

NOTE: RED TEXT ARE ITEMS TO ADDRESS

1. Additional requirements can be found in the current "Administrative Completeness Review Checklist for Engineering Permit Project": <https://www.tempe.gov/government/community-development/building-safety/applications-forms> Scroll down webpage and look for "Checklists." Select Civil Engineering Checklist for Private Development
2. Engineering plans to be submitted on 24"x36" pdf format and legible at 50% reduction. Minimum text size is 12 pt. font.
3. All plans and reports must be sealed by a professional civil engineer registered in the State of Arizona. Registrant signature must not cover name or license number per Arizona Administrative Code, p. 24
4. Maximum scale for engineering plans is 1"= 30' and show a bar scale
5. Include the most current local Arizona Blue Stake block on all sheets
6. All plan sheets must show north arrow, pointing to right or top of sheet, per Engineering Design Criteria, p. 15, note 3
7. Add note to Grading & Drainage sheets per Engineering Design Criteria, p. 12, note 10: "A Full Drainage Report Exists Under Separate Cover"
8. Compress pdf files. All plan sheets shall be saved in landscape (horizontal) orientation. Save as PDF/A.
9. PDFs shall be first generation vector-based file (direct conversion from AutoCAD, ArchiCAD, MS Word, etc and not scanned)
10. Provide separate pdfs for each document. Do not combine plans with reports or other documentation.
10. Print all graphics and text in black
11. Avoid using photos because the plans will be hard to read when reduced to 11 x 17 and printed for field inspectors
10. Engineering plans must be submitted as a separate PDF package under the EN number. Submit under the EN number in LANDSCAPE orientation through the Citizen's Portal: <https://epermits.tempe.gov/CitizenAccess/Default.aspx>
11. Provide copy of approved plat. This is for reference only. Formal submittal is through the Planning division. Plats are a Planning application and not part of Private Development Engineering. Coordinate with the planner for this project for requirements.
12. Payment of the engineering plan review fees is required at or before the time of pickup of 1st review redlines per Engineering Design Criteria, p. 11, note 2. Pay fees through the Citizen's Portal.
13. See next page for City of Tempe notes
14. This document applies to duplexes, commercial, industrial, multi-family and single-family subdivisions

LEGAL DESCRIPTION
(per Maricopa County Assessor's Office)

VICINITY MAP
(Show streets closest to property)

OWNER'S NAME AND ADDRESS
(Verify with Maricopa County Assessor's website or provide warranty deed or title report dated within 6 months)

NAME AND ADDRESS OF ENGINEERING COMPANY AND MAIN CONTACT

BENCHMARK
(Provide point number and elevation per Tempe Survey Control Map)

PROPERTY INFORMATION

Assessor's Parcel Number (APN):
Gross Area: s.f. and acres
Net Area: s.f. and acres
Disturbed Area: s.f. and acres

PROJECT DESCRIPTION

UTILITY COMPANY SUBMITTALS

1. These plans have been submitted to the following utility companies and the work contained in these plans has been approved by these companies within their area of interest. The size and locations, as shown, of the gas, telephone and power lines, and connections agree with the information contained in the utility company's records. Where the work to be done conflicts with any of these utilities, the conflicts shall be resolved as specified in the special provisions and/or as otherwise noted on these plans. Conflicts arising during the course of construction from unforeseen circumstances shall be reported to the interested utility company and be resolved by them and the design engineer.

2. The City will not participate in the cost of construction or utility relocation.

Salt River Power District	_____	_____
	Company Representative Contacted	Date
SRVWUA	_____	_____
	Company Representative Contacted	Date
Arizona Public Service	_____	_____
	Company Representative Contacted	Date
CenturyLink	_____	_____
	Company Representative Contacted	Date
El Paso Natural Gas Co.	_____	_____
	Company Representative Contacted	Date
Southwest Gas Co.	_____	_____
	Company Representative Contacted	Date
Cox Cable T.V.	_____	_____
	Company Representative Contacted	Date
Air Products	_____	_____
	Company Representative Contacted	Date
(Add All Utilities Affecting Project)	_____	_____
	Company Representative Contacted	Date

(This is only an example of utility companies. Add or remove as needed. Contact AZ811 for list of utility companies that affect the project)

MCESD DWR # _____

By: _____

Maricopa County Department of Environmental Services _____ Date _____
(required before plan approval)

APPROVAL FOR (Specify permit that applies e.g. Drainage, Offsites, Paving, Sewer, Street Lights, Underground Fire, Water) ONLY

CITY OF TEMPE _____ DATE _____
(Provide minimum 3/4" space for signature)

AS-BUILT INFORMATION IS INCLUDED IN THESE AREAS ON THIS SET OF DRAWINGS	PERMITS REQUIRED FOR THIS SET OF DRAWINGS
SEWER _____	_____ DRAINAGE
WATER _____	_____ PAVING
WATER-RECLAIMED _____	_____ WATER
STORM DRAIN _____	_____ SEWER
DRYWELL _____	_____ STREET LIGHTS
PAVING _____	_____ FLOODPLAIN
OFFSITE (C.G.SW,DW) _____	_____ U.G. FIRELINE
GRADING/DRAINAGE _____	_____ OTHER
AS-BUILT PLANS CHECKED FOR FIELD CHANGES	PARCEL # _____
INSPECTOR: _____ DATE: _____	PROJECT # _____

SHEET INDEX
(Provide SWPPP plans and include in sheet index. Place at end of set. If NOI is not needed, then provide quantity of disturbed area to demonstrate this)

ESTIMATED PUBLIC QUANTITIES (remove items that do not apply)

Item	Unit	Quantity
Water Main (Specify size)	LF	
Water Services (Specify size)	EA	
Water Meters	EA	
(Specify size, landscape or domestic, and compound or turbo)		
Existing Water Meters Removed	EA	
(Specify size, landscape or domestic and compound or turbo)		
Fire Hydrant	EA	
(Hydrants that are called out to be relocated shall be removed and replaced with a new hydrant)		
Tap Sleeve and Valve	EA	
Pipe Encasement	EA	
Valve Cluster	EA	
Driveway or Alley Entrance	EA	
Bus Bay	EA	
Bus Shelter (Specify type A or B)	EA	
Concrete Curb and Gutter	LF	
Sidewalk or Bike Path	LF	
Sidewalk Ramp	EA	
Valley Gutter and Apron	EA	
New/Replacement Paving	SY	
Alley Surfacing	SY	
Manhole Adjustments	EA	
Valve Box Adjustments	EA	
Irrigation	LF	
Storm Drains	LF	
Catch Basin	EA	
Manholes	EA	
Sewer Lines (Specify size)	LF	
Sewer Services (Specify size)	EA	
Manhole (Specify size)	EA	
Sewer Cleanout (Specify size)	EA	
6" Machine-Drilled Tap	EA	
Energization (overhead)	EA	
Energization (underground)	EA	
Trench Inspection	LF	
Street Light Pole	EA	
Street Light Pole Relocation	EA	

RETENTION CALCULATION

V = (P + 12) * A * C
V = Volume required to retain (cubic feet)
P = Precipitation Depth (in inches) of storm water required to be retained
A = Total gross area of lot (in square feet) plus any additionally required areas e.g. 1/2 streets (excluding arterials) and alleys
C = Coefficient of Non-Absorption

P = 2.2 inches (based on the 100-year, 2-hour storm event)
C = 0.95
V = (2.2 + 12) * A * (0.95)

Retention Required Total: c.f.
Retention Provided Total: c.f.

ESTIMATED PRIVATE QUANTITIES (remove items that do not apply)

Storm Drains	LF
Dual-chamber Drywell	EA
Oil Stop Structure	EA
Headwalls	EA
Catch Basin	EA
Manholes	EA
Storm Pipe (Specify Size)	LF
Underground Storage Tank	LF
Riprap	SF
Sewer Lines (Specify size)	LF
Sewer Services (Specify size)	EA
Manhole (Specify diameter)	EA
Sewer Cleanout	EA
6" Machine-Drilled Tap	EA
Underground Fire Sprinkler Line (Specify size)	EA

1. On cover sheet, provide dissipation calculation of basins over 1' without a drywell showing that volume can be dissipated within a 36-hour period per Engineering Design Criteria, p. 56 item g.
2. On cover sheet, provide dissipation rate calculation of drywell on cover sheet. This should be specific to the site. Formula should show number of hours to dissipate entire volume. Typically, underground tanks require dual-chamber drywells
3. On cover sheet, show drywell percolation calculation, which needs to be 0.1 cfs unless percolation test is provided, and then 1/2 of rate is allowed. Refer to Engineering Design Criteria, p. 63, note h.
4. On cover sheet, provide storage calculation for any underground storage tanks.
5. Provide retention summary table listing each basin along with overall totals for required and provided for site.



GENERAL AND SITE PLAN NOTES

- All construction under the Public Works permit shall conform to the City of Tempe Supplement to the MAG Specifications and Details, Maricopa Association of Governments Uniform Standard Specifications and Details (MAG Specifications and Details), and City of Tempe Traffic Barricade Manual.
- A permit issued by the Engineering Division shall be required for all work in the City of Tempe rights of way. An investigation assessment, in the amount defined by section 29-19 Engineering Fees, Appendix A of Tempe City Code, will be charged for any work within the City of Tempe rights-of-way in which a permit has not been issued prior to commencement of work.
- The City shall be notified prior to any construction work. Call the Engineering Request Line at (480) 350-8072 at least one business day before start of construction to request inspections. Construction work concealed without inspection by the City shall be subject to exposure at the contractor's expense.
- Right of way improvements shall not be accepted until 3 mil minimum double matte black line mylar reproducible "as-built" plans have been submitted to and approved by the Engineering Division.
- Location of all water valves, manholes, and cleanouts must be referenced at all times during construction and made available to the Water Utilities Division.
- No job will be considered complete until all curbs, pavement, and sidewalks have been swept clean of all dirt and debris and all survey monuments are installed according to the plans.
- The City will not participate in the cost of construction, utility relocation, construction staking, or as-built plans.
- All existing street monuments must be preserved. Prior to construction, monuments will be referenced horizontally and vertically. After construction, monuments shall be reset and field notes, including new elevation, shall be filed with the City.
- Fire riser, details and FDC are for reference only and are not approved on these drawings. Fire sprinkler plans must be submitted for separate fire department review and approval.
- All overhead utility lines (other than transmission lines 12.5KV or greater) that on or adjacent to the site, including street or alley crossings, shall be placed underground per City Code Section 25-120 through Section 25-126 and Ordinance No. 88.85
- All onsite private utilities and details shown in these plans are for reference only and are not approved on these drawings. See plans that are approved by Building Safety for onsite private utilities.
- This set of plans has been reviewed for compliance with City requirements prior to issuance of construction permits. However, such review shall not prevent the City from requiring correction of errors in plans found to be in violation of any law or ordinance. It is the responsibility of the professional engineer sealing and signing these plans to be certain that they are in full compliance with Tempe standards, details, criterion, laws and ordinances.
- The City does not warrant any quantities shown on these plans.
- The City approval is for general layout in the right-of-way, on-site grading, drainage, water and sewer. This plan check approval is valid for a period of one year from application date. Construction permits shall be obtained during this period or the plans shall be resubmitted for review and approval. One 6 month extension may be granted upon request if the request is made prior to the expiration of the one year period at a cost of 25% of the total plan check fee. Permits must then be issued with 6 months and they will be valid for one year from issue date, otherwise, the project expires and permits are voided.
- An approved set of plans shall be available on the job site at all times.
- Construction items shall not be accepted until 3 mil minimum double matte black line mylar reproducible "As-Built" plans have been submitted to and approved by the Engineering Division.
- The developer is responsible for the removal or relocation of all obstructions within the right-of-way prior to starting new construction.
- The developer is responsible for arranging the relocation and associated costs of all utilities. A utility relocation schedule shall be submitted prior to the start of new construction.
- The developer is responsible for obtaining or dedicating all required rights-of-way and easements to the City prior to approval of improvement plans.
- The contractor shall contact Arizona Blue Stake at 602-263-1100 at least 2 working days prior to construction, in accordance with A.R.S. § 40-360.21, et seq.
- The contractor shall barricade construction sites at all times per the City of Tempe Traffic Barricade Manual. When required by the City, a traffic control plan shall be submitted for approval in advance of construction.
- The contractor may obtain a fire hydrant meter for construction water from Customer Services. This meter should be ordered two working days prior to the start of construction. The unlawful removal of water from a fire hydrant is a violation of the municipal code, punishable by fine and/or imprisonment.
- All broken or displaced existing concrete curb, gutter, or sidewalk shall be removed and replaced as directed by the City of Tempe Engineering Division inspector.
- All City facilities, alleys and roadway surfaces damaged by developer/contractor during construction shall be repaired/restored to the satisfaction of the City of Tempe Engineering Division inspector per the respective City and/or MAG standard detail.

SEWER, WATER and UTILITY PLAN NOTES

- The contractor shall uncover all existing lines being tied into to verify their location, size, material type, etc. prior to construction of new lines. The contractor will locate or have located all existing underground pipelines, telephone and electric conduits, and structures in advance of construction and will observe all possible precautions to avoid damage to same. Call Blue Stake at 602-263-1100.
 - Summits in water lines shall be located at fire hydrants.
 - Backfilling shall not be started until lines are approved by the Engineering Division.
 - If a backflow prevention assembly is required to be installed, the contractor will call the Development Services Department at 480-350-8341 for an inspection before backfilling the assembly.
 - All public water lines shall be Pressure Class 350 DIP, protected with high density polyethylene corrosion protection per MAG Specification 610.
 - All new water and sewer connections to existing lines shall be done only by open-cut on major arterial streets, major intersections or the presence of a major water or sewer line. Bored installations must be clearly identified and specifically approved by the City Engineer, or designee.
 - All on-site sewer systems are considered private unless otherwise noted on plans and must be approved by the City of Tempe Building Safety Division of the Development Services Department.
 - In accordance with AAC R18-4-119, all materials added after January 1, 1993, which may come into contact with drinking water shall conform to National Sanitation Foundation Standards 60 and 61.
 - All manhole installations shall be complete in place including all excavation, backfill, sweeps, and conduits necessary to complete the installation of the manhole and connections to the mainline conduits.
 - For the existing sewer stub connections only. (To be signed on "As-Built" mylar.) "This is to certify that an actual field flow test on the existing sewer stub was performed and was found to be acceptable and free of any obstructions prior to final building connection"
- | | | |
|----------|------|---------------------|
| Engineer | Date | Arizona P.E. Number |
|----------|------|---------------------|
- All valves shall be flanged to fittings, preferably tees.
 - Thrust & anchor blocks per MAG Standard Detail 301, 380 & 381.
 - Only the City of Tempe Water Utilities Division personnel shall operate any existing valves or any valve connecting new work to the existing city water system.
 - Sewer, water and utility improvements shall not be accepted until 3 mil minimum double matte black line mylar reproducible "as-built" plans have been submitted to and approved by the Engineering Division.
 - Water, storm drain & sanitary sewer separation/protection shall be per MAG Standard Detail 404 with City approval. The City considers storm drains to be "sewer" when crossing water lines. The City considers storm drains to be "potable water" when crossing sanitary sewer lines.
 - The contractor shall take every precaution to prevent foreign material from entering the pipe while it is being stored.
 - During installation and at all times when pipe laying is not in progress, the open ends of the pipe in the trench shall be closed by a water-tight plug or other means approved by the City of Tempe Engineering inspector. If in the opinion of the City of Tempe Engineering Inspector the pipe contains dirt that will not be removed during the flushing operation, the interior of the pipe shall be cleaned and swabbed, as necessary, with a .005 to .010 percent chlorine solution.
 - After pressure testing and before placing in service, all water lines shall be disinfected and tested for water quality in accordance with MAG Standard Specifications Section 611. If the waterline fails the chlorine residual test or fails to meet the water quality test more than three (3) times, the City of Tempe Engineering inspector reserves the right to require the installed waterline to be cleaned by pigging the line, in accordance with standard procedures, at no cost to the City.

PAVING PLAN NOTES

- No paving construction shall be started until all underground utilities within the roadway prism are completed.
- The maximum stake interval for grades of 0.2% or less shall be 25' for concrete work and 50' for asphalt roadway section, except on horizontal or vertical curves where a maximum stake interval of 20' for concrete work shall be required. All curb returns shall be staked at the P.C., P.T. and the midpoint of the return. No grade stake interval shall exceed 50'.
- Gutters will be water tested in the presence of the City Engineer, or designee, to insure proper drainage, prior to final approval by the Engineering Division.
- Exact point of matching, termination and overlay, if necessary, may be determined in the field by the Engineering Division.
- Underground street light and traffic signal circuits shall be installed as part of the offsite improvements. New foundations for traffic signal poles shall be poured far enough in advance to allow sufficient time for concrete curing and for scheduling the relocation of the existing traffic signals.
- Address overlay requirements where open cutting is permitted. Finished pavement surface materials such as rubberized asphalt shall be matched in field.
- Paving improvements shall not be accepted until 3 mil minimum double matte black line mylar reproducible "as-built" plans have been submitted to and approved by the Engineering Division.

ON-SITE DRAINAGE PLAN NOTES

- A Public Works permit issued by the Engineering Division shall be required for the onsite drainage of the project.
- Drywells must be registered with the Arizona State Department of Environmental Quality. An Aquifer Protection Permit (APP) may also be required.
- Prior to acceptance the owner/developer shall furnish the following:
 - Drilling log and certification of compliance for all dry wells.
 - A 3 mil minimum double matte, black and white reproducible mylar copy of the approved plans with this certification signed by a registered professional engineer.
- "This is to certify that an actual field survey was made under my supervision of the subject site and that finish floor and retention elevations are the true "As-Built" conditions, and they meet or exceed the original retention requirements as shown on this approved plan."

Engineer	Date	Arizona P.E. Number
----------	------	---------------------

- Underground storm water storage systems when used and specifically approved by the City Engineer, or designee, shall be the sole responsibility of the owner, including the design, construction, inspection, monitoring and maintenance. The owner shall be liable for any and all claims resulting there from. The City of Tempe, by allowing this system assumes no liability or responsibility for the design, construction, inspection, monitoring, and/or maintenance of the system. A deed restriction describing the system shall be recorded. This document shall state that the deed restriction cannot be relinquished or abandoned without the written approval of the City of Tempe.
- All best management practices (BMPs) shall be installed and maintained in accordance with the specifications of Volume III, Erosion Control, of the Drainage Design Manual issued by the Flood Control District of Maricopa County (2012). The perimeter of the project site shall have BMPs in accordance with the Storm Water Pollution Prevention Plan (SWPPP). Designated Washdown Areas shall be onsite and follow the specifications of the General Housekeeping Best Management Practice GH-4. Onsite stock piles shall have perimeter control BMPs installed around the stock pile. Offsite storm drain inlets shall be protected by BMP SPC-7 if upstream construction activities may result in stormwater discharges.

STREET LIGHTING PLAN NOTES

- Street lights to be Streamline Steel Poles and installed on foundations per City of Tempe Standard Detail T-651.
- Street lights to be Architectural Street Lights and installed on foundations per City of Tempe Standard Detail T-652.
- Street lights to be architectural Tempe Special District Lighting and installed on foundations per City of Tempe Standard Detail T-645.
- Street lights to be decorative Special District Street Lights and installed on foundations per City of Tempe Standard Detail T-653.
- All street lights to have individual pull box (J-Box), (provided by the utility company), installed within 2 to 4' from the base of the pole and per City of Tempe standard Detail T-650.
- All street lights to be 2' from back of curb where recessed or no sidewalk exists, or 2' back of walk to the face of pole unless otherwise approved by City.
- All street light conduits to be 2-1/2" PVC Schedule 40.
- Street lighting improvements shall not be accepted until 3 mil minimum double matte black line mylar reproducible "as-built" plans have been submitted to and approved by the Engineering Division.

(For Street Lighting Plan notes 1-4, use only notes that apply to this project. Remove notes that do not apply.)



DSXXXXXX ENXXXXXX PROJECT ADDRESS QUARTER SECTION