

REQUIREMENTS FOR PUBLIC IMPROVEMENT PLANS

CITY OF JEFFERSON, MISSOURI

All plans submitted to the Department of Public Works shall include the following information and be accompanied by the appropriate supplemental documentation:

I. GENERAL

- A. Plan Size – approximately 22” x 34”
- B. Title block giving:
 - 1. Owner or developer’s name
 - 2. General location or subdivision name
 - 3. Date prepared and revision date(s)
 - 4. Consultant’s name
 - 5. Name of product (street, private sewer number, etc.)
- C. Engineer’s seal and signature
- D. Scale used for drawing labeled in both plan and profile section of sheet
- E. North arrow
- F. Bench Mark (U.S.G.S. Datum)
- G. All numbers (stations, offsets, elevations) called out to the nearest 1/100 of a foot (0.01’)
- H. Existing right-of-way, adjoining property lines and easement lines with dimensions
- I. Proposed right-of-way and easement lines with dimensions, min. width = 15 feet
- J. Book and page of recorded dedication documents, other than plats
- K. Existing features within 50 feet of proposed improvements: pavements, utilities structures, creeks, ditches, etc.
- L. Approval line with date
Approved by: _____ Date: _____
Matthew J. Morasch, P.E.,
Director of Public Works
- M. Plat (if applicable)
- N. Legal descriptions of easements outside platted area (if applicable)

- O. Label private infrastructure as being private, not to be maintained by the City of Jefferson

II. STREET PLANS

- A. Proposed street and right-of-way location
 - 1. Pavement and right-of-way width in accordance with Chapter 33 of the Code of the City of Jefferson. See Street Standards table
 - 2. Design speed of 30 mph. (If 30 mph design speed not obtained, provide explanation and request exception)
 - 3. Street name labeled on plan view.
- B. Right-of-way lines and pavement of all adjoining existing streets
- C. The proposed pavement construction centerline
 - 1. Stationing and alignment, including curve data (delta, degree, radius length, PI, PC, and PT)
 - 2. Distance from right-of-way
 - 3. Angle of intersection with other streets
 - a. Label if not 90 degrees
 - b. 70 degree minimum
- D. All existing and proposed drainage facilities. Design shall be in accordance with Chapter 31 of the Code of the City of Jefferson. Submittal in accordance with storm water drainage guidelines and requirements
- E. A typical cross-section of the proposed street on each sheet of the plans
 - 1. Pavement type and thickness – 6" PCC or 5 ½" AC Base with 1-1/2" Grade BP-1 AC Surface Course for local streets
 - 2. Cross slope – 2%
 - 3. Bench behind curb – 10 feet at 2% slope
 - 4. 2:1 max cut and fill slopes, 3:1 or flatter desired
 - 5. Utility trench and layout of proposed utilities within trench with separation dimensions
- F. A profile of the proposed street
 - 1. The existing ground line as surveyed in the field shown as dashed line
 - 2. Previously approved centerline of proposed intersecting streets shown as dashed lines
 - 3. The proposed finished grade centerline shown as solid line
 - a. Grades on tangents

- b. Curve data (length, rate of curvature, middle ordinate, PVI, PVC and PVT).
 - c. Elevations every 25 feet
 - d. The cross slope of through streets shall be maintained. Side street profiles shall include appropriate vertical curves (minimum $k=2$ at intersections) to transition from cross slope of through street
 4. All utility crossing locations and elevations of all existing and proposed culverts, pipes, utilities and other underground structures
- G. Sidewalks and sidewalk ramps (design shall be in accordance with the latest edition of the City of Jefferson Standard Drawings)
 1. Width and thickness noted
 2. Greenway width noted
 3. Ramps with 'Type' noted
 4. Ramp and radii details with elevations to denote appropriate maximum grades(2% or less at intersections, etc.)
 5. 2% or less across intersections, street crossings and driveways (include intersection, street, driveway profiles to verify)
- H. Intersection Details
 1. Provide cross-slopes and elevations necessary to show how Radii, sidewalk ramps and cul-de-sacs drain and are pitched
 2. Radius returns with spot elevations
 3. Road transitions from regular cross-slope to matching street profile
- I. Sight Distance
 1. Quantify available sight distance in both directions from all proposed intersections, existing driveways and any critical proposed driveways/lots, and crests of hills
- J. All necessary roadway cross-sections
- K. Existing and proposed utility and mailbox or mailbox cluster locations, including any street lights, pedestals, fire hydrants, etc.
- L. Standard construction notes on each sheet of plans

- M. Intersection details. Provide elevation / transition information for all intersections and cul-de-sacs
- N. Temporary turnarounds and temporary easement, if necessary
- O. Standard construction notes on each sheet of plans

STANDARD STREET NOTES

1. The Department of Public Works must be notified at least 24 hours prior to beginning construction, including grading. No street or any part thereof will be accepted by the City of Jefferson unless proper notice has been given to the Department of Public Works in advance, so that the work will be inspected.
2. All construction indicated hereon shall be done in accordance with the standards and specifications of the City of Jefferson.
3. Joints for PCC pavement shall be installed every 12 feet for 6 inch thick pavement. Spacing for other pavement depths shall be two times the pavement thickness. If curb and gutter is placed separately, pavement joints shall match joints in curb and gutter and maximum spacing on curb and gutter joints shall be 10 feet.
4. Expansion joints shall be placed in curb and gutter at curb returns, inlet returns and drive approaches. 3/4" expansion material with 5/8" x 24" smooth dowels shall be placed at radius points. These dowels shall be greased and wrapped on one end with expansion tubes.
5. Reinforce joints in PCC pavement as follows:
 - a. Transverse sawed joints – not tied
 - b. Transverse construction joints – tie with 1/2" x 24" deformed bars at 12" centers
 - c. Longitudinal construction or sawed joints – tie with 1/2" x 24" deformed bars at 30" centers
6. All joints shall be sealed.
7. All disturbed right-of-way shall be sodded or seeded and mulched before the street will be accepted by the City.

III. STORM WATER DRAINAGE PLANS

- A. Design shall be in accordance with Chapter 31 of the Code of the City of Jefferson and the APWA Storm Drainage Design Manual. Design information shall be in form stipulated by same
1. Drainage area map (on plan sheets)
 2. Existing and proposed runoff calculations (on plan sheets)
 - a. 10 year design storm – residential
 - b. 25 year design storm – commercial and residential downstream from commercial
 - c. 50 and 100 year overflow without flooding a structure
 3. Inlet calculations (on plan sheets)
 4. Pipe capacity calculations (on plan sheets)
 - a. $3 \text{ fps} < \text{velocity} < 15 \text{ fps}$ (min. grade 0.50%) (max. grade-no more than 10 ft/s outflow velocity w/o energy dissipation structure, not considering rip-rap)
 - b. Headwater depth, min. freeboard = 1foot
 5. Detention and erosion protection calculations (on plan sheets)
- B. Proposed drainage facility location
1. Structures
 - a. Station and offset
 - b. Type and size
 - c. Drainage area
 - d. Top of cover elevation
 - e. Flowlines of all pipes
 1. Minimum depth of structure 3.50 feet (Type A), 4.00 feet (Type C)
 2. Minimum drop through structure 0.10 feet
 3. Elevation of top of pipe in equal to or above top of pipe out of structure
 2. Pipes and open channels
 - a. Location
 - b. Type, size, length, slope (min. grade 0.50%) (measured inside of structure to inside of structure) (max. grade-no more than 10 ft/s outflow velocity w/o energy dissipation structure, not considering rip-rap)
 - c. Existing ground line as surveyed in field shown as dashed line
 - d. Proposed ground line shown as solid line, min. cover over line =1 foot (not including pavement on cross road pipes)
 - e. Full depth chat backfill or 95% compaction under roadways

- f. Pipe profile showing pipe length and dimension to scale (including top of pipe and bottom of pipe, (not just one line representing the pipe)) on profile view
 - g. All utility crossing locations and elevations of other existing and proposed culverts, pipes, utilities and other underground structures
 - h. Headwater depth of all cross road pipes labeled
 - i. Drainage area
 - j. Show riparian corridor and applicable structure setbacks
3. Detention basins
 - a. Limits of fill for berm
 - b. Limits of ponding area
 - c. Outlet
 4. The location of all creeks, ditches, swales, pipes of other drainage facilities that drain to or away from any part of the proposed storm water drainage system
 5. Written agreement must be provided from adjacent property owner if runoff is concentrated and/or redirected downstream
- C. Recorded Easements with book and page noted on plan
 - D. Existing and proposed utility and mailbox or mailbox cluster locations, including any street lights, pedestals, fire hydrants, etc.
 - E. Erosion and Sediment Control Plan (reference E & SC Checklist and SWQ Benefits Summary Checklists) (needed also for STREET/SANITARY PLANS)
 - F. Floodplain, Floodway location, elevation (separate permit required for work within the 100 year floodplain/floodway (floodway requires a study and a no-rise certificate))
 - G. Land Disturbance Permit and associated SWPPP from MDNR
 - H. Post Construction Storm Water Quality BMP(s), associated calculations and details – in accordance with Chapter 31 of the Code of the City of Jefferson and the APWA/ MARC Manual for Best Management Practices for Storm Water Quality
 - I. Standard construction notes on each sheet of plans

STANDARD STORM WATER DRAINAGE SYSTEM NOTES

1. The Department of Public Works must be notified at least 24 hours prior to beginning construction, including grading. No storm water drainage system or any part thereof will be accepted by the City of Jefferson

unless proper notice has been given to the Department of Public Works in advance, so that the work will be inspected.

2. All construction indicated hereon shall be done in accordance with standards and specifications of the City of Jefferson.
3. Detention basins are to be constructed before any pavement is placed.
4. All pipes shall be installed before adjacent pavement is installed.
5. All fills shall be compacted as placed and made prior to trench excavation.
6. Minimum cover over storm water drainage pipes = 1 foot.
7. All disturbed areas shall be repaired before the storm water drainage system will be accepted by the City.

NOTE: If storm water drainage systems are designed as part of a street plan, notes 3, 4, 5, and 6 can be added to the standard street notes.

IV. SANITARY SEWER PLANS

- A. Contact the Wastewater Division to determine the designation for the proposed sewer.
 1. Designation for each proposed sanitary sewer line (LINE "A", "B", "Realignment of...", "Extension of....." etc.)
- B. The proposed sewer location
 1. The location and station of each manhole and lamphole
 - a. Lampholes only permitted at locations where lines cannot or will not be extended in the future
 - b. Maximum distance between manholes = 400 feet
 - c. Maximum distance between manhole and lamphole = 150 feet
 2. The maximum angle of deflection between the lines into and out of each manhole = 90 degrees
 3. The location and station of all cross road service lines and all proposed wye locations
- C. The location, size, station, and name of the existing sanitary sewer to which the proposed sanitary sewer is to connect
- D. A profile of the proposed sanitary sewer

1. The existing ground line as surveyed in the field shown as dashed line
 2. The proposed ground line shown as solid line, minimum cover over sanitary sewer =3 feet
 - a. Full depth rock backfill or 95% compaction under roadways
 - b. Ductile iron pipe or concrete encasement under creeks, min. clearance = 1 foot
 - c. Ductile iron pipe or concrete encasement under roadways where cover is less than 3 feet, min. cover = 2 feet
 3. The station, location, type, top of cover elevation, and flow line elevation of all manholes and lampholes, upper and lower flowlines of drop manholes
 - a. Min. depth of manhole = 4 foot
 - b. Max. depth of lamphole = 6 feet (as of January 7, 2001)
 - c. Max. inside drop = 24 inches, with paved drop invert
 - d. Min. outside drop = 2 feet
 4. The length, size, and type of pipe and grade of each section of sanitary sewer; min. grade = 0.5% for 8 inch diameter pipe (measured inside of structure to inside of structure)
 5. Show pipe length and dimension to scale (including top of pipe and bottom of pipe, (not just one line representing the pipe)) on profile view
 6. Utilities crossings- all locations and elevations of all other existing and proposed culverts, pipes, utilities and other underground structures
 7. Location and station of all proposed wye locations
- E. Existing and proposed utility and mailbox or mailbox cluster locations (min. 18 inch clearance vertical and ten(10) feet horizontal from water lines and services and the proposed sanitary sewer line), including any street lights, pedestals, fire hydrants, etc.
- F. Standard construction notes on each sheet of plans

STANDARD SANITARY SEWER NOTES

1. The Department of Public Works must be notified at least 24 hours prior to beginning construction, including grading. No sanitary sewer line or any part thereof will be accepted by the City of Jefferson unless proper notice has been given to the Department of Public Works in advance, so that the work can be inspected.
2. All construction indicated hereon shall be done in accordance with the standards and specifications of the City of Jefferson.

3. All fills shall be compacted as placed and made prior to trench excavation.
4. Minimum drop through manhole = 0.10 feet.
5. Minimum cover over sewer line = 3 feet.
6. All sanitary sewer line extensions or additions shall be inspected, tested, (including pressure and mandrel testing) and accepted by the Department of Public Works prior to connection to a functioning portion of the City sanitary sewer system. The department must be notified prior to, and an inspector must be present at the time of connection to the existing system.
7. All disturbed areas shall be repaired before the sanitary sewer system will be accepted by the City.

V. TRAFFIC CONTROL PLANS

- A. When traffic on existing streets is potentially impacted by construction of new streets, storm water drainage systems, sanitary sewer systems or public utilities, a traffic control plan will be required
- B. If new streets are being proposed, additional permanent traffic control striping, signage, etc. may be required as a part of the approved plan
- C. Either temporary, permanent or both; plans shall include all necessary signage and striping (temporary or otherwise), electronic message boards, pedestrian signage, barricades, delineators, cones, etc. to ensure that existing traffic is informed of the construction impacting the traveled way
- D. All proposed traffic control devices and proposed layouts and phasing shall be in accordance with the latest edition of the MUTCD Manual
- E. Please refer to requirements above in Section II. STREET PLANS regarding plan contents, approval information, etc. as Section V. TRAFFIC CONTROL PLANS will have mostly similar requirements

DOCUMENT CHECKLIST
PLANS FOR PUBLIC IMPROVEMENTS
CITY OF JEFFERSON, MISSOURI

PLAT (IF APPLICABLE) _____

LEGAL DESCRIPTIONS/ COPIES OF EASEMENTS TO REVIEW _____

STREET PLANS:

PLAN-PROFILE SHEET(S) _____

CENTERLINE PROFILE OBTAINED IN FIELD _____

30 MPH DESIGN SPEED OBTAINED, IF POSSIBLE/PRACTICAL _____

STORM WATER DRAINAGE SYSTEM INFORMATION (SEE BELOW) _____

SIDEWALK AND SIDEWALK RAMP INFORMATION _____

INTERSECTION DETAILS _____

SIGHT DISTANCE INFORMATION _____

UTILITY INFORMATION _____

STORM WATER DRAINAGE SYSTEM PLANS:

PLAN-PROFILE SHEET(S) _____

DRAINAGE AREA MAP (ON PLAN SHEETS) _____

EXISTING AND PROPOSED RUNOFF CALCULATIONS
(ON PLAN SHEETS) _____

INLET CAPACITY CALCULATIONS
(ON PLAN SHEETS) _____

PIPE CAPACITY CALCULATIONS
(ON PLAN SHEETS) _____

DETENTION CALCULATIONS
(ON PLAN SHEETS) _____

UTILITY INFORMATION _____

EROSION AND SEDIMENT CONTROL PLAN, BMPS _____

FLOODPLAIN, FLOODWAY LOCATION, ELEVATIONS AND PERMITS _____

LAND DISTURBANCE PERMIT AND ASSOCIATED SWPPP FROM MDNR _____

STORM WATER QUALITY BENEFIT SUMMARY, BMPS _____

50 AND 100-YEAR OVERFLOW PROVIDED _____

MIN. LOWEST FINISHED FLOOR ELEVATIONS (WHERE REQUIRED) _____

25' RIPARIAN CORRIDOR SHOWN (WHERE REQUIRED) _____

SANITARY SEWER PLANS:

PLAN-PROFILE SHEET(S) _____

CENTERLINE PROFILE OBTAINED IN FIELD _____

EXISTING MANHOLE ELEVATIONS OBTAINED IN FIELD _____

UTILITY INFORMATION _____

PROPOSED WYE LOCATIONS AND STATIONS _____

MIN. LOWEST FINISHED FLOOR ELEVATIONS (WHERE REQUIRED) _____

TRAFFIC CONTROL PLANS:

PLAN SHEET(S) _____

PROPOSED SIGNAGE, STRIPING, ETC. USING MUTCD GUIDELINES _____

DETAILS OF SIGNAGE, STRIPING, ETC. USING MUTCD STD. ON PLANS

PHASING, SEQUENCING _____

UTILITY INFORMATON (IF APPLICABLE) _____

Completed by _____ Date _____