

RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS

CREEK COUNTY, OKLAHOMA

2005 - 66

A RESOLUTION ADOPTING ENGINEERING DESIGN CRITERIA AND REPEALING ALL RESOLUTIONS OR PARTS OF RESOLUTIONS IN CONFLICT HEREWITH.

WHEREAS, Title 19 O.S. Section 866 et seq., and as amended, enables Creek County, Oklahoma, to enact and enforce Engineering Design Criteria; and

WHEREAS, a properly advertised Public Hearing was held on the 29th day of August, 2005 by the Creek County Board of County Commissioners, and after due study and deliberation, this Board deems it advisable and in keeping with the purposes as set forth in O.S. 19, Section 866 and subsequent amendments thereto to adopt the Engineering Design Criteria, attached hereto as Exhibit A and made a part of this Resolution, with a copy to be duly filed with the Creek County Clerk.

NOW, THEREFORE, BE IT RESOLVED that the Board of County Commissioners does hereby adopt the Engineering Design Criteria for Creek County, Oklahoma attached hereto as Exhibit A and made a part of this resolution, with a copy to be duly filed with the Creek County Clerk.

BE IT FURTHER RESOLVED that this Resolution shall take effect and be in force immediately.

APPROVED AND ADOPTED this 19th day of September, 2005.

BOARD OF COUNTY COMMISSIONERS

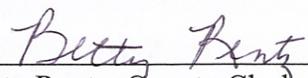


Roger Boomer, Chair



Dana B. Hudgins, Vice-Chair

ATTEST:

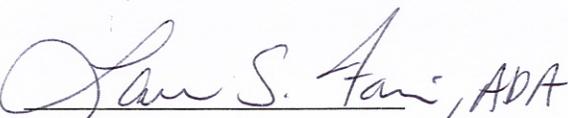


Betty Rentz, County Clerk



Johnny Burke, Member

APPROVED AS TO FORM AND LEGALITY BY DISTRICT ATTORNEY



Max Cook, District Attorney

Exhibit A

ENGINEERING DESIGN CRITERIA CREEK COUNTY, OKLAHOMA

Adopted by Resolution No. 2005- 66



Creek County Planning Office

Erik Enyart, Creek County Planner/INCOG

John McElhenney, P.E., County Engineer/INCOG

Prepared By: INCOG

August 25, 2005

ENGINEERING DESIGN CRITERIA

CREEK COUNTY, OKLAHOMA

Adopted by Resolution No. 2005-66
Effective Date: September 19, 2005

CREEK COUNTY BOARD OF COMMISSIONERS

Dana Hudgins, District 1

Johnny Burke, District 2

Roger Boomer, District 3, Chair

Erik Enyart, INCOG/Creek County Planner

PREPARED BY:



CREEK COUNTY, OKLAHOMA
ENGINEERING DESIGN CRITERIA

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SECTION 1. INTRODUCTION

1. Purpose and Intent:
 - a. The purpose of these Engineering Design Criteria (Criteria) is to establish public policy for the development of privately and publicly financed improvements in Creek County (County). These Criteria establish minimum standards for the design and preparation of construction plans prepared by a Professional Engineer. While certain interim requirements may be imposed, it is the intent of these Criteria that the Professional Engineer be fully and exclusively responsible for producing an acceptable set of construction plans in compliance herewith. County personnel, except as otherwise provided herein, shall make reviews on behalf of the County to document that an acceptable product is produced.
 - b. These Criteria have been prepared by the County and adopted by the Creek County Board of Commissioners (Commissioners) by Resolution No. 2005-66 dated September 19, 2005.
 - c. These Criteria shall become effective on and after the 19th day of September, 2005. Any project **beginning** on or after such date shall be governed by the Criteria contained herein and all other amendments hereto.

2. Minimum Standards, Criteria and Specifications:
 - a. These Criteria shall be considered as minimum standards, criteria and specifications pertaining to development and construction of privately or publicly financed improvements. Promulgation hereof and adherence hereto shall not relieve persons or entities governed hereby from prudent, reasonable development design and construction practices or compliance with other such local, state or federal regulations.
 - b. Compliance with the minimum standards, criteria and specifications established herein shall not relieve the developer or the developer's engineer of required compliance with any other local, state, or federal regulations, and the more restrictive shall control.
 - c. These Criteria shall not be interpreted in any manner that allows the production of an unacceptable product nor in such a manner that the product would endanger the health, safety or the welfare of the general public.

3. Preparation, Review and Approval of Plans:

- a. The preparation, review and approval of plans for streets, water, sanitary sewer, stormwater runoff and detention, erosion control and the related permitting processes by the County is a subsystem of the overall subdivision platting and development process, and shall be performed in accordance with the Subdivision Regulations of the County. However, it is recommended that the developer and/or developer's engineer coordinate these projects and activities with the County at the conceptual level so that the County Engineer (Engineer) can become familiar with the project at the conceptual stage and processing can thereby be expedited.
- b. Improvement plans shall be approved by the County prior to the start of any construction of improvements.
- c. During installation of the improvements, an approved set of plans shall be on-site at all times and on file in the office of the Creek County Planner (Planner).

4. Maintenance Bonds and Surety:

Maintenance bonds or other such surety as determined by the Commission shall be required upon completion for all public improvements, and the bonding period, also referred to herein as the Monitoring Period, shall begin on the day of final acceptance of the improvement by the County as required by the Creek County Subdivision Regulations (Subdivision Regulations).

SECTION 2. GENERAL STANDARDS

The design parameters listed in these Criteria document and pertain to the design of any facility within the service/maintenance area of the County. All other federal, state and local regulations that stipulate other criteria not covered herein shall also be adhered to, and the more restrictive shall control.

Within the unincorporated annexation fenceline of the City of Sapulpa in Creek County, the minimum Criteria for road construction shall be in accordance with Appendix A Figure 2 as required by the Joint Resolution adopted by Creek County and the City of Sapulpa dated February 2003.

However, all other design and construction details shall meet or exceed these Criteria.

1. Bonds and Surety:
 - a. County Owned Projects:
 - (1) For all construction projects performed for the County, performance, statutory and maintenance bonds, or other such surety as accepted by the County, in an amount equal to 100 percent of the construction costs as approved by the County, shall be posted as required by the Subdivision Regulations and prior to start of construction;
 - (2) The performance and statutory bonds shall expire once the project is completed and accepted by the County;
 - (3) The maintenance bond or other surety acceptable to the County shall be required in accordance with the Monitoring Period as determined by the County and shall extend for a period after the completion and acceptance of all improvements. In special circumstances, as determined by the County, the County reserves the right to extend the Monitoring Period of the maintenance requirement; and
 - (4) All bonds or sureties shall be obtained from a company on the U.S. Department of Treasury List of Approved Surety (Circular 570)
 - b. Private Development Projects: See the Subdivision Regulations

2. Construction Costs: A detailed copy of the Construction Bid showing total costs and unit costs for all items on all projects shall accompany the bond or fee submittal.
3. Final Acceptance: The improvements are accepted by the County only upon passage of a resolution to the effect and/or when the County issues a letter of acceptance of the improvement to the developer.
4. As Built Drawings: Upon completion of construction, the consulting engineer shall furnish the County a complete set of sealed "As Built Drawings" for the improvements. Three (3) sets of As Built drawings shall be submitted on paper and also on a computer disk of As Built Drawing files in .dxf or .dwg format.
5. Surveying:
 - a. Land Surveys: All land and boundary surveys for design and construction shall be performed by a surveying company and/or individual registered to practice by the Oklahoma State Board of Registration for Professional Engineers and Land Surveyors.
 - b. Benchmarks:
 - (1) All elevations shown on the plans shall be based on NAVD, 1988 adjustment datum.
 - (2) Horizontal controls shall be on the basis of the NGS Oklahoma State Plane Coordinate System, NAD 83, latest revision.
 - (3) The permanent bench mark location and description used to extend level datum to the projects shall be noted on the plans.
 - (4) All temporary bench marks used for control of the project shall be designated on the plans stating elevation, location and description. On public projects, the nearest such bench mark shall be shown on each sheet.
 - c. Alignment Surveys:
 - (1) Alignment surveys for water, sewer, storm drainage and roadway designs shall begin at a station designated to the nearest hundred feet. Station 0+00 shall be used to start all surveys, unless back stationing is a possibility. Station 10+00 shall be the beginning station for all alignment

surveys where back stationing may be needed. Exceptions may be considered by the Engineer on a case-by-case basis.

- (2) Alignment surveys for sanitary sewer and storm drainage projects shall begin at the downstream terminus and proceed upstream.
- (3) Alignment surveys for roadway and water line projects should generally proceed from west to east or from south to north.

6. Drafting:

a. Media Material

- (1) Construction plans shall be drawn and be prepared on a high quality reproducible medium that can be reproduced to make high quality blue-line or photocopies.
- (2) Construction plans prepared using computer aided design (CAD) programs shall be prepared on reproducible velum sheets.
- (3) Originals provided to the County shall be on velum sheets that are plotter printed; sepia copies are not acceptable.
- (4) Black India ink shall be used on all original drawings and plots.

b. Media Size:

- (1) Full Size Sheets: Standard sheets shall be 22-inch x 34-inch or 24-inch x 36-inch having minimum margins of 1.5-inch along the left border and 0.5-inch along the top, bottom and right borders. Full size sheets shall be used for submitting plans to the County for review and for bidding.
- (2) Half Size Sheets: Half size sheets may be submitted to the County, after prior approval by the Engineer. Half size sheets may also be used with approval of the Engineer and at the request of the Contractor. The developer's engineer (Design Engineer) shall correct the scale on the half size sheets so the user does not have to convert scales from the full size drawings.

c. Lettering, Line Weights and Symbols:

- (1) All line work shall be of sufficient density to be reproducible by current reproduction processes. Any line work which does not reproduce satisfactorily may be cause for rejection of the plans by the Engineer.
- (2) Freehand lettering shall not be allowed.
- (3) All lettering shall be at least 0.08-inch and shall be legible at half size.

d. Scales:

- (1) Water, Sanitary Sewer and Storm Sewer Lines/Storm Sewer Channels:
 - (a) Plan and Profile Sheets:
 - i. Congested Areas: 1-inch = 20 feet (1" = 20') horizontal and 1-inch = 5 feet (1" = 5') vertical for existing developed areas.
 - ii. Uncongested Areas: 1-inch = 50 feet (1" = 50') horizontal and 1-inch = 5 feet (1" = 5') vertical in lower congested areas for new subdivisions.
 - (b) Detail Sheets: 3/16-inch = 1-foot (3/16" = 1'- 0")
 - (c) Cross Section Sheets: 1-inch = 10 feet (1" = 10") horizontal and 1-inch = 5-feet (1" = 5') vertical
- (2) Streets/Roadways: See Street Design Standards
- (3) Site Grading Plans: 1-inch = 50 feet (1" = 50')

7. Plans for New Improvements:

- a. Title Sheet: A title sheet shall be included on all plans and include the following information:
 - (1) Project title
 - (2) Project location map (1-inch = 2,000 feet minimum) referencing plan sheet layout.

- (3) Project owner's name, address, and telephone number.
 - (4) Funding source (if applicable).
 - (5) County (for County projects only).
 - (6) Contact person other than the Project Owner.
 - (7) Design Engineer's name, address, and telephone number for Project Owner.
 - (8) Drawing index and legend.
 - (9) Seal of the Professional Engineer responsible for the project – only Oklahoma registration accepted.
 - (10) Signature area for the County to approve drawings for County projects only.
 - (11) OKIE One Call Logo.
 - (12) Legend: A legend showing typical symbols used in the preparation of engineering plans is included at the end of this Section and shall be shown on all plans. Topography for which symbols are not standardized shall be indicated and named on the plan and profile. The complete legend of symbols shall be shown on the cover sheet.
- b. Plan/Profile and Detail Sheets: The Criteria for general information on plan sheets shall be as follows:
- (1) The title sheet shall not be used for a plan sheet on public projects.
 - (2) North or west should generally be oriented to the top or right hand side of all water line and street projects.
 - (3) Stationing shall increase from left to right.
 - (4) North shall be oriented as needed on all gravity line projects as long as the downstream end of the line is on the left hand side of the sheet.

- (5) A title block shall be located in the lower right hand corner of each sheet and shall include the following:
- (a) Project title.
 - (b) Owner's name.
 - (c) Design Engineer's name for Project Owner.
 - (d) Drawing description.
 - (e) Scale.
 - (f) Sheet number.
 - (g) Date the last revisions were made.
 - (h) Initials of the Design Engineer responsible for the drawing.

c. General Requirements for Plans:

- (1) References:
- (a) All base and plan maps shall reference existing and proposed land lines, and include but be not limited to property lines, right-of-way lines, lot lines, building setback lines, section lines, etc. These lines, such as property lines, lot lines, right-of-way lines, easement lines, building lines, section and quarter section lines, shall be represented and located.
 - (b) At least one benchmark (BM) or temporary benchmark (TBM) with known elevation to the hundredth unit of measurement shall be shown on a single site plan sheet. On multiple site projects, such as water, sewer, roadway, and storm drainage projects, a minimum of two (2) separate benchmarks shall be referenced per each plan and profile sheet on public projects.
 - (c) All benchmarks or beginning construction stations shall be referenced for future location.

- (d) When more than one plan sheet is utilized for a project, an overlap of not less than one inch at map scale with a match line is required.
 - (e) When unusual subsoil or drainage conditions are suspected, a geotechnical analysis shall be made by the Design Engineer and a special design prepared in line with good engineering practices.
- (2) Existing Improvements: Each plan sheet shall show all improvements located above and below ground, horizontally and vertically, which could be affected by construction or a part of the construction as follows:
- (a) Structures
 - (b) Utilities and other pipelines
 - (c) Roadways
 - (d) Drainage
- (3) No public improvements shall be installed except within dedicated right-of-way or appropriate dedicated easements. Any such new required dedicated right-of-way or easements shall be submitted for review the Engineer and acceptance by the County prior to filing. Restricted easements and offsite easements shall only be filed after review by the Engineer and acceptance by the County.
- (4) All structures (manholes, junction boxes, inlets, headwalls, etc.) shall be numbered and labeled both in plan and in profile and detailed on plans.
- (5) Waterlines, sanitary sewer and storm sewer lines shall be identified on both plan and profile sheets.
- (6) Drawings shall show all obstructions, existing and proposed, above and below ground and all such obstructions shall be located vertically and horizontally. The Project Owner's Design Engineer shall be responsible for contacting all utilities to obtain locations of their facilities, which also applies to contact with the various affected pipeline companies.

8. Site Grading Plan:
 - a. Present Site Conditions:
 - (1) Topography: Existing site topography extending a minimum of 50 feet past property limits with contour lines at 2-foot interval.
 - (2) Existing features:
 - (a) Right-of ways and easements.
 - (b) All utilities.
 - (c) Drainageways with 100-year floodplain and floodway limits with reference to the FEMA Map Number and date.
 - (d) Buildings, fences, retaining walls, oil or gas wells (plugged or active), injection wells, mines and other man-made physical features.
 - (e) Significant natural features such as creeks, streams, or rock out-croppings.
 - (f) Test hole locations.
 - (3) Elevations on plans shall be U.S.G.S. datum. Benchmarks used for the project shall be noted on the first plan sheet of each project, and their location and elevation shall be clearly defined. At least one permanent benchmark shall be established per 20 acres of development or project site, with a minimum of one benchmark per development or project site. State plane coordinates for each benchmark shall be recorded with the benchmark.
 - b. Proposed Site Conditions:
 - (1) Proposed contours with match to existing contours of adjacent property.
 - (2) Drainage flow arrows for each individual lot.
 - (3) Grade breaks and slopes of 3:1 or greater
 - (4) Top of curb elevation at each property line extension.

- c. Proposed improvements:
 - (1) Sidewalks, bike paths, pedestrian trails and other public improvements.
 - (2) Storm drainage structures.
 - (3) Fences, retaining walls and other physical site improvements - cross sections may be required to detail these features.
 - (4) Minimum finished floor elevations for buildings.
 - (5) Driveway grades.
- d. DEVIATIONS: Deviations from the accepted site grading plan shall be subject to prior review and approval by the Engineer to revise any of the following:
 - (1) Finished floor elevation.
 - (2) Drainage flow direction.
 - (3) Other significant proposed features as determined by the Engineer.

9. Detention Plans:

- a. Present Site Conditions:
 - (1) Topography: Existing site topography extending a minimum of 50 feet beyond the property limits with contour lines at a maximum interval of 2-feet.
 - (2) Existing features:
 - (a) Right-of way and easements.
 - (b) All utilities.
 - (c) Buildings, fences, retaining walls, and other man-made physical features.
 - (d) Significant natural features such as creeks, streams, or rock out-croppings.

- (e) Test hole locations.
 - (3) Elevations on plans shall be U.S.G.S. datum. Benchmarks used for the project shall be noted on the first plan sheet of each project, and their location and elevation shall be clearly defined. At least one permanent benchmark shall be established per 20 acres of development or project site, with a minimum of one benchmark per development or project site. State plane coordinates for each benchmark shall be recorded with the benchmark.
- b. Proposed Site Conditions:
- (1) Proposed contours with match to existing contours of adjacent property.
 - (2) Grade breaks and slopes.
 - (3) Top of berm and bottom of pond elevations.
 - (4) Outlet structure details and elevations, to include erosion control features where required.
 - (5) Water surface elevation of detention pond during 100-year event shown with a dashed line.
- c. Proposed improvements:
- (1) Sidewalks, bike paths, pedestrian trails and other public improvements.
 - (2) Storm drainage structures.
 - (3) Fences, retaining walls and other physical site improvements - cross sections may be necessary to detail these features.
 - (4) Minimum finished floor elevations for buildings.
 - (5) Driveway grades.
- d. DEVIATIONS: Deviations from the approved site grading plan shall be subject to prior review and approval by the Engineer for the following revisions:
- (1) Finished floor elevation.

- (2) Change in the drainage flow direction.
- (3) Other significant proposed features as determined by the Engineer.

10. Erosion and Sedimentation Control Plans Drawing Contents:

- a. General Location Map: A map shall be provided in sufficient detail to indicate the location of the project site. The map should be at a scale of 1" = 1000' to 1" = 2000' and should indicate the project site in relation to existing topographic and transportation features and land boundaries. The map shall show the drainage area of land tributary to the site.
- b. Sediment and Erosion Control Plan: Map(s) of the proposed development at a scale of 1" = 20' to 1" = 200' on 22-inch X 34-inch drawing sheets shall be included. The plan shall show the following:
 - (1) A boundary line survey of the site on which the work is to be performed.
 - (2) Existing topography at two (2) foot contour intervals. The contours shall extend a minimum of 100-feet beyond the property line when available or a minimum of 50-feet in all other cases.
 - (3) Proposed topography at two (2) foot contour intervals.
 - (4) Location of any existing structure or natural feature, including natural drainageways, on the site.
 - (5) Location of any structure or natural feature on the land adjacent to the site and within a minimum of 100-feet of the site boundary line.
 - (6) The map shall show the location of the storm sewer, channel, or creek receiving storm runoff from the site.
 - (7) Location of any proposed additional structures of development on the site, if known.
 - (8) Limits of clearing and grading showing areas which are to be cleared and graded.
 - (9) Proposed location of erosion control barrier.

- c. Detailed Drawings: Detailed drawings and structural practices used that are not referenced in these Criteria and other information or detail as may be reasonably required by the Engineer and County.

11. **Legend:**

The cover sheet for construction plans shall include an index of all sheets. The following Legend and symbology shall be used and apply to all submittals under the provisions of these Criteria:

BFE	Base Flood Elevation
BM	Bench Mark
D/E	Drainage Easement, Restricted Easement
E	Easement
PC	Point of Curvature
PI	Point of Intersection
PT	Point of Tangency
R/W	Right-of-way
S/E	Sanitary Sewer, Restricted Easement
SPD	Standard Proctor Density
TBM	Temporary Bench Mark
U/E	Utility Easement
W/E	Waterline Easement, Restricted Easement

SECTION 3. CONSTRUCTION PLANS

1. Preliminary Construction Plans:

The subdivider shall submit five (5) full-size sets of the Preliminary Construction Plans for proposed improvements at the time of application for approval of the preliminary plat to the Planning Staff as required by Section 2.4 and 3.4 of the Subdivision Regulations, and shall show the following:

- a. The location and width of each proposed right-of-way and street, sidewalk, pedestrian way and trail;
- b. The location, size, dimensions and points of access as applicable to existing streets and utilities within 200 feet of the project boundary as necessary to serve the subject property.
- c. The location, size and any associated easements for all proposed utilities and points of connection to the existing utility system;
- d. Proposed plans and specifications of any public or private water or sewage system;
- e. Topography of the subdivided area with contour lines having intervals appropriate to provide a clear and accurate understanding of the natural topography based on NGVD, including off-site areas as required for a comprehensive understanding of flow, grading and slope;
- f. A grading and drainage plan indicating the location and size of existing and proposed storm sewers, the location and width of proposed drainage ways, and including points of access to the existing system;
- g. The proposed location of any detention facilities and their inflow and outflow locations, and proposed access to said facilities for required maintenance;
- i. The size and location of all proposed off-site utility extensions, and proposed easements; and
- j. Such other information as may be required by the County for review and analysis of the proposed development and related plans.

2. Final Construction Plans:

The subdivider shall submit five (5) full-size sets of the Final Construction Plans for proposed improvements at the time of application for approval of the final plat to the Planning Staff as required by Section 2.5 and 3.5 of the Subdivision Regulations, which shall show the following:

- a. Profiles showing existing and proposed elevations along the center lines of each proposed street, with existing and proposed grades;
- b. Cross-sections of each proposed street, bicycle path, pedestrian way and sidewalk showing the type and width of the improvement;
- c. Plans, profiles and construction details of all proposed utilities and improvements;
- d. Plans and specifications for proposed public or private water or sewage systems;
- e. Results of soil profile or percolation tests if on-site sewage systems are to be used, and otherwise be in accordance with DEQ requirements. The soil profile testing method is preferred by DEQ and the County;
- f. A drainage and grading plan showing all existing and proposed storm sewers, manholes, catch basins, detention facilities, watercourses, culverts, and other drainage structures within the tract, or adjacent thereto, with pipe sizes, grades, and inlets. The drainage plan shall show the size of proposed and dedicated easements, or reservations for all detention facilities and drainage ways and whether private or public maintenance is proposed;
- g. Grading plans showing existing and final grades, and finished floor elevations;
- i. Copies of the approved permits as required by DEQ and these Criteria; and
- j. Such other information as may be required by the County for review and analysis of the proposed development and related plans.

SECTION 4. AS BUILT DRAWINGS

1. The subdivider shall submit As Built drawings in conjunction with the application for final plat approval as required by Sections 2.5, 2.6, 3.6, 4.2 and 5.3 of the Subdivision Regulations to the Planning Staff.
2. No final approval shall be endorsed on the final plat until all requirements of plat approval have been met and the As Built plans have been received and other requirements for submission and acceptance of sureties have been met as per Section 5 of the Subdivision Regulations.

SECTION 5. STREETS AND ALLEYS

1. Streets: Streets shall be constructed in accordance with Appendix A Figure 1 unless otherwise specified herein as follows:
 - a. Streets shall be either asphalt or concrete pavement.
 - b. Curbed streets shall be designed and constructed as:
 - (1) Concrete paved streets shall have integral concrete curbs when required per the Subdivision Regulations; or
 - (2) Asphalt paved streets shall have concrete curb and gutter when required per the Subdivision Regulations.
 - c. Streets may be designed and constructed in a borrow ditch configuration; however, borrow ditch street configuration shall be permitted only on lots having a frontage of 150 feet or greater and shall otherwise comply with these Criteria and the Subdivision Regulations (Regulations).
 - d. Streets constructed within the unincorporated areas of the City of Sapulpa annexation fenceline shall be designed and constructed in accordance with Appendix A Figure 2

2. In the preparation of paving design, the following criteria shall be observed:

a. Grades:

<u>Street Classification</u>	<u>Minimum</u>	<u>Maximum</u>
Arterials/Section Lines	0.5%	6%
Commercial / Industrial	0.5%	5%
Residential Collector	0.5%	8%
Local (Minor)	0.5%	8%
Cul-de-sac	0.5%	8%

According to the Regulations, the maximum permitted grade shall not exceed eight percent (8%). For situations where the topography is unusually steep, grades may be permitted upon review and recommendation of the Sapulpa Metropolitan Area Planning Commission (SMAPC) with final approval by the County up to a maximum of 12 percent providing they do not exceed 500 feet in length from the point of tangency (PT) to the point of curvature (PC).

- b. Cross slope: The cross slope of the street shall be ¼-inch or ⅜-inch per foot; however, crowns shall be flattened off so that the crown shall not exceed the curb height.
- c. Vertical curves: Vertical curves shall be the minimum length available for the two grades as defined by the AASHTO publication titled "A POLICY OF GEOMETRIC DESIGN OF HIGHWAYS AND STREETS." The "K" value shall not be less than 20 for crests and shall not be less than 30 for sags.
- d. Horizontal Curves: Deflections greater than 10 degrees

<u>Street Classification</u>	<u>Minimum Centerline Radius (ft)</u>	<u>Minimum Centerline Tangent (ft)</u>
Arterials/Section Lines	500	200
Commercial / Industrial	500	200
Residential Collector	270	100
Local (Minor)	75	100
Cul-de-sac	75	100

- e. Minimum curb return radii at intersections (*):

<u>Street Classification</u>	<u>Minimum Curb Return Radius</u>
Arterials/Section Lines	40 feet
Commercial / Industrial	40 feet
Residential Collector	30 feet
Local (Minor)	25 feet
Cul-de-sac (**)	25 feet

- (*) When two streets of different classifications intersect, use the larger of the two radii shown in the table above.
- (**) Refers to the entrance into the cul-de-sac's turnaround

- f. Intersections:
 - (1) All curb returns shall be designed with a wheelchair ramp according to ADA standards. Intersections shall be approached on all sides by leveling areas. Where the grade exceeds seven (7) percent, such leveling areas shall have a minimum length of 75 feet measured from the intersection of

the centerlines, within which no grade shall exceed a maximum of four (4) percent.

- (2) Right angle intersections shall be used whenever practicable; however, the angle of intersection of the street centerlines shall not be less than 70 degrees.
- (3) Elevations at street intersections shall be computed by extending curb grades to the point of intersection (PI) of curb returns. A minimum of 0.20 feet fall around a curb return is required. Elevations and centerline stationing at all radius points shall be shown on the plan. All pavement stationing shall be shown using back of curb data.
- (4) Residential street grades shall not exceed 2% at intersections with arterials and section line roads, 3% at intersections with commercial/industrial roads, and 4% at intersections with all other residential streets, for a minimum distance of 50 feet from the intersected right-of-way line.
- (5) Commercial and industrial street grades shall not exceed 2% at intersections with arterials and section line roads, 3% at intersections with residential streets and other commercial/industrial roads, for a minimum distance of 50 feet from the intersected right-of-way line.
- (6) Vertical curves shall not begin within 50 feet of an intersecting right-of-way line.
- (7) The minimum distance between off-setting intersections is 125 feet.

g. Plan: The following information shall be shown on the plan portion of the drawing:

- (1) Width of pavement from the gutter flow line to gutter flow line.
- (2) Curb radii with elevation and stationing at radius points.
- (3) Location and size of existing utilities and topographic features.
- (4) Central angle, centerline radius, arc length and tangent distance of horizontal curves. Stationing of beginning and

end of paving, PC and PT stationing of curves and ties to lot corners.

- (5) All lot dimensions.
- h. Profile: The following information shall be shown on the profile portion of the drawing:
 - (1) Existing ground lines at both right-of-way lines.
 - (2) Proposed centerline grade and stationing. Roadway cross slope left and right.
 - (3) The PT, PI, and PC of vertical curves, and the sag or crest of vertical curves, and vertical curve station and elevation at 25 feet intervals.
 - (4) The vertical curve length and "K" value.
 - (5) Elevation and station of crests and sags.
 - (6) Cross sections shall be shown from right-of-way line to right-of-way line a minimum of every 100 feet when curb and gutter are not proposed.
- i. Typical Section: A typical section for each proposed street classification.
- j. Barricade: A TYPE III ODOT barricade shall be installed at the end of a temporary cul-de-sac and all stub-out streets.

3. Curbs:

Barrier curbs and mountable curbs are acceptable curb types; however, mountable curb construction requires specific and prior approval by the Engineer.

4. Alleys:

Alleys shall be asphalt or concrete pavement, with an inverted crown and the curb omitted. Asphalt paved alleys shall have a concrete "V" drain along the centerline of the alley and be constructed as otherwise required by the Subdivision Regulations.

SECTION 6. WATER

1. The water system shall meet the requirements of the Oklahoma Department of Environmental Quality (DEQ) and these Criteria and other related County regulations and requirements. A copy of the application for a permit from the DEQ to construct said system, including showing design flow and pressure data, shall be submitted to the Planner with the preliminary construction plans.
2. The water system shall provide a minimum of 1,000 gallons per minute (gpm) at a minimum pressure of 25 pounds per square inch (psi) at all locations within the proposed subdivision.
3. Water lines shall not be less than 6-inches in diameter and include fire hydrants.
4. Prior to start of construction of the water system plans shall be submitted for review by the Engineer, and review and approval by the appropriate water department.
5. Copies of DEQ approved permits shall be provided to the Planner prior to the start of construction of the water system.

SECTION 7. SANITARY SEWER

1. The sanitary sewer system shall meet the requirements of the DEQ. A copy of the application for a permit from the DEQ to construct said system shall be submitted to the Planner with the preliminary construction plans.
2. Prior to start of construction of the sanitary sewer system, final construction plans shall be submitted for review by the Engineer, and review and approval by the appropriate sanitary sewer department, and permits shall be approved (copies of which shall be on file with the Planner) by the DEQ.

SECTION 8. STORMWATER RUNOFF

1. The stormwater drainageway system shall be designed to receive and pass the runoff from the post-development 100-year frequency rainfall, from where runoff flows onto the development to where the runoff flows off the development. The collector system shall be designed to either:
 - a. Pass a minimum of the runoff from the 5-year frequency rainfall in a pipe network with overland flow capacities so that the combination of the two shall pass the runoff from a 100-year frequency rainfall under post-development conditions; or
 - b. Pass the entire runoff from the 100-year frequency rainfall in the pipe network. Should the entire runoff from the 100-year frequency rainfall be conveyed in a pipe network, an overland system shall be designed to convey a nominal frequency runoff in the event of inlet blockage or bypass.
2. The overland flow portion of the stormwater drainage way system shall be confined within dedicated rights-of-way and/or restricted drainage easements.
3. The Oklahoma Department of Highways (ODOT) Technical Manual shall be used for determining the basic "C" values. A weighted "C" value shall be determined with minimum values of 0.45 for single-family residential developments except manufactured home parks, 0.65 for multifamily and manufactured home park developments, and 0.90 for industrial and commercial development. Unplatted areas within 300 feet on either side of an arterial or section line road shall be considered commercial and shall be designed in accordance with the intensities and densities shown on the Comprehensive Plan or as otherwise determined by the Engineer in estimating runoff coefficients. The "C" value shall be increased by 25% for the 100-year frequency rainfall event.
4. For the 100-year event when runoff is designed to flow in the street right-of-way, inlets shall be located so runoff is contained within the street right-of-way, and shall not be deeper than one (1) foot above the curb. For the 5-year event when runoff is designed to flow in the street right-of-way, the distance between inlets, as well as the distance to the first inlet, shall be determined by the following and whichever is less:
 - a. Local, Minor, and Cul-de-sac: No curb overtopping is allowed and the flow may spread to the crown of street.

- b. Collector, Commercial, Industrial, Central Business District: No curb overtopping is allowed; however, the flow spread shall leave the equivalent of one 10-foot driving lane clear of water.
 - c. Arterials: No curb overtopping is allowed. Flow spread shall leave the equivalent of two 10-foot driving lanes clear of water with one clear lane in each direction.
5. The storm sewer system shall commence at the point where the maximum allowable encroachment occurs. Where no curbing exists, runoff shall be conveyed within the right-of-way or dedicated drainage easement.
6. Inlets shall be located at intersections to collect the flow from crossing the intersection. Inlets at intersections shall be located so that they do not encroach upon the curb return. No drainage structure shall be permitted at a wheelchair ramp.
7. At sump locations, the stormwater shall not pond outside the right-of-way or dedicated drainage easement, and the ponding depth shall not exceed 18 inches above the top of the grate for the 100-year frequency rainfall.
8. An overflow drainage easement shall be established along the overflow path in the event of blockage of the sump.
9. Runoff from areas greater than one half (1/2) acre outside the right-of-way shall be collected before it reaches the right-of-way. Parking lots shall have internal drainage systems so as to reduce concentrated flow into streets. This requirement does not apply to single-family residential lots; however, stormwater shall not be conveyed across more than four (4) such lots before it is contained in an easement for a drainage ditch, channel or storm sewer.
10. The following items shall be summarized and tabulated on the plans, and a summary table shall also be included with the drainage calculations:
 - a. Drainage areas;
 - b. Runoff from 5-year and 100-year frequency rainstorms;
 - c. Inlet design for each inlet; and
 - d. The flows and velocities for each pipe and open channel.
11. If a tract of land under development has a floodplain area within its boundary, then a hydraulic (backwater) analysis of the existing and proposed drainage system shall be provided to show any impact the

proposed development has on the floodplain area and base flood elevation (BFE). Any development encroaching into a floodplain area shall comply with the County Flood Damage Prevention regulations.

12. Trapezoidal channels shall be designed with a hard-lined low flow channel, such as concrete. The low flow channel shall branch off to pick up any storm sewers discharging into the channel. The top of the sides of the low flow channel shall be a minimum of 6-inches lower than the adjacent main channel bottom to insure that the drainage runs over and into the low flow channel and does not erode the area around it. The minimum cross slope on the bottom of the trapezoidal channel shall be 2 percent. The side slopes of the channel shall not be steeper than 4:1, unless the side slopes are concrete lined. The easement for the trapezoidal channel shall include 10-foot additional width along the top of one side the bank for an access road for maintenance.
13. The minimum velocity in any drainage system shall be 2.5 feet per second for all events of 5-year frequency and greater. The maximum velocity in a pipe shall be 30 feet per second and the maximum velocity in an unlined channel shall be six (6) feet per second.
14. No pipe shall be installed downstream having a diameter smaller than the pipe from which it is receiving water.
15. Junctions between different pipe sizes shall be made with the top inside of the downstream pipe no higher than the top inside of the upstream pipe.
16. The maximum spacing between manholes or junction boxes shall not exceed 500 feet.
17. The minimum storm sewer and driveway culvert pipe size shall be 18-inch diameter pipe.
18. A minimum of 6 inches cover shall be provided over pipes and box culverts to the bottom of the subgrade in paved areas except when the box culverts, excluding single-family residential driveways, are built with the top at grade.
19. All storm sewers and appurtenances shall be shown in profile. For each storm sewer section, the sewer diameter and slope, its design capacity, and its design flow shall be shown. The design capacity of each inlet shall be noted at each inlet in the profile. The hydraulic grade line of the design flow in the storm sewer shall be shown.

20. Bridges shall have adequate capacity to pass the 100-year post-development flow with one foot of freeboard under the low cord, and pass the 500-year post-development flow with no road overtopping. The 100- and 500-year water surface elevations shall be shown in the profile.
21. All storm sewer, culvert, and bridge outlets shall be designed to reduce the discharge velocity to non-erosive velocities.
22. All open channels shall be provided with a minimum of one (1) foot of freeboard above the 100-year frequency rainstorm.
23. When storm sewers are constructed in fill areas, all materials in fill areas shall be compacted to a 95 percent standard proctor density (SPD) prior to the trenching and laying of the pipe.
24. Borrow Ditches: Borrow ditches when allowed:
 - a. Shall not exceed 4 feet in depth;
 - b. Culverts shall be sized to handle the 5-year or larger storm and shall not be less than 18 inches in diameter;
 - c. The side slope on the street side of the borrow ditch bank shall be 4 feet horizontal to 1 foot vertical or flatter, and 3 feet horizontal to 1 foot vertical or flatter for the slope of the ditch side across the ditch from the street pavement;
 - d. Ditches shall be sodded or hydromulched;
 - e. Headwalls are required on all culverts, including culverts under driveways;
 - f. The diameter of the driveway culvert for each lot in the addition shall be shown on the plat in a schedule of driveway culverts, which shall also include acceptable pipe material and class of material.

SECTION 9. STORMWATER DETENTION

1. The runoff from all the development shall not exceed the pre-development rate of runoff at all locations where runoff flows off the development. At a minimum, the runoff from the 5-year frequency rainfall and the 100-year frequency rainfall shall be evaluated.
2. A report shall be prepared detailing how each item in these Criteria is met. The report shall include a summary table of the pre-development flow rate and post-development flow rate at each location where runoff flows off of the development, a note stating how the post-development flow velocity is not erosive at all locations where runoff flows off of the development, and the 5-year, 100-year and 500-year water surface elevations and the lowest top of berm elevation for each detention facility. The report shall be sealed by the professional engineer registered in the State of Oklahoma responsible for the design and analysis.
3. A topographic drawing shall be included with the analysis showing the entire drainage basin to and through the development property, the location of the development, the locations where runoff flows off the development (with unique ID numbers), and with the pre-development sub-basins shown. The post-development topography and sub-basins shall be shown on a separate drawing.
4. A map showing the areas considered developed in the design of each detention facility shall be included in the submittal.
5. The runoff from the development shall not be erosive at all locations where runoff flows off of the development.
6. Detention facilities shall be designed as “dry” facilities. The facilities shall not “pond” water when not functioning as a stormwater detention facility. Deviations shall receive specific and prior approval from the County Engineer.
7. The side slopes of the detention facilities shall not be steeper than 4:1 (four units horizontal to one unit vertical).
8. The unpaved bottom of a detention facility shall be sloped a minimum of two (2) percent. The paved bottom of a detention facility shall be sloped a minimum of 0.5%. Low flow channels are recommended.
9. The outlet structure of the detention facility, shall not be smaller than an 18-inch diameter pipe.

10. Detention facilities shall be designed to pass the 500-year rainfall event with a minimum of one foot of freeboard below the lowest elevation of the detention facility's top of berm.
11. Detention facilities are discouraged from being located in the floodplain. However, if detention facilities encroach into the floodplain, the developer shall obtain a Floodplain Development Permit, shall demonstrate through a hydraulic analysis that there shall be no rise in the BFE, and the beginning water surface elevation for detention storage shall be above the BFE.

SECTION 10. SOIL EROSION AND SEDIMENTATION CONTROL

Soil erosion and sedimentation is greatly accelerated during construction activities. In order to control these natural processes the following practices shall be adhered to:

1. The developer shall comply with all County and DEQ stormwater permit requirements, including the Notice of Intent (NOI) regulations.
2. Prior to the start of any construction the developer shall:
 - a. Submit a Stormwater Pollution Prevention Plan (SWP₃) to the Engineer and Planner for approval.
 - b. Submit the SWP₃ and NOI to the DEQ and Planner for approval and Permit.
 - c. Provide two (2) sets of the DEQ approved SWP₃ and NOI to the Planner at the time of application for preliminary plat approval.
3. A diversion or perimeter dike shall be constructed and maintained where concentrated flow of surface runoff is to be conveyed down slope onto adjacent properties.
4. A temporary barrier consisting of a straw bale dike or silt fence shall be placed and maintained around all storm sewer inlets to prevent sediment from entering the storm sewer system.
5. Straw bale dikes or silt fence shall also be placed and maintained along streets adjacent to areas of land exposed or stripped of vegetation due to grading or construction activities.
6. A stabilized construction entrance shall be built and maintained to reduce or eliminate the tracking or flowing of sediment onto public right-of-ways.
7. Silt ponds shall be constructed and maintained where necessary to prevent sediment from leaving the construction site.
8. Immediately prior to and upon completing construction, all exposed areas of land shall have been properly seeded with the ground cover established and maintained in an erosion-free manner in accordance with adopted standards.
9. All soil erosion and sediment control devices shall be maintained and immediately repaired if damaged during the period of construction.

SECTION 11. PERMITTING PROCEDURES

1. Flood Plain Development Permit:

Any development encroaching into a floodplain area shall comply with the County Flood Damage Prevention regulations.

2. Water:

Copies of the approved DEQ permits shall be provided to the Planner in accordance with Section 6 of these Criteria.

3. Sanitary Sewer:

a. Reference is made to Section 4.11 and Section 6 of the Subdivision Regulations for the basic standards for subdivisions. The information contained herein is included for guidance and reference. The DEQ should be consulted for specific additional detailed information.

b. Subdivisions:

- (1) Provide the following information within the restrictive covenants of the subdivision plat as follows:

For those subdivisions within Creek County that plan to utilize individual on-site sewage disposal systems:

“Sewerage is intended to be disposed of by individual on-site sewage disposal systems, and shall be subject to the regulations of the Oklahoma State Department of Environmental Quality. Each lot owner shall be responsible for obtaining the required permits and for the installation and maintenance of the sewage disposal system serving the lot. If the system utilizes an underground absorption field, the lot area containing the absorption field shall be maintained free of paving, surfacing, swimming pools, lawn sprinkler systems, or any building or other structure which would interfere with the functioning of the absorption field. The system shall be maintained in proper operating condition at all times by the lot owner. For aerobic on-site systems, a maintenance contract shall be in effect as required by DEQ regulations consistent with the requirements of the Oklahoma Department of Environmental Quality as

described in the Oklahoma Administrative Code Title 252, Chapter 641.”

- (2) Minimum Lot Size Requirements for On-Site Sewage Disposal Systems in Unincorporated Creek County:

<u>Type of Disposal System</u>	<u>Type of Water Supply</u>	
	<u>Private Well</u>	<u>Public Water</u>
Aerobic with Land Application	¾ Acre	½ Acre
Evapotranspiration/Absorption (ETA)	1 Acre	1 Acre
Subsurface Absorption Field		
Percolates in 30 minutes or less or has a group 2 soil classification	¾ Acre	½ Acre
Subsurface Absorption Field		
Percolates in 60 minutes or less or has a group 3 or 4 soil classification	1 Acre	1 Acre
Lagoon System	2½ Acres	2½ Acres

4. Notice of Intent (NOI):

Prior to the start of any construction the developer shall apply for and receive approval of the required permits as per Section 11 of these Criteria.

SECTION 12. DEFINITIONS

Alley: A minor right-of-way dedicated for public use which gives a secondary means of vehicular access to the back or side properties otherwise abutting a street, and which may be used for public utility purposes, but is not intended for general traffic circulation.

Annexation Fenceline: An incorporated strip of land, typically a minimum of 20 feet in width or as otherwise prescribed by Oklahoma State Statutes, delineating the future growth area of a city or town.

As Built Drawings: The drawings as issued for construction on which the developer's engineer, upon completion of the work and subject to approval and acceptance of the County Engineer, has shown changes due to addenda or change orders and other information based on record documents furnished by the contractor and/or inspector to said engineer and which were annotated by the contractor to show changes made during construction. Further, upon completion of the improvements, and prior to acceptance of said improvements by the Creek County Board of Commissioners, said developer's engineer shall affix thereto his or her seal attesting to the accuracy and completeness of such improvements and drawings and provide the County with the required number of complete sets.

Board of Commissioners: The Board of Commissioners of Creek County.

CAD: Computer aided drafting programs.

Collector Street: See "Street Collector."

Comprehensive Plan: The master plan for the physical development of Creek County as prepared and adopted by the Sapulpa Metropolitan Area Planning Commission, and approved by the Creek County Board of County Commissioners pursuant to 19 O.S. 866.1 - 866.36 and subsequent amendments thereto, and includes any part of such Plan.

Construction Plans: The maps or drawings prepared by a Professional Engineer registered to practice in the State of Oklahoma accompanying any development proposal or accompanying a preliminary and final subdivision plat and showing the specific location and design of improvements to be installed as a condition of development or plat approval in accordance with the requirements of the Creek County Engineer based on the Creek County Subdivision Regulations, Engineering and Design Criteria, and Specifications and Standards for Construction.

County: Creek County Board of Commissioners, referred to herein as "County".

County Road: Shall be a road maintained by Creek County.

County Clerk: The Clerk of Creek County, Oklahoma.

County Commissioner: A County Commissioner of Creek County, Oklahoma.

County Engineer: The Engineer of Creek County, Oklahoma, as designated by the Creek County Board of County Commissioners, referred to herein as “Engineer”.

County Planner: The Planner of Creek County, Oklahoma, as designated by the Creek County Board of Commissioners, referred to herein as “Planner”.

Cul-de-sac: See “Street, Cul-de-sac.”

Deeds of Dedication: The instrument(s) of public record by which specified interests in land are described and conveyed to the public and by which the formalities prerequisite to the recording of a subdivision plat or other similar instrument are set forth and which may, though not required to do so, set forth private covenants or restrictions establishing requirements for buildings, construction, use, or other such conditions of the subject land. It is required that the development standards of a Planned Unit Development and other similar standards be shown and included in the Deeds of Dedication on the face of the Preliminary and Final Plat.

DEQ: The Oklahoma Department of Environmental Quality.

Detention Facility: A facility for the collection or storage of stormwater for subsequent discharge at a rate that is less than the rate of inflow.

Developer’s Engineer: A professional engineer registered to practice in the State of Oklahoma working for the developer/owner of a proposed development or subdivision.

Development: Any man-made change in improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations.

Easement: A grant of one or more of the property rights by the property owner to the public, a corporation, or other persons for the use of land for specific purposes.

Engineering Department: Shall mean the Creek County Engineer.

Engineering Design Criteria: The criteria adopted by the Creek County Board of Commissioners that establishes minimum criteria for engineering design and construction of infrastructure and other improvements related to development and subdivisions, referred to herein as “Criteria”.

Floodplain or Flood-Prone Area: Any land area susceptible to being inundated by water from any source, such as the area adjoining the channel of a river, creek, stream or watercourse, or lake or any other body of standing water which may from time to time be covered by floodwater. The floodplain areas shall be those as described and delineated on maps contained within the offices of the County Planner. See “Flood or Flooding.”

Flood or Flooding: A general and temporary condition of partial or complete inundation of normally dry land areas from:

1. The overflow of inland or tidal waters; or
2. The unusual and rapid accumulation or runoff of surface waters from any source.

Frontage: That dimension of a lot abutting a street right-of-way to which access is available from said lot.

Governing Body: Unless otherwise clearly specified, shall mean the Board of County Commissioners of Creek County.

Grade: The slope of a road, street or other public way, specified in percent (%) of vertical to horizontal measurements.

Half-Mile-Line: The north-south or east-west line, which bisects a one square mile section of land.

Health Department: Unless otherwise clearly specified, shall mean the Oklahoma Department of Environmental Quality (DEQ).

Jurisdiction: See "Territorial Jurisdiction."

Lot, Lot of Record: A tract, plot or portion of a subdivision or other parcel which is part of a subdivision, the plat of which has been recorded in the office of the County Clerk of the County in which the lot is located or a parcel of land, the deed of which is recorded in the office of the County Clerk of the County in which the parcel is located. A Lot, or Lot of Record is further classified as follows:

1. An unplatted parcel of land which was filed of record by distinct instrument in the office of the Creek County Clerk prior to October 21, 1986; or
2. Any whole lot as shown on a subdivision plat properly filed of record in the office of the Creek County Clerk prior to October 21, 1986; or
3. Any whole lot shown on a subdivision plat properly filed in the office of the Creek County Clerk prior to October 21, 1986, which plat has shown on its face the approval of the Planning Commission.

Lot, Double Frontage: A lot which runs through a block from street to street and has frontage on two (2) or more streets, as distinguished from a corner lot.

Lot, Key: A lot having a side lot line abutting the rear lot line of another lot.

Lot, Reverse Frontage: A corner lot of such size and shape that a building erected on it might logically be designed to face on either adjoining street, thus causing it to rear on the side lot line of an abutting lot.

Lot-Split: Any subdivision containing not more than two (2) lots, any portion of which has an area of less than ten (10) acres that has frontage on an existing street, not involving any new street or road, or the extension of public facilities, or the creation of any public improvements, and not adversely affecting the

remainder of the parcel or adjoining property, and not in conflict with any provision or portion of the Comprehensive Plan, Major Street Plan, Zoning Code, or these Subdivision Regulations.

Major Street: See “Street, Major.”

Major Street and Highway Plan: The street plan and part of the Comprehensive Plan, which relates to the location and standards for design and right-of-way for streets and highways, and includes such standards for local and minor streets.

Minor Street: See “Street, Minor.”

Minor Subdivision: Any subdivision containing not more than four (4) lots, any portion of which has an area of less than ten (10) acres that has frontage on an existing street, does not require a new street or road nor the extension of public facilities, the creation of any public improvements, and that could adversely affect the remainder of the parcel or adjoining property. Minor Subdivisions shall not be in conflict with any provision or portion of the Comprehensive Plan, Major Street Plan, Zoning Code, Subdivision Regulations, or Engineering Design Criteria.

NOI: Notice of Intent to commence construction as required by the Oklahoma Department of Environmental Quality. See Sections 10 and 11 of these Engineering Design Criteria for further information and requirements.

Open Space: Space on the ground, which is not built upon or otherwise improved to an impervious state (such as for buildings, drives or walkways) and which is maintained for active or passive recreational or buffer type uses.

Planned Unit Development (PUD): A discretionary type of development as further defined by the Creek County Zoning Code for a tract of land under single ownership or control, based upon the underlying zoning and a development plan approved by the Creek County Board of County Commissioners after a hearing and review by the Planning Commission permitting flexibility of principal land uses, lot sizes and accessory uses not otherwise available under conventional zoning and the related development standards.

Planner: The Administrative Official, also referred to as the County Planner, so designated by the Creek County Board of County Commissioners to administer the Subdivision Regulations, Zoning Code and other development related regulations in the unincorporated areas of Creek County under the jurisdiction of the Planning Commission; or the Administrative Official so designated by the City of Sapulpa to administer the Subdivision Regulations, Zoning Code and other development regulations in the incorporated areas under the jurisdiction of the Planning Commission referred to in the City of Sapulpa as the Urban Development Director.

Planning Commission: The Sapulpa Metropolitan Area Planning Commission (SMAPC) or said Planning Commission having such jurisdiction as determined by the Creek County Board of Commissioners.

Plat, Final: A map or chart of land subdivision prepared in accordance with the Subdivision Regulations in a form suitable for filing in the office of the County Clerk, including necessary affidavits, dedications, and acceptances, and containing a complete engineering description including references to field markers sufficient to locate on the ground all streets, alleys, blocks, lots, and other elements of the subdivision.

Plat, Preliminary: A map or chart of a proposed land subdivision prepared in accordance with the Subdivision Regulations showing the concept, character, and general details of the proposed development.

Plat, Sketch: A map or chart of a proposed land division prepared after a pre-application conference in accordance with the Subdivision Regulations showing the general layout of streets and reservations of land, street improvements, drainage, water and sewerage, floodplains, the availability of existing utilities and other related information.

Professional Engineer: A professional engineer registered to practice in the State of Oklahoma.

Professional Land Surveyor: A land surveyor registered to practice in the State of Oklahoma.

Quarter-Mile Line: A north-south or east-west line that bisects the north, south, east or west half of the section.

Record Drawings: See "As Built Drawings."

Required Improvement: An improvement required in accordance with the Subdivision Regulations, Engineering Design Criteria, and the Standard Specifications for Construction as a condition for approval of a plat or development.

Reserve Area: An area or part of a plat identified on the face of the plat and set aside for open space, park land, stormwater detention or similar purposes which are specified on the face of the plat. The title, ownership and responsibility for maintenance of Reserve Areas shall remain with the developer/owner until or unless conveyed to a property owners association or accepted by the governing body. Said owner shall grant to the governing body a perpetual easement for utilities and other public purposes across such Reserve Area as specified in the covenants or deeds of dedication. The governing body shall have no liability for any damage to any private improvements occasioned by the maintenance or reconstruction of utilities or infrastructure located in the Reserve Area.

Reserve Strip: A strip of land typically created by the owner to be privately retained to prevent, restrict, or otherwise control access to public utilities or streets. Such strips are not permitted to be in private control or ownership in accordance with these Subdivision Regulations.

Restrictive Covenants: An agreement of public record that restricts the use or occupancy of real property and sets forth a formal binding agreement that runs with such land and binds future land owners, his or her successors, or assigns to such agreements.

Right-of-way: A strip of land occupied or intended to be occupied by a street, crosswalk, railroad, road, electrical and communication services, oil or gas pipeline, water main, sanitary or storm sewer main, shade trees, or for other special use. The usage of the term “right-of-way” for purposes of other than the platting of land shall mean that every right-of-way thereafter established and shown on the final plat is to be separate and distinct from the lots or parcels adjoining such right-of-way and not included within the dimensions or areas of such lots or parcels. Right-of-way intended for streets, crosswalks, water mains, sanitary sewers, storm drains, shade trees, or otherwise involving construction or maintenance by a public agency shall be dedicated to the public use by the maker of the plat on which such right-of-way is established. All such dedications are subject to the final approval and acceptance by the Creek County Board of County Commissioners.

Setback: The distance, existing or planned, between a building and the nearest property line on a street right-of-way.

Standard Specifications for Construction: The specifications acting in conjunction with the Engineering Design Criteria adopted by the Creek County Board of County Commissioners for regulating the nature, extent, dimensions, construction, and financing of improvements in subdivisions. Where the County has elected to participate in an agreement with an incorporated place to allow said place to exercise extraterritorial subdivision jurisdiction, such specifications shall include a map showing the extent of such jurisdiction. These Specifications may also be referred to as the “Construction Standards.”

Street: A public way or private right-of-way as provided for by Oklahoma State Statutes that affords the primary means of access to abutting property or serves as a thoroughfare for vehicular traffic or both, but excludes alleys. See also Section 4.2 of the Regulations for further information on Streets. The following street classifications are established in Creek County and recognized by the Comprehensive Plan, the Major Street Plan and the Subdivision Regulations:

Street, Arterial/Section Line Road: A street designated on the Major Street Plan and Highway Plan that carries a significant portion of interurban vehicle traffic at moderate speeds with some traffic stops. See also “Street, Primary Arterial,” “Street, Secondary Arterial,” or “Street, Secondary Arterial Alternate.”

Street, Border: A street located adjacent to a railroad, drainage way, park, open space area or limited access highway.

Street, Collector: A street designated on the Major Street and Highway Plan that is intended to move traffic from minor streets to arterial streets, including the principal entrance and circulation street or streets of a development.

Street, Commercial Business: A category of trafficway that provides circulation within commercial business districts and areas.

Street, Commercial Collector/Industrial Collector: A category of trafficway that provides circulation to and from commercial and industrial areas to connect to major streets or highways.

Street, Commercial/Industrial: A category of trafficway that provides circulation within commercial and industrial areas.

Street, Cul-de-sac: A minor local street with only one outlet and having a terminus for the safe and convenient reversal of traffic movement including all emergency and service vehicles, and a maximum length from the entrance to the center of the turn-around.

Street, Frontage or Service: A minor street auxiliary to and located on the side of a major street for service to abutting properties and adjacent areas and for control of access.

Street, Major: Highways, arterials (primary, secondary and section line roads), and collector streets shown on the Major Street Plan.

Street, Marginal Access: A street that serves development that may front an existing or proposed arterial street.

Street, Minor (Local): Any trafficway of limited length not classified on the Major Street and Highway Plan that provides direct access to abutting tracts of land and access to more heavily traveled streets, and that is designed in such a manner to discourage its use by through traffic.

Street, Primary Arterial: A thoroughfare designated on the Major Street Plan and Highway that carries a significant portion of interurban vehicular traffic at a moderate rate of speed.

Street, Secondary Arterial or Street, Secondary Arterial Alternate or Section Line Roadway: A thoroughfare designated on the Major Street and Highway Plan that carries a significant portion of interurban vehicular traffic having some traffic stops.

Subdivider: Any person, firm, partnership, corporation, or other entity, acting as a unit, subdividing or proposing to subdivide land as herein defined.

Subdividing: The dividing of land into two (2) or more lots, parcels, tracts, or areas, any one (1) of which when divided has an area of less than ten (10) acres, or any dividing of land involving the vacating or dedicating of right-of-way or the alignment of an existing or proposed street or highway or public utility easement, or the resubdividing of land heretofore divided into lots, sites, or parcels, whether such dividing or resubdividing is by means of a map or plat or metes-and-bounds descriptions.

Subdivision: A tract of land that has been subdivided or is proposed to be subdivided.

Subdivision Regulations: The Subdivision Regulations adopted by the Creek County Board of County Commissioners.

Territorial Jurisdiction: The area within which the Planning Commission has jurisdiction over the subdividing of land, as provided by 19 O.S. Section 866, as amended. Said area consists of those parts of Creek County for which the Planning Commission has adopted and the Board of County Commissioners of Creek County has approved a Comprehensive Plan (including a Major Street and Highway Plan), Subdivision Regulations, a Zoning Code and other development related regulations.

Way: Any street, avenue, parkway, highway, boulevard, road, or alley reserved and/or dedicated for public or private use chiefly by vehicular or pedestrian traffic.

Zoning Code: The Zoning Code adopted and as amended by the Creek County Board of County Commissioners.

APPENDIX A

MINIMUM SPECIFICATIONS FOR CREEK COUNTY ROADS AND RELATED CONSTRUCTION

1. GENERAL

- a. Creek County (County) hereby designates the “Standard Specifications for Highway Construction” of the Oklahoma Department of Transportation (ODOT) as the officially adopted “Creek County Road Construction: Minimum Specifications.” “Section” references herein are to the respective section of the ODOT Standards and to the following figures included at the end of Appendix A:

Figure 1. Creek County, Oklahoma Traffic Right-of-way and Roadway Construction Standards, 4 pages.

Figure 2. Asphalt Pavement Standard Details for Residential and Commercial Streets: City of Sapulpa Annexation Fenceline, 1 page.*

* Figure 2 shall be the minimum standard for County roads within the annexation fenceline of the City of Sapulpa in Creek County in accordance with the Joint Resolution passed by Creek County and the City of Sapulpa in February 2003.

- b. In general practice, a grade and drainage project shall require a majority of the drainage structures to be in place before the grade work is started. A drainage map should show the number of acres in each contributing drainage area (m) and the coefficient of flow (c) in the large areas.
- c. Aerial photos may be used to find the area of drainage.
- d. Concrete culverts and headwalls shall be constructed in keeping with Section 508.01 through 511.06.
- e. Pipe structures shall conform to Section 613 and the pipe shall meet the requirements of Section 726. Any such pipe requiring a diameter larger than 24” shall be constructed of reinforced concrete, and shall have headwalls and other such end sections.

2. ROAD SURFACE COURSE

The road surface shall be constructed as per Figures 1 or 2 of this Appendix.

3. ROAD BED PREPARATION

- a. Earthwork Section 201 Earthwork Preparing for a Roadbed: The roadbed shall be completed in keeping with Section 202.04c and have a minimum width of 31'. If a 12" Base Course is used, the minimum width shall be 33'.
- b. General requirements for Road Bases Section 301.1 through 301.06: The County requires a minimum of 6" for aggregate to meet or exceed the specifications of Section 703.01 or 12" soil from a sand rock deposit meeting the requirements of Section 704.02 Type II.
- c. Asphaltic Surface Section 411: The Asphaltic Surface Course required by the County is a minimum of 3" of plant mix asphalt concrete pavement meeting or exceeding the construction methods of Section 411.01 through 411.04. All such material shall meet or exceed the minimum requirements of Section 708.
- d. Design and construction shall be in accordance with Figures 1 or 2 as specified herein.

4. BASE COURSE

- a. The following materials may be used for the Base Course:
 - (i) 6" thickness of crushed limestone; or
 - (ii) 12" Select Borrow material defined as an alternate base construction material used in place of crushed limestone according to the current version of Section 705. The suitability and compliance of a proposed material as attaining the classification of Select Borrow material shall be determined by scientific testing.
- b. The Base Course shall be constructed to ODOT Specifications and shall be uniform and smooth.

5. SUB-BASE COURSE

- a. The Sub-Base Course shall be composed of materials of uniform composition. No organic materials or foreign materials shall be permitted. Sub-Base shall meet the standard minimum 95% SPD density, and shall be uniform and smooth.
- b. The following materials may be used for the Sub-Base Course:
 - (1) Native materials as approved by the County Commissioners Office.
 - (2) Recycled or residual materials as approved by the County Commissioners Office.
 - (3) Other approved Base or surface material used for roadway construction may be applied as a Sub-Base Course.

6. ROAD SHOULDER

The Road Surface course shall be bordered on the outside edges by Base materials to create a Road Shoulder. The Road Shoulder shall be a minimum of 3' in width on each side and sloping $\frac{1}{2}$ " per foot to the top on the borrow ditch. Native Soil, Crushed Limestone, Select Borrow, or Asphaltic Concrete shall be used for the Road Shoulder, unless and as otherwise required by Figures 1 or 2.

7. PHASED CONSTRUCTION PROCESS

The determination of compliance of the construction of the Sub-Base Course and section shall be made prior to initiation of construction of the Base Course. The determination of compliance of the construction of the Base Course sections shall be made prior to initiation of the construction of the Road Surface Course.

8. PRIOR APPROVAL OF CONSTRUCTION MATERIALS

All materials proposed as a Construction Material shall be reviewed, tested and approved prior to the use of such materials.

9. TESTING

- a. The County shall utilize scientific testing methods to determine compliance with these Construction Specifications. The developing party shall provide adequate testing of all Sub-Base Course, Base Course, and Road Surface Course materials for composition and properties, densities, and other specifications as required by the County.
- b. The County specifies that all testing of materials shall be performed by Terracon, Inc., Tulsa, Oklahoma, or by a testing laboratory as approved by ODOT.
- c. All outside inspection and testing costs shall be reimbursed to the County by the developing party. All such costs shall be paid to the County in full prior to the start of construction if applicable or prior to acceptance of the related improvements by the County.

10. PLANNING, ENGINEERING AND DESIGN

All roads in the County shall be constructed in accordance with and meet or exceed the approved land use and planning procedures, and professional engineering design and construction practices as stated in the Subdivision Regulations, these Engineering Design Criteria (see Figures 1 or 2 in particular) and otherwise as approved and required by the County.

11. ROADWAY, DITCHING, CROSS-DRAINAGE STRUCTURES, AND STORMWATER DRAINAGE

- a. Refer to Section 500.
- b. The top of the ditch shall begin at the Road Shoulder and extend on a uniform slope for a minimum of 8' to the Ditch Channel as required in Section 8 of these Criteria. The Ditch Channel shall be a minimum of 2' wide. The back-slope of the ditch shall be uniform and variable, and be designed and constructed to protect against erosion.
- b. Cross-Drainage structures shall be steel reinforced concrete with concrete headwalls. All such structures shall be sized to meet the 100-year rainfall criteria.
- c. Roadway ditches shall be limited to carrying the roadway runoff. Stormwater management systems and drainage easements may parallel and be contiguous with the roadway ditch; however, the

runoff from such systems shall not be included within the roadway ditch.

12. FINAL INSPECTION AND MONITORING PERIOD – SECURITY FOR MAINTENANCE AND REPAIRS

- a. Upon completion of the construction, the developing party and the County shall meet on the construction site for the final inspection.
- b. When the County determines that the developing party has completed construction of the road to the standards and specifications as adopted by the County, a 2-year Monitoring Period or as otherwise agreed to by the County shall be initiated for maintenance and repairs. The developing party shall provide securities acceptable to the County in the form of maintenance bonds, escrow funds, irrevocable letters of credit, or other approved assurances for the Monitoring Period.
- c. Any roadway or system failure that occurs during the Monitoring Period shall be repaired by the developer under the supervision of the County. At the expiration of the Monitoring Period, any repairs or maintenance to the roadway deemed necessary by the County shall be made at that time by the developing party and prior to acceptance by the County of the respective improvements. If the cost of repairs exceeds the assurance amount, the developing party shall produce the additional funds as required for the repairs.
- d. Failure to present the County with a road meeting or exceeding the County Road Construction Minimum Specifications shall be grounds for the County to decline to accept said road or system.

13. REPRESENTATIONS

All property sales and transactions made during the Monitoring Period along said road shall disclose the status and terms of acceptance of the road as being contingent upon the said road meeting or exceeding the County Road Construction Minimum Specifications during said monitoring period.

14. ACCEPTANCE

Upon the expiration of the Monitoring Period, if the terms of the County Road Construction Minimum Specifications have been fully complied with and the final product is a roadway meeting said Specifications, then the County may, by resolution, accept the road and system into the system of County maintained roads.

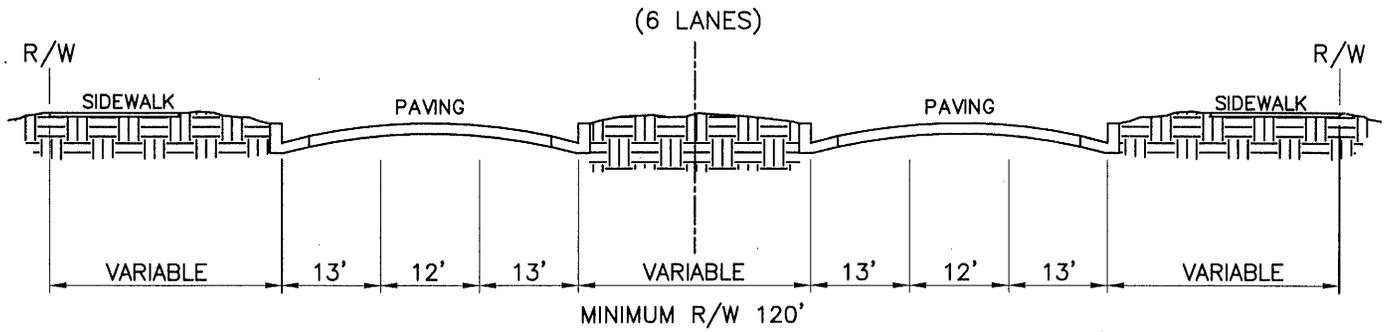
FIGURE 1. Creek County, Oklahoma Traffic Right-of-way and Roadway Construction Standards, 4 pages.

INSERT FOUR PAGES 8 ½” x 11” OF FIGURE 1

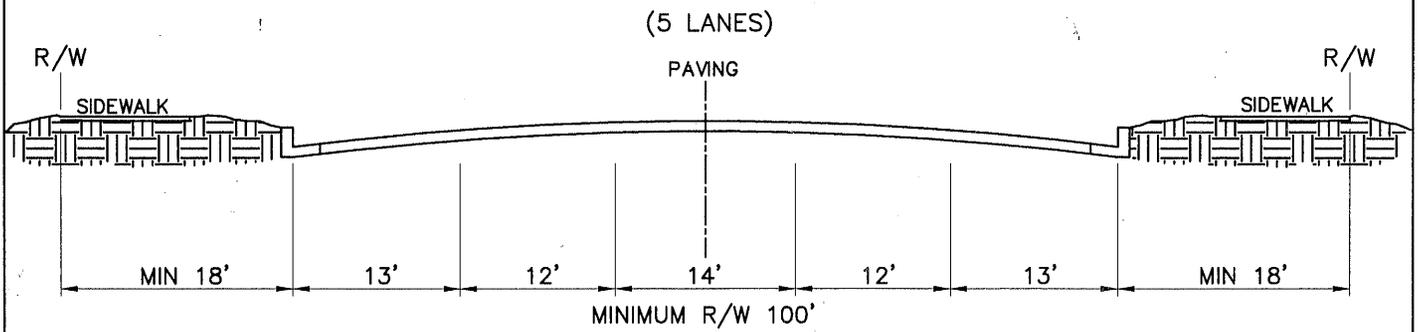
INSERT 1 PAGE 11” x 17” OF FIGURE 2

TRAFFICWAY RIGHT-OF-WAY
AND CONSTRUCTION STANDARDS

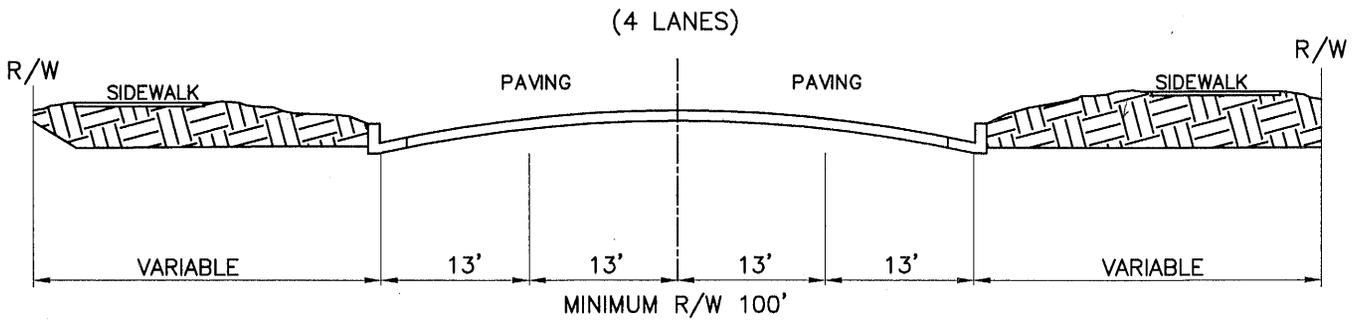
FIGURE 1



PRIMARY ARTERIAL / MAJOR ARTERIAL
MINIMUM PAVING AND MATERIAL SPECIFICATIONS FOR CONSTRUCTION
SHALL BE DETERMINED BY SITE SPECIFIC GEOTECHNICAL REPORT



SECONDARY ARTERIAL (ALTERNATE) / MINOR ARTERIAL (ALTERNATE)
MINIMUM PAVING AND MATERIAL SPECIFICATIONS FOR CONSTRUCTION
SHALL BE DETERMINED BY SITE SPECIFIC GEOTECHNICAL REPORT

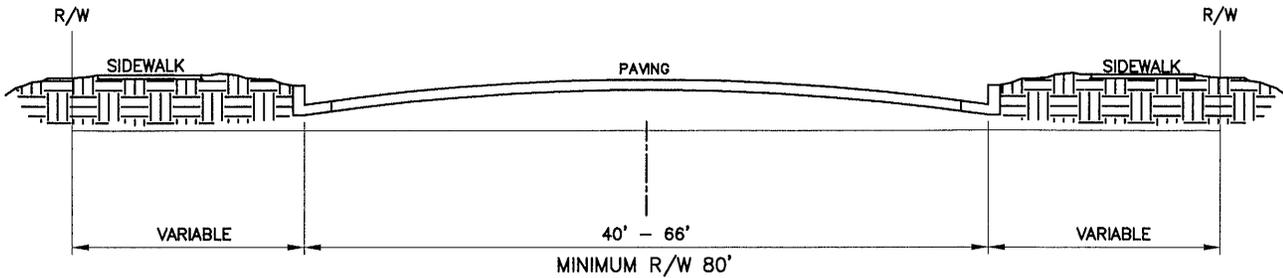


SECONDARY ARTERIAL / MINOR ARTERIAL
MINIMUM PAVING AND MATERIAL SPECIFICATIONS FOR CONSTRUCTION
SHALL BE DETERMINED BY SITE SPECIFIC GEOTECHNICAL REPORT.

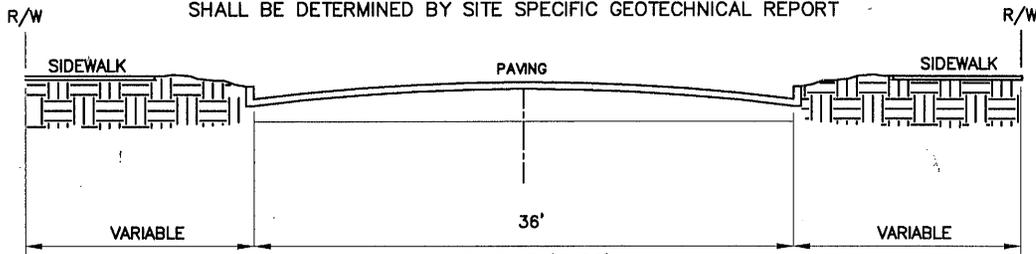
APPENDIX A: CREEK COUNTY, OKLAHOMA
ENGINEERING DESIGN CRITERIA

TRAFFICWAY RIGHT-OF-WAY
AND CONSTRUCTION STANDARDS

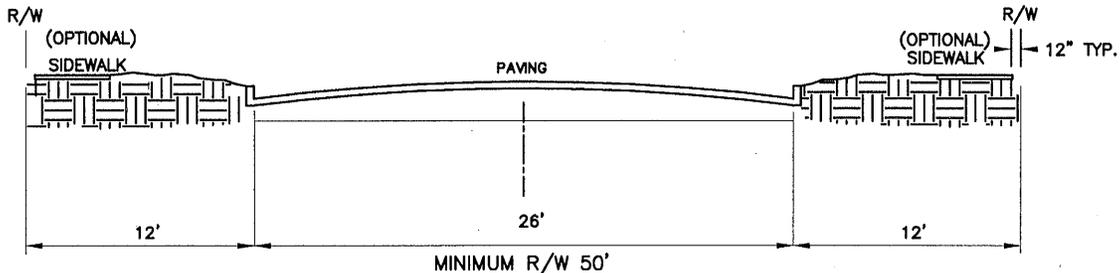
FIGURE 2



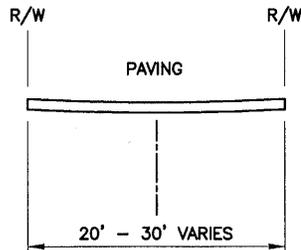
COMMERCIAL / INDUSTRIAL COLLECTOR
CENTRAL BUSINESS DISTRICT STREET WITH SIDEWALKS
MINIMUM PAVING AND MATERIAL SPECIFICATIONS FOR CONSTRUCTION
SHALL BE DETERMINED BY SITE SPECIFIC GEOTECHNICAL REPORT



RESIDENTIAL COLLECTOR
COMMERCIAL / INDUSTRIAL (LOCAL)
MINIMUM PAVING AND MATERIAL SPECIFICATIONS FOR CONSTRUCTION
SHALL BE DETERMINED BY SITE SPECIFIC GEOTECHNICAL REPORT

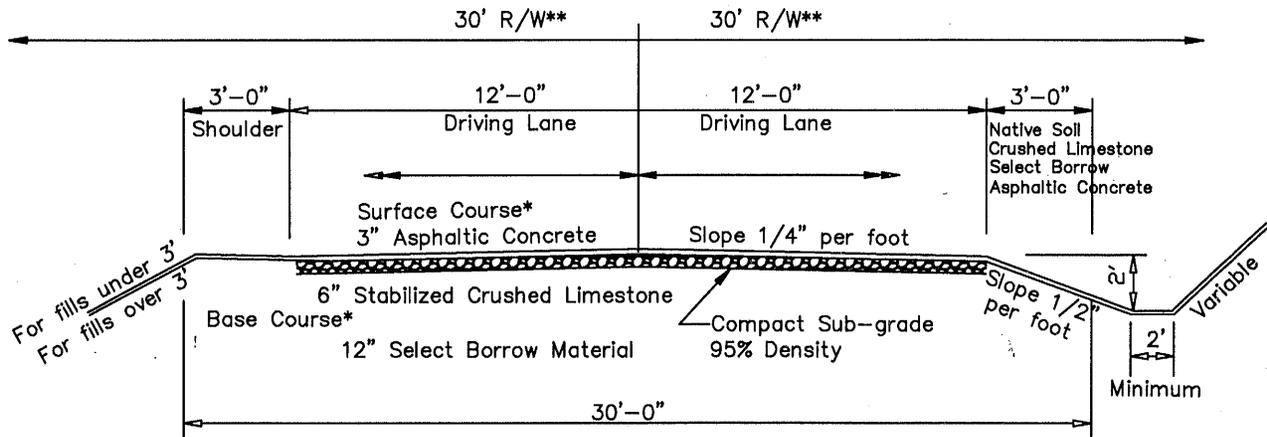


RESIDENTIAL STREET, LOCAL/MINOR
MINIMUM PAVING AND MATERIAL SPECIFICATIONS FOR CONSTRUCTION
SHALL BE DETERMINED BY SITE SPECIFIC GEOTECHNICAL REPORT



ALLEYWAY
MINIMUM R/W 20' RESIDENTIAL - PVMT WIDTH 20'
MINIMUM R/W 30' COMMERCIAL / INDUSTRIAL - PVMT WIDTH 30'
MINIMUM PAVING AND MATERIAL SPECIFICATIONS FOR CONSTRUCTION
SHALL BE DETERMINED BY SITE SPECIFIC GEOTECHNICAL REPORT

APPENDIX A: CREEK COUNTY, OKLAHOMA
ENGINEERING DESIGN CRITERIA



NOTE: All earth work shall be done in accordance with Standard Specifications for Highway Construction.

CREEK COUNTY, OKLAHOMA RIGHT-OF-WAY STANDARDS

MINIMUM REQUIREMENTS FOR RURAL RESIDENTIAL STREETS
WITH BORROW DITCHES
MINIMUM LOT WIDTH 150 FEET

THE MINIMUM DIAMETER CULVERT PIPE FOR
SUCH CONSTRUCTION IS 18" DIAMETER.

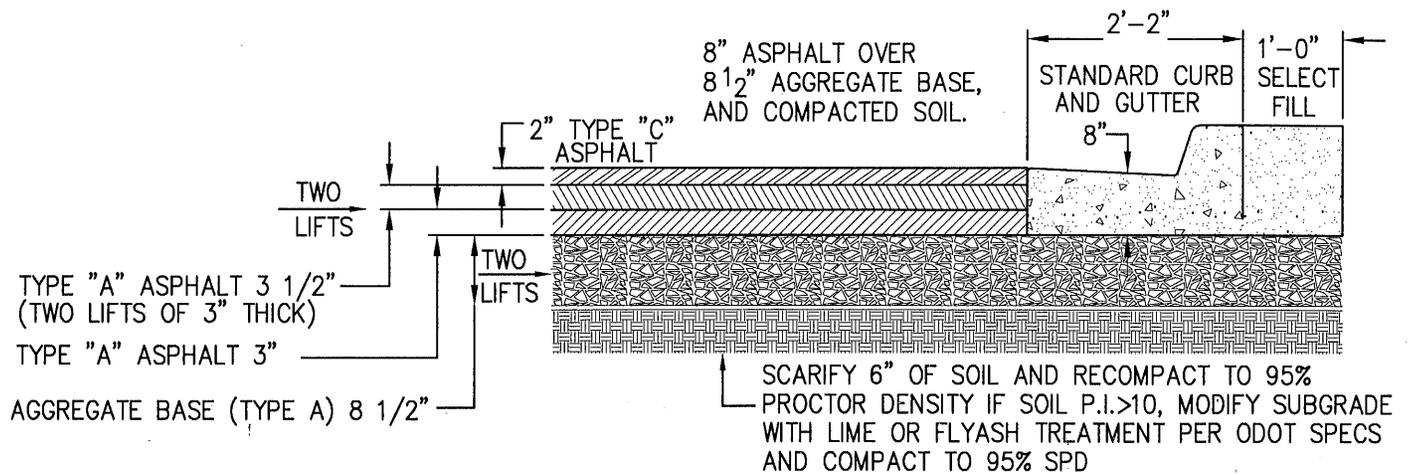
MINIMUM PAVING AND MATERIAL SPECIFICATIONS FOR CONSTRUCTION
SHALL BE DETERMINED BY SITE SPECIFIC GEOTECHNICAL REPORT

*PRODUCT FORMULA AND APPLICATION
SHALL BE TO OKLAHOMA DEPARTMENT
OF TRANSPORTATION SPECIFICATIONS.

**SECTION LINE/ARTERIAL ROADS SHALL
BE A MINIMUM OF 100' WIDE RIGHT-OF-WAY
LANE CONFIGURATION SHALL BE AS
REQUIRED BY THE CREEK COUNTY BOARD OF
COMMISSIONERS.

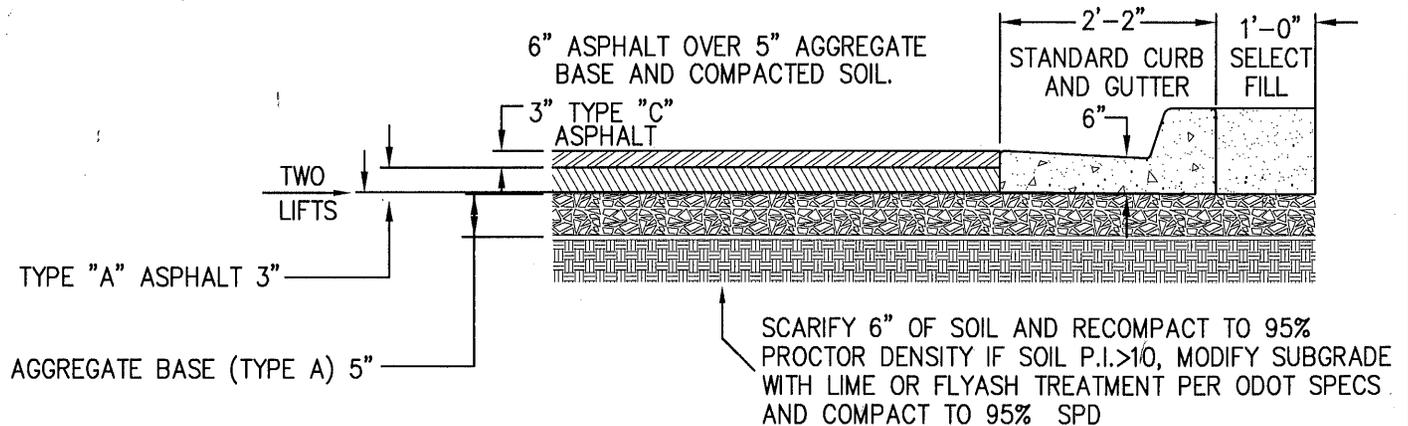
APPENDIX A: CREEK COUNTY, OKLAHOMA
ENGINEERING DESIGN CRITERIA

COLLECTOR / INDUSTRIAL



MINIMUM PAVING AND MATERIAL SPECIFICATIONS FOR CONSTRUCTION
SHALL BE DETERMINED BY SITE SPECIFIC GEOTECHNICAL REPORT

RESIDENTIAL, LOCAL, MINOR



MINIMUM PAVING AND MATERIAL SPECIFICATIONS FOR CONSTRUCTION
SHALL BE DETERMINED BY SITE SPECIFIC GEOTECHNICAL REPORT

TYPICAL PAVING SECTION CONSTRUCTION NOTES:

1. ALL CONSTRUCTION AND ALL MATERIALS TESTING SHALL BE PER APPLICABLE O.D.O.T. SPECIFICATIONS, LATEST VERSION.
2. SCARIFY SUBGRADE SOIL TO A DEPTH OF 6" MIN. PER O.D.O.T. SPECIFICATION 310 (METHOD B).
3. MODIFIED SUBGRADE (SOIL P.I.>10) PER O.D.O.T. SPECIFICATION 307 OR 317.
4. FILTER FABRIC SHALL BE PER O.D.O.T. SPECIFICATION 325.
5. AGGREGATE BASE (TYPE A) SHALL BE PER O.D.O.T. SPECIFICATION 303.
6. ASPHALT TYPE "A" SHALL BE PLANT MIX ASPHALT CONCRETE PAVEMENT BE PER O.D.O.T. SPECIFICATION 411.
7. PRIOR TO PLACING ASPHALT, ALL ROCK AGGREGATE BASE AND SOIL SHALL RECEIVE A PRIME COAT PER O.D.O.T. SPECIFICATION 408.
8. TACK COAT BETWEEN CONSECUTIVE LIFTS OF ASPHALT WILL BE REQUIRED WHEN THE TEMPERATURE OF THE PREVIOUS LIFT IS LESS THAN 135 DEGREES.
APPLICATION SHALL BE PER O.D.O.T. SPECIFICATION 407.

