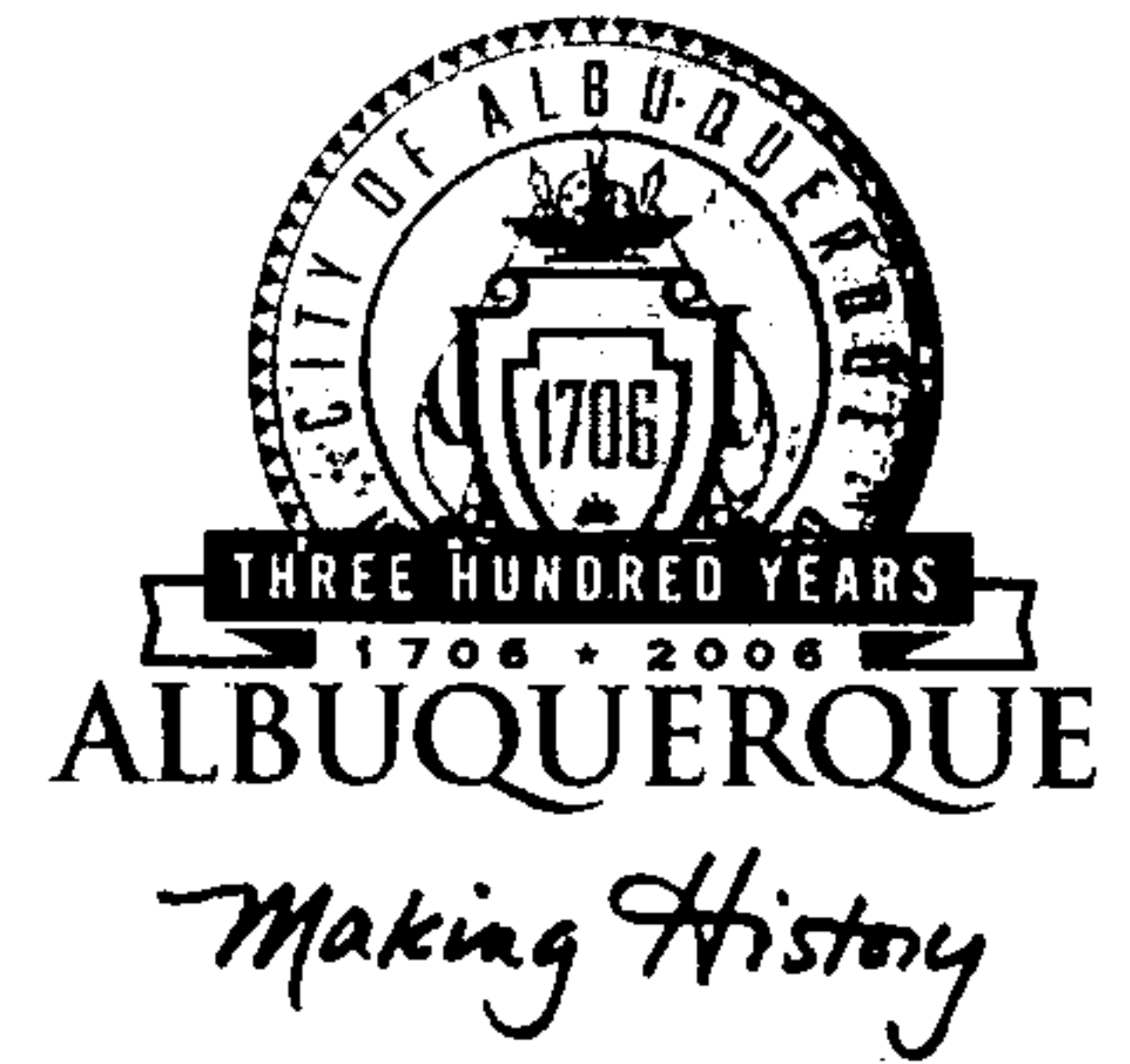


CITY OF ALBUQUERQUE



August 19, 2005

Ms. Genny Donart, PE
ISAACSON & ARFMAN, PA
120 Monroe St. NE
Albuquerque, NM 87108

RE: VISTA DEL AGUILA SUBDIVISION, UNIT 3 (C-19/D34)
Engineers Certification for Release of Financial Guaranty
Engineers Stamp dated 12/17/2003
Engineers Certification dated 08/19/2005

Dear Genny:

P.O. Box 1293 Based upon the information provided in your Engineer's Certification Submittal dated
08/19/2005, the above referenced plan is adequate to satisfy the Grading and Drainage
Certification for Release of Financial Guaranty.

Albuquerque If you have any questions, you can contact me at 924-3982.

Sincerely,

Arlene V. Portillo

Arlene V. Portillo
Plan Checker, Planning Dept.- Hydrology
Development and Building Services

New Mexico 87103

www.cabq.gov

C: Marilyn Maldonado, COA# 702481
File



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

April 22, 2004

Genevieve Donart, PE
Isaacson & Arfman
128 Monroe NE
Albuquerque, NM 87108

**Re: Vista del Aguila, Unit 3 Subdivision Revised Grading Plan
Engineer's Stamp dated 12-17-03, (C19/D34)**

Dear Ms. Donart,

Based upon the information provided in your submittal dated 2-4-03, the above referenced plan is approved for Grading Permit. This is now the plan that must be certified for Release of Financial Guarantees.

If you have any questions, you can contact me at 924-3986.

Sincerely,

Bradley L. Bingham, PE
Principal Engineer, Planning Dept.
Development and Building Services

C: file

**ADDENDUM TO THE
DRAINAGE REPORT**

FOR

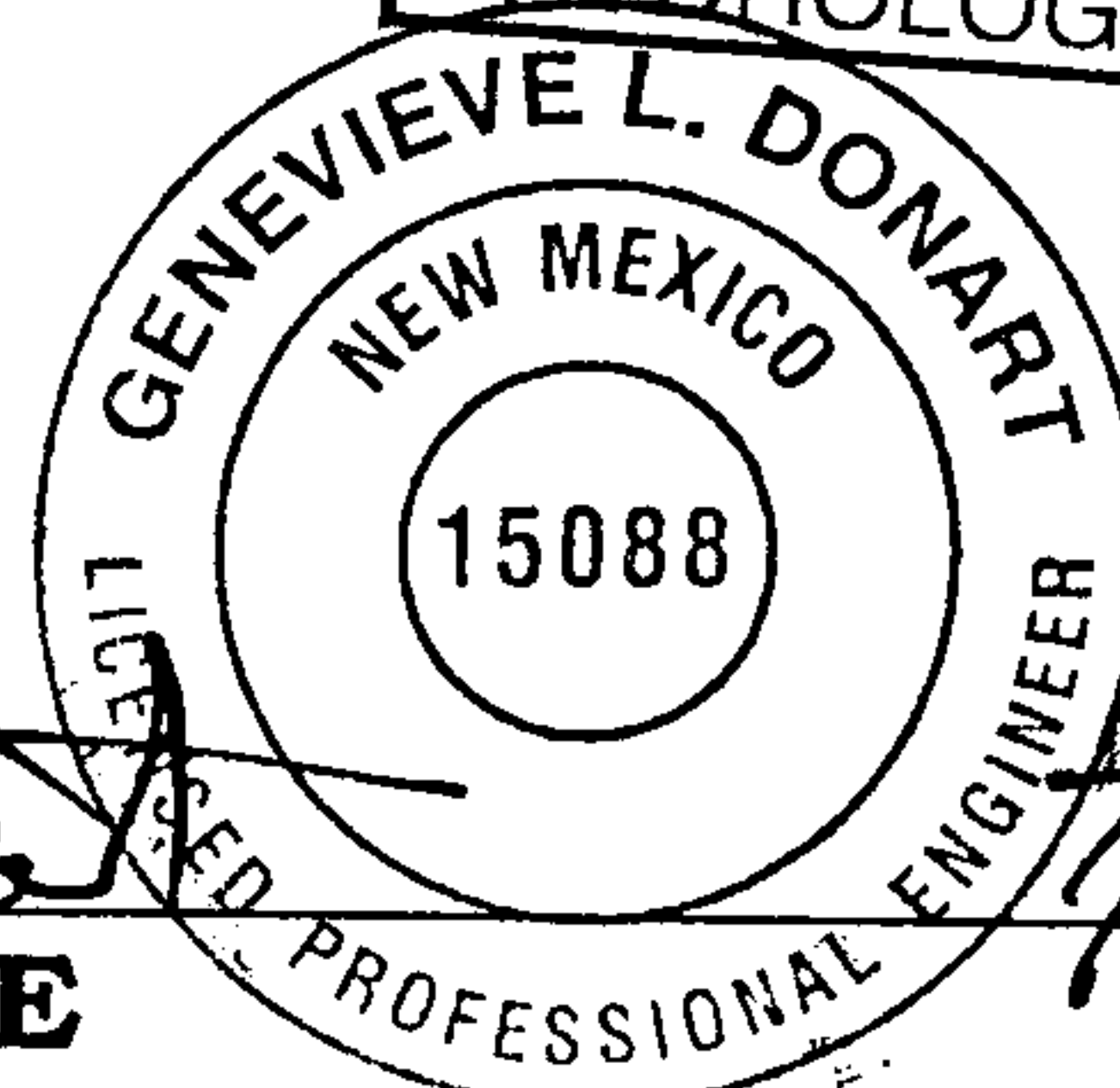
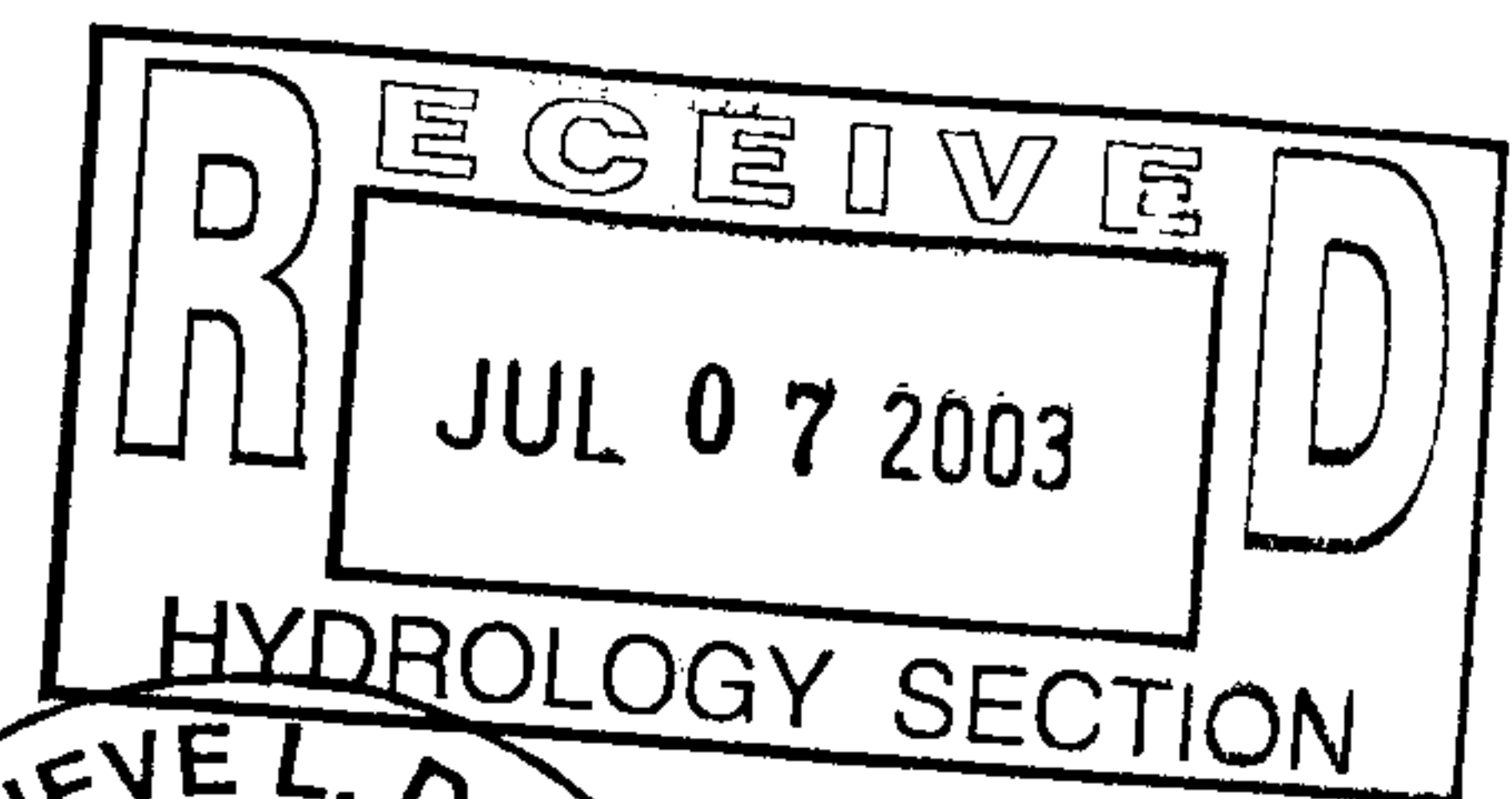
VISTA DEL AGUILA UNIT THREE

**A 74-LOT SINGLE FAMILY
RESIDENTIAL SUBDIVISION**

**ALBUQUERQUE, NEW MEXICO
JULY 2003**

Prepared by:

**ISAACSON & ARFMAN, P.A.
128 Monroe Street NE
Albuquerque, NM 87108
(505) 268-8828**



Genevieve L. Donart
Genevieve L. Donart, PE

7/6/03
Date

II. INTRODUCTION

The Vista del Aguila Unit Three Subdivision is a 74 lot, single-family residential subdivision in the North Albuquerque Acres adjacent to the north side of Alameda Blvd between Louisiana and Wyoming. This drainage report was covered previously under the combined Drainage Report for Vista del Aguila Unit Three and Trementina Subdivisions, but the layout of Vista del Aguila Unit Three has been revised. This addendum revises the Grading & Drainage Plan and storm drain layout, and refers back to the previous report for other items.

This area is covered under the Final North Albuquerque Acres Drainage Master Plan (NAA MDP) dated October 1998, and falls within drainage basins 117.4 and 934.1 as defined in the NAA MDP.

The previous report references the Drainage Report for Eagle Springs Subdivision dated January 9, 2001 (ES Report) and the LOMR for Quail Springs Subdivision dated March 4, 1997. Eagle Springs is the existing subdivision adjacent to the south boundary of Trementina. Flows from the NAA MDP basin 934.1 will be diverted into a storm drain which runs through Eagle Springs. A LOMR for Quail Springs Subdivision removed portions of a former floodplain on the site, the remainder of which will be removed by Vista del Aguila Unit Three.

III. EXISTING CONDITIONS

The proposed site is a total of 11 undeveloped North Albuquerque Acres lots, with native grasses and scrub brush. The natural ground slopes downhill to the west at approximately a 3% grade. To the north is the Quail Springs Subdivision and to the south is the Alameda Blvd right-of-way. Vista del Aguila Unit Three is bordered by Louisiana Blvd to the west, and there are five undeveloped lots upstream of the subdivision, between the east boundary and Wyoming Blvd.

There is an abandoned arroyo within the project that used to carry flows discharged from La Cueva High School. Those former offsite flows are now captured by a storm drain system in Wyoming Blvd and no longer affect the site, but portions of that floodplain still exist. This floodplain will be removed by LOMR prior to financial guarantee release.

The only existing storm drain facilities in the project area are an asphalt tailings swale along the south side of Alameda, and a storm drain connection through an HOA tract in Eagle Springs to the south. According to the ES Report, the downstream storm drain was under-designed for the fully-developed flows designated in the NAA MDP for Basin 934.1, and the amount of storm water entering the system must be reduced by 21.99 cfs. (See the previous report.)

Existing storm water flows from Basins 100, 101, and 110 totaling 64.1 cfs travel west towards Louisiana, where small storms pond on Lot 32, block 3 and Lot 1, block 4. (See the Existing Basin Map in the pockets and calculations in Appendix A) Larger storms overtop Louisiana and water continues west in the asphalt swale along Alameda.

IV. PROPOSED CONDITIONS

The Grading & Drainage Plan for the subdivision is in the pockets at the back of this report. It has been modified from the previously approved plan to reflect a continuous street from the west end of the project to the east end, rather than having that street broken up by a hammerhead. Eagle Feather Rd became part of Dancing Eagle Ave, Eagle Feather Ct became Dancing Eagle Ct, and Via Feliz was renamed to become Eagle Feather Dr.

Drainage basin boundaries remain the same as in the previous Plan, but flows from Basin 302c are now captured by inlets on grade in Dancing Eagle Ave, instead of in sump inlets at the old Dancing Eagle Ct, and the storm drain connects to the Alameda drain at Eagle Talon Dr. (See the Proposed Basin Map in the pockets.) The same flows are captured in the storm drain as were previously calculated.

Land treatments, proposed storm water volumes, and individual basin flows are all the same as were calculated in the previous report. (See calculations in Appendix A.) Basins 201, 202, 321 and 322 are offsite and considered undeveloped in the proposed condition. Basins 210a, 210b, 310, and 311 include Alameda Blvd. All others are to be developed by this project.

Vista del Aguila Unit Three has only mountable curb inside the projects due to a reduced distance from the back of curb to the right-of-way line. Street flow capacities are therefore reduced compared with a similar project that uses standard curb, and storm inlets are required more frequently. Street Flow Capacity Calculations can be found in Appendix B and HydraFlow Storm Sewer Calculations are in Appendix C.

There are two main outlet points from Vista Del Aguila Unit Three: at the south ends of Eagle Talon Dr (just west of AP30) and Dancing Eagle Ct (AP32). All upstream flows are captured in storm inlets prior to the Analysis Points, and empty to the west Alameda storm drain.

Contributing basins for the combined flows at AP30 are Basins 302a, 302b, and 302c. Basin boundaries for 302a and 302b are located where storm inlets in Dancing Eagle Ave are required because street flow capacities are exceeded. Inlets at the west end of Basin 302c collect the remaining water in Dancing Eagle Ave prior to reaching Eagle Talon Dr. Minor flows from Basin 303 exit Eagle Talon Dr as surface flow.

Contributing basins for the combined flows at AP32 are Basins 304a and 304b. No storm inlets are required in this portion of Dancing Eagle Ave, but a sump inlet collects the water at the end of Dancing Eagle Ct.

Basins 301 and 303 direct about 1.7 cfs each to Alameda Blvd.

No offsite storm water enters the subdivision. Basin 201 slopes down towards Alameda, preventing ponding along the eastern perimeter wall. All flows from Quail Springs are directed north into that subdivision.

ALAMEDA BLVD:

Portions of Alameda Blvd adjacent to the proposed subdivisions will be developed to half the final width. As required in the COA DPM, one lane in each direction must remain free of storm water in the 10-year, 6-hour storm. Street flow capacities are designed so that only 20 feet of the 30 feet of paving in each direction carries water.

Undeveloped flows from Basins 202 and 210A enters Alameda from the east end. Inlets at AP10 capture water from this basin. These flows combine with Basin 203 and 320a, and divert to the Eagle Springs storm drain. (Please see Calculations for the Trementina Subdivision in the previous report.)

Developed flows from the subdivisions enter the west Alameda storm drain at AP20, AP30, AP32, and minor flows enter Alameda from Basin 301 and 303. Inlets at AP11, AP21 and AP31 capture flows generated in the right-of-way and undeveloped flows from Basins 201 and 321.

Inlets in Alameda will only be installed where there is curb proposed at this time. Future development will be responsible for inlets in adjacent portions of Alameda as they are constructed.

The NAA MDP requires that storm drain eventually be constructed downstream in Alameda from Louisiana to San Pedro, and then connect with the La Cueva Channel to the north. Because this connection has not yet been built, flows that enter the west Alameda storm drain are routed to a retention pond at the southeast corner of the intersection of Alameda and Louisiana (Basin 322). This pond is sized for the 100-year, 10-day developed volumes from Vista del Aguila Unit Three, Trementina, and Alameda Blvd, and the undeveloped volumes from all other basins.

V. FUTURE CONDITIONS

In the future, as lots designated as undeveloped in the proposed condition develop, the flows in the system will increase. This report assumes that Basins 201a, 201b, 202, and 321 will have similar land treatments to the basins within the proposed subdivisions. Basin 322 is zoned as SU-2/C-1, so it was assumed that the land treatments will be different from the residential areas. Land treatments,

proposed storm water volumes, and individual basin flows are all the same as were calculated in the previous report. (See Runoff Calculations for Future Conditions in Appendix A.)

The storm drain in Alameda is sized for the fully-developed condition, but the pond is sized only for the proposed condition. Offsite lots will be required to retain all developed stormwater on their properties.

Once future expansion of the downstream storm drain in Alameda allows for free discharge to the La Cueva Channel, the retention ponds can be removed by a separate grading plan. The City of Albuquerque and AMAFCA will determine the when the system is approved for free discharge.

VI. SUMMARY & CONCLUSIONS

Based on information in previous sections, it is recommended that the following items be constructed with each of the noted developments:

Vista del Aguila Unit Three:

1. Mountable curb on all interior streets
2. Standard curb on Alameda Blvd.
3. Storm drain in Dancing Eagle Ave with 2 single-grate inlets at Lot 14, Blk C, another 2 single-grate inlets at Lot 8, Blk D, and another 2 single-grate inlets at Lot 13, Blk D. The storm drain outlets through Eagle Talon Dr.
4. Storm drain with a triple-grate sump inlet at the south end of Dancing Eagle Ct. The storm drain outlets through the Dancing Eagle Ct.
5. All Alameda Blvd drainage improvements up to the east edge of the subdivision.
6. A minimum of 5.4454 Ac-ft of retention pond and 1 foot of freeboard on the two lots at the southeast corner of Alameda and Louisiana. A blanket public drainage easement and a Covenant & Agreement shall be provided for these lots.
7. A LOMR will remove the floodplain prior to financial guarantee release.

Alameda Blvd:

1. Standard curb on all portions of the street adjacent to the proposed subdivisions.
2. Storm drain from Eagle Feather Dr to Louisiana Blvd with a double-grate inlet on the north side of Alameda upstream of Via de Paz, and a single-grate inlet on the north side of Alameda adjacent to the end of Dancing Eagle Ct . This system will empty to the retention pond.

In the future, the following items shall be constructed by offsite development:

Future Conditions:

1. Temporary retention ponds on offsite properties to retain the developed volumes for that property.
2. A single-grate inlet on the north side of Alameda between Lots 18 & 19, NAA, Unit 3, Tract 2, Block 4 to capture developed flows from Basin 201A.
3. The first lot within Basin 321 must construct inlets to capture the flows from that basin.

4. Once completion of future expansion of the downstream storm drain in Alameda allows for free discharge to the La Cueva Channel, the retention pond on Basin 322 and any individual lot retention ponds can be removed by separate grading plans. Free discharge and pond removals are subject to City of Albuquerque and AMAFCA approval.
5. When Basin 322 is available to develop, the blanket drainage easement shall be vacated, and an inlet shall be constructed to capture flows from that basin.

RUNOFF CALCULATIONS FOR PROPOSED CONDITIONS (Q₁₀₀)

100-YEAR, 6-HOUR STORM

Per the City of Albuquerque D.P.M. Section 22.2

PROJECT NAME: VISTA DEL AGUILA UNIT 3
JOB NUMBER: 1257

PRECIP ZONE	Q ₁₀₀ RUNOFF RATES (cfs/Ac)			
	A	B	C	D
1	1.29	2.03	2.87	4.37
2	1.56	2.28	3.14	4.70
3	1.87	2.60	3.45	5.02
4	2.20	2.92	3.73	5.25

% LAND TREATMENTS				
	TREAT TYPE 1	TREAT TYPE 2	TREAT TYPE 3	TREAT TYPE 4
A	0	100	0	
B	14.6	0	21	
C	14.5	0	21	
D	70.9	0	58	
Σ% =	100	100	100	0

PRECIPITATION ZONE: 3

TREATMENT TYPE 1 (PROPOSED SUBDIVISION)							
BASIN #	LAND TREATMENT AREAS (Ac)					Q ₁₀₀ (cfs)	REMARKS
	A _{TOTAL}	A _A	A _B	A _C	A _D		
203	1.472	0	0.21	0.21	1.04	6.5343	Trementina-Via Contenta east of 11+50
301	0.385	0	0.06	0.06	0.27	1.7090	Vista 3 - Eagle Feather
302a	1.917	0	0.28	0.28	1.36	8.5096	Vista 3 - Dancing Eagle Ave
302b	2.143	0	0.31	0.31	1.52	9.5128	Vista 3 - Dancing Eagle Ave
302c	1.079	0	0.16	0.16	0.77	4.7897	Vista 3 - Dancing Eagle Ave
303	0.388	0	0.06	0.06	0.28	1.7223	Vista 3 - Eagle Talon Dr
304a	1.704	0	0.25	0.25	1.21	7.5641	Vista 3 - Dancing Eagle Ave
304b	0.66	0	0.10	0.10	0.47	2.9298	Vista 3 - Dancing Eagle Ct
320a	2.052	0	0.30	0.30	1.45	9.1089	Trementina-Via Contenta (sta 7+00-11+50)
320b	1.81	0	0.26	0.26	1.28	8.0346	Trementina-Via Contenta (sta 3+00-7+00)
320c	1.497	0	0.22	0.22	1.06	6.6452	Trementina-Via de Paz

RUNOFF CALCULATIONS FOR PROPOSED CONDITIONS (Q_{100}) **100-YEAR, 6-HOUR STORM**

Per the City of Albuquerque D.P.M. Section 22.2

TREATMENT TYPE 2 (UNDEVELOPED LAND)							
BASIN #	LAND TREATMENT AREAS (Ac)					Q_{100} (cfs)	REMARKS
	A_{TOTAL}	A_A	A_B	A_C	A_D		
201	4.282	4.28	0	0	0	8.0073	N. of Alameda, e. of Via Feliz
202	1.617	1.62	0	0	0	3.0238	S. of Alameda, e. of Trementina
321	2.665	2.67	0	0	0	4.9836	S. of Alameda, w. of Trementina
322	1.612	1.61	0	0	0	3.0144	Pond/Lots

TREATMENT TYPE 3 (ALAMEDA BLVD)							
BASIN #	LAND TREATMENT AREAS (Ac)					Q_{100} (cfs)	REMARKS
	A_{TOTAL}	A_A	A_B	A_C	A_D		
210a	1.025	0	0.22	0.22	0.59	4.2867	Alameda R/W, e. of Via Feliz, n. side
210b	0.661	0	0.14	0.14	0.38	2.7644	Alameda R/W, e. of Via Feliz, s. side
310	2.655	0	0.56	0.56	1.54	11.1035	Alameda R/W, middle section
311	1.678	0	0.35	0.35	0.97	7.0176	Alameda R/W, Louisiana to Trementina

VOLUME CALCULATIONS FOR PROPOSED CONDITIONS (V_{100})

100-YEAR, 6-HOUR STORM

Per the City of Albuquerque D.P.M. Section 22.2

PROJECT NAME: VISTA DEL AGUILA UNIT 3

JOB NUMBER: 1257

PRECIP ZONE	E ₃₆₀ EXCESS PRECIPITATION (in.)			
	A	B	C	D
1	0.44	0.67	0.99	1.97
2	0.53	0.78	1.13	2.12
3	0.66	0.92	1.29	2.36
4	0.80	1.08	1.46	2.64

% LAND TREATMENTS				
	TREAT TYPE 1	TREAT TYPE 2	TREAT TYPE 3	TREAT TYPE 4
A	0	100	0	0
B	14.6	0	21	0
C	14.5	0	21	0
D	70.9	0	58	0
Σ % =	100	100	100	0

PRECIPITATION ZONE: 3

TREATMENT TYPE 1								
BASIN #	LAND TREATMENT AREAS (Ac)					V_{100} (Ac-ft)	V_{100} (cu.ft.)	REMARKS
	A _{TOTAL}	A _A	A _B	A _C	A _D			
203	1.472	0	0.21	0.21	1.04	0.2447	10657.9	
301	0.385	0	0.06	0.06	0.27	0.0640	2787.6	
302a	1.917	0	0.28	0.28	1.36	0.3186	13879.9	
302b	2.143	0	0.31	0.31	1.52	0.3562	15516.3	
302c	1.079	0	0.16	0.16	0.77	0.1793	7812.4	
303	0.388	0	0.06	0.06	0.28	0.0645	2809.3	
304a	1.704	0	0.25	0.25	1.21	0.2832	12337.7	
304b	0.66	0	0.10	0.10	0.47	0.1097	4778.7	
320a	2.052	0	0.30	0.30	1.45	0.3411	14857.4	
320b	1.81	0	0.26	0.26	1.28	0.3009	13105.2	
320c	1.497	0	0.22	0.22	1.06	0.2488	10838.9	

VOLUME CALCULATIONS FOR PROPOSED CONDITIONS (V_{100})

100-YEAR, 6-HOUR STORM

Per the City of Albuquerque D.P.M. Section 22.2

TREATMENT TYPE 2								
BASIN #	LAND TREATMENT AREAS (Ac)					V_{100} (Ac-ft)	V_{100} (cu.ft.)	REMARKS
	A_{TOTAL}	A_A	A_B	A_C	A_D			
201	4.282	4.28	0	0	0	0.2355	10258.8	
202	1.617	1.62	0	0	0	0.0889	3874.0	
321	2.665	2.67	0	0	0	0.1466	6384.8	
322	1.612	1.61	0	0	0	0.0887	3862.0	

TREATMENT TYPE 3								
BASIN #	LAND TREATMENT AREAS (Ac)					V_{100} (Ac-ft)	V_{100} (cu.ft.)	REMARKS
	A_{TOTAL}	A_A	A_B	A_C	A_D			
210a	1.025	0	0.22	0.22	0.59	0.1566	6819.8	
210b	0.661	0	0.14	0.14	0.38	0.1010	4397.9	
310	2.655	0	0.56	0.56	1.54	0.4055	17664.8	
311	1.678	0	0.35	0.35	0.97	0.2563	11164.5	

RUNOFF CALCULATIONS FOR FUTURE, FULLY-DEVELOPED CONDITIONS (Q_{100})

100-YEAR, 6-HOUR STORM

Per the City of Albuquerque D.P.M. Section 22.2

PROJECT NAME: VISTA DEL AGUILA UNIT 3
JOB NUMBER: 1257

PRECIP ZONE	Q ₁₀₀ RUNOFF RATES (cfs/Ac)			
	A	B	C	D
1	1.29	2.03	2.87	4.37
2	1.56	2.28	3.14	4.70
3	1.87	2.60	3.45	5.02
4	2.20	2.92	3.73	5.25

% LAND TREATMENTS				
	TREAT TYPE 1	TREAT TYPE 2	TREAT TYPE 3	TREAT TYPE 4
A	0	0	0	
B	14.6	21	5	
C	14.5	21	5	
D	70.9	58	90	
Σ % =	100	100	100	0

PRECIPITATION ZONE: 3

TREATMENT TYPE 1 (DEVELOPED RESIDENTIAL)							
BASIN #	LAND TREATMENT AREAS (Ac)					Q ₁₀₀ (cfs)	REMARKS
	A _{TOTAL}	A _A	A _B	A _C	A _D		
201	4.282	0	0.63	0.62	3.04	19.0	N. of Alameda, e. of Trementina
202	1.617	0	0.24	0.23	1.15	7.2	S. of Alameda, e. of Trementina
203	1.472	0	0.21	0.21	1.04	6.5	Trementina-Via Contenta east of 11+50
301	0.385	0	0.06	0.06	0.27	1.7	Vista 3 - Eagle Feather
302a	1.917	0	0.28	0.28	1.36	8.5	Vista 3 - Dancing Eagle Ave
302b	2.143	0	0.31	0.31	1.52	9.5	Vista 3 - Dancing Eagle Ave
302c	1.078	0	0.16	0.16	0.76	4.8	Vista 3 - Dancing Eagle Ave
303	0.388	0	0.06	0.06	0.28	1.7	Vista 3 - Eagle Talon Dr
304a	1.704	0	0.25	0.25	1.21	7.6	Vista 3 - Dancing Eagle Ave
304b	0.66	0	0.10	0.10	0.47	2.9	Vista 3 - Dancing Eagle Ct
320a	2.052	0	0.30	0.30	1.45	9.1	Trementina-Via Contenta (sta 7+00-11+50)
320b	1.81	0	0.26	0.26	1.28	8.0	Trementina-Via Contenta (sta 3+00-7+00)
320c	1.497	0	0.22	0.22	1.06	6.6	Trementina-Via de Paz
321	2.665	0	0.39	0.39	1.89	11.8	S. of Alameda, w. of Trementina

RUNOFF CALCULATIONS FOR FUTURE, FULLY-DEVELOPED CONDITIONS (Q_{100})

100-YEAR, 6-HOUR STORM

Per the City of Albuquerque D.P.M. Section 22.2

TREATMENT TYPE 2 (ALAMEDA BLVD)							
BASIN #	LAND TREATMENT AREAS (Ac)					Q_{100} (cfs)	REMARKS
	A_{TOTAL}	A_A	A_B	A_C	A_D		
210a	1.025	0	0.22	0.22	0.59	4.3	Alameda R/W, e. of Via Feliz
210b	0.661	0	0.14	0.14	0.38	2.8	Alameda R/W, e. of Via Feliz
310	2.655	0	0.56	0.56	1.54	11.1	Alameda R/W, middle section
311	1.678	0	0.35	0.35	0.97	7.0	Alameda R/W, Louisiana to Trementina

TREATMENT TYPE 3 (COMMERCIAL)							
BASIN #	LAND TREATMENT AREAS (Ac)					Q_{100} (cfs)	REMARKS
	A_{TOTAL}	A_A	A_B	A_C	A_D		
322	1.612	0	0.08	0.08	1.45	7.8	Future commercial - SE cor of Alameda
		0	0.00	0.00	0.00	0.0	and Louisiana

RETENTION POND VOLUMES

FOR 100-YEAR, 10-DAY STORM

$$P_{360} = 2.54 \text{ in} \quad (\text{from Fig. C-2, COA DPM})$$

$$P_{1440} = 2.93 \text{ in} \quad (\text{from Fig. C-3, COA DPM})$$

$$V_{360} = 3.1588 \text{ Ac-ft} \quad (\text{from Volume calcs})$$

$$A_D = 14.2042 \text{ Ac}$$

$$P_{10\text{day}} = 10 - [24.9/(P_{1440})^{1.4}]$$

$$P_{10\text{day}} = 4.471788 \text{ in}$$

$$V_{10\text{day}} = V_{360} + A_D(P_{10\text{day}} - P_{360})/12$$

$$V_{10\text{day}} = \underline{\underline{5.4454 \text{ Ac-ft}}} \quad \Rightarrow \quad 237203 \text{ cu. ft.}$$

TABLE 3 STREET FLOW DEPTH SUMMARY - VISTA DEL AGUILA 3							
STREET	LOCATION	STREET WIDTH	CURB TYPE	SLOPE (ft/ft)	Q₁₀₀ (cfs)	DEPTH (ft)	EGL DEPTH (ft)
Dancing Eagle Ave	Sta 10+05 to Eagle Feather	28' F-F	mtbl	0.0373	9.11	0.22	0.44
Dancing Eagle Ave	Sta 8+40 to 10+05	28' F-F	mtbl	0.0262	11.03	0.25	0.44
Dancing Eagle Ave	Sta 3+95 to 8+40	28' F-F	mtbl	0.0264	11.22	0.25	0.44
Dancing Eagle Ave	Sta 1+72 to 3+95	28' F-F	mtbl	0.0332	9.87	0.23	0.44
Dancing Eagle Ct	0	24' F-F	mtbl	0.0175	10.49	0.26	0.41
Eagle Feather (X2)	Dancing Eagle to Alameda	56' F-F	mtbl	0.0050	3.42	0.22	0.25
Eagle Talon Dr (X2)	Eagle Feather to Alameda	56' F-F	mtbl	0.0111	3.44	0.19	0.25

STREET FLOW CAPACITY CALCULATIONS			
STREET NAME:		Dancing Eagle Ave	
LOCATION:		Sta 10+05 to Eagle Feather	
STREET INFORMATION		HALF STREET CALCULATIONS	
Slope	0.0373	Road Width/2	14
Q ₁₀₀	9.11	Curb Height	0.33
Right-of-way Width	40	1/2 Wetted Perimeter (P)	11.220
Road Width	28	1/2 Area(STD)	----
Curb Type	mtbl	1/2 Area(MDN)	----
Road Cross Slope	0.02	1/2 Area(MTBL)	1.210
Manning's N	0.017	Discharge (1/2 Q)	4.594
Depth		0.220	
RESULTS			
HGL			
Q ₁₀₀ FLOW CAPACITY =		9.19 cfs	OK
at an HGL Depth=		0.22 ft	< Curb height = 0.33
		OK	
EGL			
Velocity		3.80 fps	
V ² /2g		0.22 ft	
EGL Depth =		0.44 ft	< Right-of-way height = 0.44
		OK	

STREET FLOW CAPACITY CALCULATIONS			
STREET NAME:		Dancing Eagle Ave	
LOCATION:		Sta 8+40 to 10+05	
STREET INFORMATION		HALF STREET CALCULATIONS	
Slope	0.0262	Road Width/2	14
Q ₁₀₀	11.03	Curb Height	0.33
Right-of-way Width	40	1/2 Wetted Perimeter (P)	12.954
Road Width	28	1/2 Area(STD)	----
Curb Type	mtbl	1/2 Area(MDN)	----
Road Cross Slope	0.02	1/2 Area(MTBL)	1.613
Manning's N	0.017	Discharge (1/2 Q)	5.651
Depth		0.254	
RESULTS			
HGL			
Q ₁₀₀ FLOW CAPACITY =		11.30 cfs	OK
at an HGL Depth=		0.25 ft	< Curb height = 0.33
		OK	
EGL			
Velocity		3.50 fps	
V ² /2g		0.19 ft	
EGL Depth =		0.44 ft	< Right-of-way height = 0.44
		OK	

STREET FLOW CAPACITY CALCULATIONS			
STREET NAME:		Dancing Eagle Ave	
LOCATION:		Sta 3+95 to 8+40	
STREET INFORMATION		HALF STREET CALCULATIONS	
Slope	0.0264	Road Width/2	14
Q ₁₀₀	11.22	Curb Height	0.33
Right-of-way Width	40	1/2 Wetted Perimeter (P)	12.903
Road Width	28	1/2 Area(STD)	----
Curb Type	mtbl	1/2 Area(MDN)	----
Road Cross Slope	0.02	1/2 Area(MTBL)	1.600
Manning's N	0.017	Discharge (1/2 Q)	5.613
Depth		0.253	
RESULTS			
HGL			
Q ₁₀₀ FLOW CAPACITY =		11.23 cfs	OK
at an HGL Depth=		0.25 ft	< Curb height = 0.33
		OK	
EGL			
Velocity		3.51 fps	
V ² /2g		0.19 ft	
EGL Depth =		0.44 ft	< Right-of-way height = 0.44
		OK	

STREET FLOW CAPACITY CALCULATIONS			
STREET NAME:		Dancing Eagle Ave	
LOCATION:		Sta 1+72 to 3+95	
STREET INFORMATION		HALF STREET CALCULATIONS	
Slope	0.0332	Road Width/2	14
Q ₁₀₀	9.87	Curb Height	0.33
Right-of-way Width	40	1/2 Wetted Perimeter (P)	11.781
Road Width	28	1/2 Area(STD)	----
Curb Type	mtbl	1/2 Area(MDN)	----
Road Cross Slope	0.02	1/2 Area(MTBL)	1.334
Manning's N	0.017	Discharge (1/2 Q)	4.937
Depth		0.231	
RESULTS			
HGL			
Q ₁₀₀ FLOW CAPACITY =		9.87 cfs	OK
at an HGL Depth=		0.23 ft	< Curb height = 0.33
			OK
EGL			
Velocity		3.70 fps	
V ² /2g		0.21 ft	
EGL Depth =		0.44 ft	< Right-of-way height = 0.44
			OK

STREET FLOW CAPACITY CALCULATIONS			
STREET NAME:		Dancing Eagle Ct	
LOCATION:			
STREET INFORMATION		HALF STREET CALCULATIONS	
Slope	0.0175	Road Width/2	12
Q ₁₀₀	10.49	Curb Height	0.33
Right-of-way Width	44	1/2 Wetted Perimeter (P)	12.262
Road Width	24	1/2 Area(STD)	----
Curb Type	mtbl	1/2 Area(MDN)	----
Road Cross Slope	0.02	1/2 Area(MTBL)	1.704
Manning's N	0.017	Discharge (1/2 Q)	5.252
Depth		0.262	
RESULTS			
HGL			
Q ₁₀₀ FLOW CAPACITY =		10.50 cfs	OK
at an HGL Depth=		0.26 ft	< Curb height = 0.33
			OK
EGL			
Velocity		3.08 fps	
V ² /2g		0.15 ft	
EGL Depth =		0.41 ft	< Right-of-way height = 0.52
			OK

STREET FLOW CAPACITY CALCULATIONS			
STREET NAME:		Eagle Feather (X2)	
LOCATION:		Dancing Eagle to Alameda	
STREET INFORMATION		HALF STREET CALCULATIONS	
Slope	0.005	Road Width/2	28
Q ₁₀₀	3.42	Curb Height	0.33
Right-of-way Width	74	1/2 Wetted Perimeter (P)	11.322
Road Width	56	1/2 Area(STD)	----
Curb Type	mtbl	1/2 Area(MDN)	----
Road Cross Slope	0.02	1/2 Area(MTBL)	1.232
Manning's N	0.017	Discharge (1/2 Q)	1.723
Depth		0.222	
RESULTS			
HGL			
Q ₁₀₀ FLOW CAPACITY =		3.45 cfs	OK
at an HGL Depth=		0.22 ft	< Curb height = 0.33
			OK
EGL			
Velocity		1.40 fps	
V ² /2g		0.03 ft	
EGL Depth =		0.25 ft	< Right-of-way height = 0.50
			OK

STREET FLOW CAPACITY CALCULATIONS			
STREET NAME:		Eagle Talon Dr (X2)	
LOCATION:		Eagle Feather to Alameda	
STREET INFORMATION		HALF STREET CALCULATIONS	
Slope	0.0111	Road Width/2	28
Q ₁₀₀	3.44	Curb Height	0.33
Right-of-way Width	74	1/2 Wetted Perimeter (P)	9.792
Road Width	56	1/2 Area(STD)	----
Curb Type	mtbl	1/2 Area(MDN)	----
Road Cross Slope	0.02	1/2 Area(MTBL)	0.922
Manning's N	0.017	Discharge (1/2 Q)	1.742
Depth		0.192	
RESULTS			
<u>HGL</u>			
Q ₁₀₀ FLOW CAPACITY =		3.48 cfs	OK
at an HGL Depth=		0.19 ft	< Curb height = 0.33
			OK
<u>EGL</u>			
Velocity		1.89 fps	
V ² /2g		0.06 ft	
EGL Depth =		0.25 ft	< Right-of-way height = 0.50
			OK

Hydraflow Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (I) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
1	End	73.0	0.00	0.00	0.00	0.00	0.00	0.0	5.2	0.0	83.41	232.1	11.80	36	12.11	5300.10	5291.26	5303.64	5302.50	5308.06	5303.50	Alameda & Louisi
2	1	345.0	0.00	0.00	0.00	0.00	0.00	0.0	4.6	0.0	68.55	78.67	10.05	36	1.39	5305.00	5300.20	5307.64	5303.64	5313.05	5308.06	Alameda
3	2	446.0	0.00	0.00	0.00	0.00	0.00	0.0	3.8	0.0	45.71	77.44	9.58	30	3.57	5321.00	5305.10	5323.24	5307.64	5329.30	5313.05	Alameda
4	3	62.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	5.55	23.93	4.39	18	5.19	5325.29	5322.07	5326.19	5323.24	5331.06	5329.30	Alameda connect
5	3	43.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	5.55	34.79	4.39	18	10.98	5326.79	5322.07	5327.69	5323.24	5331.06	5329.30	Alameda connect
6	3	148.0	0.00	0.00	0.00	0.00	0.00	0.0	2.9	0.0	23.81	26.88	8.88	24	1.41	5324.11	5322.02	5325.84	5323.50	5329.11	5329.30	Via de Paz
7	6	52.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	6.65	9.44	3.89	18	0.81	5324.68	5324.26	5326.01	5325.84	5327.77	5329.11	Via de Paz conn
8	6	173.0	0.00	0.00	0.00	0.00	0.00	0.0	2.4	0.0	17.16	34.69	6.69	24	2.35	5328.33	5324.26	5329.80	5325.84	5336.70	5329.11	Via Contenta
9	8	36.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.02	19.65	3.44	18	3.50	5329.74	5328.48	5330.51	5329.80	5338.03	5336.70	Via Contenta con
10	8	11.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.02	22.62	3.44	18	4.64	5328.99	5328.48	5329.76	5329.80	5336.95	5336.70	Via Contenta con
11	8	396.0	0.00	0.00	0.00	0.00	0.00	0.0	0.1	0.0	9.12	44.53	4.66	24	3.88	5343.78	5328.43	5344.85	5329.80	5351.63	5336.70	Via Contenta
12	11	18.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.56	32.93	4.33	18	9.83	5345.70	5343.93	5346.52	5344.85	5351.81	5351.63	Via Contenta con
13	11	20.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.56	31.24	4.33	18	8.85	5345.70	5343.93	5346.52	5344.85	5352.26	5351.63	Via Contenta con
14	1	61.0	0.00	0.00	0.00	0.00	0.00	0.0	0.1	0.0	14.86	16.13	4.73	24	0.51	5300.56	5300.25	5303.91	5303.64	5307.83	5308.06	Dancing Eagle Ct
15	14	39.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	10.49	18.72	5.94	18	3.18	5302.30	5301.06	5304.30	5303.91	5307.07	5307.83	Dancing Eagle Ct
16	2	178.0	0.00	0.00	0.00	0.00	0.00	0.0	3.9	0.0	22.84	35.96	9.96	24	2.53	5312.00	5307.50	5313.69	5308.68	5319.43	5313.05	Eagle Talon
17	16	117.0	0.00	0.00	0.00	0.00	0.00	0.0	3.6	0.0	22.84	24.74	8.28	24	1.20	5313.50	5312.10	5315.19	5313.69	5327.10	5319.43	Dancing Eagle Av
18	17	19.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	2.40	38.09	7.41	18	13.16	5317.50	5315.00	5318.10	5315.27	5322.67	5327.10	Dancing Eagle co
19	17	7.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	2.40	62.76	9.17	18	35.71	5317.50	5315.00	5320.89	5315.20	5322.69	5327.10	Dancing Eaglle c
20	17	230.0	0.00	0.00	0.00	0.00	0.00	0.0	3.0	0.0	18.04	39.46	6.92	24	3.04	5320.60	5313.60	5322.10	5315.19	5328.61	5327.10	Dancing Eagle Av
21	20	29.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.76	8.71	4.87	18	0.69	5322.80	5322.60	5323.64	5323.39	5328.78	5328.61	Dancing Eagle co
Project File: 1257-Louis prop.stm									IDF File: sampleFHA.IDF							Total number of lines: 27				Run Date: 07-02-2003		
NOTES: Intensity = 127.16 / (Inlet time + 17.80) ^ 0.82; Return period = 100 Yrs. ; Initial tailwater elevation = 5302.50 (ft)																						

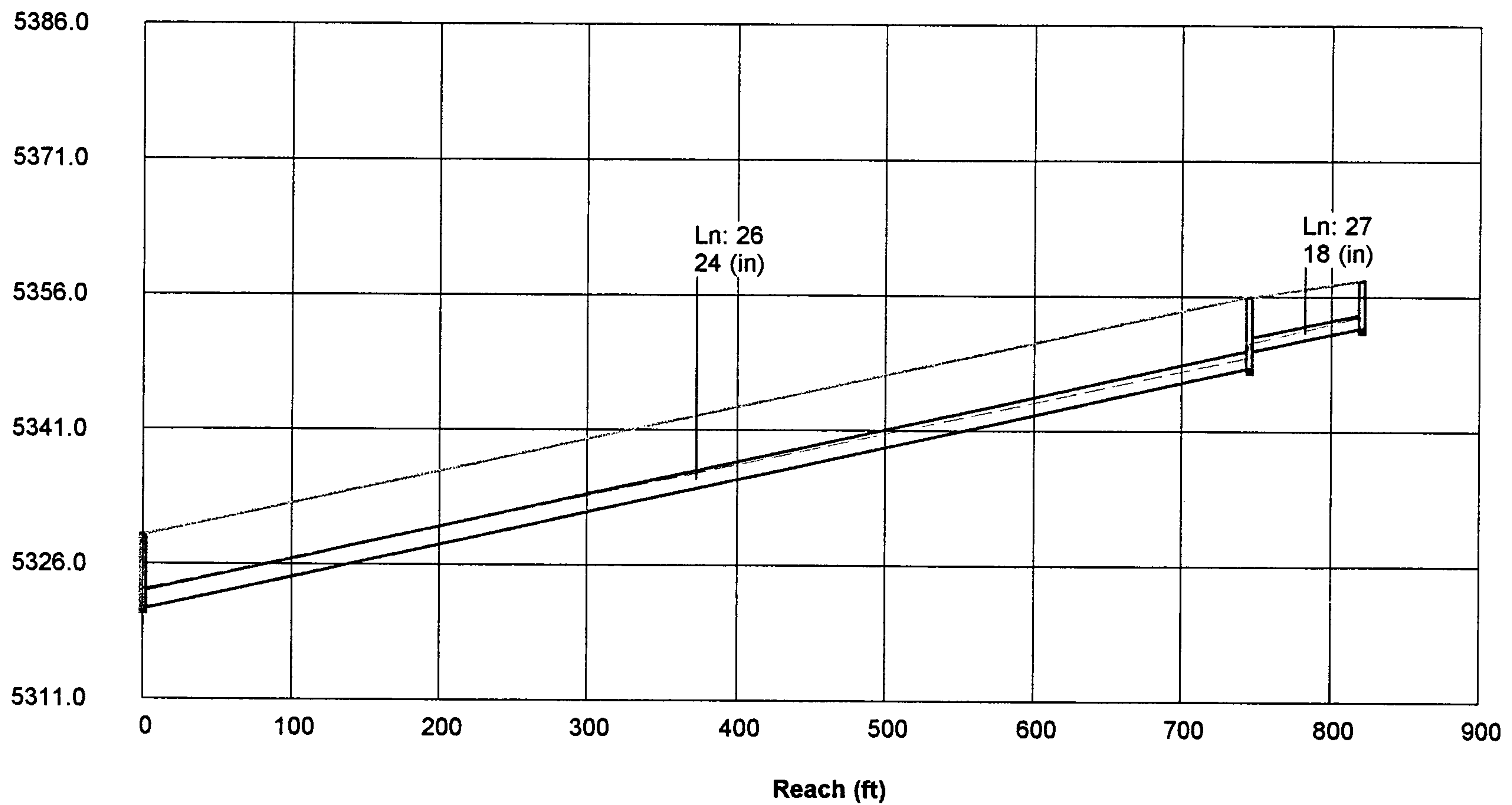
Hydraflow Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (I) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr (min)	Syst (min)	Size (in)	Slope (%)					Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)			
22	20	11.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.76	14.15	5.23	18	1.82	5322.80	5322.60	5323.94	5323.20	5328.70	5328.61	Dancing Eagle co
23	20	450.0	0.00	0.00	0.00	0.00	0.00	0.0	0.2	0.0	8.52	40.46	4.41	24	3.20	5335.10	5320.70	5336.13	5322.10	5343.14	5328.61	Dancing Eagle Av
24	23	31.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.26	26.00	7.39	18	6.13	5339.00	5337.10	5339.79	5337.53	5344.05	5343.14	Dancing Eagle co
25	23	7.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.26	46.80	9.14	18	19.86	5338.49	5337.10	5341.87	5337.41	5343.26	5343.14	Dancing Eagle co
26	3	745.0	0.00	0.00	0.00	0.00	0.00	0.0	0.2	0.0	10.80	42.98	4.57	24	3.61	5348.00	5321.10	5349.16	5323.24	5355.98	5329.30	Alameda
27	26	75.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	10.80	19.17	8.97	18	3.33	5352.50	5350.00	5353.75	5350.81	5357.82	5355.98	Alameda connect
Project File: 1257-Louis prop.stm									IDF File: sampleFHA.IDF							Total number of lines: 27				Run Date: 07-02-2003		
NOTES: Intensity = 127.16 / (Inlet time + 17.80) ^ 0.82; Return period = 100 Yrs. ; Initial tailwater elevation = 5302.50 (ft)																						

Storm Sewer Profile

Proj. file: 1257-Louis prop.stm

Elev. (ft)



Storm Sewer Profile

Proj. file: 1257-Louis prop.stm

Elev. (ft)

5317.0

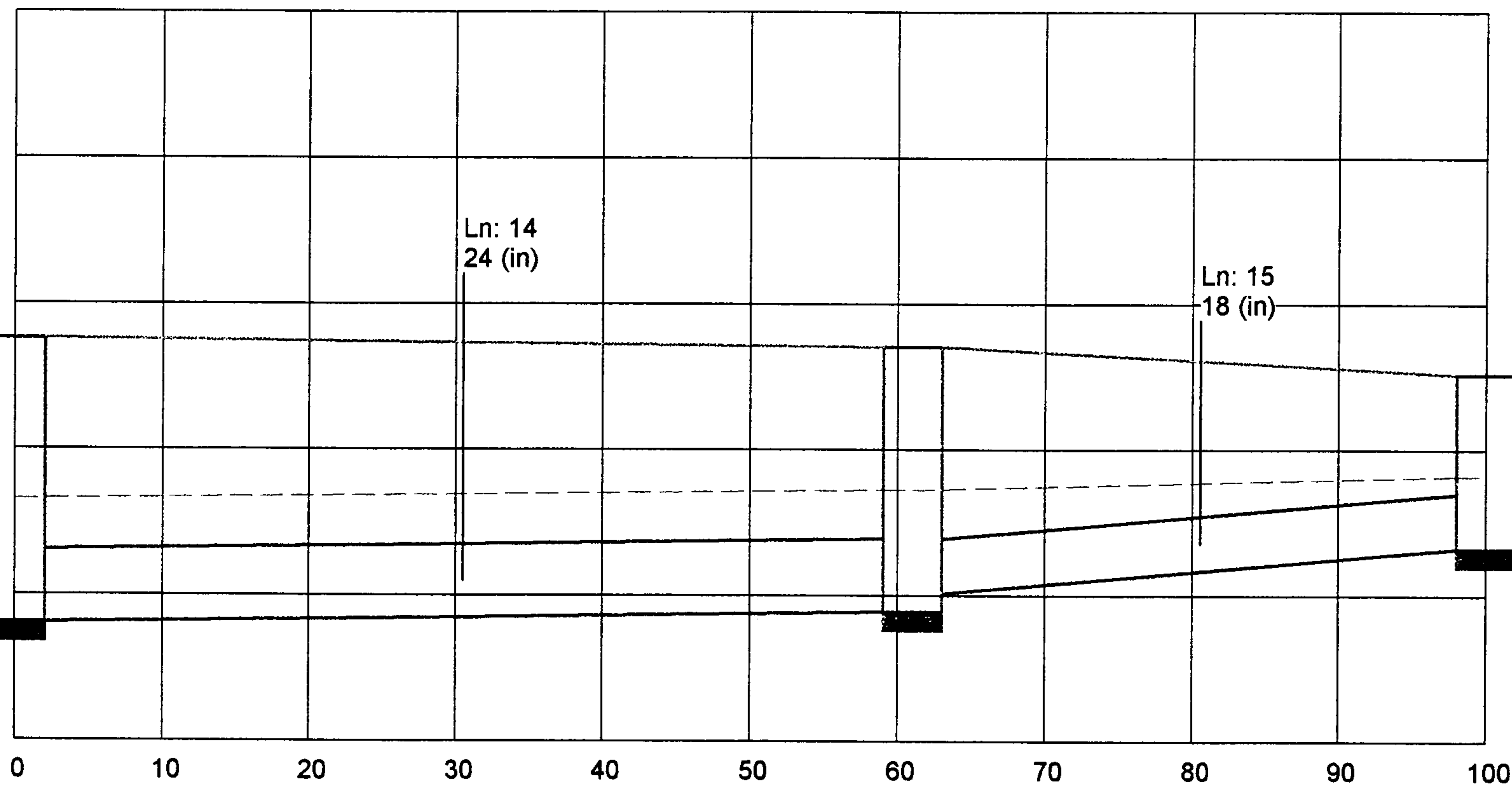
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5309.0

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5301.0

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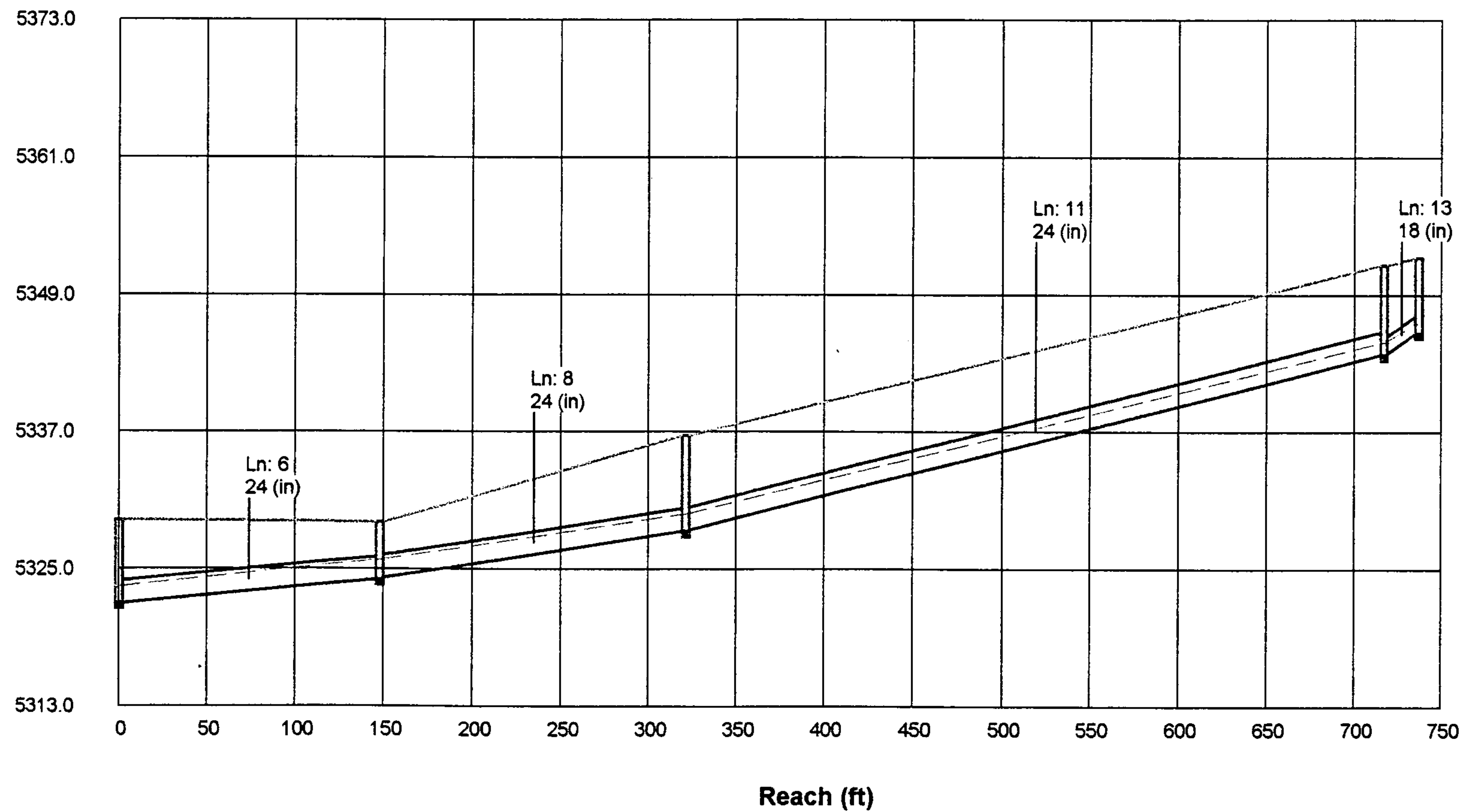


Reach (ft)

Storm Sewer Profile

Proj. file: 1257-Louis prop.stm

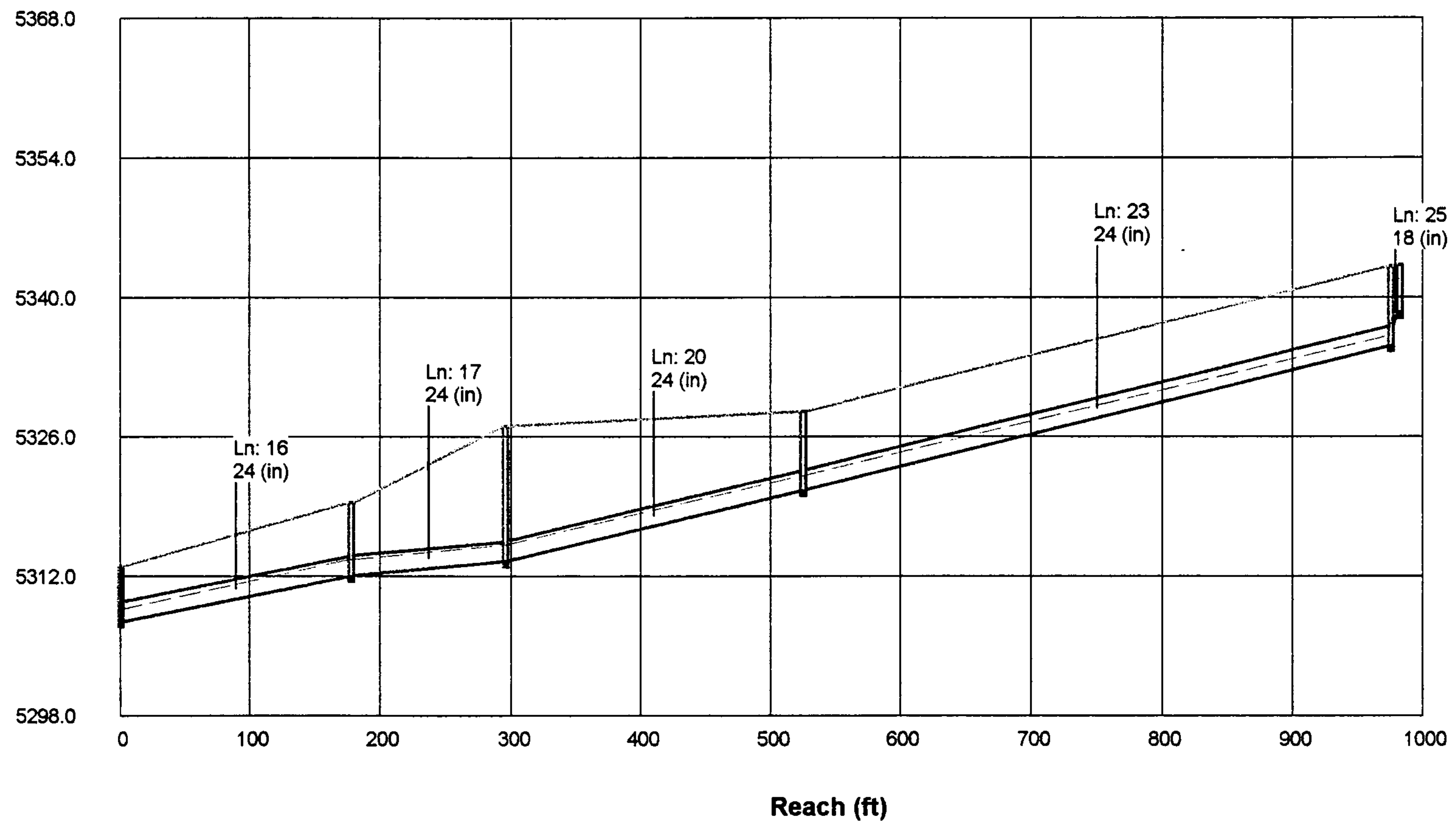
Elev. (ft)



Storm Sewer Profile

Proj. file: 1257-Louis prop.stm

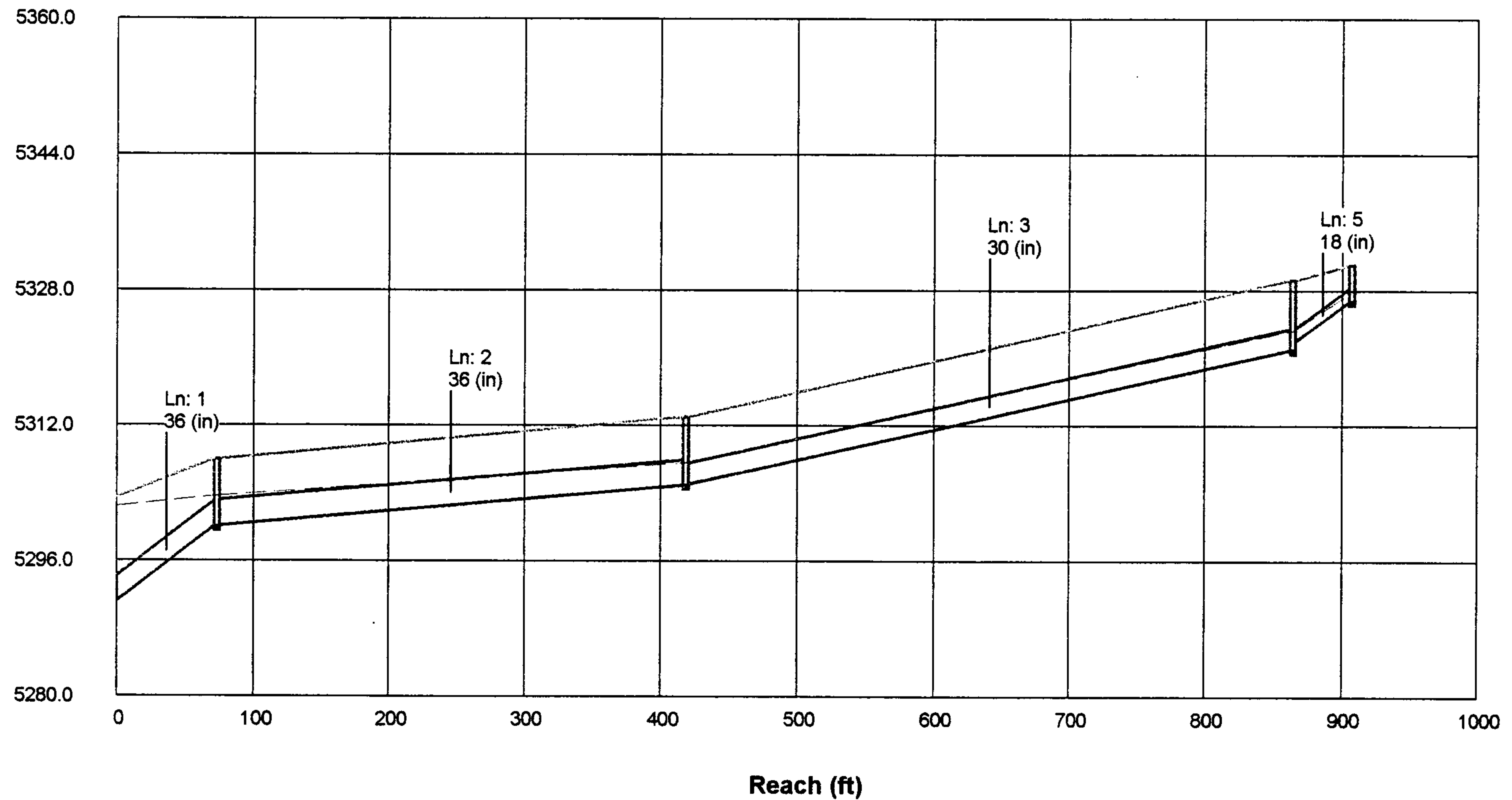
Elev. (ft)



Storm Sewer Profile

Proj. file: 1257-Louis prop.stm

Elev. (ft)



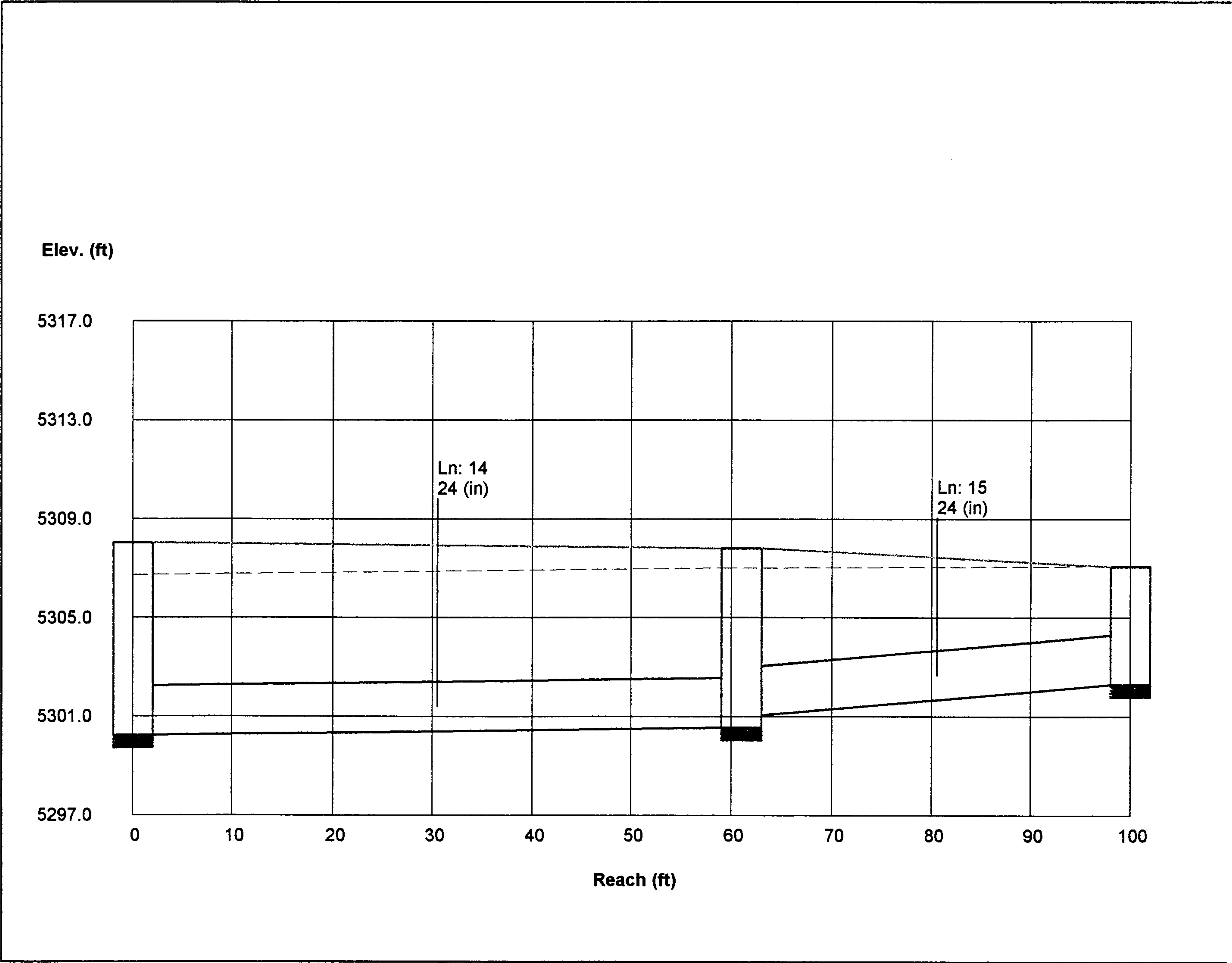
Hydraflow Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (I) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr (min)	Total (min)	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
1	End	153.0	0.00	0.00	0.00	0.00	0.00	0.0	4.8	0.0	111.2	160.3	15.73	36	5.78	5300.10	5291.26	5306.75	5302.50	5308.06	5303.50	Alameda & Louisi
2	1	345.0	0.00	0.00	0.00	0.00	0.00	0.0	4.3	0.0	84.18	78.67	11.91	36	1.39	5305.00	5300.20	5312.25	5306.75	5313.05	5308.06	Alameda
3	2	446.0	0.00	0.00	0.00	0.00	0.00	0.0	3.3	0.0	49.51	77.44	10.29	30	3.57	5321.00	5305.10	5323.30	5312.25	5329.30	5313.05	Alameda
4	3	62.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	5.55	23.93	4.30	18	5.19	5325.29	5322.07	5326.19	5323.30	5331.06	5329.30	Alameda connect
5	3	43.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	5.55	34.79	4.30	18	10.98	5326.79	5322.07	5327.69	5323.30	5331.06	5329.30	Alameda connect
6	3	148.0	0.00	0.00	0.00	0.00	0.00	0.0	2.9	0.0	23.81	26.88	8.88	24	1.41	5324.11	5322.02	5325.84	5323.50	5329.11	5329.30	Via de Paz
7	6	52.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	6.65	9.44	3.89	18	0.81	5324.68	5324.26	5326.01	5325.84	5327.77	5329.11	Via de Paz conne
8	6	173.0	0.00	0.00	0.00	0.00	0.00	0.0	2.4	0.0	17.16	34.69	6.69	24	2.35	5328.33	5324.26	5329.80	5325.84	5336.70	5329.11	Via Contenta
9	8	36.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.02	19.65	3.44	18	3.50	5329.74	5328.48	5330.51	5329.80	5338.03	5336.70	Via Contenta con
10	8	11.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.02	22.62	3.44	18	4.64	5328.99	5328.48	5329.76	5329.80	5336.95	5336.70	Via Contenta con
11	8	396.0	0.00	0.00	0.00	0.00	0.00	0.0	0.1	0.0	9.12	44.53	4.66	24	3.88	5343.78	5328.43	5344.85	5329.80	5351.63	5336.70	Via Contenta
12	11	18.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.56	32.93	4.33	18	9.83	5345.70	5343.93	5346.52	5344.85	5351.81	5351.63	Via Contenta con
13	11	20.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.56	31.24	4.33	18	8.85	5345.70	5343.93	5346.52	5344.85	5352.26	5351.63	Via Contenta con
14	1	61.0	0.00	0.00	0.00	0.00	0.00	0.0	0.2	0.0	14.86	16.13	4.73	24	0.51	5300.56	5300.25	5307.02	5306.75	5307.83	5308.06	Dancing Eagle Ct
15	14	39.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	10.49	40.33	3.34	24	3.18	5302.30	5301.06	5307.10	5307.02	5307.07	5307.83	Dancing Eagle Ct
16	1	23.0	0.00	0.00	0.00	0.00	0.00	0.0	0.2	0.0	12.14	36.71	6.87	18	12.22	5303.06	5300.25	5307.06	5306.75	5308.06	5308.06	Alameda connect
17	2	178.0	0.00	0.00	0.00	0.00	0.00	0.0	3.9	0.0	22.84	35.96	7.30	24	2.53	5312.00	5307.50	5313.95	5312.25	5319.43	5313.05	Eagle Talon
18	17	117.0	0.00	0.00	0.00	0.00	0.00	0.0	3.6	0.0	22.84	24.74	7.79	24	1.20	5313.50	5312.10	5315.19	5313.95	5327.10	5319.43	Dancing Eagle Av
19	18	19.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	2.40	38.09	7.41	18	13.16	5317.50	5315.00	5318.10	5315.27	5322.67	5327.10	Dancing Eagle co
20	18	7.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	2.40	62.76	9.17	18	35.71	5317.50	5315.00	5320.89	5315.20	5322.69	5327.10	Dancing Eagle c
21	18	230.0	0.00	0.00	0.00	0.00	0.00	0.0	3.0	0.0	18.04	39.46	6.92	24	3.04	5320.60	5313.60	5322.10	5315.19	5328.61	5327.10	Dancing Eagle Av
Project File: 1257-Louis future.stm									IDF File: sampleFHA.IDF							Total number of lines: 30				Run Date: 07-02-2003		
NOTES: Intensity = 127.16 / (Inlet time + 17.80) ^ 0.82; Return period = 100 Yrs. ; Initial tailwater elevation = 5302.50 (ft)																						

Hydraflow Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (I) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr (min)	Syst (min)	Size (in)	Slope (%)					Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)			
22	21	29.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.76	8.71	4.87	18	0.69	5322.80	5322.60	5323.64	5323.39	5328.78	5328.61	Dancing Eagle co
23	21	11.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.76	14.15	5.23	18	1.82	5322.80	5322.60	5323.94	5323.20	5328.70	5328.61	Dancing Eagle co
24	21	450.0	0.00	0.00	0.00	0.00	0.00	0.0	0.2	0.0	8.52	40.46	4.41	24	3.20	5335.10	5320.70	5336.13	5322.10	5343.14	5328.61	Dancing Eagle Av
25	24	31.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.26	26.00	7.39	18	6.13	5339.00	5337.10	5339.79	5337.53	5344.05	5343.14	Dancing Eagle co
26	24	7.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.26	46.80	9.14	18	19.86	5338.49	5337.10	5341.87	5337.41	5343.26	5343.14	Dancing Eagle co
27	16	50.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	7.77	21.00	4.40	18	4.00	5305.60	5303.60	5307.34	5307.06	5309.00	5308.06	Future Lots 1&2 c
28	2	23.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	11.83	42.96	6.70	18	16.74	5309.00	5305.15	5312.54	5312.25	5313.05	5313.05	Future Lots 3-5 c
29	3	745.0	0.00	0.00	0.00	0.00	0.00	0.0	0.2	0.0	14.60	42.98	5.55	24	3.61	5348.00	5321.10	5349.35	5323.30	5355.98	5329.30	Alameda
30	29	75.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	14.60	19.17	10.01	18	3.33	5352.50	5350.00	5354.00	5350.99	5357.82	5355.98	Alameda connect
Project File: 1257-Louis future.stm									IDF File: sampleFHA.IDF							Total number of lines: 30				Run Date: 07-02-2003		
NOTES: Intensity = 127.16 / (Inlet time + 17.80) ^ 0.82; Return period = 100 Yrs. ; Initial tailwater elevation = 5302.50 (ft)																						

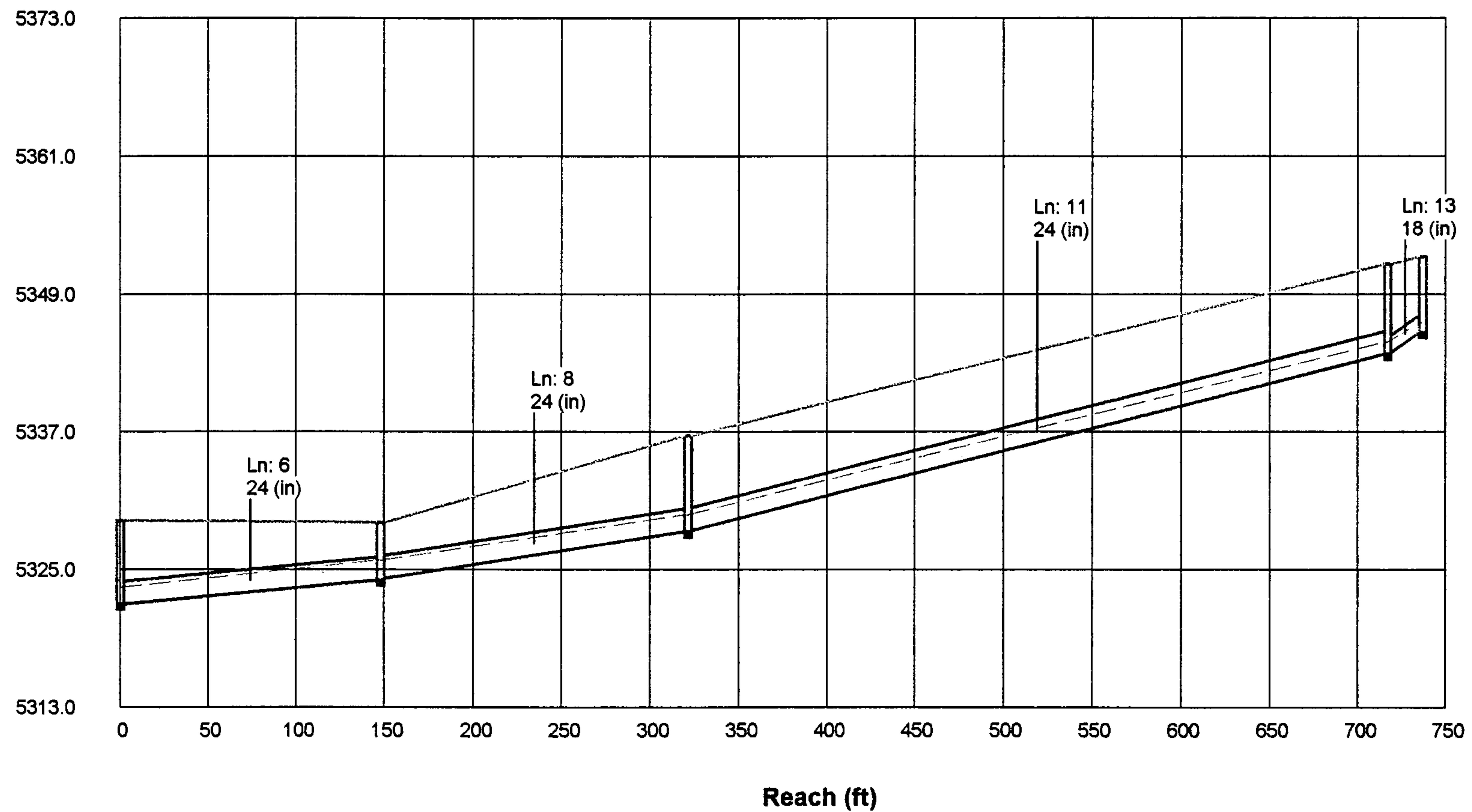
Storm Sewer Profile



Storm Sewer Profile

Proj. file: 1257-Louis future.stm

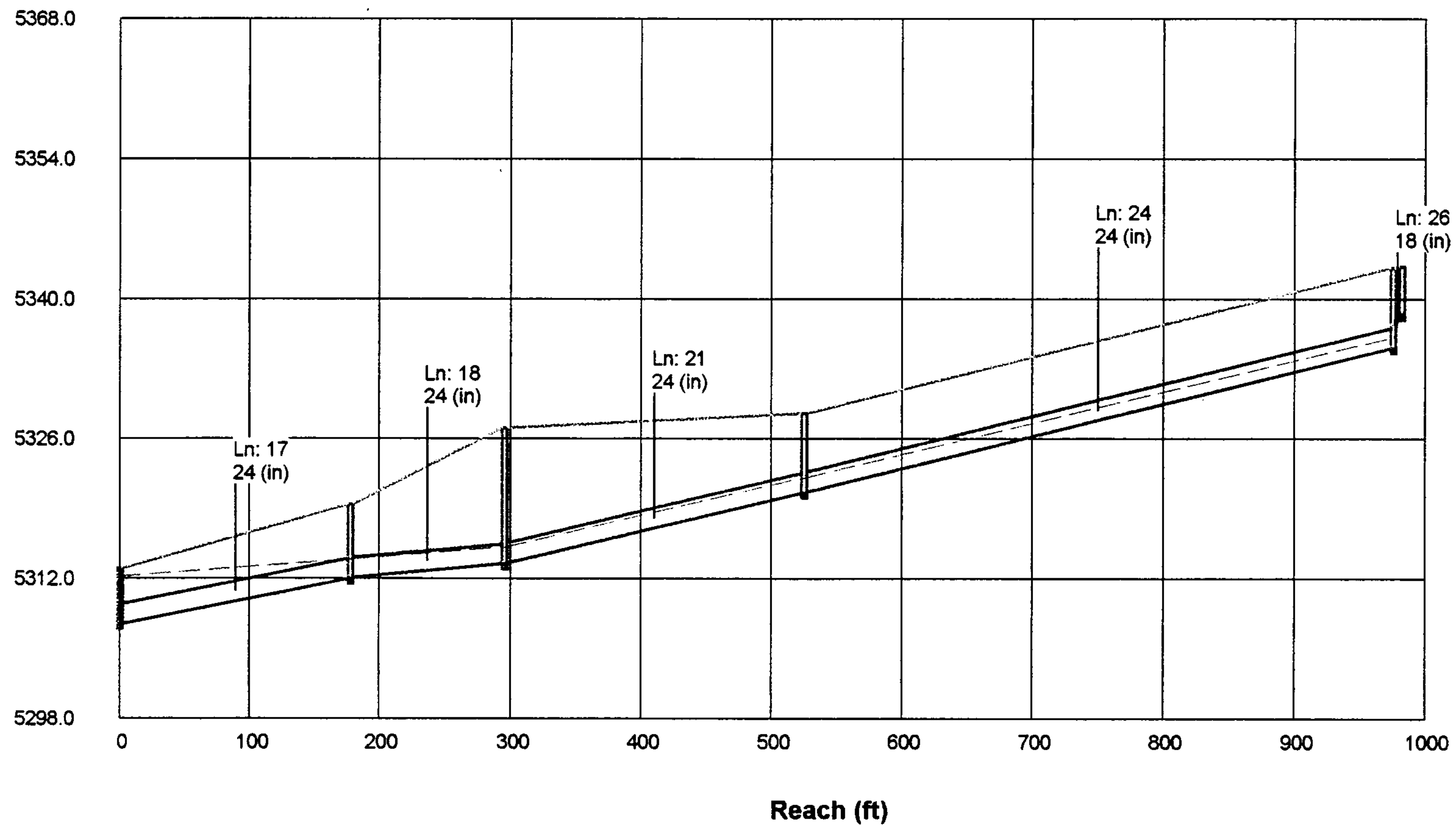
Elev. (ft)



Storm Sewer Profile

Proj. file: 1257-Louis future.stm

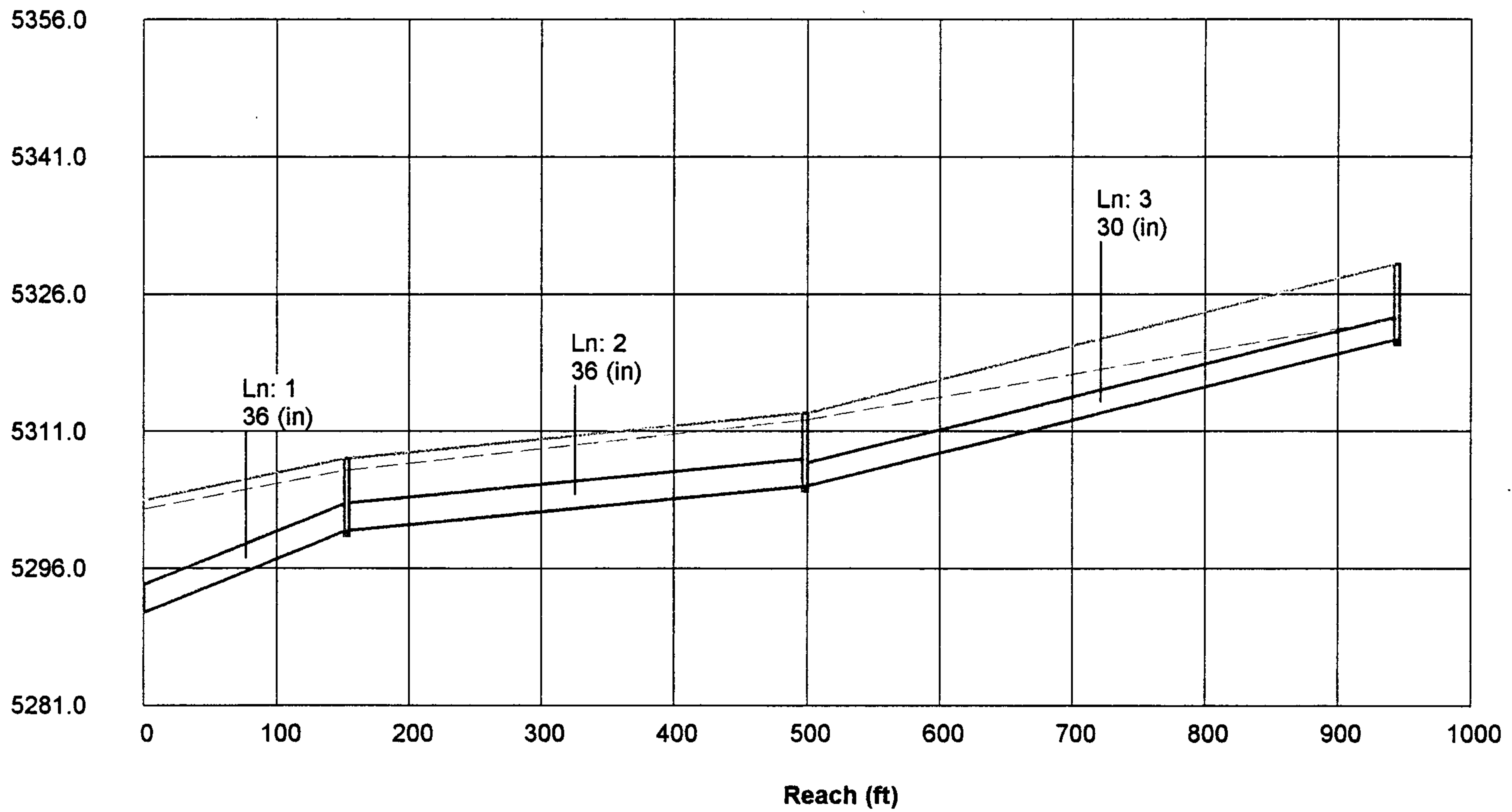
Elev. (ft)



Storm Sewer Profile

Proj. file: 1257-Louis future.stm

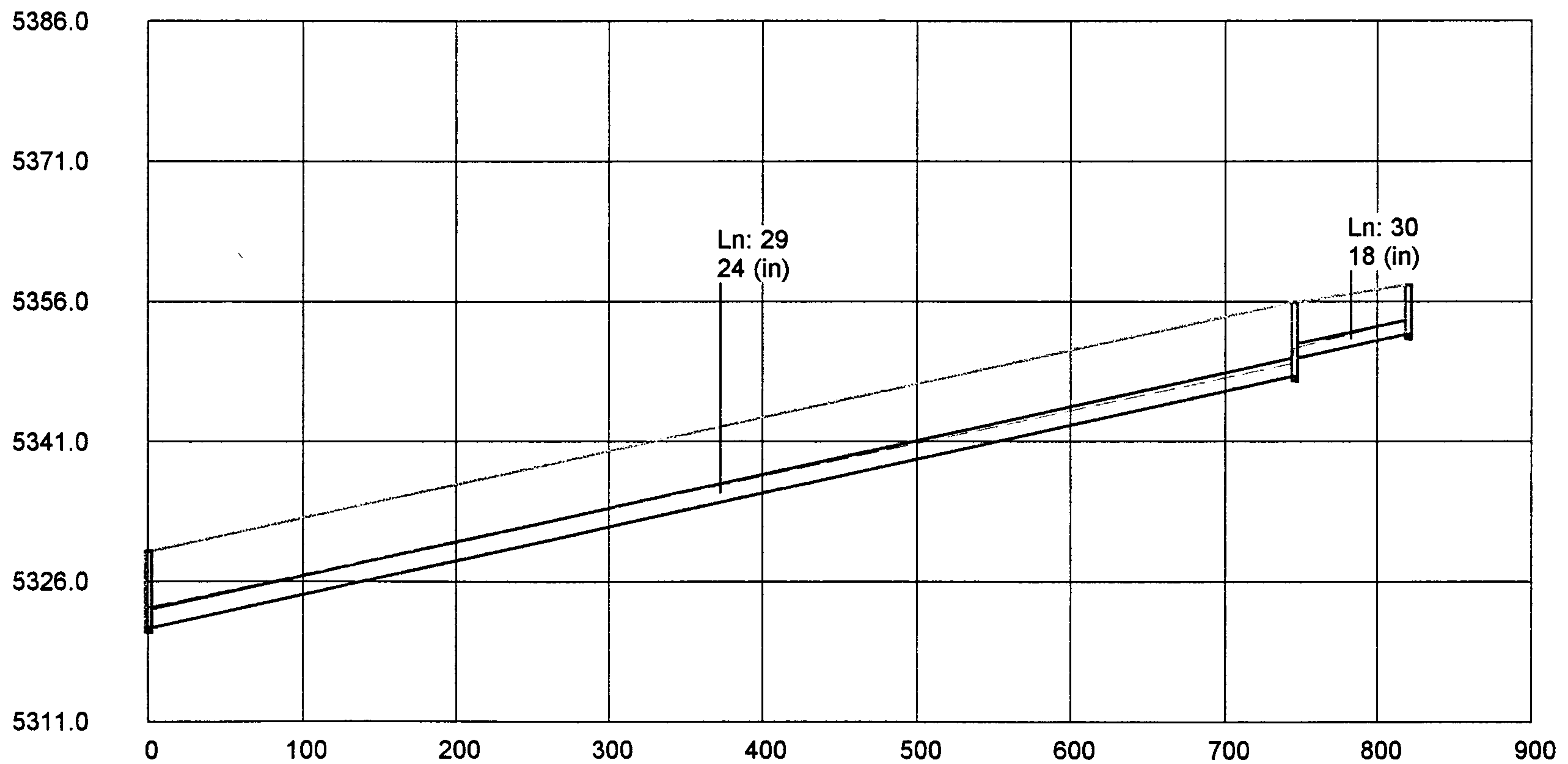
Elev. (ft)



Storm Sewer Profile

Proj. file: 1257-Louis future.stm

Elev. (ft)



Ln: 29
24 (in)

Ln: 30
18 (in)

Reach (ft)

C19/D034

PERMANENT EASEMENT

10/27/03

Grant of Permanent Easement, between Two Joes, L.L.C. ("Grantor"), whose address is 4402 Canyon Court NE, Albuquerque, NM 87111 City of Albuquerque, a New Mexico municipal corporation ("City"), whose address is P.O. Box 1293, Albuquerque, New Mexico, 87103.

Grantor grants to the City an exclusive, permanent easement ("Easement") in, over, upon and across the real property described on Exhibit "A" attached hereto ("Property") for the construction, installation, maintenance, repair, modification, replacement and operation of drainage improvements, together with the right to remove trees, bushes, undergrowth and any other obstacles upon the Property if the City determines they interfere with the appropriate use of this Easement.

In the event Grantor constructs any improvements ("Improvements") within the Easement, the City has the right to enter upon Grantors property at any time and perform whatever inspection, installation, maintenance, repair, modification or removal ("Work") it deems appropriate without liability to the City. If the Work effects any Improvements or encroachments made by the Grantor, the City will not be financially or otherwise responsible for rebuilding or repairing the Improvements or encroachments. If in the opinion of the City, the Work to be performed by the City could endanger the structural integrity or otherwise damage the Improvements or encroachments, the Grantor shall, at its own expense, take whatever protective measures are required to safeguard the Improvements or encroachments.

Grantor covenants and warrants that Grantor is the owner in fee simple of the Property, that Grantor has a good lawful right to convey the Property or any part thereof and that Grantor will forever warrant and defend the title to the Property against all claims from all persons or entities.

The grant and other provisions of this Easement constitute covenants running with the property for the benefit of the City and its successors and assigns until terminated.

This Easement shall not be effective unless approved by the City Engineer as shown in the signature block below.

WITNESS my hand and seal this 1st day of October, 2003.

APPROVED

[Signature]
City Engineer

10-27-03
Dated

GRANTOR:

[Signature]
(Individual)

GRANTOR: Two Joes, L.L.C.

By: [Signature]
Its: Managing Member
(Corporation or Partnership)

Rev. 1/00 KJC



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Page: 1 of 4
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INDIVIDUAL

STATE OF _____)
)ss
COUNTY OF _____)

This instrument was acknowledged before me on _____ day of _____, 20____, by

Notary Public

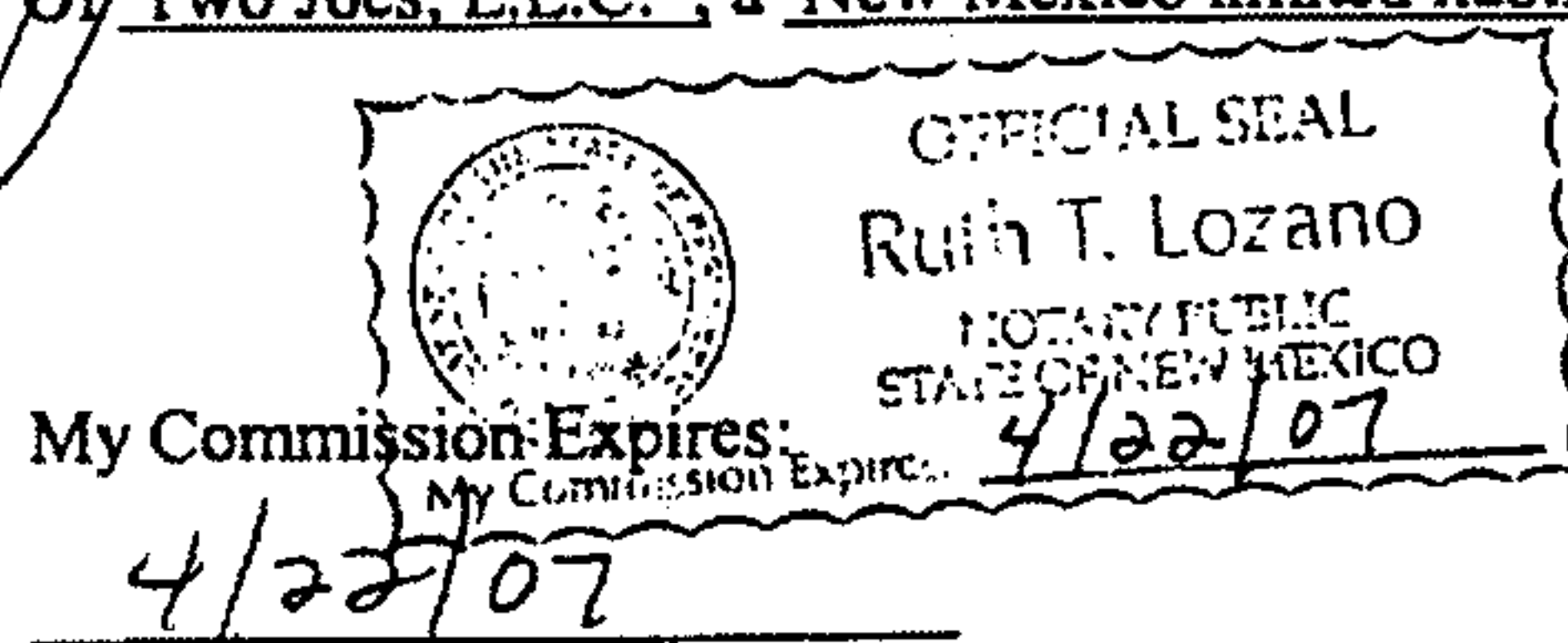
My Commission Expires:

CORPORATION

STATE OF New Mexico)
)ss
COUNTY OF Bernalillo)

This instrument was acknowledged before me on 6th day of October, 2003, by

Paul R. Hahn
Of Two Joes, L.L.C., a New Mexico limited liability corporation, on behalf of the corporation.



Ruth T. Lozano
Notary Public

PARTNERSHIP

STATE OF _____)
)ss
COUNTY OF _____)

This instrument was acknowledged before me on _____ day of _____, 20____, by
_____, partners(s), on behalf of _____, a partnership.

Notary Public

My Commission Expires:



Maru Herrera

Bern. Co. ERSE

R 15.00

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(ED)

LEGAL DESCRIPTION

THAT CERTAIN PARCEL of land situate within the Elena Gallegos Grant, Section 18, Township 11 North, Range 4 East, New Mexico Principal Meridian, City of Albuquerque, Bernalillo County, New Mexico being a portion of "NORTH ALBUQUERQUE ACRES, TRACT 2, UNIT 3" as the same is shown and designated on said plat filed for record in the office of the County Clerk of Bernalillo County, New Mexico, on September 10, 1931, in Volume D1, Folio 20, and being more particularly described as a Public Blanket Drainage Easement as follows:

BEGINNING at the northwest corner of Lot 32, Block 3, Unit 3, Tract 2 of said Plat from whence the Albuquerque Control Survey Monument "10-C18" bears N 64°01'27" W, 2934.03 feet;

THENCE S 00°12'41" W, 296.23 feet to a point being the northwest corner of Lot 1, Block 4, Unit 3, Tract 2 of said Plat being the true POINT OF BEGINNING of a Public Blanket Drainage Easement;

THENCE continuing S 89°42'43" E, 299.84 feet to a point being the northeast corner of Lot 2, Block 4, Unit 3, Tract 2 of said Plat;

THENCE continuing S 00°14'27" W, 234.58 feet to a point being the southeast corner of Lot 2, Block 4, Unit 3, Tract 2 of said Plat, said point also being common to the northeast corner of Lot 31, Block 4, Unit 3, Tract 2 of said Plat;

THENCE continuing N 89°35'26" W, 299.72 feet to a point being the southwest corner of Lot 1, Block 4, Unit 3, Tract 2 of said Plat, said point also being common to the northwest corner of Lot 32, Block 4, Unit 3, Tract 2 of said Plat;

THENCE N 00°12'41" E, 233.94 feet to the POINT OF BEGINNING and containing 1.6122 acres more or less.

BASIS OF BEARING: The north property line of lots 22-32 of the aforementioned plat.



Mary Herrera

Bern. Co. EASE

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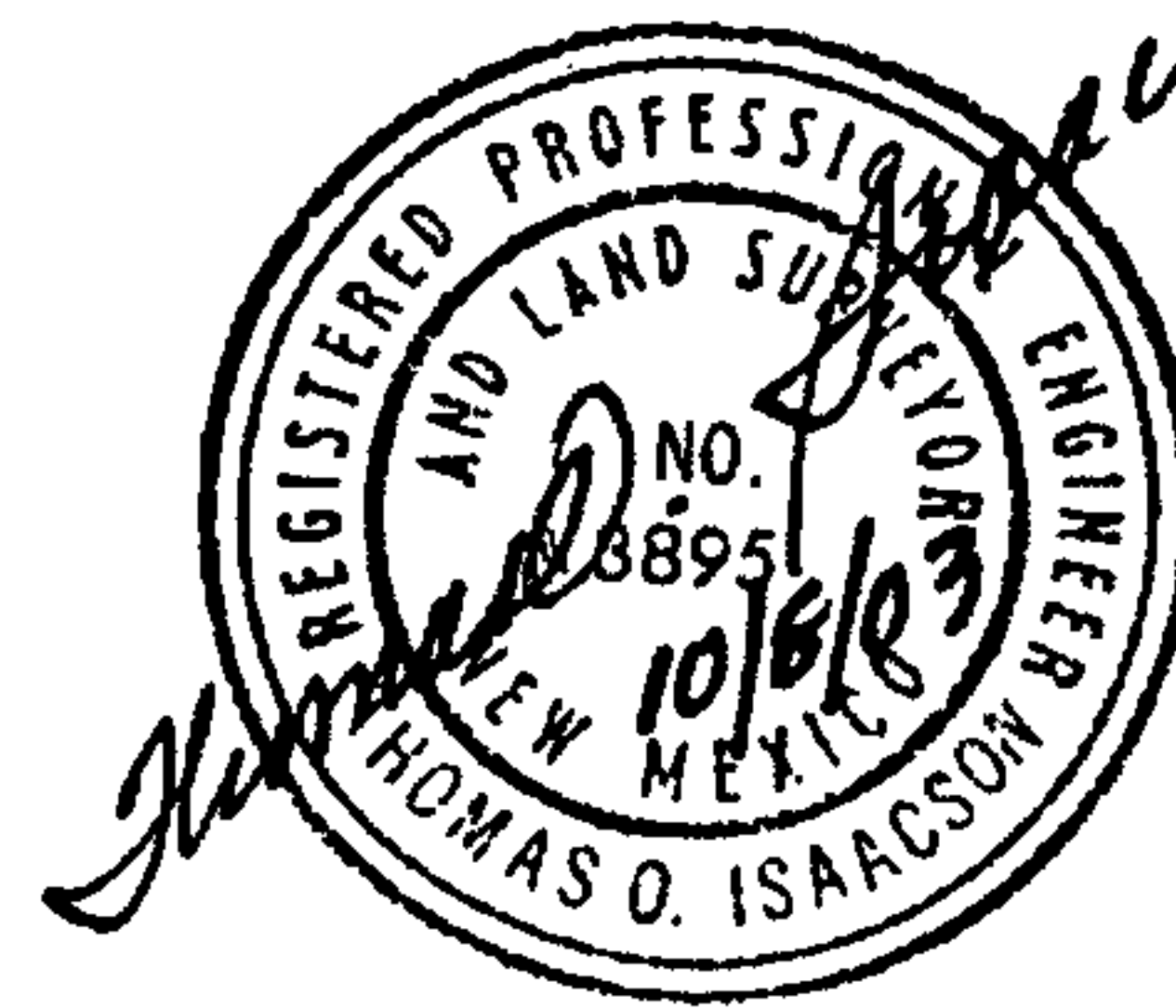
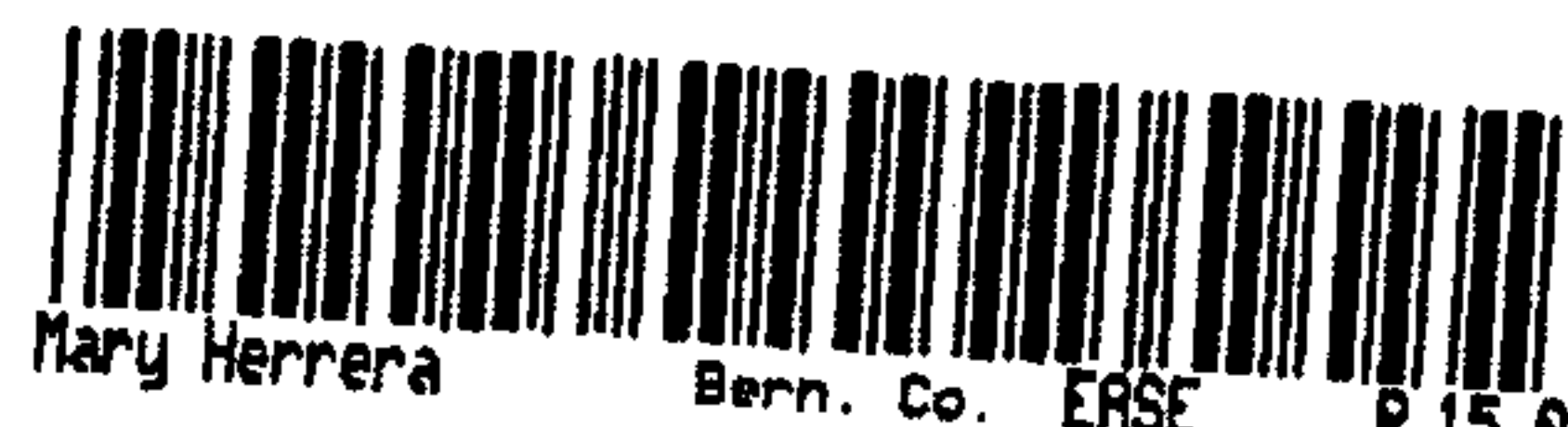
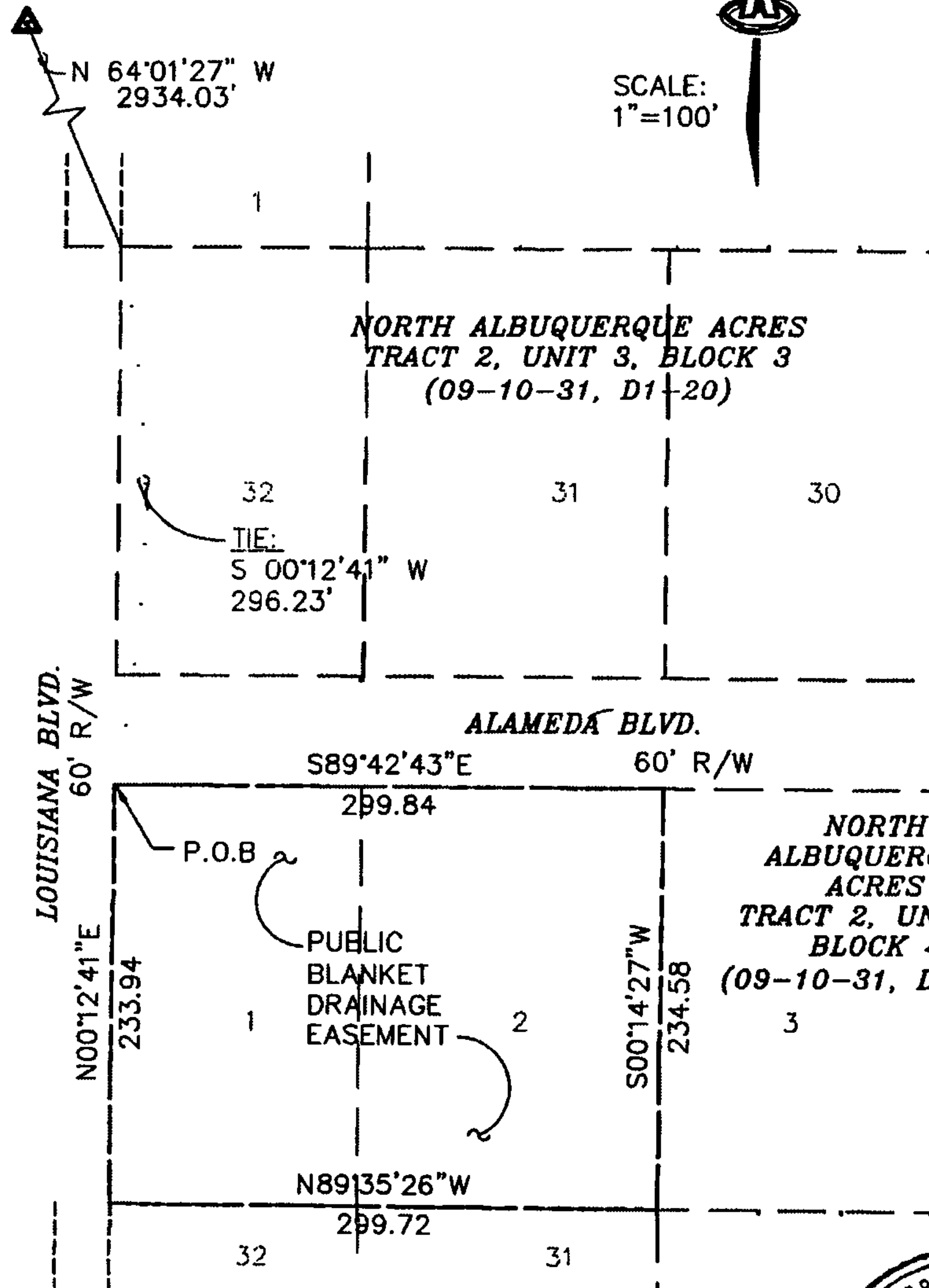


EXHIBIT 'A'

1257ESMT2.DWG

10/07/03

ACS MONUMENT
 "10-C18"
 Y=1524061.42
 X=402319.45
 G-G=0.9996613
 $\Delta\alpha = -00^{\circ}11'18''$
 CENTRAL ZONE
 (NAD 1927/SLD 1929)
 ELEVATION=5219.41



Mary Herrera

Bern. Co.

ERSE

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Page: 4 of 4

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EXHIBIT 'A'

1257ESMT2.DWG

10/07/03

AGREEMENT AND COVENANT

This Agreement and Covenant, between the City of Albuquerque, New Mexico ("City") and Two Joes, L.L.C., ("User") is made in Albuquerque, New Mexico and is entered into as of the date of recording this Agreement with the Bernalillo County Clerk.

1. Recital. The User is the owner of certain real property ("User's Property") located at Louisiana Blvd. and Alameda Blvd., in Albuquerque, New Mexico, and more particularly described as: (give legal description and filing information)

Lots 1 and 2, Tract 2, Unit 3, Block 4
North Albuquerque Acres, filed September 10, 1931 in Book D1, Page 20

The City is the owner of certain real property, easement or public right-of-way ("City's Property") in the vicinity of, contiguous to, abutting or within User's Property, and more particularly described as:

Louisiana Blvd. right-of-way and Alameda Blvd. right-of-way

The User wishes to construct upon, improve or repair and to maintain the following "Improvement" on the City's Property (or already has done so):

A sketch of the proposed or existing Improvement is attached as Exhibit A and made a part of this Agreement.

The City agrees to permit the Improvement to exist on the City's Property provided the User complies with the terms of this Agreement.

2. City Use of City's Property and City Liability. The City has the right to enter upon the City's Property at any time and perform whatever inspection, installation, maintenance, repair, modification or removal ("Work") it deems appropriate without liability to the User. If the Work affects the Improvement the City will not be financially or otherwise responsible for rebuilding or repairing the Improvement. The User promptly will repair the Improvement to the City's satisfaction. The cost of repairing the Improvement will be paid by User.

3. User's Responsibility for Improvement. The User will be solely responsible for constructing, maintaining, repairing and, if required, removing the Improvement, all in accordance with standards required by the City as per the approved Grading and Drainage Plan _____ on file at the City Engineer's office. The User will be solely responsible for paying all related costs. The User will be solely responsible for paying all related costs. The User will not permit the Improvement to constitute a hazard to the health or safety of the general public or to interfere with the City's use of the City's Property. The User will conform with all applicable laws, ordinances and regulations.

4. Use of the Improvement. If the City's Property is a public right-of-way, it shall be open to the use of the general public at all times, subject to reasonable curtailment during periods of construction, maintenance or repair.

5. Demand for Repair, Modification or Removal. The City may send written notice ("Notice") to the User requiring the User to repair, modify or remove the Improvement within 30 days ("Deadline") and the User will comply promptly with the requirements of the Notice. If removal is demanded, the City also may require the User to return the City's Property to its original condition by the Deadline. The User will perform all required work by the Deadline, at User's sole expense.

6. Failure to Perform by User and Emergency Work by City. If the User fails to comply with the terms of the Notice by the Deadline stated, or, if the City determines that an emergency condition exists, the City may perform the work itself. The City then may assess the User for the cost of the work and for any other expenses or damages which result from User's failure to perform. The User agrees promptly to pay the City the amount assessed. If the User fails to pay the City within thirty (30) days after the City gives the User written notice of the amount due, the City may impose a lien against User's Property for the total resulting amount.

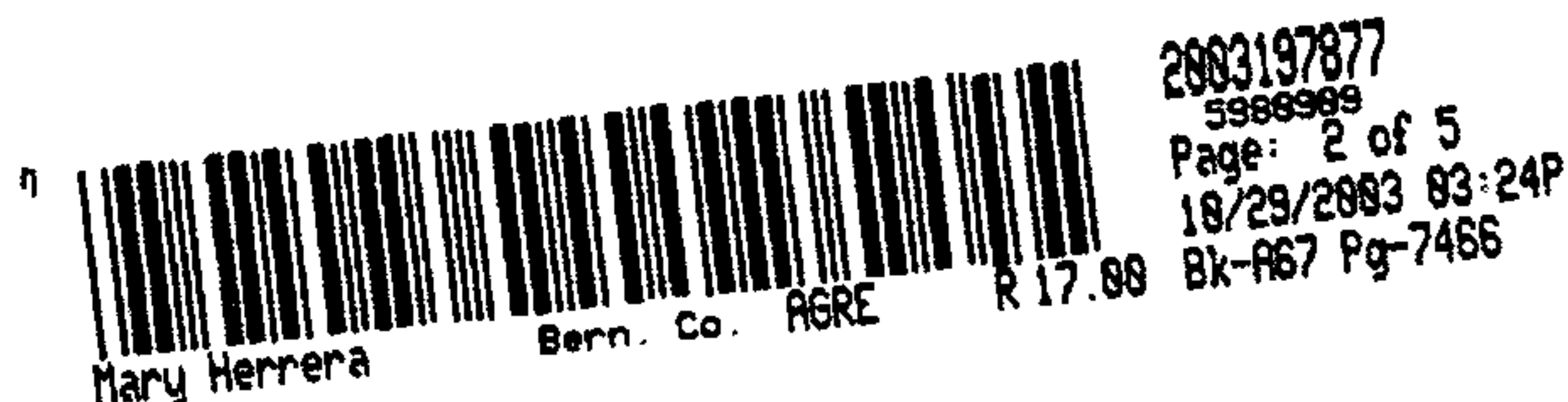
7. Cancellation of Agreement and Release of Covenant. This Agreement may be canceled and User's covenants released by the City at will by the City's mailing to the User notice of the City's intention to record a Cancellation and Release with the Bernalillo County Clerk. The Cancellation and Release will be effective thirty (30) days after the date of mailing the notice to the User unless a later date is stated in the notice or the Cancellation and Release. After the effective date, the City will record the Cancellation and Release with the Bernalillo County Clerk.

8. Condemnation. If any part of the User's Property is ever condemned by the City, the User will forego all claims to compensation for any portion of User's structure which encroaches on City Property and for severance damage to the remaining portion of User's structure on User's Property.

9. Assessment. Nothing in this Agreement shall be construed to relieve the User, his heirs, assigns and successors from an assessment against User's Property for improvements to the City Property under a duly authorized and approved Special Assessment District. The parties specifically agree that the value of the Improvement will not reduce the amount assessed by the City.

10. Notice. For purposes of giving formal written notice to the User, User's address is:

4402 Canyon Court NE
Albuquerque, NM 87111



Notice may be given to the User either in person or by mailing the notice by regular U.S. mail, postage paid. Notice will be considered to have been received by the User within 3 days after the notice is mailed if there is no actual evidence of receipt. The User may change User's address by giving written notice of the change by certified mail, return receipt requested, to the City Engineer at P.O. Box 1293, Albuquerque, New Mexico 87103.

11. Indemnification. The User agrees to defend, indemnify and hold harmless the City, its officials, agents and employees from and against any and all claims, actions, suits or proceedings of any kind brought against said parties as a result of User's use of the City's Property. To the extent, if at all, Section 56-7-1 NMSA 1978 is applicable to this Agreement, this Agreement to indemnify will not extend to liability, claims, damages, losses or expenses, including attorney's fees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications by the indemnitee, or the agents or employees of the indemnitee; or (2) the giving of or the failure to give direction or instructions by the indemnitee, where such giving or failure to give directions or instructions is the primary cause of bodily injury to persons or damage to property.

12. Term. This Agreement shall continue until revoked by the City pursuant to Section 7 above.

13. Binding on User's Property. The covenants and obligations of the User set forth herein shall be binding on User, his heirs assigns and successors and on User's Property and constitute covenants running with User's Property until released by the City.

14. Entire Agreement. This Agreement contains the entire agreement of the parties and supersedes any and all other agreements or understandings, oral or written, whether previous to the execution hereof or contemporaneous herewith.

15. Changes of Agreement. Changes to this Agreement are not binding unless made in writing, signed by both parties.

16. Construction and Severability. If any part of this Agreement is held to be invalid or unenforceable, the remainder of the Agreement will remain valid and enforceable if the remainder is reasonably capable of completion.



Mary Herrera

Bern. Co. AGRE

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17. Captions. The captions to the sections or paragraphs of this Agreement are not part of this Agreement and will not affect the meaning or construction of any of its provisions.

CITY OF ALBUQUERQUE:

USER: Two Joes, L.L.C.

By: [Signature]
Title: City Engineer
Dated: 10-27-03

By: [Signature]
Title: Managing Member
Dated: 10/6/03

10/27/03

cf 10/24/03

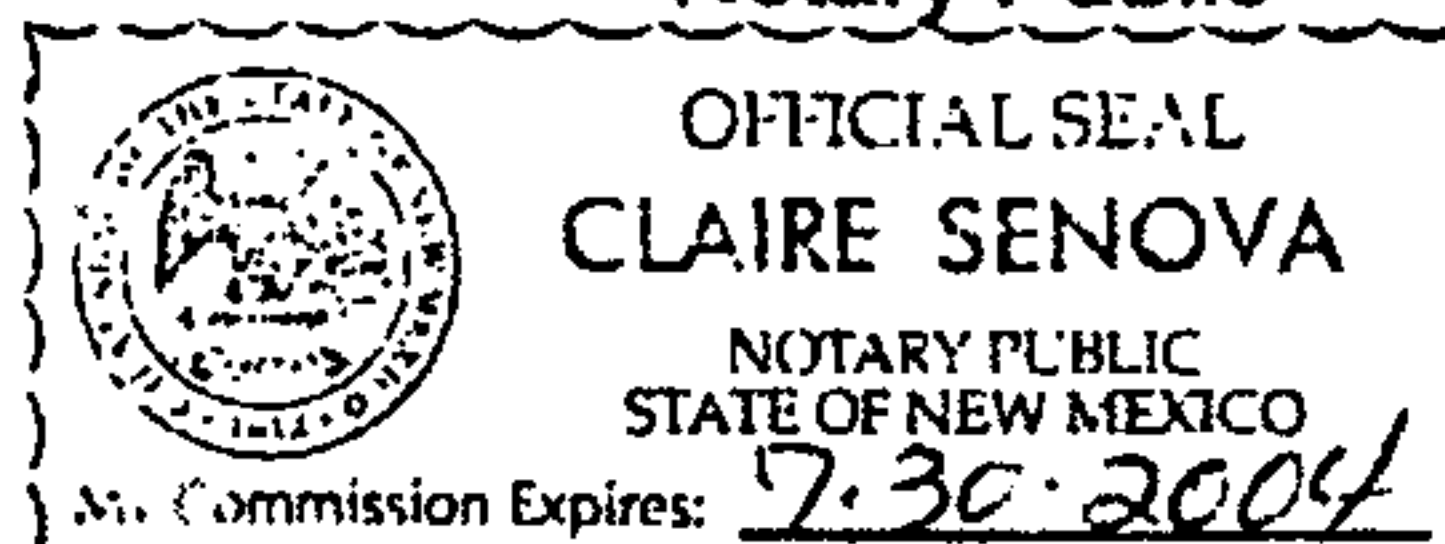
CITY'S ACKNOWLEDGMENT

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

This instrument was acknowledged before me on October 27, 2003
by Fred Casarez, City Engineer, Public Works Department, for the City
of Albuquerque, a New Mexico municipal corporation, on behalf of the corporation.

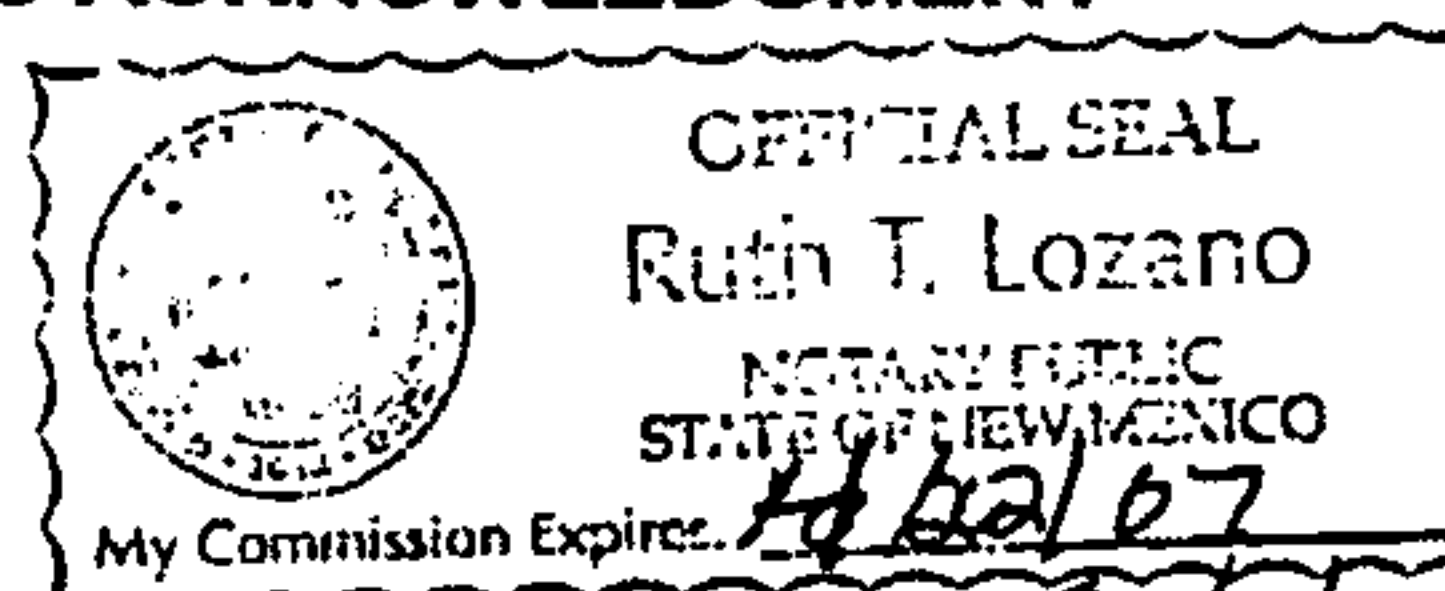
[Signature]
Notary Public.

My Commission Expires:
7.30.2004



USER'S ACKNOWLEDGMENT

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)



This instrument was acknowledged before me on October 6, 2003
by [Signature], Two Joes, L.L.C., on behalf of Two Joes, L.L.C.
Managing Member
[Signature]
Notary Public

My Commission Expires:
4/22/07

npd4agm...2... (Printed text)



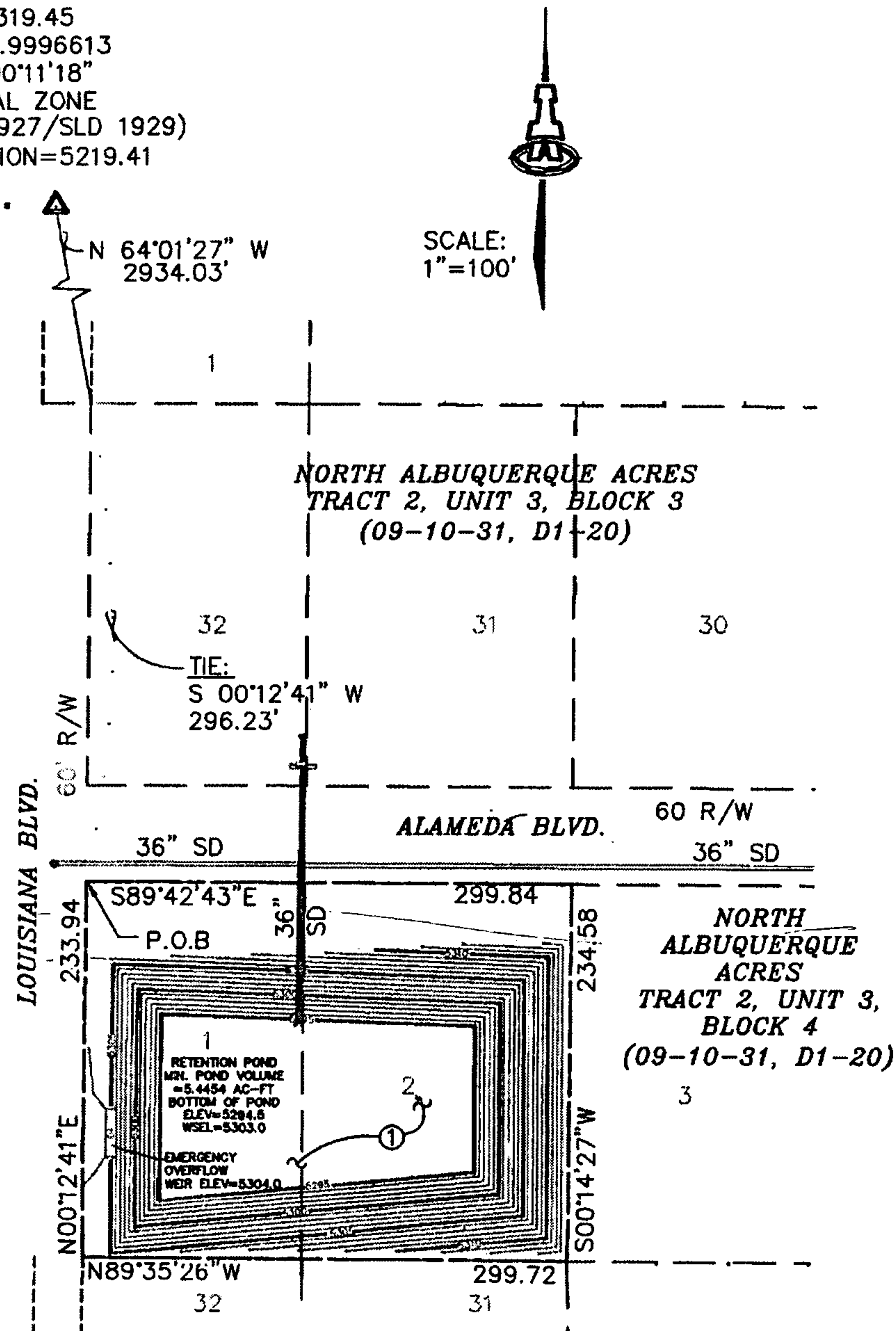
Mary Herrera

Bern Co. AGRE

R 17.00

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Page: 4 of 5
10/29/2003 03:24P
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ACS MONUMENT
 "10-C18"
 Y=1524061.42
 X=402319.45
 G-G=0.9996613
 $\Delta\alpha = -00^{\circ}11'18''$
 CENTRAL ZONE
 (NAD 1927/SLD 1929)
 ELEVATION=5219.41



① PUBLIC BLANKET DRAINAGE EASEMENT

2003197875
 10-29-2003 Blk-A67 Pg 7464

EXHIBIT 'A'

1257ESMT3.DWG

10/07/03



Mary Herrera

Bern. Co. AGRE

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CONTRACT CONTROL FORM

PRELIMINARY REVIEW

Contact Person Kathy Jaramillo
Phone No. 924-3996

Project # 702482
CCN# 200400465
New or Ext. #

Type of Agreement: permanent easements (2) agreement & covenant

Description/Project Name: Fremontina Subd

Planning Dept./Div.: Design Review

Developer: Tuo Jones, LLC

Contract Amount \$ -0-

Contract Amount \$ -0-

Contract Amount \$ -0-

SIA Contract Period: 10/27/03 - 12/31/2023

SIA Contract Period: 10/27/03 - 12/31/2023

STW Contract Period: 10/27/03 - 12/31/2023

DRAFT CONTRACT:

Rec'd by Legal: Rejected/Returned to Dept.:

Returned to Legal: / Approved: Initials:

FINANCIAL GUARANTY:

Letter of Credit No.: Date: Attached: Yes No Initial

Other: Type Date: Attached: Yes No Initial

FINAL CONTRACT REVIEW

APPROVALS REQUIRED:

	Date Delivered	Returned to Dept.	Approved By	Approval Date
Utility Div	<u>10/10/03</u>	<u>10/13/03</u>	<u>NJM</u>	<u>10/10/03</u>
Hydrology Div	<u>10/14/03</u>	<u>10/21/03</u>	<u>BLB</u>	<u>10/20/03</u>
Transportation Div	<u>10/13/03</u>	<u>10/14/03</u>	<u>W/A</u>	<u>10/14/03</u>
DRC Chairman	<u>10/21/03</u>	<u>10/22/03</u>	<u>CJ</u>	<u>10/21/03</u>
Legal Dept	<u>10/24/03</u>	<u>10/24/03</u>	<u>CF</u>	<u>10/24/03</u>
City Engineer	<u>10/24/03</u>	<u>10/27/03</u>	<u>FA</u>	<u>10/27/03</u>
PWD Director	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Finance	<u> </u>	<u> </u>	<u> </u>	<u> </u>
City Clerk	<u> </u>	<u> </u>	<u> </u>	<u> </u>
CAO	<u> </u>	<u> </u>	<u> </u>	<u> </u>

DISTRIBUTION:

	Date:	By:
User Department.	<u>10/21/03</u>	<u> </u>
Vendor	<u> </u>	<u> </u>
City Clerk	<u>11/7/03</u>	<u>JN</u>
Treasury	<u> </u>	<u> </u>
Other:	<u> </u>	<u> </u>

RECEIVED
ALBUQUERQUE CITY CLERK

03 NOV - 7 PM 2 19

ADDENDUM TO COVER PAGE

10-24-03

(Date)

TO: Kevin Curran, Assistant City Attorney, Legal Department

FROM: Project Administrator, Project Review Sec., PWD,

SUBJECT: PROJECT TITLE: Tremonting Subd PROJECT # 702482

The attached documents have been review, approved, initialed and/or signed by the DRC Chairman and are submitted for your action as noted.

9/10/03

ITEM	ACTION		
	Review & Approval	Reference	Comments
Procedure "A".....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Procedure "B".....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Procedure "B" Modified Non Work Order.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Procedure "C".....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Procedure "C" Modified.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Special Agreement.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Sidewalk Deferral Agreement.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Amendment.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Assignment.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Financial Guarantee.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Construction Paperwork:			
Contractors Proposal.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Performance/Warranty Bonds.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Labor/Material Bonds.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Certificate of Insurance.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Engineers Cost Estimate.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Extension.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Release/Agreement.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Release/Financial Guarantee.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Calling Notice.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Letter of Commitment.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Reduction Letter.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
License Agreement.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Monitoring Well Permit.....	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Agreement & Covenant.....	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Drainage Covenant.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Revocable Permit.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Encroachment.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Permanent Easement.....	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
Temporary Easement.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	

Other:

Please Call Kathy at 3996 if you have any questions regarding the above or when the documents are ready to be picked up.

No. of Attachments (3)