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NO. DATE BY

UNIFORM DESIGN STANDARDS FOR WATER DISTRIBUTION SYSTEMS

LEGEND

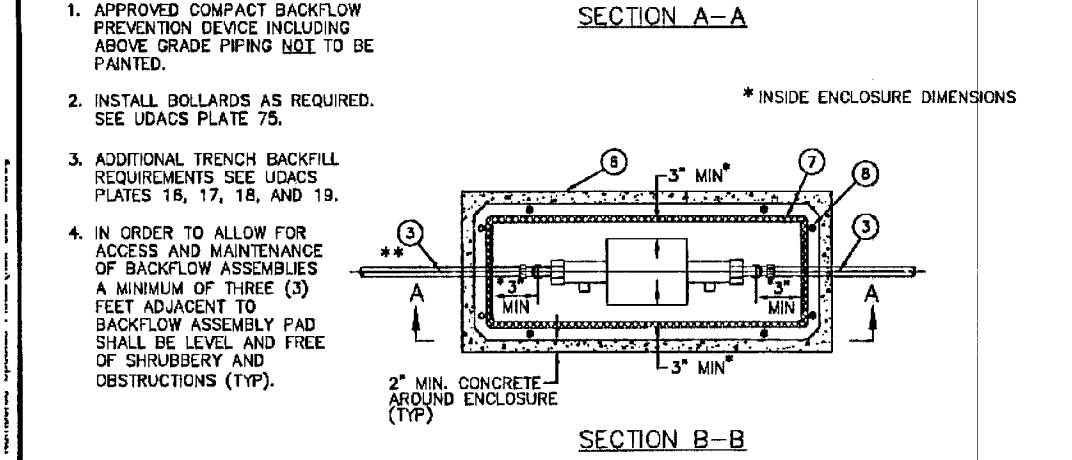
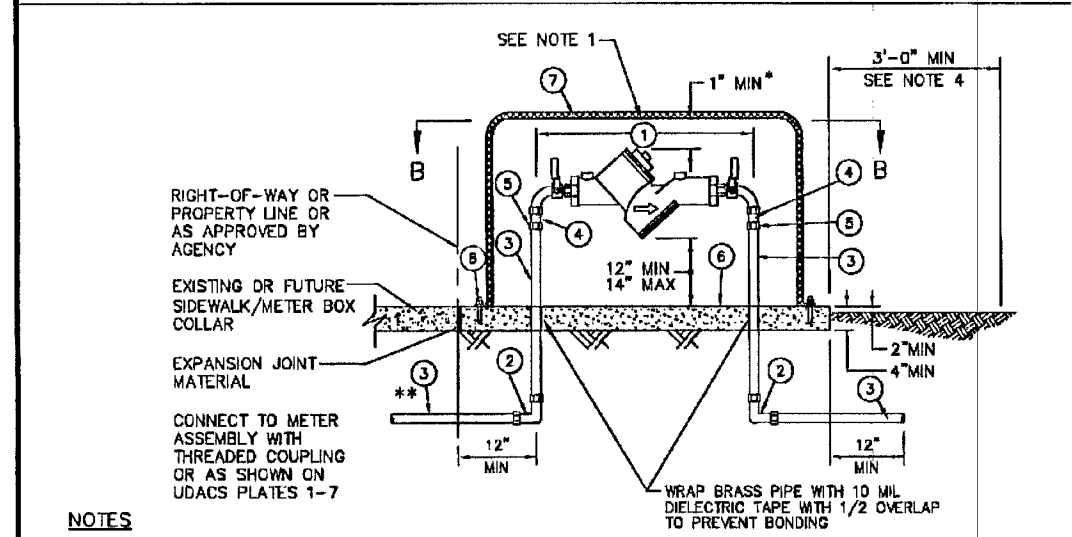
- SERVICE SADDLE
- CORPORATION STOP (BALL TYPE)
- SERVICE LATERAL. SIZE TO MATCH METER (1" MINIMUM)
- UPSTREAM BALL ANGLE METER STOP TO MATCH METER SIZE (1" x 1" MINIMUM) WITH LOCK WING AND WITHOUT LEVER HANDLE. FOR ALL 5/8" AND 3/4" METERS USE A 1" x 3/4" ADAPTER.
- WATER METER. AGENCY SUPPLIED, CONTRACTOR INSTALLED (SEE METER LENGTH CHART)
- TAIL PIECE (1" MIN). TAIL PIECE SHALL BE THE SAME SIZE AND MATERIAL AS SERVICE LATERAL UNLESS OTHERWISE SPECIFIED (OR IF BACKFLOW ASSEMBLY IS REQUIRED) INSTALL 1" x 3/4" ADAPTER AT TAIL PIECE FOR 5/8" OR 3/4" METERS.
- METER BOX INSTALLED TO FINAL GRADE (SIZE TO MATCH METER, 1" MIN)
- SAND BACKFILL
- PREFORMED POLYFOAM PIPE INSULATION (1/2" MIN), MAY BE USED IN LIEU OF SAND BACKFILL AT METER BOX

NOTES

- PROTECT SERVICE LATERAL DURING CONSTRUCTION. DAMAGED SERVICE LATERALS WILL REQUIRE ENTIRE LATERAL REPLACEMENT FROM ANGLE METER STOP TO CORPORATION STOP.
- CUL-DE-SAC SERVICE LATERALS MUST FOLLOW THE MOST DIRECT ROUTE POSSIBLE BETWEEN SERVICE SADDLE AND ANGLE METER STOP. HORIZONTAL BENDING RADIUS ALLOWED FOR 1" TUBING IS 12" MIN. MAXIMUM DEFLECTION ANGLE ALLOWED IS 90°.
- USE OF 5/8" METERS NOT APPROVED BY ALL AGENCIES.
- FLUSH LATERAL PRIOR TO SETTING METER.
- METERS SHALL BE LOCATED OUTSIDE OF DRIVEWAYS WITHIN EXISTING OR FUTURE SIDEWALK AREAS, OR AS SPECIFIED BY AGENCY.
- ADDITIONAL TRENCH BACKFILL REQUIREMENTS ABOVE SERVICE LATERALS SEE UDACS PLATES 16, 17, 18, AND 19.
- ONE ADDITIONAL FLARED COUPLING, OR COMPRESSION COUPLING IS ALLOWED BETWEEN THE CORPORATION STOP, AND THE ANGLE METER STOP IF THE TOTAL LATERAL LENGTH IS GREATER THAN 40' (FOR 1-1/2" OR 2" LATERAL SIZES ONLY)

NOT TO SCALE	FILE NAME: UDACS-4 DRAWN BY: SEM CHECKED BY: SEM	NEW SERVICE INSTALLATION WITH SINGLE ANGLE METER STOPS COMMERCIAL & RESIDENTIAL GREATER THAN 1/4 ACRE CROSS 5/8", 3/4", 1", 1-1/2", AND 2" METER SIZES	UDACS PLATE NO. 4 SHEET 2 OF 2
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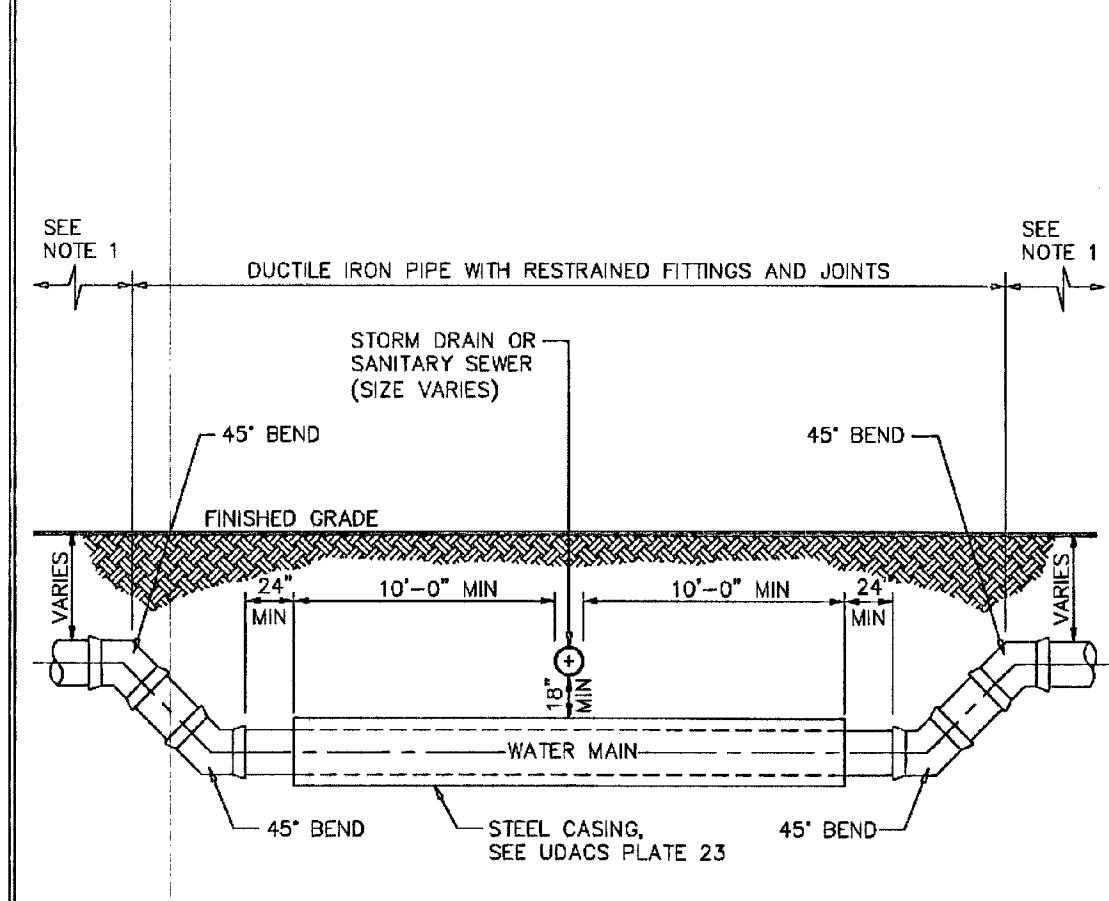
UNIFORM DESIGN STANDARDS FOR WATER DISTRIBUTION SYSTEMS



- NOTES
- APPROVED COMPACT BACKFLOW PREVENTION DEVICE INCLUDING ABOVE GRADE PIPING SHALL BE PAINTED.
 - INSTALL BOLLARDS AS REQUIRED. SEE UDACS PLATE 75.
 - ADDITIONAL TRENCH BACKFILL REQUIREMENTS SEE UDACS PLATES 16, 17, 18, AND 19.
 - IN ORDER TO ALLOW FOR ACCESS AND MAINTENANCE OF BACKFLOW ASSEMBLY A MINIMUM OF THREE (3) FEET ADJACENT TO BACKFLOW ASSEMBLY PAD SHALL BE LEVEL AND FREE OF SHROUBERY AND OBSTRUCTIONS (TYP).
- LEGEND
- APPROVED BACKFLOW ASSEMBLY
 - BRASS 90° BEND - IRON PIPE THREAD (RPT x RPT)
 - BRASS PIPE - STANDARD - TBC
 - BRASS CLOSE NIPPLE
 - BRASS UNION - IRON PIPE THREAD (RPT x RPT) (IF NOT PROVIDED WITH ASSEMBLY)
 - CONCRETE PAD - 3000 PSI (PAD SIZE TO MEET ENCLOSURE MANUFACTURER'S SPECIFICATIONS)
 - AGENCY APPROVED ENCLOSURE
 - ANCHOR PER MANUFACTURER'S REQUIREMENTS
- OFF = IRON PIPE FEMALE, IPM = IRON PIPE MALE, TBC = TRENCHED BOTH ENDS

NOT TO SCALE	FILE NAME: UDACS-22 DRAWN BY: SEM CHECKED BY: SEM	BACKFLOW PREVENTION ASSEMBLY 1" - 2" DIAMETER	UDACS PLATE NO. 8 SHEET 1 OF 1
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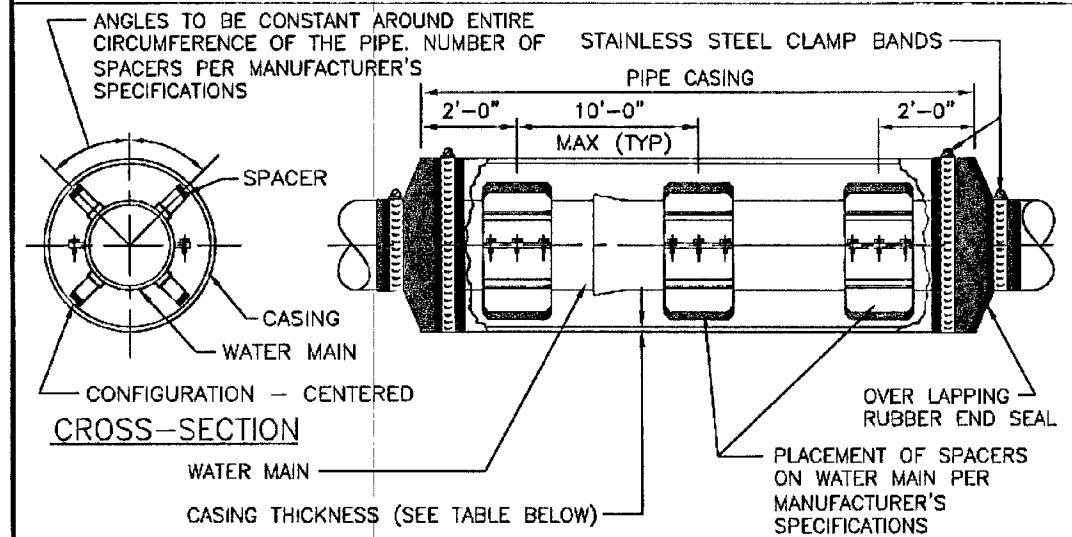
UNIFORM DESIGN STANDARDS FOR WATER DISTRIBUTION SYSTEMS



- NOTES
- PROVIDE LENGTH OF RESTRAINED JOINTS PAST 45° BEND (SUBMIT CALCULATIONS AND IDENTIFY ON PLANS).
 - IDENTIFY TRANSITION FROM DUCTILE IRON PIPE ON PLANS IF PIPE MATERIAL CHANGES.
 - SEE UDACS PLATES 16, 17, 18, AND 19 FOR TRENCH BACKFILL REQUIREMENTS.

NOT TO SCALE	FILE NAME: UDACS-22 DRAWN BY: SEM CHECKED BY: SEM	STORM DRAIN OR SANITARY SEWER NEW WATER MAIN CROSSING	UDACS PLATE NO. 22 SHEET 1 OF 1
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UNIFORM DESIGN STANDARDS FOR WATER DISTRIBUTION SYSTEMS



CASING TABLE

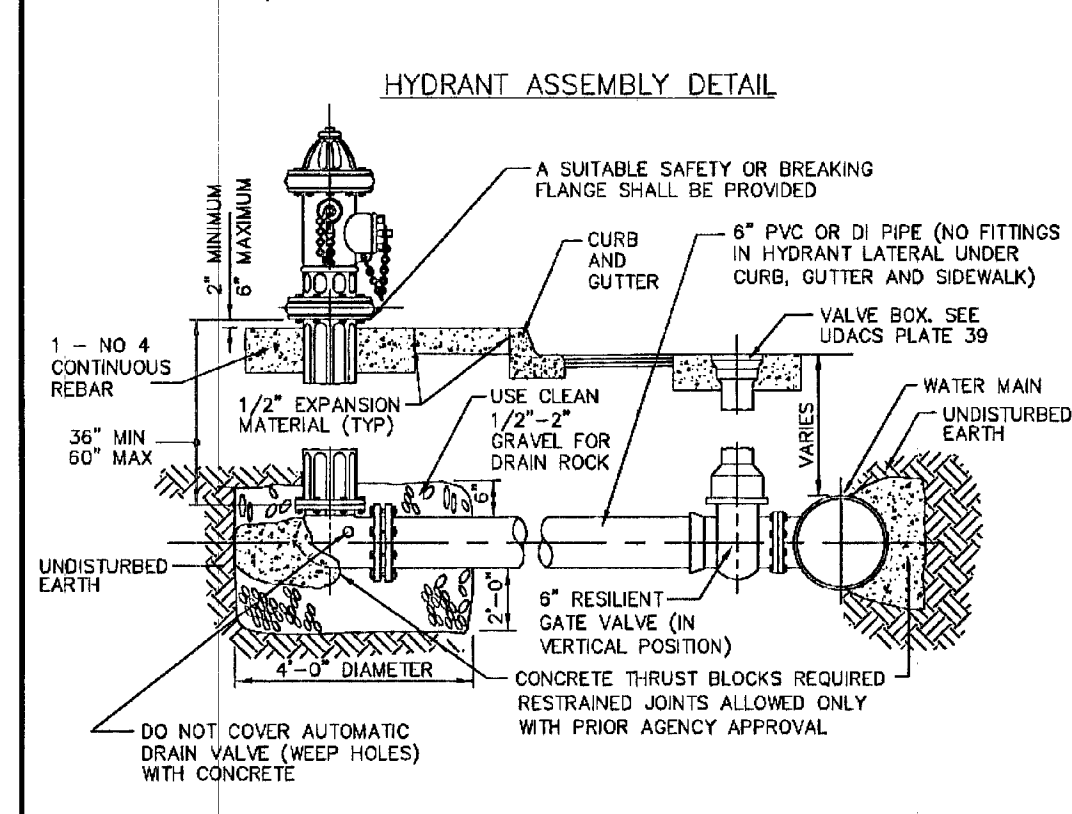
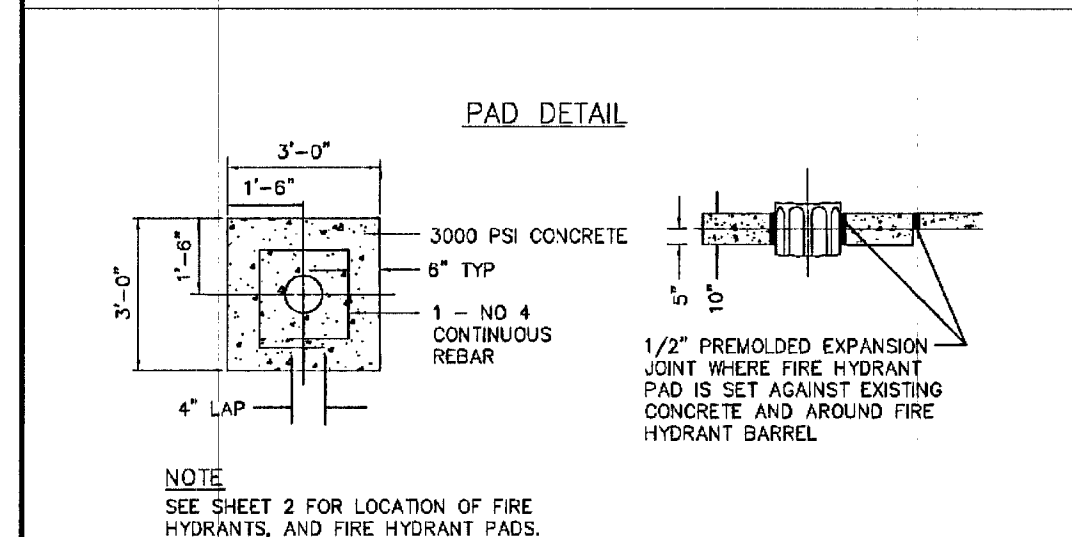
PIPE SIZE	CASING OD	THICKNESS
8"	18"	1/4"
10"	20"	1/4"
12"	24"	5/16"
14"	30"	5/8"
18"	36"	3/8"
24"	42"	1/2"

* CASING INSTALLATIONS OVER 25 FEET BELOW FINISHED GRADE TO HAVE THICKNESS DETERMINED BY A NEVADA LICENSED PROFESSIONAL ENGINEER.
* CASING INSTALLATIONS UNDER RAILROAD TRACKS TO HAVE THICKNESS DETERMINED BY A NEVADA LICENSED PROFESSIONAL ENGINEER AND APPROVED BY UNION PACIFIC RAILROAD.

- NOTES
- STEEL PIPE CASING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A283, GRADE B, C, OR D. ALL JOINTS SHALL BE WELDED. INTERIOR JOINTS SHALL BE GROUNDED TO A SMOOTH FINISH. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AWSW C208, "AWSW STANDARD FOR FIELD WELDING OF STEEL WATER PIPE." COATINGS FOR STEEL CASING ARE NOT REQUIRED.
 - STEEL PIPE CASING SHALL BE INSTALLED SYMMETRICAL ABOUT WATER MAIN CENTERLINE (TYP). PIPE CASING SHALL BE LAID TRUE TO LINE AND GRADE WITH NO BENDS OR CHANGES IN GRADE FOR THE FULL LENGTH OF THE CASING.
 - AGENCY APPROVED CASING SPACERS AND END SEALS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. USE A "CENTERED" CONFIGURATION AND PROVIDE THE MANUFACTURER WITH THE FOLLOWING: (PIPE OD, CASING ID, AND CASING LENGTH).
 - ALL PIPE JOINTS WITHIN THE CASING ARE TO BE EXTERNALLY RESTRAINED.
 - CASING TO BE FILLED (IF REQUIRED). SEE AGENCY FOR FILL MATERIALS AND ADDITIONAL REQUIREMENTS.
 - CASINGS INSTALLED BY JACK AND BORE METHOD SHALL BE INSTALLED TO THE GRADE SHOWN ON THE DRAWINGS, WITH A MAXIMUM VERTICAL DEVIATION OF 40' AND -2", AND A MAXIMUM HORIZONTAL DEVIATION OF ±2" PROVIDED THE ALIGNMENT DOES NOT CONFLICT WITH OTHER UTILITIES AND/OR RIGHTS-OF-WAY.

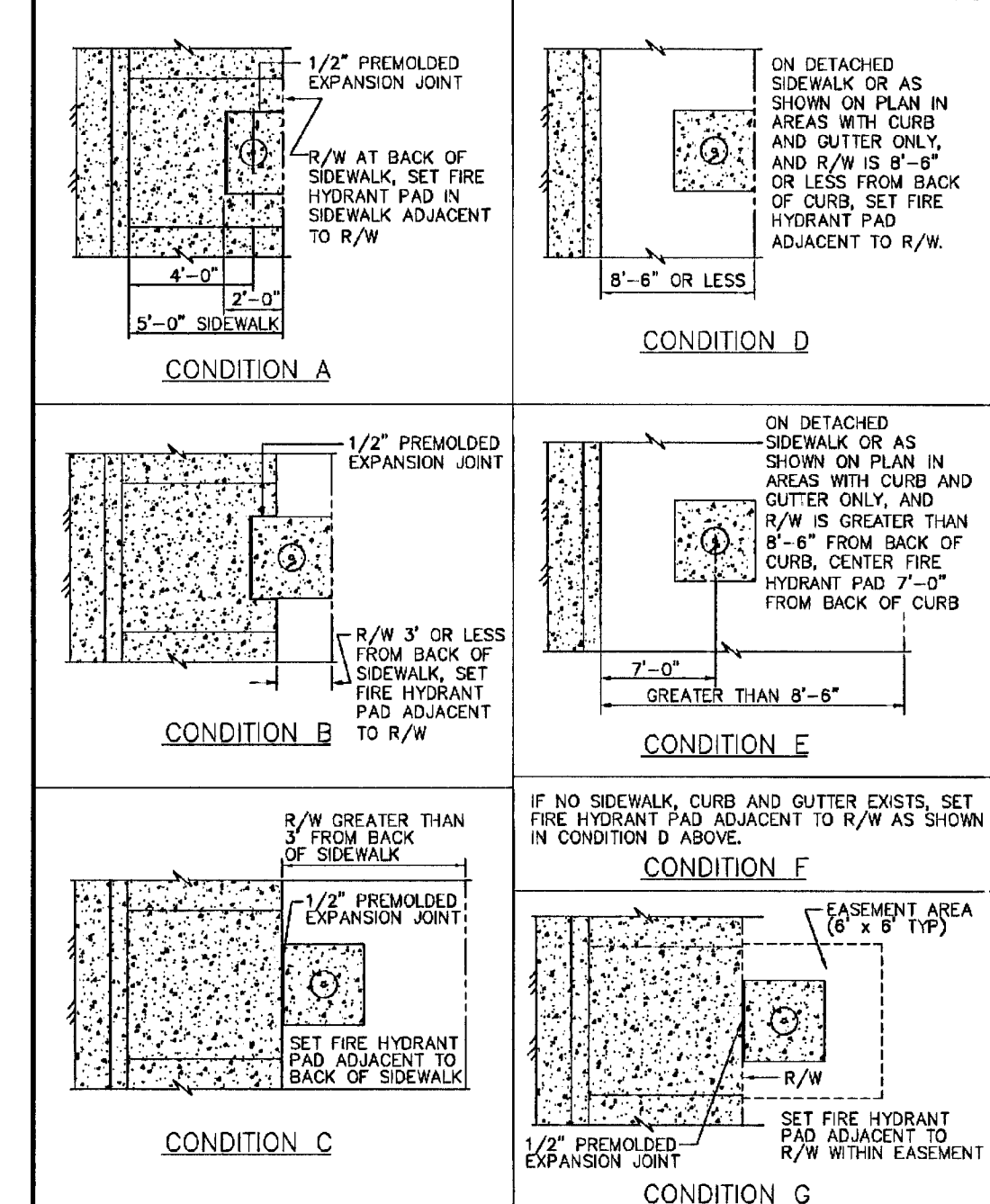
NOT TO SCALE	FILE NAME: UDACS-23 DRAWN BY: SEM CHECKED BY: SEM	CASING INSTALLATION	UDACS PLATE NO. 23 SHEET 1 OF 1
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UNIFORM DESIGN STANDARDS FOR WATER DISTRIBUTION SYSTEMS



NOT TO SCALE	FILE NAME: UDACS-40 DRAWN BY: SEM CHECKED BY: SEM	FIRE HYDRANT INSTALLATION	UDACS PLATE NO. 40 SHEET 1 OF 3
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UNIFORM DESIGN STANDARDS FOR WATER DISTRIBUTION SYSTEMS



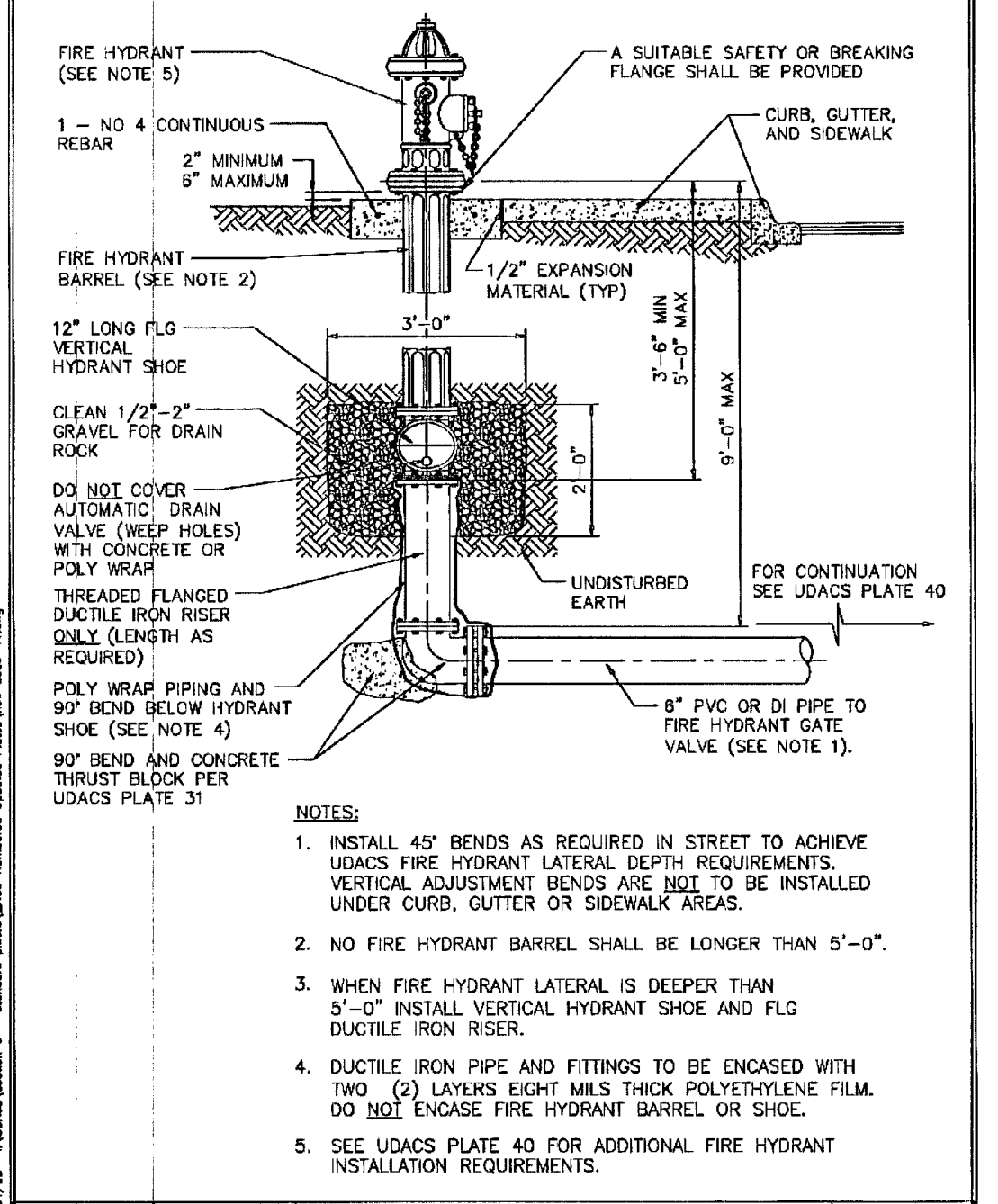
NOT TO SCALE	FILE NAME: UDACS-40 DRAWN BY: SEM CHECKED BY: SEM	FIRE HYDRANT INSTALLATION	UDACS PLATE NO. 40 SHEET 2 OF 3
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UNIFORM DESIGN STANDARDS FOR WATER DISTRIBUTION SYSTEMS

- NOTES
- ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE REQUIREMENTS AND APPROVED FIRE HYDRANT INSTALLATION GUIDES OF THE FIRE DEPARTMENT HAVING JURISDICTION.
 - NO HYDRANT SHALL BE LOCATED WITHIN 25 FEET OF ANY STRUCTURE OR 6 FEET OF A DRIVEWAY, POWER POLE, LIGHT STANDARD, OR ANY OTHER OBSTRUCTION. FOR WALLS, FENCE, AND PLANTER LOCATIONS, A PERIMETER AROUND THE HYDRANT MEASURING A MINIMUM OF 3 FEET FROM ITS CIRCUMFERENCE SHALL BE MAINTAINED CLEAR OF ALL OBSTRUCTIONS AT ALL TIMES. HYDRANTS MUST BE LOCATED A MINIMUM OF 6 FEET AWAY FROM THE BEGINNING OF A TURNING RADIUS.
 - 6" FIRE HYDRANT LATERAL SHALL BE THE SAME PRESSURE CLASS AS THE DISTRIBUTION MAIN.
 - DUCTILE IRON PIPE TO BE ENCASED WITH TWO LAYERS EIGHT MILS THICK POLYETHYLENE FILM. DO NOT ENCASE FIRE HYDRANT BARREL.
 - ALL FIRE HYDRANTS SHALL BE REPAINTED AS REQUIRED IF DAMAGED DURING INSTALLATION.
 - USE OF FIRE HYDRANT BARREL EXTENSIONS MUST HAVE PRIOR AGENCY APPROVAL.
 - MAXIMUM FIRE HYDRANT LATERAL DEFLECTION SEE UDACS SECTIONS 2.07 AND 3.11
 - ADDITIONAL CLEARANCE FROM THE FRONT OF FIRE HYDRANT TO BACK OF CURB MAY BE REQUIRED BY THE AGENCY.

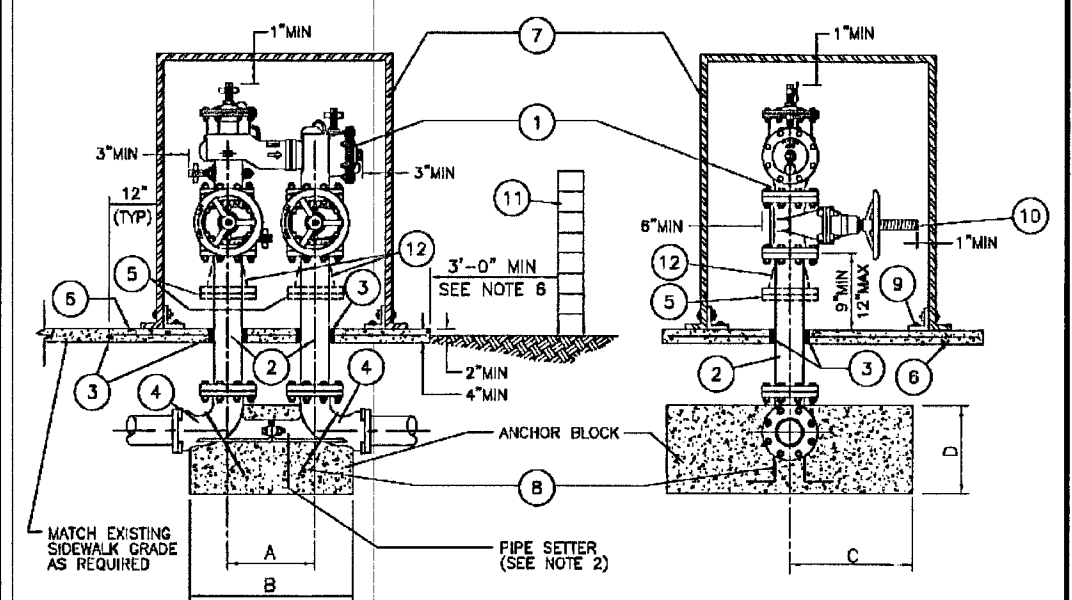
NOT TO SCALE	FILE NAME: UDACS-40 DRAWN BY: SEM CHECKED BY: SEM	FIRE HYDRANT INSTALLATION	UDACS PLATE NO. 40 SHEET 3 OF 3
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UNIFORM DESIGN STANDARDS FOR WATER DISTRIBUTION SYSTEMS



NOT TO SCALE	FILE NAME: UDACS-41 DRAWN BY: SEM CHECKED BY: SEM	DEEP FIRE HYDRANT INSTALLATION	UDACS PLATE NO. 41 SHEET 1 OF 1
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UNIFORM DESIGN STANDARDS FOR WATER DISTRIBUTION SYSTEMS



ANCHOR BLOCK SIZING REQUIREMENTS

ASSEMBLY SIZE	3"	4"	6"	8"	10"
A	12-1/2"	18"	18"	18-1/2"	21"
B	18"	26"	26"	30"	36"
C	15"	21"	21"	24"	27"
D	8"	12"	12"	15"	20"

- NOTES
- ENCLOSURE SIZE AND CONCRETE PAD TO BE DETERMINED USING MINIMUM CLEARANCES SHOWN.
 - PIPE SETTER MAY BE OMITTED WITH PRIOR APPROVAL BY THE AGENCY HAVING JURISDICTION.
 - DIFFERENCE IN ELEVATION NOT PERMITTED AT 90° BENDS BELOW GRADE, UNLESS PRIOR APPROVAL OBTAINED FROM THE AGENCY HAVING JURISDICTION.
 - INSTALL BOLLARDS AS REQUIRED. SEE UDACS PLATE 75.
 - APPROVING AGENCY MAY REQUIRE INSTALLATION OF A REDUCER. INSTALL REDUCER PRIOR TO AND/OR AFTER 90° BEND ON INLET/OUTLET PIPING.
 - IN ORDER TO ALLOW FOR ACCESS AND MAINTENANCE OF BACKFLOW ASSEMBLY A MINIMUM OF THREE (3) FEET ADJACENT TO BACKFLOW ASSEMBLY PAD SHALL BE LEVEL AND FREE OF SHROUBERY AND OBSTRUCTIONS (TYP).
 - 3" ASSEMBLY - 6" RISERS WITH REDUCER (6" x 3"), 6" 90° BENDS WITH NO SETTER.

NOT TO SCALE	FILE NAME: UDACS-56 DRAWN BY: SEM CHECKED BY: SEM	COMPACT BACKFLOW PREVENTION ASSEMBLY 3" - 10" DIAMETER	UDACS PLATE NO. 56 SHEET 1 OF 2
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UNIFORM DESIGN STANDARDS FOR WATER DISTRIBUTION SYSTEMS

- LEGEND
- APPROVED REDUCED PRESSURE PRINCIPLE ASSEMBLY
 - APPROVED REDUCED PRESSURE DETECTOR ASSEMBLY
 - APPROVED DOUBLE CHECK VALVE ASSEMBLY
 - APPROVED DOUBLE CHECK DETECTOR ASSEMBLY
 - ALL ASSEMBLIES TO BE FACTORY COATED. ABOVE GRADE PIPING TO BE PAINTED. SEE SECTION 3, PROTECTIVE COATINGS
 - THREADED FLG x PE DUCTILE IRON PIPE, PRESSURE CLASS 350.
 - 1/2" EXPANSION JOINT MATERIAL
 - FLG x MJ OR FLG x FLG 90° DUCTILE IRON BEND (WITH SETTER). NO SETTER REQUIRED FOR 3" ASSEMBLY
 - RESTRAINED ADAPTER FLANGE.
 - CONCRETE PAD - 3000 PSI (4" THICK) WITH WELDED WIRE FABRIC, 4 x 4 - W1.4 x W1.4
 - AGENCY APPROVED ENCLOSURE
 - NO. 4 REBAR. (WRAP EXPOSED PORTION OF REBAR WITH 10 MIL DIELECTRIC PLASTIC TAPE WITH 1/2 OVERLAP)
 - ANCHOR PER MANUFACTURER'S REQUIREMENTS
 - FOR OS & Y VALVE INSTALLATIONS VALVE STEM TO MAINTAIN 1" MIN CLEARANCE FROM INSIDE WALL OF ENCLOSURE OR AS APPROVED BY AGENCY
 - RETAINING WALL, FENCE, OR OTHER OBSTRUCTION (EASEMENT)
 - DI FLG CONCENTRIC (6" x 3") OR ECCENTRIC (6" x 4") REDUCER

NOT TO SCALE	FILE NAME: UDACS-56 DRAWN BY: SEM CHECKED BY: SEM	COMPACT BACKFLOW PREVENTION ASSEMBLY 3" - 10" DIAMETER	UDACS PLATE NO. 56 SHEET 2 OF 2
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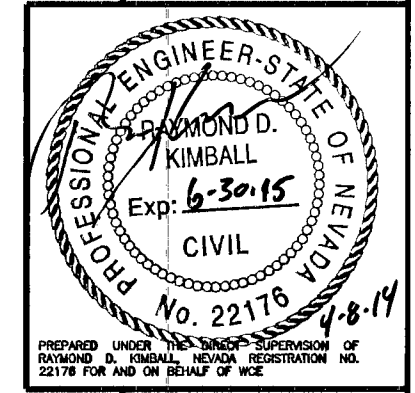
COUNTY DATUM
CITY OF LAS VEGAS BENCHMARK NO. 7LV0128SSW6 BEING A RIVET & PLATE IN TOP OF CURB AT THE NORTHWEST CORNER OF SHADOW LANE & MESQUITE AVENUE.
ELEVATION: 2057.65 FEET OR 627.174 METERS, NAVD 88.

H#52288

IWCE
MADISON DEVELOPMENT GROUP, LLC
10510 NE NORTHUP WAY, STE. 120
SPokane Valley, WA 99037
PHONE: 509-889-6500
FAX: 509-889-0227

WHIPPLE CONSULTING ENGINEERS
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PHONE: 509-889-6500
FAX: 509-889-0227

MATRESS FIRM
UTILITY DETAILS
80 S. MARTIN LUTHER KING BLVD.
LAS VEGAS, NEVADA



SCALE:
HORIZONTAL: 1" = 20'
VERTICAL: N/A

PROJ #: 13-1112
DATE: 04/04/14
DRAWN: SMM
REVIEWED: TRW

SHEET C6.3
12 OF 14

CLV DWG NUMBER 107V6237