TOWN OF QUEEN CREEK
COMMUNITY DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

SEWER PLAN REVIEW CHECKLIST

PROJECT: _____

LOCATION: _____

LEGEND	REVIEW BY	DATE
✓ = Compliance		
○ = Non-Compliant		
N/A = Non Applicable		

ITEM	REQUIREMENT	COMMENTS
☐	1. The First Submittal of the Sewer Plans shall include, at a minimum, sewer plan sheets, details, and an Engineer's Sewer Design Report.	
☐	2. The Sewer Plans shall be submitted on 24" x 36" sheets bound or stapled in sets.	
☐	3. Each sheet of the Sewer Plans must be signed and sealed by the Engineer preparing the plans.	
☐	4. The minimum height of all text, numbering, and lettering shall be 0.1" (one-tenth of one inch)	

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☐ 5. If an easement or right-of-way (ROW) dedication or abandonment is required by separate instrument, the following exhibits and/or information must be provided with the easement document.
- The subdivision name
- The type of easement
- The reason or purpose of the easement or ROW and why it is required
- A Vicinity Map showing the major cross streets
- The legal description sealed by an R.L.S.
- A Detail or Plot Map showing the easement or ROW location and alignment with dimensions and bearings, true Point of Beginning, Section, Township, and Range.
- Current Title Report.

☐ 6. Include an approval block for the Town Engineering Manager and Maricopa County Environmental Services (or ADEQ if in Pinal County). County approval and signature is required prior to the Town's Engineer's signature.

☐ 7. Sewer Payback Fees are required. (Queenland Manor Subdivision & High School)

☐ 8. Show the required Town of Queen Creek sewer specifications with general notes and construction notes.

☐ 9. Note the type of sewer pipe used.

☐ 10. Note that all materials used and installation shall conform to Maricopa County MAG Standards and Specifications.

☐ 11. Provide a detail that show the separation requirements between sewer and waterlines which conform to State Health Code Standards.

☐ 12. Include a sewer trench detail showing at a minimum the following information: width of trench, depth of bedding below and above pipe, type of bedding (conform to MAG Stds. & Specs.), bedding compaction requirements, backfill type, minimum backfill density, position of locator tape, and type of proposed pipe.

☐ 13. If sewer trench exceeds a 10 ft. depth, provide notes on the trench detail that the contractor shall excavate and backfill to comply with OSHA Standards and Guidelines.

☐ 14. Note that the sewer laterals shall be installed per County Standards or the Serving Agency Standards, whichever is most restrictive.

☐ 15. Index map with sheet layout and numbers, street names, flow arrows, phase limits and numbers, existing and proposed sewer systems including pipe sized, manhole and cleanout locations.

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- ☐ 16. A Vicinity or Site Location Map.
- ☐ 17. A "Utility Coordination Block" shall be included on the cover sheet showing the names of the utility companies servicing the area of development and the dates plan were submitted to them.
- ☐ 18. Provide a Quantities Table of estimated construction materials. A completed Certificate of Quantities Form, signed and sealed by the Engineer, shall be submitted for final approval.
- ☐ 19. The name of the proposed development; the Developer's and Engineer's name, address, and phone.
- ☐ 20. Provide or reference a Sewer Service Tap Detail and a Sewer Lateral Detail.
- ☐ 21. A North arrow and 4 inch graphic scale must be shown on each plan sheet. Horizontal and vertical scales must be shown on both plan and profile views.
- ☐ 22. Match lines, with stationing and sheet references, must be shown on each sheet as applicable.
- ☐ 23. Phase limits and numbers, if applicable, must be shown on each sheet as applicable sheet.
- ☐ 24. Existing storm drainage facilities such as retention basins, catch basin, scuppers, and storm drain pipes must be shown on plans.
- ☐ 25. Existing buildings and other significant structures must be shown on the plans.
- ☐ 26. All existing and proposed sewer lines must be shown in both plan and profile views. The proposed finish grade shall be shown on the profiles with elevations and with the existing ground line.
- ☐ 27. Dimensional ties, station and offset from the street centerline, must be provided for all existing sewer lines being tied to.
- ☐ 28. Service stubs to platted lots within the subdivision for underground utilities shall be placed to the right-of-way line or the public utility easement whichever is greater.
- ☐ 29. Sanitary sewer lines shall be extended to the boundaries of the plat to provide service connections to abutting unsubdivided land. A sewer stub-out must be shown at each manhole adjacent to undeveloped property, unless otherwise justified.

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☐ 30. All sewer lines shall be parallel to property lines or center line or as close to parallel as possible. They shall be located 6 ft. From centerline, as a guideline, and shall not cross the street centerline except in special cases approved by the Town Engineer.

☐ 31. All sewer lines shall have a minimum of 4 ft of cover

☐ 32. All sewer lines shall not be placed in less than a 20 foot easement

☐ 33. Unless otherwise specified, all gravity sewer lines shall be constructed of SDR 35 PVC pipe conforming to ASTMD 3034.

☐ 34. A sewer line shall be constructed of an unbroken length of ductile iron pipe or concrete encasement for a distance of at least 6 ft. in each direction when the sewer line crosses a water pipe that is less than 2 ft above the sewer line. See MAG Std. Detail 404 for applicability .

☐ 35. Manholes shall be constructed as follows:
- At all changes in grade
- At all changes in alignment
- At all connections from Private Sewers
- At lateral connections from some commercial buildings (at Town Engineer's discretion)
- At all connections where the sewer line size changes.

☐ 36. The maximum manhole spacing for all sewers (8' - 15") is 500 ft. Manholes shall be numbered consecutively and the numbers indicated on the plans.

☐ 37. Manhole elevation drops shall be at a minimum the following:
- 0.00 ft drop across manholes
- 0.10 ft. drop on angles

☐ 38. Manhole size to be as follows:
- All sewer main lines— (8" and larger) require a 5 ft. diameter manhole with a 30" frame and cover per MAG STDs.

☐ 39. Connecting sewers in a manhole may have a maximum of a 12 inch drop (flow line to flow line).

☐ 40. Manholes shall never be located in retention basins.

☐ 41. All manholes in washes shall be a minimum of 6 inches above finished grade but shall not exceed 2 ft. The actual wash topography and flow characteristics will dictate this height.

☐ 42. Watertight manhole covers conforming to MAG Standard Detail 423 shall be provided for all manholes in washes, unpaved areas, and for those manholes in a direct path of surface runoff or ponding.

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☐ 43. A cleanout shall be put on the end of a line that will not be extended. The spacing to the cleanout shall not be more than 100 feet. If the spacing from the manhole exceeds 100 feet, a manhole shall be required.

☐ 44. Sewer taps in manholes shall be constructed with the tap invert 4 inches above the highest sewer invert at the manhole.

☐ 45. When sewer lines of different sizes enter the same manhole, the smaller pipe shall not have its crown lower than the crown of the larger pipe (same level of higher).

☐ 46. All sewer laterals shall be constructed to the lot line. A plug or a cap must be installed at the end of each lateral with a 2x4 installed vertically from the plug of cap up to 2 ft. above grade and identified per MAG Stds.

☐ 47. No sewer tap shall have less than 3 feet of cover over its crown at the property line or easement line.

☐ 48. Proposed sewer tap locations with stations are to be shown for each lot on all plans, but may be changed in the field with Town Engineer approval.

☐ 49. All abandoned sewer taps must be capped.

☐ 50. All crossing of the following existing and proposed utility lines must be shown in both plan and profile views. The outside pipe elevations should be shown to indicate available clearances.

- Water and sewer
- Reclaimed water (4' or larger)
- Telephone, electric, gas, cable, and other buried utilities where appropriate.

☐ 51. The sewer line slope must be shown and shall meet the minimum state (ADEQ) requirements.

☐ 52. The following general information is required on profiles:

- Scale: horizontal and vertical
- Profile of proposed sewer with slopes
- Profile of existing ground (dashed) and finished grade (solid) at location in which the sewer line is to be constructed
- Stationing at bottom of profile
- Profile of waterline and slopes with encasement limits
- Manholes with stations and elevations at centerlines of manhole

ITEM	REQUIREMENT	COMMENTS
☐	53. The following statement shall be a standard Engineering Stipulation for projects not abutting to an existing Town Sewer Main: If Developer wishes to proceed with development prior to the time that adequate funding is available to Town to complete the design and construction of the Sewer Collection System, Developer may elect to design and construct the Sewer Collection System at Developer's sole cost, and request to enter into a reimbursement agreement pursuant to Article 16-3 of the Town Code.	

PLEASE RETURN THIS CHECKLIST WITH THE NEXT SUBMITTAL

TOWN OF QUEEN CREEK
DEVELOPMENT & COMMUNITY SERVICES DEPARTMENT
DEVELOPMENT SERVICES DIVISION

SEWER, WATER AND UTILITY NOTES

1. All improvements shall conform to the latest M.A.G standards and specifications and/or the latest stan dards and specification adopted by the Town." should be reworded to "All improvements shall conform to the latest M.A.G standards and specifications and/or the latest standards and specification adopted by the Town at the time the permit for constructing these improvements is applied for.

2. Excavations shall comply with requirements of OSHA Excavation Standards (29 CFR, Part 1926, Subpart P). Under no circumstances will the contractors be allowed to work in a trench located within the Town's right-of-way without proper shoring or excavation methods.

3. Trenches shall not be backfilled until pipe and bedding are approved by the Town Engineer or his repre sentative. Bedding shall be consolidated in the haunching area of the pipe. Separate inspections by the Town are required for trench bottom preparation and for haunch consolidation. Final compaction of bed ding material may be accomplished as part of compaction of the initial lift of backfill.

4. Trench excavation, backfilling and compaction shall be in accordance with MAG Uniform Standard Specifications for Public Works Construction, Section 601.

5. The contractor shall determine water tightness of the total length of sewer line by either exfiltration test ing or low pressure air testing. It is recommended that the installation contractor schedule a test with the owner's representative prior to dry utility installation. The Town's acceptance testing will be scheduled after all day utilities are installed.

6. The contractor shall perform a deflection test on the total length of sewer line in accordance with the re quirements of MAG Uniform Standard Specifications for Public Works, Section 615.

7. Compaction testing of trench backfill is required. The Town Engineer or his representative will direct the number and location of density tests. Compaction and materials testing shall be provided by the contractor at his expense.

8. Manholes with sewer pipe to 8" diameter: Coat concrete surface 100% coverage with Sewer Shield 100, or approved equal. For manholes with sewer pipe of 10" and up: Coat the entire manhole with Sewer Shield 100 or approved equal.

9. The contractor is to verify elevation and location of sewer main stub-out before proceeding with sewer excavation.

10. A copy of the contractor's cut sheets (with Engineers' stamp) shall be furnished to the Town Engineering staff at least 24 hours prior to beginning excavation.

11. The contractor shall place a three (3) foot length of #5 rebar at the end of each sewer stub-out, and where possible, etch a small "S" in the curb at the location of each stub-out.

12. All manhole stubs shown on the plans shall be bell end with short stub and cap, unless the stub is specifi cally called out as a 'future outlet stub with spigot end and cap' on the plans.

13. PVC Pipes shall have water stops at all manholes.

14. If the “drop” within the manhole is greater than 5.0 ft, the manhole shall be according to MAG Std Dtl 426 Type ‘A’.

15. Electronic Ball Markers shall be placed at sewer connections in accordance with MAG Std Dtl 440-1 Type ‘A’.

16. Manholes shall be tested by water exfiltration testing with 0.001 of total volume loss allowable or air test ing using the “Standard Test Method for Concrete Sewer Manholes by Negative Air Pressure (Vacuum) Test.”

17. Manhole steps are not permitted.

18. For all manholes, apply existing coating from the bottom of frame and cover.

19. All exposed metal shall receive an SSPC-SP5 White Metal Blast Cleaning and the following coatings:

    One or more coats of Superior Environmental Products SP2000R, Enviro-Cote 120, Sewer Shield 101A or other approved coating shall be applied in accordance with the manufacturer’s recommendations. The total dry film coating thickness shall be 16 to 20 mils in dry film thickness. The color of the final coat shall be charcoal gray, white or other approved color. After all coats have been applied, the area where the SP2000R, Enviro-Cote 120, Sewer Shield 101A or other approved coating was applied shall be checked for holidays utilizing a testing voltage of 67 1/2 volts with a wet sponge and a certification issued stating that there are none.

20. The SP2000R, Enviro-Cote 120, Sewer Shield 101A, Sewer Shield 100, Sewer 101T, SL100 or other ap proved coatings shall be applied by a coating applicator who specialized in applying coatings and is quail fied to apply the noted coating in accordance with the manufacturer’s specifications.

21. A Town of Queen Creek manhole cover is available and is required as specified in the MAG Specifica tions.

22. *T.V. Inspection*
    Newly constructed sewer mains shall twice be internally televised. First prior to paving and prior to ac ceptance of the sewer facilities and then again after paving and making all manhole adjustments. All tele vision inspections shall be done by the Town of Queen Creek through their contracted T.V. inspections firm.

    Inspection schedule and fees.
    Contractor is required to contact public works inspection staff at (480)358-3003 to schedule the T.V. in spection. Coordinate at least a week in advance of the day needed. The contractor is required to pay a fee to the Town to cover direct costs of the T.V. inspection firm and staff review of submittals. The fee from the required first two inspections will be collected as the sewer permit is issued. The Town will pay the cost for the first two scheduled TV inspections on Capital Improvements Projects. Any additional costs due to re-inspecting failed areas will be charged to the contractor. The current rate is $0.25 per foot.

    Pre-T.V. inspection requirements

    - Lines and manholes must be free of debris and soil.
    - Lines must be flushed within 24 hours of inspection. Inspections of dry sewer lines are not acceptable.
    - Lines must be buried and compacted to grade.

    If the T.V crew arrives for a scheduled inspection and the contractor has not met the above requirements, he inspection will be rescheduled on a first come basis after the contractor indicates the requirements have been met. A $250 call-out fee will be assessed to the contractor.

23. Acceptance

A sewer line will be considered deficient and unacceptable if:

- ◊ The alignment is outside of the specified limits.
- ◊ The depth of ponding water in sewer pipe 8 inches through 12 inches in diameter is greater than 5/8 inch. The depth of ponding water in sewer pipe 15 inches and larger in diameter is greater than 1-1/4 inch.
- ◊ The pipe has visible defects such as open joints, pinched gaskets, cracked bells or similar defects.
- ◊ The pipe has debris in it.
- ◊ Acceptance of the completed Right of Way improvements will not be given until 4 mil Mylar re producible as-builts and CD in PDF format have been submitted to and approved by the Town's Engineering Division.

24. Town of Queen Creek defines the following terms from the Arizona Administrative Code, Title 18. Environmental Quality , Chapter 9. Department Environmental Quality Water Pollution Control, Article 3 Aquifer Protection Permits—General Permits, Part E. Type 4 General Permits, R18-9-E301.4.01 General Permit: Sewage Collection Systems.

- Applicant: the Subdivision Owner, Developer, Design Engineer, or Authorized Representative.
- Engineer (section E. Additional Verification of General Permit Conformance requirements.): The Sub division Design Engineer

25. Requirements Per Town of Queen Creek Fire Marshall:

Fire Hydrants on Arterial Roadways need to be out of the 2003 IFC Appendix C Fire Hydrant locations and distribution page 373. Sec. C-102 Fire hydrants shall be provided along required fire apparatus roads and adjacent public streets. The sub-section under Table C-105.1 © states "Where new water mains are extended along streets where hydrants are not needed for fire protection of structures or similar fire prob lems, fire hydrants shall be provided at a spacing of not to exceed 1,000 ft to provide for transportation hazards".