

GENERAL NOTES

Provide all materials and perform construction in accordance with City of Wichita Standard Specifications, unless shown or stated otherwise on these Drawings or in the Special Provisions.

Excavation Safety

Provide a minimum advance notice of seventy-two (72) hours to utility companies prior to starting any excavation, as follows:

Kansas one-call 1-800-344-7233
or local Wichita 687-2470

The contractor must notify the following in case of an emergency:

AT&T (telephone) 1-800-870-8390
Cox communications (cable) 262-0661
Westar (electric) 383-8600
Kansas gas service (gas) 1-888-482-4950
City of Wichita, Water & Sewer Maintenance. 262-6000
Black Hills (gas) 946-0096

Preserve existing property irons. Reestablish any property irons damaged or destroyed by construction operations. Reestablishment of damaged irons shall be at the contractor's expense by a licensed land surveyor in accordance with Kansas state laws.

City of Wichita Public Works Department (PWD) shall provide all construction staking at no cost to the contractor. Coordinate survey staking with the PWD and give the surveyor 24 hours notice when stakes are required.

Others will adjust utility service lines, poles, valve boxes, meters, etc., as necessary, prior to construction unless the Drawings specifically call for their adjustment by Contractor. Existing utilities and their location, as shown on the Drawings, represent the best information obtainable for design. The plan locations shown are not guaranteed. Additional existing utilities may also be encountered. Contractor shall work around existing utilities within the right-of-way that do not conflict with proposed construction.

Others will relocate all business signs, posts and landscaping features that conflict with the new construction prior to construction. Contractor shall remove and dispose of all items that remain within the construction limits upon the start of construction, unless otherwise noted.

Contractor shall provide disposal sites and dispose of all rubble from the removal of miscellaneous structures and excess excavation that is to be wasted. Engineer shall approve the suitability, appearance and site location of disposal sites. Engineer shall not approve locations that will leave an unsightly appearance, in Engineer's opinion. Obtain approval from Kansas Department of Health and Environment for all disposal sites. Obtain Kansas State Board of Agriculture permits for any material stockpiled or disposed of in a flood plain. Obtain approval and permits from U. S. Army Corps of Engineers for any material dumped in waters of the United States or wetlands. Provide additional archeological investigations for any material buried or stockpiled beyond approved construction limits, unless buried or stockpiled in a previously approved disposal location.

Maintain access control along the project corridor throughout construction. Construct temporary fence at no additional cost to the City of Wichita if necessary to maintain access control.

SITE RESTORATION NOTES

All ruts and areas significantly disturbed by construction traffic during tree removal activities shall be filled, graded, and seeded. Significant rutting or disturbance of the levee embankment shall be repaired in accordance with the procedures shown on sheet G-1.04.

Repair or replace damaged items not part of the project at no additional cost to City of Wichita.

Place compacted topsoil to a minimum depth of 6 inches or as specified on the drawings. The finished grade on Drawings indicates the surface elevation after placement of the prescribed topsoil thickness. Offsite topsoil borrow shall be fertile natural topsoil, typical of the locality, obtained from well-drained areas. Stockpiled topsoil may be used. It shall be without admixture of subsoil or slag and shall be free of stones, lumps, sticks, plants, or their roots, toxic substances or other extraneous matter that may be harmful to plant growth or would interfere with future maintenance. Topsoil pH range shall be 5.5 to 7.0. Engineer shall approve topsoil prior to placement.

Rake all gravel or other similar debris larger than 1/2 inch in diameter and remove during final grade preparation.

Seeding Operations

Substitute the following for City of Wichita Specification Section 902.2 and Table 902-1.

Provide seed in standard containers that is new crop seed complying with and labeled in accordance with U.S. Department of Agriculture rules and regulations under the Federal Seed Act in effect at the time of purchase. Furnish a statement certifying the purity percent, germination percent, and the sproutable seed percent for the seed. Store the seed in a cool, dry place. Seed that is moldy, wet or otherwise damaged will not be accepted.

Water seeded areas with a deep soaking every two (2) weeks during dry periods until a mature stand of grass is obtained.

Seeding shall be accomplished per the following rates and specifications:

Table with 2 columns: COMMON NAME, RATE (PLS lbs/acre)*. Rows include Smooth Brome (75), K-31 Fescue (300), Annual Rye (100), Fertilizer (10-20-10) (350).

*Pounds of pure live seed per acre

The Seeding process shall include in order:

- 1. Furnish topsoil
2. Finish grading
3. Prepare seedbed
4. Seed and maintain areas as required.

All seeded areas on or within 3 feet of the toe of the levee embankment shall be covered with an Erosion Control Blanket (North American Green SC150, or approved equivalent). All other seeded areas shall be covered with a prairie hay mulch, or equivalent. No bare ground shall be visible in the seeded area if proper application is achieved. Thick clumps of mulch are not permissible as uniform coverage is expected. Mulch shall be applied at a minimum of 4,000 lbs. per acre.

Seeding shall not be performed in windy weather. Seeding shall be done in two (2) directions at right angles to each other. A 3-ft wide strip shall be sodded along sidewalks, roadways, and parking areas to prevent washing and erosion. Following initial soil disturbance or redistribution, permanent or temporary erosion control measures shall be installed within seven days. The erosion control measures shall be installed on all perimeter slopes and all other disturbed or graded areas on the project site.

TREE REMOVAL NOTES

Removal of all woody vegetation and trees within a clear zone is required to provide access for periodic inspection, regular maintenance, and flood fighting (if required), as well as to protect the levee from damage due to tree root intrusion and from trees blowing over and uprooting the levee.

Substitute the following for City of Wichita Specification Section 202.2.

Remove trees and any other undesirable woody vegetation within the 15 foot clear zone on each side of the existing or reconstructed levee in general accordance with USACE ETL 1110-2-571 'Guidelines For Landscape Planting And Vegetation Management At Floodwalls, Levees, Embankment Dams, And Appurtenant Structures', the project specifications, these notes, and Drawing G-1.03. Measure the clear zone from the levee toe, the land side of collection ditch, land side face of floodwall, or relief well, to the center of the tree trunk.

Before proceeding with any tree removal activities, obtain, or confirm that the City of Wichita has obtained, all required permits.

Remove all trees, regardless of size, within the 15 foot clear zone as shown on the attached Drawing G-1.03. Trees located outside the 15 foot clear zone, but having limbs encroaching within the levee right-of-way (R.O.W.), shall be trimmed back to a minimum of 20 feet above the ground level. Any trees specified for removal outside of the 15 foot clear zone do not require root ball extractions and may be cut level with the surrounding natural ground surface.

Determine the diameter of a tree by measuring the widest section of the tree trunk at a point 2 feet above the ground surface.

Cut trees and other woody vegetation having a trunk diameter less than 4 inches flush with the ground and treat the remaining exposed stump with herbicide containing Glyphosate (Roundup, Accord) or Triclopyr (Redeem) to prevent regrowth. Treat the entire cut surface by applying herbicide immediately after cutting. Following herbicide application, treat exposed surfaces with a protective coating similar to polyurethane that will prolong the decaying process.

Totally remove (including stump and root ball) trees located in the "clear zone" and having a trunk diameter greater than 4 inches. Cut trees that are 4 inches and larger approximately 2 feet above the ground level leaving a prominent stump for use in the root ball extraction procedure. Protect and avoid damaging the existing embankment, overhead/buried utilities, conveyance structures, vegetation to remain, and nearby properties.

Grub stumps of all trees 4 inches in diameter and larger within the levee 15 feet clear zone. Remove root balls by pulling the stump or extraction with appropriate excavation equipment. Special tree removal procedures are required for trees on levee crown or slopes; see Drawing G-1.03 for details. Once the root ball has been extracted, any remaining loose soil or remaining root system shall be removed from the cavity by excavating the root ball cavity with a horizontal bottom and maximum side slopes of 1:0.1:5 (horizontal to vertical) as shown on sheet G-1.03.

Backfill all excavations with approved, Engineered Fill as specified in GRADING NOTES. Overfill all root ball cavities or excavations a minimum of 5 percent of fill depth to provide positive drainage and allow for settlement. Flowable Fill as specified in GRADING NOTES may be used to backfill excavations that are not located within the embankment.

Within the levee embankment slopes and crown, place approved backfill material in accordance with Compaction & Moisture Control as specified in GRADING NOTES except the maximum thickness of loose lifts shall be 6 inches. Verify compaction in accordance with Routine Density Tests as specified in GRADING NOTES.

Outside the levee embankment, place approved backfill material in accordance with Compaction & Moisture Control as specified in GRADING NOTES. Verify compaction in accordance with Routine Density Tests as specified in GRADING NOTES.

Grade and seed all areas disturbed by the construction activity, except as otherwise noted in Seeding Operations. Prevent water from ponding on the levee or within the 15 feet clear zone and provide for positive drainage away from the levee. Restore grades in accordance with SITE RESTORATION NOTES and provide positive drainage of finished surface to prevent ponding of water.

Remove all woody debris, stumps, root balls, tree trunks, limbs, etc. from the levee to approved disposal locations.

All fencing (new and repaired) shall be subsidiary to tree removal.

TREE TRIMMING NOTES

Perform tree trimming with sharp instrument/tool intended for such operations. Knocking branches off with a backhoe or other similar machine is not acceptable. Refer to tree trimming detail on Drawing G-1.03 for trimming procedure.

FLOOD WALL CONSTRUCTION JOINT SEALANT NOTES

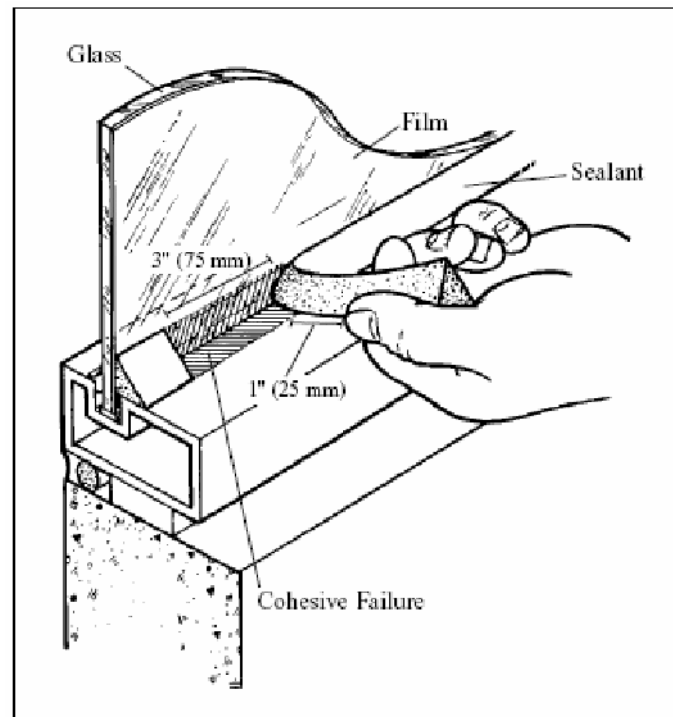
Provide elastomeric sealant meeting ASTM C920, Type M, Grade NS, Class 25, Use M requirements. Prior to beginning Work, select a representative test location for proof testing and test sealant per Standard Sealant Adhesion Test, below, to assure satisfactory adhesion of sealant to the concrete surfaces. If the sealant fails the adhesion test; determine the suitability of the sealant for the application, adequacy of substrate cleaning and preparation, or other reason for failure prior to commencing Work.

Clean and clear all vegetation, old damaged sealant, and any other deleterious material from all exposed flood wall construction joints. Assume that all joints are clean, free from frost and surface moisture, and within the proper thermal range specified by the sealant manufacturer prior to sealant application. Fully seal all construction joints with a Type M, Grade NS, Class 25, Use M elastomeric sealant meeting ASTM C920 requirements. Apply sealant according to manufacturer's recommendations. Test sealant applied to construction joints and cracks per Standard Sealant Adhesion Test, below, for proper adhesion to the concrete surfaces.

Standard Field Adhesion Test

The field adhesion test is a simple screening procedure that may help detect application problems such as improper cleaning, use of improper primer, poor primer application or improper joint configuration. As a check for adhesion, a simple hand pull test is required at the job site after the sealant is fully cured per manufacturer's instructions (usually within 7 to 21 days). Field adhesion testing should be documented using a Field Adhesion Testing Log. Perform a minimum of five tests, but at least one test per each 1000 linear feet of joint that are sealed.

The hand pull test procedure is as follows:



Field Adhesion Test - Weathersal Joint

- a. Make a knife cut across the joint.
b. Make cuts along each side of the joint approximately 3" (75 mm) long.
c. Place a 1" (25 mm) mark on the sealant tab as shown in the illustration.
d. Grasp a 2" (50 mm) piece of sealant firmly just beyond the 1" (25 mm) mark and pull at a 90 degree angle.
e. If dissimilar substrates are being sealed, check the adhesion of sealant to each substrate separately. This is accomplished by extending the cut along one side of the joint, checking adhesion to the opposite side, and then repeating for the other surface.
f. If the sealant does not pass according to the guidelines provided, consult the Manufacturer.
g. Inspect the joint for complete fill. The joint should not have voids, and joint dimensions should match those shown in the Manufacturer's Specifications.
h. Record the test results in a Field Adhesion Testing Log. Retain testing log as a part of As-Built Records.

Repair the sealant pulled from the test area by applying new sealant to the test area. Assuming good adhesion was obtained, use the same application procedure to repair the areas as was used to originally seal it. Care should be taken to ensure that the original sealant surfaces are clean and that the new sealant is in contact with the original sealant.

LEVEE SURFACING

The top width of the Levee shall be graded such that all ruts are filled in and a relatively level to slightly crowned surface is provided.

After grading, Recycled Asphalt Pavement (RAP) shall be placed at a minimum nominal compacted depth of 8-inches thick and rolled with a large steel drum or approved equivalent. The top width of RAP surfacing shall be a minimum of 12 feet with 1:1 side slopes. R.A.P. shall consist of 100% recycled asphalt material, either millings or crushed with a maximum particle size of 3". AB-3 aggregate meeting KDOT specification 1104 requirements for quality and gradation may be used in lieu of RAP for surfacing material.

GRADING NOTES

Levee construction usually occurs in a narrow strip with limited access for equipment to transport, place, spread, and compact the fill. To assure that the levee is stable and resistant to the forces of water, it is critical that the foundation be properly prepared, good materials be used, and that satisfactory compaction be accomplished. Because the construction usually takes place in a narrow strip, conventional mass grading techniques and testing frequencies are usually not appropriate.

Preparation

Clear the Work area by complete removal of all objectionable matter and/or obstructions above the ground surface. Objectionable matter includes all trees, fallen timber, brush, vegetation, loose stone, abandoned structures, fencing, and similar debris. Clear the entire foundation area under the proposed levee and berms prior to construction operations. Dispose of objectionable matter and/or obstructions in approved disposal area.

Strip topsoil from Work areas to a minimum depth of 4 inches or as designated on Drawings. Stockpile stripped material that is suitable for use as topsoil for later reuse. Material that does not contain wood, clods, and other objectionable material (i.e. roots, rocks, and debris) and contains adequate moisture and is capable of supporting vegetation growth may be suitable for use as topsoil. Dispose of unsuitable stripped material in approved disposal area.

Engineered Fill

In general, soil excavated in Work areas is suitable for use as engineered fill if it is free of organic matter and other objectionable material (i.e. roots, rocks, and debris), is of suitable moisture content, and it meets the requirements of an approved soil as stated in the Record Tests section.

Test proposed engineered fill soil as indicated in "Record Tests" prior to beginning fill placement for the Work. Once placement of engineered fill commences, the new set of "Record Tests" shall be completed a minimum of once every 5,000 cubic yards (or fraction thereof) of engineered fill placed. Retest the engineered fill as indicated in "Record Tests" if the consistency, color, texture, or appearance of the engineered fill changes significantly or if three or more routine density tests on the same material fail by yielding relative compaction percentages below 95% or above 105% of maximum dry density (MDD).

Maintain construction slopes and grades to provide positive drainage during all grading operations; if necessary, install sumps and provide pumps to maintain the Work free of standing water.

Record Tests

Testing shall only be required where compacted earthfill is placed within the "clear zone" of a levee. Test each type of engineered fill used for the Work to determine the MDD and optimum moisture content (OMC) per ASTM D-698 (standard Proctor) and the soil classification per ASTM D2487 (USCS) of the material. Perform all tests necessary to provide the USCS classification (e.g., plasticity characteristics per ASTM D4318 (Atterberg Limits), particle size distribution per ASTM D422, specific gravity ASTM D854) for each type of engineered fill soil. Assume that all engineered fill used for the Work meets the Unified Soil Classification System (USCS) type SM, SC, CH, CL, or ML. Soil not meeting those USCS types must have hydraulic conductivity (ASTM D5084) and triaxial shear (ASTM D4767) tests at 95% of the soils MDD at OMC submitted to the Engineer for approval.

Identify each record test with a unique designation that includes a clear description and photographs of the soil in both moist and dry states so the routine density tests can be readily matched to the appropriate record test. Publish copies of all record tests to the City of Wichita, Engineer, Testing Service, Contractor, and/or other entities on the distribution list. Maintain at least one up-to-date set of copies at all Work site(s).

Compaction & Moisture Control

Place approved engineered fill in maximum 8 inch thick, loose lifts and compact to at least 95% of its MDD within the levee embankment slopes and crown. Maintain engineered fill moisture content between -1% to +2% of its OMC prior to and during compaction.

Outside the levee embankment, place approved backfill material in maximum 8 inch, loose lifts and compact to at least 90% of its MDD. Maintain engineered fill moisture content between -3% to +2% of its OMC prior to and during compaction.

Routine Density Tests

Perform routine density tests at a frequency of at least one test per each 2000 square feet, per lift, on all engineered fill placed for the Work with a minimum of at least three tests for each complete lift of engineered fill. Match each routine density test to the record test that most closely matches the soil at the test location.

Identify each routine density test with a unique designation and provide written documentation of each test location, elevation, actual lift thickness measurement, matching record test, actual moist density, actual moisture content, actual dry density, percent of MDD and OMC relative to the matched record test, whether the test passes or fails, and, if a retest of a failed test, the original test's unique designation.

The following table indicated the required precision for test locations:

Table with 2 columns: Location station and offset, to the nearest ten feet; Elevation, to the nearest 1/2 foot; Lift thickness, to the nearest 1/10 foot.

A test fails if the compaction is less than the specified criteria for MDD or if the moisture is outside of the specified range for OMC (e.g., a test may have acceptable compaction, but fail due to being too dry or too wet). If routine density tests indicate inadequate compaction or excessively dry or moist soil, rework the whole lift represented by the failing test. Retest the failed area after it has been reworked and recompacted.

Flowable Fill

Flowable fill may be used to backfill excavations not located within the levee embankment. The following table presents the minimum allowable mix design for flowable fill. Test aggregates for alkali-aggregate reactivity per ASTM C1260 if more than 200 cubic yards of flowable fill is used in the project. Materials with measured expansion of less than 0.10% at 16 days after casting are acceptable.

Table with 3 columns: Material, Fill Mix (batch weight per cubic yard), Remarks. Rows include Portland Cement type I or II, Fly Ash, Sand SSD(3), Total Water, Air Entraining Agent, Water reducing Admixture.

- (1) Ground Granulated Blast Furnace Slag.
(2) Class C shall not be used with aggregate that exhibit alkali-aggregate reactivity potential.
(3) Saturated Surface Dry(1) Ground Granulated Blast Furnace Slag.

Table with 10 columns: DATE, APPR, MARK, DESCRIPTION.

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CITY OF WICHITA logo

SYSTEMWIDE VEGETATION MAINTENANCE - PHASE 1 WICHITA-VALLEY CENTER LOCAL FLOOD PROTECTION PROJECT WICHITA, KANSAS PREPARED FOR THE CITY OF WICHITA, KANSAS 465 N. Main Wichita, KS 67202

LAWRENCE J. SAMPLE LICENSED PROFESSIONAL ENGINEER 15855 5-28-10 KANSAS

Table with 2 columns: DESIGNED BY: Larry Sample, PE; DATE: 5-28-2010; DWN BY: DSM; CKD BY: LBK; APP BY: L. SAMPLE

AMEC PROJ. NO. 5-6150-0000

GENERAL NOTES G-1.02 SHEET 3 OF 38