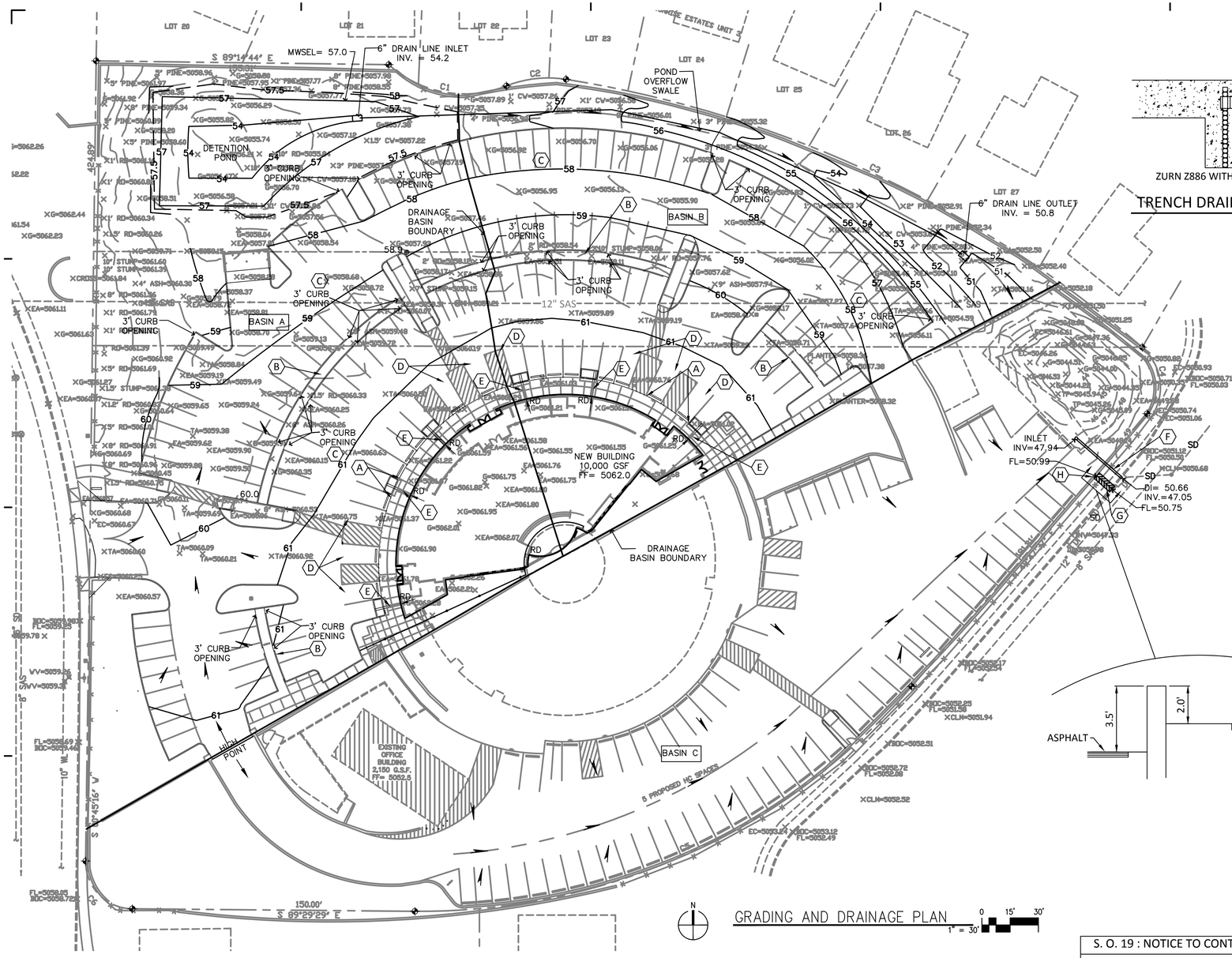
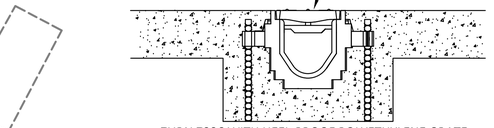
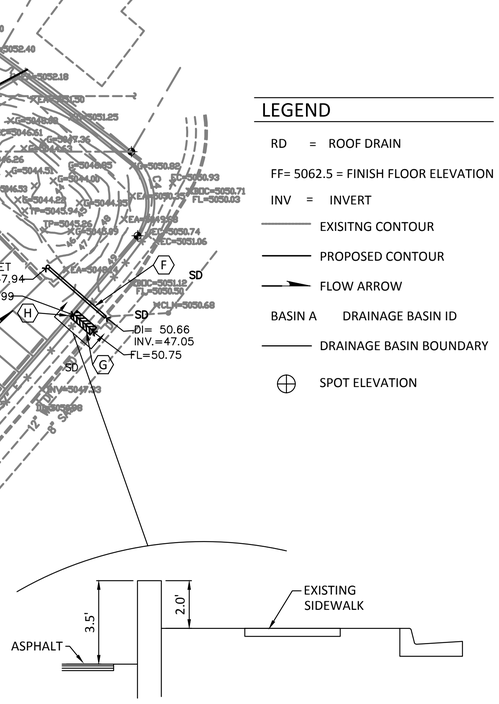




TRENCH DRAIN

N.T.S.



VICINITY MAP M-10-Z
NOT TO SCALE

LEGEND

RD = ROOF DRAIN

FF= 5062.5 = FINISH FLOOR ELEVATION

INV = INVERT

EXISITNG CONTOUR

PROPOSED CONTOUR

FLOW ARROW

BASIN A DRAINAGE BASIN ID

DRAINAGE BASIN BOUNDARY

SPOT ELEVATION

DRAINAGE

LEGAL: Tract A, Westgate Heights

AREA: 4.555 acres (198,410 SF) PRECIPITATION ZONE: 1

BENCHMARK: City of Albuquerque Station '5-M10' being a brass cap ELEV= 5042.77 (NAVD 1988)

SURVEYOR: Harris Surveying, Inc. dated December 2009

FLOOD HAZARD: From FEMA Panel 336, this site is identified as being within Zone 'X' which is located outside the 100-year floodplain

EXISTING CONDITIONS: The existing church site was developed in 1981 and includes a 9,500 SF sanctuary building along with a 650 SF garage, and associated paved parking and landscaping. Two existing retention ponds are located at the northwest corner and eastern end of the site. The two abutting public streets are both higher than the retention pond areas. Runoff in Basin A drains to the pond shown in the northwest corner of the site. Basin B drains to the northeast and runoff passes through a group of 3" square weep holes in a block wall on its way to the eastern retention pond. Basin C surface flows to the same retention pond.

BASIN	ACRES	'A'	'B'	'C'	'D'	Q(EXISTING)
A	1.672	0	32	44	24	1.672 x 2.96= 4.95
B	0.865	0	9	73	18	0.865 x 3.07= 2.65
C	2.018	0	5	5	90	2.018 x 4.18= 8.43
						Total Q = 16.0 CFS

PROPOSED IMPROVEMENTS: The proposed improvements include a 10,000 SF church building along with additional paved parking. The proposed additional parking, located in the NW half of the site, is within Basins A & B with no improvements proposed in Basin C.

FIRST FLUSH: The first flush volume is calculated using the impervious areas within Basins A & B only. It is based on 0.44" rainfall less the 0.1" initial abstraction giving V=
[(1.672)(.24)+(0.865)(.18)](43560)(0.34/12) = 687 CF
The proposed detention pond at the NW corner of the site provides 750 CF storage volume at 6" depth.

DRAINAGE APPROACH: The proposed drainage plan will continue to follow historic flow paths, but increased impervious area will require additional onsite storage volume. The detention pond design is based on the 100-year 10-day volume. The storm water pond in the northwest corner of the site will be designed to discharge to the east. Both a 6" drain line and a surface drainage swale will carry flows to the pond at the east side of the site. The 6" drain line and the existing weep holes will act to limit discharge to the east pond. A 12" drain line is proposed to discharge storm water to Summerfield Place SW by discharging into the back of an existing storm drain inlet. For low flows the Manning capacity based on gravity flow will be:

Manning's: Q=(1.49/.013) AxR*2/3xS*1/2=(114.6)(.7854)(.397)(.14)= 5.0 CFS
As the water depth rises to 50.99 (the sidewalk culvert invert elevation), the capacity will increase based on pressure flow and approach the flow rate determined by the Orifice equation as follows:

Q = K x A x (2gH)*1/2 = (0.6)(0.7854)(12.815) = 6.0 CFS

Sidewalk culvert capacity is 4.6 CFS each so total discharge will be limited to:
Q = (4.6)(2) + 6.0 = 15.2 CFS (<16.0 CFS ---OK)

BASIN	ACRES	'A'	'B'	'C'	'D'	Q(DEVELOPED)
A	1.672	0	12	14	74	1.672x 3.88= 6.49
B	0.865	0	9	6	85	0.865x 4.07= 3.52
C	2.018	0	5	5	90	2.018x 4.18= 8.43
						Total Q = 18.44 CFS

Developed runoff will surface flow to the detention basins at the NW and NE corners of the site per historic conditions. The proposed improvements will increase site runoff, but by enlarging the onsite detention pond, the impact to downstream drainage facilities will be minimized.

KEYED NOTES

A. NEW ASPHALT PAVING TO BE FLUSH WITH SIDEWALK ELEVATION AROUND BUILDING PERIMETER.

B. NEW LANDSCAPE MEDIAN AREAS WITH FINISH GRADE DEPRESSED 2-4" BELOW ADJACENT ASPHALT ELEVATION.

C. NEW CURB OPENINGS TO ALLOW RUNOFF TO ENTER/EXIT MEDIANS.

D. NEW ACCESSIBLE PARKING SPACE AND ACCESSWAY TO NOT EXCEED 2% SLOPE IN ANY DIRECTION.

E. NEW TRENCH DRAIN (6) LOCATED AT ROOF DRAIN OUTLETS TO DISCHARGE TO PLANTER. PROVIDE 8'" WIDE BY 6" HIGH CURB OPENING ON OPPOSITE SIDE OF PLANTER FOR OVERFLOW.

F. BUILD NEW 32 LF 12" PVC DRAIN LINE TO CONNECT TO EXISTING CATCH BASIN ON SUMMERFIELD PLACE PER COA STD DWG NO 2237. INVERT AT CATCH BASIN = 47.30 AND INLET INV = 47.94.

G. BUILD 2 NEW 24" SIDEWALK CULVERTS FROM THE FACE OF CURB TO THE PROPERTY LINE (12 LF EACH), PER COA STD DWG NO 2236.

H. CUT RECTANGULAR HOLE IN EXISTING BLOCK WALL 4.75' WIDE BY 0.67' HIGH AT ELEVATION SHOWN FOR RUNOFF TO ENTER NEW SIDEWALK CULVERTS. INSTALL 2 3"x3"x¼" STEEL ANGLES AT 5'6" LONG (ONE ON EACH SIDE), TO SUPPORT WALL ABOVE OPENING. SECURE ANGLES WITH 3 ANCHOR BOLTS AT 24" ON CENTER ON EACH SIDE OF WALL.

S. O. 19 : NOTICE TO CONTRACTORS

1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY R/W.
2. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT THE LINE LOCATING SERVICE, NEW MEXICO ONE CALL 260-1990, (NM ONE CALL "811") FOR THE LOCATION OF EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE LOCATIONS OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
6. MAINTENANCE OF THE FACILITY SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY BEING SERVED.
7. WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS.

APPROVAL	NAME	DATE
INSPECTOR		

J M Z arquitectos
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Stamp

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NEW MEXICO
10519
REGISTERED PROFESSIONAL ENGINEER
10/1/14

Consultant

Client

Archdiocese of Santa Fe
4000 St. Joseph Pl. N.W.
Albuquerque, NM 87120

Revisions

No.	Date	Description

Issue Date:	SEPTEMBER 4, 2014
Project No.	JMZ 032013
Doc. Phase:	100% CDS
	FOR PERMIT AND FOR CONSTRUCTION
Drawn By:	CB
Checked By:	SMM
Principal	SMM
Signed:	
Date:	
License No.	

Project Name

Santuario
San Martin De Porres
8301 Camino San Martin SW
Westgate Heights
Albuquerque, NM 87121

Sheet Title

GRADING AND DRAINAGE PLAN

Sheet Number

C-101