

CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director



Mayor Timothy M. Keller

November 29, 2018

David Soule, P.E.
Rio Grande Engineering
PO Box 93924
Albuquerque, NM 87199

RE: **13424 Cedarbrook Ave NE**
Grading and Drainage Plan
Engineer's Stamp Date: 11/27/18
Drainage File: F23D013

Dear Mr. Soule:

Based on the submittal received on 11/27/18, the grading and drainage plan is approved for Grading Permit.

PO Box 1293

Prior to Building Permit (For Information):

Albuquerque

1. Engineer's Certification of the compacted pad and grading, per the DPM Chapter 22.7: *Engineer's Certification Checklist For Non-Subdivision* is required.

Prior to Certificate of Occupancy (For Information):

NM 87103

2. Engineer's Certification, per the DPM Chapter 22.7: *Engineer's Certification Checklist For Non-Subdivision* is required to ensure the site and the grades along the property lines were not disturbed during home construction.

www.cabq.gov

If you have any questions, please contact me at 924-3695 or dpeterson@cabq.gov.

Sincerely,

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



City of Albuquerque

Planning Department
Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Project Title: 13424 Cedarbrook **Building Permit #:** _____ **Hydrology File #:** F23d013

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

Legal Description: lot 15 block 14 Glenwood Hills unit 2

City Address: 13424 Cedarbrook

Applicant: Lowebo homes **Contact:** _____

Address: _____

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

Other Contact: RIO GRANDE ENGINEERING **Contact:** DAVID SOULE

Address: PO BOX 93924 ALB NM 87199

Phone#: 505.321.9099 **Fax#:** 505.872.0999 **E-mail:** david@riograndeengineering.com

TYPE OF DEVELOPMENT: _____ PLAT ☒ RESIDENCE _____ DRB SITE _____ ADMIN SITE

Check all that Apply:

DEPARTMENT:

☒ HYDROLOGY/ DRAINAGE
☐ TRAFFIC/ TRANSPORTATION

TYPE OF SUBMITTAL:

☐ ENGINEER/ARCHITECT CERTIFICATION
☐ PAD CERTIFICATION
☐ CONCEPTUAL G & D PLAN
☒ GRADING PLAN
☐ DRAINAGE REPORT
☐ DRAINAGE MASTER PLAN
☐ FLOODPLAIN DEVELOPMENT PERMIT APPLIC
☐ ELEVATION CERTIFICATE
☐ CLOMR/LOMR
☐ TRAFFIC CIRCULATION LAYOUT (TCL)
☐ TRAFFIC IMPACT STUDY (TIS)
☐ STREET LIGHT LAYOUT
☐ OTHER (SPECIFY) _____
☐ PRE-DESIGN MEETING?

IS THIS A RESUBMITTAL?: ☒ Yes ☐ No

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
☐ GRADING PERMIT APPROVAL
☐ SO-19 APPROVAL
☐ PAVING PERMIT APPROVAL
☐ GRADING/ PAD CERTIFICATION
☐ WORK ORDER APPROVAL
☐ CLOMR/LOMR
☐ FLOODPLAIN DEVELOPMENT PERMIT
☐ OTHER (SPECIFY) _____

DATE SUBMITTED: _____ **By:** _____

COA STAFF:

ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____

CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director



Mayor Timothy M. Keller

November 16, 2018

David Soule, P.E.
Rio Grande Engineering
PO Box 93924
Albuquerque, NM 87199

RE: **13424 Cedarbrook Ave NE**
Grading and Drainage Plan
Engineer's Stamp Date: 11/5/18
Drainage File: F23D013

Dear Mr. Soule:

Based on the submittal received on 11/5/18, the grading and drainage plan cannot be approved until the following are corrected:

PO Box 1293

Prior to Grading Permit:

Albuquerque

1. Show the freeboard wall in plan view and provide sections (east wall and south wall). Ensure the wall and footer do not encroach on either ROW. Any private encroachment into the public ROW will require a revocable permit.

NM 87103

Prior to Building Permit (For Information):

www.cabq.gov

2. Engineer's Certification of the compacted pad and grading, per the DPM Chapter 22.7: *Engineer's Certification Checklist For Non-Subdivision* is required.

Prior to Certificate of Occupancy (For Information):

3. Engineer's Certification, per the DPM Chapter 22.7: *Engineer's Certification Checklist For Non-Subdivision* is required to ensure the site and the grades along the property lines were not disturbed during home construction.

If you have any questions, please contact me at 924-3695 or dpeterson@cabq.gov.

Sincerely,

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

Weighted E Method

Existing Developed Basins										100-Year, 6-hr.		10-day	
Basin	Area (sf)	Area (acres)	Treatment A % (acres)	Treatment B % (acres)	Treatment C % (acres)	Treatment D % (acres)	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Volume (ac-ft)	Flow cfs	Volume (ac-ft)	Flow cfs
EXISTING	17820	0.409	0%	0	90.0%	0.368	10.0%	0.04091	0%	0.000	1.118	0.038	1.23
PROPOSED	14820	0.340	0%	0	34.0%	0.116	24.0%	0.08165	42%	0.143	1.826	0.052	1.39

Equations:

Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed*Ad / (Total Area)

Volume = Weighted D * Total Area

Flow = Qa * Aa + Qb * Ab + Qc * Ac + Qd * Ad

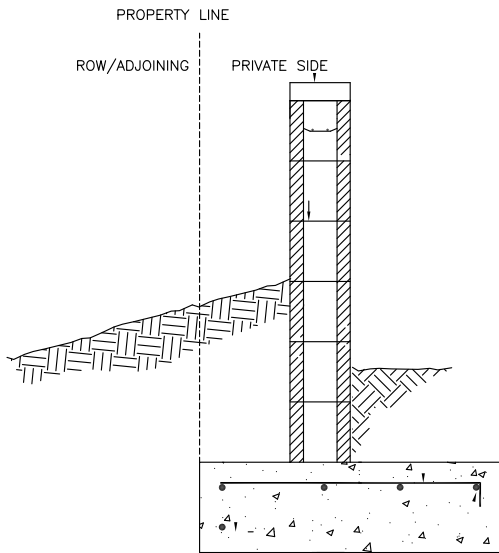
Where for 100-year, 6-hour storm (zone 4)

Ea= 0.8	Qa= 2.2
Eb= 1.08	Qb= 2.92
Ec= 1.46	Qc= 3.73
Ed= 2.64	Qd= 5.25

FIRST FLUSH VOLUME
REQUIRED
PROVIDED

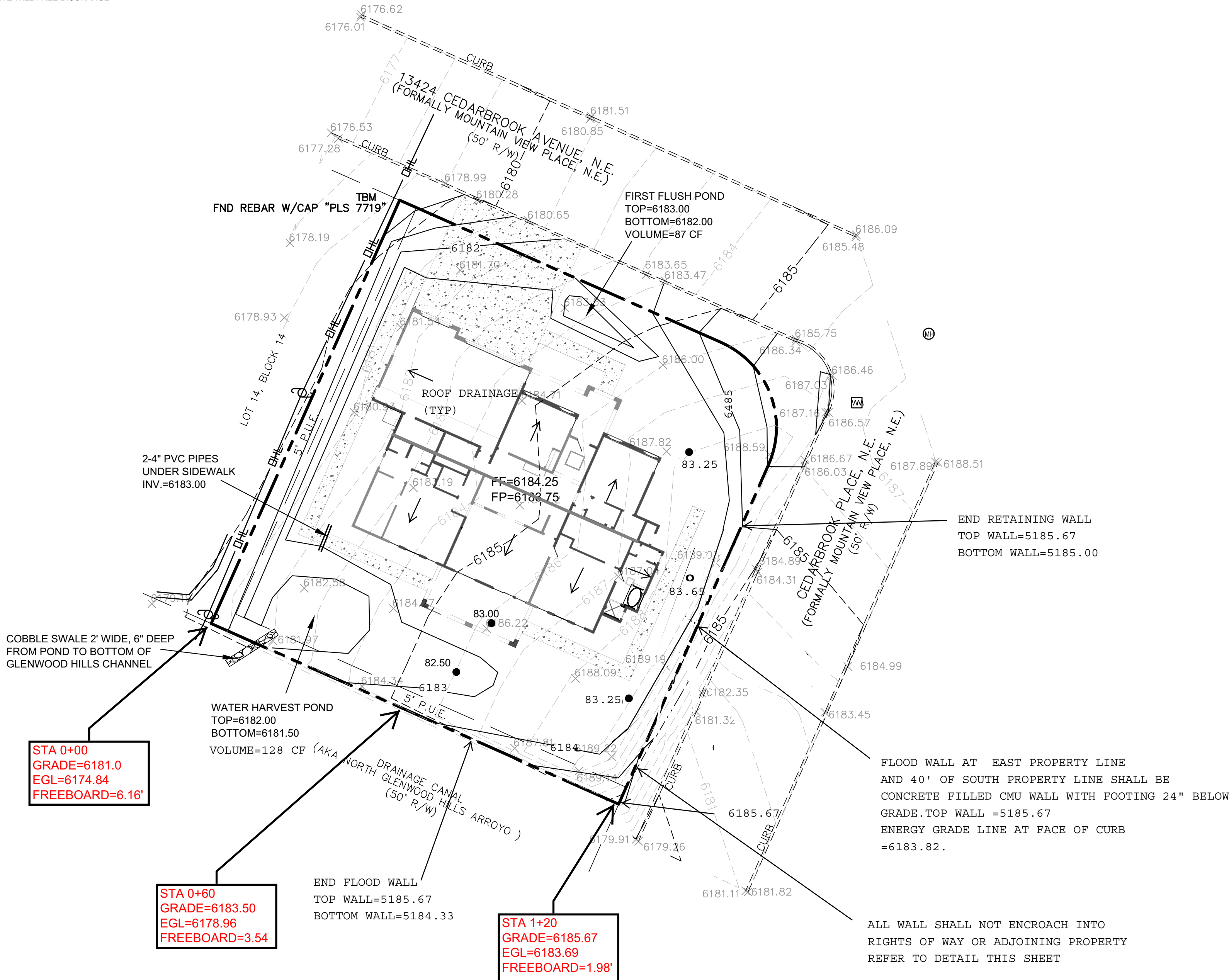
176.36 CF
272 CF

DRAINAGE NARRATIVE
THIS SITE IS A LOT WITHIN A FULLY DEVELOPED RESIDENTIAL SUBDIVISION. THE SITE IS ADJACENT TO FULLY DEVELOPED ROADWAYS. GLEN WOOD HILLS ARROYO. ABUTS THIS SITE. THE DENSITY OF THIS DEVELOPMENT IS SIMILAR TO THE SURROUNDING FULLY DEVELOPED CONDITIONS. THE SITE WILL FREE DISCHARGE AFTER THE FIRST FLUSH VOLUMES ARE RETAINED ON SITE



WALL SHALL BE CONSTRUCTED SUCH THAT NO PORTION OF WALL OR FOOTING SHALL ENCRDCH. EXISTING GRADES SHALL BE MAINTAINED WITHIN RIGHT OF WAYS

WALL DETAILS AT ALL PROPERTY BOUNDARIES

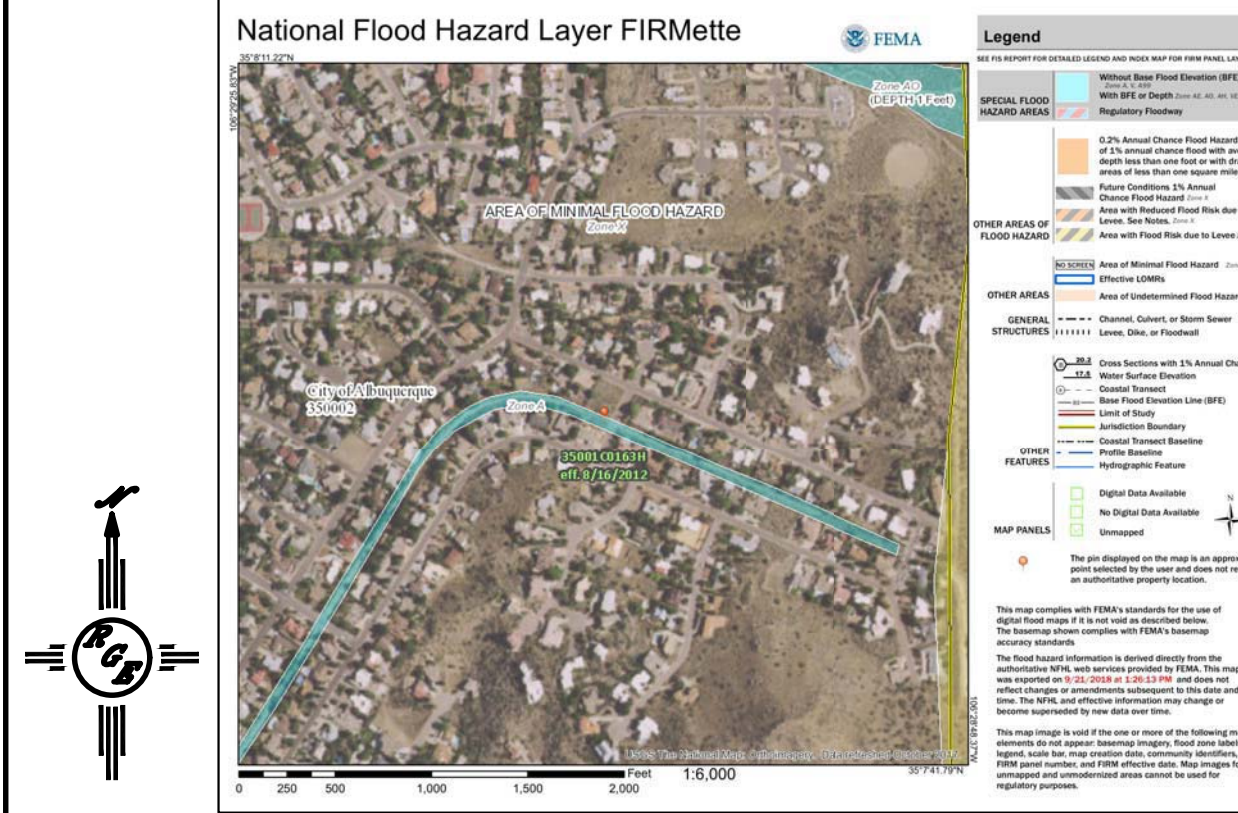


EROSION CONTROL NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.
2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.
4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL ACCEPTANCE OF ANY PROJECT.

VICINITY MAP:

F-23-Z



FIRM MAP:

LEGAL DESCRIPTION:

LOT 15, BLK 14 GLENWOOD HILLS UNIT 2
CITY OF ALBUQUERQUE
BERNALILLO COUNTY, NEW MEXICO

NOTES:

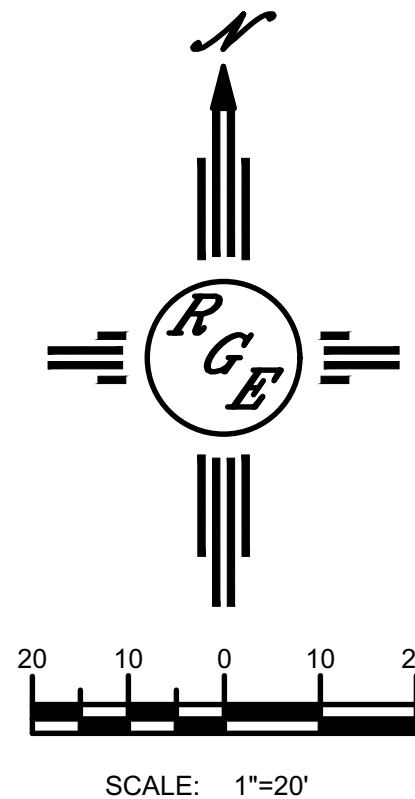
1. ALL SPOT ELEVATIONS REPRESENT FLOWLINE ELEVATION UNLESS OTHERWISE NOTED.
2. ANY PROPOSED FENCING NOT SHOWN ON THIS PLAN MUST ALLOW FOR UNIMPEDED FLOW TO PASS THRU. COURT YARD WALLS NEAR HOME MAY BE BLOCK WITH BLOCKS TURNED AT GARDE EVERY 20' TO ALLOW FOR FREE FLOW OF STORM WATER.
3. TOPOGRAPHY SHOWN WAS OBTAINED BY CONSTRUCTION SURVEY TECHNOLOGY ON 6/28/16. DATUM USED IS NAVD88.

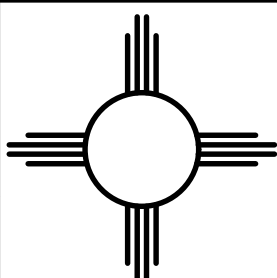
LEGEND

- 5601--- EXISTING CONTOUR
- 5600--- EXISTING INDEX CONTOUR
- 5601--- PROPOSED CONTOUR
- 5600--- PROPOSED INDEX CONTOUR
- RIGHT-OF-WAY
- EXISTING CURB AND GUTTER
- x 5657.58 EXISTING SPOT ELEVATION
- 5657.58 PROPOSED SPOT ELEVATION
- PROPOSED CONTOUR
- PROPOSED CONCRETE DRIVEWAY
- PROPOSED GRAVEL DRIVEWAY

CAUTION:

EXISTING UTILITIES ARE NOT SHOWN. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO ANY EXCAVATION TO DETERMINE THE ACTUAL LOCATION OF UTILITIES & OTHER IMPROVEMENTS.

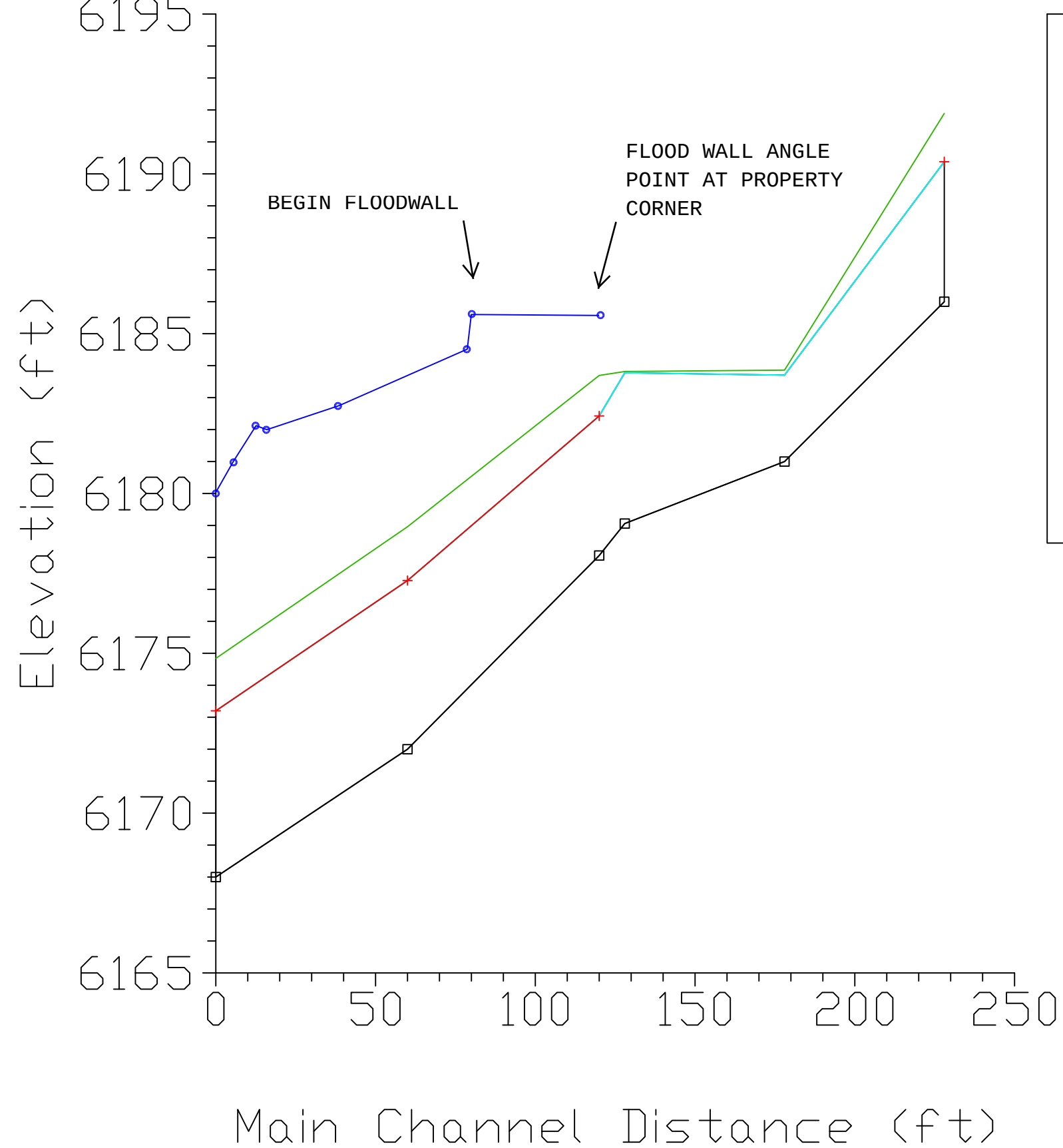


ENGINEER'S SEAL	13424 CEDARBROOK AVE.	DRAWN BY DEM
DAVID SOULE NEW MEXICO REGISTERED PROFESSIONAL ENGINEER 11/27/18	GRADING AND DRAINAGE PLAN	DATE 9-23-2018
		12000 CIRCUMFERENCE MAY 10 IN DIA 14
DAVID SOULE P.E. #14522	 Rio Grande Engineering 1800 CENTRAL AVENUE SUITE 201 ALBUQUERQUE, NM 87108 (505) 872-0000	SHEET # 1 OF 1
		JOB # XXXXX

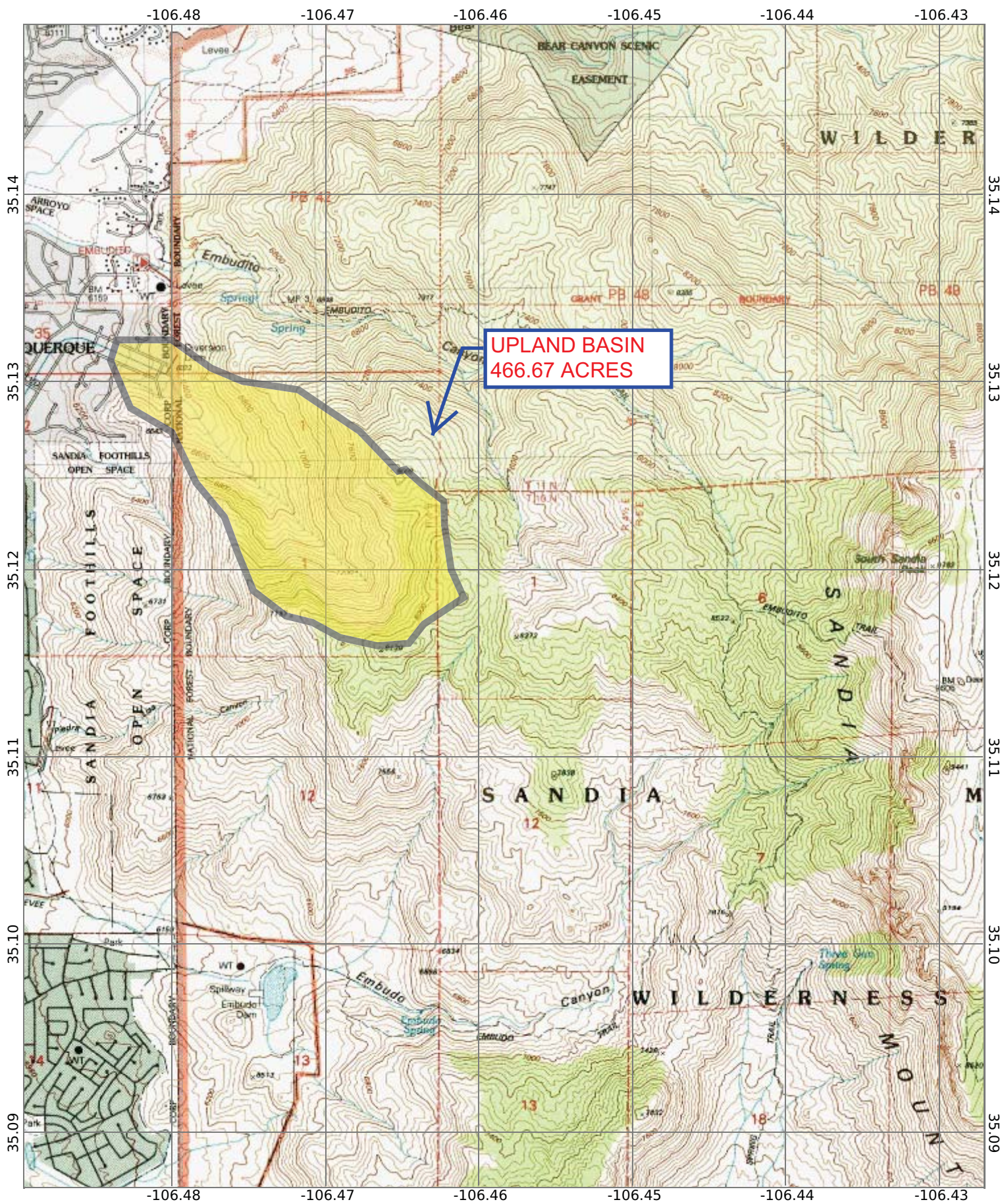
CEDARBROOK

Plan: Plan 01

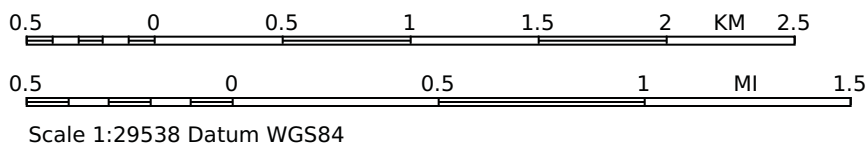
11/5/2018



Legend	
EG	PF 1
WS	PF 1
Crit	PF 1
INVERT	
Ground	



★
8.3°E
10/9/18



UPLAND BASIN.txt

*S AHYMO - CEDAR BROOK-UPLAND FLOW
*S

START TIME=0.0 PUNCH CODE=0

RAINFALL TYPE=2
QUARTER=0.0 ONE= 2.23 IN
SIX=2.90 IN DAY= 3.65 IN DT = 0.05 HR

COMPUTE LT TP LCODE=1 NK=0 ISLOPE=0
LENGTH=8000 FT SLOPE=.19 K=.7
KN=.042 CENTROID RATIO=.62

COMPUTE NM HYD ID=1 HYD NO=101 DA= .728 SQ MI
PER A=50 PER B=40 PER C=5 PER D=5
TP=0.00 MASSRAIN=-1

PRINT HYD ID=1 CODE=3

FINISH

AHYMO.OUT

AHYMO PROGRAM (AHYMO-S4) - Version: S4.01a - Rel: 01a
 RUN DATE (MON/DAY/YR) = 11/05/2018
 START TIME (HR:MIN:SEC) = 11:26:23 USER NO.=
 RioGrandeSingleA41963517
 INPUT FILE = Documents and Settings\Owner\Desktop\2018
 JOBS\18209-cedarbrook\UPLAND BASIN.txt

*S AHYMO - CEDAR BROOK-UPLAND FLOW
 *S

START TIME=0.0 PUNCH CODE=0

RAINFALL TYPE=2
 QUARTER=0.0 ONE= 2.23 IN
 SIX=2.90 IN DAY= 3.65 IN DT = 0.05 HR

24-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONVECTIVE
 AREAS (NM & AZ) - D1

DT =	0.050000	HOURS	END TIME =	24.000002	HOURS
0.0000	0.0045	0.0091	0.0140	0.0193	0.0248
0.0398	0.0537	0.0687	0.0842	0.1010	0.1181
0.1538	0.1722	0.1925	0.2138	0.2367	0.2658
0.3412	0.3902	0.4507	0.5314	0.6221	0.7789
1.4400	1.7335	1.9649	2.0812	2.1831	2.2564
2.3654	2.4026	2.4368	2.4649	2.4887	2.5102
2.5478	2.5640	2.5793	2.5942	2.6086	2.6205
2.6337	2.6401	2.6461	2.6521	2.6579	2.6636
2.6746	2.6799	2.6851	2.6902	2.6952	2.7000
2.7095	2.7141	2.7186	2.7230	2.7273	2.7316
2.7399	2.7440	2.7481	2.7521	2.7560	2.7599
2.7676	2.7713	2.7751	2.7787	2.7824	2.7860
2.7931	2.7965	2.8000	2.8034	2.8068	2.8101
2.8167	2.8200	2.8232	2.8263	2.8295	2.8326
2.8388	2.8418	2.8448	2.8478	2.8508	2.8537
2.8595	2.8623	2.8652	2.8680	2.8708	2.8735
2.8790	2.8817	2.8844	2.8870	2.8897	2.8923
2.8974	2.9000	2.9026	2.9051	2.9077	2.9102
2.9153	2.9179	2.9204	2.9229	2.9255	2.9280
2.9331	2.9356	2.9381	2.9406	2.9432	2.9457
2.9507	2.9532	2.9557	2.9582	2.9607	2.9632
2.9682	2.9707	2.9732	2.9757	2.9781	2.9806
2.9856	2.9880	2.9905	2.9930	2.9954	2.9979
3.0028	3.0053	3.0077	3.0102	3.0126	3.0151
3.0199	3.0224	3.0248	3.0272	3.0297	3.0321
3.0369	3.0393	3.0418	3.0442	3.0466	3.0490
3.0538	3.0562	3.0586	3.0610	3.0634	3.0657
3.0705	3.0729	3.0753	3.0776	3.0800	3.0824
3.0871	3.0895	3.0918	3.0942	3.0965	3.0989
3.1036	3.1059	3.1083	3.1106	3.1129	3.1153
3.1199	3.1222	3.1246	3.1269	3.1292	3.1315
3.1361	3.1384	3.1407	3.1430	3.1453	3.1476
3.1522	3.1545	3.1568	3.1591	3.1613	3.1636
3.1682	3.1704	3.1727	3.1749	3.1772	3.1795
3.1840	3.1862	3.1885	3.1907	3.1930	3.1952
3.1997	3.2019	3.2041	3.2063	3.2086	3.2108
3.2152	3.2174	3.2196	3.2218	3.2240	3.2263
3.2306	3.2328	3.2350	3.2372	3.2394	3.2416
3.2459	3.2481	3.2503	3.2525	3.2546	3.2568
3.2611	3.2633	3.2654	3.2676	3.2697	3.2719
3.2761	3.2783	3.2804	3.2825	3.2847	3.2868
3.2910	3.2932	3.2953	3.2974	3.2995	3.3016
3.3058	3.3079	3.3100	3.3121	3.3142	3.3163

AHYMO.OUT

3.3205	3.3225	3.3246	3.3267	3.3288	3.3308	3.3329
3.3350	3.3370	3.3391	3.3411	3.3432	3.3452	3.3473
3.3493	3.3514	3.3534	3.3555	3.3575	3.3595	3.3616
3.3636	3.3656	3.3676	3.3696	3.3717	3.3737	3.3757
3.3777	3.3797	3.3817	3.3837	3.3857	3.3877	3.3897
3.3917	3.3937	3.3957	3.3976	3.3996	3.4016	3.4036
3.4055	3.4075	3.4095	3.4114	3.4134	3.4153	3.4173
3.4192	3.4212	3.4231	3.4251	3.4270	3.4290	3.4309
3.4328	3.4348	3.4367	3.4386	3.4405	3.4425	3.4444
3.4463	3.4482	3.4501	3.4520	3.4539	3.4558	3.4577
3.4596	3.4615	3.4634	3.4653	3.4672	3.4690	3.4709
3.4728	3.4747	3.4765	3.4784	3.4803	3.4821	3.4840
3.4859	3.4877	3.4896	3.4914	3.4933	3.4951	3.4970
3.4988	3.5006	3.5025	3.5043	3.5061	3.5079	3.5098
3.5116	3.5134	3.5152	3.5170	3.5188	3.5206	3.5224
3.5242	3.5260	3.5278	3.5296	3.5314	3.5332	3.5350
3.5368	3.5386	3.5403	3.5421	3.5439	3.5456	3.5474
3.5492	3.5509	3.5527	3.5544	3.5562	3.5579	3.5597
3.5614	3.5632	3.5649	3.5667	3.5684	3.5701	3.5718
3.5736	3.5753	3.5770	3.5787	3.5804	3.5822	3.5839
3.5856	3.5873	3.5890	3.5907	3.5924	3.5941	3.5958
3.5974	3.5991	3.6008	3.6025	3.6042	3.6058	3.6075
3.6092	3.6108	3.6125	3.6142	3.6158	3.6175	3.6191
3.6208	3.6224	3.6241	3.6257	3.6273	3.6290	3.6306
3.6322	3.6339	3.6355	3.6371	3.6387	3.6404	3.6420
3.6436	3.6452	3.6468	3.6484	3.6500		

COMPUTE LT TP LCODE=1 NK=0 ISLOPE=0
 LENGTH=8000 FT SLOPE=.19 K=.7
 KN=.042 CENTROID RATIO=.62

Tc AND Tp COMPUTED BY UPLAND/LAG TIME PROCEDURE

SCS UPLAND METHOD FACTORS

NOTE: Upland factor input values have been adjusted to meet Upland/Lag Time requirements.

	LENGTH (FT)	ADJUSTED SLOPE (FT/FT)	COMPOSITE K
SHEET FLOW PORTION	400.0	0.064555	0.7000
SHALLOW FLOW PORTION	1600.0	0.064555	2.0000
CHANNEL FLOW PORTION	6000.0	0.064555	3.0000
TOTAL BASIN	8000.0	0.064555	2.3729

LAG EQUATION FACTORS: Kn= 0.0420 TOTAL BASIN LENGTH (FT)=
 8000.0
 TOTAL BASIN SLOPE (FT/FT)= 0.064555 CENTROID LENGTH (FT)=
 4960.0

TIME OF CONCENTRATION (HRS)= 0.5005 TIME TO PEAK (HRS)= 0.3337
 LAG TIME (HRS)= 0.3754

COMPUTE NM HYD ID=1 HYD NO=101 DA= .728 SQ MI
 PER A=50 PER B=40 PER C=5 PER D=5
 TP=0.00 MASSRAIN=-1

TIME TO PEAK (hrs)= 0.3337

K = 0.185477HR TP = 0.333685HR K/TP RATIO = 0.555844 SHAPE
 CONSTANT, N = 6.929759
 UNIT PEAK = 56.497 CFS UNIT VOLUME = 0.9998 B = 517.92

AHYMO.OUT

P60 = 2.2300
 AREA = 0.036400 SQ MI IA = 0.10000 INCHES INF = 0.04000
 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

K = 0.296077HR TP = 0.333685HR K/TP RATIO = 0.887294 SHAPE
 CONSTANT, N = 3.997872
 UNIT PEAK = 735.85 CFS UNIT VOLUME = 1.000 B = 355.03
 P60 = 2.2300
 AREA = 0.691600 SQ MI IA = 0.57105 INCHES INF = 1.44895
 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

PRINT HYD

ID=1 CODE=3

PARTIAL HYDROGRAPH 101.00

TIME	TIME	FLOW	TIME	TIME	FLOW	TIME	FLOW
HRS	FLOW	CFS	HRS	FLOW	CFS	HRS	CFS
	HRS			HRS			
	CFS			CFS			
	0.000	0.0		5.550	3.5	11.100	1.1
16.650	1.0		22.200	0.8			
	0.150	0.0		5.700	3.2	11.250	1.1
16.800	0.9		22.350	0.8			
	0.300	0.0		5.850	2.8	11.400	1.1
16.950	0.9		22.500	0.8			
	0.450	0.0		6.000	2.6	11.550	1.1
17.100	0.9		22.650	0.8			
	0.600	0.0		6.150	2.4	11.700	1.1
17.250	0.9		22.800	0.8			
	0.750	0.7		6.300	2.2	11.850	1.1
17.400	0.9		22.950	0.8			
	0.900	3.2		6.450	2.0	12.000	1.1
17.550	0.9		23.100	0.8			
	1.050	5.8		6.600	1.9	12.150	1.1
17.700	0.9		23.250	0.8			
	1.200	9.2		6.750	1.8	12.300	1.1
17.850	0.9		23.400	0.8			
	1.350	39.0		6.900	1.7	12.450	1.1
18.000	0.9		23.550	0.8			
	1.500	352.3		7.050	1.6	12.600	1.1
18.150	0.9		23.700	0.8			
	1.650	765.9		7.200	1.5	12.750	1.0
18.300	0.9		23.850	0.8			
	1.800	755.7		7.350	1.5	12.900	1.0
18.450	0.9		24.000	0.8			
	1.950	514.0		7.500	1.4	13.050	1.0
18.600	0.9		24.150	0.7			
	2.100	313.4		7.650	1.4	13.200	1.0
18.750	0.9		24.300	0.5			
	2.250	190.5		7.800	1.4	13.350	1.0
18.900	0.9		24.450	0.3			
	2.400	118.1		7.950	1.3	13.500	1.0
19.050	0.9		24.600	0.2			
	2.550	82.5		8.100	1.3	13.650	1.0
19.200	0.9		24.750	0.1			
	2.700	66.9		8.250	1.3	13.800	1.0
19.350	0.9		24.900	0.1			
	2.850	55.7		8.400	1.3	13.950	1.0
19.500	0.9		25.050	0.1			
	3.000	46.6		8.550	1.2	14.100	1.0
19.650	0.9		25.200	0.0			

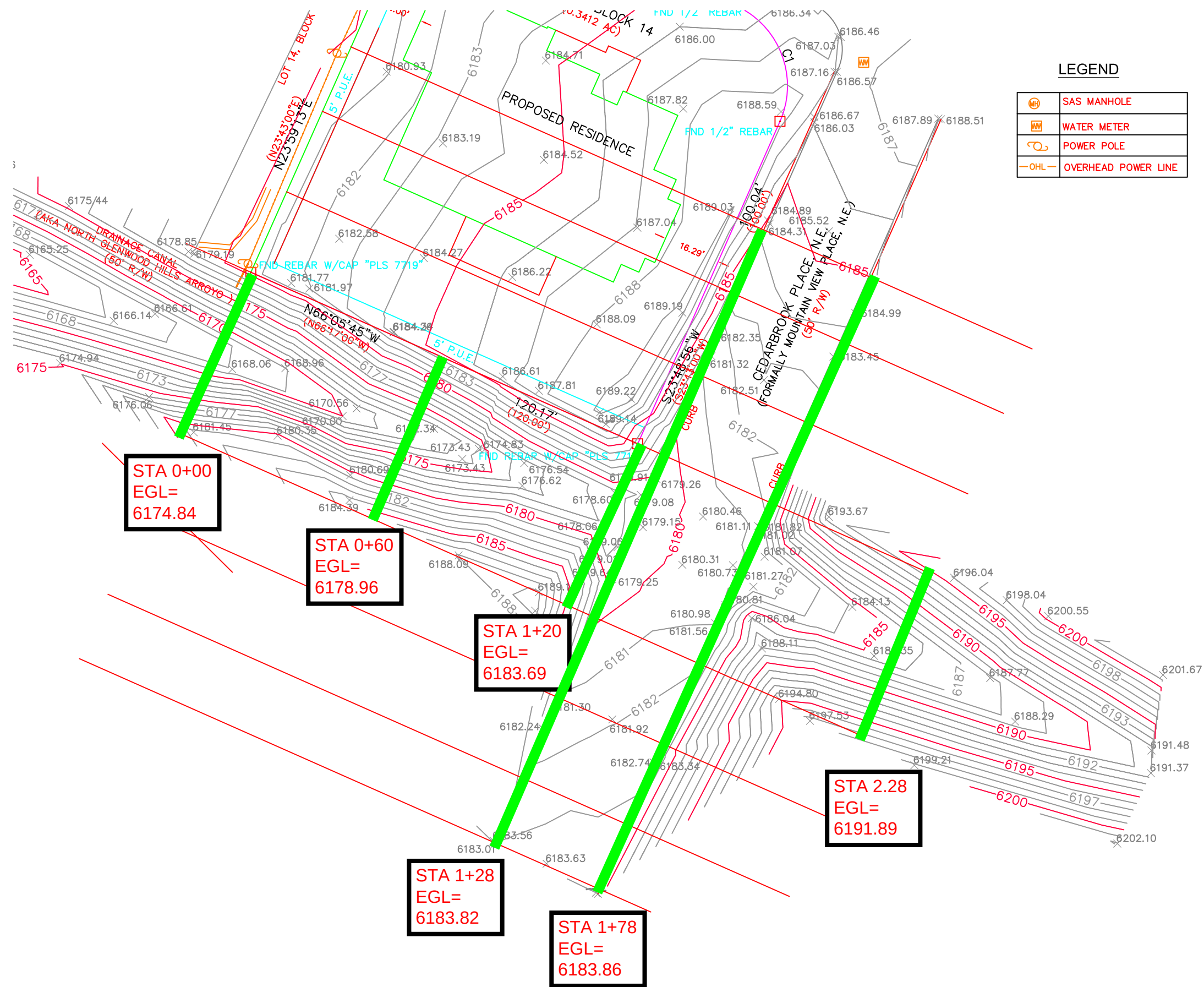
AHYMO.OUT						
19.800	3.150 0.9	39.2	25.350	8.700 0.0	1.2	14.250 1.0
19.950	3.300 0.9	33.1	25.500	8.850 0.0	1.2	14.400 1.0
20.100	3.450 0.9	27.9	25.650	9.000 0.0	1.2	14.550 1.0
20.250	3.600 0.9	23.6	25.800	9.150 0.0	1.2	14.700 1.0
20.400	3.750 0.9	20.0	25.950	9.300 0.0	1.2	14.850 1.0
20.550	3.900 0.8	17.0	26.100	9.450 0.0	1.2	15.000 1.0
20.700	4.050 0.8	14.4	26.250	9.600 0.0	1.1	15.150 1.0
20.850	4.200 0.8	12.3	26.400	9.750 0.0	1.1	15.300 1.0
21.000	4.350 0.8	10.5	26.550	9.900 0.0	1.1	15.450 1.0
21.150	4.500 0.8	9.0	26.700	10.050 0.0	1.1	15.600 1.0
21.300	4.650 0.8	7.8	26.850	10.200 0.0	1.1	15.750 1.0
21.450	4.800 0.8	6.7	27.000	10.350 0.0	1.1	15.900 1.0
21.600	4.950 0.8	5.8	27.150	10.500 0.0	1.1	16.050 1.0
21.750	5.100 0.8	5.1		10.650	1.1	16.200 1.0
21.900	5.250 0.8	4.5		10.800	1.1	16.350 1.0
22.050	5.400 0.8	4.0		10.950	1.1	16.500 1.0

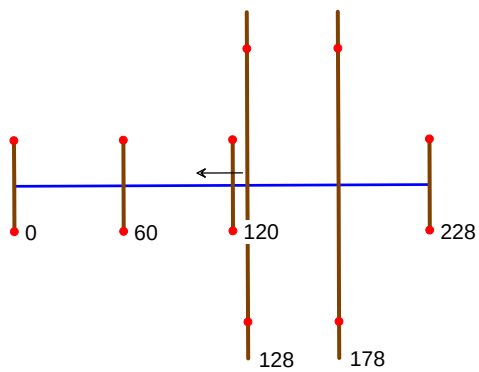
RUNOFF VOLUME = 1.18147 INCHES = 45.8723 ACRE-FEET
 PEAK DISCHARGE RATE = 810.93 CFS AT 1.700 HOURS BASIN AREA =
 0.7280 SQ. MI.

FINISH

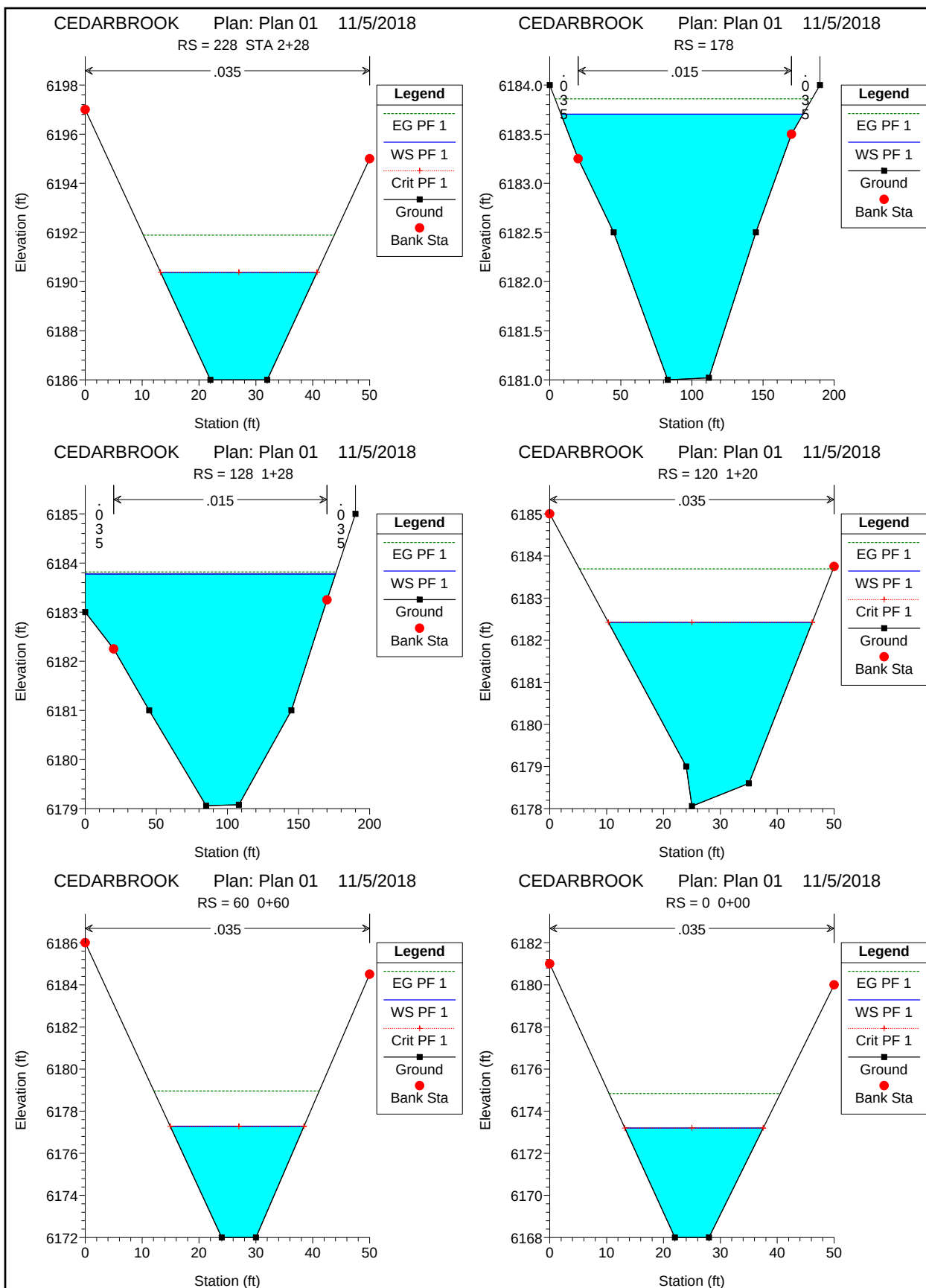
NORMAL PROGRAM FINISH

END TIME (HR:MIN:SEC) = 11:26:23





None of the XS's are Geo-Referenced (• Geo-Ref user entered XS • Geo-Ref interpolated XS • Non Geo-Ref user entered XS • Non Geo-Ref interpolated XS)



HEC-RAS Plan: Plan 01 River: GLENWOOD HILLS Reach: CEDARBROOK CROSS Profile: PF 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
CEDARBROOK CROSS	228	PF 1	810.00	6186.00	6190.38	6190.38	6191.89	0.013813	9.86	82.17	27.52	1.01
CEDARBROOK CROSS	178	PF 1	810.00	6181.00	6183.70		6183.86	0.000508	3.18	258.29	170.21	0.43
CEDARBROOK CROSS	128	PF 1	810.00	6179.06	6183.78		6183.82	0.000056	1.63	516.11	176.02	0.16
CEDARBROOK CROSS	120	PF 1	810.00	6178.06	6182.43	6182.43	6183.69	0.014055	9.03	89.67	35.85	1.01
CEDARBROOK CROSS	60	PF 1	810.00	6172.00	6177.28	6177.28	6178.96	0.014246	10.41	77.82	23.49	1.01
CEDARBROOK CROSS	0	PF 1	810.00	6168.00	6173.20	6173.20	6174.84	0.014098	10.28	78.81	24.33	1.01