

ORIGINAL

NEW APPLICATION



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RECEIVED

1 FENNEMORE CRAIG
2 A Professional Corporation
3 Jay L. Shapiro (No. 014650)
4 Patrick J. Black (No. 017141)
5 3003 North Central Avenue
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7 Phoenix, Arizona 85012
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AZ CORP COMMISSION
DOCUMENT CONTROL

Arizona Corporation Commission

DOCKETED

APR 04 2006

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Attorneys for The Links at Coyote Wash Utilities, LLC

SW-04210A-06-0220

BEFORE THE ARIZONA CORPORATION COMMISSION

8 IN THE MATTER OF THE APPLICATION
9 OF THE LINKS AT COYOTE WASH
10 UTILITIES, LLC, FOR AN EXTENSION OF
11 ITS EXISTING CERTIFICATE OF
CONVENIENCE AND NECESSITY FOR
WASTEWATER SERVICE.

DOCKET NO. SW-04210A-06-

**APPLICATION FOR EXTENSION OF
CERTIFICATE OF CONVENIENCE AND
NECESSITY**

12 The Links at Coyote Wash Utilities, L.L.C. ("Applicant"), an Arizona public service
13 corporation, hereby applies for an Order approving an extension of its existing Certificate of
14 Convenience and Necessity ("CC&N") for wastewater service to include an area encompassing
15 the development known as Links at Coyote Wash ("Development"). In support of this
16 Application, Applicant states as follows:

17 1. Applicant is a public service corporation engaged in providing wastewater utility
18 service for public purposes within portions of Yuma County, Arizona. Applicant was first
19 granted its CC&N in Decision No. 67187 (August 10, 2004), and currently serves approximately
20 80 wastewater utility customers. The area served by Applicant contains mostly residential
21 properties.

22 2. The area covered by this Application will contain approximately 500 residential
23 lots.

24 3. Glen Curtis Development, Inc. ("Developer") has requested that Applicant extend
25 wastewater utility service to the Development. A copy of this request for service is attached
26 hereto as Exhibit 1.

1 4. A legal description for the area covered by this Application is attached hereto as
2 Exhibit 2.

3 5. Applicant's management contact is Jason Williamson of Pivotal Utility
4 Management, whose business address is 6825 East Tennessee Avenue, Denver, CO. 80224. The
5 telephone number is (303) 333-1250.

6 6. Applicant's operator, certified by the Arizona Department of Environmental
7 Quality, is Rick Miller of Sunstate Environmental Services, whose business address is P.O. Box
8 5450, Yuma, Arizona, 85366. The telephone number is (928) 341-9196.

9 7. Applicant's attorneys are Fennemore Craig, whose address is 3003 North Central
10 Avenue, Suite 2600, Phoenix, Arizona 85012-2913. The individual attorney responsible for this
11 application is Patrick J. Black. Mr. Black's telephone number is (602) 916-5400. **All Data**
12 **Requests or other Requests for Information should be directed to Mr. Williamson, with a**
13 **copy to Mr. Black's attention, on behalf of The Links at Coyote Wash Utilities, LLC.**

14 8. A Certificate of Good Standing for The Links at Coyote Wash Utilities, LLC is
15 attached hereto as Exhibit 3.

16 9. The newly acquired customers in the areas covered by the application will receive
17 wastewater service subject to Applicant's current rates and charges for utility service, which were
18 approved in Decision No. 67187 (August 10, 2004).

19 10. A detailed map indicating Applicant's present CC&N and the area requested by
20 this Application is attached hereto as Exhibit 4.

21 11. Applicant's balance sheet and profit and loss information for the 12-month period
22 ending 2004 is contained in Applicant's Annual Report, which is attached hereto as Exhibit 5.

23 12. A copy of a master wastewater design report which illustrates that Applicant has,
24 or will have, sufficient treatment capacity to service existing and future demands is attached
25 hereto as Exhibit 6.

26 13. Detailed engineering designs for Phase 3 of the Development are attached hereto

1 as Exhibit 7. Applicant is in the process of integrating preliminary Phase 4 design plans, which
2 are included in Exhibit 7.

3 14. The estimated numbers or customers to be served in each of the first five years of
4 wastewater utility service to the area covered by this Application is as follows:

5 Residential

6
7 1st Year: 50
8 2nd Year: 100
9 3rd Year: 150
4th Year: 200
5th Year: 250

10 15. Applicant's estimated annual operating revenue and operating expenses for each of
11 the first five years of operation in the new area covered by this Application are as follows:

12 Operating Revenue

12 Operating Expenses

13 1st Year - \$4,250
14 2nd Year - \$28,250
15 3rd Year - \$46,250
16 4th Year - \$64,250
17 5th Year - \$82,250

13 1st Year - \$17,383
14 2nd Year - \$38,459
15 3rd Year - \$54,455
16 4th Year - \$66,284
17 5th Year - \$79,403

18 16. The plant cost projections, including service meters, by year for the next five (5)
19 years are as follows, and more particularly described in Exhibit 8:

20 Plant Cost Projection

21 1st Year - \$532,829.85
22 2nd Year - \$945,322.35
23 3rd Year - \$1,395,322.30
24 4th Year - \$1,395,322.30
25 5th Year - \$1,395,322.30

26 17. The wastewater facilities needed to serve the area covered by this Application will
be constructed as needed to provide service to customers. Wastewater infrastructure construction
in Phase 3 of the Development is complete, and Phase 4 is scheduled for a completion date of first

1 quarter, 2007.

2 18. Copies of Applicant's Aquifer Protection Permit for the LACW Wastewater
3 Treatment Plant, and the current amendment application, are attached hereto as Exhibit 9.

4 19. The construction of the additional on-site utility facilities needed to serve the area
5 covered by this Application will be financed by advances in aid of construction in accordance
6 with Commission regulations and Applicant's applicable tariffs, contributions in aid of
7 construction for off-site facilities, and the terms of the main extension agreement between
8 Applicant and Developer.

9 20. The Development is located within the boundaries of the Town of Wellton
10 ("Town"). Applicant provides wastewater service within Town limits pursuant to a June 15,
11 2004, letter from the Town's attorney permitting Applicant to use Town right-of-ways for the
12 collection system. *See* Decision No. 67157 at 5.

13 21. Water will be provided to the Development by the Town.

14 22. The Arizona Department of Environmental Quality ("ADEQ") will issue various
15 Approvals to Construct concerning additional facilities to serve the requested extension area,
16 which will be provided to the Commission as soon as they are issued.

17 23. Notice of this Application will be given by publication in a newspaper of general
18 circulation as required by the Commission. Proof of publication will be filed with the
19 Commission.

20 24. Applicant maintains that this Application is in the public interest and should be
21 granted. There is a present need for wastewater service in order to foster orderly growth in Yuma
22 County in an area contiguous to Applicant's existing CC&N. Applicant is in the best position to
23 extend and provide wastewater service to the Development, and expansion of service will benefit
24 existing customers by allowing the cost of providing wastewater service to be spread over a larger
25 customer base, as well as achieving greater economies of scale.

26 25. To the best of its knowledge and belief, Applicant is currently in compliance with

1 all regulatory requirements applicable to its provision of wastewater utility service in Arizona,
2 including all applicable orders, rules and regulations of the Commission and ADEQ.

3 WHEREFORE, Applicant respectfully requests the following:

4 A. That the Commission proceed to consider and act upon this Application as timely
5 as possible and to schedule a hearing, if necessary, on this matter;

6 B. That upon completion of said hearing that the Commission enter an Order
7 approving the extension of The Links at Coyote Wash Utilities, LLC.'s current Certificate of
8 Convenience and Necessity to include the additional geographic areas requested by this
9 Application, as described in Exhibit 2 and shown in Exhibit 4; and

10 C. That the Commission grant such other and further relief as may be appropriate
11 under the circumstances herein.

12 DATED this 4th day of April, 2006.

FENNEMORE CRAIG, P.C.

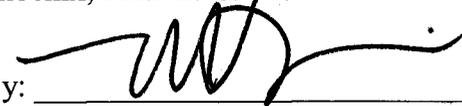
14
15 By: 
16 Jay L. Shapiro
17 Patrick J. Black
18 Attorney for The Links at Coyote Wash
19 Utilities, LLC

18 ORIGINAL and 13 copies delivered this
19 _4th_ day of April, 2006, to:

19 Docket Control
20 Arizona Corporation Commission
21 1200 West Washington Street
22 Phoenix, Arizona 85007

22 COPY hand-delivered this 4th day of April, 2006:

23 Linda Jaress, Executive Consultant
24 Utilities Division
25 Arizona Corporation Commission
26 1200 West Washington Street
Phoenix, Arizona 85007

26 By: 

EXHIBIT

1

REQUEST FOR SERVICE

This request is made this 9th day of December, 2005, by Glen Curtis Development, Inc., an Arizona corporation ("Developer").

Developer is requesting service from the Links at Coyote Wash Utilities, LLC, an Arizona public service corporation ("Utility"), for development of 500 lots, (The Links at Coyote Wash, Phase 3 and 4), located on that portion of the Southwest quarter of Section 12, Township 9 South, Range 19 West of the Gila and Salt River Base and Meridian, Yuma County, Arizona, lying South of Interstate 8.

GLEN CURTIS DEVELOPMENT, INC.
An Arizona corporation

BY: _____

A handwritten signature in black ink, appearing to read "Glen Curtis", is written over a horizontal line.

Dated:

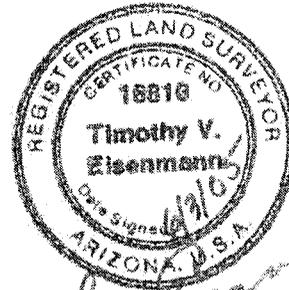
EXHIBIT

2

LEGAL DESCRIPTION

**Coyote Wash – Unit No. 3
(Utilities Service Area)**

Those portions of Southeast quarter (SE¼) Section 11, the Southwest quarter (SW¼) Section 12 and the Northeast quarter (NE¼) Section 14, all in Township 9 South, Range 19 West, Gila and Salt River Base and Meridian, Yuma County, Arizona lying north of the North Right of Way Line of the U.S.B.R. Wellton Canal and south of the South Right of Way Line of Interstate 8.

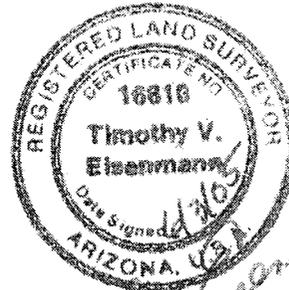


Timothy V. Eisenmann

LEGAL DESCRIPTION

**Coyote Wash – Unit No. 4
(Utilities Service Area)**

The West 788.96 feet of the Southeast quarter (SE¼) Section 12, Township 9 South, Range 19 West, Gila and Salt River Base and Meridian, Yuma County, Arizona lying north of the North Right of Way Line of the U.S.B.R. Wellton Canal and south of the South Right of Way Line of Interstate 8.



Timothy V. Eisenmann

EXHIBIT

3

STATE OF ARIZONA



Office of the
CORPORATION COMMISSION

CERTIFICATE OF GOOD STANDING

To all to whom these presents shall come, greeting:

I, Brian C. McNeil, Executive Director of the Arizona Corporation Commission, do hereby certify that

*****THE LINKS AT COYOTE WASH UTILITIES, L.L.C.*****
a domestic limited liability company organized under the laws of the State of Arizona, did organize on the 4th day of June 2003.

I further certify that according to the records of the Arizona Corporation Commission, as of the date set forth hereunder, the said limited liability company is not administratively dissolved for failure to comply with the provisions of A.R.S. section 29-601 et seq., the Arizona Limited Liability Company Act; and that the said limited liability company has not filed Articles of Termination as of the date of this certificate.

This certificate relates only to the legal existence of the above named entity as of the date issued. This certificate is not to be construed as an endorsement, recommendation, or notice of approval of the entity's condition or business activities and practices.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the Arizona Corporation Commission. Done at Phoenix, the Capital, this 12th Day of December, 2005, A. D.



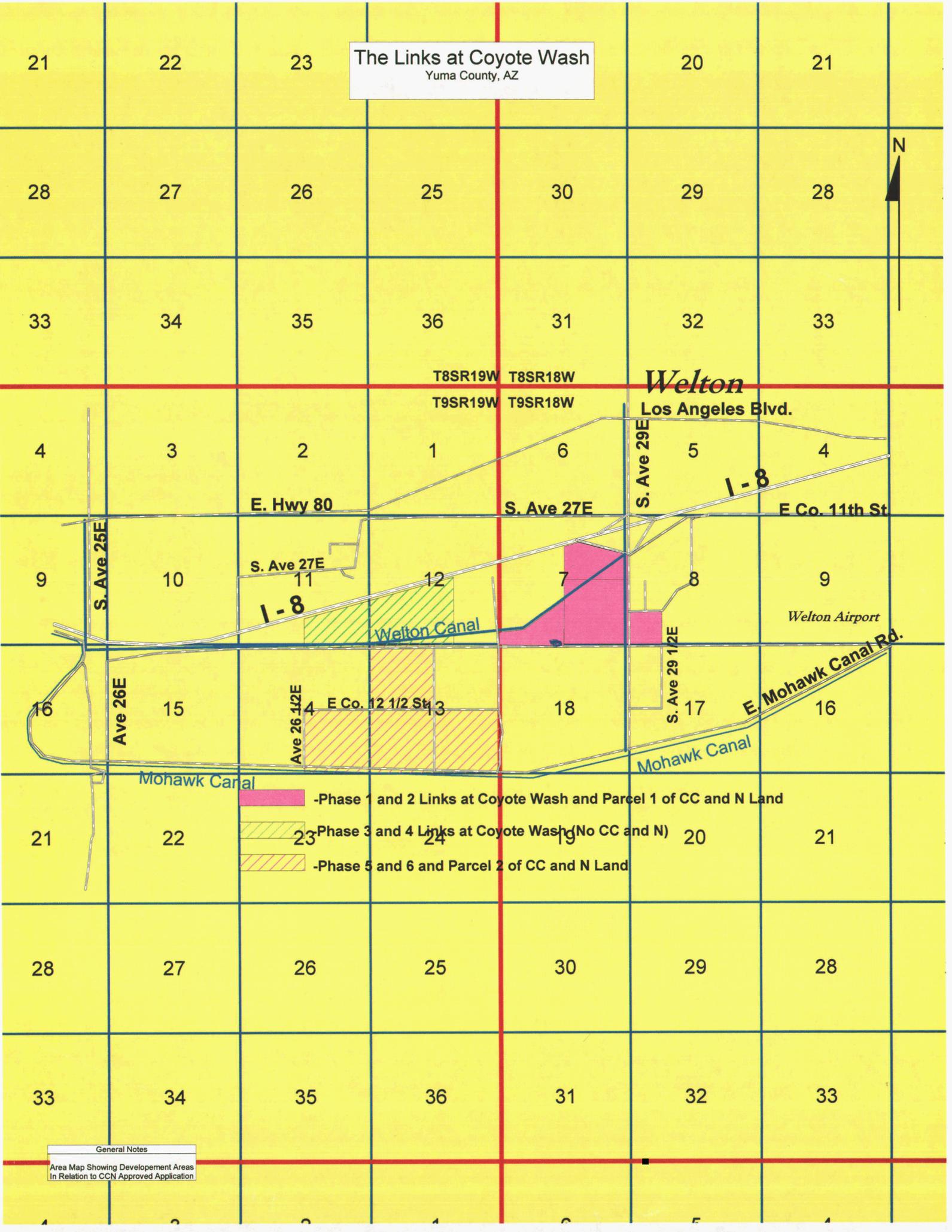

EXECUTIVE SECRETARY

BY: 

EXHIBIT

4

The Links at Coyote Wash
Yuma County, AZ



- Phase 1 and 2 Links at Coyote Wash and Parcel 1 of CC and N Land
- Phase 3 and 4 Links at Coyote Wash (No CC and N)
- Phase 5 and 6 and Parcel 2 of CC and N Land

General Notes
Area Map Showing Development Areas
In Relation to CCN Approved Application

EXHIBIT

5

ARIZONA CORPORATION COMMISSION
UTILITIES DIVISION

ANNUAL REPORT MAILING LABEL - MAKE CHANGES AS NECESSARY

SW-04210A

The Links at Coyote Wash Utilities, Inc.



c/o Pivotal Utility Management
6825 E. Tennessee Ave., #547
Denver, CO 80224

NOV 04 2005

Arizona Corporation Commission
Utilities Division

ANNUAL REPORT

FOR YEAR ENDING

12	31	2004
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FOR COMMISSION USE

ANN05	04
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COMPANY INFORMATION

Company Name (Business Name) The Links at Coyote Wash Utilities, LLC

Physical Address PO Box 6407
(Street)

Yuma
(City)

AZ
(State)

85365
(Zip)

(928) 726-5920
Telephone No. (Include Area Code)

(928) 341-1026
Fax No. (Include Area Code)

Pager/Cell No. (Include Area Code)

Email Address _____

Local Office Mailing Address PO Box 6407
(Street)

Yuma
(City)

AZ
(State)

85367
(Zip)

(928) 726-5920
Local Office Telephone No. (Include Area Code)

(928) 341-1026
Fax No. (Include Area Code)

Pager/Cell No. (Include Area Code)

Email Address _____

MANAGEMENT INFORMATION

Management Contact: Jason Williamson Manager
(Name) (Title)

6825 E. Tennessee Ave. Suite 547 Denver CO 80224
(Street) (City) (State) (Zip)

(303)-333-1250 (303)-333-1257
Telephone No. (Include Area Code) Fax No. (Include Area Code) Pager/Cell No. (Include Area Code)

Email Address pivotalutility@earthlink.com

On Site Manager: Rick Miller
(Name)

PO Box 5450 Yuma AZ 85633
(Street) (City) (State) (Zip)

928-341-9685 928-341-9196 928-920-9056
Telephone No. (Include Area Code) Fax No. (Include Area Code) Pager/Cell No. (Include Area Code)

Email Address sunstatees@aol.com

Statutory Agent: Patrick J. Black, Esq. Fennemore Craig, P.C.
 (Name)

3003 N. Central Ave. Phoenix AZ 85012-2913
 (Street) (City) (State) (Zip)

(602) 542-5400
 Telephone No. (Include Area Code) Fax No. (Include Area Code) Pager/Cell No. (Include Area Code)

Attorney: Same as Statutory Agent
 (Name)

(Street) (City) (State) (Zip)

Telephone No. (Include Area Code) Fax No. (Include Area Code) Pager/Cell No. (Include Area Code)

OWNERSHIP INFORMATION

Check the following box that applies to your company:

<input type="checkbox"/> Sole Proprietor (S)	<input type="checkbox"/> Corporation (C) (Other than Association/Co-op)
<input type="checkbox"/> Partnership (P)	<input type="checkbox"/> Subchapter S Corporation (Z)
<input type="checkbox"/> Bankruptcy (B)	<input type="checkbox"/> Association/Co op (A)
<input type="checkbox"/> Receivership (R)	<input checked="" type="checkbox"/> Limited Liability Company
<input type="checkbox"/> Other (Describe) _____	

COUNTIES SERVED

Check the box below for the county/ies in which you are certificated to provide service:

<input type="checkbox"/> APACHE	<input type="checkbox"/> COCHISE	<input type="checkbox"/> COCONINO
<input type="checkbox"/> GILA	<input type="checkbox"/> GRAHAM	<input type="checkbox"/> GREENLEE
<input type="checkbox"/> LA PAZ	<input type="checkbox"/> MARICOPA	<input type="checkbox"/> MOHAVE
<input type="checkbox"/> NAVAJO	<input type="checkbox"/> PIMA	<input type="checkbox"/> PINAL
<input type="checkbox"/> SANTA CRUZ	<input type="checkbox"/> YAVAPAI	<input checked="" type="checkbox"/> YUMA
<input type="checkbox"/> STATEWIDE		

COMPANY NAME: The Links at Coyote Wash Utilities, LLC

UTILITY PLANT IN SERVICE

Acct. No.	DESCRIPTION	Original Cost (OC)	Accumulated Depreciation (AD)	O.C.L.D. (OC less AD)
351	Organization	\$ -	\$ -	\$ -
352	Franchises	\$8,369.55	\$1,673.91	\$6,695.64
353	Land and Land Rights	\$4,270.87	\$ -	\$4,270.87
354	Structures and Improvements	\$ -	\$ -	\$ -
355	Power Generation Equipment	\$ -	\$ -	\$ -
360	Collection Sewers – Force	\$ -	\$ -	\$ -
361	Collection Sewers – Gravity	\$409,993.71	\$8,199.87	\$401,793.84
362	Special Collecting Structures	\$ -	\$ -	\$ -
363	Services to Customers	\$ -	\$ -	\$ -
364	Flow Measuring Devices	\$ -	\$ -	\$ -
365	Flow Measuring Installations	\$ -	\$ -	\$ -
370	Receiving Wells	\$7,500.00	\$282.75	\$7,217.25
371	Pumping Equipment	\$ -	\$ -	\$ -
380	Treatment and Disposal Equip.	\$155,653.53	\$7,782.68	\$147,870.85
381	Plant Sewers	\$ -	\$ -	\$ -
382	Outfall Sewer Lines	\$ -	\$ -	\$ -
389	Other Plant and Misc. Equipment	\$ -	\$ -	\$ -
390	Office Furniture and Equipment	\$ -	\$ -	\$ -
391	Transportation Equipment	\$ -	\$ -	\$ -
393	Tools, Shop and Garage Equip.	\$ -	\$ -	\$ -
394	Laboratory Equipment	\$ -	\$ -	\$ -
395	Power Operated Equipment	\$ -	\$ -	\$ -
398	Other Tangible Plant	\$ -	\$ -	\$ -
	TOTALS	\$585,787.66	\$17,939.21	\$567,848.45

This amount goes on the Balance Sheet Acct. No. 108

COMPANY NAME: The Links at Coyote Wash Utilities, LLC

CALCULATION OF DEPRECIATION EXPENSE

Acct. No.	DESCRIPTION	Original Cost (1)	Depreciation Percentage (2)	Depreciation Expense (1x2)
351	Organization			
352	Franchises	\$8,369.55	20.00%	\$1,673.91
353	Land and Land Rights	\$4,270.87		
354	Structures and Improvements			
355	Power Generation Equipment			
360	Collection Sewers – Force			
361	Collection Sewers – Gravity	\$409,993.71	2.00%	\$8,199.87
362	Special Collecting Structures			
363	Services to Customers			
364	Flow Measuring Devices			
365	Flow Measuring Installations			
370	Receiving Wells	\$7,500.00	3.77%	\$282.75
371	Pumping Equipment			
380	Treatment and Disposal Equip.	\$155,653.53	5.00%	\$7,782.68
381	Plant Sewers			
382	Outfall Sewer Lines			
389	Other Plant and Misc. Equipment			
390	Office Furniture and Equipment			
391	Transportation Equipment			
393	Tools, Shop and Garage Equip.			
394	Laboratory Equipment			
395	Power Operated Equipment			
398	Other Tangible Plant			
	TOTALS	\$585,787.66		\$17,939.21

This amount goes on Comparative Statement of Income and Expense Acct. 403

COMPANY NAME: The Links at Coyote Wash Utilities, LLC

BALANCE SHEET

Acct. No.	ASSETS	BALANCE AT BEGINNING OF TEST YEAR	BALANCE AT END OF YEAR
	CURRENT AND ACCRUED ASSETS		
131	Cash	\$1,663.97	\$807.56
132	Special Deposits		
135	Temporary Cash Investments		
141	Customer Accounts Receivable		
146	Notes/Receivables from Associated Companies		
151	Plant Material and Supplies		
162	Prepayments		
174	Miscellaneous Current and Accrued Assets		
	TOTAL CURRENT AND ACCRUED ASSETS	\$1,663.97	\$870.56
	FIXED ASSETS		
101	Utility Plant in Service	\$559,814.19	\$585,787.66
103	Property Held for Future Use		
105	Construction Work in Progress		
108	Accumulated Depreciation – Utility Plant	-	\$17,939.21
121	Non-Utility Property		
122	Accumulated Depreciation – Non Utility		
	TOTAL FIXED ASSETS	\$559,814.19	\$567,848.45
	TOTAL ASSETS	\$561,478.16	\$568,719.01

NOTE: Total Assets on this page should equal Total Liabilities and Capital on the following page.

COMPANY NAME: The Links at Coyote Wash Utilities, LLC

BALANCE SHEET (CONTINUED)

Acct. No.	LIABILITIES	BALANCE AT BEGINNING OF TEST YEAR	BALANCE AT END OF YEAR
	CURRENT LIABILITES		\$30.00
231	Accounts Payable		
232	Notes Payable (Current Portion)		
234	Notes/Accounts Payable to Associated Companies		
235	Customer Deposits		
236	Accrued Taxes		
237	Accrued Interest		
241	Miscellaneous Current and Accrued Liabilities		
	TOTAL CURRENT LIABILITIES		\$30.00
	LONG-TERM DEBT (Over 12 Months)		
224	Long-Term Notes and Bonds		
	DEFERRED CREDITS		
252	Advances in Aid of Construction	\$	\$
253	Other Deferred Credits		
255	Accumulated Deferred Investment Tax Credits		
271	Contributions in Aid of Construction		
272	Less: Amortization of Contributions		
281	Accumulated Deferred Income Tax		
	TOTAL DEFERRED CREDITS		
	TOTAL LIABILITIES		\$30.00
	CAPITAL ACCOUNTS		
201	Common Stock Issued		
211	Other Paid in Capital		
215	Retained Earnings		
218	Proprietary Capital (Sole Props and Partnerships)	\$561,478.16	\$568,689.01
	TOTAL CAPITAL	\$561,478.16	\$568,689.01
	TOTAL LIABILITIES AND CAPITAL	\$561,478.16	\$568,719.01

COMPANY NAME: The Links at Coyote Wash Utilities, LLC

COMPARATIVE STATEMENT OF INCOME AND EXPENSE

	OPERATING REVENUES	PRIOR YEAR	TEST YEAR
521	Flat Rate Revenues		\$ 4,130.61
522	Measured Revenues		
536	Other Wastewater Revenues		
	TOTAL REVENUES		\$ 4,130.61
	OPERATING EXPENSES		
701	Salaries and Wages		
710	Purchased Wastewater Treatment		
711	Sludge Removal Expense		
715	Purchased Power		\$ 3,420.44
716	Fuel for Power Production		
718	Chemicals		
720	Materials and Supplies		\$ 4,857.00
731	Contractual Services – Professional		\$ 5,896.43
735	Contractual Services – Testing		
736	Contractual Services – Other		\$30,753.86
740	Rents		
750	Transportation Expense		
755	Insurance Expense		
765	Regulatory Commission Expense		
775	Miscellaneous Expense		\$ 53.12
403	Depreciation Expense		\$17,939.21
408	Taxes Other Than Income		
408.11	Property Taxes		
409	Income Taxes		
	TOTAL OPERATING EXPENSES		\$62,920.06
	OTHER INCOME/EXPENSE		
419	Interest and Dividend Income		
421	Non-Utility Income		
426	Miscellaneous Non-Utility Expenses		
427	Interest Expense		
	TOTAL OTHER INCOME/EXP		
	NET INCOME/(LOSS)		\$ (58,789.45)

COMPANY NAME: The Links at Coyote Wash Utilities, LLC

SUPPLEMENTAL FINANCIAL DATA

Long-Term Debt

	LOAN #1	LOAN #2	LOAN #3	LOAN #4
Date Issued				
Source of Loan				
ACC Decision No.				
Reason for Loan				
Dollar Amount Issued				
Amount Outstanding				
Date of Maturity				
Interest Rate				
Current Year Interest				
Current Year Principle				

COMPANY NAME: The Links at Coyote Wash Utilities, LLC

WASTEWATER COMPANY PLANT DESCRIPTION

TREATMENT FACILITY

TYPE OF TREATMENT (Extended Aeration, Step Aeration, Oxidation Ditch, Aerobic Lagoon, Anaerobic Lagoon, Trickling Filter, Septic Tank, Wetland, Etc.)	Extended Aeration
DESIGN CAPACITY OF PLANT (Gallons Per Day)	69,300 GPD

LIFT STATION FACILITIES

Location	Quantity of Pumps	Horsepower Per Pump	Capacity Per Pump (GPM)	Wet Well Capacity (gals)
County Rd. 12 – 300 yards west of the WWTP	2	10	400	3300

FORCE MAINS

Size	Material	Length (Feet)
4-inch		
6 – inch	PVC	1020'

MANHOLES

CLEANOUTS

Type	Quantity
Standard	75

Quantity
3

COMPANY NAME: The Links at Coyote Wash, LLC

WASTEWATER COMPANY PLANT DESCRIPTION CONTINUED

COLLECTION MAINS

SERVICES

Size (in inches)	Material	Length (in feet)
4		
6		
8	PVC	19,700
10	PVC	3,500
12	PVC	1,650
15	PVC	4,025
18		
21		
24		
30		

Size (in inches)	Material	Quantity
4	PVC	504
6		
8		
12		
15		

FOR THE FOLLOWING FIVE ITEMS, LIST THE UTILITY OWNED ASSETS IN EACH CATEGORY

SOLIDS PROCESSING AND HANDLING FACILITIES	Sludge Holding Tank/Aerobic Digester
DISINFECTION EQUIPMENT	Chlorine contact tank and liquid chlorine feed system, dechlorination tablet feeder
FILTRATION EQUIPMENT	N/A
STRUCTURES	Stucco operations/control/chemical storage lab building Block wall surrounding WWTP
OTHER	Backup generator (75 KW Diesel) w/150 Amp transfer switch Centrifuge, lab basic test kit Influent and Effluent magnetic flow meters

COMPANY NAME: The Links at Coyote Wash Utilities, LLC

WASTEWATER FLOWS

MONTH/YEAR (Most Recent 12 Months)	NUMBER OF SERVICES	TOTAL MONTHLY SEWAGE FLOW	SEWAGE FLOW ON PEAK DAY
January, 2004	40	111,600	.006 mgd
February, 2004	46	109,089	.007 mgd
March, 2004	52	100,146	.0067 mgd
April, 2004	59	101,369	.0065 mgd
May, 2004	65	100,453	.007 mgd
June, 2004	72	60,219	.004 mgd
July, 2004	73	88,015	.0067 mgd
August, 2004	80	90,276	.006 mgd
September, 2004	82	93,392	.0062 mgd
October, 2004	91	120,636	.006 mgd
November, 2004	86	176,647	.013 mgd
December, 2004	81	202,716	.014 mgd

PROVIDE THE FOLLOWING INFORMATION AS APPLICABLE

Method Of Effluent Disposal	Reuse – Golf Course
Wastewater Inventory Number	18278
Groundwater Permit Number	N/A
ADEQ Aquifer Protection Permit Number	29198
ADEQ Reuse Permit Number	N/A
EPA NPDES Permit Number	N/A

STATISTICAL INFORMATION

Total number of customers: 81 as of December 31, 2004

Total number of gallons treated is 1,354,558 gallons

COMPANY NAME: The Links at Coyote Wash Utilities, LLC-- YEAR ENDING 12/31/2004

INCOME TAXES

For this reporting period, provide the following:

Federal Taxable Income Reported \$<70,163>
Estimated or Actual Federal Tax Liability \$0

State Taxable Income Reported \$<70,163>
Estimated or Actual State Tax Liability \$ 0

Amount of Grossed-Up Contributions/Advances:

Amount of Contributions/Advances N/A
Amount of Gross-Up Tax Collected N/A
Total Grossed-Up Contributions/Advances N/A

Decision No. 55774 states, in part, that the utility will refund any excess gross-up funds collected at the close of the tax year when tax returns are completed. Pursuant to this Decision, if gross-up tax refunds are due to any Payer or if any gross-up tax refunds have already been made, attach the following information by Payer: name and amount of contribution/advance, the amount of gross-up tax collected, the amount of refund due to each Payer, and the date the Utility expects to make or has made the refund to the Payer.

CERTIFICATION

The undersigned hereby certifies that the Utility has refunded to Payers all gross-up tax refunds reported in the prior year's annual report. This certification is to be signed by the President or Chief Executive Officer, if a corporation; the managing general partner, if a partnership; the managing member, if a limited liability company or the sole proprietor, if a sole proprietorship.

Patricia A. Miller
SIGNATURE

11/4/05
DATE

Patricia A. Miller
PRINTED NAME

Manager Bill
TITLE

COMPANY NAME: The Links at Coyote Wash Utilities, LLC-- YEAR ENDING 12/31/2004

PROPERTY TAXES

Amount of actual property taxes paid during Calendar Year 2004 was: \$35.54

Attach to this annual report proof (e.g. property tax bills stamped "paid in full" or copies of cancelled checks for property tax payments) of any and all property taxes paid during the calendar year.

If no property taxes paid, explain why. _____

**VERIFICATION
AND
SWORN STATEMENT
Intrastate Revenues Only**

NOV 04 2005

VERIFICATION

STATE OF _____

I, THE UNDERSIGNED

OF THE

COUNTY OF (COUNTY NAME)	Yuma
NAME (OWNER OR OFFICIAL) TITLE	Robert O Curtis
COMPANY NAME	The Links at Coyote Wash Utilities LLC

DO SAY THAT THIS ANNUAL UTILITY REPORT TO THE ARIZONA CORPORATION COMMISSION

FOR THE YEAR ENDING

MONTH	DAY	YEAR
12	31	2004

HAS BEEN PREPARED UNDER MY DIRECTION, FROM THE ORIGINAL BOOKS, PAPERS AND RECORDS OF SAID UTILITY; THAT I HAVE CAREFULLY EXAMINED THE SAME, AND DECLARE THE SAME TO BE A COMPLETE AND CORRECT STATEMENT OF BUSINESS AND AFFAIRS OF SAID UTILITY FOR THE PERIOD COVERED BY THIS REPORT IN RESPECT TO EACH AND EVERY MATTER AND THING SET FORTH, TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF.

SWORN STATEMENT

IN ACCORDANCE WITH THE REQUIREMENT OF TITLE 40, ARTICLE 8, SECTION 40-401, ARIZONA REVISED STATUTES, IT IS HEREIN REPORTED THAT THE GROSS OPERATING REVENUE OF SAID UTILITY DERIVED FROM ARIZONA INTRASTATE UTILITY OPERATIONS DURING CALENDAR YEAR 2004 WAS:

Arizona Intrastate Gross Operating Revenues Only (\$)
\$ 4,130.61

(THE AMOUNT IN BOX ABOVE
INCLUDES \$ _____
IN SALES TAXES BILLED, OR COLLECTED)

****REVENUE REPORTED ON THIS PAGE MUST INCLUDE SALES TAXES BILLED OR COLLECTED. IF FOR ANY OTHER REASON, THE REVENUE REPORTED ABOVE DOES NOT AGREE WITH TOTAL OPERATING REVENUES ELSEWHERE REPORTED, ATTACH THOSE STATEMENTS THAT RECONCILE THE DIFFERENCE. (EXPLAIN IN DETAIL)**



SIGNATURE OF OWNER OR OFFICIAL
1-928-726-5920

TELEPHONE NUMBER

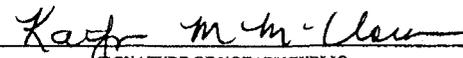
SUBSCRIBED AND SWORN TO BEFORE ME

A NOTARY PUBLIC IN AND FOR THE COUNTY OF

THIS 31st DAY OF

COUNTY NAME	Yuma
MONTH	October
YEAR	2005

(SEAL)



SIGNATURE OF NOTARY PUBLIC

MY COMMISSION EXPIRES 3-12-2008

**VERIFICATION
AND
SWORN STATEMENT
RESIDENTIAL REVENUE
INTRASTATE REVENUES ONLY**

NOV 04 2005

VERIFICATION

STATE OF _____

COUNTY OF (COUNTY NAME) <i>yuma</i>	
NAME (OWNER OR OFFICIAL) <i>Robert O Curtis</i>	TITLE <i>Manager</i>
COMPANY NAME <i>The Links at Coyote Wash Utilities LLC</i>	

I, THE UNDERSIGNED
OF THE

DO SAY THAT THIS ANNUAL UTILITY REPORT TO THE ARIZONA CORPORATION COMMISSION

FOR THE YEAR ENDING

MONTH	DAY	YEAR
12	31	2004

HAS BEEN PREPARED UNDER MY DIRECTION, FROM THE ORIGINAL BOOKS, PAPERS AND RECORDS OF SAID UTILITY; THAT I HAVE CAREFULLY EXAMINED THE SAME, AND DECLARE THE SAME TO BE A COMPLETE AND CORRECT STATEMENT OF BUSINESS AND AFFAIRS OF SAID UTILITY FOR THE PERIOD COVERED BY THIS REPORT IN RESPECT TO EACH AND EVERY MATTER AND THING SET FORTH, TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF.

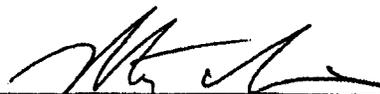
SWORN STATEMENT

IN ACCORDANCE WITH THE REQUIREMENTS OF TITLE 40, ARTICLE 8, SECTION 40-401.01, ARIZONA REVISED STATUTES, IT IS HEREIN REPORTED THAT THE GROSS OPERATING REVENUE OF SAID UTILITY DERIVED FROM ARIZONA INTRASTATE UTILITY OPERATIONS RECEIVED FROM RESIDENTIAL CUSTOMERS DURING CALENDAR YEAR 2004 WAS:

ARIZONA INTRASTATE GROSS OPERATING REVENUES \$ <u>4,136.61</u>

(THE AMOUNT IN BOX AT LEFT INCLUDES \$ 0.00 IN SALES TAXES BILLED, OR COLLECTED)

*RESIDENTIAL REVENUE REPORTED ON THIS PAGE MUST INCLUDE SALES TAXES BILLED.

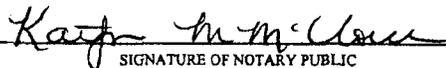
X 
SIGNATURE OF OWNER OR OFFICIAL
1-928-726-5920
TELEPHONE NUMBER

SUBSCRIBED AND SWORN TO BEFORE ME
A NOTARY PUBLIC IN AND FOR THE COUNTY OF
THIS 31st DAY OF

NOTARY PUBLIC NAME <i>Kathryn M. McClure</i>
COUNTY NAME <i>yuma</i>
MONTH <i>October</i> 20 <i>05</i>

(SEAL)

MY COMMISSION EXPIRES

X 
SIGNATURE OF NOTARY PUBLIC

3-12-2008

EXHIBIT

6



Santec
Corporation

220 Malibu Street Castle Rock, Colorado 80104 Phone (303) 660-9211 Fax (303) 660-2180

WASTEWATER TREATMENT PLANT DESIGN REPORT AND SUBMITTAL

for

The Links at Coyote Wash WWTP Expansion

Wellton, Arizona

Yuma County

Prepared for:

**Links at Coyote Wash Utilities, LLC
P.O. Box 6407
Yuma, Arizona 85366-6407**

Prepared by:

**Santec Corporation
220 Malibu Street
Castle Rock, Colorado 80109**





santec
Corporation

220 Malibu Street Castle Rock, Colorado 80104 Phone (303) 660-9211 Fax (303) 660-2180

TABLE OF CONTENTS

<u>Section</u>	<u>Contents</u>
1	Project Summary
2	Wastewater Characterization
3	Method of Disposal
4	BADCT
5	Key Maintenance, Contingency, and Emergency Operation
6	Construction Management
7	Facility Start Up Plan
8	General Specifications
9	Plans and Specifications
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A	Technical Capability
B	Financial Capability
C	MSDS
D	Closure / Post Closure Plans
E	208 Form Documentation
F	Facility Zoning Demonstration
G	FEMA Map



**TO: ARIZONA DEPARTMENT OF ENVIRONMENTAL
QUALITY**

PROJECT SUMMARY

The Links at Coyote Wash WWTF is an existing facility (APP No. P-105311) in Wellton, AZ which provides wastewater service to the Links at Coyote Wash development. The facility was designed to provide service to approximately 504 homes with a permitted capacity of 126,000 gpd. The WWTF was to be constructed in phases to minimize capital investment at the onset of the project and provide efficient treatment during low flow conditions experienced with new developments. Current treatment capacity at the plant site is 69,300 gpd. The Links at Coyote Wash subdivision is expanding the development on adjacent land to include an additional 500 home sites and must expand the existing, permitted treatment capacity to accommodate the growth.

REQUIRED PERMITS & PROCEDURES

1. Expansion of CC&N area to provide service to new area
2. Significant Amendment to Aquifer Protection Permit to increase flow
3. Revision of Reclaimed Water Permit to accommodate increased flow
4. 208 Consistency Review

SUMMARY OF SIGNIFICANT AMENDMENT

The Links at Coyote Wash Utilities, LLC is requesting the following changes to Aquifer Protection Permit No. P-105311 dated March 22, 2004 as follows:

1. Expansion of the permitted capacity from .126 mgd to .235 mgd
2. Revision of the second train design flow from .0567 mgd to .1657 mgd.
3. Permit Transfer from G-12 LLC to Links at Coyote Wash Utilities LLC

Sincerely,



Glen T. Curtis
The Links at Coyote Wash Utilities, LLC
Managing Member



AQUIFER PROTECTION PROGRAM PERMIT AMENDMENT FORM

ADEQ Use Only	
Type of Permit Amendment Requested:	Type of Facility:
<input checked="" type="radio"/> Significant	<input type="radio"/> Industrial
<input type="radio"/> Other	<input type="radio"/> Mine
<input type="radio"/> Minor	<input checked="" type="radio"/> Domestic Wastewater

AN INITIAL APPLICATION FEE OF \$1000 IS REQUIRED (Arizona Administrative Code R18-14-103)

Mail or hand deliver the completed form to one of the Application Clerks listed below, in care of Water Permits Section, 5415B-3, 1110 W. Washington St., Phoenix, AZ 85007 Your application must be received and stamped in by an Application Clerk in the Water Permits Section. Otherwise, it will not be subject to Licensing Time Frames and will not be processed.

Manager, Industrial / Drywell Unit

Secretary, Industrial / Drywell Unit

Manager, Mining Unit

Secretary, Mining Unit

Manager, Wastewater / Recharge Unit

Secretary, Wastewater / Recharge Unit

GENERAL INFORMATION

PLEASE TYPE OR PRINT

The Links at Coyote Wash WWTF

FACILITY NAME

P.O. Box 6047

MAILING ADDRESS

Yuma, AZ 85374

CITY, STATE, ZIP CODE

32 d 32' 00" N, 114 d 08' 00" W

LATITUDE AND LONGITUDE

T 9N, R 18W, Section 7

TOWNSHIP, RANGE, SECTION, QUARTER SECTIONS

The Links at Coyote Wash Utilities, LLC

FACILITY OWNER NAME

P.O. Box 6047

MAILING ADDRESS OF OWNER

Yuma, AZ 85374

(928) 726-5920

CITY, STATE, ZIP CODE

TELEPHONE NUMBER

PERMIT AMENDMENT FORM, p. 2

SAME AS ABOVE

APPLICANT NAME (IF DIFFERENT THAN OWNER)

MAILING ADDRESS

CITY, STATE, ZIP CODE

TELEPHONE NUMBER

Daniel Dow, Santec Corporation

CONTACT PERSON NAME (IF DIFFERENT THAN OWNER)

220 Malibu Street

MAILING ADDRESS

Castle Rock, CO 80109

(303) 660-9211 ext. 15

CITY, STATE, ZIP CODE

TELEPHONE NUMBER

REQUIRED ATTACHMENTS

Please provide a description of the permit amendment (pursuant to A.A.C. R18-9-A211) either in a cover letter or attach additional pages as necessary.

IS THE APPLICANT REQUIRED TO FILE A CERTIFICATE OF DISCLOSURE OF VIOLATIONS WITH ADEQ, PURSUANT TO A.R.S. §49-109 (CHECK BOX):

Yes

No

If you answered "Yes" to this question, please provide a copy of the Certificate of Disclosure with your completed submittal.

CERTIFICATION

I certify under penalty of law that this Aquifer Protection Permit amendment application and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including permit revocation as well as permit revocation as well as the possibility of fine and imprisonment for knowing violations.

NAME AND OFFICIAL TITLE:

Glenn T Curtis

SIGNATURE:

[Handwritten Signature]

DATE SIGNED:

2/3/06

Please check the box that applies:

owner

operator

both owner & operator

PROJECT SUMMARY

The Links at Coyote Wash WWTF is an existing facility (APP No. P-105311) in Wellton, AZ which provides wastewater service to the Links at Coyote Wash development. The facility was designed to provide service to approximately 504 homes with a permitted capacity of 126,000 gpd. The WWTF was to be constructed in phases to minimize capital investment at the onset of the project and provide efficient treatment during low flow conditions experienced with new developments. Current treatment capacity at the plant site is 69,300 gpd. The Links at Coyote Wash subdivision is expanding the development on adjacent land to include an additional 500 home sites and must expand the existing, permitted treatment capacity to accommodate the growth.

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BACKGROUND INFORMATION

WASTEWATER TREATMENT FACILITY

The existing Links at Coyote Wash Phase One WWTF was constructed in 2004. The facility included an influent pump station, flow equalization, aeration, anoxic and reaeration zones followed by secondary clarification and chlorination/ dechlorination. Effluent from the WWTF flows by gravity to a lined holding pond on a golf course for consumptive reuse of the reclaimed water class B⁺ effluent. Presently, average monthly flows to the WWTF are <12,000 gpd but are steadily increasing as the Links at Coyote Wash subdivision matures.

The Links at Coyote Wash subdivision was initially planned for two phases of development consisting of 504 residential units in total. Following the success of lot sales on phase one and phase two of the subdivision, additional development phases (three and four) to the subdivision are being planned. The new development has a planned capacity of 488 additional residential lots, all requiring wastewater service.

During the initial planning for the WWTF, a two phase construction was planned. The Phase One WWTF was a newly constructed facility and the Phase Two WWTF incorporated the utilization of an existing WWTF already in service, but scheduled for decommissioning. The available treatment capacity of the existing WWTF which was planned for service for the Phase Two WWTF is approximately 1/3 of the required treatment capacity making utilization of that facility impractical.

SEWER COLLECTION SYSTEM

The sewer collection system for subdivision Phases One and Two is primarily a gravity system flowing to a main service lift station. The lift station inlet invert depth is approximately 23' below grade with a base elevation of approximately 35'. The influent lift station contains a duplex pumping system design to handle .126 mgd of flow (including peak factor). The influent lift station pumps through a 6" force main to the flow equalization basin alongside the treatment plant. A second force main from the additional development will discharge to the facility headworks at the treatment plant site.

RECLAIMED WATER SYSTEM

The existing, permitted facility discharges to a lined golf course holding pond for irrigation of the golf course. Proposed plans include an additional reclaimed water line to provide transfer from the existing holding pond to the additional reuse sites incorporated with the additional development.

WASTEWATER CHARACTERIZATION

WASTEWATER FLOW PROJECTIONS

DESIGN WASTEWATER TREATMENT PLANT FLOW

Links at Coyote Wash is an existing RV subdivision that has its own wastewater treatment facility. The proposed Links at Coyote Wash phase will require an expansion to the WWTP. The expansion will provide treatment to 165,700 gpd of wastewater generated by the proposed development. At full buildout, both treatment plants will be in operation providing treatment for 235,000 gpd. This 235,000 gpd capacity will serve a part-time population of at least 2350 persons; calculating sewage flow at 100 gpd/capita per the ADEQ Engineering Bulletin No. 11. Because dwellings are often used as seasonal homes in the area, flows approaching the rated WWTP capacity are not anticipated; however, peak flows may be experienced on weekends and holidays. The following tables show the number of dwelling units and projected flows that are expected.

Table 1 WASTEWATER FLOWS

<u>Contributing Development</u>	<u>Dwelling Units</u>	<u>Projected Unit Flow (gpd/ unit)</u>	<u>Nominal Plant Capacity (gpd)</u>
Links Phase One WWTP	295	235	69,300
Links Phase Two WWTP	705	235	165,700
Links Full Build-out	1000	235	235,000

Table 2 WASTEWATER FLOW INFORMATION

Parameter	Flows Information (In gal/day)		
	Links at Coyote Wash (existing)	Links at Coyote Wash (proposed)	Full Buildout
Design Flow	69,300	165,700	235,000
Max Day	69,300	165,700	235,000
Max Month	69,300	165,700	235,000
Peak Hour	6,486,480	14,515,320	19,909,200
Min Day	6,930	16,570	23,500
Min Month	6,930	16,570	23,500
Min Hour	6,930	16,570	23,500

PHYSICAL, CHEMICAL AND BIOLOGICAL CHARACTERISTICS

The wastewater treatment facility has been designed assuming medium-strong strength wastewater as shown in Table 2.2 from *Wastewater Engineering Treatment, Disposal and Reuse* (Metcalf and Eddy, Fourth Edition, page 186, Table 3-16).

The projected organic loading of 200 mg/l BOD₅ and 220 mg/l TSS is in conformance with the recommendation in Figure VI-2 on Page VI-6 of *Minimum Requirements for Design, Submission of Plans and Specifications of Sewage Works, Engineering Bulletin No. 11*, Arizona Department of Environmental Quality, July 1978.

TABLE 3 TYPICAL COMPOSITION OF DOMESTIC WASTEWATER

(All values except settleable solids are expressed in mg/L)

CONSTITUENT	CONCENTRATION		
	Strong	Medium	Low
Solids, total	1,230	720	390
Dissolved, total	860	500	270
Fixed	520	300	160
Volatile	340	200	110
Suspended, total	400	210	120
Fixed	85	50	25
Volatile	315	160	95
Settleable solids, ml/L	20	10	5
Biochemical oxygen demand (20° C)	350	190	110
Total organic carbon (TOC)	260	140	80
Chemical oxygen demand (COD)	800	430	250
Nitrogen (total as N):	70	40	20
Organic	25	15	8
Nitrites	0	0	0
Nitrates	0	0	0
Phosphorous (total as P):	12	7	4
Organic	4	2	1
Inorganic	8	5	3
Chlorides	90	50	30
Alkalinity (as CaCO ₃)		60-120	
Grease	100	90	50

Table contents from *Wastewater Engineering Treatment, Disposal and Reuse*, Metcalf and Eddy, Inc. Fourth Edition Table 3-15, 3-16.

SEASONALITY

VARIATIONS IN FLOW

The Santec WWTP design incorporates features that enable the facility to be operated flexibly and to effectively treat flow variations. The Santec WWTP is designed to treat average daily flows from 25% to 100% of the design flow. Detailed information regarding WWTP operation, including average daily flows below 25% of design, can be found in the start-up procedure.

TEMPERATURE VARIATIONS

A specific feature of the Santec design that results in consistent, high-quality sewage treatment is the use of horizontal cylindrical tanks that are installed completely below grade. The below grade, totally enclosed tanks retain the heat generated by the oxidation process and process air blowers for more rapid waste stabilization. The earth-insulated tank provides maximum protection from temperature variations in the surrounding air and establishes consistent microbe growth and wastewater stabilization. Effective treatment to the performance level specified can be maintained with mixed liquor temperatures in the range of 10 °C to 35 °C. This range is based on operational observation and data from Santec Corporation WWTP's located throughout the U.S.

DAILY FLOWS APPROACHING DESIGN FLOW

HYDRAULIC IMPACT

The Links at Coyote Wash WWTP average design flow of 235,000 gpd was developed Paragraph 2.1.2. Treatment facility force mains, gravity piping, recycle piping and aeration systems have each been sized based on this design flow.

The proposed wastewater treatment plant incorporates flow equalization to dampen peak flows received by the wastewater treatment facility. During normal operation, peak flow to the aeration tank and other downstream treatment units is limited to 125% of the design flow. Process flow is controlled through selection of the design pumping rate, use of control valves and by use of variable speed drives. Any of these methods may be used to control the flow rate through the process. A detailed summary of flow equalization unit operation can be found in Section 6.

IMPACT OF FLOW ON TREATMENT PERFORMANCE

The Santec WWTP will operate within compliance for all levels of flow up to the design capacity. Operating the Santec WWTP in accordance with the normal operating procedure will produce an effluent that meets the permitted discharge standards.

Operational experience with Santec Corporation treatment systems shows that heavy loading provides the operator with the maximum operational flexibility to maintain the design food to micro-organism (F: M) ratio in the aeration tanks.

DESIGN FEATURES

The proposed wastewater treatment plant for the Links at Coyote Wash facility incorporates several design features to accommodate increasing and fluctuating wastewater flow rates:

Flow Equalization Tank - The equalization tank is provided to dampen peak flows to and throughout the facility.

Aeration Load Variation - Flexible process design and operating procedure controls the F:M ratio for flows between 25% and 125% of design rating by introducing raw sewage at one of several points in the aeration tank(s). This feature allows the operator to balance the oxygen demand in the aeration portion of the treatment process.

Aeration Detention Time - Sludge Recycle and Mixed Liquor return rates are variable and operated to optimize waste stabilization with variable detention times in treatment units.

Air Delivery System - A variable frequency drive on the blower motor control panel enables optimization of the oxygen supply to meet the microbe oxygen demand at various flow rates.

METHOD OF DISPOSAL

EFFLUENT REUSE PLAN

The proposed addition to the Links at Coyote Wash development will be very similar to the existing development. There will be a golf course built within the development that can reuse the effluent from the wastewater treatment plant. The proposed wastewater treatment plant will be placed next to the existing wastewater treatment plant. The effluent line from the proposed plant will be connected into the existing chlorine contact tank and therefore the effluent from both plants will run to the existing lake. The proposed development will include installing an effluent lift station near the lake to transfer the water from the lake to the new development golf course for reuse. This line will be in conformance with State and County standards for reclaimed water lines including pipe coding and separation requirements. The effluent flow from the wastewater treatment plants will be continuous therefore supplying the golf course with water as required. See the Wastewater Characterization Section for more details on quantity and quality of flow.

SLUDGE MANAGEMENT

The Links at Coyote Wash wastewater treatment plant will dispose of all biosolids in the Copper Mountain landfill in Wellton, AZ in accordance with state and federal regulations. The table below shows the estimated sludge production at different daily flow rates.

Landfill Name	Copper Mountain Landfill
Address	34853 E County 12 St Wellton, AZ
Phone #	928-854-9152
Contact	Pauline Weber

Table 1 ESTIMATED WASTE SLUDGE

Average Daily Flow Volume (gpd)	Estimated Waste Sludge Volume (gallons)	Net Waste Activated Sludge (pounds/day)	Dry Biosolids (tons/year)
60,000	1068	35.7	6.5
120,000	2135	71.3	13.0
180,000	3203	107	19.5
235,000	4182	139.6	25.4

Testing must be done on the biosolids and results sent to both ADEQ and Copper Mountain Landfill. The following table shows the necessary tests that must be done. Some tests will be done once a year and the results of them will be sent to ADEQ along with the Biosolids Annual Report Form. The other tests will be done on an as needed basis determined by the landfill.

Table 2 SAMPLING AND MONITORING SCHEDULE

Pollutant Or Test	Yearly	As Required by Copper Mountain Landfill
Arsenic	x	
Cadmium	x	
Chromium	x	
Copper	x	
Lead	x	
Mercury	x	
Molybdenum	x	
Nickel	x	
Selenium	x	
Zinc	x	
Fecal Coliform	x	
TCLP Tests		x
Paint Filter Test		x
Halogenated Volatile Organic Compounds		x
Aromatic Volatile Organic Compounds		x
Polychlorinated Biphenyls		x

Nicklaus Engineering, Inc.

1851 West 24th Street
(928) 344-8374

Yuma, Arizona 85364
Fax: (928) 344-8994

Email: YUMA@NICKLAUS.COM

*Bill Vonn Nicklaus, P.E., President
Thomas F. Weber, P.E., Vice President
Timothy S. Wierwille, P.E., Vice President
Harold L. Kambler, P.E., Vice President
Steve Gassner, P.E., Vice President
John P. Jester, P.E., Vice President
George D. Nordin, P.E., Vice President
Edmund L. Stover, P.E., Vice President*

September 8, 2005

Town of Wellton
P.O. Box 67
Wellton, Arizona 85356

Attention: Gary Reinhart

Reference: ADEQ Notice of Intent for Type 2 General Permit Under A.C.C. R18-9-714
Direct Reuse of Class B+ Reclaimed Water

Dear Mr. Reinhart:

Per the request of Rodney Reinhart, we have completed the subject Notice of Intent (NOI) documentation for the Town's submittal to ADEQ Wastewater, Recharge, and Resource Unit. Attached please find three copies of the documentation. According the included directions, the Town is to submit 2 copies to the address shown on sheet 5 for the NOI.

Items included for this submittal include:

- Completed NOI forms ready for your signature and submittal
- Copies of Attachment to the NOI that provides the answers to the questions detailed in Item 3 of the NOI.
- Copy of letter from Mr. Rick Miller, Coyote Wash WWTP Operator acknowledging the Town's use of the discharge from the WWTP for irrigation.
- Draft of a letter from to be included from the Town of Wellton agreeing to meet the conditions of the NOI including the placing and maintaining of warning signage. An electronic copy of this letter is included for placing this letter on Town stationery.

Should you have any questions concerning this submittal, please contact me at (928) 344-8374

Sincerely,
NICKLAUS, ENGINEERING, INC.

John H. Jester, P.E.
Senior Vice President



ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
Water Permits Section

NOTICE OF INTENT (NOI)
For Type 2 General Permit Coverage under A.A.C. R18-9-714 for
Direct Reuse of Class B+ Reclaimed Water

Instructions: Every person who applies for a Type 2 Reclaimed Water General Permit, as provided by Arizona Administrative Code (A.A.C.) Title 18, chapter 9, Article 7 must file a Notice of Intent to Operate (NOI) required by A.A.C. R18-9-708(B). A separate NOI form must be completed for each reclaimed water activity intended to be covered under a general permit. A person intending to operate under a general permit must comply with all the provisions of the general permit and other applicable requirements of statute and rule. The NOI shall be filed with the Department at least 90 days prior to the date the proposed activity will start. **Please submit two (2) copies of this NOI and any supplemental documentation to the address shown on page five.**

This Notice of Intent (NOI) is an application to use Class B+ reclaimed water under 18 A.A.C. 9, Articles 6 and 7, and 18 A.A.C. 11, Article 3. A person holding a Type 2 General Permit for Direct Reuse of Class B+ Reclaimed Water is responsible for the correct use of the reclaimed water as stated in the above-referenced rules. Persons seeking approval of this NOI must: (1) meet the requirements of Article 7 and the specific terms of the Type 2 General Permit for Direct Reuse of Class B+ Reclaimed Water found in R18-9-714; (2) file the NOI form; (3) pay the \$300 general permit review fee (review fees, which are flat rate fees specified in A.A.C. R18-14-102(C), are NON-REFUNDABLE); (4) satisfy any deficiency requests from the Department; and (5) received a written **Notice of Recording** from the Department.

Note: Please ensure the narrative, design drawings, and any supplemental information provided is comprehensive and adequate to demonstrate conformance with A.A.C. R18-9-714.

Requirements for Reusing Reclaimed Water Under a Type 2 General Permit (A.A.C. R18-9-703(B))

1. A person may directly reuse reclaimed water under a Type 2 Reclaimed Water General Permit if:
 - a. The direct reuse is authorized by and meets the requirements of 18 A.A.C. 9, Article 7.
 - b. The direct reuse meets all the conditions of the applicable Type 2 Reclaimed Water General Permit under A.A.C. R18-9-712 through R18-9-716;
 - c. The person files a Notice of Intent for Direct Reuse of Reclaimed Water as outlined in 2 below; and
 - d. The person submits the applicable fee established in 18 A.A.C. 14.
2. Notice of Intent for Direct Reuse of Reclaimed Water:
 - a. A person shall submit, by certified mail, in person, or by another method approved by the Department, the Notice of Intent for Direct Reuse of Reclaimed Water on a form provided by the Department.
 - b. The Notice of Intent for Direct Reuse of Reclaimed Water shall include:
 - i. The name, address, and telephone number of the applicant;
 - ii. The name, address, and telephone number of the contact person;
 - iii. The source, volume, and class of reclaimed water to be directly reused;
 - iv. A legal description of the direct reuse site, including latitude and longitude coordinates;
 - v. The description of the direct reuse activity, including a description of acreage and the type of vegetation to be irrigated, if applicable to the type of direct reuse activity; and
 - vi. The permittee's signature certifying that the permittee agrees to comply with all requirements of this Article, including specific terms of the applicable Reclaimed Water General Permit.

1. Application Type (please check one) New Renewal

2. Applicant Information (please print)

Name of Applicant (organization, corporation, district, individual, etc.) _____ Authorized Contact Person for the Applicant _____

Town of Wellton _____ Rodney Reinhart _____

Name and Title of Signatory (person responsible for overall compliance): _____ Title of Contact Person _____

Gary Reinhart, Town Manager _____ Director of Public Works _____

Address: _____ Address of Contact Person _____

28634 Oakland Ave. (P.O. Box 67) _____ 28634 Oakland Ave. (P.O. Box 67) _____

Wellton, AZ 85356 _____ Wellton, AZ 85356 _____

Phone No. (928) 785-3348 Fax No. (928) 785-4374 Phone No. (928) 550-1510 Fax No. (928) 785-4374

3. End User/Reuse Site Information

Provide the following information as an appendix to this NOI for the reuse site(s) to be supplied with Class B+ reclaimed water.

- a. Name and address of the reuse site(s) (example: ABC Golf Course, 191 N Main Street,) including county. If the site has no physical address, please describe the location.
- b. Township, Range, Section, 1/4, 1/8, 1/4 for the reuse site(s).
- c. Latitude and longitude of the approximate center point for the reuse site(s).
- d. Description of the reuse activity, including type of vegetation being irrigated (fruit trees, shrubs, alfalfa, etc) and approximate acreage (if applicable).
- e. A map showing the location of the reuse site(s).
- f. A statement from the reclaimed water supplier acknowledging use of reclaimed water under this NOI.
- g. A statement that permittee shall post signs as specified in R118-9-704(H).

7. Review Fee

The review fee for all Type 2 General Permits is \$300 and must accompany this NOI upon submittal to the Department. Review fees, which are flat rate fees specified in A.A.C. R18-14-102(C), are NON-REFUNDABLE.

8. Certification of Compliance (to be completed by Applicant as identified in No. 1 above)

I, Gary Reinhart, certify that this Notice of Intent and all attachments were prepared under my direction or authorization and all information is, to the best of my knowledge, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including permit revocation as well as the possibility of fines and imprisonment for knowing violations. I also certify that I have read and understand the requirements to use Class B+ reclaimed water as stated in 18 A.A.C. 9, Articles 6 and 7, and 18 A.A.C. 11, Article 3, and that I shall abide by the terms of these rules.

Signature

Date

9. Submit two (2) copies of this NOI and supplemental documentation to the following address:

Arizona Department of Environmental Quality
Wastewater, Recharge, and Reuse Unit
1110 West Washington Street, 5415B-3
Phoenix, AZ 85007

Attachment A To
Notice of Intent (NOI) For Type 2 General Permit for
Direct Reuse of Class B+ Reclaimed Water
Town of Wellton, Arizona

Page 1 of 2

Item 3 – End User/Reuse Site Information

a. Name and Address of Reuse Sites:

The Links At Coyote Wash Golf Course Phases 1 and 2, and Phases 3 and 4
11902 Williams Street
Town of Wellton, Yuma County, Arizona 85356

b. Township, Range, and Section for the reuse sites:

- The Links At Coyote Wash Golf Course Phases 1 and 2
The Phase 1 and 2 Golf Course is located in the SE $\frac{1}{4}$ of Section 7, and the SE $\frac{1}{4}$ of the SW $\frac{1}{2}$ of Section 7, Township 9 South, Range 18 West (T9S, R18W).
- The Links At Coyote Wash Golf Course Phases 3 and 4
The Phase 3 and 4 Golf Course is located in the SE $\frac{1}{4}$ of Section 11, and the S $\frac{1}{2}$ of Section 12, Township 9 South, Range 19 West (T9S, R19W).

c. Latitude (Lat.) and longitude (Lon) of the approximate center point for the reuse sites.

- The Links At Coyote Wash Golf Course Phases 1 and 2
The approximate center point for Phase 1 and 2 Golf Course is located at Lat. North 32 Degrees, 39 Minutes, 10 Seconds, and Lon. West 14 Degrees, 08 Minutes, 40 Seconds.
- The Links At Coyote Wash Golf Course Phases 3 and 4
The approximate center point for Phase 3 and 4 Golf Course is located at Lat. North 32 Degrees, 39 Minutes, 05 Seconds, and Lon. West 14 Degrees, 08 Minutes, 45 Seconds.

d. Description of the reuse activity, including vegetation being irrigated, and approximate acreage being irrigated.

- The Links At Coyote Wash Golf Course Phases 1 and 2
The reuse activity for Phases 1 and 2 consist of the irrigation of a 9-holes golf course turf area with landscaping palm trees and shrubs, and Club House turf area with landscaping trees and shrubs. The area being irrigated for the Phases 1 and 2 Golf Course is approximately 36.0 acres.
- The Links At Coyote Wash Golf Course Phases 3 and 4
The reuse activity for Phases 3 and 4 consist of the irrigation of a 9-holes golf course turf area with landscaping palm trees and shrubs. The area being irrigated for the Phases 3 and 4 Golf Course is approximately 34.9 acres.

**Attachment A To
Notice of Intent (NOI) For Type 2 General Permit for
Direct Reuse of Class B+ Reclaimed Water
Town of Wellton, Arizona**

Page 2 of 2

- e. A map showing the location of the reuse sites.

Attached please find the two drawings titled Location Map of NOI Reuse Sites, Sheet 1 of 2 (Phases 1 & 2 Golf Course), and Sheet 2 of 2 (Phases 3 & 4 Golf Course). These two maps show the locations and layouts of the Golf Course areas for the Phase 1 and 2, and Phase 3 and 4 Golf Courses, respectively.

- f. A Statement from the reclaimed water supplier acknowledging use of the reclaimed water under this NOI.

Attached please find a letter from Mr. Rick Miller, Plant Operator of the Coyote Wastewater Treatment Plant dated September 7, 2005, acknowledging that the Town of Wellton is using the reclaimed water from the Coyote Wash WWTP for Golf Course irrigation under this NOI.

- g. A statement that the permittee shall post signs as specified in A.C.C. R18-9-704 (H).

Attached is a letter from the Town of Wellton dated September 1, 2005, stating that the Town has had posted and does maintain signage in both English and Spanish, at the locations as specified in R18-9-704 (H) for Reclaimed water Class B+ as specifies in Table 1 – Signage Requirements for Direct Reuse Sites.

September 1, 2005

Arizona Department of Environmental Quality
Wastewater, Recharge, and Reuse Unit
1110 West Washington Street, 5415B-3
Phoenix, Arizona 85007

Reference: Statement Concerning the Posting of Signs in Accordance
With A.C.C. R18-9-704(H)

Dear Administrative Staff:

The Town of Wellton is providing this letter to the ADEQ Wastewater, Recharge, and Resource Unit to certify that the Town agrees to comply with all requirements of of this Notice of Intent for the Direct Reuse Of Class B+ Reclaimed Water for irrigation at the Links at Coyote Wash Golf Course Phases 1 through 4. As part of this agreement, the Town has had placed and maintains signage so that the public is informed that reclaimed water is in use and that no one should drink from the storage pond areas or the reuse system. These signs are placed at the locations as specified in A.C.C. R18-9-704(H), Table 1 – Storage Requirements for Direct Reuse Sites.

Sincerely,
TOWN OF WELLTON

Gary Reinhard
Town Manager

SUNSTATE Environmental Services

1000 E. 30th PLACE

PHOENIX, AZ 85034

TEL: (928) 341-9195 Fax: (928) 341-9195

www.SunstateEnvironmental.com

Nicholas Engineering
Richard J. Lester

September 7 2005

RE: Pine Links at Coyote Wash

The Coyote Wash wastewater treatment facility is supplying reclaimed water to the Pine Links at Walton Golf Course for irrigation.

Yours



Richard J. Lester

BADCT

The Links at Coyote Wash WWTF has been designed to meet the requirements of A.R.S. Title 18, Chapter 9, Article 2, Part B and therefore meets the requirements of R18-9-A202 (A)(5). The effluent from the wastewater treatment facility meets the requirements for reclaimed water Class B⁺ quality water.

MATERIALS OF CONSTRUCTION

Treatment facility vessels shall be constructed of horizontal and vertical fiberglass (FRP) vessels.

Horizontal basins construction shall be equivalent to UL 1316 standards for fuel storage tanks. Vertical access manways on horizontal tanks shall be of FRP material glassed to the horizontal tank providing a water tight seal. Manway risers shall overlap access manways for smooth fit and transition to the risers. Tank penetrations shall be of PVC construction and glassed to the horizontal tank providing a water tight seal.

Vertical fiberglass construction shall be minimum ¼" wall thickness construction and contain anti-flotation bottom glassed into vertical construction for watertight seal.

TREATMENT PROCESS DESCRIPTION

The design and process flow of the wastewater treatment system expansion is consistent with the design of the existing facility and the previously proposed phase 2 expansion. The Links at Coyote Wash WWTF employs a 4-stage process design for single stage carbon oxidation-nitrification with nitrogen removal occurring in a 1st stage anoxic zone and a 3rd stage denitrification zone. The distinction between an anoxic zone and a denitrification zone for the purposes of this design report is the carbon source utilized for the denitrification process. The anoxic zone utilizes the soluble portion of the sewage waste stream as a carbon source, while the denitrification zone utilizes supplemental carbon addition in the form of methanol. The fourth stage of the process is reaeration of the mixed liquor to strip Nitrogen gas from the mixed liquor. The process flow diagram in the plans and specifications provides a more detailed view including recycle flows for the proposed treatment facility.

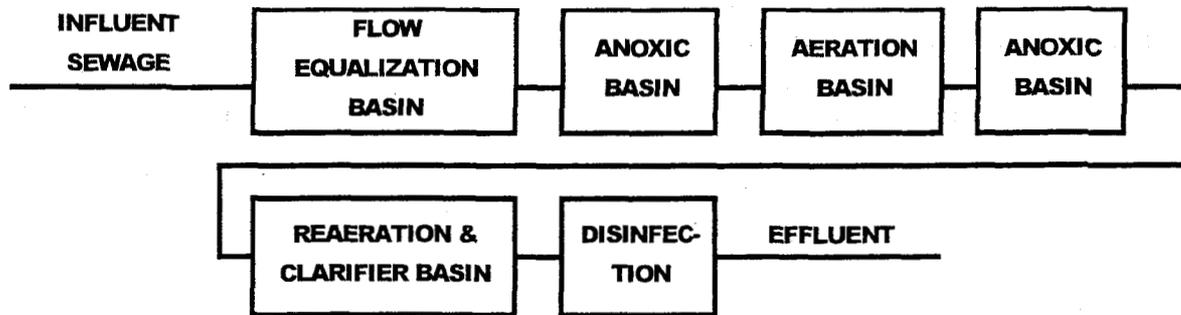


Figure 1. Sewage Treatment Process Flow Diagram.

TREATMENT UNIT PROCESSES

HEADWORKS

The facility headworks consists comminuting, coarse bar screening and flow equalization. Facility headworks design provides hydraulic capacity in excess of that required for the design peak hourly flow to the facility as established by the wastewater characterization.

FLOW EQUALIZATION

The flow equalization design incorporates automated flow control via variable pump flow designed to provide continuous flow to the treatment process throughout the flow variability spectrum. During periods of low flow, the controls set a minimum flow to the treatment process (typically 25% of the design average flow), as the equalization basin fills, the speeds progressively increase to the maximum position. The maximum position is set to provide 125% of the design average flow to the treatment process units.

Estimates on peak flow for design are obtained from **The 10-State Standards**, "Recommended Standards for Wastewater Facilities" (Health Education Services, 1997 Edition).

The flow equalization basin for the facility receives the entire raw waste stream from the collection system. Headworks items such as comminution and bar screen are located ahead of the flow equalization basin for pump protection. All subsequent process units are located down stream of the flow equalization basin.

The design of the flow equalization basin is for an in-line equalization unit. Due to the estimated variations in the influent flow rate, and in-line unit will provide better flow distribution over a 24-hour period than a side-line equalization unit.

A high-level, emergency, gravity overflow shall be installed to the aeration portion of the treatment process.

The flow equalization basin shall be capable of being mixed and aerated with coarse bubble diffusers to maintain aerobic conditions and prevent deposition of solids on the vessel floor. Aeration in the vessel will be controlled by a control valve located inside the access manway within easy reach of the operator to adjust aeration levels in the vessel. Diffusers shall be of coarse bubble design and provide a minimum rate of 2 cfm per 1,000 gallons of basin volume.

The duplex pumps will alternate duty as the lead pump and the lag pump in each sequential pumping cycle. For extended periods of operation, the lead and lag designation will alternate at 180-minute intervals.

The discharge line from each pump shall be connected in sequence to 1) a check valve, 2) a gate valve, and 3) a single pump discharge pipeline (force main) shared by both pumps. The pump discharge pipeline is routed to the influent anoxic and aeration tanks.

A magnetic flow meter displaying both gallons per minute and totalized flow is located on the pump discharge pipeline to monitor and control the flow to the treatment process. A switch for pump ON/AUTOMATIC/OFF operation shall be provided. Pump ON/OFF operation in the automatic mode shall be provided by a combination unit consisting of an ultra-sonic level transmitter and a pump control unit. Pump operation in the flow equalization basin feeds the treatment process.

The ultra-sonic level transmitter shall provide a signal for all levels of wastewater in the flow equalization basin. The pump control unit shall have a minimum of four (4) level controlled, adjustable relays. Relays shall be adjusted to the ultra-sonic level transmitter output signal to control the following functions:

- Low Level Alarm ON
- Lead Pump OFF level
- Lead Pump ON level
- Lag Pump OFF level
- Lag Pump ON level
- High Level Alarm ON

An alternator relay shall be provided in the control panel to alternate the operation of the pumps with each automatic ON signal and with each 180 minute ON cycle. Pump relays shall be capable of forced alternation at an adjustable time interval.

AERATION PROCESS SUMMARY

Table 1 AERATION PROCESS DESIGN PARAMETER SUMMARY

<u>PARAMETER</u>	<u>DESIGN VALUE</u>	<u>BULLETIN 11 STANDARD</u>
AERATION PERIOD (hrs)	18.0	24.0
% RECYCLE	0%-150%	75%-150%
LBS BOD ₅ / 1000 CF (ft ³)	17.7	10-20
LBS BOD ₅ / LB MLSS (F/M)	0.093	0.05-0.15
LBS O ₂ / LB BOD ₅ REMOVED	1.5	NONE
FT ³ O ₂ / LB BOD ₅ REMOVED	2,100	2,100
MLSS (mg/l)	4000	2000-4000
SLUDGE AGE (days)	18.9	10 or more
LBS SOLIDS/ LB BOD ₅ REMOVED	12.5	NONE

NITRIFICATION PROCESS SUMMARY

The Santec design incorporates a single-stage, suspended growth, combined carbon oxidation-nitrification process for the conversion of ammonia-nitrogen to nitrate-nitrogen. The design of a single-stage, suspended growth, combined carbon oxidation nitrification process is well documented in "Process Design Manual for Nitrogen Control" and "Wastewater Engineering Treatment, Disposal and Reuse".

DENITRIFICATION PROCESS SUMMARY

The Santec denitrification process uses a modified denitrification system that uses methanol as the carbon source for nitrate reduction in the denitrification tank and soluble influent carbon source in the anoxic tank. Table 3.2 lists the design parameters. The denitrification process includes an anoxic zone prior to aeration for additional removal of nitrate. The design of system utilizes the denitrification tank following aeration as the principal nitrogen removal zone with a safety factor of 2.0 on this zone. The primary purpose of the influent anoxic zone is the reduction in operating cost associated with the addition of methanol in the denitrification zone following aeration. The configuration is identical to the denitrification tank following aeration.

Table 2 DENITRIFICATION PROCESS DESIGN PARAMETER SUMMARY

<u>PARAMETER</u>	<u>DESIGN VALUE</u>	<u>BULLETIN 11 STANDARD</u>
ANOXIC DETENTION PERIOD (hrs)	1.9	NONE
DENITRIFICATION DETENTION PERIOD (hrs)	2.8	NONE
MLVSS	3000	1000-3000
LBS NO ₃ -N / 1000 CF (ft ³)	21.42/13.79	200
pH	7.2	6.5-7.5
METHANOL/ NO ₃ -N RATIO	3.0	3-4

SECONDARY CLARIFIER SUMMARY**Table 3 SECONDARY CLARIFIER DESIGN PARAMETER SUMMARY**

<u>PARAMETER</u>	<u>DESIGN VALUE</u>	<u>BULLETIN 11 STANDARD</u>
DETENTION PERIOD (hours)	3.6	3.6
WEIR LOADING RATE (gpd/linear ft)	3,488	3,750
SURFACE LOADING RATE (gpd/ft ²)	560	493

The secondary clarifier shall be provided in a horizontal, cylindrical, fiberglass tank constructed to the standards set forth in the tank specifications. The cylindrical design of the vessel provides smooth transitions from wall to floor to prevent the formation of "dead-zones" where solids can accumulate in the basin.

The secondary clarifier occupies the outlet half of the tank in which the secondary clarifier is constructed. A longitudinal Fiberglass Reinforce Plastic (FRP) baffle shall maintain separation between reaeration and secondary clarification.

DISINFECTION SUMMARY

The design of the facility shall include chlorine disinfection for inactivation of *coliform* bacteria in the effluent. Disinfection design factors are provided in Table 3.

Table 4 DISINFECTION DESIGN PARAMETER SUMMARY

<u>PARAMETER</u>	<u>DESIGN VALUE</u>	<u>BULLETIN 11 STANDARD</u>
DETENTION PERIOD (hrs)	.25	.25
CHLORINE DOSAGE (mg/l)	8.0	8
FLOW PEAK FACTOR	1.4	

DISINFECTION CHEMICAL FEED EQUIPMENT

A chlorine feed pump with liquid chlorine solution shall be used to accomplish effluent disinfection. The feed pump shall have a rated capacity of twice the anticipated chlorine dosage required.

CONTACT BASIN DESIGN

The basin design shall include over-under type baffling to prevent short-circuiting of the contact basin. Dewatering of the contact basin, when required, shall be accomplished by use of a portable, submersible dewatering pump.

DECHLORINATION CHEMICAL FEED EQUIPMENT

A dechlorination tablet feeder shall be installed on the gravity overflow outlet line from the chlorine contact basin to accomplish dechlorination of the effluent. The tablet feeder shall be a flow rated proportional feeder that allows for long-term unattended operation while providing a stable, adjustable chemical dose. Treatment of the wastewater effluent shall be accomplished by immersion of feed tubes containing vertically stacked chemical tablets. Chemical agents shall be released as the liquid erodes the tablets. The tablet feeder shall be equipped with a self-draining flow channel to allow complete dry down of the chemical tablets during low and/or no flow conditions to ensure long-term tablet integrity.

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Links at Coyote Wash Expansion

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9	REAERATION
10	NITRIFICATION
11	INFLUENT DENITE
12-13	DENITRIFICATION
14-15	SLUDGE MANAGEMENT
16	DISINFECTION
17-18	AERATION SYSTEM
	BLOWER CALCULATIONS
	MOTOR DATA



**DESIGN SUMMARY
FOR SECONDARY TREATMENT PROCESS
INCLUDING NUTRIENT REMOVAL**

PROJECT NAME:	Links at Coyote Wash Expansion	
PROJECT LOCATION:	Wellton, Arizona	
DATE:	2/10/2006	
PREPARED BY:	NAW	
INFLUENT LOADING PARAMETERS:		
		<u>English</u>
HYDRAULIC LOADING PARAMETERS		<u>Units</u>
Design Average Daily Flow <i>gpd</i>		165,700
Design Maximum Day Flow <i>gpd</i>		207,125
Design Peak Hourly Flow <i>gph</i>		25,186
ORGANIC AND MASS LOADING PARAMETERS		
Design influent BOD ₅ <i>ppm</i>		220.0
Design influent BOD ₅ <i>lbs/day</i>		303.7
Design influent TSS <i>ppm</i>		220.0
Design influent TSS <i>lbs/day</i>		303.7
Design influent NH ₃ <i>ppm</i>		39.6
Design influent NH ₃ <i>lbs/day</i>		54.7
EFFLUENT PARAMETERS:		
Design effluent BOD ₅ <i>ppm</i>		30.0
Design effluent BOD ₅ <i>lbs/day</i>		41.4
Design effluent TSS <i>ppm</i>		30.0
Design effluent TSS <i>lbs/day</i>		41.4
Design effluent Total Nitrogen <i>ppm</i>		10.0
Design effluent Total Nitrogen <i>lbs/day</i>		13.8
Fecal Coliform Concentration <i>cfu/100ml</i>		<2.2
TREATMENT UNIT PROCESSES:		
FLOW EQUALIZATION		
Working Volume <i>gal</i>		36,766
Minimum pumping rate <i>gpm</i>		28.8
Maximum pumping rate <i>gpm</i>		143.8
Average pumping rate <i>gpm</i>		115.1

AERATION		
Design Aeration Detention Time hrs		18.6
Working Volume gal		128,466
Design MLSS concentration ppm		4,000
Aeration Tank Loading lbs BOD ₅ /1000 ft ³		17.7
Aeration Tank Loading lbs BOD ₅ /lb MLSS		0.093
Aeration Tank Loading lbs solids/lb BOD ₅ removed		12.5
Aeration Oxygen Requirement lbs O ₂ /lb peak hourly BOD ₅		1.5
Aeration Oxygen Requirement lbs O ₂ /day		569
NITRIFICATION		
Detention Time in Nitrification Zone hrs		18.6
Nitrification Zone Working Volume gal		128,466
Design Nitrification Temperature F°		68
Design MLVSS concentration ppm		3,000
Nitrification Oxygen Requirement lbs O ₂ /lb NH ₃		4.6
Nitrification Oxygen Requirement lbs O ₂ /day		251
Nitrification Safety Factor		5.7
DENITRIFICATION (INFLUENT ANOXIC)		
Detention Time in Denitrification Zone hrs		1.9
Denitrification Zone Working Volume gal		15,066
Design Denitrification Temperature F°		68
Design MLVSS concentration ppm		3,000
Nitrate Removal Rate lbs NO ₃ removed/lb VSS/day		0.06
Effluent Nitrate concentration ppm		25.5
DENITRIFICATION (SECONDARY ANOXIC)		
Detention Time in Denitrification Zone hrs		2.2
Denitrification Zone Working Volume gal		15,066
Denitrification Temperature F°		68
Design MLVSS concentration ppm		3,000
Nitrate Removal Rate lbs NO ₃ removed/lb VSS/day		0.125
Design Solids Retention Time days		16.7
Methanol/ Nitrate Nitrogen Ratio		3.0
Effluent Nitrate concentration ppm		0.3
REAERATION		
Detention Time in Reaeration Zone hrs		1.8
Reaeration Zone Working Volume gal		12,770
Aeration and Mixing scfm		200

SECONDARY CLARIFICATION			
Detention Time in Clarifier	hrs	3.6	
Clarifier Working Volume	gal	24,512	
Clarifier Surface Loading	gpd/ft ²	560	
Clarifier Sidewater Depth	ft	10	
Weir Loading rate	gpd/ft	3,488	
Sludge Removal Ratio		150%	
SOLIDS MANAGEMENT			
Sludge Holding Tank Working Volume	gal	55,744	
Holding Tank Solids Mean Cell Residence Time	days	40	
Net Waste Activated Sludge	lbs/day	98	
Net Waste Activated Sludge Volume	gal/day	2,949	

	A	B	C	D
1	SANTEC DESIGN CALCULATIONS FOR FLOW EQUALIZATION			
2				
3				
4				
5				
6	PROJECT NAME:	Links at Coyote Wash Expansion		
7	PROJECT LOCATION:	Wellton, Arizona		
8	DATE:	2/10/2006		
9	PREPARED BY:	NAW		
10				
11	CALCULATION OF PEAK FACTOR:			
12	BASED ON POPULATION ESTIMATES			
13	AND RECOMMENDED STANDARDS FOR WASTEWATER FACILITIES			
14			English	Metric
15			Units	Units
16	Q_{design} = Average Daily Sewage Flow	gpd (m^3/day)	165,700	628
17	Projected wastewater Generation rate	gpd/capita ($m^3/day/capita$)	100	0.38
18	Population served by Flow Equalization	(capita)	1,657	
19	Peak factor = Q_{peak}/Q_{design} =	$[18 + \text{SQRT}(P)] / [4 + \text{SQRT}(P)]$	3.648	
20	where P= Estimated population in thousands			
21	Q_{peak} = Maximum Rate of Sewage Flow (Peak Hourly Flow)	gph (m^3/hr)	25,186	95
22				
23	CALCULATION OF REQUIRED STORAGE VOLUME:			
24	Peak factor chosen by Santec		3.65	
25	Average Daily Sewage Flow	gpd (m^3/day)	165,700	628
26	Q_{design} = Average Daily Sewage Flow	gpm (m^3/min)	115.1	0.436
27	T_{max} =Duration of maximum flow	hours	2.00	
28	Q_{min} =Minimum pumping rate	gpm (m^3/min)	28.77	0.109
29	Q_{max} =Maximum pumping rate	gpm (m^3/min)	143.84	0.545
30	V_{req} = ($Q_{peak} - Q_{avg} * 60$) * T_{max}	gal (m^3)	36,563	138.5
31				
32	BASIN SELECTION:			
33	Freeboard	in (cm)	12	30.5
34	Tank inside diameter	ft (m)	12	3.66
35	Freeboard D-Factor		0.960	
36	Minimum Level	in (cm)	18	45.72
37	Minimum Level D-Factor		0.928	
38	Reference Volume	gal (m^3)	41,039	155.46
39	Reference tank length	ft (m)	49.73	15.16
40	Chosen tank length	ft (m)	50.00	15.25
41	Actual Full Volume	gal (m^3)	41,268	156.3
42	Actual Working Volume	gal (m^3)	36,766	139.3
43				
44	AERATION:			
45	Required aeration and mixing capacity	SCFM/1000 gal ($m^3/min/m^3$)	2	0.0567
46	Air Flow Rate per Diffuser	SCFM (m^3/min)	10	0.2834
47	Diffusers required in Flow Equalization Basin		8	
48	Air required for flow equalization basin	SCFM (m^3/min)	80	2.2672

	A	B	C	D
49	HEAD LOSS CALCULATIONS:		English	Metric
50			Units	Units
51	Design Average Flow Rate <i>gpd (m³/day)</i>		165,700	627
52	Design Average Flow Rate <i>gpm (m³/s)</i>		115.1	0.436
53	Pump Peak Factor		1.25	
54	Pump Design Flow Rate (one pump) <i>gpm (m³/s)</i>		143.8	0.5446
55	Nominal Diameter of Force Main Pipe <i>in (cm)</i>		3	7.6
56	Actual Diameter of Force Main Pipe <i>in (cm)</i>		3.067	7.8
57	Flow Velocity in Pipe <i>ft/s (m/s)</i>		6.25	1.905
58	Pumping Station Elevation <i>ft (m)</i>		276	84
59	Discharge Elevation <i>ft (m)</i>		292	89
60	Static Head Loss <i>ft (m)</i>		16	5
61				
62	System Losses			
63	Force Main at Q_{max}			
64	Pipe Roughness Factor (cannot exceed 120 for PVC)		120	
65	Diameter of Force Main Pipe <i>in (cm)</i>		3.067	7.8
66	Flow Velocity in Pipe <i>ft/s (m/s)</i>		6.25	1.905
67	Length of Force Main <i>ft (m)</i>		100	30
68	Minor Losses	# of	Equivalent	Equivalent
69		Fittings	Length (ft)	Length (ft)
70	22.5° Bends	0	2	0
71	45° Bends	0	4	0
72	90° Bends	2	8	16
73	Check Valves	0	14	0
74	Air Release Valves	0	2	0
75	Total Equivalent Pipe Length <i>ft (m)</i>		116	35
76	Frictional Head Loss <i>ft (m)</i>		7.23	2.2
77				
78	Discharge Line at Q_{max}			
79	Pipe Roughness Factor (cannot exceed 120 for PVC)		120	
80	Diameter of Pump Discharge Line <i>in (m)</i>		3.067	7.8
81	Pump Design Flow Rate (one pump) <i>gpm (m³/s)</i>		143.8	0.0000
82	Flow Velocity in Pipe <i>ft/s (m/s)</i>		6.25	1.905
83	Length of Discharge Line <i>ft (m)</i>		17	5
84	Minor Losses	# of	Equivalent	Equivalent
85		Fittings	Length (ft)	Length (ft)
86	22.5° Bends	0	2	0
87	45° Bends	0	4	0
88	90° Bends	2	8	16
89	Check Valves	1	14	14
90	Air Release Valves	0	2	0
91	Total Equivalent Pipe Length <i>ft (m)</i>		47	14
92	Frictional Head Loss from above fittings <i>ft (m)</i>		2.93	0.89
93				
94	DYANAMIC HEADLOSS at Q_{max}		10.16	

	A	B	C	D
95			English	Metric
96			Units	Units
97	Force Main at Q_{min}			
98	Pipe Roughness Factor (cannot exceed 120 for PVC)		120	
99	Diameter of Force Main Pipe <i>in (cm)</i>		3.067	7.8
100	Flow Velocity in Pipe <i>ft/s (m/s)</i>		1.25	0.381
101	Length of Force Main <i>ft (m)</i>		100	30
102	Minor Losses	# of	Equivalent	Equivalent
103		Fittings	Length (ft)	Length (ft)
104	22.5° Bends	0	2	0
105	45° Bends	0	4	0
106	90° Bends	2	8	16
107	Check Valves	0	14	0
108	Air Release Valves	0	2	0
109	Total Equivalent Pipe Length <i>ft (m)</i>		116	35
110	Frictional Head Loss <i>ft (m)</i>		0.37	0.1
111				
112	Discharge Line at Q_{min}			
113	Pipe Roughness Factor (cannot exceed 120 for PVC)		120	
114	Diameter of Pump Discharge Line <i>in (m)</i>		3.067	7.8
115	Pump Design Flow Rate (one pump) <i>gpm (m³/s)</i>		28.8	0.0000
116	Flow Velocity in Pipe <i>ft/s (m/s)</i>		1.25	0.381
117	Length of Discharge Line <i>ft (m)</i>		17	5
118	Minor Losses	# of	Equivalent	Equivalent
119		Fittings	Length (ft)	Length (ft)
120	22.5° Bends	0	2	0
121	45° Bends	0	4	0
122	90° Bends	2	8	16
123	Check Valves	1	14	14
124	Air Release Valves	0	2	0
125	Total Equivalent Pipe Length <i>ft (m)</i>		47	14
126	Frictional Head Loss from above fittings <i>ft (m)</i>		0.15	0.05
127				
128	DYANAMIC HEADLOSS at Q_{min}		0.52	
129				
130	HEAD LOSS SUMMARY:			
131	Static Head Loss <i>ft (m)</i>		16	5
132	Total Head Loss at Q_{min} <i>ft (m)</i>		16.52	5
133	Total Head Loss at Q_{max} <i>ft (m)</i>		26.16	
134				
135	PUMP SELECTION:			
136	3SE1544L 6.00" IMP			

	A	B	C	D
1	SANTEC DESIGN CALCULATIONS			
2	FOR BOD REMOVAL			
3				
4				
5	PROJECT NAME:	Links at Coyote Wash Expansion		
6	PROJECT LOCATION:	Wellton, Arizona		
7	DATE:	2/10/2006		
8	PREPARED BY:	NAW		
9				
10	DESIGN PARAMETERS:			
11			English	Metric
12			Units	Units
13	Q_{design} = Design Average Flow <i>gpd</i> (m^3/day)		165,700	628
14	BOD_{inf} = Design Influent wastewater BOD_5 Concentration <i>ppm</i> (mg/l)		220	220
15	BOD_{inf} <i>LB/day</i> (kg/day)		303.7	137.7
16	T_{inf} = Temperature of Plant Influent F° (C°)		68	20
17	pH_{inf} = Design Influent wastewater pH		7.2	
18	BOD_{eff} = Design Effluent BOD_5 Concentration <i>ppm</i> (mg/l)		30	30
19	BOD_{eff} <i>LB/day</i> (kg/day)		41.4	18.8
20	BOD_5 Removal Efficiency		86.4%	
21				
22	CALCULATION OF AERATION VOLUME:			
23	Design Aeration Detention time <i>hours</i>		18.00	
24	Freeboard <i>in</i> (cm)		12	30.48
25	Tank inside diameter <i>ft</i> (m)		14	4.27
26	Freeboard D-Factor		0.968	
27	Reference Volume <i>gal</i> (m^3)		128,344	486.17
28	Chosen tank length <i>ft</i> (m)		40.00	12.20
29	Number of Aeration Tanks		3	
30	Actual Full Volume <i>gal</i> (m^3)		132,672	502.56
31	Actual Working Volume <i>gal</i> (m^3)		128,466	486.63
32				
33	CALCULATION OF AERATION TANK LOADING:			
34	Actual Working Volume <i>ft³</i> (m^3)		17,173	486.5
35	Aeration Tank Loading <i>lbs BOD₅/1000 ft³</i> ($kg BOD_5/m^3$)		17.7	0.3
36	MLSS CALCULATIONS:			
37	Design MLSS Concentration prior to recycle <i>ppm</i> (mg/l)		220	220
38	~Assumes influent suspended solids concentration			
39	Aeration Volume prior to recycle (25%) <i>gal</i> (m^3)		32,116	121.66
40	MLSS prior to recycle <i>lbs</i> (kg)		58.93	26.75
41	Design MLSS Concentration after recycle <i>ppm</i> (mg/l)		4,000	4,000
42	Aeration Volume after recycle (75%) <i>gal</i> (m^3)		96,349	364.97
43	MLSS after recycle <i>lbs</i> (kg)		3214	1459.25
44	Aeration Tank Loading <i>lbs BOD₅/lb MLSS</i> ($kg BOD_5/kg MLSS$)		0.093	0.093
45				
46	Loading <i>lbs solids/lb BOD₅ removed</i> ($kg solids/kg BOD_5 removed$)		12.5	12.5
47				
48	CALCULATION OF AERATION REQUIREMENTS:			
49	Aeration Capacity <i>ft³ air / lb BOD₅ removed</i> ($m^3 air/kg BOD_5 removed$)		2,100	26.97
50	Air Flow Rate per Diffuser <i>scfm</i> (m^3/min)		4	0.11
51	Required Number of Diffusers		96	

	A	B	C	D
1	SANTEC DESIGN CALCULATIONS			
2	FOR CLARIFICATION			
3				
4				
5	PROJECT NAME:	Links at Coyote Wash Expansion		
6	PROJECT LOCATION:	Wellton, Arizona		
7	DATE:	2/10/2006		
8	PREPARED BY:	NAW		
9			English	Metric
10	DESIGN PARAMETERS:		Units	Units
11	CLARIFIER DESIGN			
12	Flow rate <i>gpd (m³/day)</i>		165,700	627.67
13	Clarifier recommended loading <i>gal/ft²/day (m³/m²/day)</i>		560	22.78
14	Maximum allowable clarifier loading rate <i>gal/ft²/day (m³/m²/day)</i>		1,000	40.70
15	Clarifier loading safety factor		1.8	
16				
17	Required area of clarifier <i>ft² (m²)</i>		296.0	27.51
18	Freeboard in clarifier <i>in (cm)</i>		22	55.88
19	Width of surface area including baffle offset <i>ft (m)</i>		5.82	1.77
20	Clarifier baffle offset <i>in (cm)</i>		18	45.72
21	Required diameter <i>ft (m)</i>		12.00	3.66
22	Required clarifier length <i>ft (m)</i>		50.88	15.51
23	D-Factor		0.9034	
24	Baffle offset multiplier		0.6575	
25	Selected clarifier length <i>ft (m)</i>		50.00	15.25
26	Selected clarifier working volume <i>gal (m³)</i>		24,512	92.85
27	Full Volume <i>gal (m³)</i>		27,133	102.78
28	Santec clarifier detention time <i>hr.</i>		3.6	
29				
30	EFFLUENT WEIR DESIGN AND LOADING			
31	Weir length <i>ft (m)</i>		47.5	14.48
32	~Clarifier length - minus tank dome length			
33	Weir type, 45 deg. V notch.			
34	Number of V-notches required		64	
35	Weir loading rate <i>gal/ft/day (m³/m/day)</i>		3,488	43.26
36				
37	SLUDGE REMOVAL			
38	RETURN SLUDGE FACILITIES(FROM CLARIFIER)			
39	Operation range of return sludge system is 50-150% of plant design flow			
40	Number of 3" airlifts required		7	
41	Maximum return rate <i>gpm (m³/min)</i>		173	0.6538
42	Total air required for return sludge system <i>SCFM (m³/min)</i>		34.5	0.978
43	~Return rate x 0.2 SCF per gallon moved			
44	SKIMMER FACILITIES(FROM CLARIFIER)			
45	Operation range of skimmer system is 0-100% of plant design flow			
46	Number of 3" skimmers required		7	
47	Skimmer capacities <i>gpm (m³/min)</i>		115	0.4359
48	Total air required for skimmer system <i>SCFM (m³/min)</i>		23.0	0.652
49	~Skimmer capacity x 0.2 SCF per gallon moved			

	A	B	C	D
1	SANTEC DESIGN CALCULATIONS			
2	FOR REAERATION			
3				
4				
5	PROJECT NAME:	Links at Coyote Wash Expansion		
6	PROJECT LOCATION:	Wellton, Arizona		
7	DATE:	2/10/2006		
8	PREPARED BY:	NAW		
9				
10	DESIGN PARAMETERS:			
11			English	Metric
12			Units	Units
13	REAERATION DESIGN			
14	Reaeration length	ft (m)	50	15.25
15	Reaeration reactor working volume	gal (m ³)	12,770	48.37
16	Full Volume	gal (m ³)	14,135	53.54
17				
18	RETURN SLUDGE FACILITIES(FROM REAERATION)			
19	Operation range of return sludge system is 50-150% of plant design flow			
20	Number of 3" airlifts required		7	
21	Maximum return rate	gpm (m ³ /min)	173	0.6538
22	Total air required for return sludge system	SCFM (m ³ /min)	34.5	0.978
23	~Return rate x 0.2 SCF per gallon moved			
24				
25	REAERATION MIXING REQUIREMENTS			
26	~One diffuser per 2.5' of tank length			
27	Number of diffusers required		20	
28	Air Flow Rate per Diffuser	scfm (m ³ /min)	10	0.28
29	Total air required for reaeration diffusers	SCFM (m ³ /min)	200	

	A	B	C	D
1	SANTEC DESIGN CALCULATIONS			
2	FOR NITRIFICATION			
3				
4				
5	PROJECT NAME:	Links at Coyote Wash Expansion		
6	PROJECT LOCATION:	Wellton, Arizona		
7	DATE:	2/10/2006		
8	PREPARED BY:	NAW		
9			English	Metric
10	DESIGN PARAMETERS:		Units	Units
11	NITRIFICATION CALCULATIONS			
12				
13	N_{inf} = Influent Nitrogen concentration	PPM (mg/l)	39.6	39.6
14	~Assume 18% of Influent BOD			
15	N_{eff} = Desired Effluent Ammonia Nitrogen concentration	PPM (mg/l)	1.0	
16	Nitrification Temperature	F° (C $^{\circ}$)	68	20.00
17	Mixed liquor suspended solids	PPM (mg/l)	4,000	4,000
18	Mixed liquor volatile suspended solids	PPM (mg/l)	3,000	3,000
19	Minimum Dissolved Oxygen	PPM (mg/l)	2	2
20	BOD to TKN ratio (entering recycle zone)			
21	~Assume Influent BOD concentration			
22	Fraction of Nitrifiers (based on BOD/TKN ratio)		0.05	
23	X = Nitrifier concentration	PPM (mg/l)	140	140
24	$\Theta_{recycle}$ = Detention Time in nitrification zone (aeration after recycle)	hrs	18.6	
25				
26	DESIGN CONSTANTS			
27	K_{O_2} = Half-Saturation constant for oxygen	PPM (mg/l)	1.3	1.3
28	Y = Heterotrophic yield coefficient for ammonia oxidation			
29	k_d = Decay coefficient	day $^{-1}$	0.05	
30	μ_m = Maximum specific growth rate	day $^{-1}$	0.5	
31	K_n = Half-Saturation constant for ammonia oxidation	PPM (mg/l)	0.728	0.728
32	$K_n = 10^{(0.051)T - 17.158}$			
33	μ'_m = Maximum Possible Nitrifier growth rate	day $^{-1}$	0.407	
34	$\mu'_m = \mu_m e^{0.008(T-15)} [DO/(K_{O_2} + DO)] [1 - 0.833(7.2 - pH)]$			
35	Θ_c^m = Minimum cell residence time	day	2.46	
36	$\Theta_c^m = 1/\mu'_m$			
37	k' = Maximum rate of substrate utilization	day $^{-1}$	2.03	
38	$k' = \mu'_m/Y$			
39	U = Substrate utilization factor	day $^{-1}$	2.011	
40	$U = (k' * N_{eff}) / (K_n + N_{eff})$			
41	$\Theta_{recycle req}$ = Required Detention time in nitrification zone	hrs	3.29	
42	$\Theta_{recycle req} = (N_{inf} - N_{eff}) / (U * X)$			
43	Nitrification Zone Working Volume		gal (m 3)	132,672
44	Nitrification Safety Factor			5.7
45	$SF = \Theta_{recycle} / \Theta_{recycle req}$			
46	Note: If the safety factor is less than one, the plant can not achieve this level of nitrification.			
47	AERATION FOR NITRIFICATION			
48	NH3-N available to be oxidized to NO3-N	LB (kg)	54.66	24.8
49	Oxygen required to convert NH3-N to NO3-N			
50	~Use 4.6 LB oxygen per LB NH-3.			
51	Nitrification oxygen requirement	LB/day (kg/day)	251.4	114.0

	A	B	C	D
1	SANTEC DESIGN CALCULATIONS			
2	FOR INFLUENT ANOXIC DENITRIFICATION			
3				
4				
5	PROJECT NAME:	Links at Coyote Wash Expansion		
6	PROJECT LOCATION:	Wellton, Arizona		
7	DATE:	2/10/2006		
8	PREPARED BY:	NAW		
9			English	Metric
10	DENITRIFICATION CALCULATIONS		Units	Units
11				
12	DETERMINATION OF HYDRAULIC DETENTION TIME AT AVERAGE DRY WEATHER FLOW			
13	<i>(See USEPA Process Design Manual for Nitrogen Control)</i>			
14	$HT = 24 * (Do - D1) / (X1 * Qd)$			
15	~Nitrogen Control, page 5-6 (5-2)			
16	Qd = NO3 removal rate	lb NO3 removed/lb VSS/day (kg/day)	0.06	0.027
17	Do = Influent Total Nitrogen concentration	PPM (mg/l)	39.6	39.6
18	D1 = Effluent NO3 concentration	PPM (mg/l)	25.5	25.5
19	X1 = MLVSS concentration	PPM (mg/l)	3000	3000
20	HT = Minimum Hydraulic detention time	hrs	1.88	
21				
22	EQUATION FOR DETERMINING DENITRIFICATION REACTOR VOLUME			
23	$Vr = Q * HT / 24$			
24	Vr = Required reactor volume	gal (m ³)	12,980	49.2
25	Reactor freeboard	in (cm)	14	35.6
26	Reactor diameter	ft (m)	12.00	3.66
27	D-Factor		0.9501	
28	Reference Volume	gal (m ³)	13,662	51.8
29	Chosen length	ft (m)	20.00	
30	Actual working volume	gal (m ³)	15,066	57.1
31	Full Volume	gal (m ³)	15,858	60.1
32	Tank Loading	lbs NO₃-N/day/ 1000 ft³	27.14	
33				
34				
35	DENITRIFICATION MIXERS			
36	Operation range of mixer system is 0-200% of plant design flow			
37	Number of 3" mixers required		3	
38	Maximum mixing rate	gpm (m ³ /min)	230.1	
39	Total air required for mixing system	SCFM (m ³ /min)	46.0	
40	~Return rate x 0.2 SCF per gallon moved			

	A	B	C	D
1	SANTEC DESIGN CALCULATIONS			
2	FOR DENITRIFICATION			
3				
4				
5	PROJECT NAME:	Links at Coyote Wash Expansion		
6	PROJECT LOCATION:	Wellton, Arizona		
7	DATE:	2/10/2006		
8	PREPARED BY:	NAW		
9			English	Metric
10	DENITRIFICATION CALCULATIONS		Units	Units
11	DETERMINATION OF THE MINIMUM SOLIDS RETENTION TIME FOR DENITRIFICATION			
12	<i>(See USEPA Process Design Manual for Nitrogen Control)</i>			
13	$T_m = 1 / ((YD \times QD) - K_d)$			
14	YD = denitrifier yield	lb VSS grown/lb NO ₃ removed (kg)	0.80	0.36
15	QD = Peak NO ₃ removal rate	lb NO ₃ /lb VSS/day (kg/day)	0.20	0.09
16	Kd = Decay coefficient	day ⁻¹	0.04	
17	<i>~Constants from Metcalf and Eddy Third Edition Tables 11-19 and 11-20</i>			
18	Tm = minimum solids retention time	days	8.3	
19				
20	EQUATION FOR DETERMINING DESIGN SOLIDS RETENTION TIME			
21	$T_d = SF \times T_m$			
22	SF = Safety factor		2.0	
23	<i>~To account for diurnal load variations</i>			
24	Td = Design solids retention time	day	16.7	
25				
26	DETERMINATION OF THE DESIGN NITRATE REMOVAL RATE			
27	$Q_d = ((1/T_d) + K_d) / YD$			
28	<i>~Nitrogen Control page 5-5 (3-50)</i>			
29	Qd = NO ₃ removal rate	lb NO ₃ removed/lb VSS/day (kg/day)	0.125	0.057
30				
31	DETERMINATION OF STEADY STATE NO₃ CONTENT OF THE EFFLUENT			
32	<i>(See USEPA Process Design Manual for Nitrogen Control)</i>			
33	$D_1 = (Q_d \times K_D) / (Q_D - Q_d)$			
34	<i>~Nitrogen Control, page 5-6 (5-1)</i>			
35	KD = Half saturation constant	PPM (mg/l NO ₃)	0.16	0.16
36	<i>~Wastewater Engineering, page 3-37 Section 3.3.5.4</i>			
37	D1 = Effluent NO ₃ concentration	PPM (mg/l)	0.267	0.267
38				
39	DETERMINATION OF HYDRAULIC DETENTION TIME AT AVERAGE DRY WEATHER FLOW			
40	<i>(See USEPA Process Design Manual for Nitrogen Control)</i>			
41	$HT = 24 * (D_o - D_1) / (X_1 \times Q_d)$			
42	<i>~Nitrogen Control, page 5-6 (5-2)</i>			
43	Do = Influent Total Nitrogen concentration	PPM (mg/l)	25.5	25.5
44	D1 = Effluent NO ₃ concentration	PPM (mg/l)	0.267	0.267
45	X1 = MLVSS concentration	PPM (mg/l)	3000	3000
46	HT = Minimum Hydraulic detention time	hrs	1.61	
47				

	A	B	C	D
48	EQUATION FOR DETERMINING DENITRIFICATION REACTOR VOLUME			
49	$V_r = Q \times HT / 24$			
50	$V_r =$ Required reactor volume		gal (m^3)	11,150 42.2
51	Reactor freeboard		in (cm)	14 35.6
52	Reactor diameter		ft (m)	12.00 3.66
53	D-Factor			0.9501
54	Reference Volume		gal (m^3)	11,736 44.5
55	Chosen length		ft (m)	20.00
56	Actual working volume		gal (m^3)	15,066 57.1
57	Full Volume		gal (m^3)	15,858 60.1
58	Tank Loading		lbs NO_3-N/day/ 1000 ft^3	17.48
59				
60	EQUATION FOR DETERMINING METHANOL REQUIREMENT			
61	(See USEPA Process Design Manual for Nitrogen Control page 3-34)			
62	$M_r = 3.0 \times Q \times (D_o - D_1) \times 8.33$			
63	$M_r =$ Methanol requirement		lb/day (kg/day)	104.5
64	$M_r =$ Methanol requirement		gpd (m^3 /day)	15.8
65				
66	Methanol/ NO_3-N Ratio			3.0
67				
68	DENITRIFICATION MIXERS			
69	Operation range of mixer system is 0-200% of plant design flow			
70	Number of 3" mixers required			3
71	Maximum mixing rate		gpm (m^3 /min)	230.1
72	Total air required for mixing system		SCFM (m^3 /min)	46.0
73	~Return rate x 0.2 SCF per gallon moved			

	A	B	C	D
1	SANTEC DESIGN CALCULATIONS			
2	FOR SLUDGE MANAGEMENT			
3				
4				
5	PROJECT NAME:	Links at Coyote Wash Expansion		
6	PROJECT LOCATION:	Wellton, Arizona		
7	DATE:	2/10/2006		
8	PREPARED BY:	NAW		
9				
10	PROCESS DESIGN FROM:			
11	"Wastewater Engineering Treatment, Disposal, and Reuse"			
12	Metcalf and Eddy , Inc., Third Edition			
13			English	Metric
14			Units	Units
15	PLANT FLOW <i>gpd(m³/day)</i>		165,700	627.7
16	Plant Flow Override			
17	INFLUENT			
18	PLANT INFLUENT BOD ₅ CONCENTRATION	<i>PPM (mg/l)</i>	220	220
19	TSS % VOLATILE		75%	
20	PLANT INFLUENT SUS. SOLIDS CONCENTRATION	<i>PPM (mg/l)</i>	220	220
21	EFFLUENT			
22	PLANT EFFLUENT BOD ₅ CONCENTRATION	<i>PPM (mg/l)</i>	30	30
23	PLANT EFFLUENT SUS. SOLIDS CONCENTRATION	<i>PPM (mg/l)</i>	30	30
24	DESIGN EQUATIONS			
25	$P_x = Y_{obs} * Q * (S_o - S) * 8.34 \text{ lbs/day}$			
26	$Y_{obs} = Y / (1 + k_d * \theta_c)$			
27	$V_s = (Q_i * X_i) / [X * (k_d * P_v + 1 / \theta_s)] \text{ gal (m}^3\text{)}$			
28	$Q_i = P_x / X_i * 119,788$			
29	<i>Definition of Variables</i>			
30	$P_x =$ Net waste activated sludge	<i>lbs/day (kg/day)</i>	98.5	44.7
31	$Y_{obs} =$ observed yield	<i>lbs biomass/ lb BOD₅</i>	0.375	0.375
32	$Q =$ process flow rate	<i>Mgal/day (m³/day)</i>	0.16570	62.8
33	$S_o =$ Influent BOD ₅ concentration	<i>ppm (mg/l)</i>	220	220
34	$S =$ Effluent BOD ₅ concentration	<i>ppm (mg/l)</i>	30	30
35	$Y =$ theoretical yield coefficient	<i>lbs biomass/ lb BOD₅</i>	0.60	0.60
36	$k_d =$ endogenous decay coefficient	<i>day⁻¹</i>	0.06	0.06
37	$\theta_c =$ Mean Cell Residence Time	<i>in process days</i>	10	10
38	$Q_i =$ net waste volume	<i>gal/day (m³/day)</i>	2949	11.2
39	$X_i =$ waste activated sludge concentration	<i>ppm (mg/l)</i>	4,000	4,000
40	$X =$ digester suspended solids concentration	<i>ppm (mg/l)</i>	4,000	4,000
41	$P_v =$ volatile fraction of digester suspended solids		0.75	0.8
42	$\theta_s =$ Mean Cell Residence Time	<i>in digester days</i>	40	40
43	$V_s =$ required digester treatment volume	<i>gal (m³)</i>	42,124	159.6

	A	B	C	D
45			English	Metric
46	CAPACITY OF SLUDGE HOLDING TANK		Units	Units
47	Required digestion volume <i>gal (m³)</i>		42,124	159.6
48	Required supernatant volume <i>gal (m³)</i>		11,795	44.7
49	Required holding tank volume <i>gal (m³)</i>		53,919	204.2
50	Sludge Holding tank diameter <i>ft (m³)</i>		14.00	4.27
51	Chosen holding tank length <i>ft (m)</i>		50.00	15.25
52	Chosen holding tank volume <i>gal (m³)</i>		55,744	211.2
53				
54	AERATION:			
55	Required aeration and mixing capacity <i>SCFM/1000 gal (m³/min/m³)</i>		3	0.0850
56	Air Flow Rate per Diffuser <i>SCFM (m³/min)</i>		10	0.2834
57	Diffusers required in Sludge Holding Tank		17	
58	Air required for Sludge Holding Tank <i>SCFM (m³/min)</i>		170	4.8178

	A	B	C	D
1	SANTEC DESIGN CALCULATIONS			
2	FOR CHLORINE DISINFECTION (Existing)			
3				
4				
5	PROJECT NAME:	Links at Coyote Wash Expansion		
6	PROJECT LOCATION:	Wellton, Arizona		
7	DATE:	2/10/2006		
8	PREPARED BY:	NAW		
9			English	Metric
10	DISINFECTION CALCULATIONS		Units	Units
11	Design flow of the treatment plant <i>gal (m³)</i>		235,000	890.18
12	Peak factor (multiplier of design flow that reaches chlorine chamber)		1.4	
13	~Maximum pumping capacity of equalization pumps			
14	Maximum flow reaching chlorine contact chamber <i>gal (m³)</i>		329,000	1,246.25
15	Minimum required detention time <i>min</i>		15	
16	Required basin volume <i>gal (m³)</i>		3,427	12.98
17				
18	REQUIRED BASIN VOLUME CALCULATIONS			
19	Required Working Volume <i>gal (m³)</i>		3,427	12.98
20	Tank inside diameter <i>ft (m)</i>		8.00	2.44
21	Water Surface Area <i>gal/ft</i>		376	
22	Distance cylinder extends above grade <i>ft (m)</i>		0.4	0.12
23	Depth of Inlet Invert Below Grade <i>ft (m)</i>		6.3	1.92
24	Distance between inlet and outlet inverts <i>ft (m)</i>		0.5	0.15
25	Required cylinder length to achieve required contact time <i>ft (m)</i>		9.1	2.78
26	Required Cylinder Length <i>ft (m)</i>		16.3	4.97
27	Chosen Cylinder Length <i>ft (m)</i>		16.0	4.88
28	Actual Working Volume <i>gal (m³)</i>		3,460	13.10
29	Actual Full Volume <i>gal (m³)</i>		6,017	22.79
30				
31	CHLORINE DOSAGE CALCULATIONS			
32	Required Dosage <i>ppm (mg/l)</i>		8.0	8.0
33	Required Feed Rate <i>lbs/hr (kg/hr)</i>		0.653	0.296
34				
35	DECHLORINATION DOSAGE CALCULATIONS			
36	Total Chlorine Residual <i>ppm (mg/l)</i>		1.0	1.0
37	Required Na ₂ SO ₃ Dosage <i>ppm (mg/l)</i>		2.0	2.0
38	Required Feed Rate at Peak flow <i>lbs/hr (kg/hr)</i>		0.224	0.102
39	35% 5 oz. Tablets per Day		1	

	A	B	C	D
1	SANTEC DESIGN CALCULATIONS			
2	FOR AERATION			
3				
4				
5	PROJECT NAME:	Links at Coyote Wash Expansion		
6	PROJECT LOCATION:	Wellton, Arizona		
7	DATE:	2/10/2006		
8	PREPARED BY:	NAW		
9			English	Metric
10	AERATION DESIGN PARAMETERS		Units	Units
11	Q_{design} = Design Average Flow	gpd (m^3/day)	165,700	627.67
12	BOD_{inf} = Design Influent wastewater BOD_5 Concentration	ppm (mg/l)	220	
13	BOD_{inf}	LB/day (kg/day)	303.7	137.7
14	BOD_{eff} = Design Effluent BOD_5 Concentration	ppm (mg/l)	30	30
15	BOD_{eff}	LB/day (kg/day)	41.4	18.8
16				
17	Requirement for BOD Removal	lbs O_2 /lb design peak hourly BOD	1.5	1.5
18	~Recommended Standards for Wastewater Facilities			
19	Design peak hourly BOD	lbs/hour (kg/hour)	15.8	7.2
20	BOD oxygen requirement	lb/day (kg/day)	569.4	258.2
21				
22	Nitrification oxygen requirement	lb/day (kg/day)	251.4	114.0
23				
24	Total Aeration Oxygen Requirement	lb/day (kg/day)	820.8	372.2
25				
26	OXYGEN TRANSFER DESIGN PARAMETERS			
27	Depth of diffusers	ft (m)	13	3.96
28	Air Flow Rate per Diffuser	SCFM (m^3/min)	4	0.11336
29	Treatment Plant Elevation	ft (m)	300	
30	Density of Oxygen at Elevation	lb/ft ³ (kg/m ³)	0.08390	
31	Diffuser Transfer efficiency	%/ft of submergence	1%	
32	~Assume 50% SOTE			
33	Oxygen transfer	lb/day/diffuser (kg/day/diffuser)	13.2	5.98
34				
35	Required Number of Diffusers		62	
36	Oxygen transfer	lb/day (kg/day)	820.8	372.22
37				

	A	B	C	D
38	REQUIRED BLOWER CAPACITY CALCULATIONS			
39	Number of Aeration Diffusers		96	
40	Air Flow Rate per Diffuser	SCFM (m^3/min)	4	0.113
41	Aeration Air Flow Rate	SCFM (m^3/min)	384	10.883
42	Number of Flow Equalization Diffusers		8	
43	Air Flow Rate per Diffuser	SCFM (m^3/min)	10	0.283
44	Flow Equalization Air Flow Rate	SCFM (m^3/min)	80	2.267
45	Number of Reaeration Diffusers		20	
46	Air Flow Rate per Diffuser	SCFM (m^3/min)	10	0.283
47	Flow Equalization Air Flow Rate	SCFM (m^3/min)	200	5.668
48	Number of Sludge Holding Tank Diffusers		17	
49	Air Flow Rate per Diffuser	SCFM (m^3/min)	10	0.283
50	Sludge Holding Tank Air Flow Rate	SCFM (m^3/min)	170	4.818
51				
52	Airlift air flow rates			
53	Return Activated Sludge (from clarifier)	SCFM (m^3/min)	34.5	0.978
54	Return Mixed Liquor (from reaeration)	SCFM (m^3/min)	34.5	0.978
55	Skimmer (from clarifier)	SCFM (m^3/min)	23.0	0.652
56	Denitrification Mixers	SCFM (m^3/min)	92.1	2.609
57				
58	Total Required Airflow Rate	SCFM (m^3/min)	1018	28.853

Company: Dresser ROOTS
 Address: 2135 Highway 6 South; Houston, TX 77077
 281-966-4464/ Fax: 281-966-4711
 Contact: Phil Gordon

ROOTS BLOWER PERFORMANCE SUMMARY: (02/16/2006)

AMBIENT CONDITIONS:

Gas	AIR	
Relative Humidity	36%	
Molecular Wt.	28.505	
k-Value	1.391	
Specific Gravity	.984	
Ambient Temp.	120	deg F
Ambient Pressure	14.27	PSIA
Elevation	800	feet

INPUT CONDITIONS:

Actual Volume	1193	ICFM	+/-5 %
Std. Volume	1018	SCFM	
Mass/Wt. Flow	78	#/min	+/-5 %
System Inlet Pressure	14.27	PSIA	
Inlet Pr. Loss	0	PSI	
System Disch Pressure	6.5	PSIG	
Disch Pr. Loss	0	PSI	
Inlet Temperature	120	deg F	

STANDARD CONDITIONS:

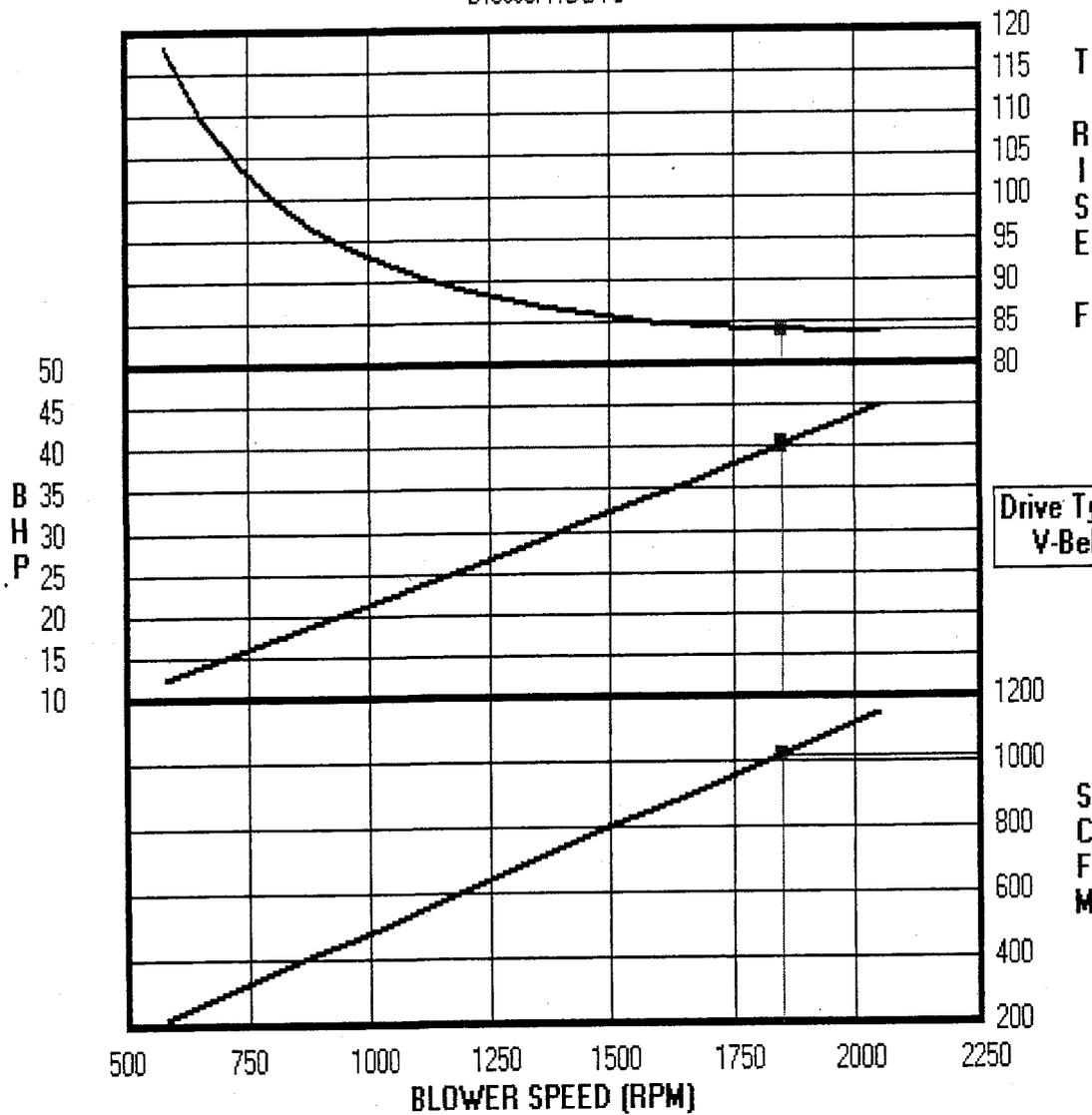
Pressure	14.7	PSIA
Temperature	68	deg F
Relative Humidity	36	%

SELECTED UNIT DETAIL:

Model	711	URAI
Speed	1849	RPM 90%
Power at Blower Shaft	40.3	BHP +/- 4%
Blower Differential Pressure	6.50	PSI 65%
Temperature Rise	84	deg F 37%
Discharge Temperature	204	deg F
Discharge Volume	938	ACFM
Gear Tip Speed	3391	FPM
V-Belt: Est. B10 Brg Life:	325771	hours
Coupling: Est. B10 Brg Life:	345318	hours
Est. Free Field Noise @ 1 m.	92.7	dBa
CFR	0.738	
Weight	530	lbs.
Shaft Dia.	1.562	in.
Min. Sheave Dia.	9.5	in.
Inlet/Disch Conn.	6F	

711 URAI: Variable Speed Performance

Dresser ROOTS



Drive Type:
V-Belt

Enter a new Speed

Recalc

Close Form

Print Curve

You must press the Print Screen keyboard button before the Print Curve Button.

INLET CONDITIONS: AIR

RH = 36.00%, MW = 28.505, k = 1.391, Tin = 120 deg F

DESIGN: Speed = 1849 RPM

System Inlet P = 14.27 PSIA

System Disch P = 6.5 PSIG

STD: RH = 36%, T = 68 deg F, P = 14.7 PSIA



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Specifications: EM2543T

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[Specifications](#)

Catalog Number:	EM2543T
Specification Number:	42F056W798
Horsepower:	50
Voltage:	230/460
Hertz:	60
Phase:	3
Full Load Amps:	114/57
Usable at 208 Volts:	122
RPM:	1775
Frame Size:	326T
Service Factor:	1.15
Rating:	40C AMB-CONT
Locked Rotor Code:	H
NEMA Design Code:	A
Insulation Class:	F
Full Load Efficiency:	95
Power Factor:	87
Enclosure:	OPSB
Baldor Type:	4264M
DE Bearing:	6312
ODE Bearing:	6311
Electrical Specification Number:	42WGW798
Mechanical Specification Number:	42F56
Base:	RG
Mounting:	F1

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KEY MAINTENANCE ACTIVITIES

The following chart shows the necessary activities to keep equipment running properly. Each operator is provided with a summation of the manufacturers information about necessary maintenance activities and the frequency of performing them.

Table 1 MAINTENANCE ACTIVITIES

Equipment	Service needed	Interval	Specification
Blowers:	Check Gear oil level	Check weekly	
	Change Gear oil	Change after INITIAL 100 hours	Mobile DTE BB or SAE-30 Non-Detergent
	Change Gear oil	Change after every 1000 hours	Mobile DTE BB or SAE-30 Non-Detergent
	Bearings	Weekly	NLGI #2 Grease
Communtor:	Grease Bearings:	Quarterly	NLGI #2 Grease
	Speed Reducer	10,000 hours	Per manufactures recommendations
	Seal Weepage	Inspect daily	
Tyco Valves:	Terminations	Tighten Yearly	
Blower Air Filters:	Clean	Monthly	
	Replace	Yearly	
Diffusers:	Remove, inspect and check	Yearly	
LMI Pumps:	Replace seal rings, valve balls, and check valve.	Yearly or As Needed	See LMI book
Baldor Motors:	Inspect Motor	Every 20 Days	
	Grease Bearings	10,000 Hours	Polyrex EM (Exxon Mobil)
Pumps:	Check Amps draw	Weekly	
	Inspect and tighten wires	Yearly	

CONTINGENCY AND EMERGENCY OPERATION

VIOLATION OF A PERMIT CONDITION (MECHANICAL)

The permit conditions contained in this section are defined as facility operational and inspection items for which violation does not automatically result in exceedence of discharge limits, alert levels, violation of an Aquifer Water Quality Standard or an eminent or substantial endangerment to the public health or the environment. These items generally relate to maintenance of specific equipment items and/ or treatment process units.

Table 2 TREATMENT FACILITY MECHANICAL INTEGRITY

<u>Pollution Control Structure/ Parameter</u>	<u>Performance Level</u>	<u>Inspection Frequency</u>
Pump Integrity	Good working condition	Weekly
Treatment Plant Vessels	No visible cracks or leakage	Weekly
Blower Integrity	Good working condition	Weekly
Treatment Plant Flow Meters	Good working condition	Weekly
Telemetry/ Alarm Devices	Good working condition	Monthly

CORRECTIVE ACTION

For operational levels exceeded in Table 9-1 above for mechanical equipment with duplicity:

COMMINUTOR

Bypass comminutor unit utilizing bypass valves. Manually cleaned bar screen serves as back-up for screening of large solids. Operation in this fashion can be conducted indefinitely until comminutor unit can be repaired or replaced.

PUMPING SYSTEMS

Pump packages are of full duplex configuration. A failed pump should be immediately repaired or replaced. During the interim period, the remaining, working pump should be utilized. Should two pumps fail during a single repair period, the flow equalization pumps and filter equalization pumps can be interchanged with corresponding adjustments to rate control for emergency operation.

Air pumps (blower package) can be operated in the same fashion as the liquid pumps.

CONTROL SYSTEMS

Control panels are provided with Hand/ Off Auto switches for operation. Should control failure exist, the equipment can be operated in hand position, bypassing automatic control of the system. Control panel should be diagnosed and repaired immediately.

FLOW METERING

The WWTP is provided with one magnetic flow meter on the pumped line from the flow equalization basin (flow monitoring point). Failed meters should be diagnosed and repaired immediately.

As an extreme contingency should the flow meter fail, operators can measure the pumping rate from the flow equalization basin utilizing a bucket and stopwatch and utilize pump run times to calculate the average daily flow.

MONITORING EQUIPMENT

Monitoring equipment such as pH and D.O. probes are provided thru various means. Operators are provided with submersible probes for monitoring these parameters in the most time efficient manner. Should the submersible probes fail, operators are also provided with colorimetric means of evaluating these parameters.

1. Initiate equipment repair procedure by one of the following:
 - a. Replacement Parts
 - b. Off-site unit repair
 - c. Unit replacement
2. For pump equipment, ensure emergency equipment is available for usage until repair/ replacement is completed.

For operational levels exceeded in Table 9-1 for mechanical equipment without duplicity:

1. Initiate emergency operational procedures including:
 - a. Standby pumping
 - b. High level overflow to aeration reactors
 - c. Contact equipment supplier for immediate replacement
2. For treatment plant vessel integrity.
 - a. Contain the spill.
 - b. Repair the damaged area
 - c. Clean-up of the affected area
3. Notify the ADEQ Water Quality Compliance Unit within 5 days of becoming aware of a violation of any permit condition having been exceeded.
4. Submit a written report within 30 days of becoming aware of the violation of a permit condition having been exceeded or of a spill.

VIOLATION OF A PERMIT CONDITION (GROUND WATER QUALITY)

The permit conditions contained in this section are, if exceeded, violations of the Aquifer Water Quality Standard or alert levels specified in the Ground Water monitoring plan required for this permit with samples taken from the point of compliance.

Table 3

VIOLATION OF PERMIT CONDITION AT GROUND WATER MONITORING LOCATION

<u>Pollution Control Structure/ Parameter</u>	<u>Performance Level</u>	<u>Sampling Frequency</u>
Total Nitrogen	10.0 mg/l	Monthly
Nitrate-Nitrate as N	10.0 mg/l	Monthly
TKN	Reserved	Monthly
Fecal Coliform	<200CFU per 100 ml	Monthly

CORRECTIVE ACTION

For levels exceeded at the groundwater monitoring point of compliance:

1. Verification sampling at the point of compliance.
2. Discharge monitoring sampling to establish effluent standard. If discharge complies with permit standards, no additional action to be taken.
3. Further monitoring and institution of operational procedures to control effluent quality.

VIOLATION OF DISCHARGE LIMITATION

The permit conditions contained in this section are violations, if exceeded, of the discharge limitations as monitored at the effluent sampling location.

Table 4

VIOLATION OF PERMIT AT EFFLUENT SAMPLING LOCATION

<u>Pollution Control</u>	<u>Performance Level</u>	<u>Sampling Frequency</u>
Flow: Average Monthly	.235 MGD	Daily
BOD ₅ (30 day average)	30 mg/l	Weekly
BOD ₅ (7 day average)	45 mg/l	Weekly
TSS (30 day average)	30 mg/l	Weekly
TSS (7 day average)	45 mg/l	Weekly
pH	6-9	Weekly
Fecal Coliform (Max)	<800 CFU	Daily
Fecal Coliform (7 sample median)	<200 CFU	Daily
Total Nitrogen	10.0 mg/l	Weekly
Nitrate-Nitrite as N	10.0 mg/l	Monthly
TKN	10.0 mg/l	Monthly

CORRECTIVE ACTION

For levels exceeded at the discharge monitoring location/ effluent sampling location:

1. Verification Sampling
2. Further monitoring to include institution of operational procedures to control effluent quality.
3. Notify the ADEQ Water Quality Compliance Unit within 5 days of becoming aware of a violation of any permit condition having been exceeded.
4. Submit a written report within 30 days of becoming aware of the violation of a permit condition having been exceeded or notice of a spill.

IMMINENT AND SUBSTANTIAL DANGER TO PUBLIC HEALTH

If an imminent and substantial endangerment to the public health or environment exists, the following actions shall be taken:

CORRECTIVE ACTION

1. Immediate cessation of discharge by:
 - a. Utilization of all available storage capacity including on-site storage ponds
 - b. Emergency pumping
2. Mitigation measures to limit the impact of pollutants on existing uses of the aquifer.

24-HOUR EMERGENCY RESPONSE MEASURES

The primary emergency for a continuous flow wastewater treatment facility treating primarily domestic wastewater is interruption of service to mechanical equipment. Preventive Maintenance Procedures as summarized in Table 8-1 provide the protection to mechanical failure along with normal maintenance procedures.

CORRECTIVE ACTION

Should conditions exist for whatever reason at the WWTP which cause the effluent to be classified as an imminent and substantial danger to public health, the following sequence shall be utilized.

1. Immediate cessation of discharge
2. Utilization of existing storage capacity in flow equalization basin and sludge holding tank
3. Vault and Haul of raw sewage from flow equalization basin as possible.
4. Notify the ADEQ Water Quality Compliance Unit immediately regarding emergency response measures taken.
5. Submit a written report within 30 days of becoming aware of the violation of a permit condition having been exceeded or notice of a spill.

EMERGENCY RESPONSE COORDINATOR

Name of Operator: Rick Miller
Operator Mailing Address:

Phone: 928-341-9685
Fax:
Operator:

CONSTRUCTION MANAGEMENT

INTRODUCTION:

For most endeavors, project goals and objectives can only partially be defined by contract language. The key to success rests in good faith agreements between all parties to create an environment of mutual respect and trust, and to foster a teamwork approach. These Construction Administration Procedures have been developed to enhance communication among the project team. These procedures provide guidelines to be followed, but do not address all the requirements of the contract documents, nor take precedence over the contract documents.

PROJECT TEAM:

The project team consists of the following:

	<u>OWNER</u>	<u>WWTP PROJECT ENGINEER</u>	<u>FACILITY SUPPLIER</u>
NAME:	The Links at Coyote Wash Utilities	Santec Corporation	Santec Corporation
CONTACT:	Glen T. Curtis	Daniel Dow, P.E.	Dwight Zemp, V.P.
PHONE:	928.726.5920	303.660.9211 ext. 15	303.888.4977
FAX:		303.660.2180	303.660.2180
EMAIL:		ddow@santeccorporation.com	dzemp@santeccorporation.com
MAILING ADDRESS:			
PHYSICAL ADDRESS:	PO Box 6407	220 Malibu Street	220 Malibu Street
CITY / STATE / ZIP:	Yuma, AZ 85366-6407	Castle Rock, CO 80109	Castle Rock, CO 80109

In these procedures, the term Project Manager will signify Santec Corporation. On every project there will also be contractors hired to do a part of the work. The following procedures have been developed for the benefit of the owner, project manager, and the contractors.

COMMUNICATION AND CORRESPONDENCE:

During the performance of daily activities, the project manager may find it necessary to have discussions and brief meetings with the construction teams (contractors). In the overall spirit of teamwork, the project manager will be expected to maintain appropriate records of the discussions and meetings.

SPECIAL MEETINGS:

As required by job conditions, special meetings may be called by the project manager, or may be requested by the contractor to discuss any particular problem or situation that may arise. The contractor will attend all meetings when requested.

SUBMITTAL PROCEDURES:

All shop drawings, qualifications, certifications, specifications, installation instructions, and other technical information required by the contract are to be submitted to the appropriate authorities.

QUALITY CONTROL

INSTALLATION QUALITY CONTROL

The project manager shall monitor and maintain quality control over suppliers, contractors, work force, site conditions, products and services to ensure work is of specified, consistent quality.

WORKMANSHIP

Specified requirements represent a minimum, acceptable quality for Work.

Perform work with suitable qualified personnel to produce work of specified quality

Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibrations and distortion

FACILITY SUPPLIER INSTRUCTIONS

The project manager shall inspect and make sure that the whole work force comply fully with facility supplier's instructions. The project manager shall also assure the project is completed in the order of installation steps set forth by the facility supplier.

Should instructions conflict with contract documents, a request for clarification from the facility supplier shall be made before proceeding.

SAFETY PLAN:

The responsibility of safety lies solely with each contractor. The contractor shall be required to comply with the safety program and all applicable federal, state, and local regulation codes, rules, laws and ordinances. The safety plan shall include, but is not limited to the following: safety and health orientation, enforcement policy, disciplinary action for non-compliance, job site safety pre-planning, emergency safety plan, accident reporting, basic safe practices, ladder safety, confined spaces, fire prevention and site security.

CONFLICT RESOLUTION:

If the facility supplier believes there is a conflict between elements of the contract documents, he should identify the conflict and request direction by the RFI process. After the owner has reviewed and responded to the request for information, he will transmit two copies to the facility supplier. If the facility supplier believes a written clarification or interpretation justifies an increase in the contract price, or contract time, he may make a request for change. This process also will be followed if there is a conflict between a contractor and the facility supplier.

CONTRACTOR'S ON-SITE WORK:

The contractor will be responsible for the following work. Excavation for all tankage is shown on the plant layout drawings. All tank tie-down straps and dead men for tank anchoring. Supply and place pea gravel bed under tankage. Unload and place all tankage at elevations shown on the hydraulic profile. Supply and install all crossover piping located between tankage, including inlet and outfall lines. Backfill around tanks with pea gravel to a level just below the tank manway collars. Supply fuel storage tank and line to generator if needed. Construct concrete footers for site building as needed. Provide clean water fill for the tanks at the time of placement. Provide primary electrical power and installation of the power to the site building and each Santec control panel.

Owner furnished equipment and facilities:

Service entrance to building and any other electrical power required. Telephone service to the site building. Potable water to the site building. All required fencing and signage around the wastewater treatment plant. Landscaping around the facility. Access road to the plant site, operations and control building and sludge holding tank.

CONSTRUCTION CHECK POINTS:

At the following points, checks will be made to insure the installation of the plant adheres to installation procedures and guidelines. They are as follows:

- Elevations in excavation before tanks are set.
- Depth of pea gravel bed
- Elevations after tanks are set.
- Tank tie-down and chocks
- Back fill of tanks
- Hydrostatic testing of tanks
- Start up of plant
- Final cleanup

START-UP:

The contractor shall initially start-up and place all equipment installed by him into successful operation according to facility supplier's written instructions. A qualified representative from Santec, who shall certify same on the appropriate equipment start-up and training form, must verify proper checkout and start-up.

FINAL CLEANUP:

After start up has been completed and all equipment is prepared for operation, the contractor shall clean the entire work site. A representative from Santec will inspect final clean up to make sure site is finished and end product is of the quality that is set by the facility supplier.

SYSTEM START-UP

PRE-OPERATIONAL TESTING

TREATMENT PLANT CONTAINMENT VESSELS

All tanks and containment vessels shall be hydrostatic tested over a 24-hour period utilizing non-potable water.

Tanks shall be tested following installation and connection to ensure the integrity of the tanks and connections.

All connections and tanks shall be watertight during normal operation.

Tank and connection testing shall consist of two tank water level measurements taken at 24-hour intervals.

TREATMENT FACILITY PIPING

Gravity overflow connections shall be hydrostatic tested concurrently with hydrostatic testing of treatment plant containment vessels.

Pressurized piping shall be leak tested utilizing non-potable water.

All connections and piping shall be watertight during normal operation.

MECHANICAL EQUIPMENT

All mechanical equipment lubrication, connection and installation shall be verified prior to mechanical equipment start-up.

Nameplate data shall be recorded on forms provided by the equipment supplier.

ELECTRICAL EQUIPMENT

All electrical equipment including motors, control panels and distribution panels shall be inspected to ensure proper connection prior to start-up.

Controls panels shall be tested for proper operation by the panel manufacturer prior to installation.

All motors including pump and blower motors shall be monitored during pre-operational testing to ensure operation consistent with manufacturer's nameplate loads.

Back-up power start-up shall be conducted by an authorized representative of the equipment supplier.

FACILITY START-UP FOR BATCH OPERATION

Wastewater treatment facilities providing service to new developments typically experience large fluctuations in the incoming wastewater flow rate until the development is over 20% constructed. During the initial construction of the development, low flows typically less than 25% of the design average daily flows are anticipated. Treatment of the waste stream prior to full-start up of the facility is accomplished by operating the flow equalization basin in a batch operation mode. Operating the treatment facility in this fashion provides treatment of all sewer flows from the onset of the project while minimizing the cost of plant operations.

The following sequence illustrates operation of the basin in the batch operation mode:

1. Incoming flow is received from the collection system in the aerated flow equalization basin.
2. Incoming flows are stored in the equalization basin until a pre-set level is reached.
3. When the pre-set level is reached, the auto-dialer will notify the operator of the facility.
4. The operator will interrupt the aeration cycle and allow the solids to settle to the bottom of the basin.
5. Utilizing the flow equalization pumps, the operator will decant the supernatant into the head of the aeration basin.
6. Aeration to the equalization basin and treatment process is restarted.
7. As the flow goes through the plant, further treatment and clarification will occur with the alternating aeration and settling cycles prior to discharge from the secondary clarifier.

Treatment systems that require nitrogen removal can be operated in alternating aerobic and anoxic conditions in the equalization basin. This mode utilizes the incoming sewage flow as a carbon source during anoxic cycles.

FACILITY START-UP FOR CONTINUOUS OPERATION

Full-scale operation of the treatment facility is typically conducted when the average daily flow to the treatment facility is 25% of the design average daily flow. Batch treatment of the waste is discontinued and continuous flow operation commences.

The design of the facility incorporates several features for operation of the facility at average daily flows significantly less than design flow.

1. The flow equalization basin incorporates a flow control system to maintain continuous flow to the aeration process.
2. The pump discharge feed line from the flow equalization basin can be directed to one of several points in the aeration tank to process the wastewater at the best food to micro organism ratio. Typically start-up is conducted with the feed from the flow equalization basin discharging in the final 1/3 of the aeration basin.

3. When the hydraulic detention time in aeration is less than 18 hours, the feed line from the flow equalization basin is diverted to the next upstream feed point.

EFFLUENT CHARACTERISTICS DURING START-UP

BOD₅

During start-up, effluent BOD₅ is typically in compliance with permit limits. Continuous flow and high food to micro organism ratios facilitate rapid biomass growth and subsequent removal of the organic substrate.

TSS

During start-up, effluent TSS typically requires 5-10 days to be in compliance with permit limits. Sufficient biomass and sludge age must be developed to provide proper flocculation and settling the clarifier for removal of suspended solids.

pH

During start-up, effluent pH is typically in compliance with permit limits.

FECAL COLIFORM

During start-up, effluent Fecal Coliform levels are typically in compliance with permit limits.

TOTAL NITROGEN

During start-up, effluent Total Nitrogen levels typically require 30-60 days to develop the microbial populations to maintain discharge permit limits.

TIME FRAME FOR MEETING PERFORMANCE REQUIREMENTS

Continuous start-up of the facility typically requires *60 days* or less to develop the mixed liquor concentrations and microbial populations appropriate for the influent loading.

Effluent typically requires *60 days* or less to meet performance requirements.

GENERAL SPECIFICATION

PIPE

Santec corporation uses mainly plastic piping for the construction of their wastewater treatment plants. Plastic pipe is very resistant against the harsh environments that are associated with raw sewage. Plastic pipe is not only used to carry water but also air. PVC Schedule 40 and 80 are used for pressure situations and Sewer and Drain for situations where water is being transported by gravity. CPVC is a plastic that is meant for higher temperatures and is used for all air applications.

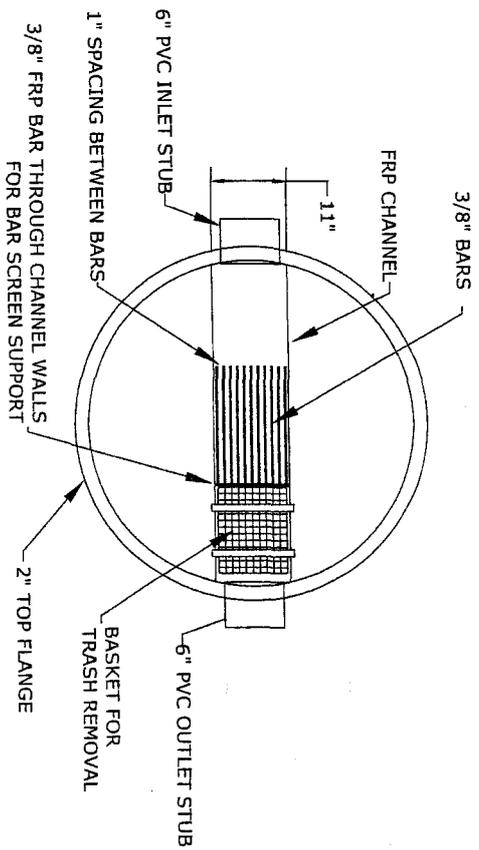
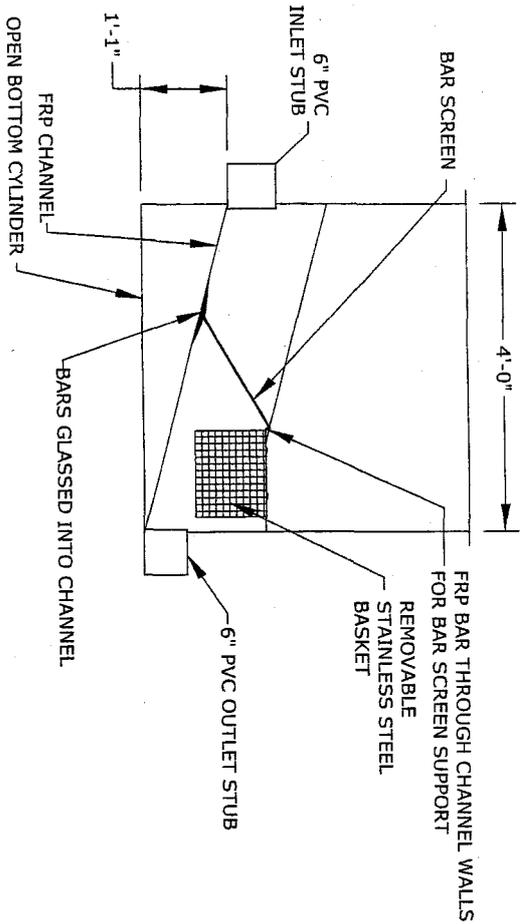
All plastic piping are joined using a PVC or CPVC cement that welds the joints in the socket of a fitting.

AUXILIARY POWER

The existing Links at Coyote Wash wastewater treatment plant has a Caterpillar D75P3 75 KW diesel back up generator that will supply sufficient power to both the existing phase and the proposed phase.

WATER AND SEWER LINE SEPARATION

All water and sewer lines will be separated according to all federal, state, and local regulations.

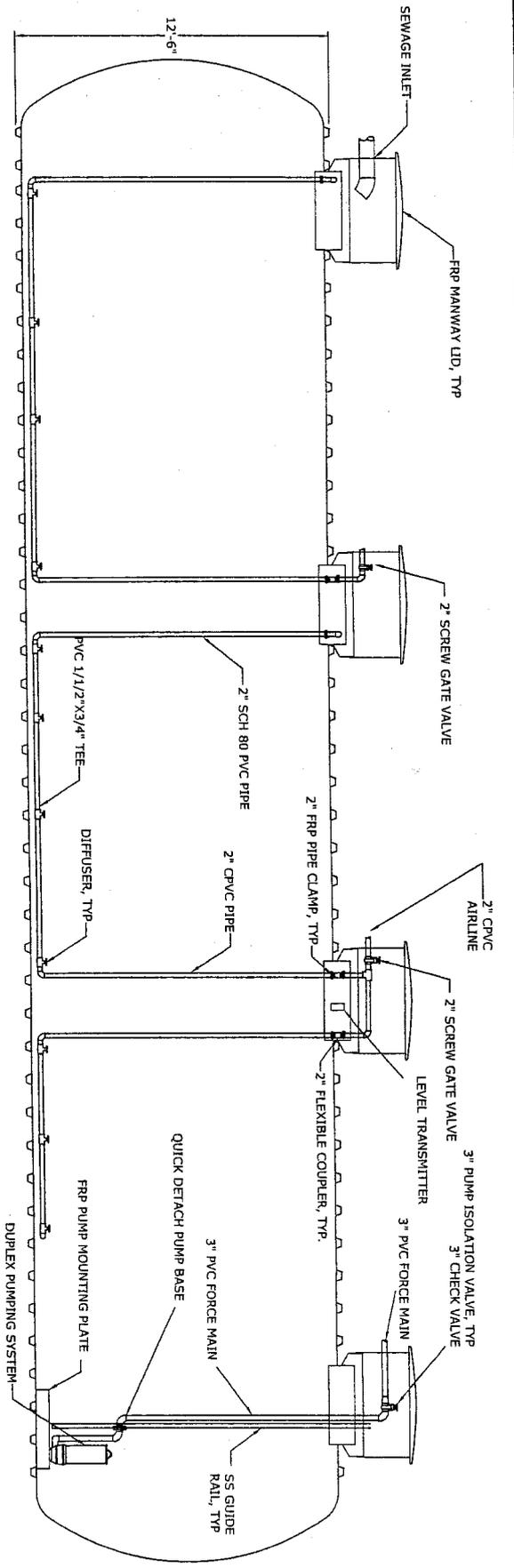


BAR SCREEN DETAIL

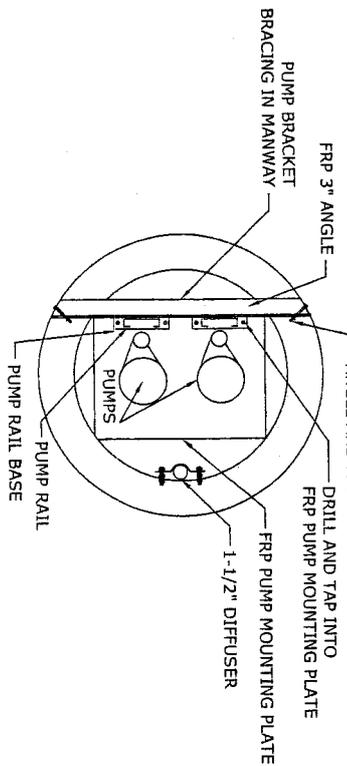
SANTEC STANDARDS	
BAR SCREEN	
12-4-1-6	
DATE	B.3.205
DRAWN BY	NANW
REV. 1	REV. 1.0
REV. 2	REV. 1.0
REV. 3	REV. 1.0
REV. 4	REV. 1.0
REV. 5	REV. 1.0
REV. 6	REV. 1.0
REV. 7	REV. 1.0
REV. 8	REV. 1.0
REV. 9	REV. 1.0
REV. 10	REV. 1.0
REV. 11	REV. 1.0
REV. 12	REV. 1.0
REV. 13	REV. 1.0
REV. 14	REV. 1.0
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REV. 100	REV. 1.0



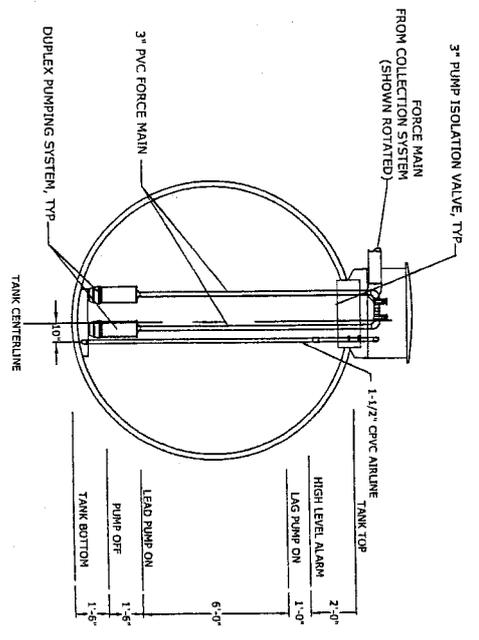
Santec
 SANTEC CORPORATION
 CASTLE ROCK, COLORADO
 PHONE: 303.660.9211 FAX: 303.660.2180



FLOW EQ ELEVATION



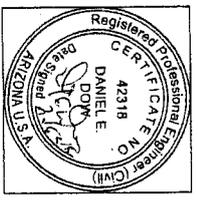
FLOW EQ MANWAY DETAIL



FLOW EQ CROSS SECTION

GREYLINE LEVEL CONTROLLER

ITEM	MODEL	DESCRIPTION
1	BSI	DESCRIPTION
	MAX RANGE	132 FT
	ACCURACY	±0.25% OF RANGE
	OUTPUT ISOLATED	4-20 mA
	# CONTROL RELAYS	6
	OPERATING TEMP	-5°F - 140°F
	SURGE PROTECTION	SENSOR 4-20 mA, AC POWER
	POWER SUPPLY	120V 60HZ 7.5 W MAX
	ENCLOSURE	NEMA 4X



SANTEC STANDARDS
FLOW EQ
 20-12-4-1C

Santec
 SANTEC CORPORATION
 CASTLE ROCK, COLORADO
 PHONE: 303.850.9211 FAX: 303.890.2180

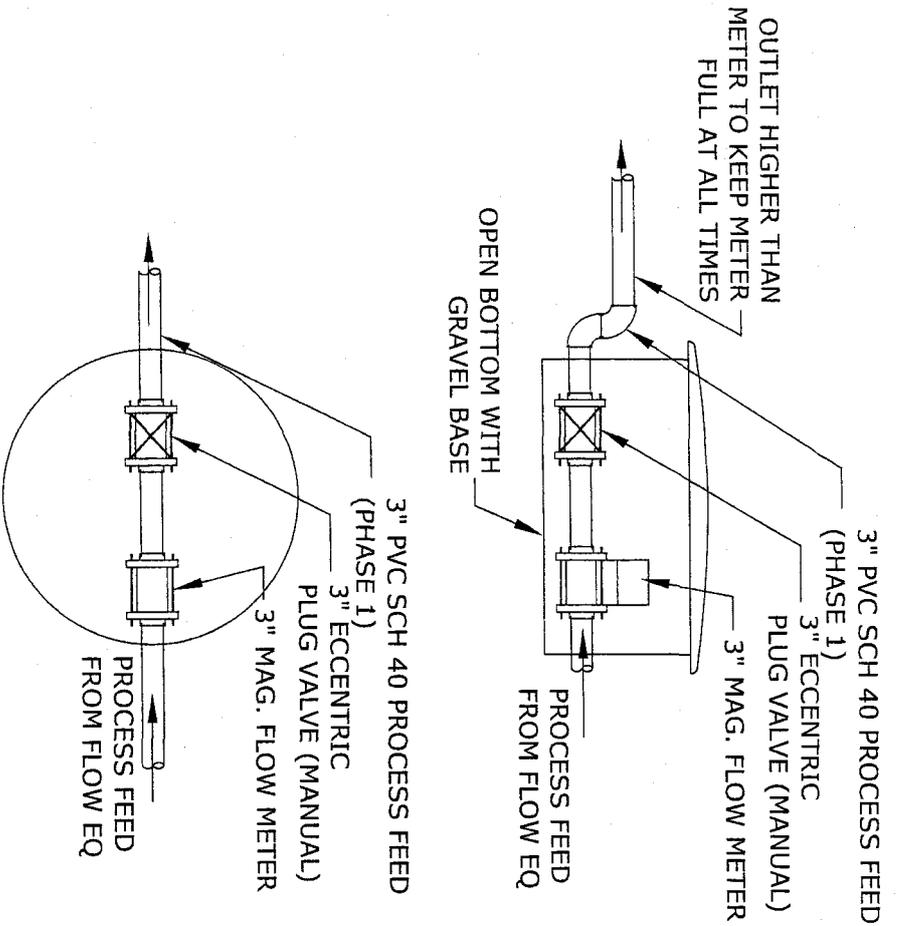
DATE: 8-2-05
 DRAWN: NAW
 CHECKED: REV 1.0
 SHEET: SS-20

HERSEY B.E.P. MAG METER

ITEM	DESCRIPTION
SIZE	3" FLANGED
MODEL NUMBER	6403.0S0T5A1000
FLOW RANGE	6.25 GPM TO 250 GPM
ACCURACY	+0.5% OF RATE
OUTPUT	4-20 mA ANALOG
LINER MATERIAL	TEFLON PTFE
FLUID TEMP	-20°F - 350°F
PRESSURE	275psi AT 100°F
POWER SUPPLY	120V or 240V ac
ENCLOSURE	NEMA 4, 4X, 12, 13

MILLIKEN ECCENTRIC VALVE

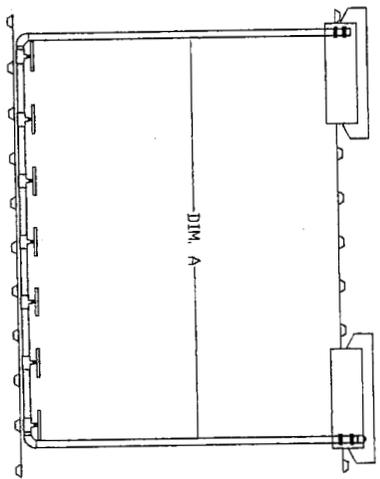
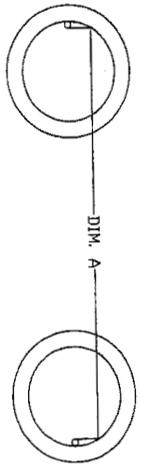
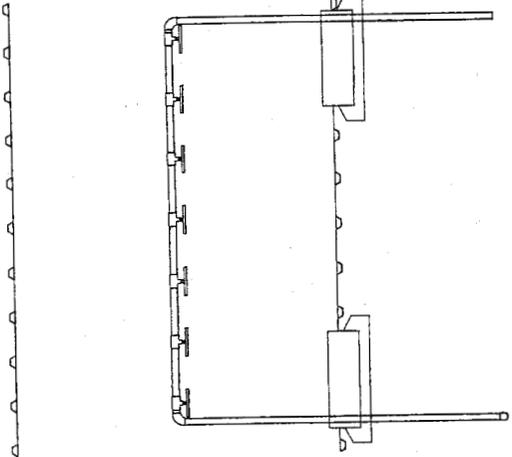
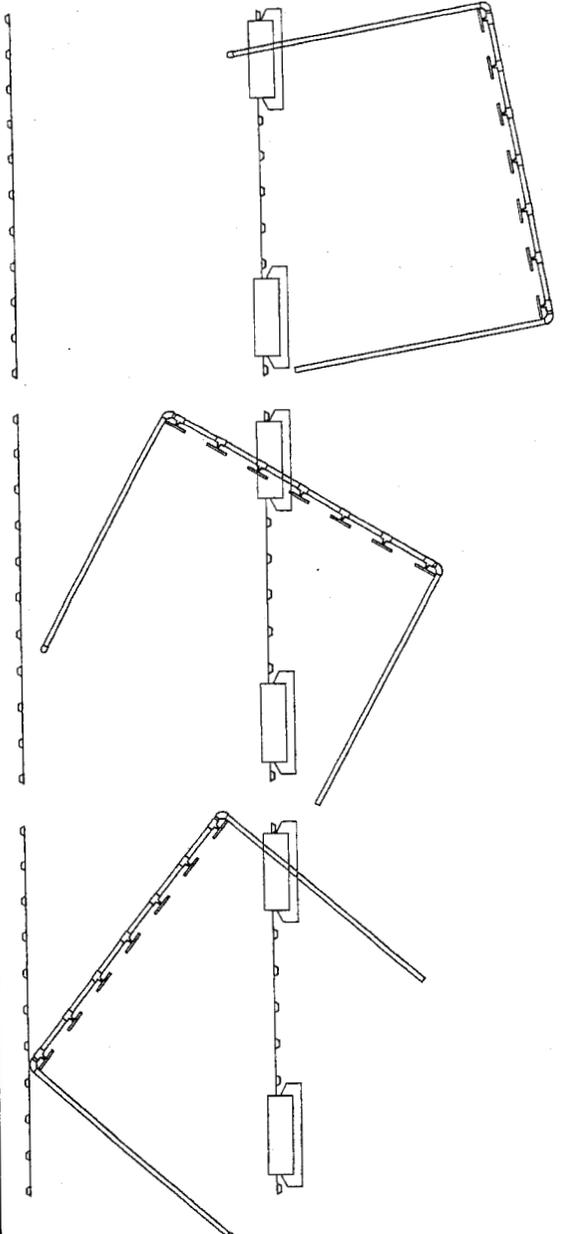
ITEM	DESCRIPTION
SIZE	3"
MODEL NUMBER	601-E0
ELASTOMER	EPDM
SEAT	EPOXY
VALVE TYPE	ANSI 125 FLANGED
FLUID TEMP	-35°F - 250°F
PRESSURE	175psi



SANTEC STANDARDS
FLOW CONTROL MANWAY
21-4-1-3

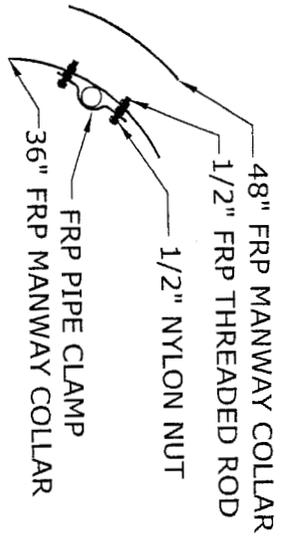
Gntec
SANTEC CORPORATION
CASTLE ROCK, COLORADO
PHONE: 303.680.9211 FAX: 303.680.2180

DATE: 8-12-05
DESIGNED: NAW
REVISED: REV 1.0
SHEET: SS-21

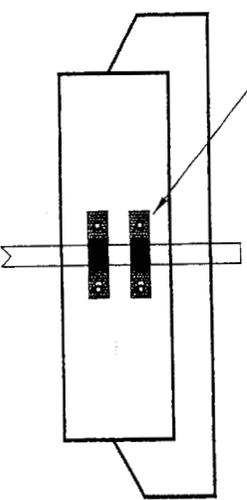


NOTE: DRILL 1/2" HOLE IN FIBERGLASS COLLAR FOR THREADED ROD

FOR PIPE IN AERATION TANKS, USE TWO (2) PIPE CLAMPS FOR EACH DOWN TUBE

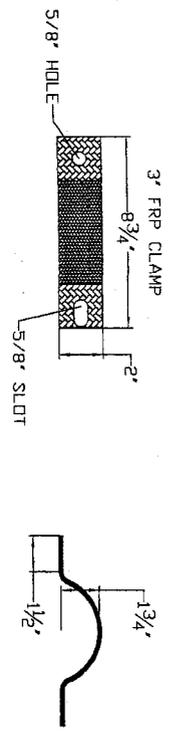


TWO PIPE CLAMPS FOR AERATION TANK DIFFUSERS

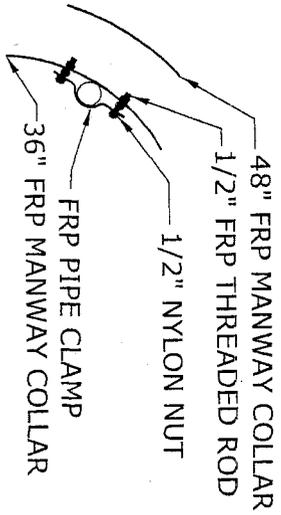


DIFFUSER INSTALLATION	
CONSTRUCTION DETAILS	
	DATE: 8.16.05
SANTEC CORPORATION	DRAWN BY: NANT
CASTLE ROCK, COLORADO	REV: 1
PHONE: 303.680.9211 FAX: 303.680.2180	SHEET: CD2

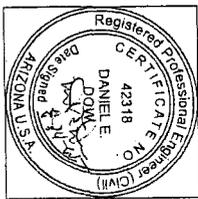
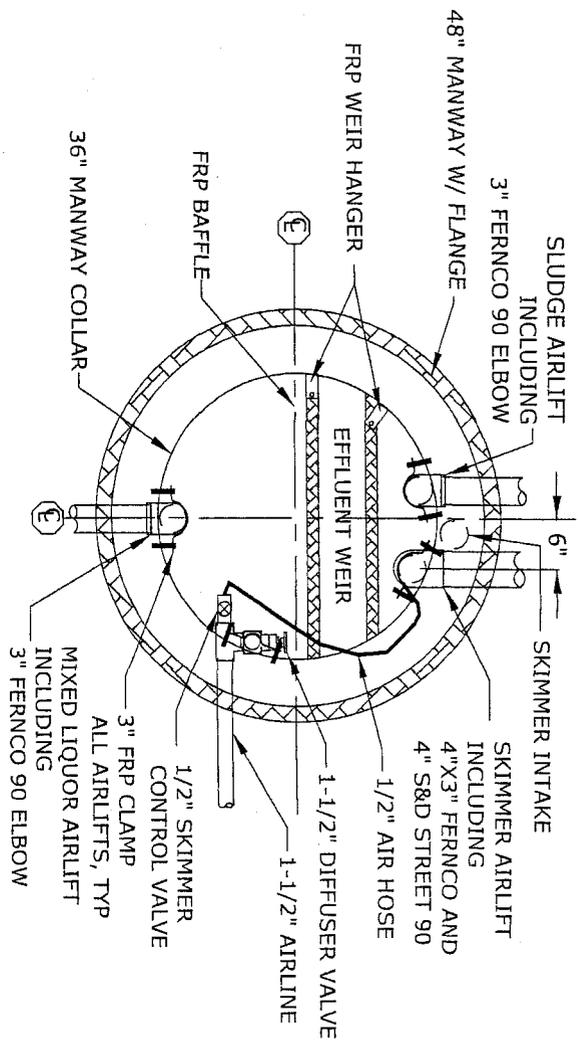
MOUNTING AIRLIFTS IN CLARIFIER



NOTE: DRILL 1/2" HOLE IN FIBERGLASS COLLAR FOR THREADED ROD FOR 3" CLAMPS, USE ONLY ONE CLAMP



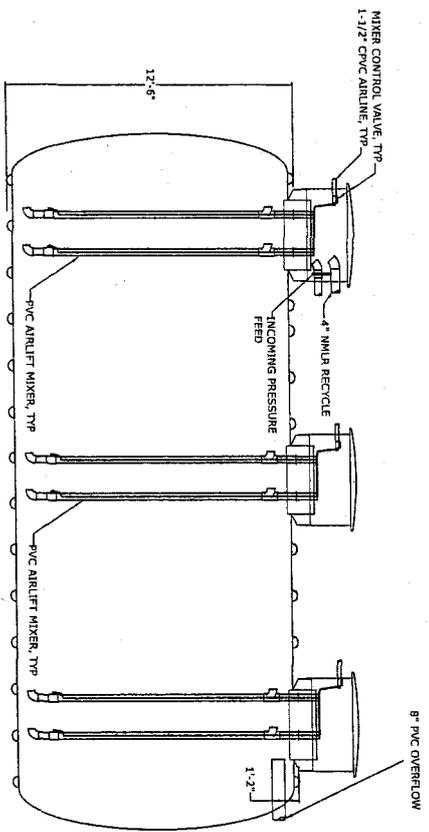
MOUNTING AIRLIFTS IN CLARIFIER



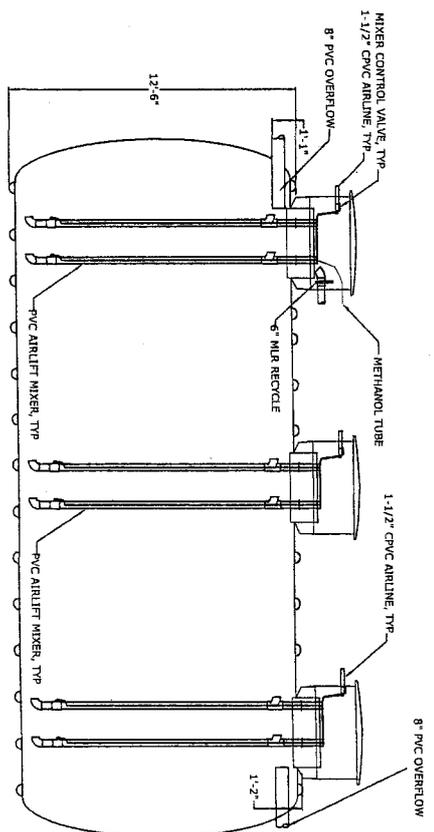
Ignitec
 SANITEC CORPORATION
 CASTLE ROCK, COLORADO
 PHONE: 303.660.9211 FAX: 303.660.2187

AIRLIFT MOUNTING
 THE CLARIFIER
 CONSTRUCTION DE S

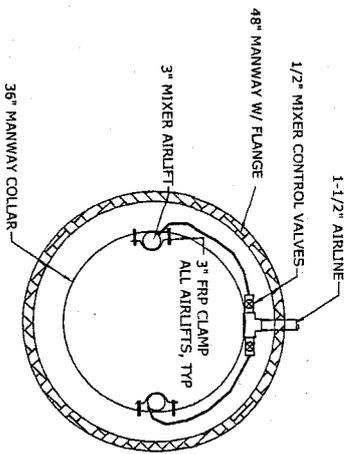
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 DRAWN BY: NAV
 CHECKED BY: CT



ANOXIC TANK ELEVATION



DENITRIFICATION TANK ELEVATION



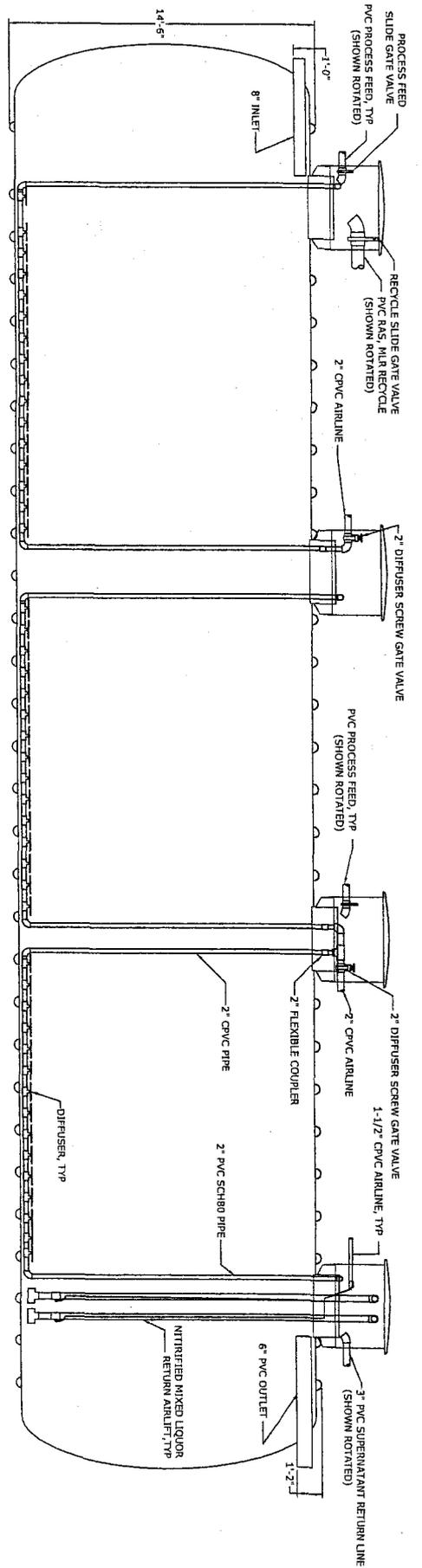
MANWAY DETAIL



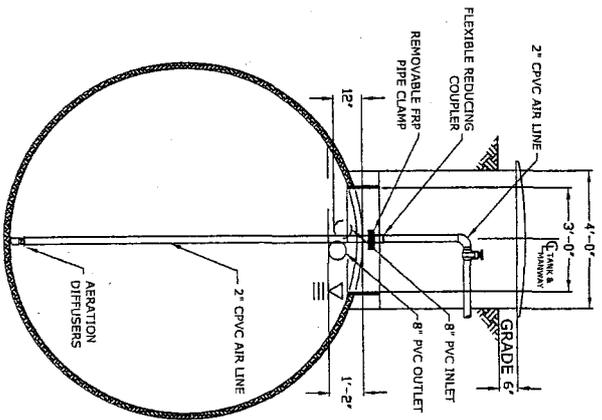
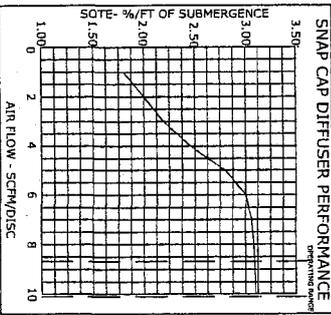
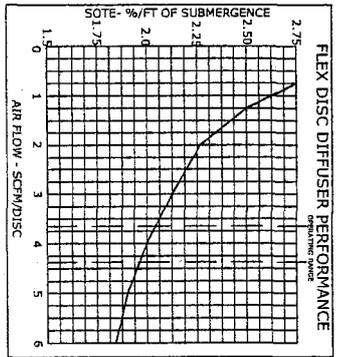
SAITEC STANDARDS
ANOXIC AND DENITRIFICATION TANKS
30-12-3-8

DATE	8-3-05
DRAWN BY	NAV
REVISED BY	REV TO
PROJECT	SS-30

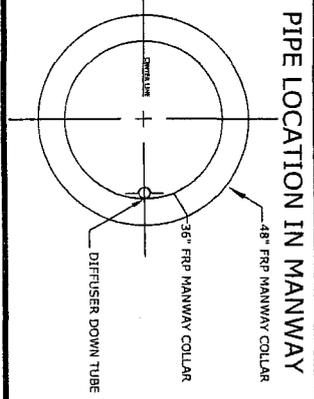
SanTec
SAITEC CORPORATION
CASTLE ROCK, COLORADO
PHONE: 303.880.9271 FAX: 303.880.2189



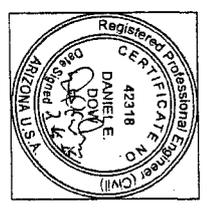
AERATION ELEVATION



AERATION CROSS SECTION



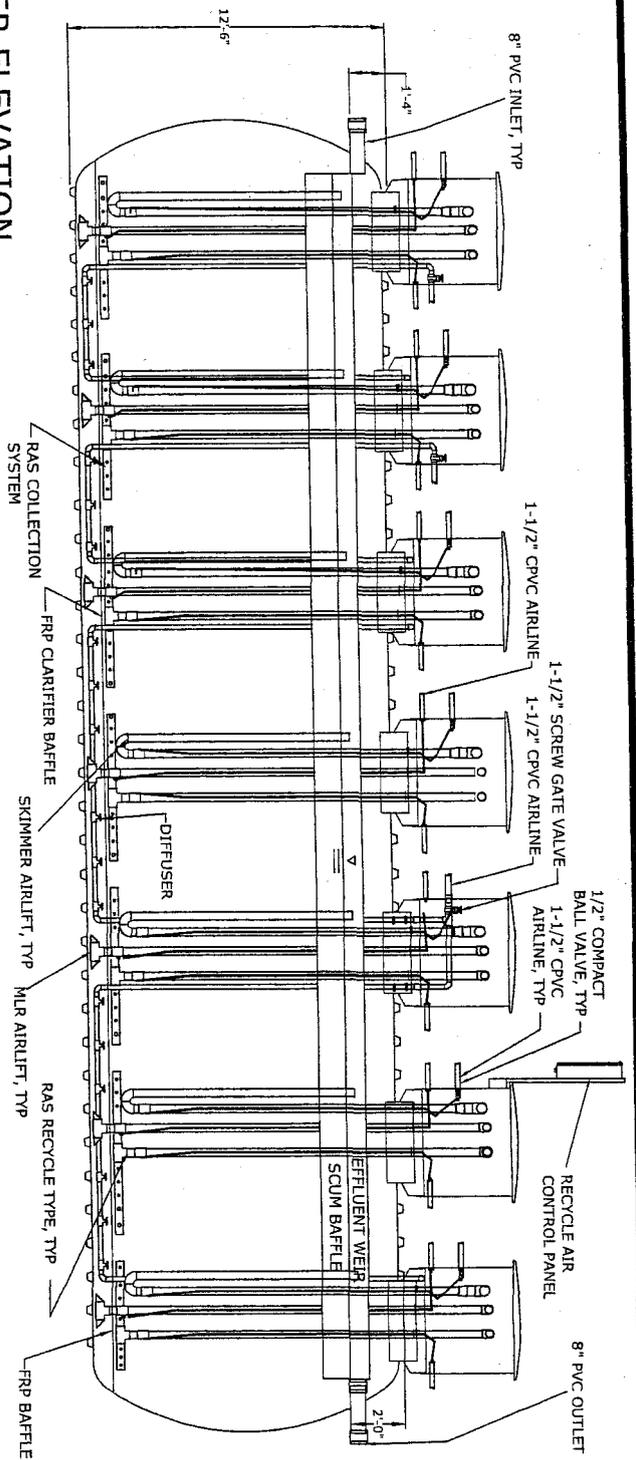
PIPE LOCATION IN MANWAY



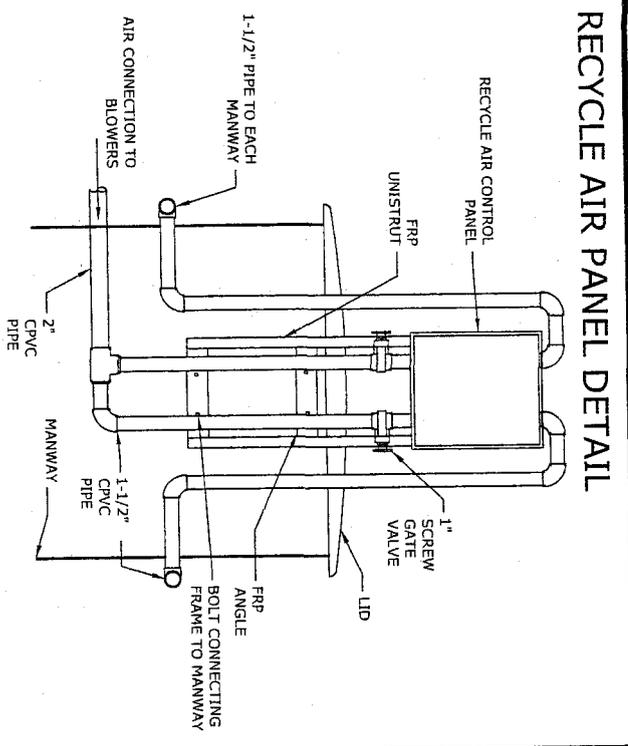
SANTEC STANDARDS
AERATION TANK
40-14-4-8N

Jantec
SANTEC CORPORATION
CASTLE ROCK, COLORADO
PHONE: 303.660.9211 FAX: 303.660.2160

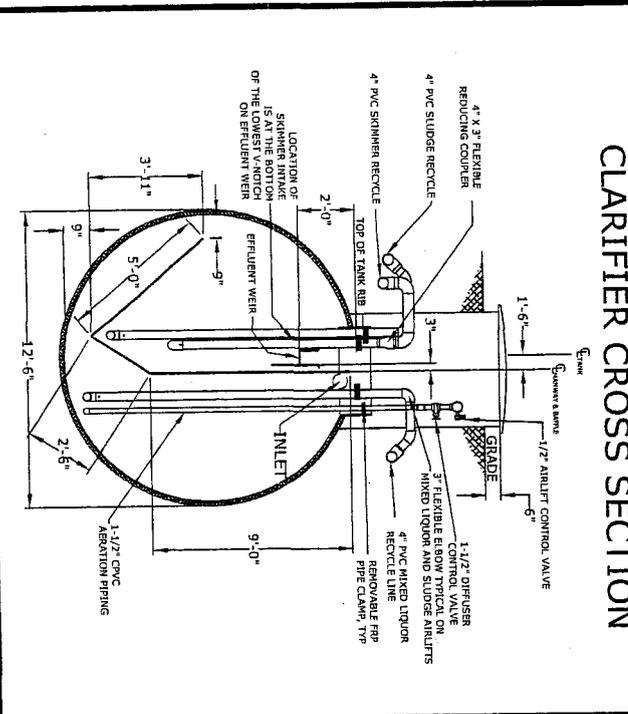
DATE	8-3-05
DRAWN BY	NAV
REVISED	REV 1.0
PROJECT	SS-40



CLARIFIER ELEVATION



RECYCLE AIR PANEL DETAIL

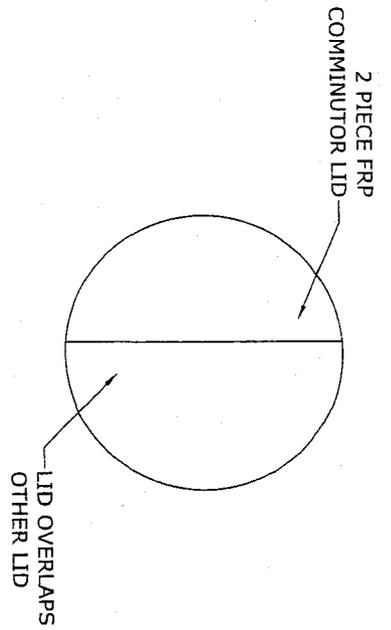


CLARIFIER CROSS SECTION

SANTEC STANDARDS
CLARIFIER
50-12-7-8

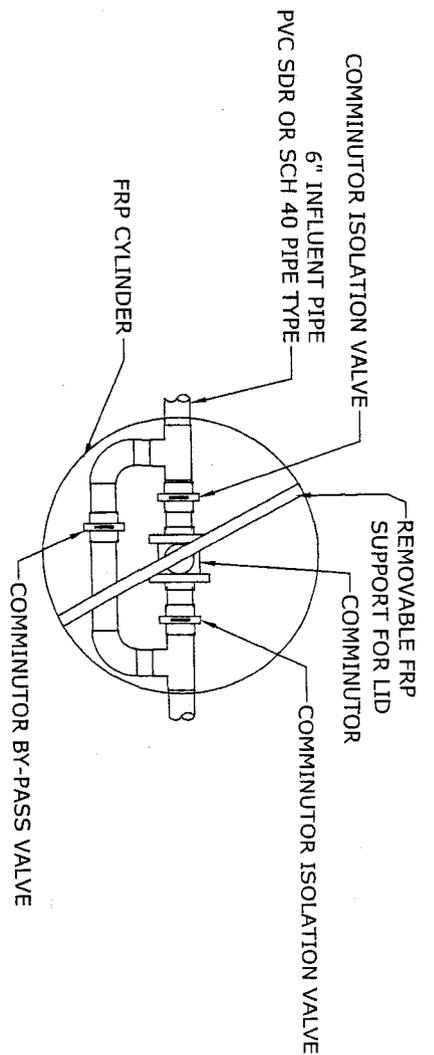
<p>SANTEC CORPORATION CASTLE ROCK, COLORADO PHONE: 303.690.2111 FAX: 303.690.2180</p>	<p>DATE: 8-11-05 DRAWN: NAW REV: REV 1.0 PROJECT: SS-50</p>
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COMMINUTOR 2 PIECE LID DETAIL

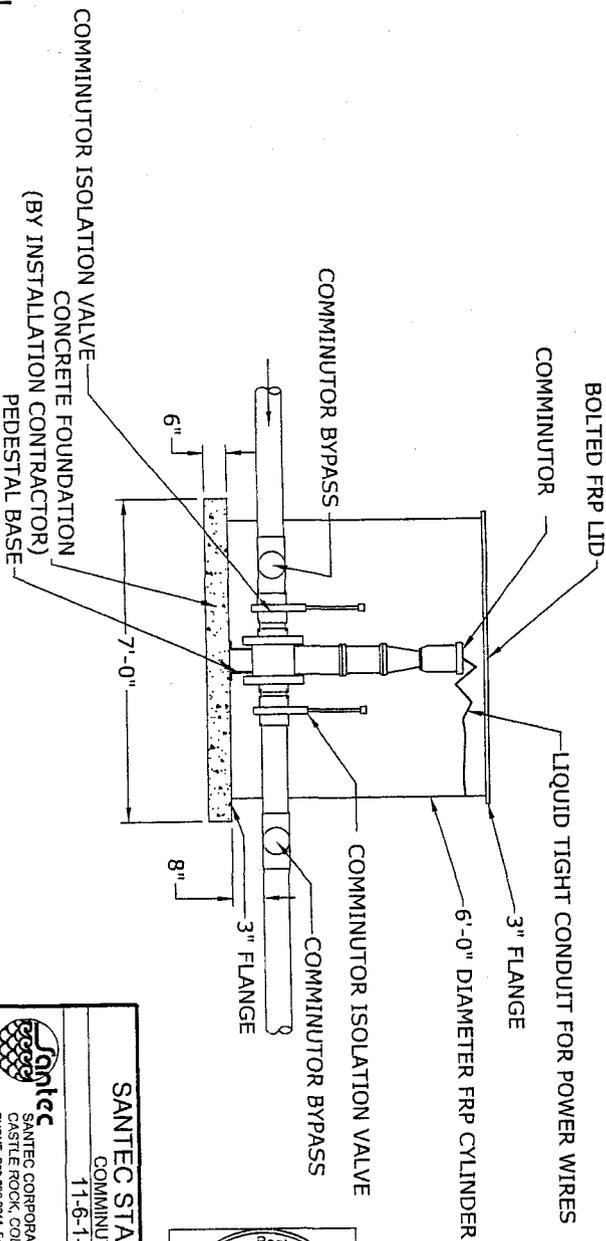


FRANKLIN MILLER COMMINUTOR	
ITEM	DESCRIPTION
SIZE	8" FLANGED
MODEL NUMBER	SUPER SHREDDER 8000
MOTOR HP	5
POWER	230/460V
WEIGHT	500 LBS
CUTTER MATERIAL	1316 STAINLESS STEEL

COMMINUTOR PLAN VIEW



COMMINUTOR ELEVATION



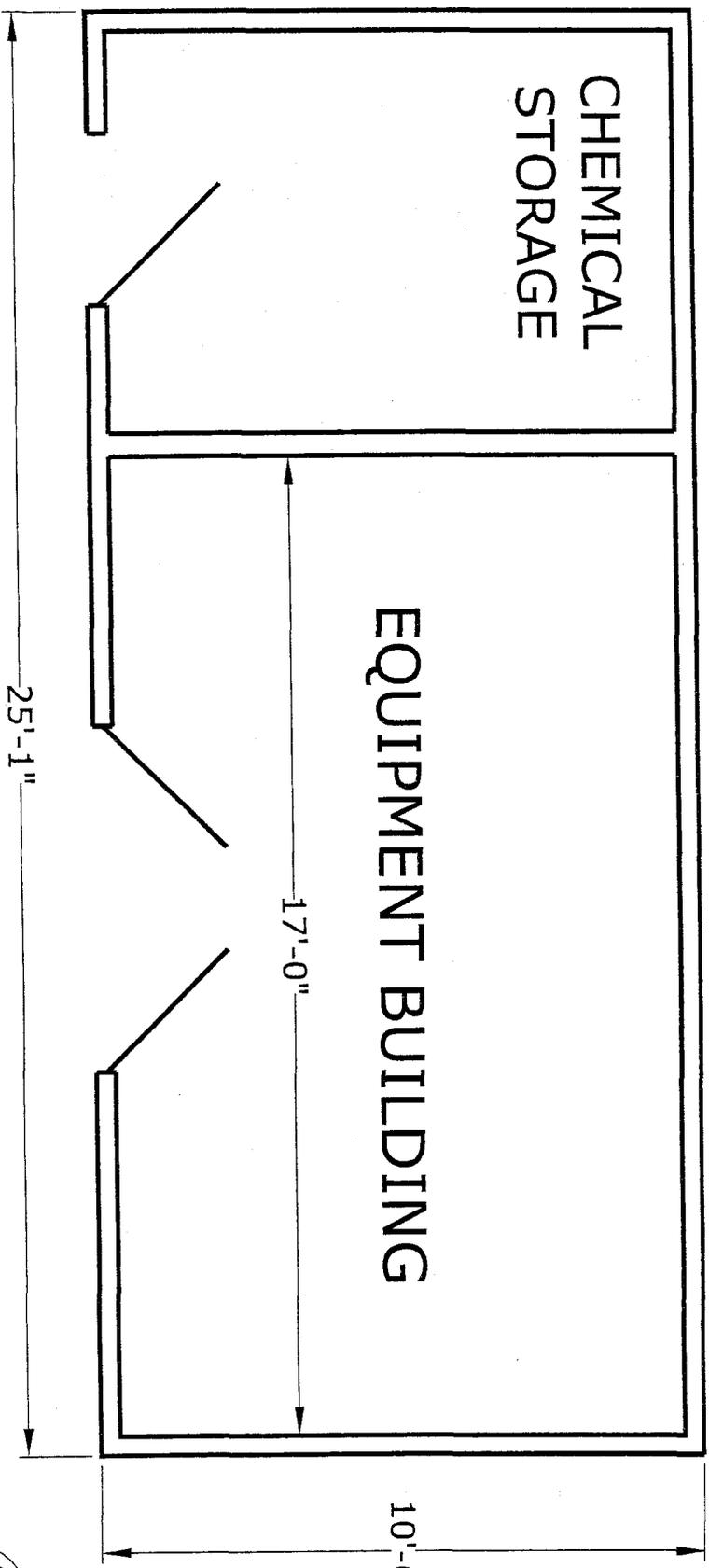
SANTEC STANDARDS
COMMINUTOR
11-6-1-6

Ganlec
SANTEC CORPORATION
CASTLE ROCK, COLORADO
PHONE: 303.980.2711 FAX: 303.980.2180

DATE: 8-3-05
DRAWN: NAW
REVISION: SS-11

CHEMICAL STORAGE

EQUIPMENT BUILDING



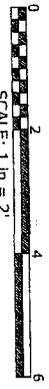
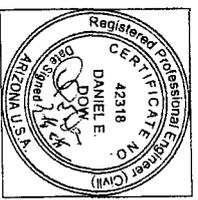
25'-1"

17'-0"

10'-6"



BUILDING LAYOUT

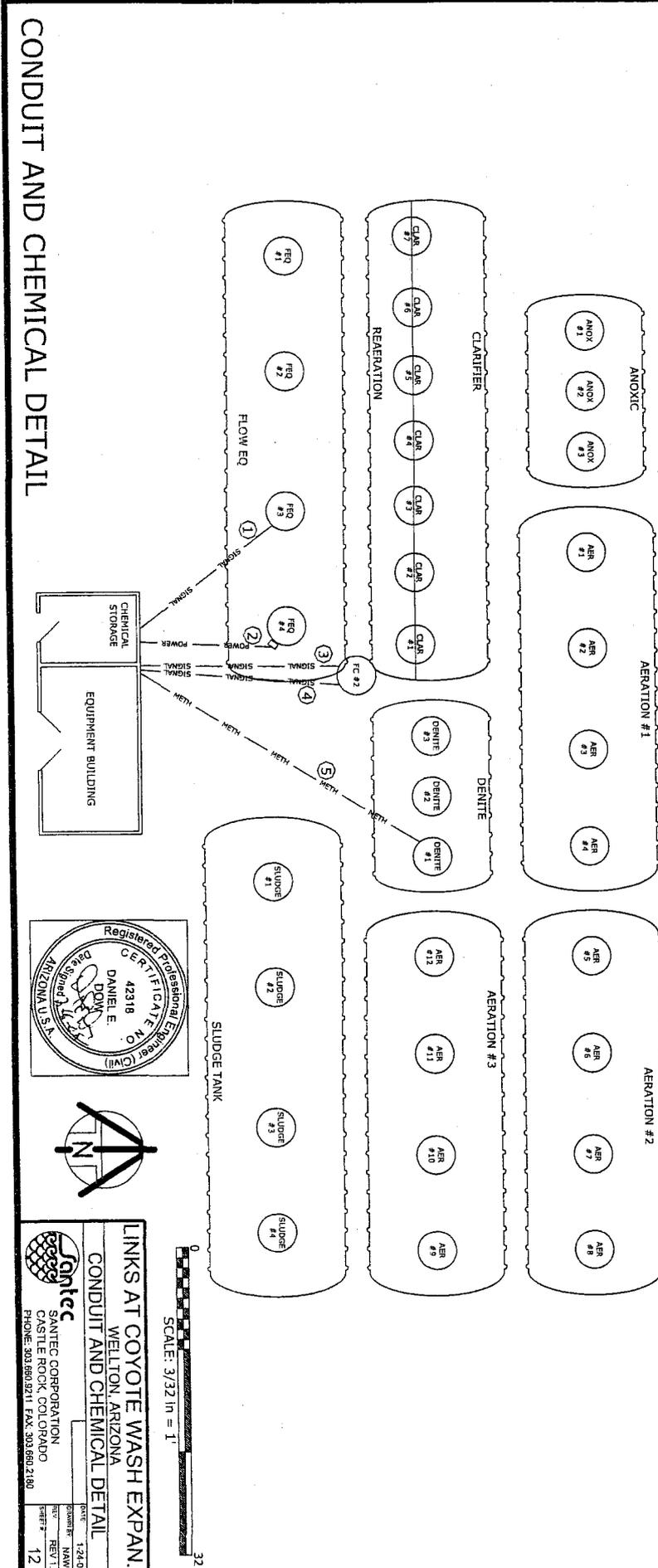
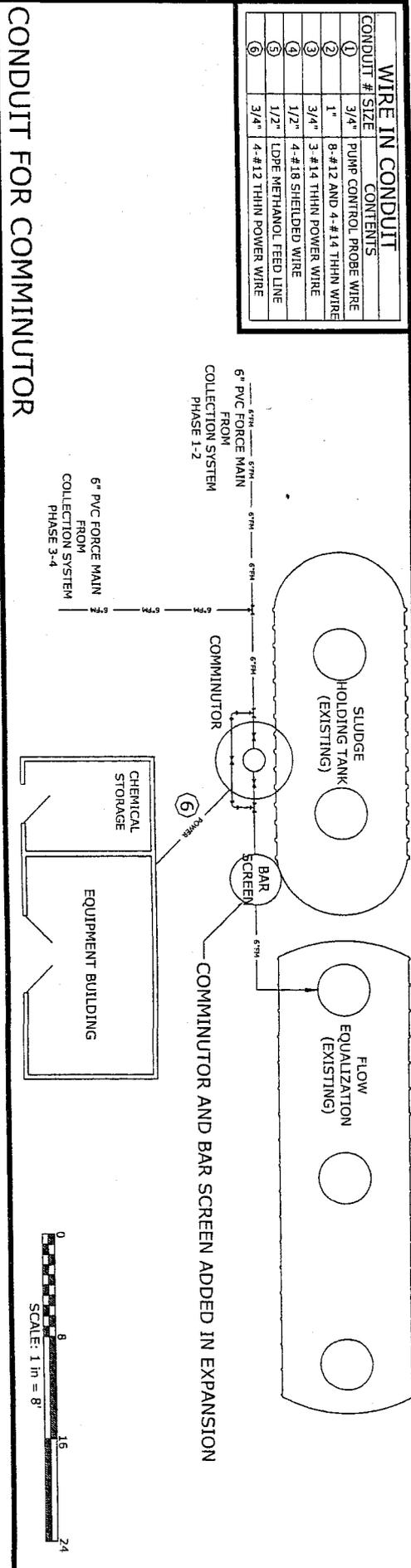


LINKS AT COYOTE WASH EXPAN.
WELLTON, ARIZONA
BUILDING LAYOUT

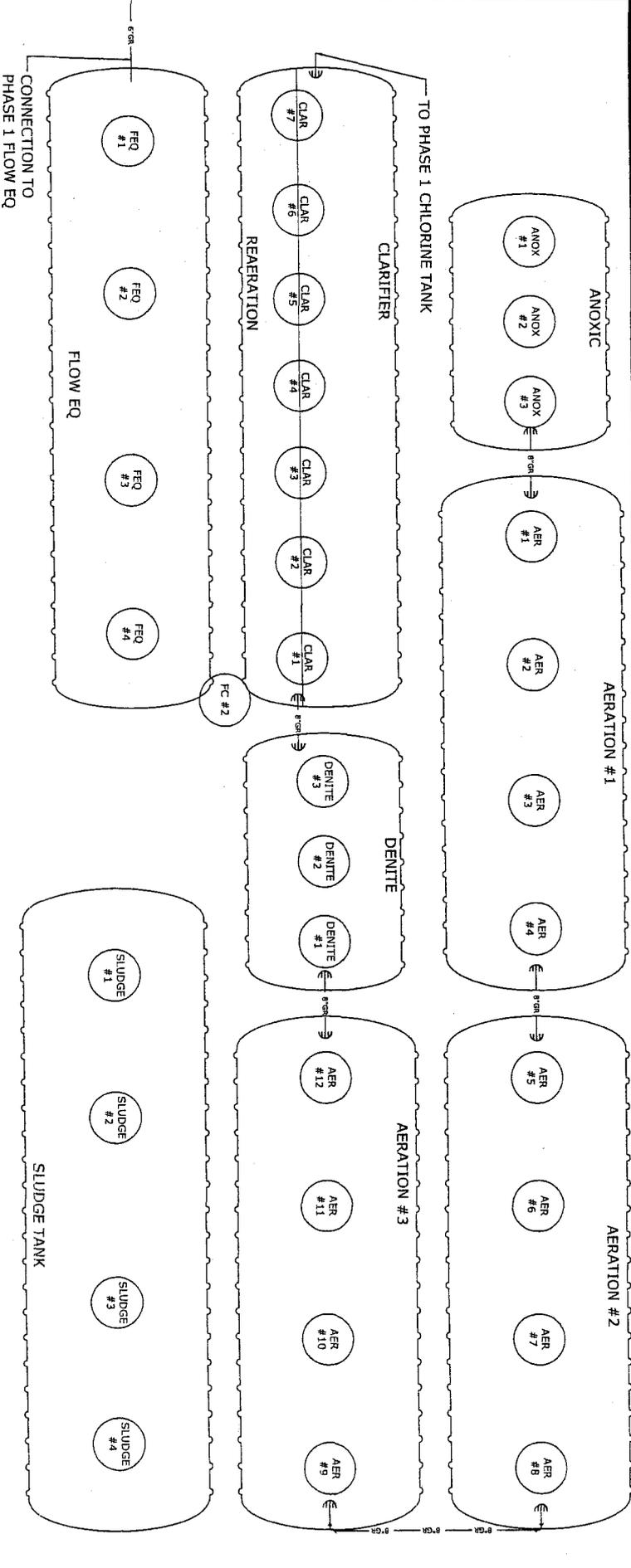
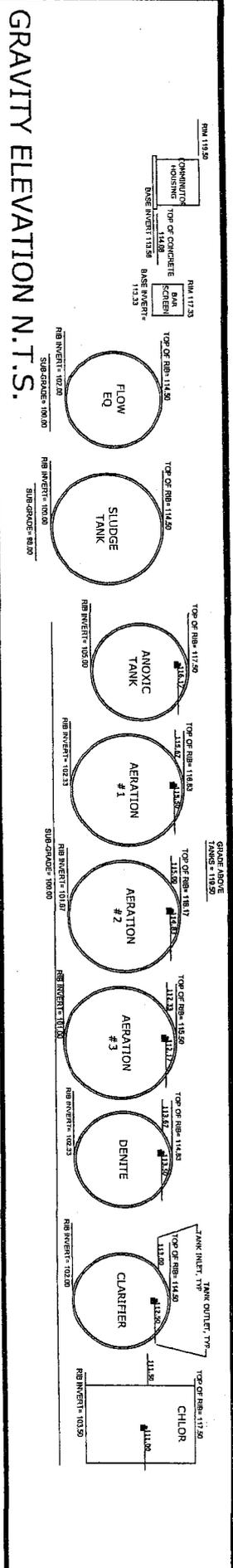
DATE	1-24-06
DRAWN BY	NAWJ
REV	REV.1.0
SHEET #	13

Jonlec
SANTIEC CORPORATION
CASTLE ROCK, COLORADO
PHONE: 303.660.9211 FAX: 303.660.2190

WIRE IN CONDUIT		
CONDUIT #	SIZE	CONTENTS
①	3/4"	PUMP CONTROL PROBE WIRE
②	1"	8-#12 AND 4-#14 THIN WIRE
③	3/4"	3-#14 THIN POWER WIRE
④	1/2"	4-#18 SHIELDED WIRE
⑤	1/2"	LDPE METHANOL FEED LINE
⑥	3/4"	4-#12 THIN POWER WIRE

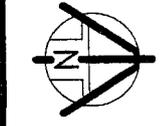
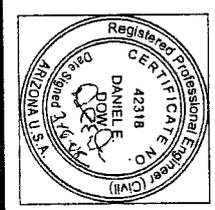
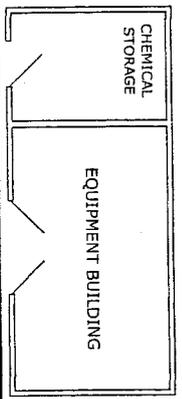


CONDUIT AND CHEMICAL DETAIL



NOTE:
 -ELEVATION OF EXISTING FLOW EQ TOP OF RIB IS 114.50
 -SET ELEVATION OF INLET INVERT IN CHLORINE CONTACT TANK TO 111.50

GRAVITY LINE DETAIL



LINKS AT COYOTE WASH EXPAN.
 WELLTON ARIZONA
GRAVITY LINE DETAIL

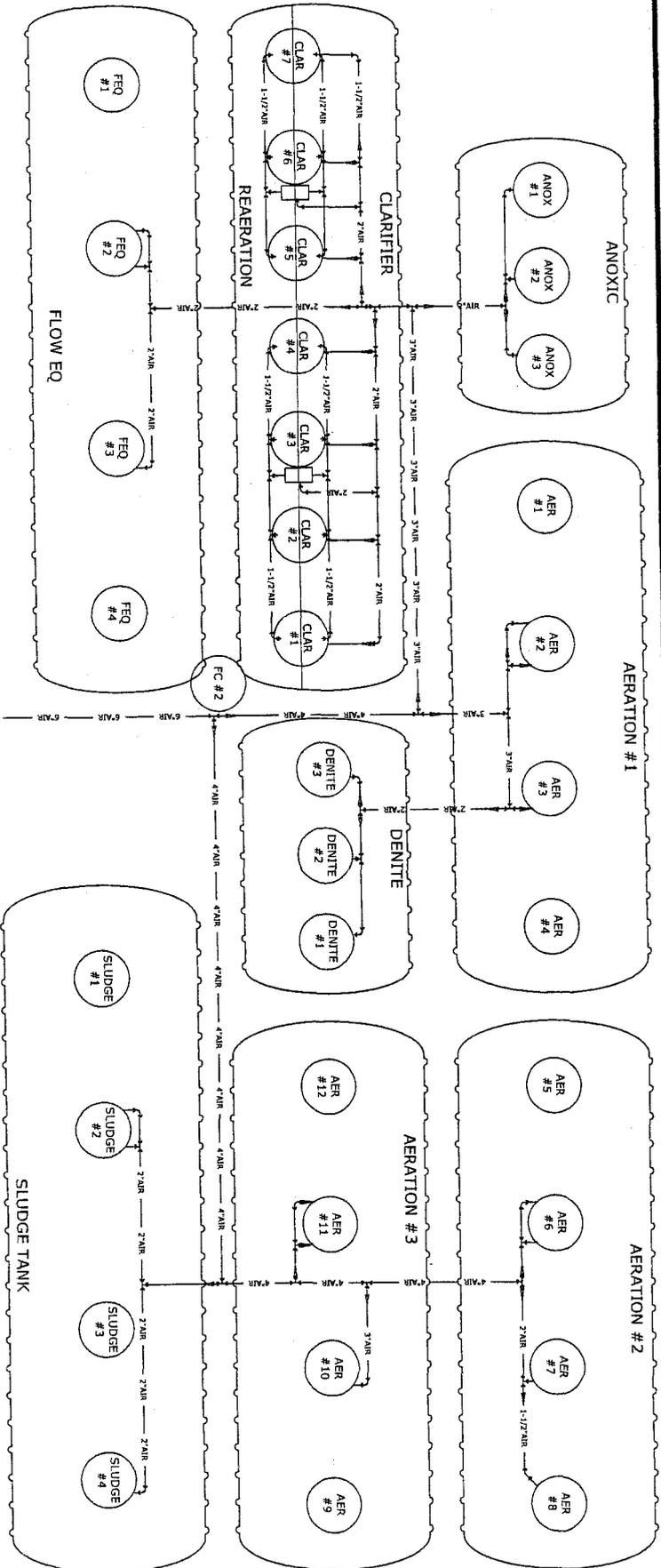
Santec
 SANTEC CORPORATION
 CASTLE ROCK, COLORADO
 PHONE: 303.650.9211 FAX: 303.650.2180

DATE	1-24-06
DRAWN BY	NAV
REV.	REV 1.0
SHEET	7

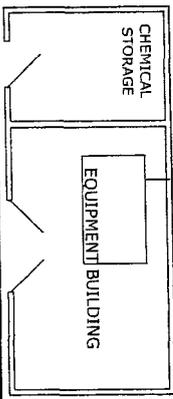


DIFFUSER SCHEDULE		
VESSEL	TYPE	QUANTITY
FLOW EQ	SNAP CAP	8
ANOXIC	NONE	0
AERATION #1	FLEX-DISC	32
AERATION #2	FLEX-DISC	32
AERATION #3	FLEX-DISC	32
DENITTE	NONE	0
REGENERATION	SNAP CAP	20
CLARIFIER	NONE	0
SLUDGE	SNAP CAP	17

PROCESS BLOWER DATA	
NAME/MODEL	ROOTS/DRESSER 711-U-64D
FLOW - SCFM/ACFM	1019/1193
DISCHARGE PRESSURE	6.5 PSIG
BLOWER RPM	1699
BRKTE HORSEPOWER	40.3 HP
ELECTRICAL SERVICE	480, 3 PH, 60 HZ
MOTOR	50 HP
FLMVAR	57%



AIRLINE DETAIL

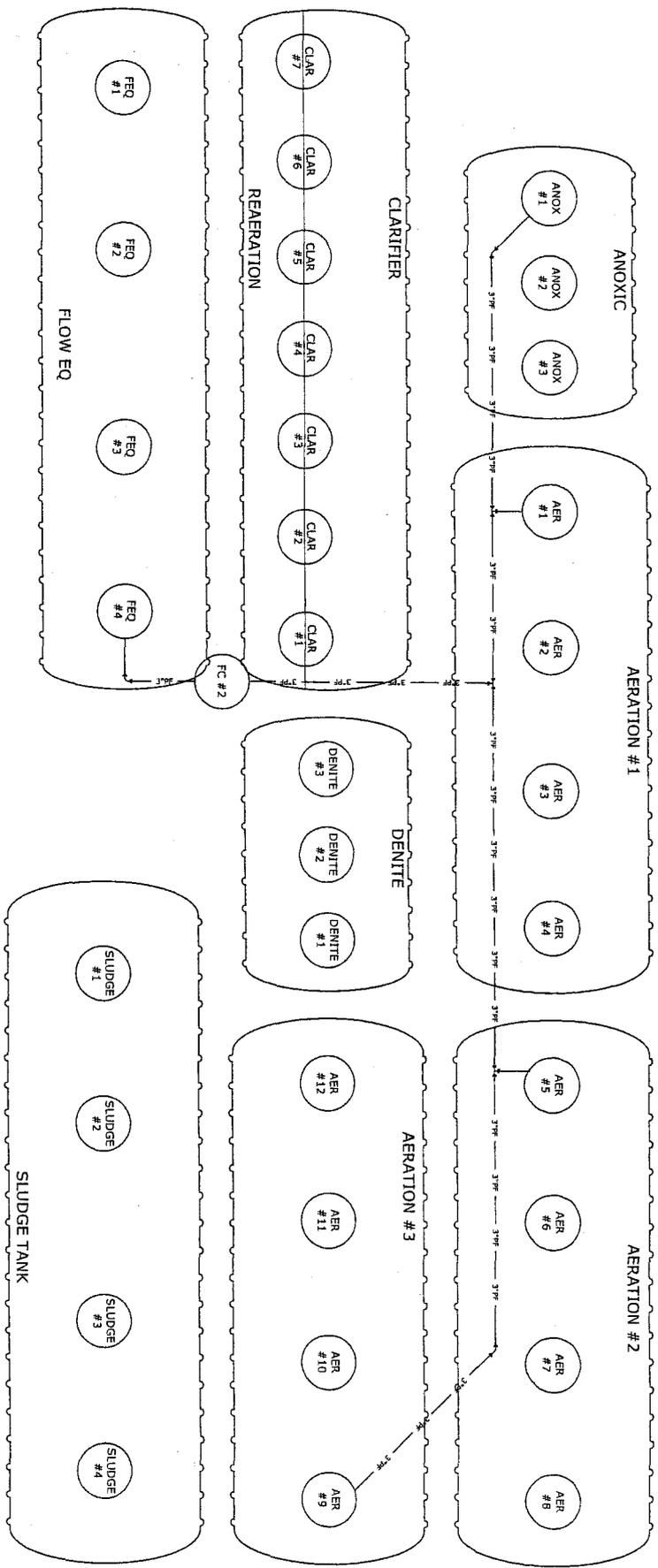


LINKS AT COYOTE WASH EXPAN.
WELLTON, ARIZONA
AIRLINE DETAIL

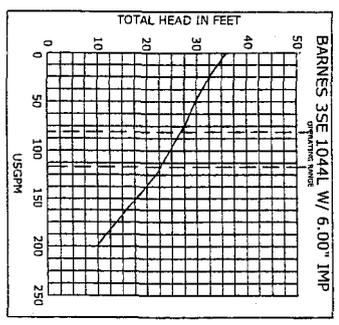
Santec
SANTEC CORPORATION
CASTLE ROCK, COLORADO
PHONE: 303.660.9211 FAX: 303.660.2180

DATE	1-24-06
DESIGNED BY	NAV
CHECKED BY	REV 1.0
SHEET #	11

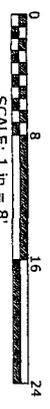
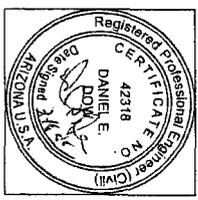
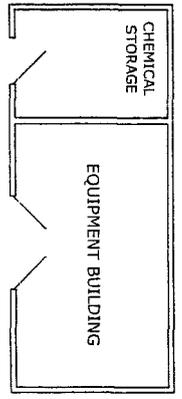




PROCESS FEED DETAIL



PUMP SCHEDULE	
PUMP MODEL	BARNES 3SE1044L
DISCHARGE	3"
FLOW	94 GPM
TDH	21'
SPEED	1,750 RPM
HORSEPOWER	1
ELECTRICAL	480 VAC, 3 PH, 60 HZ
FLA/LRA	4.9/15.4
SOLID SIZE	2"

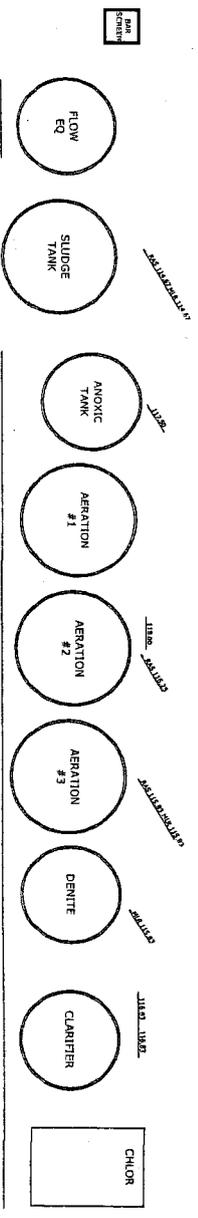


LINKS AT COYOTE WASH EXPAN.
WELLTON, ARIZONA
PROCESS FEED DETAIL

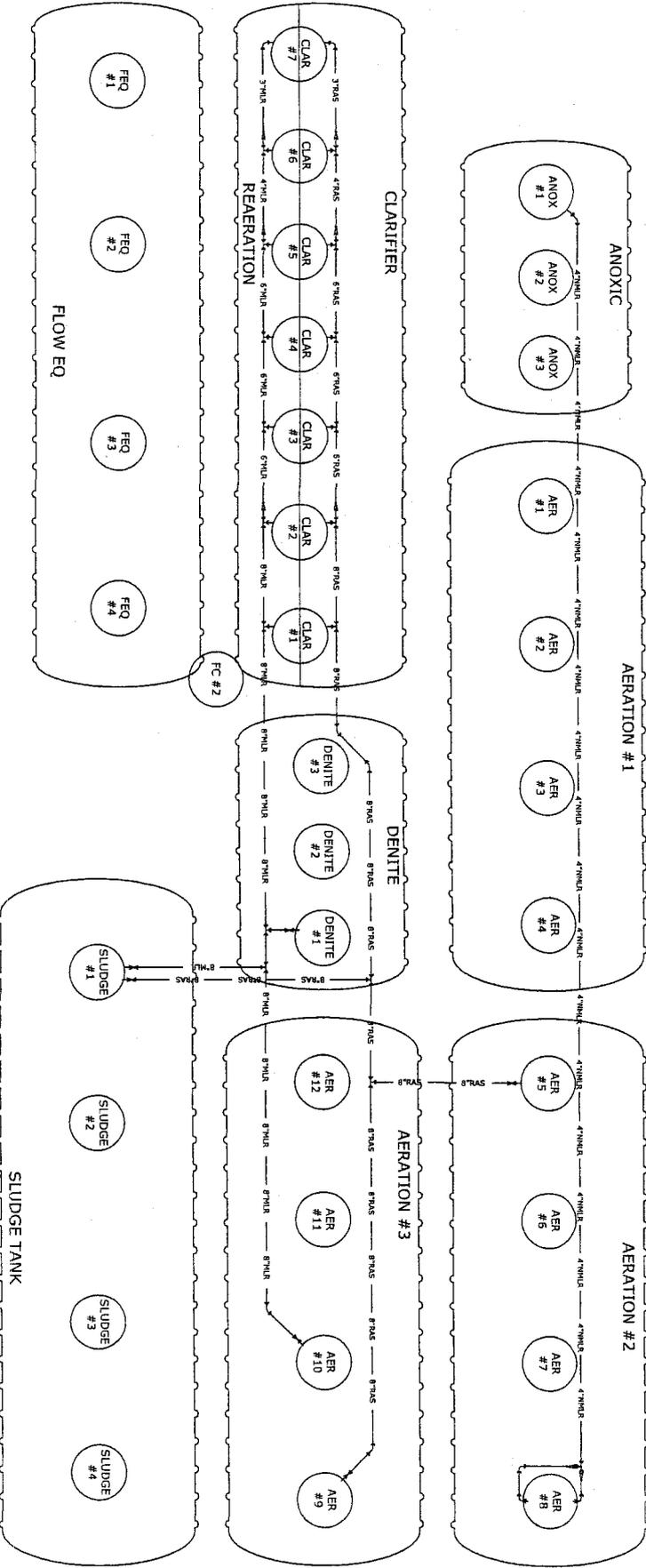
Linktec
SANTER CORPORATION
CASTLE ROCK, COLORADO
PHONE: 303.680.9211 FAX: 303.680.2180

DATE	1-24-08
DRAWN BY	NAVY
REV	REV 10
SHEET #	8

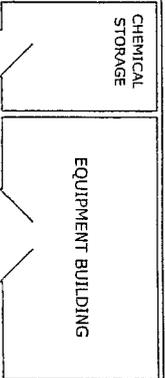
RECYCLE ELEVATION N.T.S.



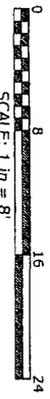
AIRLIFT SCHEDULE		
VESSEL	TYPE	QUANTITY
FLOW EQ	NONE	0
ANOXIC	MIXER	6
AERATION #1	NONE	0
AERATION #2	NONE	0
AERATION #3	NMLR	2
DENITE	MIXER	6
REAERATION	MLR	7
CLARIFIER	SLUDGE/SKIMMER	7/7
SLUDGE	SUPERNATANT	2

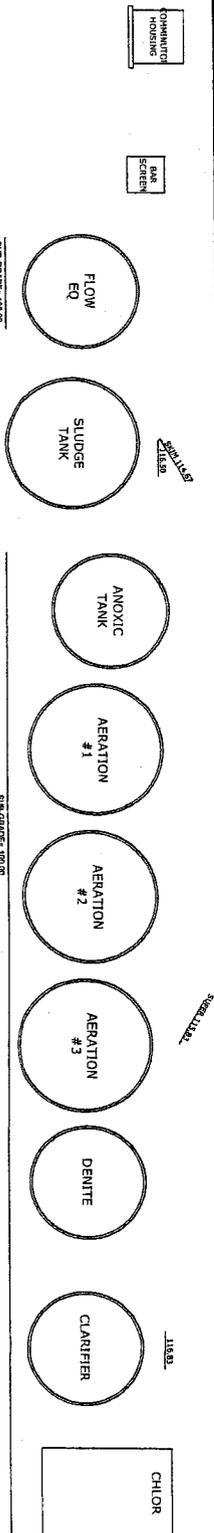


RECYCLE LINE DETAIL

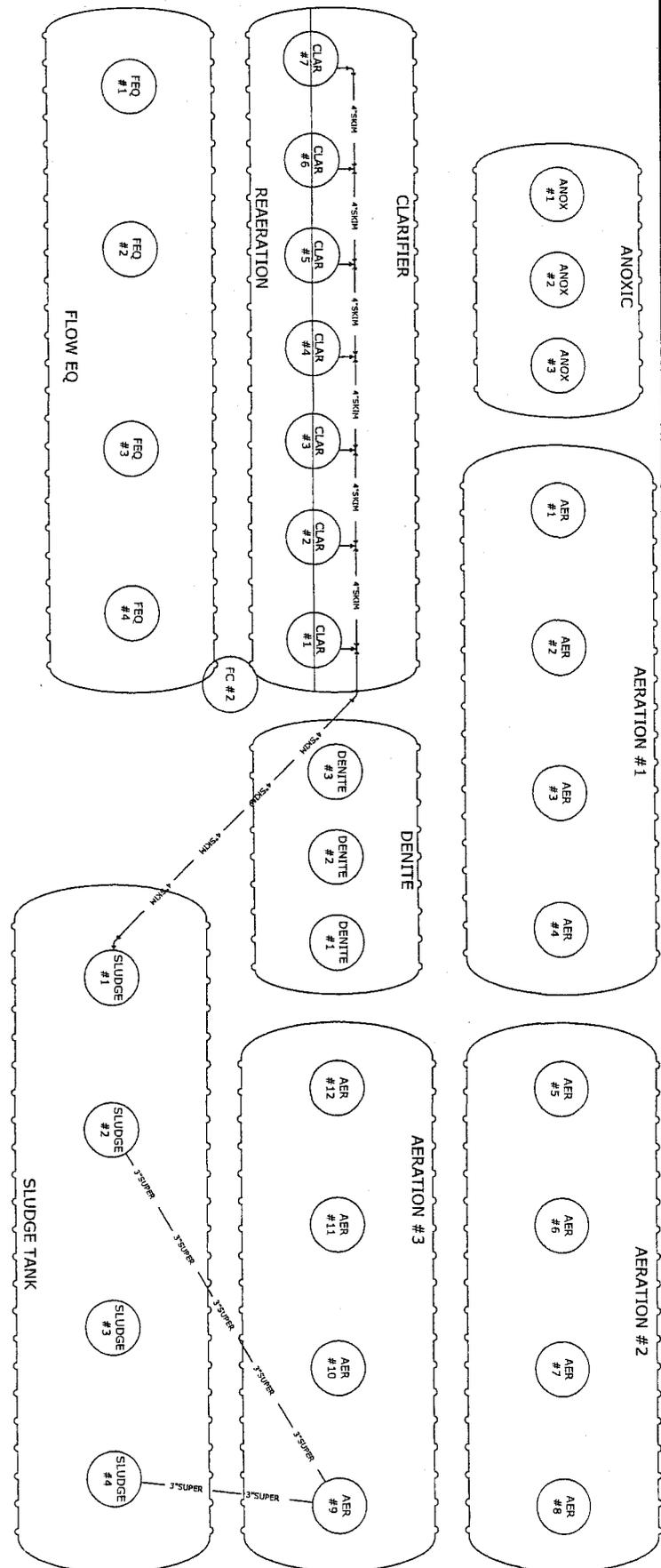


LINKS AT COYOTE WASH EXPAN.
 WELLTON, ARIZONA
Jontec SANTIEC CORPORATION
 CASTLE ROCK, CO. ORADO
 PHONE: 303.980.9211 FAX: 303.980.2190
 DATE: 1-24-06
 DRAWN: TADV
 CHECK: REV 10
 PROJECT: 9

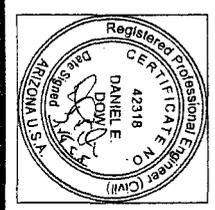
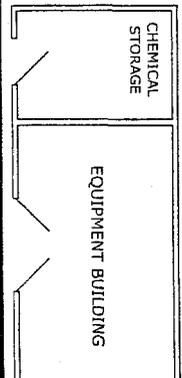




SKIMMER AND SUPERNATANT ELEVATION



SKIMMER AND SUPERNATANT DETAIL



LINKS AT COYOTE WASH EXPAN.
 WELLTON ARIZONA
SKIMMERS/SUPERNATANT DETAIL
 Santeq
 SANTEC CORPORATION
 CASTLE ROCK, COLORADO
 PHONE: 303.950.9211 FAX: 303.950.2190



DATE	1-24-05
DRAWN BY	NAV
REV	REV 1.0
SHEET #	10

LINKS AT COYOTE WASH EXPANSION WWTP

PHYSICAL LOCATION

SOUTH OF THE TOWN OF WELLTON, AZ
 AT CORNER OF AVE 29 EAST AND
 COUNTY 12TH STREET
 LATITUDE: 32°32'00" NORTH
 LONGITUDE: 114°08'00" WEST
 T9N, R18W, SECTION 7
 GILA AND SALT RIVER BASELINE AND MERIDIAN

PROJECT OWNER

Links at Coyote Wash Utilities, L.L.C.

P. O. BOX 6047

YUMA, ARIZONA 85374

Phone: (928) 726.5920

Fax:

FACILITY DESIGNER

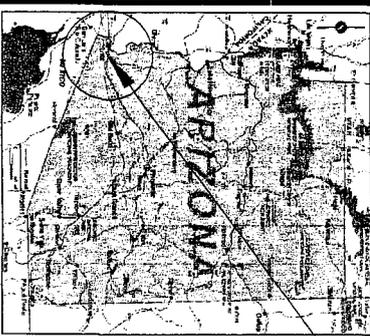
Santec Corporation

220 Malibu Street

Castle Rock, CO 80109

Phone: (303) 660.9211

Fax: (303) 660.2180



APPROXIMATE SITE LOCATION



SYMBOL LEGEND	
	BELLSPIGOT 45 DEGREE ELBOW
	BELLSPIGOT 90 DEGREE ELBOW
	BELLSPIGOT TEE
	BELLSPIGOT BUSHING
	BELLSPIGOT CONCENTRIC BUSHING
	BELLSPIGOT CHECK VALVE
	BELLSPIGOT GLOBE VALVE
	BELLSPIGOT GATE VALVE
	FLANGED FLOW METER
	FLANGED CHECK VALVE
	FLANGED GATE VALVE
	ACTUATED GATE VALVE

PIPE SCHEDULE	
AIR	CPVC SCH 40 OR EQUAL
FM	PVC SCH 40 OR EQUAL
FR	PVC SDR35 OR EQUAL
DR	PVC DWV OR EQUAL
3/8"	PVC DWV OR EQUAL
1/2"	PVC SDR35 OR EQUAL
3/4"	PVC SDR35 OR EQUAL
1"	PVC SDR35 OR EQUAL
1 1/4"	3/8" x 1/4" LDPE TUBING

DRAWING INDEX

SHEET# SHEET TITLE

SITE PLANS

- 1 PLAN INDEX
- 2 WWTP LAYOUT
- 3 WWTP LAYOUT WITH SET BACKS
- 4 PHASING
- 5 PROCESS FLOW DIAGRAM
- 6 VESSEL AND MANWAY SCHEDULE
- 7 GRAVITY LINE DETAIL
- 8 PROCESS FEED DETAIL
- 9 RECYCLE LINE DETAIL
- 10 SKIMMER/SUPERNATANT DETAIL
- 11 AIRLINE DETAIL
- 12 CONDUIT DETAIL
- 13 BUILDING LAYOUT

SANTEC STANDARDS

- SS-11 COMMINUTOR
- SS-12 BAR SCREEN
- SS-20 FLOW EQ TANK
- SS-21 FLOW CONTROL MANWAY
- SS-30 ANOXIC/DENITRIFICATION TANKS
- SS-40 AERATION TANK
- SS-50 CLARIFIER
- SS-70 SLUDGE TANK

CONSTRUCTION DETAILS

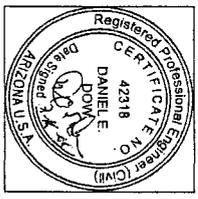
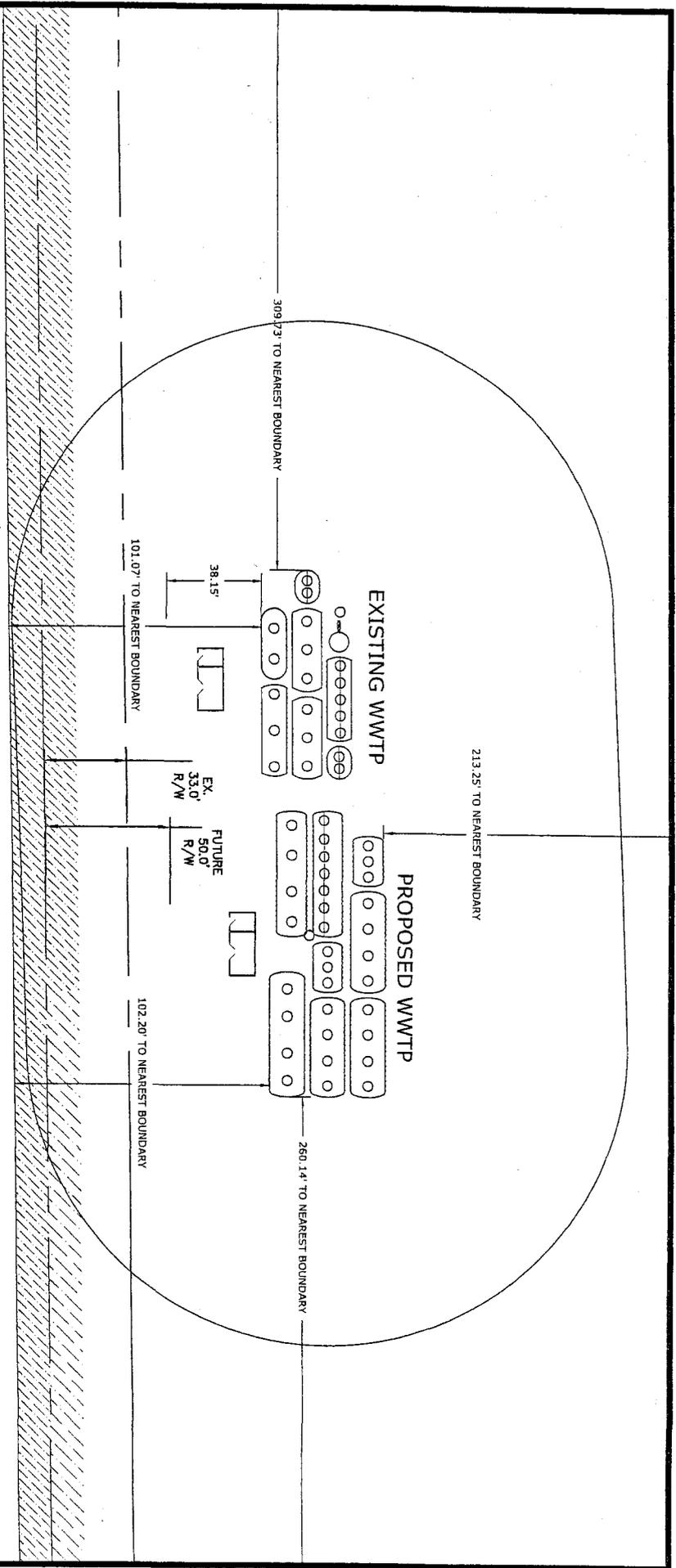
- CD1 DIFFUSER MEASUREMENT
- CD2 DIFFUSER INSTALLATION
- CD3 AIRLIFT CONSTRUCTION
- CD4 AIRLIFT MOUNTING
- CD5 MOUNTING WEIR
- CD6 RAS MANIFOLD CONSTRUCTION
- CD7 INSTALLING MANWAYS
- CD8 FLOW EQ CONSTRUCTION
- CD9 AIRLINE/FORCE MAIN DETAIL
- CD10 TANK INSTALLATION 1
- CD11 TANK INSTALLATION 2

LINKS AT COYOTE WASH EXPAN.

WELLTON, AZ
 PLAN INDEX

Santec
 SANTEC CORPORATION
 CASTLE ROCK, COLORADO
 PHONE: 303.660.9211 FAX: 303.660.2180

DATE	1-24-06
ISSUED BY	NAV
REV	REV 10
SHEET #	1

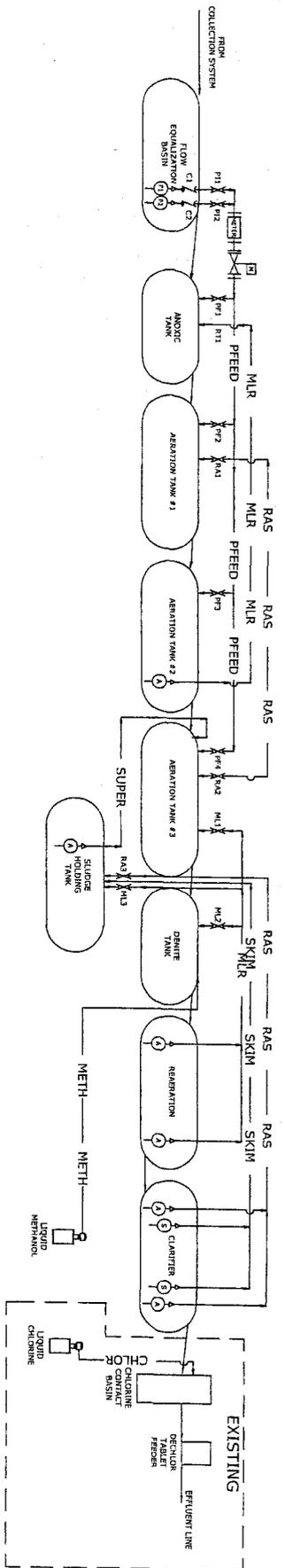


LINKS AT COYOTE WASH EXPAN.
 WELTON, ARIZONA
WWTP LAYOUT WITH SET BACK

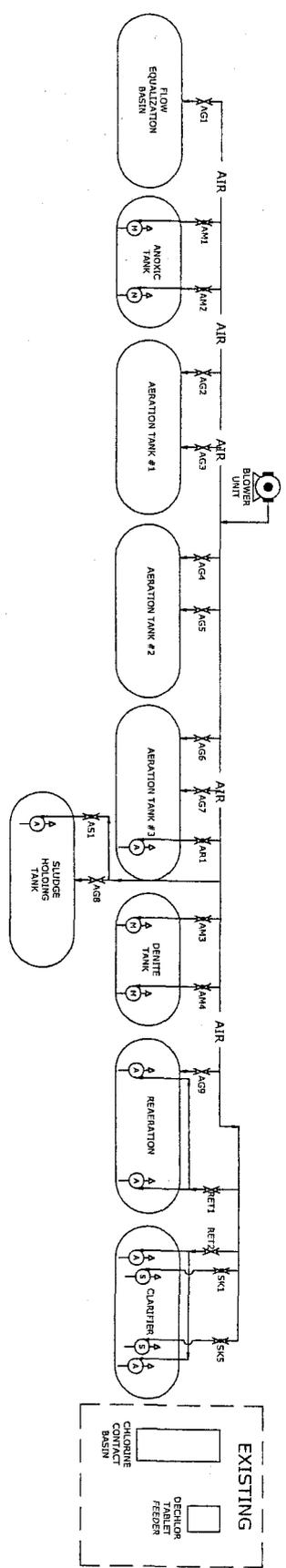
Antec
 SANTEC CORPORATION
 CASTLE ROCK, COLORADO
 PHONE: 303.860.9211 FAX: 303.860.2180

DATE:	2-14-06
DRAWN BY:	NAW
REV:	REV 1.0
SHEET:	3

HYDRAULIC LINES AND VALVES, N.T.S.



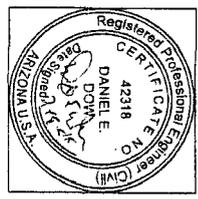
AIR LINES AND VALVES, N.T.S.



SYMBOL LEGEND

— AIR —	— AIR —	— AIR —	— PROCESS AIR LINE —	— BALL VALVE —
— CHLOR —	— CHLOR —	— GR —	— CHLORINE FEED LINE —	— GATE VALVE —
— GR —	— GR —	— GR —	— GRAVITY OVERFLOW LINE —	— CHECK VALVE —
— METH —	— METH —	— METH —	— METHANOL FEED LINE —	— AIRLIFT PUMP, RECYCLE TYPE —
— MLR —	— MLR —	— MLR —	— MIXED LIQUOR RETURN LINE —	— AIRLIFT PUMP, MIXER TYPE —
— PFEED —	— PFEED —	— PFEED —	— PROCESS FEED LINE —	— AIRLIFT PUMP, SKIMMER TYPE —
— RAS —	— RAS —	— RAS —	— RETURN ACTIVATED SLUDGE LINE —	— PUMP, CENTRIFUGAL —
— SKIM —	— SKIM —	— SKIM —	— SKIMMER WASTE LINE —	— ECCENTRIC PLUG VALVE, MOTORIZED —
— SUPER —	— SUPER —	— SUPER —	— SUPERNATANT RETURN LINE —	— FLOW METER, MAGNETIC —

NOTES:
1) VESSELS SHOWN ARE SCHEMATIC ONLY.



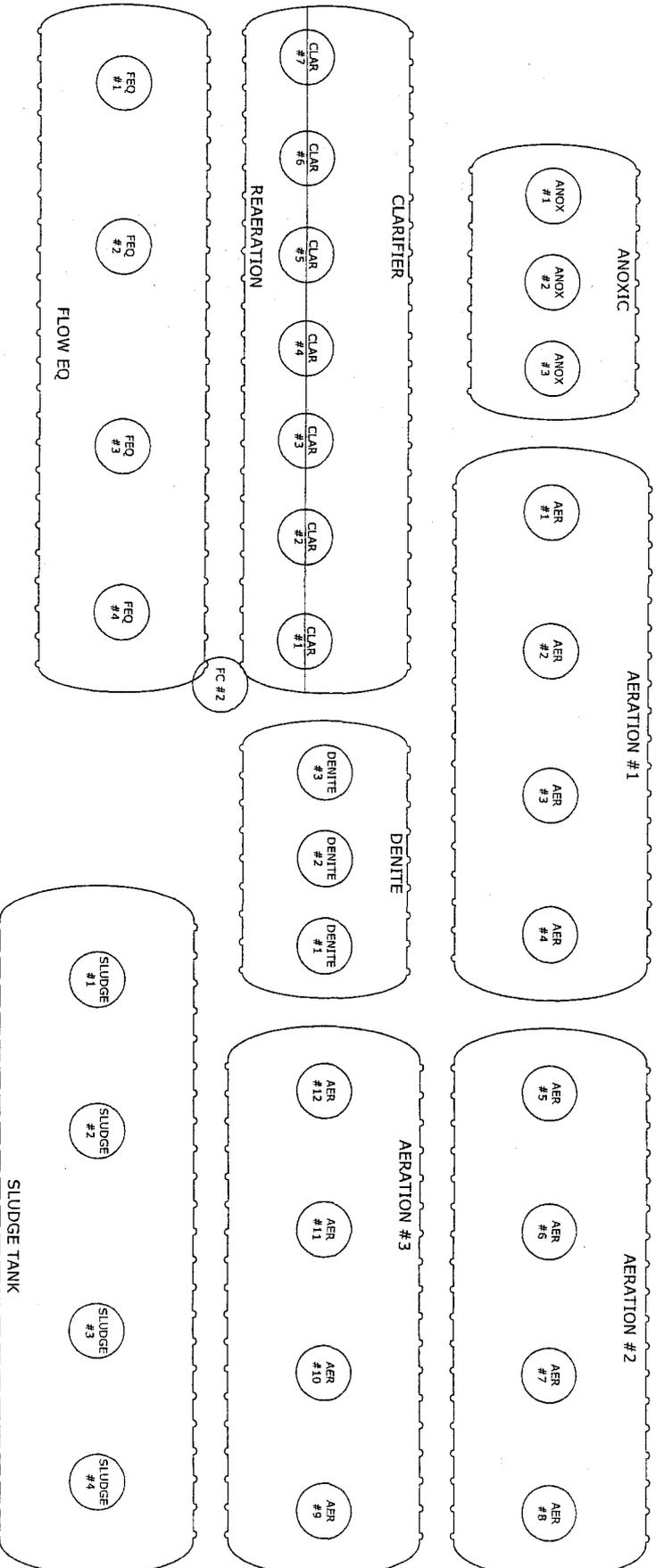
LINKS AT COYOTE WASH EXPAN.
WELLTON, ARIZONA

PROCESSED FLOW DIAGRAM

Santec
SANTEC CORPORATION
CASTLE ROCK, COLORADO
PHONE: 303.860.9211 FAX: 303.860.2100

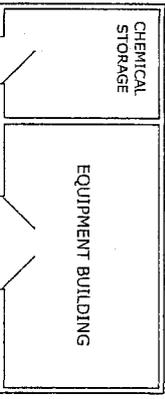
DATE: 1-24-08
DRAWN BY: NAVW
CHECKED BY: NAVW
SHEET # 5

TANK SCHEDULE			MANWAY SCHEDULE				
VESSEL	LENGTH	DIA.	VOLUME	MANWAY S ON	LENGTH	DIA.	QUANTITY
FLOW EQ	50'-0"	12'-0"	35,766 GAL	FLOW EQ	3'-0"	4'-0"	4
ANOXIC #1	26'-0"	12'-0"	13,966 GAL	ANOXIC	1'-6"	4'-0"	3
ANOXIC #2	26'-0"	12'-0"	13,966 GAL	ANOXIC #1	2'-0"	4'-0"	4
ANOXIC #3	26'-0"	12'-0"	13,966 GAL	ANOXIC #2	2'-0"	4'-0"	4
DENITE	26'-0"	12'-0"	15,066 GAL	DENITE #1	3'-0"	4'-0"	3
REGENERATION	50'-0"	12'-0"	17,770 GAL	DENITE #2	3'-0"	4'-0"	3
CLARIFIER	50'-0"	12'-0"	24,512 GAL	CLARIFIER	3'-0"	4'-0"	4
SLUDGE	50'-0"	14'-0"	55,744 GAL	FC #2	2'-0"	4'-0"	1



NOTES: FOR TANK CROSS-SECTION DETAILS,
SEE SANTEC STANDARDS SECTION

VESSEL AND MANWAY SCHEDULE



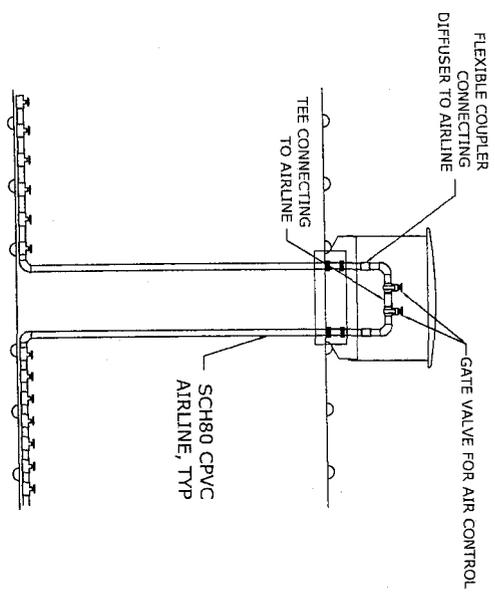
0 8 16 24
SCALE: 1 in = 8'

LINKS AT COYOTE WASH EXPAN.
VESSEL AND MANWAY SCHEDULE

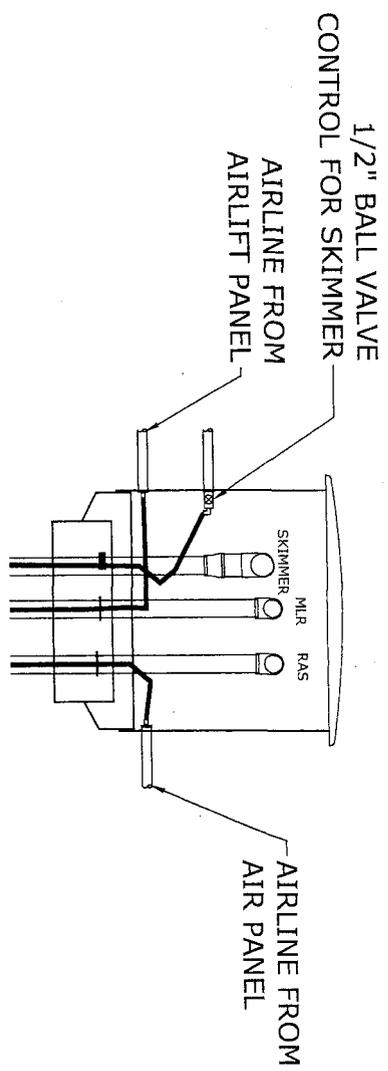
Santec
SANTEC CORPORATION
CASTLE ROCK, COLORADO
PHONE: 303.680.5811 FAX: 303.680.2180

DATE: 1-24-06
DRAWN: NAVJ
CHECKED: REV 10
SHEET: 6

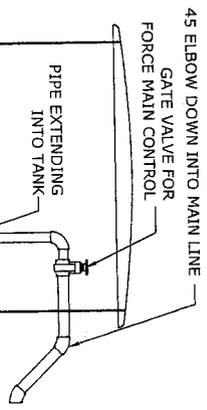
DIFUSER AIRLINE DETAIL N.T.S.



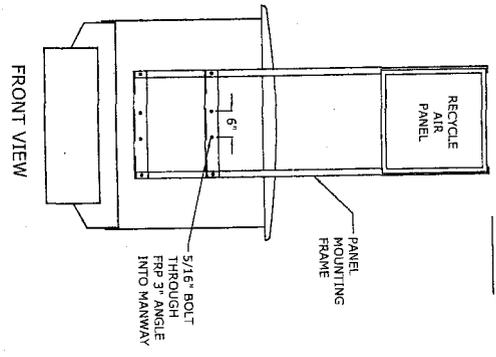
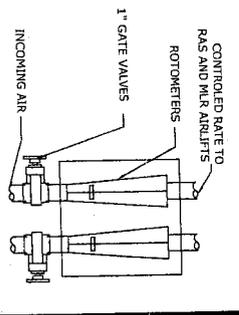
CLARIFIER AIRLINE DETAIL N.T.S.



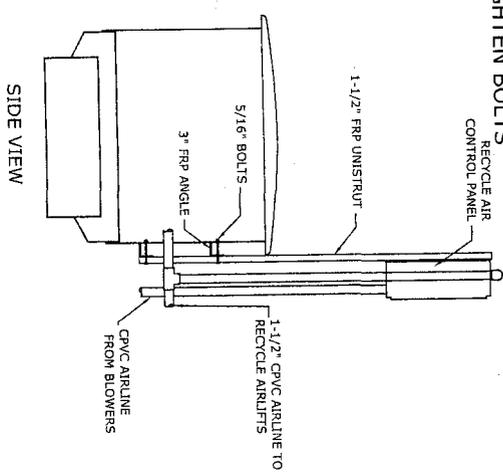
FORCE MAIN DETAIL N.T.S.



AIR PANEL DETAIL



- MOUNTING AIR PANEL**
- STEP 1: DRILL HOLES FOR 5/16" BOLTS THROUGH ANGLE AND INTO MANWAY
 - STEP 2: PLACE BOLTS THROUGH HOLES AND PUT NUTS ON INSIDE OF MANWAY
 - STEP 3: LEVEL PANEL AND TIGHTEN BOLTS



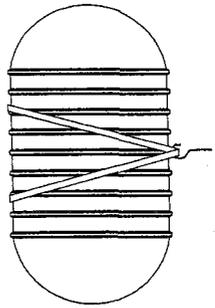
AIRLINE/FORCE MAIN DETAIL

CONSTRUCTION DETAILS

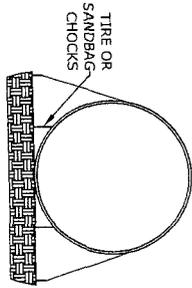
Santec
 SANTEC CORPORATION
 CASTLE ROCK, COLORADO
 PHONE: 303.660.9211 FAX: 303.660.2190

DATE	8-18-05
DRAWN BY	NAV
CHECKED BY	
SHEET #	CD9

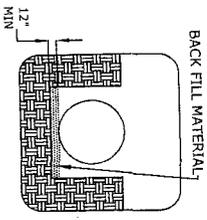
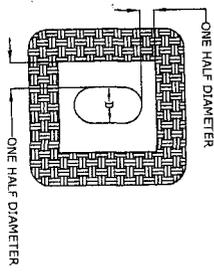
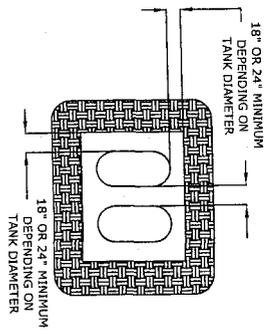




LIFTING:
Use a crane or other appropriate lifting equipment to move or lift the treatment tank(s). Always use nylon straps that reach completely around each tank or ALL lifting lugs if applicable. Guide the tank(s) with guidelines. Do NOT use chains or cables around the tank(s). Tank(s) should NOT be dropped, rolled or impacted.



TIRE OR SANDBAG CHOCKS



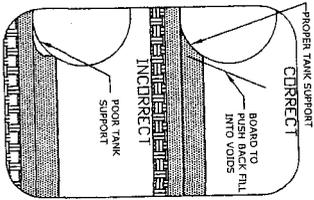
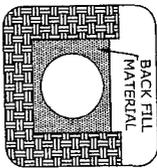
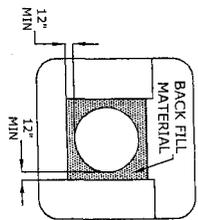
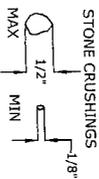
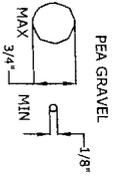
CHOCK TANKS:
Tank(s) should be set on smooth ground. Use of chocks and design objects for the tank(s) until ready for installation and then down if winds are expected. Use minimum 1/2" diameter nylon or hemp rope over each tank end and tie to wooden stakes of adequate size.

STABLE WALLS:
Stable walls are those which normally can be made vertical from bed to grade without use of shoring or sheet piling.

g. Diameter tanks: - Hole must be large enough to allow a minimum of 18" from ends and sides of tanks to hole walls and a minimum of 18" between tanks at the ribs.
10" and 12" Diameter tanks: - Hole must be large enough to allow a minimum of 24" from ends and sides of tanks to hole walls and a minimum of 24" between tanks at the ribs.

UNSTABLE WALLS:
Unstable walls are those with soils having less than 750 pcf cohesion as calculated from an unconfined compression test, or soils with an ultimate bearing capacity of less than 3,500 psf. A qualified soil testing laboratory can provide data and recommendations. Hole must be large enough to allow a minimum of one half the tank diameter from ends and sides of tank(s) to hole walls. Spacing between tanks is the same as for stable walls.

BURIAL DEPTH AND COVER:
Hole must be deep enough to (1) provide for a minimum bed of 12" of back fill material at the hole bottom and (2) place the tank(s) at the elevation specified on the Santeq drawing "Hydraulic Profile".
Cover depth should be a minimum of 24" over the crest of the tank(s). Finished grade over the tank(s) should not be less than the surrounding grade level. Manway riser extensions are available from Santeq. Do NOT allow equipment or traffic to drive over treatment tank(s).



BED AND BACK FILL MATERIAL:
The backfill material surrounding a tank is a critical part of a fiberglass tank installation.

The tank(s) should be surrounded by a 12" minimum layer of washed, dry and free flowing back fill material conforming to ASTM C-33 para. 9.1, sizes 6 through 8. No more than 5% (by weight) of the material may pass through a #8 sieve.

Pea gravel (recommended): - A mix of rounded aggregate with particle sizes not less than 1/8" nor more than 3/4" in diameter.

Stone or gravel crushings (alternative): - A mix of angular aggregate with particle size not less than 1/8" nor more than 1/2" in diameter.

Do NOT use other materials. The tank warranty is voided if other than approved (above) bed and back fill materials are employed without written approval from Santeq Corporation.

FILLING OF TANKS:
Do NOT fill tank(s) until back fill material has been brought to the tops of the tank(s). Never add water for hold down in dry hole conditions until the back filling is complete.

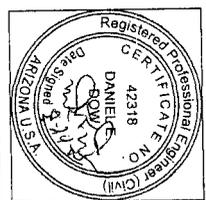
DRY HOLE INSTALLATION:
Once the hole has been placed at the proper elevation on the minimum 12" of correct bedding material, tank can be back filled to the top of the tank. Back fill should be free of large rocks, debris or foreign materials. As tank is back filled care must be taken to ensure that back fill is pushed completely around the tank, especially under the tank bottom, between ribs and under the end caps. There should be no voids between the tank and back fill. A board or similar device should be used to push back fill under the tank.

CAUTION: - Do NOT place tank(s) directly on concrete slab or grout tank(s) in wet concrete. Do NOT place tank(s) on timbers, beams or cradles.
Unanchored tank(s) installed with back fill to the top of the tank(s), should be filled with water as ballast. Do NOT put water in tank(s) before back fill material is even with the top of the tank(s).

INSTALLATION INSTRUCTIONS

Fiberglass underground tanks must be installed according to these instructions and NFPA 30 and 31. Local codes may apply and should be consulted. Failure to follow these installation instructions will void the warranty and may result in tank failure. Proper installation of fiberglass underground tanks helps to prevent tank damage and insures long term corrosion proof service. It is imperative to read, understand and follow these instructions. Fiberglass underground tanks require the back fill material to provide as much as 90% of the tank support under certain stress conditions. The installing contractor must use the correct bed and back fill material and follow these instructions. For questions contact:

SANTEQ CORPORATION
220 WALBU STREET
CASTLE ROCK, CO 80109
(303) 660-9211

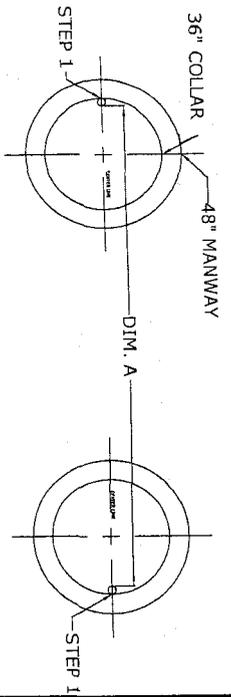


TANK INSTALLATION 1 CONSTRUCTION DETAILS

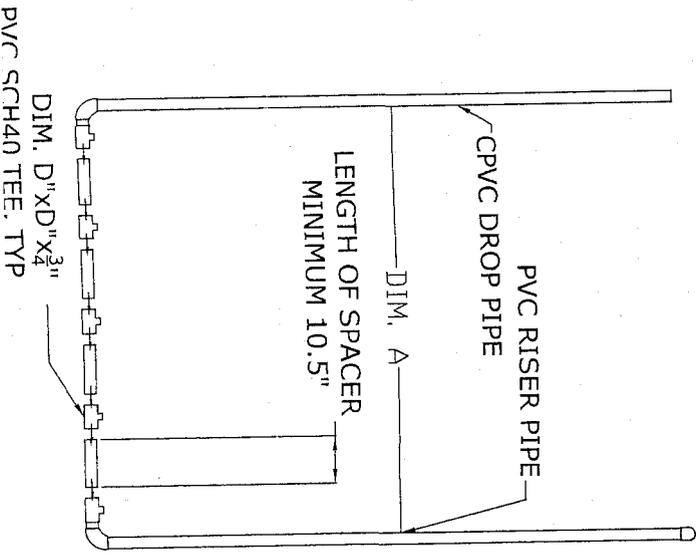
Santeq
SANTEQ CORPORATION
CASTLE ROCK, COLORADO
PHONE: 303.660.9211 FAX: 303.660.2190

DATE:	5-16-95
DRAWN BY:	NAVY
REVIEW:	
SCALE:	CD110

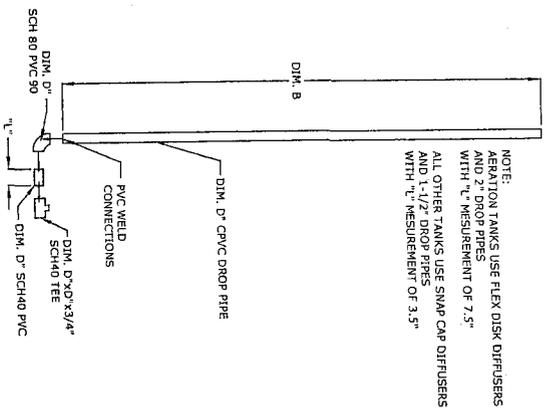
STEP 1: MEASURE DISTANCE BETWEEN OUTER EDGE OF 36" COLLARS



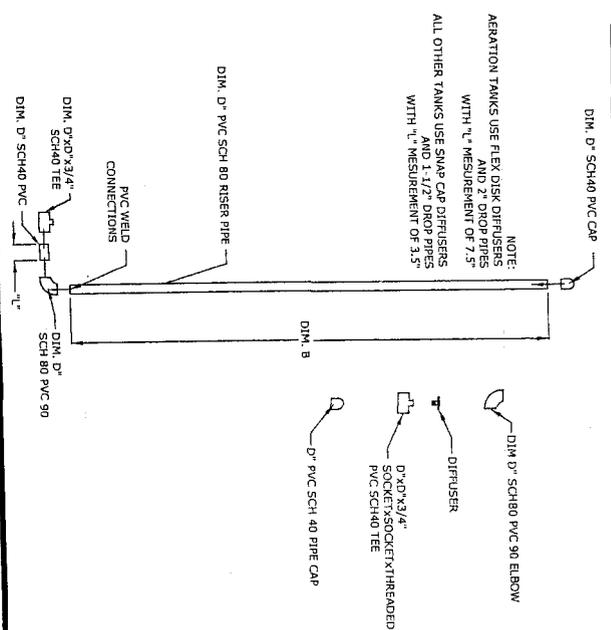
STEP 4: EQUALLY SPACE REMAINING DIFFUSERS ON DIFFUSER MANIFOLD MAINTAINING DIM "A"



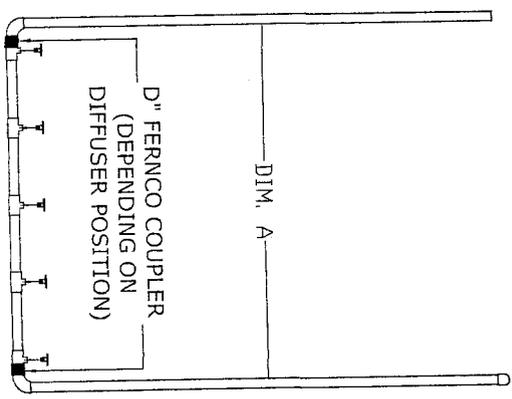
STEP 2: BUILD PVC DROP PIPE



STEP 3: BUILD PVC SCH 80 RISER PIPE



STEP 5: SCREW DIFFUSERS INTO MANIFOLD NOTE: ALLOW DRYING TIME BEFORE INSTALLING



NOTE: IF DIFFUSER BANK WILL BE PLACED ON BOTTOM OF TANK, ADD 1 FOOT TO LENGTH OF DIFFUSER DOWN AND RISER AND PLACE FERNCOS ON BOTTOM OF BANK



TANK DIAMETER	PIPE DIA.	PIPE LENGTH
8' DIA.	1-1/2"	8'
8' DIA.	2"	8'
10' DIA.	1-1/2"	10'
10' DIA.	2"	10'
12' DIA.	1-1/2"	12'
12' DIA.	2"	12'
14' DIA.	1-1/2"	14'
14' DIA.	2"	14'

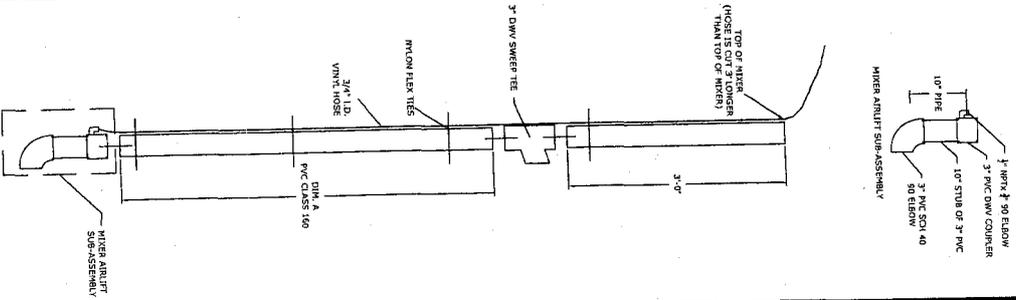
DIFFUSER MEASUREMENT

CONSTRUCTION DETAILS

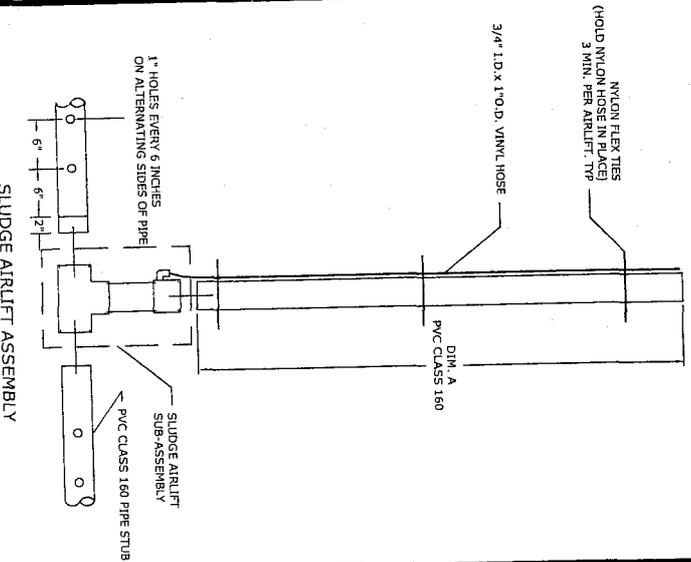
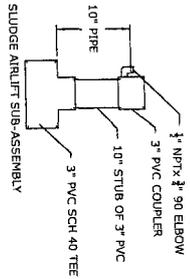
Sanitec
 SANITEC CORPORATION
 CASTILE ROCK, COLORADO
 PHONE: 303.860.9211 FAX: 303.860.2140

DATE: 8.16.05
 DRAWN BY: NAW
 CHECKED BY: NAW
 PROJECT: CD1

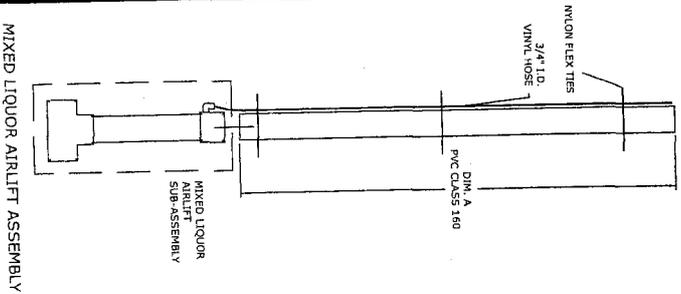
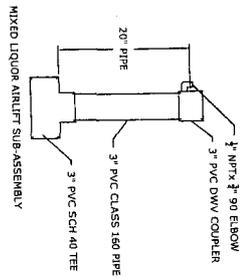
TANK DIA	DIM A
8' DIA	5'-0"
10' DIA	6'-6"
12' DIA	9'-0"



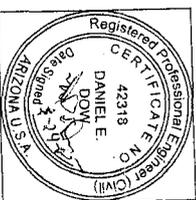
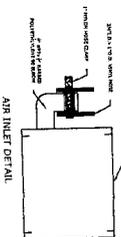
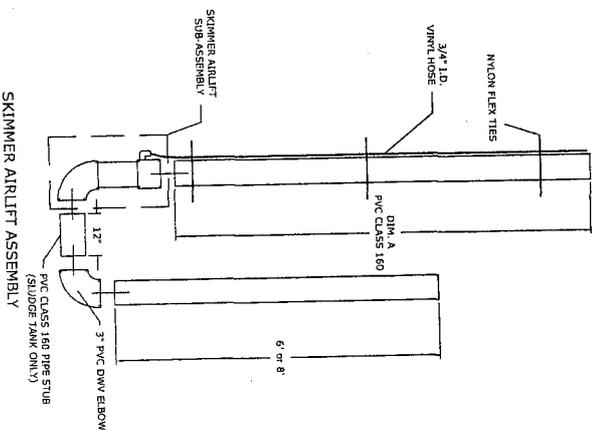
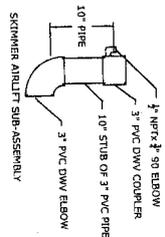
TANK DIA	DIM A
8' DIA	8'-0"
10' DIA	10'-0"
12' DIA	12'-0"



TANK DIA	DIM A
8' DIA	7'-2"
10' DIA	9'-2"
12' DIA	11'-2"



TANK DIA	DIM A
8' DIA	8'-0"
10' DIA	10'-0"
12' DIA	12'-0"



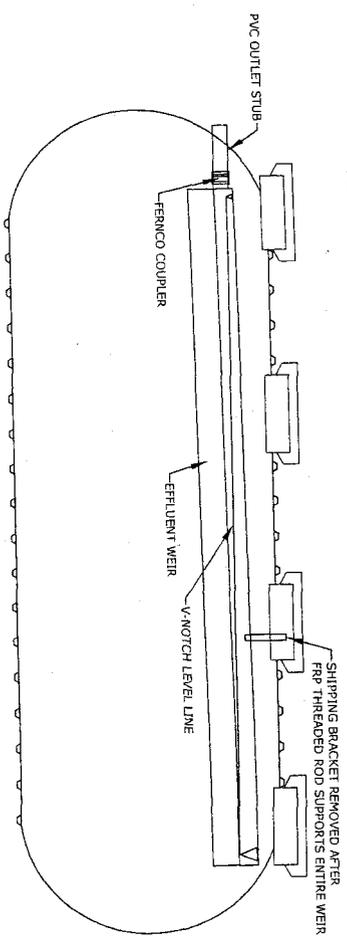
AIRLIFT CONSTRUCTION

CONSTRUCTION DETAILS

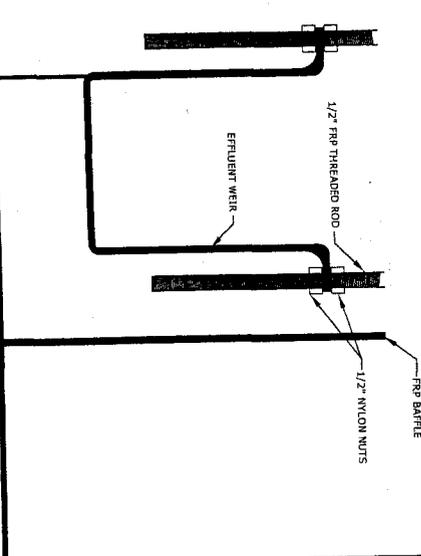

Santec
 SANTEC CORPORATION
 CASTLE ROCK, COLORADO
 PHONE: 303.860.9211 FAX: 303.860.2180

DATE	8-16-05
REV	NAW
DRAWN BY	NAW
CHECKED BY	NAW
PROJECT #	CD3

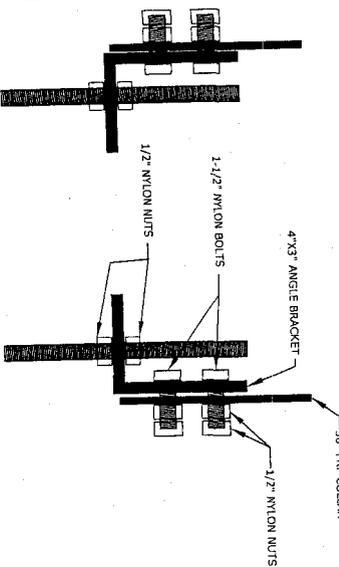
STEP 1: ATTACH/ TIGHTEN FERRENCO ON OUTLET END



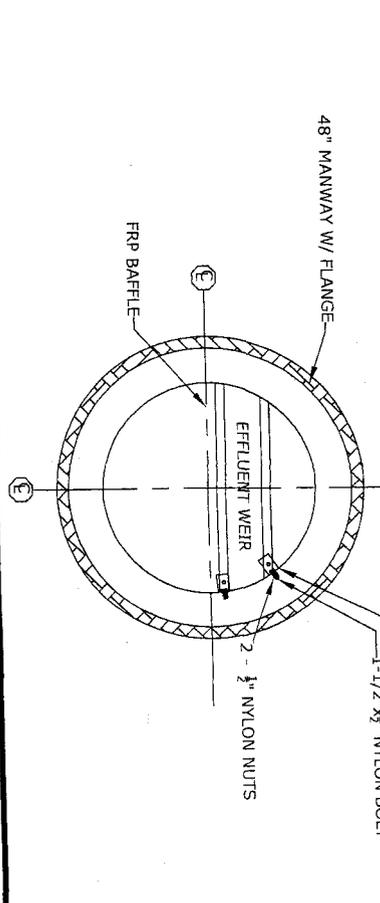
STEP 4: MOUNT WEIR SUPPORT AND TIGHTEN



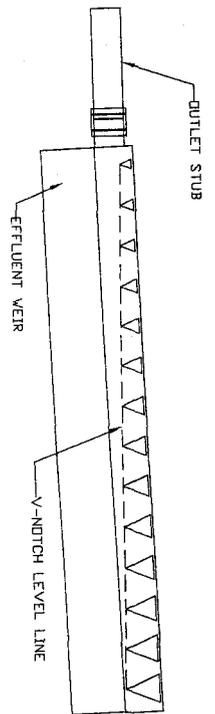
STEP 5: MOUNT WEIR BRACKETS AND TIGHTEN



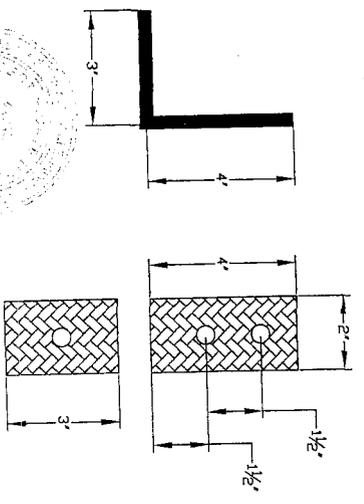
STEP 2: DRILL MOUNTING HOLES IN WEIR
STEP 3: MOUNT AND DRILL SUPPORT BRACKET FLUSH W/ 3/8" COLLAR TOP



- STEP 6: LEVEL WEIR FROM SIDE TO SIDE
- STEP 7: REPEAT FOR ALL MANWAYS EXCEPT OUTLET STUB MANWAY
- STEP 8: LEVEL V-NOTCHES FROM END TO END (SHOULD BE 5-1/2" BOTTOM OF WEIR DIFFERENCE)



4" x 3" x 2" x 3/8" ANGLE BRACKET

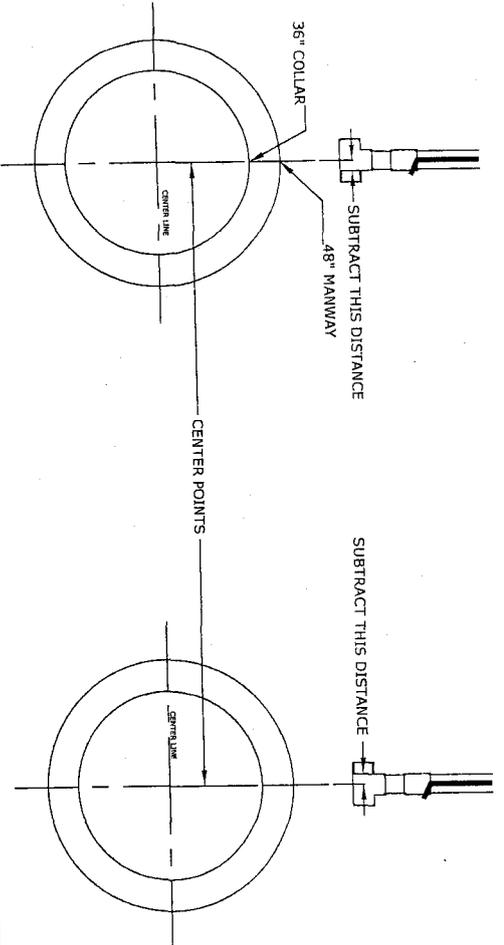


MOUNTING WEIR
 THE CLARIFIER
 CONSTRUCTION DETAILS

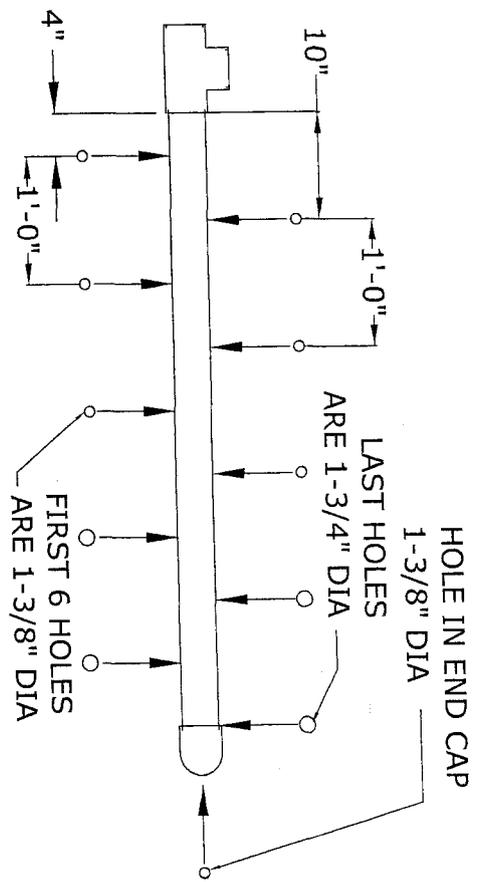
Santec
 SANTEC CORPORATION
 CASTLE ROCK, COLORADO
 PHONE: 303.850.5211 FAX: 303.850.2180

DATE: 8-18-05
 DRAWN BY: NAV
 SHEET: CDS

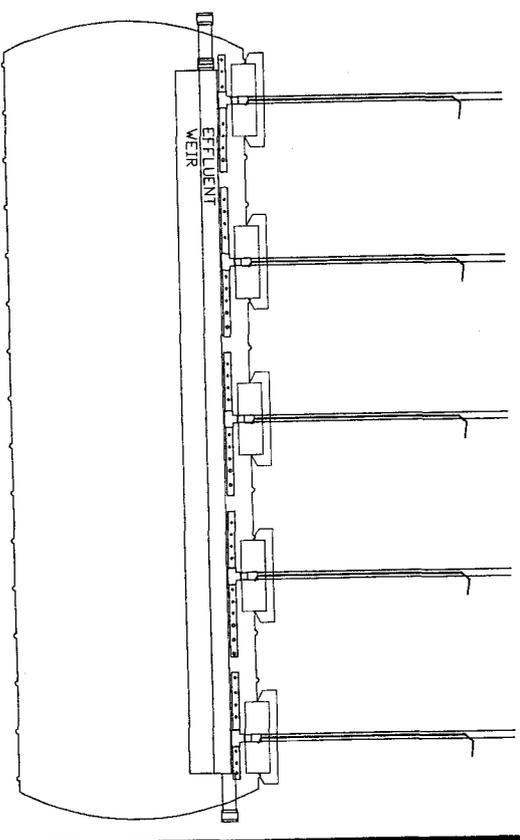
STEP 1: MEASURE DISTANCE BETWEEN CENTER POINTS OF AIRLIFTS. SUBTRACT DISTANCE FROM CENTER OF TEE TO START OF SOCKET TO FIND LENGTH OF MANIFOLD



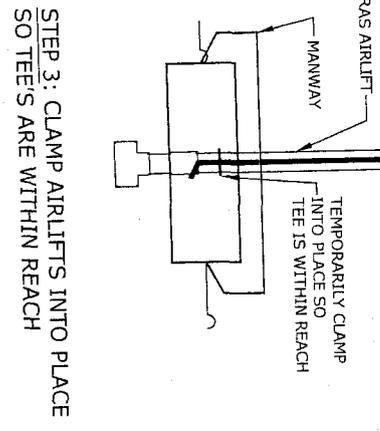
STEP 2: CUT MANIFOLD AND DRILL HOLES ON ALTERNATING SIDES EVERY 6" AS SHOWN BELOW CAP THE END MANIFOLDS AND DRILL A 1" HOLE IN THE END



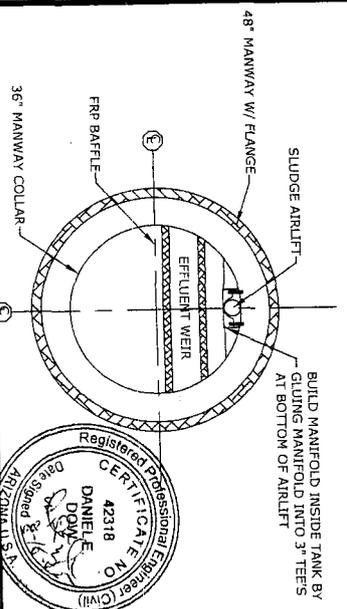
STEP 4: GLUE MANIFOLDS INTO TEES WITH HOLES ON THE SIDES.



STEP 5: ALLOW DRY TIME AND THEN LOOSEN CLAMPS AND LOWER INTO BOTTOM OF V IN THE TANK



STEP 3: CLAMP AIRLIFTS INTO PLACE SO TEES ARE WITHIN REACH



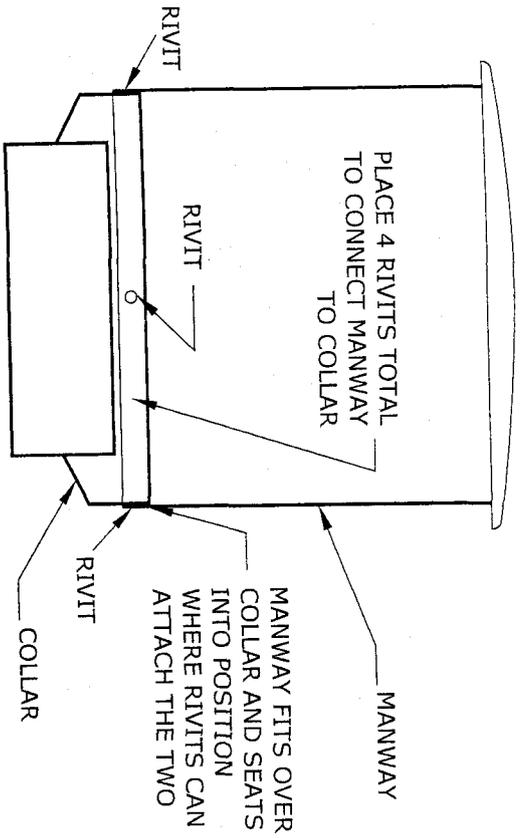
RAS MANIFOLD CONSTRUCTION
THE CLARIFIER
CONSTRUCTION DETAIL

Santec
SANTEC CORPORATION
CASTLE ROCK, COLORADO
PHONE: 303.660.2271 FAX: 303.660.2180

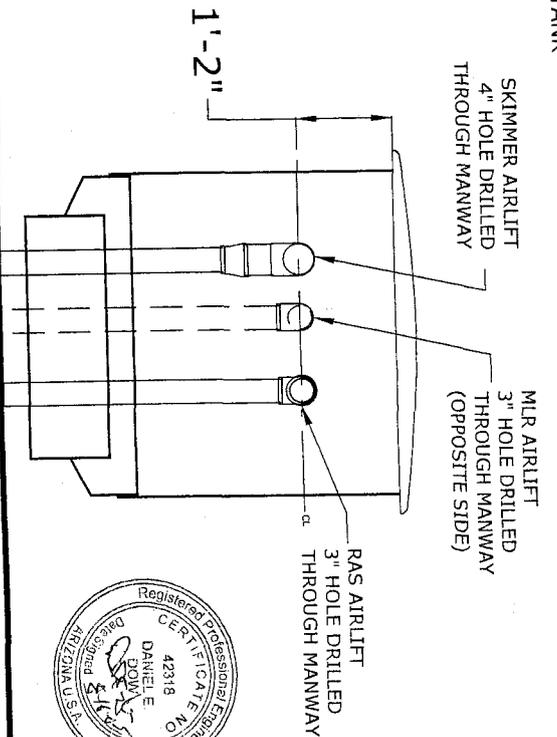
6-16-05
REV: 37 NAV
CDP



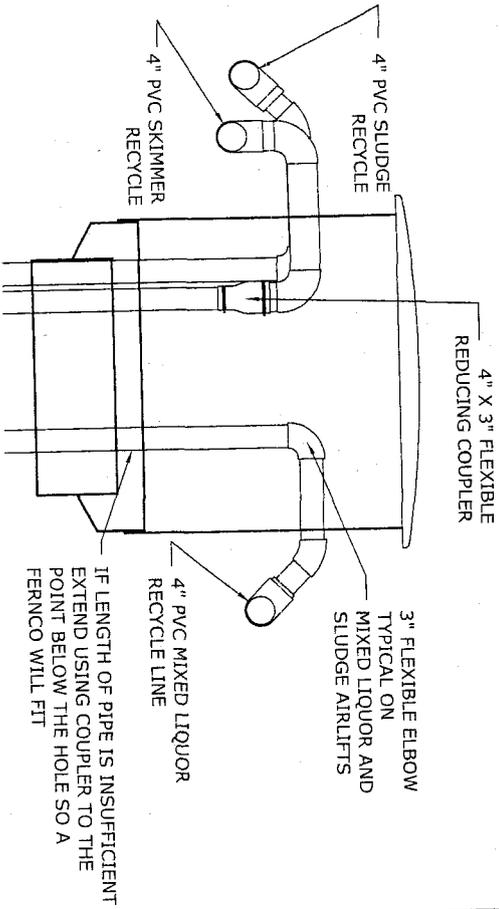
STEP 1: DRILL AND RIVET THE MANWAY IN 4 PLACES TO THE COLLAR



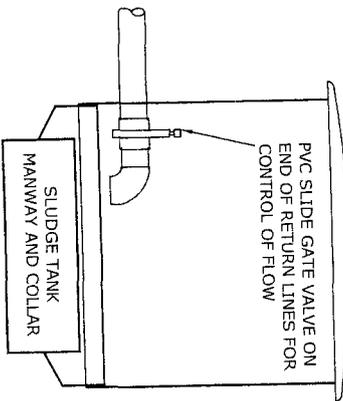
STEP 2: DRILL HOLES IN MANWAY 14" DOWN FROM FLANGE. LINE HOLES UP WITH AIRLIFTS INSIDE AND PERPENDICULAR TO THE TANK



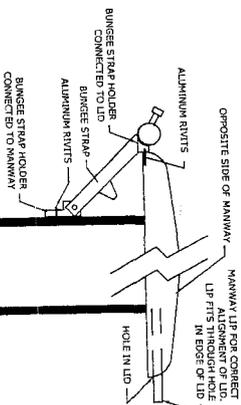
STEP 3: EXTEND AIRLIFTS IF NEEDED AND USE FLEXIBLE 90 ELBOW'S TO CONNECT TO PIPE RUNNING OUT OF MANWAY



STEP 4: PLACE SLIDE GATE VALVES ON END OF RECYCLE LINES WITH PVC 90 ELBOWS TO DIRECT THE FLOW DOWN INTO THE TANK



STEP 5: ATTACH BUNGEEES TO LID AND MANWAY FOR SECURING LID. ATTACH BUNGEE ON OPPOSITE SIDE OF MANWAY LIP



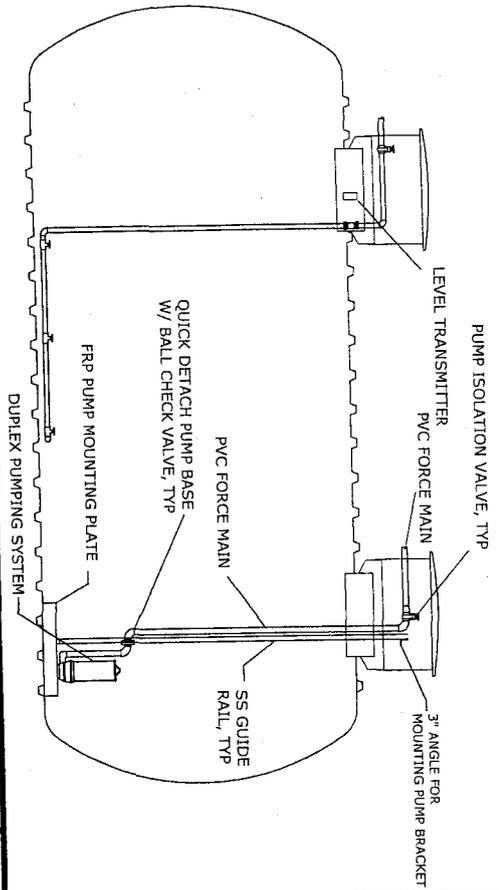
INSTALLING MANWAYS

CONSTRUCTION DETAILS

SanTec
 SANTEC CORPORATION
 CASTLE ROCK, COLORADO
 PHONE: 303.960.9211 FAX: 303.660.2180

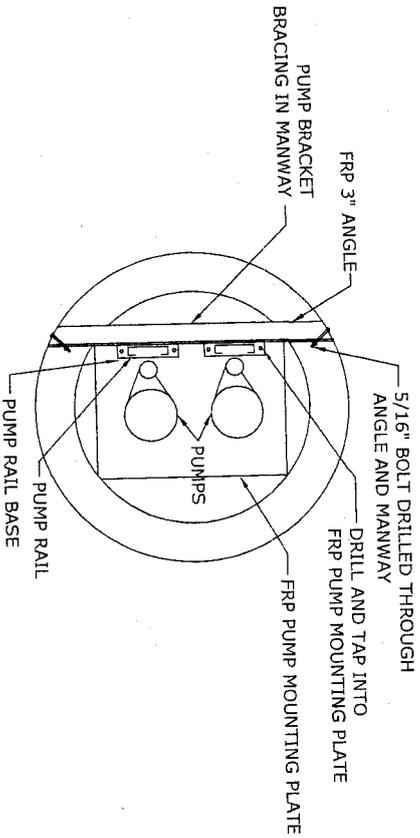
DATE	8-16-05
DRAWN BY	NAV
REV	
SHEET #	CD7

EXAMPLE FLOW EQ TANK WITH BREAK AWAY RAILS FOR PUMPS. ALSO SHOWING ELECTRICAL PANEL AND DIFFUSERS

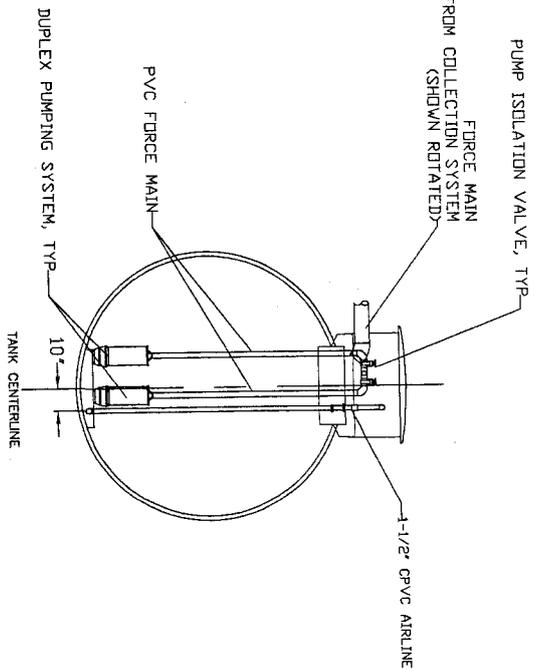


MOUNTING BREAK AWAY PUMP BRACKETS

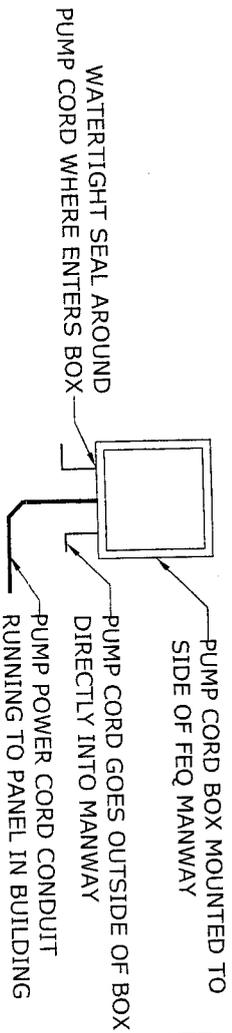
STEP 1: MOUNT FRP BRACING INSIDE MANWAY SO THAT PUMPS WILL BE CENTERED
 STEP 2: MOUNT BREAK AWAY RAILS TO BRACE
 STEP 3: PUMP RAILS AND DRILL AND TAP BOTTOM OF RAIL INTO PUMP MOUNTING PLATE



TYPICAL CROSS SECTION OF FLOW EQ TANK SHOWING WATER LEVEL PUMP SETTINGS



TYPICAL PUMP CORD BOX MOUNTED TO SIDE OF MANWAY



SanTec
 SANTED CORPORATION
 CASTLE ROCK, COLORADO
 PHONE: 303.660.9211 FAX: 303.660.2180

FLOW EQ CONSTRUCTION
 FLOW EQ TANK
 CONSTRUCTION DETAILS

DATE	5-16-05
DRAWN BY	NAVJ
REV	
SHEET #	CDP

INSTALLATION INSTRUCTIONS

Fiberglass underground tanks must be installed according to these instructions and NFPA 30 and 31. Local codes may apply and should be consulted. Failure to follow these installation instructions will void the warranty and may result in tank failure. Proper installation of fiberglass underground tanks helps to prevent tank damage and insures long term corrosion proof service. It is imperative to read, understand and follow these instructions. Fiberglass fill underground tanks require the back fill material to provide as much as 90% of the tank support under certain stress conditions. The installing contractor must use the correct bed and back fill material and follow these instructions. For questions contact:

SANTEC CORPORATION
 220 MALIBU STREET
 CASTLE ROCK, CO 80109
 (303) 660-9211



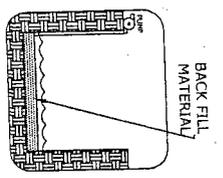
TANK INSTALLATION 2

CONSTRUCTION DETAILS

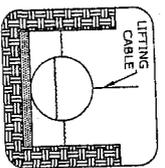
DATE	B-16-05
DESIGNED BY	NAW
CHECKED BY	NAW
PROJECT #	CD11



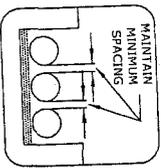
SANTEC CORPORATION
 CASTLE ROCK, COLORADO
 PHONE: 303.660.9211 FAX: 303.660.7160



WET HOLE INSTALLATION
 Anchoring is recommended in clay, if high water table exists or if high water conditions could develop after tank installation.
 Water level in the hole should be maintained at the lowest practical level during installation. A system of well points and pumps is the recommended method to minimize water level in the hole. The number of well points required will depend on the water flow rate into the hole. The hole bottom should be level, free of rocks and debris, and covered with at least one foot of recommended back fill material.

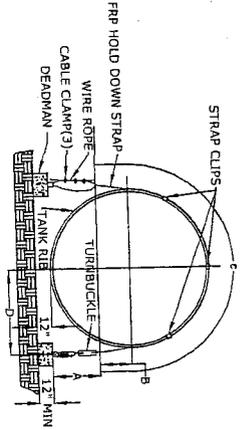


BALLAST:
 Clean water only should be used to ballast tank(s). Place tank(s) in the hole, adding only enough ballast to sink it. Ballast level in hole must NEVER exceed water level. In hole during installation while adding ballast, use lifting cable to keep tank in position. The lifting cable must be carefully tended. Do NOT place tank(s) on timbers, beams or cradles.

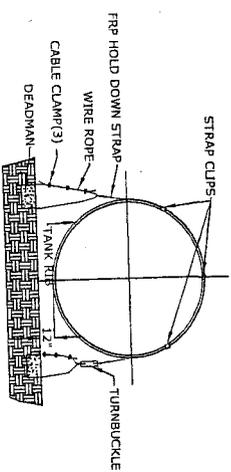


LEVEL TANKS:
 While leveling tank(s), insure that minimum distance between tanks are maintained, and that piping is properly aligned.

FINAL GRADE:
 Back fill procedure should be the same as described for dry hole. Care should be taken to ensure there are no voids between the tank(s) and the back fill. Excavation should be brought to grade with top of surface water away from the system. The site can be landscaped as desired.



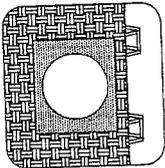
TANK DIA	DIM A	DIM B	DIM C MIN	DIM C MAX	DIM D
8"	31"	15"	52"	58"	15'-1"
10"	45"	15"	69"	75"	18'-8 3/4"
12"	50"	23"	87"	93"	22'-6 3/4"



ANCHORING:
 Use fiberglass hold down straps on top of all designated tank ribs. See Santec tank drawings or contact Santec Corporation for anchor points at bottom of hole must be aligned with designated ribs to within +/- one inch. Do not use straps or cables between ribs of tank(s). All straps should be tightened to give "snug" fit of straps to tank.

DEADMEN:
 Deadmen should be designed so that the weight of the deadmen combined by the weight of the back fill over the deadmen and the tank, is more than enough to counteract the buoyant force on the tank should the tank be empty at the time of a high water condition. The deadmen should contain steel bolts for tank strap attachment in the locations described in the design. Consult the project engineer for the deadmen design.

BARRICADE:
 If future work is to be performed in the vicinity of the plant, mark the location of the treatment tank(s) well so that equipment is not run over the tank(s) or piping.



STATEMENT OF QUALIFICATIONS

Santec Corporation

COMPANY INFORMATION

Established in 1987, Santec Corporation provides full service wastewater treatment solutions from project inception to performance evaluation. Headquartered in Castle Rock, Colorado, Santec has completed over 200 wastewater treatment projects in 22 U.S. states and the Caribbean and compiled more than 75 years of aggregate staff experience on wastewater projects.

KEY PERSONNEL

John W. Clingman, President

Mr. Clingman provides construction oversight and management for all installation services. With over 30 years experience in the installation of small wastewater treatment facilities, Mr. Clingman's expertise ensures quality installations.

Dwight L. Zemp, Vice-President

Mr. Zemp provides operational oversight and assistance for all wastewater customers with Santec Corporation facilities. As a licensed operator himself, Mr. Zemp ensures that the facility design is compliant with the needs of on-site operators.

Daniel E. Dow, Project Manager

Mr. Dow provides design, engineering and permitting services for all Santec Corporation facilities. As a registered civil engineer in AZ, Mr. Dow ensures facility designs meet the requirements of permitting authorities.

AZ RECENT PROJECT LIST

Recent projects completed with the above Key Personnel in Arizona.

FLAGSTAFF MEADOWS PHASE 2	.1 MGD	Bellefont, AZ	2004
VERDE SANTA FE PHASE 2	.1 MGD	Cornville, AZ	2005
CROSS CREEK RANCH	.02 MGD	Sedona, AZ	2004
BENSCH RANCH	.056 MGD	Mayer, AZ	2003
LINKS AT COYOTE WASH	.068 MGD	Wellton, AZ	2003

Contractor

On all projects, Santec corporation hires one or more sub-contractors to do part of the work necessary for the installation of the wastewater treatment plant. Qualified licensed sub-contractors are hired to do the following work:

- Excavate hole, set tanks at correct elevations and backfill
- Bring water, electricity, and phone to site
- Build a WWTP building
- Site preparation and final cleanup
- Concrete work

The sub-contractor hired to do the work must be trained in safety concerning the specific area of work. Each sub-contractor must be able to show that they have experience in their specific field and are able to the job presented. A field inspector from Santec will check work done at certain check points as to assure that the job will be done correctly and to the specifications prepared by Santec Corporation.

Hydrologist

The hydrologist chosen for the completion of the study and report will be a registered geologist in the state of Arizona. They must show experience in the area of hydrology and have a confident knowledge of location area of study for the proposed wastewater treatment plant.

Operator

The operator of the new wastewater treatment facility will be Rick Miller. He is a grade 3 operator and therefore is qualified by certification to operate the new facility. He has many years of experience as an operator and currently operates 2 other Santec facilities.

ESTIMATE OF COSTS

Line Item	Estimated Cost	Responsible Entity
Facility Equipment	\$370,000.00	Links at Coyote Wash Utilities LLC
Facility Construction & Installation	\$80,000.00	Links at Coyote Wash Utilities LLC
Operation & Maintenance Phase 1	\$32,558/ yr	Links at Coyote Wash Utilities LLC
Operation & Maintenance Phase 1&2	\$95,788/ yr	Links at Coyote Wash Utilities LLC
Facility Decommissioning	\$40,000.00	Links at Coyote Wash Utilities LLC
Post Closure Monitoring	-----	Links at Coyote Wash Utilities LLC

¹ Per closure plan all materials to be removed from site and site remediated



APPROXIMATE SCALE
2000 0 2000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM FLOOD INSURANCE RATE MAP

YUMA COUNTY,
ARIZONA
(UNINCORPORATED AREAS)

PANEL 950 OF 1500
(SEE MAP INDEX FOR PANELS NOT PRINTED)

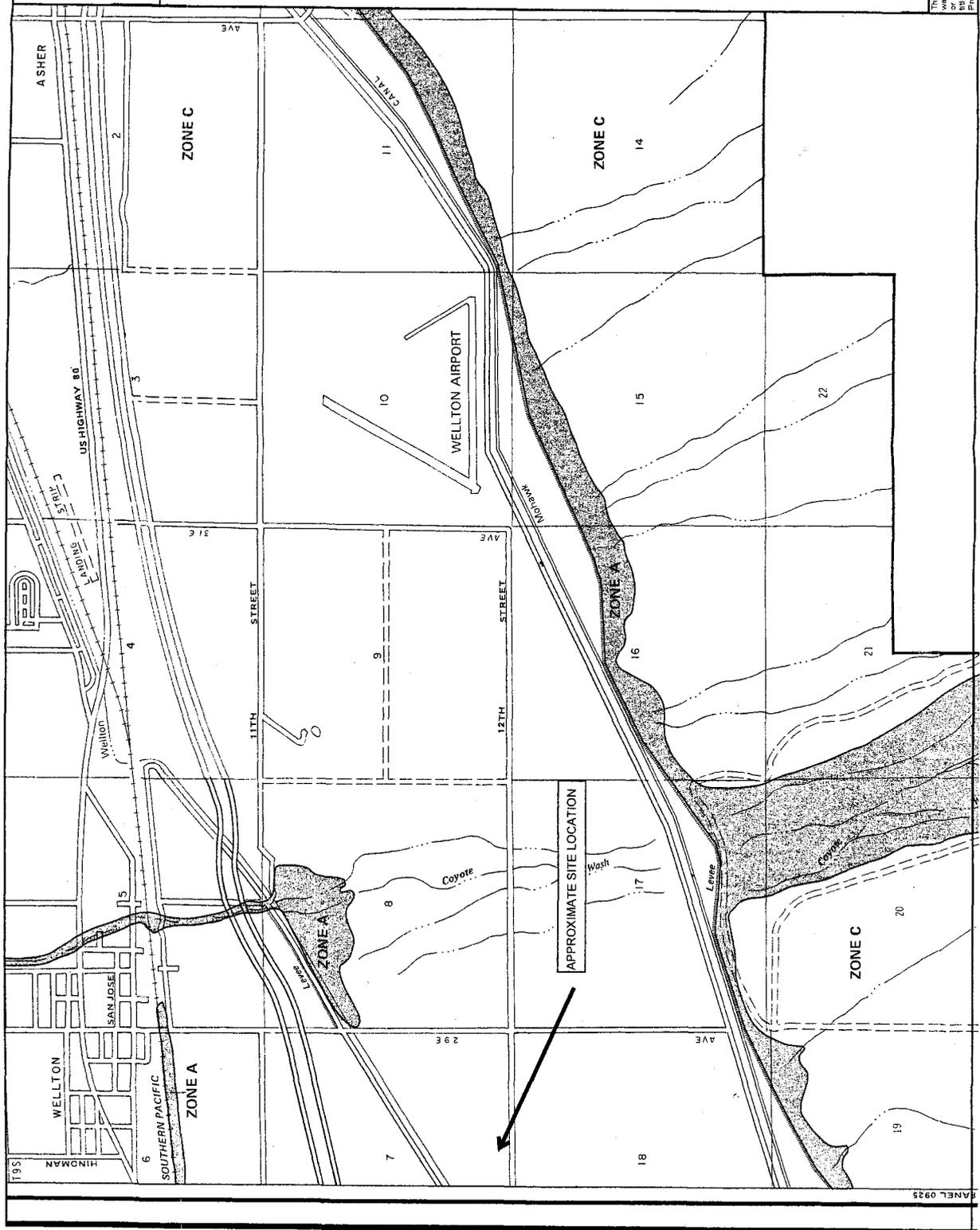
COMMUNITY-PANEL NUMBER
040099 0950 B

EFFECTIVE DATE:
DECEMBER 15, 1983



Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using FIRM software. The information on this map is current as of the date of the map or amendments which may have been made subsequent to the date on the map. For the latest product information about National Flood Insurance Program flood maps, check the FEMA Flood Map Store at www.fema.gov

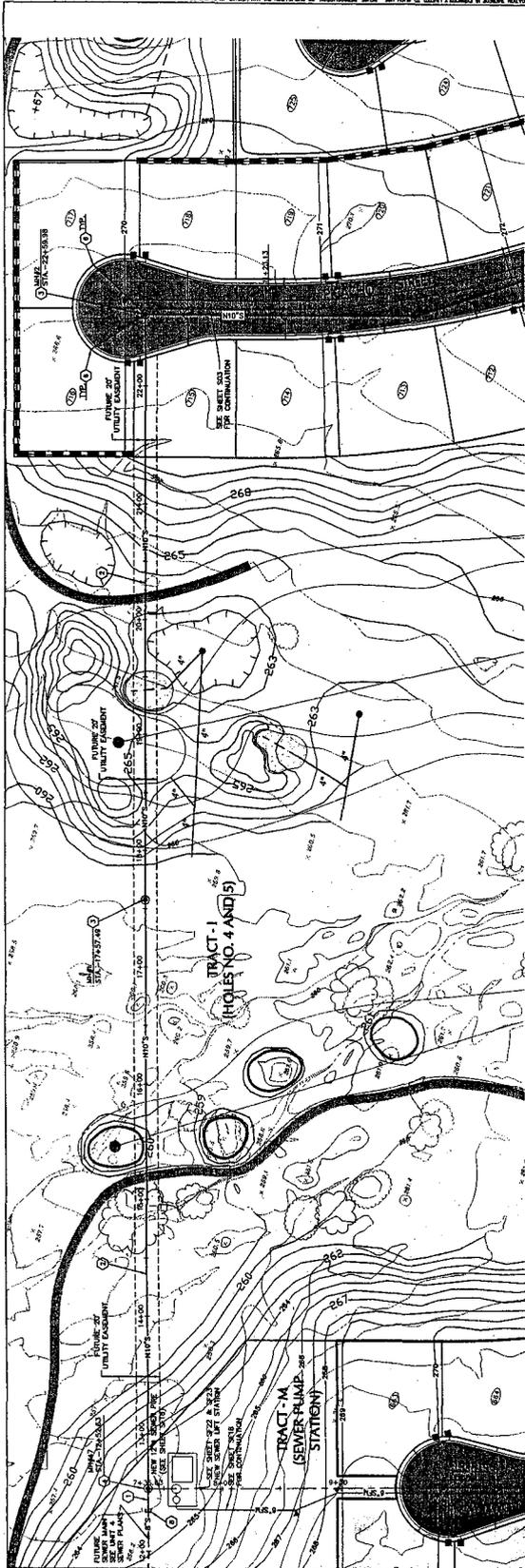


PANEL 0925

EXHIBIT

7

DETAILED PLANS
FOR UNIT 3



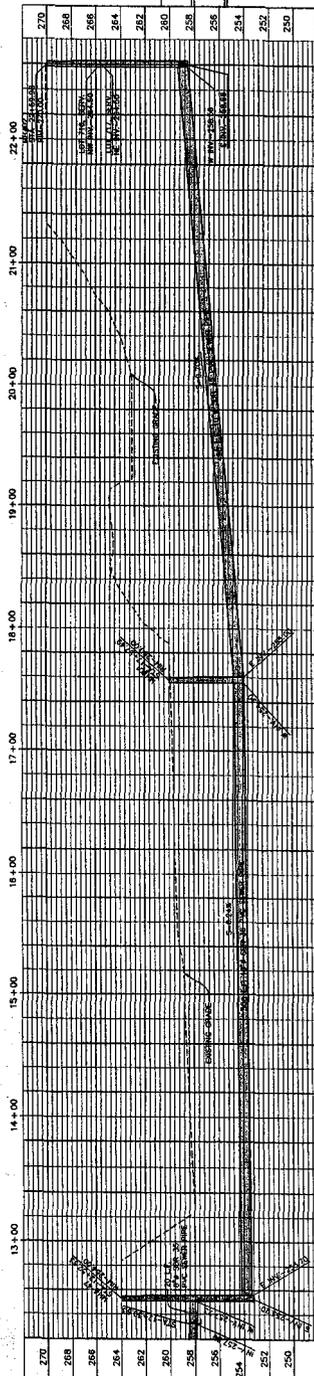
- SCHEDULE OF WORK**
- ① NEW 8" SDR 35 PVC SEWER PIPE SEE DETAIL-**(4)**
 - ② NEW 10" SDR 35 PVC SEWER PIPE SEE DETAIL-**(5)**
 - ③ NEW 4" SDR 35 PVC SEWER MANHOLE SEE DETAIL-**(6)**
 - ④ NEW 4" SDR 35 PVC SEWER CLEANOUT SEE DETAIL-**(7)**
 - ⑤ NEW 4" SDR 35 PVC SEWER SURFACE PIPE SEE DETAIL-**(8)**
 - ⑥ TYPICAL WATER AND SEWER CROSSING SEE DETAIL-**(9)**
 - ⑦ PUMP AND MARK END OF NEW SEWER STUBOUT



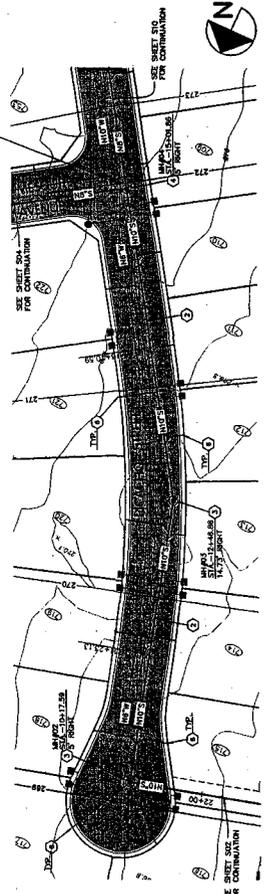
REVISED: SEPT. 30, 2005 - B.V.
 THE LINKS AT COYOTE WASH SUBDIVISION
 UNIT NO. 3 - SEWER COLLECTION SYSTEM

SCALE: AS SHOWN
 SHEET NO. 302
 DATE: 09/30/05
 DRAWN BY: JAC
 CHECKED BY: JAC
 DESIGNED BY: JAC
 SEE DET. TOP 30-33

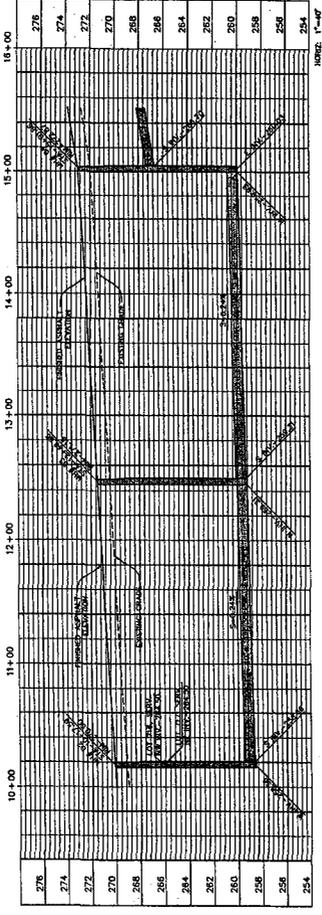
MEP
 MECHANICAL ENGINEERING
 1811 W. 10TH AVENUE, SUITE 100
 DENVER, COLORADO 80202-1001
 PHONE: 303.733.8888
 FAX: 303.733.8889
 WWW.MEP-ENG.COM



EXISTING PICACHO STREET ALIGNMENT
- STA. 31+00.00 TO 31+00.00



- SCHEDULE OF WORK:**
- 1) NEW 18" 33 PFC SINKER PIPE SEE DETAIL- (A)
 - 2) NEW 18" 33 PFC SINKER PIPE SEE DETAIL- (A)
 - 3) NEW 18" 33 PFC SINKER PIPE SEE DETAIL- (A)
 - 4) NEW 18" SINKER MANHOLE SEE DETAIL- (A)
 - 5) NEW 18" SINKER CLEANOUT SEE DETAIL- (A)
 - 6) NEW 4" 33 PFC SINKER SERVICE PIPE SEE DETAIL- (A)
 - 7) TYPICAL WREN AND SINKER CROSSING SEE DETAIL- (A)
 - 8) TOP AND MARK END OF NEW SINKER SHOOTOUT SEE DETAIL- (A)



**THE LINKS AT COYOTE WASH SUBDIVISION
UNIT NO. 3 - SEWER COLLECTION SYSTEM**

**Sanitary Sewer
Picacho Street**

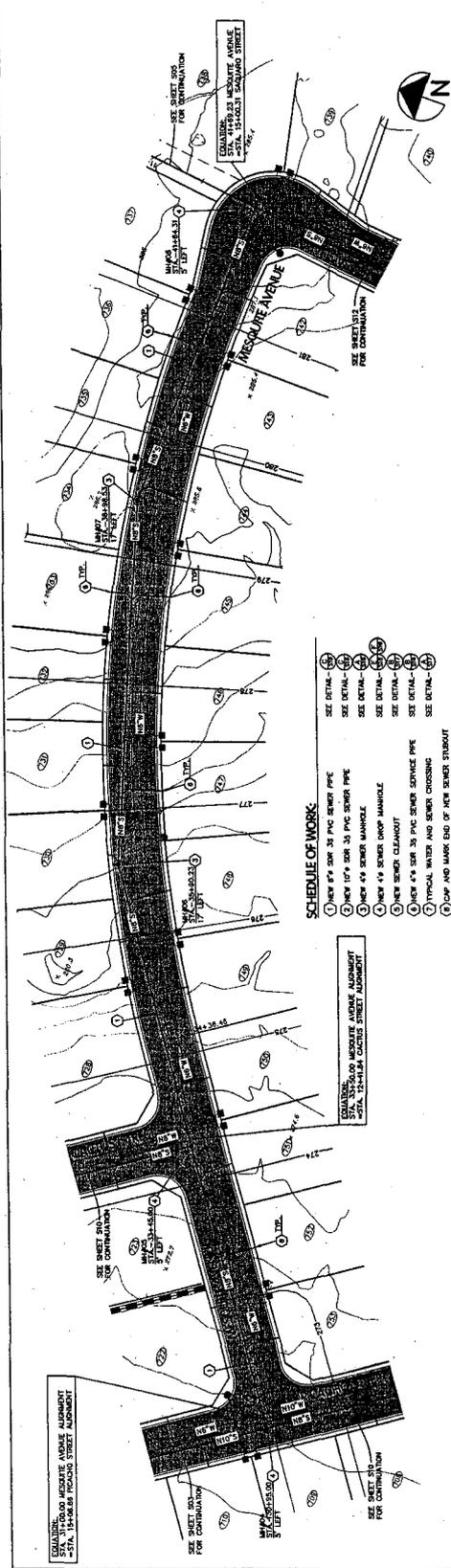
NSP

Nicklaus Engineering Inc.
1401 West 24th Street, Suite 100
Tulsa, Oklahoma 74119
(918) 436-4444

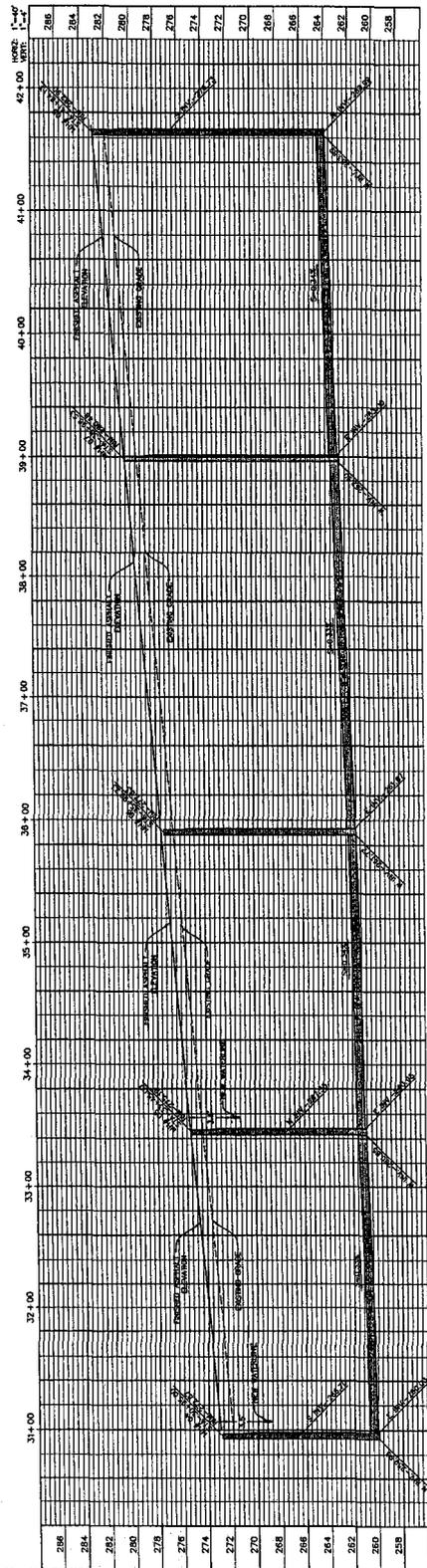
DATE: 08/24/2011
SCALE: AS SHOWN
DESIGNER: J. W. NICKLAUS
CHECKED BY: J. W. NICKLAUS
DATE: 08/24/2011

SHEET 503





- SCHEDULE OF WORKS**
- ① NEW 8" SDR 35 PVC SEWER PIPE SEE DETAIL 208
 - ② NEW 10" SDR 35 PVC SEWER PIPE SEE DETAIL 208
 - ③ NEW 4" SDR 35 PVC SEWER SERVICE PIPE SEE DETAIL 208
 - ④ NEW 4" SDR 35 PVC SEWER SERVICE PIPE SEE DETAIL 208
 - ⑤ NEW 4" SDR 35 PVC SEWER SERVICE PIPE SEE DETAIL 208
 - ⑥ NEW 4" SDR 35 PVC SEWER SERVICE PIPE SEE DETAIL 208
 - ⑦ TYPICAL WATER AND SEWER CROSSING SEE DETAIL 208
 - ⑧ DROP AND MAKE END OF NEW SEWER THROUGH SEE DETAIL 208



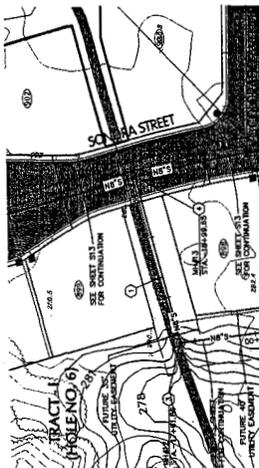
THE LINKS AT COYOTE WASH SUBDIVISION
 UNIT NO. 3 - SEWER COLLECTION SYSTEM

SCALE: AS SHOWN
 DATE: 11/11/11
 DRAWN BY: J. B. BROWN
 CHECKED BY: J. B. BROWN
 DATE: 11/11/11

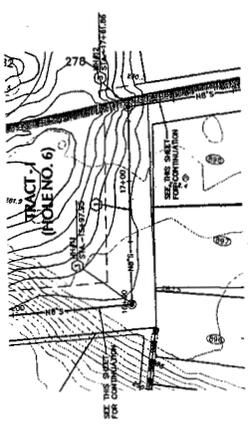
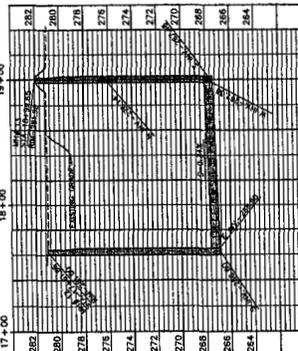
MS&E
 Mesquite Engineering Inc.
 1000 West 20th Street, Suite 200
 Tulsa, Oklahoma 74104-4024
 PHONE: 918.438.4000
 FAX: 918.438.4001

SHEET **S04**

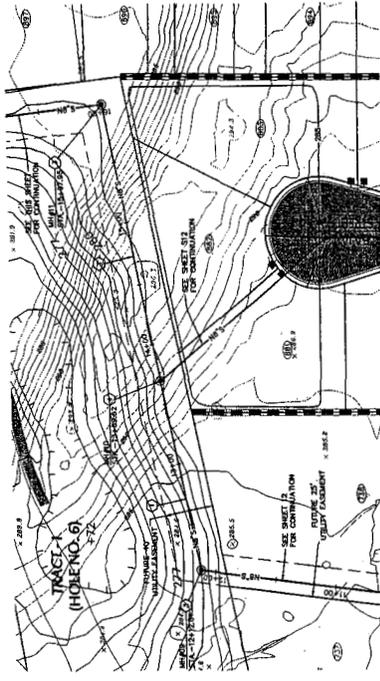
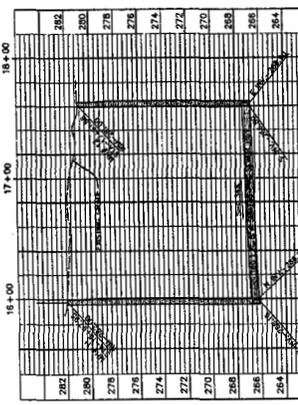




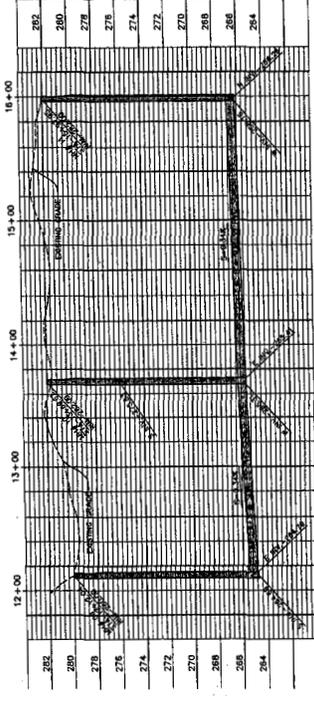
SEE SHEET 17 SANTA STREET ALIGNMENT
-STA. THROUGH CEDARWOOD AVENUE ALIGNMENT



SEE THIS SHEET FOR CONTINUATION



SEE SHEET 12 FOR CONTINUATION



SCHEDULE OF WORKS

- ① NEW 6" DIA. 30 P.C. SEWER PIPE SEE DETAIL (A)
- ② NEW 10" DIA. 30 P.C. SEWER PIPE SEE DETAIL (A)
- ③ NEW 4" DIA. 30 P.C. SEWER MANHOLE SEE DETAIL (A)
- ④ NEW 4" DIA. 30 P.C. SEWER MANHOLE SEE DETAIL (A)
- ⑤ NEW 4" DIA. 30 P.C. SEWER CLEANOUT SEE DETAIL (A)
- ⑥ NEW 4" DIA. 30 P.C. SEWER SERVICE PIPE SEE DETAIL (A)
- ⑦ TYPICAL WATER AND SEWER CROSSING SEE DETAIL (A)
- ⑧ CUP AND MAKE END OF NEW SEWER SEGMENT SEE DETAIL (A)



THE LINKS AT COYOTE WASH SUBSTATION
UNIT NO. 3 - SEWER COLLECTION SYSTEM

SCALE: AS SHOWN
DATE: 10/15/03
DRAWN BY: J. L. WILSON
CHECKED BY: J. L. WILSON
DATE: 10/15/03

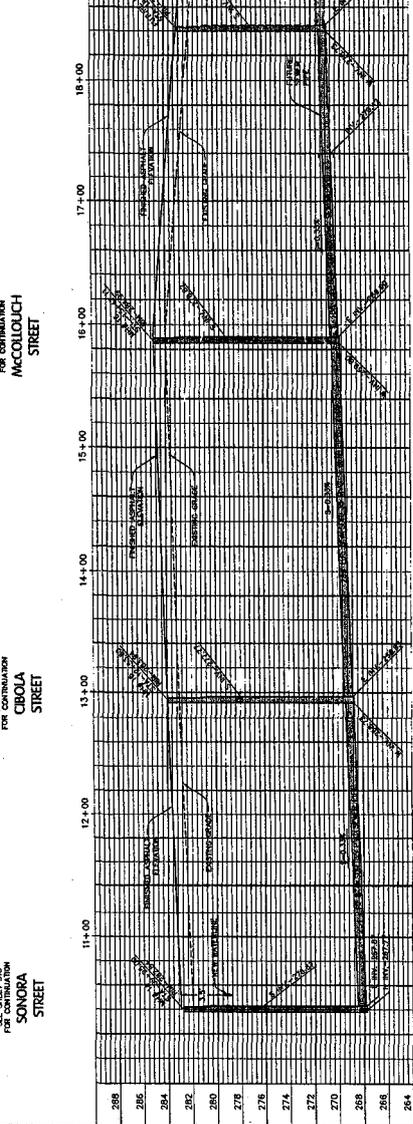
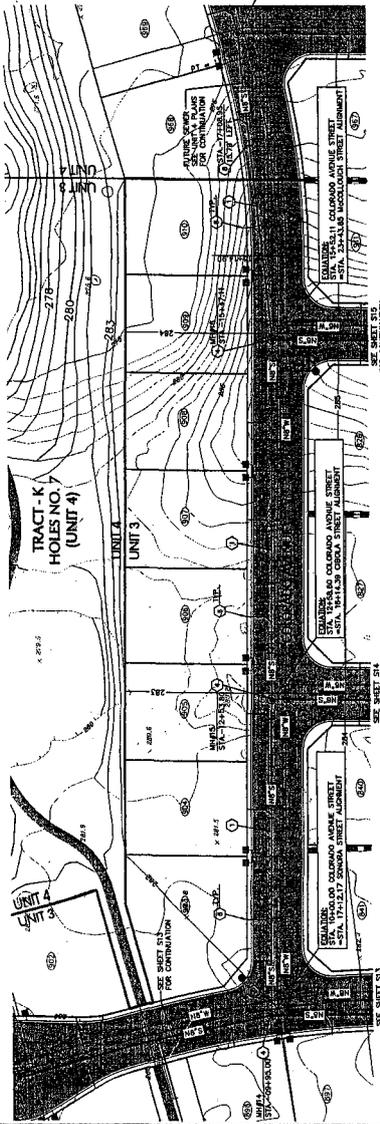
SANITARY SEWER
SHEET NO. 5

MEP
Nicklaus Engineering Inc.
10000 WILSON AVENUE, SUITE 100
DUBLIN, CALIFORNIA 94568

SHEET 505

SCHEDULE OF WORK

- ① NEW 8" DIA. 30 PVC SEWER PIPE SEE DETAIL-66
- ② NEW 10" DIA. 30 PVC SEWER PIPE SEE DETAIL-66
- ③ NEW 4" SEWER MANHOLE SEE DETAIL-66
- ④ NEW 4" SEWER DROP MANHOLE SEE DETAIL-66
- ⑤ NEW SEWER CLEANOUT SEE DETAIL-66
- ⑥ NEW 4" DIA. 30 PVC SEWER SERVICE PIPE SEE DETAIL-66
- ⑦ TYPICAL WATER AND SEWER CROSSING SEE DETAIL-66
- ⑧ CAP AND MARK END OF NEW SEWER STUMPS



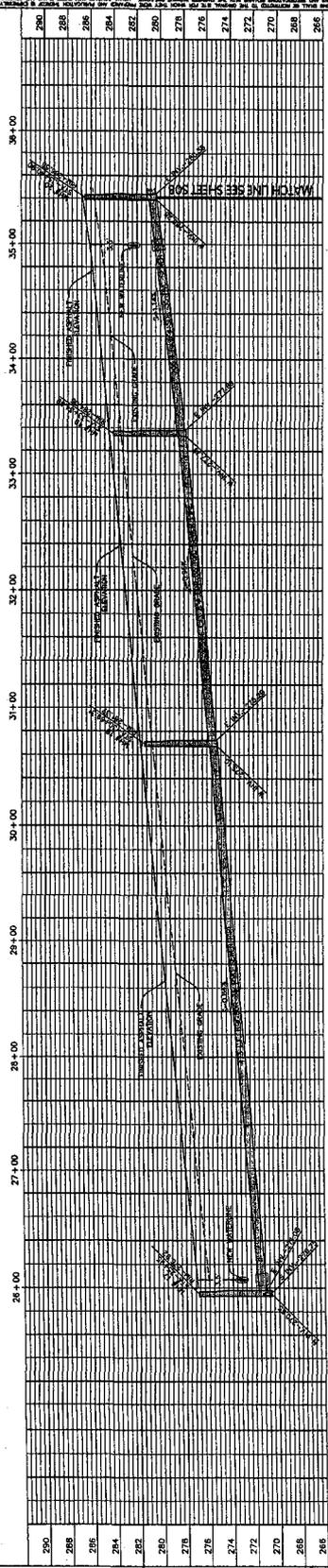
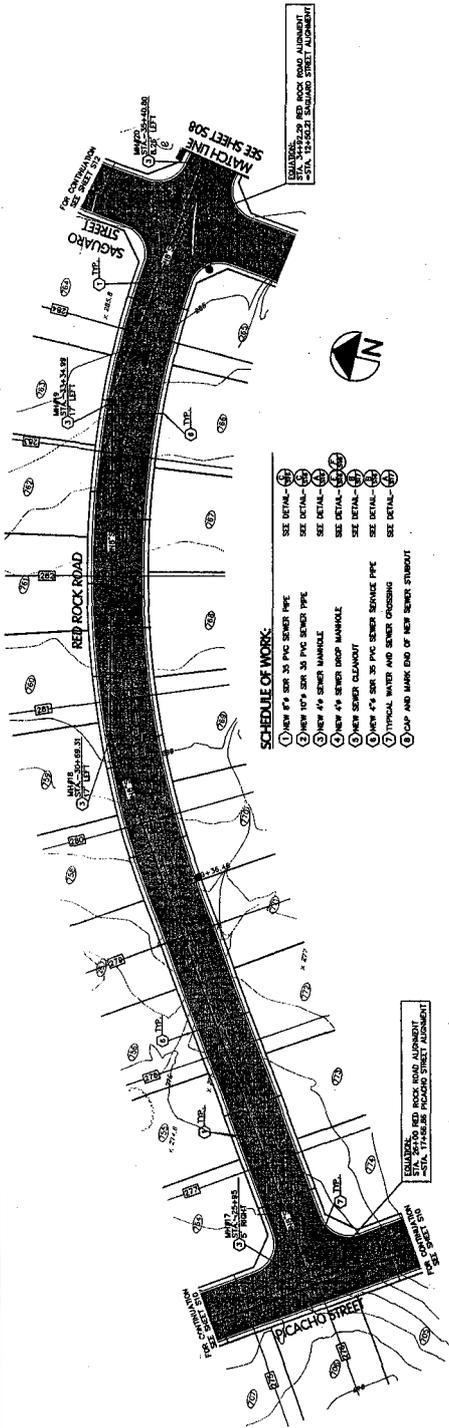
THE LINKS AT COYOTE WASH SUBDIVISION
 UNIT NO. 3 - SEWER COLLECTION SYSTEM
 SANITARY SEWER
 COLORADO AVENUE

W&A
 Nicholas Engineering Inc.
 1601 West 24th Street, P.O. Box 6079
 Lakewood, Colorado 80226
 Phone: (303) 440-1000
 Fax: (303) 440-1001

DATE: 06/20/08
 DRAWN BY: J.C.C.
 CHECKED BY: J.P.P.
 PROJECT NO.: 08-001
 SHEET NO.: 307-2-30

SHEET 506

Norwalk



THE LINKS AT COVOTE WASH SUBDIVISION
 UNIT NO. 3 SEWER COLLECTION SYSTEM

SANITARY SEWER
 RED ROCK ROAD

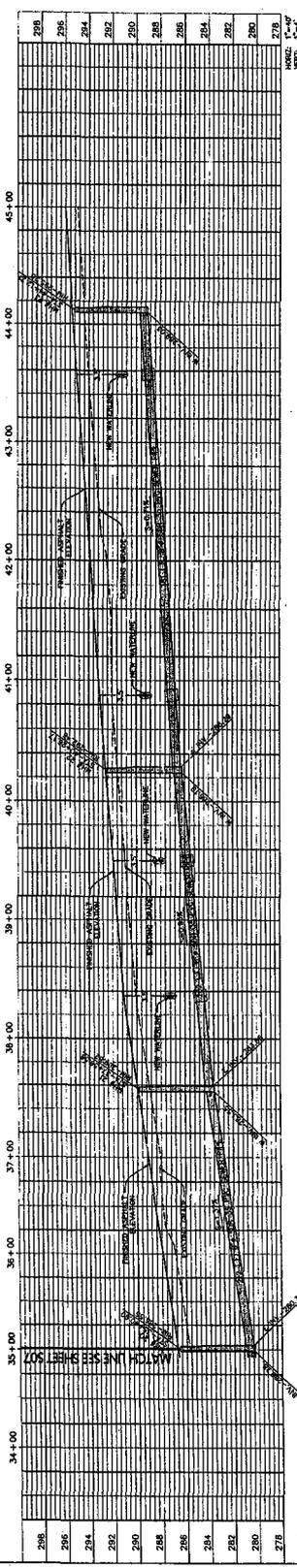
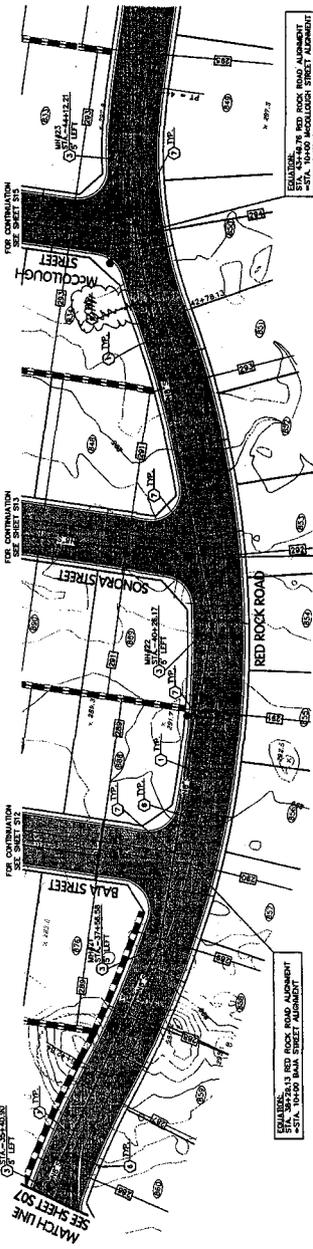
MEP

Nicklaus Engineering Inc.
 11500 W. WYOMING AVENUE, SUITE 100
 DENVER, COLORADO 80234-1074
 PHONE: 303.751.1000
 FAX: 303.751.1001

DATE: 08/20/03
 DRAWN BY: J. L. NICKLAUS
 CHECKED BY: J. L. NICKLAUS
 TITLE: SANITARY SEWER
 SHEET NO.: 507



THE ENGINEER HAS REVIEWED THE RECORD DRAWING OF THIS PROJECT AND HAS FOUND IT TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF SAN JOSE. THE ENGINEER'S REVIEW IS LIMITED TO THE TECHNICAL ASPECTS OF THE DRAWING AND DOES NOT CONSTITUTE A GUARANTEE OF THE ACCURACY OF THE INFORMATION PROVIDED BY THE CLIENT.



- SCHEDULE OF WORK:**
- ① NEW 8" Ø 30' PVC SEWER PIPE SEE DETAIL-^(A)
 - ② NEW 10" Ø 30' PVC SEWER PIPE SEE DETAIL-^(B)
 - ③ NEW 4" SEWER MANHOLE SEE DETAIL-^(C)
 - ④ NEW 4" SEWER DROP MANHOLE SEE DETAIL-^(D)
 - ⑤ NEW SEWER CLEAROUT SEE DETAIL-^(E)
 - ⑥ NEW 4" Ø 30' PVC SEWER SERVICE PIPE SEE DETAIL-^(F)
 - ⑦ TYPICAL WATER AND SEWER CROSSING SEE DETAIL-^(G)
 - ⑧ CAP AND MARK END OF NEW SEWER STUBOUT SEE DETAIL-^(H)



THE ENGINEER HAS REVIEWED THE RECORD DRAWING OF THIS PROJECT AND HAS FOUND IT TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF SAN JOSE. THE ENGINEER'S REVIEW IS LIMITED TO THE TECHNICAL ASPECTS OF THE DRAWING AND DOES NOT CONSTITUTE A GUARANTEE OF THE ACCURACY OF THE INFORMATION PROVIDED BY THE CLIENT.

NICHOLAS ENGINEERING INC.
 SANITARY SEWER COLLECTION SYSTEM
 RED ROCK ROAD

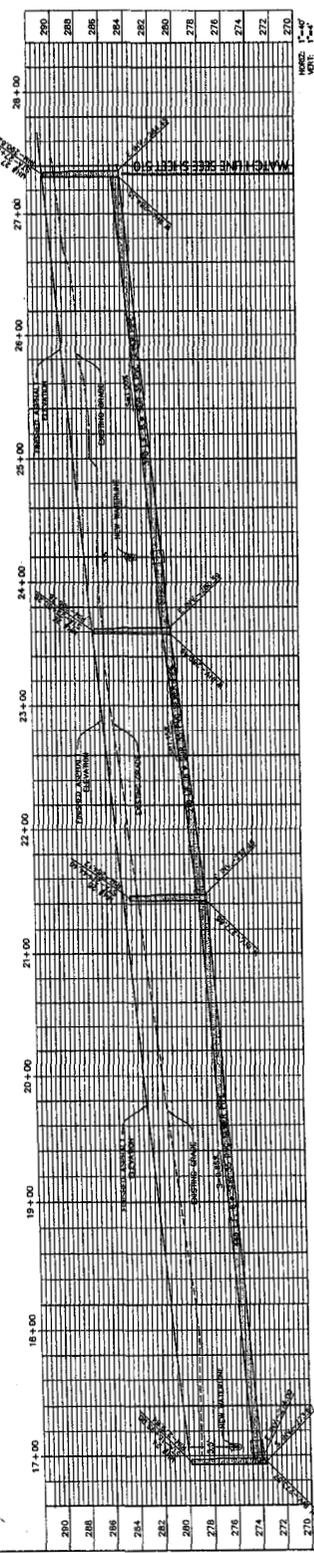
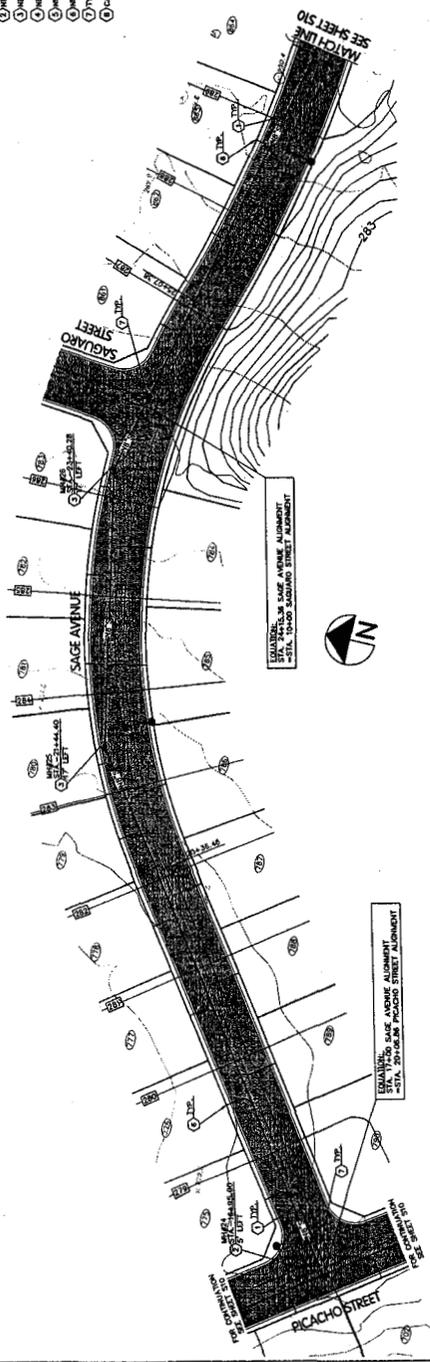
DATE: 08/11/2011
 DRAWN BY: J. L. LEE
 CHECKED BY: J. L. LEE
 SCALE: AS SHOWN
 SHEET NO.: 307

NEA
 Nicholas Engineering Inc.
 10000 BALS CANYON ROAD, SUITE 100
 SAN JOSE, CALIFORNIA 95138
 TEL: (408) 261-1000
 FAX: (408) 261-1001
 WWW.NICHOLAS-ENGINEERING.COM



SCHEDULE OF WORK

- ① NEW 6" DIA. 30 PVC SEWER PIPE SEE DETAIL-44
- ② NEW 10" DIA. 30 PVC SEWER PIPE SEE DETAIL-44
- ③ NEW 4" SEWER MANHOLE SEE DETAIL-44
- ④ NEW 4" SEWER STOP MANHOLE SEE DETAIL-44
- ⑤ NEW SEWER CLEANOUT SEE DETAIL-44
- ⑥ NEW 4" DIA. 30 PVC SEWER SERVICE PIPE SEE DETAIL-44
- ⑦ TYPICAL WATER AND SEWER CROSSING SEE DETAIL-44
- ⑧ CAP AND MARK END OF NEW SEWER STREET

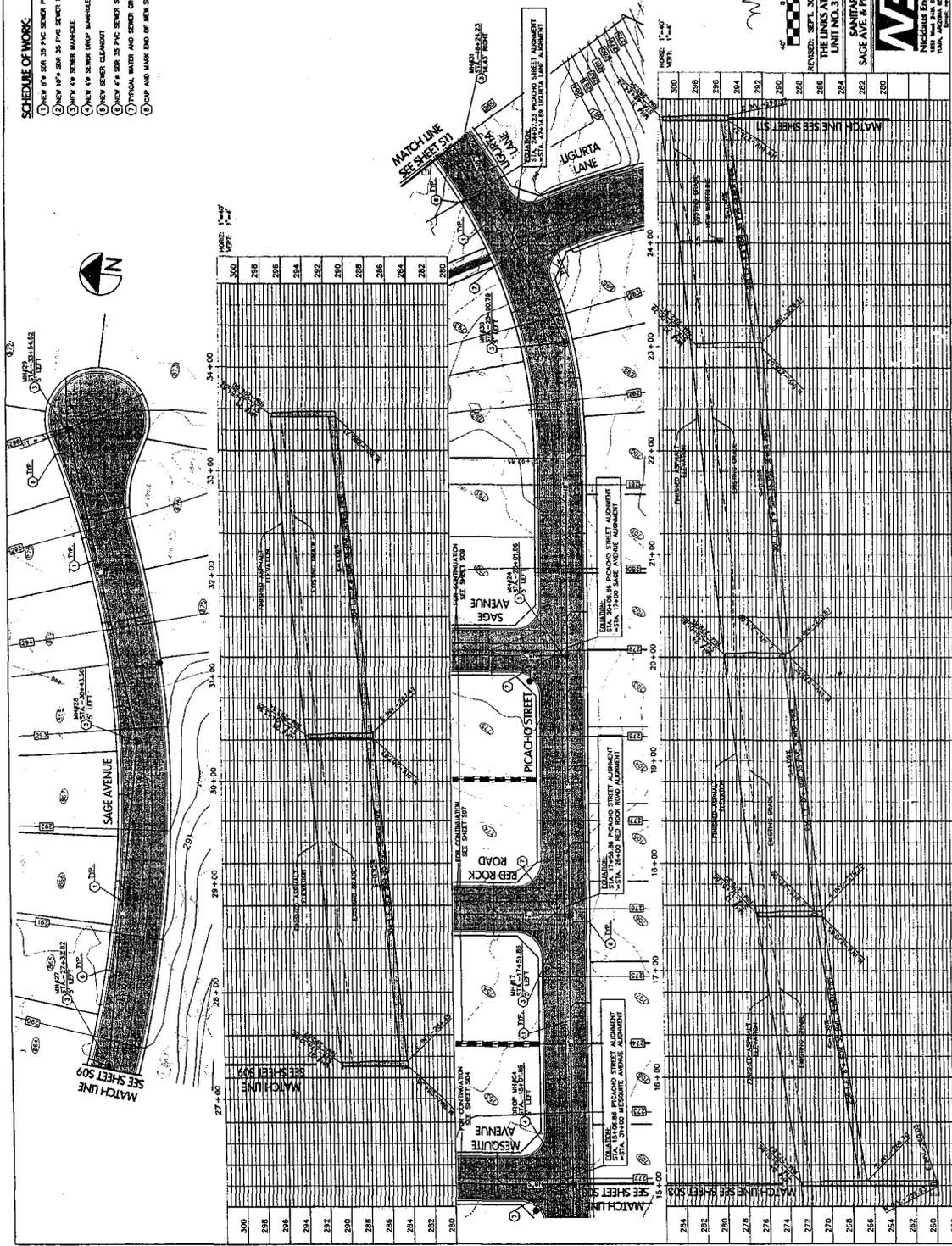


REVISED: SECT. 30, 2005 - D.V.
 THE LINKS AT COYOTE WASH SUBDIVISION
 UNIT NO. 3 SEWER COLLECTION SYSTEM
 SAGE AVENUE
 SAGE AVENUE
 NEDJUS Engineering Inc.
 1500 W. WASHINGTON AVENUE, SUITE 100
 LAS VEGAS, NEVADA 89102
 PHONE: 702-735-1100
 FAX: 702-735-1101
 SHEET S09



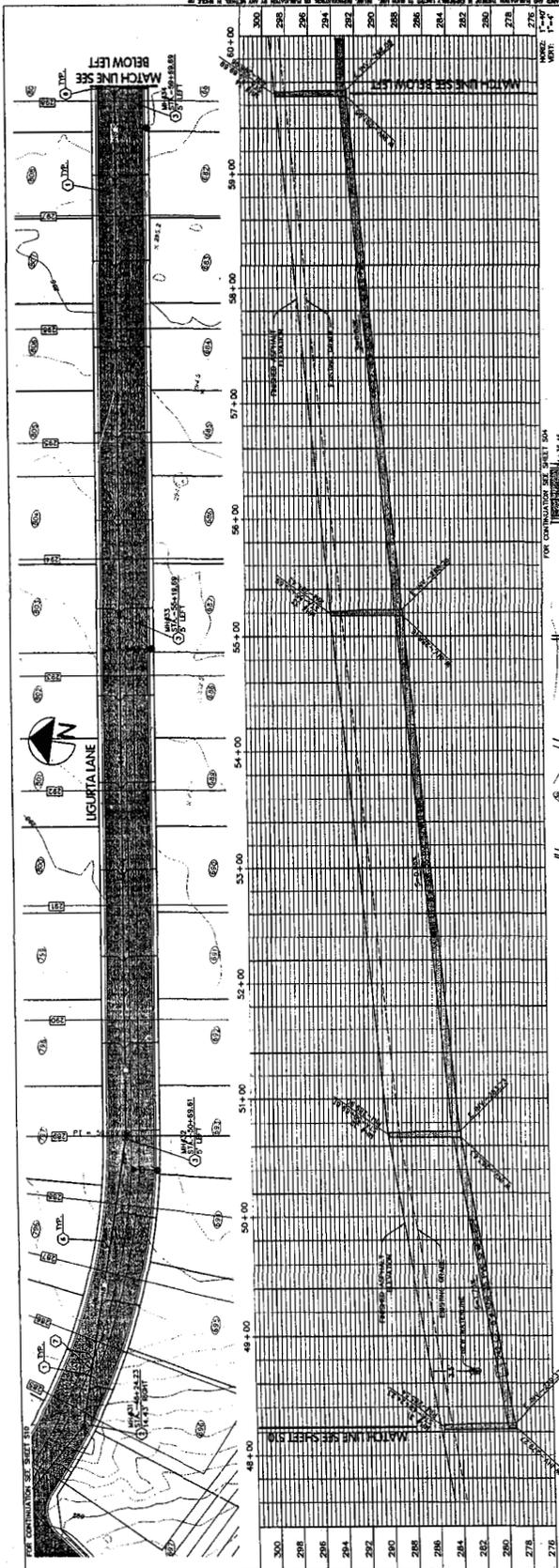
SCHEDULE OF WORKS

- ① NEW 6" 30' 35 PFC SEWER PIPE SEE DETAIL 101
- ② NEW 10" 30' 35 PFC SEWER PIPE SEE DETAIL 102
- ③ NEW 18" 30' 35 PFC SEWER MANHOLE SEE DETAIL 103
- ④ NEW 18" 30' 35 PFC SEWER CLEANOUT SEE DETAIL 104
- ⑤ NEW 4" 30' 35 PFC SEWER SERVICE PIPE SEE DETAIL 105
- ⑥ TYPICAL WATER AND SEWER CROSSING SEE DETAIL 106
- ⑦ TOP AND BANK END OF NEW SEWER TRUNK

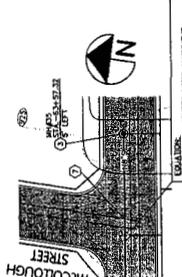
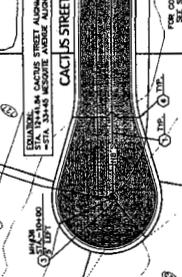
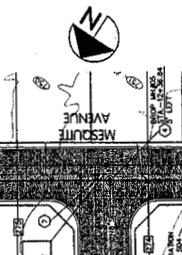


REVISIONS:
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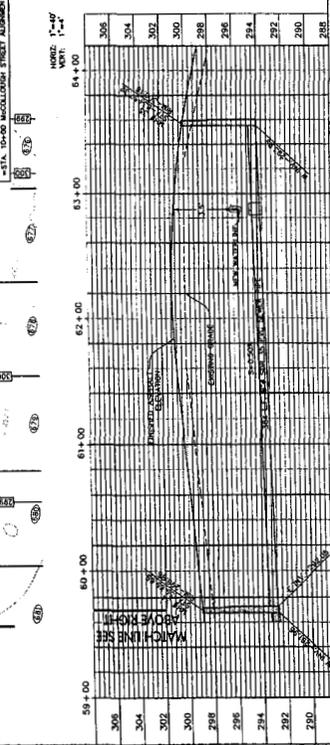
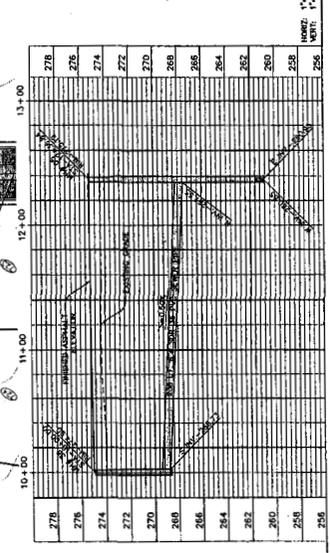


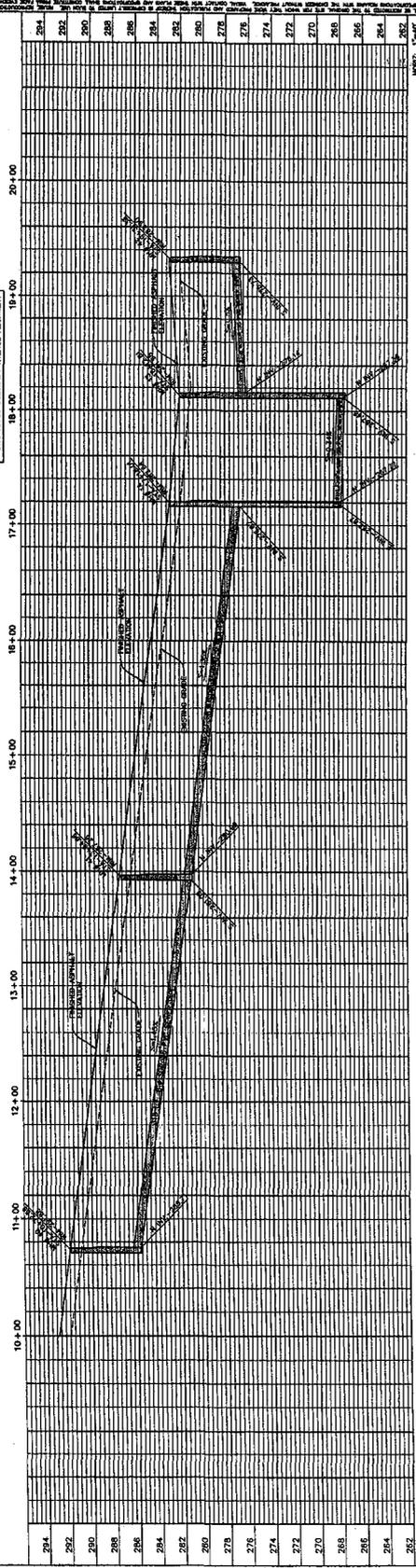
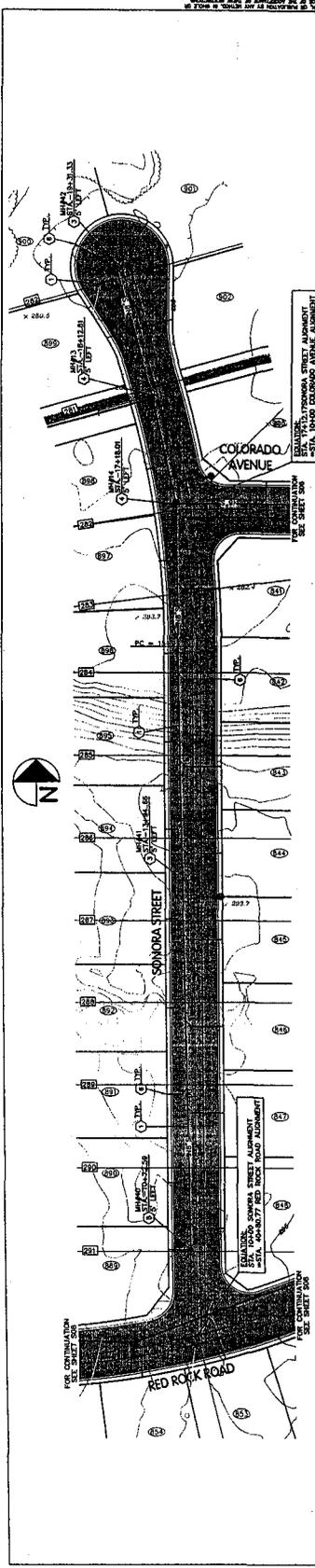
- SCHEME OF WORK.**
- 1) NEW 4" 30' 30' PVC SEWER PIPE SEE DETAIL (A)
 - 2) NEW 4" 30' 30' PVC SEWER PIPE SEE DETAIL (A)
 - 3) NEW 4" 30' 30' PVC SEWER PIPE SEE DETAIL (A)
 - 4) NEW 4" 30' 30' PVC SEWER PIPE SEE DETAIL (A)
 - 5) NEW 4" 30' 30' PVC SEWER PIPE SEE DETAIL (A)
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 - 17) NEW 4" 30' 30' PVC SEWER PIPE SEE DETAIL (A)
 - 18) NEW 4" 30' 30' PVC SEWER PIPE SEE DETAIL (A)
 - 19) NEW 4" 30' 30' PVC SEWER PIPE SEE DETAIL (A)
 - 20) NEW 4" 30' 30' PVC SEWER PIPE SEE DETAIL (A)



DESIGNED: 03/20/2005 - D.V.
 THE LINKS AT CONCRETE WASH SUBDIVISION
 UNIT NO. 3 SEWER COLLECTION SYSTEM
 SAN ANGELO, TEXAS
 NICHOLAS ENGINEERING INC.
 1100 W. WASHINGTON STREET, SUITE 200
 AUSTIN, TEXAS 78701-4074
 PHONE: (512) 452-1100
 FAX: (512) 452-1101
 WWW: WWW.NICHOLAS-ENG.COM

SCALE: AS SHOWN
 DATE: 03/20/2005
 DRAWN BY: D.V.
 CHECKED BY: D.V.
 PROJECT NO.: 05-02-03
 SHEET NO.: 511





- SCHEDULE OF WORK**
- ① NEW 8" DIA. 30 PVC SEWER PIPE
 - ② NEW 10" DIA. 30 PVC SEWER PIPE
 - ③ NEW 4" SEWER MANHOLE
 - ④ NEW 4" SEWER CLEANOUT
 - ⑤ NEW 4" DIA. 30 PVC SEWER SERVICE PIPE
 - ⑥ TYPICAL WATER AND SEWER CROSSING
 - ⑦ CAP AND MARK END OF NEW SEWER STUBOUT

THE LINKS AT COYOTE WASH SUBDIVISION
UNIT NO. 3 SEWER COLLECTION SYSTEM

DATE: 08/20/2013
SCALE: AS SHOWN
DRAWN BY: J. W. WILSON
CHECKED BY: J. W. WILSON
FILE NO.: 13-000-003

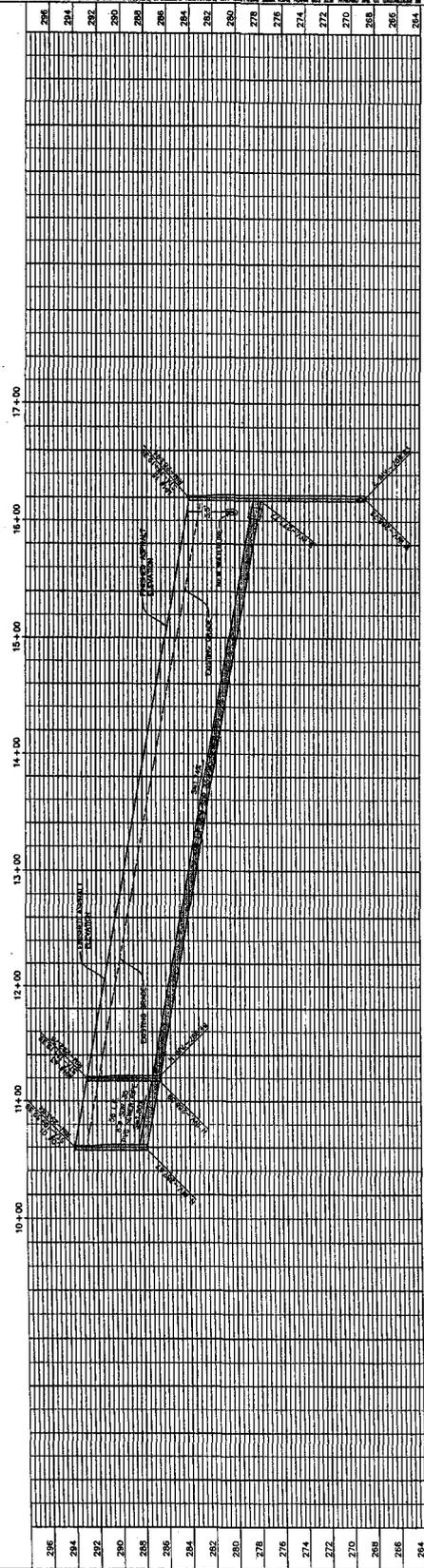
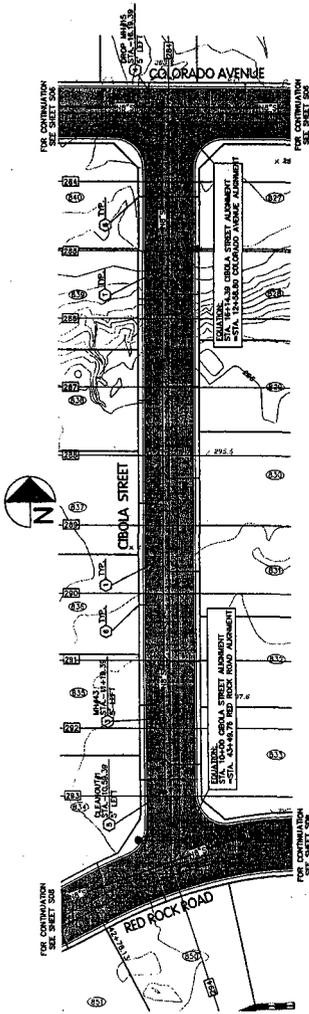
SEWER
\$13

NECA
Nicasius Engineering Inc.
1001 W. WASHINGTON ROAD, SUITE 100
MOUNTAIN VIEW, CO 80501

SONORA STREET

1" = 40'

- SCHEDULE OF WORK:**
- ① NEW 12" DIA. 30 PVC SEWER PIPE SEE DETAIL-46
 - ② NEW 12" DIA. 30 PVC SEWER PIPE SEE DETAIL-46
 - ③ NEW 4" DIA. 30 PVC SEWER PIPE SEE DETAIL-46
 - ④ NEW 4" DIA. 30 PVC SEWER PIPE SEE DETAIL-46
 - ⑤ NEW 4" DIA. 30 PVC SEWER PIPE SEE DETAIL-46
 - ⑥ NEW 4" DIA. 30 PVC SEWER PIPE SEE DETAIL-46
 - ⑦ TYPICAL WATER AND SEWER CROSSING SEE DETAIL-46
 - ⑧ CAP AND MARK END OF NEW SEWER STRAIGHT



VERT. CURVE
VERT. 1'-11"



THE LINKS AT CONCRETE WASTE SUBSTATION
UNIT NO. 3 SEWER COLLECTION SYSTEM

SANITARY SEWER
CIBOLA STREET

NEA
Nicholas Engineering Inc.
1000 W. 10th Street, Suite 100
Wichita, Kansas 67203
Phone: 316-261-1111
Fax: 316-261-1112
www.nicholaseng.com

SHEET
S14

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FOR CONTINUATION SEE SHEET 511

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00

MATCH LINE STA. 22+80

280 279 278 277 276 275 274 273 272 271 270 269 268 267 266

280 279 278 277 276 275 274 273 272 271 270 269 268 267 266





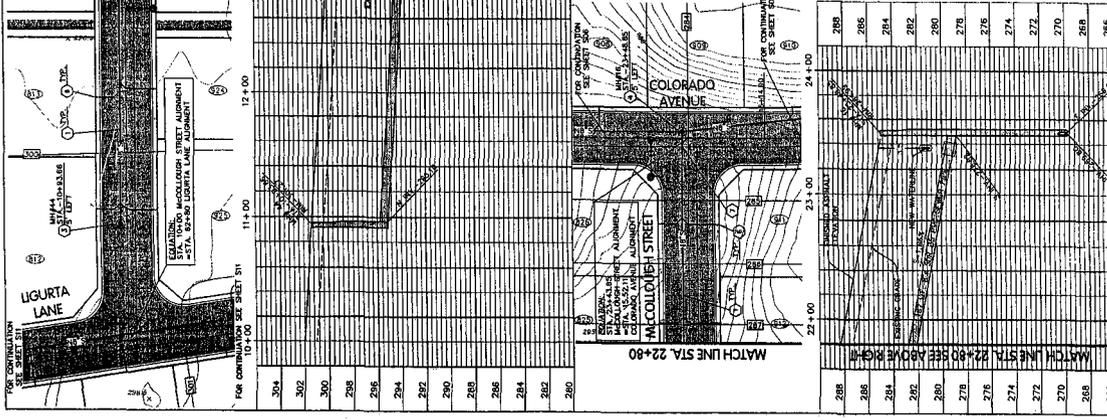
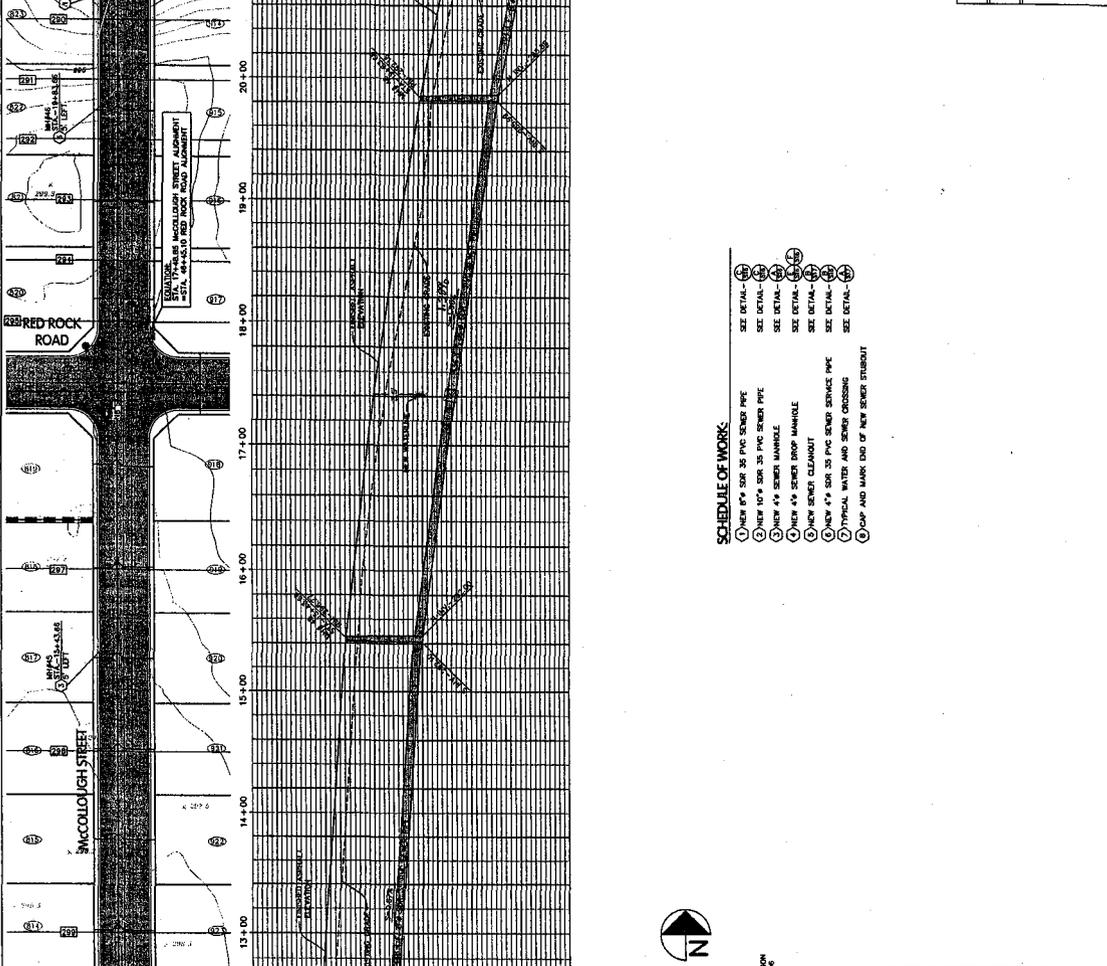


THE LINKS AT COYOTE WASH SUBDIVISION
UNIT NO. 3
SANITARY SEWER
MCCOLLOUGH STREET

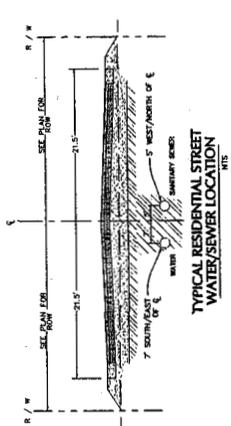
SCALE: AS SHOWN
 DATE: 11/11/11
 DRAWN BY: J. L. LEE
 CHECKED BY: J. L. LEE
 DESIGNED BY: J. L. LEE
 PROJECT NO.: 11-000000
 SHEET NO.: 515

Nicklass Engineering Inc.
 1001 West State Street, P.O. Box 6000
 Salt Lake City, Utah 84143
 Phone: (801) 466-1000
 Fax: (801) 466-1001

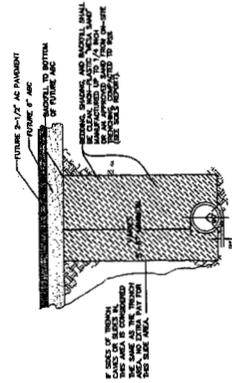
- SCHEDULE OF WORK**
- ① NEW 8" SDR 35 PVC SEWER PIPE SEE DETAIL- (A)
 - ② NEW 10" SDR 35 PVC SEWER PIPE SEE DETAIL- (B)
 - ③ NEW 4" SDR 35 PVC SEWER MANHOLE SEE DETAIL- (C)
 - ④ NEW 4" SDR 35 PVC SEWER DRAIN MANHOLE SEE DETAIL- (D)
 - ⑤ NEW 4" SDR 35 PVC SEWER CLEANOUT SEE DETAIL- (E)
 - ⑥ NEW 4" SDR 35 PVC SEWER SERVICE PIP SEE DETAIL- (F)
 - ⑦ TYPICAL WATERS AND SEWER CROSSING SEE DETAIL- (G)
 - ⑧ CURE AND MARK END OF NEW SEWER TIEOUT



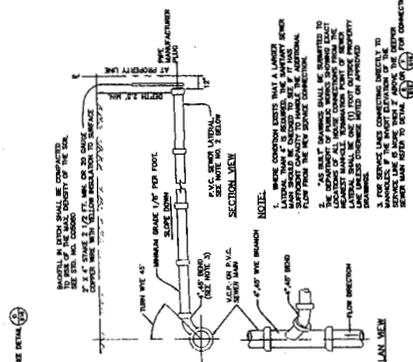
FOR CONTINUATION SEE SHEET 511	MATCH LINE STA. 22+80
10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00	22+00 23+00 24+00
280 279 278 277 276 275 274 273 272 271 270 269 268 267 266	285 284 283 282 281 280 279 278 277 276 275 274 273 272 271 270 269 268 267 266



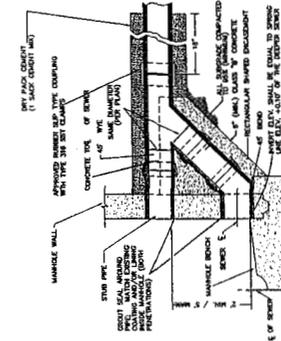
TYPICAL RESIDENTIAL STREET WATER/SEWER LOCATION



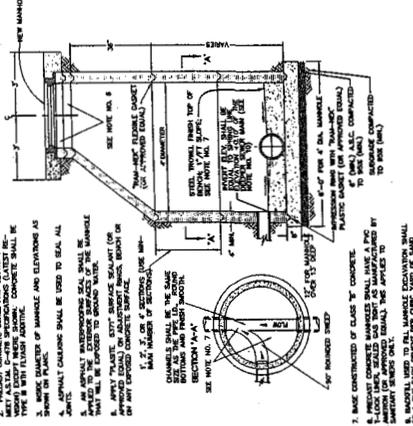
TYPICAL SEWER TRENCH



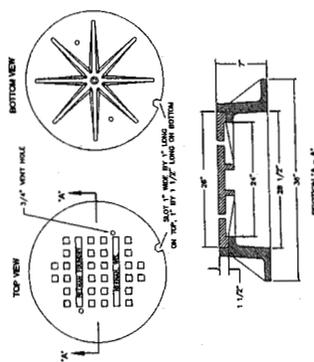
STANDARD HOUSE CONNECTION



DROP SEWER CONNECTION TYPE 'A'



PRE-CAST CONCRETE MANHOLE



STANDARD MANHOLE COVER

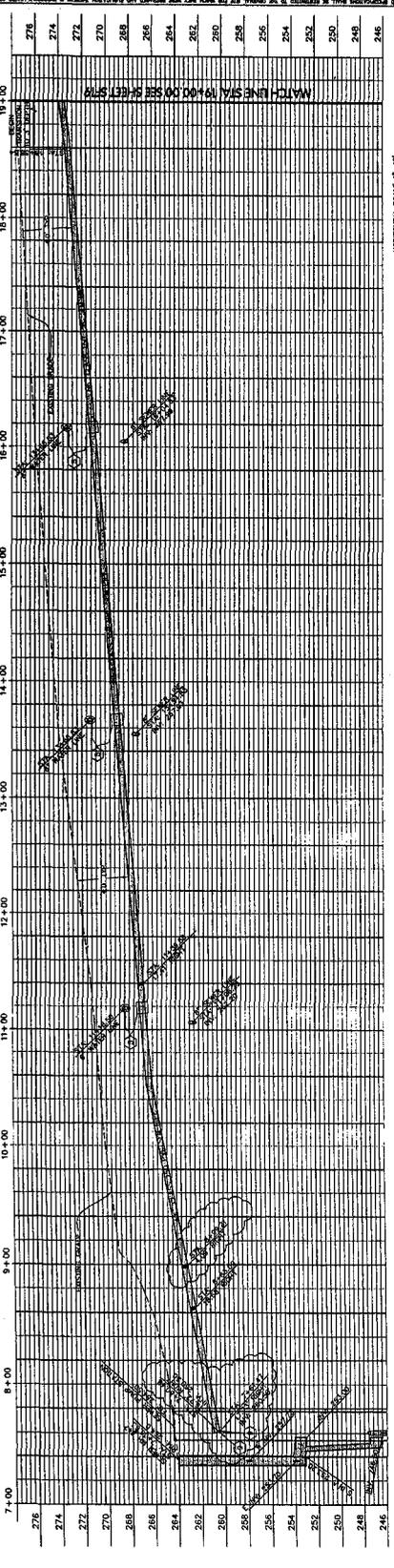
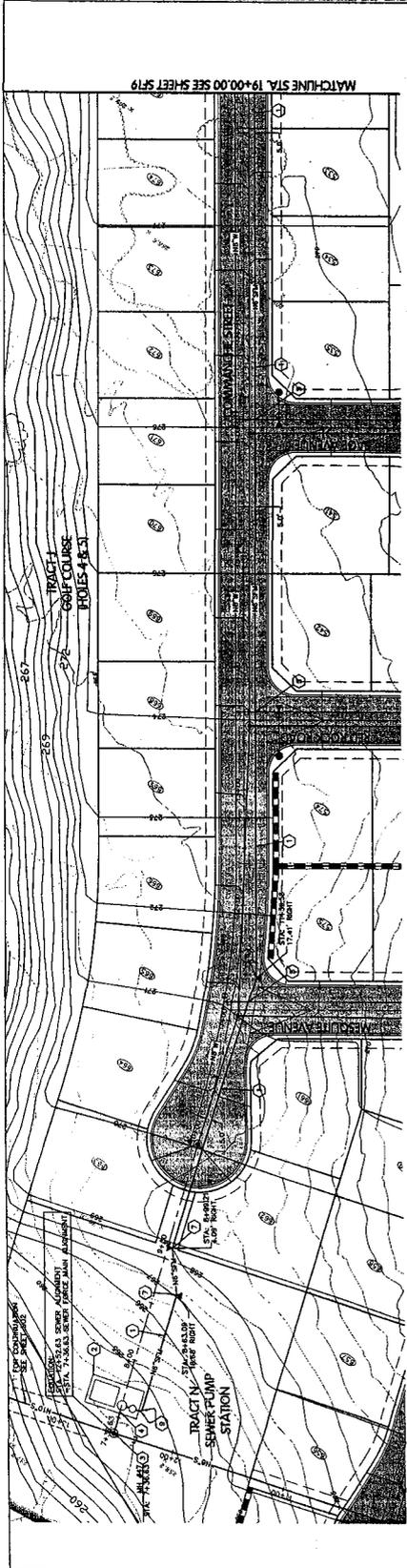
NOTES:
 1. CONCRETE MANHOLE SHALL BE CONSTRUCTED ONLY UPON APPROVAL BY THE TOWN ENGINEER.
 2. PRECAST CONCRETE MANHOLES SHALL BE CONSTRUCTED TO THE STANDARD SPECIFICATIONS FOR PRECAST CONCRETE MANHOLES AND COVERS.
 3. MANHOLE COVERS SHALL BE USED TO SEAL ALL MANHOLES.
 4. MANHOLE COVERS SHALL BE USED TO SEAL ALL MANHOLES.
 5. ALL MANHOLES SHALL BE CONSTRUCTED TO THE STANDARD SPECIFICATIONS FOR PRECAST CONCRETE MANHOLES AND COVERS.
 6. ALL MANHOLES SHALL BE CONSTRUCTED TO THE STANDARD SPECIFICATIONS FOR PRECAST CONCRETE MANHOLES AND COVERS.
 7. ALL MANHOLES SHALL BE CONSTRUCTED TO THE STANDARD SPECIFICATIONS FOR PRECAST CONCRETE MANHOLES AND COVERS.
 8. ALL MANHOLES SHALL BE CONSTRUCTED TO THE STANDARD SPECIFICATIONS FOR PRECAST CONCRETE MANHOLES AND COVERS.
 9. ALL MANHOLES SHALL BE CONSTRUCTED TO THE STANDARD SPECIFICATIONS FOR PRECAST CONCRETE MANHOLES AND COVERS.
 10. ALL MANHOLES SHALL BE CONSTRUCTED TO THE STANDARD SPECIFICATIONS FOR PRECAST CONCRETE MANHOLES AND COVERS.

NOTES:
 1. THE TOP OF THE COVER AND FRAME SHALL BE FLUSH AND THERE SHALL BE 1/4\"/>

THE LINKS AT COVOTTE WASH SUBDIVISION
 UNIT NO. 3 SEWER COLLECTION SYSTEM
 SANITARY SEWER DETAILS

DATE: 05/20/2010
 DRAWN BY: J. L. BROWN
 CHECKED BY: J. L. BROWN
 PROJECT NO.: 09-22-20
 SHEET NO.: S16

MEP
 Nicklaus Engineering Inc.
 1000 West John Street P.O. Box 6029
 Rock Hill, South Carolina 29733



HORIZONTAL SCALE 1"=40'
VERTICAL SCALE 1"=4'

SCHEDULE OF WORK

- 1) NEW 6" CLASS 150 C-900 OR 18 PVC PIPE SEE DETAIL (A) SEE SHEET S23
- 2) NEW 6" RIBBED PUMP STATION SEE DETAIL (A) SEE SHEET S23
- 3) NEW 4" SINKER DROP MANHOLE SEE DETAIL (A) SEE SHEET S23
- 4) TYPICAL WADY AND SINKER CROSSING SEE DETAIL (A) SEE SHEET S23
- 5) SEWAGE AIR RELEASE VALVE MANHOLE SEE DETAIL (A) SEE SHEET S23
- 6) NEW 11.25" BEND AND THRUST BLOCK SEE DETAIL (A) SEE SHEET S23
- 7) NEW 4" BEND AND THRUST BLOCK SEE DETAIL (A) SEE SHEET S23
- 8) NEW 2.5" BEND W/ METALLIC CONNECTIONS SEE DETAIL (A) SEE SHEET S23
- 9) NEW 11.25" BEND W/ METALLIC CONNECTIONS SEE DETAIL (A) SEE SHEET S23
- 10) NEW 4" BEND W/ METALLIC CONNECTIONS SEE DETAIL (A) SEE SHEET S23
- 11) NEW 2.5" BEND AND THRUST BLOCK SEE DETAIL (A) SEE SHEET S23

REVISED: NOV. 29, 2005 - A.A.
THE LINKS AT CONYOTE WASH INTERSECTION
UNIT NO. 3 SEWER FORCE MAIN

COMMANCHE STREET

NEA
Nicklaus Engineering Inc.
10000 W. WASHINGTON AVENUE, SUITE 100
DENVER, COLORADO 80231-1000
TEL: 303.752.1234
FAX: 303.752.1235

PROJECT: SF18

DATE: 11/29/05

SCALE: AS SHOWN

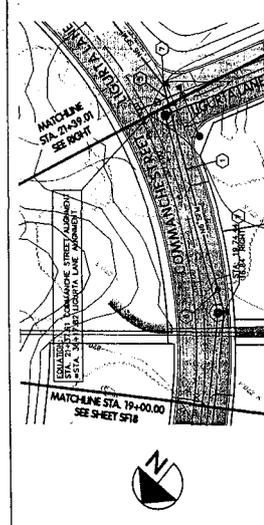
DESIGNED BY: A.A.

CHECKED BY: A.A.

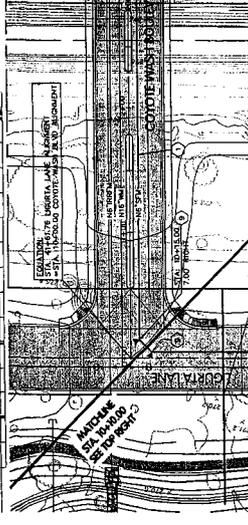
DATE: 11/29/05

DATE: 11/29/05

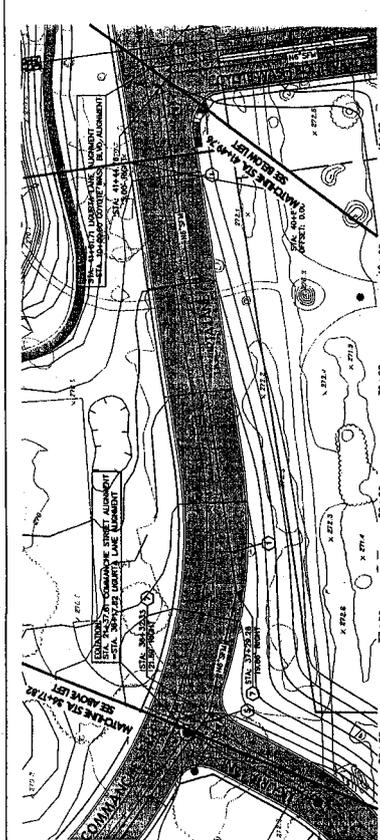




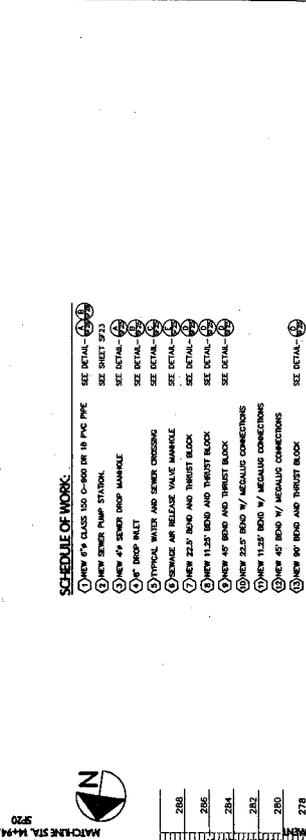
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266	266



288	288
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264	264



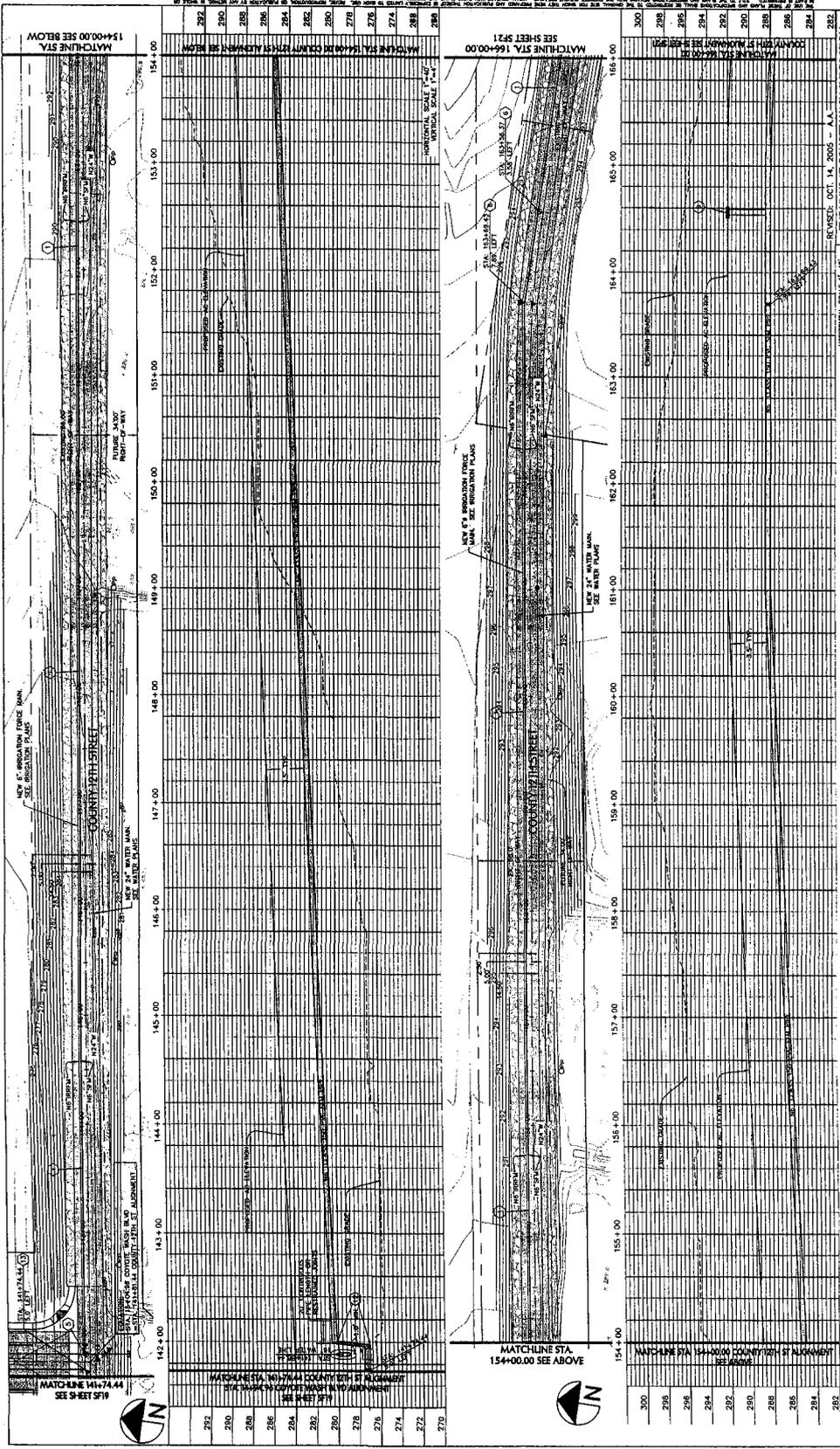
- SCHEDULE OF WORK**
- 1. NEW 6" BACS 150 C-800 DR 18 PVC PIPE SEE DETAIL 3-13
 - 2. NEW SINKER PUMP STATION SEE DETAIL 3-13
 - 3. NEW 4" SINKER DROP MANHOLE SEE DETAIL 3-13
 - 4. 4" DROP INLET SEE DETAIL 3-13
 - 5. TYPICAL WELLS AND SINKER CROSSING SEE DETAIL 3-13
 - 6. CHANGE AIR RELEASE VALVE MANHOLE SEE DETAIL 3-13
 - 7. NEW 24" BEND AND THRUST BLOCK SEE DETAIL 3-13
 - 8. NEW 14.5" BEND AND THRUST BLOCK SEE DETAIL 3-13
 - 9. NEW 45" BEND AND THRUST BLOCK SEE DETAIL 3-13
 - 10. NEW 24" BEND W/ METALLIC CONNECTIONS SEE DETAIL 3-13
 - 11. NEW 14.5" BEND W/ METALLIC CONNECTIONS SEE DETAIL 3-13
 - 12. NEW 45" BEND W/ METALLIC CONNECTIONS SEE DETAIL 3-13
 - 13. NEW 90" BEND AND THRUST BLOCK SEE DETAIL 3-13

REVISED: SEPT. 30, 2005 - A.A.
THE LINKS AT COYOTE WASH SUBDIVISION
 UNIT NO. 3 SINKER PUMP MAIN
 COMMANCHE ST., LIGURTA LN.
 & COYOTE WASH BLVD.

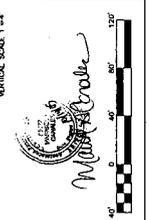


SF19
 SHEET

Nicklaus Engineering Inc.
 1100 West 10th Street, Suite 200
 Lincoln, Nebraska 68502
 TEL: 402-441-2300
 FAX: 402-441-2301



COUNTY 12TH STREET
 THE LINKS AT COYOTE WASH SUBDIVISION
 UNIT NO. 3 SEWER FORCE MAIN
 REVISIONS: OCT. 14, 2005 - A.A.
 COUNTY 12TH STREET
 THE LINKS AT COYOTE WASH SUBDIVISION
 UNIT NO. 3 SEWER FORCE MAIN
 SCALE: AS SHOWN
 DATE: 10/14/05
 DRAWN BY: A.A.
 CHECKED BY: J.M.
 PROJECT NO.: 05-0001
 SHEET NO.: SF20 OF 23



SCHEDULE OF WORK:
 1. NEW 6" CLASS 150 C-500 OR 18" PVC PIPE SEE DETAIL- (A-1) SEE SHEET SF21
 2. NEW SEWER PUMP STATION SEE DETAIL- (A-2)
 3. NEW 4" SEWER DROP MANHOLE SEE DETAIL- (A-3)
 4. 8" DROP INLET SEE DETAIL- (A-4)
 5. TYPICAL WATER AND SEWER CROSSING SEE DETAIL- (A-5)
 6. SEWAGE AIR RELEASE VALVE MANHOLE SEE DETAIL- (A-6)

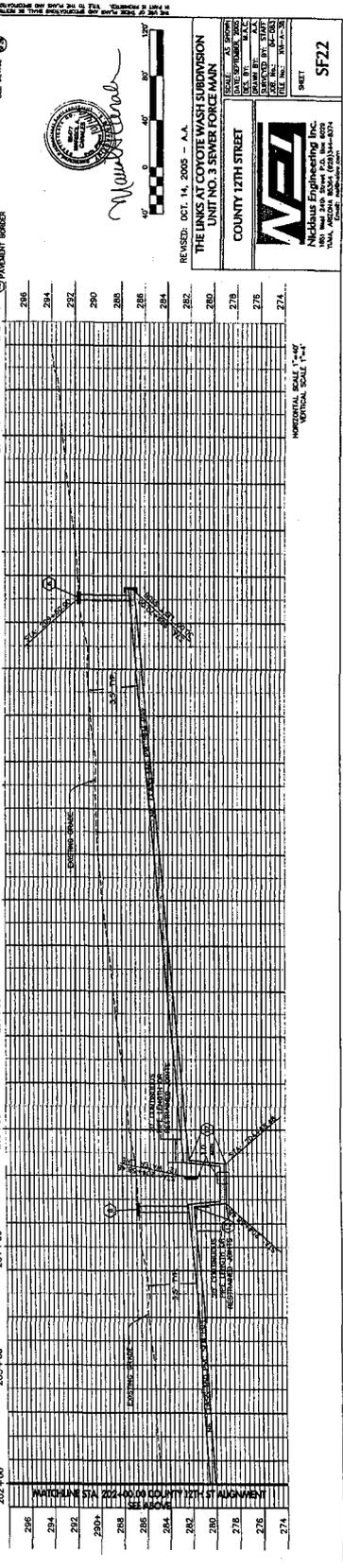
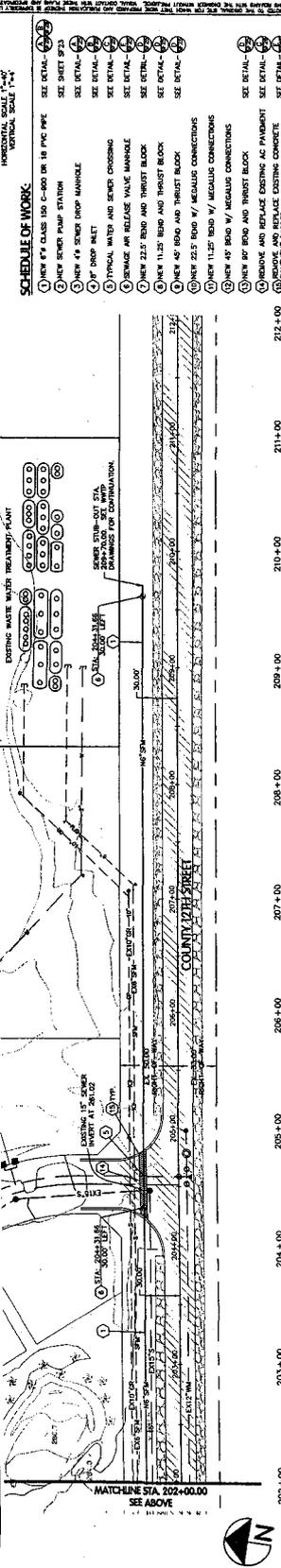
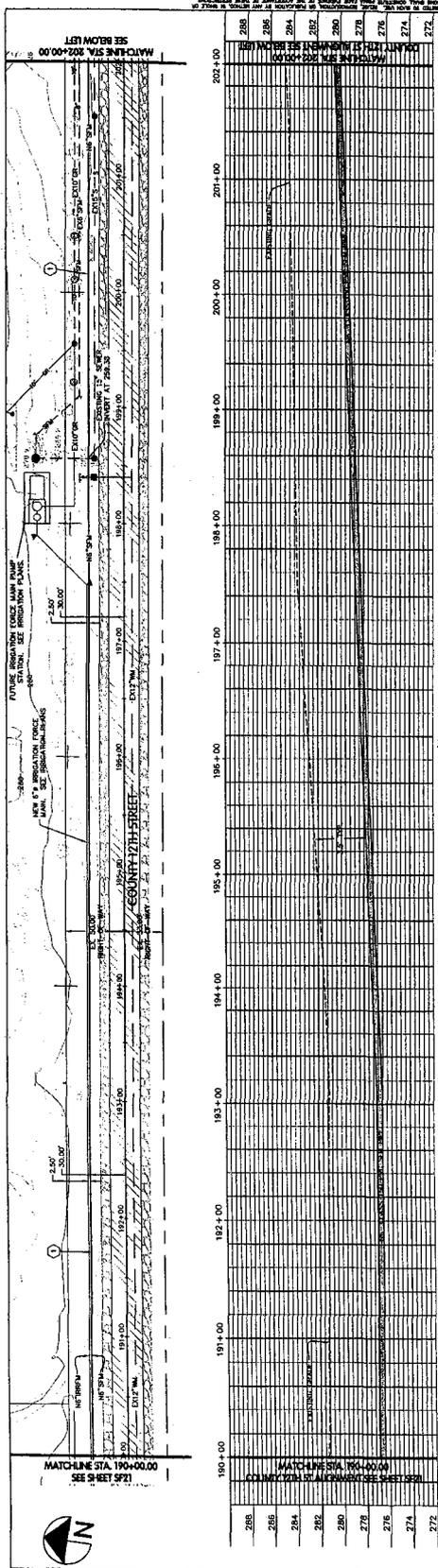
7. NEW 24" 800 AND THRUST BLOCK
 8. NEW 11.25' 800 AND THRUST BLOCK
 9. NEW 45' 800 AND THRUST BLOCK
 10. NEW 23.5' 800 W/ METALLIC CONNECTIONS
 11. NEW 11.25' 800 W/ METALLIC CONNECTIONS
 12. NEW 45' 800 W/ METALLIC CONNECTIONS

13. NEW 36" 800 AND THRUST BLOCK
 14. REMOVE AND REPLACE EXISTING 48" PAVEMENT SEE DETAIL- (A-7)
 15. PAVEMENT BORDER SEE DETAIL- (A-8)

16. NEW 8" REGULATING FORCE MAIN SEE REMOVAL PLANS
 17. NEW 24" WATER MAIN SEE WATER PLANS

18. NEW 12" 800 AND THRUST BLOCK
 19. NEW 45' 800 AND THRUST BLOCK
 20. NEW 23.5' 800 W/ METALLIC CONNECTIONS
 21. NEW 11.25' 800 W/ METALLIC CONNECTIONS
 22. NEW 45' 800 W/ METALLIC CONNECTIONS

COUNTY 12TH STREET
 THE LINKS AT COYOTE WASH SUBDIVISION
 UNIT NO. 3 SEWER FORCE MAIN
 SCALE: AS SHOWN
 DATE: 10/14/05
 DRAWN BY: A.A.
 CHECKED BY: J.M.
 PROJECT NO.: 05-0001
 SHEET NO.: SF20 OF 23



- SCHEDULE OF WORK**
- ① NEW 15" CLASS 150 C-400 DI 18 PVC PIPE SEE DETAIL (S-1)
 - ② NEW SEWER PUMP STATION SEE SHEET SF23
 - ③ NEW 4" SEWER DROP MANHOLE SEE DETAIL (S-2)
 - ④ 1" DROP MANHOLE SEE DETAIL (S-3)
 - ⑤ TYPICAL WATER AND SEWER CROSSING SEE DETAIL (S-4)
 - ⑥ REPLACE AIR RELEASE VALVE MANHOLE SEE DETAIL (S-5)
 - ⑦ NEW 24" REND AND THURST BLOCK SEE DETAIL (S-6)
 - ⑧ NEW 15" REND AND THURST BLOCK SEE DETAIL (S-7)
 - ⑨ NEW 40" REND AND THURST BLOCK SEE DETAIL (S-8)
 - ⑩ NEW 24" REND W/ METALLIC CONNECTIONS SEE DETAIL (S-9)
 - ⑪ NEW 15" REND W/ METALLIC CONNECTIONS SEE DETAIL (S-10)
 - ⑫ NEW 40" REND AND THURST BLOCK SEE DETAIL (S-11)
 - ⑬ REMOVE AND REPLACE EXISTING AC PAVEMENT SEE DETAIL (S-12)
 - ⑭ REMOVE AND REPLACE EXISTING CONCRETE PAVEMENT SURFACE SEE DETAIL (S-13)

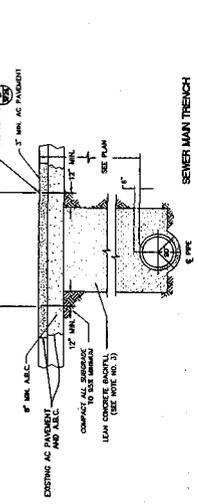


REVISED: OCT. 14, 2005 - A.A.
 THE LINKS AT COYOTE WASH SUBDIVISION
 UNIT NO. 3 SEWER FORCE MAIN
 COUNTY 12TH STREET

Nicholas Engineering Inc.
 1801 West 24th Street, P.O. Box 6000
 Torrance, California 90505
 TEL: (310) 209-1000 FAX: (310) 209-1001
 WWW: WWW.NICHOLAS-ENG.COM

SHEET **SF22**

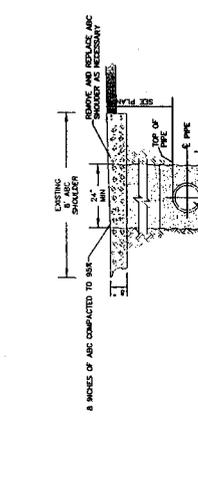




NOTES

1. EXISTING SHALL BE SLOPED OR SHOWN AS REQUIRED PER LOCAL STRONGMANS.
2. BACKFILL, SHOULDER AND SUBGRADE SHALL BE COMPACTED TO 95% A.C.C. OR APPROVED EQUIVALENT.
3. ALL MATERIALS SHALL BE 1 1/2\"/>

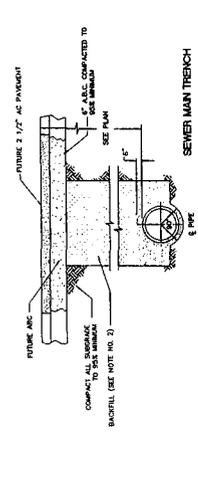
TYPICAL SEWER MAIN TRENCH BACKFILL (UNPAVED AREA)



NOTES

1. EXISTING SHALL BE SLOPED OR SHOWN AS REQUIRED PER LOCAL STRONGMANS.
2. BACKFILL, SHOULDER AND SUBGRADE SHALL BE COMPACTED TO 95% A.C.C. OR APPROVED EQUIVALENT.
3. ALL MATERIALS SHALL BE 1 1/2\"/>

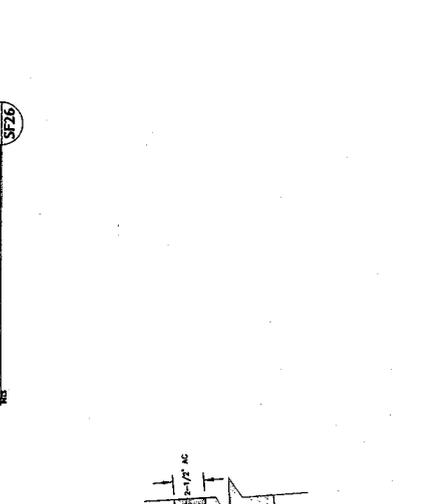
TYPICAL SEWER FORCE MAIN TRENCH BACKFILL (AT ABC SHOULDER)



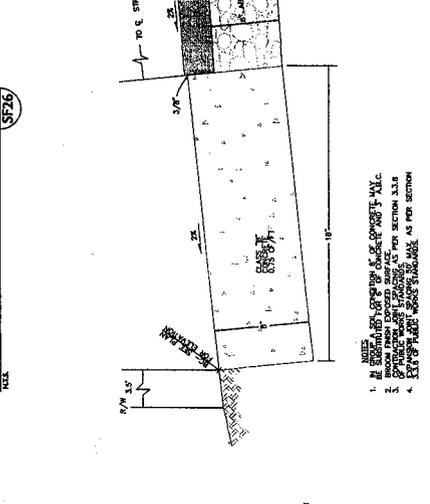
NOTES

1. EXISTING SHALL BE SLOPED OR SHOWN AS REQUIRED PER LOCAL STRONGMANS.
2. BACKFILL, SHOULDER AND SUBGRADE SHALL BE COMPACTED TO 95% A.C.C. OR APPROVED EQUIVALENT.
3. ALL MATERIALS SHALL BE 1 1/2\"/>

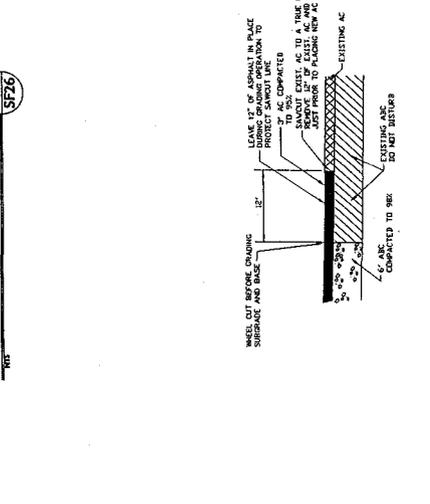
TYPICAL SEWER FORCE MAIN TRENCH BACKFILL (IN PAVEMENT)



TYPICAL SAW CUT



CONCRETE PAVEMENT BORDER



TYPICAL SEWER MAIN TRENCH BACKFILL (AT ABC SHOULDER)

REVISED: OCT. 14, 2005 - A.A.
 THE LINKS AT COYOTE WASH SUBDIVISION
 UNIT NO. 3 SEWER FORCE MAIN

SCALE: AS SHOWN
 DATE: 10/14/05
 DRAWN BY: J.A.A.
 CHECKED BY: J.A.A.
 DATE: 10/14/05

DETAILS

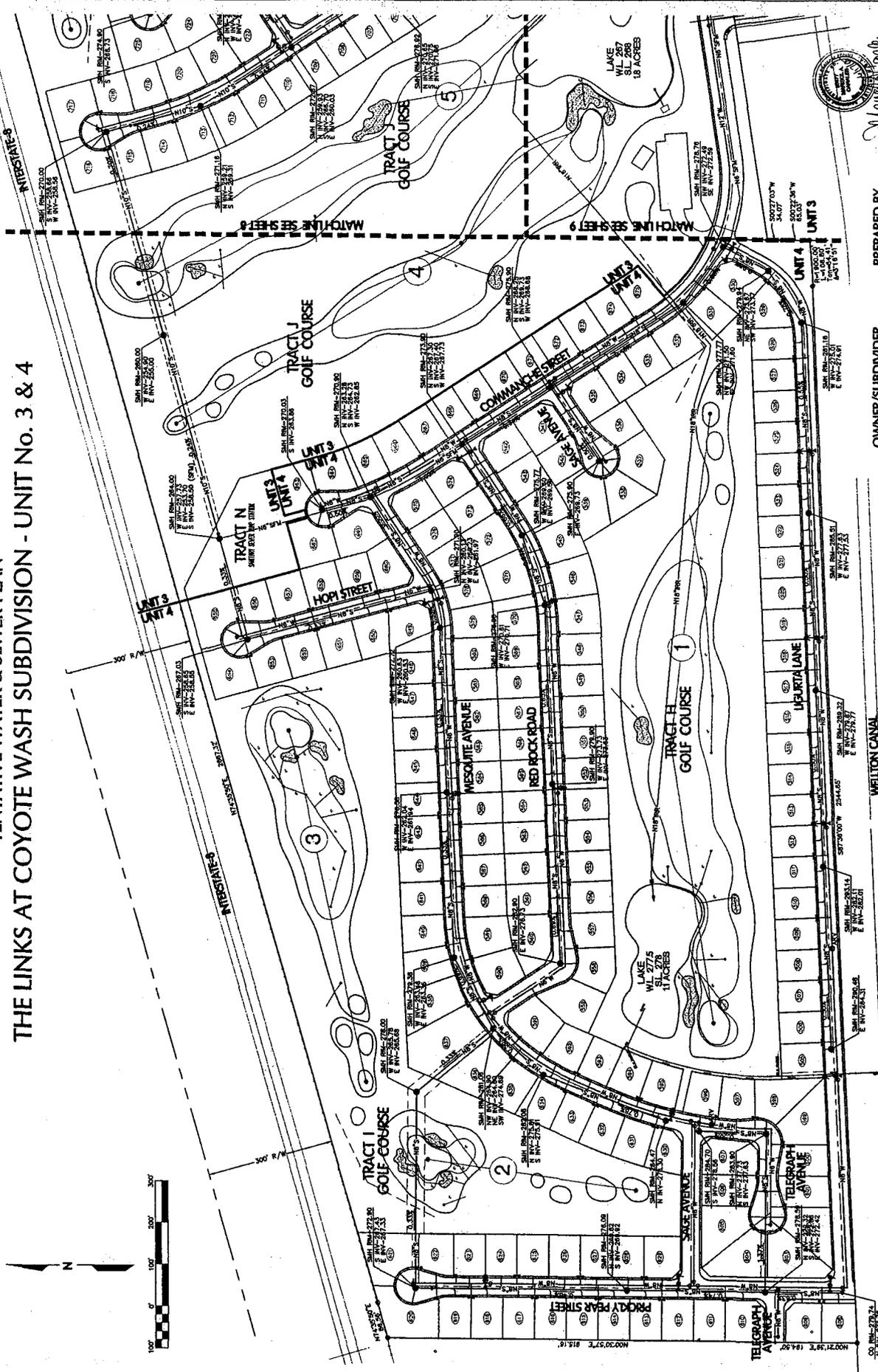
W&E
 Nicholas Engineering Inc.
 1500 JARDON ROAD (208) 544-1874
 FREDERICK, MARYLAND

PROJECT
SF26

Nicholas

**PRELIMINARY
PLAN FOR UNIT 4**

TENTATIVE WATER & SEWER PLAN
 THE LINKS AT COYOTE WASH SUBDIVISION - UNIT No. 3 & 4

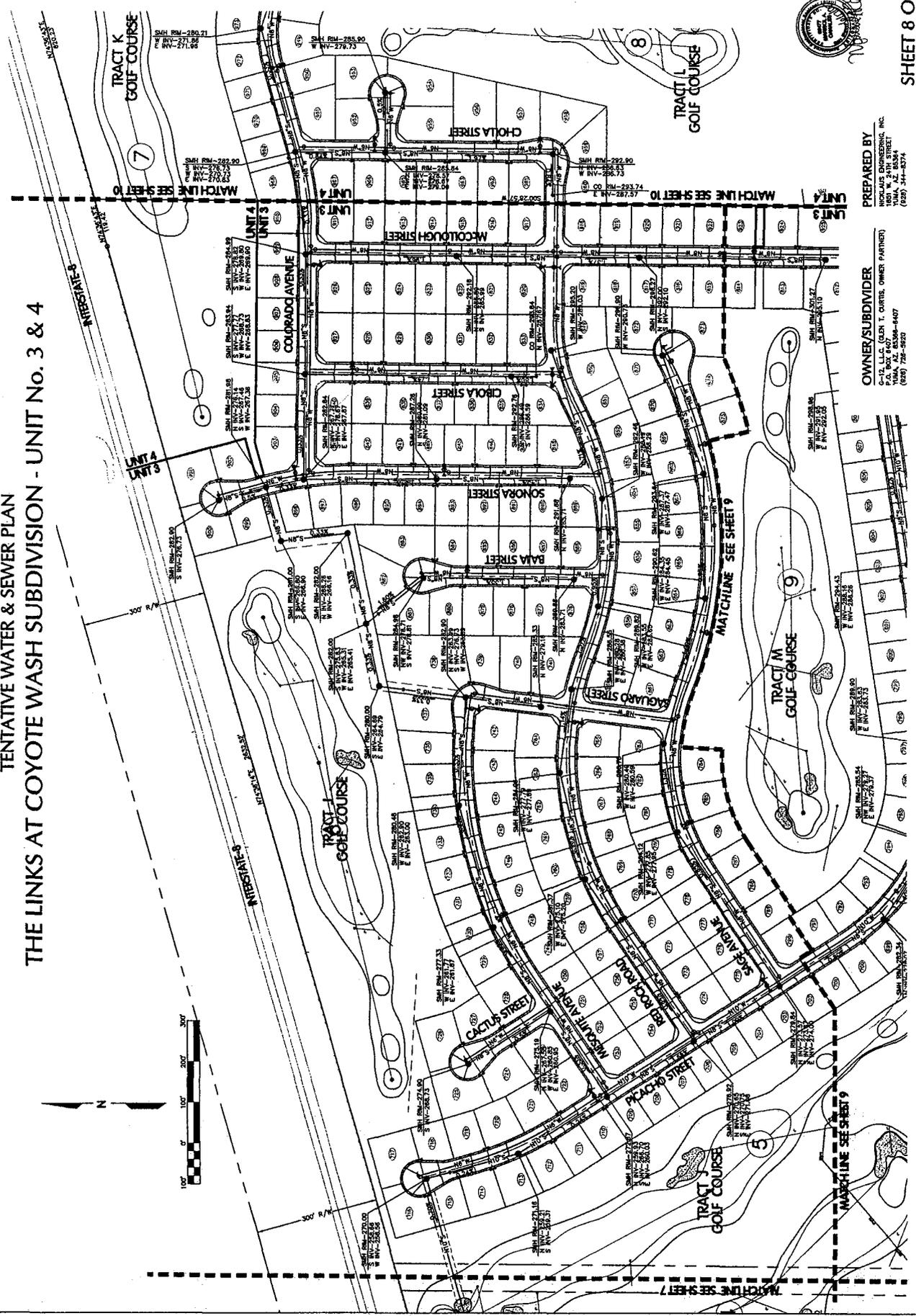
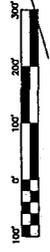
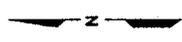


OWNER/SUBDIVIDER
 C-12, L.L.C. (GEN. T. CARTER, OWNER PARTNER)
 1075 W. WASHINGTON STREET
 TULSA, AZ 85306-4407
 (928) 728-9820

PREPARED BY
 NOKALIS ENGINEERING, INC.
 1075 W. WASHINGTON STREET
 TULSA, AZ 85306-4407
 (928) 541-8374



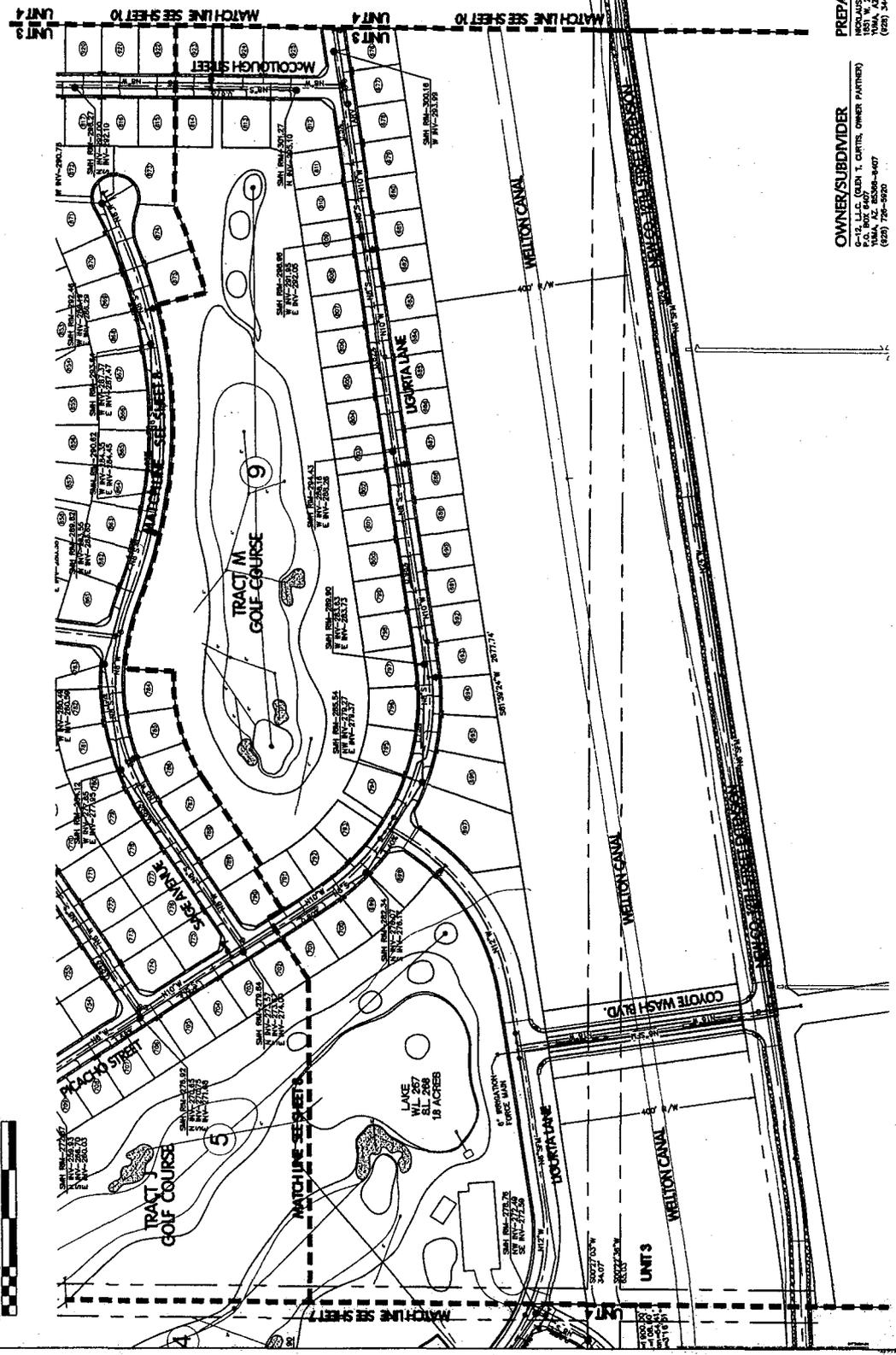
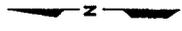
TENTATIVE WATER & SEWER PLAN
 THE LINKS AT COYOTE WASH SUBDIVISION - UNIT No. 3 & 4



PREPARED BY
 NICHOLAS ENGINEERING, INC.
 10000 W. 10th Street
 Suite 100
 Aurora, CO 80015
 (303) 344-8374

OWNER/SUBDIVIDER
 C-12, L.L.C. (GLEN T. CHIVERS, OWNER PARTNER)
 10000 W. 10th Street
 Suite 100
 Aurora, CO 80015
 (303) 758-9920

TENTATIVE WATER & SEWER PLAN THE LINKS AT COYOTE WASH SUBDIVISION - UNIT No. 3 & 4



EXTEND NEW 24" WATER PIPE FOR APPROXIMATELY 1/4 MILE AND BRANCH TO EXISTING WATERMAIN AT CANAL AVENUE AND COUNTY 12TH STREET MAIN FROM WIT.

EXTEND 8" SEWER FORCE MAIN TO EXISTING WASTEWATER TREATMENT PLANT

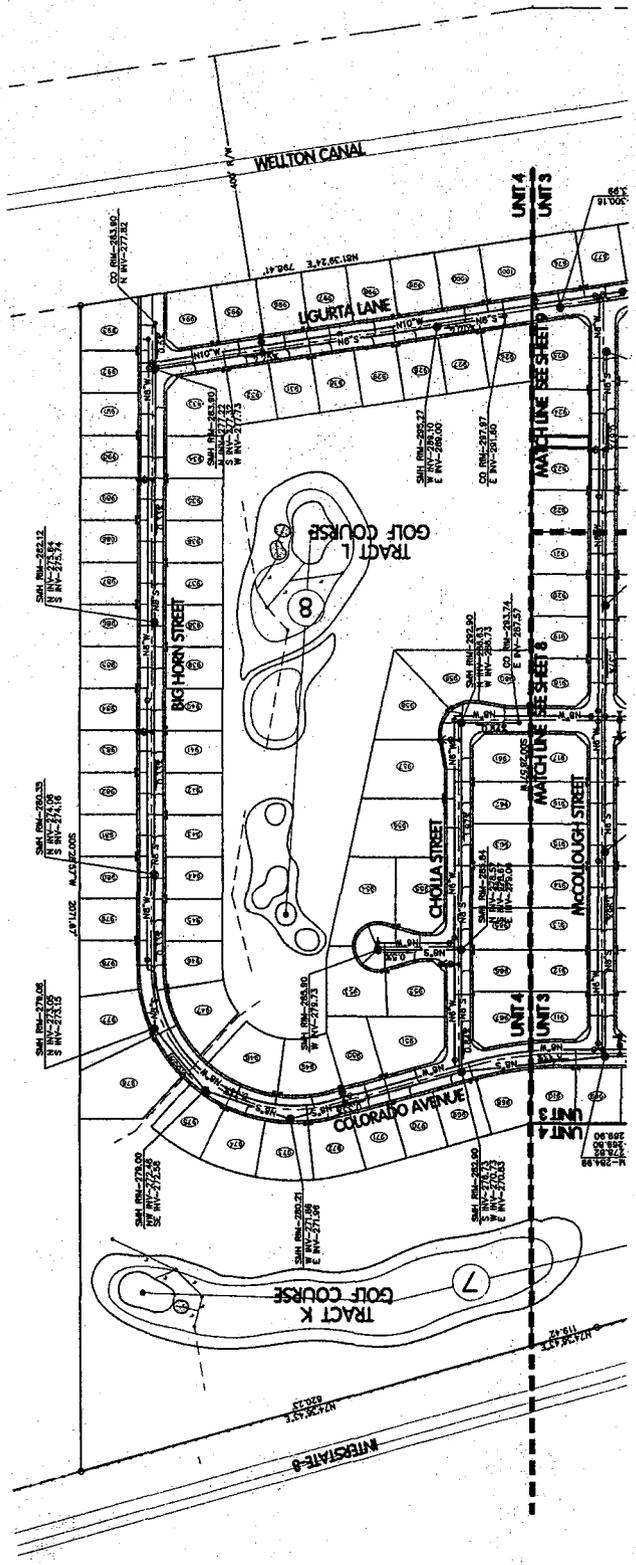


McCollough

PREPARED BY
 WATSON ENGINEERING, INC.
 1801 W. 4TH STREET
 YUMA, AZ 85504
 (928) 344-8574

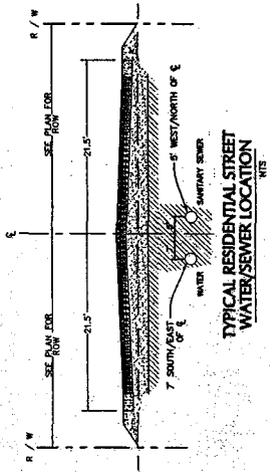
OWNER/SUBDIVIDER
 GLEN T. CURTIS, OWNER PARTNER
 P.O. BOX 640
 YUMA, AZ 85506-9407
 (928) 726-9920

TENTATIVE WATER & SEWER PLAN THE LINKS AT COYOTE WASH SUBDIVISION - UNIT No. 3 & 4



LEGEND

---	CENTER/SECTIONAL LINE
---	PROPERTY LINE
---	RIGHT OF WAY
---	LOT LINE
---	NEW WATERLINE
---	NEW SEWER LINE
○	NEW SEWER MANHOLE
○	NEW SINGLE WATER SERVICE
○	NEW DUAL WATER SERVICE
○	NEW FIRE HYDRANT
○	NEW WATER VALVE
○	NEW BLOWOFF VALVE
○	NEW AIR RELIEF VALVE
○	NEW RM/AV/DT ELEVATION
○	NEW RM/AV/DT ELEVATION




Michael Cowley
PREPARED BY:
 HOWARD ENGINEERING, INC.
 6-12, L.L.C. (CERT. T. CHARTERED OWNER PARTNER)
 1000 W. WILSON STREET
 TULSA, AL 35096-6407
 (918) 755-9620
 (918) 544-8374

EXHIBIT

8

**THE LINKS AT COYOTE WASH SUBDIVISION
PHASE 3
ENGINEER'S ESTIMATE**

NO.	ITEM DESCRIPTION	EST. QUANTITY	UNIT	UNIT COST	TOTAL COST
A.	Subdivision and Infrastructure				
1	10" Sewer pipe, Trenching & Backfill	1,495	L.F.	\$ 22.50	\$ 33,637.50
2	8" Sewer pipe, Trenching & Backfill	12,479	L.F.	\$ 20.50	\$ 255,819.50
3	Sewer Service	250	EA.	\$ 400.00	\$ 100,000.00
4	Sewer Manhole	47	EA.	\$ 2,500.00	\$ 117,500.00
5	Sewer Cleanout	1	EA.	\$ 500.00	\$ 500.00
	SUBTOTAL				\$ 507,457.00
	5% Engineering/Materials Testing/Construction Staking/inspection				\$ 25,372.85
	TOTAL 'A'				\$ 532,829.85

**THE LINKS AT COYOTE WASH SUBDIVISION
PHASE 4
ENGINEER'S ESTIMATE**

NO.	ITEM DESCRIPTION	EST. QUANTITY	UNIT	UNIT COST	TOTAL COST
A.	Subdivision and Infrastructure				
1	8" Sewer pipe, Trenching & Backfill	9,420	L.F.	\$ 22.50	\$ 211,950.00
2	Sewer Service	171	EA.	\$ 400.00	\$ 68,400.00
3	Sewer Manhole	32	EA.	\$ 3,500.00	\$ 112,000.00
4	Sewer Cleanout	1	EA.	\$ 500.00	\$ 500.00
	SUBTOTAL				\$ 392,850.00
	5% Engineering/Materials Testing/Construction Staking/inspection				\$ 19,642.50
	TOTAL ESTIMATE				\$ 412,492.50

EXHIBIT

9

AQUIFER
PROTECTION
PERMIT
(APP)



Janel Napolitano
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

1110 West Washington Street • Phoenix, Arizona 85007
(602) 771-2300 • www.adeq.state.az.us



Stephen A. Owens
Director

May 21, 2004

Spike Curtis
The Links at Coyote Wash
PO Box 6407
Yuma, Arizona 85336

Re: The Links at Coyote Wash WWTP; Inventory No. P-105311;
Decision to Issue Aquifer Protection Permit # 105311

Dear Mr. Curtis:

Enclosed is a copy of the signed Aquifer Protection Permit Other Amendment, and the Executive Summary for the above referenced facility. The APP conditions shall apply from March 22, 2003, which is the date of the Water Quality Division Director's signature, and shall be valid for the life of the facility (operational, closure, and post-closure periods).

Thank you for your cooperation in protecting the water quality of the State of Arizona. If you have any questions about the permit or need further assistance, please contact me at (800) 234-5677 ext.771-4613 or (602) 771-4613.

Sincerely,

Donald Bell, Project Mgr.
Wastewater, Recharge, & Reuse Unit
Water Permits Section, Water Quality Division

Enclosures (2): Permit & Executive Summary.

cc: Water Resources & Conservation Div., Attn: Mason Bolitho
Yuma County Planning & Zoning
Yuma County Health Department
Roman Diaz, NRO Compliance Unit
Don Shroyer, Mgr., Water Quality Data Unit
Lynne Dekarske, Administrative Assistant, Water Programs Section
ADEQ Regional Liaison Officer
Cliff Devlieg, WQ Compliance Unit
Dan Dow, Daniel Dow, Santec Corporation

MRR04-0400

Northern Regional Office
1515 East Cedar Avenue • Suite F • Flagstaff, AZ 86004
(928) 779-0313

Southern Regional Office
400 West Congress Street • Suite 433 • Tucson, AZ 85701
(520) 628-6733

Printed on recycled paper.

EXECUTIVE SUMMARY
AQUIFER PROTECTION PERMIT NO. P105311
PERMIT FOR WASTEWATER TREATMENT PLANT

Facility Name

The Links at Coyote Wash Wastewater Treatment Facility

Facility Location

The Links at Coyote Wash Wastewater Treatment Plant (WWTP) is located on south side of the City of Wellton, south of the Wellton- Mohawk Canal, east of Avenue 29 E and north of 12th Street, Yuma County, Arizona, Latitude 32° 32' 00" N, Longitude 114° 08' 00" W, Township 9 S, Range 18 W, Section 7, S1/2, Gila and Salt River Baseline and Meridian.

Regulatory Status

The Application for the Aquifer Protection Permit (APP) was received on February 20, 2003.

Facility Description

The limited partnership G-12, L.L.C. is authorized to operate the Links at Coyote Wash Wastewater Treatment Facility (WWTF) at a capacity of 0.126 million gallons per day (MGD). The WWTF will be constructed in two phases and will consist of two treatment trains. Phase I will include influent pump stations, headworks and chlorination/dechlorination disinfection basins large enough for both Phases. Phase I treatment will include flow equalization chamber, aeration basins, anoxic basins, and re-aeration in the secondary clarifier for a design capacity for Phase I of 0.0693 MGD. Phase II shall have additional flow equalization chambers, aeration basins, anoxic basins, and re-aeration in the additional secondary clarifier for a second treatment train design capacity of an additional 56,700 MGD. When the design capacity flow limit of 0.0693 MGD for phase I has been reached, no additional connections shall be accepted. After the facility has constructed the additional treatment in phase II, the facility may accept connections up to the level of 0.126 MGD. Disposal shall meet the Class B+ reclaimed water standards as required by A.A.C. R18-9-305 for use under a valid reclaimed water permit as per A.A.C. R18-9 Articles 6 and 7.

The sludge will be hauled off-site for disposal in accordance with State and Federal regulations at the Tacna landfill. In addition to the APP permit conditions pertaining to treatment and disposal of sewage sludge, the permittee must also comply with the requirements for sewage sludge disposal in 40 Code of Federal Regulations (CFR) Part 503 and 18 A.A.C. Ch. 9, Art. 10.

Depth to groundwater at the site is at least 70 feet bgs and the direction of groundwater flow is estimated to be to the north-east.

Best Available Demonstrated Control Technology (BADCT)

The WWTP employs secondary treatment and chlorine disinfection to achieve a total nitrogen level of less than 10 mg/l and a fecal coliform level of 200 CFU, and provides dechlorination to prevent the formation of trihalomethanes. The WWTP units are constructed from fiberglass (FRP), and the storage

EXECUTIVE SUMMARY - Page 2
AQUIFER PROTECTION PERMIT NO. P105311
PERMIT FOR WASTEWATER TREATMENT PLANT

ponds are all lined. Regular groundwater monitoring will be conducted at the point of compliance well, as part of this permit. The depth to groundwater at the site is at least 70 feet below ground surface.

Compliance with Aquifer Water Quality Standards (AWQS)

To ensure that the site operations do not impact the Aquifer, total nitrogen, total coliform, metals, and VOCs will be monitored in both discharge and groundwater monitoring, as described in the permit. Monitoring will initially be conducted prior to the operation of the WWTP to establish the ambient groundwater quality prior to operation of the WWTP. If there are no exceedances of the AWQS, the permit monitoring requirements remain the same. If there are ambient AWQS exceedances, the facility shall apply to amend the permit to establish Aquifer Quality limits (AQLs) based on the ambient conditions established in the preliminary groundwater sampling.

Point of Compliance

POC # 1 well is located downstream and northeast of the WWTP.

Storm/Surface Water Considerations

The WWTP is outside the 100-yr flood zone.

Zoning Requirements

The permittee has provided the zoning information required pursuant to A.A.C. R18-9-A201(A)(2)(c).

Financial Capability

The permittee has provided the financial information required pursuant to A.A.C. R18-9-A203.

Technical Capability

The permittee has provided the technical capability information required pursuant to A.A.C. R18-9-A202(B).

STATE OF ARIZONA
AQUIFER PROTECTION PERMIT NO. P-105311
PLACE ID 18278 LTF 29198

1.0 AUTHORIZATION

In compliance with the provisions of Arizona Revised Statutes (A.R.S.) Title 49, Chapter 2, Articles 1, 2 and 3, Arizona Administrative Code (A.A.C.) Title 18, Chapter 9, Articles 1 and 2, A. A. C. Title 18, Chapter 11, Article 4 and amendments thereto, and the conditions set forth in this permit, the limited partnership of G-12, L.L.C. is hereby authorized to operate the Links at Coyote Wash Wastewater Treatment Facility (WWTF) located south of the Town of Wellton, Yuma County, Arizona, over groundwater of the Yuma Basin, Township 9 South, Range 18 West, Section 7, S1/2 of the Gila and Salt River baseline and meridian.

This permit becomes effective on the date of the Water Quality Division Director's signature and shall be valid for the life of the facility (operational, closure, and post-closure periods), unless suspended or revoked pursuant to A.A.C. R18-9-A213. The permittee shall construct, operate and maintain the permitted facilities:

1. Following all the conditions of this permit including the design and operational information documented or referenced below, and
2. such that Aquifer Water Quality Standards (AWQS) are not violated at the applicable point(s) of compliance (POC) set forth below or if an AWQS for a pollutant has been exceeded in an aquifer at the time of permit issuance, that no additional degradation of the aquifer relative to that pollutant and as determined at the applicable POC occurs as a result of the discharge from the facility.

1.1 PERMITTEE INFORMATION

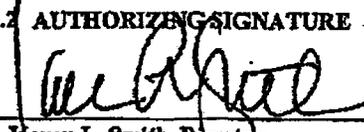
Facility Name:	The Links at Coyote Wash WWTF	
Permittee:	Mailing Address:	Facility's Street Address:
G-12, L.L.C.	P.O. Box 6047 Yuma, Arizona 85374	South of the Town of Wellton, Arizona, at corner of Ave. 29 East and County 12 th Street.
Facility Contact:	Mr. Spike Curtis, G-12 L.L.C.	(928) 726-5920
Emergency Telephone Number:	Rick Miller, Sunstate Env. Services	(928) 341-9685

Latitude: 32° 32' 00" North

Longitude: 114° 08' 00" West

Legal Description: Township 9 N, Range 18 W, Section 7

1.2 AUTHORIZING SIGNATURE



Karen L. Smith, Director
Water Quality Division
Arizona Department of Environmental Quality
Signed this 17 day of March, 2004

2.0 SPECIFIC CONDITIONS [A.R.S. §§ 49-203(4), 49-241(A)]

2.1 Facility / Site Description [A.R.S. § 49-243(K)(8)]

The limited partnership G-12, L.L.C. is authorized to operate the Links at Coyote Wash Wastewater Treatment Facility (WWTF) at a capacity of 0.126 million gallons per day (MGD). The WWTF will be constructed in two phases and will consist of two treatment trains. Phase I will include influent pump stations, headworks and chlorination/dechlorination disinfection basins large enough for both phases. Phase I treatment will include flow equalization chamber, aeration basins, anoxic basins, and re-aeration in the secondary clarifier for a design capacity for Phase I of 0.0693 MGD. Phase II shall have additional flow equalization chamber, aeration basins, anoxic basins, and re-aeration in the additional secondary clarifier for a second treatment train design capacity of an additional 56,700 MGD. When the design capacity flow limit of 0.0693 MGD for phase I has been reached, no additional connections shall be accepted. After the facility has constructed the additional treatment in phase II, the facility may accept connections up to the level of 0.126 MGD. Disposal shall meet the Class B+ reclaimed water standards as required by A.A.C. R18-9-305 for use under a valid reclaimed water permit as per A.A.C. R18-9 Articles 6 and 7.

The sludge will be hauled off-site for disposal in accordance with State and Federal regulations at the Tacna landfill. In addition to the APP permit conditions pertaining to treatment and disposal of sewage sludge, the permittee must also comply with the requirements for sewage sludge disposal in 40 Code of Federal Regulations (CFR) Part 503 and 18 A.A.C. Ch. 9, Art. 10.

Depth to groundwater at the site is at least 70 feet and the direction of groundwater flow is estimated to be to the north-east.

The materials authorized to be disposed of through the wastewater treatment Facility are typical household sewage and pre-treated commercial wastewater and shall not include motor oil, gasoline, paints, varnishes, hazardous wastes, solvents, pesticides, fertilizers or other materials not generally associated with toilet flushing, food preparation, laundry facilities and personal hygiene.

The site includes the following permitted discharging facilities:

Facility	Latitude	Longitude
Discharge structure	32° 32' 00" N	114° 08' 00" W

2.2 Best Available Demonstrated Control Technology [A.R.S. § 49-243(B) and A.A.C. R18-9-A202(A)(5)]

The WWTF includes the following Best Available Demonstrated Control Technology.

2.2.1 Engineering Design

The treated effluent shall be discharged to a golf course for reuse and shall meet or exceed Aquifer Water Quality Limits (AQL) and the Class B+ Reclaimed Water standards. The facility shall be constructed according to plans submitted February 20, 2003 and approved by the ADEQ Wastewater, Reuse and Recharge Unit.

2.2.2 Site-specific Characteristics

Site specific characteristics were not used to determine BADCT.

2.2.3 Pre-Operational Requirements

Not applicable.

2.2.4 Operational Requirements

1. A copy of the new O & M manual shall be maintained at the WWTP site at all times and shall be available upon request during inspections by ADEQ personnel.
2. The pollution control structures shall be inspected for the items listed in Section 4.0, Table IV Facility Inspection (Operational Monitoring).
3. If any damage of the pollution control structures is identified during inspection, proper repair procedures shall be performed. All repair procedures and material(s) used shall be documented on the Self-Monitoring Report Form submitted quarterly to the ADEQ Water Quality Compliance.
4. Reclaimed Water Classification for this facility is Class B+ as specified in Arizona Administrative Code (A.A.C.) R18-9-305.

2.3 Discharge Limitations [A.R.S. §§ 49-201(14), 49-243 and A.A.C. R18-9-A205(B)]

1. The permittee is authorized to operate the Links at Coyote Wash Wastewater Treatment Facility (WWTF) with a maximum average monthly flow of 0.0693 MGD.
2. The materials authorized to be disposed of through the wastewater treatment Facility are typical household sewage and pre-treated commercial wastewater and shall not include motor oil, gasoline, paints, varnishes, hazardous wastes, solvents, pesticides, fertilizers or other materials not generally associated with toilet flushing, food preparation, laundry facilities and personal hygiene.
3. In addition to the APP permit conditions pertaining to treatment and disposal of sewage sludge, the permittee must also comply with the requirements for sewage sludge disposal in 40 Code of Federal Regulations (CFR) Part 503 and 18 A.A.C. Ch. 9, Art. 10. Violations of 40 CFR 503 and 18 A.A.C. Ch. 9, Art. 10 do not constitute violations of this permit.
4. Specific discharge limitations are listed in Section 4.0, Table I.

2.4 Point(s) of Compliance (POC) [A.R.S. § 49-244]

Point of Compliance has been designated for this facility and is located northeast of the WWTF site at:

POC Locations	Latitude	Longitude
POC # 1	32° 38' 58" N	114° 09' 06" W

Groundwater monitoring will be required at POC # 1 as part of this permit. Monitoring requirements for the POC are listed in Section 4.0, TABLE II.

The Director may designate additional points of compliance if information on groundwater gradients or groundwater usage indicates the need.

2.5 Monitoring Requirements [A.R.S. § 49-243(K)(1), A.A.C. R18-9-A206(A)]

All monitoring required in this permit shall continue for the duration of the permit, regardless of the status of the facility. All sampling, preservation and holding times shall be in accordance with currently accepted standards of professional practice. Trip blanks, equipment blanks and duplicate samples shall also be obtained, and chain of custody procedures shall be followed, in accordance with currently accepted standards of professional practice. The permittee shall consult the most recent version of the ADEQ Quality Assurance Project Plan (QAPP) and EPA 40 CFR PART 136 for guidance in this regard. Copies of laboratory analyses and chain of custody forms shall be maintained at the permitted facility. Upon request these documents shall be made immediately available for review by ADEQ personnel.

2.5.1 Discharge Monitoring

The permittee shall monitor the wastewater according to Section 4.0, TABLE I. A representative sample of the wastewater shall be collected at discharge structure prior to the recharge basins.

2.5.2 Facility / Operational Monitoring

Operational monitoring inspections shall be conducted according to Section 4.0, TABLE III. A log of these inspections shall be kept at the facility for ten (10) years from the date of each inspection, available for review by ADEQ personnel.

- a. If any damage of the pollution control structures is identified during inspection, proper repair procedures shall be performed. All repair procedures and materials used shall be documented on the Self-Monitoring Report Form submitted quarterly to the ADEQ Water Quality Compliance. If none of the conditions occur, the report shall say "no event" for a particular reporting period. If the facility is not in operation, the permittee shall indicate that fact in the Self-Monitoring Report.
- b. The permittee shall submit data required in Section 4.0, TABLE III regardless of the operating status of the facility unless otherwise approved by the Department or allowed in this permit.

2.5.3 Groundwater Monitoring and Sampling Protocols

No ground water monitoring data is available at the location to document pre-existing conditions. A groundwater monitoring well shall be constructed according to the time lines indicated in Section 3.0 of this permit, prior to the facility accepting any effluent. The ambient groundwater shall be monitored prior to the operation of this facility. If the groundwater has no exceedances of the Aquifer Water Quality Standards (AWQSs) the permit conditions shown in Table II shall remain the permit conditions for this permit. If the ambient conditions show an exceedance of any groundwater parameter in Table II, the facility shall proceed to do the following: (1) continue to sample for 8 monthly samples to establish ambient conditions; (2) report the results of the sampling of the exceeded parameters as "reserved for ambient sampling" for the reporting

purposes of this permit; (3) Submit a report to ADEQ with the application indicating the facility's recommendations for the ambient limits to be set based upon the data submitted; and (4) submit a significant amendment application to ADEQ within 30 days of receiving the 8 months of ambient data, to establish the ambient groundwater monitoring conditions [see Section 3.0].

After establishment of monitoring well, static water levels shall be measured and recorded prior to sampling. Wells shall be purged of at least three borehole volumes (as calculated using the static water level) or until indicator parameters (pH, temperature, conductivity) are stable, whichever represents the greater volume. If evacuation results in the well going dry, the well shall be allowed to recover to 80% of the original borehole volume, or for 24 hours, whichever is shorter, prior to sampling. If after 24 hours there is not sufficient water for sampling, the well shall be recorded as "dry" for the monitoring event. An explanation for reduced pumping volumes, a record of the volume pumped, and modified sampling procedures shall be reported and submitted with the Self-Monitoring Report Form (SMRF).

2.5.4 Surface Water Monitoring and Sampling Protocols

Not applicable.

2.5.5 Analytical Methodology

All samples collected for compliance monitoring shall be analyzed using Arizona state approved methods. If no state approved method exists, then any appropriate EPA approved method shall be used. Regardless of the method used, the detection limits must be sufficient to determine compliance with the regulatory limits of the parameters specified in this permit. Analyses shall be performed by a laboratory licensed by the Arizona Department of Health Services, Office of Laboratory Licensure and Certification. For results to be considered valid, all analytical work shall meet quality control standards specified in the approved methods. A list of Arizona state certified laboratories can be obtained at the address below:

Arizona Department of Health Services
Office of Laboratory Licensure and Certification
1740 W. Adams Street, Room 203 North
Phoenix, AZ 85007
Phone: (602) 364-0720

2.5.6 Installation and Maintenance of Monitoring Equipment

Monitoring equipment required by this permit shall be installed and maintained so that representative wastewater, groundwater, soil, water, or sludge samples can be collected. Should new groundwater wells be determined to be necessary, the construction details shall be submitted to the ADEQ Water Permits Section for approval.

2.6 Contingency Plan Requirements

[A.R.S. § 49-243(K)(3), (K)(7) and A.A.C. R18-9-A204 and R18-9-A205]

2.6.1 General Contingency Plan Considerations

At least one copy of the contingency and emergency response plan(s) shall be maintained at the location where day-to-day decisions regarding the operation of the facility are made. The permittee shall be aware of and follow the contingency and emergency plans.

Any alert level (AL) that is exceeded or any violation of an aquifer quality limit (AQL), discharge limit (DL), or other permit condition shall be reported to ADEQ following the reporting requirements in Section 2.7.3.

Some contingency actions involve verification sampling. Verification sampling shall consist of the first followup sample collected from a location that previously indicated a violation or that an AL has been exceeded. Collection and analysis of the verification sample shall use the same protocols and test methods to analyze for the pollutant or pollutants that exceeded an AL or violated an AQL.

2.6.2 Exceeding of Alert Levels / Performance Levels (PL)**2.6.2.1 Exceeding of Performance Levels Set for Operational Conditions**

If the PL set in Section 4.0, TABLE III, has been exceeded the permittee shall:

- a. Notify the ADEQ Southern Regional Office Water Quality Compliance Section in writing within five (5) days of becoming aware of a violation of a PL.
- b. Submit a written report within thirty (30) days after becoming aware of the violation of a PL. The report shall document all of the following:
 1. A description of the violation and its cause;
 2. the period of violation, including exact date(s) and time(s), if known, and the anticipated time period during which the violation is expected to continue;
 3. any action taken or planned to mitigate the effects of the violation, or the spill, or to eliminate or prevent recurrence of the violation;
 4. any monitoring activity or other information which indicates that any pollutants would be reasonably expected to cause an exceedance of an Aquifer Water Quality Standard; and
 5. any malfunction or failure of pollution control devices or other equipment or process.

2.6.2.2 Exceeding of Alert Levels Set for Discharge Monitoring

1. If an AL set in Section 4.0, TABLE I or II has been exceeded, the permittee shall conduct verification sampling within 24 hours of becoming aware of the alert status.

2. If the verification sampling confirms that the AL has been exceeded, the permittee shall immediately investigate to determine the cause of the AL being exceeded. The investigation shall include the following:
 - a. Inspection, testing, and assessment of the current condition of all treatment or pollutant discharge control systems that may have contributed to the AL being exceeded.
 - b. Review of recent process logs, reports, and other operational control information to identify any unusual occurrences;
3. The permittee shall initiate actions identified in the contingency plan referenced in Section 5.0 and specific contingency measures identified in Section 2.6 to resolve any problems identified by the investigation which may have led to an AL being exceeded. To implement any other corrective action the permittee shall obtain prior approval from ADEQ according to Section 2.6.6.
4. Within thirty (30) days after confirmation of an AL being exceeded, the permittee shall submit the laboratory results to the ADEQ Southern Regional Office Water Quality Compliance Section, along with a summary of the findings of the investigation, the cause of the AL being exceeded, and actions taken to resolve the problem.
5. Upon review of the submitted report, the Department may require additional monitoring, increased frequency of monitoring, amendments to permit conditions or other actions.

2.6.2.3 Exceeding of Alert Levels in Groundwater Monitoring

2.6.2.3.1 Alert Levels for Indicator Parameters

Not Applicable.

2.6.2.3.2 Alert Levels for Pollutants with Numeric Aquifer Water Quality Standards

1. If an AL for a pollutant set in Section 4.0, TABLE II has been exceeded, the permittee shall conduct verification sampling within 5 days of becoming aware of an AL being exceeded.
2. If verification sampling confirms the AL being exceeded, the permittee shall increase the frequency of monitoring to 'Daily', 'Weekly', and 'Monthly' for constituents that have a permit monitoring frequency of 'Weekly', 'Monthly', and 'Quarterly', 'Semi-Annual' or 'Annual' respectively. In addition, the permittee shall immediately initiate an investigation of the cause of the AL being exceeded, including inspection of all discharging units and all related pollution control devices, review of any operational and maintenance practices that might have resulted in an unexpected

discharge, and hydrologic review of groundwater conditions including up gradient water quality.

3. The permittee shall initiate actions identified in the contingency plan and specific contingency measures identified in Section 2.6 to resolve any problems identified by the investigation which may have led to an AL being exceeded. To implement any other corrective action the permittee shall obtain prior approval from ADEQ according to Section 2.6.6. Alternatively, the permittee may submit a technical demonstration, subject to written approval by the Water Permits Section, that although an AL is exceeded, pollutants are not reasonably expected to cause a violation of an AQL. The demonstration may propose a revised AL or monitoring frequency for approval in writing by the Water Permits Section.
4. Within thirty (30) days after confirmation of an AL being exceeded, the permittee shall submit the laboratory results to the Water Quality Compliance Section, Enforcement Unit along with a summary of the findings of the investigation, the cause of the AL being exceeded, and actions taken to resolve the problem.
5. Upon review of the submitted report, the Department may require additional monitoring, increased frequency of monitoring, amendments to permit conditions or other actions.
6. The increased monitoring required as a result of ALs being exceeded may be reduced to reduced to Section 4.0, TABLE II frequencies, if the results of four sequential sampling events demonstrate that no parameters exceed the AL.

2.6.2.3.3

Alert Levels to Protect Downgradient Users from Pollutants Without Numeric Aquifer Water Quality Standards

Not Applicable.

2.6.3 Discharge Limitations (DL) Violations

1. If a DL set in Section 4.0, TABLE I has been exceeded, the permittee shall conduct verification sampling within 24 hours of becoming aware of a DL being exceeded.
2. If verification sampling confirms that the DL has been violated, the permittee shall immediately investigate to determine the cause of the violation. The investigation shall include the following:
 - a. Inspection, testing, and assessment of the current condition of all treatment or pollutant discharge control systems that may have contributed to the violation; and
 - b. Review of recent process logs, reports, and other operational control information to identify any unusual occurrences.

The permittee also shall submit a report according to Section 2.7.3, which includes a summary of the findings of the investigation, the cause of the violation, and actions taken to resolve the problem. The permittee shall consider and ADEQ may require corrective action that may include control of the source of discharge, cleanup of affected soil, surface water or groundwater, and mitigation of the impact of pollutants on existing uses of the aquifer. Corrective actions shall either be specifically identified in this permit, included in the contingency plan, or separately approved according to Section 2.6.6.

3. Upon review of the submitted report, the Department may require additional monitoring, increased frequency of monitoring, amendments to permit conditions or other actions.

2.6.4 Aquifer Quality Limit (AQL) Violation

1. If an AQL set in Section 4.0, TABLE II has been exceeded, the permittee shall conduct verification sampling within 5 days of becoming aware of an AQL being exceeded.
2. If verification sampling confirms that the AQL is violated for any parameter, the permittee shall increase the frequency of monitoring to 'Daily', 'Weekly', and 'Monthly' for constituents that have a permit monitoring frequency of 'Weekly', 'Monthly', and 'Quarterly', 'Semi-Annual' or 'Annual' respectively. In addition, the permittee shall immediately initiate an evaluation for the cause of the violation, including inspection of all discharging units and all related pollution control devices, and review of any operational and maintenance practices that might have resulted in unexpected discharge.

The permittee also shall submit a report according to Section 2.7.3, which includes a summary of the findings of the investigation, the cause of the violation, and actions taken to resolve the problem. The permittee shall consider and ADEQ may require corrective action that may include control of the source of discharge, cleanup of affected soil, surface water or groundwater, and mitigation of the impact of pollutants on existing uses of the aquifer. Corrective actions shall either be specifically identified in this permit, included in the contingency plan, or separately approved according to Section 2.6.6.

3. Upon review of the submitted report, the Department may require additional monitoring, increased frequency of monitoring, amendments to permit conditions or other actions.

2.6.5 Emergency Response and Contingency Requirements for Spills and Unauthorized Discharges

2.6.5.1 Duty to Respond

The permittee shall act immediately to correct any condition that could pose an endangerment to public health or the environment.

2.6.5.2 Spills of Hazardous Substances or Toxic Pollutants

In the event of any accidental spill or unauthorized discharge (A.R.S. § 49-201(12)) of suspected hazardous substances (A.R.S. § 49-201(18)) or toxic pollutants (A.R.S. § 49-243(I)) on the facility site, the permittee shall promptly isolate the area and attempt to identify the spilled material. The permittee shall record information, including name, nature of exposure and follow-up medical treatment, if necessary, on persons who may

have been exposed during the incident. Spilled materials, absorbents, and contaminated media generated during emergency response shall be removed and disposed of according to applicable federal, state and local regulations. The emergency response coordinator shall notify the ADEQ Water Quality Compliance Unit at (602) 771-4841 immediately upon discovering a release of a hazardous substance in excess of a reportable quantity in accordance with 40 CFR Part 302, *et seq.*

2.6.5.3 Discharge of Non-hazardous Materials

In the event of any unauthorized discharge of non-hazardous materials from the facility, the permittee shall promptly attempt to cease the discharge and isolate the discharged material. Discharged material shall be removed and the site cleaned up as soon as possible. The permittee shall notify ADEQ Water Quality Compliance Unit at (602) 771-4841 within 24-hours upon discovering the discharge of non-hazardous material which: a) has the potential to cause an AQL to be exceeded; or b) could pose an endangerment to public health or the environment.

2.6.5.4 Reporting Requirements

The permittee shall submit a written report for any unauthorized discharges described in Sections 2.6.5.2 and 2.6.5.3 to ADEQ Water Quality Compliance Unit at (602) 771-4841 within thirty days of the discharge or as required by subsequent ADEQ action. The report shall summarize the event, including any human exposure, and facility response activities and include all information specified in Section 2.7.3. If a notice is issued by ADEQ subsequent to the discharge notification, any additional information requested in the notice shall also be submitted within the time frame specified in that notice. Upon review of the submitted report, ADEQ may require additional monitoring or corrective actions.

2.6.6 Corrective Actions

Specific contingency measures identified in Section 2.6 and actions identified in the contingency plan have already been approved by ADEQ and do not require written approval to implement.

With the exception of emergency response actions taken under Section 2.6.5, the permittee shall obtain written approval from the Water Permits Section prior to implementing a corrective action to accomplish any of the following goals in response to exceeding an AL or violation of an AQL, DL, or other permit condition:

1. Control of the source of an unauthorized discharge;
2. Soil cleanup;
3. Cleanup of affected surface waters;
4. Cleanup of affected parts of the aquifer;
5. Mitigation to limit the impact of pollutants on existing uses of the aquifer.

Within 30 days of completion of any corrective action, the operator shall submit to the ADEQ Water Quality Compliance Unit, a written report describing the causes, impacts, and actions taken to resolve the problem.

2.7 Reporting and Recordkeeping Requirements**[A.R.S. § 49-243(K)(2) and A.A.C. R18-9-A206(B) and R18-9-A207]****2.7.1 Self Monitoring Report Forms (SMRF)**

1. The permittee shall complete the SMRFs provided by ADEQ, and submit them to the ADEQ Water Quality Compliance Section, Data Unit.
2. The permittee shall complete the SMRF to the extent that the information reported may be entered on the form. If no information is required during a quarter, the permittee shall enter "not required" on the SMRF and submit the report to ADEQ. The permittee shall use the format devised by ADEQ.
3. The tables contained in Sections 4.0 list the parameters to be monitored and the frequency for reporting results for groundwater compliance monitoring. Monitoring methods shall be recorded on the SMRFs.
4. In addition to the SMRF, the information contained in Section 6.9.3 shall be included for any exceedances or violations being reported for the current reporting period.

2.7.2 Operation Inspection / Log Book Recordkeeping

A signed copy of this permit shall be maintained at all times at the location where day-to-day decisions regarding the operation of the facility are made. A log book of the inspections and measurements required by this permit shall be maintained at the location where day-to-day decisions are made regarding the operation of the facility. The logbook shall be retained for ten years from the date of each inspection, and upon request, the permit and the logbook shall be made immediately available for review by ADEQ personnel. The information in the log book shall include, but not be limited to, the following information as applicable:

1. name of inspector;
2. date and shift inspection was conducted;
3. condition of applicable facility components;
4. any damage or malfunction, and the date and time any repairs were performed;
5. documentation of sampling data and time;
6. names of samples;
7. static water level in monitor well prior to sampling;
8. sampling method;
9. purging volume;
10. indicator parameters including field conductance ($\mu\text{mhos/cm}$), field temperature ($^{\circ}\text{C}$), and field pH (standard units);
11. date of analysis;
12. preservation and transportation procedures;
13. the name of the analytical facility, and;
14. any other information as specified by this permit to be entered in the logbook.

2.7.3 Permit Violation and Alert Level Status Reporting

1. The permittee shall notify the ADEQ Southern Regional Office Water Quality Compliance Unit in writing within five days (except as provided in Section 2.6.5) of becoming aware of a violation of any permit condition, discharge limitation or of an Alert Level being exceeded.
2. The permittee shall submit a written report to the ADEQ Southern Regional Office Water Quality Compliance Unit within 30 days of becoming aware of the violation of any permit condition or discharge limitation. The report shall document all of the following:
 - a. Identification and description of the permit condition for which there has been a violation and a description of its cause.
 - b. The period of violation including exact date(s) and time(s), if known, and the anticipated time period during which the violation is expected to continue.
 - c. Any corrective action taken or planned to mitigate the effects of the violation, or to eliminate or prevent a recurrence of the violation.
 - d. Any monitoring activity or other information which indicates that any pollutants would be reasonably expected to cause a violation of an Aquifer Water Quality Standard.
 - e. Proposed changes to the monitoring which include changes in constituents or increased frequency of monitoring.
 - f. Description of any malfunction or failure of pollution control devices or other equipment or processes.

2.7.4 Operational, Other or Miscellaneous Reporting

The permittee shall complete the Self-Monitoring Report Form provided by the Department to reflect facility inspection requirements designated in Section 4.0, TABLE III and submit to the ADEQ, Water Quality Compliance quarterly along with other reports required by this permit. Facility inspection reports shall be submitted no less frequently than quarterly, regardless of operational status.

2.7.5 Reporting Location

All SMRFs shall be submitted to:

Arizona Department of Environmental Quality
Water Quality Compliance Section, Data Unit
Mail Code: 5415B-1
1110 W. Washington Street
Phoenix, AZ 85007
Phone (602) 771-4681

All documents required by this permit to be submitted to the ADEQ Southern Regional Office Water Quality Compliance Unit shall be directed to:

Arizona Department of Environmental Quality
 Southern Regional Office Water Quality Compliance Unit
 400 W. Congress, Suite 433
 Tucson, AZ 85701
 Phone (520) 628-6745

All documents required by this permit to be submitted to the Water Permits Section shall be directed to:

Arizona Department of Environmental Quality
 Water Permits Section
 Mail Code: 5415B-3
 1110 W. Washington Street
 Phoenix, AZ 85007
 Phone (602) 771-4428

All documents required by this permit to be submitted to the Water Quality Compliance Section, enforcement Unit shall be directed to:

Arizona Department of Environmental Quality
 Water Quality Compliance Section
 1110 W. Washington Street
 Phoenix, AZ 85007
 Phone (602) 771-4525

2.7.6 Reporting Deadline

The following table lists the quarterly report due dates:

Monitoring conducted during quarter	Quarterly Report due by
January-March	April 30
April-June	July 30
July-September	October 30
October-December	January 30

2.7.7 Changes to Facility Information in Section 1.0

The Water Permits Section and Water Quality Compliance Section shall be notified within 10 days of any change of facility information including Facility Name, Permittee Name, Mailing or Street Address, Facility Contact Person or Emergency Telephone Number.

2.8 Temporary Cessation (A.R.S. § 49-243(K)(8) and A.A.C. R18-9-A209(A))

The permittee shall give written notice to the ADEQ Southern Regional Office Water Quality Compliance Section upon ceasing operation of the facility for a period of 60 days or greater. The permittee shall take the following measures upon temporary cessation:

- A. If applicable, direct the wastewater flows from the facility to another State approved wastewater treatment facility.
- B. Correct the problem that caused the temporary cessation of the facility.
- C. Notify ADEQ with a monthly facility Status Report describing the activities conducted on the WWTP to correct the problem.

At the time of notification the permittee shall submit for ADEQ approval a plan for maintenance of discharge control systems and for monitoring during the period of temporary cessation. Immediately following ADEQ's approval, the permittee shall implement the approved plan. If necessary, ADEQ shall amend permit conditions to incorporate conditions to address temporary cessation. If the facility will cease operation, the permittee shall submit closure notification, as set forth in Section 2.9 below.

2.9 Closure [A.R.S. §§ 49-243(K)(6), 49-252 and A.A.C. R18-9-A209(B)]

The permittee shall give written notice of closure to the Water Quality Compliance Section before closing, or before ceasing use of a facility addressed under this permit if the cessation is projected to last more than three years.

Within 90 days following notification of closure, the permittee shall submit for approval to the Water Permits Section, a detailed Closure Plan which meets the requirements of A.R.S. § 49-252 and A.A.C. 18-9-A209(B)(1)(a).

If the closure plan achieves clean closure immediately, ADEQ shall issue a letter of approval to the permittee. If the closure plan contains a schedule for bringing the facility to a clean closure configuration at a future date, ADEQ may incorporate any part of the schedule as an amendment to this permit.

Upon completion of closure activities, the permittee shall give written notice to the Water Permits Section indicating that the approved Closure Plan has been implemented fully. If clean closure has been achieved, ADEQ shall issue a letter of approval to the permittee at that time. If any of the following conditions apply, the permittee shall follow the terms of Post Closure stated in this permit:

1. Clean closure cannot be achieved at the time of closure notification or within one year thereafter under a diligent schedule of closure actions;
2. Further action is necessary to keep the facility in compliance with aquifer water quality standards at the applicable point of compliance;
3. Continued action is required to verify that the closure design has eliminated discharge to the extent intended;
4. Remedial or mitigative measures are necessary to achieve compliance with Title 49, Ch. 2;
5. Further action is necessary to meet property use restrictions.

2.9.1 Closure Plan

A specific closure plan is not required at the time of permit issuance.

2.9.2 Closure Completion

Not required at the time of permit issuance.

2.10 Post Closure [A.R.S. §§ 49-243(K)(6), 49-252 and A.A.C. R18-9 A209(C)]

Post-closure requirements shall be established based on a review of facility closure actions and will be subject to review and approval by the Water Permits Section.

In the event clean closure cannot be achieved pursuant to A.R.S. § 49-252, the permittee shall submit for approval to the Water Permits Section a Post-Closure Plan that addresses post-closure maintenance and monitoring actions at the facility. The Post-Closure Plan shall meet all requirements of A.R.S. §§ 49-201(29) and 49-252 and A.A.C. R18-9-A209(C). Upon approval of the Post-Closure Plan, this permit shall be amended or a new permit shall be issued to incorporate all post-closure controls and monitoring activities of the Post-Closure Plan.

2.10.1 Post-Closure Plan

A specific post-closure plan is not required at the time of permit issuance.

2.10.2 Post-Closure Completion

Not required at the time of permit issuance.

3.0 COMPLIANCE SCHEDULE [A.R.S. § 49-243(K)(5) and A.A.C. R18-9-A208]

For each compliance schedule item listed below, the permittee shall submit the required information, including a cover letter that lists the compliance schedule items, to the Water Permits Section. A copy of the cover letter must also be submitted to the Water Quality Compliance Section, Data Unit.

1. Notify ADEQ Water Permits Unit and Water Quality Compliance Unit of the completion of the Phase II construction and provide a sealed engineers inspection report of the completion.
2. The ambient groundwater shall be monitored prior to the operation of this facility to establish the ambient groundwater levels for each parameter listed in Table II of this permit by conducting groundwater monitoring at the POC well [see Section 2.5.3]. If the groundwater monitoring shows no exceedances of the Aquifer Water Quality Standards (AWQs) the permit limits shown in Table II shall remain the permit limits for this permit.
3. If the ambient conditions show an exceedance of any groundwater parameter listed in Table II, the facility shall proceed to do the following: (1) continue to sample for 8 monthly samples to establish ambient conditions; (2) report the results of the sampling of the exceeded parameters as "reserved for ambient sampling" for the reporting purposes of this permit; (3) submit a report to ADEQ indicating the facility's recommendations for the ambient limits to be set in the permit based upon the data submitted; AND (4) submit a significant amendment application to ADEQ within 30 days of receiving the 8 months of ambient sampling data, to establish the ambient groundwater monitoring conditions [see Section 2.5.3]; ADEQ will document this acceptance of the current groundwater monitoring with a letter within 30 days of receiving the acceptable ambient information indicating that the ambient conditions shall be monitored as "reserved for ambient monitoring" for purposes of this permit during this period of time.

4.0 TABLES OF MONITORING REQUIREMENTS

TABLE I DISCHARGE MONITORING FOR CLASS B+ RECLAIMED WATER

Sampling Point Number	Sampling Point Identification		Latitude	Longitude	
1	Discharge Structure		33° 32' 00" N	114° 08' 00" W	
Parameter	AL ¹	DL ¹	Units	Sampling Frequency	Reporting Frequency
Flow: Daily	Reserved ²	Reserved	MGD ³	Everyday ⁴	Quarterly
Flow: Phase I total monthly flow provided for reuse ⁵	0.0658	0.0693	MGD	Monthly	Quarterly
Flow: Phase I and II total monthly flow provided for reuse ⁶	0.1197	0.126	MGD	Monthly	Quarterly
Total Nitrogen ⁷ : Five-sample rolling geometric mean	8.0	10.0	mg/l	Monthly	Quarterly
Fecal Coliform ⁸ : Single-sample maximum	Reserved	800	CFU or MPN ⁹	Daily	Quarterly
Fecal Coliform: Four (4) of last seven (7) samples ¹⁰	Reserved	200	CFU or MPN	Daily	Quarterly

- ¹ AL = Alert Level. DL = Discharge Limit. The ALs and DLs are maximum numbers unless otherwise indicated.
- ² Limits may be established at a future date.
- ³ Million Gallons per Day
- ⁴ Flow rate shall be measured using a continuous recording flow meter.
- ⁵ This flow limit shall not be exceeded until Phase II is operational.
- ⁶ Monthly average of daily flow values. When Phase II is completed, the total for both phases shall be only reported value.
- ⁷ Nitrate N, plus Nitrite N, plus Total Kjeldahl Nitrogen (TKN).
- ⁸ For fecal coliform, "daily" sampling means every day in which a sample can practicably be obtained and delivered in sufficient time for proper analysis, provided that no less than four (4) samples in each calendar week are obtained and analyzed.
- ⁹ CFU=colony forming units. MPN=most probable number.
- ¹⁰ If at least four (4) out of the last seven (7) samples are not greater than 200 CFU or MPN per 100 ml, report "yes" in the appropriate space on the SMRF (indicating that the standard has been met). If at least four (4) out of the last seven (7) samples are greater than 200 CFU or MPN per 100 ml, report "no" in the appropriate space on the SMRF (indicating that the standard has not been met).

4.0 TABLES OF MONITORING REQUIREMENTS

TABLE I
DISCHARGE MONITORING (continued)

Parameter	AL ¹	DL ²	Units	Sampling Frequency	Reporting Frequency
Metals (Total):					
Antimony	0.0048	0.006	mg/l	Quarterly	Quarterly
Arsenic	0.04	0.05	mg/l	Quarterly	Quarterly
Barium	1.60	2.00	mg/l	Quarterly	Quarterly
Beryllium	0.0032	0.004	mg/l	Quarterly	Quarterly
Cadmium	0.004	0.005	mg/l	Quarterly	Quarterly
Chromium	0.08	0.1	mg/l	Quarterly	Quarterly
Cyanide (As free cyanide)	0.16	0.2	mg/l	Quarterly	Quarterly
Fluoride	3.2	4.0	mg/l	Quarterly	Quarterly
Lead	0.04	0.05	mg/l	Quarterly	Quarterly
Mercury	0.0016	0.002	mg/l	Quarterly	Quarterly
Nickel	0.08	0.1	mg/l	Quarterly	Quarterly
Selenium	0.04	0.05	mg/l	Quarterly	Quarterly
Thallium	0.0016	0.002	mg/l	Quarterly	Quarterly

4.0 TABLES OF MONITORING REQUIREMENTS

TABLE I
DISCHARGE MONITORING (continued)

Parameter	AL	DL	Units	Sampling Frequency	Reporting Frequency
Volatile Organic Compounds (VOCs):					
Benzene	0.004	0.005	mg/l	Semi-Annual	Semi-Annual
Carbon tetrachloride	0.004	0.005	mg/l	Semi-Annual	Semi-Annual
o-Dichlorobenzene	0.48	0.6	mg/l	Semi-Annual	Semi-Annual
para-Dichlorobenzene	0.06	0.075	mg/l	Semi-Annual	Semi-Annual
1,2-Dichloroethane	0.004	0.005	mg/l	Semi-Annual	Semi-Annual
1,1-Dichloroethylene	0.0056	0.007	mg/l	Semi-Annual	Semi-Annual
cis-1,2-Dichloroethylene	0.05	0.07	mg/l	Semi-Annual	Semi-Annual
trans-1,2-Dichloroethylene	0.08	0.1	mg/l	Semi-Annual	Semi-Annual
Dichloromethane	0.004	0.005	mg/l	Semi-Annual	Semi-Annual
1,2-Dichloropropane	0.004	0.005	mg/l	Semi-Annual	Semi-Annual
Ethylbenzene	0.56	0.7	mg/l	Semi-Annual	Semi-Annual
Monochlorobenzene	0.08	0.1	mg/l	Semi-Annual	Semi-Annual
Styrene	0.08	0.1	mg/l	Semi-Annual	Semi-Annual
Tetrachloroethylene	0.004	0.005	mg/l	Semi-Annual	Semi-Annual
Toluene	0.8	1.0	mg/l	Semi-Annual	Semi-Annual
Trihalomethanes (total) ¹¹	0.08	0.1	mg/l	Semi-Annual	Semi-Annual
1,1,1-Trichloroethane	0.16	0.2	mg/l	Semi-Annual	Semi-Annual
1,2,4 - Trichlorobenzene	0.056	0.07	mg/l	Semi-Annual	Semi-Annual
1,1,2 - Trichloroethane	0.004	0.005	mg/l	Semi-Annual	Semi-Annual
Trichloroethylene	0.004	0.005	mg/l	Semi-Annual	Semi-Annual
Vinyl Chloride	0.0016	0.002	mg/l	Semi-Annual	Semi-Annual
Xylenes (Total)	8.0	10.0	mg/l	Semi-Annual	Semi-Annual

¹¹ Total Trihalomethanes comprises of Bromoform, Bromodichloromethane, Chloroform, and Dibromochloromethane.

4.0 TABLES OF MONITORING REQUIREMENTS

**TABLE II
GROUNDWATER MONITORING ¹**

Sampling Point Number	Sampling Point Identification	Latitude	Longitude		
1	Monitor Well	32° 38' 57"N	114° 09' 06" W		
Parameter	AL ²	AQL ³	Units	Sampling Frequency	Reporting Frequency
Depth to groundwater	Reserved	Reserved	feet	Monthly	Quarterly
Nutrients:					
Total Nitrogen ⁴	8.0	10.0	mg/l	Monthly	Quarterly
Nitrate-Nitrite as N	8.0	10.0	mg/l	Monthly	Quarterly
Total Kjeldahl Nitrogen (TKN)	Reserved	Reserved		Monthly	Quarterly
Microbes:					
Total Coliform	Absence	Absence ⁵	CFU	Monthly	Quarterly

¹ A monitor well shall be drilled at POC # 1 and groundwater monitoring shall commence by March 12, 2004. Depth to groundwater shall be measured with every sampling because of the mounding effects.

² AL = Alert Level.

³ AQL = Aquifer Quality Limit. All AQLs and ALs are presented in mg/l, except Total Coliform which is presented in Colony Forming Units (CFU). All ALs and AQLs are maximum numbers except where stated otherwise.

⁴ Calculated value. Total Nitrogen = Nitrate as N plus Nitrite as N plus TKN.

⁵ Absence means the absence of total coliform in the first sample, or the absence of total coliform or fecal coliform in the repeat sample. In the event the facility must re-sample due to a positive result for total coliform in the initial sample, then only the result of the repeat sample must be submitted to ADEQ.

4.0 TABLES OF MONITORING REQUIREMENTS

TABLE II
GROUNDWATER MONITORING (Continued)

Parameter	AL ¹	AQL ²	Units	Sampling Frequency	Reporting Frequency
Metals (Total):					
Antimony	0.0048	0.006	mg/l	Quarterly	Quarterly
Arsenic	0.04	0.05	mg/l	Quarterly	Quarterly
Barium	1.60	2.00	mg/l	Quarterly	Quarterly
Beryllium	0.0032	0.004	mg/l	Quarterly	Quarterly
Cadmium	0.004	0.005	mg/l	Quarterly	Quarterly
Chromium	0.08	0.1	mg/l	Quarterly	Quarterly
Cyanide (As free cyanide)	0.16	0.2	mg/l	Quarterly	Quarterly
Fluoride	3.2	4.0	mg/l	Quarterly	Quarterly
Lead	0.04	0.05	mg/l	Quarterly	Quarterly
Mercury	0.0016	0.002	mg/l	Quarterly	Quarterly
Nickel	0.08	0.1	mg/l	Quarterly	Quarterly
Selenium	0.04	0.05	mg/l	Quarterly	Quarterly
Thallium	0.0016	0.002	mg/l	Quarterly	Quarterly

4.0 TABLES OF MONITORING REQUIREMENTS

TABLE D
GROUNDWATER MONITORING (continued)

Parameter	AL	DL	Units	Sampling Frequency	Reporting Frequency
Volatile Organic Compounds (VOCs):					
Benzene	0.004	0.005	mg/l	Semi-Annual	Semi-Annual
Carbon tetrachloride	0.004	0.005	mg/l	Semi-Annual	Semi-Annual
o-Dichlorobenzene	0.48	0.6	mg/l	Semi-Annual	Semi-Annual
para-Dichlorobenzene	0.06	0.075	mg/l	Semi-Annual	Semi-Annual
1,2-Dichloroethane	0.004	0.005	mg/l	Semi-Annual	Semi-Annual
1,1-Dichloroethylene	0.0056	0.007	mg/l	Semi-Annual	Semi-Annual
cis-1,2-Dichloroethylene	0.05	0.07	mg/l	Semi-Annual	Semi-Annual
trans-1,2-Dichloroethylene	0.08	0.1	mg/l	Semi-Annual	Semi-Annual
Dichloromethane	0.004	0.005	mg/l	Semi-Annual	Semi-Annual
1,2-Dichloropropane	0.004	0.005	mg/l	Semi-Annual	Semi-Annual
Ethylbenzene	0.56	0.7	mg/l	Semi-Annual	Semi-Annual
Monochlorobenzene	0.08	0.1	mg/l	Semi-Annual	Semi-Annual
Styrene	0.08	0.1	mg/l	Semi-Annual	Semi-Annual
Tetrachloroethylene	0.004	0.005	mg/l	Semi-Annual	Semi-Annual
Toluene	0.8	1.0	mg/l	Semi-Annual	Semi-Annual
Trihalomethanes (total) ⁶	0.08	0.1	mg/l	Semi-Annual	Semi-Annual
1,1,1-Trichloroethane	0.16	0.2	mg/l	Semi-Annual	Semi-Annual
1,2,4 - Trichlorobenzene	0.056	0.07	mg/l	Semi-Annual	Semi-Annual
1,1,2 - Trichloroethane	0.004	0.005	mg/l	Semi-Annual	Semi-Annual
Trichloroethylene	0.004	0.005	mg/l	Semi-Annual	Semi-Annual
Vinyl Chloride	0.0016	0.002	mg/l	Semi-Annual	Semi-Annual
Xylenes (Total)	8.0	10.0	mg/l	Semi-Annual	Semi-Annual

⁶Total Trihalomethanes comprises of Bromoform, Bromodichloromethane, Chloroform, and Dibromochloromethane.

4.0

TABLES OF MONITORING REQUIREMENTS

TABLE III
PLANT I INSPECTION (OPERATIONAL MONITORING)

Pollution Control Structures/Parameter	Performance Levels	Inspection Frequency
Pump Integrity	Good Working Condition	Weekly
Freeboard in the Effluent Holding Ponds	Minimum 3 feet	Weekly
Treatment Plant Components	Good Working Condition No visible cracks or leakage	Weekly
Industrial Wastewater Pretreatment Program / Ordinance	Active	Yearly

5.0 REFERENCES AND PERTINENT INFORMATION

The terms and conditions set forth in this permit have been developed based upon the information contained in the following, which are on file with the Department:

1. Permit application dated: Feb 20, 2003
1. APP Aquifer impact review dated: August 5, 2003
2. Public Notice dated: October 3, 2003
3. Public Hearing comments, correspondence and any additional supplemental information contained in the permit file.
5. ADEQ File Number: 105311
6. Other _____

6.0 GENERAL CONDITIONS AND RESPONSIBILITIES**6.1 Annual Registration Fees.**

The permittee shall pay an Annual Registration Fee to ADEQ. The Annual Registration Fee is based upon the amount of daily influent or discharge of pollutants in gallons per day as established by A.R.S. § 49-242(D). This fee is payable to ADEQ each year.

6.2 Duty to Comply. [A.R.S. §§ 49-221 through 263]

The permittee shall comply with all conditions of this permit and all applicable provisions of Title 49, Chapter 2, Articles 1, 2 and 3 of the Arizona Revised Statutes, Title 18, Chapter 9, Articles 1 through 4, and Title 18, Chapter 11, Article 4 of the Arizona Administrative Code. Any permit non-compliance constitutes a violation and is grounds for an enforcement action pursuant to Title 49, Chapter 2, Article 4 or permit modification, suspension, or revocation.

6.3 Duty to provide information. [A.R.S. §§ 49-243(K)(2) and 49-243(K)(8)]

The permittee shall furnish to the Director, or an authorized representative, within a time specified, any information which the Director may request to determine whether cause exists for amending or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

6.4 Severability. [A.R.S. § 49-243(K)(8)]

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

6.5 Proper Operation and Maintenance. [A.R.S. § 49-243(K)(8)]

The permittee shall, at all times, properly operate and maintain all facilities, treatment processes, and discharge control systems which are installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

6.6 Compliance with Aquifer Water Quality Standards. [A.R.S. §§ 49-243(B)(2) and 49-243(B)(3)]

The permittee shall not cause or contribute to a violation of an aquifer water quality standard at the applicable point of compliance for the facility. Where, at the time of issuance of the permit, an aquifer already exceeds an aquifer water quality standard for a pollutant, the permittee shall not discharge that pollutant so as to further degrade, at the applicable point of compliance for the facility, the water quality of any aquifer for that pollutant.

6.7 Technical and Financial Capability.

[A.R.S. §§ 49-243(K)(8) and 49-243(N) and A.A.C. R18-9-A202(B) and R18-9-A203(E) and (F)]

The permittee shall have and maintain the technical and financial capability necessary to fully carry out the terms and conditions of this permit. Any bond, insurance policy, trust fund, or other financial assurance mechanism provided as a demonstration of financial capability in the permit application,

pursuant to A.A.C. R18-9-A203(D), shall be in effect prior to any discharge authorized by this permit and shall remain in effect for the duration of the permit.

6.8 Reporting of Bankruptcy or Environmental Enforcement. [A.A.C. R18-9-A207(C)]

The permittee shall notify the Director within five days after the occurrence of any one of the following:

1. The filing of bankruptcy by the permittee.
2. The entry of any order or judgment not issued by the Director against the permittee for the enforcement of any environmental protection statute or rule.

6.9 Monitoring and Records. [A.R.S. § 49-243(K)(8) and A.A.C. R18-9-A206]

The permittee shall conduct any monitoring activity necessary to assure compliance with this permit, with the applicable water quality standards established pursuant to A.R.S. §§ 49-221 and 49-223 and §§ 49-241 through 49-252.

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
2. The permittee shall retain records of all monitoring information, including copies of all reports required by this permit and records of all data used to complete the application for this permit, for a period of 10 years from the date of the sample, measurement report, or application. This period may be extended by request of the Director at any time.
3. At a minimum, records of monitoring information shall include:
 - a. The date, time, and exact place of sampling or measurements
 - b. The individual(s) who performed the sampling or measurements
 - c. The date(s) analyses were performed
 - d. The individual(s) who performed the analyses
 - e. The analytical techniques or methods used
 - f. The results of such analyses
 - g. The chain of custody records, and
 - h. Any field notes relating to the information described in (a) - (g) above.

6.10 Other information. [A.R.S. § 49-243(K)(8)]

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, the permittee shall promptly submit the correct facts or information.

6.11 Inspection and Entry. [A.R.S. §§ 49-203(B) and 49-243(K)(8)]

The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to enter and inspect the facility as reasonably necessary to ensure compliance with Title 49, Chapter 2, Article 3 of the Arizona Revised Statutes, and Title 18, Chapter 9, Articles 1 through 4 of the Arizona Administrative Code and the terms and conditions of this permit. In so doing, the Department representative may:

1. Enter upon the operator's premises where a regulated facility or activity is located or conducted, or locations where records must be kept under the conditions of this permit.
2. Have access to and copy, at reasonable times, any records required to be kept under the conditions of this permit.
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit.
4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance, any substances or parameters at any location.
5. Take photographs or video tape.
6. Take other actions reasonably necessary to determine compliance with Aquifer Protection Permit statutes or rules or the terms and conditions of this permit.

6.12 Duty to Modify. [A.R.S. § 49-243(K)(8)]

The permittee shall apply for and receive a written amendment before deviating from any of the designs or operational practices authorized by this permit.

6.13 Permit Action: Amendment, Transfer, Suspension & Revocation.

[A.R.S. §§ 49-201, 49-241 through 251, A.A.C. R18-9-A211, R18-9-A212 and R18-9-A213]

This permit may be amended, transferred, renewed, or revoked for cause, under the rules of the Department. The filing of a request by the permittee for a permit action does not stay or suspend the effectiveness of any existing permit condition. The Director shall issue a public notice of all proposed permit actions pursuant to A.A.C. R18-9-A211, R18-9-A212 and R18-9-A213.

6.13.1 Permit Reopen.

The Director may reopen this permit and amend it pursuant to A.A.C. R18-9-A211.

6.13.2 Permit Transfer.

This permit may not be transferred to any other person except after notice to and approval of the transfer by the Department. No transfer will be approved until the applicant complies with all transfer requirements as specified in A.A.C. R18-9-A212(B) and (C).

The permittee shall notify the Water Permits Section in writing within 15 days after any change in the owner or operator of the facility. The notification shall state the permit number, the name of the facility, the date of property transfer, and the name, address, and phone number where the new owner or operator can be reached. The operator shall advise the new owner or operators of the terms of this permit and the need for permit transfer in accordance with the rules.

APPLICATION
FOR
AMENDMENT TO
APP

TO: ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

PROJECT SUMMARY

The Links at Coyote Wash WWTF is an existing facility (APP No. P-105311) in Wellton, AZ which provides wastewater service to the Links at Coyote Wash development. The facility was designed to provide service to approximately 504 homes with a permitted capacity of 126,000 gpd. The WWTF was to be constructed in phases to minimize capital investment at the onset of the project and provide efficient treatment during low flow conditions experienced with new developments. Current treatment capacity at the plant site is 69,300 gpd. The Links at Coyote Wash subdivision is expanding the development on adjacent land to include an additional 500 home sites and must expand the existing, permitted treatment capacity to accommodate the growth.

REQUIRED PERMITS & PROCEDURES

1. Expansion of CC&N area to provide service to new area
2. Significant Amendment to Aquifer Protection Permit to increase flow
3. Revision of Reclaimed Water Permit to accommodate increased flow
4. 208 Consistency Review

SUMMARY OF SIGNIFICANT AMENDMENT

The Links at Coyote Wash Utilities, LLC is requesting the following changes to Aquifer Protection Permit No. P-105311 dated March 22, 2004 as follows:

1. Expansion of the permitted capacity from .126 mgd to .235 mgd
2. Revision of the second train design flow from .0567 mgd to .1657 mgd.
3. Permit Transfer from G-12 LLC to Links at Coyote Wash Utilities LLC

Sincerely,

Glen T. Curtis
The Links at Coyote Wash Utilites, LLC
Managing Member



AQUIFER PROTECTION PROGRAM PERMIT AMENDMENT FORM

<i>ADEQ Use Only</i>	
Type of Permit Amendment Requested	Type of Facility
<input checked="" type="radio"/> Significant	<input type="radio"/> Industrial
<input type="radio"/> Other	<input type="radio"/> Mine
<input type="radio"/> Minor	<input checked="" type="radio"/> Domestic Wastewater

AN INITIAL APPLICATION FEE OF \$1000 IS REQUIRED (Arizona Administrative Code R18-14-103)

Mail or hand deliver the completed form to one of the Application Clerks listed below, in care of Water Permits Section, 5415B-3, 1110 W. Washington St., Phoenix, AZ 85007 Your application must be received and stamped in by an Application Clerk in the Water Permits Section. Otherwise, it will not be subject to Licensing Time Frames and will not be processed.

Manager, Industrial / Drywell Unit

Secretary, Industrial / Drywell Unit

Manager, Mining Unit

Secretary, Mining Unit

Manager, Wastewater / Recharge Unit

Secretary, Wastewater / Recharge Unit

GENERAL INFORMATION

PLEASE TYPE OR PRINT

The Links at Coyote Wash WWTF

FACILITY NAME

P.O. Box 6047

MAILING ADDRESS

Yuma, AZ 85374

CITY, STATE, ZIP CODE

32 d 32' 00" N, 114 d 08' 00" W

LATITUDE AND LONGITUDE

T 9N, R 18W, Section 7

TOWNSHIP, RANGE, SECTION, QUARTER SECTIONS

The Links at Coyote Wash Utilities, LLC

FACILITY OWNER NAME

P.O. Box 6047

MAILING ADDRESS OF OWNER

Yuma, AZ 85374

CITY, STATE, ZIP CODE

(928) 726-5920

TELEPHONE NUMBER

SAME AS ABOVE

APPLICANT NAME (IF DIFFERENT THAN OWNER)

MAILING ADDRESS

CITY, STATE, ZIP CODE

TELEPHONE NUMBER

Daniel Dow, Santec Corporation

CONTACT PERSON NAME (IF DIFFERENT THAN OWNER)

220 Malibu Street

MAILING ADDRESS

Castle Rock, CO 80109

(303) 660-9211 ext. 15

CITY, STATE, ZIP CODE

TELEPHONE NUMBER

REQUIRED ATTACHMENTS

Please provide a description of the permit amendment (pursuant to A.A.C. R18-9-A211) either in a cover letter or attach additional pages as necessary.

IS THE APPLICANT REQUIRED TO FILE A CERTIFICATE OF DISCLOSURE OF VIOLATIONS WITH ADEQ, PURSUANT TO A.R.S. §49-109 (CHECK BOX):

Yes

No

If you answered "Yes" to this question, please provide a copy of the Certificate of Disclosure with your completed submittal.

CERTIFICATION

I certify under penalty of law that this Aquifer Protection Permit amendment application and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including permit revocation as well as permit revocation as well as the possibility of fine and imprisonment for knowing violations.

NAME AND OFFICIAL TITLE: _____

SIGNATURE: _____ DATE SIGNED: _____

Please check the box that applies:

owner

operator

both owner & operator

This table was dynamically generated from the AZURITE Permit Database.

Date/Time Generated: Mar. 31, 2006 @ 07:46

Application ID:	39264
Applicant:	Coyote Wash Llc
Place:	Links @ Coyote Wash - Wwtp Wellton
License Category:	APP, Individual Permit, Significant Amendment, No Public Hearing
Current Status:	Administrative Completeness Review phase
ADEQ Staff Assigned:	Donald G. Bell; dgb@azdeq.gov; (602) 771-4613
Recent Activities	Date
Program Receipt of Application	22-FEB-06
Receipt of license application	22-FEB-06

Results 1 - 1 of 1

Go to Page: **1**

Search Again

208 Consistency Review Form



This facility review is based on information obtained from the applicant, permit writer, the associated Water Quality Management Plan (WQMP) and amendments, and other related documents as cited.

Permit Writer or Applicant – Please Complete Sections 1-14

Facility Information	Explanation (Provide a brief description)
1. Include Facility Name, name of Owner, name of Applicant & Permit Writer. & (If Known, Please include permit number)	NAME: The Links at Coyote Wash WWTF OWNER: The Links at Coyote Wash Utilities ADEQ STAFF: TBD/ Not yet Assigned PERMIT #: P-105311
2. Permit category - (a, b, or c) a. AZPDES (describe discharge) b. Individual APP (describe facility) c. General permit (describe type)	B, Individual Permit
3. Facility location (watershed, county, Lat/Long or Township, Range & Section)	WATERSHED: Yuma Basin Groundwater COUNTY: Yuma County LOCATION: South of the town of Wellton, AZ at the corner of Ave 29 East and County 12 th St. Township 9 N, Range 18W, Section 7
4. Type of permit - (a, b, c, or d) a. New WWT facility b. AZPDES renewal c. Modification to an existing facility d. On-site subdivision	C, Modification to an existing facility
5. Attach a descriptive map <u>Include a, b, c, & d</u> a. Facility/site location b. Discharge location(s) c. Adjacent urban areas (the nearest urban area may be miles away) d. Nearest surface water(s)	See Attached map
6. Treatment & Design Capacity (design flow for annual average daily flow) <i>Note: If renewal with no changes in discharge location, technology, treatment and disposal methods, and capacity - STOP HERE</i>	.235 MGD, no change in discharge location, technology, treatment level or disposal method INCREASE IN CAPACITY FROM EXISTING PERMIT
7. Change in annual average daily flow – (a, or b)? a. No change b. Increase (explain)	B, Increase in flow from .126 mgd to .235 mgd to accommodate additional development
8. Treatment method (explain)	Extended aeration utilizing activated sludge process including nitrogen removal and chlorination/ dechlorination
9. Change in treatment method – (a, b, or c)? a. No change b. Improvement to technology c. Septics/alternative systems (attach ADEQ Forms 113 and 115)	A. No change in treatment method

10. Effluent disposal method(s) <i>If discharge is to a surface water or lake, provide name of surface water.</i>		Discharge to adjacent golf course irrigation pond for reuse consistent with reclaimed water permit for B ⁺ effluent
11. Change in effluent disposal method (a, b, c, or d)? a. No change b. Change in location (explain) c. Change in method (explain) d. Additional locations (explain)		A, No Change to effluent disposal method
12. Sludge handling – <i>describe how sludge will be handled</i>		Waste sludge is removed to the Copper Mountain Landfill in Wellton, AZ and landfilled in accordance with applicable requirements
13. Entity type a. Municipality/public utility b. Private utility c. Semi public (<i>sanitary district</i>) d. Other (<i>individual homeowner or homeowners association</i>)		A, The Links at Coyote Wash Utilities operates under CC&N granted by the Corporation Commission.
14. Service area (if known) <i>Attach map & legal description</i> a. New service area for CC&N b. Expansion of existing service area c. Increase # of lots in subdivision d. Other		See attached map, Incorporation of expansion to the existing subdivision into the service area for the WWTF.

For ADEQ 208 Review Staff Only –

Facility Information	Explanation (Reference the page # and COG WQMP)
1. DPA	
2. Permit number	
3. Service area <i>Attach map & legal description</i> a. New service area for CC & N b. Expansion of existing service area c. Increase # of lots in subdivision	
4. Planning area <i>Attach map & legal description</i> a. New b. Expansion of planning area	
5. Designated Management Agency a. Facility is a DMA b. Distance to nearest DMA c. Ordinance requiring hookup	

Does the facility meet any of the following conditions?

Special Conditions	Explanation
6. Discharge to a unique water?	
7. Discharge to an impaired/not	

attaining water?	
8. Pollutant load allocations specified in a TMDL?	
9. Located in a nitrogen management area?	
10. Change in ownership? <i>(Pima County only)</i>	
11. Other <i>(compliance issues, site specific standards, etc.)</i>	

Based on Section 208 of the Federal Water Pollution Control Act, Arizona Administrative Code R18-9-108(B)(10), and/or the Certified Area WQMP, this application for permit is determined to be:

Determination By:

Date:

Consistent	Not Inconsistent	Inconsistent	208 Coordinator	Unit Manager	Section Manager

If determination is "inconsistent," an amendment to the Water Quality Management (208) Plan must be processed and submitted for approval by ADEQ.

If determination is "Not inconsistent," this means the project was not identified in the current 208 Water Quality Management Plan, but is consistent with regional water quality management goals.

EXPANSION GOLF COURSE REUSE SITE

- PROPOSED SERVICE AREA
- EXISTING SERVICE AREA

NOTES:
 -DEPTH TO GROUNDWATER IS AT LEAST 70 FEET
 -WWTP LOCATION IS T9N R18W SECTION 7
 -POINT OF COMPLIANCE IS A WELL DRILLED NORTH EAST OF WWTP
 -PHASE II OF WWTP WILL BE INSTALLED EAST OF EXISTING WWTP
 B+ QUALITY EFFLUENT



LINKS AT COYOTE WASH EXPLAN.
 WELLTON, ARIZONA
 WWTP LAYOUT

DATE:	2-1-06
DRAWN BY:	NAV
REV:	REV 1.0
SHEET #:	A



SANTEQ CORPORATION
 CASTLE ROCK, COLORADO
 PHONE: 303.660.9211 FAX: 303.660.2180