# CITY OF ALBUQUERQUE



April 7, 2015

Jeff Wooten, PE **Wooten Engineering, Inc.** 3708 Saint Andrews SE Rio Rancho, NM 87124

RE: Applebees and 14k Retail Building

Grading and Drainage Plan

Engineer's Stamp Date 4-03-2015 (File: K09-D038)

Dear Mr. Wooten:

Based upon the information provided in your submittal received 4-03-15, the above referenced plan is approved for Building Permit. Please attach a copy of this approved plan in the construction sets when submitting for a building permit.

PO Box 1293

Prior to Certificate of Occupancy release, Engineer Certification per the DPM Checklist will be required. Additionally, it will be required to submit the construction work within COA right-of-way through the DRC Process.

Albuquerque

If you have any questions, you can contact me at 924-3924.

New Mexico 87103

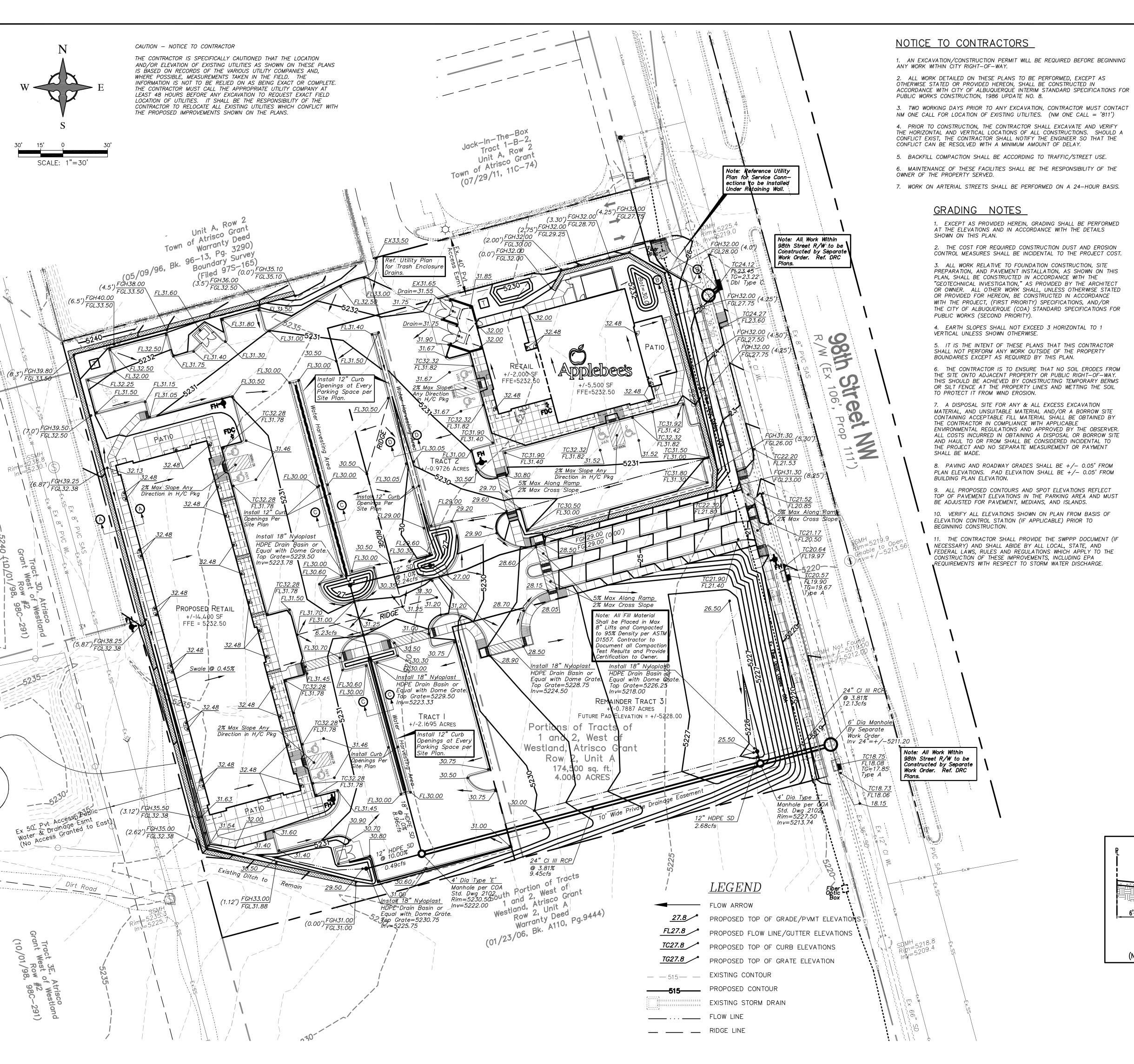
www.cabq.gov

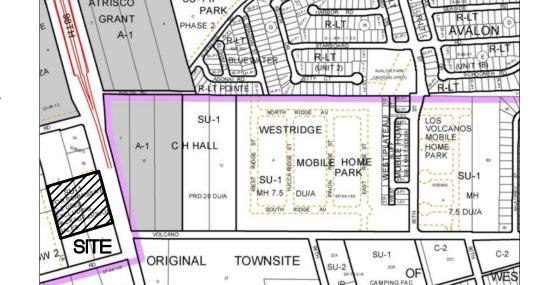
Sincerely,

Jeanne Wolfenbarger, P.E. Senior Engineer, Planning Dept. Development Review Services

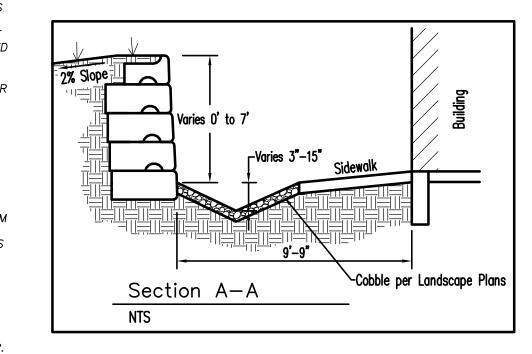
Orig: Drainage file

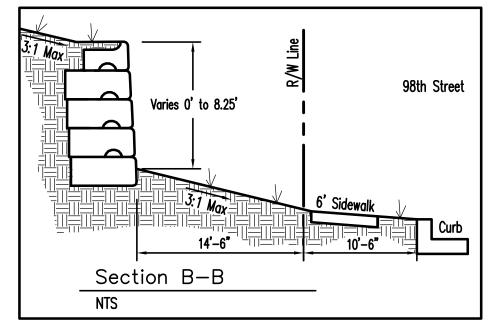
c.pdf via Email: Recipient, Monica Ortiz

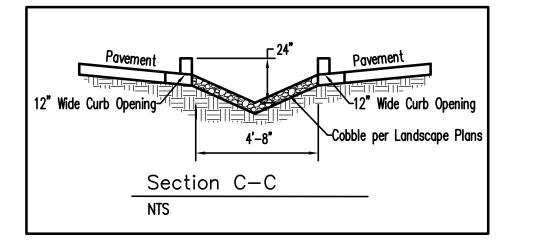


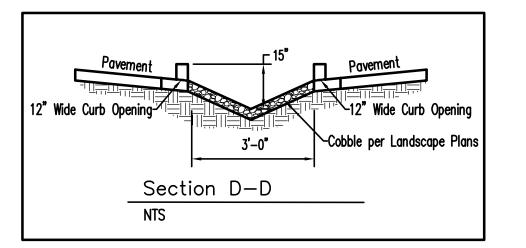


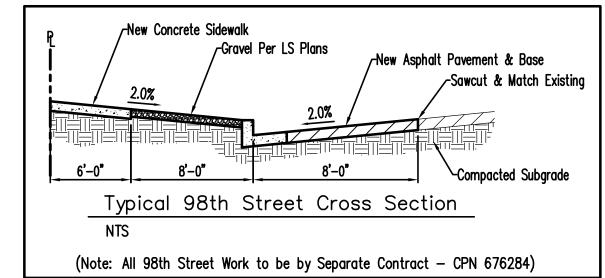
VICINITY MAP - Zone Atlas K-9















Phone: (505) 342-6200

Fax: (505) 342-6201

IDDDLEDEES

XXX 98TH STREET

BUQUERQUE, NEW MEXICO

**p r o j e c †** † i † l ∈

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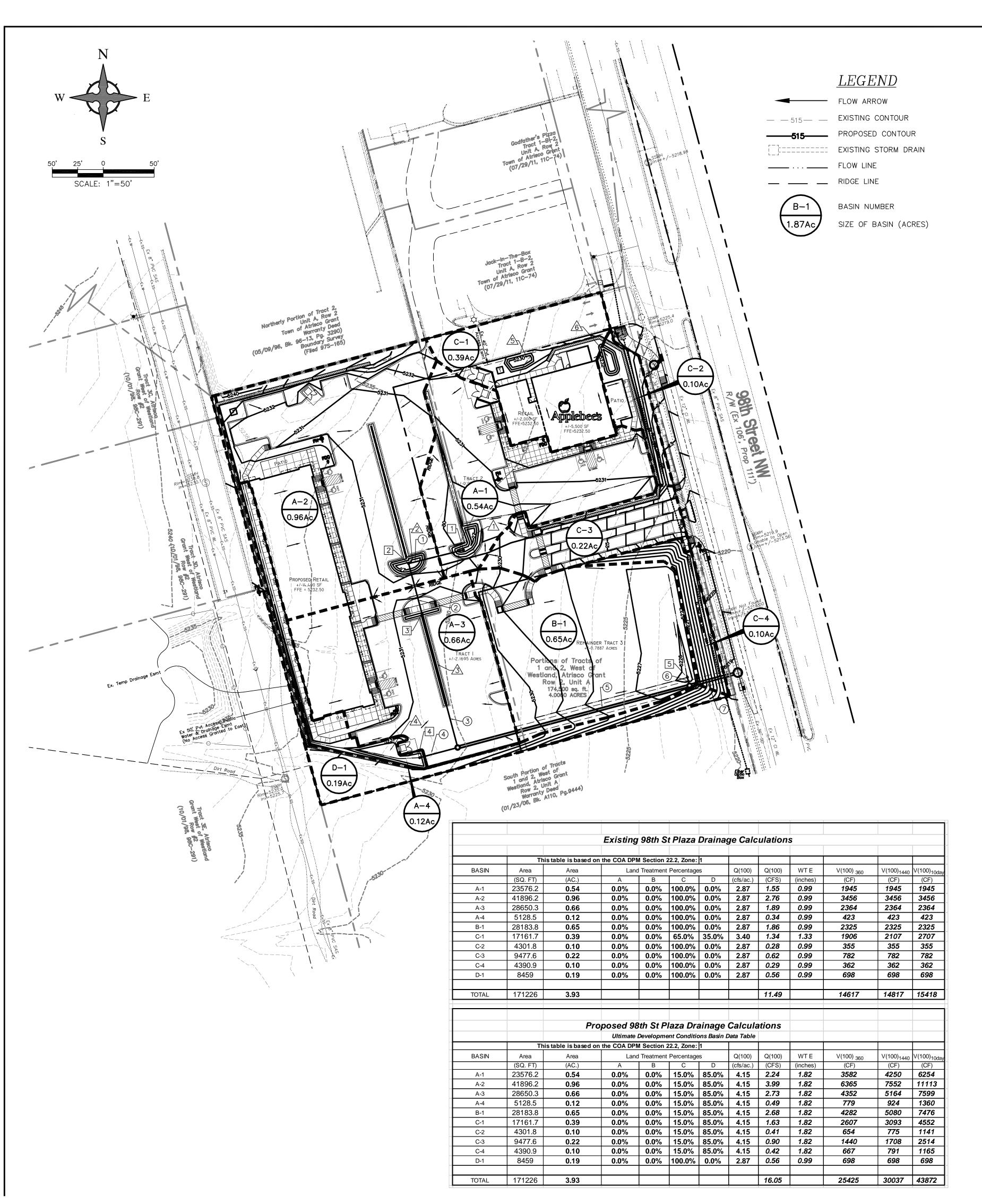
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Grading Plan

drawing number C2



### DRAINAGE MANAGEMENT PLAN

### INTRODUCTION

The purpose of this submittal is to provide a final drainage management plan for 98th Street Plaza, located at the NWQ of 98th St and Volcano Rd in Albuquerque, NM.. The site contains approximately 3.93 acres.

### EXISTING HYDROLOGIC CONDITIONS

The site is currently vacant and drains via. surface flow from west to east into a swale/bar ditch along 98th St. The flow is then conveyed south into existing drop inlets at 98th/Volcano, which then flows in a Storm Drain System and into the Tierra Bayita Phase IIIC Ponds

located at the SWQ of 98th/Volcano. The ponds were constructed via City Project Number 4076.92. Per the Tierra Bayita Drainage Facilities DMP by Greiner (File No L10/D000 dated Dec 1997), all 3.93 acres of our project is part of Basin 109.10, which is allowed to have a maximum discharge of 4.241 cfs/acre into the storm drain system and Phase IIIC Ponds. Currently, the only off—site drainage entering the site consists of an existing small wash that drains across the southwest corner of the property. This wash drains approximately 3 undeveloped acres as well as the emergency overflow from a small retention pond on the west side of Leonidas Lane. This drainage will continue to bypass the site and drains to the existing inlets located at the NWC of 98th/Volcano.

### PROPOSED HYDROLOGIC CONDITIONS

As noted above, our site is allowed to discharge up to 4.241 cfs/acre into the downstream systems. This accounts for the developed flows from our site at a +/-85% pervious land treatment. Each of the three parcels will need to provide water havesting swales and ponding per the current COA DPM at an effective rate of 0.34" for the impervious area located on site.

A majority of the drainage will be collected on—site in a storm drain system that connects to the existing 36" storm drain in 98th St. The remainder of the drainage will sheet flow to 98th St where it will be collected in three new curb inlets provided by this project and built by CPN 676284. For additional information on the new inlets in 98th St., reference the Inlet Study provided for the Replat of this site (DRB No. 1000870).

As mentioned above, the existing off—site flows from the west will continue to bypass the site through a swale at the southwest corner of the site and drains to the existing inlets located at the NWC of 98th/Volcano. Basin D—1 is the only Basin that drains onto adjacent sites and contributes a minimal 0.56 cfs. The land treatment within this basin remains pervious and will not adversely impact the adjacent properties.

# FIRST FLUSH CALCULATIONS

The first flush impervious area is 109,114 SF \* 0.34" / 12 = 3,091.56 cubic feet. Six new depressed Water Harvesting Ponds have been provided on site, which equates to a total of 3,211.5 CF of volume during the 100-Yr, 6-Hr Storm. In addition, a majority of the site's drainage is being routed through the water harvesting areas which will increase the stowmwater quality of the runoff discharging from the

# CONCLUSION

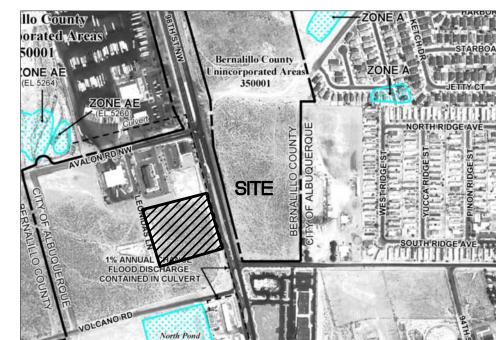
This drainage management plan provides for grading and drainage elements which are capable of safely passing the 100 year storm, does not burden downstream systems, and meet city requirements. The downstream storm drain systems and the Tierra Bayita Phase IIIC Ponds are sized to handle the increased runoff generated by this site. In addition, the proposed water harvesting ponds provided within Basins A and C will help treat stormwater runoff per the DPM. The proposed improvements to the site should not have any negative impacts to facilities downstream. With this submittal, we are requesting building permit approval.

# WATER HARVESTING POND VOLUME CALCULATIONS

	CONTOUR ELEVATION	AREA (SF)	VOLUME (CF)
1		60 SF	129 CF
	5228.00	198 SF	293 CF
	5229.00	388 SF /	100.0.05
	TOTAL		422.0 CF
2	2. 5227.00	142 SF	208.5 CF
	5228.00	275 SF	399.5 CF
	5229.00	524 SF	000.0
	TOTAL		608.0 CF
3	5. 5228.50	0 SF	
	5229.50	480 SF	240 CF
	TOTAL		240.0 CF
4	5229.50	0 SF <	
	5230.00	572 SF	143 CF
	5231.00	915 SF	743.5 CF
	TOTAL		886.5 CF
_	5070.00	4.47. CF	
5		143 SF	204 CF
	5231.00	265 SF	340 CF
	5232.00	415 SF /	5440 05
	TOTAL		544.0 CF
6	5. 5230.00	126 SF	187.5 CF
	5231.00	249 SF <	324.0 CF
	5232.00	399 SF /	
	TOTAL COTAL		511.5 CF
	GRAND TOTAL		3,211.5 CF

# PLANNED COMMER AREA PLANNED C

WESTRIDGE



# FIRM MAP 35001C0328H

Per FIRM Map 35001C0328H, dated August 16, 2012, the site is not located in the Floodplain and determined to be outside the 0.2% chance Annual Floodplain.'

### INLET CALCULATIONS

1. INLET TYPE = 18" DOME GRATE SUMP CONDITION

2. INLET TYPE = 18" DOME GRATE

- Q = 2.24cfs Depth of Flow per Nyloplast Capacity Chart = 0.28'
- SUMP CONDITION
  Q = 3.99cfs

  Depth of Flow per Nyloplant Canacity Chart = 0.50
- Depth of Flow per Nyloplast Capacity Chart = 0.50'

  3. INLET TYPE = 18" DOME GRATE
  SUMP CONDITION
- Q = 2.73cfs
  Depth of Flow per Nyloplast Capacity Chart = 0.33
- 4. INLET TYPE = 18" DOME GRATE
  SUMP CONDITION
- Depth of Flow per Nyloplast Capacity Chart = 0.11'

  5. INLET TYPE = 18" DOME GRATE
  SUMP CONDITION
- SUMP CONDITION
  Q = 2.68cfs
  Depth of Flow per Nyloplast Capacity Chart = 0.32'

# PIPE CALCULATIONS

Q = 0.49cfs

- 1. Pipe Diameter = 12"; Pipe Material = HDPE; n=0.010
  Q = 2.24cfs
  Pipe Slope = 1.00%
- Capacity of Pipe = 4.64 cfs

  2. Pipe Diameter = 18"; Pipe Material = HDPE; n=0.010
- Q = 6.23cfs
  Pipe Slope = 1.00%
  Capacity of Pipe = 13.69 cfs
- 3. Pipe Diameter = 18"; Pipe Material = HDPE; n=0.010 Q = 8.96cfs
  Pipe Slope = 1.00%
  Capacity of Pipe = 13.69 cfs
- 4. Pipe Diameter = 12"; Pipe Material = HDPE; n=0.010
  Q = 0.49cfs
  Pipe Slope = 10.00%
- Capacity of Pipe = 43.30 cfs

  5. Pipe Diameter = 18"; Pipe Material = RCP; n=0.013
  Q = 9.45cfs
  Pipe Slope = 3.81%
- Capacity of Pipe = 20.56 cfs

  6. Pipe Diameter = 12"; Pipe Material = HDPE; n=0.010
  Q = 0.49cfs
  Pipe Slope = 85.20%
- Capacity of Pipe = 42.87 cfs

  7. Pipe Diameter = 18"; Pipe Material = RCP; n=0.013
  Q = 12.13cfs

Q = 12.13cts Pipe Slope = 3.81% Capacity of Pipe = 20.56 cfs

# Curb Opening Capacity Calculation

12" Curb Opening
Area = 0.5 SF
Wp = 2'
R = 0.25
Slope into Opening = 1.0%
Mannings n = 0.013

Max Qin = 2.27 cfs (per Opening)

# IMPERVIOUS AREA CALCULATIONS

PROPOSED SITE CONDITIONS

PERVIOUS AREA: 27,755 SF
IMPERVIOUS AREA: 109,114 SF
TOTAL SITE AREA (TRACTS 1 AND 2): 136,869 SF
% IMPERVIOUS = 79.72%

NOTE: TRACT 3 IS EXCLUDED FROM CALCULATIONS. PRIOR TO DEVELOPMENT, TRACT 3 WILL NEED TO PROVIDE THE REQUIRED CALCULATIONS.

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projectiitle

DISIA

Darren Sowell

ARCHITECTS

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Fax: (505) 342-6201



**project** n u m b e r

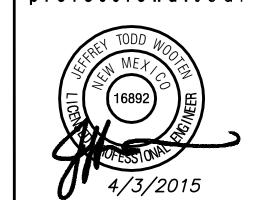
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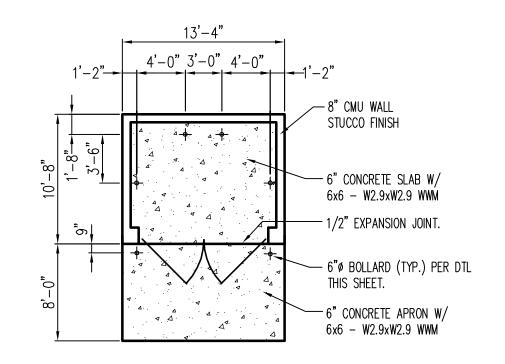


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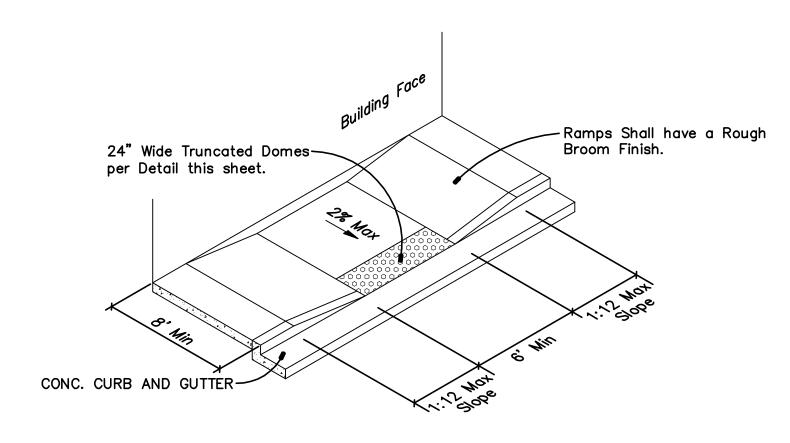
Drainage Calculations

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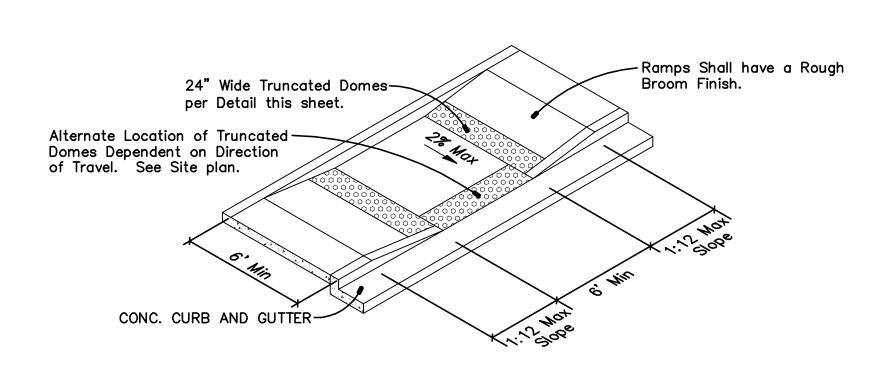
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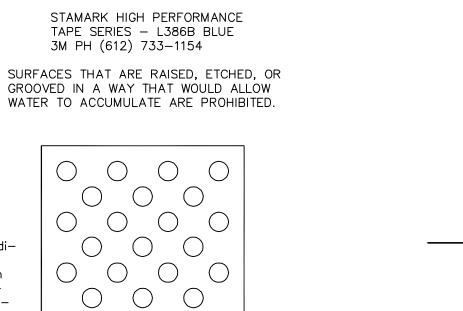
# Single Dumpster Enclosure



ADA Parking Wheelchair Ramp



In—Line Wheelchair Ramp



TEXTURE SURFACING ON ASPHALTIC PAVEMENT SHALL CONSIST OF ABRASIVE ADHESIVE STRIPS

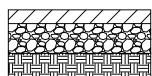
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Truncated Domes Detail

87"± STEEL - PAINTED TO MATCH BLDG. BIKE RACK MODEL 4H (7-BIKE, 87" LONG) AS MANUFACTURED -BOLT TO CONCRETE BY DERO BIKE RACK CO., SIDEWALK PER MINNEAPOLIS, MN OR MANUFACTURER'S EQUIVALENT. RECOMMENDATIONS.

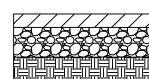
Bike Rack Detail

# AUTOMOBILE PARKING AREA PAVEMENT (PARKING SPACES ONLY)



3" ASPHALTIC CONCRETE 6" AGGREGATE BASE COURSE MIN. 8" COMPACTED SUBGRADE

INTERNAL DRIVEWAYS AND HEAVY DUTY PAVEMENT



ALL PIPES SHALL BE PAINTED TRAFFIC YELLOW

Pipe Bollard Detail

4" ASPHALTIC CONCRETE 6" AGGREGATE BASE COURSE MIN. 8" COMPACTED SUBGRADE

TRASH ENCLOSURE CONCRETE PAD

6" PORTLAND CEMENT CONCRETE 6" AGGREGATE BASE COURSE COMPACTED SUBGRADE

NOTE: REFERENCE GEOTECHNICAL REPORT BY GEO-TEST DATED 11/7/2014 FOR ADDITIONAL DETAILS AND SPECIFICATIONS OF PAVEMENT.

←6" SCH. 40 STEEL PIPE

FILLED W/ CONC. WITH TOP ROUNDED.

PAVEMENT OR

FINISHED GRADE -

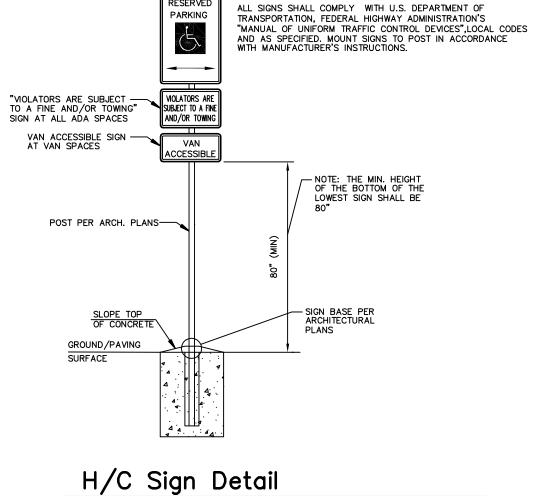
3" COVER TO OVER FOOTING

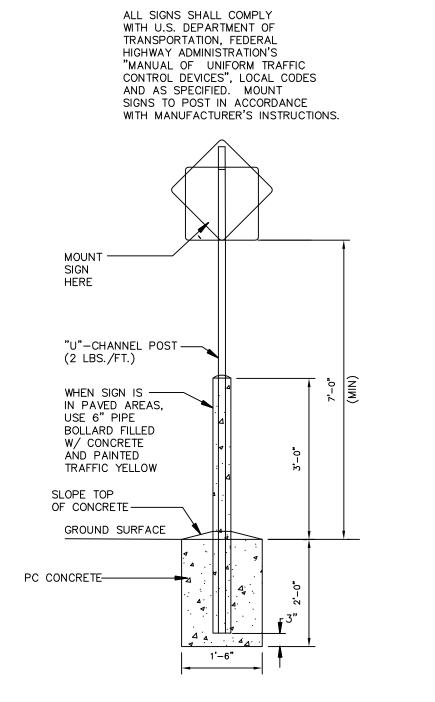
- 2500 PSI P.C.

CONCRETE MINIMUM

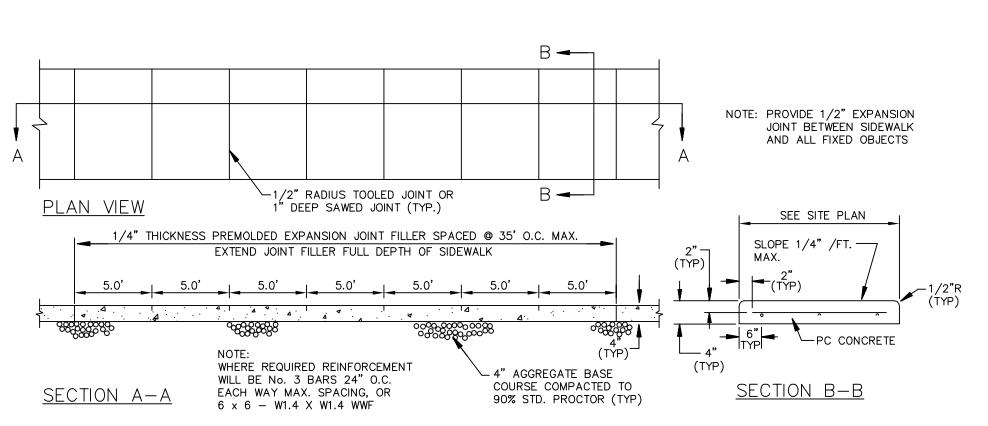
- FILL POST w/ CONCRETE

# Pavement Sections



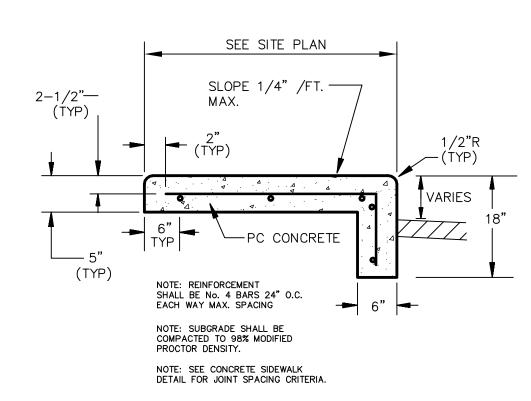


Standard Sign Base

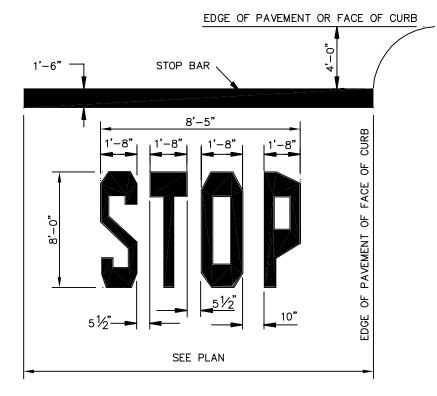


Concrete Sidewalk

NTS

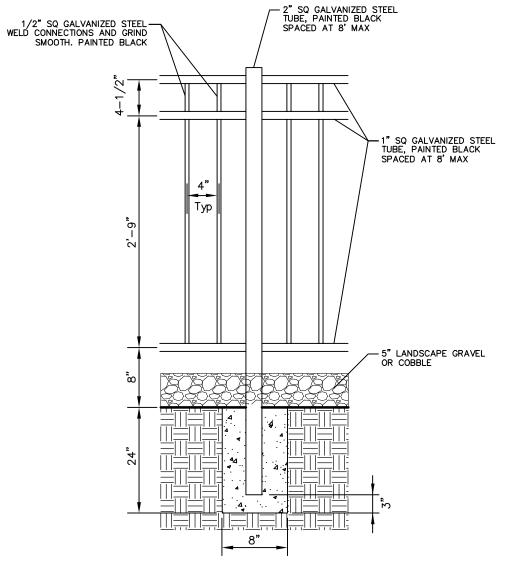


Sidewalk with Turndown Detail



1. WORDS AND ARROWS FOR DRIVEWAYS SHALL BE APPLIED ACCORDING TO REQUIREMENTS AS OUTLINED IN SECTION 3B OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS 2. THESE WORDS AND BAR ARE TO BE PAINTED REFLECTIVE WHITE.

Stop Bar



Railing Detail

Wooten 4700 Lincoln NE, Suite 111 Albuquerque, NM 87109 Ph: 505.980.3560



Phone: (505) 342-6200

Fax: (505) 342-6201

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**project** number

drawing issuance

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professional seal

Description: Date:

03.02.2015

ADAAG standardizes detectable warnings as

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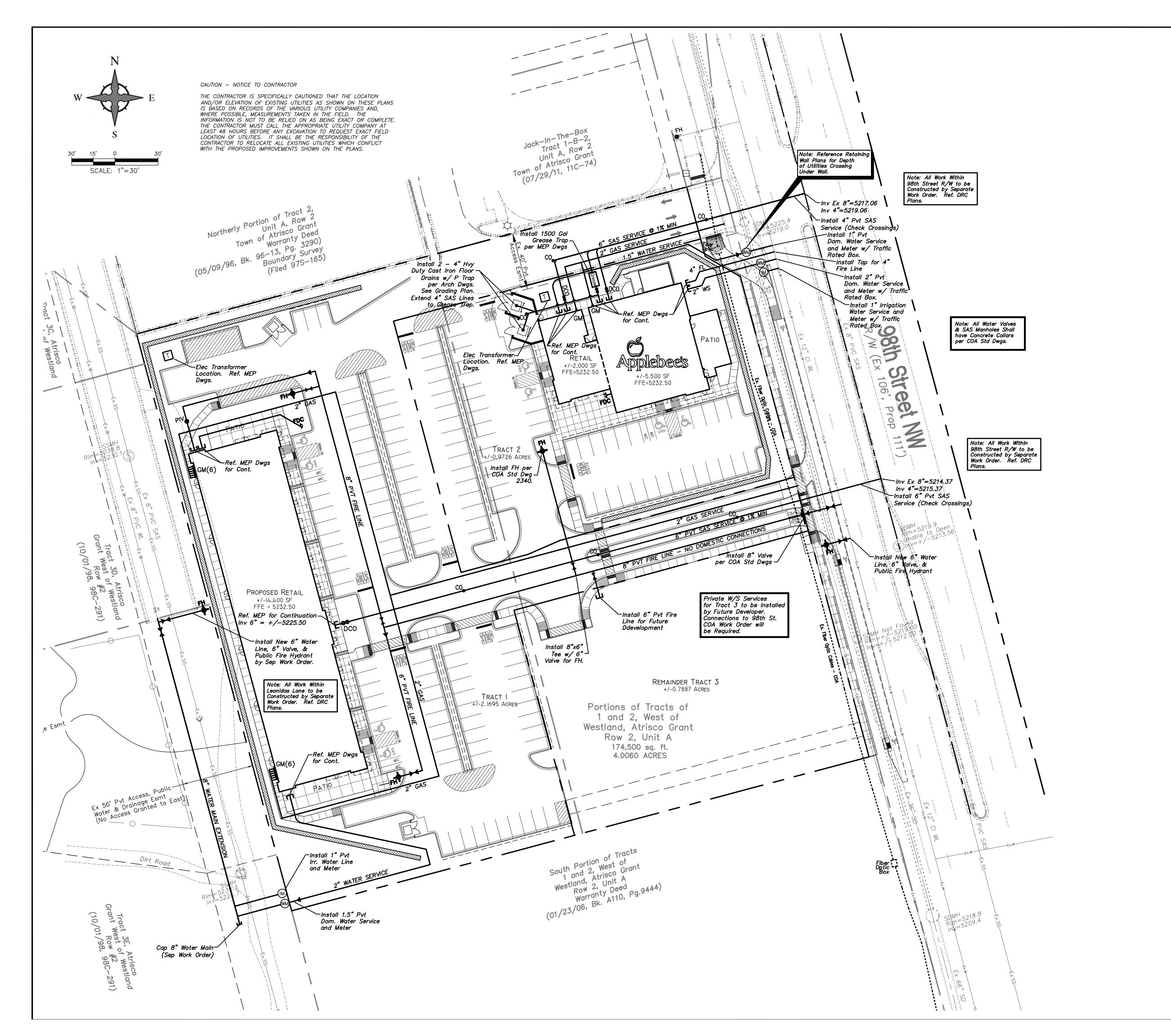
ing surfaces.

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Site Details drawing number C4

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# GENERAL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE INSTALLATION OF ALL WORK RELATED TO MECHANICAL UTILITIES AS SHOWN ON THIS PLAN INCLUDING: TRENCHING, BACKFILL, SUPPORTS, CLEANOUT PADS, SERVICE STOPS AND BOXES, SERVICE LINES, TESTING, CLEANING, AND STERILIZING. ANY WORK NOT ACCEPTED BY THE ARCHITECT OR ENGINEER DUE TO IMPROPER WORKMANSHIP OR LACK OF PROPER COORDINATION SHALL BE REMOVED AND CORRECTLY INSTALLED AT THE CONTRACTOR'S EXPENSE, AS DIRECTED.

2. MINIMUM DEPTHS OF COVER SHALL BE: 36" FOR WATERLINES AND 48" FOR SEWER, EXCEPT AT BUILDING CONNECTION.

3. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED OR PROVIDED OF HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE UNIFORM PLUMBING CODE, LATEST EDITION.

4. UTILITY LINES SHALL BE INSTALLED PRIOR TO PAVEMENT, CURB AND GUTTER, AND/OR SIDEWALK, AS APPLICABLE.

5. ROUGH GRADING OF SITE  $(\pm 0.5')$  SHALL BE COMPLETED PRIOR TO INSTALLATION OF UTILITY LINES.

6. CONTRACTOR WILL BE RESPONSIBLE FOR CONNECTIONS TO BUILDING UTILITIES AND ALL NECESSARY FITTINGS TO WITHIN 5' OF BUILDING.

7. ALL VALVES SHALL BE ANCHORED PER CITY OF ALBUQUERQUE STANDARDS.

8. FIRE LINES (IF REQUIRED) SHALL USE PIPE MATERIALS UNDERWRITERS LABORATORIES LISTED AND APPROVED FOR FIRE SERVICE.

9. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WATER METER, FIRE LINE, AND SEWER HOOKUP FEES FOR INSTALLATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR UTILITY EXPANSION CHARGES, PRORATA AND OTHER SPECIAL ASSESSMENTS.

10. CONTRACTOR SHALL VERIFY INVERTS AND LOCATIONS OF EXISTING WATER/SAS LINES PRIOR TO BEGINNING WORK. ALL CONFLICTS SHALL BE BROUGHT TO ATTENTION OF THE ENGINEER AND RESOLVED PRIOR TO BEGINNING WORK.

# <u>UTILITY NOTES</u>

1. INSTALL NEW WATER METERS AND SERVICES PER CITY STANDARDS AND SPECIFICATIONS AS WELL AS THE UNIFORM PLUMBING CODE. REFER TO BULDING PLUMBING PLANS FOR EXACT LOCATIONS OF BUILDING STUB OUTS.

2. INSTALL NEW SANITARY SEWER SERVICES PER CITY STANDARDS AND SPECIFICATIONS AS WELL AS THE UNIFORM PLUMBING CODE. CLEAN OUTS SHALL BE INSTALLED AT A MAXIMUM OF 100' SPACING PER THE UPC. REFER TO BULDING PLUMBING PLANS FOR EXACT LOCATIONS OF BUILDING STUB OUTS.

3. COORDINATE WITH ELECTRIC UTILITY COMPANY FOR PROPOSED TRANSFORMERS, METERS, AND SERVICE LINES EXTENSIONS AS REQUIRED. REFERENCE MEP PLANS FOR ACTUAL BUILDING STUB OUT LOCATIONS AS WELL AS LOADING AND ELECTRICAL PANEL REQUIREMENTS.

4. COORDINATE WITH GAS UTILITY COMPANY FOR NEW SERVICE AS REQUIRED. REFERENCE MEP PLANS FOR ACTUAL BUILDING STUB OUT LOCATIONS AS WELL AS GAS LOADING REQUIREMENTS.

5. COORDINATE WITH TELECOMMUNICATION COMPANIES FOR NEW PHONE AND CABLE SERVICE AS REQUIRED FOR THE PROJECT. REFERENCE MEP PLANS FOR BUILDING STUB OUT LOCATIONS AND SERVICE REQUIREMENTS.

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COORDINATE ALL CONSTRUCTION ACTIVITY WITHIN STREET RIGHTS—OF—WAY WITH THE CITY OF ALBUQUERQUE AS APPLICABLE TO THE WORK. THIS INCLUDES PAVEMENT REMOVAL/REPLACEMENT AND NECESSARY TRAFFIC CONTROL. OBTAIN RIGHT TO WORK PERMITS AS NECESSARY.

Wooten Engineering

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Darren Sowell

ARCHITECTS

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projectnumber 1420 drawingissuance

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Utility Plan
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