CITY OF ALBUQUERQUE

February 27, 2018

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

RE: **Entertainment Facility**
3930 Pan-American NE
Grading and Drainage Plan
Engineers Stamp Date: 2/16/18
Hydrology File: G16D145A

Dear Mr. Bohannan,

Based on the information provided in your submittal received on 2/21/18, the Grading and Drainage Plan cannot be approved for Building Permit until the following are addressed:

1. The first flush pond(s) need to be sized for the areas draining to them. Calculate the first flush requirement for each subbasin within the project site, including the western edge of this project site that is not delineated. Show how the first flush runoff will be retained on-site from each subbasin.
2. If unable to retain on-site, the runoff that bypasses the first flush ponds will need to be quantified and stated on plans.
3. Payment of Fee-in-Lieu will be required for the bypass volume at a rate of $8/CF. this appears to be all of Basin 1 and the non-delineated western edge.
4. The southern drainage easement is currently being used for surface drainage. The construction plans for the drainage easement (SAD216 CPN: 3960) show an earthen drainage channel with cement treated base (CTB) dikes, a flow depth of 0.33', and a 48" storm drain beneath. The current proposal to use it as a first flush facility is unacceptable until it can be demonstrated that the new pond will not interfere with the function of this channel.
5. Please provide the ALTA survey and copies of easements of record for the southern drainage easement. The DRB approved Site Plan for Carpenter's Union alternately refers to this area as "Storm Drain Easement, Variable Width Drainage Easement, and Easement for Flood Control Channel."

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6. Additional detail will be needed for the pond(s), including top of pond elevations, actual and required volume and water surface elevations with respect to walls and property lines.

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

Sincerely,

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

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TIERRA WEST, LLC

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February 15, 2018

Ms. Dana Peterson
Senior Engineer Planning Dept.
PO Box 1293
Albuquerque, NM 87103

RE: ENTERTAINMENT FACILITY
3930 PAN-AMERICAN NE
GRADING AND DRAINAGE PLAN
ENGINEERS STAMP DATE: 2/1/18
HYDROLOGY FILE: G16D145A

Dear Ms. Peterson:

Please find the following responses addressing your comments listed below:

1. The western edge of this project site is no delineated as a subbasin and does not appear to be considered in your drainage plan. Please include.
   The western edge of this project is accounted for in the original Carpenter's Center Master Drainage Plan and drains to an existing inlet in the parking lot to the west.

2. Hatch or otherwise delineate the impervious versus areas on the subbasin map and provide the areas for each. Include a scale for the subbasin map.
   The Basin Map is now scaled and includes hatching for the impervious area as well as the square footage.

3. This site has been previously graded and compacted by human activity; no type B land treatment remains. Please update to reflect land treatment C.
   Based on the definition in the DPM Type B is acceptable for irrigated lawns, parks and golf courses with flat slopes. This is the land treatment that is used for landscaped areas within the City. Type C is generally used when there are large slopes on the property, which this one does not have.

4. Calculate the first flush requirement for each subbasin and shoe how it will be retained on-site for each subbasin. If unable to retain on-site, the bypass volume needs to be quantified and stated on plans. Payment of Fee-in-Lieu will be required for the bypass volume at a rate of $8/CF.
   The First Flush calculation was completed for each Basin. The total volume is captured in the proposed First Flush pond located along the south property line.

5. Basin 2 is described as surface draining south into the drainage channel. However there is an existing inlet in the proposed parking lot that drains to the west. Will this be removed?
   The existing inlet was constructed with the original Carpenter's Training center prior to the First Flush requirement. This grading plan is set up to essentially bypass this inlet, although storm water may enter the inlet during large rain events.

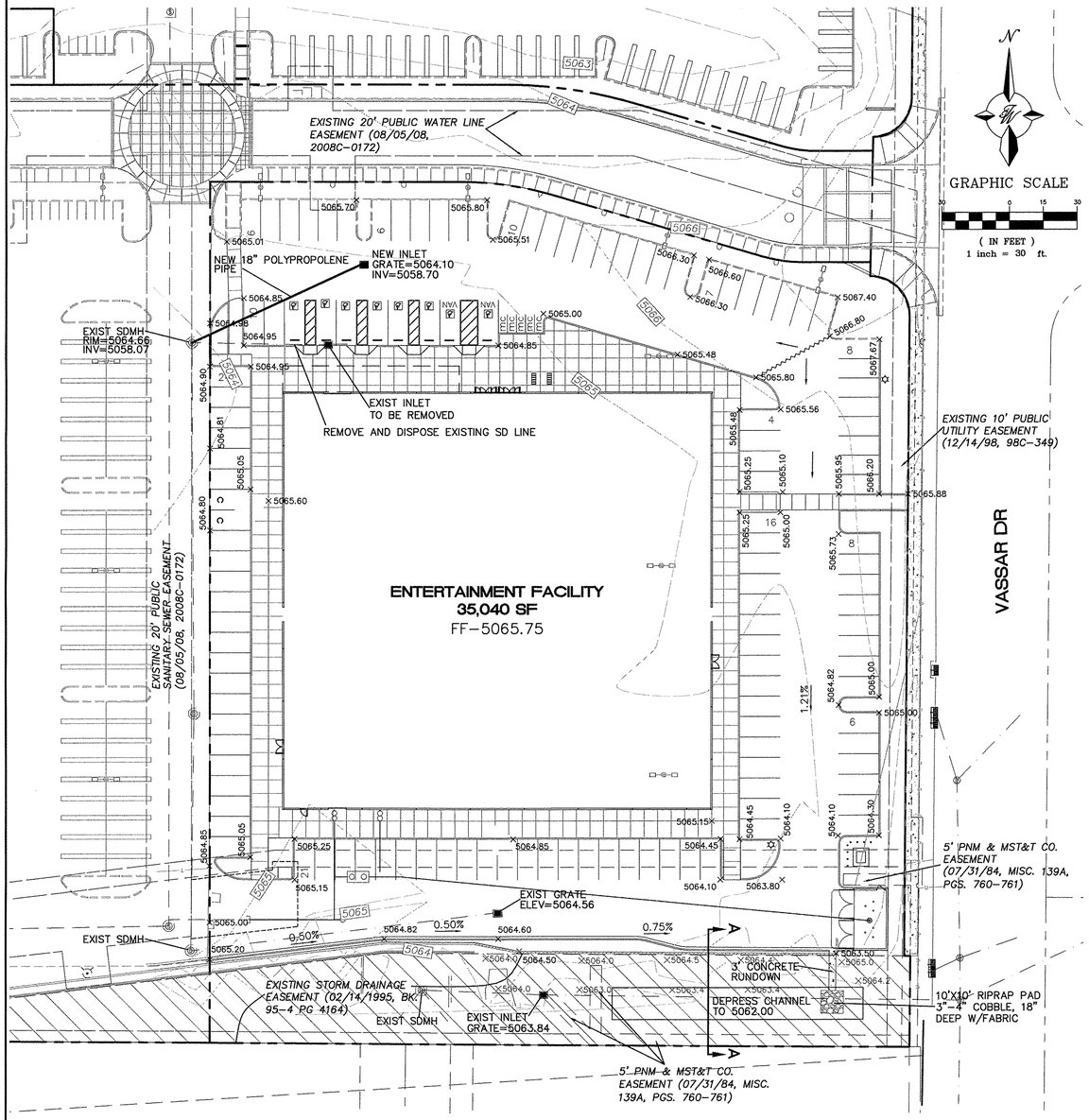
6. Who owns the southern drainage easement? Assuming this a publicly owned easement, the proposal to use it as a first flush facility is unacceptable and an alternate site needs to be selected for first flush ponding. The City will not accept maintenance responsibility for private first flush ponds.
   The easement is a public storm drainage easement for the storm sewer and owned by the property owner for the site. The surface is still the responsibility of the owner of the property and they are the ones responsible for maintenance as part of the continuing responsibility for the property.

If you have any questions or need additional information regarding this matter, please do not hesitate to contact me.

Sincerely,

Ronald R. Bohannan, PE

JN: 2017042
RRB/jn/kw



LEGEND

- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- CENTERLINE
- RIGHT-OF-WAY
- BUILDING
- SIDEWALK
- RETAINING WALL
- 5010 CONTOUR MAJOR
- 5011 CONTOUR MINOR
- x 5048.25 SPOT ELEVATION
- FLOW ARROW
- EXISTING CURB & GUTTER
- EXISTING BOUNDARY LINE
- EXISTING CONTOUR MAJOR
- EXISTING CONTOUR MINOR
- x 5048.25 EXISTING SPOT ELEVATION

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 (CITY) ACCEPTANCE OF ANY PROJECT.

NOTICE TO CONTRACTORS

1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
4. 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.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
7. WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS.

EXISTING SITE DRAINAGE:

THE 2.60 ACRE SITE IS LOCATED AT THE SOUTHEAST CORNER OF PAN AMERICAN FREEWAY AND VASSAR DRIVE NE. THE SITE IS BOUNDED ON THE NORTH AND WEST BY COMMERCIAL DEVELOPMENT, ON THE EAST BY VASSAR DRIVE NE AND ON THE SOUTH BY AN INDUSTRIAL/MANUFACTURING DEVELOPMENT.

THE SITE IS CURRENTLY VACANT DRAINS TO TWO EXISTING STORM SEWER INLETS WHERE THE WATER IS THEN CONVEYED BY STORM SEWER AND OPEN CHANNEL TO THE GRIEGOS POND THAT WAS CONSTRUCTED WITH SAD 216.

THERE ARE OFF-SITE FLOWS ENTERING A DRAINAGE EASEMENT ALONG THE SOUTH PROPERTY LINE WHERE A STORM SEWER AND OVERFLOW CHANNEL ARE LOCATED. THIS SITE IS LOCATED IN ZONE "X" AS SHOWN ON FIRM MAP #35001C0138H.

BASED ON THE APPROVED DRAINAGE REPORT FOR THE CARPENTERS TRAINING CENTER (G16/D145) THIS PROJECT MAY DISCHARGE A TOTAL OF 9.89 CFS. THE INFORMATION PERTAINING TO THE AMOUNT OF DISCHARGE ALLOWED FROM THIS PARCEL IS DETAILED ON PAGE 12 OF THE CARPENTERS TRAINING CENTER REPORT. ALL OF THE FLOWS PASS THROUGH AN EXISTING 48" RCP UNDER INTERSTATE 25 WHICH HAS A CAPACITY FOR 161 CFS. THIS PIPE DAYLIGHTS INTO A PONDING AREA WEST OF THE INTERSTATE AND EVENTUALLY DRAINS INTO THE GRIEGOS POND.

PROPOSED SITE DRAINAGE:

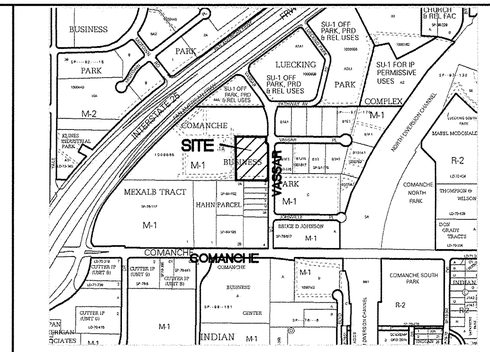
THIS SITE WILL BE DEVELOPED WITH A ENTERTAINMENT BUILDING ON THE PAD ALONG VASSAR DRIVE. THE SITE WILL UTILIZE LOW IMPACT DEVELOPMENT (LID) WHERE POSSIBLE ALLOWING SURFACE STORM WATER TO FLOW THROUGH LANDSCAPED AREAS PRIOR TO DISCHARGING TO THE STORM SEWER. THERE ARE THREE PROPOSED BASINS AS SHOWN ON THE PROPOSED BASIN MAP ON THIS SHEET.

BASIN 1 CONSISTS OF THE FRONT PARKING LOT AND DRAINS TO AN EXISTING DROP INLET. THE CARPENTER'S DRAINAGE PLAN WAS DEVELOPED BEFORE THE FIRST FLUSH REQUIREMENT SO THIS BASIN WAS MINIMIZED AS MUCH AS POSSIBLE SO THE FLOWS COULD BE REDIRECTED TO A FIRST FLUSH POND. THE FLOWS THAT ENTER THE EXISTING INLET EVENTUALLY DRAIN TO THE GRIEGOS POND SO ARE ESSENTIALLY DISCONNECTED FROM THE RIO GRADE.

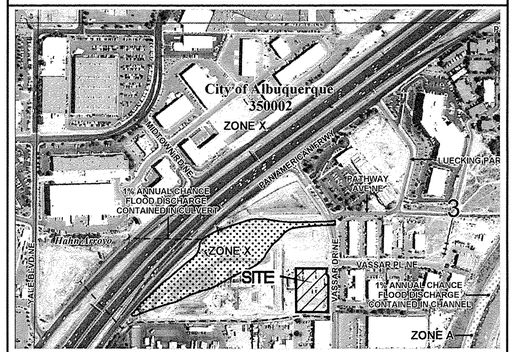
BASIN 2 CONSISTS OF THE BUILDING AND THE SOUTH AND WEST PARKING LOTS AND WILL SURFACE DRAIN TO THE EXISTING DRAINAGE CHANNEL ALONG THE SOUTH PROPERTY LINE. THE CHANNEL IS AN OVERFLOW AREA FOR AN EXISTING STORM SEWER. THE CHANNEL BOTTOM WILL BE DEPRESSED ONE FOOT TO ACCOMMODATE THE FIRST FLUSH VOLUME OF 0.057 AC-FT. EXCESS FLOW CAN BLEED OFF INTO AN EXISTING INLET LOCATED AT THE WEST END OF THE CHANNEL AS IF THE STORM SEWER OVERFLOWED. THE EXISTING DROP INLET IN THE DRIVE AISLE WILL ONLY ACT AS AN OVERFLOW SHOULD THERE BE A LARGE AMOUNT OF WATER THAT FALLS ON THE PARKING LOT

BASIN 3 CONSISTS OF THE EXISTING CHANNEL ITSELF AS WELL AS THE FIRST FLUSH POND. ALL OF THE FLOWS FROM THIS PROJECT ARE THE SAME AS APPROVED IN THE CARPENTER'S TRAINING CENTER REPORT OF 9.90 CFS AND ARE EVENTUALLY STORED IN THE GRIEGOS POND.

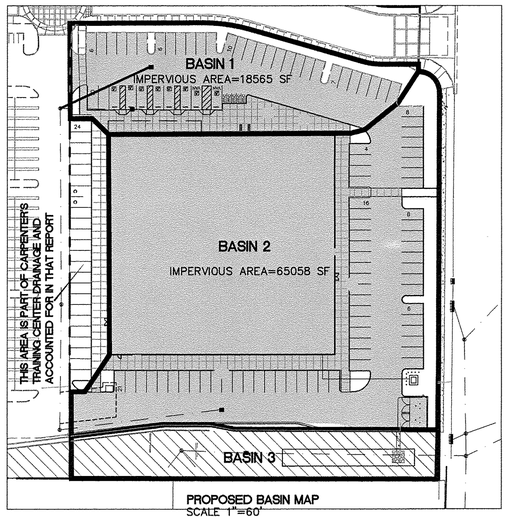
THE PARKING AREA WEST OF THE BUILDING IS LOCATED IN A DRAINAGE BASIN THAT WAS INCLUDED AS PART OF THE ORIGINAL CARPENTER'S DRAINAGE PLAN AND DRAINS TO AN EXISTING DROP INLET IN THE CARPENTER'S PARKING LOT.



VICINITY MAP G-16-Z

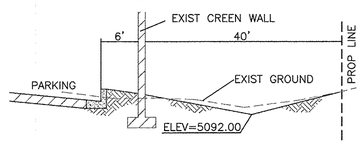


FIRM MAP 35001C0138H

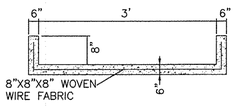


PROPOSED BASIN MAP
SCALE 1"=60'

FIRST FLUSH CALCULATION
BASIN 1: 18385 SF X 0.34"/12"=521 CF=0.012 AC-FT
BASIN 2: 65058 SF X 0.34"/12"=1843 CF=0.042 AC-FT



SECTION A-A



CONCRETE RUNDOWN DETAIL

Weighted E Method

On-Site Basins

Basin	Area (sf)	Area (acres)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	100-Year Weighted E (in)	100-Year Volume (ac-ft)	100-Year Flow cfs	10-Year Weighted E (in)	10-Year Volume (ac-ft)	10-Year Flow cfs
1	22,168	0.51	0%	0	17%	0.09	0%	0.00	83%	0.42	1.892	0.080	2.18	1.160	0.049	1.41
2	71,405	1.64	0%	0	9%	0.15	0%	0.00	91%	1.49	1.999	0.273	7.35	1.245	0.170	4.82
3	12,748	0.29	0%	0	100%	0.29	0%	0.00	0%	0.00	0.780	0.019	0.67	0.280	0.007	0.28
		2.44								**1.91**		**0.372**	**10.20**			

Equations:

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

Volume = Weighted D * Total Area

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

Excess Precipitation, E (inches)		
Zone 2	100-Year	10 - Year
E_a	0.53	0.13
E_b	0.78	0.28
E_c	1.13	0.52
E_d	2.12	1.34

Peak Discharge (cfs/acre)		
Zone 2	100-Year	10 - Year
Q_a	1.56	0.38
Q_b	2.28	0.95
Q_c	3.14	1.71
Q_d	4.70	3.14

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 NEW MEXICO 7868 REGISTERED PROFESSIONAL ENGINEER

RONALD R. BOHANNAN P.E. #7868

ENTERTAIMENT FACILITY 3930 PAN AMERICAN FRWY

GRADING PLAN

TIERRA WEST, LLC
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DRAWN BY pm

DATE 2-15-18

DRAWING

SHEET # 3

JOB # 2017042