CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

24th RTH

March ~~17~~, 2016

Yolanda Padilla-Moyer, PE
Christian Sholtis, PE
BOHANNAN-HUSTON, INC.
7500 Jefferson Street NE Courtyard I
Albuquerque, NM 87109

RE: **Del Webb Phase 2 @ Mirehaven (both phases) (H09D017F)**
Tract M Watershed Subdivision
Drainage Report, Engineer's Stamp Date: 3-11-2016
Grading and Drainage Plans, Engineer's Stamp Date: 3-11-16

Dear Ms. Yolanda Padilla-Moyer P.E. & Mr. Sholtis, P.E.,

Based upon the information provided in your submittal received 3-11-16 and 3-16-16, the above referenced submittal is approved for ESC Permit (Grading Permit).

Prior to Building Permit approval, Engineer Certification per the DPM checklist will be required.

If you have any questions, you can contact me at 924-3695.

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf Addressee via Email

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

H09D017F_GP_Appr.doc

City of Albuquerque

Planning Department
Development & Building Services Division
DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV 02/2013)

Project Title: DEL WEBB PHASE 2 @ MIREHAVEN Building Permit #: _____ City Drainage #: H09D017F
DRB#: 1006864 EPC#: 15 EPC-40049 Work Order#: _____
Legal Description: TRACT M, WATERSHED SUBDIVISION
City Address: _____

Engineering Firm: BOHANNAN HUSTON INC Contact: Christian Sholtis
Address: 7500 JEFFERSON ST NE COURTYARD 1 ALBUQUERQUE NM 87109
Phone#: 823-1000 Fax#: _____ E-mail: csholtis@bhinc.com

Owner: WESTERN ALBUQUERQUE LAND HOLDINGS, LLC Contact: JEFF GARRETT
Address: 3131 CAMELBACJ=K RD SUITE 200 PHOENIX, AZ 85016
Phone#: 602-427-4064 Fax#: _____ E-mail: _____

Architect: _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

Surveyor: _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

Contractor: _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

TYPE OF SUBMITTAL:

X DRAINAGE REPORT
___ DRAINAGE PLAN 1st SUBMITTAL
X DRAINAGE PLAN RESUBMITTAL
___ CONCEPTUAL G & D PLAN
X GRADING PLAN
___ EROSION & SEDIMENT CONTROL PLAN (ESC)
___ ENGINEER'S CERT (HYDROLOGY)
___ CLOMR/LOMR
___ TRAFFIC CIRCULATION LAYOUT (TCL)
___ ENGINEER'S CERT (TCL)
___ ENGINEER'S CERT (DRB SITE PLAN)
___ ENGINEER'S CERT (ESC)
___ SO-19
___ OTHER (SPECIFY)

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

___ SIA/FINANCIAL GUARANTEE RELEASE
___ PRELIMINARY PLAT APPROVAL
___ S. DEV. PLAN FOR SUB'D APPROVAL
___ S. DEV. FOR BLDG. PERMIT APPROVAL
___ SECTOR PLAN APPROVAL
___ FINAL PLAT APPROVAL
___ CERTIFICATE OF OCCUPANCY (PERM)
___ CERTIFICATE OF OCCUPANCY (TCL TEMP)
___ FOUNDATION PERMIT APPROVAL
___ BUILDING PERMIT APPROVAL
X GRADING PERMIT APPROVAL
___ PAVING PERMIT APPROVAL
X WORK ORDER APPROVAL
___ GRADING CERTIFICATION
___ SO-19 APPROVAL
___ ESC PERMIT APPROVAL
___ ESC CERT. ACCEPTANCE
___ OTHER (SPECIFY)

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WAS A PRE-DESIGN CONFERENCE ATTENDED: ___ Yes ___ No ___ Copy Provided
DATE SUBMITTED: 3-11-16 By: CHRISTIAN J SHOLTIS, PE

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal The particular nature, location, anc scope to the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the followin

1 **Conceptual Grading and Drainage Plan** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans
2 **Drainage Plans** Required for building permits, grading permits, paving permits and site plans less than five (5) acres
3. **Drainage Report** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more
4 **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: DEL WEBB PHASE 2 @ MIREHAVEN Building Permit #: _____ City Drainage #: H09D017F

DRB#: 1006864 EPC#: 15 EPC-40049 Work Order#: _____

Legal Description: TRACT M, WATERSHED SUBDIVISION

City Address: _____

Engineering Firm: BOHANNAN HUSTON INC Contact: Yolanda Moyer

Address: 7500 JEFFERSON ST NE COURTYARD 1 ALBUQUERQUE NM 87109

Phone#: 823-1000 Fax#: _____ E-mail: ypadilla@bhinc com

Owner: PULTE Contact: KEVIN PATTON

Address: 7601 JEFFERSON STREET NE SUITE 310 ALBUQ NM 87109

Phone#: 505-341-8591 Fax#: _____ E-mail: kevin patton@pultegroup com

Architect: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Other Contact: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Check all that Apply:

DEPARTMENT:

x HYDROLOGY/ DRAINAGE
_____ TRAFFIC/ TRANSPORTATION
_____ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

_____ ENGINEER/ ARCHITECT CERTIFICATION

_____ CONCEPTUAL G & D PLAN
x GRADING PLAN
_____ DRAINAGE MASTER PLAN
_____ DRAINAGE REPORT
_____ CLOMR/LOMR

_____ TRAFFIC CIRCULATION LAYOUT (TCL)
_____ TRAFFIC IMPACT STUDY (TIS)
_____ EROSION & SEDIMENT CONTROL PLAN (ESC)

_____ OTHER (SPECIFY) _____

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

_____ BUILDING PERMIT APPROVAL
_____ CERTIFICATE OF OCCUPANCY

_____ PRELIMINARY PLAT APPROVAL
_____ SITE PLAN FOR SUB'D APPROVAL
_____ SITE PLAN FOR BLDG. PERMIT APPROVAL
_____ FINAL PLAT APPROVAL
_____ SIA/ RELEASE OF FINANCIAL GUARANTEE
_____ FOUNDATION PERMIT APPROVAL
x GRADING PERMIT APPROVAL
_____ SO-19 APPROVAL
_____ PAVING PERMIT APPROVAL
_____ GRADING/ PAD CERTIFICATION
x WORK ORDER APPROVAL
_____ CLOMR/LOMR

_____ PRE-DESIGN MEETING
_____ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: x Yes _____ No

DATE SUBMITTED: 3-16-16 By: YOLANDA PADILLA MOYER, P.E

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED ___

RECEIVED
3/16/16

Bohannan Huston

Courtyard I
7500 Jefferson St. NE
Albuquerque, NM
87109-4335

www.bhinc.com

voice: 505.823.1000
facsimile: 505.798.7988
toll free: 800.877.5332

March 11, 2016

Mr. Shahab Biazar, P.E.
City Engineer
City of Albuquerque
600 2nd Street NW
Albuquerque, NM 87102

Re: Grading and Drainage Plan Resubmittal, DMP FOR DEL WEBB PHASE 2 @ MIREHAVEN, Tract M Watershed Subdivision (H09/D017F)

Dear Shahab:

In addition to the enclosed revised Drainage Report and Grading plan, below are our responses (in blue) to your comments provided in your e-mail dated February 12, 2016.

1. Inlets 1 and 2 are called out on first section of the Wind Caves Way street hydraulics analysis sheet. It should be changed to Inlets 3 and 4.
   - This has corrected.
2. Double check the calculations for swales within Basins F.3 and G.4. Is right slopes on one of the swales is at 3%? In some areas the bottom of the slopes exceeds 8%.
   - The swale section and design has been revised and updated in the report. The swales will be 7', 8' and 9' wide with a 1' depth i.e approximate side slopes of 4:1. A note has been added the grading plan to identify exact location and sizes.
3. Small portion of the G.3 to the north does drain to West Creek Pl.
   - Basin boundary has been adjusted.
4. Sidewalk culvert locations and calculations should be provided.
   - It is a the request of the client that none be included and that the drainage spill over the sidewalk. This is a private subdivision which will be privately owned and maintained and it is felt that the metal plate on the sidewalk culvert are a greater hazard than the drainage and maintenance of any flow passing over the sidewalk.
5. Existing grades/topography should be provided at the east side of project.
   - We have since received design survey and the flowline elevations have been updated to reflect the design survey elevations.
6. First flush volumes are not shown for ponds within Basins F.4 and G.4.
   - These calculations have been added to the report.

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Advanced Technologies ▲

Per our meeting on, Monday March 7th we have added the storm drain analysis for the pipe tying to the downstream 42" stub to the Mirehaven arroyo.

Please find enclosed the revised plan; we are requesting your review and approval. I appreciate your time and consideration. If you have questions or require additional information, please contact me at 823-1000.

Sincerely,

Yolanda Padilla Moyer, P.E.
Senior Project Manager
Community Development & Planning

Chris Sholtis, P.E.
Senior Project Manager
Community Development & Planning

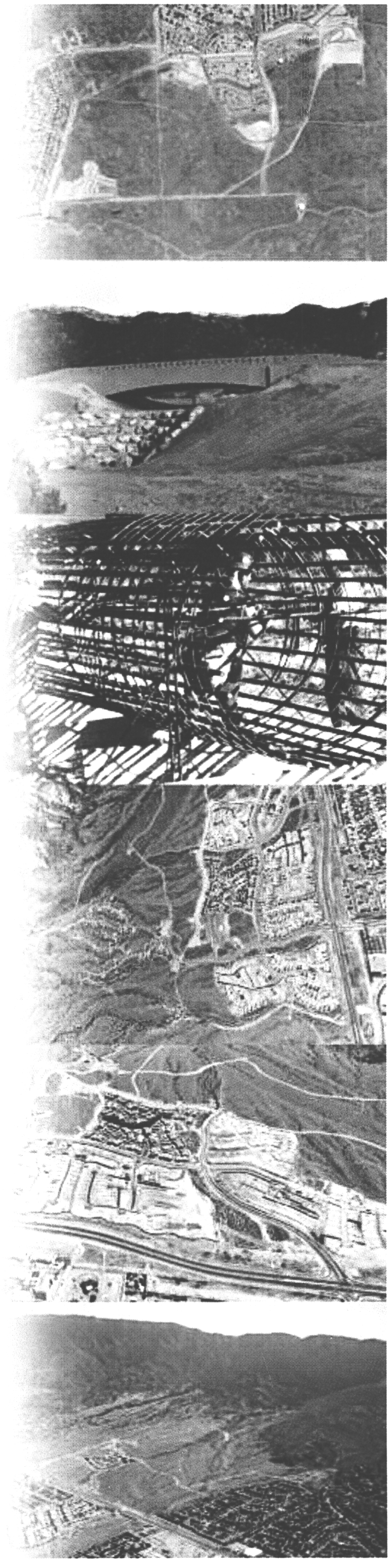
Enclosure

cc: Kevin Patton, Pulte Homes

DRAINAGE MANAGEMENT PLAN FOR

DEL WEBB PHASE 2 @ MIREHAVEN

TRACTS M OF THE WATERSHED SUBDIVISION



MARCH 2016

Prepared for:

Pulte Homes of New Mexico
7601 Jefferson Blvd. NE, Suite 320
Albuquerque, NM 87109

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LAND DEVELOPMENT SECTION

Prepared by:

Bohannan Huston

Engineering

Spatial Data

Advanced Technologies

DRAINAGE MANAGEMENT PLAN
FOR
DEL WEBB PHASE 2 @ MIREHAVEN
(TRACTS M OF THE WATERSHED SUBDIVISION)

MARCH 11, 2016

Prepared for:

PULTE HOMES OF NEW MEXICO
7601 JEFFERSON BLVD. NE, SUITE 320
ALBUQUERQUE, NM 87109

Prepared by:

BOHANNAN HUSTON, INC.
COURTYARD I
7500 JEFFERSON STREET NE
ALBUQUERQUE, NM 87109

Prepared by:

3-11-16

Christian J. Sholtis, PE — Date
Senior Project Manager

CHRISTIAN J. SHOLTIS
NEW MEXICO
16244
LICENSED PROFESSIONAL ENGINEER

Bohannan Huston

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EXHIBIT 3: PROPOSED BASINS MAP

EXHIBIT 4: STORM DRAIN NETWORK MAP

EXHIBIT 5: GRADING PLAN

EXHIBIT 6 OVERALL BASIN MAP FROM DRAINAGE MASTER PLAN FOR THE MIREHAVEN MASTER PLANNED COMMUNITY

I. PURPOSE

The purpose of this report is to provide a Drainage Management Plan for Del Webb Phase 2 @ Mirehaven. Pulte @ Mirehaven Phase 2 encompasses Tract M of the Watershed Subdivision and will consist of 183 single family residential lots on approximately 51 acres. This report will provide drainage analysis to support proposed site specific drainage infrastructure in order to obtain approval of the preliminary/final plat and grading plan by the City of Albuquerque.

II. CONCEPTS AND METHODOLOGIES

Drainage conditions were analyzed utilizing the 100-year, 6-hour storm event in accordance with the City of Albuquerque Drainage Ordinance and the *Development Process Manual (DPM), Volume 2 Design Criteria, Section 22.2, Hydrology, The City of Albuquerque*, January 2002. The proposed project site is approximately 47 acres; however, sub-basins are broken down into areas much less than 40 acres. Therefore, Part A of the DPM, Section 22.2, which provides a simplified procedure for projects with sub-basins smaller than 40 acres, was used. The project lies within Precipitation Zone 1.

The following document was referenced in the preparation of this report:

- *Drainage Master Plan for Pulte at Mirehaven Phase 1* prepared by Bohannan Huston, Inc., dated December 2013.

The above drainage report outlines the developed drainage management concepts and parameters for the project site as well as surrounding areas. The hydrologic calculations for this project use a unit discharge of 3.25 cfs consistent with the Master Drainage Plan.

For street hydraulics, the maximum hydraulic capacity for this project is defined as the maximum flow that can be attained without the energy line exceeding the elevation at the street Right-of-Way, as allowed by the City of Albuquerque DPM and using a Manning's 'n' value of 0.017.

Storm drain pipe hydraulics were analyzed using Manning's equation, with an "n" value of 0.013, and an HGL slope equal to the corresponding street grade.

III. SITE LOCATION AND CHARACTERISTICS

The Mirehaven Master Planned Community is comprised of approximately 285 acres, encompassing the project area as well as other bulk tracts within the Watershed Subdivision

area. The entire master plan area is bounded by the Petroglyph National Monument to the north and west, Tierra Pintada Blvd. to the east and Tract N-1 (future APS school site) to the south. The project site (Del Webb Phase 2 @ Mirehaven (Tract M)) is approximately 51 acres and is located northwest of Mirehaven Parkway on the north side of the Mirehaven Arroyo. The existing topography slopes from north to south across the site, with an average grade of between 5 percent and 10 percent. Native vegetation consists primarily of native grasses and bushes, with few trees within the site.

IV. EXISTING HYDRAULIC AND HYDROLOGIC CONDITIONS

The project site is currently undeveloped. As stated in the *Drainage Master Plan for the Mirehaven Master Planned Community,* existing flows drain into the Mirehaven Arroyo via sheet flows. The Mirehaven Arroyo is an improved channel owned and maintained by the City which discharges into the AMAFCA Ladera Dam System. The channel is designed to accommodate fully developed flows from the project site and surrounding areas. Please refer to the *West I-40 Drainage Management Plan* and the *Drainage Report for Stormcloud Subdivision* for further information regarding the Mirehaven Arroyo and the continuation of downstream analysis of the existing storm drain network and the Ladera Dam System. Currently, portions of the project site lie within a designated floodplain near the existing channel. However, upon approval of a LOMR as part of the channel construction, the floodplain will be confined to the constructed channel entirely outside of the project site.

V. DEVELOPED HYDRAULIC AND HYDROLOGIC CONDITIONS

A. OFFSITE FLOWS

Offsite flows impact the project site from the north from basins within the Petroglyph National Monument area. Offsite flows will be accepted and conveyed through the site and into the Mirehaven Arroyo consistent with the historic drainage scheme (see *Proposed Basin Map*, **Exhibit 3**).

B. ONSITE FLOWS

Developed flows were calculated based on the residential dwelling unit density (du/ac) as shown on Table A-5 in Chapter 22, Section 2 of the City of Albuquerque's Development Process Manual and as per the previously approved Master Drainage Plan (MDP) for the site and surrounding areas.

As shown on the Developed Conditions Basin Map, onsite and offsite sub-basins will discharge to the Mirehaven Arroyo and will be conveyed by constructed streets as well as a

new storm drain system within the project. Two existing storm drain pipe stub-outs into the Mirehaven Arroyo exist for the purposes of accepting stormwater from the site, and these will be the main points of discharge for developed runoff (see *Storm Drain Network Map*, **Exhibit 4**). The exception to this will be Basin F.4 which discharges runoff out the lots' backyards toward the south and into the Mirehaven Arroyo right-of-way where it will flow on the north side of the arroyo in an existing swale before being captured by an existing storm drain just west of Willow Canyon Trail. This flow will then be discharged into the Mirehaven Arroyo via one of the previously described existing storm drain stub-outs. Similarly, Basins G.4, G.5, and G.6 drain out the lots' backyards and into a proposed pond before discharging into Mirehaven Arroyo. Basins G.3B and G.7, which consist of the Lake Isabella Way entrance and landscape area adjacent to Watershed subdivision, discharge a small amount of runoff into West Creek Place within the existing Watershed Subdivision located east of the site. This additional flow will increase the street water surface elevation by 0.02 ft. or less and will be conveyed and captured by the existing streets and storm drain within Watershed subdivision. This additional flow does not represent a negative impact to the existing downstream conveyances due to the negligible amount of flow added.

New storm inlets will be placed where street surface flows reach maximum hydraulic capacity. All streets are normal crown streets except for Bates Well Lane and Wind Caves Way which consist of a constant cross slope to one side. Due to the relative steepness of the site, which results in high velocity flows and corresponding energy lines, maximum hydraulic capacity in the streets is generally far less than curb height (see Developed Conditions Basin Map and Proposed Storm Drain Network Map for basin flows and storm drain inlet and pipe sizes).

C. FIRST FLUSH REQUIREMENTS

This project is required to meet the first flush requirements of the new City Drainage Ordinance. The first flush requirement will be met by ponding within the area between the curb and sidewalk and is calculated as 0.34 in. (0.44 in. - 0.1 in. initial abstraction) times the roof area that can drain to the on lot pond (taken as one half the pad area). There are two pad sizes, 42 ft. x 85 ft. and 54 ft. x 85 ft., in this project with a first flush requirement of 51 and 65 cubic feet for each lot, respectively and a total requirement of 0.24 ac-ft. for the entire project. The on-lot first flush ponding requirements will be met through on-lot ponding in the lot front yards as well as ponding within the landscape strip between the sidewalk and the curb (see **Appendix B**).

For the entire site, the first flush ponding requirement is 0.68 ac-ft. which leaves 0.44 ac-ft. that is generated by the internal streets (not including lots). Since the runoff generated by the streets discharges directly to the proposed storm drain system and then into the Mirehaven Channel, this runoff is not treated within the project site for the first flush. However, the entire site eventually discharges to the Ladera Dam system via the Mirehaven Channel. Therefore, 100% of runoff generated by this project in all storms gets treated for the first flush by downstream facilities, with the on-lot drainage being treated for a second time once it reaches the Ladera Dam.

VI. CONCLUSION

This report provides the drainage concepts in support of the development of Del Web Phase 2 @ Mirehaven and is consistent with the previously approved Master Drainage Plan for the site. Developed flows generated by the project site will be discharged to the fully improved Mirehaven Arroyo. Offsite flows will be accepted and conveyed through the site. Additionally, this drainage report maintains the overall drainage pattern of the area and allows for the safe management of storm runoff in the fully developed condition as well as interim conditions.

Appendix

APPENDICES

APPENDIX A: STREET HYDRAULICS, STORM DRAIN INLET ANALYSIS, AND STORM DRAIN PLAN AND PROFILE FOR EAST STORMDRAIN NETWORK

APPENDIX B: FIRST FLUSH REQUIREMENT PONDING CALCULATIONS, SWALE HYDRAULICS CALCULATIONS

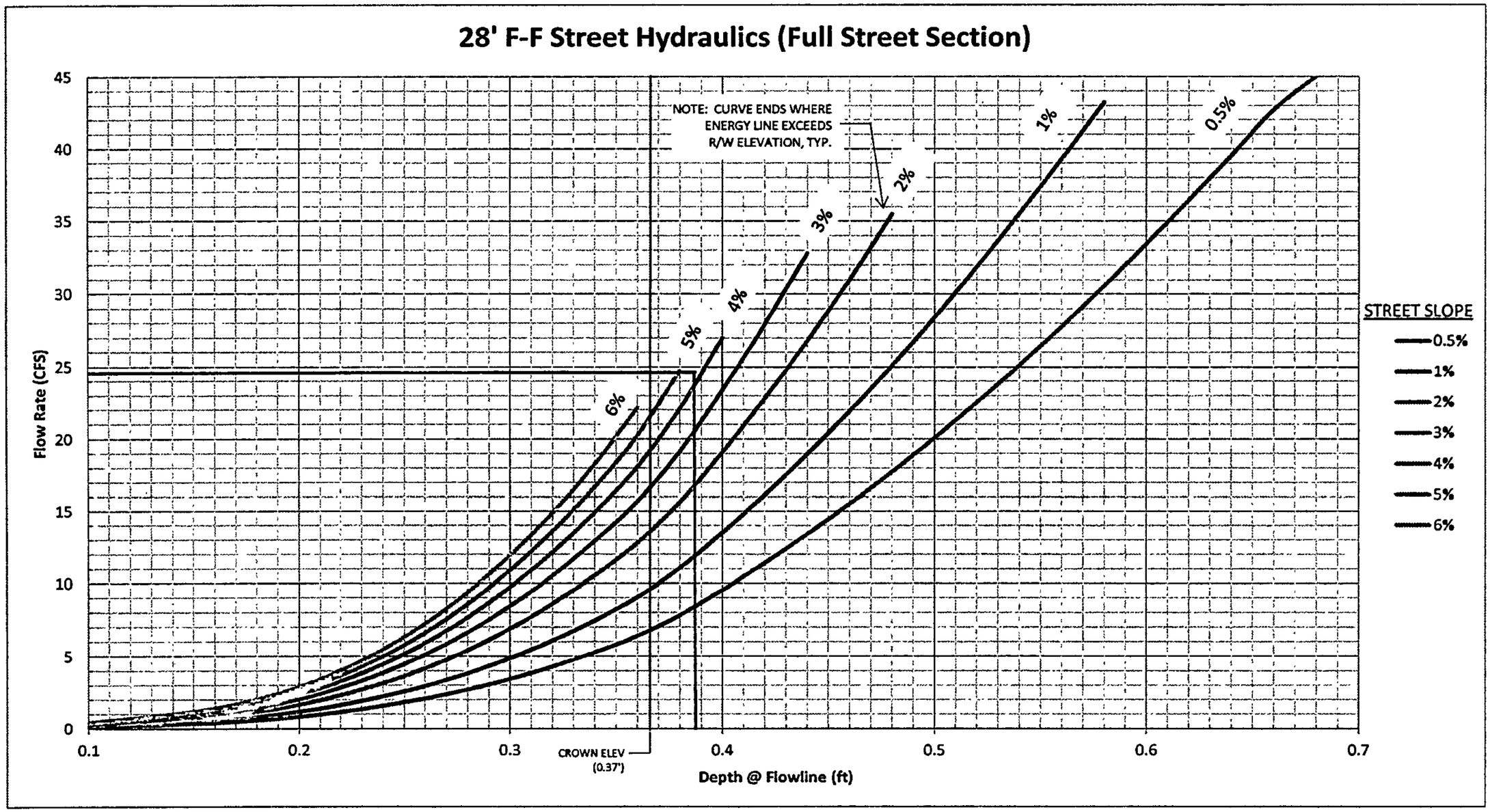
A

* * * * *

APPENDIX A -

STREET HYDRAULICS, STORM DRAIN INLET ANALYSIS, AND STORM DRAIN PLAN AND PROFILE FOR EAST STORMDRAIN NETWORK

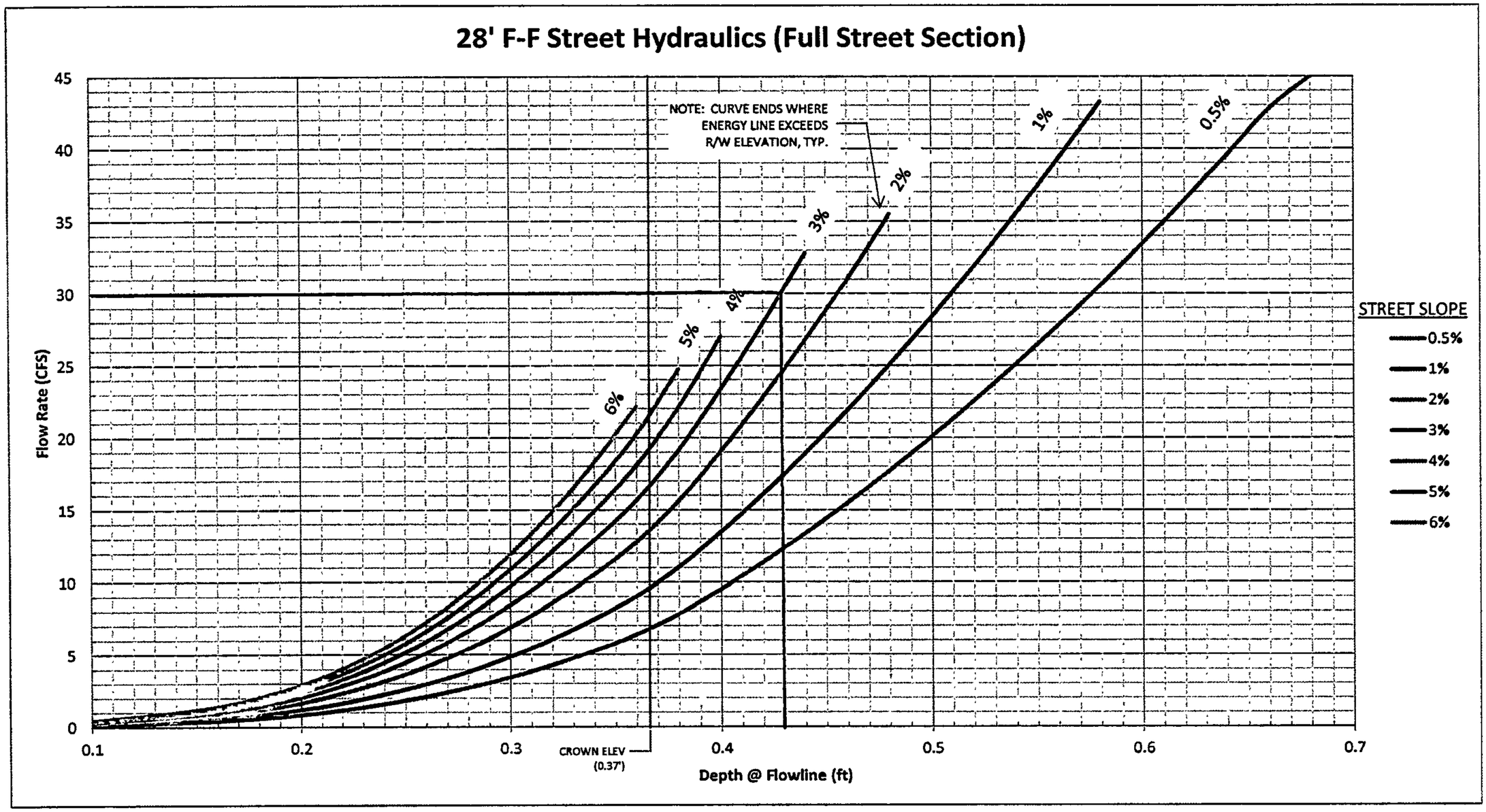
Bohannan Huston



GOLD BUTTE TRAIL (BASIN F.3)

S = 4.1%

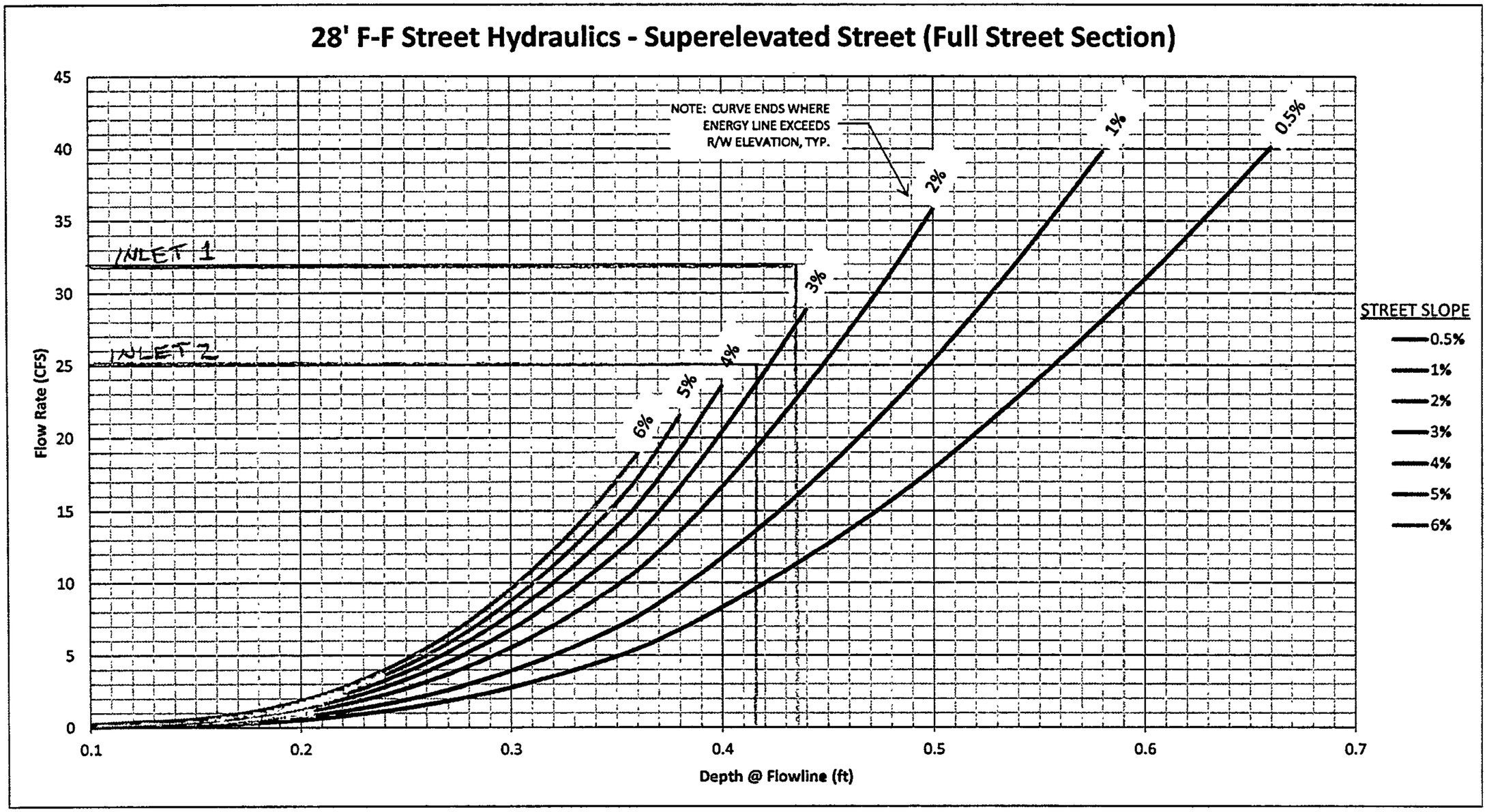
Q ≅ 24.7 CFS ⇒ D = 0.39'



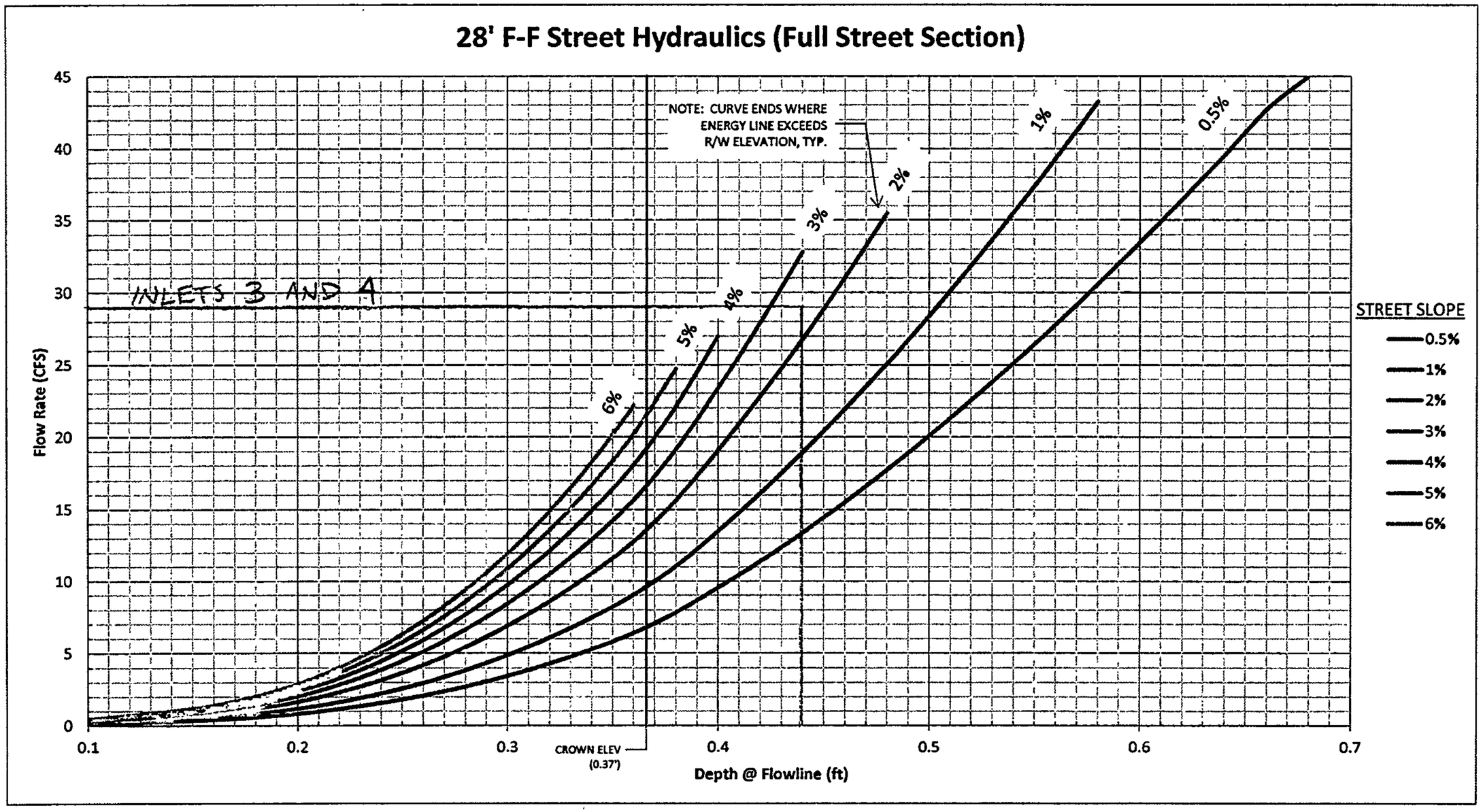
CHUCKWALLA SPRING LANE (BASIN F-2)

S = 3.1%

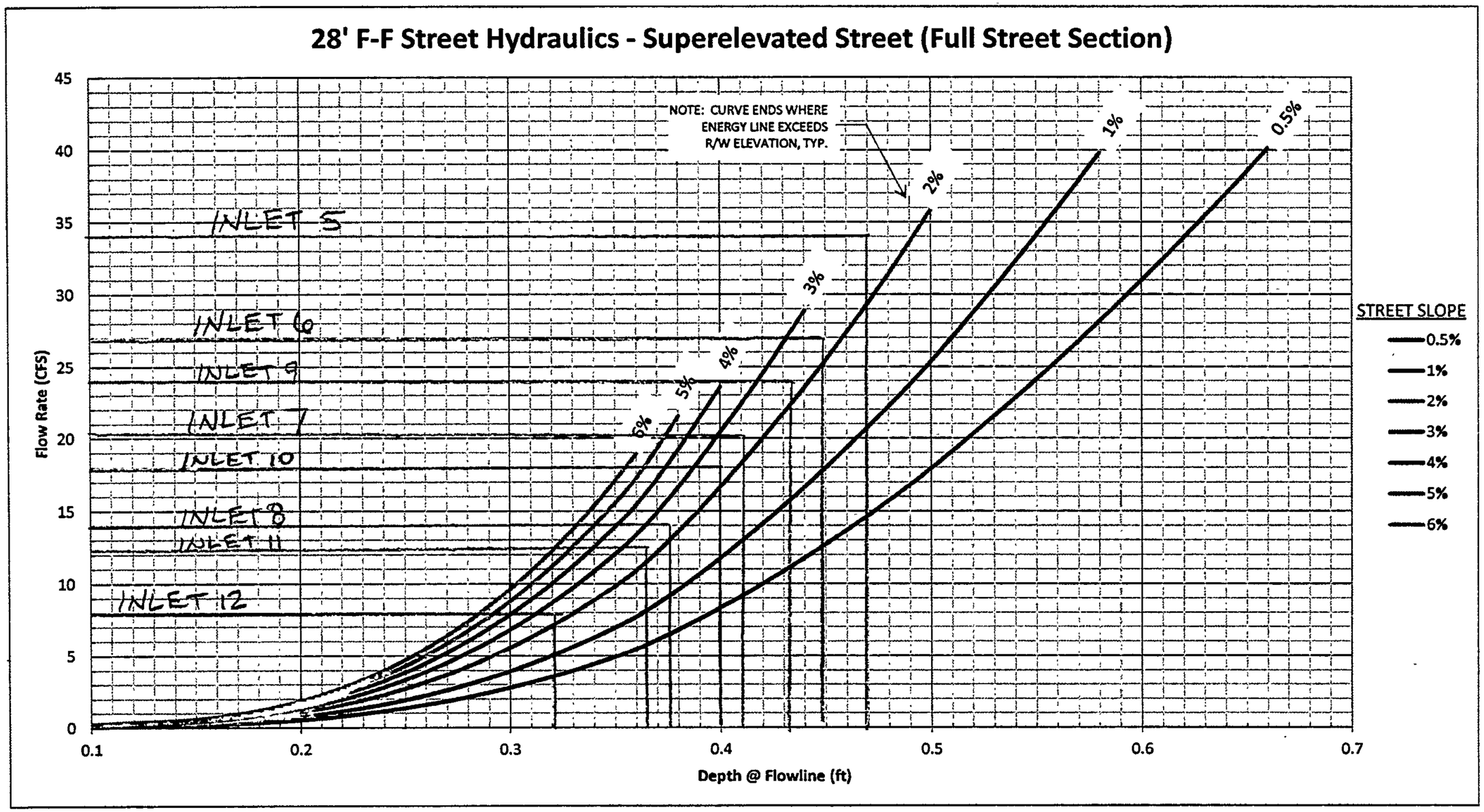
Q ≅ 30.0 CFS ⇒ D = 0.43'



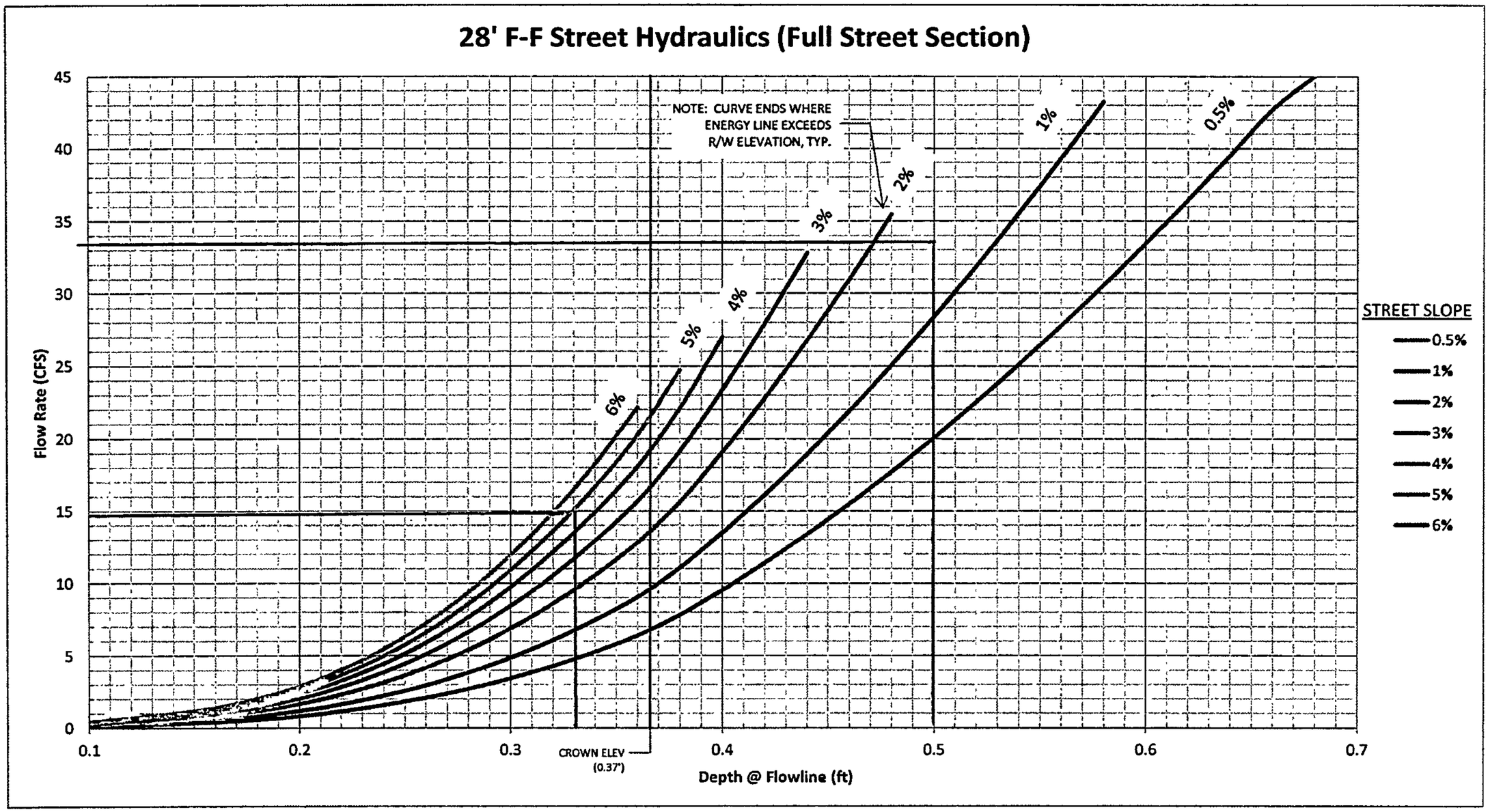
CHUCKWALLA SPR LN (BASIN F.2, @ INLETS)



WIND CAVES WAY - BASIN F.3



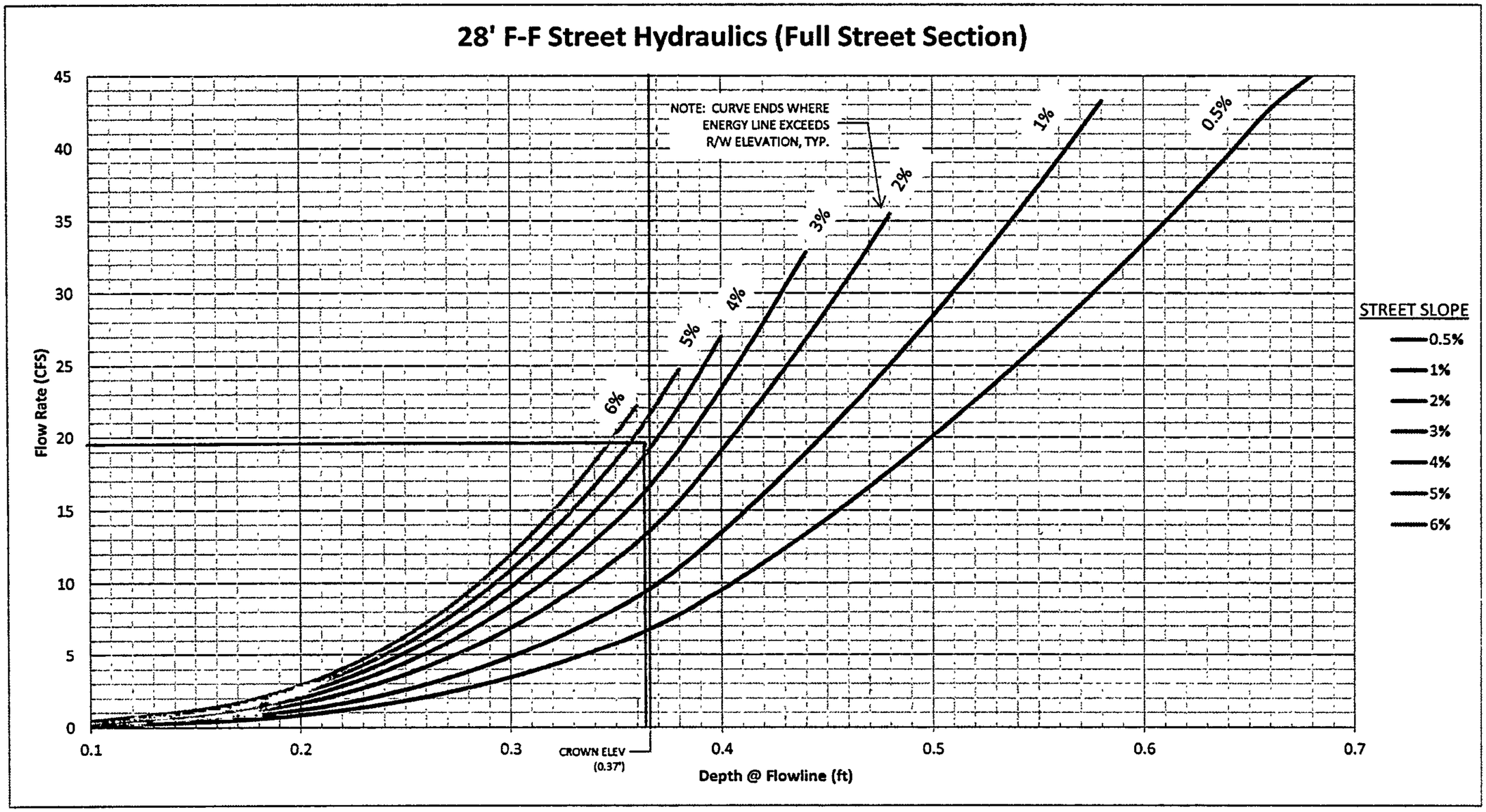
WIND CAVES WAY - BASIN F.1, F.2,



KOMATKE TRAIL (BASIN F.1)

S= 1.5 %

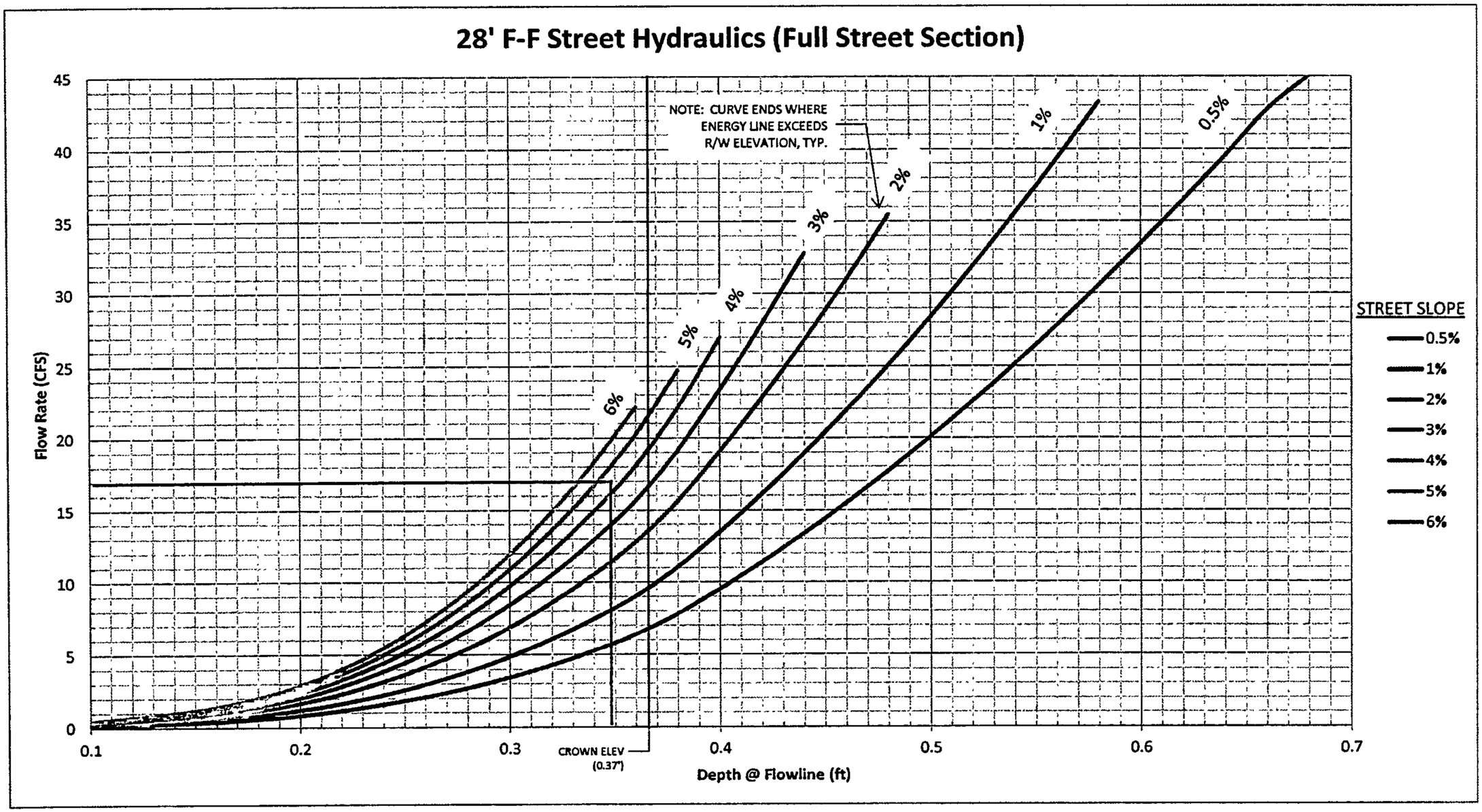
Q≅ 33.2 CFS ⇒ D= 0.50'



GRANITE MTN LOOP (BASIN 6.2)

S = 4.3%

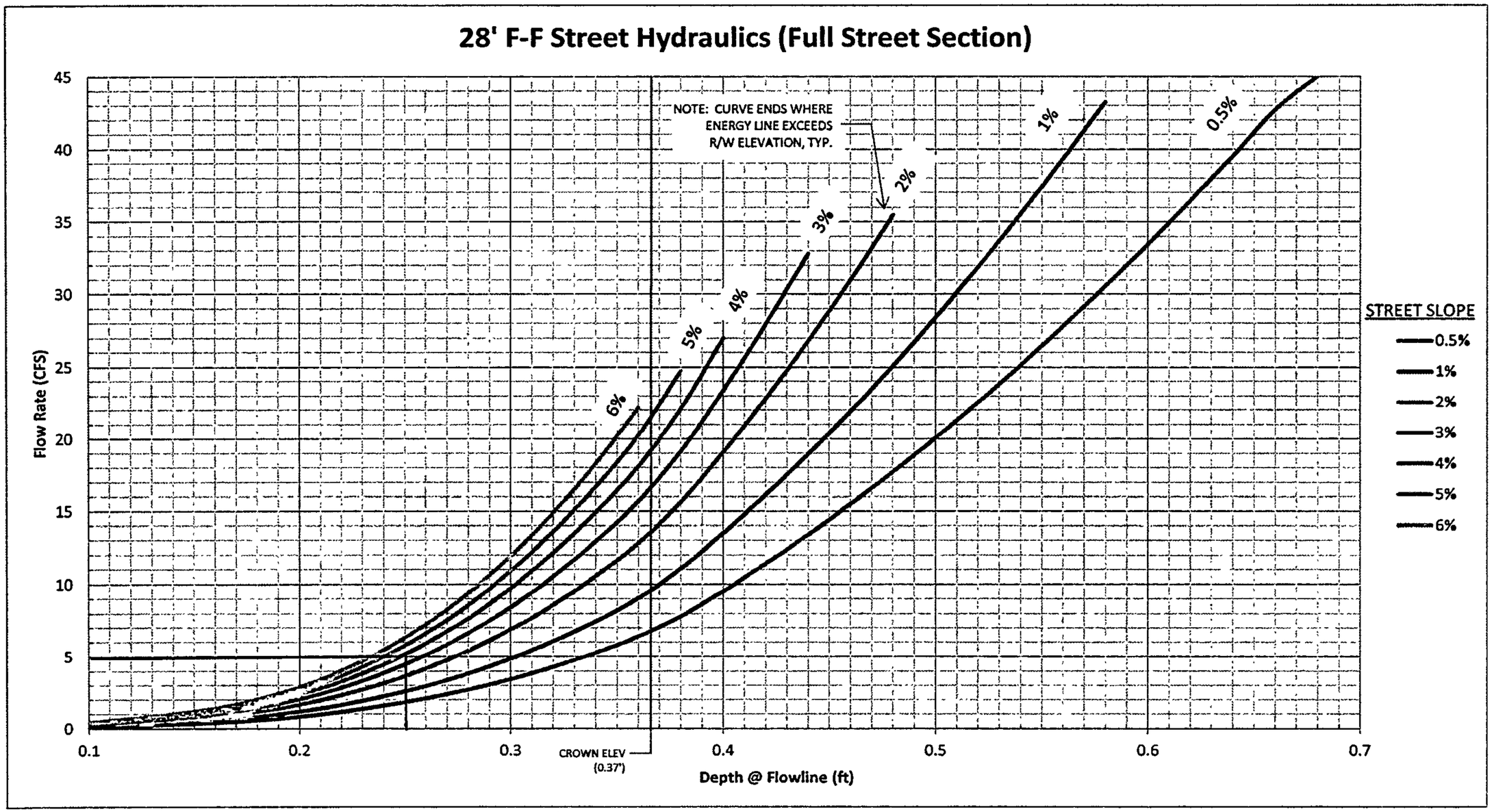
Q ≅ 19.4 CFS ⇒ D = 0.36'



WOODS WASH TRAIL (BASIN G.1)

S= 4.5%

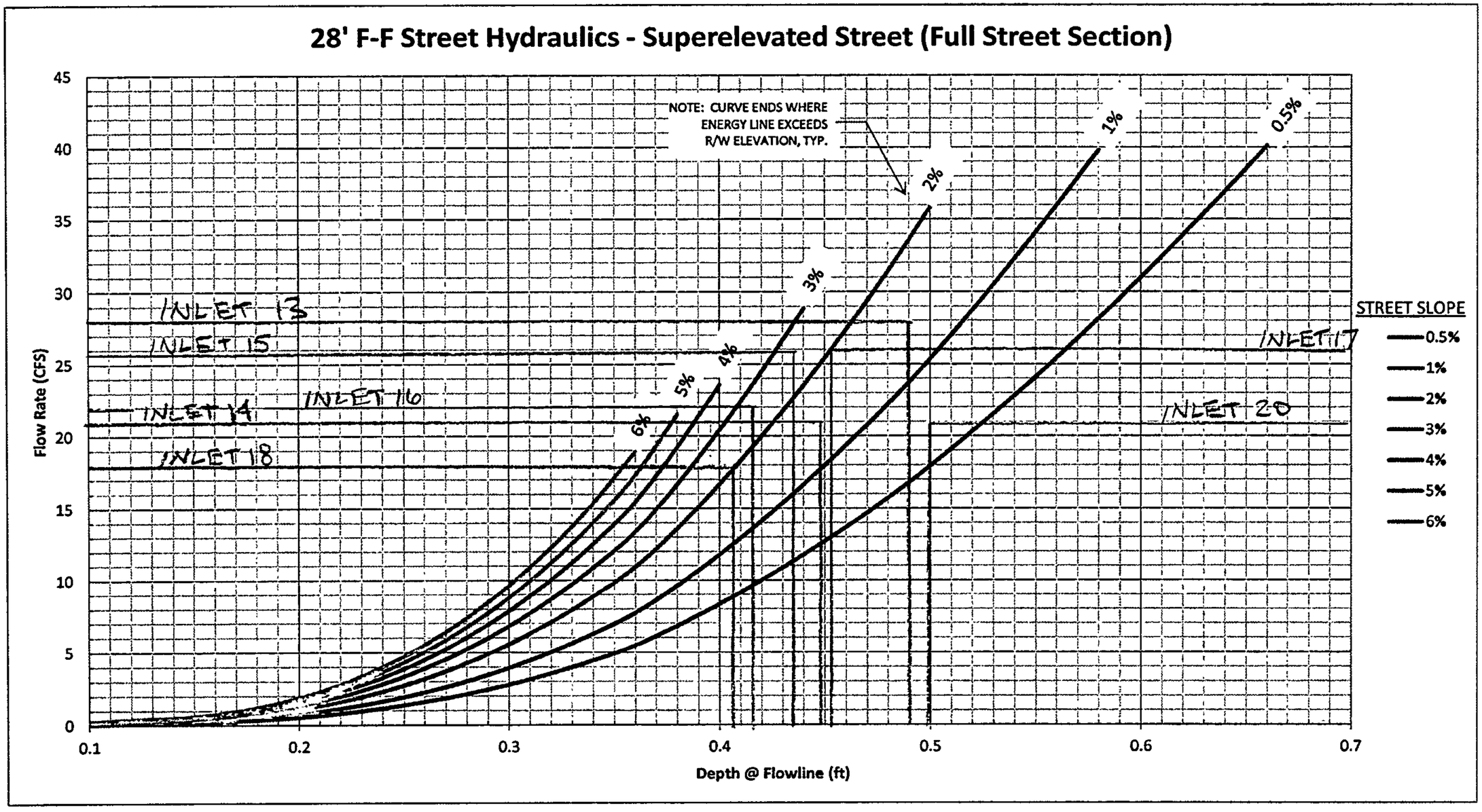
$Q \cong \frac{1}{2}\, 6.1 = 16.9$ CFS $\Rightarrow D = 0.35'$



LAKE ISABELLA WAY (BASIN G.3)

S = 3.8%

Q ≅ 5.0 CFS ⇒ D = 0.25'



WIND CAVES WAY, - BASIN G.1, G.5
BATES WELL LN

X,Y INPUT FILES FOR STREAM CALCULATOR - STREET CAPACITIES

NORMAL CROWN 28' F-F
0 0.86
9.33 0.67
9.5 0.0
11.5 0.13
23.5 0.37
35.5 0.13
37.5 0.0
37.67 0.67
47.0 0.86

SUPERELEVATED (CROSS SLOPE) 28' F-F
0, 1.33
8.375, 1.16
9, .49
11, .365
35, .125
37, 0
37.625, .67
46, .84

28' Street Depth VS Flowrate, n=0.017
(NORMAL CROWN)

	S=0.5%		S=1.0%		S=2.0%	
Depth	Q	E	Q	E	Q	E
0.02	0.002	0.021	0.002	0.022	0.003	0.025
0.04	0.011	0.043	0.016	0.046	0.022	0.052
0.06	0.032	0.065	0.046	0.07	0.065	0.081
0.08	0.07	0.088	0.099	0.095	0.14	0.11
0.1	0.127	0.11	0.179	0.12	0.254	0.141
0.12	0.206	0.133	0.292	0.146	0.413	0.172
0.14	0.289	0.153	0.408	0.167	0.578	0.194
0.16	0.403	0.174	0.57	0.187	0.807	0.214
0.18	0.582	0.195	0.823	0.21	1.164	0.24
0.2	0.832	0.217	1.176	0.234	1.663	0.268
0.22	1.161	0.239	1.642	0.259	2.322	0.298
0.24	1.578	0.262	2.232	0.284	3.156	0.329
0.26	2.092	0.285	2.959	0.31	4.184	0.361
0.28	2.711	0.308	3.835	0.337	5.423	0.394
0.3	3.444	0.332	4.87	0.364	6.888	0.427
0.32	4.298	0.355	6.078	0.391	8.595	0.461
0.34	5.28	0.379	7.467	0.418	10.56	0.496
0.36	6.398	0.403	9.049	0.446	12.797	0.531
0.38	7.822	0.429	11.062	0.478	15.644	0.575
0.4	9.547	0.457	13.502	0.514	19.094	0.629
0.42	11.406	0.486	16.13	0.552	22.812	0.683
0.44	13.393	0.515	18.94	0.59	26.786	0.739
0.46	15.504	0.544	21.926	0.628	31.008	0.796
0.48	17.735	0.573	25.081	0.667	35.47	0.853
0.5	20.082	0.603	28.401	0.706	40.165	0.912
0.52	22.543	0.633	31.881	0.746	45.087	0.971
0.54	25.115	0.663	35.518	0.786	50.229	1.032
0.56	27.794	0.693	39.307	0.826	55.588	1.093
0.58	30.578	0.724	43.244	0.867	61.157	1.154
0.6	33.466	0.754	47.328	0.908	66.932	1.217
0.62	36.455	0.785	51.555	0.95	72.91	1.279
0.64	39.542	0.816	55.921	0.991	79.085	1.343
0.66	42.727	0.847	60.425	1.034	85.454	1.407
0.68	45.06	0.87	63.724	1.059	90.12	1.439
0.7	46.652	0.886	65.976	1.071	93.304	1.442
0.72	48.482	0.903	68.564	1.085	96.964	1.45
0.74	50.542	0.92	71.477	1.101	101.083	1.462
0.76	52.827	0.939	74.709	1.118	105.654	1.477
0.78	55.336	0.959	78.257	1.137	110.672	1.495
0.8	58.066	0.979	82.118	1.158	116.133	1.515
0.82	61.019	0.999	86.294	1.179	122.039	1.537
0.84	64.195	1.02	90.786	1.201	128.391	1.562

STREET FLOW INCREMENTAL DEPTH VS FLOW FOR VARIOUS STREET SLOPES - OUTPUT

S=3.0%		S=4.0%		S=5.0%	
Q	E	Q	E	Q	E
0.004	0.027	0.005	0.03	0.005	0.032
0.027	0.058	0.031	0.064	0.035	0.07
0.08	0.091	0.092	0.101	0.103	0.112
0.171	0.126	0.198	0.141	0.221	0.156
0.311	0.161	0.359	0.182	0.401	0.202
0.505	0.198	0.583	0.224	0.652	0.25
0.707	0.221	0.817	0.248	0.913	0.275
0.988	0.242	1.141	0.269	1.275	0.296
1.426	0.27	1.646	0.3	1.84	0.33
2.037	0.302	2.352	0.336	2.63	0.37
2.843	0.337	3.283	0.376	3.671	0.415
3.866	0.373	4.464	0.418	4.99	0.462
5.125	0.411	5.918	0.462	6.616	0.512
6.642	0.451	7.669	0.508	8.574	0.564
8.436	0.491	9.741	0.555	10.891	0.618
10.527	0.532	12.155	0.603	13.59	0.673
12.933	0.574	14.934	0.652	16.696	0.73
15.673	0.617	18.097	0.702	20.233	0.788
19.159	0.673	22.123	0.77	24.735	0.868
23.386	0.743	27.003	0.857	30.191	0.972
27.939	0.815	32.261	0.947	36.069	1.078
32.806	0.889	37.881	1.038	42.352	1.188
37.977	0.964	43.852	1.132	49.028	1.299
43.442	1.04	50.162	1.227	56.083	1.414
49.192	1.118	56.802	1.324	63.506	1.53
55.22	1.197	63.762	1.423	71.288	1.649
61.518	1.277	71.035	1.523	79.42	1.769
68.081	1.359	78.613	1.625	87.892	1.891
74.902	1.441	86.489	1.728	96.698	2.016
81.975	1.525	94.656	1.833	105.829	2.141
89.296	1.609	103.11	1.939	115.28	2.269
96.859	1.694	111.843	2.046	125.044	2.397
104.66	1.781	120.851	2.154	135.115	2.528
110.373	1.818	127.448	2.198	142.491	2.577
114.274	1.813	131.952	2.184	147.527	2.555
118.756	1.815	137.127	2.18	153.313	2.545
123.801	1.823	142.953	2.184	159.827	2.545
129.4	1.835	149.418	2.194	167.054	2.552
135.544	1.852	156.513	2.21	174.987	2.567
142.233	1.873	164.237	2.23	183.622	2.588
149.466	1.896	172.589	2.255	192.96	2.613
157.246	1.922	181.572	2.283	203.004	2.644

S=6.0%

Q	E
0.006	0.034
0.038	0.076
0.113	0.122
0.242	0.171
0.439	0.223
0.715	0.277
1	0.302
1.397	0.323
2.016	0.36
2.881	0.404
4.021	0.454
5.467	0.507
7.248	0.563
9.393	0.621
11.93	0.682
14.887	0.744
18.29	0.808
22.164	0.873
27.096	0.965
33.072	1.086
39.511	1.21
46.395	1.337
53.707	1.467
61.436	1.6
69.568	1.736
78.093	1.874
87	2.015
96.281	2.158
105.927	2.303
115.93	2.45
126.283	2.598
136.979	2.749
148.012	2.901
156.092	2.957
161.608	2.926
167.946	2.91
175.081	2.905
182.999	2.911
191.689	2.924
201.148	2.945
211.377	2.972
222.379	3.005

28' Street Depth VS Flowrate, n=0.017

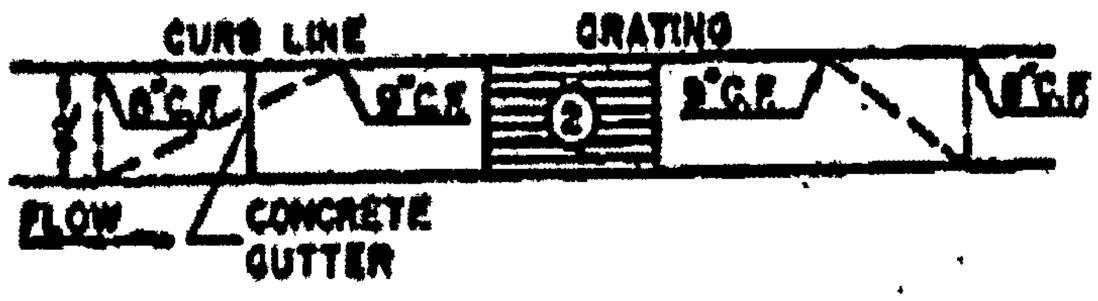
Superelevated Street

	S=0.5%		S=1.0%		S=2.0%	
Depth	Q	E	Q	E	Q	E
0.02	0.001	0.021	0.001	0.022	0.002	0.025
0.04	0.006	0.043	0.009	0.046	0.012	0.052
0.06	0.018	0.065	0.025	0.071	0.036	0.081
0.08	0.038	0.088	0.054	0.096	0.077	0.111
0.1	0.07	0.111	0.099	0.121	0.139	0.142
0.12	0.113	0.133	0.16	0.147	0.227	0.174
0.14	0.142	0.15	0.201	0.16	0.284	0.181
0.16	0.215	0.17	0.305	0.18	0.431	0.2
0.18	0.345	0.191	0.487	0.203	0.689	0.226
0.2	0.537	0.214	0.76	0.227	1.075	0.254
0.22	0.803	0.236	1.135	0.252	1.606	0.284
0.24	1.151	0.259	1.627	0.278	2.302	0.316
0.26	1.59	0.282	2.249	0.304	3.181	0.348
0.28	2.13	0.305	3.013	0.33	4.261	0.381
0.3	2.779	0.329	3.93	0.357	5.558	0.415
0.32	3.545	0.352	5.013	0.384	7.09	0.449
0.34	4.436	0.376	6.273	0.412	8.871	0.484
0.36	5.459	0.4	7.72	0.439	10.918	0.519
0.38	6.801	0.426	9.619	0.473	13.603	0.565
0.4	8.336	0.454	11.789	0.508	16.673	0.615
0.42	9.999	0.482	14.141	0.543	19.998	0.667
0.44	11.787	0.51	16.669	0.579	23.573	0.719
0.46	13.697	0.538	19.37	0.616	27.393	0.771
0.48	15.726	0.566	22.24	0.652	31.453	0.824
0.5	17.932	0.595	25.36	0.69	35.864	0.88
0.52	20.314	0.625	28.729	0.73		
0.54	22.813	0.655	32.263	0.77		
0.56	25.427	0.685	35.959	0.81		
0.58	28.152	0.715	39.812	0.851		
0.6	30.986	0.746				
0.62	33.927	0.777				
0.64	36.974	0.808				
0.66	40.124	0.839				

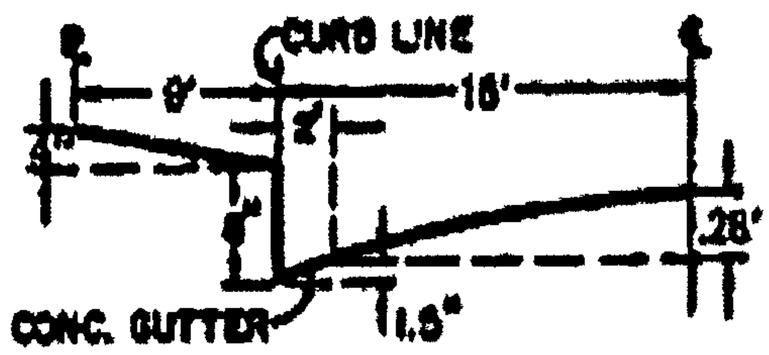
S=3.0%		S=4.0%		S=5.0%	
Q	E	Q	E	Q	E
0.002	0.027	0.003	0.03	0.003	0.032
0.015	0.059	0.017	0.065	0.019	0.071
0.044	0.092	0.051	0.103	0.056	0.113
0.094	0.127	0.109	0.143	0.122	0.158
0.171	0.163	0.197	0.184	0.221	0.206
0.278	0.201	0.321	0.228	0.359	0.255
0.348	0.201	0.402	0.222	0.449	0.242
0.528	0.22	0.609	0.24	0.681	0.26
0.844	0.249	0.975	0.272	1.09	0.295
1.316	0.282	1.52	0.309	1.699	0.336
1.967	0.317	2.271	0.349	2.539	0.381
2.819	0.354	3.255	0.391	3.639	0.429
3.896	0.392	4.498	0.436	5.029	0.48
5.218	0.431	6.025	0.482	6.737	0.532
6.807	0.472	7.86	0.529	8.788	0.586
8.683	0.513	10.026	0.578	11.21	0.642
10.865	0.555	12.546	0.627	14.027	0.699
13.372	0.598	15.44	0.678	17.263	0.757
16.66	0.658	19.237	0.75	21.508	0.843
20.42	0.723	23.579	0.831		
24.493	0.79				
28.871	0.858				

S=6.0%

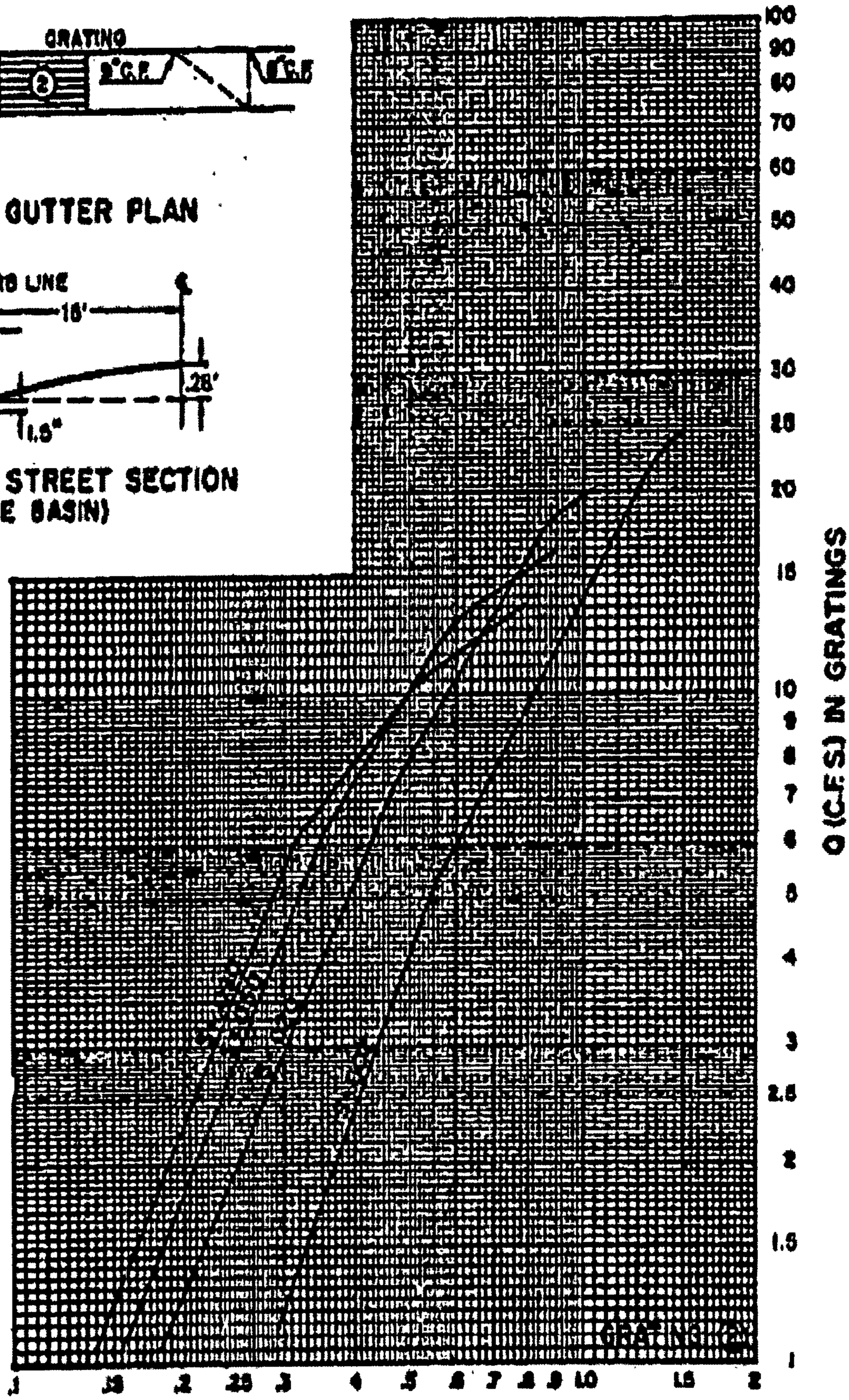
Q	E
0.003	0.035
0.021	0.077
0.062	0.124
0.133	0.174
0.242	0.227
0.393	0.282
0.492	0.263
0.746	0.28
1.194	0.318
1.861	0.363
2.781	0.413
3.987	0.467
5.509	0.524
7.379	0.583
9.627	0.644
12.28	0.706
15.366	0.771
18.911	0.836



GRATING & GUTTER PLAN



TYPICAL HALF STREET SECTION
(ABOVE BASIN)



GRATE OPEN AREA = 7.36 SF / GRATE

60" WING 40"@ TC

18.5" 18.5"

35.5"

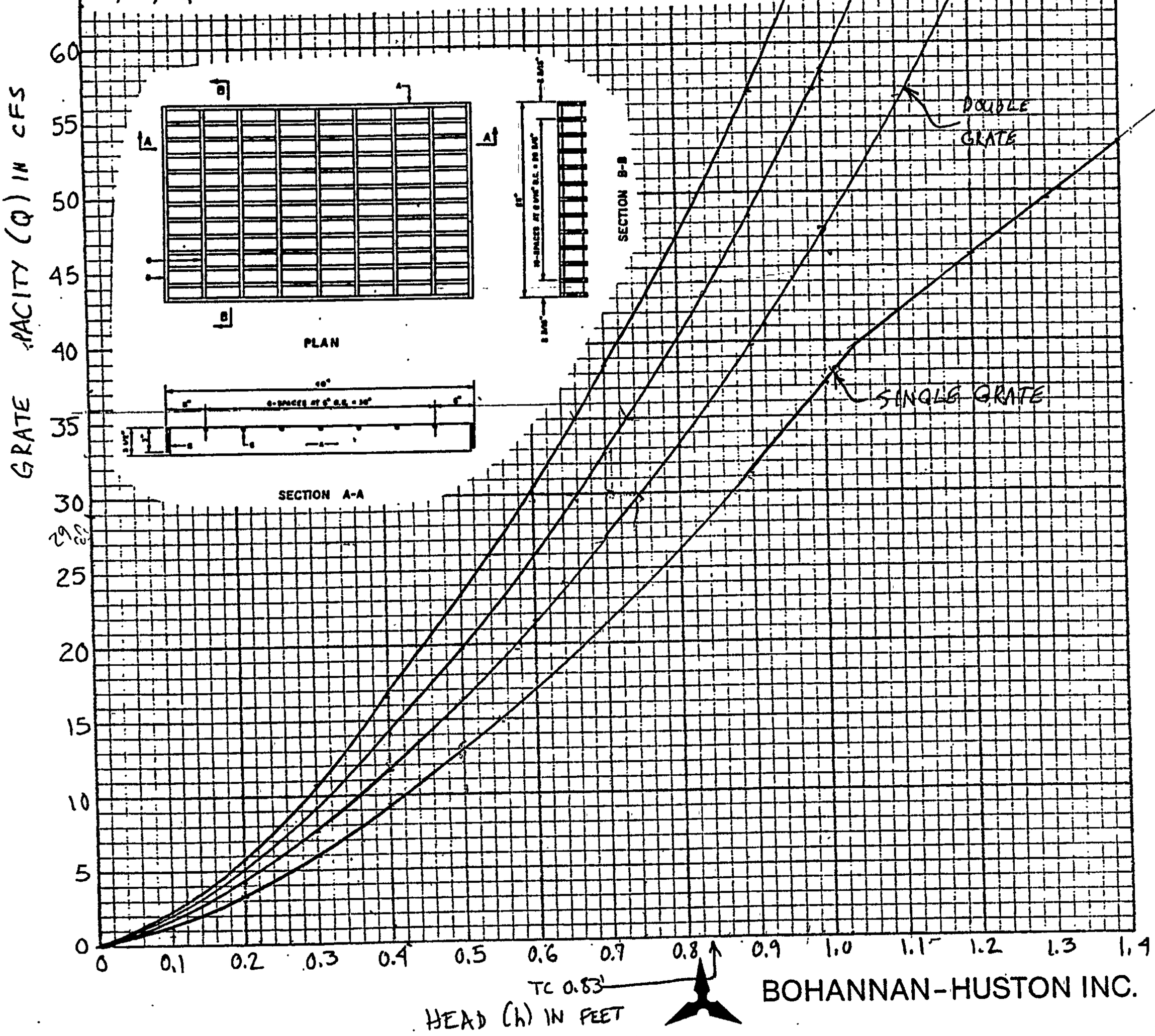
NET OPEN AREA

GRATE @ 10" (0.83') BELOW TC

EQUATION	SGL A	DBL A	TRPL A	QDPL A
1) ORIFICE	$22.0\,h^{0.5} + 16.5\,h^{1.5}$	$43.9\,h^{0.5} + 16.5\,h^{1.5}$	$65.9\,h^{0.5} + 16.5\,h^{1.5}$	$87.8\,h^{0.5} + 16.5\,h^{1.5}$
2) 3-SIDED WEIR ($h \le 0.83'$)	$36.4\,h^{1.5}$	$46.2\,h^{1.5}$	$56.0\,h^{1.5}$	$65.7\,h^{1.5}$
3) 4-SIDED WEIR ($h > 0.83'$)	ADD TO 2): $11(h-.83)^{1.5}$	ADD TO 2): $22(h-.83)^{1.5}$	ADD TO 2): $33(h-.83)^{1.5}$	ADD TO 2): $44(h-.83)^{1.5}$

1) $Q = 0.6A\sqrt{2gh} + 3.3(5')h^{1.5}$

2) & 3) $Q = 3.3\,Ph^{1.5}$



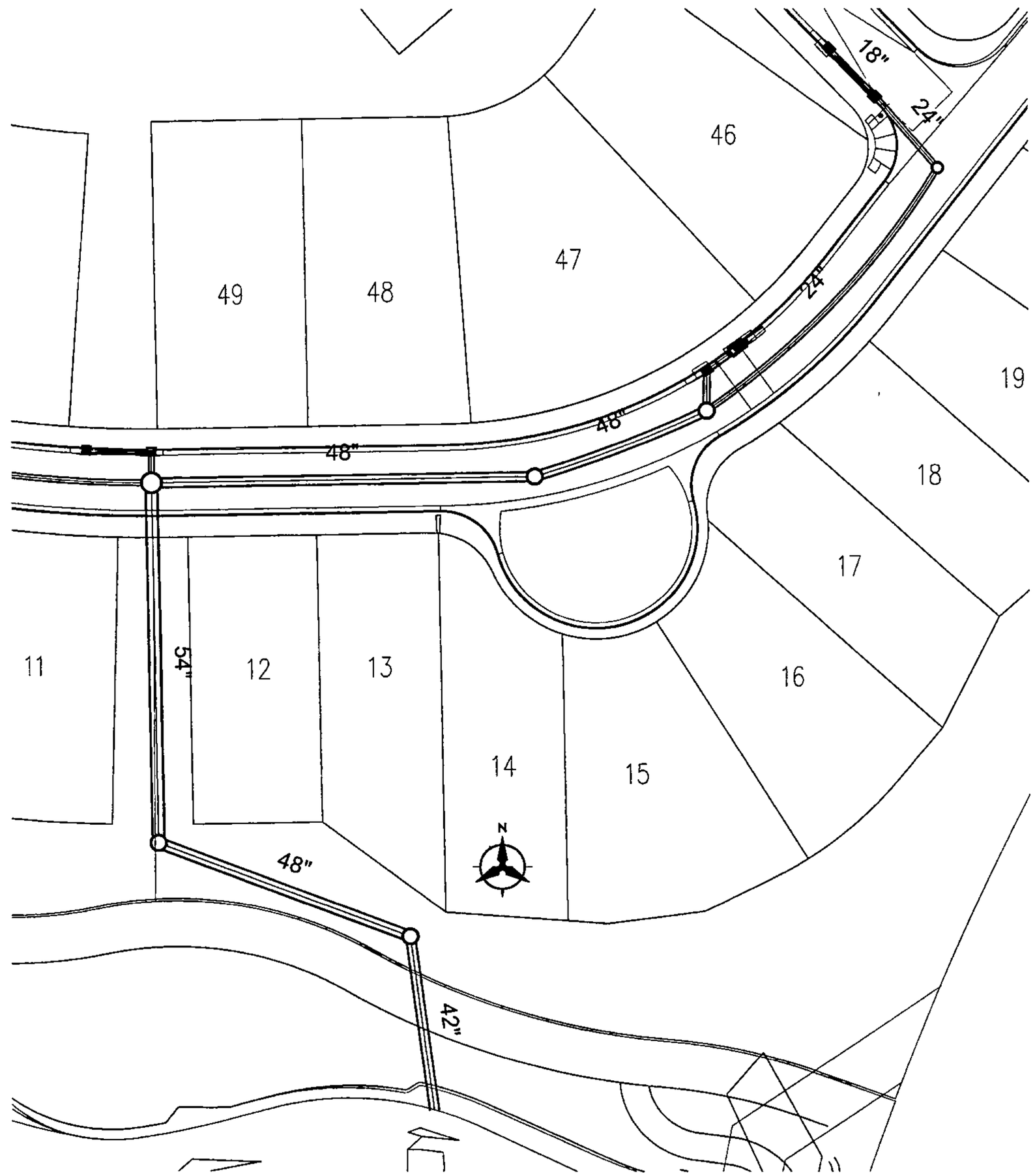
BOHANNAN-HUSTON INC.

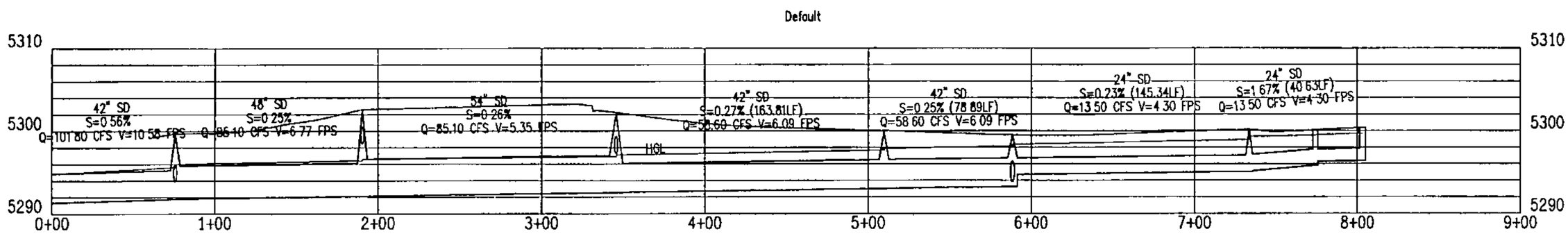
PROJECT NAME SUMP INLETS SHEET ____ OF ____

PROJECT NO. ____ BY JPK DATE 4/9/92

SUBJECT RATING CURVE FOR TYPE A INLETS CH'D ____ DATE ____

E. SD PLAN VIEW





E. SD PROFILE VIEW

SDMH #1 HEADLOSS CALC

$\Delta = 60°$

$K_b = 0.2\sqrt{\frac{60}{90}} = 0.16$

$V_1 = 6.8$ fps

$V_2 = 10.6$ fps

$V_{avg} = 8.7$

$h_t = 0.1\left[\frac{V_1^2}{2g} - \frac{V_2^2}{2g}\right] = 0.1\left(\frac{10.6^2 - 6.8^2}{2g}\right) = \underline{0.1}$

$h_b = K_b \frac{V^2}{2g} = \frac{8.7^2}{2g} K_b = \underline{0.14}$

$h_{mt} = 0.05 \frac{8.7^2}{2g} = \underline{0.06}$

$\underline{\underline{H_{TOT} = 0.35'}}$

NOTE ALL OTHER SDMH MINOR LOSSES CALCULATED BY INROADS S&S. S&S CALCULATED SDMH #1 INCORRECTLY.

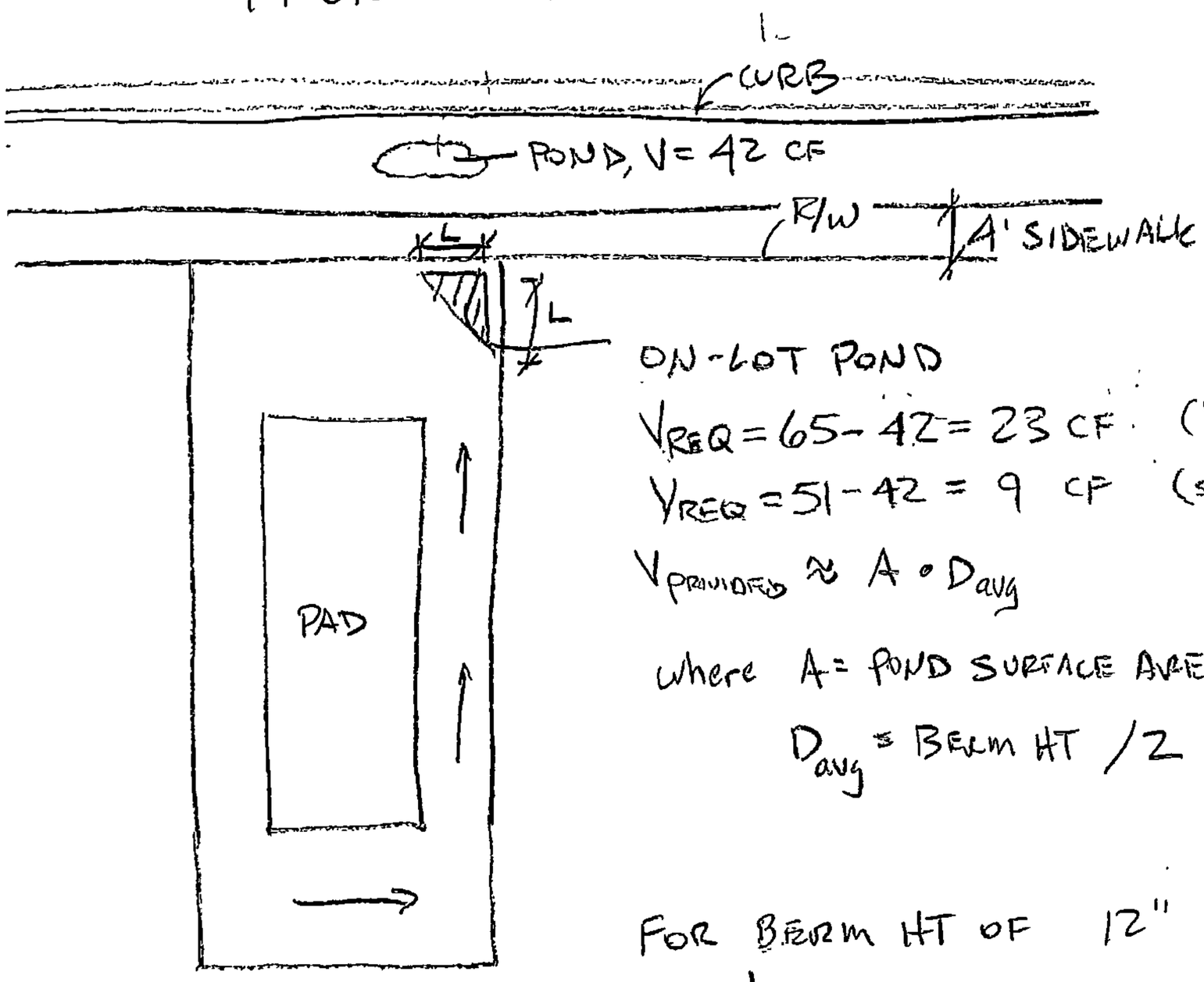
B

APPENDIX B -

FIRST FLUSH REQUIREMENT AND PONDING CALCULATION, SWALE HYDRAULICS CALCULATIONS

ON-LOT

FRONT DRAINING LOTS POND CALC.



ON-LOT POND

$V_{REQ} = 65 - 42 = 23$ CF (large lot)

$V_{REQ} = 51 - 42 = 9$ CF (small lot)

$V_{PROVIDED} \approx A \cdot D_{avg}$

where A = POND SURFACE AREA $= \frac{1}{2} L^2$

D_{avg} = BERM HT / 2

FOR BERM HT OF 12"

$L = 9'$

FOR BERM HT OF 8",

$L = 12'$

TOTAL SITE

FROM BASIN % D ON BASIN MAP: 24.14 Ac OF IMP. (D)

$V_{REQ} = (0.44-1)/12 * 24.14 = 0.68$ Ac-FT

$V_{LOTS} = (65+51)/2 * 182$ lots $= 10{,}560$ CF $= 0.24$ AC-FT

$V_{STREETS} = 0.68 - 0.24 = 0.44$ Ac-FT

Bohannan Huston INC.

ENGINEERING
SPATIAL DATA
ADVANCED TECHNOLOGIES

PROJECT NAME _____ SHEET _____ OF _____
PROJECT NO. _____ BY _____ DATE _____
SUBJECT _____ CH'D _____ DATE _____

FIRST FLUSH PONDING REQUIREMENTS

FIRST FLUSH PONDING, CONT.

BASIN F.4

$A_D = 0.50(7.05) = 3.53 Ac$

$V_{REQ} = (0.44 - 0.1)/12 * 3.53 = 0.1000$ AC-FT

$V_{POND} = 0.1540$ AC.FT ≥ 0.1000 ok

BASIN G.4/G.6

$A_D = 0.50(3.45) + 0.42(1.38) = 2.30$ Ac

$V_{REQ} = 0.34/12 * 2.30$ Ac $= 0.065$ AC-FT

$V_{POND} = 0.1878$ AC-FT ≥ 0.065 ACFT ok

Basin F.4 POND

Elevation	Incremental Volume cu ft	Cumulative Volume cu ft	Acre-Feet	Surface Area sq ft
5324.1000	195.0080	195.0080	0.0045	1998.2737
5324.2000	204.6864	399.6944	0.0092	2095.6550
5324.3000	214.4838	614.1782	0.0141	2194.2197
5324.4000	224.3997	838.5779	0.0193	2293.9714
5324.5000	234.4343	1073.0122	0.0246	2394.9116
5324.6000	244.5877	1317.5999	0.0302	2497.0393
5324.7000	254.8597	1572.4596	0.0361	2600.3516
5324.8000	265.2504	1837.7100	0.0422	2704.8547
5324.9000	275.7598	2113.4698	0.0485	2810.5447
5325.0000	286.3879	2399.8578	0.0551	2917.4163
5325.1000	297.1348	2696.9925	0.0619	3025.4756
5325.2000	308.0003	3004.9928	0.0690	3134.7241
5325.3000	318.9845	3323.9773	0.0763	3245.1619
5325.4000	330.0874	3654.0646	0.0839	3356.7871
5325.5000	341.3088	3995.3735	0.0917	3469.5947
5325.6000	352.6489	4348.0223	0.0998	3583.5911
5325.7000	364.1087	4712.1310	0.1082	3698.7732
5325.8000	375.6854	5087.8164	0.1168	3815.1418
5325.9000	387.3829	5475.1993	0.1257	3932.6951
5326.0000	399.1974	5874.3967	0.1349	4051.4448
5326.1000	411.1311	6285.5278	0.1443	4171.3752
5326.2000	423.1836	6708.7115	0.1540	4292.4939
5326.3000	0.0000	6708.7115	0.0000	0.0000
5326.4000	0.0000	6708.7115	0.0000	0.0000
5326.5000	0.0000	6708.7115	0.0000	0.0000
5326.6000	0.0000	6708.7115	0.0000	0.0000
5326.7000	0.0000	6708.7115	0.0000	0.0000
5326.8000	0.0000	6708.7115	0.0000	0.0000
5326.9000	0.0000	6708.7115	0.0000	0.0000
5327.0000	0.0000	6708.7115	0.0000	0.0000

BASIN G.4 POND

Elevation	Incremental Volume cu ft	Cumulative Volume cu ft	Acre-Feet	Surface Area sq ft
5293.1000	249.8711	249.8711	0.0057	2586.8992
5293.2000	266.7109	516.5820	0.0119	2743.6809
5293.3000	281.9908	798.5728	0.0183	2897.5603
5293.4000	297.8050	1096.3778	0.0252	3059.9775
5293.5000	314.4741	1410.8519	0.0324	3230.9297
5293.6000	331.9971	1742.8491	0.0400	3410.4458
5293.7000	350.3763	2093.2254	0.0481	3598.4915
5293.8000	369.6086	2462.8340	0.0565	3795.1001
5293.9000	389.6960	2852.5300	0.0655	4000.2517
5294.0000	410.6380	3263.1680	0.0749	4213.9373
5294.1000	435.3993	3698.5673	0.0849	4494.3271
5294.2000	463.5267	4162.0941	0.0955	4776.5037
5294.3000	491.8228	4653.9168	0.1068	5059.8281
5294.4000	520.0672	5173.9841	0.1188	5341.1926
5294.5000	548.1147	5722.0987	0.1314	5620.8206
5294.6000	575.9939	6298.0927	0.1446	5898.7773
5294.7000	603.2203	6901.3129	0.1584	6155.6208
5294.8000	627.4350	7528.7480	0.1728	6393.4414
5294.9000	651.3241	8180.0720	0.1878	6633.4028
5295.0000	0.0000	8180.0720	0.0000	0.0000

Basin F.4 Swale Lower Section

Analyzer Report

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Drainage Structure Analyzer

Channel Hydraulic Analysis

Date: Tuesday, March 15, 2016 4:16:17 PM

==========

Input Data

Shape	V-Shaped
Material	Gravel Riprap 1"
Roughness	0.033000
Left Slope	25.0000%
Right Slope	25.0000%
Bed Slope	0.6000%
Flow Rate	24.9000 cfs

Output Results

Flow Rate	24.9000 cfs
Depth	1.4889 ft
Velocity	2.8080 ft/s
Top Width	11.9113 ft
Critical Depth	1.1920 ft

Subcritical

RECEIVED

Basin F.4 Swale Mid Section

Analyzer Report

==========

Drainage Structure Analyzer

Channel Hydraulic Analysis

Date: Tuesday, March 15, 2016 3:51:14 PM

==========

Input Data

Shape	V-Shaped
Material	Gravel Riprap 1"
Roughness	0.033000
Left Slope	25.0000%
Right Slope	25.0000%
Bed Slope	1.7000%
Flow Rate	12.5000 cfs

Output Results

Flow Rate	12.5000 cfs
Depth	0.9459 ft
Velocity	3.4929 ft/s
Top Width	7.5669 ft
Critical Depth	0.9040 ft

Subcritical

RECEIVED
3/16/16

Basin G.4 Swale Lower Section (Worst Case for Entire Reach)

Analyzer Report

==========

Drainage Structure Analyzer

Channel Hydraulic Analysis

Date: Tuesday, March 15, 2016 4:00:13 PM

Input Data

Shape	V-Shaped
Material	Gravel Riprap 1"
Roughness	0.033000
Left Slope	25.0000%
Right Slope	25.0000%
Bed Slope	1.0000%
Flow Rate	12.1000 cfs

Output Results

Flow Rate	12.1000 cfs
Depth	1.0322 ft
Velocity	2.8395 ft/s
Top Width	8.2572 ft
Critical Depth	0.8930 ft

Subcritical

RECEIVED
3/16/16

Analyzer Report - SWALE BASIN G.4, LOWER SECTION

==========

Drainage Structure Analyzer

Channel Hydraulic Analysis

Date: Tuesday, February 02, 2016 5:41:04 PM

==========

Input Data

Shape	V-Shaped
Material	Gravel Riprap 1"
Roughness	0.033000
Left Slope	14.0000%
Right Slope	25.0000%
Bed Slope	4.5000%
Flow Rate	12.2000 cfs

Output Results

Flow Rate	12.2000 cfs
Depth	0.6874 ft
Velocity	4.6342 ft/s
Top Width	7.6596 ft
Critical Depth	0.7840 ft

Super Critical

Analyzer Report - SWALE BASINS G.5/G.6 LOWER SECTION

==========

Drainage Structure Analyzer

Channel Hydraulic Analysis

Date: Tuesday, February 02, 2016 5:42:27 PM

Input Data

Shape	V-Shaped
Material	Gravel Riprap 1"
Roughness	0.033000
Left Slope	14.0000%
Right Slope	25.0000%
Bed Slope	1.0000%
Flow Rate	7.6000 cfs

Output Results

Flow Rate	7.6000 cfs
Depth	0.7631 ft
Velocity	2.3422 ft/s
Top Width	8.5036 ft
Critical Depth	0.6490 ft

Subcritical

Exhibits

EXHIBITS

EXHIBIT 1: PRELIMINARY PLAT

EXHIBIT 2: EXISTING BASINS MAP

EXHIBIT 3: PROPOSED BASINS MAP

EXHIBIT 4: STORM DRAIN NETWORK MAP

EXHIBIT 5: GRADING PLAN

EXHIBIT 6 OVERALL BASIN MAP FROM DRAINAGE MASTER PLAN FOR THE MIREHAVEN MASTER PLANNED COMMUNITY

EXHIBIT 1

PRELIMINARY PLAT

Bohannan Huston

EXHIBIT 2

EXISTING BASINS MAP

Bohannan Huston

EXHIBIT 3

PROPOSED BASINS MAP

Bohannan Huston

EXHIBIT 4

PROPOSED STORM DRAIN NETWORK

Bohannan Huston

EXHIBIT 5

GRADING PLAN

Bohannan Huston

EXHIBIT 6 –

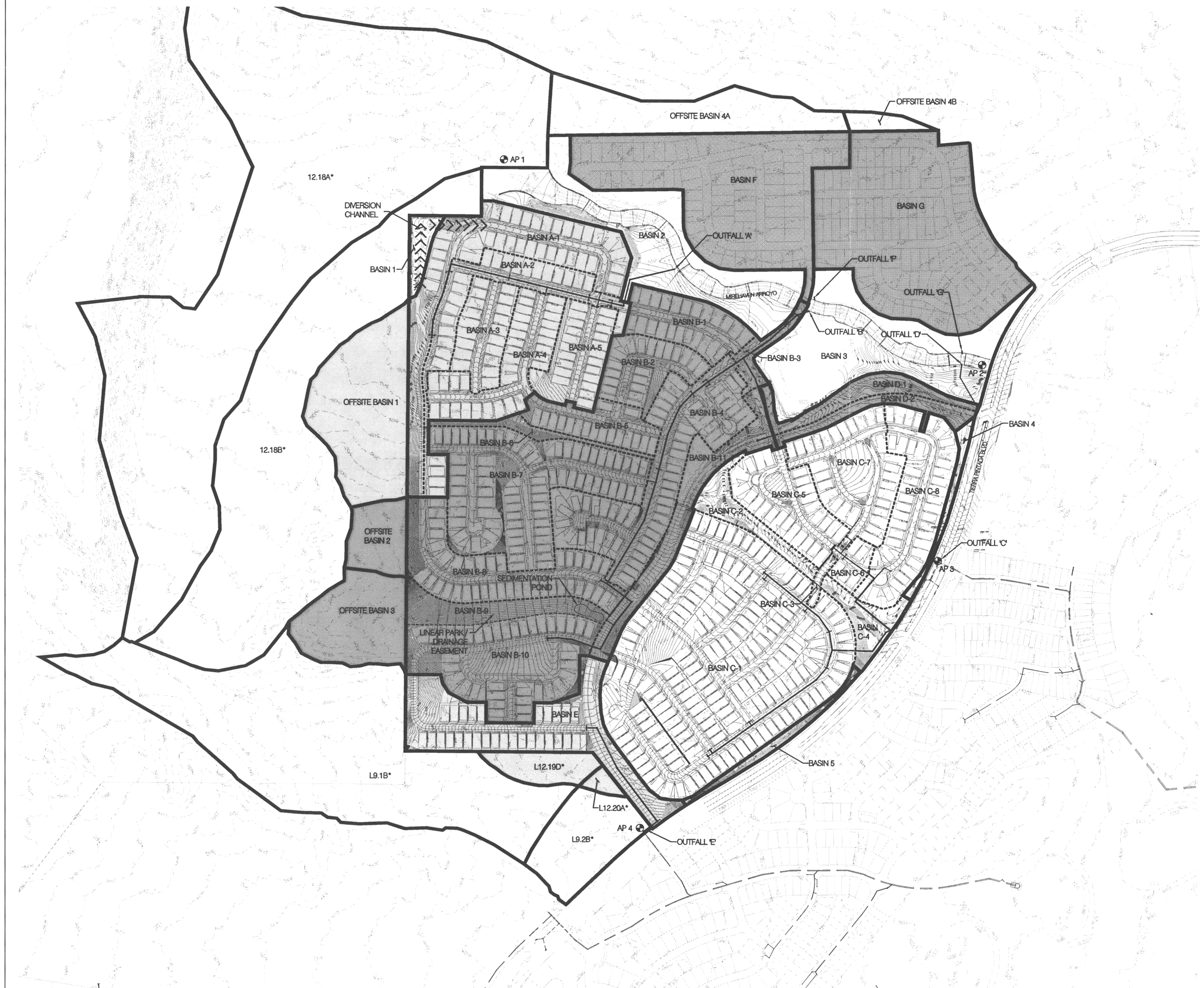
OVERALL BASIN MAP FROM DRAINAGE MASTER PLAN FOR THE MIREHAVEN MASTER PLANNED COMMUNITY

Bohannan Huston

DRAINAGE MASTER PLAN FOR THE MIREHAVEN MASTER PLANNED COMMUNITY

OVERALL BASIN MAP

11/2013



BASIN I.D.	AREA (AC)	Q (CFS) 100YR
Offsite Basin 1	12.8	19.8
Offsite Basin 2	3.5	5.8
Offsite Basin 3	7.6	16.3
Offsite Basin 4A	9.8	17.3
Offsite Basin 4B	1.1	1.9
12.18B	42.0	65.0
Basin A-1	12.4	40.3
Basin A-2	7.2	23.4
Basin A-3	4.4	14.3
Basin A-4	7.0	22.8
Basin 4-5	5.1	16.6
Basin B-1	5.0	16.3
Basin B-2	4.6	15.0
Basin B-3	1.4	5.6
Basin B-4	13.6	44.2
Basin B-5	4.0	13.0
Basin B-6	1.3	3.4
Basin B-7	16.2	52.7
Basin B-8	9.5	30.9
Basin B-9	3.8	12.4
Basin B-10	12.5	40.7
Basin B-11	5.9	21.4
Basin C-1	39.6	128.8
Basin C-2	2.7	7.1
Basin C-3	0.4	1.7
Basin C-4	2.5	6.6
Basin C-5	6.5	21.1
Basin C-6	1.4	4.6
Basin C-7	8.4	27.3
Basin C-8	9.2	29.9
Basin D-1	3.0	10.9
Basin D-2	2.2	8.0
Basin E	11.6	37.7
Basin F	21.5	69.9
Basin G	26.0	84.6
Basin 1	1.4	4.4
Basin 2	15.8	44.7
Basin 3	16.2	49.0
Basin 4	2.5	6.6
Basin 5	1.4	3.7

OUTFALL I.D.	SIZE (IN)	Q (CFS) 100YR
A	48	137.3
B	60	277.6
C	66	236.2
D	24	10.9
E	30	37.7
F	42	87.2
G	42	86.6

LEGEND

- BASIN BOUNDARY
- SUB BASIN BOUNDARY
- FUTURE / PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- DIVERSION CHANNEL

* BASIN FLOWS ARE FROM THE "WEST I-40 DPM". THE EXISTING, UNDEVELOPED PORTIONS OF BASIN 12.18 HAS BEEN SPLIT INTO TWO BASINS, 12.18A AND 12.18B. BASIN 12.18B WILL BE INTERCEPTED BY A DIVERSION SWALE THAT WILL BE LOCATED IN BASIN 1.

ANALYSIS POINT	Qallowable (CFS)
1	1373****
2	1495*****
3	375***
4	216**

** PER "DRAINAGE ANALYSIS REPORT FOR ARROYO VISTA BLVD & TIERRA PINTADA BLVD", APRIL 4, 2012

*** PER "DRAINAGE REPORT FOR STORMCLOUD SUBDIVISION", MAY 27, 2005

****UPSTREAM FLOWS ARE FROM "WEST I-40 DMP UPDATE 2011", DECEMBER 2011

***** PER TECHNICAL MEMORADANDUM "PRELIMINARY HYDRAULIC ANALYSIS FOR MIREHAVEN ARROYO CROSSING", JANUARY 10, 2012.

N

300 150 0 300

SCALE: 1"=300'

Bohannan Huston

www.bhinc.com 800.877.5332

Tue, 19-Nov-2013 - 11:11:am, Plotted by: AROMERO
P:\20130375\CDP\Plans\General\Drainage Master Plan\20130375OverallBasins.dwg

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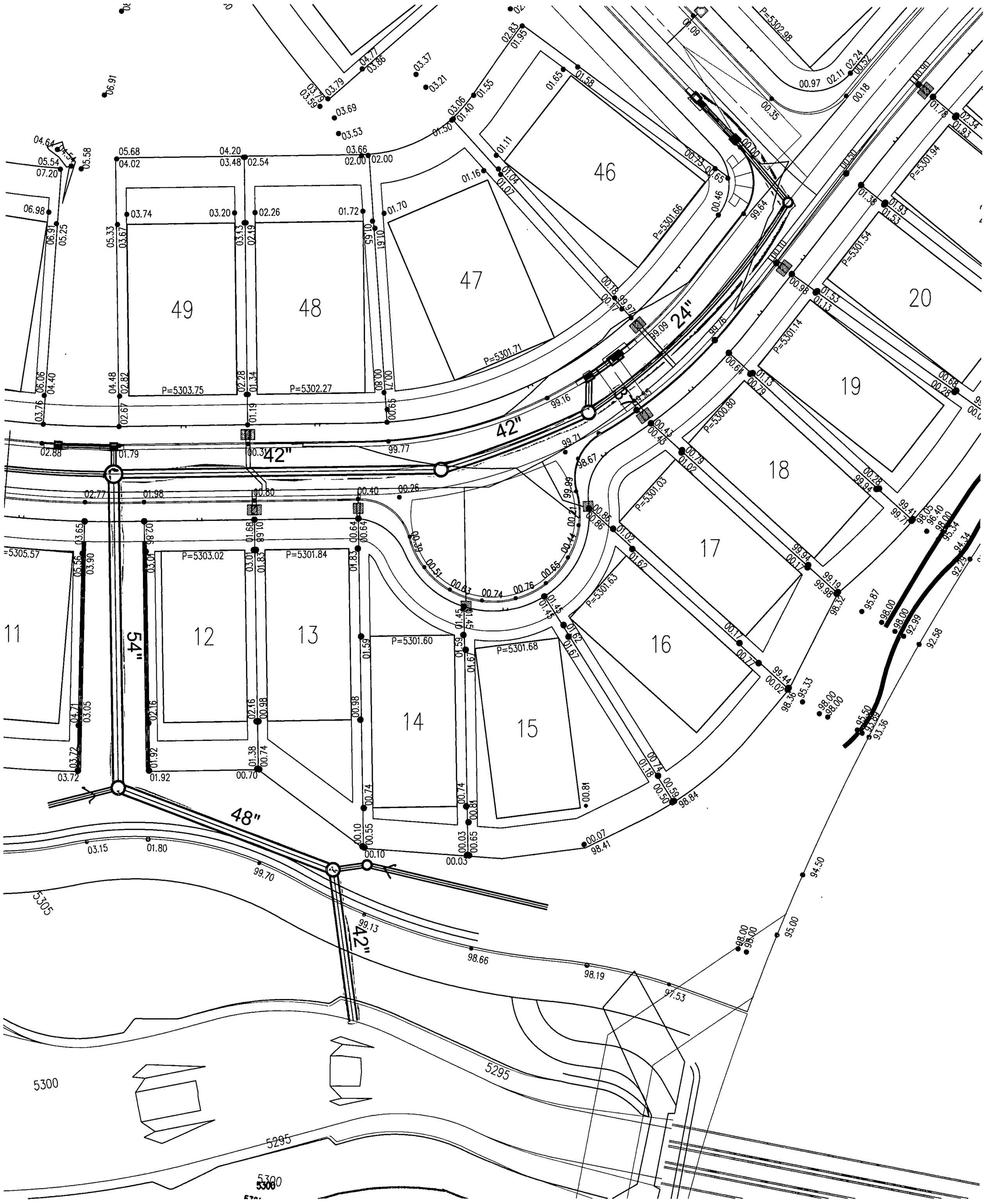
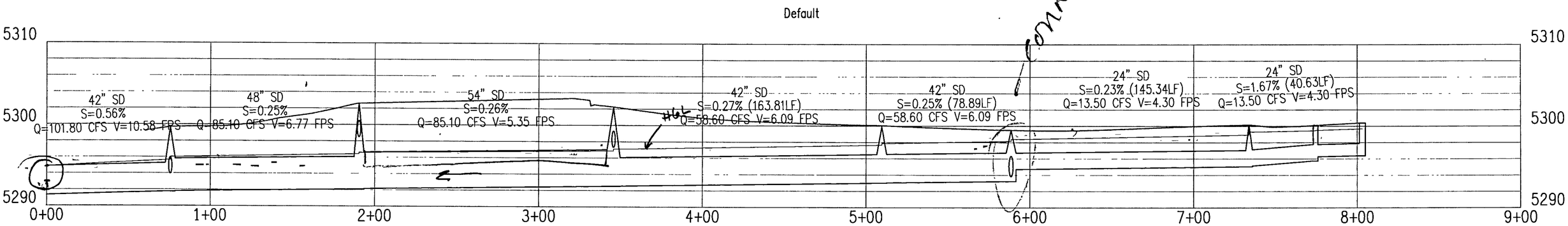
SHAHAB Saad olc




Default
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5300
5290
42" SD
S=0.56%
Q=101.80 CFS V=10.58 FPS
48" SD
S=0.25%
Q=85.10 CFS V=6.77 FPS
54" SD
S=0.26%
Q=85.10 CFS V=5.35 FPS
42" SD
S=0.27% (163.81LF)
Q=58.60 CFS V=6.09 FPS
42" SD
S=0.25% (78.89LF)
Q=58.60 CFS V=6.09 FPS
24" SD
S=0.23% (145.34LF)
Q=13.50 CFS V=4.30 FPS
24" SD
S=1.67% (40.63LF)
Q=13.50 CFS V=4.30 FPS
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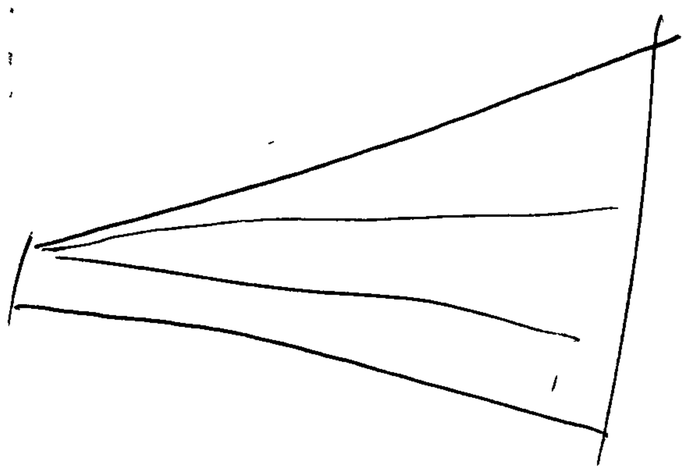
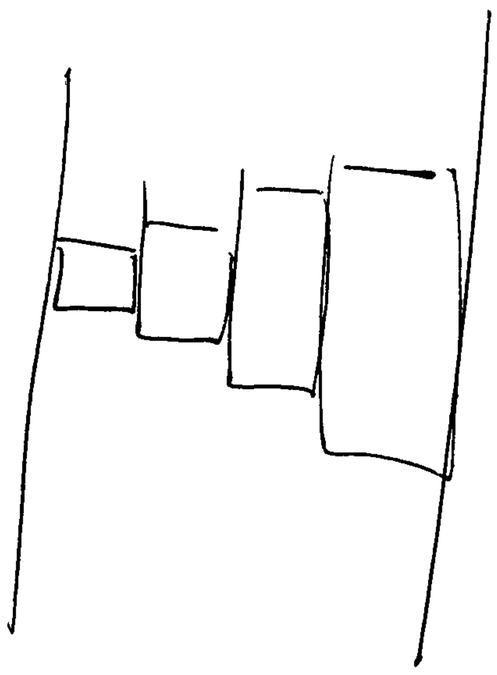
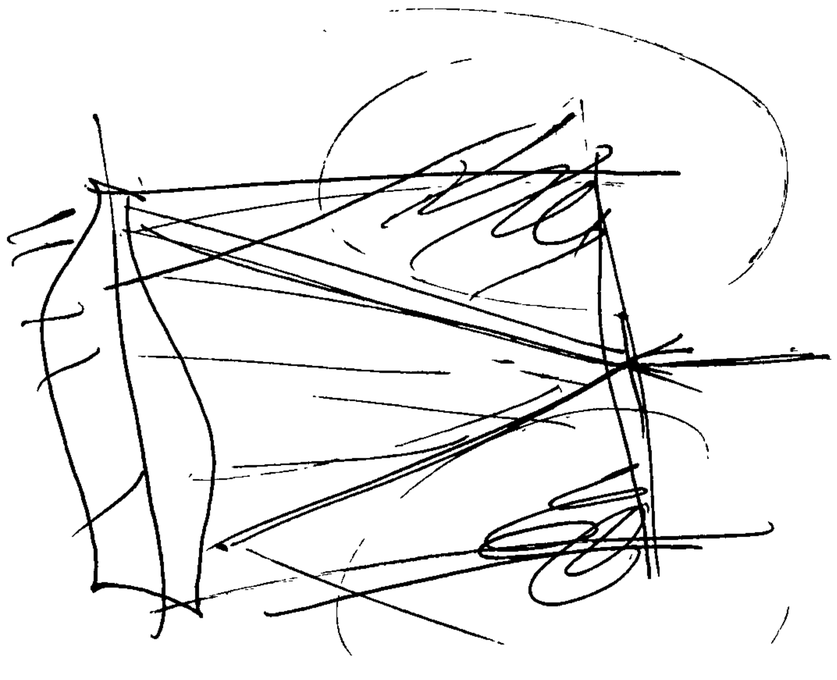
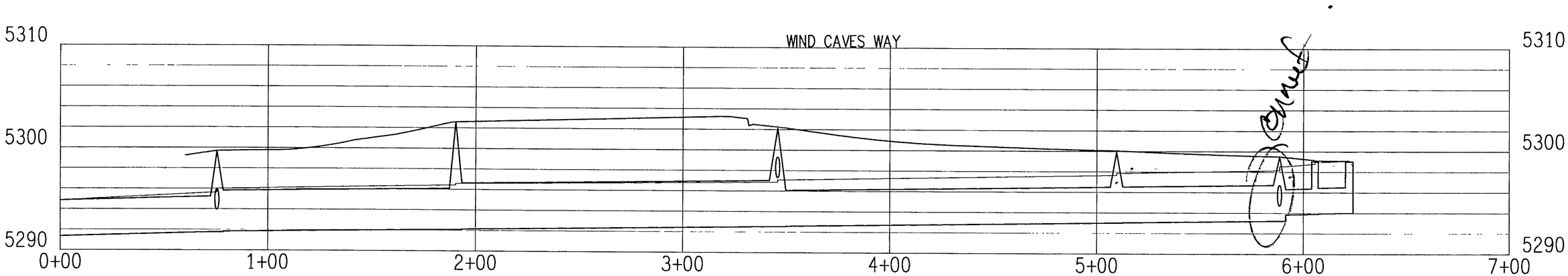
8+00
9+00








WIND CAVES WAY
5310
5300
5290
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00

Current DRC
Project No _____

ORIGINAL

Date Submitted 1/27/2016
Date Site Plan Approved
Date Preliminary Plat Approved 1-27-16
Date Preliminary Plat Expires 1-27-17

DRB Project No. 1006864

Figure 12

INFRASTRUCTURE LIST

EXHIBIT "A"
TO SUBDIVISION IMPROVEMENTS AGREEMENT
DEVELOPMENT REVIEW BOARD (D.R.B.) REQUIRED INFRASTRUCTURE LIST

DEL WEBB AT MIREHAVEN PHASE 2
(TRACT M AND TRACT N-2-A-1, WATERSHED)

Following is a summary of PUBLIC/PRIVATE infrastructure required to be constructed or financially guaranteed for the above development. This listing is not necessarily a complete listing. During the SIA process and/or in the review of the construction drawings, if the DRC Chair determines that appurtenant items and/or unforeseen items have not been included in the infrastructure listing, the DRC Chair may include those items in the listing and related financial guarantee. Likewise, if the DRC Chair determines that appurtenant or non-essential items can be deleted from the listing, these items may be deleted as well as the related portions of the financial guarantees. All such revisions require approval by the DRC Chair, the User Department and agent/owner. If such approvals are obtained, these revisions to the listing will be incorporated administratively. In addition, any unforeseen items which arise during construction which which are necessary to complete the project and which normally are the Subdivider's responsibility will be required as a condition of project acceptance and close out by the City.

SIA Sequence #	COA DRC Project #	Size	Type of Improvement	Location	From	To	Private Inspector	City Inspector	City Const Engineer
			PUBLIC WATERLINE IMPROVEMENTS PHASE 2A						
		10" DIA (3WR)	WATERLINE W/ NEC. VALVES FH'S, MJ'S & RJ'S	WIND CAVES WAY	PHASE 2A/2B BOUNDARY WILLOW CANYON TRAIL	WEST CREEK PLACE	/	/	/
		6" DIA (3WR)	WATERLINE W/ NEC. VALVES FH'S, MJ'S & RJ'S	LAKE ISABELLA WAY	WOODS WASH TRAIL	BATES WELL LANE	/	/	/
		6" DIA (3WR)	WATERLINE W/ NEC. VALVES FH'S, MJ'S & RJ'S	GRANITE MOUNTAIN LOOP	PHASE 2A/2B BOUNDARY	WIND CAVES WAY	/	/	/
		6" DIA (3WR)	WATERLINE W/ NEC. VALVES FH'S, MJ'S & RJ'S	WOODS WASH TRAIL	CUL-DE-SAC TERMINUS	WIND CAVES WAY	/	/	/
		6" DIA (3WR)	WATERLINE W/ NEC. VALVES FH'S, MJ'S & RJ'S	BATES WELLS LANE	CUL-DE-SAC TERMINUS	WIND CAVES WAY	/	/	/
			FIRE HYDRANT REMOVAL	SW CORNER OF TIERRA PINTADA AND WESTCREEK PLACE			/	/	/

SIA Sequence #	COA DRC Project #	Size	Type of Improvement	Location	From	To	Private Inspector	City Inspector	City Const Engineer
			PUBLIC SANITARY SEWER IMPROVEMENTS -PHASE 2A						
		8" DIA	SANITARY SEWER W/ NEC MH'S & SERVICES	WIND CAVES WAY	PHASE 2A/2B BOUNDARY WILLOW CANYON TRAIL	WEST CREEK PLACE	/	/	/
		8" DIA	SANITARY SEWER W/ NEC MH'S & SERVICES	LANE ISABELLA WAY	LOT 55	BATES WELL LANE	/	/	/
		8" DIA	SANITARY SEWER W/ NEC MH'S & SERVICES	GRANITE MOUNTAIN LOOP	LOT 92	WIND CAVES WAY	/	/	/
		8" DIA	SANITARY SEWER W/ NEC MH'S & SERVICES	WOODS WASH TRAIL	CUL-DE-SAC TERMINUS	WIND CAVES WAY	/	/	/
		8" DIA	SANITARY SEWER W/ NEC. MH'S & SERVICES	BATES WELLS LANE	CUL DE-SAC TERMINUS	WIND CAVES WAY	/	/	/
							/	/	/

SIA Sequence #	COA DRC Project #	Size	Type of Improvement	Location	From	To	Private Inspector	City Inspector	City Const Engineer
			PUBLIC STORM DRAIN IMPROVNENTS-PHASE 2A						
		18-30" DIA	RCP W/ NEC. MH'S, LATERALS & INLETS	WIND CAVES WAY	LOT 54/55	BATES WELLS LANE	/	/	/
		18" DIA	RCP W/ NEC. MH'S, LATERALS & INLETS	BATES WELLS LANE	60' NORTH OF WIND CAVES WAY INTERSECTION	WIND CAVES WAY	/	/	/
		18-42" DIA	RCP W/ NEC. MH'S, LATERALS & INLETS	WILLOW CANYON TRAIL	WIND CAVES WAY	MIREHAVEN ARROYO	/	/	/
		42" DIA	RCP W/ NEC. MH'S, LATERALS & INLETS	PUBLIC STORM DRAIN EASEMENT BTWN LOTS 11/12	WIND CAVES WAY	MIREHAVEN ARROYO	/	/	/
		18" DIA	RCP W/ NEC. MH'S LATERALS & INLETS	TRACT M-1 BEHIND LOTS 13 - 15	PUBLIC STORM DRAIN EASEMENT BTWN LOTS 11/12	POND SE CORNER OF PROPERTY BEHIND LOT 15	/	/	/
		NOTE:	A GRADING AND DRAINAGE CERTIFICAITON OF THE APPROVED GRADING PLAN IS REQUIRED PRIOR TO THE RELEASE OF FINANCIAL GUARANTY				/	/	/

PUBLIC ROADWAY IMPROVEMENTS ON SITE PHASE 2A

22' F-F (EGRESS) 30' F-F (INGRESS) 10' MEDIAN	RESIDENTIAL PAVING W/ PCC CURB & GUTTER 4' WIDE PCC SIDEWALK†* S SIDE ONLY	LAKE ISABELLA WAY	BATES WELLS LANE	WEST CREEK PLACE	/	/	/
28' F-F	RESIDENTIAL PAVING W/ PCC CURB & GUTTER & PCC 4' WIDE SIDEWALK†* ON BOTH SIDES	LAKE ISABELLA WAY	WOODS WASH TRAIL	BATES WELLS LANE	/	/	/
28' F-F	RESIDENTIAL PAVING W/ PCC CURB & GUTTER & PCC 4' WIDE SIDEWALK†* ON BOTH SIDES	WIND CAVES WAY	PHASE 2A/2B BOUNDARY WILLOW CANYON TRAIL	BATES WELLS LANE	/	/	/
24' F-F	RESIDENTIAL PAVING W/ PCC CURB & GUTTER & PCC 4' WIDE	WIND CAVES WAY	BATES WELLS LANE	STREET TERMINUS	/	/	/
10' WIDE	2" RAISED PATTERN CONCRETE CROSSWALK	WIND CAVES WAY	TRAIL CONNECTION BTWN LOTS 49/50	TRAIL CONNECTION BTWN LOTS 11/12	/	/	/
26' F-F	RESIDENTIAL PAVING W/ PCC CURB & GUTTER & PCC 4' WIDE SIDEWALK†* ON S SIDE ONLY	GRANITE MOUNTAIN LOOP	PHASE 2A/2B BOUNDARY	LOT 92	/	/	/
28' F-F	RESIDENTIAL PAVING W/ PCC CURB & GUTTER & PCC 4' WIDE SIDEWALK†* ON BOTH SIDES	GRANITE MOUNTAIN LOOP	LOT 92	WIND CAVES WAY	/	/	/
28' F-F	RESIDENTIAL PAVING W/ PCC CURB & GUTTER & PCC 4' WIDE SIDEWALK†* ON NORTH SIDE ONLY	WOODS WASH TRAIL	CUL DE SAC TERMINUS	WIND CAVES WAY	/	/	/
28' F-F	RESIDENTIAL PAVING W/ PCC CURB & GUTTER & PCC 4' WIDE SIDEWALK†* ON BOTH SIDES	BATES WELLS LANE	CUL-DE-SAC TERMINUS	WIND CAVES WAY	/	/	/
36' F-F	RESIDENTIAL PAVING W/ PCC CURB & GUTTER & PCC 8' WIDE SIDEWALK†* EAST SIDE ONLY 6' BIKE LANES ON BOTH SIDES	WILLOW CANYON TRAIL	WIND CAVES WAY	MIREHAVEN ARROYO	/	/	/
8'	ASPHALT OR GRAVEL TRAIL	PUBLIC PEDESTRIAN ACCESS EASEMENT	EXISTING NATIONAL MONUMENT GATE AT THE NE CORNER OF SITE	WESTCREEK PLACE	/	/	/
8'	ASPHALT TRAIL	HOA TRACT M-2 BTWN LOTS 11/12	WIND CAVES WAY	MIREHAVEN ARROYO	/	/	/
8'	ASPHALT OR GRAVEL TRAIL	HOA TRACT M-1	NE CORNER GRANITE MOUNTAIN / LOT 92	EXISTING NATIONAL MONUMENT GATE AT THE NE CORNER OF SITE	/	/	/
8'	ASPHALT TRAIL	HOA TRACT M-1	BATES WELLS LANE	EXISTING NATIONAL MONUMENT GATE AT THE NE CORNER OF SITE	/	/	/
8'	ASPHALT TRAIL	HOA TRACT M-1	BATES WELLS LANE CUL-DE-SAC TERMINUS	LAKE ISABELLA WAY	/	/	/
8'	ASPHALT TRAIL	HOA TRACT M-3	LAKE ISABELLA WAY	WIND CAVES WAY BATES WELL LANE	/	/	/
4'	CONCRETE SIDEWALK	WESTSIDE OF WESTCREEK PLACE	HAMMERHEAD	TIERRA PINTADA BLVD	/	/	/
NOTE	STREET LIGHTS AS REQUIRED PER THE COA DPM				/	/	/

*ALL SIDEWALKS TO BE DEFERRED ALONG FRONTAGE OF LOTS

†SIDEWALK TO BE WAIVED ON 1) NORTHSIDE OF GRANITE MOUNTAIN LOOP, 2) NORTHSIDE OF LAKE ISABELLA WAY 3) NORTHSIDE OF WIND CAVES WAY EAST OF BATES WELLS LANE

**PROVIDE / INSTALL THE NECESSARY ROADWAY SIGNAGE ASSOCIATED W/ THE DEVELOPMENT AS APPROVED BY THE CITY DRC

PUBLIC WATERLINE IMPROVEMENTS PHASE 2B

		6" DIA (3WR)	WATERLINE W/ NEC. VALVES FH'S MJ'S & RJ'S	WIND CAVES WAY	CUL-DE-SAC TERMINUS	GRANITE MOUNTAIN LOOP	/	/	/
		10" DIA (3WR)	WATERLINE W/ NEC VALVES FH'S MJ'S & RJ'S	WIND CAVES WAY	GRANITE MOUNTAIN LOOP	PHASE 2A/2B BOUNDARY WILLOW CANYON TRAIL	/	/	/
		10" DIA (3WR)	WATERLINE W/ NEC VALVES FH'S, MJ'S & RJ'S	20' PUBLIC WATERLINE ESMENT BTWN LOTS 166/167	PHASE 2A/2B BOUNDARY	EXISTING 10" WL MIREHAVEN ARROYO	/	/	/
		6" DIA (3WR)	WATERLINE W/ NEC VALVES FH'S, MJ'S & RJ'S	GRANITE MOUNTAIN LOOP	WIND CAVES WAY (WEST INTERSECTION)	WIND CAVES WAY (EAST INTERSECTION)	/	/	/
		6" DIA (3WR)	WATERLINE W/ NEC VALVES FH'S, MJ'S & RJ'S	GOLD BUTTE TRAIL	GRANITE MOUNTAIN LOOP	WIND CAVES WAY	/	/	/
		6" DIA (3WR)	WATERLINE W/ NEC VALVES FH'S MJ'S & RJ'S	CHUCKWALLA SPRING LANE	GRANITE MOUNTAIN LOOP	WIND CAVES WAY	/	/	/
		6" DIA (3WR)	WATERLINE W/ NEC VALVES FH'S MJ'S & RJ'S	KOMATKE TRAIL	GRANITE MOUNTAIN LOOP	WIND CAVES WAY	/	/	/
							/	/	/

SIA Sequence #	COA DHC Project #	Size	Type of Improvement	Location	From	To	Private Inspector	City Inspector	City Civil Engineer
			PUBLIC SANITARY SEWER IMPROVEMENTS PHASE 2B						
		8" DIA	SANITARY SEWER W/ NEC MH'S & SERVICES	WIND CAVES WAY	CUL-DE-SAC TERMINUS	PHASE 2A/2B BOUNDARY WILLOW CANYON TRAIL	/	/	/
		8" DIA	SANITARY SEWER W/ NEC. MH'S & SERVICES	GRANITE MOUNTAIN LOOP	LOT 152	WIND CAVES WAY	/	/	/
		8" DIA	SANITARY SEWER W/ NEC MH'S & SERVICES	GRANITE MOUNTAIN LOOP	LOT 92	WIND CAVES WAY	/	/	/
		8" DIA	SANITARY SEWER W/ NEC MH'S & SERVICES	GOLD BUTTE TRAIL	LOT 145	WIND CAVES WAY	/	/	/
		8" DIA	SANITARY SEWER W/ NEC MH'S & SERVICES	CHUCKWALLA SPRING LANE	LOT 130	WIND CAVES WAY	/	/	/
		8" DIA	SANITARY SEWER W/ NEC MH'S & SERVICES	KOMATKE TRAIL	LOT 112	WIND CAVES WAY	/	/	/
							/	/	/

SIA Sequence #	COA DHC Project #	Size	Type of Improvement	Location	From	To	Private Inspector	City Inspector	City Civil Engineer
			PUBLIC STORM DRAIN IMPROVMENTS-PHASE 2B						
		18" DIA	RCP W/ NEC MH'S LATERALS & INLETS	CHUCKWALLA SPRING LANE	75' NORTH OF WIND CAVES WAY	WIND CAVES WAY	/	/	/
		18"-30" DIA	RCP W/ NEC MH'S, LATERALS & INLETS	WIND CAVES WAY	CHUCKWALLA SPRING LANE	PHASE 2A/2B BOUNDARY WILLOW CANYON TRAIL	/	/	/
							/	/	/
							/	/	/
							/	/	/
		NOTE	A GRADING AND DRAINAGE CERTIFICATON OF THE APPROVED GRADING PLAN IS REQUIRED PRIOR TO THE RELEASE OF FINANCIAL GUARANTY						

PUBLIC ROADWAY IMPROVEMENTS - OFFSITE PHASE 2B

28' F-F	RESIDENTIAL PAVING W/ PCC CURB & GUTTER & PCC 4' WIDE SIDEWALK†* ON BOTH SIDES	WIND CAVES WAY	CUL-DE-SAC TERMINUS	PHASE 2A/2B BOUNDARY WILLOW CANYON TRAIL	/	/	/
28' F-F	RESIDENTIAL PAVING W/ PCC CURB & GUTTER & PCC 4' WIDE SIDEWALK†* ON EAST SIDE ONLY	GRANITE MOUNTAIN LOOP	WIND CAVES WAY	LOT 152	/	/	/
28' F-F	RESIDENTIAL PAVING W/ PCC CURB & GUTTER & PCC 4' WIDE SIDEWALK†* ON S SIDE ONLY	GRANITE MOUNTAIN LOOP	LOT 152	PHASE 2A/2B BOUNDARY	/	/	/
28' F-F	RESIDENTIAL PAVING W/ PCC CURB & GUTTER & PCC 4' WIDE SIDEWALK†* ON BOTH SIDES	GOLD BUTTE TRAIL	GRANITE MOUNTAIN LOOP	WIND CAVES WAY	/	/	/
28' F-F	RESIDENTIAL PAVING W/ PCC CURB & GUTTER & PCC 4' WIDE SIDEWALK†* ON BOTH SIDES	CHUCKWALLA SPRING LANE	GRANITE MOUNTAIN LOOP	WIND CAVES WAY	/	/	/
28' F-F	RESIDENTIAL PAVING W/ PCC CURB & GUTTER & PCC 4' WIDE SIDEWALK†* ON BOTH SIDES	KOMATKE TRAIL	GRANITE MOUNTAIN LOOP	WIND CAVES WAY PHASE 1 BOUNDARY LINE	/	/	/
8'	ASPHALT TRAIL	HOA TRACT M-1 BTWN LOTS 166/167	WIND CAVES WAY	MIREHAVEN ARROYO	/	/	/
8	ASPHALT TRAIL	HOA TRACT M-1 BTWN LOTS 174/175	WIND CAVES WAY	MIREHAVEN ARROYO	/	/	/
NOTE	STREET LIGHTS AS REQUIRED PER THE COA DPM				/	/	/

*ALL SIDEWALKS TO BE DEFERRED ALONG FRONTAGE OF LOTS
†SIDEWALK TO BE WAIVED ON 1) EAST SIDE OF GRANITE MOUNTAIN LOOP AT SIDEYARD OF LOT 153, 2) NORTH SIDE OF GRANITE MOUNTAIN LOOP

**PROVIDE / INSTALL THE NECESSARY ROADWAY SIGNAGE ASSOCIATED W/ THE DEVELOPMENT AS APPROVED BY THE CITY DRC

AGENT/OWNER

YOLANDA PADILLA MOYER P.E
PREPARED BY PRINT NAME

BOHANNAN HUSTON INC
FIRM

SIGNATURE

MAXIMUM TIME ALLOW TO CONSTRUCT IMPROVEMENTS WITHOUT A DRB EXTENSION

DEVELOPMENT REVIEW BOARD MEMBER APPROVALS

DRB CHAIR	1-27-16 DATE	PARKS & RECREATION	Carol S. Dumont 1-27-16 DATE
TRANSPORTATION DEVELOPMENT	1/27/16 DATE	DMAFCA	DATE
ABCWUA	01/27/16 DATE	CITY ENGINEER	1-27-16 DATE
	DATE		DATE

REVIEW COMMITTEE REVISIONS

REVISION	DATE	DRC CHAIR	USER DEPARTMENT		AGENT/OWNER

CITY OF ALBUQUERQUE

January 11, 2016

Yolanda Padilla-Moyer, PE
Christian Sholtis, PE
Bohannan Huston, Inc.
7500 Jefferson NE, Courtyard I
Albuquerque, NM 87109

Re: DMP FOR DEL WEBB PHASE 2 @ Mirehaven Tract M Watershed Subdivision Engineer's Stamp Date: 11/25/2015 (H09/D017F)

Dear Ms. Yolanda Padilla-Moyer P.E. & Mr. Sholtis, P.E.,

Based upon the information provided in your submittal received 11-25-15, the DMP cannot be approved based on the following comments:

1. Please make sure all pad elevations meet the ABCWUA maximum finished floor elevation for Zone 3WR.
2. Overall discharge flow of 178.50 cfs exceeds the flows shown on the master plan. How will this impact existing drainage structures.
3. Basin G.4 includes the road. Where do basins G.4 and G.6 drain to? The runoff should be routed to the exiting 42" storm drain pipe via an inlet and storm drain pipe.
4. Show how grades tie to surrounding properties. Include proposed contours.
5. Provide typical lot grading for first flush including the ponding between the back of curb and sidewalk. Provide first flush calculations for typical lot and overall volume provided.
6. For future submittals please include copy of the overall approved basin map with your report.
7. Provide the proposed graded for the trail from Granite Mountain Loop to West Creek Place. Are the grades to ADA standards?
8. Existing topography do not reach nor extend beyond the property line on the east side. Elevations must be provided for existing improvements to assure proper proposed grades will not any adverse impacts.
9. Are retaining walls required for lots 28 to 34?
10. Provide top and bottom elevations for all retaining walls. Please double check all walls for height requirements and clear sight distances.
11. Show flow arrows for the lots.
12. Modify basin maps to properly quantify flows and their discharge location. Why is Basin G.5 separated from Basin G.3.

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

13. How much runoff is proposed to drain to West Creek Place? Will this impact street capacity or storm drain system capacity?
14. Double check flow and flow depth calculated passed upstream inlets. Is there an emergency overflow for the inlets at swamp condition? Is the system designed for twice the 100-year storm?
15. Basin F.4 drains to the back. How the runoff enters the storm drain system.
16. How does the offsite runoff enter the site? Are there erosion protection measures along the sloped areas?
17. Provide storm drain capacity analysis for the existing 42" stubs. SDP7 appears to be at maximum capacity. Can additional inlets be added east of inlet 12 to route the flows to SDP8 on Willow Canyon Trail?
18. Will there be phasing plan for the grading? And temporary measures for offsite runoff.
19. Erosion and Sediment control plan must be submitted for approval prior to Grading permit. Starting February 1st storm water quality permits must be obtained prior to grading approval. A flood plain permit will be required as well prior to grading permit approval.

If you have any questions, you can contact me at 924-3999.

Sincerely,

Shahab Biazar, P.E.
City Engineer, Planning Department
Development Review Services

C: e-mail

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

H09D017F

Project Title: DEL WEBB PHASE 2 @ MIREHAVEN Building Permit #: _____ City Drainage #: ~~H09D017E~~

DRB#: _____ EPC#: _____ Work Order#: _____

Legal Description: TRACT M, WATERSHED SUBDIVISION

City Address: _____

Engineering Firm: BOHANNAN HUSTON INC Contact: Christian Sholtis

Address: 7500 JEFFERSON ST NE COURTYARD 1 ALBUQUERQUE NM 87109

Phone#: 823-1000 Fax#: _____ E-mail: csholtis@bhinc com

Owner: WESTERN ALBUQUERQUE LAND HOLDINGS, LLC Contact: JEFF GARRETT

Address: 3131 CAMELBACJ=K RD SUITE 200 PHOENIX, AZ 85016

Phone#: 602-427-4064 Fax#: _____ E-mail: _____

Architect: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Surveyor: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Contractor: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

TYPE OF SUBMITTAL:

X DRAINAGE REPORT
___ DRAINAGE PLAN 1st SUBMITTAL
___ DRAINAGE PLAN RESUBMITTAL
___ CONCEPTUAL G & D PLAN
X GRADING PLAN
___ EROSION & SEDIMENT CONTROL PLAN (ESC)
___ ENGINEER'S CERT (HYDROLOGY)
___ CLOMR/LOMR
___ TRAFFIC CIRCULATION LAYOUT (TCL)
___ ENGINEER'S CERT (TCL)
___ ENGINEER'S CERT (DRB SITE PLAN)
___ ENGINEER'S CERT (ESC)
___ SO-19
___ OTHER (SPECIFY)

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

___ SIA/FINANCIAL GUARANTEE RELEASE
X PRELIMINARY PLAT APPROVAL
X S. DEV. PLAN FOR SUB'D APPROVAL
___ S. DEV. FOR BLDG. PERMIT APPROVAL
___ SECTOR PLAN APPROVAL
___ FINAL PLAT APPROVAL
___ CERTIFICATE OF OCCUPANCY (PERM)
___ CERTIFICATE OF OCCUPANCY (TCL TEMP)
___ FOUNDATION PERMIT APPROVAL
___ BUILDING PERMIT APPROVAL
X GRADING PERMIT APPROVAL
___ PAVING PERMIT APPROVAL
___ WORK ORDER APPROVAL
___ GRADING CERTIFICATION

___ SO-19 APPROVAL
___ ESC PERMIT APPROVAL
___ ESC CERT. ACCEPTANCE
___ OTHER (SPECIFY)

RECEIVED
NOV 25 2015
LAND DEVELOPMENT SECTION

$1,880.00

WAS A PRE-DESIGN CONFERENCE ATTENDED: ___ Yes ___ No ___ Copy Provided

DATE SUBMITTED: 11-25-15 By: CHRISTIAN J SHOLTIS, PE

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal The particular nature, location, anc scope to the proposed development defines the degree of drainage detail One or more of the following levels of submittal may be required based on the followin

1 **Conceptual Grading and Drainage Plan** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans
2 **Drainage Plans** Required for building permits, grading permits, paving permits and site plans less than five (5) acres
3 **Drainage Report**: Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more
4 **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

Harmon Rita T.

From: Biazar, Shahab
Sent: Tuesday, January 26, 2016 11:28 AM
To: Yolanda Padilla Moyer; Chris Sholtis; Kevin G. Patton (kevin.patton@pultegroup.com)
Cc: Harmon Rita T.; Abiel X. Carrillo; Elliott, Stanice; Cherne, Curtis
Subject: DEL WEBB Phase 2, Tract M off the Watershed Subdivision (H09D017F)
Attachments: stormwater control_ESC_Permit.pdf

Hi,

Based on the DMP submittal for DEL WEBB Phase 2, Tract M off the Watershed Subdivision (H09D017F), the plan is approved for Preliminary Plat but the following comments must be addressed prior to grading and workorder approval:

- Provide calculations for the proposed swale below Basin G.4. Include the swale and surface treatment on the grading plan.
- Provide calculations for the proposed swale below Basin F.4. Include the swale and surface treatment on the grading plan. Show the proposed inlet at the pond as discussed at the meeting.
- Include details for the offsite runoff conveyance over the wall and the path/swale to the street.
- Provide overall first flush calculations and typical lot ponding exhibit including ponding calculations for the different lot sizes.
- Provide existing topography beyond the property line on the east side. Elevations must be provided for existing improvements to assure proper proposed grades will not any adverse impacts.
- Part of Basin G.3 drains Basin G.1. How would this impact street capacity and proposed inlet location?
- Provide wall sections (including swales if any).
- Provide pipe sizes for all the storm drain pipes.
- An Erosion and Sediment Control (ESC) plan must be approved prior to grading approval.
- Stormwater Control Permit for ESC will also be required prior grading approval.
- North end of Basin G.3 and Basin G.7 drain to Westcreek Pl. How will this impact street capacity and downstream storm drain structures.
- Please update proposed Basin map according to the proposed drainage patterns. Please make sure street capacity reflects the actual flows.
- A Flood Permit application is required.
- No building permit will be issued for the lots within the flood plain until the flood plain is removed.
- Are the grades along Mirehaven arroyo as-built grades? Proposed contour do not tie to existing grades.
- Provide additional top of retaining wall elevations to the north.
- Avoid draining extensive runoff over the sidewalks. Include sidewalk culverts in these areas.
- Provide capacity calculations for all the swales and include surface treatments.
- Provide additional retention for first flush within all proposed ponds. Provide first flush volume calculations. Include bottom of the pond and invert elevations for pipes.

Please give me a call if you any questions. I have attached a copy of the Stormwater Control Permit for ESC.

Thanks

Shahab Biazar, P.E.

City Engineer
Planning Department
Development Review Services Division
600 2nd St. NW, Suite 201
Albuquerque, NM 87102
t 505-924-3999
f 505-924-3864

Bohannan ▲ Huston

Courtyard I
7500 Jefferson St. NE
Albuquerque, NM
87109-4335

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voice: 505.823.1000
facsimile: 505.798.7988
toll free: 800.877.5332

January 15, 2016

Mr. Shahab Biazar, P.E.
City Engineer
City of Albuquerque
600 2nd Street NW
Albuquerque, NM 87102

Re: Grading and Drainage Plan Resubmittal, DMP FOR DEL WEBB PHASE 2 @ MIREHAVEN, Tract M Watershed Subdivision (H09/D017F)

Dear Shahab:

In addition to the enclosed revised Drainage Report and Grading plan, below are our responses (in blue) to your comments provided in a letter dated January 11, 2016.

1. Please make sure all pad elevations meet the ABCWUA maximum finished floor elevation for Zone 3WR.
   - All pad elevations are between 5255' and 5270' within the 3WR Pressure Zone.
2. Overall discharge flow of 178.50 cfs exceeds the flows shown on the master plan. How will this impact existing drainage structures?
   - As per the West I-40 DMP, the Mirehaven Channel is designed to accommodate fully developed flows from adjacent sites. Additionally, due to the project site's close proximity to the existing channel, flows generated by the project site enter the channel long before the peak channel flow occurs.
3. Basin G.4 includes the road. Where do basins G.4 and G.6 drain to? The runoff should be routed to the exiting 42" storm drain pipe via an inlet and storm drain pipe.
   - A storm drain pipe has been added to capture flows, and the report has been revised to reflect this.
4. Show how grades tie to surrounding properties. Include proposed contours.
   - All ties and proposed contours have been added to the grading plan.
5. Provide typical lot grading for first flush including the ponding between the back of curb and sidewalk. Provide first flush calculations for typical lot and overall volume provided.
   - Detail and calculations have been added to the report.
6. For future submittals please include copy of the overall approved basin map with your report.
   - Has been added to the revised report.
7. Provide the proposed graded for the trail from Granite Mountain Loop to West Creek Place. Are the grades to ADA standards?
   - Grading for all Trails have been added. The trail is this location is a Maximum of 5%

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8. Existing topography do not reach nor extend beyond the property line on the east side. Elevations must be provided for existing improvements to assure proper proposed grades will not any adverse impacts.
   - Existing elevations along Westcreek Place have been added
9. Are retaining walls required for lots 28 to 34?
   - Retaining wall have been added in this area.
10. Provide top and bottom elevations for all retaining walls. Please double check all walls for height requirements and clear sight distances.
    - Elevations have been added to the top and bottom of retaining walls. There are no sight distance issues.
11. Show flow arrows for the lots.
    - Flow arrows have been added to the lots that drain to the rear.
12. Modify basin maps to properly quantify flows and their discharge location. Why is Basin G.5 separated from Basin G.3?
    - Basin Map has been revised to show correctly.
13. How much runoff is proposed to drain to West Creek Place? Will this impact street capacity or storm drain system capacity?
    - Only Basin G.7 will discharge to West Creek Place, and amounts to 0.9 cfs. This additional flow is negligible and will not adversely impact the existing downstream drainage infrastructure.
14. Double check flow and flow depth calculated passed upstream inlets. Is there an emergency overflow for the inlets at swamp condition? Is the system designed for twice the 100-year storm?
    - Inlet capacities and street depths shown are correct. The sump condition inlets are double grate to accommodate twice the 100-year flowrate, and the Storm Drain Network Map has been revised to reflect this.
15. Basin F.4 drains to the back. How the runoff enters the storm drain system?
    - A swale on the north side of the Mirehaven Arroyo will convey flows to a proposed inlet near Willow Canyon Trail.
16. How does the offsite runoff enter the site? Are there erosion protection measures along the sloped areas?
    - Offsite runoff will be conveyed into the site through a drainage structure to be designed as part of the construction drawing preparation.
17. Provide storm drain capacity analysis for the existing 42" stubs. SDP7 appears to be at maximum capacity. Can additional inlets be added east of inlet 12 to route the flows to SDP8 on Willow Canyon Trail?
    - SDP7 has excess capacity as shown. Inlet 12 only has a bypass flow of 3.9 cfs which can easily be handled by Inlets 13 and 14 and has already included as part of the captured flow. The system works as designed without adding inlets. We feel adding an additional inlet to capture such a small flow (<3.9 cfs) is not cost effective from a construction standpoint as well as future City maintenance standpoint.
18. Will there be phasing plan for the grading? And temporary measures for offsite runoff.
    - At this time, it is planned for the entire site to be graded at once. In the event that the grading will be phased. A separate Grading and Drainage submittal will be submitted to Hydrology for review and approval.

Bohannan Huston

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19. Erosion and Sediment control plan must be submitted for approval prior to Grading permit. Starting February 1st storm water quality permits must be obtained prior to grading approval. A flood plain permit will be required as well prior to grading permit approval.
    - An Erosion and Sediment Control Plan and permit will be submitted with a separate submittal and it is understood they will need to be approved prior to grading permit approval. Per the previous processes on Mirehaven, the contractor has applied for the flood plain permit prior to them obtaining permit approval not prior to Hydrology giving grading approval. Has this changed?

Please find enclosed the revised plan; we are requesting your review and approval. I appreciate your time and consideration. If you have questions or require additional information, please contact me at 823-1000.

Sincerely,

Yolanda Padilla Moyer

Yolanda Padilla Moyer, P.E.
Senior Project Manager
Community Development & Planning

Enclosure

cc: Kevin Patton, Pulte Homes

City of Albuquerque

Planning Department
Development & Building Services Division
DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV 02/2013)

Project Title: DEL WEBB PHASE 2 @ MIREHAVEN Building Permit #: _____ City Drainage #: H09D17F

DRB#: _____ EPC#: _____ Work Order#: _____

Legal Description: TRACT M, WATERSHED SUBDIVISION

City Address: _____

Engineering Firm: BOHANNAN HUSTON INC Contact: Christian Sholtis

Address: 7500 JEFFERSON ST NE COURTYARD 1 ALBUQUERQUE NM 87109

Phone#: 823-1000 Fax#: _____ E-mail: csholtis@bhinc com

Owner: WESTERN ALBUQUERQUE LAND HOLDINGS, LLC Contact: JEFF GARRETT

Address: 3131 CAMELBACJ=K RD SUITE 200 PHOENIX, AZ 85016

Phone#: 602-427-4064 Fax#: _____ E-mail: _____

Architect: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Surveyor: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Contractor: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

TYPE OF SUBMITTAL:

- X DRAINAGE REPORT
- ___ DRAINAGE PLAN 1st SUBMITTAL
- X DRAINAGE PLAN RESUBMITTAL
- ___ CONCEPTUAL G & D PLAN
- X GRADING PLAN
- ___ EROSION & SEDIMENT CONTROL PLAN (ESC)
- ___ ENGINEER'S CERT (HYDROLOGY)
- ___ CLOMR/LOMR
- ___ TRAFFIC CIRCULATION LAYOUT (TCL)
- ___ ENGINEER'S CERT (TCL)
- ___ ENGINEER'S CERT (DRB SITE PLAN)
- ___ ENGINEER'S CERT (ESC)
- ___ SO-19
- ___ OTHER (SPECIFY)

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- ___ SIA/FINANCIAL GUARANTEE RELEASE
- X PRELIMINARY PLAT APPROVAL
- X S. DEV. PLAN FOR SUB'D APPROVAL
- ___ S. DEV. FOR BLDG. PERMIT APPROVAL
- ___ SECTOR PLAN APPROVAL
- ___ FINAL PLAT APPROVAL
- ___ CERTIFICATE OF OCCUPANCY (PERM)
- ___ CERTIFICATE OF OCCUPANCY (TCL TEMP)
- ___ FOUNDATION PERMIT APPROVAL
- ___ BUILDING PERMIT APPROVAL
- X GRADING PERMIT APPROVAL
- ___ PAVING PERMIT APPROVAL
- X WORK ORDER APPROVAL
- ___ GRADING CERTIFICATION
- ___ SO-19 APPROVAL
- ___ ESC PERMIT APPROVAL
- ___ ESC CERT. ACCEPTANCE
- ___ OTHER (SPECIFY)

RECEIVED
JAN 15 2016
LAND DEVELOPMENT SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED: ___ Yes ___ No ___ Copy Provided

DATE SUBMITTED: 1-15-16 By: CHRISTIAN J SHOLTIS, PE

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, anc scope to the proposed development defines the degree of drainage detail One or more of the following levels of submittal may be required based on the followin

1. **Conceptual Grading and Drainage Plan** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans
2. **Drainage Plans**· Required for building permits, grading permits, paving permits and site plans less than five (5) acres
3. **Drainage Report** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

Biazar, Shahab

From: Biazar, Shahab
Sent: Friday, February 12, 2016 12:21 PM
To: Yolanda Padilla Moyer; Chris Sholtis
Cc: Kevin G. Patton (kevin.patton@pultegroup.com); Abiel X. Carrillo (acarrillo@cabq.gov); Harmon Rita T. (rharmon@cabq.gov)
Subject: RE: DPM FOR DEL WEBB PHASE 2 @ MIREHAVEN, TRACT M WATERSHED SUBDIVISION (H09D017F)

Sorry,

I had to make one correction,

- Existing grades/topography should be provided at the east side of the project.

Thanks

Shahab Biazar, P.E.

City Engineer
Planning Department
Development Review Services Division
600 2nd St. NW, Suite 201
Albuquerque, NM 87102
t 505-924-3999
f 505-924-3864

From: Biazar, Shahab
Sent: Friday, February 12, 2016 12:19 PM
To: Yolanda Padilla Moyer; Chris Sholtis
Cc: Kevin G. Patton (kevin.patton@pultegroup.com); Abiel X. Carrillo (acarrillo@cabq.gov); Harmon Rita T. (rharmon@cabq.gov)
Subject: DPM FOR DEL WEBB PHASE 2 @ MIREHAVEN, TRACT M WATERSHED SUBDIVISION (H09D017F)

Based on your submittal for DMP for DEL WEBB Phase 2 @ Mirehaven (H09dD017F) received February 5, 2016 with engineering stamp date of February 4, 2016 the plans can be approved for Preliminary Plat. The following items must be addressed prior to grading permit and work order approval:

- Inlets 1 and 2 are called out on first section of the Wind Caves Way street hydraulics analysis sheet. It should be changed to Inlets 3 and 4.
- Double check the calculations for swales within Basins F.3 and G.4. Is right slopes on one of the swales is at 3%? In some areas the bottom of the slopes exceeds 8%. F.4?
- Small portion of the G.3 to the north does drain to West Creek Pl. — ?
- Sidewalk culvert locations and calculations should be provided.
- Existing grades/topography should be provided at the end of project.
- First flush volumes are not shown for ponds within Basins F.4 and G.4.

Thanks

Shahab Biazar, P.E.

City Engineer
Planning Department
Development Review Services Division
600 2nd St. NW, Suite 201
Albuquerque, NM 87102
t 505-924-3999
f 505-924-3864

Bohannan Huston

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7500 Jefferson St. NE
Albuquerque, NM
87109-4335

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facsimile: 505.798.7988
toll free: 800.877.5332

February 05, 2016

Mr. Shahab Biazar, P.E.
City Engineer
City of Albuquerque
600 2nd Street NW
Albuquerque, NM 87102

Re: Grading and Drainage Plan Resubmittal, DMP FOR DEL WEBB PHASE 2 @ MIREHAVEN, Tract M Watershed Subdivision (H09/D017F)

Dear Shahab:

In addition to the enclosed revised Drainage Report and Grading plan, below are our responses (in blue) to your comments provided in a letter dated January 11, 2016.

1. Provide calculations for the proposed swale below Basin G.4. Include the swale and surface treatment on the grading plan.
   - Has been addressed.
2. Provide calculations for the proposed swale below Basin F.4. Include the swale and surface treatment on the grading plan. Show the proposed inlet at the pond as discussed at the meeting.
   - Has been addressed.
3. Include details for the offsite runoff conveyance over the wall and the path/swale to the street.
   - Per our meeting, we discuss providing a detail at construction plan phase. This design will need coordination and planning to determine the correct design for these areas
4. Provide overall first flush calculations and typical lot ponding exhibit including ponding calculations for the different lot sizes..
   - Has been addressed.
5. Provide existing topography beyond the property line on the east side. Elevations must be provided for existing improvements to assure proper proposed grades will not any adverse impacts
   - Design elevations are provided along the flowline and right of way of Westcreek. Design Survey is currently in the schedule to be picked up. We will insure that the roadways tie to the existing Westcreek with the construction plans. It will not change the overall drainage pattern of this site.
6. Part of Basin G.3 drains Basin G.1. How would this impact street capacity and proposed inlet location?
   - Basin boundaries have been modified to reflect this condition and the inlet/storm drain analysis updated.
7. Provide wall sections (including swales if any).
   Wall sections have been added to the grading plan
8. Provide pipe sizes for all the storm drain pipes.
   - Has been addressed.

RECEIVED
FEB 05 2016
LAND DEVELOPMENT SECTION

Courtyard I
7500 Jefferson St. NE
Albuquerque, NM
87109-4335

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voice: 505.823.1000
facsimile: 505.798.7988
toll free: 800.877.5332

9. An Erosion and Sediment Control (ESC) plan must be approved prior to grading approval.
   - An Erosion and Sediment Control Plan and permit will be submitted with a separate submittal and it is understood they will need to be approved prior to grading permit approval.
10. Stormwater Control Permit for ESC will also be required prior grading approval.
    - The Stormwater Control Permit for ESC will be submitted prior to grading approval via a separate submittal.
11. North end of Basin G.3 and Basin G.7 drain to Westcreek Pl. How will this impact street capacity and downstream storm drain structures.
    - The north end of Basin G.3 drains into Bates Well Lane and does not enter Westcreek Pl. Basin G.7 does discharge into Westcreek Place; however, this flow amounts to only 0.9 cfs. As per the Street Hydraulics graphs in the Report Appendices, the addition of 0.9 cfs only increases the street water surface elevation by 0.01' or less depending on the street grades. Therefore, this additional 0.9 cfs discharging to Westcreek Pl is negligible and will not adversely impact existing downstream infrastructure.
12. Please update proposed Basin map according to the proposed drainage patterns. Please make sure street capacity reflects the actual flows?
    - Has been addressed.
13. A Flood Permit application is required.
    - In the past the contractor has filled this form out prior to them being able to pull their permit. See enclosed previous permit.
14. No building permit will be issued for the lots within the flood plain until the flood plain is removed?
    - This is understood. A LOMR-F maybe processed for these lots to removed them from the floodplain.
15. Are the grades along Mirehaven arroyo as-built grades? Proposed contours do not tie to existing grades
    - The grades along the arroyo maintenance road are the design grades provided in the construction plan of the arroyo.
16. Provide additional top of retaining wall elevations to the north.
    - These have been added to the grading plan
17. Avoid draining extensive runoff over the sidewalks. Include sidewalk culverts in these areas?
    - The sidewalks will be detailed out in the construction plans. Sidewalk culverts if necessary will be called out and included at that time.
18. Provide capacity calculations for all the swales and include surface treatments.
    - Has been addressed.
19. Provide additional retention for first flush within all proposed ponds. Provide first flush volume calculations. Include bottom of the pond and invert elevations for pipes permit.
    - Has been addressed.

Bohannan ▲ Huston

Courtyard I
7500 Jefferson St. NE
Albuquerque, NM
87109-4335

www.bhinc.com

voice: 505.823.1000
facsimile: 505.798.7988
toll free: 800.877.5332

Please find enclosed the revised plan; we are requesting your review and approval. I appreciate your time and consideration. If you have questions or require additional information, please contact me at 823-1000.

Sincerely,

Yolanda Padilla Moyer, P.E.
Senior Project Manager
Community Development & Planning

Chris Sholtis, P.E.
Senior Project Manager
Community Development & Planning

Enclosure

cc: Kevin Patton, Pulte Homes

Floodplain Development Permit Form

Planning Dept., City of Albuquerque

Section 1: General Provisions (Applicant to read and sign)

1. No work of any kind may start until a permit is issued.
2. Applicant is hereby informed that other permits may be required to fulfill local, state, and federal regulatory requirements.
3. Applicant hereby gives consent to the Floodplain Administrator and his/her representative to make reasonable inspections required to verify compliance.
4. The applicant certifies that all statements herein and in attachments to this application are, to the best of my knowledge, true and accurate.

Applicant Signature _____ Date 4/1/2014

Applicant Printed Name Cody Walton Phone #: (505)991-5441

Section 2: Proposed Development in Special Flood Hazard Area (to be completed by Applicant)

Brief Project Description Mass Grading for future Mirehaven Arroyo Improvements and Mirehaven Subdivision Improvements.

Applicant is (check one): Owner____ Builder X Engineer/Architect____

Project address/Legal Desc/location: See drainage files

Description of Work (in Special Flood Hazard Area):

A. Building Development	Building Type
___New Building	___Residential (1-4 Family)
___Addition	___Residential (More than 4 Family)
___Alteration	___Commercial
___Demolition	___Manufactured Home

Estimated Cost of Project $_____

Existing Structure Value$_____ %(new/existing):_____

Rev. November 2010

B. Other Development Activities

_X_ Clearing _X_ Fill ___ Drilling _X_ Grading
_X_ Excavation, except for Structural Development (checked above)
_X_ Watercourse Alteration (Including Dredging and Channel Modifications)
___ Drainage Improvements
_X_ Road, Street or Bridge Construction
_X_ Water or Sewer Line Installation
_X_ Paving
_X_ Walls
___ Storage of Materials/Equipment for more than 1 Year: Volume (cu. ft.):_____
___ Other (Please Specify)_____

Is there a Grading Plan associated with this work? _X_ Yes ___ No

Drainage file number: H09D017 B, C, D

Section 3: Floodplain Determination (Completed by the Floodplain Administrator)

The proposed development is located in a SFHA Zone (circle one): A AE AH (AO)

And is located on FIRM Panel: 0307, 0326

And is located in a Floodway: ___ Yes X No

BFE if Applicable: AO 1

Drainage File Number: H09D017, B, C, D

Floodplain Permit Number: H09F017D

Building Permit / Work Order #:_____

Site specific Instructions: Construct improvements per approved plans and a LOMR is required.

Signed: Curtis Chase Date 4-20-14

Printed Name: Curtis Chase

Rev. November 2010

If proposed development is a building, proceed to Section 4.
Section 4: Requirements for building in a SFHA:
(To be completed by the Floodplain Administrator or Representative)

BFE (unless not available):_____

Minimum Finished Floor Elevation:_____

Minimum Lowest Adjacent Grade:_____

Change in water elevation (if in a Floodway):_____

Is flood-proofing required:___Yes ___No

If yes, method of flood-proofing:_____

An Elevation Certificate is required for structural development in a SFHA. A Certificate of Occupancy will not be granted until the Planning Dept receives the Elevation Certificate.

Section 5: Post Development Certification:

A. For Structural Development:
Elevation Certificate received on Date:_____

Finished Floor Elevation:_____

Lowest Adjacent Grade:_____

The Floodplain Administrator or Representative verifies the above information is ___acceptable or ___not acceptable per the City of Albuquerque's Floodplain Ordinance.

The site was visually inspected on Date:_____

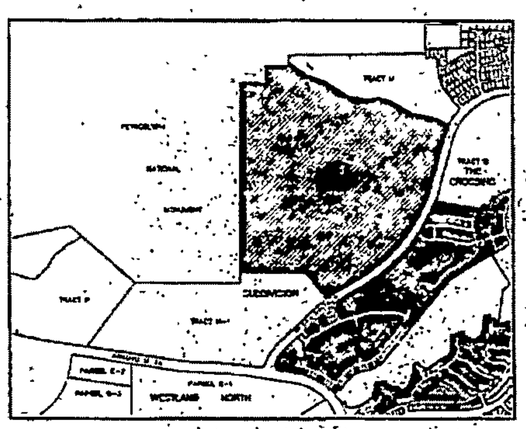
Certificate of Occupancy approved on Date:_____

Signature:_____ Date:_____

Printed Name:_____

B: For Other Development Activities:
The site was visually inspected on Date:_____ and found to be ___in ___not in compliance with the approved Floodplain Permit.

Signature:_____ Date:_____
Printed Name:_____



LOCATION MAP
ZONE ATLAS INDEX MAP NO. H-8, H-9 & J-7
NOT TO SCALE

DESCRIPTION

A certain tract of land located within the Town of Atrisco Grant, projected Sections 8, 9, & 17, Township 10 North, Range 2 East, New Mexico Principal Meridian, City of Albuquerque, Bernalillo County, New Mexico, being and comprising all of Tract "N-2", Watershed Subdivision, as the same is shown and designated on the plat thereof, filed in the office of the County Clerk of Bernalillo County, New Mexico on May 8, 2012 in Book 2012C, page 58.

This tract contains 237.7847 acres, more or less.

FREE CONSENT AND DEDICATION

The plat shown hereon is made with free consent and in accordance of the desires of the undersigned owner(s), the execution of this plat is their free act and deed. Those signing as owner(s) warrant that they hold among them, complete indefeasible title in fee simple to the land shown on this plat. Owner(s) hereby affirm that the described property shown on this plat lies within the platting and subdivision jurisdiction of Albuquerque, New Mexico. Said owner(s) hereby grant all Easements as may be shown on this plat to the City of Albuquerque, New Mexico in Fee Simple with Warranty Covenants.

WESTERN ALBUQUERQUE LAND HOLDINGS LLC,
a Delaware limited liability company

BY: BARCLAYS CAPITAL REAL ESTATE INC.
as Servicing Member

By: _____
Mark Wisell
Vice President, Barclays Capital Real Estate Inc.

OFFICIAL SEAL
Nancy Ann Dubin-Dimitri
My Commission Expires
June 28, 2014

COUNTY OF NEW YORK) STATE OF ILLINOIS
) ss
County of New York) COUNTY OF COOK

This instrument was acknowledged before me on 16 day of SEPTEMBER 2013, by Mark Wisell, Vice President of Barclays Capital Real Estate Inc., servicing member of Western Albuquerque Land Holdings LLC, a Delaware limited liability company.

My Commission Expires: MAY 29, 2014 _____ Notary Public

PLAT OF
TRACTS N-2-A, N-2-B, N-2-C N-2-D, N-2-E & N-2-F WATERSHED SUBDIVISION

(A REPLAT OF TRACT N-2, WATERSHED SUBDIVISION)

ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO
JULY, 2013

PROJECT NUMBER 1006864

APPLICATION NUMBER 13DRB-70658, 13DRB-70646

UTILITY APPROVALS:

QWEST TELECOMMUNICATIONS _____ DATE 10/2/13

COMCAST CABLE _____ DATE 9/30/13

PNM ELECTRIC SERVICES _____ DATE 9-13-13

NEW MEXICO GAS COMPANY _____ DATE 10/1/2013

CITY APPROVALS:

CITY ENGINEER _____ DATE 9-17-13

CITY SURVEYOR _____ DATE 09-18-13

TRAFFIC ENGINEERING, TRANSPORTATION DIVISION _____ DATE 09/18/13

ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY _____ DATE 9-19-13.

PARKS & RECREATION DEPARTMENT _____ DATE 10/2/2013

AMAFCA _____ DATE 10-2-13

CITY ENGINEER _____ DATE 10-4-13

DRB CHAIRPERSON, PLANNING DEPARTMENT _____ DATE

SUBDIVISION DATA

1. DRB No.
2. Zone Atlas Index Nos. H-8, H-9 & J-7.
3. Gross Subdivision Acreage: 237.7847 acres.
4. Total Number of Tracts Created: 7 Tracts.
5. No Streets were created.
6. Date of Survey: July, 2013.
7. Plat is located within the Town of Atrisco Grant, within projected Sections 8, 9 & 17, T10N, R2E, NMPM.

PURPOSE OF PLAT

The Purpose of this plat is to subdivide Tract N-2, Watershed Subdivision, as the same is shown and designated on the plat thereof, filed in the office of the County Clerk of Bernalillo County, New Mexico on May 8, 2012 in Book 2012C, page 58, into seven (7) tracts and to grant easements.

PUBLIC UTILITY EASEMENTS

PUBLIC UTILITY EASEMENTS shown on this plat are granted for the common and joint use of:

A. Public Service Company of New Mexico ("PNM"), a New Mexico corporation, (PNM Electric) for installation, maintenance, and service of overhead and underground electrical lines, transformers, and other equipment and related facilities reasonably necessary to provide electrical services.

B. New Mexico Gas Company for installation, maintenance, and service of natural gas lines, valves and other equipment and facilities reasonably necessary to provide natural gas.

C. Qwest Corporation d/b/a CenturyLink QC for the installation, maintenance, and service of such lines, cable, and other related equipment and facilities reasonably necessary to provide communication services.

D. Cable TV for the installation, maintenance, and service of such lines, cable, and other related equipment and facilities reasonably necessary to provide Cable services.

Included, is the right to build, rebuild, construct, reconstruct, locate, relocate, change, remove, replace, modify, renew, operate and maintain facilities for purposes described above, together with free access to, from, and over said easements, with the right and privilege of going upon, over and across adjoining lands of Grantor for the purposes set forth herein and with the right to utilize the right of way and easement to extend services to customers of Grantee, including sufficient working area space for electric transformers, with the right and privilege to trim and remove trees, shrubs or bushes which interfere with the purposes set forth herein. No building, sign, pool (above ground or subsurface), hot tub, concrete or wood pool decking, or other structure shall be erected or constructed on said easements, nor shall any wall be drilled or operated thereon. Property owners shall be solely responsible for correcting any violations of National Electrical Safety Code by construction of pools, decking, or any structures adjacent to or near easements shown on this plat.

Easements for electric transformer/switchgears, as installed, shall extend ten (10) feet in front of transformer/switchgear doors and five (5) feet on each side.

Disclaimer

In approving this plat, Public Service Company of New Mexico (PNM), New Mexico Gas Company (NMGC) and Qwest Corporation D/B/A CenturyLink (QWEST) did not conduct a Title Search of the properties shown hereon. Consequently, PNM, NMGC and QWEST do not waive or release any easement or easement rights which may have been granted by prior plat, replat or other document and which are not shown on this plat.

NOTES

1. Bearings are New Mexico State Plane Grid Bearings (Central Zone) NAD 1927. Basis of Bearings is between City of Albuquerque Control Monuments "REWARD" and "BH 41". Bearing = N03°06'40"E
2. Distances are ground distances.
3. Record Bearings and distances are the same as shown on this plat and the same as shown on the Plat of Tracts N-1 & N-2, Watershed Subdivision, filed in the Office of the County Clerk of Bernalillo County, New Mexico on May 8, 2012 in Book 2012C, page 58.
4. Record Bearings and distances of Dependent Resurvey and Metes and Bounds Survey for the Petroglyph National Monument, United States Department of the Interior, Bureau of Land Management, Santa Fe, New Mexico dated June 21, 1991 are shown in parenthesis.
5. This Plat was prepared with information included in Title Commitment issued by First American Title Insurance Company, Commitment No. 1519038-ALD4, Effective Date: March 8, 2011.
6. Portions of Tract N-2 are located in Flood Zones "AO" and "X", per FIRM Map Number 35001C0307H, Revised August 18, 2012 and FIRM Map Number 35001C0320G, Revised August 16, 2012.
7. SOLAR NOTE - Pursuant to Section 14-14-4-7 of the City of Albuquerque Code of Ordinances, "No property within the area of this Plat shall at any time be subject to a deed restriction, covenant, or binding agreement prohibiting solar collectors from being installed on buildings or erected on the lots or tracts within the area of proposed Plat. The foregoing requirement shall be a condition to approval of this plat".
8. Interior lined corners shall be monumented with a 5/8" rebar and plastic cap stamped "GROMATZKY PS 16459".

NOTICE OF SUBDIVISION PLAT CONDITIONS

Future subdivision of Tracts shown on this Plat, zoning Site Development Plan approvals, and development permits may be conditioned upon dedication of rights-of-way and easements, and/or upon infrastructure improvements by the owner for water, sanitary sewer, streets, drainage, grading and parks in accordance with current resolutions, ordinances and policies in effect at the time for any specific proposal.

The City and AMAFCA (with reference to drainage) may require and/or permit easements to be added, modified, or removed when future plats and/or Site Development Plans are approved.

By its approval of this subdivision the City makes no representation or warranties as to availability of utilities, or final approval of all requirements including (but not limited to) the following items: water and sanitary sewer availability; future street dedications and/or improvements; park and open space requirements; drainage requirements and/or improvements; and, excavation, filling or grading requirements. Any person intending development of lands within this subdivision is cautioned to investigate the status of these items.

At such time as all such conditions have been satisfactorily met, the City Engineer shall approve a recordable document, removing such conditions from all or from a portion of the area within the subject subdivision.

TAX CERTIFICATION

THIS IS TO CERTIFY THAT TAXES ARE CURRENT AND PAID ON UPC #

100905942416120101

PROPERTY OWNER OF RECORD Western Albuq-Land Holdings LLC

_____ 10/17/13
BERNALILLO COUNTY TREASURER'S OFFICE DATE

SURVEYOR'S CERTIFICATION

I, Robert Gromatzky, a registered Professional New Mexico Surveyor, certify that I am responsible for this survey and that this plat was prepared by me or under my supervision, shows all existing easements as shown on the plats of record, or made known to me by the owner, utility companies, or other interested parties and conforms to the Minimum Requirements of the Board of Registration for Professional Engineers and Professional Surveyors and meets the minimum requirements for monumentation and surveys contained in the Albuquerque Subdivision Ordinance, and is true and accurate to the best of my knowledge and belief.

_____
Robert Gromatzky
New Mexico Professional Surveyor 16459

Date: July 31, 2013

ROBERT GROMATZKY NEW MEXICO 16459 LICENSED PROFESSIONAL SURVEYOR

DOC# 2013115035

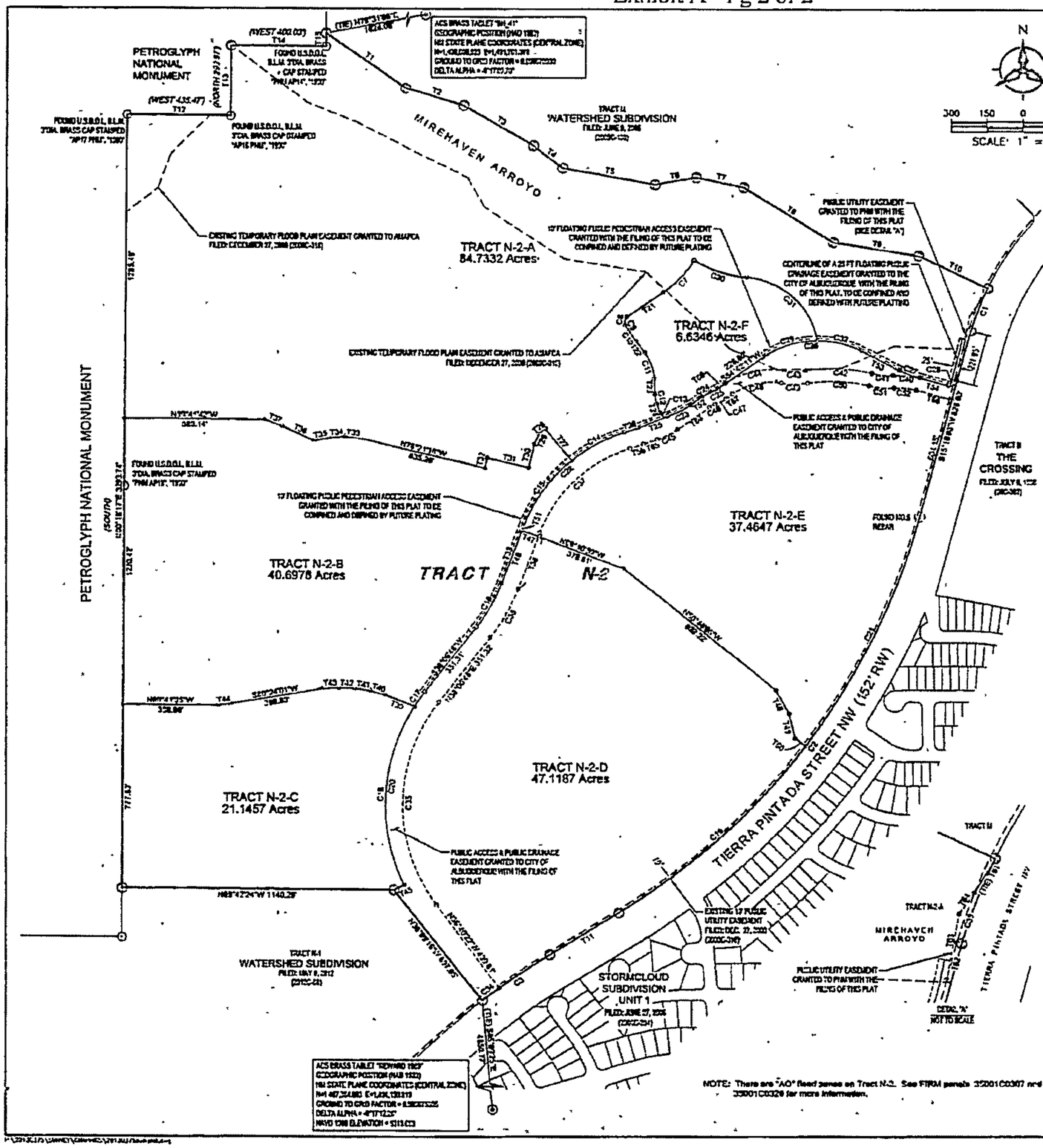
SHEET 1 OF 2

Bohannan Huston
7500 JEFFERSON STREET NE ALBUQUERQUE, NEW MEXICO

PLAT OF
TRACTS N-2-A, N-2-B, N-2-C N-2-D, N-2-E & N-2-F WATERSHED SUBDIVISION

(A REPLAT OF TRACT N-2, WATERSHED SUBDIVISION)

ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO
JULY, 2013



NOTE: There are "AO" flood zones on Tract N-2. See FIRM panels 35001C0307 and 35001C0326 for more information.

LEGEND

- CITY OF ALBUQUERQUE CONTROL MONUMENT
- SET #5 REBAR WITH YELLOW PLASTIC SURVEY CAP STAMPED "GROMATZKY PS 15467"
- FND-NO.5 REBAR NO CAP
- FND #5 REBAR WITH CAP STAMPED "GROMATZKY PS 15467"
- FND-BRASS CAP AS NOTED
- BOUNDARY LINE
- LOT LINE
- EXISTING EASEMENT LINE
- PROPOSED EASEMENT LINE
- ADJOINING PROPERTY LINE

Curve Data						
ID	DELTA	TANGENT	ARC	RADIUS	CHORD	CHORD BRG
C1	68°31'31"	88.90'	180.53'	1353.00'	180.35'	S21°24'31"W
C2	43°21'02"	1131.94'	2154.84'	2844.00'	2103.81'	S36°51'32"W
C3	66°41'04"	173.02'	343.78'	2064.00'	343.60'	S45°11'13"W
C7	22°36'30"	95.32'	188.17'	476.08'	186.98'	S44°30'44"W
C8	67°14'35"	23.80'	38.87'	33.00'	34.47'	S11°41'43"W
C9	62°25'28"	14.00'	28.82'	644.00'	28.00'	S39°40'47"E
C10	06°48'13"	27.80'	54.05'	457.00'	54.00'	S32°40'04"E
C11	22°34'15"	53.97'	110.59'	280.00'	114.08'	S19°40'03"E
C12	14°47'22"	26.47'	46.78'	181.00'	46.63'	S18°32'47"E
C13	63°38'54"	24.00'	33.38'	33.00'	35.33'	S62°57'01"E
C14	31°30'30"	129.31'	225.67'	679.00'	224.71'	S81°12'41"W
C15	28°39'55"	173.95'	331.82'	679.00'	347.00'	S35°38'52"W
C16	17°17'45"	180.58'	317.58'	729.00'	316.60'	S30°28'34"W
C17	85°37'21"	38.23'	70.43'	772.00'	70.48'	S35°18'06"W
C18	30°16'22"	434.34'	782.84'	778.00'	773.19'	S63°21'03"W
C19	31°28'36"	538.61'	1060.78'	2048.00'	1054.68'	S47°51'23"W
C20	63°33'35"	486.13'	863.33'	778.00'	824.08'	N06°02'46"E
C21	33°01'47"	554.36'	1053.03'	2048.00'	1038.36'	S38°18'13"W
C22	51°13'24"	325.73'	637.48'	679.00'	537.48'	N46°25'43"E
C23	17°21'21"	59.34'	111.85'	363.00'	111.39'	N63°22'51"E
C24	14°53'06"	38.00'	41.58'	160.00'	41.44'	N82°87'14"E
C25	14°53'06"	18.16'	36.12'	133.00'	36.02'	N82°87'14"E
C26	62°30'23"	241.37'	433.48'	396.00'	412.32'	N58°81'23"E
C27	12°03'51"	45.65'	90.87'	429.00'	90.67'	S53°54'29"E
C28	60°00'35"	38.61'	47.13'	90.00'	42.43'	N58°10'25"E
C29	35°11'27"	125.74'	243.32'	394.00'	239.71'	S72°17'52"W
C30	30°40'00"	118.56'	222.82'	398.00'	220.73'	S72°12'11"E
C31	75°45'50"	252.65'	428.77'	325.00'	398.14'	S47°33'31"E
C32	37°27'02"	98.84'	180.07'	396.00'	178.15'	N76°22'56"W
C34	01°43'56"	44.61'	89.81'	2964.00'	89.81'	N52°42'29"E
C35	74°47'08"	549.82'	922.16'	703.00'	858.09'	N68°43'12"E
C36	17°17'45"	120.63'	230.53'	763.00'	229.62'	N30°28'34"E
C37	51°13'24"	298.74'	542.27'	606.00'	524.34'	N45°25'43"E
C39	05°02'17"	55.62'	110.07'	1262.00'	110.03'	S19°30'13"W
C40	18°24'03"	55.90'	110.73'	337.00'	110.21'	N34°31'26"W
C41	18°40'55"	44.91'	89.01'	273.00'	88.62'	N34°52'51"W
C42	29°54'43"	142.19'	289.27'	471.00'	286.22'	N37°29'31"W
C43	12°18'34"	43.44'	83.81'	273.00'	81.57'	N63°47'23"W
C44	45°07'11"	133.96'	257.70'	327.00'	251.08'	S77°16'46"W
C45	16°22'57"	47.07'	93.53'	327.00'	93.18'	N32°33'38"E
C46	14°53'06"	13.87'	27.53'	106.00'	27.50'	N32°07'14"E
C47	14°38'00"	25.19'	50.10'	180.00'	49.96'	N32°07'14"E
C48	45°09'11"	113.61'	215.14'	273.00'	209.62'	N77°16'46"E
C49	18°18'34"	55.82'	110.59'	327.00'	102.03'	S39°47'23"E
C50	29°54'43"	130.16'	237.71'	817.00'	235.04'	S37°29'31"E
C51	18°40'55"	53.70'	106.82'	327.00'	106.15'	S34°52'51"E
C52	18°24'03"	45.67'	92.43'	273.00'	92.01'	S34°31'26"E

Tangent Data		
ID	BEARING	DISTANCE
T1	S35°85'53"E	403.99'
T2	S73°12'01"E	236.30'
T3	S89°57'22"E	333.94'
T4	S72°88'53"E	136.62'
T5	S78°54'17"E	383.07'
T6	N80°08'14"E	175.33'
T7	S78°18'21"E	381.25'
T8	S57°32'44"E	443.85'
T9	S80°39'34"E	361.84'
T10	S64°38'27"E	318.71'
T11	S58°31'45"W	333.70'
T12	S82°38'48"E	433.62'
T13	N00°18'32"E	330.02'
T14	S89°43'38"E	430.08'
T15	N00°17'30"E	38.11'
T21	S23°18'02"W	184.36'
T22	N36°12'11"W	83.89'
T23	N03°87'55"W	67.17'
T24	N17°67'34"W	30.10'
T25	S87°44'25"W	133.42'
T26	S72°82'38"W	57.02'
T27	N39°98'31"W	178.25'
T28	S50°18'30"W	33.41'
T29	S22°57'21"W	49.83'
T30	S13°38'44"W	104.80'
T31	N78°21'18"W	178.00'
T32	S13°38'44"W	45.07'
T33	N83°32'17"W	87.17'
T34	S85°37'22"W	87.32'
T35	S77°35'21"W	84.68'
T36	N04°41'53"W	147.78'
T37	N83°28'52"W	78.78'
T38	S38°18'01"W	257.31'
T39	N68°20'32"W	132.47'
T40	N74°84'44"W	65.40'
T41	N82°81'43"W	63.57'
T42	N87°47'56"W	65.57'
T43	S88°42'29"W	71.57'
T44	S83°18'14"W	31.78'
T45	S84°12'51"W	46.81'
T46	S38°48'01"W	238.53'
T47	N78°48'34"W	73.82'
T48	N38°47'32"W	113.85'
T49	N13°29'28"W	186.12'
T50	N52°48'51"W	54.87'
T51	S32°49'01"W	18.78'
T52	S34°42'11"W	34.81'
T53	N82°30'25"W	178.53'
T54	N74°49'38"W	124.62'
T55	N72°02'38"E	53.74'
T61	N30°53'18"E	83.03'
T62	S15°18'44"W	81.70'
T63	N10°47'14"E	141.70'
T64	N33°48'48"E	84.53'
T65	N71°08'38"E	81.30'
T66	N54°42'11"E	164.60'
T67	N54°42'11"E	38.34'
T68	S74°47'18"E	154.87'
T69	S54°42'11"W	38.24'

DOCN 2013115225

SHEET 2 OF 2

Bohannan Huston
7500 JEFFERSON STREET NE ALBUQUERQUE, NEW MEXICO

City of Albuquerque

Planning Department
Development & Building Services Division
DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV 02/2013)

Project Title: DEL WEBB PHASE 2 @ MIREHAVEN Building Permit #: _____ City Drainage #: H09D017F
DRB#: 1006864 EPC#: 15 EPC-40049 Work Order#: _____
Legal Description: TRACT M, WATERSHED SUBDIVISION
City Address: _____

Engineering Firm: BOHANNAN HUSTON INC Contact: Christian Sholtis
Address: 7500 JEFFERSON ST NE COURTYARD 1 ALBUQUERQUE NM 87109
Phone#: 823-1000 Fax#: _____ E-mail: csholtis@bhinc com

Owner: WESTERN ALBUQUERQUE LAND HOLDINGS, LLC Contact: JEFF GARRETT
Address: 3131 CAMELBACJ=K RD SUITE 200 PHOENIX, AZ 85016
Phone#: 602-427-4064 Fax#: _____ E-mail: _____

Architect: _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

Surveyor: _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

Contractor: _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

TYPE OF SUBMITTAL:

X DRAINAGE REPORT
___ DRAINAGE PLAN 1st SUBMITTAL
X DRAINAGE PLAN RESUBMITTAL
___ CONCEPTUAL G & D PLAN
X GRADING PLAN
___ EROSION & SEDIMENT CONTROL PLAN (ESC)
___ ENGINEER'S CERT (HYDROLOGY)
___ CLOMR/LOMR
___ TRAFFIC CIRCULATION LAYOUT (TCL)
___ ENGINEER'S CERT (TCL)
___ ENGINEER'S CERT (DRB SITE PLAN)
___ ENGINEER'S CERT (ESC)
___ SO-19
___ OTHER (SPECIFY)

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

___ SIA/FINANCIAL GUARANTEE RELEASE
___ PRELIMINARY PLAT APPROVAL
___ S. DEV. PLAN FOR SUB'D APPROVAL
___ S. DEV. FOR BLDG. PERMIT APPROVAL
___ SECTOR PLAN APPROVAL
___ FINAL PLAT APPROVAL
___ CERTIFICATE OF OCCUPANCY (PERM)
___ CERTIFICATE OF OCCUPANCY (TCL TEMP)
___ FOUNDATION PERMIT APPROVAL
___ BUILDING PERMIT APPROVAL
X GRADING PERMIT APPROVAL
___ PAVING PERMIT APPROVAL
X WORK ORDER APPROVAL
___ GRADING CERTIFICATION
___ SO-19 APPROVAL
___ ESC PERMIT APPROVAL
___ ESC CERT. ACCEPTANCE
___ OTHER (SPECIFY)

RECEIVED
FEB 05 2016
LAND DEVELOPMENT SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED: ___ Yes ___ No ___ Copy Provided
DATE SUBMITTED: 1-15-16 By: CHRISTIAN J SHOLTIS, PE

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal The particular nature, location, anc scope to the proposed development defines the degree of drainage detail One or more of the following levels of submittal may be required based on the followin

1. **Conceptual Grading and Drainage Plan** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans
2. **Drainage Plans** Required for building permits, grading permits, paving permits and site plans less than five (5) acres
3. **Drainage Report** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

PLANNED COMMUNITY

OVERALL BASIN MAP

11/2013

BASIN I.D.	AREA (AC)	Q (CFS) 100YR
Offsite Basin 1	12.8	19.8
Offsite Basin 2	3.5	5.8
Offsite Basin 3	7.6	16.3
Offsite Basin 4A	9.8	17.3
Offsite Basin 4B	1.1	1.9
12.18B	42.0	65.0
Basin A-1	12.4	40.3
Basin A-2	7.2	23.4
Basin A-3	4.4	14.3
Basin A-4	7.0	22.8
Basin 4-5	5.1	16.6
Basin B-1	5.0	16.3
Basin B-2	4.6	15.0
Basin B-3	1.4	5.6
Basin B-4	13.6	44.2
Basin B-5	4.0	13.0
Basin B-6	1.3	3.4
Basin B-7	16.2	52.7
Basin B-8	9.5	30.9
Basin B-9	3.8	12.4
Basin B-10	12.5	40.7
Basin B-11	5.9	21.4
Basin C-1	39.6	128.8
Basin C-2	2.7	7.1
Basin C-3	0.4	1.7
Basin C-4	2.5	6.6
Basin C-5	6.5	21.1
Basin C-6	1.4	4.6
Basin C-7	8.4	27.3
Basin C-8	9.2	29.9
Basin D-1	3.0	10.9
Basin D-2	2.2	8.0
Basin E	11.6	37.7
Basin F	21.5	69.9
Basin G	26.0	84.6
Basin 1	1.4	4.4
Basin 2	15.8	41.7
Basin 3	16.2	49.0
Basin 4	2.5	6.6
Basin 5	1.4	3.7

17.3 cfs.

1.90 cfs

69.90

84.60

154.70

OUTFALL I.D.	SIZE (IN)	Q (CFS) 100YR
A	48	137.3
B	60	277.6
C	66	236.2
D	24	10.9
E	30	37.7
F	42	87.2
G	42	86.6

31 + 41 + 21 = 93 cfs

6 + 125 = 125.00 cfs

LEGEND

BASIN BOUNDARY

SUB BASIN BOUNDARY

FUTURE / PROPOSED STORM DRAIN

EXISTING STORM DRAIN

DIVERSION CHANNEL

CITY OF ALBUQUERQUE

Richard J. Berry, Mayor

August 20, 2016

Yolanda Padilla Moyer, P.E.
Bohannan Huston
7601 Jefferson NE, Suite 100
Albuquerque, NM, 87109

RE: Del Webb @ Mirehaven Phase 2
Grading & Drainage Plan Revision
Stamp Date 3-11-16 / Hydrology File: H09D017F

Dear Ms. Padilla-Moyer:

Based upon the information provided in your submittal received 8-05-2016, the above-referenced is re-approved for ESC Grading Permit. We understand that the above-referenced Plan includes minor changes to the way that Lots 58-67 drain within Phase 2A.

Engineer's Certification will be required prior to Pad Certification/Release of Financial Guarantee per the DPM Checklist.

An approved ESC Grading Permit is required prior to any grading on the site. A Floodzone Permit will be required for the Grading Permit, since the Mirehaven Arroyo A Zone is still mapped and appears to encroach into small portions of the site.

If you have any questions, you can contact me at 924-3986.

Sincerely,

Abiel Carrillo, P.E.
Principal Engineer, Planning Dept.
Development Review Services

Orig: Drainage file

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

Bohannan Huston

Courtyard I
7500 Jefferson St. NE
Albuquerque, NM
87109-4335

www.bhinc.com

voice: 505.823.1000
facsimile: 505.798.7988
toll free: 800.877.5332

August 5, 2016

Mr. Shahab Biazar, P.E. - City Engineer
Abiel Carrillo, P.E. – City Hydrologist
City of Albuquerque
600 2nd Street NW
Albuquerque, NM 87102

Re: Revised Grading and Drainage Plan, Del Webb @ Mirehaven, Phase 2A
DRB Case No. 1006864

Dear Shahab\ Abiel:

Please find enclosed a revision to the approved grading and drainage plan for Phase 2A of the above referenced project.

The revision consists of Lots 58-67 draining to the front of the lot into Woods Wash Trail, whereas the approved grading and drainage plan showed the lots draining back the open space area. As you are probably aware, these lots previously drained to the front and during the Grading and Drainage review process we revised these same lots to drain toward the back. In that original change, the initial calculations inadvertently did not get updated to account for the lots draining back. The calculations were checked and verified that the proposed infrastructure was not impacted however the calculations from the initial design were not updated as mentioned. We notice this when we were going to update the necessary calculation for this new change. In the end the drainage, regardless if these pad drain forward of back, ultimately drain via the same roads and collected by the same inlets and storm drain. The original roadway, inlet and storm drain calculation remain true in the approved Grading and Drainage report. We have provided an updated Basin Map which delineates the boundaries.

Please find enclosed the revised grading plan and revised basin map. We are requesting your review and approval. I appreciate your time and consideration. If you have questions or require additional information, please contact me at 823-1000.

Sincerely,

Yolanda Padilla Moyer

Yolanda Padilla Moyer, P.E.
Senior Project Manager
Community Development & Planning

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AUG 0 5 2016
LAND DEVELOPMENT SECTION

Enclosure

cc: Kevin Patton, Pulte Homes

Engineering ▲

Spatial Data ▲

Advanced Technologies ▲

\\a-abq-fs2\projects\20160158\Correspondence\Submittals\Hydrology\08-04-16_Grading Revision_Lots 58-67\2_2016-0804_20160158_Grading Plan Revision Letter.docx

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

H09D017F

Project Title: DEL WEBB @ MIREHAVEN PHASE ~~2A~~ 2 Building Permit #: _____ City Drainage #: H-8/H-9

DRB#: 10006864 EPC#. _____ Work Order#: 650388

Legal Description: DEL WEBB @ MIREHAVEN PHASE 2A (A REPLAT OF TRACT N-2-A-1 & TRACT M OF WATERSHED)

City Address: _____

Engineering Firm: BOHANNAN HUSTON INC Contact: Yolanda Moyer

Address: 7500 JEFFERSON ST NE COURTYARD 1 ALBUQUERQUE NM 87109

Phone#: 823-1000 Fax#: _____ E-mail: ypadilla@bhinc.com

Owner: PULTE Contact: KEVIN PATTON

Address: 7601 JEFFERSON STREET NE SUITE 310 ALBUQ. NM 87109

Phone#: 505-341-8591 Fax#: _____ E-mail: kevin.patton@pultegroup.com

Architect: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Other Contact: _____ Contact: _____

Address: _____

Phone#: _____ Fax#. _____ E-mail: _____

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AUG 0 5 2016
LAND DEVELOPMENT SECTION

Check all that Apply:

DEPARTMENT:

x HYDROLOGY/ DRAINAGE
___ TRAFFIC/ TRANSPORTATION
___ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

___ ENGINEER/ ARCHITECT CERTIFICATION

___ CONCEPTUAL G & D PLAN
___ GRADING PLAN
___ DRAINAGE MASTER PLAN
___ DRAINAGE REPORT
___ CLOMR/LOMR

___ TRAFFIC CIRCULATION LAYOUT (TCL)
___ TRAFFIC IMPACT STUDY (TIS)
___ EROSION & SEDIMENT CONTROL PLAN (ESC)

x OTHER (SPECIFY) Revision to existing approved plan

No resubmittal Fee

AC

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

___ BUILDING PERMIT APPROVAL
___ CERTIFICATE OF OCCUPANCY

___ PRELIMINARY PLAT APPROVAL
___ SITE PLAN FOR SUB'D APPROVAL
___ SITE PLAN FOR BLDG. PERMIT APPROVAL
___ FINAL PLAT APPROVAL
___ SIA/ RELEASE OF FINANCIAL GUARANTEE
___ FOUNDATION PERMIT APPROVAL
x GRADING PERMIT APPROVAL
___ SO-19 APPROVAL
___ PAVING PERMIT APPROVAL
___ GRADING/ PAD CERTIFICATION
___ WORK ORDER APPROVAL
___ CLOMR/LOMR

___ PRE-DESIGN MEETING
___ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: x Yes ___ No

DATE SUBMITTED: 08-05-16 By: YOLANDA PADILLA MOYER, P.E.

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED ___

Erica Newman

From: Erica Newman
Sent: Friday, August 05, 2016 10:58 AM
To: 'PLNDRS@cabq.gov'
Cc: Yolanda Padilla Moyer
Subject: Grading Plan Revision COA Project Number #650388
Attachments: 2016-0805_20160158_Grading Plan Revision Digital Submittal.pdf

Good Morning—

Please see the attached submittal package for the revised grading plan for Del Webb @ Mirehaven, Phase 2A. Let us know if you have any questions.

Thanks!

Erica

Erica G. Newman, EI
Engineer Intern
Community Development & Planning
Bohannan Huston
Courtyard I
7500 Jefferson St. NE
Albuquerque, NM 87109-4335
www.bhinc.com
voice: 505.923.3335 **facsimile:** 505.798.7988 **toll free:** 800.877.5332

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LAND DEVELOPMENT SECTION

CITY OF ALBUQUERQUE

Richard J. Berry, Mayor

January 24, 2017

Yolanda Padilla Moyer, P.E.
Bohannan Huston
7601 Jefferson NE, Suite 100
Albuquerque, NM, 87109

RE: Del Webb @ Mirehaven Phase 2
Grading & Drainage Plan Revision 2
Stamp Date 3-11-16 / Hydrology File: H09D017F

Dear Ms. Padilla-Moyer:

Based upon the information provided in your submittal received 1/9/2017, the above-referenced project is re-approved for ESC Grading Permit. We understand that the changes include changing the height of the retaining walls and increasing the slopes along the northern boundary of the site within Phase 2A. The slopes are steeper, but will not exceed 3H:1V.

Engineer's Certification will be required prior to Pad Certification/Release of Financial Guarantee per the DPM Checklist.

An approved ESC Grading Permit is required prior to any grading on the site. A Floodzone Permit will be required for the Grading Permit, since the Mirehaven Arroyo A Zone is still mapped and appears to encroach into small portions of the site.

If you have any questions, you can contact me at 924-3695.

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

Sincerely,

Dana Peterson, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

H09D017F

Project Title: DEL WEBB @ MIREHAVEN PHASE 2A Building Permit #: _____ City Drainage #: ~~H-8/H-9~~

DRB#: 10006864 EPC#: _____ Work Order#: 650388

Legal Description: DEL WEBB @ MIREHAVEN PHASE 2A (A REPLAT OF TRACT N-2-A-1 & TRACT M OF WATERSHED)

City Address: _____

Engineering Firm: BOHANNAN HUSTON INC Contact: Yolanda Moyer

Address: 7500 JEFFERSON ST NE COURTYARD 1 ALBUQUERQUE NM 87109

Phone#: 823-1000 Fax#: _____ E-mail: ypadilla@bhinc com

Owner: PULTE Contact: KEVIN PATTON

Address: 7601 JEFFERSON STREET NE SUITE 310 ALBUQ. NM 87109

Phone#: 505-341-8591 Fax#: _____ E-mail: kevin patton@pultegroup com

Architect: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Other Contact: _____ Contact: _____

Address: _____

Phone#: _____ Fax#: _____ E-mail: _____

Check all that Apply.

DEPARTMENT:

x HYDROLOGY/ DRAINAGE
___ TRAFFIC/ TRANSPORTATION
___ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

___ ENGINEER/ ARCHITECT CERTIFICATION

___ CONCEPTUAL G & D PLAN
___ GRADING PLAN
___ DRAINAGE MASTER PLAN
___ DRAINAGE REPORT
___ CLOMR/LOMR

___ TRAFFIC CIRCULATION LAYOUT (TCL)
___ TRAFFIC IMPACT STUDY (TIS)
___ EROSION & SEDIMENT CONTROL PLAN (ESC)

x OTHER (SPECIFY) Revision to existing approved plan

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

___ BUILDING PERMIT APPROVAL
___ CERTIFICATE OF OCCUPANCY

___ PRELIMINARY PLAT APPROVAL
___ SITE PLAN FOR SUB'D APPROVAL
___ SITE PLAN FOR BLDG. PERMIT APPROVAL
___ FINAL PLAT APPROVAL
___ SIA/ RELEASE OF FINANCIAL GUARANTEE
___ FOUNDATION PERMIT APPROVAL
x GRADING PERMIT APPROVAL
___ SO-19 APPROVAL
___ PAVING PERMIT APPROVAL
___ GRADING/ PAD CERTIFICATION
___ WORK ORDER APPROVAL
___ CLOMR/LOMR

___ PRE-DESIGN MEETING
___ OTHER (SPECIFY) _____

received 1-9-17 AO

IS THIS A RESUBMITTAL?: x Yes ___ No

DATE SUBMITTED: 01-05-17 By: YOLANDA PADILLA MOYER, P.E

COA STAFF ELECTRONIC SUBMITTAL RECEIVED. ___

Bohannan Huston

Courtyard I
7500 Jefferson St. NE
Albuquerque, NM
87109-4335

www.bhinc.com

voice: 505.823.1000
facsimile: 505.798.7988
toll free: 800.877.5332

January 5, 2017

Mr. Shahab Biazar, P.E. - City Engineer
City of Albuquerque
600 2nd Street NW
Albuquerque, NM 87102

Re: Revised Grading and Drainage Plan, Del Webb @ Mirehaven, Phase 2A
DRB Case No. 1006864 (Design Revision #2)

Dear Shahab:

Please find enclosed design revision #2 to the approved grading and drainage plan for Phase 2A of the above referenced project.

The revision consists of regrading of the north portion of the subdivision adjacent to the Monument Boundary in the Homeowner's Tract. This area has been regraded to reduce the height of the retaining wall along the northern boundary. The northern wall has been reduced from the original 8' high single, double and triple retaining wall to a mostly 2' high wall (some areas are higher up to 5.33') along the boundary with a 3:1 maximum slope to a 4' retaining wall at the bottom of the slope. See sheet 7 for revised cross-sections depicting this change. The lot and roadway grading has not changed and there is no impact to the drainage patterns or basins with this revision.

Please find enclosed the revised grading plan and revised basin map. We are requesting your review and approval. I appreciate your time and consideration. If you have questions or require additional information, please contact me at 823-1000.

Sincerely,

Yolanda Padilla Moyer

Yolanda Padilla Moyer, P.E.
Senior Project Manager
Community Development & Planning

Enclosure

cc: Kevin Patton, Pulte Homes

Yolanda Padilla Moyer

From: Yolanda Padilla Moyer
Sent: Thursday, January 05, 2017 6:03 PM
To: 'PLNDRS@cabq.gov'
Cc: 'Kevin Patton'
Subject: 1006864 Del Webb 2 Revised Grading Plan DR#2
Attachments: Del Webb 2 Revised Grading DR#2_digital submittal.pdf

Please find enclosed the digital submittal for the above mentioned project.

Yolanda Padilla Moyer, P.E.
Senior Project Manager
Bohannan Huston, Inc.

received
1-9-17 Ae