ATTACHMENT A TO SUPPLIER RESPONSE FORM (EXHIBIT B)
SAMPLE PROJECTS

Respondents shall provide a response to the two sample projects attached. Respondent shall provide the following information for each sample project:

1.1.1. A detailed cost estimate of the sample project in the following format or a similar format which follows Respondents estimating method:

Actual Costs	**Cost to Colorado Springs Utilities**
Labor	$_____
Labor Multiplier (_%)	$_____
Rented equipment	$_____
Owned Equipment	$_____
Asphalt	$_____
Project Materials	$_____
Equipment/ Materials Multiplier (_%)	$_____
Misc. Subcontractor work	$_____
Subcontractor Multiplier (_%)	$_____
Home office cost	$_____
Field office	$_____
Profit (_%)	$_____
TOTAL PROJECT COST	$ _____

1.1.2. Time to complete project;
1.1.3. Equipment used;
1.1.4. Coordination approach i.e. Construction sequence;
1.1.5. Resources to be provided by SU;
1.1.6. Example of similar project completed by Respondent;
1.1.7. Opinions and recommendations on suitable methods and approach to accomplishing the work.

SAMPLE PROJECT 1

Academy Blvd/Airport Road PRV Vault Relocation Project

Work shall include excavation, installation of vault, piping and valves to the limits shown on the plans, and backfill for a 16"x12" pressure reducing valve vault configuration. Project includes installation of new PRV vault and associated 20" piping, tie-ins to existing 20" water main, installation of PRV's, valves and fittings inside new vault, installation of corrosion protection, installation of electrical conduits and electrical service to new vault, and electrical wiring and fixtures inside of vault. All work shall be performed in accordance with the plans and details and Colorado Springs Utilities' Line Extension and Service Standards. Costs should be in conformance with the Statement of Work and include only labor and equipment for installation of the vault, piping and appurtenances. Traffic control, surface restoration and materials will be provided by Colorado Springs Utilities.

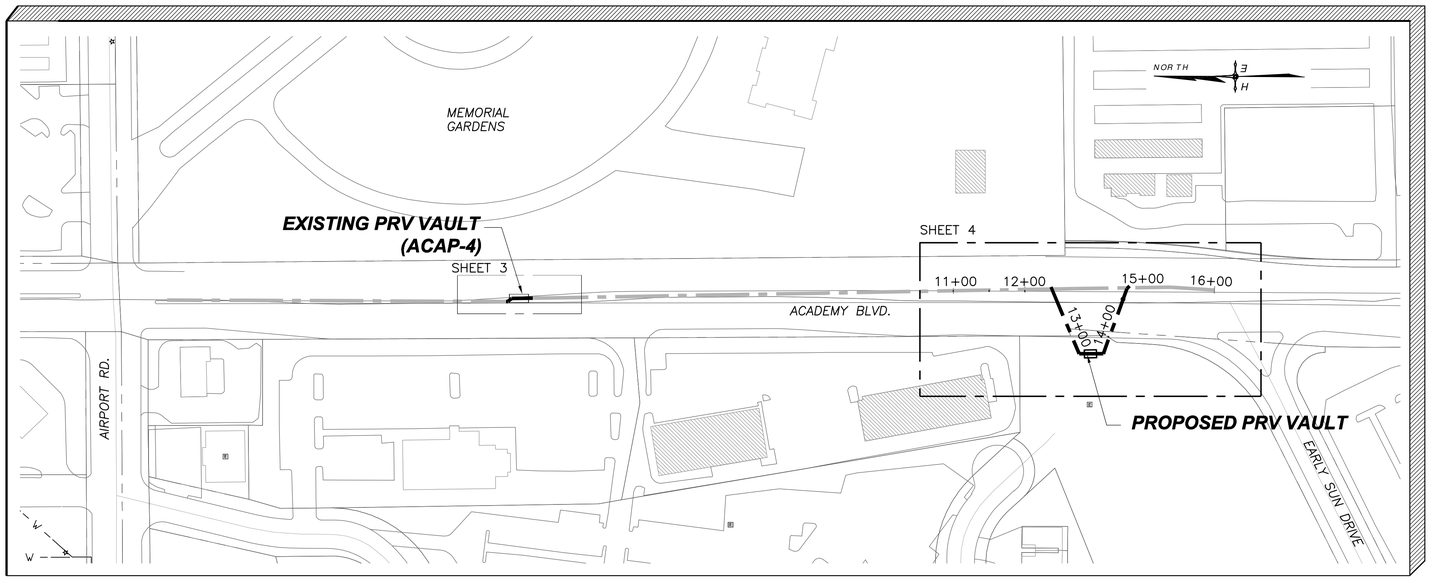
Colorado Springs Utilities
It's how we're all connected

WATER SERVICES DIVISION
WATER PLANNING AND DESIGN

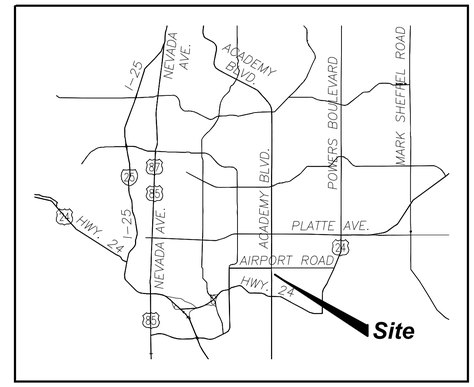
Approved for Construction

By: _____ _____
Colorado Springs Utilities *Date*

ACADEMY BLVD/AIRPORT RD
(PRV VAULT RELOCATION PROJECT)
(ACAP-4)



SITE MAP (1)
Scale: 1"=100'



VICINITY MAP
Scale: none

SHEET INDEX	
SHEET 1 OF 8	TITLE SHEET
SHEET 2 OF 8	GENERAL NOTES AND MATERIALS
SHEET 3 OF 8	EXISTING VAULT DEMOLITION / SALVAGE / REPLACEMENT
SHEET 4 OF 8	PLAN & PROFILE
SHEET 5 OF 8	PROPOSED PRV VAULT PLAN AND SECTION
SHEET 6 OF 8	DETAILS
SHEET 7 OF 8	GEOTECHNICAL BORINGS
SHEET 7 OF 8	ELECTRICAL

URS
9960 FEDERAL DRIVE, SUITE 300
COLORADO SPRINGS, CO 80921
PHONE (719) 531-0001
FAX (719) 531-0007

BID DOCUMENTS
SEPTEMBER 4, 2007

(AS BUILT INFORMATION)

DATE STARTED:

DATE COMPLETED:

FOREMAN:

INSPECTOR:

CONTRACTOR:

(PROJECT RELATED INFORMATION)

PARENT WORK ORDER NUMBER: 1474157

PROJECT NUMBER: 2007-W182

FIMS MAP: L-35, L-36

SHEET NO: 1 OF 8

NETWORK LOCATION & DRAWING TITLE:
N:\General\temp cad\21711652-PRV VAULT\G-1.dwg

REVISIONS: (1) 11-09-07 REVISED PRV SITE PLAN

GENERAL NOTES

PIPELINE INSPECTIONS NOTIFICATION:

THE CONTRACTOR IS REQUIRED TO NOTIFY THE COLORADO SPRINGS UTILITIES PIPELINE INSPECTIONS OFFICE, 2 WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION. (NORTH OFFICE (668-4396) OR SOUTH OFFICE (668-4658)). IF THIS PROJECT INVOLVES A TAP, DO NOT CALL TO SCHEDULE THE TAP UNTIL THE PIPELINE NOTIFICATION HAS BEEN GIVEN.

1. ALL PERMITS REQUIRED SHALL BE OBTAINED BY THE CONTRACTOR, WHO SHALL COMPLY WITH THE CONDITIONS THEREOF.

2. ALL WATER AND WASTEWATER PIPELINE INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CURRENT "COLORADO SPRINGS UTILITIES, LINE EXTENSION AND SERVICE STANDARDS". THE CONTRACTOR SHALL HAVE A COPY OF THE ABOVE NAMED STANDARDS ON SITE AT ALL TIMES.

3. ANY PROPOSED "FIELD ADDITIONS" OF BENDS OR FITTINGS TO AN APPROVED FIRE LINE DESIGN MUST HAVE THE SIGNED APPROVAL OF THE ENGINEER, COLORADO SPRINGS FIRE DEPARTMENT AND / OR SPRINKLER INSTALLATION COMPANY PRIOR TO INSTALLATION.

4. ALL WORK IN THE CITY OF COLORADO SPRINGS PUBLIC RIGHT-OF-WAY/EASEMENT SHALL BE IN ACCORDANCE WITH BOTH THE CITY OF COLORADO SPRINGS, ENGINEERING DIVISION STANDARDS AND THE COLORADO SPRINGS UTILITIES LINE EXTENSION AND SERVICE STANDARDS.

5. 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 COLORADO SPRINGS UTILITIES PER THE LINE EXTENSION AND SERVICE STANDARDS.

6. REUSE OF EXISTING FITTINGS SHALL BE LEFT AT THE DISCRETION OF THE COLORADO SPRINGS UTILITIES INSPECTOR. ANY MATERIAL SALVAGED BY THE CONTRACTOR (VALVES, PIPE, HYDS, ETC.) AND NOT REUSED SHALL BE RETURNED TO POSSESSION OF COLORADO SPRINGS UTILITIES.

7. THE FOLLOWING TIE-IN POINTS WERE NOT FIELD VERIFIED FOR LOCATION AND SHALL BE EXPOSED PRIOR TO CONSTRUCTION. STA. 12+47.9 AND 14+76.9.

8. ALL PIPELINE ELEVATIONS SHOWN ARE TO THE BOTTOM OF THE PIPE, UNLESS OTHERWISE NOTED.

THE FOLLOWING NOTES ARE CONSISTENT WITH FIMS DATA:

NOTE: HORIZONTAL CONTROL VALUES ARE BASED ON THE NORTH AMERICAN DATUM OF 1983 AND ARE REPRESENTED AS STATE PLANE COORDINATES, COLORADO CENTRAL ZONE.

NOTE: VERTICAL CONTROL VALUES ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM, 1929 AND THE 1960 SUPPLEMENTARY ADJUSTMENT.

BENCH MARK: SEE CONTROL POINT CP-100 ON SHEET 4 OF 7.

9. CORROSION CONTROL PER COLORADO SPRINGS UTILITIES LINE EXTENSION AND SERVICE STANDARDS

- ANODE
- POLYETHYLENE WRAP REQUIRED ON ALL METALLIC FITTINGS
- DOUBLE BONDING REQUIRED
- TEST STATIONS REQUIRED AT ALL PROPOSED FIRE HYDRANTS AND AS INDICATED ON APPROVED PLANS.
- INSULATING COUPLINGS STATIONS AS SHOWN IN THE DRAWINGS.

10. COLORADO SPRINGS UTILITIES CANNOT GUARANTEE THE LOCATIONS OR ACCURACY OF UNDERGROUND FACILITIES OR BE RESPONSIBLE FOR ANY DAMAGE THAT MAY OCCUR DURING CONSTRUCTION PER THE COLORADO SPRINGS UTILITIES LINE EXTENSION AND SERVICE STANDARDS. THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATIONS OF EXISTING UTILITES WITHIN THE PROJECT CONSTRUCTION ZONE. THESE LOCATIONS SHALL BE IDENTIFIED AND MARKED BY CALLING THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 1-800-922-1987.

11. 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 EXCAVATIONS FOR DISINFECTION BY COLORADO SPRINGS UTILITIES. 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 COSTS SHOULD UNFORSEEN ISSUES ARISE. ADDITIONAL COSTS MAY BE INCURRED FOR THE REMOVAL OF WATER OR DEBRIS. 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.

12. CONTRACTOR SHALL NOTIFY THE COLORADO DEPARTMENT OF TRANSPORTATION UTILITY ENGINEER ONE WEEK PRIOR TO BEGINNING WORK ON ANY STATE HIGHWAY RIGHT-OF-WAY. CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED THEREFORE.

13. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY PROTECTION, REMOVAL AND REINSTALLATION AT THE SAME LOCATIONS OF ALL FACILITIES AFFECTED BY WORK.

14. 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 DEVELOPER/OWNER'S EXPENSE.

15. ALL RETIRED APPURTENANCES (VALVE BOXES, HYDRANTS, ETC.) WILL BE REMOVED UPON COMPLETION OF THE PROJECT. NO RETIRED FACILITIES (VALVE BOXES, HYDRANTS, ETC.) SHALL BE LEFT ABOVE GROUND.

16. SEE DRAWINGS FOR LOCATIONS OF TEST HOLES TH3 AND TH4, AND POTHOLES TH1-ACT, TH2-ACT, AND TH3-ACT.

21. TRAFFIC CONTROL PLAN: IN ACCORDANCE WITH CITY OF COLORADO SPRINGS STANDARDS.

ABBREVIATIONS

Ⓐ	ANODE	MJ	MECHANICAL JOINT
ACT	ACTUAL	N,S,E,W	NORTH,SOUTH,EAST,WEST
BFV	BUTTERFLY VALVE	PH	POTHOLE
BOP	BOTTOM OF PIPE	PL	PROPERTY LINE
BOV	BLOWOFF ASSEMBLY AND VALVE	PP	POWER POLE
CB	CATCH BASIN	PRV	PRESSURE REGULATING VALVE
CIP	CAST IRON PIPE	PSI	POUNDS PER SQUARE INCH
CL	CENTER LINE	PUPS	12" OR SMALLER, USE PLAIN END BY PLAIN END, 30" LENGTH, 16" OR LARGER USE PLAIN END BY PLAIN END,24" LENGTH
CMP	CORRUGATED METAL PIPE		
CPLG.(INS.),(RED.),(STR.)	COUPLING (INSULATING),(REDUCING),(STRAIGHT)	PVC	POLYVINYL CHLORIDE PIPE
CR	CURB RETURN	RCP	REINFORCED CONCRETE PIPE
CRA	CONCRETE REVERSE ANCHOR	RED	REDUCER
CTRB	CONCRETE THRUST REACTION BLOCK	RSTNT	MJ RESTRAINT (i.e. MEGALUG)
CY	CUBIC YARDS	SJ	SLIP JOINT
DEFL	DEFLECT	SS	SANITARY SEWER
DIP	DUCTILE IRON PIPE	STA	STATION
EL.	ELEVATION	STS	STORM SEWER
FLG	FLANGE	TOP	TOP OF PIPE
GPM	GALLONS PER MINUTE	TS	TEST STATION
GR.BK.(OR V.P.I.)	V.P.I. GRADE BREAK	WL	WATER LINE
HYD.ASSY.	INCLUDES FIRE HYDRANT, LATERAL, VALVE, TIE RODS, AND REVERSE ANCHOR.	.333	4" ABOVE EXIST. TOP OF CURB OR GROUND
INV.	INVERT		

1. ALL WATER MAIN FITTINGS SHALL BE FIELD STAKED PRIOR TO CONSTRUCTION.

2. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE ENGINEER AND COLORADO SPRINGS UTILITIES.

3. MODIFICATIONS TO ALIGNMENTS AND/OR DESIGNS FOR THE WORK MAY REQUIRE ADDITIONAL MATERIAL AND SHALL REQUIRE THE CONCURRENCE OF THE ENGINEER AND CITY WATER RESOURCES DEPARTMENT.

4. CONTRACTOR SHALL PROTECT AND MAINTAIN ALL UTILITIES, STRUCTURES, IMPROVEMENTS, MONUMENTS AND BENCHMARKS AFFECTED BY THE WORK. ANY DAMAGE SHALL BE REPAIRED AND RESTORED TO THE SATISFACTION OF THE AFFECTED OWNER, PUBLIC AGENCIES AND THE ENGINEER.

5. CONTRACTOR SHALL IMPLEMENT PROCEDURES TO MINIMIZE EROSION OF AREAS DISTURBED BY THE WORK. CONTRACTOR SHALL MAINTAIN ALL DISTURBED AREAS UNTIL NATIVE VEGETATION IS REESTABLISHED TO THE SATISFACTION OF THE OWNER.

6. CONTRACTOR ASSUMES ALL RISKS WORKING ADJACENT TO HIGH VOLTAGE ELECTRIC HIGH PRESSURE GAS, ELECTRIC DISTRIBUTION, AND MAJOR DRAINAGE CHANNEL BUT NOT LIMITED TO THE POTENTIAL OF ELECTROCUTION, FLAMMABLE GAS, POTENTIAL FLOODING, LOSS OF EQUIPMENT AND LOSS OF WORK COMPLETED OR IN PROCESS.

7. CONTRACTOR SHALL PROVIDE ALL NECESSARY TRAFFIC CONTROL TO PERFORM THE WORK.

8. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN AND IS SUBJECT TO COLORADO SPRINGS UTILITIES AND/OR ENGINEER APPROVAL.

9. CONTRACTOR WILL ISOLATE WATERLINE TO INCLUDE LOCATION OF VAULT DEMOLITION THROUGH SOUTHERN CONNECTION POINT. CONTRACTOR SHALL COORDINATE WITH COLORADO SPRINGS UTILITIES FOR VALVE LOCATION, SHUT OFF SCHEDULE, AND ALLOWABLE DURATION. SEE SUPPLEMENTAL CONDITIONS FOR DETAILS.

10. ALL PIPELINE CONSTRUCTION SHALL MEET THE SPECIFICATION OF COLORADO SPRINGS UTILITIES STANDARDS AND SPECIFICATIONS. ALL PIPE SHALL BE CEMENT MORTAR LINED DUCTILE IRON PIPE OR APPROVED EQUAL, UNLESS SEPCIFIED OTHERWISE, PRESSURE CLASS 350, INSTALLED WITH A MAXIMUM JOINT DEFLECTION PER MANUFACTURER'S RECOMMENDATION. ALL PIPELINE JOINTS SHALL BE RESTRAINED AND FITTINGS SHALL BE RESTRAINED WITH THRUST BLOCKS AND MECHANICAL JOINT RESTRAINT AS SHOWN ON SHEET 6. PIPE GASKETS SHALL BE GAR-LOCK. ALL PIPE SHALL HAVE A MINIMUM COVER DEPTH OF 5'-6". FOR STEEL PIPE STANDARDS, SEE BELOW.

11. LOCATOR TAPE SHALL BE PLACED 1' ABOVE PIPE IN TRENCH THE ENTIRE LENGTH OF PROJECT.

12. ALL JOINT HARNESS TIE BOLTS OR STUDS AND HARNESS LUGS SHALL MEET THE REQUIREMENTS OUTLINED IN AWWA M-11, SECTION 13.10.

13. CONTRACTOR SHALL DISPOSE OF ALL EXCESS MATERIALS IN A MANNER ACCEPTABLE TO THE ENGINEER.

14. CONTRACTOR SHALL PROVIDE ANODES TO SU SPECIFICATIONS. TEST STATION PROVIDED BY SU WILL BE MALONEY TEST STATION, WATER TYPE.

15. CONTRACTOR SHALL CONDUCT HIS WORK ENTIRELY WITHIN EASEMENT AND RIGHT-OF-WAY AS SHOWN ON DRAWINGS.

STEEL PIPE

TAPE COATING SYSTEMS: IN ACCORDANCE WITH COLORADO SPRINGS UTILITY STANDARDS.

POLYURETHANE COATINGS FOR INTERIOR AND EXTERIOR OF STEEL WATER PIPE AND FITTINGS: AWWA C 222.

CEMENT-MORTAR LINING: IN ACCORDANCE WITH COLORADO SPRINGS UTILITY STANDARDS.

FIELD WELDING: IN ACCORDANCE WITH COLORADO SPRINGS UTILITY STANDARDS.

STEEL PIPE FLANGES: IN ACCORDANCE WITH COLORADO SPRINGS UTILITY STANDARDS.

STEEL WATER PIPE: IN ACCORDANCE WITH COLORADO SPRINGS UTILITY STANDARDS.
- PIPE DESIGN PRESSURE IS 250 PSI. WALL THICKNESS SHALL BE ¼ INCH MINIMUM.

BOLTS, NUTS, AND TIE-RODS: IN ACCORDANCE WITH AWWA M-11, JOINT HARNESS ASSEMBLY.

DUCTILE IRON PIPE

CEMENT-MORTAR LINING: IN ACCORDANCE WITH COLORADO SPRINGS UTILITY STANDARDS.

PIPE AND FITTINGS WRAPPED: IN ACCORDANCE WITH COLORADO SPRINGS UTILITY STANDARDS.

DUCTILE IRON RESTRAINED JOINT PIPE: IN ACCORDANCE WITH COLORADO SPRINGS UTILITY STANDARDS.

ANCILLARY CONCRETE MATERIALS

NON-SHRINK GROUT: MASTER BUILDERS MASTERFLOW 928 GROUT, OR EQUAL. PLACE GROUT ACCORDING TO MANUFACTURERS INSTRUCTIONS.

BONDING AGENT: TWO PART EPOXY BONDING AGENT. BONDING AGENT MASTER BUILDERS CONCRETE OR EQUAL. PLACE CONCRETE OVER BONDING AGENT WHILE STILL TACKY.

WATER CURE CONCRETE AND GROUT: MINIMUM 7 DAYS. CURING COMPOUND MAY BE SUBSTITUTED AT THE BUILDER'S OPTION. CURING COMPOUND SHALL BE IN ACCORDANCE WITH ASTM C309, WITH ADDITIONAL REQUIREMENT THAT MOISTURE LOSS NOT EXCEED 0.04 GRAMS PER SQUARE CENTIMETER PER 72 HOURS. CURING COMPOUND: MASTER BUILDERS MASTERKURE 100W OR 200W.

SEALANT: ONE PART POLYURETHANE CAPABLE OF BEING CONTINUOUSLY IMMERSED IN WATER. PRIOR TO APPLYING SEALANT, JOINT OR AREA SHALL BE CLEAN AND FREE OF DUST, OIL, OR FOREIGN MATERIALS. SEALANT: SIKA CHEMICAL COMPANY, SIKAFLEX 1A OR EQUAL.

AGGREGATES: IN ACCORDANCE WITH COLORADO SPRINGS UTILITY STANDARDS.

CONCRETE QUALITY: IN ACCORDANCE WITH COLORADO SPRINGS UTILITY STANDARDS.

REINFORCING STEEL: IN ACCORDANCE WITH COLORADO SPRINGS UTILITY STANDARDS.

CONCRETE TOPPING: SHALL CONTAIN 1.5 LB/CY OF POLYPROPYLENE FIBERS. FIBERS SHALL BE FIBERMESH OR EQUAL.

CITY OF COLORADO SPRINGS CITY ENGINEERING NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY OF COLORADO SPRINGS ENGINEERING DIVISION STANDARD SPECIFICATIONS.
2. CONTRACTOR SHALL OBTAIN AN EXCAVATION PERMIT FOR ALL THE EXCAVATION WORK IN THE PUBLIC RIGHTS-OF-WAY.
3. CONCRETE PERMITS SHALL ALSO BE OBTAINED FOR ALL CONCRETE WORK (CURB & GUTTER, SIDEWALKS, CROSSPANS ETC.).
4. FULL CROSSPAN SECTIONS SHALL BE SAW CUT AND REMOVED FROM JOINT TO JOINT, DRILLED, AND DOWELS INSTALLED AND NEW CONCRETE PLACED PER ENGINEERING DIVISION STANDARD SPECIFICATIONS.
5. CITY ENGINEERING INSPECTIONS 385-5977 SHALL BE CALLED TO INSPECT ALL CONCRETE WORK AND THE EXISTING STORM SEWERS.
6. FLOW FILL SHALL BE USED FOR THE BACKFILL UNDER THE STORM SEWER CROSSINGS UP TO THE SPRING-LINE OF THE STORM SEWER PIPES. ANY DAMAGE TO THE EXISTING STORM SEWER SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
7. TRENCH BACKFILL AND COMPACTION TESTS SHALL BE TAKEN IN CONSECUTIVE 6" LIFTS OF SUITABLE TRENCH BACKFILL MATERIAL TO ENSURE COMPLIANCE WITH REQUIRED STANDARD SPECIFICATION.
8. AFTER TRENCHING IS COMPLETED, THE ASPHALT PATCHING SHALL BE PER STREET DIVISION REQUIREMENTS.
9. ALL TRAFFIC STRIPING SHALL BE REPLACED AFTER COMPLETION OF PATCHING.

PAINTING

UNLESS OTHERWISE STATED, NEW METAL SURFACES SHOULD BE PAINTED, WITH THE FOLLOWING EXCEPTIONS:
- NON-FERROUS AND CORROSION-RESISTANT FERROUS ALLOYS, EXCEPT WHERE REQUIRED FOR ELECTRICAL ISOLATION WHERE ALUMINUM OR STAINLESS STEEL IN CONTACT WITH CONCRETE.
- NONMETALIC MATERIALS.
- PRE-FINISHED ELECTRICAL AND ARCHITECTURAL ITEMS.
- NONSUBMERGED ELECTRICAL CONDUIT ATTACHED TO UNPAINTED CONCRETE.
- GALVANIZED ITEMS.

EXPOSED METALS: PROTECTED WITH SYSTEM NO 5 AS FOLLOWS:
- SP-10, NEAR WHITE METAL BLAST CLEANING.
- EPOXY PRIMER: 1 COAT, 2.5 MDFT.
- POLYURETHANE ENAMEL: 1 COAT, 3 MDFT.

ALUMINUM AND DISSIMILAR METAL INSULATION PROTECTED WITH SYSTEM NO 27, AS FOLLOWS:
- SP 1 SOLVENT CLEANING.
- PRIME IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
- BITUMINOUS PAINT: 1 COAT, 10 MDFT.

⚠2 MATERIAL LIST - NEW PRV VAULT & PIPELINES

	MATERIAL					
	(SIZE)	(FOOTAGE)	(TYPE)	(DEGREE)	(NUMBER)	(NOTE)
PIPE	20"	193'	DIP			RESTRAINED JOINT (INCLUDING FITTINGS)
PIPE	16"	6'	DIP			INCLUDING FITTINGS
PIPE	16"	49'	STL			INCLUDING FITTINGS
PRV	16"				1	FLANGED, BY CSU
VALVE	16"		BF		2	FLANGED, BY CSU
VALVE	16"		BF		1	MJ, BY CSU
PRV	12"				1	FLANGED, BY CSU
VALVE	12"		GATE		2	FLANGED, BY CSU
REDUCER	20x16		DIP		2	RESTRAINED JOINT
BEND	20"		DIP	45	2	RESTRAINED JOINT
BEND	20"		DIP	22 1/2	2	RESTRAINED JOINT
BEND	16"		STL	67	1	
BEND	16"		STL	70	1	
BEND	12"		STL	90	2	STANDARD
TEE	16x12		STL		2	STANDARD
COUPLING	20"				2	INSULATING
COUPLING	16"				2	INSULATING
COUPLING	16"				2	NON-INSULATING
DISMANTLING JOINT	16"				1	BY CSU
DISMANTLING JOINT	12"				1	BY CSU
ANODE					8	CSU STANDARD
PRE-CAST VAULT					1	SEE PLAND AND DETAILS
HARNESS/BLOCK					4	SEE PLANS AND DETAILS
METER VAULT					1	6' MANHOLE

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	16" & 20"	24±	STL							
PIPE	12"	18±	STL							
VALVE										
HYDRANT										
CROSS										
REDUCER	20x16		STL		2					
BENDS	12"		STL	90	2					
TEES	20x12		STL		2					

(AS BUILT INFORMATION)

DATE STARTED:

DATE COMPLETED:

FOREMAN:

INSPECTOR:

CONTRACTOR:

LEGEND

- EXISTING ROW/PROPERTY LINE
- EXISTING CURB LINE
- EXISTING GAS MAIN
- EXISTING WATER
- PROPOSED WATER
- EXISTING STORM DRAIN
- EXISTING SEWER
- EXISTING ELECTRIC
- EXISTING FIBER LINE / CABLE
- EXISTING MAN HOLE
- FENCE
- VALVE (PROPOSED)
- VALVE (EXISTING)
- BLOWOFF (PROPOSED)
- BLOWOFF (EXISTING)
- PLUG (PROPOSED)
- PLUG (EXISTING)
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- EXISTING STREET LIGHT
- EXISTING ELECTRIC VAULT
- EXISTING CABLE BOX
- EXISTING TELEPHONE BOX

(PROJECT RELATED INFORMATION)

PARENT WORK ORDER NUMBER: 1474157

PROJECT NUMBER: 2007-W182

FIMS MAP: L-35, L-36

SHEET NO: 2 OF 8

NETWORK LOCATION & DRAWING TITLE:
N:\General\temp cad\21711652-PRV VAULT\G-2.dwg

REVISIONS: ⚠2 11-09-07 REVISED SITE LAYOUT

REVISIONS: ⚠1 REVISION 1, 9-19-07

ACADEMY BLVD/AIRPORT RD PRV VAULT RELOCATION PROJECT

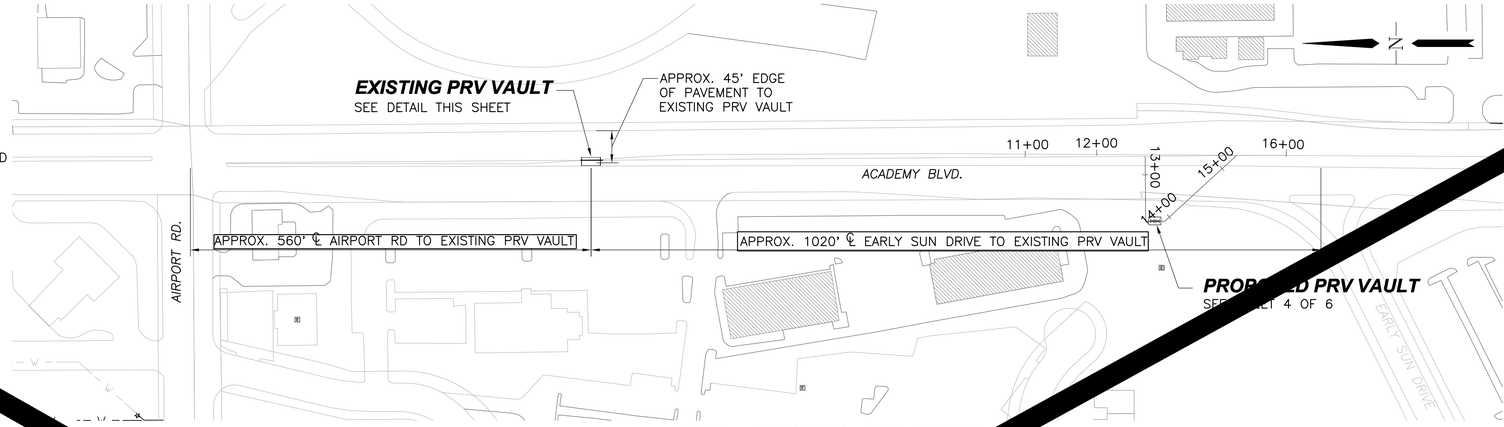
GENERAL NOTES AND MATERIALS

Colorado Springs Utilities
It's how we're all connected

DESIGN BY:	SARAH SANDOVAL	DATE:	SEPTEMBER 4, 2007
APPROVED BY:	SCOTT COLE	DATE:	SEPTEMBER 4, 2007
SURVEYED BY:	URS CORPORATION	DATE:	AUGUST 3, 2007

NOTES

1. SALVAGED EQUIPMENT AS LISTED IN SALVAGE LIST SHALL BE RETURNED TO SPRINGS UTILITIES TO LOCATION DESIGNATED BY THE OWNER.
2. REMOVE AND DISPOSE OF EXISTING VAULT, AND APPURTENANCES NOT ITEMIZED IN SALVAGE LIST. INSTALL PIPE AS SHOWN.
3. THE EXISTING INFORMATION SHOWN ON THIS DRAWING PROVIDED BY SPRINGS UTILITIES PDFS DATED 3-16-07 AND 7-20-07 AND NAMED EXHIBIT B AND ACADEMY – AIRPORT – 24, RESPECTIVELY.
4. COMPACT BACKFILL FOR PRV VAULT REMOVAL AND PIPELINE REPLACEMENT TO CITY OF COLORADO SPRINGS STANDARDS.
5. DEPTH OF VAULT IS APPROXIMATELY 9' AND SHOULD BE VERIFIED BY THE CONTRACTOR PRIOR TO DEMOLITION.
6. ANODES SHALL BE 32 POUNDS.

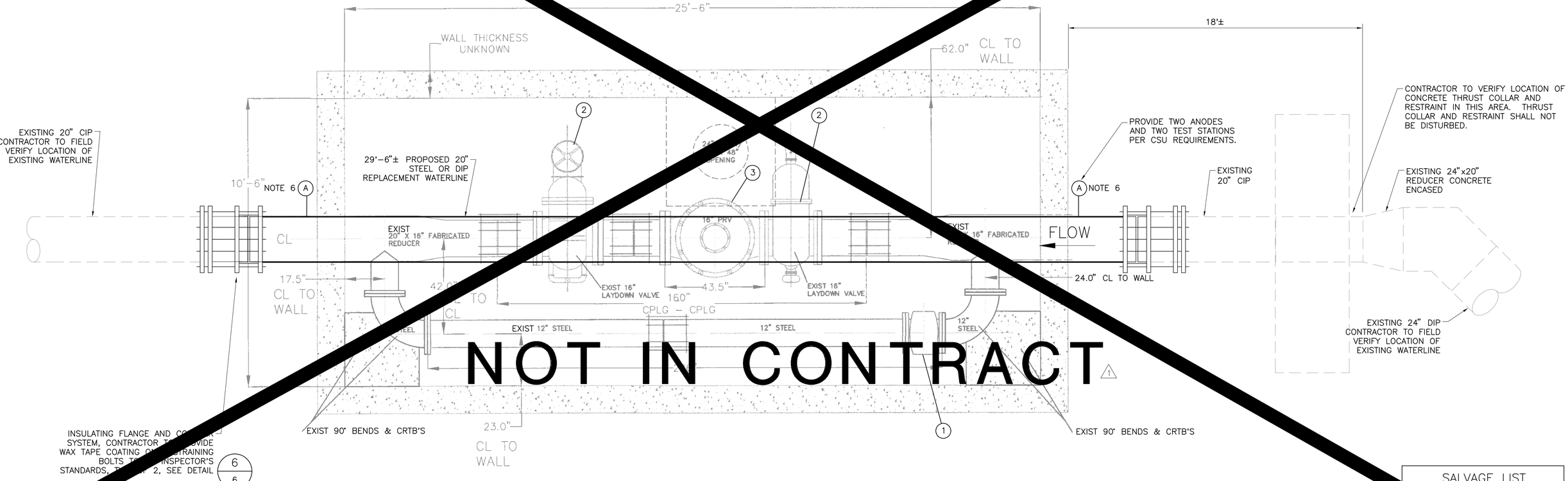


CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-
CALL 3 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER

PLAN - EXISTING PRV VAULT

100 0 100 200

SCALE: 1"=100'



NOT IN CONTRACT 1

ENLARGED PLAN - EXISTING PRV VAULT DETAIL 1/3

NTS

SALVAGE LIST	
1	12" GATE VALVE
2	16" LAYDOWN GATE VALVE
3	16" PRV

(AS BUILT INFORMATION)

DATE STARTED:

DATE COMPLETED:

FOREMAN:

INSPECTOR:

CONTRACTOR:

LEGEND

EXISTING ROW/PROPERTY LINE	VALVE (PROPOSED)
EXISTING CURB LINE	VALVE (EXISTING)
EXISTING GAS MAIN	BLOWOFF (PROPOSED)
EXISTING WATER	BLOWOFF (EXISTING)
PROPOSED WATER	PLUG (PROPOSED)
EXISTING STORM DRAIN	PLUG (EXISTING)
EXISTING SEWER	EXISTING FIRE HYDRANT
EXISTING ELECTRIC	PROPOSED FIRE HYDRANT
EXISTING FIBER LINE / CABLE	EXISTING STREET LIGHT
EXISTING MAN HOLE	EXISTING ELECTRIC VAULT
FENCE	EXISTING CABLE BOX
	EXISTING TELEPHONE BOX

(PROJECT RELATED INFORMATION)

PARENT WORK ORDER NUMBER: 1474157

PROJECT NUMBER: 2007-W182

FIMS MAP: L-35, L-36

SHEET NO: 3 OF 8

NETWORK LOCATION & DRAWING TITLE:

N:\General\temp cad\21711652-PRV VAULT\C-4.dwg

REVISIONS: 1 11-09-07 REVISED PRV SITE PLAN

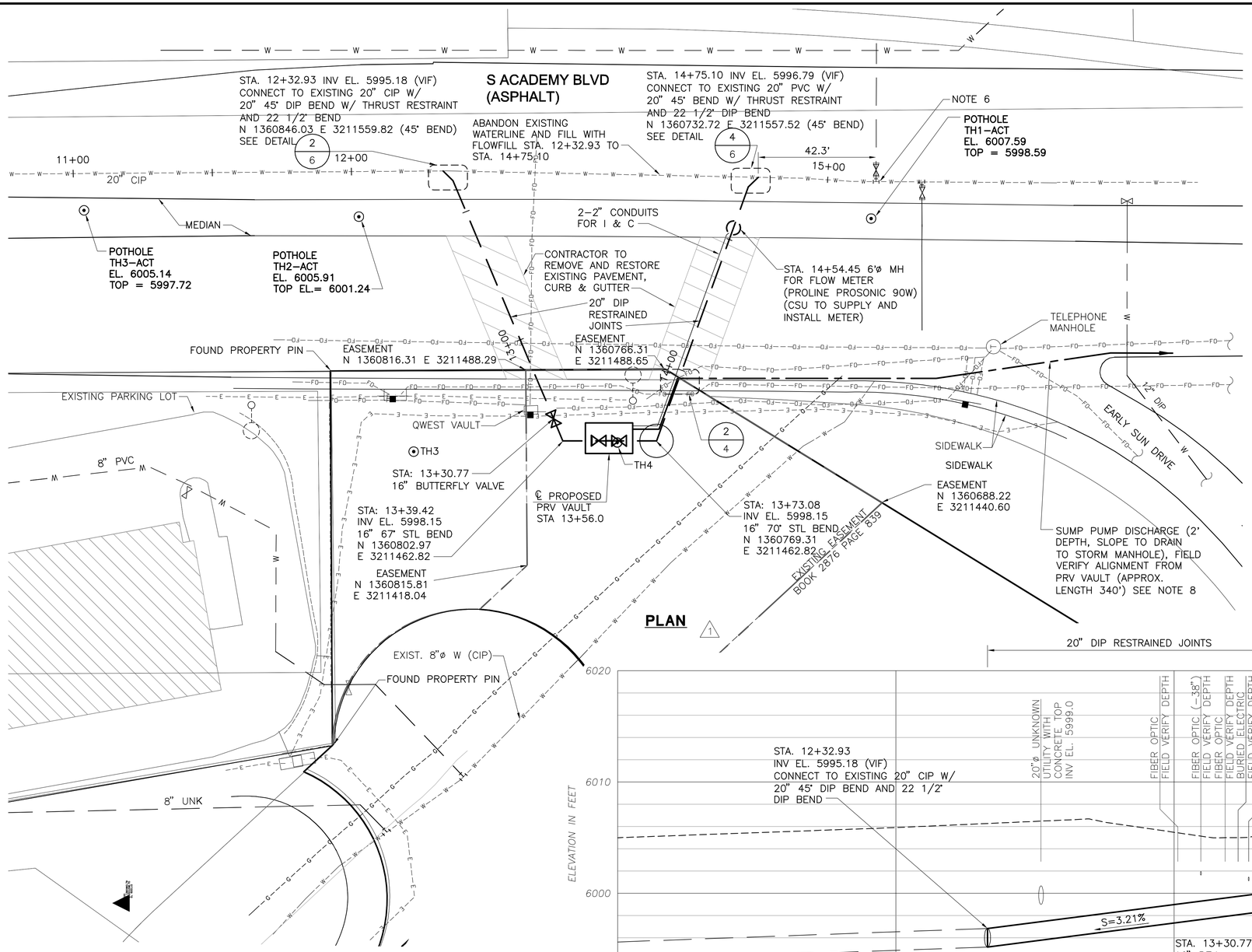
ACADEMY BLVD/AIRPORT RD PRV VAULT RELOCATION PROJECT

EXISTING VAULT DEMOLITION / SALVAGE / REPLACEMENT

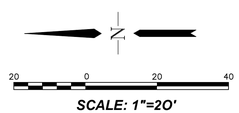
Colorado Springs Utilities

It's how we're all connected

DESIGN BY:	SARAH SANDOVAL	DATE:	SEPTEMBER 4, 2007
APPROVED BY:	SCOTT COLE	DATE:	SEPTEMBER 4, 2007
SURVEYED BY:	URS CORPORATION	DATE:	AUGUST 3, 2007

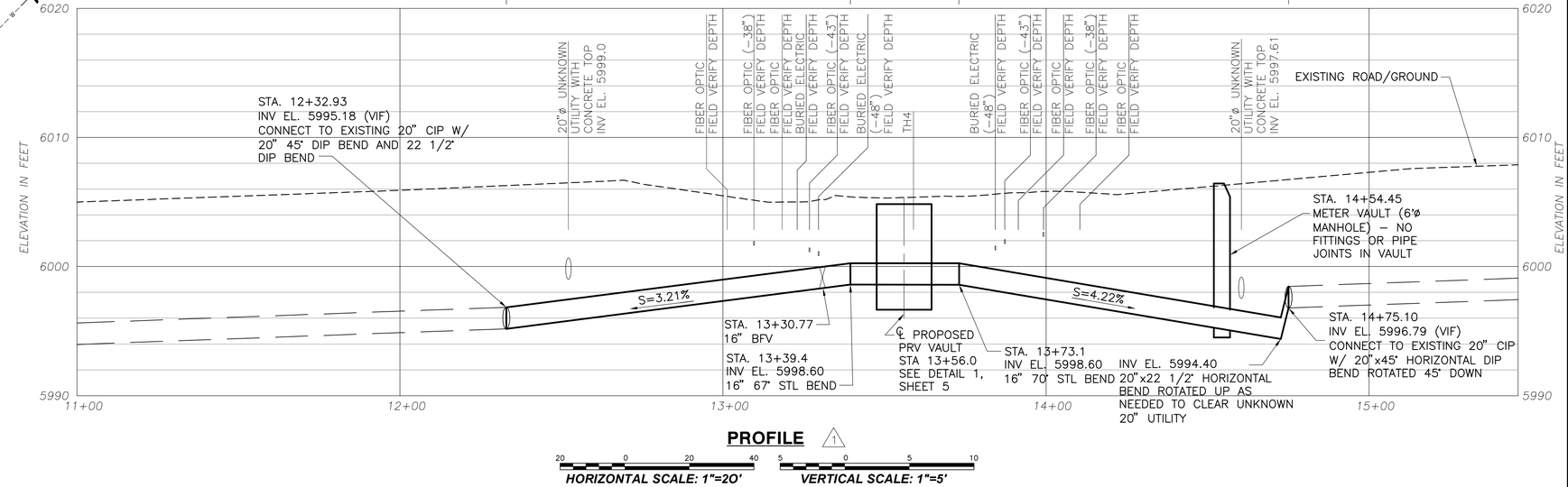


PLAN



SCALE: 1"=20'

CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1–800–922–1987
CALL 3 BUSINESS DAYS IN ADVANCE
BEFORE YOU DIG, GRADE OR EXCAVATE
FOR THE MARKING OF UNDERGROUND
MEMBER UTILITIES.

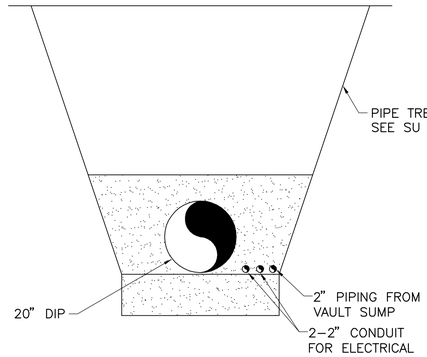


PROFILE

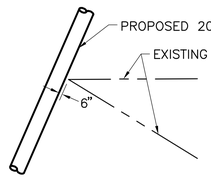
HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

NOTES:

1. SURVEY PROVIDED BY URS FROM STA. 11+70 TO STA. 15+85. ALL OTHER UTILITY LOCATIONS PROVIDED BY COLORADO SPRINGS UTILITIES FIMS DATA.
2. PIPELINE ELEVATIONS ARE INVERT UNLESS OTHERWISE NOTED.
3. CONTRACTOR TO VERIFY LOCATION AND DEPTH OF EXISTING WATERLINE AT CONNECTION POINTS PRIOR TO CONSTRUCTION.
4. RESTORE DAMAGED OR REMOVED ROADWAY, CURB AND GUTTER, AND PRIVATE PROPERTY TO A CONDITION EQUAL TO OR BETTER THAN CONDITION AT START OF PROJECT.
5. CONTRACTOR TO VERIFY DEPTH AND LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.
6. CONTRACTOR TO PROTECT IN PLACE EXISTING THRUST RESTRAINT ON 8" PIPELINE.
7. CONTRACTOR TO BORE 2"ø HOLE IN SIDE OF EXISTING MANHOLE. EXTEND PIPING INSIDE MANHOLE AND PROVIDE 90° BEND TO EXTEND PIPING DOWN TOWARD EXISTING STORM DRAIN PIPE.
8. FOR ELECTRICAL AND SCADA INFORMATION, SEE SHEET 8 OF 8.



PIPE TRENCH DETAIL 1/4
NTS



EASEMENT DETAIL 2/4
NTS

(AS BUILT INFORMATION)

DATE STARTED:

DATE COMPLETED:

FOREMAN:

INSPECTOR:

CONTRACTOR:

LEGEND

- EXISTING ROW/PROPERTY LINE
- EXISTING CURB LINE
- EXISTING GAS MAIN
- EXISTING WATER
- PROPOSED WATER
- EXISTING STORM DRAIN
- EXISTING SEWER
- EXISTING ELECTRIC
- EXISTING FIBER LINE / CABLE
- EXISTING MAN HOLE
- FENCE
- VALVE (PROPOSED)
- VALVE (EXISTING)
- BLOWOFF (PROPOSED)
- BLOWOFF (EXISTING)
- PLUG (PROPOSED)
- PLUG (EXISTING)
- 32 LB ANODE
- ANODE TEST STATION
- EXISTING STREET LIGHT
- EXISTING ELECTRIC VAULT
- EXISTING CABLE BOX
- EXISTING TELEPHONE BOX

(PROJECT RELATED INFORMATION)

PARENT WORK ORDER NUMBER: 1474157

PROJECT NUMBER: 2007–W182

FIMS MAP: L–35, L–36

SHEET NO: 4 OF 8 (REV 1)

NETWORK LOCATION & DRAWING TITLE:
N:\General\temp cad\21711652–PRV VAULT\C–1&C–2 11–1–07.dwg

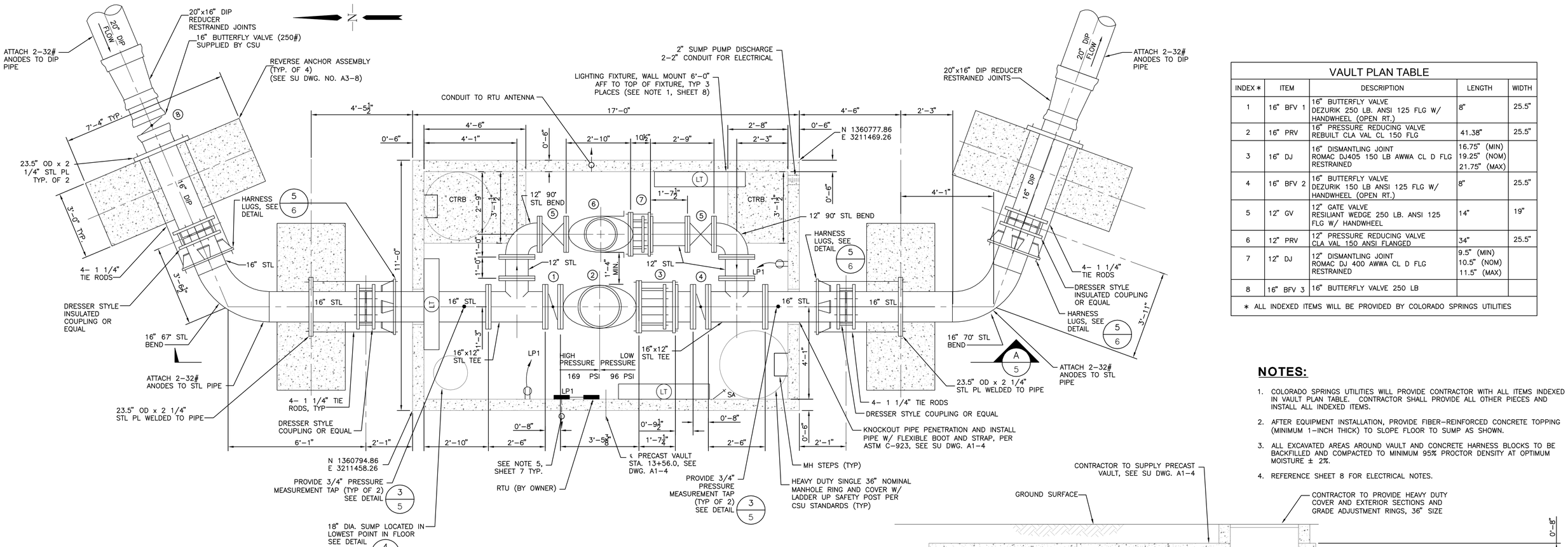
REVISIONS: 1 11–09–07 REVISED PRV SITE PLAN

ACADEMY BLVD/AIRPORT RD PRV VAULT RELOCATION PROJECT

PLAN AND PROFILE

Colorado Springs Utilities
It's how we're all connected

DESIGN BY:	SARAH SANDOVAL	DATE:	SEPTEMBER 4, 2007
APPROVED BY:	SCOTT COLE	DATE:	SEPTEMBER 4, 2007
SURVEYED BY:	URS CORPORATION	DATE:	AUGUST 3, 2007



VAULT PLAN TABLE				
INDEX *	ITEM	DESCRIPTION	LENGTH	WIDTH
1	16" BFV 1	16" BUTTERFLY VALVE DEZURIK 250 LB. ANSI 125 FLG W/ HANDWHEEL (OPEN RT.)	8"	25.5"
2	16" PRV	16" PRESSURE REDUCING VALVE REBUILT CLA VAL CL 150 FLG	41.38"	25.5"
3	16" DJ	16" DISMANTLING JOINT ROMAC DJ405 150 LB AWWA CL D FLG RESTRAINED	16.75" (MIN) 19.25" (NOM) 21.75" (MAX)	
4	16" BFV 2	16" BUTTERFLY VALVE DEZURIK 150 LB ANSI 125 FLG W/ HANDWHEEL (OPEN RT.)	8"	25.5"
5	12" GV	12" GATE VALVE RESILIANT WEDGE 250 LB. ANSI 125 FLG W/ HANDWHEEL	14"	19"
6	12" PRV	12" PRESSURE REDUCING VALVE CLA VAL 150 ANSI FLANGED	34"	25.5"
7	12" DJ	12" DISMANTLING JOINT ROMAC DJ 400 AWWA CL D FLG RESTRAINED	9.5" (MIN) 10.5" (NOM) 11.5" (MAX)	
8	16" BFV 3	16" BUTTERFLY VALVE 250 LB		

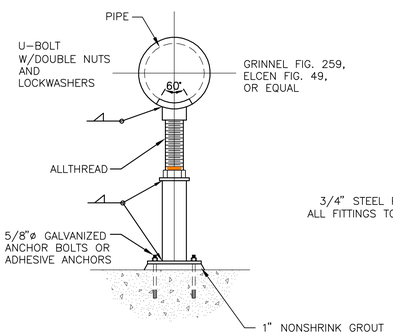
* ALL INDEXED ITEMS WILL BE PROVIDED BY COLORADO SPRINGS UTILITIES

NOTES:

1. COLORADO SPRINGS UTILITIES WILL PROVIDE CONTRACTOR WITH ALL ITEMS INDEXED IN VAULT PLAN TABLE. CONTRACTOR SHALL PROVIDE ALL OTHER PIECES AND INSTALL ALL INDEXED ITEMS.
2. AFTER EQUIPMENT INSTALLATION, PROVIDE FIBER-REINFORCED CONCRETE TOPPING (MINIMUM 1-INCH THICK) TO SLOPE FLOOR TO SUMP AS SHOWN.
3. ALL EXCAVATED AREAS AROUND VAULT AND CONCRETE HARNESS BLOCKS TO BE BACKFILLED AND COMPACTED TO MINIMUM 95% PROCTOR DENSITY AT OPTIMUM MOISTURE ± 2%.
4. REFERENCE SHEET 8 FOR ELECTRICAL NOTES.

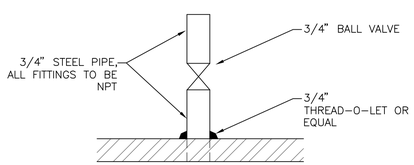
VAULT PIPING PLAN (1/5)

SCALE: 1"=2'



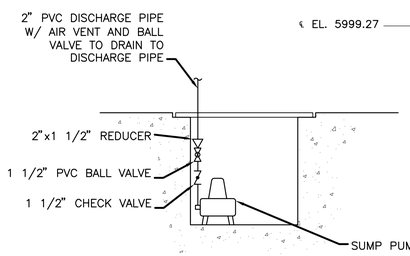
ADJUSTABLE PIPE SUPPORT DETAIL (2/5)

NTS



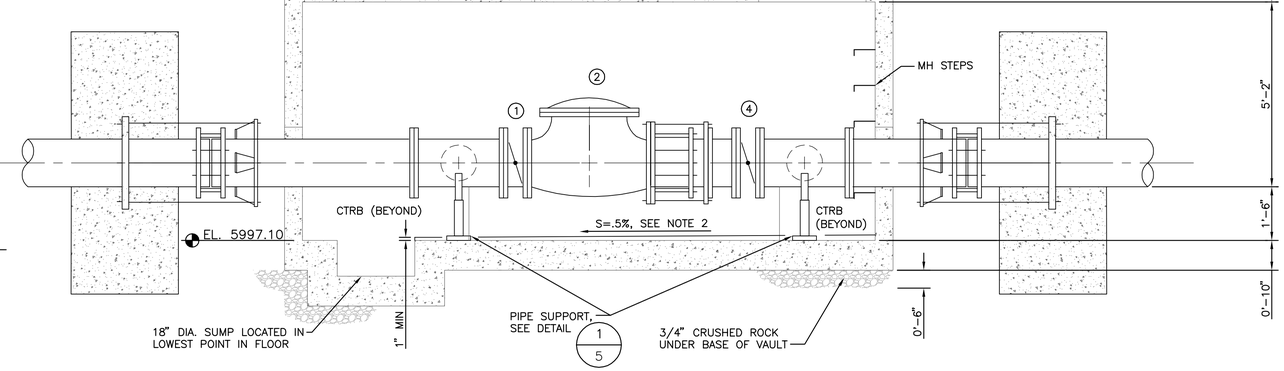
PRESSURE MEASUREMENT TAP DETAIL (3/5)

NTS



SUMP PUMP DETAIL (4/5)

NTS



VAULT SECTION (A/5)

SCALE: 1"=2'

(AS BUILT INFORMATION)	
DATE STARTED:	
DATE COMPLETED:	
FOREMAN:	
INSPECTOR:	
CONTRACTOR:	

(PROJECT RELATED INFORMATION)	
PARENT WORK ORDER NUMBER:	1474157
PROJECT NUMBER:	2007-W182
FIMS MAP:	L-35
SHEET NO:	5 OF 8 (REV 3)
NETWORK LOCATION & DRAWING TITLE:	N:\General\temp cad\21711652-PRV VAULT\C-3.dwg
REVISIONS: 3	11-09-07 REVISED SITE LAYOUT
REVISIONS: 2	10-19 VALVE PIPE REDIMENSION
REVISIONS: 1	REVISION 1, 9-19-07

ACADEMY BLVD/AIRPORT RD PRV VAULT RELOCATION PROJECT

PROPOSED PRV VAULT PLAN AND SECTION

Colorado Springs Utilities
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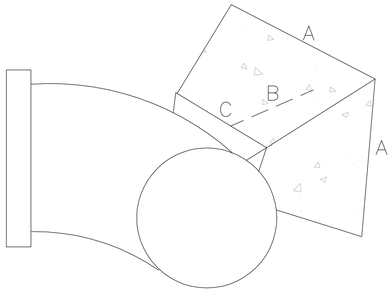
DESIGN BY:	SARAH SANDOVAL	DATE:	SEPTEMBER 4, 2007
APPROVED BY:	SCOTT COLE	DATE:	SEPTEMBER 4, 2007
SURVEYED BY:	URS CORPORATION	DATE:	AUGUST 3, 2007



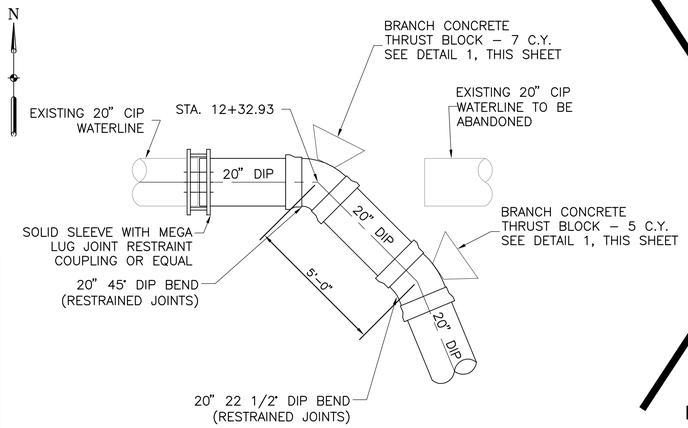
NOTES:
1. THRUST BLOCKS SIZED FOR 250 PSI PIPE PRESSURE AND SOIL LATERAL BEARING PRESSURE OF 1500 PSF (POUNDS PER SQUARE FOOT).

2. CONCRETE TO BE 2,000 PSI COMPRESSIVE STRENGTH.

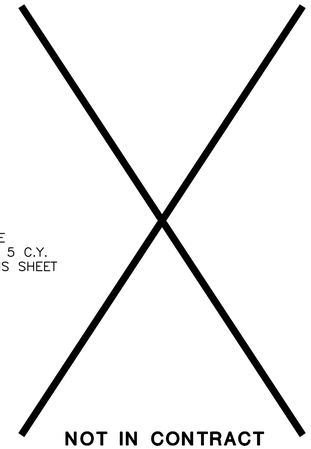
THRUST BLOCK SIZES

PIPE SIZE (IN.)	STATION	FITTING	MIN. THRUST BLOCK BEARING AREA (SQ FT)	THRUST BLOCK DIMENSIONS			
				A (FT)	B (FT)	C (FT)	CY
20	12+32.9	45° BEND	40	6.5	4	2	7
20	12+37.9	22 1/2° BEND	10	5.0	4	2	5
20	14+70.1	22 1/2° BEND	10	5.0	4	2	5
20	14+75.1	45° BEND	40	6.5	4	2	7
16	13+32.4	REVERSE	53.4	7.33	3	7.33	6
16	13+43.1	REVERSE	53.4	7.33	3	7.33	6
16	13+69.0	REVERSE	53.4	7.33	3	7.33	6
16	13+79.4	REVERSE	53.4	7.33	3	7.33	6

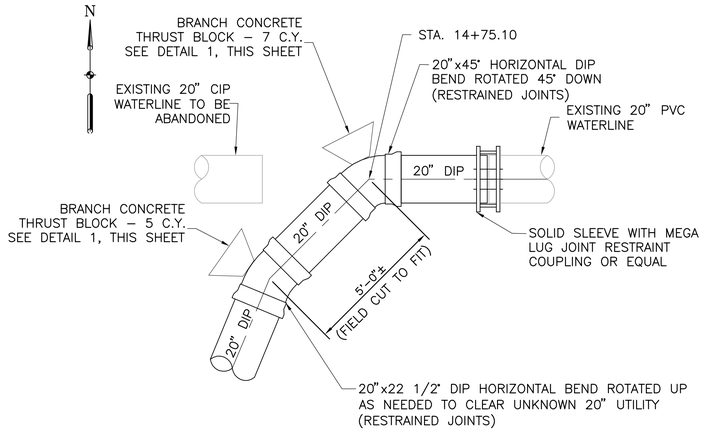
THRUST BLOCK DETAIL 1/6 △1
NTS



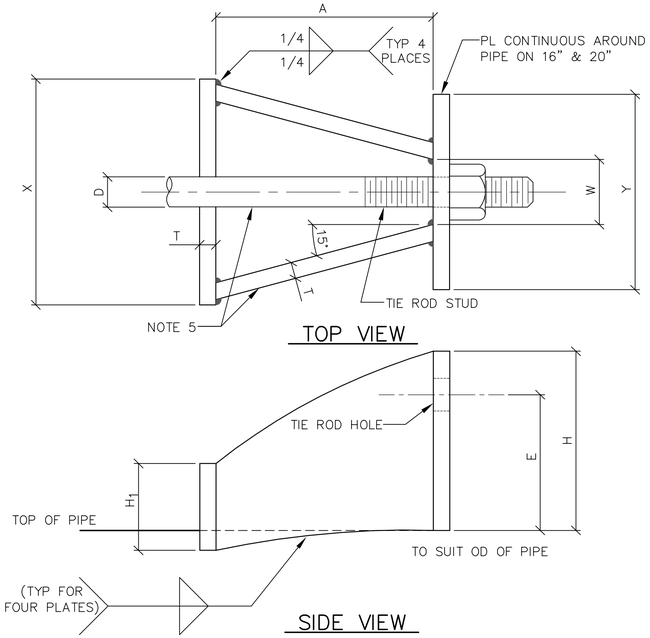
CONNECTION DETAIL 2/6 △1
NTS



NOT IN CONTRACT (N.I.C.)
DETAIL 3/6 △1
NTS

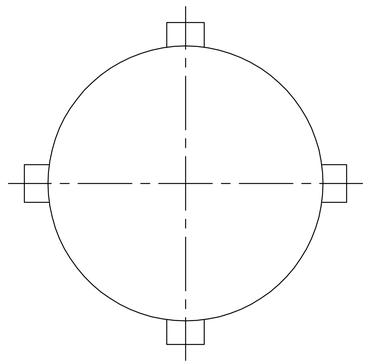


DETAIL 4/6 △1
NTS



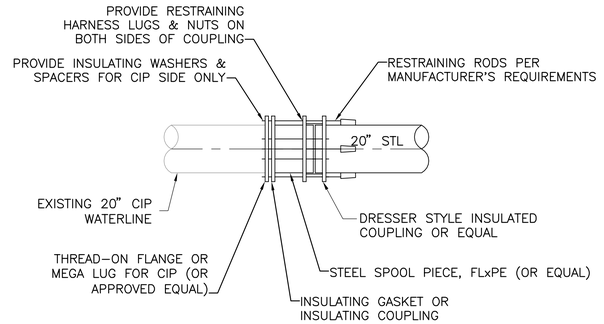
NOTES:

1. USE FOUR HS STEEL TIE RODS.
2. TIE ROD HOLE ø 1/8" LARGER THAN STUD ø.
3. BOTTOM EDGE OF ALL PLATES SHAPED TO FIT OD OF PIPE.
4. HARNESS LUGS AS PER AWWA MANUAL M11.
5. FIELD APPLY TAPE WRAP ALL AROUND, MIN 4" LAP


LUG PLACEMENT

NOMINAL PIPE ø	NO. OF LUGS	STUD ø D	A	W	T	H	E	H_1	Y	X
16"	4	1 1/4"	7 1/2"	2"	5/8"	5"	3 3/4"	2 1/2"	RING	RING

COMBINATION FLANGED HARNESS LUG DETAILS 5/6
NTS



CONNECTION DETAIL 6/6
NTS

(AS BUILT INFORMATION)

DATE STARTED:

DATE COMPLETED:

FOREMAN:

INSPECTOR:

CONTRACTOR:

(PROJECT RELATED INFORMATION)

PARENT WORK ORDER NUMBER: 1474157

PROJECT NUMBER: 2007–W182

FIMS MAP: L–35

SHEET NO: 6 OF 8

NETWORK LOCATION & DRAWING TITLE:

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REVISIONS: △1 11–09–07 REVISED SITE LAYOUT

ACADEMY BLVD/AIRPORT RD PRV VAULT RELOCATION PROJECT

DETAILS

Colorado Springs Utilities
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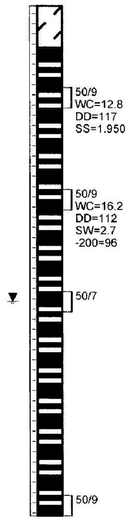
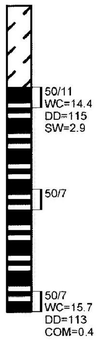
DESIGN BY:	SARAH SANDOVAL	DATE:	SEPTEMBER 4, 2007
APPROVED BY:	SCOTT COLE	DATE:	SEPTEMBER 4, 2007
SURVEYED BY:	URS CORPORATION	DATE:	AUGUST 3, 2007

TH - 3



TH - 4



LEGEND:

FILL, CLAY, SANDY, MEDIUM STIFF TO STIFF, MOIST, MEDIUM BROWN.

CLAY, SLIGHTLY SANDY TO SANDY, SLIGHTLY MOIST TO MOIST, MEDIUM TO DARK BROWN. (CL)

BEDROCK. CLAYSTONE, SLIGHTLY SANDY, HARD TO VERY HARD, SLIGHTLY MOIST TO MOIST, MEDIUM TO DARK BROWN.

DRIVE SAMPLE. THE SYMBOL 6/12 INDICATES 6 BLOWS OF A 140-POUND HAMMER FALLING 30 INCHES WERE REQUIRED TO DRIVE A 2.5-INCH O.D. SAMPLER 12 INCHES.

GROUND WATER LEVEL MEASURED FIVE DAY(S) AFTER DRILLING.

INDICATES SLOTTED PVC PIPE.

NOTES:

1. THE BORINGS WERE DRILLED JUNE 14, 2007 USING A 4-INCH DIAMETER, CONTINUOUS-FLIGHT AUGER AND A TRUCK-MOUNTED DRILL RIG.
2. THESE LOGS ARE SUBJECT TO THE EXPLANATIONS, LIMITATIONS, AND CONCLUSIONS AS CONTAINED IN THIS REPORT.
3. WC - INDICATES MOISTURE CONTENT. (%)
   DD - INDICATES DRY DENSITY. (PCF)
   SW - INDICATES SWELL WHEN WETTED UNDER 1 KSF LOAD. (%)
   LL - INDICATES LIQUID LIMIT. (%) (NL : NON-LIQUID)
   PI - INDICATES PLASTICITY INDEX. (%) (NV : NO VALUE)
   -200 - INDICATES PASSING NO. 200 SIEVE. (%)
   SS - INDICATES WATER-SOLUBLE SULFATE CONTENT. (%)

(AS BUILT INFORMATION)

DATE STARTED:

DATE COMPLETED:

FOREMAN:

INSPECTOR:

CONTRACTOR:

(PROJECT RELATED INFORMATION)

PARENT WORK ORDER NUMBER: 1474157

PROJECT NUMBER: 2007-W182

FIMS MAP: L-35

SHEET NO: 7 OF 8

NETWORK LOCATION & DRAWING TITLE:

N:\General\temp cad\21711652-PRV VAULT\C-7.dwg

REVISIONS:

ACADEMY BLVD/AIRPORT RD PRV VAULT RELOCATION PROJECT

GEOTECHNICAL BORINGS

Colorado Springs Utilities

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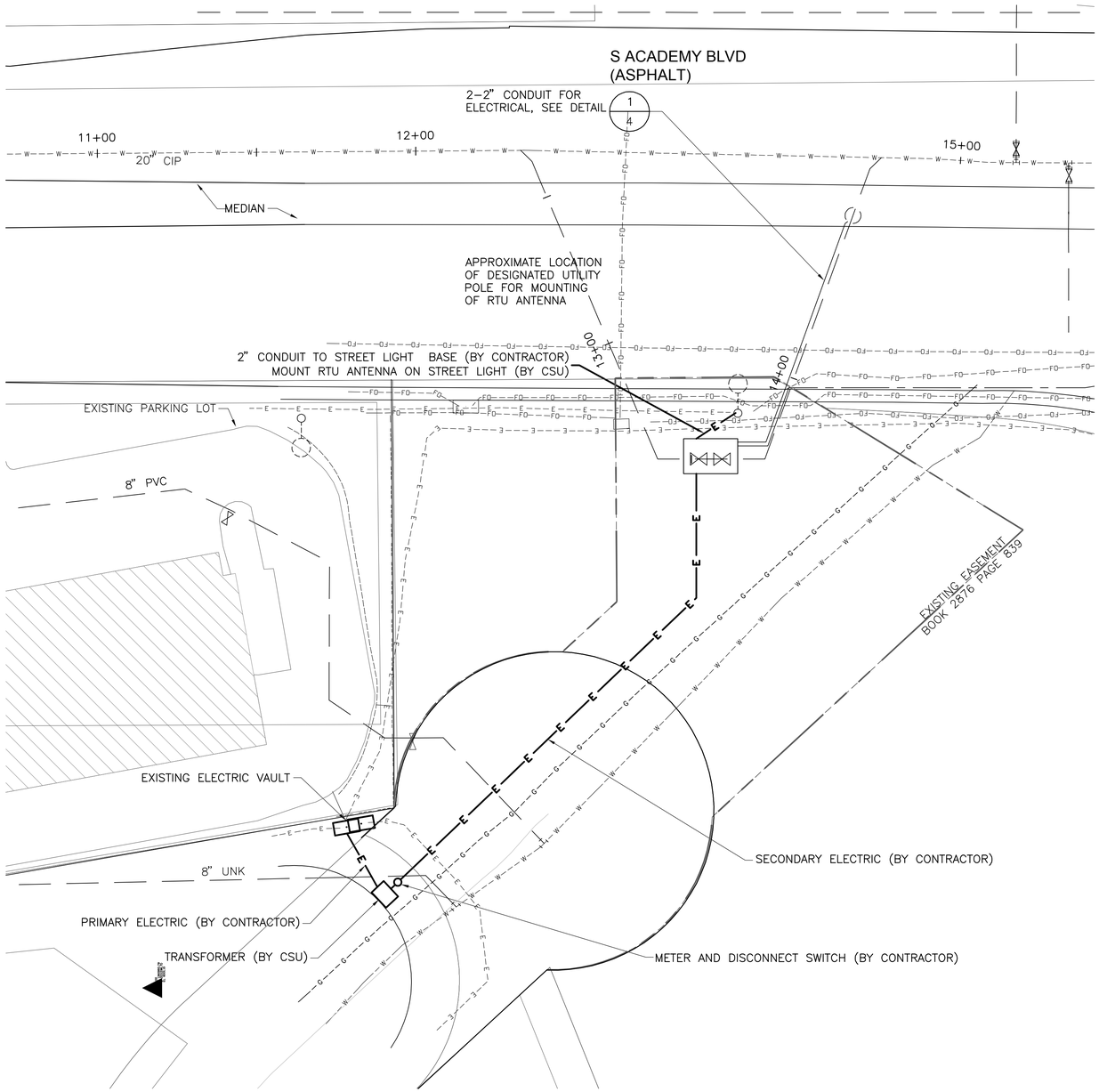
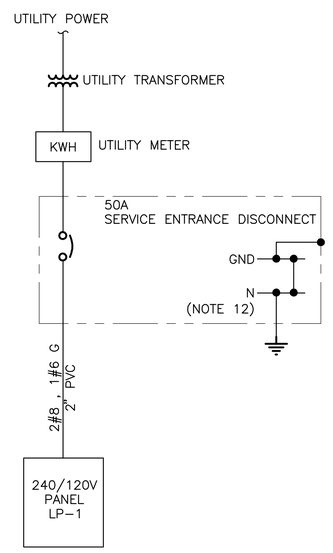
DESIGN BY:	SARAH SANDOVAL	DATE:	SEPTEMBER 4, 2007
APPROVED BY:	SCOTT COLE	DATE:	SEPTEMBER 4, 2007
SURVEYED BY:	URS CORPORATION	DATE:	AUGUST 3, 2007



PANEL: LP–1
SERVICE VOLTAGE: 120/240
TOTAL LOAD KVA: 2.8
REMARKS:

LOCATION: ACADEMY BLVD/AIRPORT RD. PRV VAULT
PHASE: 1 WIRE: 3
BUS SIZE: 100A MAIN SIZE: 50A TYPE: BRKR
NEUTRAL: NONE MOUNTING: SURFACE – NEMA 12

LOAD IN VA A	LOAD IN VA B	CIRCUIT DESCRIPTION	BKR A/P	CKT NO	CKT NO	BKR A/P	CIRCUIT DESCRIPTION	LOAD IN VA A	LOAD IN VA B
375.0		LIGHTING	15/1	1	2	15/1	METER VAULT	175.0	
	1000.0	RTU	20/1	3	4	20/1	RECEPTACLES		360.0
864.9		SUMP PUMP RECEPTACLE	15/1	5	6	15/1	SPARE		
				7	8				
				9	10				
				11	12				
1239.9	1000.0	TOTAL					TOTAL	175.0	360.0



ELECTRICAL NOTES:

1. TYPE 1 FIXTURE IS A 4', TWIN TUBE, HIGH OUTPUT, FIBERGLASS GASKETED ENCLOSED FLUORESCENT, CAT NO. DMW 248HO AR120 GEB 10RS AS MANUFACTURED BY LITHONIA.
2. RECEPTACLES SHALL BE SPECIFICATION GRADE, TWO–POLE, THREE–WIRE GROUNDING TYPE WITH SCREW TYPE TERMINALS SUITABLE FOR #10 AWG. RATING SHALL BE 125 VOLTS, NEMA WD, WITH 5–20R, 20 AMP CONFIGURATION, IN MALLEABLE IRON WEATHERPROOF BOX MOUNTED 48" ABOVE FINISHED FLOOR.
3. SWITCH SHALL BE INDUSTRIAL GRADE , TOTALLY ENCLOSED, AC TYPE CAPABLE OF CONTROLLING 100 PERCENT FLUORESCENT LAMP LOADS WITH A RATING OF 20 AMPS AT 120/277 VOLTS. SWITCH SHALL MEET NEMA WD 1 AND FS W–S–896F, MOUNTED IN MALLEABLE IRON WEATHERPROOF BOX.
4. UNLESS NOTED OTHERWISE, ALL CIRCUITS SHOWN SHALL CONSIST OF 2#12, 1#12G AWG COPPER, IN 3/4" RIGID GALVANIZED METAL CONDUIT, MINIMUM.
5. CONTRACTOR SHALL INSTALL THE NEW VAULT FEEDER FROM THE NEW TRANSFORMER TO THE NEW VAULT IN WEATHERPROOF CONDUIT.
6. TRANSFORMER SHALL BE FURNISHED AND INSTALLED BY COLORADO SPRINGS UTILITIES. A MAIN DISCONNECT IS REQUIRED AT METER PEDESTAL, TO BE LOCATED NEAR TRANSFORMER AND AWAY FROM POTENTIAL FUTURE DEVELOPMENT. COORDINATE WITH CS UTILITIES FOR SCHEDULE, LOCATION, AND INSTALLATION DETAILS.
7. INSTALL TWO 2" CONDUITS FROM OWNER FURNISHED RTU TO METER VAULT. INSTALL ONE 2" CONDUIT FROM RTU FOR ANTENNA CABLE TO DESIGNATED LIGHT POLE.
8. INSTALL 2#12, 1#12G AWG COPPER IN BURIED 2" CONDUIT FROM LP–1 TO METER VAULT.
9. SEPARATE RECEPTACLE CIRCUIT REQUIRED FOR SUMP PUMP.
10. ALL BRANCH CIRCUITS TO BE INDIVIDUALLY GFCI PROTECTED.
11. ELECTRICAL CONTRACTOR SHALL FIELD CONFIRM ALL MOTOR HORSEPOWER, SIZES, AND ELECTRICAL LOADS FOR SIZING OF CIRCUIT BREAKERS, FUSES, STARTERS, CONTACTORS, SWITCHES, WIRE, AND CONDUITS PRIOR TO INSTALLATION.
12. CONNECT GROUND AT SERVICE TO LISTED 5/8"x10' DRIVEN COPPER–CLAD GROUND ROD. BOND NEUTRAL PER NEC.
13. REGIONAL BUILDING DEPARTMENT HAS FINAL INSPECTION AND APPROVAL AUTHORITY.

(AS BUILT INFORMATION)

DATE STARTED:

DATE COMPLETED:

FOREMAN:

INSPECTOR:

CONTRACTOR:

LEGEND

EXISTING ROW/PROPERTY LINE
EXISTING CURB LINE
EXISTING GAS MAIN
EXISTING WATER
PROPOSED WATER
EXISTING STORM DRAIN
EXISTING SEWER
EXISTING ELECTRIC
EXISTING FIBER LINE / CABLE
EXISTING MAN HOLE
FENCE

VALVE (PROPOSED)
VALVE (EXISTING)
BLOWOFF (PROPOSED)
BLOWOFF (EXISTING)
PLUG (PROPOSED)
PLUG (EXISTING)
35 LB ANODE

ANODE TEST STATION
EXISTING STREET LIGHT
EXISTING ELECTRIC VAULT
EXISTING CABLE BOX
EXISTING TELEPHONE BOX

(PROJECT RELATED INFORMATION)

PARENT WORK ORDER NUMBER: 1474157
PROJECT NUMBER: 2007–W182
FIMS MAP: L–35
SHEET NO: 8 OF 8
NETWORK LOCATION & DRAWING TITLE:
N:\General\temp cad\21711652–PRV VAULT\C–8.dwg
REVISIONS: 1 11–09–07 REVISED SITE LAYOUT

ACADEMY BLVD/AIRPORT RD PRV VAULT RELOCATION PROJECT

ELECTRICAL

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DESIGN BY:	SARAH SANDOVAL	DATE:	SEPTEMBER 4, 2007
APPROVED BY:	SCOTT COLE	DATE:	SEPTEMBER 4, 2007
SURVEYED BY:	URS CORPORATION	DATE:	AUGUST 3, 2007

SAMPLE PROJECT 2
30" Waterline to Briargate Reservoirs

Work shall include construction of approximately 800 lineal feet of 24" HDPE in an existing 36" steel sleeve and 4500 lineal feet of 36" ductile iron pipe through undeveloped areas including future roadways and existing platted undeveloped streets. Pipeline work includes installation of air/vacuum valves and vaults, butterfly valves, lowerings, connections to the existing water system, fire hydrants, corrosion protection, and all other appurtenances shown on the construction plans. All work shall be performed in accordance with the construction plans and details and Colorado Springs Utilities' Line Extension and Service Standards. Costs should be in conformance with the Statement of Work and include only labor and equipment for installation. Traffic control, surface restoration and materials will be provided by Colorado Springs Utilities

Approved for Construction

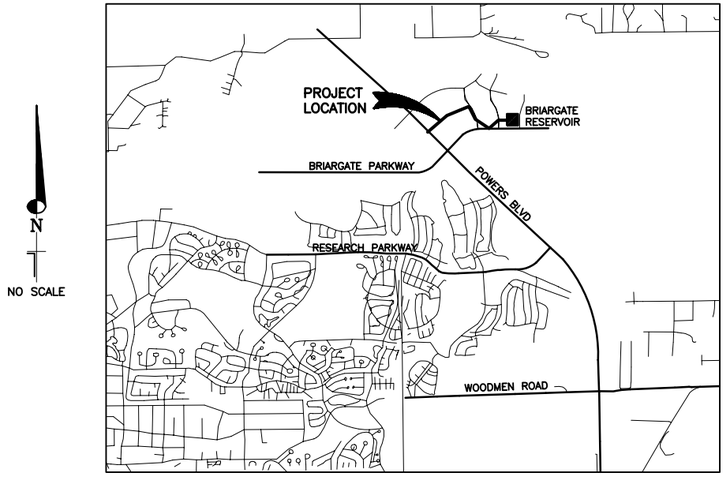
By: _____ _____
Colorado Springs Utilities: Infrastructure Planning & Design — Date

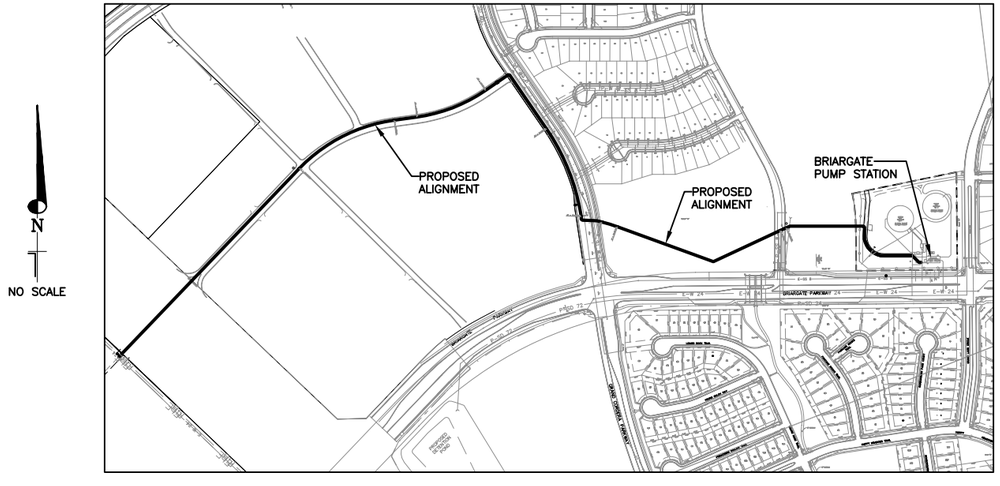
CHARLES REESE — CREW SUPERVISOR | 9-06-05 START | 12-22-05 FINISH

Colorado Springs Utilities

It's how we're all connected

30" WATERLINE TO BRIARGATE RESERVOIRS





integra engineering
450 DECATUR STREET
Denver, Colorado 80204 (303)825-1802

RECORD DRAWINGS MARCH, 2006

(PROJECT RELATED INFORMATION)
PARENT WORK ORDER NUMBER: 1229957
PROJECT NUMBER: 2005-W199
FIMS MAP:

COLORADO SPRINGS UTILITIES
30" WATERLINE TO BRIARGATE RESERVOIRS

GENERAL NOTES

1. TOPOGRAPHY AND SURFACE FEATURES WAS FURNISHED BY MATRIX DESIGN GROUP, INC. 2004. SURVEY CONTROL FOR THE DRAWINGS IS BASED ON SURVEY INFORMATION OBTAINED FROM A FIELD SURVEY PERFORMED BY PRECISION SURVEY & MAPPING IN 2005.
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THESE CONTRACT DOCUMENTS, COLORADO SPRINGS UTILITIES STANDARDS AND SPECIFICATIONS, LATEST EDITION, AND BE SUBJECT TO CONSTRUCTION OBSERVATION BY UTILITIES REPRESENTATIVES OR PERSONNEL.
3. A PRECONSTRUCTION MEETING WILL BE HELD AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING ALL UTILITY COMPANIES AFFECTED BY THIS CONSTRUCTION.
5. THE CONTRACTOR SHALL CONTACT THE APPROPRIATE UTILITY AGENCIES 48 HOURS PRIOR TO ANY EXCAVATION TO OBTAIN UTILITY LOCATIONS. CONTRACTOR SHALL CONTACT UNCC AT 1-800-922-1987.
6. THE LOCATION OF EXISTING UTILITIES SHOWN ON PLANS ARE APPROXIMATE ONLY AND NOT ALL UTILITIES MAY BE SHOWN. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES AND COSTS WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PROTECT ANY AND ALL UTILITIES.
7. THE CONTRACTOR SHALL PROTECT ALL EXISTING FACILITIES.
8. THE CONTRACTOR SHALL VERIFY INVERT ELEVATIONS OF EXISTING WATERLINES AND STRUCTURES PRIOR TO CONSTRUCTION.
9. THE CONTRACTOR SHALL MAINTAIN, ON THE PROJECT SITE, A FULL SET OF CONSTRUCTION DRAWINGS, RECORDING ALL INFORMATION PERTAINING TO THE CONSTRUCTION OF THE WATERLINE IMPROVEMENTS. THESE RECORD DRAWINGS SHALL BE PROVIDED TO THE COLORADO SPRINGS UTILITIES UPON COMPLETION OF THE PROJECT.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING, RESETTING AND/OR REPLACING ANY EXISTING SIGNS, CULVERTS, STRUCTURES, LANDSCAPING, FENCES, ETC. ENCOUNTERED ON THE JOB AND RESTORING THEM TO THEIR ORIGINAL CONDITION.
11. COMPACTION OF ALL TRENCHING MUST BE ATTAINED. COMPACTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS IN THESE CONTRACT DOCUMENTS.
12. WORK HOURS SHALL BE BETWEEN 7AM AND 5PM, MONDAY THROUGH FRIDAY, OR AS ALLOWED BY THE APPLICABLE RIGHT-OF-WAY PERMITS(CDOT).
13. HORIZONTAL AND VERTICAL DEFLECTION OF THE PIPES SHALL NOT EXCEED MANUFACTURER'S RECOMMENDATIONS FOR THE PIPE MATERIAL AND TEST PRESSURE SPECIFIED.
14. ONLY ONE CONNECTION TO THE EXISTING PIPE WILL BE ALLOWED UNTIL THE NEW PIPE AND APPURTENANCES HAVE BEEN DISINFECTED AND HYDROSTATICALLY TESTED IN ACCORDANCE WITH COLORADO SPRINGS UTILITIES STANDARDS AND SPECIFICATIONS.
15. TYPICAL DEPTH FROM SURFACE TO TOP OF PIPE SHALL BE 5.0 FEET, OR AS SHOWN. A MINIMUM HORIZONTAL SEPARATION OF 10 FT. TO OUTSIDE OF PIPE SHALL BE MAINTAINED BETWEEN THE NEW WATERLINE AND EXISTING PIPELINES. A VERTICAL SEPARATION OF 18" SHALL BE MAINTAINED BETWEEN THE NEW WATERLINE AND ALL EXISTING UTILITIES.
16. THE CONTRACTOR SHALL CONFORM TO THE CURRENT OSHA REGULATIONS FOR EXCAVATIONS AND CONFINED SPACE ENTRY, IF APPLICABLE.
17. UNLESS OTHERWISE NOTED, ALL STRUCTURAL STEEL SHALL BE ASTM A36.
18. TO THE EXTENT POSSIBLE, ELEVATIONS OF EXISTING UTILITIES WERE DETERMINED. CONTRACTOR SHALL VERIFY PRIOR TO CONSTRUCTING PIPELINE. PROFILE ELEVATIONS REFLECT BOTTOM OF PIPE.
19. HORIZONTAL CONTROL IS BASED ON FIMS DATUM(AKA NAD83 DATUM/COLORADO STATE PLANE CENTRAL COORDINATE SYSTEM PER DATA SHEETS PROVIDED BY COLORADO SPRINGS UTILITIES). THE COORDINATES LISTED BELOW ARE MODIFIED TO GROUND. VERTICAL CONTROL IS BASED ON NGVD 29 DATUM. INFORMATION IS LISTED BELOW AS:

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
17120	1416411.93	3213749.08	7004.09	NO. 5 REBAR
10508	1417823.81	3217890.40	7100.89	E 1/4 SECTION 26
17124	1413958.16	3215670.06	6971.28	NO. 5 REBAR
10512	1415208.35	3220551.31	7065.92	3.5" ALUM. CAP S 1/4 SECTION 25

INDEX OF DRAWINGS

LEGEND

EXISTING INDEX CONTOUR — 5050
EXISTING INTERMEDIATE CONTOUR — 47
PROPOSED INDEX CONTOUR — 5050
PROPOSED INTERMEDIATE CONTOUR — 47
EXISTING WATERLINE — WAT
EXISTING VALVE — WAT (GV)
EXISTING OVERHEAD POWERLINE — OHE
EXISTING UNDERGROUND ELECTRIC — ELE
EXISTING TELEPHONE — TEL
EXISTING GAS LINE — GAS
NEW WATER PIPELINE
EXISTING CABLE TV — CTV
EXISTING STORM SEWER — STM
EXISTING SANITARY SEWER SERVICE — SS
EXISTING FIBER OPTIC — FIB
EXISTING RIGHT-OF-WAY
PROPOSED EASEMENT (PERMANENT)
PROPOSED EASEMENT (TEMPORARY)
EXISTING EASEMENTS
EXISTING PARCELS
EXISTING WATER METER (M)
EXISTING ELECTRIC BOX (E)
EXISTING POWERPOLE
EXISTING GUY POLE
SURVEY CONTROL POINT
TESTHOLE (GEOTECH-DRILLED) (TH)
EXISTING SANITARY MANHOLE (S)
EXISTING STORM MANHOLE (ST)
EXISTING FIRE HYDRANT
AIR VENT
PROPOSED FIRE HYDRANT
TEST STATION
CONCRETE REVERSE ANCHOR

COLORADO SPRINGS UTILITIES 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, LINE EXTENSION & SERVICE STANDARDS". THE CONTRACTOR SHALL HAVE A COPY OF THE ABOVE NAMED SPECIFICATIONS 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 COLORADO SPRINGS UTILITIES.
5. REUSE OF EXISTING FITTINGS SHALL BE LEFT TO THE DISCRETION OF THE COLORADO SPRINGS UTILITIES INSPECTOR OR FOREMAN. ANY MATERIAL SALVAGED AND NOT REUSED SHALL BE RETURNED TO THE WATER WAREHOUSE.
6. THE FOLLOWING TIE-IN POINTS WERE NOT FIELD VERIFIED FOR LOCATION AND SHALL BE EXPOSED PRIOR TO CONSTRUCTION. NOTIFY COLORADO SPRINGS UTILITIES 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.

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 17lb ANODE BONDED TO EACH INDIVIDUAL FITTING OR APPURTENANT.
e. ☐ DOUBLE BONDING REQUIRED.
f. ☒ ANODE STATIONS: SEE SHEET D-6
TEST STATIONS : SEE SHEET D-6
INSULATING COUPLING STATIONS: D-6

☒ 9. THE EXISTING UTLITIES WERE NOT POTHOLED FOR LOCATION AND SHALL BE LOCATED PRIOR TO CONSTRUCTION. NOTIFY COLORADO SPRINGS UTILITIES 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 VALCES, T-BOLTS AND ROD COUPLINGS ARE ACCEPTABLE FOR THRUST RESTRAINT)

☒ 14. [☐ DEVELOPER/ ☒ CONTRACTOR]
COLORADO SPRINGS UTILITIES 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 PORPOSED AND EXISTING FIELD CONDITIONS, AND FOR DETERMING 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 COLORADO SPRINGS UTILITIES SHALL BE AT THE EXPENSE OF THE DEVELOPER/CONTRACTOR.

☒ 15. THERE SHALL BE NO CLAIMS AGAINST COLORADO SPRINGS UTILITIES FOR HINDRANCES OR DELAY 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 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.

☒ 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.

MATERIALS LIST

PROJ. # 1229957
W.O. # 2005-w199
30" Waterline to Briargate Reservoir

TOTAL	UOM	USED MATERIAL DESCRIPTION
81	LFT	6" DIP
10	EA	6" MEGALUGS
800	LFT	24" HDPE DR9
18	LFT	24" DIP RESTRAINED
2	EA	24" MEGALUGS
2340	LFT	30" DIP UNRESTRAINED
2060	LFT	30" DIP RESTRAINED
68	EA	30" MEGALUGS
1	EA	24" DIP FLxPE
2	EA	24" SOLID SLEEVE
3	EA	24" MJ ADAPTOR
2	EA	30"X24" REDUCER
3	EA	30" 11 1/4 BEND (H)
5	EA	30" 22 1/2 BEND (H)
3	EA	30" 22 1/2 BEND (V)
9	EA	30" 45 BEND (H)
4	EA	30" BUTTERFLY VALVE MJ
1	EA	30" BUTTERFLY VALVE FL
1	EA	30"X6" TEE MJ
1	EA	24"X6" TAPPING TEE
4	EA	FIRE HYDRANT
4	EA	6" GATE VALVE MJ
2	EA	4" GATE VALVE MJ
2	EA	30" FLxPE DIP SPOOL
9	EA	VALVE BOXES
1	EA	6FT CONCRETE MANHOLE
1	EA	8FT X 8FT CONCRETE VAULT
2	EA	30" X 6" TAPPING SLEEVE
7	EA	30" DISMANTLING JOINT
2	EA	AIR VAC ASSEMBLY
2	EA	TEST STATION MALONEY
4	EA	TEST STATION FLUSH MOUNT
10	EA	17 LB ANODES
46	EA	32 LB ANODES
4400	FT	MARKER TAPE
18	FT	42" STEEL SLEEVE
119	EA	BONDING WIRE*
300	EA	DIP CAD WELDS*
648	EA	THERMITE CAPS
1	EA	6" 90 BEND MJ
1	EA	PLUG, MJ, 24" w/4" TAP
750	LFT	COVERING, PIPE, 24"
5844	LFT	COVERING, PIPE, 30"
2	EA	30" x 4" TAPPING SADDLES
2	EA	9 LB ANODES

*use of bonding strap will require half this quantity

THIS MATERIAL LIST MAY VARY DEPENDING ON INSTALLATION AND DOES NOT INCLUDE MISC. MATERIALS SUCH AS CONCRETE.

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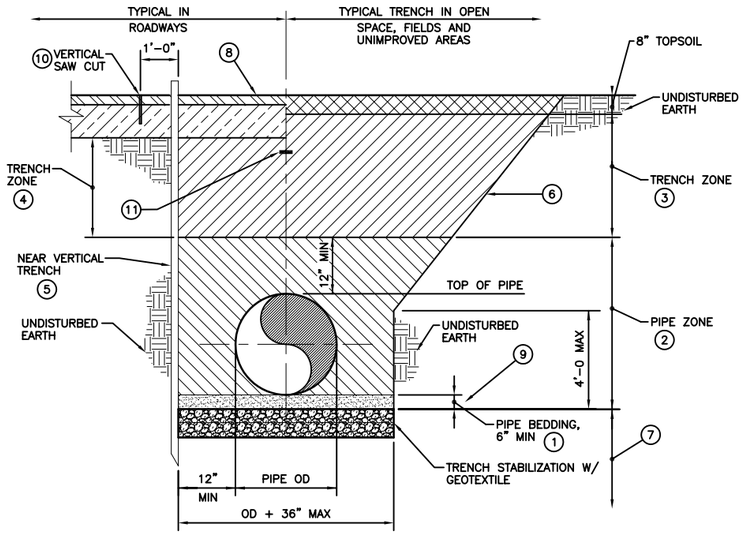
RECORD DRAWINGS
MARCH, 2006

Colorado Springs Utilities
It's how we're all connected

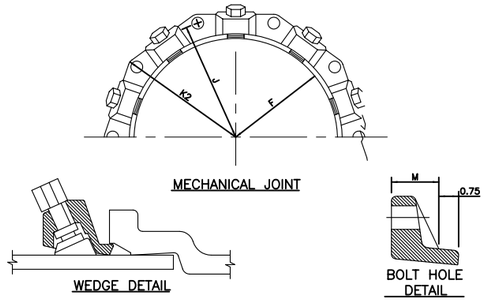
CS25CVR2.DWG



1 DETAIL
NON-ROCK EXCAVATION TRENCH
N.T.S.

NOTES FOR TYPICAL TRENCH SECTION

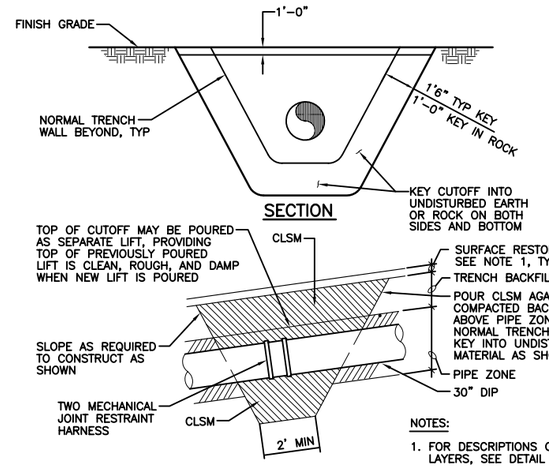
1. PIPE BEDDING.
2. PIPE ZONE.
3. TRENCH ZONE (OPEN SPACE) SUITABLE MATERIAL.
4. TRENCH ZONE IN STREETS AND HIGHWAY RIGHT OF WAY SUITABLE MATERIAL.
5. PROVIDE SUPPORTS AS REQUIRED FOR CONSTRUCTION AND SAFETY.
6. ALTERNATE SLOPED TRENCH SIDEWALLS MAY BE USED IN UNIMPROVED OPEN AREAS. TRENCH SIDEWALL CUT SLOPES MAY BE USED AT THE CONTRACTOR'S DISCRETION IN UNIMPROVED AREAS AS REQUIRED BY OSHA REGULATIONS, SOIL TYPE, NEARBY GROUND TOPO, AND OTHER FACTORS.
7. TRENCH OVER EXCAVATION AND FOUNDATION STABILIZATION MATERIAL SHALL ONLY BE USED WHEN ORDERED BY THE OWNER, WHEN UNSUITABLE, UNEXPECTED TRENCH CONDITIONS ARE FOUND DURING CONSTRUCTION, WRAP MATERIAL IN GEOTEXTILE.
8. REPLACEMENT ROADWAY SECTION TO MATCH EXISTING ASPHALT PAVEMENT THICKNESS.
9. IF DURING CONSTRUCTION, THE WATER TABLE IS DISCOVERED TO BE ABOVE THE TRENCH BOTTOM, THE OWNER SHALL BE NOTIFIED, AND APPROPRIATE DEWATERING SHALL BE IMPLEMENTED TO LOWER THE WATER LEVEL.
10. SAW CUTS OF EXISTING PAVEMENT SHALL BE STRAIGHT, SQUARE AND PARALLEL TO THE TRENCH.
11. INSTALL PLASTIC MARKING TAPE 2' BELOW GRADE.



DIMENSIONS

NOMINAL PIPE SIZE	NO. OF BOLTS	NO. OF WEDGES	K2 INCHES	J INCHES	F INCHES	M INCHES
6"	6	3	11.12	9.50	7.00	0.88
8"	6	4	13.37	11.75	9.15	1.00
10"	8	6	15.62	14.00	11.20	1.00
12"	8	8	17.88	16.25	13.30	1.25
16"	12	12	22.63	21.00	17.58	0.875
24"	16	16	31.50	30.00	25.94	1.81
30"	20	20	39.12	30.00	32.17	2.25

2 DETAIL
MECHANICAL JOINT RESTRAINT
N.T.S.



NOTES:

1. FOR DESCRIPTIONS OF TRENCH LAYERS, SEE DETAIL 1/D-1
2. INSTALL REVERSE ANCHOR/ TRENCH PLUG WITHIN 5 FT OF ALL BURIED IN-LINE VAVLES.

3 DETAIL
TRENCH PLUG/REVERSE ANCHOR
N.T.S.

STEP 1:

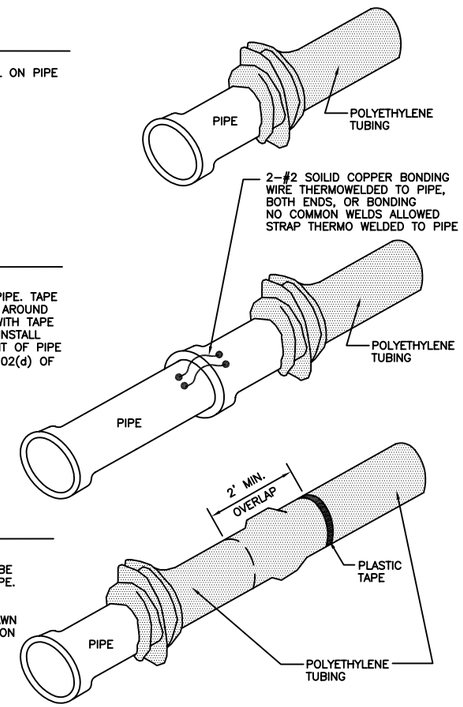
PLACE TUBE OF POLYETHYLENE MATERIAL ON PIPE PRIOR TO LOWERING IT INTO TRENCH.

STEP 2:

PULL TUBE OVER THE LENGTH OF THE PIPE. TAPE TUBE TO END AT JOINT. FOLD MATERIAL AROUND THE ADJACENT SPIGOT END AND WRAP WITH TAPE TO HOLD THE PLASTIC TUBE IN PLACE. INSTALL BONDING STRAP OR WIRE AT EVERY JOINT OF PIPE PRIOR TO WRAPPING AS PER SECTION 6.02(d) OF THE STANDARD SPECIFICATIONS.

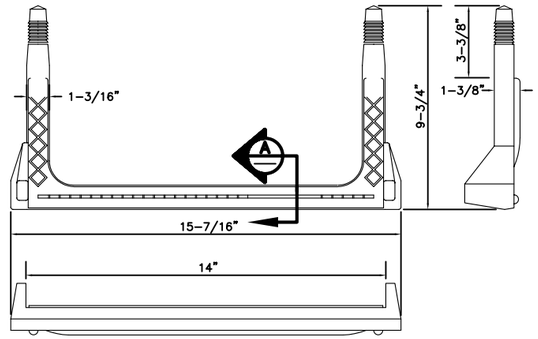
STEP 2:

OVERLAP FIRST TUBE WITH ADJACENT TUBE AND SECURE WITH PLASTIC ADHESIVE TAPE. THE POLYETHYLENE TUBE MATERIAL COVERING THE PIPE SHALL BE LOOSE. EXCESS MATERIAL SHALL BE NEATLY DRAWN UP AROUND THE PIPE BARREL, FOLDED ON TOP OF PIPE AND TAPED IN PLACE.

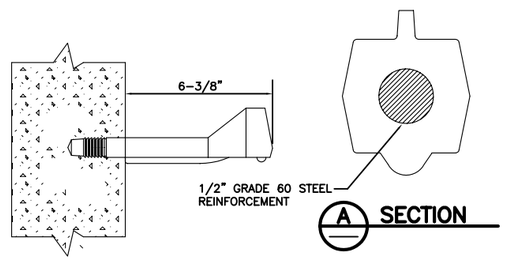


FIELD INSTALLATION OF POLYETHYLENE WRAP FOR DIP PIPE AND FITTINGS

4 DETAIL
POLYETHYLENE WRAP
N.T.S.



COPOLYMER POLYPROPYLENE PLASTIC STEP



5 DETAIL
PLASTIC MANHOLE STEPS
N.T.S.

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LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"-SCALE ACCORDINGLY)

DRAWING CS25D001.DWG
DRAWN NJM
DESIGNED STD
CHECKED RRP

APPROVED:

PRINCIPAL

DATE:

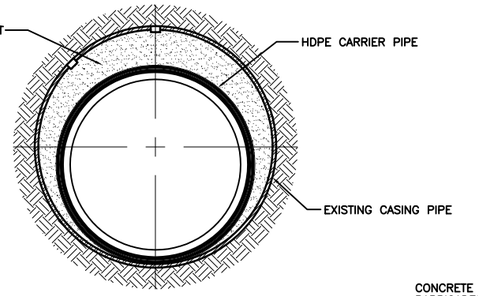
REVISIONS				
REV.	DESCRIPTION	BY	DATE	APP.
0	RECORD DRAWING	NLG	04/20/06	CRB

COLORADO SPRINGS UTILITIES

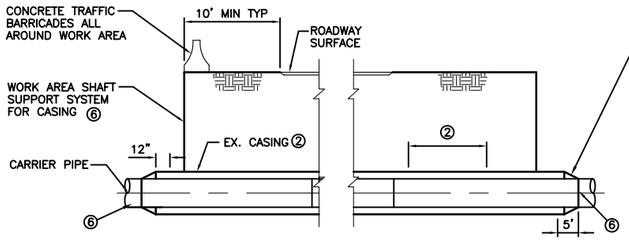
30" WATERLINE TO BRIARGATE RESERVOIRS

DETAILS

DATE: 4/20/05
PROJECT NUMBER: CS25
REVISION NO. 0
DRAWING NUMBER D-1
SHEET NUMBER

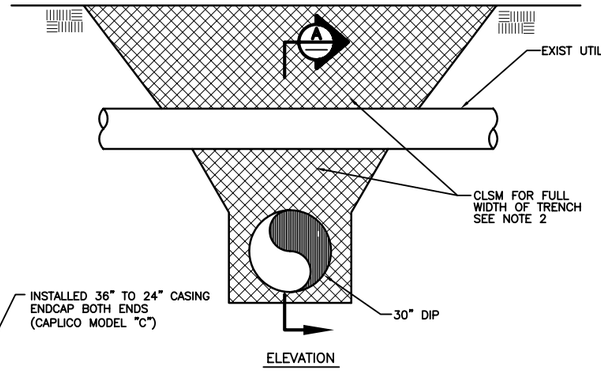


1. OBTAIN PERMITS PRIOR TO CONSTRUCTION. CONFORM TO THE REQUIREMENTS OF THE CROSSING PERMITS. COMPLY WITH ALL CURRENT OSHA REGULATIONS CONCERNING EXCAVATIONS.
2. CASING INSULATORS SHALL BE AS SPECIFIED IN SECTION 02151. INSULATORS SHALL BE HEAVY-DUTY STEEL TYPE, INSTALLED AT 10 FT. INTERVALS, MAX, 2 PER PIPE JOINT, OR AS RECOMMENDED BY THE PIPE MANUFACTURER. INSTALL INSULATORS WITHIN 1 FT. ON EACH SIDE OF CARRIER PIPE JOINTS. ADDITIONAL INSULATORS SHALL BE INSTALLED FOR PLACEMENT WITHIN 2 FT. OF EACH END OF CASING.
3. CARRIER PIPE SHALL HAVE JOINT TYPE AS SPECIFIED. NO DEFLECTIONS PERMITTED WITHIN THE CASING PIPE.
4. SHEETING OR SHORING THAT IS LEFT IN PLACE SHALL BE CUT OFF 18" BELOW GROUND SURFACE.
5. INSTALL TEST STATION PER DETAIL 6/D-5, TYPICAL EACH END.



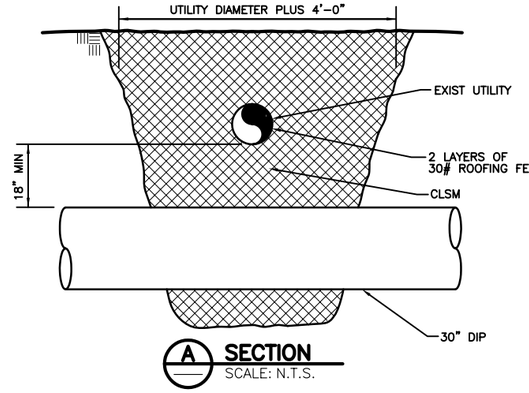
NOTE:
1.CASING FILLED WITH FLY ASH SLURRY. (87 YARDS)

① DETAIL PIPE w/CASING
N.T.S.



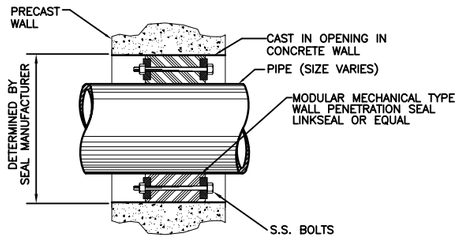
ELEVATION

NOTES:
1. FIRMLY SUPPORT EXISTING PIPE OR DUCT DURING INSTALLATION OF NEW PIPE.
2. CLSM UTILITY SUPPORT IS TO BE PROVIDED AT ALL UTILITY CROSSINGS 12"ø AND GREATER WHERE THE SEPARATION IS LESS THAN 1'-6".



Ⓐ SECTION
SCALE: N.T.S.

② DETAIL UTILITY CROSSING(12" DIA OR LARGER) CLSM SUPPORT
N.T.S.

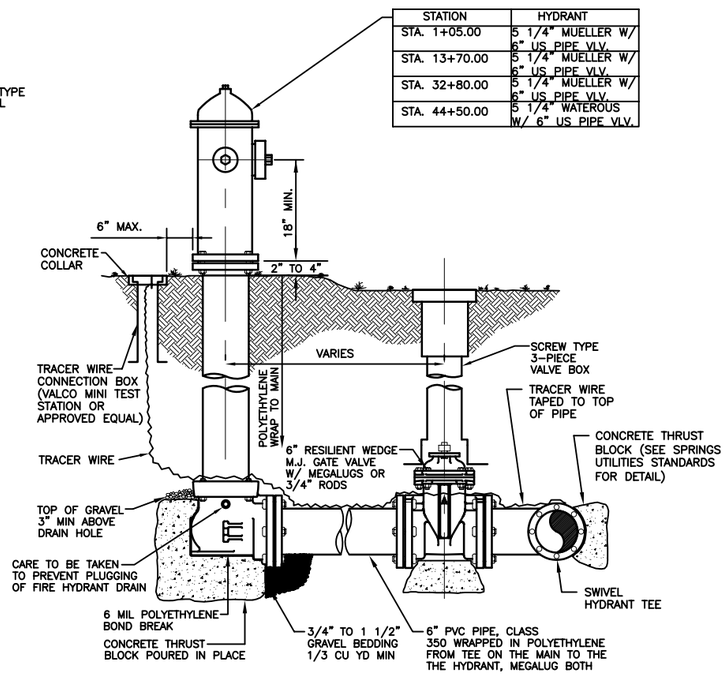


PRECAST STRUCTURE

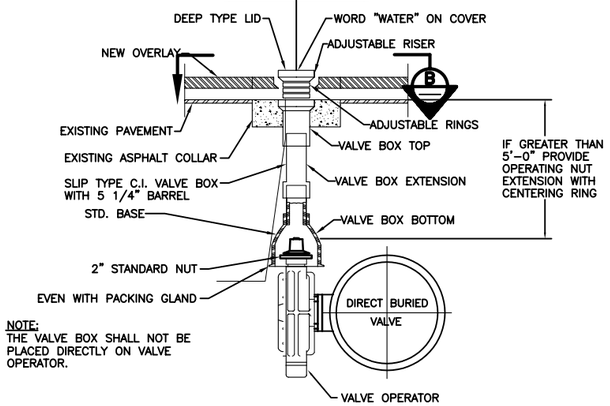
CAST-IN-PLACE CONCRETE

④ DETAIL WALL PENETRATIONS
SCALE: N.T.S.

STATION	HYDRANT
STA. 1+05.00	5 1/4" MUELLER W/ 6" US PIPE VLV.
STA. 13+70.00	5 1/4" MUELLER W/ 6" US PIPE VLV.
STA. 32+80.00	5 1/4" MUELLER W/ 6" US PIPE VLV.
STA. 44+50.00	5 1/4" WATEROUS W/ 6" US PIPE VLV.

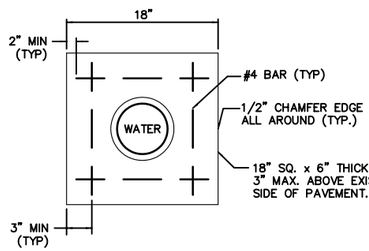


⑤ DETAIL TYPICAL HYDRANT INSTALLATION
N.T.S.



NOTE:
THE VALVE BOX SHALL NOT BE PLACED DIRECTLY ON VALVE OPERATOR.

③ DETAIL DIRECT BURY BUTTERFLY VALVE
N.T.S.



Ⓑ SECTION CONC PAD IN UNIMPROVED AREAS
N.T.S.

integra engineering
450 DECATUR STREET
Denver, Colorado 80204 (303)825-1802

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"-SCALE ACCORDINGLY)

DRAWING CS25D002.DWG
DRAWN NJM
DESIGNED STD
CHECKED RRP

APPROVED:

PRINCIPAL

DATE:

REVISIONS

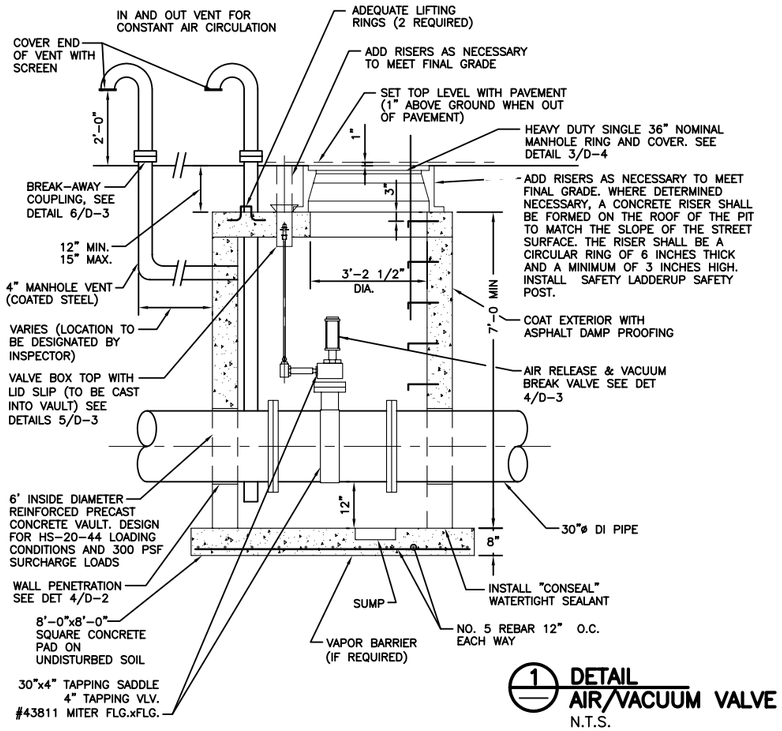
REV.	DESCRIPTION	BY	DATE	APP.
0	RECORD DRAWING	NLG	04/20/06	CRB

COLORADO SPRINGS UTILITIES

30" WATERLINE TO BRIARGATE RESERVOIRS

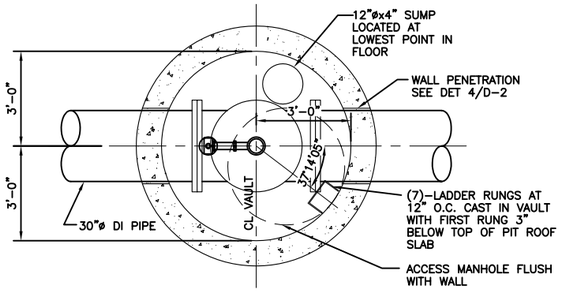
DETAILS

DATE: 4/20/05
PROJECT NUMBER: CS25
REVISION NO. 0
DRAWING NUMBER D-2
SHEET NUMBER



1 DETAIL AIR/VACUUM VALVE VAULT

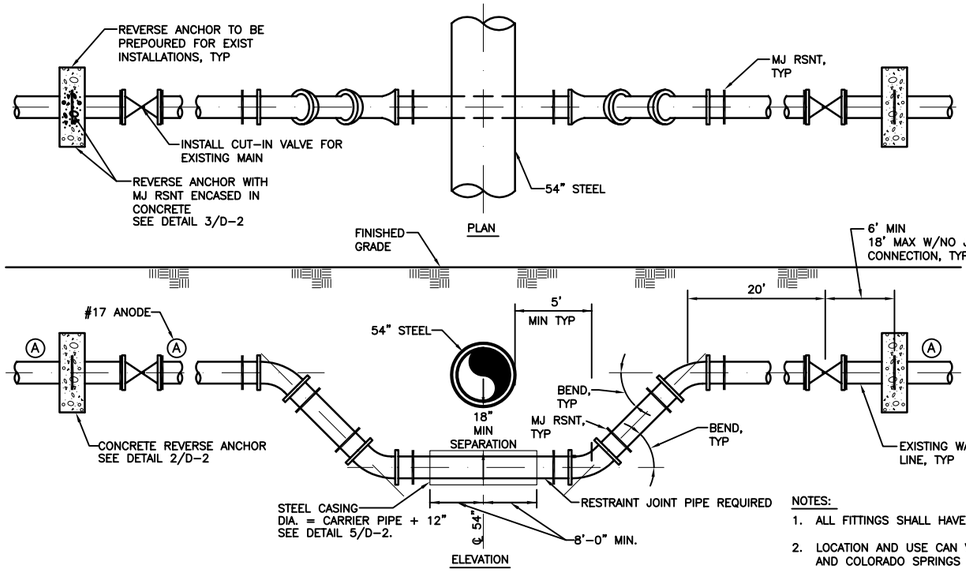
N.T.S.



AIR & VACUUM VALVE ASSEMBLY TABLE			
AIR VALVE ASSEMBLY NO.	STATION	DESIGN PRESSURE (psi)	AIR/VACUUM VALVE SIZE (INCH)
2	51+85.0	150	4

NOTES:

1. ALL CONCRETE WORK SHALL COMPLY WITH LATEST ACI-318 SPECIFICATIONS.
2. ALL SUPPORT MATERIALS SHALL BE GIVEN 2 COATS OF RUST INHIBITIVE PAINT.
3. ALL LADDER RUNGS MUST LINE UP BOTH HORIZONTALLY AND VERTICALLY.

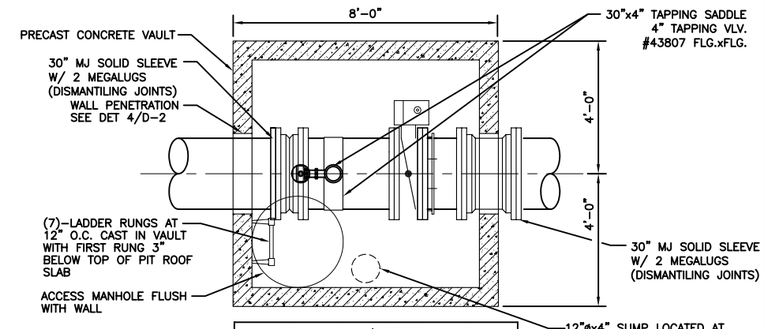


2 DETAIL LOWERING DETAIL

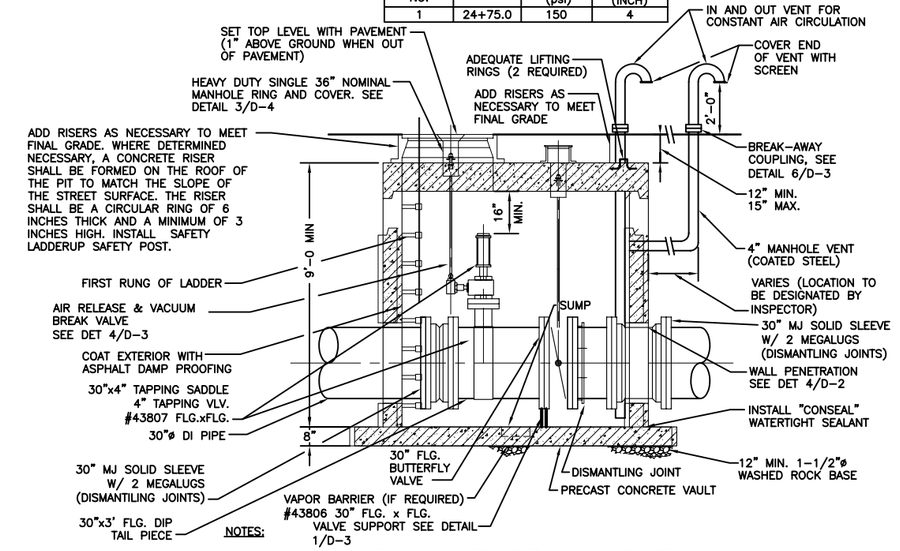
N.T.S.

NOTES:

1. ALL FITTINGS SHALL HAVE MJ RESTRAINED JOINTS.
2. LOCATION AND USE CAN VARY DUE TO SITE CONDITIONS AND COLORADO SPRINGS UTILITIES INSPECTOR'S DIRECTION'S.



AIR & VACUUM/BUTTERFLY VALVE ASSEMBLY TABLE			
AIR VALVE ASSEMBLY NO.	STATION	DESIGN PRESSURE (psi)	AIR/VACUUM VALVE SIZE (INCH)
1	24+75.0	150	4

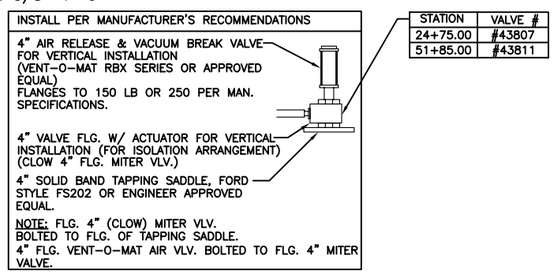


NOTES:

1. ALL CONCRETE WORK SHALL COMPLY WITH LATEST ACI-318 SPECIFICATIONS.
2. ALL SUPPORT MATERIALS SHALL BE GIVEN 2 COATS OF RUST INHIBITIVE PAINT.
3. ALL LADDER RUNGS MUST LINE UP BOTH HORIZONTALLY AND VERTICALLY.

3 DETAIL COMBINATION AIR/VACUUM AND BUTTERFLY VALVE VAULT

SCALE: 3/8"=1'-0



STATION	VALVE #
24+75.00	#43807
51+85.00	#43811

4 DETAIL AIR/VACUUM VALVE ASSEMBLY

N.T.S.

integra engineering
450 DECATUR STREET
Denver, Colorado 80204 (303)825-1802

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"-SCALE ACCORDINGLY)

DRAWING CS25D003.DWG
DRAWN NJM
DESIGNED STD
CHECKED RRP

APPROVED:

PRINCIPAL

DATE:

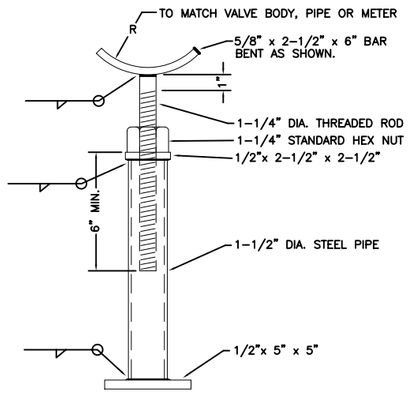
REVISIONS				
REV.	DESCRIPTION	BY	DATE	APP.
0	RECORD DRAWING	NLG	04/20/06	CRB

COLORADO SPRINGS UTILITIES

30" WATERLINE TO BRIARGATE RESERVOIRS

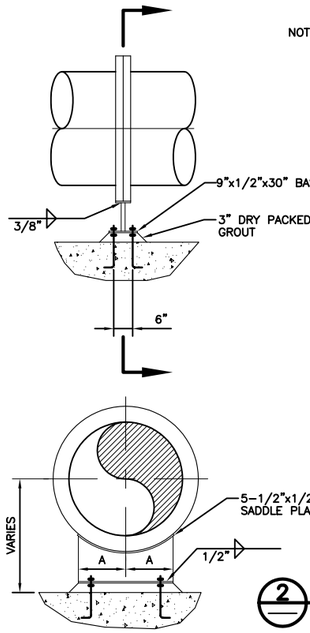
DETAILS

DATE: 4/20/05
PROJECT NUMBER: CS25
REVISION NO. 0
DRAWING NUMBER D-3
SHEET NUMBER



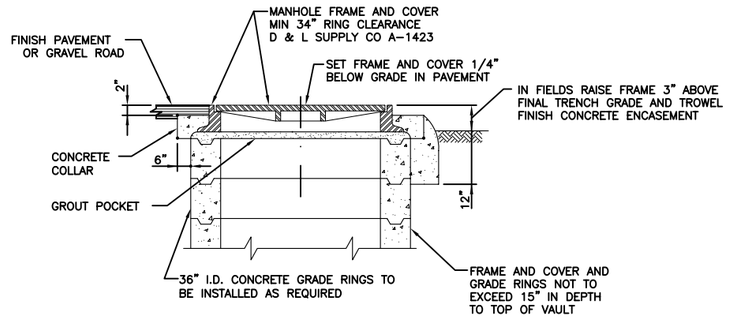
ADJUSTABLE STEEL PIPE & VALVE SUPPORT

1 DETAIL VALVE SUPPORT–ADJUSTABLE
N.T.S.



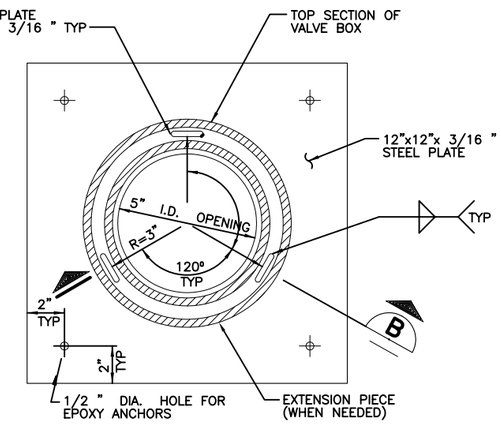
PIPE DIAMETER (INCHES)	"A" (INCHES)
6	2-1/2
8	3-1/2
12	5
18	7-1/2
24	10
30	12-1/2
48	20
54	22-1/2

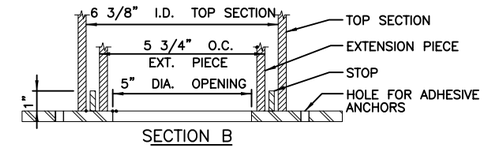
2 DETAIL PIPE SUPPORT AT FLANGE
N.T.S.



SECTION

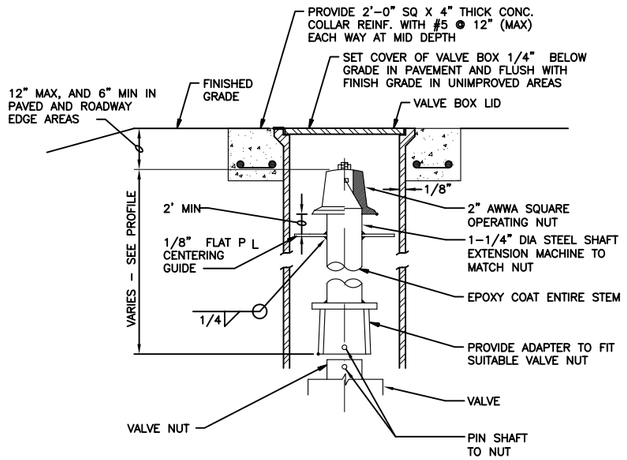
3 DETAIL MANHOLE FRAME AND COVER
N.T.S.



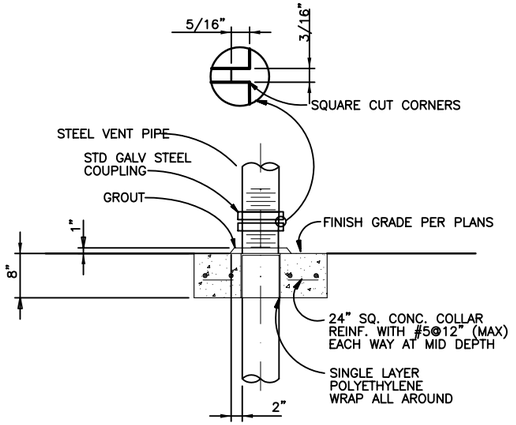


SECTION B

4 DETAIL VALVE BOX SUPPORT PLATE
N.T.S.



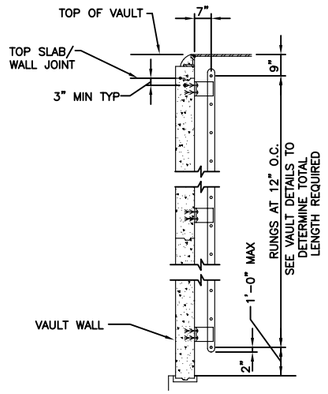
5 DETAIL VALVE BOX/OPERATOR STEM
N.T.S.



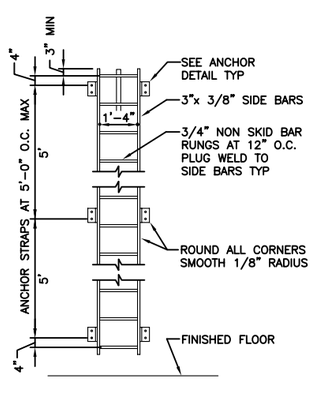
NOTES:

1. MOUND CONCRETE AROUND PIPE, TO PROVIDE DRAINAGE.
2. TROWEL FINISH ALL EXPOSED CONCRETE SURFACES.

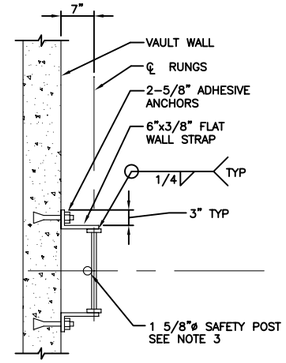
6 DETAIL BREAK AWAY COUPLING
N.T.S.



SECTION



ELEVATION



ANCHOR DETAIL

NOTES:
1. HOT DIP GALVANIZE ALL LADDER PIECES AFTER FABRICATION.
2. ALL ANCHOR BOLTS SHALL BE STAINLESS STEEL.
3. BILCO LADDERUP SAFETY POST MODEL Z – GALVANIZED STEEL.

7 DETAIL VAULT LADDER
N.T.S.

integra engineering
450 DECATUR STREET
Denver, Colorado 80204 (303)825-1802

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"-SCALE ACCORDINGLY)

DRAWING CS25D004.DWG
DRAWN NJM
DESIGNED STD
CHECKED RRP

APPROVED:

PRINCIPAL

DATE:

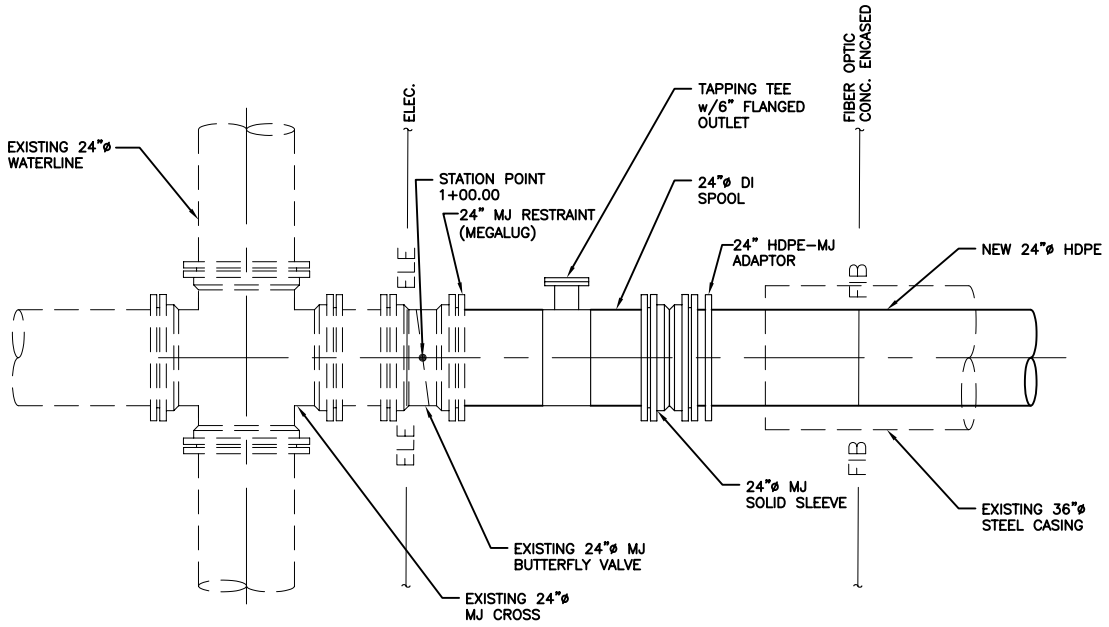
REVISIONS				
REV.	DESCRIPTION	BY	DATE	APP.
0	RECORD DRAWING	NLG	04/20/06	CRB

COLORADO SPRINGS UTILITIES

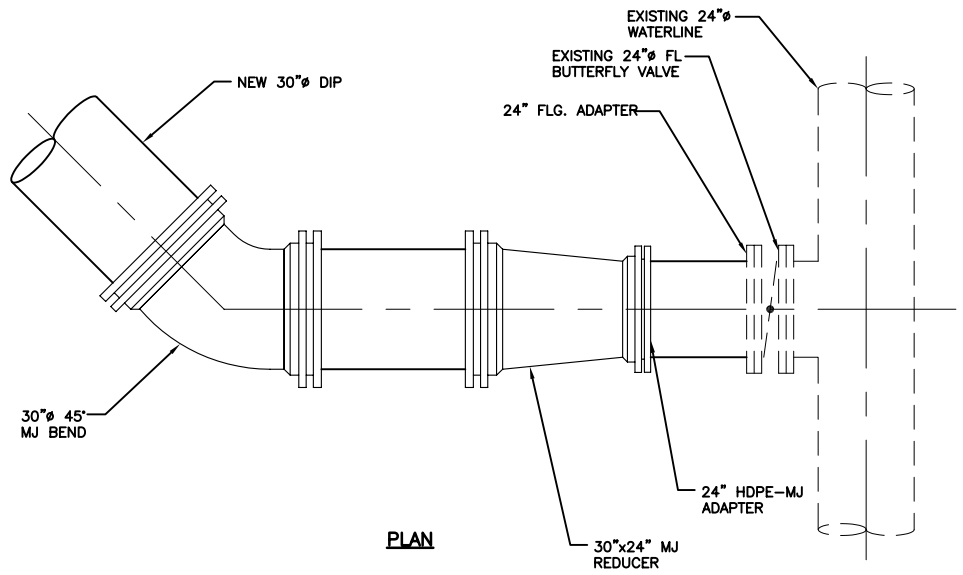
30" WATERLINE TO BRIARGATE RESERVOIRS

DETAILS

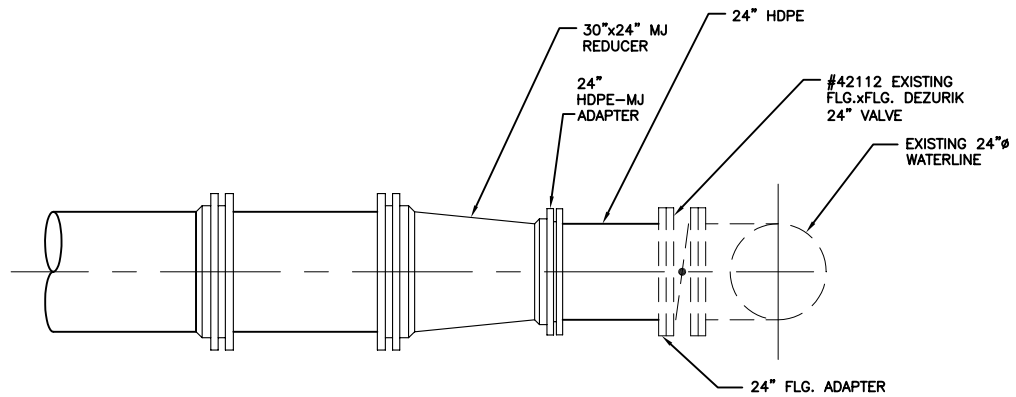
DATE: 4/20/05
PROJECT NUMBER: CS25
REVISION NO. 0
DRAWING NUMBER D-4
SHEET NUMBER



1 DETAIL
CONNECTION AT STA. 1+00.00
SCALE: 1"=2'



PLAN



SECTION

NOTE:
1. ALL PIPE SHALL BE RESTRAINED.
2. CONTRACTOR TO FIELD VERIFY TIE–IN LOCATION.

2 DETAIL
CONNECTION AT STA. 52+26.84
SCALE: 1"=2'

integra engineering
450 DECATUR STREET
Denver, Colorado 80204 (303)825–1802

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"–SCALE ACCORDINGLY)

DRAWING CS25C001.DWG
DRAWN NJM
DESIGNED NJM
CHECKED RRP

APPROVED:

PRINCIPAL

DATE:

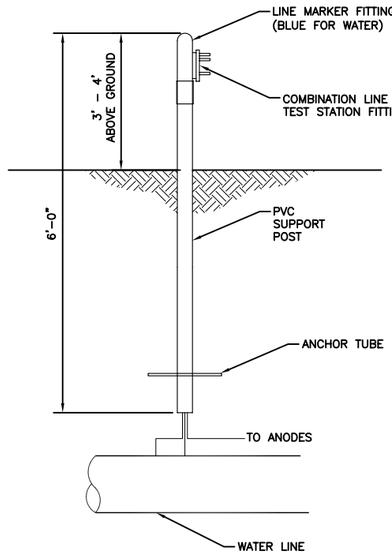
REVISIONS				
REV.	DESCRIPTION	BY	DATE	APP.
0	RECORD DRAWING	NLG	04/20/06	CRB

COLORADO SPRINGS UTILITIES

30" WATERLINE TO BRIARGATE RESERVOIRS

CONNECTION DETAILS

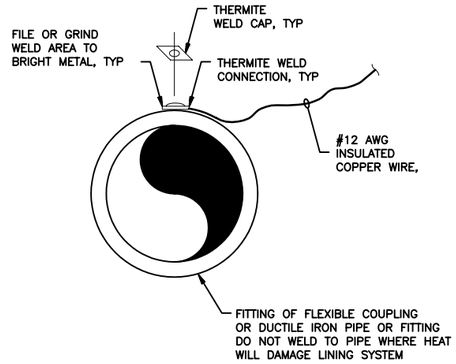
DATE: 7/28/05
PROJECT NUMBER: CS25
REVISION NO. 0
DRAWING NUMBER C–1
SHEET NUMBER



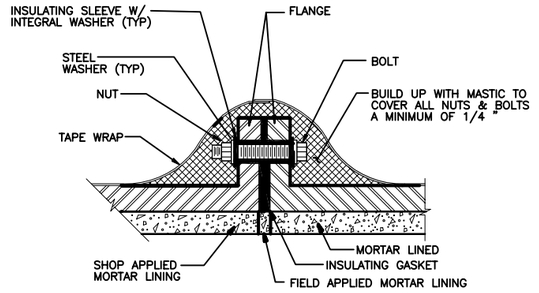
NOTES:

1. ALL LEAD WIRES SHALL BE INSTALLED WITH A MIN. OF 1'–6" OF SLACK IN EACH PLACE INDICATED TO PREVENT BREAKAGE OF WIRE BECAUSE OF BACKFILL SETTLEMENT.
2. LEAD WIRES SHALL BE ATTACHED TO THE PIPE ON THE CENTERLINE, APPROXIMATELY 12" APART.
3. LEAD WIRES SHALL BE EXOTHERMAL (CADWELD) WELDED TO PIPES IN ACCORDANCE WITH THE INSTRUCTIONS OF THE WELDING EQUIPMENT MANUFACTURER.
4. TEST STATION SHALL BE CONSTRUCTED UNDER THE DIRECTION OF THE COLORADO SPRINGS UTILITIES INSPECTOR.
5. TEST STATION CAN VARY DUE TO SITE CONDITIONS AND COLORADO SPRINGS UTILITIES INSPECTOR'S DIRECTIONS.
6. COLORADO SPRINGS UTILITIES WILL CONNECT WIRES IN TEST STATION.
7. COLORADO SPRINGS UTILITIES WILL FURNISH THE UTILITY MARKER/TEST STATION POSTS. COORDINATE WITH THE OWNER TO PICKUP AND INSTALL THE POSTS. BURIED UTILITY MARKERS/TEST STATION SHALL BE MALONEY LINE MRKR, PHANTOM MODEL.

1 DETAIL
CATHODIC PROTECTION TEST STATION (UNIMPROVED AREAS)
N.T.S.



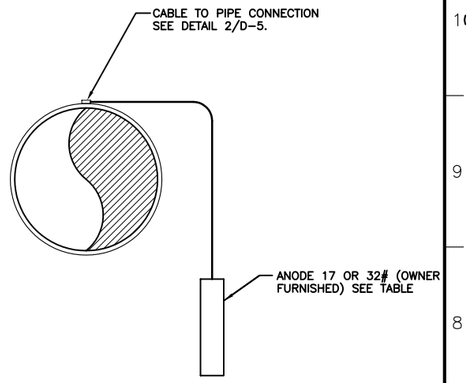
2 DETAIL
PIPELINE WIRE CONNECTION
N.T.S.



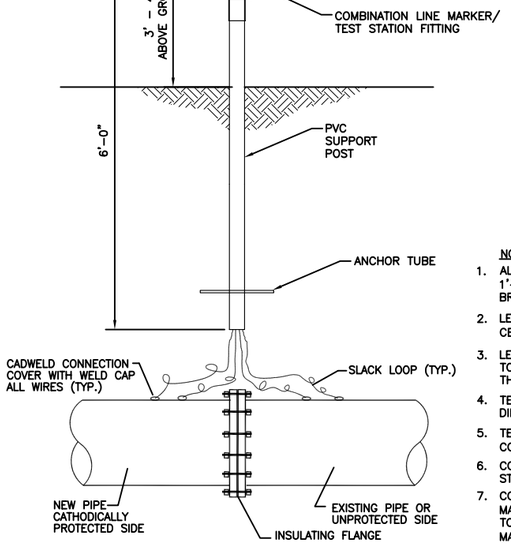
NOTES:

1. WRAP & FILL COAT MAY BE DELETED FOR EXPOSED JOINTS.
2. INSULATING FLANGES AT BLOWOFFS SIMILAR.

3 DETAIL
INSULATING FLANGE
N.T.S.



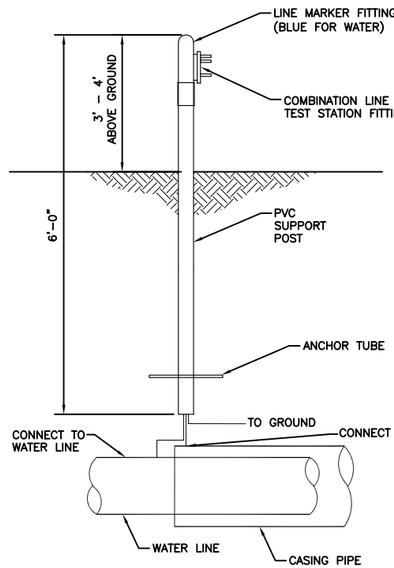
4 DETAIL
ANODE INSTALLATION
N.T.S.



NOTES:

1. ALL LEAD WIRES SHALL BE INSTALLED WITH A MIN. OF 1'–6" OF SLACK IN EACH PLACE INDICATED TO PREVENT BREAKAGE OF WIRE BECAUSE OF BACKFILL SETTLEMENT.
2. LEAD WIRES SHALL BE ATTACHED TO THE PIPE ON THE CENTERLINE, APPROXIMATELY 12" APART.
3. LEAD WIRES SHALL BE EXOTHERMAL (CADWELD) WELDED TO PIPES IN ACCORDANCE WITH THE INSTRUCTIONS OF THE WELDING EQUIPMENT MANUFACTURER.
4. TEST STATION SHALL BE CONSTRUCTED UNDER THE DIRECTION OF THE COLORADO SPRINGS UTILITIES INSPECTOR.
5. TEST STATION CAN VARY DUE TO SITE CONDITIONS AND COLORADO SPRINGS UTILITIES INSPECTOR'S DIRECTIONS.
6. COLORADO SPRINGS UTILITIES WILL CONNECT WIRES IN TEST STATION.
7. COLORADO SPRINGS UTILITIES WILL FURNISH THE UTILITY MARKER/TEST STATION POSTS. COORDINATE WITH THE OWNER TO PICKUP AND INSTALL THE POSTS. BURIED UTILITY MARKERS/TEST STATION SHALL BE MALONEY LINE MRKR, PHANTOM MODEL.

5 DETAIL
TEST STATION (AT INSULATED FLANGE)
N.T.S.



NOTES:

1. ALL LEAD WIRES SHALL BE INSTALLED WITH A MIN. OF 1'–6" OF SLACK IN EACH PLACE INDICATED TO PREVENT BREAKAGE OF WIRE BECAUSE OF BACKFILL SETTLEMENT.
2. LEAD WIRES SHALL BE ATTACHED TO THE PIPE ON THE CENTERLINE, APPROXIMATELY 12" APART.
3. LEAD WIRES SHALL BE EXOTHERMAL (CADWELD) WELDED TO PIPES IN ACCORDANCE WITH THE INSTRUCTIONS OF THE WELDING EQUIPMENT MANUFACTURER.
4. TEST STATION SHALL BE CONSTRUCTED UNDER THE DIRECTION OF THE COLORADO SPRINGS UTILITIES INSPECTOR.
5. TEST STATION CAN VARY DUE TO SITE CONDITIONS AND COLORADO SPRINGS UTILITIES INSPECTOR'S DIRECTIONS.
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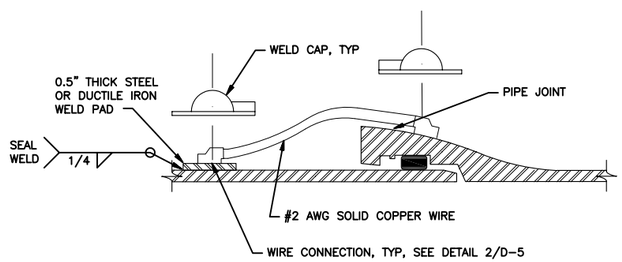
7. COLORADO SPRINGS UTILITIES WILL FURNISH THE UTILITY MARKER/TEST STATION POSTS. COORDINATE WITH THE OWNER TO PICKUP AND INSTALL THE POSTS. BURIED UTILITY MARKERS/TEST STATION SHALL BE MALONEY LINE MRKR, PHANTOM MODEL.

6 DETAIL
TEST STATION (AT CASINGS)
N.T.S.



7 DETAIL
PUSH–ON JOINT BOND
N.T.S.

integra engineering
450 DECATUR STREET
Denver, Colorado 80204 (303)825–1802

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"–SCALE ACCORDINGLY)

DRAWING CS25D005.DWG
DRAWN NJM
DESIGNED STD
CHECKED RRP

APPROVED:

PRINCIPAL

DATE:

REVISIONS

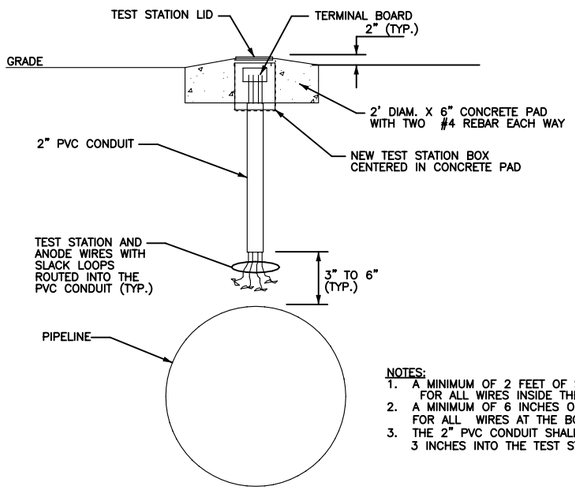
REV.	DESCRIPTION	BY	DATE	APP.
0	RECORD DRAWING	NLG	04/20/06	CRB

COLORADO SPRINGS UTILITIES

30" WATERLINE TO
BRIARGATE RESERVOIRS

CATHODIC PROTECTION DETAILS

DATE: 4/20/05
PROJECT NUMBER: CS25
REVISION NO. 0
DRAWING NUMBER D–5
SHEET NUMBER



NOTES:
1. A MINIMUM OF 2 FEET OF SLACK SHALL BE PROVIDED FOR ALL WIRES INSIDE THE TEST STATION BOX.
2. A MINIMUM OF 6 INCHES OF SLACK SHALL BE PROVIDED FOR ALL WIRES AT THE BOTTOM OF THE 2" PVC CONDUIT.
3. THE 2" PVC CONDUIT SHALL EXTEND APPROXIMATELY 3 INCHES INTO THE TEST STATION BOX.

1 DETAIL
TYPICAL TEST STATION BOX
N.T.S.

TEST STATION NO.	GENERAL LOCATION	STATION	TEST STATION TYPE	SHEET OR DETAIL REFERENCE
1	CASING END	1+07.14	PHANTOM MALONEY	6/D-5 SIM
2	CASING END	6+82.99	PHANTOM MALONEY	6/D-5 SIM
3	HYDRANT	13+75.00	FLUSH MOUNT	6/D-6 SIM
4	@ TURN SOUTH ON GRAND CORDERA DR.	25+50±	PHANTOM MALONEY	6/D-5 SIM
5	HYDRANT	32+80.00	FLUSH MOUNT	1/D-6 SIM
6	HYDRANT	44+50.00	FLUSH MOUNT	1/D-6 SIM
7	NEAR PUMP STATION	52+26.00	PHANTOM MALONEY	6/D-5 SIM

2 DETAIL
TEST STATION SCHEDULE
N.T.S.

ANODE NO.	STATION	SIZE	LOCATION OR SPACING
1	1+00.00	1-32#	220 FT. SPACING
2	1+05.00	1-17#	FIRE HYDRANT
3	7+00.00	1-32#	220 FT. SPACING
4	9+20.00	1-32#	220 FT. SPACING
5	11+40.00	1-32#	220 FT. SPACING
6	13+60.00	1-32#	220 FT. SPACING
7	13+70.00	1-17#	FIRE HYDRANT
8	15+80.00	1-32#	220 FT. SPACING
9	18+00.00	1-32#	220 FT. SPACING
10	20+20.00	1-32#	220 FT. SPACING
11	22+40.00	1-32#	220 FT. SPACING
12	24+60.00	1-32#	220 FT. SPACING
13	26+80.00	1-32#	220 FT. SPACING
14	29+00.00	1-32#	220 FT. SPACING
15	31+20.00	1-32#	220 FT. SPACING
16	32+80.00	1-17#	FIRE HYDRANT
17	33+40.00	1-32#	220 FT. SPACING
18	35+60.00	1-32#	220 FT. SPACING
19	37+80.00	1-32#	220 FT. SPACING
20	40+00.00	1-32#	220 FT. SPACING
21	42+20.00	1-32#	220 FT. SPACING
22	44+40.00	1-32#	220 FT. SPACING
23	44+50.00	1-17#	FIRE HYDRANT
24	46+60.00	1-32#	220 FT. SPACING
25	48+80.00	1-32#	220 FT. SPACING
26	51+00.00	1-32#	220 FT. SPACING

3 DETAIL
ANODE SCHEDULE
N.T.S.

integra engineering
450 DECATUR STREET
Denver, Colorado 80204 (303)825-1802

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"-SCALE ACCORDINGLY)

DRAWING CS25D006.dwg
DRAWN JMB
DESIGNED CRB
CHECKED CRB

APPROVED:

PRINCIPAL

DATE:

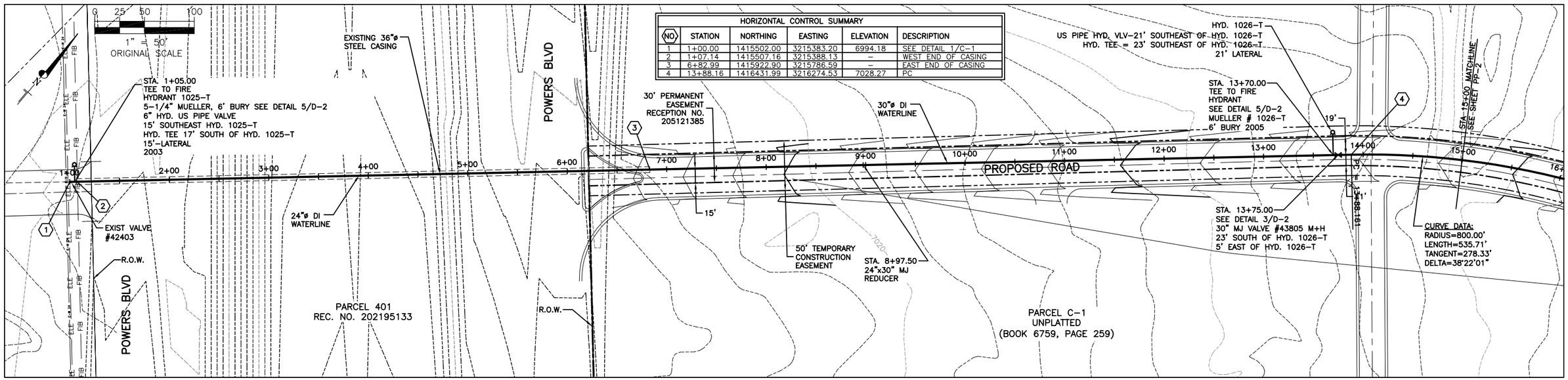
REVISIONS				
REV.	DESCRIPTION	BY	DATE	APP.
0	RECORD DRAWING	NLG	04/20/06	CRB

COLORADO SPRINGS UTILITIES

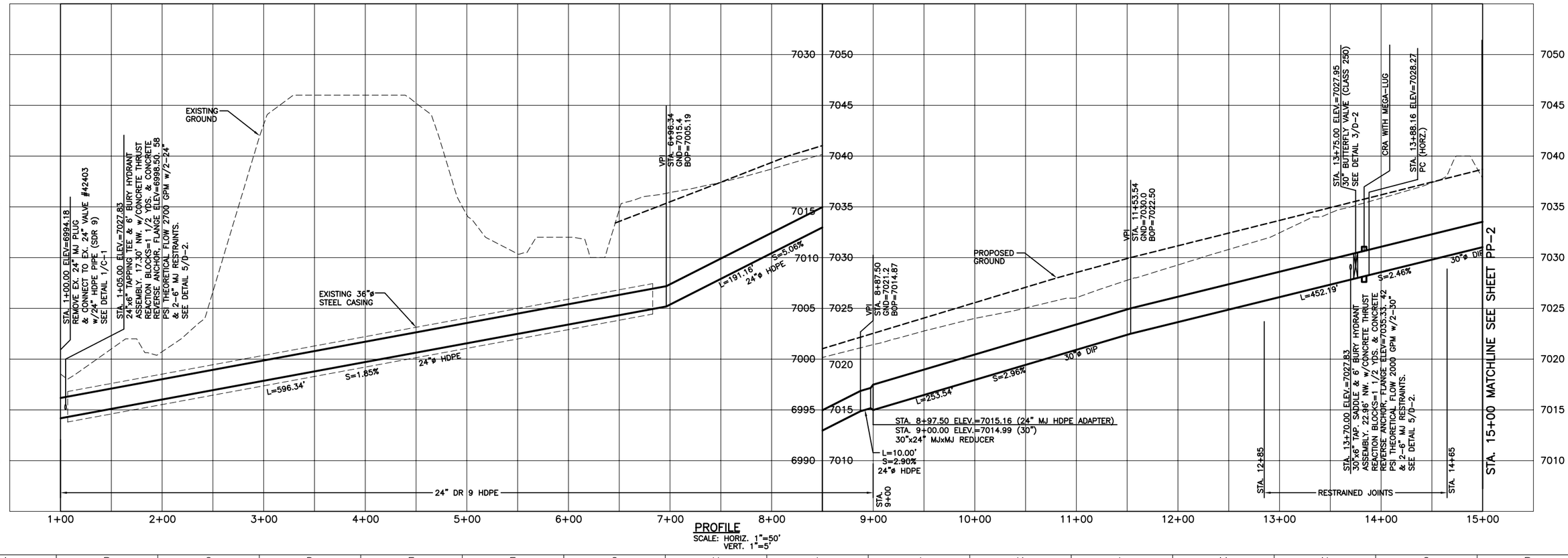
30" WATERLINE TO
BRIARGATE RESERVOIRS

CATHODIC PROTECTION DETAILS

DATE: 08/24/05
PROJECT NUMBER: CS25
REVISION NO. 0
DRAWING NUMBER
D-6
SHEET NUMBER



HORIZONTAL CONTROL SUMMARY					
NO	STATION	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	1+00.00	1415502.00	3215383.20	6994.18	SEE DETAIL 1/C-1
2	1+07.14	1415507.16	3215388.13	–	WEST END OF CASING
3	6+82.99	1415922.90	3215786.59	–	EAST END OF CASING
4	13+88.16	1416431.99	3216274.53	7028.27	PC



PROFILE
SCALE: HORIZ. 1"=50'
VERT. 1"=5'

integra engineering 450 DECATUR STREET Denver, Colorado 80204 (303)825-1802	LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"-SCALE ACCORDINGLY) DRAWING CS25PP01.DWG DRAWN NJM DESIGNED CRB CHECKED RRP	APPROVED: PRINCIPAL DATE:	REVISIONS REV. 0 — DESCRIPTION: RECORD DRAWING — BY: NLG — DATE: 04/20/06 — APP.: CRB

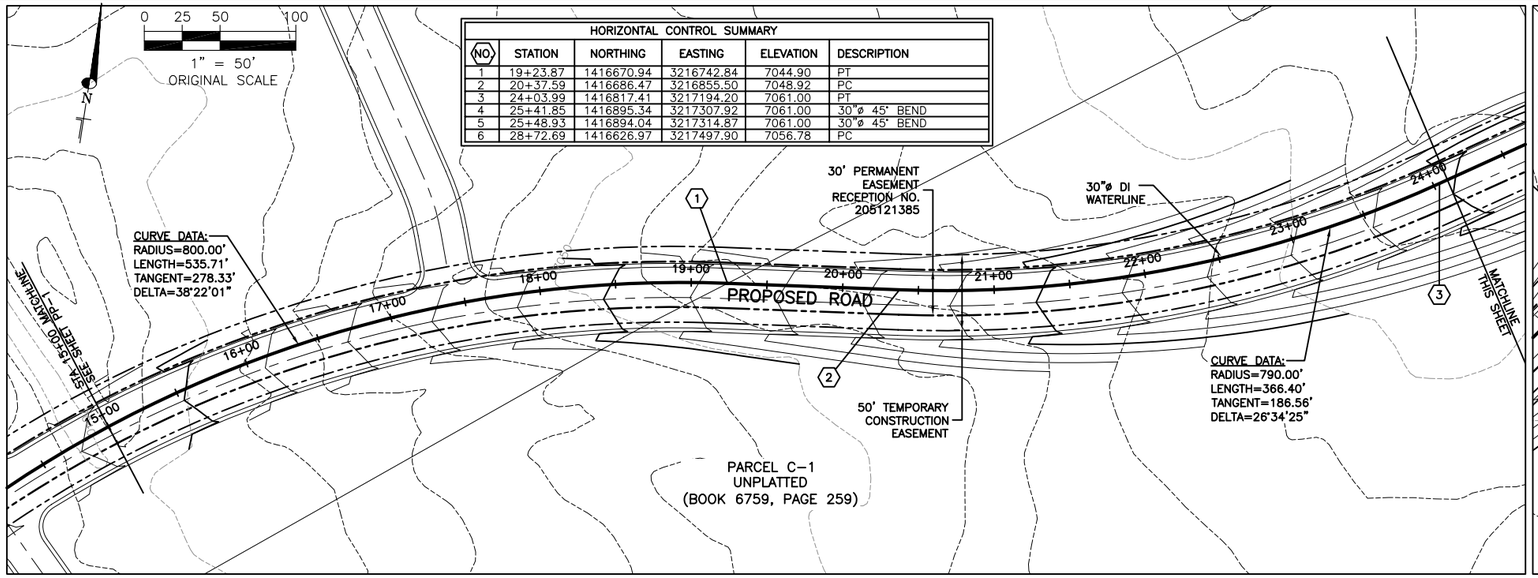
COLORADO SPRINGS UTILITIES

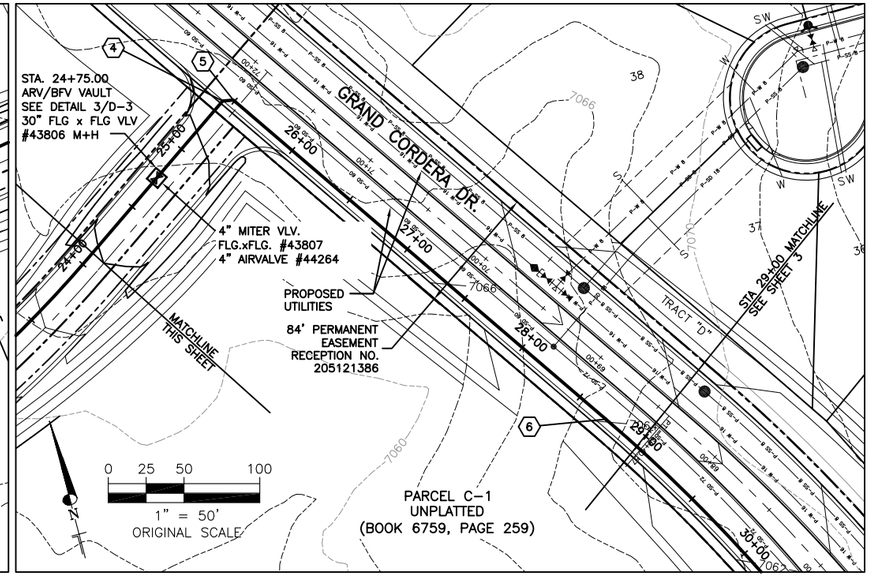
30" WATERLINE TO BRIARGATE RESERVOIRS

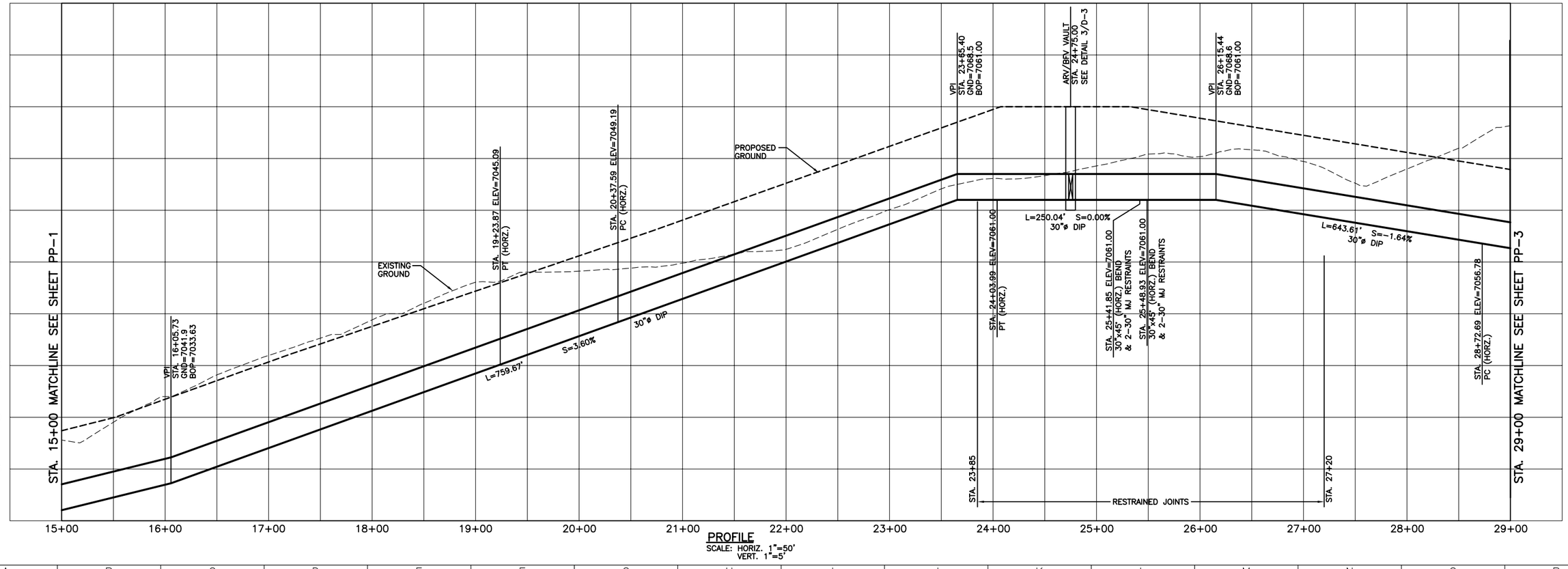
PLAN AND PROFILE
STA 1+00 TO 15+00

DATE: 6-14-05
PROJECT NUMBER: CS25
REVISION NO. 0
DRAWING NUMBER PP-1
SHEET NUMBER

HORIZONTAL CONTROL SUMMARY					
NO.	STATION	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	19+23.87	1416670.94	3216742.84	7044.90	PT
2	20+37.59	1416686.47	3216855.50	7048.92	PC
3	24+03.99	1416817.41	3217194.20	7061.00	PT
4	25+41.85	1416895.34	3217307.92	7061.00	30"ø 45° BEND
5	25+48.93	1416894.04	3217314.87	7061.00	30"ø 45° BEND
6	28+72.69	1416626.97	3217497.90	7056.78	PC







PROFILE
SCALE: HORIZ. 1"=50'
VERT. 1"=5'

integra engineering
450 DECATUR STREET
Denver, Colorado 80204 (303)825-1802

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"-SCALE ACCORDINGLY)

DRAWING CS25PP02.DWG
DRAWN NJM
DESIGNED CRB
CHECKED RRP

APPROVED:

PRINCIPAL

DATE:

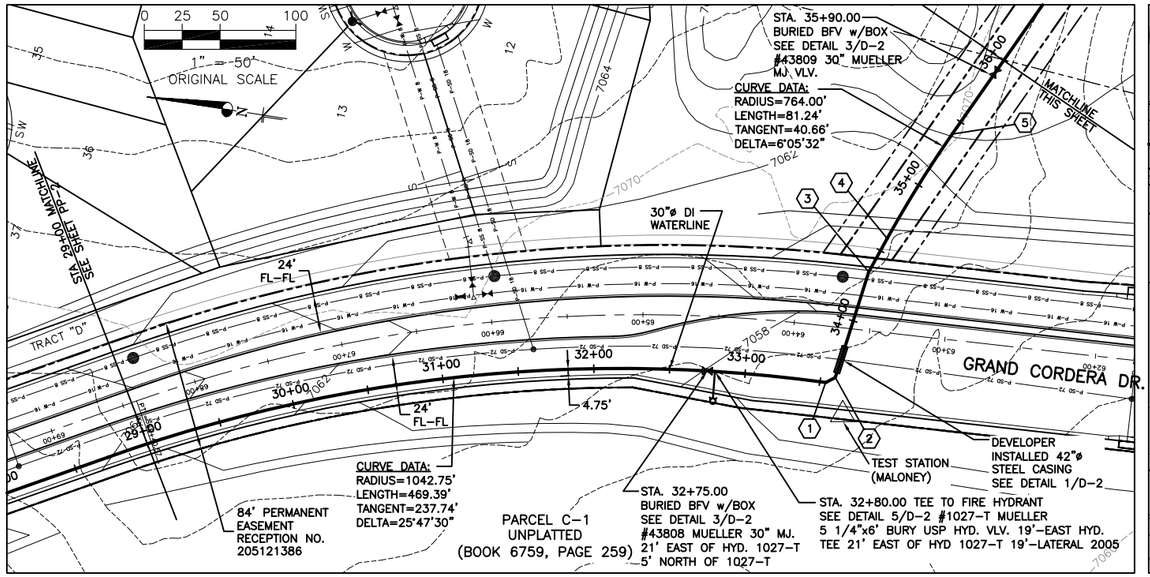
REVISIONS				
REV.	DESCRIPTION	BY	DATE	APP.
0	RECORD DRAWING	NLG	04/20/06	CRB

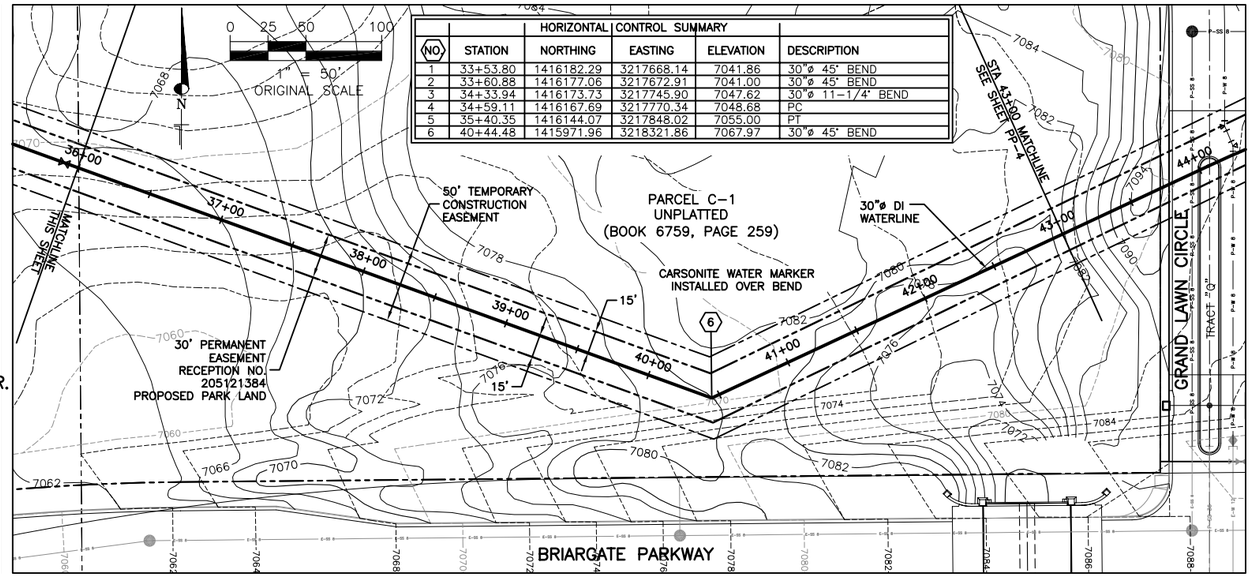
COLORADO SPRINGS UTILITIES

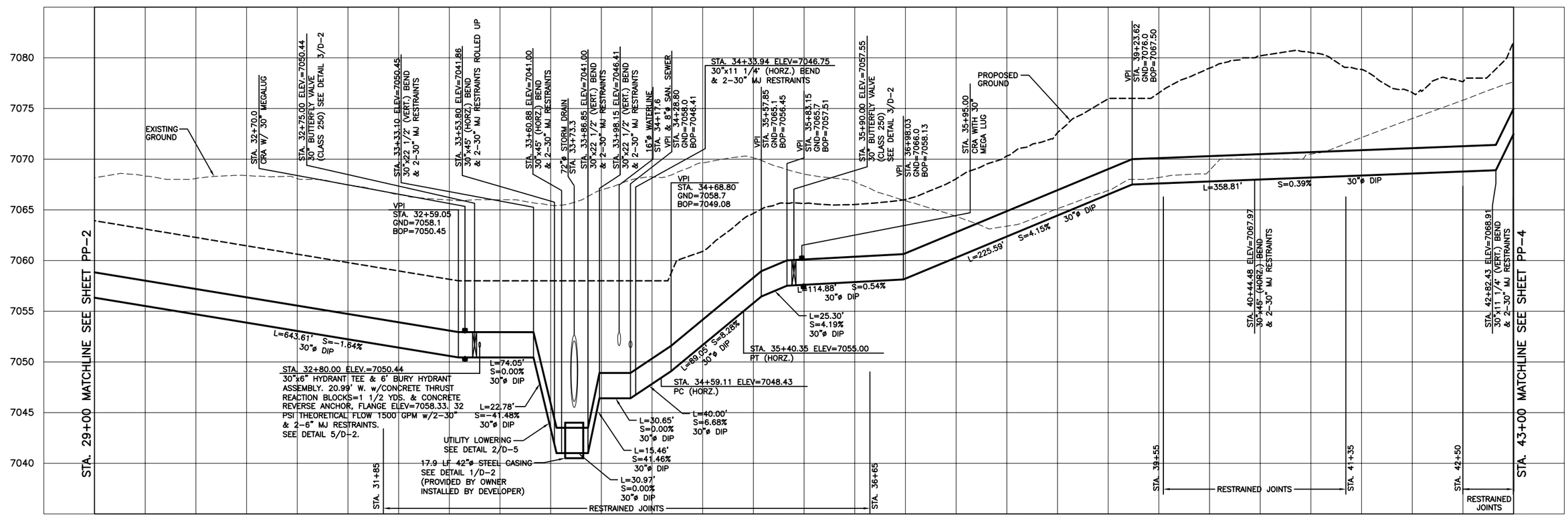
30" WATERLINE TO BRIARGATE RESERVOIRS

PLAN AND PROFILE
STA 15+00 TO 29+00

DATE: 6-14-05
PROJECT NUMBER: CS25
REVISION NO. 0
DRAWING NUMBER PP-2
SHEET NUMBER







PROFILE
SCALE: HORIZ. 1"=50'
VERT. 1"=5'

integra engineering
450 DECATUR STREET
Denver, Colorado 80204 (303)825-1802

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"-SCALE ACCORDINGLY)

DRAWING CS25PP03.DWG
DRAWN NJM
DESIGNED CRB
CHECKED RRP

APPROVED:

PRINCIPAL

DATE:

REVISIONS

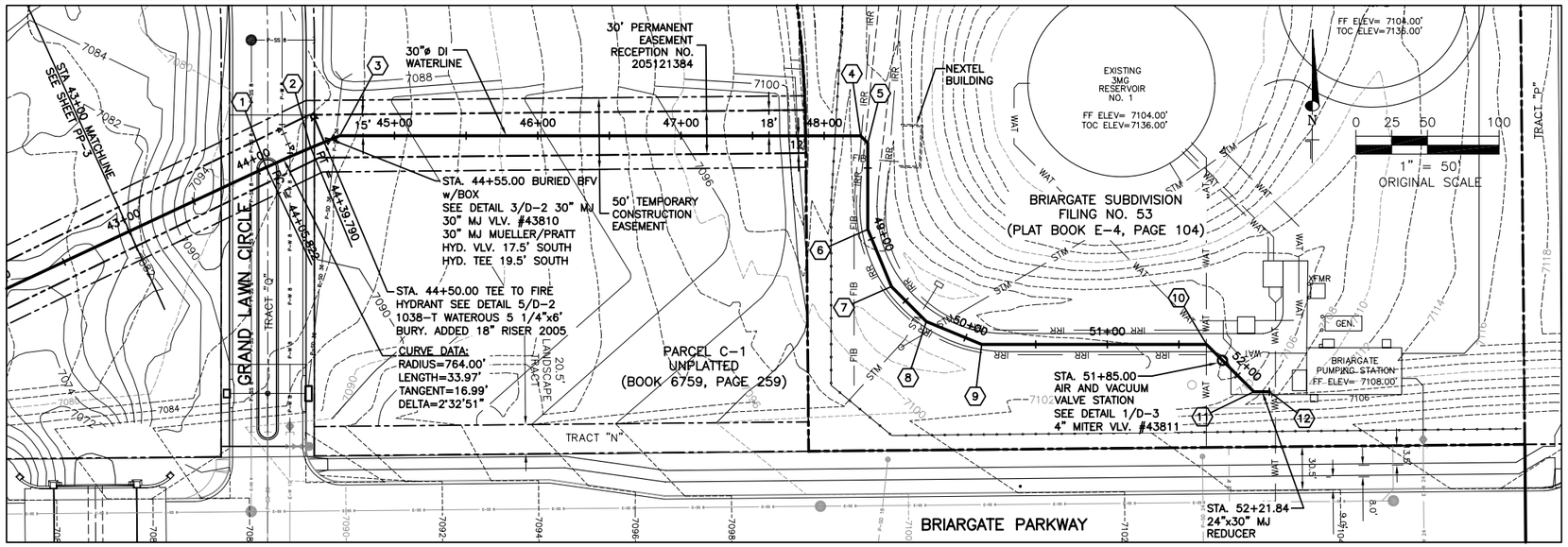
REV.	DESCRIPTION	BY	DATE	APP.
0	RECORD DRAWING	NLG	04/20/06	CRB

COLORADO SPRINGS UTILITIES

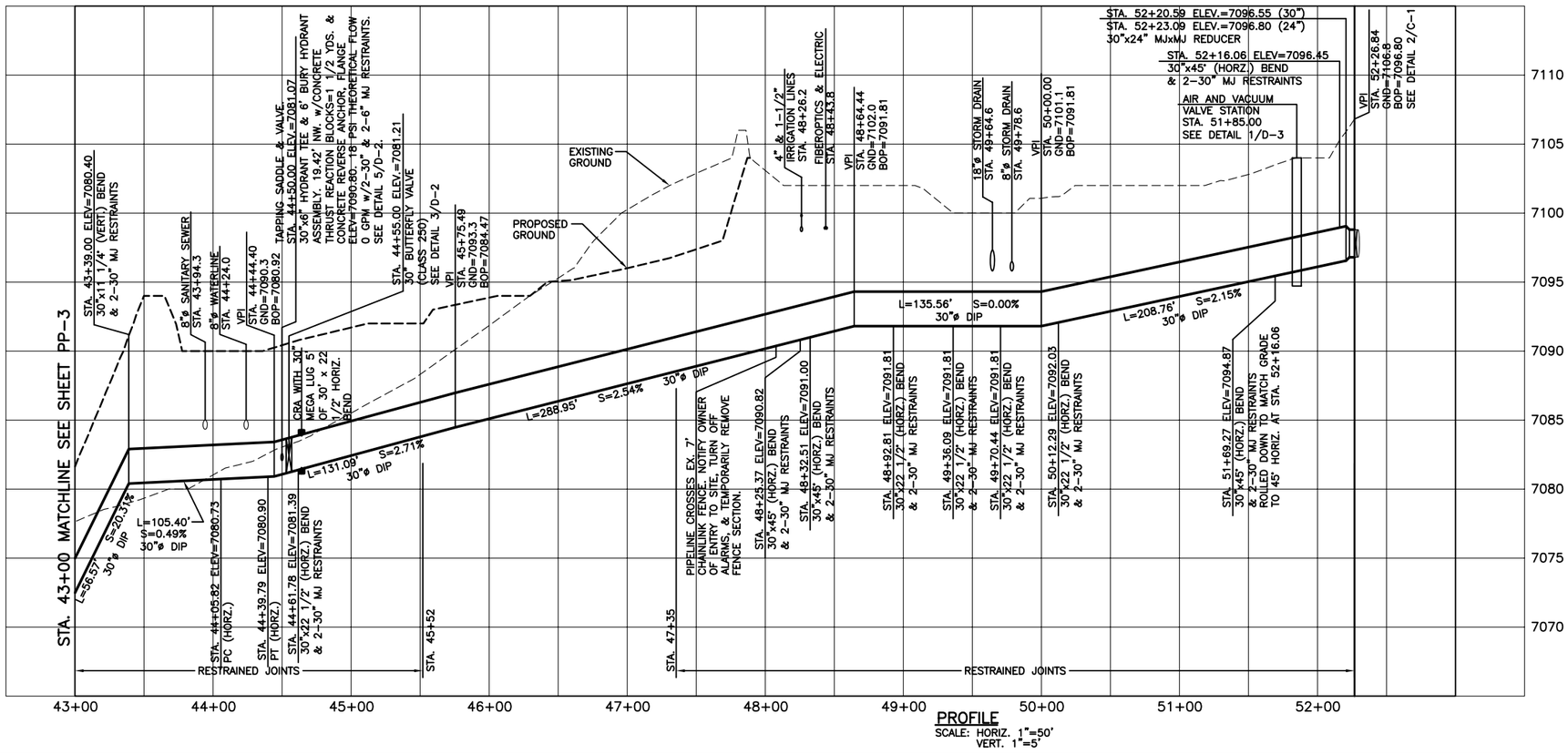
30" WATERLINE TO
BRIARGATE RESERVOIRS

PLAN AND PROFILE
STA 29+00 TO 43+00

DATE: 6-14-05
PROJECT NUMBER: CS25
REVISION NO. 0
DRAWING NUMBER PP-3
SHEET NUMBER



HORIZONTAL CONTROL SUMMARY					
NO.	STATION	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	44+05.82	1416124.89	3218649.25	7080.73	PC
2	44+39.79	1416138.58	3218680.34	7080.90	PT
3	44+61.78	1416146.99	3218700.65	7081.39	30"ø 22-1/2° BEND
4	48+25.37	1416146.94	3219064.24	7090.82	30"ø 45° BEND
5	48+32.51	1416141.89	3219069.29	7091.00	30"ø 45° BEND
6	48+92.81	1416081.59	3219069.28	7091.81	30"ø 22-1/2° BEND
7	49+36.09	1416041.59	3219085.84	7091.81	30"ø 22-1/2° BEND
8	49+70.44	1416017.30	3219110.13	7091.81	30"ø 22-1/2° BEND
9	50+12.29	1416001.28	3219148.79	7092.03	30"ø 22-1/2° BEND
10	51+69.27	1416001.26	3219305.76	7094.87	30"ø 45° BEND
11	52+16.06	1415968.17	3219228.85	7098.75	30"ø 45° BEND
12	52+26.84	1415968.17	3219349.62	7099.00	SEE DETAIL 2/C-1



PROFILE
SCALE: HORIZ. 1"=50'
VERT. 1"=5'

integra engineering
450 DECATUR STREET
Denver, Colorado 80204 (303)825-1802

LINE IS 2 INCHES AT FULL SIZE (IF NOT 2"-SCALE ACCORDINGLY)

DRAWING CS25PP04.DWG
DRAWN NJM
DESIGNED CRB
CHECKED RRP

APPROVED:

PRINCIPAL

DATE:

REVISIONS				
REV.	DESCRIPTION	BY	DATE	APP.
0	RECORD DRAWING	NLG	04/20/06	CRB

COLORADO SPRINGS UTILITIES

30" WATERLINE TO BRIARGATE RESERVOIRS

PLAN AND PROFILE
STA 43+00 TO 52+26.84

DATE: 6-14-05
PROJECT NUMBER: CS25
REVISION NO. 0
DRAWING NUMBER PP-4
SHEET NUMBER