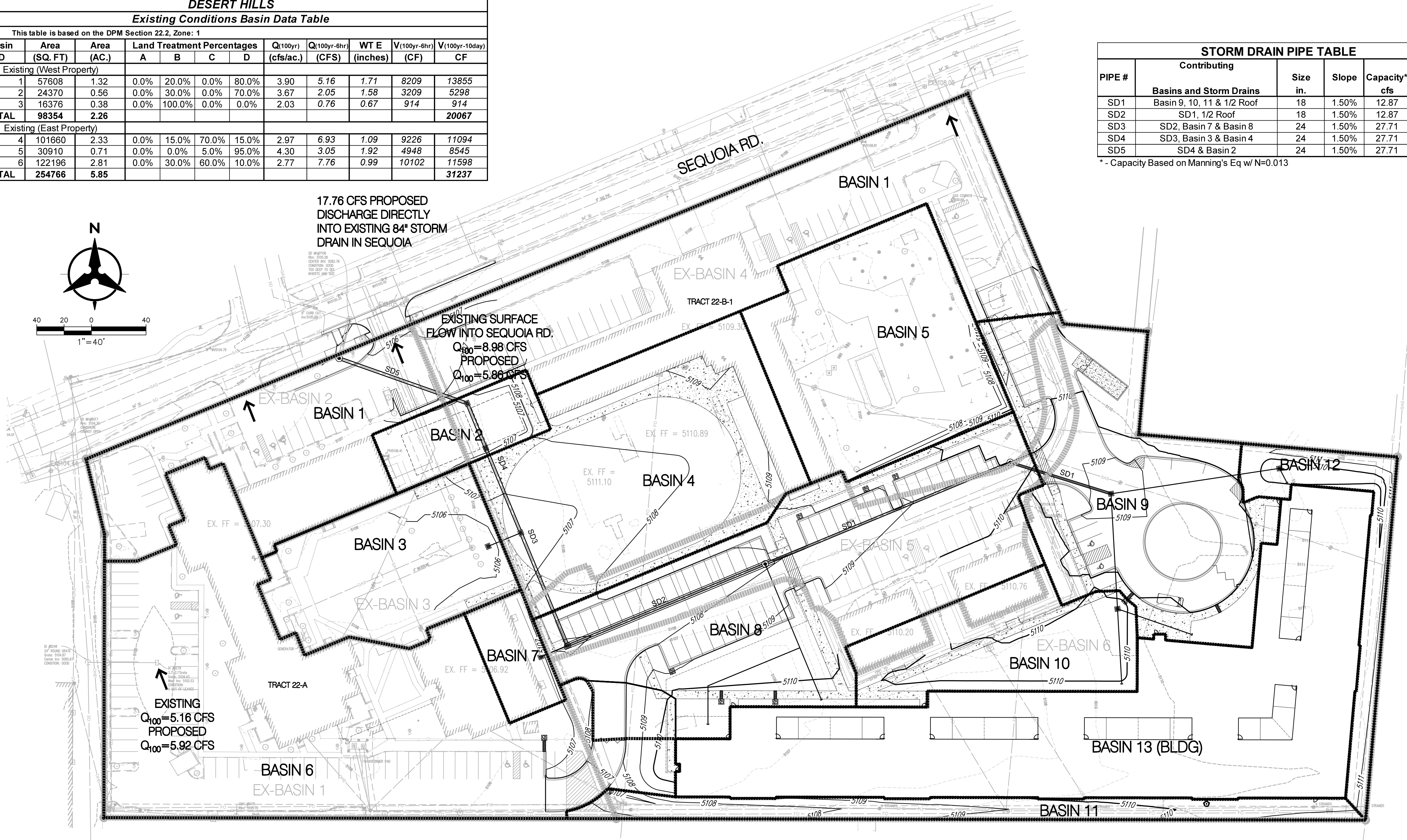
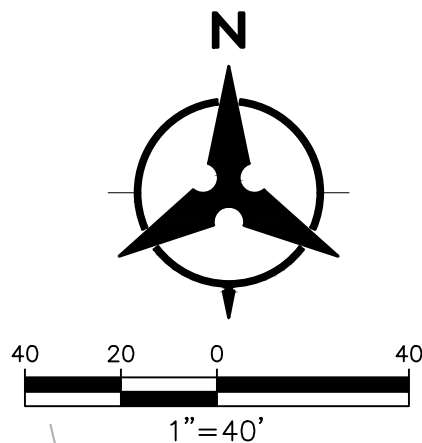


DESERT HILLS											
Existing Conditions Basin Data Table											
This table is based on the DPM Section 22.2, Zone: 1											
Basin	Area	Area	Land Treatment Percentages				Q(100yr)	Q(100yr-6hr)	WT E	V(100yr-6hr)	V(100yr-10day)
ID	(SQ. FT)	(AC.)	A	B	C	D	(cfs/ac.)	(CFS)	(inches)	(CF)	CF
Existing (West Property)											
1	57608	1.32	0.0%	20.0%	0.0%	80.0%	3.90	5.16	1.71	8209	13855
2	24370	0.56	0.0%	30.0%	0.0%	70.0%	3.67	2.05	1.58	3209	5298
3	16376	0.38	0.0%	100.0%	0.0%	0.0%	2.03	0.76	0.67	914	914
TOTAL	98354	2.26									20067
Existing (East Property)											
4	101680	2.33	0.0%	15.0%	70.0%	15.0%	2.97	6.93	1.09	9226	11094
5	30910	0.71	0.0%	0.0%	5.0%	95.0%	4.30	3.05	1.92	4948	8545
6	122196	2.81	0.0%	30.0%	60.0%	10.0%	2.77	7.76	0.99	10102	11598
TOTAL	254766	5.85									31237



STORM DRAIN PIPE TABLE					
PIPE #	Contributing	Size in.	Slope	Capacity* cfs	ACTUAL FLOW cfs
SD1	Basins and Storm Drains				
SD2	Basin 9, 10, 11 & 1/2 Roof	18	1.50%	12.87	7.25
SD3	SD1, 1/2 Roof	18	1.50%	12.87	9.74
SD4	SD2, Basin 7 & Basin 8	24	1.50%	27.71	14.13
SD5	SD3, Basin 3 & Basin 4	24	1.50%	27.71	17.34
SD6	SD4 & Basin 2	24	1.50%	27.71	17.76

* - Capacity Based on Manning's Eq w/ $N=0.013$

DESERT HILLS											
Proposed Ultimate Development Conditions Basin Data Table											
This table is based on the DPM Section 22.2, Zone: 1											
Basin	Area	Area	Land Treatment Percentages				Q(100yr)	Q(100yr-6hr)	WT E	V(100yr-6hr)	V(100yr-10day)
ID	(SQ. FT)	(AC.)	A	B	C	D	(cfs/ac.)	(CFS)	(inches)	(CF)	CF
	Proposed										
1	59457	1.36	0.0%	0.0%	5.0%	95.0%	4.30	5.86	1.92	9518	16437
2	5735	0.13	0.0%	30.0%	30.0%	40.0%	3.22	0.42	1.29	615	896
3	16320	0.37	0.0%	45.0%	45.0%	10.0%	2.64	0.99	0.94	1284	1484
4	31871	0.73	0.0%	35.0%	35.0%	30.0%	3.03	2.21	1.17	3113	4284
5	24913	0.57	0.0%	40.0%	40.0%	20.0%	2.83	1.62	1.06	2196	2807
*6	58603	1.35	0.0%	10.0%	10.0%	80.0%	3.99	5.36	1.74	8507	14250
7	3873	0.09	0.0%	0.0%	20.0%	80.0%	4.07	0.36	1.77	573	952
8	41555	0.95	0.0%	0.0%	10.0%	90.0%	4.22	4.03	1.87	6483	11064
9	30541	0.70	0.0%	0.0%	15.0%	85.0%	4.15	2.91	1.82	4640	7820
10	14326	0.33	0.0%	5.0%	20.0%	75.0%	3.95	1.30	1.71	2040	3356
11	9112	0.21	0.0%	25.0%	75.0%	0.0%	2.66	0.56	0.91	691	691
12	7157	0.16	0.0%	25.0%	75.0%	0.0%	2.66	0.44	0.91	543	543
13 (BLDG)	49662	1.14	0.0%	0.0%	0.0%	100.0%	4.37	4.98	1.97	8153	14236
TOTAL	200772	8.11						31.04			41110

DRAINAGE MANAGEMENT PLAN

INTRODUCTION:
THE PURPOSE OF THIS SUBMITTAL IS TO PROVIDE A GRADING AND DRAINAGE PLAN FOR THE PROPOSED DESERT HILLS FACILITY MODERNIZATION IN SUPPORT OF GRADING PERMIT AND BUILDING PERMIT APPROVAL.

THE DESERT HILLS CAMPUS, COMPRISED TO TWO ADJACENT TRACTS (TRACT 22-A AND TRACT 22-B-1 OF THE CORONA DEL SOL SUBDIVISION) IS LOCATED AT 5310 SEQUOIA RD. THE FACILITY PLANS TO DEVELOP THE REMAINDER OF THEIR EASTERN TRACT (TRACT 22-B-1) BY CONSTRUCTING A NEW 120 BED FACILITY AT THE SOUTH END OF THE SITE. IN ADDITION TO THIS IMPROVEMENT, THE CAMPUS WILL INCORPORATE OTHER IMPROVEMENTS TO "MODERNIZE" THE FACILITY THROUGHOUT BOTH TRACTS SO THAT THE CAMPUS ACTS AS ONE COHESIVE SITE. NEW CROSS LOT DRAINAGE AND ACCESS EASEMENTS WERE GRANTED ACROSS BOTH TRACTS DURING THE DRB PROCESS TO ALLOW THIS TO OCCUR.

EXISTING CONDITIONS:

THE 8.1 ACRE CAMPUS IS NEARLY FULLY DEVELOPED AND OVER THE YEARS HAS BEEN PERMITTED AS TWO SEPARATE PROJECTS BECAUSE IT IS MADE UP OF TWO SEPARATE TRACTS. THE OUTFALL HAS ALWAYS BEEN TO AN EXISTING 84" STORM DRAIN LOCATED WITHIN SEQUOIA RD. VIA SURFACE FLOW INTO THE ROADWAY. THIS STORM DRAIN ULTIMATELY OUTFALLS DIRECTLY TO THE RIO GRANDE RIVER.

TRACT 22-A (COA HYDRO FILE G11/D48)

THE SITE IS CURRENTLY FULLY DEVELOPED. A PORTION OF THE SITE DRAINS TO THE WEST VIA SURFACE FLOW INTO AN EXISTING STORM DRAIN LOCATED WITHIN THE ADJACENT ALLEY WHICH TIES DIRECTLY TO THE 84" STORM DRAIN WITHIN SEQUOIA RD. THE NORTHERN BASIN DRAINS VIA SURFACE FLOW DIRECTLY TO SEQUOIA RD. THE INTERIOR BASIN FLOW IS DESIGNED TO BE FULLY RETAINED ONSITE. (SEE EXISTING ONSITE BASINS 1-3 FOR EXISTING FLOWS)

TRACT 22-B-1 (COA HYDRO FILE G11/D51)

THE NORTHERN HALF OF THIS TRACT IS DEVELOPED AND THE SOUTHERN HALF IS CURRENTLY A DIRT LOT. THE NORTHERN HALF OF THE DRAINAGE FROM THIS SITE OUTFALLS VIA SURFACE FLOW DIRECTLY TO SEQUOIA RD AND ULTIMATELY INTO AN 84" STORM DRAIN. THE SOUTHERN HALF OF THIS SITE APPEARS TO OUTFALL WEST ONTO TRACT 22-A AND FOLLOWS THE EXISTING DRAINAGE NOTED IN TRACT 22-A. IN ADDITION THE EXISTING ROPES COURSE (BASIN 5) APPEARS TO FULLY RETAIN THE DRAINAGE WITHIN IT. (SEE EXISTING ONSITE BASINS 4-5 FOR EXISTING FLOWS).

PER FEMA MAP NUMBER 35001C0327H, THIS SITE IS NOT WITHIN A DESIGNATED FEMA FLOOD ZONE.

PROPOSED CONDITIONS:

THE DEVELOPED FLOWS FOR THE SITE WILL BE ANALYZED AS ONE PROJECT. THE MAJORITY OF THE SITE WILL DRAIN INTO A NEW ONSITE STORM DRAIN WHICH WILL DIRECTLY TO THE 84" STORM DRAIN WITHIN SEQUOIA RD. VIA AN EXISTING MANHOLE. THE CONNECTION TO THE MANHOLE WILL BE CONSTRUCTED UNDER COA PROJECT NUMBER 690283. EXISTING SURFACE FLOW TO SEQUOIA RD. WAS APPROXIMATELY 8.98 CFS. THE PROPOSED CONDITIONS DECREASES SURFACE FLOW TO SEQUOIA RD. TO APPROXIMATELY 5.86 CFS. THE INCREASED IMPERVIOUS AREA UNDER DEVELOPED CONDITIONS WILL INCREASE THE TOTAL RUNOFF OF THE SITE SLIGHTLY, HOWEVER WE ANTICIPATE THE INCREASE TO BE NEGLIGIBLE TO THE CAPACITY OF THE EXISTING 84" STORM DRAIN BASED ON THE AS BUILTS OF THE 84" STORM DRAIN. THE SITE WILL DISCHARGE 17.76 CFS DIRECTLY INTO THE 84" STORM DRAIN THROUGH A NEW 24" STORM DRAIN CONNECTION. SEE THE ABOVE BASIN BOUNDARIES AND STORM DRAIN CALCULATIONS ASSOCIATED WITH THE STORM BASIN.

CONCLUSION:

THIS DRAINAGE MANAGEMENT PLAN AND GRADING PLAN DEMONSTRATE THAT THE DRAINAGE ELEMENTS PROPOSED WITH THE PROJECT ARE CAPABLE OF SAFELY CONVEYING THE 100 YEAR, 6 HOUR STORM EVENT IN ACCORDANCE WITH THE DEVELOPMENT PROCESS MANUAL. WITH THIS SUBMITTAL WE ARE REQUESTING GRADING AND DRAINAGE APPROVAL FOR GRADING APPROVAL, AND BUILDING PERMIT APPROVAL.

LEGEND

- | | |
|--|-----------------------------------|
| | PROPOSED BASIN BOUNDARY |
| | PROPERTY LINE |
| | EXISTING CONTOURS |
| | |
| | PROPOSED SPOT ELEVATION |
| | TO=TOP OF CURB, FL=FLOW LINE |
| | TW=TOP OF WALL, BW=BOTTOM OF WALL |
| | EX=EXISTING, TO=TOP OF GRADE |
| | PROPOSED DIRECTION OF FLOW |
| | WATER BLOCK |
| | EXISTING BASIN BOUNDARY |
| | PROPOSED INDEX CONTOURS |
| | PROPOSED INTER CONTOURS |
| | PROPOSED CURB & GUTTER |
| | EASEMENT |
| | PROPOSED LIGHTING |
| | PROPOSED STORM DRAIN LINE |

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DRAINAGE MANAGEMENT PLAN

1	COA Comments 2014-06-20
2	Plan Revisions 2014-06-20

20 JUNE 2014
AHC1313

C1.0A

BID PACKAGE ONE - CONSTRUCTION DOCUMENTS