GENERAL NOTES

Unless shown or stated otherwise on these drawings, all materials, and construction shall be in accordance with City of Wichita Standard Specifications..

Contractor will be required to 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 Maint.	262–6000
Black Hills (gas)	946–0096

The Contractor shall be responsible for preserving existing property irons shown on plans that are to remain. The Contractor will be required to reestablish any shown property irons which are damaged or destroyed by his construction operations. Such irons shall be reestablished at the Contractor's expense by a licensed land surveyor in accordance with state laws.

All construction staking shall be performed by the City of Wichita Public Works Department at no cost to the contractor. The contractor shall coordinate the survey staking with the City of Wichita Public Works Department and give the surveyor 24 hours notice when stakes are required.

Project surveys were performed on the NAD83 State Plane Coordinate System, South Zone. No coordinates were modified to ground. Elevations are in USGS Mean Sea Level Datum. (NAVD 88).

Utility service lines, poles, valve boxes, meters, etc... are to be adjusted as necessary by others prior to construction unless the plans specifically call for their adjustment by the contractor. Existing utilities and their location, as shown on the plans, represent the best information obtainable for design. Some utilities have been relocated and may not reflect so on the plans. Location information has been obtained from the various utility companies and is either from company record drawings or company provided field locations. The plan locations shown are not guaranteed. Additional existing utilities may also be encountered. The contractor will be required to work around existing utilities within the right–of–way which do not conflict with proposed construction.

All business signs, posts and landscaping features in conflict with the new construction will be relocated by others prior to construction. Upon the start of construction, all items that remain within the construction limits shall be removed and disposed of by the contractor unless otherwise noted.

Rubble from the removal of miscellaneous structures and excess excavation which is to be wasted shall be disposed of on sites to be provided by the contractor. These sites shall be approved by the Engineer as to suitability, appearance and site location. Locations that, in the opinion of the Engineer, will leave an unsightly appearance will not be approved. All disposal sites must be approved by the Kansas Department of Health and Environment. Material either stockpiled or disposed of in a flood plain would require a Kansas State Board of Agriculture permit. Any material dumped in waters of the United States or wetlands is subject to U.S. Corps of Engineers permitting regulations. Any material buried or stockpiled beyond approved construction limits would require additional archeological investigations unless buried in a previously approved borrow location.

Contractor shall remove and deliver to 1801 S. McLean all manhole frame and lids noted for removal during construction. All associated costs to transport the salvaged material will be Subsidiary to the bid item "Site Clearing and Restoration".

The bid item "Removal of Existing Structures" includes the removal and disposal of drainage structures, fences, buildings, manholes, etc. that are within the project construction limits.

Demolition of buildings shall be accomplished in conformance with City Standards. Contractor is responsible for all aspects of the demolition. All costs associated will be subsidiary to the bid item "Removal of Existing Structures".

Contractor is responsible for maintaining access control along the project corridor throughout construction. If necessary to maintain access control, temporary fence shall be constructed at no cost to the owner.

SITE RESTORATION NOTES:

Repair rutting on levee surfaces due to storm water runoff throughout construction. Significant rutting shall be repaired in accordance with procedure shown on Sheet SP–3.01. Replace lost seed, fertilizer and erosion control devices at no additional cost to the City of Wichita.

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

Place topsoil to a minimum compacted 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 ½ 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:

COMMON NAME	RATE(PLSlbs/acre)*
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.

Cover all seeded areas with a 6:1 or steeper Slope with an Erosion Control Blanket (North American Green SC–150), or approved equivalent. Cover all other seeded areas with a prairie hay mulch, or equivalent. No bare ground shall be visible in the seeded area. Thick clumps of mulch are no permissible, provide uniform coverage. Apply mulch 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 redisturbance, 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.

All costs for this Work shall be subsidiary to the Seeding and Site Restoration bid item. Erosion Control Blanket will be paid for seperately.

RAILROAD NOTES:

All work performed within the Union Pacific Railroad (UPRR) right–of–way shall conform to the UPRR construction standards and specifications and the most current American Railway Engineering and Maintenance–of–Way Association (A.R.E.M.A.) Manual for Railway Engineering in addition to those stated in these plans. In the event of conflict between these specifications, the more restrictive will apply.

The contractor will obtain a permit from the UPRR to perform the work shown in these plans. The contractor will comply to all rules and regulations set forth in the permit in addition to those noted above.

The contractor will obtain the required railroad insurance as directed by the UPRR. A railroad flagman will be required to be on site at all times when work is occurring on railroad right–of–way. The contractor is responsible for coordinating this work. Flagman expenses are subsidiary to the project.

TRAFFIC CONTROL AND CONSTRUCTION SEQUENCING NOTES:

The contractor is responsible for preparing and submitting a construction sequence plan prior to construction.

The contractor is responsible for erecting and maintaining traffic control as sown on this sheet. All other traffic control necessary due to construction activity on or near local or private streets will be the responsibility of the Contractor.

Access to the project site to and from Interstate 135 right–of–way will not be allowed.

The contractor will maintain adequate drainage within the project limits throughout all construction activities. Any temporary grading or storm collection/distribution necessary to provide adequate drainage that is not outlined in the plans will be the contractor's responsibility and subsidiary to the bid item "Traffic Control".

The contractor is responsible for locating acceptable fill material sources, determining haul routes to and from the construction site and establishing staging on or near the construction site.

Levee Surfacing with RAP shall not be started until all other earthwork and grading is completed.

The existing aerial AT&T crossing at Station 158+88 will be removed from the construction limits by others. This work will not be accomplished until December 1, 2009. The Contractor shall work around the crossing and all appurtenances within the construction limit until this date. The Contractor is required to provide access to AT&T for the purpose of removing the crossing.

Properties S6, S7 and S10 have yet to be acquired by the City of Wichita. The Contractor is not permitted to encroach onto these properties until the City has permission to do so. See sheets G–1.06 and G–1.07 for property identification.

SPECIAL NOTES REGARDING BREACHES THROUGH THE LEVEE:

Repairs to existing sections of levee, storm pipe removal and replacement and levee widening transitions to existing levee sections will require cuts to be made through existing portions of the levee. Adherence to the following notes will be required to perform cuts through existing levees:

Schedule Work requiring breaching levees during historic periods of low river stage. The river stage at the nearest, upstream river gage shall be less than ½ bank–full and steady or dropping prior to beginning Work requiring breaching levees.

Monitor the weather forecast frequently and coordinate the Work with the City of Wichita in accordance with 3.04 Flood Warning and Prediction Service of the Operation and Maintenance Manual. Postpone Work requiring breaching levee if Contractor anticipates significant precipitation or if there are severe storm and/or flash flood watches in the upstream watershed prior to or during planned Work period.

The Contractor shall Maintain a sufficient supply of approved fill material on–site and appropriate equipment to patch construction breaches in the levee should the river level rise above ½ bank–full stage at the nearest, upstream river gage. The Contractor shall be responsible for ceasing construction activities at construction breach locations and immediately patching breaches in the levee whether there is a threat of flooding and whenever so directed by City of Wichita.

Cuts in the levee for pipe installation shall be made only when all proposed pipe material for the given drainage pipe is on site.

TREE REMOVAL NOTES:

Remove trees and any other undesirable woody vegetation within the 15 feet 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 SP–2.12. Measure the clear zone from the levee's toe, the land side of collection ditch, land side face of floodwall, or relief well, to the center of the tree trunk.

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.

Remove trees having a trunk diameter 4 inches and larger totally, including stump and root ball. 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 process. 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 with the levee 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 SP–2.12 for details. Conce 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 slope of 1.0:1.5 (horizontal to vertical) as shown in the attached drawing.

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 with the embankment.

Within the levee embankment slopes and crown, place approved backfill material in accordance with Compaction and 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 and 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. 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 levee to approved disposal locations.

Tree removal will also be required to allow construction of new fence. Remove trees to provide clear space along fences for installation, access, and security. Grub all stumps for all trees that are in conflict with proposed improvements such as fences.

Any tree that must have branches removed shall be trimmed with sharp instrument/tool that is intended for such operations. Consult landscape architect prior to trimming. Knocking branches off with a back hoe or other similar machine is not acceptable! Refer to tree trimming detail on sheet SP–3.02 for trimming procedure.

EROSION CONTROL NOTES:

These plans provide for the construction of all improvements without necessity of entering or disturbing the Arkansas River. If the contractor determines that entering the river will be necessary, he will be responsible for obtaining all permits and adhering to all regulatory requirements. The contractor shall prevent all construction material and debris from coming in contact with the river.

ABANDONMENT OF PIPES THROUGH LEVEE NOTES:

Remove portion of pipe exposed to allow for construction of new levee.

Securely plug or cap pipe ends by a means approved by the owner.

Fill pipe completely with pressure grout in a manner that ensures all annular space will be filled.

Grout material shall be sand cement slurry with a minimum of two (2) sacks of cement per cubic yard and a minimum of water to assure satisfactory placement.
All materials, labor and equipment subsidiary.

GRADING NOTES:

Levee construction usually occurs in 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 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 following construction operations. Dispose of objectionable matter and/or obstructions in approved disposal area.

Within the Work area, grub all stumps, roots, buried logs, old piling, old paving, drains, and other objectionable matter. Remove roots or other intrusions over 1–1/2 inches diameter within the levee foundation area to a depth of 5 ft below existing ground surface. Slope the sides of all holes and depressions caused by grubbing operations no steeper than 1.5:1.0 (H:V) before backfilling. Dispose of grubbed material 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 USC classified 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

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 D–2487 (USC) of the material. Perform all tests necessary to provide the USC classification (e.g. plasticity characteristics per ASTM D–4318 (Atterberg Limits), particle size distribution per ASTM D–422, specific gravity ASTM D–854) for each type of engineered fill soil. Assure that all engineered fill used for the Work meets the Unified Soil Classification (USC) system type SM, SC, CH, CL, or ML. Soil not meeting those USC types must have hydraulic conductivity (ASTM D–5084) and triaxial shear (ASTM D–4767) 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 test to 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

Placed 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% and +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 construction.

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:

Location station and offset	To the nearest ten feet
Elevation	To the nearest ½ 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.

LEVEE SURFACING NOTES:

The top width of the Levee shall be stripped and graded such that all organic matter is removed and a level side–to–side surface is provided.

After stripping and grading, RAP shall be placed at a nominal compacted depth of 8" thick and rolled with a large steel drum or approved equivalent. Width of placement on the top of the asphalt shall be between 8 to 12 feet and side slope of RAP shall be 1:1. RAP shall consist of 100% recycled asphalt material, either millings or crushed with a maximum particle size of 3".

MARK	DESCRIPTION	DATE	APPR.

MKEC ENGINEERING CONSULTANTS, INC.
411 N. WEBB ROAD
WICHITA, KS. 67206
316–684–9600

CITY OF WICHITA

LEVEE 'S':
WICHITA-VALLEY CENTER LOCAL FLOOD PROTECTION PROJECT
WICHITA, KANSAS

PREPARED FOR
THE CITY OF WICHITA, KANSAS
CLIENTS STREET ADDRESS
CLIENTS STATE AND ZIP CODE

DESIGNED BY: JAY R. ANGLEMYER		DATE: 14-Oct-09
DWN BY: STAFF	CKD BY: STAFF	APP BY: JRA
FILE NAME: J:\Civil\07866\dwg\TITLE\07866Note		

MKEC PROJ. NO. 0701040866

LEVEE S
GENERAL NOTES

G-1.02