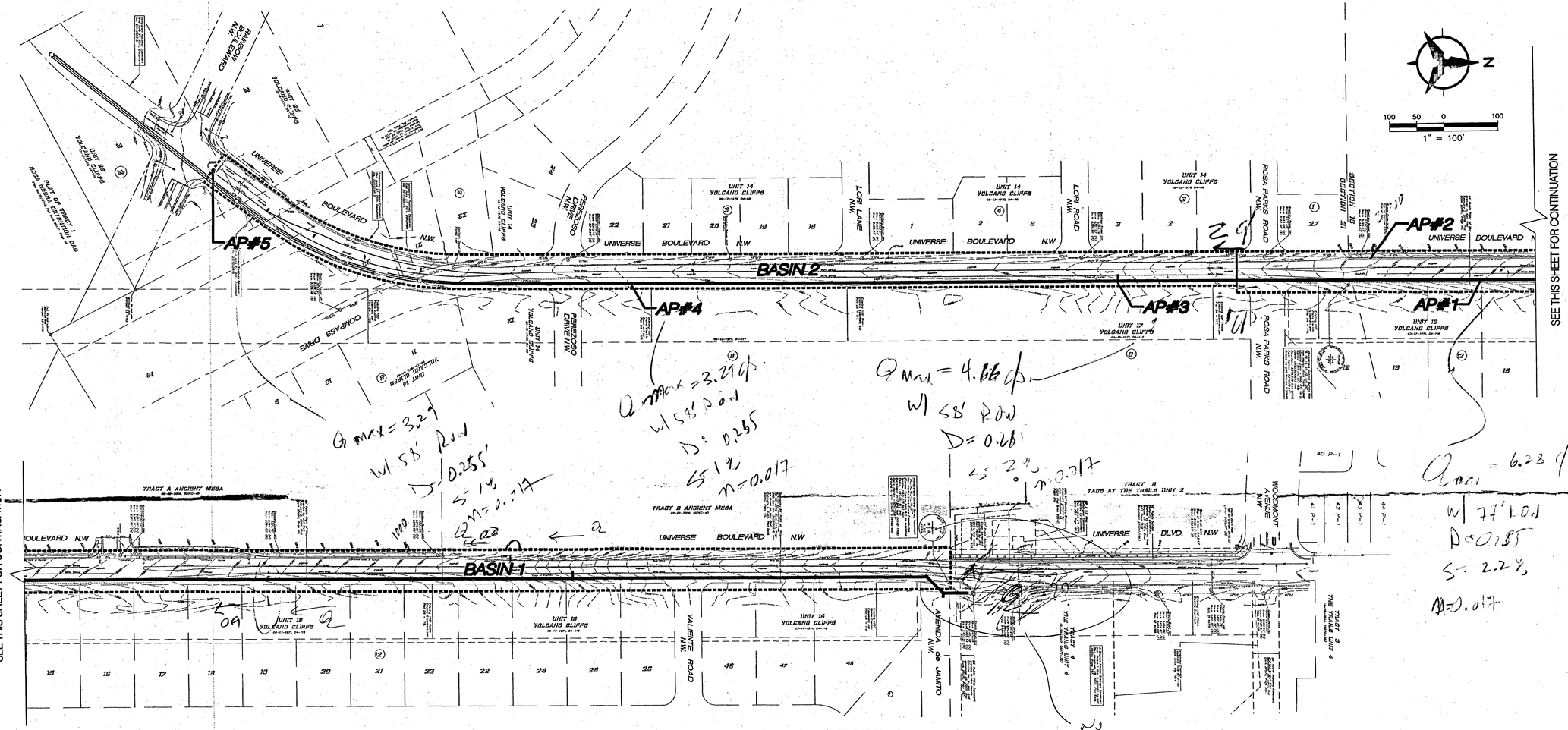

Universe Boulevard										
Proposed Conditions Basin Data Table (10-year)										
This table is based on the DPM Section 22.2, Zone: 1										
Basin	Area	Area	Land Treatment Percentages				Q(10)	Q(10)	V(10)	V(10)
ID	(SQ. FT)	(AC.)	A	B	C	D	(cfs/ac.)	(CFS)	(inches)	(CF)
PROPOSED										
1	167000	3.83	0.0%	10.0%	0.0%	90.0%	2.68	10.3	1.14	15837
2	124500	2.86	0.0%	10.0%	0.0%	90.0%	2.68	7.7	1.14	11807
TOTAL	291500	6.69	-	-	-	-	-	17.9	-	27644

Universe Boulevard										
Proposed Conditions Basin Data Table (100-year)										
This table is based on the DPM Section 22.2, Zone: 1										
Basin	Area	Area	Land Treatment Percentages				Q(100)	Q(100)	V(100)	V(100)
ID	(SQ. FT)	(AC.)	A	B	C	D	(cfs/ac.)	(CFS)	(inches)	(CF)
PROPOSED										
1	167000	3.83	0.0%	10.0%	0.0%	90.0%	4.14	15.9	1.84	25607
2	124500	2.86	0.0%	10.0%	0.0%	90.0%	4.14	11.8	1.84	19090
TOTAL	291500	6.69	-	-	-	-	-	27.7	-	44697

FUTURE STREET CAPACITY ANALYSIS

I. INTRODUCTION

The purpose of this analysis is to evaluate the street capacity of the future Universe Boulevard roadway to determined stub out locations for future storm drain inlets along the Trails Universe storm drain project. The roadway sections for Universe Boulevard are taken from the Trails Cliffs Sector Development Plan.

II OFFSITE DRAINAGE

For the purposes of this analysis it is assumed that there are no off-site flows entering the Universe Boulevard righ-of-way. Universe Boulevard is higher than the land to the east of the right-of-way. It is assumed that the future SAD 229 storm drain on the west side of the Universe Boulevard right-of-way will extend west of the right-of-way and intercept flows before they enter the right-of-way.

III. STREET CAPACITY ANALYSIS

Universe Boulevard is broken into two drainage basins based on the street sections in the Sector Development Plan. The street capacity analysis looks at both the 10-year and 100-year storms. The analysis of the 10-year storm is to ensure that a portion of the driving lane in each direction is clear of water. The analysis of the 100-year storm is to determine the amount of flow that bypasses the proposed SAD 228 storm inlets on Universe Boulevard north of Rainbow Boulevard. Future and existing storm drain inlets on the west side of Universe Boulevard will need to connect to the SAD 229 storm drain as they will likely have conflicts with the SAD 229 storm drain to be able to connect to the Trails Universe storm drain.

The street and inlet capacity analyses for each of the 5 Analysis Points shown is attached to this submittal. Analysis Point #1 is for a single storm drain inlet on the east side of Universe Boulevard. Analysis Point #2 is for an existing storm drain inlet on the west side of Universe Boulevard. Analysis Points #3 & 4 assume future inlets on both sides of the road. Analysis Point #5 corresponds with proposed inlets to be constructed with SAD 228. The 10-year storm analysis shows that at each of the Analysis Points maintains a minimum clear drive lane from the future median curb or centerline stripe of 8.25 feet. The by-pass flow into the Rainbow/Universe intersection for the 10-year and 100-year storms is 1.9 cfs and 4.3 cfs, respectively.

AS-BUILT INFORMATION
CONTRACTOR — DATE
WORK STAKED BY — DATE
WORK INSPECTED/ACCEPTANCE BY — DATE
FIELD VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE

MICROFILM INFORMATION
RECORDED BY — DATE
NO.

BENCH MARKS
ACS MONUMENT STAMPED "CO_TA_16_15_11N_2E"
GEOGRAPHIC POSITION (NAD 83)
N.M. STATE PLANE COORDINATES (CENTRAL ZONE)
X = 1,497,693.917 Y = 1,521,076.443
GROUND-TO-GRID FACTOR = 0.999667560
$\Delta\alpha$ = -00°16'30.67"
NAVD 1988 ELEVATION = 5417.800

SURVEY INFORMATION
FIELD NOTES

NO.	DATE	BY

ENGINEER'S SEAL
STATE OF NEW MEXICO — 14664 — REGISTERED PROFESSIONAL ENGINEER

No.	Date	REMARKS	By
		REVISIONS	
		DESIGN	

Designed By: SJS DATE:10/2012
Drawn By: DTH DATE:10/2012
Checked By: SJS DATE:10/2012

Bohannan Huston

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

THE TRAILS UNIVERSE STORM DRAIN
FUTURE DRAINAGE PLAN

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
XXXXXX	C-09/D-09	3	8

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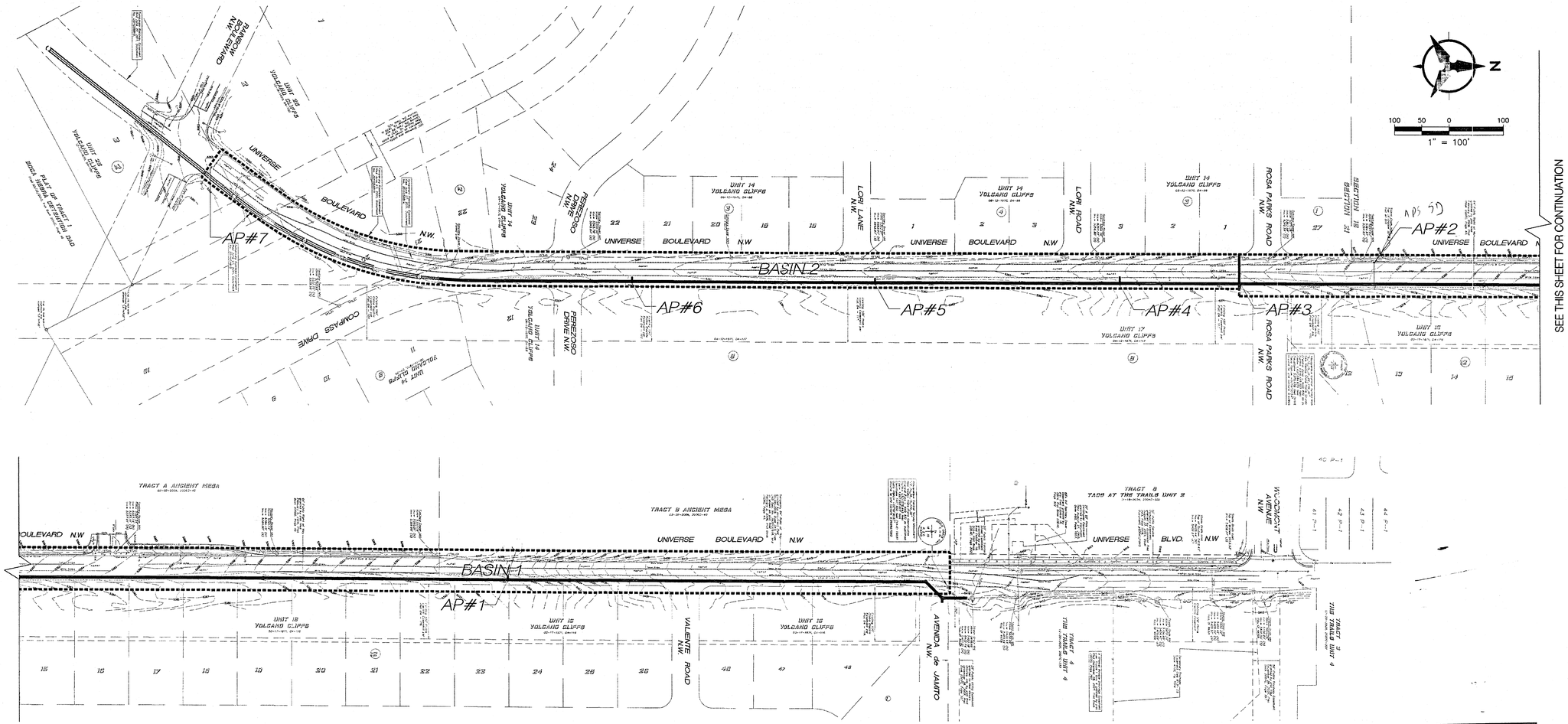
February 04, 2013 - 11:13am



Universe Boulevard										
Proposed Conditions Basin Data Table (10-year)										
This table is based on the DPM Section 22.2, Zone: 1										
Basin	Area	Area	Land Treatment Percentages				Q(10)	Q(10)	V(10)	V(10)
ID	(SQ. FT)	(AC.)	A	B	C	D	(cfs/ac.)	(CFS)	(inches)	(CF)
PROPOSED										
1	167000	3.83	0.0%	10.0%	0.0%	90.0%	2.68	*10.3*	*1.14*	*15837*
2	124500	2.86	0.0%	10.0%	0.0%	90.0%	2.68	*7.7*	*1.14*	*11807*
TOTAL	**291500**	**6.69**	-	-	-	-	-	***17.9***	-	***27644***

Universe Boulevard										
Proposed Conditions Basin Data Table (100-year)										
This table is based on the DPM Section 22.2, Zone: 1										
Basin	Area	Area	Land Treatment Percentages				Q(100)	Q(100)	V(100)	V(100)
ID	(SQ. FT)	(AC.)	A	B	C	D	(cfs/ac.)	(CFS)	(inches)	(CF)
PROPOSED										
1	167000	3.83	0.0%	10.0%	0.0%	90.0%	4.14	*15.9*	*1.84*	*25607*
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TOTAL	**291500**	**6.69**	-	-	-	-	-	***27.7***	-	***44697***

FUTURE STREET CAPACITY ANALYSIS

I. INTRODUCTION

The purpose of this analysis is to evaluate the street capacity of the future Universe Boulevard roadway to determined stub out locations for future storm drain inlets along the Trails Universe storm drain project. The roadway sections for Universe Boulevard are taken from the Trails Cliffs Sector Development Plan.

II OFFSITE DRAINAGE

For the purposes of this analysis it is assumed that there are no off-site flows entering the Universe Boulevard right-of-way. Universe Boulevard is higher than the land to the east of the right-of-way. It is assumed that the future SAD 229 storm drain on the west side of the Universe Boulevard right-of-way will extend west of the right-of-way and intercept flows before they enter the right-of-way.

III. STREET CAPACITY ANALYSIS

Universe Boulevard is broken into two drainage basins based on the street sections in the Sector Development Plan. The street capacity analysis looks at both the 10-year and 100-year storms. The analysis of the 10-year storm is to ensure that a portion of the driving lane in each direction is clear of water. The analysis of the 100-year storm is to determine the amount of flow that bypasses the proposed SAD 228 storm inlets on Universe Boulevard north of Rainbow Boulevard. Future and existing storm drain inlets on the west side of Universe Boulevard will need to connect to the SAD 229 storm drain as they will likely have conflicts with the SAD 229 storm drain to be able to connect to the Trails Universe storm drain.

The street and inlet capacity analyses for each of the 7 Analysis Points shown is attached to this submittal. Analysis Point #3 is for a single storm drain inlet on the east side of Universe Boulevard. Analysis Point #2 is for an existing storm drain inlet on the west side of Universe Boulevard. Analysis Points #3 through 6 assume future inlets on both sides of the road. Analysis Point #7 corresponds with proposed inlets to be constructed with SAD 228. The 10-year storm analysis shows that at each of the Analysis Points maintains a minimum clear drive lane from the future median curb or centerline stripe of 7.75 feet. The by-pass flow into the Rainbow/Universe intersection for the 10-year and 100-year storms is 0.0 cfs and 1.1 cfs, respectively.

RECEIVED
FEB 15 2013
LAND DEVELOPMENT SECTION

AS-BUILT INFORMATION

CONTRACTOR	DATE
STAKED BY	DATE
INSPECTORS ACCEPTANCE BY	DATE
FIELD VERIFICATION BY	DATE
DRAWINGS CORRECTED BY	DATE

MICROFILM INFORMATION

RECORDED BY	DATE
NO.	

BENCH MARKS

ACS MONUMENT STAMPED "CC_TA_16_15_11N_2E"
GEOGRAPHIC POSITION (NAD 83)
N.M. STATE PLANE COORDINATES (CENTRAL ZONE)
X = 1,497,693.917 Y = 1,521,076.443
GROUND-TO-GRID FACTOR = 0.999667560
$\Delta\alpha$ = -00°16'30.67"
NAVD 1988 ELEVATION = 5417.800

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL
SCOTT J. SIES
14668
REGISTERED PROFESSIONAL ENGINEER
1/14/13

No.	Date	REMARKS	By
		REVISIONS	
		DESIGN	

Designed By: SJS DATE:10/2012
Drawn By: DTH DATE:10/2012
Checked By: SJS DATE:10/2012

Bohannan Huston

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

THE TRAILS UNIVERSE STORM DRAIN
FUTURE DRAINAGE PLAN

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
761283	C-09/D-09	3	8

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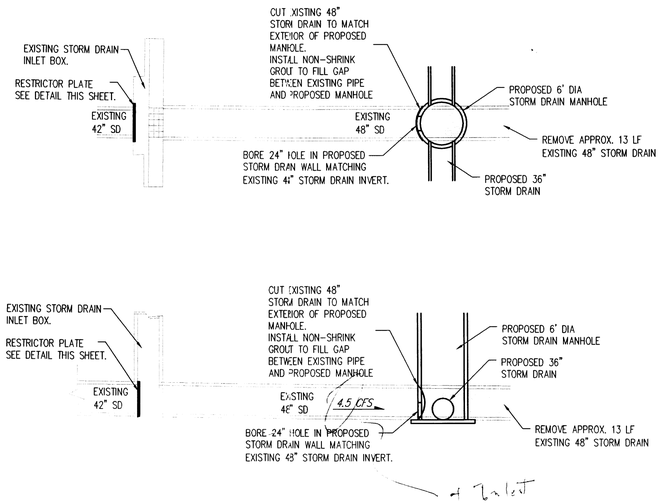

A STORM DRAIN DETAIL
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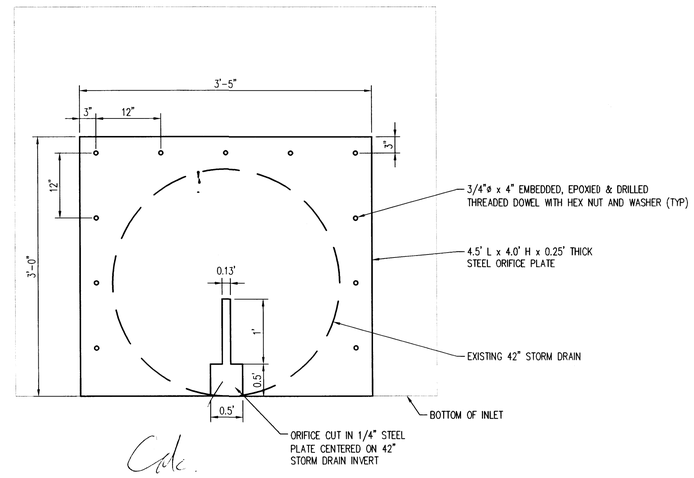

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AS-BUILT INFORMATION

CONTRACTOR	DATE
WORK STAKED BY	DATE
INSPECTOR'S ACCEPTANCE BY	DATE
FIELD VERIFICATION BY	DATE
DRAWINGS CORRECTED BY	DATE

MICROFILM INFORMATION

RECORDED BY	DATE
NO.	

BENCH MARKS

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GEOGRAPHIC POSITION (NAD 83)
N.M. STATE PLANE COORDINATES (CENTRAL ZONE)
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GROUND-TO-GRID FACTOR = 0.999667290
$\Delta\alpha$ = -00°16'20"
NAVD 1988 ELEVATION = 5425.21

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

SCOTT J. STEFFEN
NEW MEXICO
14664
REGISTERED PROFESSIONAL ENGINEER

No.	Date	REMARKS	By
		REVISIONS	
		DESIGN	

Designed By: SJS DATE:05/2011
Drawn By: DH DATE:05/2011
Checked By: SJS DATE:05/2011

Bohannan Huston

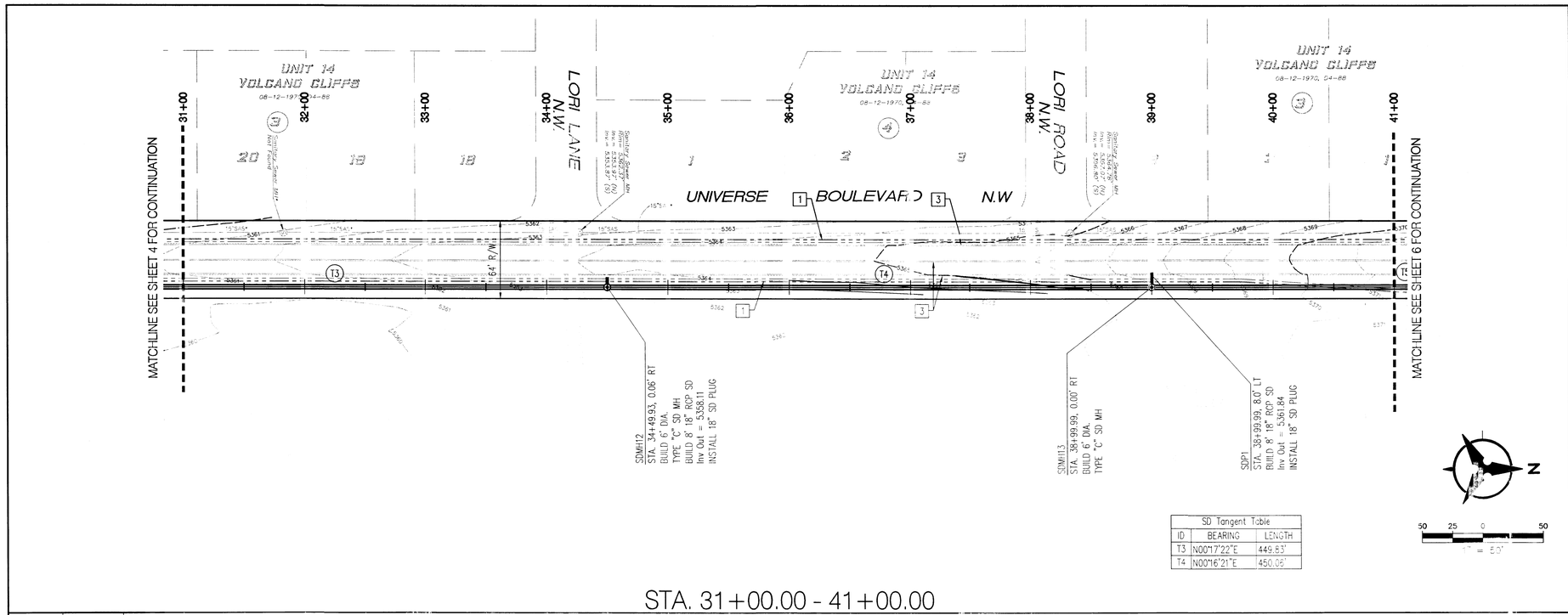
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

THE TRAILS UNIVERSE STORM DRAIN
MISCELLANEOUS PAVING DETAILS

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
761283	C-9 / D-9	9	9

RECEIVED
JUL 03 2013
LAND DEVELOPMENT SECTION



SD Tangent Table		
ID	BEARING	LENGTH
T3	N00°17'22"E	449.83'
T4	N00°16'21"E	450.06'

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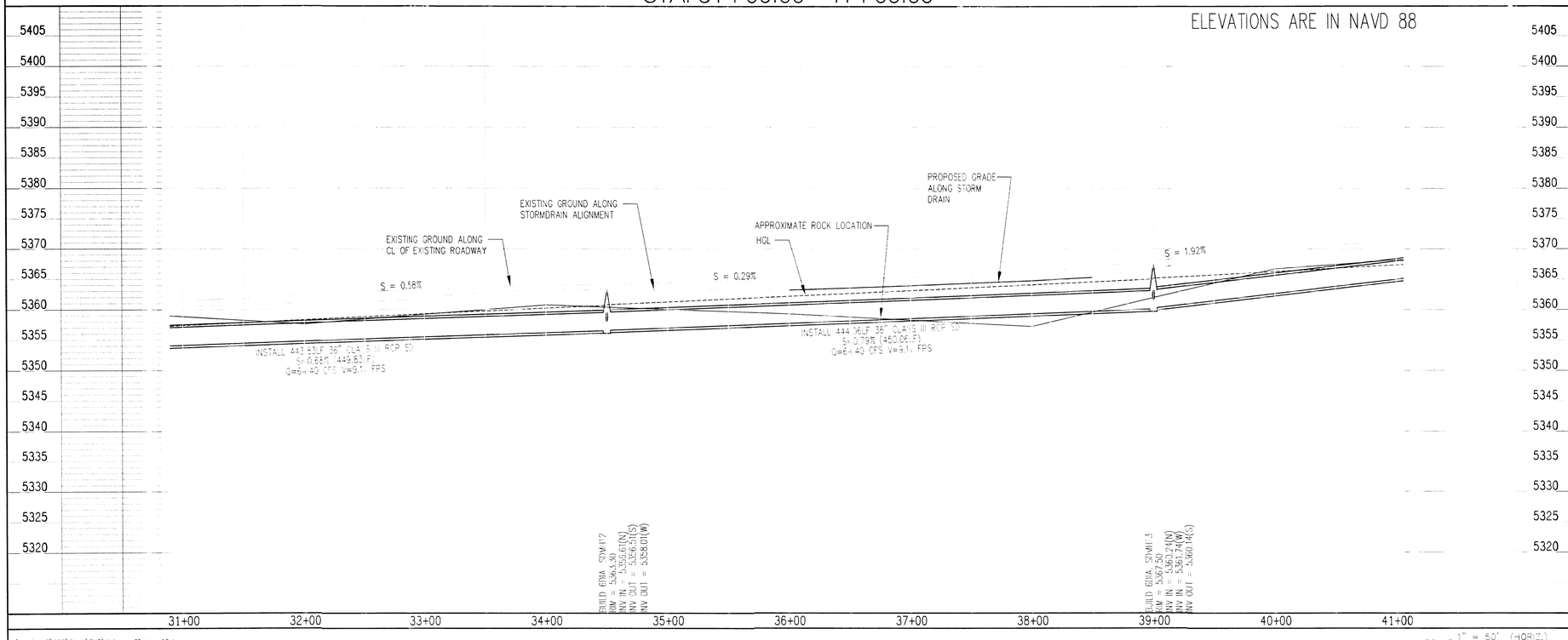
1" = 50'

STA. 31+00.00 - 41+00.00

ELEVATIONS ARE IN NAVD 88



GENERAL NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES. CONTRACTOR SHALL COORDINATE RELOCATION OF UTILITY LINES WITH UTILITY COMPANIES AS REQUIRED.
2. ALL CURVE DATA AND DIMENSIONS ARE CALCULATED FROM CENTERLINE OF PIPE OR MANHOLE. ALL SAS & SD SLOPES ARE CALCULATED TO TRUE PIPE DIMENSIONS FROM INVERT TO INVERT. (PAY ITEMS ARE SHOWN IN PARENTHESES)
3. GRADE ELEVATIONS, WHERE NOTED, ARE FOR FLOWLINE OF STANDARD CURB UNLESS OTHERWISE SPECIFIED.
4. CONTRACTOR IS RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ALL DAMAGED EXISTING UTILITY CONDUITS AND EXISTING LINES.
5. CONTRACTOR SHALL PARK EQUIPMENT AND VEHICLES AS NOT TO INTERFERE WITH NORMAL ACTIVITIES OF RESIDENTS OR OTHER CONTRACTORS ON SITE.
6. ANY DAMAGE TO THE EXISTING FACILITIES (CURB & GUTTER, PAVEMENT, LANDSCAPING, ETC.) DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTORS' EXPENSE.
7. MH RIMS & CATCH BASIN INLET ELEVATIONS, FIRE HYDRANT & FLANGE ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY AND ADJUST TO FINAL PAVEMENT OR SURFACE GRADES.
8. STORM DRAIN STATIONING FOLLOWS CL OF STORM DRAIN UNLESS OTHERWISE NOTED
9. STATIONING OF DROP INLET IS TO MIDDLE OF DOWN HILL GRATE AT FACE OF CURB.
10. FLOWLINE ELEVATIONS FOR DROP INLETS ARE PROJECTED FROM FLOWLINE OF STANDARD CURB TO MIDDLE OF DOWNHILL GRATE.
11. ALL WATERLINE FITTINGS, VALVES, BENDS, TEES, CROSSES AND APPURTENANCES SHALL USE RESTRAINED JOINTS UNLESS OTHERWISE NOTED ON THE PLANS.
12. AT UTILITY CROSSING WHERE LESS THAN 1 FOOT OF COVER OVER STORM DRAIN PIPE IS PRESENT LEAN FILL IS TO BE USED FOR A DISTANCE OF 5 FEET ON EACH SIDE OF THE SD ℄ FROM TOP OF STORM DRAIN TO BOTTOM OF SANITARY SEWER OR WATER LINE.
13. RCP SHALL BE INSTALLED SO THAT THE JOINT GAP AT THE HOME POSITION SHALL CONFORM TO THE APPROVED MANUFACTURER'S RECOMMENDATIONS. MANUFACTURER'S RECOMMENDED JOINT GAP TOLERANCES FOR EACH PIPE SIZE AND TYPE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF PIPE. RCP JOINTS SHALL NOT BE GROUTED UNLESS DIRECTED BY THE ENGINEER AFTER CITY APPROVAL.
14. ALL EXCAVATION, TRENCHING AND SHORING ACTIVITIES MUST BE CARRIED-OUT IN ACCORDANCE WITH OSHA 29 CFR 1926.650 SUBPART P.

KEYED NOTES

1. FUTURE CURB & GUTTER
2. EXISTING CURB & GUTTER
3. EXISTING EDGE OF ASPHALT
4. EXISTING 48" STORM DRAIN

AS-BUILT INFORMATION

CONTRACTOR	DATE
STAKED BY	DATE
INSPECTOR'S ACCEPTANCE BY	DATE
FIELD VERIFICATION BY	DATE
DRAWINGS CORRECTED BY	DATE

BENCH MARKS

ACS MONUMENT STAMPED "CC_TA_16_15_11N_2E"
GEOGRAPHIC POSITION (NAD 83)
N.M. STATE PLANE COORDINATES (CENTRAL ZONE)
X = 1,497,693.917 Y = 1,521,076.443
GROUND TO GRID FACTOR = 0.99966/560
$\Delta\alpha$ = -00°16'30.67"
NAVD 1988 ELEVATION = 5417.800

RECORDED BY: DATE
NO.

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

STEVEN M. JAMES 14664 NEW MEXICO REGISTERED PROFESSIONAL ENGINEER

No.	Date	REMARKS	By

REVISIONS

DESIGN

Designed By:	SJS	DATE: 10/2012
Drawn By:	DH	DATE: 10/2012
Checked By:	SJS	DATE: 10/2012

Bohannan Huston

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

THE TRAILS UNIVERSE STORM DRAIN
UTILITY PLAN AND PROFILE
STA. 31+00.00 - 41+00.00

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
761283	C-9 / D-9	5	9

SCALE: 1" = 50' (HORIZ.)
1" = 10' (VERT.)

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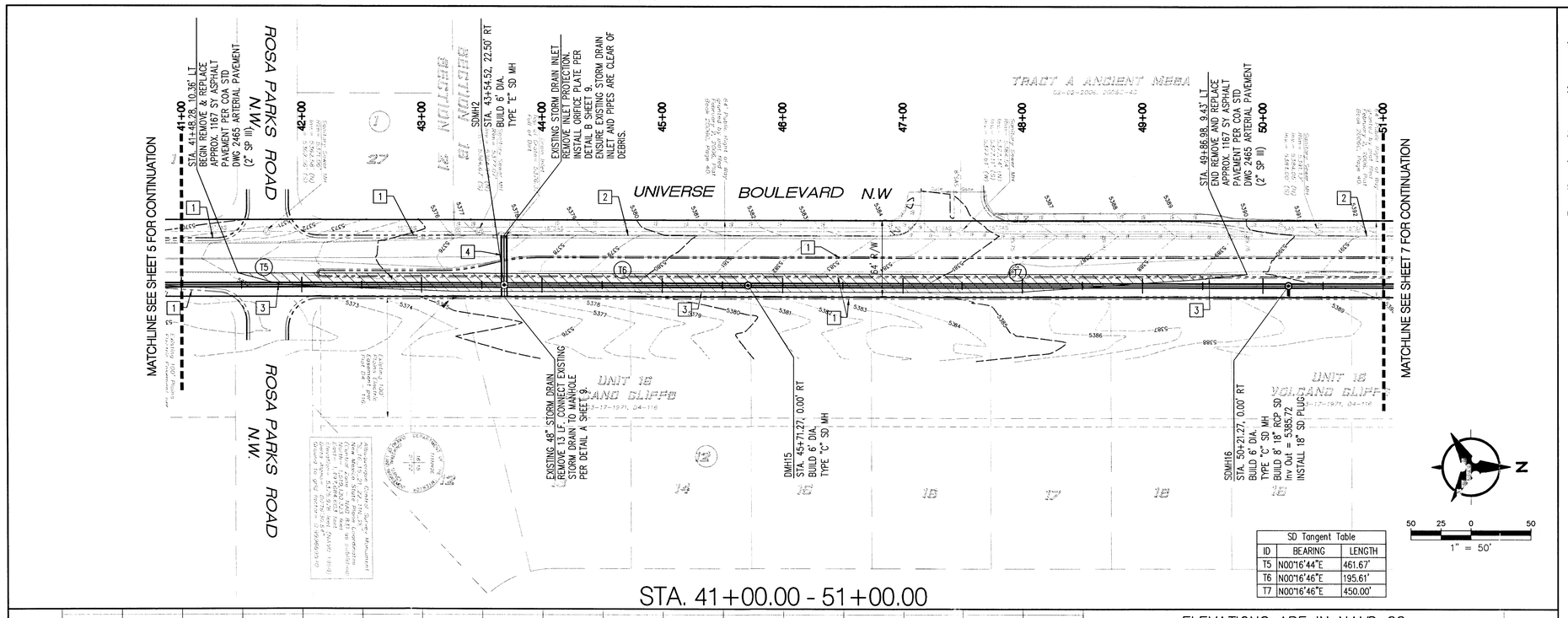
July 03, 2013 - 1:51pm



SD Tangent Table		
ID	BEARING	LENGTH
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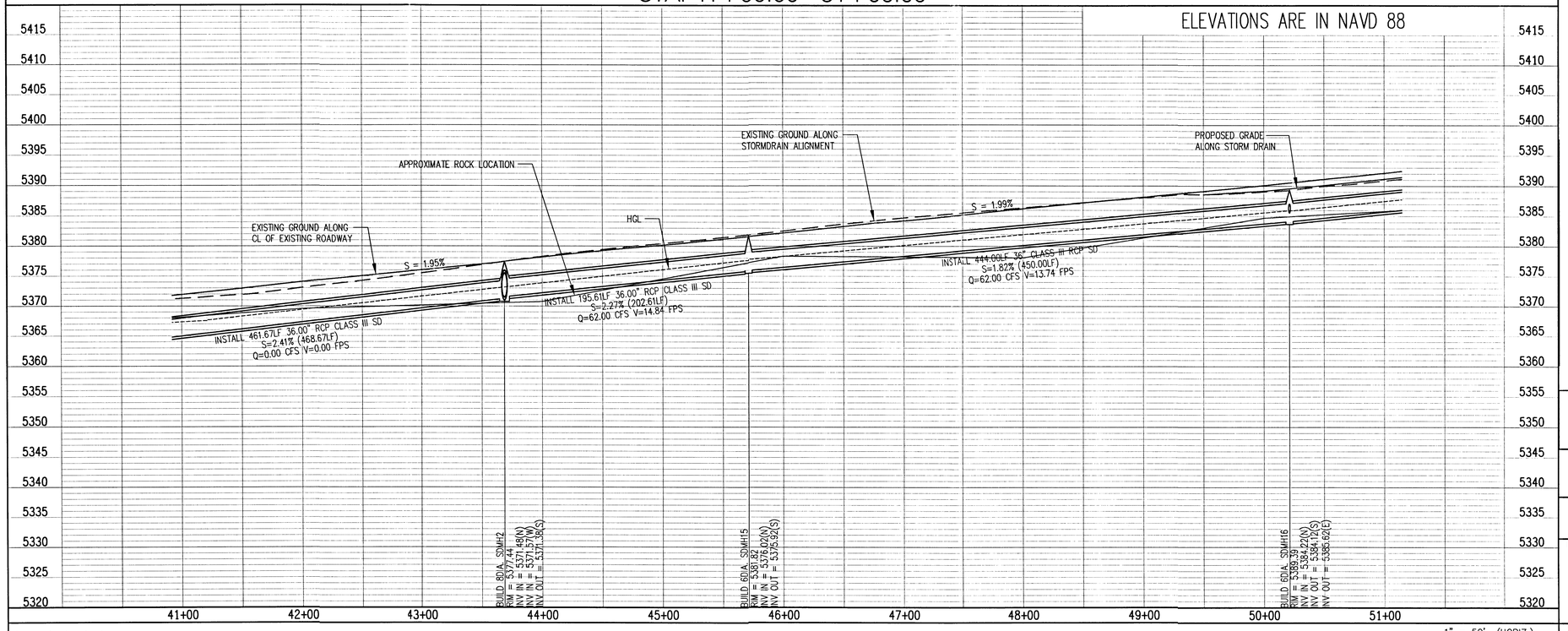
T6	N00°16'46"E	195.61'
T7	N00°16'46"E	450.00'

STA. 41+00.00 - 51+00.00



SCALE: 1" = 50' (HORIZ.)
1" = 10' (VERT.)

GENERAL NOTES

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KEYED NOTES

1. FUTURE CURB & GUTTER
2. EXISTING CURB & GUTTER
3. EXISTING EDGE OF ASPHALT
4. EXISTING 48" STORM DRAIN

AS-BUILT INFORMATION

	DATE
CONTRACTOR	
WORK STAKED BY	DATE
INSPECTOR'S AUTHORIZATION BY	DATE
FIELD VERIFICATION BY	DATE
AS-BUILTS CORRECTED BY	DATE

MICRO-FILM INFORMATION

	DATE
RECORDED BY	
NO.	

BENCH MARKS

ACS MONUMENT STAMPED "CC_TA_16_15_11N_2E"
GEOGRAPHIC POSITION (NAD 83)
N.M. STATE PLANE COORDINATES (CENTRAL ZONE)
X = 1,497,693.917 Y = 1,521,076.443
GROUND-TO-GRID FACTOR = 0.999667560
$\Delta\alpha$ = -00°16'30.67"
NAVD 1988 ELEVATION = 5417.800

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

SCOTT J. STEFFEN
NEW MEXICO
14664
REGISTERED PROFESSIONAL ENGINEER

No.	Date	REMARKS	By
		REVISIONS	
		DESIGN	

Designed By: SJS DATE:10/2012
Drawn By: DH DATE:10/2012
Checked By: SJS DATE:10/2012

Bohannan Huston

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

THE TRAILS UNIVERSE STORM DRAIN
UTILITY PLAN AND PROFILE
STA. 41+00.00 - 51+00.00

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
761283	C-9 / D-9	6	9

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