



Chandler · Arizona
Where Values Make The Difference

Civil Engineering Sewer and Reclaimed Water Plan Review Checklist

Log No: _____

C.I.P. No: _____

Project:	
Location:	

Item Number Proofing Marks:	
/	Requirement satisfied.
O	Requirement not satisfied.
?	Unable to determine status, more information is required.
X	Not applicable.

Review #	Reviewed By	Date
1		
2		
3		
4		
5		

The requirements referred to on the checklist can be found in the City Code, Chapter 48 (Subdivisions) and the City's Technical Design Manuals.

Item	Requirement	Comments
1.	The plans must conform to the requirements of the Construction Plans Review Checklist.	
2.	The current City standard notes must be shown, or corrected, on the cover or detail sheet: <ul style="list-style-type: none"> a) General Notes. b) Sewer Notes. c) Reclaimed Water Notes (if reclaimed water line design is included in the plans). 	
3.	An index map with the following information is required on the cover sheet: <ul style="list-style-type: none"> a) Existing sewer system. 	

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9.	<p>The development is adjacent to a current City project/Improvement District. Coordinate your plans with the City Project/Improvement District Engineer. Add the following approval block to the cover sheet and acquire the engineer's signature.</p> <hr/> <p>APPROVED FOR COORDINATION DATE (Add project name and number)</p>	
10	<p>A portion of the improvements shown on the plans is within the jurisdiction of the state/county. Acquire the appropriate permit. Indicate the permit number on the cover sheet.</p>	
11	<p>A sewer service tap detail is required on the cover sheet showing the following items:</p> <ul style="list-style-type: none"> a) Standard tap location in relation to side lot line. b) Minimum 6' separation between water and sewer services. c) Reference to MAG Standard Detail 440-1. 	
12	<p>Provide a manhole service tap detail on the cover sheet or detail sheet.</p>	
13	<p>Show the scale on each sheet. See Technical Design Manuals 1& 2 - Water and Wastewater System Design for requirements.</p>	
14	<p>The sewer line sizes must conform to the City's wastewater master plan, both size and depth.</p>	
15	<p>Show all existing sewer lines being tied into in both plan and profile views.</p>	
16	<p>Show all proposed sewer lines in both plan and profile views.</p>	
17	<p>If a model home area is a part of the project, construct sewer lines, as a minimum, from the point of outfall to and including the first manhole upstream from the model area.</p>	
18	<p>Dimensional ties must be provided for all existing sewer lines being tied into. Providing both the street centerline station and the</p>	

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19	<p>perpendicular distance (offset) from the street centerline usually satisfies this requirement.</p> <p>Install the sewer line in the standard location. See the sewer system design manual for details. Where the sewer alignment is not parallel to the street centerline, the following requirements must be met:</p> <ul style="list-style-type: none"> a) Sewer lines are only permitted to cross and re-cross the street centerline for short distances, providing that the sewer line maintains a horizontal clear distance of 3' or more from the lip of gutter on the side of the street of the standard sewer location. b) Manholes shall be located outside of the vehicular wheel path. Select a horizontal alignment that satisfies this requirement. c) The sewer does not encroach more than 4' past the street centerline. d) Maintain the standard distance of the sewer from the street centerline at each manhole. 	
20	<p>Construct a manhole wherever the sewer changes slope, horizontal alignment or size, or intersects another sewer. The following conditions also must be met:</p> <ul style="list-style-type: none"> a) Sewer lines of different sizes entering the same manhole must not have their soffits lower than the soffit of the largest pipe. b) Sewer intersections must be between 90° and 180° inclusive. c) Sewer lines intersecting at an angle from 90° to less than 120° must have a 0.10' minimum drop across the manhole. d) For sewers greater than 15" in diameter, design inverts at junctions to maintain the energy gradient across the junction and to prevent backflow. 	
21	<p>Show the following items on the plans:</p> <ul style="list-style-type: none"> a) For existing and proposed manholes: <ul style="list-style-type: none"> 1) Rim elevation. To the nearest 0.1' (one tenth of one foot) for proposed manholes. 2) Invert elevations. 3) Sewer station. 4) Dimensional ties, i.e., station and offset, from the street centerline to manhole. 5) Where a proposed manhole is 	

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	constructed on an existing sewer, horizontal distance from the nearest downstream manhole and the slope of the existing sewer.	
	b) Sewer station, invert elevation, and rim elevation of cleanout.	
	c) Distance from centerline to centerline of manholes.	
	d) Distance from centerline of manhole to centerline of cleanout.	
	e) Standard detail number for manholes (MAG Standard Detail 420 and City of Chandler Standard Details C-400 and C-401) and cleanouts (MAG Standard Detail 441).	
	f) Show the following street centerline survey data: <ol style="list-style-type: none"> 1) Stations at changes in horizontal alignment of the street. 2) For tangents: bearing and distance. 3) For curves: radius, central angle, arc length, and radial bearing for non-tangent curves. 	
22	The minimum cover allowed for a sewer service line is 4½'. If the cover on the sewer service tap is less than 4½' at the property line, the service must be sleeved within ductile iron pipe and further coordination with dry utilities is required.	
23	All manholes shall be precast concrete per MAG Std Dtl 420 with 5-foot diameter shafts, 30-inch diameter covers, and without steps. Manholes in arterial streets and for sewers 18" and larger shall include corrosion protection. All manholes shall be sprayed with pesticide coating. Specify corrosion protection and pesticide coatings in accordance with the list of approved products.	
24	Bedding must conform to City of Chandler Standard Detail C-402 for all types of pipe at all depths.	
25	The sewer line slope must be shown and it must meet the minimum requirements. See the <i>Water and Wastewater System Design</i> manual for details.	
26	The maximum distances between manholes and cleanouts must comply with the following: <ol style="list-style-type: none"> a) Lateral sewer (less than 18" diameter) 	

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	manhole to manhole = 400'.	
	b) Lateral sewer (less than 18" diameter) manhole to cleanout = 150'.	
	c) Interceptor sewer (18" and greater diameter) manhole to manhole = 600'.	
27	<p>Show all crossings of existing utility lines in both plan and profile views:</p> <p>a) Water and sewer.</p> <p>b) Reclaimed water (4" or larger).</p> <p>c) C.I.P. projects also must include telephone, electric, gas, cable, and other buried utilities where appropriate.</p>	
28	<p>Protection of waterlines consisting of concrete encasement is required; see MAG Standard Detail 404 for applicability. Ductile iron pipe is not allowed for sewer construction.</p>	
29	<p>Cap all abandoned sewer taps.</p>	
30	<p>Show a sewer service tap with station, either sewer station or station in relation to the nearest downstream manhole, for each lot.</p>	
31	<p>Show a sewer stub-out at each manhole adjacent to undeveloped property, unless otherwise justified. Also, provide sewer stub-outs for all major parcels within, or adjacent to, the development. Wherever possible, extend sewer stub-outs sufficiently beyond paved surfaces to avoid pavement cutting at time of future connection. Show sewer stub-outs in both plan and profile views.</p>	
32	<p>Reclaimed water lines are required in arterial street rights-of-way adjacent to all projects south of the monument line of Pecos Road.</p> <p>a) Show all existing and proposed reclaimed water lines on the plans.</p> <p>b) Reclaimed water mains must be installed in locations per City of Chandler Standard Detail C-200 unless otherwise determined by the City Engineer.</p> <p>c) A 6' minimum separation is required between reclaimed water and sewer lines.</p> <p>d) A 6' minimum separation is required between reclaimed water and potable water lines.</p>	

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	<ul style="list-style-type: none"> e) Public reclaimed water lines must be 12" in diameter unless otherwise noted on the plans. f) Tees must be spaced at no greater than ¼ mile apart. g) Crosses must be at all intersections of an arterial street with another arterial street. h) Install laterals with a minimum diameter of 8" at all tees and crosses. Extend laterals sufficiently beyond paved surfaces to avoid pavement cutting at time of future connection. i) Two (2) valves are required on each tee and three (3) valves are required on each cross. j) Valve box installations must conform to City of Chandler Standard Detail C-406, C-317 in areas subject to wheel loads; these details must be specified in the construction notes on the plans. k) Plans must refer to valve blocking per M.A.G. Standard Detail 301. l) Valves must not be located in sidewalk or handicap access ramp areas. m) All valves must be stationed on the plans. n) Install a blow off valve per C-300 at each dead-end of main lines, whether the line will become a wet line or remain a dry line at the end of the project. 	
33	<p>Submit a street cut application to the City. It must be approved by the City Engineer before plan approval. The status of the application is:</p> <ul style="list-style-type: none"> a) Please submit application. b) Application is currently under review. c) Application has been denied. d) Application has been approved. 	
34	<p>Complete and submit (with mylars for final approval) a construction quantity estimate certified by a registered civil engineer and a complete set of improvement plans, in addition to all other plans required, for performance bond processing.</p>	
35	<p>An easement dedication is required by separate instrument. Please provide the following exhibits and/or information along with the easement document:</p>	

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	<ul style="list-style-type: none"> a) Subdivision name. b) Type of easement/right-of-way. c) Reason or purpose of the easement/right-of-way. d) Vicinity map showing major cross streets. e) Legal description with registered land surveyor certification. f) Detail map showing the easement/right-of-way alignment with dimensions and bearings, true point of beginning. g) Current title report. 	

The improvement plans for this subdivision will not be approved until a construction quantity estimate certified by a registered civil engineer and a complete set of improvement plans are submitted for performance bond processing.

Prior checklists and plans are required for subsequent submittals.

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1. Municipal Utilities Department Senior Engineer review?