

CITY OF ALBUQUERQUE

Planning Department
David S. Campbell, Director



Timothy M. Keller, Mayor

January 9, 2018

Jake Bordenave
Bordenave Designs
PO Box 91194
Albuquerque, NM 87199

RE: **Homewood Suites - 5400 San Antonio Dr. NE**
Grading and Drainage Plan
Engineer's Stamp Date 12/26/2017
Hydrology File: E18D050

Dear Mr. Bordenave:

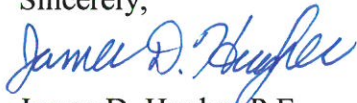
Based on the information provided in the submittal received on 12/28/17 the above-referenced Grading Plan cannot be approved for Building Permit until the following comments are addressed. In meetings since the G&D Plan was submitted it has been decided that the new pipe is to be shifted closer to the building, so some of these comments may not apply and there may be new comments after the plan changes are made.

1. The revised plan must be submitted and reapproved for Sight plan for Building Permit and the approved plan must be included in the Site Plan for Building Permit prior to final DRB signoff on that plan.
2. A recorded SIA must be provided to Hydrology showing that the public improvements have been Financially Guaranteed prior to final DRB signoff of the site plan.
3. A temporary bridge across the San Antonio Arroyo is to be added to the DRC work order plan set that will include removal and replacement of a portion of the adjacent bike trail. The trail removal and replacement should be shown on the G&D Plan
4. Bridge plans must be stamped by a New Mexico licensed professional engineer, and included in the DRC plans along with build notes, including a specific requirement of a Barricading Permit for the work in the channel right of way.
5. Written approval from Parks Department will be required for the trail closure prior to DRC approval.
6. The existing Public Storm Drain thru this site must remain functional at all times. Notes are to be added to the G&D Plan and the DRC P&P stating that temporary diversion ditches will be constructed and maintained when the storm drain is not in service.
7. The storm drain design and calculations must be submitted and approved by Hydrology prior to approval of the DRC Work Order Plans. The computer printouts should either be put on the G&D Plan or in a report with engineer's stamp on them.

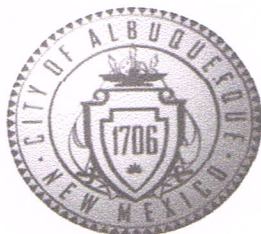
8. Private maintenance will be required for the piece of pipe that will be left in the Channel Right of way that will just receive private drainage. An Agreement and Covenant will be required prior to DRC approval, and the recording information should be noted on both the DRC Plans and the Grading and Drainage Plan. The covenant must be recorded prior to DRC approval.
9. A new public easement must be recorded prior to DRC approval. The original signed and notarized document complete with exhibits is to be turned into Madeline Caruthers along with a \$25 check to Bernalillo County for each document to be recorded. The document will be routed for approval and recorded by the City and you will be copied with any comments and/or the recorded document.
10. Profiles of the public pipes should show Q and V.
11. Add a signature block for the Landfill Gas engineer working for Homestead Suites to "Certify that this G&D Plan is in conformance with the Landfill Mitigation Plan" and provide copies of the plan and permits to hydrology prior to hydrology approval of the G&D Plan. Excerpts of the plan should be included in the DRC plans for "Information Only" prior to DRC approval.
12. Keynote # 4 should say private instead of public, unless you can provide records showing that the channel east of the building is public, and Keynote # 17 needs to be changed to reflect the relocated pipe.

If you have any questions, I can be contacted at 924-3986 or jhughes@cabq.gov.

Sincerely,



James D. Hughes P.E.
Principal Engineer, Planning Dept.
Development Review Services



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 10/2015)

Project Title: Mtn. West Lodging Building Permit #: _____ Hydrology File #: E18/D050
DRB#: 1000216 EPC#: _____ Work Order#: _____
Legal Description: Tract A-3-A, 1 Group Addition
City Address: _____

Applicant: Bordenave Designs Contact: Jake
Address: PO Box 91194, Alb, NM 87199
Phone#: 505-823-1344 Fax#: 505-821-9105 E-mail: jake.bordenave@comcast.net
Other Contact: — Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

Check all that Apply:

DEPARTMENT:

- ☒ HYDROLOGY/ DRAINAGE
☐ TRAFFIC/ TRANSPORTATION
☐ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

- ☐ ENGINEER/ARCHITECT CERTIFICATION
☒ CONCEPTUAL G & D PLAN
☒ GRADING PLAN
☐ DRAINAGE MASTER PLAN
☐ DRAINAGE REPORT
☐ CLOMR/LOMR
☐ TRAFFIC CIRCULATION LAYOUT (TCL)
☐ TRAFFIC IMPACT STUDY (TIS)
☐ EROSION & SEDIMENT CONTROL PLAN (ESC)
☐ OTHER (SPECIFY) _____

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

NO PRE-DESIGN MEETING?

IS THIS A RESUBMITTAL?: ☒ Yes ☒ No

OTHER (SPECIFY) _____

DATE SUBMITTED: 12/28/17 By: JAKE BORDENAVE

COA STAFF: _____ ELECTRONIC SUBMITTAL RECEIVED: _____



December 26, 2017

City of Albuquerque
Hydrology, Planning Dept.
PO Box 1293
Albuquerque, NM 87103

Attn: James D. Hughes PE
Re: E18/D050

The following is written in response to your comments (dated 11/27/17) on the subject project. The responses are in the same order as your comments.

1. Since the new storm drain is being connected to the existing storm drain at both ends we can't construct the new storm drain and have the existing storm drain functional at the same time. Also, as you are aware, the portion of the storm drain easement in the area of proposed construction was vacated by plat in October of this year. To solve these issues of concern it is suggested that a Temporary Drainage Easement be prepared to allow drainage to cross the property in an undefined location and manner.

2. The storm drain is analyzed as a series of connected culverts with the tailwater equal to the downstream headwater requirement less the drop across the manhole. This method will provide conservative values for HGL elevations and what I believe is actually happening in a storm drain as it goes through a manhole if the flow depth is more than half the pipe diameter.

We could have arrived at the same conclusion as the hydraulic analysis by using simple logic. The additional flow from the east area of the project (1.4 cfs) is very small compared to the main flow from the street and it enters the system within 11 feet of the end of the pipe. Also the new pipe starts and ends on the existing pipe so that the elevation difference is equal and it is fifty feet shorter than the old pipe. The logic agrees with the calculations.

3. A written agreement between the City and the owner of the property will be completed and filed with the County Clerk. The filing information will be shown on both the Drainage Report and the DRC plans. Hydraulic calculations have been prepared for both the public and the private portions of the storm drain system and are included in the Drainage Report.

4. A signature block from Ken Hunter will be added to both plan sets once we get all other items resolved.

5. The items listed are public. Keynote No. 17 has been labeled on the plan.

6. The FEMA designated flood plain boundary has been shown on the plan and a Keynote has been added that states that a Elevation Certificate will be required.

7. One set of notes has been deleted and Note 4 of the Grading Notes has been changed.
8. A bold note has been added to the plan regarding site construction items that are to be built per City Work Order and items that are to be governed by an Agreement and Covenant document.

Sincerely,

Jean J.(Jake) Bordenave

P.O. Box 91194
Albuquerque, NM 87199-1194
Phone (505)823-1344 Fax (505)821-9105 Cell 480-6812
Email jakebordenave@comcast.net

PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE

December 26, 2017

Pino Arroyo to Manhole 1

PROGRAM INPUT DATA

DESCRIPTION	VALUE
Culvert Diameter (ft).....	3.0
FHWA Chart Number.....	1
FHWA Scale Number (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.013
Entrance Loss Coefficient of Culvert Opening.....	0.2
Culvert Length (ft).....	11.0
Invert Elevation at Downstream end of Culvert (ft).....	5,202.07
Invert Elevation at Upstream end of Culvert (ft).....	5,202.1
Culvert Slope (ft/ft).....	0.0027
Starting Flow Rate (cfs).....	1.4
Incremental Flow Rate (cfs).....	4.0
Ending Flow Rate (cfs).....	41.4
Starting Tailwater Depth (ft).....	2.0
Incremental Tailwater Depth (ft).....	0.1
Ending Tailwater Depth (ft).....	3.0

COMPUTATION RESULTS

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
1.4	2.0	0.49	1.97	0.41	0.37	2.0	0.28
5.4	2.1	0.99	2.09	0.8	0.73	2.1	1.02
9.4	2.2	1.33	2.23	1.06	0.97	2.2	1.69
13.4	2.3	1.63	2.37	1.29	1.16	2.3	2.3
17.4	2.4	1.9	2.53	1.5	1.33	2.4	2.87
21.4	2.5	2.16	2.7	1.7	1.49	2.5	3.4
25.4	2.6	2.4	2.87	1.9	1.63	2.6	3.9
29.4	2.7	2.65	3.05	2.11	1.76	2.7	4.39
33.4	2.8	2.89	3.24	2.35	1.88	2.8	4.86
37.4	2.9	3.14	3.43	2.77	1.99	2.9	5.35
41.4	3.0	3.39	3.65	3.0	2.1	3.0	5.86

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PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE

December 26, 2017

Manhole 1 to Manhole 2

PROGRAM INPUT DATA

DESCRIPTION	VALUE
Culvert Diameter (ft).....	3.0
FHWA Chart Number.....	1
FHWA Scale Number (Type of Culvert Entrance).....	1
Manning's Roughness Coefficient (n-value).....	0.013
Entrance Loss Coefficient of Culvert Opening.....	0.2
Culvert Length (ft).....	163.0
Invert Elevation at Downstream end of Culvert (ft).....	5,202.3
Invert Elevation at Upstream end of Culvert (ft).....	5,202.91
Culvert Slope (ft/ft).....	0.0037
Starting Flow Rate (cfs).....	0.1
Incremental Flow Rate (cfs).....	4.0
Ending Flow Rate (cfs).....	40.1
Starting Tailwater Depth (ft).....	3.19
Incremental Tailwater Depth (ft).....	0.0
Ending Tailwater Depth (ft).....	3.19

COMPUTATION RESULTS

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
0.1	3.19	0.12	2.58	0.11	0.1	3.0	0.01
4.1	3.19	0.85	2.59	0.64	0.63	3.0	0.58
8.1	3.19	1.23	2.63	0.91	0.9	3.0	1.15
12.1	3.19	1.54	2.69	1.12	1.1	3.0	1.71
16.1	3.19	1.81	2.77	1.31	1.28	3.0	2.28
20.1	3.19	2.07	2.88	1.49	1.44	3.0	2.84
24.1	3.19	2.32	3.01	1.66	1.58	3.0	3.41
28.1	3.19	2.57	3.16	1.83	1.71	3.0	3.98
32.1	3.19	2.81	3.34	2.01	1.84	3.0	4.54
36.1	3.19	3.06	3.54	2.19	1.95	3.0	5.11
40.1	3.19	3.3	3.77	2.41	2.06	3.0	5.67

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PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE

December 27, 2017

Manhole 1 to Manhole 'X'

PROGRAM INPUT DATA

DESCRIPTION	VALUE
Culvert Diameter (ft).....	3.0
FHWA Chart Number.....	1
FHWA Scale Number (Type of Culvert Entrance).....	2
Manning's Roughness Coefficient (n-value).....	0.013
Entrance Loss Coefficient of Culvert Opening.....	0.5
Culvert Length (ft).....	180.0
Invert Elevation at Downstream end of Culvert (ft).....	5,202.3
Invert Elevation at Upstream end of Culvert (ft).....	5,202.67
Culvert Slope (ft/ft).....	0.0021
Starting Flow Rate (cfs).....	1.0
Incremental Flow Rate (cfs).....	0.1
Ending Flow Rate (cfs).....	1.4
Starting Tailwater Depth (ft).....	3.19
Incremental Tailwater Depth (ft).....	0.0
Ending Tailwater Depth (ft).....	3.19

COMPUTATION RESULTS

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
1.0	3.19	0.41	2.82	0.37	0.31	3.0	0.14
1.1	3.19	0.43	2.82	0.39	0.32	3.0	0.16
1.2	3.19	0.45	2.82	0.41	0.34	3.0	0.17
1.3	3.19	0.47	2.82	0.42	0.35	3.0	0.18
1.4	3.19	0.49	2.82	0.44	0.37	3.0	0.2

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PIPE CULVERT ANALYSIS
COMPUTATION OF CULVERT PERFORMANCE CURVE

December 26, 2017

Manhole 2 to Manhole 3

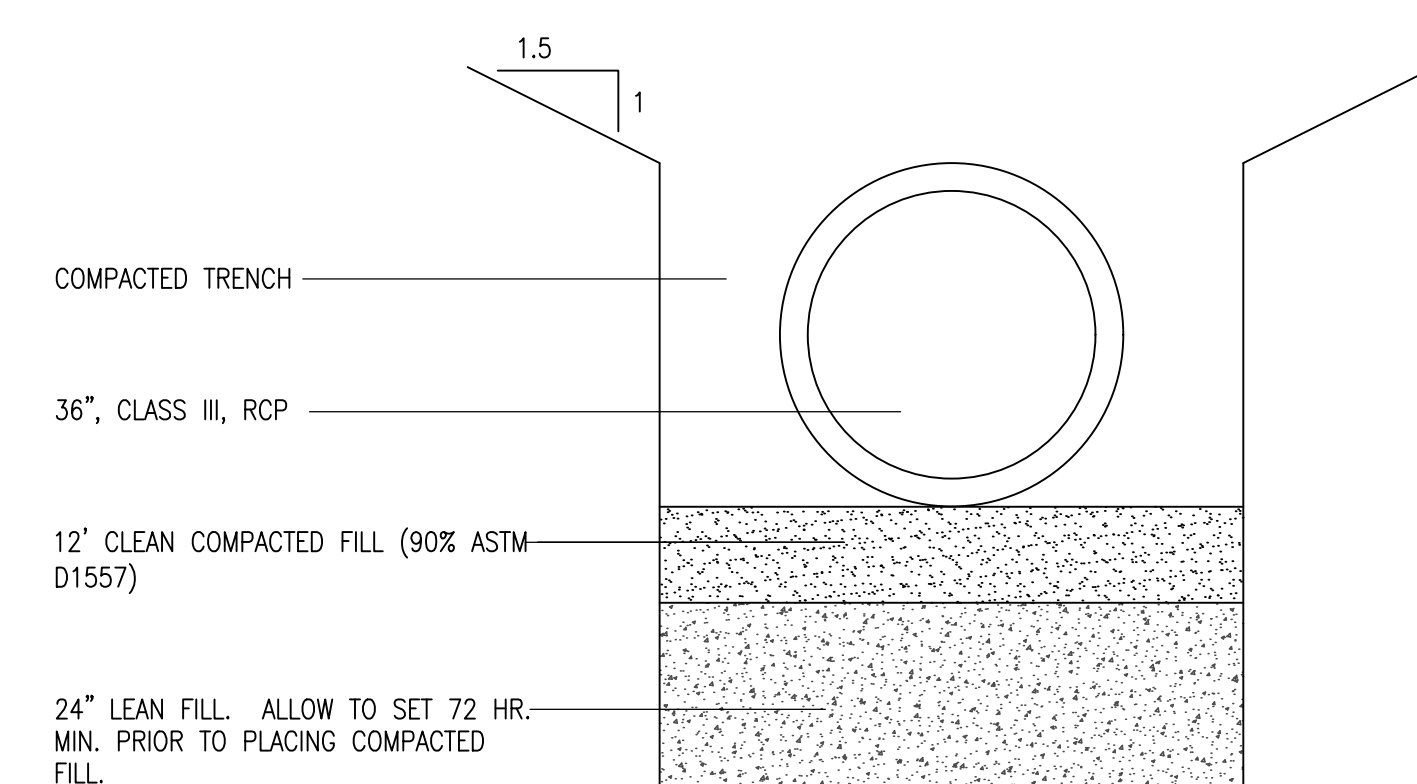
PROGRAM INPUT DATA

DESCRIPTION	VALUE
Culvert Diameter (ft).....	3.0
FHWA Chart Number.....	1
FHWA Scale Number (Type of Culvert Entrance).....	2
Manning's Roughness Coefficient (n-value).....	0.013
Entrance Loss Coefficient of Culvert Opening.....	0.5
Culvert Length (ft).....	96.0
Invert Elevation at Downstream end of Culvert (ft).....	5,203.01
Invert Elevation at Upstream end of Culvert (ft).....	5,203.23
Culvert Slope (ft/ft).....	0.0023
Starting Flow Rate (cfs).....	0.1
Incremental Flow Rate (cfs).....	4.0
Ending Flow Rate (cfs).....	40.1
Starting Tailwater Depth (ft).....	3.1
Incremental Tailwater Depth (ft).....	0.0
Ending Tailwater Depth (ft).....	3.1

COMPUTATION RESULTS

Flow Rate (cfs)	Tailwater Depth (ft)	Headwater (ft) Inlet Control	Headwater (ft) Outlet Control	Normal Depth (ft)	Critical Depth (ft)	Depth at Outlet (ft)	Outlet Velocity (fps)
0.1	3.1	0.13	2.88	0.12	0.1	3.0	0.01
4.1	3.1	0.85	2.89	0.73	0.63	3.0	0.58
8.1	3.1	1.23	2.92	1.03	0.9	3.0	1.15
12.1	3.1	1.53	2.98	1.28	1.1	3.0	1.71
16.1	3.1	1.8	3.06	1.51	1.28	3.0	2.28
20.1	3.1	2.06	3.16	1.73	1.44	3.0	2.84
24.1	3.1	2.3	3.28	1.95	1.58	3.0	3.41
28.1	3.1	2.54	3.42	2.18	1.71	3.0	3.98
32.1	3.1	2.77	3.58	2.47	1.84	3.0	4.54
36.1	3.1	3.01	3.77	3.0	1.95	3.0	5.11
40.1	3.1	3.24	3.98	3.0	2.06	3.0	5.67

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DISCLOSURE STATEMENT:

THE SUBJECT PROPERTY IS LOCATED ON A FORMER LANDFILL. DUE TO THE SUBJECT PROPERTY BEING ON A FORMER LANDFILL, CERTAIN PRECAUTIONARY MEASURES MAY BE TAKEN TO ENSURE THE HEALTH AND SAFETY OF THE PUBLIC. RECOMMENDATIONS MADE BY PROFESSIONAL ENGINEER WITH EXPERTISE IN LANDFILLS AND LANDFILL GAS ISSUES (AS REQUIRED BY THE MOST CURRENT VERSION OF THE "INTERIM GUIDELINES FOR DEVELOPMENT WITHIN CITY DESIGNATED LANDFILL BUFFER ZONES" SHALL BE CONSULTED PRIOR TO DEVELOPMENT OF THE SITE.

N

LE: 1" = 20' HORIZONTAL
1" = 5' VERTICAL

Profile view of a storm drain installation. The vertical axis shows elevation in feet (5200 to 5225). The horizontal axis shows stationing (5+00.00 to 7+71.59). The profile includes the ground surface (dashed line), the storm drain pipe (solid line), and the proposed final grade (dashed line). Two manholes are shown: Manhole 1 at station 5+00.00 and Manhole 2 at station 7+71.59. The pipe is labeled "INSTALL 36" RCP, CLASS III STORM DRAIN". The ground surface is labeled "FINAL GRADE AT CENTERLINE OF PIPE". The pipe is labeled "H.G.L.". The manholes are labeled "INSTALL 6' TYPE 'E' MANHOLE".

Station	Ground Surface (ft)	Proposed Final Grade (ft)	Manhole Type	Manhole Invert (ft)	Manhole Outfall (ft)	HGL (ft)
5+00.00	5208.85	5208.85	6' Type 'E'	5202.30	5202.39	5202.39
6+69.96	5215.00	5215.00	6' Type 'E'	5203.01	5202.81	5202.81
7+71.59	5216.97	5216.97	6' Type 'E'	5203.43	5203.23	5203.23

TOPOGRAPHY LEGEND	
G	GROUND
FL	FLOWLINE
TA	TOP OF ASPHALT
TC	TOP OF CONCRETE
BC	TOP BACK OF CURB
TP	TOP OF EARTH PAD
TS	TOP OF SIDEWALK
TW	TOP OF WALL
FH	FIRE HYDRANT
WM	WATER METER
WV	WATER VALVE
CB	CATCH BASIN GRATE
WM	WATER METER
WV	WATER VALVE
MH	MANHOLE
CB	CATCH BASIN GRATE
GM	GAS METER
GV	GAS VALVE
LP	LIGHT POLE
PP	POWER POLE
GW	GUY WIRE
PED	ELEC, TEL, CBL PEDESTAL

1. SEE SHEETS 2 & 3 FOR PLAT DIMENSIONS.
2. STATIONING IS ALONG THE CENTERLINE OF PIPE. OFFSETS ARE MEASURED PERPENDICULAR TO THE CENTER LINE.
3. ALL UTILITY DIMENSIONS ARE MEASURED TO CENTER OF PIPE HORIZONTALLY AND EITHER TOP OF PIPE FOR PRESSURE FLOW LINES OR INVERT OF PIPE FOR GRAVITY FLOW LINES UNLESS OTHERWISE STATED.
4. CITY OF ALBUQUERQUE STANDARD DRAWINGS

VALVE BOX
 -2326
 -2328 WATER LINE
 -2329 FIRE LINE

FIRE HYDRANT
 -2340

CITY OF ALBUQUERQUE

TITLE	HOMEWOOD SUITES STORM DRAIN	
SHEET NUMBER	1	

DESIGN REVIEW	ENGINEER APPROVAL		MO/DAY/YEAR	MO/DAY/YEAR

[illegible]

HEADER CURB

The drawing consists of two parts: a cross-section view at the top and a plan view below it. The cross-section shows a rectangular curb with a width of 6 inches and a height of 15 inches. A note indicates to round the top edges with a 1/2 inch edging tool. The plan view shows the curb's placement on a sloped fill area. The curb is 1 foot wide and is set back 2 feet from the edge of the fill slope. The curb is composed of three layers: a top layer of 2-inch diameter reinforcing steel bars, a middle layer of portland cement curb, and a bottom layer of subgrade preparation (95% modified proctor). The curb is also shown with a compacted subgrade (90% modified proctor) and a paving surface. A note indicates to provide contraction joints at 50 feet on center unless otherwise stated on site plans or if curb abuts sidewalk; where curb joints shall match sidewalk joints.

6"

15"

* ROUND TOP EDGES WITH 1/2" EDGING TOOL.

2'-0" MIN.

1'-0" MIN.

6"

6"

2-#4 REINFORCING STEEL BARS

PORTLAND CEMENT CURB

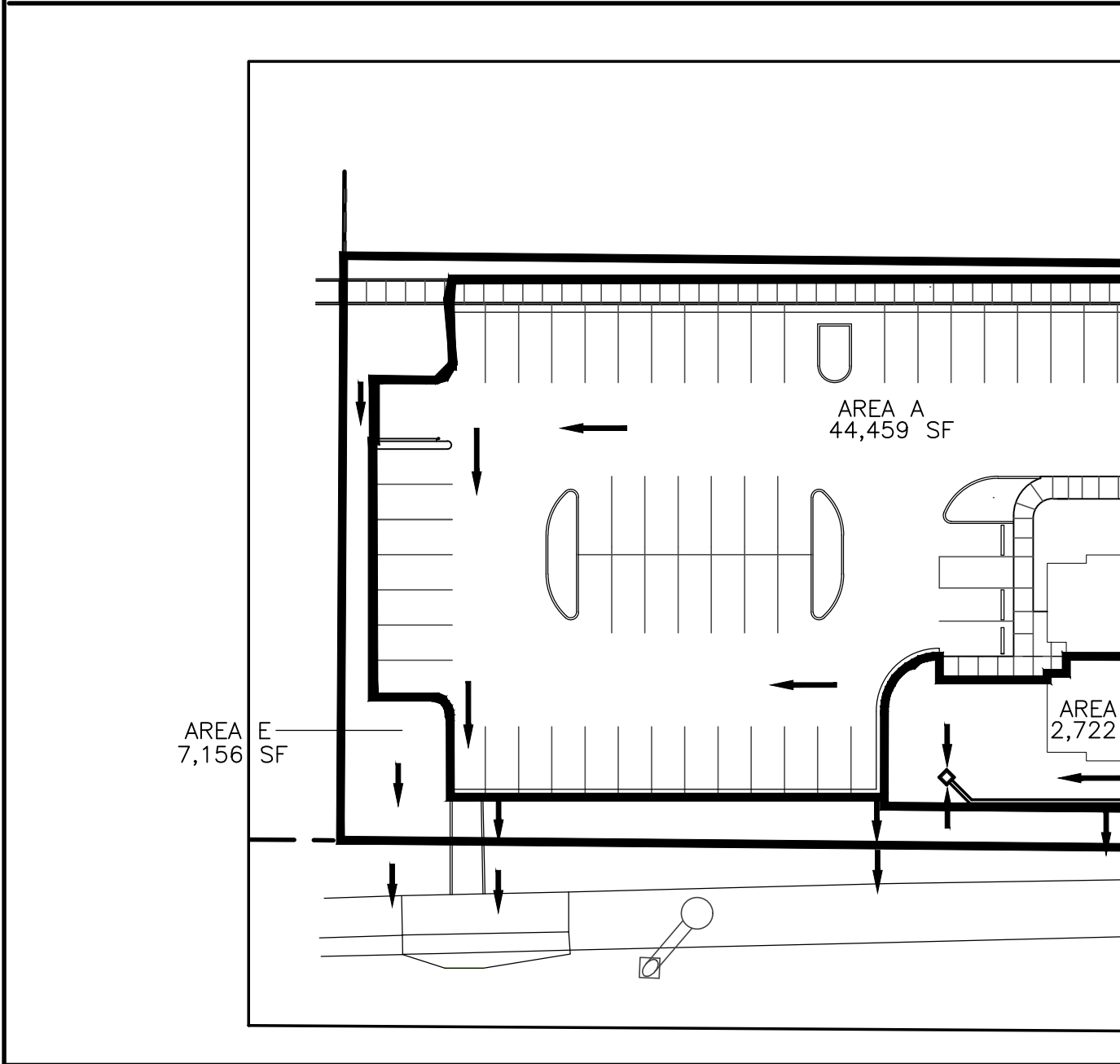
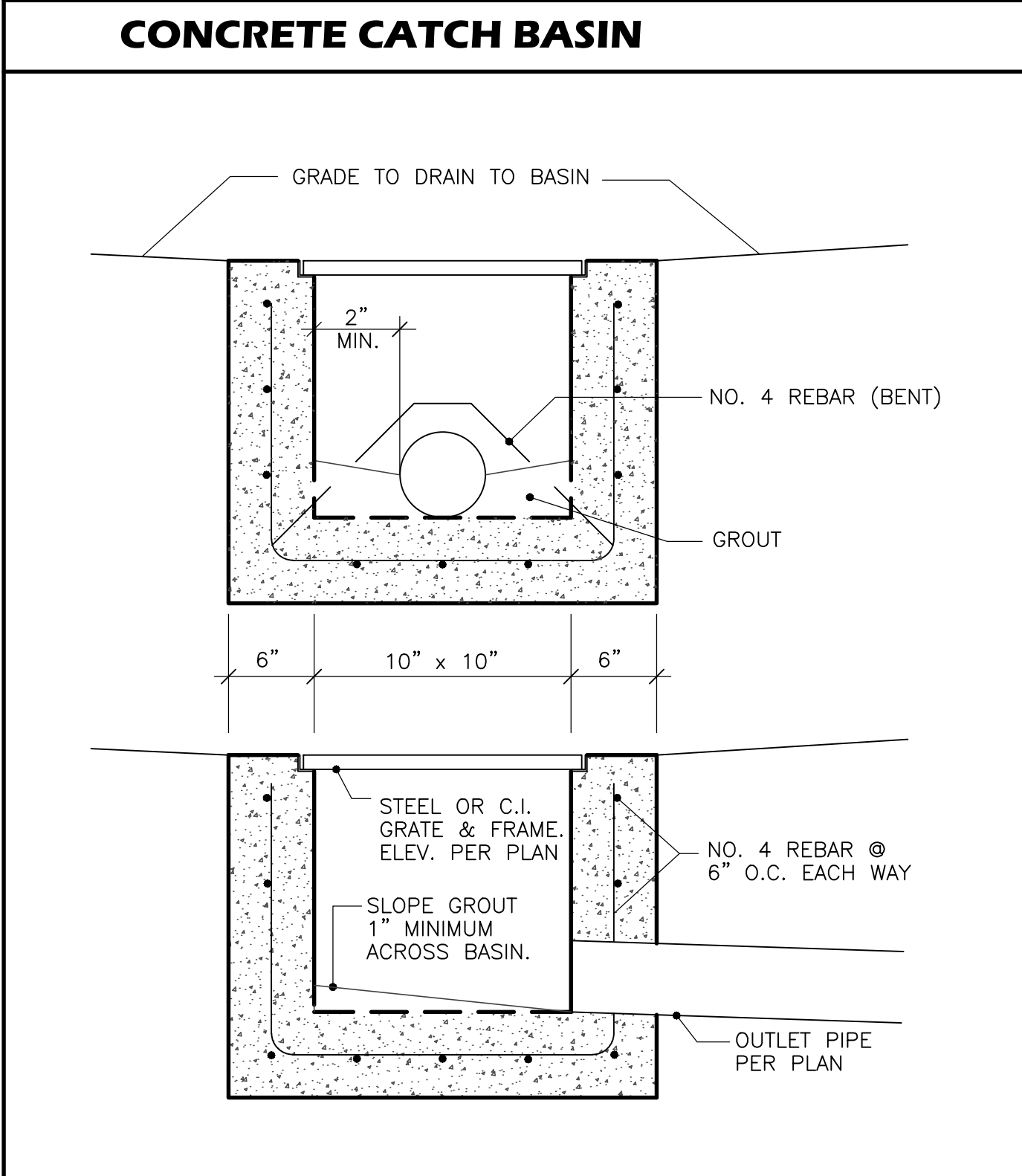
SUBGRADE PREPARATION
(95% MODIFIED PROCTOR)

COMPACTED SUBGRADE
(90% MODIFIED PROCTOR)

PAVING SURFACE
(SEE PAVING SECTION)

NOTE:

PROVIDE CONTRACTION JOINTS AT 50 FEET ON CENTER AND EXPANSION JOINTS AT 50 FEET ON CENTER UNLESS OTHERWISE STATED ON SITE PLANS OR IF CURB ABUTS SIDEWALK; WHERE CURB JOINTS SHALL MATCH SIDEWALK JOINTS.



ASPHALT PAVEMENT

light duty
IN PARKING SPACES
ONLY

The diagram shows a cross-section of a light duty asphalt pavement structure. It consists of three layers: a top layer of asphalt surface course, a middle layer of subgrade preparation, and a bottom layer of compacted subgrade. The layers are labeled with their respective thicknesses and compaction requirements.

- 3" ASPHALT SURFACE COURSE
- 6" SUBGRADE PREPARATION (95% MODIFIED PROCTOR)
- COMPACTED SUBGRADE (90% MODIFIED PROCTOR)

heavy duty
IN TRUCK LANES

The diagram shows a cross-section of a heavy duty asphalt pavement structure. It consists of four layers: a top layer of asphalt surface course, a layer of aggregate base course, a layer of subgrade preparation, and a bottom layer of compacted subgrade. The layers are labeled with their respective thicknesses and compaction requirements.

- 4" ASPHALT SURFACE COURSE
- 4" AGGREGATE BASE COURSE
- 12" SUBGRADE PREPARATION (2-6" COURSES) (95% MODIFIED PROCTOR)
- COMPACTED SUBGRADE (90% MODIFIED PROCTOR)

NOTES:

1. ASPHALT MIX DESIGN TO USE CITY OF ALBUQUERQUE AGGREGATE CLASS C AND HAVE A MARSHALL STABILITY GREATER THAN 1800 LBS.
2. ASPHALT CONCRETE COURSES GREATER THAN 3" IN THICKNESS SHALL BE PLACED WITH MULTIPLE LIFTS. MINIMUM LIFT THICKNESS 1 1/2".

SIDEWALK

* ROUND EXPOSED EDGES WITH 1/2" EDGING TOOL.

SEE SITE PLAN FOR WIDTH

SLOPE AT 1/4" PER FOOT UNLESS OTHERWISE SHOWN

6"

6"

4" PORTLAND CEMENT CONCRETE SIDEWALK (4000 PSI CONCRETE)

6" SUBGRADE PREPARATION (95% MODIFIED PROCTOR)

COMPACTED SUBGRADE (90% MODIFIED PROCTOR)

A cross-sectional diagram of a sidewalk construction. The diagram shows several distinct layers from top to bottom: a concrete sidewalk layer, a subgrade preparation layer, a compacted subgrade layer, and an asphalt paving section at the base. Dimensions are indicated with arrows: the sidewalk width is 6 inches; the slope is 1/4 inch per foot unless otherwise shown; the subgrade preparation is 6 inches thick; the compacted subgrade is 90% modified proctor; and the asphalt paving section is 4 inches thick. A note indicates that the round exposed edges should be finished with a 1/2 inch edging tool.

- * ROUND EXPOSED EDGES
WITH 1/2" EDGING TOOL.
- SEE SITE PLAN
FOR WIDTH
- SLOPE AT 1/4"
PER FOOT UNLESS
OTHERWISE SHOWN
- 4" PORTLAND CEMENT CONCRETE SIDEWALK
(3000 PSI CONCRETE)
- 6" SUBGRADE PREPARATION (95%
MODIFIED PROCTOR)
- NO. 4 REBAR (CONTINUOUS)
- COMPACTED SUBGRADE (90%
MODIFIED PROCTOR)
- ASPHALT PAVING SECTION

STORM DRAIN OUTLET

CONCRETE CHANNEL EXTENSION.

HEADER CURB PER DETAIL THIS SHEET.

DBL 'D' CATCH BASIN PER COA STD. DWG. 2206.

6" PVC OR CORR. SMOOTH WALL HDPE STORM DRAIN FROM CATCH BASIN.

GROUT. SLOPE 1"/FT. FROM BASIN WALL TO OUTLET PIPE.

CURB 16.80

GRATE 16.30

INLET 14.15

OUTLET 13.80

6" PVC OR CORR. SMOOTH WALL HDPE PIPE FROM CATCH BASIN TO EXISTING 36" RCP. ENTER EXISTING RCP PIPE ABOVE PIPE CENTERLINE.

EXISTING 36" RCP STORM DRAIN. SAW HOLE FOR INLET PIPE FROM CATCH BASIN. SEAL INLET PIPE IN PLACE AND PLUG 36" RCP IMMEDIATELY UPSTREAM FROM INLET PIPE WITH NON-SHRINK GROUT.

APPROXIMATE INVERT 02.8.

* ROUND EXPOSED EDGES
WITH 1/2" EDGING TOOL.

12" 6" 18" 6" 6" 6"

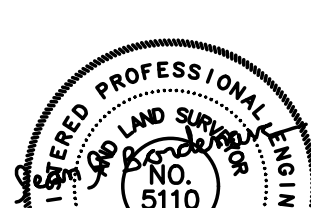
NO. 4 REBAR (2 MIN.) AT 18" O.C. MAX.

NO. 4 REBAR (2 MIN.) AT 18" O.C. MAX.

SUBGRADE PREPARATION (95% MODIFIED PROCTOR)

COMPACTED SUBGRADE (90% MODIFIED PROCTOR)

no.	date	remarks	by
REVISIONS			

	project title HOMESWOOD SUITES SAN ANTONIO NE ALBUQUERQUE, NM		
	sheet title SITE DETAILS & DRAINAGE CALCS		
12/26/17	drawn by METO	design by JJB	project no. 1715
BORDENAVE DESIGNS P.O. BOX 91194, ALBUQUERQUE, NM 87199 Office (505)823-1344 Cell (505)480-6812 Email JakeBordenave@comcast.net			sheet C1.2

BASIN A

CONCRETE CHANNEL FROM PARKING LOT TO SIDE CHANNEL INLET
BROAD CRESTED WEIR

$Q = CLH^{1.5}$ where $Q = 4.97$ cfs, $C = 2.8$, $H = 0.4'$ and $L = \text{weir length}$
 $L = 7.01'$, USE $8'$ WEIR LENGTH

BASIN B

GRATED CATCH BASIN - SUMP
ORIFICE INLET

$Q = CA(2gh)^{0.5}$ where the orifice opening is 50% of the basin opening and a
50% clogging factor at grate, $Q = 0.22$ cfs, orifice factor = 0.60,
 $g = 32.2'/\text{sec}/\text{sec}$, $H = 0.25'$

$0.22 = 0.6A(2)(32.2)(0.25)^{0.5}$
 $A = 0.09(2)(2) = 0.36$ sf, USE $10"x10"$ CATCH BASIN

ORIFICE OUTLET

$Q = CA(2gh)^{0.5}$ where orifice factor = 0.60, $g = 32.2'/\text{sec}/\text{sec}$, $H = 1.5'$
 $0.22 = 0.6A(2)(32.2)(1.5)^{0.5}$
 $A = 0.037$ sf, Radius = $0.12'$, USE $6"$ PIPE

BASIN C

GRATED CATCH BASIN - SUMP
ORIFICE INLET

$Q = CA(2gh)^{0.5}$ where the orifice opening is 50% of the basin opening and a
50% clogging factor at grate, $Q = 0.21$ cfs, orifice factor = 0.60,
 $g = 32.2'/\text{sec}/\text{sec}$, $H = 0.25'$

$0.21 = 0.6A(2)(32.2)(0.25)^{0.5}$
 $A = 0.09(2)(2) = 0.36$ sf, USE $10"x10"$ CATCH BASIN

ORIFICE OUTLET

$Q = CA(2gh)^{0.5}$ where orifice factor = 0.60, $g = 32.2'/\text{sec}/\text{sec}$, $H = 1.5'$
 $0.22 = 0.6A(2)(32.2)(1.5)^{0.5}$
 $A = 0.037$ sf, Radius = $0.12'$, USE $6"$ PIPE

CONDITION	STORM	TREATMENT	TREATMENT	EXCESS	PEAK	RUNOFF	RUNOFF
	A RETURN S PERIOD	TYPE	AREA	PRECIPITATION	RUNOFF	VOLUME	RATE
	N	(table 4)		(table 8)	(table 9)		
-	- year	-	sq. ft.	in.	cfs/acre	cu. ft.	cfs.
DEVELOPED	10	A	0	0.19	0.58	0	0.00
SITE		B	4459	0.36	1.19	134	0.12
		C	7885	0.62	2	407	0.36
		D	51050	1.5	3.39	6381	3.97
		TOTAL	63394			6922	4.46
	100	A	0	0.66	1.87	0	0.00
		B	4459	0.92	2.6	342	0.27
		C	7885	1.29	3.45	848	0.62
		D	51050	2.36	5.02	10040	5.88
		TOTAL	63394			11229	6.77
	A 100	A	0	0.66	1.87	0	0.00
		B	1251	0.92	2.6	96	0.07
		C	2459	1.29	3.45	264	0.19
		D	40749	2.36	5.02	8014	4.70
		TOTAL	44459			8374	4.97
	B 100	A	0	0.66	1.87	0	0.00
		B	1717	0.92	2.6	132	0.10
		C	0	1.29	3.45	0	0.00
		D	1005	2.36	5.02	198	0.12
		TOTAL	2722			329	0.22
	C 100	A	0	0.66	1.87	0	0.00
		B	0	0.92	2.6	0	0.00
		C	399	1.29	3.45	43	0.03
		D	1510	2.36	5.02	297	0.17
		TOTAL	1909			340	0.21
	D 100	A	0	0.66	1.87	0	0.00
		B	0	0.92	2.6	0	0.00
		C	1491	1.29	3.45	160	0.12
		D	7702	2.36	5.02	1515	0.89
		TOTAL	9193			1675	1.01
	E 100	A	0	0.66	1.87	0	0.00
		B	3536	0.92	2.6	271	0.21
		C	3536	1.29	3.45	380	0.28
		D	84	2.36	5.02	17	0.01
		TOTAL				668	0.50

OUTLET PIPE FROM BASIN B TO BASIN D

PVC OR SMOOTH WALL HDPE (set velocity = 2.5 fps minimum)

$Q = (1.489/n)A^{2/3}S^{0.5}$, where $Q = 0.43\text{cfs}$, $n = 0.13$, $A = 0.196\text{sf}$, $R = 0.125$

$S = (0.43/(0.125)^{2/3}(1.489/0.13)) = 0.0043$ ft.ft, USE 0.50%

BASIN D

DBL 'D' CATCH BASIN - SUMP

ORIFICE INLET

$Q = CA(2gh)^{0.5}$ where 50% clogging factor at grate, $Q = 1.01\text{cfs}$, orifice factor = 0.60, $A = 4.20\text{sf}$,
 $g = 32.2'/\text{sec}/\text{sec}$,
 $1.01 = (0.6)(2.1)((2)(32.2)(H))^{0.5}$

$D = 0.32$ ft,

ORIFICE OUTLET

$Q = CA(2gh)^{0.5}$ where $Q = 1.54\text{cfs}$, orifice factor = 0.60, $g = 32.2'/\text{sec}/\text{sec}$, $H = 2.5'$,
 $1.44 = 0.6A((2)(32.2)(1.5))^{0.5}$

$A = 0.037$ sf, Radius = $0.12' =$ USE $6"$ PIPE

TBM	TEMPORARY BENCHMARK		FEMA FLOODPLAIN BOUNDARY
G	GROUND		DRAINAGE BASIN BOUNDARY
FF	FINISH FLOOR		EROSION SETBACK LINE
FG	FINISH GRADE <i>after landscaping</i>		EXISTING CONTOUR
FL	FLOWLINE		PROPOSED CONTOUR
TA	TOP OF ASPHALT		EXISTING SPOT ELEVATION
TC	TOP OF CONCRETE		PROPOSED SPOT ELEVATION
BC	TOP OF CURB		RECORD SPOT ELEVATION
TP	TOP OF EARTH PAD		
TS	TOP OF SIDEWALK		
TW	TOP OF WALL		
FH	FIRE HYDRANT		
WM	WATER METER		
WV	WATER VALVE		
MH	MANHOLE		
CB	CATCH BASIN GRATE		
GM	GAS METER		
GV	GAS VALVE		
LP	LIGHT POLE		
PP	POWER POLE		
GW	GUY WIRE		
PED	ELEC., TEL. OR CBL. PED.		
OHU	OVERHEAD UTILITIES		
◄RD/C	ROOF DRAINAGE POINT		

KEYED NOTES

1. EXISTING BUILDING TO REMAIN.
2. EXISTING CONCRETE SIDEWALK TO REMAIN.
3. EXISTING ASPHALT DRIVEWAY AND PARKING TO REMAIN.
4. EXISTING PUBLIC CONCRETE CHANNEL & ASPHALT BIKE TRAIL (PINO ARROYO).
5. PROPOSED BUILDING. SEE ARCHITECTURAL FOR DETAILS.
6. PROPOSED CONCRETE TURNDOWN SIDEWALK. SEE SHEET C1.2 FOR DETAILS.
7. PROPOSED CONCRETE HEADER CURB. SEE SHEET C1.2 FOR DETAILS.
8. PROPOSED CONCRETE CURB AND GUTTER. SEE SHEET C1.2 FOR DETAILS.
9. PROPOSED HEAVY DUTY ASPHALT PAVEMENT. SEE SHEET C1.2 FOR DETAILS.
10. EXISTING 36" PUBLIC STORM DRAIN TO REMAIN IN PUBLIC EASEMENT ON PRIVATE PROPERTY.
11. EXISTING 36" PUBLIC STORM DRAIN TO BE REMOVED.
12. EXISTING 36" PUBLIC STORM DRAIN TO BECOME PRIVATE STORM DRAIN ON VACATED PUBLIC EASEMENT.
13. EXISTING 36" PUBLIC STORM DRAIN AND 6" MANHOLE (RIM 12.85, INV. 02.62) TO BECOME PRIVATE STORM DRAIN ON PUBLIC PROPERTY.
- *14. PROPOSED 36" PUBLIC STORM DRAIN IN 30' PUBLIC EASEMENT ON PRIVATE PROPERTY.
- *15. PROPOSED 6" TYPE 'E' MANHOLE PER COA STD. DWG. 2209. INLET INV. 03.43, OUTLET INV. 02.23, RIM 16.97.
16. PROPOSED 6" TYPE 'E' MANHOLE PER COA STD. DWG. 2209. INLET INV. 03.01, OUTLET INV. 02.81, RIM 15.30 .
- *17. EXISTING MANHOLE FORMED ONSITE. ADJUST ONSITE, CONSTRUCT NEW OR CONSTRUCT 8" TYPE 'C'. TO BE DETERMINED ONSITE WITH CITY DRAINAGE PERSONNEL DURING CONSTRUCTION. INLET INV. 02.01, RIM 08.85.
- *18. PROPOSED CONCRETE CHANNEL TO EXISTING CONCRETE SIDE INLET TO PINO ARROYO CHANNEL PER COA STD. DWG 2260.
19. PROPOSED PRIVATE CONCRETE CHANNEL TO BE EXTENDED, PRIVATE DBL. 'D' CATCH BASIN AND 12" OUTLET TO BE CONNECTED TO EXISTING 36" STORM DRAIN. SEE SHEET C1.2 FOR DETAILS.
20. PROPOSED 12:1 CONCRETE SIDEWALK RAMP w/ 24" TRUNCATED DOME MAT AT BASE.
21. 10"x10" CONCRETE OR POLY CARBONATE CATCH BASIN w/ 6" PVC OR SMOOTH WALL HDPE OUTLET PIPE. OUTLET INV. 14.95. SEE SHEET C1.2 FOR DETAILS.
22. 10"x10" CONCRETE OR POLYCARBONATE CATCH BASIN w/ 6" PVC OR SMOOTH WALL HDPE OUTLET PIPE. OUTLET INV. 14.45. SEE SHEET C1.2 FOR DETAILS.
23. MASONRY RETAINING WALL. SEE STRUCTURAL PLANS FOR DETAILS.
24. EXISTING 30' WIDE PUBLIC STORM DRAIN EASEMENT.
25. EXISTING 10' WIDE PUBLIC UTILITY EASEMENT.
26. FLOOD PLAIN BOUNDARY. FINISHED FLOOR ELEVATION CERTIFICATES OF BUILDINGS IN THE FLOOD PLAIN ARE REQUIRED.

DRAINAGE NOTES

1. THE SITE WAS PREVIOUSLY DEVELOPED AS AN HOTEL. THAT USE WILL CONTINUE AND THE FACILITY WILL BE EXPANDED INTO EXISTING PARKING AREA AND EXISTING BARE LAND.
2. THE NEWLY DEVELOPED AS WELL AS THE EXISTING RUNOFF WILL BE DIRECT DISCHARGED TO THE PINO ARROYO VIA IMPERMEABLE SURFACES DUE TO LAND FILL CONCERNS.
3. EXISTING AND PROPOSED FLOW RATES WILL NOT BE TABULATED AND COMPARED. INCOMING FLOW RATES (SHOWN ON THE AS-BUILT PLANS) IN THE STORM DRAIN WILL BE USED TO ESTABLISH GRADES AND PIPE SIZES OF THE NEW PORTION OF THE STORM DRAIN. DESIGN FLOW RATE, VELOCITY, WATER SURFACE AND HGL WILL BE SHOWN ON THE CITY APPROVED WORK ORDER PLANS.
4. AN ESC PLAN IS REQUIRED FOR THE SITE.
5. THE BULK OF THE SITE IS LOCATED IN AN AREA DESIGNATED 'ZONE X' PER FEMA FIRM MAP NO. 137H, DATED AUGUST, 2012.
6. EXISTING TOPOGRAPHY FOR THE SITE WAS OBTAINED BY CONSTRUCTION SURVEY TECHNOLOGIES, INC. IN JUNE, 2015 AND HARRIS SURVEYING IN OCTOBER, 2017.

***NOTE:**
ITEMS IN KEYED NOTES 14 THRU 18 SHALL BE CONSTRUCTED UNDER CITY
WORK ORDER, PROJECT NO. 735186

NOTE:
ITEM NO. 13 IS AN EXISTING PUBLIC STORM DRAIN. PER AN AGREEMENT AND COVENANT BETWEEN THE CITY OF ALBUQUERQUE AND THE OWNER OF THE ADJOINING PROPERTY THE STORM DRAIN EAST OF MANHOLE (ITEM NO. 17) IS NOW A PRIVATE FACILITY ON PUBLIC PROPERTY PER A DOCUMENT FILED IN THE PUBLIC RECORDS AS DOCUMENT _____, FILED _____.

DISCLOSURE STATEMENT:

THE SUBJECT PROPERTY IS LOCATED ON A FORMER LANDFILL. DUE TO THE SUBJECT PROPERTY BEING ON A FORMER LANDFILL, CERTAIN PRECAUTIONARY MEASURES MAY NEED TO BE TAKEN TO ENSURE THE HEALTH AND SAFETY OF THE PUBLIC. RECOMMENDATIONS MADE BY A PROFESSIONAL ENGINEER WITH EXPERTISE IN LANDFILLS AND LANDFILL GAS ISSUES (AS REQUIRED BY THE MOST CURRENT VERSION OF THE INTERIM GUIDELINES FOR DEVELOPMENT WITHIN CITY DESIGNATED LANDFILL BUFFER ZONES) SHALL BE CONSULTED PRIOR TO DEVELOPMENT OF THE SITE.

DATE _____

[illegible]

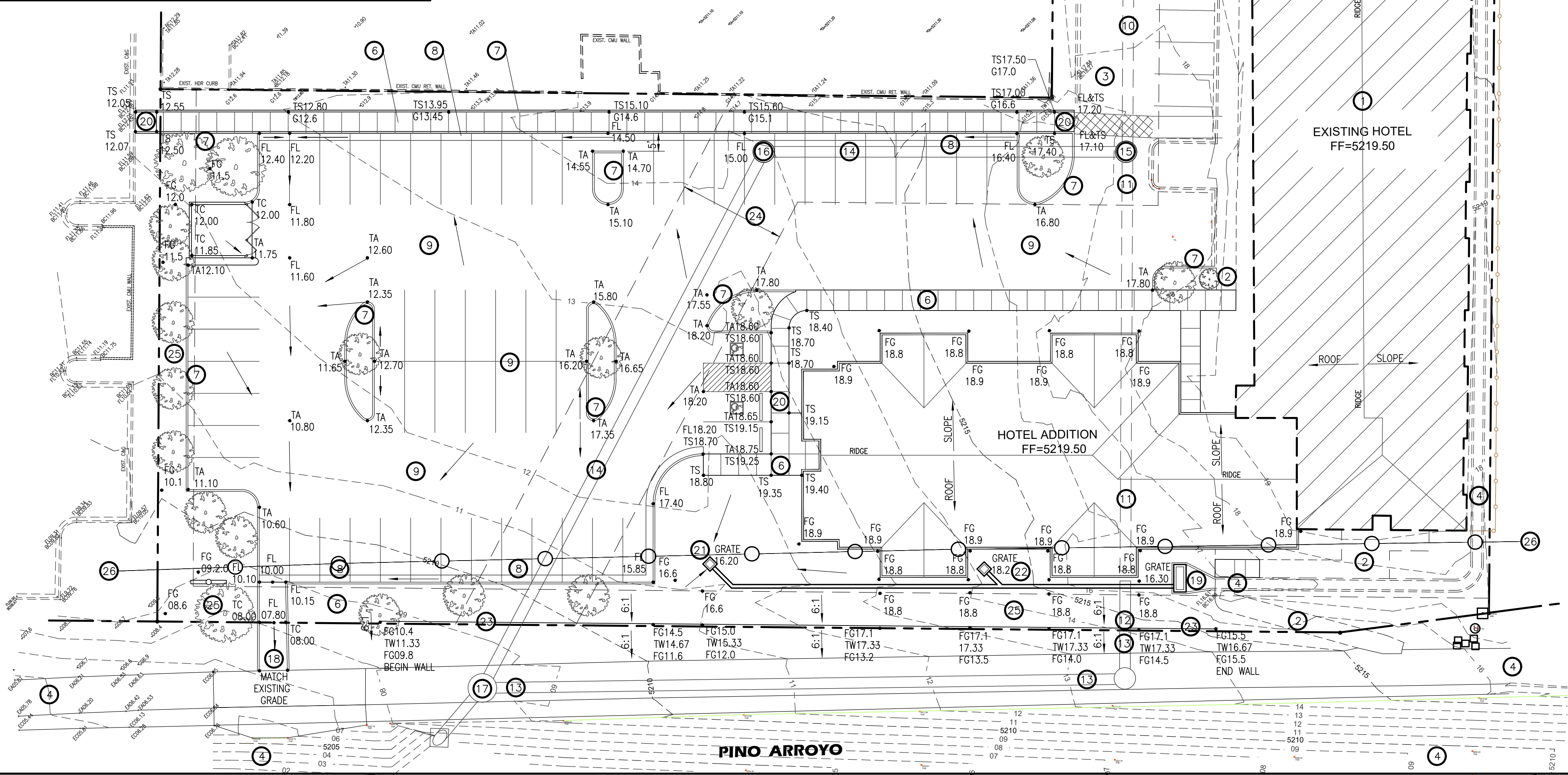
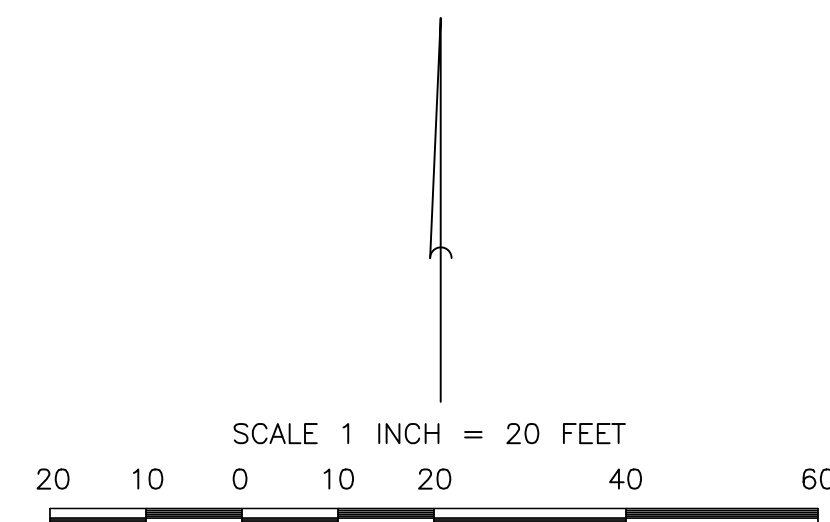
LEGAL DESCRIPTION		
TRACT A-3-A, J GROUP ADDITION		
PERMANENT BENCHMARK		
ACS STATION	, ELEVATION	(NAVD 1988)
GRADING NOTES		
1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT THE NEW MEXICO ONE CALL SYSTEM AT 260-1990 FOR LOCATION OF EXISTING UTILITIES. 2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY. 3. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH. 4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION 1986 EDITION THROUGH UPDATE NO. 9. ITEMS 14, 15, 16 AND 19 ARE TO BE CONSTRUCTED PER CITY OF ALBUQUERQUE REQUIREMENTS.		
EROSION CONTROL NOTES		
1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE ONTO PUBLIC RIGHT-OF-WAY OR PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY THE CONSTRUCTION OF TEMPORARY SOIL BERMS OR SILT FENCES AT PROPERTY LINES AND WETTING SOIL TO PREVENT IT FROM BLOWING. IF THE SITE IS CONTROLLED BY A SWPPP PLAN, EROSION CONTROL SHALL BE ACCOMPLISHED ACCORDING TO THE PLAN. 2. THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET. 3. THE CONTRACTOR SHALL SECURE THE APPROPRIATE BARRICADING, TOP SOIL DISTURBANCE AND ACCESS PERMITS FROM THE COUNTY PRIOR TO BEGINNING CONSTRUCTION.		

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4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE COUNTY OF BERNALILLO STANDARDS AND PROCEDURES.

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[illegible]