

**City of Tulsa**  
**Infrastructure Development Process**  
**Plan Review Checklist**

IDP Number \_\_\_\_\_

Project Name \_\_\_\_\_

This checklist is to assist engineers and developers in the process of preparing plans for review by the City of Tulsa. The City requires that an engineer licensed in the State of Oklahoma complete this checklist and sign and seal as indicated below.

I \_\_\_\_\_, an engineer licensed in the State of Oklahoma, do hereby certify that I have reviewed the plans for the above IDP project, and completed the checklist to ensure that all of the items on the checklist have been addressed with regard to City requirements.

My license expires \_\_\_\_\_.

(Sign and Seal)

**City of Tulsa**  
**Infrastructure Development Process**  
**Plan Review Checklist**

Complies				Overall General
Item No.	Y	N	N/A	<b>Are the following Permits Required?</b>
1.				Corps of Engineers (section 404)
2.				Levee Authority
3.				Railroad Crossing
4.				ODOT
5.				Turnpike Authority
6.				Engineering Report Form for ODEQ Permit for construction
7.				NPDES (SP3 required for all projects disturbing one (1) acre or more; NOI and NOT form to be completed by contractor)
				<b>Other</b>
8.				<b>Are all plans are properly folded?</b>
9.				Has this note been added to the plans? "All construction to be in strict accordance with current City of Tulsa Standards and Specifications"
10.				Summary Datum Used (all elevations must use NAVD 1988 Datum) Must have Vertical Datum and Benchmark
11.				Did you Locate and identify property pins on the Survey Data Sheet.?
12.				Are Bench Marks included on each sheet?
13.				Is all lettering a minimum of 0.10" in height on full size plans?
14.				Has New Construction been shown in <b>bold</b> font?
15.				Is FEMA A-Zone, or Regulatory Floodplain, on the property? If so, then show the limits of the FP on the plans.
16.				Is this site platted?
17.				Is this site being platted for this development?
18.				Are Sheets numbered according to COT numbering system?
19.				Are plans readable? No attempt will be made to review unreadable plans. This includes reference sheets usually provided by the surveyor. If it's important enough to be shown it must be readable.
20.				Are drawings at a common engineer's scale and have all scales been checked?

**City of Tulsa  
Infrastructure Development Process  
Plan Review Checklist**

Complies				Overall General
Item No.	Y	N	N/A	<b>Are the following included on the Cover Sheet</b>
21.				IDP Project Number
22.				Legal Description
23.				Atlas #
24.				List of Sheets
25.				IDP Description
26.				Engineers Name, address, phone number & Contact person
27.				Owner's Name, address, phone number & Contact person
28.				Engineer Seal, Signature
29.				List of all Standards used (include std # and Verbatim title)
30.				Good Location Map (show subdivision within the section and major streets)
31.				Name of Subdivision
32.				Legend listing all info
33.				Table of impervious area (existing, additional, total)
34.				Site plan, with no match lines or additional sheets, showing and labeling the following: Adjacent subdivisions and property owners', all adjacent and onsite streets, all existing and proposed Rights of Way and Easements, and all items being constructed by this IDP Project

**City of Tulsa**  
**Infrastructure Development Process**  
**Plan Review Checklist**

<b>Complies</b>				<b>Stormwater</b>
Item No.	Y	N	N/A	<b>General Questions</b>
35.				Is work being done in or Stormwater being discharged into ODOT's, OTA's, RR's, etc. right-of-way? If yes, that agency must provide a release letter prior to approval of the plans.
36.				Is the development in the floodplain? If yes – Is work being proposed in the floodplain? _____ If yes - Has impact*analysis been provided? _____ All properties, private and publicly held must have impact analysis. * Impact is defined as any increase in flow, velocity, elevation, or storage
37.				Is compensatory storage required? Compensatory storage is required for any fill brought into the floodplain (1:1 ratio). A cut/fill summary chart and cross sections need to be shown on the plans for verification. <b>A Separate Instrument Compensatory Storage Easement must be processed.</b>
38.				Is a CLOMRs required? In FEMA floodplains, CLOMRs are required for improvements within the floodplain. Permits cannot be approved until the CLOMR has been signed by the City.
39.				Is detention required? A Detention Determination Recommendation must be submitted to address the following; Is there downstream flooding of structures? _____ What does the MDP recommend for future developments? _____ Are there known downstream problems? _____ Is it located in the upper 1/3 of the drainage basin? _____ <b>If yes to any one of these, detention is probably required</b>
40.				Is this a residential subdivision where detention is not required? If yes, fees-in-lieu must be paid upfront.
41.				Are offsite waters coming onto the site? Provisions need to be made to receive and pass offsite waters. Appropriate easements <b>will</b> be required.
42.				Does development drain to 121 <sup>st</sup> & Yale? If yes, there is a storm water development fee of \$4,000/acre. This fee is in addition to the fee-in-lieu-of detention. All new development within this area must connect to the Yale Ave. storm sewer system.
43.				Are paved ditches required? Ditches are required to be paved along arterial streets. The ditch must be constructed for the entire length of the development and have 3' curtain walls every 100'.
44.				Is runoff leaving the development by sheet flow? Every effort must be made to collect runoff onsite and convey it into a public storm sewer system.
<b>FLOODPLAINS</b>				
45.				Have floodplains been placed in a Reserve Area and/or Overland Drainage Easement?
46.				Are minimum finished floor elevations shown on the plans?
47.				Are the current and proposed floodplains plotted on the plans by elevation?

**City of Tulsa**  
**Infrastructure Development Process**  
**Plan Review Checklist**

<b>Complies</b>				<b>Stormwater</b>
Item No.	Y	N	N/A	<b>DETENTION FACILITIES</b>
48.				Does the embankment fall within the regulation/jurisdiction of the OWRB? Is the storage greater than 15 ac-ft? _____ Is the embankment 6' high or higher? _____
49.				Have detention facilities been placed in a reserve area and/or an easement? In multi-lot developments, detention facilities must be placed in a reserve area and dedicated to a "property owners association" for ownership/maintenance. If it serves only one lot with one property owner, then an easement will suffice. The plans must use metes and bounds to clearly locate the reserve or easement.
50.				Has detention facility been sized in accordance with the Stormwater Management Criteria Manual?
51.				Is the top of the embankment set at least 1' above the 500 yr pool?
52.				Has the standard detention "summary chart" been shown on the plans? (see website)
53.				Does the concrete trickle channel have a slope of at least 0.5% with 3' curtain walls every 100'?
54.				Does the bottom of the pond have a minimum slope to the trickle channel of 2%?
55.				Are the side slopes no steeper than 4:1?
56.				Has a 20' wide access been provided to the pond?
57.				Is the top width of the dike at least 15 ft.? This must be an all weather surface and provide access to and from the outlet works.
58.				Has an all weather maintenance access been provided to the bottom? The maximum slope can be no more than 10%. Turn around area must also be all weather.
59.				Is permanent vegetation of the bottom and side slopes shown? Bermuda Solid Slab Sod is required.
60.				Are details of the Outlet Structure and Emergency Overflow Spillway included in the Plan Set by Standards or Details?
61.				Has the outlet exit channel been adequately protected?
<b>RUNOFF SYSTEM REVIEW</b>				
62.				Are all public storm sewers sized to handle the 100-year event and placed in an Easement? For basins with a Tc > 10 minutes, a hydrograph method must be used. Rational method can used if Tc < 10 minutes.
63.				Has erosion been addressed at discharge locations? Clearly show all dissipation structures w/construction details.
64.				Has emergency overland relief been provided? Relief is required for inlets should the inlet/sewer plug up (for whatever reason). Overland drainage easements are required if the relief is outside a public right-of-way.

**City of Tulsa**  
**Infrastructure Development Process**  
**Plan Review Checklist**

<b>Complies</b>				<b>Stormwater</b>
Item No.	Y	N	N/A	<b>RUNOFF SYSTEM REVIEW (cont.)</b>
65.				Has site grading been checked for the following? To assure water will not back up into any buildings and that it has an emergency overflow path. That sufficient top of pavement and/or top of curb elevations have been included at all entrances, assuring a high point is being graded in the entrance to prevent drainage onto and off of the property at the entrances. If drainage flows from the property into the street, then calculations showing quantity of drainage and spread into the street must be submitted for criteria compliance review.
66.				Has only RCP or RCB been used for all public storm sewer systems?
67.				If HDPE was used in private systems, was the trench backfilled with Type A aggregate? <b>CGMP cannot be used.</b>
68.				Have culverts/bridges been sized in accordance with chapter 300 of the Stormwater Criteria Management Manual? Flow area greater than a single 48" RCP require 1ft of freeboard between the 100-year water surface elevation and the inside, top of the culvert?
69.				Do any storm sewers make direction changes of 90° or more at a manhole? 36" and larger strictly prohibited. Smaller lines may be approved on a case by case basis.
70.				Have storm sewers been designed so that the minimum velocity for a line flowing half full is 2.5 fps?
71.				In sandy soils, have the storm sewer joints been specified with the sanitary sewer spec. and/or been wrapped with a Cadi-Lok type wrap?
72.				Are all public storm sewers backfilled with Type A aggregate and are the City's "Standard Bedding Detail for Storm Sewers" referenced on the plans?
73.				Are all inlet (public and private) times of concentration less than 10 minutes for residential developments and 5 minutes for commercial developments?
74.				Were times of concentration determined in accordance with chapter 600 of the Stormwater Criteria Management Manual?
75.				Was rainfall intensity, I100, determined in accordance with chapter 600 of the Stormwater Criteria Management Manual?
76.				Have drainage area map(s) been check for the following information? - Are Drainage Areas and their boundaries clearly labeled and do they have their own inlets also clearly labeled? Nomenclature should be intuitively obvious as to which inlet goes with which drainage area. There should be one Drainage Area per Inlet. - Are Flow Paths and drainage direction arrows clearly shown?
77.				Was the standard drainage summary chart used and has it been checked for the following information? (See Website) - Are runoff coefficients in accordance with chapter 600 of the Stormwater Criteria Management Manual? Are Tcs reasonable? Are D100s less than or equal to 0.38'? Were inlet capacities computed and the appropriate clogging factors used per chapter 700 of the Stormwater Criteria Management Manual? - The on-site Q100 must be collected in the inlets before it leaves the site. Run through the numbers for each drainage area.
78.				Was the standard storm sewer summary chart used? (See Website) - Does it include V100 and Vhalf full values?

**City of Tulsa**  
**Infrastructure Development Process**  
**Plan Review Checklist**

<b>Complies</b>				<b>Stormwater</b>
Item No.	Y	N	N/A	<b>RUNOFF SYSTEM REVIEW (cont.)</b>
79.				Have profiles been shown for all storm sewers systems and ditches and include values for pipe size and type, slope, length, Q100, Qcapacity, V100, HGL/EGL, Froude number, and left & right top of ditch as appropriate?
80.				Was the HGL/EGL calculated per the criteria manual?
81.				Are all crossing utilities shown on the Storm Sewer Profiles, so that the required clearances between pipes can be reviewed?
82.				Are all storm sewers identified on the plans and profiles as public or private? A conspicuous note stating "ALL STORM SEWERS ARE PUBLIC UNLESS OTHERWISE NOTED" may be shown on each plan and profile sheet instead of labeling each line.
83.				Do profiles identify inlets by name and type?
84.				Are public storm sewers centered in their easements and have the appropriate easements per chapter 300 of the Stormwater Criteria Management Manual been provided?
85.				Have vertical (1' or 2') and horizontal (5') separations between storm sewers and water and sanitary lines been maintained? See chapter 700 of the Stormwater Criteria Management Manual.
86.				Are slopewalls or PCES used instead of headwalls and are outlets toed-in 4' per City standards?
87.				Are the outside faces of storm lines at least 1' apart measured at the inside face of manholes or junction boxes? Are the outside faces of storm sewers at least 6" from the interior corners of boxes? For structures where these dimensions are questionable, scaled plan views are required for easy verification.
88.				Are manholes/junction boxes provided in accordance with chapter 700 of the Stormwater Criteria Management Manual?
89.				Were all curb inlets placed outside of curb returns?
90.				Is there sufficient room next to curb inlets and within the limits of the property line for required driveways?
91.				Are sufficient offsite contours shown to establish limits of drainage basins and/or existence of runoff coming onto the site?
92.				Has runoff crossing more than 2 lots been contained in a drainage easement per chapter 300 of the Stormwater Criteria Management Manual?
93.				Are all overland drainage easements located to avoid any likely fences?
94.				Are erosion control measures included in the plans? Be sure to show construction entrance, silt fences, sediment ponds, sod, and all other erosion control devices in compliance with City standards. If inlet traps are used, details are required.
<b>RETAINING WALLS</b>				
95.				Are any retaining walls with a height of 4' or higher from the bottom of the foundation required for the project? Such walls require a separate permit and are not to be included in an IDP set of plans. Walls should be shown in plan and profile but not in sufficient detail to allow construction.
96.				Are segmental retaining walls proposed? Geogrid is not allowed in any utility easement or right of way.

**City of Tulsa  
Infrastructure Development Process  
Plan Review Checklist**

<b>Complies</b>				<b>Water Main Extension</b>
Item No.	Y	N	N/A	<b>General Construction Notes</b>
97.				Has all design been in strict accordance with current City of Tulsa Standards and Specifications for water mainlines?
98.				If rock excavation is expected is reference to the City of Tulsa blasting ordinance given?
99.				Has a pay note stating that blasting is included as unclassified excavation been added?
100.				Have restoration notes been added?
101.				Have all of the City of Tulsa Design Criteria been met for the water mainline?
102.				Have the Oklahoma Department of Environmental Quality (ODEQ) Design Criteria been met?
				<b>Right-of-Way Sheet</b>
103.				Have all bearings and distances on boundary lines of the easements been shown?
104.				Have all new rights of ways, permanent and temporary easements been denoted and shown individually for the development site?
105.				Have all lot and block numbers been shown for the development site?
106.				Is property legal description shown?
				<b>Design Criteria</b>
107.				Has Water, Storm Sewer and Sanitary Sewer separation Per. ODEQ regulations and COT requirements been maintained? -2 feet vertical separation, above and below top of pipe -Is 10 feet horizontal separation between the sanitary sewer and water meet? -Is sewer pipe joints (20' PVC or 18' DIP) an equal distant from water pipe crossing met. -1 feet vertical separation, above and below top of Storm Sewer pipe.
				<b>Construction Plan and Profile Sheets</b>
108.				Are existing utilities and features shown in the profile sheet with stations and flow line or top of pipe elevations?
109.				Are the waterlines located on the east and south side of the streets?
110.				Are the waterlines shown and dimensioned 8 feet from the property line?
111.				Under all paved driving surfaces is the entire trench backfilled with rock?
112.				Are fire hydrants spaced (350' apart) on the project site?
113.				Has conduit pipe with 3/8" steel wall thickness been properly sized?

<b>Conduit Sizing (Inches)</b>								
<b>Carrier Pipe</b>	6	8	12	16	24	30	36	42
<b>Conduit</b>	18	20	24	30	42	48	54	60

114.				Is vertical scale used labeled 1" = 10' or 1"= 5'?
115.				Is the horizontal scale used within the range of 1"=20' to 1"=50'? (depending upon COT project requirements, 600' maximum distance per sheet)

**City of Tulsa**  
**Infrastructure Development Process**  
**Plan Review Checklist**

<b>Complies</b>				<b>Water Main Extension</b>
Item No.	Y	N	N/A	<b>Construction Plan and Profile Sheets</b>
116.				Are gate valves used as necessary to allow for isolating portions of the water mainlines? (Number of directions minus 1 equals number of valves to be used)
117.				Are station numbers and sizes shown for valves, fire hydrants, fittings, air release valves or other appurtenance?
118.				Are details of both sides of the street shown in the plan sheet?
119.				Are fittings shown as restrained?
120.				Is the minimum cover of 36" over waterline using lowest grade in the vicinity? (In general, the water mains are to be three feet minimum below the proposed finished grade over the main, and three feet minimum below the centerline of the street, and four (4) feet minimum below the pavement if the water main is under the pavement, below the invert of a bar ditch, or creek crossing)
121.				Is the maximum waterline depth of 8'-0" unless approved by COT Water Design? Section. With the exception of creek crossings, and road crossings, etc. Channel or creek crossing: <ul style="list-style-type: none"> <li>- Is four (4) feet minimum clearance below bottom of creek?</li> <li>- Is D.I.P. used only?</li> <li>- ODEQ regulations Section 252:626-19-2(9)(B) - Under Water Crossings <ul style="list-style-type: none"> <li>• Are valves provided at both ends of water crossings so that the section can be isolated for testing or repair? Are the valves easily accessible and not subject to flooding? Is the valve closest to the supply source in a manhole?</li> <li>• Make permanent taps on each side of the valve within the manhole to allow insertion of a small meter for testing to determine leakage and for sampling purposes</li> </ul> </li> <li>- Are restrained joints and fittings provided a minimum of 20 feet into each bank of crossing?</li> <li>- Was bank stabilization used (Riprap per COT Standards)?</li> <li>- Does designed pipe for river crossings have flexible watertight joints?</li> </ul>
122.				Are master meter vault locations shown with reference to streets? <ul style="list-style-type: none"> <li>- New/replacement residential meters located within Right-of-Way and 2'-0" off property line?</li> <li>- Separate meter box for residential service pressure reducing valve (PRV) located between property line and meter box?</li> </ul>
123.				Are all list of material's boxes shown, "Furnished by Contractor", and "Installed by Contractor"?
124.				Has approval been given to tap onto a 12" or larger size waterline?
125.				Has independent valves been used on 12" lines or larger for 3-way fire hydrants?
126.				Is the minimum size pipe used a 6-inch?
127.				Have conduits been installed level?
128.				Is the pipe level where valves and fire hydrant have been installed?
129.				Are Standard Details a part of the plan specifications with the exception of the following? <ul style="list-style-type: none"> <li>- Are air/vacuum/release valves used for waterlines 16" and larger, or elevation changes of 15' or more?</li> <li>- Specials (Pump Station, Water Towers, River Crossings, Storage Tanks) Required?</li> </ul>

**City of Tulsa**  
**Infrastructure Development Process**  
**Plan Review Checklist**

<b>Complies</b>				<b>Sanitary Sewer</b>
Item No.	Y	N	N/A	<b>Construction Notes/Schedule of Quantities/Drainage Basin Map</b>
130.				Has this note been added to the plans? "Contractor will be required to vacuum test all manholes according to City of Tulsa Standards and Specifications"
131.				Has the standard note for traffic control & street closure been added?
132.				Have the Schedule of Quantities been added?
133.				Has this note been added to the plans? "Contractor shall submit professional engineered trench excavation plan for all excavations in excess of 20 feet."
134.				Will blasting be used on the project? If so, reference the City of Tulsa blasting ordinance, and include a pay note stating that blasting is included as unclassified excavation.
135.				Has the Drainage Basin Map, clearly defining all areas tributary to the subject property, and the proposed sewer main, been included in the plan?
136.				Did you show your calculation of the ordinance flow?
				<b><i>Survey Data Sheet</i></b>
137.				Did you include the manhole numbers and control point locations on the overall plan view?
138.				Have you included a Survey Data Table (description, location, and coordinates) for your control points?
139.				Have you included a Table of State Plane Coordinates for both the existing and proposed manhole locations (MH #, X, Y, Z)?
				<b><i>Right-of-Way Sheet</i></b>
140.				Have you shown all ROW and easements? Include Document Numbers for each dedication, and include width and bearings of unplatted easements.
141.				Are ownership name and legal description for surrounding properties included?
				<b><i>New Construction Plan and Profile Sheets</i></b>
142.				Does the Profile show rising grade from left to right?
143.				Is Call OKIE on each sheet?
144.				Have all pipelines been properly stationed and manholes labeled? No continuous stationing with each manhole starting a new run. Existing MHs use Capital Letters and proposed MHs begin with #1 at the lowest end.
145.				Do channel or creek crossings provide four feet minimum cover? Pipe must be D.I.P. from manhole to manhole, and Rip Rap the channel over the cut. If less than 4' of cover, then place steel conduit 10' beyond the upper toe of each bank.

**City of Tulsa**  
**Infrastructure Development Process**  
**Plan Review Checklist**

<b>Complies</b>				<b>Sanitary Sewer</b>
<b>Item No.</b>	<b>Y</b>	<b>N</b>	<b>N/A</b>	<b>New Construction Plan and Profile Sheets (cont'd)</b>
146.				Is the depth of cut from the ground elevation to the top of pipe 4' or less, or 16' or greater? If so, Ductile Iron Pipe lain in crushed stone bedding is required.
147.				Has adequate water and sewer separation (two feet vertical and ten feet horizontal or D.I.P. per ODEQ regulations) been maintained?
148.				Have you Potholed all high-pressure gas pipelines at all crossings? Coordinate with the Gas Line Owner.
149.				Did you show service tees in the profile with station, size and direction facing?
150.				Will service lines be located under paved driving surfaces? If so, then they must be D.I.P. for all public and private streets.
151.				Are all service connections less than the maximum allowable 16' depth?
152.				Are Flow Direction Arrows shown for all sewer lines?
153.				If the sewer line is located within a 17.5' perimeter easement, is it the required 12.5' from the property line?
154.				Is the sewer located 7' south, or west, of the property line within back to back 11 foot easements for new development?
155.				For side lot easements, does the required Ductile Iron Pipe have a minimum of 7.5' of distance from the center of the pipe to the edge of the easement?
156.				Are limits of pavement removal and replacement shown on plan view?
157.				Are street features and special backfill requirements shown in profile?
158.				Has sufficient survey data been provided to reconstruct curbs and streets?
159.				Is all pipe in fill areas and within street ROW constructed of Ductile Iron, with backfill/fill compacted to 95% Standard Proctor Density?
160.				Is Type "A" aggregate backfill been shown for the entire trench under all paved driving surfaces?
161.				Is the depth of the sewer main sufficient to serve all intended properties (check cleanout elevations)?
162.				Are all service tee depths sufficient for the proposed service line to clear utilities and maintain cover at ditches?
163.				Does the Ordinance Flow Equation show sufficient capacity to serve the entire upstream drainage basin? Include calculations on the plans.
164.				If described in the Facilities Plan, is capacity provided to serve other basins?
165.				Are stub-outs provided for future extension, per the Facilities Plan?
166.				Are Finished floor and cleanout elevations provided?
167.				Have locations where the property owner must install backflow prevention been identified? (if building site is below the upstream/downstream manhole rim)
168.				Are two foot contour lines shown on plan view (existing [dashed] and proposed [solid])?
169.				Is manhole spacing no greater than 300 feet in residential areas, or 400 feet in open areas? Longer spacing may be allowed on sewers 18" I.D. and greater per ODEQ specifications.
170.				Do all manholes shall have a minimum depth of 4.0 feet? If not, then a special structure (5' I.D. Flat Top MH) will be required.
171.				Does the design provide sufficient pipeline slope considering minimum velocity of 2.0 FPS (Max. slope 8%)? See chart below.

**City of Tulsa**  
**Infrastructure Development Process**  
**Plan Review Checklist**

**Complies**

**Sanitary Sewer**

<b>Sanitary Sewer Pipe in Inches (Maximum slope 8%)</b>									
<b>Size</b>	8	10	12	14	15	16	18	21	24
<b>Min. Slope</b>	0.40%	0.29%	0.22%	0.17%	0.15%	0.14%	0.12%	0.10%	0.08%

Item No.	Y	N	N/A	<b>New Construction Plan and Profile Sheets (cont'd)</b>
172.				Are existing utilities and features shown on both the Plan & Profile? Include stationing of features in the profile view.
173.				Is conduit provided from ROW to ROW under all arterial streets?
174.				Is the wall thickness of the conduit a minimum of 3/8"?

**Conduit Sizing (Inches)**

<b>Carrier Pipe</b>	6	8	10	12	14	15	16	18	20	24	30	36	42	48
<b>Conduit</b>	18	20	22	26	28	28	32	32	36	42	48	54	62	68

Item No.	Y	N	N/A	<b>New Construction Plan and Profile Sheets (cont'd)</b>
175.				Have Pipe length, I.D. and slope been identified?
176.				Does QA/QC for Schedule of Quantities, match with items listed in the proposal?
177.				Where possible, have Manholes been placed on Lot Lines?
178.				Have MHs been elevated 1' above the FEMA 100-year floodplain elevation? If not have sealed lids been approved?
179.				Have offset dimensions of sewer line from property line been provided?
180.				Is all pipe, at depth greater than 16 feet; larger than 15" ID; under paved driving surfaces; or within floodway; designed as Ductile Iron?
181.				Have safety considerations at schools, playgrounds, etc. been added to the plans?
182.				Have service connections only been provided on mains 12" ID and smaller? (15" ID allowed only with Underground Collections approval)
183.				Have all trunk mains larger than 16" ID been designed as D.I.P. with approved epoxy lining?
184.				Have all manholes, associated with mains 15" ID and larger, been designed with interior epoxy coating?
185.				Is the diameter of proposed manholes appropriate for the pipe size (8" - 12" pipe: 4ft ID; 15" - 21" pipe: 5ft ID; 22" - 36" pipe: 6ft ID)?
186.				Have restoration details of retaining walls, improved channels, and other special structures been provided?
187.				Do sewers terminating in a manhole project a minimum of 15.0 feet into the property to be served, or 10.0 feet where a lamphole is proposed?

**City of Tulsa**  
**Infrastructure Development Process**  
**Plan Review Checklist**

<b>Complies</b>				<b>Sanitary Sewer</b>
Item No.	Y	N	N/A	<b>New Construction Plan and Profile Sheets (cont'd)</b>
188.				Have existing sewer lines been inspected for condition prior to plan submittal? Redevelopment involving the demolition of existing residential or commercial structures shall include a complete rehabilitation of all existing sewer facilities servicing the redevelopment. The developer shall be responsible for the cost associated with internal inspection, rehab plan preparation, and construction.
189.				Have all private sanitary sewer service lines, 8 inch I.D and larger, been designed according to City of Tulsa, Public Mainline Standards? All 8” private service lines must be reviewed by Development Services as an IDP project, and construction must be inspected by the Development Services Plumbing inspector. The Service line must be clearly labeled “Private Service Line” on the plans because the City of Tulsa will not maintain these lines.
				<b>Rehabilitation Plan and Profile Sheets (in addition to that listed above)</b>
190.				Has proper reference been made to Rehabilitation Specifications?
191.				Has the feasibility of bypass pumping been addressed?
192.				Is the Plan and Profile shown for all open cut pipelines?
193.				Are Flow Capacity Calculations included to confirm sufficient capacity exists for all rehabilitation methods that reduce cross sectional area?
				<b>Detail Sheet(s)</b>
194.				Have details of all existing and proposed manhole inverts been shown?
195.				Have all existing and proposed MHs been shown to scale, including manhole diameter, pipe O.D., invert, minimum radius of invert (per Standard 366), location of manhole steps, and deflection angles?
196.				Is a minimum of 1’ clear space maintained between O.D.’s of adjacent pipe?

**City of Tulsa**  
**Infrastructure Development Process**  
**Plan Review Checklist**

**Complies**

**Transportation & Traffic Engineering**

Item No.	Y	N	N/A	<b>GENERAL INFORMATION</b>
197.				Is a Change of Access required to be processed through TMAPC?
198.				Is modification of a public roadway median proposed for this project?
199.				Are special features being proposed that will require a License Agreement with the City?
200.				Are sidewalks required to be constructed in the project?
				<b>PAVING PLAN</b>
201.				Does street layout including collector street location conform to the plat or PUD and/or Preliminary Plat?
202.				Are street names provided on each street segment on plan sheets where name is needed for street identification?
203.				Are there streets in the project and correctly labeled as Public or Private?
204.				Are end-of-roadway barriers provided with standard details shown in plans?
205.				Are there "Limits of No Access" shown on the plan?
206.				Have all TAC recommendations or requirements been adequately addressed?
207.				Are Right of Way lines shown with Plat number or Book & Page number?
208.				Are easements shown with Plat number or Book & Page number?
209.				Are existing median locations and openings on adjacent streets shown?
210.				If modification of public roadway median is proposed, are details provided?
211.				Do radii at returns conform to City of Tulsa standards? (25' for residential streets, 30' at intersections with arterials, 40' for industrial districts)
212.				Does cul de sac radius conform to subdivision regulations?
213.				Do horizontal curves along proposed streets meet AASHTO design criteria?
214.				Are all pavement related City of Tulsa Standards listed in an INDEX on the Cover Sheet or provided in details on Paving Plan or construction Details sheets with appropriate DETAIL/SHEET standard drafting referencing?
215.				Are appropriate references to ODOT 1999 standards included?
216.				Do street pavement sections conform to Standard Nos. 726, 727, and/or 729, including all compaction and test rolling requirements?
217.				If "No" to above, has Geotechnical Report been submitted for review?
218.				Have all the standards listed in the Index been used?
219.				Are street paving width and stationing clearly shown on paving plan sheets?
220.				Are curve and line data provided for all curves and curb returns?
221.				If sidewalks are to be constructed, are they shown on the plans, properly dimensioned and referenced to the appropriate construction detail?
222.				Is there minimum 18" distance provided between sidewalk and property line?
223.				If any part of the sidewalk is on private property has it been placed in a sidewalk easement?
224.				Is wheelchair ramp Standard No. 790 called out and referenced or construction details provided conforming to No. 790?
225.				If there is an obstruction in the sidewalk access ramp e.g. light pole, is there a minimum of 3' available on at least one side?
226.				Are existing and proposed curb and gutter, driveways, sidewalks, and ramps clearly identified and dimensioned?
227.				Is a curb and gutter detail provided or Standard No. 726 referenced with the curb type from that standard specified?

**City of Tulsa**  
**Infrastructure Development Process**  
**Plan Review Checklist**

<b>Complies</b>				<b>Transportation &amp; Traffic Engineering</b>
Item No.	Y	N	N/A	<b>PAVING PLAN (contd...)</b>
228.				Are hand formed gutters clearly identified with detail provided?
229.				Are transitions from curbed to uncurbed sections properly detailed, including section showing compacted subgrade and base material extending 2 ft beyond edge of uncurbed pavement?
230.				Is type of existing pavement shown on plans?
231.				Are ties of new to existing pavement clearly explained in a construction detail? (At minimum, include note: "Full Depth Saw Cut," and "Match Existing")
232.				Are all storm water curb inlets shown on paving plans?
233.				Are spot elevations provided where necessary to construct according to the design drainage?
234.				Is the maximum depth of storm run off at the curb equal to or less than 0.38'?
				<b>DRIVEWAY AND ENTRY</b>
235.				Do commercial driveways conform to City of Tulsa design standards for width (24' – 36'), radius of returns (15'), and pavement type and thickness?
236.				Does driveway spacing and geometry meet minimum industry standards with relation to adjacent driveways and intersections?
237.				Does gated entry at a private street have adequate queuing storage for two vehicles waiting to access a private street or parking lot?
238.				If existing public pavement is concrete or asphalt overlay over concrete is proposed driveway shown as concrete?
239.				Is the slope across driveway a maximum of 2% or less?
240.				Is the maximum grade of driveway entrance 8% or less?
				<b>STREET PROFILES</b>
241.				Do profiles extend at least 100 ft beyond ends of paving construction to show tie-in to existing or future pavement or ground topography?
242.				Are Top of Curb (TC) or Top of Pavement at Centerline (TP), and existing right and existing left grade lines clearly labeled on each profile?
243.				Is stationing and elevation grid properly scaled with all grid lines shown?
244.				Are elevations shown at all 50 ft stationing increments and called out features?
245.				Is each profile captioned with the correct street name?
246.				Are all street intersections shown with stationing equations and proper street name labels?
247.				Do all grades conform to the minimum 0.75% and maximum 8%?
248.				Are vertical curves sufficiently distanced (min. 50 ft) from an arterial street curb line?
249.				Are requirements for maximum grade and distance from arterial street being maintained (max. 2% for a min. 100 ft from arterial curb line)?
250.				Is the 4% maximum grade of intersecting residential streets being maintained?
251.				Do all vertical curves conform to City of Tulsa requirements for design standards according to the current edition of the AASHTO Guide for Design of Pavement Structures?
252.				Are all vertical curve data provided to show conformance with the above design standards?

**City of Tulsa**  
**Infrastructure Development Process**  
**Plan Review Checklist**

<b>Complies</b>				<b>Transportation &amp; Traffic Engineering</b>
Item No.	Y	N	N/A	<b>INTERSECTION DETAILS</b>
253.				Are right-of-way lines, property lines, and lot lines shown?
254.				Are all intersection details captioned with their correct street names?
255.				Are the street names shown on the details?
256.				Is reference stationing provided in all details?
257.				Is curve data shown?
258.				Are spot elevations at curb returns shown?
259.				Is positive drainage provided, including the minimum 0.75% along the curb line of the full arc length of each curb return and “eyebrow” intersection corners?
260.				Are arrows provided showing direction of drainage flow?
261.				Are hand-formed flow-away curb-and-gutter sections properly shown and labeled?
262.				Are storm water curb inlets shown on the intersection details?
263.				Are all intersections and related constructed features properly dimensioned, including references to property lines or stationing for locating curb returns, street centerlines, medians, islands, and other constructed features?
264.				Are sidewalks and ramps shown and labeled as to whether their construction is included in the IDP contract or will be by individual lot builders?
265.				Are special grading instructions properly referenced to the respective street profile(s) and vice versa?
266.				Are all special paving features and transitions properly labeled and referenced to a corresponding construction detail?
267.				Is pavement striping shown where necessary (e.g., gore areas at traffic circles, major transitions, turn lanes), with material and application specifications?
				<b>LIGHTING, STRIPING AND SIGNALIZATION</b>
268.				Is project within 500 feet of an intersection that currently has a traffic signal or within 200 feet of any other active traffic control or warning device that is supplied with electrical service?
269.				Is a vehicular or pedestrian traffic signal proposed on this project?
270.				Does traffic signal installation conform to City of Tulsa standards?
271.				Does the plan set containing traffic signal design have a sheet that shows pavement markings relational to traffic signal standards layout and signal head spacing?
272.				Is street lighting proposed on project?
273.				Is project within a school area that might affect pavement markings or school signing?
274.				Are street name signs required to identify a new street or streets?
275.				Is traffic control signing required on this project?
276.				Are parking meters located in the affected area?
277.				Is there roadway channelization islands proposed for this project?