

CITY OF ALBUQUERQUE



Richard J. Berry, Mayor

March 27, 2017

Diane Hoelzer, P.E.
Mark Goodwin & Associates
PO Box 90606
Albuquerque, NM, 87199

**RE: TLC Plumbing Office/Warehouse
Grading Plan and Drainage Report
Stamp Date: 2/24/17
Hydrology File: G15D032**

Dear Ms. Hoelzer:

Based upon the information provided in your submittal received 2/27/2017, the Grading Plan and Drainage Report **is not** approved for Building Permit and Site Plan for Building Permit. The following comments need to be addressed for approval of the above referenced project:

Drainage Repot:

1. Under Existing Drainage Conditions, you state a SAD, however you do not mention which SAD was used in the 2004-2005 construction. You can just add an excerpt from the SAD that shows your claim of a 100 yr-6 hr peak discharge of 71.7 cfs.
2. Under Existing Drainage Conditions, please show what the 100 yr-6 hr peak discharge for the current development.
3. Under Developed Drainage Conditions, you do not state anywhere what the new 100 yr-6 hr peak discharge for the whole 17.145 acre site with the proposed development. This cannot be more than the existing peak discharge of 71.7 cfs.
4. Figure 3, please show where the site is on the exhibit.
5. Appendix A, As noted in comment 3 above, please show the calculations for the new 100 yr-6 hr peak discharge for the whole 17.145 acre site with the proposed development.

CITY OF ALBUQUERQUE



Richard J. Berry, Mayor

Grading Plan:

1. Please show a cross section for Sub Basin 100 and label the size and depth of the rock for the drainage swale.

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

Sincerely,

Renee C. Brissette

Reneé C. Brissette, P.E.
Senior Engineer, Hydrology
Planning Department

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 09/2015)

Project Title: TLC PLUMBING OFFICE/WAREHOUSE Building Permit #: BP-2017-06255 City Drainage #: G15D
DRB#: _____ EPC#: _____ Work Order#: _____
Legal Description: TR 1-A PLAT OF TRACT 1-A LANDS OF LAFARGE CONT
City Address: 500 EDITH BLVD NE

Engineering Firm: Mark Goodwin and Assoc, PA Contact: Diane Hoelzer, PE
Address: 8916 Adams NE, ABQ, NM 87113
Phone#: 505-828-2200 Fax#: _____ E-mail: diane@goodwinengineers.com

Owner: TLC Contact: Hal Whitacre
Address: 5000 EDITH BLVD NE
Phone#: 505-362-3493 Fax#: 505-761-9875 E-mail: hwhitacre@tlcplumbing.com

Architect: Scott C. Anderson Contact: _____
Address: 7604 RIO PENASCO NW, ABQ, NM 87120
Phone#: 505-401-7575 Fax#: _____ E-mail: andersonscottc.com

Other Contact: n/a 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) _____

CHECK 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
☐ PRE-DESIGN MEETING
☐ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: ☐ Yes ☒ No

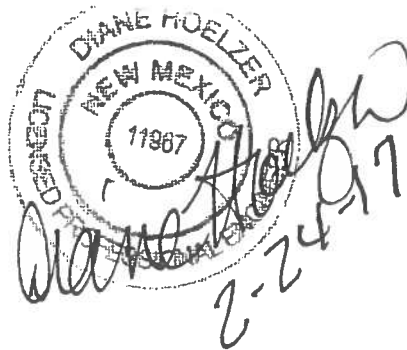
DATE SUBMITTED: February 24, 2017 By: Diane Hoelzer, PE

COA STAFF: _____ ELECTRONIC SUBMITTAL RECEIVED: _____

*TLC Warehouse & Building
Drainage Management Plan*

*Prepared by
Mark Goodwin & Associates, P.A.*

February 2017



TLC Warehouse and Building

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I. PROJECT DESCRIPTION

The TLC project site covers an area of approximately 17.145 acres (Figure 1). The first phase of development for this site was completed in 2004-2005 and included the construction of two buildings, a parking lot and some underground storm pipe as shown on the google earth map (Figure 2). In this second phase, two additional buildings, a parking lot and some asphalt driveways are proposed as shown on the sub basin boundary exhibits (Figure 4.1 and 4.2) and the grading plan.

II. DESIGN CRITERIA AND PREVIOUS DEVELOPMENT

The design criteria used in this report was in accordance with Section 22.2 Hydrology of the Development Process Manual, Volume 2, Design Criteria, January 1993 edition. The 100-year 6-hour storm event was analyzed to determine flow conveyed in swales and the internal roads using $P(1 \text{ hr})=1.92"$, $P(6\text{-hr})=2.28"$. The onsite Land Treatment values used were determined by measuring the total impervious area. First Flush volumes were calculated using 0.34 inches of precipitation over the new impervious areas, including roof and asphalt roads as has been the latest "design criteria" used by the City of Albuquerque.

The project site is in FEMA flood zone X as shown on FIRM Panel 119 of 825, map number 35001C0119G, September 26, 2008 (Figure 3).

III. EXISTING DRAINAGE CONDITIONS

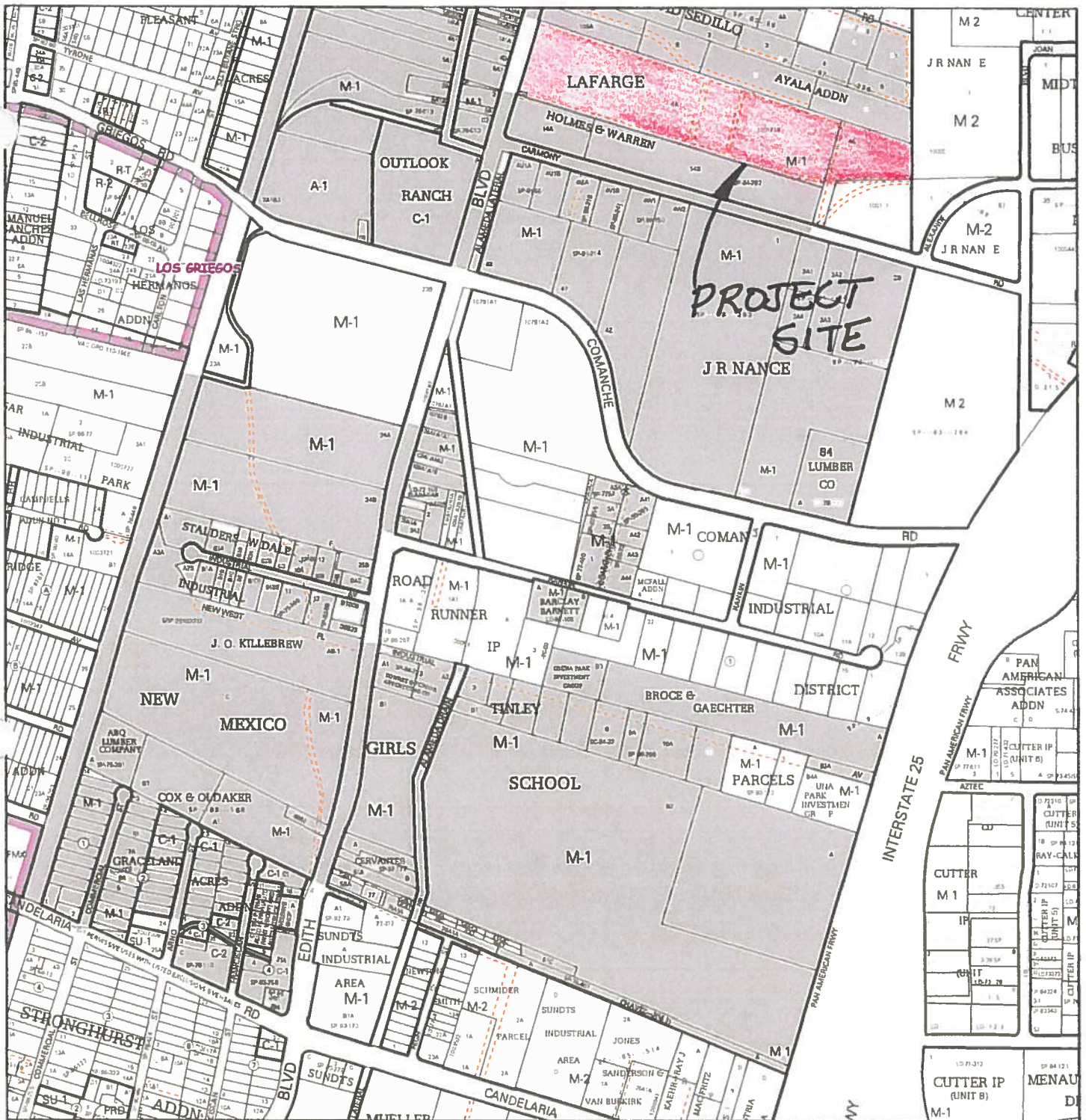
Under existing drainage conditions, onsite runoff is conveyed in a westerly direction and is intercepted by three existing drop inlets and a cattle guard inlet that spans the entrance road at Edith Blvd. There is an existing 24" and 36" RCP storm pipe that connects the three drop inlets and cattle inlet to an existing 48" storm pipe in Edith Blvd. as shown on the grading plan. The Edith Blvd. storm pipe was constructed as part of an SAD. Per the SAD, the maximum runoff from the site is calculated using 80% D and 20% B. Using these Land Treatment percentages in AHYMO results in a 100 yr-6 hr peak discharge of 71.7 cfs.

IV. DEVELOPED DRAINAGE CONDITIONS

Under developed conditions the site runoff is conveyed into two first flush ponds with outfall structures that connect to an onsite storm pipe. The existing storm pipe along the south boundary will be extended north in a 24" pipe to the "north" first flush pond. The 100 year peak discharge into the north first flush pond is 8.71 cfs and the south first flush pond is 6.71 cfs. Both outfall structures and storm pipe are designed to convey this discharge. The peak discharge for the building and parking lot at the NW corner of the property is 1.61 cfs. The first flush volumes for this area will be captured in retention swales that will spillover into each other as indicated on the grading plan and then overflow at the entrance road curb-cut and be intercepted by the cattle grate inlet.

V. FIRST FLUSH PONDS

Calculation for volume can be found in the Appendix.



For more current information and details visit: <http://www.cabq.gov/gis>





Figure 2



MAP SCALE 1" = 500'

0 500 1000 FEET

NFIP

PANEL 0119G

FIRM

FLOOD INSURANCE RATE MAP

BERNALILLO COUNTY,

NEW MEXICO

AND INCORPORATED AREAS

PANEL 119 OF 825

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ALBUQUERQUE, CITY OF	350002	0119	G
BERNALILLO COUNTY AREAS	350001	0119	G
LOS ANGELES, CITY OF	350123	0119	G

Notice to User: The Map Number shown below should be used above should be used on insurance applications for the subject community.

MAP NUMBER
35001C0119G

MAP REVISED
SEPTEMBER 26, 2008

Federal Emergency Management Agency

Figure 3

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

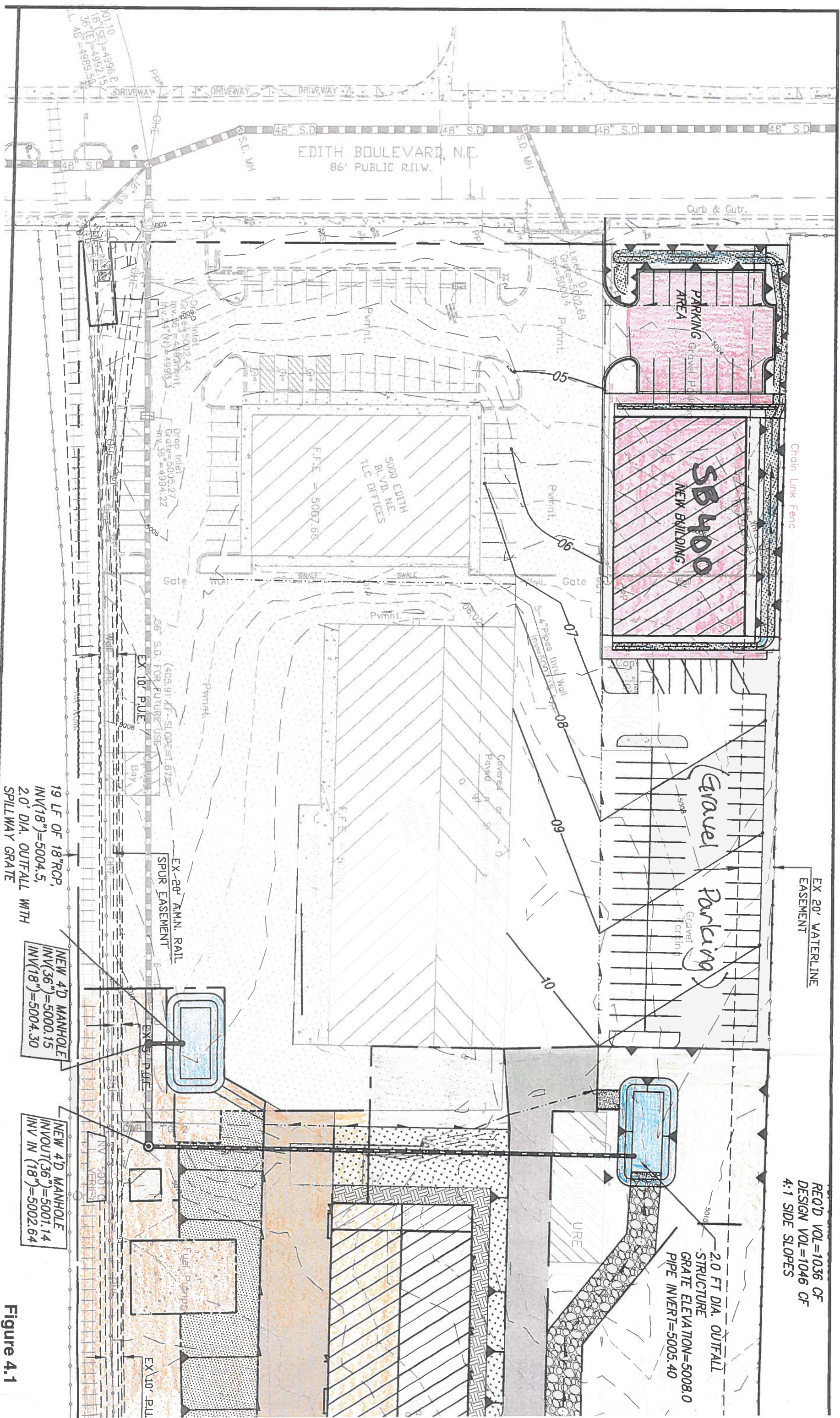
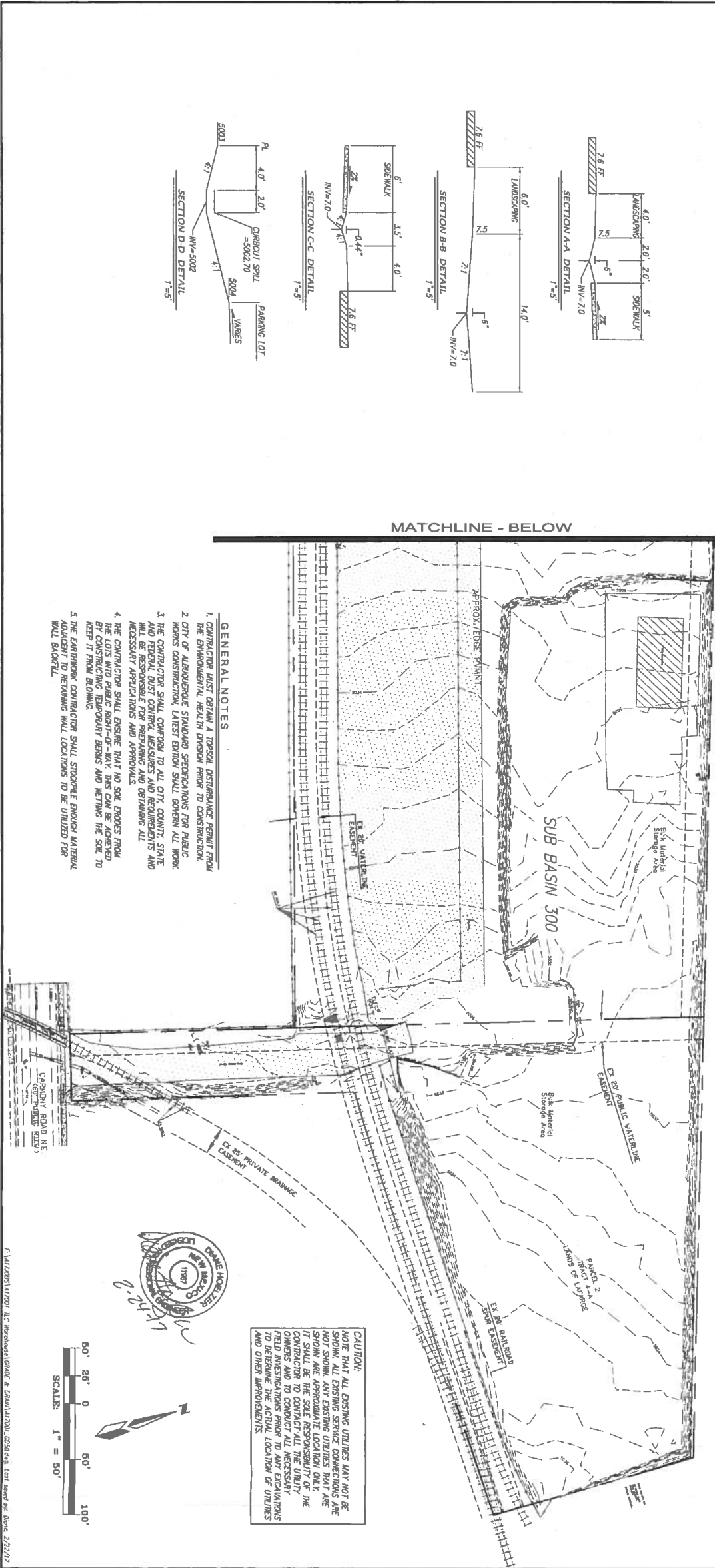
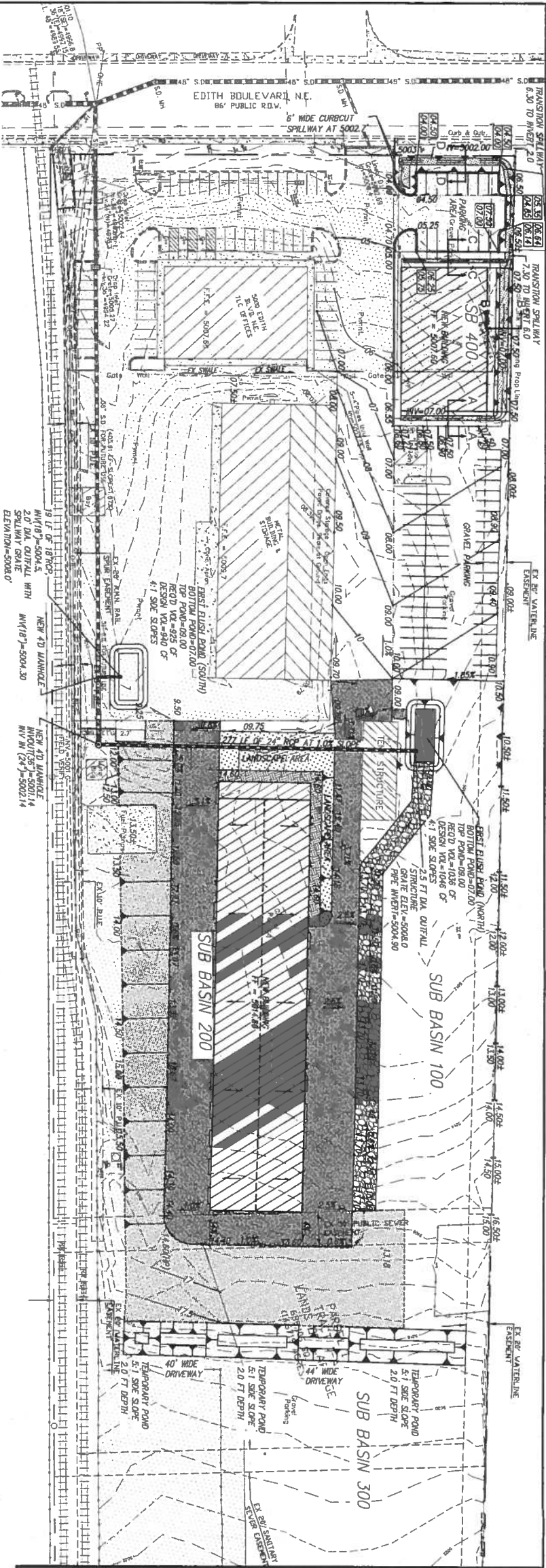
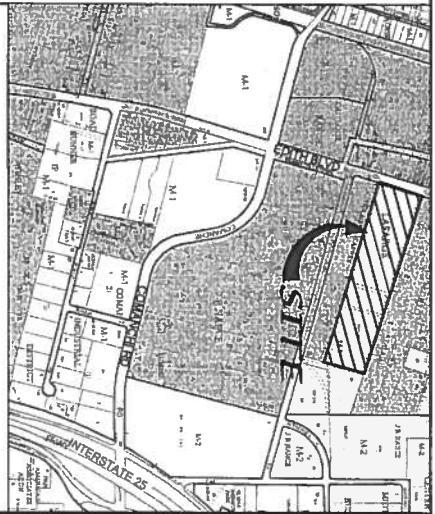


Figure 4.1



CAUTION:
NOTE THAT ALL EXISTING UTILITIES MAY NOT BE SHOWN. ALL EXISTING SERVICE CONNECTIONS ARE NOT SHOWN. ANY EXISTING UTILITIES THAT ARE SHOWN ARE APPROXIMATE LOCATIONS ONLY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES AND TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO ANY EXCAVATIONS TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS.

SCALE: 1" = 50'



ACS BENCHMARK
STA. NM 47.10, A BRASS DISC WITHIN THE MEDIAN OF SECOND ST. NW, JUST NORTH OF MESCALERO ROAD. ELEV. = 4970.252

LEGAL DESCRIPTION
TRACT 1-A, LANDS OF LAFARGE
PLAN NO. 001, FEB. 4, 2009 AS 2009C-45.

LEGEND	
---	EXISTING CONTOUR (MAJOR)
-x-	EXISTING CONTOUR (MINOR)
x 00.0	EXISTING SPOT ELEVATION
FL	EXISTING TOP CURB/TOWNLANE ELEVATION
---	EXISTING ASPHALT PAVEMENT
---	EXISTING ELECTRIC TRANSMISSION
---	EXISTING OVERHEAD ELECTRIC LINE
---	EXISTING POWER POLE
---	EXISTING LIGHT POLE
---	EXISTING TRAFFIC SIGNAL PULBOX
---	EXISTING TELEPHONE MANHOLE
---	EXISTING CANY FEDESTAL
---	EXISTING STORM DRAIN MANHOLE
---	NEW STANDARD CURB & GUTTER
---	NEW MOUNTABLE CURB & GUTTER
---	NEW RIGHT-OF-WAY
---	NEW CENTERLINE
---	NEW LOT LINES
---	NEW EASEMENTS
---	NEW TOP OF WALL ELEVATION
---	NEW BOTTOM OF WALL ELEVATION
---	NEW SPOT ELEVATIONS
---	NEW FLOW DIRECTION
---	NEW WATER BLOCK
---	NEW RETAINING WALL (SEE NOTE 9)
---	NEW GARDEN WALL
---	NEW STORM DRAIN

TLC WAREHOUSE GRADING DRAINAGE PLAN

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

Designed: DER Drawn: DER Checked: DMG Sheet: C101
Scale: 1" = 1' Date: 01/26/17 Job: A17001

APPENDIX A

First Flush Pond Calculations
First Flush Swale Calculations
Pond Outfall Structure Calculations
Misc. hydrology calculations
Channel capacity calculation
AHYMO printouts

First Flush Pond Calculations

TLC WAREHOUSE BUILDING

FIRST FLUSH POND NORTH

Sub basin 100 - (new asphalt and building roof)

Total impervious area= $36,575 \text{ SF} \times (0.34"/12) = 1036 \text{ CF}$ (required retention volume)

POND DESIGN: 62 feet x 33 feet (at contour 5009.')

4:1 side slopes, 2.0 feet deep

2.0 foot diameter outfall at elevation 5008.' $Q(100) = 8.64 \text{ cfs}$

Design volume = 1046 CF

Connected to a 18" RCP Storm drain

FIRST FLUSH POND SOUTH

Sub basin 200 - (new asphalt and building roof)

Total impervious area= $32,672 \text{ SF} \times (0.34"/12) = 925 \text{ CF}$ (required retention volume)

POND DESIGN: 57 feet x 33 feet (at contour 5009.')

4:1 side slopes, 2.0 feet deep

2.0 foot diameter outfall at elevation 5008.' $Q(100) = 6.71 \text{ cfs}$

Design volume = 938 CF

Connected to 36" RCP Storm drain



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Consulting Engineers

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(505) 828-2200 FAX 797-9539

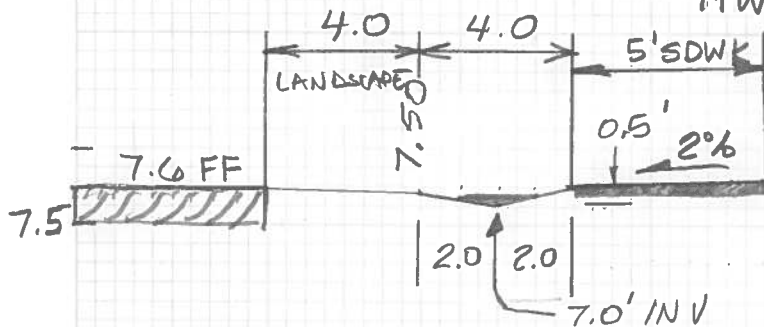
PROJECT TLC Warehouse
SUBJECT First Flush calcs
BY DLH DATE 2-21-17
CHECKED _____ DATE _____
SHEET _____ OF _____

SECTION A-A

$$\text{SIDEWALK } 519 \text{ SF } \left(\frac{.34}{12} \right) = 14. \text{ CF}$$

$$80 \text{ LF} \Rightarrow 0.1834 \text{ SF}$$

$$\text{MWSEL} \leq 3'' \text{ (100 YR)}$$

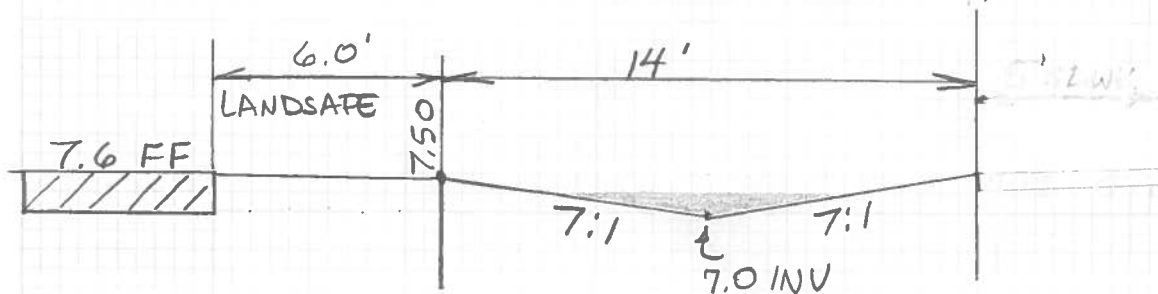


SECTION B-B (BUILDING-ROOF)

$$9380 \text{ SF } \left(\frac{.34}{12} \right) = 265 \text{ CF}$$

$$120 \text{ LF SWALE}$$

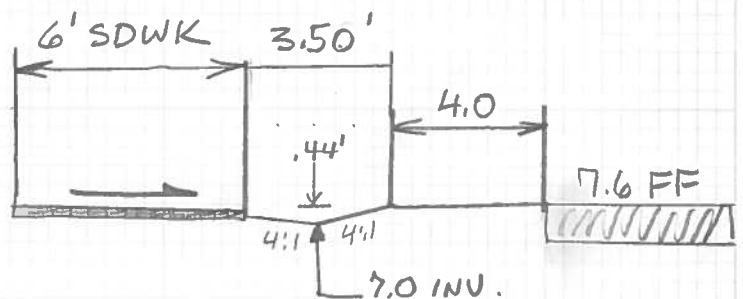
$$\text{MWSEL} = 0.56' \text{ (100 YR)}$$



SECTION C-C

$$\text{SIDEWALK } 620 \text{ SF } \left(\frac{.34}{12} \right) = 17.56 \text{ CF}$$

$$90 \text{ LF} = 0.195 \text{ SF}$$

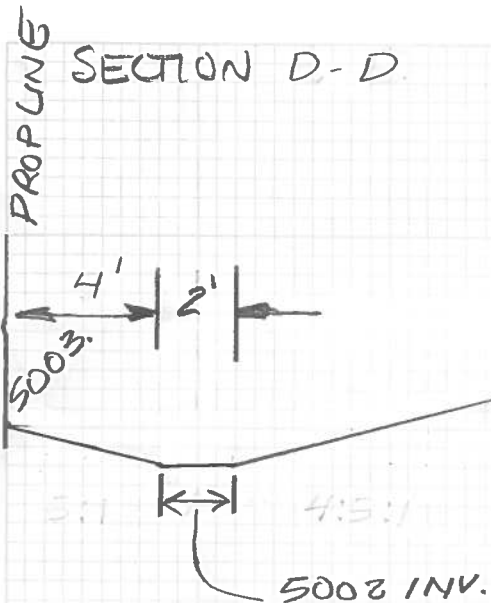




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PROJECT TLC Warehouse
SUBJECT First Frost Calcs
BY DMG DATE 2-21-17
CHECKED _____ DATE _____
SHEET _____ OF _____



$$5516 \text{ SF} \left(\frac{.34}{12} \right) = 156 \text{ CF}$$

$$90 \text{ LF} = 1.73 \text{ SF}$$

$$[2(.5) + 2(.5)] 90 \text{ LF} = 180 \text{ CF}$$



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PROJECT TLC Warehouse
SUBJECT Hydrology Calcs
BY DHG DATE 2-21-17
CHECKED _____ DATE _____
SHEET _____ OF _____

FIRST FLUSH POND - NORTH
OUTFALL STRUCTURE

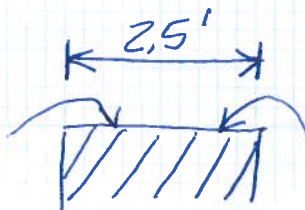
$$Q = 8.64$$

$$Q = CLH^{3/2} \quad L = 2\pi r$$

$$L = 2\pi(1.25') = 7.85$$

$$Q = 8.64 = 2.8(7.85)H^{3/2}$$

$$H = 0.54' = 6.4''$$



FIRST FLUSH POND - SOUTH
OUTFALL STRUCTURE

$$Q = 6.71 \text{ cfs} \quad L = 2\pi r = 2(\pi)1 = 6.28'$$

$$6.71 = 2.8(6.28)H^{3/2}$$

$$H = 0.53' = 6.3''$$



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Consulting Engineers

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PROJECT Hydrology Calcs.
SUBJECT TLC Warehouse
BY Dut DATE 8-21-17
CHECKED _____ DATE _____
SHEET _____ OF _____

SB 100 125164 SF = 2.873 ACRES = 0.00449 sq.mi

Tr A = 42840 (34.2%)

Tr B = 22874 (18.3%)

Tr C = 22875 (18.3%)

Tr D = 36575 (29.2%)

SB 200 92794 SF = 2.1302 ACRES = 0.003329 sq.mi

Tr A = 33700 (36.3%)

Tr B = 11793 (12.7%)

Tr C = 11793 (12.7%)

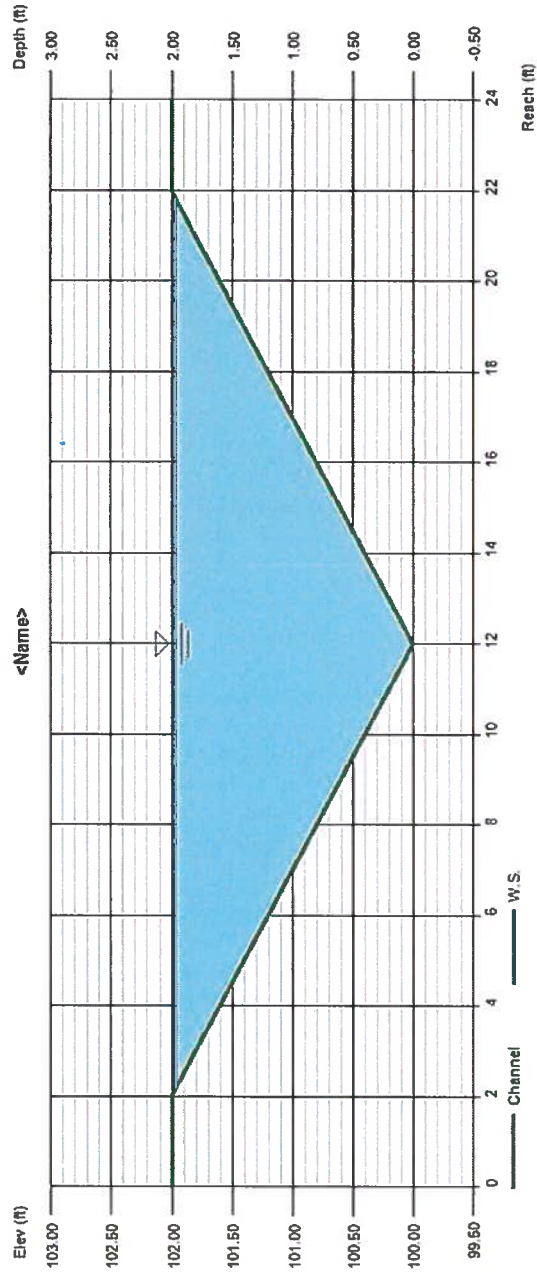
Tr D = 35,508 (38.3%)

SB 300 305,576 SF = 7.015 ACRES = 0.010961 sq.mi.

Tr. A = 100%

Section	Item	Input
Channel	Section Type =	Triangular
	Bot Width (ft)	-0-
	Side Slope, z:1 =	5.00 5.00
	Tot Depth (ft) =	2.00
	Inv Elev (ft) =	100.00
	Slope (%) =	0.60
Calcs	n-value =	0.250
	Compute by =	Known Q
	Q (cfs) =	8.64

Clear
Run



Depth (ft)	Q (cfs)	Area (sqft)	Veloc (ft/s)	Wp (ft)	Yc (ft)	TopWidth (ft)	Energy (ft)
1.97	8.640	19.40	0.45	20.09	0.72	19.70	1.97


```

AHYMO PROGRAM (AHYMO-S4)
RUN DATE (MON/DAY/YR) = 02/23/2017
START TIME (HR:MIN:SEC) = 11:41:48
INPUT FILE = C:\Program Files (x86)\AHYMO-S4\TLCBLG6.DAT
- Version: S4.01a - Rel: 01a
USER NO. = M-GoodwinNMSiteA90075759

START TIME=0.0 HR PUNCH CODE=0 PRINT LINES=-6
LOCATION NEW MEXICO
State of New Mexico soil infiltration values (LAND FACTORS) used for computations.
Land Treatment Initial Abstr.(in) Unif. Infilt.(in/hour)
A 0.65 1.67
B 0.50 1.25
C 0.35 0.83
D 0.10 0.04

```

```
*S***** FILE: TLCBLG.DAT REV: 2-23-17 DLH *****
*S***** ZONE ATLAS G-15 *****
*S*****
*S*****
*S*****
*S***** 100 YEAR 6 HOUR STORM EVENT *****
*S*****
*S***** TYPE=1 RAIN QUARTER=.0 *****
RAINFALL
RAIN ONE=1.92 IN RAIN SIX=2.28 IN
RAIN DAY=2.60 IN DT=0.05 HRS
```

6-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONVECTIVE AREAS (NM & AZ) - DI									
DT = 0.050000 HOURS		END TIME =		6.000000 HOURS					
0.0000	0.0024	0.0049	0.0076	0.0104	0.0134	0.0168			
0.0215	0.0288	0.0367	0.0449	0.0539	0.0630	0.0725			
0.0822	0.0921	0.1032	0.1148	0.1274	0.1501	0.1779			
0.2151	0.2572	0.3093	0.3788	0.4569	0.5919	0.8016			
1.1611	1.4138	1.6130	1.7132	1.8009	1.8640	1.9142			
1.9579	1.9899	2.0193	2.0435	2.0595	2.0713	2.0817			
2.0916	2.1002	2.1083	2.1162	2.1237	2.1300	2.1337			
2.1372	2.1408	2.1440	2.1473	2.1505	2.1536	2.1567			
2.1595	2.1624	2.1652	2.1680	2.1707	2.1733	2.1759			
2.1784	2.1809	2.1833	2.1857	2.1880	2.1903	2.1926			
2.1948	2.1970	2.1992	2.2013	2.2034	2.2055	2.2076			
2.2096	2.2116	2.2136	2.2156	2.2175	2.2195	2.2214			
2.2233	2.2251	2.2270	2.2288	2.2306	2.2324	2.2341			
2.2359	2.2376	2.2393	2.2410	2.2427	2.2443	2.2460			
2.2476	2.2492	2.2508	2.2524	2.2540	2.2555	2.2571			
2.2586	2.2601	2.2616	2.2631	2.2646	2.2660	2.2675			
2.2689	2.2703	2.2717	2.2732	2.2745	2.2759	2.2773			
2.2786	2.2800								

```

*****
**S**
**S**      DEVELOPED
**S**      SUB BASIN NORTH
**S**      AREA= 2.873 ACRES
*****
**S**
*****
COMPUTE NM HYD
ID=1  HYD NO=100 . AREA= 0.00449 SQ MI
PER A=34.2 PER B=18.3 PER C=18.3 PER D
TP=-.1333 HR MASS RAIN=-1
*****

```

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 5.1762 CFS UNIT VOLUME = 0.9971 B = 526.28 P60 = 1.9200
AREA = 0.001311 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

K = 0.139829HR TP = 0.133300HR K/TP RATIO = 1.048980 SHAPE CONSTANT, N = 3.365536
UNIT PEAK = 7.4021 CFS UNIT VOLUME = 0.9982 B = 310.39 P60 = 1.9200
AREA = 0.003179 SQ MI IA = 0.53369 INCHES INF = 1.34432 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 100.00

RUNOFF VOLUME = 1.18518 INCHES = 0.2838 ACRE-FEET
PEAK DISCHARGE RATE = 8.64 CFS AT 1.500 HOURS BASIN AREA = 0.0045 SQ. MI.

*S*****

*S DEVELOPED

*S SUB BASIN SOUTH

*S AREA=2.1302 ACRES

*S*****

COMPUTE NM HYD ID=1 HYD NO=200. AREA= 0.003329 SQ MI

PER A=36.3 PER B=12.7 PER C=12.7 PER D=38.3

TP=-.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 5.0338 CFS UNIT VOLUME = 0.9971 B = 526.28 P60 = 1.9200
AREA = 0.001275 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 200.00

RUNOFF VOLUME = 1.27420 INCHES = 0.2262 ACRE-FEET
PEAK DISCHARGE RATE = 6.71 CFS AT 1.500 HOURS BASIN AREA = 0.0033 SQ. MI.

*S*****

*S UNDEVELOPED

*S SUB BASIN EAST

*S AREA= 7.015 ACRES

*S*****

COMPUTE NM HYD ID=1 HYD NO=300. AREA= 0.010961 SQ MI

PER A=100 PER B=0 PER C=0 PER D=0

TP=-.1333 HR MASS RAIN=-1

K = 0.162423HR TP = 0.133300HR K/TP RATIO = 1.218480 SHAPE CONSTANT, N = 2.920032
UNIT PEAK = 22.633 CFS UNIT VOLUME = 0.9978 B = 275.24 P60 = 1.9200
AREA = 0.010961 SQ MI IA = 0.65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

PRINT HYD ID=1 CODE=1

HYDROGRAPH FROM AREA 300.00

RUNOFF VOLUME = 0.67303 INCHES = 0.3934 ACRE-FEET
PEAK DISCHARGE RATE = 12.93 CFS AT 1.550 HOURS BASIN AREA = 0.0110 SQ. MI.

*S*****

*S NW BUILDING AND PARKING

*S SUB BASIN 400

*S AREA= 0.5214 ACRES

*S*****

COMPUTE NM HYD ID=1 HYD NO=400. AREA= 0.000815 SQ MI

PER A=100 PER B=0 PER C=24 PER D=76

TP=-.1333 HR MASS RAIN=-1

*****WARNING***** SUM OF TREATMENT TYPES DOES NOT EQUAL 100 PERCENT OR TOTAL AREA

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 1.2227 CFS UNIT VOLUME = 0.9911 B = 526.28 P60 = 1.9200
AREA = 0.000310 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

K = 0.151586HR TP = 0.133300HR K/TP RATIO = 1.137180 SHAPE CONSTANT, N = 3.113085
UNIT PEAK = 1.1028 CFS UNIT VOLUME = 0.9864 B = 290.92 P60 = 1.9200
AREA = 0.000505 SQ MI IA = 0.59194 INCHES INF = 1.50742 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

PRINT HYD ID=1 CODE=1

HYDROGRAPH FROM AREA 400.00

RUNOFF VOLUME = 1.24227 INCHES = 0.0540 ACRE-FEET
PEAK DISCHARGE RATE = 1.60 CFS AT 1.500 HOURS BASIN AREA = 0.0008 SQ. MI.

*S*****

FINISH

NORMAL PROGRAM FINISH END TIME (HR.MIN:SEC) = 11:41:48

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AHYMO PROGRAM (AHYMO-S4)
- Version: S4.01a - Rel: 01a
RUN DATE (MON/DAY/YR) = 02/24/2017
START TIME (HR:MIN:SEC) = 09:50:59
INPUT FILE = C:\Program Files (x86)\AHYMO-S4\tlcbldg.dat
USER NO = M-GoodwinNMSiteA90075759

START TIME=0.0 HR PUNCH CODE=0 PRINT LINES=-6
LOCATION NEW MEXICO
State of New Mexico soil infiltration values (LAND FACTORS) used for computations.
Land Treatment Initial Abstr.(in) Unif. Infiltr.(in/hour)
A 0.65 1.67
B 0.50 1.25
C 0.35 0.83
D 0.10 0.04

*s*****
*s***** FILE: TLCLBLG.DAT REV: 2-24-17 DLH
*s*****
*s***** ZONE ATLAS G-15
*s*****
*s*****
*s***** 100 YEAR 6 HOUR STORM EVENT
*s*****
*s*****
*s***** TYPE=1 RAIN QUARTER=0.0
RAIN ONE=1.92 IN RAIN SIX=2.28 IN
RAIN DAY=2.60 IN DT=0.05 HRS

6-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONVECTIVE AREAS (NM & AZ) - D1
DT = 0.050000 HOURS END TIME = 6.000000 HOURS

*s*****
*s* DEVELOPED
*s* SUB BASIN
*s* AREA=17.145 ACRES
*s*****
COMPUTE NM HYD ID=1 HYD NO=200. AREA= 0.026789 SQ MI
PER A=0 PER B=20 PER C=0 PER D=80
TP=-.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 84.612 CFS UNIT VOLUME = 0.9990 B = 526.28 P60 = 1.9200
AREA = 0.021431 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

K = 0.131002HR TP = 0.133300HR K/TP RATIO = 0.982760 SHAPE CONSTANT, N = 3.593019
UNIT PEAK = 13.146 CFS UNIT VOLUME = 1.000 B = 327.06 P60 = 1.9200
AREA = 0.005358 SQ MI IA = 0.50000 INCHES INF = 1.25000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

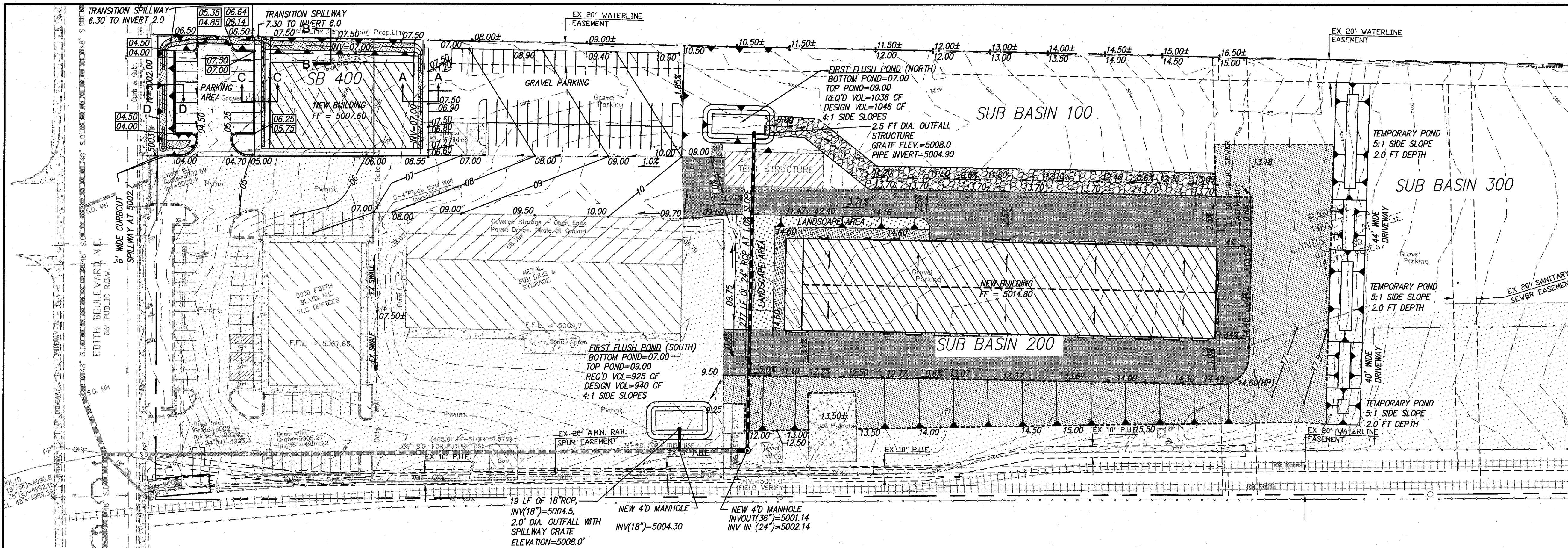
PRINT HYD ID=1 CODE=1
PARTIAL HYDROGRAPH 200.00

RUNOFF VOLUME = 1.80433 INCHES = 2.5779 ACRE-FEET
PEAK DISCHARGE RATE = 71.70 CFS AT 1.500 HOURS BASIN AREA = 0.0268 SQ. MI.

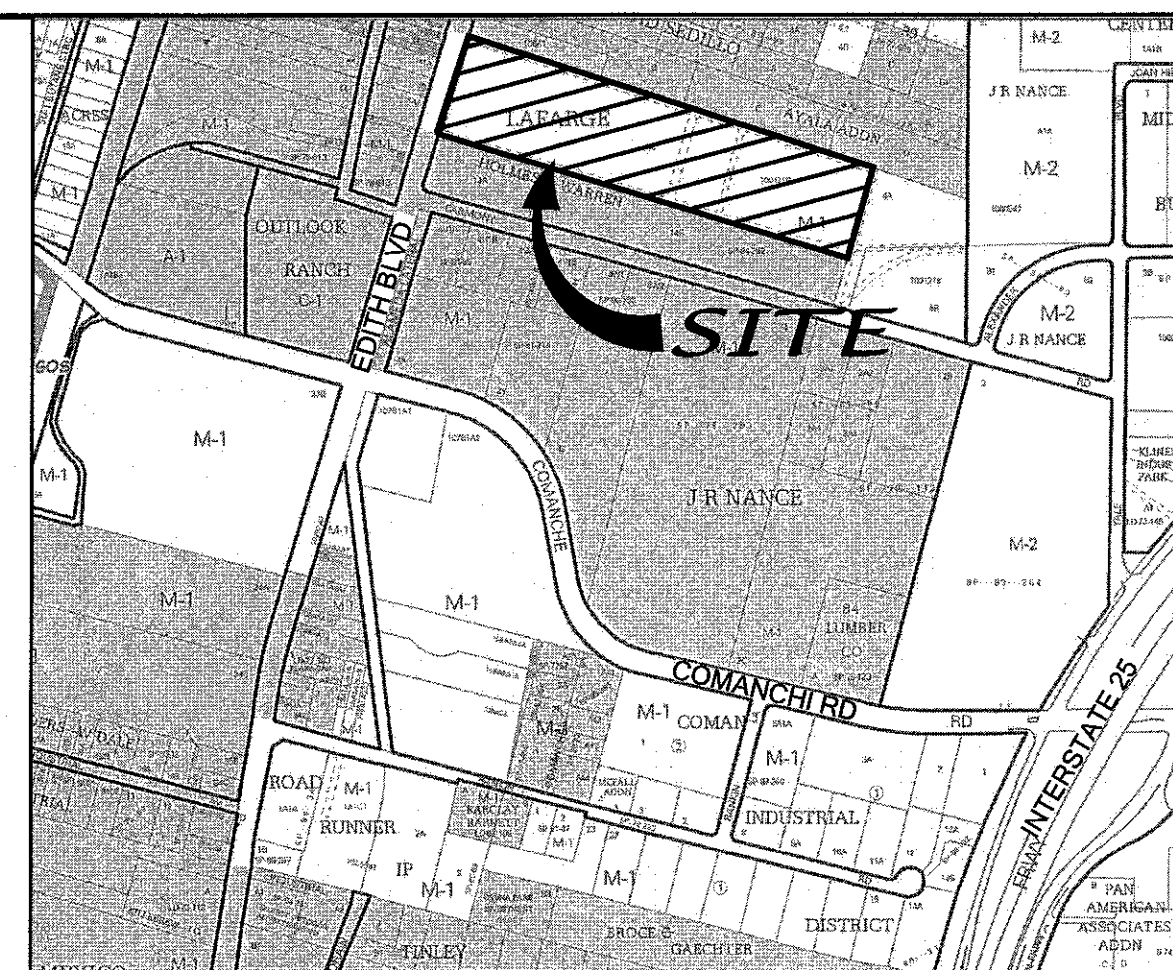
*s*****
FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 09:50:59

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MATCHLINE - BELOW



VICINITY MAP ZONE MAP: G-15-Z

ACS BENCHMARK

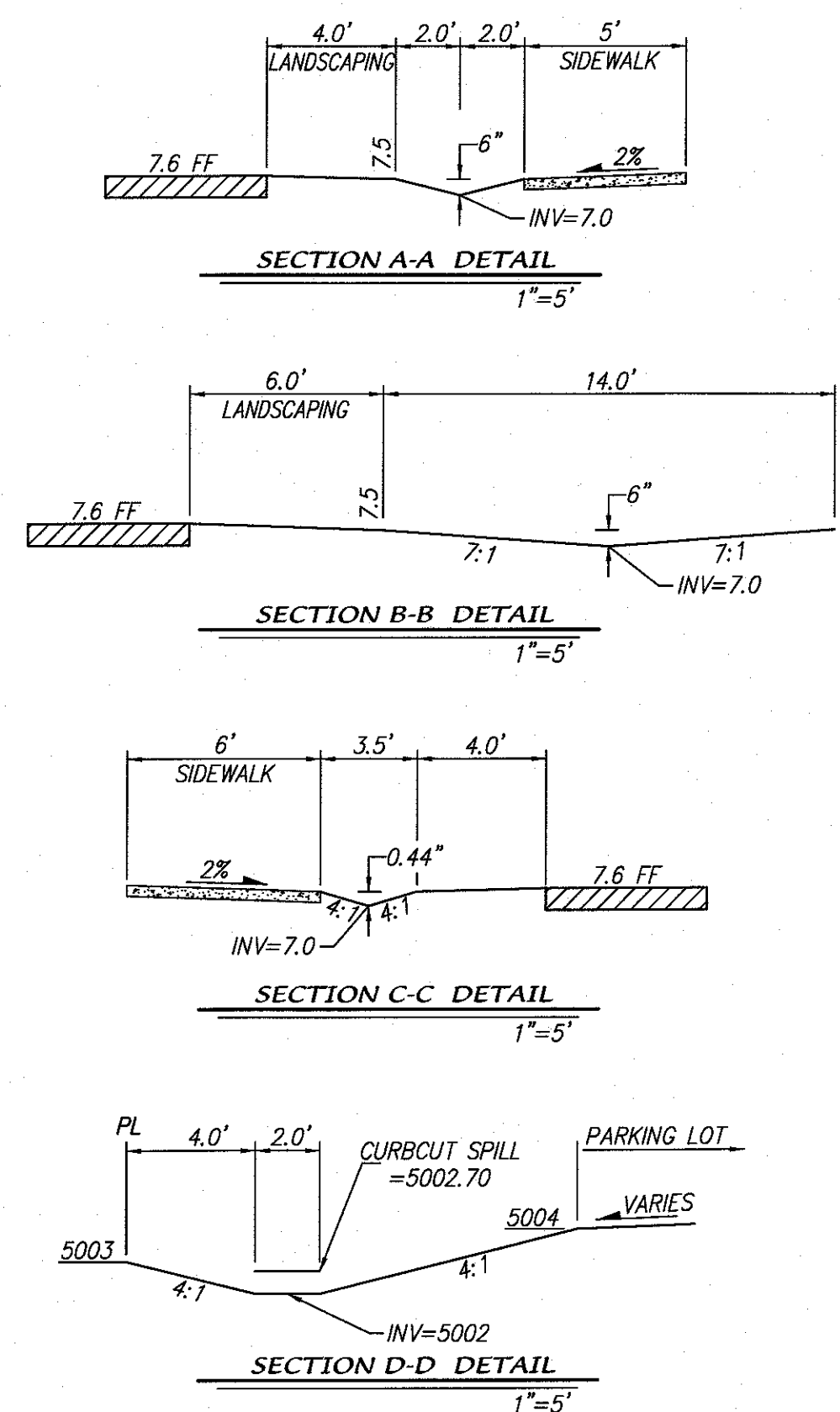
STA. 'NM_47_10'. A BRASS DISC WITHIN THE MEDIAN OF SECOND ST. NW, JUST NORTH OF Mescalero Road. ELEV. = 4970.252

LEGAL DESCRIPTION

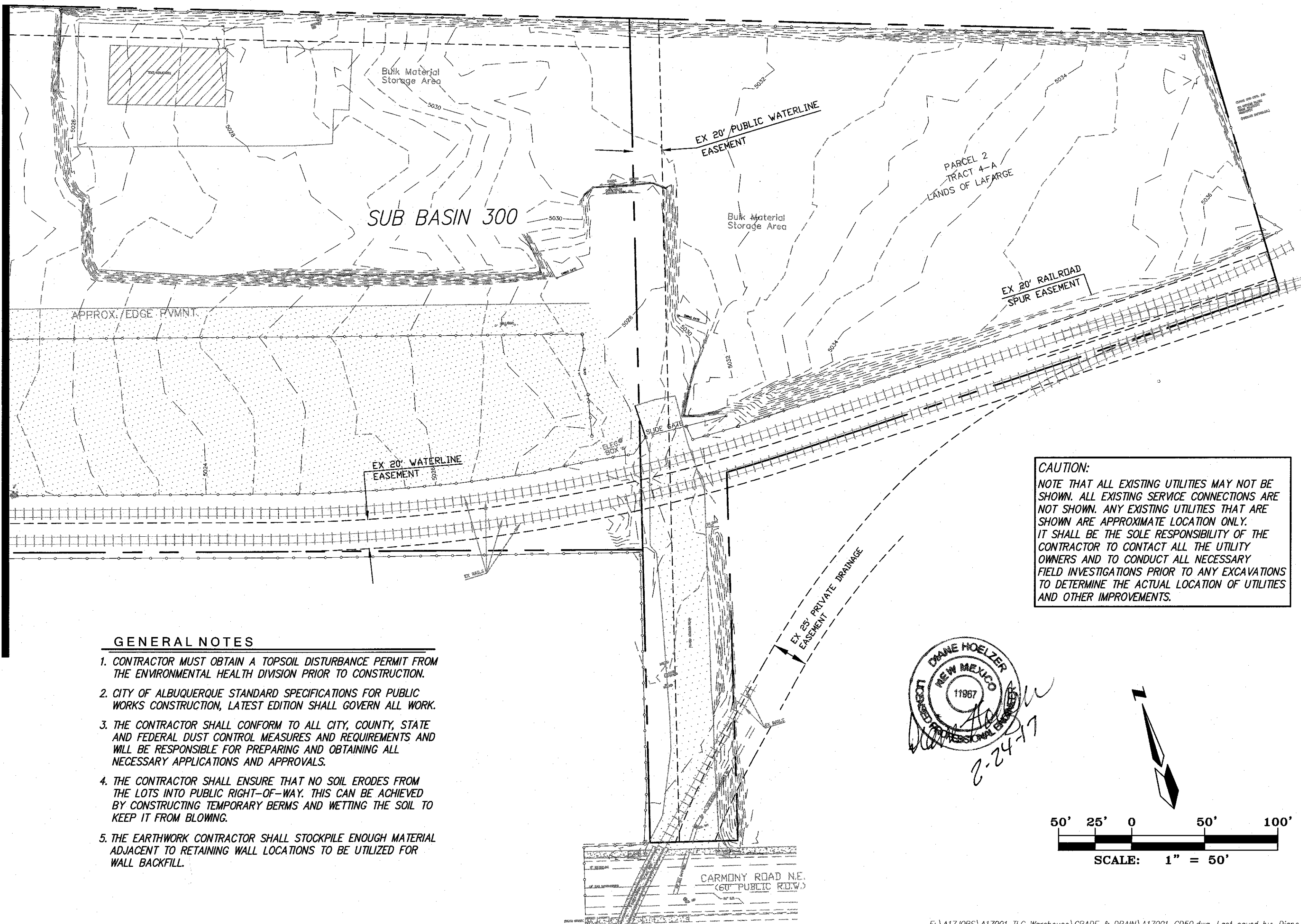
TRACT 1-A, LANDS OF LAFARGE
PLAT RCD'D. FEB.4, 2005 AS 2005C-45.

LEGEND

— 60 —	EXISTING CONTOUR (MAJOR)
— 58 —	EXISTING CONTOUR (MINOR)
x 00.0	EXISTING SPOT ELEVATION
TC=	EXISTING TOP CURB/FLOWLINE ELEVATION
FL=	EXISTING ASPHALT PAVEMENT
[E]	EXISTING ELECTRIC TRANSFORMER
— E —	EXISTING OVERHEAD ELECTRIC LINE
•	EXISTING POWER POLE
□	EXISTING LIGHT POLE
□	EXISTING TRAFFIC SIGNAL PULLBOX
⊙	EXISTING TELEPHONE MANHOLE
⊙	EXISTING CATV PEDESTAL
⊙	EXISTING STORM DRAIN MANHOLE
—	NEW STANDARD CURB & GUTTER
—	NEW MOUNTABLE CURB & GUTTER
—	NEW RIGHT-OF-WAY
—	NEW CENTERLINE
—	NEW LOT LINES
---	NEW EASEMENTS
69.537W	NEW TOP OF WALL ELEVATION
68.256W	NEW BOTTOM OF WALL ELEVATION
.81.77	NEW SPOT ELEVATIONS
—	NEW FLOW DIRECTION
—	NEW WATER BLOCK
—	NEW RETAINING WALL (SEE NOTE 9)
—	NEW GARDEN WALL
—	NEW STORM DRAIN

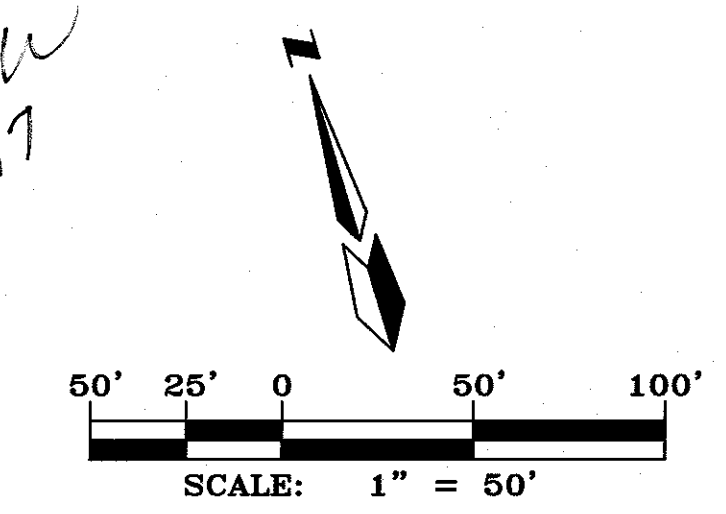
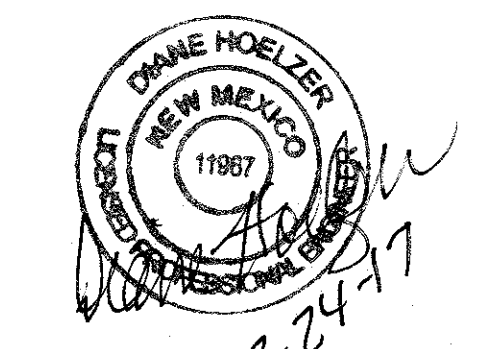


MATCHLINE - BELOW



CAUTION:
NOTE THAT ALL EXISTING UTILITIES MAY NOT BE SHOWN. ALL EXISTING SERVICE CONNECTIONS ARE NOT SHOWN. ANY EXISTING UTILITIES THAT ARE SHOWN ARE APPROXIMATE LOCATION ONLY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT ALL THE UTILITY OWNERS AND TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO ANY EXCAVATIONS TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS.

- GENERAL NOTES**
- CONTRACTOR MUST OBTAIN A TOPSOIL DISTURBANCE PERMIT FROM THE ENVIRONMENTAL HEALTH DIVISION PRIOR TO CONSTRUCTION.
 - CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION SHALL GOVERN ALL WORK.
 - THE CONTRACTOR SHALL CONFORM TO ALL CITY, COUNTY, STATE AND FEDERAL DUST CONTROL MEASURES AND REQUIREMENTS AND WILL BE RESPONSIBLE FOR PREPARING AND OBTAINING ALL NECESSARY APPLICATIONS AND APPROVALS.
 - THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE LOTS INTO PUBLIC RIGHT-OF-WAY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AND NETTING THE SOIL TO KEEP IT FROM BLOWING.
 - THE EARTHWORK CONTRACTOR SHALL STOCKPILE ENOUGH MATERIAL ADJACENT TO RETAINING WALL LOCATIONS TO BE UTILIZED FOR WALL BACKFILL.



TLC WAREHOUSE GRADING DRAINAGE PLAN

dmg MARK GOODWIN & ASSOCIATES, P.A. CONSULTING ENGINEERS P.O. BOX 90606 ALBUQUERQUE, NEW MEXICO 87199 (505)828-2200, FAX (505)797-9539			
Designed: DER	Drawn: DER	Checked: DMG	Sheet: C101
Scale: 1" = 1'	Date: 01/26/17	Job: A17001	