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.
Horizontal Project Datum: NAD83 State Plane, south zone
Vertical Project Datum: NAVD88, USGS mean sea level

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 or local Wichita	1-800-344-7233 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 all 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.

Project surveys used the NAD83 state plane coordinate system, south zone. No coordinates were modified to ground. Elevations are in USGS mean sea level datum (NAVD 88).

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. Some utilities were previously relocated and may not be reflected on the Drawings. Various utility companies provided utility location information from record drawings or field locations; 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 dispose of and provide disposal sites for 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 deposited 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.

Items noted for removal may be abandoned in-place if done so in conformance with City of Wichita standard specifications at no additional cost to City of Wichita. Contractor may remove items noted to be abandoned in-place or if in conflict with the proposed improvements at no additional cost to City of Wichita. Cost for removal or abandonment is subsidiary to "removal of existing items" and includes all removal items noted and not-noted on the plan sheets.

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.

Excavation on the levee embankment shall require the excavation area to be re-established in accordance with the Grading Notes section of these General notes.

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 C-2.05. Replace lost seed, fertilizer and erosion control devices at no additional cost to City of Wichita.

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

Place 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 ½inch 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(PLS lbs/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 slope steeper than 4:1 with EROSION CONTROL BLANKET (North American Green SC-150, or approved equal). All other seeded areas shall be covered with a prairie hay mulch, or equivalent. No bare ground shall be visible in the seeded area. Thick clumps of mulch are not permissible. Provide uniform coverage. 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 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.

The contractor shall be responsible for establishing a vigorous stand of vegetation in project seeding areas. A vigorous stand of vegetation for this project shall be defined as vegetation having a density equal to at least 70 percent of the vegetation density on undisturbed areas at the site. All work associated with seedbed preparation, seeding, mulching, and vegetation establishment shall be subsidiary to the Project Seeding bid Item "

EROSION CONTROL BLANKET will be paid for seperately.

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 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 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 3 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.

Before removing any old or abandoned pipes or any other objects that are in the levee, approval should be obtained from USACE indicating the removal and backfilling process.

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.

Frozen material shall not be used nor shall any fill be placed on frozen surfaces.

No foundation or embankment backfill shall be placed in standing or running water. Should a quick condition develop, dewatering by well points or other methods, shich will nullify the excess gradient, shall be used. Sump pumping will not be permitted.

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 D2487 (USC) of the material. Perform all tests necessary to provide the USC 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. 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 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 color 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 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 -1% to +3% of its OMC prior to and during compaction.

Routine Density Tests

The contractor shall provide an inspector qualified to perform tasks as outlined in EM 1110-2-1913, "Design and Construction of Levees", Section III. The contractors's inspector shall 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. Routine density test shall be completed in accordance with ASTM D6938 for nuclear in-place density testing. is testing method chosen. The results of all density testing shall be reported to and verified by an inpsector designated by the City of Wichita.

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 moisture 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 indicates the required precision for test locations:

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 is 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 for the project. Materials with measured expansion of less than 0.10% at 16 days after casting are acceptable.

Flowable fill consistency – The fresh mixture shall not be thin and watery, but shall have a consistency similar to that of batter. It shall be tested by filling an open-ended 3-inch diameter, 6-inch high cylinder to the top with the mixture and immediately pulling the cylinder straight up. The correct consistency will produce an approximate 8-inch diameter circular-type spread with no segregation.

These drawings have been prepared based on historical documents. Do not scale drawings. All measurements are subject to field verification by the Contractor. All measurements and quantities shown hereon are best estimates at the time of drawing preparation.

GRADING NOTES (cont.):

Material	Fill Mix (batch weight per cubic yard)	Remarks
Portland Cement Type I or II	minimum 100 lbs	ASTM C150 meeting low alkali requirements. Or, ASTM C989, Grade 100 or 120 GGBFS(1) Cement.
Fly Ash	minimum 275 lbs	ASTM C618, Class N, C(2) or F.
Sand SSD(3)	2795 lbs	ASTM C33, concrete fine aggregate.
Total Water	maximum 370 lbs	Potable water.
Air Entraining Agent	Minimum 2 ounces	ASTM C260
Water reducing Admixture	As required to produce cohesive flowable mixture	ASTM C494, Type A or F.

(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

SPECIAL NOTES REGARDING BREACHES THROUGH THE LEVEE:

Installation and removal of the by-pass pumping/siphoning pipes through the levee as well as any necessary point repairs to the levee may require temporarily breaching existing portions of the levee. Adherence to the following notes will be required to breach any portion of the existing levee.:

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 ½bank-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 rises above ½bank-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 whenever there is a threat of flooding and whenever so directed by City of Wichita.

Make breaches in the levee for pipe installation only when all required pipe, approved fill, and other material and equipment for the Work is on site and ready to install.

CONCRETE REPAIR NOTES

All replacement concrete shall have a compressive strength of 4,000 PSI at 7 days using type III cement, unless noted otherwise. All replacement concrete shall be tested in accordance with standard methods specified by ACI Manual of Practice, 2010, including but not limited to ACI 364.1R, ACI 318-08 and ACI 546. Also, reference U.S. Army Corps of Engineers standard EM 1110-2-2002.

All reinforcing steel shall conform to ASTM A615. All reinforcing steel dowel installation shall conform to ACI-318-08.

Concrete removal shall be performed by cutting, abrasives or impact methods only.

The City Representative shall be AMEC Earth & Environmental or other authorized representative.

Project is considered to be under the of a performance specification. Repairs must meet a minimum design life of 20 years. Repairs outlined are intended to provide guidance. Alternate procedures may be considered but ultimately must meet the approval of the Project Engineer and the City of Wichita prior to the commencement of construction.

In all areas of repair, the contractor shall provide a submittal indicating methods and procedures including but not limited to the following;
- Removal of Concrete and Steel
- Surface Preparation
- Bonding Agents
- Mix Designs of Cementitious Materials
- Placement of Cementitious Materials
- Finish Treatments
- Installation of Grout Fill in Voids
- Manufacturer Information for Mechanical Splices
- Steel Mill Certifications

CONSTRUCTION SEQUENCE

1. Stage all material equipment necessary to work on a location.
2. Isolate from stream and excavate pool area.
3. Stabilize (cover with geotextile or EC matting) any exposed banks around pool. Install temporary slope barrier along slope above pool.
4. Allow stream to flow into pool.
5. Locate pump and run pump line to location designated downstream.
6. Install any necessary stabilization along pump line or at outlet end.
7. Install up stream cofferdam.
8. Install down stream cofferdam.
9. Pump out water captured between cofferdams.
10. Run pump from pool as needed to bypass walk area.
11. Any water captured between cofferdams after work begins must be filter before released.
12. Perform repairs between cofferdams.
13. Remove all debris, sediment, etc from between cofferdams.
14. Stabilize any areas disturbed between cofferdams.
15. Remove down stream cofferdam.
16. Remove up stream cofferdam.
17. Remove pump and line from across levee and re-stabilize as needed.
18. Repair/restore pool area.

EROSION CONTROL NOTES

1. Existing vegetation shall be preserved where practical.
2. Minimize time period for soil areas to be without vegetative cover.
3. Clearing and grubbing within 50 feet of defined drainage course should be delayed until all material and equipment necessary to complete the drainage change are on-site.
4. Work impacting defined drainage course shall be completed as quickly as possible, once work has been initiated.
5. Areas impacted by construction within the drainage course should be re-vegetated or stabilized to minimize erosion, as soon as possible.
6. If construction activities temporarily stop, disturbed areas shall be protected from erosion.
7. The contract documents provide for the construction of most improvements without necessity of entering or disturbing any regulated streams or drainage systems. When the contractor must enter a regulated stream or drainage system, he will be responsible for obtaining all necessary permits and adhering to all regulatory requirements. Where possible the contractor shall prevent all construction material and debris from coming in contact with any regulated stream or drainage system.

ADDITIONAL EROSION CONTROL NOTES

1. Use temporary erosion and pollution control measures to control erosion resulting from the construction of the project.
2. Use temporary erosion and pollution control measures to prevent contamination of adjacent streams or other watercourses, lakes, ponds, or other areas of water impoundment.
3. Coordinate temporary erosion and pollution control measures with the construction of permanent erosion control features to provide continuous erosion control. Schedule construction of drainage structures and permanent erosion control features as soon as practical.
4. Initiate temporary erosion and pollution control measures as soon as practical, within 14 days after construction activities have temporarily or permanently ceased on a portion of the project site. Exceptions to this requirement are as follows: If implementations of erosion and pollution control measures are precluded by snow cover, such measures will be undertaken as soon as practical. If construction activities will resume on the portion of the project site within 21 days, temporary erosion and pollution control measures do not have to be initiated.
5. The Engineer will limit the surface area of erodible earth material exposed by clearing and grubbing, by excavation, by borrow, and by embankment operations. The Engineer will limit the exposed erodible earth material according to the Contractor's capability and progress in keeping with the approved schedule. The surface area of erodible earth material exposed at one time will not exceed 17.3 acres per equipment spread, unless approved in writing by the Engineer.
6. Restrict construction operations in rivers, streams, and other water impoundments to those areas which must be entered for the construction of temporary or permanent structures. When no longer required, promptly remove all falsework, piling, or other obstructions caused by the construction.
7. Avoid frequent fording of live streams with construction equipment.
8. Accomplish temporary erosion and pollution control through the use of berms, slope drains, ditch checks, slope barriers, sediment basins, seeding and mulching, and erosion control blankets. These measures may be taken at any time of the year.
9. Install and maintain temporary erosion and pollution control devices as shown on the plans, or as dictated by weather conditions, actual site conditions, construction procedures, and as directed by the Engineer. If temporary erosion and pollution control is not implemented and maintained according to the approved schedule, all work on the project will cease until conditions are brought back in to compliance, as determined by the Engineer.
10. Prevent discharge of solid materials into waters of U.S.
11. Minimize off-site tracking of sediment by construction vehicles.
12. Soil shall be stockpiled where it will not re-enter waters of U.S.

MARK	DESCRIPTION	DATE	APPR.

amec
AMEC Environment & Infrastructure, Inc.
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Topeka, Kansas 66604
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CITY OF WICHITA

Diversion Structure Rehabilitation Improvements For the WICHITA-VALLEY CENTER LOCAL FLOOD PROTECTION PROJECT
WICHITA, KANSAS

PREPARED FOR
THE CITY OF WICHITA, KANSAS
455 N. Main
Wichita, KS 67202

DON W. DOTSON LICENSED KANSAS PROFESSIONAL ENGINEER 19964

DESIGNED BY: DON DOTSON, P.E.		DATE: 2012/JAN/16
DWN BY: Staff	CKD BY: CJR	APP BY: LJS
FILE NAME: 00_GENERAL NOTES.dgn		

AMEC PROJ. NO. 5-6150-0001

GENERAL NOTES

G-1.02

SHEET 3 OF 17