

CITY OF ALBUQUERQUE



July 21, 2015

Glen Broughton
Bohannon Huston, Inc.
7600 Jefferson St NE
Albuquerque, NM 87109

**Re: Smiles for Kids Dental Office
Grading and Drainage Plan
Engineer's Stamp Date : 6-25-15 (C12D054)**

Dear Mr. Broughton,

Based upon the information provided in your submittal received 6-24-15, the above referenced plans are approved for Building Permit and SO-19 Permit.

Please attach a copy of this approved plan in the construction sets when submitting for a building permit. Prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

PO Box 1293
Albuquerque
New Mexico 87103

A separate SO-19 permit is required for construction within City ROW. A copy of this approval letter must be on hand when applying for the excavation/barricading permit. The work in the City ROW must be inspected and accepted. Contractor must contact Jason Rodriguez at 235-8016 and Construction Coordination at 924-3416 to schedule an inspection.

If you have any questions, you can contact me at 924-3695.

www.cabq.gov

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf: via Email: Recipient, Jason Rodriguez and Antoinette Baldonado (DMD)



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: _____ Building Permit #: _____ City Drainage #: _____

DRB#: _____ EPC#: _____ Work Order#: _____

Legal Description: _____

City Address: _____

Engineering Firm: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Owner: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Architect: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Surveyor: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Contractor: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

TYPE OF SUBMITTAL:

- _____ DRAINAGE REPORT
- _____ DRAINAGE PLAN 1st SUBMITTAL
- _____ DRAINAGE PLAN RESUBMITTAL
- _____ CONCEPTUAL G & D PLAN
- _____ GRADING PLAN
- _____ EROSION & SEDIMENT CONTROL PLAN (ESC)
- _____ ENGINEER'S CERT (HYDROLOGY)
- _____ CLOMR/LOMR
- _____ TRAFFIC CIRCULATION LAYOUT (TCL)
- _____ ENGINEER'S CERT (TCL)
- _____ ENGINEER'S CERT (DRB SITE PLAN)
- _____ ENGINEER'S CERT (ESC)
- _____ SO-19
- _____ OTHER (SPECIFY)

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

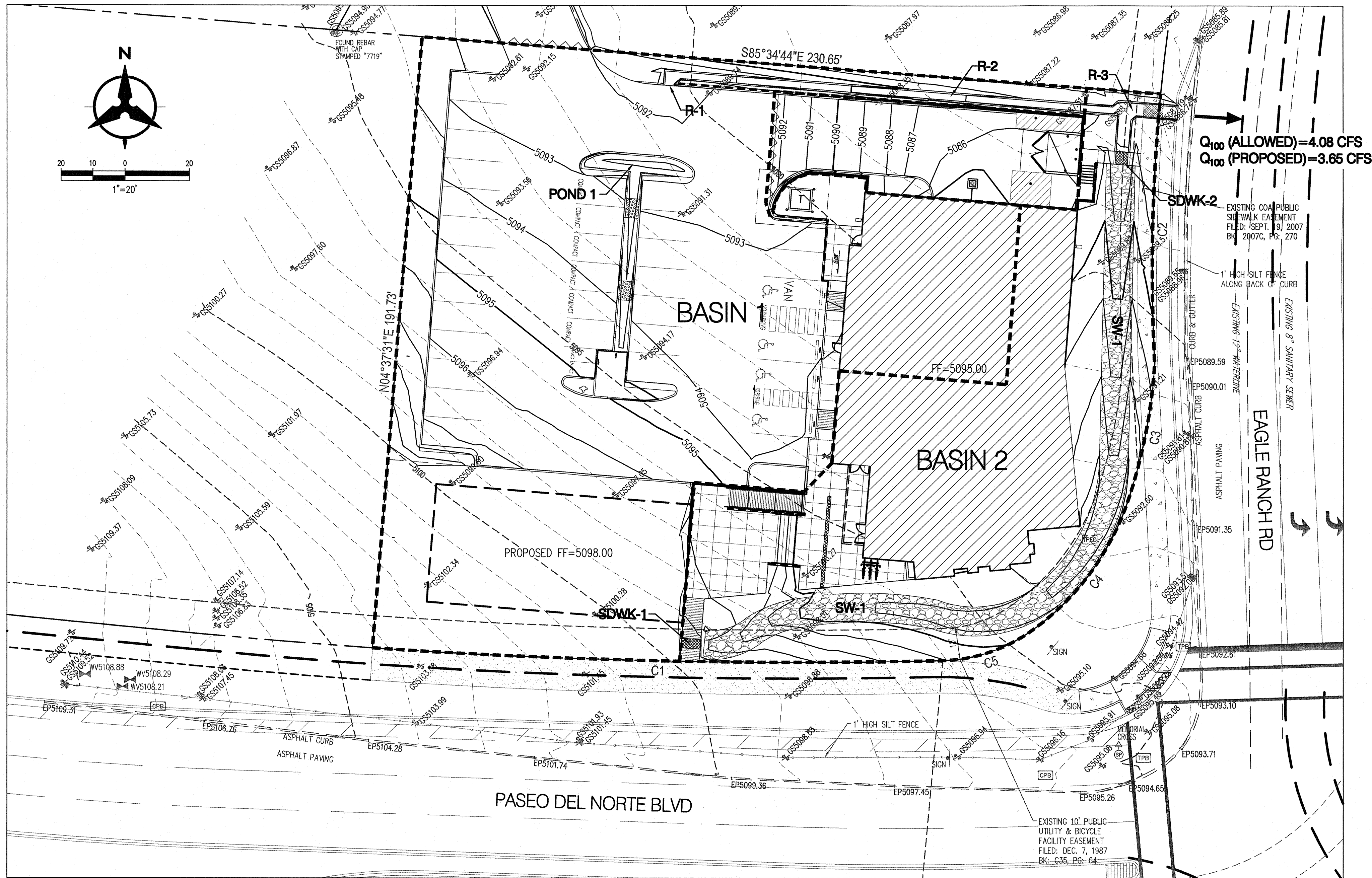
- _____ SIA/FINANCIAL GUARANTEE RELEASE
- _____ PRELIMINARY PLAT APPROVAL
- _____ S. DEV. PLAN FOR SUB'D APPROVAL
- _____ S. DEV. FOR BLDG. PERMIT APPROVAL
- _____ SECTOR PLAN APPROVAL
- _____ FINAL PLAT APPROVAL
- _____ CERTIFICATE OF OCCUPANCY (PERM)
- _____ CERTIFICATE OF OCCUPANCY (TCL TEMP)
- _____ FOUNDATION PERMIT APPROVAL
- _____ BUILDING PERMIT APPROVAL
- _____ GRADING PERMIT APPROVAL
- _____ PAVING PERMIT APPROVAL
- _____ WORK ORDER APPROVAL
- _____ GRADING CERTIFICATION
- _____ SO-19 APPROVAL
- _____ ESC PERMIT APPROVAL
- _____ ESC CERT. ACCEPTANCE
- _____ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED: _____ Yes _____ No _____ Copy Provided

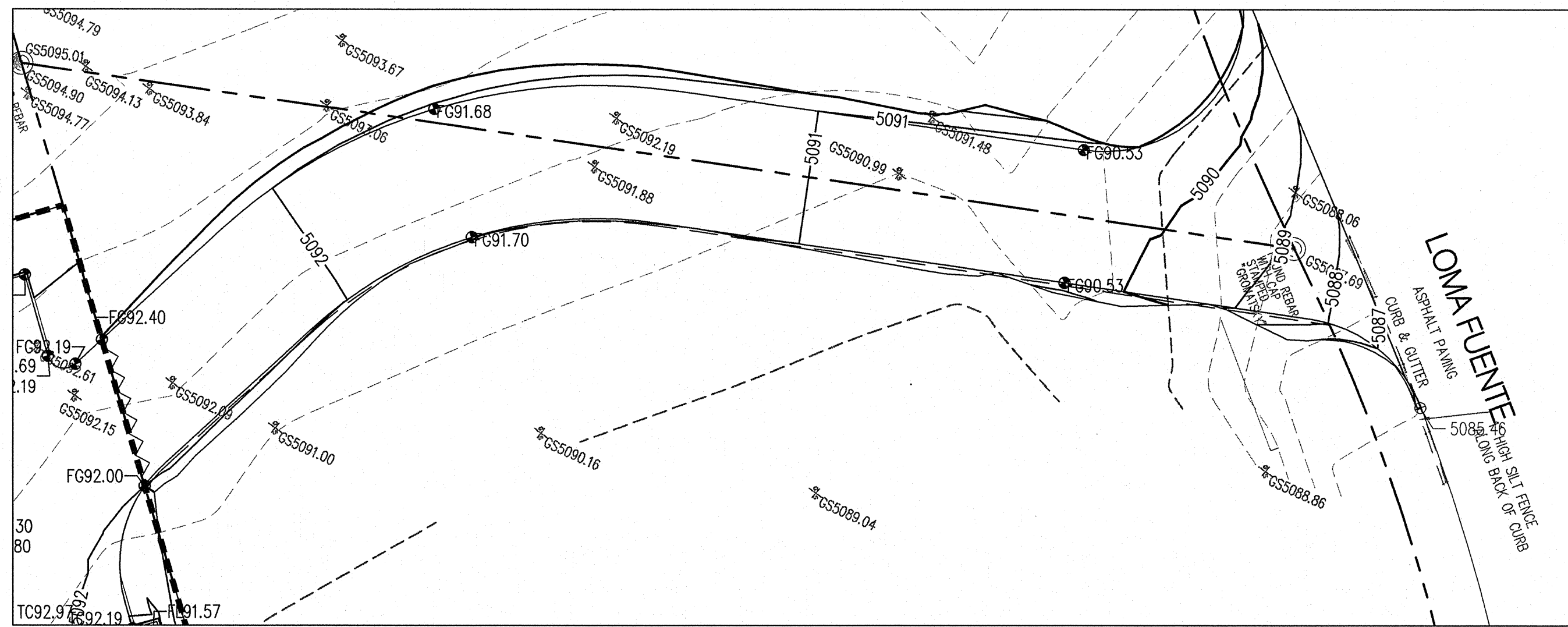
DATE SUBMITTED: _____ By: _____

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, and scope to the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres
3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

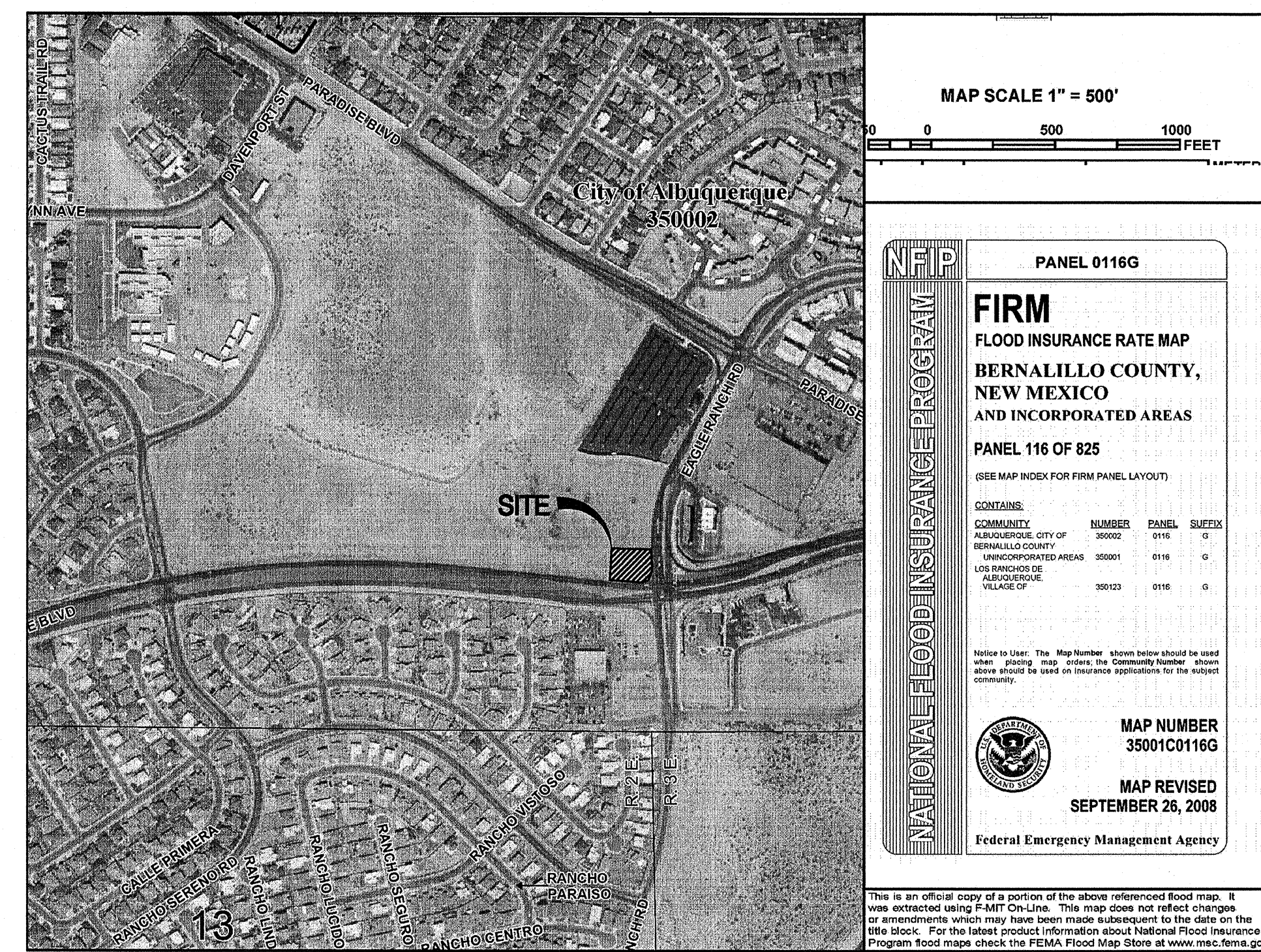


SITE DRAINAGE MANAGEMENT PLAN



ACCESS ROAD GRADING PLAN

- LEGEND**
- PROPERTY LINE
 - EXISTING CONTOURS
 - PROPOSED SPOT ELEVATION
 - TC=TOP OF CURB, FL=FLOW LINE
 - TW=TOP OF WALL, BW=BOTTOM OF WALL
 - EX=EXISTING, TG=TOP OF GRADE
 - PROPOSED DIRECTION OF FLOW
 - WATER BLOCK
 - PROPOSED RETAINING WALL
 - PROPOSED INDEX CONTOURS
 - PROPOSED INTER CONTOURS
 - PROPOSED CURB & GUTTER
 - EASEMENT
 - PROPOSED STORM DRAIN LINE



FEMA FIRM MAP # 35001C0116G

INTRODUCTION:

THE PROJECT IS LOCATED ON THE NORTHWEST INTERSECTION OF PASEO DEL NORTE BLVD AND EAGLE RANCH RD. THIS SITE IS NOT WITHIN A DEFINED FLOOD ZONE AS SHOWN ON FIRM MAP NUMBER 35001C0116G (THIS SHEET). THE PURPOSE OF THIS SUBMITTAL IS TO PROVIDE A DRAINAGE MANAGEMENT PLAN FOR THE DEVELOPMENT OF SMILES FOR KIDS DENTIST OFFICE AND REQUEST BUILDING PERMIT APPROVAL.

EXISTING CONDITIONS:

THE 0.98 ACRE SITE IS CURRENTLY UNDEVELOPED. THE SITE SLOPES TO THE NORTH / NORTHEAST WHERE THE RUNOFF OPENLY DISCHARGES INTO EAGLE RANCH RD.

BASED ON THE DRAINAGE STUDY FOR FOUNTAIN HILLS (CITY OF ALBUQUERQUE DRAINAGE FILE #C12/D3B), THE ALLOWABLE PEAK DISCHARGE FROM THE SITE IS APPROXIMATELY 4.08 CFS.

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" (THIS SHEET).

PROPOSED CONDITIONS:

THIS DRAINAGE MANAGEMENT PLAN WAS DEVELOPED IN ACCORDANCE WITH A FULLY DEVELOPED SITE. IT WAS DETERMINED THAT THE MAXIMUM ALLOWABLE PEAK DISCHARGE FROM THE SITE IS APPROXIMATELY 4.08 CFS (AS MENTIONED ABOVE).

THE SITE IS DIVIDED INTO TWO SMALL DRAINAGE BASINS. THE ULTIMATE OUTFALL LOCATION FOR "BASIN 1" IS EAGLE RANCH ROAD THROUGH MEANS OF RIBBON CHANNEL AND A SMALL POND (POND 1) IN THE PARKING LOT USED TO MITIGATE THE FIRST FLUSH. THE SOUTHERN AND EASTERN PORTIONS OF THE SITE (BASIN 2) DIRECT THE RUNOFF TO THE SAME DISCHARGE POINT AS "BASIN 1". THE RAMP INTO THE PARKING GARAGE DRAINS INTO AN INLET. RUNOFF FROM THE RAMP AND PARKING GARAGE ARE CONVEYED TO A SUMP PUMP WHICH DISCHARGES TO THE SANITARY SEWER. THE TOTAL AREA OF THE RAMP IS 0.07 ACRES.

OFFSITE PRIVATE ACCESS ROAD IS NOT INCLUDED IN THE CALCULATION. RUNOFF FROM TRACT 10-A-1 WILL BE ADDRESSED WITH THE DEVELOPMENT OF THAT TRACT.

RUNDOWN CAPACITIES:

THE CONCRETE RIBBON CHANNEL WAS DESIGNED USING MANNING'S EQUATION AND THE WEIR EQUATION.

THE SITE CONTAINS ONE LARGE RIBBON CHANNEL TO DIRECT THE FLOW TO EAGLE RANCH ROAD.THE BEGINNING OF THE RIBBON CHANNEL (DENOTED AS "R-1") WAS SIZED USING THE WEIR EQUATION TO ACCEPT RUNOFF FROM "BASIN 1". ONCE THE FLOW ENTERS THE RIBBON CHANNEL (DENOTED AS "R-2"), THERE IS ENOUGH CAPACITY GIVEN THE RELATIVELY STEEP SLOPE TO DIRECT THE FLOW TO EAGLE RANCH ROAD. THE RIBBON CHANNEL WAS WIDENED IN THE NORTHEAST CORNER OF THE SITE (DENOTED AS "R-3") TO INCLUDE RUNOFF FROM "BASIN 2". FOR MORE DETAILS, SEE THE RUNDOWN CAPACITY TABLE (THIS SHEET).

SWALE CAPACITY:

THE RIPRAP SWALE WAS DESIGNED USING MANNING'S EQUATION.

THE LARGE SWALE RUNNING FROM THE SOUTH TO THE NORTHEAST CORNER WAS SIZED TO ACCEPT THE FLOWS FROM "BASIN 2". THE SLOPE OF THE SWALE CHANGES THROUGHOUT. TO PROPERLY DETERMINE CAPACITY,THE FLATTEST SLOPE WAS USED TO. FOR MORE DETAILS, SEE THE SWALE CAPACITY TABLE (THIS SHEET).

SIDEWALK CULVERT CAPACITIES:

THE SIDEWALK CULVERTS WERE DESIGNED USING THE WEIR EQUATION.

BOTH SIDEWALK CULVERTS ARE THE SAME WIDTH AND HEIGHT, MEANING THEY HAVE THE SAME CAPACITY. THE CULVERTS HAVE MORE THAN ENOUGH CAPACITY FOR THE DESIGN STORM EVENT. IN THE EVENT OF CLOGGING OR LARGER STORM EVENT, RUNOFF WILL FLOW OVER THE TOP OF THE SIDEWALK CULVERT IN THE DIRECTION OF ITS INTENDED FLOWPATH.

FIRST FLUSH CALCULATIONS:

IMPERVIOUS AREA: 29,952 SF (PAVED AREA 22,216 & ROOF AREA 7,736 SF)
"RAINFALL DEPTH: ROOF AREA = 0.44", PAVED AREA = 0.33"
VOLUME REQUIRED: 895 CF
VOLUME PROVIDED: 315 CF
"INITIAL ABSTRACTION OF 0.1" WAS USED FOR PAVED AREAS PER DPM CHAPTER 22, TABLE A-7.

THERE WERE MANY CONTRIBUTING FACTORS THAT LIMITED THE VOLUME THAT COULD BE INCORPORATED INTO THE SITE DESIGN. THE SITE HAS AN EXISTING SLOPE OF APPROXIMATELY 10.00%. STEEP SLOPE SITES MAKE IT CHALLENGING TO INCORPORATE SHALLOW RETENTION AREAS IN THE LANDSCAPE DESIGN AND REDUCE THE ACTUAL VOLUME INTERCEPTED. IN ADDITION, BUILDING AND SITE PARKING SET BACKS LIMITED THE AREA AVAILABLE TO PROVIDE RETENTION PONDS WHERE THEY WOULD BE MOST EFFECTIVE AT TREATING THE FIRST FLUSH. ANOTHER SITE CONSTRAINT IS AN EXISTING UTILITY EASEMENT (ALONG EAGLE RANCH AND PASEO DEL NORTE) CONTAINING COMMUNICATION AND GAS LINES. GIVEN THE SITE CONSTRAINTS, THIS DESIGN MAXIMIZED THE FIRST FLUSH RETAINED WITHIN THE PARKING LOT PONDING AREA.

CONCLUSION:

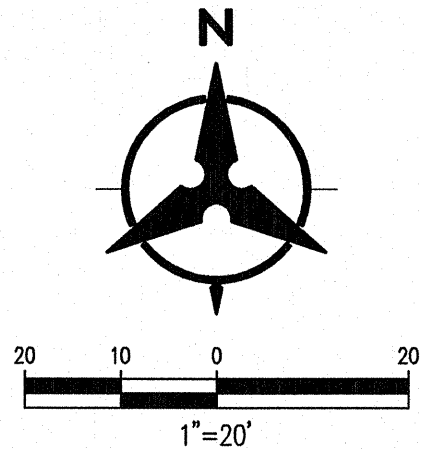
THE PEAK DISCHARGE FROM THE SITE IS 3.65 CFS WHICH IS LESS THAN THE ALLOWABLE PEAK DISCHARGE RATE, THEREFORE WE ARE IN CONFORMANCE WITH CITY OF ALBUQUERQUE HYDROLOGY REQUIREMENTS AND REQUEST BUILDING PERMIT APPROVAL.

Smiles for Kids Dental Office											
Proposed Ultimate Development Conditions Basin Data Table											
This table is based on the DPM Section 22.2, Zone: 1											
Basin ID	Area (SQ. FT)	Area (AC.)	Land Treatment Percentages				Q(100yr) (cfs/ac.)	Q(100yr-6hr) (CFS)	WT E (inches)	V(100yr-6hr) (CF)	V(100yr-10day) CF
Proposed											
1	26589	0.61	0.0%	0.0%	17.0%	83.0%	4.12	2.51	1.80	3996	6699
2	13140	0.30	0.0%	0.0%	40.0%	60.0%	3.77	1.14	1.58	1728	2694
TOTAL	39729	**0.91						3.65			***9393

CONCRETE RUNDOWN TABLE										
Rundown #	Basin ID	Rundown Type	Required Flow	Weir Height ft	Weir Length ft	Weir Capacity**	Channel Width ft	Channel Height ft	Minimum Slope	Capacity* CFS
R-1	BASIN 1	Rectangle	2.51	0.50	3.00	3.00			N/A	
R-2	BASIN 1	Rectangle	2.51		N/A		2.00	0.50	2.80%	9.20
R-3	BASINS 1 & 2	Rectangle	3.65		N/A		3.00	0.50	0.70%	7.46
Capacity Based on Manning's Eq w/ N=0.013 - *										
Weir Eq: Q=2.65L(h ^{1.5}) - **										

SWALE CAPACITY TABLE					
SWALE #	Contributing Basins & Flows	Required Flow	Manning's Coefficient	Channel Slope	Stream Capacity*
SW-1	BASIN 2	1.14	0.035	1.40%	22.47
Capacity Based on Manning's Eq - *					

SIDEWALK CULVERT CAPACITY TABLE					
WEIR #	Contributing Basins & Flows	Required Flow	Weir Height (FT)	Weir Length (FT)	Weir Capacity*
SDWK-1	MINIMAL ONSITE	0.50	0.50	3.00	3.00
SDWK-2	BASIN 2	1.14	0.50	3.00	3.00
Weir Coefficient = 2.65 - *					



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by

date

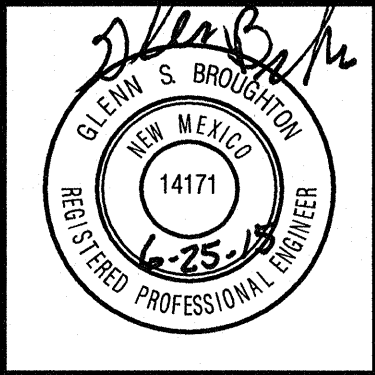
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MH

Mullen Heller
Architecture P.C.

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Suite B
Albuquerque 87102
505 268 4144[p]
505 268 4244 [f]



20150304

job number

MHS

drawn by

GSB

project manager

06.25.2015

date

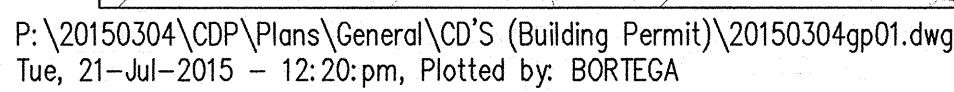
project title

Smiles for Kids Dental Office

9201 Eagle Ranch Road, NW,
Albuquerque, New Mexico 87114

sheet title

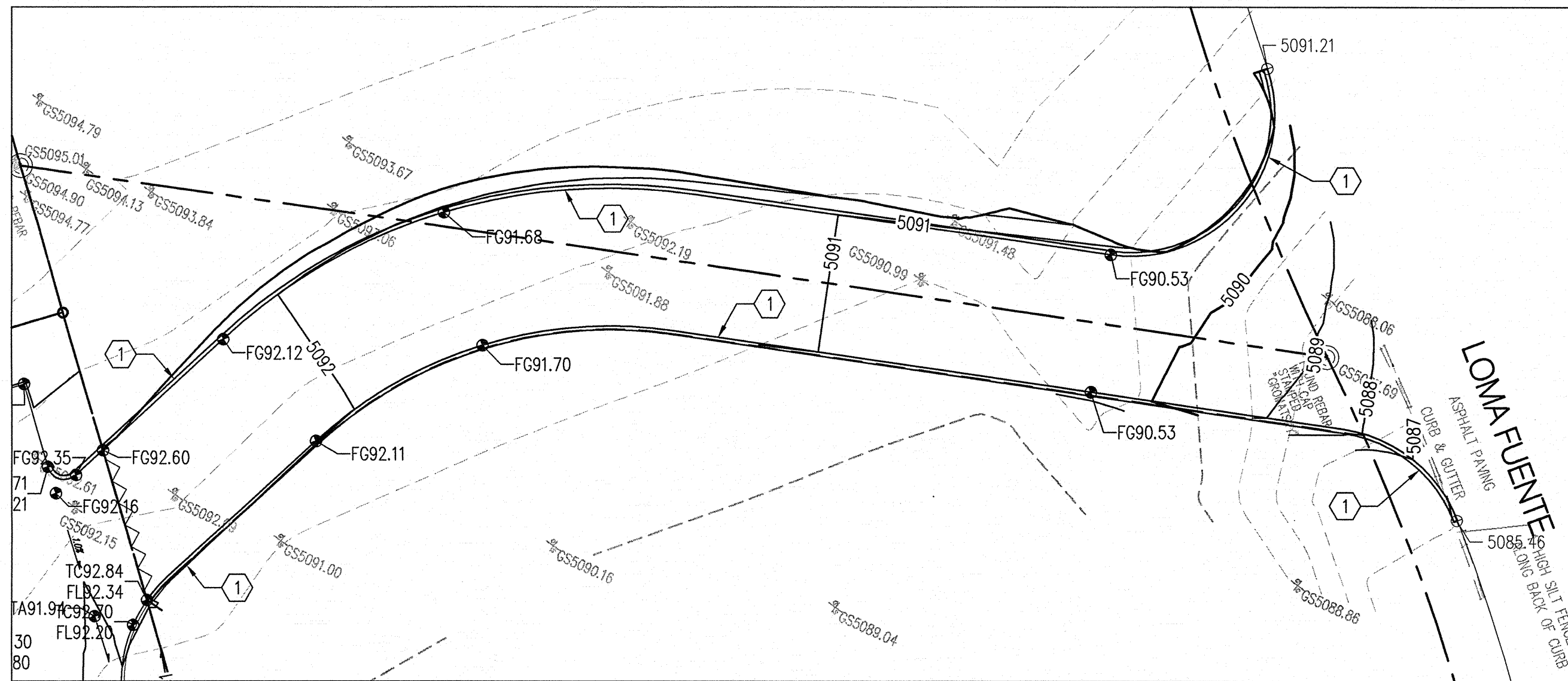
Drainage Management Plan



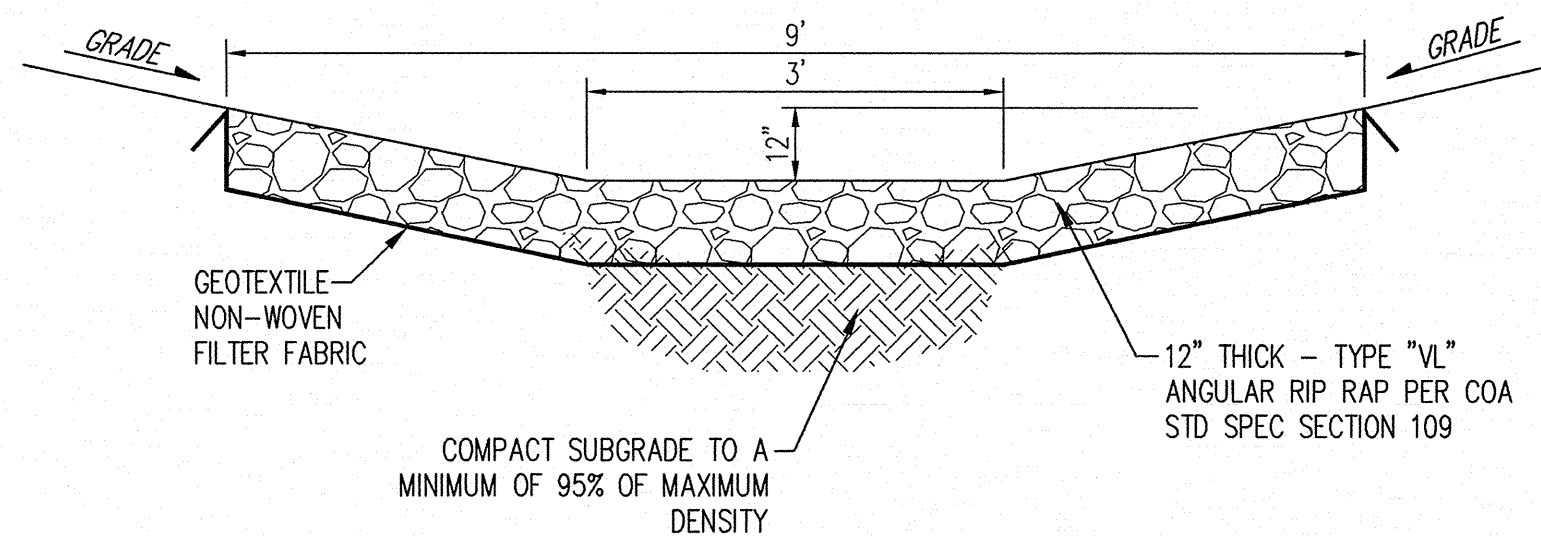
sheet-
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GRADING KEYNOTES

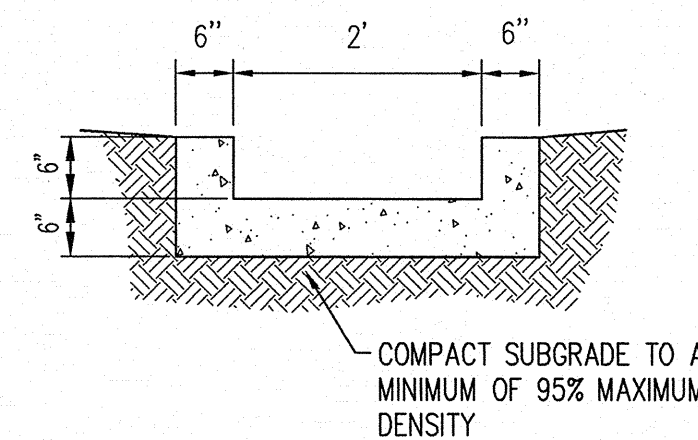
1. INSTALL EXTRUDED ASPHALT CURB PER COA STD DWG 2415B.



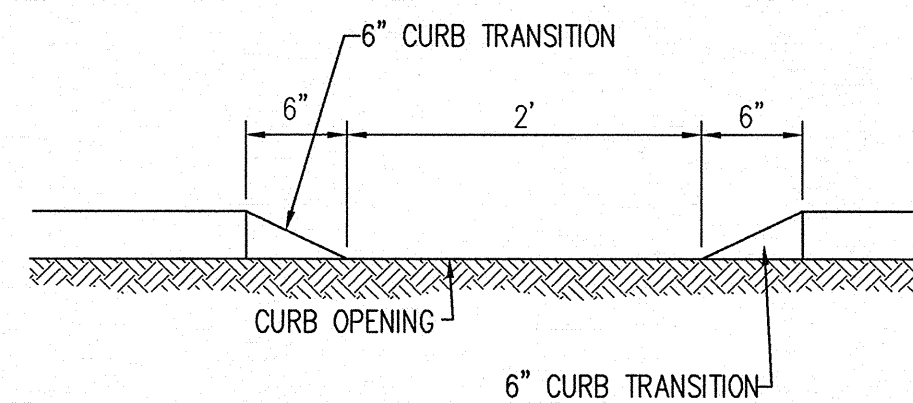
A ACCESS ROAD GRADING PLAN
1"=20'



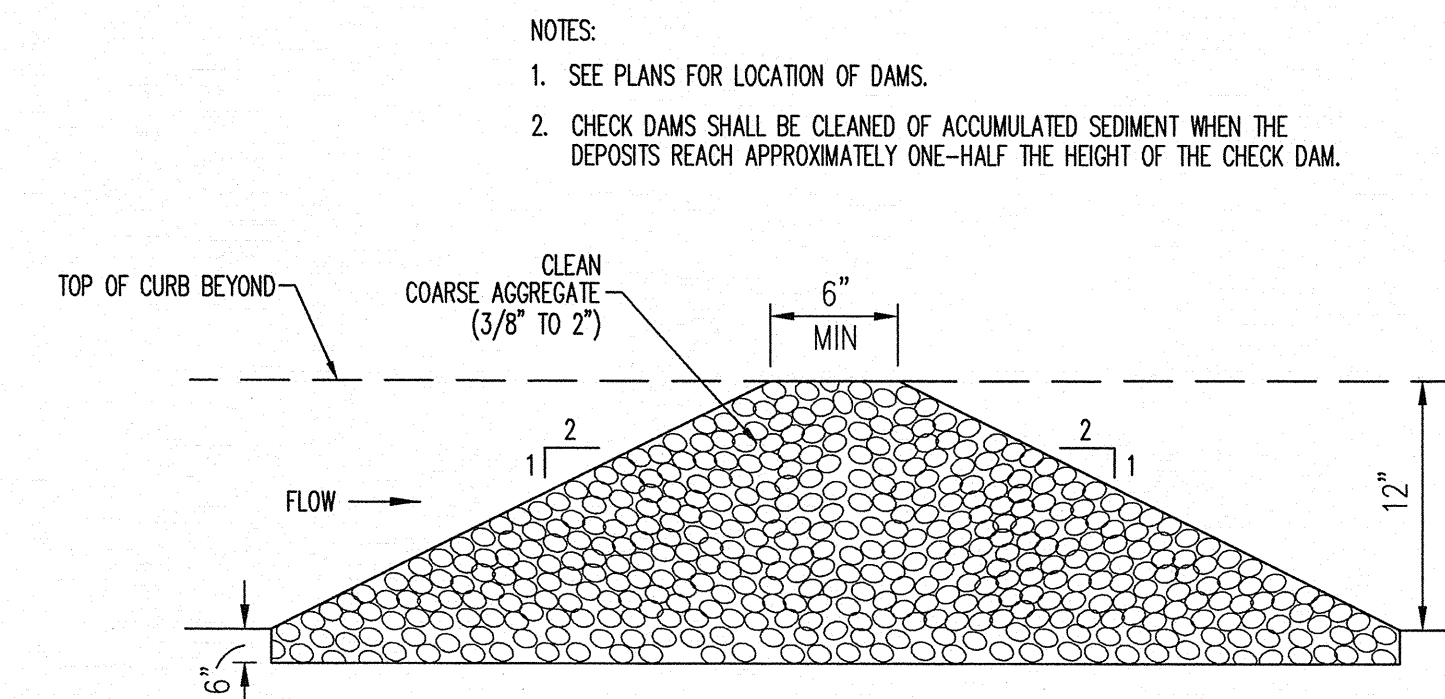
D LARGE RIP-RAP SWALE
N.T.S.



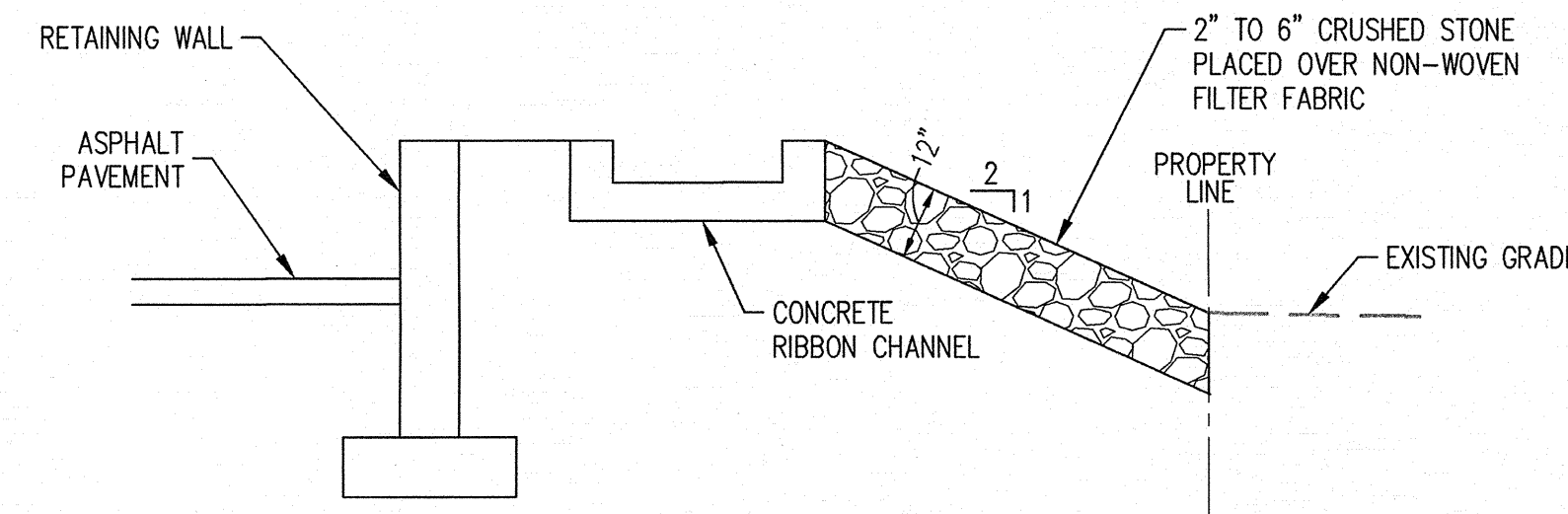
E CONCRETE RIBBON CHANNEL
N.T.S.



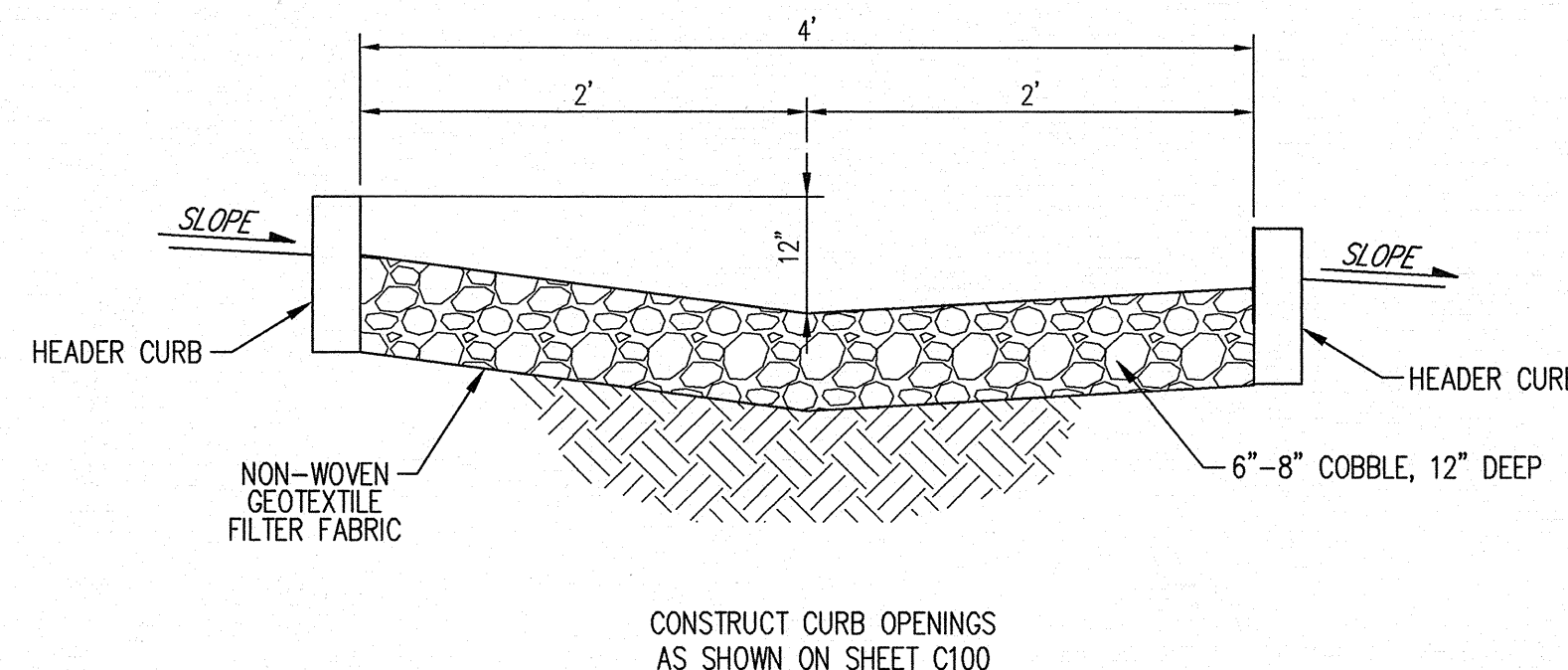
F TYPICAL CURB OPENING
N.T.S.



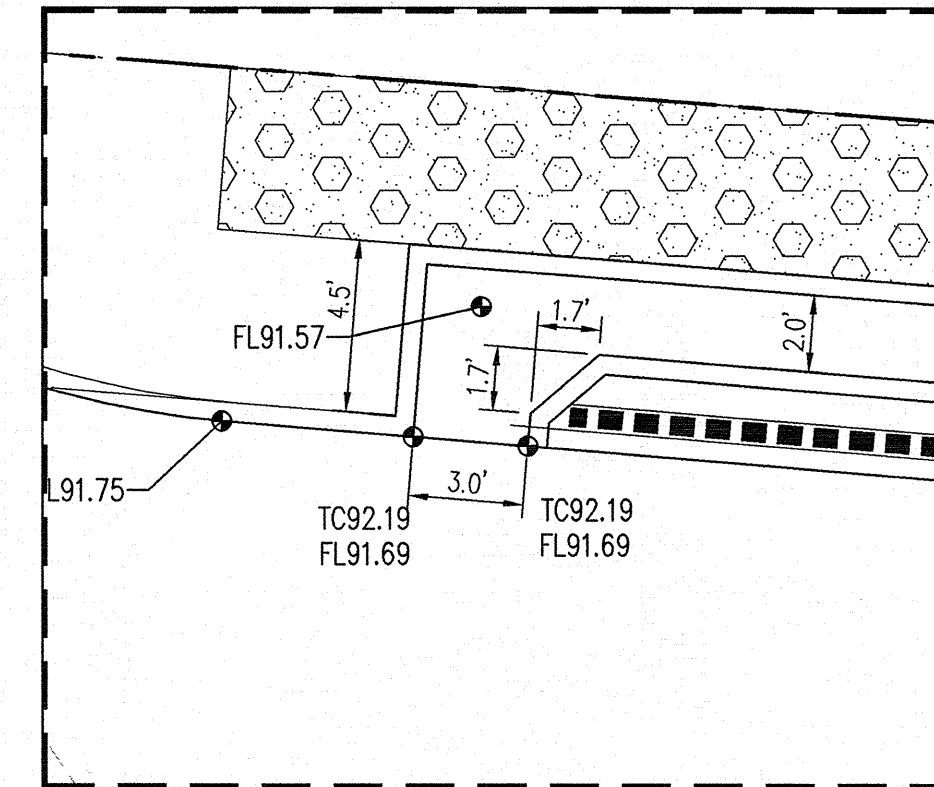
G CHECK DAM
N.T.S.



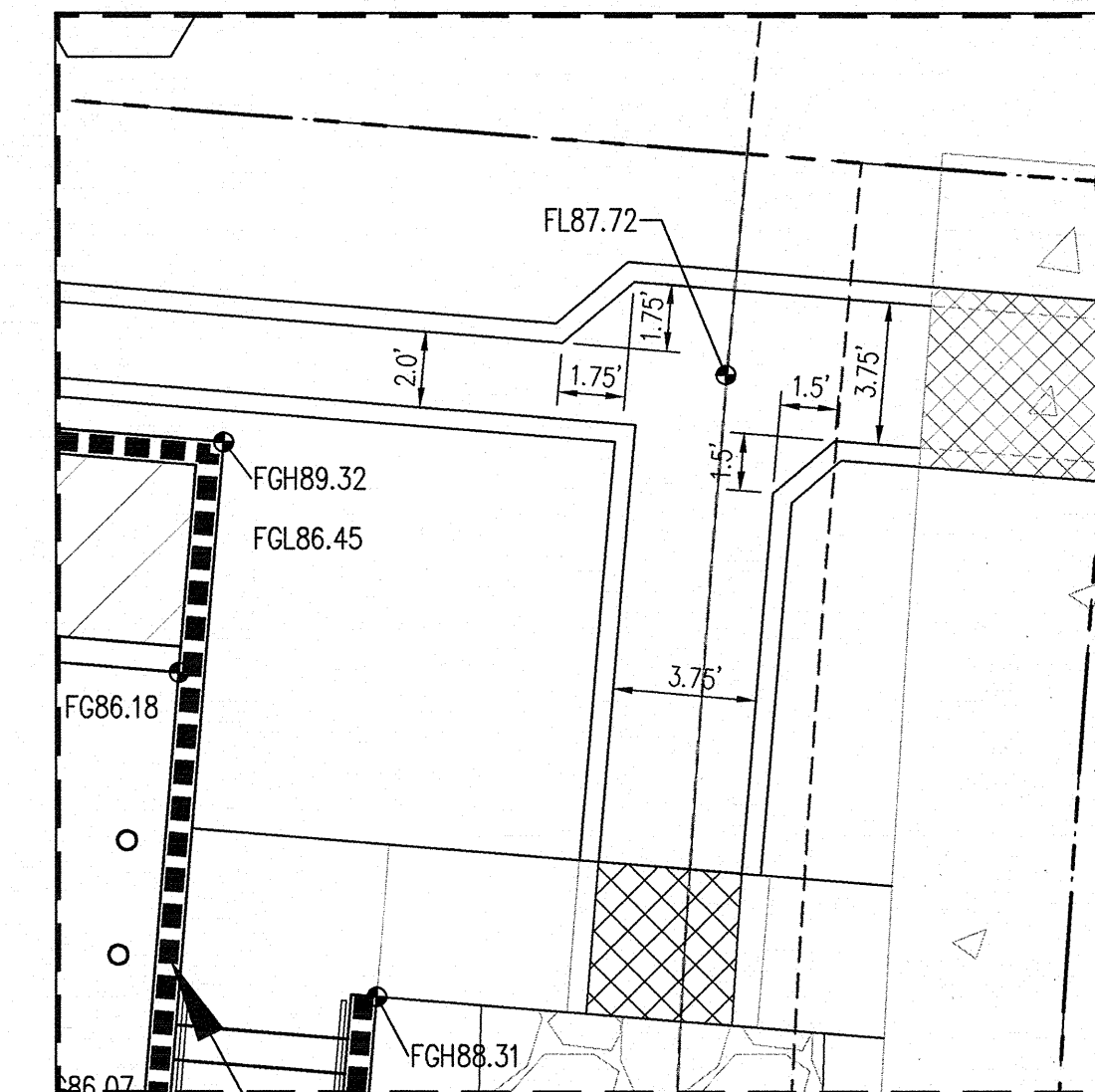
H TYPICAL RETAINING WALL SECTION
N.T.S.



I TYPICAL WATER HARVESTING SECTION
N.T.S.



B DETAIL "B"
1"=5'



C DETAIL "C"
1"=5'

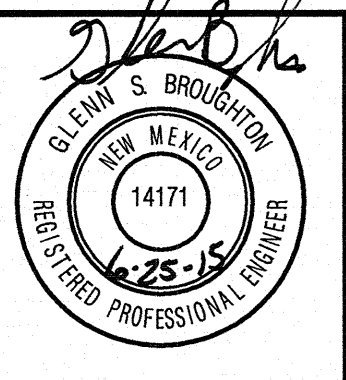
- NOTES:
- SEE PLANS FOR LOCATION OF DAMS.
 - CHECK DAMS SHALL BE CLEANED OF ACCUMULATED SEDIMENT WHEN THE DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE CHECK DAM.

GRADING SHEET NOTES

- EXCEPT AS PROVIDED HEREIN, GRADING SHALL BE PERFORMED AT THE ELEVATIONS AND IN ACCORDANCE WITH THE DETAILS SHOWN ON THIS PLAN.
- THE COST FOR REQUIRED CONSTRUCTION DUST AND EROSION CONTROL MEASURES SHALL BE INCIDENTAL TO THE PROJECT COST.
- ALL WORK RELATIVE TO FOUNDATION CONSTRUCTION, SITE PREPARATION, AND PAVEMENT INSTALLATION, AS SHOWN ON THIS PLAN, SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE "GEOTECHNICAL INVESTIGATION". ALL OTHER WORK SHALL, UNLESS OTHERWISE STATED OR PROVIDED FOR HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE PROJECT, (FIRST PRIORITY) SPECIFICATIONS, AND/OR THE CITY OF ALBUQUERQUE (COA) STANDARD SPECIFICATIONS FOR PUBLIC WORKS (SECOND PRIORITY).
- EARTH SLOPES SHALL NOT EXCEED 3 HORIZONTAL TO 1 VERTICAL UNLESS SHOWN OTHERWISE.
- IT IS THE INTENT OF THESE PLANS THAT THIS CONTRACTOR SHALL NOT PERFORM ANY WORK OUTSIDE OF THE PROPERTY BOUNDARIES EXCEPT AS REQUIRED BY THIS PLAN.
- THE CONTRACTOR IS TO ENSURE THAT NO SOIL ERODES FROM THE SITE ONTO ADJACENT PROPERTY OR PUBLIC RIGHT-OF-WAY.
- A DISPOSAL SITE FOR ANY & ALL EXCESS EXCAVATION MATERIAL, AND UNSUITABLE MATERIAL AND/OR A BORROW SITE CONTAINING ACCEPTABLE FILL MATERIAL SHALL BE OBTAINED BY THE CONTRACTOR IN COMPLIANCE WITH APPLICABLE ENVIRONMENTAL REGULATIONS AND APPROVED BY THE OBSERVER. ALL COSTS INCURRED IN OBTAINING A DISPOSAL OR BORROW SITE AND HAUL TO OR FROM SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE.
- PAVING AND ROADWAY GRADES SHALL BE +/- 0.1' FROM PLAN ELEVATIONS. PAD ELEVATION SHALL BE +/- 0.05' FROM BUILDING PLAN ELEVATION.
- ALL PROPOSED CONTOURS REFLECT TOP OF PAVEMENT ELEVATIONS IN THE PARKING AREA AND MUST BE ADJUSTED FOR MEDIANS AND ISLANDS.
- VERIFY ALL ELEVATIONS SHOWN ON PLAN FROM BASIS OF ELEVATION CONTROL STATION PRIOR TO BEGINNING CONSTRUCTION.

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by	
date	
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drawn by	MHS
project manager	GSB
date	07.21.2015

project title
Smiles for Kids Dental Office
9201 Eagle Ranch Road, NW,
Albuquerque, New Mexico 87114
sheet title
Grading Plan Details