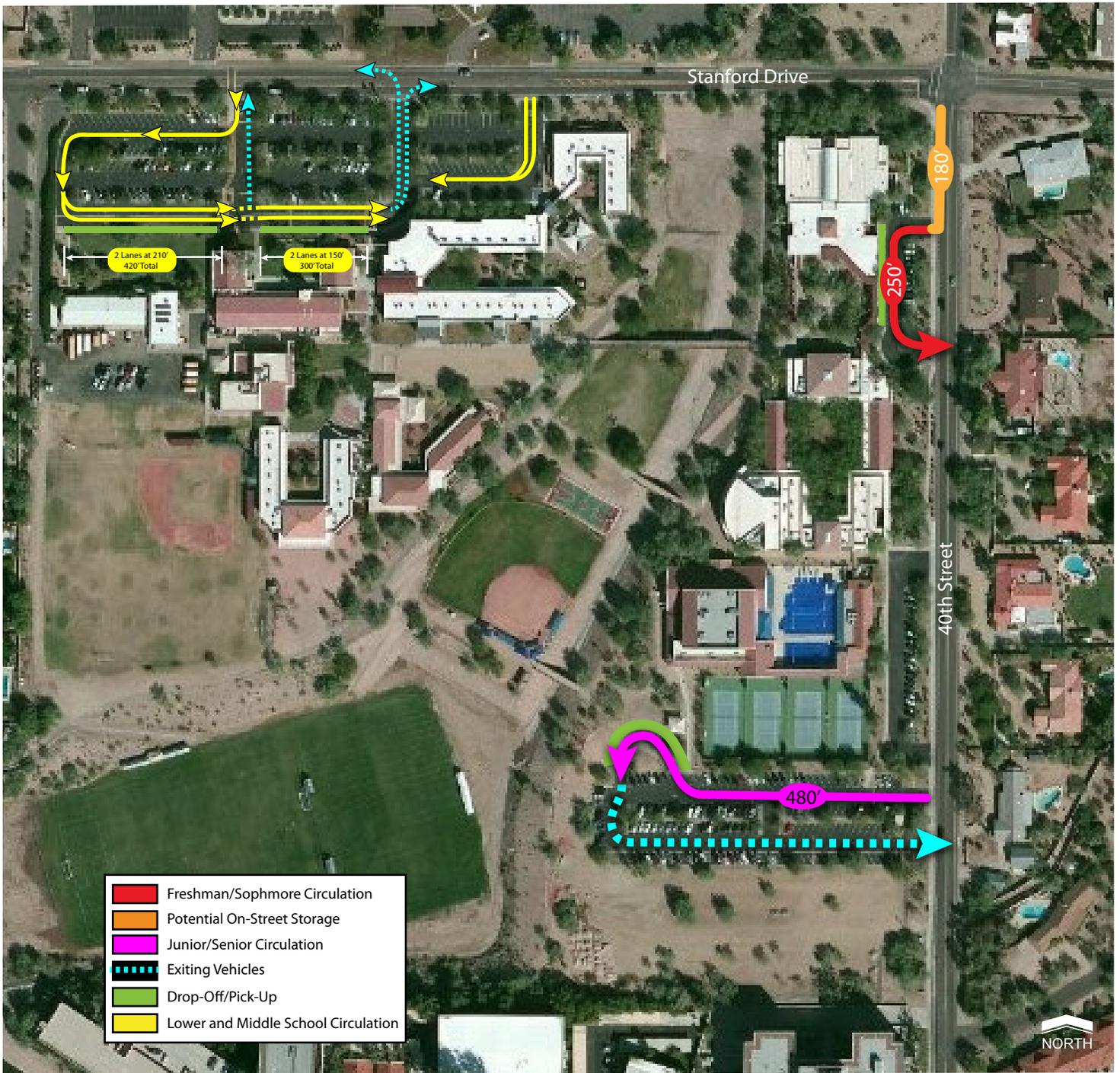
### **TOWN IMPROVEMENTS**

The Town of Paradise Valley plans to convert the all-way stop controlled intersection of 40<sup>th</sup> Street and Stanford Drive into a roundabout. The future roundabout will provide a single lane at all approaches.

### **SCHOOL IMPROVEMENTS**

CivTech Inc. was previously retained by Phoenix Country Day School to prepare the *Phoenix Country Day School Traffic Impact Study*, dated October 31, 2013. The original study addressed the addition of the new aquatics center, relocation of tennis courts, and a new parking lot. The location of the new aquatics center will be between the gymnasium and the tennis courts, adjacent to the drainage facility. The existing faculty parking lot, south parking lot and overflow parking lot will be removed (163 spaces plus overflow), and a new parking lot will be constructed on the southeast corner of the school campus.

The new parking lot will provide approximately 210 parking spaces with three (3) north-south drive aisles. Access to the new parking lot will be provided at two (2) full access driveways on 40<sup>th</sup> Street. Although two-way traffic will be allowed at both driveways of the new parking lot, it is anticipated that the majority of trips will enter at the north driveway and exit at the south driveway.



**Figure 4: Existing Circulation Plan**

### ***New Gymnasium***

Phoenix Country Day School is proposing a new gym at the location of the old aquatic center next to the old gym. Both the old and new gyms may be accessed via the new parking lot located in the southeast corner of the school campus.

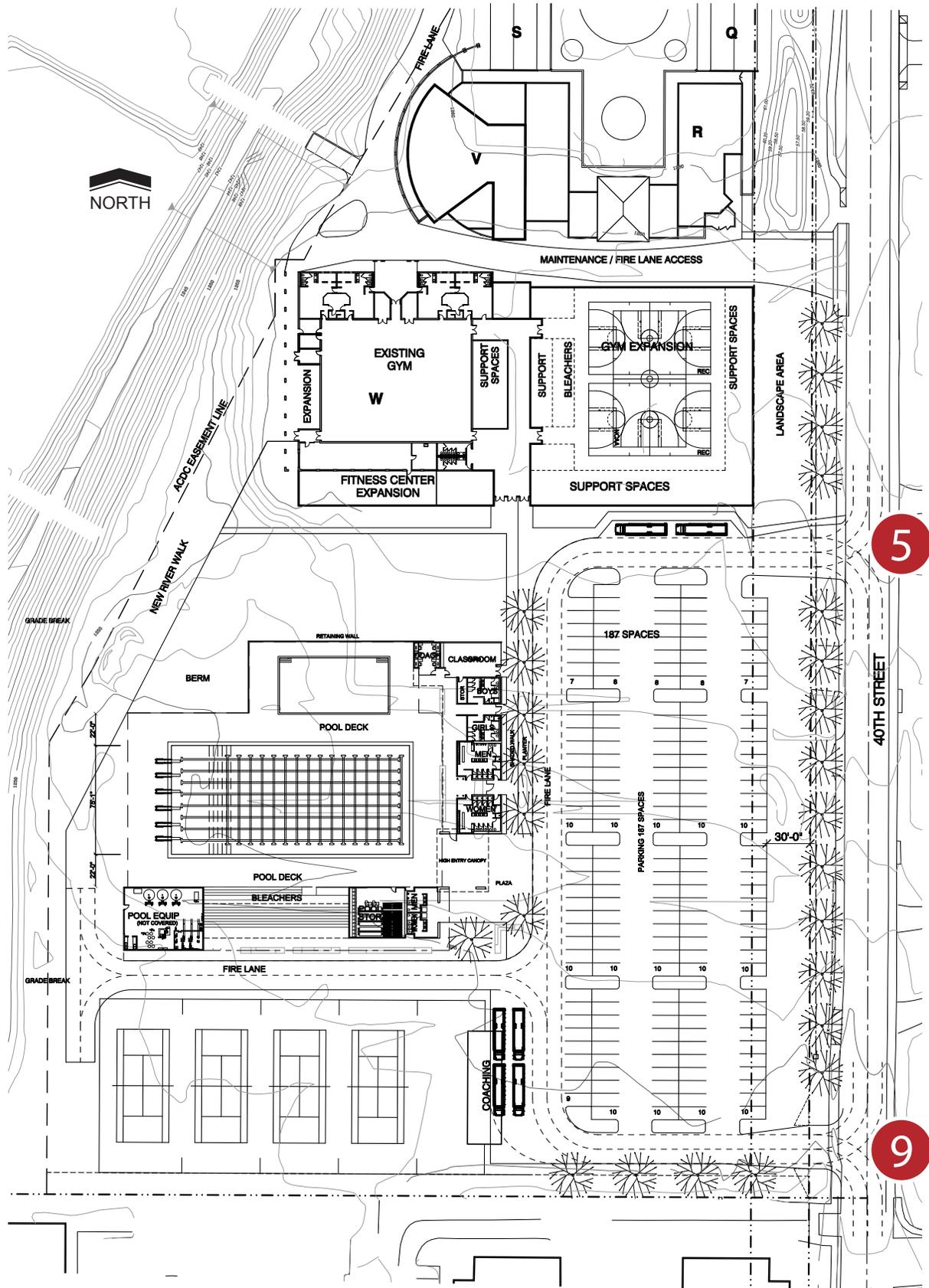
The existing gym has a bleacher capacity of 484 persons, and a gym floor space of 8944 square feet (with the bleachers in a closed position). The new gym will have a bleacher capacity of 750 persons and a gym floor space 13,258 square feet (with the bleachers in a closed position). Phoenix Country Day School is planning for the new gym to accommodate the existing events at the school. The old gym will be used for PE Classes and minor school day functions.

With the construction of the pool and the new expansion to the gym, the Phoenix Country Day School athletic program will not change. There are no plans to grow the programs, and Phoenix Country Day School will not be hiring new coaches. The existing and new gymnasiums will allow Phoenix Country Day School to finish their same athletic programs earlier in the evening. Student athletes who typically leave around 7:30 PM will now have the opportunity to be home sooner due to more facility space.

Because school enrollment is not being changed with the addition of the new gym, the total number of trips to/from the school is not anticipated to increase during regular school hours. As a result, the morning and afternoon peak hour trips are not expected to increase with the gym expansion.

Both the old and new gyms may be accessed via the new parking lot located in the southeast corner of the school campus. This lot has two full driveways to 40<sup>th</sup> Street. A maintenance/fire lane access is located just north of the existing and new gyms, separated from the parking lot. In the case that extra parking is required for special events, Phoenix Country Day School has an agreement with the Camelback Bible Church to share parking.

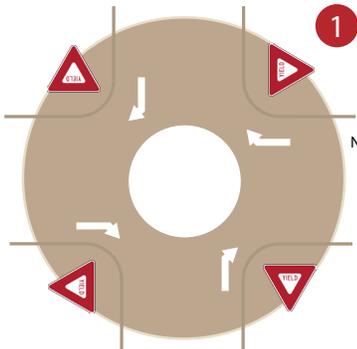
The proposed site plan is displayed in **Figure 5**. The proposed intersection lane configurations are illustrated in **Figure 8**.



5

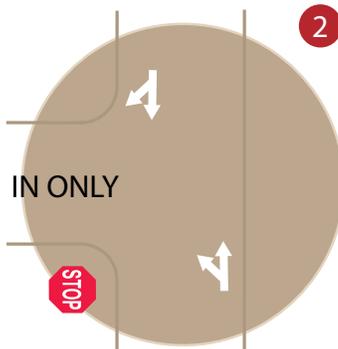
9

Figure 5: Proposed Site Plan

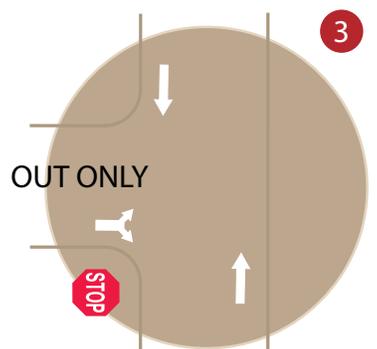


40th St. & Stanford Dr.

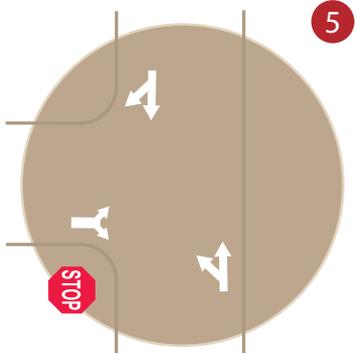
Note: The Town of Paradise Valley is Planning a Roundabout at the Intersection of 40th Street and Stanford Drive.



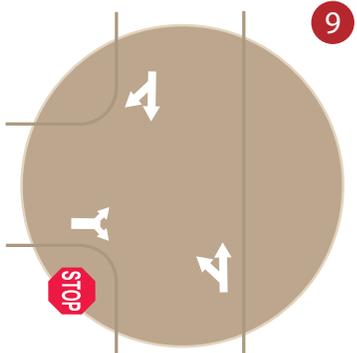
40th St. & Office North Driveway



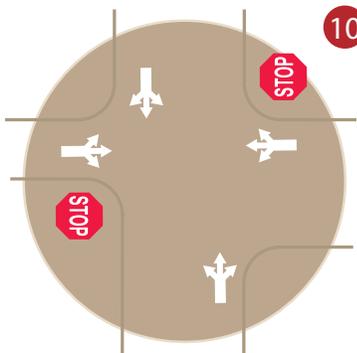
40th St. & Office South Driveway



40th St. & Access New Parking North Driveway



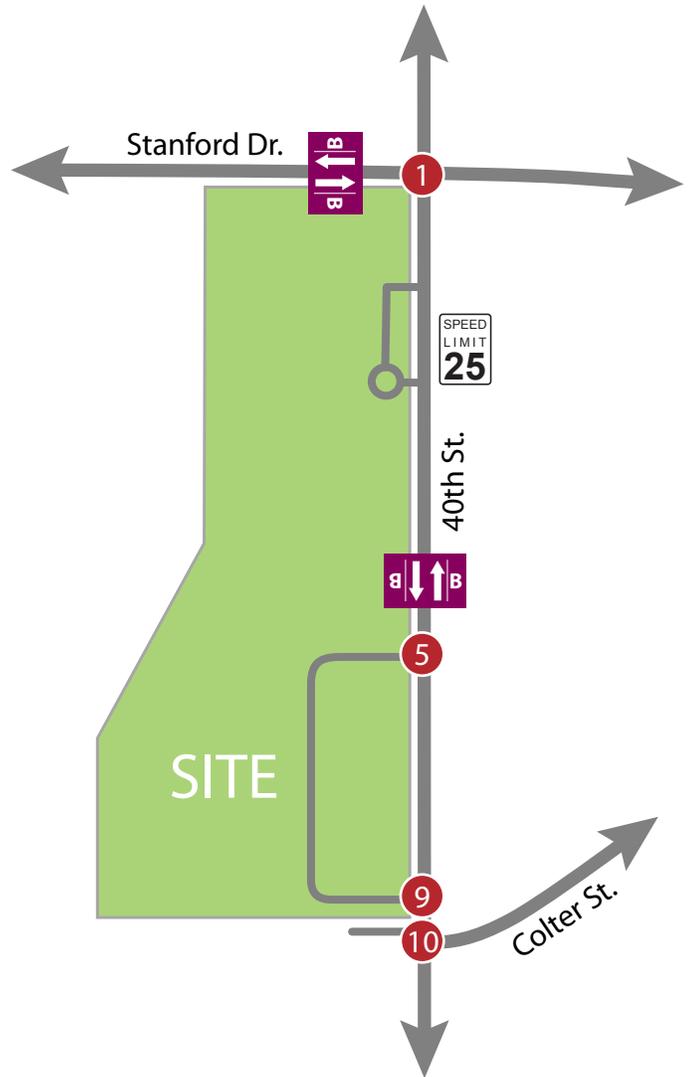
40th St. & New Parking South Driveway



40th St. & Colter St.

**LEGEND**

- Thru or Turning Movement
- Stop Sign
- Bike Lane
- Yield Sign
- Speed Limit



**Figure 6: Proposed Intersections**

## PROPOSED CIRCULATION

With the modifications to the southeast portion of the campus, the existing student/staff parking lot and pick-up area for the juniors/seniors is being reconstructed into one combined parking lot/pick-up area.

During afternoon pick-up time, the queue for vehicles entering the north parking lot on 40<sup>th</sup> Street has been observed to back onto 40<sup>th</sup> Street. Currently, the freshmen and sophomores are picked up in the north parking lot on 40<sup>th</sup> Street. With the new roundabout design for the 40<sup>th</sup> Street/Stanford Drive intersection, there is concern regarding the southbound queue on 40<sup>th</sup> Street. Therefore, the school intends to relocate the freshmen/sophomore afternoon pick-up area to the reconstructed south parking lot with the juniors/seniors.

Due to the location of the loading area, it is anticipated that the majority of parents will enter the parking lot at the north entrance and exit at the south entrance. These circulation changes are addressed in this Traffic Impact Study.

### **CIRCULATION QUEUE ANALYSIS**

An analysis was conducted to determine the estimated queue for afternoon pick-up at the south parking lot on 40<sup>th</sup> Street. This parking lot will be utilized for afternoon pick-up for all high school students. In order to estimate the queue, high school enrollment numbers and student drivers were obtained from the school. **Table 3** summarizes the high school student enrollment.

**Table 3: High School Enrollment**

<b>Grade</b>	<b>Number of Students</b>
9 <sup>th</sup>	74
10 <sup>th</sup>	70
11 <sup>th</sup>	64
12 <sup>th</sup>	58
<b>TOTAL</b>	<b>266</b>

According to the school, there are 119 student drivers, leaving approximately 147 students to be picked up. For purposes of this analysis, 150 students will be assumed to be picked up.

Through observations at schools that require student pick-up and drop-off, CivTech has identified an average peak queue length of 0.10 vehicles per student during the afternoon pick-up for high school students. With the Phoenix Country Day School expecting approximately 150 9<sup>th</sup> – 12<sup>th</sup> grade students to be picked up in the afternoon in the southeast parking lot/student pick-up area, this equates to approximately fifteen

(15) vehicles. The average queue length of a vehicle is twenty-five (25) feet, which results in a total queue length of 375 feet.

A review of the proposed site plan indicates that there is approximately 325 feet of sidewalk frontage along the pool and tennis courts for the loading of students and approximately 225 feet of queuing space between 40<sup>th</sup> Street and the loading area. The total queuing space available on site is approximately 550 feet, which exceeds the required queue storage of 375 feet.

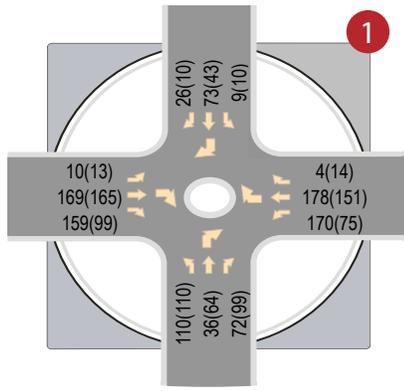
The proposed morning and afternoon circulation plans are depicted in **Figure 7** and **Figure 8**, respectively.

### **TRAFFIC VOLUME CHANGES**

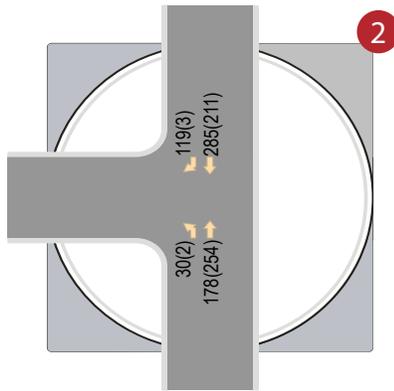
Similar to the *Phoenix Country Day School Traffic Impact Study*, dated October 31, 2013, the proposed improvements will not affect school enrollment. Therefore, the total number of trips to/from the school is not anticipated to increase during regular school hours. As a result, the morning and afternoon peak hour trips are not expected to increase with the gym expansion.

The proposed afternoon pick-up circulation plan will affect the traffic volumes at the driveways, which have been addressed in this Traffic Impact Study.

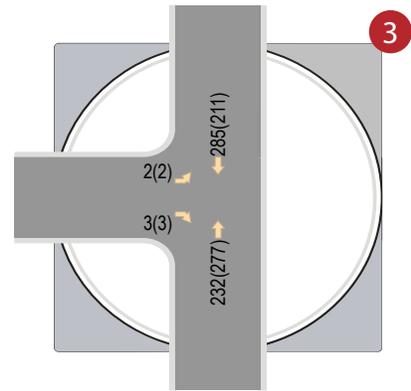
Two-way traffic will be allowed at both driveways of the new south parking lot. However, it is anticipated that the majority of trips will enter at the north driveway and exit at the south driveway. The anticipated school peak hour traffic volumes under the proposed conditions are depicted in **Figure 8**.



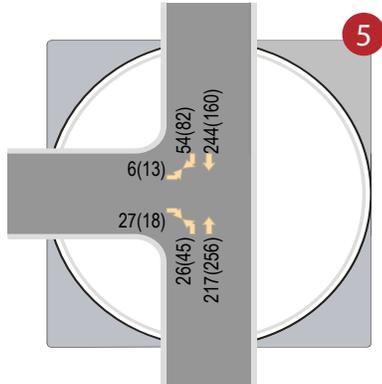
40th Street & Stanford Drive



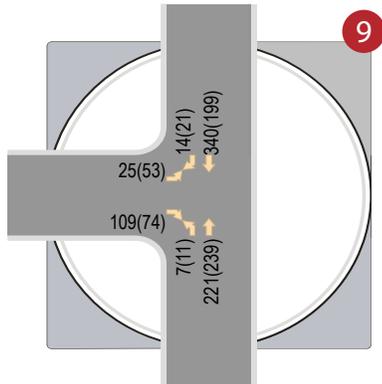
40th Street & Office North Driveway



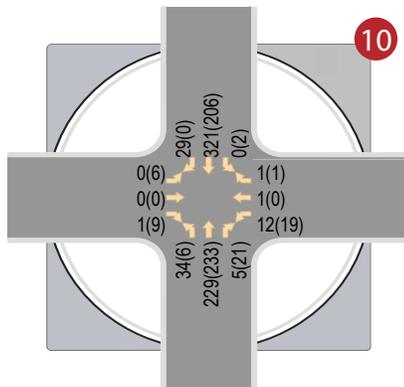
40th Street & Office South Driveway



40th Street & New Parking North Driveway



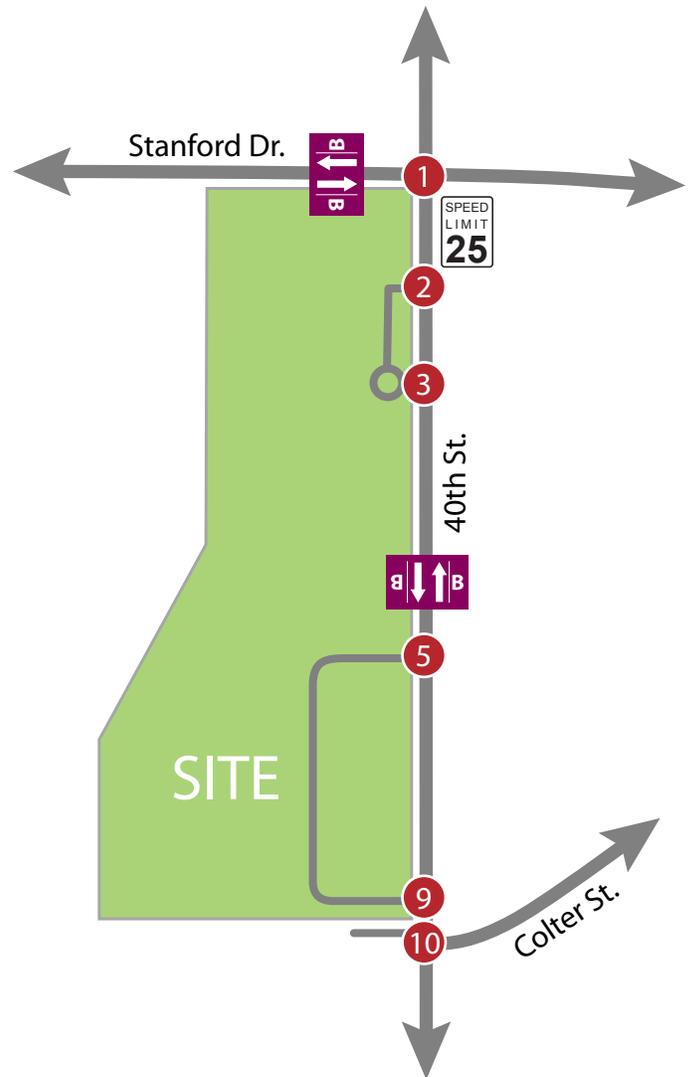
40th Street & New Parking South Driveway



40th Street & Colter Street

**LEGEND**

XX(XX) - AM(PM) Peak Hour Traffic Volumes



**Figure 7: Anticipated Traffic Volumes**





## CAPACITY ANALYSIS

Peak hour capacity analyses have been conducted for the study intersections based on intersection configurations and traffic volumes after the proposed intersection modifications. All intersections have been analyzed using the methodologies previously discussed. The intersection of 40<sup>th</sup> Street and Stanford Drive was analyzed once in its existing configuration and a second time as a roundabout. The resulting levels of service for the proposed conditions are summarized in **Table 4**. The proposed conditions analyses have been included in **Appendix D**.

**Table 4: Levels of Service with Proposed Modifications**

ID	Intersection	Stop Control	Approach	LOS	
				AM	School PM
1	40 <sup>th</sup> Street & Stanford Drive	Roundabout	NB	A	A
			SB	A	A
			EB	A	A
			WB	A	A
			<b>Overall</b>	<b>A</b>	<b>A</b>
2	40 <sup>th</sup> Street & Office North Driveway	Ingress/1-way stop (EB)	NB shared SB shared	A A	A A
3	40 <sup>th</sup> Street & Office South Driveway	Egress/1-way stop (EB)	EB shared	B	B
5	40 <sup>th</sup> Street & New Parking North Driveway	1-way stop (EB)	NB shared	A	A
			SB shared	A	A
			EB shared	B	B
9	40 <sup>th</sup> Street & New Parking South Driveway	1-way stop (EB)	NB shared	A	A
			SB shared	A	A
			EB shared	B	B
10	40 <sup>th</sup> Street & Colter Street	2-way stop (EB/WB)	NB shared	A	A
			SB shared	A	A
			EB shared	B	B
			WB shared	C	B

Under proposed conditions, all study intersections are anticipated to operate with a LOS C or better during the peak school hours. The city planned roundabout at the intersection of 40<sup>th</sup> Street and Stanford Drive is anticipated to operate at LOS A. With the new circulation plan during the school afternoon peak hour, traffic is not anticipated to queue back to the future roundabout at the intersection of 40<sup>th</sup> Street and Stanford Drive.

## CONCLUSIONS

The following conclusions and recommendations have been documented in this study.

### Planned Improvements by the Town of Paradise Valley

- The Town of Paradise Valley plans to convert the all-way stop controlled intersection of 40<sup>th</sup> Street and Stanford Drive into a roundabout.
- The city planned roundabout at the intersection of 40<sup>th</sup> Street and Stanford Drive is anticipated to operate at LOS A. Except for atypical days at the beginning of the school year, traffic is not anticipated to queue back to the future roundabout at the intersection of 40<sup>th</sup> Street and Stanford Drive.

### Proposed School Improvements

- The Phoenix Country Day School proposes to expand the existing gymnasium to the east where the old aquatics center was located.
- At the request of the Town of Paradise Valley, the circulation plan is being changed to relocate the freshman and sophomore afternoon pick-up location to be at the curb within the new main parking lot so that all Upper School students are picked up within this parking lot.
- The maximum enrollment of students at the school is not proposed to change.

### Intersection Capacity Analysis

- Under the existing conditions, all study intersections were analyzed to operate with a LOS C or better during the peak school hours.
- Under proposed conditions, all study intersections are anticipated to operate with a LOS C or better during the peak school hours.

## LIST OF REFERENCES

*A Policy on Geometric Design of Highways and Streets.* American Association of State Highway and Transportation Officials, Washington, D.C., 2001.

*Highway Capacity Manual.* Transportation Research Board, Washington, D.C., 2010.

*Manual of Uniform Traffic Control Devices.* U.S. Department of Transportation, Federal Highways Administration, Washington, D.C., 2003.

*Roadway Design Manual.* Maricopa County Department of Transportation, Phoenix, Arizona, April 2004.

## **TECHNICAL APPENDIX**

- APPENDIX A: REVIEW COMMENTS RESPONSES**
- APPENDIX B: EXISTING TRAFFIC COUNTS**
- APPENDIX C: EXISTING PEAK HOUR CAPACITY ANALYSIS**
- APPENDIX D: PROPOSED PEAK HOUR CAPACITY ANALYSIS**

## **APPENDIX A**

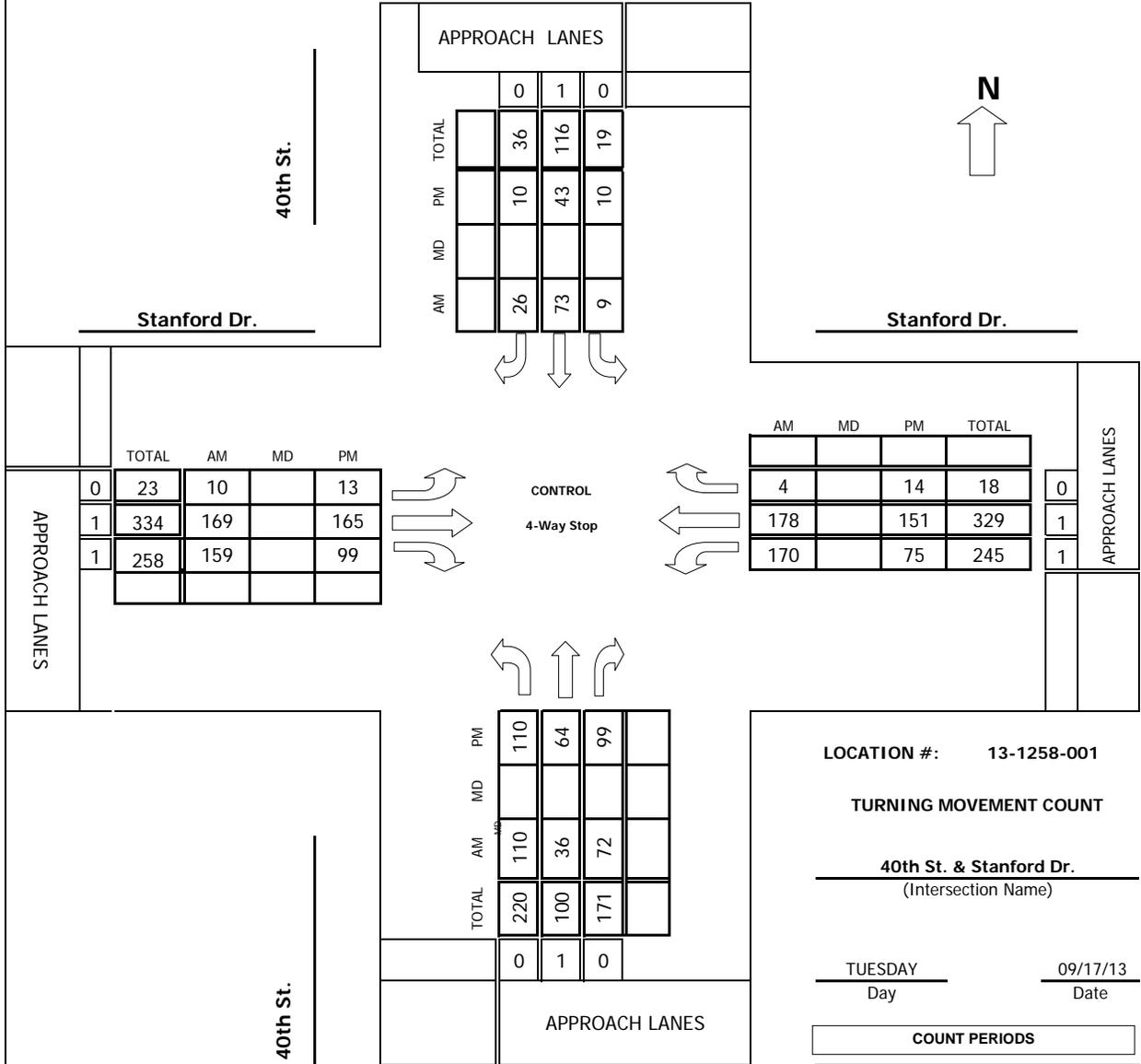
### **REVIEW COMMENTS AND RESPONSES**

## APPENDIX B

### EXISTING TRAFFIC COUNTS

Project #: 13-1258-001

**TMC SUMMARY OF 40th St. & Stanford Dr.**



40th St.

Stanford Dr.

APPROACH LANES			
	0	1	0
TOTAL	36	116	19
PM	10	43	10
MD			
AM	26	73	9

Stanford Dr.

APPROACH LANES			
AM	4		18
MD		14	329
PM	178	151	245
TOTAL	170	75	245

APPROACH LANES

	TOTAL	AM	MD	PM
0	23	10		13
1	334	169		165
1	258	159		99

CONTROL  
4-Way Stop

40th St.

TOTAL	AM	MD	PM
220	110		110
100	36		64
171	72		99
0	1		0

APPROACH LANES

LOCATION #: 13-1258-001

**TURNING MOVEMENT COUNT**  
**40th St. & Stanford Dr.**  
 (Intersection Name)

TUESDAY 09/17/13  
 Day Date

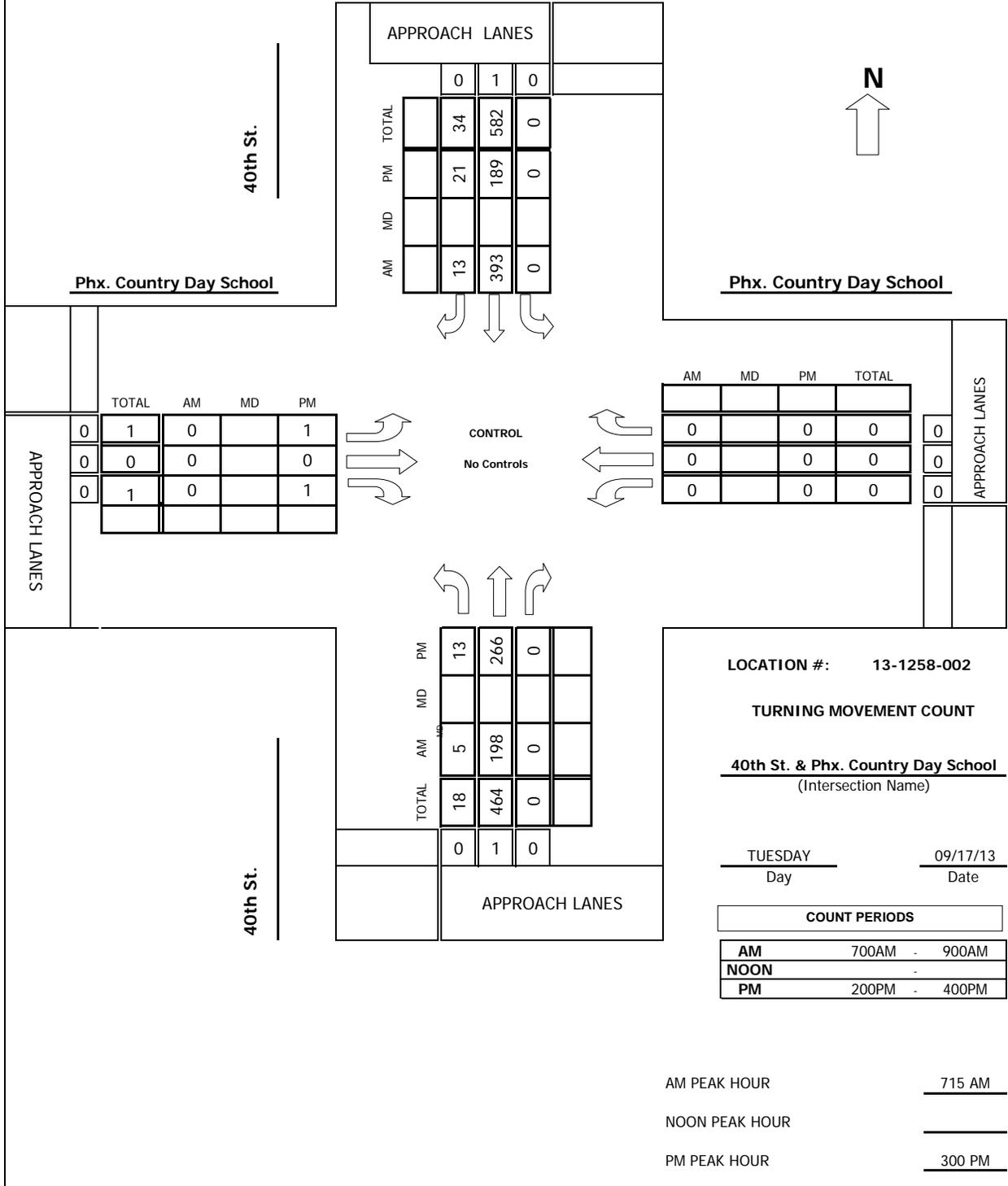
**COUNT PERIODS**

AM	700AM	-	900AM
NOON		-	
PM	200PM	-	400PM

AM PEAK HOUR 715 AM  
 NOON PEAK HOUR \_\_\_\_\_  
 PM PEAK HOUR 230 PM

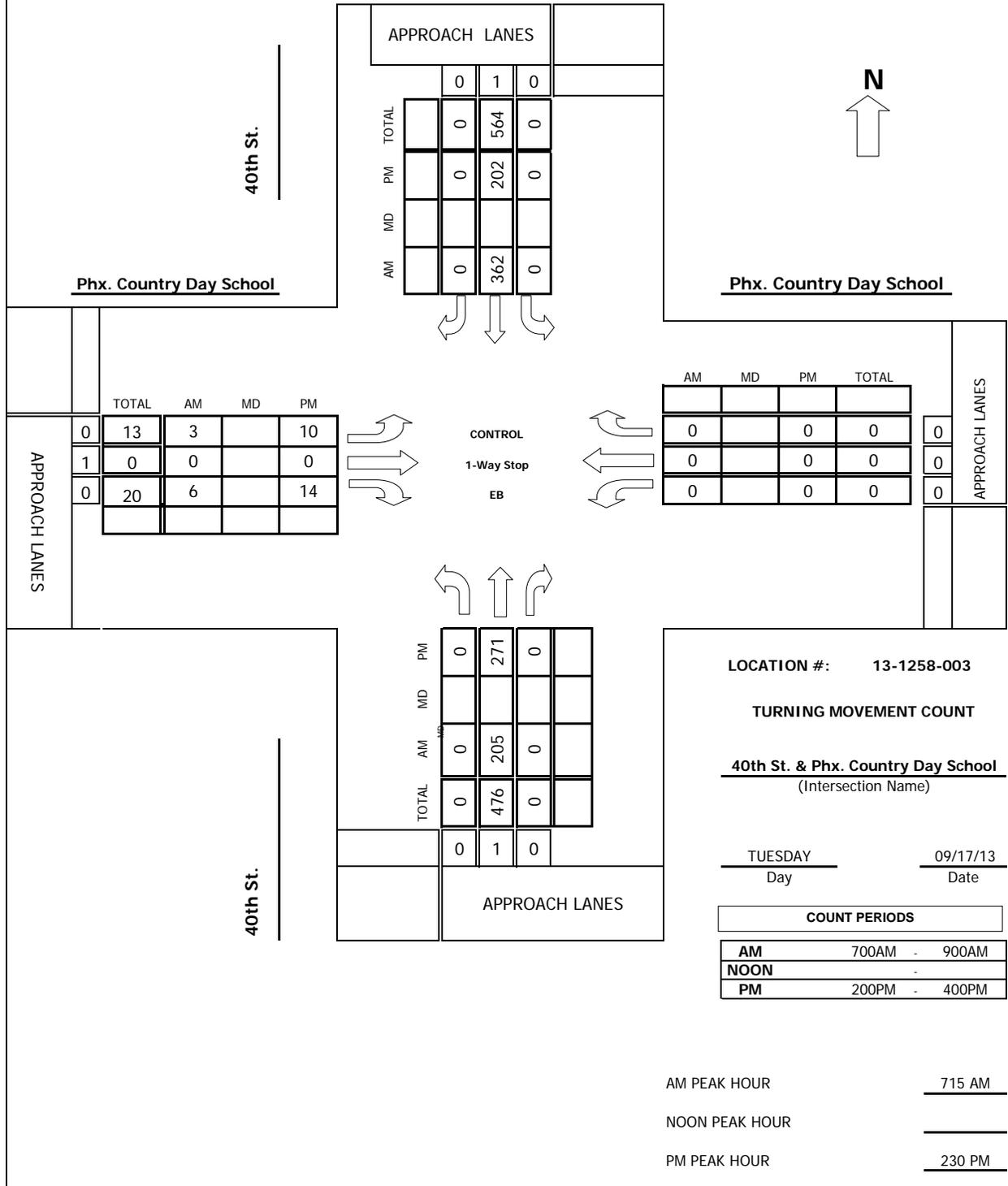
Project #: 13-1258-002

**TMC SUMMARY OF 40th St. & Phx. Country Day School**



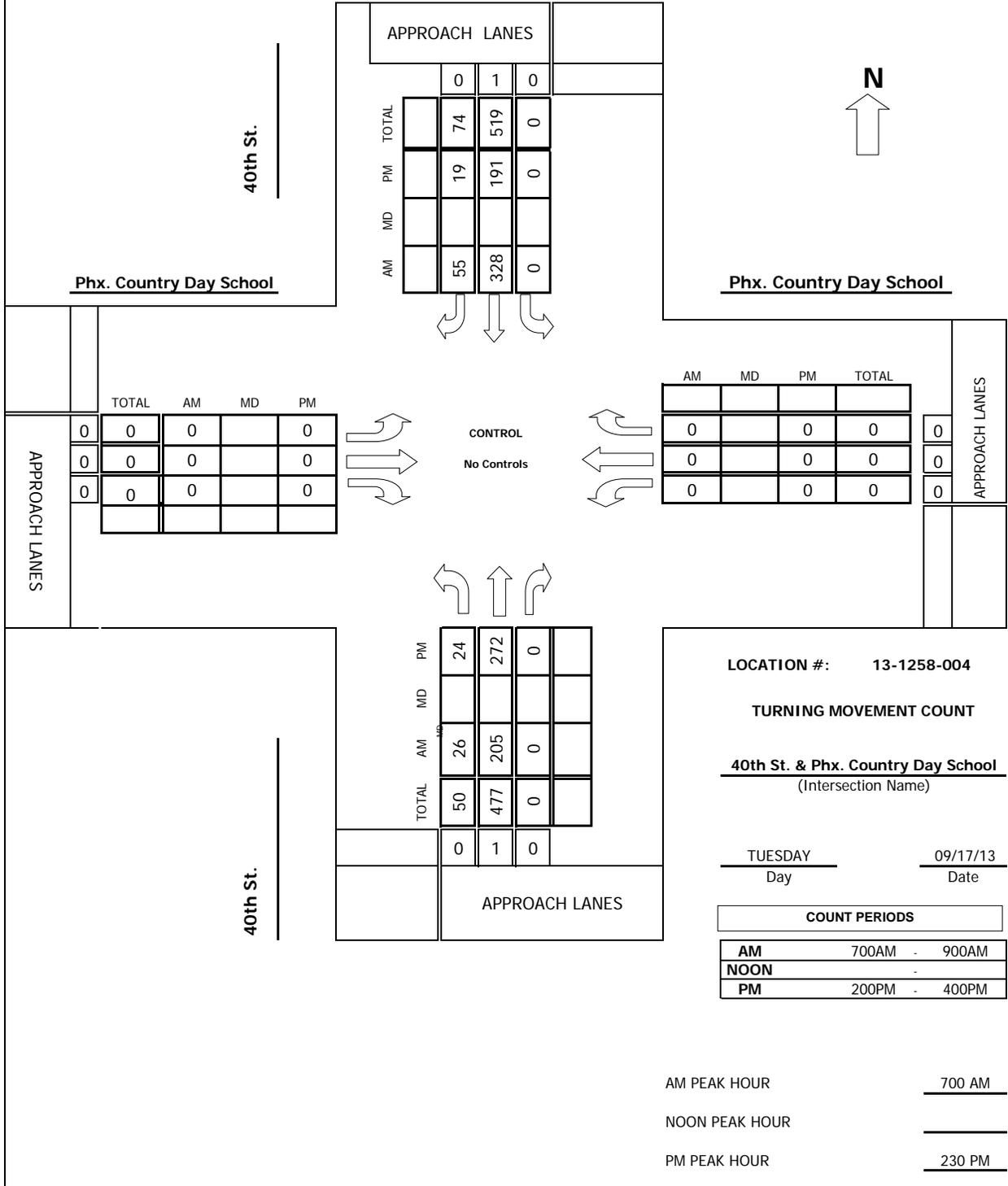
Project #: 13-1258-003

**TMC SUMMARY OF 40th St. & Phx. Country Day School**



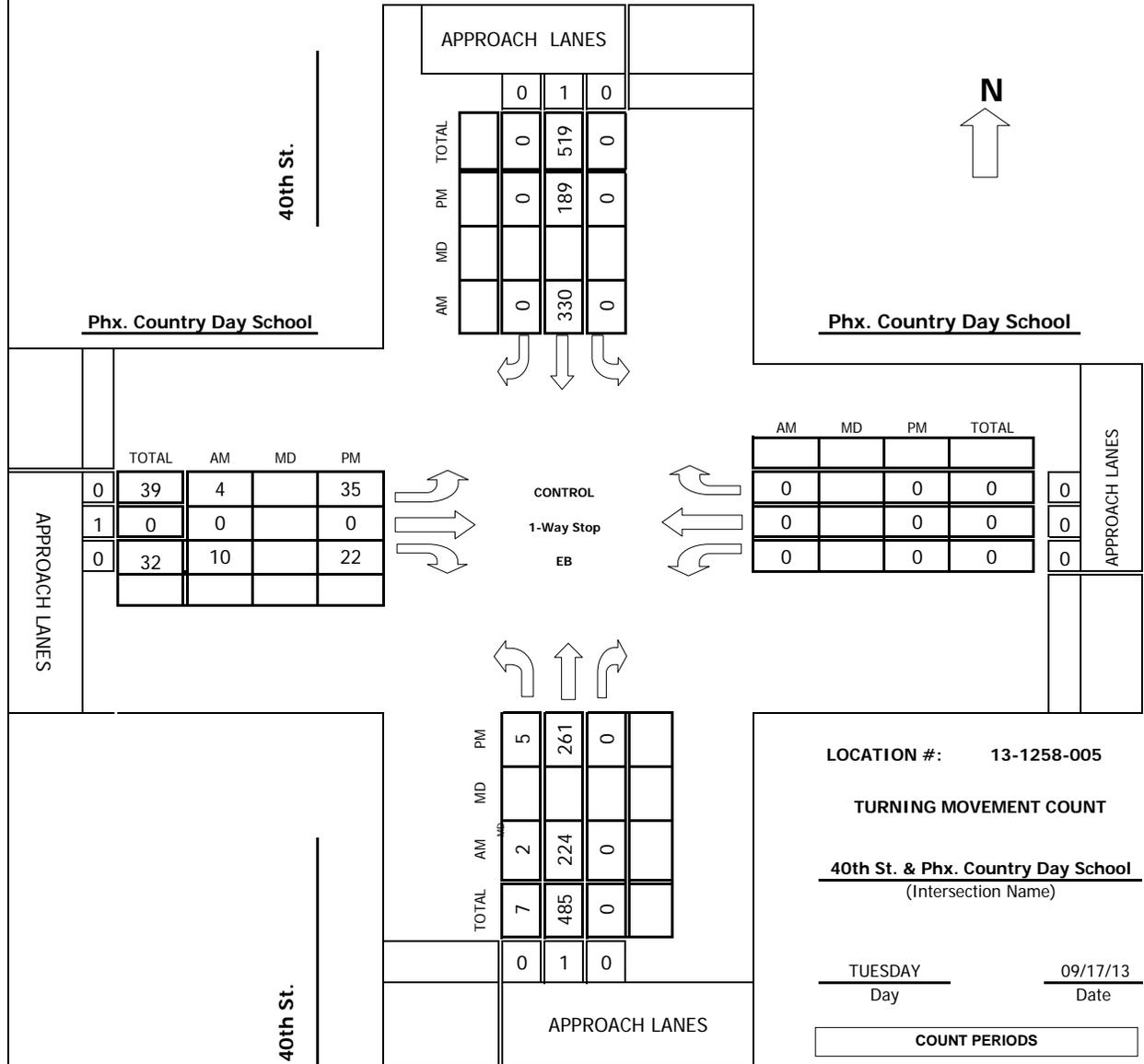
Project #: 13-1258-004

**TMC SUMMARY OF 40th St. & Phx. Country Day School**



Project #: 13-1258-005

**TMC SUMMARY OF 40th St. & Phx. Country Day School**



LOCATION #: 13-1258-005

**TURNING MOVEMENT COUNT**

**40th St. & Phx. Country Day School**  
(Intersection Name)

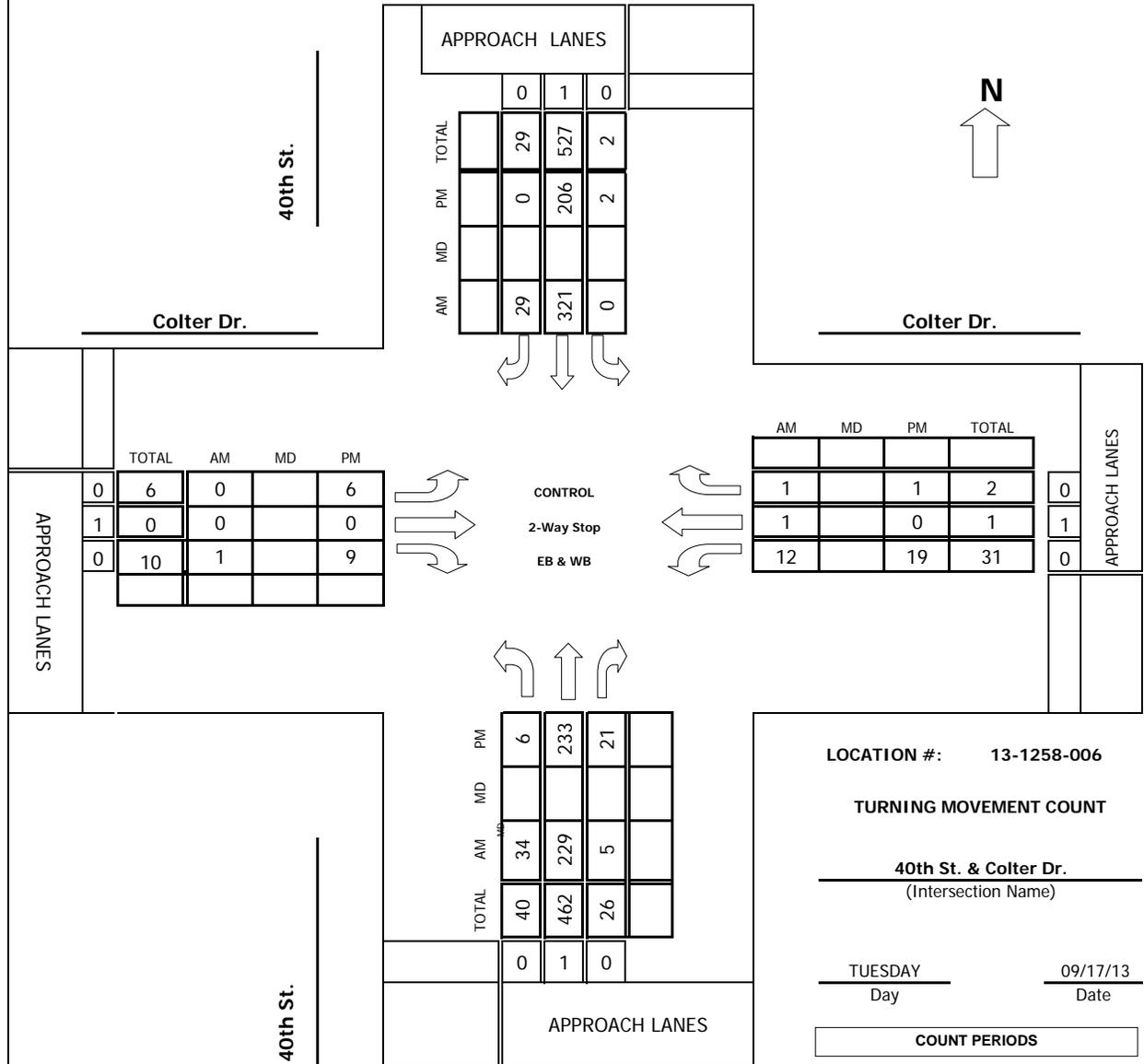
TUESDAY 09/17/13  
Day Date

COUNT PERIODS	
AM	700AM - 900AM
NOON	-
PM	200PM - 400PM

AM PEAK HOUR 700 AM  
 NOON PEAK HOUR  
 PM PEAK HOUR 230 PM

Project #: 13-1258-006

**TMC SUMMARY OF 40th St. & Colter Dr.**



APPROACH LANES		TOTAL	AM	MD	PM
	0	6	0		6
	1	0	0		0
	0	10	1		9

CONTROL  
 2-Way Stop  
 EB & WB

	AM	MD	PM	TOTAL	APPROACH LANES
0					
1		1		2	
0	1	0		1	
0	12		19	31	

	TOTAL	AM	MD	PM
0	40	34		6
1	462	229		233
0	26	5		21

LOCATION #: 13-1258-006

**TURNING MOVEMENT COUNT**

**40th St. & Colter Dr.**  
 (Intersection Name)

TUESDAY 09/17/13  
 Day Date

COUNT PERIODS		
AM	700AM	900AM
NOON	-	-
PM	200PM	400PM

AM PEAK HOUR 715 AM  
 NOON PEAK HOUR \_\_\_\_\_  
 PM PEAK HOUR 230 PM

## APPENDIX C

### EXISTING PEAK HOUR CAPACITY ANALYSIS

---

Phoenix Country Day School  
Existing Conditions  
AM Peak Hour

---

Scenario Report

Scenario: AM  
Command: AM  
Volume: AM  
Geometry: Default Geometry  
Impact Fee: Default Impact Fee  
Trip Generation: AM  
Trip Distribution: Default Trip Distribution  
Paths: Default Path  
Routes: Default Route  
Configuration: Default Configuration

Phoenix Country Day School
Existing Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #1 40th Street & Stanford Drive

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.492
Loss Time (sec): 0 Average Delay (sec/veh): 13.1
Optimal Cycle: 0 Level Of Service: B

\*\*\*\*\*

Street Name: 40th Street Stanford Drive
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

-----|-----|-----|-----|

Control: Stop Sign Stop Sign Stop Sign Stop Sign

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0

Lanes: 0 0 1! 0 0 0 0 1! 0 0 0 1 0 0 1 0

-----|-----|-----|-----|

Volume Module:

Base Vol: 110 36 72 9 73 26 10 169 159 170 178 4
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 110 36 72 9 73 26 10 169 159 170 178 4
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
PHF Volume: 138 45 90 11 91 33 13 211 199 213 223 5
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 138 45 90 11 91 33 13 211 199 213 223 5
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 138 45 90 11 91 33 13 211 199 213 223 5

-----|-----|-----|-----|

Saturation Flow Module:

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 0.50 0.17 0.33 0.08 0.68 0.24 0.06 0.94 1.00 1.00 0.98 0.02
Final Sat.: 280 91 183 42 342 122 30 508 603 510 538 12

-----|-----|-----|-----|

Capacity Analysis Module:

Vol/Sat: 0.49 0.49 0.49 0.27 0.27 0.27 0.42 0.42 0.33 0.42 0.41 0.41
Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\*
Delay/Veh: 14.4 14.4 14.4 11.5 11.5 11.5 13.4 13.4 11.0 14.1 13.2 13.2
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 14.4 14.4 14.4 11.5 11.5 11.5 13.4 13.4 11.0 14.1 13.2 13.2
LOS by Move: B B B B B B B B B B B B
ApproachDel: 14.4 11.5 12.3 13.6
Delay Adj: 1.00 1.00 1.00
ApprAdjDel: 14.4 11.5 12.3 13.6
LOS by Appr: B B B
AllWayAvgQ: 0.8 0.8 0.8 0.3 0.3 0.3 0.6 0.6 0.4 0.6 0.6 0.6

\*\*\*\*\*

Note: Queue reported is the number of cars per lane.

\*\*\*\*\*

Phoenix Country Day School
Existing Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #2 40th Street & Office North Driveway
\*\*\*\*\*

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: A[ 8.5]

\*\*\*\*\*

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes for 40th Street and Office North Driveway.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for various movements.

Critical Gap Module table showing Critical Gp and FollowUpTim for various movements.

Capacity Module table showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for various movements.

Level Of Service Module table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS for various movements.

\*\*\*\*\*

Note: Queue reported is the number of cars per lane.

\*\*\*\*\*

Phoenix Country Day School
Existing Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #3 40th Street & Office South Driveway

\*\*\*\*\*

Average Delay (sec/veh): 3.0 Worst Case Level Of Service: B[ 13.0]

\*\*\*\*\*

Street Name: 40th Street Office South Driveway

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled Stop Sign Stop Sign

Rights: Include Include Include Include

Lanes: 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0

Volume Module:

Base Vol: 0 208 0 0 285 0 26 0 123 0 0 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 0 208 0 0 285 0 26 0 123 0 0 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80
PHF Volume: 0 260 0 0 356 0 33 0 154 0 0 0

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 260 0 0 356 0 33 0 154 0 0 0

Critical Gap Module:

Critical Gp:xxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx 6.4 6.5 6.2 xxxxxx xxxx xxxxxx
FollowUpTim:xxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx 3.5 4.0 3.3 xxxxxx xxxx xxxxxx

Capacity Module:

Cnflct Vol: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx 616 616 356 xxxxx xxxxx xxxxxx
Potent Cap.: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx 457 409 692 xxxxx xxxxx xxxxxx

Move Cap.: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx 457 409 692 xxxxx xxxxx xxxxxx
Volume/Cap: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.07 0.00 0.22 xxxxx xxxxx xxxxx

Level Of Service Module:

2Way95thQ: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del:xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx

LOS by Move: \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx 635 xxxxxx xxxxx xxxxx xxxxxx
SharedQueue:xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx 1.2 xxxxxx xxxxxx xxxxx xxxxxx

Shrd ConDel:xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx 13.0 xxxxxx xxxxxx xxxxx xxxxxx
Shared LOS: \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

ApproachDel: xxxxxxx xxxxxxx 13.0 xxxxxxx
ApproachLOS: \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

\*\*\*\*\*

Note: Queue reported is the number of cars per lane.

\*\*\*\*\*

Phoenix Country Day School
Existing Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #4 40th Street & Faculty North Driveway
\*\*\*\*\*

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: A[ 8.4]

\*\*\*\*\*

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes for 40th Street and Faculty North Driveway.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for various movements.

Critical Gap Module table showing Critical Gp and FollowUpTim for various movements.

Capacity Module table showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for various movements.

Level Of Service Module table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS for various movements.

\*\*\*\*\*

Note: Queue reported is the number of cars per lane.

\*\*\*\*\*

Phoenix Country Day School
Existing Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #6 40th Street & Faculty South Driveway
\*\*\*\*\*

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[ 12.0]

\*\*\*\*\*

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes for 40th Street and Faculty South Driveway.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for various approaches.

Critical Gap Module table showing Critical Gp and FollowUpTim for different approaches.

Capacity Module table showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for different approaches.

Level Of Service Module table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

\*\*\*\*\*

Note: Queue reported is the number of cars per lane.

\*\*\*\*\*

Phoenix Country Day School
Existing Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #7 40th Street & Student North Driveway
\*\*\*\*\*

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: A[ 8.4]

\*\*\*\*\*

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes for 40th Street and Student North Driveway.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for various movements.

Critical Gap Module table showing Critical Gp and FollowUpTim for various movements.

Capacity Module table showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for various movements.

Level Of Service Module table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS for various movements.

\*\*\*\*\*

Note: Queue reported is the number of cars per lane.

\*\*\*\*\*

Phoenix Country Day School  
 Existing Conditions  
 AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #8 40th Street & Student South Driveway

\*\*\*\*\*

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[ 11.7]

\*\*\*\*\*

Street Name: 40th Street Student South Driveway

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled Stop Sign Stop Sign

Rights: Include Include Include Include

Lanes: 0 1 0 0 0 0 0 1 0 0 0 0 0 0 0

-----|-----|-----|-----|

Volume Module:

Base Vol: 2 224 0 0 330 0 4 0 10 0 0 0

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 2 224 0 0 330 0 4 0 10 0 0 0

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80

PHF Volume: 3 280 0 0 413 0 5 0 13 0 0 0

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 3 280 0 0 413 0 5 0 13 0 0 0

-----|-----|-----|-----|

Critical Gap Module:

Critical Gp: 4.1 xxxx xxxxxx xxxxxx xxxx xxxxxx 6.4 6.5 6.2 xxxxxx xxxx xxxxxx

FollowUpTim: 2.2 xxxx xxxxxx xxxxxx xxxx xxxxxx 3.5 4.0 3.3 xxxxxx xxxx xxxxxx

-----|-----|-----|-----|

Capacity Module:

Cnflct Vol: 413 xxxx xxxxxx xxxx xxxx xxxxxx 698 698 413 xxxx xxxx xxxxxx

Potent Cap.: 1157 xxxx xxxxxx xxxx xxxx xxxxxx 410 367 644 xxxx xxxx xxxxxx

Move Cap.: 1157 xxxx xxxxxx xxxx xxxx xxxxxx 409 366 644 xxxx xxxx xxxxxx

Volume/Cap: 0.00 xxxx xxxx xxxx xxxx xxxxxx 0.01 0.00 0.02 xxxx xxxx xxxxxx

-----|-----|-----|-----|

Level Of Service Module:

2Way95thQ: 0.0 xxxx xxxxxx xxxx xxxx xxxxxx xxxx xxxx xxxxxx xxxx xxxx xxxxxx

Control Del: 8.1 xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx

LOS by Move: A \*

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxxxx xxxx xxxx xxxxxx xxxx 553 xxxxxx xxxx xxxx xxxxxx

SharedQueue: 0.0 xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx 0.1 xxxxxx xxxxxx xxxx xxxxxx

Shrd ConDel: 8.1 xxxx xxxxxx xxxxxx xxxx xxxxxx xxxxxx 11.7 xxxxxx xxxxxx xxxx xxxxxx

Shared LOS: A \*

ApproachDel: xxxxxx xxxxxx 11.7 xxxxxx

ApproachLOS: \*

\*\*\*\*\*

Note: Queue reported is the number of cars per lane.

\*\*\*\*\*

Phoenix Country Day School
Existing Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #10 40th Street & Colter Street
\*\*\*\*\*

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: C[ 17.2]

\*\*\*\*\*

Table with columns for Street Name (40th Street, Colter Street), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, and Lanes.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume across various movements.

Critical Gap Module table with columns for Critical Gp, FollowUpTim, and values for different movements.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap across movements.

Level Of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

\*\*\*\*\*

Note: Queue reported is the number of cars per lane.

\*\*\*\*\*

---

Phoenix Country Day School  
Existing Conditions  
School PM Peak Hour

---

Scenario Report

Scenario: SPM  
Command: SPM  
Volume: SPM  
Geometry: Default Geometry  
Impact Fee: Default Impact Fee  
Trip Generation: SPM  
Trip Distribution: Default Trip Distribution  
Paths: Default Path  
Routes: Default Route  
Configuration: Default Configuration

Phoenix Country Day School
Existing Conditions
School PM Peak Hour

Level Of Service Computation Report

2000 HCM 4-Way Stop Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #1 40th Street & Stanford Drive

\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.548
Loss Time (sec): 0 Average Delay (sec/veh): 12.4
Optimal Cycle: 0 Level Of Service: B

\*\*\*\*\*

Street Name: 40th Street Stanford Drive
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Stop Sign Stop Sign

Rights: Include Include Include Include

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0

Lanes: 0 0 1! 0 0 0 0 1! 0 0 0 1 0 0 1 0

Volume Module:

Base Vol: 110 64 99 10 43 10 13 165 99 75 151 14

Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 110 64 99 10 43 10 13 165 99 75 151 14

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80 0.80

PHF Volume: 138 80 124 13 54 13 16 206 124 94 189 18

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0

Reduced Vol: 138 80 124 13 54 13 16 206 124 94 189 18

PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

FinalVolume: 138 80 124 13 54 13 16 206 124 94 189 18

Saturation Flow Module:

Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

Lanes: 0.41 0.23 0.36 0.16 0.68 0.16 0.07 0.93 1.00 1.00 0.92 0.08

Final Sat.: 251 146 226 84 361 84 41 520 632 518 516 48

Capacity Analysis Module:

Vol/Sat: 0.55 0.55 0.55 0.15 0.15 0.15 0.40 0.40 0.20 0.18 0.37 0.37

Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\* \*\*\*\*

Delay/Veh: 14.5 14.5 14.5 10.0 10.0 10.0 12.6 12.6 9.4 10.7 12.0 12.0

Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

AdjDel/Veh: 14.5 14.5 14.5 10.0 10.0 10.0 12.6 12.6 9.4 10.7 12.0 12.0

LOS by Move: B B B B B B B B A B B B

ApproachDel: 14.5 10.0 11.4 11.6

Delay Adj: 1.00 1.00 1.00 1.00

ApprAdjDel: 14.5 10.0 11.4 11.6

LOS by Appr: B B B B

AllWayAvgQ: 1.0 1.0 1.0 0.1 0.1 0.1 0.6 0.6 0.2 0.2 0.5 0.5

\*\*\*\*\*

Note: Queue reported is the number of cars per lane.

\*\*\*\*\*

Phoenix Country Day School
Existing Conditions
School PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 40th Street & Office North Driveway

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: A[ 7.8]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes for 40th Street and Office North Driveway.

Table for Volume Module showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Table for Critical Gap Module showing Critical Gp and FollowUpTim.

Table for Capacity Module showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Table for Level Of Service Module showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Phoenix Country Day School
Existing Conditions
School PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 40th Street & Office South Driveway

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: B[ 10.8]

Table with columns for Street Name (40th Street, Office South Driveway), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Uncontrolled, Stop Sign), Rights (Include), and Lanes (0, 1, 0, 0).

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for each approach and movement.

Critical Gap Module table showing Critical Gp and FollowUpTim for each approach and movement.

Capacity Module table showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for each approach and movement.

Level Of Service Module table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS for each approach and movement.

Note: Queue reported is the number of cars per lane.

Phoenix Country Day School
Existing Conditions
School PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 40th Street & Faculty North Driveway

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[ 11.3]

Table with columns for Street Name (40th Street, Faculty North Driveway), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Uncontrolled, Stop Sign), Rights (Include), and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for each approach.

Critical Gap Module table showing Critical Gp and FollowUpTim for each approach.

Capacity Module table showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for each approach.

Level Of Service Module table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS for each approach.

Note: Queue reported is the number of cars per lane.

Phoenix Country Day School
Existing Conditions
School PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #6 40th Street & Faculty South Driveway

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[ 11.1]

Table with columns for Street Name (40th Street, Faculty South Driveway), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Uncontrolled, Stop Sign), Rights (Include), and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for each approach.

Critical Gap Module table showing Critical Gp and FollowUpTim for each approach.

Capacity Module table showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for each approach.

Level Of Service Module table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Phoenix Country Day School
Existing Conditions
School PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 40th Street & Student North Driveway

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: A[ 7.8]

Table with columns for Street Name (40th Street, Student North Driveway), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Uncontrolled, Stop Sign), Rights (Include), and Lanes (0, 1, 0, 0, 0).

Volume Module:

Table showing traffic volume metrics: Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for each approach.

Critical Gap Module:

Table showing Critical Gap (4.1) and FollowUpTim (2.2) for each approach.

Capacity Module:

Table showing Capacity metrics: Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for each approach.

Level Of Service Module:

Table showing Level of Service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Phoenix Country Day School
Existing Conditions
School PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #8 40th Street & Student South Driveway

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: B[ 12.2]

Table with columns for Street Name (40th Street, Student South Driveway), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Uncontrolled, Stop Sign), Rights (Include), and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for each approach and movement.

Critical Gap Module table showing Critical Gp and FollowUpTim for each approach and movement.

Capacity Module table showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for each approach and movement.

Level Of Service Module table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS for each approach and movement.

Note: Queue reported is the number of cars per lane.

Phoenix Country Day School
Existing Conditions
School PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #10 40th Street & Colter Street

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: B[ 14.0]

Table with columns for Street Name (40th Street, Colter Street), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, and Lanes.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for each approach.

Critical Gap Module table showing Critical Gp and FollowUpTim for each approach.

Capacity Module table showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for each approach.

Level Of Service Module table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

## APPENDIX D

### PROPOSED PEAK HOUR CAPACITY ANALYSIS

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Phoenix Country Day School  
Proposed Conditions  
AM Peak Hour

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Scenario Report

Scenario: AM  
Command: AM  
Volume: AM  
Geometry: Default Geometry  
Impact Fee: Default Impact Fee  
Trip Generation: AM  
Trip Distribution: Default Trip Distribution  
Paths: Default Path  
Routes: Default Route  
Configuration: Default Configuration

Phoenix Country Day School  
 Proposed Conditions  
 AM Peak Hour

Level Of Service Computation Report

FHWA Roundabout Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #1 40th Street & Stanford Drive

\*\*\*\*\*

Average Delay (sec/veh): 5.3 Level Of Service: A

\*\*\*\*\*

Street Name:	40th Street						Stanford Drive													
Approach:	North Bound			South Bound			East Bound			West Bound										
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Yield Sign			Yield Sign			Yield Sign			Yield Sign										
Lanes:	1			1			1			1										

Volume Module:

Base Vol:	110	36	72	9	73	26	10	169	159	170	178	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	110	36	72	9	73	26	10	169	159	170	178	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
PHF Volume:	138	45	90	11	91	33	13	211	199	213	223	5
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	138	45	90	11	91	33	13	211	199	213	223	5
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	138	45	90	11	91	33	13	211	199	213	223	5

PCE Module:

AutoPCE:	138	45	90	11	91	33	13	211	199	213	223	5
TruckPCE:	0	0	0	0	0	0	0	0	0	0	0	0
ComboPCE:	0	0	0	0	0	0	0	0	0	0	0	0
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	138	45	90	11	91	33	13	211	199	213	223	5

Delay Module: >> Time Period: 0.25 hours <<

CircVolume:	235	572	315	195
MaxVolume:	1073	891	1030	1095
PedVolume:	0	0	0	0
AdjMaxVol:	1073	891	1030	1095
ApproachVol:	273	135	422	440
ApproachV/C:	0.25	0.15	0.41	0.40
ApproachDel:	4.5	4.8	5.9	5.5
ApproachLOS:	A	A	A	A
Queue:	1.0	0.5	2.0	2.0

Phoenix Country Day School
Proposed Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #2 40th Street & Office North Driveway
\*\*\*\*\*

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: A[ 8.5]

\*\*\*\*\*

Table with columns for Street Name (40th Street, Office North Driveway), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Uncontrolled, Stop Sign), Rights (Include), and Lanes (0, 1, 0, 0, 0).

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume across various movement categories.

Critical Gap Module: Table with columns for Critical Gp and FollowUpTim, with values like 4.1, 2.2 and 'xxxx' placeholders.

Capacity Module: Table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap, with values like 505, 1070 and 'xxxx' placeholders.

Level Of Service Module: Table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS, with values like 0.1, 8.5 and 'xxxx' placeholders.

\*\*\*\*\*

Note: Queue reported is the number of cars per lane.

\*\*\*\*\*

Phoenix Country Day School
Proposed Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #3 40th Street & Office South Driveway
\*\*\*\*\*

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[ 11.5]

\*\*\*\*\*

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes for 40th Street and Office South Driveway.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for various movements.

Critical Gap Module table showing Critical Gp and FollowUpTim for different movements.

Capacity Module table showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for different movements.

Level Of Service Module table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

\*\*\*\*\*

Note: Queue reported is the number of cars per lane.

\*\*\*\*\*

Phoenix Country Day School
Proposed Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #5 40th Street & New Parking North Driveway
\*\*\*\*\*

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: B[ 11.1]

\*\*\*\*\*

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes for 40th Street and New Parking North Driveway.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for various approaches.

Critical Gap Module table showing Critical Gp and FollowUpTim for different approaches.

Capacity Module table showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for different approaches.

Level Of Service Module table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

\*\*\*\*\*

Note: Queue reported is the number of cars per lane.

\*\*\*\*\*

Phoenix Country Day School
Proposed Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #9 40th Street & New Parking South Driveway

Average Delay (sec/veh): 2.7 Worst Case Level Of Service: B[ 14.1]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes for 40th Street and New Parking South Driveway.

Volume Module:

Table showing traffic volume metrics: Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume.

Critical Gap Module:

Table showing critical gap and follow-up time metrics: Critical Gp and FollowUpTim.

Capacity Module:

Table showing capacity metrics: Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module:

Table showing level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Phoenix Country Day School
Proposed Conditions
AM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*
Intersection #10 40th Street & Colter Street
\*\*\*\*\*

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: C[ 17.2]

\*\*\*\*\*

Table with columns for Street Name (40th Street, Colter Street), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, and Lanes.

Table for Volume Module showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for each movement.

Table for Critical Gap Module showing Critical Gp, FollowUpTim, and other metrics for each movement.

Table for Capacity Module showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for each movement.

Table for Level Of Service Module showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

\*\*\*\*\*

Note: Queue reported is the number of cars per lane.

\*\*\*\*\*

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Phoenix Country Day School  
Existing Conditions  
School PM Peak Hour

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## Scenario Report

Scenario: SPM  
Command: SPM  
Volume: SPM  
Geometry: Default Geometry  
Impact Fee: Default Impact Fee  
Trip Generation: SPM  
Trip Distribution: Default Trip Distribution  
Paths: Default Path  
Routes: Default Route  
Configuration: Default Configuration

Phoenix Country Day School  
 Existing Conditions  
 School PM Peak Hour

Level Of Service Computation Report

FHWA Roundabout Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #1 40th Street & Stanford Drive

\*\*\*\*\*

Average Delay (sec/veh): 4.7 Level Of Service: A

\*\*\*\*\*

Street Name:	40th Street						Stanford Drive								
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Yield Sign			Yield Sign			Yield Sign			Yield Sign					
Lanes:	1			1			1			1					

Volume Module:

Base Vol:	110	64	99	10	43	10	13	165	99	75	151	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	110	64	99	10	43	10	13	165	99	75	151	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
PHF Volume:	138	80	124	13	54	13	16	206	124	94	189	18
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	138	80	124	13	54	13	16	206	124	94	189	18
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	138	80	124	13	54	13	16	206	124	94	189	18

PCE Module:

AutoPCE:	138	80	124	13	54	13	16	206	124	94	189	18
TruckPCE:	0	0	0	0	0	0	0	0	0	0	0	0
ComboPCE:	0	0	0	0	0	0	0	0	0	0	0	0
BicyclePCE:	0	0	0	0	0	0	0	0	0	0	0	0
AdjVolume:	138	80	124	13	54	13	16	206	124	94	189	18

Delay Module: >> Time Period: 0.25 hours <<

CircVolume:	235	420	160	234
MaxVolume:	1073	973	1114	1074
PedVolume:	0	0	0	0
AdjMaxVol:	1073	973	1114	1074
ApproachVol:	341	79	346	300
ApproachV/C:	0.32	0.08	0.31	0.28
ApproachDel:	4.9	4.0	4.7	4.6
ApproachLOS:	A	A	A	A
Queue:	1.4	0.3	1.3	1.1

Phoenix Country Day School
Existing Conditions
School PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 40th Street & Office North Driveway

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[ 7.8]

Table with columns for Street Name (40th Street, Office North Driveway), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Uncontrolled, Stop Sign), Rights (Include), and Lanes (0, 1, 0, 0, 0).

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume across various movements.

Critical Gap Module table with columns for Critical Gp and FollowUpTim across various movements.

Capacity Module table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap across various movements.

Level Of Service Module table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS across various movements.

Note: Queue reported is the number of cars per lane.

Phoenix Country Day School
Existing Conditions
School PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

\*\*\*\*\*

Intersection #3 40th Street & Office South Driveway

\*\*\*\*\*

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[ 11.0]

\*\*\*\*\*

Table with columns for Street Name (40th Street, Office South Driveway), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, and Lanes.

Volume Module:

Table with columns for Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for each movement.

Critical Gap Module:

Table with columns for Critical Gp and FollowUpTim for each movement.

Capacity Module:

Table with columns for Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for each movement.

Level Of Service Module:

Table with columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS for each movement.

\*\*\*\*\*

Note: Queue reported is the number of cars per lane.

\*\*\*\*\*

Phoenix Country Day School
Existing Conditions
School PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 40th Street & New Parking North Driveway

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: B[ 11.9]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes for 40th Street and New Parking North Driveway.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for various movements.

Critical Gap Module table showing Critical Gp and FollowUpTim for different movements.

Capacity Module table showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for various movements.

Level Of Service Module table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Phoenix Country Day School
Existing Conditions
School PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #9 40th Street & New Parking South Driveway

Average Delay (sec/veh): 2.9 Worst Case Level Of Service: B[ 12.9]

Table with columns for Street Name, Approach, Movement, Control, Rights, and Lanes for 40th Street and New Parking South Driveway.

Volume Module table showing Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for various movements.

Critical Gap Module table showing Critical Gp and FollowUpTim for different movements.

Capacity Module table showing Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap for various movements.

Level Of Service Module table showing 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Phoenix Country Day School
Existing Conditions
School PM Peak Hour

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #10 40th Street & Colter Street

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: B[ 14.0]

Table with columns for Street Name (40th Street, Colter Street), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control (Uncontrolled, Stop Sign), Rights (Include), and Lanes (0, 1, 0, 0).

Volume Module:

Table showing traffic volume metrics: Base Vol, Growth Adj, Initial Bse, User Adj, PHF Adj, PHF Volume, Reduct Vol, and Final Volume for each approach.

Critical Gap Module:

Table showing critical gap and follow-up time metrics for each approach.

Capacity Module:

Table showing capacity metrics: Conflict Vol, Potent Cap., Move Cap., and Volume/Cap for each approach.

Level Of Service Module:

Table showing level of service metrics: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., Shared Queue, Shrd ConDel, Shared LOS, Approach Del, and Approach LOS.

Note: Queue reported is the number of cars per lane.



April 21, 2014

Mr. James Shano, P.E.  
Public Works Director  
Town of Paradise Valley  
6401 E. Lincoln Drive  
Paradise Valley, AZ 85253

Apr 21 03.31.2016

**RE: 2<sup>nd</sup> Submittal - Traffic Impact Statement for Phoenix Country Day School Gym Expansion – Paradise Valley, AZ**

Dear Mr. Shano:

CivTech Inc. has been retained by Architekton to prepare a Traffic Impact Statement for the proposed Phoenix Country Day School (PCDS) gym expansion in Paradise Valley, Arizona. A new gym is being proposed at the location of the old aquatic center next to the existing gym. A site plan has been included with this letter as part of the **Attachment**.

The existing gym has a bleacher capacity of 484 persons, and a gym floor space of 8,944 square feet (with the bleachers in a closed position). The new gym will have a bleacher capacity of 750 persons and a gym floor space of 13,258 square feet (with the bleachers in a closed position). PCDS is planning for the new gym to accommodate the existing events at the school. The old gym will be used for PE Classes and minor school day functions.

This letter statement discusses the traffic impact of the PCDS gym expansion.

**BACKGROUND**

CivTech completed a *Traffic Impact Analysis* for the Phoenix Country Day School (PCDS) in October 2013. The study addressed the addition of the new aquatics center, relocation of tennis courts, and a new parking lot. The location of the new aquatics center will be between the gymnasium and the tennis courts, adjacent to the drainage facility. The existing faculty parking lot, south parking lot and overflow parking lot will be removed (163 spaces plus overflow), and a new parking lot will be constructed on the southeast corner of the school campus. The new parking lot will provide approximately 210 parking spaces with three (3) north-south drive aisles. Access to the new parking lot will be provided at two (2) full access driveways on 40<sup>th</sup> Street. Although two-way traffic will be allowed at both driveways of the new parking lot, it is anticipated that the majority of trips will enter at the north driveway and exit at the south driveway.

PCDS is now proposing a new gym at the location of the old aquatic center next to the old gym. Both the old and new gyms may be accessed via the new parking lot located in the southeast corner of the school campus.

**PARKING**

Per the *Traffic Impact Analysis* completed in October 2013 for the Phoenix Country Day School, the following parking accommodations have been provided:

- The proposed parking lot in the southeast corner of campus will add 47 total parking spaces, thus providing sufficient parking spaces for the school’s typical parking demand.
- Phoenix Country Day School and Camelback Bible Church maintain a shared parking agreement for when additional parking is needed for large events.
- Since the church provides 307 parking spaces, and the school has parking that peaks at different days of the week and times of the day, this agreement vastly increases the available parking for both uses for a large event.
- According to the *Camelback Bible Church Parking Summary and Matrix* letter dated February 25, 2013, the church has a surplus of approximately 79 parking spaces during the church’s typical Sunday parking peak. The minimum available parking for Phoenix Country Day School on a weekend is 524 spaces.

The available parking spaces are summarized below in **Table 1**.

**Table 1: PCDS Available Parking Summary**

Parking Lot	Existing	Proposed
Lot 1	81	81
Lot 2	66	66
Lot 3	43	43
Lot 4	14	14
Lot 5	18	-
Lot 6	145	210
Lot 7	31	31
<b>TOTAL PCDS PARKING</b>	<b>398</b>	<b>445</b>
Camelback Bible Available Shared Parking - Weekday and Saturday	307	307
Camelback Bible Available Shared Parking - Sunday	79	79
<b>Total Parking Available - Weekday and Saturday</b>	<b>705</b>	<b>752</b>
<b>Total Parking Available - Sunday</b>	<b>477</b>	<b>524</b>

**TRIP GENERATION**

School enrollment is not being changed with the gym expansion. Therefore, the total number of trips to/from the school is not anticipated to increase during regular school hours. As a result, the morning and afternoon peak hour trips are not expected to increase with the gym expansion.

A typical athletic day at PCDS requires the use of the current parking lot, which accommodates all of their practices and games for their entire athletic facility. With the new construction of the

pool and gym, the PCDS athletic program will not change. There are no plans to grow the programs, and PCDS will not be hiring new coaches and will not have more athletes competing. The existing and new gymnasiums will allow PCDS to finish their same athletic programs earlier in the evening. Student athletes who typically leave around 7:30 PM will now have the opportunity to be home sooner due to more facility space.

**Special Events**

The Phoenix Country Day School hosts a handful of events each year that demand more parking than a typical day. As described in the ‘Parking’ section below, overflow parking is available at the Camelback Bible Church should extra parking be required during the following special school events:

- Ice cream social- 400 expected guests
- High School Athletic Tournaments:
  - Volleyball- 100 expected throughout the day
  - Basketball- 200 expected throughout the day
  - Soccer- 100 expected throughout the day
  - Baseball / Softball- 100 expected throughout the day
- Middle School Athletic Tournament
  - Basketball / Soccer- 200 expected throughout the day
- Swimming / Diving meets- 400 expected guests

Typical car occupancy rates for the special events were assumed to calculate the resulting numbers of cars. **Table 2** summarizes the special events and their corresponding parking demand.

**Table 2: PCDS Special Event Parking Demand**

Event	Guests	Rate (persons/car)	Cars/Parking Demand		
Ice Cream Social	400	1.5	267	<b>Total Available Parking (including overflow parking from church)</b>	
Swim Meet	400	2.2	182		
Basketball	200	2.0	100		
Volleyball	100	2.0	50		
Soccer	200	2.0	100		
Baseball/Softball	100	2.0	50		
Basketball Gym at Capacity	750	2.0	375	<b>Weekday &amp; Saturday</b>	<b>Sunday</b>
<b>Scenario 1: Ice Cream Social and Swim Meet</b>			<b>449</b>	<b>752</b>	<b>524</b>
<b>Scenario 2: Basketball Gym at Capacity and Swim Meet</b>			<b>557</b>	<b>752</b>	<b>524</b>
<b>Scenario 3: Basketball Gym at Capacity and Ice Cream Social</b>			<b>642</b>	<b>752</b>	<b>524</b>

One of the scenarios considered is an ice cream social and swim meet occurring on the same day. The resulting parking demand for this scenario is 449 spaces. The total PCDS available parking is 445 spaces. Therefore, there would be an overflow of four (4) vehicles, which could be accommodated by the overflow parking provided at the Camelback Bible Church.

In the unexpected event of the basketball gym being at capacity and a swim meet, the estimated parking demand is 557 spaces. On a Saturday, the total available parking, including the overflow parking at the church, is 752 parking spaces. Therefore, the parking for this scenario could be accommodated on a Saturday by using the overflow parking. Should this scenario occur on a Sunday, the parking demand could not be accommodated with overflow parking.

In the unexpected event of the basketball gym being at capacity and a social event, the estimated parking demand is 642 spaces. The parking for this worst-case scenario consisting of a full capacity basketball gym and social event could be accommodated on a Saturday by using the church overflow parking. Should this scenario occur on a Sunday, the parking demand could not be accommodated with overflow parking.

## **CIRCULATION**

CivTech completed a *Traffic Impact Analysis* for the Phoenix Country Day School (PCDS) in October 2013, which includes detailed weekday peak hour analyses for the school. School enrollment is not being changed with the gym expansion. Therefore, new peak hour analyses were not conducted for the gym expansion.

Both the old and new gyms may be accessed via the new parking lot located in the southeast corner of the school campus. This lot has two full driveways to 40<sup>th</sup> Street. A maintenance/fire lane access is located just north of the existing and new gyms, separated from the parking lot. The gym expansion will not affect the morning and afternoon drop-off/pick-up time periods. In the case that extra parking is required for special events, PCDS has an agreement with the Camelback Bible Church to share parking.

## **CONCLUSIONS**

- PCDS is proposing a new gym at the location of the old aquatic center next to the existing gym.
- The existing gym has a bleacher capacity of 484 persons, and a gym floor space of 8944 square feet (with the bleachers in a closed position). The new gym will have a bleacher capacity of 750 persons and a gym floor space 13,258 square feet (with the bleachers in a closed position). PCDS is planning for the new gym to accommodate the existing events at the school. The old gym will be used for PE Classes and minor school day functions.
- School enrollment is not being changed with the addition of the new gym. Therefore, the total number of trips to/from the school is not anticipated to increase during regular school hours. As a result, the morning and afternoon peak hour trips are not expected to increase with the gym expansion.

- With the new construction of the pool and gym, the PCDS athletic program will not change. There are no plans to grow the programs, and PCDS will not be hiring new coaches and will not have more athletes competing. The existing and new gymnasiums will allow PCDS to finish their same athletic programs earlier in the evening. Student athletes who typically leave around 7:30 PM will now have the opportunity to be home sooner due to more facility space.
- Both the old and new gyms may be accessed via the new parking lot located in the southeast corner of the school campus. This lot has two full driveways to 40<sup>th</sup> Street. A maintenance/fire lane access is located just north of the existing and new gyms, separated from the parking lot.
- The gym expansion will not affect the morning and afternoon drop-off/pick-up time periods. In the case that extra parking is required for special events, PCDS has an agreement with the Camelback Bible Church to share parking.
- One of the special event scenarios considered is an ice cream social and swim meet occurring on the same day. The resulting parking demand for this scenario is 449 spaces. The total PCDS available parking is 445 spaces. Therefore, there would be an overflow of four (4) vehicles, which could be accommodated by the overflow parking provided at the Camelback Bible Church.
- In the unexpected event of the basketball gym being at capacity and a swim meet, the estimated parking demand is 557 spaces. On a Saturday, the total available parking, including the overflow parking at the church, is 752 parking spaces. Therefore, the parking for this scenario could be accommodated on a Saturday by using the overflow parking. Should this scenario occur on a Sunday, the parking demand could not be accommodated with overflow parking.
- In the unexpected event of the basketball gym being at capacity and a social event, the estimated parking demand is 642 spaces. The parking for this worst-case scenario consisting of a full capacity basketball gym and social event could be accommodated on a Saturday by using the church overflow parking. Should this scenario occur on a Sunday, the parking demand could not be accommodated with overflow parking.

Should you wish to discuss this information further, please contact me at (480) 659-4250.

Sincerely,

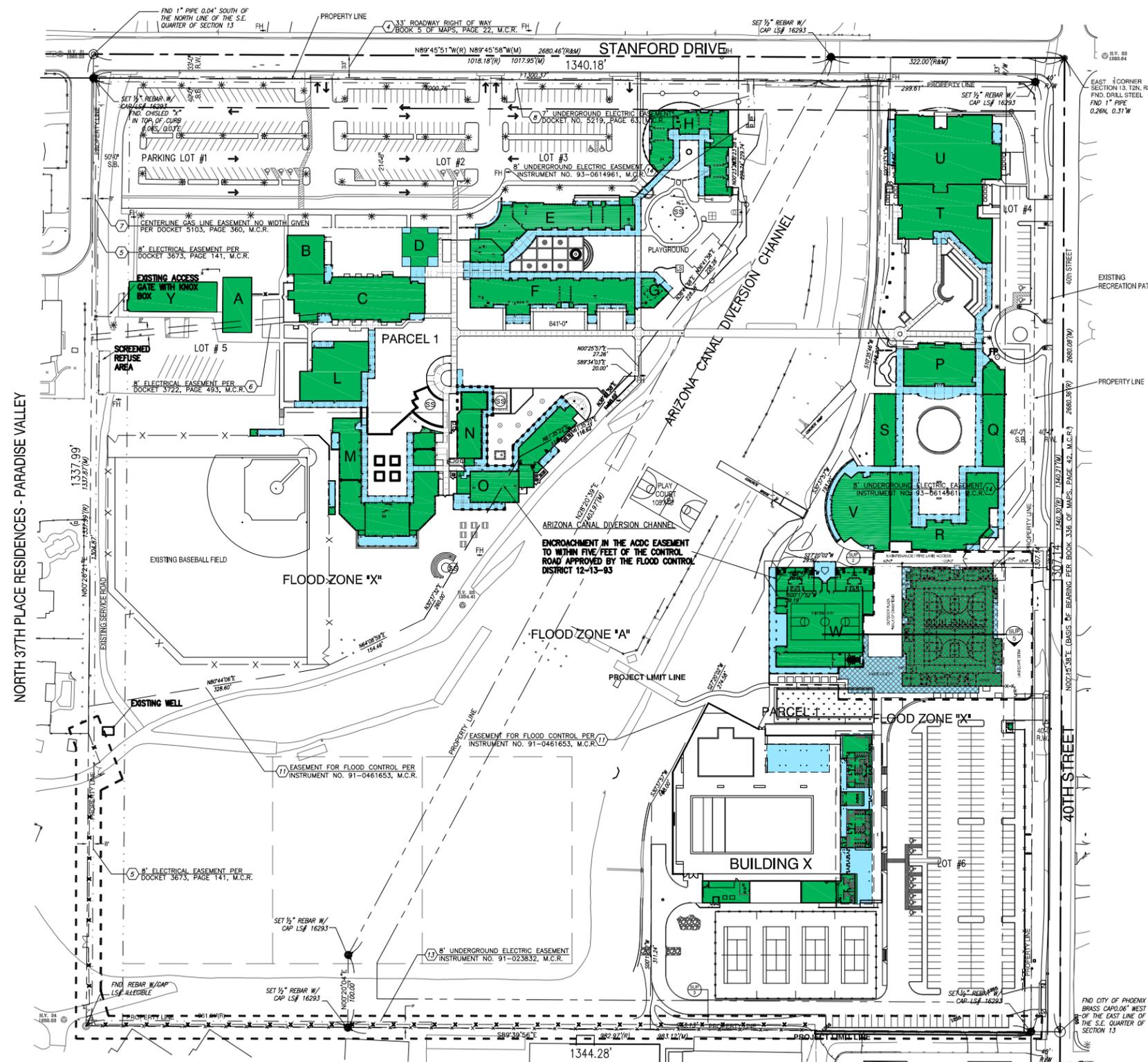
**CivTech**



Dawn Cartier, P.E., PTOE  
Project Manager

Attachment

CAMELBACK BIBLE CHURCH - PARADISE VALLEY



**CAMPUS PLAN LEGEND**

- EXISTING GROSS BUILDING AREA
- EXISTING COVERED EXTERIOR AREA
- EXISTING TO BE DEMOLISHED
- NEW GROSS BUILDING AREA
- NEW COVERED EXTERIOR AREA

THIS SYMBOL INDICATES AN APPROVED SHADE COVER NOT TO EXCEED 20% HIGH; COLORS: SAND, SAGE, OXIDE RED SIMILAR TO BUILDING TRIM. NO NEW SHADE STRUCTURES IN THIS PERMIT.

CITY OF PHOENIX  
**OVERALL CAMPUS PLAN**  
 1" = 80'-0"

**EXISTING CONDITIONS**

EXISTING BUILDING AREAS						
BUILDING DESIGNATION	INTENDED USE	CURRENT APPROVED AREA (S.F.)	CURRENT APPROVED BUILDING HEIGHT	MEASURED GROSS BUILDING AREA (S.F.)	MEASURED COVERED EXTERIOR AREA (S.F.)	TOTAL LOT COVERAGE (S.F.)
A	BUSINESS	3,000	15'-8" TO PARAPET	3,040	0	3,040
B	DINING HALL	8,524	23' TO RIDGE	2,772	0	2,772
C	MULTI-USE (BURCH HALL)	20,000	23' TO RIDGE, W/TOWER OF 38'	10,609	1,092	11,701
D	ADMINISTRATION	2,137	23' TO RIDGE	2,145	555	2,700
E	CLASSROOMS/ADMIN/SUPPORT T	10,100	14' TO RIDGE, W/TOWER OF 20'	9,496	4,187	13,683
F	CLASSROOMS	9,000	13'	9,212	3,609	12,821
G	HEALTH	2,000	14' TO RIDGE, W/TOWER OF 20'	1,148	823	1,971
H	CLASSROOMS	9,000	15' TO RIDGE	7,380	2,488	9,868
I	CLASSROOMS	DEMOLISHED		-	-	N/A (DEMOLISHED)
J	CLASSROOMS	DEMOLISHED		-	-	N/A (DEMOLISHED)
L	MUSIC	6,500	26'	6,518	2,084	8,602
M	CLASSROOMS	11,800	N/A	11,887	4,054	15,941
N	CLASSROOMS	3,280	VARIES 11' - 24'	3,277	1,547	4,824
O	CLASSROOMS	7,420	VARIES 11' - 24'	7,379	3,036	10,415
P	LIBRARY	5,700	VARIES TO 25' TO RIDGE	6,835	3,065	9,900
Q	CLASSROOMS/OFFICE	4,300	17'-8" TO RIDGE	2,980	969	3,949
R	CLASSROOMS/ST. CTR.	9,900	VARIES TO 22' TO RIDGE	9,486	832	13,318
S	CLASSROOMS	3,000	17'-8" TO RIDGE	3,000	986	3,986
T	SCIENCE	9,500	VARIES 16' - 20'	9,508	1,887	11,395
U	ART	13,000	VARIES 16' - 18'	13,281	973	14,254
V	AUDITORIUM	7,600	27'	7,503	1,643	9,146
W	GYM/ATHLETICS	16,462	VARIES TO 36' 6" TO PARAPET	16,383	5,342	21,705
X	AQUATICS CENTER	17,343	VARIES 18' MAX.	9,006	8,337	17,343
Y	MAINTENANCE	5,040		5,075	0	5,075
Z	PROPOSED GYMNASIUM EXPANSION	PROPOSED	PROPOSED 38'-0" MAXIMUM	PROPOSED 20,779	PROPOSED 5820	PROPOSED 26,599
-	GUARDHOUSE	50	10'	56	0	56
-	DUGOUTS	884		199	710	909
<b>TOTAL</b>		<b>189,078</b>		<b>178,934</b>	<b>57,039</b>	<b>235,973</b>

**EXISTING LOT COVERAGE RATIO**

LOT COVERAGE	235,973 S.F.
SITE AREA (NET)	1,700,420 S.F.
<b>LOT COVERAGE RATIO</b>	<b>235,973 S.F. / 1,700,420 S.F. = 13.88%</b>

**THIS PROJECT: PROPOSED GYMNASIUM EXPANSION**

**CHANGES TO BUILDING AREAS AND LOT COVERAGE (INTERMEDIATE AMENDMENT)**

PROPOSED GYM	
GROSS BUILDING AREA	20,779 S.F.
COVERED EXTERIOR AREA	5,820 S.F.
<b>TOTAL PROPOSED</b>	<b>20,779 + 5,820 = 26,599 S.F.</b>
<b>NEW LOT COVERAGE</b>	<b>209,374 S.F. + 26,599 S.F. = 235,973 S.F.</b>
<b>% CHANGE IN LOT COVERAGE</b>	<b>26,599 S.F. / 1,700,420 S.F. = +1.56%</b>
<b>CURRENT LOT COVERAGE RATIO</b>	<b>209,374 S.F. / 1,700,420 S.F. = 12.32%</b>
<b>PROPOSED LOT COVERAGE RATIO</b>	<b>235,973 S.F. / 1,700,420 S.F. = 13.88%</b>

**60 MONTH INCREASED FLOOR AREA**

- 175,854 sf (Oct 2003 - Mar 2004, Buildings G, F, H and M)
- 176,990 sf (July - Sept 2007, Building K rebuild)
- 209,374 sf (Oct - Nov 2013, Remove Building K, rebuild-relocate Building X aquatic center) \*correction on all building square footages
- 235,973 (Feb - Jun 2014, Remove Building X and add Building Z gymnasium expansion)
- 60-month increase at 33.3% (14.9% use 2013 #'s for existing buildings)

**DESCRIPTION OF WORK**  
 NEW 20,779 SF GYMNASIUM, 5,820 SF COVERED EXTERIOR AREA, NEW SECURITY FENCING @ SOUTH PERIMETER OF CAMPUS

**PROPERTY DESCRIPTION**  
 THE NORTHEAST ONE QUARTER OF THE SOUTHEAST ONE QUARTER OF SECTION 13, TOWNSHIP 2 NORTH, RANGE 3 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, AS REFERENCED IN BOOK 336 OF MAPS, PAGE 1, MARICOPA COUNTY RECORDERS.

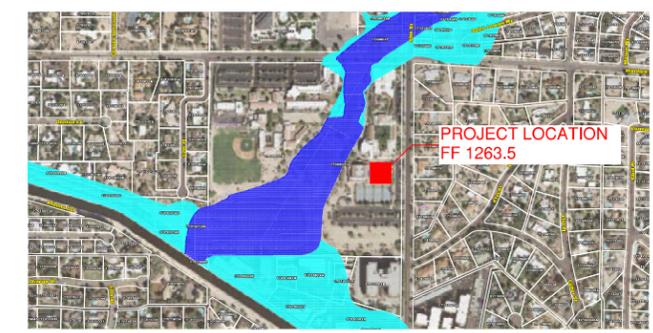
PHOENIX COUNTRY DAY SCHOOL, MARICOPA COUNTY RECORDER'S PARCEL #S 170-09-001A & 170-09-001B

**RESPONSIBILITY FOR COMPLIANCE**  
 THE DEVELOPMENT, CONSTRUCTION AND USAGE OF THE PROPERTY SHALL BE IN STRICT COMPLIANCE WITH THE AMENDED SPECIAL USE PERMIT ISSUED BY THE TOWN OF PARADISE VALLEY.

- SHEET LIST**
- SUP-1 OVERALL CAMPUS PLAN
  - SUP-2 PROJECT AREA PLAN
  - SUP-3 FENCE PLAN, DETAILS
  - SUP-4 FENCE
  - SUP-5 SECTION / BUILDING ELEVATIONS
  - SUP-6 BUILDING ELEVATIONS
  - SUP-7 GRADING PLAN
  - PR100 LANDSCAPE ARCHITECTURE
  - ES-1 ELECTRICAL SITE PLAN
  - ES-2 LIGHTING CUT SHEETS

**Table 1: PCDS Available Parking Summary**

Parking Lot	Existing	Proposed	Accessible
Lot 1	81	81	3
Lot 2	66	66	2
Lot 3	43	43	2
Lot 4	14	14	2
Lot 5	31	31	0
Lot 6	145	214	8
<b>TOTAL PCDS PARKING</b>	<b>398</b>	<b>449</b>	<b>17</b>
Camelback Bible Available Shared Parking - Weekday and Saturday	307	307	
Camelback Bible Available Shared Parking - Sunday	79	79	
<b>Total Parking Available - Weekday and Saturday</b>	<b>705</b>	<b>756</b>	<b>17</b>
<b>Total Parking Available - Sunday</b>	<b>477</b>	<b>528</b>	<b>17</b>

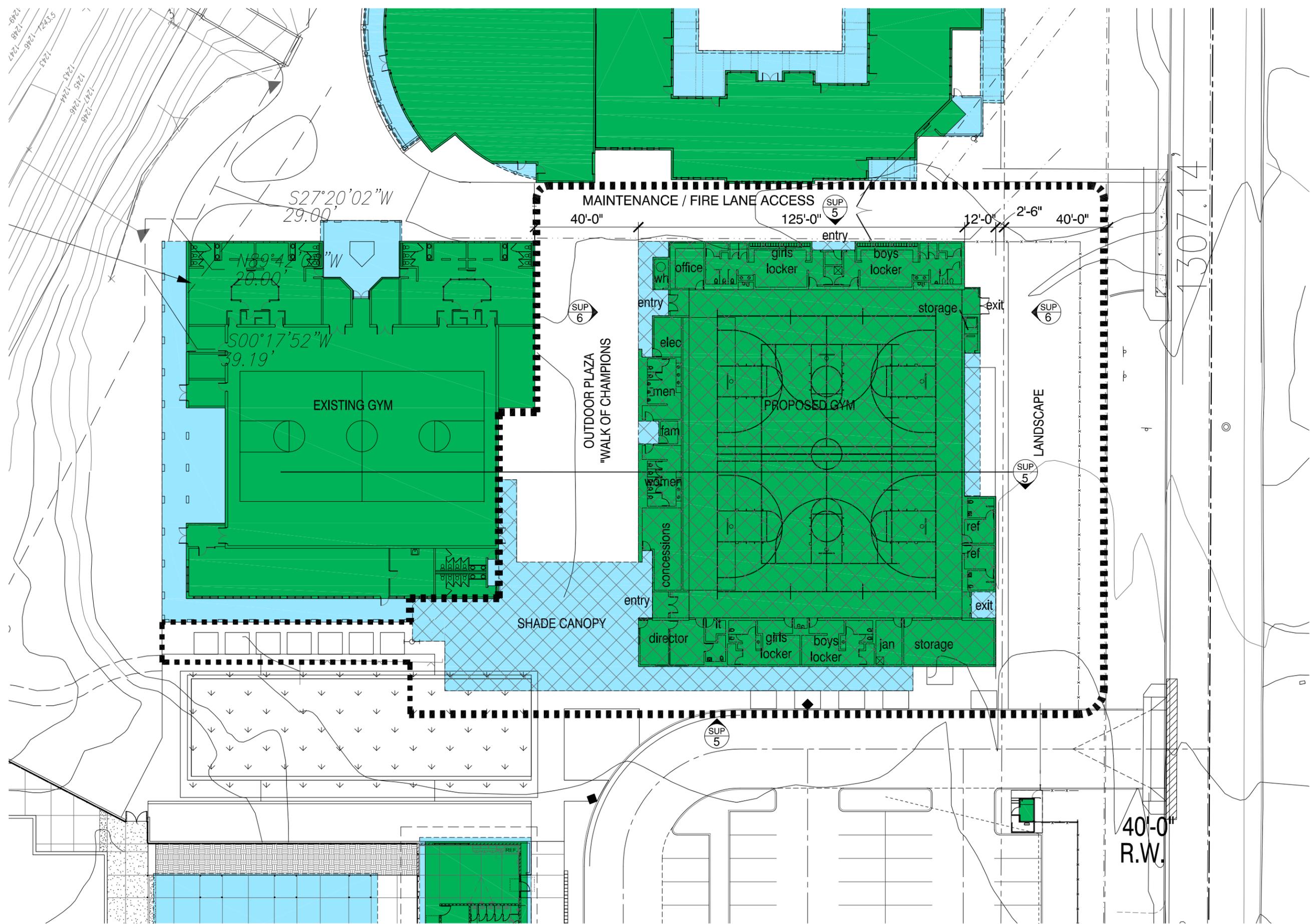


464 S Farmer Ave., Suite 101  
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 www.architekton.com

**ARCHITEKTON**  
**PHOENIX COUNTRY DAY SCHOOL GYM EXPANSION**  
 3901 EAST STANFORD DRIVE PARADISE VALLEY, AZ

No.	Description	Date
SUP SUBMITTAL		04.08.14
SUP COMMENTS		04.21.14
RESUBMITTAL		
SUP COMMENTS		06.17.14
RESUBMITTAL		

CAMPUS PLAN  
**SUP-1**



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ARCHITEKTON

PHOENIX COUNTRY DAY SCHOOL GYM EXPANSION  
 3901 EAST STANFORD DRIVE PARADISE VALLEY, AZ

No	Description	Date
1	SUP SUBMITTAL	04.08.14
2	SUP COMMENTS RESUBMITTAL	04.21.14



ENLARGED AERIAL VIEW OF FCD/FIRE DEPT. ACCESS AND ADJ. RESIDENCE



20 FCD/ FIRE DEPT. ACCESS



17 EXIST. WALL ON ADJ. COMM. PROPERTY



21 FCD/ FIRE DEPT. ACCESS



18 COMM. PROP. FENCE WITH NEW WROUGHT IRON

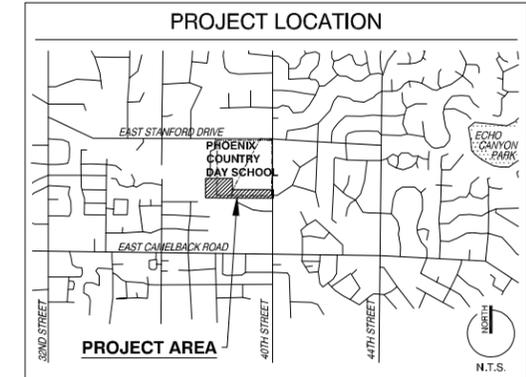


22 EXIST. SIGN AT FCD/ FIRE DEPT. ACCESS



19 FCD/ FIRE DEPT. ACCESS

PROJECT DATA	
OWNER:	PHOENIX COUNTRY DAY SCHOOL
PROJECT ADDRESS:	3901 EAST STANFORD DRIVE PARADISE VALLEY, ARIZONA 85253
CONTACT:	KATHY PETERS 602-955-8200
PROPERTY ZONING:	SPECIAL USE PERMIT
A.P.N.:	170-09-001-A, 170-09-001-B
DESCRIPTION OF WORK:	MODIFY AND ADD FENCING ALONG THE SOUTH AND WEST PROPERTY LINES TO SECURE THE SCHOOL GROUNDS.



FENCING TYPES	
<b>CHAIN LINK:</b>	2 3/8" SS 40 LINE POSTS, 1 5/8" SS 40 TOP RAIL, 9GA. CHAIN LINK AND 7GA. BOTTOM WIRE.
<b>WROUGHT IRON:</b>	3" SQ. LINE POSTS, 2" RAILS AND 1" PICKETS 4" O.C., WITH CURVED TOP SIM. TO EXISTING FCD FENCING.
<b>ADDITIONAL NOTES:</b>	REFER TO SITE PLAN FOR LOCATIONS, APPROXIMATE LENGTHS, AND HEIGHTS. GATES (WHERE INDICATED) TO MATCH ADJACENT FENCE.

SECURITY FENCING NOTES	
<b>LEGEND:</b>	--- PROPERTY LINE      PHOTO MARKER
<b>KEYNOTES:</b>	<ol style="list-style-type: none"> <li>EXISTING WALL/FENCE TO REMAIN.</li> <li>FENCE PER APPROVED SUP-13 AS PART OF NEW PCDS AQUATICS CENTER.</li> <li>RAISE EXISTING CONCRETE PILASTERS AND MASONRY WALL WITH 3" OF WROUGHT IRON FENCE ENTIRE LENGTH OF THE WALL. SEE IMAGE 18. THIS WALL IS ON COMMERCIAL PROPERTY IN THE CITY OF PHOENIX. IF BY AGREEMENT WITH THE OWNER TO RAISE THE WALL, NO APPROVAL SHOULD BE NEEDED FROM EITHER THE CITY OF PHOENIX OR THE TOWN OF PARADISE VALLEY. SEE ELEVATION 36/SUP-4</li> <li>INSTALL NEW 6' HIGH CHAIN LINK FENCE TO BE CONSTRUCTED ON PCDS PROPERTY, JUST INSIDE PROPERTY LINE. GRADE BELOW FENCE VARIES.</li> <li>NEW CHAIN LINK GATES, WITH KNOX BOX FOR FLOOD CONTROL DISTRICT AND FIRE DEPARTMENT. AGREEMENT AND/OR PERMITS REQUIRED WITH FLOOD CONTROL DISTRICT. SEE ELEVATION 35/SUP-4</li> </ol>
<b>ADDITIONAL NOTES:</b>	FENCE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO BIDDING.



**SITE SECURITY FENCING PLAN**  
1/4" = 1'-0"



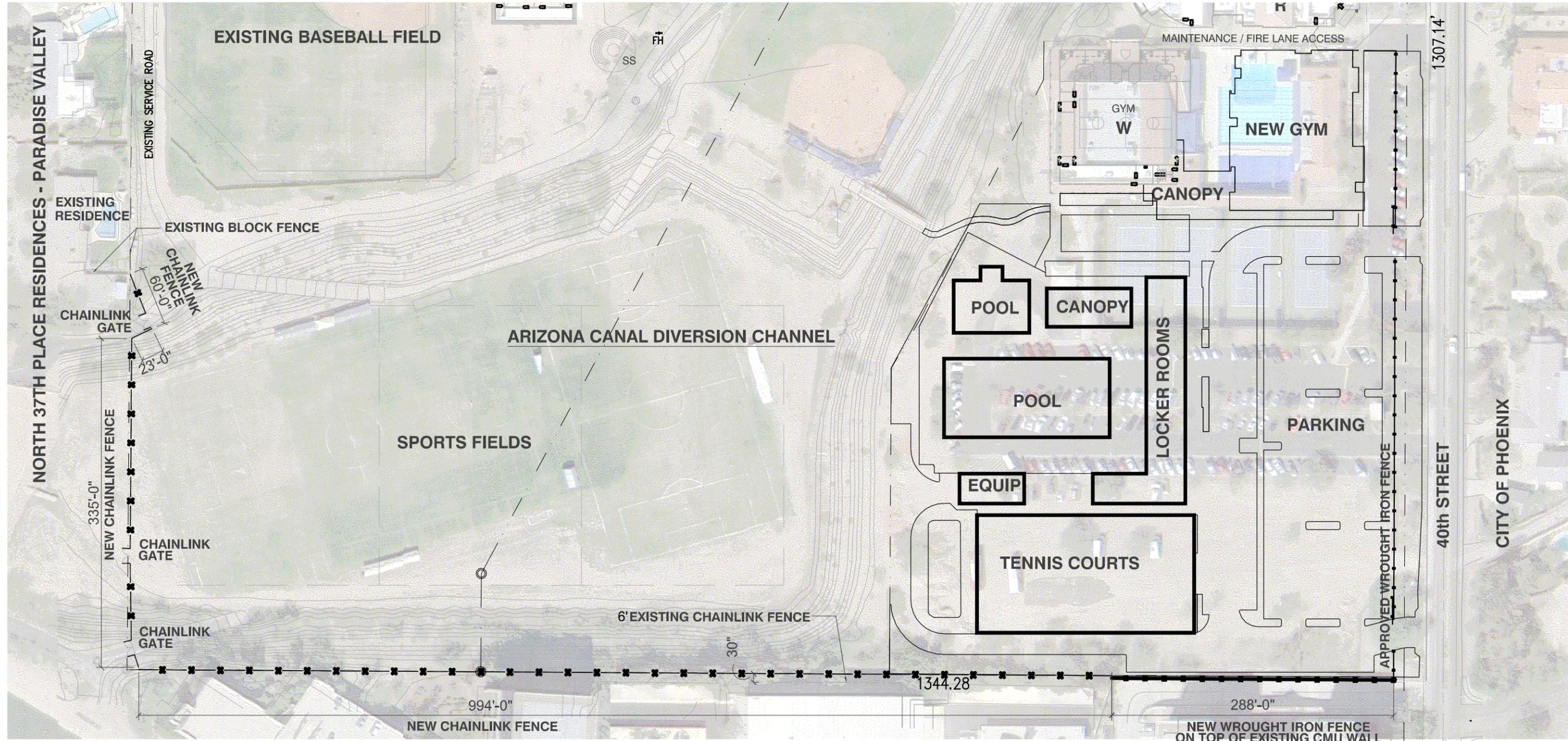
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PHOENIX COUNTRY DAY SCHOOL GYM EXPANSION  
3901 EAST STANFORD DRIVE PARADISE VALLEY, AZ

No	Description	Date
1	SUP SUBMITTAL	04.08.14
2	SUP COMMENTS RESUBMITTAL	04.21.14

**FENCE PLAN  
SUP-3**



CITY OF PHOENIX

**SITE SECURITY FENCING PLAN**



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**ARCHITEKTON**

**PHOENIX COUNTRY DAY SCHOOL GYM EXPANSION**  
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No	Description	Date
1	SUP SUBMITTAL	04.08.14
2	SUP COMMENTS RESUBMITTAL	04.21.14
3	SUP COMMENTS RESUBMITTAL	06.17.14



35 ADJACENT RESIDENCE



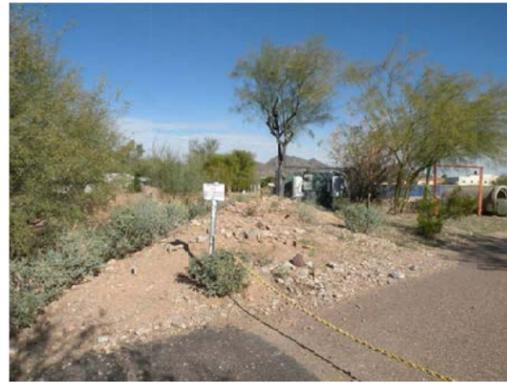
31 SPORTS FIELDS AND FCD FENCE



27 EXIST. FCD FENCING



23 FCD/ FIRE DEPT. ACCESS



36 EAST PROPERTY LINE



33 FCD/ FIRE DEPT. ACCESS



29 TYPICAL EXISTING FCD FENCE TYPE



25 CANAL



34 FCD/ FIRE DEPT. ACCESS



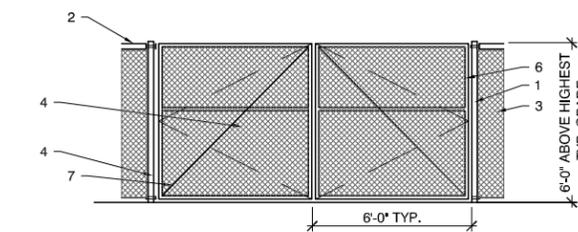
30 FCD/ FIRE DEPT. ACCESS



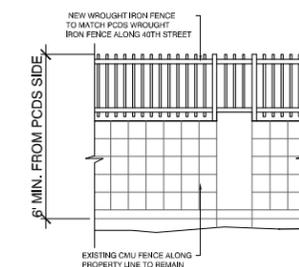
26 FCD/ FIRE DEPT. ACCESS

**NOTES:**

1. 2 1/2" GALVANIZED STEEL POST W/ TOP CAP (3" AT CORNERS) - TYP.
2. 2 1/2" TOP RAIL - TYP.
3. 1 5/8" GALVANIZED CHAIN LINK
4. BRACE ROD AS REQ'D.
5. HORIZONTAL BRACE AS REQ'D.
6. WELDED STEEL GATE W/ LATCH - LOCATIONS INDICATED PER PLAN
7. TENSION WIRE - TYP.



35 CHAIN LINK FENCE ELEVATION



36 EXISTING CMU WITH WROUGHT IRON FENCE ELEVATION



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No	Description	Date
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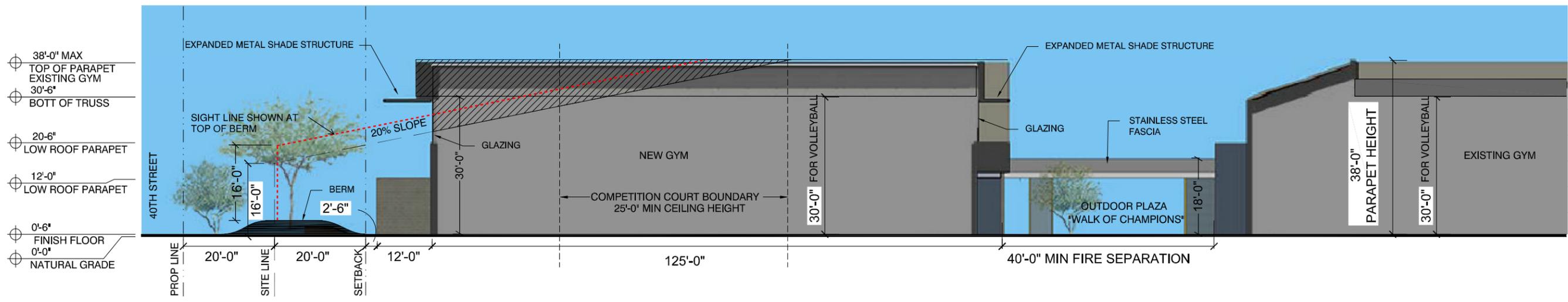
FENCE  
**SUP-4**



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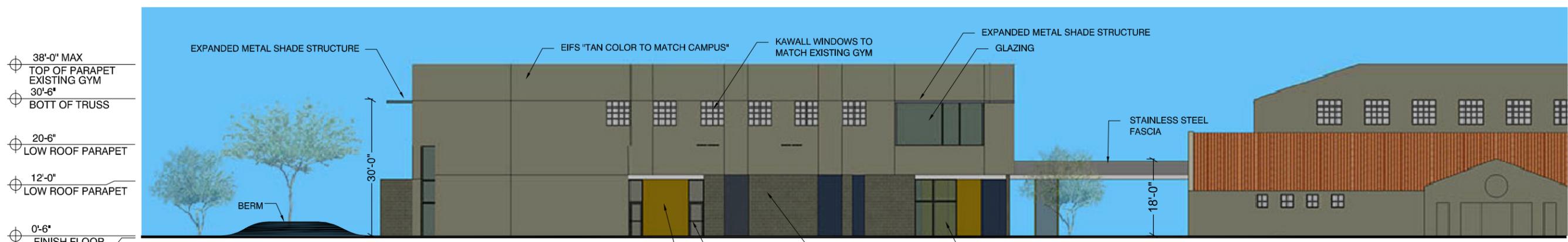
**ARCHITEKTON**



**SECTION DIAGRAM**  
3/32" = 1'-0"

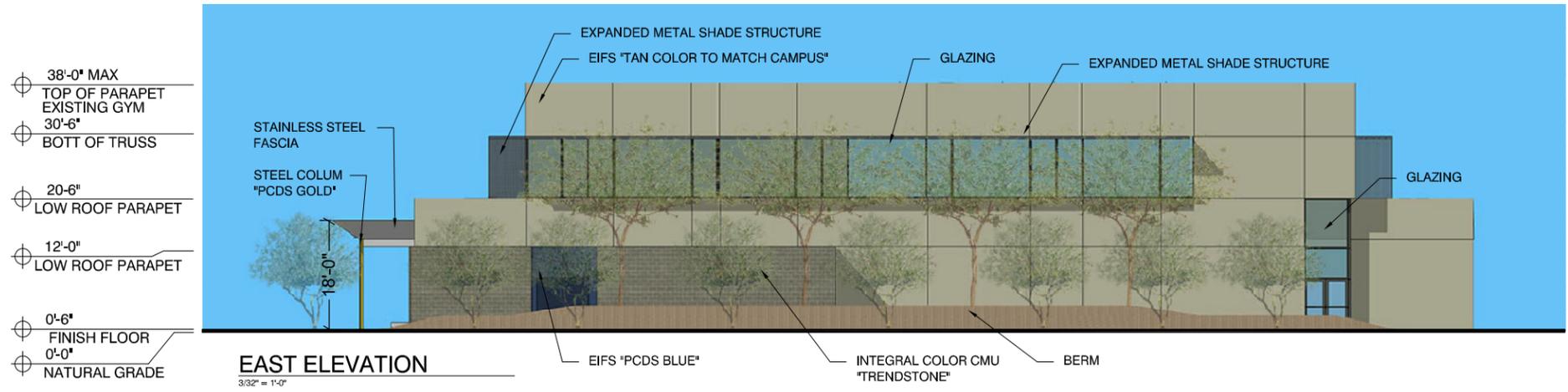


**SOUTH ELEVATION**  
3/32" = 1'-0"

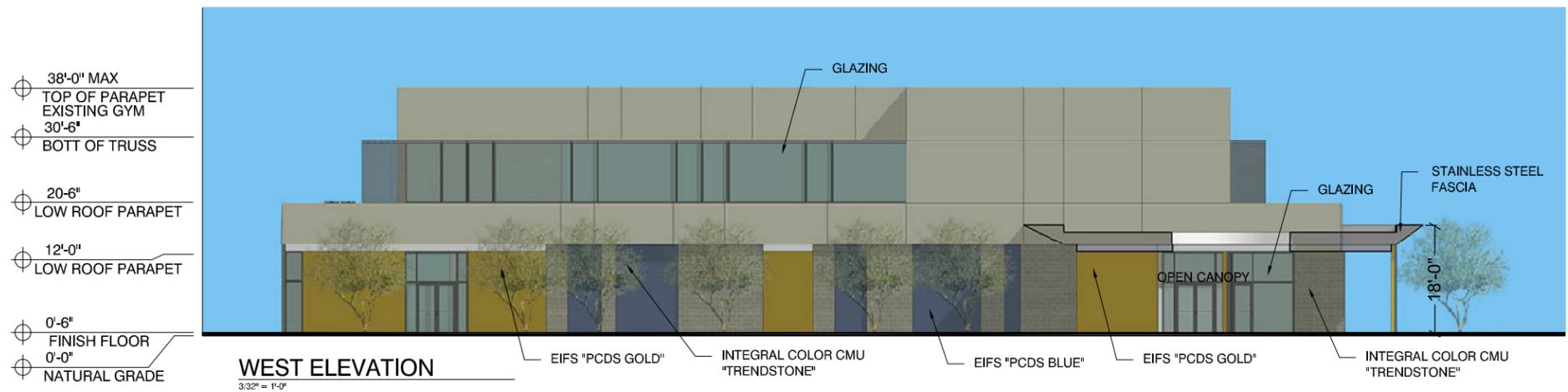


**NORTH ELEVATION**  
3/32" = 1'-0"

No.	Description	Date
1	SUP SUBMITTAL	04.08.14
2	SUP COMMENTS	04.21.14
3	RESUBMITTAL	



**EAST ELEVATION**  
3/32" = 1'-0"



**WEST ELEVATION**  
3/32" = 1'-0"



**VIEW FROM 40TH STREET**



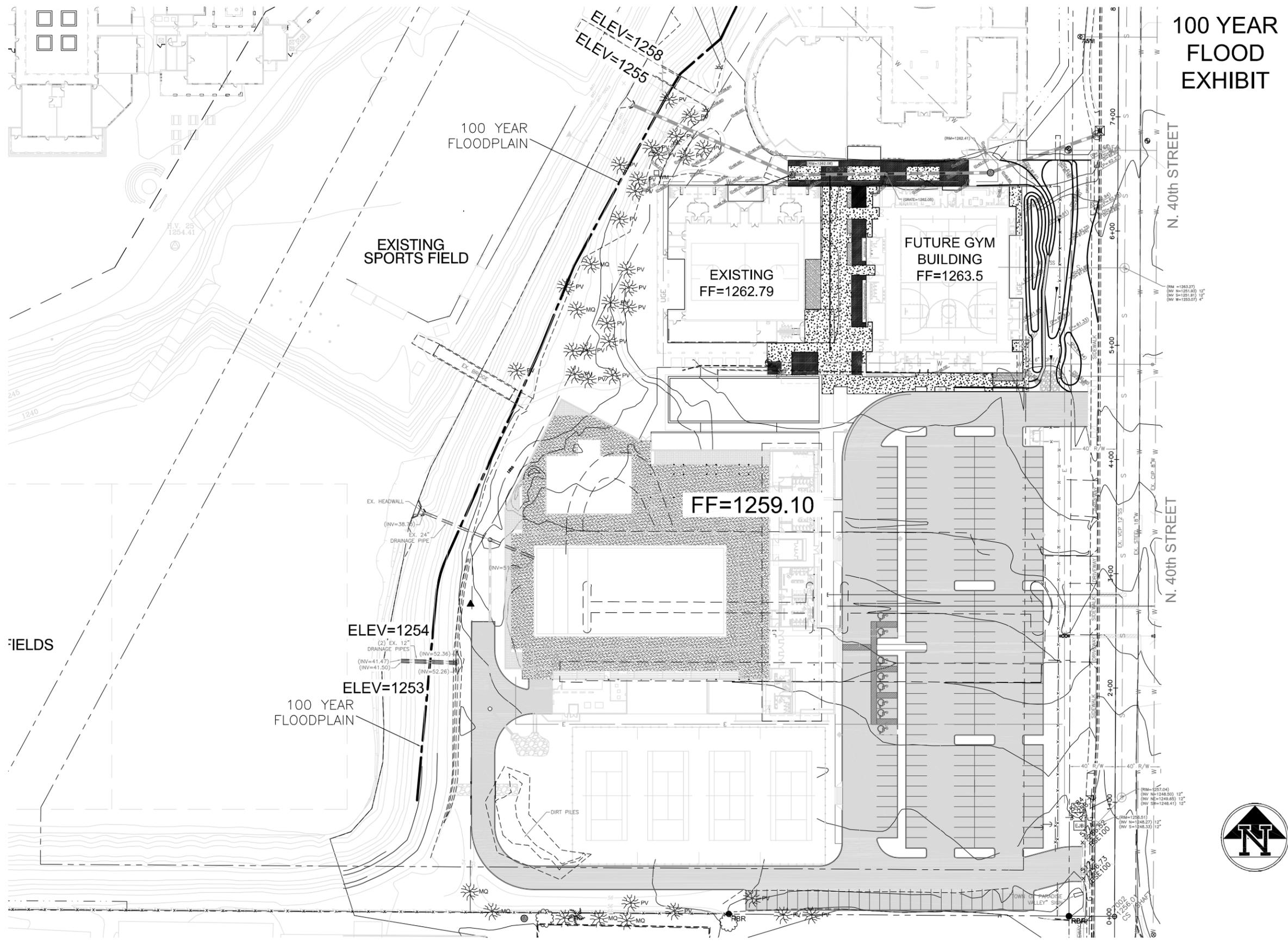
464 S Farmer Ave., Suite 101  
Tempe AZ, 85281  
T 480.894.4637  
F 480.894.4638  
www.architekton.com

**ARCHITEKTON**

**PHOENIX COUNTRY DAY SCHOOL GYM EXPANSION**  
3901 EAST STANFORD DRIVE PARADISE VALLEY, AZ

No	Description	Date
1	SUP SUBMITTAL	04.08.14
2	SUP COMMENTS	04.21.14
3	RESUBMITTAL	

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 SHEET SET INFORMATION: Sheet Set Name: ### Sheet Set Description: ###



# 100 YEAR FLOOD EXHIBIT

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## PHOENIX COUNTRY DAY SCHOOL - GYM EXPANSION -

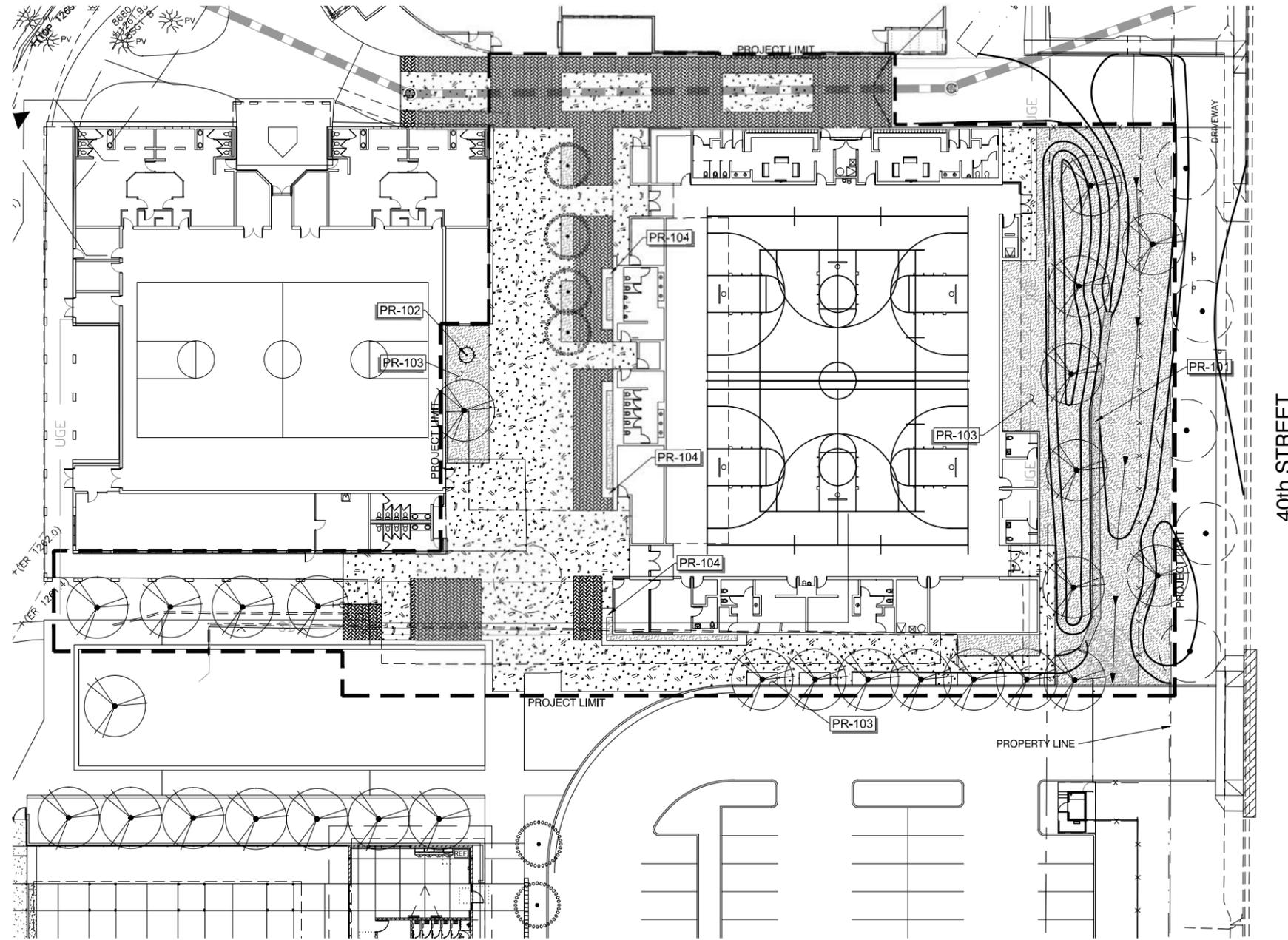
Phoenix Country Day School  
 3901 E. Stanford Dr. Paradise Valley, AZ 85253

No	Description	Date
1	Comments	



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 Sheet Set Name: ### Sheet Set Description: ###

DOCUMENT INFORMATION:  
 PRINTER INFORMATION:  
 SHEET SET INFORMATION:



### CONCEPT PLANT SCHEDULE

	CHAMPIONS COURT TREE ACACIA ANEURA / MULGA ACACIA SALICINA / WILLOW ACACIA	7
	CHAMPIONS LAWN TREE PARKINSONIA X 'DESERT MUSEUM' / DESERT MUSEUM PALO VERDE	27
	CHAMPIONS TREE CARNEGIA GIGANTEA / SAGUARO	1
	EXISTING TREE	5
	CHAMPIONS COURT PLANTING ECHINOCACTUS GRUSONII / GOLDEN BARREL CACTUS FEROCACTUS GRACILIS / RED SPINE CACTUS LOPHOCEREUS SCHOTTII MONSTROSUS / TOTEM POLE CACTUS MUHLENBERGIA CAPILLARIS 'REGAL MIST' TM / MUHLY PEDILANTHUS MACROCARPUS / SLIPPER PORTULACARIA AFRA / ELEPHANT BUSH	9,159 SF

### REFERENCE NOTES SCHEDULE

SYMBOL	PRELIMINARY NOTES DESCRIPTION	QTY	DETAIL
	BERM REFER TO CIVIL DRAWINGS		
	ICONIC SOUTHWEST PLANT FOR FOCAL POINT IN SPACE		
	DECOMPOSED GRANITE TOPDRESSING ON ALL PLANTING SURFACES		
	CONCRETE BENCH SEATING TO MATCH AQUATIC CENTER CHARACTER		
SYMBOL	PRELIMINARY NOTES DESCRIPTION	QTY	DETAIL
	EXTERIOR SURFACE 2 - MEDIUM BROOM FINISH CONCRETE	10,486 SF	
	EXTERIOR SURFACE 1 - DECORATIVE BRICK PAVING	5,157 SF	

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 web www.cvlci.com

PHOENIX COUNTRY DAY SCHOOL  
 - GYMNASIUM -

Phoenix Country Day School  
 3901 E. Stanford Dr. Paradise Valley, AZ 85253

No	Description	Date

Landscape Architecture

**PR100**



Apr 8 2014

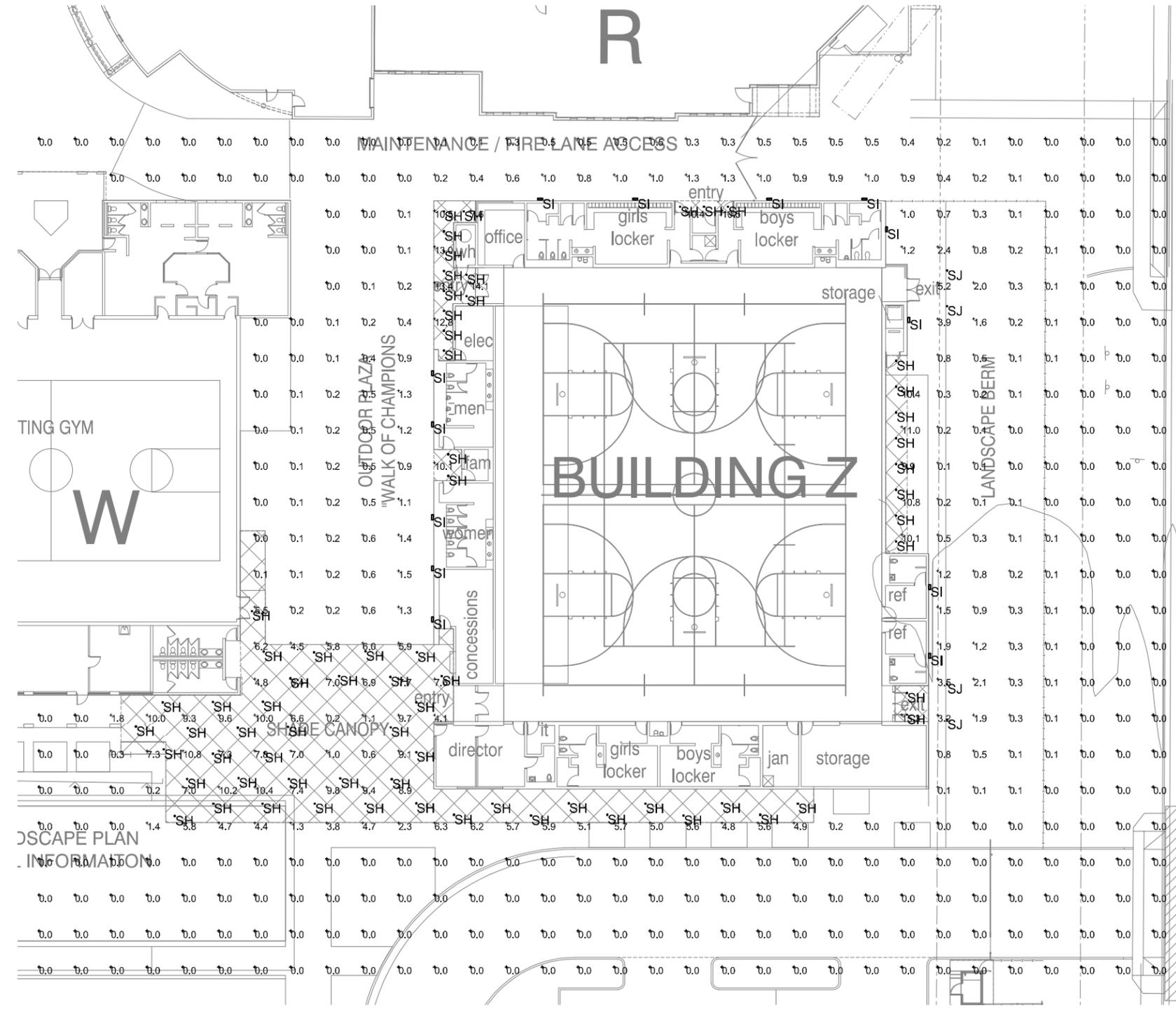
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PHOENIX COUNTRY DAY SCHOOL GYM EXPANSION  
3901 EAST STANFORD DRIVE PARADISE VALLEY, AZ

LUMINAIRE SCHEDULE									
Symbol	Label	Qty	Catalog Number	Description	Lamp	File	Lumens	LLF	Watts
□	SH	69	ATLANTIC LED6X6 DLM1300 35K T SS GS	6 INCH SQUARE DOWNLIGHT	LED	120031.ies	1300	0.81	21
▭	SI	13	LUMARK XTOR2A N HA	LUMARK CROSSTOUR LED WALL PACK - 20W - 3500K WITH SPECULAR REFLECTOR; CLEAR LENS AND ALUMINUM HEATSINK MOUNTED AT 15°	LED	XTOR2A-N.ies	1323	0.81	19.8
○	SJ	4	MCGRAW EDISON BRL 36 42 CF UNV BZ	36" ROUND ARCHITECTURAL SQUALLARD WITH STACKED LOUVERS	ONE 42 WATT CFL	BRL-36-70-MP.ies	3200	0.75	42

STATISTICS						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #1	+	1.3 fc	15.3 fc	0.0 fc	N/A	N/A



1 ELECTRICAL SITE PHOTOMETRY  
SCALE: 1/8" = 1'-0"

**HENDERSON ENGINEERS**  
5343 NORTH 16TH STREET, SUITE 460  
PHOENIX, AZ 85016  
TEL 602 336 5200 FAX 602 336 5201  
www.hel-eng.com  
AZ LICENSE NUMBER: 10470-0  
EXPIRES 06/30/14

No.	Description	Date
	SUP-PRE-APP	02.07.14

ELECTRICAL SITE PHOTOMETRY  
**ES-1**

# RECESSED LED 6"x8" square open

architectural

Project TYPE 'S'H'

Ordering data

LED6x8-DLM1300-35K-1-LM-SS-GS

## frame-in kit | 120 or 277 Volt

Powered and grounded in a box with gasketed snap-on cover. Lined for through-brain circuit wiring. Universal mounting brackets provide tool-less adjustability and will accept the supplied hanger bars or optional #871 and #520 Caddy bars. Also accepts C channel.

Electroplated galvanized steel hanger bars are included as factory standard. Bars extend to 24" and offer full-adjust and additional mounting features.

### Philips Fortimo 2.8i LED Module

- Remote phosphor technology
- Superior quality white LED light
- 80+ CRI
- Dimmable, instant 100% light (10% - 100%)
- Dimmable via 0-10V protocol (Mark 7 compatible driver)
- Rated Life: 50,000 hours at 70% lumen maintenance (L70) when maintained in a 35°C ambient environment with open air flow. Ambient temperatures lower than 35°C may extend life of module. 5-year warranty.

### Philips Fortimo Electronic LED Driver

- Input voltage: 120V < 240/277V
- FCC 47 CFR Part 15/ Class A
- Class 2 Rated
- Operating temperature: 70°C / -40°C

### Nuventix Sympat Cooling Systems

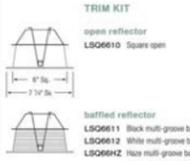
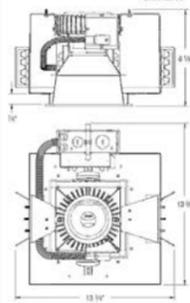
- Quiet operation of 25 dB in mid performance mode.
- 5-year warranty

This LED fixture is intended for non-C applications. Installation must be kept 5' away from fixtures on all sides. Listed by Wet Location under covered ceiling. Tested and Listed by ETL to UL 1598 and CSA C22.2 #250. Tested to M79. Photometrics at atlantictesting.com

Specifications and dimensions subject to change without notice.



t: 508 678-5411 | f: 508 678-5408 www.atlantic-lighting.com 09-28-13 NP11-019



Trim is a die-formed square reflector with milled corners and a standard white flange. The integral flange is constructed with a stamped overlay that eliminates visible corner seams and creates a more rigid trim. Optional polished flange will match the reflector finish.

## ordering data

### FRAME-IN KIT

LED6x8

SERIES Architectural 6"x8" LED

LUMENS\*

DLM1100 1100 lumen module

DLM1300 1300 lumen module

DLM2000 2000 lumen module

COLOR TEMPERATURE

27K 2700K

35K 3500K

4K 4000K

VOLTAGE

1 120V

2 277V

3 347V Step down transformer

OPTIONS

LEM Energy Pack - Openly Voltage Input #LS17-C2 or equivalent Class 2 rated. Requires large frame.

TRIM KIT

\*\*\* Refer to left for part numbers. Specify finish & other below.

FINISHES

CL Spectral clear

SD Semi-specular clear

HZ High Gloss White

WH Matte White

Other

PF Polished flange (Not available on baffled)

GS Gasket under flange

Lumens\* Temp Watts\*

1100 2700K 13W

1100 3000K 13W

1100 3500K 13W

1100 4000K 13W

1300 2700K 22W

1300 3000K 22W

1300 3500K 21W

1300 4000K 20W

2000 2700K 33W

2000 3000K 33W

2000 3500K 31W

2000 4000K 30W

\* Lumen and wattage are approximate measurements. See photometrics for better values.

P/N Example: LED6x8-DLM1100-27K-1 / LSQ610-CL

LED6x8-DLM1100-27K-1 / LSQ610-CL

spec lumens temp voltage size kit finish other

## DESCRIPTION

The McGraw-Edison BSL / BRL Bollard Series, available in heights from 24" to 42", has crisp, clean lines which blend with any architectural setting. Constructed of seamless, heavy-duty aluminum and finished with a tough polyester powder coat finish, the McGraw-Edison Bollard Series is guaranteed to meet or exceed all requirements. UL, ETL listed and CSA certified for wet locations.

Bollards are designed for walkways, entrances, drives and other small-area lighting applications where low ceiling height is desirable.

## SPECIFICATION FEATURES

**Construction**  
TOP: Plugged, minimum 5/32" thick cast aluminum top cap secured via a concealed stainless steel allen screw with twist remove mechanism for lamp access. Pole through ventilation assure cool-to-the-touch top. LOUVERS: Cast Aluminum Louver blades provide sharp cutoff delivering no direct light above 80°. Louvers are secured to the shaft via tamper-resistant steel rods and fasteners. LOWER HOUSING: Nominal 1 1/2" thick aluminum extruded housing. Bollard housing is secured to top base with flathead, counter-sink screws for smooth, unobtrusive appearance. BASE: Rugged cast aluminum. Completely concealed.

**Electrical**  
HID High Power Factor ballast or 20" PF starting. CFL Electronic Ballast for 2" starting. Product is factory mounted to the base. Dual disconnect provided between base and electrical essentially. Metal Halls and High Pressure Sodium Lamp sources up to 160W and up to 420W Compact Fluorescent sources.

**Options**  
LAMP ENCLOSURE: One pipe tempered glass with external flutes for lens (disassembly of illumination. Descriptive colored glass optional. Glass is fully gasketed via EPOXY resin. Socket is porcelain, made-to-base for HID lamp sources and

polycarbonate/PBT GX24q-3/4 base for compact fluorescent lamps.

**Mounting**  
Base mounts onto foundation with three (3) 1/2" x 12 1/2" anchor bolts on a 5" Dia. bolt circle (a centrally located 2 7/8" x 3 1/2" wire entrance opening provided).

**Finish**  
Premium fade and abrasion resistant, TGIC Polyester Powder Coat Finish. Standard colors are Black, Grey, Bronze, White, Dark Platinum and Graphite Metallic. Other finish colors available including all RAL matches.

## WATTAGE TABLE

Lamp Type Wattage

Pulse Start Metal Halide (MP) 50, 70, 100W

High Pressure Sodium (HPS) 35, 50, 70, 100W

Compact Fluorescent (CF) 11, 18, 21, 31, 42W

Incandescent (IC) 100W

## SHIPPING DATA

Approximate Net Weight: 39 lbs. (12 kg)

ADH08549 08 2010-06-22 0 28 29

COOPER Lighting

www.cooperlighting.com

ADH08549 08 2010-06-22 0 28 29

## McGraw-Edison

Category # BRL-36-42-CF-UVV-BZ

Type SJ

Project

Comments

Prepared by

Date

Date