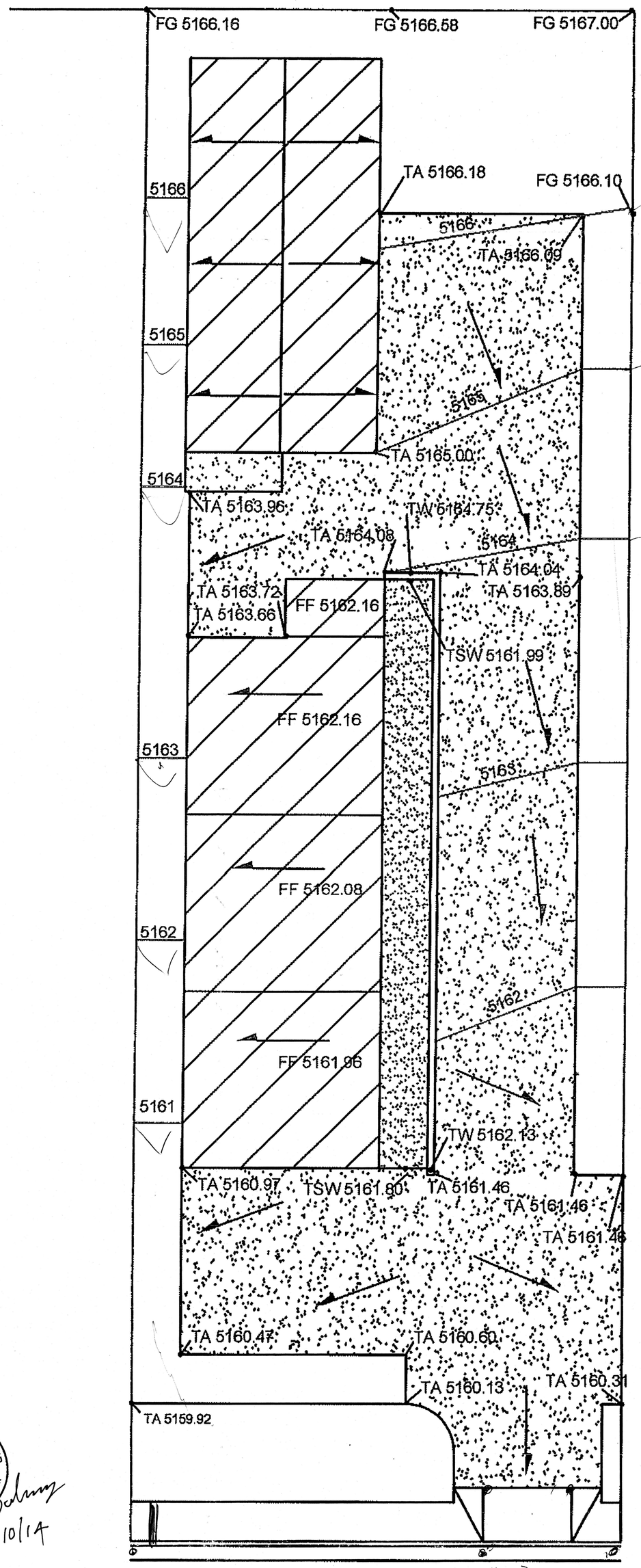

SCALE 1"-20'

LEGEND

TA = TOP OF ASPHALT

TSW = TOP OF SIDEWALK

TW = TOP OF WALL

FG = FINISH GRADE

BUILDINGS

SIDEWALK

ASPHALT PAVEMENT

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1/10/14

2117 ST CYR
GRADING & DRAINAGE PLAN

Pg. 3 of 8

Lot is between Rio Grande and San Mateo therefore in precipitation Zone 2, Table A-1, Figure A-1

Table A-2 DEPTH (INCHES) AT 100-YEAR STORM					
Zone	P_{360}	P_{360}	P_{1440}	P_{4DAYS}	$P_{10\ DAYS}$
2	2.01	2.35	2.75	3.30	3.950

Table A-8 EXCESS PRECIPITATION, E (INCHES) 6-HOUR STORM					
Zone	Treatment 100 year [2-year, 10-year]				
	A	B	C	D	
2	0.53 [0.0,0.13]	0.78 [0.02, 0.28]	1.13 [0.15, 0.52]	2.12 [0.79, 1.34]	

Weighted Excess Precipitation E

$$E = \frac{E_a A_a + E_b A_b + E_c A_c + E_d A_d}{A_a + A_b + A_c + A_d}$$

Historic E_{100}= 0.53	Volume=	0.086 ac-ft	3763 ft^3
Existing E_{100}= 1.242	Volume=	0.202 ac-ft	8818 ft^3
Developed E_{100}= 2.027	Volume=	0.330 ac-ft	14389 ft^3

Historic E_{10}= 0.13	Volume=	0.021 ac-ft	923 ft^3
Existing E_{10}= 0.100	Volume=	0.016 ac-ft	709 ft^3
Developed E_{10}= 0.206	Volume=	0.034 ac-ft	1461 ft^3

Table A-9 PEAK DISCHARGE (CFS/ACRE)					
Zone	Treatment 100 year [2-year, 10-year]				
	A	B	C	D	
2	1.56 [0.0,0.38]	2.28 [0.08, 0.95]	3.14 [0.60, 1.71]	4.70 [1.86, 3.14]	

Peak Rate of Discharge

$$Q = Q_a A_a + Q_b A_b + Q_c A_c + Q_d A_d$$

Historic Q_{100}=	0.254	cfs
Existing Q_{100}=	0.541	cfs
Developed Q_{100}=	0.742	cfs
Historic Q_{10}=	0.062	cfs
Existing Q_{10}=	0.305	cfs
Developed Q_{10}=	0.490	csf

Standard Broad-Crested Weirs Equation

$$Q = 2/3 C_t b (2g) H^{2/3} \quad C_t = 0.57$$

	H (ft)	C_t	b (ft)	2g	Q (cfs)
Weir-1	0.26	0.57	7	64.4	0.3771

Manual FHWA HDS No. 5 Pg 3.15 & 3.16 Wide Broad-Crested Wiers

$$Q = Cd\ L\ HW_r^{1.5}$$

HWr = Upstream Depth of Water
Cd = Discharge Coefficient=KtCr
L = Breath of weir
Kt = Submergence Factor
HWr/L = #REF! Therefore HWr/L>0.15 use Graph A
Cr = 3.08 From Graph A
Kt = 1.00 From Graph C
Cd = KtCr = 3.08

	HWr (ft)	C_d	L (ft)	HWr/L	Q (cfs)
Weir-2	0.16	3.080	4	0.040	0.7885

ONSITE BASIN HYDROLOGY HISTORIC CONDITIONS

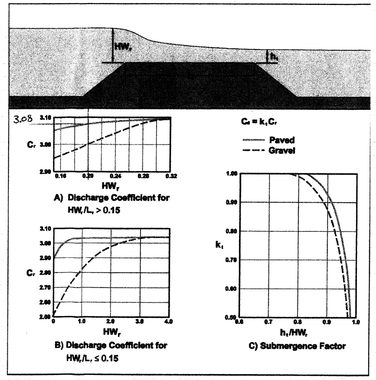
AREA	Area (sf)	Land Use Area (ac)				Historic V_{10} (ac-ft)	Historic V_{100} (ac-ft)	Historic Q_{100} (cfs)
		A	B	C	D			
Historic Lot	7100	0	0	0	0.163	0.021	0.086	0.000
Total Site	**7100**	**0**	**0**	**0**	**0.1630**	**0.021**	**0.086**	**0.000**
Total Site (ac)	**0.163**							

ONSITE BASIN HYDROLOGY EXISTING CONDITIONS 2014

AREA	Area (sf)	Land Use Area (ac)				Exist V_{10} (ac-ft)	Exist V_{100} (ac-ft)	Exist Q_{100} (cfs)
		A	B	C	D			
sidewalk	40	0	0	0	0.001	0.016	0.202	0.000
building	763	0	0	0	0.018			
rest of lot	6297	0	0	0.145				
Total Site	**7100**	**0**	**0**	**0.1446**	**0.0184**	**0.0163**	**0.2024**	**0.000**
Total Site (ac)	**0.163**							

ONSITE BASIN HYDROLOGY PROPOSED DEVELOPED CONDITIONS 2014

AREA	Area (sf)	Land Use Area (ac)				Develop V_{10} (ac-ft)	Develop V_{100} (ac-ft)	Develop Q_{100} (cfs)
		A	B	C	D			
sidewalk	290	0	0	0	0.007	0.034	0.330	0.000
buildings	1930				0.044			
pavement	4210				0.097			
landscaping	670			0.015				
Total Site	**7100**	**0**	**0**	**0.0154**	**0.1476**	**0.0335**	**0.3303**	**0.000**
Total Site (ac)	**0.163**							



Q=(1.49/n)A $R^{.66}$ $S^{.5}$
Swale Parking Lot

manning coeffient	n= 0.014	asphalt smooth
cross sectional area (SF)	A= 0.525	(1/2 b h)
channel slope	S= 0.0062	
hydraulic radius	R= 0.074983	(A/P)
wetted perimeter	P= 7.001607	$(b^2+h^2)^{.5}$
depth of channel (FT)	d= 0.15	
channel flow (cfs)	Q= 0.796	
	b= 7.000	
	h= d	

Q=(1.49/n)A $R^{.66}$ $S^{.5}$
Channel Between Area 3 and Sidewalk Culvert

manning coeffient	n= 0.013	concrete smooth
cross sectional area (SF)	A= 0.42	b* h
channel slope	S= 0.002	
width of channel	W= 1.5	
hydraulic radius	R= 0.203883	A/P
wetted perimeter	P= 2.06	2d+W
depth of channel (FT)	d= 0.28	
channel flow (cfs)	Q= 0.754	

Q=(1.49/n)A $R^{.66}$ $S^{.5}$
Sidewalk Culvert

manning coeffient	n= 0.013	concrete smooth
cross sectional area (SF)	A= 0.45	b* h
channel slope	S= 0.02	
width of culvert	W= 1.5	
hydraulic radius	R= 0.214286	A/P
wetted perimeter	P= 2.1	2d+W
depth of channel (FT)	d= 0.3	
channel flow (cfs)	Q= 2.639	

GENERAL

Smith Engineering has been retained to develop the drainage and grading plan for the apartment addition to 2117 St Cyr SE, Block 8, Lot 17, Vista Heights Subdivision, Zone SU–2 DR. The lot is 142–feet long and 50–feet wide with square footage of 7,100 (0.163 acres). The lot borders St Cyr Street on the south, the alley on the north and just north of the City of Albuquerque Bus Facility.

SITE LOCATION AND DESCRIPTION

The lot is located in Bernalillo County in the southeast quadrant of the City of Albuquerque, New Mexico. The local climate is considered semi–desert and is hot and dry. The lot is located on the east mesa between the University of New Mexico and the Albuquerque International Airport. Albuquerque generally receives about 8–inches of rain per year. The majority of floods that affect the area come from thunderstorms that occur in the months of July, August and September. The summer rain storms originate from the Gulf of Mexico. Less intense winter rainfall comes from frontal activity that originates in the Pacific Ocean.

HYDROLOGICAL ANALYSIS

The City of Albuquerque's Development Process Manual (DPM) Section 22.2 was used to compute the 100–year 6–hour peak flows and runoff volumes for the onsite basin. Precipitation Zone 2 along with Tables A–2, A–8 and A–9 were used for these calculations. The site is small enough to warrant one basin for analysis.

. Existing Conditions

The site located in the Vista Heights subdivision, Block 8, Lot 16 with the following address , 2117 St Cyr Road, SE. The lot has an existing house on the northwest corner of the lot with an approximate square footage of 763. The roof is pitched and drains to the west and east. There are two small sheds on the south property line. There is fencing on the east, north and west property lines. The lot is mainly compacted earth with a couple of trees and patches of native grasses and weeds. The average slope of the existing grade is about 0.15% north to south. According to the owner, the adjacent lot to the west drains onto the property during heavy rain falls. The Flood Insurance Rate Map (FIRM MAP NUMBER # 35001C0353, August 16, 2012 delineates an existing 100–year flood plain, "Zone X: Area of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees form 1% annual chance flood".

Land Treatments C and D were used to compute the existing conditions peak flow and run off. The results are summarized in the attached tables. The average existing 100–year peak flow is 0.541 cubic feet per second.

. Developed Conditions

The proposed developed project site increases the area of Treatment Zone D and decreases the area of Treatment Zone C. The new depressed landscaped area with be xeriscaped with gravel, native bushes and scrubs and given a Treatment Zone C for analysis. The new apartments (Units 1, 2, & 3) total 1080 square feet. The sidewalk in front of the apartments is about 290 square feet. Pavement for the driveway and parking is about 4,210 square feet and the landscaping is about 680 square feet. The runoff from buildings, sidewalk and pavement will flow to the depressed landscape areas. St Cyr Road slopes to the east to Yale Blvd SE. There are five lots between the site and Yale Blvd.

The following spread sheets show the hydrological analysis and calculations for the property. The existing runoff 100–yr flow (Q100) is 0.541 cfs and the developed runoff 100–yr flow (Q100) is 0.742 cfs. This is a 37% increase in 100–yr (Q100) runoff. The existing 100–yr volume (V100) is 0.202 ac–ft and the developed 100–yr volume (V100) is 0.33 ac–ft.

There are two depressed landscaped areas. The landscaped areas are adjacent to the north, west and east property lines. The walls lining the landscape areas must keep water from the adjacent lots from flowing into the property and the water stored in the landscape area from over flowing into the adjacent property. The top of the walls will be at an elevation of 5158.50 feet which makes it at lease 6–inches above the existing ground on the adjacent lots. The interior wall of the depressed landscaped area will have the same elevation. This elevation will be higher than the top of pavement and act as a curb to prevent vehicles from driving into the landscaped area.

Landscaped Area 1 is the area on the north and east property lines of the lot. This area will take the runoff of 2/3 of the existing house, half the runoff of the apartment roofs and the pavement east of the house and apartments. The interior wall will have several two foot wide openings to allow the parking lot runoff to flow into the depressed Landscaped Area 1. Landscape Area 1 had a storage capacity of 1340 ft3 (1072 ft2 x 1.25–ft).

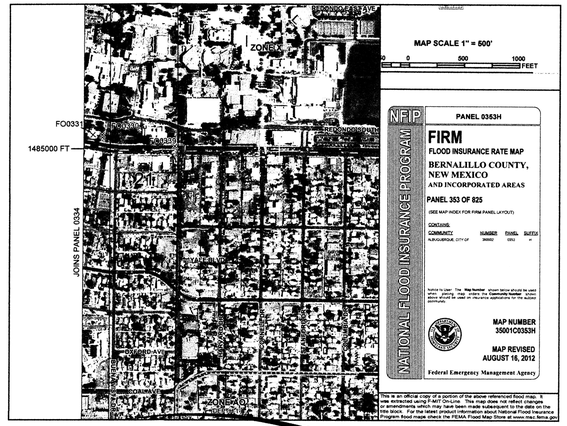
Landscape Area 2 is adjacent to the west and south property lines of the lot. The runoff from the western slope the existing house and the apartments will flow into this area. The parking area between the house and apartment and the parking to south of the apartments will also flow into this area. Landscape Area 2 has a storage capacity of 973 ft3. The total volume of storage in Area 1 and Area 2 is 2313 ft3 (885 ft2 x 1.1–ft) which is greater than the volume of ten year event at 1461 ft3.

Runoff that does not make it into Landscape Area 1 or2 will flow into the swale at the entrance to the lot and flow into Landscape Area 2. The swale has been designed to have a capacity of 0.796 cfs. This is slightly larger than the developed Q100 of 0.746 cfs. All depressed landscape areas will have the same bottom elevation of 5160.00. If the water surface in Area 1 is higher than 5157.60–feet it will over flow by a broad–crested weir to the swale that drains into Landscape Area 2. Area 1 receives half of the runoff of the site. Therefore the discharge over Weir 1 from Area 1 must have the capacity to pass about half the Q100. Weir 1 has a capacity of 0.378 cfs.

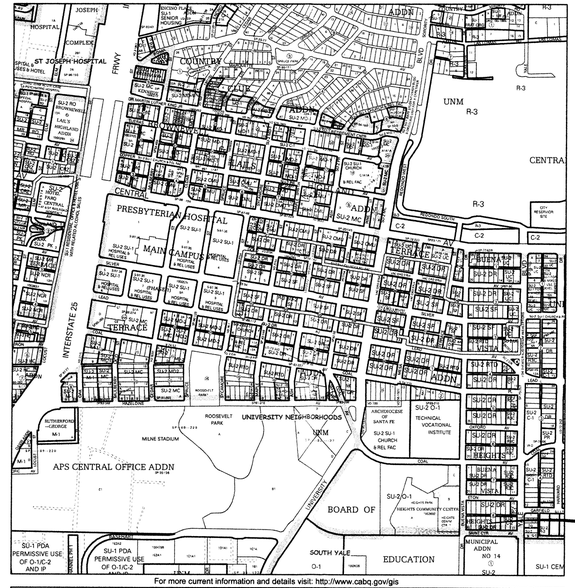
The swale has a slope of 0.62% has been designed to pass more than 100% of Q100 . The swale discharges into Area 2. The opening into Area 2 has the same shape and slope as the pavement swale. When the water surface of the stored storm water reaches 5157.1, the storm water will begin to flow over Weir 2 to a concrete channel . Weir 2 has a capacity of 0.789 cfs which is greater than the of Q100 at 0.746 cfs.

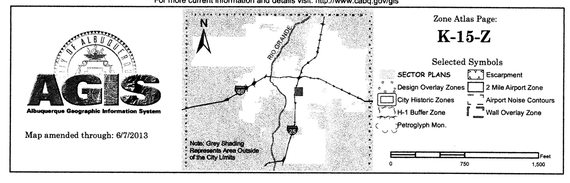
The concrete channel transitions from 4 feet wide at the discharge of Weir 2 to 1.5 feet. The slope is 0.2% and has a capacity to pass the 0.754 cfs which is greater than the Q100 at 0.746 cfs. From this channel the water flows into a side walk culvert. The design of the sidewalk culvert is per Standard Drawing 2236, City of Albuquerque Standard Specifications for Public Works Construction. The sidewalk culvert has width of 1.5–feet and a channel slope of 2%. It will pass 3 times Q100 flows, 2.64 cfs.

The developed flows from the lot will not affect the alley. The alley is at a higher elevation than the lot. The walls that contain the runoff in the depressed landscaping will prevent any flows from the property entering adjacent properties.
There is a small section of the lot just south of the pavement swale where the storm runoff cannot be captured. This area is 224 ft2 or 3% of the lot area. The storm runoff from this area will therefore flow down the drive pad to St Cyr Road.
Since the property will retain the 10–year event there affect of existing flows in the surrounding area. Any storm events greater than the 10–year event will have the runoff flow form the site in a control manner through the sidewalk culvert into St. Cyr Rd. Therefore events greater than the 10–year event will affect flows in St. Cyr.



PROJECT SITE





PROJECT SITE

JOHN ALLEN SOLINGER
NEW MEXICO
17855
PROFESSIONAL ENGINEER

NO.	REVISION DESCRIPTION	DATE	BY
1			
2			
3			
4			
5			

ST. CYR
GRADING & DRAINAGE PLAN
SITE PLAN AND GENERAL NOTES

SMITH ENGINEERING COMPANY
NEW MEXICO TEXAS

JOB NO:
DATE: MAY 28, 2014
SHEET NO: 1 3

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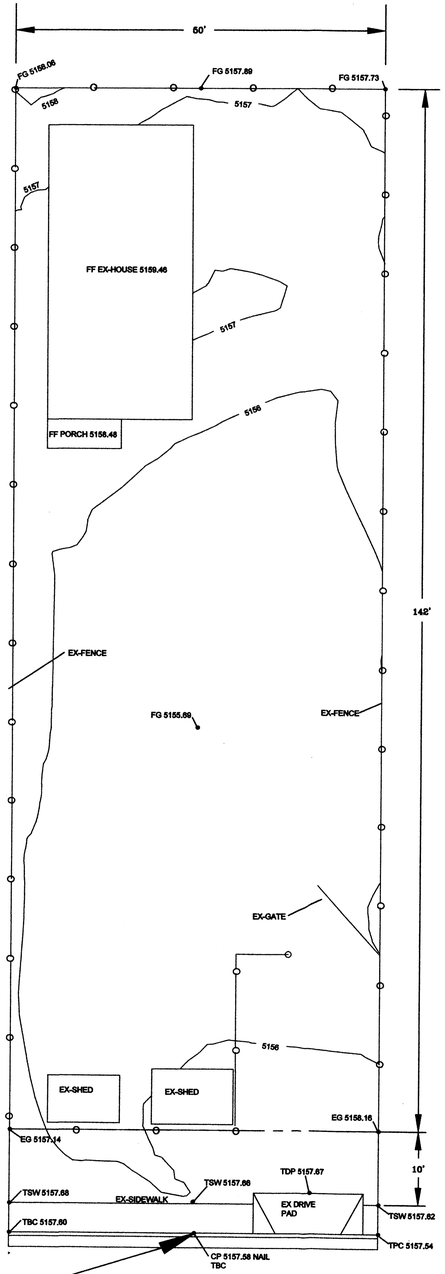
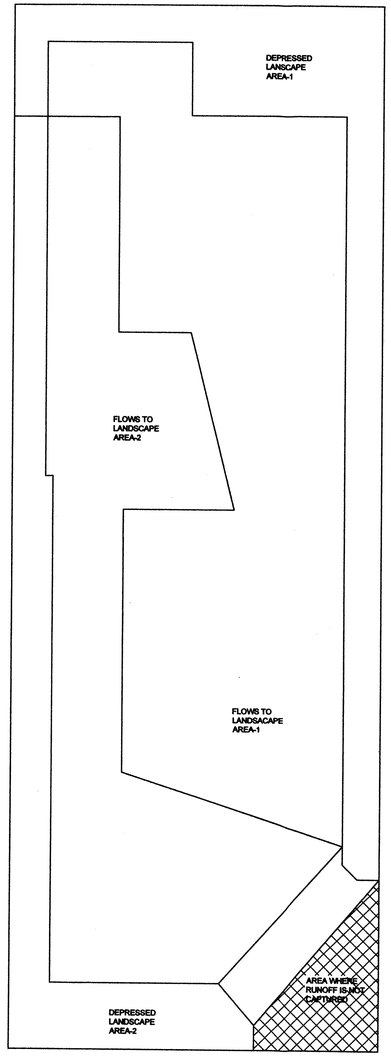
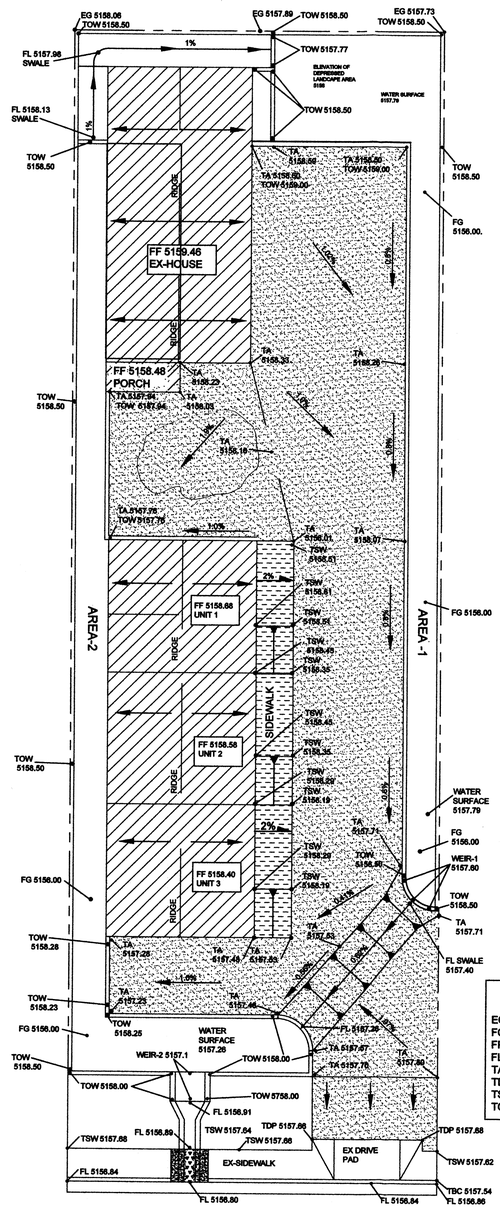


2217 ST CYR EXISTING GRADING PLAN

SITE BENCHMARK IS THE NAIL LOCATED THE TOP BACK OF CURB AT THE MID POINT OF THE LOTS. ELEVATION 5157.58. SEE EXSITING GRAING PLAN .



2217 ST CYR DEVELOPED RUNOFF AREAS



LEGEND

EG = EXISTING GRADE	BUILDINGS
FG = FINISH GRADE	
FF = FINISH FLOOR	SIDEWALK
FL = FLOW LINE	
TA = TOP OF ASPHALT	
TDP = TOP OF DRIVEPAD	ASPHALT PAVEMENT
TSW = TOP OF SIDEWALK	
TOW = TOP OF WALL	FLOW DIRECTION

2117 ST CYR GRADING & DRAINAGE PLAN

SCALE: 1" = 10'

10 0 10 20 30 Feet

RECEIVED
JUN 18 2014
JUL 07 2014
LAND DEVELOPMENT SECTION

JOHN ALLEN BOLINGER
NEW MEXICO
17855
PROFESSIONAL ENGINEER

NO.	REVISION DESCRIPTION	DATE	BY
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2117 ST. CYR
GRADING & DRAINAGE PLAN

GRADING AND DRAINAGE PLAN

SMITH ENGINEERING COMPANY
NEW MEXICO TEXAS

JOB NO:

DATE: MAY 28, 2014

SHEET 2 NO: 3

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CONCRETE:

SHALL MEET ALL THE REQUIREMENTS OF THE CURRENT ISSUE OF THE ACI MANUAL OF CONCRETE PRACTICE, WITH TYPE I-II CEMENT. MINIMUM 28 DAY STRENGTH, 3000 PSI, EXCEPT AS FOLLOWS:

FOUNDATIONS, GRADE BEAMS, OR ANY OTHER CONCRETE IN CONTACT WITH EARTH----------3000 PSI (MAX W/C=0.45)

ALL CAST IN PLACE CONCRETE FOR USE IN LIQUID CONTAINING STRUCTURES----------4000 PSI (MAX W/C=0.40)

CAST IN PLACE SLABS NOT ON GRADE----------4000 PSI

WALLS AND COLUMNS----------4000 PSI

CONCRETE FILL ON METAL DECK----------3000 PSI

MAXIMUM SLUMP:
FOR SLABS NOT ON GRADE----------4"
FOR OTHER CONCRETE----------5"

CONCRETE DURABILITY:
ALL CONCRETE EXPOSED TO WEATHER OR SOIL SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 4 OF THE ACI 318 FOR THE FOLLOWING EXPOSURE CLASSES.

1. VERTICAL CONCRETE EXPOSED TO WEATHER;
   A. CATEGORY F (FREEZING AND THAWING): F0
   B. CATEGORY S (SULFATE EXPOSURE): S0
   C. CATEGORY P (PERMEABILITY): P0
   D. CATEGORY C (CORROSION): C0

2. HORIZONTAL CONCRETE EXPOSED TO WEATHER;
   A. CATEGORY F (FREEZING AND THAWING): F0
   B. CATEGORY S (SULFATE EXPOSURE): S0
   C. CATEGORY P (PERMEABILITY): P0
   D. CATEGORY C (CORROSION): C0

3. CONCRETE EXPOSED TO SOIL;
   A. CATEGORY F (FREEZING AND THAWING): F0
   B. CATEGORY S (SULFATE EXPOSURE): S0
   C. CATEGORY P (PERMEABILITY): P0
   D. CATEGORY C (CORROSION): C0

CONTRACTOR SHALL SUBMIT FOR APPROVAL CONCRETE MIX DESIGN FOR EACH CLASS OF CONCRETE. THE MIX SUBMITTAL SHALL INDICATE WHICH OF THE FOLLOWING ACI 318 METHODS THE CONCRETE SUPPLIER ALONG WITH HIS TESTING LAB INTENDS TO USE FOR CONCRETE PROPORTIONING - THE FIELD EXPERIENCE METHOD, THE LABORATORY TRIAL MIXTURE METHOD OR A COMBINATION OF BOTH. IF CONSECUTIVE TESTS (15 TO 30) ARE BEING RELIED UPON PER ACI 318, SECTION 5.3 THOSE TESTS SHALL BE SUBMITTED ALONG WITH THE MIX DESIGNS. MIX DESIGNS SHALL BEAR THE STAMP OF AN ENGINEER LICENSED IN THE STATE OF NEW MEXICO.

NO ADMIXTURES SHALL BE USED WITHOUT APPROVAL. NO AIR ENTRAINMENT SHALL BE ALLOWED IN FLAT SLABS. ADMIXTURES CONTAINING CHLORIDES SHALL NOT BE USED. CONCRETE SHALL NOT BE IN CONTACT WITH ALUMINUM. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED, EXCEPT THAT SLABS ON GRADE NEED BE VIBRATED ONLY AROUND EMBEDDED ITEMS. DO NOT TAMP SLABS. USE ROLLER BUG, VIBRATING SCREED OR BULL FLOAT TO FINISH. SEE SPECIFICATIONS FOR CURING. REVIBRATE TOPS OF COLUMNS SOON AFTER PLACING CONCRETE, TO CLOSE PLASTIC SHRINKAGE CRACKS.

MINIMUM STRENGTH FOR REMOVAL OF FORMS AND SHORING SHALL BE 75% OF SPECIFIED STRENGTH AT 28 DAYS.

FLY ASH (POZZOLAN) IF PERMITTED PER ARCHITECTURAL SPECIFICATIONS SHALL NOT EXCEED 15% REPLACEMENT OF TOTAL CEMENT CONTENT USING A 1:1 REPLACEMENT FACTOR.

WHEN SPAN L EXCEEDS 10'-0" CAMBER UP ALL CONCRETE BEAMS AND SLABS L/400 AT MIDSPAN. CAMBER UP ALL OVERHANGS L/300 AT EDGE OF CANTILEVER. RECORD CAMBER AT UNDERSIDES OF STRUCTURE IMMEDIATELY BEFORE AND AFTER RESHORING AND IMMEDIATELY AFTER DESHORING.

REINFORCING:

LATEST ACI CODE AND DETAILING MANUAL APPLY. ALL REINFORCING BARS DEFORMED EXCEPT #2 BARS AND WIRE MESH.

ALL REINFORCING SHALL BE ASTM A-615 GRADE 60 EXCEPT AS FOLLOWS:

SPIRALS----------GRADE 60 OR COLD DRAWN A-82
WIRE MESH----------A-185
WELDED ANCHORS----------GRADE 40 CHEMICAL ANALYSIS LIMITED PER AWS SPECIFICATIONS FOR WELD WITHOUT PREHEAT.
WELDED ANCHORS #5 AND LARGER----------ASTM A-706

CLEAR CONCRETE COVER TO REINFORCING ARE AS FOLLOWS:

CAST-IN-PLACE CONCRETE (NONPRESTRESSED):

CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH----------3"

EXPOSED TO EARTH OR WEATHER:
#6 THROUGH #18----------2"
#5 AND SMALLER----------1 1/2"

NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
SLABS, WALLS, JOISTS: #11 AND SMALLER----------1 1/2"
BEAMS AND COLUMNS----------1 1/2"

MESH SPLICES: TYPICAL SPACING PLUS 2" (MINIMUM 8") MEASURED BETWEEN CROSS WIRES.

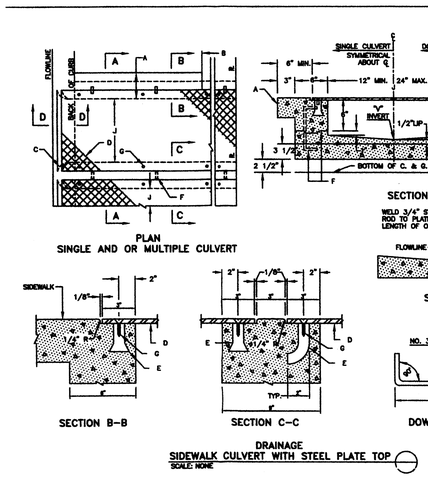
FOR TYPICAL BAR BENDS, SEE DETAIL 6/S-002.

LAP SPLICES IN CONCRETE SHALL BE CLASS B TENSION LAPS PER DETAIL 5/S-002. SPLICE BOTTOM BAR OVER SUPPORTS AND TOP BAR AT MIDSPAN ONLY.

WHERE BARS ARE SHOWN SPLICED, THEY MAY RUN CONTINUOUS AT CONTRACTOR'S OPTION.

PROVIDE SHOP DRAWINGS AND FABRICATE AFTER THE ARCHITECTS REVIEW. ALL SPLICE LOCATIONS ARE SUBJECT TO APPROVAL. PLACE REBAR PER CRSI STANDARDS.

REBAR SPACING GIVEN IS MAXIMUM ON CENTER AND ALL REBAR IS CONTINUOUS UNLESS OTHERWISE NOTED. PROVIDE BENT CORNER REBAR TO MATCH AND LAP WITH HORIZONTAL REBARS AT CORNERS
AND INTERSECTIONS OF WALLS. DOWEL ALL VERTICAL WALL AND COLUMN REBAR TO FOUNDATIONS. SECURELY TIE ALL REBAR, INCLUDING DOWELS, IN LOCATION BEFORE PLACING CONCRETE OR GROUT.



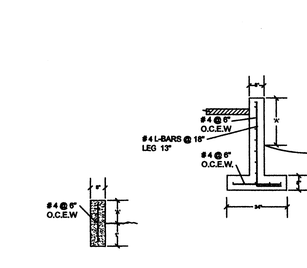
SIDEWALK CULVERT NOTES:

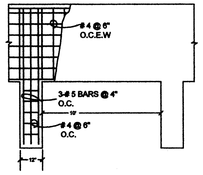
1. PLACING OF CRWN THRU CNST. SIDEWALK AND CURB & GUTTER REQUIRES THAT ENTIRE SIDEWALK AND C & G STONES BE REMOVED AND REPLACED AS DETAILED HEREIN.
2. BOTTOM SLAB OF CULVERT SHALL BE POURED MONOLITHICALLY WITH NEW GUTTER.
3. THE INVERT SHALL BE TROWELED TO PRODUCE A HARD POLISHED SURFACE OF MAX. DENSITY AND SMOOTHNESS. INVERT SHALL BE 1"-RAISED TO WITHIN 3" OF OUTLET, THEN RAMPED TO PARALLEL FLOWLINE AT OUTLET, UNLESS OTHERWISE SHOWN.
4. ALL EXPOSED CONC. SURFACE SHALL MATCH GRADE, COLOR, FINISH AND SCORING OF ADJACENT CURB AND SIDEWALK.
5. SIDEWALK REPLACED DURING CONSTRUCTION SHALL BE POURED MONOLITHICALLY WITH CULVERT WALLS.
6. IF ROD ANCHORS ARE USED, DRILL & TAP FOR F.H. MACHINE SCREW. ATTACH ANCHORS TO PLATE AND SECURE PLATE IN PLACE PRIOR TO POURING OF WALLS.
7. LENGTH OF EACH PLATE SHALL BE SUCH THAT THE WEIGHT WILL NOT EXCEED 300 LBS. AND SHALL BE STRESS RELIEVED AFTER FABRICATION. CLEAN SURFACE OF PLATE AND FRAMING MEMBERS AND PAINT W/ ONE SHOP COAT RED OXIDE AND TWO FINISH COATS ALUMINUM PAINT (AASHTO M 68).

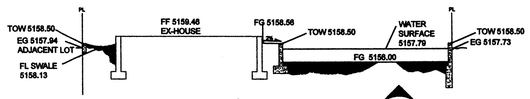
SIDEWALK CULVERT CONSTRUCTION NOTES:

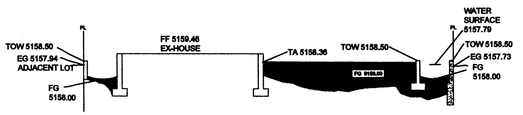
A. MATCH NEAREST CONTROL JOINT, INSTALL 1/2" EXPANSION JOINT.
B. EDGE OF SIDEWALK OR SETBACK (VARIABLE).
C. 3" RADIUS (TYPICAL).
D. 3/16" CHECKERED STEEL PLATE (PAINT PER NOTE 7, ABOVE).
E. FOR SECURING PLATE USE 1" X 5" S.S. ROD ANCHOR, "RED HEAD MULTI-SET T SRM-38 ANCHOR" OR APPROVED EQUAL. INSTALL PER MANUFACTURER'S INSTRUCTIONS AT MAX. 24" O.C. A MINIMUM OF 2 PER SIDE AND ONE WITHIN 6" OF EACH END.
F. CONSTRUCTION JOINT IS OPTIONAL. IF USED, SPACE DOWELS AT 18" O.C. MAX., 1 1/2" MINIMUM FROM FACE OF CONCRETE.
G. 3/8" - 16 X 1 1/4" COUNTERSUNK, F.H., STAINLESS STEEL, MACHINE SCREW.
H. SLOPE 1/4" PER FT. MIN.
J. DRAIN WIDTH PER PLAN (12" MIN., 24" MAX.).

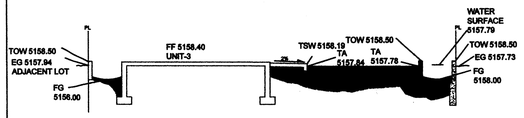
REVISIONS	NM APWA
	DRAINAGE SIDEWALK CULVERT WITH STEEL PLATE TOP
	DWG. 2236 FEB. 2006

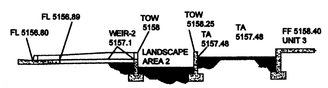


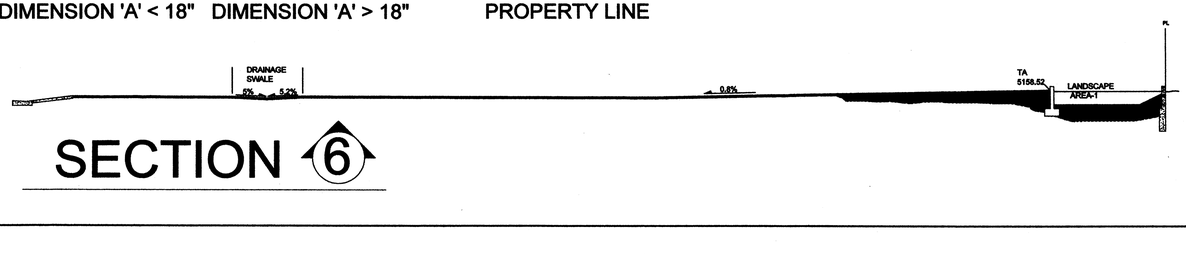


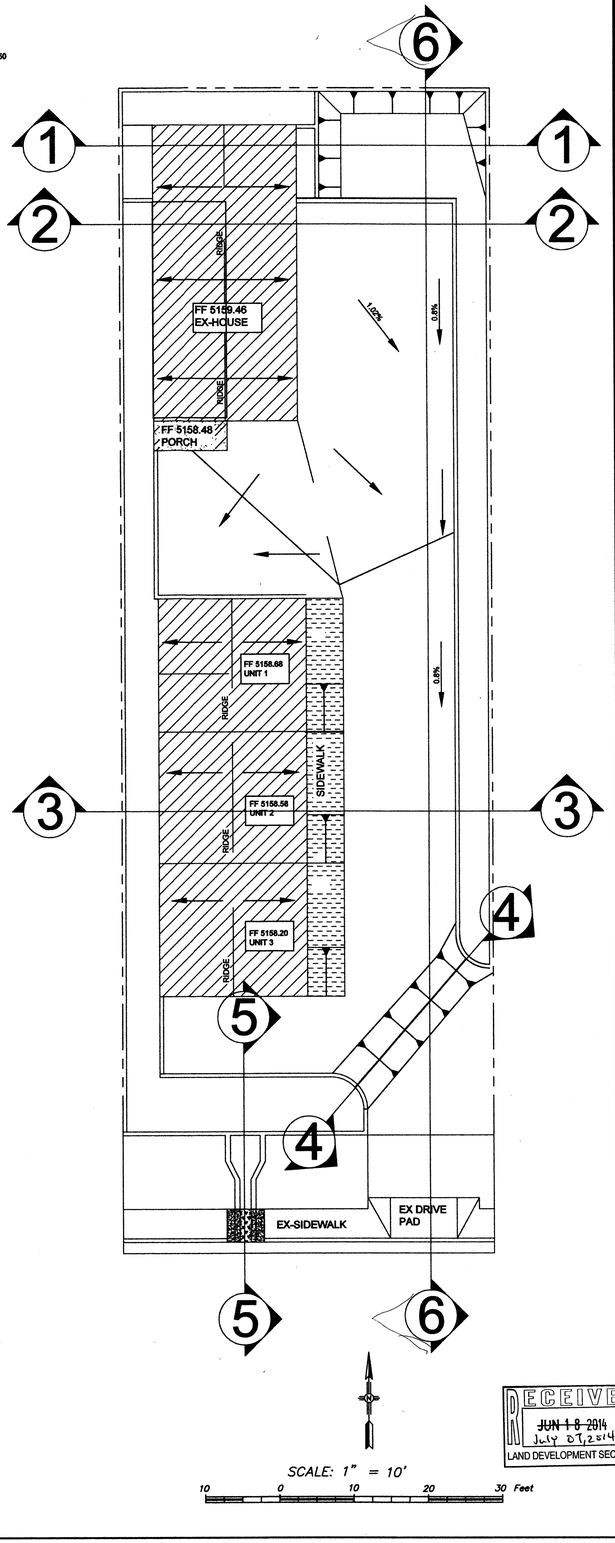












JOHN ALLEN BOLDEN
NEW MEXICO
17355
PROFESSIONAL ENGINEER

NO.	REVISION DESCRIPTION	DATE	BY
1			
2			
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ST. CYR
GRADING & DRAINAGE PLAN

SECTIONS AND STRUCTURAL DETAILS

SMITH ENGINEERING COMPANY
TEXAS
NEW MEXICO

RECEIVED
JUN 18 2014
JULY 07, 2014
LAND DEVELOPMENT SECTION

JOB NO:

DATE:
MAY 28, 2014

SHEET NO:
3 13

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