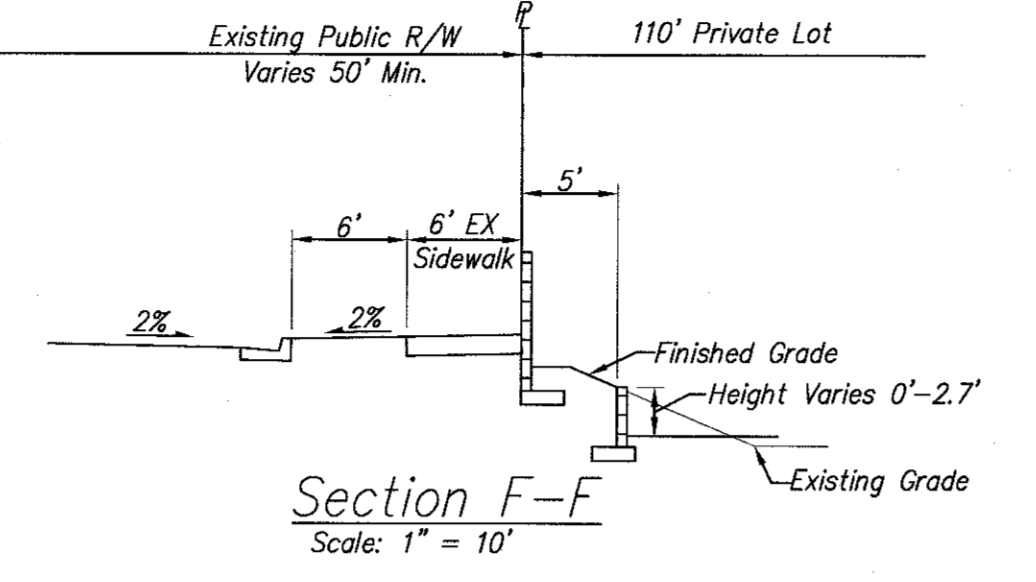
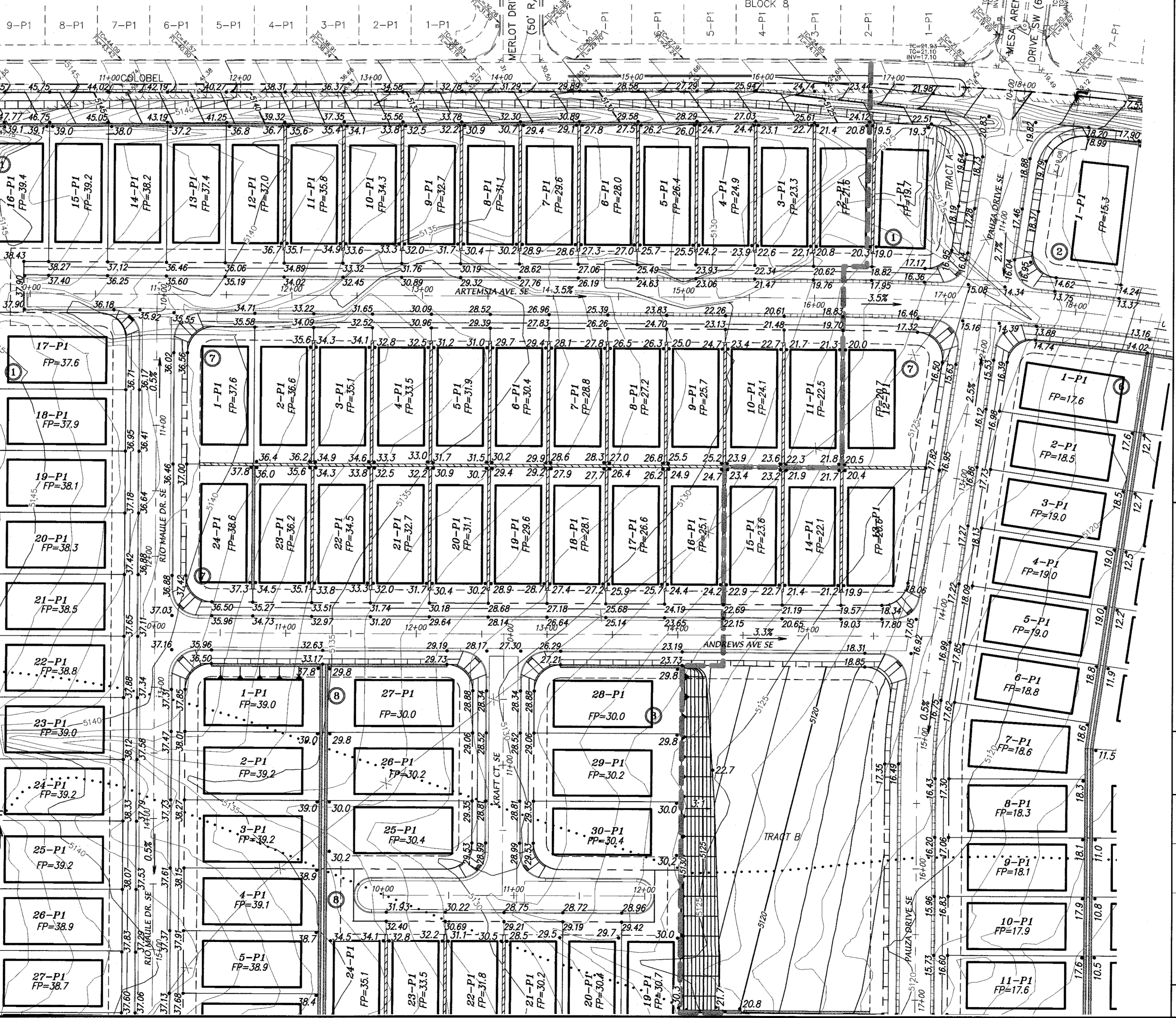
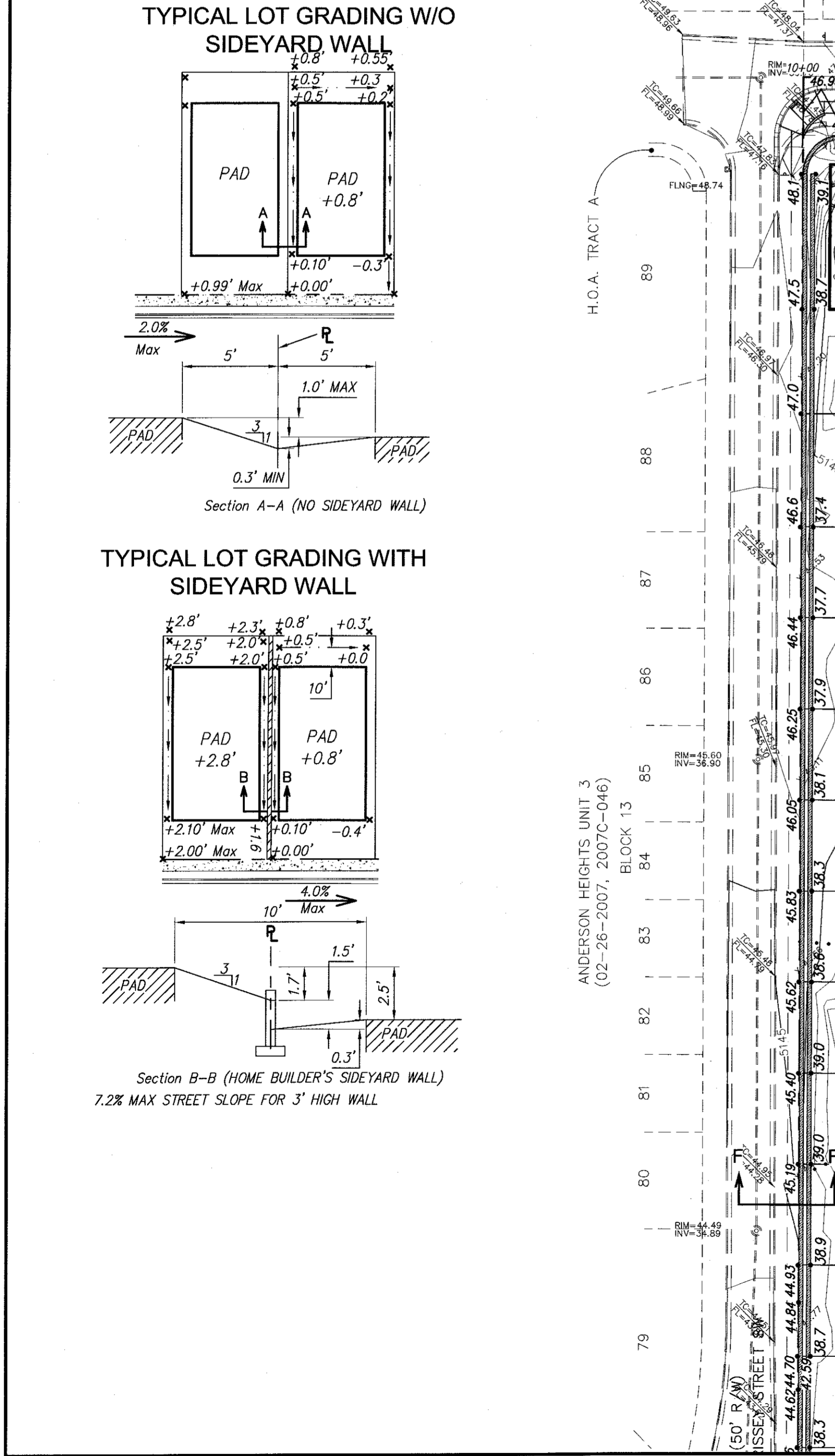


LEGEND

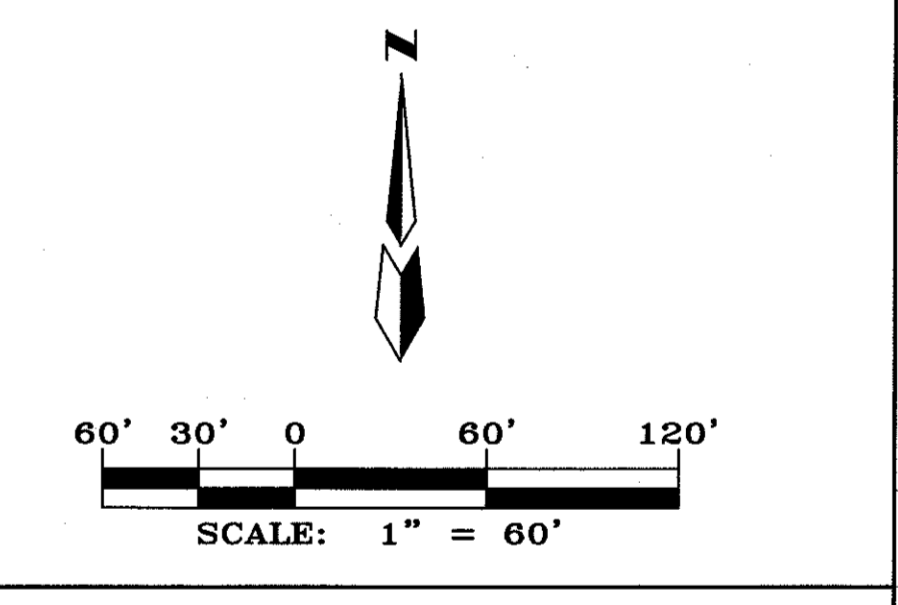
4" MOUNTABLE CURB AND GUTTER		EXISTING PAVEMENT	
8" STANDARD CURB AND GUTTER		RETAINING WALLS THIS PROJECT	
SIDEWALK CONSTRUCTED THIS PROJECT		RETAINING WALLS DEFERRED TO THE HOME BUILDERS	
SIDEWALK TO BE DEFERRED		EXISTING CONTOUR MAJOR	
LIMITS OF GRADING (THIS PROJECT)		EXISTING CONTOUR MINOR	
HANDICAPPED RAMP		PROPOSED CONTOUR	
		PROPOSED SLOPE	
		FEMA FLOOD ZONE	
		LOT NUMBER	
		BLOCK NUMBER	



ARROWWOOD HILLS UNIT 1 (06-23-2006, 2006C-199) BLOCK 7



- GRADING NOTES:**
- THE CONTRACTOR(S) MUST COMPLY WITH NPDES TEMPORARY CONSTRUCTION REQUIREMENTS AND OBTAIN A PERMIT. CONTRACTOR SHALL ALSO PROVIDE A COPY OF THE APPLICATION FOR PERMIT AND NOTICE OF TERMINATION TO THE OWNER.
 - THE CONTRACTOR(S) IS RESPONSIBLE FOR PREPARING AND MAINTAINING A SWPPP FOR THE DURATION OF INFRASTRUCTURE CONSTRUCTION AND UNTIL THE CITY OF ALBUQUERQUE ACCEPTS THE PUBLIC INFRASTRUCTURE. CONTRACTOR SHALL PROVIDE THE OWNER WITH A COPY OF THE SWPPP AT THE BEGINNING OF THE PROJECT AND AT THE TIME OF NOTICE OF TERMINATION.
 - THE CONTRACTOR(S) IS RESPONSIBLE FOR CONSTRUCTING AND MAINTAINING EROSION CONTROLS FOR THE DURATION OF THE CONSTRUCTION OF THE PUBLIC INFRASTRUCTURE AND FOR THE REMOVAL OF THE EROSION CONTROLS WHERE DIRECTED TO DO SO BY THE OWNER AT THE TIME OF NOTICE OF TERMINATION.
 - THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION STAKING AND IS TO PROVIDE AN AS-BUILT SURVEY CERTIFIED BY A REGISTERED PROFESSIONAL SURVEYOR TO THE OWNER UPON COMPLETION OF THE CONSTRUCTION. THE EARTHWORK CONTRACTOR IS TO PROVIDE EARTHWORK SURVEY, AND THE WALL BUILDER IS TO PROVIDE WALL SURVEY.
 - EARTHWORK CONTRACTOR SHALL PREPARE ROUGH SUBGRADE FOR THE RETAINING WALL CONSTRUCTION AND PROVIDE SUFFICIENT BACKFILL MATERIAL STOCKPILED ON THE HIGH SIDE OF EACH WALL FOR THE WALL BUILDER TO COMPLETELY BACKFILL THE WALLS.
 - RETAINING WALLS ARE SHOWN FOR GRADING PURPOSES ONLY. RETAINING WALL DESIGN IS TO BE PERFORMED BY OTHERS, AND SHALL BE SUBMITTED TO THE CITY OF ALBUQUERQUE FOR REVIEW, APPROVAL, PERMIT, AND INSPECTION.
 - EARTHWORK CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL INVESTIGATION BY X'E VINEYARD, INC. DATED NOVEMBER 27, 2015.
 - TOPOGRAPHIC AND BOUNDARY SURVEY ARE BY ALDRICH LAND SURVEYING MARCH 2016.
 - BENCHMARK USED IS AGRS BRASS CAP STAMPED "TRANS 1969" HAVING AN ELEVATION OF 5121.089 (NAVD88).
 - FEMA SPECIAL FLOOD HAZARD ZONE ON THIS PROPERTY AS SHOWN ON FIRM 35001C0336H AND 35001C0338H REVISED AUGUST 16, 2012
 - ALL LOTS ARE TO BE PROVIDED WITH A STORM WATER QUALITY POND IN THE FRONT YARD BETWEEN THE SIDEWALK AND STREET PER SECTION C-C.
 - EARTHWORK CONTRACTOR TO PROVIDE VIDEO DOCUMENTATION OF THE EXISTING CONDITION OF IMPROVEMENTS AROUND THE PERIMETER OF PROJECT TO THE OWNER PRIOR TO BEGINNING CONSTRUCTION.



CERTIFICATE OF SUBSTANTIAL COMPLIANCE

MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90608
ALBUQUERQUE, NEW MEXICO 87199
OFFICE (505) 828-2200, FAX (505) 787-9539

CITY OF ALBUQUERQUE PLANNING DEPARTMENT

TITLE: **DESERT SANDS SUBDIVISION GRADING & DRAINAGE PLAN**

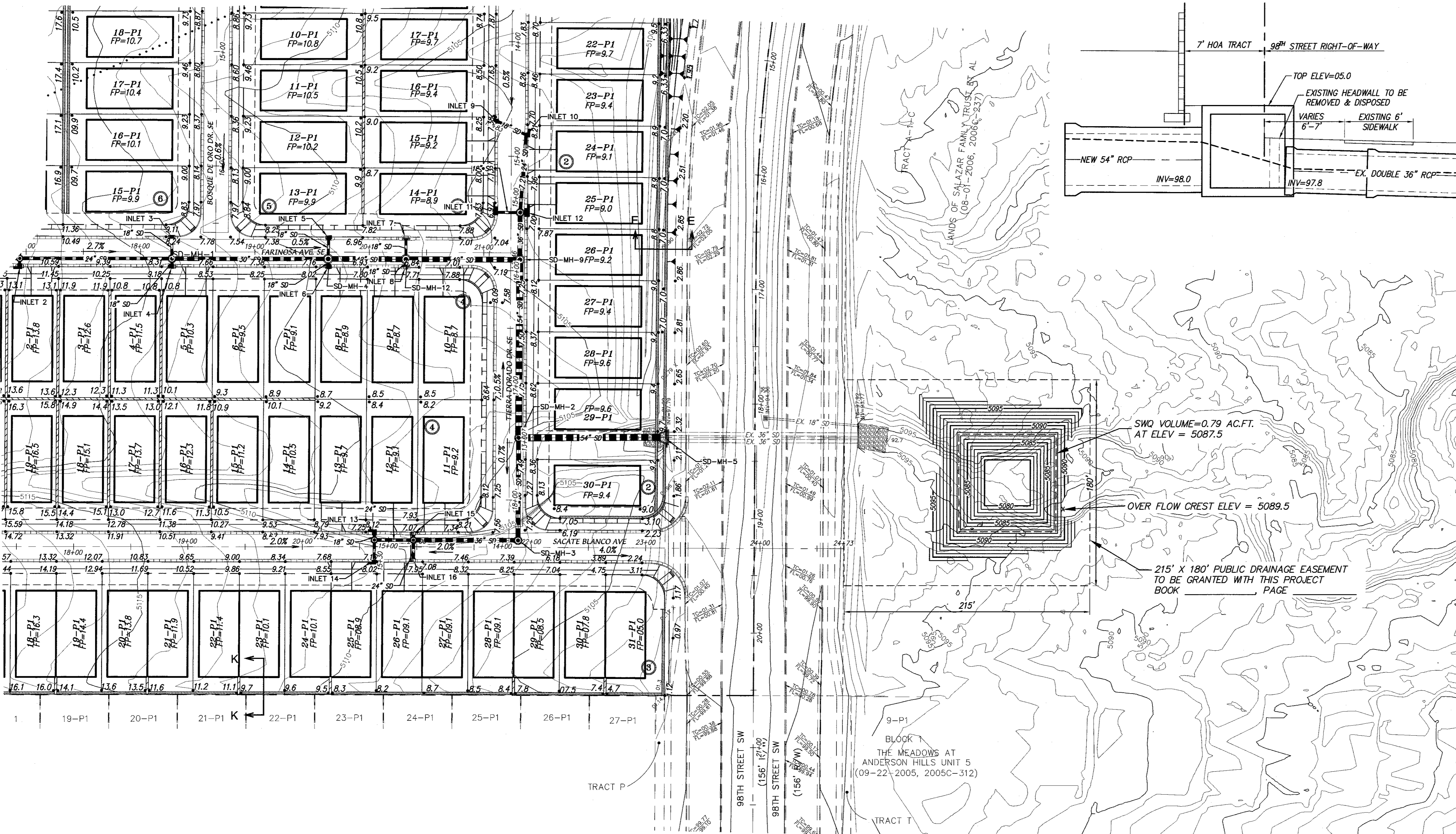
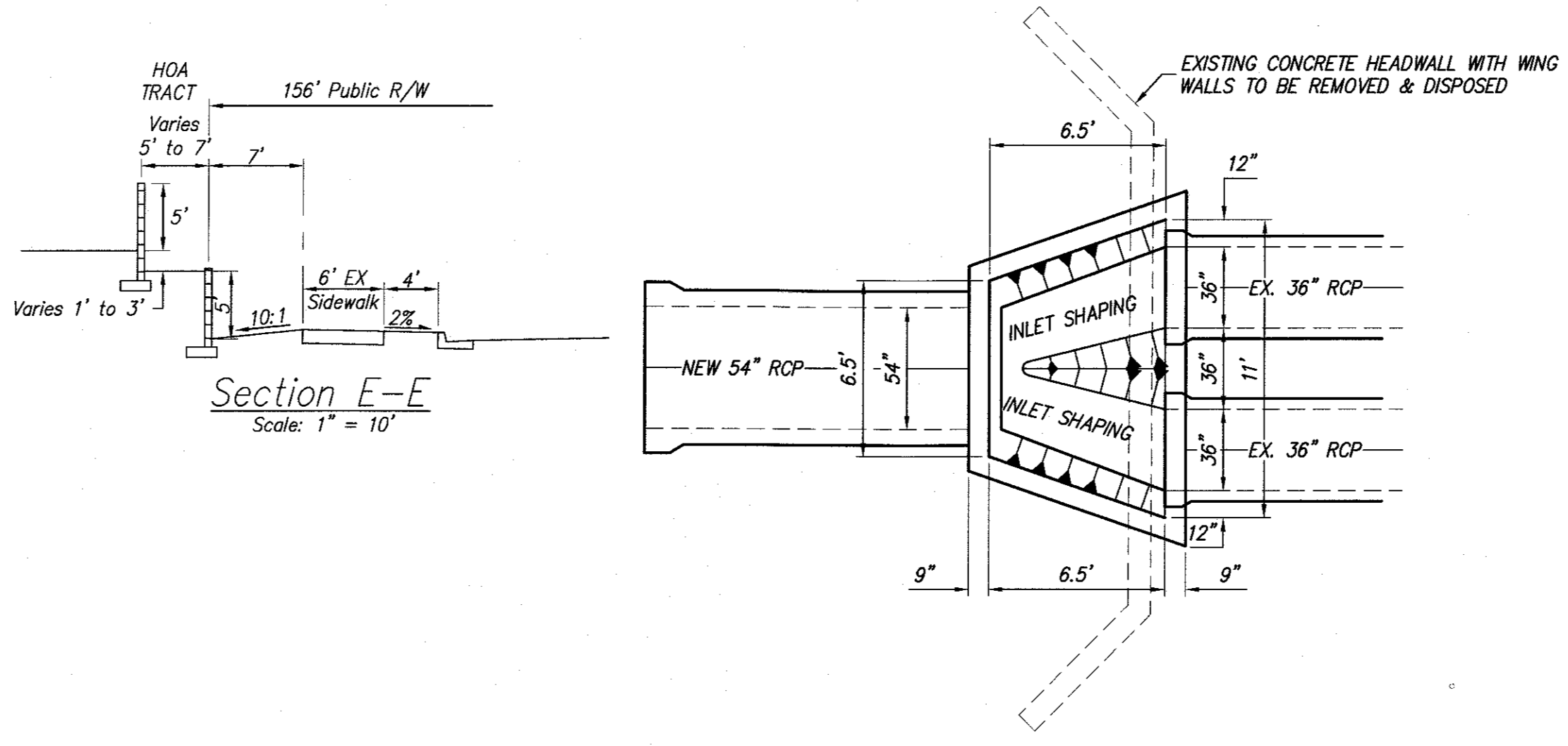
DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	MO./DAY/YR.	MO./DAY/YR.
CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
		1	5

AS-BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION	
CONTRACTOR	DATE	AGRS Aluminum Cap stamped "TRANS 1969"	From the intersection of Central Avenue and 98th Street SW	NO.	DATE
INSPECTOR	DATE	Central Avenue and 98th Street SW	South of 98th Street and Snow Vista Boulevard.	BY	DATE
FIELD ENGINEER	DATE	98th Street and Snow Vista Boulevard	and the co-op electric transmission line 0.85 miles to pylon numbered 52.	REVISIONS	DATE
APPROVED BY	DATE	0.85 miles to pylon numbered 52.	The station is just east of this point. Geographic Position (NA03), in feet N.M. State Plane Coordinates (Central Zone) N=1417885.503, E=1495145.468 Elevation (NAVD88), in feet = 5121.089	DESIGN	DATE
RECORDED BY	DATE			DRAWN BY	DATE
				SPS	01/16
				CHECKED BY	DATE
				DMG	01/16



LEGEND

4" MOUNTABLE CURB AND GUTTER		EXISTING PAVEMENT	
8" STANDARD CURB AND GUTTER		RETAINING WALLS THIS PROJECT	
SIDEWALK CONSTRUCTED THIS PROJECT		RETAINING WALLS DEFERRED TO THE HOME BUILDERS	
SIDEWALK TO BE DEFERRED		EXISTING CONTOUR MAJOR	
LIMITS OF GRADING (THIS PROJECT)		EXISTING CONTOUR MINOR	
HANDICAPPED RAMP		PROPOSED CONTOUR	
		PROPOSED SLOPE	
		FEMA FLOOD ZONE	
		LOT NUMBER	
		BLOCK NUMBER	



<p>CONTRACTOR: ACRS Aluminum Cap stamped "TRANS 1969" From the intersection of Central Avenue and 98th Street SW go south on 98th Street 1.2 miles to the intersection of 98th Street and Snow Vista Boulevard. Then go southeast along Snow Vista Boulevard and the co-op electric transmission line 0.85 miles to pylon numbered 52. The station is just east of this point. Geographic Position (NAD83), in feet N.M. State Plane Coordinates (Central Zone) N=1471885.503, E=1495145.466 Elevation (NAVD88), in feet = 5121.089</p>		<p>DATE: _____</p>	
<p>INSPECTOR'S FIELD VERIFICATION BY: _____</p>		<p>DATE: _____</p>	
<p>REVISIONS BY: _____</p>		<p>DATE: _____</p>	
<p>DESIGN BY: JGH</p>		<p>DATE: 03/16</p>	
<p>DRAWN BY: STS</p>		<p>DATE: 01/16</p>	
<p>CHECKED BY: DMG</p>		<p>DATE: 01/16</p>	
<p>CITY OF ALBUQUERQUE PLANNING DEPARTMENT</p>			
<p>TITLE: DESERT SANDS SUBDIVISION GRADING & DRAINAGE PLAN</p>			
DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.
CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
		3	5

F:\153085\153085_Lands of Salazar\GRADE & DRAINAGE\153085_CD - CD Plan 1.dwg, 7/5/2016 4:49:58 PM, SPS
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Sump Inlet Summary Table

Inlet #	Alignment	Type	Area (SF)	Effective Perimeter (FT)	Q100 (CFS)	Orifice depth ⁽¹⁾ (FT)	Weir Depth ⁽²⁾ (FT)	Top of Curb Elevation	100-YR Water Surface Elev.	Overflow Crest Elevation	Emergency Overflow Depth	Emergency Overflow Elevation	Lowest Adjacent Pad Elevation
7	E	Dbl 'C'	17.39	10.50	12.88	0.02	0.55	5107.51	5107.52	5107.78	0.67	5108.45	5108.70
8	E	Dbl 'C'	17.39	10.50	12.88	0.02	0.55	5107.51	5107.52	5107.78	0.67	5108.45	5108.70
11	F	Dbl 'C'	16.09	10.50	10.22	0.02	0.47	5107.59	5107.52	5107.78	0.67	5108.45	5108.70
12	F	Dbl 'C'	16.09	10.50	10.22	0.02	0.47	5107.59	5107.52	5107.78	0.67	5108.45	5108.70
15	D	Dbl 'C'	16.09	10.50	6.38	0.01	0.34	5107.74	5107.54	5107.57	0.40	5107.97	5108.70
16	D	Dbl 'C'	16.09	10.50	6.38	0.01	0.34	5107.74	5107.54	5107.57	0.40	5107.97	5108.70

1) Orifice Equatⁿ $Q = 0.6 A (2gh)^{0.5}$ so $h = (Q/0.6A)^2 / 2g$
 2) Weir Equatⁿ $Q = 3 L h^{3/2}$ so $h = (Q/3L)^{2/3}$
 3) The orifice equation is used in accordance with FHWA HEC-22, and the height is added to the center of the grate elevation which is 0.72' below the top of curb elevation.
 4) The weir equation is used in accordance with FHWA HEC-22, and the height is added to the lip of gutter elevation which is 0.54' below the top of curb elevation.
 5) The Area and Effective Perimeter are calculated by "Hydraulic Tool Box 4.2" in accordance with Federal Highway Administration HEC-22 3rd edition, Rev Aug, 2013
 6) Emergency Overflow from inlets #7, 8, 11, & 12 goes south in alignment F to alignment D. The total flow is 52.58 cfs and has a normal depth of 0.67' at 0.5% slope.
 7) Emergency Overflow from inlets #15 & 16 goes east in alignment D to 98th St. The total flow is 12.28 cfs and has a critical depth of 0.40' at the high spot.

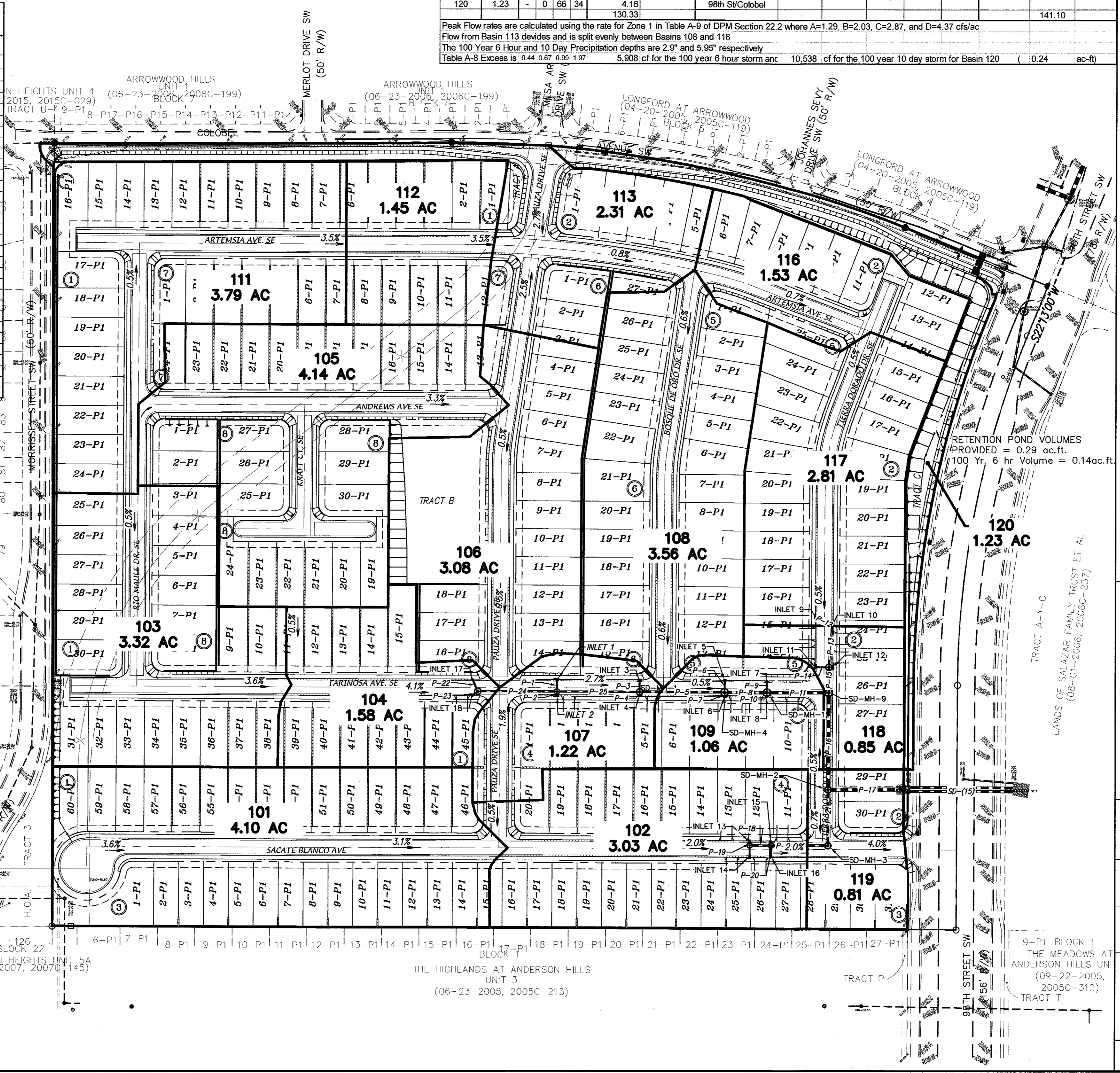
Hydrology and Surface Drainage Summary

BASIN ID	Ground Cover (%)				Peak 100-YR Flow Q ₁₀₀ (cfs)				Street flows				Inlet Calcs			
	AREA (Ac)	A	B	C	Incremental	Surface	Location	Curb Type	Slope (%)	Depth (ft)	Velocity (fps)	Energy (ft)	Inlet ID	Intercepted	By-pass (cfs)	
101	4.10	-	19	19	62	14.93	14.93	Sacate Blanco Ave.	Roll (4")	3.1	0.28	4.0	0.53	-	0.00	14.93
102	3.03	-	19	19	62	11.03	25.96	Sacate Blanco Ave.	Std. (8")	2.9	0.43	4.0	0.68	13 & 14	13.20	12.76
103	3.32	-	19	19	62	12.09	12.09	Farinosa Ave.	Roll (4")	3.6	0.26	4.0	0.51	15 & 16	12.76	-
104	1.70	-	19	19	62	6.19	18.27	Farinosa Ave.	Std. (8")	4.1	0.36	4.7	0.70	17 & 18	11.80	6.47
105	4.14	-	19	19	62	15.07	15.07	Andrews Ave.	Roll (4")	3.3	0.28	4.0	0.53	-	0.00	15.07
106	3.08	-	19	19	62	11.21	26.28	Paenza Drive	Std. (8")	0.5	0.54	2.8	0.66	-	0.00	26.28
107	1.22	-	19	19	62	4.44	37.20	Farinosa Ave.	Std. (8")	2.7	0.47	5.1	0.87	1 & 2	15.00	22.20
108	3.56	-	19	19	62	12.96	26.70	Bosque de Oro Dr.	Std. (8")	0.6	0.54	2.9	0.67	-	0.00	26.70
109	1.06	-	19	19	62	3.86	40.76	Farinosa Ave.	Std. (8")	0.5	0.62	3.4	0.80	5 & 6	15.00	25.76
111	3.79	-	19	19	62	13.80	13.80	Artemisia Ave.	Roll (4")	3.5	0.28	4.0	0.53	-	0.00	13.80
112	1.45	-	19	19	62	5.28	19.08	Artemisia Ave.	Std. (8")	3.5	0.37	4.6	0.70	-	0.00	19.08
113	2.31	-	19	19	62	8.41	27.49	Artemisia Ave.	Std. (8")	0.8	0.52	3.2	0.68	-	0.00	27.49
116	1.53	-	19	19	62	5.57	19.31	Artemisia Ave.	Std. (8")	0.7	0.48	2.7	0.59	-	0.00	19.31
117	2.81	-	19	19	62	10.23	29.54	Tierra Dorando Dr.	Std. (8")	0.5	0.57	2.9	0.70	9 & 10	12.20	17.34
118	0.85	-	19	19	62	3.09	20.44	Tierra Dorando Dr.	Std. (8")	0.5	0.57	2.9	0.70	11 & 12	20.44	0.00
119	0.81	-	19	19	62	2.95	15.70	Sacate Blanco Ave.	Std. (8")	1.8	0.44	4.2	0.71	-	2.95	12.76
120	1.23	-	0	66	34	4.16	130.33	98th St/Cobol	-	-	-	-	-	-	-	-

Peak Flow rates are calculated using the rate for Zone 1 in Table A-9 of DPM Section 22.2 where A=1.29, B=2.03, C=2.87, and D=4.37 cfs/ac
 Flow from Basin 113 divides and is split evenly between Basins 108 and 116
 The 100 Year 6 Hour and 10 Day Precipitation depths are 2.9" and 5.95" respectively
 Table A-8 Excess is 0.44 0.67 0.99 1.97 5.908 cfs for the 100 year 6 hour storm acc 10,538 cfs for the 100 year 10 day storm for Basin 120 (0.24 ac-ft)

Storm Drain Pipe Summary

Location	Inlet			Pipe						
	#	Q ₁₀₀ cfs	Q ₁₀₀ cfs	PIPE ID	SLOPE %	Diam. in	Capacity cfs	Velocity fps	K	Area sf
Sacate Blanco Ave.	13	6.60	13.20	18	0.50	24	15.99	4.20	226.2	3,142
Sacate Blanco Ave.	14	6.60	6.60	19	0.50	18	7.42	3.74	105.00	1,767
Sacate Blanco Ave.	15	6.38	6.38	20	0.50	18	7.42	3.61	105.00	1,767
Sacate Blanco Ave.	16	6.38	25.96	21	0.50	36	47.16	3.67	666.9	7,069
Farinosa Ave.	1	7.50	7.50	1	1.00	18	10.50	4.24	105	1,767
Farinosa Ave.	2	7.50	7.50	2	2.70	18	17.25	4.24	105.00	1,767
Farinosa Ave.	3	6.00	6.00	3	1.00	18	10.50	3.40	105	1,767
Farinosa Ave.	4	6.00	6.00	4	1.00	18	10.50	3.40	105	1,767
Farinosa Ave.	5	38.80	5	0.50	36	47.16	5.49	666.9	7,069	
Farinosa Ave.	6	7.50	7.50	6	1.00	18	10.50	4.24	105	1,767
Farinosa Ave.	7	7.50	7.50	7	1.00	18	10.50	4.24	105	1,767
Farinosa Ave.	8	53.80	8	0.60	42	77.92	5.59	1006	9,621	
Farinosa Ave.	9	12.88	12.88	9	1.00	24	22.62	4.10	226.2	3,142
Farinosa Ave.	10	12.88	12.88	10	1.00	24	22.62	4.10	226.2	3,142
Farinosa Ave.	11	79.56	11	0.70	42	84.17	8.27	1006	9,621	
Tierra Dorando Dr.	9	6.10	6.10	12	1.00	18	10.50	3.45	105	1,767
Tierra Dorando Dr.	10	6.10	12.20	13	0.50	24	15.99	3.88	226.2	3,142
Tierra Dorando Dr.	11	10.22	10.22	14	1.20	18	11.50	5.78	105	1,767
Tierra Dorando Dr.	12	10.22	32.64	15	0.50	36	47.16	4.62	666.9	7,069
Tierra Dorando Dr.	13	112.20	16	0.70	54	104.57	7.05	1987	15,904	
Lot 29 Esmt	138.15	17	1.00	54	196.70	8.69	1967	15,904	-	-
Ex Double 36" RCP @ 98th St.	138.15	18	2.00	36	188.83	9.77	868.9	-	-	-
Farinosa Ave.	17	5.90	5.90	22	1.00	18	10.50	3.34	105.00	1,767
Farinosa Ave.	18	5.90	23	1.00	18	10.50	3.34	105.00	1,767	
Farinosa Ave.	11	11.80	24	4.10	24	45.80	3.76	226.2	3,142	
Farinosa Ave.	26	26.80	25	2.70	24	37.17	8.53	226.2	3,142	



AS BUILT INFORMATION

CONTRACTOR	DATE
WORK STARTED BY	DATE
FIELD ACCEPTANCE BY	DATE
DESIGNED BY	DATE
CHECKED BY	DATE
RECORDED BY	DATE
NO.	NO.

AGPS Aluminum Cap stamped "TRANS 1969" From the intersection of Centre Avenue and 98th Street SW go south on 98th Street 1/2 miles to the intersection of 98th Street and Snow Vista Boulevard. Then go southeast along Snow Vista Boulevard and the co-op electric transmission line 0.85 miles to pylon numbered 52. The station is just east of this point. Geographic Position (NAD83), in feet N.A. State Plane Coordinates (Central Zone) N=1471885.503, E=1491545.466 Elevation (NAVD83), in feet = 5121.089

SURVEY INFORMATION

FIELD NOTES	BY	DATE
NO.	BY	DATE

ENGINEER'S SEAL

6-30-2016
 7-6-2016

CERTIFICATE OF SUBSTANTIAL COMPLIANCE

REVISIONS	BY	DATE
DESIGN	JDH	03/16
DESIGN	SFS	01/16
DESIGN	DMG	01/16

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 ALBUQUERQUE, NEW MEXICO 87199
 OFFICE (505) 828-2200, FAX (505) 797-9539

CITY OF ALBUQUERQUE PLANNING DEPARTMENT

**DESERT SANDS SUBDIVISION
DRAINAGE PLAN**

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	MO./DAY/YR.	MO./DAY/YR.

CITY PROJECT NO. ZONE MAP NO. SHEET **5** OF **5**

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