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PLANNING
SCANNED BY

PUBLIC IMPROVEMENT PLANS FOR

TENNYSON STREET AND SAN ANTONIO DRIVE UTILITY EXTENSIONS

ALBUQUERQUE, NEW MEXICO

MARCH 2011

PREPARED FOR:
ST. CHAD'S EPISCOPAL CHURCH
7171 TENNYSON STREET NORTHEAST
ALBUQUERQUE, NM 87122

PREPARED BY:
ISAACSON & ARFMAN, P.A.
128 MONROE ST. NE
ALBUQUERQUE, NM 87108

CERTIFICATE OF SUBSTANTIAL COMPLIANCE ON PLANS

I, Fred C. Arfman of the firm of Isaacson & Arfman, P.A., 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 and survey information provided by Tim Aldrich of the firm Aldrich Land Surveying, NMPS number 7719

Fred C. Arfman

NMPE No. 7322



SURVEYOR'S CERTIFICATION

"I, Timothy Aldrich, a duly qualified Registered Professional Land Surveyor under the laws of the State of New Mexico, do hereby certify that the 'as-built' information shown on these drawings was obtained from field construction and 'as-built' surveys performed by me or under my supervision, that the 'as-built' information shown on these drawings was added by me or under my supervision, and that this 'as-built' information is true and correct to the best of my knowledge and belief." Aldrich Land Surveying is not responsible for any of the design concepts, calculations, engineering or intent of the record drawings.

Timothy Aldrich, L.S. No. 7719

12/12/2011

BERNALILLO COUNTY APPROVAL

[Signature]

BERNALILLO COUNTY PUBLIC WORKS DIVISION
PWC0 20110009

5/10/11
DATE

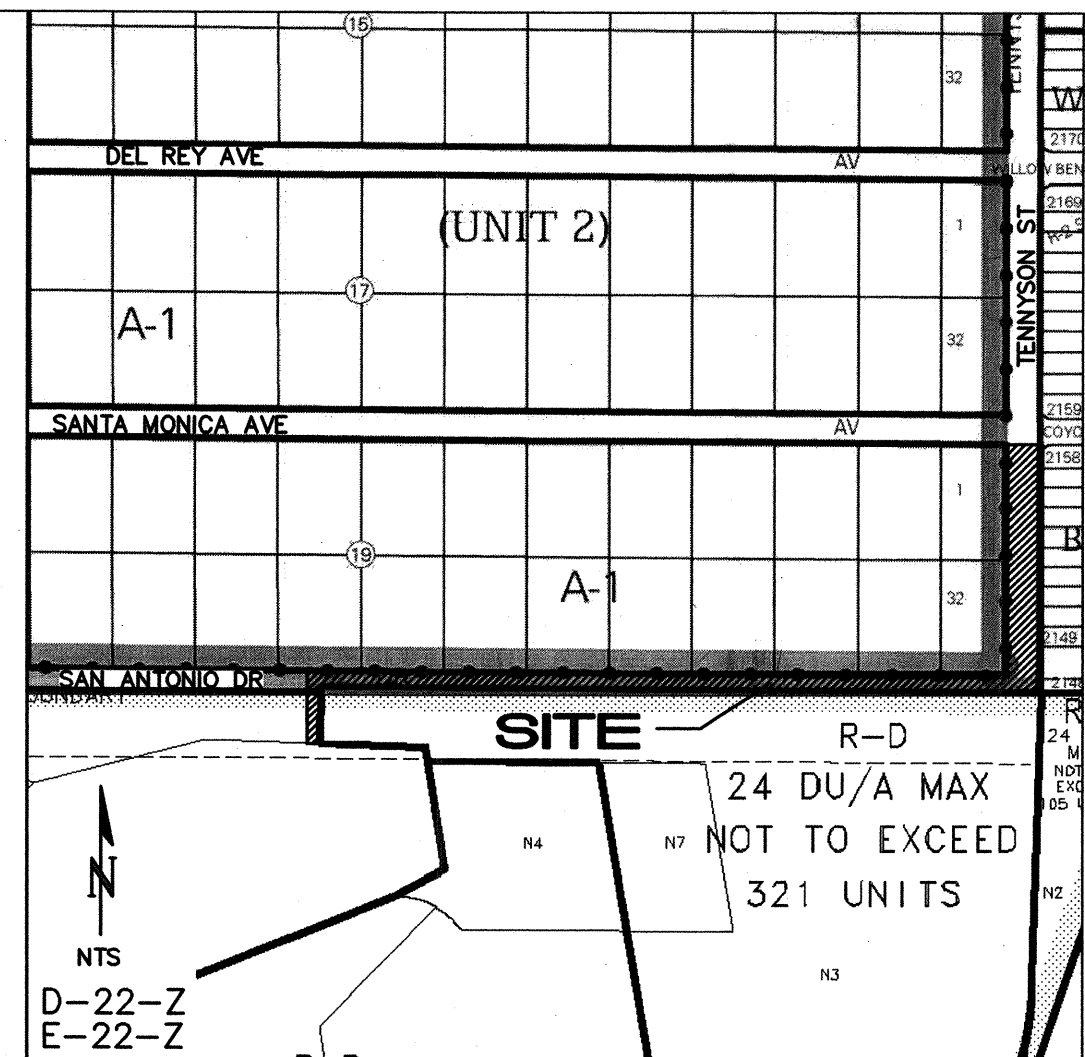
INDEX TO DRAWINGS

SHEET NO.	TITLE
1	COVERSHEET
2	TOPOGRAPHIC SURVEY
3	MASTER UTILITY PLAN
	<u>UTILITY PLAN & PROFILE SHEETS</u>
4	SAN ANTONIO DRIVE
5	TENNYSON STREET
6	UTILITY DETAILS
7	TRAFFIC CONTROL DETAILS (BERNALILLO COUNTY)

26. 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 SHUT-OFF 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. SHUT-OFF REQUEST MUST BE MADE ONLINE AT: [HTTP://ABCWUA.ORG/CONTENT/VIEW/463789/](http://abcwua.org/content/view/full/463789/)

GENERAL NOTES

- 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 AS AMENDED WITH UPDATE NO. 7, INCLUDING AMENDMENT 1.
- ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, RULES, AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE & VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH MINIMUM DELAY.
- TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, NM ONE CALL SYSTEMS, INC. @ 260-1990 FOR LOCATION OF EXISTING UTILITIES.
- CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN A MANNER WHICH WILL MINIMIZE INTERFERENCE WITH LOCAL TRAFFIC. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS, AND ORDERS OF ANY PUBLIC BODY HAVING JURISDICTION FOR THE SAFETY OF PERSONS OR PROPERTY, AND TO PROTECT THEM FROM DAMAGE, INJURY, OR LOSS. CONTRACTOR SHALL ERECT AND MAINTAIN, AS REQUIRED BY THE CONDITIONS AND PROGRESS OF THE WORK, ALL NECESSARY SAFEGUARDS FOR SAFETY CONTINUOUSLY AND NOT LIMITED TO NORMAL WORKING HOURS, THROUGHOUT THE DURATION OF THE PROJECT. CONTRACTOR SHALL ADHERE TO SECTION 19 OF THE GENERAL CONDITIONS OF THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986, AS AMENDED WITH UPDATE NO. 7.
- THE CONTRACTOR AGREES THAT HE SHALL ASSUME THE SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD HARMLESS THE OWNER & ENGINEER FROM ANY AND ALL LIABILITY REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.
- TRAFFIC CONTROL: SEVEN (7) WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION THE CONTRACTOR SHALL SUBMIT TO THE CONSTRUCTION COORDINATION DIVISION A DETAILED CONSTRUCTION SCHEDULE. TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN A BARRICADE PERMIT FROM THE CONSTRUCTION COORDINATION DIVISION. CONTRACTOR SHALL NOTIFY CONSTRUCTION COORDINATION ENGINEER (924-3400) PRIOR TO OCCUPYING AN INTERSECTION. SEE SECTION 19 OF THE SPECIFICATIONS. ALL STREET STRIPING ALTERED OR DESTROYED SHALL BE REPLACED WITH PLASTIC REFLECTORIZED PAVEMENT MARKINGS BY CONTRACTOR TO LOCATION AS EXISTING OR AS SHOWN IN THIS PLAN SET.
- WHEN ABUTTING NEW PAVEMENT TO THE EXISTING INTERSECTING STREETS THE EXISTING PAVEMENT SHALL BE SAW CUT PER CITY OF ALBUQUERQUE / BERNALILLO COUNTY STANDARD DRAWING 2465 TO A STRAIGHT LINE AT RIGHT ANGLES AND ANY BROKEN OR CRACKED PAVEMENT SHALL BE REMOVED. SAW CUTTING SHALL BE CONSIDERED INCIDENTAL TO PAVING, THEREFORE, NO DIRECT PAYMENT WILL BE MADE FOR SAW CUTTING. THE CONTRACTOR SHALL CONTACT BERNALILLO COUNTY PUBLIC WORKS DIVISION (948-1502) WHEN WORKING ON TENNYSON TO REQUEST AN INSPECTOR TO VERIFY PAVEMENT THICKNESS.
- EXISTING CURB AND GUTTER NOT TO BE REMOVED UNDER THE CONTRACT WHICH IS DAMAGED OR DISPLACED BY THE CONTRACTOR SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT HIS EXPENSE PER COA STD DWG #2415A.
- SUPPLEMENTAL SPECIFICATION: ALL BACKFILL FOR WATER LINE AND SANITARY SEWER LINE TRENCHES SHALL BE COMPACTED TO A MINIMUM 95% MAXIMUM DENSITY PER ASTM D-1557.
- THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY OR PRIVATE ROADWAY EASEMENTS SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET OR INTO ANY PUBLIC DRAINAGE FACILITY.
- PROPOSED WATERLINE MATERIALS SHALL BE EITHER PVC PIPE MEETING AWWA C900 DR-18 REQUIREMENTS (6"-12") OR DUCTILE IRON PIPE, THICKNESS CLASS 50 (6"-16").
- ALL SANITARY SEWER LINE MATERIALS SHALL BE PVC SDR-35 PIPE.
- ALL FITTINGS ON WATERLINES SHALL HAVE RESTRAINED JOINTS AS NOTED ON THE PLANS.
- THE 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 UPDATE #7.
- PNM WILL PROVIDE AT NO COST TO THE CITY OR THE CONTRACTOR, THE REQUIRED PERSONNEL FOR INSPECTION OR OBSERVATION DEEMED NECESSARY BY PNM WHILE THE CONTRACTOR IS EXPOSING PNM'S CABLES. HOWEVER, THE CONTRACTOR SHALL BE CHARGED THE TOTAL COST ASSOCIATED WITH REPAIRS TO ANY DAMAGED CABLES OR FOR ANY COST ASSOCIATED WITH SUPPORTING OR RELOCATING THE POLES AND CABLES DURING CONSTRUCTION.
- WARNING---EXISTING UTILITY LINE LOCATIONS ARE SHOWN IN AN APPROXIMATE MANNER ONLY, AND SUCH LINES MAY EXIST WHERE NONE ARE SHOWN. THE LOCATION OF ANY SUCH EXISTING LINES IS BASED UPON INFORMATION PROVIDED BY THE UTILITY COMPANY, THE OWNER, OR BY OTHERS, AND THE INFORMATION MAY BE INCOMPLETE OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES. THE ENGINEER HAS UNDERTAKEN NO FIELD VERIFICATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UNDERGROUND UTILITY LINES. MAKES NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY, AND PRESERVE ANY AND ALL EXISTING UTILITIES. THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES, IN PLANNING AND CONDUCTING EXCAVATION, WHETHER BY CALLING OR NOTIFYING THE UTILITIES, COMPLYING WITH "BLUE STAKES" PROCEDURES, OR OTHERWISE.
- ANY WORK OCCURRING WITHIN A FULLY DEVELOPED ARTERIAL ROADWAY REQUIRES 24 HR. CONSTRUCTION.
- ALL EXCAVATION, TRENCHING AND SHORING ACTIVITIES MUST BE ACCOMPLISHED IN ACCORDANCE WITH OSHA 29CFR 1926.650 SUBPART P.
- CONTRACTOR SHALL MAINTAIN A GRAFFITI-FREE WORK SITE. CONTRACTOR SHALL PROMPTLY REMOVE ANY AND ALL GRAFFITI FROM EQUIPMENT, WHETHER PERMANENT OR TEMPORARY.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR DISPOSING OF ALL DEBRIS, INCLUDING, BUT NOT LIMITED TO, HAZARDOUS WASTE AT DISPOSAL SITES APPROVED BY GOVERNMENTAL AGENCIES REGULATING THE DISPOSAL OF SUCH MATERIALS.
- TACK COAT FOR SURFACE COURSE REQUIREMENTS WILL BE DETERMINED BY THE ENGINEER.
- PERMANENT PAVEMENT STRIPING AND MARKINGS WILL BE PLACED BY THE CONTRACTOR. THE ROAD SHALL NOT BE OPENED TO THE TRAFFIC UNTIL IT IS STRIPED. ALL STRIPING, PAVEMENT MARKINGS INCLUDING CROSSWALKS, ARROWS AND LINE MARKINGS ARE TO BE CONSTRUCTED OF PREFORMED THERMO-PLASTIC IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- ELECTRONIC MARKER SPHERES (EMS) WILL BE PLACED ACCORDING TO SECTION 17C OF THE CITY OF ALBUQUERQUE SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986 EDITION AS REVISED THROUGH UPDATE #7.
- ALL WATER VALVE BOXES AND MANHOLES IN THE STREET CONSTRUCTION ARE TO BE ADJUSTED TO FINISH GRADE AND WILL BE MEASURED AND PAID PER EACH.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE EXECUTION OF THE WATER VALVE SHUT-OFF PLAN WITH ABCWUA. ALL WATER VALVES TO BE SHUT-OFF WILL BE OPERATED BY ABCWUA. CONTRACTOR SHALL NOTIFY ABCWUA AT 857-8200 TWENTY FOUR (24) HOURS PRIOR TO WATERLINE CONSTRUCTION AND SEVEN (7) WORKING DAYS IN ADVANCE OF ANY WORK WHICH MAY AFFECT EXISTING PUBLIC WATER FACILITIES IN COMPLIANCE WITH SECTION 18 OF THE STANDARD SPECIFICATIONS.
- CONTRACTOR SHALL SUPPORT ALL EXISTING, UNDERGROUND UTILITY LINES WHICH BECOME EXPOSED DURING CONSTRUCTION. PAYMENT FOR SUPPORTING WORK SHALL BE INCIDENTAL TO WATERLINE AND/OR SEWER LINE COSTS.
- CONTRACTOR SHALL ASSIST THE ENGINEER/INSPECTOR IN THE RECORDING OF DATA ON ALL UTILITY LINES AND ACCESSORIES AS REQUIRED BY THE CITY OF ALBUQUERQUE FOR THE PREPARATION OF RECORD DRAWINGS. CONTRACTOR SHALL NOT COVER UTILITY LINES AND ACCESSORIES UNTIL ALL DATA HAS BEEN RECORDED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING ALL CONSTRUCTION SIGNING UNTIL PROJECT HAS BEEN ACCEPTED BY THE CITY.
- THE CONTRACTOR SHALL NOTIFY THE ALBUQUERQUE TRAFFIC ENGINEERING DIVISION THREE (3) WORKING DAYS IN ADVANCE OF ANY WORK THAT REMOVES, RELOCATES, OR REINSTALLS ANY EXISTING REGULATORY SIGNS.
- ROP PIPE JOINTS 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. ROP JOINTS SHALL NOT BE GROUTED UNLESS DIRECTED BY THE ENGINEER AFTER CITY APPROVAL.
- IF A PAVEMENT DROP-OFF IS CREATED DURING CONSTRUCTION, THE CONTRACTOR SHALL INITIATE PROTECTIVE MEASURES TO PREVENT ABRUPT PAVEMENT CHANGES. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION.
- ROP ELLIPTICAL PIPE SHALL HAVE GASKETED JOINTS MEETING ASTM C-443 REQUIREMENTS.



RECORD DRAWING

REV.	SHEETS	CITY ENGINEER	DATE	USER	DEPARTMENT	DATE	USER	DEPARTMENT	DATE
ENGINEERS STAMP & SIGNATURE		APPROVALS		ENGINEER		DATE		*****	
		DRC Chairman		<i>[Signature]</i>		8-25-11		APPROVED FOR CONSTRUCTION	
		Transportation		<i>[Signature]</i>		8-25-11			
		Water/Wastewater		<i>[Signature]</i>		8-25-11			
		Hydrology		<i>[Signature]</i>		8-25-11			
		Constr. Mngmt.		<i>[Signature]</i>		8-25-11			
Constr. Coord.									
City Project No.				648483				Sheet 1 Of 7	

DRB NO. N/A

ISAACSON & ARFMAN, P.A.

Consulting Engineering Associates

128 Monroe Street N.E.

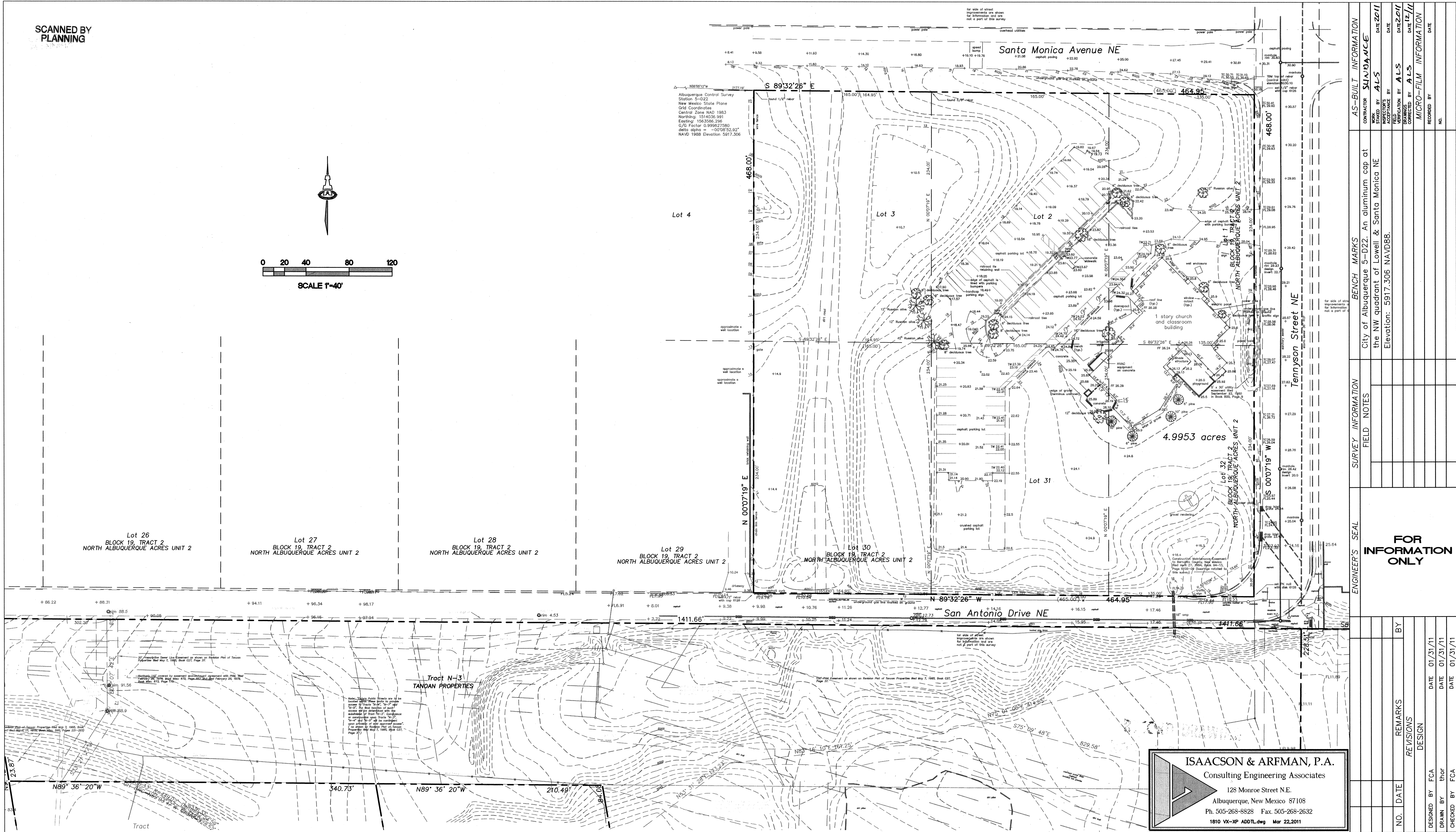
Albuquerque, New Mexico 87108

Ph. 505-268-8828 Fax. 505-268-2632

1810 CC-001.dwg

Mar 22, 2011

APPROVED AS RECORD DRAWINGS
DESIGN REVIEW SECTION
CITY OF ALBUQUERQUE
DATE: 04/09/12

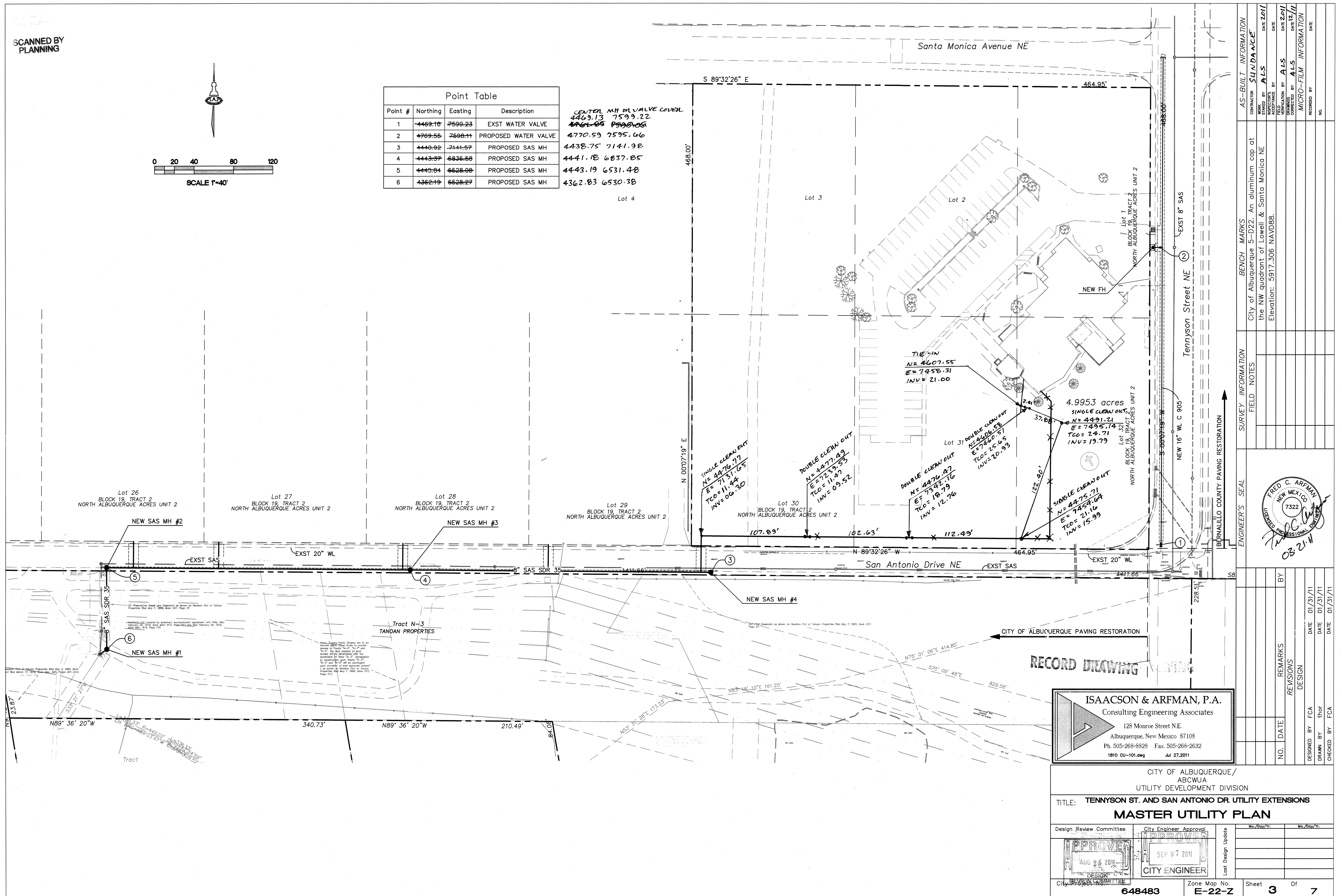


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 1810 VX-XP A00TL.dwg Mar 22,2011

CITY OF ALBUQUERQUE/ ABCWJA UTILITY DEVELOPMENT DIVISION															
TITLE: TENNYSON ST. AND SAN ANTONIO DR. UTILITY EXTENSIONS															
TOPOGRAPHY SURVEY															
Design Review Committee	City Engineer Approval	Last Design Update	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Mo./Day/Yr.</td> <td style="width: 50%; text-align: center;">Mo./Day/Yr.</td> </tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>	Mo./Day/Yr.	Mo./Day/Yr.										
Mo./Day/Yr.	Mo./Day/Yr.														
City-Project No. 648483	Zone Map No. E-22-Z	Sheet 2 Of 7													

Point Table			
Point #	Northing	Easting	Description
1	4469.16	7599.23	EXST WATER VALVE
2	4769.55	7598.11	PROPOSED WATER VALVE
3	4440.92	7141.57	PROPOSED SAS MH
4	4443.37	6836.58	PROPOSED SAS MH
5	4445.64	6528.08	PROPOSED SAS MH
6	4362.19	6528.27	PROPOSED SAS MH

CENTER MH ON VALVE COVER
4469.13 7599.22
~~4469.89 7598.05~~
4770.59 7595.66
4438.75 7141.98
4441.18 6837.85
4443.19 6531.48
4362.83 6530.38



RESTRAINED JOINT LENGTHS FOR WATERLINE FITTINGS

RESTRAINED JOINT LENGTHS, L _T , FOR HORIZONTAL BENDS, VALVES, AND DEAD ENDS, (FT.)					
SIZE	HORZ. BENDS				VALVES & DEAD ENDS
	90°	45°	22 1/2°	11 1/4°	
16	x	x	x	x	112
12	30	12	6	3	85
10	26	11	5	3	72
8	22	9	4	2	60
6	17	7	3	2	46
4	12	5	2	1	32

RESTRAINED JOINT LENGTHS, L _T , FOR REDUCERS, (FT.) MINIMUM UNOBSTRUCTED, STRAIGHT-RUN LENGTH: RESTRAIN EITHER LARGE PIPE, OR SMALL PIPE.					
SIZE	LARGE SIDE	SMALL SIDE	SIZE	LARGE SIDE	SMALL SIDE
12x10	25	30	10x6	44	73
12x8	45	68	10x4	58	141
12x6	62	121	8x6	25	33
12x4	74	213	8x4	43	83
10x8	24	30	6x4	24	35

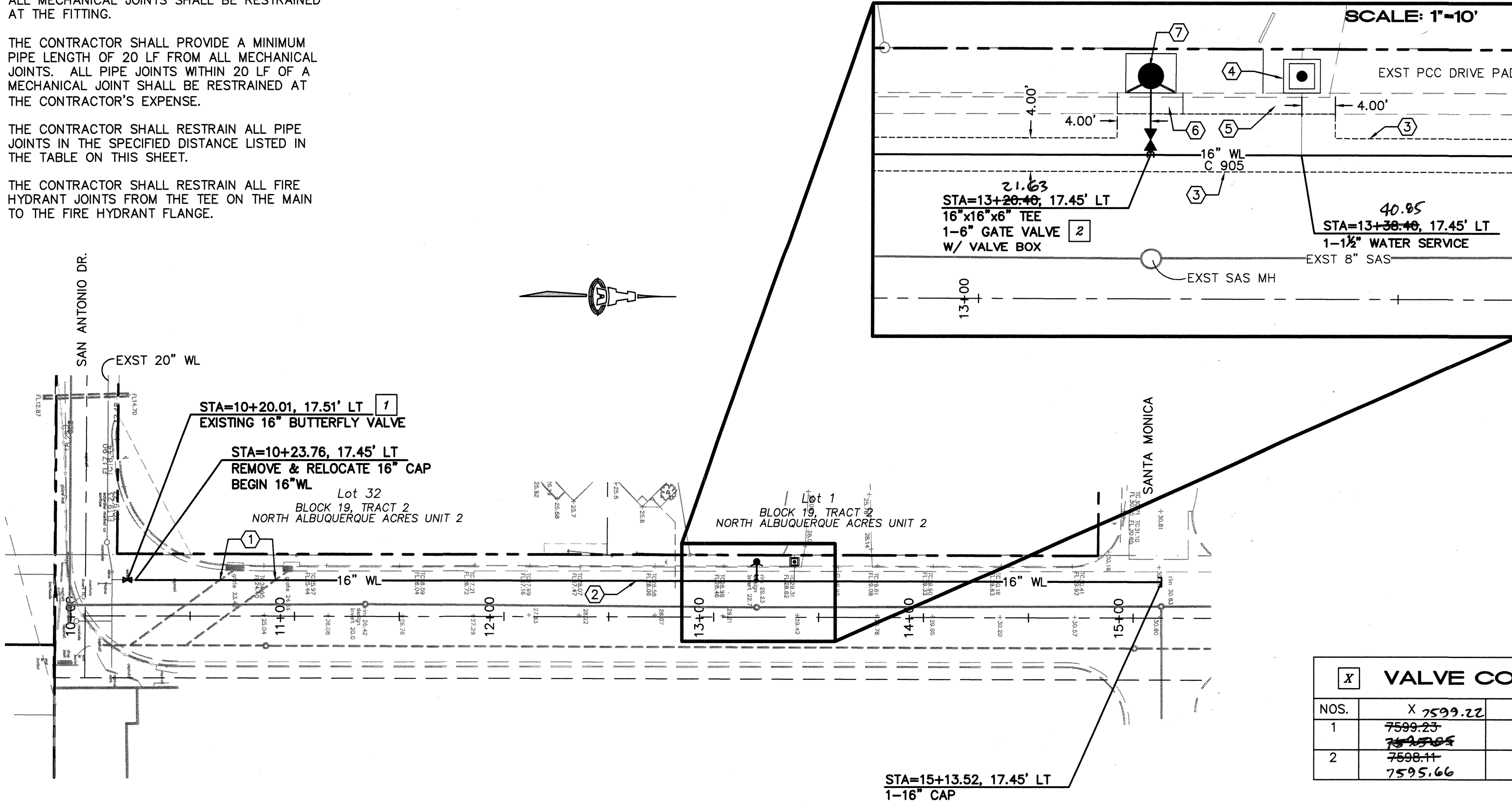
RESTRAINED JOINT LENGTHS, L _T , FOR TEES, (FT.) ALL JOINTS AT THE TEE MUST BE RESTRAINED.		
SIZE	RUN	BRANCH
12x12x12	15	17
12x12x10	10	18
12x12x8	6	19
12x12x6	3	19
12x12x4	1	19
10x10x10	12	18
10x10x8	8	15
10x10x6	4	16
10x10x4	2	4
8x8x8	9	20
8x8x6	5	17
8x8x4	2	15
6x6x6	6	20
6x6x4	2	20

THIS TABLE IS BASED UPON THE FOLLOWING CRITERIA:

DEPTH OF BURY: 3.0 FT. MINIMUM
FACTOR OF SAFETY: 1.25
MATERIAL: PVC PIPE
SOIL TYPE: GM/SM - SILTY GRAVELS AND
SILTY SANDS, GRAVEL-SAND-SILT
MIXTURES.
TEST PRESSURE: 150 PSI
TRENCH TYPE 4: PIPE BEDDED IN SAND, GRAVEL, OR
CRUSHED STONE TO DEPTH OF 1/8 PIPE
DIAMETER, 4 INCH MINIMUM; BACKFILL
COMPACTED TO TOP OF PIPE.

DIFFERENT CRITERIA, E.G., DUCTILE IRON PIPE, GREATER DEPTH OF
BURY, ETC., WILL REQUIRE DIFFERENT RESTRAINED LENGTHS.
THESE MUST BE CALCULATED BY A QUALIFIED PROFESSIONAL
ENGINEER AND APPROVED BY ALBUQUERQUE BERNALILLO COUNTY
WATER UTILITY AUTHORITY.

- NOTES:
- ALL MECHANICAL JOINTS SHALL BE RESTRAINED AT THE FITTING.
 - THE CONTRACTOR SHALL PROVIDE A MINIMUM PIPE LENGTH OF 20 LF FROM ALL MECHANICAL JOINTS. ALL PIPE JOINTS WITHIN 20 LF OF A MECHANICAL JOINT SHALL BE RESTRAINED AT THE CONTRACTOR'S EXPENSE.
 - THE CONTRACTOR SHALL RESTRAIN ALL PIPE JOINTS IN THE SPECIFIED DISTANCE LISTED IN THE TABLE ON THIS SHEET.
 - THE CONTRACTOR SHALL RESTRAIN ALL FIRE HYDRANT JOINTS FROM THE TEE ON THE MAIN TO THE FIRE HYDRANT FLANGE.

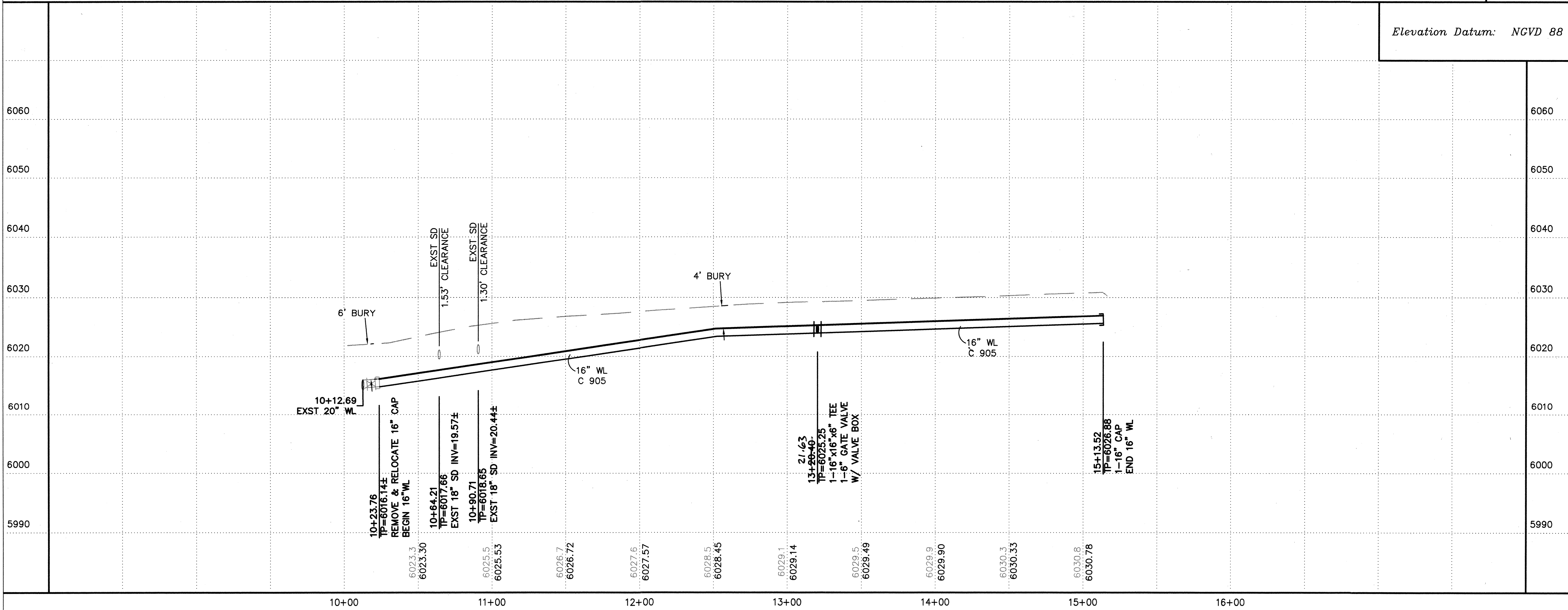


VALVE COORDINATES			
NOS.	X	Y	Z
1	7599.23	4469.16	
2	7595.66	4776.59	

SCALES:
1"=40' HOR.
1"=10' VERT.

Elevation Datum: NGVD 88

TENNYSON STREET



GENERAL UTILITY NOTES

- CONSTRUCT SAS SERVICES PER COA STD DWG #2125.
- CONSTRUCT ALL SINGLE WATER SERVICES PER COA STD DWG #2361, #2362, & #2363 W/ DUAL CHECK VALVES ON PRIVATE SIDE OF SETTING.
- SEE THIS SHEET FOR WATER SHUT-OFF PLAN.
- SEE THIS SHEET FOR RESTRAINED JOINT LENGTHS FOR WATER LINE FITTINGS.
- NOT USED.
- SEE COA STD DWG #2328 FOR VALVE RING & COVER DETAIL. SEE COA STD DWG #2326 FOR VALVE BOX DETAIL.
- NOT USED.
- WHEN ABUTTING NEW PAVEMENT TO THE EXISTING INTERSECTING STREETS THE EXISTING PAVEMENT SHALL BE SAW CUT PER CITY OF ALBUQUERQUE / BERNALILLO COUNTY STANDARD DRAWING 2485 TO A STRAIGHT LINE AT RIGHT ANGLES AND ANY BROKEN OR CRACKED PAVEMENT SHALL BE REMOVED. SAW CUTTING SHALL BE CONSIDERED INCIDENTAL TO PAVING, THEREFORE, NO DIRECT PAYMENT WILL BE MADE FOR SAW CUTTING. THE CONTRACTOR SHALL CONTACT BERNALILLO COUNTY PUBLIC WORKS DIVISION (848-1502) WHEN WORKING ON TENNYSON TO REQUEST AN INSPECTOR TO VERIFY PAVEMENT THICKNESS.

KEYED CONSTRUCTION NOTES

- CONTRACTOR TO SUPPORT EXISTING RCP CONNECTOR PIPE AS NECESSARY TO ENSURE AGAINST DISPLACEMENT OF DRAIN PIPE.
- REMOVE & REPLACE 4' WIDE STRIP OF RESIDENTIAL ASPHALT PAVING PER COA STD DWG #2465.
- LIMITS OF ASPHALT REMOVE & REPLACE AT WATERLINE.
- PCC PAD AROUND METER BOX (300 PSI) PER COA STD DWG #2362.
- EXISTING CURB & GUTTER TO REMAIN.
- REMOVE & REPLACE SAME CURB & GUTTER (1-STONE), NMDOT CLASS A CONCRETE.
- NEW FH W/ PCC PAD PER COA STD DWG #2340. FLANGE ELEV= 6029.66 29.25

WATER SHUT-OFF PLAN

SHUT-OFF VALVE 1193 TO PROVIDE NON-PRESSURE CONNECTION. 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/463/729/)

RECORD DRAWING

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Ph. 505-268-8828 Fax. 505-268-2632
1810 CU-302.dwg Jul 27, 2011

CITY OF ALBUQUERQUE/
ABCWUA
UTILITY DIVISION

TITLE: **TENNYSON ST. AND SAN ANTONIO DR. UTILITY EXTENSIONS
TENNYSON STREET STA 10+00-END
UTILITY PLAN AND PROFILE**

Design Review Committee

APPROVED
AUG 25 2011
DESIGN REVIEW COMMITTEE

City Engineer Approval

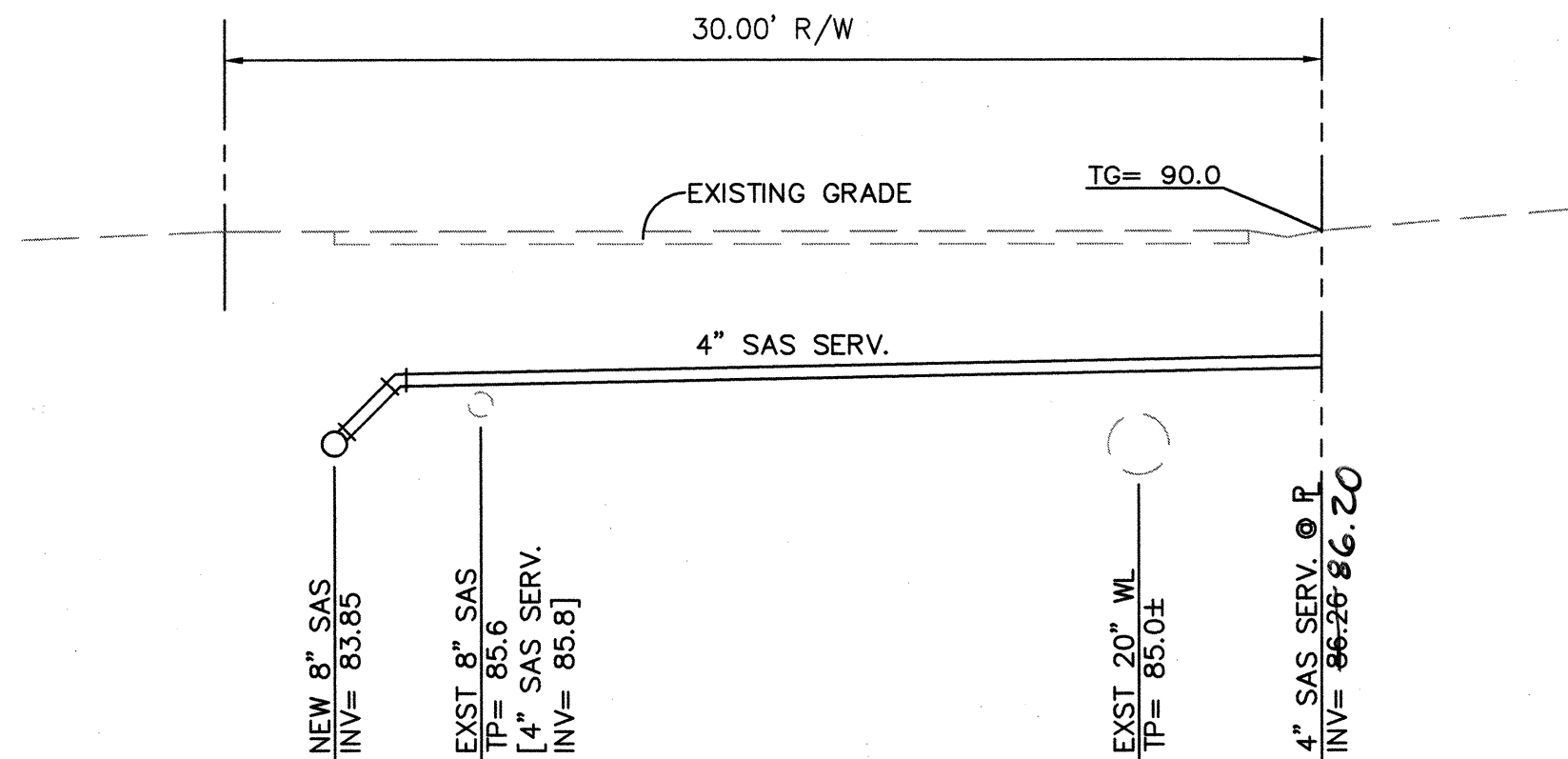
APPROVED
SEP 07 2011
CITY ENGINEER

City Project No. **648483**

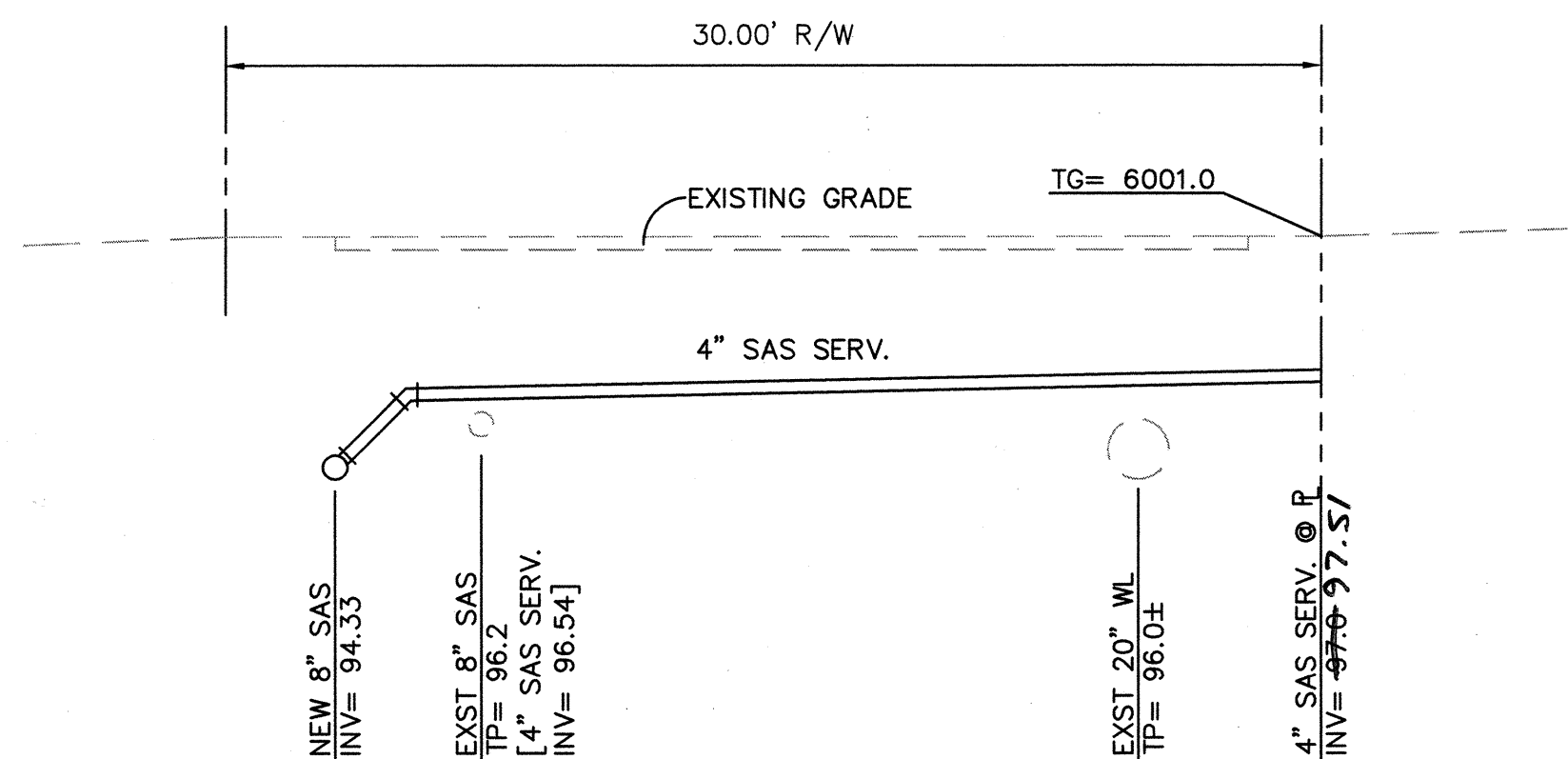
Zone Map No. **E-22-Z**

Sheet **5** Of **7**

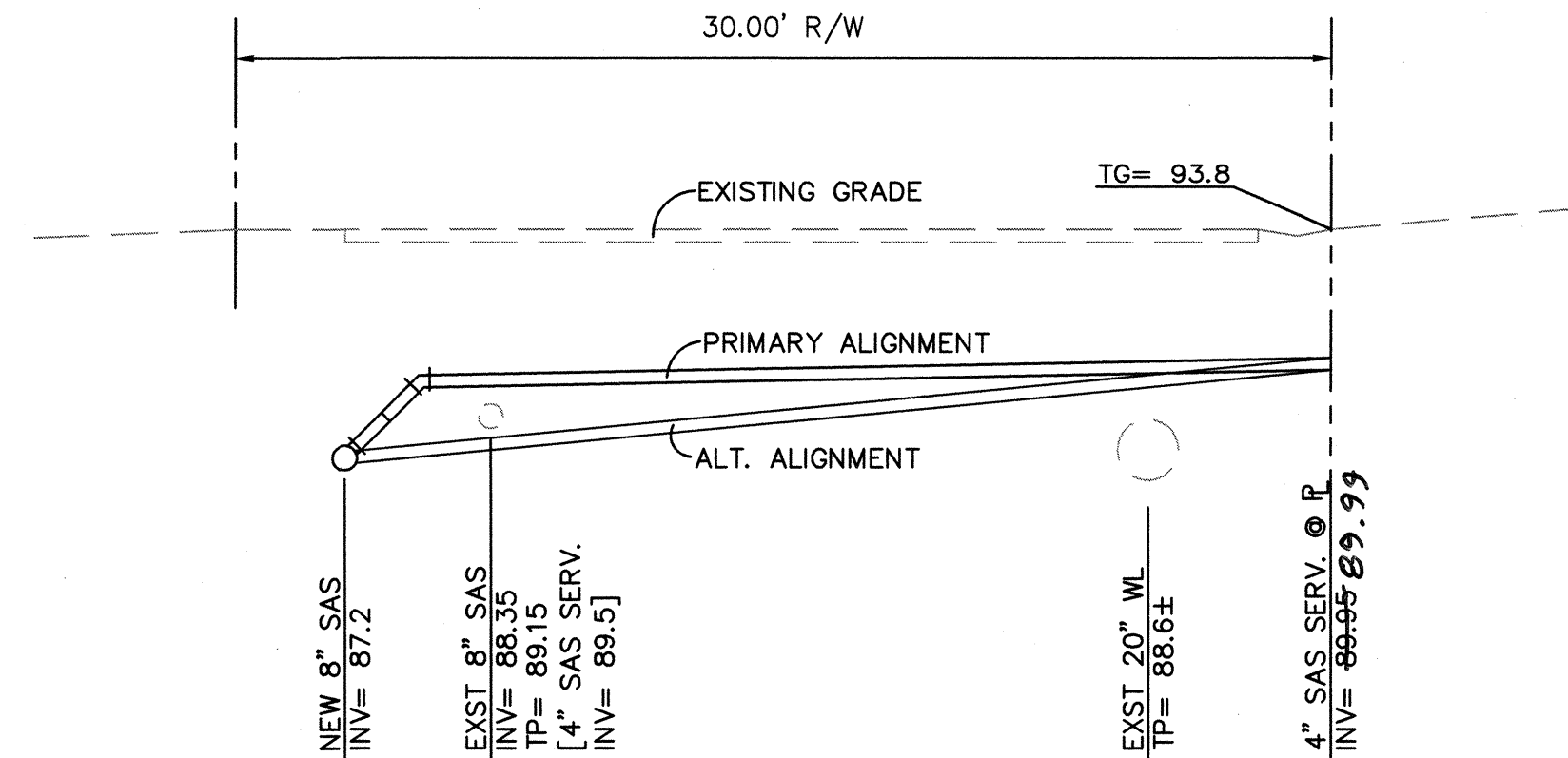
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PLANNING



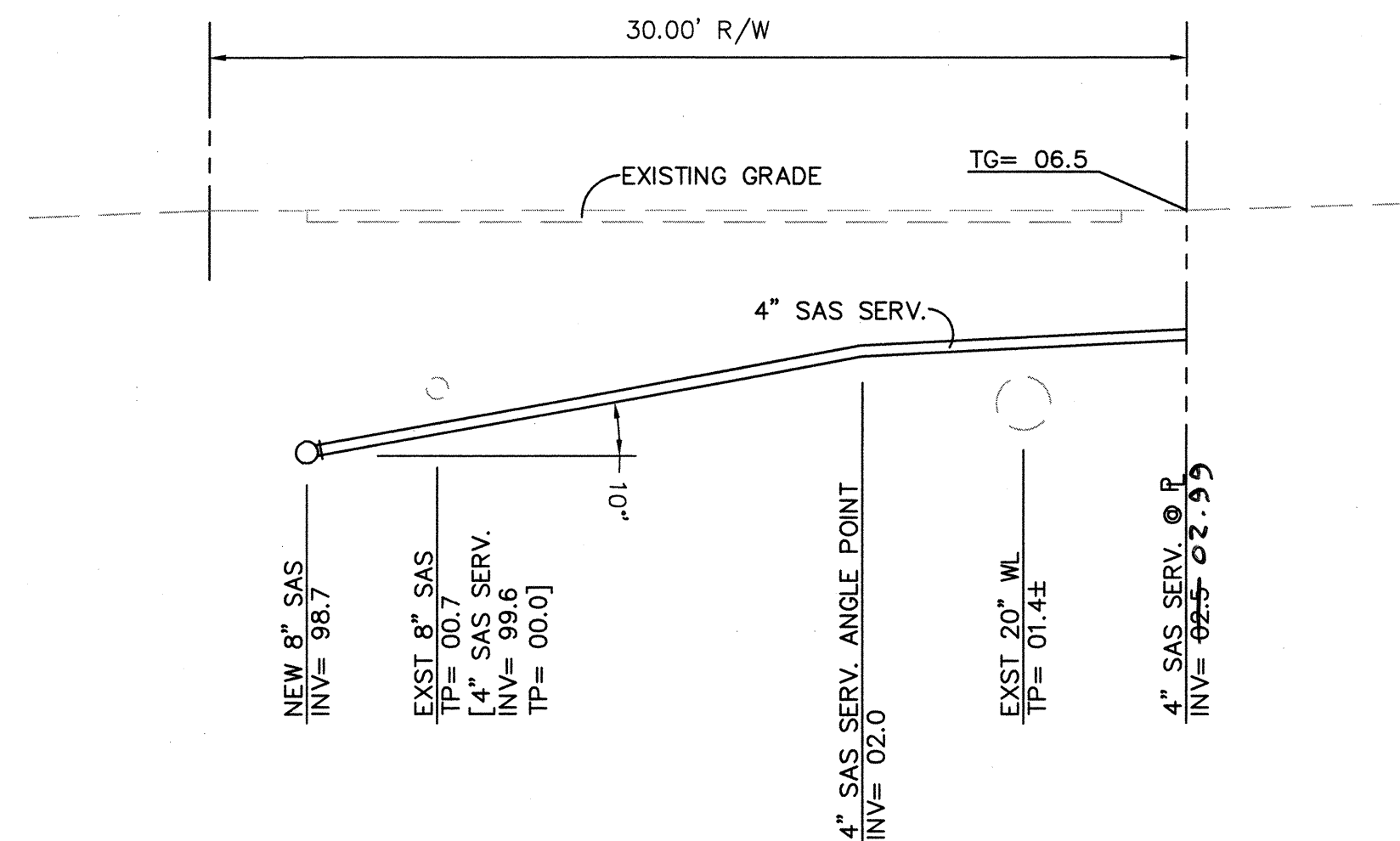
33.96
SAS SERVICE • STA 4+88.75
SCALE: 1"=5'



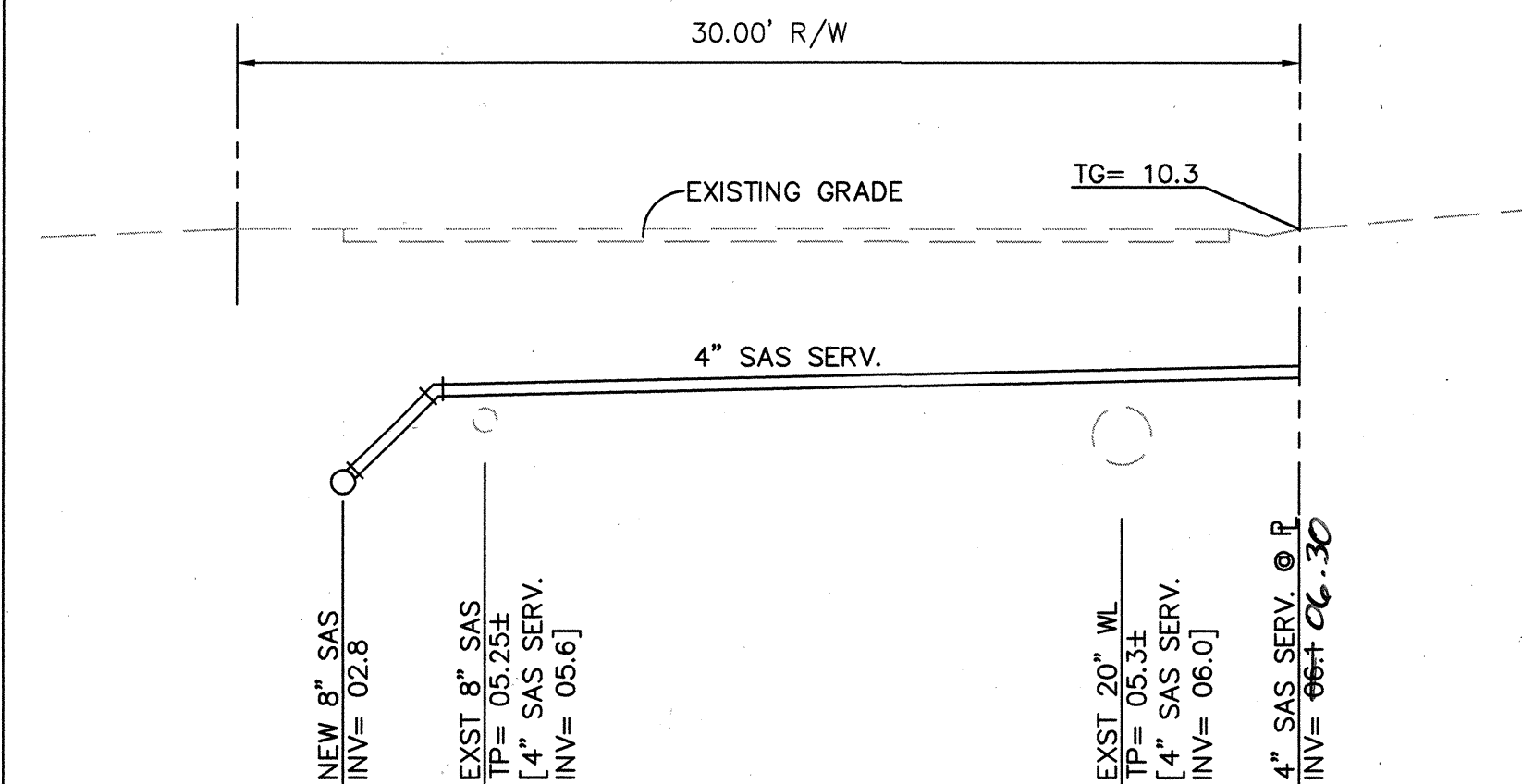
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SAS SERVICE • STA 7+07.28
SCALE: 1"=5'



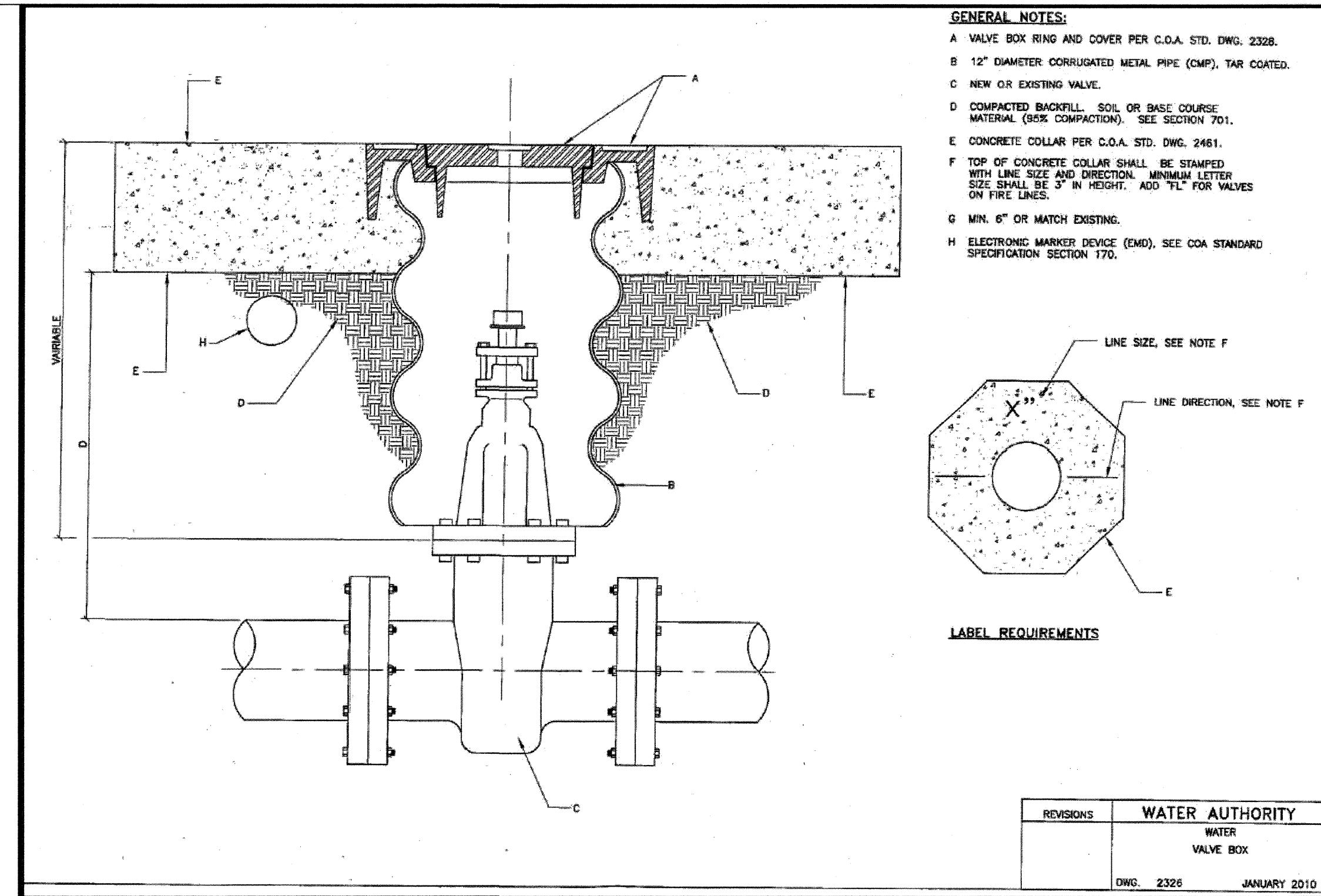
20.14
SAS SERVICE • STA 5+29.16
SCALE: 1"=5'



55.04
SAS SERVICE • STA 8+56.00
SCALE: 1"=5'



SAS SERVICE • STA 10+10.00
SCALE: 1"=5'



STD DWG 2326--WATER VALVE BOX
NTS

GENERAL NOTES:

- A VALVE BOX RING AND COVER PER C.O.A. STD. DWG. 2328.
- B 12" DIAMETER CORRUGATED METAL PIPE (CMP), TAR COATED.
- C NEW OR EXISTING VALVE.
- D COMPACTED BACKFILL, SOIL OR BASE COURSE MATERIAL (BASE COMPACTION), SEE SECTION 701.
- E CONCRETE COLLAR PER C.O.A. STD. DWG. 2481.
- F TOP OF CONCRETE COLLAR SHALL BE STAMPED WITH LINE SIZE AND DIRECTION. MINIMUM LETTER SIZE SHALL BE 3" IN HEIGHT. ADD "TL" FOR VALVES ON FIVE LINES.
- G MIN. 6" OR MATCH EXISTING.
- H ELECTRONIC MARKER DEVICE (EMD), SEE C.O.A. STANDARD SPECIFICATION SECTION 170.

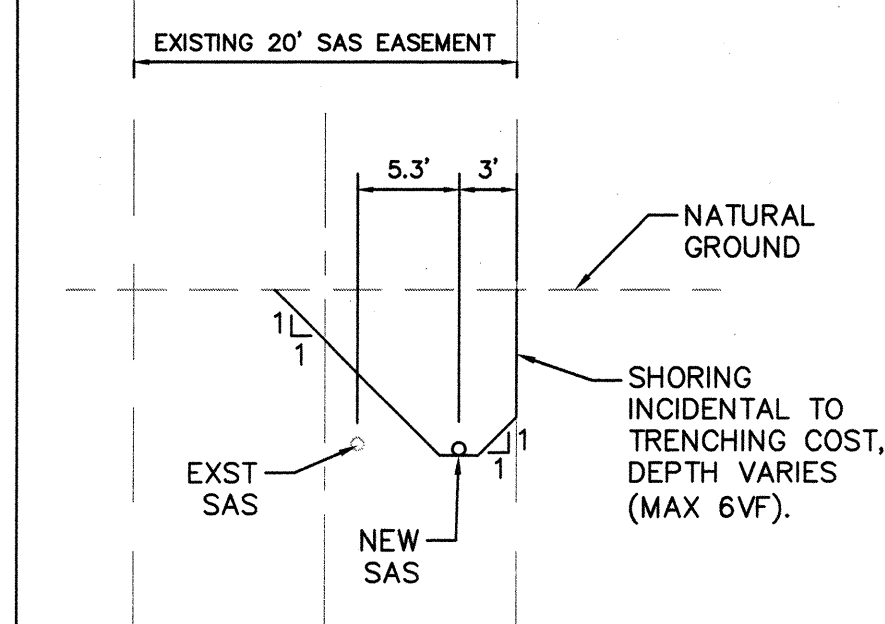
REVISIONS

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		

WATER AUTHORITY

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		

DWG: 2326 JANUARY 2010



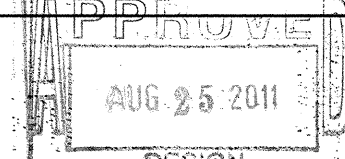
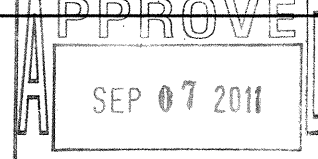
TRENCHING PRISM (STA 3+50.00)
WITHIN 20' SAS EASEMENT
SCALE: 1"=20'

SANITARY SEWER SERVICES

PROVIDE NECESSARY FITTINGS TO ACHIEVE REQUIRED SEPARATION BETWEEN SERVICE LINE AND EXISTING UTILITIES (8" SAS + 20" WL). FITTINGS ARE AND INCIDENTAL COST OF THE SERVICE.

RECORD DRAWING

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque, New Mexico 87108
Ph. 505-268-8928 Fax. 505-268-2632
1810 CU-501.dwg Jul 27, 2011

CITY OF ALBUQUERQUE/ ABCWUA UTILITY DEVELOPMENT DIVISION				TITLE: TENNYSON ST. AND SAN ANTONIO DR. UTILITY EXTENSIONS				
UTILITY DETAILS								
Design Review Committee		City Engineer Approval		Last Design Update	Mo./Day/Yr.		Mo./Day/Yr.	
								
City Project No.		Zone Map No.			Sheet		Of	
648483		E-22-Z			6		7	

CONSTRUCTION TRAFFIC CONTROL GENERAL NOTES

1. PROJECT IS SUBJECT TO THE REQUIREMENTS OF COUNTY ORDINANCE NO. 95-12 AND COUNTY ORDINANCE NO. 96-3. THE CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ALL PERMITS NECESSARY. CONTRACTOR SHALL CALL 848-1504 FOR MORE INFORMATION.
2. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE COUNTY TRAFFIC CONTROL ADMINISTRATOR AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF WORK. TRAFFIC CONTROL PLANS SHALL BE PREPARED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION AND BY CERTIFIED PERSONNEL AND MUST BE APPROVED PRIOR TO COMMENCEMENT OF WORK ON THE PROJECT. CALL 848-1504 FOR FURTHER INFORMATION.
3. A DAILY TRAFFIC CONTROL LOG SHALL BE MAINTAINED BY THE CONTRACTOR REFLECTING THE TYPES AND LOCATIONS OF ALL TRAFFIC CONTROL DEVICES, SIGNS, BARRICADES, ETC. BEING USED ON THE PROJECT IN COMPLIANCE WITH THE APPROVED TRAFFIC CONTROL PLAN. THIS LOG SHALL BE SUBMITTED TO THE BERNALILLO COUNTY TRAFFIC CONTROL ADMINISTRATOR UPON COMPLETION OF THE PROJECT CONSTRUCTION OR WHEN SO REQUESTED BY THE PROJECT MANAGER OR THE BERNALILLO COUNTY TRAFFIC CONTROL ADMINISTRATOR.
4. CONTRACTOR SHALL PROVIDE A WEEKLY CONSTRUCTION ACTIVITY SCHEDULE TO BERNALILLO COUNTY PUBLIC WORKS DIVISION ATTN: PROJECT MANAGER
5. THE CONTRACTOR SHALL FILE A WEEKLY WRITTEN REPORT TO THE TRAFFIC CONTROL ADMINISTRATOR DESCRIBING THE TRAFFIC CONTROL PLAN THAT WILL BE IN EFFECT FOR THE FOLLOWING WEEK.
6. SUBJECT TO THE APPROVED TRAFFIC CONTROL PLAN, AT LEAST ONE LANE SHALL BE OPEN TO TRAFFIC AT ALL TIMES. CONTRACTOR SHALL PROVIDE PROPER SIGNAGE AND FLAGMAN AND SHALL MAINTAIN THE TRAFFIC LANE IN SUCH A MANNER AS TO ASSURE PROPER SAFETY TO THE TRAVELING PUBLIC AT ALL TIMES, EXCEPT WHEN GRADING, EXCAVATION AND BACKFILL OPERATIONS ARE BEING CONDUCTED IMMEDIATELY IN FRONT OF THE PROPERTY, IN WHICH CASE ACCESS WILL NOT BE DENIED FOR MORE THAN 4 HOURS WITHOUT APPROVAL BY THE COUNTY.
7. TRAFFIC LANES PROVIDED DURING CONSTRUCTION SHALL BE MAINTAINED, IN SUCH A CONDITION UNDER ALL WEATHER CONDITIONS, SO AS TO PERMIT THE REASONABLE PASSAGE OF PASSENGER VEHICLES, AND SHALL BE KEPT GRADED AND SMOOTH, AND WATERED SEVERAL TIMES DAILY TO CONTROL DUST.
8. TYPICAL TRAFFIC CONTROL PLANS DO NOT REFLECT THE EXISTING TOPOGRAPHY SUCH AS DRIVEWAYS, LANE WIDTHS, AND BUSINESS/RESIDENTIAL ACCESSES. EVERY LOCATION THAT REQUIRES CONSTRUCTION TRAFFIC CONTROL SHALL HAVE A DETAILED TRAFFIC CONTROL PLAN SHOWING ALL EXISTING TOPOGRAPHY.
9. CONSTRUCTION SHALL NOT BEGIN UNLESS A TRAFFIC CONTROL PLAN HAS BEEN APPROVED AND VERIFIED BY BERNALILLO COUNTY TRAFFIC ENGINEERING.
10. ALL CONSTRUCTION TRAFFIC CONTROL DEVICES SHALL COMPLY WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL, SERVICE AND MAINTAIN ALL TRAFFIC CONTROL DEVICES. TRAFFIC CONTROL DEVICES SHALL NOT BE REMOVED OR ALTERED IN ANY WAY WITHOUT THE APPROVAL OF THE COUNTY TRAFFIC CONTROL ADMINISTRATOR, PER SECTION 6A-4 OF THE MUTCD, LATEST EDITION.
11. THE CONSTRUCTION TRAFFIC CONTROL INITIAL SET-UP FOR EACH PHASE SHALL BE BY AN AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) CERTIFIED WORKSITE TRAFFIC SUPERVISOR. THE MAINTENANCE AND SERVICING SHALL ALSO BE DONE BY AN ATSSA CERTIFIED WORKSITE TRAFFIC SUPERVISOR OR EQUIVALENT.
12. CONTRACTOR IS RESPONSIBLE TO MAINTAIN AND SERVICE ALL TRAFFIC CONTROL DEVICES 24 HOURS A DAY, 7 DAYS A WEEK THROUGHOUT LENGTH OF PROJECT. CONTRACTOR IS RESPONSIBLE THAT ALL TRAFFIC CONTROL DEVICES COMPLY WITH THE MUTCD, LATEST EDITION.
13. ALL ADVANCE WARNING SIGNS SHALL BE DOUBLE INDICATED WHENEVER THERE ARE MULTI-LANE TRAFFIC IN ANY ONE GIVEN DIRECTION AND THERE IS SUFFICIENT MEDIAN SPACE.
14. ALL BARRICADES IN ALL TAPERS AND TANGENTS SHALL BE PLACED APART, A DISTANCE MEASURED IN FEET, EQUAL TO THAT OF THE POSTED SPEED LIMIT. NO EXCEPTIONS UNLESS APPROVED BY BERNALILLO COUNTY TRAFFIC ENGINEERING PER MUTCD SECTION 6A-4.
15. ALL WORK IN ARTERIAL ROADWAYS SHALL BE ON A CONTINUOUS 24 HOUR PER DAY BASIS UNTIL COMPLETED.
16. EQUIPMENT OR MATERIALS SHALL NOT BE STORED WITHIN 15 FEET OF A TRAVELED TRAFFIC LANE DURING NON-WORKING HOURS WITHOUT THE APPROVAL OF BERNALILLO COUNTY TRAFFIC ENGINEERING.
17. CONTRACTOR SHALL PROVIDE AND MAINTAIN A SAFE AND ADEQUATE MEANS OF CHANNELIZING PEDESTRIAN TRAFFIC AROUND AND THROUGH THE CONSTRUCTION AREA.
18. CONTRACTOR IS RESPONSIBLE FOR OBLITERATION OF ANY CONFLICTING STRIPING AND RESPONSIBLE FOR ALL TEMPORARY STRIPING.
19. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL FACILITIES, BUSINESSES AND/OR RESIDENTS AT ALL TIMES.

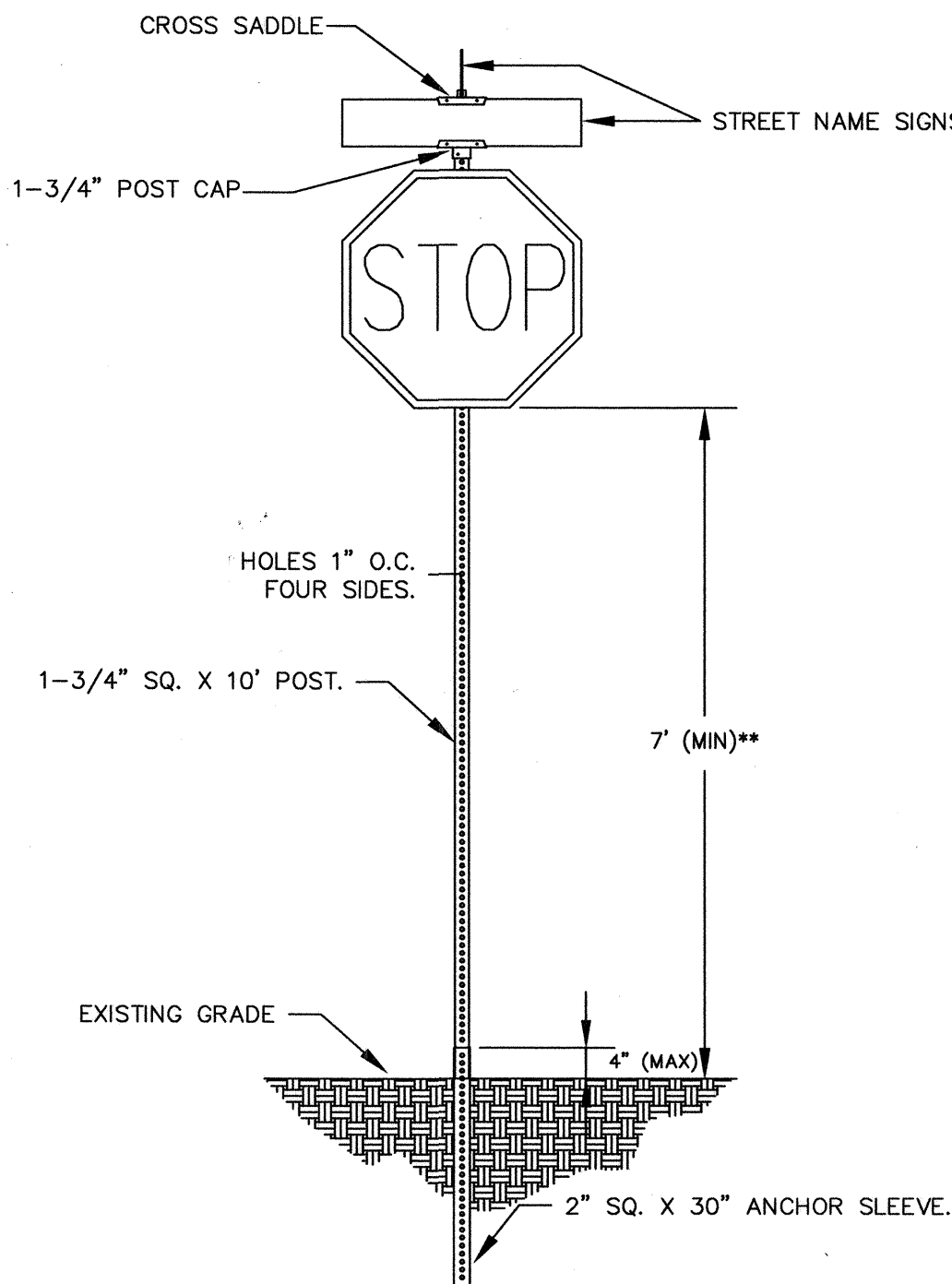
20. CONTRACTOR SHALL PROVIDE ACCESS SIGNS FOR BUSINESSES LOCATED WITHIN THE CONSTRUCTION AREA UNDER THE SUPERVISION OF BERNALILLO COUNTY TRAFFIC ENGINEERING. EACH ACCESS SIGN SHALL HAVE 5 INCH, WHITE LETTERING ON BLUE BACKGROUND. SHOPPING CENTERS AND MALLS SHALL BE LISTED AS SUCH.

21. 48 HOURS PRIOR TO OCCUPYING OR CLOSING OF A RIGHT-OF-WAY, CONTRACTOR SHALL NOTIFY: POLICE, FIRE DEPARTMENT, SCHOOLS, HOSPITALS, TRANSIT AUTHORITY, BUSINESSES AND/OR RESIDENTS THAT WILL BE AFFECTED BY THE CONSTRUCTION.

22. ANY FIELD ADJUSTMENTS SHALL BE APPROVED BY BERNALILLO COUNTY TRAFFIC ENGINEERING.

23. EXCAVATIONS SHALL BE PLATED, TEMPORARILY PATCHED OR RESURFACED PRIOR TO OPENING OF TRAFFIC. A MINIMUM OF 11 FEET, SHALL BE PROVIDED FOR TRAFFIC IN ANY GIVEN DIRECTION. CONTRACTOR IS RESPONSIBLE FOR ANY WORK INVOLVED IN SATISFYING THESE REQUIREMENTS.

24. THE CONTRACTOR SHALL CONTACT BERNALILLO COUNTY TRAFFIC ENGINEER (848-1575) BEFORE REMOVING AND/OR INSTALLING ANY TRAFFIC SIGNS OR PERMANENT STRIPING AND MARKINGS. ALL STRIPING, PAVEMENT MARKINGS INCLUDING CROSSWALKS, LEGENDS AND SYMBOLS ARE TO BE CONSTRUCTED OF INTERSECTION GRADE COLD PLASTIC AND LINE MARKINGS ARE TO BE CONSTRUCTED OF DURABLE PAINT IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) LATEST EDITION. ANY PAVEMENT MARKINGS AND SIGNS REMOVED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT EXISTING LOCATIONS. SUCH WORK SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION OF THE PROJECT.



SIGN POST DETAIL
SCALE: N.T.S.

*ALL STREET NAME SIGNS SHALL BE WHITE LETTERS ON GREEN BACKGROUND WITH HI INTENSITY REFLECTIVE SHEETING. ALL LETTERS SHALL BE 4" FOR POSTED SPEEDS OF 25 MPH AND BELOW AND 6" FOR POSTED SPEEDS GREATER THAN 25 MPH.
**SEE MUTCD FOR MINIMUM MOUNTING HEIGHT IN RURAL AREAS

# OF POSTS	MAXIMUM SIGN SQUARE FOOTAGE
1	6
2	12
3	18

TAPER REQUIREMENT

SPEED LIMIT (MPH)	TAPER LENGTH(L) (FEET)			MINIMUM NUMBER OF DEVICES FOR TAPER	MAXIMUM DEVICE SPACING IN FEET	
	10' LANE	11' LANE	12' LANE		ALONG TAPER	AFTER TAPER
20	70	75	80	5	20	20
25	105	115	125	6	25	25
30	150	165	180	7	30	30
35	205	225	245	8	35	35
40	270	295	320	9	40	40
45	450	495	540	13	45	45
50	500	550	600	13	50	50
55	550	605	660	13	55	55

RECOMMENDED SIGN SPACING(D) FOR

ADVANCE WARNING SIGN SERIES

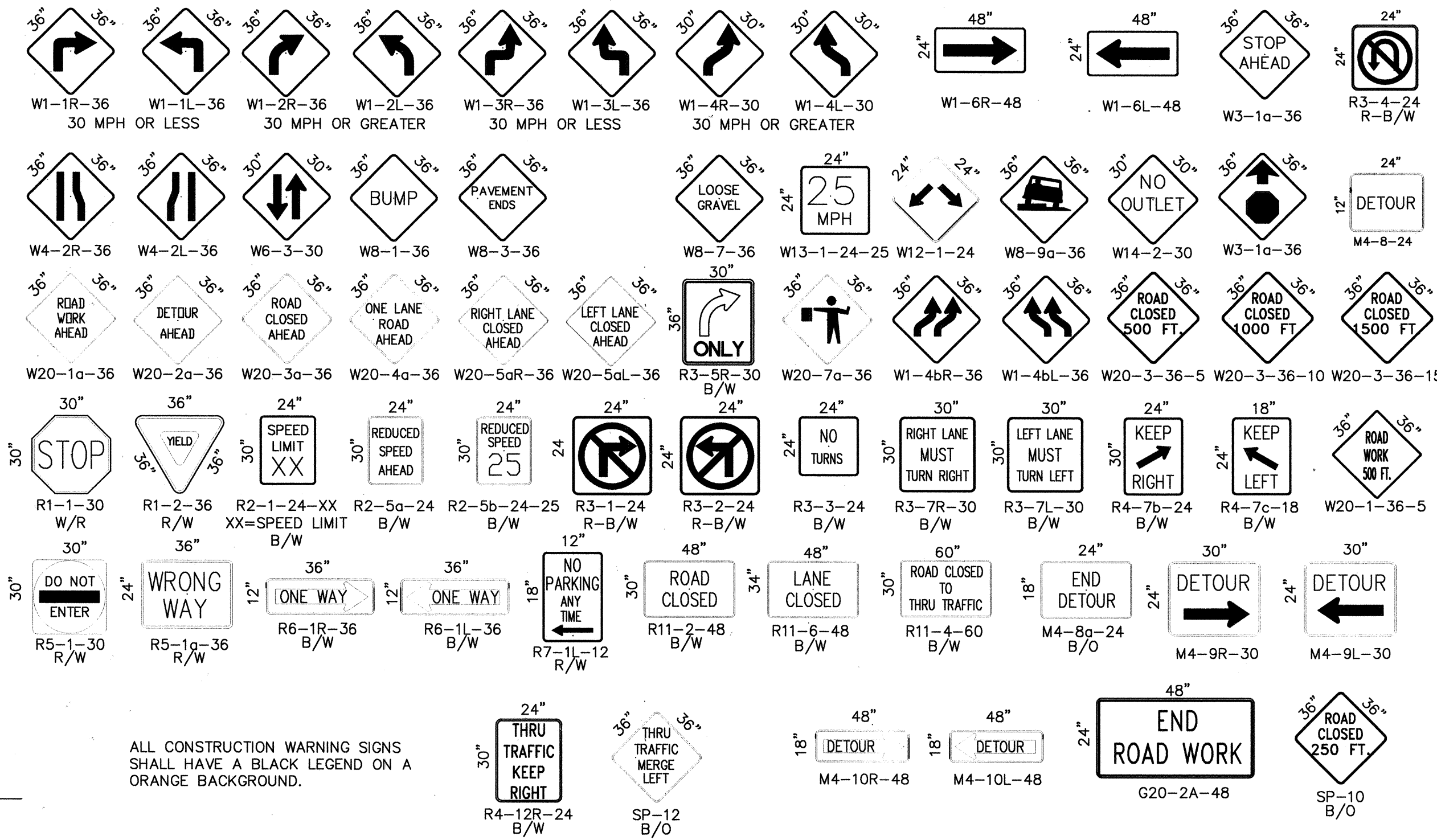
SPEED MILES PER HOUR	MINIMUM DISTANCE IN FEET	
	BETWEEN SIGNS	FROM LAST SIGN TO TAPER
0-20	10 X SPEED LIMIT	10 X SPEED LIMIT
25-30	10 X SPEED LIMIT	10 X SPEED LIMIT
30-35	10 X SPEED LIMIT	10 X SPEED LIMIT
40-45	10 X SPEED LIMIT	10 X SPEED LIMIT
50-60	10 X SPEED LIMIT	10 X SPEED LIMIT

LEGEND

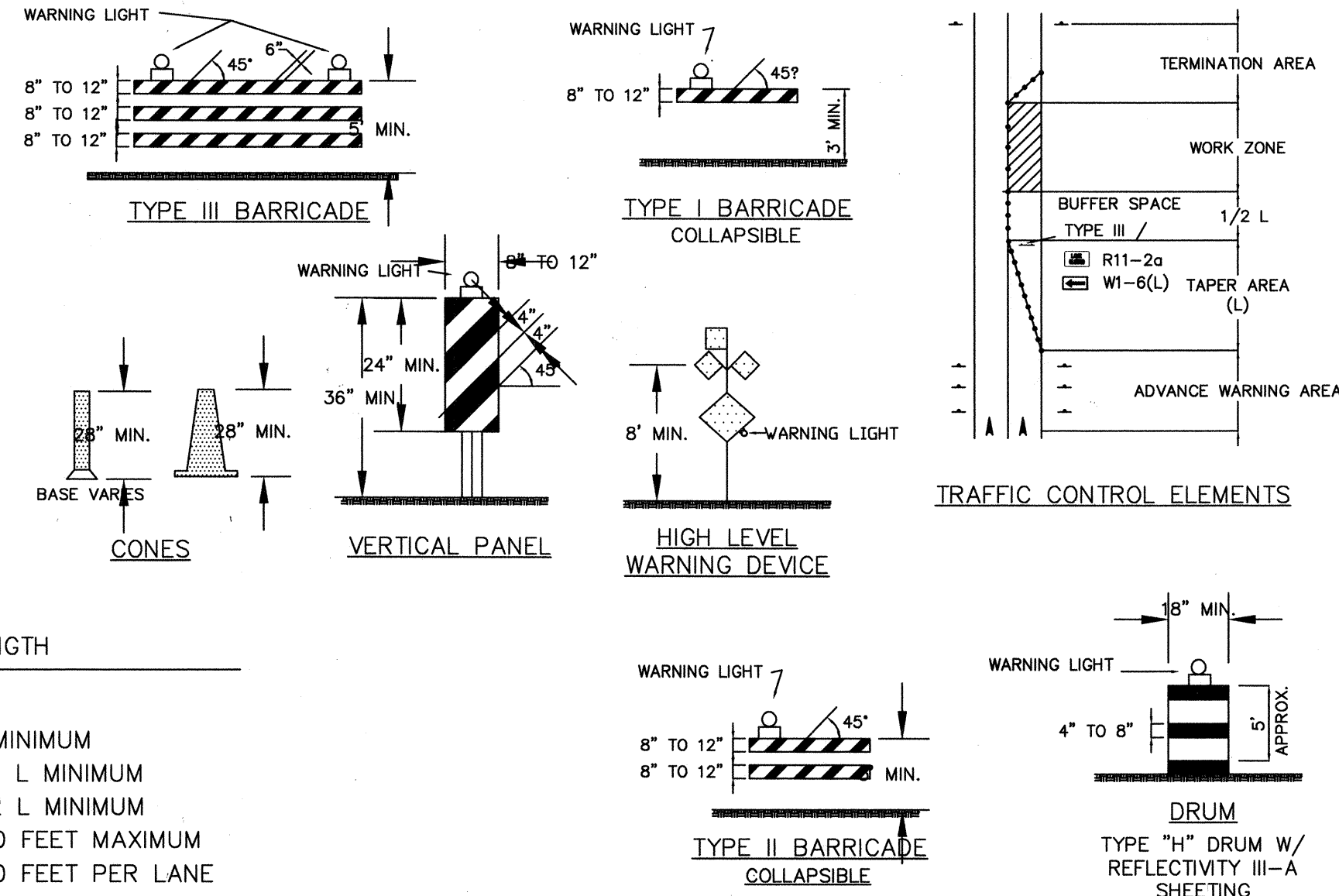
- WORK AREA
- BARRICADE - TYPE I, TYPE II, OR TYPE "H" DRUM W/ REFLECTIVITY III-A SHEETING
- BARRICADE - TYPE III
- VERTICAL PANEL
- WARNING SIGN
- DISTANCE BETWEEN SIGNS - A DISTANCE MEASURED IN FEET EQUAL TO A VALUE OF TEN TIMES THE SPEED LIMIT OF THE STREET
- FLAGMAN POSITION
- S SPACING BETWEEN BARRICADES- A DISTANCE MEASURED IN FEET EQUAL TO THE SPEED LIMIT OF THE STREET
- L TAPER LENGTH - SEE CHART BELOW

THE TANGENT LENGTH IS EQUAL TO THE TAPER LENGTH FOR A GIVEN STREET.

SIGN FACE DETAILS



ALL CONSTRUCTION WARNING SIGNS SHALL HAVE A BLACK LEGEND ON A ORANGE BACKGROUND.



TAPER CRITERIA

TYPE OF TAPER	TAPER LENGTH
UPSTREAM TAPER:	
MERGING TAPER	L MINIMUM
SHIFTING TAPER	1/2 L MINIMUM
SHOULDER TAPER	1/2 L MINIMUM
TWO-WAY TRAFFIC TAPER	100 FEET MAXIMUM
DOWNSTREAM TAPERS	100 FEET PER LANE

TAPER LENGTH COMPUTATION

SPEED LIMIT	
40 MPH OR LESS	$L = \frac{WS^2}{60}$
40 MPH OR GREATER	$L = W \times S$

L = TAPER LENGTH
W = WIDTH OF OFFSET IN FEET
S = POSTED SPEED OR OFF-PEAK 85-PERCENTILE SPEED IN MPH

RECORD DRAWING

BY		
NO.	DESCRIPTION	DATE
REVISIONS		
COUNTY OF BERNALILLO		
TENNYSON ST. AND SAN ANTONIO DR.		
UTILITY EXTENSIONS		
SIGNING & CONSTRUCTION		
TRAFFIC CONTROL STANDARDS		
FOR INFORMATION ONLY		
PROJECT NO.	DRAWN: XXX	DATE: XX-XX-XX
648483	CHECKED: XXX	SCALE: