

Engineering Services • 8500 Santa Fe Drive
 Overland Park, Kansas 66212
www.opkansas.org

**PUBLIC IMPROVEMENTS PLAN REVIEW CHECKLIST
 April 2019**

Office Use: PIP Case No: _____
 Review Date: _____
 Reviewer: _____

PUBLIC IMPROVEMENT PLAN REVIEW CHECKLIST

This plan review checklist is designed as a tool to assist the design engineer and review engineer in submitting a complete set of plans for issuance of public improvement permits. This checklist is not intended to be a complete listing of all applicable requirements, but is only a collection of the most commonly required items. It is the responsibility of the design engineer to obtain all applicable design standards and use good engineering judgment in preparing construction plans.

TABLE OF CONTENTS:	PAGE #
SECTION 1 – DESIGN STANDARDS	3
1.1 Overland Park Municipal Code	3
1.2 Other City Standards and Policies	3
1.3 Referenced Standards	4
SECTION 2 – SUBMITTALS	4-6
2.1 Initial Submittals	4
2.2 Final Submittals and Administrative Items for Permitting	4-5
2.3 Legal Documents provided by Engineer/Developer	5
2.4 Fees paid by Engineer/Developer	6
2.5 Information Provided by Contractors	6
SECTION 3 – CONSTRUCTION PLANS	6-
3.1 General Information	6-7
3.2 Stormwater Treatment Facility Plan	7
3.3 Drainage Plan, Map and Calculations	7-8
3.4 Box Culverts	8-9
3.5 Storm Sewer Profiles	9-10
3.6 Grading Plan	10-12
3.7 Street Plan and Profiles	12-15

TABLE OF CONTENTS:	PAGE #
3.8 Intersection & Cul-De-Sac Details	15
3.9 Turn Lanes	15-16
3.10 Erosion and Sediment Control Plan	16-18
3.11 Streetlights	19-21
3.12 Street Signage Plan	21
3.13 Traffic Control Plan	21-22
3.14 Landscape Plan	22
3.15 Standard Detail Sheet	22
3.16 Miscellaneous Items/Other Permits	22

SECTION 1 – DESIGN STANDARDS

The following is a list of applicable design standards for typical residential subdivisions in Overland Park. Depending on project specific circumstances, other standards may apply:

1.1 OVERLAND PARK MUNICIPAL CODE SECTIONS THAT TYPICALLY APPLY TO PUBLIC IMPROVEMENTS

- Chapter 13.10 – Streets and Sidewalks ([OPMC 13](#))
- Chapter 15.10 – Stormwater Management Program – Standards and Permitting ([OPMC 15.10](#))
- Chapter 16.200 – Erosion and Sediment Control ([OPMC 16.200](#))
- Chapter 16.210 – Stormwater Treatment ([OPMC 16.210](#))
- Chapter 18.360 – Floodplain Management ([OPMC 18.360](#))
- Chapter 18.365 – Stream Corridor Requirements ([OPMC 18.365](#))
- Chapter 18.460 – Subdivisions and Lot Splits ([OPMC 18.460](#))

1.2 OTHER CITY STANDARDS AND POLICIES

- City of Overland Park Design and Construction Standards – [Volume 1: Design Criteria](#)
- City of Overland Park Design and Construction Standards – [Volume 2: Construction Specifications](#)
- [Manual of Infrastructure Standards for Right-of-Way Restoration](#)
- [Overland Park Traffic Control Handbook](#)
- [Overland Park Standard and Supplementary Details](#)
- Stormwater Management Studies ([ES Policy #3-01](#))
- [As-built Grading Plans for Residential Subdivisions](#)
- [City of Overland Park Approved Materials List](#)
- [Streetlight Design Manual](#)
- [Traffic Sign Design Guidelines](#)

1.3 REFERENCED STANDARDS

- KC Metro Chapter APWA Division V – Design Criteria Section 5100 – Erosion and Sediment Control (APWA 5100) [September 2010](#)
- KC Metro APWA Division V – Design Criteria Section 5600 – Storm Drainage Systems and Facilities (APWA 5600) [2006 version](#)
- MARC / KC Metro APWA Manual of Best Management Practices for Stormwater Quality, [October 2012](#) with [addendum](#)

OTHER STANDARDS

- Manual of Uniform Traffic Control Devices (MUTCD)
- AASHTO “Policy on Geometric Design of Highways and Streets – latest edition (AASHTO Green book)
- Roadside Design Guide

SECTION 2 – SUBMITTALS

2.1 INITIAL SUBMITTALS

- ___ [Public Improvement Permit application](#) submitted
- ___ Other items stipulated with development plan approval
- ___ Sealed Final Stormwater Management Study – 2 hard copies and one digital in pdf format. If no changes, a letter indicating that there are no changes from the preliminary is acceptable.
- ___ Sealed Flood Study (HEC-RAS) – when required – 2 copies with data files
- ___ Work in Special Flood Hazard Areas – submit separate [Floodplain Development Permit](#) application/checklist including one copy in a digital form

2.2 FINAL SUBMITTALS AND ADMINISTRATIVE ITEMS FOR PERMITTING

All items must be addressed prior to permitting – See ES Policies #2-105 and #2-02 for additional information on administrative item review responsibilities.

- ___ Land Disturbance Permit (see [Land Disturbance Permit application](#) for information)
- ___ Right-of-way work permit must be obtained for sanitary sewer or any other utility installed within the right-of-way (in conjunction with Land Disturbance Permit)
- ___ Final Plat recorded prior to permit issuance

- ___ All civil sheets signed and sealed by a Kansas registered P.E. except for unmodified City Standard Details
- ___ Pre-construction meeting may be required at the discretion of the plan reviewer and inspector
- ___ Construction Plans – 5 full-size and 2 half-size sealed sets plus one digital copy in pdf format. Final plans distributed as follows: 3 - to each contractor, 1 - “red tag”, 1 consultant, 2 (half size) inspector
- ___ [Geotechnical Report](#) – 2 copies (must be approved and recommendations incorporated into construction drawings regarding subgrade treatment)
- ___ Digital DWG copy of proposed stormwater treatment facilities on the site that meets [STF drawing requirements](#)
- ___ Review Engineer verification that Summary of Quantities is complete and accurate

2.3 LEGAL DOCUMENTS

- ___ Long-term temporary construction easements – dedicated to City (adjacent to unimproved thoroughfares - check with Planning Technician to verify if obtained)
- ___ Temporary construction easements – dedicated to developer (for work on private property not owned by developer)
- ___ [Permanent drainage easements](#) – dedicated to City (for any enclosed/improved public drainage systems where easements not dedicated on final plat)
- ___ Stormwater Treatment Facility Maintenance Agreement - either the [Single Owner](#) or [HOA/Business Association](#) version depending on ownership
- ___ [Stream Corridor Maintenance Agreement](#) (when development includes a platted stream corridor)
- ___ [Right-of-Way Maintenance Agreement](#) (when development includes non-standard items within right-of-way). Note that when there are proposed fixed objects in the right-of-way, the agreement is required to be reviewed/approved by the City Engineer.
- ___ [Private Lake Agreement](#) (when private lake is included on development)
- ___ Other stipulated agreements/documents as required with the development plan or plat approval

2.4 FEES PAID PRIOR TO PERMITTING

- Easement/legal document [recording fees](#) as set by Johnson County
- Street escrow funds (when required by development plan/plat stipulation)

2.5 INFORMATION PROVIDED BY CONTRACTORS

- [Contractor Application for Public Improvement Permit](#)
- Bid tabulation
- [Performance and Maintenance Bonds](#)
- Public Improvement Permit fee (5% of bond amount)
- Contractor's certificate of insurance on file meets minimum City Insurance Requirements under Section 1.1 of the [City's Construction Specifications](#)

SECTION 3 – CONSTRUCTION PLANS

3.1 GENERAL INFORMATION

- Project Title must match final plat name
- Signature Block - "Manager, Engineering Services Division, Date"
- PIP Case Number - "PIP20__-_____" (number provided by plan reviewer)
- Index of sheets
- General location map
- City standard [general notes](#)
- Benchmark information and vertical datum tied to the [Johnson County Survey Control Network](#)
- Developer/Owner contact information (name/address/phone/email)
- Utility contacts and phone #'s
- Summary of Quantities:
 - ✓ Verify that sidewalks/ramps in common areas included
 - ✓ Fly ash or cement treated base included when required by geotech report
 - ✓ Flowable fill included for storm sewer under pavement/sidewalks

___ Legend

3.2 STORMWATER TREATMENT FACILITY PLANS

- ___ Stormwater Treatment Facility Plans submitted on separate sheets or as separate plan submittal in accordance with [Stormwater Treatment Facilities Construction Plan Review Checklist](#)
- ___ All native vegetation areas shall call out the specific allowed species, size, spacing, and maintenance requirements, including mowing restrictions

3.3 DRAINAGE PLAN, MAP, AND CALCULATIONS

- ___ Scale: 1"=100' or larger for onsite areas (smaller scale allowed for large offsite drainages)
- ___ Existing/proposed storm sewers shown
- ___ Existing/proposed contours shown
- ___ All onsite/offsite drainage areas shown
 - ✓ No significant drainage basin shifting allowed
- ___ Storm sewer system extended appropriately
 - ✓ Maximum tributary drainage area to uppermost inlets in system - 2 acres or 6 whole or partial platted lots (whichever is less)
 - ✓ 450-ft maximum flow path to first inlet or to street gutter (single family residential only)
 - ✓ Sump at intersection return – 1 cfs maximum (approx ¼ acre drainage area) crossing street
 - ✓ Pipe system extended to undeveloped upstream property lines for future service
 - ✓ Public storm sewer system minimizes length under pavement
 - ✓ Must discharge to appropriate downstream drainage system – cannot shift, concentrate, or increase drainage area to adjoining property unless adequate storm sewer facilities are available
 - ✓ Public vs. private storm sewers clearly labeled
- ___ Storm Sewer Structures:
 - ✓ Structure numbers labeled
 - ✓ Stationing shown
 - ✓ Adequate side clearance for pipes especially on skewed connections. See [clearance requirements](#) on standard details
 - ✓ 4 ft minimum length, width, and depth
- ___ Natural Conveyance Swales:
 - ✓ 10% design storm minimum capacity set aside in dedicated tract (residential only)

- ✓ Minimum 30-ft wide
- ✓ 1% design storm overflow system provided
- ✓ Drainage area between 2 and 25 acres
 - o If DA < 5 ac., swale may discharge into enclosed system
 - o If DA > 25 ac., must meet stream corridor requirements
- ✓ Minimum of 1-ft freeboard between the lowest opening into a building and the EGL of the adjacent flow
- ✓ Native vegetation required - plans should call out types/establishment requirements
- ✓ 2% minimum average channel slope
- ✓ 6 fps maximum velocity

— Street Crossings (APWA 5601.8B):

- ✓ Residential streets – 10-year (10%) design storm – enclosed downstream system
- ✓ Residential streets – 25-year (4%) design storm – open downstream system
- ✓ Collectors – 25-year (4%) design storm
- ✓ Thoroughfares – 50-year (2%) design storm
- ✓ All new streets
 - o 7-in maximum depth at highest point in roadway
 - o 14-in maximum depth at deepest point in roadway
 - o Road overtopping during 1% storm is allowed only for structure spans < 20 ft
 - o Guardrail required if 100-yr design flow > 250 cfs AND street overtops in excess of the standard

— Drainage Table

- ✓ 10-year (10%) design storm
- ✓ 100-year (1%) design storm overflow system (1-ft freeboard (EGL) required to any building openings)
- ✓ Maximum gutter width of spread per APWA Section 5604.2 – spot check inlets for larger sub-areas and low street slopes
- ✓ Tc based on 100-ft maximum overland flow length (calculations required for Tc > 5 min)
- ✓ Runoff coefficient “c” conforms with APWA Section 5602.3
- ✓ Undeveloped areas - use City “Future Development Plan” land uses to determine future runoff conditions
- ✓ Pipe system design storm hydraulic grade line (HGL) shown at each inlet – HGL must remain 0.5 ft below bottom of throat opening for 10-year design storm

3.4 BOX CULVERTS

— Box Culvert Plan

- ✓ Bridge analysis if span under street is > 20 ft (total span including center divider walls). Bridge information must be completed to the City of Overland Park Bridge SOP requirements. For most bridges, the City will utilize our on call structural consultant to assist in reviewing the plans.

- ✓ Cast-in-place box culverts require minimum 3” seal course on 6” aggregate base, except when excavating in rock
- ✓ 5-ft minimum height and width interior dimensions for maintenance access
- ✓ Boxes under public/private streets – provide street/box intersection station and skew angle
- ✓ Bridge plans must include structure # (to be assigned by Public Works) on box as a plaque
- ✓ Must submit bridge registration paperwork
- ✓ Bridge plaque installation location and detail provided on plans

___ Handrails provided per City standard detail

___ Maintenance Access

- ✓ 15-ft minimum wide path to entrance on traversable slope (5:1 or flatter)
- ✓ Easement provided for maintenance access at inlet and outlet of box accessible during low flow conditions (submerged culverts not allowed)
- ✓ Energy dissipation pool (when provided) is below flowline of the culvert
- ✓ Provide access every 1,000-ft or at every bend
- ✓ Provide concrete maintenance pad at one end of the box. Coordinate with PW Stormwater and/or Maintenance on preferred location

___ Box Culvert Details

- ✓ KDOT details acceptable
- ✓ KDOT detail for wingwall not acceptable – required to be independent structure from box
- ✓ KCMMB 5K concrete mix design required
- ✓ Wingwall footings below grade frost line (3’-6” min depth)
- ✓ Provide weep holes for long culvert runs in excess of 50-ft under roadway
- ✓ Expansion joint required between box and wingwall per Supplemental Details
- ✓ Provide external sealing band at precast box joints that meets ASTM 877 per Supplemental Details
- ✓ If not using KDOT standard box, submit structural computations for file

___ Construction Issues

- ✓ Provisions for re-routing live streams around box during construction
- ✓ Stream temporary re-routing includes non-erodible materials
- ✓ Temporary culverts sized/placed to avoid flooding upstream property – 2-year design storm minimum
- ✓ Construction inventory for bridges after completion

3.5 STORM SEWER PROFILES

___ Structures

- ✓ Inverts/top elevations indicated
- ✓ 4-ft minimum length and width
- ✓ 4-ft minimum structure depth (top to lowest invert out)
- ✓ Top of pipe cannot encroach into inlet throat

- ✓ Structural design required if L+H or W+H > 20 ft
- ✓ Adequate vertical drop (0.2-ft min for straight through (< 22 degrees) flows, 0.5-ft min for other conditions including multi-inflow pipes, size transitions, etc.)
- ✓ 8-ft maximum curb inlet width

— Pipe Profiles

- ✓ Minimum 10-year design storm HGL contained; 100-year design checked for overflow path
- ✓ HGL shown on pipe profile for 10-year storm
- ✓ Profile required for storm sewers with two or more pipe runs
- ✓ Line length, slope, inverts, and top elevations indicated
- ✓ For structures with two or more pipe connections – provide pipe orientation
- ✓ Existing/proposed ground line indicated
- ✓ 18-in minimum cover (APWA 5606.6)
- ✓ Class III RCP pipe required - CMP/HDPE not allowed
- ✓ Cover exceeding 12-ft – check if Class IV pipe is required for due to earth loads
- ✓ Maximum pipe run length 500-ft (APWA 5604.5)
- ✓ End sections draining into enclosed system include protection grate for pipes 24-in and larger
- ✓ Trench detail provided
- ✓ Flowable fill required for under pavement in right-of-way – limits shown on pipe profile

— Outlets

- ✓ Grade for positive drainage shown
- ✓ Flowline indicated for end of pipe AND end section
- ✓ Outlet protection adequate
- ✓ Last pipe section at the smallest grade possible to reduce outlet velocity (3 fps minimum velocity, 0.5% min slope)
- ✓ Discharges to natural streams meet APWA 5605.6 requirements (location, skew, etc.)
- ✓ Discharges to streams/lakes/ponds at least 6-in above normal pool elevation (no submerged/elevated outlets)
- ✓ Safety handrails provided for pipe inlets/outlets larger than 42-in height pipe (see handrail design requirement on box culvert checklist)
- ✓ Toewall detail for outlet structures

3.6 GRADING PLAN

— Scale: 1"=50' or larger

— North arrow shown

— Slopes

- ✓ Contour interval for existing/proposed – 2-ft maximum
- ✓ Minimum slope – 2.5%
- ✓ Maximum slope – 33% (3:1)

- ✓ Fill slopes must be set back at least 12-in from any property line
- ___ Contours extended 50-ft beyond project/watershed limits – or as necessary to show drainage patterns
- ___ Spot elevations at all lot corners; high and low points as needed
- ___ Overflow Swale Information
 - ✓ Flowline information at property line crossings
 - ✓ Required for all storm sewer systems regardless of pipe capacity
 - ✓ May be required in some locations upstream from public system (flat areas and to divert drainage from existing developments)
 - ✓ Minimize overland flows draining onto existing developments (regardless if drainage area is \leq pre-existing)
 - ✓ Design flow (Q-1% minus Q-10% if storm sewer exists – otherwise Q-1%)
 - ✓ For pipe systems designed to carry Q-1% - an overflow swale IS required and must be sized to carry the Q-10% flow
 - ✓ Cross-sections – show flow depth, energy grade depth, side slopes, width and longitudinal slope
 - ✓ Centered on property lines when feasible
 - ✓ Beginning and ending locations shown on plan
 - ✓ Berms located on the downhill side of area inlets: Show 3 spot elevations with the center overflow elevation set 6-in above inlet top
 - ✓ No drainage easements for overflow swales – pipe system only
- ___ Overflow Weirs
 - ✓ Flow depth
 - ✓ Cross-section at weir
 - ✓ MLOs upstream
- ___ Sites adjacent to major drainageways, stream corridors, lakes, and ponds
 - ✓ 1% storm (100-year) information shown on adjoining property corners
 - Energy grade line (EGL)
 - Water surface elevation (WSE)
 - Minimum low opening (minimum 1-ft above ultimate EGL or 2-ft above FEMA BFE - whichever is greater)
 - For lots adjacent to major drainageways but not SFHAs, MLOs required when the lowest corner of the lot will be less than 3-ft above the ultimate EGL
 - MLOs always required for lots abutting the SFHA
- ___ Grading Adjacent to Unimproved Thoroughfares
 - ✓ Check the width/condition of the unimproved thoroughfare to determine if street widening/overlay is required (OPMC 18.460.260)
 - ✓ Match approved [Preliminary Engineering Study](#) for future thoroughfare grade at right-of-way line
 - ✓ Coordinate final design grades with Public Works if thoroughfare is under design (may make preliminary studies obsolete)

- ✓ Show existing/proposed spot elevations at right-of-way line – 50-ft intervals - stationing coordinated with thoroughfare plan
- ✓ Provide interim ditch/shoulder when required in accordance with [standard detail](#)
- ✓ For street widening > 3-ft, provide table showing elevations for centerline, edge of existing pavement, edge of proposed pavement
- ✓ In most cases, widening requires 3-in overlay of entire street section - see [standard detail](#)
- ✓ Extend (preferred) or protect (when extension not feasible) cross road drainage structures when widening the shoulder and regrading the ditch. AASHTO Roadside Design Guide is a resource available on clear zone issues.

***Grading Plan Must Include the Following for Residential Subdivisions Only**

- ___ Lots labeled F.I.R. (Foundation Investigation Required) for building lots with
 - ✓ Building area with 6+ feet of fill
 - ✓ Slopes > 4:1
 - ✓ Pre-existing stream or water body
- ___ Drainage arrows and house footprints shown on each lot

3.7 STREET PLAN AND PROFILES

Plan View

- ___ Scale: 1"=50' or larger
- ___ Street and right-of-way widths dimensioned
- ___ Sawcut existing pavement to extend existing street (5-ft or true section)
- ___ Type B curb used in islands and medians
- ___ "Dry" curb indicated where necessary
- ___ Adjacent to unimproved thoroughfares – for the last 10-ft of the curb, flatten or eliminate curb beyond mid-point of curb return per the [standard detail](#)
- ___ Street curve radii dimensioned and in conformance with the [Design Standards](#)
- ___ Sidewalk locations shown:
 - ✓ Conforms with location shown on preliminary plat
 - ✓ Same side of street as streetlights when feasible
 - ✓ Wraps at least ½ distance around cul-de-sacs
 - ✓ Local streets – 4-ft sidewalk one side
 - ✓ Collectors – 4-ft sidewalk both sides
 - ✓ Thoroughfares – 5-ft sidewalk both sides
 - ✓ Passing squares shown maximum 200-ft spacing (4-ft sidewalks only)

- ✓ Sidewalks across islands shown as constructed by developer
- ✓ Pedestrian street crossings provided to cross collector streets

— Allowances for future bike/hike trails (see Greenway Linkage Plan for [Northern](#) and [Southern](#) Overland Park)

- ✓ Curb drops installed at width needed for bike/hike trails
- ✓ ADA ramp installed for future tie-in of bike trails
- ✓ Trail shifted close to roadway at intersections – (3-ft minimum greenspace, 6-ft desirable, 10-ft maximum)
- ✓ Parks Department approval of alignment
- ✓ Running slope limited to 5% except when within the street right-of-way, it may follow the grade of the street
- ✓ Pedestrian street crossing cross slope requirements for perpendicular curb ramps and blended transitions adjacent to pedestrian street crossings are as follows:
 - ✓ At yield or stop control: 2%
 - ✓ Without yield or stop control, or with traffic signals: 5%
 - ✓ At mid-block: no greater than the street or highway grade

— Streetlight poles and conduit sleeves shown for street crossings and commercial entrances

— Easements shown

- ✓ Permanent maintenance [access easements](#) shown
- ✓ [Sidewalk easements](#) as needed that extend at least 1-ft beyond the sidewalk if not dedicated by plat
- ✓ [Storm sewer drainage easements](#) – 20-ft minimum or pipe O.D. + 15-ft rounded up to nearest 5-ft, whichever is greater
- ✓ Verify that easement locations on final plat conform with construction plans
- ✓ Storm sewers located in drainage easements
- ✓ Overlapping drainage easements/utility easements only allowed when utility structures are located outside of drainage easement area

— Storm Sewer Structures

- ✓ Structure numbers labeled
- ✓ Stationing shown
- ✓ Adequate side clearance for pipes (see [design chart](#))
- ✓ 4-ft minimum length, width, and depth

— End of Road Markers

- ✓ Type III barricades at hazardous locations (i.e. drainageways, embankments, obstructions, etc.)
- ✓ Non-hazardous locations
 - 28-ft street: 3 OM4-3 signs required
 - 36-ft street: 4 OM4-3 signs required

— Pavement Marking Plan

- ✓ Include the following note in a prominent location: “At least 24 hours prior to the installation of pavement markings in the public right-of-way, contact the project Engineering Services Construction Inspector or Engineering Services at (913) 895-6223”
- ✓ Show existing pavement markings
- ✓ Marked crosswalks - typically only at signalized intersections and school zones. Contact PW Traffic Division for additional information.

— Drive Entrances to Public Streets

- ✓ Width labeled
- ✓ Concrete driveway in conformance with [Commercial Entrance standard detail](#)
- ✓ Address any conflicts with existing traffic signal loops or street lighting conduit
- ✓ Elevations of quarter points, high points, low points shown – drive slopes of ¼ to ½ inch/ft towards the public street in the right-of-way
- ✓ Curb radii shown

— ADA Ramps – required on public street to public street connections

- ✓ ADA ramps shown with elevation and slope callouts
- ✓ Cross slope limited to 2% maximum, EXCEPT
 - Pedestrian street crossing without stop or yield control cross slope shall be limited to 5% maximum
 - Mid-block ramp cross-slope can match street grade
- ✓ Ramp slope limited to 8.3% except that the ramp slope is not required to exceed 15-feet
- ✓ Detectable warning surfaces for private driveways are to be provided as follows:
 - For private driveways that are signalized, or expected to be signalized in the future, truncated domes required
 - For private drives that connect to public streets and appear to residents to be a public street, detectable warning surfaces are required
 - Turning space (4'x4' min) shall be provided at the top of ramps with a maximum slope of 2% in all directions
 - Scale: 1"=5' or larger

Profile View

— Profile Information

- ✓ Existing/proposed elevations shown at 25-ft intervals
- ✓ Street slopes shown: 1% min. grade, max. grades – [Design Standards](#)
- ✓ Profile grade should be street centerline – noted on typical street cross section detail
- ✓ Transition from end of pavement to existing grade shall be 3:1 minimum

— Vertical curve information shown

- ✓ Station and elevation - PVI, PVC, PVT, G1, G2
- ✓ Stopping Sight Distance (SSD) and K-values [Design Standards](#)

- ✓ Verify intersection sight distance meets AASHTO Green Book at all intersections with thoroughfares, and collector/collector intersections. Use sight triangle from UDO [Section 18.420.060](#) for other locations.
- ✓ Grade breaks at intersections (stop locations on local residential streets only) – 5% algebraic grade difference
- ✓ Instantaneous slopes on vertical curves < 0.5% for distances not to exceed: sag curves – 25 ft, crest curves – 35 ft

___ Future profile for intersections with unimproved thoroughfares - show both existing and future condition profile

- ✓ Minimize future street tear-out/reconstruction
- ✓ Safe interim condition
- ✓ Minimize storm drainage system tear-out/reconstruction

3.8 INTERSECTION & CUL-DE-SAC DETAILS

___ Scale – 1" = 20' or larger

___ Curb return radii dimensioned

___ Curb returns

- ✓ Quarter point station/elevations shown
- ✓ Curb drops for ADA ramps stationed/elevations shown
- ✓ 1.0% minimum grade crossing asphalt streets required
- ✓ 0.5% minimum grade on curbs
- ✓ Dry curb indicated where necessary
- ✓ Curb types indicated (use Type B curb for islands)

___ Curb Ramps - See Section 3.7

___ Drainage Arrows Shown

3.9 TURN LANES

___ Table of elevations and distances required for any curbed street that includes the following data

- ✓ Minimum station interval – 25-ft
- ✓ Elevations and distances for:
 - Existing and proposed curb
 - Existing median curb
- ✓ Existing cross slope shown
- ✓ Proposed turn lane cross slope
- ✓ Future overlay cross slope (Allowable range 3/16" to 1/2" per foot)

___ Reconstruction of median matches existing curb types

___ Streetlighting cable locations shown to identify conflicts and necessary relocations

- ___ Right-of-way grading behind curb at ¼” to ½” per foot
- ___ Construct concrete section with 2-in asphalt overlay in lieu of full depth asphalt for widening < 4-ft
- ___ Pavement surface course joint lines offset minimum of 6-in from drive lanes
- ___ Depth of fly-ash/cement treatment noted
- ___ Curb removal detail provided
- ___ Match existing street pavement section – including pavement thickness, relocation of underdrains (when existing), jointing pattern, and base material (OP Special)

3.10 EROSION AND SEDIMENT CONTROL PLAN

- ___ ESC General Information
 - ✓ Project Narrative
 - ✓ Existing site conditions
 - Identifies sensitive areas (stream corridor, trees, etc.) & areas of special concern
 - Describes phases
 - ✓ General location map
 - ✓ Nature of work
 - ✓ Total disturbed acreage
 - ✓ Phasing/sequence of work
 - ✓ Identification of sensitive downstream waters (wetlands, streams, reservoirs, etc.) and critical areas (steep slopes etc).
 - ✓ Description and implementation sequence of BMPs (interim and permanent)
 - Conforms with City of Overland Park Erosion and Sediment Control General Notes and adopted KC Metro APWA Division 5100 design criteria
- ___ Erosion and Sediment Control Plans
 - ✓ All BMPs are on site (temporary construction easements must be granted for offsite BMPs)
 - ✓ Plan Sheets
 - Limits of disturbance clearly delineated
 - ✓ Drainage Patterns
 - Outlet points (total drainage area, total disturbed area to each outlet point, type of structure)
 - Inlet points (show flow arrows and tributary acres)
 - Verify BMP selected is appropriate for the flow based on the sub-areas from the drainage map
 - ✓ Existing and proposed contours labeled
 - ✓ Location & implementation schedule of ESC devices
 - Includes conditions for removal

- ✓ Legend of proposed ESC devices
- ✓ Standard [Erosion and Pollution General Notes](#) provided
- ✓ [Staging Chart](#) sequencing all construction related BMP and vegetative activities from initial land disturbance through final stabilization
 - Installation of fencing for areas to be protected from disturbance
 - Clearing and grubbing of those areas necessary for the installation of perimeter ESC devices
 - Installation of perimeter ESC devices
 - Installation of permanent and temporary stabilization measures
 - ESC devices installed with each construction phase for utilities, buildings, parking lots, etc.
 - Inactive areas to be stabilized when work shifts to another part of the site
 - Final stabilization of site (except stormwater treatment facility areas)
 - Removal of temporary ESC devices
 - Final grading for installation of stormwater treatment facilities
 - Construction of stormwater treatment facilities
 - Final stabilization of stormwater treatment facility areas
- ✓ Standard Details
 - Conform with City standard details

____ ESC measures prior to land disturbance

- ✓ Protection of undisturbed areas
- ✓ Perimeter controls
- ✓ Stabilized construction entrance
- ✓ Stabilized parking/delivery/staging area
- ✓ Diversion of offsite water around disturbance for drainage areas > 0.5 ac.
- ✓ Sediment basins (drainage areas ≥ 10 ac. to a common discharge point)
 - Basins must function in all phases of the project
- ✓ Other BMPs:
 - Topsoil stockpiles
 - Wood mulch

____ ESC measures during land disturbance and construction work

- ✓ Isolation of inactive areas
- ✓ Concrete washout location shown
- ✓ Soil stockpiles, location, stabilization & protection
- ✓ Soil stabilization within 14 days after inactivity (seeding, mulch, hydraulic applications, sod, matting, blankets, plastic sheeting, dust control, etc.)
- ✓ Adequate selection of sediment control BMPs
 - Silt fence used as perimeter controls, internal controls, toe protection or interruption of long slopes
 - Provide turf reinforcement mats (TRM), erosion control blanket, sod or other suitable stabilization for concentrated flow areas larger than ½ acre
 - Special stabilization measures should cover the bottom of the concentrated flow area and extend at least 6 inches vertically up the sides

- Other linear sediment control devices that trap sediment as water passes through the medium (e.g. compost socks, compost berms, vegetative buffers, etc.)
- Inlet protection provided – except on thoroughfares
- Sediment traps
 - Designer to provide specific design if drainage area larger than 2 acres
 - Overflow location and elevation called out on plan
- Sediment basins (applicable only to drainage areas ≥ 10 ac)
 - Design information shown (chart filled out)
 - Basin side slopes and inlets stabilized
 - Emergency spillway provided w/ adequate protection
 - All inflow pipe flow lines ABOVE cleanout level
 - Riser pipe & skimmer size indicated
 - Anti-flotation device size indicated
 - Baffles provided when necessary
 - Plan shown for ultimate removal of basin
 - Notes about when basin CAN be removed - See OPMC [18.130.057](#) and OPMC [16.200.060](#).
 - Notes about when basin MUST be cleaned out
- ✓ Adequate selection of erosion controls for runoff entering, crossing, or exiting the site:
 - Minimize erosion of cut and fill slopes (terracing, slope drains, diversion dikes & swales, slope roughening, etc.)
 - Erosion resistant conveyance through site (pipes, check dams, outlet protection, channel lining: sod, matting, rock-lined, etc.)
- ✓ Adequate measures for work in live watercourses (temporary stream crossings, stream diversion, etc.)
- ✓ Adequacy of offsite receiving channels
- ✓ Rip rap or other suitable treatment for stormwater runoff from stub streets

— ESC measures after land disturbance and construction work

- ✓ Permanent stabilization (seeding, sodding, etc.)
 - Planting schedule and layout
 - Completion certification if required
 - Long-term maintenance agreement for plantings if required
- ✓ Post-construction ESC
 - BMPs labeled on plans that will be converted to stormwater treatment facilities (STFs) after stabilization of the site
 - Reference to STF Plans, Maintenance Agreement
 - Sediment basins
 - Criteria for removal of basin(s) from service
 - Notes on timing & methods for basin clean out and area stabilization and/or conversion to flood control detention basin or STF

3.11 STREETLIGHTS

- ___ Overall conceptual streetlight design provided for subdivisions with multiple plats
 - ✓ Use as few streetlight control centers as possible

- ___ City of Overland Park standard symbol legend must match plan sheet

- ___ Control center address (existing and proposed) shown on the bottom right corner of the sheet (address must have “LC” (lighting controller) attached, ex: 9705LC 120th)

- ___ Plan View (50 scale or larger)
 - ✓ Street names, right-of-way, and outlines
 - ✓ Sidewalk/trails (existing/proposed)
 - ✓ Easements and utilities
 - ✓ Storm sewer system (to check for conflicts with streetlight foundations)
 - ✓ Adjacent subdivision names (existing or unplatted)
 - ✓ Existing streetlight equipment in adjacent subdivisions
 - ✓ Subdivision border, property, and lot lines

- ___ Spacing/Type:
 - ✓ Local/Residential (28’ b-b)
 - Spacing: 225’-350’
 - Pole: LED (100W HPS equivalent) with 14’ pole
 - Foundation: Type R screw-in foundation
 - Poles addressed from streetlight controller - see standard detail for naming convention
 - ✓ Collector/Commercial/Apartment/Industrial (36’ b-b)
 - Approximate Spacing: 150-200’ - Consultant to provide lighting level computations in accordance with luminance criteria from the [Streetlight Design Manual](#)
 - Evaluate intersection light levels for collector / local street intersections and attempt to obtain minimum intersection lighting
 - Evaluate intersection light levels for collector / collector street intersections and obtain [minimum intersection lighting](#)
 - Pole: Class C, D, or E LED cobrahead with 30’ pole (Type T1 screw-in or concrete foundation) for commercial areas
 - ✓ 30 and 40-ft poles addressed individually. Plan reviewer shall assign an address - see [Streetlight Design Manual for information on addressing](#)
 - ✓ Intersections with unimproved (unlighted) thoroughfares. Provide [partial lighting in accordance with the Streetlight Design Manual](#)

- ___ Connection to existing system
 - ✓ Provide connection & location construction notes

- ___ Equipment relocations/modification (median breaks, driveways, street entrances, and turn lanes)

- Proposed pole locations:
 - ✓ At/near property lines
 - ✓ At intersections
 - ✓ At changes of alignment of 60 degrees or more
 - ✓ On residential cul-de-sacs longer than 200-ft (at/near the bulb)
 - ✓ On the sidewalk side
 - ✓ 3-ft minimum setback
 - ✓ Proper clearance from overhead lines (field check)

- Proposed Control Centers
 - ✓ Location
 - Maximizes the usage of all 4 circuits
 - Located in U/E out of the R/W
 - Out of the [sight distance triangle - OPMC 18.420.060](#)
 - At the property line or with respect to any structure and driveway conflict
 - ✓ For new controllers, Plan Reviewer must submit a [KCPL Account Setup Form](#) to KCPL
 - ✓ Obtain address for new controller from Development Coordinator
 - ✓ 2" PVC conduit with pull string shown/noted from control center to power source
 - ✓ Type 2 junction box next to the control center (at maintenance request) with two 2" HDPE conduits from the control center
 - ✓ Size of pad, orientation of photocell (work pad to the right of the photocell which is facing north or east)
 - ✓ Circuit number(s) noted

- Proposed Junction Boxes
 - ✓ Designate Type 1 or 2 (if more than 2 conduits entering/existing junction box, then specify Type 2) Type 1 = 12" x 12", Type 2 = 12" x 18"

- 2" SDR13.5 HDPE Conduit - Gray
 - ✓ Installed throughout project unless otherwise noted
 - ✓ Conduit from power supply to streetlight cabinet shall be 3" SDR 13.5 HDPE (black with red stripes per KCPL requirement)

- Details as required (Use most recently available details)
 - ✓ Breakaway pole base details
 - ✓ Controller details
 - ✓ Electrical connector details
 - ✓ Pole and luminaire details
 - ✓ Pole foundation details
 - ✓ Standard details
 - ✓ Bill of materials
 - ✓ General notes & Legend for developer projects

- NON-TYPICAL details included where applicable
 - ✓ Single circuit control center – used only in temporary situations as approved by the City

- ___ End circuit at the streetlight pole
 - ✓ If this is not possible, provide Type 1 junction box (supplied/installed by contractor) at the end of platted street for future circuit
 - ✓ Junction box field marker provided by the City of Overland Park
 - ✓ Install 2" HDPE Schedule 40 with pull string from the last box/pole on the circuit to the junction box
 - ✓ Contractor is responsible for pulling cable through the HDPE conduit for the connection at the existing light pole/junction box for the next phase of construction

- ___ Delivery of existing equipment to Traffic Services Maintenance facility (see streetlight disassembly instruction)

- ___ Disturbed grassy areas within the right-of-way to be resodded; medians to be reseeded

- ___ Voltage drop calculations required for all new circuits connecting to an existing circuit or on new circuits with 20+ lights. 5% maximum voltage drop allowed with a 0.95 line fluctuation factor

3.12 STREET SIGNAGE PLAN

- ___ Street name signs - verify street suffix matches guidelines and 100 blocks are listed correctly

- ___ Stop and yield signs only when required. Typically on residential streets only when intersecting a collector or thoroughfare

- ___ Check street name sign sizes against the pre-generated street name signs in the Wiki

- ___ See [Traffic Sign Design Guidelines](#) For additional information on signage requirements

3.13 TRAFFIC CONTROL PLAN

- ___ Pavement connections or encroachments to collectors and thoroughfares require PROJECT SPECIFIC traffic control plan

- ___ Must conform to [MUTCD](#) and City of [Overland Park Traffic Control Handbook](#)

- ___ Must include plan for non-work periods

- ___ Includes dimensions for distances between warning signs & channelizers

___ Type III barricades shown to keep proposed streets closed until street opened to public

___ Shows pedestrian detour plan if sidewalk is to be closed during construction

3.14 LANDSCAPE PLAN

___ Shows required street trees within public right-of-way

✓ Preliminary landscape plan must be reviewed by Current Planning concurrent with the Engineering Services plan review

✓ Current Planning must approve the plan prior to issuance of a public improvement permit

✓ Verify that trees are out of sight distance triangles, and properly spaced from box culverts, regulatory signs and streetlight poles. See [Street Tree Planting Restrictions](#) for additional information.

3.15 STANDARD DETAIL SHEETS

___ Entire standard detail must be included – do not rearrange or piecemeal detail

___ Check for usage of current [Standard Details](#) – updated annually

___ Customized or non-standard details must be sealed by design engineer

___ Ensure City title block is removed on customized or non-standard details

___ All public infrastructure requires KCMMB concrete mix designs to minimum strength shown on standard details

3.16 MISCELLANEOUS ITEMS/OTHER PERMITS

___ [KDHE Notice of Intent \(NOI\)](#) signed application must be submitted for projects > 1 ac.

___ [Kansas Dept of Agriculture Division of Water Resources \(KDA-DWR\)](#) permit may be required for work in streams with 240+ ac watershed

___ Corps of Engineers Section 404 Permit must be obtained for work in Jurisdictional Waters of the US. Note that some minor work is covered under Nationwide Permits that does not require pre-construction approval by the Corps of Engineers. This should be noted in the stormwater report.

___ KDOT right-of-way work permit required prior to work in state right-of-way