Manual of Infrastructure Standards

City of Westwood, Kansas
Public Works Department
Adopted August 14,2025
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Definitions

For purposes of this Manual, the following words or phrases shall have the meaning given herein:

1. ***AB-3*** is a material designation for a graded combination of limestone aggregate.
2. ***Abandoned Facilities*** means those facilities owned by the ROW user that are not in use and will not be utilized by the owner in the future.
3. ***AE*** shall mean air-entrained as it pertains to concrete and percentage of air-entrained admixture.
4. ***Affiliate*** means any person controlling, controlled by or under the common control of a ***service provider***.
5. ***AIMS*** shall mean Johnson County Automated Information Mapping System.
6. ***Antenna*** means communications equipment that transmits or receives electromagnetic radio signals used in the provision of services.
7. ***Applicant*** means any person requesting permission to occupy, lease or operate facilities using the right-of-way, or to excavate the right-of-way.
8. ***APWA Specifications*** means The American Public Works Association Specifications and Criteria, current edition.
9. ***Area of Influence*** means that area around a street excavation where the pavement and sub-grade is impacted by the excavation and is subject to more rapid deterioration.
10. ***Arterial Street*** shall be designated as Shawnee Mission Parkway, State Line Road, Rainbow Boulevard, West 47th Street, and Mission Road within the City of Westwood.
11. ***ASTM*** shall mean American Society for Testing and Materials, also known as ASTM International.
12. ***ATSSA*** shall mean American Traffic Safety Services Association.
13. ***Backhaul*** means communication and network infrastructure, including wireless communication data facilities, responsible for transporting communication data to and from end users or nodes to the central network or infrastructure.
14. ***Base Station*** means a station that includes a structure that currently supports or houses an antenna, transceiver, coaxial cables, power cables or other associated equipment at a specific site that is authorized to communicate with mobile stations, generally consisting of radio transceivers, antennas, coaxial cables, power supplies and other associated electronics. "Base Station" does not mean a tower or equipment associated with a tower and does not include any structure that, at the time the relevant application is filed with the authority, does not support or house wireless communication equipment or facilities.
15. ***BMPs*** shall mean Best Management Practices.
16. ***City*** means the City of Westwood, Kansas, a municipal corporation and any duly authorized representative of that City.

17. ***Clear Zone*** means the total roadside border area, starting at the edge of the traveled way, available for use by errant vehicles.
18. ***Collector Street*** shall be designated as Belinder Avenue, West 47th Place and West 50th Street within the City of Westwood.
19. ***Collocation*** means the mounting or installation of communication facilities on a building, structure, wireless support structure, tower, utility pole, base station or existing structure for the purpose of transmitting or receiving radio frequency signals for Services.
20. ***Construct*** means and includes construct, install, erect, build, affix or otherwise place any fixed structure or object, in, on, under, through or above the right-of-way.
21. ***Day*** means calendar day unless otherwise specified.
22. ***Public Works Director*** shall mean the person with that title as designated by the City of Westwood. Furthermore, it may also be the person designated by the Public Works Director.
23. ***Eligible Facilities Request*** means any request for modification of an existing tower of base station that does not substantially change the physical dimensions of such tower or base station involving: (a) collocation of new transmission equipment; or (b) removal of transmission equipment; or (c) replacement of transmission equipment.
24. ***Emergency*** means a condition that (a) poses a clear and immediate danger to life or health or of a loss of property; or (b) requires immediate repair or replacement in order to restore service to a user.
25. ***EPA*** shall mean the Environmental Protection Agency.
26. ***Excavate*** means and includes any cutting, digging, excavating, tunneling, boring, grading or other alteration of the surface or subsurface material or earth in the right-of-way.
27. ***Excavation Fee*** means the fee charged by the City for each street or pavement cut which is intended to recover the costs associated with construction and repair activity of the ROW-user and its contractors and/or subcontractors.
28. ***FCC*** means Federal Communications Commission.
29. ***Facility*** means lines, pipes, irrigation systems, wires, cables, conduit facilities, ducts, poles, towers, vaults, pedestals, boxes, appliances, antennas, transmitters, gates, meters, appurtenances, or other equipment.
30. ***Governing Body*** means the Mayor and the City Council of the City of Westwood, Kansas.
31. ***Governmental Entity*** means any county, township, city, town, village, school district, library district, road district, drainage or levee district, sewer district, water district, fire district or other municipal corporation, quasi-municipal corporation or political subdivision of the State of Kansas or of any other state of the United States and any agency or instrumentality of the State of Kansas or of any other state of the United States or of the United States.
32. ***HDD*** shall mean Horizontal Directional Drilling.
33. ***IMSA*** shall mean International Municipal Signal Association.
34. ***Kansas One-Call*** is the statewide notification system established pursuant to the Kansas Underground Utility Damage Prevention Act, K.S.A. 66-1801, *et seq*.

35. ***KCMMB Specifications*** means The Kansas City Metro Materials Board Specifications, current edition.
36. ***KCC*** means the Kansas Corporation Commission.
37. ***KDHE*** means the Kansas Department of Health and Environment.
38. ***KDOT*** shall mean Kansas Department of Transportation.
39. ***Local Street*** shall be designated as all Streets within the City of Westwood with the exception of Mission Road, Belinder Avenue, Rainbow Boulevard, State Line Road, Shawnee Mission Parkway, West 47th Place, West 50th Street and West 47th Street.
40. ***MSDS*** shall mean Material Safety Data Sheet(s).
41. ***MUTCD*** means the latest edition of the Federal Highway Administration's Manual on Uniform Traffic Control Devices.
42. ***NPDES*** shall mean the National Pollution Discharge Elimination System.
43. ***OSHA*** shall mean Occupational Safety and Health Administration.
44. ***Pavement*** means and includes Portland cement concrete pavement, asphalt concrete pavement, asphalt treated road surfaces and any aggregate base material, including, but not limited to, any material used or approved by the City of Westwood in street resurfacing.
45. ***Permit and Inspection Fee*** means the fee charged by the City to recover its cost incurred for right-of-way management including, but not limited to, costs associated with registering applicants; issuing, processing, and verifying right-of-way permit applications; inspecting job sites and restoration of improvements; determining the adequacy of right-of-way restoration; revoking right-of-way permits and, other costs the City may incur in managing the provisions of this Ordinance.
46. ***Permittee*** means any person to whom a right-of-way permit is issued to excavate a right-of-way.
47. ***Person*** means any natural or corporate person, business association or business entity including, but not limited to, a partnership, a sole proprietorship, a political subdivision, a public or private agency of any kind, a utility, a successor or assign of any of the foregoing, or any other legal entity.
48. ***Public Improvement*** means any project undertaken by the City for the construction, reconstruction, maintenance, or repair of any public infrastructure, and including without limitation, streets, alleys, bridges, bikeways, parkways, sidewalks, sewers, drainage facilities, traffic control devices, streetlights, public facilities, parks, public easements, recreational facilities, irrigation system, public improvements, public buildings or public lands.
49. ***Public Lands*** means any real property of the City or any interest therein that is not right-of-way.
50. ***Public Works Director*** means the Public Works Director of Westwood, Kansas, or his or her authorized representative.
51. ***Registration*** means the application process of a service provider, the approval of the application by the City, and the authorization of the service provider to use

any portion of the right-of-way within the City to provide service both within and beyond the City limits.

52. ***Repair*** means the temporary construction work necessary to make the right-of-way or any public improvement therein is useable.
53. ***Repair and Restoration Costs*** means those costs associated with repairing and restoring the public right-of-way because of damage caused by the ROW-user and its contractors and/or subcontractors in the right-of-way.
54. ***Restoration*** means the process by which an excavated right-of-way and surrounding area, including pavement and foundation, is returned to the same condition, or better, that existed before the commencement of the work.
55. ***Right-of-Way or Rights-of-Way (herein also "ROW")*** means the area on, below or above public streets, alleys, bridges and parkways and the areas immediately adjacent thereto dedicated to public use, i.e., dedicated roadway area.
56. ***Right-of-Way Permit*** means the authorization to excavate for the construction, installation, repair or maintenance of any type of facility within the right-of-way.
57. ***Routine Service Operation*** means a work activity that makes no material change to the facilities and does not disrupt traffic.
58. ***ROW*** shall mean right-of-way.
59. ***ROW-User*** means a person, its successors and assigns, that uses the right-of-way for purposes of work, excavation, provision of services, or to install, construct, maintain, repair facilities thereon, including, but not limited to, landowners (residents) and service providers. A ROW-user shall not include ordinary vehicular or pedestrian traffic or any governmental entity that has entered into an agreement pursuant to K.S.A. 12-2901, *et seq.*, with the City regarding the use and occupancy of the City's right-of-way.
60. ***Service*** means a commodity provided to a person by means of a system such as a delivery system that is comprised of facilities located or to be located in the right-of-way, including, but not limited to, gas, telephone, cable television, Internet services, Open Video Systems, wireless services, alarm systems, steam, electric, water, telegraph, data transmission, petroleum pipelines, or sanitary sewers.
61. ***Service Provider*** means any person owning, possessing or having an interest in facilities in the right-of-way that are used for the provisions of a service for or without a fee; provided, that this definition shall also include persons owning, possessing, or having an interest in facilities in the right-of-way that are used by, may be used by or are intended for use by another person, in whole or in part, to provide a service for or without a fee, regardless of whether the actual facility owner provides any service as defined herein.
62. ***Small Cell Facility*** means a wireless facility that meets both of the following qualifications: (a) Each antenna is located inside an enclosure of no more six cubic feet in volume, or in the case of an antenna that has exposed elements, the antenna and all of the antenna's exposed elements could fit within an imaginary enclosure of no more than six (6) cubic feet; and (b) primary equipment enclosures that are no larger than seventeen (17) cubic feet in volume, or facilities comprised of such higher limits as the FCC has excluded from review pursuant to 54 U.S.C. 306108. Accessary facilities may be located outside the primary equipment and if so located, are not to be included in the calculation of equipment

volume. Accessary facilities include, but are not limited to, any electric meter, concealment, telecommunications demarcation box, ground-based enclosures, back-up power systems, grounding equipment, power transfer switch, cut-off switch and vertical cable runs for the connection of power and other services.

63. ***Small Cell Network*** means a collection of interrelated small cell facilities designed to deliver wireless service.
64. ***Standard Specifications*** means the provisions of the Standard Specifications for State Road and Bridge Construction, Kansas Department of Transportation, current edition and special provisions.
65. ***Stealth or Stealth Technology*** means using the least visually intrusive facility by minimizing adverse aesthetic and visual impacts on the land, property, buildings and other facilities adjacent to, surrounding and the relative area as the requested location of a communications facility. This means ensuring that all antenna arrays, cables, and other accessory facilities used for the provision of wireless service or other service incapable of underground placement are not obtrusive or noticeably visible from adjacent properties or adjacent rights-of-way. Any accessory facilities mounted onto a tower or structure shall not project greater than one (1) foot, measured horizontally, from the surface or the tower or structure and shall be painted or screened with materials that are conforming or complementary color to the tower or structure. Cables shall be contained within the interior of the tower or structure and shall not be allowed to travel along the exterior of a tower or structure. In light of the ongoing and anticipated development of new technologies likely to change the components of communication facilities of all sorts, the Public Works Director may reasonably determine if communications facility or the components thereof are reasonably designed to meet the stealth guidelines. All such determinations shall be made in a competitively neutral, non-discriminatory manner in light of public health, safety and welfare.
66. ***Street*** means the pavement and sub-grade of a City residential, collector or Arterial roadway, excluding curbs, gutters, and portions adjacent to the pavement and sub-grade of a roadway that lie in a right-of-way.
67. ***Substantial Modification*** means a proposed modification to an existing wireless support structure or base station that will substantially change the physical dimensions of the wireless support structure or base station under the objective standard for substantial change, established by the FCC pursuant to 47 C.F.R. 1.40001.
68. ***Tolerance Zone*** shall mean the minimum acceptable horizontal and vertical separation between the existing utility and the proposed utility or structure.
69. ***Tower*** means any structure built for the sole or primary purpose of supporting any FCC licensed or authorized antennas and their accessory facilities including structures that are constructed for wireless services and the associated site.
70. ***Transmission Equipment*** means equipment that facilitates transmission of a wireless service licensed or authorized by the FCC including, but not limited to, radio transceivers, antennas, coaxial or fiber optic cable, and regular backup power supply. The term includes equipment associated with wireless services

including, but not limited to, private, broadcast, and public safety services as well as unlicensed wireless services, such as microwave backhaul.

71. ***USDA*** shall mean the United States Department of Agriculture.
72. ***WB-1*** means the traffic control device designation "Bump" as designated in the MUTCD.
73. ***Wireless Support Structure*** means a freestanding structure, such as a monopole, guyed or self-supporting tower or other suitable existing or alternative structure designed to support or capable of supporting wireless facilities. Wireless support structure shall not include any telephone or electrical utility pole or any tower used for the distribution or transmission of electrical service.

1. General:

As stated in the Code of the City of Westwood, Kansas, 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. All repairs or restorative efforts shall begin within 72 hours upon completion of the repair or replacement of the utility. All restorative efforts not completed within 10 calendar days may be repaired or replaced by the City or a sub-contractor acting on behalf of the City and any costs incurred with the repairs or replacement shall be borne by the ROW –user. Upon determination by the Public Works Director, that such repair or replacement is necessary to protect public safety, all such repairs or replacement shall be commenced within twenty-four hours of written notice to make such repairs or replacement. If, after 24 hours, all such repairs and replacement have not begun, the City may make or cause to be made such repair or replacement, and the cost shall be borne by the ROW –user.

All construction materials shall conform to the references contained in this document, unless otherwise directed by the Public Works Director.

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 or Referenced Standard Details, on file in the office of the City Clerk. The Standard Details shall be adopted and amended by the Public Works Director with the consent of the Governing Body.

The Public Works Director may delegate any or all of his or her duties contained in this manual.

As allowed by the right-of-way management ordinance, penalties for violation of this regulation include stop work orders, revocation of permit, doubling fees for work without a permit, denial of future permits, and fines levied by the Municipal Court.

1.1. Applicability:

Uses of the right-of-way covered in this manual include the following:

- **1.1.1.** Excavation, construction, repair, and maintenance of facilities (utilities) and streets, including drilling, jacking, tunneling, boring, pipe lining, pipe bursting, and other trenchless technologies.
- **1.1.2.** Construction or reconstruction of driveways and driveway approaches or other entries from the right-of-way to private property.
- **1.1.3.** Disruption or obstruction of the right-of-way associated with design, inspection, management, maintenance, adjustments or protection of facilities, regardless of the location of the facilities.
- **1.1.4.** Placement of dumpsters on the right-of-way.
- **1.1.5.** Oversize/overweight loads.
- **1.1.6.** Other activities in or affecting the right-of-way.
- **1.1.7.** Temporary Street Closures not affiliated with a ROW Permit.

1.2. Inspections:

For excavation permit activity in the right-of-way, permittee will notify the Public Works Director to schedule a minimum of two inspections. One

shall be in advance of the start of backfilling operations in any area within the right-of-way; and a second inspection shall occur 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 the Public Works Director after work is substantially complete except for weather dependent work. In such a case Permittee shall notify the Public Works Director 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 Public Works Director, the two-year maintenance period will begin.

Except in the event of an emergency, permittee shall notify the Director of Public Works a minimum of two working days in advance of any street closure. No such closure shall take place without notice and prior authorization from the City. **See also 1.3. "Notification of Emergency Services and Traffic Control".**

In addition to the required scheduled inspections, the Director of Public Works may choose to inspect the on-going permitted work at any time to ensure that all requirements of the approved permit are being met.

1.3. Notification of Emergency Services:

The Westwood Police Department, Consolidated Fire District Number 2 and Johnson County Med-Act shall be notified in advance of any street closure. The Public Works Director will allow closing of streets only with prior approval at the time the permit is issued or in the event of an emergency. Appropriate contacts are as follows:

1.3.1. Westwood Police Department (Johnson County Sheriffs Dispatch, Non-Emergency) 913-780-0728.

1.3.2. Consolidated Fire District Number 2 and Johnson County Med-Act EMS (Non-Emergency) 913-432-1717.

1.3.3. Emergency for the entire above dial 911.

1.4. Utility Locates and Notification:

As a condition of the ROW permit, all existing utilities shall be located before any excavation begins. This can be done with the following phone numbers, which are listed on the application as well as the permit:

1.4.1. Kansas One-Call…….1-800-344-7233

1.4.2. Water District Number 1 of Johnson County…….913-895-1806

If utility locates have not been done, work will be shut down until locates have been completed.

2. Permits

2.1. Permit Required:

No regulated use will proceed without a current and valid permit issued by the City of Westwood, Kansas. Permit requests are performed electronically at: https://www.westwoodks.org/building-and-planning/page/right-way-permits. Application for permit shall be made three working days in advance of the start of work.

2.1.1. ROW-users performing routine service operations which do not require excavation in the right-of-way and do not disrupt traffic for more than four hours are not required to obtain a permit, except that activities or operations on Rainbow Boulevard, Shawnee Mission Parkway, Mission Road, State Line or West 47th Street shall not be exempt from obtaining a Routine Maintenance Disruption / Obstruction Annual Permit.

2.1.2. Any work performed within the road ROW on Shawnee Mission Parkway (US 56 Hwy.) or Rainbow Boulevard (US 169 Hwy.) is required to obtain a ROW permit from KDOT. When a ROW permit from KDOT has been issued, the Public Works Director will consider an application for a ROW permit for issuance from the City.

2.1.3. In an emergency, construction may proceed without a permit. Provided, however, that no backfilling or any other final covering or concealment of any work will take place until the Public Works Director has granted permission to do so. Further, in an emergency, a permit must be obtained within seventy-two hours.

2.2. Types of Rights-of-way Use Permits:

2.2.1. Driveway Approach Permit - for the installation of a new or replacement approach to a driveway or parking lot where an excavation within the public right-of-way is required, subject to the City's driveway and other regulations.

2.2.2. Individual Site Excavation Permit – for construction, maintenance or service at a single site or address.

2.2.3. Multiple Site Excavation Permit – for construction, maintenance or service that has multiple discrete locations in increments of 100 lineal feet. Multiple site permits will not be open ended. All sites must be identified at the time the permit is issued. All sites must be under the control of a single contractor.

2.2.4. Routine Maintenance Disruption/Obstruction Annual Permit – for routine maintenance or service activities that do not include cutting of pavement or excavation of the right-of-way. The replacement of damaged or obsolete poles in the same location and all work on the overhead lines themselves shall fall under the routine maintenance disruption/obstruction permit.

2.2.5. Dumpster Placement Permit – for placing or parking in the right-of-way a dumpster or other lawful types of containers for debris or waste holding 8 cubic yards or more.

2.2.6. Oversize/Overweight Loads Permit– for the transportation of oversize or overweight loads on the City of Westwood streets. Size limits are those set out in the City of Westwood's traffic code.

2.2.6.1. Single Event - is for one-time movement of an oversized load.

2.2.6.2. Fixed Route - is for multiple vehicles between a single fixed destination and the designated connection to a State or Federal Highway.

2.2.7. Hauling Permit – for the hauling or moving of any earth, excavated rock, rubbish or used building materials, regardless of where it originated. A separate permit shall be required for each point of origination.

2.2.8. Temporary Road Closure Permit – for the temporary closing of roads or lanes related to construction that is related to non-ROW permits.

2.3. Fees and Time Limits:

Fees are listed in the Westwood Master Fee Schedule: CAFhttps://www.westwoodks.org/media/47362025 Fee Schedule 11142024.pdf. Time limits are calendar days for which the permit will be valid. Work, including temporary or final restoration, shall be complete within these times. More than one fee may be imposed.

3. Pre-construction Requirements

3.1. Sketch Submittal:

3.1.1. Driveway Approach and Individual Site Excavation Permit Applications shall be accompanied by a location sketch. Information shown shall include at a minimum:

3.1.1.1. Scalable drawing showing extents of pavement, curb and sidewalk, building foundation, and a graphic scale and north arrow (such as shown on the plot plan for the property);

3.1.1.2. The property address, permittee's name and phone number, labels for the adjacent street and an indication of the direction to and name of the nearest cross street;

3.1.1.3. Location, size and material of proposed improvements;

3.1.1.4. For an individual site excavation permit, the location of the existing utility mains and the location and presumed size of the excavation;

3.1.1.5. Sketch shall be legible and line weights and styles, symbols and abbreviations shall be distinct and widely recognized by practitioners in the Kansas City Metropolitan Area.

3.1.2. Multiple Site Excavation Permits or Excavations Exceeding 100 Lineal Feet shall be accompanied by a location drawing prepared by a Kansas Licensed Professional Engineer. Information shown shall include at a minimum:

3.1.2.1. Scalable drawing showing extents of pavement, curb and sidewalk, building foundation, and graphic scale and north arrow (such as shown on the plot plan for the property);

3.1.2.2. The property address, permittee's name and telephone number, labels for the adjacent street and an indication of the direction to and name of the nearest cross street;

3.1.2.3. Location, size and material of proposed improvements;

3.1.2.4. The location of the existing utility mains and other subsurface structures, location and presumed size of the excavation;

3.1.2.5. Drawing shall be legible and line weights and styles, symbols and abbreviations shall be distinct and widely recognized by practitioners in the Kansas City Metropolitan Area.

3.2. Design Review:

Construction affecting more than 100 lineal feet of right-of-way shall be subject to a design review.

3.2.1. Coordination: Applicant shall demonstrate that all registered service providers have had 14 days to review and comment on the plans and that such comments have been reasonably addressed.

3.2.2. Horizontal Separation: The horizontal separation between the facility and deeper utilities such as water, sanitary sewer or storm sewer shall be four foot or ½ of the deeper utilities' depth, whichever is greater.

3.2.3. Projects involving Horizontal Directional Drilling shall follow the design guidelines in Section 8.

3.2.4. Plan Content: the drawings shall include the following minimum content:

3.2.4.1. Base map shall be scalable map showing extents of pavement, curb, sidewalk, above ground utility appurtenances and other above ground improvements.

3.2.4.2. Show marked location of existing underground facilities. Underground facilities shall be marked from record drawings, visible above ground appurtenances, or by tracing electric signal in metallic line or tracer wire.

3.2.4.3. Show accurate horizontal location of improvements including bulk dimensions of conduit, mains or other buried lines.

3.2.4.4. Show vertical information where necessary to identify and avoid potential conflicts.

3.2.4.5. Show property lines, right-of-way lines and construction limits.

3.2.4.6. Show traffic control plan and erosion control plan.

3.2.5. Plan Presentation: Plans shall be neat, orderly, and legible and shall comply with the following format and content requirements:

3.2.5.1. Employ distinct line types, symbols and notes to indicate different types of facilities. Include a drawing legend.

3.2.5.2. Sheet size shall be a minimum 11" by 17" to a maximum 24" by 36".

3.2.5.3. Name of facility owner and legend of symbols and abbreviations shall be on each sheet.

3.3. Preconstruction Documentation:

Document the existing conditions of the improvements along the route that are scheduled to remain. Provide copies of preconstruction photos or digital images to the City of Westwood on request. If no preconstruction documentation is performed and damage is discovered by the City, then the

Utility or contractor performing the work shall be required to replace the damaged area.

3.4. Notification:

Permittee shall provide notification to impacted property owners or tenants:

3.4.1. Who: Applicants for individual site excavation permits and multiple site excavation permits must comply with these notification requirements. Driveway approach and routine maintenance permit applicants are exempted from notification requirements.

3.4.2. What: Notice shall include:

3.4.2.1. The nature of the work and length of time delays and disruptions that may be expected.

3.4.2.2. Whether streets will be closed or remain open to traffic.

3.4.2.3. Whether any utilities will be out of service during construction.

3.4.2.4. The name and telephone number of the superintendent or project manager or person who has authority over the job site, schedule, workers and subcontractors on the worksite.

3.4.2.5. Subject to City of Westwood discretion for projects more than 100 linear feet of right-of-way, provide invitation and opportunity for residents and businesses to review project plans.

3.4.3. How: Notice may be a door hanger, postcard or other written medium. The City of Westwood shall be given a copy of the notice and distribution list.

3.4.4. Where: Notify all residents and businesses adjacent to the work on both sides of the street. If the street is completely closed for any portion of the work, contact all residents and businesses in the entire block.

3.4.5. When: For projects affecting more than 100 linear feet of right-of-way notice shall be given a minimum of seven days prior to start of construction. If construction does not begin when stated on the notice, the notification process shall be repeated. For emergency work, notice shall be given as soon as practicable after start of work. For all other work, notice shall be given a minimum of 24 hours before start of work.

4. Safety:

4.1. Potholing:

4.1.1. Prior to excavating in the public rights-of-way, permittee must pothole to verify existing utilities when the following circumstances are present:

4.1.1.1. Whenever an excavation or bore, including one using trenchless technology except Cured-in-Place-Pipe or slip lining, will be within the tolerance zone of an existing underground facility.

4.1.1.2. Whenever an excavation using trenchless technology except Cured-in-Place-Pipe or slip lining will parallel an underground facility within three feet of that facility, potholing is required every 100 feet.

4.1.1.3. Whenever an excavation will be in the vicinity of an area of congested underground facilities.

4.1.1.4. Whenever an excavation is within three feet of a hazardous or vital underground facility.

4.1.2. The preferred method of excavating a pothole is air vacuum excavation. When air vacuum excavation is not feasible, the preferred method of potholing is the use of water vacuum excavation or hand digging. When potholing, exposed underground facilities should be protected and supported. Potholes shall be backfilled in accordance with Sections 6 & 7.

4.1.3. If potholing reveals incorrectly located lines, permittee must report discrepancy to the facility owner and Kansas One Call along with proper location information.

4.2. Locates:

Prior to excavation permittee shall call for locates pursuant to Kansas One-Call.

4.3. Clothing:

Workers in the right-of-way shall wear a shirt, vest or jacket that is orange, yellow green or fluorescent versions of these colors. For nighttime work, outer garments shall be retroreflective.

4.4. Safety Officer:

Permittee shall identify a safety officer, and 24-hour contact numbers, with job site responsibilities to oversee compliance with all safety regulations. The Safety Officer shall be on 24-hour call.

4.5. Trench Safety:

U.S. Department of Labor, OSHA has standards for excavations and trenches that may affect the work.

4.6. Hazardous Material Spills:

Permittee shall comply with all KDHE, EPA, and the City of Westwood Spill Response Plan for reporting spills of hazardous materials, including fuels and other equipment maintenance fluids.

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4.7. Open Excavation Protection:

If an excavation cannot be backfilled immediately and will be left unattended, the excavation shall be enclosed with orange safety fencing material, which is properly secured around the excavation. In addition, all trenches and other excavations shall be provided with suitable barriers, signs, lights, or other traffic control devices to the extent that adequate protection is provided to the public against accidents because of such open construction. No excavation shall be left unattended in excess of seventy- two hours, without permission from the Public Works Director.

4.8. Traffic Control:

Permittee must provide adequate traffic control for any permitted activity that obstructs any part of the roadway pavement. Traffic Control Devices and Flaggers shall be provided to maintain traffic in a safe, orderly manner. All traffic control devices and flagging operations shall conform to the latest editions of the MUTCD, the "State of Kansas Traffic Control Handbook for Flaggers", and all traffic control devices must adhere to the ATTSA Publication, "Quality Standards for Work Zone Traffic Control Devices", and APWA Section 2305 "Maintenance of Traffic".

All barricades, signs, lights, and other protective devices shall be installed and maintained in conformity with applicable statutory requirements and other legal requirements and, where within KDOT State Highway right-of-way, as required by the authority having jurisdiction there over. Obstructions requiring traffic control include but are not limited to workers adjacent to or in the roadway, excavations, equipment maneuvering areas, stored materials, spoil stockpiles, any stationary equipment that is a source of construction activity such as delivery trucks, tool trucks, lifts, excavators, and unoccupied parked maintenance equipment, except where parked entirely within permitted parking zones, and any other area or activity that present a potential conflict with the traffic operations of the roadway.

4.8.1. Installer Qualifications: Individuals designing, placing and maintaining traffic control devices shall have adequate training and have a basic understanding of the principles established by the MUTCD.

4.8.2. Traffic Safety Resources: The Permittee shall either:

4.8.2.1. Have on staff a work zone traffic safety officer who has either an ATTSA traffic control technician certification or IMSA Certification in work zone

traffic safety and who has oversight responsibility of traffic control and work zone safety, or;

4.8.2.2. Contract all traffic control setup, maintenance and removal to a firm specializing in traffic control that has a technician on each crew that has either an ATTSA traffic control technician certification or IMSA certification in work zone traffic safety.

4.8.3. All traffic devices shall conform to the MUTCD and shall be placed in conformance with the principles described in the MUTCD. A detailed traffic control plan shall be required prior to issuance of a permit, for any lane closure on an Arterial or collector street. It shall be unlawful for any person without proper authority to move or remove traffic control devices, warning devices or other protective devices.

4.8.4. All traffic control devices shall be removed immediately upon elimination of the roadway obstacle.

4.8.5. The permittee, the person responsible on site, and each individual worker creating an obstruction shall be severally liable for fines and other penalties for failure to provide adequate traffic control.

5. Construction Requirements:

5.1. Times of Operation:

The permittee shall perform all work on the right-of-way at such times that will allow the least interference with the normal flow of traffic and the peace and quiet of the neighborhood. Except with the permission of the Public Works Director, non-emergency work shall be restricted as follows:

5.1.1. On arterials and collector streets and ROW work may not be performed during the hours from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. Monday through Friday. No work shall occur on Holidays or Sundays. Work may be permitted on Saturdays from 8:00 a.m. to 4:00 p.m. provided no mechanical or motorized equipment is utilized and with the permission of the Public Works Director.

5.1.2. Work may not be performed on any local street ROW during the hours of 5:00 p.m. and 8:00 a.m., Monday through Friday. No work shall occur on Holidays or Sundays. Work may be permitted on Saturdays from 8:00 a.m. to 4:00 p.m. provided no mechanical or motorized equipment is utilized and with the permission of the Public Works Director.

5.2. Service Disruptions:

The Permittee shall not disrupt the utility service to any structure unless:

5.2.1. Separate notification has been given to the tenant / owner of the structure on both the day before and the day of the disruption.

5.2.2. Disruption is limited to the hours between 9:00 a.m. and 4:00 p.m. or other times as negotiated with the tenant / owner.

5.3. Impact on Adjoining Properties:

Permittee shall make all reasonable efforts to promptly respond to adjacent businesses and residents' needs and requests, particularly:

5.3.1. Times of operation;

5.3.2. Unscheduled services or access disruption;

5.3.3. Mud on street and general job site cleanup;

5.3.4. Handicap access equipment;

5.3.5. Incomplete restoration.

5.4. Vehicle Marking:

Any vehicle or mobile equipment used by the permittee in connection with excavation of, disruption of, or any work in the right-of-way shall be clearly identified with the name of the permittee or the person doing the work painted or otherwise durably marked on both sides of the vehicles or equipment, in plain letters, not less than two inches high and not less than one-fourth inch stroke.

5.5. Sediment and Erosion Control:

The permittee shall utilize temporary erosion control methods on the project site to prevent mud and debris from entering the roadway or the storm/sanitary system and to prevent damage to other properties. The forms of temporary erosion control shall include but not be limited to construction of temporary cutoff ditches, installation of staked straw bales, temporary hydro seeding, erosion control fabric fences, fiber logs, temporary erosion control blankets, and check dams.

5.6. Dumpster Locations:

Dumpsters shall only be permitted in the ROW when insufficient space exists on private property. Dumpsters shall not be permitted on Arterial or collectors. Dumpsters shall not be permitted in the street unless there is sufficient room for emergency vehicles and other vehicular traffic to pass safely. The minimum clearance for vehicular movement is 10 feet. Dumpsters shall not be placed on sidewalks. The motoring public shall be advised of the ROW blockage by means of reflective traffic control devices in conformance to the MUTCD placed around the dumpster.

5.7. Horizontal Directional Drilling:

HDD under any street shall be at a minimum depth of four feet. Additional guidelines are set forth in Section 8.

5.8. Tracer Wire:

New non-metallic underground facilities placed in the right-of-way shall be accompanied by tracer wire as provided in section 5.8.1. and 5.8.2. This requirement applies to new facilities installed in excess of 100 feet.

5.8.1. If conduit or innerduct is used the tracer wire can be pre-installed or blown in after the conduit or innerduct installation.

5.8.2. If conduit or innerduct is not used, then the tracer wire shall be installed as integral part of the facility installation.

5.8.3. Tracer wire shall be accessible at least every three hundred feet. Access points may include valve boxes, hand-holes, manholes, vaults or other covered access devices. Access point covers should be clearly marked with the type of facility.

5.9. Damage to Utilities:

Any ROW user that damages an underground facility, power pole or tracer wire shall immediately notify the damaged facility owner and the Public Works Director for the City of Westwood. The owner of the damaged facility may conduct, direct, oversee or specify how the repair is to take place. Permittee shall coordinate and cooperate with the owner of the damaged facility.

6. Excavation in Unpaved Portion of Right of Way

6.1. Trenching:

The Contractor or Permittee shall not open more trenches 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. The excavation shall be done with the least possible damage and shall excavate earth in such manner as to cause the least inconvenience to the public, and to permit uninterrupted passage of water along the gutters. The excavation shall be completed at the end of each working day, except when approved by the Director of Public Works. All excavated materials shall be removed at the end of each working day and all material shall be removed completely from the site of the work upon completion of such work. The excavation or trench shall have straight vertical sides, where practical, and shoring, siding, and bracing shall be employed as required to prevent cave-ins.

6.2. Bracing and Shoring:

The Contractor or Permittee shall provide adequate bracing, sheeting, and shoring, as necessary, to provide protection for the workers and the work. All bracing, sheeting, or shoring shall conform in full accordance with Occupational Safety and Health Standards –Excavations; Final Rule 29 CFR Part 1926.

6.3. Backfill:

Pipe or conduit embedment material shall be as specified by the Utility and approved by the Public Works Director. If not otherwise specified, embedment material around pipe or conduit shall be crushed stone or pea gravel with not less than 95 percent passing the one-half inch sieve, and not less than ninety-fine percent to be retained on a No. 8 sieve. Embedment material shall be placed in maximum lifts of six inches.

Embedment material around pipe or conduit may extend up to a maximum of 12 inches above the top of the pipe. Flowable Backfill/Controlled Low Strength Material (CLSM) may be used in lieu of embedment material.

All soil backfill material above the embedment area shall be clean soil, free from aggregate, woody material, trash, pavement material, or any other debris. The top six inches from the surface of the trench or excavation shall be composed of topsoil free from clods suitable for supporting vegetation. All soil backfills shall be compacted in eight-inch lifts, using vibratory equipment for each lift, to a minimum of 95 percent of standard density using ASTM D 698.

Flowable Backfill/Controlled Low Strength Material (CLSM) shall be used to fill the area to within eight inches of the surrounding grade for pavement and to the bottom of the grade for sidewalks, driveway approaches and curb and gutter. A mixture of Portland cement, fly ash, (optional), fine aggregate, water, and admixtures (as approved by the

Public Works Director) proportioned to a consistency to fill voids without vibration. Flowable Backfill (CLSM) shall consist of the following:

1. Cement: The Portland cement shall conform to ASTM C 150, Type I or Type II.
2. Fly Ash: Fly ash, when used, shall conform to ASTM C 618 Class C or F.
3. Fine Aggregate: Fine Aggregate shall conform to ASTM C 33.
4. Mixing Water: Mixing water shall conform to ASTM C 1602.
5. Admixtures: Air entrainment, when used, shall conform to ASTM C 260. Water reducing admixtures, when used, shall conform to ASTM C 494. All other admixtures shall only be used when approved by the Public Works Director.
6. Other Materials: Proposed replacement or supplementary materials shall be approved by the Public Works Director and in conformance to NRMCA or ACI guidelines for CLSM.

Flowable Backfill (CLSM) compressive strength testing results are required for approval of mix design prior to placement of flowable backfill. Compressive tests are to be conducted on 7 and 28 days in accordance with ASTM D 4832. CLSM shall have a minimum and maximum 28-day design compressive strength of 75 PSI and 150 PSI, respectively. The unit weight of the CLSM shall range between 105 to 125 lbs. per cubic foot (pcf). All tests necessary for determining conformance with the requirements specified herein will be at the Contractor's or Utilities' expense.

If an excavation cannot be backfilled and will be left unattended, the contractor shall adequately cover the excavation. No excavation shall be left unattended in excess of 72 hours, without permission of the Public Works Director. The Permittee assumes the sole responsibility for maintaining proper barricades, plates, safety fencing and/or warning lights as required from the time of opening of the excavation until the excavation is closed.

7. Excavation in Paved Portion of Right of Way

7.1. Trenching:

The Contractor or Permittee shall not open more trenches 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. The excavation shall be done with the least possible damage and shall excavate earth in such manner as to cause the least inconvenience to the public, and to permit uninterrupted passage of water along the gutters. The excavation shall be completed at the end of each working day, except when approved by the Public Works Director working day and all materials shall be removed completely from the site of the work upon completion of such work. The excavation or trench shall have straight vertical sides (where practical) and shoring, siding, and bracing shall be employed as required to prevent cave-ins. Trench width shall provide a minimum of six inches clear on each side of the pipe.

7.2. Sawing Pavement:

Prior to excavating the street, the pavement shall be sawed to the width of the intended trench a minimum of two inches deep. After the trench is excavated, utility work and backfill are complete; a final vertical saw cut shall be made completely through the pavement. This final saw cut shall be made 12 inches wider on each side of the trench than the trench width at the widest point. A similar saw cut shall be made at the beginning and end of the trench. This requirement is to provide a 12-inch undisturbed subgrade to support the pavement repair. All broken pavements shall be removed from the site and not placed in the backfill.

7.3. Bracing and Shoring:

The Contractor or Permittee shall provide adequate bracing, sheeting, and shoring, as necessary, to provide protection for the workers and the work. All bracing, sheeting, or shoring shall conform to Occupational Safety and Health Standards-Excavations; Final Rule 29 CFR Part 1926.

7.4. Backfill:

Pipe or conduit embedment material shall be as specified by the Utility and approved by the Public Works Director. If not otherwise specified, embedment material around pipe or conduit shall be crushed stone, pea gravel or sand with not less than ninety-five percent passing the one-half inch sieve, and not less than ninety-five percent to be retained on a No. 8 sieve. Embedment material shall be placed in maximum lifts of six inches. Embedment material around pipe or conduit may extend up to a maximum of twelve inches above the top of the pipe. No soil backfill shall be used in paved areas.

Above the embedment material in areas under pavement, sidewalks, driveway approaches and curb and gutter, Flowable Backfill/Controlled

Low Strength Material (CLSM) shall be used to fill the area to within eight inches of the surrounding grade for pavement and to the bottom of the grade for sidewalks, driveway approaches and curb and gutter. A mixture of Portland cement, fly ash, (optional), fine aggregate, water, and admixtures (as approved by the Public Works Director) proportioned to a consistency to fill voids without vibration. Flowable Backfill (CLSM) shall consist of:

1 .Cement: The Portland cement shall conform to ASTM C 150, Type I or Type II.

2. Fly Ash: Fly ash, when used, shall conform to the requirements of ASTM C 618 Class C or F.

3. Fine Aggregate: Fine Aggregate shall conform to ASTM C 33.

4. Mixing Water: Mixing water shall conform to ASTM C 1602.

5. Admixtures: Air entrainment, when used, shall conform to ASTM C 260. Water reducing admixtures, when used, shall conform to ASTM C 494. All other admixtures shall only be used when approved by the Public Works Director.

6. Other Materials: Proposed replacement or supplementary materials shall be approved by the Public Works Director and in conformance with current NRMCA or ACI guidelines for CLSM.

Flowable Backfill (CLSM) compressive strength testing results are required for approval of mix design prior to placement of flowable backfill. Compressive tests are to be conducted at 7 and 28 days in accordance with ASTM D 4832. CLSM shall have a minimum and maximum 28-day design compressive strength of 75 PSI and 150 PSI, respectively. The unit weight of the CLSM shall range between 105 to 125 lbs. per cubic foot (pcf). All tests necessary for determining conformance with the requirements specified herein will be at the Contractor's or Utilities' expense.

7.5. Plating the Excavation:

Any excavation left overnight on any Arterial 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 or cold mix asphaltic concrete. Permittee may be required to post a WB-1 "Bump" advance warning sign with flashing light a minimum of 250 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, and with the approval of the Director of Public Works 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 drivable condition. No excavation shall be left unattended in excess of 72 hours, without permission of the Public Works Director. The Permittee assumes the sole responsibility for maintaining proper barricades, plates,

safety fencing and/or warning lights as required from the opening of the excavation until the excavation is surfaced and opened for travel.

8. Horizontal Directional Drilling Guidelines

8.1. Introduction:

This section is to be used as a basic guide for Horizontal Directional Drilling (HDD) applications performed within the limits of the City of Westwood. The overall purpose is to provide guidelines that will help ensure public safety and protection of existing underground facilities. This protection effort is made up of many different aspects and each one has been addressed in this section.

This section is not intended to be a step-by-step procedure manual but rather a collection of fundamental elements of the HDD process.

By following these guidelines, all involved can better ensure that all reasonable steps have been taken to ensure public safety and to protect existing underground facilities.

8.2. Design Guidelines:

Prior to applying for a Right-of-Way Permit that will involve HDD, the Permittee, or its designer shall undergo a thorough design process. At a minimum, the Permittee shall complete the following tasks prior to submitting a Right-of-Way application.

8.2.1. Prepare or obtain scaled mapping for the planned installation, including all exiting surface facilities and improvements, and including any indication of underground facilities or improvements.

8.2.2. Collect existing underground utility information, including the horizontal location of all known substructures.

8.2.3. Obtain right-of-way information through Johnson County AIMS, survey records or other sources.

8.2.4. Obtain general and/or specific geotechnical information, including USDA Soil Conservation Service Data for the project area and possibly including site-specific geotechnical sampling and analysis.

8.2.5. Prepare construction plans using the information noted above including location of all planned improvements, existing underground utility information, right-of-way limits and property ownership information.

In addition to the design requirements listed previously, the Permittee (or designer) shall adopt the following practices:

8.2.5.1. The minimum horizontal and vertical clearance requirements when determining the HDD alignment to include road setbacks, existing surface features, exiting underground utilities and underground facilities.

8.2.5.2. Product pipe and reamer diameter requirements:

Product Diameter .....Reamer Diameter

<8”.....Product + 4”
8” to 24”..... Product * 1.5
>24”……+ 12”

8.2.5.3. The bore geometry for the given ground profile including bore length(s) and depth requirements, bending radii for the final product pipe: typically, 100-foot radius per 1 inch product diameter with 600 feet to 1000 feet radius minimums depending on subsurface materials and equipment requirements.

8.2.5.4. The drilling equipment for the given geotechnical conditions, geometry and final product diameter including thrust and pullback ratings, mud motors vs. jetting heads, wireline vs. walkover tracking systems.

8.2.5.5. The equipment and material handling requirements include drilling fluid and drilling containment, drill operation and final product staging.

8.2.5.6. Material strengths, capacities and coupling methods.

8.3. Construction Safety Guidelines:

Prior to performing work involving HDD under a right-of-way permit, the Permittee or Contractor shall consider the following safety guidelines:

8.3.1. Perform all operations in compliance with OSHA guidelines and ensure that all personnel are properly trained and equipped to work in the public right-of-way.

8.3.2. Ensure that he approved traffic control plan is implemented and followed at all times.

8.3.3. Ensure that all storm water pollution prevention measures (required with permit application) are implemented and followed at all times.

8.3.4. Ensure setbacks, offsets and clearances are maintained.

8.3.5. Insure that utility One-Call and other utility coordination have been met.

8.3.6. Positively identify (by potholing) all crossed utilities that are expected to be above and within 5 feet of the proposed vertical

alignment, below and within 3 feet of the proposed vertical alignment and as required by the Public Works Director.

8.3.7. Positively identify (by potholing) all parallel utilities at the beginning and ending of all bores, every 200 feet if it is within 5 feet of the proposed alignment, every 50 feet if it is within 3 feet of the proposed alignment and as otherwise required by the Public Works Director.

8.3.8. The HDD Contractor shall have a planned response in the event of a utility strike including utility notification and avoiding electrocution in the event of an electric strike, avoiding combustion in the event of a gas line strike and avoiding contamination in the case of a sewer strike.

8.4. Drilling Fluid Containment and Disposal Requirements:

The HDD Contractor shall contain, handle and dispose of drilling fluids in accordance with the following:

8.4.1. All drilling fluid and fluid additives shall be disclosed and MSDS shall be provided to the Public Works Director on request.

8.4.2. Excess drilling fluid shall be confined in a containment pit at the entry and exit locations until recycled or removed from the site.

8.4.3. Precautions shall be taken to ensure that drilling fluid does not enter roadways, streams, municipal storm or sanitary sewer lines, and/or any other drainage system or body of water.

8.4.4. Drilling fluids that are not recycled and reused shall be removed from the site and disposed of at an approved disposal site.

8.4.5. Drilling fluids shall be completely removed from the construction site prior to back filling or restoring the site.

8.4.6. Collection, transportation and disposal of the drilling fluids shall be environmentally safe and comply with local ordinances and Federal Government Regulations.

8.5. Construction Requirements:

All construction work shall be performed in accordance with the "Municipal Code of the City of Westwood" and "Manual of Infrastructure Standards for Right-of-Way Restoration". For all work involving HDD under a right-of-way permit, the Permittee or Contractor shall perform the following:

8.5.1. Prior to the construction the HDD Contractor shall familiarize himself with the work area and the technical requirements of the plans.

8.5.2. The Permittee or Contractor shall establish construction marking/staking prior to construction to indicate HDD entry and exit locations and proposed HDD alignment at 50-foot (max.) intervals.

8.5.3. Provide the Public Works Director with a list of all crew foreman and/or superintendents.

8.5.4. During construction the HDD Contractor shall calibrate its' tracking and locating equipment at the beginning of each workday.

8.5.5. The HDD Contractor shall monitor and record the alignment and depth readings provided by the tracking system every 25 to 30 feet for normal conditions and every 5 to 10 feet where precise alignment control is necessary.

8.5.6. The HDD Contractor shall complete the HDD installation as designed and permitted both horizontally and vertically unless otherwise authorized by the Public Works Director.

8.5.7. The HDD Contractor shall attempt to maintain drilling fluid circulation throughout the HDD Process during the initial pilot hole installation and during the reaming and back pull process (do not pull the fluid circulation rate).

8.5.8. The HDD Contractor shall not expand the bore hole by more than six inches (6 inches) using only a compaction reamer.

8.5.9. The HDD Contractor shall plan its reamer and back pulling operations carefully to ensure that, once, all reaming and back pulling operations can be completed without stopping and within the permitted working hours.

8.5.10. The HDD Contractor shall at all times for the entire length of the HDD alignment be able to demonstrate the horizontal and vertical position of the alignment, the fluid volume used and the return rates and pressures.

8.5.11. The HDD Contractor shall inspect the work and surrounding area to ensure that no construction-related damage has occurred including heaving or humping of paved surfaces and drilling fluid fractures or releases.

8.5.12. At the request of the Public Works Director, the Contractor shall provide access for inspection for the HDD operations.

8.5.13. Following construction, the Permittee shall notify the Director of Public Works of completion of the authorized work.

8.5.14. Prior to the start of the backfilling of excavations under paved surfaces, the permittee shall notify the Public Works Director to schedule an inspection. On completion of all right-of-way restoration activities, the Permittee will schedule a close-out inspection.

8.5.15. The Permittee or Contractor shall ensure that all cleanup and restoration complies with the Restoration Section of this Manual.

8.5.16. The Permittee's two-year maintenance period will not begin until any corrective actions required have been completed and inspected to the satisfaction of the Public Works Director.

8.6. Storm Water Pollution Prevention/Best Management Practices:

All construction activities shall be performed in accordance with the NPDES as regulated by the EPA, the KDHE & and the City of Westwood.

The Permittee or its Contractor shall implement BMP's to ensure that storm water runoff is not contaminated by sediment caused by land disturbances associated with construction activities. For a full list and discussion of recommended BMP's, please see the following publication:

> Publication: Construction Site Storm Water Runoff Control
> Source: https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater-construction

The following seven goals shall be applied for all Storm Water Pollution Prevention planning:

8.6.1. Ensure that sediment controls are in place.

8.6.2. Maintain sediment controls throughout the construction and restoration process.

8.6.3. Minimize the overall disturbance whenever possible.

8.6.4. Protect disturbed areas throughout the construction process.

8.6.5. Prevent storm water runoff from entering disturbed areas.

8.6.6. Never intentionally discharge construction contaminants directly into creeks, rivers, ditches or storm sewer systems.

8.6.7. Complete permanent restoration as soon as possible.

In addition to those overall goals stated previously, the contractor shall, at a minimum, implement the following Best Management Practices:

8.6.7.1. Provide temporary erosion protection whenever possible. Mulch, seed, or gravel may be applied even if a disturbed area may and/or will be disturbed again or other permanent measures of stabilization are to follow.

8.6.7.2. Cover spoil piles with a tarp or contain with a sediment barrier.

8.6.7.3. Contain disturbed sediment on site by using sediment barriers such as silt fence, sandbags, straw bales, rock checks and/or sediment traps to contain sediment on the construction site.

8.6.7.4. Existing vegetation may be used as a sediment filter where minimal grades and sheet flow runoff will occur.

8.6.7.5. Ensure that all sediment barriers are installed and functioning properly.

8.6.7.6. Avoid causing flooding in roadways and adjacent right-of-way.

8.6.7.7. Do not block existing culverts and storm inlets except as a last resort.

8.6.7.8. Insure that sediment is removed from sediment traps and filters after all storm events.

8.7. Construction Records and As-Built Plan Requirements:

The HDD Contractor shall keep detailed and accurate records of all activities associated with the HDD process. Upon completion of HDD installations, the Permittee shall provide the City of Westwood with "As Built Plans" and any supporting documents within 60 days of project completion. As-Built Plans are preferred in both AutoCAD and paper format. HDD construction records and As-Built Plans shall include the following:

8.7.1. HDD tracking data and operator logs shall be maintained daily and shall be made available on request from the Director of Public Works. These records and operator notes shall specify:

8.7.1.1. The type of tracking equipment used

8.7.1.2. The length and depth of the HDD installation

8.7.1.3. Additional information that may include steering adjustments and other equipment performance parameters.

8.7.2. As-Built Plans shall be derived from the tracking data and operator logs. At a minimum, the drawings shall indicate:

8.7.2.1. Horizontal and vertical HDD alignment

8.7.2.2. Existing utility horizontal locations and depths at all exposed or potholed locations

8.7.2.3. Existing utility horizontal locations were indicated with field locates.

8.7.3. As-Built Plans shall conform to the same requirements for right-of-way permits included previously.

9. Street Repair

9.1. General:

In accordance with Chapter 13, 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 Public Works Director may require the entire lane to be repaved.

The majority of streets in the City of Westwood are constructed of bituminous materials, consisting of full depth asphaltic concrete, asphaltic concrete over aggregate base, or seal coat over asphaltic concrete.

9.2. Asphaltic Concrete Street Repair:

Asphaltic concrete street repair and restoration shall be performed as follows:

9.2.1. The minimum 12-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 placed a minimum of six inches of KCMMB 5K having a minimum compressive strength of 3000 pounds per square inch in 24 hours. Polar Set, or an approved equal, is the only accelerator that will be used. After 24 hours, or when specified strength is achieved, concrete shall be tack coated and two inches of hot asphaltic concrete surface course shall be placed and compacted to 95 percent of standard density. All asphaltic concrete mixes and tack coat shall conform to APWA Specifications. The concrete bench surface and the existing pavement edges 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 Public Works Director 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.

9.3. Portland Cement Concrete Street Repair:

This option shall only be used for the repair of an existing full depth Portland Cement Concrete Street. The minimum 12-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 eight-inches or, to the depth of the existing pavement thickness, of KCMMB 5K having a minimum compressive strength of three thousand pounds per square inch in twenty-four hours. An approved mix design shall be on file in the office of the

Public Works Director prior to placement. This new concrete pavement surface shall be flush with existing street surface.
An approved mix design shall be on file in the office of the Public Works Director prior to placement. This new concrete pavement surface shall be flush with existing street surface.

9.4. Permanent Pavement Markings:

Permittee shall be responsible for the replacement of any permanent pavement markings on all roadways, which have been removed or disturbed because of any street cut. Permittees 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 APWA Specifications, and in accordance with the latest edition of the MUTCD, within fourteen days after the pavement surface has been placed, unless otherwise authorized by the Public Works Director.

10. Concrete Construction / Replacement:

10.1. General:

All concrete used in construction of curbs, sidewalks, sidewalk ramps and driveway entrances shall be classified as KCMMB 4K having a minimum 28-day compressive strength of 4000 pounds per square inch. An approved concrete mix design can be found on-line at the KCMMB website: http://www.kcmmb.org/.

10.2. Concrete Curb and Gutter:

Concrete Curbs shall be constructed or removed and replaced in accordance with the requirements of APWA Section 2209 "Curbing". The only exceptions are:

10.2.1. Concrete used shall be as specified above in "General".

10.2.2. Control Joints shall be placed at eight-foot intervals if there is four-foot-wide sidewalk present or at ten-foot intervals if five-foot wide sidewalk is present. If no sidewalk is present, contraction joints shall be place at eight-foot intervals.

10.2.3. If removed curbs exceed 35 feet in length, then a slip-form curb machines shall be utilized. This requirement may be waived at the discretion of the Public Works Director.

10.2.4. Wherever the term City Engineer is used, this shall mean Public Works Director.

10.3. Concrete Sidewalks and Sidewalk Ramps:

Concrete Sidewalks and Sidewalk Ramps shall be constructed or removed and replaced in accordance with the requirements as stated in APWA Section 2301 "Standard Sidewalks, Sidewalk Ramps, Driveways, and Bicycle/Pedestrian Paths" and shall comply with the latest requirements of the ADA. The only exceptions are:

10.3.1. Concrete used shall be as specified above in "General".

10.3.2. Sidewalk Ramps shall be constructed as shown on the "Standard Detail for Sidewalk Ramps".

10.3.3. Sidewalk contraction joints shall align with the curb contraction joints when the curb is adjacent to the sidewalk.

10.3.4. Wherever the term City Engineer is used, this shall mean Public Works Director.

10.3.5. Sidewalks at driveway entrances shall be six inches thick as indicated on the "Standard Detail for Driveway Entrances".

10.4. Concrete Sidewalk ADA Compliant Ramps At Street Corners:

Concrete sidewalks that are ADA complaint shall be constructed or removed and replaced in accordance with the latest edition of the ADA. All ramps shall be constructed in accordance with the requirements of APWA Section 2301. The only exceptions are:

10.4.1. Concrete used shall be as specified above in "General".

10.4.2. Sidewalk ramps shall be constructed as shown on the "Standard Detail for Sidewalk Ramps @ Street Intersections.

10.4.3. Sidewalk control joints shall align with the curb control joints when the ramp is adjacent to the sidewalk.

10.4.4. Wherever the term City Engineer is used, this shall mean Public Works Director.

10.4.5. The detectable warning shall be constructed utilizing "Handicap Detectable Warning Plates" dimensioned 2 feet by 4 feet. The Detectable cast iron warning plates to be "Duralast" brand. The link to the product and installation guidelines can be found here: https://info.ejco.com/duralast

10.5. Concrete Driveway Entrances:

Concrete Driveway Entrances shall be constructed or removed and replaced in accordance with the requirements as stated in APWA Section 2301 "Standard Sidewalks, Sidewalk Ramps, Driveways, and Bicycle/Pedestrian Paths" and Article 4, Section 4.3.10 of the "City of Westwood Zoning Ordinance" and the "ADA". The only exceptions are:

10.5.1. Concrete used shall be as specified above in "General".

10.5.2. Driveway Entrances shall be constructed as shown on the "Standard Detail for Driveway Entrances".

10.5.3. Wherever the term City Engineer is used, this shall mean Public Works Director.

10.5.4. When sidewalks cross a driveway entrance, the driveway entrance shall be constructed as indicated in the "Standard Detail for Driveway Entrances".

11. Miscellaneous/Additional Driveway Construction/Replacement:

11.1. General:

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

.

11.2. Asphaltic Concrete Driveway Entrances and Decorative Driveway Entrances:

All driveway entrances shall be constructed or removed and replaced in accordance with the requirements as stated in APWA Section 2301 "Standard Sidewalks, Sidewalk Ramps, Driveways, and Bicycle/Pedestrian Paths" and APWA Section 2302 "Asphalt Sidewalks, Driveways, and Bicycle/Pedestrian Paths". The only exceptions are:

11.2.1. All asphaltic concrete driveways shall be a minimum of four inches of APWA Type 1-01 or Type 2-01 Base Mix. A two-inch surface mix of Type 3-01 shall then be placed. The six-inch section previously described shall be the minimum acceptable section, if the existing section exceeds six inches, then the existing section thickness shall be used comprised of the base as described above being increased in thickness to make up the difference in sections.

11.2.2. When a decorative driveway exists, the driveway shall be restored to the original condition using the same or like materials. Some examples may be exposed aggregate concrete, pavers, stamped or imprinted concrete and stylized finishing techniques.

11.2.3. No new construction of gravel driveway entrances or driveways 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, which shall be placed in three-inch lifts, with a moisture content being uniform throughout, and the material shall be compacted to 95 percent standard density as specified in ASTM D698.

12. Restoration of Unpaved Right-of-Way:

12.1. Soil Backfill:

All soil backfill material above the embedment area shall be clean soil free from aggregate, woody material, trash, pavement material, or any other debris. The remaining six inches from the surface of the trench or excavation shall be composed of topsoil free from 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, fine grading, removing clods, surface stones of one-half inch diameter or larger, and weeds/old vegetation.

12.2. Fertilizer:

Fertilizer for sod shall be of an approved commercial brand composed of "slow-release nitrogen", 4-1-2 formula or similar, such as 18-5- 9, for Kentucky Bluegrass or Turf- Type Tall Fescue sod and 25-5-10 for Zoysia sod.

Fertilizer for Fescue and temporary Rye seed shall be of an approved commercial brand composed of "slow-release nitrogen", 1-2-1 range such as 13-25-12.

Fertilizers 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 at not less than one pound of pure nitrogen per thousand square feet of sodding or seeding area.

12.3. Sodding:

Disturbed turf in developed areas shall be sodded. Seeding will be allowed only with the consent of the Public Works Director or his designee. Sod shall be replaced with like species. Kentucky Bluegrass, Turf-Type Tall Fescue, or 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.

Bluegrass or Fescue sod may be planted during the periods of March 1st to May 15th and September 1st to November 15th. Bluegrass or Fescue sod may be planted during the period November 15th to March 1st, when the soil and sod are workable. If Bluegrass or Fescue Sod is planted between November 15th and March 1st, the permittee shall maintain it until it is sufficiently rooted and growing. Zoysia sod may be planted during the period April 1st to October 15th.

12.4. Seeding: Seeding shall not be permitted.

Sodding is the required restoration method. Seeding may be considered by the Public Works Director in lieu of sod at the request of the permittee where special circumstances may exist.

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 racked to 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 in 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.

The seeding season shall be from February 15th to April 20th and from August 15th to September 30th.

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.

12.5. Protection of Trees, Shrubs and Landscape Plants:

All trees, shrubs 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 using approved arboreal practices to prevent damage from construction equipment. Trees shall not be endangered by stockpiling excavated material or storing equipment within the drip line area of the tree. No backfill material exceeding four inches in depth shall be placed within the dripline area of any tree. When excavation is required within the dripline 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 clean-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 Public Works Director may grant permission by permitting any right-of-way user to trim trees upon or overhanging the right-of-way 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 Director of Public Works may require the right-of-way user to remove and replace with like species at the right-of-way user's cost.

12.6. Replacement of Trees, Shrubs and Landscape Plants:

Any trees, shrubs or landscape plants that are damaged during the construction process shall be replaced with like material at the expense of the permittee and to the satisfaction of the Public Works Director.

13. Sediment and Erosion Control:

13.1. Temporary Erosion Control:

The permittee shall utilize temporary erosion control methods on the project site to prevent soil, aggregate and construction debris from entering the right-of-way or the storm sewer system, and to prevent damage to existing residential yards. Temporary Erosion Control shall conform to APWA Section 5108 "Sediment Control," as amended. A temporary erosion control plan shall be provided, prior to construction, for approval by the Public Works Director.

14. Construction and Replacement of Towers, Poles and Related Facilities:

14.1. Towers and Poles:

14.1.1. Location:

Towers and poles shall be placed as far from the traveled roadway as possible. All towers and poles shall be breakaway or maintain a clear zone of 8 feet from the face of curb on tangent sections of roadway and a clear zone of 12 feet from the face of curb on the outside of horizontal curves at a minimum.

14.1.2. Height:

The maximum height which may be approved for a tower, pole or related transmission equipment in the public right-of-way is 50 feet along an arterial, 40 feet along a collector, and 20 feet along a residential street.

14.1.3. Design:

All towers and poles shall be monopoles or of some other stealth or stealth technology design unless required by the Public Works Director, or his designee, to be architecturally compatible to the surrounding development. Guy and lattice towers are not allowed. Furthermore, all towers and poles must be designed in compliance with all current applicable technical, safety, and safety-related codes adopted by the City.

New poles shall be round, tapered, and made of aluminum, with a brushed aluminum finish or comparable finish or material approved by the Public Works Director; provided that, any new or replacement poles required to meet the structural standards for collocation of facilities shall be aesthetically and architecturally compatible with the poles, streetlights, or like facilities of the adjacent or surrounding area and shall utilize the same or similar material and finishes. For example, if existing streetlight poles along the right-of-way surrounding or in the area of the proposed pole have been painted, are of a different or unique style, or are otherwise designed, then the new or replacement pole shall be of materials and color that are consistent with the surrounding elements so as to blend in architecturally and shall be designed, finished, and painted in the same or similar manner to match said streetlight poles. This section shall not prohibit the installation of wood poles that replace existing wood poles, or poles installed along existing service lines.

14.1.4. Antennas on Towers and Poles:

All antennas installed on towers and poles shall be internal or panel antennas of slim-line design and be mounted parallel with the tower, or alternatively, an omni-directional antenna may be placed at the top of the tower when it gives the appearance of being a similarly sized extension of the tower. Antenna bridges and platforms are not allowed on towers or poles. Antennas and related visible facilities installed on a tower or alternative structure shall be of materials and colors that are consistent with the surrounding elements so as to blend in architecturally with said tower or structure. The antennas and related visible facilities shall be of a neutral color that is identical to, or closely compatible with, the color of the tower or

alternative tower structure so as to make the antennas and related facilities as visually unobtrusive as possible.

14.1.5. Wires Connected to Towers and Poles:

To the extent possible, cable or fiber that connects transmission equipment to an equipment box shall be contained inside the pole. If cables and fiber cannot be installed internally, it shall be flush mounted to the pole and covered with a metal, plastic, or similar material cap that matches the color of the pole and is properly secured and maintained by the provider, or cable or fiber shall be enclosed within conduit or a similar cable cover which shall be painted to match the pole.

14.1.6. Backhaul Connected to Towers and Poles:

All new wired backhauls shall be installed underground. Providers using backhaul that utilizes wireless technology shall not disturb any trees or vegetation without approval by, or complying with any conditions set by, the Public Works Director.

15. Construction of Wireless Facilities on Municipal Streetlight Poles and Facilities:

15.1. Attachment:

For the placement of new communication facilities, including small cell facilities on an existing utility pole or streetlight pole, completion of structural analysis from a licensed professional engineer which describes the facility, utility pole, or street light's pole structural capacity, including that said facility can safely accommodate all antennas, transmission equipment, and accessory equipment to include conduit, electric disconnects and service panels, as well as the existing equipment already located on the pole to include streetlight fixtures, arms and banners and brackets. Said analysis shall be submitted with the application and shall be stamped by a Kansas Registered Professional Engineer. Said report and analysis shall also reflect that the facility or pole is capable of withstanding standard wind loads for applications for the type requested, in compliance with all City Codes, nationally recognized street and highway safety codes, and the City's Manual on Infrastructure Standards.

15.2. Compliance with FCC Standards:

An Engineer's certification that any proposed communication facility on the proposed site within the ROW complies with all FCC standards regarding provisions and regulations for radio frequency emissions or exposure and anticipated levels of electromagnetic radiation to be generated by the facility; provided that, nothing within this section requires or is intended to hold service providers or ROW-users or to exceed the requirements issued or promulgated by the FCC.

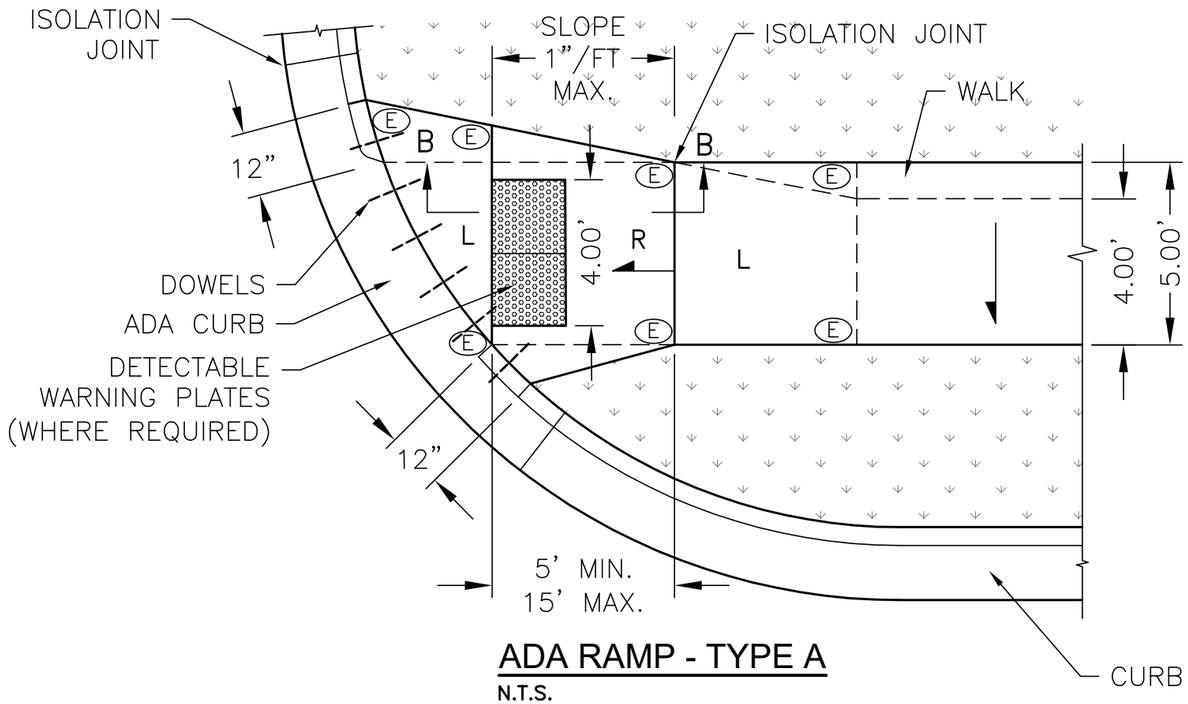
All proposed communication facilities, including small cell facilities on an existing utility pole or streetlight pole or newly installed replacement utility pole or streetlight pole that satisfies the structural analysis requirements, shall include an electrical disconnect switch for the proposed equipment to include notification procedures for the City to the Provider so that the City can safely work on its streetlights or banners and not be exposed to harmful levels of radio frequency emissions or harmful exposure of electromagnetic radiation generated by the proposed facility.

15.3. State Highway Corridors:

Applicants for use, construction, excavation, modification, or conducting repairs in or on the State Highway ROW also within the City's ROW shall first obtain a permit from the Kansas Department of Transportation prior to submission of an application for permit to use the ROW to the City and shall include a copy of such permit with the submission of the application.

Standard Details

- 01 Type A, AM Handicapped Ramp
- 02 Type B, BM Handicapped Ramp
- 03 Curbs & Sidewalks
- 04 Driveways
- 05 Street Trench



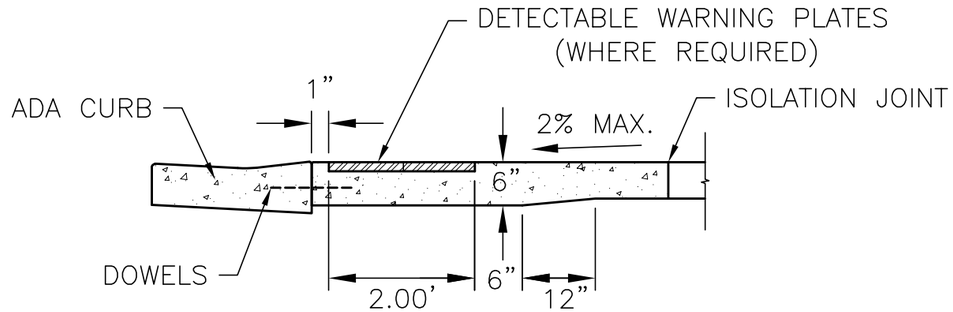
ADA RAMP - TYPE A

N.T.S.

NOTES

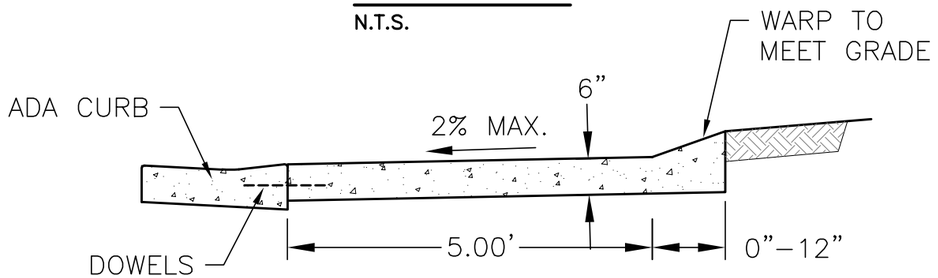
1. NO ISOLATION JOINT MATERIAL BETWEEN CURB & LANDING/WALK.
2. WALK/LANDINGS CROSS SLOPE 2% MAX.
3. LANDINGS TO BE 2% (1:50) MAX. SLOPE IN ALL DIRECTIONS.
4. RAMP SLOPE 8.33% (1:12)MAX. LONG. 2% (1:50) MAX. CROSS
5. LENGTH OF RAMPS 5'–0" MIN. TO 15'–0" MAX.
6. DOWELS BETWEEN CURB & DRIVE/WALK SHALL BE #4 x 18" @ 12" O.C. – EPOXY COATED.

DETECTABLE WARNING PLATES TO BE DURALAST CAST IRON.
EJCO.COM 1.800.626.4653
RADIAL PLATES ARE REQUIRED WHEN INSTALLED AT BACK OF CURB ALONG CURVES. SEE PLAN FOR LOCATIONS AND RADIUS.
INSTALL PER MANUFACTURES INSTRUCTIONS.



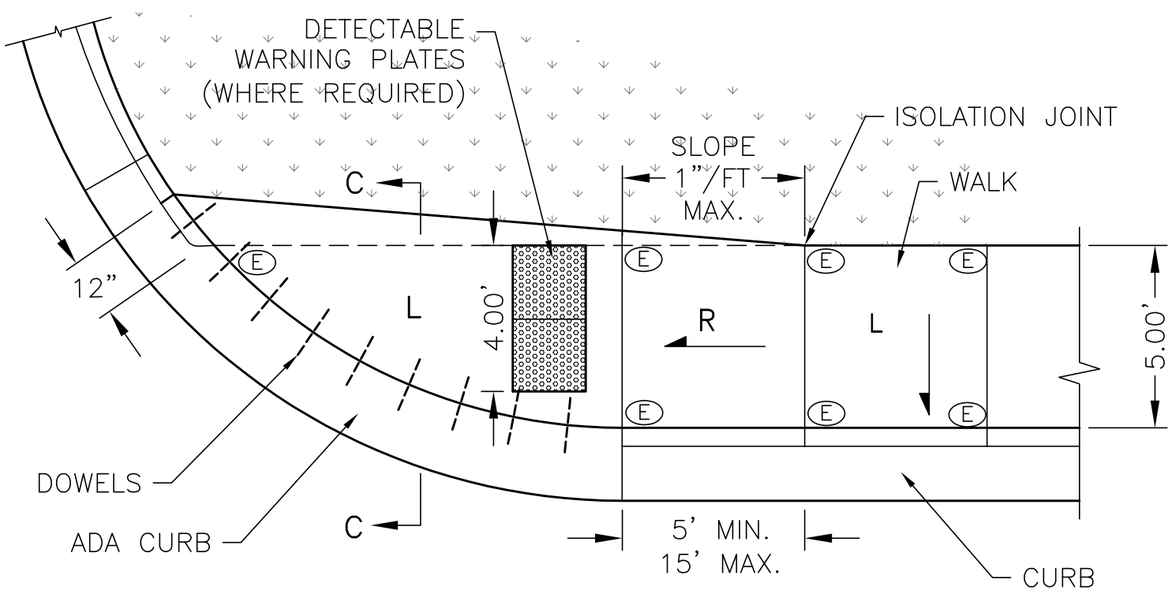
SECTION B-B

N.T.S.



SECTION C-C

N.T.S



ADA RAMP - TYPE A-M

N.T.S.

(E) = PROVIDE ELEVATION

CITY of WESTWOOD
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ADA RAMP - TYPE A

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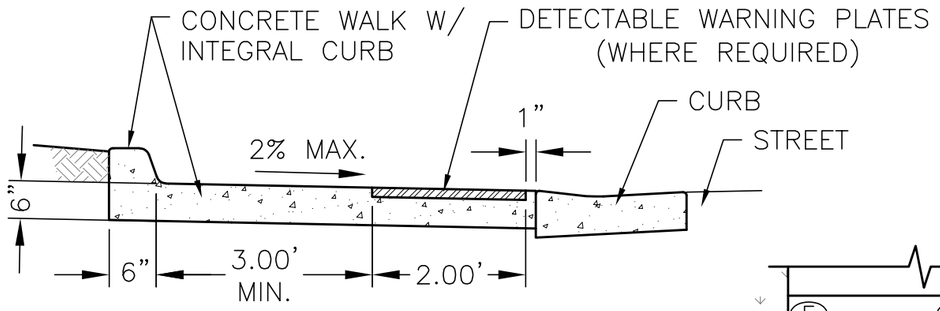
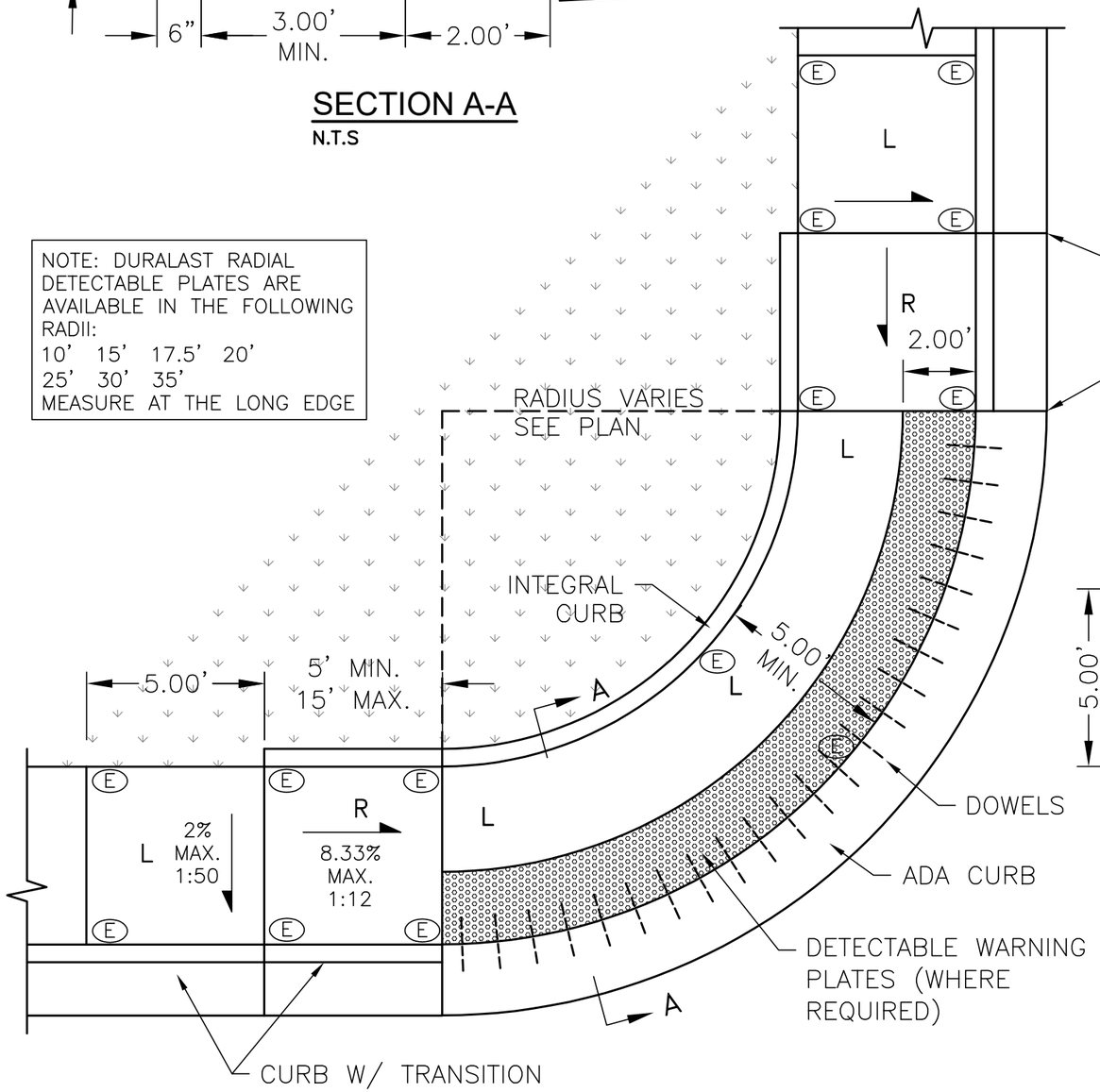


SECTION A-A
N.T.S

NOTE: DURALAST RADIAL DETECTABLE PLATES ARE AVAILABLE IN THE FOLLOWING RADII:
10' 15' 17.5' 20'
25' 30' 35'
MEASURE AT THE LONG EDGE

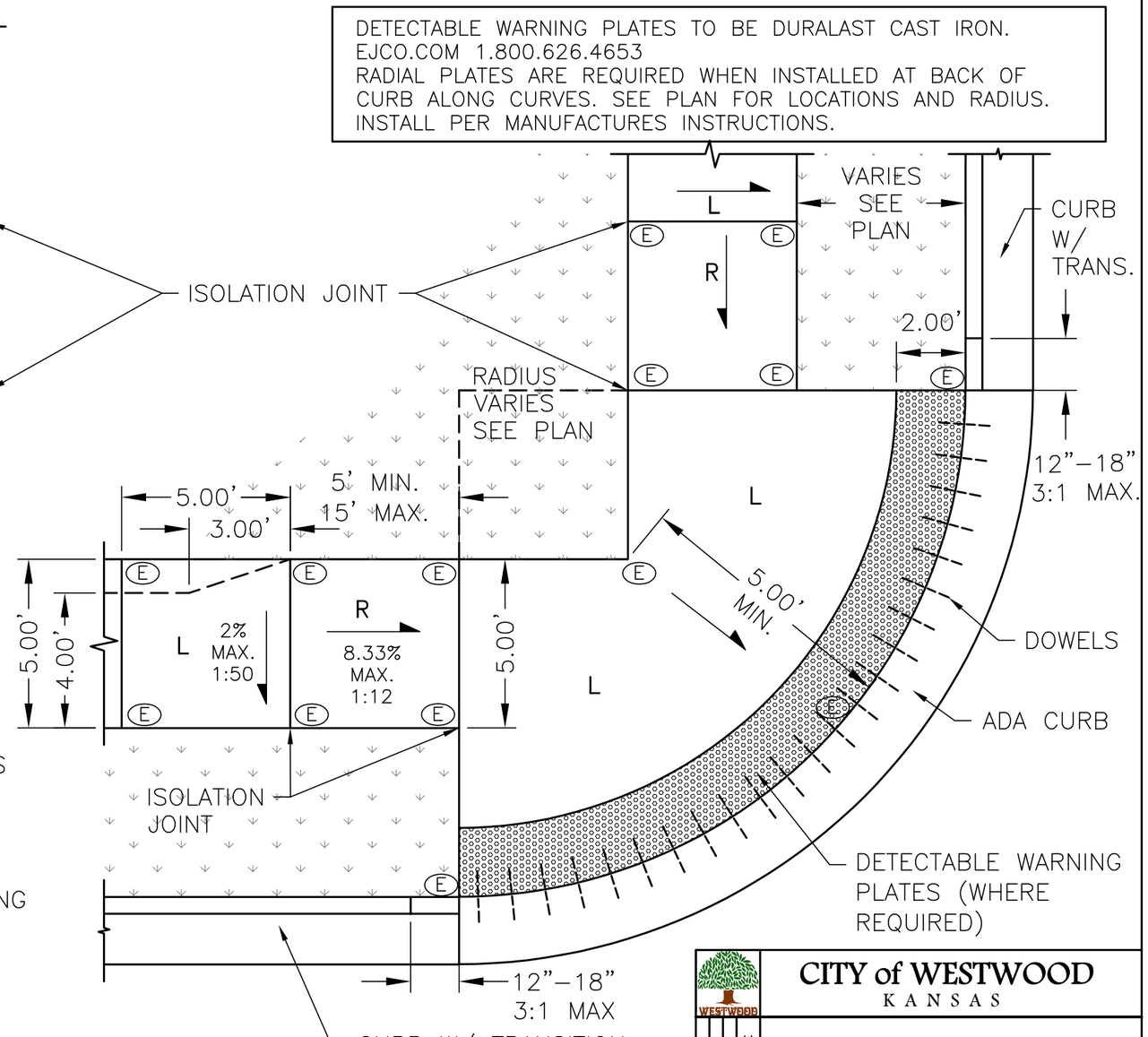


ADA RAMP - TYPE B-M
N.T.S.

(E) = PROVIDE ELEVATION

NOTES
1. NO ISOLATION JOINT MATERIAL BETWEEN CURB & LANDING/WALK.
2. WALK/LANDINGS CROSS SLOPE 2% MAX.
3. LANDINGS TO BE 2% (1:50) MAX. SLOPE IN ALL DIRECTIONS.
4. RAMP SLOPE 8.33% (1:12)MAX. LONG. 2% (1:50) MAX. CROSS
5. LENGTH OF RAMPS 5'–0" MIN. TO 15'–0" MAX.
6. DOWELS BETWEEN CURB & DRIVE/WALK SHALL BE #4 x 18" @ 12" O.C. – EPOXY COATED.

DETECTABLE WARNING PLATES TO BE DURALAST CAST IRON.
EJCO.COM 1.800.626.4653
RADIAL PLATES ARE REQUIRED WHEN INSTALLED AT BACK OF CURB ALONG CURVES. SEE PLAN FOR LOCATIONS AND RADIUS.
INSTALL PER MANUFACTURES INSTRUCTIONS.



ADA RAMP - TYPE B
N.T.S.

CITY of WESTWOOD
KANSAS

ADA RAMP - TYPE B

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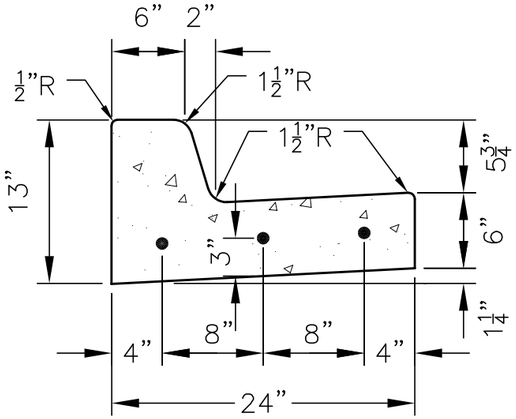
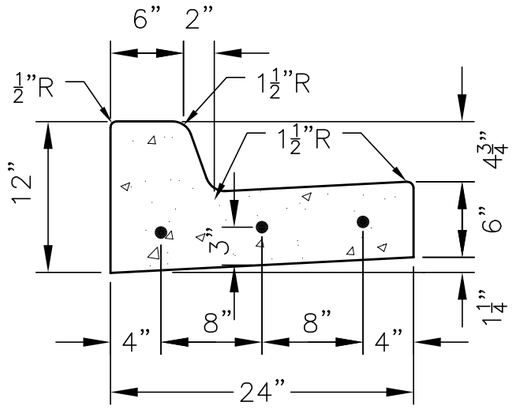
NOTES:
1. REINFORCEMENT SHOWN IS FOR LOCATION & CLEARANCE. SEE SPECIFICATION FOR ADDITIONAL REINFORCEMENT REQUIREMENTS.
2. ALL CONCRETE TO BE KCMMB AE 4K –OR– APPROVED EQUAL



THOROUGHFARE VERTICAL CURB
N.T.S.



RESIDENTIAL VERTICAL CURB
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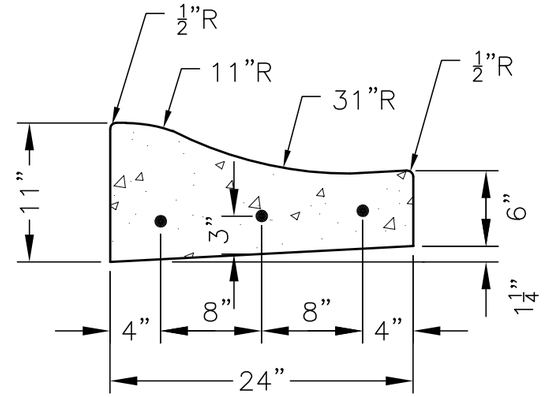
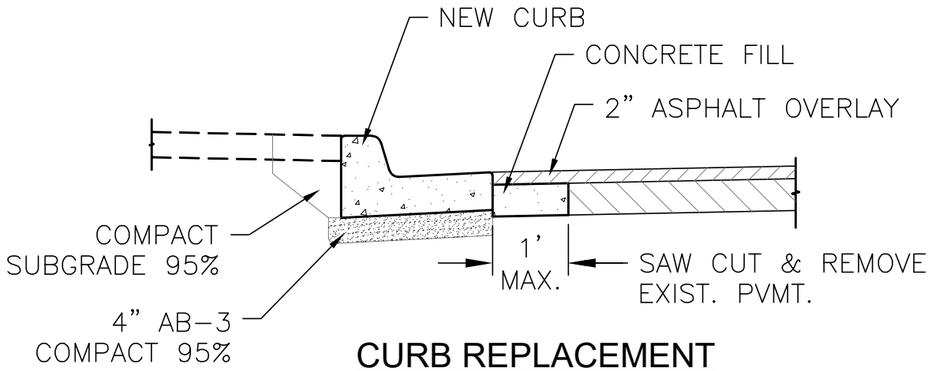
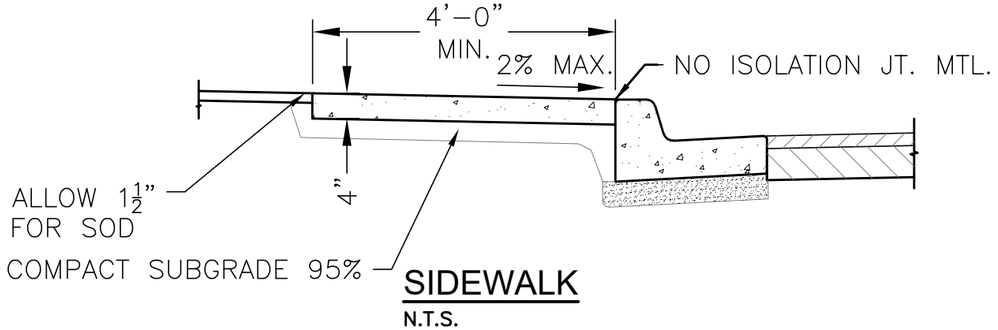


ROLLBACK CURB
N.T.S.

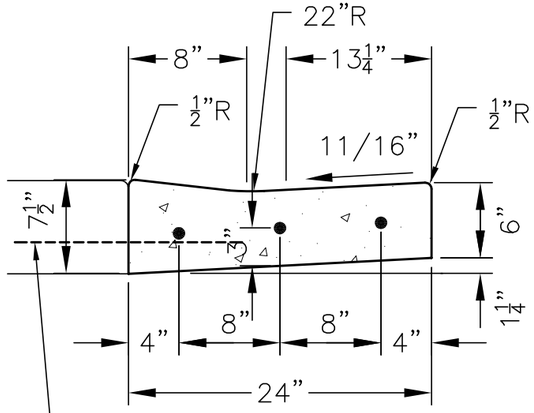


CURB REPLACEMENT
N.T.S.

NOTE: 1" DEEP CONTROL JOINTS SPACING TO EQUAL WIDTH OF WALK – TOOL ALL 4 EDGES

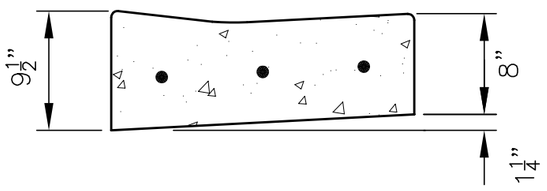


SIDEWALK
N.T.S.



#4 DOWELS 18" @ 12" O.C. EPOXY COATED–3" CLEAR @ BOTTOM (TYP.)

ADA & RESIDENTIAL DRIVEWAY CURB
N.T.S.



SAME AS RESIDENTIAL DRIVEWAY CURB EXCEPT FOR DIMENSIONAL DIFFERENCES SHOWN.

COMMERCIAL DRIVEWAY CURB
N.T.S.

CITY of WESTWOOD
KANSAS

CURBS & SIDEWALKS

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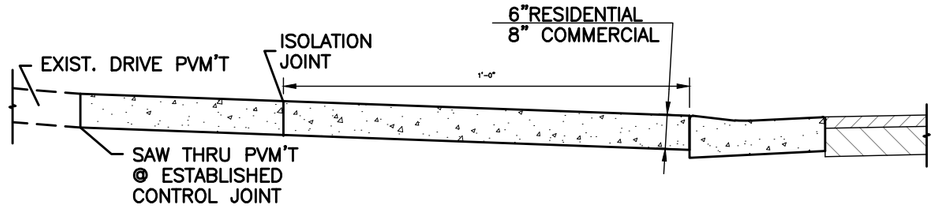
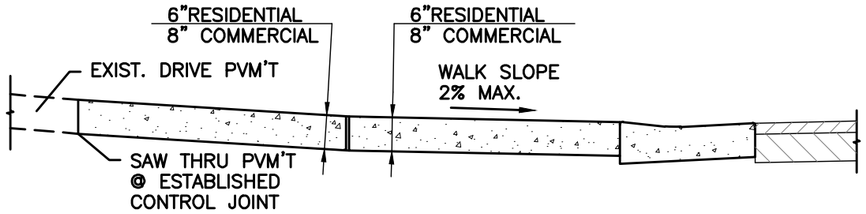
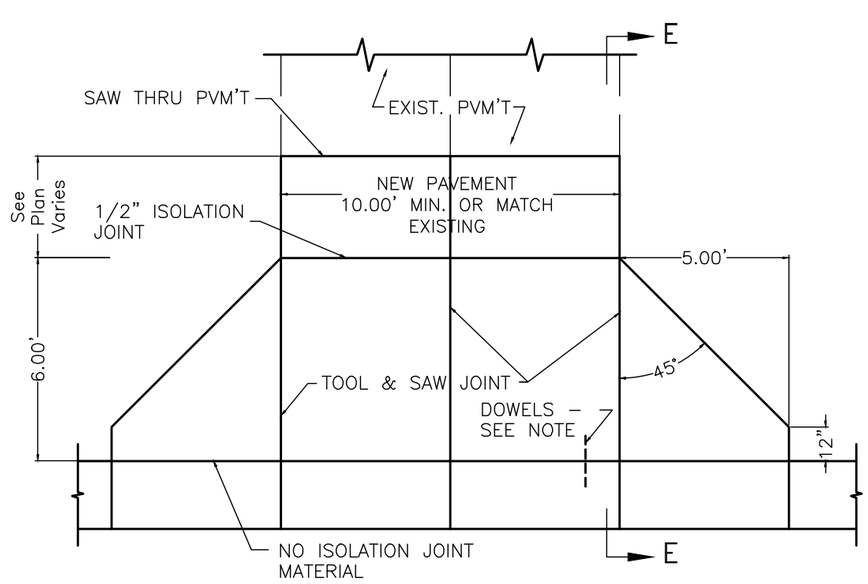
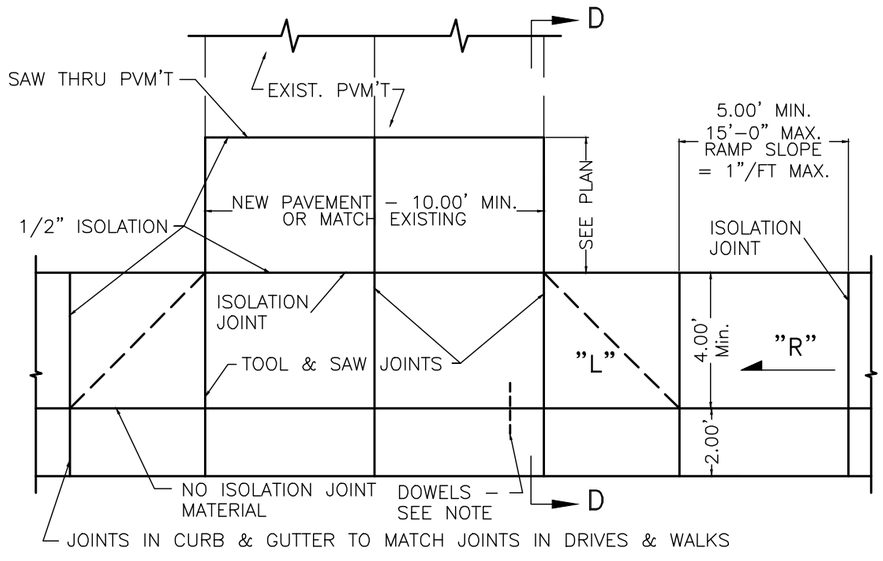
NOTES:

1. CURB JOINTS TO MATCH DRIVE JOINTS. NEW DRIVE MATERIAL & SURFACE SHALL MATCH EXISTING DRIVE.
2. ASPHALT DRIVES SHALL HAVE 4" THICK BASE, APWA 1–01 OR 2–01.
3. SURFACE COURSE SHALL BE APWA 3–01.
4. REINF. DOWELS BETWEEN CURB & DRIVE/WALK SHALL BE #4x18" @ 12" O.C. – EPOXY COATED FOR ALL CONCRETE DRIVE APPROACHES.
5. ALL TOOLED JOINTS SHALL BE TOOLED & SAWED TO A DEPTH OF 1/3 PAVEMENT THICKNESS.
6. SLOPE ON ALL LANDINGS & DRIVE APPROACHES WITH SIDEWALKS TO BE 2% MAX. IN ALL DIRECTIONS.









CITY of WESTWOOD
KANSAS

DRIVEWAYS

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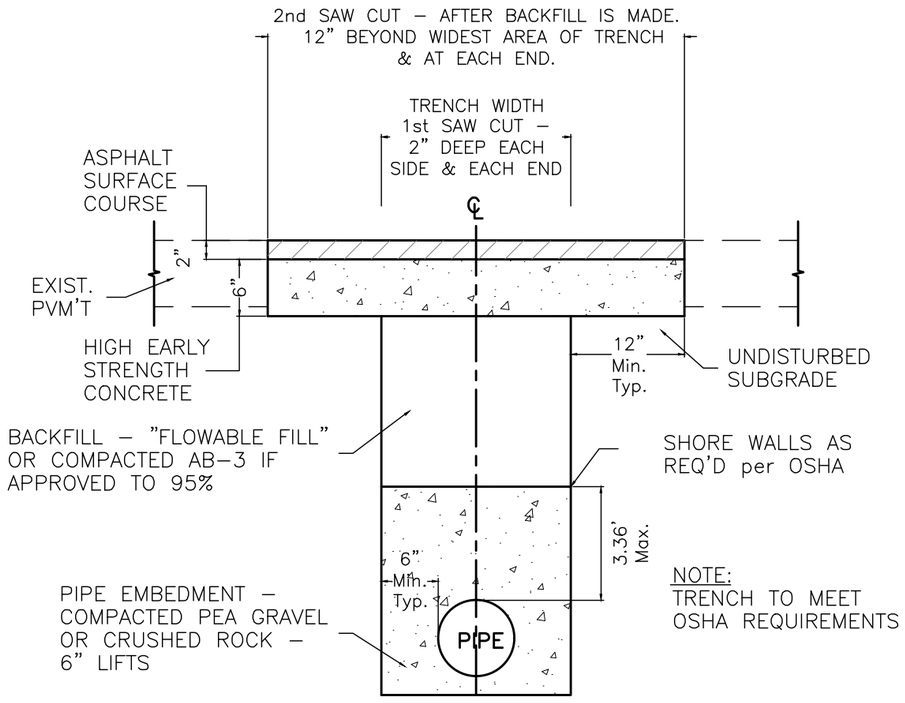

CITY of WESTWOOD
KANSAS

Street Trench

PUBLIC WORKS DEPARTMENT
STANDARD DETAILS

DATE: 26 OCT 2021

SHEET
05

DATE
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