

## KEYED NOTES

1. CONSTRUCT 86 LF RETAINING WALL. SEE DETAIL 3, THIS SHEET.
2. INSTALL COLORED CONCRETE DRIVEWAY (BY OTHERS).
3. CONSTRUCT NEW PATIO. SEE ARCHITECTURAL PLANS FOR DETAILS.
4. CONSTRUCT NEW DECK. SEE ARCHITECTURAL PLANS FOR DETAILS.
5. INSTALL COLORED CONCRETE WALKWAY. SEE ARCHITECTURAL PLANS FOR DETAILS.
6. INSTALL NEW 6" TUF-TITE TR1 TRENCH DRAIN.
7. 24 LF 4" SCH. 40 PVC DRAIN PIPE SEE PLAN FOR INVERT ELEVATIONS.
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9. OFFSET FOOTING ADJACENT TO DECK SEE NOTE ON DETAIL 2, THIS SHEET.

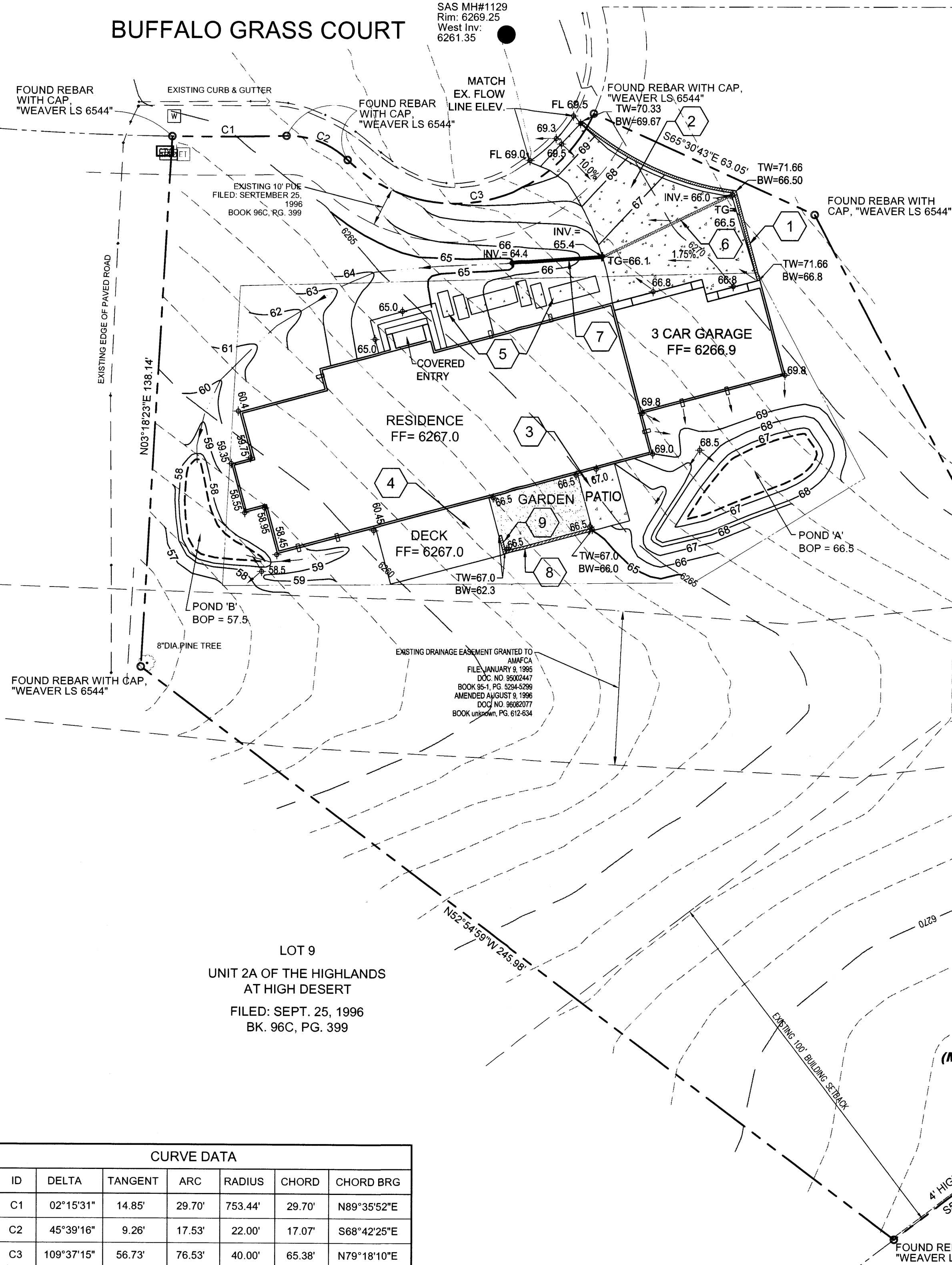
## LEGAL DESCRIPTION

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## UPC NUMBER

1024-062-049-161-304-03

## BUFFALO GRASS COURT

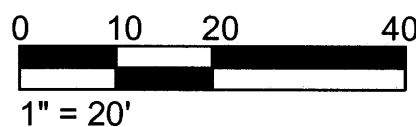
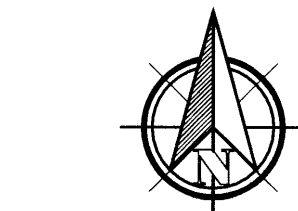


## CURVE DATA

ID	DELTA	TANGENT	ARC	RADIUS	CHORD	CHORD BRG
C1	02°15'31"	14.85'	29.70'	753.44'	29.70'	N89°35'52"E
C2	45°39'16"	9.26'	17.53'	22.00'	17.07'	S68°42'25"E
C3	109°37'15"	56.73'	76.53'	40.00'	65.38'	N79°18'10"E

## 1 GRADING &amp; DRAINAGE PLAN

Scale: 1" = 20'



## ENGINEER'S STATEMENT

I, THE ENGINEER OF RECORD CERTIFY THAT I HAVE PERSONALLY VISITED THE SITE AND THE EXISTING GRADES AND CONTOURS DEPICTED ON THIS PLAN MATCH WHAT PRESENTLY EXISTS AT THIS LOCATION.

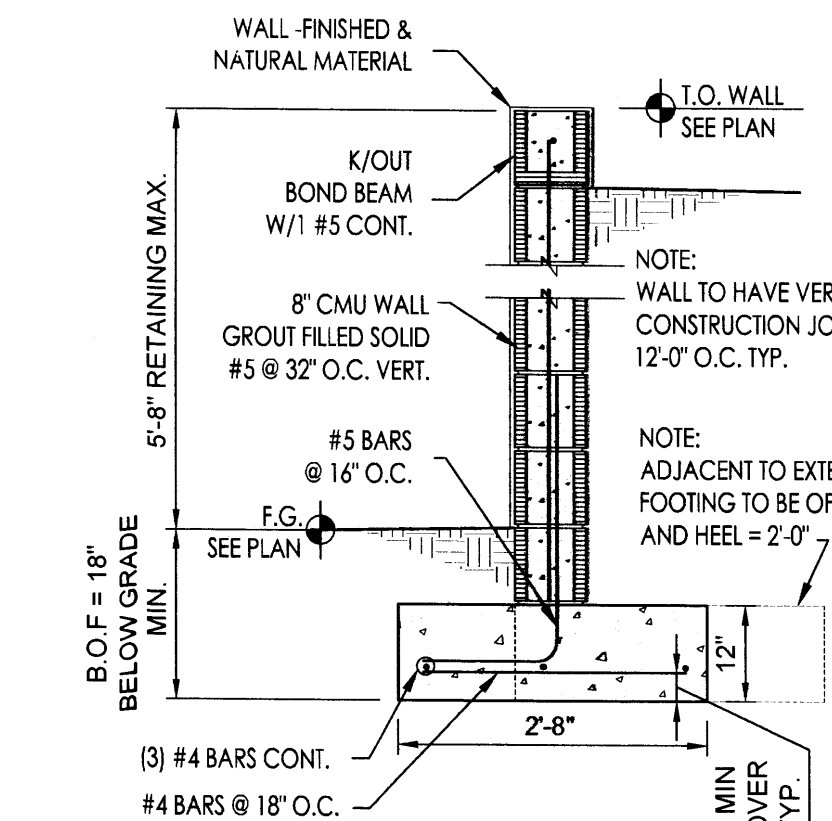
JAMES CRAIG HAGELGANTZ, NMPE #15559

## BENCHMARK

PROJECT BENCHMARK:  
FOUND BRASS CAP,  
T11N, R4E, TR1, AP4,  
S25, TRA, LS 6544, 1983"  
ELEV = 6274.03

## LEGEND

---	6610	EXISTING INDEX CONTOUR
---	6509	EXISTING INTERIM CONTOUR
---	10	NEW INDEX CONTOUR
---	09	NEW INTERIM CONTOUR
+	22.8	NEW SPOT ELEVATION
---		NEW CONCRETE DRIVEWAY
---		NEW BUILDING
---	FF	FINISH FLOOR ELEVATION
---		EXISTING SANITARY SEWER MANHOLE
---		DIRECTION OF FLOW
---		EXISTING FENCE LINE
---		REBAR/BRASS CAP
---		EXISTING TREE/SHRUB
---		FLOWLINE



## 2 RETAINING WALL DETAIL

Scale: NTS

## FIRM MAP

SCALE: NONE

## LOCATION MAP

SCALE: NONE

## DRAINAGE NARRATIVE

THE SITE FOR THIS GRADING PLAN IS LOT 10 TRACT 14 B (E23DD003K) OF HIGH DESERT ESTATES IN ALBUQUERQUE, NEW MEXICO. THE SITE IS CONTAINED WITHIN THE HIGH DESERT MASTER DRAINAGE PLAN. THE SITE IS LOCATED ON SOUTH SIDE OF A CUL-DE-SAC AT THE END OF BUFFALO GRASS COURT. THE SITE CONTAINS APPROXIMATELY 1.136 ACRES AND IS CURRENTLY UNDEVELOPED WITH NO STRUCTURES OR DRIVEWAY. THE SITE CURRENTLY DRAINS FROM EAST TO WEST ALONG NATURAL SLOPES AND IS BISECTED WITH AN AMAFCA DRAINAGE EASEMENT. THE PORTION OF THE NORTH SIDE OF THE LOT IS WITHIN A TYPE X FLOOD PLAIN. (SEE MAP THIS SHEET) NO PORTION OF THE LOT IS LOCATED WITHIN A 100 YEAR FLOOD PLAIN.

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## ONSITE DRAINAGE RETENTION

FIRST FLUSH STORAGE REQUIRED BY COA HYDROLOGY:

PROVIDE STORAGE FOR FIRST FLUSH RUNOFF PER SECTION 22 OF DPM  
TABLE A-6 USE 0.1 - 0.44 = 0.34 IN

FIRST FLUSH (IN) APPLIED OVER IMPERVIOUS AREAS (ACRES)  
THEREFORE 0.34/12 X 0.169 X 43560 = 209CF

FIRST FLUSH PONDING AREA REQD. = 209 CF < 815 CF PROVIDED

## DRAINAGE CALCULATIONS

<b>Hydrology Calculations</b> DFM - Volume 2, October 2008 Section 22.2 Hydrology				
Precipitation Zone	4			
100 Year Storm Depth, P (360)	2.9			
Treatment Area	A	B	C	D
Excess Precipitation Factors	0.8	1.08	1.46	2.64
Peak Discharge Factors	2.20	2.92	3.73	5.25
Land Treatment Area	Acres	Existing	Allowable	Proposed
Type "D" (Impervious, Roof, Driveway, Ect.)	0	0.19	0.176	
Type "C" (Compacted Soil > 10%)	0	0.23	0.04	
Type "B" (Compacted Native Soil)	0	0.23	0.10	
Type "A" (Undeveloped)	1.1362	0.49	0.82	
Total (Acres)	1.136	1.136	1.136	
Excess Precipitation (in)	0.80	1.30	1.13	
Volume (100), cf	3300	5364	4673	
Volume (10), cf	2211	3594	3131	
Q (100), cfs	2.50	3.61	3.17	
Q (10), cfs	1.67	2.42	2.12	
Ponding Volume Required, cf = $V(10)_{proposed} - V(10)_{existing}$	920			

POND VOLUME PROVIDED:

POND 'A' = 816 CF

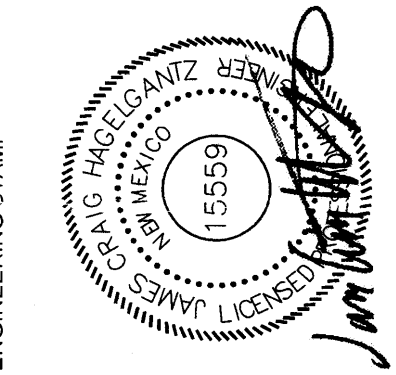
POND 'B' = 130 CF

TOTAL PONDING PROVIDED = 946 CF > 920 CF

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8102 Menaul Blvd. NE, Suite D, Albuquerque, NM 87110  
tele: 505.255.7902  
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REV NO. REV. DATE DESCRIPTION



DO NOT SCALE DRAWINGS  
CONTRACTOR TO VERIFY ALL  
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CHAO \ LIMARY HOME  
6001 BUFFALO GRASS COURT  
ALBUQUERQUE, NEW MEXICO 87111

SHEET TITLE

GRADING  
AND  
DRAINAGE  
PLAN

SHEET NUMBER

C-101

DESIGNED BY: JCH PROJECT NO.: 14-034  
DRAWN BY: CB DATE: JUNE 2015



## KEYED NOTES

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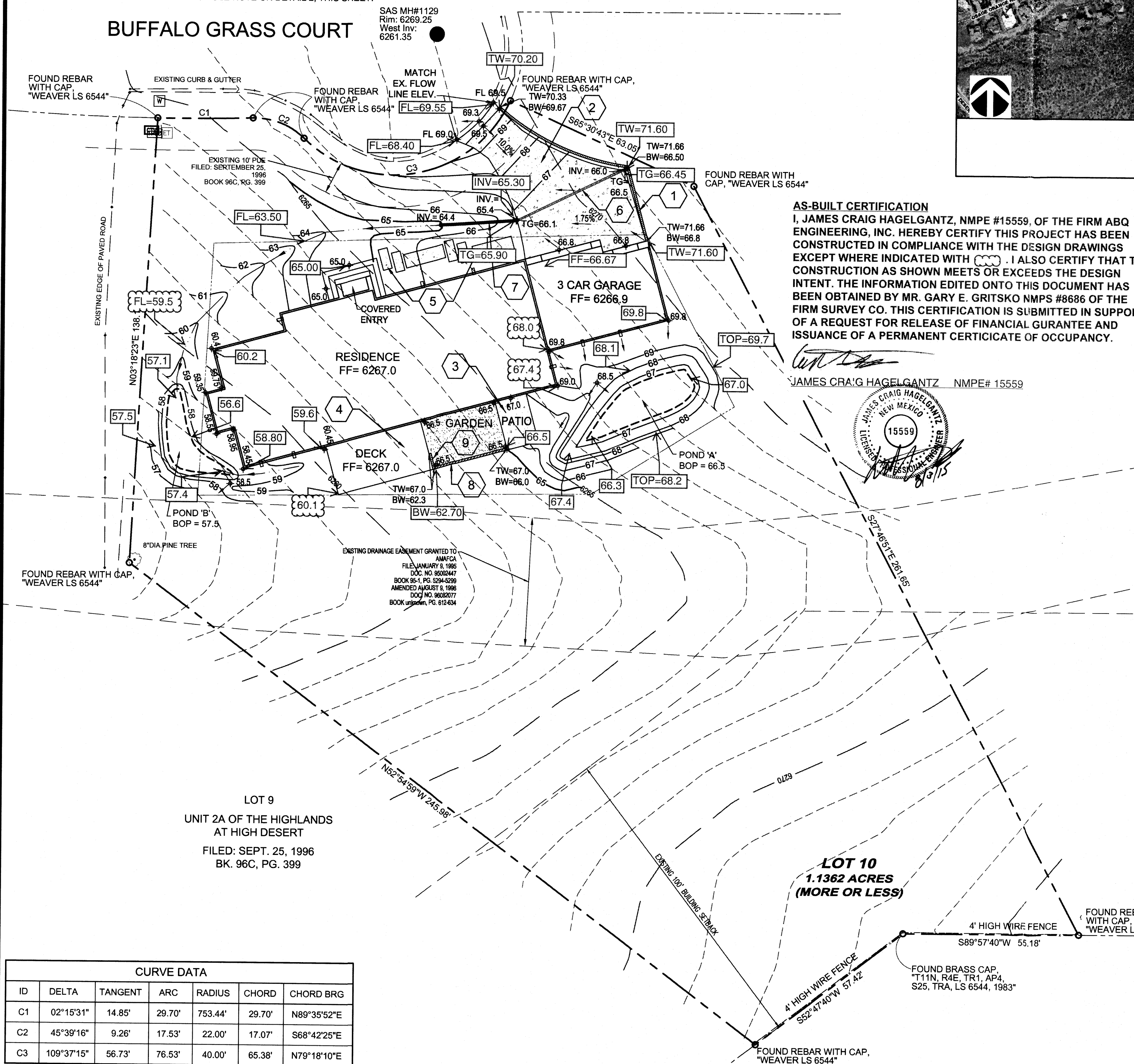
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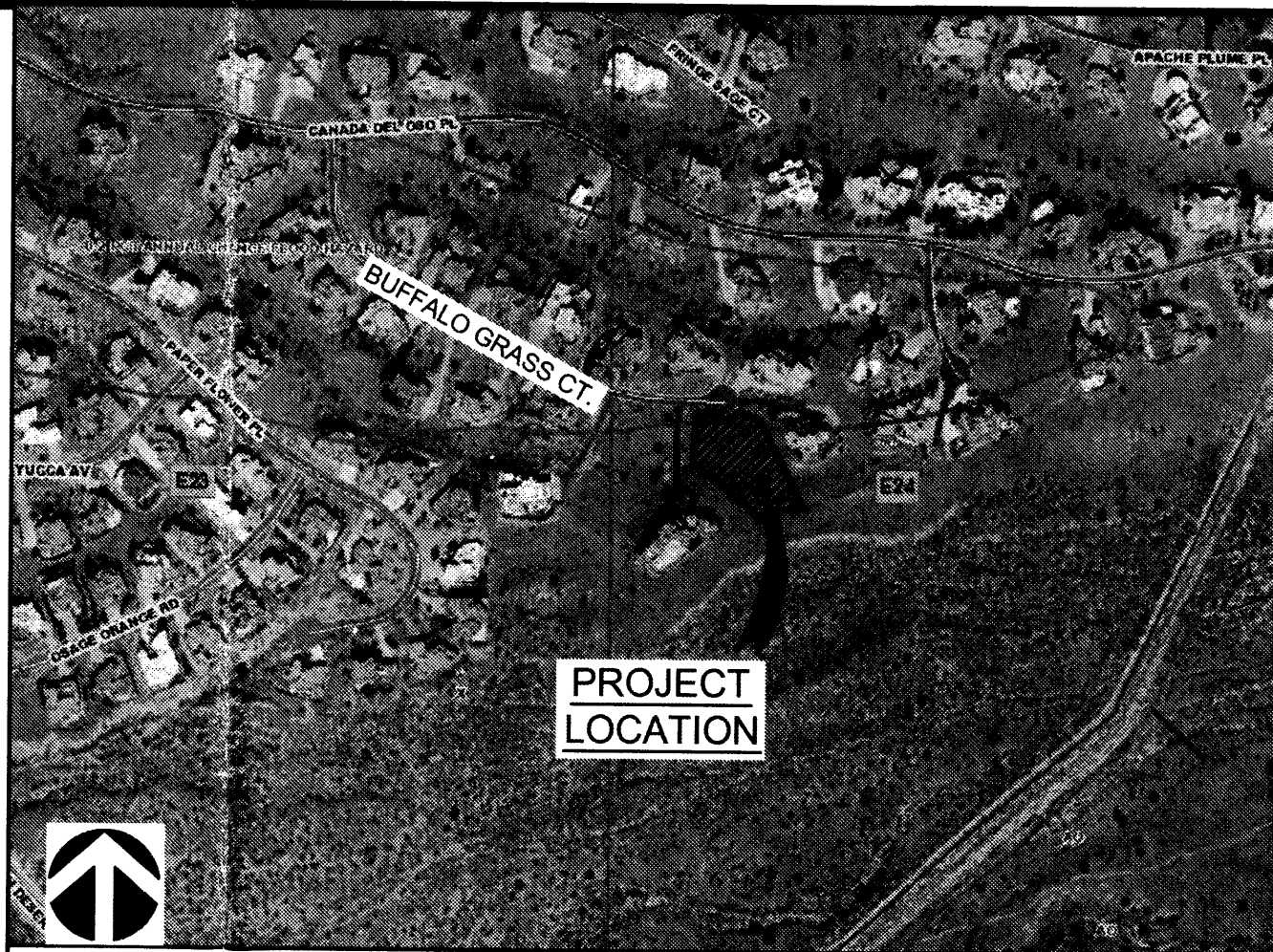
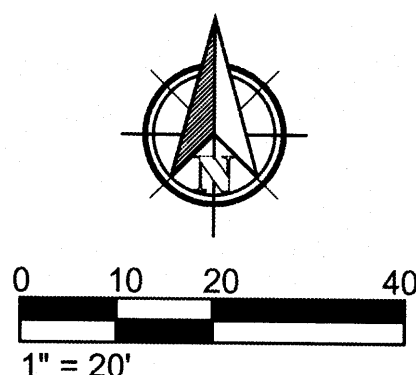
1024-062-049-161-304-03

## BUFFALO GRASS COURT



## GRADING &amp; DRAINAGE PLAN

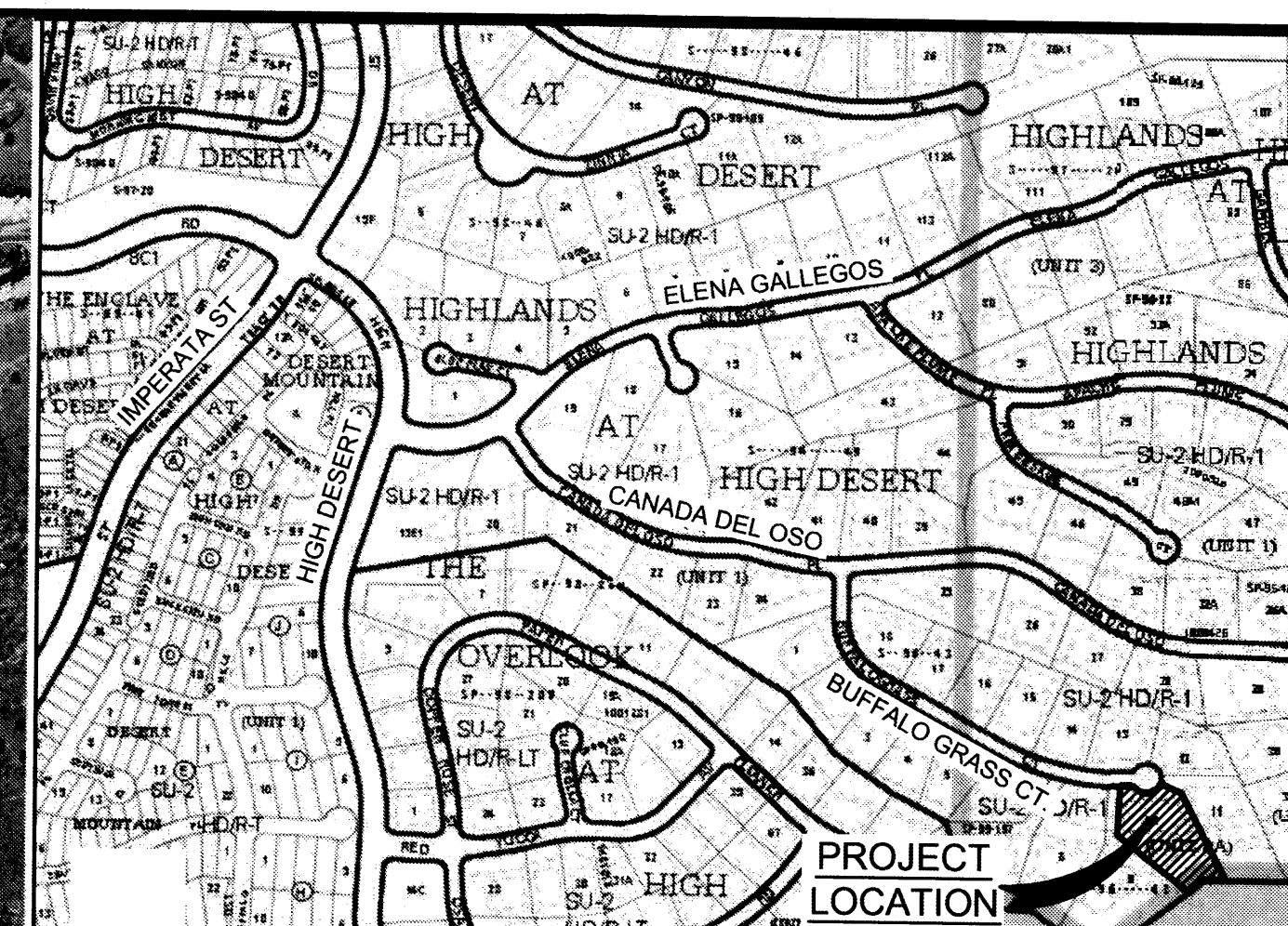
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## PROJECT LOCATION

## FIRM MAP

SCALE: NONE



## LOCATION MAP

SCALE: NONE

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## DRAINAGE CALCULATIONS

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Land Treatment Area	Acres	Existing	Allowable	Proposed
Type "D" (Impervious, Roof, Driveway, Ect.)		0	0.19	0.178
Type "C" (Compacted Soil > 10%)		0	0.23	0.04
Type "B" (Compacted Native Soil)		0	0.23	0.10
Type "A" (Undeveloped)		1.1362	0.49	0.82
Total (Acres)		1.136	1.136	1.136
Excess Precipitation(in)		0.80	1.30	1.13
Volume (100), cf		3300	5364	4673
Volume (10), cf		2211	3594	3131
Q (100), cfs		2.50	3.61	3.17
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Ponding Volume Required , cf = V(10)proposed-V(10)existing				920

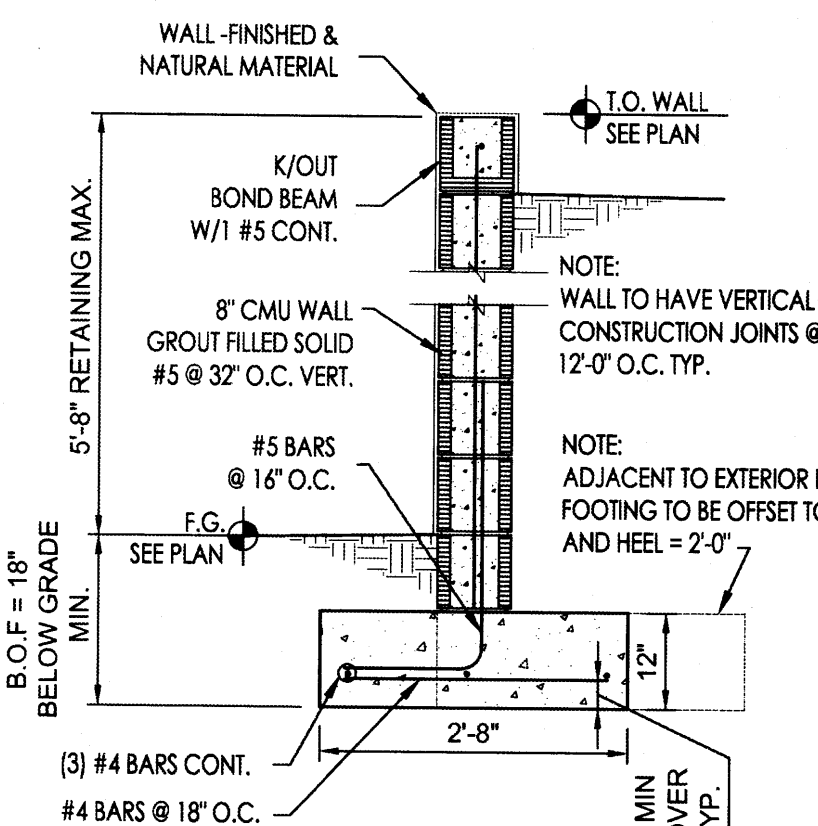
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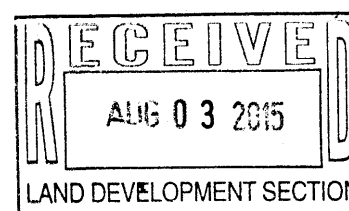
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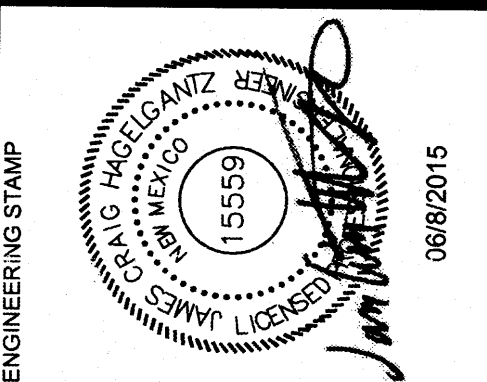
## RETAINING WALL DETAIL

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DESIGNED BY: JCH PROJECT NO.: 14-034  
DRAWN BY: CB DATE: JUNE 2015

SHEET TITLE

GRADING  
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## KEYED NOTES

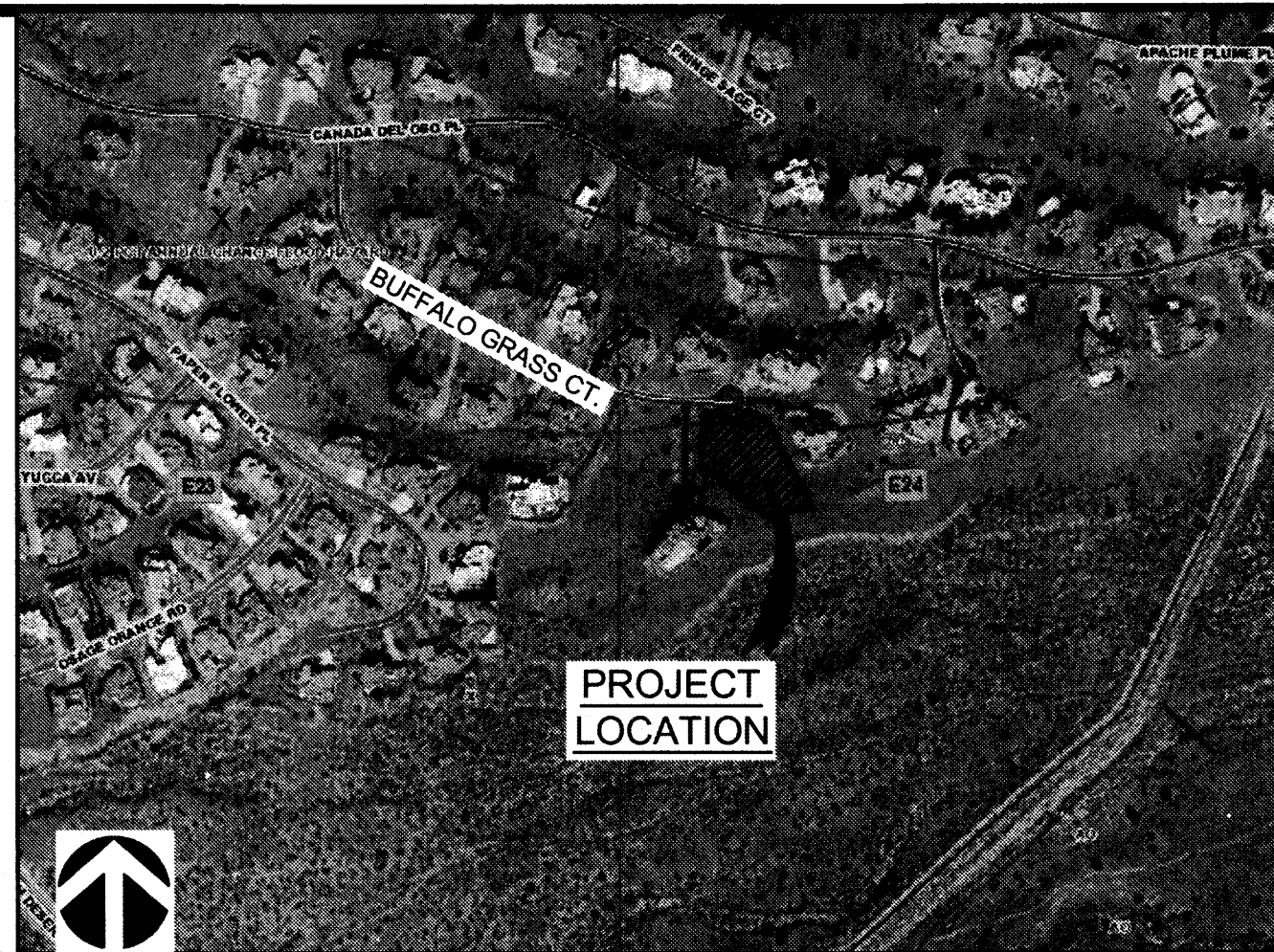
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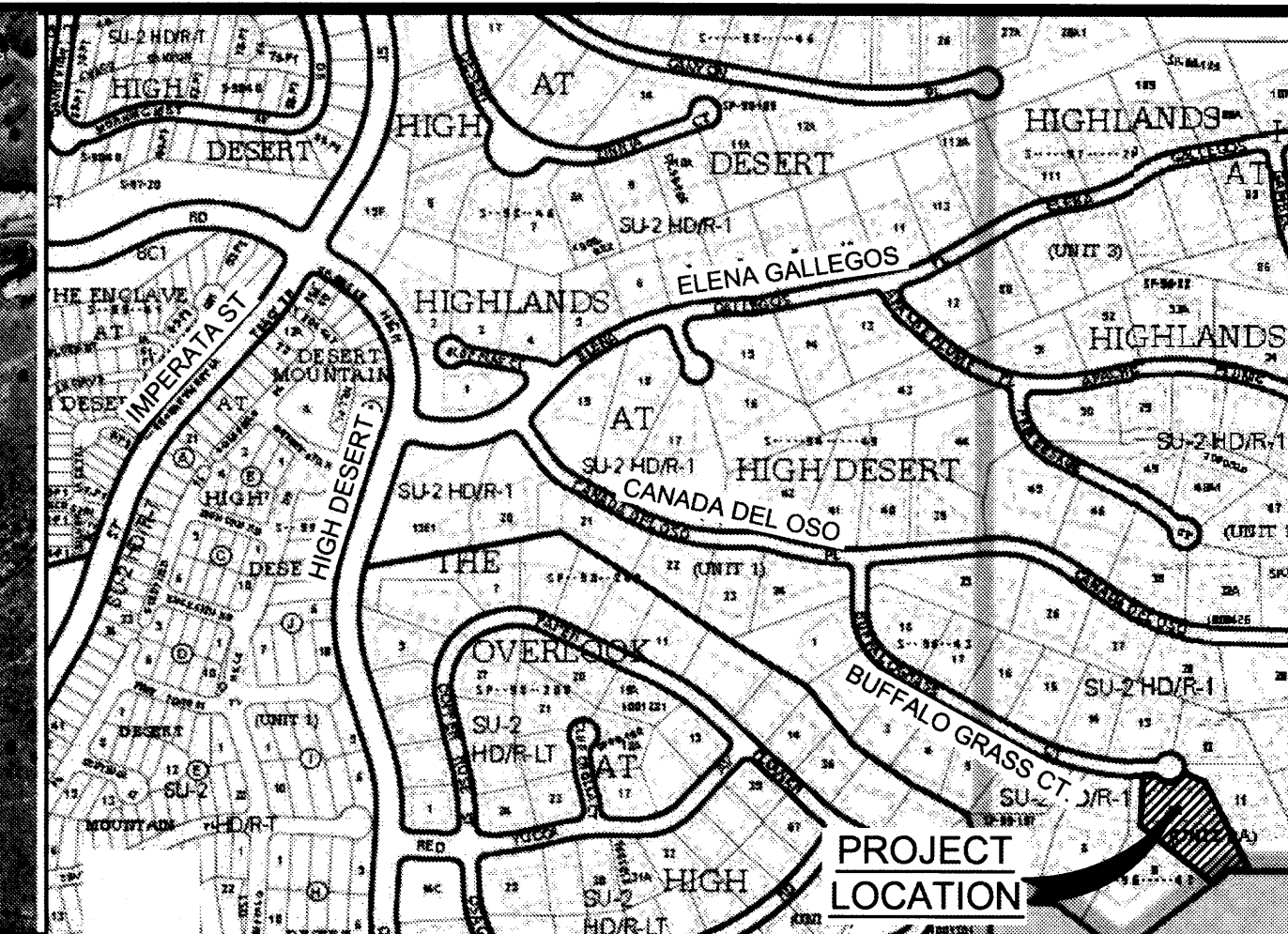
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## FIRM MAP

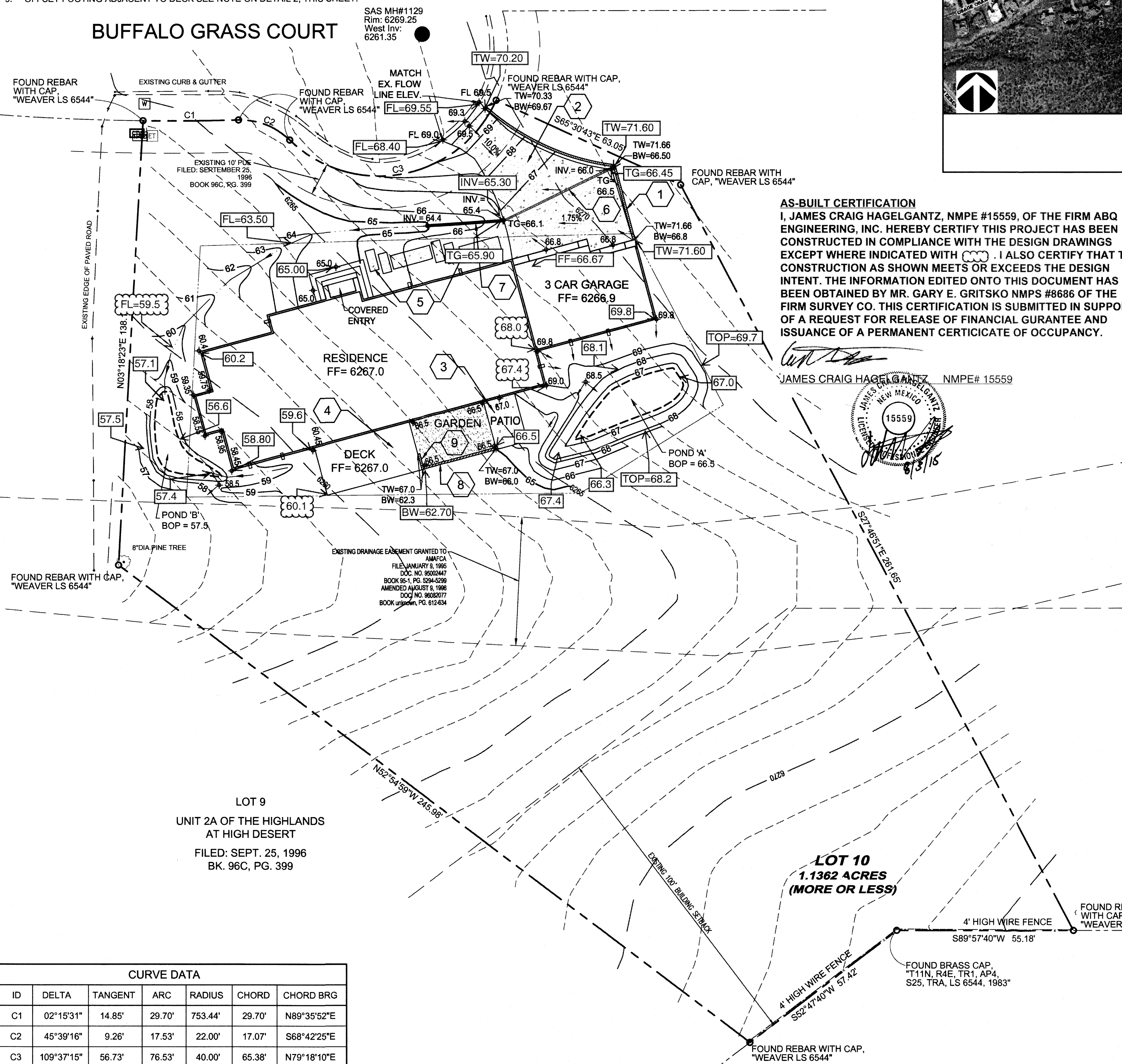
SCALE: NONE



## LOCATION MAP

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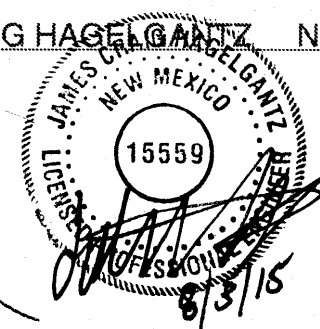
## BUFFALO GRASS COURT



## AS-BUILT CERTIFICATION

I, JAMES CRAIG HAGELGANTZ, NMPE #15559, OF THE FIRM ABQ ENGINEERING, INC. HEREBY CERTIFY THIS PROJECT HAS BEEN CONSTRUCTED IN COMPLIANCE WITH THE DESIGN DRAWINGS EXCEPT WHERE INDICATED WITH (---). I ALSO CERTIFY THAT THE CONSTRUCTION AS SHOWN MEETS OR EXCEEDS THE DESIGN INTENT. THE INFORMATION EDITED ONTO THIS DOCUMENT HAS BEEN OBTAINED BY MR. GARY E. GRITSKO NMPS #8686 OF THE FIRM SURVEY CO. THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF A REQUEST FOR RELEASE OF FINANCIAL GUARANTEE AND ISSUANCE OF A PERMANENT CERTIFICATE OF OCCUPANCY.

JAMES CRAIG HAGELGANTZ NMPE# 15559



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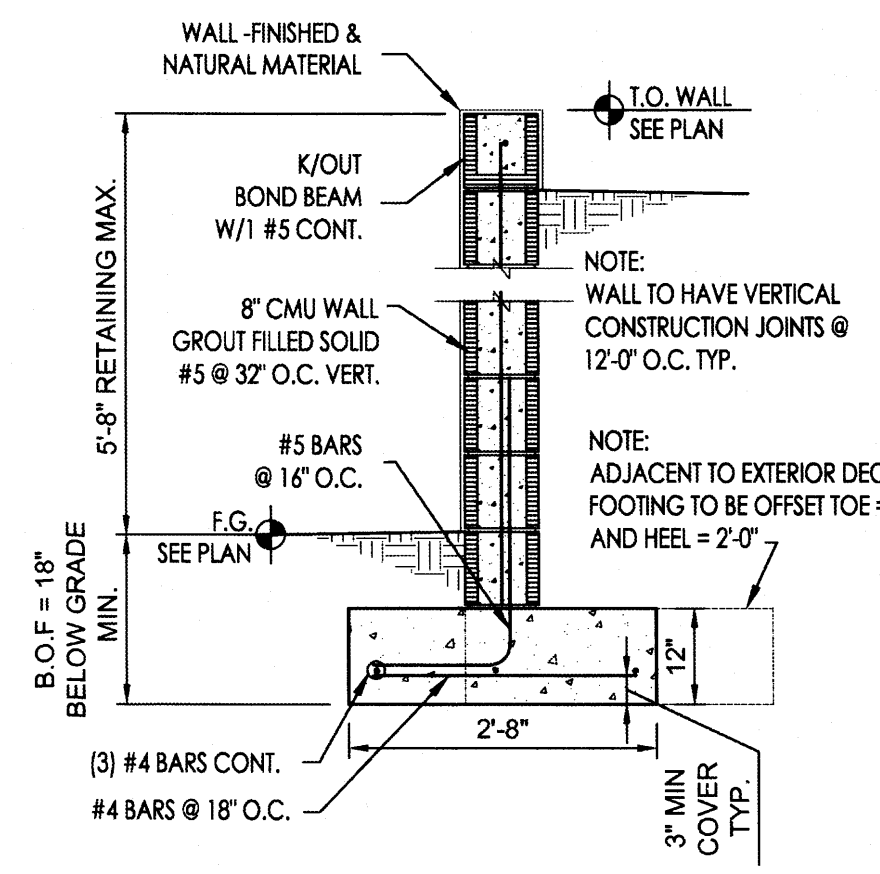
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## RETAINING WALL DETAIL

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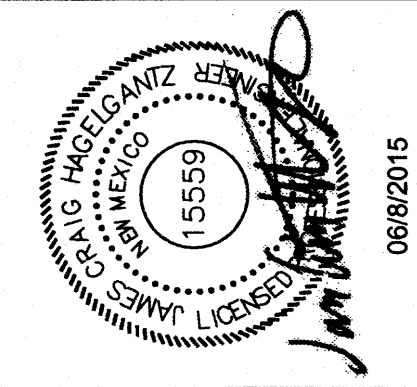
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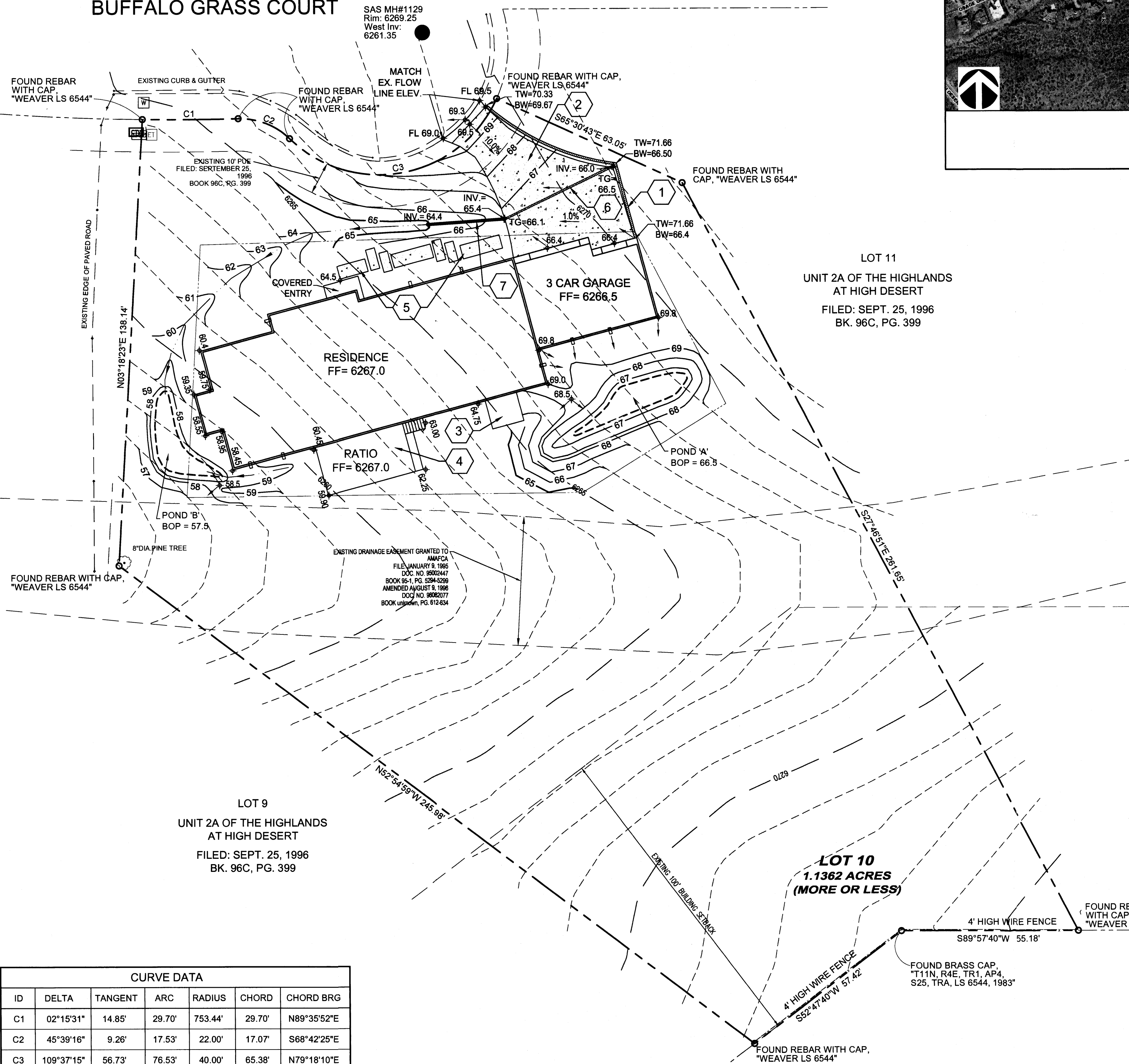
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## UPC NUMBER

1024-062-049-161-304-03

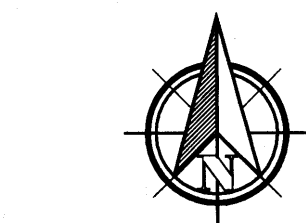
## BUFFALO GRASS COURT



CURVE DATA						
ID	DELTA	TANGENT	ARC	RADIUS	CHORD	CHORD BRG
C1	02°15'31"	14.85'	29.70'	753.44'	29.70'	N89°35'52"E
C2	45°39'16"	9.26'	17.53'	22.00'	17.07'	S68°42'25"E
C3	109°37'15"	56.73'	76.53'	40.00'	65.38'	N79°18'10"E

## GRADING &amp; DRAINAGE PLAN

Scale: 1" = 20'



## ENGINEER'S STATEMENT

I, THE ENGINEER OF RECORD CERTIFY THAT I HAVE PERSONALLY VISITED THE SITE AND THE EXISTING GRADES AND CONTOURS DEPICTED ON THIS PLAN MATCH WHAT PRESENTLY EXISTS AT THIS LOCATION.

JAMES CRAIG HAGELGANTZ, NMPE #15559

## BENCHMARK

PROJECT BENCHMARK:  
FOUND BRASS CAP,  
T11N, R4E, TR1, AP4,  
S25, TRA, LS 6544, 1983"  
ELEV = 6274.03

## LEGEND

---	EXISTING INDEX CONTOUR
---	EXISTING INTERIM CONTOUR
---	NEW INDEX CONTOUR
---	NEW INTERIM CONTOUR
+	NEW SPOT ELEVATION
---	NEW CONCRETE DRIVEWAY
---	NEW BUILDING
---	FINISH FLOOR ELEVATION
---	EXISTING SANITARY SEWER MANHOLE
---	DIRECTION OF FLOW
---	EXISTING FENCE LINE
---	REBAR/BRASS CAP
---	EXISTING TREE/SHRUB
---	FLOWLINE

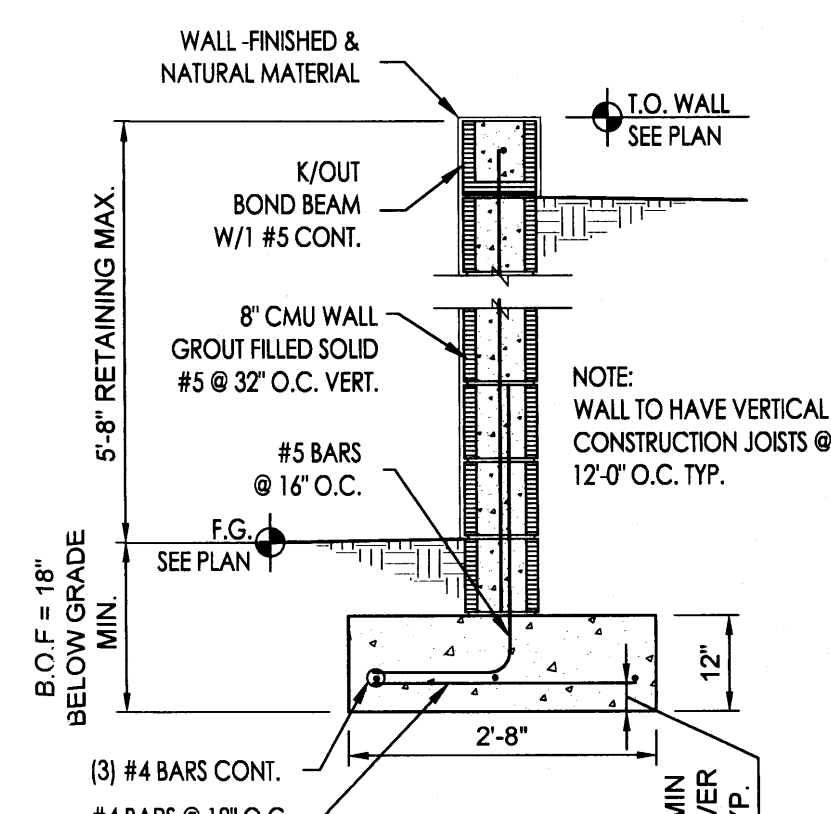
## NCC APPROVED

THESE PLANS WERE APPROVED BY THE NCC ON 29 Sep 14. A LETTER OF APPROVAL WAS ISSUED BY THE NCC WHICH LISTS CONDITIONS THAT MUST BE MET AS STATED IN THE LETTER DATED 29 Sep 14.

MEMBER DATE MEMBER DATE  
MEMBER DATE MEMBER DATE

## RETAINING WALL DETAIL

Scale: NTS



## DRAINAGE NARRATIVE

THE SITE FOR THIS GRADING PLAN IS LOT 10 TRACT 14 B (E23DD003K) OF HIGH DESERT ESTATES IN ALBUQUERQUE, NEW MEXICO. THE SITE IS CONTAINED WITHIN THE HIGH DESERT MASTER DRAINAGE PLAN. THE SITE IS LOCATED ON SOUTH SIDE OF A CUL-DE-SAC AT THE END OF BUFFALO GRASS COURT. THE SITE CONTAINS APPROXIMATELY 1.136 ACRES AND IS CURRENTLY UNDEVELOPED WITH NO STRUCTURES OR DRIVEWAY. THE SITE CURRENTLY DRAINS FROM EAST TO WEST ALONG NATURAL SLOPES AND IS BISECTED WITH AN AMAFCA DRAINAGE EASEMENT. THE PORTION OF THE NORTH SIDE OF THE LOT IS WITHIN A TYPE X FLOOD PLAIN. (SEE MAP THIS SHEET) NO PORTION OF THE LOT IS LOCATED WITHIN A 100 YEAR FLOOD PLAIN.

WITH THIS DEVELOPMENT, THE PROPOSED RESIDENCE WILL BE CONSTRUCTED ON THE NORTHERN PORTION OF THE SITE WITH A DRIVEWAY BETWEEN THE ADJACENT STREET AND PROPOSED GARAGE. THE MAJORITY OF THE SITE HISTORICALLY DRAINED TOWARD THE ARROYO IN THE MIDDLE OF THE SITE. THE PORTION OF THE SITE SOUTH OF THE ARROYO WILL REMAIN UNDEVELOPED. WHILE THE NEW GRADING MAINTAINS THE HISTORICAL DRAINAGE PATTERN, THE ADDITION OF THE ONSITE PONDING AREAS WILL CAPTURE AND MANAGE THE 90TH PERCENTILE STORM EVENT WHICH IS 0.44 IN. THE PONDING AREAS HAVE BEEN SIZED TO RETAIN THE "FIRST FLUSH" RUNOFF PER COA DRAINAGE ORDINANCE (SEE CALCULATIONS BELOW)

## ONSITE DRAINAGE RETENTION

## STORAGE REQUIRED BY COA HYDROLOGY:

PROVIDE STORAGE FOR FIRST FLUSH RUNOFF PER SECTION 22 OF DPM  
TABLE A-6 USE 0.1 - 0.44 = 0.34 IN

FIRST FLUSH (IN) APPLIED OVER IMPERVIOUS AREAS (ACRES)  
THEREFORE 0.34/12 X 0.169 X 43560 = 209 CF

FIRST FLUSH PONDING AREA REQ. = 209 CF < 815 CF PROVIDED

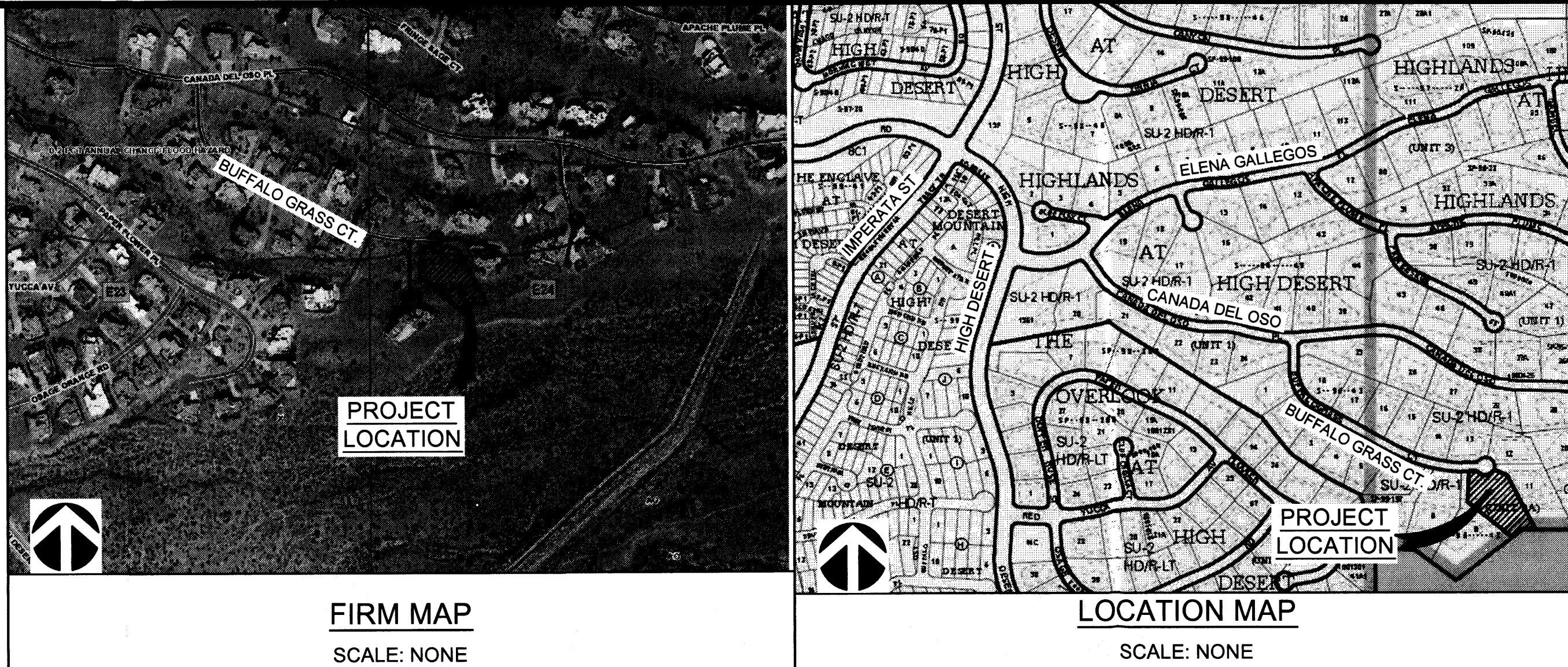
## DRAINAGE CALCULATIONS

Hydrology Calculations				
DPM - Volume 2, October 2008				
Section 22.2 Hydrology				
Precipitation Zone	4			
100 Year Storm Depth, P (360)	2.9			
Treatment Area	A	B	C	D
Excess Precipitation Factors	0.8	1.08	1.46	2.64
Peak Discharge Factors	2.20	2.92	3.73	5.25
Land Treatment Area	Acres	Existing	Allowable	Proposed
Type "D" (Impervious, Roof, Driveway, Etc.)	0	0.19	0.169	
Type "C" (Compacted Soil >10%)	0	0.23	0.01	
Type "B" (Compacted Native Soil)	0	0.23	0.06	
Type "A" (Undeveloped)	1.1362	0.49	0.90	
Total (Acres)	1.136	1.136	1.136	
Excess Precipitation(in)	0.80	1.30	1.09	
Volume (100) cf	3300	5364	4515	
Volume (10) cf	2211	3594	3025	
Q (100) cfs	2.50	3.61	3.07	
Q (10) cfs	1.67	2.42	2.06	
Ponding Volume Required, cf = V(10)proposed-V(10)existing	815			

## POND VOLUME PROVIDED:

POND 'A' = 685 CF  
POND 'B' = 130 CF

TOTAL PONDING PROVIDED = 820 CF > 815 CF



## FIRM MAP

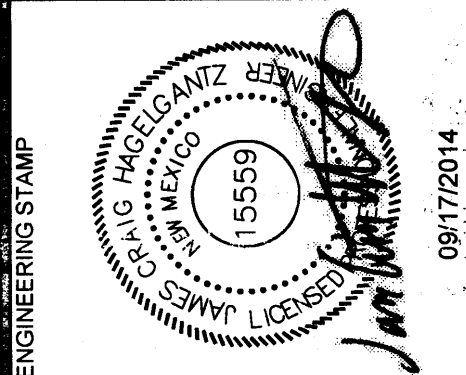
SCALE: NONE

## LOCATION MAP

SCALE: NONE

**ABQ Engineering**

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CHAO LIMARY HOME  
6001 BUFFALO GRASS COURT  
ALBUQUERQUE, NEW MEXICO 87111

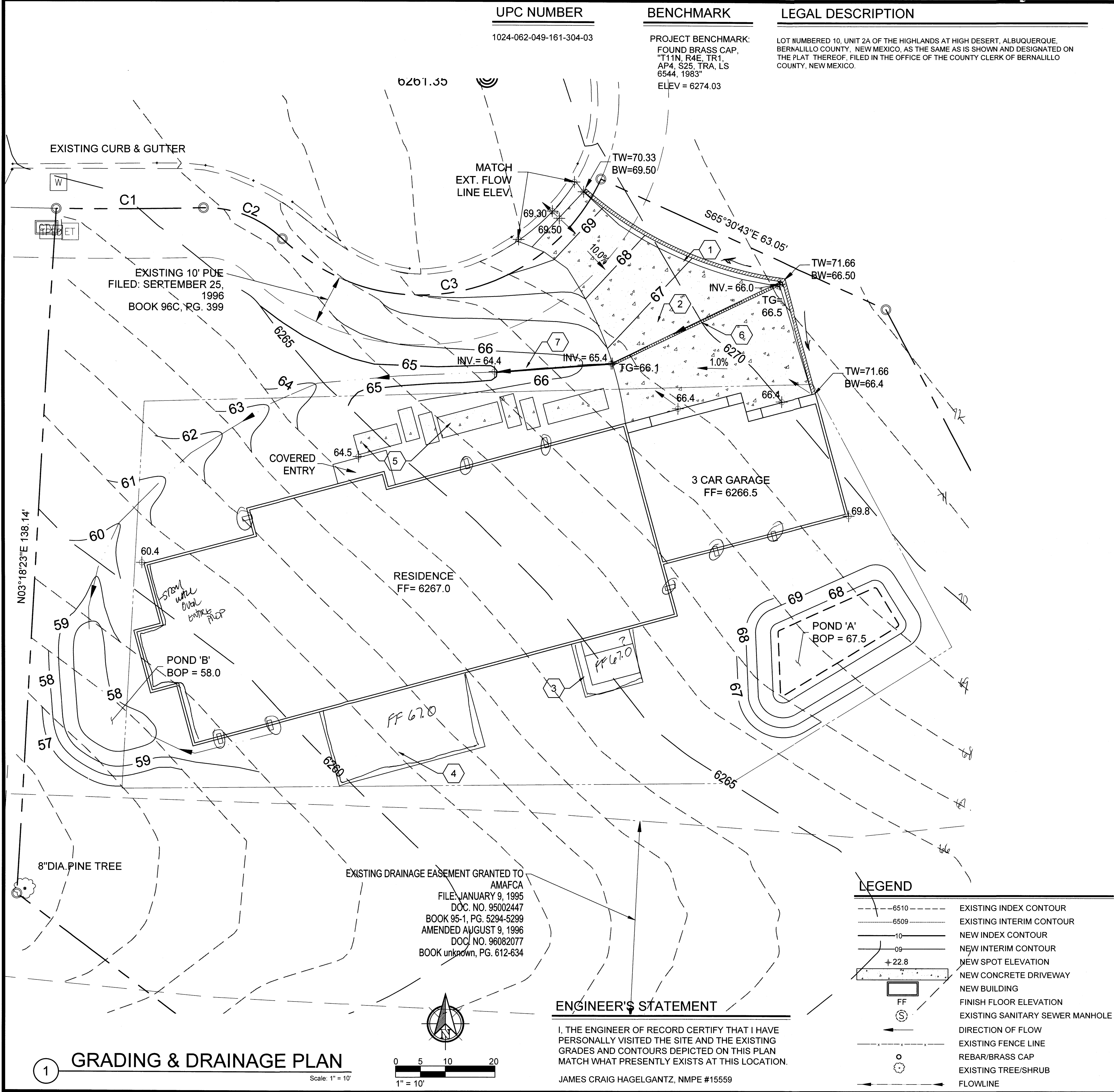
DESIGNED BY: PROJECT NO.: 14-034  
DRAWN BY: DATE: AUGUST 2014

SHEET TITLE

SHEET NUMBER



LAST MODIFIED: Sep 16, 2014 - 2:13pm BY USER: Craig  
C:\Users\craig\appdata\local\temp\McAulish\_8728\1  
DWG NAME: 14-034 DRAINAGE



KEYED NOTES

1. CONSTRUCT 86 LF RETAINING WALL. SEE DETAIL 3, THIS SHEET.
2. INSTALL COLORED CONCRETE DRIVEWAY (BY OTHERS).
3. CONSTRUCT NEW PATIO. SEE ARCHITECTURAL PLANS FOR DETAILS.
4. CONSTRUCT NEW DECK. SEE ARCHITECTURAL PLANS FOR DETAILS.
5. INSTALL COLORED CONCRETE WALKWAY. SEE ARCHITECTURAL PLANS FOR DETAILS.
6. INSTALL NEW 6" TUF-TITE TR1 TRENCH DRAIN.
7. 4" SCH. 40 PVC DRAIN PIPE SEE PLAN FOR INVERT ELEVATIONS

DRAINAGE CALCULATIONS

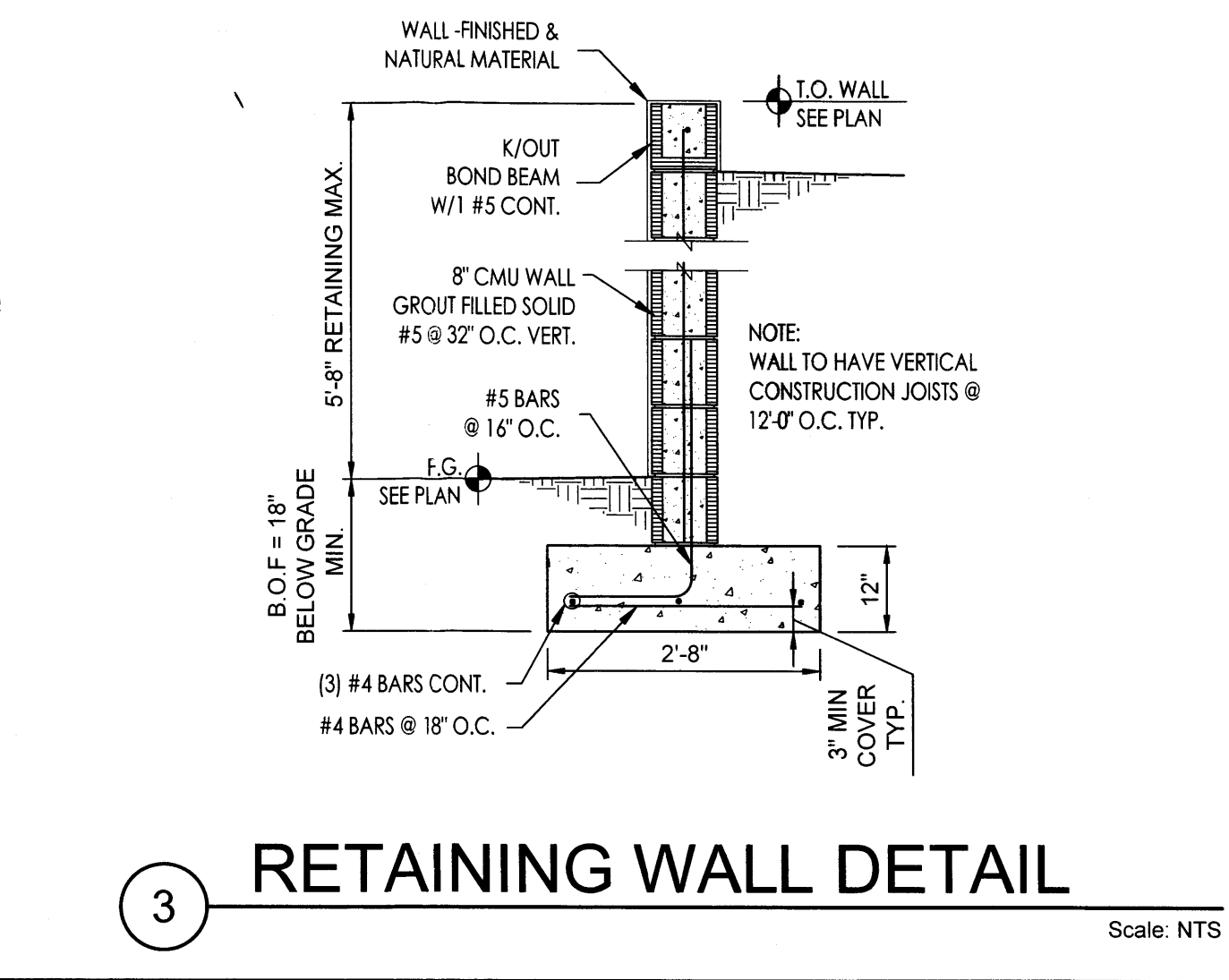
Hydrology Calculations  
DPM - Volume 2, October 2008  
Section 22.2 Hydrology

Precipitation Zone				
100 Year Storm Depth, P (360)	4			
	2.9			
Treatment Area	A	B	C	D
Excess Precipitation Factors	0.8	1.08	1.48	2.64
Peak Discharge Factors	2.20	2.92	3.73	5.25
Land Treatment Area	Acres	Existing	Allowable	Proposed
Type "D" (Impervious, Roof, Driveway, Ect.)		0	0.19	0.19
Type "C" (Unpaved Roadway)		0	0.23	0.00
Type "B" (Irrigated Lawns)		0	0.23	0.00
Type "A" (Undeveloped)		1.1362	0.49	0.97
Total (Acres)		1.136	1.136	1.136
Excess Precipitation(in)		0.80	1.28	1.07
Volume (100), cf		3300	5297	4430
Volume (10), cf		2211	3549	2968
Q (100), cfs		2.50	3.47	3.02
Q (10), cfs		1.67	2.32	2.02
Ponding Volume Required ,cf = V(10)proposed-V(10)existing =				758

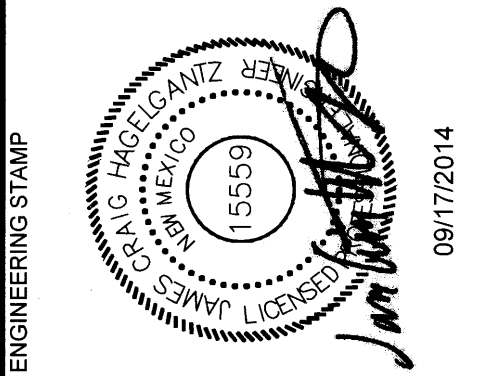
POND VOLUME PROVIDED:

POND 'A'= 670 CF  
POND 'B'= 130 CF

TOTAL PONDING PROVIDED = 800 CF > 758 CF



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GRADING  
AND  
DRAINAGE  
PLAN

C-101

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