

CONSTRUCTION PLANS FOR CAPSTONE STUDENT HOUSING SITE DEVELOPMENT

APPROVED AS RECORD DRAWINGS
DESIGN REVIEW SECTION
CITY CONSTRUCTION ENGINEER
DATE: Dec 10, 2014

CITY OF ALBUQUERQUE
BERNALILLO COUNTY, NEW MEXICO
SEPTEMBER, 2013

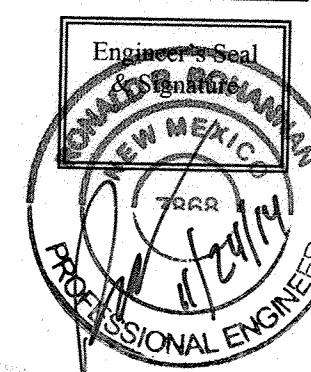
EW

INDEX TO DRAWINGS

1. TITLE SHEET
2. PLAT
3. PLAT
4. MASTER UTILITY PLAN
5. ONSITE WATERLINE CONNECTIONS TO MAIN, NORTH SIDE
6. ONSITE WATERLINE WEST SIDE 10+00 TO 19+50
7. ONSITE WATERLINE WEST SIDE 19+50 TO 27+28
8. ONSITE WATERLINE SOUTH SIDE AND SOUTHEAST SIDE
9. SANITARY SEWER - PUBLIC
10. GRADING PLAN (FOR REFERENCE ONLY)
11. GRADING PLAN (FOR REFERENCE ONLY)
12. TRANSPORT STREET IMPROVEMENTS
13. CONSTRUCTION DETAILS
14. CONSTRUCTION DETAILS

CERTIFICATE OF SUBSTANTIAL COMPLIANCE ON PLANS

I, Ronald R. Bohannon, of the firm of Tierra West LLC, a Registered Professional Engineer in the State of New Mexico, do hereby certify, to the best of my knowledge and belief, that the infrastructure installed as part of this project has been inspected by me or by a qualified person under my direct supervision and has been constructed in accordance with the plans and specifications approved by the City Engineer and that the original design intent of the approved plans has been met, except as noted by me on the as-built construction drawings. This Certification is based on site inspections by me, or personnel under my direction with survey information provided by Thomas Johnston, of Wayjohn Surveys, NMPS number 14269.



UTILITY CONTACT INFORMATION

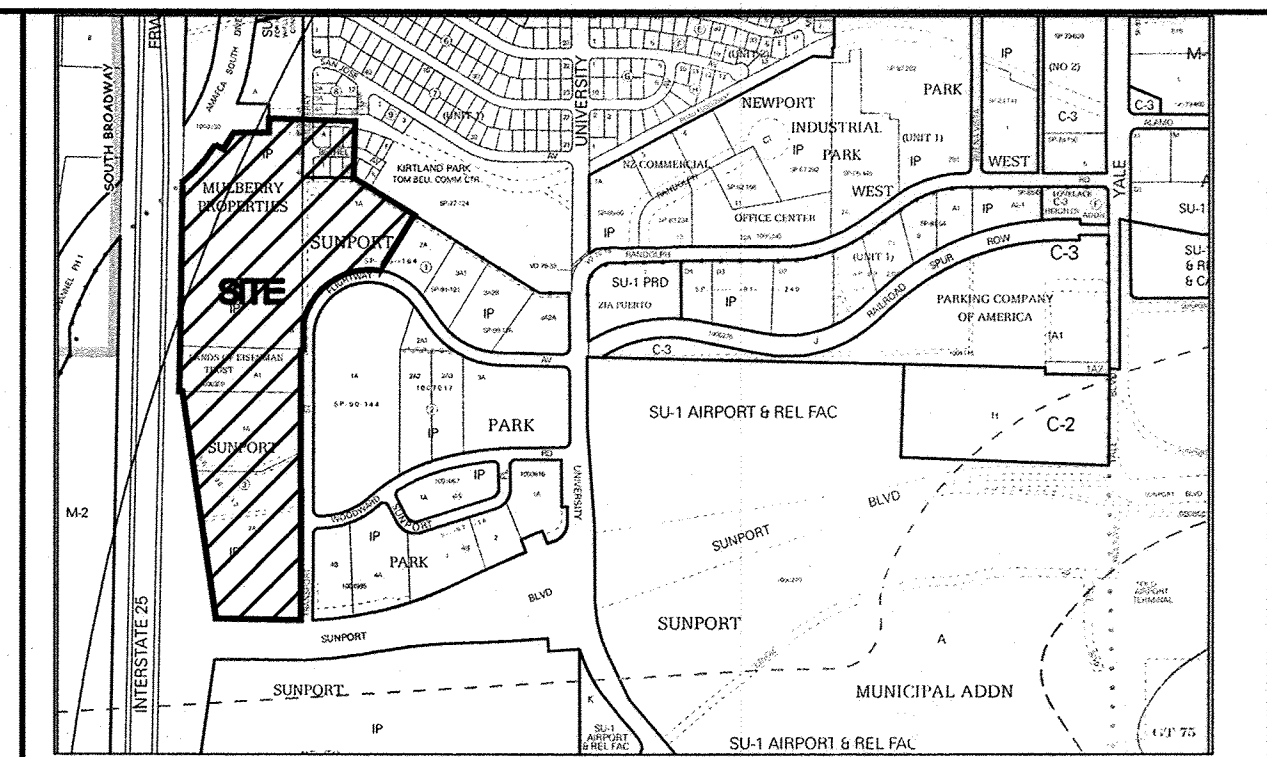
ROBERT MARTINEZ-COMCAST
761-6221
ROBERT_MARTINEZ@CABLE.COMCAST.COM

TONY MACHAC-PNM ELECTRIC
241-3404
TONY.MACHAC@PNM.COM

JOE HERRERA-NEW MEXICO GAS COMPANY
891-6995
JOE.HERRERA@NMGC.CO

ROSA KNIFFIN-QWEST
245-6374
ROSARITO.KNIFFIN@QWEST.COM

PETER CHANG-ALBUQUERQUE BERNALILLO COUNTY
WATER UTILITY AUTHORITY
768-2598
PCHANG@ABCWUA.ORG



VICINITY MAP

M-15Z

NOTICE TO CONTRACTORS

1. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED OR PROVIDED FOR HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986 EDITION (UPDATE #8).
2. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM (260-1990) FOR LOCATION OF EXISTING UTILITIES.
3. ANY WORK AFFECTING AN ARTERIAL ROADWAY REQUIRES 24-HOUR CONSTRUCTION.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR SURVEYOR IMMEDIATELY SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
5. SEVEN (7) WORKING DAYS PRIOR TO BEGINNING OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO BERNALILLO COUNTY CONSTRUCTION COORDINATION DIVISION A DETAILED CONSTRUCTION SCHEDULE. TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN A BARRICADE PERMIT FROM THE CONST. COORDINATION DIVISION. CONTRACTOR SHALL NOTIFY BARRICADE ENGINEER (848-1504) PRIOR TO OCCUPYING AN INTERSECTION. REFER TO STANDARD SPECIFICATIONS (924-3400) FOR COA.
6. ALL STREET STRIPING ALTERED OR DESTROYED SHALL BE REPLACED WITH HOT THERMOPLASTIC ONLY REFLECTORIZED PAVEMENT MARKINGS BY THE CONTRACTOR TO LOCATION AS EXISTING OR AS INDICATED BY THIS PLAN SET.
7. CONTRACTOR SHALL NOTIFY THE ENGINEER NOT LESS THAN SEVEN (7) DAYS PRIOR TO STARTING WORK IN ORDER THAT THE CITY SURVEYOR MAY TAKE NECESSARY MEASURES TO INSURE THE PRESERVATION OF SURVEY MONUMENTS. CONTRACTOR SHALL NOT DISTURB PERMANENT SURVEY MONUMENTS WITHOUT THE CONSENT OF THE CITY SURVEYOR AND SHALL NOTIFY THE CITY SURVEYOR AND BEAR THE EXPENSE OF REPLACING ANY THAT MAY BE DISTURBED WITHOUT PERMISSION. REPLACEMENT SHALL BE DONE ONLY BY THE CITY SURVEYOR. WHEN A CHANGE IS MADE IN THE FINISHED ELEVATIONS OF THE PAVEMENT OF ANY ROADWAY IN WHICH A PERMANENT SURVEY MONUMENT IS LOCATED, CONTRACTOR SHALL, AT HIS OWN EXPENSE, ADJUST THE MONUMENT COVER TO THE NEW GRADE UNLESS OTHERWISE SPECIFIED. REFER TO SECTION 4.4 OF THE GENERAL CONDITIONS OF THE STANDARD SPECIFICATIONS. ANY PERMANENT SURVEY MONUMENT LOCATED WITHIN 50' OF THIS PROJECT THAT IS NOT SHOWN ON THE PLAN AND IS DESTROYED DURING CONSTRUCTION WILL BE REPLACED AT THE CONTRACTORS EXPENSE.
8. CONTRACTOR SHALL MAINTAIN A GRAFFITI-FREE WORK SITE. CONTRACTOR SHALL PROMPTLY REMOVE ANY AND ALL GRAFFITI FROM EQUIPMENT, WHETHER PERMANENT OR TEMPORARY.
9. FOR STORM DRAIN CONSTRUCTION, RCP PIPE JOINTS SHALL NOT BE GROUTED PRIOR TO FINAL INSPECTION. FINAL INSPECTION WILL DETERMINE JOINTS TO BE GROUTED FOR FINAL ACCEPTANCE OF THE CONSTRUCTION.
10. THE CONTRACTOR SHALL COORDINATE WITH THE WATER AUTHORITY SEVEN (7) DAYS IN ADVANCE OF PERFORMING WORK THAT WILL AFFECT THE PUBLIC WATER OR SANITARY SEWER INFRASTRUCTURE. WORK REQUIRING SHUTOFF OF FACILITIES DESIGNATED AS MASTER PLAN FACILITIES MUST BE COORDINATED WITH THE WATER AUTHORITY 14 DAYS IN ADVANCE OF PERFORMING SUCH WORK. ONLY WATER AUTHORITY CREWS ARE AUTHORIZED TO OPERATE PUBLIC VALVES. SHUTOFF REQUESTS MUST BE MADE ONLINE AT, [HTTP://ABCWUA.ORG/CONTENT/VIEW/463/729/](http://abcwua.org/content/view/full/463/729/)
11. ALL EXCAVATION, TRENCHING, AND SHORING ACTIVITIES MUST BE CARRIED-OUT IN ACCORDANCE WITH OSHA 29 CFR 1926.652 SUBPART 2 AND COA STD DWG 2465.
12. ELECTRONIC MARKER SPHERES (EMS) WILL BE PLACED ACCORDING TO SECTION 170 OF THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986 EDITION AS REVISED THROUGH UPDATE #8.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING ALL CONSTRUCTION SIGNING UNTIL PROJECT HAS BEEN ACCEPTED BY COA AND BERNALILLO COUNTY.

THE FOLLOWING NOTES ALSO APPLY WHEN CHECKED

- ☒ ALL UTILITIES AND UTILITY SERVICE LINES SHALL BE INSTALLED PRIOR TO PAVING.
- ☒ BACKFILL COMPACTION SHALL BE ACCORDING TO SPECIFIED STREET USE.
- ☒ TACK COAT REQUIREMENTS SHALL BE DETERMINED BY THE PROJECT ENGINEER.
- ☒ SIDEWALKS AND WHEELCHAIR RAMPS WITHIN THE CURB RETURNS SHALL BE CONSTRUCTED WHEREVER A NEW CURB RETURN IS CONSTRUCTED.
- ☒ IF CURB IS DEEPRESSED FOR A DRIVEPAD, THE DRIVEPAD SHALL BE CONSTRUCTED PRIOR TO ACCEPTANCE OF CURB AND GUTTER.
- ☒ ALL STORM DRAINAGE FACILITIES SHALL BE COMPLETED PRIOR TO FINAL ACCEPTANCE.

DRB# 1009090

TIERRA WEST, LLC
5571 MIDWAY PARK PLACE NE
ALBUQUERQUE, NEW MEXICO 87109
(505) 858-3100
www.tierrawestllc.com

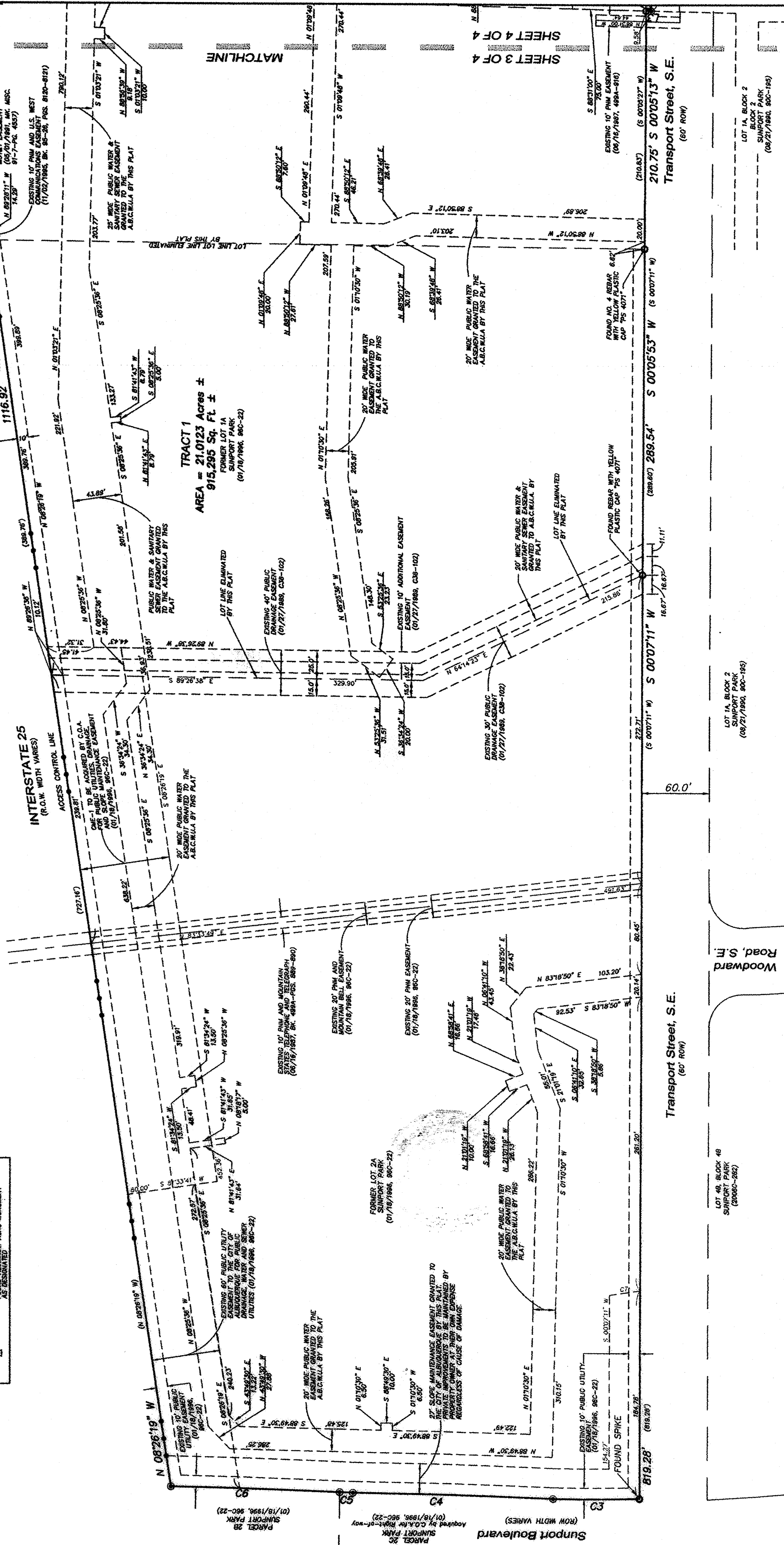
REV	SHEETS	CITY ENGINEER	DATE	USER DEPT.	DATE	USER DEPT.	DATE
ENGINEERS STAMP & SIGNATURE		APPROVALS	ENGINEER	DATE	*****		
		DRC Chairman	<i>[Signature]</i>	10/7/13	APPROVED FOR CONSTRUCTION		
		Transportation	<i>[Signature]</i>	10/10/13			
		Water/Wastewater	<i>[Signature]</i>	9-27-13			
		Hydrology	<i>[Signature]</i>	9-30-13			
		Traffic Engineer					
		Const. Mngmt.					
		Berna. Cont. Public Works					
		EWD	<i>[Signature]</i>	9/19/13			
		CITY PROJECT NO.	643182		SHEET 1 OF 14		

Plat of
Tracts 1 and 2
Capstone Subdivision
Albuquerque, Bernalillo County, New Mexico
July 2013

RECORDING STAMP

Legend

N 90°00'00" E
(N 90°00'00" E)
MEASURED BEARINGS AND DISTANCES MATCH
RECORD BEARINGS AND DISTANCES
RECORD BEARINGS AND DISTANCES
FOUND AND USED MONUMENT
AS DESIGNATED
DEPOSITS NO. 4 BEAR WITH YELLOW
PLASTIC CAP PS 11983" SET THIS SURVEY
FOUND ALUMINUM AGRS MONUMENT



Curve Table

[illegible]

Line Table

LINE	BEARING	DISTANCE
L1	N 47°30'05" E	35.08'
	(N 47°26'21" E)	(34.90')
L2	S 55°34'40" E	43.08'
	(S 55°31'37" E)	(43.08')
L3	N 88°35'56" W	4.65'
L4	N 89°28'11" W	15.84'
	(N 89°28'05" W)	(15.83')
L5	N 00°00'18" E	10.00'



PRECISION
SURVEYING, INC.

FOR REFERENCE ONLY

INDEXING INFORMATION FOR COUNTY CLERK
OWNER ALBUQUERQUE AIRPARK PARTNERS/MAST VOYAGER
SECTION 33, TOWNSHIP 10 N., RANGE 3 E.,
SUBDIVISION CAPSTONE SUBDIVISION

Sheet 3 of 4
11216023

Legend

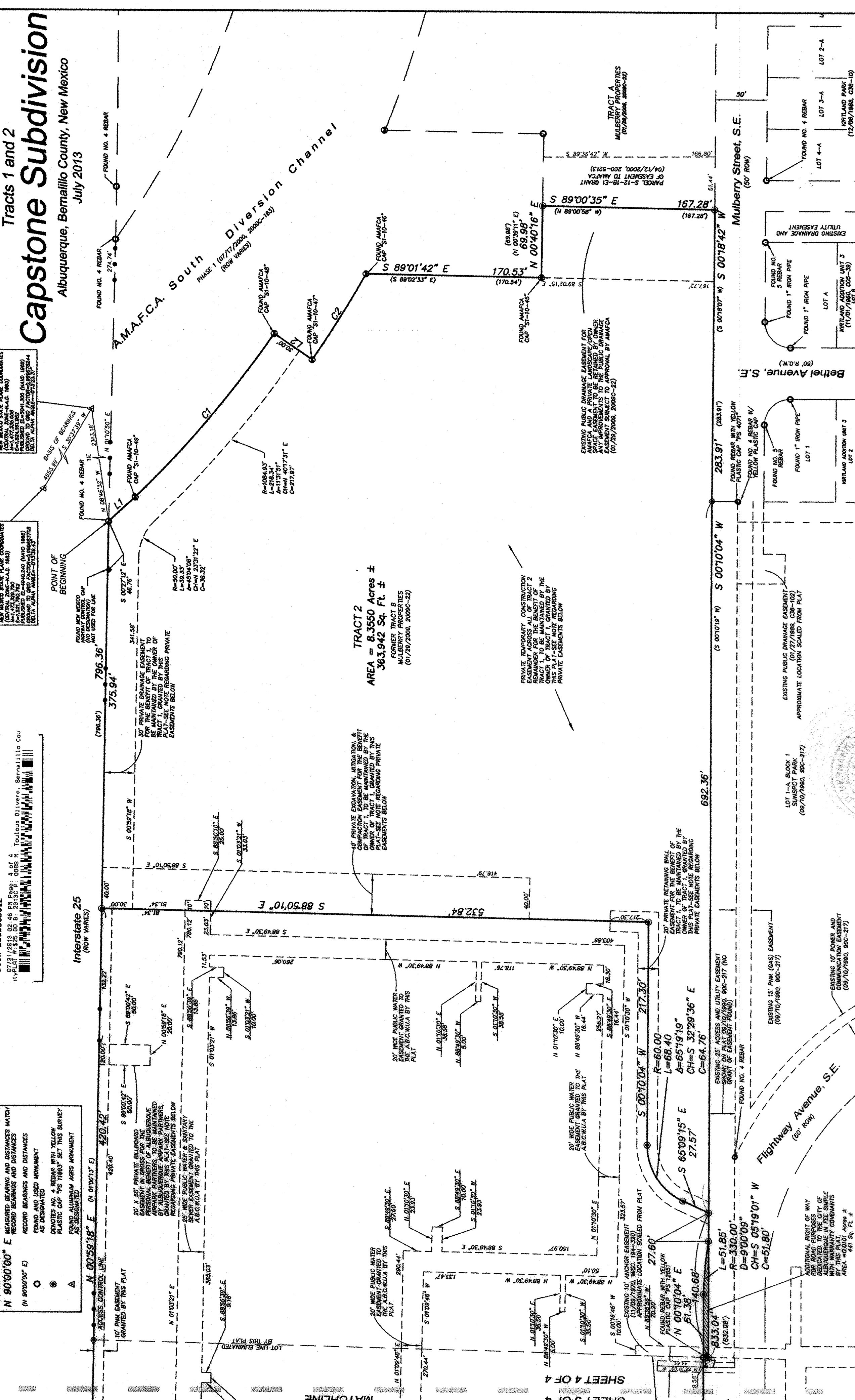
N 90°00'00" E
 (N 90°00'00" E)

MEASURED BEARING AND DISTANCES MATCH
 RECORD BEARINGS AND DISTANCES

RECORD BEARINGS AND DISTANCES
 FOUND AND USED MONUMENT
 AS DESIGNATED

DENOTES NO. 4 REBAR WITH YELLOW
 PLASTIC CAP "PS 114903" SET THIS SURVEY
 FOUND ALUMINUM AGRS MONUMENT

DOC# 2013085812



Curve Table

CURVE	RADIUS	ARC LENGTH	TIME/STEP	DELTA ANG	BEARING	CHORD LENGTH
C1	1054.83	208.45	10.08	1.72241°	N 40.170° E	209.15
	($\sigma=146.63$)	($\sigma=28.29$)	($\sigma=0.0167$)	($\sigma=0.00017$)	($\sigma=0.00017$)	($\sigma=0.0017$)
C2	1068.83	208.89	10.08	1.72241°	S 49.830° E	209.65
	($\sigma=146.63$)	($\sigma=28.29$)	($\sigma=0.0167$)	($\sigma=0.00017$)	($\sigma=0.00017$)	($\sigma=0.0017$)
C3	151.100	75.70	3.36	3.17759°	S 87.220° W	76.69
	($\sigma=19.83$)	($\sigma=3.89$)	($\sigma=0.0453$)	($\sigma=0.00047$)	($\sigma=0.00047$)	($\sigma=0.0047$)
C4	151.100	76.70	3.36	3.17759°	S 87.220° W	76.69
	($\sigma=19.83$)	($\sigma=3.89$)	($\sigma=0.0453$)	($\sigma=0.00047$)	($\sigma=0.00047$)	($\sigma=0.0047$)
C5	780.145	117.65	5.85	0.020713°	N 89.979° W	117.61
	($\sigma=78.0145$)	($\sigma=17.65$)	($\sigma=0.00585$)	($\sigma=0.0000001$)	($\sigma=0.0000001$)	($\sigma=0.000001$)
C6	771.141	117.70	5.85	0.020713°	N 89.979° W	117.61
	($\sigma=77.1141$)	($\sigma=17.61$)	($\sigma=0.00585$)	($\sigma=0.0000001$)	($\sigma=0.0000001$)	($\sigma=0.000001$)
C7	771.141	120.01	72.01	0.06552°	N 89.133° W	120.01
	($\sigma=77.1141$)	($\sigma=18.001$)	($\sigma=0.007201$)	($\sigma=0.0000001$)	($\sigma=0.0000001$)	($\sigma=0.000001$)

Line Table

LINE	BEARING	DISTANCE
L1	N 47°30'05" E	35.08'
	(S 44°08'21" E)	(34.98')
L2	S 55°34'40" E	45.08'
	(S 55°31'37" E)	(45.08')
L3	N 88°35'56" W	4.65'
L4	N 89°28'11" W	15.84'
	(N 89°28'05" W)	(15.83')

NOTE REGARDING PRIVATE EASEMENTS

THE 20'X50' PRIVATE BILLBOARD EASEMENT, THE 30' PRIVATE DRAINAGE EASEMENT, 40' PRIVATE EXCAVATION, MITIGATION & COMPACTION EASEMENT, PRIVATE TEMPORARY CONSTRUCTION EASEMENT AND 20' PRIVATE RETAINING WALL EASEMENT ARE SUBJECT TO ADDITIONAL TERMS AND CONDITIONS SET FORTH IN SEPARATE INSTRUMENTS RECORDED CONTEMPORANEOUSLY WITH THIS PLAT.

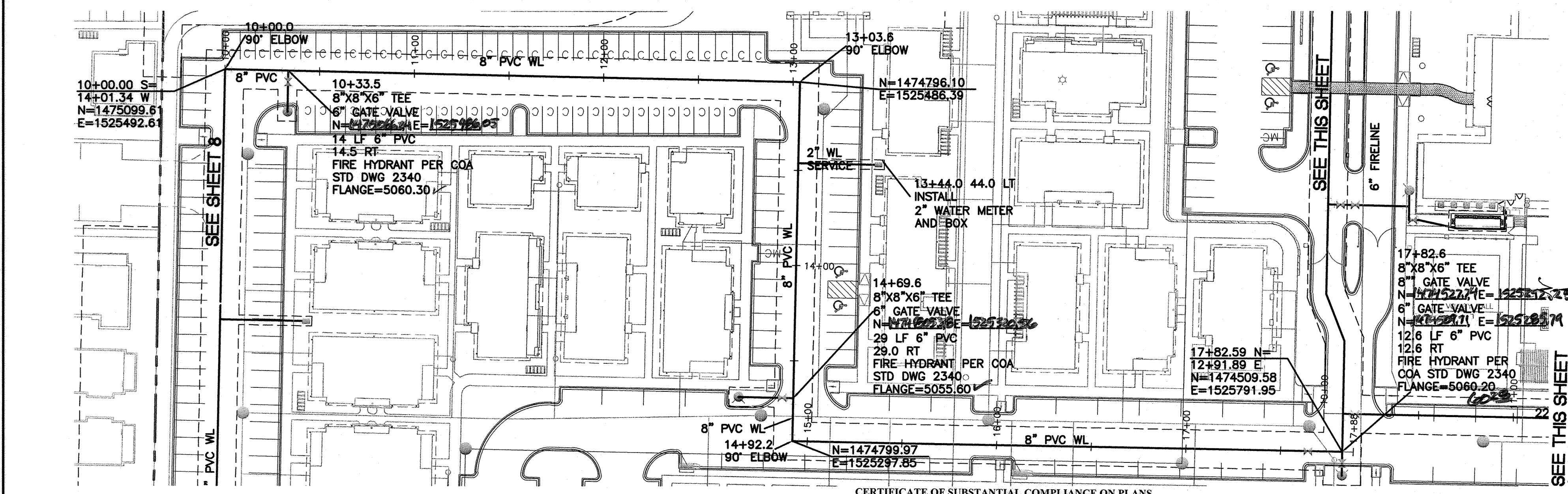
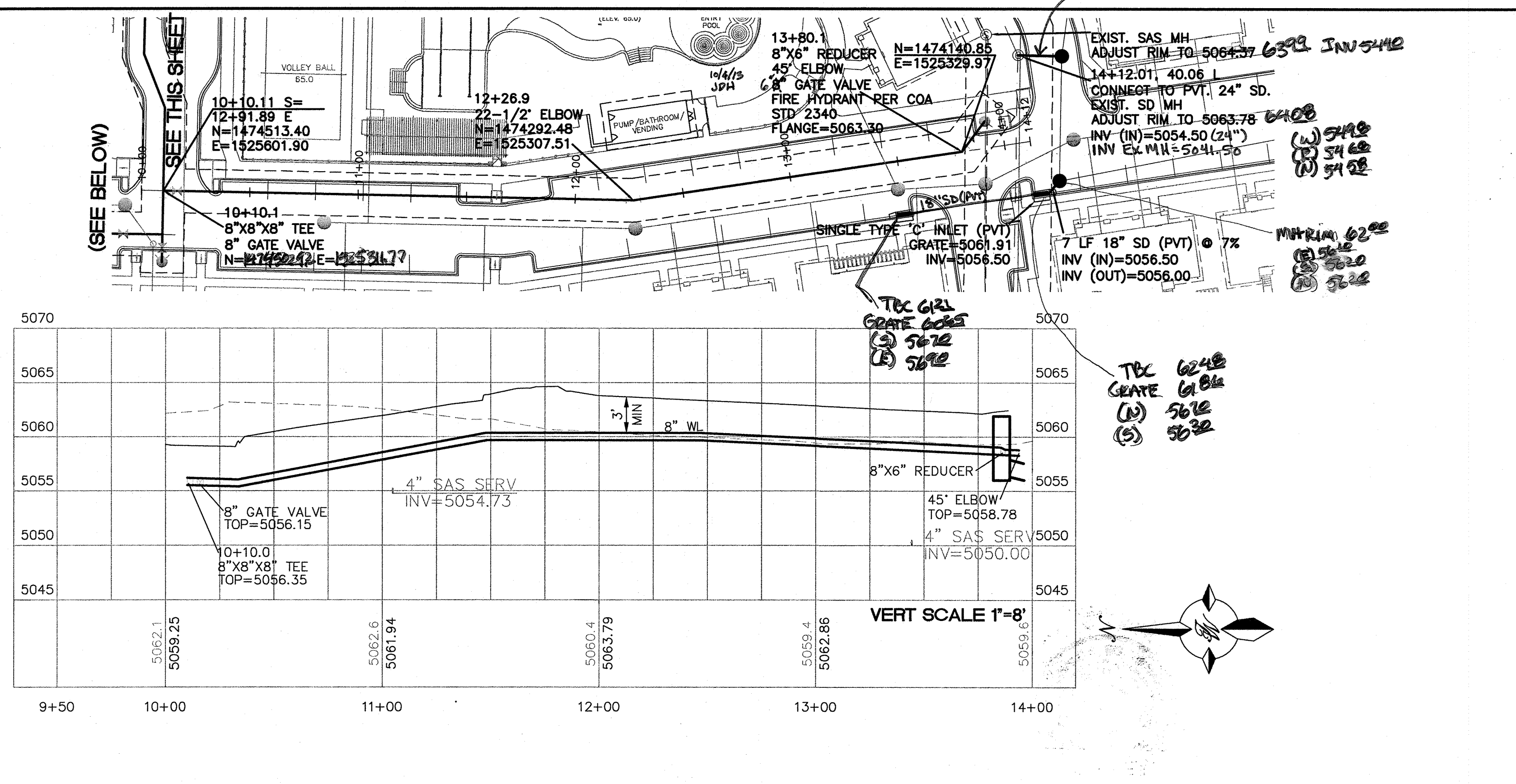
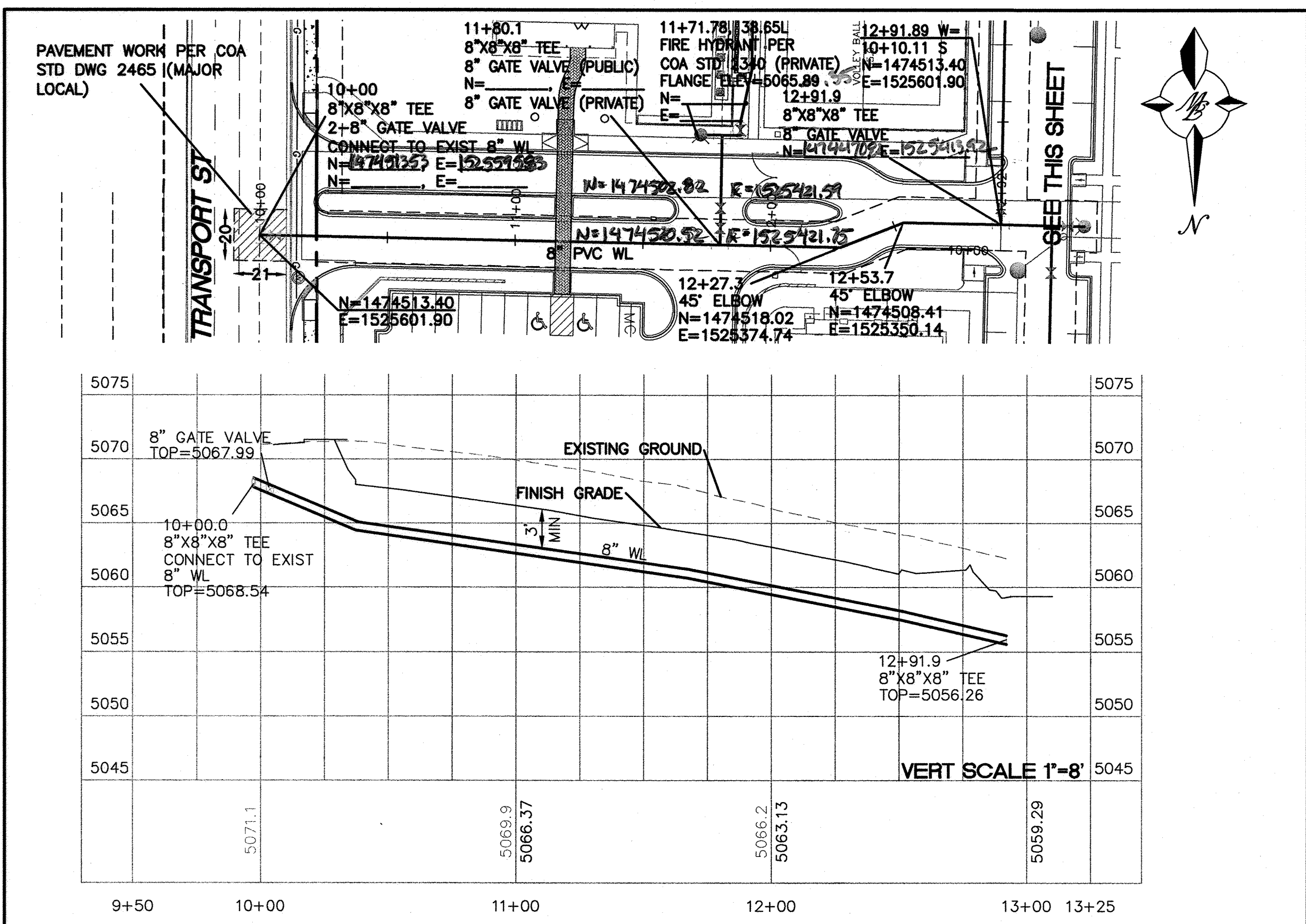
PRECISION
SURVEYS, INC.

FOR REFERENCE ONLY

INDEXING INFORMATION FOR COUNTY CLERK
OWNER ALBUQUERQUE AIRPARK PARTNERS/MAST VOYAGER
SECTION 33, TOWNSHIP 10 N., RANGE 3 E.

SOIL FULL FILE
 5700 PHONE
 7900 FAX

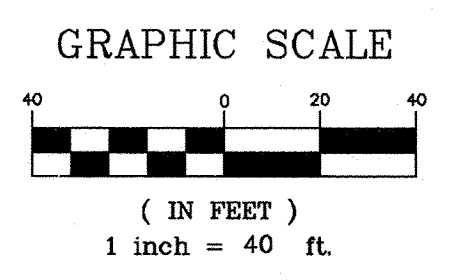
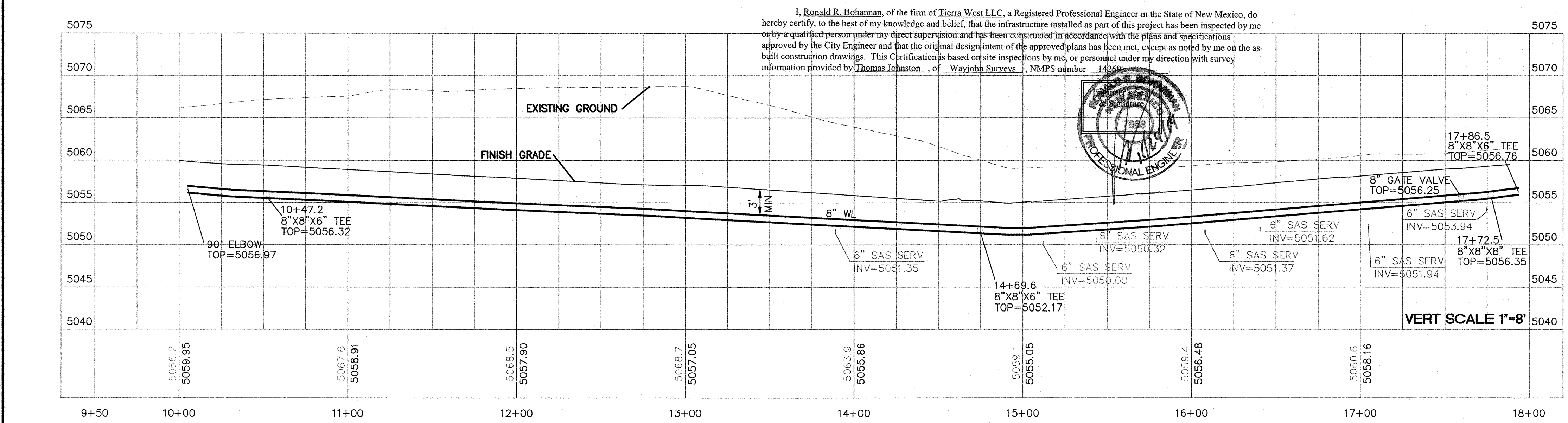
Sheet 4 of 4



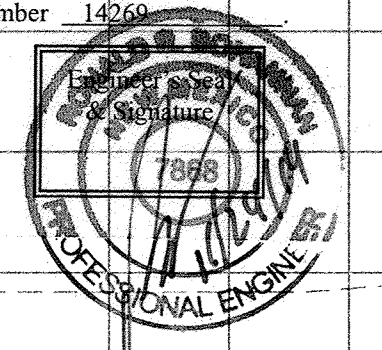
- NOTES:
1. SANITARY SEWER SERVICE CONNECTION PER COA STD DWG 2125.
 2. ALL FIRE HYDRANTS ARE TO BE BUILT WITH MECH RESTRAINTS PER COA STANDARDS.
 3. ALL EXISTING UTILITY CONNECTION LOCATIONS AND INVERTS MUST BE FIELD VERIFIED PRIOR TO AND CONSTRUCTION OF UTILITIES.
 4. ALL EXCAVATION, TRENCHING AND SHORING ACTIVITIES MUST BE CARRIED-OUT IN ACCORDANCE WITH OSHA 29 CFR 1926.650 SUBPART P.
 5. ALL WATERLINES ARE C900 PVC (DR18) UNLESS OTHERWISE NOTED.
 6. ALL SANITARY SEWER LINES ARE TO BE SDR35 UNLESS OTHERWISE NOTED.

- LEGEND
- CURB & GUTTER
 - BOUNDARY LINE
 - EASEMENT
 - SIDEWALK
 - EXISTING CURB & GUTTER
 - EXISTING SAS MANHOLE
 - EXISTING FIRE HYDRANT
 - EXISTING POWER POLE
 - EXISTING OVERHEAD UTILITIES
 - EX. 8" SAS
 - EX. WL
 - EX. RCP
 - EXISTING SANITARY SEWER LINE
 - EXISTING WATER LINE
 - EXISTING STORM SEWER LINE
 - PROPOSED METER
 - PROPOSED VALVE W/BOX
 - PROPOSED FIRE HYDRANT
 - PROPOSED SAS MANHOLE

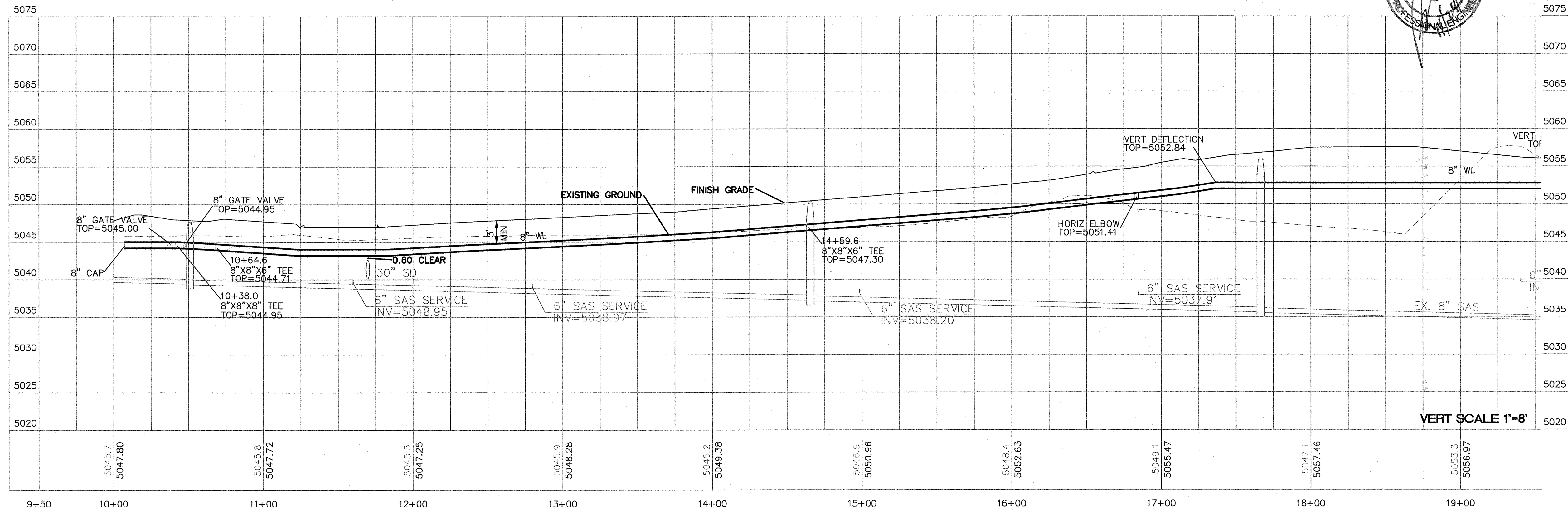
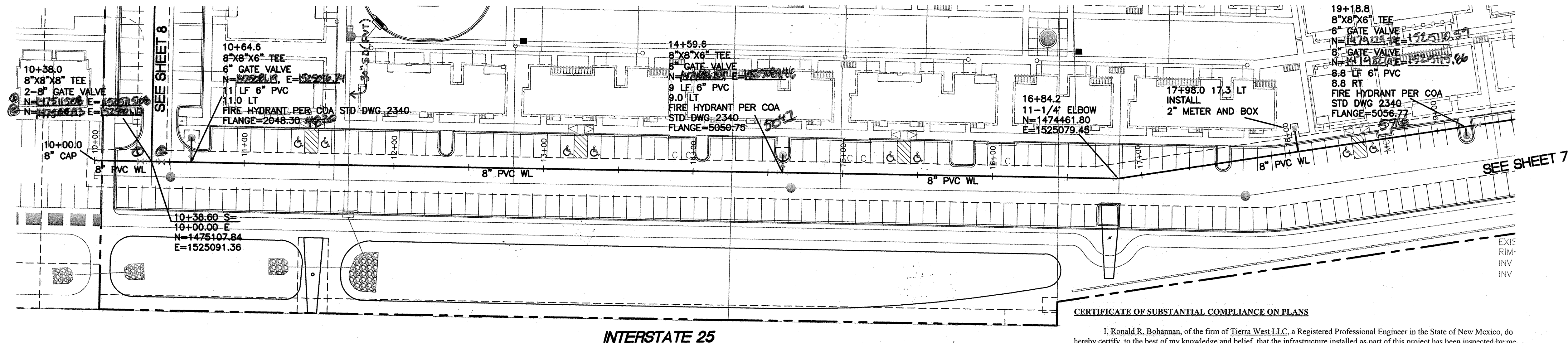
CAUTION:
ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS, PRIOR TO STARTING THE WORK. ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.



CERTIFICATE OF SUBSTANTIAL COMPLIANCE ON PLANS
I, Ronald R. Bohannon, of the firm of Tierra West LLC, a Registered Professional Engineer in the State of New Mexico, do hereby certify, to the best of my knowledge and belief, that the infrastructure installed as part of this project has been inspected by me or by a qualified person under my direct supervision and has been constructed in accordance with the plans and specifications approved by the City Engineer and that the original design intent of the approved plans has been met, except as noted by me on the as-built construction drawings. This Certification is based on site inspections by me, or personnel under my direction with survey information provided by Thomas Johnston, of Wayjohn Surveys, NMPs number 14269.



TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NEW MEXICO 87109 (505) 858-3100 www.tierrawestllc.com	
CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT ENGINEERING GROUP	
TITLE: CAPSTONE STUDENT HOUSING WATERLINE CONNECTIONS TO MAIN, NORTH SIDE	
DESIGN REVIEW COMMITTEE APPROVED OCT 07 2013 DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL APPROVED OCT 11 2013 CITY ENGINEER
CITY PROJECT NO. 643182	ZONE MAP NO. M-15-Z
DESIGNED BY: JW DRAWN BY: pm DATE: June, 2013 JOB NO.: 2011064 CHECKED BY: RRB DATE: June, 2013	NO. DATE REMARKS REVISIONS DESIGN
SHEET 5 OF 14	



- NOTES:**
- SANITARY SEWER SERVICE CONNECTION PER COA STD DWG 2125.
 - ALL FIRE HYDRANTS ARE TO BE BUILT WITH MECH RESTRAINTS PER COA STANDARDS.
 - ALL EXISTING UTILITY CONNECTION LOCATIONS AND INVERTS MUST BE FIELD VERIFIED PRIOR TO AND CONSTRUCTION OF UTILITIES.
 - ALL EXCAVATION, TRENCHING AND SHORING ACTIVITIES MUST BE CARRIED-OUT IN ACCORDANCE WITH OSHA 29 CFR 1926.650 SUBPART P.
 - ALL WATERLINES ARE C900 PVC (DR18) UNLESS OTHERWISE NOTED.
 - ALL SANITARY SEWER LINES ARE TO BE SDR35 UNLESS OTHERWISE NOTED.

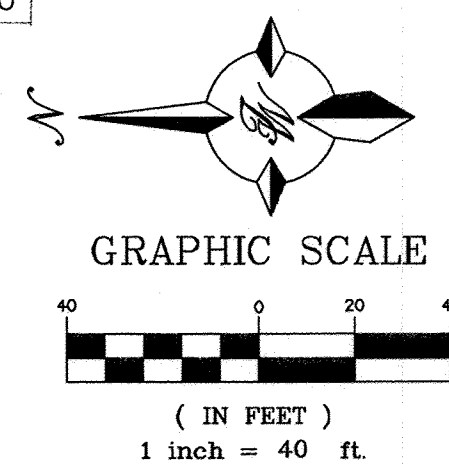
NOTE
SEE SHEET 9 FOR SANITARY SEWER IMPROVEMENTS IN THIS AREA

LEGEND

- Curb & Gutter
- Boundary Line
- Easement
- Sidewalk
- Existing Curb & Gutter
- Existing SAS Manhole
- Existing Fire Hydrant
- Existing Power Pole
- Existing Overhead Utilities
- EX. 8" SAS — Existing Sanitary Sewer Line
- EX. WL — Existing Water Line
- EX. RCP — Existing Storm Sewer Line
- Proposed Meter
- Proposed Valve w/Box
- Proposed Fire Hydrant
- Proposed SAS Manhole

CAUTION:

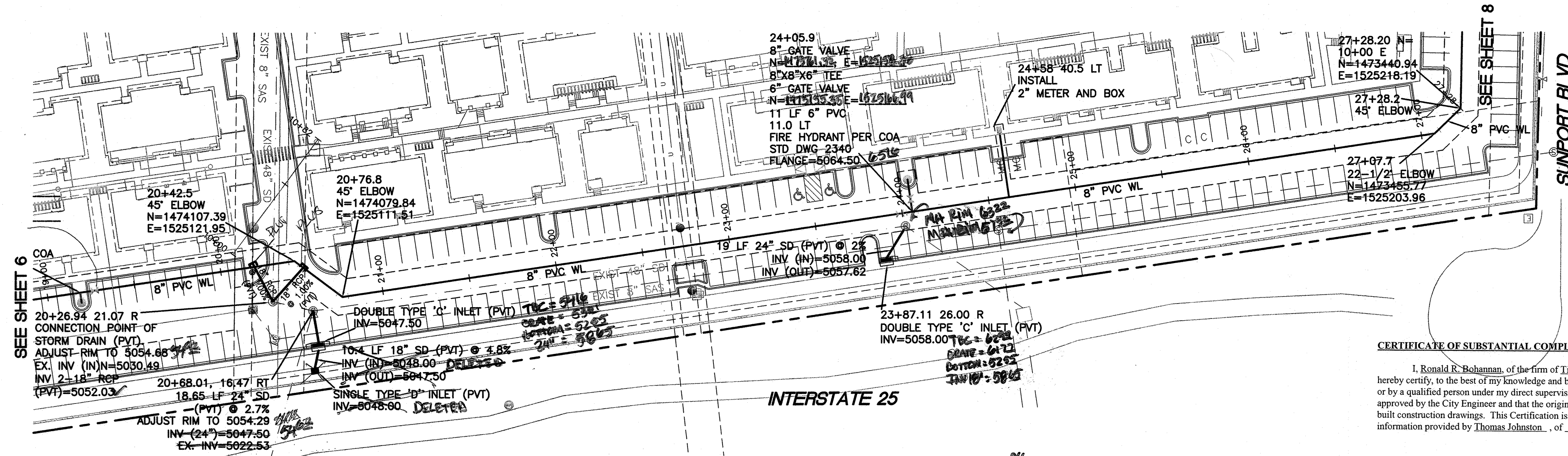
ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS, PRIOR TO STARTING THE WORK. ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.



TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NEW MEXICO 87109 (505) 858-3100 www.tierrawestllc.com	
CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT ENGINEERING GROUP	
TITLE: CAPSTONE STUDENT HOUSING WATERLINE WEST SIDE 10+00 TO 19+50	
DESIGN REVIEW COMMITTEE APPROVED OCT 07 2013 DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL APPROVED OCT 11 2013 CITY ENGINEER
CITY PROJECT NO. 643182	ZONE MAP NO. M-15-Z
SHEET 6	OF 14

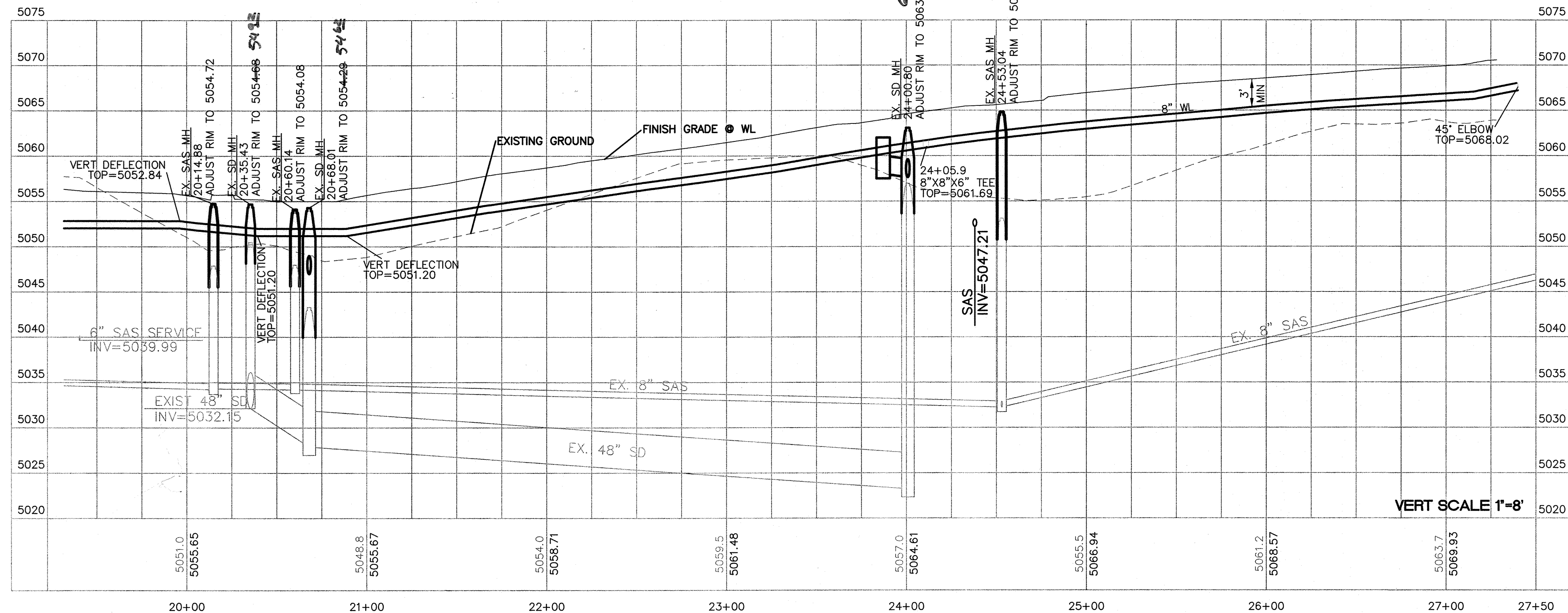
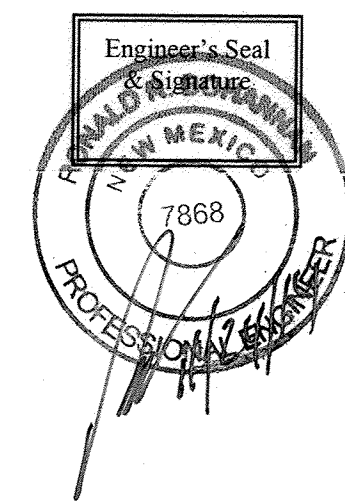
AS BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL	
CONTRACTOR	DATE	A.G.R.S. MONUMENT	DATE	FIELD NOTES	NO.	NO.	NO.
INSPECTOR	DATE	STANDARD N.M.S.H.C. BRASS TABLET	DATE	BY	BY	REMARKS	REVISIONS
ACCEPTANCE BY	DATE	NEW MEXICO STATE PLANE COORDINATES	DATE				
VERIFICATION BY	DATE	(CENTRAL ZONE-N.A.D. 1983)	DATE				
DRAWN BY	DATE	N=1,477,335.008	DATE				
CHECKED BY	DATE	E=1,524,161.852	DATE				
RECORDED BY	DATE	PUBLISHED EL=5041.300 (NAVD 88)	DATE				
NO.		GROUND TO GRID FACTOR=0.99978244	DATE				
		DELTA ALPHA ANGLE=-01°23.37"	DATE				

FLANGE
57 LG



CERTIFICATE OF SUBSTANTIAL COMPLIANCE ON PLANS

I, Ronald R. Bohannon, of the firm of Tierra West LLC, a Registered Professional Engineer in the State of New Mexico, do hereby certify, to the best of my knowledge and belief, that the infrastructure installed as part of this project has been inspected by me or by a qualified person under my direct supervision and has been constructed in accordance with the plans and specifications approved by the City Engineer and that the original design intent of the approved plans has been met, except as noted by me on the as-built construction drawings. This Certification is based on site inspections by me, or personnel under my direction with survey information provided by Thomas Johnston, of Wayjohn Surveys, NMPS number 14269.



- NOTES:
1. SANITARY SEWER SERVICE CONNECTION PER COA STD DWG 2125.
 2. ALL FIRE HYDRANTS ARE TO BE BUILT WITH MECH RESTRAINTS PER COA STANDARDS.
 3. ALL EXISTING UTILITY CONNECTION LOCATIONS AND INVERTS MUST BE FIELD VERIFIED PRIOR TO AND CONSTRUCTION OF UTILITIES.
 4. ALL EXCAVATION, TRENCHING AND SHORING ACTIVITIES MUST BE CARRIED-OUT IN ACCORDANCE WITH OSHA 29 CFR 1926.650 SUBPART P.
 5. ALL WATERLINES ARE C900 PVC (DR18) UNLESS OTHERWISE NOTED.
 6. ALL SANITARY SEWER LINES ARE TO BE SDR35 UNLESS OTHERWISE NOTED.

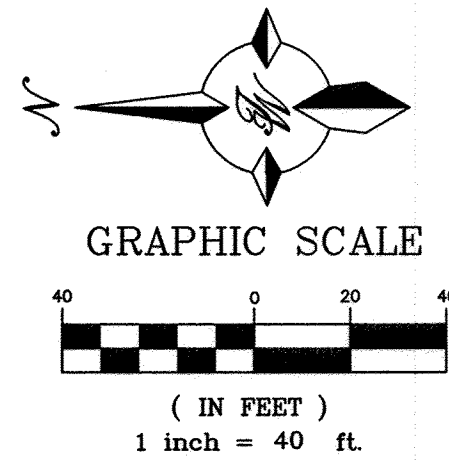
NOTE
SEE SHEETS 4 AND 9 FOR SANITARY SEWER IMPROVEMENTS IN THIS AREA
ONLY STORM DRAIN CONNECTION TO EXISTING SHALL BE PART OF WORK ORDER.
ALL PRIVATE STORM DRAIN SHOWN FOR REFERENCE ONLY.

LEGEND

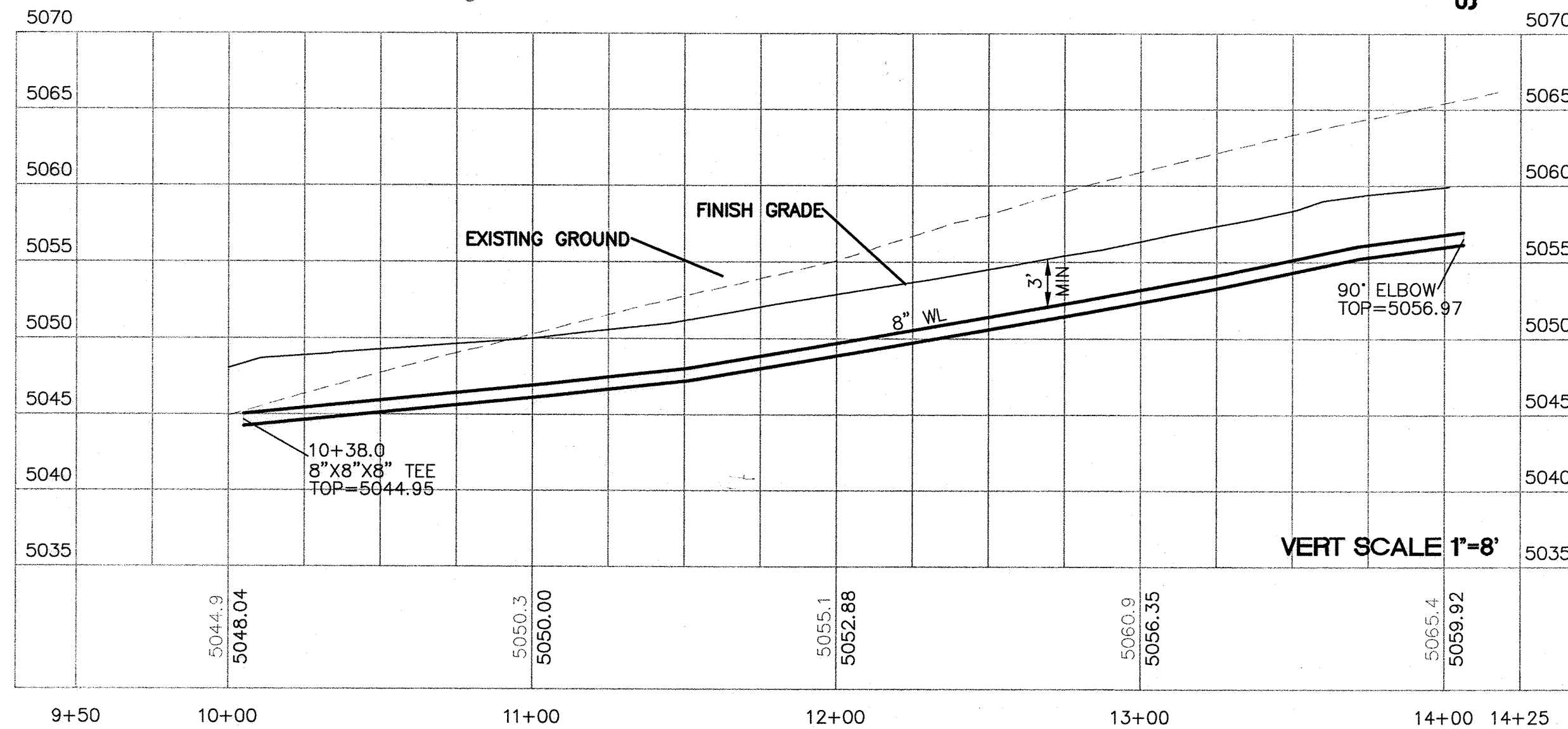
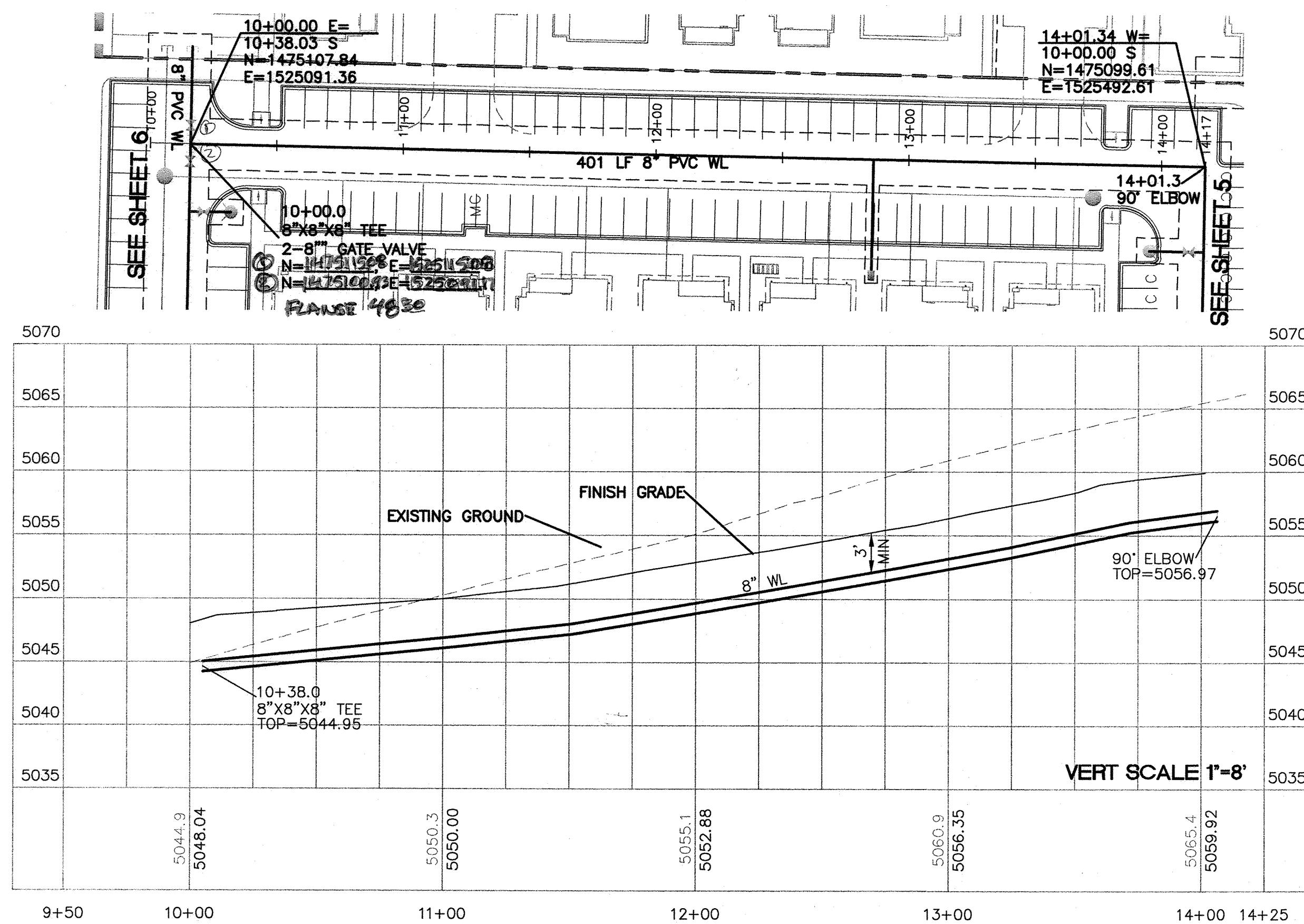
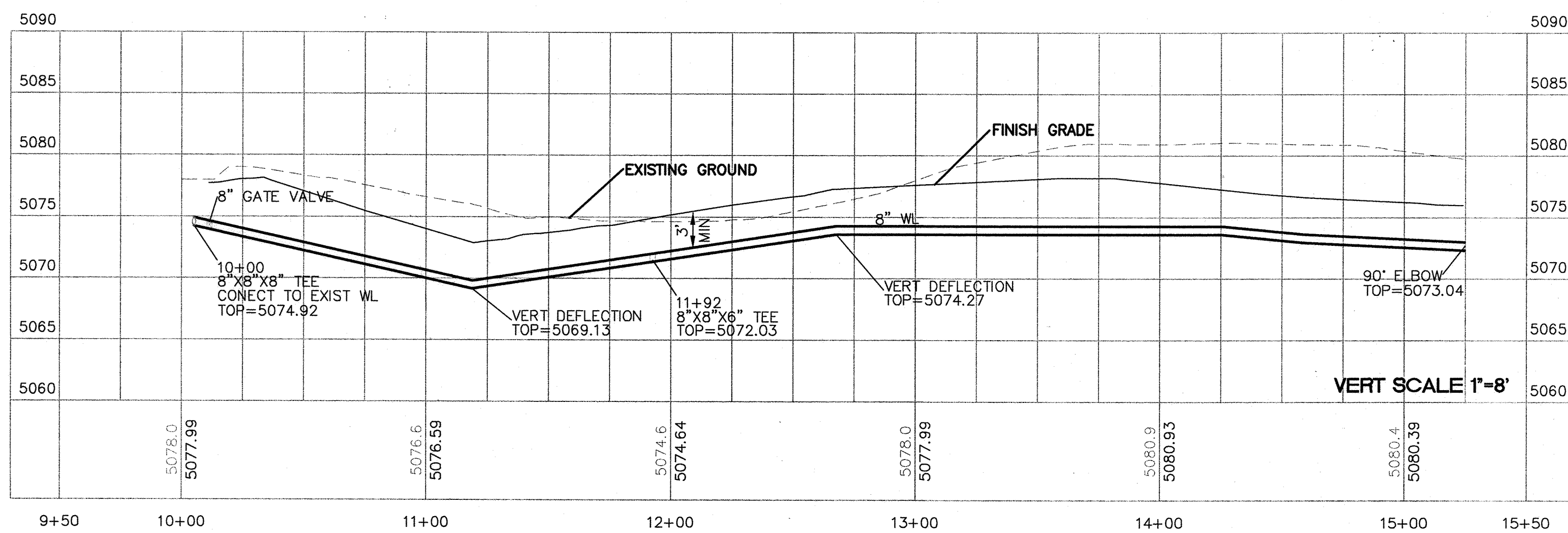
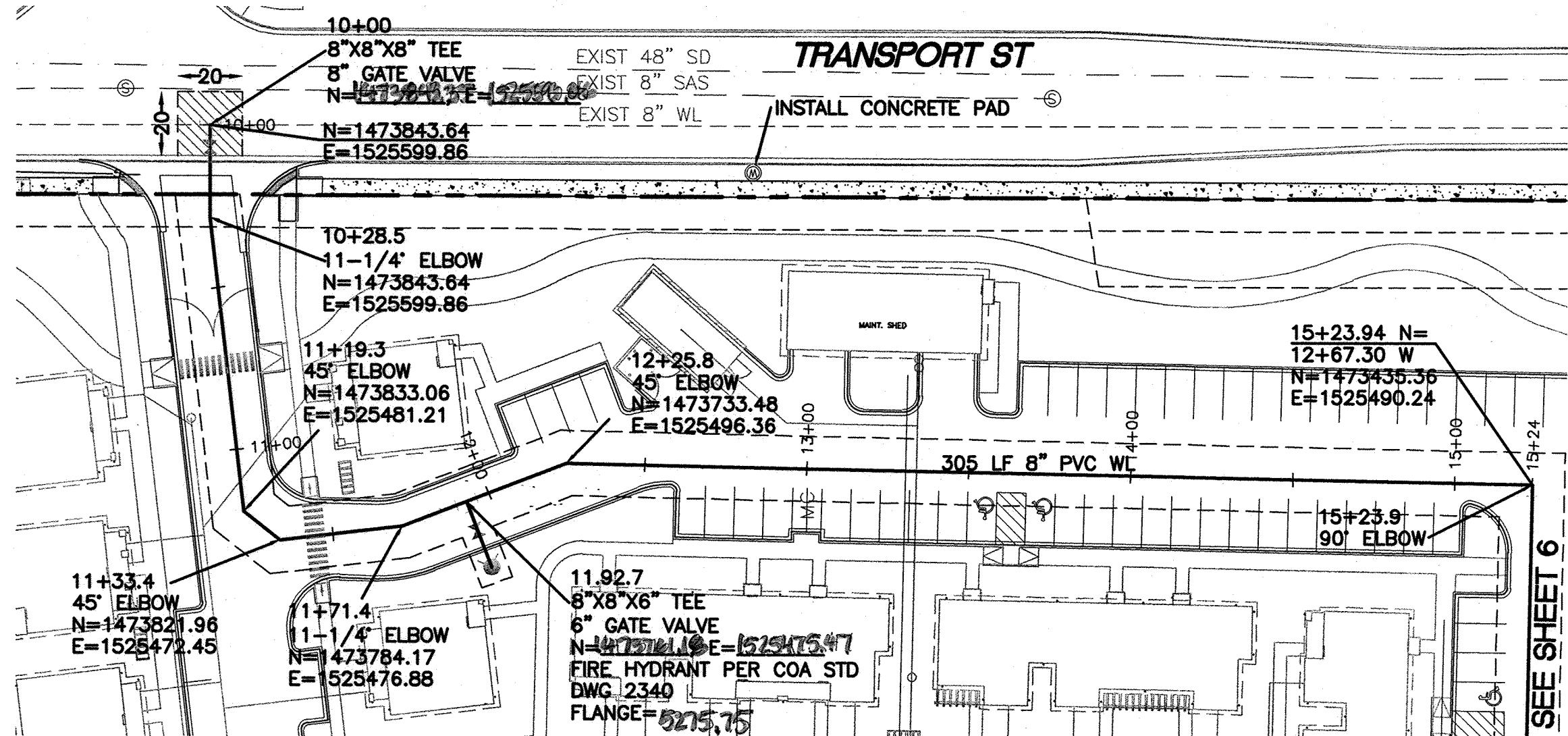
- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- SIDEWALK
- EXISTING CURB & GUTTER
- EXISTING SAS MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING POWER POLE
- EXISTING OVERHEAD UTILITIES
- EXISTING SANITARY SEWER LINE
- EXISTING WATER LINE
- EXISTING STORM SEWER LINE
- PROPOSED METER
- PROPOSED VALVE W/BOX
- PROPOSED FIRE HYDRANT
- PROPOSED SAS MANHOLE

CAUTION:

ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS, PRIOR TO STARTING THE WORK. ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.



TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NEW MEXICO 87109 (505) 858-3100 www.tierrawestllc.com	
CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT ENGINEERING GROUP	
TITLE: CAPSTONE STUDENT HOUSING WATERLINE WEST SIDE 19+50 TO 27+28	
DESIGN REVIEW COMMITTEE APPROVE OCT 07 2013 DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL APPROVE OCT 11 2013 CITY ENGINEER
CITY PROJECT NO. 643182	ZONE MAP NO. M-15-Z
SHEET 7	OF 14



LEGEND

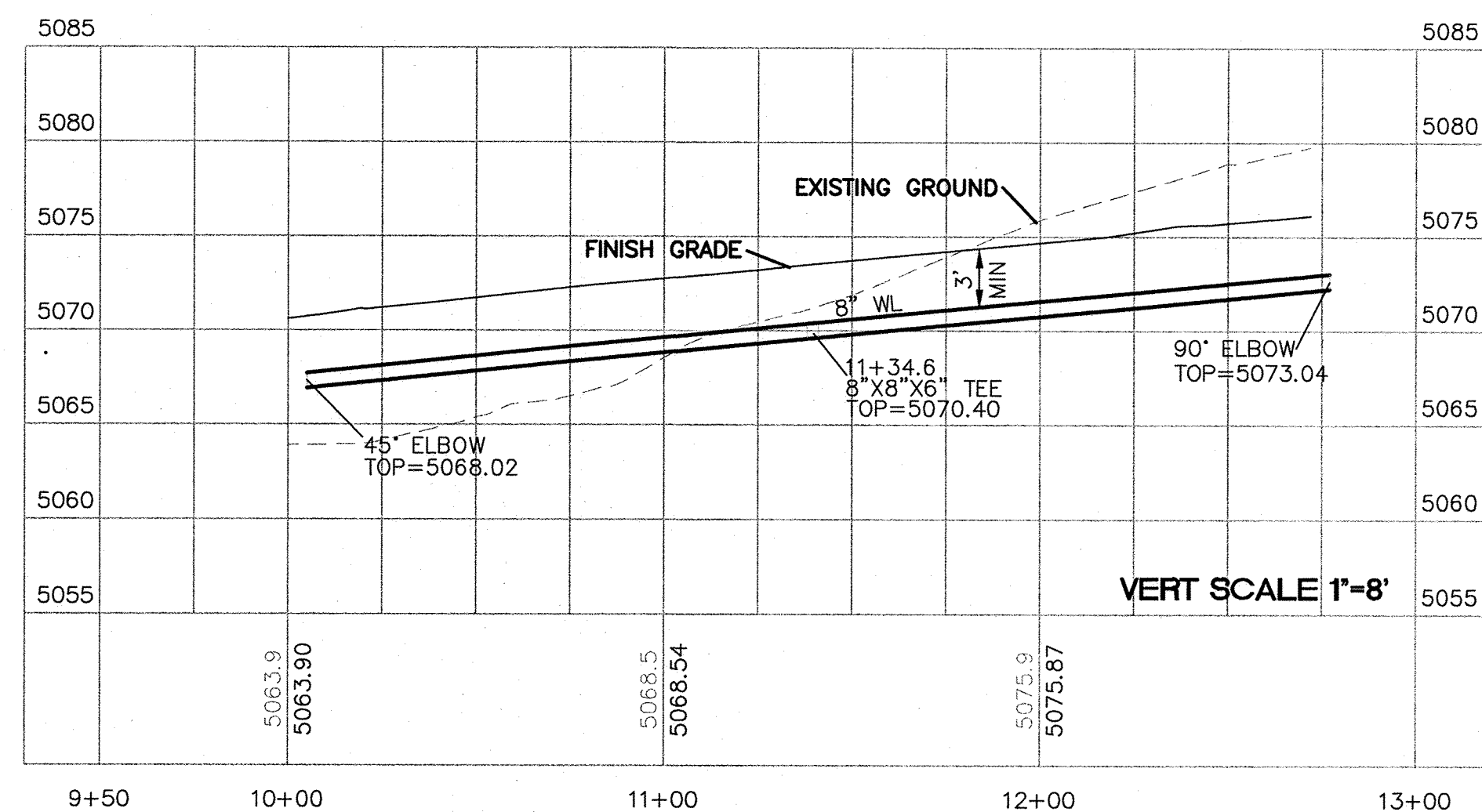
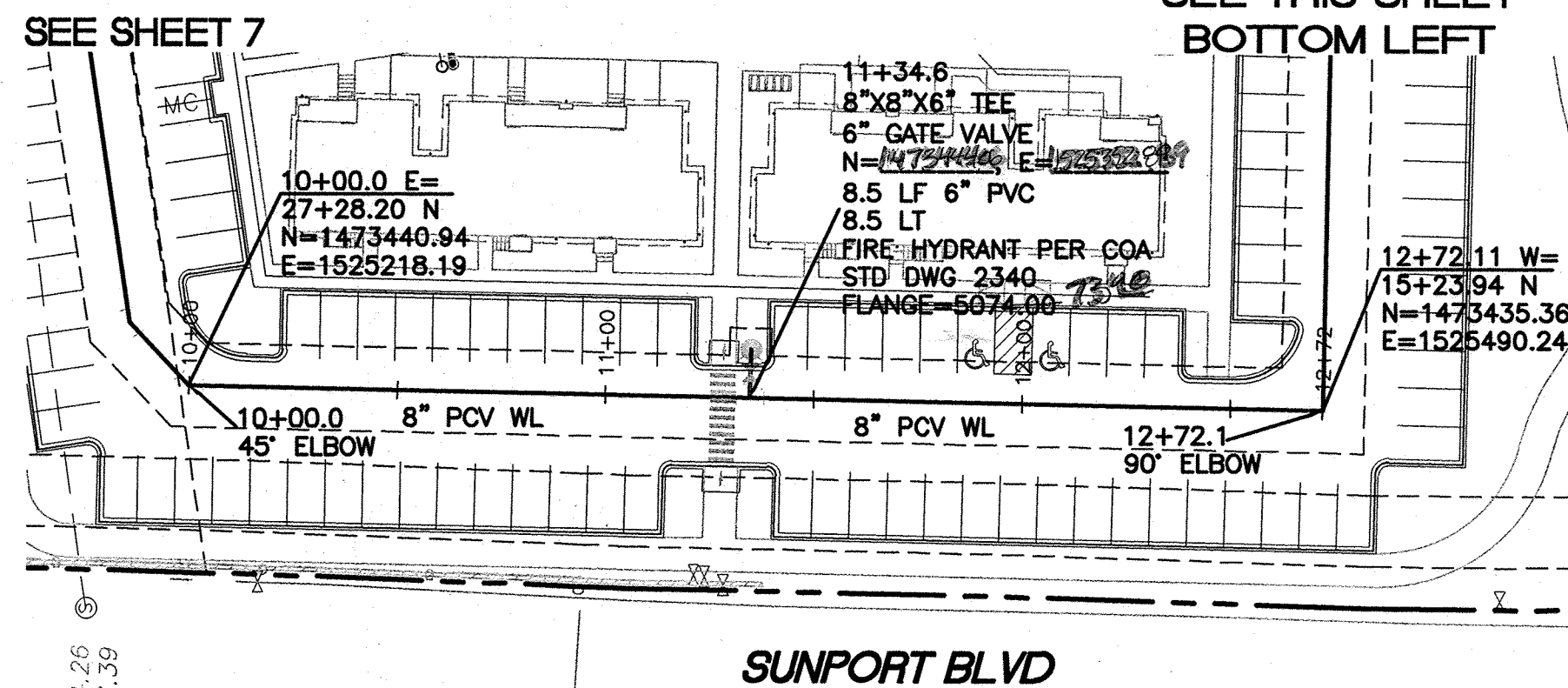
- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- SIDEWALK
- EXISTING CURB & GUTTER
- EXISTING SAS MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING POWER POLE
- EXISTING OVERHEAD UTILITIES
- EXISTING SANITARY SEWER LINE
- EXISTING WATER LINE
- EXISTING STORM SEWER LINE
- PROPOSED METER
- PROPOSED VALVE W/BOX
- PROPOSED FIRE HYDRANT
- PROPOSED SAS MANHOLE

NOTES:

- SANITARY SEWER SERVICE CONNECTION PER COA STD DWG 2125.
- ALL FIRE HYDRANTS ARE TO BE BUILT WITH MECH RESTRAINTS PER COA STANDARDS.
- ALL EXISTING UTILITY CONNECTION LOCATIONS AND INVERTS MUST BE FIELD VERIFIED PRIOR TO AND CONSTRUCTION OF UTILITIES.
- ALL EXCAVATION, TRENCHING AND SHORING ACTIVITIES MUST BE CARRIED-OUT IN ACCORDANCE WITH QSHA 29 CFR 1926.650 SUBPART P.
- ALL WATERLINES ARE C900 PVC (DR18) UNLESS OTHERWISE NOTED.
- ALL SANITARY SEWER LINES ARE TO BE SDR35 UNLESS OTHERWISE NOTED.

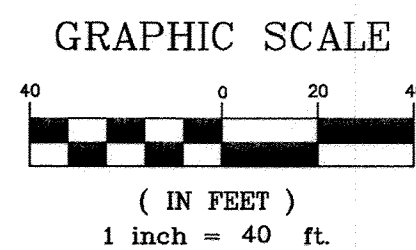
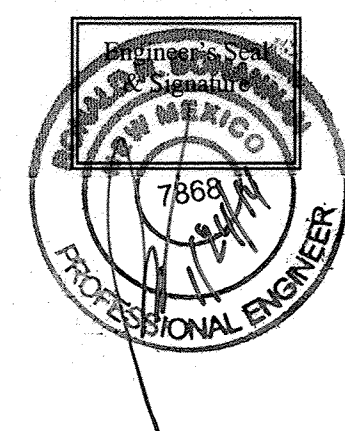
CAUTION:

ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS, PRIOR TO STARTING THE WORK. ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.



CERTIFICATE OF SUBSTANTIAL COMPLIANCE ON PLANS

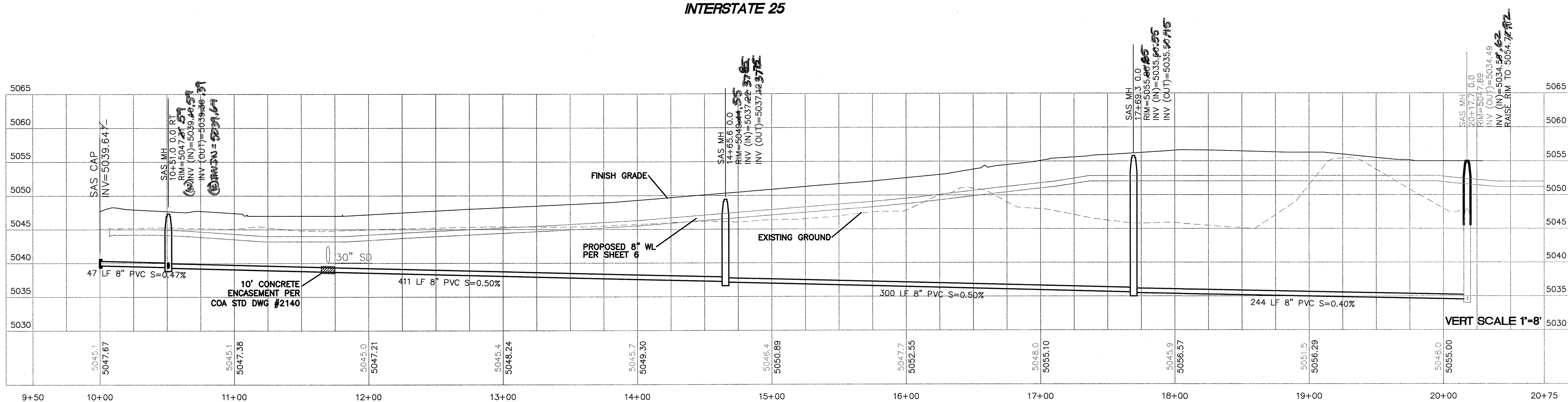
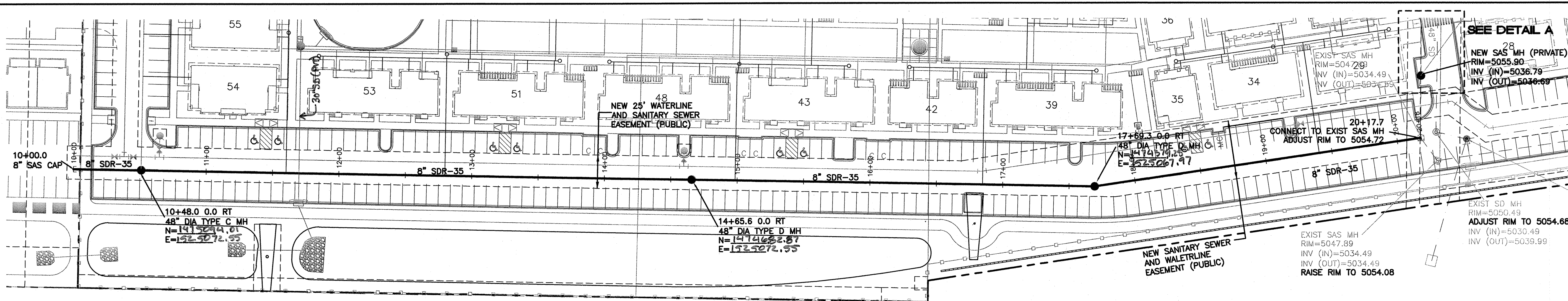
I, Ronald R. Bohannon, of the firm of Tierra West LLC, a Registered Professional Engineer in the State of New Mexico, do hereby certify, to the best of my knowledge and belief, that the infrastructure installed as part of this project has been inspected by me or by a qualified person under my direct supervision and has been constructed in accordance with the plans and specifications approved by the City Engineer and that the original design intent of the approved plans has been met, except as noted by me on the as-built construction drawings. This Certification is based on site inspections by me, or personnel under my direction with survey information provided by Thomas Johnston, of Wayjohn Surveys, NMPs number 14269.



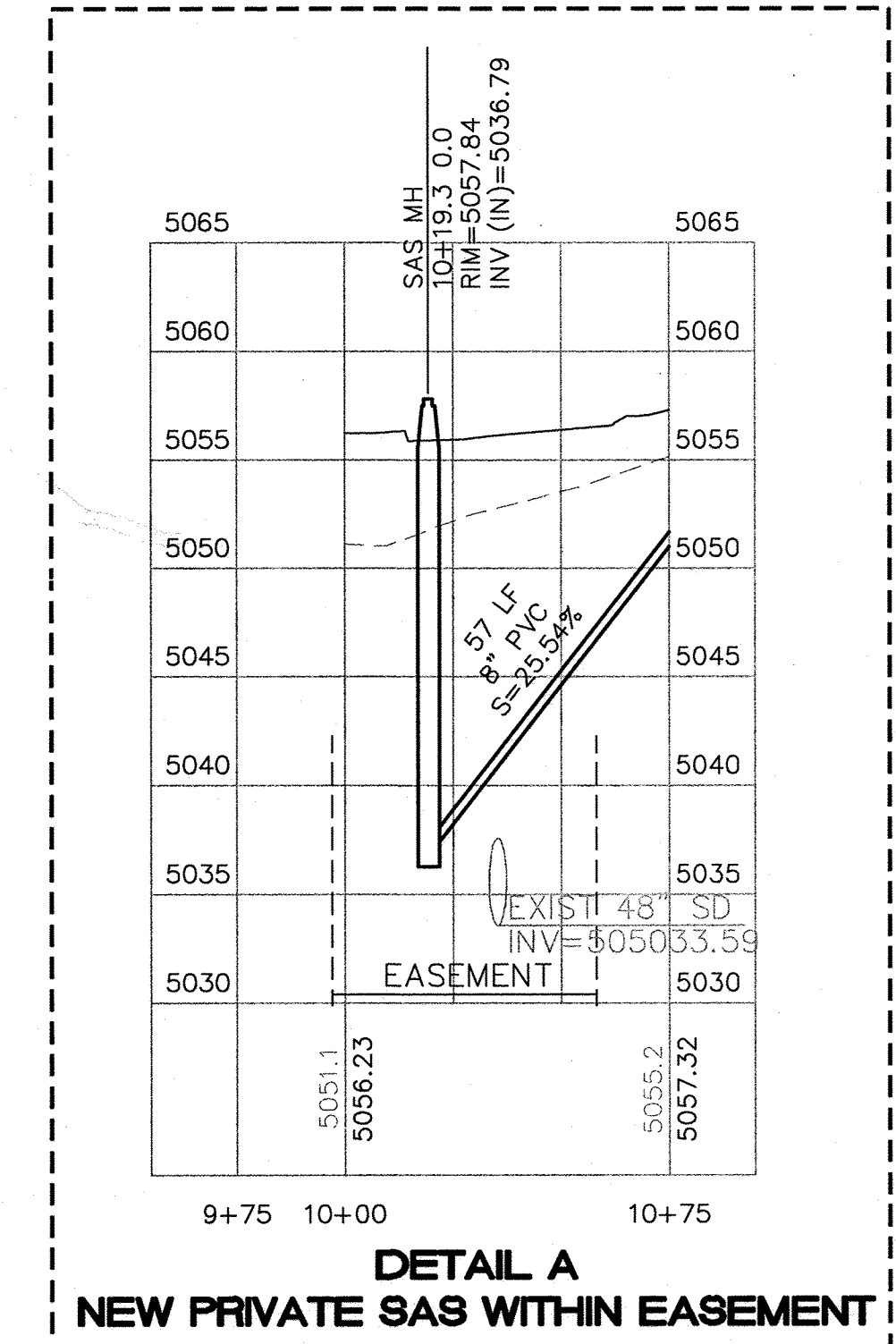
TIERRA WEST, LLC
5571 MIDWAY PARK PLACE NE
ALBUQUERQUE, NEW MEXICO 87109
(505) 858-3100
www.tierrawestllc.com

CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT ENGINEERING GROUP	
TITLE: CAPSTONE STUDENT HOUSING WATERLINE SOUTH SIDE AND SOUTHEAST SIDE	
DESIGN REVIEW COMMITTEE APPROVED OCT 07 2013 DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL APPROVED OCT 11 2013 CITY ENGINEER
CITY PROJECT NO. 643182	ZONE MAP NO. M-15-Z
DESIGNED BY: JW DATE: June, 2013	CHECKED BY: RRB DATE: June, 2013
DRAWN BY: pm DATE: June, 2013	JOB NO.: 2011064
SHEET 8 OF 14	

AS BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL	
CONTRACTOR	DATE	A.G.R.S. MONUMENT	DATE	FIELD NOTES	DATE		
WORK	DATE	STANDARD N.M.S.H.C. BRASS TABLET	DATE	BY	NO.		
INSPECTOR'S ACCEPTANCE	DATE	NEW MEXICO STATE PLANE COORDINATES	DATE				
ACCEPTANCE BY	DATE	(CENTRAL ZONE-N.A.D. 1983)	DATE				
DRAWINGS	DATE	N=1,477,335.008	DATE				
VERIFIED BY	DATE	E=1,524,161.952	DATE				
RECORDED BY	DATE	PUBLISHED EL=5041.300 (NAVD 1989)	DATE				
		GROUND TO GRID FACTOR=0.999578244					
		DELTA ALPHA ANGLE=01323.37"					



- NOTES:**
- SANITARY SEWER SERVICE CONNECTION PER COA STD DWG 2125.
 - ALL FIRE HYDRANTS ARE TO BE BUILT WITH MECH RESTRAINTS PER COA STANDARDS.
 - ALL EXISTING UTILITY CONNECTION LOCATIONS AND INVERTS MUST BE FIELD VERIFIED PRIOR TO AND CONSTRUCTION OF UTILITIES.
 - ALL EXCAVATION, TRENCHING AND SHORING ACTIVITIES MUST BE CARRIED-OUT IN ACCORDANCE WITH OSHA 29 CFR 1926.650 SUBPART P.
 - ALL WATERLINES ARE C900 PVC (DR18) UNLESS OTHERWISE NOTED.
 - ALL SANITARY SEWER LINES ARE TO BE SDR35 UNLESS OTHERWISE NOTED.



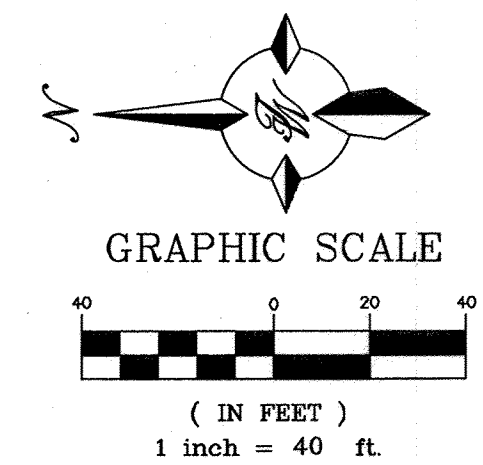
- LEGEND**
- CURB & GUTTER
 - BOUNDARY LINE
 - EASEMENT
 - SIDEWALK
 - EXISTING CURB & GUTTER
 - EXISTING SAS MANHOLE
 - EXISTING FIRE HYDRANT
 - EXISTING POWER POLE
 - EXISTING OVERHEAD UTILITIES
 - EXISTING SANITARY SEWER LINE
 - EXISTING WATER LINE
 - EXISTING STORM SEWER LINE
 - PROPOSED METER
 - PROPOSED VALVE W/BOX
 - PROPOSED FIRE HYDRANT
 - PROPOSED SAS MANHOLE

NOTE
SEE SHEET 6 FOR WATERLINE IN THIS AREA

CERTIFICATE OF SUBSTANTIAL COMPLIANCE ON PLANS

I, Ronald R. Bohannon, of the firm of Tierra West LLC, a Registered Professional Engineer in the State of New Mexico, do hereby certify, to the best of my knowledge and belief, that the infrastructure installed as part of this project has been inspected by me or by a qualified person under my direct supervision and has been constructed in accordance with the plans and specifications approved by the City Engineer and that the original design intent of the approved plans has been met, except as noted by me on the as-built construction drawings. This Certification is based on site inspections by me, or personnel under my direction with survey information provided by Thomas Johnston, of Wayjohn Surveys, NMPs number 14260.

(Professional Engineer Seal)



TIERRA WEST, LLC
5571 MIDWAY PARK PLACE NE
ALBUQUERQUE, NEW MEXICO 87109
(505) 858-3100
www.tierrawestllc.com

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: CAPSTONE STUDENT HOUSING
SANITARY SEWER - PUBLIC

DESIGN REVIEW COMMITTEE
APPROVED OCT 07 2013
DESIGN REVIEW COMMITTEE

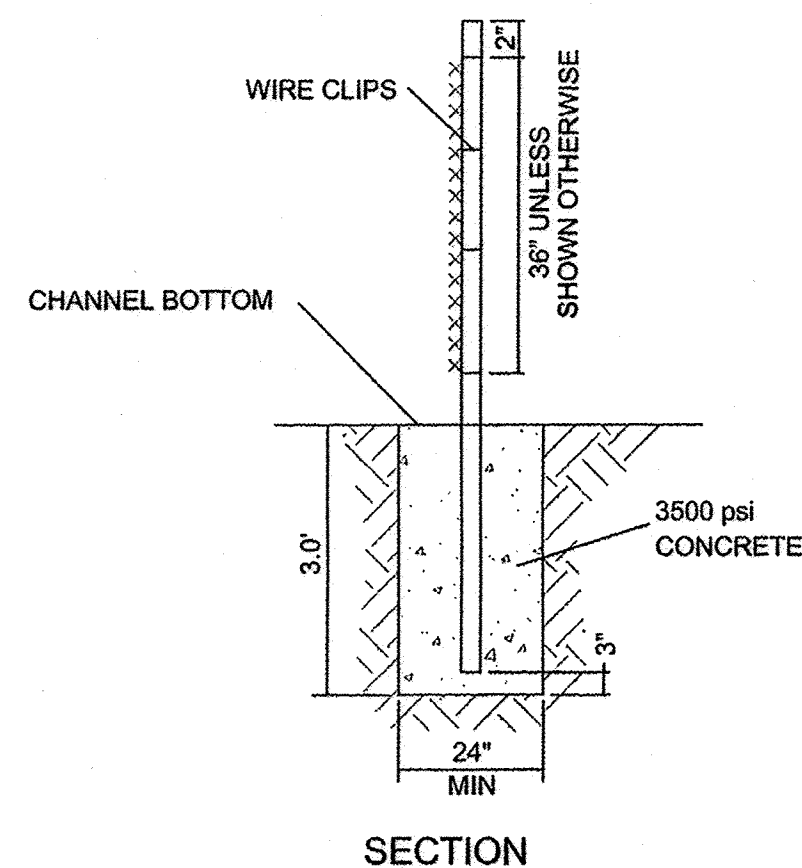
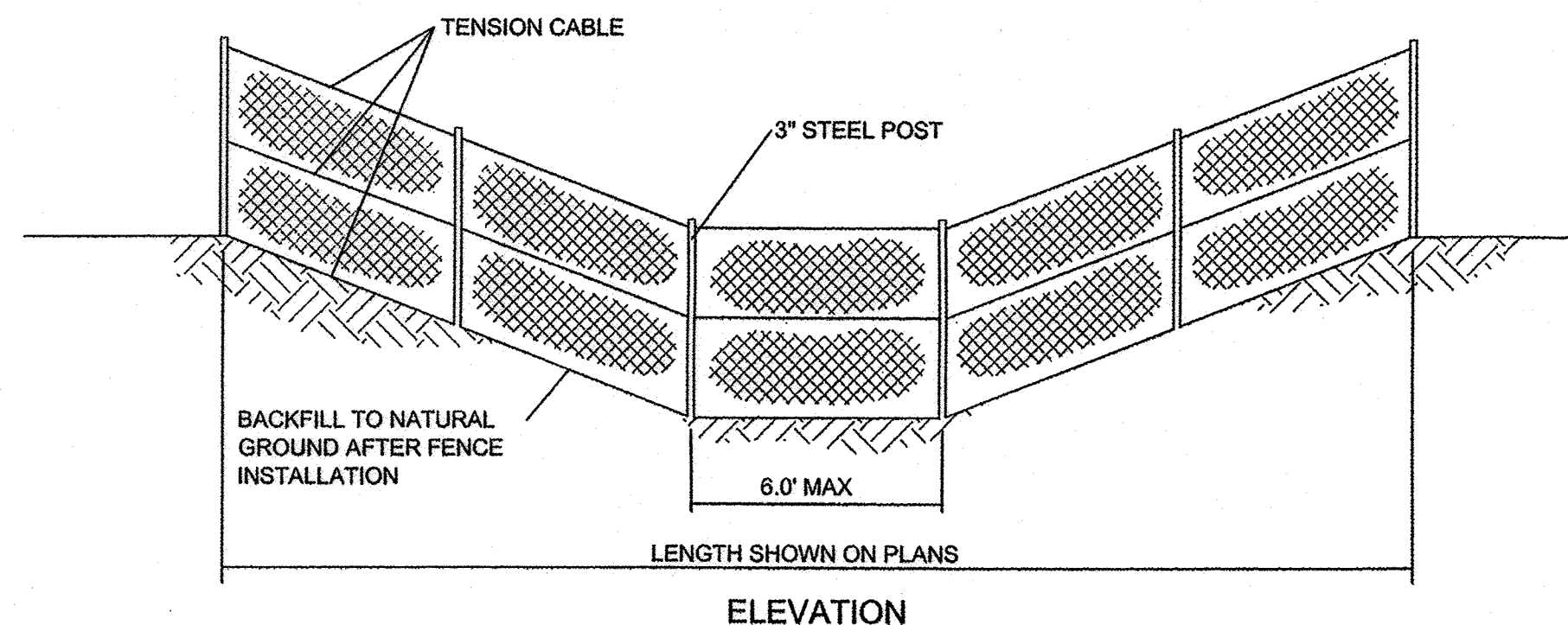
CITY ENGINEER APPROVAL
APPROVED OCT 11 2013
CITY ENGINEER

LAST DESIGN UPDATE

MO./DAY/YR.

CITY PROJECT NO. 643182 **ZONE MAP NO.** M-15-Z **SHEET** 9 **OF** 14

DESIGNED BY: JW **DATE:** June, 2013
DRAWN BY: pm **DATE:** June, 2013
DRAWN NAME: 2011064-WATER-PP **JOB NO.:** 2011064
CHECKED BY: RRB **DATE:** June, 2013

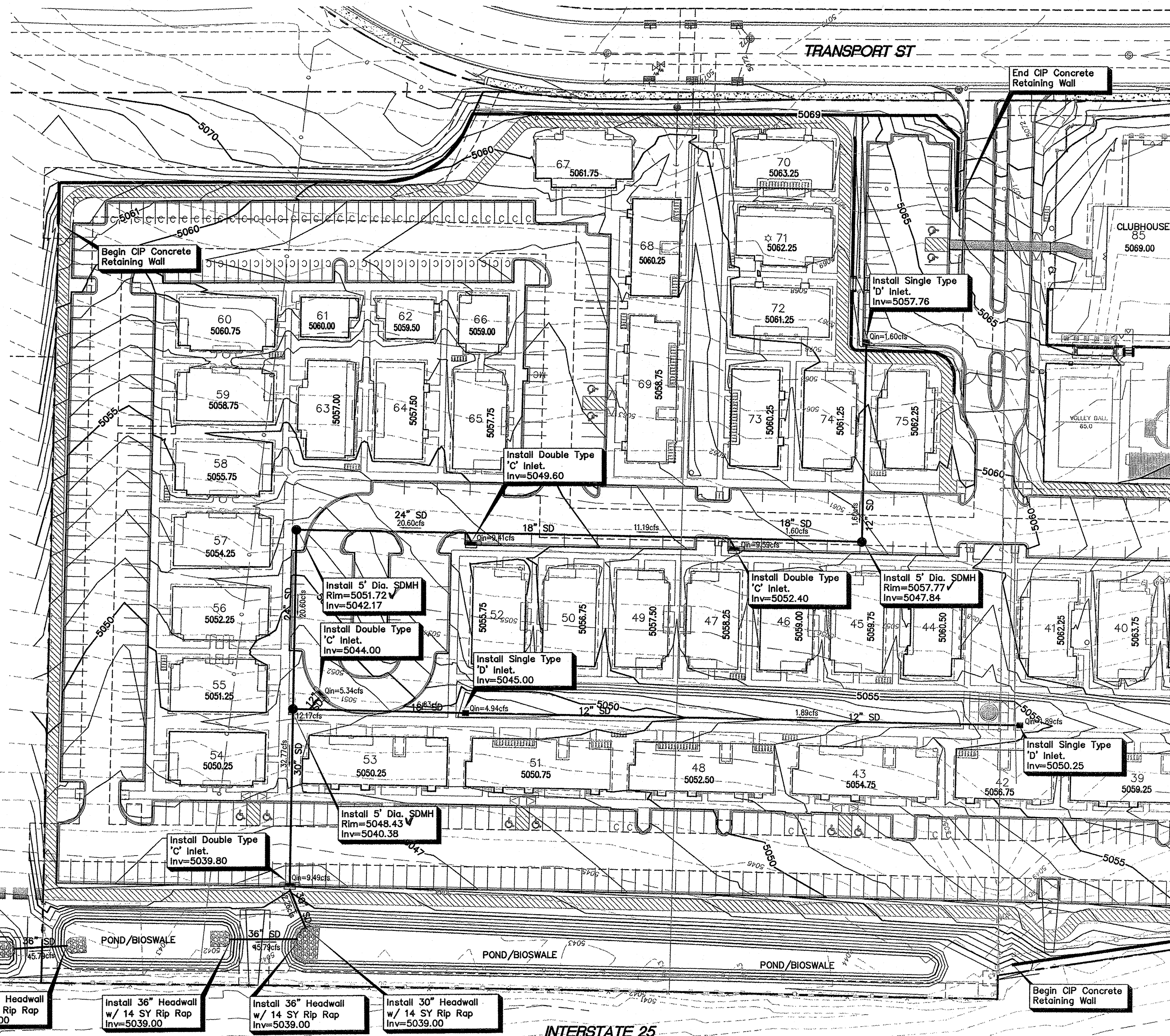


DEBRIS FENCE DETAIL

NTS

NOTES

1. FENCE FABRIC SHALL BE 2" MESH 9 GAGE GALVANIZED WIRE, CHAINLIKE PLACED ON THE UPSTREAM SIDE OF THE POSTS AND TENSION CABLES
2. TENSION CABLE SHALL BE 5/16" DIA STEEL AT 18" C/C SECURED AT ENDS WITH CLAMPS. SECURE FENCE TO CABLE WITH NO 12 GALVANIZED STEEL WIRE LOOPED AT 6" C/C
3. POSTS SHALL BE 3" DIA STEEL PIPE, 5.79 LB/FT. FILL MORTAR AFTER PLACING
4. FENCE FABRIC SHALL BE SECURED TO POSTS WITH 9 GAGE WIRE CLIPS AT 9" C/C

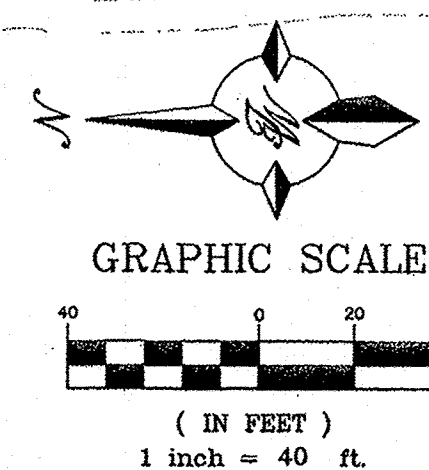


EROSION CONTROL NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.
2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.
4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL ACCEPTANCE OF ANY PROJECT.

NOTICE TO CONTRACTORS

1. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONNECTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
3. BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
4. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
5. SOURCE OF TOPO IS ALTA/ACSM LAND TITLE SURVEY OF LOT 2 HARMS INDUSTRIAL PARK PREPARED BY PRECISION SURVEYS, INC DATED JANUARY 11, 2012.
6. STORM WATER RUNOFF WILL BE PASSIVELY HARVESTED ALONG THE WEST, SOUTH AND EAST PROPERTY LINES WITHIN LANDSCAPED AREAS IN COMPLIANCE WITH WATER CONSERVATION ORDINANCE REQUIREMENTS.

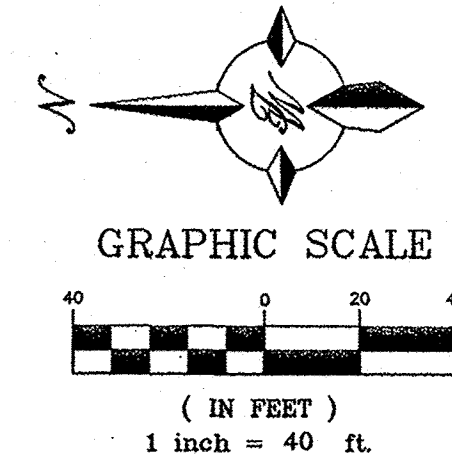
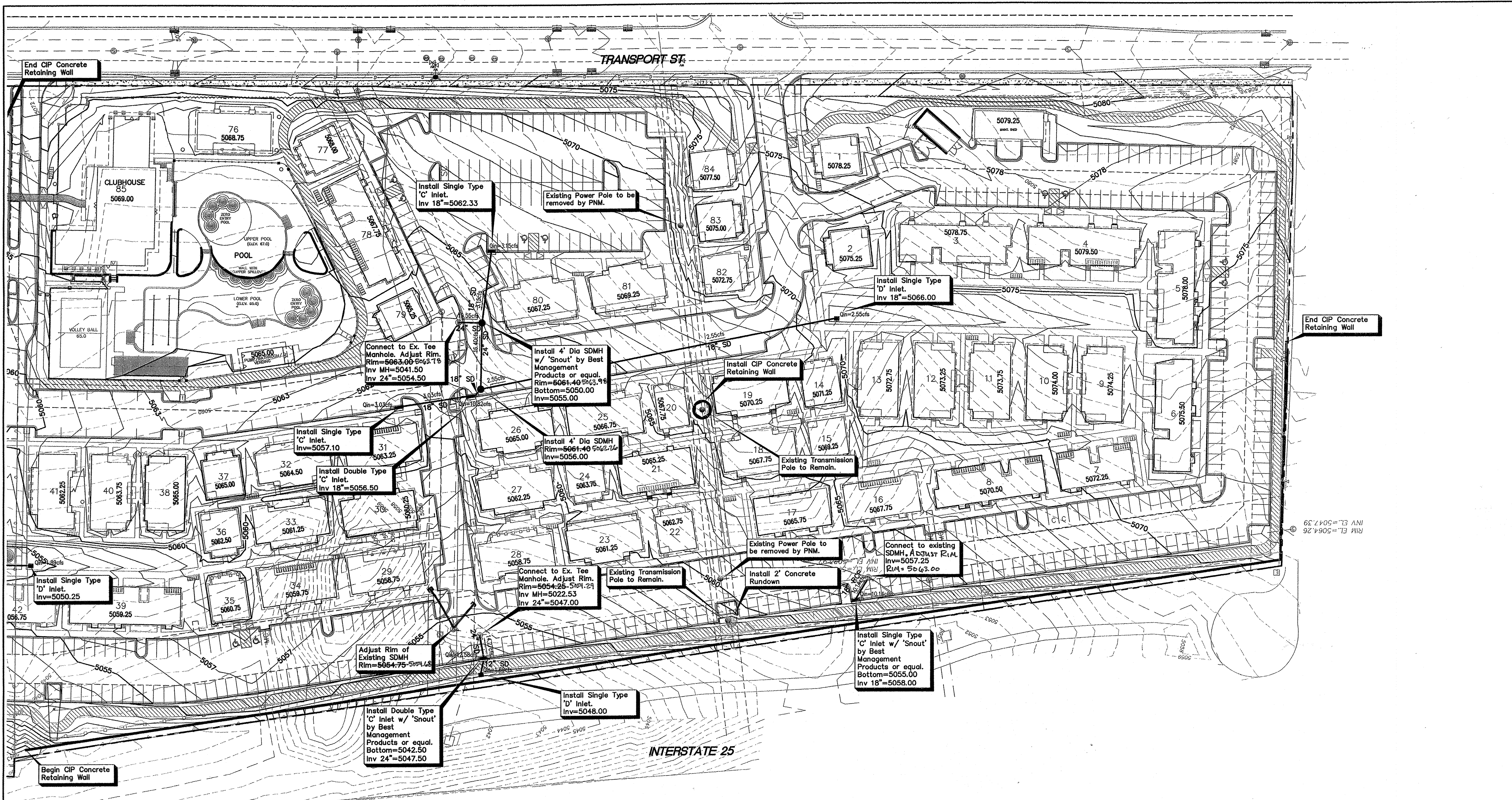


CAUTION:

ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS, PRIOR TO STARTING THE WORK. ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.

FOR REFERENCE ONLY

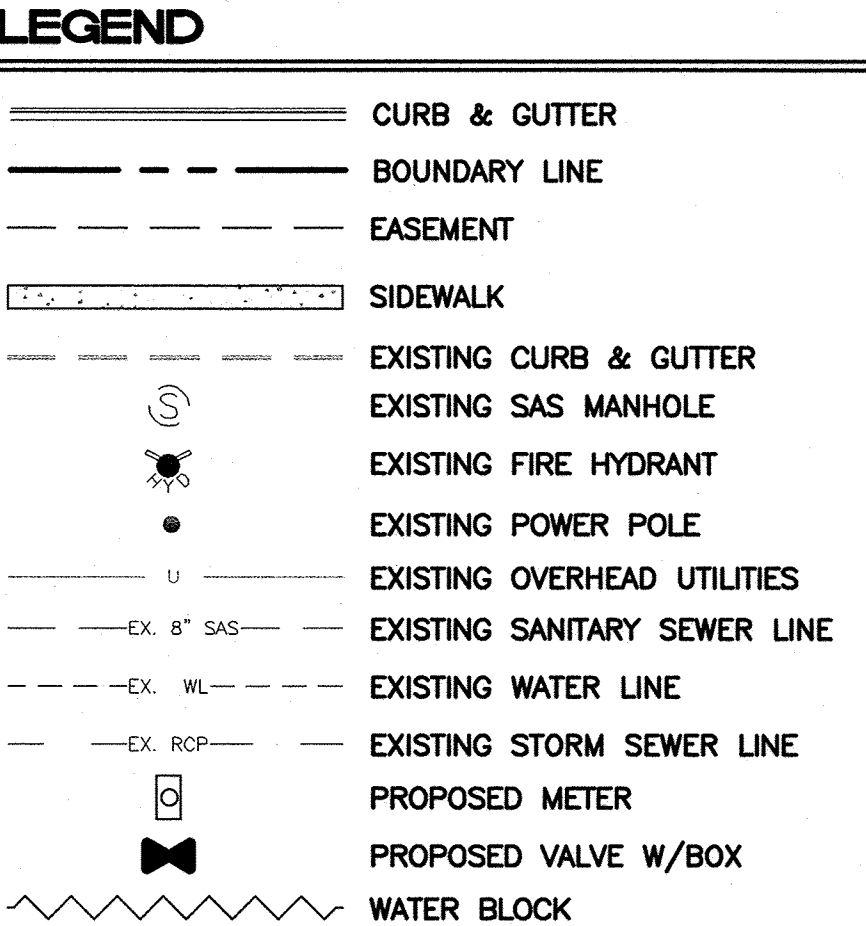
ENGINEER'S SEAL JEFFREY T. WOOTEN P.E. #16892	CAPSTONE STUDENT HOUSING ALBUQUERQUE, NM	DRAWN BY SH
	GRADING PLAN Sheet 1	DATE 8-28-13 DRAWING 2011064-CR
TERRA WEST, LLC 5571 MIDWAY PARK PL NE ALBUQUERQUE, NEW MEXICO 87109 (505) 858-3100 www.tierrawestllc.com		SHEET # 05A JOB # 2011064



CAUTION:
ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS. PRIOR TO STARTING THE WORK, ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.

FOR REFERENCE ONLY

	ENGINEER'S SEAL	CAPSTONE STUDENT HOUSING ALBUQUERQUE, NM	DRAWN BY SH
		GRADING PLAN Sheet 2	DATE 8-28-13
			DRAWING 2011064-GR
			SHEET # 66B
TIERRA WEST, LLC 5571 MIDWAY PARK PL. NE ALBUQUERQUE, NEW MEXICO 87109 (505) 858-3100 www.tierrowestllc.com		JOB # 2011064	



NOTE
SEE SHEET 4 OF 14 FOR TRANSPORT STREET UTILITY
IMPROVEMENTS

KEYED NOTES

- ① UNIDIRECTIONAL ACCESSIBLE RAMP PER COA STD DWG 2426
- ② 6" VALLEY GUTTER PER COA STD DWG 2420
- ③ 8" STD CURB AND GUTTER PER COA STD DWG 2415A
- ④ 5' SIDEWALK PER COA STD DWG 2430
- ⑤ TYPE "E" CURB RAMP PER COA STD DWG 2441
- ⑥ PROVIDE 6:1 TIE IN GRADES TO EXISTING ELEVATION
- ⑦ REMOVE EXISTING WATER METER BOX *N/A*
- ⑧ INSTALL CONCRETE PAD

QUARTER POINTS

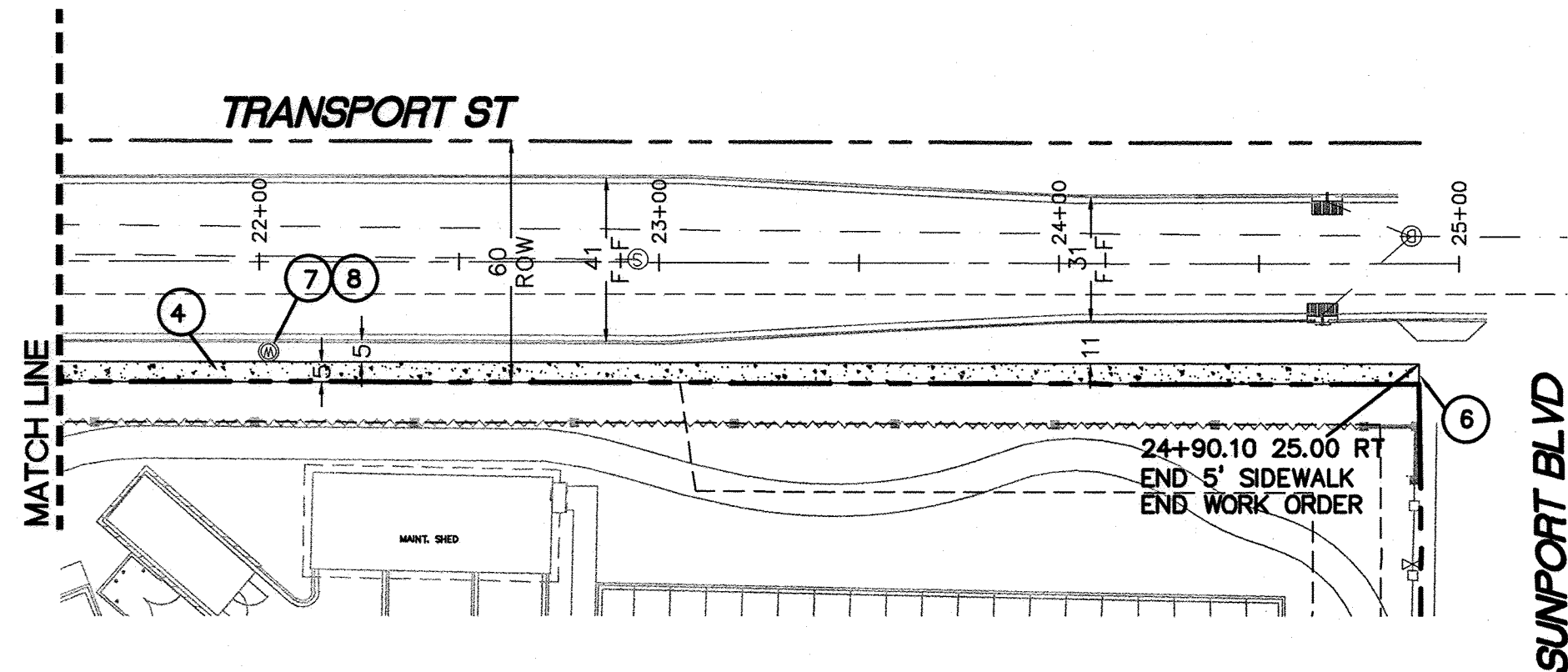
C1	FL	ELEV.
	A	5071.64
	B	5071.73
	C	5071.82

C2	FL	ELEV.
	D	5071.34
	E	5071.18
	F	5071.02

C3	FL	ELEV.
	A	5077.19
	B	5077.38
	C	5077.56

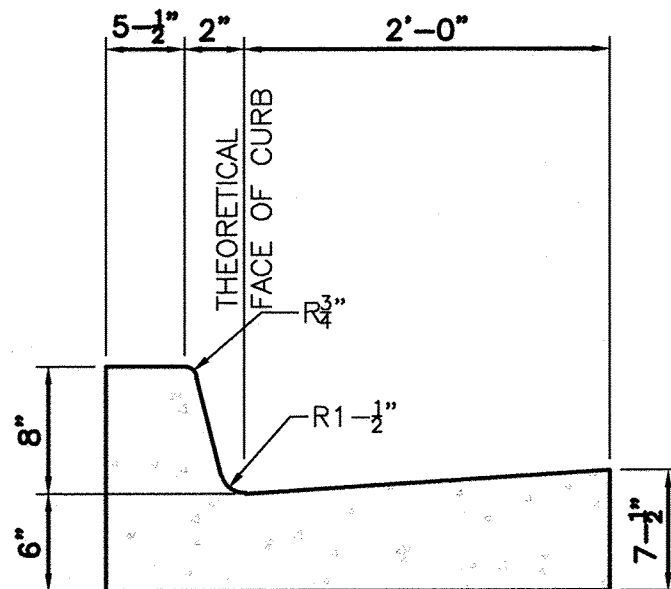
C4	FL	ELEV.
	D	5078.35
	E	5078.30
	F	5078.25

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C1	91°01'32"	25.00	39.72
C2	88°50'35"	25.00	38.77
C3	83°10'44"	25.00	36.29
C4	96°49'16"	25.00	42.25

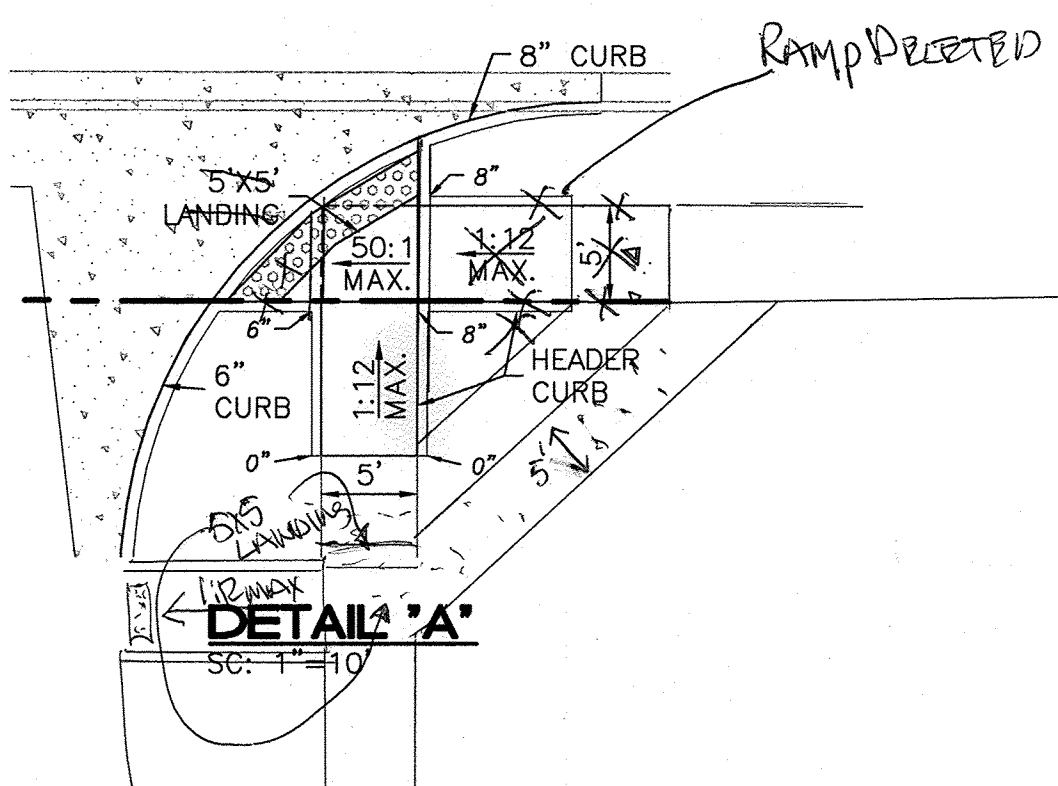
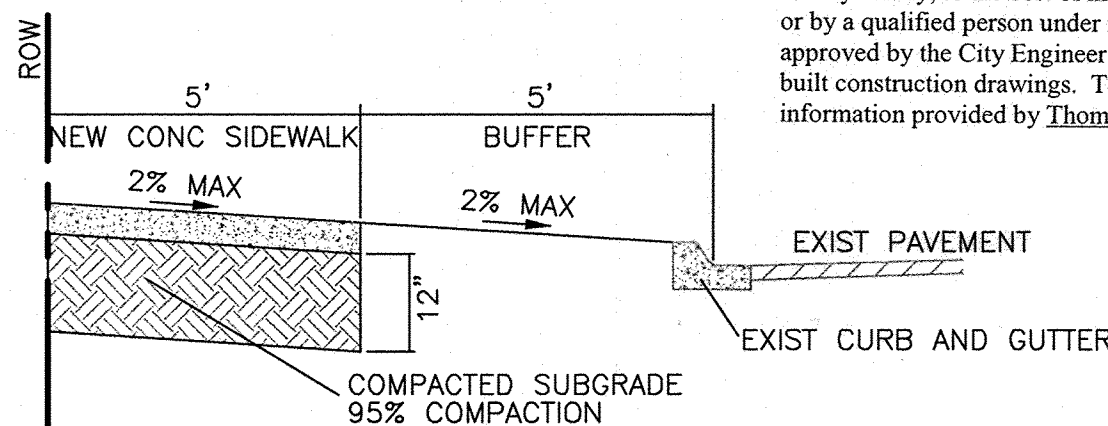


RAMP NOTES:

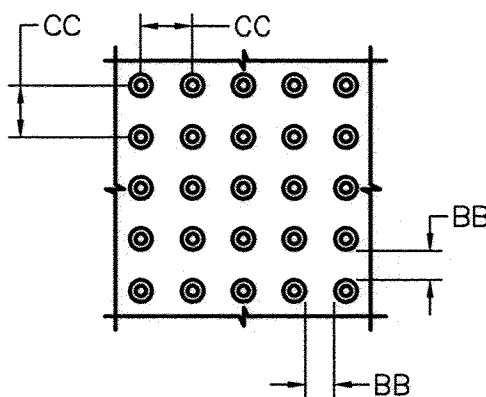
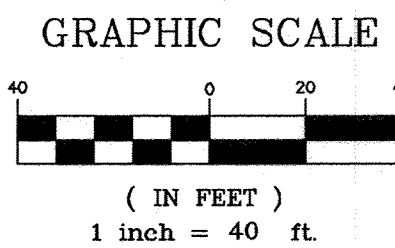
1. THE SURFACE OF RAMP AND SIDES SHALL HAVE A TRANSVERSE BROOMED SURFACE TEXTURE ROUGHER THAN THE SURROUNDING SIDEWALK.
2. DESIGN PER ADA GUIDELINES.
3. SUBMIT SPECIFICATIONS TO CONSTRUCTION ENGINEER FOR EVALUATION PRIOR TO CONSTRUCTION.



SECTION A-A

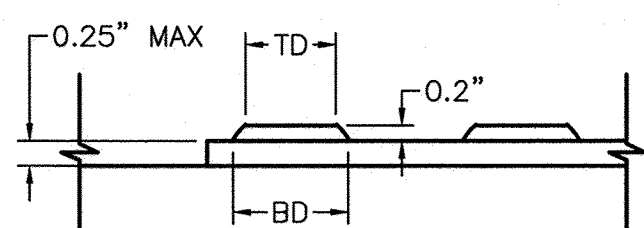


CAUTION:
ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY THE CITY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS, PRIOR TO STARTING THE WORK. ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.



DOME SPACING

CC - CENTER TO CENTER SPACING 2.35"
BB - BASE TO BASE SPACING 1.48" MIN



DOVE SECTION

BD - BASE DIAMETER 0.9" MIN
TD - TOP DIAMETER 50% OF BD MIN TO
65% OF BD MAX

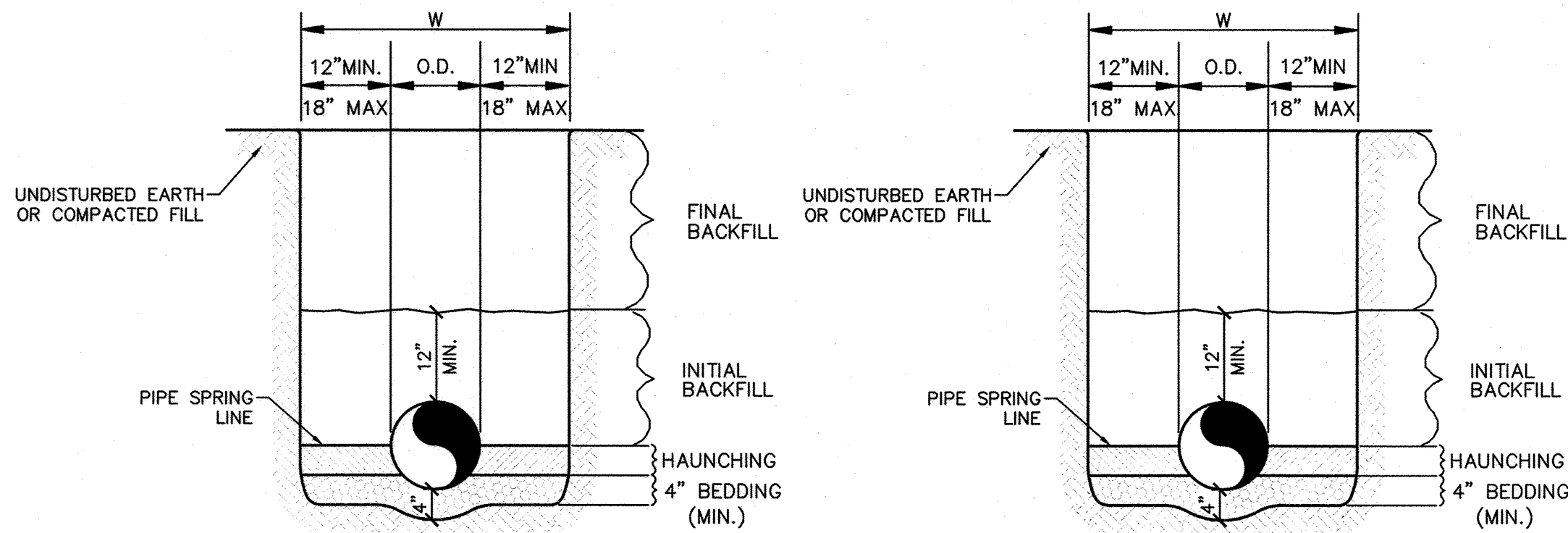
CURB GENERAL NOTES:

1. ALL CURBS TO BE CONSTRUCTED OF PORTLAND CEMENT CONCRETE, PER COA SPECIFICATIONS.
2. PROVIDE CONTRACTION JTS. 12" MAX., SPACING, 1/2 EXP. JTS. AT CURB RETURNS AND AT A MAX. SPACING OF 120" BETWEEN CURB RETURNS AND EACH SIDE OF SEPARATELY CONSTRUCTED DRIVEWAYS. CONTRACTION JTS., SHALL BE EITHER SAWED OR TOOLED A MINIMUM OF 1" DEEP, FINISHED FACES.
3. ALL EDGES SHALL BE EDGED WITH A 3/8" RADIUS EDGING TOOL.
4. 1/4" ISOLATION JOINT SHALL BE PLACED BETWEEN SIDEWALK AND CURB WHEN CAST ADJACENT TO EACH OTHER.

8" STANDARD CURB / GUTTER

NTS

[illegible]



WATER LINE

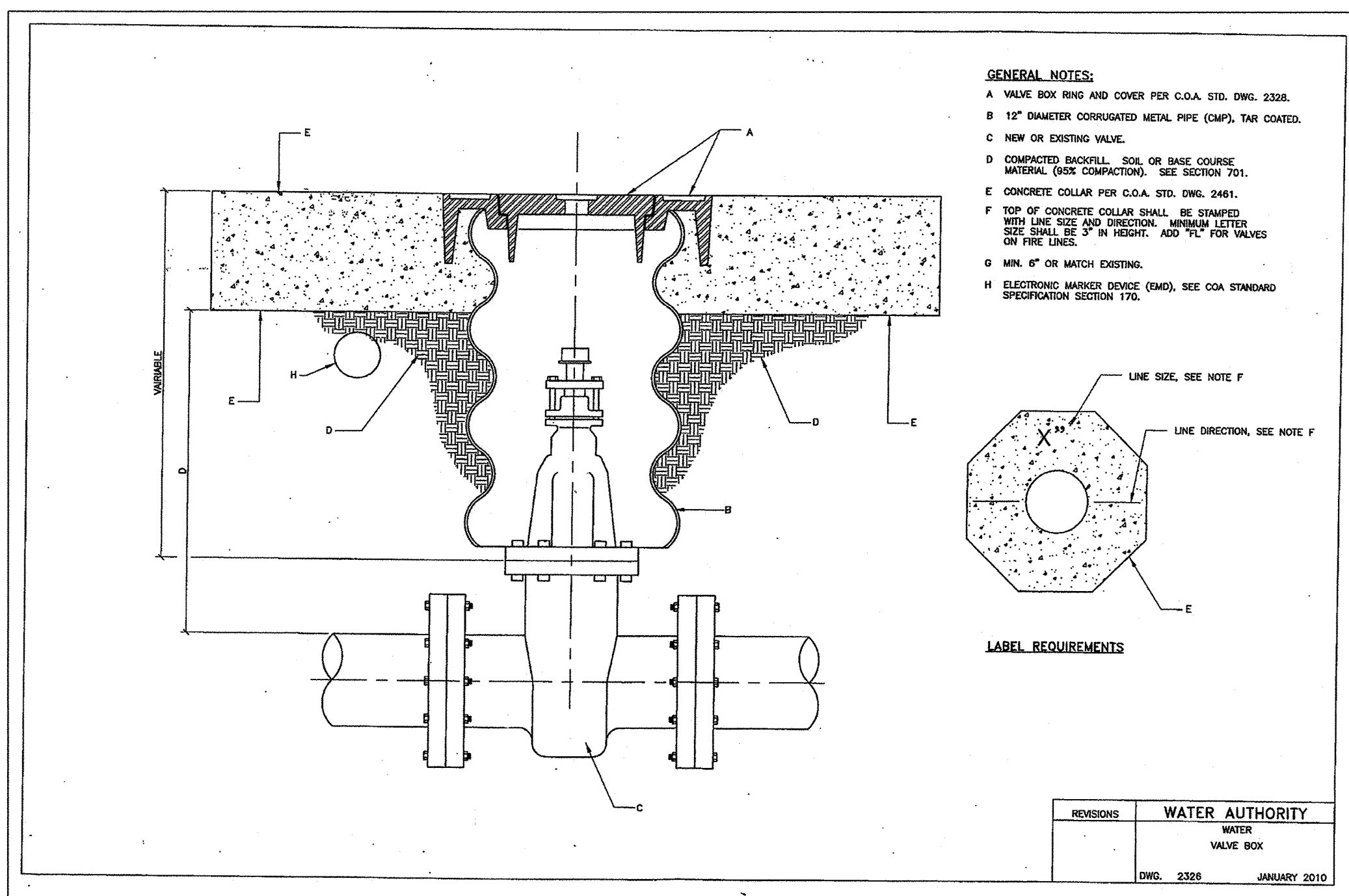
SANITARY SEWER

GENERAL NOTES

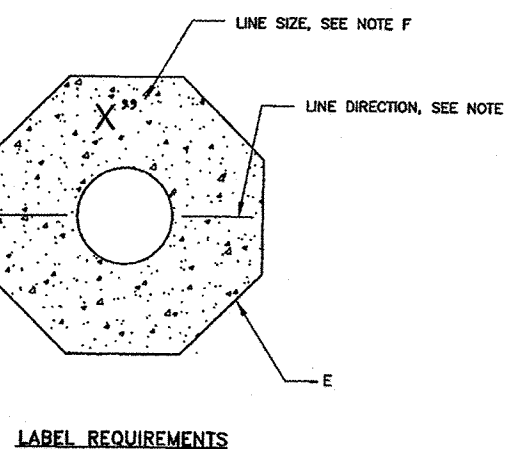
- BEDDING SHALL BE CLASS I-A WORKED BY HAND, IF GROUNDWATER IS ANTICIPATED, THEN BEDDING SHALL BE CLASS I-B COMPACTED TO 85% STANDARD PROCTOR. (SEE SPECIFICATIONS FOR GRADATION)
- HAUNCHING SHALL BE WORKED AROUND THE PIPE BY HAND TO ELIMINATE VOIDS AND SHALL BE CLASS I-A OR CLASS I-B OR CLASS II COMPACTED TO 85% PROCTOR.
- INITIAL BACKFILL SHALL BE CLASS I-A WORKED BY HAND, OR CLASS I-B OR CLASS II COMPACTED TO 85% STANDARD PROCTOR.
- INITIAL BACKFILL NOT UNDER PAVED AREAS CAN BE COMPACTED TO 90% STANDARD PROCTOR.
- FINAL BACKFILL SHALL BE CLASS I, OR II COMPACTED AS NOTED IN NOTES 3. AND 4.
- FINAL BACKFILL NOT UNDER PAVED AREAS CAN BE TYPE II COMPACTED TO 95% STANDARD PROCTOR.
- ALL MATERIALS ARE CLASSIFIED IN ACCORDANCE WITH ASTM D 2321-89.
- ALL MATERIALS SHALL BE INSTALLED IN MAXIMUM 8" LOOSE LIFTS IN ACCORDANCE WITH ASTM D 698.
- FILL SALVAGED FROM EXCAVATION SHALL BE FREE OF DEBRIS, ORGANICS AND ROCKS LARGER THAN 3".
- ALL TRENCH EXCAVATIONS SHALL BE SLOPED, SHORED, SHEETED, BRACED, OR OTHERWISE SUPPORTED IN COMPLIANCE WITH OSHA REGULATIONS AND LOCAL ORDINANCES. (SEE SPECIFICATIONS)

UTILITY TRENCH AND BEDDING DETAIL

NTS



- GENERAL NOTES:
- VALVE BOX RING AND COVER PER C.O.A. STD. DWG. 2326.
 - 12" DIAMETER CORRUGATED METAL PIPE (CMP), TAR COATED.
 - NEW OR EXISTING VALVE.
 - COMPACTED BACKFILL, SOIL OR BASE COURSE MATERIAL (95% COMPACTION). SEE SECTION 701.
 - CONCRETE COLLAR PER C.O.A. STD. DWG. 2461.
 - TOP OF CONCRETE COLLAR SHALL BE STAMPED WITH LINE SIZE AND DIRECTION. MINIMUM LETTER SIZE SHALL BE 1/4" IN HEIGHT. ADD "12" FOR VALVES ON PIPE LINES.
 - MIN. 6" OR MATCH EXISTING.
 - ELECTRONIC MARKER DEVICE (EMD), SEE C.O.A. STANDARD SPECIFICATION SECTION 170.



REVISIONS	WATER AUTHORITY
DWG. 2326	JANUARY 2010

THE FOLLOWING TABLES WERE CREATED USING EBAA IRON INC. SOFTWARE FOR RESTRAINING JOINTS WITH THESE CRITERIA:

DEPTH OF BURY: 3.0' MINIMUM
SAFETY FACTOR: 1.5 TO 1
PIPE MATERIAL: PVC
SOIL TYPE: GM/SM-SILTY GRAVEL/SILTY SAND, GRAVEL-SAND MIXTURES
TEST PRESSURE: 150 PSI
TRENCH TYPE 3: PIPE BEDDED IN 4" MINIMUM LOOSE SOIL BACKFILL LIGHTLY CONSOLIDATED TO TOP OF PIPE

THESE LENGTHS WILL BE AFFECTED IF THE TYPE OF MATERIAL, GREATER DEPTH OF BURY, ETC. CHANGES. THESE MUST BE RECALCULATED BY THE DESIGN ENGINEER PRIOR TO CONSTRUCTION.

RESTRAINED JOINT LENGTHS FOR TEES*						
SIZE	LENGTH ALONG RUN**					
	10'	8'	6'	4'	2'	0'
12x12x12	61	68	76	83	90	98
12x12x10	39	48	56	65	74	83
12x12x8	15	26	37	48	59	70
12x12x6	1	1	9	24	38	53
12x12x4	1	1	1	1	16	37
10x10x10	46	54	61	68	76	83
10x10x8	25	34	43	52	61	70
10x10x6	1	5	17	29	41	53
10x10x4	1	1	1	2	20	37
8x8x8	34	42	49	56	63	70
8x8x6	6	15	25	34	43	53
8x8x4	1	1	1	10	24	37
6x6x6	7	24	31	39	46	53
6x6x4	1	1	6	17	27	37

*RESTRAINTS ONLY PLACED ON THE BRANCH
**LENGTH ALONG RUN REFERS TO THE LENGTH OF PIPE ON EITHER SIDE OF THE TEE BEFORE THE NEXT JOINT.

RESTRAINED JOINT LENGTHS FOR HORIZONTAL BENDS, VALVES, AND DEAD ENDS (EACH SIDE)					
SIZE	HORIZONTAL BENDS				VALVES DEAD ENDS
	90°	45°	22-1/2°	11-1/4°	
12	45	19	9	4	102
10	38	16	8	4	86
8	32	13	6	3	72
6	25	10	5	2	55
4	18	7	4	1	39

RESTRAINED JOINT LENGTHS FOR REDUCERS***			
SIZE	L. SIDE	SIZE	L. SIDE
12x10	50	10x6	53
12x8	54	10x4	70
12x6	74	8x6	30
12x4	88	8x4	52
10x8	29	6x4	28

***RESTRAINTS ONLY PLACED ON LARGE SIDE

THE FOLLOWING TABLES WERE CREATED USING EBAA IRON INC. SOFTWARE FOR RESTRAINING JOINTS WITH THESE CRITERIA:

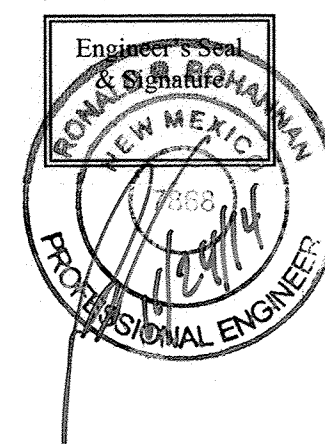
DEPTH OF BURY: 3.0' MINIMUM TO 6.0'
SAFETY FACTOR: 1.5 TO 1
PIPE MATERIAL: PVC
SOIL TYPE: GM/SM-SILTY GRAVEL/SILTY SAND, GRAVEL-SAND MIXTURES
TEST PRESSURE: 150 PSI
TRENCH TYPE 3: PIPE BEDDED IN 4" MINIMUM LOOSE SOIL BACKFILL LIGHTLY CONSOLIDATED TO TOP OF PIPE

THESE LENGTHS WILL BE AFFECTED IF THE TYPE OF MATERIAL, GREATER DEPTH OF BURY, ETC. CHANGES. THESE MUST BE RECALCULATED BY THE DESIGN ENGINEER PRIOR TO CONSTRUCTION.

RESTRAINED JOINT LENGTHS FOR VERTICAL OFFSETS/BENDS (EACH SIDE)				
SIZE	HORIZONTAL BENDS			
	90°	45°	22-1/2°	11-1/4°
12 UPPER LOWER	DON'T USE	42 10	20 5	10 2
10 UPPER LOWER	DON'T USE	36 8	17 4	8 2
8 UPPER LOWER	DON'T USE	30 7	14 3	7 2
6 UPPER LOWER	DON'T USE	23 5	11 3	5 1
4 UPPER LOWER	DON'T USE	16 4	8 2	4 1

CERTIFICATE OF SUBSTANTIAL COMPLIANCE ON PLANS

I, Ronald R. Bohannon, of the firm of Tierra West LLC, a Registered Professional Engineer in the State of New Mexico, do hereby certify, to the best of my knowledge and belief, that the infrastructure installed as part of this project has been inspected by me or by a qualified person under my direct supervision and has been constructed in accordance with the plans and specifications approved by the City Engineer and that the original design intent of the approved plans has been met, except as noted by me on the as-built construction drawings. This Certification is based on site inspections by me, or personnel under my direction with survey information provided by Thomas Johnston, of Wayjohn Surveys, NMPs number 14269



TIERRA WEST, LLC
5571 MIDWAY PARK PLACE NE
ALBUQUERQUE, NEW MEXICO 87109
(505) 858-3100
www.tierrawestllc.com

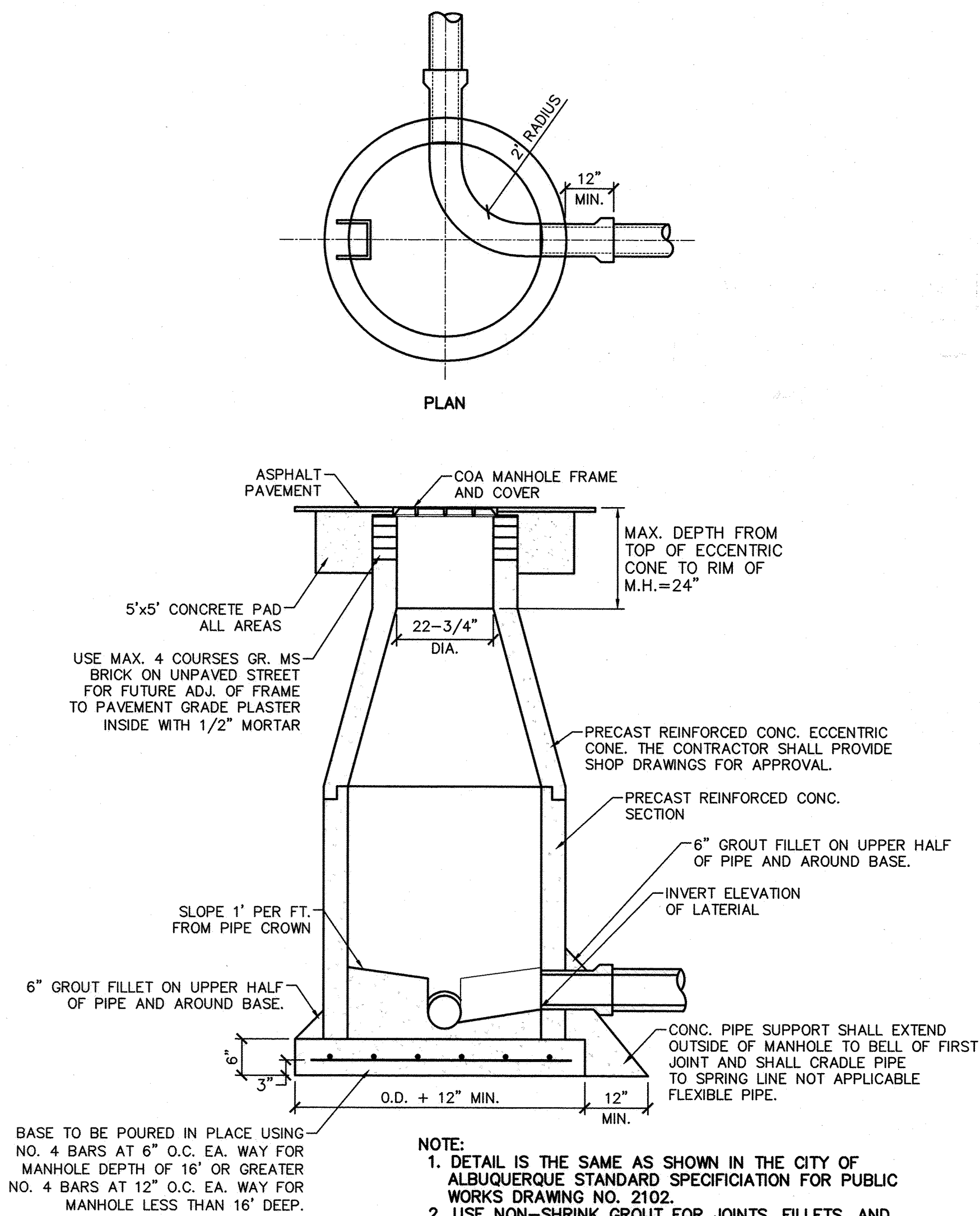
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

TITLE: **CAPSTONE STUDENT HOUSING**
CONSTRUCTION DETAILS

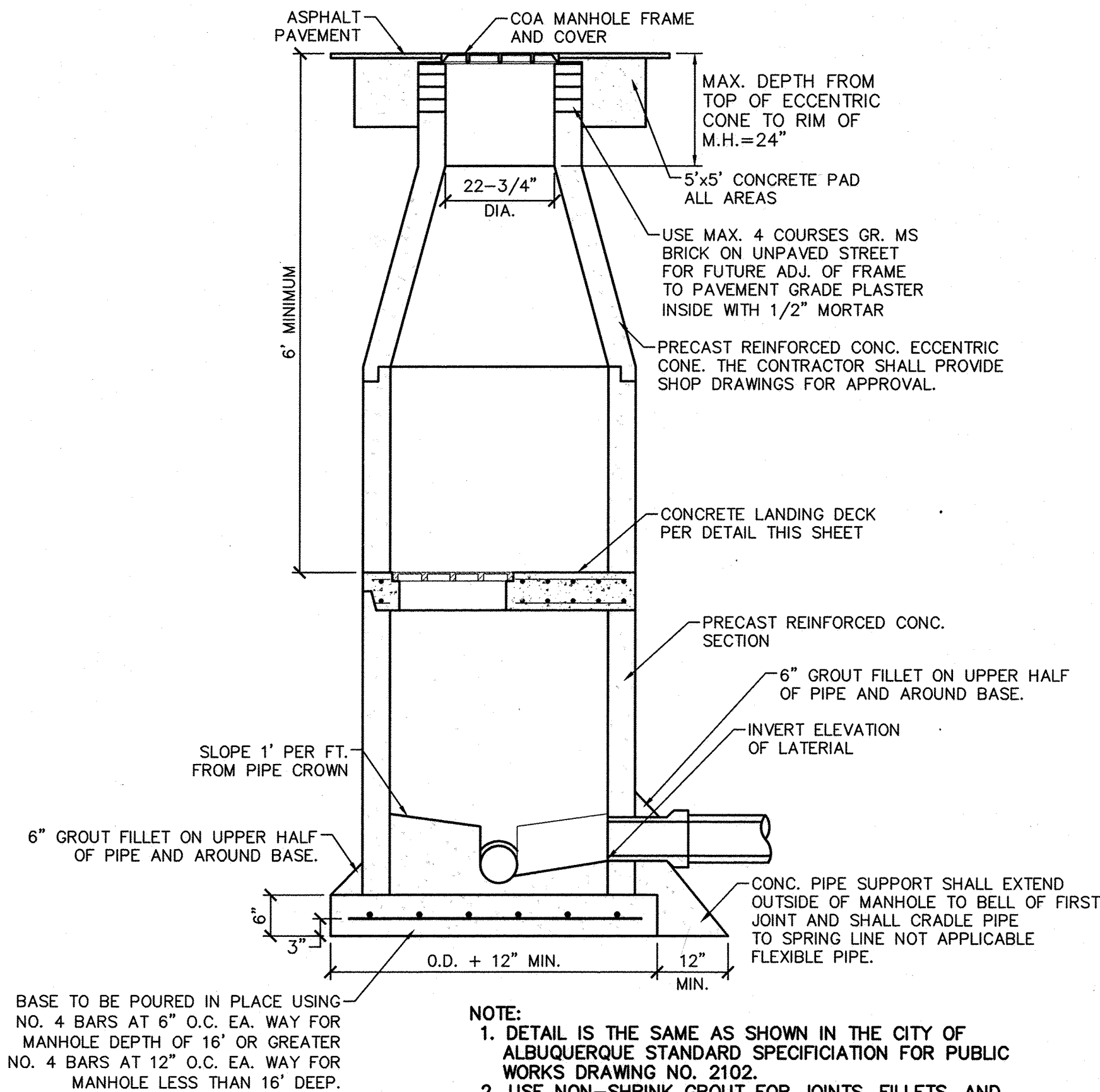
DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.
APPROVED OCT 07 2013 DESIGN REVIEW COMMITTEE	APPROVED OCT 11 2013 CITY ENGINEER			

CITY PROJECT NO. 643182 ZONE MAP NO. M-15-Z SHEET 13 OF 14

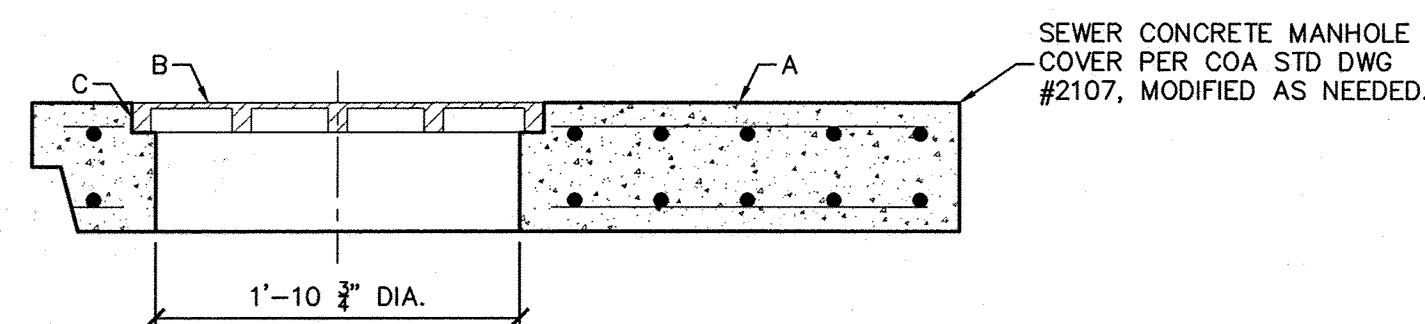
AS BUILT INFORMATION	BENCH MARKS	SURVEY INFORMATION	ENGINEER'S SEAL
CONTRACTOR: TIERRA WEST, LLC WORKED BY: RONALD R. BOHANNON INSPECTED BY: THOMAS JOHNSTON DATE: 10/11/2013 NEW MEXICO STATE PLANE COORDINATES (CENTRAL ZONE-N.A.D. 1983) N=1,477,335.008 E=1,524,151.952 PUBLISHED EL=5041.300 (NAVD 1989) GROUND TO GRID FACTOR=0.999678244 DELTA ALPHA ANGLE=-0.7323.37"	AGRS MONUMENT "L" 25'-30" STANDARD N.M.S.H.C. BRASS TABLET	DATE: 10/11/2013 BY: RONALD R. BOHANNON NO. 14269	 DESIGNED BY: JW DRAWN BY: pm DATE: June, 2013 DATE: June, 2013 JOB NO.: 2011064 DRAWN NAME: 2011064-DET CHECKED BY: RRB DATE: June, 2013



SEWER MANHOLE TYPE 'E' DETAIL
(LESS THAN 20' DEPTH)
NTS

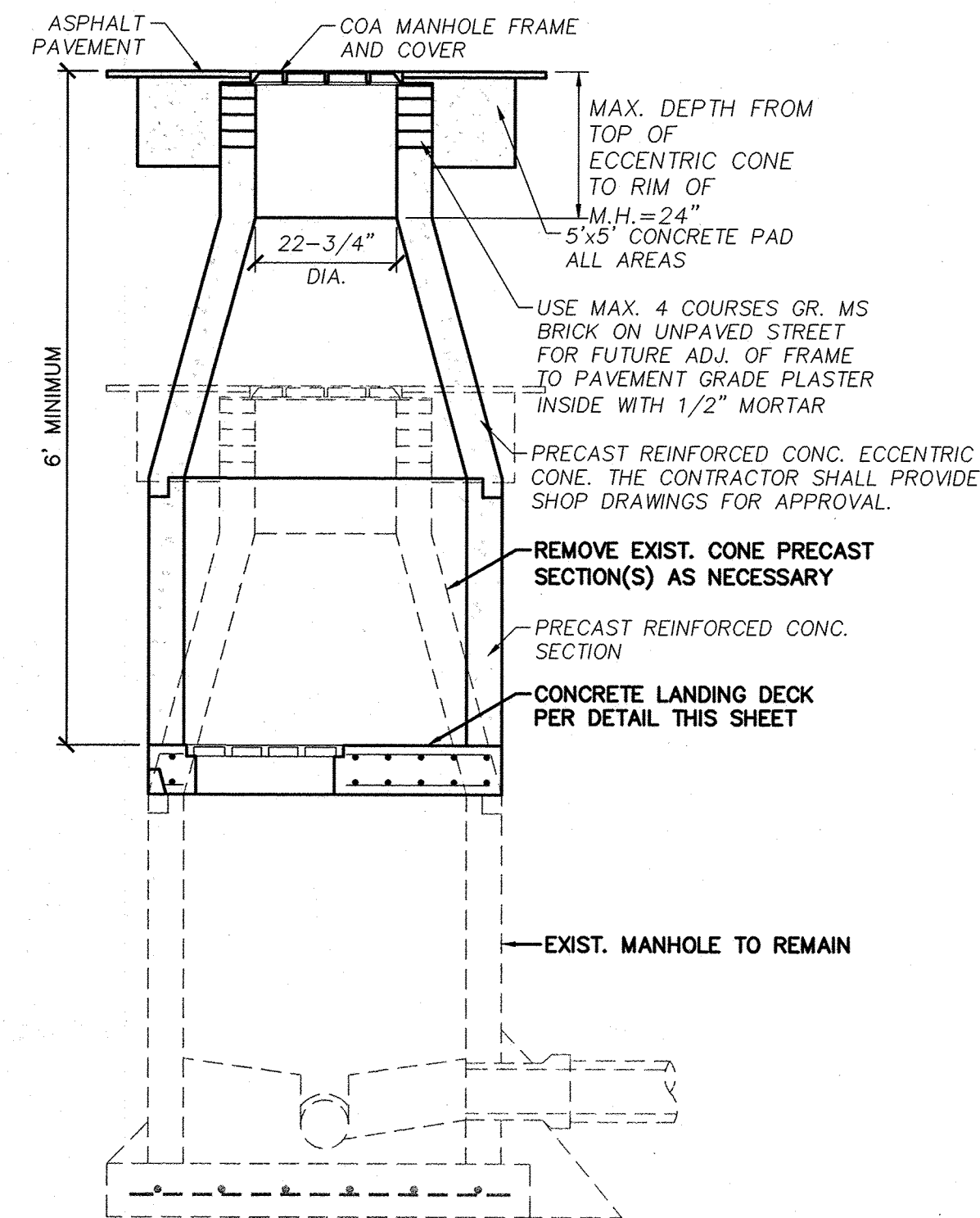


MODIFIED SEWER MANHOLE TYPE 'E' DETAIL
(GREATER THAN 20' DEPTH, NEW INSTALL)
NTS



- NOTE:
- A. PRECAST OR CAST-IN-PLACE REINFORCED CONCRETE MANHOLE COVER.
 - B. ROUND GRATE, RATED FOR PEDESTRIAN LANDING.
 - C. EMBEDDED MANHOLE FRAME.

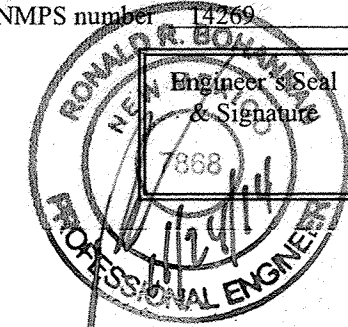
CONCRETE LANDING DECK
NTS



MODIFIED EXIST. SEWER MANHOLE TYPE 'E' DETAIL
(GREATER THAN 20' DEPTH, RAISED)
NTS

CERTIFICATE OF SUBSTANTIAL COMPLIANCE ON PLANS

I, Ronald R. Bohannon, of the firm of Tierra West LLC, a Registered Professional Engineer in the State of New Mexico, do hereby certify, to the best of my knowledge and belief, that the infrastructure installed as part of this project has been inspected by me or by a qualified person under my direct supervision and has been constructed in accordance with the plans and specifications approved by the City Engineer and that the original design intent of the approved plans has been met, except as noted by me on the as-built construction drawings. This Certification is based on site inspections by me, or personnel under my direction with survey information provided by Thomas Johnston, of Wayjohn Surveys, NMPS number 18269.



TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NEW MEXICO 87109 (505) 858-3100 www.tierrawestllc.com	
CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT ENGINEERING GROUP	
TITLE: CAPSTONE STUDENT HOUSING CONSTRUCTION DETAILS	
DESIGN REVIEW COMMITTEE APPROVED OCT 07 2013 DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL APPROVED OCT 11 2013 CITY ENGINEER
CITY PROJECT NO. 643182	ZONE MAP NO. M-15-Z
SHEET 14	OF 14

AS BUILT INFORMATION		BENCH MARKS		SURVEY INFORMATION		ENGINEER'S SEAL	
CONTRACTOR	DATE	AGRS. MONUMENT	DATE	FIELD NOTES	DATE	NO.	BY
WORK	DATE	STANDARD N.M.S.H.C. BRASS TABLET	DATE	NO.	DATE	NO.	BY
INSPECTED BY	DATE	NEW MEXICO STATE PLANE COORDINATES	DATE	NO.	DATE	NO.	BY
ACCEPTANCE BY	DATE	(CENTRAL ZONE-N.A.D. 1983)	DATE	NO.	DATE	NO.	BY
VERIFICATION BY	DATE	N=1,477,335.008	DATE	NO.	DATE	NO.	BY
DRAWINGS	DATE	E=1,524,161.952	DATE	NO.	DATE	NO.	BY
CORRECTED BY	DATE	PUBLISHED EL=5041.300 (NAD 1986)	DATE	NO.	DATE	NO.	BY
MICRO-FILM INFORMATION	DATE	GROUND TO GRID FACTOR=0.999678944	DATE	NO.	DATE	NO.	BY
RECORDED BY	DATE	DELTA ALPHA ANGLE=071323.37"	DATE	NO.	DATE	NO.	BY
NO.	DATE		DATE	NO.	DATE	NO.	BY