

Proposed Project: City of El Dorado
Wastewater Treatment Facility Improvement Project

Contact Person: Kevin Leung, P.E., Ph.D.
Address: Professional Engineering Consultants, P.A.
303 S. Topeka Avenue
Wichita, KS 67202

Sent to the Kansas Geological Survey for environmental review.

Agency Review Comments:

Last fall I mailed to PEC an environmental review sheet concerning the wastewater treatment facility improvements for El Dorado related to the application of El Dorado for a Kansas Water Pollution Control Revolving Loan Fund. I had an opportunity to have a tour of the wetlands pilot project area for treatment of a portion of the city wastewater during a November 17, 2004 tour of the facility by the Kansas Water Authority and attendees. I indicated in the review sheet of November 18, 2005 that the proposed project appears to be a forward thinking approach to the wastewater treatment and includes a treatment plant to make sure that the effluent water quality will meet necessary standards during conditions when the large wetlands will not be able to achieve all standards (such as during the winter). The long-term benefits of the new wastewater treatment system should offset any short-term adverse impacts during construction.

The additional information sent to the KGS further documents what is planned for the facility. I have no additional comments.

Recommended Action:

- ☒ Clearance of project should be granted
☐ Clearance of project should not be granted
☐ Clearance of project should be delayed until the issues or questions have been clarified
☐ Clearance of project should not be delayed, but the applicant (in the application) should address or clarify the questions or concerns indicated above

Donald Whittemore
Reviewer's Name

Geohydrology Section, Kansas Geological Survey
Division/Agency

6/8/05
Date


Reviewer's Signature

Please note that Lee Allison is no longer the Director of the Kansas Geological Survey. Address future correspondence to the Director, Kansas Geological Survey, to reduce the time for communication of the information to a reviewer.



Professional Engineering Consultants, P.A.

May 5, 2005

Mr. Lee Allison
Kansas Geological Survey
University of Kansas
1930 Constant Ave. - Campus West
Lawrence, KS 66047

Reference: El Dorado Wetlands and Water Reclamation Facility
PEC Project No. 34-02463-001-0347

Dear Mr. Allison:

The City of El Dorado is planning to build a new Wastewater Treatment Plant (WWTP) located in the NE ¼ of the SW ¼ of the SE ¼ of Section 11, Township 26 South, Range 5 East, Butler County, Kansas. The proposed process is based upon activated sludge process using oxidation ditch reactors for nutrient removal and final effluent with ultraviolet disinfection. The WWTP facility for the City of El Dorado is proposed as an average daily flow of 3.0 million gallons per day (MGD) and a peak day flow of 6.0 MGD. Under wet weather peak flow, the flow excess the WWTP capacity will be diverted into the existing extraneous flow basins for storage and pumped back to the influent pump station for treatment. If the excess flow exceeds the capacity of the extraneous flow basins then the flow will be pumped to the new Headworks where the excess flow will pass through fine screening equipment (1/4-in screen) and be discharged into the proposed wetlands for storage. It should be noted that the proposed wetlands is not for wastewater treatment.

The final effluent will be discharged through an outfall structure, step weir cascade aeration to a Site Pond and the effluent of the Site Pond will be discharged into the Walnut River. The cascade will provide aeration and additional dissolved oxygen in the treated effluent into the Walnut River. The locations of the proposed WWTP are shown in the attached documents.

Please review the attached documents and provide comments. We request that a response letter be returned and notification of any additional requirements which you deem necessary. The following drawings are for your references:

- Aerial photograph of the project site
- USGS Quadrangle map
- Vicinity Map
- Key Map
- Pond Site Plan
- Wetlands Site Plan and Section Details

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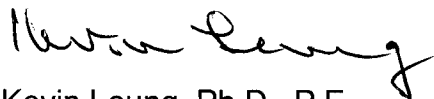
WICHITA
TOPEKA
TULSA
LAWRENCE
PITTSBURG

Mr. Lee Allison
May 5, 2005
Page 2

If you have any questions or comments, please notify.

Very truly yours,

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

A handwritten signature in black ink, appearing to read "Kevin Leung", with a stylized flourish at the end.

Kevin Leung, Ph.D., P.E.
Project Engineer

KSL/tac

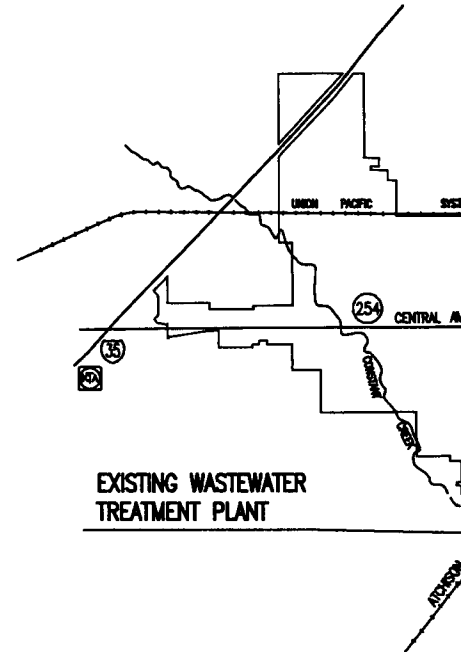
Encl: As noted

cc: Rod Geisler, KDHE

CONSTRUCT CITY OF BUTLER CO ELDORADO V WATER RECLAM

PUBLIC OFFICIALS

MAYOR -	BRIAN SHEPHERD
COMMISSION -	LINDA CLARK
	MIKE FAGG
	STEVE PERSHALL
	TODD PETERSON
CITY CLERK -	DEE ANNE GRUNDER
CITY MANAGER -	GUS COLLINS
CITY ATTORNEY -	MIKE COASH
CITY ENGINEER -	DAVID WAGNER
DIRECTOR OF PUBLIC WORKS -	RON PARKER
DIRECTOR OF PUBLIC UTILITIES -	KURT BOOKOUT
WASTEWATER TREATMENT PLANT SUPERINTENDENT -	BRETT PERRY

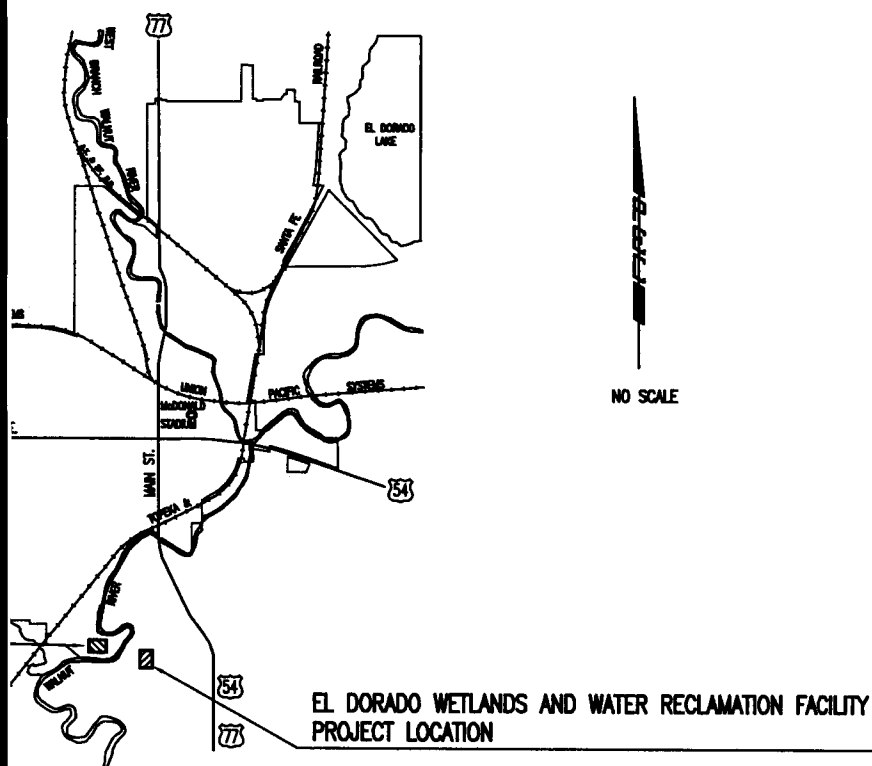


KSWPCSR LF PRO
P.E.C. PROJECT N

MA
PLANS

PROFESSIONAL ENGINE
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WICH

ION PLANS FOR EL DORADO COUNTY, KANSAS WETLANDS AND WATER RECLAMATION FACILITY



APPROVED AS NOTED BY:

BRIAN SHEPHERD, MAYOR

DATE

GUS COLLINS, CITY MANAGER

DATE

KURT BOOKOUT, DIRECTOR OF
PUBLIC UTILITIES

DATE

CITY MAP

PROJECT NO. C20-1639-01

NO. 34-02463-001-0347

Y 2005

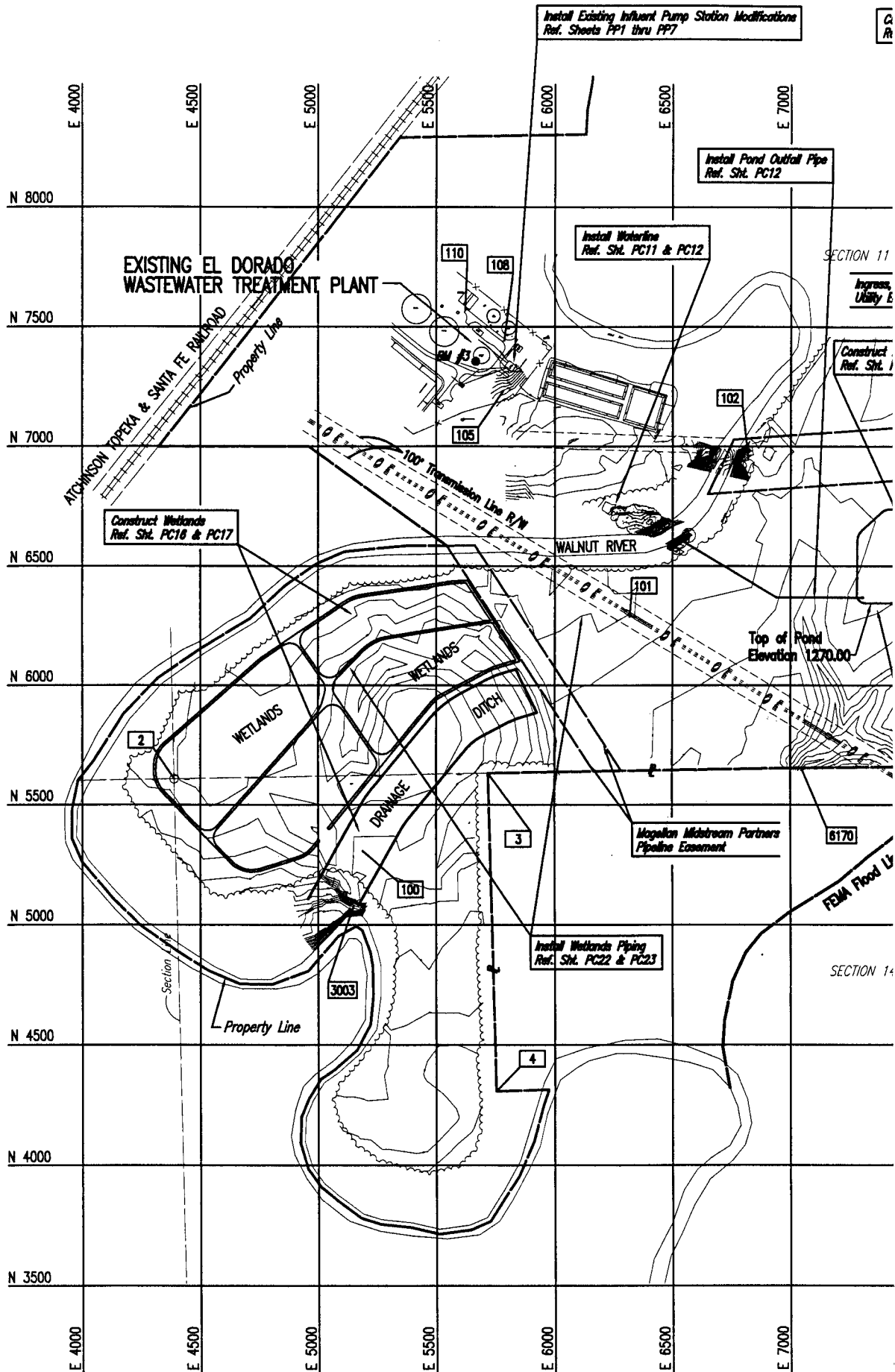
PREPARED BY

ENGINEERING CONSULTANTS, P.A.

ENGINEERS

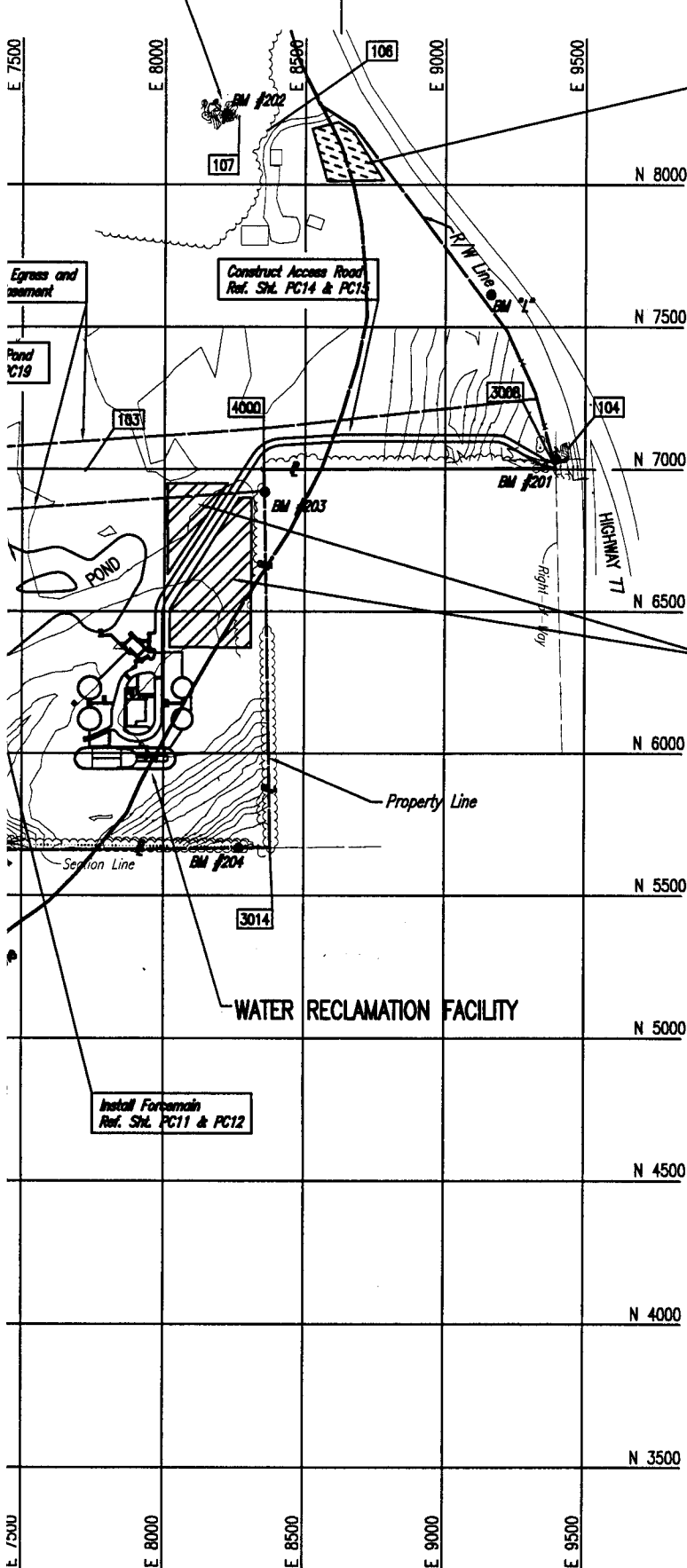
TA, KANSAS

DSMR: BWA OPER: GLM SCALE: 1"=300.00
 Q:\2002\02463\001\PC1 Keymap 02-21-2005 10:42:09 am



Instruct Low Water Crossing
f. Shl. PC21

To El Dorado



Contractor to stockpile excess topsoil and earthwork in existing borrow area. Access to the site may be achieved across the field.

Contractor staging area is near or below the 100 year flood elevation. The 100 year flood elevation is 1271.50. Contractor is responsible for raising the staging area and/or assuming all risks associated with flooding. Upon completion of the project, the staging area must be returned to original pre-construction grade elevations and seeded per the specifications.

SCALE: 1" = 300'



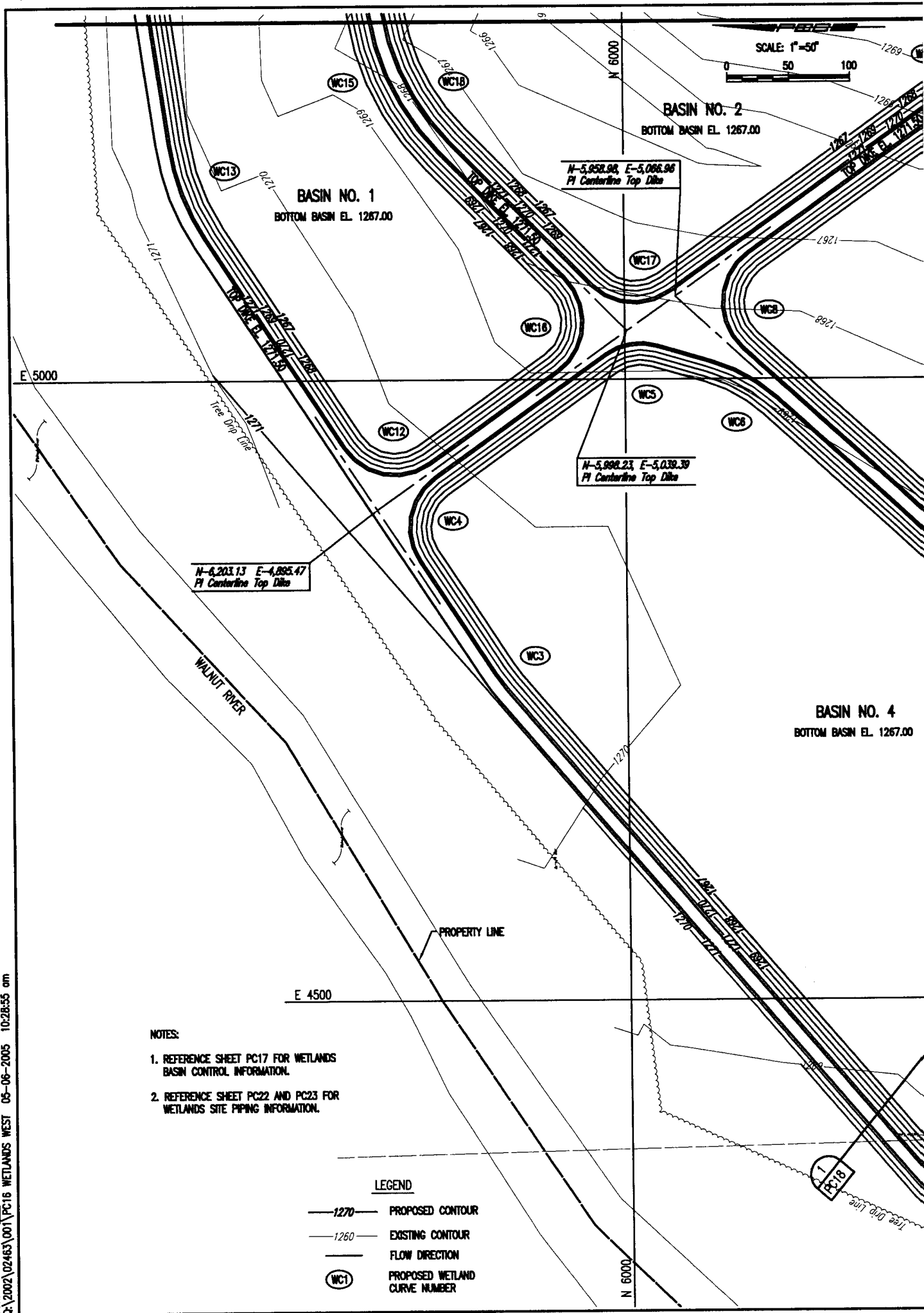
LEGEND

- PROPERTY LINE
- CONTRACTOR STAGING AREA
- STOCKPILE AREA
- HORIZONTAL CONTROL POINT
- BENCHMARK

NOTE: Ref. Shl. PC2 for Horizontal Control and Benchmark Information.



Rev.	Revision	By	Date
CITY OF EL DORADO, KANSAS			
KEY MAP			
EL DORADO WETLANDS AND WATER RECLAMATION FACILITY			
Professional Engineering Consultants, P.A. 303 S. TOPEKA • WICHITA, KANSAS 67202 316-262-2691 • FAX 316-262-3003			
Designed by	KLR, BWA	Job No.	34-02463-1-347
Drawn by	GM	Date	MAY 2005
			Shl. PC1 of 73

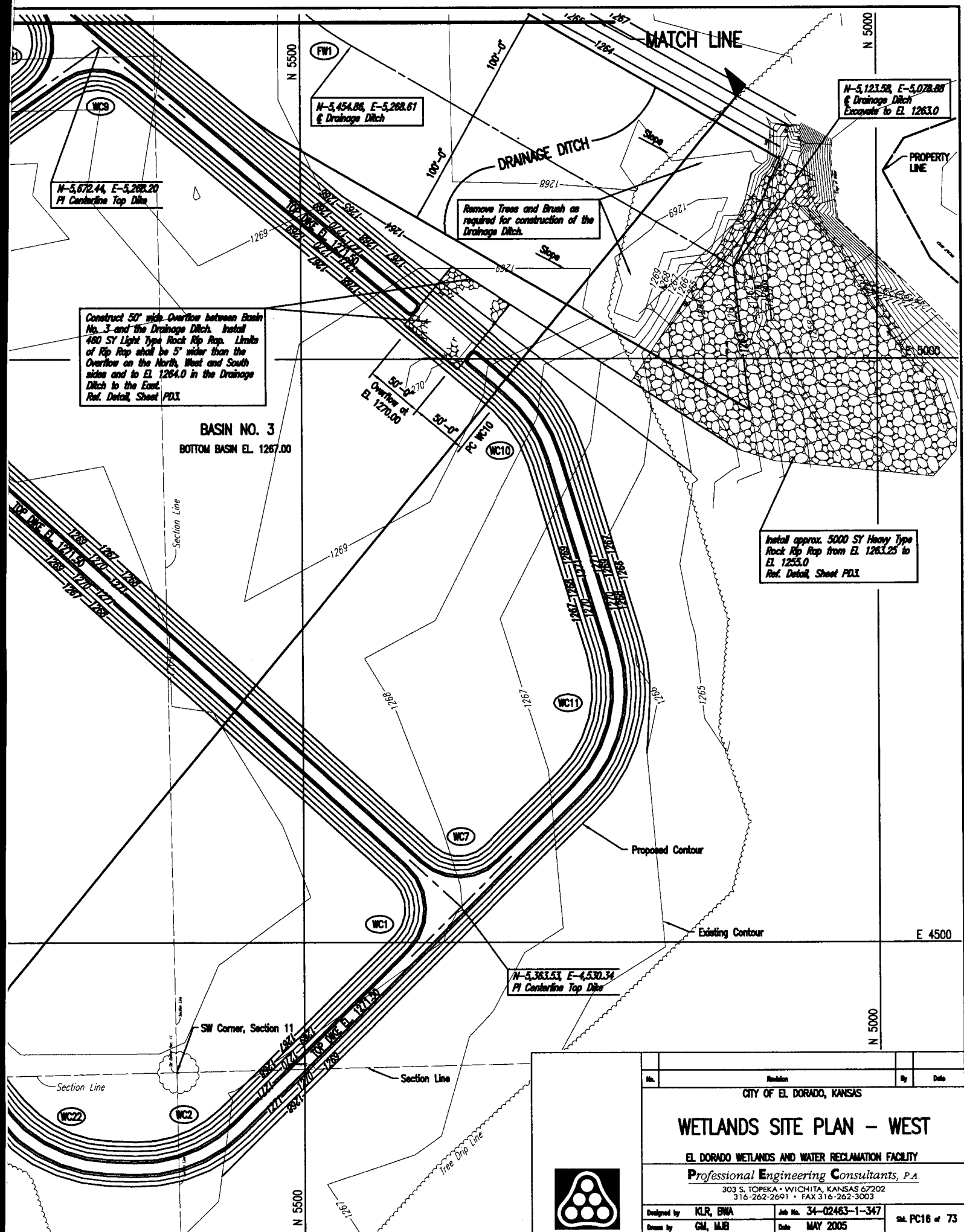


NOTES:

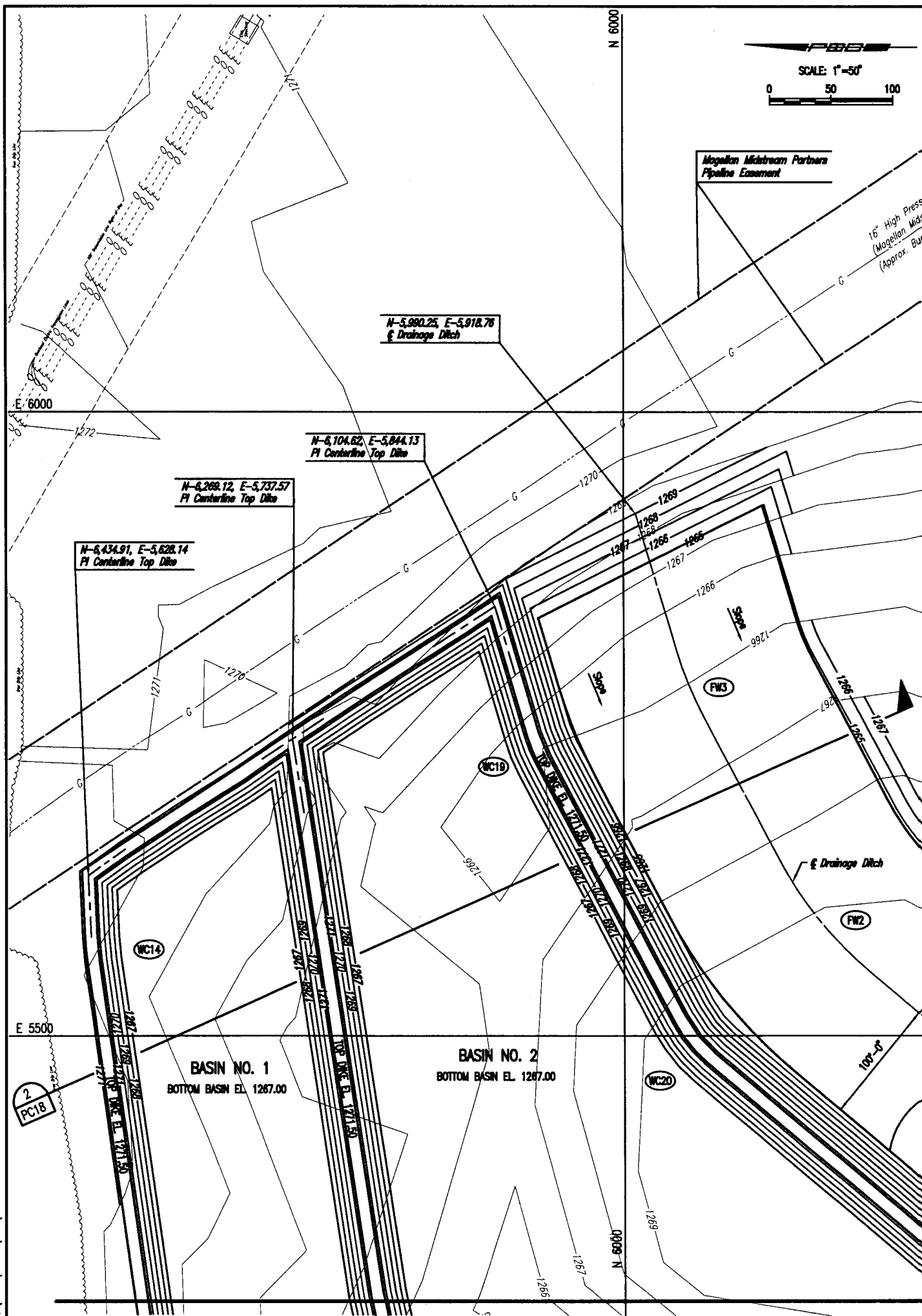
1. REFERENCE SHEET PC17 FOR WETLANDS BASIN CONTROL INFORMATION.
2. REFERENCE SHEET PC22 AND PC23 FOR WETLANDS SITE PIPING INFORMATION.

LEGEND

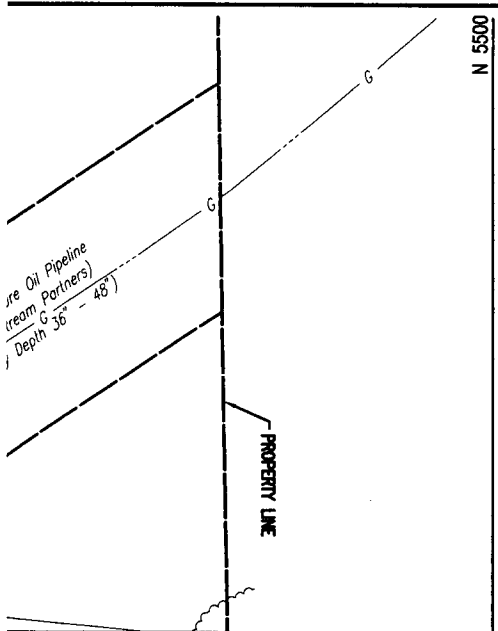
- 1270— PROPOSED CONTOUR
- 1260— EXISTING CONTOUR
- FLOW DIRECTION
- (WC1) PROPOSED WETLAND CURVE NUMBER



No.	Revision	By	Date
CITY OF EL DORADO, KANSAS			
WETLANDS SITE PLAN - WEST			
EL DORADO WETLANDS AND WATER RECLAMATION FACILITY			
Professional Engineering Consultants, P.A.			
303 S. TOPEKA • WICHITA, KANSAS 67202 316-262-2691 • FAX 316-262-3003			
Designed by	KLR, BMA	Job No.	34-02463-1-347
Drawn by	GM, MJB	Date	MAY 2005
			Sta. PC16 of 73



DSNR: BWA OPER: GLW SCALE: 1=50.00
Q:\2002\02463\001\PC17 WETLANDS EAST 05-06-2005 10:33:25 am

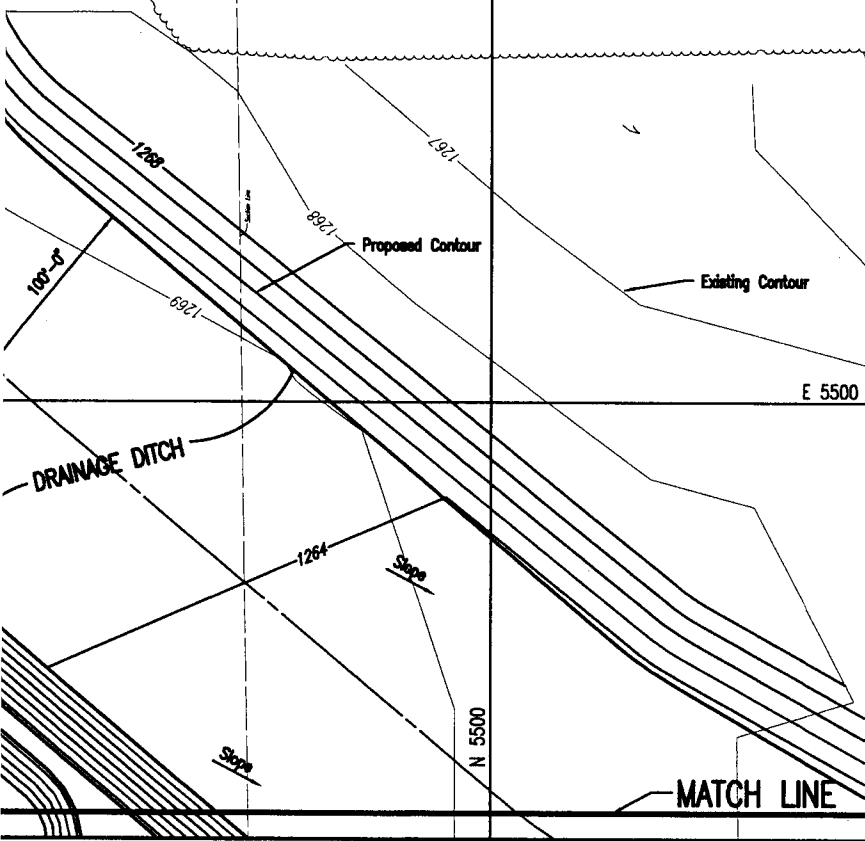


WETLANDS CURVE TABLE (AT ELEVATION 1267.00 - POND BOTTOM)									
CURVE	RADIUS	Δ	P.C.		P.T.		C.C.		
			NORTH	EAST	NORTH	EAST	NORTH	EAST	
WC1	32.00'	93°46'44"	5,422.57	4,552.59	5,421.69	4,505.87	5,444.00	4,528.82	
WC2	100.00'	48°10'50"	5,573.05	4,358.70	5,648.23	4,330.48	5,642.76	4,430.40	
WC3	100.00'	07°20'42"	6,085.75	4,761.96	6,083.52	4,772.16	6,010.25	4,827.53	
WC4	32.00'	88°32'29"	6,154.30	4,863.56	6,146.04	4,907.46	6,127.85	4,881.28	
WC5	32.00'	51°14'53"	6,005.79	5,005.97	5,978.49	5,010.52	5,987.40	4,979.78	
WC6	120.00'	25°51'34"	5,934.51	4,987.77	5,887.58	4,971.85	5,967.92	4,882.51	
WC7	32.00'	86°13'16"	5,342.65	4,582.72	5,386.38	4,581.89	5,364.96	4,605.67	
WC8	32.00'	102°53'32"	5,882.31	5,037.84	5,889.28	5,067.80	5,870.89	5,061.61	
WC9	32.00'	74°51'50"	5,683.68	5,225.18	5,654.81	5,223.59	5,675.28	5,199.00	
WC10	100.00'	33°10'55"	5,334.37	4,856.78	5,302.74	4,909.23	5,368.35	4,879.93	
WC11	100.00'	62°50'28"	5,252.71	4,745.98	5,278.62	4,644.99	5,348.33	4,716.68	
WC12	32.00'	91°27'31"	6,170.19	4,946.71	6,215.23	4,955.18	6,188.58	4,972.90	
WC13	172.00'	25°18'48"	6,327.04	5,123.32	6,354.01	5,183.70	6,183.81	5,218.56	
WC14	172.00'	05°37'09"	6,408.01	5,563.39	6,408.63	5,580.18	6,237.82	5,588.25	
WC15	218.00'	36°16'21"	6,223.60	5,291.66	6,162.18	5,170.63	6,008.15	5,324.90	
WC16	32.00'	98°57'39"	6,080.81	5,068.41	6,085.02	5,020.58	6,083.42	5,046.77	
WC17	32.00'	80°02'21"	5,973.65	5,084.75	6,014.65	5,088.30	5,982.04	5,110.94	
WC18	172.00'	36°16'21"	6,129.70	5,203.17	6,178.16	5,298.66	6,008.17	5,324.88	
WC19	128.00'	11°16'52"	6,085.69	5,734.39	6,086.12	5,711.12	5,973.10	5,771.20	
WC20	128.00'	22°13'35"	5,975.48	5,502.96	5,944.35	5,484.67	5,882.45	5,563.04	
WC21	32.00'	105°08'10"	5,742.38	5,298.50	5,744.46	5,245.73	5,762.86	5,271.91	
WC22	100.00'	47°02'47"	5,689.57	4,331.27	5,741.61	4,385.64	5,686.11	4,431.21	
WC23	198.00'	11°16'52"	5,859.76	5,838.84	5,844.96	5,802.85	5,670.12	5,885.78	

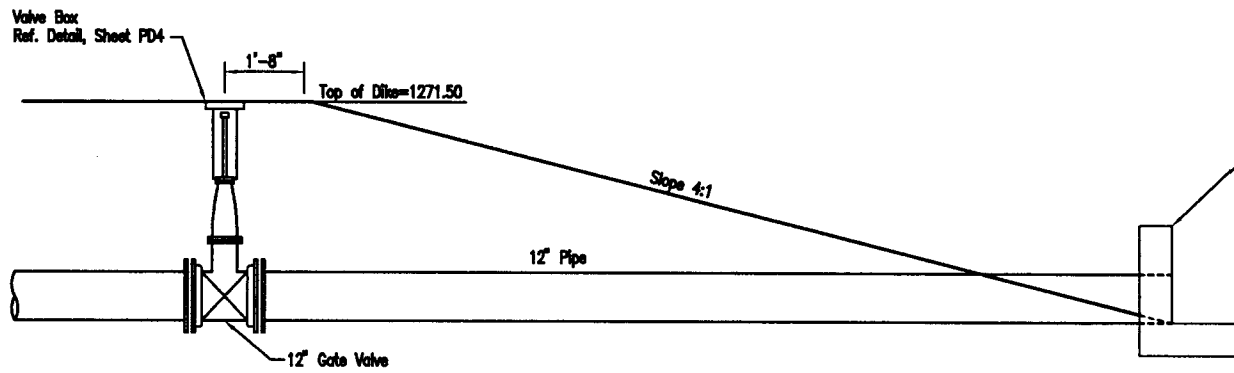
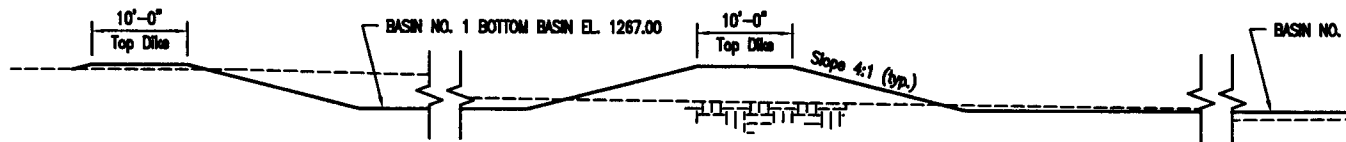
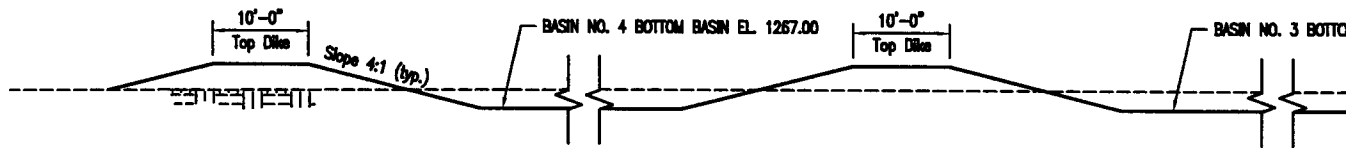
CENTERLINE DRAINAGE DITCH									
CURVE	RADIUS	Δ	P.C.		P.T.		C.C.		
			NORTH	EAST	NORTH	EAST	NORTH	EAST	
FW1	300.00'	09°58'50"	5,454.86	5,288.61	5,497.72	5,298.39	5,305.76	5,528.94	
FW2	300.00'	22°13'35"	5,801.57	5,581.38	5,874.51	5,641.12	5,808.61	5,781.93	
FW3	300.00'	11°16'52"	5,935.03	5,754.97	5,957.45	5,808.51	5,670.12	5,885.78	

NOTE:
REFERENCE SHEET PC22 AND PC23 FOR
WETLANDS SITE PIPING INFORMATION.

- LEGEND**
- 1270 — PROPOSED CONTOUR
 - 1260 — EXISTING CONTOUR
 - FLOW DIRECTION
 - 2.5' — FLOWLINE ELEVATION
 - 2.5' — HIGH POINT ELEVATION
 - WC1 — PROPOSED WETLAND CURVE NUMBER

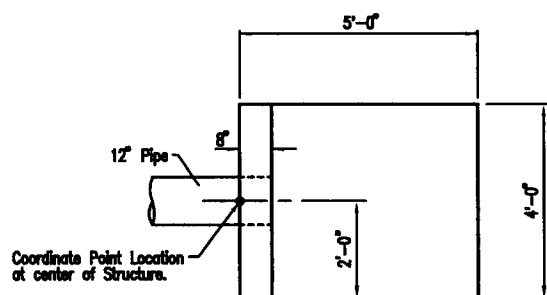
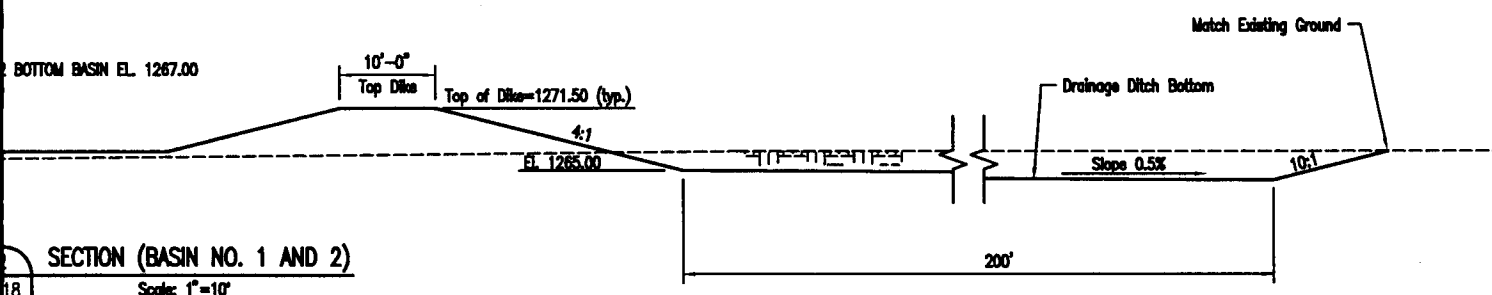
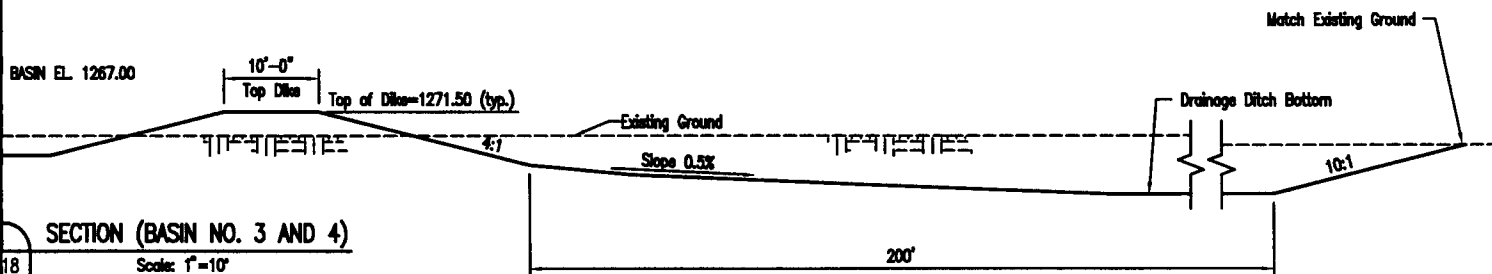


No.		Revision		By		Date	
CITY OF EL DORADO, KANSAS							
WETLANDS SITE PLAN - EAST							
EL DORADO WETLANDS AND WATER RECLAMATION FACILITY							
Professional Engineering Consultants, P.A.							
303 S. TOPEKA • WICHITA, KANSAS 67202 316-262-2691 • FAX 316-262-3003							
Designed by KLR, BMA				Job No. 34-02463-1-347			
Drawn by GM, MJB				Date MAY 2005			
Sheet PC17 of 73							

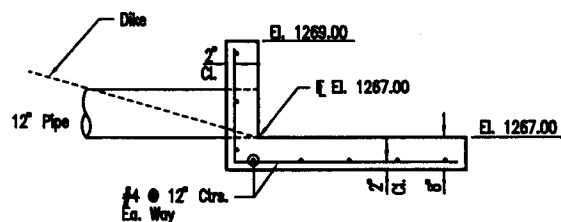


TYPICAL WETLANDS PIPING SECTION

Scale: 1" = 2'-0"



PLAN



ELEVATION

BASIN OUTLET HEADWALL

No Scale

BASIN OUTLET HEADWALL
REF. DETAIL THIS SHEET

BOTTOM BASIN EL. 1267.00

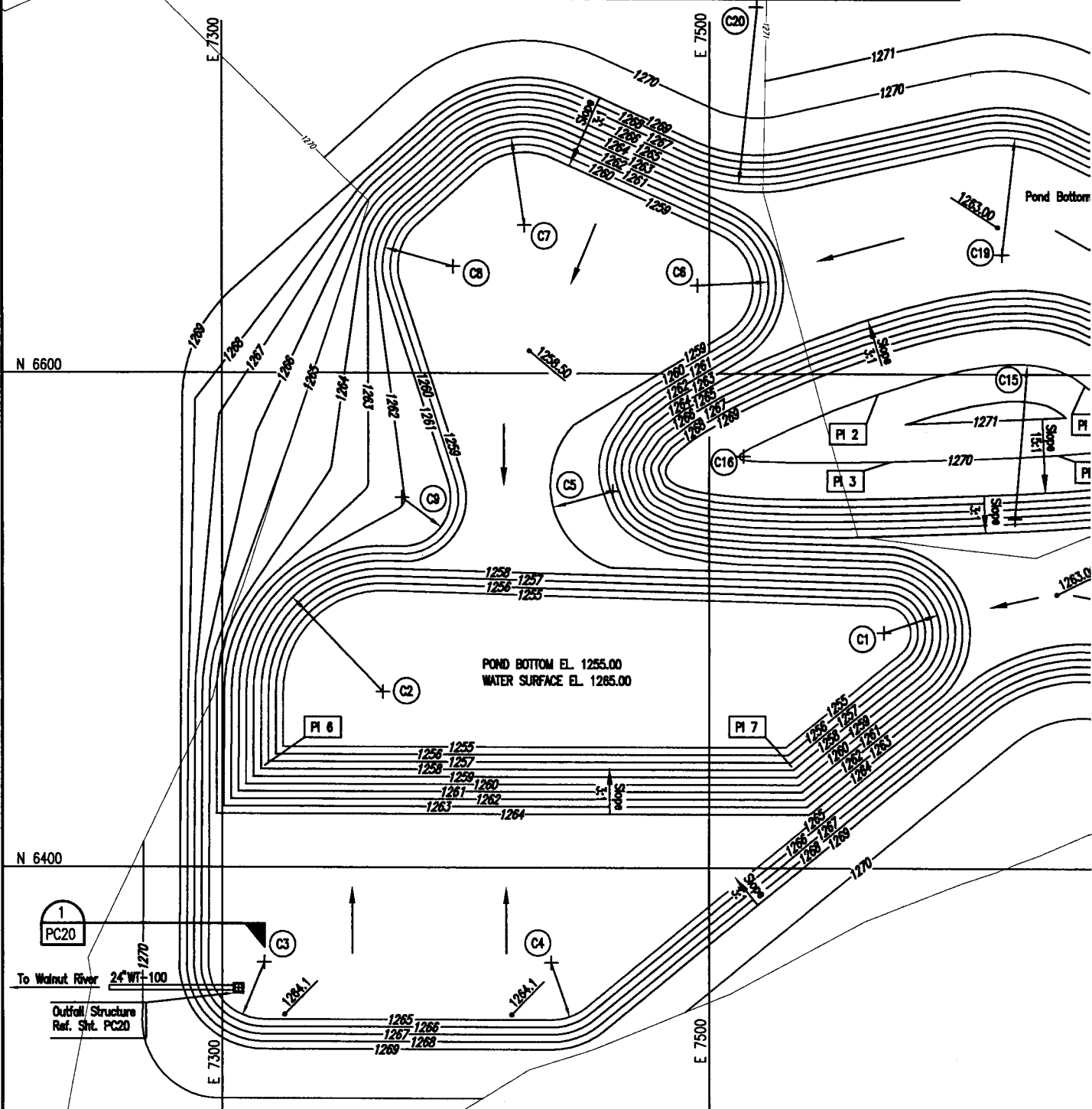


No.	Revision	By	Date
CITY OF EL DORADO, KANSAS			
WETLANDS SECTIONS AND DETAILS			
EL DORADO WETLANDS AND WATER RECLAMATION FACILITY			
Professional Engineering Consultants, P.A.			
303 S. TOPEKA • WICHITA, KANSAS 67202			
316-262-2691 • FAX 316-262-3003			
Designed by	KLR, EWA	Job No.	34-02463-1-347
Drawn by	BB	Date	MAY 2005
			Sht. PC18 of 73

POND COORDINATE CURVE TABLE

CURVE	DELTA	RADIUS	POINT OF CURVATURE		POINT OF TANGENCY		CENTER		BASED ON ELEVATION
			NORTH	EAST	NORTH	EAST	NORTH	EAST	
C1	139°24'07"	23.00'	6,485.31	7,586.06	6,536.18	7,572.24	6,513.19	7,571.59	1259.00
C2	91°18'23"	53.00'	6,541.94	7,367.27	6,489.24	7,312.78	6,488.96	7,365.78	
C3	90°18'18"	23.00'	6,379.75	7,294.20	6,356.63	7,317.20	6,379.63	7,317.20	1264.00
C4	38°58'16"	15.65'	6,361.75	7,448.67	6,356.63	7,435.20	6,379.63	7,435.20	
C5	147°31'50"	25.00'	6,545.34	7,458.84	6,581.79	7,447.72	6,570.33	7,460.55	
C6	124°45'41"	29.00'	6,629.04	7,510.08	6,680.35	7,507.16	6,653.83	7,485.19	1261.00
C7	85°52'23"	38.00'	6,711.14	7,438.94	6,678.32	7,424.15	6,705.23	7,400.25	
C8	66°24'50"	29.00'	6,683.17	7,375.41	6,661.48	7,394.67	6,652.51	7,367.09	
C9	108°38'24"	20.00'	6,573.96	7,382.66	6,547.78	7,373.08	6,567.77	7,373.84	
C10	79°02'21"	18.00'	6,624.83	7,725.46	6,602.34	7,721.10	6,610.94	7,736.91	
C11	92°38'10"	10.00'	6,573.14	7,733.71	6,559.82	7,728.07	6,569.17	7,724.53	1259.00
C12	110°13'12"	18.00'	6,550.36	7,703.07	6,521.73	7,685.84	6,533.53	7,708.44	
C13	109°14'33"	43.00'	6,471.91	7,738.06	6,478.71	7,808.85	6,500.09	7,771.54	
C14	138°22'54"	30.00'	6,704.52	7,905.10	6,732.82	7,856.48	6,709.67	7,875.54	
C15	23°02'09"	62.83'	6,619.67	7,642.60	6,621.91	7,617.55	6,559.43	7,625.07	1270.00
C16	109°55'23"	1.62'	6,585.61	7,512.78	6,583.07	7,513.54	6,584.61	7,514.04	
C17	90°48'12"	4.96'	6,588.37	7,668.90	6,594.68	7,673.07	6,593.09	7,668.37	
C18	64°56'24"	42.00'	6,678.62	7,762.41	6,673.10	7,717.85	6,711.02	7,735.70	
C19	38°05'03"	48.00'	6,708.91	7,640.27	6,713.40	7,609.14	6,686.56	7,619.65	1265.00
C20	36°54'06"	72.00'	6,896.78	7,535.11	6,701.40	7,489.77	6,767.04	7,519.35	
C21	88°02'42"	72.00'	6,486.70	7,607.74	6,480.91	7,707.43	6,432.61	7,661.84	

N 6800



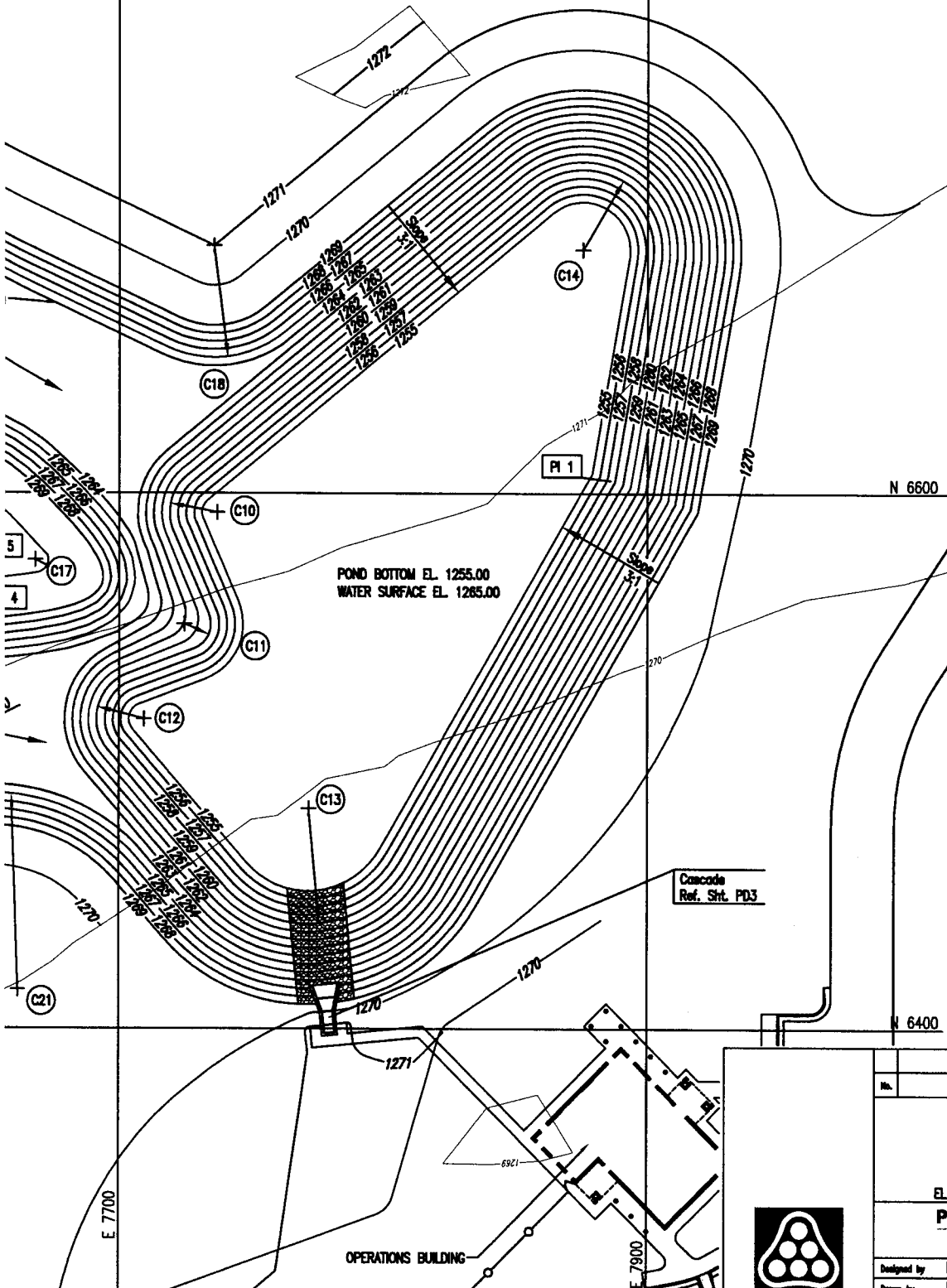
P.I. COORDINATE TABLE		
POINT	NORTH	EAST
PI 1	6,623.07	7,886.02
PI 2	6,609.99	7,569.08
PI 3	6,582.54	7,574.84
PI 4	6,585.33	7,842.66
PI 5	6,613.74	7,853.90
PI 6	6,458.13	7,317.37
PI 7	6,458.13	7,533.83

SCALE: 1"=30'



LEGEND

- 1270 — PROPOSED CONTOUR
- 1260 — EXISTING CONTOUR
- (C1) CURVE NUMBER
- PI 1 POINT OF INTERSECTION
- ↗ DENOTES DIRECTION OF DRAINAGE
- 1272.3 PROPOSED GROUND ELEVATION



No.		Revision		By	Date
CITY OF EL DORADO, KANSAS					
POND SITE PLAN					
EL DORADO WETLANDS AND WATER RECLAMATION FACILITY					
Professional Engineering Consultants, P.A.					
303 S. TOPEKA • WICHITA, KANSAS 67202					
316-262-2691 • FAX 316-262-3003					
Designed by	KLR, BWA	Job No.	34-02463-1-347	Sht. PC19 of 73	
Drawn by	BB	Date	MAY 2005		



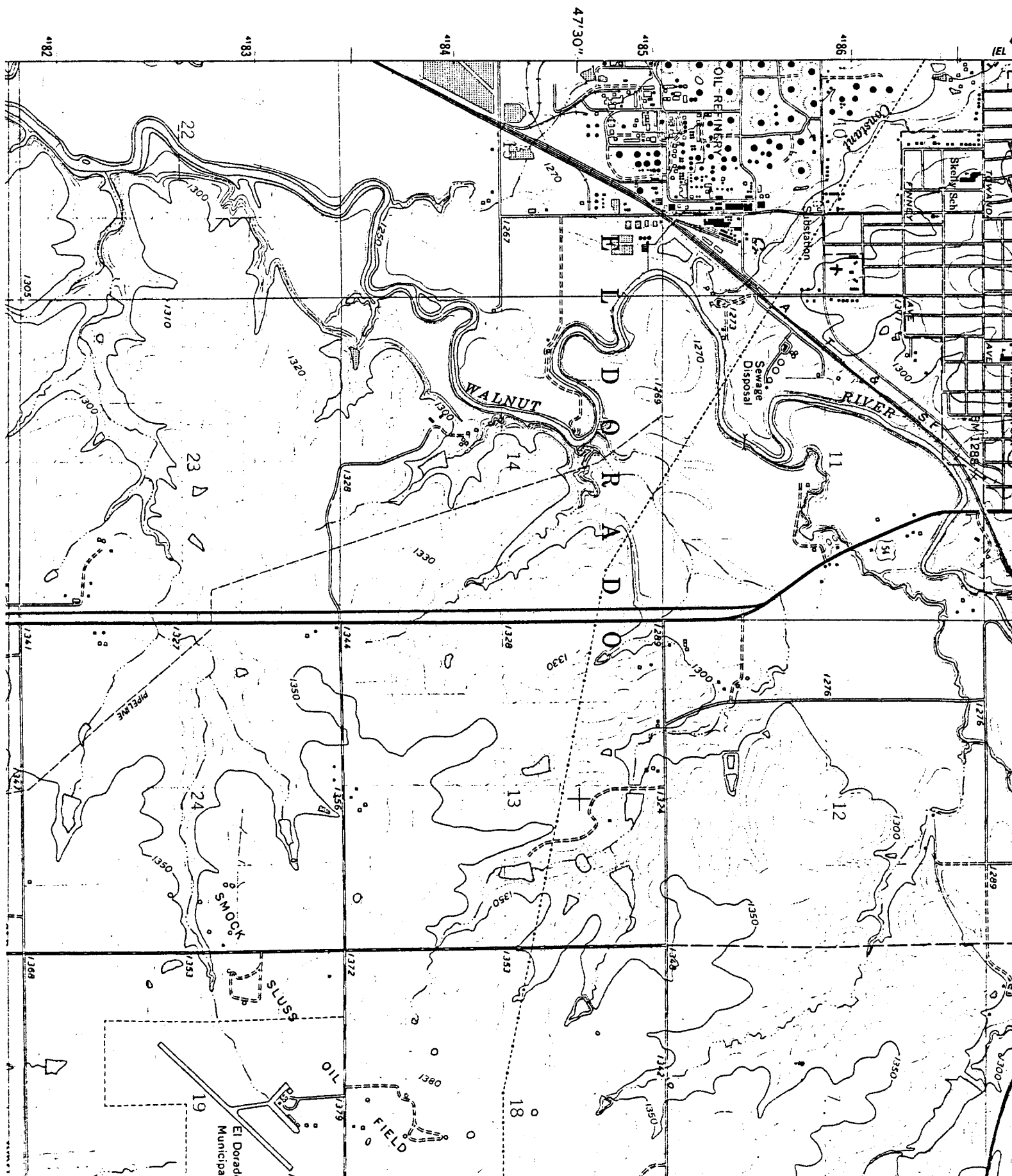


SCALE: 1"=600'



No.		Revision	By	Date
CITY OF EL DORADO, KANSAS				
AERIAL PHOTOGRAPH				
PROJECT SITE				
WASTEWATER TREATMENT PLANT IMPROVEMENTS				
Professional Engineering Consultants, P.A.				
303 S. TOPEKA • WICHITA, KANSAS 67202				
316-262-2691 • FAX 316-262-3003				
Designed by	KLR, KSL	Job No.	34-02463-347	Figure 3-1
Drawn by	MJB	Date	MAY 2003	

0.0130"



37°49'00" —
0°5'00"
15.1"
2.0

159 IV SW (DORADO SW) 15 MI TO EL DORADO INTERCHANGE 2.3 MI TO EL DORADO INTERCHANGE

