

# CITY OF ALBUQUERQUE

Planning Department  
David Campbell, Director



Mayor Timothy M. Keller

August 27, 2018

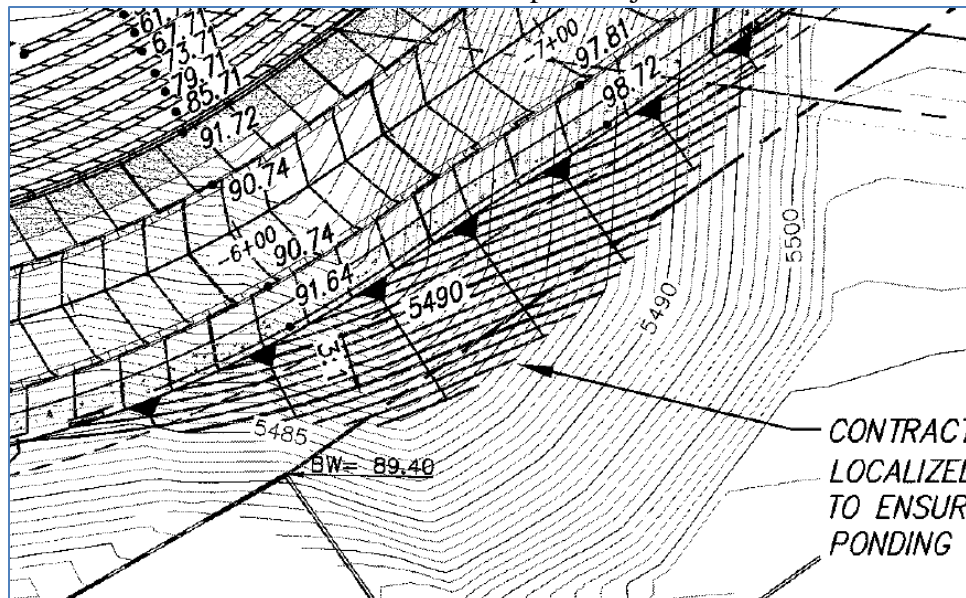
Mark Goodwin, P.E.  
Mark Goodwin & Associates  
PO Box 90606  
Albuquerque, NM, 87199

RE: **Juan Tabo Hills Estates**  
**Revised Grading Plan**  
**Engineer's Stamp Date: 8/9/18**  
**Hydrology File- M21D018; DRB# 1005278**

Dear Mr. Goodwin:

Based on the submittal received on 8/17/18, the revised grading plan cannot be approved until the following are corrected:

1. Fill in or provide an armored drainage conveyance for the low spot south of the Rocky Top entrance. This area cannot be allowed to pond adjacent to the road embankment:



PO Box 1293

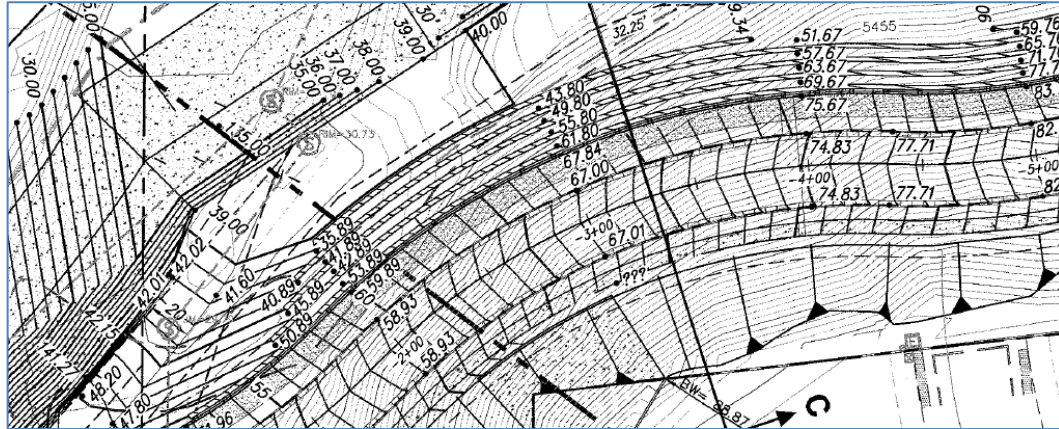
Albuquerque

NM 87103

[www.cabq.gov](http://www.cabq.gov)

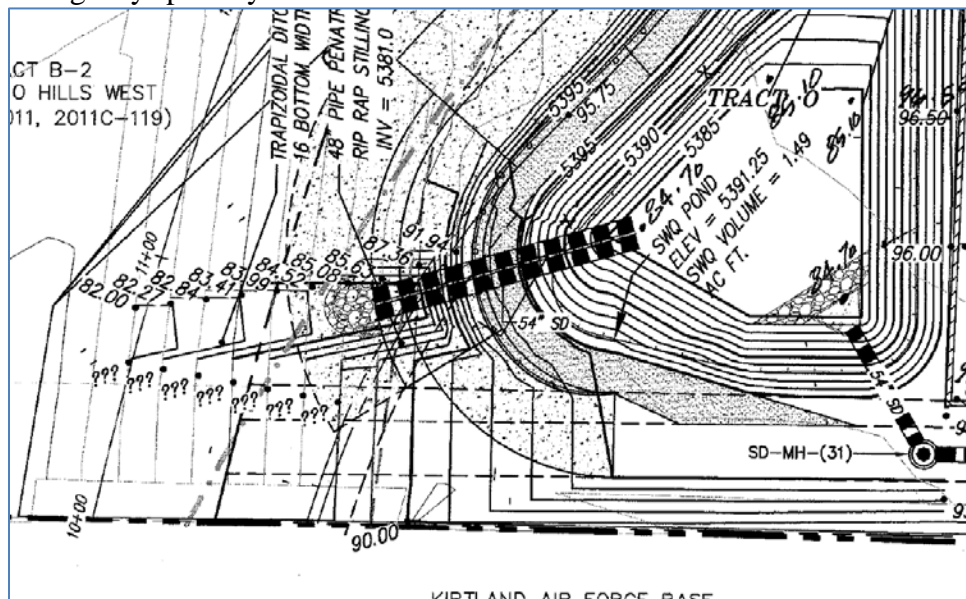


2. Provide an armored drainage conveyance for the interspaces between the terraced retaining walls and down into the storm water pond; ensure the AMAFCA access road is protected from this runoff. The section C-C inset, showing the V-swale with riprap needs to be provided for each terrace of the retaining walls.



3. Provide self-ponding areas in the interspace (park) between the AMAFCA access road and the public road, or drain away from bank protection per AMAFCA direction. The contours and spot elevations should reflect the access road as sloping at 2% away from the top of shotcrete and back into the park area. If used, the ponding areas should be sized for the 10-day, 100-yr volume with supporting calculations provided.

4. Explain the switch to the dual pipe penetration at the SW pond. Is this reflected in the bank protection plans? Where are its build notes? It is still labeled as a single 48" pipe. The grading for the AMAFCA access ramp should be shown here as well as the grades for the emergency spillway:



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5. Will this pond still function as a first flush facility? If not, than payment of the Fee-in-Lieu will be required at a rate or \$6/cf for the SWQ volume.
6. All of the grading sheets need to be re-stamped and re-dated, not just sheet 1 (the basin maps can remain as-is).

If you have any questions, you can contact me at 924-3695 or [dpeterson@cabq.gov](mailto:dpeterson@cabq.gov).

Sincerely,

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

PO Box 1293

Albuquerque

NM 87103

[www.cabq.gov](http://www.cabq.gov)



# City of Albuquerque

Planning Department  
Development & Building Services Division

## DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Project Title: Juan Tabo Hills Estates Building Permit #: \_\_\_\_\_ Hydrology File #: m-211018

DRB#: 1005278 EPC#: \_\_\_\_\_ Work Order#: \_\_\_\_\_

Legal Description: Tract A Juan Tabo Hills / Tract 1-A-1 Juan Tabo Hills Unit 2

City Address: Juan Tabo Hills and Tijera Arroyo

Applicant: Eastside Development, Inc. Contact: Rex Wilson

Address: PO Box 9470, Albuquerque NM 87117

Phone#: 899-6768 Fax#: \_\_\_\_\_ E-mail: rew2d2@comcast.net

Other Contact: Mark Goodwin & Associates PA Contact: Mark Goodwin

Address: PO Box 90000, Albuquerque NM 87199

Phone#: 328-3200 Fax#: \_\_\_\_\_ E-mail: markgoodwin@markgoodwin.com

TYPE OF DEVELOPMENT: 132 PLAT (# of lots) \_\_\_\_\_ RESIDENCE \_\_\_\_\_ DRB SITE \_\_\_\_\_ ADMIN SITE

IS THIS A RESUBMITTAL? ☒ Yes ☐ No

DEPARTMENT \_\_\_\_\_ TRANSPORTATION ☒ HYDROLOGY/DRAINAGE

Check all that Apply:

### TYPE OF SUBMITTAL:

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

### 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: 8-17-18 By: Mark Goodwin, PE

COA STAFF:

ELECTRONIC SUBMITTAL RECEIVED: \_\_\_\_\_

FEE PAID: \_\_\_\_\_





D. Mark Goodwin & Associates, P.A.  
Consulting Engineers

P.O. BOX 90606, ALBUQUERQUE, NM 87199  
(505) 828-2200 FAX 797-9539

*~ 2012 ACEC/NM Award Winner for Engineering Excellence ~  
~ 2008 ACEC/NM Award Winner for Engineering Excellence ~  
~ 2017 ENR Landscape/Urban Development Award of Merit ~*

August 17, 2018

Mr. Dana Peterson  
City of Albuquerque  
600 2<sup>nd</sup> Street SW  
Albuquerque, NM 87102

**Re: Juan Tabo Hills**  
**File: M21D018, DRB 1005278**

Dear Mr. Peterson,

In response to your letter dated 7/26/18 and our meeting of 8/6/2018, we offer the following:

1. Note has been added to fill localized low area adjacent to the street.
2. Sections have been updated and are shown.
3. Armoring between walls has been added.
4. Current AMAFCA improvements are shown.
5. Ponding behind the Bank Protection will not be allowed. These areas are still in design with the Bank Protection Plans.
6. Amended Plat & Grading Plan was submitted to DRB.
7. All lot numbers correspond with the Final Plat.
8. All lots are numbered.
9. Pads encroach into P.U.E.'s not RW. P.U.E has been labeled.
10. SWQ Pond requirements have not been determined.
11. Same as 10.
12. Rip-Rap Section has been added.
13. Prudent Line will be shown on appropriate Pad Certification.

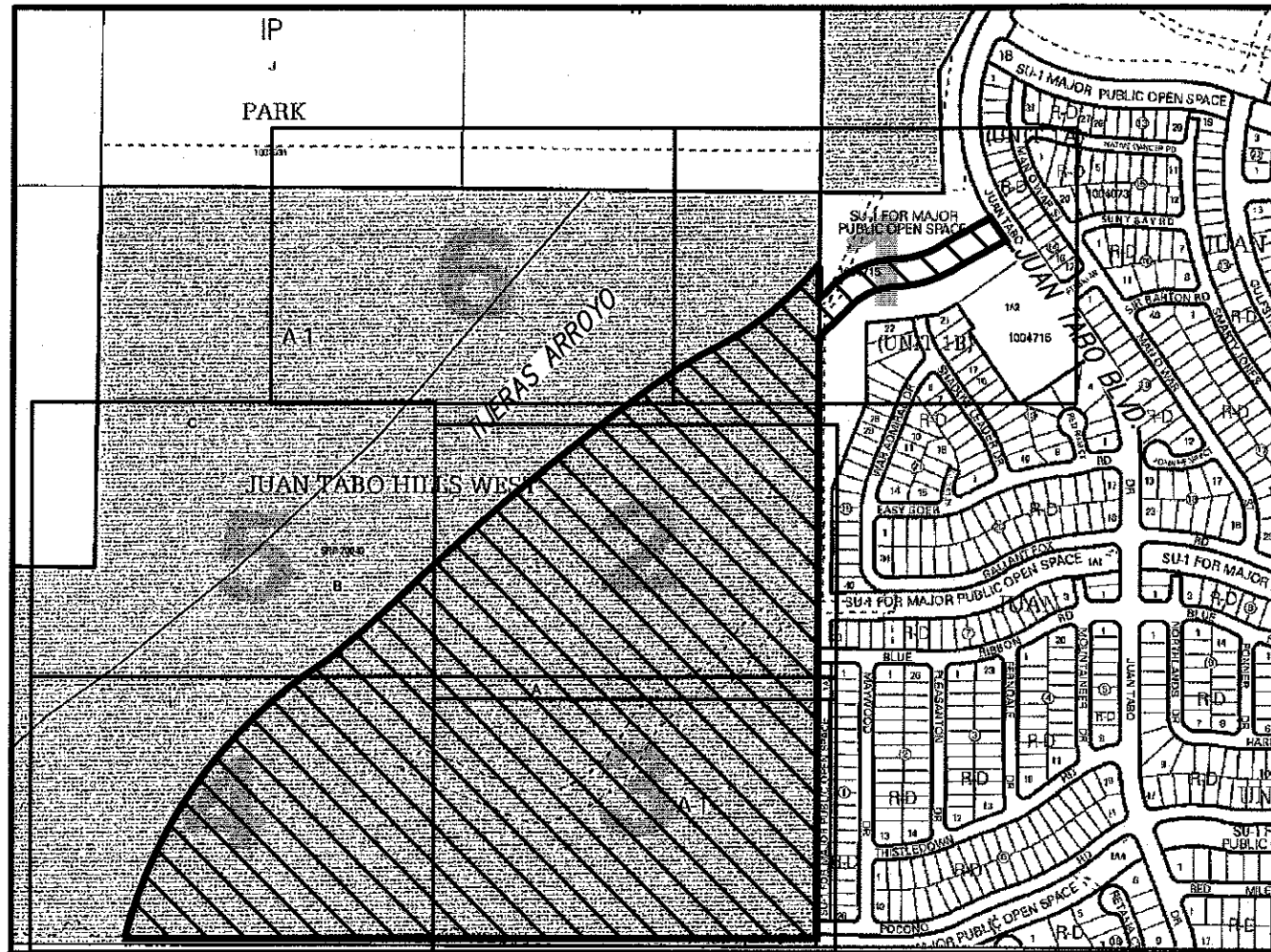
Will this response, we request approval of this plan.

Please contact us with any further questions.

Sincerely,  
MARK GOODWIN & ASSOCIATES, PA

Mark Goodwin, PE  
President





VICINITY MAP

ZONE MAP: M-21

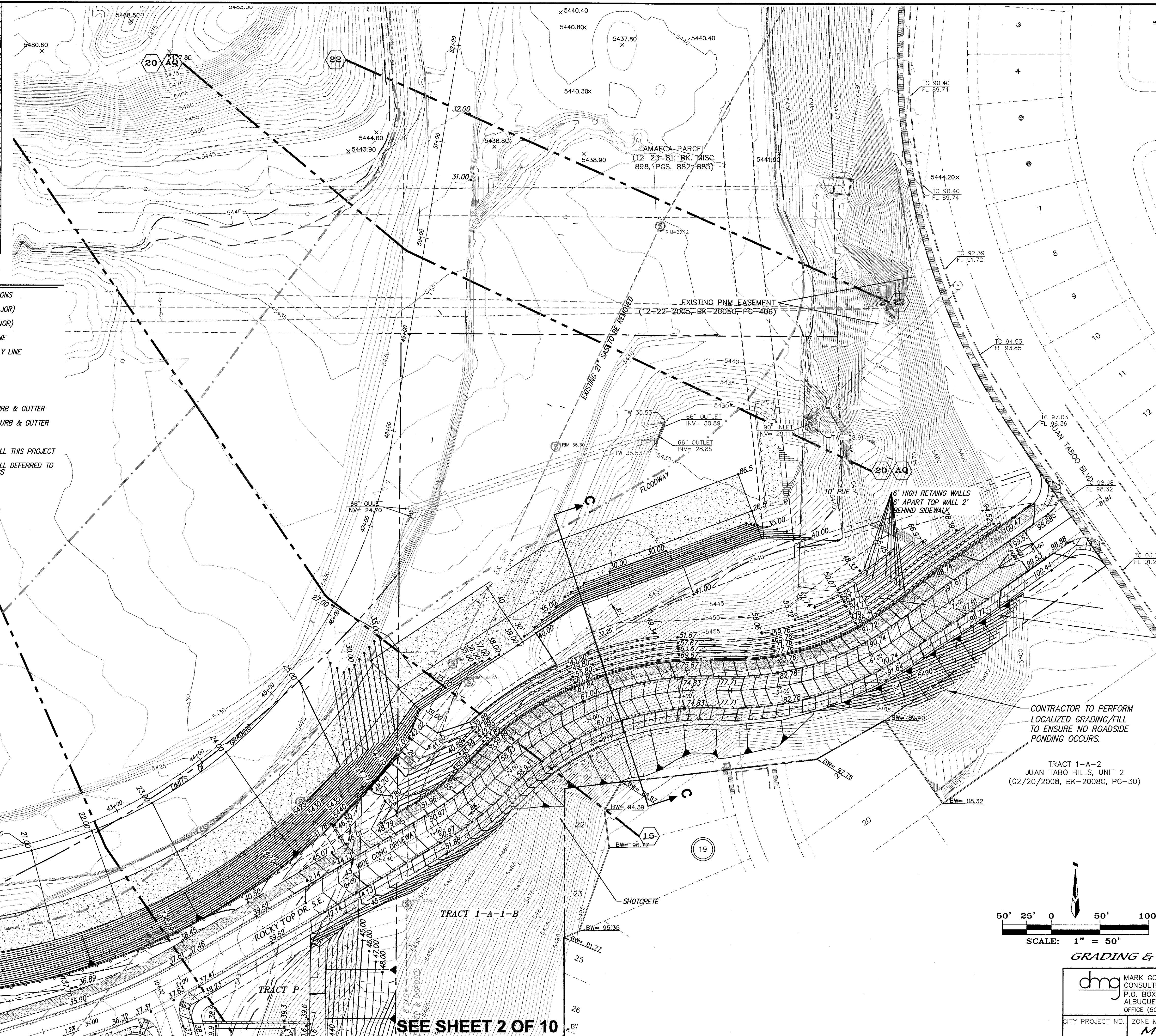
LEGEND

- EXIST. HANDRAIL
- EXIST. CONCRETE CURB
- EXIST. CONCRETE/SIDEWALK
- EXIST. WALL OR HEAD WALL
- EXIST. TOP CURB/FLOWLINE
- EXIST. SPOT ELEV.
- EXIST. GUY WIRE
- EXIST. MONITOR WELL
- EXIST. OVERHEAD ELECTRIC
- EXIST. POWER POLE
- EXIST. SANITARY SEWER MANHOLE
- EXIST. STORM DRAIN MANHOLE
- EXIST. WATER VALVE
- EXIST. WATER METER
- NEW SPOT ELEVATIONS
- NEW CONTOUR (MAJOR)
- NEW CONTOUR (MINOR)
- NEW BOUNDARY LINE
- NEW RIGHT-OF-WAY LINE
- NEW LOT LINE
- NEW CENTERLINE
- NEW EASEMENT
- NEW STANDARD CURB & GUTTER
- NEW MOUNTABLE CURB & GUTTER
- NEW SIDEWALK
- NEW RETAINING WALL THIS PROJECT
- NEW RETAINING WALL DEFERRED TO THE HOME BUILDERS

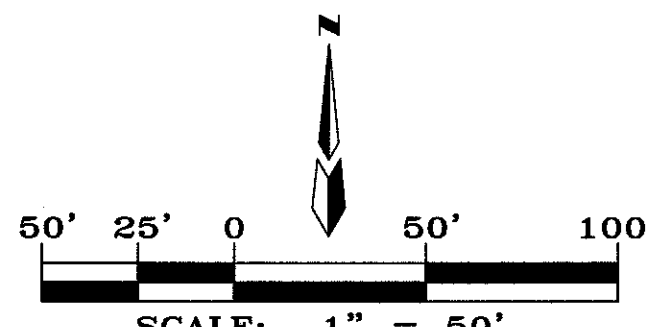
- LIMITS 100 YEAR FLOOD PLAIN
- LIMITS 500 YEAR FLOOD PLAIN
- LIMITS OF FLOODWAY
- LIMITS AO ZONE
- BLOCK NUMBER INDENTITY

SEE SHEET 6 OF 10

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SEE SHEET 2 OF 10



AMENDED GRADING & DRAINAGE PLAN

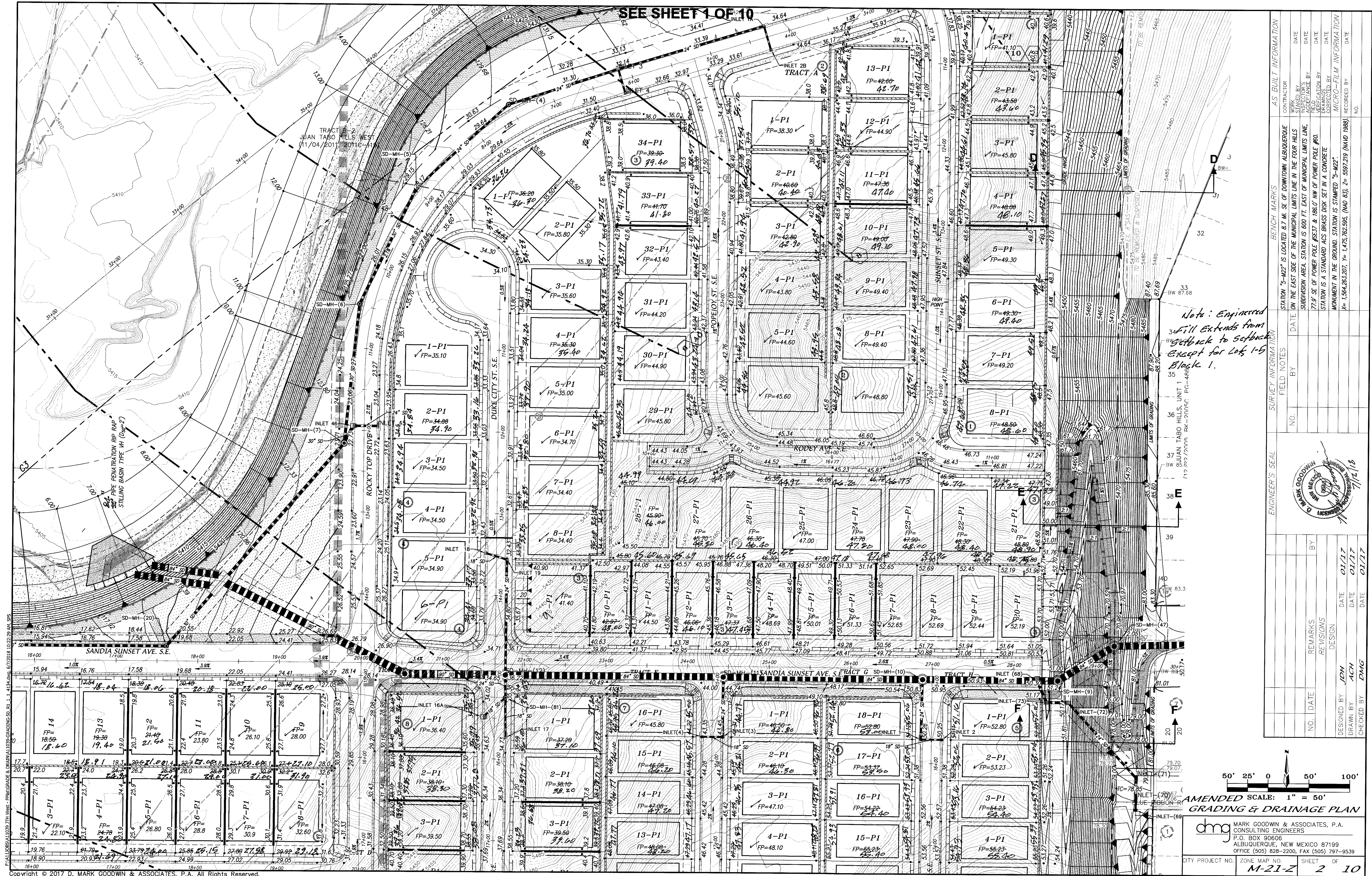
dmg MARK GOODWIN & ASSOCIATES, P.A. CONSULTING ENGINEERS  
P.O. BOX 90606  
ALBUQUERQUE, NEW MEXICO 87199  
OFFICE (505) 828-2200, FAX (505) 797-9539

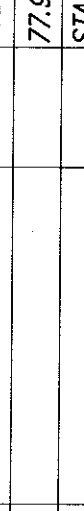
CITY PROJECT NO.	ZONE MAP NO.	SHEET OF
	M-21-Z	1 10

BENCH MARKS		AS BUILT INFORMATION	
STATION 5+422.27	IS LOCATED 8.7 MI. SE OF DOWNTOWN ALBUQUERQUE ON THE EAST SIDE OF THE MUNICIPAL LIMITS LINE IN THE FOUR HILLS SUBDIVISION AREA. STATION IS 600 FT. EAST OF MUNICIPAL LIMITS LINE. 77.9' SE OF POWER POLE #537 & 186.0' NW OF POWER POLE #60. STATION IS A STANDARD ACS BRASS DISK SET IN A CONCRETE MONUMENT IN THE GROUND. STATION IS STAMPED "5+422.27".	CONTRACTOR	DATE
X=1,584,263.207	Y=1,475,762.585 (NAD 83), Z=5,592.219 (NAD 1988)	INSPECTOR'S	DATE
		FIELD BY	DATE
		NO.	DATE
		BY	DATE
		REMARKS	DATE
		DESIGN	DATE
		CHECKED BY	DATE

NO.	DATE	REVISIONS	BY
1	01/17	DESIGN	JDH
2	01/17		ACH
3	01/17		DMG





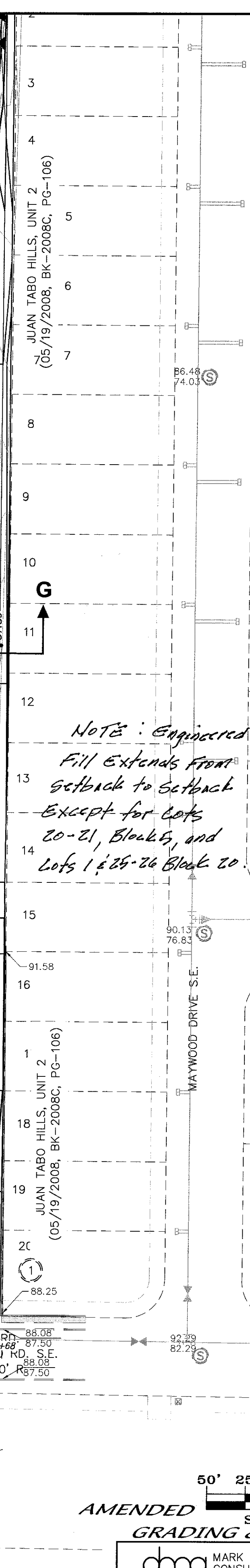
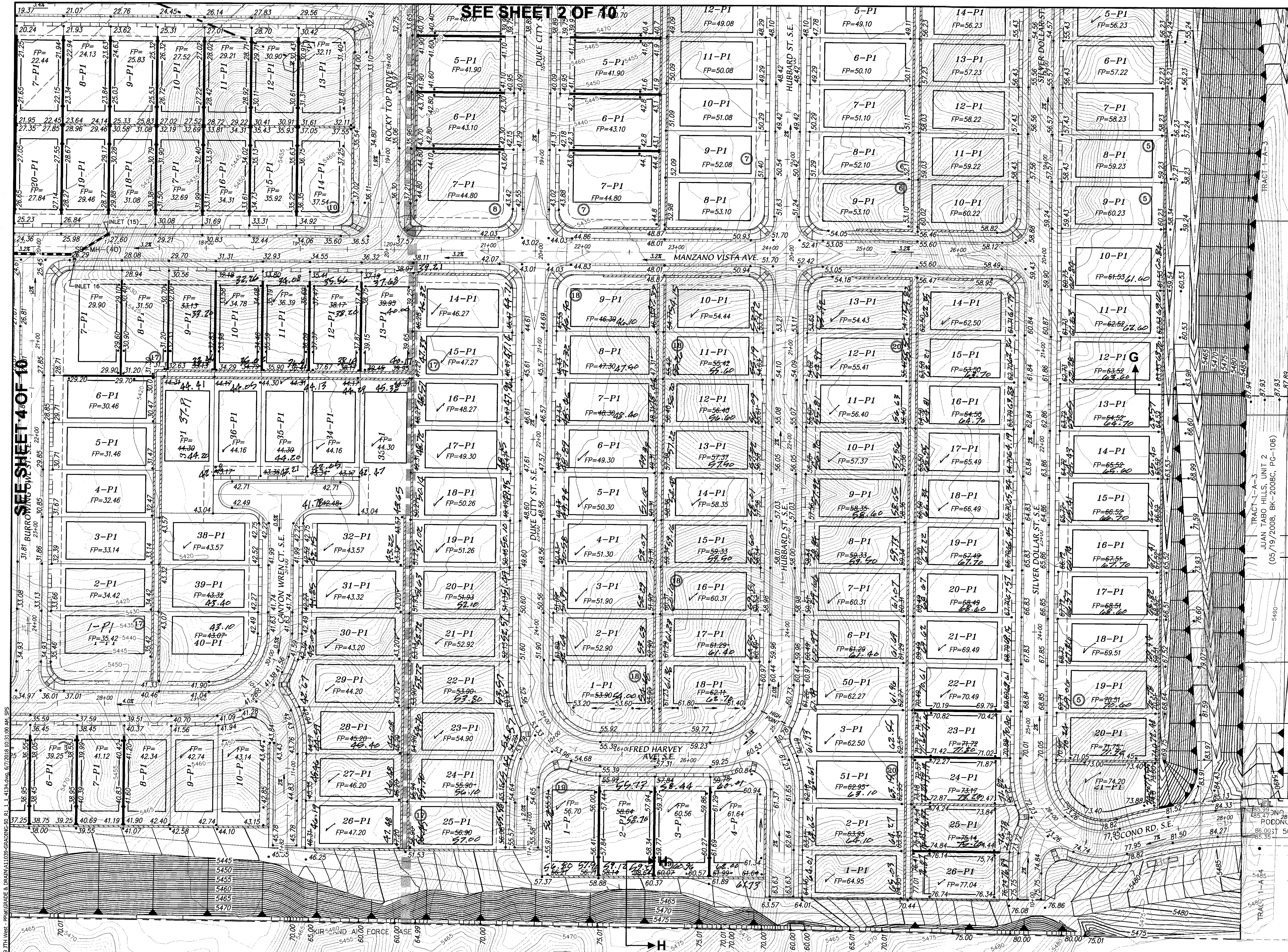
ENGINEER'S SEAL				SURVEY INFORMATION		BENCH MARKS		AS BUILT INFORMATION	
				FIELD NOTES		STATION "5-M22" IS LOCATED 8.7 MI. SE OF DOWNTOWN ALBUQUERQUE ON THE EAST SIDE OF THE MUNICIPAL LIMITS LINE IN THE FOUR HILLS SUBDIVISION AREA. STATION IS 600 FT. EAST OF MUNICIPAL LIMITS LINE, 77.9' SE OF POWER POLE #537 & 186.0' NW OF POWER POLE #60. STATION IS A STANDARD ACS BRASS DISK SET IN A CONCRETE MONUMENT IN THE GROUND. STATION IS STAMPED "5-M22". X= 1,564,263.207, Y= 1,475,762.995, (NAD 83), Z= 5597.219 (NAVD 1989).			
				NO.	BY	DATE	CONTRACTOR	WORK	DATE
NO.	DATE	REMARKS	BY	NO.	DATE				
DESIGN			DESIGNED BY JDH			DATE 01/17			
REVISIONS			DRAWN BY ACH			DATE 01/17			
CHECKED BY DMG			CHECKED BY DMG			DATE 01/17			

AMENDED SCALE: 1" = 50'  
GRADING & DRAINAGE PLAN

dmg MARK GOODWIN & ASSOCIATES, P.A.  
CONSULTING ENGINEERS  
P.O. BOX 9060  
ALBUQUERQUE, NEW MEXICO 87199  
OFFICE (505) 828-2200, FAX (505) 797-9539

CITY PROJECT NO. ZONE MAP NO. SHEET OF  
M-21-Z 2 10





SURVEY INFORMATION		FIELD NOTES		ENGINEER'S SEAL		AS BUILT INFORMATION	
NO.	DATE	BY	REMARKS	NO.	DATE	CONTRACTOR	DATE
1	05/19/2008	JDH	DESIGN	1	05/19/2008	STATION 35+42.27 IS LOCATED 8.7 MI. SE OF DOWNTOWN ALBUQUERQUE ON THE EAST SIDE OF THE MUNICIPAL LIMITS LINE IN THE FOUR HILLS SUBDIVISION AREA. STATION IS 600 FT. EAST OF MUNICIPAL LIMITS LINE. 77.9' SE OF POWER POLE #27 & 68.0' NW OF POWER POLE #20. STATION IS A STANDARD ACS BRASS DISK SET IN A CONCRETE MONUMENT IN THE GROUND. STATION IS STAMPED "5-M42".	DATE
2	01/17	ACH	REVISIONS	2	01/17	STATION 35+42.27, Y= 1,475,762.595, (NAD 83), Z= 5597.719 (NAD 1983)	DATE
3	01/17	DMG	DESIGN	3	01/17		DATE

NOTE: Engineered Fill Extends From setback to Setback Except for Lots 20-21, Block 5, and Lots 1 & 24-26 Block 20

AMENDED SCALE: 1" = 50'

GRADING & DRAINAGE PLAN

dmg MARK GOODWIN & ASSOCIATES, P.A. CONSULTING ENGINEERS P.O. BOX 90606 ALBUQUERQUE, NEW MEXICO 87199 OFFICE (505) 828-2200, FAX (505) 797-9539

CITY PROJECT NO. M-21-Z ZONE MAP NO. 3 SHEET OF 10







THE CONTRACTOR(S) MUST COMPLY WITH NPDES TEMPORARY CONSTRUCTION REQUIREMENTS AND OBTAIN A PERMIT. CONTRACTOR SHALL ALSO PROVIDE A COPY OF THE APPLICATION FOR PERMIT AND NOTICE OF TERMINATION TO THE OWNER.

THE CONTRACTOR(S) IS RESPONSIBLE FOR PREPARING AND MAINTAINING A SWPPP FOR THE DURATION OF INFRASTRUCTURE CONSTRUCTION AND UNTIL THE CITY OF ALBUQUERQUE ACCEPTS THE PUBLIC INFRASTRUCTURE. CONTRACTOR SHALL PROVIDE THE OWNER WITH A COPY OF THE SWPPP AT THE BEGINNING OF THE PROJECT AND AT THE TIME OF NOTICE OF TERMINATION.

THE CONTRACTOR(S) IS RESPONSIBLE FOR CONSTRUCTING AND MAINTAINING EROSION CONTROLS FOR THE DURATION OF THE CONSTRUCTION OF THE PUBLIC INFRASTRUCTURE AND FOR THE REMOVAL OF THE EROSION CONTROLS WHERE DIRECTED TO DO SO BY THE OWNER AT THE TIME OF NOTICE OF TERMINATION.

THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION STAKING AND IS TO PROVIDE AN AS-BUILT SURVEY CERTIFIED BY A REGISTERED PROFESSIONAL SURVEYOR TO THE OWNER UPON COMPLETION OF THE CONSTRUCTION. THE EARTHWORK CONTRACTOR IS TO PROVIDE EARTHWORK SURVEY, AND THE WALL BUILDER IS TO PROVIDE WALL SURVEY.

EARTHWORK CONTRACTOR SHALL PREPARE ROUGH SUBGRADE FOR THE RETAINING WALL CONSTRUCTION AND PROVIDE SUFFICIENT BACKFILL MATERIAL STOCKPILED ON THE HIGH SIDE OF EACH WALL FOR THE WALL BUILDER TO COMPLETELY BACKFILL THE WALLS.

RETAINING WALLS ARE SHOWN FOR GRADING PURPOSES ONLY. RETAINING WALL DESIGN IS TO BE PERFORMED BY OTHERS, AND SHALL BE SUBMITTED TO THE CITY OF ALBUQUERQUE FOR REVIEW, APPROVAL, PERMIT, AND INSPECTION

EARTHWORK CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL INVESTIGATION BY GEOTEST, INC. DATED JUNE 29, 2012.

TOPOGRAPHIC AND BOUNDARY SURVEY ARE BY ALDRICH LAND SURVEYING NOVEMBER 2011.

GENEALOGY USED IS AGRS BRASS CAP STAMPED "7-M21" HAVING AN ELEVATION OF 5498.07 (NGVD29).

FEMA SPECIAL FLOOD HAZARD ZONE ON THIS PROPERTY AS SHOWN ON LOWR CASE NO. 13-06-1053P EFFECTIVE JUNE 17, 2013.

\_\_\_\_\_ LIMITS 100 YEAR FLOOD PLAIN

\_\_\_\_\_ LIMITS 500 YEAR FLOOD PLAIN

\_\_\_\_\_ LIMITS OF FLOODWAY

\_\_\_\_\_ LIMITS AO ZONE

The diagram illustrates a proposed driveway layout with the following dimensions and setbacks:

- Driveway Width:** 10.0' (10' 0")
- Driveway Length:** 20.0' (20' 0")
- Setbacks:**
  - Front Setback: 5.0' (5' 0")
  - Side Setback: 5.0' (5' 0")
  - Back Setback: 1.0' MAX (1' 0" MAX)
- Driveway Area:** PAD (Proposed Driveway Area)
- Section A-A:** (NO SIDEYARD WALL)
- Other Dimensions:**
  - 0.8' (8' 0")
  - 0.55' (5' 5")
  - 0.5' (5' 0")
  - 0.3' (3' 0")
  - 0.10' (1' 0")
  - 0.00' (0' 0")
  - 0.99' MAX (9' 9" MAX)
  - 0.3' MIN (3' 0" MIN)

**Figure 6-10**

**Section B-B (HOME BUILDER'S SIDEYARD WALL)**

TRACT C  
JUAN TABO HILLS WEST  
(06/14/2007, 2007C-161)

TRACT B-1  
JUAN TABO HILLS WEST  
(11/04/2011, 2011C-119)

TRACT B-2  
JUAN TABO HILLS WEST  
(11/04/2011, 2011C-119)

TRACT B-2  
JUAN TABO HILLS WEST  
(11/04/2011, 2011C-119)

10'

sidewalk

Type M Dumped  
Lip Cap - 18" Thick

Park Protection

Rock Squirrel Ave. S.E.

16  
FP= 16.90

15  
FP= 17.70

14  
FP= 18.50

1-P1  
FP= 18.70

2-P1  
FP= 20.70

3-P1  
FP= 22.10

17.73  
17.88

19.76  
20.11

18.90  
19.37

15.99  
16.85

17.68  
18.54

20.24

10.91  
11.69

11.84  
13.1

13.39  
13.5

12.60  
13.39

14.46  
15.08

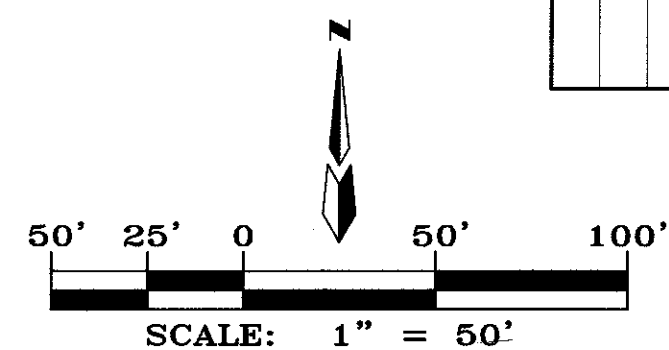
15.99  
16.85

17.68  
18.54

20.24

SEE SHEET 2 & 3 OF 10

Note: Engineered Fill  
Extends from  
Setback to Setback



**AMENDED  
GRADING & DRAINAGE PLAN**

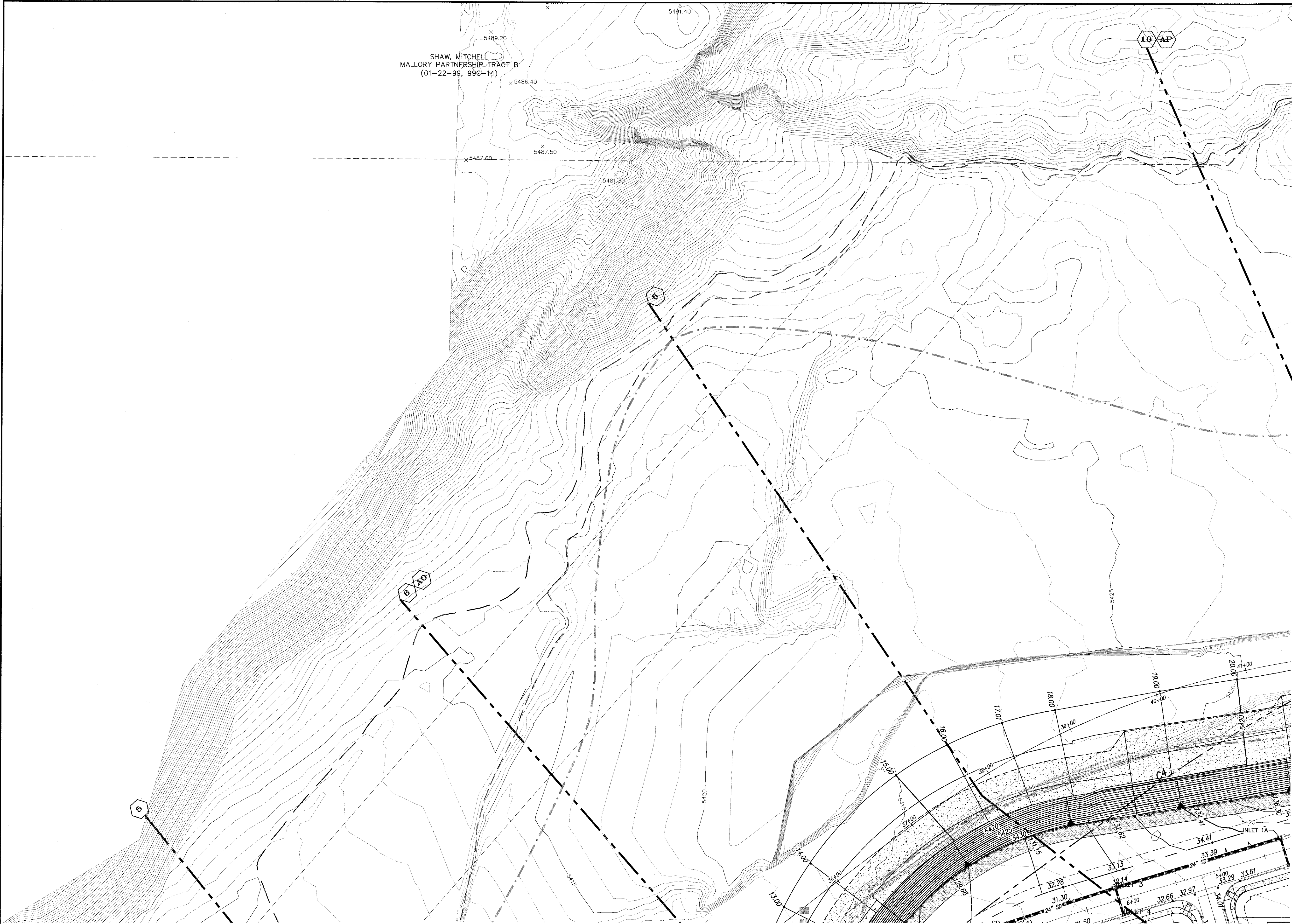
**dmg** MARK GOODWIN & ASSOCIATES, P.A.  
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CITY PROJECT NO.	ZONE MAP NO.	SHEET OF
	<i>M-21-Z</i>	<i>5 10</i>

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SEE SHEET 5 OF 10

SEE SHEET 1 OF 10

50' 25' 0 50' 100'

SCALE: 1" = 50'

AMENDED  
GRADING & DRAINAGE PLAN

dmg

MARK GOODWIN & ASSOCIATES, P.A.  
CONSULTING ENGINEERS  
P.O. BOX 90606  
ALBUQUERQUE, NEW MEXICO 87199  
OFFICE (505) 828-2200, FAX (505) 797-9539

CITY PROJECT NO.

ZONE MAP NO.

SHEET OF

M-21-Z

6

10

ENGINEER'S SEAL			SURVEY INFORMATION			BENCH MARKS			AS BUILT INFORMATION		
			FIELD NOTES			STATION "5-M22" IS LOCATED 8.7 MI. SE OF DOWNTOWN ALBUQUERQUE ON THE EAST SIDE OF THE MUNICIPAL LIMITS LINE IN THE FOUR HILLS SUBDIVISION AREA. STATION IS 600 FT. EAST OF MUNICIPAL LIMITS LINE, 77.9' SE OF POWER POLE #E37 & 186.0' NW OF POWER POLE #60. STATION IS A STANDARD ACS BRASS DISK SET IN A CONCRETE MONUMENT IN THE GROUND. STATION IS STAMPED "5-M22". X= 1,564,263.207, Y= 1,475,762.595, (NAD 83), Z= 5397.219 (NAD 1988).			CONTRACTOR		
			NO.			WORK			NO.		
			BY			DATE			NO.		
			REMARKS			DATE			NO.		
			BY			DATE			NO.		
DESIGNED BY			NO.			DATE			NO.		
DRAWN BY			REVISIONS			DATE			NO.		
CHECKED BY			DESIGN			DATE			NO.		
			JCH			01/17			MICRO-FILM INFORMATION		
			ACH			01/17			RECORDED BY		
			DMG			01/17			NO.		



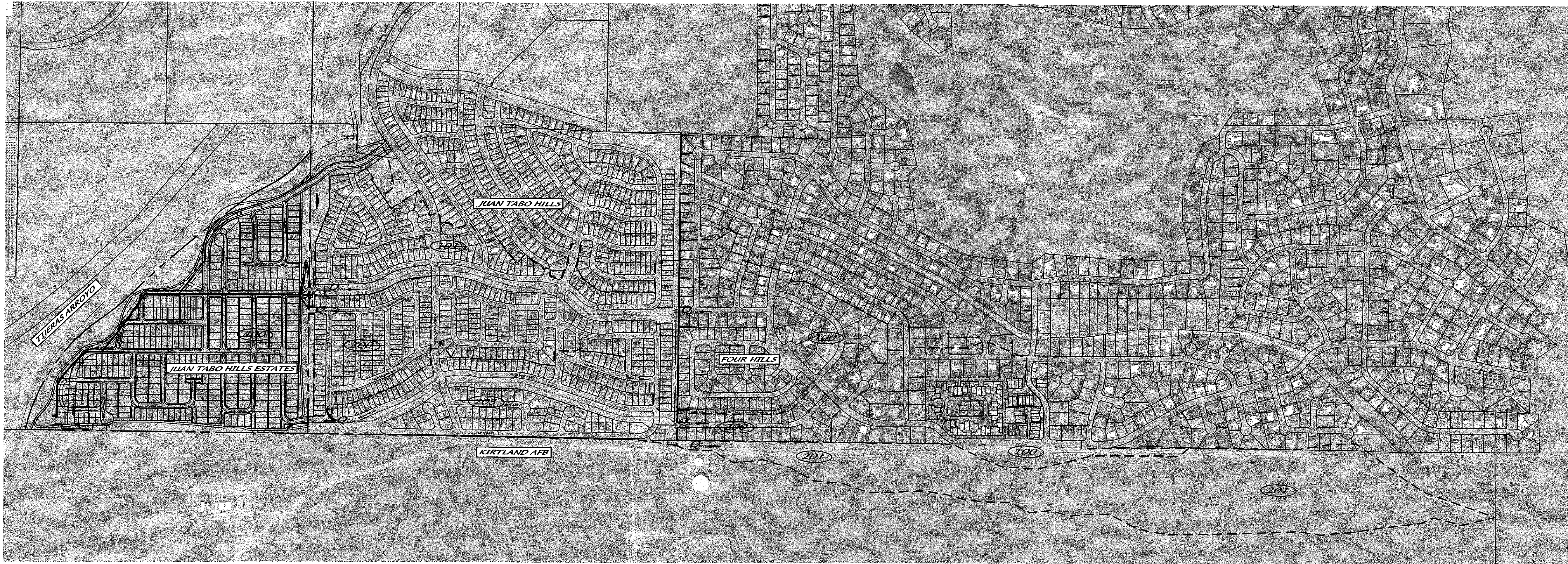


Table 1: HYDROLOGY SUMMARY TABLE										
AHYMO BASIN ID	Location	AREA		Ground Cover (%)				Q <sub>100</sub> (cfs)		Water Quality Volume (Ac-Ft)
		(Ac)	(Sq mi)	A	B	C	D	Increment	Increment	
100	Four Hills	89.10	0.13922	8	18	35	38.7	328.22	1.3218	1.3218
101	Juan Tabo Hills	66.80	0.10438	0	19	39	42	282.50	1.0755	1.0755
200	Four Hills	9.00	0.01406	0	20	40	40	37.61	0.1380	1.4898
201	Kirtland	76.30	0.01828	100	0	0	0	27.64	0.0000	0.0000
203	Juan Tabo Hills	42.50	0.06541	0	22	45	33	172.59	0.5376	1.8131
300	Juan Tabo Hills	22.30	0.03484	0	14	29	57	99.75	0.4873	2.1004
400	JTH Estates	77.70	0.12141	0	9	41	50	343.61	1.4893	1.4893
TOTALS:		383.70	0.50					1291.92		5.05

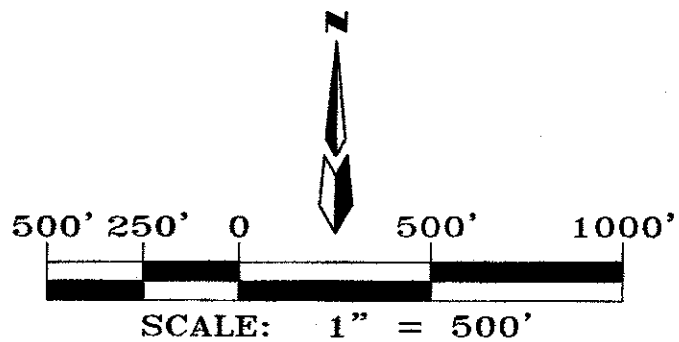
LEGEND

--- AHYMO BASIN BOUNDARY

--- SUB-BASIN BOUNDARY

--- NEW RCP STORM DRAIN

(400) AHYMO BASIN NUMBER



AMENDED

**JUAN TABO HILLS ESTATES**  
**DRAINAGE BASIN MAP**

**dmg** MARK GOODWIN & ASSOCIATES, P.A.  
CONSULTING ENGINEERS  
P.O. BOX 90606  
ALBUQUERQUE, NEW MEXICO 87199  
OFFICE (505) 828-2200, FAX (505) 787-9539

CITY PROJECT NO. ZONE MAP NO. SHEET OF  
**M-21-Z 7 10**

ENGINEER'S SEAL		SURVEY INFORMATION		BENCH MARKS		AS BUILT INFORMATION					
	NO.	DATE	BY	STATION "S-M22" IS LOCATED 8.7 MI. SE OF DOWNTOWN ALBUQUERQUE ON THE EAST SIDE OF THE MUNICIPAL LIMITS LINE IN THE FOUR HILLS SUBDIVISION AREA. STATION IS 600 FT. EAST OF MUNICIPAL LIMITS LINE, 77.9' SE OF POWER POLE #537 & 186.0' NW OF POWER POLE #80. STATION IS A STANDARD ACS BRASS DISK SET IN A CONCRETE MONUMENT IN THE GROUND. STATION IS STAMPED "S-M22". X= 1,564,283.207, Y= 1,475,782.595, (NAD 83), Z= 5597.219 (MVD 1988).	CONTRACTOR	WORK STAKED BY	DATE				
DESIGNED BY <b>JPH</b>		DATE <b>01/17</b>		REVISIONS		MICRO-FILM INFORMATION					
DRAWN BY <b>ACH</b>		DATE <b>01/17</b>		CORRECTED BY		RECORDED BY					
CHECKED BY <b>DMG</b>		DATE <b>01/17</b>		NO.		NO.					



HYDROLOGY SUMMARY TABLE																	
HYDROLOGY				Street flows						Inlet Calcs			Split Flows				
AHYMO BASIN ID	SUB-BASIN ID	AREA (Ac)	Peak 100-YR Flow Q <sub>100</sub> (cfs)		Location	Curb Type	Slope	Depth	Velocity	Energy	Inlet #	Intercepted	By-pass	Path 1		Path 2	
			Incremental	Surface			(%)	(ft)	(fps)	(ft)		(cfs)	(cfs)	Downstrm ID	Flow (cfs)	Downstrm ID	Flow (cfs)
400		77.70	343.61														
	400AA	3.18	14.05	14.05	Rocky Top	Std. (8")	8.0	0.29	5.5	0.76	-	0.00	14.05	400DD	14.05	-	-
	400BB	2.45	10.82	10.82	Trail	n/a	-	-	-	-	-	0.00	10.82	400DD	10.82	-	-
	400CC	1.89	8.35	8.35	Sunset St	Roll (4")	3.6	0.23	3.8	0.45	-	0.00	8.35	400DD	8.35	-	-
	400DD	0.44	1.94	35.16	Sunset St	Std. (8")	1.2	0.53	3.1	0.68	11 & 12	11.80	23.36	400FF	23.36	-	-
	400EE	2.87	12.68	12.68	Sunset St	Roll (4")	1.0	0.33	2.5	0.43	-	0.00	12.68	400FF	12.68	-	-
	400FF	4.13	18.24	30.92	Popejoy	Std. (8")	3.6	0.42	5.2	0.84	-	-	-	-	-	-	-
				54.28	Rocky Top	Std. (8")	1.2	0.60	4.1	0.86	13 & 14	16.00	38.28	400GG	38.28	-	-
	400GG	1.16	5.12	43.40	Rocky Top	Std. (8")	2.1	0.49	4.9	0.86	-	0.00	43.40	400P	43.40	-	-
	400A	1.27	5.61	14.84	Silver Dollar St	Std. (8")	2.0	0.32	3.6	0.52	-	0.00	14.84	400B	14.84	-	-
	400B	2.68	11.84	26.68	Silver Dollar St	Std. (8")	2.0	0.43	4.0	0.68	-	0.00	26.68	400F1	13.34	400C	13.34
	400C	2.78	12.28	25.62	Silver Dollar St	Std. (8")	2.0/Sump	0.43	4.0	0.68	S12 & S13	25.62	0.00	400L1	0.00	-	-
	400D	3.86	17.05	17.05	Eastern Bndry	n/a	-	-	-	-	S11	17.05	0.00	400L1	0.00	-	-
	400L1	0.55	2.43	2.43	Sandia Sunset	Roll (4")	0.5	0.22	1.4	0.25	S22	2.43	0.00	-	-	-	-
	400L2	0.84	3.71	3.71	Sandia Sunset	Roll (4")	2.6	0.23	3.1	0.38	-	0.00	3.71	400L3	3.71	-	-
	400L3	0.82	3.62	7.33	Sandia Sunset	Roll (4")	3.4	0.28	4.1	0.54	-	0.00	7.33	400N	3.67	400J	3.67
	400E	2.89	12.77	12.77	Hubbard	Roll (4")	2.0	0.30	3.4	0.48	-	0.00	12.77	400F2	12.77	-	-
	400F1	0.45	1.99	15.33	Manzano Vista	Std. (8")	3.2	0.34	4.2	0.61	-	0.00	15.33	400F2	7.66	400I	7.66
	400F2	0.46	2.03	22.46	Manzano Vista	Std. (8")	3.2	0.39	4.3	0.68	-	0.00	22.46	400F3	11.23	400J	11.23
	400F3	0.26	1.15	35.22	Manzano Vista	Std. (8")	3.2	0.44	4.2	0.71	-	0.00	35.22	400K1	17.61	400T	17.61
	400G	3.31	14.62	14.62	Duke City	Roll (4")	2.0	0.33	3.4	0.51	-	0.00	14.62	400H	14.62	-	-
	400H	1.86	8.22	22.84	Duke City	Std. (8")	2.0	0.42	3.9	0.66	-	0.00	22.84	400F3	22.84	-	-
	400I	2.79	12.32	19.99	Hubbard	Std. (8")	2.0/Sump	0.40	3.8	0.62	S14 & S15	19.99	0.00	400L1	0.00	-	-
	400J	2.79	12.32	27.22	Duke City	Std. (8")	4.0	0.46	4.0	0.71	S16 & S17	27.22	0.00	-	-	-	-
	400K1	0.41	1.81	19.42	Rocky Top	Std. (8")	1.9	0.41	3.7	0.62	-	0.00	19.42	400K2	9.71	400AG	9.71
	400K2	0.41	1.81	11.52	Rocky Top	Std. (8")	1.9	0.35	3.1	0.50	-	0.00	11.52	400P	5.76	400AJ	5.76
	400M	2.13	9.41	9.41	Duke City	Roll (4")	0.5	0.33	1.8	0.38	-	0.00	9.41	400N	9.41	-	-
	400N	1.07	4.73	17.80	Duke City	Std. (8")	0.5	0.44	2.0	0.50	S18 & S19	17.80	0.00	-	-	-	-
	400P	0.70	3.09	52.26	Rocky Top	Std. (8")	Sump	-	-	-	S1 & S2	52.26	0.00	-	-	-	-
	400Q	1.93	8.53	8.53	Canyon Wren Ct	Roll (4")	0.5	0.33	1.8	0.38	-	0.00	8.53	400R	8.53	-	-
	400R	2.08	9.19	17.71	Harrier Hawk	Std. (8")	4.0	0.36	4.7	0.70	-	0.00	17.71	400S	8.86	400V	8.86
	400S	2.17	9.59	18.44	Burrowing Owl	Roll (4")	2.0	0.35	3.6	0.55	-	0.00	18.44	400U	18.44	-	-
	400T	1.90	8.39	26.00	Manzano Vista	Std. (8")	3.2	0.41	4.6	0.74	15 & 16	11.80	14.20	400U	14.20	-	-
	400U	1.60	7.07	39.71	Manzano Vista	Std. (8")	3.2	0.47	5.5	0.94	17 & 18	14.20	25.51	400X	25.51	-	-
	400V	3.71	16.39	25.24	White Dove	Std. (8")	2.0	0.43	4.0	0.68	-	0.00	25.24	400AC	12.62	400W	12.62
	400W	0.78	3.45	16.07	White Dove	Std. (8")	2.0	0.38	3.5	0.57	-	0.00	16.07	400X	16.07	-	-
	400X	0.29	1.28	42.86	Manzano Vista	Std. (8")	3.1	0.47	5.7	0.97	-	0.00	42.86	400Z	21.43	400Y	21.43
	400Y	0.93	4.11	25.54	Rock Squirrel	Std. (8")	2.0	0.43	4.0	0.68	-	0.00	25.54	400AH	25.54	-	-
	400Z	1.54	6.80	28.23	Manzano 40' FF	Std. (8")	1.0	0.42	4.1	0.68	-	0.00	28.23	400AF	28.23	-	-
	400AB	2.98	13.16	13.16	Lobo Trot	Roll (4")	1.0	0.33	2.5	0.43	S7 & S8	13.16	0.00	400AD	18.94	-	-
	400AC	1.43	6.32	18.94	Running Bear	Std. (8")	6.0	0.31	5.5	0.78	-	0.00	18.94	-	-	-	-
	400AD	2.64	11.66	58.83	Cougar Run 40' FF	Std. (8")	1.0	0.61	4.0	0.86	S23 & S24	58.83	0.00	-	-	-	-
	400AG	2.83	12.50	22.21	Rock Squirrel	Std. (8")	3.4	0.38	4.6	0.71	-	0.00	22.21	400AI	11.10	400AH	11.10
	400AH	0.24	1.06	37.70	Rock Squirrel	Std. (8")	Sump	-	-	-	S5 & S6	37.70	0.00	-	-	-	-
	400AI	0.34	1.50	12.61	Sandia Sunset	Std. (8")	1.0	0.38	2.5	0.48	-	0.00	12.61	400AJ	12.61	-	-
	400AJ	1.95	8.61	26.98	Sandia Sunset	Std. (8")	1.4	0.52	4.4	0.82	S3 & S4	26.98	0.00	-	-	-	-
		77.70	343.61									352.84					

LEGEND

--- AHYMO BASIN BOUNDARY

--- SUB-BASIN BOUNDARY

--- NEW RCP STORM DRAIN

400 AHYMO BASIN NUMBER

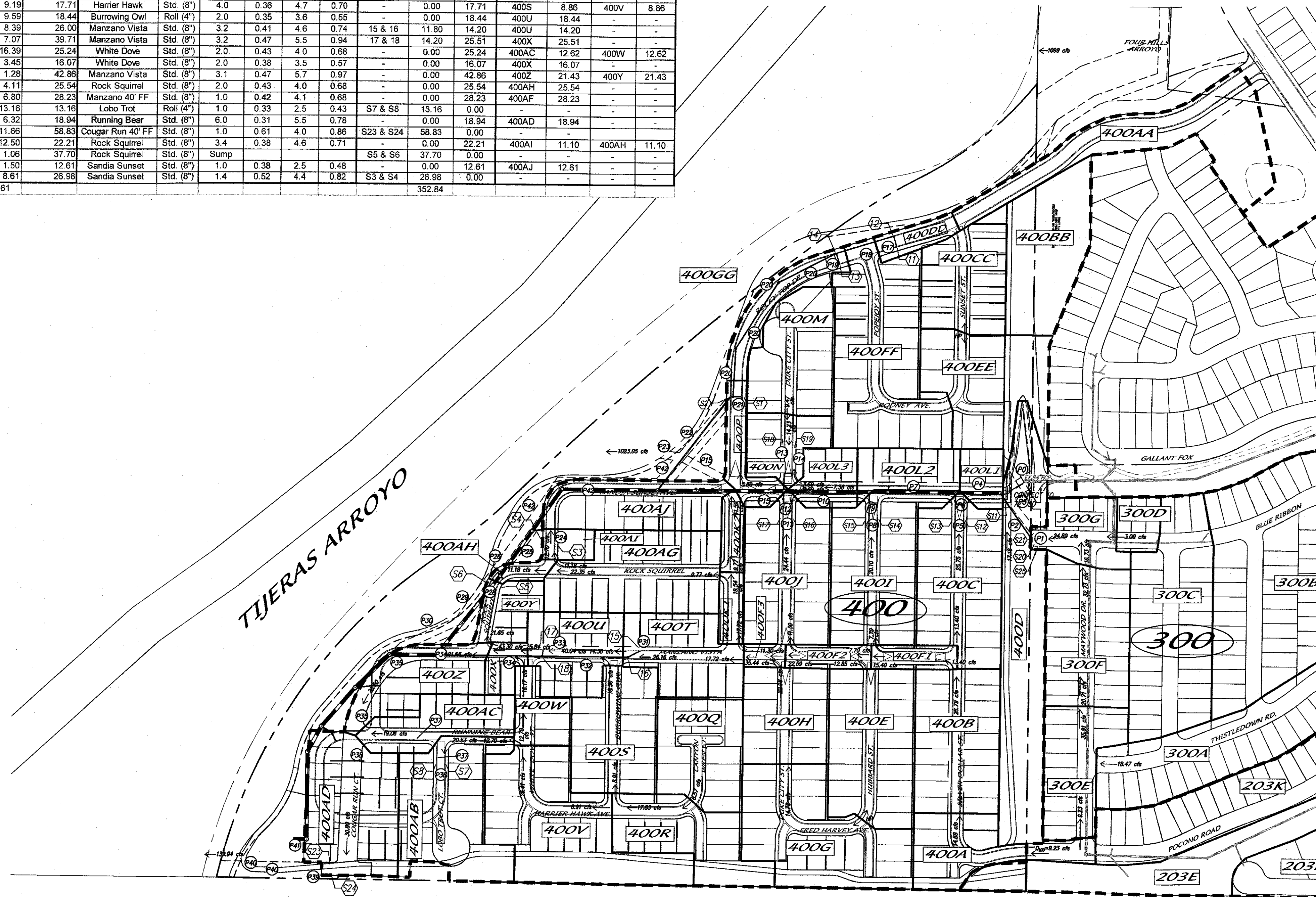
400Q SUB-BASIN NUMBER

15 NEW INLET NUMBER

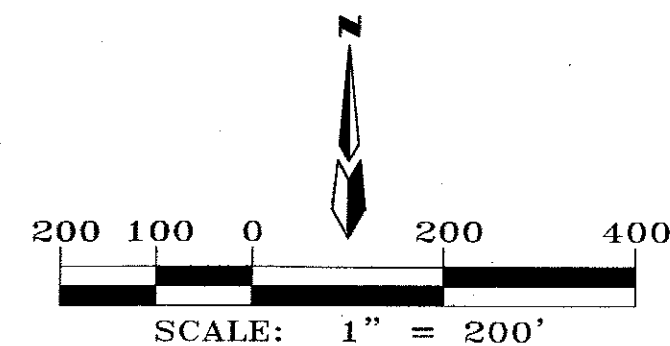
51 EXISTING INLET NUMBER

18 NEW RCP PIPE NUMBER

↑ HIGH POINT (WATERBLOCK)



SEE SHEET 9 OF 11



Storm Drain System Design									
STREET NAME	INLET #	Q (cfs)	PIPE #	SLOPE %	Q <sub>ult</sub> (cfs)	PIPE CAPACITY (cfs)	PIPE DIA (in)	AREA (sq ft)	VELOCITY (ft/sec)
Gallant Fox	S20	12.44	P1	2.12	848.57	930.11	84	38.48	22.05
Blue Ribbon	S21	12.45	P2	15.00	24.89	87.61	24	3.14	7.92
Tract J	S11	17.05	P3	1.00	41.94	66.69	36	7.07	5.93
Sandia Sunset	P4	2.00	P4	2.00	890.51	903.40	84	38.48	23.14
Silver Dollar	S12	12.61	P5	2.00	12.81	14.85	18	1.77	7.25
Silver Dollar	S13	12.81	P6	2.00	25.62	31.99	18	1.77	14.50
Sandia Sunset	P7	2.20	P7	2.20	916.13	947.49	84	38.48	23.81
Hubbard	S14	10.00	P8	2.00	10.00	14.85	18	1.77	5.66
Hubbard	S15	9.99	P9	2.00	19.99	31.99	18	1.77	11.31
Sandia Sunset	S16	13.61	P10	7.00	936.12	1690.11	84	38.48	24.32
Duke City	S17	13.61	P11	1.50	12.22	12.86	18	1.77	6.93
Duke City	S18	13.61	P12	1.20	24.44	24.78	24	3.14	7.78
Duke City	S19	8.90	P13	1.00	8.90	10.50	18	1.77	5.04
Duke City	S19	8.90	P14	1.00	17.80	22.62	24	3.14	5.67
Sandia Sunset	10	6.60	P15	4.00	978.36	1277.60	84	38.48	25.42
Rocky Top	11	5.90	P17	1.50	5.90	12.86	18	1.77	3.34
Rocky Top	12	5.90	P18	2.00	11.80	14.85	24	3.14	3.76
Rocky Top	13	8.00	P19	2.00	8.00	14.85	18	1.77	4.53
Rocky Top	14	8.00	P20	1.50	27.80	27.70	24	3.14	8.85
Rocky Top	S1	28.13	P21	1.50	28.13	27.70	24	3.14	8.32
Rocky Top	S2	28.13	P22	0.50	80.06	101.54	48	12.57	6.37
Sandia Sunset	6.60	P23	1.50	1023.05	1119.91	96	50.27	20.35	-
Sandia Sunset	S3	13.49	P24	1.00	13.49	22.62	24	3.14	4.29
Sandia Sunset	S4	13.49	P25	1.00	26.98	22.62	24	3.14	8.59
Sandia Sunset	P26	1.00	P26	1.00	62.35	66.69	36	7.07	8.82
Rock Squirrel	S5	18.85	P28	2.00	19.02	31.99	24	3.14	6.05
Rock Squirrel	S6	18.85	P29	1.00	100.22	100.00	42	9.62	10.42
Rock Squirrel	P30	1.00	P30	1.00	100.22	100.00	42	9.62	10.42
Manzano Vista	15	5.90	P31	2.00	5.90	14.85	18	1.77	3.34
Manzano Vista	16	5.90	P32	3.14	11.80	18.61	18	1.77	6.63
Manzano Vista	17	7.10	P33	2.00	7.10	14.85	18	1.77	4.02
Manzano Vista	18	7.10	P34	3.14	26.00	40.08	24	3.14	8.28
Manzano Vista	P35	1.00	P35	1.00	126.22	143.60	48	12.57	10.04
Lobo Trot	S7	6.58	P36	1.00	6.58	10.50	18	1.77	3.72
Lobo Trot	S8	6.58	P37	1.00	13.16	22.62	24	3.14	4.19
Manzano Vista	P38	1.00	P38	1.00	139.38	143.60	48	12.57	11.09
Cougar Run St	S23 & S24	58.83	P39	1.10	198.21	206.30	54	15.90	12.46
48 RCP Into Arroyo	P40	1.00	P40	1.00	139.94	143.60	48	12.57	11.14
SWD @ 48" RCP	P41	1.00	P41	1.00	58.27	66.69	36	7.07	8.24
SWD @ 96" RCP	P42	1.00	P42	1.00	35.37	410.10	30	4.91	7.21

AS BUILT INFORMATION		CONTRACTOR		DATE	
NO.	BY	NO.	BY	NO.	BY
STATION "5-W2" IS LOCATED 8.7 MI. SE OF DOWNTOWN ALBUQUERQUE ON THE EAST SIDE OF THE MUNICIPAL LIMITS LINE IN THE FOUR HILLS SUBDIVISION AREA. STATION IS 600 FT. EAST OF MUNICIPAL LIMITS LINE. 17.9' SE OF POWER POLE #327 & 106.0' NW OF POWER POLE #40. STATION IS A STANDARD ACS BRASS DISK SET IN A CONCRETE MONUMENT IN THE GROUND. STATION IS STAMPED "5-W2". X= 1,564,363.207, Y= 1,475,762.395, (NAD 83), Z= 5597.216 (NAVD 1989).					
SURVEY INFORMATION		ENGINEER'S SEAL		REVISIONS	
NO.	DATE	NO.	DATE	NO.	DATE
DESIGNED BY: JCH DRAWN BY: ACH CHECKED BY: DMG					
DATE: 01/17 DATE: 01/17 DATE: 01/17					

AMENDED

JUAN TABO HILLS ESTATES

ONSITE DRAINAGE BASIN MAP

dmg MARK GOODWIN & ASSOCIATES, P.A.  
 CONSULTING ENGINEERS  
 P.O. BOX 90606  
 ALBUQUERQUE, NEW MEXICO 87199  
 OFFICE (505) 828-2200, FAX (505) 797-9539

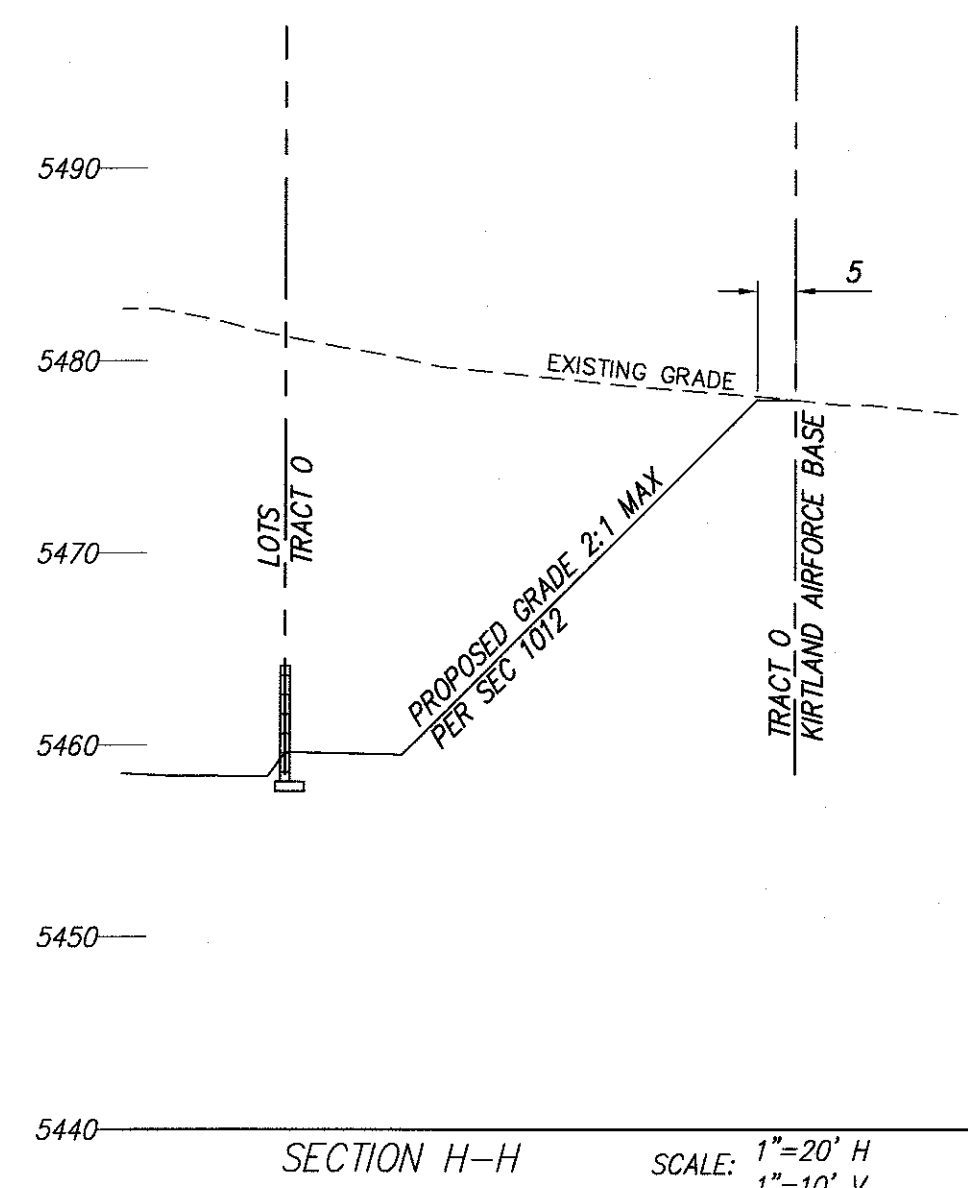
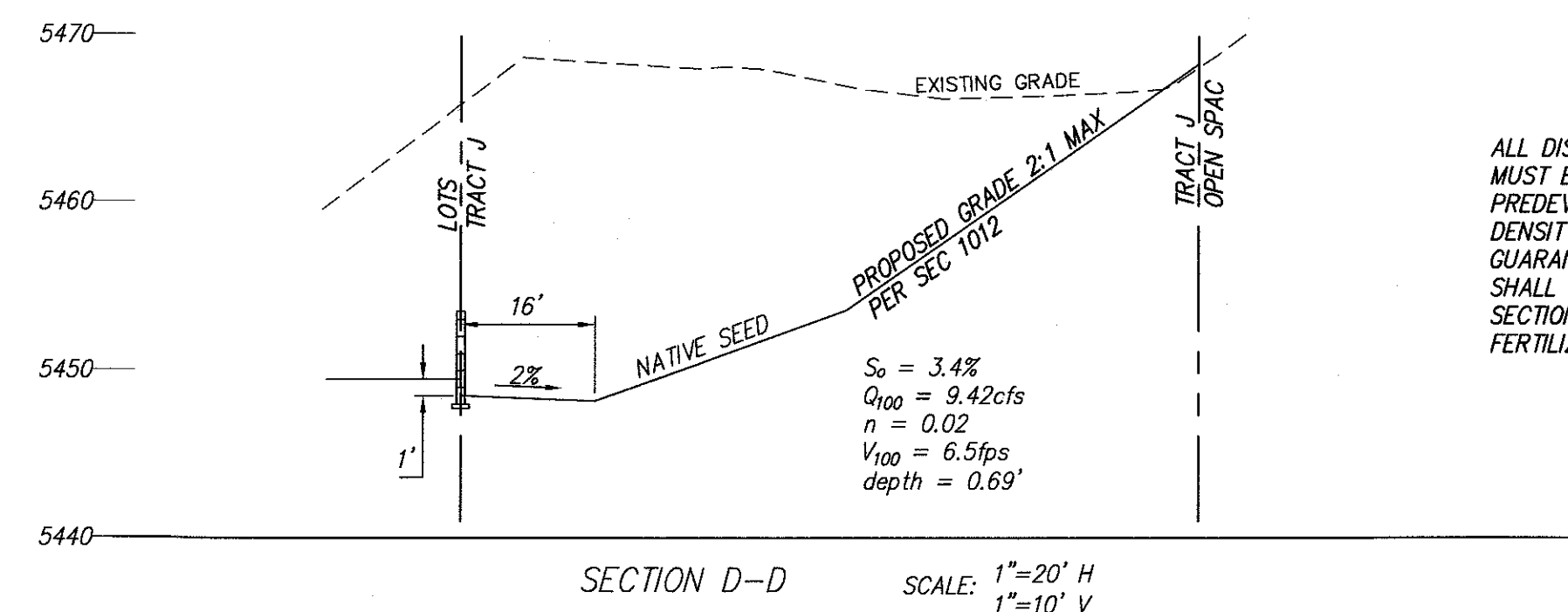
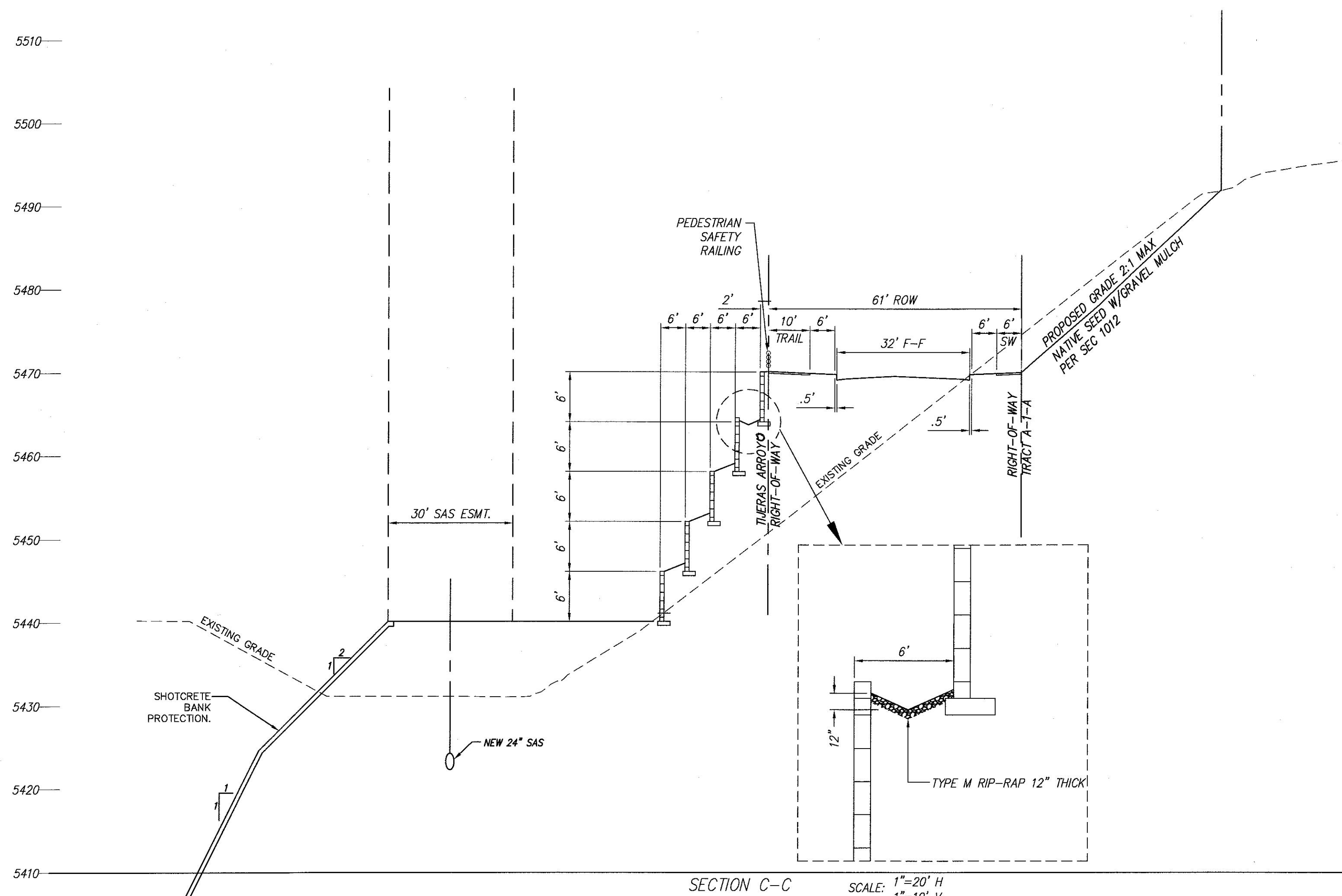
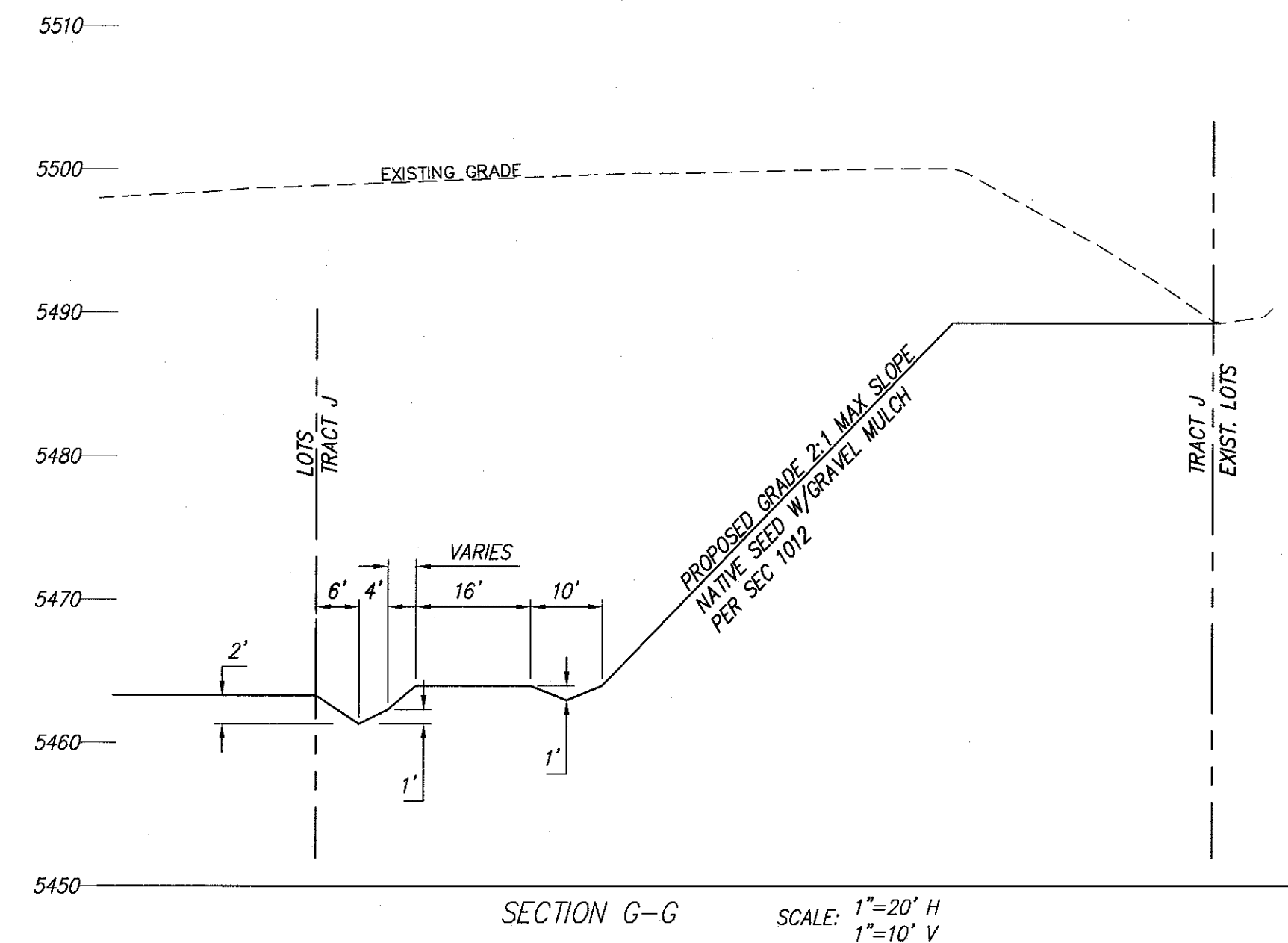
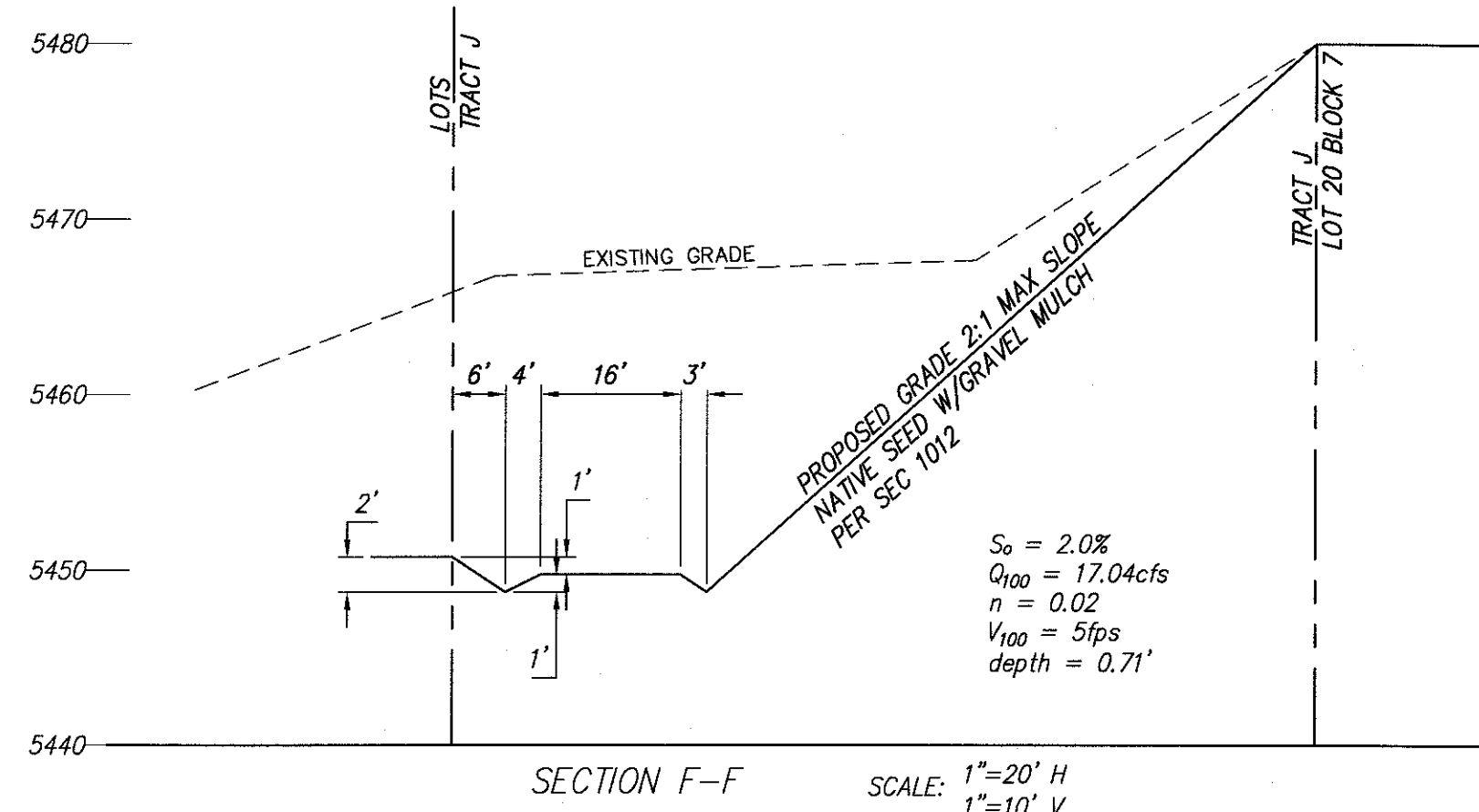
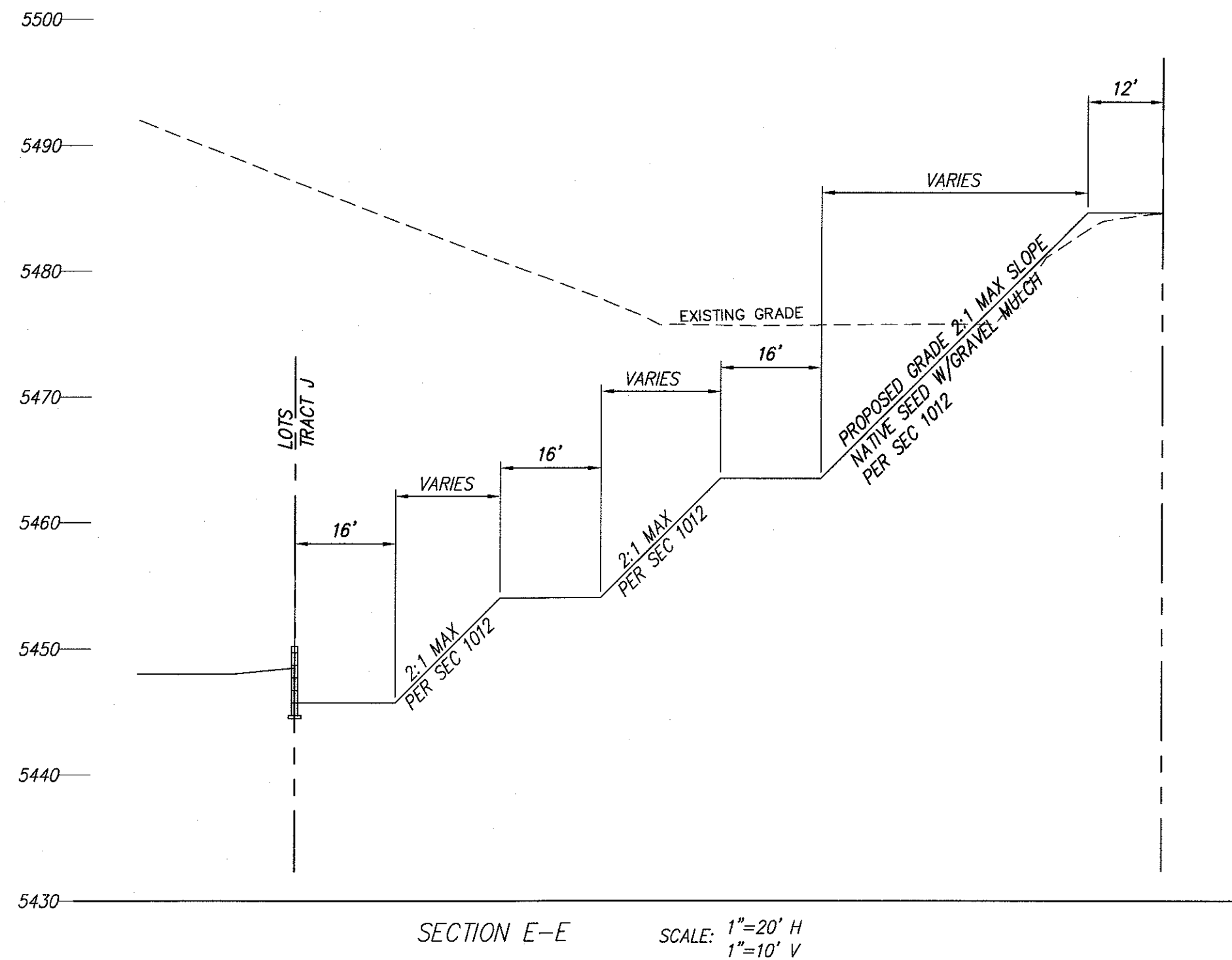
CITY PROJECT NO. ZONE MAP NO. SHEET OF  
 M-21-Z 8 10







F:\A11039\A11039 JTH WEST - PPLAT\GRADE & DRAIN\SECTIONS.DWG, 8/9/2018 10:24:33 AM, SPS



ALL DISTURBED AREA IN TRACT J AND O  
MUST BE REVEGETATED TO 70% OF  
PREDEVELOPMENT GROUND COVER  
DENSITY PRIOR TO RELEASE OF FINANCIAL  
GUARANTEES. NATIVE SEED AND MULCH  
SHALL BE APPLIED IN ACCORDANCE WITH  
SECTION 1012 AND WILL INCLUDE  
FERTILIZER AND SUPPLEMENTAL WATER.

SURVEY INFORMATION		BENCH MARKS		AS-BUILT INFORMATION	
FIELD NOTES		STATION "5-M22"		CONTRACTOR	
BY		ON THE EAST SIDE OF THE MUNICIPAL LIMITS LINE IN THE FOUR HILLS		WORK	
NO.		SUBDIVISION AREA. STATION IS 600 FT. EAST OF MUNICIPAL LIMITS LINE.		INSPECTED BY	
		77.9' SE OF POWER POLE #357 & 186.0' NW OF POWER POLE #60.		DATE	
		STATION IS A STANDARD ACS BRASS DISK SET IN A CONCRETE		ACCEPTANCE BY	
		MONUMENT IN THE GROUND. STATION IS STAMPED "5-M22"		DATE	
		X= 1,564,263.207, Y= 1,475,762.595, (NAD 83), Z= 5597.719 (NAD 1983)		DRAWN BY	
				DATE	
				MICRO-FILM INFORMATION	
				RECORDED BY	
				DATE	
				NO.	

AMENDED

**JUAN TABO HILLS ESTATES**

**GRADING & DRAINAGE PLAN**

**dmg** MARK GOODWIN & ASSOCIATES, P.A.  
CONSULTING ENGINEERS  
P.O. BOX 90606  
ALBUQUERQUE, NEW MEXICO 87199  
OFFICE (505) 828-2200, FAX (505) 797-9539

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
M-21-Z		10	10