CITY OF ALBUQUERQUE

Timothy M. Keller, Mayor

February 28, 2018

Glenn Broughton, P.E.
Bohannan Huston, Inc.
7500 Jefferson St NE
Albuquerque, NM 87109

RE: Smiles for Kids Dental Office – Site Expansion
Conceptual Grading and Drainage Plan
Stamp Date: 02/21/18
Hydrology File: C12D056

Dear Mr. Broughton:

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

Based upon the information provided in your submittal received 02/22/2018, the Conceptual Grading and Drainage Plan **is not** approved for Site Plan for Building Permit. The following comments need to be addressed for approval of the above referenced project:

1. Please show and label the existing information within the ROW of Nunzio Ave (extend the ROW information past Tract C) on both Sheets C001 & C101. This can be taken from the latest aerial (Google Earth).
2. Please show a private drainage easement along the proposed Swale, detention pond, and the segment of the private storm pipe on Sheet C001, C100, & C101.
3. Please label Tract H and Lot 10-A-1 on Sheet C001.
4. Please correct the flow arrow on Drainage Areas for Basin 3 & Off-site Basin C on Sheet C001.

As a reminder, prior to obtaining Building Permit approval, please provide a written agreement from Tract F property Owner stating that grading can be conducted on their property for the benefit of Tract H. Also please provide a Private Facility Drainage Covenant for the on-site first flush ponds on Tract H, an Agreement and Covenant for the detention pond on Tract F and a Drainage Covenant for the private storm drain and drainage swales on Tract F. I have attached word documents of these for your use. After the drainage easement is recorded, please place a note stating the recording information on the Grading Plan.

If you have any questions, please contact me at 924-3995 or rbrissette@cabq.gov.

Sincerely,

Renée C. Brissette

Renée C. Brissette, P.E. CFM
Senior Engineer, Hydrology
Planning Department

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Orig: Drainage File

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: Smiles for Kids Dental Office - Site Expansion Building Permit #: City Drainage #: C12/D003B
DRB#: EPC#: Work Order#:
Legal Description: Tract G of Fountain Hills Plaza
City Address: 9201 Eagle Ranch Road NW

Engineering Firm: Bohannan Huston, Inc Contact: Glenn Broughton
Address: 7500 Jefferson NE Albuquerque, NM 87109
Phone#: 505-823-1000 Fax#: E-mail: gbroughton@bhinc.com

Owner: Contact:
Address:
Phone#: Fax#: E-mail:

Architect: Mullen Heller Architects Contact:
Address: 924 Park Ave SW Albuquerque, NM 87102
Phone#: 268-4144 Fax#: E-mail: doug@mullenheller.com

Other Contact: Contact:
Address:
Phone#: Fax#: E-mail:

Check all that Apply:

DEPARTMENT:
- _x__ HYDROLOGY/ DRAINAGE
- _____ TRAFFIC/ TRANSPORTATION
- _____ MS4/ EROSION & SEDIMENT CONTROL

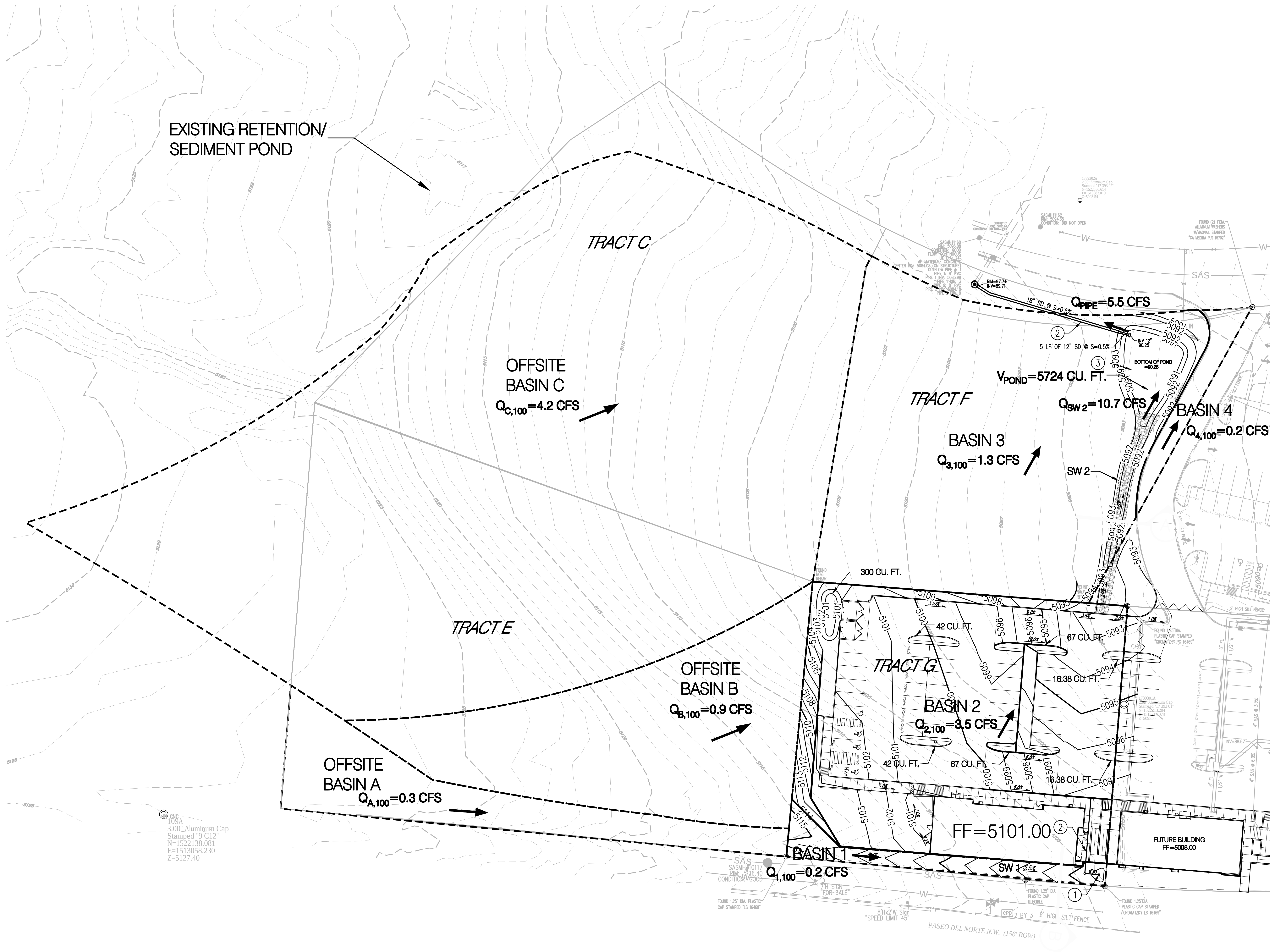
TYPE OF SUBMITTAL:
- _____ ENGINEER/ ARCHITECT CERTIFICATION
- _X__ CONCEPTUAL G & D PLAN
- _____ GRADING PLAN
- _____ DRAINAGE MASTER PLAN
- _____ DRAINAGE REPORT
- _____ CLOMR/LOMR
- _____ TRAFFIC CIRCULATION LAYOUT (TCL)
- _____ TRAFFIC IMPACT STUDY (TIS)
- _____ EROSION & SEDIMENT CONTROL PLAN (ESC)
- _____ OTHER (SPECIFY) ____________________

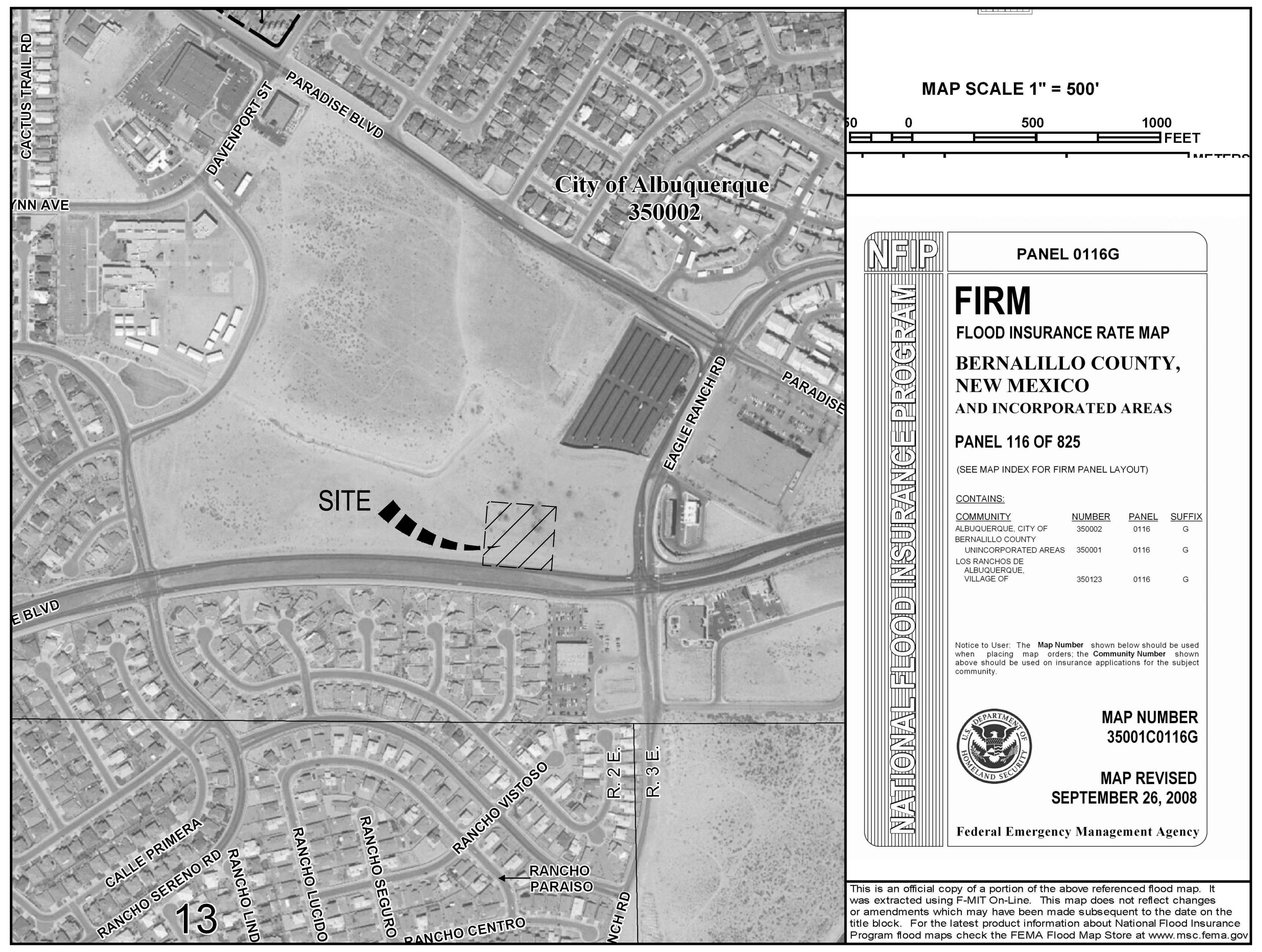
CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:
- _____ BUILDING PERMIT APPROVAL
- _____ CERTIFICATE OF OCCUPANCY
- _____ PRELIMINARY PLAT APPROVAL
- _____ SITE PLAN FOR SUB'D APPROVAL
- _X__ SITE PLAN FOR BLDG. PERMIT APPROVAL
- _____ FINAL PLAT APPROVAL
- _____ SIA/ RELEASE OF FINANCIAL GUARANTEE
- _____ FOUNDATION PERMIT APPROVAL
- _____ GRADING PERMIT APPROVAL
- _____ SO-19 APPROVAL
- _____ PAVING PERMIT APPROVAL
- _____ GRADING/ PAD CERTIFICATION
- _____ WORK ORDER APPROVAL
- _____ CLOMR/LOMR
- _____ PRE-DESIGN MEETING
- _____ OTHER (SPECIFY) ____________________

IS THIS A RESUBMITTAL?: _____ Yes _N___ No

DATE SUBMITTED: 02/21/2018 By: Glenn Broughton

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___





FEMA FIRM MAP # 35001C0116G

LEGAL DESCRIPTION: TRACT G OF FOUNTAIN HILLS PLAZA.

INTRODUCTION:

THE PROJECT IS LOCATED ON TRACT G OF FOUNTAIN HILLS PLAZA WHICH IS NEAR THE NORTHWEST CORNER OF PASEO DEL NORTE AND EAGLE RANCH RD. THE PURPOSE OF THIS SUBMITTAL IS TO PROVIDE A DRAINAGE MANAGEMENT PLAN FOR THE DEVELOPMENT OF SMILES FOR KIDS DENTIST OFFICE SITE EXPANSION AND REQUEST SITE DEVELOPMENT PLAN FOR BUILDING PERMIT APPROVAL.

EXISTING CONDITIONS:

TRACT G OF FOUNTAIN HILLS PLAZA IS A 0.95 ACRE SITE THAT IS CURRENTLY UNDEVELOPED. THE SITE SLOPES TO THE NORTH / NORTHEAST WHERE THE RUNOFF FREE DISCHARGES ONTO TRACT F AND LOT 10-A-1 OF ALBUQUERQUE WEST UNIT 1 AND ULTIMATELY INTO EAGLE RANCH RD AND NUNZIO AVE. THIS SITE IS NOT WITHIN A DEFINED FLOOD ZONE AS SHOWN ON FIRM MAP NUMBER 35001C0116G (THIS SHEET).

BASED ON THE DRAINAGE STUDY FOR FOUNTAIN HILLS (CITY OF ALBUQUERQUE DRAINAGE FILE C12/D3B), BASIN C-1-B1 IS 1.84 ACRES WITH A PEAK DISCHARGE OF 7.21 CFS. THE EQUATES TO AN ALLOWABLE PEAK DISCHARGE FROM THE SITE OF APPROXIMATELY 3.7 CFS.

THE APPROVED DRAINAGE MANAGEMENT PLAN SPECIFIES THAT BASIN C-1-B1 DRAIN NORTH TO NUNZIO. 80% OF THE DEVELOPED FLOWS WILL BE DIVERTED DIRECTLY TO THE STORM DRAIN SYSTEM AND THE REMAINING 20% CAN DISCHARGE TO THE PUBLIC RIGHT OF WAY AND WILL BE INTERCEPTED BY STORM DRAIN INLETS.

METHODOLOGY:

THE HYDROLOGIC ANALYSIS PROVIDED WITH THIS DRAINAGE MANAGEMENT PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 22.2 OF THE DPM. THE SITE IS LOCATED WEST OF THE RIO GRANDE WITHIN PRECIPITATION ZONE 1. LAND TREATMENT PERCENTAGES WERE CALCULATED BASED ON THE ACTUAL CONDITIONS IN EACH ONSITE BASIN AND ARE SUMMARIZED IN THE "PROPOSED BASIN DATA TABLE".

OFFSITE DRAINAGE WEST OF THE SITE CURRENTLY DRAINS ONTO TRACT G. IN THE INTERIM CONDITION THE OFFSITE DRAINAGE WILL BE CONVEYED THROUGH TRACT G. WITH THE DEVELOPMENT OF UPSTREAM TRACTS, THIS DRAINAGE WILL BE DIVERTED TO THE PUBLIC STORM DRAIN SYSTEM.

PROPOSED CONDITIONS:

THIS DRAINAGE MANAGEMENT PLAN WAS DEVELOPED BASED ON A FULLY DEVELOPED SITE. IT WAS DETERMINED THAT THE MAXIMUM ALLOWABLE PEAK DISCHARGE FROM THE SITE IS 3.7 CFS (AS MENTIONED ABOVE). THIS DMP INCLUDES ANALYSIS OF UNDEVELOPED OFFSITE DRAINAGE FROM BASIN C-A-1 AS SHOWN ON THE FOUNTAIN HILLS PLAZA DMP AS WELL AS RUNOFF FROM TRACT F.

IN ORDER TO CONVEY DRAINAGE FROM TRACT G TO THE PUBLIC STORM DRAIN SYSTEM, A DRAINAGE SWALE ON THE EAST SIDE OF TRACT F IS PROPOSED. THIS DRAINAGE SWALE WILL ALSO INTERCEPT RUNOFF FROM TRACT F AND THE OFFSITE DRAINAGE BASINS. A NEW STORM DRAIN WILL BE EXTENDED EAST FROM THE EXISTING STUBOUT INSTALLED WITH THE FOUNTAIN HILLS PUBLIC STORM DRAIN IMPROVEMENTS. THE FOUNTAIN HILLS DMP SPECIFIED A FLOW RATE OF 5.77 CFS AT THE EXISTING STUBOUT. THE PEAK FLOW FROM TRACTS F, G AND THE OFFSITE BASINS IS 10.7 CFS. A TEMPORARY DETENTION POND WITH A 12" DIAMETER ORIFICE OUTLET PIPE IS PROPOSED TO REDICE THE PEAK FLOW TO A RATE THAT APPROXIMATELY EQUAL ALLOWABLE PEAK FLOW AT THE EXISTING STORM DRAIN STUBOUT. BASED ON THE DETENTION POND OUTLET FLOW RATE OF 5.53 CFS, THE REQUIRED DETENTION VOLUME IS 3,807 CUBIC FEET. THE VOLUME PROVIDED IS 5,724 CUBIC FEET, SEE DMP FOR PEAK FLOW RATE, STORM DRAIN PIPE, DRAINAGE SWALE AND DETENTION POND CALCULATIONS.

A SMALL DRAINAGE SWALE IS PROPOSED ALONG THE SOUTHERN PROPERTY LINE TO CONVEY A SMALL OFFSITE DRAINAGE BASIN AND THE AREA SOUTH OF THE BUILDING. AN INLET AND 6' STORM DRAIN WILL INTERCEPT THIS RUNOFF AND DRAIN INTO THE PARKING LOT OF TRACT G. SEE DMP CALCULATIONS FOR DRAINAGE SWALE CAPACITY CALCULATIONS.

RETENTION AREAS WITHIN TRACT G WILL BE INCORPORATED INTO THE LANDSCAPE AREAS WHERE POSSIBLE. THE FIRST FLUSH CALCULATIONS FOR THE OVERALL DEVELOPMENT AREA ARE SHOWN ON THE DRAINAGE BASIN CALCULATIONS. DUE TO THE STEEP SITE AND LIMITED OPPORTUNITIES FOR SURFACE PONDING THE ENTIRE FIRST FLUSH RETENTION VOLUME COULD NOT BE ACHIVED WITH SURFACE PONDING. A TOTAL VOLUME OF 551 CUBIC FEET HAS BEEN PROVIDED. THIS IS APPROXIMATELY 61% OF THE TOTAL REQUIRED VOLUME.

CONCLUSION:

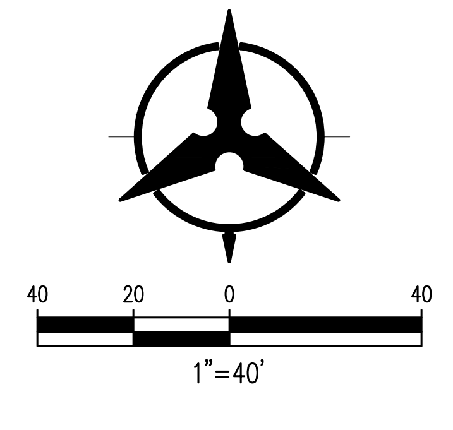
THE PEAK DISCHARGE FROM THE SITE IS 3.7 CFS WHICH IS EQUAL TO THE ALLOWABLE PEAK DISCHARGE RATE. IN ADDITION, OFFSITE FLOWS WILL DRAIN TO A TEMPORARY DETENTION POND LOCATED AT THE NORTHEAST CORNER OF TRACT F. THIS DETENTION POND WILL REDUCE THE PEAK FLOW TO THE PUBLIC STORM DRAIN SYSTEM WHICH IS IN COMPLIANCE WITH THE FOUNTAIN HILLS DMP. THEREFORE, WE ARE IN CONFORMANCE WITH CITY OF ALBUQUERQUE HYDROLOGY REQUIREMENTS AND REQUEST SITE DEVELOPMENT PLAN FOR BUILDING PERMIT APPROVAL.

LEGEND

— — —	PROPERTY LINE
-5301-	EXISTING CONTOURS
65.23 ●	PROPOSED SPOT ELEVATION TC=TOP OF CURB, FL=FLOW LINE TW=TOP OF WALL, BW=BOTTOM OF WALL EX=EXISTING, TG=TOP OF GRADE
S=2.0% →	PROPOSED DIRECTION OF FLOW
︿︿︿︿	WATER BLOCK
━ ━ ━	PROPOSED RETAINING WALL
-5305-	PROPOSED INDEX CONTOURS
———	PROPOSED INTER CONTOURS
═══	PROPOSED CURB & GUTTER
— — —	EASEMENT
—SD—	PROPOSED STORM DRAIN LINE

○ KEYED NOTES

1. STORM DRAIN INLET.
2. STORM DRAIN PIPE. SEE PLAN FOR SIZE & SLOPE.
3. DETENTION POND.



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Mullen Heller
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505 268 4244 [f]

GLENN S. BROUGHTON
NEW MEXICO
14171
REGISTERED PROFESSIONAL ENGINEER
2-21-18

job number 17-04
drawn by AV
project manager Douglas Heller, AIA
date 02-08-2018

project title
Smiles for Kids Dental Office - Site Expansion
9201 Eagle Ranch Road NW
Albuquerque, New Mexico 87114

sheet title
DRAINAGE MANAGEMENT PLAN

sheet-
C001

Smiles for Kids Dental Office - Site Expansion
Proposed Ultimate Development Conditions Basin Data Table

This table is based on the DPM Section 22.2, Zone: 1

Basin	Area	Area	Land Treatment Percentages				$Q_{(100yr)}$	$Q_{(100yr-6hr)}$	WT E	$V_{(100yr-6hr)}$	$V_{(100yr-10day)}$	"FIRST FLUSH" CALCULATIONS Impervious Area	Precipitation	Required	Volume
ID	(SQ. FT)	(AC.)	A	B	C	D	(cfs/ac.)	(CFS)	(inches)	(CF)	CF	(SF)	Depth (IN)	Volume (CF)	Provided (CF)
Proposed															
1	2963	0.07	0.0%	0.0%	100.0%	0.0%	2.87	0.2	0.99	244	244	0	0.34	0	0
2	38201	0.88	0.0%	0.0%	21.5%	78.5%	4.05	3.5	1.76	5601	9274	29988	0.34	850	551
3	43608	1.00	100.0%	0.0%	0.0%	0.0%	1.29	1.3	0.44	1599	1599	0	0.34	0	0
4	2137	0.05	0.0%	0.0%	0.0%	100.0%	4.37	0.2	1.97	351	613	2137	0.34	61	0
A	11098	0.25	100.0%	0.0%	0.0%	0.0%	1.29	0.3	0.44	407	407	0	0.34	0	0
B	25373	0.58	61.2%	38.8%	0.0%	0.0%	1.58	0.9	0.53	1119	1119	0	0.34	0	0
C	129760	2.98	81.8%	18.2%	0.0%	0.0%	1.42	4.2	0.48	5211	5211	0	0.34	0	0
TOTAL	**253142**	**5.81**						**10.7**			**18467**			**910**	**551**

Smiles for Kids Dental Office - Site Expansion
STORM DRAIN PIPE TABLE

PIPE #	Contributing Basins & Pipes	Size in.	Slope	Capacity* cfs	ACTUAL FLOW cfs	PIPE LENGTH ft	INVERT IN	INVERT OUT
STORM DRAIN PIPE								
P1	BASIN 2 - BASIN 4 & BASIN B -BASIN C	18	0.50%	7.4	5.5	98.6	5090.28	5089.71

CAPACITY IS BASED ON GRAVITY FLOW, USING MANNING'S EQUATION WITH n=0.013

Detention Pond Volume Calculations

NOTE: Blue shaded cells require user input, all other cells should not be edited.
ASSUMPTIONS:
1. Area less than 40 acres (simplified hydrograph method).
2. 100-year, 6-hour storm event

Peak Flow per Acre - DPM Section 22.2 Table A-9

Zone	A	B	C	D
1	1.29	2.03	2.87	4.37
2	1.56	2.28	3.14	4.7
3	1.87	2.6	3.45	5.02
4	2.2	2.92	3.73	5.25

Basin Name : Smiles for Kids 2
Choose Zone (1 - 4) 1
Basin Area = (acres) 5.81

Exist Conditions				Proposed Conditions			
Treatment	Percentage	Area	Q (cfs)	Treatment	Percentage	Area	Q (cfs)
A	85.0%	4.94	6.4	A	69.8%	4.06	5.2
B	15.0%	0.87	1.8	B	14.1%	0.82	1.7
C	0.0%	0.00	0.0	C	3.5%	0.20	0.6
D	0.0%	0.00	0.0	D	12.6%	0.73	3.2
		Q Peak - exist.=	**8.1**			Peak Q Developed=	**10.7**

Use my calculated exist cond. flow as the peak controlled discharge (1 = yes, or N) ?? n
If No, what is the maximum allowable discharge ? 5.53

Excess Precipitation - DPM Section 22.2 Table A-8

Zone	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	0.8	1.08	1.46	2.64

Determine Developed E (avg excess precipitation for the developed basin)

%A x E = 0.31
%B x E = 0.09
%C x E = 0.03
%D x E = 0.25
Avg E(in) = 0.68

Determine Tb (hours)

Tb = 0.753

Determine Tc (Note: Tc is assumed to be 0.2 hours, this should be checked using DPM 22.2.B.2)

Tc = 0.2

Determine Tp and Duration of Peak (hours)

Tp = 0.262833
Peak Duration = 0.0315

Compute the required retention volume using the simple hydrograph, Figure A-3 in DPM Section 22.2

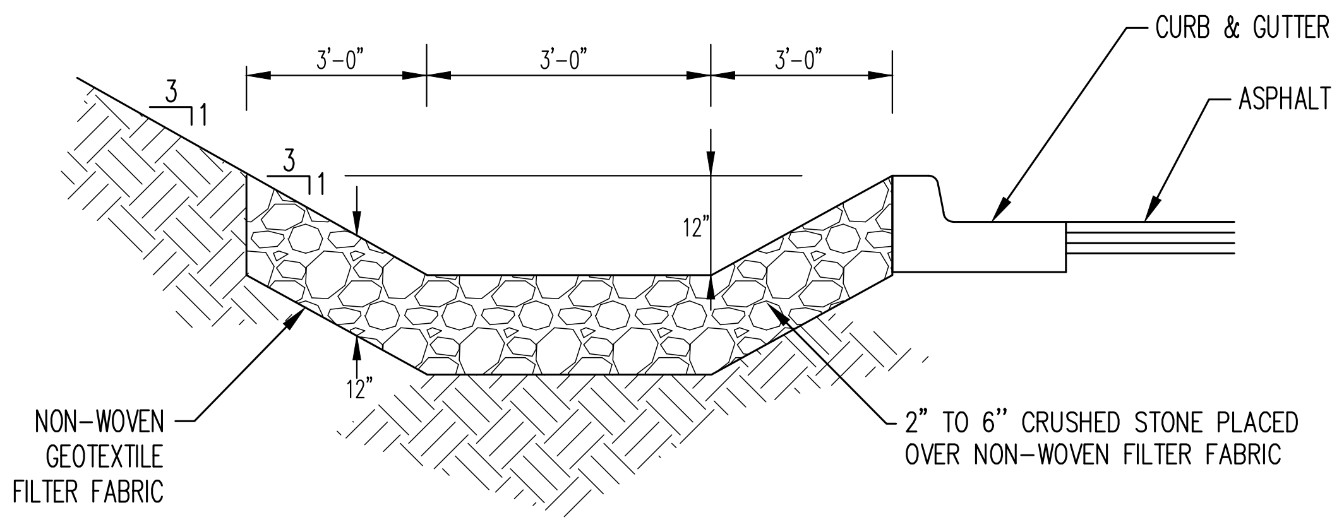
Time to Control Q (hrs) = 0.136
Time to end of Control Q (hrs)= 0.515566
Duration of Control Q (hrs)= 0.379

Required Detention Volume (CF) = 3807

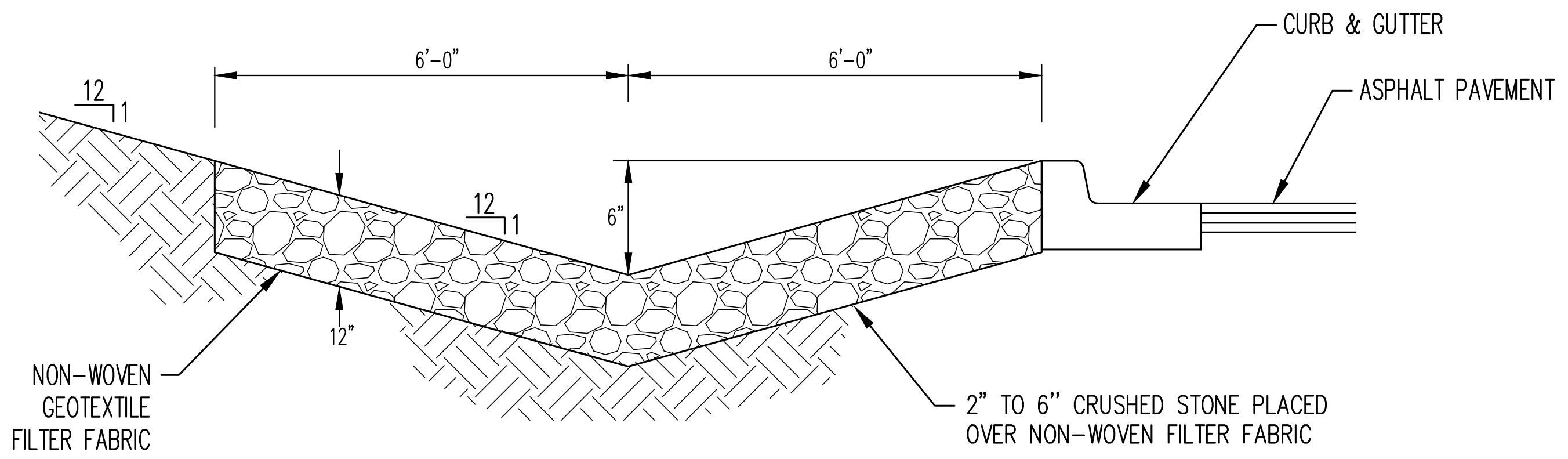
Orifice Analysis

Orifice Coef		0.62
Orifice Diam (inches)		12

Outflow (cfs)	Head (ft)
0.01	1.00
4.37	1.25
4.79	1.50
5.17	1.75
5.53	2.00
5.86	2.25
6.18	2.50
6.48	2.75
6.77	3.00
7.04	3.25
7.31	3.50
7.57	3.75
7.82	4.00
8.06	4.25
8.29	4.50
8.52	4.75
8.74	5.00
8.95	5.25
9.16	5.50
9.37	5.75
9.57	6.00
9.77	6.25



A **RIP RAP SWALE**
NTS



B **RIP RAP SWALE**
NTS

CAPACITY CALCULATION OF THE DRAINAGE SWALE SW 2

MANNING'S N = 0.035 SLOPE = 0.9%

POINT	DIST	ELEV
1	0	1
2	3	0
3	6	0
4	9	1

WSEL (FT)	DEPTH INC (FT)	FLOW AREA (SQ.FT.)	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOP WIDTH (FT)	TOTAL ENERGY (FT)
0.05	0.158	0.083	3.316	0.528	3.3	0.054	0.426
0.1	0.1	0.33	0.269	3.632	0.814	3.6	0.11
0.15	0.15	0.518	0.538	3.949	1.039	3.9	0.167
0.2	0.2	0.72	0.886	4.265	1.23	4.2	0.224
0.25	0.25	0.938	1.311	4.581	1.399	4.5	0.28
0.3	0.3	1.17	1.814	4.897	1.551	4.8	0.337
0.35	0.35	1.418	2.396	5.214	1.69	5.1	0.394
0.4	0.4	1.68	3.058	5.53	1.82	5.4	0.452
0.45	0.45	1.958	3.802	5.846	1.942	5.7	0.509
0.5	0.5	2.25	4.63	6.162	2.058	6	0.566
0.55	0.55	2.558	5.543	6.479	2.168	6.3	0.623
0.6	0.6	2.88	6.546	6.795	2.273	6.6	0.68
0.65	0.65	3.218	7.638	7.111	2.374	6.9	0.738
0.7	0.7	3.57	8.823	7.427	2.472	7.2	0.795
0.75	0.75	3.938	10.104	7.743	2.566	7.5	0.852
0.8	0.8	4.32	11.482	8.06	2.658	7.8	0.91
0.85	0.85	4.718	12.959	8.376	2.747	8.1	0.967
0.9	0.9	5.13	14.538	8.692	2.834	8.4	1.025
0.95	0.95	5.558	16.222	9.008	2.919	8.7	1.083

CAPACITY CALCULATION OF THE DRAINAGE SWALE SW 1

MANNING'S N = 0.035 SLOPE = 5.5%

POINT	DIST	ELEV
1	0	0.5
2	6	0
3	12	0.5

WSEL (FT)	DEPTH INC (FT)	FLOW AREA (SQ.FT.)	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOP WIDTH (FT)	TOTAL ENERGY (FT)
0.05	0.05	0.03	0.025	1.204	0.849	1.2	0.061
0.1	0.1	0.12	0.162	2.408	1.348	2.4	0.128
0.15	0.15	0.27	0.477	3.612	1.767	3.6	0.199
0.2	0.2	0.48	1.027	4.817	2.14	4.8	0.271
0.25	0.25	0.75	1.863	6.021	2.484	6	0.346
0.3	0.3	1.08	3.029	7.225	2.805	7.2	0.422
0.35	0.35	1.47	4.569	8.429	3.108	8.4	0.5
0.4	0.4	1.92	6.523	9.633	3.397	9.6	0.58
0.45	0.45	2.43	8.93	10.837	3.675	10.8	0.66
0.5	0.5	3	11.827	12.042	3.942	12	0.742

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date
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Mullen Heller
Architecture P.C.

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505 268 4244 [f]

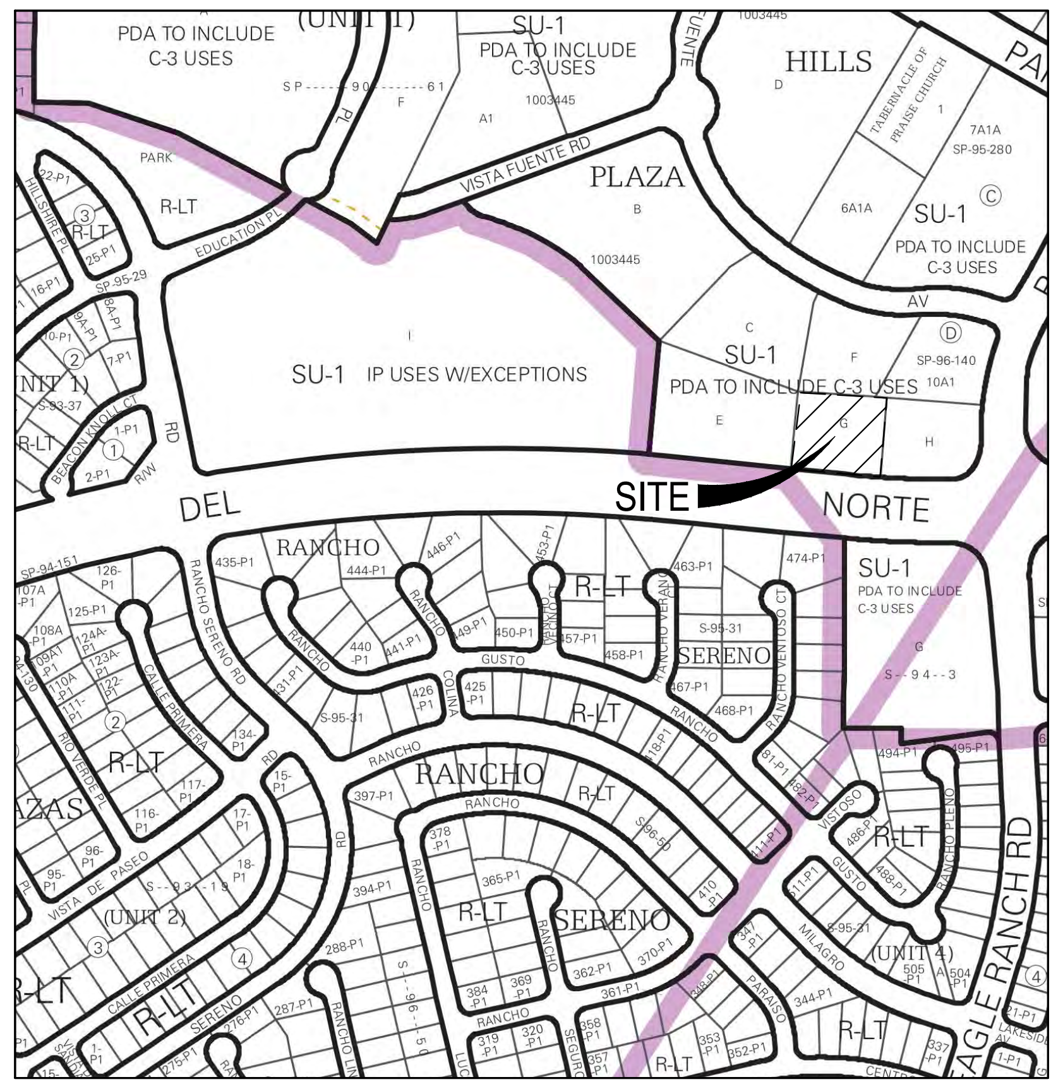
GLENN S. BROUGHTON
14171
2-21-18

job number 17-04
drawn by AV
project manager Douglas Heller, AIA
date 02-08-2018

project title
Smiles for Kids Dental Office - Site Expansion
9201 Eagle Ranch Road NW
Albuquerque, New Mexico 87114

sheet title
DRAINAGE MANAGEMENT PLAN

sheet-
C002



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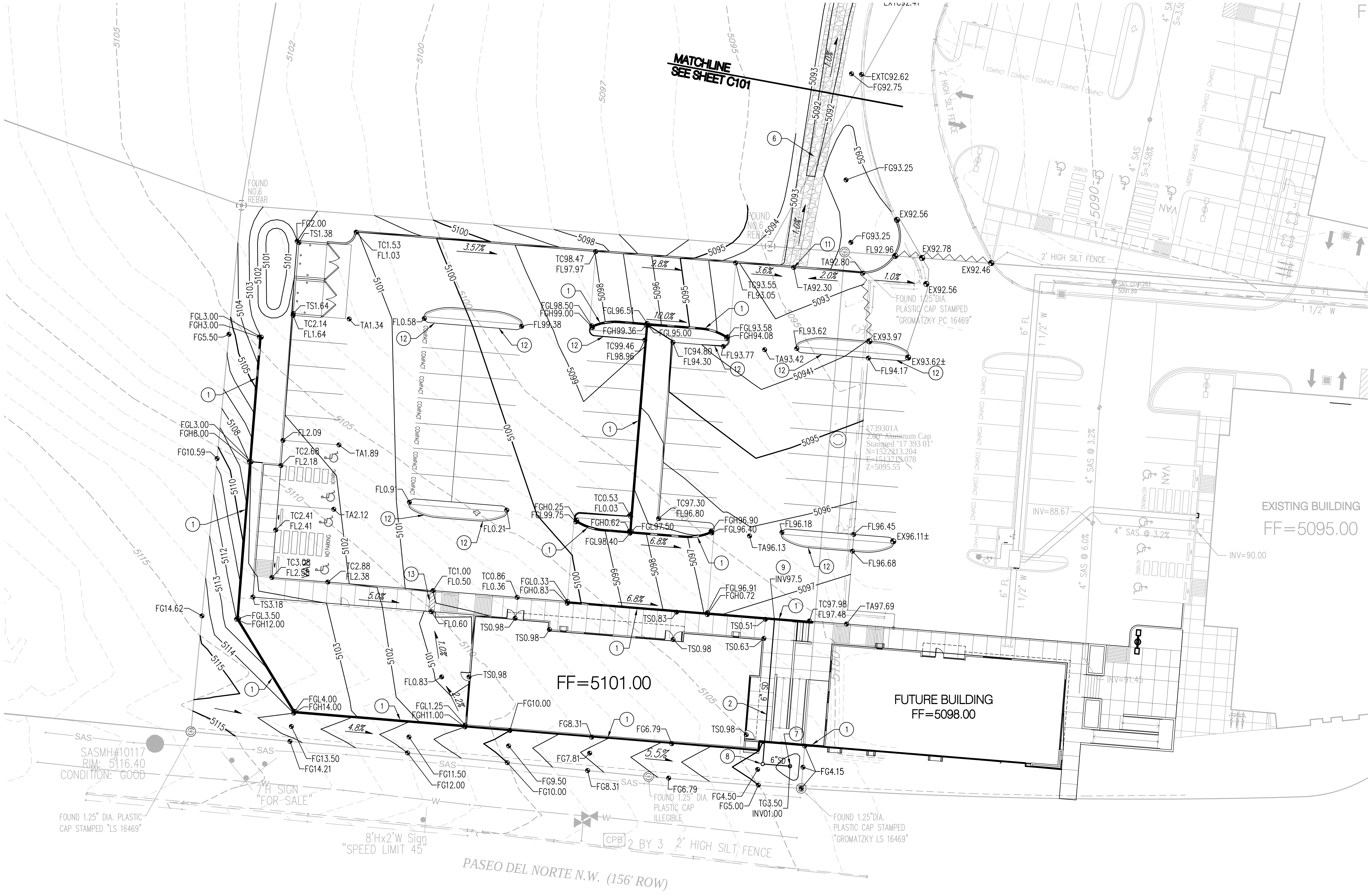


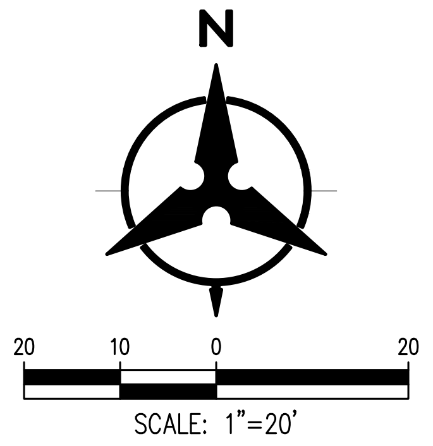
KEYED NOTES

1. PROPOSED RETAINING WALL.
2. PROPOSED STORM DRAIN PIPE. SEE PLAN FOR SIZE & SLOPE.
3. PROPOSED 4' DIA. STORM DRAIN MANHOLE.
4. INSTALL END SECTION.
5. INSTALL STORM DRAIN BEND.
6. PROPOSED RIP RAP LINED SWALE.
7. 12" DRAIN BASIN WITH DOME GRATE.
8. STORM DRAIN CLEANOUT.
9. DAYLIGHT 6" STORM DRAIN THRU RETAINING WALL.
10. 18"x12" ECCENTRIC REDUCER.
11. INSTALL 6' WIDE CURB OPENING.
12. INSTALL 12" WIDE CURB OPENING.
13. INSTALL 12" WIDE SIDEWALK CULVERT PER COA STD. DETAIL 2236.

NOTE: NOT ALL KEYED NOTES MAY APPLY TO THIS SHEET.

LEGEND

— — —	PROPERTY LINE
— — —5301— —	EXISTING CONTOURS
● 65.23	PROPOSED SPOT ELEVATION TC=TOP OF CURB, FL=FLOW LINE TS=TOP OF SIDEWALK, TA=TOP OF ASPHALT EX=EXISTING, FG=FINISHED GRADE TG=TOP OF GRATE, INV=INVERT FGH=FINISHED GRADE HIGH FGL=FINISHED GRADE LOW
S=2.0% ►	PROPOSED DIRECTION OF FLOW
︿︿︿︿	WATER BLOCK / RIDGE OR HIGH POINT
▬ ▬ ▬	PROPOSED RETAINING WALL
——5305——	PROPOSED INDEX CONTOURS
———	PROPOSED INTER CONTOURS
═══	PROPOSED CURB & GUTTER



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Mullen Heller
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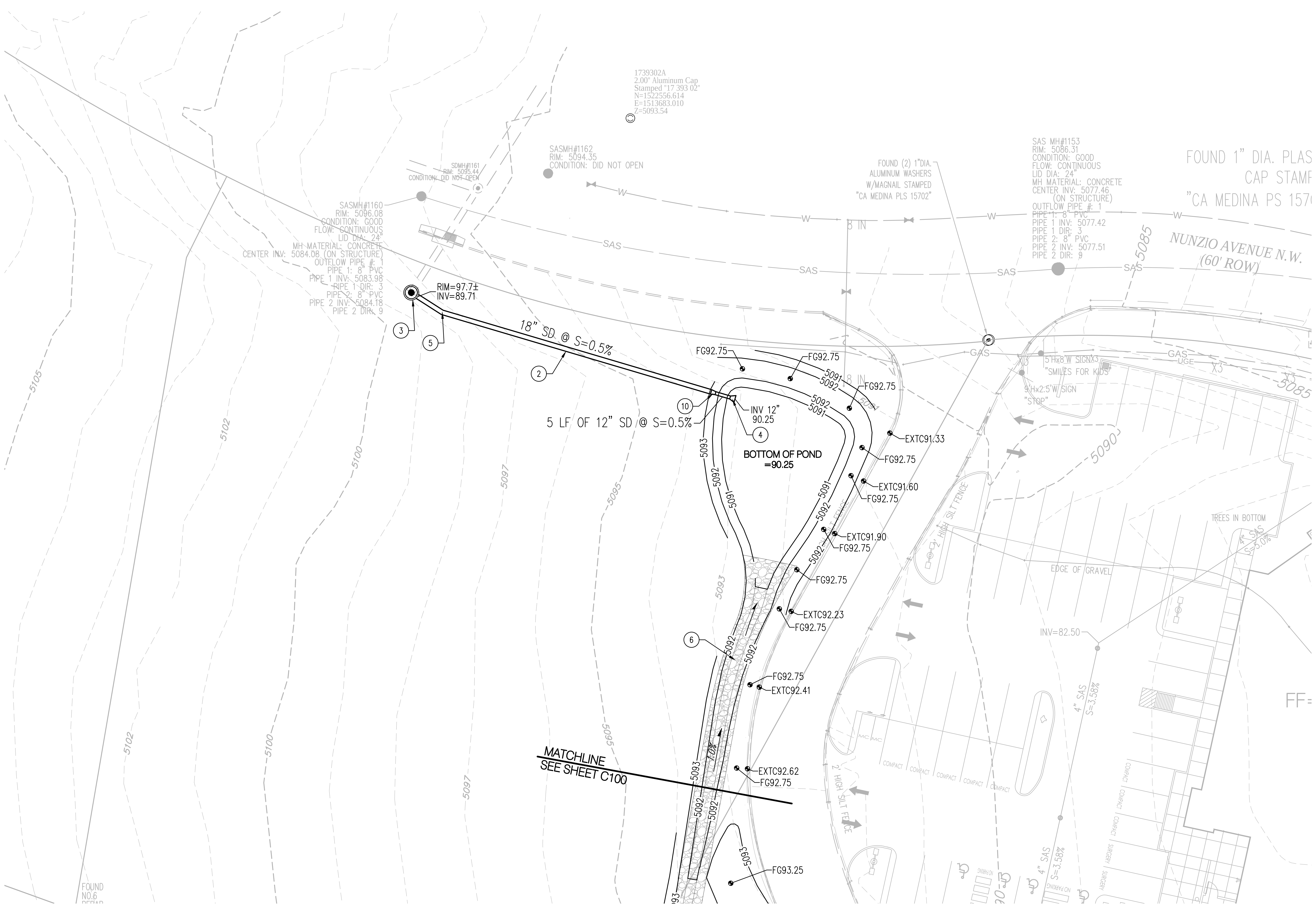
GLENN S. BROUGHTON
14171
2-21-18

job number	17-04
drawn by	AV
project manager	Douglas Heller, AIA
date	02-08-2018

project title
Smiles for Kids Dental Office - Site Expansion
9201 Eagle Ranch Road NW
Albuquerque, New Mexico 87114

sheet title
CONCEPTUAL GRADING & DRAINAGE PLAN

sheet-
C100



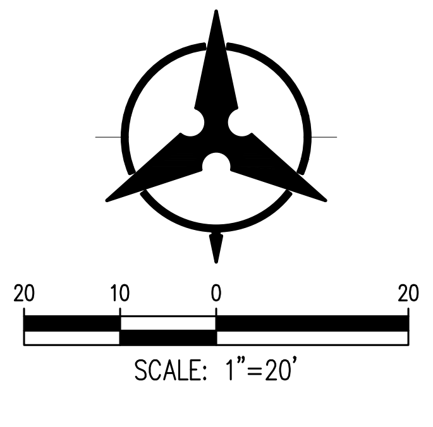
◯ KEYED NOTES

1. PROPOSED RETAINING WALL.
2. PROPOSED STORM DRAIN PIPE. SEE PLAN FOR SIZE & SLOPE.
3. PROPOSED 4' DIA. STORM DRAIN MANHOLE.
4. INSTALL END SECTION.
5. INSTALL STORM DRAIN BEND.
6. PROPOSED RIP RAP LINED SWALE.
7. 12" DRAIN BASIN WITH DOME GRATE.
8. STORM DRAIN CLEANOUT.
9. DAYLIGHT 6" STORM DRAIN THRU RETAINING WALL.
10. 18"x12" ECCENTRIC REDUCER.
11. INSTALL 6' WIDE CURB OPENING.
12. INSTALL 12" WIDE CURB OPENING.
13. INSTALL 12" WIDE SIDEWALK CULVERT PER COA STD. DETAIL 2236.

NOTE: NOT ALL KEYED NOTES MAY APPLY TO THIS SHEET.

LEGEND

— — — —	PROPERTY LINE
— — 5301 — —	EXISTING CONTOURS
◒ 65.23	PROPOSED SPOT ELEVATION TC=TOP OF CURB, FL=FLOW LINE TS=TOP OF SIDEWALK, TA=TOP OF ASPHALT EX=EXISTING, FG=FINISHED GRADE TG=TOP OF GRATE, INV=INVERT FGH=FINISHED GRADE HIGH FGL=FINISHED GRADE LOW
S=2.0% ▸	PROPOSED DIRECTION OF FLOW
﹋﹋﹋	WATER BLOCK / RIDGE OR HIGH POINT
▬ ▬ ▬	PROPOSED RETAINING WALL
—— 5305 ——	PROPOSED INDEX CONTOURS
———	PROPOSED INTER CONTOURS
═══	PROPOSED CURB & GUTTER



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