CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director

Mayor Timothy M. Keller

November 9, 2018

Ronald Bohannan, P.E.
Tierra West, LLC
5571 Midway Park Place NE
Albuquerque, NM, 87109

RE: Multi-Use Recreational Facility
1600 Desert Surf Circle NE
Mass Grading and Drainage Plan & Drainage Report
Engineer's Stamp Date: 10/29/18
Hydrology File: F16D003E1

Dear Mr. Bohannan:

Based upon the information provided in your revised submittal received 10/31/2018, the Mass Grading and Drainage Plan & Drainage Report are approved for Building Permit and Grading Permit.

Please attach a copy of this approved plan in the construction sets for Building Permit processing along with a copy of this letter.

As a reminder, please provide the Agreement and Covenant per Chapter 17 of the DPM prior to Work Order # 572462 close out. Please submit these to the 4th floor of Plaza de Sol. A $25 fee for each will be required.

If you have any questions, please contact me at 924-3995 or rbrissette@cabq.gov .

Sincerely,

Renée C. Brissette

Renée C. Brissette, P.E. CFM
Senior Engineer, Hydrology
Planning Department

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Project Title: Multi-Use Recreational Facility Building Permit #: _____ Hydrology File #: _____

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

Legal Description: Parcel B-1 Plat of Parcels C-1, C-2, C-3, C-4 and B-1

City Address: 1600 Dessert Surf Circle NE Albuquerque NM 87107

Applicant: Tierra West, LLC Contact: Jonathan Niski

Address: 5571 Midway Park Place NE Albuquerque NM 87107

Phone#: 505-858-3100 Fax#: 505-858-1118 E-mail: jniski@tierrawestllc.com

Other Contact: _____ Contact: _____

Address: _____

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

TYPE OF DEVELOPMENT: _____ PLAT (# of lots) _____ RESIDENCE _____ DRB SITE X ADMIN SITE

IS THIS A RESUBMITTAL? X Yes _____ No

DEPARTMENT _____ TRANSPORTATION X HYDROLOGY/DRAINAGE

Check all that Apply:

TYPE OF SUBMITTAL:

____ ENGINEER/ARCHITECT CERTIFICATION
____ PAD CERTIFICATION
____ CONCEPTUAL G & D PLAN
X 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?

TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

X BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY

____ PRELIMINARY PLAT APPROVAL
____ SITE PLAN FOR SUB'D APPROVAL
____ SITE PLAN FOR BLDG. PERMIT APPROVAL
____ FINAL PLAT APPROVAL

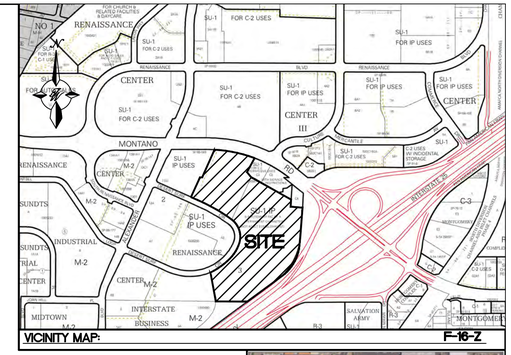
____ SIA/ RELEASE OF FINANCIAL GUARANTEE
____ FOUNDATION PERMIT APPROVAL
X GRADING PERMIT APPROVAL
____ SO-19 APPROVAL
____ PAVING PERMIT APPROVAL
____ GRADING/ PAD CERTIFICATION
____ WORK ORDER APPROVAL
____ CLOMR/LOMR
____ FLOODPLAIN DEVELOPMENT PERMIT
____ OTHER (SPECIFY) _____

DATE SUBMITTED: 10/31/2018 By: Jonathan Niski

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____

BENCHMARK
A.G.R.S. MONUMENT "M_6"
STANDARD A.G.R.S. BRASS TABLET
(FOUND IN PLACE)
NEW MEXICO STATE PLANE COORDINATES
(CENTRAL ZONE–N.A.D. 1983)
N=1,503,215.185
E=1,533,745.194
PUBLISHED EL=5113.206 (NAVD 1988)
GROUND TO GRID FACTOR=0.999672339
DELTA ALPHA ANGLE=–0°12'19.10"



VICINITY MAP: F-16-Z

FIRM MAP: 35001C0138H

GRAPHIC SCALE
60 30 0 30 60
SCALE: 1"=60'

TOP GOLF
A SPECIFIC
GRADING AND DRAINAGE PLAN
WILL BE SUBMITTED UNDER
A SEPARATE APPLICATION

EXISTING
STORM SEWER PIPE
TO BE REMOVED WITH
WORK ORDER NO. 572462

EXIST SD INLET
RIM=5086.70
INV=5082.27 SE
INV=5082.10 NW

EXIST SD MH
RIM=5040.67
INV=5031.41 S
INV=5032.39 N

EXIST SD MH
RIM=5041.99
INV=5032.98 SE
INV=5032.34 NE

FF=5063

BOP=5005

EL=5015

MONTANO RD

INTERSTATE 25

DESERT SURF CIRCLE

LEGEND

- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- CENTERLINE
- RIGHT–OF–WAY
- BUILDING
- SIDEWALK
- SCREEN WALL
- RETAINING WALL
- CONTOUR MAJOR
- CONTOUR MINOR
- x 5048.25 SPOT ELEVATION
- FLOW ARROW
- EXISTING CURB & GUTTER
- EXISTING BOUNDARY LINE
- 5010 PROPOSED CONTOUR MAJOR
- PROPOSED CONTOUR MINOR
- 5010 EXISTING CONTOUR MAJOR
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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.

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 35000C0138H 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 ACROSS THE PARKING LOT DOWN TO DESERT SURF. FROM THERE THE FLOWS WILL REMAIN IN THE 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. THOSE 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 33.24 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 THIS 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.

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.

ENGINEER'S SEAL

10/31/2018

RONALD R. BOHANNAN
P.E. #7868

MULTI-USE RECREATIONAL FACILITY, ALBUQUERQUE, NM

OVERALL MASS GRADING

TIERRA WEST, LLC
5571 MIDWAY PARK PLACE NE
ALBUQUERQUE, NM 87109
(505) 858–3100
www.tierrawestllc.com

DRAWN BY: BF
DATE: 10/31/18
2017035_OVERALL MASS GRADING PLAN
SHEET #: C3
JOB #: 2017065

Z:\2017\2017035 Top Golf Albuquerque\dwg\ORB\2017035_Overall Mass Grading Plan.dwg Nov 08, 2018 – 9:41am

N

GRAPHIC SCALE

40 20 0 20 40

SCALE: 1"=40'

LEGEND

- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- CENTERLINE
- RIGHT-OF-WAY
- BUILDING
- SIDEWALK
- SCREEN WALL
- RETAINING WALL
- CONTOUR MAJOR
- CONTOUR MINOR
- x 5048.25 SPOT ELEVATION
- FLOW ARROW
- EXISTING CURB & GUTTER
- EXISTING BOUNDARY LINE
- 5010 PROPOSED CONTOUR MAJOR
- PROPOSED CONTOUR MINOR
- 5010 EXISTING CONTOUR MAJOR
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- x 5048.25 EXISTING SPOT ELEVATION

NOTES:

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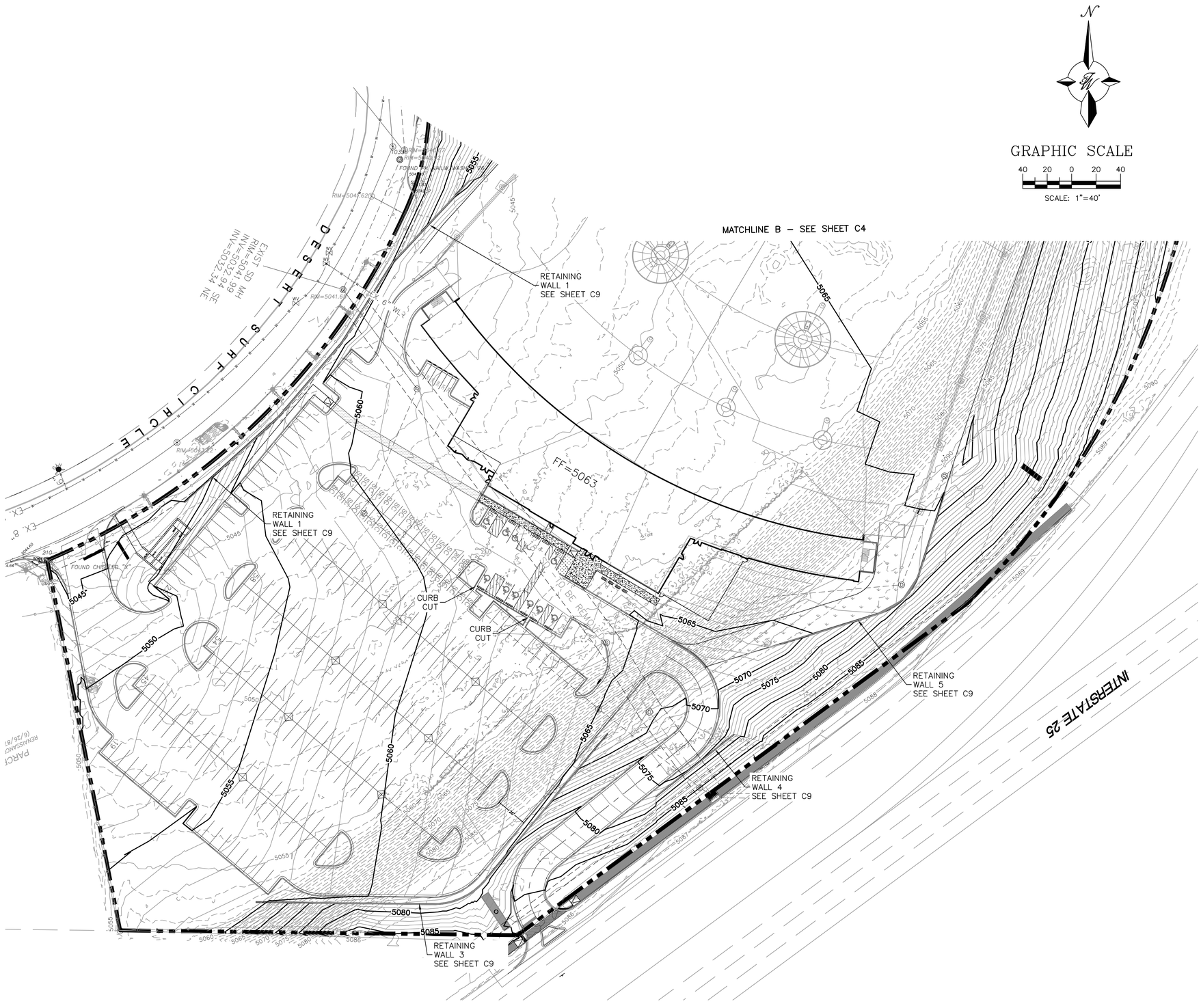
ENGINEER'S SEAL	MULTI-USE RECREATIONAL FACILITY, ALBUQUERQUE, NM	DRAWN BY BF
		DATE 10/31/18
	MASS GRADING 1	2017035_OVERALL MASS GRADING PLAN
	TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858-3100 www.tierrawestllc.com	SHEET # **C4**
10/31/2018 *RONALD R. BOHANNAN P.E. #7868*		JOB # 2017065



GRAPHIC SCALE

40 20 0 20 40

SCALE: 1"=40'

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- CURB & GUTTER
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- x 5048.25 — SPOT ELEVATION
- FLOW ARROW
- EXISTING CURB & GUTTER
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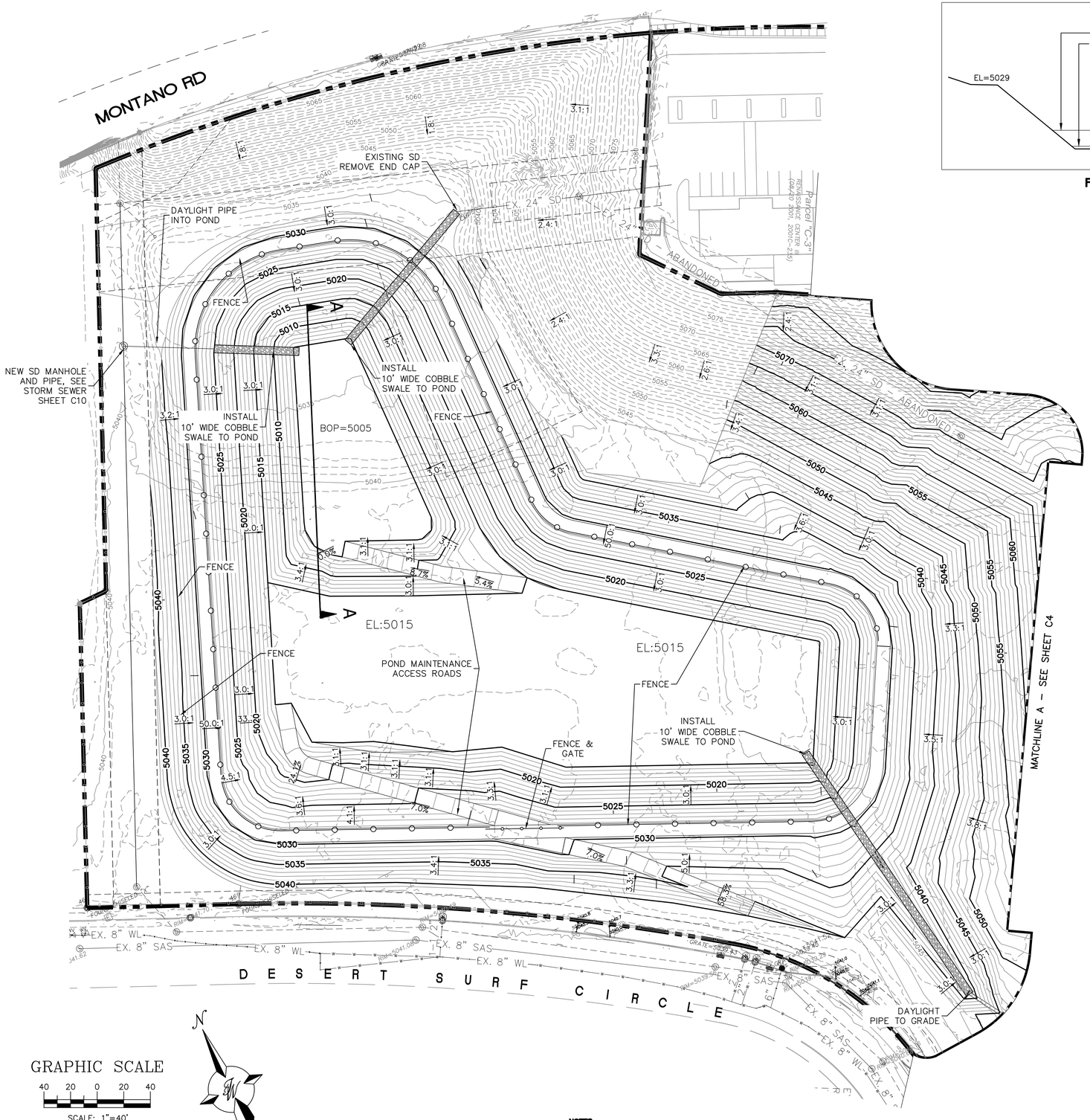
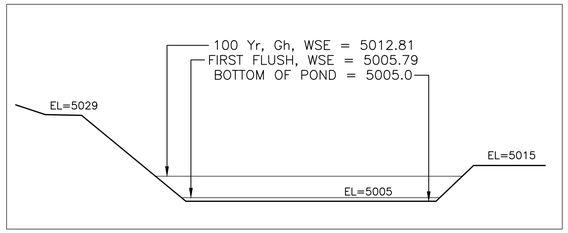
ENGINEER'S SEAL	MULTI-USE RECREATIONAL FACILITY, ALBUQUERQUE, NM	DRAWN BY BF
		DATE 10/31/18
	MASS GRADING 2	2017035_OVERALL MASS GRADING PLAN
10/31/2018	TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858–3100 www.tierrawestllc.com	SHEET # **C5**
RONALD R. BOHANNAN P.E. #7868		JOB # 2017065





POND SECTION A-A
NTS

VOLUME CALCULATIONS
POND

Ab - Bottom Of The Pond Surface Area
At - Top Of The Pond Surface Area
D - Water Depth
Dt - Total Pond Depth
C - Change In Surface Area / Water Depth

Volume = Ab * D + 0.5 * C * D²
C = (At - Ab) / Dt
Ab = 15,219.00
At = 34,269.00
Dt = 10.00
C = 1905.00

ACTUAL ELEV.	DEPTH (FT)	VOLUME (AC-FT)	
5005.00	0.00	0.00	
5005.79	0.79	0.2760	First Flush Elevation
5007.00	2.00	0.7308	
5008.00	3.00	1.1549	
5010.00	5.00	2.1345	
5012.00	7.00	3.2889	
5012.81	7.81	3.8062	100-yr Volume
5014.00	9.00	4.6183	
5015.00	10.00	5.3486	

LEGEND

- CURB & GUTTER
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- 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
- U EXISTING OVERHEAD UTILITIES
- EX. UGE EXISTING UNDERGROUND UTILITIES
- EX. 2" GAS EXISTING GAS
- EX. 8" SAS EXISTING SANITARY SEWER LINE
- EX. 10" WL EXISTING WATER LINE
- EX. 18" RCP EXISTING STORM SEWER LINE

COBBLE LINED SWALE
NTS

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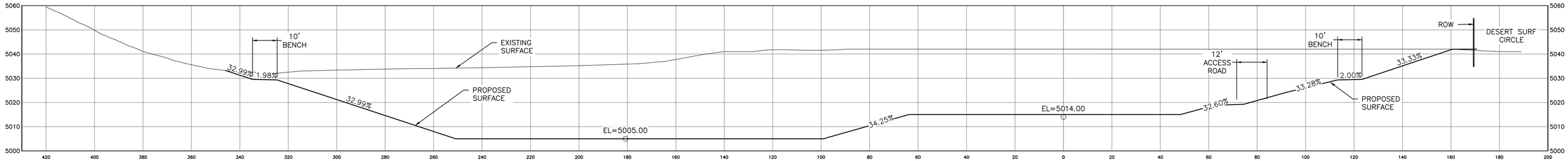
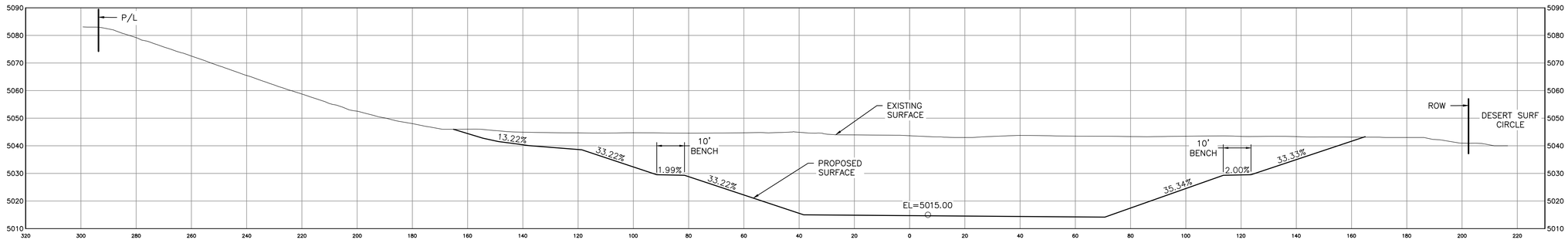
	MASS GRADING 3	2017035_OVERALL MASS GRADING PLAN
10/31/2018	TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858-3100 www.tierrawestllc.com	SHEET # **C6**
RONALD R. BOHANNAN P.E. #7868		JOB # 2017065

Z:\2017\2017035 Top Golf Albuquerque\dwg\DRB\2017035_Overall Mass Grading Plan.dwg Nov 08, 2018 - 9:42am

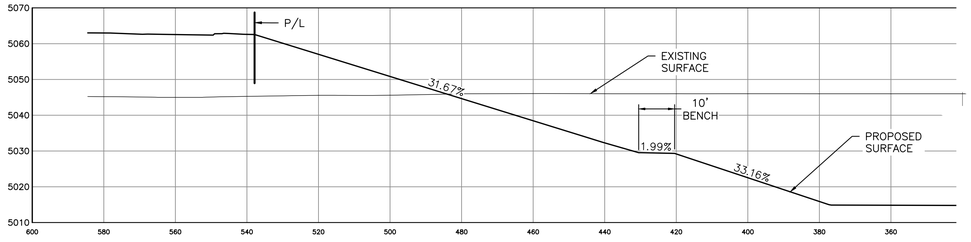
SECTION A

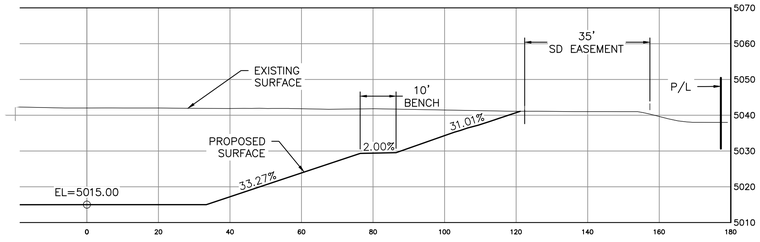


SECTION B

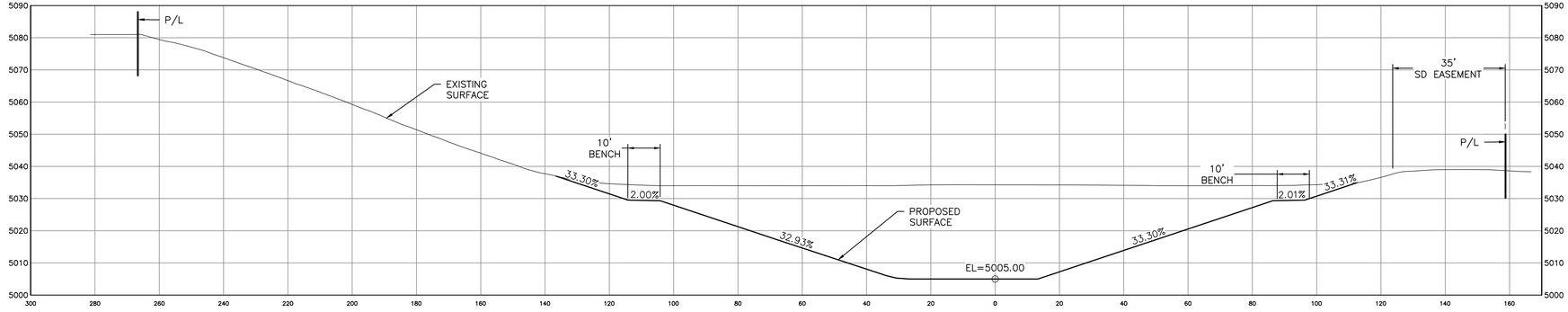


SECTION C

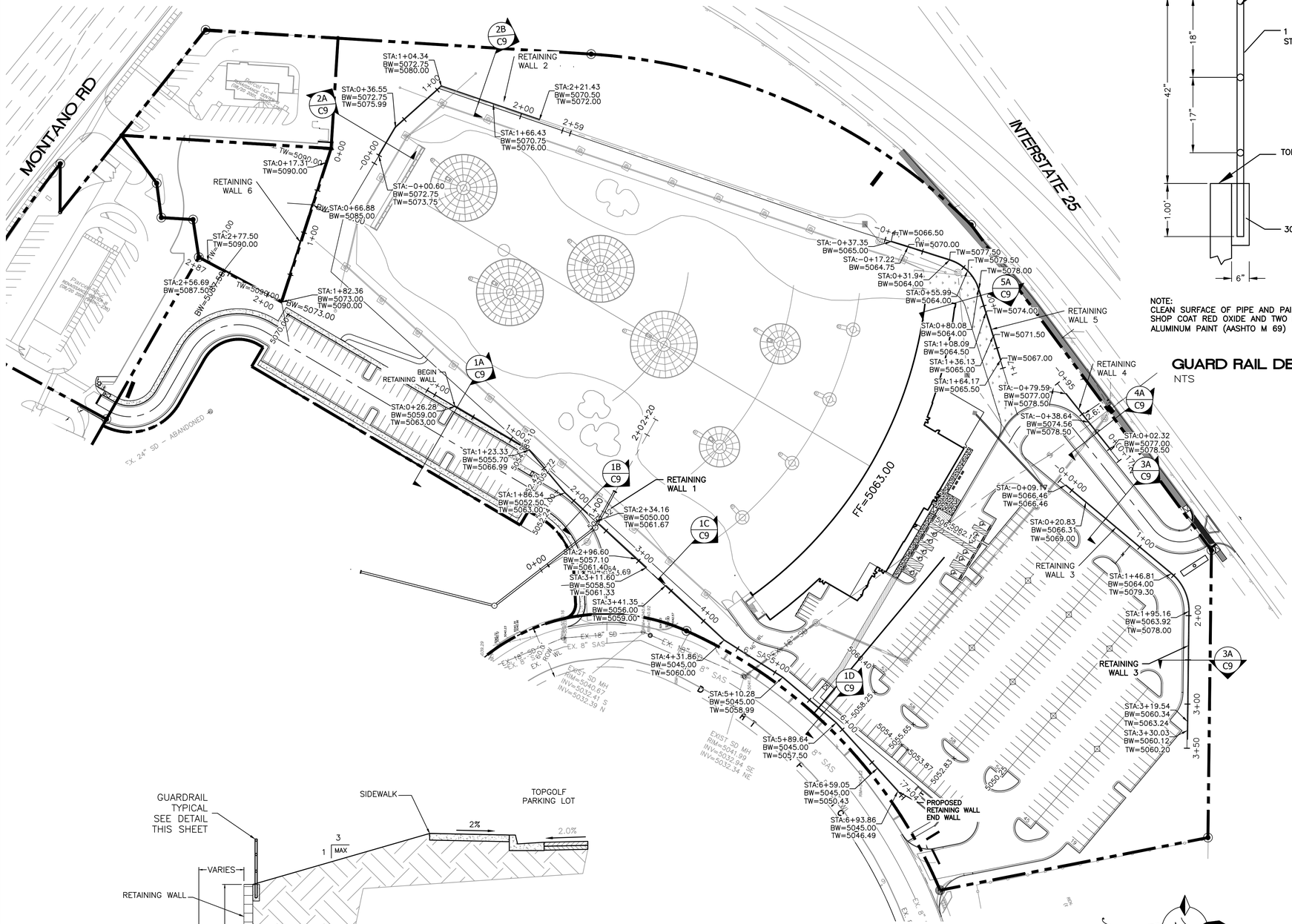




SECTION D

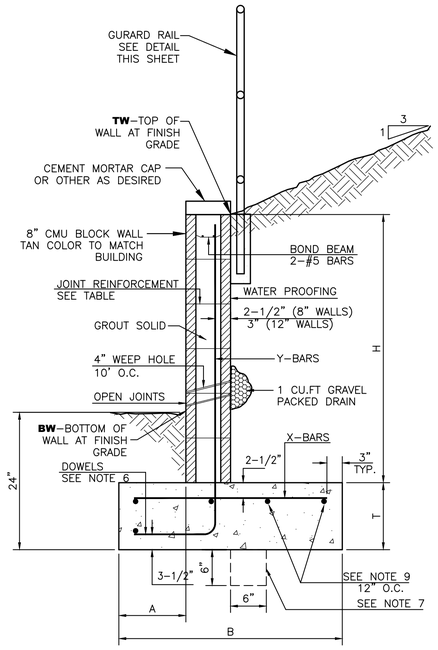


ENGINEER'S SEAL	**MULTI-USE RECREATIONAL FACILITY, ALBUQUERQUE, NM**	DRAWN BY BF
		DATE 10/31/18
	POND SECTIONS	2017035_OVERALL MASS GRADING PLAN
	TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858-3100 www.tierrawestllc.com	SHEET # **C7**
10/31/2018 *RONALD R. BOHANNAN P.E. #7868*		JOB # 2017065



NOTE:
CLEAN SURFACE OF PIPE AND PAINT WITH ONE SHOP COAT RED OXIDE AND TWO FINISH COATS ALUMINUM PAINT (AASHTO M 69)

GUARD RAIL DETAIL
NTS



RETAINING WALL DETAIL
NTS

8 INCH REINFORCED CONCRETE MASONRY WALL

H	A	B	T	Y–BARS	X–BARS
ft.–in.	in.	ft.–in.	in.		
2'–0"	8"	2'–0"	9"	#4 @32" O.C.	
2'–8"	8"	2'–0"	9"	#4 @32" O.C.	#4 @24" O.C.
3'–4"	8"	2'–4"	9"	#4 @32" O.C.	#4 @24" O.C.
4'–0"	10"	2'–8"	9"	#4 @32" O.C.	#4 @24" O.C.
4'–8"	12"	3'–4"	10"	#5 @32" O.C.	#4 @18" O.C.
5'–4"	14"	3'–10"	10"	#6 @16" O.C.	#4 @18" O.C.
6'–0"	16"	4'–8"	12"	#6 @ 8" O.C.	#4 @12" O.C.

12 INCH REINFORCED CONCRETE MASONRY WALL

H	A	B	T	Y–BARS	X–BARS
ft.–in.	in.	ft.–in.	in.		
5'–4"	14"	3'–8"	10"	#6 @18" O.C.	#4 @24" O.C.
6'–0"	15"	4'–2"	12"	#4 @16" O.C.	#4 @18" O.C.
6'–8"	16"	4'–6"	12"	#4 @24" O.C.	#5 @18" O.C.
7'–4"	18"	4'–10"	12"	#6 @16" O.C.	#5 @18" O.C.
8'–0"	20"	5'–4"	12"	#7 @18" O.C.	#6 @12" O.C.
8'–8"	20"	5'–8"	12"	#7 @16" O.C.	#6 @12" O.C.

GENERAL NOTES:

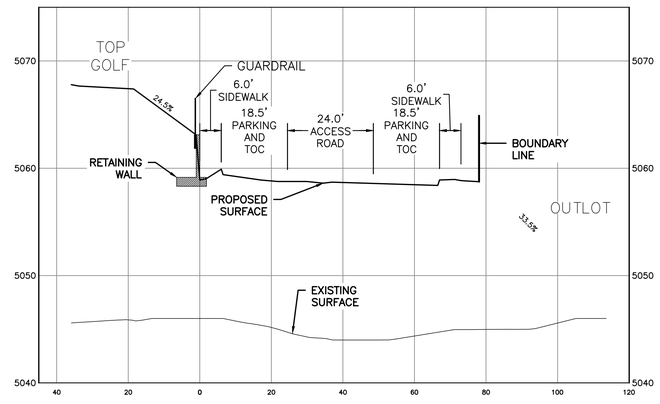
1. ALL CONCRETE IS TO BE 4000 PSI @ 28 DAYS.
2. MINIMUM COMPACTION UNDER FOOTINGS IS TO BE 95% PER ASTM. D 1557 FOR A DEPTH OF 12" MOISTURE CONTENT IS TO BE ± 2.0%.
3. BACK FILL AGAINST WALLS IS TO BE HAND–PLACED AND COMPACTED.
4. ALL BARS ARE TO BE GRADE 60, ASTM 615.
5. TRUSS TYPE DUR–O–WALL EVERY OTHER COURSE.
6. DOWELS SHALL BE AT LEAST EQUAL IN SIZE AND SPACING TO V–BARS, SHALL PROJECT A MINIMUM OF 30 BAR DIA. INTO THE FILLED BLOCK CORES, AND SHALL EXTEND TO THE TOE OF THE FOOTING.
7. PROVIDE KEY FOR 8" AND 12" WALLS WHERE H EXCEEDS 6'–0"
8. USE EITHER EXPANSION JOINTS ON 20' CENTERS OR PILASTERS EVERY 16'.
9. BOND BEAM, 1–#4 BARS FOR WALLS UNDER 3'–4", 2–#4 BARS FOR WALLS UNDER 5'–4", 2–#5 BARS FOR WALLS OVER 5'–4".

RETAINING WALL HANDRAIL SECTION
NTS

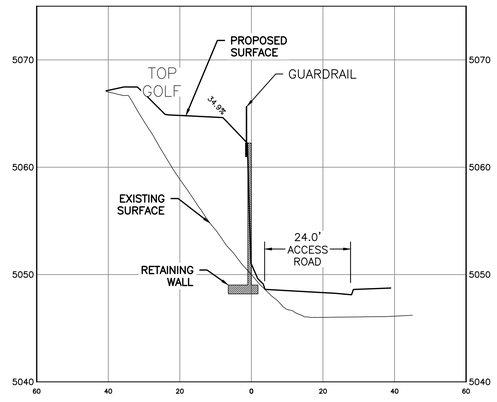
GRAPHIC SCALE
60 30 0 30 60
SCALE: 1"=60'

ENGINEER'S SEAL RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER 10/31/2018 RONALD R. BOHANNAN P.E. #7868	MULTI–USE RECREATIONAL FACILITY, ALBUQUERQUE, NM RETAINING WALLS	DRAWN BY BF DATE 10/31/18 2017035_RETAINING WALLS–3 SHEET # C8 JOB # 2017065
	TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858–3100 www.tierrawestllc.com	

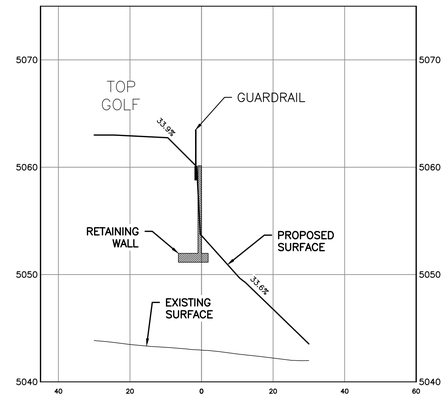
RET WALL 1 SECTION 1A



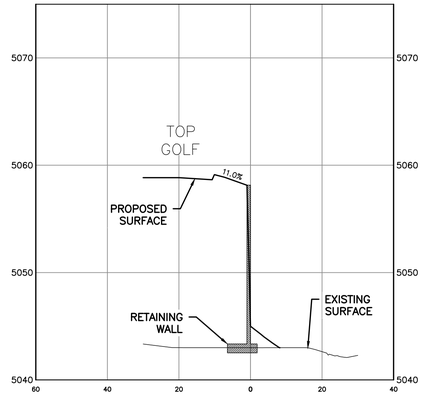
RET WALL 1 SECTION 1B



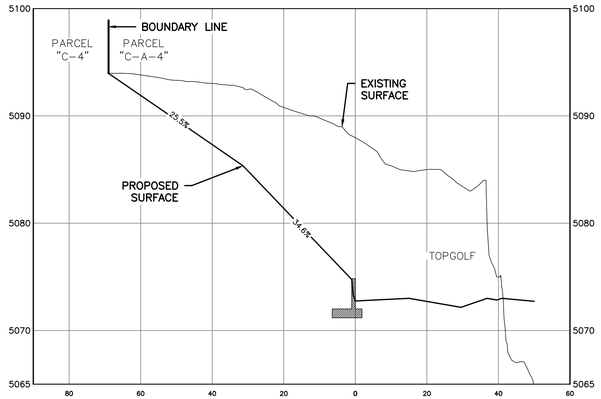
RET WALL 1 SECTION 1C



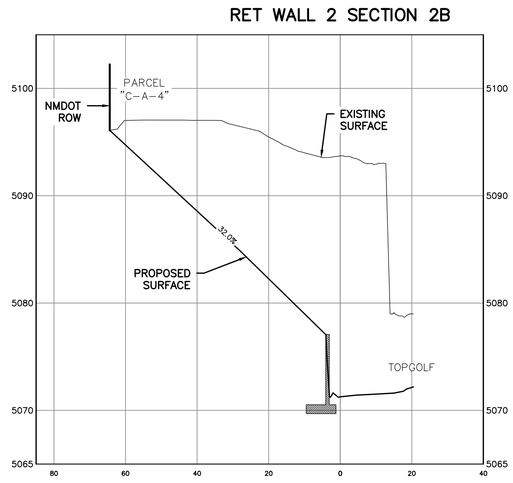
RET WALL 1 SECTION 1D



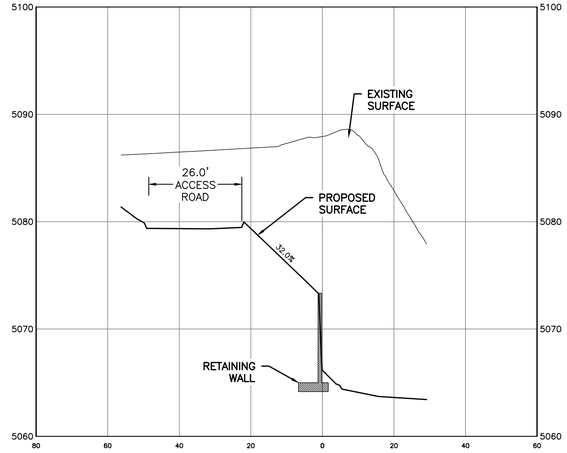
RET WALL 2 SECTION 2A



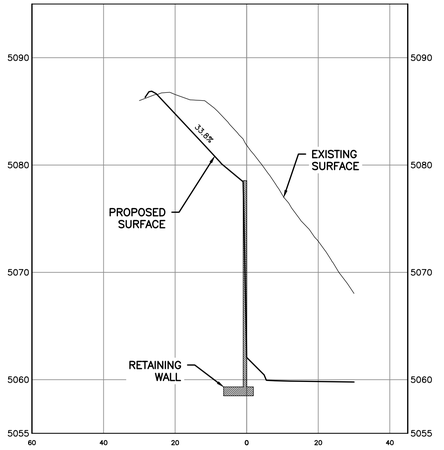
RET WALL 2 SECTION 2B



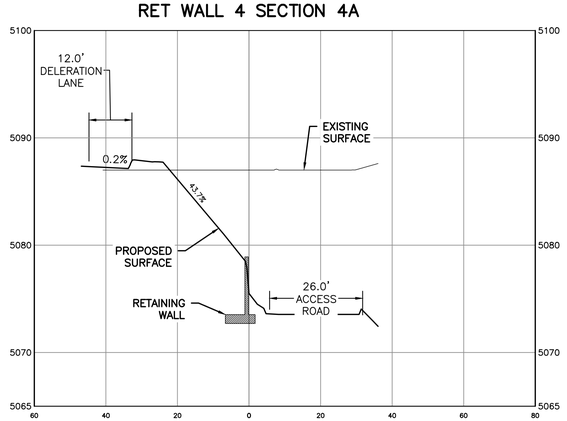
RET WALL 3 SECTION 3A



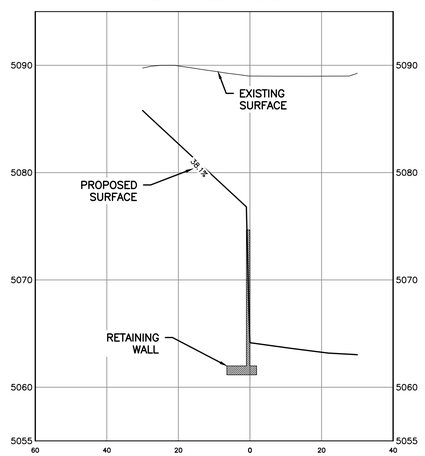
RET WALL 3 SECTION 3B



RET WALL 4 SECTION 4A



RET WALL 5 SECTION 5A



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.

GRAPHIC SCALE

20 10 0 10 20

SCALE: 1"=20'
VERT. SCALE: 1"=2.5'

ENGINEER'S SEAL

RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER

10/31/2018

RONALD R. BOHANNAN
P.E. #7868

MULTI-USE RECREATIONAL FACILITY, ALBUQUERQUE, NM

TOPGOLF SECTIONS

TIERRA WEST, LLC
5571 MIDWAY PARK PLACE NE
ALBUQUERQUE, NM 87109
(505) 858-3100
www.tierrawestllc.com

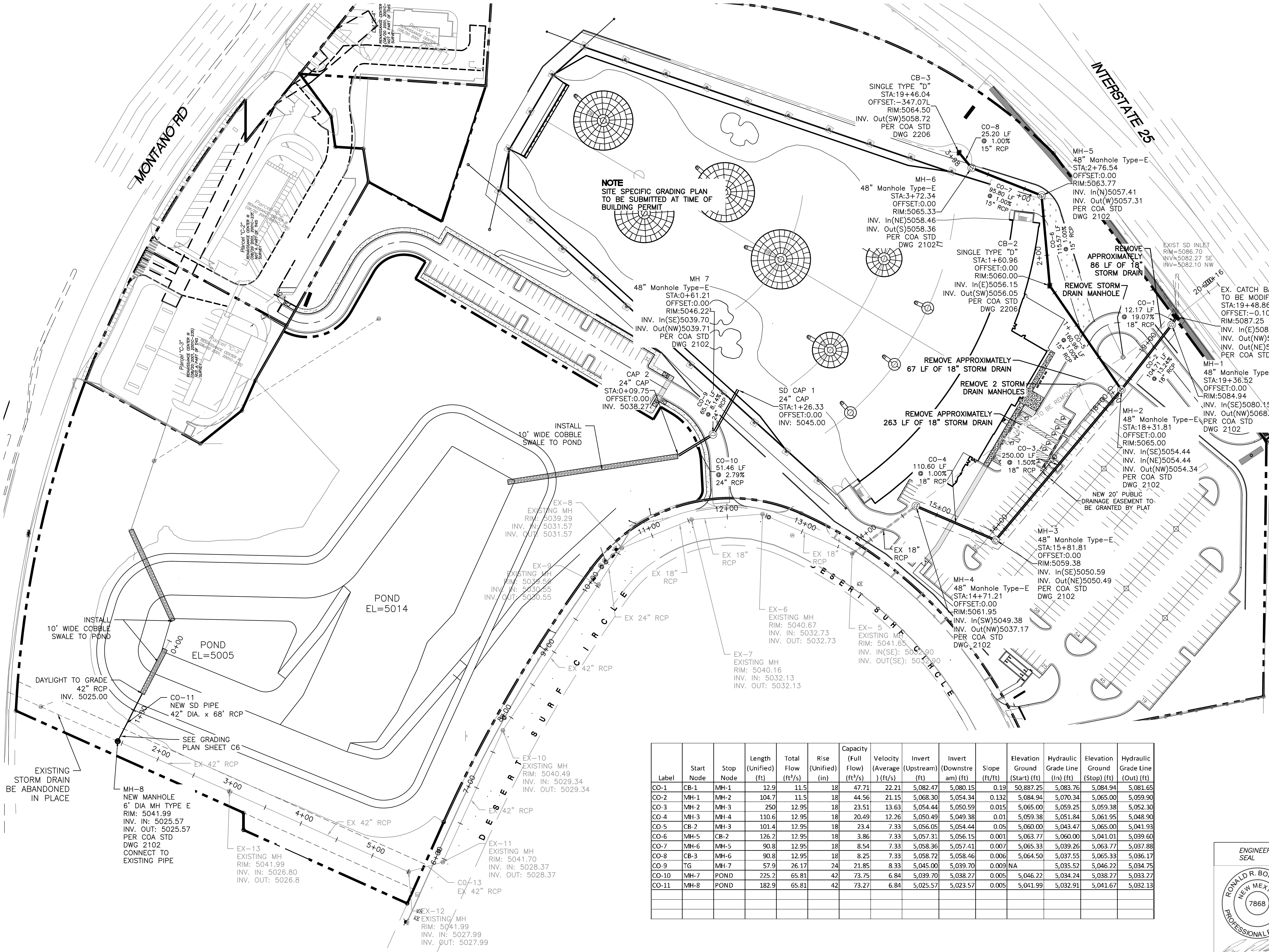
DRAWN BY: BF

DATE: 10/31/18

2017035_GRB-3

SHEET # C9

JOB # 2017065



LEGEND

- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- BUILDING
- SIDEWALK
- RETAINING WALL
- EXISTING CURB & GUTTER
- STORM DRAIN LINE
- SANITARY SEWER LINE (6" SAS)
- WATER LINE (3" WL)
- FIRE LINE (6" WL)
- EXISTING STORM DRAIN LINE (EX. 18" SD)
- STORM DRAIN MANHOLE
- EXISTING STORM DRAIN MANHOLE
- SANITARY SEWER MANHOLE
- EXISTING SAS MANHOLE
- DOUBLE CLEAN OUT
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WATER METER
- EXISTING POWER POLE
- EXISTING GAS VALVE

Label	Start Node	Stop Node	Length (Unified) (ft)	Total Flow (ft³/s)	Rise (Unified) (in)	Capacity (Full Flow) (ft³/s)	Velocity (Average) (ft/s)	Invert (Upstream) (ft)	Invert (Downstream) (ft)	Slope (ft/ft)	Elevation Ground (Start) (ft)	Hydraulic Grade Line (In) (ft)	Elevation Ground (Stop) (ft)	Hydraulic Grade Line (Out) (ft)
CO-1	CB-1	MH-1	12.9	11.5	18	47.71	22.21	5,082.47	5,080.15	0.19	50,887.25	5,083.76	5,084.94	5,081.65
CO-2	MH-1	MH-2	104.7	11.5	18	44.56	21.15	5,068.30	5,054.34	0.132	5,084.94	5,070.34	5,065.00	5,059.90
CO-3	MH-2	MH-3	250	12.95	18	23.51	13.63	5,054.44	5,050.59	0.015	5,065.00	5,059.25	5,059.38	5,052.30
CO-4	MH-3	MH-4	110.6	12.95	18	20.49	12.26	5,050.49	5,049.38	0.01	5,059.38	5,051.84	5,061.95	5,048.90
CO-5	CB-2	MH-3	101.4	12.95	18	23.4	7.33	5,056.05	5,054.44	0.05	5,060.00	5,043.47	5,065.00	5,041.93
CO-6	MH-5	CB-2	126.2	12.95	18	3.86	7.33	5,057.31	5,056.15	0.001	5,063.77	5,060.00	5,041.01	5,039.60
CO-7	MH-6	MH-5	90.8	12.95	18	8.54	7.33	5,058.36	5,057.41	0.007	5,065.33	5,039.26	5,063.77	5,037.88
CO-8	CB-3	MH-6	90.8	12.95	18	8.25	7.33	5,058.72	5,058.46	0.006	5,064.50	5,037.55	5,065.33	5,036.17
CO-9	TG	MH-7	57.9	26.17	24	21.85	8.33	5,045.00	5,039.70	0.009	NA	5,035.52	5,046.22	5,034.75
CO-10	MH-7	POND	225.2	65.81	42	73.75	6.84	5,039.70	5,038.27	0.005	5,046.22	5,034.24	5,038.27	5,033.27
CO-11	MH-8	POND	182.9	65.81	42	73.27	6.84	5,025.57	5,023.57	0.005	5,041.99	5,032.91	5,041.67	5,032.13

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NOTE:
ALL PUBLIC STORM SEWER TO BE CONSTRUCTED UNDER COA WORK ORDER PERMIT

ENGINEER'S SEAL	MULTI-USE RECREATIONAL FACILITY, ALBUQUERQUE, NM	DRAWN BY BF
RONALD R. BOHANNAN, NEW MEXICO, 7868, PROFESSIONAL ENGINEER — 10/31/2018	STORM SEWER PLAN	DATE 10/31/18
		2017035_SDB-3_MASS GRADING
RONALD R. BOHANNAN P.E. #7868	TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858-3100 www.tierrawestllc.com	SHEET # C10
		JOB # 2017065

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