



**Manual of
Infrastructure
Standards
for
Right of Way
Restoration**

**Public Works Dept.
January 2004**

MANUAL OF INFRASTRUCTURE STANDARDS INDEX

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GENERAL REQUIREMENTS

As stated in Chapter 13.12 of the Overland Park Municipal Code, all earth, materials, sidewalk, pavement, crossing, storm sewer, utilities, public improvements or improvements of any kind damaged or removed by the service provider shall be fully repaired and replaced promptly by the ROW-user at its sole expense and the reasonable satisfaction of the City. Upon determination by the City Engineer that such repair or replacement is a public safety matter, all such repair or replacement shall be commenced within twenty-four hours of notice from the City, or the City Engineer may direct the City to make such repair or replacement and bill the right-of-way user for the City cost.

All construction materials shall conform to Chapter 13.02, unless otherwise directed by the City Engineer.

After any excavation, the permittee shall restore all portions of the right of way to the same condition or better condition that it was prior to the excavation.

All excavation, backfilling, restoration and replacement work shall be in accordance with the current Standard Details, on file in the office of the City Engineer. The Standard Details shall be adopted and amended by the City Engineer.

In order to ensure public safety and to protect existing underground facilities, all horizontal directional drilling construction work shall conform to the current edition of the Horizontal Directional Drilling Guidelines Handbook, on file in the office of the City Engineer. The Horizontal Directional Drilling Guidelines Handbook shall be adopted and amended by the City Engineer.

All asphaltic concrete shall be constructed as specified in the "Overland Park Technical Specification for Asphaltic Concrete", available in the office of the City Engineer. If specified asphaltic concrete is not available, the City Engineer, at his discretion, may allow the use of an alternate asphaltic concrete mix.

The provisions of the Standard Specifications for State Road and Bridge Construction, Kansas Department of Transportation, current edition and special provisions (hereinafter Standard Specifications), are incorporated, except as hereinafter specified.

Failure of permittee to notify the City Engineer to schedule an inspection at the start of backfilling operations shall result in re-excavation, removal and recompaction of the backfill, and / or repair pavement, at the permittee's expense, to the reasonable satisfaction of the City Engineer.

Definitions:

Paved Portion of the Right of Way

Paved portion of the right of way shall include the area within any existing or future public street pavement, under any existing or future curb and gutter, median, asphalt path, concrete sidewalk, or existing concrete,

asphalt, or gravel driveway approach. It shall also include the area under any future driveway approach, when the location is known.

Unpaved Portion of the Right of Way

The unpaved portion of the right of way shall include any area outside of the paved portion.

Notification of Emergency Services

The Overland Park Police Department, Fire Department and Med-Act shall be notified twenty-four hours in advance of any street closure. The City Engineer will allow closing of streets only with prior approval at the time permit is issued.

Overland Park Police Dept. (Non-emergency)	913-895-6300
Fire Dept. and / or Med-Act ambulance (Non-emergency)	913-432-1717

EXCAVATIONS IN THE UNPAVED PORTION OF THE RIGHT OF WAY

Definition: Unpaved portion of the right of way shall include any area outside of the paved portion. See also definition for paved portion of the right of way.

Utility Locates

Prior to commencement of any excavation, the permittee shall identify and locate any buried facilities in accordance with Chapter 13.12.

Trenching

The contractor shall not open more trench in advance than is necessary to expedite the work. One block or four hundred feet (whichever is the shorter) shall be the maximum length of open trench permitted on any line under construction.

Bracing and Shoring

Contractor shall provide adequate bracing, sheeting, and shoring, as necessary, to provide protection for the workmen and the work. All bracing, sheeting, or shoring shall conform to Chapter 15.08. The contractor shall brace and shore all trenches in full accordance with Occupational Safety and Health Standards - Excavations; Final Rule 29 CFR Part 1926.

Inspection Requirements for General Permits

Unpaved Portion of the Right of Way

For general permit activity, not associated with a new one / two-family residential home building permit, in unpaved portion of the right-of way; permittee shall notify the City Engineer to schedule a minimum of one inspection: upon completion of all right-of-way restoration activities, including concrete, sod or seed work. If weather conditions are such that concrete, sod or seed work

cannot be performed, permittee shall notify City Engineer after work is substantially complete, except for weather dependent work. Permittee shall notify the City Engineer to schedule a second inspection after all restoration work has been completed, including concrete, sod or seed. When all restoration work is completed to the reasonable satisfaction of the City Engineer, the two-year maintenance period will begin.

In addition to the required scheduled inspections, the City Engineer may choose to inspect the on-going permitted work at any time and may require compaction testing at the permittee's expense to ensure that all requirements of the approved permit are being met.

Inspection Requirements for Permits Associated with a Residential Home Building Permit Unpaved Portion of the Right of Way

For permit activity associated with new one / two-family residential home building permits, in the unpaved portion of the right-of-way; permittee will notify the City Engineer to schedule one inspection, a minimum of twenty-four hours in advance of the start of backfilling operations. When all backfill work is completed to the reasonable satisfaction of the City Engineer, the right of way permit will be closed and the two-year maintenance period will begin.

In addition to the required scheduled inspections, the City Engineer may choose to inspect the on-going permitted work at any time and may require compaction testing at the permittee's expense to ensure that all requirements of the approved permit are being met.

If the excavation occurs on the opposite side of the street from the permit location, in front of an existing residence; the permittee will be required to restore the right of way to its original condition. This work shall including clean up, grading, and sodding. Permittee shall notify the City Engineer to schedule a final inspection after all restoration work has been completed. When all restoration work is completed to the reasonable satisfaction of the City Engineer, the right of way permit will be closed and the two-year maintenance period will begin.

Backfill

Embedment material around pipe or conduit shall be as specified by utility. If not otherwise specified, embedment material around pipe or conduit shall be crushed stone or siliceous gravel meeting the requirements of Section 1102 of the Standard Specifications, Aggregate Designation CA-5, except that the material passing the No. 200 sieve may exceed 2.5% per weight; to be placed in not more than six inch layers.

CA-5 Gradation

<u>Sieve</u>	<u>% Retained</u>
3/4"	0-5
3/8"	40-60
No. 8	95-100

Embedment material around pipe or conduit may extend up to a maximum of twelve inches above the top of the pipe. Removable flowable fill may be used in lieu of embedment material.

Tamped soil backfill may be used in the unpaved portion of the right of way. All tamped soil backfill material shall conform to Chapter 13.03. All unstable and unsuitable materials shall be removed and disposed of off site. Tamped soil backfill, placed in a maximum of eight inch loose lifts, shall be compacted, using vibratory equipment for each lift, to a minimum of ninety percent of standard proctor density. Under no circumstances shall any paving material from excavations in the street be used for backfill material outside the roadway.

A quick-setting removable flowable fill material, in conformance with Chapter 13.02, may be used in lieu of soil backfill. Removable flowable fill, when used in excavations in proposed roadways, shall be placed up to the existing surface. Removable flowable fill, when used outside the roadway, shall be placed up to within eighteen inches of the existing surface. Soil, placed in the top eighteen , shall be free of clods, rocks, trash, and other debris and shall be suitable for supporting vegetation.

If an excavation cannot be backfilled and will be left unattended, the contractor shall adequately cover and /or fence the excavation. No excavation shall be left unattended in excess of seventy-two hours, without permission of the City Engineer.

EXCAVATIONS IN THE PAVED PORTION OF THE RIGHT OF WAY

Definition: Paved portion of the right of way shall include the area within any existing or future public street pavement, under any existing or future curb and gutter, median, asphalt path, concrete sidewalk, or existing concrete, asphalt, or gravel driveway approach. It shall also include the area under any future driveway approach, when the location is known.

Excavations in Existing Public Streets

Utility Locates and Trenching

Prior to commencement of any excavation, the permittee shall identify and locate any buried facilities in accordance with Chapter 13.12. The contractor shall not open more trench in advance than is necessary to expedite the work. One block or four hundred feet (whichever is the shorter) shall be the maximum length of open trench permitted on any line under construction.

Sawing and Benching a Street Cut

Prior to replacement of any type of pavement, the pavement shall be sawed on each side of the required excavation to its full depth .

The size of the saw cut shall be twelve inches greater in all directions than the size of the excavation. This is to provide a minimum of a twelve-inch bench of undisturbed subgrade surrounding the excavation. All broken pavement shall be removed from the site.

Sawing Concrete Curb

Concrete curb shall be sawed to its full depth and removed and replaced to the nearest contraction or expansion joint. If an adjacent section of curb and gutter is cracked, chipped, or otherwise damaged in the process of removal, it shall also be removed and replaced to the nearest joint. See also Concrete Construction / Replacement.

Bracing and Shoring

Contractor shall provide adequate bracing, sheeting, and shoring, as necessary, to provide protection for the workmen and the work. All bracing, sheeting, or shoring shall conform to Chapter 15.08. The contractor shall brace and shore all trenches in full accordance with Occupational Safety and Health Standards - Excavations; Final Rule 29 CFR Part 1926.

Inspection Requirements for General Permits Paved Portion of the Right of Way

For general permit activity in the paved portion of the right-of-way, permittee will notify the City Engineer to schedule a minimum of two inspections. One a minimum of twenty-four hours in advance of the start of backfilling operations in any cut in an existing street or excavation under future public street; or under any existing or future curb and gutter, median, asphalt path, concrete sidewalk, or driveway approach and a second inspection upon completion of all right-of-way restoration activities, including concrete, asphalt, sod, or seed. If weather conditions are such that concrete, asphalt, sod, or seed work cannot be performed, permittee shall notify City Engineer after work is substantially complete, except for weather dependent work. Permittee shall notify the City Engineer to schedule a third inspection after all restoration work has been completed, including concrete, asphalt, sod, or seed. When all restoration work is completed to the reasonable satisfaction of the City Engineer, the right of way permit will be closed and the two-year maintenance period will begin.

If permitted activity includes concrete work, such as replacement of curbs, new construction or replacement of sidewalks and/or driveway approaches; an additional inspection shall be required. This inspection shall include form locations and grades, and subgrade prior to the placement of any concrete. Contractor shall notify the City Engineer to schedule an inspection a minimum of twenty-four hours in advance of concrete placement. Permittee shall notify the City Engineer to schedule a

final inspection after all restoration work has been completed, including backfill, right of way grading, clean up and sod.

Except in the event of an emergency, permittee shall notify the City Engineer a minimum of three days in advance of any street closure. No such closure shall take place without notice and prior authorization from the City. See also Notification Emergency Services and Traffic Control.

Inspection Requirements for Permits Associated with a Residential Home Building Permit Paved Portion of the Right of Way

For permit activity associated with a new one / two family residential building permit, in the paved portion of the right-of-way; permittee will notify the City Engineer to schedule one inspection, a minimum of twenty-four hours in advance of the start of backfilling operations. When all backfill work is completed to the reasonable satisfaction of the City Engineer, the right of way permit will be closed and the two-year maintenance period will begin.

The builder, under the building permit, shall be responsible for constructing the future sidewalk and driveway entrance and complete restoration work, including clean up, grading, and sodding.

If permitted activity includes concrete work, such as replacement of curbs, new construction or replacement of sidewalks and/or driveway approaches; an additional inspection shall be required. This inspection shall include form locations and grades, and subgrade prior to the placement of any concrete. Contractor shall notify the City Engineer to schedule an inspection a minimum of twenty-four hours in advance of concrete placement. Permittee shall notify the City Engineer to schedule a final inspection after all restoration work has been completed, including backfill, right of way grading, clean up and sod.

If the excavation occurs on the opposite side of the street from the permit location, in front of an existing residence; the permittee will be required to restore the right of way to its original condition. This work shall include any clean up, grading, and sodding. Permittee shall notify the City Engineer to schedule a final inspection after all restoration work has been completed. When all restoration work is completed to the reasonable satisfaction of the City Engineer, the right of way permit will be closed and the two-year maintenance period will begin.

Backfill

Embedment material around pipe or conduit shall be as specified by utility. If not otherwise specified, embedment material around pipe or conduit shall be crushed stone or siliceous gravel meeting the requirements of Section 1102 of the Standard Specifications, Aggregate Designation CA-5, except that the material passing the No. 200 sieve may exceed 2.5% per weight; to be placed in not more than six inch layers.

CA-5 Gradation

<u>Sieve</u>	<u>% Retained</u>
3/4"	0-5
3/8"	40-60
No. 8	95-100

Embedment material around pipe or conduit may extend up to a maximum of twelve inches above the top of the pipe. Removable flowable fill may be used in lieu of embedment material.

No soil backfill shall be used in the paved portion of the right of way.

Above embedment material, quick setting removable flowable fill shall be placed up to the bottom of the surrounding existing pavement. Removable flowable fill shall conform to Chapter 13.02.

If authorized by the City Engineer, aggregate base material, Type AB-3, Overland Park Modified may be used in lieu of removable flowable fill. AB-3 backfill shall be placed in a maximum of eight inch loose lifts, using vibratory equipment for each lift, to a minimum of ninety-five percent of standard proctor density. At the time of compaction, AB-3 shall be within zero to minus two percent of optimum moisture. If AB-3 is used, permittee shall employ a testing laboratory approved by the City Engineer, which shall certify the proper backfilling of any existing street cut, or excavation under existing curb and gutter. See Compaction Testing.

Authorization to substitute AB-3 for removable flowable fill will be given only due to special circumstances related to weather conditions, availability of materials, or duration of street closure, etc.

Compaction Testing

Permittee shall employ a testing laboratory approved by the City Engineer, which shall certify the proper backfilling of any excavation in the paved portion of the right of way. The permittee shall pay all costs associated with such testing. A list of approved testing laboratories shall be on file in the office of the City Engineer. The compaction testing provision shall be waived when removable flowable fill is used as backfill, or with the permission of the City Engineer. The permittee shall provide a copy of the compaction test results to the City Engineer's office prior to the final inspection. Start of the two-year maintenance period shall not commence until the compaction test results have been received and approved by the City Engineer. If test results do not meet specified compaction requirements, the permittee, at his own expense, shall be required to re-excavate, remove and recompact backfill, and repair pavement to the reasonable satisfaction of the City Engineer.

Plating a Street Cut

In accordance with Chapter 13.12, any excavation left overnight on any thoroughfare or collector street shall be adequately covered with a steel plate. The plate shall be securely anchored, and all edges of the plate shall be ramped with hot mix asphaltic concrete. If cold weather prohibits the availability of hot mix asphaltic concrete, cold mix may be used, so long as it is maintained in a smooth and driveable condition. Permittee shall be required to post a WB-1 “Bump” advance warning sign with flashing light a minimum of two hundred fifty feet ahead of a steel plate. See also Traffic Control. Any excavation left overnight on any residential street shall either be plated as stated above or backfilled up to the surface of the street. Under extenuating circumstances, if an excavation cannot be backfilled, and must be left unattended overnight, the excavation shall be adequately covered. If temporary surfacing material is used, it shall be maintained in a smooth and driveable condition. No excavation shall be left unattended in excess of seventy-two hours, without permission of the City Engineer. The permittee assumes the sole responsibility for maintaining proper barricades, plates, safety fencing and/or lights as required from the time of opening of the excavation until the excavation is surfaced and opened for travel.

Repairing a Street Cut

In accordance with Chapter 13.12, in addition to its own street cuts, permittee must also restore any area within five feet of the new street cut that has been previously excavated, including the paving and its aggregate foundations. In the event of lengthy longitudinal street cuts, the City Engineer may require the entire lane to be repaved.

The majority of streets in the City of Overland Park are constructed of bituminous materials, consisting of: full depth asphaltic concrete, asphaltic concrete over aggregate base, asphaltic concrete over cement treated base, or seal coat over aggregate base;

Therefore, asphaltic concrete street repair shall be performed by either Type I or Type II method, unless otherwise approved by the City Engineer.

Asphaltic Concrete Street Repair

Asphaltic concrete street repair and restoration shall be performed by one of following methods:

**Type I Asphaltic Concrete Street Repair
High Early Strength Concrete Base with
Asphaltic Concrete Surface**

**Type II Asphaltic Concrete Street Repair
Full Depth Asphaltic Concrete**

**Type I Asphaltic Concrete Street Repair
High Early Strength Concrete Base with
Asphaltic Concrete Surface**

The minimum twelve-inch bench shall be excavated to a point not less than eight inches below the existing street surface or to the depth of the existing pavement thickness, whichever is greater. Across the backfilled excavation and resting on the twelve inch bench shall be poured a minimum of six inches of High Early Strength Concrete (AE), having a minimum compressive strength of three thousand pounds per square inch in twenty-four hours. High early strength concrete (AE) shall conform to Chapter 13.02. After twenty-four hours, or when specified strength is achieved, high early strength concrete shall be tack coated and two inches of hot asphaltic concrete surface course shall be placed and compacted to ninety-five percent of standard density. For residential streets, asphaltic concrete intermediate course shall be used in lieu of asphaltic concrete surface course. All asphaltic concrete mixes and tack coat shall conform to Chapter 13.02. The concrete surface shall receive tack coat not more than six hours prior to placing asphaltic concrete. Approved mix designs for concrete and asphaltic concrete shall be on file in the City Engineer's office prior to placement. This new asphaltic concrete surface shall be flush with existing street surface. Traffic shall not be permitted on any new asphaltic concrete surface until it is sufficiently cooled and will not rut.

**Type II Asphaltic Concrete Street Repair
Full Depth Asphaltic Concrete**

If removable flowable fill is used, and the excavation width exceeds six feet, a minimum of six inches of hot asphaltic concrete intermediate course may be placed in lieu of the high early strength concrete (AE). The asphaltic concrete intermediate course shall conform to Chapter 13.02. Tack coat shall be applied between all lifts of asphaltic concrete. Surfaces shall receive tack coat not more than six hours prior to placing asphaltic concrete. Two inches of hot asphaltic concrete surface course shall be placed and compacted to ninety-five percent of standard density. For residential streets, asphaltic concrete intermediate course shall be used in lieu of asphaltic concrete surface course. Asphaltic concrete surface course and tack coat

shall both conform to Chapter 13.02. Approved asphaltic concrete mix designs shall be on file in the office of the City Engineer prior to placement. This new asphaltic concrete surface shall be flush with existing street surface. Traffic shall not be permitted on any new asphaltic concrete surface until it is sufficiently cooled and will not rut. The City Engineer, at his discretion, may allow street repair with full depth asphaltic concrete, if the size of the excavation prohibits plating.

**Portland Cement Concrete Street Repair
Full Depth High Early Strength Concrete**

This option shall only be used for the repair of an existing full depth Portland Cement Concrete street. The minimum twelve-inch bench shall be excavated to a point not less than six inches below the existing street surface or to the depth of the existing pavement thickness, whichever is greater. Across the backfilled excavation and resting on the twelve inch bench shall be poured a minimum of six inches of High Early Strength Concrete (AE), having a minimum compressive strength of three thousand pounds per square inch in twenty-four hours. High early strength concrete shall conform to Chapter 13.02. An approved concrete mix design shall be on file in the office of the City Engineer prior to placement. This new concrete pavement surface shall be flush with the existing street surface.

Permanent Pavement Markings

Permittee shall be responsible for the replacement of permanent pavement markings on thoroughfare or collector type streets, which have been removed or disturbed as a result of any street cut. Permittee will be required to place temporary pavement markings immediately after placing pavement surface, until permanent pavement markings can be installed. Permanent pavement markings shall be replaced with like materials, in accordance with the latest edition of the "Manual on Uniform Traffic Control Devices", within fourteen days after the pavement surface has been placed, unless otherwise authorized by the City Engineer.

Excavations for Utility Relocation Work for Publicly Funded Street Projects

Excavations for utility relocation work for Public Works street projects shall conform to the requirements for excavations in existing public streets in the paved portion of the right of way with the following modifications:

Limits of flowable fill backfill shall extend under the proposed curb and gutter, as well as, under the proposed street pavement.

Authorization to substitute AB-3 for removable flowable fill will be given only due to special circumstances related to weather conditions, availability of materials, duration of street closure, etc. Authorization will generally be given

only for excavations in existing public streets, including curb, or under existing concrete sidewalk, asphalt path, or driveway approach.

Excavations under Existing Concrete Sidewalks or Driveway Entrances

Excavation in areas under existing concrete sidewalks or concrete driveway entrances shall conform to the requirements for excavations in existing public streets in the paved portion of the right of way with the following modifications:

Sawing Concrete Sidewalks or Driveway Entrances

Existing concrete sidewalk or concrete driveway entrances shall be sawed to their full depth and removed and replaced to the nearest contraction or expansion joint. If an adjacent section of sidewalk or driveway is cracked, chipped, or otherwise damaged in the process of removal, it shall also be removed and replaced to the nearest joint. See also Concrete Construction / Replacement.

Excavations in Future Public Residential or Collector Streets

This section applies to the full width of proposed and existing public street right of way where residential or collector streets are not in place at the time of utility installation, but will be constructed at a future date. Excavations in areas where future public residential or collector street pavement will be constructed shall conform to the requirements for excavation in existing public streets, in the paved portion of the right of way, with the following modifications:

Backfill

FOR SANITARY SEWER CONSTRUCTION ONLY, allowable backfill materials shall include tamped soil backfill. Tamped soil backfill material shall conform to Chapter 13.03 of the Municipal Code and General Technical Specifications for Privately Funded Public Improvements Section 2324. All unstable and unsuitable materials shall be removed and disposed of off site.

Tamped soil backfill shall be placed in maximum of eight inch loose lifts, and shall be compacted, using vibratory equipment for each lift, to a minimum of ninety-five percent of standard proctor density. The permittee shall employ a testing laboratory approved by the City, which shall certify the proper backfilling of all trenches under future street pavement. Testing shall be completed for each lift. The permittee shall provide a copy of the compaction test results to the City prior to the final subgrade preparation. If test results do not meet specified compaction requirements, the permittee at his expense, shall be required to re-excavate, remove and re-compact backfill, and repair pavement to the reasonable satisfaction of the City.

CONCRETE CONSTRUCTION / REPLACEMENT

General Requirements

Concrete Mix

All concrete used in construction of curbs, sidewalks, sidewalk ramps and driveway entrances shall be classified as K.C.M.M.B. 4K having a minimum twenty-eight day compressive strength of four thousand pounds per square inch. All concrete used in this work shall conform to Chapter 13.02. Approved concrete mix designs can be found on-line at www.kcmmb.org prior to placement. All concrete mixing, placing, and curing during hot and cold weather shall conform to the requirements of Chapter 13.02.060, Special Weather Conditions.

Subgrade

All subgrade for curbs, sidewalks, sidewalk ramps, and driveway entrances shall be uniformly compacted and evenly graded to the required subgrade elevation. All loose or extraneous material shall be removed from the subgrade and soft spots shall be uniformly recompacted prior to placement of concrete. The permittee shall have available adequate vibratory compaction equipment to accomplish the compaction as set forth above.

Forms

Forms used in concrete construction shall be of steel or wood, free from warp and shall be sufficiently strong and rigid and securely staked and braced to obtain a finished product correct to the dimensions, lines and grades required. All forms must be cleaned and oiled before each use. A slip-form machine, with electronic controls, may be used in lieu of forms for long sections of curb or sidewalk.

Reinforcing Steel

All fabrication and placement of reinforcing steel shall be in conformance with Section 703 of the Standard Specifications. All reinforcing shall be held in place and positioned by pins or bar chairs. Reinforcement for curbs or driveway entrances (if required) shall be new billet ASTM A615 Grade 40. If wire mesh is used, it shall be six- inch by six-inch number six welded wire fabric in sheet form. Rolled wire mesh shall not be allowed. Reinforcing of sidewalks will not be required.

Curing

All concrete curbs, sidewalks, sidewalk ramps, or driveway entrances shall be cured either by wet covering, waterproof covering, or liquid membrane seal. The curing period shall be a minimum of five days. Curing shall be commenced as soon as possible after the finishing operation and when the concrete has set sufficiently so that it will not be damaged in the process. Concrete curing

compound shall conform to Chapter 13.02.

Concrete Curbs

Concrete curb shall be constructed or removed and replaced in accordance with the requirements of Chapter 13.03.

The surface shall be shaped by use of a steel tool to produce the sections shown in the Standard Details. The edges shall be rounded with edgers to form the radii as indicated in the Standard Details. The surface shall be finished with a wooden or steel float and brushed.

One-half inch premolded expansion joints shall be placed at points of curvature, curb returns, curb inlets, and at two hundred fifty-foot centers. The material shall extend through the full curb section. Three smooth dowel bars shall be placed at each expansion joint at eight-inch spacing. Dowel bars shall be greased, capped, and supported on fabricated bar supports. Contraction joints shall be two inches deep, and placed at fifteen-foot intervals. If sawed, the sawing shall be completed within twenty-four hours of placement of concrete.

Curbs shall be accurately placed according to the line, grade, and cross section of the existing adjoining curbs. All replacement curbs must have sufficient grade to achieve positive drainage. The City Engineer may require removal and replacement of additional sections of curb in order to achieve positive drainage.

Concrete Sidewalks and Sidewalk Ramps

The width of any sidewalk repair shall be the same as that being replaced. The minimum allowable thickness shall be four inches, except within a driveway entrance or sidewalk ramp, where the minimum allowable thickness shall be six inches. The curb section through a sidewalk ramp shall conform to the Standard Details.

All sidewalk ramps shall be constructed or replaced in accordance with Chapter 13.08 and the Standard Details. If sidewalk and curb replacement is required at a residential street crossing, which has no sidewalk ramp, permittee shall be required to construct a sidewalk ramp.

The permittee shall provide adequate tools and equipment to produce quality workmanship in placing and finishing concrete. The sidewalk surface finish shall be a coarse texture wood float and broom finish.

The sidewalk surface shall be marked off into nominal squares of dimensions equal to the width of the sidewalk with a maximum distance between joints of seven foot. A standard joint tool having a width of one-eighth inch and depth of one-quarter of the sidewalk thickness, having a lip radius of one-eighth inch to one-quarter inch shall be used in forming the joints. All joints in the sidewalk shall be tooled. Joints shall be retooled after brooming. Expansion joints shall be constructed at locations where new sidewalk is longer than two hundred fifty feet; sidewalk abuts existing concrete curbs or driveway entrances. Expansion joints shall be formed with one-half inch wide prefabricated non-extruding filler and shall extend the full depth of the slab.

Concrete Driveway Entrances

Where construction requires the removal and replacement of existing concrete driveway entrances, such removal shall be accomplished by first sawing the existing driveway entrance full depth and removing all material to be replaced. Expansion joints shall be constructed at the back of curb and where the driveway entrance abuts existing sidewalk. Expansion joints shall be formed with one-half inch wide prefabricated non-extruding filler and shall extend the full depth of the slab. Concrete driveway entrances shall be constructed or replaced to a minimum thickness of six inches. It shall include welded wire fabric or reinforcing steel only if the existing driveway is so reinforced. Concrete driveway entrances shall receive a non-slip finish obtained by a wood float and hairbrush or broom applied transverse to the centerline of the driveway. All contraction joints in concrete driveway entrances shall be tooled. Contraction joints shall be tooled after brooming to provide a "picture frame" appearance.

Concrete Paver Brick Medians, Sidewalks, and Driveway Entrances

Where construction requires the removal of concrete paver brick in medians, sidewalks, or driveway entrances, replacement brick shall be red cobblestone-style concrete pavers. Paver brick shall meet the requirements of ASTM C-936. A minimum of four inches of K.C.M.M.B. 4K concrete base, must be placed and sufficiently cured prior to placement of any paver brick. Concrete used in this work shall conform to Chapter 13.02. An approved concrete mix design shall be on line at www.kcmmmb.org prior to placement.

All concrete mixing, placing, and curing during hot and cold weather shall conform to the requirements of Chapter 13.02.060, Special Weather Conditions. A maximum of one inch of compacted sand shall be required to provide a leveling course under brick. Concrete paver brick, which has been removed, may be reused provided it has not been damaged in any manner.

MISCELLANEOUS DRIVEWAY CONSTRUCTION / REPLACEMENT

General Requirements

All asphalt, decorative, or gravel driveways that are damaged or removed shall be constructed to the same widths and with the same material that existed prior to right-of-way work. No new construction of gravel driveways will be allowed. All driveway entrances shall be constructed on a prepared subgrade, compacted to ninety-five percent of standard density for a depth of six inches.

Asphalt Driveway Entrances

Where right-of-way activities require the removal and replacement of existing asphalt driveway entrances, such removal shall be accomplished by first sawing the existing driveway full depth and removing all material to be replaced. Asphalt driveway entrances shall be replaced with a minimum of six inches of commercial grade asphaltic concrete meeting the requirements of

Section 605 of the Standard Specifications, placed in maximum lifts of four inches. In no case shall it be less than that section being replaced. Placing and compaction of the asphalt driveway pavement shall be in accordance with the Standard Specifications.

Decorative Driveway Entrances

Where right-of-way activities require the removal of existing decorative rock driveway entrances, such removal shall be accomplished by first sawing the existing driveway full depth and removing all material to be replaced. Additionally, the exposed edge of the decorative rock treatment on the portion of the drive not removed must be protected before and after placement of adjacent concrete. In the event that the aforesaid edge is damaged, the decorative rock treatment shall be resawed, removed and replaced at a point where a straight line can be obtained at no additional expense to the city. Replacement and the finish may be modified to insure subsequent bonding of the decorative rock treatment. Prior to placement of the surface treatment, the concrete base must have cured for a minimum of seven days. Aggregate used in the surface treatment must match the existing aggregate in size, shape, gradation, and color, and placement must conform to the procedures used when the original treatment was placed. The permittee should contact the homeowner to ascertain the source of the materials used, and should use duplicates of those materials wherever possible. Any noticeable difference between the existing treatment and the replacement will be grounds for the rejection of the work.

Gravel Driveway Entrances

As stated above, no new construction of gravel driveway entrances will be allowed. Existing gravel driveway entrances may be replaced at existing width, but may not be widened. The replacement material shall consist of a minimum of six inches of AB-3, as specified above, which shall be laid watered, manipulated and compacted in lifts not to exceed three inches.

RESTORATION

Suitable Soil

Soil shall be free of clods, rocks, trash, and other debris and shall be suitable for supporting vegetation. The area shall be prepared such that sodding may be placed on bare soil. This will consist of cultivating, smoothing, removing of clods, surface stones of one inch in diameter or larger, and weeds.

Fertilizer

Fertilizer for sod shall be of an approved commercial brand composed of a minimum of 25% "Slow Release Nitrogen", 4-1-2 ratio or similar, such as 18-5-9, for Kentucky bluegrass or fescue sod, and 25-5-10 for zoysia sod.

Starter fertilizer for fescue and temporary rye seed shall be of an approved commercial brand composed of a minimum of 25% "Slow Release Nitrogen",

1-2-1 ratio, such as 13-25-12. Fertilizer for buffalo grass seed shall be composed of a fertilizer containing a minimum of 25% “Slow Release Nitrogen”, with an even composition such as 12-12-12.

Fertilizer shall conform to the State fertilizer laws, and shall conform to Section 2106 of the Standard Specifications. Furnishing and placing fertilizer shall be in accordance with Section 907 of the Standard Specifications. Fertilizer shall be uniform in composition, dry and free flowing, and shall be delivered to the site in the original unopened containers, each bearing the manufacturer's guaranteed analysis. Any fertilizer, which becomes caked or otherwise damaged, making it unsuitable for use, will not be accepted. Fertilizer shall be placed prior to seeding at not less than one pound of actual phosphorus per thousand square feet of sodding or seeding area.

Sodding

Disturbed turf in developed areas shall be sodded. Seeding will be allowed only in undeveloped areas or in median areas on thoroughfare and collector streets with established buffalo grass. Sod shall be replaced with like species. Kentucky bluegrass, turf-type fescue, or zoysia sod shall be used. In the case of mixtures of bluegrass / fescue and zoysia sod, zoysia shall be used. All sod materials shall conform to Section 2107 of the Standard Specifications.

Sod shall be machine cut at a uniform soil thickness of five-eighths of an inch, plus or minus one-quarter inch, at the time of cutting. Sod shall not be harvested or transplanted when moisture content (excessively dry or wet) will adversely affect its survival. Sod shall be reasonably free of disease, nematodes, and soil-borne insects. Sod shall also be free of objectionable grassy and broad leaf weeds.

A clean edge shall be established at the outer limits of the area to be sodded, so that good contact can be made between with the ends staggered in a running bond pattern. Each successively laid strip shall be pressed firmly up against the one next to it or up against the edge of the existing turf, to ensure good contact with no overlapping. Sod shall be staked in places where the slope exceeds 3:1. After placing sod, the area shall be tamped with a hand tamp or rolled with a lawn roller half filled with water. Rolling shall be done in a direction perpendicular to the direction in which the sod lengths were laid.

The permittee shall be responsible for watering sod daily or as often as necessary until it is firmly rooted and secure in place. Sod shall be sufficiently rooted and growing prior to the restoration inspection and the commencement of the two-year maintenance period.

Sodding Season

Bluegrass or fescue sod may be planted during the periods of March 1 to May 15 and September 1 to November 15. Bluegrass or fescue sod may be planted during the period, November 15 to March 1, when the soil and sod are workable. If bluegrass or fescue sod is planted between November 15 and March 1, the permittee shall maintain it until it is sufficiently

rooted and growing. Zoysia sod may be planted during the period April 1 to October 15.

Seeding

Seeding will be allowed only in undeveloped areas or in median areas on thoroughfare or collector streets with established buffalo grass. Hydro-seeding may be allowed in specific situations, in lieu of sodding, with permission of the City Engineer.

All seeding materials, bed preparation, and planting shall conform to the applicable requirements of Sections 903, 907, and 908 of the Standard Specifications. All disturbed areas shall be seeded as soon as practicable after construction. All areas to be seeded shall be disked, harrowed, or hand raked to a minimum of two inches to six inches before application of seed. The seedbed should be uniform and well packed. Seed shall be applied with an acceptable seed drill at a depth of one-half inch in a uniform manner. Broadcasting and hand raking to a depth of one-half inch will only be used on areas where it is impossible to operate a seed drill. The seed shall be covered to a depth of one-quarter to one-half inch with a shallow-set spike tooth harrow or other approved methods. After covering, the areas shall be firmed by rolling.

Mulch shall be spread uniformly in a continuous blanket. The mulch shall be anchored in the soil to a depth of two to three inches into the soil surface. Two or more passes may be required to anchor the mulch. No mulch shall be placed unless it can be anchored on the same day.

The seed mixture shall be one hundred percent turf type tall fescue. The mix shall be composed of a minimum of three approved species. The rate of application shall be a minimum of one pound of pure live seed per one thousand square feet of planting area.

Buffalo grass seed shall be used in median areas on thoroughfare and collector streets. Buffalo grass seed mixture shall be as follows: NaTurf Certified Cody, KN03 Applied. Available through Stock Seed Co., Murdock, NE 1-800-759-1520, or approved equal. The rate of application shall be a minimum of two pounds of pure live seed per one thousand square feet of planting area. If buffalo grass seeding is required at other times of the year, temporary seed shall be used, and the areas shall be fertilized and reseeded with buffalograss during the above time period.

For temporary seeding, the seed mixture shall be a one hundred percent annual ryegrass. The rate of application shall be a minimum of five pounds of pure live seed per one thousand square feet of planting area.

Seeding shall be maintained by the permittee until satisfactory growth is established, prior to the restoration inspection and the commencement of the two-year maintenance period.

Seeding Season

Fescue and temporary rye seeding season shall be from February 15 to April 20 and from August 15 to September 30. Buffalo grass seeding season shall be from April 20 to June 1.

Protection of Trees

All trees and plants shall be protected against injury from construction operations. The permittee shall take extra measures to protect trees, such as erecting barricades or fences around the drip line, and trimming low hanging branches to prevent damage from construction equipment. Trees shall not be endangered by stockpiling excavated material or storing equipment within the drip line of the tree. No backfill material exceeding four inches in depth shall be placed within the drip line area of any tree. When excavation is required within the drip line of any tree, the permittee shall take extra measures to protect as many roots as possible. All roots to be cut or removed shall be cut with a chain saw, trencher, or other methods that will leave a smooth cut surface. All roots exposed during excavation shall be protected to prevent the roots from drying out by covering the exposed area with canvas or burlap, peat moss, or mulch, and kept damp until the area has been backfilled.

The City Engineer may grant permission by permit to any right-of-way user to trim trees upon or overhanging the right of way so as to prevent the branches of such trees from coming in contact with the facilities of the right-of-way user. In the event that any right-of-way user severely disturbs or damages the health and safety of any tree, the right-of-way user will be required to remove and replace the tree with like species at the right-of-way user's cost.

Temporary Erosion and Sediment Control

The permittee shall utilize temporary erosion control methods on the project site to prevent mud or debris from entering the roadway or the storm sewer system, and to prevent damage to existing residential yards. Temporary Erosion and Sediment Control shall conform to Chapter 16.200. The forms of temporary erosion control shall include, but not be limited to sediment fence, installation of staked straw bales, temporary seeding, mulching, erosion control fabrics, and protection of storm drain inlets. Where land disturbance activities have temporarily or permanently ceased on a portion of the project site for over 21 days, the disturbed area shall be stabilized with mulch or other similarly effective soil stabilizing BMP's. The permit holder must perform self inspections of sediment and erosion control devices on a monthly basis and after every rain event of ½" or greater in a 24 hour period. Records must be kept of all self inspections and be produced upon request by the City inspector. Care shall be taken to avoid damaging erosion and sediment control devices installed by other parties. Where utility work unavoidably damages other installations, the contractor shall promptly make repairs. Failure to promptly repair damaged BMP's installed by other parties shall be cause for suspension or revocation of the Right of Way work permit.

PUBLIC SAFETY

General Requirements

If an excavation cannot be backfilled immediately and will be left unattended, the excavation shall be enclosed with good substantial and sufficient barricades and drums equipped with the appropriate type warning lights and orange safety fencing material which is properly secured around the excavation. No excavation shall be left unattended in excess of seventy-two hours, without permission of the City Engineer.

The right-of-way construction site shall be kept clean, neat and orderly. Stockpiling of debris and unsuitable materials beyond normal working hours shall not be permitted. Immediately after construction operations have been completed for the day, all equipment, debris, and unsuitable materials shall be completely removed from the site in order to minimize the damage to finished work and inconvenience to the public and adjoining property owners.

Public Access

In conformance with Chapter 13.12, whenever a right-of-way user shall excavate the full width of any street, sidewalk, alley, driveway approach or other right-of-way, it shall be its duty to maintain an adequate passage for vehicles and pedestrians across or around the excavation until it is refilled as specified.

If a section of sidewalk is removed as a result of an excavation, temporary aggregate surfacing shall be placed level with the surface of adjacent sidewalk, or sidewalk shall be closed by installing advance warning signs and barricades until the sidewalk can be reconstructed, backfilled, and reopened. Sidewalk shall be reconstructed in as timely a manner as possible. Special emphasis shall be placed on the timely replacement of sidewalks adjacent to schools, public facilities, or commercial areas with high volume pedestrian traffic.

Traffic Control

When working on City streets, the permittee shall provide adequate and suitable barriers, signs, warning lights, flaggers, and all other equipment necessary to direct and reroute traffic and protect the public from moving or stationary vehicles, equipment, and materials, and other obstructions. Also, adequate protective warning lights and signs shall be provided to warn of any obstruction or excavation in the street, sidewalk, or parkway. All barricades, signs, and lights shall conform to the latest edition of the "Manual on Uniform Traffic Control Devices", and the current edition of the "Overland Park Traffic Control Handbook for Street Maintenance and Construction Operations".

Non-emergency work on thoroughfare or collector streets may not be accomplished during the hours of 7:00 to 8:30 A.M. and 4:00 to 6:00 P.M.

Permittee shall be required to post a WB-1 "Bump" advance warning sign with flashing light a minimum of two hundred fifty feet ahead of a steel plate. See also Plating the Excavation.

All workers in construction zones shall wear shirt, vest, or jacket that is orange, yellow, strong yellow green or fluorescent versions of these colors. For

nighttime work, similar outside garments shall be retroflective. The retroflective material shall be orange, yellow, white, silver, strong yellow green or a fluorescent version of one of these colors and shall be visible at a minimum distance of one thousand feet. Flaggers shall be equipped with sign paddles.

A detailed traffic control plan shall be required prior to issuance of permit, for any lane closure on a thoroughfare or collector street. All personnel involved in the preparation of construction traffic control plans and the installation of all traffic control devices shall be certified by The American Traffic Safety Services Association (ATSSA) as a "Traffic Control Supervisor" or by the International Municipal Signal Association (IMSA) as a "Work Zone Safety Specialist" or other equivalent certification for the design and installation of construction traffic control devices. The certification must be current and readily available for verification at any time as requested by the City Engineer. Minimum requirements for the certification shall include attending training sessions and successful completion of a written examination proctored by a nationally recognized and qualified agency. Permittee shall be required to notify emergency services in the event of any street closure. See also Notification of Emergency Services.