

GENERAL NOTES

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AS SOON AS POSSIBLE TO RESOLVE THE CONFLICT WITH A MINIMUM AMOUNT OF DELAY.
2. ALL WORK ON THIS PLAN SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
3. IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS, THEY ARE SHOWN IN AN APPROXIMATE LOCATION ONLY, AND LINES MAY EXIST WHERE NONE ARE SHOWN. THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE UTILITY OWNER OR FROM EXISTING PLANS, AND THIS INFORMATION MAY BE INCOMPLETE, OR OBSOLETE AT THE TIME OF CONSTRUCTION. THE ENGINEER HAS NOT UNDERTAKEN ANY FIELD VERIFICATION OF THESE LOCATIONS, LINE SIZES OR MATERIAL TYPE, MAKES NO REPRESENTATION THEREOF, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATIONS OF ANY UTILITY LINE, PIPELINE OR UNDERGROUND INSTALLATION IN OR NEAR THE AREA IN ADVANCE OF OR DURING ANY EXCAVATION WORK.

THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES AND UNDERGROUND FACILITIES IN PLANNING AND CONDUCTING EXCAVATIONS. THE CONTRACTOR SHALL COMPLY WITH ALL STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.
4. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHTS-OF-WAY OR ONTO PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AND BY WETTING THE SOIL TO KEEP IT FROM BLOWING.
5. THE CONTRACTOR SHALL OBTAIN ANY AND ALL PERMITS REQUIRED BY THE CITY OF ALBUQUERQUE FOR THE COMPLETION OF THE WORK PRIOR TO BEGINNING CONSTRUCTION.

LEGAL DESCRIPTION:

TRACT D-1-C-1
INTERSTATE INDUSTRIAL TRACT

RECEIVED
MAY 18 2009
HYDROLOGY
SECTION

GRADING AND DRAINAGE PLAN
CHARDANS BOILER
4321 ELLISON STREET NE
ALBUQUERQUE, NEW MEXICO

FRANK D. LOVELL ADQ. P.E.

JOB NO: 710

DATE: MAY 18, 2009

REVISIONS

SHEET NO.

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DRAINAGE CALCULATIONS - GENERAL INFORMATION:

EXISTING CONDITIONS:

The site, as shown by the Vicinity Map, is located on the south side of Ellison Street NE Between Jefferson Street NE and Washington Street NE. At present, the site is developed with a 50' x 100' (approx.) commercial building and asphalt parking. Adjacent properties to the East and West are developed. To the south of the site is a lined concrete channel. The Flood Insurance Rate Map (FIRMETTE - SEE INSET) shows the 1% annual chance flood discharge contained in channel. This channel is known as the Pina Canyon Channel. However, flows generated from the existing and proposed construction will discharge north into Ellison Street. Construction will be confined to the north end of the property, and only the northerly 240 feet of the site will be considered. At present, runoff generated by the site east of the building ridge line flows out through the parking lot which is graded to flow through the driveway into Ellison Street. Runoff generated south of the building and east of the ridge line flows north through the swale, which is also a driveway, that is west of the building, and out through the driveway into Ellison Street.

PROPOSED CONDITIONS:

It is proposed to construct a 50' long addition to the existing building. No additional pavement will be constructed. Drainage of the east side of the new addition will be conveyed around the south end of the addition by gravel swale and discharged through the existing driveway.

DRAINAGE CRITERIA:

The calculations shown on this plan were prepared in accordance with Section 22.2, Hydrology, of the Development Process Manual, Volume 2, Design Criteria, for the City of Albuquerque in cooperation with Bernalillo County, New Mexico and the Metropolitan Arroyo Flood Control Authority, January, 1993.

PRECIPITATION ZONE:

The site is between the Rio Grande River and San Mateo Blvd. and is, therefore, in Precipitation Zone 2.

LAND TREATMENT AREAS, ETC.:

The peak discharge per acre and excess precipitation are shown for the four land treatments in Zone 2 in the table below, and the values shown are from the City of Albuquerque D.P.M.

LAND TREAT.	UNIT PEAK DISCH. - q (cfs/acre)	EXCESS PRECIP. - E (in)
	100-yr.	10-yr.
A	1.56	0.38
B	2.28	0.95
C	3.14	1.71
D	4.70	3.14

DRAINAGE CALCULATIONS - EXISTING CONDITIONS:

EXISTING LAND TREATMENT AREAS:

Roof Area = 50' x 100' = 5,000 sf (0.1148 Ac) Treat. D
Paved Area = 11,395 sf (0.2616 Ac) Treat. D
Landscaped Area = 6,600 sf (0.1515 Ac) Treat. B
Undeveloped = 18,130 sf (0.4162 Ac) Treat. C
Total 41,125 (0.9441 Ac)

EXISTING WEIGHTED UNIT PEAK DISCHARGE (qw) PER ACRE:

100 year qw = (2.28 x 0.1515 + 3.14 x 0.4162 + 4.70 x 0.3764) / 0.9441 = 3.62 cfs/acre
10 year qw = (0.95 x 0.1515 + 1.71 x 0.4162 + 3.14 x 0.3764) / 0.9441 = 2.16 cfs/acre

EXISTING WEIGHTED EXCESS PRECIPITATION:

100 year Ew = (0.78 x 0.1515 + 1.13 x 0.4162 + 2.12 x 0.3764) / 0.9441 = 1.47 in
10 year Ew = (0.28 x 0.1515 + 0.92 x 0.4162 + 1.34 x 0.3764) / 0.9441 = 0.81 in

EXISTING PEAK DISCHARGE:

Q100 = qw x area = 3.62 cfs/acre X 0.9441 acre = 3.42 cfs
Q10 = qw x area = 2.16 cfs/acre X 0.9441 acre = 2.04 cfs

EXISTING VOLUME, 100-YEAR AND 10-YEAR, 6-HOUR:

V100 = (Ew x area) / 12 = (1.47 x 41,125) / 12 = 5,038 cf
V10 = (Ew x area) / 12 = (0.81 x 41,125) / 12 = 2,776 cf

DRAINAGE CALCULATIONS - PROPOSED CONDITIONS:

PROPOSED LAND TREATMENT AREAS:

Roof Area = 50' x 150' = 7,500 sf (0.1722 Ac) Treat. D
Paved Area = 10,395 sf (0.2386 Ac) Treat. D
Landscaped Area = 6,600 sf (0.1515 Ac) Treat. B
Undeveloped = 16,630 sf (0.3818 Ac) Treat. C
Total 41,125 (0.9441 Ac)

PROPOSED WEIGHTED UNIT PEAK DISCHARGE (qw) PER ACRE:

100 year qw = (2.28 x 0.1515 + 3.14 x 0.3818 + 4.70 x 0.4108) / 0.9441 = 3.68 cfs/acre
10 year qw = (0.95 x 0.1515 + 1.71 x 0.3818 + 3.14 x 0.4108) / 0.9441 = 2.21 cfs/acre

PROPOSED WEIGHTED EXCESS PRECIPITATION:

100 year Ew = (0.78 x 0.1515 + 1.13 x 0.3818 + 2.12 x 0.4108) / 0.9441 = 1.50 in
10 year Ew = (0.28 x 0.1515 + 0.92 x 0.3818 + 1.34 x 0.4108) / 0.9441 = 0.84 in

EXISTING PEAK DISCHARGE:

Q100 = qw x area = 3.68 cfs/acre X 0.9441 acre = 3.47 cfs
Q10 = qw x area = 2.21 cfs/acre X 0.9441 acre = 2.09 cfs

EXISTING VOLUME, 100-YEAR AND 10-YEAR, 6-HOUR:

V100 = (Ew x area) / 12 = (1.50 x 41,125) / 12 = 5,141 cf
V10 = (Ew x area) / 12 = (0.84 x 41,125) / 12 = 2,879 cf

SUMMARY OF ON-SITE VOLUMES AND DISCH. RATES:

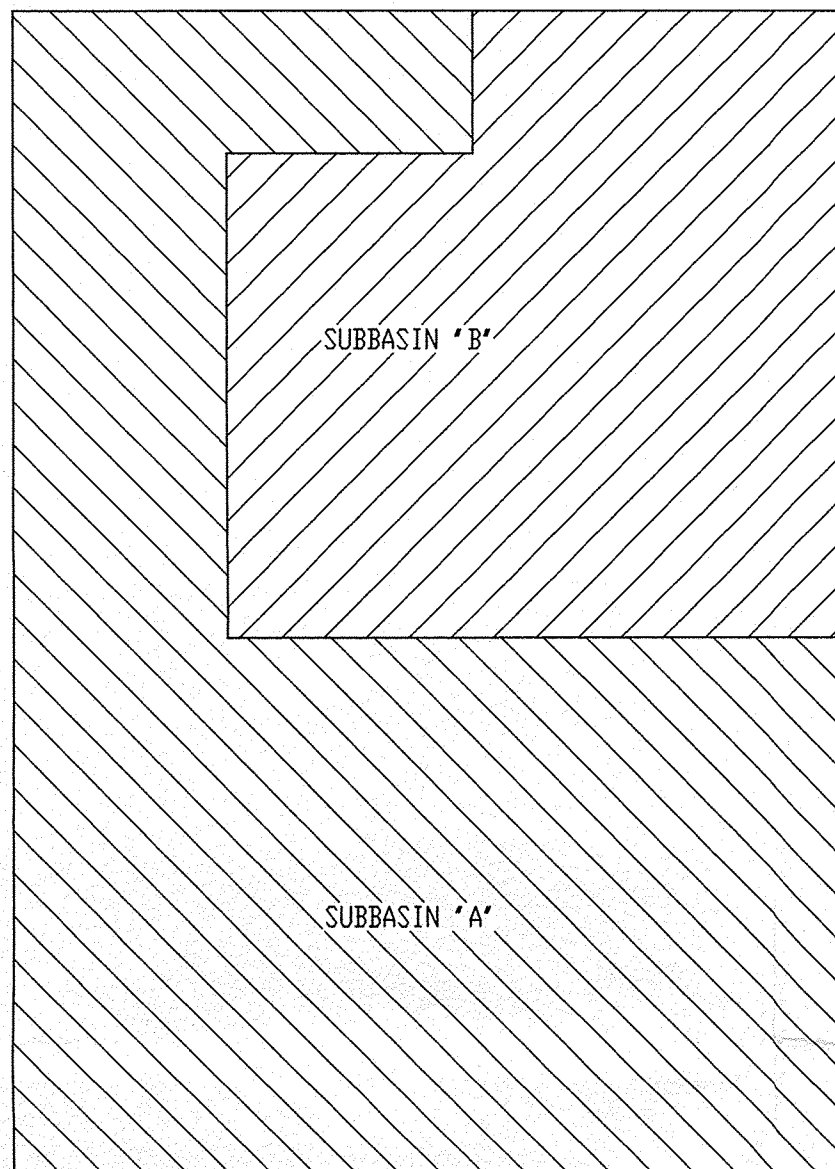
	V100(CF)	V10(CF)	Q100(CFS)	Q10(CFS)
✓ DEVELOPED	5,141	2,879	3.47	2.09
✓ EXISTING	5,038	2,776	3.42	2.04
INCREASE	103	103	0.05	0.05

NOTE: THE PREVIOUS DRAINAGE PLAN EVALUATED THE SAME AREA WITH THE FOLLOWING DISCHARGE QUANTITIES:

- ✓ UNDEVELOPED Q100 = 2.0 CFS
- ✓ DEVELOPED Q100 = 2.7 CFS

OFF-SITE FLOW:

There is no off-site flow associated with this site. The lot east of the site drains to Ellison Street and to the drainage channel to the south.



SUBBASIN "A" WEIGHTED UNIT PEAK DISCHARGE (qw) PER ACRE:

100 year qw = (2.28 x 0.0507 + 3.14 x 0.3825 + 4.70 x 0.1584) / 0.5916 = 3.48 cfs/acre
10 year qw = (0.95 x 0.0507 + 1.71 x 0.3825 + 3.14 x 0.1584) / 0.5916 = 2.02 cfs/acre

SUBBASIN "A" PEAK DISCHARGE:

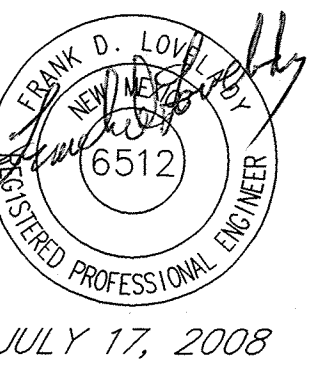
Q100 = qw x area = 3.48 cfs/acre X 0.5916 acre = 2.05 cfs
Q10 = qw x area = 2.02 cfs/acre X 0.5916 acre = 1.20 cfs

SUBBASIN "B" PEAK DISCHARGE:

Q100 = 3.47 - 2.05 = 1.42 CFS
Q10 = 2.09 - 1.20 = 0.89 CFS

$$Q_{100} A+B = 3.47$$

$$Q_{10} A+B = 2.09$$

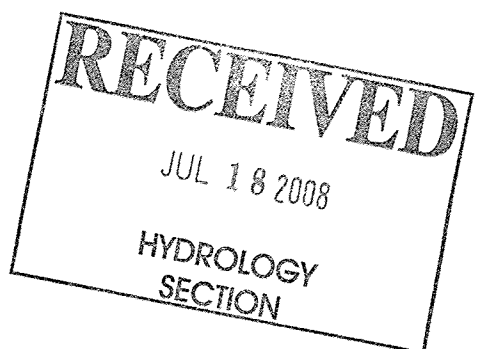


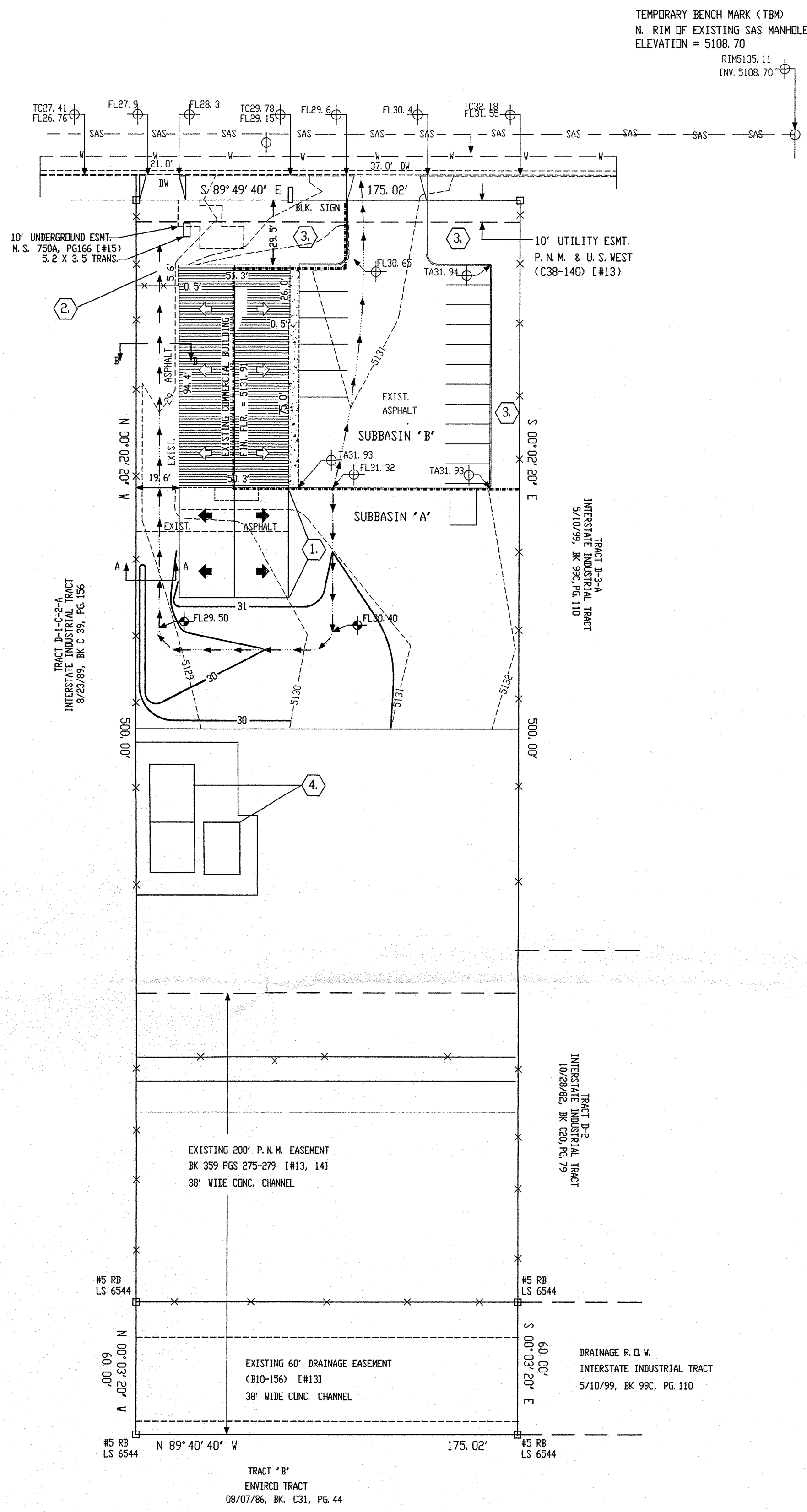
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2 OF 2





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