Commercial Site Construction Plan Review Checklist

Planning and Development Services Planning www.opkansas.org

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 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

OTHER STANDARDS

- Manual of Uniform Traffic Control Devices (MUTCD)
- 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
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 ¼ to ½ 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 ≥ 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
  o 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 ¼ to ½ 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
  o Existing ramps that are out of compliance will be required to be reconstructed
✓ Detectable warning surfaces for private drives provided as follows:
  o For private drives that are signalized, or expected to be signalized in the future, truncated domes are required
  o 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
  o Existing site conditions
  o Identify sensitive areas (stream corridor, trees, etc) & areas of special concern
  o Describe phases
  o 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
  o Limits of disturbance clearly delineated
  o Drainage/flow patterns indicated
    ▪ Verify BMP selected is appropriate for the flow based on the sub-areas from the drainage map
  o 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 KCMMB mix designs

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