

# Commercial Site Construction Plan Review Checklist

Office Use: PIP Case No: \_\_\_\_\_  
 Review Date: \_\_\_\_\_  
 Reviewer: \_\_\_\_\_

*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.*

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## **SECTION 1 – DESIGN STANDARDS**

The following is a listing of applicable design standards for typical commercial developments in Overland Park. Depending on project specific circumstances, other standards may apply.

### **1.1 OVERLAND PARK MUNICIPAL CODE**

- 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 18.430 – Parking and Loading Regulations (OPMC 18.430)
- Chapter 18.365 – Stream Corridor Requirements (OPMC 18.365)

### **1.2 OTHER CITY STANDARDS AND POLICIES**

- Overland Park Design and Construction Standards - Volume 1: Design Criteria
- 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 Details
- Stormwater Management Studies (ES Policy #3-01)

### **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**

- \_\_\_ Stormwater detention plans (if required - see stormwater detention checklist)
- \_\_\_ Other items stipulated with development plan approval
- \_\_\_ Final Stormwater Management Study (Sealed) – 2 copies – 1 hard copy, 1 pdf (unless previously submitted with other plans)
- \_\_\_ Flood Study (HEC-RAS) – when required – 2 sets with data CDs
- \_\_\_ Work in Special Flood Hazard Areas – submit separate application/checklist for a floodplain development permit
- \_\_\_ Initial site visit – plan review engineer and assigned inspector should visit most sites to review:
  - ✓ Condition of existing perimeter sidewalks, curbing, etc.
  - ✓ Potential utility conflicts (including existing street lights and poles that might conflict with driveways or sidewalks)
  - ✓ Perimeter drainage concerns – especially when abutting residential property
  - ✓ Erosion control concerns
- \_\_\_ Geotechnical report for any private pavement section that does not meet minimum City standards

### **2.2 FINAL SUBMITTALS FOR PERMITTING**

- \_\_\_ Digital DWG copy of proposed stormwater treatment facilities on the site that meets STF drawing requirements
- \_\_\_ Design calculations for all retaining walls over 4' that support buildings or site infrastructure
- \_\_\_ Final plat recorded prior to permit issuance
- \_\_\_ Pre-construction meeting held prior to permit issuance (may be required at the discretion of the plan review engineer and inspector)
- \_\_\_ All civil plan sheets sealed by a professional engineer registered in the state of Kansas

### **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 grading on other 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)

- \_\_\_ Stream corridor maintenance agreement (when development includes a platted stream corridor)
- \_\_\_ Private lake agreement (when private lake is included on development)
- \_\_\_ Stormwater treatment facility maintenance agreement – either the single owner or HOA/Business Association version depending on ownership
- \_\_\_ Stormwater treatment facilities easement – if dedicated to City by maintenance agreement or by platting
- \_\_\_ Right-of-way maintenance agreement/Joint Use of right-of-way agreement – required for any non-standard improvements located within the public right-of-way (Note: Any proposed fixed objects in the right-of-way require the review and approval of the City Engineer)
- \_\_\_ Other stipulated agreements/documents as required with the development plan or plat approval

## **2.4 MISCELLANEOUS ITEMS/OTHER PERMITS**

- \_\_\_ KDHE Notice of Intent (NOI) signed application must be submitted for projects >1 acre
- \_\_\_ Right-of-way work permit
  - ✓ Excavations in public right-of-way require a right-of-way work permit to be coordinated through the Public Works department (i.e. utility connections, underground excavations & boring)
  - ✓ Plans should include the standard comment “A right-of-way work permit must be obtained prior to any work, including utility excavations, in the right-of-way. Contact the City of Overland Park Right-of-Way Coordinator at (913) 895-6189 for additional information.
- \_\_\_ Kansas Dept. of Agriculture Division of Water Resources (KDA-DWR) approved permit must be obtained for work in SFHA or streams with 240+ acre watershed.
- \_\_\_ Corps of Engineers Section 404 Permit must be obtained for work in Jurisdictional Waters of the US.
- \_\_\_ KDOT right-of-way work permit required prior to work in state right-of-way

## **2.5 FEES PAID PRIOR TO PERMITTING**

- \_\_\_ Easement/legal document recording fees
- \_\_\_ Unspecified transportation improvement fee (when stipulated)
- \_\_\_ Signal payment fee (when stipulated)

## **SECTION 3 – CONSTRUCTION PLANS**

### **3.1 COVER SHEET**

- \_\_\_ Project Title
- \_\_\_ Index of sheets

- \_\_\_ General location map
- \_\_\_ Legal description of property
- \_\_\_ City standard general notes
- \_\_\_ Benchmark information and vertical datum tied to the Johnson County Survey Control Network
- \_\_\_ Developer/Owner contact information (name/address/phone)
- \_\_\_ Utility contacts and phone #'s
- \_\_\_ Legend

### 3.2 DRAINAGE PLAN, MAP, AND CALCULATIONS

- \_\_\_ Scale: 1"=100' or larger for onsite areas (smaller scale allowed for large offsite drainages)
- \_\_\_ Existing/proposed contours shown
- \_\_\_ All onsite/offsite drainage areas shown
  - ✓ No significant drainage basin shifting allowed
- \_\_\_ Storm sewer system extended appropriately
  - ✓ 2 acre maximum drainage area tributary to uppermost inlets in system
  - ✓ Extended to undeveloped upstream property lines for future service
  - ✓ Public vs. private storm sewer system clearly labeled
  - ✓ 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
- \_\_\_ Existing and proposed storm sewers shown and clearly labeled
- \_\_\_ Storm sewer structures
  - ✓ Structure numbers labeled
  - ✓ Stationing shown
  - ✓ Adequate side clearance for pipes (see Inlet Box Sizing Chart)
  - ✓ 4 foot minimum length, width, and depth
- \_\_\_ Non-setback curb inlets used adjacent to parking stalls
- \_\_\_ Private storm sewer system design
  - ✓ Enclosed system - 10% design storm minimum capacity
  - ✓ 1% storm overflow system provided
  - ✓ Must provide 10% overflow even if enclosed system is sized for 1% storm
  - ✓ 7-inch maximum depth in parking lots and private drives (1% storm)
  - ✓ Cannot cause backwater onto adjacent property for 1% and lesser storm event
  - ✓ Must discharge to appropriate downstream drainage system – cannot shift, concentrate, or increase drainage area to adjoining property unless adequate storm sewer facilities are available
  - ✓ Must be constructed to public storm sewer standards; however, can use 4K concrete

- Drainage calculation table
  - ✓ 10-year (10%) design storm
  - ✓ 100-year (1%) design storm overflow system (1-ft freeboard from EGL required to any building openings)
  - ✓ 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) at each inlet provided – HGL must remain 0.5 ft below bottom of throat opening for 10-year design storm

### 3.3 BOX CULVERTS

- Private culverts are required to be built to public standards (see Public Improvement Plan Review Checklist)

### 3.4 STORM SEWER PROFILES

- Structures
  - ✓ Inverts/top of structure elevations provided
  - ✓ 4-foot minimum length and width
  - ✓ 4-foot minimum structure depth (top to lowest invert out)
  - ✓ Top of pipe cannot encroach into inlet throat
  - ✓ If L+H or W+H > 20 feet, then structural design is required
  - ✓ 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
  - ✓ Cast-in-place tops required for structures adjacent to parking lots/drives/streets (exception to ES Policy #3-05)
- Pipe profiles
  - ✓ Profile required for storm sewers with two or more pipe runs
  - ✓ Line length, slope, inverts, and top elevations indicated
  - ✓ Provide pipe orientation for structures with two or more pipe connections
  - ✓ Minimum 10-year design storm HGL contained; 100-year design checked for overflow path
  - ✓ HGL shown on pipe profile for 10-year storm
  - ✓ Existing/proposed ground line indicated
  - ✓ Minimum cover – 18 inches (APWA 5606.6)
  - ✓ Class III RCP or HDPE pipe required (CMP not allowed except for minor “landscape drainage”). HDPE pipe limited to 24-inches and smaller diameter.
  - ✓ Cover exceeding 12-ft – check if Class IV pipe is required due to earth loads
  - ✓ 500-ft maximum pipe run length (APWA 5604.5)
  - ✓ Trench detail provided
  - ✓ End sections draining into enclosed system include protection grate for 24-inch and larger pipes
- Outlets
  - ✓ Grade for positive drainage shown - show grade profile - note indicating "grade to drain" is not acceptable
  - ✓ Flowline indicated for end of pipe AND end section
  - ✓ Outlet protection adequate

- ✓ Last pipe section at the smallest grades 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 lakes/ponds a minimum of 6" above normal pool elevation
- ✓ Safety handrails provided for pipe inlets/outlets 42" and larger
- ✓ Toewall detail for outlet structures

### 3.5 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

### 3.6 GRADING PLAN

\_\_\_ Scale: (1"=50' or larger) and north arrow

\_\_\_ Ground slopes

- ✓ 2-ft maximum contour interval for existing and proposed conditions
- ✓ Minimum slope – 2.5%
- ✓ Maximum slope – 33% (3:1)
- ✓ Fill slopes must be set back at least 12-inches from any property line

\_\_\_ Pavement slopes

- ✓ 1% minimum grade on asphalt
- ✓ 0.5% minimum grade on concrete surfaces

\_\_\_ Contours extended 50-ft beyond project/watershed limits – or as necessary to show drainage patterns

\_\_\_ Spot elevations, high points, and low points as needed

\_\_\_ Overflow swale information

- ✓ Beginning and ending locations shown on plans
- ✓ EGL information shown when crossing property lines
- ✓ 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 downstream from a new site even if the drainage area is the same or less than pre-existing to avoid complaints from neighbors
- ✓ Design flow (Q1% minus Q10% if storm sewer exists – otherwise use Q1%)
- ✓ For pipe systems designed to carry Q1%, an overflow swale is **required** and must be sized to carry the Q10% flow
- ✓ Cross-sections – show flow depth, energy grade depth, side slopes, width and longitudinal slope
- ✓ Berms on the downhill side of area inlets: Show 3 spot elevations with the center overflow elevation set 6-in above the inlet top
- ✓ No drainage easements for overflow swales (pipe system only)

\_\_\_ Overflow weirs

- ✓ Flow depth
- ✓ Cross-section of weir
- ✓ MLOs indicated for upstream properties

\_\_\_ Sites adjacent to major drainage ways (greater than 40 acres), stream corridors, lakes & ponds

- ✓ 1% design storm information shown on adjoining property corners:
  - Energy Grade Line (EGL)
  - Water Surface Elevation (WSEL)
  - Minimum Low Opening (MLO) set a minimum 1-ft above ultimate EGL or 2-ft above FEMA BFE - whichever is greater

\_\_\_ Grading in the public street right-of-way

- ✓ Finished grade of  $\frac{1}{4}$  to  $\frac{1}{2}$  inch per foot towards the public street

\_\_\_ Grading adjacent to unimproved thoroughfares

- ✓ Match approved Preliminary Engineering Study for future thoroughfare grade at right-of-way line
- ✓ Coordinate with Public Works for final design grades if thoroughfare is under design (may make preliminary studies obsolete)
- ✓ Show existing/proposed spot elevations at right-of-way line at 50-ft intervals - stationing coordinated with thoroughfare plan
- ✓ Provide interim shoulder and widening improvements when required in accordance with standard detail

### 3.7 SITE PLANS & DIMENSION PLANS

\_\_\_ Scale: 1"=50' or larger

\_\_\_ All paved areas dimensioned

\_\_\_ Curbs

- ✓ "Dry" curb indicated where necessary
- ✓ All curb types/locations indicated

\_\_\_ Curb return radii dimensioned

- ✓ Compound radius curve design required for landscape islands  $\geq$  8-ft wide

\_\_\_ Public Sidewalks

- ✓ Match locations shown on Final Development Plan
- ✓ Local streets – 4-ft sidewalk on one side
- ✓ Collectors, Apartment, Industrial, and Commercial streets – 4-ft sidewalk on both sides
- ✓ Thoroughfares – 5-ft sidewalk both sides
- ✓ 4-ft sidewalks only – passing squares provided at maximum 200-ft spacing
  - Driveways can be substituted as passing squares
- ✓ Existing public sidewalk closures – Provide temporary access that meets ADA guidelines as necessary (OPMC 13.10.070)

\_\_\_ Easement locations shown

- ✓ Temporary construction easements
- ✓ Platted easements (or by separate document)
- ✓ Access easements as stipulated



- \_\_\_ Allowances for future bike/hike trails (see Greenway Linkages Plan for locations)
  - ✓ Curb drops installed at width needed for bike/hike trails
  - ✓ ADA ramp installed for future tie-in of bike/hike trails
  - ✓ Trail shifted close to roadway at intersections – (3-ft minimum greenspace, 6-ft desirable, 10-ft maximum)
  - ✓ Parks Department approval of alignment
    - Asphalt trail detail provided
  
- \_\_\_ Pavement marking plan
  
- \_\_\_ 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  $\frac{1}{4}$  to  $\frac{1}{2}$  in/ft towards the public street in the right-of-way
  - ✓ Drive slopes toward the site at the property line
  - ✓ Curb radii shown
  
- \_\_\_ ADA Ramps
  - ✓ ADA ramps shown with elevation callouts
  - ✓ Connections to the public right-of-way require a minimum 4' x 4' turning square
  - ✓ Detectable warning surfaces required on sidewalk ramps crossing public streets
    - Existing ramps that are out of compliance will be required to be reconstructed
  - ✓ Detectable warning surfaces for private drives provided as follows:
    - For private drives that are signalized, or expected to be signalized in the future, truncated domes are required
    - For private drives that connect to public streets and appear to residents to be a public street, detectable warning surfaces are required

### **3.7 EROSION AND SEDIMENT CONTROL PLAN**

- \_\_\_ ESC General Information
  - ✓ Project Narrative
    - Existing site conditions
    - Identify sensitive areas (stream corridor, trees, etc) & areas of special concern
    - Describe phases
    - Nature of work
  - ✓ General location map
  - ✓ Total disturbed acreage
  - ✓ Identification of sensitive downstream waters (wetlands, streams, reservoirs, etc.)
  - ✓ Identification of critical areas (high erosion potential, e.g. steep slopes, wet weather or intermittent streams, springs, etc)
  - ✓ Detail sheets conform with City standard details
  
- \_\_\_ Erosion and sediment control plans
  - ✓ All BMPs must be located on site. Written permission must be granted for off-site BMPs
  - ✓ Plan sheets
    - Limits of disturbance clearly delineated
    - Drainage/flow patterns indicated
      - Verify BMP selected is appropriate for the flow based on the sub-areas from the drainage map
    - Existing and proposed contours labeled

- Locations and callouts of BMPs that reference phasing chart
- Legend of proposed ESC devices
  - ESC phasing chart
    - Phasing of project
    - Project stages
    - BMP plan reference numbers
    - BMP descriptions
    - BMP removal times
    - Notes

— ESC measures prior to land disturbance

- ✓ Protection of undisturbed areas
- ✓ Perimeter controls
- ✓ Stabilized construction entrance
- ✓ Stabilized parking/delivery/staging Area
- ✓ Existing inlet protection

— ESC measures during land disturbance and construction work

- ✓ Isolation of inactive areas
- ✓ Concrete washout location shown
- ✓ Soil stockpiles, location, stabilization & protection
- ✓ Soil stabilization (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 erosion control blankets, sod, or other suitable stabilization for concentrated flow areas larger than ½ acre
  - Other linear sediment control devices that trap sediment as water passes through the medium (e.g. biodegradable logs, filter socks, synthetic sediment barrier, etc)
  - Separate BMPs provided for curb inlet and junction box/area inlet protection, Condition A & B
  - Sediment traps
    - Designer to provide specific design if receiving larger than 2.0 ac of drainage area
    - Overflow location and elevation called out on plan
  - Sediment basins (applicable only to drainage areas ≥ 10 acres)
    - Design information shown (chart filled out)
    - Blowup detail of each sediment basin
      - Baffle type and location
      - Skimmer size
      - Emergency spillway location and type of stabilization
      - Stabilization of banks
      - Contours
      - Riser pipe & size indicated
      - Cleanout elevation indicated – all inflow pipe elevations ABOVE cleanout level
      - Anti-flotation device size indicated
    - Notes about when basin CAN be removed - See OPMC 18.130.057 and OPMC 16.200.060
- ✓ 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 watercourses (temporary stream crossings, stream diversion, etc)
  - Blowup details of permanent culverts showing contours, sediment control, and stabilization BMPs

\_\_\_ ESC measures after land disturbance and construction work

- ✓ Permanent stabilization (seeding, sodding, etc.)
  - Appropriate BMPs at the end of stub streets to prevent erosion if required
  - Planting schedule and layout
  - Completion certification if required
  - Long-term maintenance agreement for plantings if required
- ✓ Post-construction erosion and sediment control
  - BMPs labeled on plans that will be converted to stormwater treatment facilities 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

### 3.8 TRAFFIC CONTROL PLAN

\_\_\_ Pavement connections or encroachments to collectors and thoroughfares require *PROJECT SPECIFIC* traffic control plan.

\_\_\_ Conforms with MUTCD and City of Overland Park Traffic Control Handbook

\_\_\_ Must include plan for non-work times (non-work periods)

\_\_\_ Includes dimensions for distances between flashing arrows, advanced warning signs, channelizers, etc.

\_\_\_ Type III barricades shown to keep proposed streets closed until open to public

\_\_\_ Pedestrian traffic control plan (detour routes) when encroaching into sidewalk and highly traveled areas (schools, churches, Downtown OP) --- Check utility sheets for encroachments

### 3.9 DETAIL SHEETS

\_\_\_ Must use City standard details – except concrete mix does not need to meet KCM MB mix designs

\_\_\_ Other details on private property – Can use City standard details if desired, but not required