

LEGEND

	CURB & GUTTER
	BOUNDARY LINE
	EASEMENT
	CENTERLINE
	RIGHT-OF-WAY
	BUILDING
	SIDEWALK
	SCREEN WALL
	RETAINING WALL
	CONTOUR MAJOR
	CONTOUR MINOR
	SPOT ELEVATION
	FLOW ARROW
	EXISTING CURB & GUTTER
	EXISTING BOUNDARY LINE
	PROPOSED CONTOUR MAJOR
	PROPOSED CONTOUR MINOR
	EXISTING CONTOUR MAJOR
	EXISTING CONTOUR MINOR
	EXISTING SPOT ELEVATION

CAUTION:
 ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS, PRIOR TO STARTING THE WORK. ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.

Interim Grading Plan
 The Overall Mass Grading Plan (F160003E1) that was approved February 1, 2018 with a stamp date of 01/25/18 shall become an Interim Grading Plan. The original idea was to use the vacant tract as a large regional pond and a multi-purpose park. However that concept was changed to establish a pad site for future development.
 This plan is to be used to establish the pad site for the Top Golf project and over a course of time the pit area will be filled in with clean engineered fill material. A ponding area will be maintained in the northwest corner of the parcel and shall act as a retention pond until the point where the site is completely filled in and then it shall revert back to a detention pond as shown on the Final Grading and Drainage Plan.
 The calculations completed and provided on the plans are for an ultimate build out and the final pond is sized for the appropriate developed volumes. When the pond reverts back to a detention pond, the outflow is sized to pass through the off-site flows that were diverted from the existing storm sewer. The detention pond will not act as a first flush pond of the entire area draining through the existing pipe.

How ARE YOU STABILIZING STEEP SIDE SLOPES?

** CGN PILING STATEMENTS*

** ADD BM INFO*

- NOTICE TO CONTRACTORS**
- TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
 - PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONNECTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
 - BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
 - MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
 - SOURCE OF TOPO IS ALTA/ACSM LAND TITLE SURVEY OF LOT 2 HARMS INDUSTRIAL PARK PREPARED BY PRECISION SURVEYS, INC DATED JANUARY 11, 2012.
 - STORM WATER RUNOFF WILL BE PASSIVELY HARVESTED ALONG THE WEST, SOUTH AND EAST PROPERTY LINES WITHIN LANDSCAPED AREAS IN COMPLIANCE WITH WATER CONSERVATION ORDINANCE REQUIREMENTS.

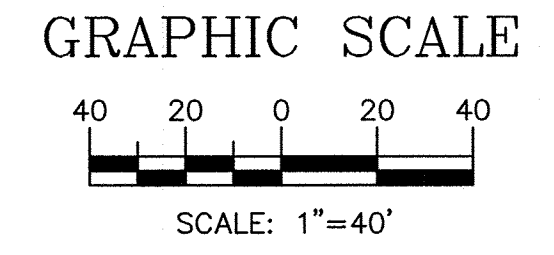
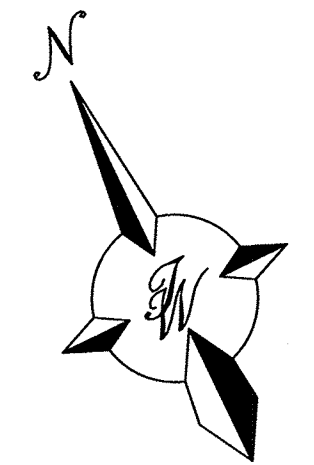
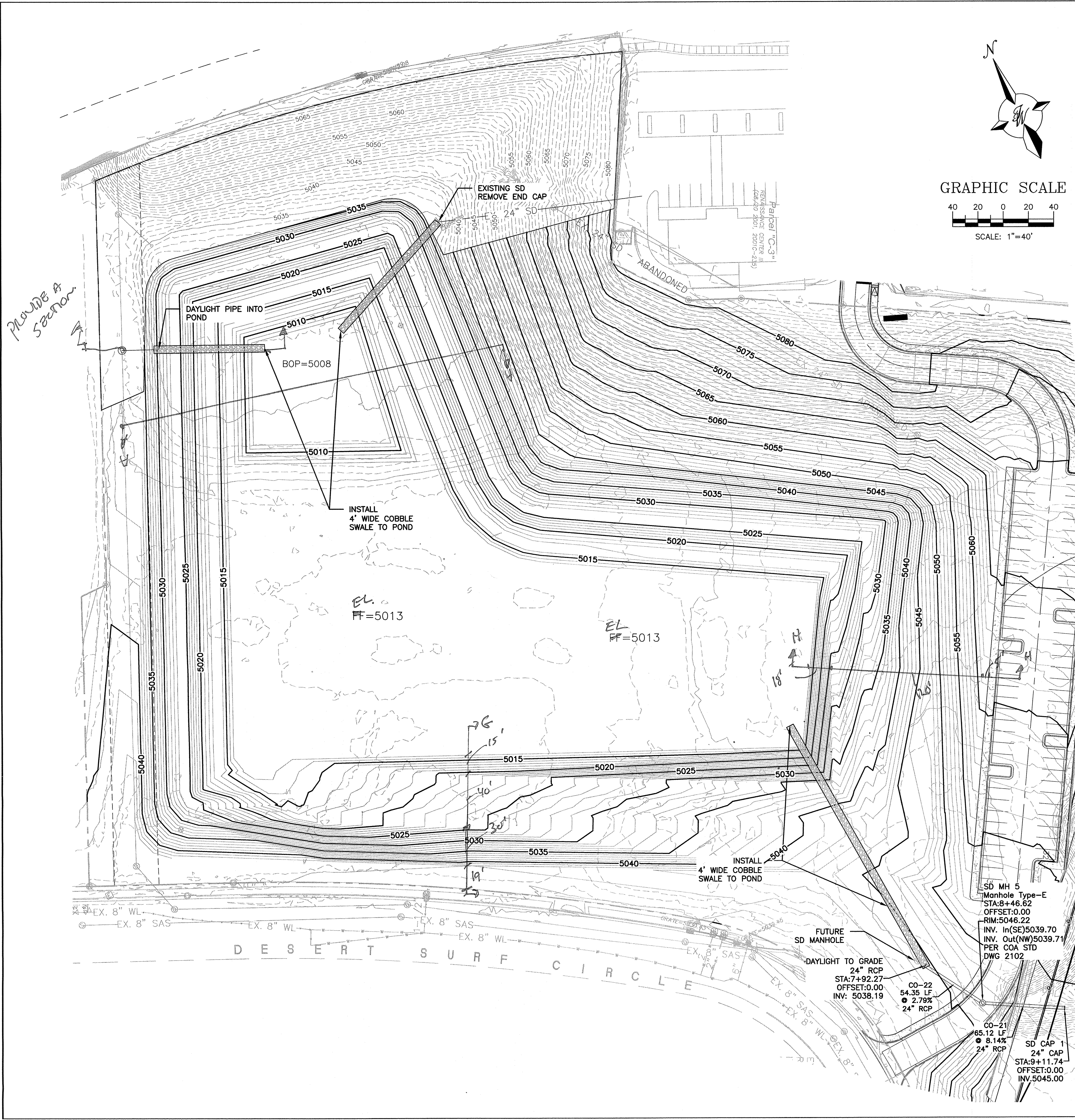
** Jankov R's*

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

ENGINEER'S SEAL
 RONALD R. BOHANNAN
 NEW MEXICO
 7868
 PROFESSIONAL ENGINEER
 9/27/2018
 RONALD R. BOHANNAN
 P.E. #7868

MULTI-USE RECREATIONAL FACILITY, ALBUQUERQUE, NM INTERIM OVERALL GRADING PLAN	DRAWN BY BF DATE 9/20/18
	2017035_INTERIM GRADING SHEET # C3
TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858-3100 www.tierrewestllc.com	
JOB # 2017065	

Z:\2017\2017035_Top Golf Albuquerque\dwg\035_Initial\Grading.dwg Oct. 02, 2018 - 10:17am



NOTICE TO CONTRACTORS

- TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 785-1234, FOR LOCATION OF EXISTING UTILITIES.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONNECTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
- BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
- MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
- SOURCE OF TOPO IS ALTA/ACSM LAND TITLE SURVEY OF LOT 2 HARMS INDUSTRIAL PARK PREPARED BY PRECISION SURVEYS, INC DATED JANUARY 11, 2012.
- STORM WATER RUNOFF WILL BE PASSIVELY HARVESTED ALONG THE WEST, SOUTH AND EAST PROPERTY LINES WITHIN LANDSCAPED AREAS IN COMPLIANCE WITH WATER CONSERVATION ORDINANCE REQUIREMENTS.

LEGEND

- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- CENTERLINE
- RIGHT-OF-WAY
- BUILDING
- SIDEWALK
- SCREEN WALL
- RETAINING WALL
- CONTOUR MAJOR
- CONTOUR MINOR
- SPOT ELEVATION
- FLOW ARROW
- EXISTING CURB & GUTTER
- EXISTING BOUNDARY LINE
- PROPOSED CONTOUR MAJOR
- PROPOSED CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- EXISTING CONTOUR MINOR
- EXISTING SPOT ELEVATION
- SINGLE CLEAN OUT
- DOUBLE CLEAN OUT
- EXISTING SD MANHOLE
- EXISTING INLET
- EXISTING SAS MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WATER METER
- EXISTING POWER POLE
- EXISTING GAS VALVE
- EXISTING OVERHEAD UTILITIES
- EX. UGE
- EX. 2" GAS
- EX. 8" SAS
- EX. 10" WL
- EX. 18" RCP
- EXISTING UNDERGROUND UTILITIES
- EXISTING GAS
- EXISTING SANITARY SEWER LINE
- EXISTING WATER LINE
- EXISTING STORM SEWER LINE

NOTES

- SPOT ELEVATIONS ARE AT FLOWLINE UNLESS OTHERWISE SPECIFIED.

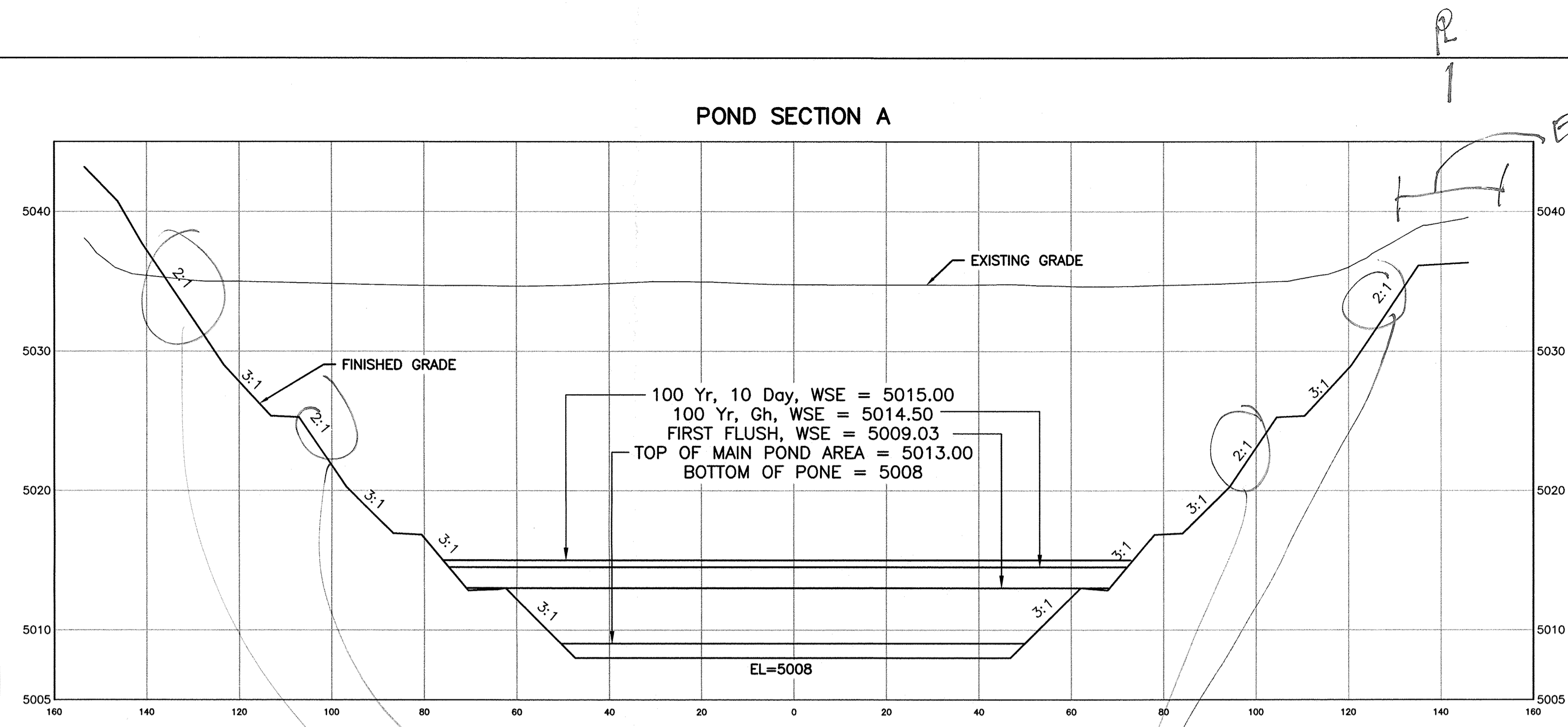
EROSION CONTROL NOTES

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

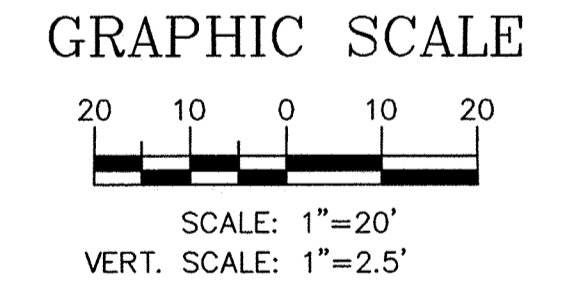
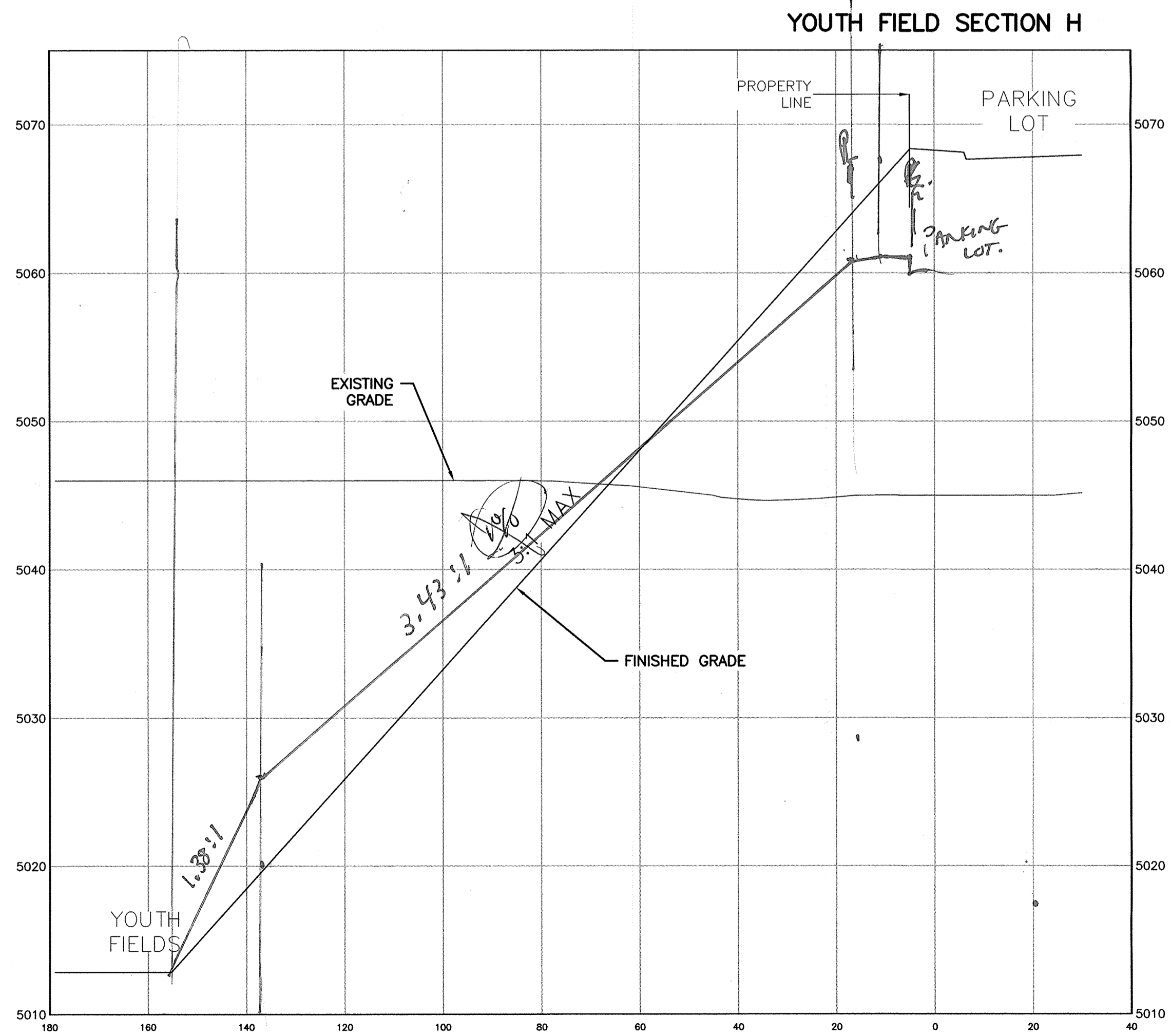
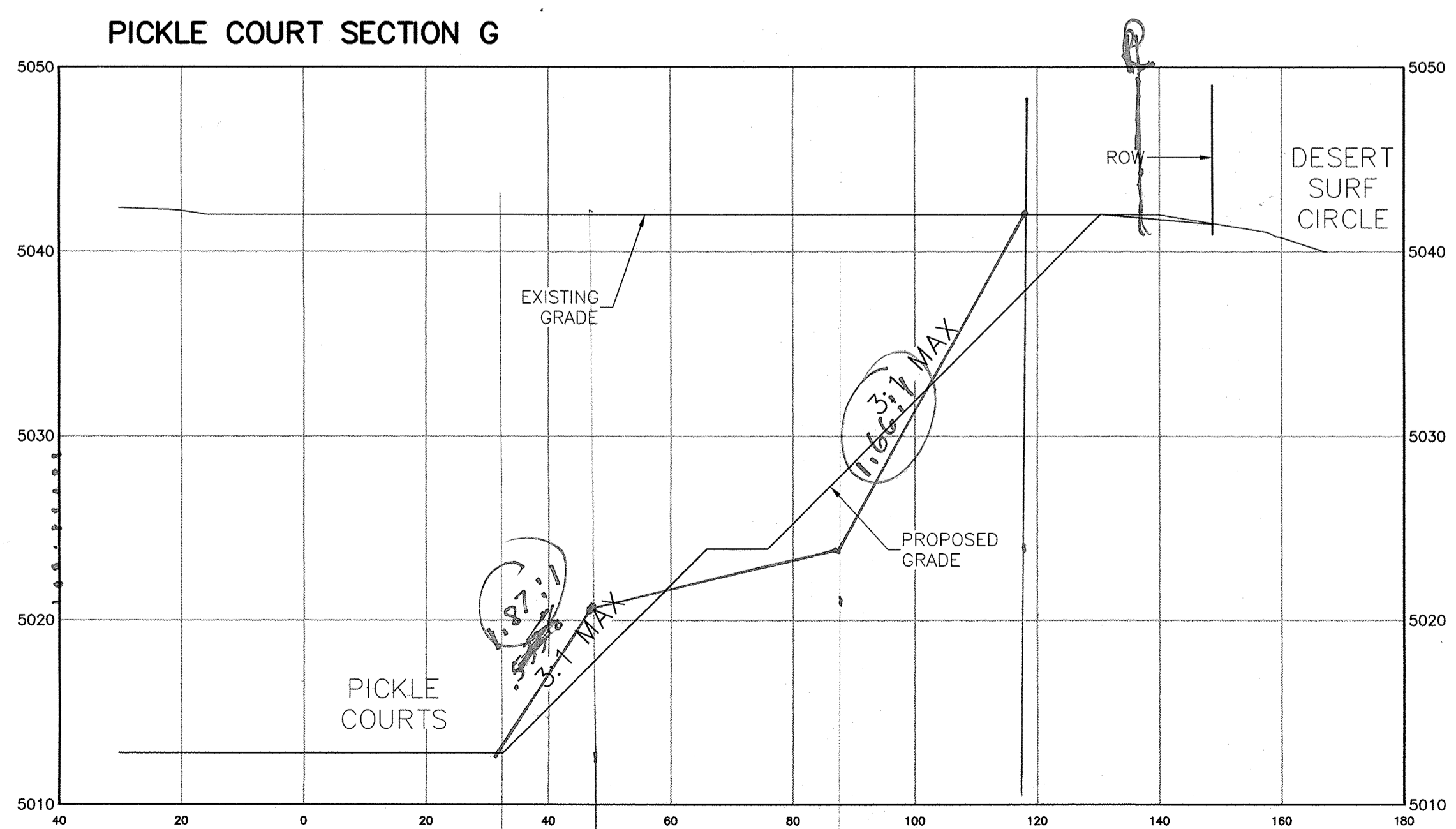
CAUTION:

ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS, PRIOR TO STARTING THE WORK. ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.

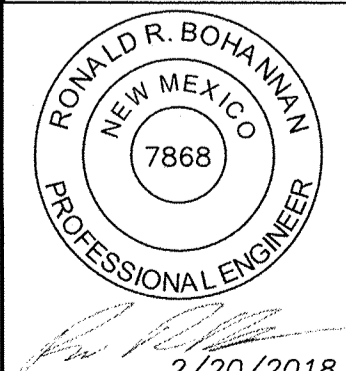
	MULTI-USE RECREATIONAL FACILITY, ALBUQUERQUE, NM	DRAWN BY BF
	INTERIM GRADING	DATE 9/20/18
	5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858-3100 www.tierrawestllc.com	2017035_INTERIM GRADING SHEET # C4
RONALD R. BOHANNAN P.E. #7868	9/27/2018	JOB # 2017065



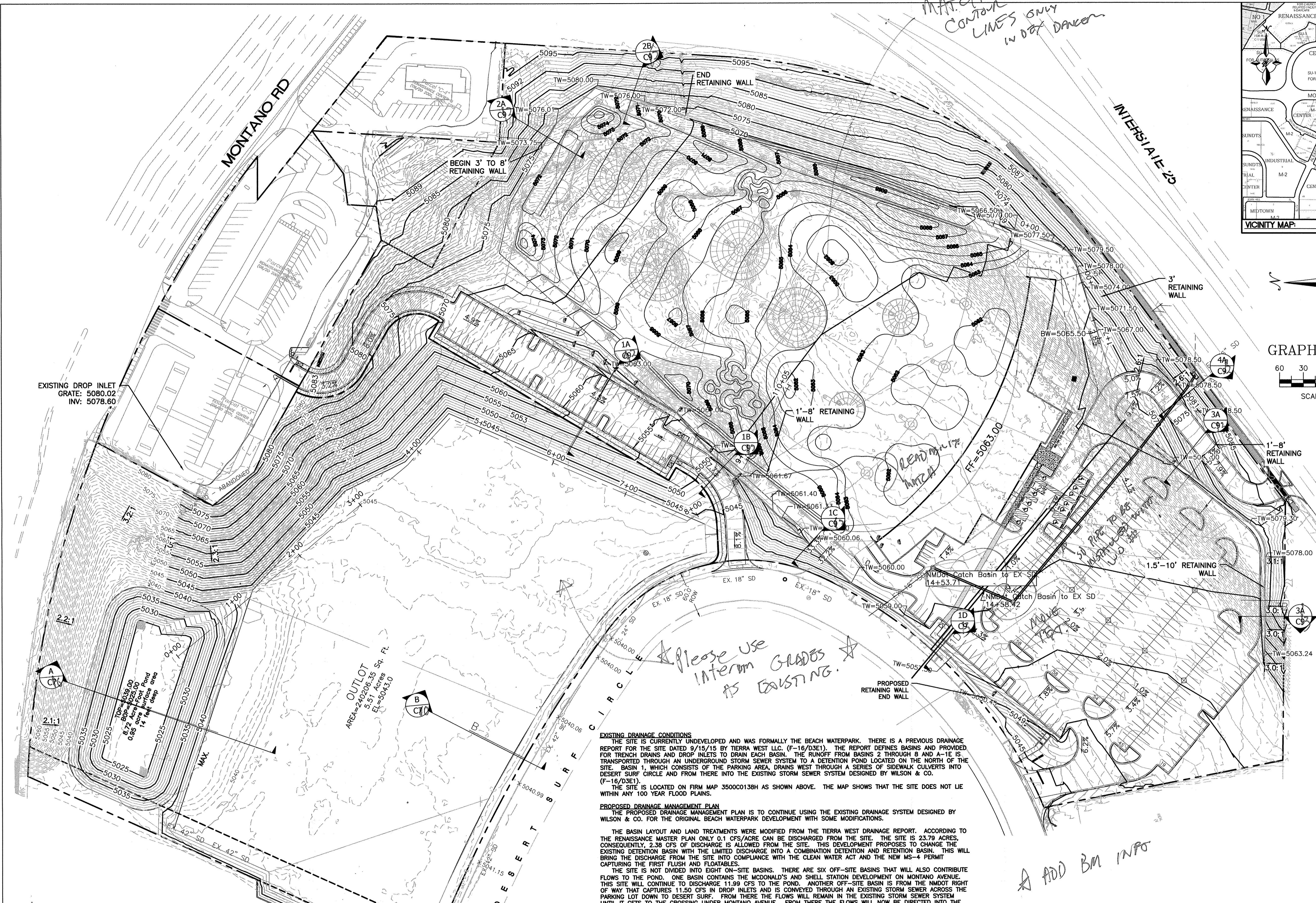
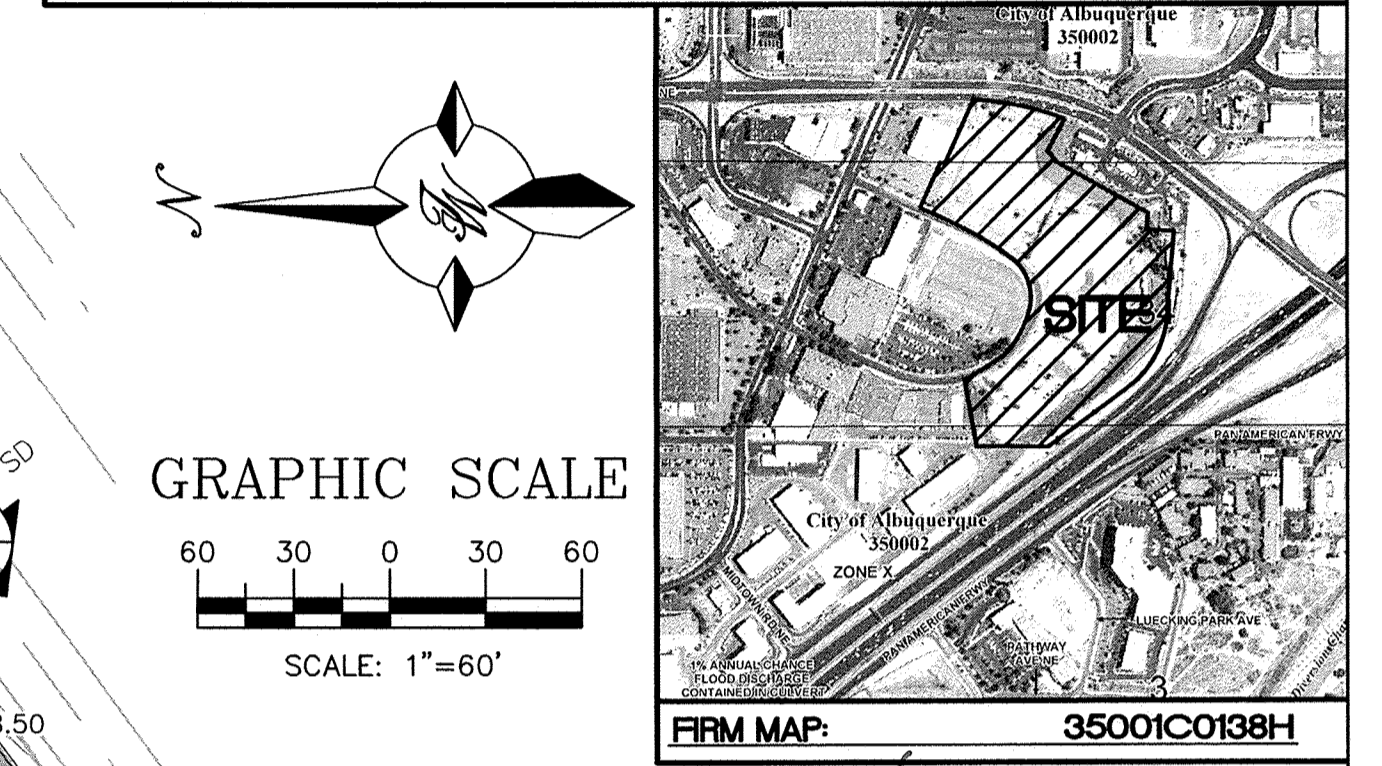
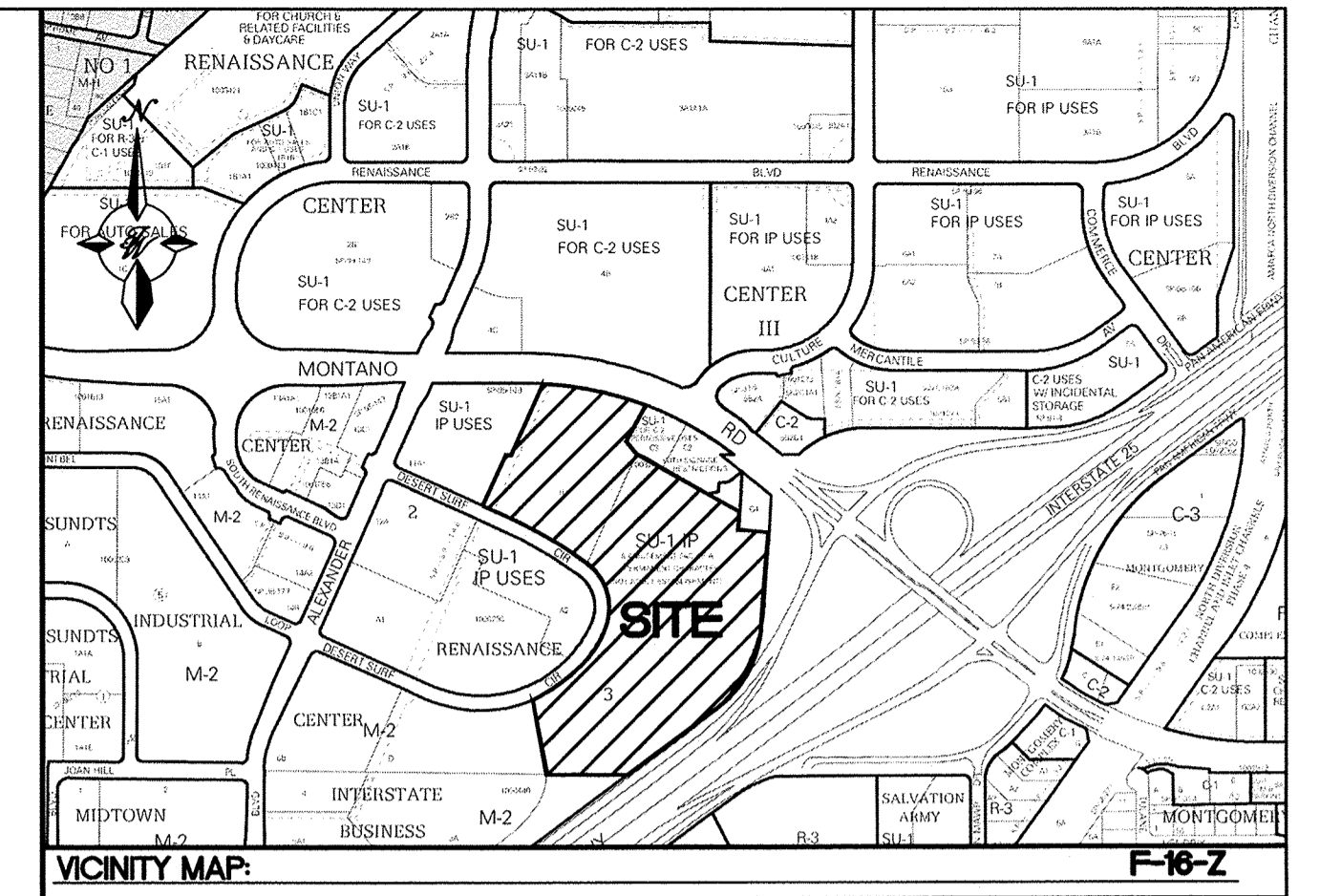
SHOW A DETAIL OF THE EXISTING PIPES INTO THE POND.



CAUTION:
 ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS, PRIOR TO STARTING THE WORK. ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.

ENGINEER'S SEAL  RONALD R. BOHANNAN P.E. #7868	MULTI-USE RECREATIONAL FACILITY, ALBUQUERQUE, NM INTERIM CROSS SECTIONS TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858-3100 www.tierrawestllc.com	DRAWN BY BF DATE 10-30-17 2017035_GRB SHEET # C5 JOB # 2017035
--	--	---

MATCH
CONTOUR
LINES ONLY
IN D&B DRAWING



LEGEND

	CURB & GUTTER
	BOUNDARY LINE
	EASEMENT
	CENTERLINE
	RIGHT-OF-WAY
	BUILDING
	SIDEWALK
	SCREEN WALL
	RETAINING WALL
	CONTOUR MAJOR
	CONTOUR MINOR
	SPOT ELEVATION
	FLOW ARROW
	EXISTING CURB & GUTTER
	EXISTING BOUNDARY LINE
	PROPOSED CONTOUR MAJOR
	PROPOSED CONTOUR MINOR
	EXISTING CONTOUR MAJOR
	EXISTING CONTOUR MINOR
	EXISTING SPOT ELEVATION

CAUTION:
ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILT SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS, PRIOR TO STARTING THE WORK. ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.

Please use
Interim GRABBS
AS EXISTING.

ADD BM INPS

Show
Grabs
S.D. PIPES

EXISTING DRAINAGE CONDITIONS
THE SITE IS CURRENTLY UNDEVELOPED AND WAS FORMALLY THE BEACH WATERPARK. THERE IS A PREVIOUS DRAINAGE REPORT FOR THE SITE DATED 9/15/15 BY TIERRA WEST LLC. (F-16/D3E1). THE REPORT DEFINES BASINS AND PROVIDED FOR TRENCH DRAINS AND DROP INLETS TO DRAIN EACH BASIN. THE RUNOFF FROM BASINS 2 THROUGH 8 AND A-1E IS TRANSPORTED THROUGH AN UNDERGROUND STORM SEWER SYSTEM TO A DETENTION POND LOCATED ON THE NORTH OF THE SITE. BASIN 1, WHICH CONSISTS OF THE PARKING AREA, DRAINS WEST THROUGH A SERIES OF SIDEWALK CULVERTS INTO DESERT SURF CIRCLE AND FROM THERE INTO THE EXISTING STORM SEWER SYSTEM DESIGNED BY WILSON & CO. (F-16/D3E1).

THE SITE IS LOCATED ON FIRM MAP 3500C0138H AS SHOWN ABOVE. THE MAP SHOWS THAT THE SITE DOES NOT LIE WITHIN ANY 100 YEAR FLOOD PLAINS.

PROPOSED DRAINAGE MANAGEMENT PLAN
THE PROPOSED DRAINAGE MANAGEMENT PLAN IS TO CONTINUE USING THE EXISTING DRAINAGE SYSTEM DESIGNED BY WILSON & CO. FOR THE ORIGINAL BEACH WATERPARK DEVELOPMENT WITH SOME MODIFICATIONS.

THE BASIN LAYOUT AND LAND TREATMENTS WERE MODIFIED FROM THE TIERRA WEST DRAINAGE REPORT. ACCORDING TO THE RENAISSANCE MASTER PLAN ONLY 0.1 CFS/ACRE CAN BE DISCHARGED FROM THE SITE. THE SITE IS 23.79 ACRES. CONSEQUENTLY, 2.38 CFS OF DISCHARGE IS ALLOWED FROM THE SITE. THIS DEVELOPMENT PROPOSES TO CHANGE THE EXISTING DETENTION BASIN WITH THE LIMITED DISCHARGE INTO A COMBINATION DETENTION AND RETENTION BASIN. THIS WILL BRING THE DISCHARGE FROM THE SITE INTO COMPLIANCE WITH THE CLEAN WATER ACT AND THE NEW MS-4 PERMIT CAPTURING THE FIRST FLUSH AND FLOATABLES.

THE SITE IS NOT DIVIDED INTO EIGHT ON-SITE BASINS. THERE ARE SIX OFF-SITE BASINS THAT WILL ALSO CONTRIBUTE FLOWS TO THE POND. ONE BASIN CONTAINS THE MCDONALD'S AND SHELL STATION DEVELOPMENT ON MONTANO AVENUE. THIS SITE WILL CONTINUE TO DISCHARGE 11.99 CFS TO THE POND. ANOTHER OFF-SITE BASIN IS FROM THE NMDOT RIGHT OF WAY THAT CAPTURES 11.50 CFS IN DROP INLETS AND IS CONVEYED THROUGH AN EXISTING STORM SEWER SYSTEM. UNTIL IT GETS TO THE CROSSING UNDER MONTANO AVENUE. FROM THERE THE FLOWS WILL NOW BE DIRECTED INTO THE PROPOSED DETENTION POND WHEREAS BEFORE THE FLOWS WOULD CONTINUE TO THE REGIONAL POND LOCATED BEHIND BOB TURNER FORD.

THE FOUR OTHER OFF-SITE BASINS ARE TO THE SOUTH OF THE PROJECT AREA AND DRAIN TO DESERT SURF. THESE BASINS CONTRIBUTE A TOTAL FLOW OF 24.52 CFS INTO THE EXISTING INLETS.

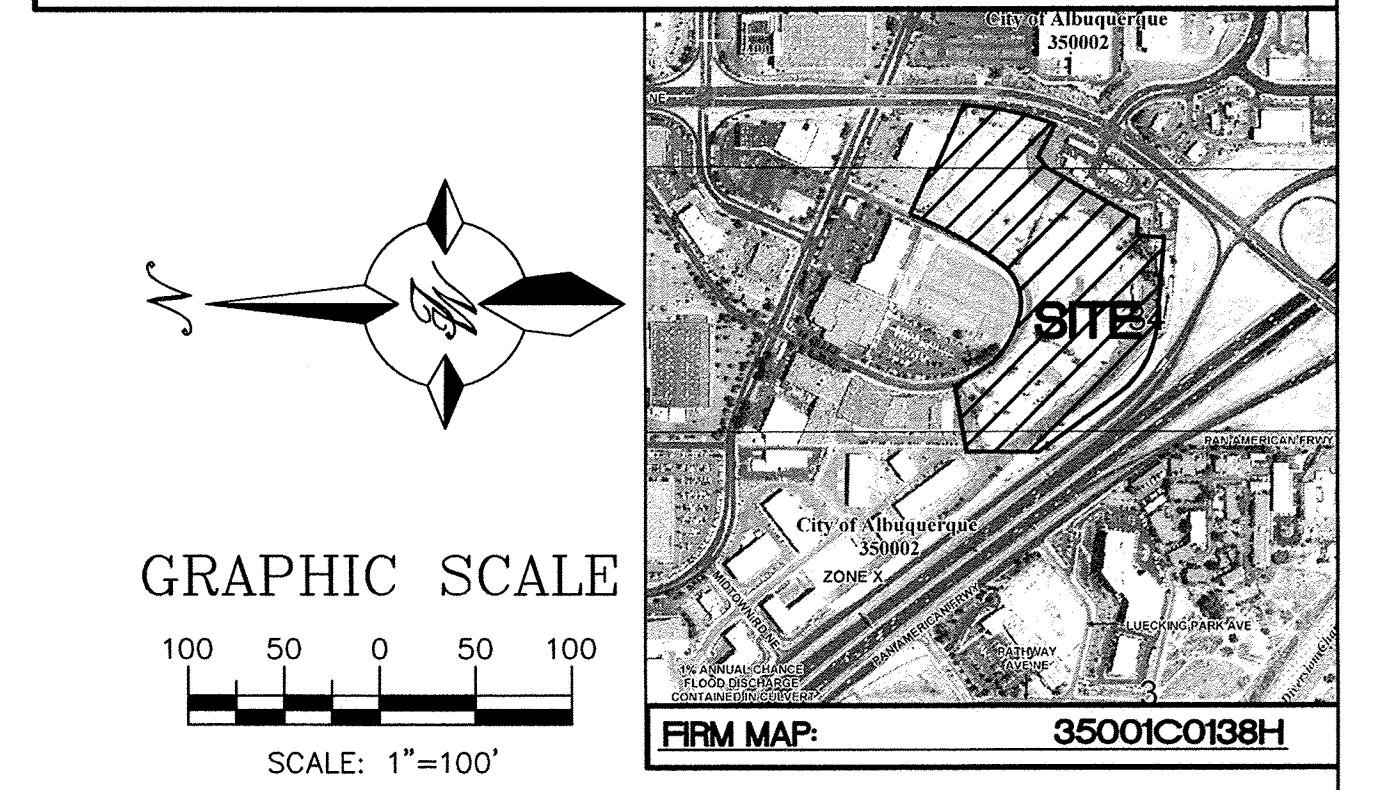
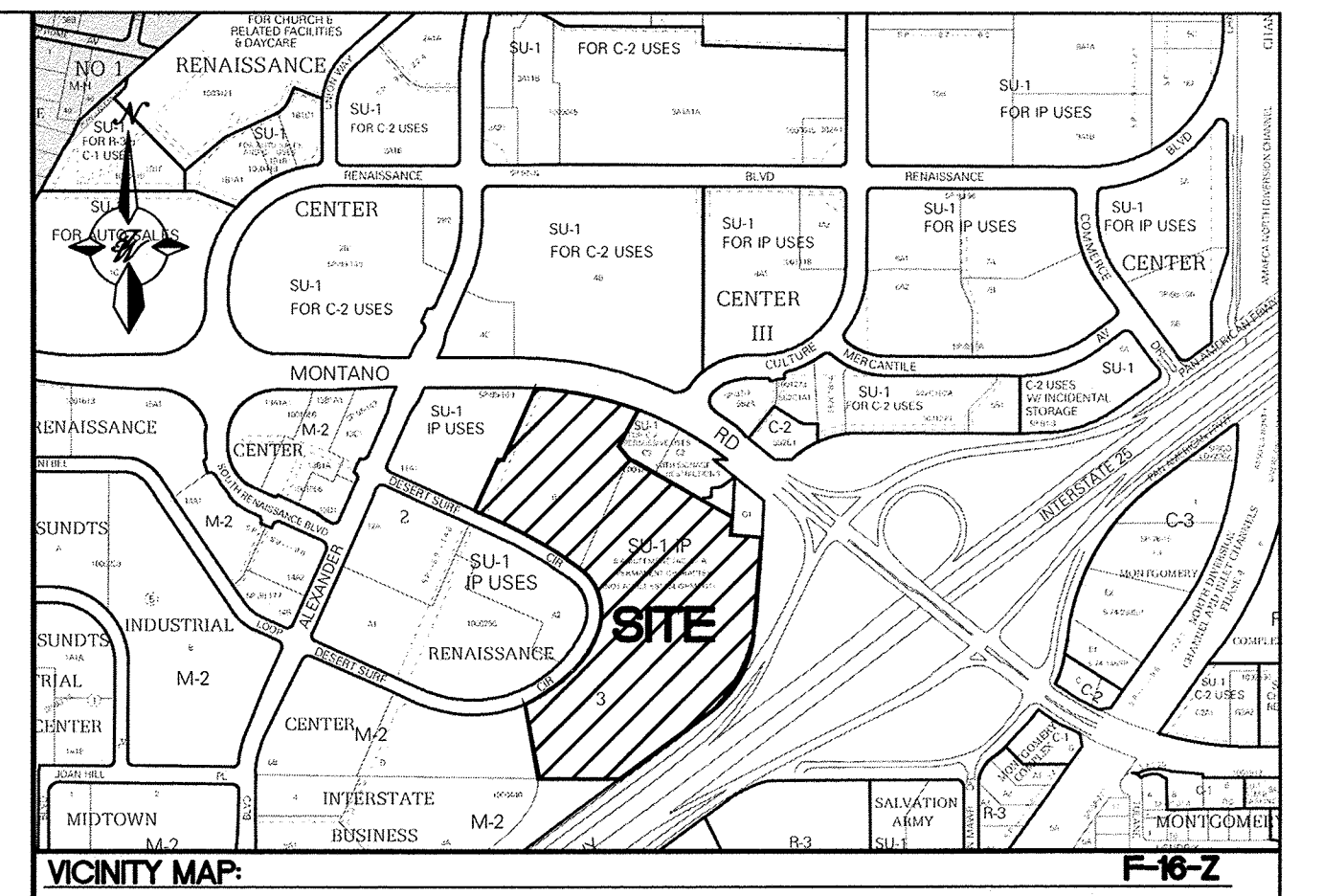
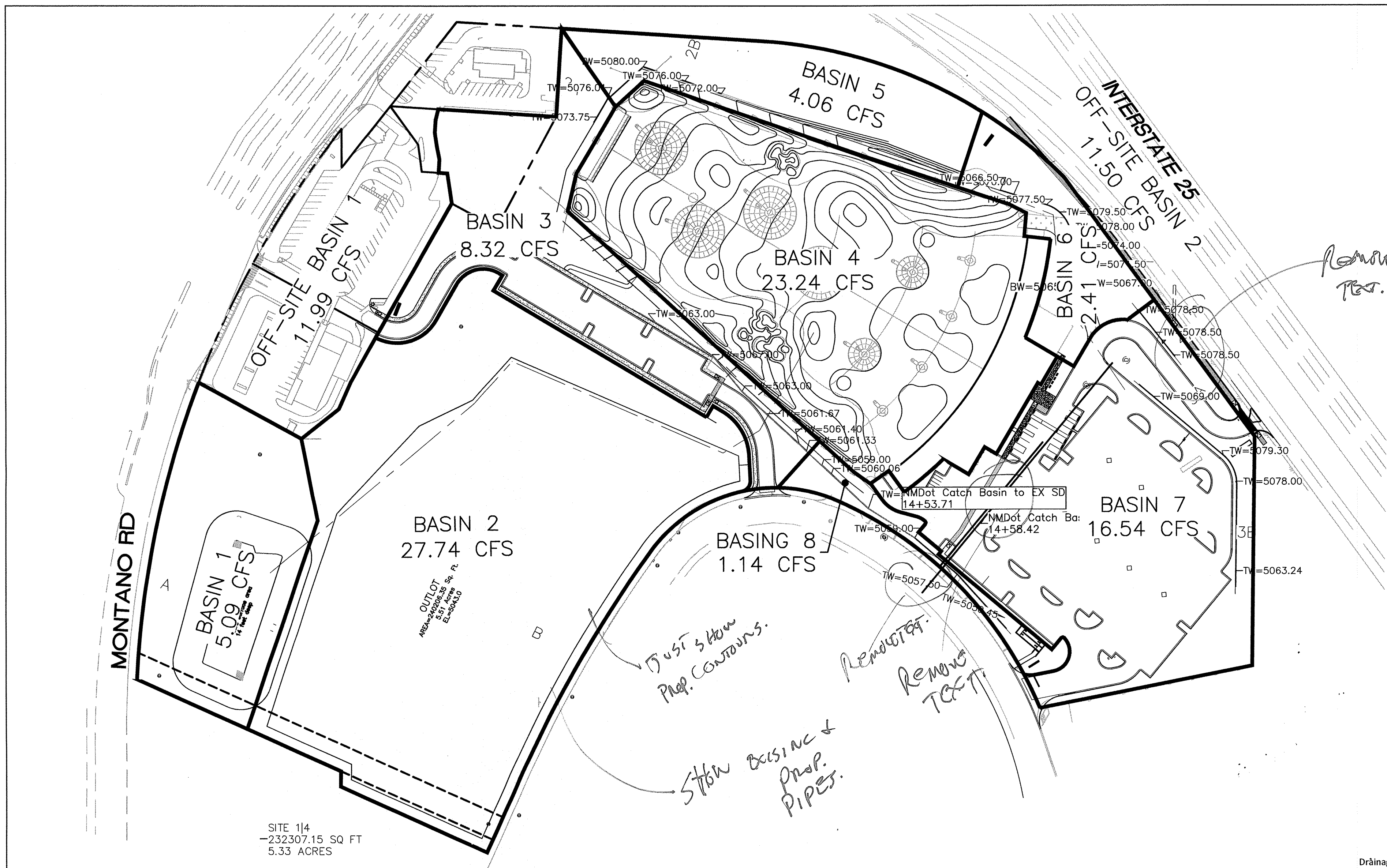
BASIN 1 CONSISTS OF THE POND AREA. BASIN 2 WILL CONSIST OF FUTURE PAD SITES AND WILL DISCHARGE 27.74 CFS TO THE POND. BASINS 3, 7 AND 8 WILL DISCHARGE 26.00 CFS INTO DESERT SURF WHICH WILL BE CAPTURED BY EXISTING DROP INLETS. THIS IS SLIGHTLY LESS THAN THE 28.19 CFS THAT IS CURRENTLY DRAINING TO THE SAME DROP INLETS.

BASIN 4 CONSISTS OF AN IMPERVIOUS SURFACE WHICH WILL BE COLLECTED IN A SERIES OF DROP INLETS AND CONVEYED VIA STORM SEWER TO THE POND AREA AND WILL DISCHARGE 23.24 CFS. BASINS 5 AND 6 AREA SLOPE AREAS THAT WILL BE CAPTURED IN A DROP INLETS AND CONVEYED TO THE REALIGNED STORM SEWER THAT CROSSES THE PARKING LOT WHERE IT WILL CONTINUE TO BE DISCHARGED INTO THE RETENTION POND. THESE BASINS DISCHARGE 6.47 CFS. HOWEVER ONLY 2.10 CFS WILL BE DISCHARGED TO THE STORM SEWER DUE TO CAPACITY RESTRAINTS WITH THE DISCHARGE BEING CONTROLLED BY PONDS IN THOSE BASINS.

THE EXISTING STORM SEWER ALONG THE WEST PROPERTY LINE WILL BE DIVERTED INTO THE PONDING AREA CAPTURING WATER FROM THE PROJECT SITE AS WELL AS OFF-SITE BASINS. THE EXISTING DISCHARGE PIPE WILL BE CHANGED TO A 18 INCH RCP WITH A 16.8 INCH ORIFICE PLATE THAT WILL BE PLACED IN A STAND PIPE. THE STAND PIPE WILL KEEP FLOATABLES FROM ENTERING THE STORM SEWER SYSTEM THAT DISCHARGES TO THE POND BEHIND THE FORD DEALERSHIP. THE DISCHARGE FROM THE POND WILL BE 27.03 CFS WHICH IS JUST UNDER THE ALLOWABLE 27.18 CFS WHEN ALL OF THE ON-SITE AND OFF-SITE BASINS ARE COMBINED. BECAUSE OF THE DEPTH OF THE DETENTION POND AREA THERE IS NO EMERGENCY OVERFLOW.

- NOTICE TO CONTRACTORS**
- TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
 - PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONNECTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
 - BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
 - MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
 - SOURCE OF TOPO IS ALTA/ACSM LAND TITLE SURVEY OF LOT 2 HARMS INDUSTRIAL PARK PREPARED BY PRECISION SURVEYS, INC DATED JANUARY 11, 2012.
 - STORM WATER RUNOFF WILL BE PASSIVELY HARVESTED ALONG THE WEST, SOUTH AND EAST PROPERTY LINES WITHIN LANDSCAPED AREAS IN COMPLIANCE WITH WATER CONSERVATION ORDINANCE REQUIREMENTS.

	MULTI-USE RECREATIONAL FACILITY, ALBUQUERQUE, NM	DRAWN BY BF
	FINAL OVERALL GRADING PLAN 3	DATE 9/20/18
		SHEET # C6
5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858-3100 www.tierrawestllc.com		JOB # 2017065



SITE 114
-232307.15 SQ FT
5.33 ACRES

MAIN POND ENG. AREA
TOP=5013.00
BOP=5008.00
VOL=1.37 Ac-ft

MULTI-USE PONDING AREA
TOP=5040.00
BOP=5013.00
VOL=107.58 Ac-ft

1st FLUSH W.S.E. = 5009.03
100yr, G-hr W.S.E. = 5014.50
100yr, G-day W.S.E. = 5015.00

FIRST FLUSH CALCULATION
0.34" RAINFALL/12 = 0.0283'
0.0283 X 9.96 ac IMPERVIOUS AREA = 0.282 ac-ft

Weighted E Method

Developed On-Site Basins

Basin	Area (sf)	Area (acres)	Treatment A				Treatment B				Treatment C				Treatment D				100-Year, 6-hr			10-Year, 6 hr			100-Year, 10 day		
			%	(acres)	%	(acres)	%	(acres)	%	(acres)	%	(acres)	%	(acres)	%	(acres)	Weighted E	Volume (ac-ft)	Flow cfs	Weighted E	Volume (ac-ft)	Flow cfs	Weighted E	Volume (ac-ft)	Flow cfs		
1	83,364	1.91	0%	0.00	25%	0.48	75%	1.44	0%	0.00	0.910	0.145	5.09	0.385	0.061	2.50	0.910	0.145	5.09								
2	318,528	7.31	0%	0.00	15%	1.10	15%	1.10	70%	5.12	1.628	0.992	27.74	0.967	0.589	17.26	1.628	1.619	27.74								
3	106,762	2.45	0%	0.00	0%	0.00	65%	1.59	35%	0.86	1.333	0.272	8.32	0.720	0.147	4.85	1.333	0.377	8.32								
4	231,637	5.32	0%	0.00	0%	0.00	100%	5.32	0%	0.00	1.970	0.873	23.24	1.240	0.549	15.37	1.970	1.524	23.24								
5	61,650	1.42	0%	0.00	0%	0.00	100%	1.42	0%	0.00	0.990	0.117	4.06	0.440	0.052	2.11	0.990	0.117	4.06								
6	37,190	0.85	0%	0.00	15%	0.13	80%	0.68	5%	0.04	0.991	0.071	2.41	0.447	0.032	1.24	0.991	0.076	2.41								
7	180,355	4.14	0%	0.00	16%	0.66	0%	0.00	84%	3.48	1.762	0.608	16.54	1.077	0.372	10.55	1.762	1.034	16.54								
8	16,694	0.38	0%	0.00	5%	0.02	85%	0.33	10%	0.04	1.072	0.034	1.14	0.509	0.016	0.61	1.072	0.039	1.14								
Total	1,036,180	23.79								14.85			3.112		1.819	54.50			88.55								

Equations:

Weighted E = $E_a \cdot A_a + E_b \cdot A_b + E_c \cdot A_c + E_d \cdot A_d$ / (Total Area)

Volume = Weighted E * Total Area

Flow = $Q_a \cdot A_a + Q_b \cdot A_b + Q_c \cdot A_c + Q_d \cdot A_d$

Excess Precipitation, E (inches)				Peak Discharge (cfs/acre)			
Zone	100-Year	10-Year		Zone	100-Year	10-Year	
E _a	0.44	0.08		Q _a	1.29	0.24	
E _b	0.67	0.22		Q _b	2.03	0.76	
E _c	0.99	0.44		Q _c	2.87	1.49	
E _d	1.97	1.24		Q _d	4.37	2.89	

Drainage Reports Referenced for Off-Site Basins

- OF-Basin 1
F16-D3E1
Montano Pads Grading and Drainage Plan
By Tierra West, LLC Stamped 09/14/15
- OF-Basin 2
F16-D3E
Renaissance III Drainage Report
By Andrews, Asbury & Robert, Inc. Stamped March 1987
- OF-Basin 3
F16-D3A
Albuquerque Tortilla Co. Grading & Drainage Plan
By BIM Development Consultants Stamped 09/05/00
- OF-Basins 4 & 5
F16-D3H
Diagnostek Expansion Grading & Drainage Plan
By D. Mark Goodwin & Associates Stamped 12/14/94
- OF-Basin 6
F16-D003L
Express Scripts Parking Lot Expansion Grading & Drainage Plan
By ABQ Engineering Stamped 10/1/04

Driveway and Street Capacity

- Weir Equation:**
- Q = Flow
C = 2.95
L = Length of weir
H = Height of Weir
- North Driveway**
- Q = 48.54 cfs
48.54 cfs > 9.71 cfs
Driveway has capacity
- South Driveway**
- Q = 58.24 cfs
58.24 cfs > 16.24 cfs
Driveway has capacity
- Desert Surf Circle**
- Q = 64.71 cfs
64.71 cfs > 51.50 cfs
Street has capacity

LEGEND


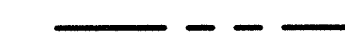
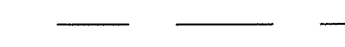

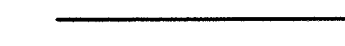

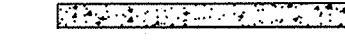
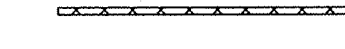
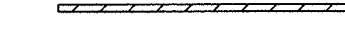
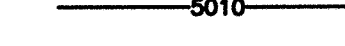
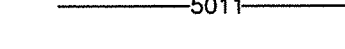
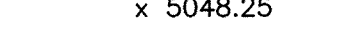






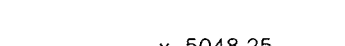

- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- CENTERLINE
- RIGHT-OF-WAY
- BUILDING
- SIDEWALK
- SCREEN WALL
- RETAINING WALL
- CONTOUR MAJOR
- CONTOUR MINOR
- SPOT ELEVATION
- FLOW ARROW
- EXISTING CURB & GUTTER
- EXISTING BOUNDARY LINE
- PROPOSED CONTOUR MAJOR
- PROPOSED CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- EXISTING CONTOUR MINOR
- EXISTING SPOT ELEVATION

CAUTION:

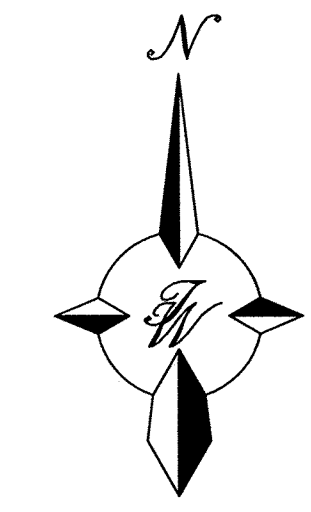
ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS, PRIOR TO STARTING THE WORK. ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.

	MULTI-USE RECREATIONAL FACILITY, ALBUQUERQUE, NM	DRAWN BY BF
	FINAL OVERALL DRAINAGE PLAN	DATE 9/20/18
9/27/2018 RONALD R. BOHANNAN P.E. #7868	TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858-3100 www.tierrawestllc.com	2017035_GRB-3 SHEET # C7 JOB # 2017065

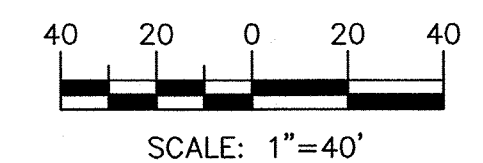
LEGEND

-  CURB & GUTTER
-  BOUNDARY LINE
-  EASEMENT
-  CENTERLINE
-  RIGHT-OF-WAY
-  BUILDING
-  SIDEWALK
-  SCREEN WALL
-  RETAINING WALL
-  CONTOUR MAJOR
-  CONTOUR MINOR
-  SPOT ELEVATION
-  FLOW ARROW
-  EXISTING CURB & GUTTER
-  EXISTING BOUNDARY LINE
-  PROPOSED CONTOUR MAJOR
-  PROPOSED CONTOUR MINOR
-  EXISTING CONTOUR MAJOR
-  EXISTING CONTOUR MINOR
-  EXISTING SPOT ELEVATION

NOTES:
1. SPOT ELEVATIONS ARE AT FLOWLINE UNLESS OTHERWISE SPECIFIED.



GRAPHIC SCALE



NOTICE TO CONTRACTORS

1. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 785-1234, FOR LOCATION OF EXISTING UTILITIES.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONNECTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
3. BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
4. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
5. SOURCE OF TOPO IS ALTA/ACSM LAND TITLE SURVEY OF LOT 2 HARMS INDUSTRIAL PARK PREPARED BY PRECISION SURVEYS, INC DATED JANUARY 11, 2012.
6. STORM WATER RUNOFF WILL BE PASSIVELY HARVESTED ALONG THE WEST, SOUTH AND EAST PROPERTY LINES WITHIN LANDSCAPED AREAS IN COMPLIANCE WITH WATER CONSERVATION ORDINANCE REQUIREMENTS.

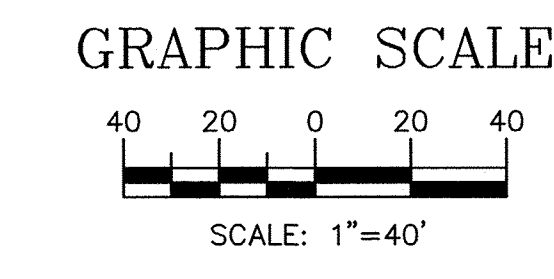
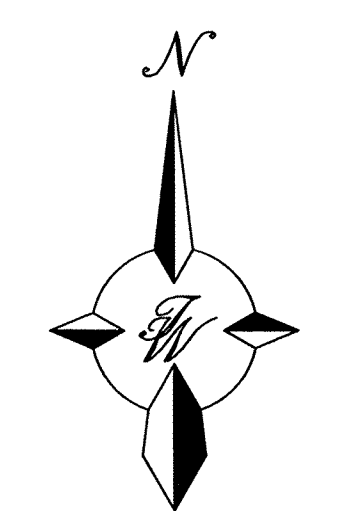
EROSION CONTROL NOTES:

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.

CAUTION:

ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS. PRIOR TO STARTING THE WORK, ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.

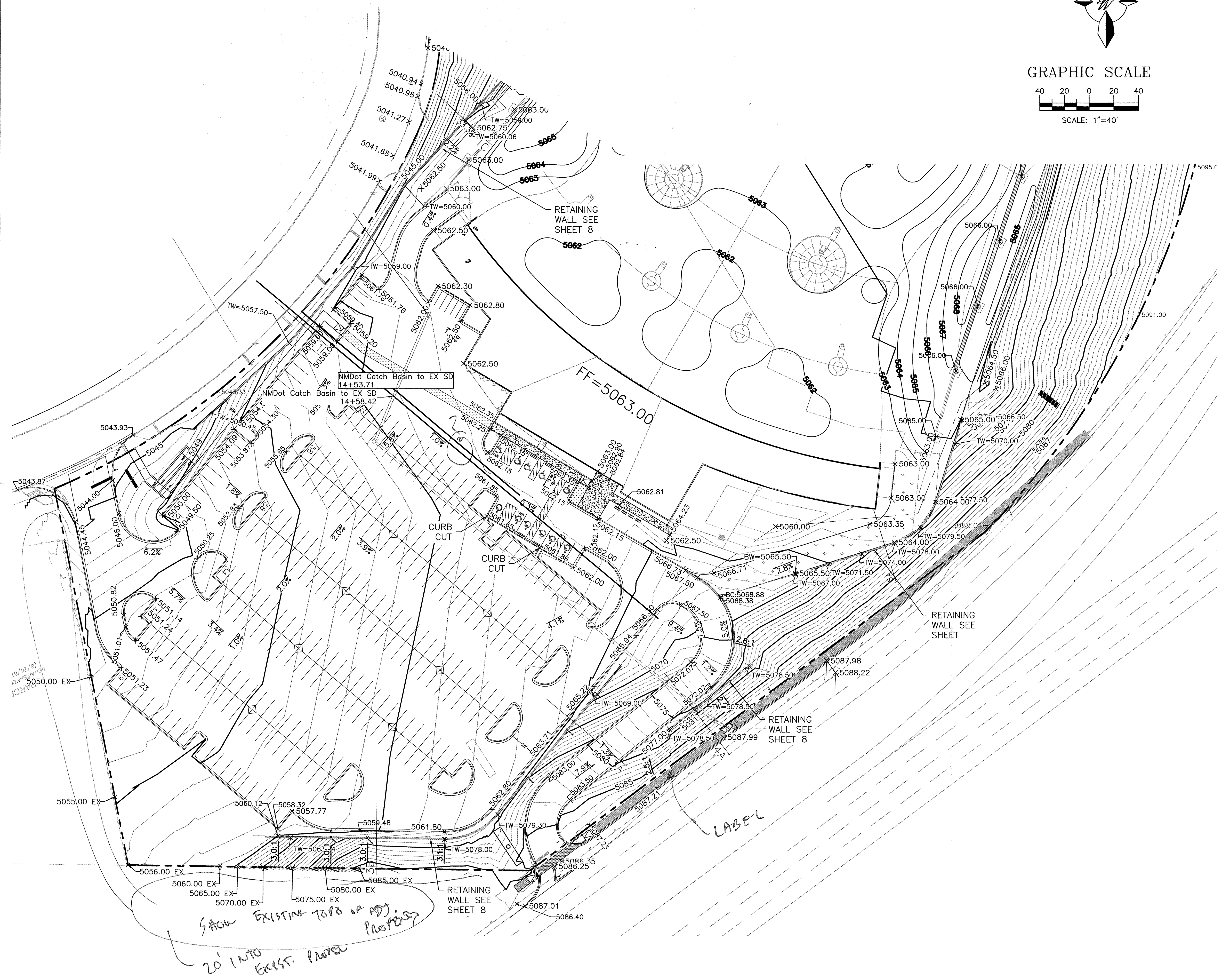
<p>ENGINEER'S SEAL</p>  <p>RONALD R. BOHANNAN P.E. #7868</p>	<p>MULTI-USE RECREATIONAL FACILITY, ALBUQUERQUE, NM</p> <p>FINAL GRADING PLAN 1</p> <p>TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858-3100 www.tierrowestllc.com</p>	<p>DRAWN BY BF</p> <p>DATE 9/20/18</p> <p>2017035_GR8-3</p> <p>SHEET # C8</p> <p>JOB # 2017065</p>
---	---	---



LEGEND

	CURB & GUTTER
	BOUNDARY LINE
	EASEMENT
	CENTERLINE
	RIGHT-OF-WAY
	BUILDING
	SIDEWALK
	SCREEN WALL
	RETAINING WALL
	CONTOUR MAJOR
	CONTOUR MINOR
	SPOT ELEVATION
	FLOW ARROW
	EXISTING CURB & GUTTER
	EXISTING BOUNDARY LINE
	PROPOSED CONTOUR MAJOR
	PROPOSED CONTOUR MINOR
	EXISTING CONTOUR MAJOR
	EXISTING CONTOUR MINOR
	EXISTING SPOT ELEVATION

NOTES:
1. SPOT ELEVATIONS ARE AT FLOWLINE UNLESS OTHERWISE SPECIFIED.



- 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.

- NOTICE TO CONTRACTORS**
1. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
 2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONNECTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
 3. BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
 4. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
 5. SOURCE OF TOPO IS ALTA/ACSM LAND TITLE SURVEY OF LOT 2 HARMS INDUSTRIAL PARK PREPARED BY PRECISION SURVEYS, INC DATED JANUARY 11, 2012.
 6. STORM WATER RUNOFF WILL BE PASSIVELY HARVESTED ALONG THE WEST, SOUTH AND EAST PROPERTY LINES WITHIN LANDSCAPED AREAS IN COMPLIANCE WITH WATER CONSERVATION ORDINANCE REQUIREMENTS.

CAUTION:
ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS, PRIOR TO STARTING THE WORK. ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.

Show EXISTING TOPS of ADJ. PROPERTY 20' INTO EXIST. PROPERTY

	MULTI-USE RECREATIONAL FACILITY, ALBUQUERQUE, NM	DRAWN BY BF
	FINAL GRADING PLAN 2	DATE 9/20/18
	5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858-3100 www.tierrawestllc.com	2017035_GRB-3
RONALD R. BOHANNAN P.E. #7868	SHEET # C9	JOB # 2017065