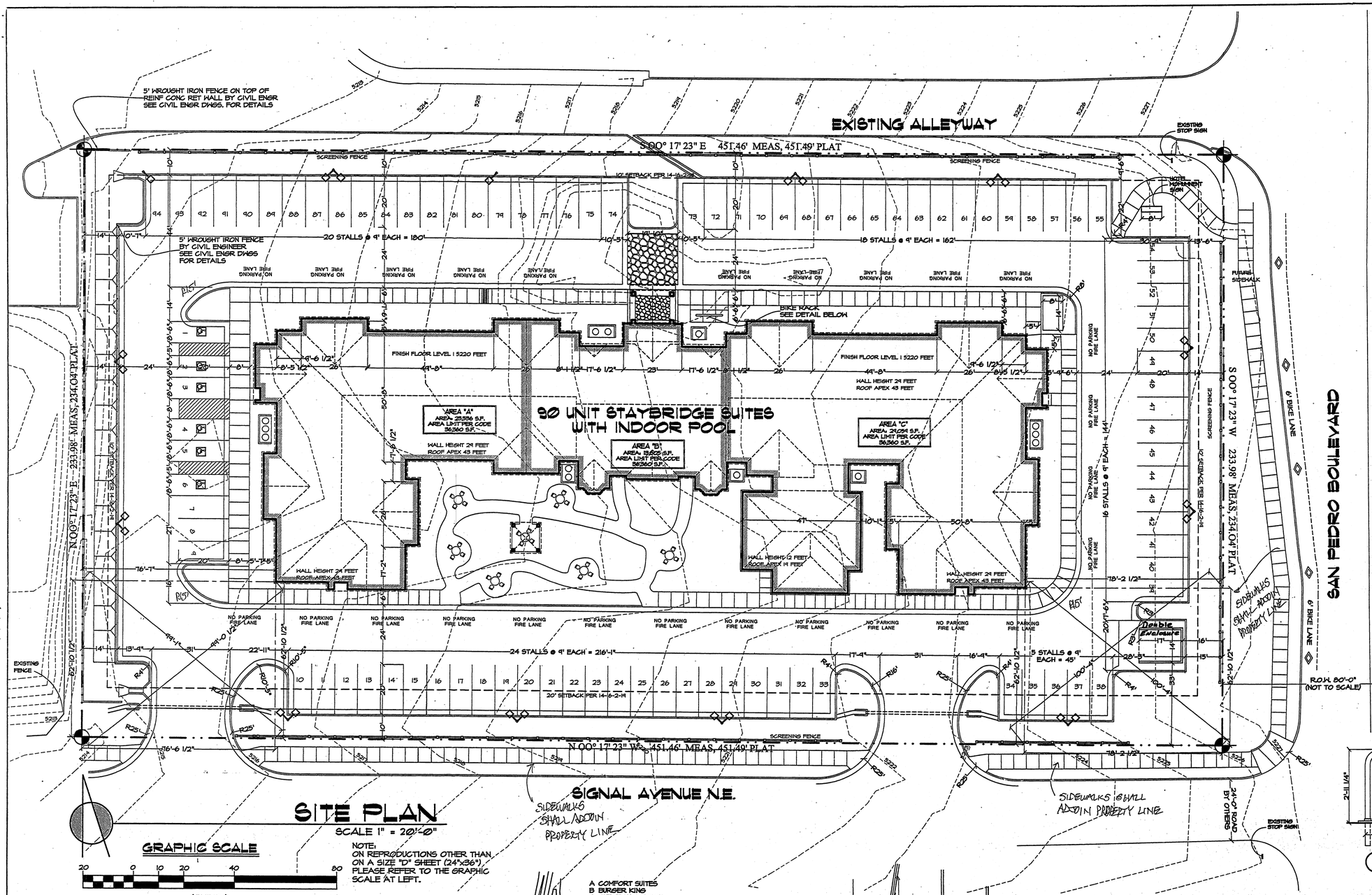


SITE PLAN

SCALE 1" = 20'-0"

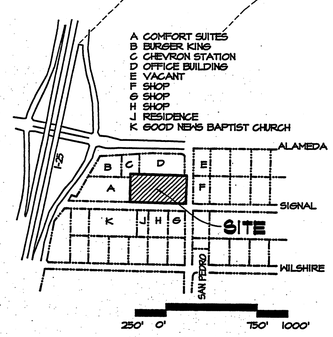
GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

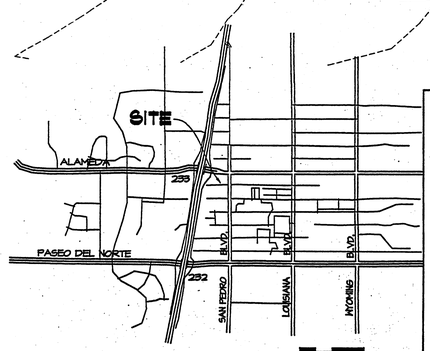
NOTE:
ON REPRODUCTIONS OTHER THAN ON A SIZE "D" SHEET (24"x36"), PLEASE REFER TO THE GRAPHIC SCALE AT LEFT.

LEON LAUVER + ASSOCIATES ARCHITECTS + CONSULTANTS P.O. BOX 1207 NORFOLK, NEBRASKA 68701 1 . 402 . 371 . 3333	STAYBRIDGE SUITES NORTH-WEST CORNER OF SAN PEDRO AVENUE NE AND SIGNAL AVENUE NE ALBUQUERQUE, NEW MEXICO 87113 (NUMBER TBD BY CITY)	INTERCONTINENTAL HOTELS GROUP SUSAN RADY 3 RAVINIA DRIVE SUITE 2900 ATLANTA, GEORGIA 30346 1 . 770 . 604 . 2361
ARCHITECT	**ADDRESS**	**FRANCHISE**
EXCEL HOSPITALITY SANTOSH + BERT MOODY 10019 STARSHINE DRIVE ALBUQUERQUE, NEW MEXICO 87114 1 . 505 . 440 . 5857	LOTS 17, 18, 19, BLOCK 12, TRACT A UNIT B, NORTH ALBUQUERQUE ACRES TO THE CITY OF ALBUQUERQUE COUNTY OF BERNALILLO STATE OF NEW MEXICO	ALL REGULATIONS AND GUIDELINES OF THE AMERICANS WITH DISABILITIES ACT AND ADDITIONAL STATE AND LOCAL ACCESSIBILITY CODES SHALL BE MET
OWNER	**PROPERTY**	**ADA NOTE:**
SU-2 ZONING - IP		
ZONING:		



SEE GRAPHIC SCALE

BLOCK PLAN



SEE GRAPHIC SCALE

VICINITY MAP:

NOTES

1. THE TRANSFORMER PAD, GAS METER AND THE TRASH ENCLOSURE SHALL BE SCREENED WITH SMALL TREES AND LARGE SHRUBS TO MATCH LOCAL BIOTA. NO SHRUB OR TREE SHALL IMPEDE OPERATION OF ANY OF THESE DEVICES. THE TRASH ENCLOSURE SHALL CONFORM TO INTERCONTINENTAL HOTELS GROUP AND CITY SPECIFICATIONS.
2. ALL UTILITY LINES SHALL BE FIELD VERIFIED WITH CITY OF ALBUQUERQUE CODES PRIOR TO INSTALLATION OF SITE WORK.
3. ALL LANDSCAPING SHALL BE DONE IN ACCORDANCE WITH INTERCONTINENTAL HOTELS GROUP WITH PROPER ADJUSTMENTS MADE TO ENSURE LOCAL CLIMATE AND BIOTA ARE FOLLOWED. ALL CODES OF THE CITY OF ALBUQUERQUE, NEW MEXICO CONCERNING LANDSCAPING SHALL BE MET. IN THE EVENT OF CONFLICT THE REGULATIONS OF THE CITY OF ALBUQUERQUE WILL HAVE PRIORITY.
4. UNDER NO CIRCUMSTANCES SHALL ANY TREE, SHRUB OR OTHER FIXTURE IMPEDE THE PASSAGE OF EMERGENCY EQUIPMENT IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE AND THE STATE OF NEW MEXICO.
5. SEE SHEET L1.1 FOR ALL LANDSCAPING DETAILS.
6. SEE SHEET A2.1 FOR ALL ELEVATION DETAILS
7. SEE SHEET C1.2 FOR PARKING LOT LIGHTS AND HOTEL SIGNAGE

SQUARE FOOTAGE

LEVEL ONE	24,303 S.F.
LEVEL TWO	22,085 S.F.
LEVEL THREE	22,085 S.F.
TOTAL BUILDING AREA	68,473 S.F.
TRASH ENCLOSURE	256 S.F.

LOT LAND USAGE

BUILDING FOOT PRINT	24,303 S.F.	23.01%
PARKING AREA	16,245 S.F.	15.42%
DRIVE AREA	27,256 S.F.	25.85%
SIDEWALKS	4,460 S.F.	4.22%
GAZEBO	153 S.F.	0.14%
TRASH ENCLOSURE & APRON	950 S.F.	0.89%
LANDSCAPE AND RETENTION	32,168 S.F.	31.09%
TOTAL LAND AREA	105,681 S.F.	100.00%
PARKING STALL REQUIRED PER 14-16-3-1	90	
PARKING STALLS PROVIDED	93	101.54%
ADA STALLS REQUIRED PER 14-16-3-1	6	
ADA STALLS PROVIDED	6	150%

PARKING STALL REQUIREMENT: 1 STALL PER GUEST UNIT CODE 14-16-3-1
NO MEETING ROOM
NO OTHER PUBLIC AMENITY
AS LISTED IN CODE 14-16-3-1
ADA COUNT EXCEEDS CODE 14-16-3-1 TO ACCOUNT FOR ADA ROOM TOTAL

PROJECT NUMBER: #1003483	
APPLICATION NUMBER: 04DRB-00853	
IS AN INFRASTRUCTURE LIST REQUIRED: (Y) IF YES, THEN A SET OF APPROVED DRC PLANS WITH A WORK ORDER IS REQUIRED FOR ANY CONSTRUCTION WITHIN A PUBLIC RIGHT OF WAY OR FOR CONSTRUCTION OF PUBLIC IMPROVEMENTS	
TRANSPORTATION DEVELOPMENT, TRANSPORTATION DIVISION	DATE: 8-25-04
UTILITIES DEVELOPMENT	DATE: 8-23-04
PARKS AND RECREATION	DATE: 8/25/04
CITY ENGINEER	DATE: 1/10/06
ENVIRONMENTAL HEALTH N/A	DATE:
SOLID WASTE MANAGEMENT Michael Holton Requires Double Enclosure	DATE: 8-23-04
TRANSPORTATION DEVELOPMENT, TRANSPORTATION DIVISION	DATE:
DRB CHAIR, PLANNING DEPARTMENT Deran Makeen 8/25/04	DATE:

BASIC DESIGN DATA:

BUILDING CODE	IBC 1997	-	-
BUILDING TYPE	5-A	-	-
OCCUPANCY	R-1	-	-
HEIGHT	43'	-	-
ZONE	SU-2 (IP)	-	-
SPRINKLER	NFPA-13	-	-

SURFACE MATERIALS LIST

E.I.F.S. CARDAMON #3052 CLASSIC FINISH

E.I.F.S. BISCUIT #3100 CLASSIC FINISH

E.I.F.S. EDELWEISS #3045 CLASSIC FINISH

FASCIA AND SOFFIT COLOR: CAMEO (VINYL) OR GLIDDEN PAINT #40YY83 / 063

SIMULATED DRY STACK STONE

GUTTER AND DOWN SPOUT PAINTED TO MATCH ADJACENT E.F.I.S. AT WALLS AND BANDS

P.T.A.C. GRILL PAINTED TO MATCH ADJACENT E.F.I.S.

MOLDED DECORATIVE LOUVER COLOR TO MATCH CARDAMON E.F.I.S

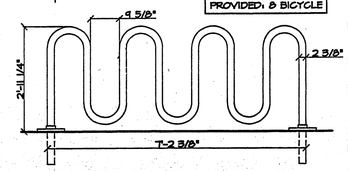
CONCRETE TILE ROOF: COLOR LIGHT GREEN

NOTE: SEE SHEET A2.1 FOR DETAILS
E.I.F.S. COLORS PER SENERGY CONTRACTOR MUST GET IHG APPROVAL FOR MATCH

RATIO : 1 BICYCLE/ 20 PARKING

REQUIRED: 5 BICYCLE/ 93 PARKING

PROVIDED: 8 BICYCLE



3 BIKE RACK DETAIL
SCALE 1/2" = 1'-0"

Staybridge Suites

site development plan for building permit

albuquerque, new mexico

RECEIVED MAY 3 2007 HYDROLOGY SECTION

drawn:	trh
checked:	L.K.Lauver
start date:	2.25.04
plot date:	8.16.04
approved:	

revisions:

7.2.04 trh
6.14.04 trh
trh 6.1.04

STATE OF NEW MEXICO LEON K. LAUVER NO. 3363 REGISTERED ARCHITECT

architect's seal:

leon lauver + associates architects + consultants
p. o. box number 1207
norfolk, nebraska 68701
voice: 1.402.371.3333
fax: 1.402.371.1164

job no: 455

sheet: G2.1

LEGEND:

EXISTING	DESCRIPTION
20	CONTOUR
20.00	SPOT ELEVATION
	PROPERTY LINE
	SWALE
	SHEET FLOW
	ROOF FLOW

LEGEND

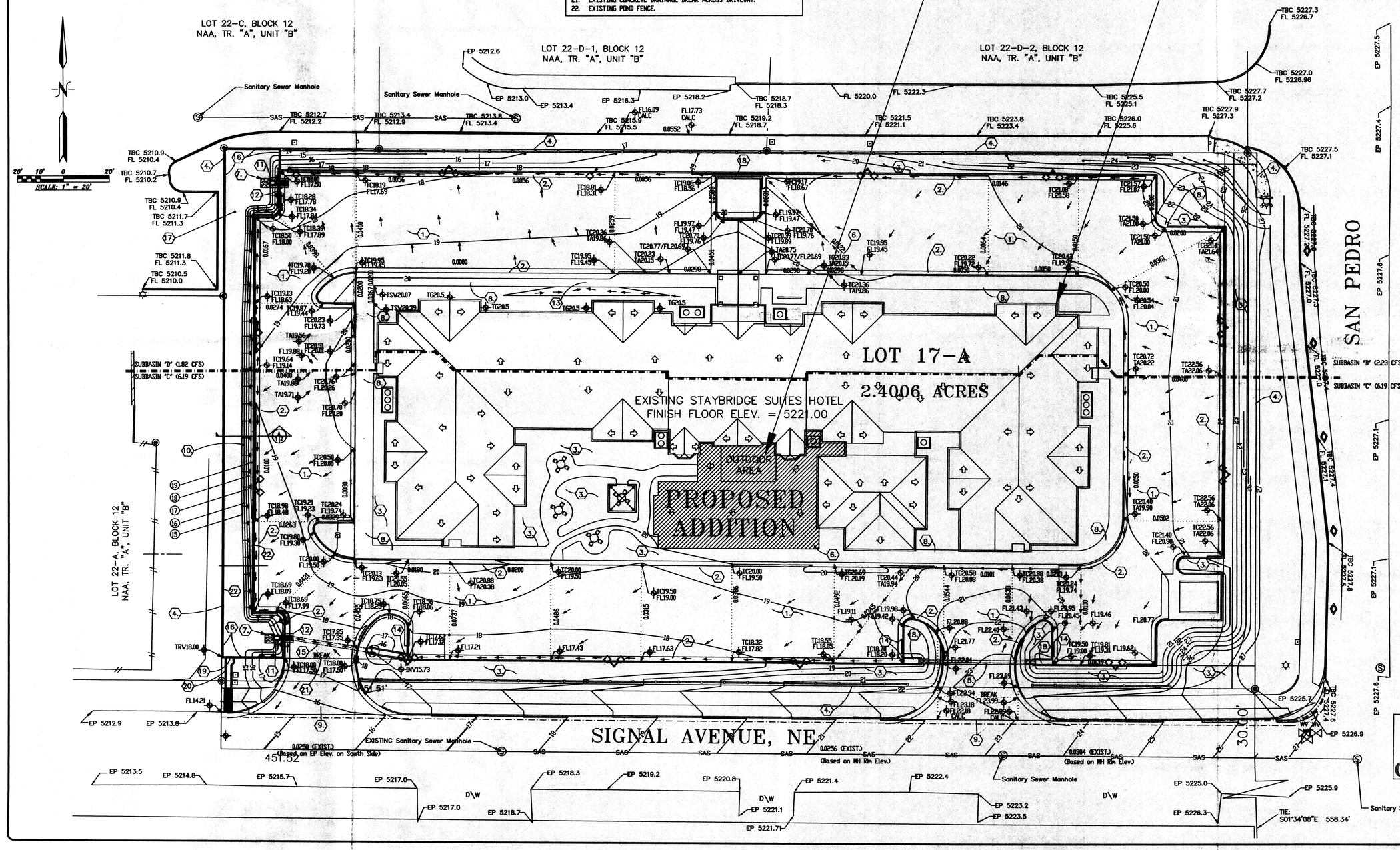
TC = TOP OF CONCRETE
FL = FLOW LINE
TG = TOP OF GRADE
EOW = END OF WALL

LEGAL DESCRIPTION:
LOTS 17-A, BLOCK 12, TRACT A, UNIT B, NORTH ALBUQUERQUE ACRES.

ZONE ATLAS NO. C-18-Z

KEYED NOTES

1. EXISTING ASPHALT PAVEMENT.
2. EXISTING CURB AND GUTTER, 6" CURB HEIGHT.
3. EXISTING LANDSCAPING.
4. EXISTING PROPERTY LINE.
5. EXISTING 12" DIA. PVC PIPE.
6. PROPOSED MEETING ROOM ADDITION
7. EXISTING CONCRETE SPLASH PAD
8. EXISTING CONCRETE SIDEWALK.
9. EXISTING PRIVATE ENTRANCE.
10. EXISTING REINFORCED CONCRETE SLOPE PAVING, 1 TO 1 SLOPE.
11. EXISTING 15" DIA. PVC PIPE. MITER END FLUSH W/ SLOPE PAVING.
12. EXISTING SINGLE D INLET.
13. EXISTING 12" WIDE SIDEWALK CULVERT.
14. EXISTING 2' WIDE CURB OPENING FOR DRAINAGE.
15. EXISTING 15" DIA. PVC PIPE.
16. EXISTING POND RETAINING WALL.
17. EXISTING DETENTION POND.
18. EXISTING 2' WIDE CONCRETE CHANNEL.
19. EXISTING 3 - 6" PIPES. POND POSITIVE DISCHARGE.
20. EXISTING CONCRETE CHANNEL FROM POND TO SW CULV
21. EXISTING CONCRETE DRAINAGE BREAK ACROSS DRIVEWAY.
22. EXISTING POND FENCE.



SANTOSH B. MODY
NEW MEXICO
16780
LICENSED PROFESSIONAL ENGINEER
5/31/11

GRADING AND DRAINAGE PLAN
STAYBRIDGE SUITES HOTEL
MEETING ROOM ADDITION
ALBUQUERQUE, NEW MEXICO

Santosh Mody, P.E.
(505) 797-9997 * Fax (505) 797-7775 * 6912 Snide Ave. NE * Albuquerque, NM * 87113

JOB NO:
DATE: MAY 31,2011
REVISIONS

RECEIVED
AUG 09 2011
HYDROLOGY SECTION

SHEET NO. 1 OF 2

DRAINAGE CALCULATIONS:

A. EXISTING CONDITIONS:

The site is located at the northwest corner of San Pedro Drive and Signal Avenue NE.
The site consists of a single approximately three acre lot with no existing flows entering the site.

An existing extended-stay hotel is located on the site, containing asphalt parking areas and drainage facilities, including an existing detention pond on the west side of the site.
The detention drains into Signal Avenue.

B. PROPOSED CONDITIONS:

It is proposed to construct a new meeting room addition in the south courtyard area of the existing hotel. The additional storm runoff created by the addition will be directed by overland flow through the parking lot into the existing detention pond.

C. DRAINAGE CRITERIA:

The calculations shown on this plan were prepared in accordance with Section 22.2, Hydrology, of the Development Process Manual, Volume 2, Design Criteria, for the City of Albuquerque in cooperation with Bernalillo County, New Mexico and the Metropolitan Arroyo Flood Control Authority, October, 2008 Revision.

D. PRECIPITATION ZONE:

Other studies in the area identified the precipitation zone as being Zone 2.

E. LAND TREATMENT AREAS:

The peak discharge per acre and excess precipitation are shown for the four land treatments in Zone 2 in the table below, and the values shown are from the City of Albuquerque D.P.M. Also shown are the existing and proposed land treatment areas.

LAND TREAT.	q(cfs/ac) 100-yr.	q(cfs/ac) 10-yr.	E (in) 100-yr.	E (in) 10-yr.	Existing Site Areas %	Existing Site Areas Sq.Ft.	Existing Site Areas Acres	Proposed Site Areas %	Proposed Site Areas Sq.Ft.	Proposed Site Areas Acres
A	1.56	0.38	0.53	0.13	0.0	0	0.0000	0.0	0	0.0000
B	2.28	0.95	0.78	0.28	26.4	27,885	0.6402	24.1	25,526	0.5860
C	3.14	1.71	1.13	0.52	0.0	0	0.0000	0.0	0	0.0000
D	4.70	3.14	2.12	1.34	73.6	77,817	1.7864	75.9	80,176	1.8406
Totals					100.0	105,702	2.4266	100.0	105,702	2.4266

F. PEAK DISCHARGE:

EXISTING CONDITIONS:
Q100 = 0.6402 x 2.28 + 1.7864 x 4.70 = 9.86 cfs
Q10 = 0.6402 x 0.95 + 1.7864 x 3.14 = 6.22 cfs

PROPOSED CONDITIONS:
Q100 = 0.5860 x 2.28 + 1.8406 x 4.70 = 9.98 cfs
Q10 = 0.5860 x 0.95 + 1.8406 x 3.14 = 6.33 cfs

G. VOLUME, 100-YEAR AND 10-YEAR, 6-HOUR:

EXISTING CONDITIONS:

V100 = (27,885 x 0.78 + 77,817 x 2.12) / 12 = 15,560 cf
V10 = (27,885 x 0.28 + 77,817 x 1.34) / 12 = 9,340 cf

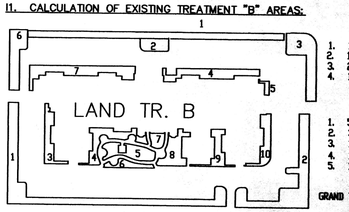
PROPOSED CONDITIONS:

V100 = (25,526 x 0.78 + 80,176 x 2.12) / 12 = 15,823 cf
V10 = (25,526 x 0.28 + 80,176 x 1.34) / 12 = 9,548 cf

H. SUMMARY OF ON-SITE VOLUMES AND PEAK DISCHARGE RATES:

	V100(CF)	V10(CF)	Q100(CFS)	Q10(CFS)
PROPOSED	15,823	9,548	9.98	6.33
EXISTING	15,560	9,340	9.86	6.22
INCREASE	263	208	0.12	0.11

I1. CALCULATION OF EXISTING TREATMENT "B" AREAS:

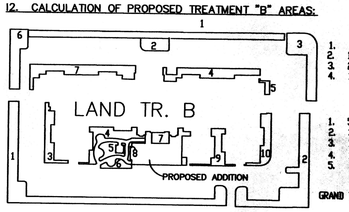


NORTH
1. 1,535 5. 161
2. 1,147 6. 1,583
3. 2,262 7. 2,192
4. 1,650
TOT. 10,530

SOUTH
1. 5,616 SF 6. 501 SF
2. 3,858 SF 7. 416 SF
3. 1,038 SF 8. 1,309 SF
4. 1,418 SF 9. 884 SF
5. 1,266 SF 10. 1,049 SF
TOT. 17,355 SF

GRAND TOTAL TREAT. B = 27,885

I2. CALCULATION OF PROPOSED TREATMENT "B" AREAS:



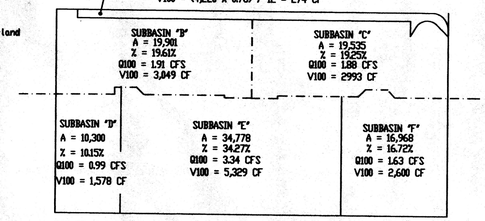
NORTH
1. 1,535 5. 161
2. 1,147 6. 1,583
3. 2,262 7. 2,192
4. 1,650
TOT. 10,530

SOUTH
1. 5,616 SF 6. 348 SF
2. 3,858 SF 7. 399 SF
3. 1,038 SF 8. 32 SF
4. 1,201 SF 9. 884 SF
5. 551 SF 10. 1,049 SF
TOT. 14,996 SF

GRAND TOTAL TREAT. B = 25,526

J. SUBBASIN AREAS AND QUANTITIES:

SUBBASIN "A", WHICH IS NORTH 1, 2 AND A PORTION OF 3 IN THE SCHEMATIC, CANNOT BE MADE TO DRAIN TO THE DETENTION POND.
AREA = 4,220 SF (0.0969 Ac.) All Treat. B
Q100 = 2.28 cfs/ acre x 0.0969 acre = 0.22 cfs
V100 = (4,220 X 0.78) / 12 = 274 CF



THE REMAINDER OF THE SITE, (105,702 - 4,220 = 101,482 SQ. FT.), IS DIVIDED INTO SUBBASINS AND THE PEAK DISCHARGE IS PRORATED BASED ON THE PERCENTAGE OF AREA OF THE SUBBASIN TO THE TOTAL SITE AS SHOWN ABOVE.
THE QUANTITY OF PEAK DISCHARGE PRORATED IS 9.98 - 0.22 = 9.76 CFS
THE QUANTITY OF V100 PRORATED IS 15,823 - 274 = 15,549 CF

K. SUMMARY OF FLOW QUANTITIES DRAINING TO POND:

TOTAL SITE
TREATMENT B = 25,526 SF
TREATMENT D = 80,176 SF
TOTAL AREA = 105,702 SF

PORTION DRAINING TO POND
TOTAL AREA = 101,482 SF 100.00%
TREATMENT B = 25,526 SF - 4,220 SF = 21,306 SF 20.99%
TREATMENT D = 101,482 SF - 21,306 SF = 80,176 SF 79.01%

TOTAL ON-SITE DISCHARGE = 9.98 CFS
LESS SUBBASIN "A" = 0.22 CFS
TOTAL DISCHARGING TO POND = 9.76 CFS

L. ALLOWABLE DISCHARGE:

Please refer to Alameda Development Grading and Drainage Plan. This site is not within the boundary of the referenced plan but the plan shows an off-site flow coming from the previously undeveloped area which is this site. The quantity of 100-year undeveloped off-site flow shown to be coming from this area is 4.65 cfs.

It is necessary to discharge Subbasin "A" directly into the access easement North of the site. Subbasin "A" is landscaping that cannot be captured and caused to drain into the detention pond. The Q100 from Subbasin "A" is 0.22 cfs, an almost negligable quantity. The allowable discharge from the detention pond is, therefore, 4.65 cfs - 0.22 cfs = 4.43 cfs

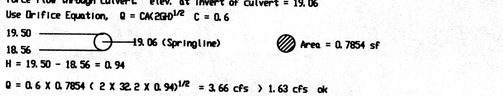
M. CAPACITY OF EXISTING CURB OPENINGS:

Use Weir Equation $Q = C\,L\,H^{3/2}$
Subbasin "C" (1.86 CFS) C = 2.65 L = 2.0 H = 0.5
$Q = 2.65 \times 2.0 \times 0.5^{3/2} = 1.87$ CFS (ADEQUATE)

Subbasin "F" (1.63 CFS) C = 2.65 L = 1.5 H = 0.5
$Q = 2.65 \times 1.5 \times 0.5^{3/2} = 1.40$ cfs
1.40 cfs < 1.63 cfs (1.5' OPENING IS ADEQUATE BECAUSE THE MINOR AMOUNT OF OVERFLOW WILL SIMPLY FLOW OVER THE CURB.
Subbasins "E" + "F" (3.34 CFS + 1.63 CFS) = 4.97 CFS
C = 2.65 L = 1.5 H = 0.30 (2.5' WIDE OPENING)
$Q = 2.65 \times 1.5 \times 0.50^{3/2} = 1.41$ cfs The width of opening is not sufficient but the excess will overflow the curb.

N. CAPACITY OF EXISTING CULVERTS:

SUBBASIN "F", CULVERT UNDER E. DRIVEWAY: Design Q = 1.63 cfs
Ponding to occur in parking lot to elevation 19.75 on occasion as required to force flow through culvert. elev. at invert of culvert = 19.06
Use Orifice Equation, $Q = CA(2GH)^{1/2}$ C = 0.6



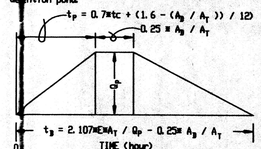
H = 19.50 - 18.56 = 0.94
$Q = 0.6 \times 0.7854 (2 \times 32.2 \times 0.94)^{1/2} = 3.66$ cfs > 1.63 cfs ok

SUBBASINS "E" & "F", CULVERT UNDER W. DRIVEWAY: Design Q = 3.34 + 1.63 = 4.97 CFS

Use Orifice Equation, $Q = CA(2GH)^{1/2}$ C = 0.6 Area = 1.2272 sf for 15" PVC Culvert.
High Water Elevation = 17.62 Invert = 16.62 H = (17.62 - 15.73) - 0.625 = 1.265 ft.
$Q = 0.6 \times 1.2272 (2 \times 32.2 \times 1.265)^{1/2} = 6.65$ cfs > 4.97 cfs ok

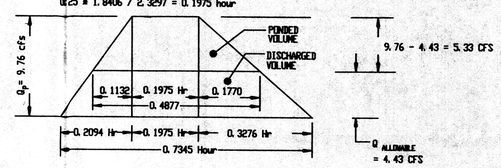
O. EXISTING DETENTION POND ANALYSIS:

The existing detention pond accommodates the combined areas of Subbasins "C" and "D".
The hydrograph method shown below was used to determine the required volume of the detention pond.



SUBBASINS DRAINING TO DETENTION POND:
E = (0.78 x 21,306 + 2.12 x 80,176) / 101,482 = 1.8387 IN.
A_T = 21,306 + 80,176 = 101,482 SF = 2.3297 AC
A_B = 80,176 sf (1.8406 ac)
Q_P = 9.76 CFS
$t_B = 2.107 \times 1.8075 \times 2.3297 / 9.76 - 0.25 \times (1.7864 / 2.3297) = 0.9091 - 0.1917 = 0.7174$ hour.
$t_P = 0.7 \times tc + (1.6 - (A_B / A_T)) / 12)$
$t_P = (0.7 \times 0.2) + (1.6 - (1.8406 / 2.3297)) / 12)$
$t_P = 0.14 + (1.6 - (0.7901)) / 12) = 0.2075$ HR

Continue the peak for 0.25 A_B / A_T hours.
$0.25 \times 1.8406 / 2.3297 = 0.1975$ hour



TOTAL VOLUME:
V = ((9.76) X 1/2(0.1975 + 0.7345))x3600 = 16,374 CF
VOLUME CALCULATED FOR AREA DRAINING TO POND = 15,823 CF
(16374 - 15,823) = 551 (551 / 15,823)100 = 3.48 % HIGHER

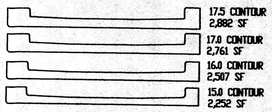
PONDED VOLUME:
V = (5.33 X 1/2(0.1975 + 0.4877) X 3600 = 6,574 CF
DISCHARGED VOLUME:
V = (4.43 X 1/2(0.4877 + 0.7345) X 3600 = 9,746 CF
V = 6,574 + 9,746 = 16,320
Since the volume calculated by the hydrograph method is 3.48% higher than the volume calculated in Section G, the ponded volume should be reduced by that same amount.
6,574 - (6,574 x 0.0348) = 6,345 cf

P. EXISTING DETENTION POND VOLUME:

The detention pond is formed by a retaining wall on the West property line and by the paved slope on the East.

CONTOUR	AREA (SF)	AVE. AREA (SF)	VERT. DIST. (FT)	VOLUME (CF)
17.5	2,882			
		2,822	0.5	1,411
17.0	2,761			
		2,634	1.0	2,634
16.0	2,507			
		2,380	1.0	2,380
15.0	2,252			
TOTAL				6,425 > 6,345 ok

OK



Q. EXISTING DETENTION POND POSITIVE DISCHARGE:

Allowable discharge rate is 4.43 cfs. Use Orifice Equation $Q = CA(2GH)^{1/2}$
H = Vert. Dist. from Springline of 6" Pipe to Top of Spillway = (17.50 - 14.77) - 0.25 = 2.48'
Area = 0.1963 sf
$Q = 0.6 \times 0.1963 (2 \times 32.2 \times 2.48)^{1/2}$ = 1.49 CFS per pipe orifice.
3 X 1.49 = 4.47 CFS > 4.43 CFS (ADEQUATE)
CAPACITY OF 2' WIDE CONCRETE CHANNEL. DEPTH = 6" AREA = 1.0 P = 3.0 R = 1/3 = 0.33
$Q = AV = A (1.486/N) R^{2/3} S^{1/2} = 1.0 (1.486 / 0.013) (0.33)^{2/3} (0.02)^{1/2} = 7.71$ CFS > 4.43 ok

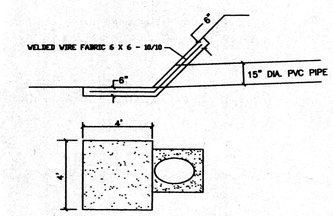
R. EXISTING DETENTION POND SPILLWAY:

The spillway is the west driveway. The drainage break even with the south end of the pond is set at elevation 17.50 which is the high water level of the pond. On the extremely rare occasion when the pond fills to maximum level, water will flow over the drainage break and out into Signal Avenue.

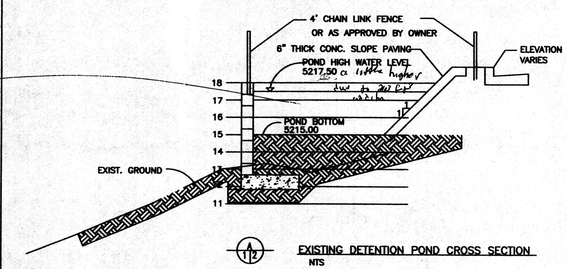
Use Weir Equation $Q = C\,L\,H^{3/2}$
THE WIDTH OF THE WEIR WILL BE THE WIDTH OF THE DRIVEWAY, WHICH IS 30'.
5 X 1.33 = 6.65 FEET.
C = 2.65 L = 30.00 H = 0.25
$Q = 2.65 \times 30.00 \times 0.25^{3/2} = 9.93$ CFS > 9.76 CFS (ADEQUATE)

GENERAL NOTES

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AS SOON AS POSSIBLE TO RESOLVE THE CONFLICT WITH A MINIMUM AMOUNT OF DELAY.
2. ALL WORK ON THIS PLAN SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
3. IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS, THEY ARE SHOWN IN AN APPROXIMATE LOCATION ONLY, AND LINES MAY EXIST WHERE NONE ARE SHOWN. THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE UTILITY OWNER OR FROM EXISTING PLANS, AND THIS INFORMATION MAY BE INCOMPLETE, OR OBSOLETE AT THE TIME OF CONSTRUCTION. THE ENGINEER HAS NOT UNDERTAKEN ANY FIELD VERIFICATION OF THESE LOCATIONS, LINE SIZES OR MATERIAL TYPE, MAKES NO REPRESENTATION THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATIONS OF ANY UTILITY LINE, PIPELINE OR UNDERGROUND INSTALLATION IN OR NEAR THE AREA IN ADVANCE OF OR DURING ANY EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES AND UNDERGROUND FACILITIES. IN PLANNING AND CONDUCTING EXCAVATIONS, THE CONTRACTOR SHALL COMPLY WITH ALL STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.
4. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHTS-OF-WAY OR ONTO PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AND BY WETTING THE SOIL TO KEEP IT FROM BLOWING.
5. THE CONTRACTOR SHALL OBTAIN ANY AND ALL PERMITS REQUIRED BY THE CITY OF ALBUQUERQUE FOR THE COMPLETION OF THE WORK PRIOR TO BEGINNING CONSTRUCTION.



EXISTING CULVERT INLET HEADER AND SPLASH PAD
1/4" = 1'-0"



EXISTING DETENTION POND CROSS SECTION
NTS

RECEIVED
AUG 09 2011
HYDROLOGY SECTION

SANTOSH B. MODY
NEW MEXICO
16780
PROFESSIONAL ENGINEER
5/31/11

DRAINAGE CALCULATIONS
STAYBRIDGE SUITES HOTEL
MEETING ROOM ADDITION
ALBUQUERQUE, NEW MEXICO

Santosh Mody, P.E.
(505) 797-9997 • Fax (505) 797-7775 • 6912 Slide Ave. NE • Albuquerque, NM • 87113

JOB NO:
DATE: MAY 31, 2011
REVISIONS

SHEET NO.
2
OF
2

CITY OF ALBUQUERQUE
DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY (S. O. 19)
NOTICE TO CONTRACTORS

1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY. AN APPROVED COPY OF THESE PLANS MUST BE SUBMITTED AT THE TIME OF APPLICATION FOR THIS PERMIT.
2. ALL WORK DETAILED ON THIS PLAN TO BE PERFORMED UNDER CONTRACT, EXCEPT AS OTHERWISE STATED OR PROVIDED FOR HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986, AS UPDATED THROUGH REVISION NO. 6.
3. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM, INC., 260-1990, FOR LOCATION FOR EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL 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 THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
7. WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS.

APPROVAL FOR SV CULVERTS	NAME	DATE
INSPECTOR:		

LEGAL DESCRIPTION:

LOTS 17, 18, AND 19, BLOCK 12, TRACT A, UNIT B, NORTH ALBUQUERQUE ACRES.

LEGEND:

EXISTING	NEW	DESCRIPTION
5220	20	CONTOUR
20.00	20.00	SPOT ELEVATION
		PROPERTY LINE
		SWALE
		SHEET FLOW
		ROOF FLOW

LEGEND

TC = TOP OF CONCRETE
FL = FLOW LINE
TG = TOP OF GRADE
EOW = END OF WALL

NOTE:

ALL WORK OUTSIDE OF THE PROPERTY LINES OF THIS SITE MUST BE CONSTRUCTED BY A C. O. A. APPROVED CONTRACTOR UNDER THE WORK ORDER PROCESS. FOR SIDEWALK CULVERT SEE S. D. 19 THIS SHEET.

NOTE ON FORMER LANDFILL:

THE SUBJECT PROPERTY IS LOCATED NEAR A FORMER LANDFILL. DUE TO THE SUBJECT PROPERTY BEING NEAR A FORMER LANDFILL, CERTAIN PRECAUTIONARY MEASURES MAY NEED TO BE TAKEN TO ENSURE THE HEALTH AND SAFETY OF THE PUBLIC. RECOMMENDATIONS MADE BY A PROFESSIONAL ENGINEER WITH EXPERTISE IN LANDFILLS AND LANDFILL GAS ISSUES SHALL BE CONSULTED PRIOR TO DEVELOPMENT OF THE SITE.

KEYED NOTES

1. NEW ASPHALT PAVEMENT.
2. NEW CURB AND GUTTER, 6" CURB HEIGHT.
3. LANDSCAPING.
4. PROPERTY LINE.
5. 12" DIA. PVC PIPE W/ MITERED ENDS & SLOPED HEADWALLS EACH END. SLOPE = 0.0050 FT./FT. INV. IN = 18.56 INV. OUT = 18.24
6. NOT USED.
7. 4'-0" X 4'-0" X 6" THICK CONCRETE SPLASH PAD (SEE DETAIL SHT. 2.) — NOT BUILT
8. NEW CONCRETE SIDEWALK.
9. PRIVATE ENTRANCE PER STD. DWG 2426.
10. REINFORCED CONCRETE SLOPE PAVING, 1 TO 1 SLOPE.
11. 15" DIA. PVC PIPE. MITER END FLUSH W/ SLOPE PAVING. INV. = 15.00
12. SINGLE D INLET PER C. O. A. STD. DWG 2206. GR. = ~~17.00~~ 16.87 INV. = ~~15.20~~ 14.75
13. 12" WIDE SIDEWALK CULVERT.
14. 2" WIDE CURB OPENING FOR DRAINAGE.
15. 15" DIA. PVC PIPE, 35.0 LF S = 0.0123 FT/FT INV. OUT = 15.30 INV. IN = 15.73. PAVEMENT ABOVE PIPE TO SWALE TO INLET. S = 0.0100
16. POND RETAINING WALL. SEE DETAILS, SHT. 3.
17. DETENTION POND. BOTTOM ELEV. = 15.00 TOP RET. WALL = 18.00 TOP SPILLWAY = 17.50 INVERT ELEV. OF POS. DISCH. PIPES =14.75
18. 2" WIDE CONCRETE CHANNEL. (SEE DETAIL, SHEET 3 OF 3.)
19. 3 - 6" PIPES. POND POSITIVE DISCHARGE. SEE DETAIL SHT. 3 OF 3.
20. CONCRETE CHANNEL FROM POND TO SW CULV. SEE DETAIL, SHT. 3 OF 3.
21. CONCRETE DRAINAGE BREAK ACROSS DRIVEWAY TO SERVE AS POND SPILLWAY.
22. POND FENCE. SEE DETAIL SHEET 2 OF 3 AND 3 OF 3.

CERTIFICATION WITH VERFICATION BY ENGINEER OF RECORD

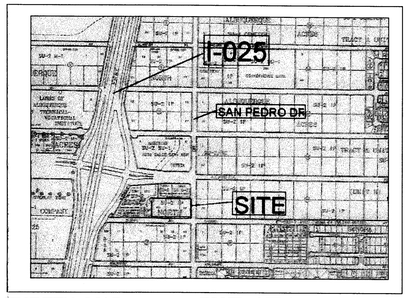
I, FRANK D. LOVELADY, NMPE 6512 OF THE FIRM FRANK D. LOVELADY P.E. HEREBY CERTIFY THAT THIS PROJECT HAS BEEN GRADED AND WILL DRAIN IN SUBSTANTIAL COMPLINACE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED 04-12-2006. THE RECORD INFORMATION EDITED ONTO THE ORIGINAL DESIGN DOCUMENT HAS BEEN OBAINED BY DOUGLAS SMITH, PLS.

I FURTHER CERTIFY THAT I HAVE PERSONALLY VISITED THE PROJECT SITE ON 04-12-07 AND HAVE DETERMINED BY VISUAL INSPECTION THAT THE SURVEY DATA PROVIDED IS REPRESENTATIVE OF ACTUAL SITE CONDITIONS AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF A REQUEST FOR PERMANANT CERTIFICATE OF OCCUPANCY.

THE RECORD INFORMATION PRESENTED HEREON IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE GRADING AND DRAINAGE ASPECTS OF THIS PROJECT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.

FRANK D. LOVELADY
NMPE 6512
April 23, 2007
DATE

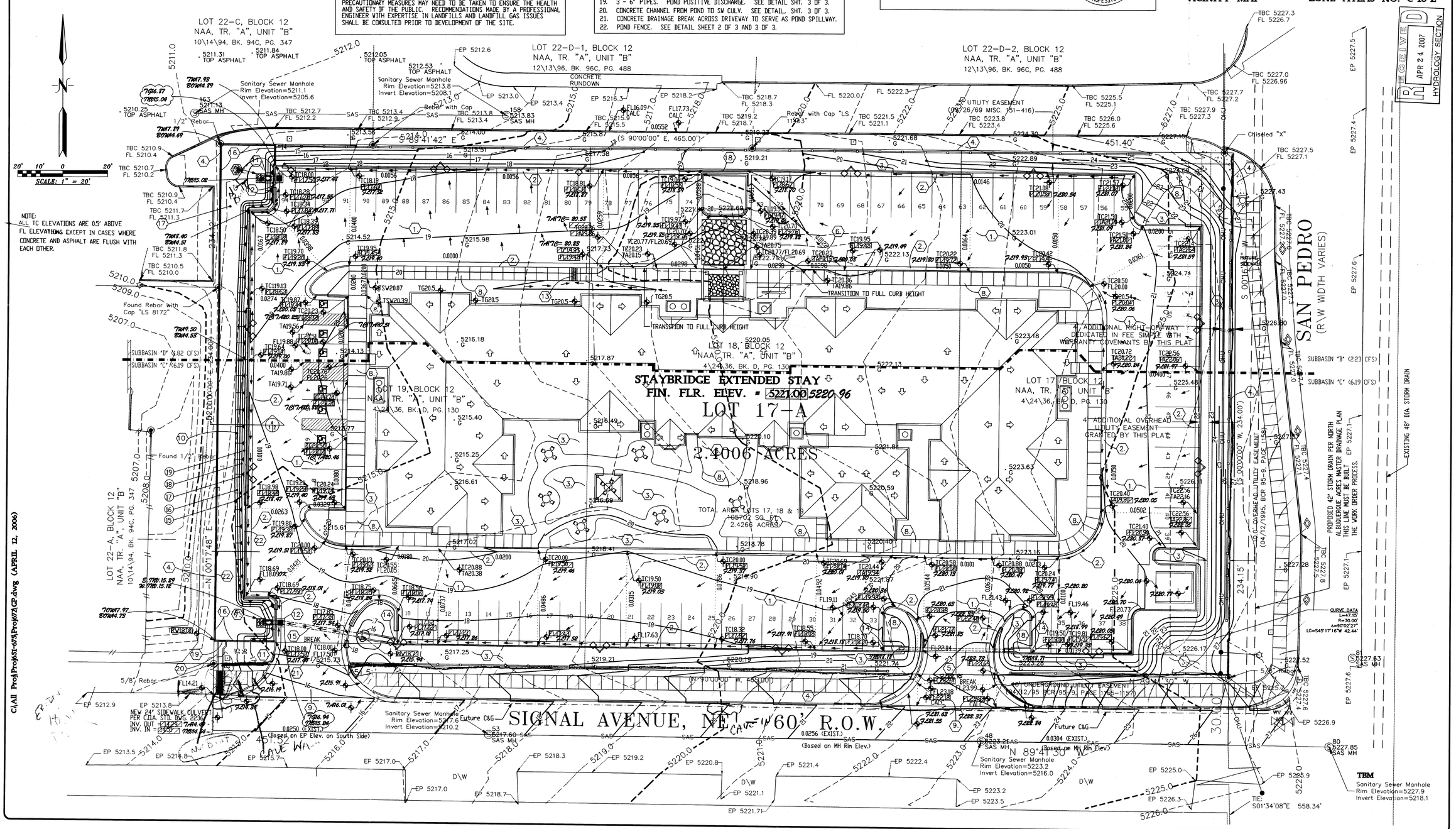
FRANK D. LOVELADY NEW MEXICO 6512 REGISTERED PROFESSIONAL ENGINEER



VICINITY MAP ZONE ATLAS NO. C-18-Z

FRANK D. LOVELADY NEW MEXICO 6512 REGISTERED PROFESSIONAL ENGINEER
JUNE 04, 2004
Revised 04/12/06

CONCEPTUAL GRADING AND DRAINAGE PLAN
STAYBRIDGE EXTENDED STAY
SIGNAL AVENUE NE
ALBUQUERQUE, NEW MEXICO



RECEIVED APR 24 2007 HYDROLOGY SECTION

FRANK D. LOVELADY, P.E.
(505) 345-2267 • Fax (505) 345-2115 • 300 ALAMOSA RD. NW • Albuquerque, NM • 87107

JOB NO: 672
DATE: APRIL 12, 2006
REVISIONS

SHEET NO. 1 OF 3

C:\All Proj\Project-673\Proj673GP.dwg (APRIL 12, 2006)

-1003483-

DRAINAGE CALCULATIONS:

A. EXISTING CONDITIONS:

The site is located at the northwest corner of San Pedro Drive and Signal Avenue NE. The lot slopes from East to West. San Pedro Drive is paved with curb and gutter on the West side adjacent to the site. The site consists of three one-acre lots. Signal Avenue is surfaced without curb and gutter. North of the site, across the access easement, which is paved with curb and gutter, there is a convenience center and a preowned auto dealership. West of the site is a Comfort Suites motel.

B. DEVELOPED CONDITIONS:

It is proposed to construct a new extended-stay facility on the site as shown. Asphalt parking will surround the building on all sides. All storm runoff will be directed through the parking lot to a detention pond on the West side of the site. The detention pond will discharge into Signal Avenue.

C. DRAINAGE CRITERIA:

The calculations shown on this plan were prepared in accordance with Section 22.2, Hydrology, of the Development Process Manual, Volume 2, Design Criteria, for the City of Albuquerque in cooperation with Bernalillo County, New Mexico and the Metropolitan Arroyo Flood Control Authority, January, 1993.

D. PRECIPITATION ZONE:

Other studies in the area identified the precipitation zone as being Zone (2) 3

E. LAND TREATMENT AREAS:

The peak discharge per acre and excess precipitation are shown for the four land treatments in Zone 2 in the table below, and the values shown are from the City of Albuquerque D.P.M. Also shown are the existing and proposed land treatment areas.

LAND TREAT.	q(cfs/ac) 100-yr.	q(cfs/ac) 10-yr.	E (in) 100-yr.	E (in) 10-yr.	Existing Site Areas %	Existing Site Areas Sq Ft.	Existing Site Areas Acres	Developed Site Areas %	Developed Site Areas Sq Ft.	Developed Site Areas Acres
A	1.56	0.38	0.53	0.13	100.0	105,702	2.4266	0.0	0	0.0000
B	2.28	0.95	0.78	0.28	0.0	0	0.0000	26.4	27,885	0.6402
C	3.14	1.71	1.13	0.52	0.0	0	0.0000	0.0	0	0.0000
D	4.70	3.14	2.12	1.34	0.0	0	0.0000	73.6	77,817	1.7864
Totals					100.0	105,702	2.4266	100.0	105,702	2.4266

F. PEAK DISCHARGE:

EXISTING CONDITIONS:

Q100 = 2.4266 * 1.56 = 3.79 cfs 4.5 cfs
Q10 = 2.4266 * 0.38 = 0.92 cfs

DEVELOPED CONDITIONS:

Q100 = 0.6402 * 2.28 + 1.7864 x 4.70 = 9.86 cfs 10.6 cfs
Q10 = 0.6402 * 0.95 + 1.7864 * 3.14 = 6.22 cfs

G. VOLUME, 100-YEAR AND 10-YEAR, 6-HOUR:

EXISTING CONDITIONS:

V100 = (105,702 * 0.53) / 12 = 4,669 cf
V10 = (105,702 * 0.13) / 12 = 1,145 cf

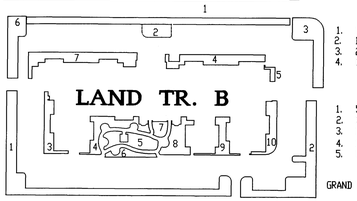
DEVELOPED CONDITIONS:

V100 = (27,885 * 0.78 + 77,817 * 2.12) / 12 = 15,560 cf
V10 = (28,885 * 0.28 + 77,817 * 1.34) / 12 = 9,364 cf

H. SUMMARY OF ON-SITE VOLUMES AND PEAK DISCHARGE RATES:

	V100(CF)	V10(CF)	Q100(CFS)	Q10(CFS)
DEVELOPED	15,560	9,364 10.6	9.86	6.22
EXISTING	4,669	1,145 4.5	3.79	0.92
INCREASE	10,891	8,219 6.1	6.70	5.30

I. CALCULATION OF TREATMENT "B" AREAS:



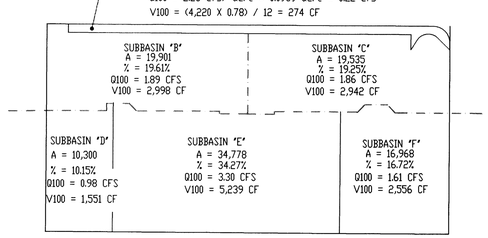
NORTH
1. 1,535 5. 161
2. 1,147 6. 1,583
3. 2,262 7. 2,192
4. 1,650
TOT. 10,530

SOUTH
1. 5,616 SF 6. 501 SF
2. 3,858 SF 7. 416 SF
3. 1,038 SF 8. 1,309 SF
4. 1,418 SF 9. 884 SF
5. 1,266 SF 10. 1,049 SF
TOT. 17,355 SF

GRAND TOTAL TREAT. B = 27,885

J. SUBBASIN AREAS AND QUANTITIES:

SUBBASIN 'A', WHICH IS NORTH 1, 2 AND A PORTION OF 3 IN THE ABOVE SCHEMATIC, CANNOT BE MADE TO DRAIN TO THE DETENTION POND.
AREA = 4,220 SF (0.0969 Ac.) All Treat. B
Q100 = 2.28 cfs/ acre * 0.0969 acre = 0.22 cfs
V100 = (4,220 X 0.78) / 12 = 274 CF



THE REMAINDER OF THE SITE,(105,702 - 4,220 = 101,482 SQ. FT.) IS DIVIDED INTO SUBBASINS AND THE PEAK DISCHARGE IS PRORATED BASED ON THE PERCENTAGE OF AREA OF THE SUBBASIN TO THE TOTAL SITE AS SHOWN ABOVE.
THE QUANTITY OF PEAK DISCHARGE PRORATED IS 9.86 - 0.22 = 9.64 CFS
THE QUANTITY OF V100 PRORATED IS 15,560 - 274 = 15,286 CF

K. FLOW QUANTITIES DRAINING TO POND:

TOTAL SITE
TREATMENT B = 27,885 SF
TREATMENT D = 77,817 SF
TOTAL AREA = 105,702 SF

PORTION DRAINING TO POND.
TOTAL AREA = 101,482 SF 100.00%
TREATMENT B = 27,885 SF - 4,220 SF = 23,665 SF 23.32%
TREATMENT D = 101,482 SF - 23,665 SF = 77,817 SF 76.68%

TOTAL ON-SITE DISCHARGE = 9.86 CFS
LESS SUBBASIN 'A' = 0.22 CFS
TOTAL DISCHARGING TO POND = 9.64 CFS

L. ALLOWABLE DISCHARGE: [See North Albuquerque Acres Master Plan]

Please refer to Alameda Development Grading and Drainage Plan. This site is not within the boundary of the referenced plan but the plan shows an off-site flow coming from the undeveloped area which is this site. The quantity of 100-year undeveloped off-site flow shown to be coming from this area is 4.65 cfs.

It is necessary to discharge Subbasin 'A' directly into the access easement North of the site. Subbasin 'A' is landscaping that cannot be captured and caused to drain into the detention pond. The Q100 from Subbasin 'A' is 0.22 cfs, an almost negligable quantity. The allowable discharge from the detention pond is, therefore, 4.65 cfs - 0.22 cfs = 4.43 cfs

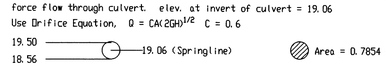
M. CAPACITY OF CURB OPENINGS:

Use Weir Equation $Q = C\,L\,H^{3/2}$
Subbasin 'C' (1.86 CFS) C = 2.65 L = 2.0 H = 0.5
$Q = 2.65 \times 2.0 \times 0.5^{3/2} = 1.87$ CFS (ADEQUATE)

Subbasin 'F' (1.61 CFS) C = 2.65 L = 1.5 H = 0.5
$Q = 2.65 \times 1.5 \times 0.5^{3/2} = 1.40$ cfs
1.40 cfs < 1.61 cfs (1.5' OPENING IS ADEQUATE BECAUSE THE MINOR AMOUNT OF OVERFLOW WILL SIMPLY FLOW OVER THE CURB.
Subbasins 'E' + 'F' (3.30 CFS + 1.61 CFS) = 4.91 CFS
C = 2.65 L = 1.5 H = 0.30 (2.5' WIDE OPENING)
$Q = 2.65 \times 1.5 \times 0.50^{3/2} = 1.41$ cfs The width of opening is not sufficient but the excess will overflow the curb.

N. CAPACITY OF CULVERTS:

SUBBASIN 'F' , CULVERT UNDER E. DRIVEWAY: Design Q = 1.61 cfs
Ponding to occur in parking lot to elevation 19.75 on occasion as required to force flow through culvert. elev. at invert of culvert = 19.06
Use Orifice Equation, $Q = CA(2GH)^{1/2}$ C = 0.6



H = 19.50 - 18.56 = 0.94

$Q = 0.6 \times 0.7854 \times (2 \times 32.2 \times 0.94)^{1/2} = 3.66$ cfs > 1.60 cfs (Adequate.)

SUBBASINS 'E' & 'F', CULVERT UNDER W. DRIVEWAY: Design Q = 3.27 + 1.60 = 4.87 CFS

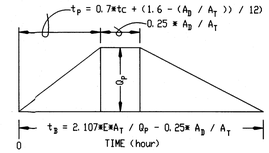
Use Orifice Equation, $Q = CA(2GH)^{1/2}$ C = 0.6 Area = 1.2272 sf for 15" PVC Culvert.

High Water Elevation = 17.62 Invert = 16.62 H = (17.62 - 15.73) - 0.625 = 1.265 ft.

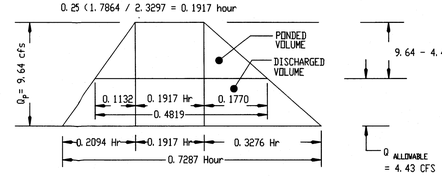
$Q = 0.6 \times 1.2272 \times (2 \times 32.2 \times 1.265)^{1/2} = 6.65$ cfs > 4.87 cfs

O. DETENTION POND ANALYSIS:

Only one detention pond is proposed which is for the combined areas of Subbasins 'C' and 'D'. The hydrograph method shown below is used to determine the required volume of the detention pond.



SUBBASINS DRAINING TO DETENTION POND:
$E = (0.78 * 23,665 + 2.12 * 77,817) / 101,482 = 1.8075$ IN.
$A_T = 23,665 + 77,817 = 101,482$ SF $= 2.3297$ AC
$A_B = 77,817$ sf (1.7864 ac)
$Q_P = 9.64$ CFS
$t_B = 2.107 * 1.8075 * 2.3297 / 9.64 - 0.25 *(1.7864 / 2.3297) = 0.9204 - 0.1917 = 0.7287$ hour.
$t_P = 0.7*tc + (1.6 - (A_B / A_T)) / 12)$
$t_P = (0.7 * 0.2) + (1.6 - (1.7864 / 2.3297)) / 12)$
$t_P = 0.14 + (1.6 - (0.7668)) / 12)$
$t_P = 0.14 + (0.8332/ 12) = 0.14 + 0.0694 = 0.2094$ HR
Continue the peak for $0.25\ A_B / A_T$ hours.
$0.25\ (1.7864 / 2.3297) = 0.1917$ hour



15,175

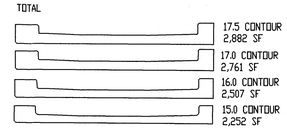
TOTAL VOLUME:
V = ((9.64) X 1/2(0.1917 + 0.7287))*3600 = 15,971 CF
VOLUME CALCULATED FOR AREA DRAINING TO POND = 15,560 CF (SECTION G)
(15,971 - 15,560) = 411 (411 / 15,560)100 = 2.62 % HIGHER

PONDED VOLUME:
V = (5.21 X 1/2(0.1917 + 0.4819) X 3600 = 6,317 CF
DISCHARGED VOLUME:
V = (4.43 X 1/2(0.4819 + 0.7287) X 3600 = 9,653 CF
V = (0.2164 + 2.0369 +0.3048) * 3,600 = 9,209 CF
V = 3,968 + 9,209 = 15,177
Since the volume calculated by the hydrograph method is 2.62% higher than the volume calculated in Section G, the ponded volume should be reduced by that same amount.
6,317 - (6,317 x 0.0262) = 6,151 cf

P. DETENTION POND VOLUME:

The detention pond is formed by a retaining wall on the West property line and by the paved slope on the East.

CONTOUR	AREA (SF)	AVE. AREA (SF)	VERT. DIST. (FT)	VOLUME (CF)
17.5	2,882			
		2,822	0.5	1,411
17.0	2,761			
		2,634	1.0	2,634
16.0	2,507			
		2,380	1.0	2,380
15.0	2,252			
TOTAL				6,425 > 6,151



Q. DETENTION POND POSITIVE DISCHARGE:

Allowable discharge rate is 4.43 cfs. Use Orifice Equation $Q = CA(2GH)^{1/2}$
H = Vert. Dist. from Springline of 6" Pipe to Top of Spillway = (17.50 - 14.77) - 0.25 = 2.48'
Area = 0.1963 sf ⊘

$Q = 0.6 * 0.1963(2 \times 32.2 \times 2.48)^{1/2} = 1.49$ CFS per pipe orifice.

3 X 1.49 = 4.47 CFS > 4.43 CFS (ADEQUATE)

CAPACITY OF 2' WIDE CONCRETE CHANNEL. DEPTH = 6" AREA = 1.0 P = 3.0 R = 1/3 = 0.33
$Q = AV = A\,(1.486/N)\,R^{2/3}S^{1/2} = 1.0\,(1.486 / 0.013)\,(0.33)^{2/3}\,(0.02)^{1/2} = 7.71$ CFS > 4.43 ok

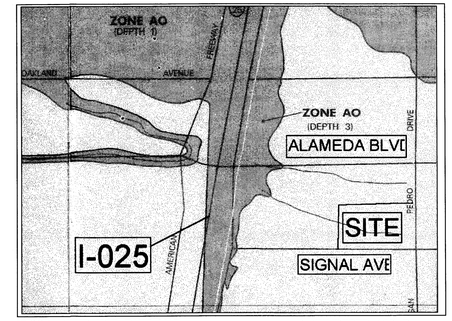
R. DETENTION POND SPILLWAY:

The spillway is the west driveway. The drainage break even with the south end of the pond is set at elevation 17.50 which is the high water level of the pond. In the extremely rare occasion when the pond fills to maximum level, water will flow over the drainage break and out into Signal Avenue.

Use Weir Equation $Q = C\,L\,H^{3/2}$
THE WIDTH OF THE WEIR WILL BE THE WIDTH OF THE DRIVEWAY, WHICH IS 30'.
5 X 1.33 = 6.65 FEET.

C = 2.65 L = 30.00 H = 0.25

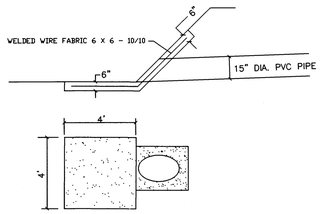
$Q = 2.65 \times 30.00 \times 0.25^{3/2} = 9.93$ CFS > 9.64 CFS (ADEQUATE)



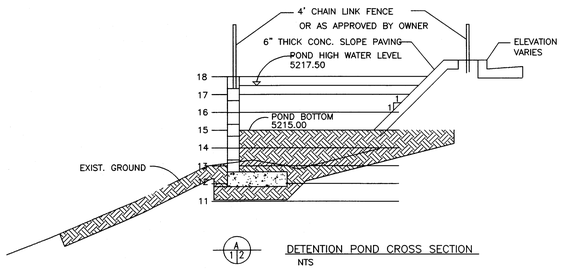
FLOOD INSURANCE RATE MAP MAP NUMBERED 137 D

GENERAL NOTES

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AS SOON AS POSSIBLE TO RESOLVE THE CONFLICT WITH A MINIMUM AMOUNT OF DELAY.
2. ALL WORK ON THIS PLAN SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
3. IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS, THEY ARE SHOWN IN AN APPROXIMATE LOCATION ONLY, AND LINES MAY EXIST WHERE NONE ARE SHOWN. THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE UTILITY OWNER OR FROM EXISTING PLANS, AND THIS INFORMATION MAY BE INCOMPLETE, OR OBSOLETE AT THE TIME OF CONSTRUCTION. THE ENGINEER HAS NOT UNDERTAKEN ANY FIELD VERIFICATION OF THESE LOCATIONS, LINE SIZES OR MATERIAL TYPE, MAKES NO REPRESENTATION THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATIONS OF ANY UTILITY LINE, PIPELINE OR UNDERGROUND INSTALLATION IN OR NEAR THE AREA IN ADVANCE OF OR DURING ANY EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES AND UNDERGROUND FACILITIES. IN PLANNING AND CONDUCTING EXCAVATIONS, THE CONTRACTOR SHALL COMPLY WITH ALL STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.
4. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHTS-OF-WAY OR ONTO PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AND BY WETTING THE SOIL TO KEEP IT FROM BLOWING.
5. THE CONTRACTOR SHALL OBTAIN ANY AND ALL PERMITS REQUIRED BY THE CITY OF ALBUQUERQUE FOR THE COMPLETION OF THE WORK PRIOR TO BEGINNING CONSTRUCTION.



CULVERT INLET HEADER AND SPLASH PAD
1/4" = 1'-0"



A/12 DETENTION POND CROSS SECTION
NTS

NOTE:

SEE SHEET 3 OF 3 FOR RETAINING WALL DETAILS.

FRANK D. LOVIC
REGISTERED PROFESSIONAL ENGINEER
6512
JUNE 04, 2004
REVISED 04/12/06

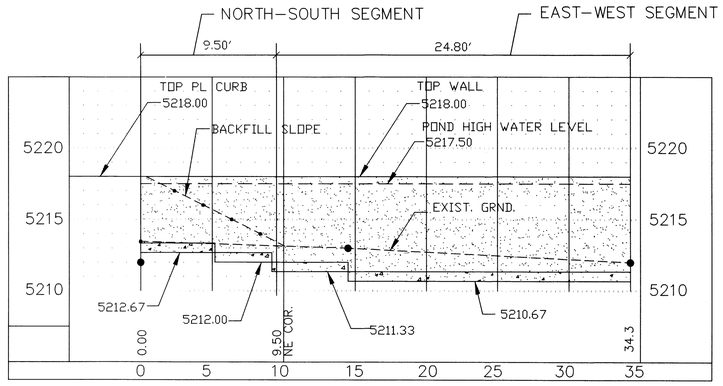
CALCULATIONS AND DETAILS
STAYBRIDGE EXTENDED STAY
SIGNAL AVENUE NE
ALBUQUERQUE, NEW MEXICO

FRANK D. LOVIC, P.E.
(505) 345-2267 * Fax (505) 345-2115 * 300 ALAMOSA RD. NW * Albuquerque, NM * 87107

JOB NO:	672
DATE:	April 12, 2006
REVISIONS	

SHEET NO. 2 OF 3

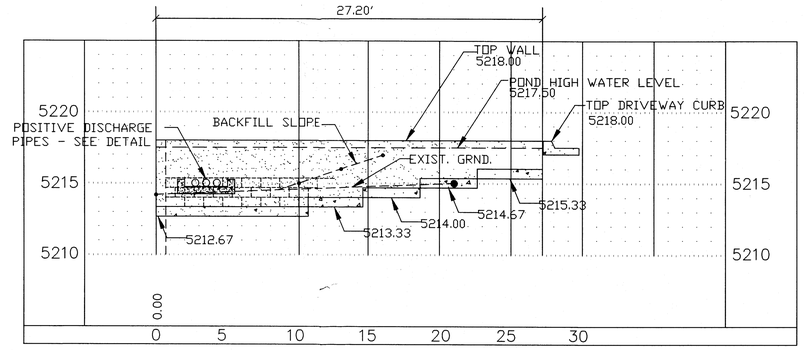
C:\All Proj\Proj\62-67\Proj672\3RD SITE PLAN\SBS_CALCS.dwg (04/12/2006)



NORTH POND RETAINING WALL PROFILE

VIEWING WEST AND SOUTH

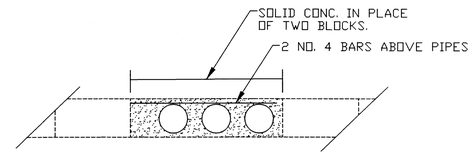
SCALES:
1" = 5' HOR
1" = 5' VER



SOUTH POND RETAINING WALL PROFILE

VIEWING NORTH

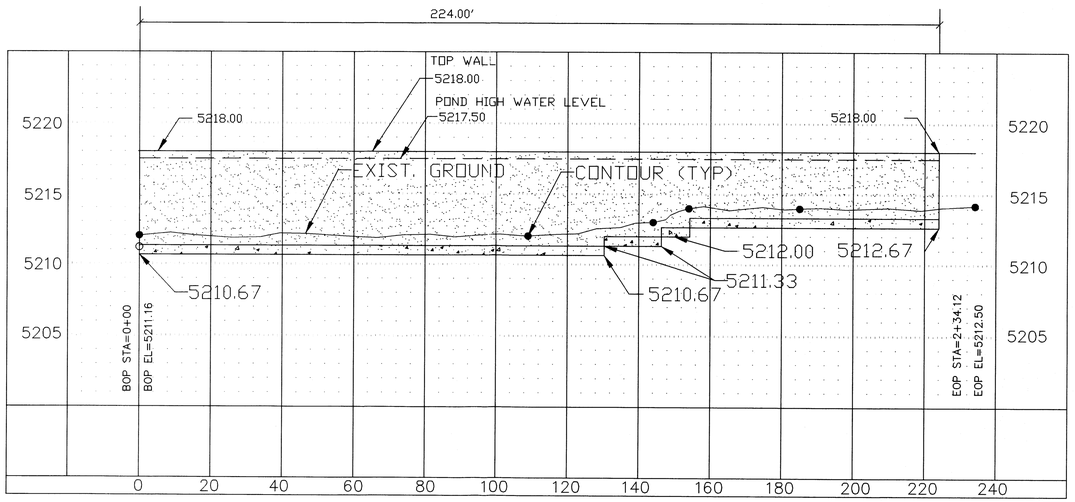
SCALES:
1" = 5' HOR
1" = 5' VER



POSITIVE DISCHARGE PIPE DETAIL

NTS

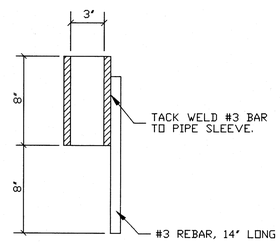
NOTE: PROVIDE EXPANSION JOINTS AT 20 FEET ON CENTER.

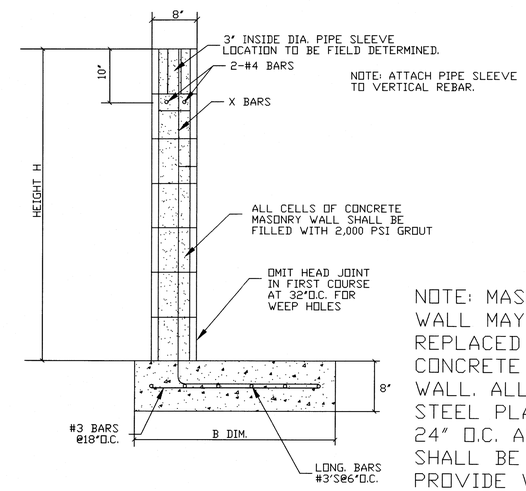


WEST POND RETAINING WALL PROFILE

VIEWING EAST

SCALES:
1" = 20' HOR
1" = 5' VER



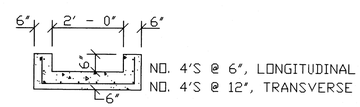


"H"	"B"	"X" BARS
3'	2'-6"	#3 BARS @ 24" O.C.
4'	2'-9"	#4 BARS @ 24" O.C.
5'	3'-0"	#5 BARS @ 24" O.C.

CONCRETE FOR FOOTING TO TEST 3,000 PSI AT 28 DAYS.
CONCRETE BLOCK, GRADE A UNITS, ASTM C-90.

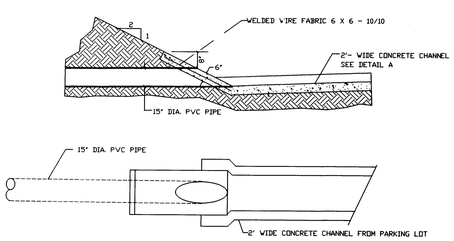
MASONRY WALL DETAILS

NOTE: MASONRY WALL MAY BE REPLACED WITH CONCRETE STEM WALL. ALL HORIZ. STEEL PLACED AT 24" O.C. AND SHALL BE #5 REBAR, PROVIDE WEEP HOLES AT BOTTOM OF WALL.



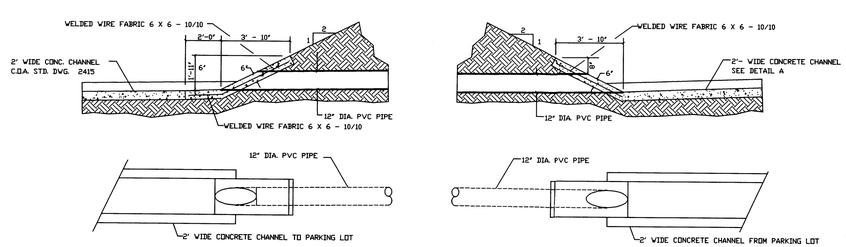
DETAIL A - 2' WIDE CONCRETE CHANNEL

SEE SHEET 1 OF 3, KEYED NOTE 18



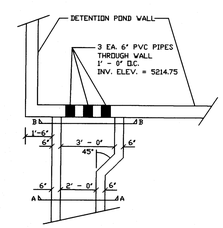
DRAINAGE UNDER WAST DRIVEWAY

1/4" = 1' - 0"

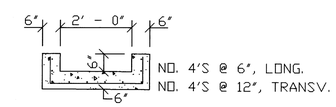


DRAINAGE UNDER EAST DRIVEWAY

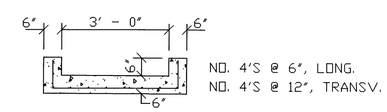
1/4" = 1' - 0"



POND POSITIVE DISCHARGE

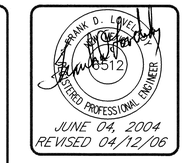


SECTION A-A



SECTION B-B

C:\All Proj\Proj652-693\Proj673\RD SITE PLAN\SES_CALCS.dwg (04/12/2006)



JUNE 04, 2004
REVISED 04/12/06

DETAILS
STAYBRIDGE EXTENDED STAY
SIGNAL AVENUE NE
ALBUQUERQUE, NEW MEXICO

FRANK D. LOVELADY, P.E.
(505) 345-2267 * Fax (505) 345-2115 * 300 ALAMOSA RD. NW * Albuquerque, NM * 87107

JOB NO: 672
DATE: April 12, 2006
REVISIONS

SHEET NO.
3
OF
3

LEGEND:

EXISTING	DESCRIPTION
20	CONTOUR
20.00	SPOT ELEVATION
	PROPERTY LINE
	SWALE
	SHEET FLOW
	ROOF FLOW

LEGEND
TC = TOP OF CONCRETE
FL = FLOW LINE
TG = TOP OF GRADE
EOW = END OF WALL

LEGAL DESCRIPTION:
LOTS 17-A, BLOCK 12, TRACT A, UNIT B, NORTH ALBUQUERQUE ACRES.

ZONE ATLAS NO. C-18-Z

KEYED NOTES

1. EXISTING ASPHALT PAVEMENT.
2. EXISTING CURB AND GUTTER, 6" CURB HEIGHT.
3. EXISTING LANDSCAPING.
4. EXISTING PROPERTY LINE.
5. EXISTING 12" DIA. PVC PIPE.
6. PROPOSED MEETING ROOM ADDITION
7. EXISTING CONCRETE SPLASH PAD
8. EXISTING CONCRETE SIDEWALK.
9. EXISTING PRIVATE ENTRANCE.
10. EXISTING REINFORCED CONCRETE SLOPE PAVING, 1 TO 1 SLOPE.
11. EXISTING 15" DIA. PVC PIPE. MITER END FLUSH W/ SLOPE PAVING.
12. EXISTING SINGLE D INLET.
13. EXISTING 12" WIDE SIDEWALK CULVERT.
14. EXISTING 2' WIDE CURB OPENING FOR DRAINAGE.
15. EXISTING 15" DIA. PVC PIPE.
16. EXISTING POND RETAINING WALL.
17. EXISTING DETENTION POND.
18. EXISTING 2' WIDE CONCRETE CHANNEL.
19. EXISTING 3 - 6" PIPES. POND POSITIVE DISCHARGE.
20. EXISTING CONCRETE CHANNEL FROM POND TO SV CULV
21. EXISTING CONCRETE DRAINAGE BREAK ACROSS DRIVEWAY.
22. EXISTING POND FENCE.

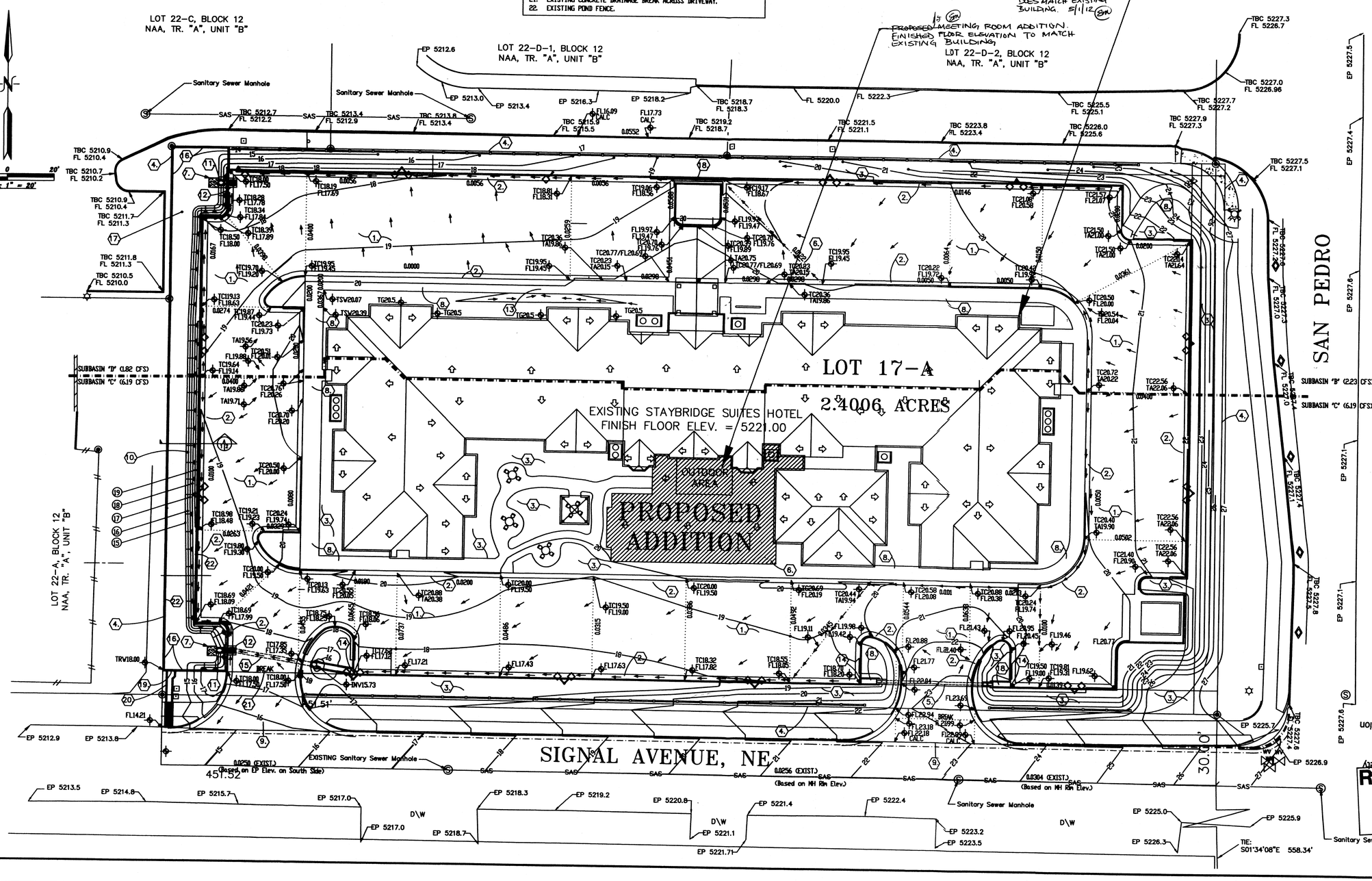
DRAINAGE CERTIFICATION

I, SANTOSH MODY, NMPE, HEREBY CERTIFY THAT THISPROJECT HAS BEEN GRADED AND WILL DRAIN IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATE 05/31/2011. I FURTHER CERTIFY THAT I HAVE PERSONALLY VISITED THE PROJECT SITE ON 05/01/2012 AND HAVE DETERMINED BY VISUAL INSPECTION THAT THE SURVEY DATA PROVIDED IS REPRESENTATIVE OF ACTUAL SITE CONDITIONS AND IS TRUE AND CORRECT TO THE BESTOF MY KNOWLEDGE AND BELIEF. THIS CERTIFICAITON IS SUBMITTED IN SUPPORT OF A REQUEST FOR FINAL CERTIFICATE OF OCCUPANCY.

THE RECORD INFORMATION PRESENTED HEREON IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE GRADING AND DRAINAGE ASPECTS OF THIS PROJECT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.

SANTOSH MODY, NMPE
5/01/12
DATE

SANTOSH B. MODY NEW MEXICO 16780 LICENSED PROFESSIONAL ENGINEER 5/1/12



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NOV 06 2012
HYDROLOGY SECTION

Plan Check Section
I.B.C
SEP 28 2011
Building & Safety
Albuquerque

SANTOSH B. MODY NEW MEXICO 16780 LICENSED PROFESSIONAL ENGINEER 5-31-11

GRADING AND DRAINAGE PLAN
STAYBRIDGE SUITES HOTEL
MEETING ROOM ADDITION
ALBUQUERQUE, NEW MEXICO

Santosh Mody, P.E.
(505) 797-9997 • Fax (505) 797-7775 • 6912 Slade Ave. NE • Albuquerque, NM • 87113

JOB NO:
DATE: MAY 31,2011
REVISIONS

SHEET NO. 1 OF 2

DRAINAGE CALCULATIONS:

A. EXISTING CONDITIONS:

The site is located at the northwest corner of San Pedro Drive and Signal Avenue NE.

The site consists of a single approximately three acre lot with no existing flows entering the site.

An existing extended-stay hotel is located on the site, containing asphalt parking areas and drainage facilities, including an existing detention pond on the west side of the site.

The detention drains into Signal Avenue.

B. PROPOSED CONDITIONS:

It is proposed to construct a new meeting room addition in the south courtyard area of the existing hotel. The additional storm runoff created by the addition will be directed by overland flow through the parking lot into the existing detention pond.

C. DRAINAGE CRITERIA:

The calculations shown on this plan were prepared in accordance with Section 22.2, Hydrology, of the Development Process Manual, Volume 2, Design Criteria, for the City of Albuquerque in cooperation with Bernalillo County, New Mexico and the Metropolitan Arroyo Flood Control Authority, October, 2008 Revision.

D. PRECIPITATION ZONE:

Other studies in the area identified the precipitation zone as being Zone 2.

E. LAND TREATMENT AREAS:

The peak discharge per acre and excess precipitation are shown for the four land treatments in Zone 2 in the table below, and the values shown are from the City of Albuquerque D.P.M. Also shown are the existing and proposed land treatment areas.

LAND TREAT.	q(cfs/ac) 100-yr.	q(cfs/ac) 10-yr.	E (in) 100-yr.	E (in) 10-yr.	Existing Site Areas %	Existing Site Areas Sq.Ft.	Existing Site Areas Acres	Proposed Site Areas %	Proposed Site Areas Sq.Ft.	Proposed Site Areas Acres
A	1.56	0.38	0.53	0.13	0.0	0	0.0000	0.0	0	0.0000
B	2.28	0.95	0.78	0.28	26.4	27,885	0.6402	24.1	25,526	0.5860
C	3.14	1.71	1.13	0.52	0.0	0	0.0000	0.0	0	0.0000
D	4.70	3.14	2.12	1.34	73.6	77,817	1.7864	75.9	80,176	1.8406
Totals					100.0	105,702	2.4266	100.0	105,702	2.4266

F. PEAK DISCHARGE:

EXISTING CONDITIONS:

Q100 = 0.6402 ≡ 2.28 + 1.7864 x 4.70 = 9.86 cfs

Q10 = 0.6402 ≡ 0.95 + 1.7864 ≡ 3.14 = 6.22 cfs

PROPOSED CONDITIONS:

Q100 = 0.5860 ≡ 2.28 + 1.8406 x 4.70 = 9.98 cfs

Q10 = 0.5860 ≡ 0.95 + 1.8406 ≡ 3.14 = 6.33 cfs

G. VOLUME, 100-YEAR AND 10-YEAR, 6-HOUR:

EXISTING CONDITIONS:

V100 = (27,885 ≡ 0.78 + 77,817 ≡ 2.12) / 12 = 15,560 cf

V10 = (27,885 ≡ 0.28 + 77,817 ≡ 1.34) / 12 = 9,340 cf

PROPOSED CONDITIONS:

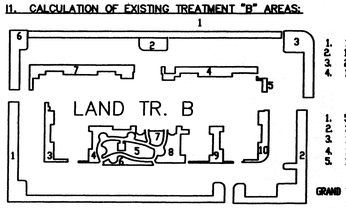
V100 = (25,526 ≡ 0.78 + 80,176 ≡ 2.12) / 12 = 15,823 cf

V10 = (25,526 ≡ 0.28 + 80,176 ≡ 1.34) / 12 = 9,548 cf

H. SUMMARY OF ON-SITE VOLUMES AND PEAK DISCHARGE RATES:

	V100(CF)	V10(CF)	Q100(CFS)	Q10(CFS)
PROPOSED	15,823	9,548	9.98	6.33
EXISTING	15,560	9,340	9.86	6.22
INCREASE	263	208	0.12	0.11

I1. CALCULATION OF EXISTING TREATMENT "B" AREAS:



NORTH

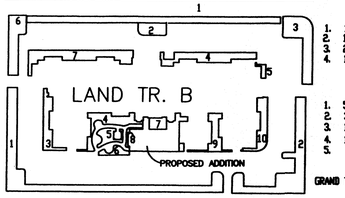
1.	1,535	5.	161
2.	1,147	6.	1,583
3.	2,262	7.	2,192
4.	1,650		
TOT.	10,530		

SOUTH

1.	5,616 SF	6.	501 SF
2.	3,858 SF	7.	416 SF
3.	1,038 SF	8.	1,309 SF
4.	1,418 SF	9.	884 SF
5.	1,266 SF	10.	1,049 SF
TOT.	17,355 SF		

GRAND TOTAL TREAT. B = 27,885

I2. CALCULATION OF PROPOSED TREATMENT "B" AREAS:



NORTH

1.	1,535	5.	161
2.	1,147	6.	1,583
3.	2,262	7.	2,192
4.	1,650		
TOT.	10,530		

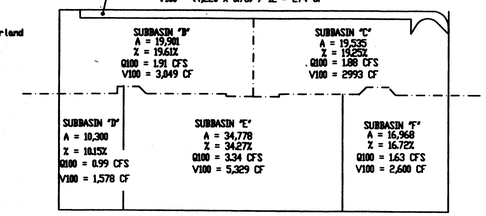
SOUTH

1.	5,616 SF	6.	348 SF
2.	3,858 SF	7.	399 SF
3.	1,038 SF	8.	52 SF
4.	1,201 SF	9.	884 SF
5.	531 SF	10.	1,049 SF
TOT.	14,996 SF		

GRAND TOTAL TREAT. B = 25,526

J. SUBBASIN AREAS AND QUANTITIES:

SUBBASIN 'A', WHICH IS NORTH 1, 2 AND A PORTION OF 3 IN THE SCHEMATIC, CANNOT BE MADE TO DRAIN TO THE DETENTION POND.
AREA = 4,220 SF (0.0969 Ac) All Treat. B
Q100 = 2.28 cfs/ acre ≡ 0.0969 acre = 0.22 cfs
V100 = (4,220 X 0.78) / 12 = 274 CF



THE REMAINDER OF THE SITE, (105,702 - 4,220 = 101,482 SQ. FT.), IS DIVIDED INTO SUBBASINS AND THE PEAK DISCHARGE IS PRORATED BASED ON THE PERCENTAGE OF AREA OF THE SUBBASIN TO THE TOTAL SITE AS SHOWN ABOVE.
THE QUANTITY OF PEAK DISCHARGE PRORATED IS 9.98 - 0.22 = 9.76 CFS
THE QUANTITY OF V100 PRORATED IS 15,823 - 274 = 15,549 CF

K. SUMMARY OF FLOW QUANTITIES DRAINING TO POND:

TOTAL SITE
TREATMENT B = 25,526 SF
TREATMENT D = 80,176 SF
TOTAL AREA = 105,702 SF

PORTION DRAINING TO POND
TOTAL AREA = 101,482 SF 100.00%
TREATMENT B = 25,526 SF - 4,220 SF = 21,306 SF 20.99%
TREATMENT D = 101,482 SF - 21,306 SF = 80,176 SF 79.01%

TOTAL ON-SITE DISCHARGE = 9.98 CFS
LESS SUBBASIN 'A' = 0.22 CFS
TOTAL DISCHARGING TO POND = 9.76 CFS

L. ALLOWABLE DISCHARGE:

Please refer to Alameda Development Grading and Drainage Plan. This site is not within the boundary of the referenced plan but the plan shows an off-site flow coming from the previously undeveloped area which is this site. The quantity of 100-year undeveloped off-site flow shown to be coming from this area is 4.65 cfs.

It is necessary to discharge Subbasin 'A' directly into the access easement North of the site. Subbasin 'A' is landscaping that cannot be captured and caused to drain into the detention pond. The Q100 from Subbasin 'A' is 0.22 cfs, an almost negligable quantity. The allowable discharge from the detention pond is, therefore, 4.65 cfs - 0.22 cfs = 4.43 cfs

M. CAPACITY OF EXISTING CURB OPENINGS:

Use Weir Equation $Q = C\,L\,H^{3/2}$

Subbasin 'C' (1.86 CFS) C = 2.65 L = 2.0 H = 0.5

$Q = 2.65 \times 2.0 \times 0.5^{3/2} = 1.87$ CFS (ADEQUATE)

Subbasin 'F' (1.63 CFS) C = 2.65 L = 1.5 H = 0.5

$Q = 2.65 \times 1.5 \times 0.5^{3/2} = 1.40$ cfs

1.40 cfs < 1.63 cfs (1.5' OPENING IS ADEQUATE BECAUSE THE MINOR AMOUNT OF OVERFLOW WILL SIMPLY FLOW OVER THE CURB.

Subbasins 'E' + 'F' (3.34 CFS + 1.63 CFS) = 4.97 CFS

C = 2.65 L = 1.5 H = 0.30 (2.5' WIDE OPENING)

$Q = 2.65 \times 1.5 \times 0.30^{3/2} = 1.41$ cfs The width of opening is not sufficient but the excess will overflow the curb.

N. CAPACITY OF EXISTING CULVERTS:

SUBBASIN 'F' , CULVERT UNDER E. DRIVEWAY: Design Q = 1.63 cfs

Ponding to occur in parking lot to elevation 19.75 on occasion as required to force flow through culvert. elev. at invert of culvert = 19.06

Use Orifice Equation, $Q = CA(2gh)^{1/2}$ C = 0.6

19.50
18.56 — 19.06 (Springline) — Area = 0.7854 sf

H = 19.50 - 18.56 = 0.94

$Q = 0.6 \times 0.7854\ (\ 2 \times 32.2 \times 0.94)^{1/2} = 3.66$ cfs > 1.63 cfs ok

SUBBASINS 'E' & 'F', CULVERT UNDER W. DRIVEWAY: Design Q = 3.34 + 1.63 = 4.97 CFS

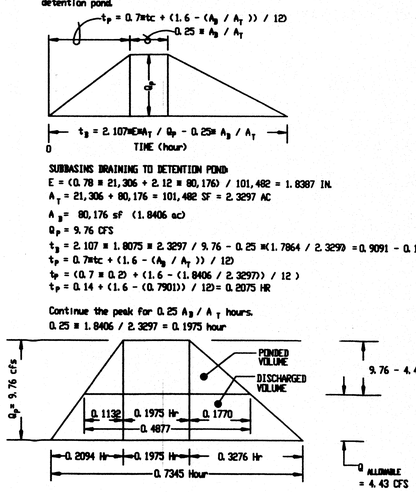
Use Orifice Equation, $Q = CA(2gh)^{1/2}$ C = 0.6 Area = 1.2272 sf for 15" PVC Culvert.

High Water Elevation = 17.62 Invert = 16.62 H = (17.62 - 15.73) - 0.625 = 1.265 ft.

$Q = 0.6 \times 1.2272\ (\ 2 \times 32.2 \times 1.265)^{1/2} = 6.65$ cfs > 4.97 cfs ok

O. EXISTING DETENTION POND ANALYSIS:

One existing detention pond accomodates the combined areas of Subbasins 'C' and 'D'.
The hydrograph method shown below was used to determine the required volume of the detention detention pond.



SUBBASINS DRAINING TO DETENTION POND:

$E = (0.78 \equiv 21,306 + 2.12 \equiv 80,176) / 101,482 = 1.8387$ IN.

$A_T = 21,306 + 80,176 = 101,482$ SF = 2.3297 AC

$A_B =$ 80,176 sF (1.8406 ac)

$Q_P = 9.76$ CFS

$t_B = 2.107 \equiv 1.8075 \equiv 2.3297 / 9.76 - 0.25 \equiv (1.7864 / 2.3297) = 0.9091 - 0.1917 = 0.7174$ hour.

$t_P = 0.7*tc + (1.6 - (A_B / A_T)) / 12)$

$t_P = (0.7 \equiv 0.2) + (1.6 - (1.8406 / 2.3297)) / 12\ )$

$t_P = 0.14 + (1.6 - (0.7901)) / 12) = 0.2075$ HR

Continue the peak for $0.25\ A_B / A_T$ hours.

$0.25 \equiv 1.8406 / 2.3297 = 0.1975$ hour

TOTAL VOLUME:
V = ((9.76) X 1/2(0.1975 + 0.7345))X3600 = 16,374 CF
VOLUME CALCULATED FOR AREA DRAINING TO POND = 15,823 CF
(16374 - 15,823) = 551 (551 / 15,823)100 = 3.48 % HIGHER

PONDED VOLUME:
V = (5.33 X 1/2(0.1975 + 0.4877) X 3600 = 6,574 CF

DISCHARGED VOLUME:
V = (4.43 X 1/2(0.4877 + 0.7345) X 3600 = 9,746 CF

V = 6,574 + 9,746 = 16,320

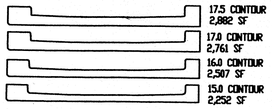
Since the volume calculated by the hydrograph method is 3.48% higher than the volume calculated in Section G, the ponded volume should be reduced by that same amount.

6,574 - (6,574 x 0.0348) = 6,345 cf

P. EXISTING DETENTION POND VOLUME:

The detention pond is formed by a retaining wall on the West property line and by the paved slope on the East.

CONTOUR	AREA (SF)	AVE. AREA (SF)	VERT. DIST. (FT)	VOLUME (CF)
17.5	2,882			
		2,822	0.5	1,411
17.0	2,761			
		2,634	1.0	2,634
16.0	2,507			
		2,380	1.0	2,380
15.0	2,252			
TOTAL				6,425 > 6,345 ok



Q. EXISTING DETENTION POND POSITIVE DISCHARGE:

Allowable discharge rate is 4.43 cfs. Use Orifice Equation $Q = CA(2gh)^{1/2}$
H = Vert. Dist. from Springline of 6' Pipe to Top of Spillway = (17.50 - 14.77) - 0.25 = 2.48'
Area = 0.1963 sf

$Q = 0.6 \equiv 0.1963(2 \times 32.2 \times 2.48)^{1/2}$ = 1.49 CFS per pipe orifice.

3 X 1.49 = 4.47 CFS > 4.43 CFS (ADEQUATE)

CAPACITY OF 2' WIDE CONCRETE CHANNEL. DEPTH = 6' AREA = 1.0 P = 3.0 R = 1/3 = 0.33

$Q = AV = A\,(1.486/N)\,R^{2/3}S^{1/2} = 1.0\,(1.486 / 0.013)\,(0.33)^{2/3}\,(0.02)^{1/2} = 7.71$ CFS > 4.43 ok

R. EXISTING DETENTION POND SPILLWAY:

The spillway is the west driveway. The drainage break even with the south end of the pond is set at elevation 17.50 which is the high water level of the pond. On the extremely rare occasion when the pond fills to maximum level, water will flow over the drainage break and out into Signal Avenue.

Use Weir Equation $Q = C\,L\,H^{3/2}$

THE WIDTH OF THE WEIR WILL BE THE WIDTH OF THE DRIVEWAY, WHICH IS 30'.

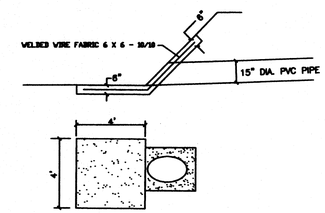
5 X 1.33 = 6.65 FEET.

C = 2.65 L = 30.00 H = 0.25

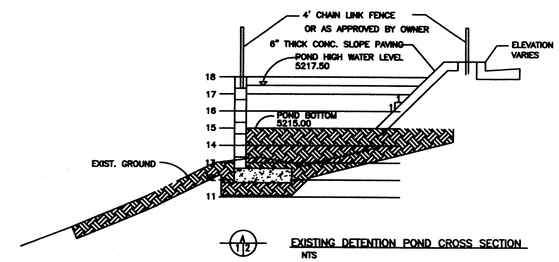
$Q = 2.65 \times 30.00 \times 0.25^{3/2} = 9.93$ CFS > 9.76 CFS (ADEQUATE)

GENERAL NOTES

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AS SOON AS POSSIBLE TO RESOLVE THE CONFLICT WITH A MINIMUM AMOUNT OF DELAY.
2. ALL WORK ON THIS PLAN SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
3. IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS, THEY ARE SHOWN IN AN APPROXIMATE LOCATION ONLY, AND LINES MAY EXIST WHERE NONE ARE SHOWN. THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE UTILITY OWNER OR FROM EXISTING PLANS, AND THIS INFORMATION MAY BE INCOMPLETE, OR OBSOLETE AT THE TIME OF CONSTRUCTION. THE ENGINEER HAS NOT UNDERTAKEN ANY FIELD VERIFICATION OF THESE LOCATIONS, LINE SIZES OR MATERIAL TYPE, MAKES NO REPRESENTATION THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATIONS OF ANY UTILITY LINE, PIPELINE OR UNDERGROUND INSTALLATION IN OR NEAR THE AREA IN ADVANCE OF OR DURING ANY EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES AND UNDERGROUND FACILITIES. IN PLANNING AND CONDUCTING EXCAVATIONS, THE CONTRACTOR SHALL COMPLY WITH ALL STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.
4. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHTS-OF-WAY OR ONTO PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AND BY WETTING THE SOIL TO KEEP IT FROM BLOWING.
5. THE CONTRACTOR SHALL OBTAIN ANY AND ALL PERMITS REQUIRED BY THE CITY OF ALBUQUERQUE FOR THE COMPLETION OF THE WORK PRIOR TO BEGINNING CONSTRUCTION.



EXISTING CULVERT INLET HEADER AND SPLASH PAD
1/4" = 1'-0"



1/12 EXISTING DETENTION POND CROSS SECTION
NTS

DRAINAGE CERTIFICATION

I, SANTOSH MODY, NMPE, HEREBY CERTIFY THAT THIS PROJECT HAS BEEN GRADED AND WILL DRAIN IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATE 05/31/2011. I FURTHER CERTIFY THAT I HAVE PERSONALLY VISITED THE PROJECT SITE ON 05/01/2012 AND HAVE DETERMINED BY VISUAL INSPECTION THAT THE SURVEY DATA PROVIDED IS REPRESENTATIVE OF ACTUAL SITE CONDITIONS AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS CERTIFICAITON IS SUBMITTED IN SUPPORT OF A REQUEST FOR FINAL CERTIFICATE OF OCCUPANCY.

THE RECORD INFORMATION PRESENTED HEREON IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE GRADING AND DRAINAGE ASPECTS OF THIS PROJECT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.

SANTOSH MODY, NMPE
05/01/12
DATE

SANTOSH B. MODY NEW MEXICO 16780 LICENSED PROFESSIONAL ENGINEER 5-31-11

Albuquerque Building & Safety
SEP 23 2011
I.B.C Plan Check Section

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HYDROLOGY SECTION

DRAINAGE CALCULATIONS
STAYBRIDGE SUITES HOTEL
MEETING ROOM ADDITION
ALBUQUERQUE, NEW MEXICO

Santosh Mody, P.E.
(505) 797-9997 * Fax (505) 797-7776 * 6912 Shade Ave. NE * Albuquerque, NM * 87113

JOB NO:
DATE: MAY 31, 2011
REVISIONS

SHEET NO. 2 OF 2