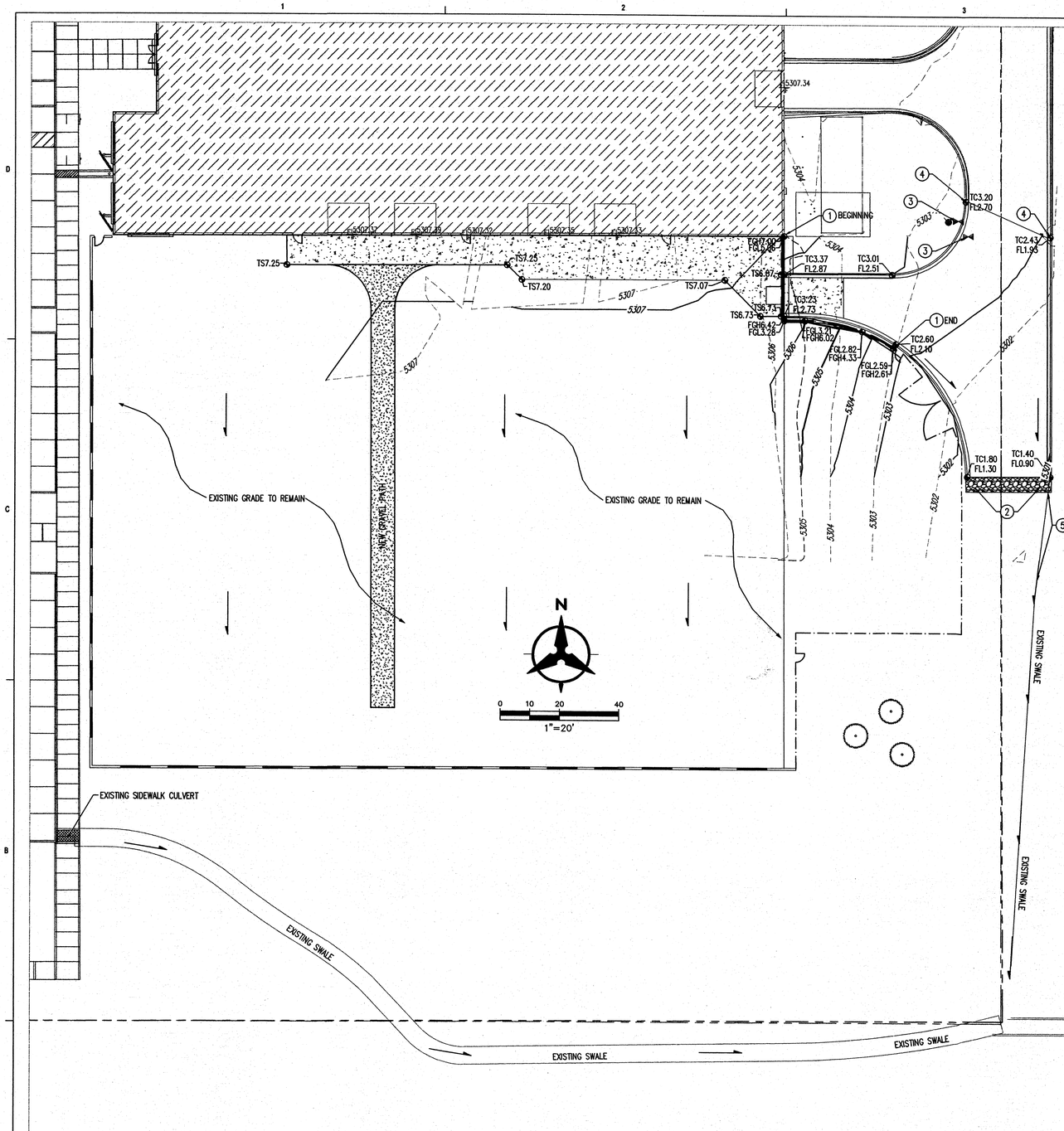


GRADING NOTES

1. EXCEPT AS PROVIDED HEREIN, GRADING SHALL BE PERFORMED AT THE ELEVATIONS AND IN ACCORDANCE WITH THE DETAILS SHOWN ON THIS PLAN.

2. THE COST FOR REQUIRED CONSTRUCTION DUST AND EROSION CONTROL MEASURES SHALL BE INCIDENTAL TO THE PROJECT COST.

3. ALL WORK RELATIVE TO FOUNDATION CONSTRUCTION, SITE PREPARATION, AND PAVEMENT INSTALLATION, AS SHOWN ON THIS PLAN, SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE "GEOTECHNICAL INVESTIGATION," AS PROVIDED BY THE ARCHITECT OR OWNER. ALL OTHER WORK SHALL, UNLESS OTHERWISE STATED OR PROVIDED FOR HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE PROJECT, (FIRST PRIORITY) SPECIFICATIONS, AND/OR THE CITY OF ALBUQUERQUE (COA) STANDARD SPECIFICATIONS FOR PUBLIC WORKS (SECOND PRIORITY).

4. EARTH SLOPES SHALL NOT EXCEED 3 HORIZONTAL TO 1 VERTICAL UNLESS SHOWN OTHERWISE.

5. IT IS THE INTENT OF THESE PLANS THAT THIS CONTRACTOR SHALL NOT PERFORM ANY WORK OUTSIDE OF THE PROPERTY BOUNDARIES EXCEPT AS REQUIRED BY THIS PLAN.

6. THE CONTRACTOR IS TO ENSURE THAT NO SOIL ERODES FROM THE SITE ONTO ADJACENT PROPERTY OR PUBLIC RIGHT-OF-WAY. THIS SHOULD BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS OR SILT FENCE AT THE PROPERTY LINES AND WETTING THE SOIL TO PROTECT IT FROM WIND EROSION.

7. A DISPOSAL SITE FOR ANY & ALL EXCESS EXCAVATION MATERIAL, AND UNSUITABLE MATERIAL AND/OR A BORROW SITE CONTAINING ACCEPTABLE FILL MATERIAL SHALL BE OBTAINED BY THE CONTRACTOR IN COMPLIANCE WITH APPLICABLE ENVIRONMENTAL REGULATIONS AND APPROVED BY THE OBSERVER. ALL COSTS INCURRED IN OBTAINING A DISPOSAL OR BORROW SITE AND HAUL TO OR FROM SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE.

8. PAVING AND ROADWAY GRADES SHALL BE +/- 0.1' FROM PLAN ELEVATIONS. PAD ELEVATION SHALL BE +/- 0.05' FROM BUILDING PLAN ELEVATION.

9. ALL PROPOSED CONTOURS REFLECT TOP OF PAVEMENT ELEVATIONS IN THE PARKING AREA AND MUST BE ADJUSTED FOR MEDIANS AND ISLANDS.

10. VERIFY ALL ELEVATIONS SHOWN ON PLAN FROM BASIS OF ELEVATION CONTROL STATION PRIOR TO BEGINNING CONSTRUCTION.

GRADING KEYED NOTES

1. RETAINING WALL, SEE ARCHITECTURAL FOR CONTINUATION.
2. INSTALL RIP RAP BLANKET PER DETAIL THIS SHEET.
3. ADJUST EXISTING VALVE RIM AND COVER TO FINISHED GRADE.
4. MATCH TO EXISTING GRADE
5. GRADE TO ENSURE DRAINAGE ENTERS EXISTING SWALE AND OUTFALLS TO THE RUNDOWN TO THE SOUTH.

GENERAL NOTES

1. ALL WORK DETAILED ON THESE PLANS AND PERFORMED UNDER THIS CONTRACT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND THE PROJECT GEOTECHNICAL REPORT. WHERE APPLICABLE, CITY OF ALBUQUERQUE PUBLIC WORKS STANDARDS SHALL APPLY.

2. THE CONTRACTOR SHALL ABIDE BY ALL LOCAL, STATE, AND FEDERAL LAWS, RULES AND REGULATIONS WHICH APPLY TO THE CONSTRUCTION OF THESE IMPROVEMENTS, INCLUDING EPA REQUIREMENTS WITH RESPECT TO STORM WATER DISCHARGE.

3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL POTENTIAL OBSTRUCTIONS INCLUDING ALL UNDERGROUND UTILITIES. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION OBSERVER OR ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.

4. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL CONTACT LINE LOCATING SERVICE FOR LOCATION OF EXISTING UTILITIES.

5. ALL ELECTRICAL, TELEPHONE, CABLE TV, GAS AND OTHER UTILITY LINES, CABLES, AND APPURTENANCES ENCOUNTERED DURING CONSTRUCTION THAT REQUIRE RELOCATION, SHALL BE COORDINATED WITH THAT UTILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL NECESSARY UTILITY ADJUSTMENTS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR DELAYS OR INCONVENIENCES CAUSED BY UTILITY COMPANY WORK CREWS. THE CONTRACTOR MAY BE REQUIRED TO RESCHEDULE HIS ACTIVITIES TO ALLOW UTILITY CREWS TO PERFORM THEIR REQUIRED WORK.

6. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITY LINES WITHIN THE CONSTRUCTION AREA. ANY DAMAGE TO EXISTING FACILITIES CAUSED BY CONSTRUCTION ACTIVITY SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE AND APPROVED BY THE CONSTRUCTION OBSERVER.

7. CONSTRUCTION ACTIVITY SHALL BE LIMITED TO THE PROPERTY AND/OR PROJECT LIMITS. ANY DAMAGE TO ADJACENT PROPERTIES RESULTING FROM THE CONSTRUCTION PROCESS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.

8. OVERNIGHT PARKING OF CONSTRUCTION EQUIPMENT SHALL NOT OBSTRUCT DRIVEWAYS OR DESIGNATED TRAFFIC LANES. THE CONTRACTOR SHALL NOT STORE ANY EQUIPMENT OR MATERIAL WITHIN THE PUBLIC RIGHT-OF-WAY.

9. THE CONTRACTOR SHALL OBTAIN ALL THE NECESSARY PERMITS FOR THE PROJECT PRIOR TO COMMENCING CONSTRUCTION (I.E., BARRICADING, TOPSOIL DISTURBANCE, EXCAVATION PERMITS, EPA STORM WATER PERMITS, ETC.).

10. ALL PROPERTY CORNERS DESTROYED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. ALL PROPERTY CORNERS MUST BE RESET BY A REGISTERED LAND SURVEYOR.

11. THE CONTRACTOR SHALL PREPARE A CONSTRUCTION TRAFFIC CONTROL AND SIGNING PLAN AND OBTAIN APPROVAL OF SUCH PLAN FROM THE CITY OF ALBUQUERQUE, TRAFFIC ENGINEERING DEPARTMENT, PRIOR TO BEGINNING ANY CONSTRUCTION WORK ON OR ADJACENT TO EXISTING STREETS.

12. ALL BARRICADES AND CONSTRUCTION SIGNING SHALL CONFORM TO APPLICABLE SECTIONS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), US DEPARTMENT OF TRANSPORTATION, LATEST EDITION.

13. THE CONTRACTOR SHALL MAINTAIN ALL CONSTRUCTION BARRICADES AND SIGNING AT ALL TIMES. THE CONTRACTOR SHALL VERIFY THE PROPER LOCATION OF ALL BARRICADING AT THE END AND BEGINNING OF EACH DAY.

14. THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO CONFORM WITH EPA REQUIREMENTS, INCLUDING COMPLIANCE WITH NPDES PHASE 2 REQUIREMENTS.

MESA DEL SOL BUILDING 1 (PREVIOUSLY ADVENT SOLAR) SITE BASIN CALCULATIONS

Ultimate Development Conditions Basin Data Table

This table is based on the DPM Section 22.2, Zone: 2

BASIN ID	Area (SQ. FT)	Area (AC.)	Land Treatment Percentages A	B	C	D	Q(100) (cfs/ac.)	Q(100) (cfs)	WT E (inches)	$V(100)_{360}$ (CF)	$V(100)_{10day}$ (CF)	AREA 4' POND (SQFT)
BUILDING 1 SITE CONTRIBUTATING TO POND												
Basin 1	78882	1.81	0.0%	10.0%	0.0%	90.0%	4.46	8.07	1.99	13055	22521	7507
Basin 2	62962	1.45	0.0%	10.0%	0.0%	90.0%	4.46	6.44	1.99	10420	17976	5992
Basin 3	86033	1.98	0.0%	10.0%	0.0%	90.0%	4.46	8.80	1.99	14238	24562	8187
Basin 4	73065	1.68	0.0%	10.0%	80.0%	10.0%	3.21	5.38	1.19	7270	8244	2748
REVISED												
Basin 5	99736	2.29	0.0%	10.0%	80.0%	10.0%	3.21	7.35	1.19	9924	11254	3751
REVISED												
			CURRENT TOTAL BASED ON COA HYDRO FILE # R16/DA2004								84557	28186
REVISED TOTAL												
			TOTAL CONTRIBUTING TO POND (including 9,907CF from Fire Station)								94,464	CF
			TOTAL CONTRIBUTING TO POND REVISED									
			CURRENT POND VOLUME (PER COA HYDRO FILE # R16/DA2004)								103,074	CF
			EXCESS POND VOLUME AVAILABLE								4,881	CF

DRAINAGE MANAGEMENT PLAN

INTRODUCTION:
THESE IMPROVEMENTS ARE LOCATED ON THE SOUTH SIDE OF THE OLD ADVENT SOLAR SITE IN MESA DEL SOL AND INCLUDE THE CONSTRUCTION OF A NEW LOADING DOCK AND ASSOCIATED PAVING FOR THE SOUTHERN GARAGES OF THIS BUILDING.

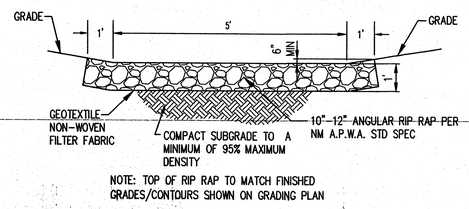
EXISTING CONDITIONS:
THIS SITE IS TIED TO TWO APPROVED DRAINAGE MANAGEMENT PLANS CONSTRUCTED. THE APPROVED GRADING AND DRAINAGE PLAN FOR THE ADVENT SOLAR SITE (COA HYDRO FILE #R16/D1), AS WELL AS THE MESA DEL SOL FIRE STATION SITE (COA HYDRO FILE # R16/2004). THE FIRE STATION SITE MODIFIED THE EXISTING RETENTION POND.

PROPOSED CONDITIONS:
THE CONSTRUCTION OF THE LOADING DOCK AND THE ASSOCIATED PAVING FOR THIS PROJECT WILL INCREASE THE IMPERVIOUS AREA APPROXIMATELY 10% FROM THE ORIGINAL CALCULATED AMOUNT FOR BASINS 4 AND 5. REFER TO THE "ULTIMATE DEVELOPMENT CONDITIONS BASIN DATA TABLE" FOR THE DIFFERENCE IN IMPERVIOUS AREA SHOW WITHIN THE GRAYED OUT SECTIONS. THE EXISTING POND VOLUME (103,074CF) HAS ENOUGH CAPACITY TO ACCEPT THIS ADDITIONAL DRAINAGE WITH EASE.

OFFSITE DRAINAGE:
THERE WILL BE NO OFFSITE BASINS THAT WILL ADVERSARY AFFECT THIS SITE. ALL SURROUNDING DRAINAGE BASINS WILL CONTINUE TO ACT AS THEY DID IN THE PAST AND DRAIN TO THE RETENTION POND VIA CONCRETE RUNDOWNS.

FLOODPLAIN:
IN ACCORDANCE WITH FEMA COMMUNITY MAP PANEL #35001C0555 D, THE SITE IS NOT LOCATED WITHIN A FLOODPLAIN.

CONCLUSION:
THE HYDROLOGIC CALCULATIONS WERE COMPUTED IN ACCORDANCE WITH SECTION 22.2 OF THE DPM AND ARE CAPABLE OF SAFELY PASSING THE 100YR, 10DAY STORM EVENT AND MEET CITY REQUIREMENTS. WITH THIS SUBMITTAL WE ARE SEEKING HYDROLOGY APPROVAL FOR PAVING AND GRADING PERMIT APPROVAL.

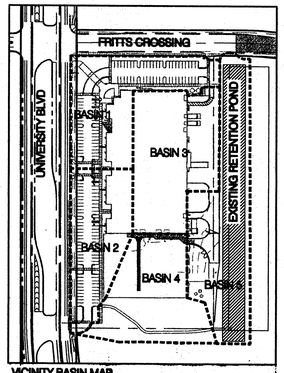


NOTE: TOP OF RIP RAP TO MATCH FINISHED GRADES/CONTOURS SHOWN ON GRADING PLAN

1 RIP RAP BLANKET
NTS

LEGEND

	PROPERTY LINE
5301	EXISTING CONTOURS
5301.15	EXISTING GROUND SPOT ELEVATION
	EXISTING ELECTRICAL POLE
65.23	PROPOSED SPOT ELEVATION TC=TOP OF CURB, FL=FLOW LINE TW=TOP OF WALL, BW=BOTTOM OF WALL EX=EXISTING, TG=TOP OF GRADE
S=2.0%	PROPOSED DIRECTION OF FLOW
	WATER BLOCK
	PROPOSED RETAINING WALL
5325	PROPOSED INDEX CONTOURS
	PROPOSED INCO TER CONTOURS
	PROPOSED CURB & GUTTER
	EASEMENT
	EXISTING TREE
	PROPOSED LIGHTING
SD	PROPOSED STORM DRAIN LINE
	PROPOSED STORM DRAIN MANHOLE
	PROPOSED STORM DRAIN INLET
	EXISTING STORM DRAIN MANHOLE



VICINITY BASIN MAP
NTS

Dekker Perich Sabatini
architecture interiors landscape planning engineering
7601 Jefferson NE Suite 100
Albuquerque, NM 87109
505 761-9700
fax 761-4222
dps@dpsdesign.org

ARCHITECT

ENGINEER

MICHAEL BALAZSKOVITS NEW MEXICO 18187 LICENSED PROFESSIONAL ENGINEER 5-2-11

PROJECT

CFV SOLAR TEST LAB @ MESA DEL SOL
5600 University SE
Albuquerque, NM

VALUE ENGINEERING

REVISIONS
△ DATE DESCRIPTION

DRAWN BY	MJB
REVIEWED BY	MJB
DATE	03/17/2011
PROJECT NO.	10-0068

DRAWING NAME
GRADING AND DRAINAGE PLAN

SHEET NO.
C-100

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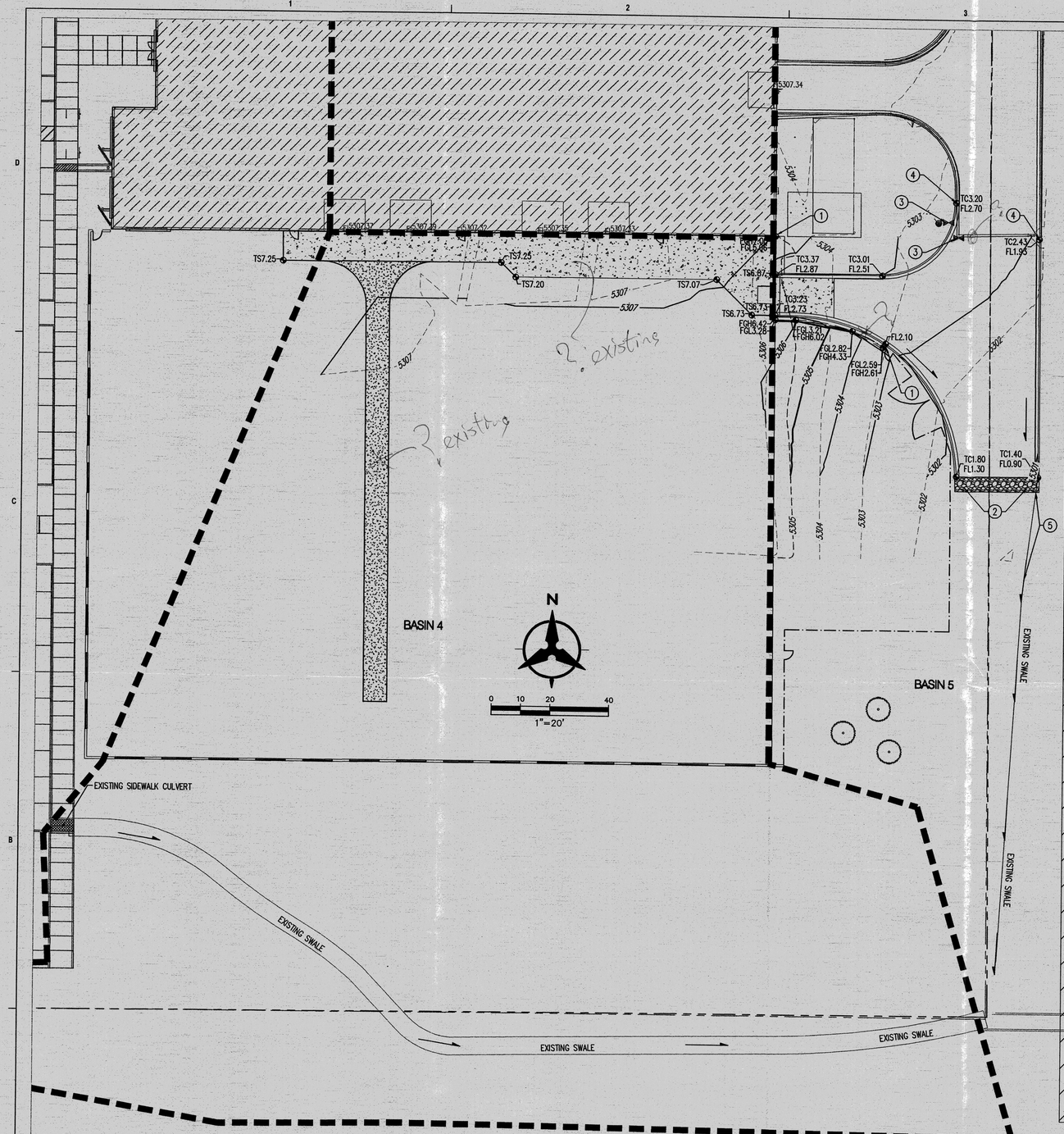

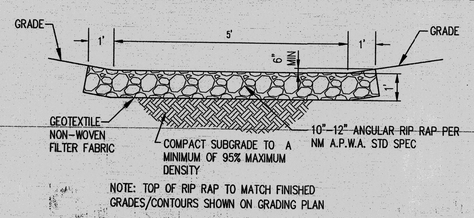

NOTE: TOP OF RIP RAP TO MATCH FINISHED GRADES/CONTOURS SHOWN ON GRADING PLAN

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NTS

GRADING NOTES

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MESA DEL SOL BUILDING 1 (PREVIOUSLY ADVENT SOLAR) SITE BASIN CALCULATIONS

Ultimate Development Conditions Basin Data Table

This table is based on the DPM Section 22.2, Zone: 2

BASIN ID	Area (SQ. FT)	Area (AC.)	Land Treatment Percentages A	B	C	D	Q(100) (cfs/ac.)	Q(100) (cfs)	WT E (inches)	$V(100)_{360}$ (CF)	$V(100)_{10day}$ (CF)	AREA 4' POND (SQFT)
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Basin 4 REVISED	73068	1.68	0.0%	10.0%	70.0%	20.0%	3.37	5.65	1.29	7873	9821	3273
Basin 5	99736	2.29	0.0%	10.0%	80.0%	10.0%	3.21	7.35	1.19	9924	11254	3751
Basin 5 REVISED	99737	2.29	0.0%	10.0%	70.0%	20.0%	3.37	7.71	1.29	10747	13405	4469
CURRENT TOTAL BASED ON COA HYDRO FILE # R16/DA2004											84557	28186
REVISED TOTAL											88288	
TOTAL CONTRIBUTING TO POND (including 9,907CF from Fire Station)											94,464	CF
TOTAL CONTRIBUTING TO POND - REVISED											98,193	CF
CURRENT POND VOLUME (PER COA HYDRO FILE # R16/DA2004)											103,074	CF
EXCESS POND VOLUME AVAILABLE											4,881	CF

DRAINAGE MANAGEMENT PLAN

INTRODUCTION:
THESE IMPROVEMENTS ARE LOCATED ON THE SOUTH SIDE OF THE OLD ADVENT SOLAR SITE IN MESA DEL SOL AND INCLUDE THE CONSTRUCTION OF A NEW LOADING DOCK AND ASSOCIATED PAVING FOR THE SOUTHERN GARAGES OF THIS BUILDING.

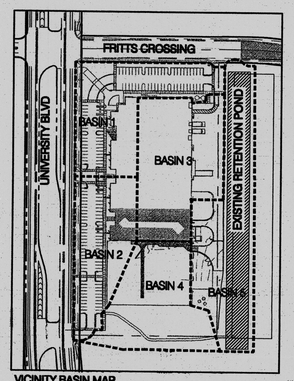
EXISTING CONDITIONS:
THIS SITE IS TIED TO TWO APPROVED DRAINAGE MANAGEMENT PLANS CONSTRUCTED. THE APPROVED GRADING AND DRAINAGE PLAN FOR THE ADVENT SOLAR SITE (COA HYDRO FILE #R16/D1), AS WELL AS THE MESA DEL SOL FIRE STATION SITE (COA HYDRO FILE # R16/2004). THE FIRE STATION SITE MODIFIED THE EXISTING RETENTION POND.

PROPOSED CONDITIONS:
THE CONSTRUCTION OF THE LOADING DOCK AND THE ASSOCIATED PAVING FOR THIS PROJECT WILL INCREASE THE IMPERVIOUS AREA APPROXIMATELY 10% FROM THE ORIGINAL CALCULATED AMOUNT FOR BASINS 4 AND 5. REFER TO THE "ULTIMATE DEVELOPMENT CONDITIONS BASIN DATA TABLE" FOR THE DIFFERENCE IN IMPERVIOUS AREA SHOW WITHIN THE GRAYED OUT SECTIONS. THE EXISTING POND VOLUME (103,074CF) HAS ENOUGH CAPACITY TO ACCEPT THIS ADDITIONAL DRAINAGE WITH EASE.

OFFSITE DRAINAGE:
THERE WILL BE NO OFFSITE BASINS THAT WILL ADVERSARY AFFECT THIS SITE. ALL SURROUNDING DRAINAGE BASINS WILL CONTINUE TO ACT AS THEY DID IN THE PAST AND DRAIN TO THE RETENTION POND VIA CONCRETE RUNDOWNS.

FLOODPLAIN:
IN ACCORDANCE WITH FEMA COMMUNITY MAP PANEL #35001C0555 D, THE SITE IS NOT LOCATED WITHIN A FLOODPLAIN.

CONCLUSION:
THE HYDROLOGIC CALCULATIONS WERE COMPUTED IN ACCORDANCE WITH SECTION 22.2 OF THE DPM AND ARE CAPABLE OF SAFELY PASSING THE 100YR, 10DAY STORM EVENT AND MEET CITY REQUIREMENTS. WITH THIS SUBMITTAL WE ARE SEEKING HYDROLOGY APPROVAL FOR PAVING AND GRADING PERMIT APPROVAL.



VICINITY BASIN MAP
N.T.S.

Dekker Perich Sabatini
architecture
interiors
landscape
planning
engineering
7601 Jefferson NE Suite 100
Albuquerque, NM 87109
505 761-9700
fax 761-4222
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ARCHITECT

ENGINEER

MICHAEL BARKOVITS NEW MEXICO 18187 LICENSED PROFESSIONAL ENGINEER 3-30-11

PROJECT

CFV SOLAR TEST LAB @ MESA DEL SOL
5600 University SE
Albuquerque, NM

VALUE ENGINEERING

REVISIONS
△ DATE DESCRIPTION

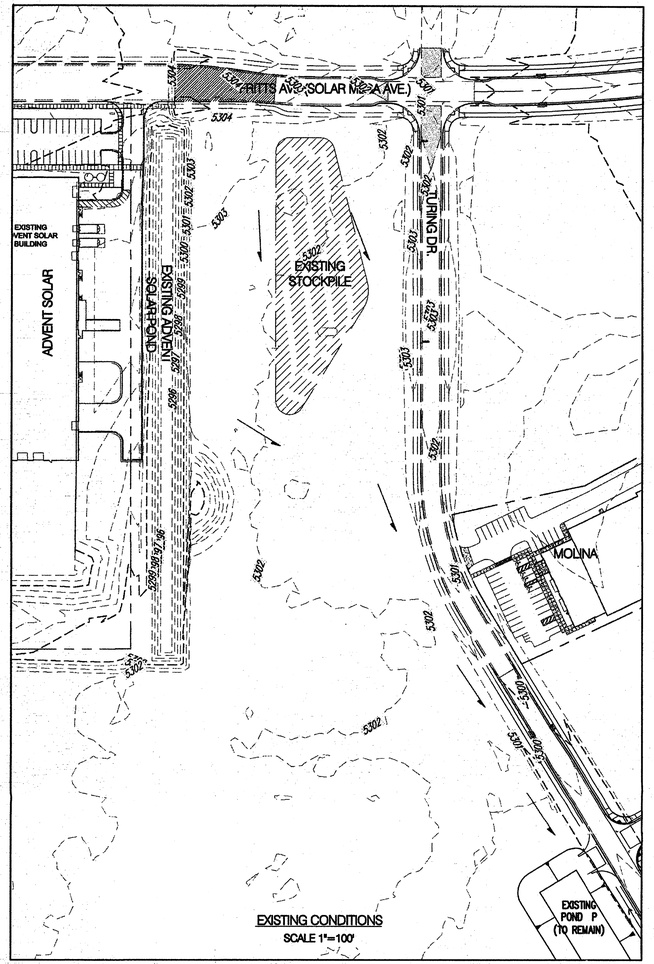
RECEIVED MAR 30 2011 PLANNING DIVISION

DRAWN BY	MJB
REVIEWED BY	MJB
DATE	03/17/2011
PROJECT NO.	10-0068

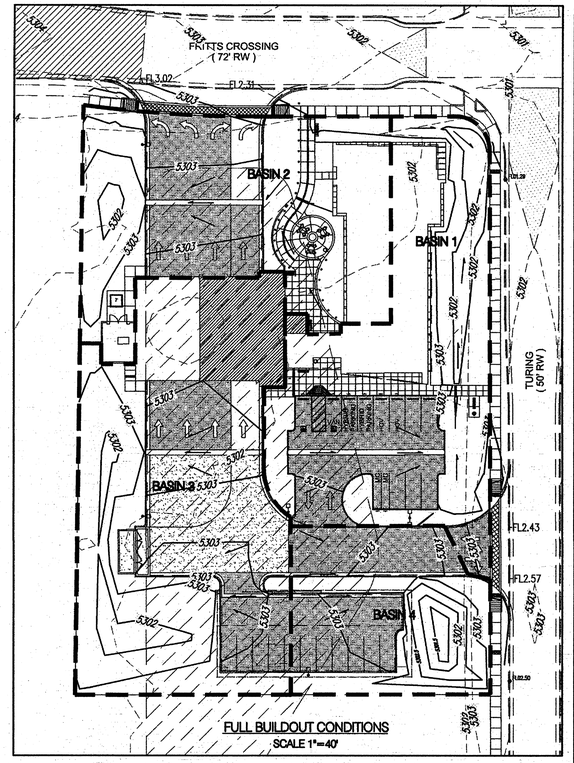
DRAWING NAME
GRADING AND DRAINAGE PLAN

SHEET NO.
C-100

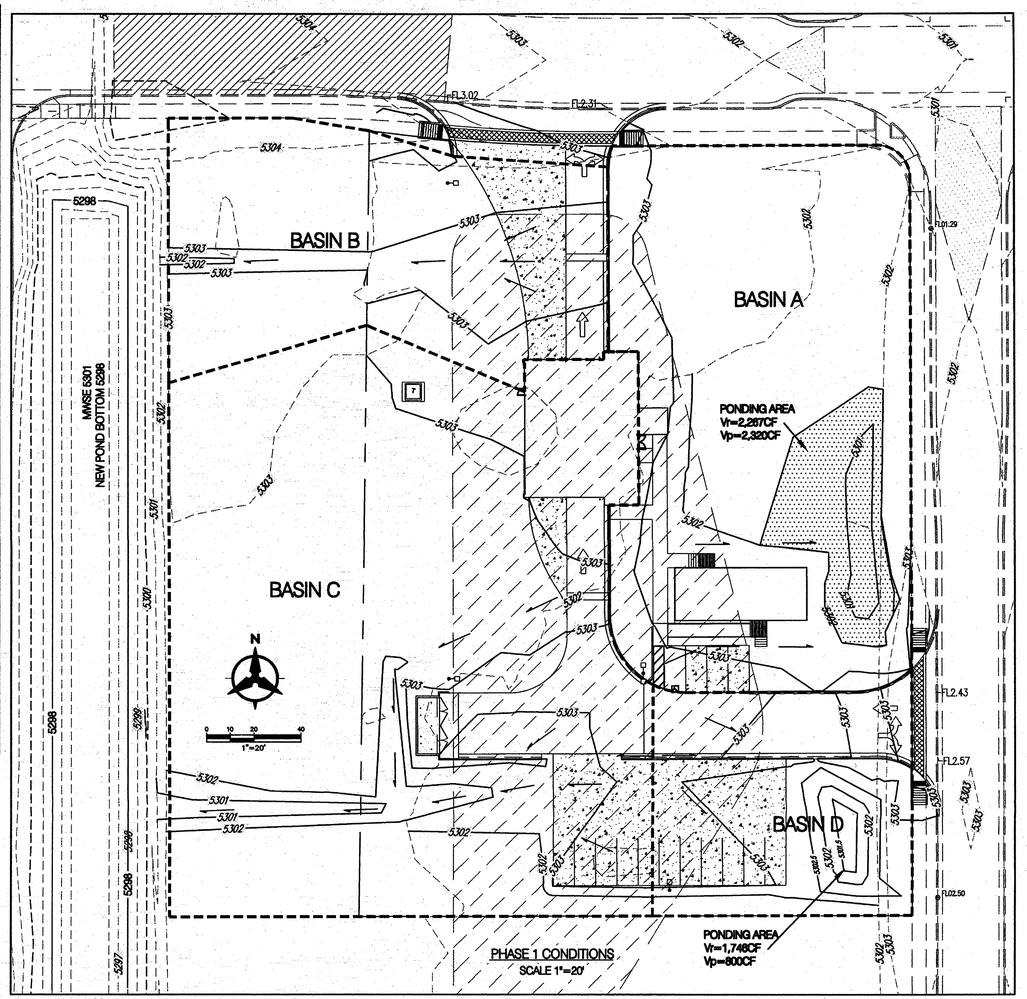
2/24/2011 8:52:19 AM



EXISTING CONDITIONS
SCALE 1"=100'



FULL BUILDOUT CONDITIONS
SCALE 1"=40'



PHASE 1 CONDITIONS
SCALE 1"=20'

TABLE 3		
EXISTING ADVENT POND VOLUME		
CALCULATED WITH THE TOP OF POND AS 5031		
ELEVATION	AREA (SF)	VOLUME AT ELEVATION (CF)
5301.00	46322	0
5300.00	37998	42160
5299.00	30039	76178
5298.50	26896	90412
5298.00	**23752**	**103074**
5297.50	20683	114183
5297.00	17613	123757
5296.00	11629	138378
TOTAL VOLUME		**138,378CF**

100yr, 10day Volume Contributing from Advent	84,557CF
100yr, 10day Volume Contributing from the Fire Statior	9,907CF
TOTAL VOLUME CONTRIBUTING TO ADVENT POND	94,463CF
TOTAL EXCESS VOLUME	**35,304CF**

TABLE 1 — **FULL BUILD OUT FIRE HOUSE - DEVELOPED HYDRAULIC CALCULATIONS** — *Ultimate Development Conditions Basin Data Table*

This table is based on the DPM Section 22.2, Zone: 2

SUB-BASIN ID	Area (SQ. FT)	Area (AC.)	Land Treatment Percentages A	B	C	D	Q(100) (cfs/ac.)	Q(100) (cfs)	WT E_{100YR} (inches)	$V(100)_{360}$ (CF)	$V(100)_{10day}$ (CF)
BASIN 1	21076	0.48	0.0%	0.0%	40.0%	60.0%	4.08	1.97	1.72	3028	4714
BASIN 2	19095	0.44	0.0%	0.0%	40.0%	60.0%	4.08	1.79	1.72	2743	4271
BASIN 3	25197	0.58	0.0%	0.0%	40.0%	60.0%	4.08	2.36	1.72	3620	5636
BASIN 4	9627	0.22	0.0%	0.0%	50.0%	50.0%	3.92	0.87	1.63	1304	1945
Total	***74994.50***	***1.72***						***6.98***		***10694.79***	***16566.00***

TABLE 2 — **LEED CALCULATIONS**

	$WT E_{2YR}$ (inches)	$V(2)_{360}$ (CF)	$V(2)_{1440}$ (CF)
BASIN 1	0.53	938	1359
BASIN 2	0.53	850	1232
BASIN 3	0.53	1121	1625
BASIN 4	0.47	377	537
Total		***3285.91***	***4753.72***

TABLE 2 — **PHASE 1 FIRE HOUSE - DEVELOPED HYDRAULIC CALCULATIONS** — *Ultimate Development Conditions Basin Data Table*

This table is based on the DPM Section 22.2, Zone: 2

SUB-BASIN ID	Area (SQ. FT)	Area (AC.)	Land Treatment Percentages A	B	C	D	Q(100) (cfs/ac.)	Q(100) (cfs)	WT E_{100YR} (inches)	$V(100)_{360}$ (CF)	$V(100)_{10day}$ (CF)
BASIN A	28670	0.66	50.0%	40.0%	0.0%	10.0%	2.16	1.42	0.79	1885	2267
BASIN B	17226	0.40	0.0%	50.0%	25.0%	25.0%	3.10	1.23	1.20	1726	2300
BASIN C	47122	1.08	0.0%	40.0%	40.0%	20.0%	3.11	3.36	1.19	4665	5922
BASIN D	10562	0.24	0.0%	15.0%	50.0%	35.0%	3.56	0.86	1.42	1253	1746
Total	***103579.58***	***2.38***						***6.87***		***9529.63***	***12235.57***

PHASE 1 DRAINAGE MANAGEMENT PLAN

I. Introduction

The purpose of this submittal is to present a final grading and drainage plan for Phase 1 of the proposed Fire House at Mesa del Sol for hydrology review and approval. The site is located east of Advent Solar. There is an existing pond serving the Advent site to the west of this property, vacant land to the south, and public roads (Solar Mesa Ave and Turing Drive) to the north and east of the site. The full build out of this project will include one building, which will have a truck bay (4 fire trucks) along with an office and living quarters, parking and landscaped areas. The Phase 1 build out will only include a truck bay (2 fire trucks) a temporary trailer, with temporary parking. With this submittal we are seeking hydrology approval for Building Permit Approval of Phase 1.

II. Existing Hydrologic Conditions

The site is approximately 1.8 acres and is undeveloped. There is currently a stock pile located directly on the site (see EXISTING CONDITIONS for location). The majority of the site drains from northwest to southeast along the frontage of Turing Dr. until it reaches and existing Pond P constructed with the Mesa del Sol Roadway Rough Grading Project.

III. Proposed Hydrologic Conditions (FULL BUILD OUT)

The Full Build Out construction of this Fire Station has caused some minor changes to the Overall Drainage Areas 1 and 2. Initially this site was scheduled to lie entirely within Drainage Area 2 (DA2); however the site layout has caused a small portion of this site to drain to Drainage Area 1 (DA1). DA1 was revised to reflect this addition (please see COA hydro file R16/DA1, Engineer Stamp date 10-27-09).

The site will be divided into 4 basins (see FULL BUILD OUT CONDITIONS map and TABLE 1), all of which will enter water harvesting areas that will retain the 2yr 24hr storm event (for LEED purposes) before they overflow into their final drainage areas.

Basin 1 will overflow into Turing Dr. via a sidewalk culvert and be carried to the regional retention pond to the north associated with DA1.

Basin 2 and 3 will overflow to the west where they will either enter the existing Advent Solar pond or upon further development enter new inlets that will be tied to the ultimate storm drainage system outfalling into the regional retention ponds associated with DA2.

The current pond volume of the Advent Solar Pond (based on a Maximum Water Surface Elevation (MWSE of 5301) is 138,378CF as shown in Table 3. The original Advent Solar Building Permit Submittal (COA Hydro File #R16/D1) noted this pond would have a MWSE of 5300. Based on further investigation of the site and the drainage certification, the MWSE is capable of safely being raised to 5301. This was based on a number of factors. The low points along the WEstern edge of this pond range from 5303.38 to 5301.65 (all within the dock area of the Advent Site, see supplemental grading plan Sheet C-101) and the eastern edge of the pond is up to 5302. Solar Mesa Ave has an elevation of 5304.5+ just north of the pond. In addition the finished floor of the Advent building is 5307.38 and the proposed finished floor of the Fire Station is 5303.25 demonstrating that the entire 100yr, 10day storm event contributing to this pond will be contained within the 5301 MWSE.

Taking this new pond volume into account and subtracting the current developed basins that contribute to this pond (see Table 4 on the supplemental grading and plan shee c101) there is an excess of approximately 35,000CF of volume (with a new pond bottom of 5298) that is not being utilized. The attached supplemental grading plan of the pond shows that this pond will now be filled 2.00' with various stockpiles located within the area. The resulting volume will be 103,074CF which is greater than the required 94,463cf. This condition applies to full build out and Phase 1 construction of the Fire Station site.

Basin 4 will overflow directly to Turing Dr. and be conveyed to the south to the regional retention pond associated with DA2. Further calculations and hydrologic conditions will be provided when the full build out is submitted for building permit.

IV. Proposed Hydrologic Conditions (PHASE 1)

The Phase 1 construction will consist of a two bay fire truck parking structure, a temporary trailer, parking and the construction of the two driveways and required driving areas. The construction of Phase 1 will minimize the amount of disturbance of the undeveloped portions of the site and utilize the existing grading characteristics.

The Phase 1 drainage analysis of this site is slightly different than the full build out. There will be no water harvesting associated with this phase; however, there will still be 4 basins (see PHASE 1 CONDITIONS map and TABLE 2) and they are broken up as follows:

Basin A will drain to the southeast into a retention pond (just north that is sized to accommodate the 100yr 10 day storm event.

Basin B and C will drain via graded swales directly into the existing Advent Solar Pond which has been resized based on the configuration outline in section III.

Basin D will outfall to the south into a water harvesting area and eventually overflow toward Pond P during large storm events. There is minimal drainage from this basin (<1cfs) so there will be no adverse effects to the down stream site. Upon full buildout a sidewalk culvert will be constructed to allow this overflow to enter Turing.

The interim conditions described will be temporary until the temporary pond is no longer needed and the storm drain is constructed to the south.

V. Offsite Drainage

There will be no offsite basins that will adversely AFFECT this site. All surrounding drainage basins will be contained within the road or continue to drain to the south.

VI. Floodplain

In accordance with FEMA Community Map Panel #35001C0555 D, the site is not located within a floodplain.

VII. Conclusion

The hydrologic calculations were computed in accordance with Section 22.2 of the Development Process Manual (DPM) and are capable of safely passing the 100yr 10day storm event and meet city requirements. With this submittal we are seeking hydrology approval for Building Permit Approval of Phase 1 for the Fire Station at Mesa del Sol.

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HYDROLOGY SECTION

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18187
4-13-10
LICENSED PROFESSIONAL ENGINEER

PROJECT

FIRE HOUSE @ MESA DEL SOL

ALBUQUERQUE, NEW MEXICO

REVISIONS
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DRAWN BY
REVIEWED BY
DATE OCTOBER 20, 2009
PROJECT NO. 07025
DRAWING NAME
PHASE 1 DRAINAGE MANAGEMENT PLAN
SHEET NO.
C001
OF

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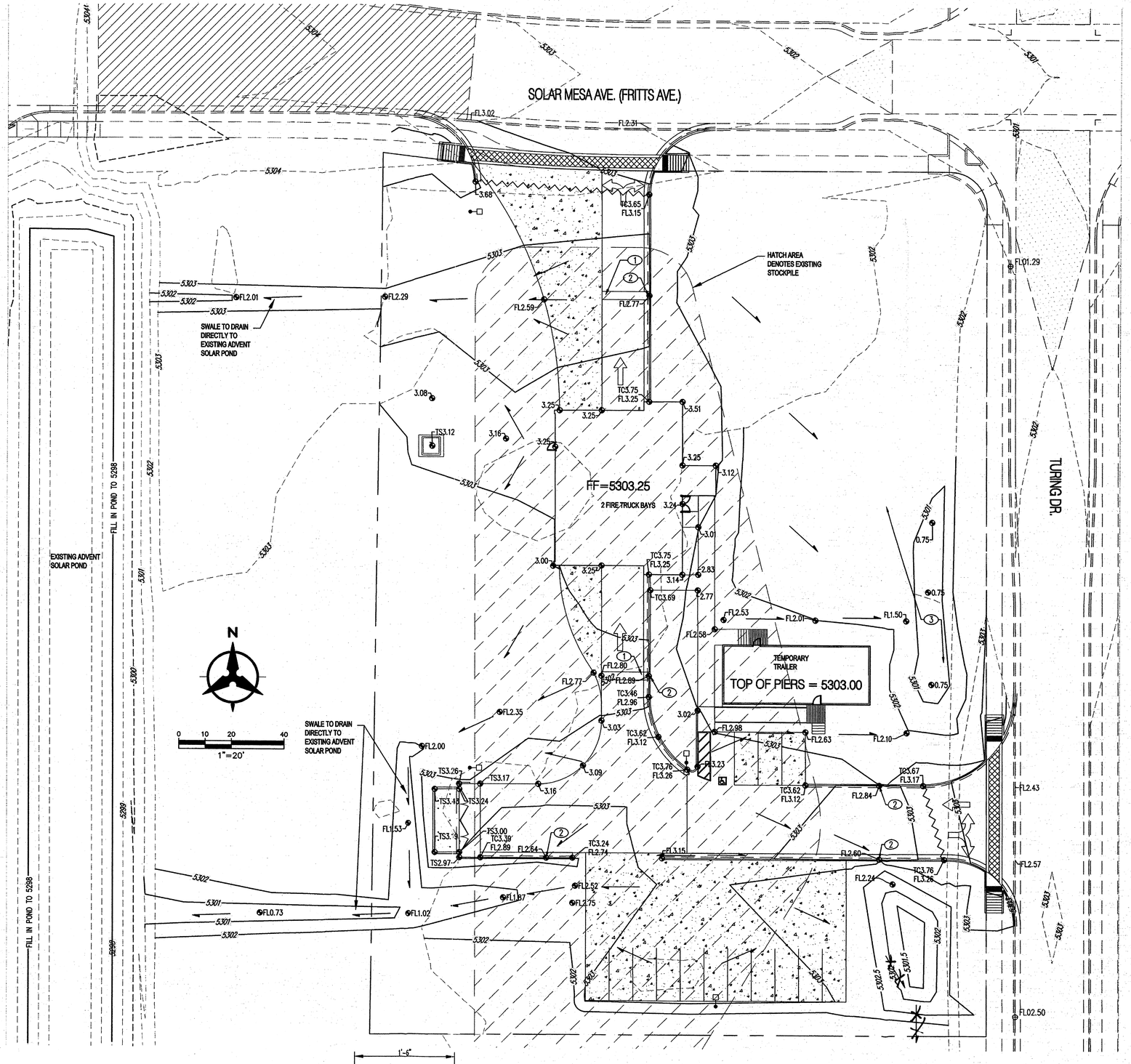
Tue, 13-Apr-2010 - 7:44:am, Plotted by: MBALASKOVITS



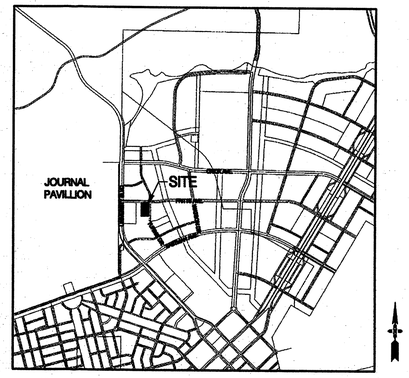
BENCHMARK

BENCHMARK #1
1_R16
N1453939.35 E1533242.614 5291.48

BENCHMARK #2
3_Q16
N1457546.798 E1534025.978 5310.42

GRADING KEYED NOTES

1. INSTALL 3' WIDE VALLEY GUTTER PER DETAIL 1 THIS SHEET.
2. INSTALL 2' WIDE CURB OPENING PER DETAIL 2 THIS SHEET.
3. TEMPORARY PONDING AREA.



LOCATION MAP
ZONE ATLAS INDEX MAP R-16

LEGEND

- PROPERTY LINE
- 5301 EXISTING CONTOURS
- 65.25 EXISTING GROUND SPOT ELEVATION
- EXISTING ELECTRICAL POLE
- 65.23 PROPOSED SPOT ELEVATION TC=TOP OF CURB, FL=FLOW LINE INV=INVERT ELEVATION
- S=2.0% PROPOSED DIRECTION OF FLOW
- WATER BLOCK
- 5325 PROPOSED INDEX CONTOURS
- PROPOSED INTER CONTOURS
- PROPOSED CURB & GUTTER
- EXISTING STORM DRAIN MANHOLE
- EXISTING STOCKPILE

GRADING NOTES

1. EXCEPT AS PROVIDED HEREIN, GRADING SHALL BE PERFORMED AT THE ELEVATIONS AND IN ACCORDANCE WITH THE DETAILS SHOWN ON THIS PLAN.

2. THE COST FOR REQUIRED CONSTRUCTION DUST AND EROSION CONTROL MEASURES SHALL BE INCIDENTAL TO THE PROJECT COST.

3. ALL WORK RELATIVE TO FOUNDATION CONSTRUCTION, SITE PREPARATION, AND PAVEMENT INSTALLATION, AS SHOWN ON THIS PLAN, SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE "GEOTECHNICAL INVESTIGATION," AS PROVIDED BY THE ARCHITECT OR OWNER. ALL OTHER WORK SHALL, UNLESS OTHERWISE STATED OR PROVIDED FOR HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE PROJECT, (FIRST PRIORITY) SPECIFICATIONS, AND/OR THE CITY OF ALBUQUERQUE (COA) STANDARD SPECIFICATIONS FOR PUBLIC WORKS (SECOND PRIORITY).

4. EARTH SLOPES SHALL NOT EXCEED 3 HORIZONTAL TO 1 VERTICAL UNLESS SHOWN OTHERWISE.

5. IT IS THE INTENT OF THESE PLANS THAT THIS CONTRACTOR SHALL NOT PERFORM ANY WORK OUTSIDE OF THE PROPERTY BOUNDARIES EXCEPT AS REQUIRED BY THIS PLAN.

6. THE CONTRACTOR IS TO ENSURE THAT NO SOIL ERODES FROM THE SITE ONTO ADJACENT PROPERTY OR PUBLIC RIGHT-OF-WAY. THIS SHOULD BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS OR SILT FENCE AT THE PROPERTY LINES AND WETTING THE SOIL TO PROTECT IT FROM WIND EROSION.

7. A DISPOSAL SITE FOR ANY & ALL EXCESS EXCAVATION MATERIAL, AND UNSUITABLE MATERIAL AND/OR A BORROW SITE CONTAINING ACCEPTABLE FILL MATERIAL SHALL BE OBTAINED BY THE CONTRACTOR IN COMPLIANCE WITH APPLICABLE ENVIRONMENTAL REGULATIONS AND APPROVED BY THE OBSERVER. ALL COSTS INCURRED IN OBTAINING A DISPOSAL OR BORROW SITE AND HAUL TO OR FROM SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE.

8. PAVING AND ROADWAY GRADES SHALL BE +/- 0.1' FROM PLAN ELEVATIONS. PAD ELEVATION SHALL BE +/- 0.1' FROM BUILDING PLAN ELEVATION.

9. ALL PROPOSED CONTOURS REFLECT TOP OF PAVEMENT ELEVATIONS IN THE PARKING AREA AND MUST BE ADJUSTED FOR MEDIANS AND ISLANDS.

10. VERIFY ALL ELEVATIONS SHOWN ON PLAN FROM BASIS OF ELEVATION CONTROL STATION PRIOR TO BEGINNING CONSTRUCTION.

11. SITE CONSTRUCTION TO MEET REQUIREMENTS OF SWPPP (STORM WATER POLLUTION PREVENTION PLAN).

GENERAL NOTES

1. ALL WORK DETAILED ON THESE PLANS AND PERFORMED UNDER THIS CONTRACT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND THE PROJECT GEOTECHNICAL REPORT. WHERE APPLICABLE, CITY OF ALBUQUERQUE PUBLIC WORKS STANDARDS SHALL APPLY.

2. THE CONTRACTOR SHALL ABIDE BY ALL LOCAL, STATE, AND FEDERAL LAWS, RULES AND REGULATIONS WHICH APPLY TO THE CONSTRUCTION OF THESE IMPROVEMENTS, INCLUDING EPA REQUIREMENTS WITH RESPECT TO STORM WATER DISCHARGE.

3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL POTENTIAL OBSTRUCTIONS INCLUDING ALL UNDERGROUND UTILITIES. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION OBSERVER OR ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.

4. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL CONTACT LINE LOCATING SERVICE FOR LOCATION OF EXISTING UTILITIES.

5. ALL ELECTRICAL, TELEPHONE, CABLE TV, GAS AND OTHER UTILITY LINES, CABLES, AND APPURTENANCES ENCOUNTERED DURING CONSTRUCTION THAT REQUIRE RELOCATION, SHALL BE COORDINATED WITH THAT UTILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL NECESSARY UTILITY ADJUSTMENTS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR DELAYS OR INCONVENIENCES CAUSED BY UTILITY COMPANY WORK CREWS. THE CONTRACTOR MAY BE REQUIRED TO RESCHEDULE HIS ACTIVITIES TO ALLOW UTILITY CREWS TO PERFORM THEIR REQUIRED WORK.

6. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITY LINES WITHIN THE CONSTRUCTION AREA. ANY DAMAGE TO EXISTING FACILITIES CAUSED BY CONSTRUCTION ACTIVITY SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE AND APPROVED BY THE CONSTRUCTION OBSERVER.

7. CONSTRUCTION ACTIVITY SHALL BE LIMITED TO THE PROPERTY AND/OR PROJECT LIMITS. ANY DAMAGE TO ADJACENT PROPERTIES RESULTING FROM THE CONSTRUCTION PROCESS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.

8. OVERNIGHT PARKING OF CONSTRUCTION EQUIPMENT SHALL NOT OBSTRUCT DRIVEWAYS OR DESIGNATED TRAFFIC LANES. THE CONTRACTOR SHALL NOT STORE ANY EQUIPMENT OR MATERIAL WITHIN THE PUBLIC RIGHT-OF-WAY.

9. THE CONTRACTOR SHALL OBTAIN ALL THE NECESSARY PERMITS FOR THE PROJECT PRIOR TO COMMENCING CONSTRUCTION (I.E., BARRICADING, TOPSOIL DISTURBANCE, EXCAVATION PERMITS, EPA STORM WATER PERMITS, ETC.).

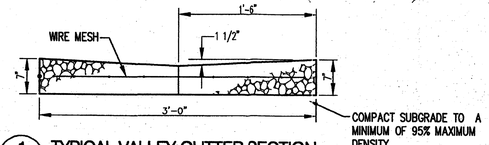
10. ALL PROPERTY CORNERS DESTROYED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. ALL PROPERTY CORNERS MUST BE RESET BY A REGISTERED LAND SURVEYOR.

11. THE CONTRACTOR SHALL PREPARE A CONSTRUCTION TRAFFIC CONTROL AND SIGNING PLAN AND OBTAIN APPROVAL OF SUCH PLAN FROM THE CITY OF ALBUQUERQUE, TRAFFIC ENGINEERING DEPARTMENT, PRIOR TO BEGINNING ANY CONSTRUCTION WORK ON OR ADJACENT TO EXISTING STREETS.

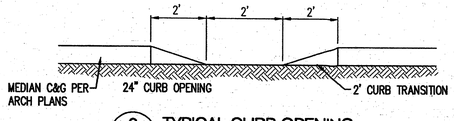
12. ALL BARRICADES AND CONSTRUCTION SIGNING SHALL CONFORM TO APPLICABLE SECTIONS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), US DEPARTMENT OF TRANSPORTATION, LATEST EDITION.

13. THE CONTRACTOR SHALL MAINTAIN ALL CONSTRUCTION BARRICADES AND SIGNING AT ALL TIMES. THE CONTRACTOR SHALL VERIFY THE PROPER LOCATION OF ALL BARRICADING AT THE END AND BEGINNING OF EACH DAY.

14. THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO CONFORM WITH EPA REQUIREMENTS, INCLUDING COMPLIANCE WITH NPDES PHASE 2 REQUIREMENTS.



1 / C100 TYPICAL VALLEY GUTTER SECTION
NTS



2 / C100 TYPICAL CURB OPENING
NTS

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4-13-10

PROJECT

FIRE HOUSE @ MESA DEL SOL
ALBUQUERQUE, NEW MEXICO

REVISIONS
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DRAWN BY
REVIEWED BY
DATE OCTOBER 20, 2009
PROJECT NO. 07025
DRAWING NAME
PHASE 1 GRADING AND DRAINAGE PLAN
SHEET NO.
C100
OF

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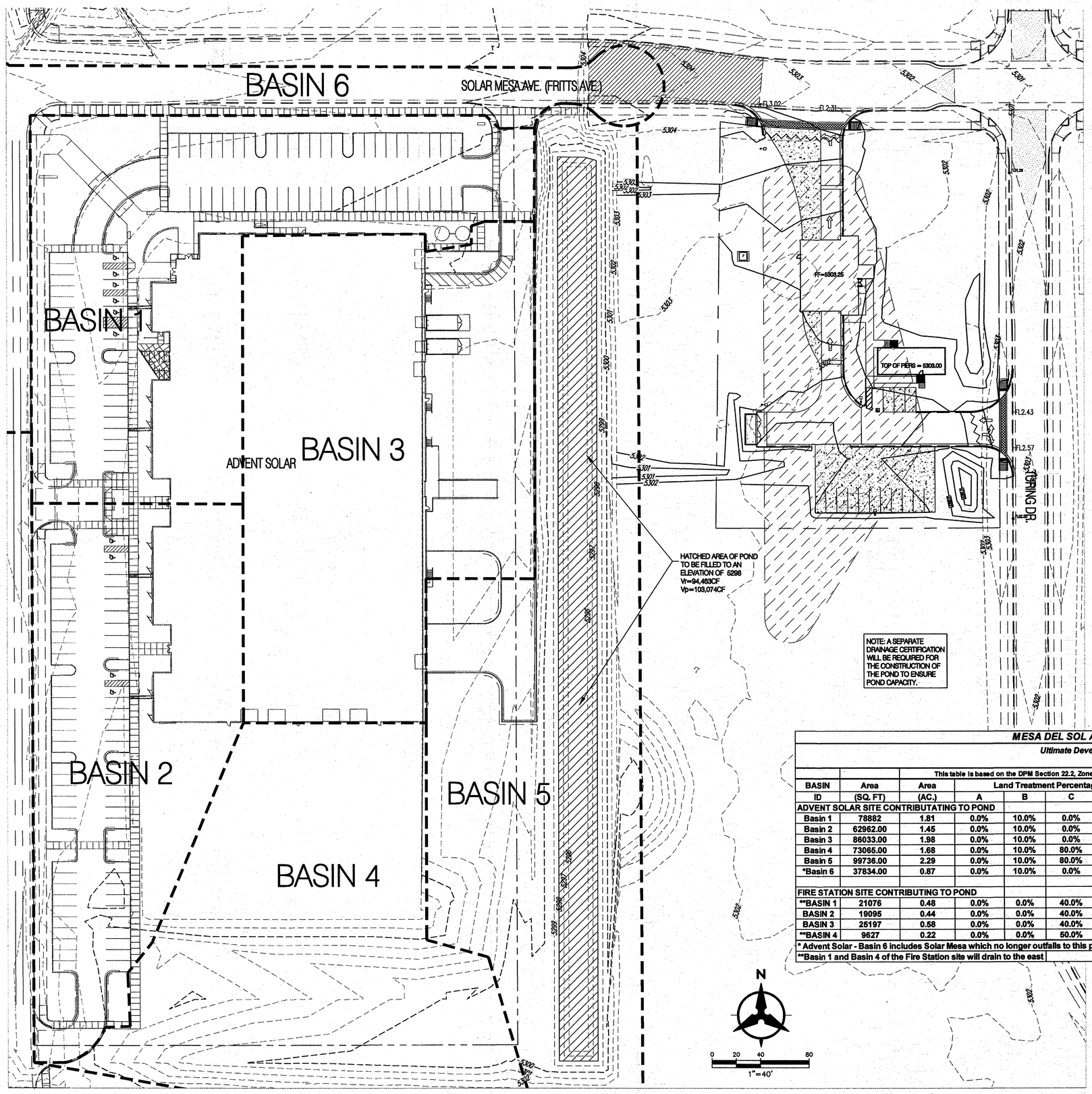

LEGEND

- PROPERTY LINE
- 5301 EXISTING CONTOURS
- 65.25 EXISTING GROUND SPOT ELEVATION
- EXISTING ELECTRICAL POLE
- 65.23 PROPOSED SPOT ELEVATION TC=TOP OF CURB, FL=FLOW LINE INV=INVERT ELEVATION
- S=2.0% PROPOSED DIRECTION OF FLOW
- WATER BLOCK
- 5305 PROPOSED INDEX CONTOURS
- PROPOSED INTER CONTOURS
- PROPOSED CURB & GUTTER
- EXISTING STORM DRAIN MANHOLE
- EXISTING STOCKPILE
- PROPOSED POND BOTTOM

MESA DEL SOL ADVENT SITE BASIN CALCULATIONS

Ultimate Development Conditions Basin Data Table

This table is based on the DPM Section 22.2, Zone: 2

BASIN ID	Area (SQ. FT)	Area (AC.)	Land Treatment Percentages A	B	C	D	Q(100) (cfs/ac.)	Q(100) (cfs)	WT E (inches)	$V(100)_{360}$ (CF)	$V(100)_{10day}$ (CF)	AREA 4' POND (SQFT)
ADVENT SOLAR SITE CONTRIBUTATING TO POND												
Basin 1	78882	1.81	0.0%	10.0%	0.0%	90.0%	4.46	8.07	1.99	13055	22521	7507
Basin 2	62962.00	1.45	0.0%	10.0%	0.0%	90.0%	4.46	6.44	1.99	10420	17976	5992
Basin 3	86033.00	1.98	0.0%	10.0%	0.0%	90.0%	4.46	8.80	1.99	14238	24562	8187
Basin 4	73065.00	1.68	0.0%	10.0%	80.0%	10.0%	3.21	5.38	1.19	7270	8244	2748
Basin 5	99736.00	2.29	0.0%	10.0%	80.0%	10.0%	3.21	7.35	1.19	9924	11254	3751
*Basin 6	37834.00	0.87	0.0%	10.0%	0.0%	90.0%	4.46	3.87	1.99	6262	10802	3601
											84557	28186
FIRE STATION SITE CONTRIBUTING TO POND												
**BASIN 1	21076	0.48	0.0%	0.0%	40.0%	60.0%	0.04	0.02	1.72	3028	4714	0
BASIN 2	19095	0.44	0.0%	0.0%	40.0%	60.0%	0.04	0.02	1.72	2743	4271	0
BASIN 3	25197	0.58	0.0%	0.0%	40.0%	60.0%	0.04	0.02	1.72	3620	5636	0
**BASIN 4	9627	0.22	0.0%	0.0%	50.0%	50.0%	0.05	0.01	1.63	1304	1945	0
* Advent Solar - Basin 6 includes Solar Mesa which no longer outfalls to this pond.												
**Basin 1 and Basin 4 of the Fire Station site will drain to the east									TOTAL CONTRIBUTING TO POND		94,463	at 5301

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PROJECT

FIRE HOUSE @ MESA DEL SOL
ALBUQUERQUE, NEW MEXICO

REVISIONS
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DRAWN BY
REVIEWED BY
DATE OCTOBER 20, 2009
PROJECT NO. 01025
DRAWING NAME
SUPLEMENTAL GRADING AND DRAINAGE SHEET ADVENT POND

SHEET NO.
C101
OF

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