#2357
1/20 RL

COLORADO SPRINGS UTILITIES

APPROVED FOR CONSTRUCTION

PLANNING AND ENGINEERING 12/31/02
DATE
1 OF 5

CSFD APPROVAL DATE

APPROVAL FOR LOT 1 ONLY. FUTURE DEVELOPMENT OF LOTS 2 THROUGH 5 WILL REQUIRE SEPERATE SUBMITTALS.

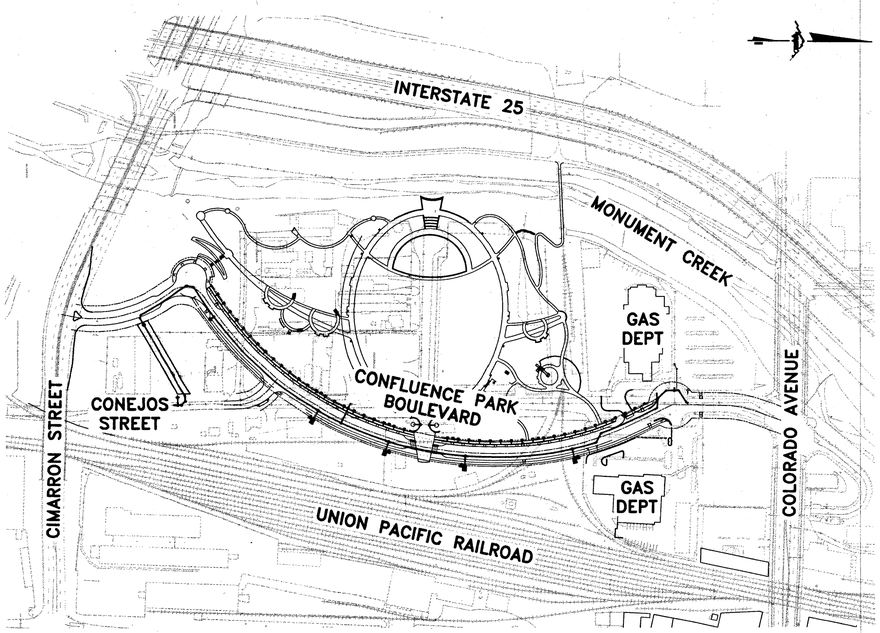
PLANNING AND ENGINEERING

A Pueblo Blue Ridge
Start 4-21-03
Finish 1-23-04

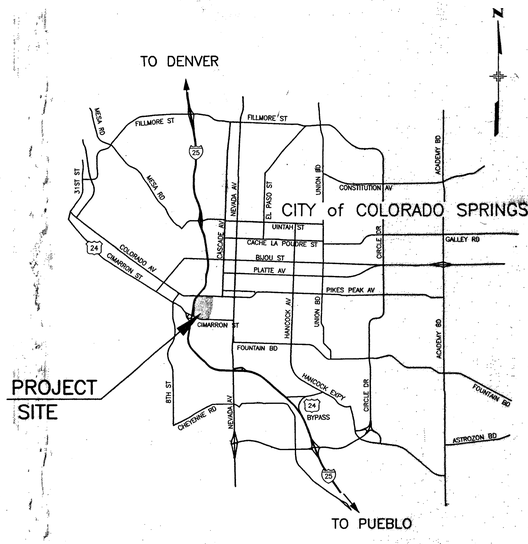
2001-W-354 1110021-01

CONFLUENCE PARK PHASE IA IMPROVEMENTS

INSTALL APPROX. 1838 FT OF 12" PVC WATER LINE IN CONFLUENCE PARK BLVD., 52 FT IN CONEJOS ST. AND 230 FT ACROSS PRIVATE PROPERTY WITHIN AN EASEMENT



SITE PLAN
SCALE: 1"=200'



VICINITY MAP
NOT TO SCALE

COLORADO REGISTERED
35165
11/20/02
PROFESSIONAL ENGINEER

WILSON & COMPANY
Engineers & Architects
A PARTNERSHIP OF CORPORATIONS

WP001

CONSTRUCTION DOCUMENTS

W.O. NO. 1110021 PROJECT NO. 2001-W354 MAP NO. G-33 & G-34

P:\99\1100402\Dwg\Construction_Set\Water (Potable)\Profile\WP001.DWG, PAPER, 11/13/2002 04:08:28 PM, jwells

☐ DESIGN RELEASED

BY DATE

☐ RECORDED PLATS AND/OR EASEMENTS VERIFIED

BY DATE

DATE STARTED _____ DATE FINISHED _____

CONTRACTOR _____ TELEPHONE NO. _____

INSPECTED BY _____

STAKED BY _____

Doron Moore 2008-0279-FH2 11/21/02

C.S.F.D. FIRE PREVENTION DIVISION DATE

APPROVAL FOR LOT 1 ONLY. FUTURE DEVELOPMENT OF LOTS 2 THROUGH 5 WILL REQUIRE SEPERATE SUBMITTALS.

GENERAL NOTES

1. ALL PERMITS REQUIRED SHALL BE OBTAINED BY THE PIPELINE INSTALLER WHO SHALL COMPLY WITH THE CONDITIONS THEREOF.
2. ALL WATER MAIN INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE LATEST " COLORADO SPRINGS, UTILITIES, WATER DEPARTMENT STANDARD SPECIFICATIONS ". THE CONTRACTOR SHALL HAVE A COPY OF THE ABOVE NAMED SPECIFICATIONS AT THE WORK SITE AT ALL TIMES.
3. ALL WORK IN THE CITY OF COLORADO SPRINGS PUBLIC RIGHT-OF-WAY SHALL BE IN CONFORMANCE WITH THE CITY OF COLORADO SPRINGS, ENGINEERING DIVISION STANDARD SPECIFICATIONS.
4. CHANGES IN DESIGN DETERMINED NECESSARY TO CONFORM TO FIELD CONDITIONS MAY REQUIRE ADDITIONAL MATERIALS NOT INDICATED ON THIS PLAN. ALL CHANGES SHALL BE APPROVED BY WATER ENGINEERING.
5. REUSE OF EXISTING FITTINGS SHALL BE LEFT TO THE DISCRETION OF THE WATER ENGINEERING INSPECTOR OR FOREMAN. ANY MATERIAL SALVAGED AND NOT REUSED SHALL BE RETURNED TO THE WATER STORE.
6. THE FOLLOWING TIE-IN POINTS WERE NOT FIELD VERIFIED FOR LOCATION AND SHALL BE EXPOSED PRIOR TO CONSTRUCTION. NOTIFY WATER ENGINEERING FOR SCHEDULING OF SURVEY CREW TO CONFIRM EXACT ALIGNMENT, IF NECESSARY, POINTS ARE AS FOLLOWS:
7. ALL PIPELINE ELEVATIONS SHOWN ARE TO THE BOTTOM OF PIPE, UNLESS OTHERWISE NOTED. (REFER TO "PROJECT DATUM" INFORMATION, THIS SHEET)

NOTE: GENERAL NOTES WITH MARKED BOXES ARE ALSO APPLICABLE TO THIS JOB.

■ 8. a. ☐ NO SPECIAL CORROSION CONTROL REQUIRED.
b. ☐ SPECIAL CORROSION CONTROL REQUIRED BETWEEN STATIONS, _____ AND _____
c. ■ POLYETHYLENE WRAP REQUIRED ON ALL FITTINGS, HYDRANTS AND METALLIC FITTINGS, ETC.
d. ■ ONE 9lb ANODE BONDED TO EACH INDIVIDUAL FITTING OR APPURTENANT.
e. ☐ DOUBLE BONDING REQUIRED.
f. ■ ANODE STATIONS: (REFER TO PLAN FOR LOCATIONS)
TEST STATIONS: (REFER TO PLAN FOR LOCATIONS)
INSULATING COUPLING STATIONS: (REFER TO PLAN FOR LOCATIONS)

☐ 9. SEVERAL EXISTING UTILITIES WERE NOT POTHOLED FOR LOCATION AND SHALL BE LOCATED PRIOR TO CONSTRUCTION. NOTIFY WATER ENGINEERING FOR SCHEDULING OF SURVEY CREW TO CONFIRM EXACT ALIGNMENT, IF NECESSARY.

■ 10. PROPOSED WATER MAINS SHALL BE INSTALLED WITH A MINIMUM COVER OF 5-1/2 FEET OR TO THE DEPTHS SHOWN ON THE PLANS.

■ 11. UNDERGROUND TELEPHONE AND CABLEVISION EXISTING IN CONSTRUCTION AREA. CALL FOR LOCATION PRIOR TO EXCAVATION.

☐ 12. PROPOSED WATER MAIN WILL NEED TO BE TIED BACK INTO EXISTING MAIN AT NIGHT.

☐ 13. SPECIAL TIE-BACK CONSTRUCTION AND/OR MATERIAL IS REQUIRED AND SHALL BE SPACED SYMMETRICALLY AROUND FITTINGS AT STATIONS:

NOTE: (FOR SLOTTED VALVES, T-BOLTS AND ROD COUPLINGS ARE ACCEPTABLE FOR THRUST RESTRAINT.)

■ 14. [☐ DEVELOPER/ ■ CONTRACTOR]
THE WATER DEPARTMENT CANNOT GUARANTEE THE LOCATIONS OR ACCURACY OF UNDERGROUND FACILITIES OR BE RESPONSIBLE FOR ANY DAMAGE THAT MAY OCCUR DURING CONSTRUCTION. THE [DEVELOPER/ CONTRACTOR] SHALL BE RESPONSIBLE FOR VERIFYING THAT THESE PLANS CONFORM TO PROPOSED AND EXISTING FIELD CONDITIONS, AND FOR DETERMINING THE LOCATIONS, HORIZONTAL AND VERTICAL, OF ALL UTILITIES PRIOR TO EXCAVATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL UTILITIES AND FACILITIES IN A MANNER DETERMINED NECESSARY BY THE OWNER OF SUCH UTILITIES OR FACILITIES. ANY SUCH PROTECTION OR ADJUSTMENTS IN THE GRADE OR ALIGNMENT OF THE PIPELINE AS DETERMINED NECESSARY BY THE WATER DEPARTMENT SHALL BE AT THE EXPENSE OF THE [DEVELOPER/ CONTRACTOR.]

■ 15. THERE SHALL BE NO CLAIMS AGAINST THE WATER DEPARTMENT FOR HINDRANCES OR DELAYS DUE TO ANY CAUSE, INCLUDING RESOLUTION OF CONFLICTS.

■ 16. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO RE-EXCAVATE THE TRENCH WHERE DISINFECTION AND PRESSURE TESTING WILL BE PERFORMED AND PREPARE AND PROTECT THESE PITS FOR DISINFECTION BY THE OWNER. SINCE DISINFECTION WILL TAKE PLACE FIRST, THE CONTRACTOR SHALL ASSIST IN TRENCH MAINTENANCE AND STAND BY DURING DISINFECTION. THERE SHALL BE NO CLAIMS FOR ANY DELAYS OR EXTRA COST SHOULD UNFORSEEN ISSUES ARISE. THERE CAN BE NO GUARANTEE OF WHEN OR HOW LONG DISINFECTION WILL OCCUR. AFTER SUCCESSFUL PRESSURE TESTING THE SITE/S WILL BE RESTORED AS SPECIFIED.

☐ 17. CONTRACTOR SHALL NOTIFY THE COLORADO DEPARTMENT OF TRANSPORTATION, UTILITY ENGINEER, ONE WEEK PRIOR TO BEGINNING WORK ON STATE HIGHWAY RIGHT OF WAY. CONTACT PERSON IS MR. DENNIS FITZSIMMONS, (719) 546-5433.

■ 18. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY PROTECTION, REMOVAL AND REINSTALLATION AT THE SAME LOCATION OF ALL FACILITIES AFFECTED BY HIS WORK.

■ 19. AFTER INSTALLATION OF PIPELINE AND BACKFILLING OF TRENCH TO FINAL GRADE, ANY EXCESS MATERIAL SHALL BE SPREAD AND COMPACTED OR HAULED AWAY AND DISPOSED OF AT THE OWNER'S DISCRETION.

ABBREVIATIONS

@	ANODE	GPM	GALLONS PER MINUTE
ACT	ACTUAL	GRD BRK	GRADE BREAK
BFV	BUTTERFLY VALVE	HYD ASSY	INCLUDES FIRE HYDRANT, LATERAL, VALVE, TIE RODS, AND REVERSE ANCHOR.
BOP	BOTTOM OF PIPE	INV	INVERT
BOV	BLOWOFF ASSEMBLY AND VALVE	MJ	MECHANICAL JOINT
CB	CATCH BASIN	N,S,E,W	NORTH,SOUTH,EAST,WEST
CMP	CORRUGATED METAL PIPE	PH	POTHOLE
CPLG.(INS.), (RED.),(STR.)	COUPLING (INSULATING),(REDUCING), (STRAIGHT)	PL	PROPERTY LINE
CR	CURB RETURN	PP	POWER POLE
CRA	CONCRETE REVERSE ANCHOR	PSI	POUNDS PER SQUARE INCH
CTRB	CONCRETE THRUST REACTION BLOCK	PUPS	12" OR SMALLER, USE PLAIN END BY PLAIN END, 30" LENGTH, 16" OR LARGER USE PLAIN END BY PLAIN END, 24" LENGTH
DEFL	DEFLECT	PVC	POLYVINYL CHLORIDE PIPE
DIP	DUCTILE IRON PIPE	RCP	REINFORCED CONCRETE PIPE
ELEV	ELEVATION	RED	REDUCER
FLG	FLANGE	RSRT	MJ RESTRAINT (i.e. MEGALUG)
		SJ	SLIP JOINT
		SS	SANITARY SEWER
		STA	STATION
		SD	STORM DRAIN
		TOP	TOP OF PIPE
		TS	TEST STATION
		WL	WATER LINE

W.O. NO. 1110021

PROJECT MAPPING

1.TOPOGRAPHY SHOWN HEREON IS BASED ON PHOTOGRAMMETRY PREPARED BY WILSON & COMPANY FROM AN AERIAL FLIGHT DATED NOVEMBER 1998.

2. EXISTING UTILITIES AND UPDATES TO THE PHOTOGRAMMETRY HAVE BEEN FIELD LOCATED BY WILSON & COMPANY AS NEEDED.

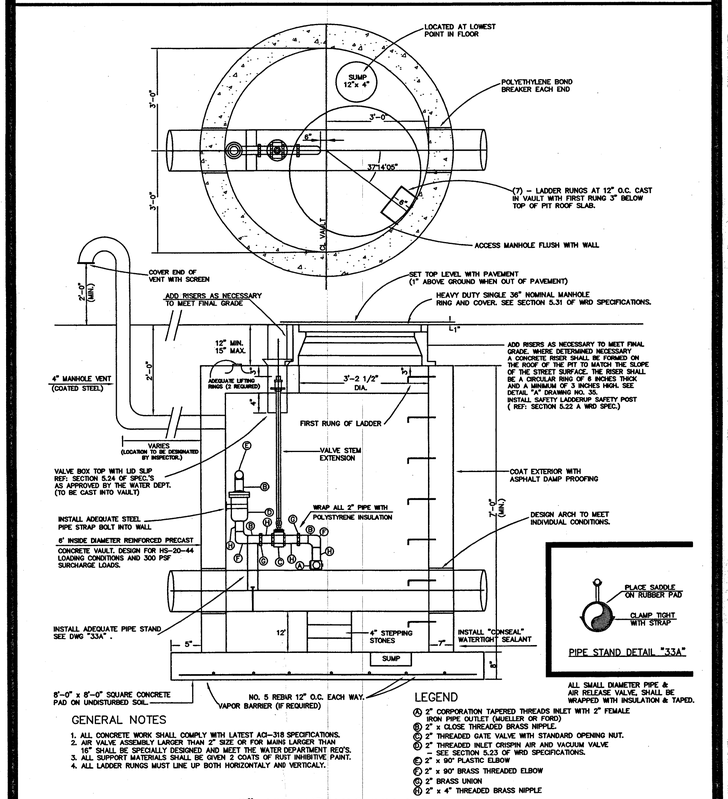
PROJECT DATUM

VERTICAL – NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29)
HORIZONTAL – NORTH AMERICAN DATUM 1983 (NAD 83)
CONTROL – PROJECT SPECIFIC (REFER TO CONTROL PLAN)

BENCHMARKS:

1. STAINLESS STEEL ROD STAMPED "A 396 1983" WITHIN A 5-INCH MONUMENT BOX LOCATED AT THE INTERSECTION OF SIERRA MADRE STREET AND THE DENVER AND RIO GRAND WESTERN RAILROAD (138.1 FT) SOUTHEAST OF THE STREET. ELEVATION = 5953.48

2. BENCH MARK DISK STAMPED "G 3 RESET 1937" SET IN THE TOP OF AN 8-INCH BY 10-INCH CONCRETE POST LOCATED AT THE WEST BIJOU STREET VIADUCT ON THE FIRST CONCRETE PIER EAST OF THE TRACK. ELEVATION = 5989.50



GENERAL NOTES

1. ALL CONCRETE WORK SHALL COMPLY WITH LATEST ACI-318 SPECIFICATIONS.
2. AIR VALVE ASSEMBLY LARGER THAN 2" SIZE OR FOR MAINS LARGER THAN 16" SHALL BE SPECIALLY DESIGNED AND MEET THE WATER DEPARTMENT REQ'S.
3. ALL SUPPORT MATERIALS SHALL BE GIVEN 2 COATS OF RUST INHIBITIVE PAINT.
4. ALL LADDER RUNGS MUST LINE UP BOTH HORIZONTALY AND VERTICALY.

LEGEND

Ⓐ 2" CORPORATION TAPERED THREADS INLET WITH 2" FEMALE IRON PIPE OUTLET (MUELLER OR FORD)
Ⓑ 2" x CLOSE THREADED BRASS NIPPLE.
Ⓒ 2" THREADED GATE VALVE WITH STANDARD OPENING NUT.
Ⓓ 2" THREADED INLET CRISPIN AIR AND VACUUM VALVE – SEE SECTION 5.23 OF WRD SPECIFICATIONS.
Ⓔ 2" x 90° PLASTIC ELBOW
Ⓕ 2" x 90° BRASS THREADED ELBOW
Ⓖ 2" BRASS UNION
Ⓗ 2" x 4" THREADED BRASS NIPPLE

2" AIR AND VACUUM VALVE STATION
NOT TO SCALE

STANDARD SYMBOLS

CENTERLINE		FIRE HYDRANT (EXISTING)	FH
DIP PAN		FIRE HYDRANT (PROPOSED)	FH
FENCE	-x-x-x-	MANHOLE	
SANITARY SEWER	-SAN-SAN-	STORM INLET	
STORM DRAIN	-SS-SS-	VALVE (PROPOSED)	
GAS	-G-G-	VALVE (EXISTING)	
ELECTRIC (O/H OR U/G*)	-E-E-	BLOWOFF (PROPOSED)	
TELEPHONE (O/H OR U/G*)	-T-T-	BLOWOFF (EXISTING)	
TELEVISION	-TV-TV-	PLUG (PROPOSED)	
FIBER OPTIC	-FO-FO-	PLUG (EXISTING)	
EXISTING WATER	-W-W-W-		
PROPOSED WATER	-W-W-		
RIGHT-OF-WAY			
PROPERTY LINE			

* O/H = OVERHEAD, U/G = UNDERGROUND

PROJECT NO. 2001-W354

MATERIALS

SYSTEM

TOTAL	UOM	USED	MATERIAL DESCRIPTION
1	EA	3	ANCHOR (REVERSE), CONCRETE, MJ, 12"
3	EA	3	ANODES, 17 LB
63	EA	66	ANODES, 9 LB
1	EA	1	AIR AND VACUUM VALVE STATION, 2"
6	EA	10	BEND, 12" x 11-1/4 DEGREE, MJ
1	EA	1	BEND, 12" x 22-1/2 DEGREE, MJ
13	EA	13	BEND, 12" x 45 DEGREE, MJ
23	EA	23	BOX, VALVE, BOTTOM SECTION, 36"
23	EA	23	BOX, VALVE, TOP SECTION W/OUT LID, 26"
1	EA	2	CLAMP, MEGALUG, RESTRAINING, 4"PVC
1	EA	2	CLAMP, MEGALUG, RESTRAINING, 6"PVC
24	EA		CLAMP, MEGALUG, RESTRAINING, 8"PVC
52	EA		CLAMP, MEGALUG, RESTRAINING, 12"PVC
81	EA		CONNECTOR, COPPER, NO. 6 TYPE
1	EA		COUPLING, INSULATING, 4" DIP
1	EA		COUPLING, INSULATING, 6" DIP
12	EA	3	COUPLING, INSULATING, 12" DIP
48	LF		COVERING, HYDRANT BARREL, POLYETHELENE, 6"
66	LF	66	PIPE, SLIP JOINT, PVC, 4"
144	LF	144	PIPE, SLIP JOINT, PVC, 8"
1991	LF	1972	PIPE, SLIP JOINT, PVC, 12" W/HIGH DEFLECTION CPLGS
130	LF	120	PIPE, SLIP JOINT, DIP, 12"
1	EA	1	PLUG, SLIP JOINT, CONCRETE, 4"
4	EA	4	PLUG, SLIP JOINT, CONCRETE, 8"
1	EA	1	REDUCER, MJ, 12" X 8"
130	LF	130	SLEEVE, STEEL, 24"
1	EA	1	TEE, MJ, CL, 12" X 4"
1	EA	1	TEE, MJ, CL, 12" X 6"
4	EA	4	TEE, MJ, CL, 12" X 8"
2	EA	2	TEST STATION, CORROSION
3	EA		THRUST REDUCER BLOCK, CONCRETE, 1/4 YD
21	EA		THRUST REDUCER BLOCK, CONCRETE, 1/2 YD
3	EA		THRUST REDUCER BLOCK, CONCRETE, 3/4 YD
5	EA	5	VALVE, BLOWOFF, 2"
2	EA	2	VALVE, MJ, GATE OR, 250#, 4"
1	EA	1	VALVE, MJ, GATE OR, 250#, 6"
8	EA	8	VALVE, MJ, GATE OR, 250#, 8"
12	EA	10 14	VALVE, MJ, GATE OR, 250#, 12"
2403	LF		WIRE, BARE COPPER, SOLID, TIE, #6

1490' LF 8" Pipe Abandoned
500' LF 4" "
1350' LF 6" Pipe Abandoned
5 Hyds Abandoned # 189-D ~ 192-D ~
1 Hyd. Removed & replaced 190-D ~ ~~193-D~~ 193-D ~
191-D ~ 194-D

FIRE HYDRANT

TOTAL	UOM	USED	MATERIAL DESCRIPTION
6	EA	7	ANCHOR (REVERSE), CONCRETE, MJ, 6"
6	EA	7	BOX, VALVE, BOTTOM SECTION, 36"
6	EA	7	BOX, VALVE, TOP SECTION W/OUT LID, 26"
12	EA		CLAMP, MEGALUG, RESTRAINING, 6"PVC
6	EA	7	HYDRANT, FIRE, 5-1/4" X 6-1/2" BURY, 250 PSI
74	LF	100	PIPE, PVC, SLIP JOINT, 6"
6	EA	14	STONE, STEPPING
4	EA	5	TEE, MJ X MJ X SW, 8" X 6"
2	EA	3	TEE, MJ X MJ X SW, 12" X 6"
6	EA	7	VALVE, MJ, GATE, OR, 250#, 6"

NOTE: THIS MATERIAL LIST MAY VARY DEPENDING ON INSTALLATION AND DOES NOT INCLUDE MISCELLANEOUS MATERIAL.

COLORADO REGISTERED BENJAMIN E. WILSON 35165 11/20/02 PROFESSIONAL ENGINEER

WILSON & COMPANY
Engineers & Architects
A PARTNERSHIP OF CORPORATIONS

WP002

RETIRED IN GROUND OR JUNKED OUT MATERIAL LIST

	JUNKED OUT MATERIAL					RETIRED IN GROUND MATERIAL				
	(SIZE)	(FOOTAGE)	(TYPE)	(DEGREE)	(NUMBER)	(SIZE)	(FOOTAGE)	(TYPE)	(DEGREE)	(NUMBER)
PIPE										
PIPE										
VALVE										
HYDRANT										
CROSS										
REDUCER										
BENDS										
TEES										

SHEET 2 OF 5

CONSTRUCTION DOCUMENTS

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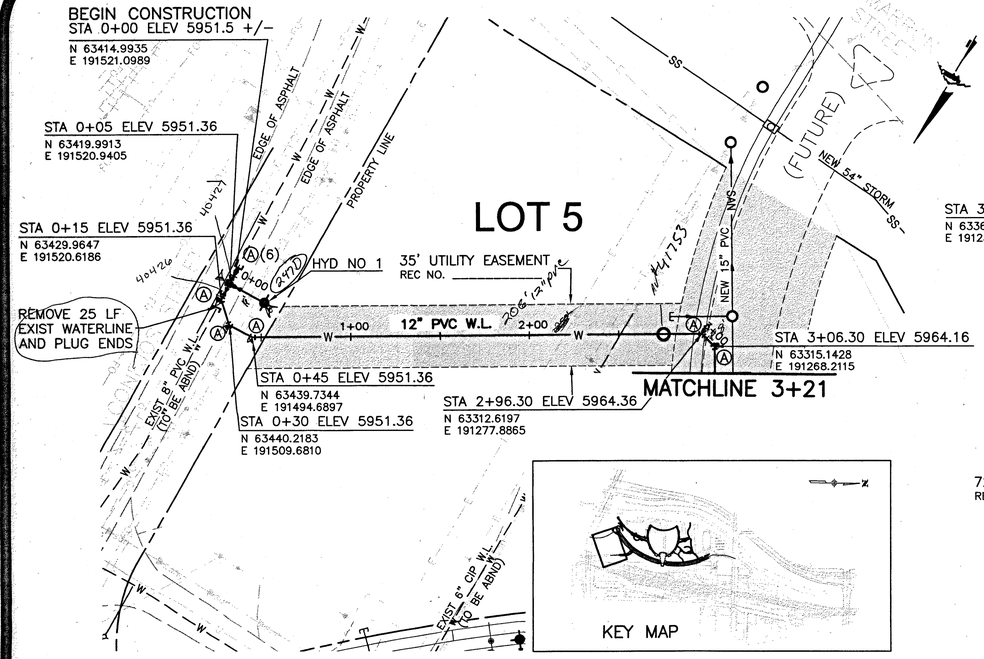
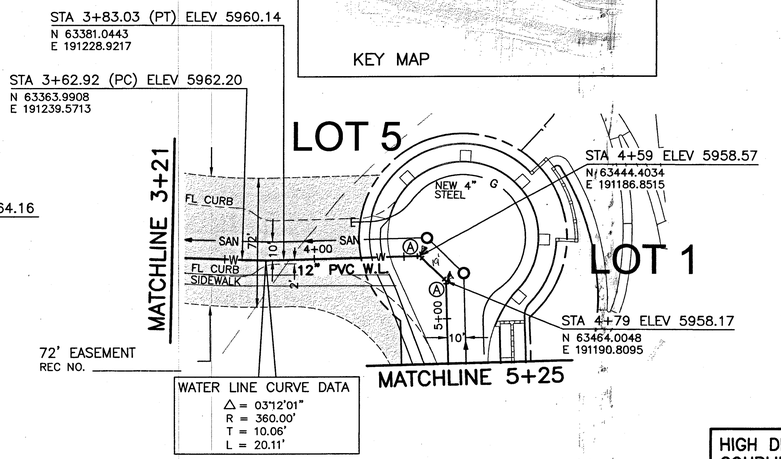




Doreen Moore 11/21/02
C.S.F.D. FIRE PREVENTION DIVISION DATE

APPROVAL FOR LOT 1 ONLY. FUTURE DEVELOPMENT OF LOTS 2 THROUGH 5 WILL REQUIRE SEPERATE SUBMITTALS.

HIGH DEFLECTION COUPLINGS TO BE USED FOR ALL 12" PVC PIPE INSTALLATION

BEFORE YOU DIG STOP CALL UTILITY NOTIFICATION CENTER OF COLORADO 1-800-922-1987 OR 534-6700 IN METRO DENVER FOR THE LOCATION OF UNDERGROUND MEMBER UTILITIES

KEYED NOTES

(1) 12" X 8" MJ X MJ RED (MATCH EXISTING)

(2) 12" X 6" HYD TEE W/CTRB = 1/4 YD & CRA, 12" VALVES (CL 250) N & S, 6" VALVE (CL 250) W, (6.5') BURY HYD ASSY 22.4' W, FLG ELEV = 5958.73, 118 PSI W/2-12" & 2-6" MJ RSNTS

(3) 12" X 45° (HORIZ) BEND W/CTRB = 1/2 YD. & 2-12" MJ RSNTS DEFL 0°00'20" IN AND OUT OF BEND (ACT DEFL 45°00'40")

(4) 12" X 45° (HORIZ) BEND W/CTRB = 1/2 YD. & 2-12" MJ RSNTS DEFL 0° IN AND OUT OF BEND (ACT DEFL 45°)

(5) 12" X 11-1/4° & 12" X 22-1/2° (HORIZ) BENDS W/CTRB = 1/2 YD. & 2-12" MJ RSNTS DEFL 2°30'00" IN AND OUT OF BEND (ACT DEFL 38°45'00")

(6) 12" X 11-1/4° (VERT) BEND W/CTRB = 1/4 YD. & 2-12" MJ RSNTS DEFL 2°13'46" IN AND OUT OF BEND (ACT DEFL 15°42'31")

(7) 12" X 11-1/4° (VERT) BEND W/2-12" MJ RSNTS & CRA W/MJ RSNT DEFL 1°35'52" IN AND OUT OF BEND (ACT DEFL 14°26'43")

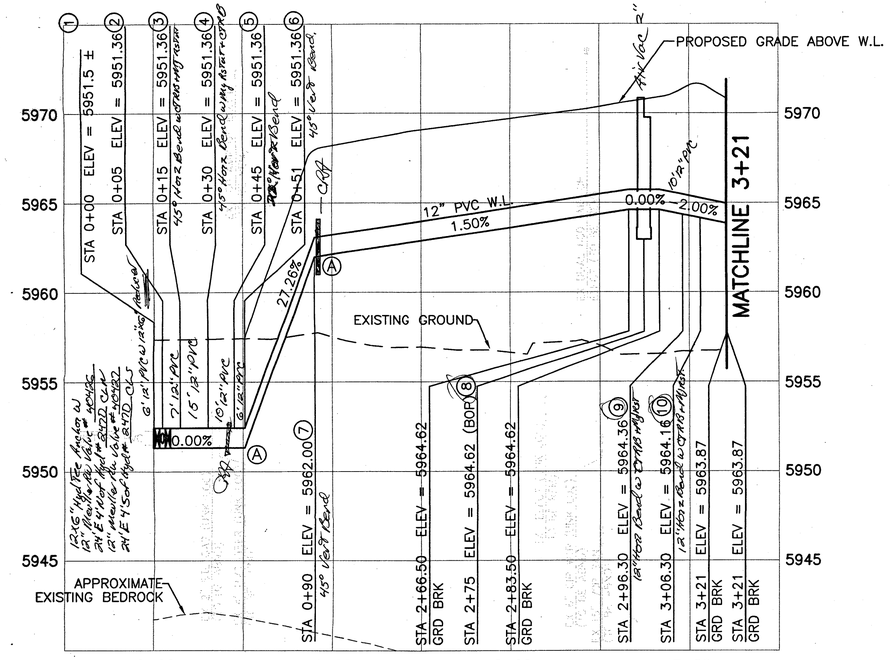
(8) 2" AIR AND VACUUM VALVE STATION RIM ELEV = 5970.84 (REFER TO SHEET 2 DETAIL)

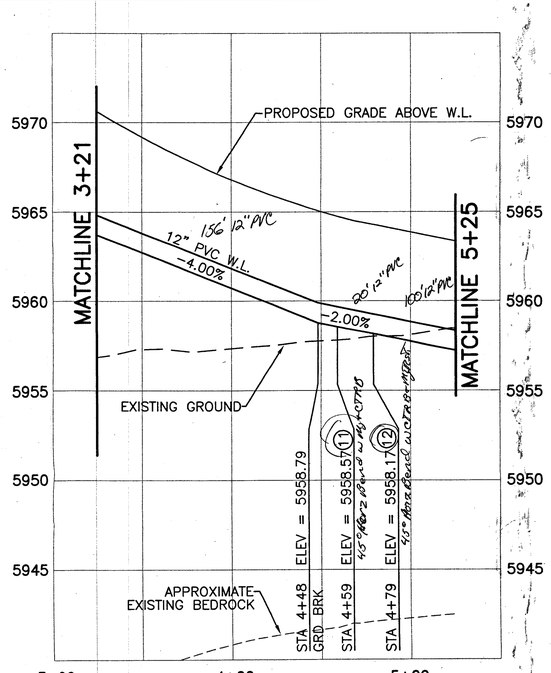
(9) 12" X 45° (HORIZ) BEND W/CTRB = 1/2 YD. & 2-12" MJ RSNTS DEFL 0° IN AND OUT OF BEND (ACT DEFL 45°)

(10) 12" X 45° (HORIZ) BEND W/CTRB = 1/2 YD. & 2-12" MJ RSNTS DEFL 0° IN AND OUT OF BEND (ACT DEFL 45°)

(11) 12" X 45° (HORIZ) BEND W/CTRB = 1/2 YD. & 2-12" MJ RSNTS DEFL 0° IN AND OUT OF BEND (ACT DEFL 45°)

(12) 12" X 45° (HORIZ) BEND W/CTRB = 1/2 YD. & 2-12" MJ RSNTS DEFL 0° IN AND OUT OF BEND (ACT DEFL 45°)





NOTE
1. RODS MAY BE SUBSTITUTED FOR M.J. RSNTS.

ROD EQUIVALENCY CHART RODS VS. M.J. RSNTS.	
SIZE OF PIPE = 12"	PRESSURE 150 PSI
11 1/4° BEND	= 2-3/4" RODS
22 1/2° BEND	= 2-3/4" RODS
45° BEND	= 4-3/4" RODS
90° BEND(TEE)	= 6-3/4" RODS
12" DEAD END	= 4-7/8" RODS
8" DEAD END	= 2-3/4" RODS

According to calculations reviewed by the Water Resources Department the theoretical available fire flow at HYD # 1 is 4350 gallons per minute under maximum day demand conditions with a 20 psi residual. Actual fire flow may vary due to various parameters.

FIMS MAP NO. G-33 & G-34

COLORADO REGISTERED BENJAMIN E. SCHEID 35165 11/20/02 PROFESSIONAL ENGINEER

WILSON & COMPANY
Engineers & Architects
A PARTNERSHIP OF CORPORATIONS

WP101

CONSTRUCTION DOCUMENTS

COLORADO SPRINGS UTILITIES
PLANNING AND ENGINEERING

INSTALL APPROX. 1838 FT OF 12" PVC WATER LINE IN CONFLUENCE PARK BLVD., 52 FT IN CONEJOS STREET AND 230 FT ACROSS PRIVATE PROPERTY WITHIN AN EASEMENT

APPV'D	KD	DATE	2/02	PLOTTED	BE DATE 10/02
CHECKED	JWS	DATE	2/02	SURV'D	MRC DATE 11/98
DESIGN	BES	DATE	12/01	SCALE:	HORIZ. 1"= 40' VERT. 1"= 4'

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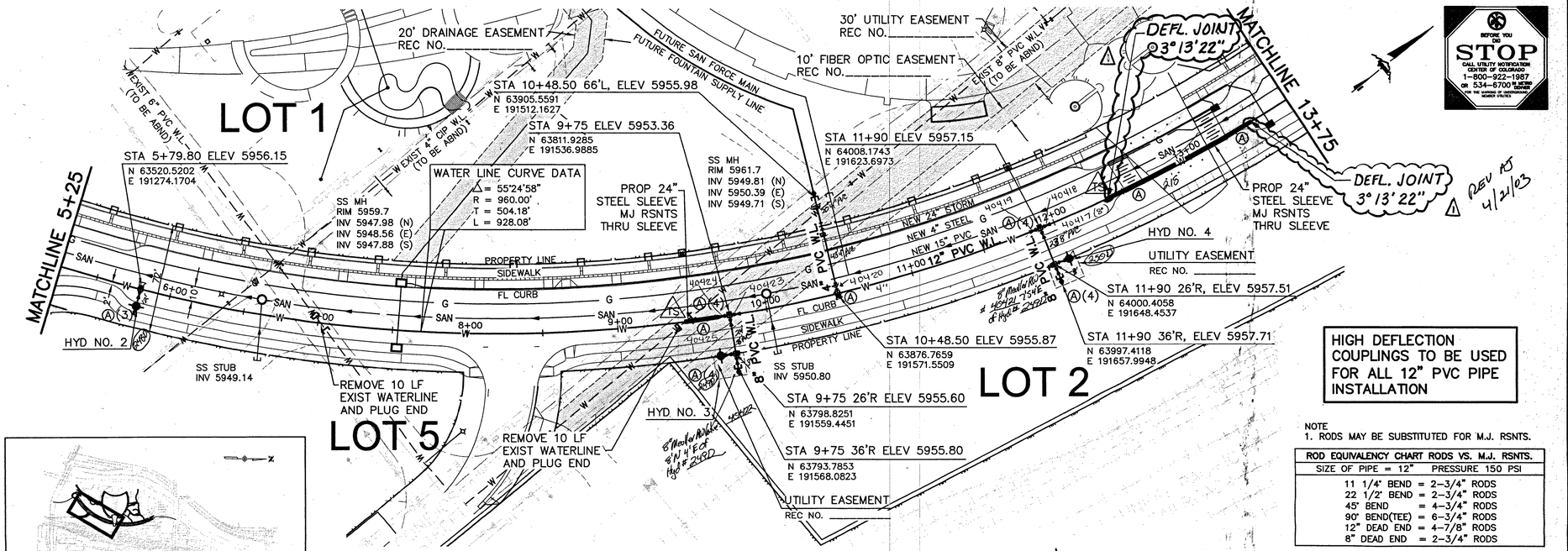


HIGH DEFLECTION COUPLINGS TO BE USED FOR ALL 12" PVC PIPE INSTALLATION

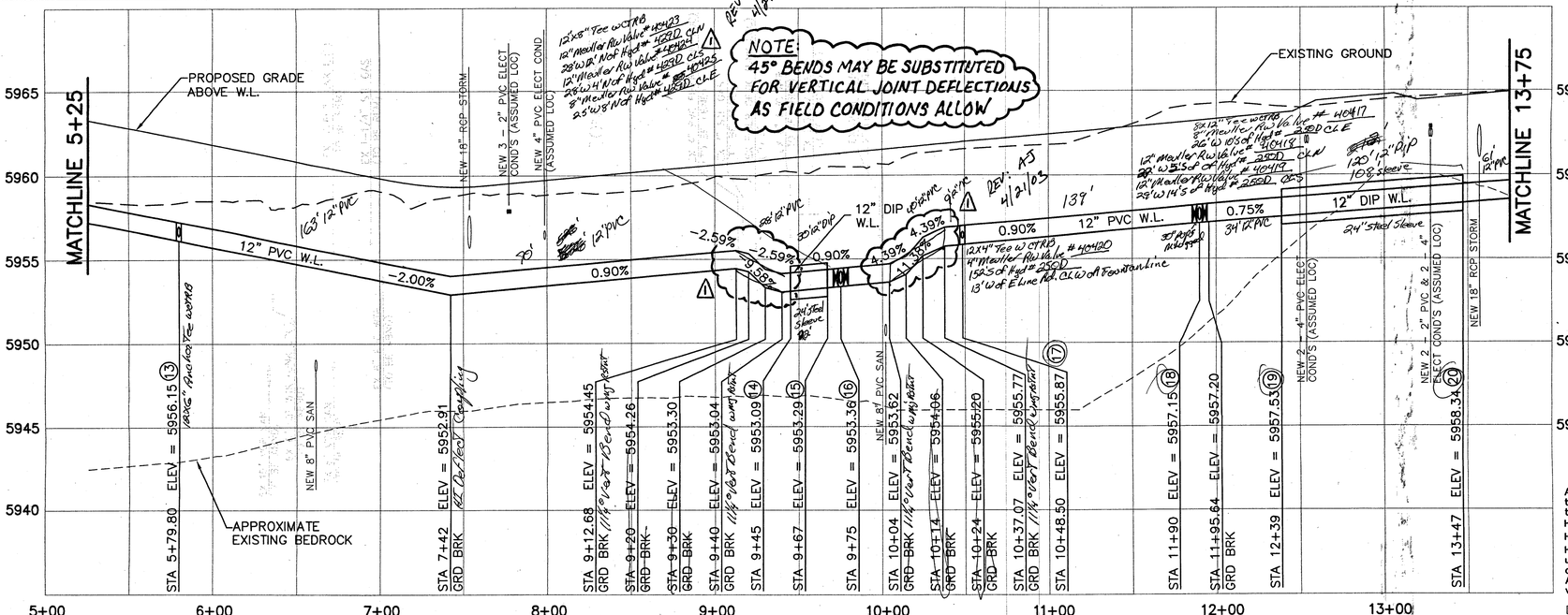
NOTE
1. RODS MAY BE SUBSTITUTED FOR M.J. RSNTS.

ROD EQUIVALENCY CHART RODS VS. M.J. RSNTS.	
SIZE OF PIPE = 12"	PRESSURE 150 PSI
11 1/4° BEND	= 2-3/4" RODS
22 1/2° BEND	= 2-3/4" RODS
45° BEND	= 4-3/4" RODS
90° BEND(TEE)	= 6-3/4" RODS
12" DEAD END	= 4-7/8" RODS
8" DEAD END	= 2-3/4" RODS

Doren Moore 11/21/02
C.S.F.D. FIRE PREVENTION DIVISION DATE

APPROVAL FOR LOT 1 ONLY. FUTURE DEVELOPMENT OF LOTS 2 THROUGH 5 WILL REQUIRE SEPERATE SUBMITTALS.

REV. Δ PER CITY COMMENTS 3/21/03 BES



According to calculations reviewed by the Water Resources Department the theoretical available fire flow at
HYD # 2 is 4355 gpm,
HYD # 3 is 4465 gpm,
HYD # 4 is 4460 gpm
under maximum day demand conditions with a 20 psi residual. Actual fire flow may vary due to various parameters.

FIMS MAP NO. G-33 & G-34

KEYED NOTES

(13) 12" X 6" HYDRANT TEE W/CTRB = 1/2 YD. & CRA, 6" VALVE (CL 250) S., (6.5') BURY HYD ASSY 11.5' S. FLG ELEV = 5962.91, 116 PSI W/2-6" MJ RSNTS

(14) BEGIN 24" STEEL SLEEVE, BEGIN 12" DIP W.L. (CL 250), W/1-12" MJ RSNT, 12" CPLG (INS), (MJ RSNTS THRU SLEEVE)

(15) END 24" STEEL SLEEVE, END 12" DIP W.L. (CL 250), W/1-12" MJ RSNT, 12" CPLG (INS)

(16) 12" X 8" TEE W/CTRB = 1/2 YD, 12" VALVE N & S (CL 250) TIE TO TEE W/2-12" MJ RSNTS, 12" CPLG (INS) N & S, 8" VALVE E (CL 250) W/2-8" MJ RSNTS. 8" X 6" HYDRANT TEE 26' E. & (6.5') BURY HYD ASSY 26' E./10' S. W/CTRB = 1/2 YD. & CRA, 6" VALVE (CL 250). FLG ELEV = 5962.43, 118 PSI W/2-8" MJ RSNTS & 2-6" MJ RSNTS. 8" VALVE (CL 250) 31' E. W/2-8" MJ RSNTS, 8" SJ PLUG 36' E. W/1-2" BOV ASSY (BOP ELEV = 5955.80)

(17) 12" X 4" TEE W/CTRB = 1/4 YD, 2-4" VALVES W (CL 250), TIE TO TEE W/1-4" MJ RSNT, 4" CPLG (INS) W, 4" SJ PLUG 66' W. W/1-2" BOV ASSY (BOP ELEV = 5955.98)

(18) 12" X 8" TEE W/CTRB = 1/2 YD, 12" VALVE N & S (CL 250) TIE TO TEE W/2-12" MJ RSNTS, 12" CPLG (INS) N & S, 8" VALVE E (CL 250) W/2-8" MJ RSNTS. 8" X 6" HYDRANT TEE 26' E. & (6.5') BURY HYD ASSY 26' E./10' N. W/CTRB = 1/2 YD. & CRA, 6" VALVE (CL 250). FLG ELEV = 5964.34, 116 PSI W/2-8" MJ RSNTS & 2-6" MJ RSNTS. 8" VALVE (CL 250) 31' E. W/2-8" MJ RSNTS, 8" SJ PLUG 36' E. W/1-2" BOV ASSY (BOP ELEV = 5957.71)

(19) BEGIN 24" STEEL SLEEVE, BEGIN 12" DIP W.L. (CL 250), W/1-12" MJ RSNT, 12" CPLG (INS), (MJ RSNTS THRU SLEEVE)

(20) END 24" STEEL SLEEVE, END 12" DIP W.L. (CL 250), W/1-12" MJ RSNT, 12" CPLG (INS)

COLORADO REGISTERED PE 35165 11/20/02 PROFESSIONAL ENGINEER

WILSON & COMPANY
Engineers & Architects
A PARTNERSHIP OF CORPORATIONS

WP102

CONSTRUCTION DOCUMENTS

COLORADO SPRINGS UTILITIES
PLANNING AND ENGINEERING

INSTALL APPROX. 1838 FT OF 12" PVC WATER LINE IN CONFLUENCE PARK BLVD., 52 FT IN CONEJOS STREET AND 230 FT ACROSS PRIVATE PROPERTY WITHIN AN EASEMENT

APPV'D	KD	DATE	3/03	PLOTTED	BE	DATE	10/02
CHECKED	JWS	DATE	2/02	SURVY'D	MRC	DATE	11/98
DESIGN	BES	DATE	12/01	SCALE: HORIZ. 1"= 40'			
				VERT. 1"= 4'			

W.O. NO. 1110021 PROJECT NO. 2001-W354 SHEET 4 OF 5

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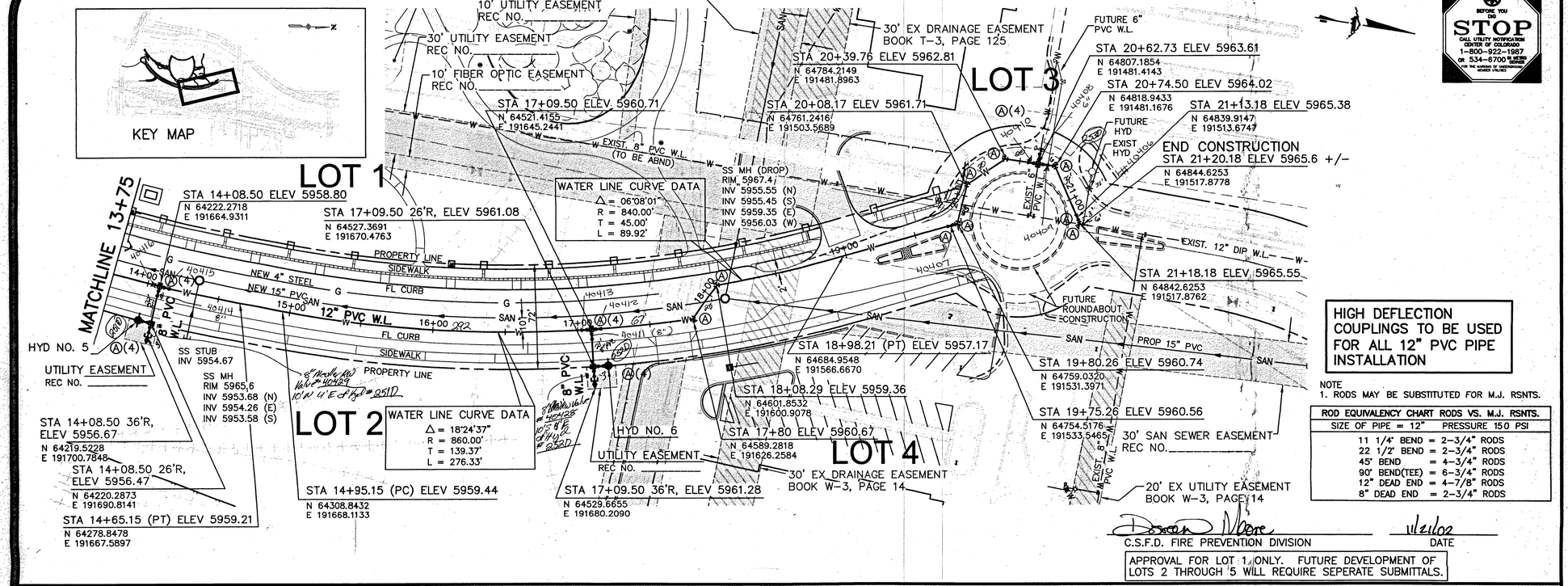


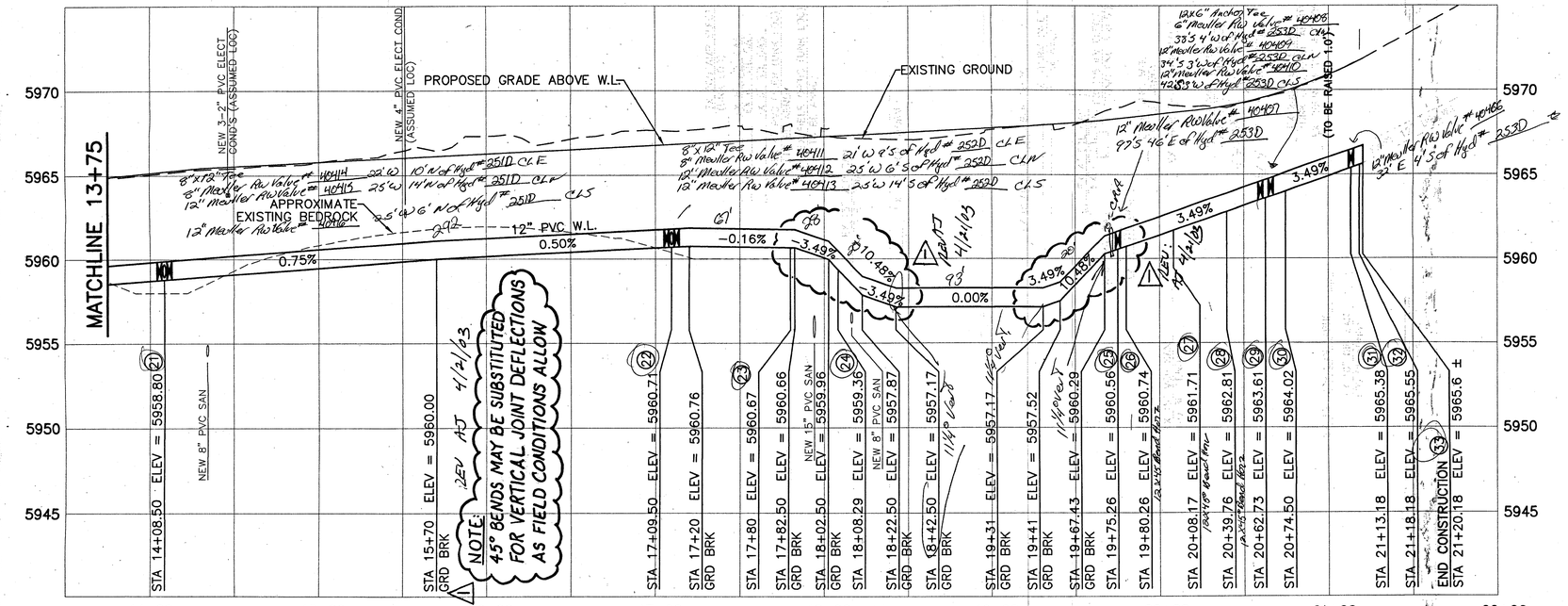
HIGH DEFLECTION COUPLINGS TO BE USED FOR ALL 12" PVC PIPE INSTALLATION

NOTE
1. RODS MAY BE SUBSTITUTED FOR M.J. RSNTS.

ROD EQUIVALENCY CHART RODS VS. M.J. RSNTS.	
SIZE OF PIPE = 12"	PRESSURE 150 PSI
11 1/4° BEND	= 2-3/4" RODS
22 1/2° BEND	= 2-3/4" RODS
45° BEND	= 4-3/4" RODS
90° BEND(TEE)	= 6-3/4" RODS
12" DEAD END	= 4-7/8" RODS
8" DEAD END	= 2-3/4" RODS

C.S.F.D. FIRE PREVENTION DIVISION — DATE 1/21/02

APPROVAL FOR LOT 1 ONLY. FUTURE DEVELOPMENT OF LOTS 2 THROUGH 5 WILL REQUIRE SEPERATE SUBMITTALS.



According to calculations reviewed by the Water Resources Department the theoretical available fire flow at HYD # 5 is 4490 gpm, HYD # 6 is 4545 gpm, under maximum day demand conditions with a 20 psi residual. Actual fire flow may vary due to various parameters.

FIMS MAP NO. G-33 & G-34

KEYED NOTES

(21) 12" X 8" TEE W/CTRB = 1/2 YD, 12" VALVE N & S (CL 250) TIE TO TEE W/2-12" MJ RSNTS, 12" CPLG (INS) N & S, 8" VALVE E (CL 250) W/2-8"MJ RSNTS. 8" X 6" HYDRANT TEE 26' E. & 6.5' BURY HYD ASSY 26' E./10' S. W/CTRB = 1/2 YD. & CRA, 6" VALVE (CL 250). FLG ELEV = 5966.30, 115 PSI W/2-8" MJ RSNTS & 2-6" MJ RSNTS. 8" VALVE (CL 250) 31' E. W/2-8" MJ RSNTS, 8" SJ PLUG 36' E. W/1-2" BOV ASSY (BOP ELEV = 5956.67)

(22) 12" X 8" TEE W/CTRB = 1/2 YD, 12" VALVE N & S (CL 250) TIE TO TEE W/2-12" MJ RSNTS, 12" CPLG (INS) N & S, 8" VALVE E (CL 250) W/2-8"MJ RSNTS. 8" X 6" HYDRANT TEE 26' E. & 6.5' BURY HYD ASSY 26' E./10' N. W/CTRB = 1/2 YD. & CRA, 6" VALVE (CL 250). FLG ELEV = 5967.91, 114 PSI W/2-8" MJ RSNTS & 2-6" MJ RSNTS. 8" VALVE (CL 250) 31' E. W/2-8" MJ RSNTS, 8" SJ PLUG 36' E. W/1-2" BOV ASSY (BOP ELEV = 5961.28)

(23) 12" X 45° (HORIZ) BEND W/CTRB = 1/2 YD, W/2-12" MJ RSNTS, DEFL 0°19'13" IN AND OUT OF BEND (ACT DEFL 45°38'26")

(24) 12" X 45° (HORIZ) Rolled BEND W/CTRB = 1/2 YD, W/2-12" MJ RSNTS, DEFL 0°21'06" IN AND OUT OF BEND (ACT DEFL 44°17'48")

(25) 12" VALVE (CL 250) W/2-12" MJ RSNTS

(26) 12" X 45° & 12" X 11-1/4° (HORIZ) BENDS W/CTRB = 3/4 YD, W/2-12" MJ RSNTS, DEFL 1°52'30" IN AND OUT OF BENDS (ACT DEFL 60°00'00")

(27) 12" X 45° (HORIZ) BEND W/CTRB = 1/2 YD, W/2-12" MJ RSNTS, DEFL 01°26'08" IN AND OUT OF BEND (ACT DEFL 42°07'44")

(28) 12" X 45° (HORIZ) BEND W/CTRB = 1/2 YD, W/2-12" MJ RSNTS, DEFL 01°26'08" IN AND OUT OF BEND (ACT DEFL 42°07'44")

(29) 12" X 6" TEE W/CTRB = 1/2 YD, 6" VALVE W (CL 250) TIE TO TEE W/1-6" MJ RSNT, 6" CPLG (INS) W. (MATCH EXISTING)

(30) 12" X 45° & 12" X 11-1/4° (HORIZ) BENDS W/CTRB = 3/4 YD. & 2-12" MJ RSNTS DEFL 1°03'45" IN AND OUT OF BEND (ACT DEFL 58°22'29")

(31) 12" VALVE (CL 250) W/2-12" MJ RSNTS

(32) 12" X 45° & 12" X 11-1/4° (HORIZ) BENDS W/CTRB = 3/4 YD. & 2-12" MJ RSNTS DEFL 0°26'21" IN AND OUT OF BEND (ACT DEFL 57°07'43")

(33) TIE INTO EXISTING TEE (MATCH EXISTING)

REV △ PER CITY COMMENTS 3/21/03 BES

COLORADO REGISTERED JOHN W. SIMONTON 35165 11/20/02 PROFESSIONAL ENGINEER

WILSON & COMPANY
Engineers & Architects
A PARTNERSHIP OF CORPORATIONS

WP103

CONSTRUCTION DOCUMENTS

COLORADO SPRINGS UTILITIES
PLANNING AND ENGINEERING

INSTALL APPROX. 1838 FT OF 12" PVC WATER LINE IN CONFLUENCE PARK BLVD., 52 FT IN CONEJOS STREET AND 230 FT ACROSS PRIVATE PROPERTY WITHIN AN EASEMENT

APP'V'D	KD	DATE	2/02	PLOTTED	BE	DATE	10/02
CHECKED	JWS	DATE	2/02	SURV'D	MRC	DATE	11/98
DESIGN	BES	DATE	12/01	SCALE: HORIZ. 1"=40'			
				VERT. 1"=4'			

W.O. NO. 1110021 PROJECT NO. 2001-W354 SHEET 5 OF 5

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