

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

The Missouri Department of Natural Resources hereby issues a permit to:

Kenneth Gross
Country Acres Residential Park
21202 Saddle Rock Lane
Aurora, CO 80016

for the construction of (described facilities):

See attached.

Permit Conditions:

See attached.

Construction of such proposed facilities shall be in accordance with the provisions of the Missouri Clean Water Law, Chapter 644, RSMo, and regulation promulgated thereunder, or this permit may be revoked by the Department of Natural Resources (Department).

As the department does not examine structural features of design or the efficiency of mechanical equipment, the issuance of this permit does not include approval of these features.

A representative of the department may inspect the work covered by this permit during construction. Issuance of a permit to operate by the department will be contingent on the work substantially adhering to the approved plans and specifications.

This permit applies only to the construction of water pollution control components; it does not apply to other environmentally regulated areas.

April 7, 2015
Effective Date

Sara Parker Pauley
Sara Parker Pauley, Director, Department of Natural Resources

April 6, 2016
Expiration Date

John Madros
John Madros, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Wastewater treatment system modifications to existing three-cell lagoon system followed by a polishing recirculating sand filter and disinfection construction consisting of: 19 linear feet of 6-inch PVC pipe; 13,948 gallon recirculation tank with four – 0.75 horsepower pumps designed for 40.7 gallons per minute at 45.4 feet of total dynamic head; 140 linear feet of 2-inch PVC pressure pipe; 2 – 32 feet by 44 feet polishing recirculating sand filter beds; 120 linear feet of 4-inch PVC pipe; one Norweco Model 2000 tablet chlorinator; 295 gallon chlorine contact volume; one Norweco Model 2000 tablet dechlorinator; effluent weir; and all the necessary appurtenances to make the facilities complete and usable. This wastewater treatment facility is to serve 50 mobile homes in Country Acres Residential Park. The design flow is 13,125 gallons per day with a population equivalent (PE) of 175.

II. FINDING OF AFFORDABILITY

The Finding of Affordability is not applicable. The permittee is not a combined or separate sanitary sewer system or a publicly owned treatment works.

III. CONSTRUCTION PERMIT CONDITIONS

The permittee is authorized to construct subject to the following conditions:

1. This construction permit does not authorize discharge.
2. All construction shall be in accordance with the plans and specifications dated March 25, 2015 and submitted by Whitehead Consultants Inc. on March 27, 2015.
3. The department must be contacted in writing prior to making any changes to the approved plans and specifications that would directly or indirectly have an impact on the capacity, flow, system layout, or reliability of the proposed wastewater treatment facilities or any design parameter that is addressed by 10 CSR 20-8, in accordance with 10 CSR 20-8.110(8).
4. State and federal law does not permit bypassing of raw wastewater, therefore steps must be taken to ensure that raw wastewater does not discharge during construction. If a sanitary sewer overflow or bypass occurs, report the appropriate information to the department's Kansas City Regional Office per 10 CSR 20-7.015(9)(E)2.
5. This construction permit is invalid for projects required to comply with the requirements contained in 10 CSR 20-4, "Grants and Loans"
6. Protection of drinking water supplies shall be in accordance with 10 CSR 20-8.120(10). "There shall be no physical connections between a public or private potable water supply system and a sewer, or appurtenance thereto which would permit the passage of any wastewater or polluted water into the potable supply. No water pipe shall pass through or come in contact with any part of a sewer manhole."

7. Sewers in relation to water works structures shall meet the requirements of 10 CSR 23-3.010 with respect to minimum distances from public water supply wells or other water supply sources and structures.
 - A. Sewer mains shall be laid at least 10 feet horizontally from any existing or proposed water main. The distances shall be measured edge-to-edge. In cases where it is not practical to maintain a 10 foot separation, the department may allow a deviation on a case-by-case basis, if supported by data from the design engineer. Such a deviation may allow installation of the sewer closer to a water main, provided that the water main is in a separate trench or on an undisturbed earth shelf located on either side of the sewer and at an elevation so the bottom of the water main is at least 18 inches above the top of the sewer. If it is impossible to obtain proper horizontal and vertical separation as described above for sewers, the sewer must be constructed of slip-on or mechanical joint pipe or continuously encased and be pressure tested to 150 pounds per square inch to assure water tightness.
 - B. Manholes should be located at least 10 feet horizontally from any existing or proposed water main.
 - C. Manholes shall be located with the top access at or above grade level.
 - D. Sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to maintain line and grade. When it is impossible to obtain proper vertical separation as stipulated above, one of the following methods must be specified:
 - a. The sewer shall be designed and constructed equal to the water pipe and shall be pressure tested to assure water tightness prior to backfilling; or
 - b. Either the water main or sewer line may be continuously encased or enclosed in a watertight carrier pipe which extends 10 feet on both sides of the crossing, measured perpendicular to the water main. The carrier pipe shall be of materials approved by the department for use in water main construction.
8. In addition to the requirements for a construction permit, 10 CSR 20-6.200 requires land disturbance activities of one acre or more to obtain a Missouri state operating permit to discharge stormwater. The permit requires best management practices sufficient to control runoff and sedimentation to protect waters of the state. Land disturbance permits will only be obtained by means of the department's ePermitting system available online at www.dnr.mo.gov/env/wpp/epermit/help.htm. See www.dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm for more information.
9. A United States (U.S.) Army Corps of Engineers (COE) permit (404) and a Water Quality Certification (401) issued by the department or permit waiver may be required for the activities described in this permit. This permit is not valid until these requirements are satisfied. If construction activity will disturb any land below the ordinary high water mark of jurisdictional

waters of the U.S. then a 404/401 will be required. Since the COE makes determinations on what is jurisdictional, you must contact the COE to determine permitting requirements. You may call the department's Water Protection Program at 573-751-1300 for more information. See www.dnr.mo.gov/env/wpp/401/ for more information.

10. Upon completion of construction;
 - A. The owner will remain the continuing authority for operation, maintenance, and modernization of these facilities;
 - B. Submit the enclosed form Statement of Work Completed to the department in accordance with 10 CSR 20-6.010(5)(D);
 - C. Submit an electronic copy of the as built if the project was not constructed in accordance with previously submitted plans and specifications; and
 - D. Submit a Form B - Application for an Operating Permit for Domestic or Municipal Wastewater ($\leq 100,000$ gallons per day) along with the modification fee.

IV. REVIEW SUMMARY

1. AMMONIA

The Water Protection Program is providing this notice to inform permittees that EPA's published ammonia criteria for aquatic life protection is lower than the current Missouri criteria. The department has initiated stakeholder discussions on this topic and at this time, there is no firm target date for starting the rulemaking to adopt new standards. More information can be found at <http://dnr.mo.gov/pubs/pub2481.pdf>.

The proposed ammonia limits are expected to be met by the over-sizing of the recirculating sand filter system. An additional downstream aeration treatment system may have to be added in the future if the system does not perform as planned. System flow redesign such as returning partially treated sewage to an anaerobic chamber or lagoon cell may be an alternative also.

2. CONSTRUCTION PURPOSE

To be in compliance with the An Abatement Order on Consent regarding compliance with effluent limitations, facility is proposing to upgrade system by adding a recirculating sand filter.

3. FACILITY DESCRIPTION

Facility is an existing three-cell lagoon. Proposed construction is to modify the lagoon and add a recirculating sand filter and disinfection following the lagoon.

4. COMPLIANCE PARAMETERS

Facility has reported no discharge frequently for the past three years. Facility is under an Abatement Order on Consent to comply with Biochemical Oxygen Demand, Total Suspended Solids, and Fecal Coliform effluent limitations as contained in Part "A" of the Missouri state operating permit. The monthly average permit limits are 30 mg/L for Biochemical Oxygen Demand and Total Suspended Solids, and 206 #/100 mL as a geometric mean for *E. Coli*.

5. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

The submittal proposes to use the existing three-cell lagoon as primary treatment before the proposed recirculating sand filter. The recirculating sand filter bed is designed to treat 4.66 gallons per square foot. The chlorine contact volume is designed to provide 15 minutes of contact time.

6. OPERATING PERMIT MODIFICATION

Draft Missouri State Operating Permit MO-0114898, which reflects this proposed construction, was placed on public notice for public comments on December 26, 2014. A comment letter was received regarding disinfection of the effluent from the wastewater treatment system. A copy of the response letter to the comment letter is enclosed.

Operating permit MO-0114898 will require a modification to reflect the construction activities. Upon construction completion, submit a \$150 modification fee and Form B - Application for an Operating Permit for Domestic or Municipal Wastewater ($\leq 100,000$ gallons per day).

RECEIVED

CP0001536

AP15019

C11587



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION CONTROL BRANCH
**FORM A - APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT
 UNDER MISSOURI CLEAN WATER LAW**

FOR AGENCY USE ONLY

CHECK NUMBER

1302

LV

DATE RECEIVED

5/30/13

FEE SUBMITTED

750.00

Note

PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM.

1. This application is for:

- An operating permit and antidegradation review public notice
- A construction permit following an appropriate operating permit and antidegradation review public notice
- A construction permit and concurrent operating permit and antidegradation review public notice
- A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required)
- An operating permit for a new or unpermitted facility Construction Permit # _____
- An operating permit renewal: permit # MO- _____ Expiration Date _____
- An operating permit modification: permit # MO- _____ Reason: _____

1.1 Is the appropriate fee included with the application? (See instructions for appropriate fee) YES NO

2. FACILITY

NAME Country Acres Residential Park		TELEPHONE WITH AREA CODE (303) 217-1114	
ADDRESS (PHYSICAL) 176 SE Y Highway		CITY Warrensburg	STATE ZIP CODE MO 64093

3. OWNER

NAME Kenneth Gross		E-MAIL ADDRESS	TELEPHONE WITH AREA CODE (303) 217-1114	
ADDRESS (MAILING) 21202 Saddle Rock Lane		CITY Aurora	STATE ZIP CODE CO 80016	FAX

3.1 Request review of draft permit prior to public notice? YES NO

4. CONTINUING AUTHORITY

NAME Owner		TELEPHONE WITH AREA CODE		
ADDRESS (MAILING)		CITY	STATE	ZIP CODE

5. OPERATOR

NAME Owner		CERTIFICATE NUMBER	TELEPHONE WITH AREA CODE	
ADDRESS (MAILING)		CITY	STATE	ZIP CODE

6. FACILITY CONTACT

NAME Owner		TITLE	TELEPHONE WITH AREA CODE	
			FAX	

7. ADDITIONAL FACILITY INFORMATION

7.1 Legal Description of Outfalls. (Attach additional sheets if necessary.)

001 SW 1/4 NE 1/4 Sec 18 T 45N R 25W John County
 UTM Coordinates Easting (X): _____ Northing (Y): _____
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

002 _____ 1/4 _____ 1/4 Sec _____ T _____ R _____ County
 UTM Coordinates Easting (X): _____ Northing (Y): _____

003 _____ 1/4 _____ 1/4 Sec _____ T _____ R _____ County
 UTM Coordinates Easting (X): _____ Northing (Y): _____

004 _____ 1/4 _____ 1/4 Sec _____ T _____ R _____ County
 UTM Coordinates Easting (X): _____ Northing (Y): _____

7.2 Primary Standard Industrial Classification (SIC) and Facility North American Industrial Classification System (NAICS) Codes.

001 - SIC 6515 and NAICS _____ 002 - SIC _____ and NAICS _____
 003 - SIC _____ and NAICS _____ 004 - SIC _____ and NAICS _____

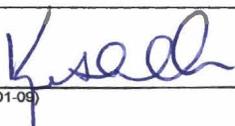
8. ADDITIONAL FORMS AND MAPS NECESSARY TO COMPLETE THIS APPLICATION
(Complete all forms that are applicable.)

- A. Is your facility a manufacturing, commercial, mining or silviculture waste treatment facility? YES NO
If yes, complete Form C (unless storm water only, then complete U.S. Environmental Protection Agency Form 2F per Item C below).
- B. Is your facility considered a "Primary Industry" under EPA guidelines: YES NO
If yes, complete Forms C and D.
- C. Is application for storm water discharges only? YES NO
If yes, complete EPA Form 2F.
- D. Attach a map showing all outfalls and the receiving stream at 1" = 2,000' scale.
- E. Is wastewater land applied? If yes, complete Form I. YES NO
- F. Is sludge, biosolids, ash or residuals generated, treated, stored or land applied? YES NO
If yes, complete Form R.

9. DOWNSTREAM LANDOWNER(S) Attach additional sheets as necessary. See Instructions.
(PLEASE SHOW LOCATION ON MAP. SEE 8.D ABOVE).

NAME Cynthia K Morris Sapp & Patricia A Morris			
ADDRESS 384 SW 811 Road	CITY Centerview	STATE MO	ZIP CODE 64019

10. I certify that I am familiar with the information contained in the application, that to the best of my knowledge and belief such information is true, complete and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders and decisions, subject to any legitimate appeal available to applicant under the Missouri Clean Water Law to the Missouri Clean Water Commission.

NAME AND OFFICIAL TITLE (TYPE OR PRINT) Kenneth Gross	TELEPHONE WITH AREA CODE (303) 217-1114
SIGNATURE 	DATE SIGNED 5/21/13

MO 780-1479 (01-09)

BEFORE MAILING, PLEASE ENSURE ALL SECTIONS ARE COMPLETED AND ADDITIONAL FORMS, IF APPLICABLE, ARE INCLUDED.
Submittal of an incomplete application may result in the application being returned.

HAVE YOU INCLUDED:

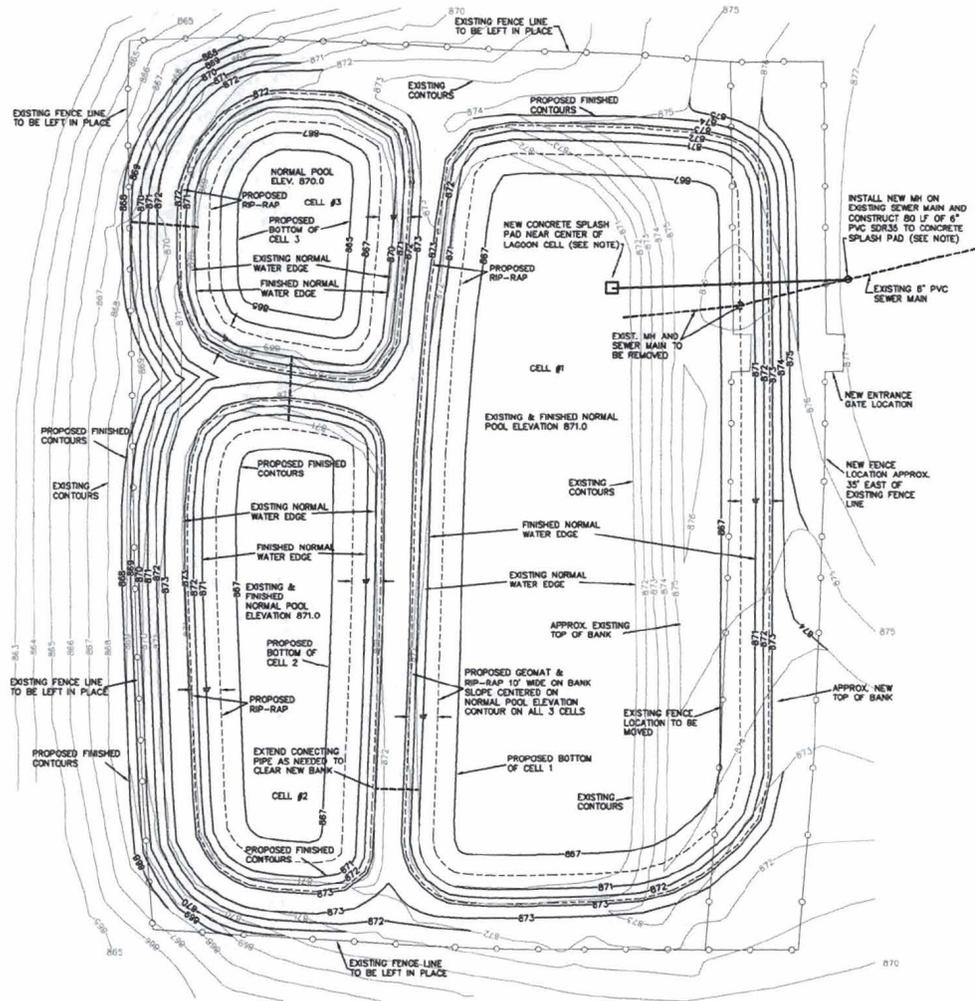
- Appropriate Fees?
- Map at 1" = 2000' scale?
- Signature?
- Form C, if applicable?
- Form D, if applicable?
- Form 2F, if applicable?
- Form I (Irrigation), if applicable?
- Form R (Sludge), if applicable?



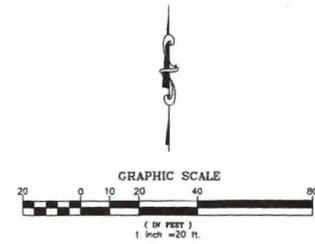
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MAY 30 2013

KANSAS CITY REGIONAL OFFICE



- GENERAL CONSTRUCTION NOTES:**
1. ALL NEW BANK SLOPES SHALL BE 3:1 UNLESS STATED OTHERWISE
 2. ALL EXISTING VEGETATION SHALL BE STRIPPED AND REMOVED WHERE NEW BANK CONSTRUCTION WILL TAKE PLACE.
 3. SCARIFY EXISTING GROUND SURFACE WHERE NEW FILL WILL BE PLACED.
 4. SEED, MULCH AND FERTILIZE ALL DISTURBED AREAS AS SOON AS POSSIBLE AFTER CONSTRUCTION IS COMPLETE.
 5. RELOCATE EXISTING FENCES AS NEEDED FOR CONSTRUCTION ACTIVITIES ON THE NORTH, WEST AND SOUTH SIDES. PROVIDE NEW FENCE ON THE EAST SIDE AT LEAST 10' FROM THE NEW TOP OF BANK.
 6. REMOVE SLUDGE FROM THE NORTH END OF CELL #1 WHERE THE EXISTING INFLOW PIPE IS LOCATED PRIOR TO EXCAVATING IN THAT AREA.
 7. THE EXISTING POOL ELEVATIONS IN THE CELLS WILL REMAIN THE SAME BUT THE CONNECTING PIPES MUST BE EXTENDED OR REWORKED TO MATCH THE FINISHED GRADES.
 8. THE FINISHED ELEVATIONS OF THE CELL BANKS SHALL BE A LEAST 2' ABOVE THE NORMAL POOL ELEVATIONS SHOWN.
 9. A SUITABLE GEOMAT APPROVED BY THE ENGINEER SHALL BE PLACED ON THE BANK SLOPES EXTENDING 5' UP AND DOWN THE SLOPES FROM THE NORMAL POOL ELEVATION AND SECURED IN PLACE WITH APPROPRIATE STAPLES. THE GEOMAT SHALL ALSO ACT AS A WEED BARRIER.
 10. THE RIP-RAP SHALL BE 6" TO 8" SIZE AND CAREFULLY PLACED TO BE UNIFORM IN DEPTH AND EVENLY DISTRIBUTED OVER THE GEOMAT MATERIAL. THE RIP-RAP SHALL BE PLACED TO PROVIDE AN APPROXIMATE 12" THICK BARRIER WHEN FINISHED.
 11. SPECIAL ATTENTION MUST BE GIVEN TO COLLAPSING AND RECOMPACTING THE BANK AREAS WHERE THERE IS DAMAGE FROM MUSKRATS AND OTHER VERMIN.
 12. FINAL GRADING MUST BE PERFORMED TO INSURE ALL SURFACES ARE SMOOTH ENOUGH TO PERMIT ROUTINE MOWING AND OTHER MAINTENANCE VEHICLE ACCESS TO ALL AREAS.
 13. THE NEW SEWER MAIN INFLOW PIPING SHALL BE RECONSTRUCTED FROM THE NEW MANHOLE LOCATION SHOWN ON THE PLANS OR STAKED IN THE FIELD BY THE ENGINEER TO A SPLASH PAD CONSTRUCTED NEAR THE MIDDLE OF CELL #1. THE SLOPE OF THE PIPE SHALL PROVIDE A MINIMUM COVER OF 18" WHERE POSSIBLE. THE NEW PIPE SHALL EXTEND FROM THE NEW MANHOLE TO A POINT APPROXIMATELY 6' FROM THE TOE OF THE NEW BANK SLOPE AND THEN SHALL LAY FLAT TO THE SPLASH PAD. IT SHALL BE A MINIMUM SD355 RATED PVC PIPE. THE MANHOLE SHALL BE A PRECAST CONCRETE OF STANDARD CONSTRUCTION. FINAL ELEVATIONS AND SLOPES WILL BE DETERMINED IN THE FIELD BASED ON FINAL CONSTRUCTION SLOPES. THE SPLASH PAD SHALL BE A MINIMUM 4' SQUARE AND CAN BE MADE OF POURED CONCRETE OR CONCRETE BLOCK MATERIALS. THE INFLOW PIPING SHALL BE PINNED IN PLACE TO PREVENT MOVEMENT AFTER CONSTRUCTION AND THE OUTFALL END SHALL BE SECURED TO THE CENTER OF THE PAD. THE PAD TOP SHALL MATCH THE BOTTOM OF THE LAGOON ELEVATION.
 14. ALL CONSTRUCTION PROCEDURES MUST BE IN COMPLIANCE WITH CURRENT MISSOURI DEPARTMENT OF NATURAL RESOURCES REGULATIONS AND SHALL BE APPROVED BY THE ENGINEER AND OWNER PRIOR TO PERFORMANCE OF THE WORK.
 15. THE LAGOON SYSTEM MUST BE LEFT IN OPERATION DURING CONSTRUCTION UNLESS ALTERNATIVE TREATMENT SYSTEMS ARE PROVIDED.
 16. SILT FENCES OR OTHER EROSION CONTROL DEVICES MUST BE INSTALLED TO PREVENT SILT RUNOFF FROM THE PROPERTY.
 17. ALL SAFETY MEASURES ARE THE RESPONSIBILITY OF THE CONTRACTOR.
 18. ALL PERMITS SHALL BE IN PLACE PRIOR TO ANY CONSTRUCTION OPERATIONS.



SITE PLAN

COUNTRY ACRES LAGOON IMPROVEMENTS
 178 SE Y HIGHWAY
 WARRENSBURG, MO 64093

Whitehead Consultants, Inc.
 Engineers, Surveyors

114 NORTH MAIN STREET CLINTON, MISSOURI 64735 Phone: (660) 865-8211 Fax: (660) 865-8447	315 WEST MAIN STREET WARSAW, MISSOURI 65355 Phone: (660) 438-6073 Fax: (660) 438-0974	
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DATE	DRAWN BY	CHECKED BY	JOB NO.	SCALE	SHEET NO.
4/27/13	GVP	BC	12-140	1"=20'	2/5



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 MAY 30 2013
 KANSAS CITY REGIONAL OFFICE

SCALE: 1"=100' HORIZONTAL
 1"= 25' VERTICAL

SECTIONS 9 TO 15

COUNTRY ACRES LAGOON IMPROVEMENTS
 176 SE Y HIGHWAY
 WARRENSBURG, MO 64093

Whitehead Consultants, Inc.
 Engineers, Surveyors

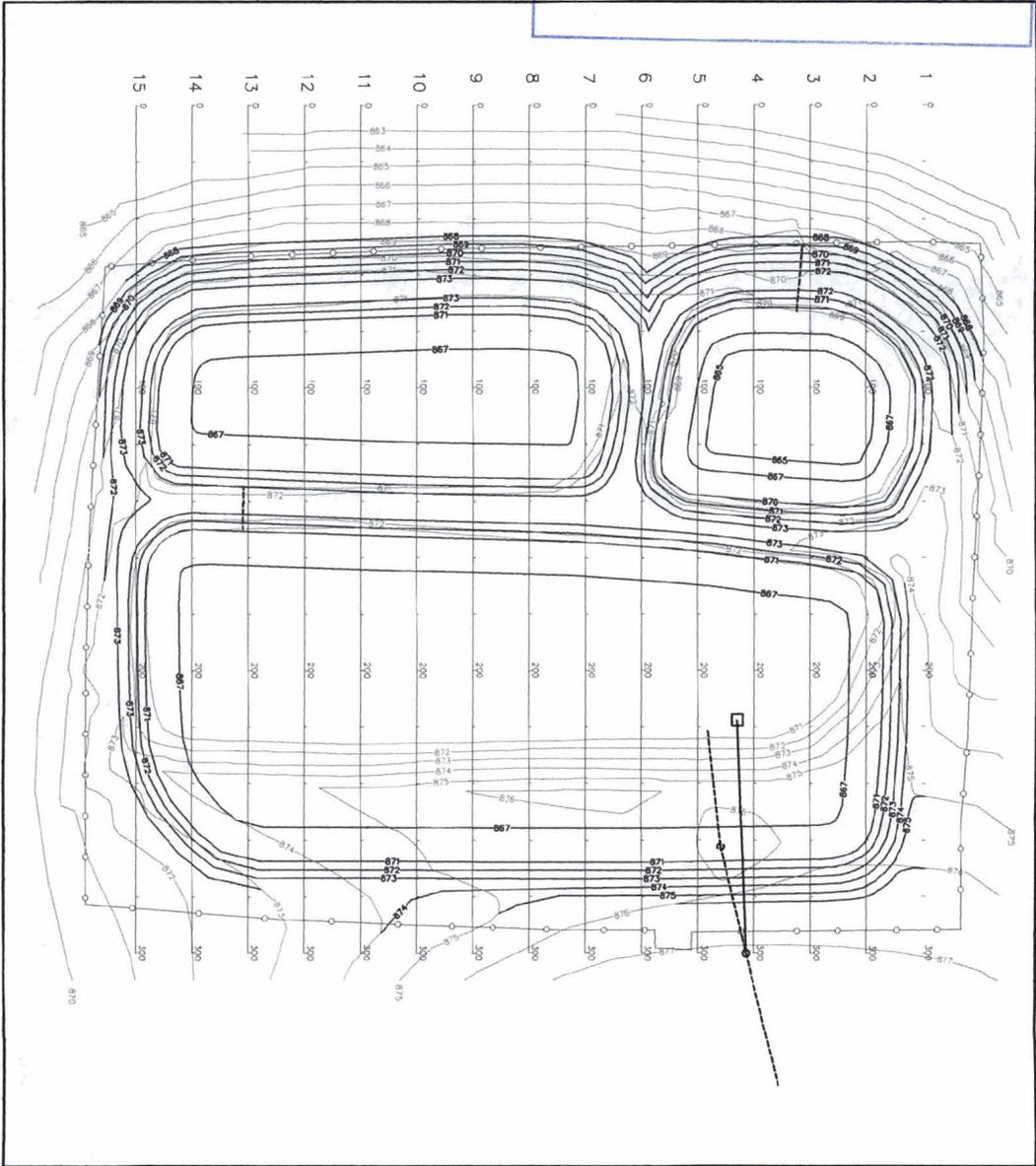
114 NORTH MAIN STREET P.O. BOX 451 CLINTON, MISSOURI 64735 Phone: (660) 885-8511 Fax: (660) 885-8447	312 WEST MAIN STREET P.O. BOX 799 WARSAW, MISSOURI 65358 Phone: (660) 438-8473 Fax: (660) 438-8574
DATE: 4/27/13 DRAWN BY: GVP CHECKED BY: BS	JOB NO.: 12-149 SCALE: 1"=100' SHEET NO.: 5/5



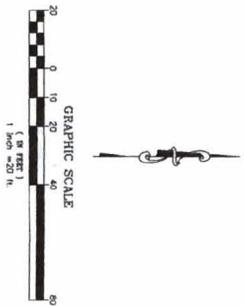
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MAY 30 2013

KANSAS CITY REGIONAL OFFICE



NOTE:
 CROSS SECTIONS ARE SPACED 20' APART NORTH TO SOUTH.
 TIC MARKS ARE SHOWN AT 20' INTERVALS ALONG THE SECTION BASE LINES.
 LIGHT CONTOUR LINES ARE EXISTING AND HEAVY CONTOUR LINES ARE PROPOSED PROPOSED
 CONTOUR LINES.
 THE SECTIONS SHOWN ON SHEETS 4 AND 5 HAVE VERTICAL GRID LINES OF 2' INTERVALS
 AND HORIZONTAL INTERVALS OF 20'.



SECTION PROFILE LAYOUT

COUNTRY ACRES LAGOON IMPROVEMENTS
 176 SE Y HIGHWAY
 WARRENSBURG, MO 64093

Whitehead Consultants, Inc.
 Engineers, Surveyors
 114 NORTH MAIN STREET
 QUINCY, MISSOURI 64676
 Phone: (660) 382-3417
 Fax: (660) 382-3417

312 WEST MAIN STREET
 WARRENSBURG, MISSOURI 64093
 Phone: (660) 382-4225
 Fax: (660) 382-4225

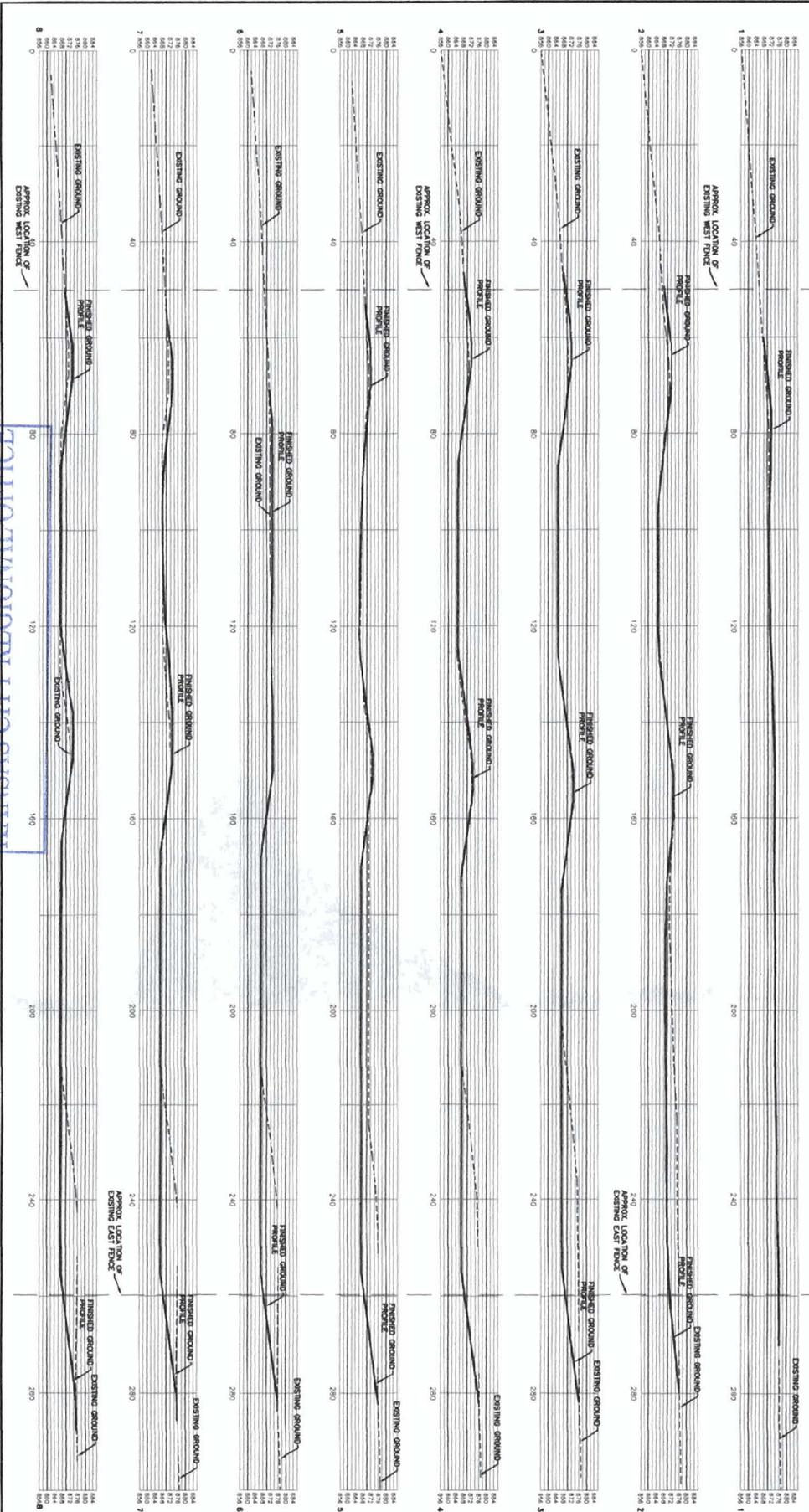


DATE	4/22/13	BY	CPW	SCALE	1"=40'	SHEET NO.	3/8
CHKD		APP					

RECEIVED

MAY 30 2013

KANSAS CITY REGIONAL OFFICE



SCALE 1"=100' HORIZONTAL
1"=20' VERTICAL

SECTIONS 1 TO 8

COUNTRY ACRES LAGOON IMPROVEMENTS

170 SE Y HIGHWAY

WARRENSBURG, MO 64083

Whitehead Consultants, Inc.

114 NORTH GARDNER, Sturgis, MO 64083

WARRENSBURG, MO 64083

PHONE (660) 486-4629

FAX (660) 486-4629

DATE 05/27/13

DRAWN BY C. COOPER

CHECKED BY J. COOPER

DATE 05/27/13

SCALE 1"=100'

SHEET NO. 6/6



