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OFFICIAL RECORD
Requested By:
D C/COMMUNITY DEVELOPMENT

Douglas County - NV
Werner Christen - Recorder
Page: 1 Of 7 Fee: 0.00
BK-0306 PG- 8897 RPTT: 0.00

Assessor's Parcel Number: N/A

Date: MARCH 24, 2006

Recording Requested By:

Name: LYNDA TEGLIA/COMMUNITY DEVELOPMENT

Address:

City/State/Zip:

Real Property Transfer Tax: $ N/A

CONTRACT #2006.058
(Title of Document)

This page added to provide additional information required by NRS 111.312 Sections 1-2. (Additional recording fee applies)
This cover page must be typed or legibly hand printed.

APPROVED MARCH 16, 2006 ITEM #8
DOUGLAS COUNTY COMMISSIONERS

FILED
NO. 2006.058
2006 MAR 24 AM 9:23
BARBARA REED
CLERK
DEPUTY

AMENDMENT NO. 01

CONTRACT BETWEEN DOUGLAS COUNTY AND HDR Engineering

FOR NVWWTP Rapid Infiltration Basin Design

WITNESSED

Whereas, on October 13, 2005, Douglas County, a political subdivision of the State of Nevada, and HDR Engineering, Inc. an independent contractor, entered into a contract for certain services; and

Whereas, the County desires to amend the contract; and

Whereas, on March 16, 2006, the Douglas County Board of Commissioners took action to approve Amendment No. 01 to the original agreement.

Now, therefore, in consideration of the agreements herein made, the parties mutually agree as follows:

- All sections of the original agreement remain in effect.

Independent Contractor — Date: 3/8/06

Community Development Director — Date: 3/16/06

Attest: Barbara Reed
County Clerk
By: L Lynch, Clerk to Board — Date: 3-17-06

District Attorney — Date: 3-23-06

EXHIBIT B
SCOPE OF SERVICES

Douglas County
North Valley Wastewater Treatment Plant -
Effluent Disposal Options for Rapid Infiltration Basins (RIBs)

PROJECT UNDERSTANDING

Based on comments received from the Nevada Division of Environmental Protection (NDEP) regarding Douglas County's proposal to use RIBs for the disposal of denitrified effluent from the North Valley Wastewater Treatment Plant, additional assessments are required to evaluate the hydraulic travel times as well as the fate and transport of nitrogen and phosphorus in the treated effluent.

SCOPE OF WORK

Task 1 – Hydraulic Travel Time Analysis

The proposed RIBs are located approximately 4,000 feet upgradient of the Carson River. Consultant will calculate the approximate hydraulic travel time from the proposed RIBs to the Carson River, based on the noted groundwater gradient and aquifer characteristics. Pure advective flow from the RIBs to the river will be assumed.

The aquifer characteristics will be estimated from available aquifer testing data for a nearby supply well and the previous geotechnical report for the RIBs. The following parameters will be used:

- Hydraulic conductivity (k) = 30 feet/day, based on a U.S. Geological Survey (USGS) analysis of a step drawdown test conducted on Brown's Well, located just north of the Carson River and west of US 395 near the water-ski school.

- Porosity (n) = 40 percent, based on the grain size analysis conducted during the RIB geotechnical investigation and literature values for similar soils.

- Hydraulic Gradient (I) based on the observed groundwater elevation near the proposed RIB (4646 NVGD 29) and the elevation of the Carson River (4616 NVGD 29) in the reach where groundwater is most likely to discharge from the RIBs, as shown by the previous analytical element modeling.

Since the overall hydraulic gradient is relatively low in this area, it is believed that this analysis will show a travel time in excess of 10 years from the RIBs to the river. If analysis indicates that

the travel times will be less than five years, Consultant will conduct additional groundwater flow modeling to refine this estimate, and provide a detailed assessment of the groundwater flow paths and likely groundwater discharge points along the Carson River.

Deliverables: *To be incorporated in summary report.*

Task 2 - Fate and Transport of Nitrogen and Phosphorous Analysis

Consultant will conduct a qualitative assessment of the fate and transport of nitrogen and phosphorous to determine if the anticipated loadings at the RIBs will result in mobile nitrogen and phosphorous species in the groundwater. The assessment will be based on the chemical characteristics of the effluent and groundwater to identify possible chemical reactions that may occur.

If this assessment indicates that mobile species of nitrogen and phosphorous may be present, Consultant will develop a 1D reactive transport model using PHREEQC software to simulate advection, dispersion, and chemical reactions along the anticipated groundwater flow path to the Carson River. PHREEQC is a USGS computer program designed to model geochemical reactions. Based on an ion pairing aqueous model, PHREEQC can calculate pH, redox potential, and mass transfer as a function of the reaction process. The composition of solutions in equilibrium with multiple phases can also be calculated in PHREEQC.

In this case, the 1D model is believed to be appropriate since groundwater discharge to the river appears to be along reasonably well-defined flow paths. Implementation of a more complex 2D or 3D model is not recommended since limited field data is available to accurately calibrate this type of model.

Deliverables: *To be incorporated in summary report.*

Task 3 - Summary Technical Memorandum

HDR will prepare a technical memorandum summarizing the findings from Tasks 1 and 2. Douglas County comments on the draft technical memorandum will be addressed and incorporated into the final technical memorandum.

Deliverables: *Three copies of the draft technical memorandum for review and comment by County staff, and three copies of the final technical memorandum after incorporation of County comments on the draft technical memorandum.*

Exhibit D - Estimated Work Effort and Cost

Douglas County

North Valley Wastewater Treatment Plant - Effluent Disposal Options for Rapid Infiltration Basins (RIBs)

	Task	Senior Project Manager *(Olson)*	Project Engineer II *(Lehtinen)*	Staff Engineer *(Cheung)*	Admin/ Clerical *(Boyle)*	Total Hours	Total Labor	Total Expenses	Total Cost
1	Hydraulic Travel Time Analysis		16			16	$2,393	$239	$2,632
2	*Fate and Transport of Nitrogen and Phosphorous Analysis*		60			60	*$8,973*	*$897*	*$9,871*
3	Summary Technical Memorandum	8	8	4	6	26	$3,561	$356	$3,917
Totals		**8**	**84**	**4**	**6**	**102**	**$14,927**	**$1,493**	**$16,420**

EXHIBIT D-1
HDR ENGINEERING, INC., STANDARD RATE SCHEDULE
January to December 2006

Douglas County
North Valley Wastewater Treatment Plant -
Effluent Disposal Options for Rapid Infiltration Basins (RIBs)

Project Principal	$230
Senior Technical Specialist	225
Chief Electrical Engineer	208
Senior Project Manager	205
Project Manager	180
Senior Electrical Engineer	175
Senior Mechanical Engineer	172
Senior Structural Engineer	171
Chemical Engineer	167
Technical Specialist	163
Mechanical Engineer	150
Project Engineer II	150
Process Engineer	139
Senior Project Engineer	135
Project Engineer	128
CAD Designer	119
Architect	119
Electrical Engineer	117
CAD Technician	100
Structural Engineer	98
Senior Administrative	90
Staff Engineer	82
Production Controller	77
Drafter	70
Administrative/Word Processing	66
Clerical	56

Please Note: Rates include current overhead rate plus profit.

EXPENSES

In-House Expenses -

Technology Charge per Direct Labor Hour	$4.10
Vehicle Mileage (per mile)	$0.445
Color Copy (per copy)	$1.40
Photocopies (per copy)	$0.10

Please Note: Technology charges include computer, CADD, network, software, and other related technology services.

Plotting (cost depends on size of plot)

	Black and White	*Color*
Bond	$0.80 to $3.50	$10.50 to $20.25
Vellum	$1.60 to $9.65	$12.50 to $24.75
Mylar	$2.50 to $14.85	$15.00 to $29.25

Please Note: Expenses and subconsultants are charged with a 10 percent markup.

SEAL

CERTIFIED COPY

The document to which this certificate is attached is a full, true and correct copy of the original on file and on record in my office.

DATE: March 24, 2006

B. REED Clerk of the 9th Judicial District Court of the State of Nevada, in and for the County of Douglas.

By _____ Deputy