CITY OF ALBUQUERQUE

July 24, 2015

Mark Goodwin, P.E.
Mark Goodwin and Associates
P.O. Box 90606
Albuquerque, NM 87199

Re: A.I.S. Retail
Grading and Drainage Plan (H13D106)
Engineer's Stamp Date, 7-18-15 (Sheets C1, C2, C3 & C4)

Dear Mr. Goodwin,

Based upon the information provided in your submittal received 7-20-15, the above referenced plan is approved for grading and building permit with following recommendation:

- Please consider changing the grades in the parking lot to lessen the 22" of water depth at the bottom/center of the pond. This might be achieved by raising the bottom of the pond and provide a flatter slopes in the parking lot to increase top of water surface elevation to the south, to the north and to the east.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology. Prior to Certificate of Occupancy release the following items will be required: a) Engineer Certification per the DPM checklist & b) An executed License Agreement or recorded public easement for the construction of the improvements along 12th Street N.W.

If you have any questions, you can contact me at 924-3999.

Sincerely,

Shahab Biazar, P.E.
City Engineer, Planning
Development and Building Services

C: email

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: AIS Retail Building Permit #: City Drainage #:

DRB#: 1000649 EPC#: Work Order#:

Legal Description: Tract A of the Plat US BLM Survey of Town of Albuquerque Sec 7&8 T10N R3E

City Address: 12th Street and Indian School and Menual

Engineering Firm: Mark Goodwin and Associates Contact: Kelly Klein

Address: PO Box 90606 Albuquerque NM 87119

Phone#: 505-828-2200 Fax#: E-mail: kelly@goodwinengineers.co

Owner: IPMI 6, L.L.C Contact: Dwayne Virgint

Address: 2401 12 th NW

Phone#: 505-724-3518 Fax#: E-mail:

Architect: Studio Southwest Architects, Inc Contact: Danny Solares

Address: 2101 Mountain Road NW

Phone#: 505-843-9639 Fax#: E-mail: dsolares@studiowarch.com

Surveyor: Contact:

Address:

Phone#: Fax#: E-mail:

Contractor: Contact:

Address:

Phone#: Fax#: E-mail:

TYPE OF SUBMITTAL:

- ____ DRAINAGE REPORT
- ____ DRAINAGE PLAN 1st SUBMITTAL
- X DRAINAGE PLAN RESUBMITTAL
- ____ CONCEPTUAL G & D PLAN
- ____ GRADING PLAN
- ____ EROSION & SEDIMENT CONTROL PLAN (ESC)
- ____ ENGINEER'S CERT (HYDROLOGY)
- ____ CLOMR/LOMR
- ____ TRAFFIC CIRCULATION LAYOUT (TCL)
- ____ ENGINEER'S CERT (TCL)
- ____ ENGINEER'S CERT (DRB SITE PLAN)
- ____ ENGINEER'S CERT (ESC)
- ____ SO-19
- ____ OTHER (SPECIFY)

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- ____ SIA/FINANCIAL GUARANTEE RELEASE
- ____ PRELIMINARY PLAT APPROVAL
- ____ S. DEV. PLAN FOR SUB'D APPROVAL
- ____ S. DEV. FOR BLDG. PERMIT APPROVAL
- ____ SECTOR PLAN APPROVAL
- ____ FINAL PLAT APPROVAL
- ____ CERTIFICATE OF OCCUPANCY (PERM)
- ____ CERTIFICATE OF OCCUPANCY (TCL TEMP)
- ____ FOUNDATION PERMIT APPROVAL
- X BUILDING PERMIT APPROVAL
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- ____ GRADING CERTIFICATION
- ____ SO-19 APPROVAL
- ____ ESC PERMIT APPROVAL
- ____ ESC CERT. ACCEPTANCE
- ____ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED: ____ Yes ____ No ____ Copy Provided

DATE SUBMITTED: 7-20-2015 By: Kelly Klein

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, and scope to the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the followin

1. **Conceptual Grading and Drainage Plan**: Required for approval of Site Development Plans greater than five (5) acres and Sector Plans
2. **Drainage Plans**: Required for building permits, grading permits, paving permits and site plans less than five (5) acres
3. **Drainage Report**: Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

CITY OF ALBUQUERQUE

July 14, 2015

Mark Goodwin, P.E.
Mark Goodwin and Associates
P.O. Box 90606
Albuquerque, NM 87199

Re: A.I.S. Retail
Grading and Drainage Plan (H13D106)
Engineer's Stamp Date, 7-9-15, 7-7-15 & 6-25-15 (Sheet C1, C2 & C3)

Dear Mr. Goodwin,

Based upon the information provided in your submittal received 6-26-15 and 7-9-15 the above referenced plan is approved for Site Plan For Building Permit. The following comments must be addressed prior to grading and building permit approval:

- Show roof flow directions. Runoff west of the building along 12th street cannot drain over the sidewalk to the west.
- There appear to be some ponding between the two buildings along 12th street.
- Provide additional spot elevation to assure that the runoff will be able to get around the back of the building and into the parking lot.
- Provide elevations for the trash enclosure floor drains.
- Show the 100-year water surface elevation on the plans. The water depth appears to be more than 24" in the parking lot. Provide your routing calculations for the parking ponding. Where is the emergency overflow?
- Please provide the bottom of the pond elevations where first flush ponding is proposed. Some areas along the parking lots may have more than 18" of vertical drop. Therefore, handrail will be required. A retaining wall should be used for these areas.
- Is the grate elevation for the double "D" inlet at the bottom of the pond? How does the sidewalk culvert tie into the double "D" inlet?
- There is a proposed sidewalk culvert north side of the southerly building along 12th Street. The culvert encroaches into the handicap ramp. Is the runoff draining to the depressed landscaping area to the southwest corner of the building? Can the runoff be routed to the parking lot? How much runoff is being routed to this area?
- Please correct the force main line size on sheet C3 of 3.
- Show existing contours. Provide contour elevations on sheet C2 of 3.
- Who will be maintaining the storm drain system?

If you have any questions, you can contact me at 924-3999.

Sincerely,

Shahab Biazar, P.E.
City Engineer, Planning
Development and Building Services

C: email

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

D. Mark Goodwin & Associates, P.A.
Consulting Engineers
P.O. BOX 90606, ALBUQUERQUE,NM 87199
(505) 828-2200 FAX 797-9539

~ 2012 ACEC/NM Award Winner for Engineering Excellence, Small Firm ~
~ 2008 ACEC/NM Award Winner for Engineering Excellence, Small Firm ~

July 20, 2015

Mr. Shahab Biazar, P.E.
City Engineer, Planning
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

Re: AIS Retail; 12 St & Indian School/Menaul; Grading and Drainage Plan (H13D106)

Dear Mr. Biazar:

Attached, please find a revised Grading & Drainage Plan as required by your letter dated 7/14/2015. Our response and/or changes are as follows:

- ***"Show roof flow directions..."*** *The roof flow directions have been added to Sheet C1. The roof runoff does NOT drain to the west of the building. The roof runoff drains towards the east of the building into the parking lot.*

- ***"There appears to be ponding between the two buildings along 12th Street."*** *Please see changes on Sheet C1. Grade point elevations were changed and flow arrows were added to ensure the runoff drains towards the parking lot.*

- ***"Provide additional spot elevations to assure that the runoff will be able to get around the back of the building and into the parking lot."*** *Please see changes on Sheet C1.*

- ***"Provide elevations for the trash enclosure floor drains."*** *Please see changes on Sheet C1.*

- ***"Show the 100 year water surface elevation on the plans...water depth appears to be more than 24"...where is the emergency overflow?"*** *The MWSEL has been added to Sheet C1. The MWSEL is 4964.11. Since the majority of the spaces in the parking lot are at elevations greater than 4963.00, the water depth is 13". Six parking spaces near the center of the pond will have a maximum depth of 22". The emergency overflow is located in the southwestern corner of the parking lot as shown on note 8 on Sheet C1.*

- ***"Please provide the bottom of the pond elevations where the first flush ponding is proposed..."*** *Please see pond elevations on Sheet C1.*

- ***"Is the grate elevation for the double "D" inlet at the bottom of the pond? How does the sidewalk culvert tie into the inlet?"*** *Please see changes on Sheet C1. The inlet has been relocated to the middle of the first flush pond A2 and will be in a sump condition. The*

top of the grate is at elevation 62.00'. The sidewalk culvert will discharge into pond A2 (outfall invert of the sidewalk culvert is 62.20'). The gravel lined bed shown on the "Typical Cross Section for First Flush Ponding in Parking Lot Medians" will help prevent erosion.

- ***"There is a proposed sidewalk culvert north side of the southerly building along 12th Street. The culvert encroaches into the handicapped ramp."*** *The culvert has been relocated. The area in question will serve as a loading ramp for truck deliveries and not designed as an ADA ramp.* ***Is the runoff draining to the depressed landscaping area to the southwest corner of the building?*** *This drainage path is intended as the emergency spillway. The only runoff draining toward the depressed landscaping area is what falls on this area during the storm.*

- ***"Please correct the force main line size on Sheet C3"*** *Please see changes on Sheet C3.*

- ***"Show existing contours. Provides contour elevations on sheet C2"*** *Please see changes on Sheet C2. Please note that the site has been regraded since the topography of these existing contours was complete. The existing spot elevations show the grades after the site was regraded.*

- ***"Who will be maintaining the storm drain system?"*** *IPMI 6 L.L.C will be maintaining the system. Their address is 2401 12th Street NW.*

Sincerely,

Kelly M Klein

Kelly Klein, EIT
MARK GOODWIN & ASSOCIATES, PA

Apr 17. 2015
(Same as Jan16 but Includes Temp Pond)

```
                    AIS_ AHYMO_2 pump out at 2.0cfs and Temp Pond FINAL_ INPUT
START               0.0 HRS  PUNCH CODE=0  PRINT LINES=-6
*S*************************************************************************
*S                  ABQ INDIAN SCHOOL  100-YR, 24-HR DEVELOPED CONDITIONS
*S*************************************************************************
LOCATION            ALBUQUERQUE
RAINFALL            TYPE=2  RAIN QUARTER=0.0  RAIN ONE=1.78
                    RAIN SIX=2.23       RAIN DAY=2.60       DT=.05
*************************************************************************
*S                  ONSITE-ENTIRE BASIN A - DEVELOPED CONDITIONS
*S                  ----------------------------------------
*************************************************************************
COMPUTE NM HYD      ID=1 HYD=100 DA=0.00541 SQ MI
                    PER A=0 B=0 C=12 D=88
                    TP=0.133333 HRS RAIN=-1
PRINT HYD           ID=1 CODE=1
*S
*************************************************************************
*S                  ONSITE-SUBBASINS IN BASIN A
*S                  ----------------------------------------
*************************************************************************
*S
*s                  BASIN 100.1
COMPUTE NM HYD      ID=2 HYD=100.1 DA=0.000191 SQ MI
                    PER A=0 B=0 C=0 D=100
                    TP=0.133333 HRS RAIN=-1
PRINT HYD           ID=2 CODE=1
*
*s                  BASIN 100.2
COMPUTE NM HYD      ID=3 HYD=100.2 DA=0.000395 SQ MI
                    PER A=0 B=0 C=14 D=86
                    TP=0.133333 HRS RAIN=-1
PRINT HYD           ID=3 CODE=1
*
*s                  BASIN 100.3
COMPUTE NM HYD      ID=4 HYD=100.3 DA=0.00033 SQ MI
                    PER A=0 B=0 C=12 D=88
                    TP=0.133333 HRS RAIN=-1
PRINT HYD           ID=4 CODE=1
*
*s                  BASIN 100.4
COMPUTE NM HYD      ID=5 HYD=100.4 DA=0.00045 SQ MI
                    PER A=0 B=0 C=12 D=88
                    TP=0.133333 HRS RAIN=-1
PRINT HYD           ID=5 CODE=1
*
*s                  BASIN 100.5
COMPUTE NM HYD      ID=6 HYD=100.5 DA=0.00404 SQ MI
                    PER A=0 B=0 C=10 D=90
                    TP=0.133333 HRS RAIN=-1
PRINT HYD           ID=6 CODE=1
*S
*************************************************************************
*S                  OFFSITE-ENTIRE BASIN B - DEVELOPED CONDITIONS
*S                  ----------------------------------------
*************************************************************************
COMPUTE NM HYD      ID=8 HYD=200 DA=0.011 SQ MI
                    PER A=0 B=0 C=12 D=88
                    TP=0.133333 HRS RAIN=-1
PRINT HYD           ID=8 CODE=1
*S
*************************************************************************
*S                  FULLY DEVELOPED CONDITIONS ADD BASINS TO GO TO PUMP
*S                  ----------------------------------------------
*************************************************************************
ADD HYD             ID=9 HYD=300 ID=6 AND 8
*
ROUTE RESERVOIR     ID=10 HYD=300.1 INFLOW ID=9  CODE=10
                    OUTFLOW (CFS)          STORAGE (AC FT)    ELEV
                    0                      0.00               4950
                    0.01                   0.001803           4951
                    0.02                   0.003606           4952
                    0.03                   0.005409           4953
                    0.04                   0.007212           4954
                    0.991                  0.009015           4955
                    0.992                  0.010818           4956
                    0.993                  0.012621           4957
                    0.994                  0.014424           4958
                    1.993                  0.016227           4959
                    1.994                  0.019042           4960
                    1.995                  0.021859           4961
                    1.996                  0.030000           4962
                    1.997                  0.021200           4963
                    1.998                  0.982000           4964
                    1.999                  2.590000           4965
```

Q = 14.23 CFS
Vol = 0.6322 AC-FT

Q = 0.53 CFS

Q = 1.05 CFS

Q = 0.89 CFS

Q = 1.20 CFS

Q = 10.69 CFS
Vol = 0.478 AC-FT

Q = 28.91 CFS
Vol = 1.285 AC-FT

Q = 39.61 CFS Vol = 1.763 AC-FT

Q_p = 1.998 CFS
@ 2.35 hours

MWSEL = 4964.11
Max Storage = 1.16 AC-FT

```
*
PRINT HYD             ID=10 CODE=1
*S
*S*************************************************************************************
*************************************************************************************
*S                     OFFSITE-ENTIRE BASIN B - UNDEVELOPED CONDITIONS
*S                     ----------------------------------------------
*************************************************************************************
COMPUTE NM HYD        ID=13 HYD=200 DA=0.011 SQ MI
                      PER A=0 B=0 C=90 D=10
                      TP=0.133333 HRS RAIN=-1
PRINT HYD             ID=13 CODE=1
*
*************************************************************************************
*S                     PARTIALLY DEVELOPED CONDITIONS ADD BASINS TO GO TO PUMP
*S                     (BASIN A: FULLY DEVELOPED... BASIN B: UNDEVELOPED)
*S                     ---------------------------------------------------
*************************************************************************************
ADD HYD               ID=14 HYD=301 ID=6 AND 13
PRINT HYD             ID=14 CODE=1
*
ROUTE RESERVOIR       ID=15 HYD=30.1 INFLOW ID=14  CODE=10
                      OUTFLOW (CFS)          STORAGE (AC FT)    ELEV
                       0                      0.00               4950
                      0.01                   0.001803           4951
                      0.02                   0.003606           4952
                      0.03                   0.005409           4953
                      0.04                   0.007212           4954
                      0.991                  0.009015           4955
                      0.992                  0.010818           4956
                      0.993                  0.012621           4957
                      0.994                  0.014424           4958
                      1.993                  0.016227           4959
                      1.994                  0.019042           4960
                      1.995                  0.021859           4961
                      1.996                  0.030000           4962
                      1.997                  0.021200           4963
                      1.998                  0.982000           4964
                      1.999                  2.590000           4965
*
PRINT HYD             ID=15 CODE=1
*
*S
*S*************************************************************************************
*************************************************************************************
*S                     ONSITE-ENTIRE BASIN A - DEVELOPED CONDITIONS
*S                     SIZING OUTLET PIPE TO PUMP  Outflow using 8" pipe
*           (Size of pipe determined by maintaing elevation of pumped conditions)
*S                     ----------------------------------------------
*************************************************************************************
*
ROUTE RESERVOIR       ID=20 HYD=408 INFLOW ID=6  CODE=10
                     OUTFLOW (CFS)         STORAGE (AC FT)      ELEV
                         0                      0.00            4959
                       1.370                  0.00034           4960
                       1.566                  0.00135           4961
                       1.567                  0.00236           4962
                       1.568                  0.01965           4963
                       1.569                  0.18197           4964
                       1.570*                 0.73497*          4965*
*
PRINT HYD             ID=20 CODE=1
*
*S
*S*************************************************************************************
*************************************************************************************
*S                     ONSITE-ENTIRE BASIN A - DEVELOPED CONDITIONS
*S                     SIZING OUTLET PIPE TO PUMP  Outflow using 12" pipe
*           (Size of pipe determined by maintaing elevation of pumped conditions)
*S                     ----------------------------------------------
*************************************************************************************
*
ROUTE RESERVOIR       ID=21 HYD=412 INFLOW ID=6  CODE=10
                     OUTFLOW (CFS)         STORAGE (AC FT)      ELEV
                         0                      0.00            4959
                       2.670                  0.00034           4960
                       4.626                  0.00135           4961
                       4.627                  0.00236           4962
                       4.628                  0.01965           4963
                       4.629                  0.18197           4964
                       4.630*                 0.73497*          4965*
*
PRINT HYD             ID=21 CODE=1
*
```

Q = 21.88 CFS
VOL = 0.6785 AC-FT

Q = 32.57 CFS VOL = 1.156 AC-FT

Qp = 1.993 CFS
@ 2.15 hrs

MWSEL = 4963.83
Max Storage = 0.9146 AC-FT

Qp = 1.57 CFS
MWSEL = 4964.10'
8" pipe flowing full at S=1.0%

12" pipe flowing full @ S=1.0%

```
*S
*
*******************************************************************************
*S                    FULLY DEVELOPED CONDITIONS ADD BASINS PUMP NOT WORKING
*S                    ------------------------------------------------------
*******************************************************************************
*
ROUTE RESERVOIR       ID=22 HYD=500 INFLOW ID=9  CODE=10
                      OUTFLOW (CFS)          STORAGE (AC FT)    ELEV
                      0                      0.00               4950
                      0.010                  0.001803           4951
                      0.015                  0.003606           4952
                      0.020                  0.005409           4953
                      0.025                  0.007212           4954
                      0.030                  0.009015           4955
                      0.035                  0.010818           4956
                      0.040                  0.012621           4957
                      0.045                  0.014424           4958
                      0.050                  0.016227           4959
                      0.055                  0.019042           4960
                      0.060                  0.021859           4961
                      0.065                  0.030000           4962
                      0.070                  0.021200           4963
                      0.075                  0.982000           4964
                      0.100                  2.590000           4965
*
PRINT HYD             ID=22 CODE=1
*
*S
*******************************************************************************
*S                    FULLY DEVELOPED CONDITIONS TO GO TO PUMP
*s             (Adding AREAS of each basin going into pump instead of
*S                  adding the individual BASIN'S HYDROGRAPHS)
*S                  ----------------------------------------
*******************************************************************************
COMPUTE NM HYD        ID=25 HYD=600 DA=0.01504 SQ MI
                      PER A=0 B=0 C=10 D=90
                      TP=0.133333 HRS RAIN=-1
PRINT HYD             ID=25 CODE=1
*
ROUTE RESERVOIR       ID=26 HYD=600.1 INFLOW ID=25  CODE=10
                      OUTFLOW (CFS)          STORAGE (AC FT)    ELEV
                       0                      0.00               4950
                      0.01                   0.001803           4951
                      0.02                   0.003606           4952
                      0.03                   0.005409           4953
                      0.04                   0.007212           4954
                      0.991                  0.009015           4955
                      0.992                  0.010818           4956
                      0.993                  0.012621           4957
                      0.994                  0.014424           4958
                      1.993                  0.016227           4959
                      1.994                  0.019042           4960
                      1.995                  0.021859           4961
                      1.996                  0.030000           4962
                      1.997                  0.021200           4963
                      1.998                  0.982000           4964
                      1.999                  2.590000           4965
*
PRINT HYD             ID=26 CODE=1
*S
*******************************************************************************************************
*****************************
*******************************************************************************
*S                    DESIGNING TEMPorary POND IN BASIN B
*S                    PARTIALLY DEVELOPED CONDITIONS ADD BASINS TO GO TO PUMP
*S                    (BASIN A: FULLY DEVELOPED... BASIN B: UNDEVELOPED)
*S                    ----------------------------------------------------
*******************************************************************************
*ADD HYD                ID=14 HYD=301 ID=6 AND 13
*PRINT HYD              ID=14 CODE=1
ADD HYD               ID=40 HYD=301 ID=20 AND 13
PRINT HYD             ID=40 CODE=1
*
ROUTE RESERVOIR       ID=50 HYD=50.1 INFLOW ID=40  CODE=10
                      OUTFLOW (CFS)          STORAGE (AC FT)        ELEV
                      0.00                   0.00                   4955
                      0.010                  0.70                   4956
                      0.015                  1.62                   4957
                      0.025                  2.81                   4958
                      0.030                  4.29                   4959
                      0.035                  6.07                   4960
                      0.040                  8.20                   4961
                      0.045                  10.69                  4962
```

(This is a check)

Design will allow for runoff to flow into streets so as not to flood the parking lot.

MWSEL = 4964.4
Max Storage = 1.611 ac-ft

Q_p = 1.993 cfs @ 2.35 hours

MWSEL = 4964.12
Max Storage = 1.17 AC-FT

*NO FLOW OUT
Q_p = 0.012 cfs*
MWSEL = 4956.47
Max Storage = 1.135 AC-FT

```
                    AIS_ AHYMO_2 pump out at 2.0cfs and Temp Pond FINAL_ INPUT
                     0.050                 13.59                 4963
*
PRINT HYD            ID=50      CODE=1
FINISH
```

GENERAL NOTES

1. SEE ARCHITECTURAL SITE PLAN FOR TRUE DIMENSIONS.
2. CITY OF ALBUQUERQUE STANDARD DETAILS SHALL BE USED WHEN APPLICABLE.
3. USE EXTRUDED CURB PER DETAIL EXCEPT WHERE NOTED
4. EXISTING CONTOURS ARE PROVIDED FOR REFERENCE ONLY. SITE HAS BEEN REGRADED SINCE TOPOGRAPHY WAS COMPLETE.

KEYED NOTES

1. 6' SIDEWALK CULVERT PER COA STANDARD DRAWING 2236
2. FUTURE SIDEWALK IMPROVEMENTS BY CITY OF ALBUQUERQUE PROJECT. SEE ARCHITECTURAL SITE PLAN.
3. CURB CUTS PER DETAIL ALONG LENGTH OF CURB
4. GARDEN / RETAINING WALL. DESIGN BY OTHERS.
5. GARDEN / RETAINING WALL. DESIGN BY OTHERS. IF WALL IS NOT TO BE CONSTRUCTED UNTIL FUTURE BUILDING IS BUILT, GRADE SLOPES AT 3:1 MAX FROM EXISTING SIDEWALK TO FUTURE PAD ELEVATION.
6. TRANSITION CURB FROM 6" TO NO CURB. INSTALL CURB STOPS IN PARKING SPACES.
7. TURNED DOWN SIDEWALK PER DETAIL THIS SHEET.
8. 3' WIDE SIDEWALK CULVERT PER COA STANDARD DRAWING 2236. USED AS EMERGENCY SPILLWAY.
9. REMOVE AND REPLACE SIDEWALK TO MATCH NEW GRADES
10. SINGLE CURB CUT PER DETAIL
11. CREATE DRAINAGE SWALE
12. MWSEL = 4964.11

FIRST FLUSH

THE "FIRST FLUSH" IS BEING ACCOMPLISHED THROUGH DEPRESSED AREAS WITHIN THE MEDIANS IN THE PARKING LOT.

REQUIRED VOLUME = 0.34" X IMPERVIOUS AREA
= 0.34"/12 X (132,631 SF)
= 3,757 CF

VOLUME PROVIDED = 3,920 CF

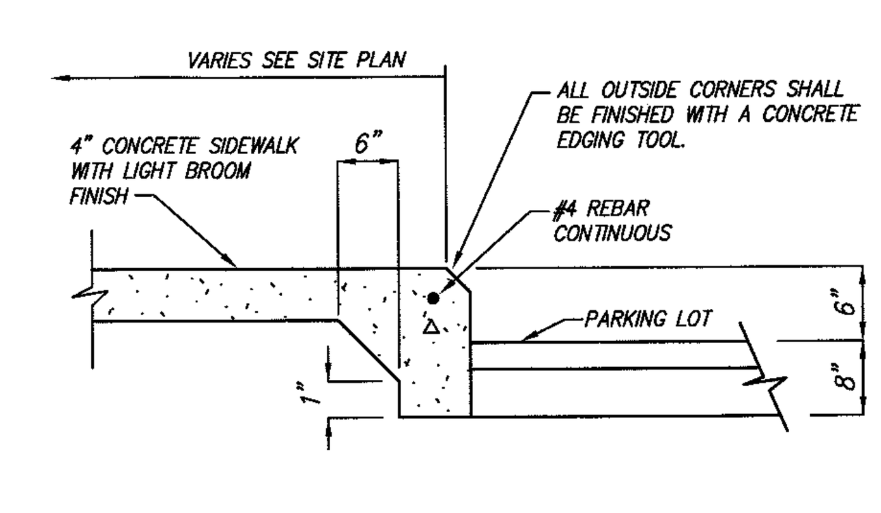
(A1) DEPTH = 14" (SEE DETAIL) POND BOTTOM = ~~63.00~~ 63.10
AREA = 1161 SF
VOLUME = 1355 CF

(A2) DEPTH = 3" (SEE DETAIL) POND BOTTOM = 61.75
AREA = 258 SF
VOLUME = 65 CF

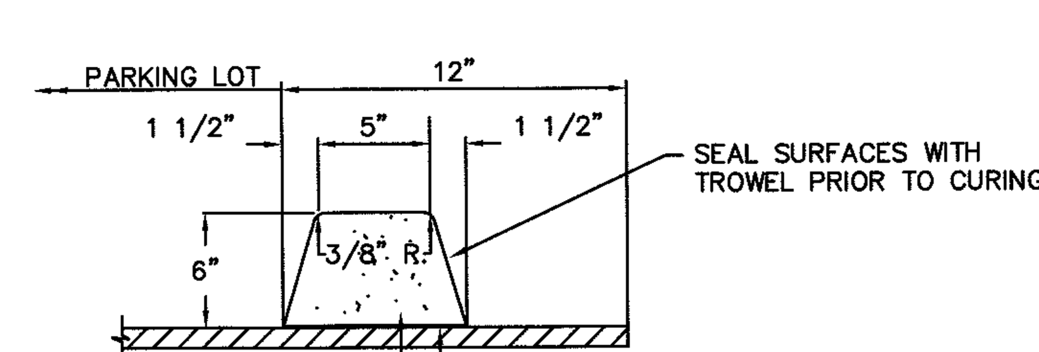
(A3) DEPTH = 14.4" (SEE DETAIL) POND BOTTOM = 63.00
AREA = 2228 SF
VOLUME = 2500 CF

STORM DRAIN NOTES

1. NEW TYPE DOUBLE "D" SD INLET PER COA DETAIL 2206 IN SUMP CONDITION
GRATE = 4962.00'
INVERT = 4959.00'
2. NEW 12" GRAVITY MAIN SDR PVC 35
LENGTH = 259'
SLOPE = 1.00%
3. NEW 4' DIA SD MH
RIM = 4968.50
INV(S) = 4956.40
INV(N) = 4956.30
4. NEW 12" GRAVITY MAIN SDR PVC 35
LENGTH = 339.00'
SLOPE = 0.9%
END INVERT = 4953.30'

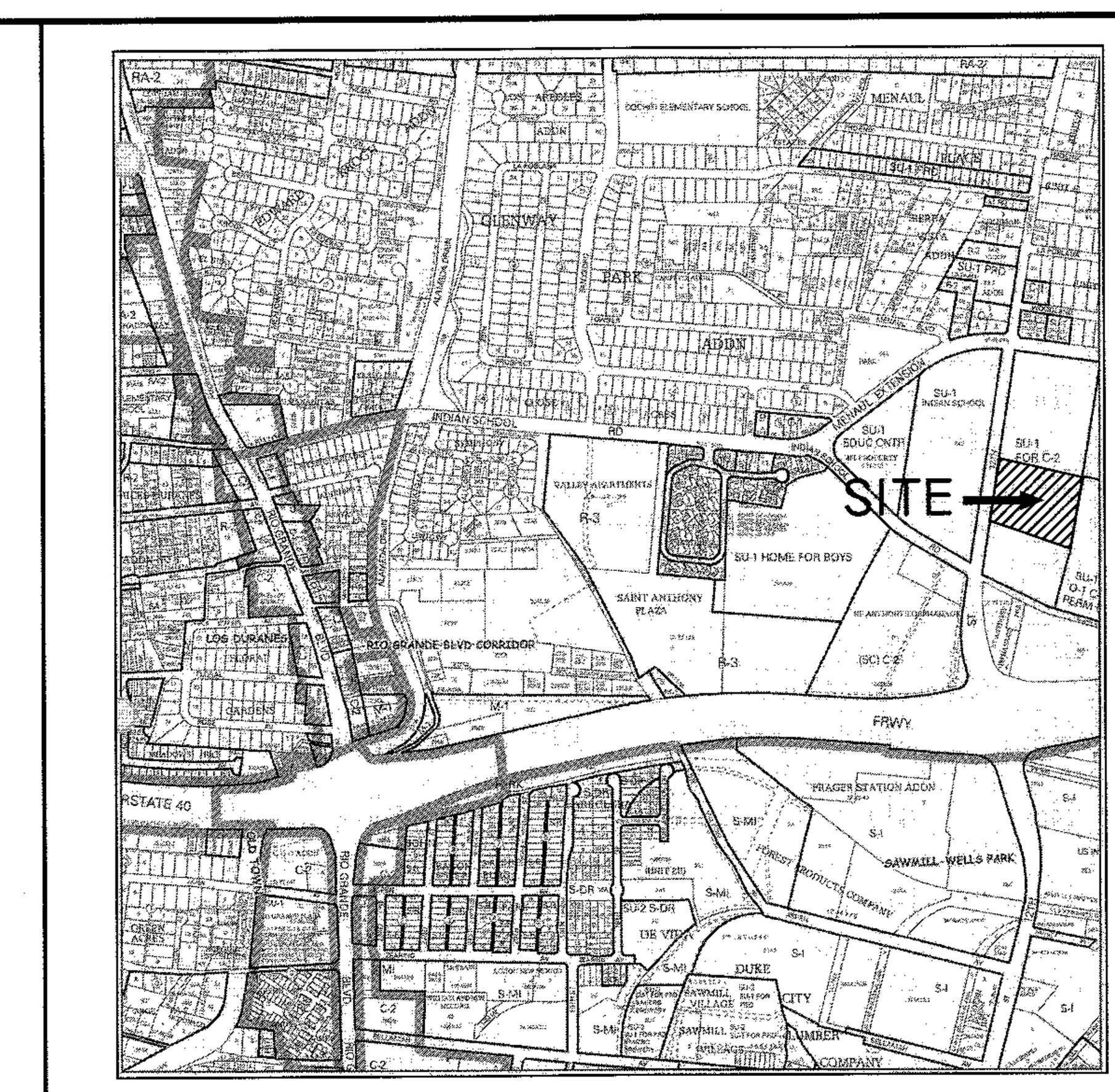


TURNED DOWN SIDEWALK DETAIL
N.T.S.



- 4000 PSI COMP. STRENGTH AT 28 DAYS
- 1.5 #/CY OF POLYPROPYLENE COLLATED FIBRILLATED FIBERS(FIBERMESH OR APPROVED EQUAL)
- NON-CHLORIDE RETARDER PER MANUF. RECOMM.

EXTRUDED CURB
N.T.S.



VICINITY MAP ZONE ATLAS H-13-Z

TRACT A
RETAIL SITE
PROJECTED SECTIONS 7 & 8, T.10 N., R. 3 E., N.M.P.M
TOWN ON ALBUQUERQUE GRANT
CITY OF ALBUQUERQUE
BERNALILLO COUNTY, NEW MEXICO

BENCHMARK

SEE PLAT FOR BASIS OF BEARINGS AND SITE BENCHMARKS

LEGAL DESCRIPTION

TRACT "A" OF THE PLAT FOR THE UNITED STATES BUREAU OF LAND MANAGEMENT SURVEY OF TOWN OF ALBUQUERQUE GRANT, PROJECTED SECTIONS 7 AND 8 TOWNSHIP 10 NORTH, RANGE 3 EAST NEW MEXICO PRINCIPAL MERIDAN, DATED AUGUST 12, 2011.

SHEET INDEX

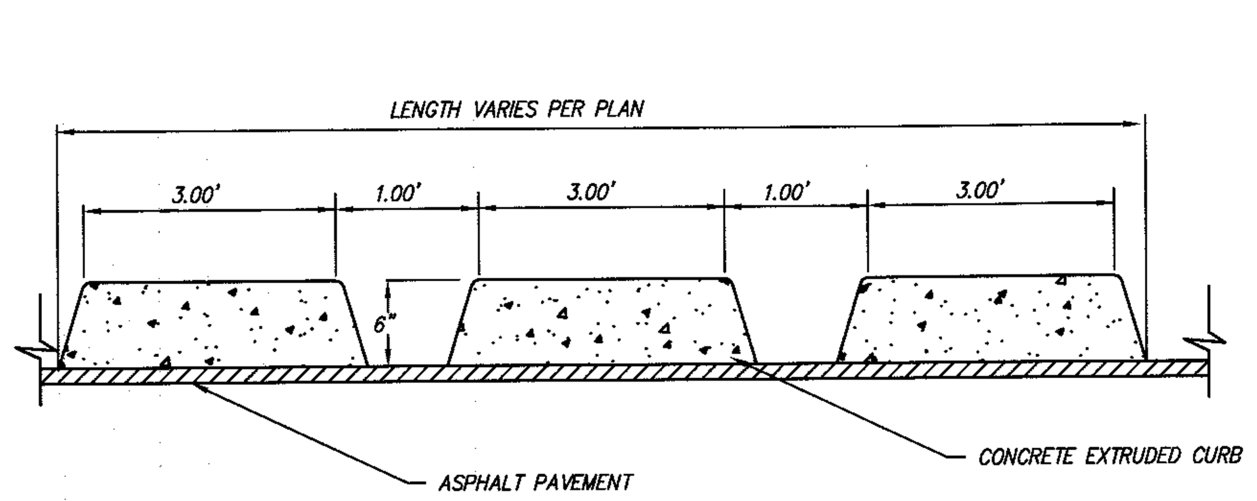
C1 SITE GRADING AND DRAINAGE PLAN - SITE SPECIFIC FOR PHASE 4
C2 OVERALL HYDROLOGY AND STORM DRAIN DESIGN
C3 SITE UTILITY PLAN
C4 OVERALL UTILITY EASEMENTS

LEGEND

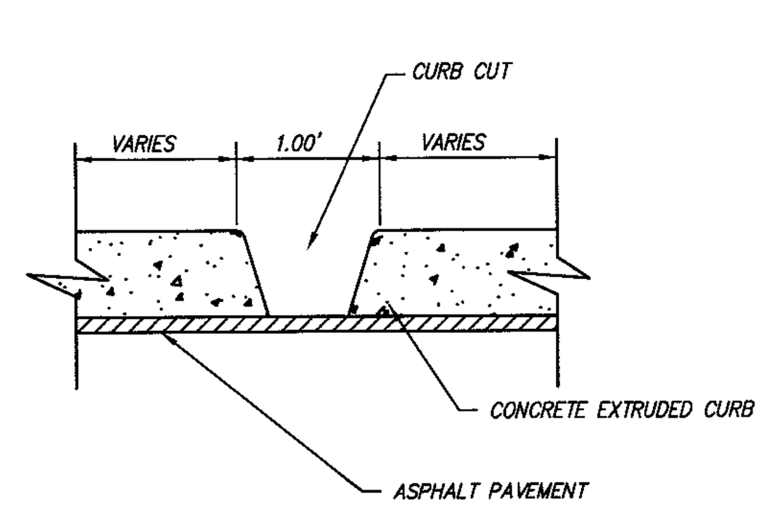
Symbol	Description
	PROPERTY LINE
—00—	EXISTING CONTOUR
+ 2050	EXISTING SPOT ELEVATION
00.00 BC / 00.00 FL	EXISTING SPOT ELEVATION
00.00 / 00.00	PROPOSED TOP OF CURB ELEVATION / PROPOSED FLOW LINE ELEVATION
00.00 TSW / 00.00 TW / 00.00 BW	PROPOSED TOP OF SCREEN WALL / PROPOSED TOP OF WALL / PROPOSED BOTTOM OF WALL
• 00.00	PROPOSED SPOT ELEVATION
	DIRECTION OF FLOW
	PROPOSED SWALE
	POND ELEVATIONS
	PROPOSED 3:1 SLOPE
	GARDEN/RETAINING WALL

D. MARK GOODWIN NEW MEXICO 8948 LICENSED PROFESSIONAL ENGINEER 1/8/15

SCALE: 1" = 30'



CURB CUT DETAIL ALONG LENGTH OF CURB
N.T.S.



SINGLE CURB CUT
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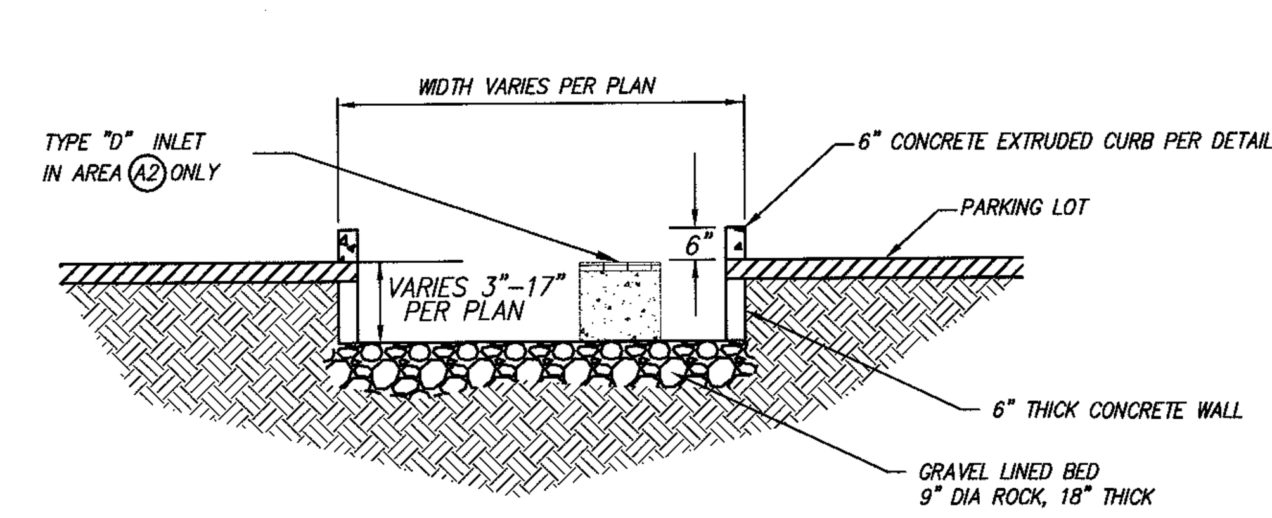
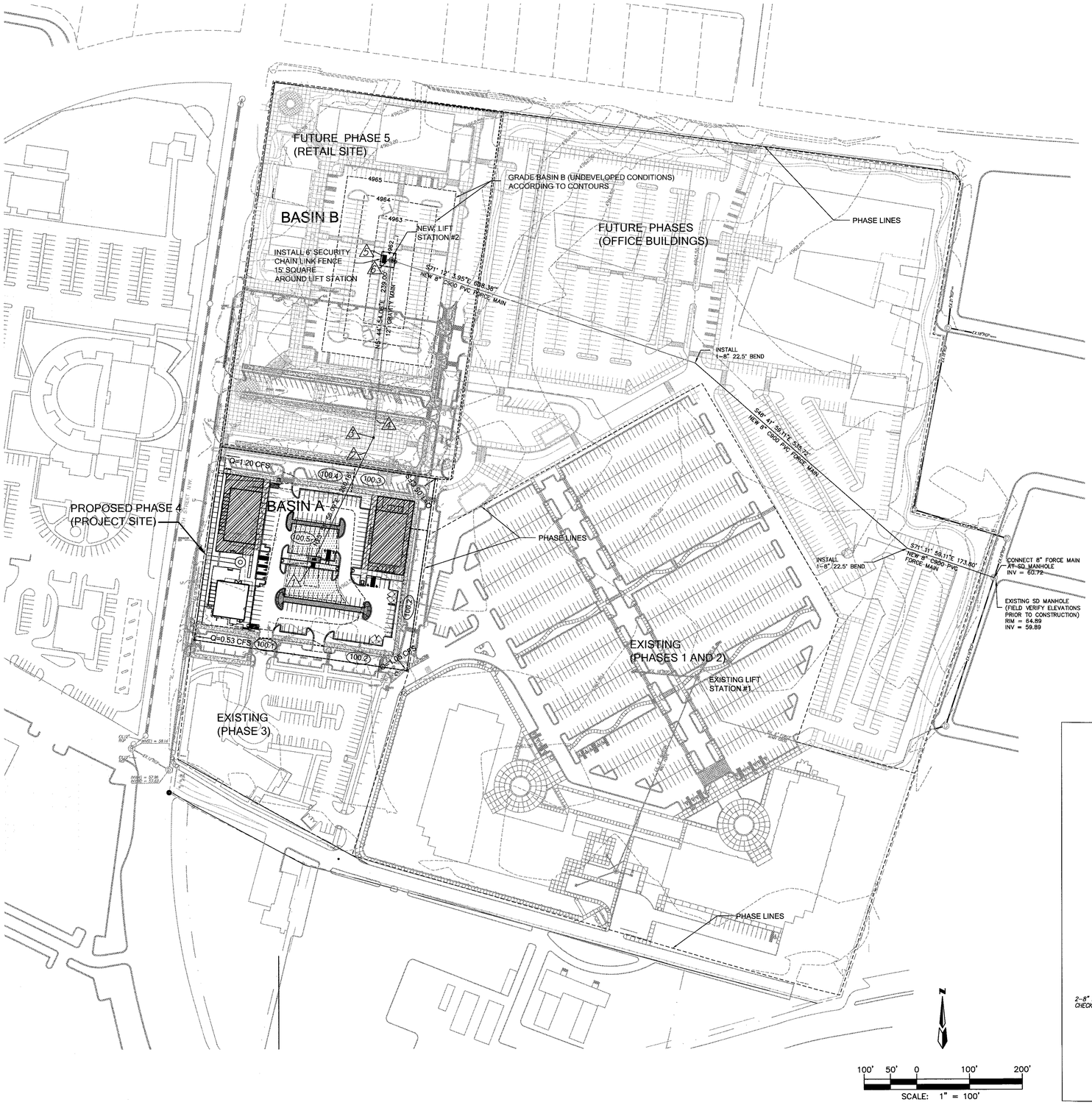


TYPICAL CROSS SECTION FOR FIRST FLUSH PONDING IN PARKING LOT MEDIANS
N.T.S.

A.I.S. RETAIL
SITE GRADING & DRAINAGE

dmg MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505)828-2200, FAX (505)797-9539

Designed: KMK	Drawn: KMK	Checked: DMG	Sheet C1 of 4
Scale: SEE SCALE	Date: 11/30/14	Job: A12041	



HYDROLOGY NOTES

THE TOTAL SITE IS BOUNDED BY 12TH STREET, INDIAN SCHOOL, MENAUL AND 9TH STREET AND CONSISTS OF 47.4 ACRES. THE PROJECT SITE IS PHASE 4 OF THE PROJECT SITE. THE FIRST 3 BEING THE BIA BUILDINGS PHASES 1 AND 2 AND IPFDC HOTEL (ALL PREPARED BY MARK GOODWIN & ASSOCIATES ON 6-11-03 AND 11-5-14 AND 10-5-06 RESPECTIVELY) THE DRAINAGE MANAGEMENT PLAN FOR ALL PHASES INCLUDES SOME DRAINAGE TO ADJACENT STREETS AND 2 LIFT STATIONS THAT PUMP THE RUNOFF TO THE EXISTING STORM DRAIN IN 9TH ST. LIFT STATION #1 WAS CONSTRUCED DURING PHASE 1. LIFT STATION #2 WILL BE CONSTRUCTED DURING THIS PHASE. THIS PLAN IS PHASE 4.

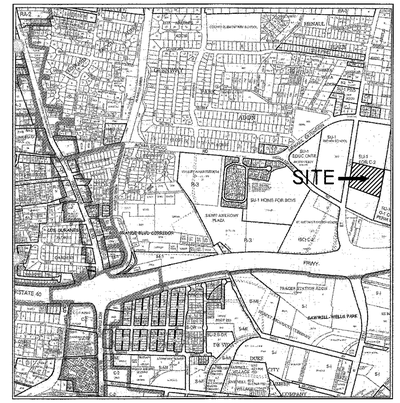
THE PROJECT SITE (PHASE 4) CONSISTS OF 3.46 ACRES. NO OFFSITE FLOWS ENTER THIS SITE. THE SITE IS NOT IN A 100YR FLOOD ZONE PER MAP 35001C0033J1D.

THE DEVELOPED FLOW FOR THIS ENTIRE SITE IS 14.23cfs. THE HYDROLOGY WAS CALCULATED PER COA DPM USING AHYMO. P_{360}=2.60" FROM NOAA 14. THE RESULTS ARE SUMMARIZED IN THE HYDROLOGY TABLE ON THIS SHEET.

PARTS OF THE PROJECT SITE ARE ALREADY DEVELOPED. THE DRAINAGE BASINS FROM THESE DEVELOPED SECTIONS WILL NOT BE CHANGED (BASINS 100.1-100.4). THE REMAINING RUNOFF (BASIN 100.5) WILL BE CAPTURED BY A TYPE "D" INLET IN SUMP CONDITION AND THEN CONVEYED BY A 12" GRAVITY LINE TO BASIN B. BASIN B WILL BE GRADED TO APPROXIMATE DEVELOPED GRADES.

THE PARKING LOT OF THE PROJECT SITE WILL ACT AS A DETENTION POND WITH WATER BEING RELEASED AT A RATE OF 1.60cfs TO THE LIFT STATION IN BASIN B.

- LIFT STATION IS 10' DIAMETER
- INLETS ARE TYPE "D"
- LEAD PUMP TURNS ON AT 4955.00'
- LAG PUMP TURNS ON AT 4959.00'
- QMAX = 1.998cfs AT 2.35 hours
- MWSEL (BASIN A&B FULLY DEVELOPED)=4964.11'.
- TOTAL STORAGE = 1.16 ac-ft
- TIME TO DRAIN ENTIRE SITE AND LIFT STATION = 29 hours
- TIME TO REACH THE GRATES = 10.25 hours



VICINITY MAP ZONE ATLAS H-13-Z

D. MARK GOODWIN NEW MEXICO 8948 LICENSED PROFESSIONAL ENGINEER 11/6/14

BASIN DATA

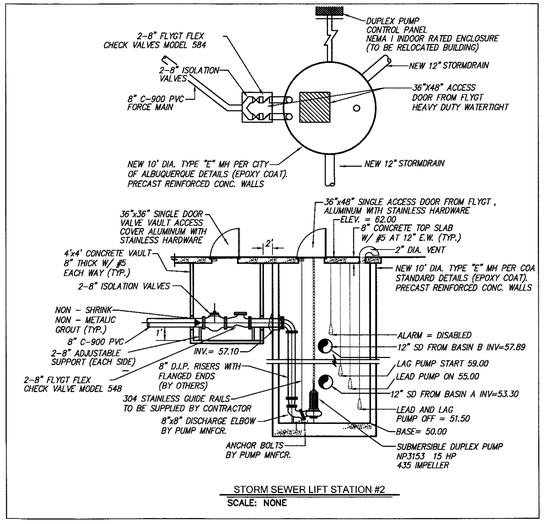
BASIN	SUBBASIN	BASIN OUTLET	AREA (acres)	% LAND TREATMENT TYPES A	B	C	D	Q (cfs)	Vol (ac-ft)
Onsite Basin A			3.46	0	0	12	88	14.23	0.63
	100.1	12th St.	0.12	0	0	0	100	0.53	0.02
	100.2	Existing Lift Station #1	0.25	0	0	14	86	1.05	0.05
	100.3	NE Corner	0.21	0	0	12	88	0.88	0.04
	100.4	12th St.	0.29	0	0	12	88	1.2	0.05
	100.5	New Sump Inlet	2.58	0	0	10	90	10.69	0.48
Basin B (Uneveloped)	existing	NEW Lift Station #2	9.63	0	0	90	10	21.88	0.68
Basin B (Developed)	future	NEW Lift Station #2	9.63	0	0	12	88	28.91	1.29
Basin A + Basin B (Undev)		NEW Lift Station #2	13.09	-	-	-	-	32.57	1.16

BASIN A POND VOLUMES

	Elev. (feet)	Surface Area (SF)	Surface Area (acres)	Incr. Volume (acre ft.)	Total Volume (acre ft.)	Total Volume (cubic ft.)
	65	37,420.00	0.86	0.57	0.75	32,631
	64	14,082.00	0.32	0.16	0.18	7,820
	63	1,924.00	0.04	0.02	0.02	753
Pond Bottom = 3	62	441.00	0.00			

BASIN B POND VOLUMES

	Elev. (feet)	Surface Area (sf)	Surface Area (acres)	Incr. Volume (acre ft.)	Total Volume (acre ft.)	Total Volume (cubic ft.)
	65	70,293.00	1.61	1.23	2.00	86,975
	64	38,709.00	0.89	0.60	0.76	33,239
	63	15,517.00	0.36	0.16	0.16	6,988
Pond Bottom = 3	62	1,211.00	0.03			



STORM SEWER LIFT STATION #2
SCALE: NONE

STORM DRAIN NOTES

1. NEW TYPE DOUBLE "D" SD INLET PER COA DETAIL 2206 IN SUMP
   GRATE = 4962.00'
   INVERT = 4959.00'
2. NEW 12" GRAVITY MAIN SDR PVC 35
   LENGTH = 259'
   SLOPE = 1.00%
3. NEW 4' DIA SD MH
   RIM = 4968.50
   INV(S) = 4956.40
   INV(N) = 4956.30
4. NEW 12" GRAVITY MAIN SDR PVC 35
   LENGTH = 339.00'
   SLOPE = 0.9%
   END INVERT = 4953.30'
5. NEW TYPE DOUBLE "D" SD INLET SUMP CONDITION
   GRATE = 4962.00'
   INVERT = 4958.00'
6. NEW 12" GRAVITY MAIN SDR PVC 35
   LENGTH = 11.50'
   SLOPE = 1.00%

A.I.S. RETAIL

OVERALL STORM DRAIN DESIGN

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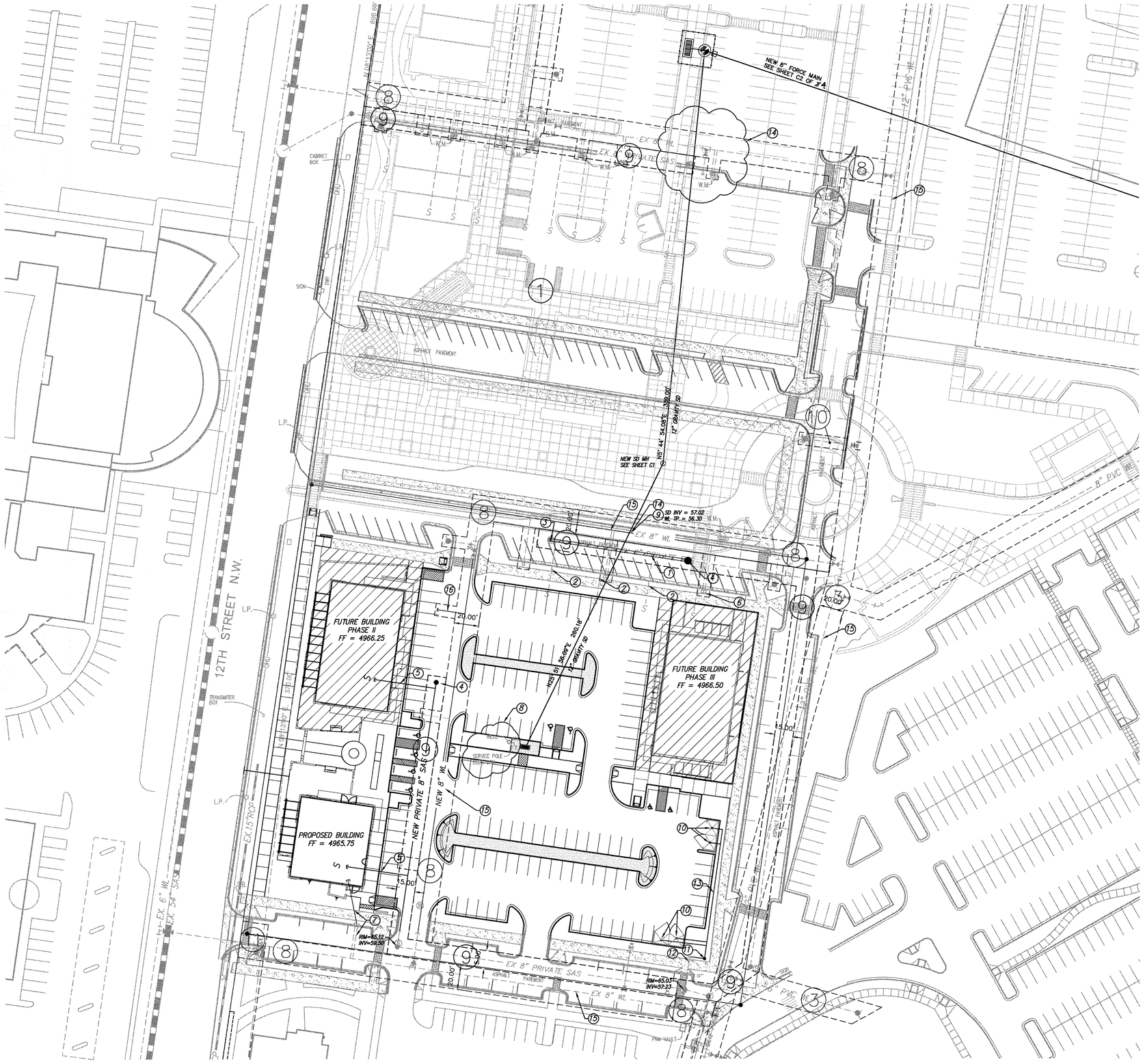
F:\A12\DBS\A12041 | P.F.D.C. RETAIL\2014 PLANS\GRADE & DRAIN\Albuquerque Indian School GRD Rel.dwg, Overall Hydrology & SD Design



GENERAL NOTES

1. FIELD VERIFY ALL EXISTING UTILITY ELEVATIONS PRIOR TO CONSTRUCTION.
2. CITY OF ALBUQUERQUE STANDARD DETAILS SHALL BE USED WHEN APPLICABLE.

○ KEYED UTILITY NOTES

1. FIELD VERIFY EXISTING 8"SAS LINE AND WL PRIOR TO CONSTRUCTION. REMOVE PER PLAN.
2. FIELD VERIFY EXISTING SAS SERVICE LINE PRIOR TO CONSTRUCTION. REMOVE PER PLAN.
3. REMOVE EXISTING SAS MANHOLE
4. INSTALL NEW SAS MANHOLE
5. INSTALL NEW SAS SERVICE.
6. EXISTING WATER SERVICE LINE TO REMAIN FOR FUTURE BUILDING.
7. FIELD VERIFY EXISTING WATER SERVICE LINE AND METER PRIOR TO CONSTRUCTION. EXTEND NEW WATER SERVICE LINE TO BUILDING.
8. RELOCATE/ABANDON EXISTING UTILITIES AS NEEDED.
9. NEW STORM DRAIN AND EXISTING WATER LINE INTERSECTION. FIELD VERIFY WATER LINE TOP OF PIPE PRIOR TO CONSTRUCTION. ADJUST WL IF REQUIRED.
10. INSTALL SAS SEWER DRAINS FOR REFUSE ENCLOSURE PER DETAIL
11. INSTALL GREASE TRAP
12. FIELD VERIFY EXISTING SAS SERVICE CONNECTION PRIOR TO CONSTRUCTION.
13. NEW 4" SAS SERVICE LINE
14. CAUTION: FIELD VERIFY EXISTING UTILITES. CONTACT ENGINEER IF CONFLICT EXISTS.
15. PUBLIC ACCEPTANCE OF WL PENDING
16. NEW WATER SERVICE TO BE INSTALLED THIS PHASE FOR FUTURE BUILDING

EASEMENT NOTES

(LARGE CIRCLES) SEE ALSO SHEET C4 OF 4

① – BLANKET COMCAST EASEMENT (09–08–2008, 2008099413)

② – 10' PNM EASEMENT (05–08–2007, 2007068048)

③ – 20' C.O.A. WATERLINE EASEMENT (07–01–2005, 2005095321)

④ – 20' C.O.A. WATERLINE EASEMENT (05–25–2004, 2004071228)

⑤ – C.O.A. WATERLINE, SANITARY SEWER AND DRAINAGE EASEMENT (05–25–2004, 2004071228)

⑥ – 15' X 20' OWEST EASEMENT (05–25–2004, 2004071227)

⑦ – C.O.A. ROADWAY EASEMENT (05–25–2004, 2004071226)

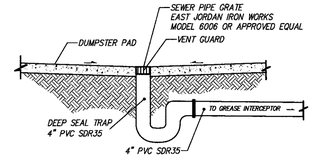
⑧ – 20' C.O.A. WATERLINE EASEMENT

⑨ – 15' PRIVATE SANITARY SEWER EASEMENT

⑩ – 10' C.O.A. WATERLINE EASEMENT

⑪ – C.O.A. SIDEWALK EASEMENT

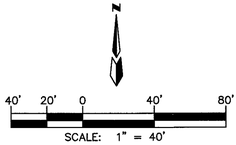
⑫ – C.O.A. WATERLINE EASEMENT



SANITARY SEWER DRAIN FOR REFUSE ENCLOSURE

N.T.S.

D. MARK GOODWIN
NEW MEXICO
8948
REGISTERED PROFESSIONAL ENGINEER
7/16/15



A.I.S. RETAIL

SITE UTILITY PLAN

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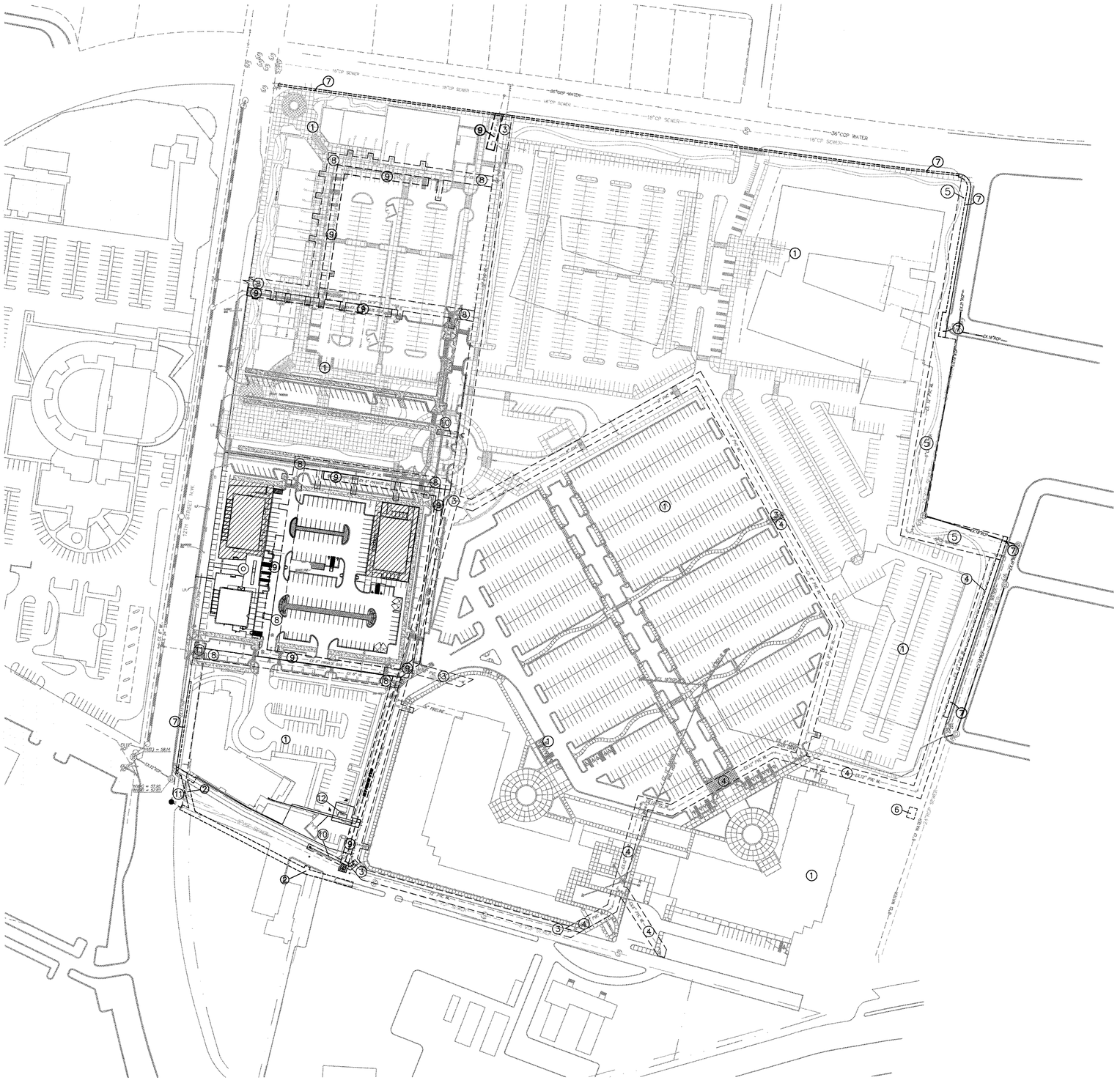

KEYED NOTES

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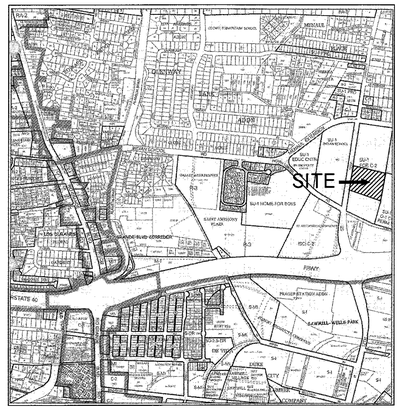

VICINITY MAP — ZONE ATLAS H-13-Z

TRACT A
RETAIL SITE
PROJECTED SECTIONS 7 & 8, T.10 N., R. 3 E., N.M.P.M
TOWN ON ALBUQUERQUE GRANT
CITY OF ALBUQUERQUE
BERNALILLO COUNTY, NEW MEXICO

BENCHMARK

SEE PLAT FOR BASIS OF BEARINGS AND SITE BENCHMARKS

LEGAL DESCRIPTION

TRACT "A" OF THE PLAT FOR THE UNITED STATES BUREAU OF LAD MANAGEMENT SURVEY OF TOWN OF ALBUQUERQUE GRANT, PROJECTED SECTIONS 7 AND 8 TOWNSHIP 10 NORTH, RANGE 3 EAST NEW MEXICO PRINCIPAL MERIDIAN, DATED AUGUST 12, 2011,

A.I.S. RETAIL
OVERALL UTILITY EASEMENTS

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