

TASK 3A

SOUTH METRO WISE AUTHORITY CONTRACT DOCUMENTS

1576 SHERMAN STREET
DENVER, CO 80203
PH (303) 825-5999 FAX (303) 825-0642



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PROJECT LOCATION: CLIENT INFORMATION:
DENVER, COLORADO

Tt PROJECT No.: CLIENT PROJECT No.:
133-08362-15001

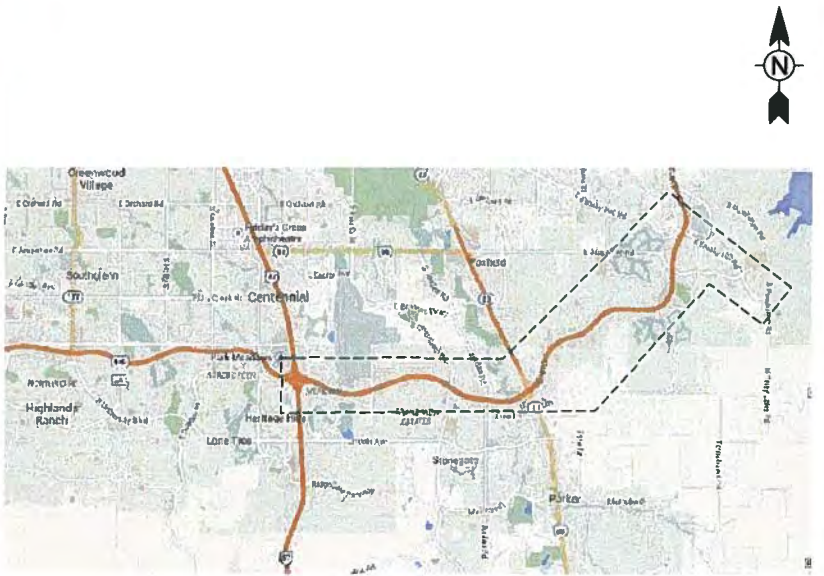
PROJECT DESCRIPTION / NOTES:

ISSUED:
APRIL 3, 2015 - NOT FOR CONSTRUCTION
APRIL 17, 2015 - NOT FOR CONSTRUCTION (REV 1)

AREA MAP:

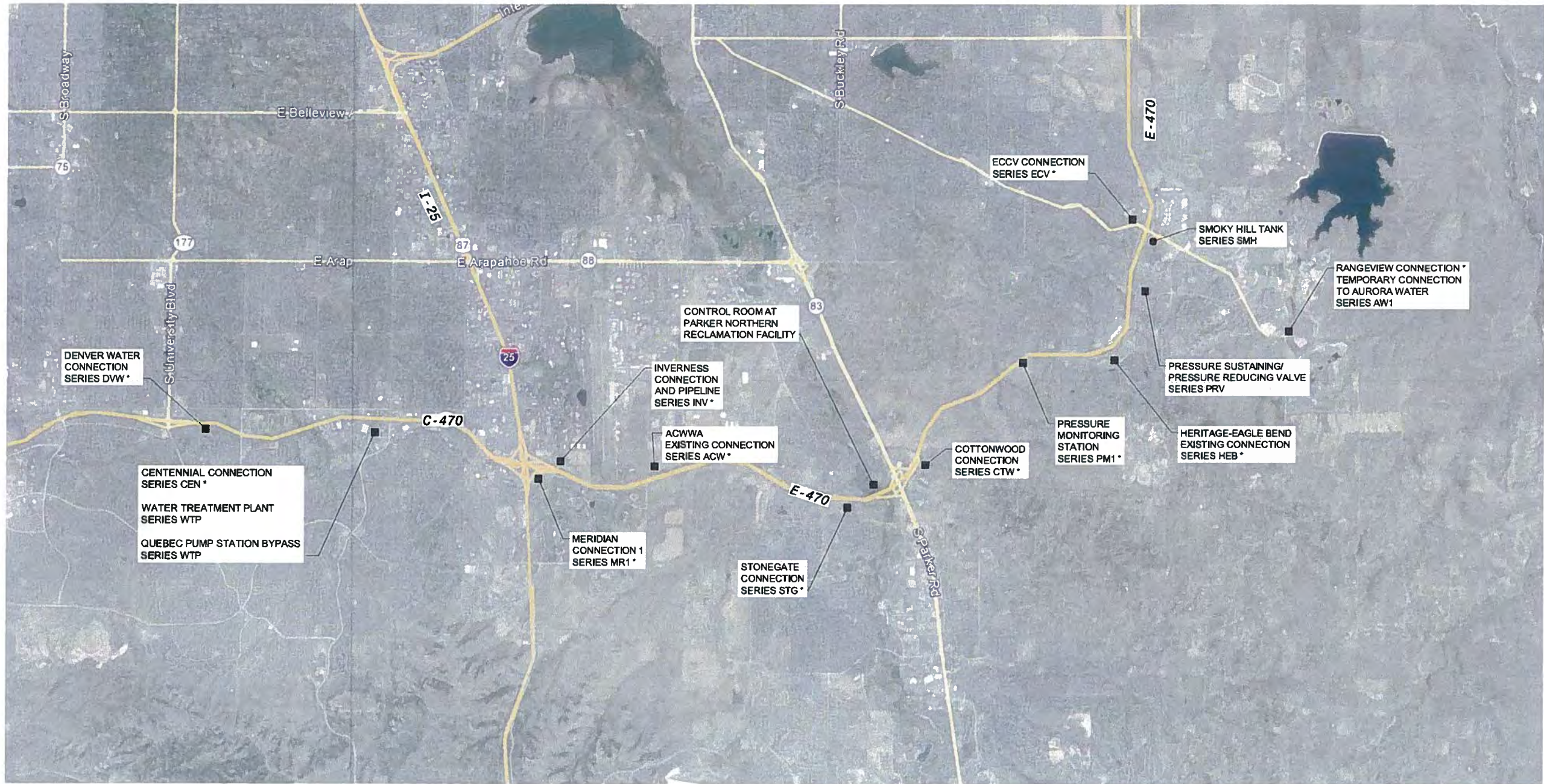


VICINITY MAP
NOT TO SCALE



AREA MAP
NOT TO SCALE

4/17/2015 8:23:23 AM T:\29905\33-29905-150\1\CAD\SHETFLS\G-002-A OVERALL VICINITY.MA P.DWG - SPERRY, TY



NOTES:

- THIS MAP INCLUDES THE FACILITY LOCATIONS OF ALL THE SUB-PACKAGES IN THE OVERALL DESIGN/BUILD PACKAGE. INCLUDED IN THIS SUB-PACKAGE ARE THE FOLLOWING:
 - * MERIDIAN CONNECTION
 - * PRESSURE SUSTAINING VALVE
 - * WATER TREATMENT PLANT
- ITEMS DENOTED WITH *** ARE NOT PART OF THIS CONTRACT, AND WILL BE CONSTRUCTED BY OTHERS.

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PRELIMINARY
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MARK	DATE	DESCRIPTION	BY

SOUTH METRO WISE AUTHORITY

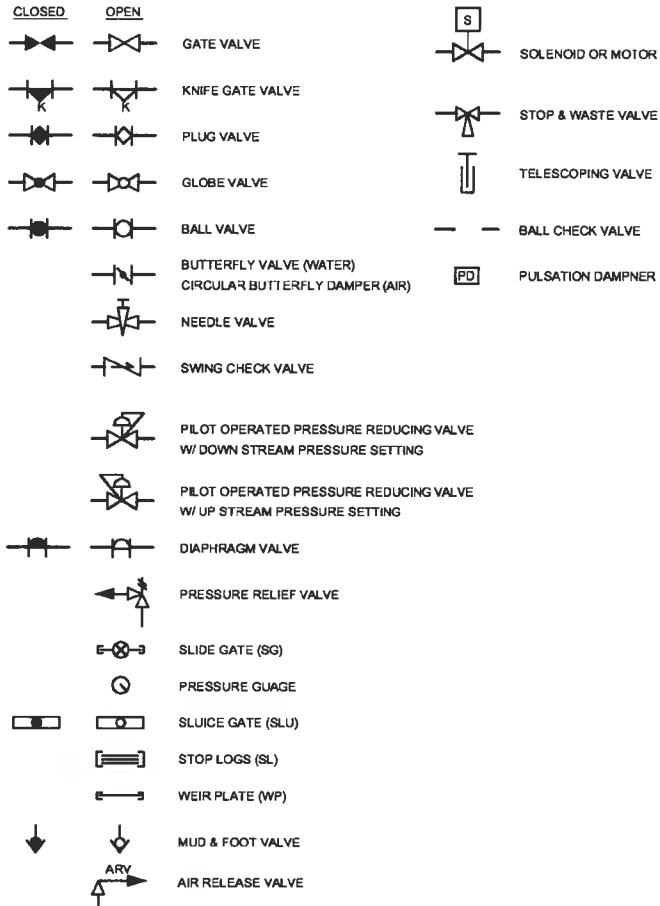
OVERALL VICINITY MAP

Project No.: 133-29905-15001
Designed By: BJS
Drawn By: TRS
Checked By: BJS

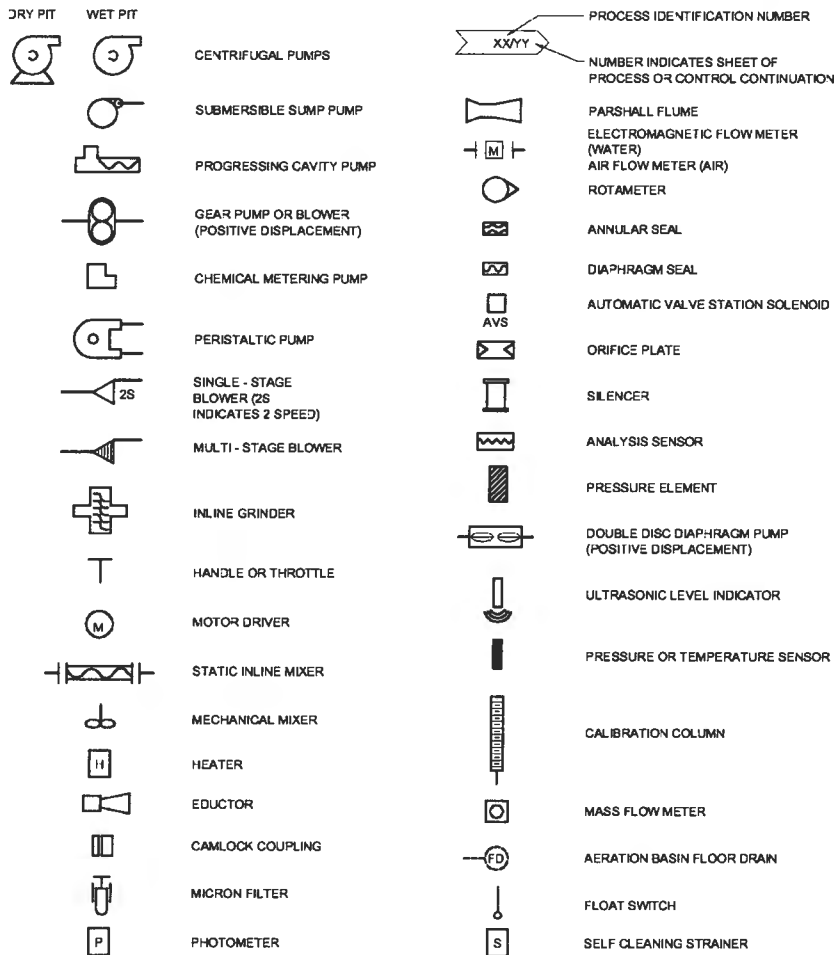
G-002

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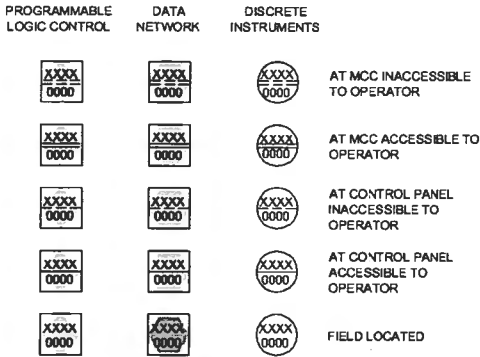
VALVE SYMBOLS



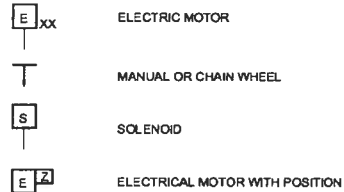
P&ID EQUIPMENT SYMBOLS



P&ID INSTRUMENT SYMBOLS



ACTUATOR SYMBOLS



NOTE:
ON LOSS OF PRIMARY
POWER (PNEUMATIC
OR ELECTRIC)
FO = FAIL OPEN
FC = FAIL CLOSED
FLP = FAIL TO LAST
POSITION

PIPING SERVICE ABBREVIATIONS

AIR	PROCESS AIR	PEFF	PRIMARY EFFLUENT
BIO	BIOLOGICAL	PD	PUMPED DRAIN
BWS	BACKWASH SUPPLY	POL	POLYMER
BWW	BACKWASH WASTE	POL SOL	POLYMER SOLUTION
CA	COMPRESSED AIR	PSC	PRIMARY SCUM
CD	CHEMICAL DRAIN	PW	POTABLE WATER
CEN	CENTRATE	RAS	RETURN ACTIVATED SLUDGE
CG	CHLORINE GAS	RRAS	RAPID RETURN ACTIVATED SLUDGE
CH	CHEMICAL	RW	REUSE WATER
CLS	CHLORINE SOLUTION	SAN	SANITARY SEWER
CV	CHLORINE VENT	SCN	SCREENINGS
CW	COLD POTABLE WATER	SE	SECONDARY EFFLUENT
D	DRAIN	SHC	SODIUM HYPOCHLORITE
DBIO	DEWATERED BIOSOLIDS	SLC	SLOPPY CAKE
FAD	FOUL AIR DUCI	SNT	SUPERNATANT (DIGESTER)
FEFF	FINAL EFFLUENT	SSC	SECONDARY SCUM
FM	FORCEMAIN	ST	SLUDGE TRANSFER
FO	FIBER OPTIC	STM	STORM SEWER
FS	FERRIC SULFATE	SW	SOFTENED WATER
GR	GRIT	TEFF	TERTIARY EFFLUENT
GU	GRIT UNDERDRAIN	TD	TANK DRAIN
HOC	HYPOCHLORITE	TSL	THICKENED SLUDGE
HW	HOT WATER	TWAS	THICKENED WASTE ACTIVATED SLUDGE
ML	MIXED LIQUOR	V	SANITARY VENT
NPW	NON-POTABLE WATER	W	WATER
OF	OVERFLOW	WAS	WASTE ACTIVATED SLUDGE
OSA	OUTSIDE AIR	WW	WASTEWATER (INFLUENT TO PLANT)
		WWFM	WASTEWATER FORCE MAIN

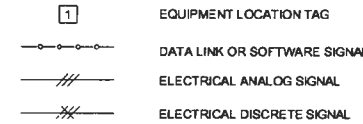
INSTRUMENT IDENTIFICATION LETTERS
(INSTRUMENT SOCIETY OF AMERICA)

FIRST - LETTER		SUCCEEDING - LETTERS		
	MEASURED OR INITIATING VARIABLE	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS	ALARM		
B	BURNER, COMBUSTION	USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONTROL		CONTROL	CLOSED
D	USER'S CHOICE	DIFFERENTIAL		
E	VOLTAGE	SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)		
G	USER'S CHOICE	GLASS, VIEWING DEVICE		
H	HAND			HIGH
I	CURRENT (ELECTRICAL)	INDICATE		
J	POWER	SCAN		
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION
L	LEVEL	LIGHT		
M	USER'S CHOICE	MOMENTARY		LOW, MIDDLE, INTERMEDIATE, USER'S CHOICE
N	TORQUE	USER'S CHOICE	USER'S CHOICE	OPEN
O	USER'S CHOICE	ORIFICE, RESTRICTION		
P	PRESSURE, VACUUM	POINT (TEST CONNECTION)		
Q	QUANTITY	INTEGRATE, TOTALIZE		
R	RADIATION	RECORD		
S	SPEED, FREQUENCY	SAFETY	SWITCH	
T	TEMPERATURE		TRANSMIT	
U	FAILURE	MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS		VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE	WELL		
X	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS	DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

COMMON INSTRUMENT & DEVICE DESIGNATIONS

TAG	DESIGNATION
DO	DISSOLVED OXYGEN
FE	FLOW ELEMENT
FIT	FLOW INDICATOR/TRANSMITTER
HC	HAND CONTROL
HOA	HAND-OFF-AUTO
HS	HAND SWITCH
OCA	OPEN-CLOSE-AUTO
OCSA	OPEN-CLOSE-STOP-AUTO
ORP	OXYGEN REDUCTION POTENTIAL
PSL	PRESSURE SWITCH LOW
PSH	PRESSURE SWITCH HIGH
SC	SPEED COMMAND
SI	SPEED INDICATION
SS	SUSPENDED SOLIDS OR START-STOP
UA	EQUIPMENT FAULT STATUS
YL	EQUIPMENT RUNNING STATUS
YS	EQUIPMENT IN AUTO OR REMOTE STATUS
ZSC	VALVE POSITION FULL CLOSE
ZSI	VALVE POSITION INDICATOR
ZSO	VALVE POSITION FULL OPEN

INSTRUMENTATION LEGEND



GENERAL NOTES

- THIS IS A STANDARD LEGEND, THEREFORE NOT ALL OF THIS INFORMATION MAY BE USED ON THIS PROJECT.
- P & I D INSTRUMENTATION DETAILS DO NOT REPRESENT INSTRUMENTS AND CONTROLS INTEGRAL TO VENDOR SUPPLIED CONTROL PANELS OR EQUIPMENT. SEE EQUIPMENT SPECIFICATIONS FOR THIS INFORMATION.
- P & I D DOES NOT REPRESENT CONTROL STRATEGIES OR INTERACTIONS. REFERENCE SECTION 16905, ELECTRICAL ELEMENTARY SCHEMATICS FOR THIS INFORMATION.
- P & I D DOES NOT REPRESENT EQUIPMENT - HARDWIRED INTERLOCK AND ENABLE CIRCUITRY. REFERENCE MCC CONTROL NARRATIVES, FOR THIS INFORMATION.

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BY	DESCRIPTION	DATE	MARK

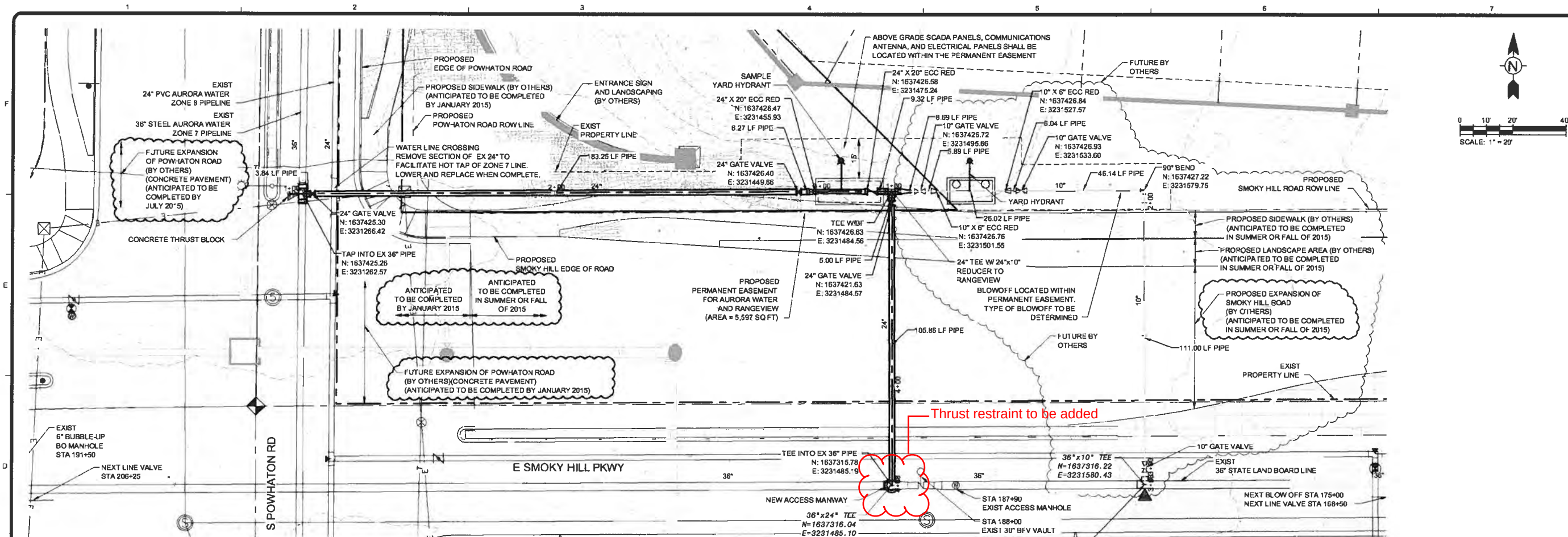
SOUTH METRO WISE AUTHORITY

P&ID LEGEND
AND ABBREVIATIONS

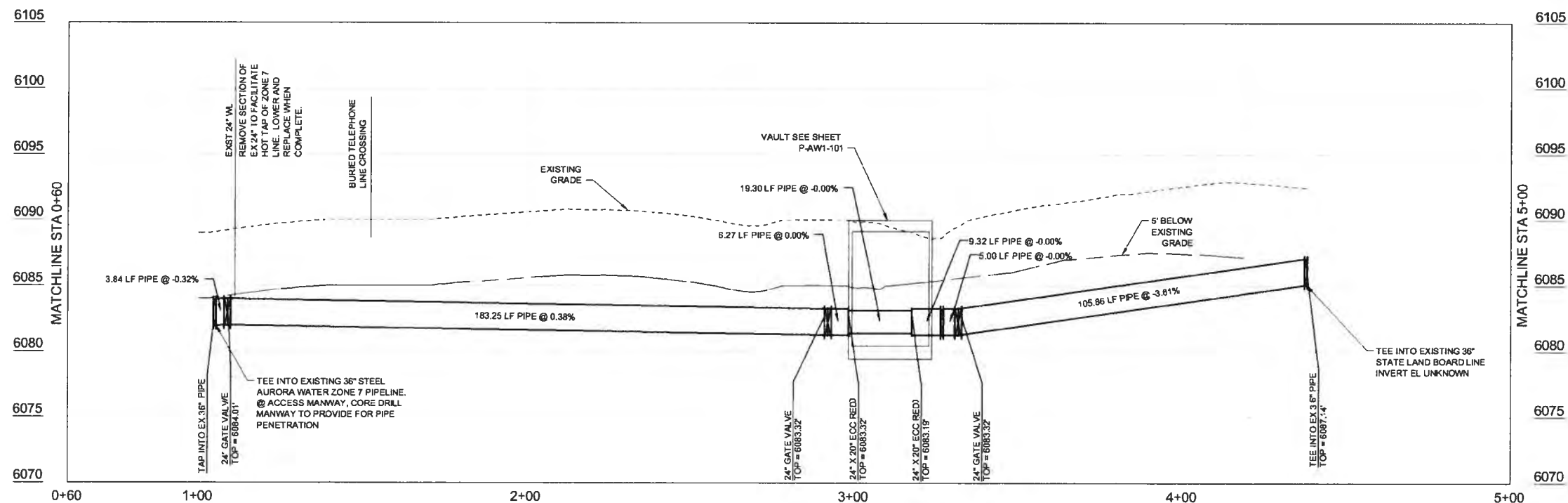
Project No.:	133-29905-15001
Designed By:	JLC
Drawn By:	TRS
Checked By:	BSJ

G-003

4/17/2015 7:04:13 AM T:\29905\13-29905-150\1\CAUSHE\TFL\ESR\AURORA-A\W1-201\24" WATERLINE PLAN AND PROFILE STA 1+00 TO 8+50.DWG - SPERRY, TY



AURORA 24" WATERLINE PLAN
SCALE: 1" = 20'



PROFILE AURORA 24" WATERLINE
SCALE: HORIZ 1" = 20'
VERT 1" = 5'

NOTES:

- RANGEVIEW CONNECTION AND ALL APPURTENANCES BY OTHERS.

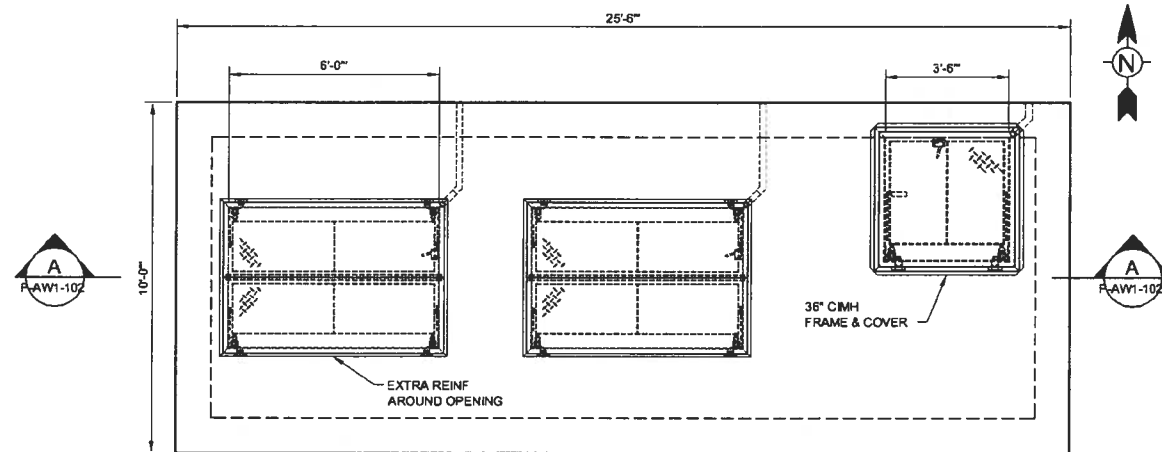


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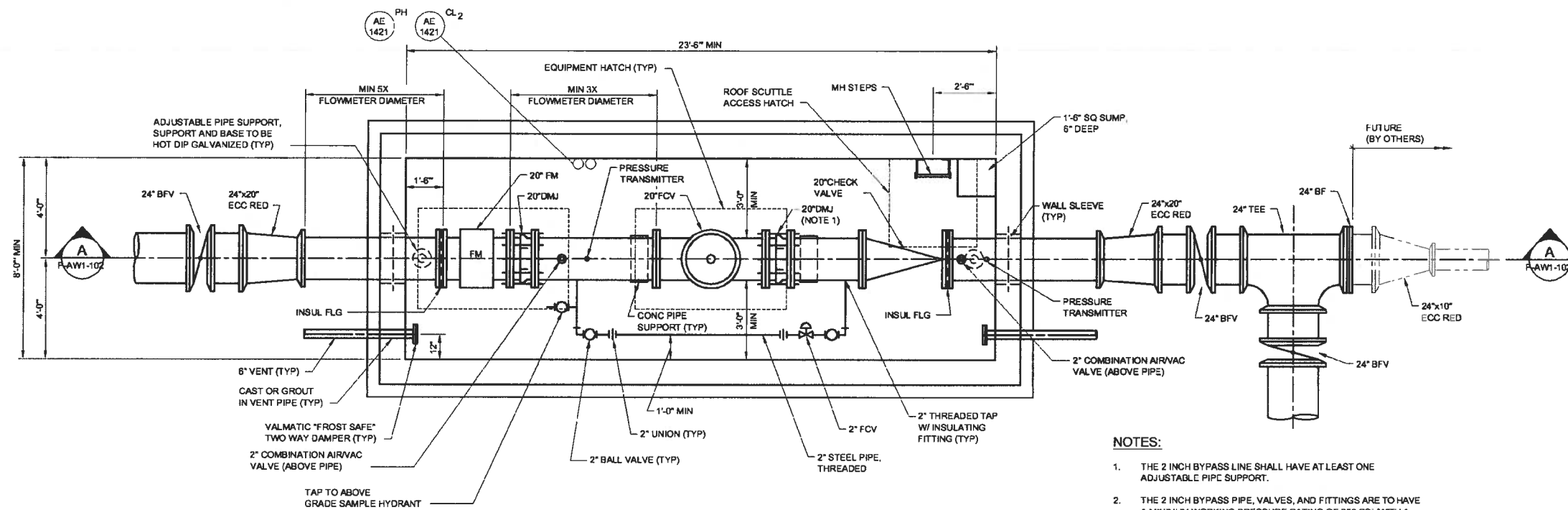
PRELIMINARY
NOT FOR CONSTRUCTION

BY	DATE	DESCRIPTION

SOUTH METRO WISE AUTHORITY AURORA CONNECTION	24" WATERLINE PLAN AND PROFILE STA 1+00 TO 8+50
Project No. 133-29905-15001	Designed By: WJR
Drawn By: CFW	Checked By: BSJ
C-AW1-201	



UPPER PLAN
SCALE: 3/8" = 1'-0"



LOWER PLAN
SCALE: 3/8" = 1'-0"

- NOTES:

1. THE 2 INCH BYPASS LINE SHALL HAVE AT LEAST ONE ADJUSTABLE PIPE SUPPORT.
2. THE 2 INCH BYPASS PIPE, VALVES, AND FITTINGS ARE TO HAVE A MINIMUM WORKING PRESSURE RATING OF 250 PSI (WITH A TEST GRAJIENT OF 1.5 TIMES WORKING PRESSURE).
3. ALL JOINTS SHALL BE RESTRAINED.
4. FCV PILOT LINES SHALL BE INSULATED.
5. PRESSURE TRANSMITTER TAPS TO BE 1/2" WITH BALL VALVE WITH MINIMUM WORKING PRESSURE RATING OF 250 PSI.
6. HATCH OVER THE FLOW METER AND FCV SHALL BE BILCO JO-3AL (48"x72"). THE ROOF SCUTTLE SHALL BE A BILCO TYPE E-50 ROOF HATCH WITH A LADDER-UP SAFETY POST AND RAILING SYSTEM TO MEET OSHA CFR 1910.23.
7. VAULT INTERIOR LIGHTING IS REQUIRED.
8. ELECTRICAL RECEPTACLE OUTLET REQUIRED NEAR THE TOP OF THE LADDER AND INSIDE VAULT.
9. LOCATE ANALYZERS AE-1421 AND AE-1422 IN PIPELINE WITH BALL VALVE TO ISOLATE. AITS SHALL BE WALL MOUNTED IN VAULT.

**PRELIMINARY
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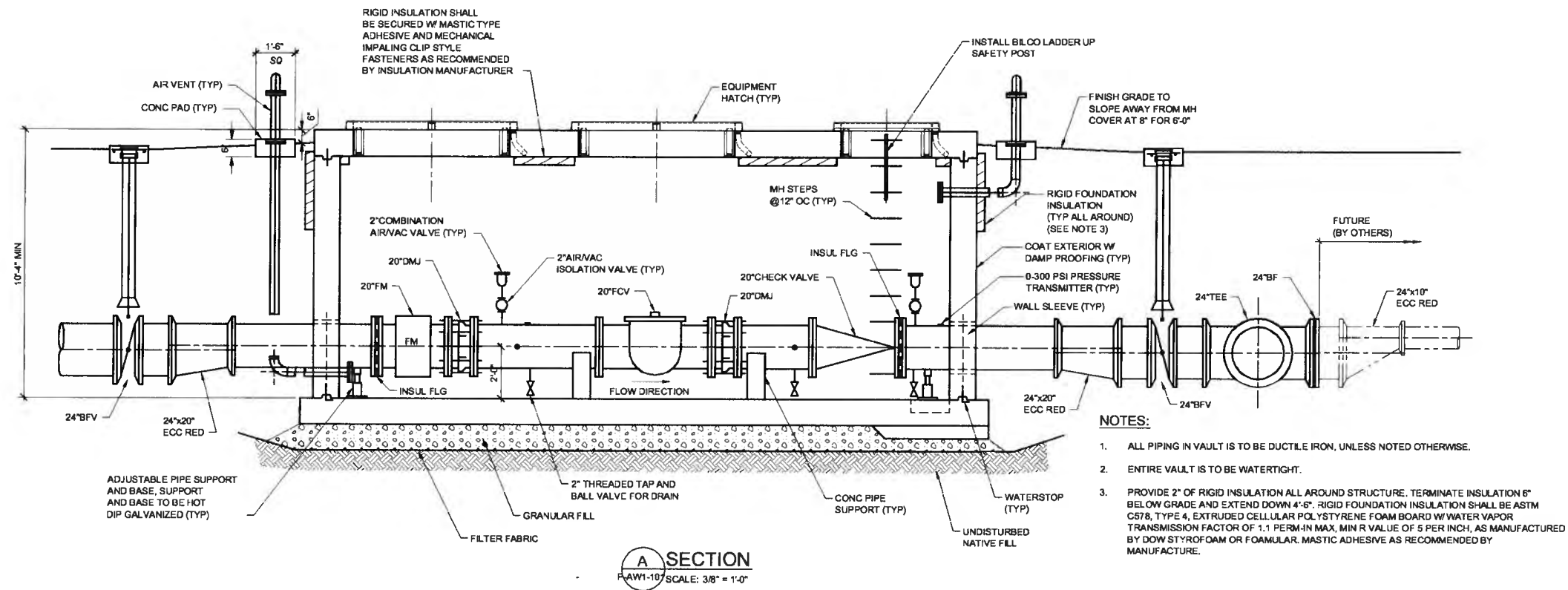
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SOUTH METRO WISE AUTHORITY
AURORA CONNECTION
VAULT
UPPER AND LOWER
PLANS

Project No.:	133-29905-15001
Designed By:	WJR
Drawn By:	CFW
Checked By:	BSJ

P-AW1-101

4/17/2015 7:04:28 AM - T:\0900\0133-29905-150\1\CAD\SHSHEET\FILES\RAVGEVIEW AND AURORA\A-W1-102 VAULT SECTION.DWG - SPERRY, TY



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SOUTH METRO WISE AUTHORITY
AURORA CONNECTION
VAULT SECTION

Project No:	133-29905-15001
Designed By:	WJR
Drawn By:	TRS
Checked By:	BSJ

P-AW1-102

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She... 9 Feb

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She

She... 9 Feb

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9 Feb

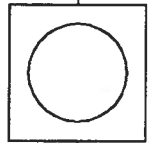
She

circ

- IRAN

4/17/2015 7:04:40 AM T:\29905\133-29905-15001\CA\DWG\Tetra\Rangeview and Aurora\A-W1-301 Aurora One Line Diagram.DWG - SPERRY, TY

FROM UTILITY POLE MOUNT
TRANSFORMER



METER SOCKET
1Ø 3W
120/240V

(3) #6, #10 GND



60A/2P

20A/1P

20A/1P

20A/1P

20A/2P

20A/1P

(2) #12, #12 GND

(2) #12, #12 GND

(2) #12, #12 GND

(3) #12, #12 GND

(2) #12, #12 GND

AURORA VAULT
LIGHTING

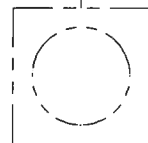
AURORA VAULT
RECEPTACLES

AURORA PLC
CONTROL PANEL

AURORA POLE
MOUNTED LIGHT

AURORA VAULT
SUMP PUMP

FROM UTILITY POLE MOUNT
TRANSFORMER



METER SOCKET
1Ø 3W
120/240V

(3) #6, #10 GND



60A/2P

20A/1P

20A/1P

20A/1P

20A/2P

20A/2P

20A/1P

(2) #12, #12 GND

(2) #12, #12 GND

(2) #12, #12 GND

(3) #12, #12 GND

(3) #12, #12 GND

(2) #12, #12 GND

RANGEVIEW VAULT
LIGHTING

RANGEVIEW VAULT
RECEPTACLES

RANGEVIEW PLC
CONTROL PANEL

RANGEVIEW POLE
MOUNTED LIGHT

RANGEVIEW VAULT
240V SPACE HEATER

RANGEVIEW VAULT
SUMP PUMP

NOTES:

1. RANGEVIEW CONNECTION BY OTHERS.



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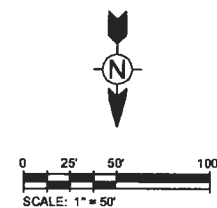
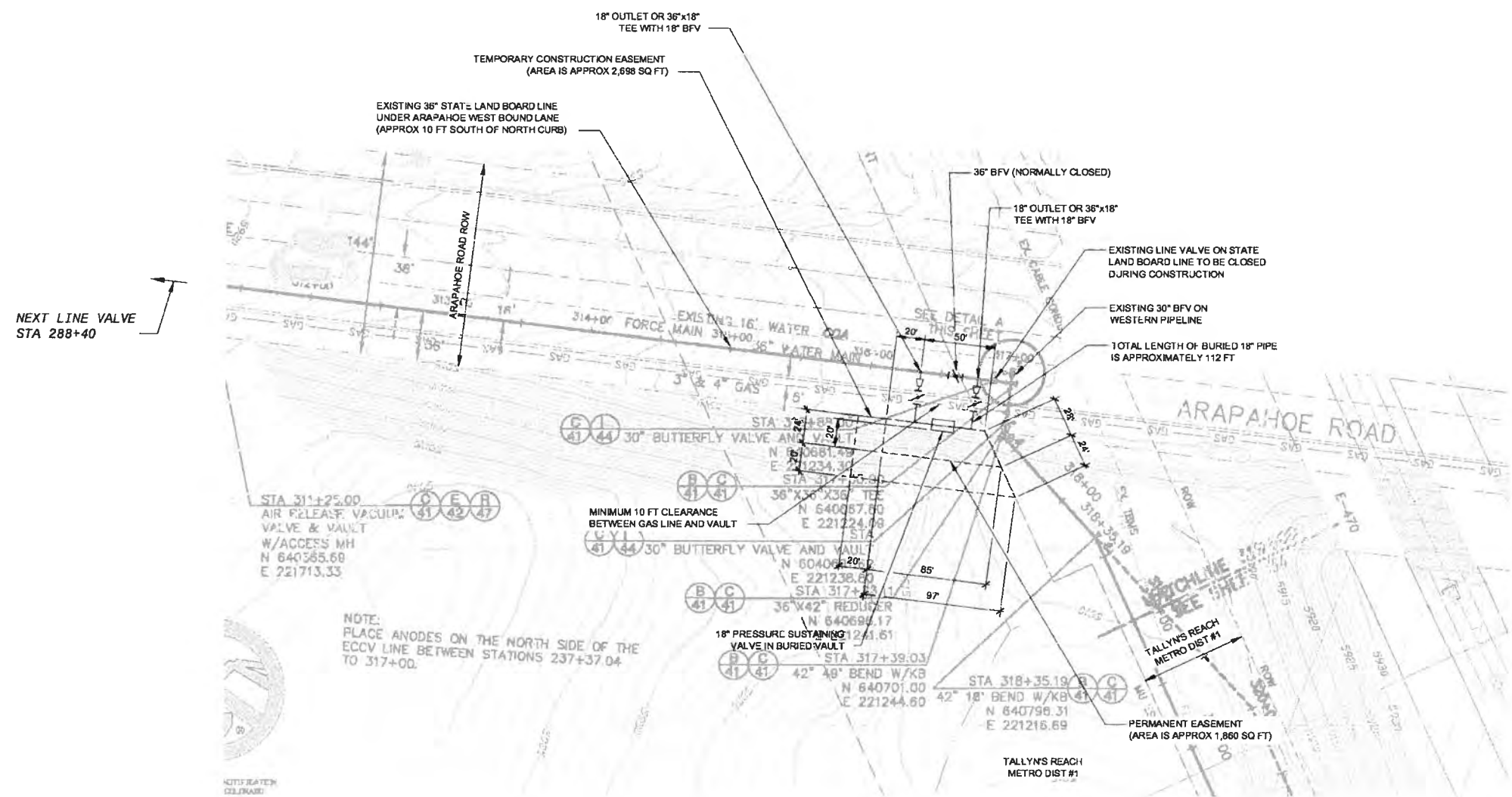
MARK	DATE	DESCRIPTION	BY

SOUTH METRO WISE AUTHORITY
AURORA CONNECTION
AURORA & RANGEVIEW
ONE LINE DIAGRAM

Project No.: 133-29905-15001
Designed By: JH
Drawn By: CFW
Checked By: BSJ

E-AW1-301

Copyright: Tetra Tech



18" WATERLINE PLAN

SCALE: 1" = 50'

SOUTH METRO WISE AUTHORITY	
PRESSURE SUSTAINING VALVE VAULT	
PLAN AND PROFILE	
Project No.:	133-29905-15001
Designed By:	WJR
Drawn By:	CFW
Checked By:	BSJ

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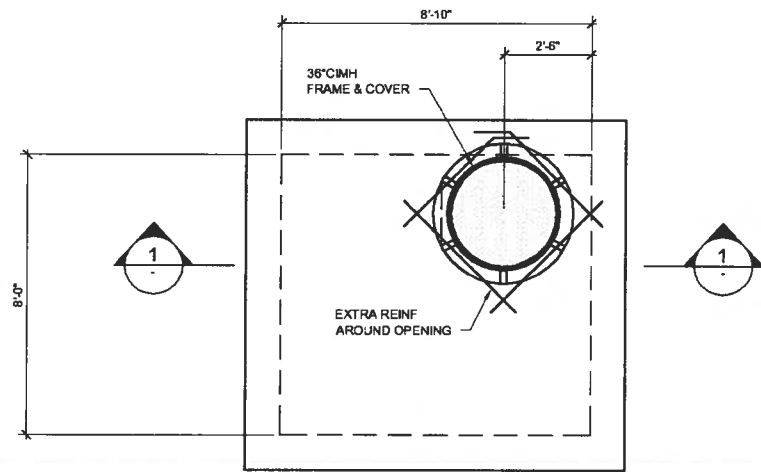
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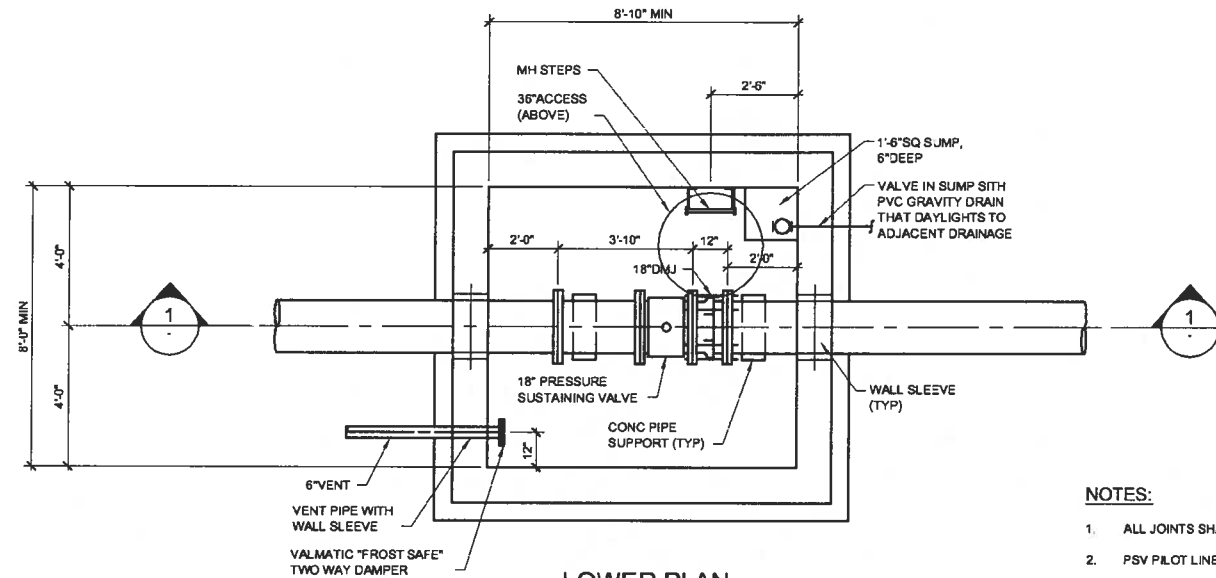


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4/17/2015 7:10:21 AM T:\029051\33-29905-1501\CAD\SHEDTFILES\PRESSURE SUSTAINING VAULT TYP-PRV-101 VAULT PLANS AND SECTIONS.DWG - SPERRY, TY



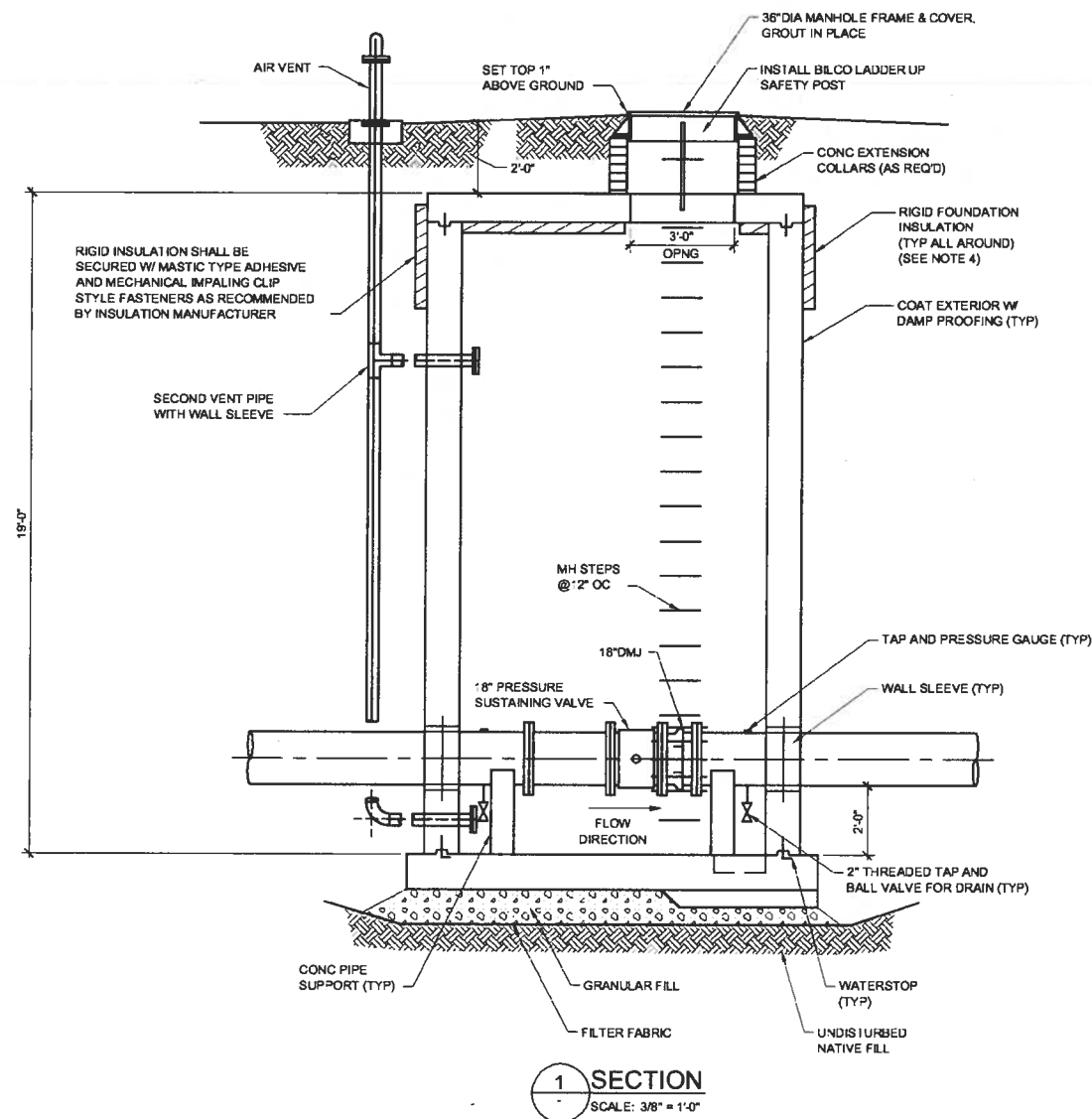
UPPER PLAN
SCALE: 3/8" = 1'-0"



LOWER PLAN
SCALE: 3/8" = 1'-0"

NOTES:

1. ALL JOINTS SHALL BE RESTRAINED.
2. PSV PILOT LINES SHALL BE INSULATED.



NOTES:

1. ALL PIPING IN VAULT IS TO BE DUCTILE IRON, UNLESS NOTED OTHERWISE.
2. ENTIRE VAULT IS TO BE WATERTIGHT.
3. PROVIDE 2" OF RIGID INSULATION ALL AROUND STRUCTURE. TERMINATE INSULATION 6" BELOW GRADE AND EXTEND DOWN 4'-6". RIGID FOUNDATION INSULATION SHALL BE ASTM C578, TYPE 4, EXTRUDED CELLULAR POLYSTYRENE FOAM BOARD W/ WATER VAPOR TRANSMISSION FACTOR OF 1.1 PERM-IN MAX, MIN R VALUE OF 5 PER INCH, AS MANUFACTURED BY DOW STYROFOAM OR FOAMULAR. MASTIC ADHESIVE AS RECOMMENDED BY MANUFACTURE.
4. ROOF SLAB SHALL BE REMOVABLE FOR FUTURE REMOVAL/REPLACEMENT OF PRESSURE SUSTAINING VALVE.



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BY	DESCRIPTION	DATE	MARK

SOUTH METRO WISE AUTHORITY
PRESSURE SUSTAINING VALVE VAULT
PLAN AND SECTIONS

Project No.: 133-29905-15001
Designed By: YJR
Drawn By: TRS
Checked By: BSJ

P-PRV-101

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SOUTH METRO WISE AUTHORITY CONNECTIONS

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PROJECT LOCATION: CLIENT INFORMATION:
DENVER, COLORADO

Tt PROJECT No.: CLIENT PROJECT No.:
133-08362-15001

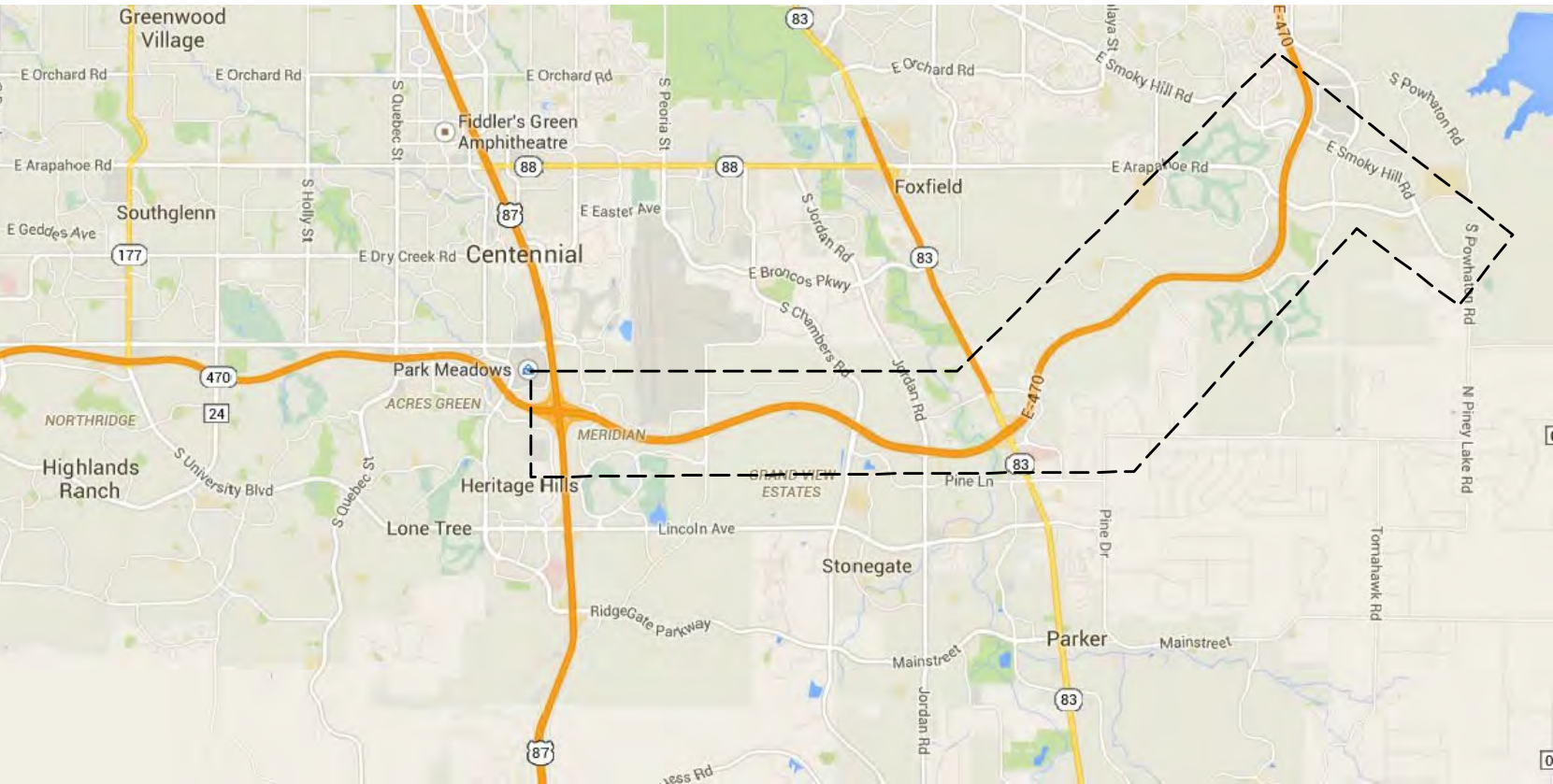
PROJECT DESCRIPTION / NOTES:

ISSUED:
OCTOBER 16, 2015 - 60% ISSUED FOR REVIEW - NOT FOR CONSTRUCTION

AREA MAP:



VICINITY MAP
NOT TO SCALE



AREA MAP
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SHEET INDEX	
SHEET NUMBER	SHEET TITLE
GENERAL	
G-000	COVER SHEET
G-001	SHEET INDEX, LEGEND, SYMBOLS AND ABBREVIATIONS
G-002	OVERALL VICINITY MAP
G-003	P&ID LEGEND AND ABBREVIATIONS
AURORA CONNECTION	
C-AW1-201	24" WATERLINE PLAN AND PROFILE STA 1+00 TO 8+50
P-AW1-101	VAULT UPPER AND LOWER PLANS
P-AW1-102	VAULT SECTION
I-AW1-002	P&ID AURORA CONNECTION
E-AW1-001	ELECTRICAL SITE PLAN
E-AW1-301	AURORA & RANGEVIEW ONE LINE DIAGRAM
PRESSURE SUSTAINING VALVE	
C-PRV-202	SITE PLAN
C-PRV-501	CIVIL DETAILS
P-PRV-101	VAULT PLAN AND SECTION

GENERAL ABBREVIATIONS

ABAN	ABANDON	MAX	MAXIMUM
ADJ	ADJUSTABLE, ADJACENT	ME	MECHANICAL
AFF	ABOVE FINISHED FLOOR	MFR	MANUFACTURE
ALT	ALTERNATE	MH	MANHOLE
APPROX	APPROXIMATE	MIN	MINIMUM
ATAD		MISC	MISCELLANEOUS
ASPH	ASPHALT	MJ	MECHANICAL JOINT
AWWA	AMERICAN WATER WORKS ASSOCIATION		
BF	BLIND FLANGE	N	NORTH, NORTHING
BLDG	BUILDING	NPT	NATIONAL PIPE THREAD
BM	BENCHMARK	NTS	NOT TO SCALE
BV	BALL VALVE	OC	ON CENTER
BLK	BLOCK	OD	OUTSIDE DIAMETER
BOT	BOTTOM	OE	OVERHEAD ELECTRIC
BOV	BLOW OFF VALVE	OH	OVERHEAD ELECTRIC
C	CONDUIT	PCO	PRESSURE CLEANOUT
CF	CUBIC FEET	PERM	PERMANENT
CI	CAST IRON	PL	PLATE
CL	CENTERLINE	PRE	PRESSURIZED RECYCLE
CMP	CORRUGATED METAL PIPE	PROJ	PROJECTION
CO	CLEANOUT	PSF	POUNDS PER SQUARE FOOT
CLR	CLEARANCE	PSI	POUNDS PER SQUARE INCH
CONC	CONCRETE	PT	POINT OF TANGENCY
CONST	CONSTRUCTION	PVC	POLYVINYL CHLORIDE
CJ	CONTROL JOINT	PW	POTABLE WATER
CU FT	CUBIC FEET		
DEFL	DEFLECTION	R	RIGHT
DEMO	DEMOLITION	RE	RECYCLE
DIA, Ø	DIAMETER	RCP	REINFORCED CONCRETE PIPE
DIP	DUCTILE IRON PIPE	REINF	REINFORCE (D) (ING) (MENT)
DN	DOWN	REQD	REQUIRED
DR	DRAIN	ROW	RIGHT OF WAY
DTO	DAFT THICKENER OVERFLOW		
DWG	DRAWING	S	SOUTH
DWP	DYNAMIC WET PRESSURE	SAN	SANITARY SEWER
E	EAST, EASTING, ELECTRIC	SCH	SCHEDULE
EL	ELEVATION	SEC	SECTION
ELEC	ELECTRICAL	SF	SQUARE FOOT
ESMT	EASEMENT	SPEC	SPECIFICATION
EW	EACH WAY	SS	SANITARY SEWER
EXP BT	EXPANSION BOLT	SST	STAINLESS STEEL
EXIST	EXISTING	STA	STATION
FCA	FLANGED COUPLING ADAPTER	STD	STANDARD
FECL3	FERRIC CHLORIDE	STL	STEEL
FES	FLARED END SECTION	SW	SEAL WATER
FF	FINISH FLOOR	T&B	TOP AND BOTTOM
FL	FLOW LINE	TB	THRUST BLOCK
FLG	FLANGE	TEMP	TEMPORARY
FM	FORCEMAIN	TH	TEST HOLE
FRP	FIBERGLASS REINFORCED PLASTIC	THD	THREAD (ED)
FT	FEET	THK	THICK
G	GAS	TYP	TYPICAL
GA	GUY ANCHOR	UE	UNDERGROUND ELECTRICAL
GB	GRADE BREAK	UT	UNDERGROUND TELEPHONE
HWL	HIGH WATER LINE	V	VERTICAL
HORIZ	HORIZONTAL	VCP	VITRIFIED CLAY PIPE
HWY	HIGHWAY		
ID	INSIDE DIAMETER	WL	WATER LINE
INSUL	INSULATION	W	WEST, WATER
INV	INVERT	W/	WITH
INV EL	INVERT ELEVATION	W/O	WITHOUT
JT	JOINT	XSECT	CROSS SECTION
L	LEFT		
LB	POUND		
LF	LINEAR FOOT		
LR	LONG RADIUS		
LWL	LOW WATER LEVEL		

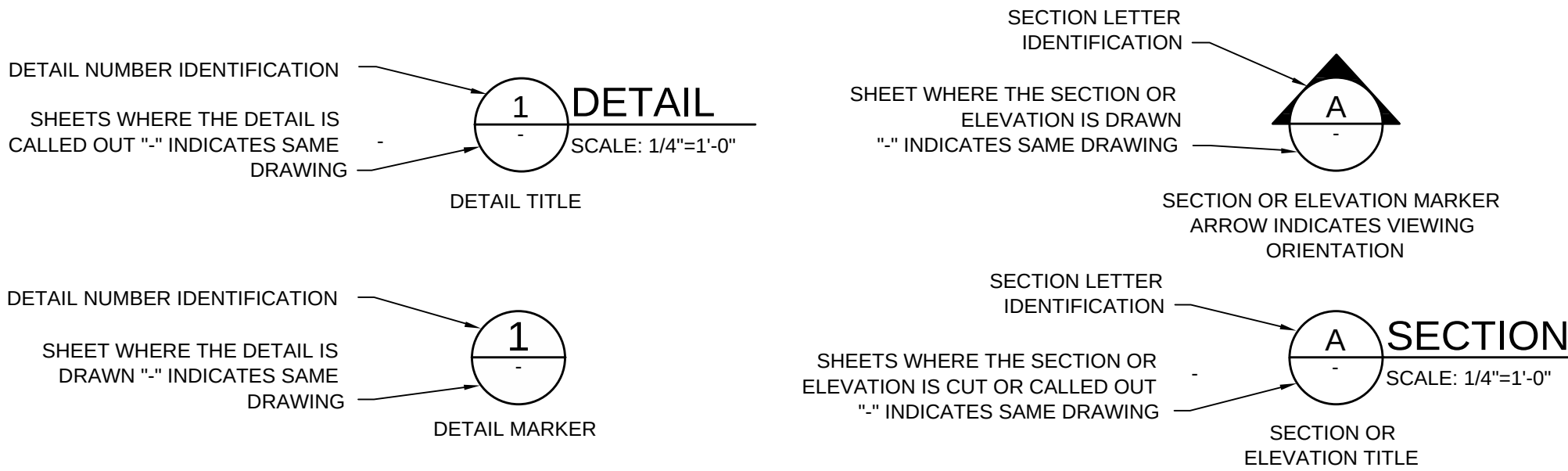
LEGEND

	EXISTING SANITARY AND MISC YARD PIPING		EARTH
	PROPOSED SEWER LINE AND MANHOLE		GROUT (IN SECTION) OR CRUSHED STONE (IN PLAN)
	EXISTING GAS LINE & METER		GRAVEL, RIPRAP OR STONE
	EXISTING TELEPHONE LINE		CONCRETE
	EXISTING OVERHEAD ELECTRIC W/ TOWER		RIGID INSULATION
	EXISTING UNDERGROUND ELECTRIC		BUSHES, TREES
	PROPOSED NEW UNDERGROUND ELECTRIC		EXISTING STRUCTURE
	CONSTRUCTION EASEMENT LINE		NEW STRUCTURE
	PERMANENT EASEMENT LINE		DRAINAGE FLOW LINE
	PROPERTY LINE		EXISTING FENCE
	CENTERLINE		EXISTING CULVERT
	WALL SLEEVE		NEW CULVERT
	SURVEY CONTROL POINT		PROPOSED CONTOUR
	EXISTING ELECTRIC METER		EXISTING CONTOUR
	EXISTING ELECTRIC VAULT		WYE
	EXISTING TRANSFORMER		LINE TURNING UP
	MECHANICAL JOINT		LINE TURNING DOWN
	FLANGED JOINT		REDUCER
	GROOVED JOINT		STRAINER
	FCA JOINT		HARNESS
	BELL RESTRAIN HARNESS JOINT		THRUST BLOCK
	NEW PIPE IN SECTION		
	BALL VALVE		
	CHECK VALVE		
	GATE VALVE		
	PRESSURE REDUCING VALVE		
	PLUG VALVE		

HATCH PATTERN

	BUILDING LIMITS		ASPHALT LIMITS
	CONCRETE LIMITS		GRAVEL LIMITS

SYMBOLS



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1	10/16/15	60% ISSUED FOR REVIEW	BSJ

SOUTH METRO WISE AUTHORITY
CONNECTIONS

SHEET INDEX, LEGEND,
SYMBOLS AND
ABBREVIATIONS

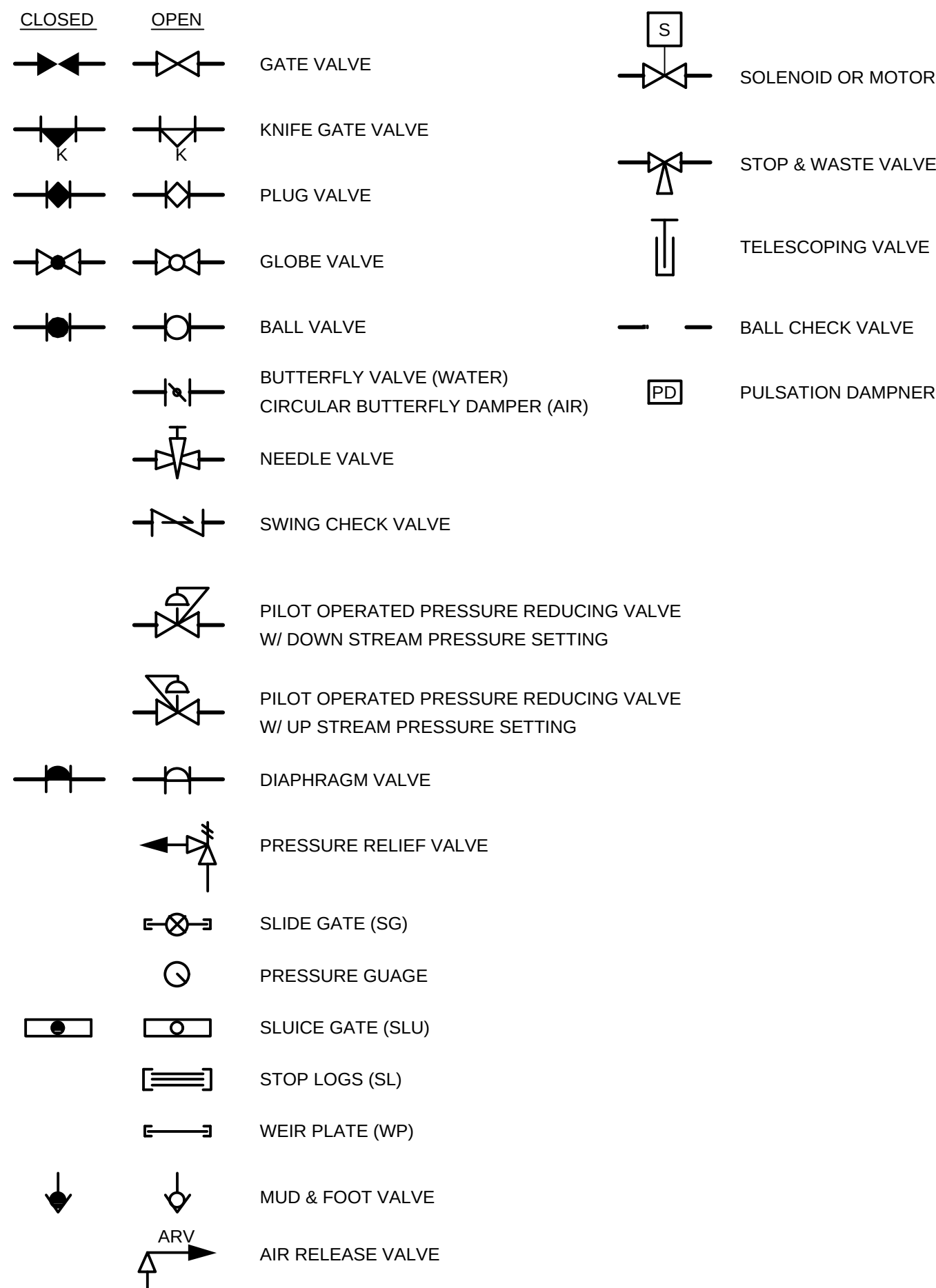
Project No.:	133-08362-15001
Designed By:	BSJ
Drawn By:	TRS
Checked By:	BSJ

G-001

Bar Measures 1 inch

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VALVE SYMBOLS

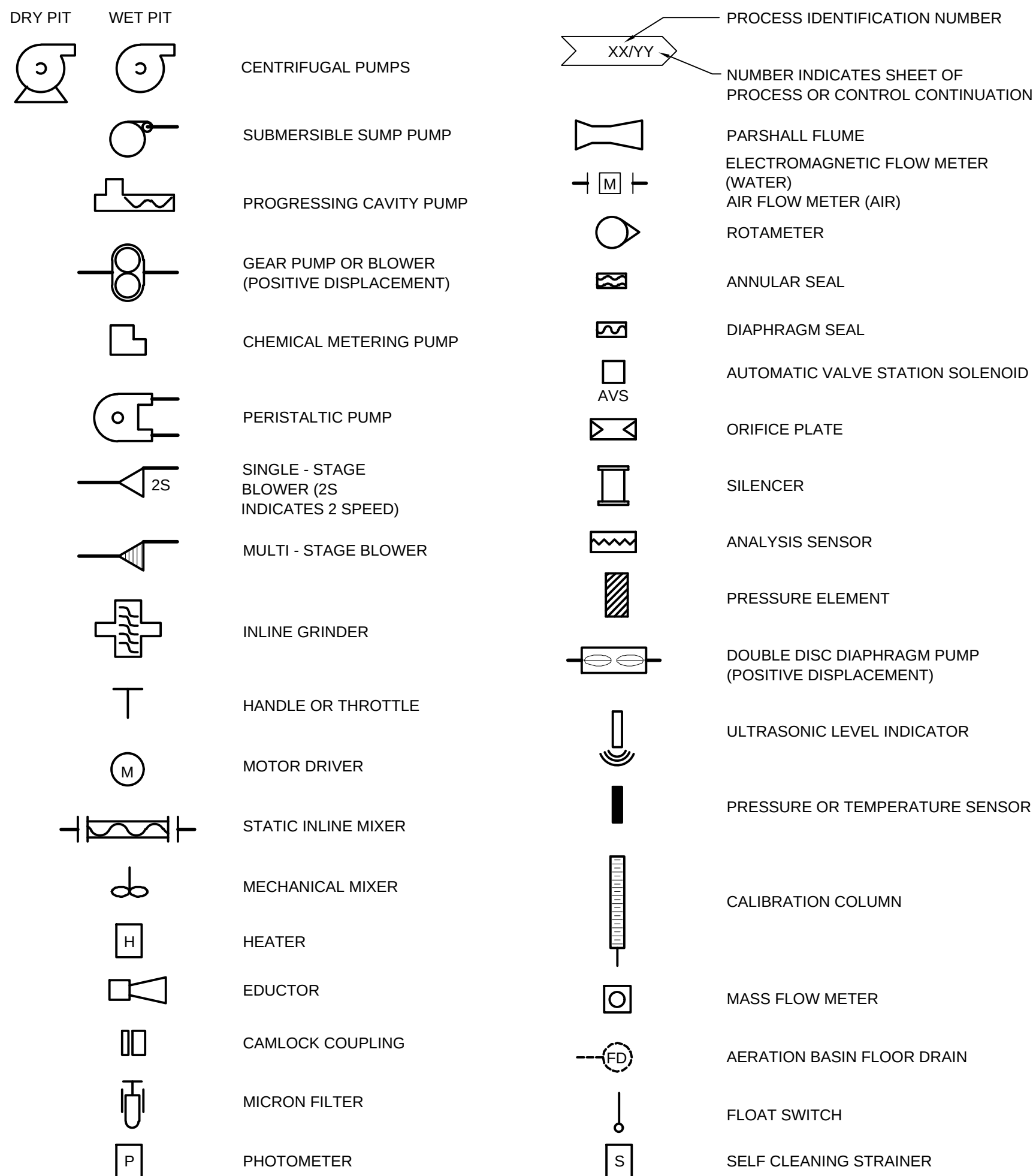


INSTRUMENT IDENTIFICATION LETTERS

(INSTRUMENT SOCIETY OF AMERICA)

FIRST - LETTER			SUCCEEDING - LETTERS		
	MEASURED OR INITIATING VARIABLE		READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONTROL			CONTROL	CLOSED
D	USER'S CHOICE	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE	MOMENTARY			MIDDLE, INTERMEDIATE
N	TORQUE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	FAILURE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

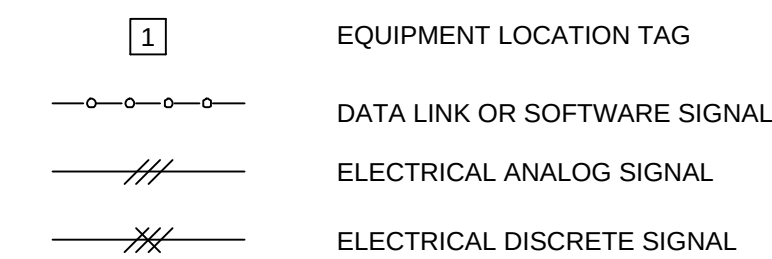
P&ID EQUIPMENT SYMBOLS



COMMON INSTRUMENT & DEVICE DESIGNATIONS

TAG	DESIGNATION
DO	DISSOLVED OXYGEN
FE	FLOW ELEMENT
FIT	FLOW INDICATOR/TRANSMITTER
HC	HAND CONTROL
HOA	HAND-OFF-AUTO
HS	HAND SWITCH
OCA	OPEN-CLOSE-AUTO
OCSA	OPEN-CLOSE-STOP-AUTO
ORP	OXYGEN REDUCTION POTENTIAL
PSL	PRESSURE SWITCH LOW
PSH	PRESSURE SWITCH HIGH
SC	SPEED COMMAND
SI	SPEED INDICATION
SS	SUSPENDED SOLIDS OR START-STOP
UA	EQUIPMENT FAULT STATUS
YL	EQUIPMENT RUNNING STATUS
YS	EQUIPMENT IN AUTO OR REMOTE STATUS
ZSC	VALVE POSITION FULL CLOSE
ZSI	VALVE POSITION INDICATOR
ZSO	VALVE POSITION FULL OPEN

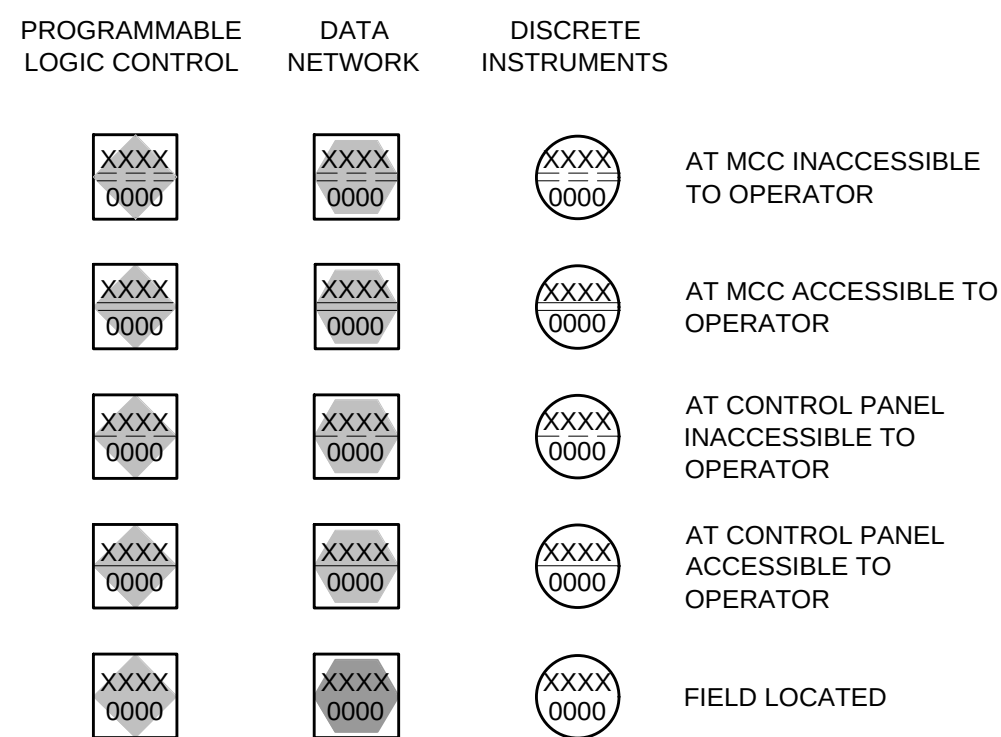
INSTRUMENTATION LEGEND



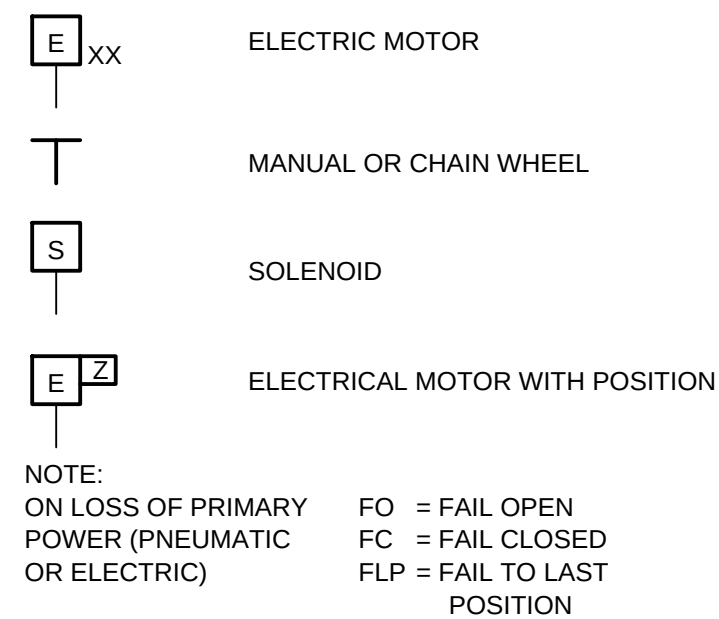
GENERAL NOTES

1. THIS IS A STANDARD LEGEND, THEREFORE NOT ALL OF THIS INFORMATION MAY BE USED ON THIS PROJECT.
2. P & ID INSTRUMENTATION DETAILS DO NOT REPRESENT INSTRUMENTS AND CONTROLS INTEGRAL TO VENDOR SUPPLIED CONTROL PANELS OR EQUIPMENT. SEE EQUIPMENT SPECIFICATIONS FOR THIS INFORMATION.
3. P & ID DOES NOT REPRESENT CONTROL STRATEGIES OR INTERACTIONS. REFERENCE SECTION 16905, ELECTRICAL ELEMENTARY SCHEMATICS FOR THIS INFORMATION.
4. P & ID DOES NOT REPRESENT EQUIPMENT HARDWIRED INTERLOCK AND ENABLE CIRCUITRY. REFERENCE MCC CONTROL NARRATIVES FOR THIS INFORMATION.

P&ID INSTRUMENT SYMBOLS



ACTUATOR SYMBOLS



PIPING SERVICE ABBREVIATIONS

AIR	PROCESS AIR	PEFF	PRIMARY EFFLUENT
BIO	BIOSOLIDS	PD	PUMPED DRAIN
BWS	BACKWASH SUPPLY	POL	POLYMER
BWW	BACKWASH WASTE	POL SOL	POLYMER SOLUTION
		PSC	PRIMARY SCUM
		PW	POTABLE WATER
CA	COMPRESSED AIR		
CD	CHEMICAL DRAIN	RAS	RETURN ACTIVATED SLUDGE
CEN	CENTRATE	RRAS	RAPID RETURN ACTIVATED SLUDGE
CG	CHLORINE GAS	RW	REUSE WATER
CH	CHEMICAL		
CLS	CHLORINE SOLUTION	SAN	SANITARY SEWER
CV	CHLORINE VENT	SCN	SCREENINGS
CW	COLD POTABLE WATER	SE	SECONDARY EFFLUENT
		SHC	SODIUM HYPOCHLORITE
D	DRAIN	SLC	SLOPPY CAKE
DBIO	DEWATERED BIOSOLIDS	SNT	SUPERNATANT (DIGESTER)
		SSC	SECONDARY SCUM
FAD	FOUL AIR DUCT	ST	SLUDGE TRANSFER
FEFF	FINAL EFFLUENT	STM	STORM SEWER
FM	FORCEMAIN	SW	SOFTENED WATER
FO	FIBER OPTIC		
FS	FERRIC SULFATE	TEFF	TERTIARY EFFLUENT
		TD	TANK DRAIN
GR	GRIT	TSL	THICKENED SLUDGE
GU	GRIT UNDERDRAIN	TWAS	THICKENED WASTE ACTIVATED SLUDGE
HOCI	HYPOCHLORITE	V	SANITARY VENT
HW	HOT WATER		
		W	WATER
ML	MIXED LIQUOR	WAS	WASTE ACTIVATED SLUDGE
		WW	WASTEWATER (INFLUENT TO PLANT)
NPW	NON-POTABLE WATER	WWFM	WASTEWATER FORCE MAIN
OF	OVERFLOW		
OSA	OUTSIDE AIR		

AURORA CONNECTION & PRV CONNECTION
SURVEY CONTROL NOTES

1. BASIS OF BEARINGS: THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 19, TOWNSHIP 5 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN IS CONSIDERED TO BEAR NORTH 89°26'01" EAST.
2. BENCHMARK: CITY OF AURORA BENCHMARK 556519SW001 BEING A 3" BRASS CAP STAMPED "SLP - 125.5 2005" LOCATED AT THE SOUTHWEST CORNER OF SOUTH MAIN STREET AND SOUTH SOUTHLANDS PARKWAY ON AN INLET NEAR THE SOUTH PCR.

NGVD29 ELEV=6064.46'
3. PROJECT COORDINATES ARE DERIVED FROM COLORADO STATE PLANE CENTRAL NAD83(92) COORDINATES USING THE FOLLOWING FORMULAS:

PROJECT NORTHING = (STATE PLANE NORTHING * 1.0003094706) - 112.30'
PROJECT EASTING = (STATE PLANE EASTING * 1.0003094706) - 220.23'

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[illegible]

SOUTH METRO WISE AUTHORITY

CONNECTIONS

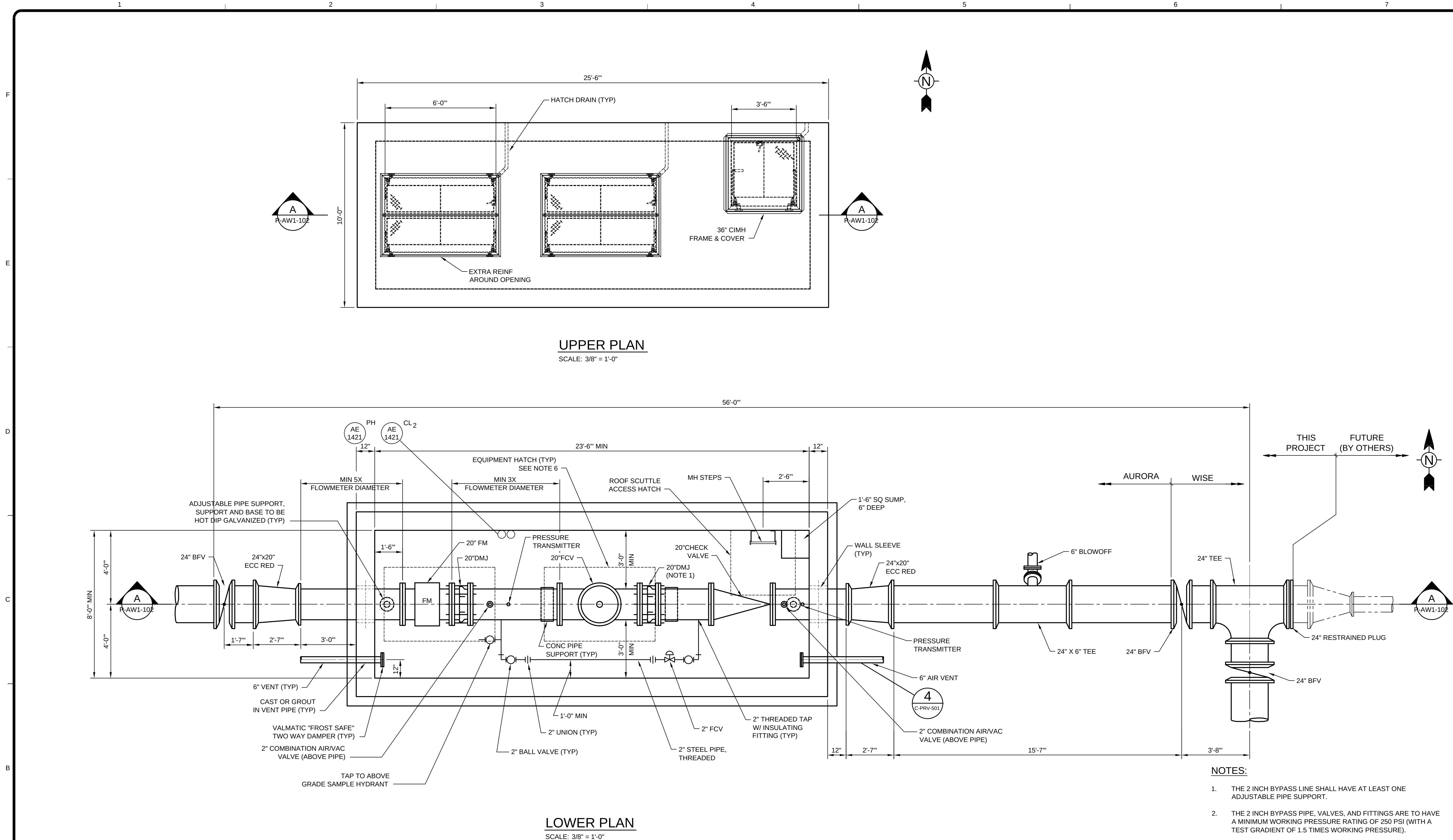
P&ID LEGEND

AND ABBREVIATIONS

Project No.:	133-08362-15001
Designed By:	JLC
Drawn By:	TRS
Checked By:	BSJ

G-003

10/21/2015 10:56:57 AM - T:\08362\133-08362-15001\CAD\SHEETFILES\1-AW1-101 VAULT UPPER AND LOWER PLANS.DWG - SPERRY, TY



UPPER PLAN
SCALE: 3/8" = 1'-0"

LOWER PLAN
SCALE: 3/8" = 1'-0"

- NOTES:**
- THE 2 INCH BYPASS LINE SHALL HAVE AT LEAST ONE ADJUSTABLE PIPE SUPPORT.
 - THE 2 INCH BYPASS PIPE, VALVES, AND FITTINGS ARE TO HAVE A MINIMUM WORKING PRESSURE RATING OF 250 PSI (WITH A TEST GRADIENT OF 1.5 TIMES WORKING PRESSURE).
 - ALL JOINTS SHALL BE RESTRAINED.
 - FCV PILOT LINES SHALL BE INSULATED.
 - PRESSURE TRANSMITTER TAPS TO BE 1/2" WITH BALL VALVE WITH MINIMUM WORKING PRESSURE RATING OF 250 PSI.
 - HATCH OVER THE FLOW METER AND FCV SHALL BE BILCO JD-3AL (48"x72"). THE ROOF SCUTTLE SHALL BE A BILCO TYPE E-50 ROOF HATCH WITH A LADDER-UP SAFETY POST AND RAILING SYSTEM TO MEET OSHA CFR 1910.23.
 - VAULT INTERIOR LIGHTING IS REQUIRED.
 - ELECTRICAL RECEPTACLE OUTLET REQUIRED NEAR THE TOP OF THE LADDER AND INSIDE VAULT.
 - LOCATE ANALYZERS AE-1421 AND AE-1422 IN PIPELINE WITH BALL VALVE TO ISOLATE. AITS SHALL BE WALL MOUNTED IN VAULT.

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SOUTH METRO WISE AUTHORITY	CONNECTIONS
VAULT	UPPER AND LOWER PLANS

Project No.:	133-08362-15001
Designed By:	WJR
Drawn By:	TRS
Checked By:	BSJ

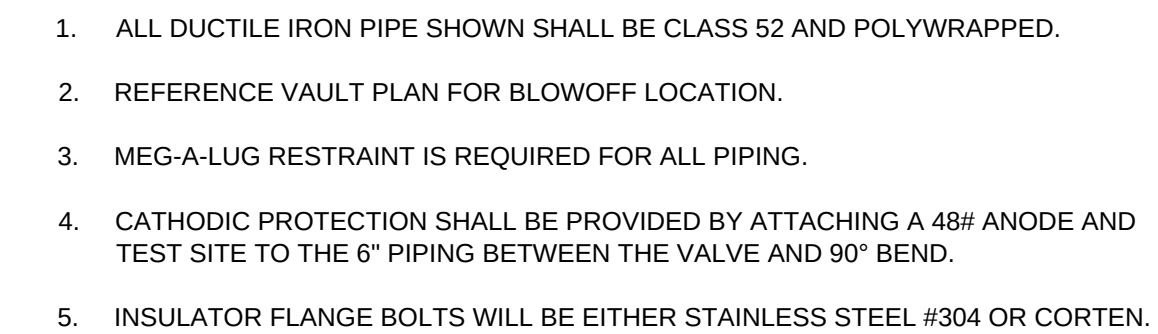
P-AW1-101

Bar Measures 1 inch

PRELIMINARY
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1. ALL PIPING IN VAULT IS TO BE DUCTILE IRON, UNLESS NOTED OTHERWISE.
2. PROVIDE 2" OF RIGID INSULATION ALL AROUND STRUCTURE. TERMINATE INSULATION 6" BELOW GRADE AND EXTEND DOWN 4'-6".



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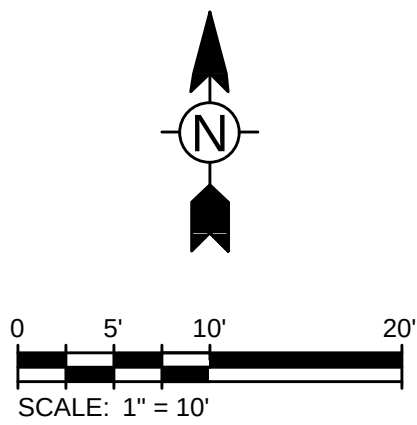
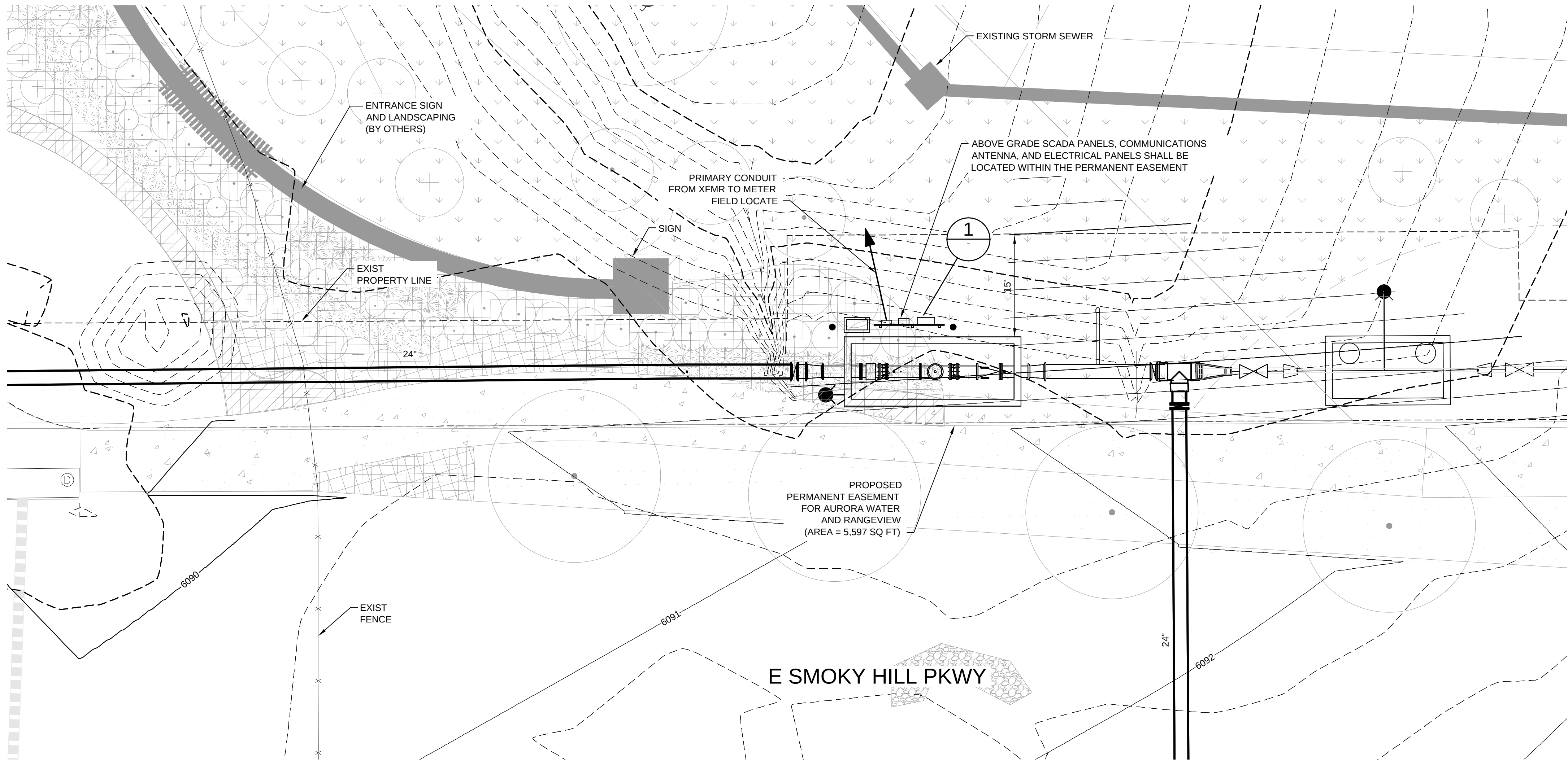
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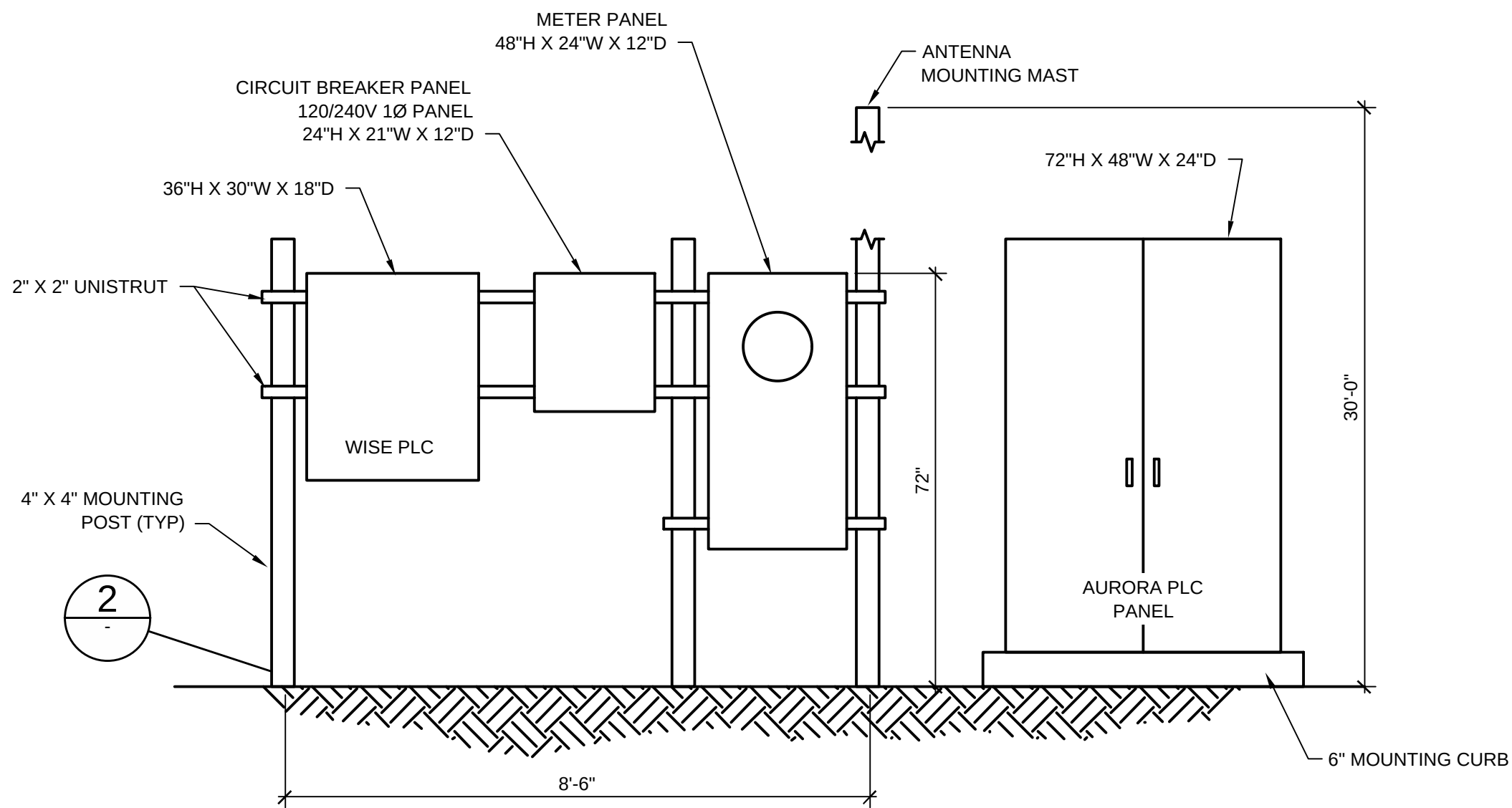
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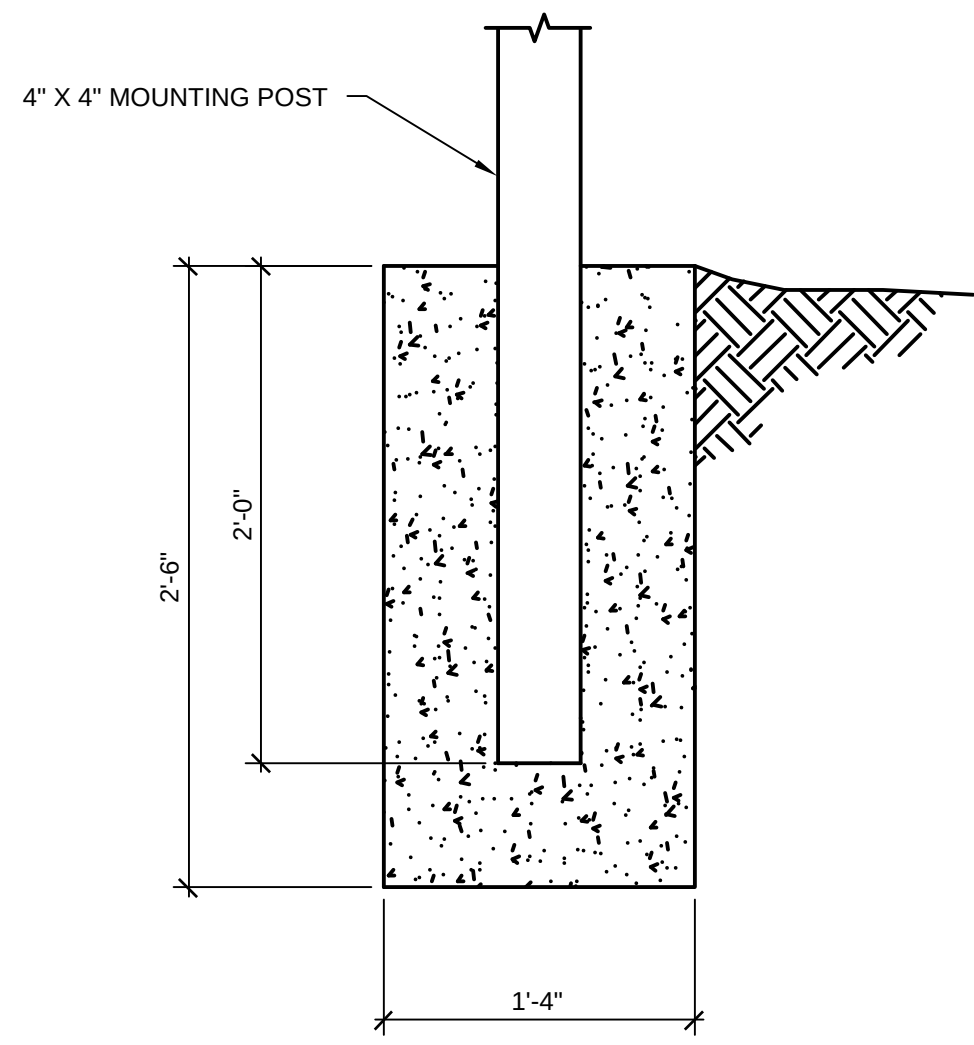
7



ELECTRICAL SITE PLAN
SCALE: 1" = 10'



1 DETAIL
NTS



2 DETAIL
NTS



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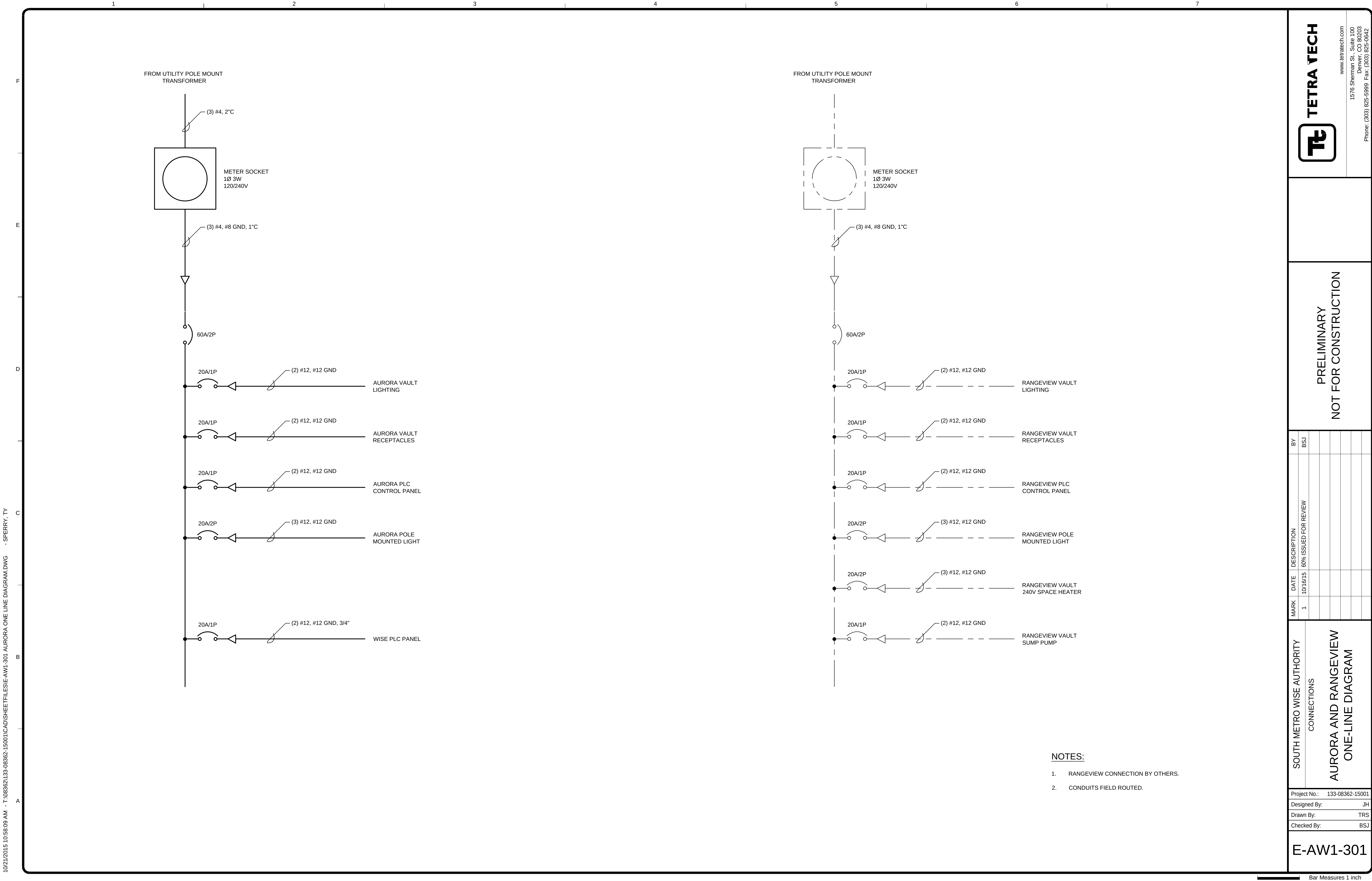
SOUTH METRO WISE AUTHORITY
CONNECTIONS
ELECTRICAL SITE PLAN

Project No.: 133-08362-15001
Designed By: DI
Drawn By: TRS
Checked By: WJR

E-AW1-001

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Bar Measures 1 inch



10/21/2015 10:58:27 AM - T:\08362\133-08362-15001\CAD\SHEETFILES\C-PRV-202\PLAN AND PROFILE.DWG - SPERRY, TY

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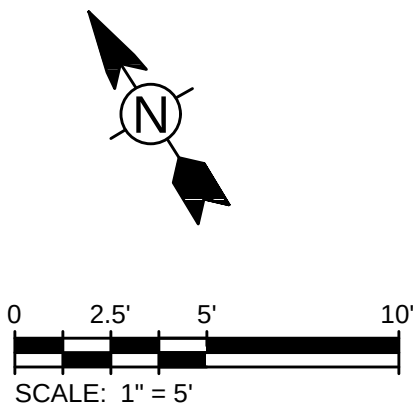
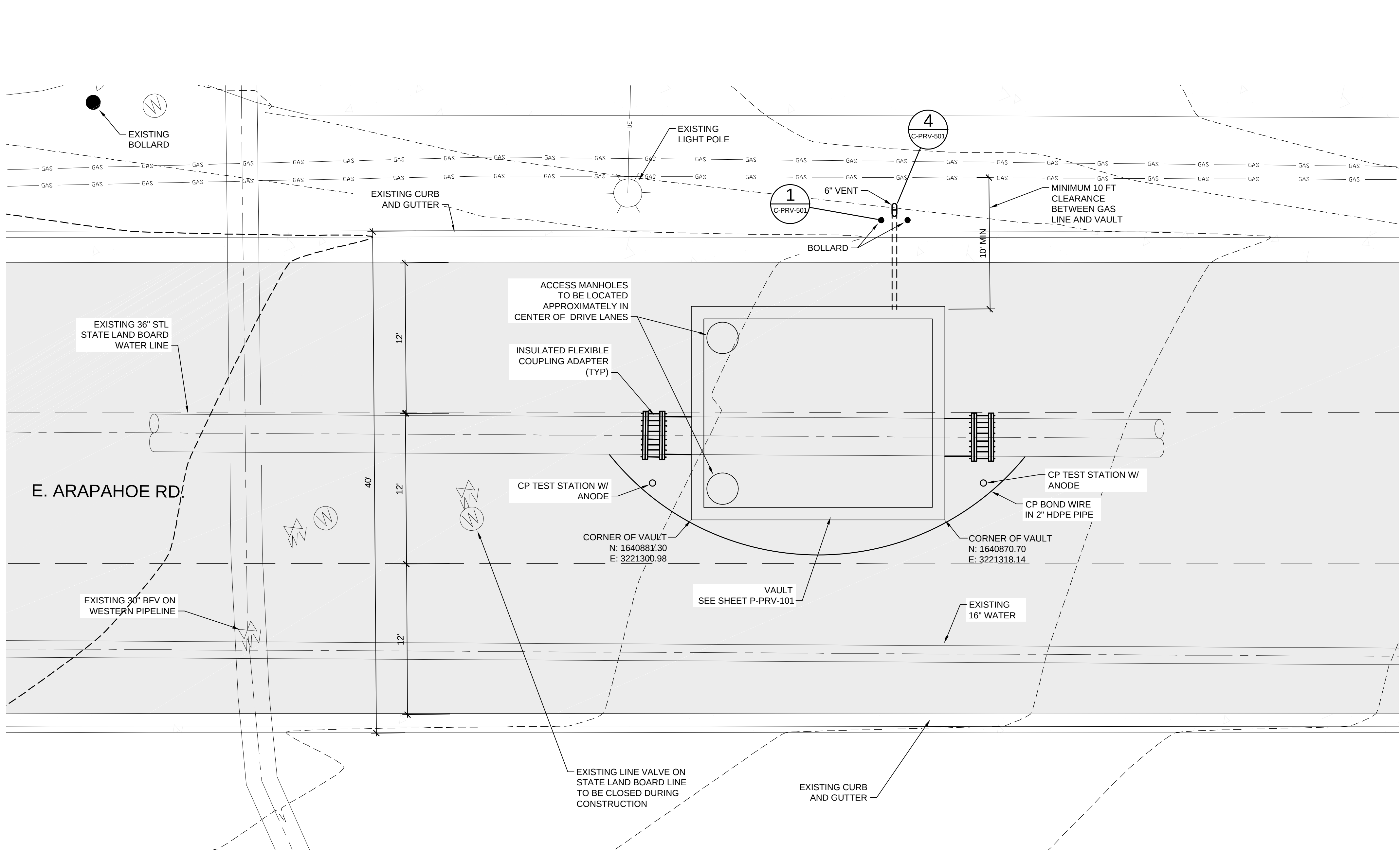
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4

5

6

7



PRV VAULT PLAN
SCALE: 1" = 5'

SOUTH METRO WISE AUTHORITY

CONNECTIONS

SITE PLAN

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Drawn By:	TRS
Checked By:	BSJ

C-PRV-202

Bar Measures 1 inch

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F

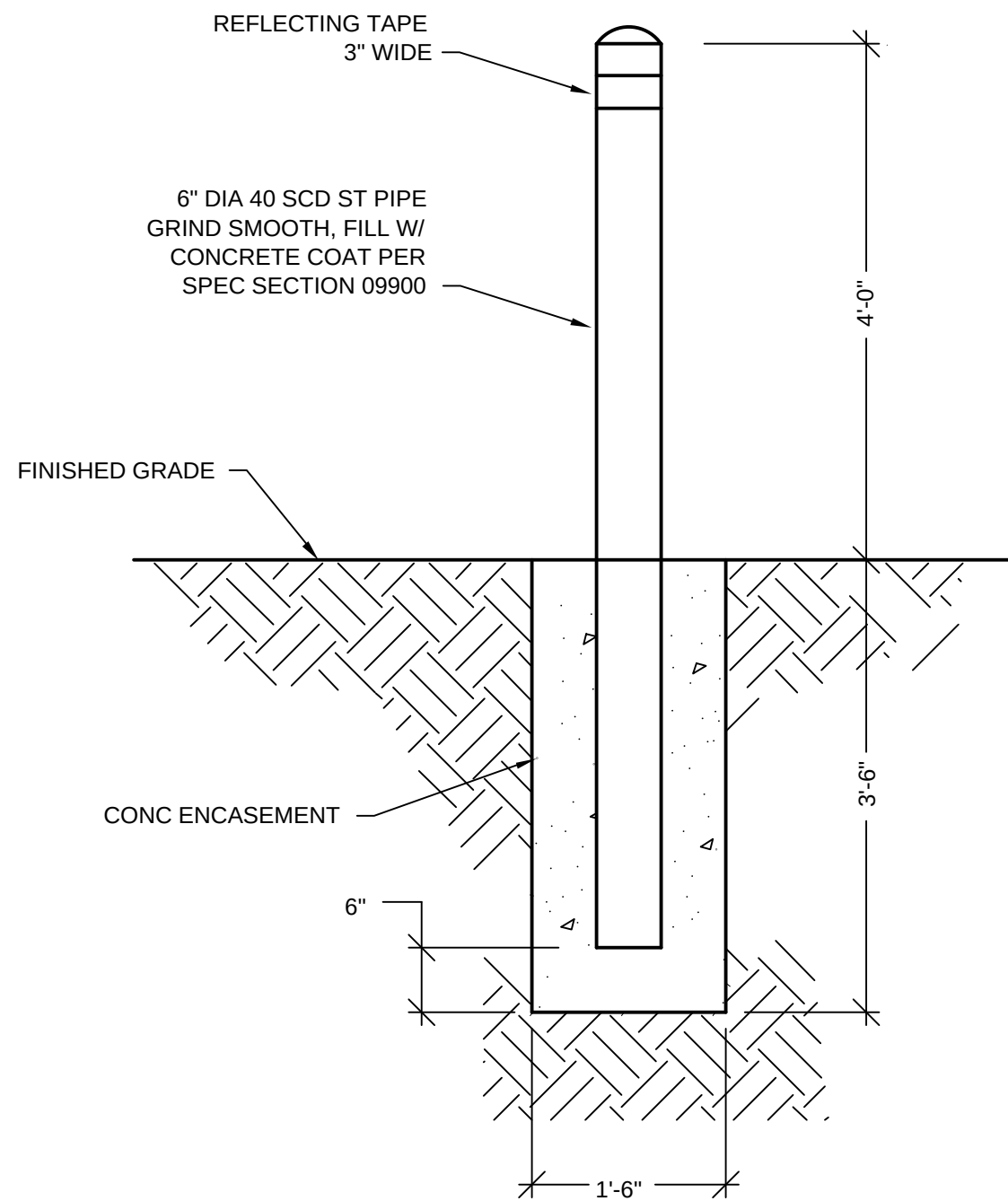
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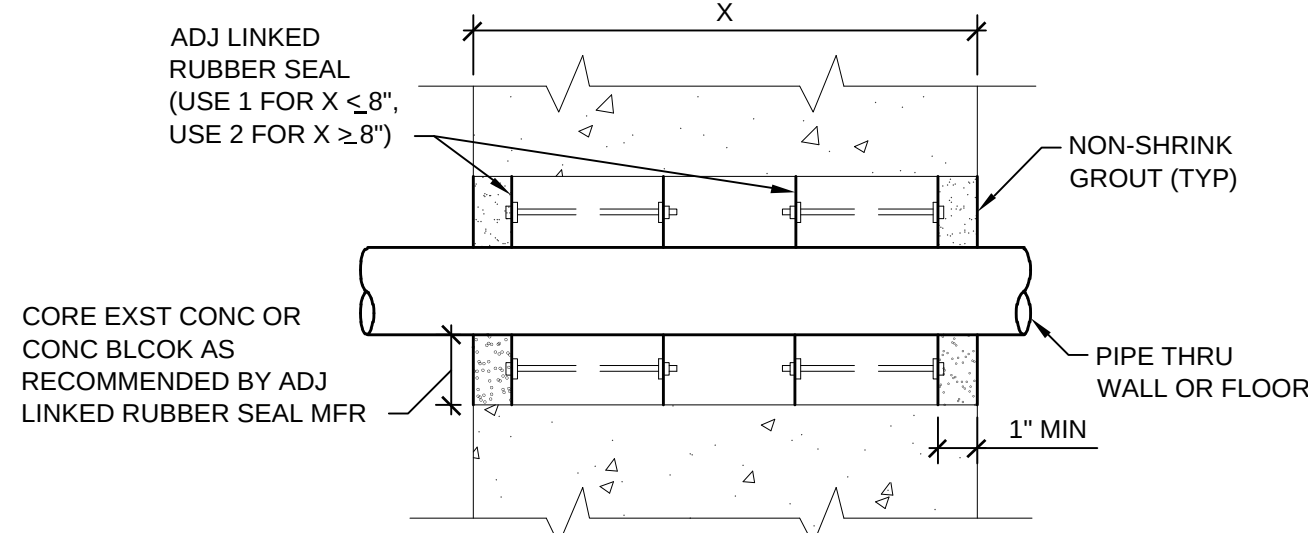
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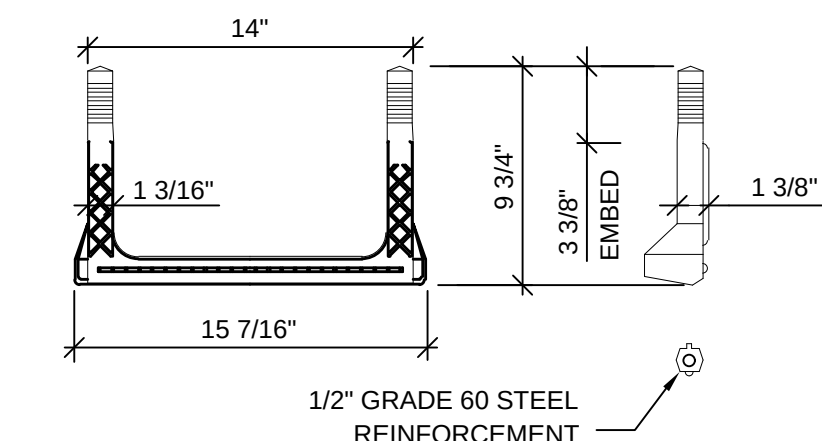
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1 BOLLARD DETAIL
3/4" = 1'-0"

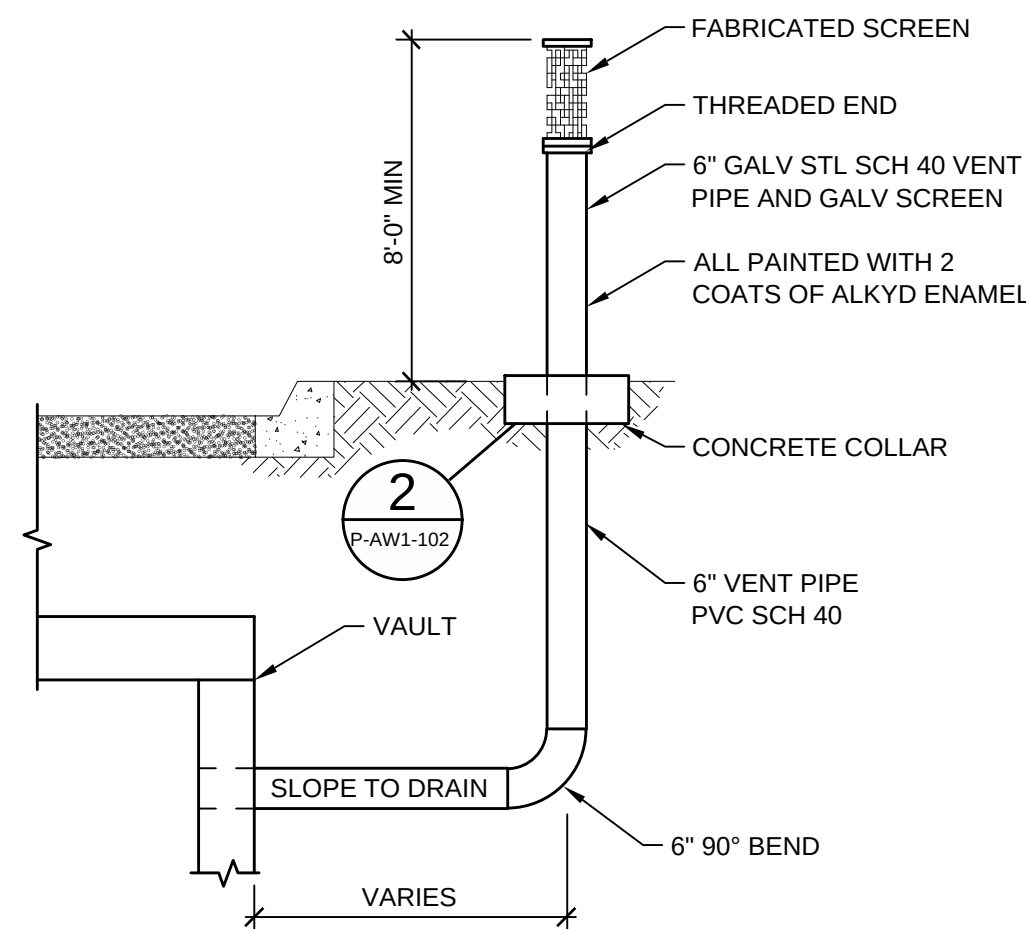


2 WALL SLEEVE DETAIL
SCALE: NTS

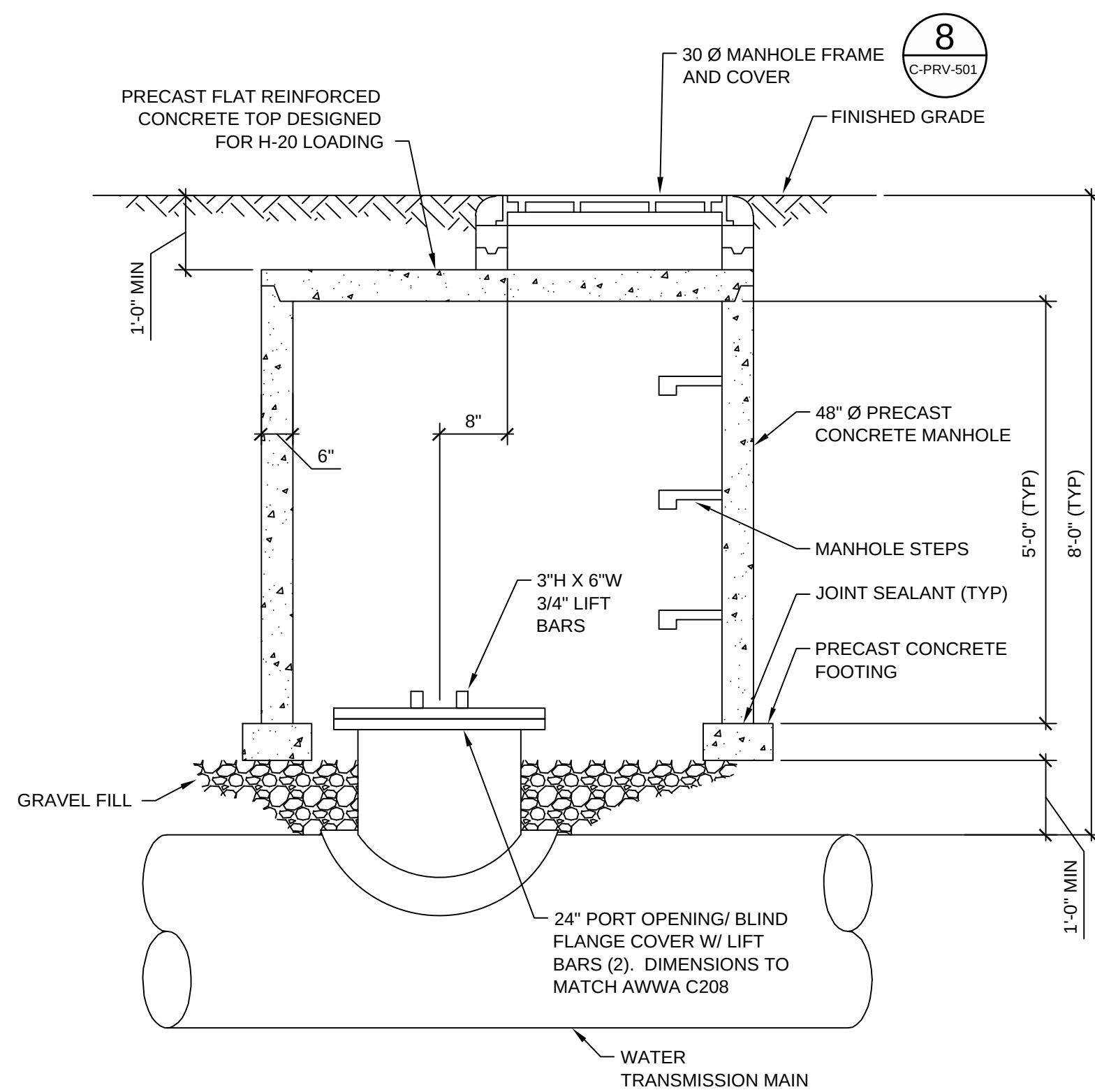


NOTE:
USE COPOLYMER POLYPROPYLENE PLASTIC STEPS FOR ALL MH STEPS

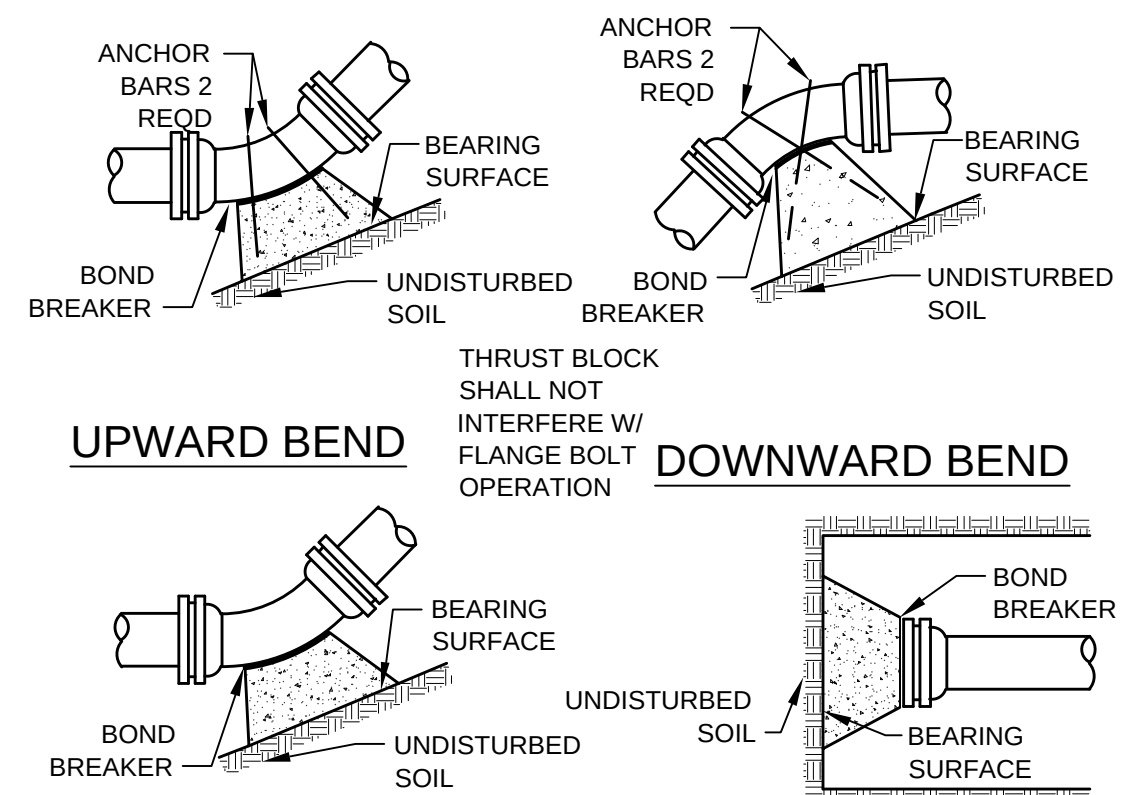
3 PLASTIC MANHOLE STEP DETAIL
NTS



4 VENT DETAIL
NTS



5 ACCESS MANWAY DETAIL
NTS

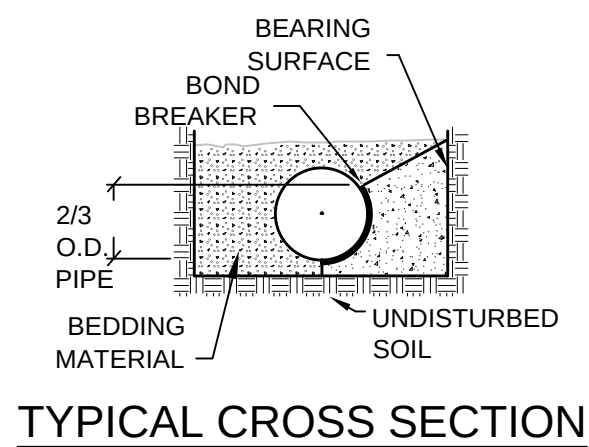


UPWARD BEND

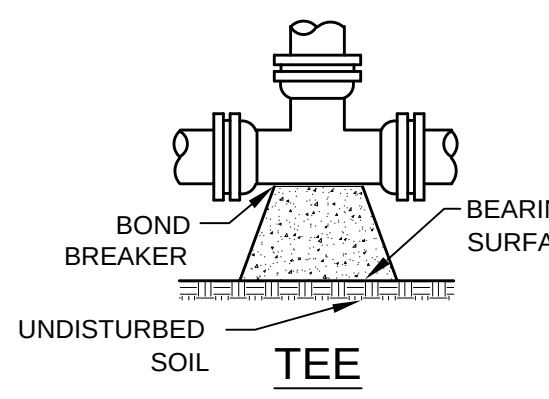
DOWNWARD BEND

11.25°, 22.5°, 45° AND 90°
BENDS

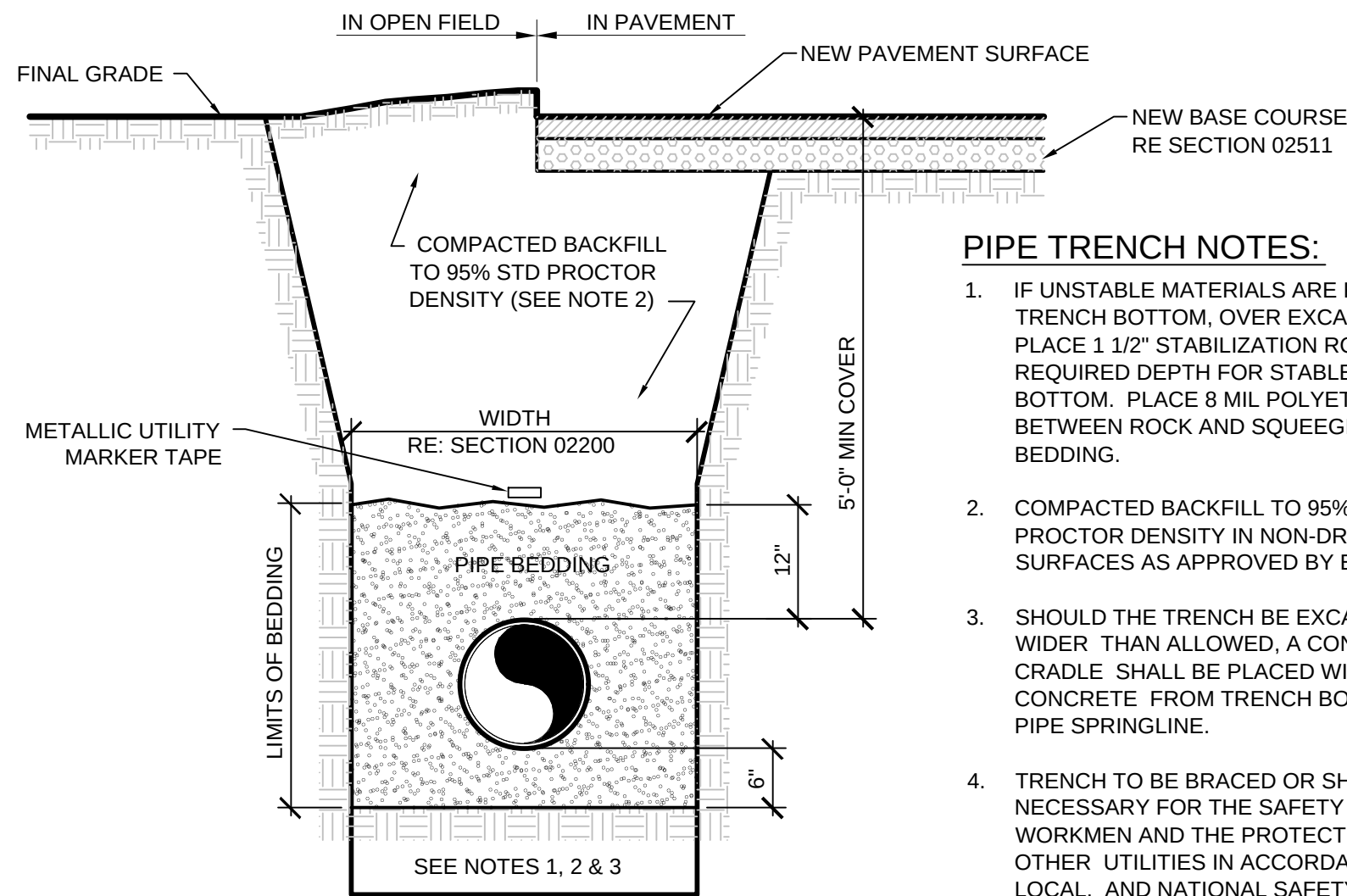
DEAD END



6 THRUST BLOCK DETAIL
NTS



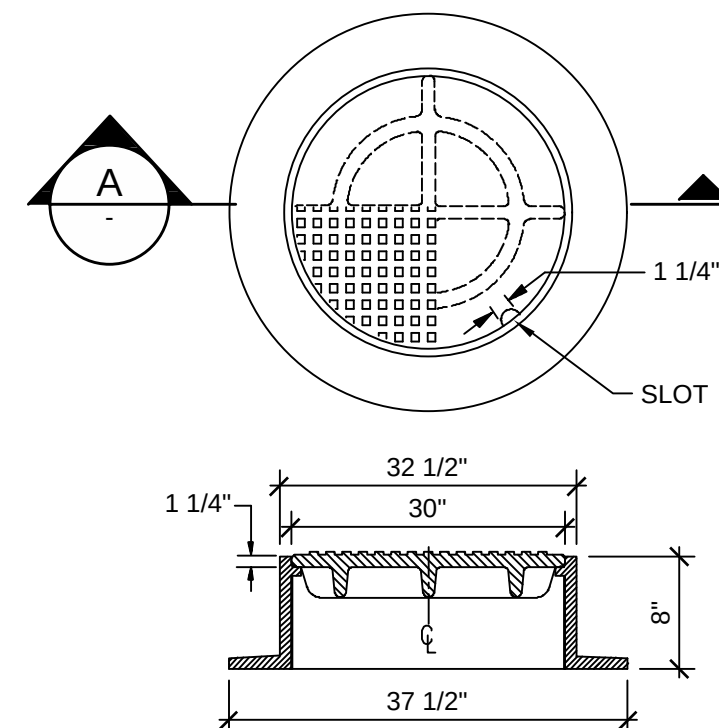
TEE



7 TYPICAL PIPE TRENCH SECTION
NTS

PIPE TRENCH NOTES:

- IF UNSTABLE MATERIALS ARE FOUND IN TRENCH BOTTOM, OVER EXCAVATE AND PLACE 1 1/2" STABILIZATION ROCK TO REQUIRED DEPTH FOR STABLE TRENCH BOTTOM. PLACE 8 MIL POLYETHYLENE BETWEEN ROCK AND SQUEEGEE BEDDING.
- COMPACTED BACKFILL TO 95% STD PROCTOR DENSITY IN NON-DRIVING SURFACES AS APPROVED BY ENGINEER.
- SHOULD THE TRENCH BE EXCAVATED WIDER THAN ALLOWED, A CONCRETE CRADLE SHALL BE PLACED WITH 2500psi CONCRETE FROM TRENCH BOTTOM TO PIPE SPRINGLINE.
- TRENCH TO BE BRACED OR SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKMEN AND THE PROTECTION OF OTHER UTILITIES IN ACCORDANCE WITH LOCAL AND NATIONAL SAFETY REGULATIONS.
- MINIMUM COVER TO BE 5'-0" BELOW FINAL GRADE, UNLESS SHOWN OTHERWISE.



SECTION A-A

8 MANHOLE RING AND COVER
NTS

PIPE SIZE	TEE, WYE, PLUG OR CAP	BENDS			
		90°	45°	22.5°	11.25°
4"	1.4	2.0	1.1	0.6	0.3
6"	3.2	4.5	2.4	1.2	0.6
8"	5.7	8.0	4.3	2.2	1.1
10"	8.8	12.5	6.8	3.4	1.7
12"	12.7	18.0	9.7	5.0	2.5
14"	17.3	24.5	13.3	6.8	3.4
18"	28.6	40.5	21.9	11.2	5.6
24"	50.9	72.0	39.0	19.9	10.0
30"	79.5	112.5	60.9	31.0	15.6
36"	114.5	161.9	87.6	44.7	22.4
42"	155.9	220.4	119.3	60.8	30.6
48"	203.6	287.9	155.8	79.4	39.9

MINIMUM BEARING SURFACE AREA

NOTES:

- BEARING SURFACES SHOWN IN CHART ARE MINIMUM SQUARE FEET.
- BASED ON SOIL BEARING CAPACITY OF 2,000 lb/s.f.
- TEST PRESSURE = 150 psi
- TYPE II PORTLAND CEMENT, USE 3000 lb CONCRETE
- FOR DIFFERENT TEST PRESSURES AND SOIL BEARING PRESSURES, USE THE EQUATION:
BEARING AREA: (TEST PRESSURE/150 psi) x (2,000/SOIL BEARING PRESSURE) x TABLE VALUE

6 THRUST BLOCK DETAIL
NTS

TETRA TECH



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BY	BSJ	DATE	DESCRIPTION	MARK
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SOUTH METRO WISE AUTHORITY
CONNECTIONS
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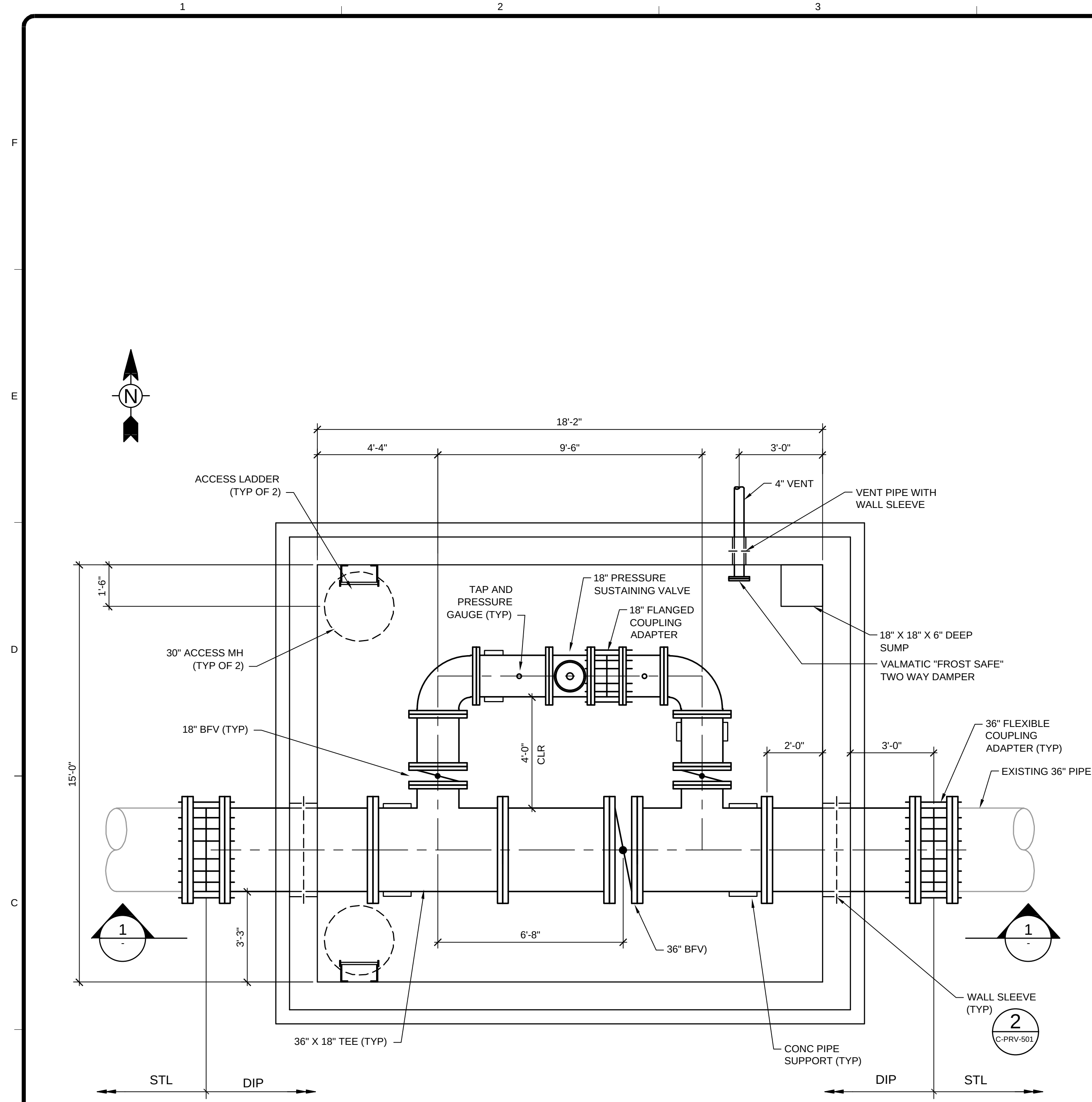
Project No.:	133-08362-15001
Designed By:	AD
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Checked By:	BSJ

C-PRV-501

Bar Measures 1 inch

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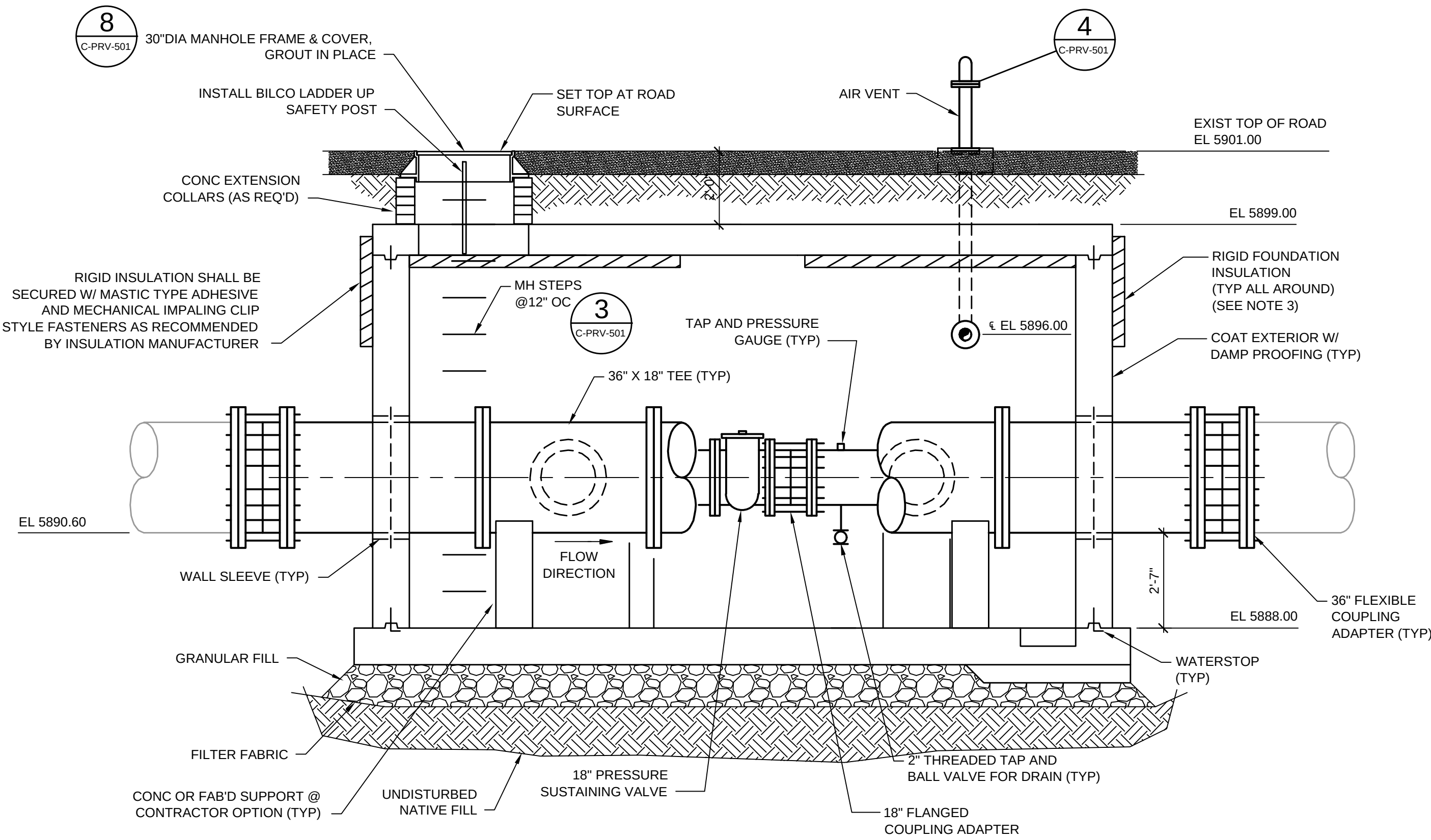


NOTES:

- ALL JOINTS SHALL BE RESTRAINED.
- PSV PILOT LINES SHALL BE INSULATED.

PLAN

SCALE: 3/8" = 1'-0"

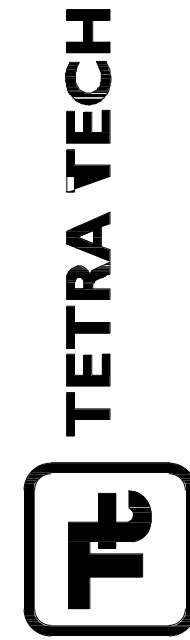


NOTES:

- ALL PIPING IN VAULT IS TO BE DUCTILE IRON, UNLESS NOTED OTHERWISE.
- ENTIRE VAULT IS TO BE WATERTIGHT.
- PROVIDE 2" OF RIGID INSULATION ALL AROUND STRUCTURE. TERMINATE INSULATION 6" BELOW GRADE AND EXTEND DOWN 4'-6". RIGID FOUNDATION INSULATION SHALL BE ASTM C578, TYPE 4, EXTRUDED CELLULAR POLYSTYRENE FOAM BOARD W/ WATER VAPOR TRANSMISSION FACTOR OF 1.1 PERM-IN MAX, MIN R VALUE OF 5 PER INCH, AS MANUFACTURED BY DOW STYROFOAM OR FOAMULAR, MASTIC ADHESIVE AS RECOMMENDED BY MANUFACTURE.
- ROOF SLAB SHALL BE REMOVABLE FOR FUTURE REMOVAL/REPLACEMENT OF PRESSURE SUSTAINING VALVE.
- PRE-CAST VAULT SUPPLIED BY VENDOR TO BE TRAFFIC RATED HS-20.

SECTION

SCALE: 3/8" = 1'-0"



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SOUTH METRO WISE AUTHORITY
CONNECTIONS
VAULT
PLAN AND SECTION

Project No.: 133-08362-15001
Designed By: WJR
Drawn By: TRS
Checked By: BSJ

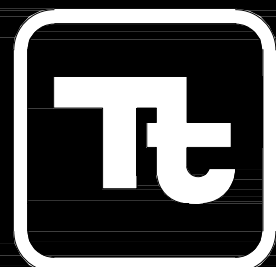
P-PRV-101

Bar Measures 1 inch

SOUTH METRO WISE AUTHORITY CONNECTIONS

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PROJECT LOCATION:
DENVER, COLORADO

CLIENT INFORMATION:

Tt PROJECT No.:
133-08362-15001

CLIENT PROJECT No.:

PROJECT DESCRIPTION / NOTES:

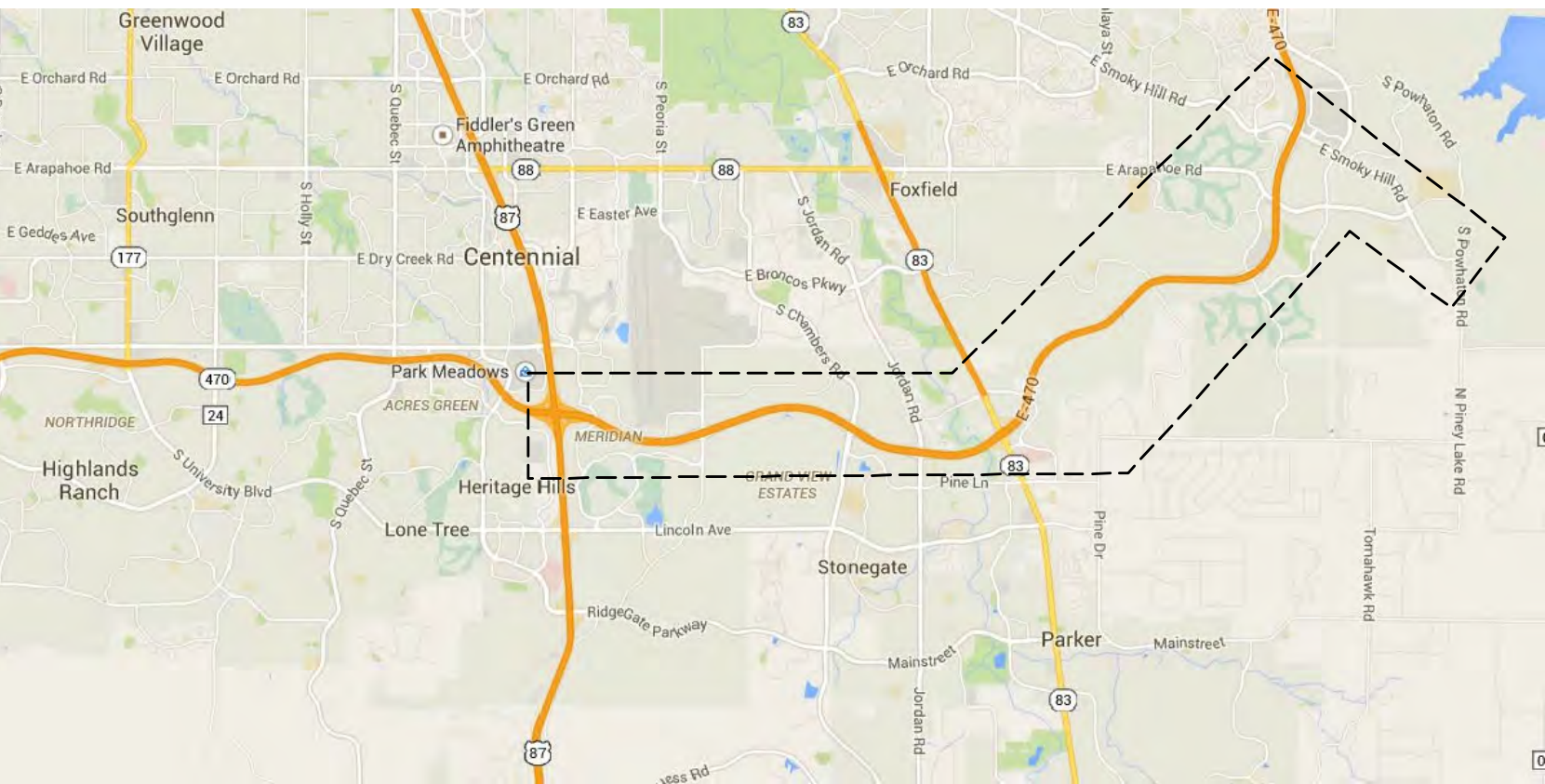
ISSUED:

OCTOBER 16, 2015 - 60% ISSUED FOR REVIEW - NOT FOR CONSTRUCTION
NOVEMBER 3, 2015 - ISSUED FOR PERMITTING - NOT FOR CONSTRUCTION
DECEMBER 17, 2015 - 95% ISSUED FOR REVIEW - NOT FOR CONSTRUCTION

AREA MAP:



VICINITY MAP
NOT TO SCALE



AREA MAP
NOT TO SCALE

SHEET INDEX		
SHEET NUMBER	SHEET TITLE	COA SHEET NUMBER
GENERAL		
G-000	COVER SHEET	1
G-001	SHEET INDEX, LEGEND, SYMBOLS AND ABBREVIATIONS	2
G-002	OVERALL VICINITY MAP	3
G-003	P&ID LEGEND AND ABBREVIATIONS	4
POWHATON ST. & SMOKY HILL RD. CONNECTION		
C-AW1-201	24" WATERLINE PLAN AND PROFILE AND EROSION CONTROL PLAN	5
P-AW1-101	VAULT UPPER AND LOWER PLANS	
P-AW1-102	VAULT SECTION	
M-AW1-101	VAULT PLAN	
M-AW1-102	VAULT SECTIONS	
I-AW1-002	P&ID AURORA CONNECTION	
E-AW1-001	ELECTRICAL SITE PLAN	
E-AW1-101	VAULT ELECTRICAL PLAN	
E-AW1-301	AURORA & RANGEVIEW ONE LINE DIAGRAM	
ARAPAHOE RD. & E-470 CONNECTION		
C-PRV-202	PRV SITE PLAN AND EROSION CONTROL PLAN	6
C-PRV-501	CIVIL DETAILS	7
C-PRV-502	EROSION CONTROL DETAILS	8
C-PRV-503	CATHODIC PROTECTION DETAILS	
C-PRV-504	CATHODIC PROTECTION DETAILS	
C-PRV-505	CATHODIC PROTECTION DETAILS	
P-PRV-101	VAULT PLAN AND SECTION	9

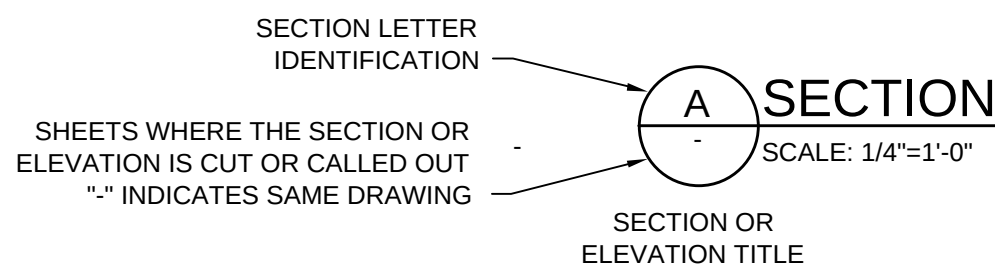
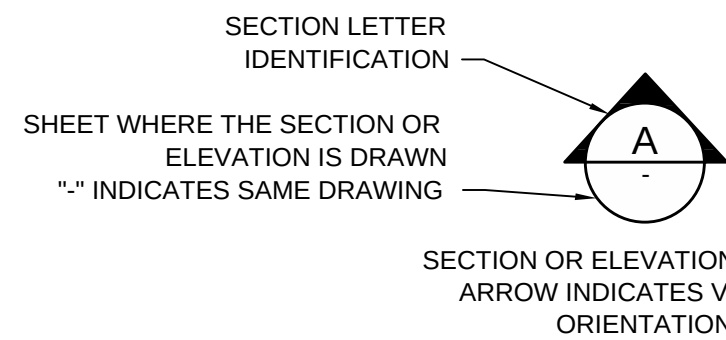
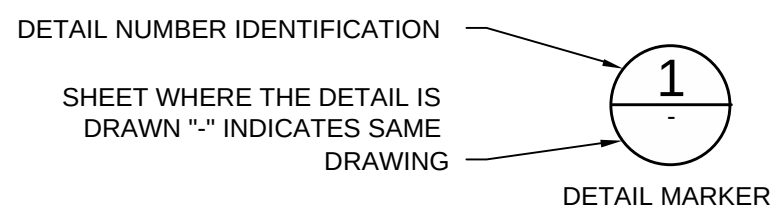
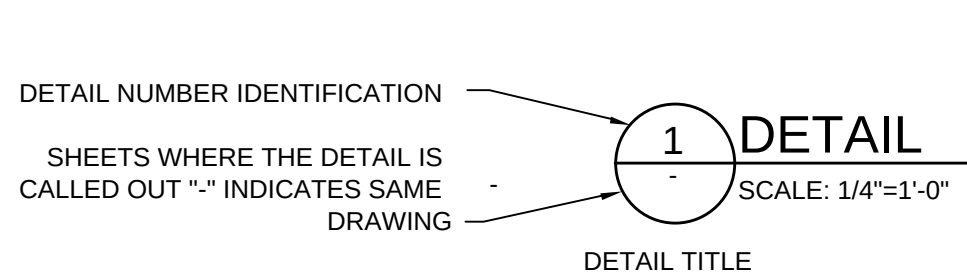
COA ROADWAY DESIGN & CONSTRUCTION SPECIFICATION NOTES :

1. CITY OF AURORA PLAN REVIEW IS ONLY FOR GENERAL CONFORMANCE WITH CITY OF AURORA DESIGN CRITERIA AND THE CITY CODE. THE CITY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND ELEVATIONS WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE. THE CITY OF AURORA, THROUGH THE APPROVAL OF THIS DOCUMENT, ASSUMES NO RESPONSIBILITY FOR THE COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.
2. ALL ROADWAY CONSTRUCTION SHALL CONFORM TO CITY OF AURORA "ROADWAY DESIGN AND CONSTRUCTION SPECIFICATIONS," LATEST REVISION.
3. ALL WATER DISTRIBUTION, SANITARY SEWER, AND STORM DRAINAGE CONSTRUCTION SHALL CONFORM TO CITY OF AURORA "PUBLIC UTILITY IMPROVEMENTS RULES AND REGULATIONS REGARDING STANDARDS AND SPECIFICATIONS," LATEST REVISION
4. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE CITY. THE CITY RESERVES THE RIGHT TO ACCEPT OR REJECT ANY MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO THE CITY STANDARDS AND SPECIFICATIONS.
5. THE CONTRACTOR SHALL NOTIFY THE CITY PUBLIC IMPROVEMENT INSPECTIONS DIVISION, 303-739-7420, 24 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION.
6. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ACTUAL CONSTRUCTION. FOR INFORMATION, CONTACT UTILITY NOTIFICATION CENTER OF COLORADO, 1-800-922-1987 OR 811.
7. THE CONTRACTOR SHALL HAVE ONE SIGNED COPY OF THE PLANS (APPROVED BY THE CITY OF AURORA), ONE COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED AT THE JOB SITE AT ALL TIMES.
8. IT IS THE CONSULTANT'S RESPONSIBILITY TO ACCURATELY SHOW EXISTING CONDITIONS, BOTH ON-SITE, AND OFF-SITE, ON THE CONSTRUCTION PLANS. ANY MODIFICATIONS NEEDED DUE TO CONFLICTS, OMISSIONS, OR CHANGED CONDITIONS EITHER ON-SITE OR OFF-SITE, WHICH ARISE IN THE FIELD, WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY. THE COST TO RECTIFY ANY ADVERSE SITUATION TO MEET THE CITY STANDARDS AND SPECIFICATIONS AND THE CITY CODE SHALL BE BORNE SOLELY BY THE DEVELOPER.
9. THE OWNER/DEVELOPER MUST OBTAIN THE WRITTEN PERMISSION OF THE ADJACENT PROPERTY OWNER(S) PRIOR TO ANY OFF-SITE GRADING OR CONSTRUCTION.
10. CONCRETE SHALL NOT BE PLACED UNTIL THE FORMS HAVE BEEN INSPECTED AND A POUR SLIP ISSUED. POUR SLIPS WILL NOT BE ISSUED UNLESS THE CONTRACTOR HAS, AT THE JOB SITE, A COPY OF THE APPROVED PLANS BEARING THE SIGNATURE OF THE CITY ENGINEER AND WITH THE "APPROVED FOR CURB AND GUTTER ONLY" BLOCK INITIALED BY THE CITY ENGINEER'S REPRESENTATIVE.
11. PAVING SHALL NOT START UNTIL A SOIL REPORT AND PAVEMENT DESIGN IS APPROVED BY THE CITY ENGINEER AND SUBGRADE COMPACTION TESTS TAKEN BY THE DEVELOPER'S GEOTECH ARE APPROVED BY PUBLIC IMPROVEMENTS INSPECTIONS.
12. STANDARD CITY OF AURORA CURB RAMPS SHALL BE CONSTRUCTED AT ALL CURB RETURNS, AT ALL "T" INTERSECTIONS AND AT ALL CURBSIDE KIOSKS OR CLUSTERS, UNLESS OTHERWISE MODIFIED BY THESE PLANS.
13. ALL STATIONING IS BASED ON CENTERLINE OF ROADWAYS UNLESS OTHERWISE NOTED.
14. ALL ELEVATIONS ARE INDICATED ON DRAWINGS UNLESS OTHERWISE NOTED.
15. THE CITY OF AURORA SHALL NOT BE LIABLE FOR THE MAINTENANCE OF THE CONNECTIONS SITE LOCATION AND ANYTHING LABELED PRIVATE. THESE FACILITIES MAY NOT MEET CITY STANDARDS AND SHALL REMAIN IN PRIVATE MAINTENANCE IN PERPETUITY.
16. THE CONTRACTOR/DEVELOPER IS RESPONSIBLE FOR CONTACTING CDOT TO ENSURE THAT ALL WORK ON OR ADJACENT TO STATE HIGHWAYS OR CDOT R.O.W. MEETS CDOT REQUIREMENTS.
17. THE STREETLIGHT INSTALLATION COST IS FUNDED BY THE DEVELOPER/OWNER. COORDINATE THE STREETLIGHT LOCATIONS AND INSTALLATION WITH THE PUBLIC WORKS DEPARTMENT 303-739-7300.
18. THE OWNER/CONTRACTOR MUST OBTAIN A COPS STORM WATER DISCHARGE PERMIT FROM THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, IF REQUIRED.
19. THE OWNER/CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE ARMY CORP OF ENGINEERS FOR WETLAND MITIGATION OR WORK WITHIN THE WATERS OF THE U.S., IF REQUIRED. IT IS THE RESPONSIBILITY OF THE OWNER/CONTRACTOR TO INFORM THE CITY OF AURORA OF THE ARMY CORP OF ENGINEER'S REQUIREMENTS. CITY APPROVAL OF THE CONSTRUCTION PLANS IS SUBJECT TO THE OWNER/CONTRACTOR OBTAINING A 404 PERMIT, IF APPLICABLE.

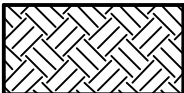
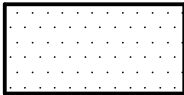
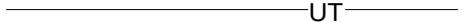
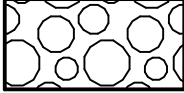
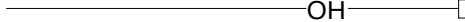
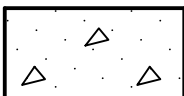
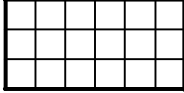
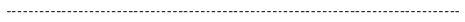
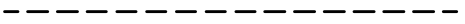
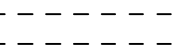
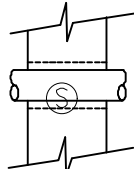
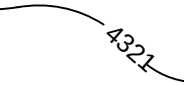
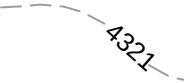
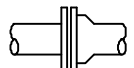
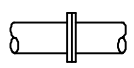
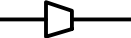
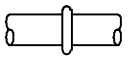
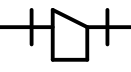
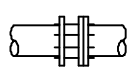
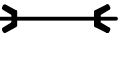
GENERAL ABBREVIATIONS

ABAN	ABANDON	MAX	MAXIMUM
ADJ	ADJUSTABLE, ADJACENT	ME	MECHANICAL
AFF	ABOVE FINISHED FLOOR	MFR	MANUFACTURE
ALT	ALTERNATE	MH	MANHOLE
APPROX	APPROXIMATE	MIN	MINIMUM
ATAD		MISC	MISCELLANEOUS
ASPH	ASPHALT	MJ	MECHANICAL JOINT
AWWA	AMERICAN WATER WORKS ASSOCIATION		
		N	NORTH, NORTHING
BF	BLIND FLANGE	NPT	NATIONAL PIPE THREAD
BLDG	BUILDING	NTS	NOT TO SCALE
BM	BENCHMARK		
BV	BALL VALVE	OC	ON CENTER
BLK	BLOCK	OD	OUTSIDE DIAMETER
BOT	BOTTOM	OE	OVERHEAD ELECTRIC
BOV	BLOW OFF VALVE	OH	OVERHEAD ELECTRIC
C	CONDUIT	PCO	PRESSURE CLEANOUT
CF	CUBIC FEET	PERM	PERMANENT
CI	CAST IRON	PL	PLATE
CL	CENTERLINE	PRE	PRESSURIZED RECYCLE
CMP	CORRUGATED METAL PIPE	PROJ	PROJECTION
CO	CLEANOUT	PSF	POUNDS PER SQUARE FOOT
CLR	CLEARANCE	PSI	POUNDS PER SQUARE INCH
CONC	CONCRETE	PT	POINT OF TANGENCY
CONST	CONSTRUCTION	PVC	POLYVINYL CHLORIDE
CJ	CONTROL JOINT	PW	POTABLE WATER
CU FT	CUBIC FEET		
		R	RIGHT
DEFL	DEFLECTION	RE	RECYCLE
DEMO	DEMOLITION	RCP	REINFORCED CONCRETE PIPE
DIA,Ø	DIAMETER	REINF	REINFORCE (D) (ING) (MENT)
DIP	DUCTILE IRON PIPE	REQD	REQUIRED
DN	DOWN	ROW	RIGHT OF WAY
DR	DRAIN		
DTO	DAFT THICKENER OVERFLOW		
DWG	DRAWING	S	SOUTH
DWP	DYNAMIC WET PRESSURE	SAN	SANITARY SEWER
		SCH	SCHEDULE
E	EAST, EASTING, ELECTRIC	SEC	SECTION
EL	ELEVATION	SF	SQUARE FOOT
ELEC	ELECTRICAL	SPEC	SPECIFICATION
ESMT	EASEMENT	SS	SANITARY SEWER
EW	EACH WAY	SST	STAINLESS STEEL
EXP BT	EXPANSION BOLT	STA	STATION
EXIST	EXISTING	STD	STANDARD
		STL	STEEL
FCA	FLANGED COUPLING ADAPTER	SW	SEAL WATER
FECL3	FERRIC CHLORIDE		
FES	FLARED END SECTION	T&B	TOP AND BOTTOM
FF	FINISH FLOOR	TB	THRUST BLOCK
FL	FLOW LINE	TEMP	TEMPORARY
FLG	FLANGE	TH	TEST HOLE
FM	FORCEMAIN	THD	THREAD (ED)
FRP	FIBERGLASS REINFORCED PLASTIC	THK	THICK
FT	FEET	TYP	TYPICAL
G	GAS	UE	UNDERGROUND ELECTRICAL
GA	GUY ANCHOR	UT	UNDERGROUND TELEPHONE
GB	GRADE BREAK		
HWL	HIGH WATER LINE		
HORIZ	HORIZONTAL	V	VERTICAL
HWY	HIGHWAY	VCP	VITRIFIED CLAY PIPE
ID	INSIDE DIAMETER	WL	WATER LINE
INSUL	INSULATION	W	WEST, WATER
INV	INVERT	W/	WITH
INV EL	INVERT ELEVATION	W/O	WITHOUT
JT	JOINT	XSECT	CROSS SECTION
L	LEFT		
LB	POUND		
LF	LINEAR FOOT		
LR	LONG RADIUS		
LWL	LOW WATER LEVEL		

SYMBOLS



LEGEND

		EXISTING SANITARY AND MISC YARD PIPING		EARTH
		EXISTING GAS LINE & METER		GROUT (IN SECTION) OR CRUSHED STONE (IN PLAN)
		EXISTING TELEPHONE LINE		GRAVEL, RIPRAP OR STONE
		EXISTING OVERHEAD ELECTRIC W/ TOWER		CONCRETE
		EXISTING UNDERGROUND ELECTRIC		RIGID INSULATION
		PROPOSED NEW UNDERGROUND ELECTRIC		BUSHES, TREES
		CONSTRUCTION EASEMENT LINE		EXISTING STRUCTURE
		PERMANENT EASEMENT LINE		NEW STRUCTURE
		PROPERTY LINE		DRAINAGE FLOW LINE
		EXISTING NATURAL GAS LINE		EXISTING FENCE
		EXISTING SANITARY SEWER		PROPOSED SILT FENCE
		EXISTING WATER LINE		EXISTING CULVERT
		WALL SLEEVE		NEW CULVERT
		SURVEY CONTROL POINT		PROPOSED CONTOUR
		EXISTING ELECTRIC METER		EXISTING CONTOUR
		EXISTING ELECTRIC VAULT		WYE
		EXISTING TRANSFORMER		LINE TURNING UP
		MECHANICAL JOINT		LINE TURNING DOWN
		FLANGED JOINT		REDUCER
		GROOVED JOINT		STRAINER
		FCA JOINT		HARNES
		BELL RESTRAIN HARNES JOINT		THRUST BLOCK
		NEW PIPE IN SECTION		
		BALL VALVE		
		CHECK VALVE		
		GATE VALVE		
		PRESSURE REDUCING VALVE		
		PLUG VALVE		

HATCH PATTERN

 BUILDING LIMITS
  ASPHALT LIMITS

 CONCRETE LIMITS
  GRAVEL LIMITS

TETRA TECH

1576 Sherman St., Suite 100
Denver, CO 80203
Phone: (303) 825-5999 Fax: (303) 825-0642
www.tetratech.com

PRELIMINARY
NOT FOR CONSTRUCTION

MARK	DATE	DESCRIPTION	BY
1	10/16/15	60% ISSUED FOR REVIEW	BSJ
2	11/03/15	ISSUED FOR PERMITTING	BSJ
3	12/17/15	95% ISSUED FOR REVIEW	BSJ

TH METRO WISE AUTHORITY

CONNECTIONS

MEET INDEX, LEGEND,
SYMBOLS AND
ABBREVIATIONS

Project No.:	133-08362-15001
Designed By:	BSJ
Drawn By:	TRS
Checked By:	BSJ

1/2/2016 9:43:05 AM - T:\08362\133-08362-15001\CAD\SHSHEETFILES\G-002-CON OVERALL VICINITY MAP.DWG - SPERRY, TY

F
E
D
C
B
A



COA UTILITY NOTES:

- ALL MATERIALS, WORKMANSHIP, CONSTRUCTION DETAILS, AND TESTING FOR THE WATER LINE CONSTRUCTION SHALL CONFORM TO STANDARDS AND SPECIFICATIONS REGARDING WATER, SANITARY SEWER AND STORM DRAINAGE INFRASTRUCTURE, LATEST REVISION AS SET FORTH BY THE CITY OF AURORA WATER DEPARTMENT, LATEST REVISION.
- ALL FIRE HYDRANTS SHALL BE LOCATED NOT LESS THAN THREE FEET - SIX INCHES (3' - 6') AND NOT MORE THAN 8 FEET FROM THE BACK OF CURB TO THE CENTER OF THE HYDRANT AND BE UNOBSTRUCTED ON THE STREET SIDE. MINIMUM CLEARANCE ON ALL OTHER SIDES SHALL BE 5 FEET. FIRE HYDRANTS MUST BE GRADE STAKED IN THE FIELD. FIRE HYDRANTS ARE NOT ALLOWED IN SIDEWALKS.
- ALL FIRE HYDRANTS MUST BE GRADE STAKED IN THE FIELD WHENEVER CURB AND GUTTER HAS NOT BEEN INSTALLED.
- ALL UTILITY EASEMENTS MUST REMAIN UNOBSTRUCTED AND FULLY ACCESSIBLE ALONG THEIR ENTIRE LENGTH FOR MAINTENANCE EQUIPMENT.
- WATER MAIN RESTRAINT SHALL BE IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS REGARDING WATER, SANITARY SEWER AND STORM DRAINAGE INFRASTRUCTURE, LATEST REVISION. MEGALUGS OR UNI-FLANGE MAY BE USED IN PLACE OF RODS AND CLAMPS.
- WATER LINE VALVES ARE NOT ALLOWED IN CROSS PANS.
- ALL WATER METERS, WATER SERVICE LINES AND SANITARY SEWER SERVICE LINES ARE NOT ALLOWED IN OR UNDER DRIVEWAYS.
- ALL SANITARY SERVICE LINES SHALL BE TEES OFF OF MAINS. WYES SHALL BE USED FOR LOTS AT BACK OF CUL-DE-SACS.
- WATER PRESSURE ZONE 7. ZERO (0) PSI @ ELEVATION 6190 STATIC. A PRESSURE REDUCING VALVE (PRV) IS REQUIRED WHEN THE PRESSURE AT THE UNIT IS GREATER THAN (80) PSI. PRV'S ARE NOT ALLOWED IN CITY OF AURORA OWNED AND MAINTAINED METER PITS.
- ADJUST ALL MANHOLES, FIRE HYDRANTS, AND VALVE BOXES TO GRADE PER AURORA WATER STANDARDS AND SPECIFICATIONS REGARDING WATER, SANITARY SEWER AND STORM SEWER INFRASTRUCTURE, LATEST REVISION, AS NECESSARY.

GENERAL NOTES:

- HORIZONTAL AND VERTICAL CONTROL:
NAD 83 / 92 (BASIS OF AURORA GRID) NGVD 29.
VERTICAL DATUM ADJUSTMENT
NAVD88 DATUM = NGVD29 DATUM + 3.1 FEET.
- CALL BEFORE YOU DIG. CONTRACTOR SHALL VERIFY LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STRUCTURES, WHETHER INDICATED ON THE DRAWINGS OR NOT, IN THE FIELD IN ADVANCE OF EXCAVATING, BY CONTACTING ALL UTILITIES AND OTHER AGENCIES, AND BY PROSPECTING. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL, DEMOLITION, RECONSTRUCTION, AND RECONNECTION OF EXISTING FACILITIES AS REQUIRED TO COMPLETE THE WORK. IF REQUIRED AFTER FIELD VERIFICATION, CONTRACTOR SHALL COORDINATE WITH THE ENGINEER TO DETERMINE ANY NECESSARY MODIFICATIONS TO PROPOSED NEW WORK.
- BEFORE CONSTRUCTION IS STARTED, CONTRACTOR SHALL COORDINATE WITH THE OWNER OF EACH UTILITY AND DEFINE THE REQUIREMENTS AND METHODS TO ACCOMMODATE THE PROTECTION, TEMPORARY SUPPORT, ADJUSTMENT, OR RELOCATION OF ANY UTILITIES AFFECTED BY THE PROPOSED NEW WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL PROPERTY CORNER MARKERS. PROPERTY CORNER MARKERS DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REESTABLISHED BY A PROFESSIONAL SURVEYOR LICENSED IN THE STATE OF COLORADO.
- CONTRACTOR SHALL PROTECT AND MAINTAIN ALL EXISTING TREES, SHRUBS, AND PLANTS UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL INSTALL ALL PIPELINES, PAVING, WALKWAYS, AND CURB AND GUTTER AT A UNIFORM GRADE BETWEEN ELEVATIONS DEPICTED ON THE DRAWINGS.
- FOR ALL SITE GRADING, SMOOTH PARABOLIC TRANSITIONS SHALL BE MADE BETWEEN CHANGES IN SLOPE. PARABOLIC ROUNDING SHALL APPLY TO ALL CUT AND FILL SECTIONS.
- FINISH GRADE NEAR ACCESS HATCHES WILL SLOPE GENERALLY AWAY FROM STRUCTURE.
- RESTRAINED JOINTS SHALL BE PROVIDED FOR ALL BURIED PRESSURE PIPING.
- UNLESS OTHERWISE SPECIFIED, INDICATED ON THE DRAWINGS, OR UNLESS APPROVED IN ADVANCE BY THE OWNER, INSTALL PIPELINES SLOPING DOWNWARD FROM AN AIR VALVE. MINIMUM 5'-0" COVER AT MANHOLE OR AT MANUAL ARV TO A BLOWOFF, AND PROVIDE THE SPECIFIED MINIMUM PIPE COVER. MINIMUM PIPE COVER SHALL BE FROM THE EXISTING, PROPOSED OR FUTURE GROUND SURFACE OR ROAD PROFILE, WHICHEVER GROUND SURFACE OR ROAD PROFILE IS APPLICABLE AS INDICATED ON THE DRAWINGS. IF THE PROPOSED GROUND SURFACE IS ABOVE THE EXISTING GROUND SURFACE INDICATED ON THE DRAWINGS AND IS NOT THE ACTUAL GROUND SURFACE AT THE TIME OF PIPELINE INSTALLATION, INSTALL THE PIPELINE TO PROVIDE MINIMUM PIPE COVER FROM THE PROPOSED GRADE IF ACCEPTABLE TO THE ENGINEER. HIGH POINTS IN THE PIPELINE WILL NOT BE PERMITTED EXCEPT AT LOCATIONS OF AIR VALVES AS INDICATED ON THE DRAWINGS. REVIEW THE PIPELINE PROFILE REQUIREMENTS WITH THE ENGINEER PRIOR TO PREPARING LAYING SCHEDULES AND PERFORMING FIELD STAKING.
- CONTRACTOR SHALL FIELD VERIFY LOCATION, ELEVATION, AND ARRANGEMENT OF CONNECTIONS OF NEW PIPELINES WITH EXISTING PIPELINES BASED ON FIELD CONDITIONS, INCLUDING EXPOSED EXISTING PIPING PRIOR TO FABRICATING NEW PIPING. CONTRACTOR SHALL PROVIDE FITTINGS, ADAPTERS, SOLID SLEEVE COUPLINGS, AND HARNESSSED MECHANICAL COUPLING; ROTATE FITTINGS; DEFLECT JOINTS; AND MODIFY EXISTING PIPING AS APPLICABLE AND AS REQUIRED TO MAKE CONNECTIONS, INCLUDING ADJUSTMENTS FOR ANY OFFSETS IN CENTERLINE ELEVATIONS BETWEEN PIPELINES. CONTRACTOR SHALL PROVIDE TEMPORARY PLUG WITH FACTORY OUTLET SIZED AS REQUIRED FOR CONTRACTOR'S TESTING AND DISINFECTION WORK BEFORE MAKING CONNECTION, WHEN APPLICABLE. CONTRACTOR SHALL COORDINATE MAKING EACH CONNECTION WITH THE OWNER.
- ALL DIP SHALL BE PROTECTED WITH A MINIMUM OF ONE WRAP OF POLYETHYLENE ENCASEMENT.
- ALL OWNERSHIP, RIGHT-OF-WAY, AND EASEMENT INFORMATION WAS OBTAINED FROM THE DOUGLAS / ARAPAHOE COUNTY ASSESSORS OFFICE. NO TITLE COMMITMENT WAS PROVIDED TO FARNSWORTH GROUP, THEREFORE, THE SURVEYOR DOES NOT GUARANTEE ALL RECORDED INFORMATION AS SHOWN HEREIN.
- CONTRACTOR SHALL INSTALL TRACER WIRE AND WARNING TAPE ABOVE METALLIC PIPELINE IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
- CONTRACTOR SHALL REMOVE AND REPLACE ALL EXISTING FENCING DISTURBED BY CONSTRUCTION ACTIVITIES ALONG THE ENTIRE PIPELINE ROUTE, WHETHER OR NOT IT IS IDENTIFIED ON THE DRAWINGS. REPLACEMENT FENCING SHALL MATCH ORIGINAL FENCING AND SHALL BE CONSTRUCTED OF ENTIRELY NEW MATERIALS UNLESS APPROVED IN ADVANCE BY OWNER.
- CONTRACTOR SHALL OPEN CUT EXISTING GRAVEL AND ASPHALT SURFACED ROADS WHERE INDICATED ON THE DRAWINGS. THICKNESS AND TYPE OF REPLACEMENT ASPHALT, BASE COURSE, AND AGGREGATE ROAD BASE SHALL, AS A MINIMUM, MATCH EXISTING SURFACING.
- PIPE JOINTS MAY BE DEFLECTED AS NECESSARY TO INSTALL PIPELINE ALONG THE LINES AND GRADES SHOWN. THE PIPE VERTICAL ALIGNMENT MAY BE SLIGHTLY ADJUSTED TO ACHIEVE 5 FOOT OF COVER, HOWEVER NO NEW HIGH POINTS OR LOW POINTS SHALL BE CREATED. MAXIMUM JOINT PULL OUT FOR HORIZONTAL CURVES AND VERTICAL SLOPE CHANGES WITH DEFLECTED JOINTS SHALL BE 75 PERCENT OF THE MANUFACTURER'S MAXIMUM ALLOWABLE PULL OUT FOR THE PARTICULAR TYPE OF JOINT BEING DEFLECTED. VERTICAL SLOPE CHANGES SHOWN ON THE DRAWINGS TO BE POINT DEFLECTIONS SHALL BE DISTRIBUTED OVER MULTIPLE PIPE JOINTS TO LIMIT THE PULL OUT PER JOINT TO THE ABOVE LIMIT.
- CONTRACTOR TO CONFINE ITS CONSTRUCTION DISTURBANCE TO WITHIN THE PERMANENT AND TEMPORARY EASEMENTS.
- ALL OPEN CUT ROADS AND STREETS SHALL HAVE A MINIMUM OF ONE LANE OPEN AT ALL TIMES FOR EMERGENCY ACCESS. CONTRACTOR SHALL ALSO PROVIDE TRAFFIC CONTROL AT ALL OPEN CUT ROAD AND STREET CROSSINGS.

NOTES:

- THIS MAP INCLUDES THE FACILITY LOCATIONS OF ALL THE SUB-PACKAGES IN THE OVERALL DESIGN/BUILD PACKAGE. INCLUDED IN THIS SUB-PACKAGE ARE THE FOLLOWING:

* TEMPORARY CONNECTION TO AURORA WATER
* PRESSURE SUSTAINING VALVE
- ITEMS DENOTED WITH " * " ARE NOT PART OF THIS CONTRACT, AND WILL BE CONSTRUCTED BY OTHERS.

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1	10/16/15	60% ISSUED FOR REVIEW	BSJ
2	11/03/15	ISSUED FOR PERMITTING	BSJ
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SOUTH METRO WISE AUTHORITY	
CONNECTIONS	
OVERALL VICINITY MAP	

Project No.:	133-08362-15001
Designed By:	BSJ
Drawn By:	TRS
Checked By:	BSJ

C.O.A.	3	G-002
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Bar Measures 1 inch



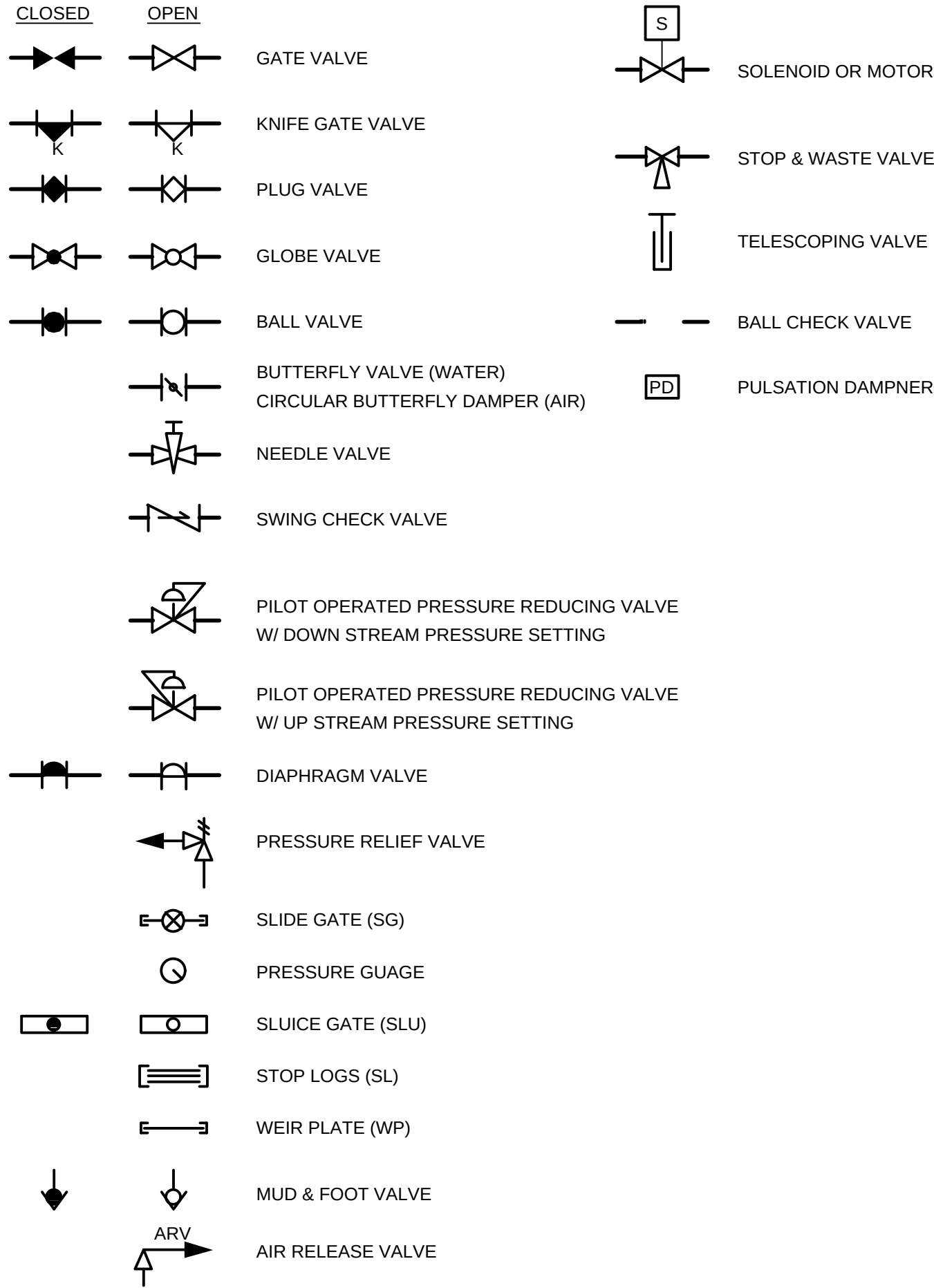
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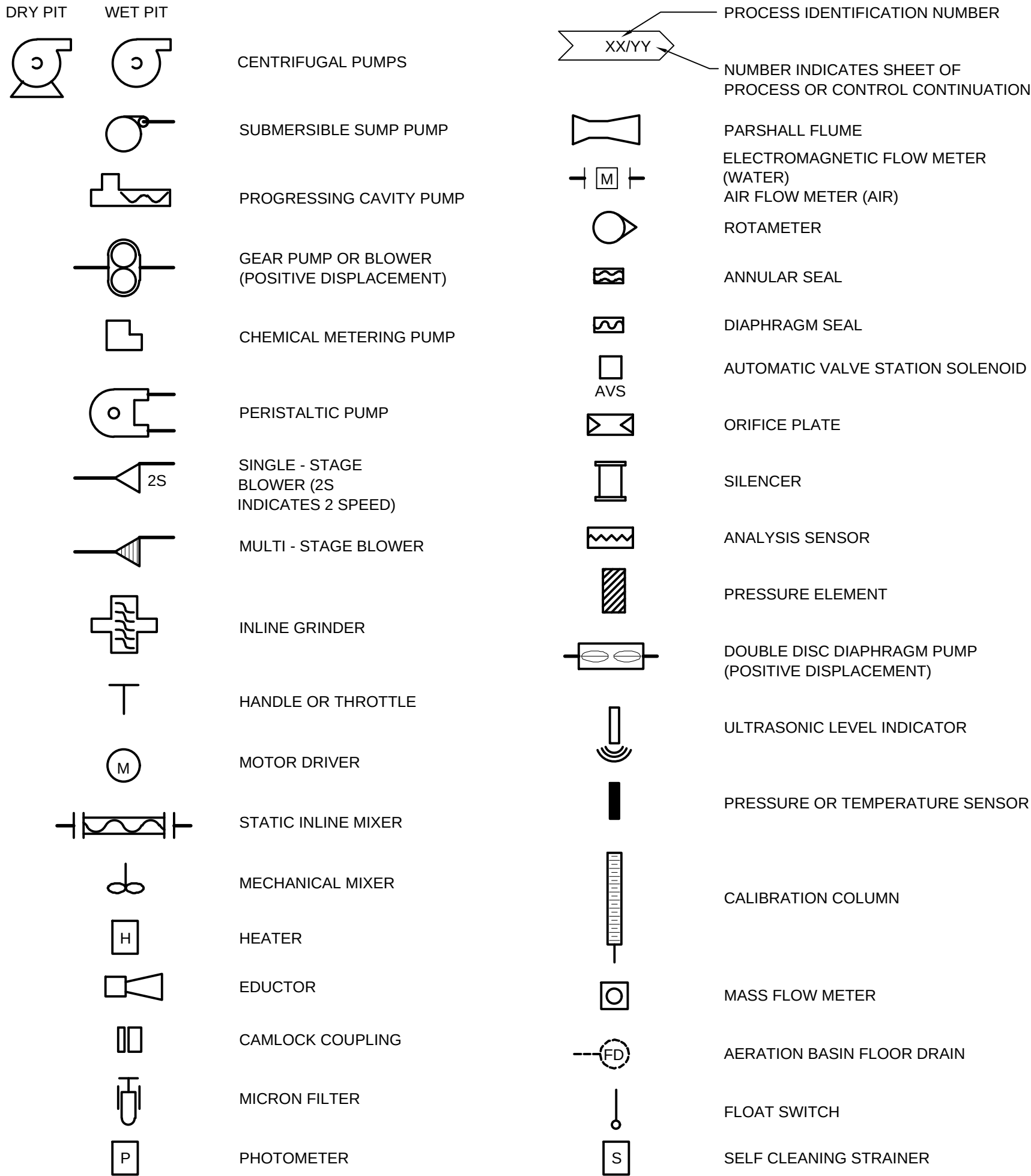
VALVE SYMBOLS



INSTRUMENT IDENTIFICATION LETTERS
(INSTRUMENT SOCIETY OF AMERICA)

	FIRST - LETTER		SUCCEEDING - LETTERS		
	MEASURED OR INITIATING VARIABLE		READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONTROL			CONTROL	CLOSED
D	USER'S CHOICE	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE	MOMENTARY			MIDDLE, INTERMEDIATE
N	TORQUE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	FAILURE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

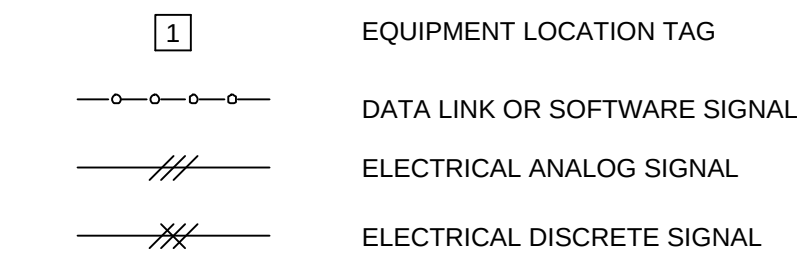
P&ID EQUIPMENT SYMBOLS



COMMON INSTRUMENT & DEVICE DESIGNATIONS

TAG	DESIGNATION
DO	DISSOLVED OXYGEN
FE	FLOW ELEMENT
FIT	FLOW INDICATOR/TRANSMITTER
HC	HAND CONTROL
HOA	HAND-OFF-AUTO
HS	HAND SWITCH
OCA	OPEN-CLOSE-AUTO
OCSA	OPEN-CLOSE-STOP-AUTO
ORP	OXYGEN REDUCTION POTENTIAL
PSL	PRESSURE SWITCH LOW
PSH	PRESSURE SWITCH HIGH
SC	SPEED COMMAND
SI	SPEED INDICATION
SS	SUSPENDED SOLIDS OR START-STOP
UA	EQUIPMENT FAULT STATUS
YL	EQUIPMENT RUNNING STATUS
YS	EQUIPMENT IN AUTO OR REMOTE STATUS
ZSC	VALVE POSITION FULL CLOSE
ZSI	VALVE POSITION INDICATOR
ZSO	VALVE POSITION FULL OPEN

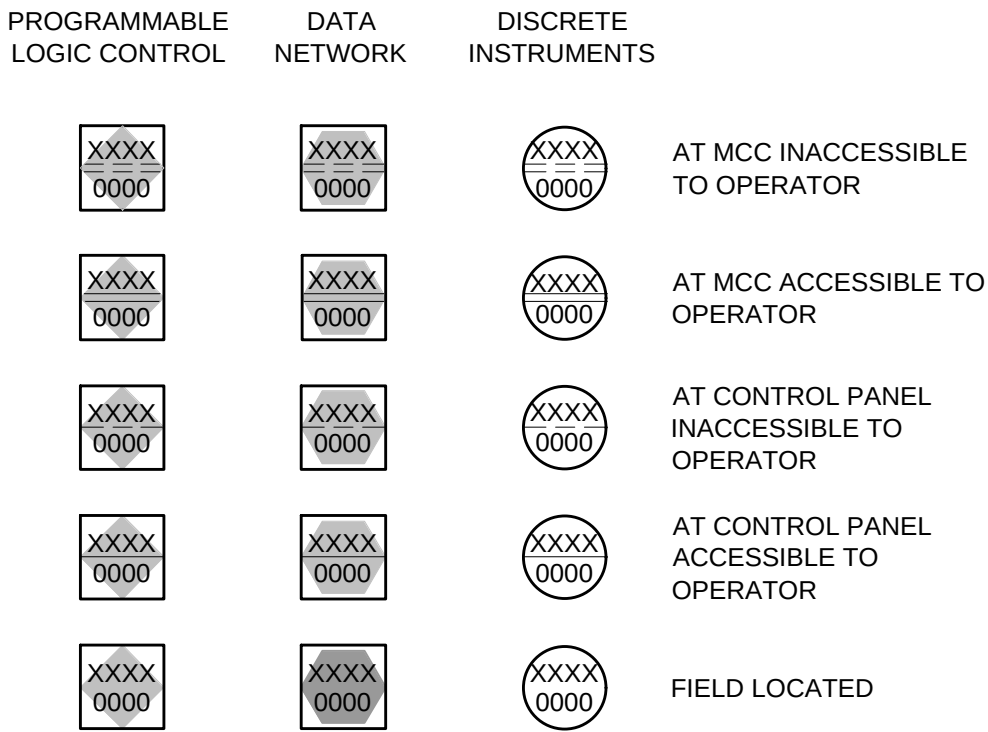
INSTRUMENTATION LEGEND



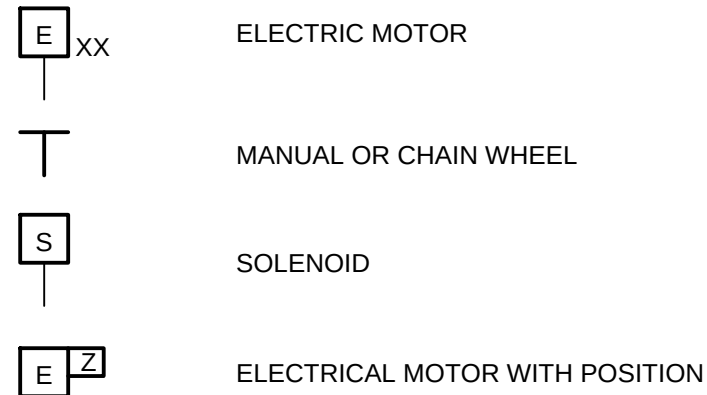
GENERAL NOTES

- THIS IS A STANDARD LEGEND, THEREFORE NOT ALL OF THIS INFORMATION MAY BE USED ON THIS PROJECT.
- P & ID INSTRUMENTATION DETAILS DO NOT REPRESENT INSTRUMENTS AND CONTROLS INTEGRAL TO VENDOR SUPPLIED CONTROL PANELS OR EQUIPMENT. SEE EQUIPMENT SPECIFICATIONS FOR THIS INFORMATION.
- P & ID DOES NOT REPRESENT CONTROL STRATEGIES OR INTERACTIONS. REFERENCE SECTION 16905, ELECTRICAL ELEMENTARY SCHEMATICS FOR THIS INFORMATION.
- P & ID DOES NOT REPRESENT EQUIPMENT HARDWIRED INTERLOCK AND ENABLE CIRCUITRY. REFERENCE MCC CONTROL NARRATIVES FOR THIS INFORMATION.

P&ID INSTRUMENT SYMBOLS



ACTUATOR SYMBOLS



NOTE:
ON LOSS OF PRIMARY POWER (PNEUMATIC OR ELECTRIC)

FO = FAIL OPEN
FC = FAIL CLOSED
FLP = FAIL TO LAST POSITION

PIPING SERVICE ABBREVIATIONS

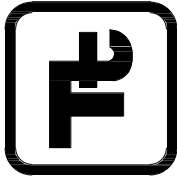
AIR	PROCESS AIR	PEFF	PRIMARY EFFLUENT
BIO	BIOSOLIDS	PD	PUMPED DRAIN
BWS	BACKWASH SUPPLY	POL	POLYMER
BWW	BACKWASH WASTE	POL SOL	POLYMER SOLUTION
		PSC	PRIMARY SCUM
		PW	POTABLE WATER
CA	COMPRESSED AIR		
CD	CHEMICAL DRAIN	RAS	RETURN ACTIVATED SLUDGE
CEN	CENTRATE	RRAS	RAPID RETURN ACTIVATED SLUDGE
CG	CHLORINE GAS	RW	REUSE WATER
CH	CHEMICAL		
CLS	CHLORINE SOLUTION	SAN	SANITARY SEWER
CV	CHLORINE VENT	SCN	SCREENINGS
CW	COLD POTABLE WATER	SE	SECONDARY EFFLUENT
		SHC	SODIUM HYPOCHLORITE
		SLC	SLOPPY CAKE
D	DRAIN	SNT	SUPERNATANT (DIGESTER)
DBIO	DEWATERED BIOSOLIDS	SSC	SECONDARY SCUM
FAD	FOUL AIR DUCT	ST	SLUDGE TRANSFER
FEFF	FINAL EFFLUENT	STM	STORM SEWER
FM	FORCEMAIN	SW	SOFTENED WATER
FO	FIBER OPTIC		
FS	FERRIC SULFATE	TEFF	TERTIARY EFFLUENT
		TD	TANK DRAIN
GR	GRIT	TSL	THICKENED SLUDGE
GU	GRIT UNDERDRAIN	TWAS	THICKENED WASTE ACTIVATED SLUDGE
HOCl	HYPOCHLORITE	V	SANITARY VENT
HW	HOT WATER		
		W	WATER
ML	MIXED LIQUOR	WAS	WASTE ACTIVATED SLUDGE
		WW	WASTEWATER (INFLUENT TO PLANT)
NPW	NON-POTABLE WATER	WWFM	WASTEWATER FORCE MAIN
OF	OVERFLOW		
OSA	OUTSIDE AIR		

AURORA CONNECTION & PRV CONNECTION
SURVEY CONTROL NOTES

- BASIS OF BEARINGS: THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 19, TOWNSHIP 5 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN IS CONSIDERED TO BEAR NORTH 89°26'01" EAST.
 - BENCHMARK: CITY OF AURORA BENCHMARK 5S6519SW001 BEING A 3" BRASS CAP STAMPED "SLP - 125.5 2005" LOCATED AT THE SOUTHWEST CORNER OF SOUTH MAIN STREET AND SOUTH SOUTHLANDS PARKWAY ON AN INLET NEAR THE SOUTH PCR.
- NGVD29 ELEV=6064.46'
- PROJECT COORDINATES ARE DERIVED FROM COLORADO STATE PLANE CENTRAL NAD83(92) COORDINATES USING THE FOLLOWING FORMULAS:

PROJECT NORTHING = (STATE PLANE NORTHING * 1.0003094706) - 112.30'
PROJECT EASTING = (STATE PLANE EASTING * 1.0003094706) - 220.23'

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SOUTH METRO WISE AUTHORITY
CONNECTIONS
P&ID LEGEND
AND ABBREVIATIONS

Project No.:	133-08362-15001
Designed By:	JLC
Drawn By:	TRS
Checked By:	BSJ

C.O.A.

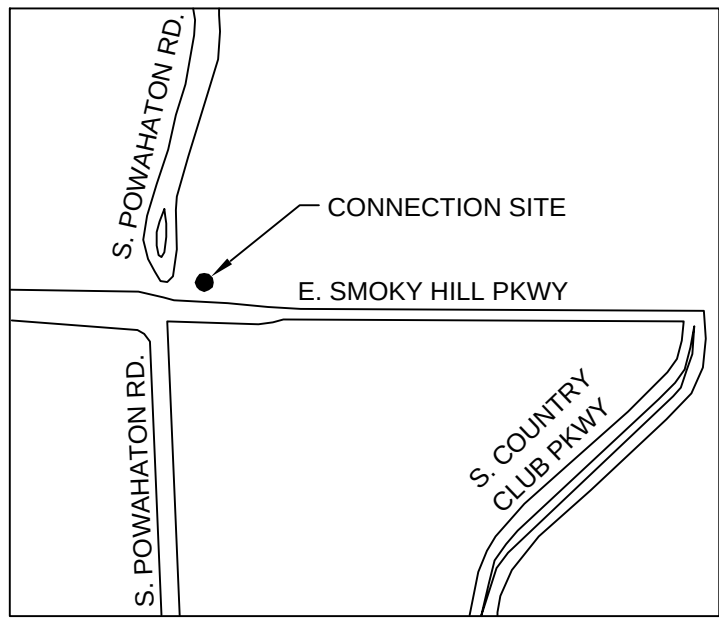
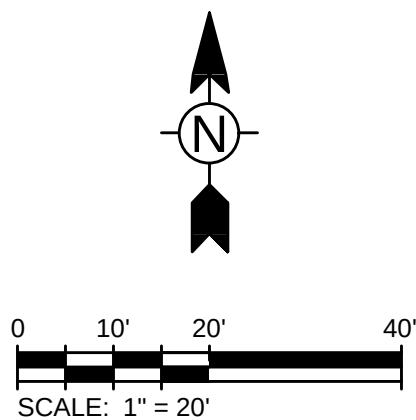
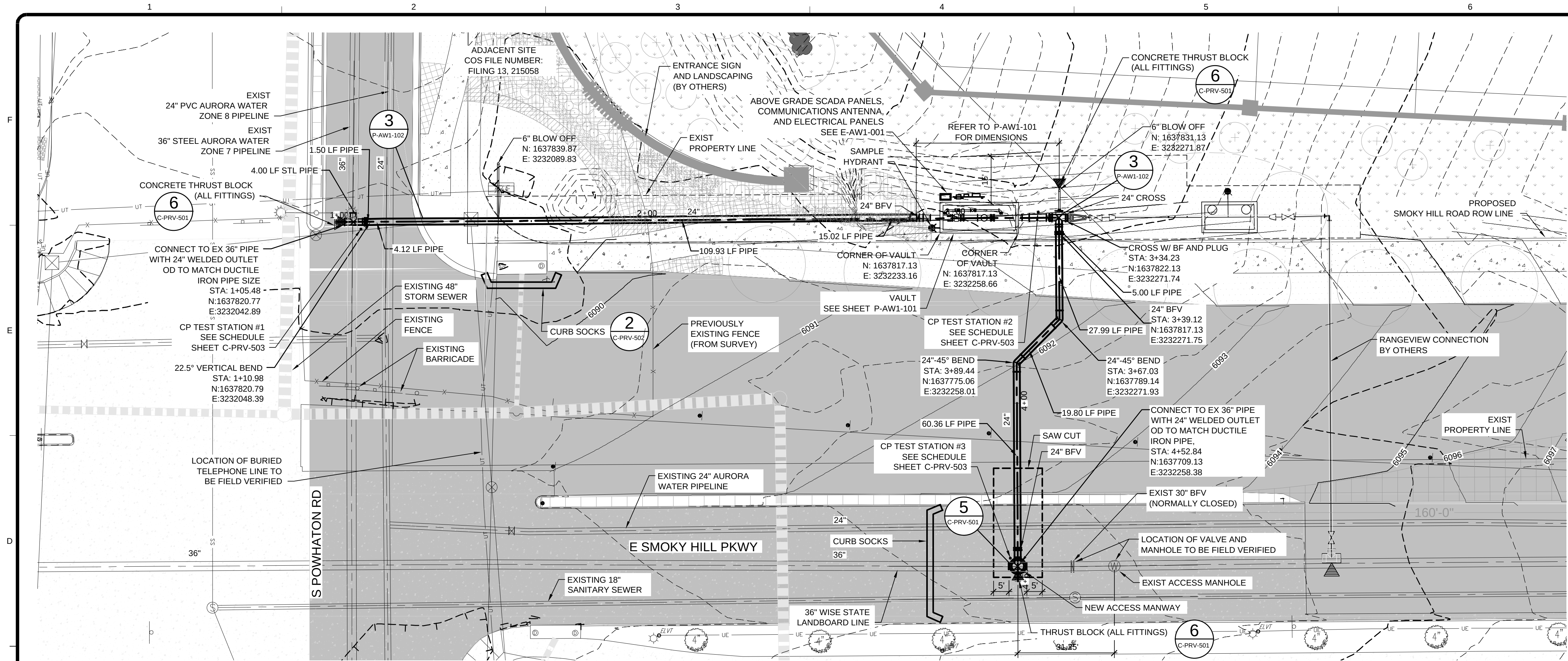
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G-003

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Bar Measures 1 inch

1/14/2016 8:56:08 AM - T:\09362133-08362-15001\CAD\SHETS\ESC-AW1-201 24" WATERLINE PLAN AND PROFILE STA 1+00 TO 8+50.DWG - SPERRY, TY



KEY MAP

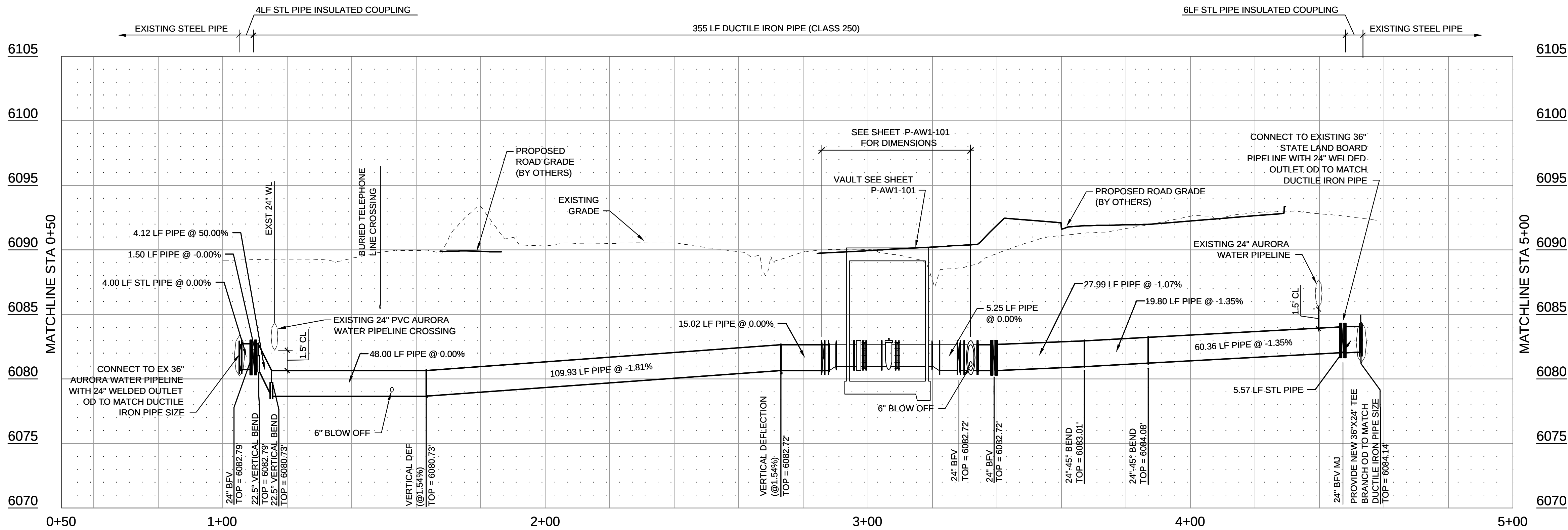
VERTICAL DATUM EQUATION:
NAVD88 DATUM = NGVD29 DATUM + 3.1 FEET.

BENCHMARK NOTES:

1. BASIS OF BEARINGS: THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 19, TOWNSHIP 5 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN IS CONSIDERED TO BEAR NORTH 89°26'01" EAST.
2. BENCHMARK: CITY OF AURORA BENCHMARK 5S6519SW001 BEING A 3" BRASS CAP STAMPED "SLP - 125.5 2005" LOCATED AT THE SOUTHWEST CORNER OF SOUTH MAIN STREET AND SOUTH SOUTHLANDS PARKWAY ON AN INLET NEAR THE SOUTH PCR. NGVD29 ELEV=6064.46'.

AURORA 24" WATERLINE PLAN

SCALE: 1" = 20'



NOTES:

1. RANGEVIEW CONNECTION AND ALL APPURTENANCES BY OTHERS.
2. UNLESS NOTED OTHERWISE, ALL PIPES ARE PRIVATE.
3. RESTORE SITE TO CONDITIONS FOUND PRIOR TO BEGINNING WORK. REPAIR ALL CONCRETE AND ASPHALT ROADWAYS. REPLACE CURB AND GUTTER, AND SEED LANDSCAPE AREAS TO MATCH.
4. REPLACE ENTIRE CONCRETE PANEL SECTIONS WHEN DISTURBED.
5. PLACE THE TRENCH SPOILS ON UPHILL SIDE OF THE TRENCH.
6. ALL NEW PIPE TO BE RESTRAINED.
7. WARNING TAPE TO BE PROVIDED FOR ALL BURIED PIPING.

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SOUTH METRO WISE AUTHORITY
CONNECTIONS
POWAHATON ST. & SMOKY HILL RD.
24" WATERLINE
PLAN AND PROFILE AND
EROSION CONTROL PLAN

Project No.:	133-08362-15001
Designed By:	WJR
Drawn By:	CFW
Checked By:	BSJ

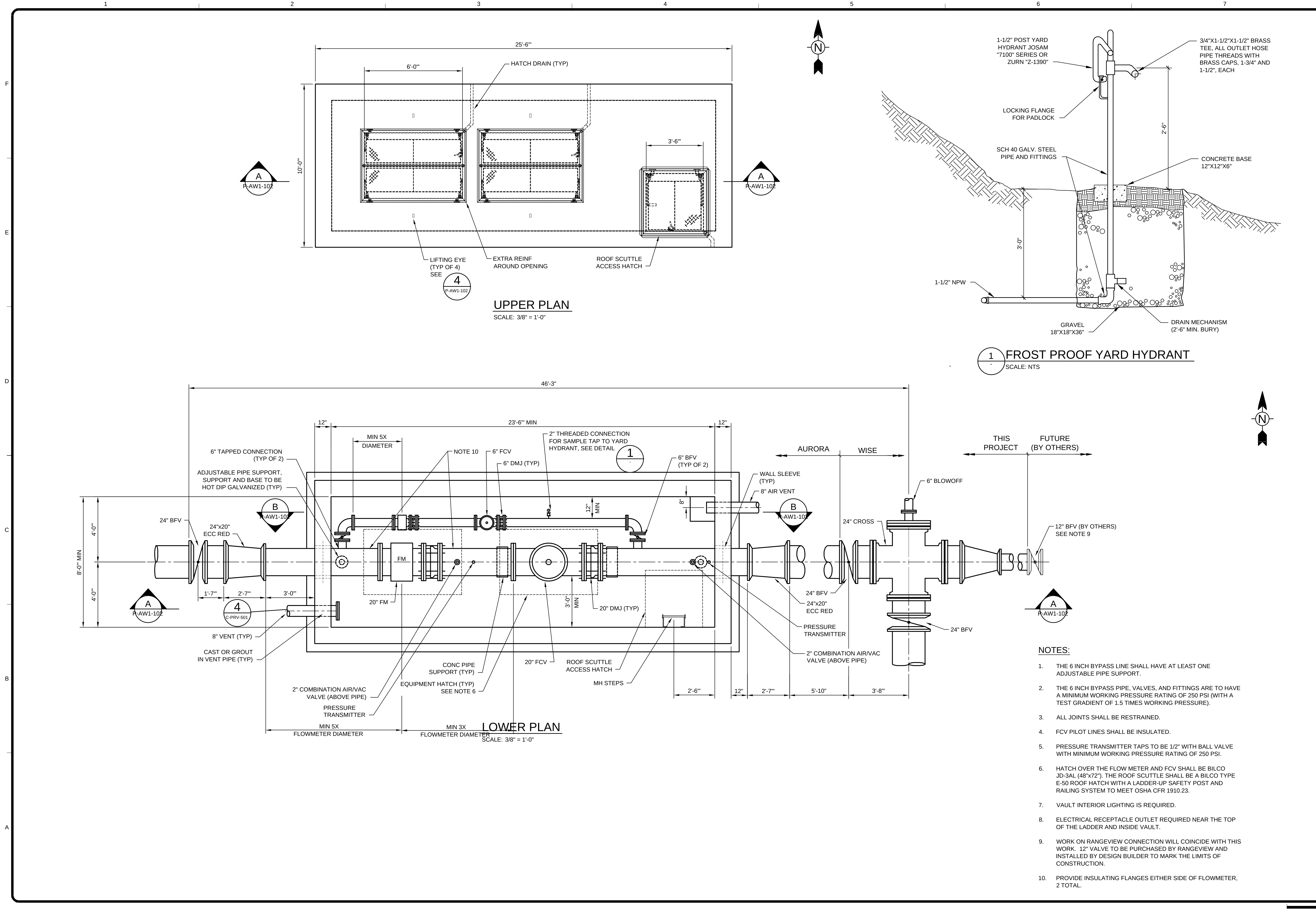
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5

C-AW1-201

Bar Measures 1 inch

1/12/2016 9:43:39 AM - T:\08362\133-08362-15001\CAD\SHEETFILES\1-AW1-101 VAULT UPPER AND LOWER PLANS.DWG - SPERRY, TY



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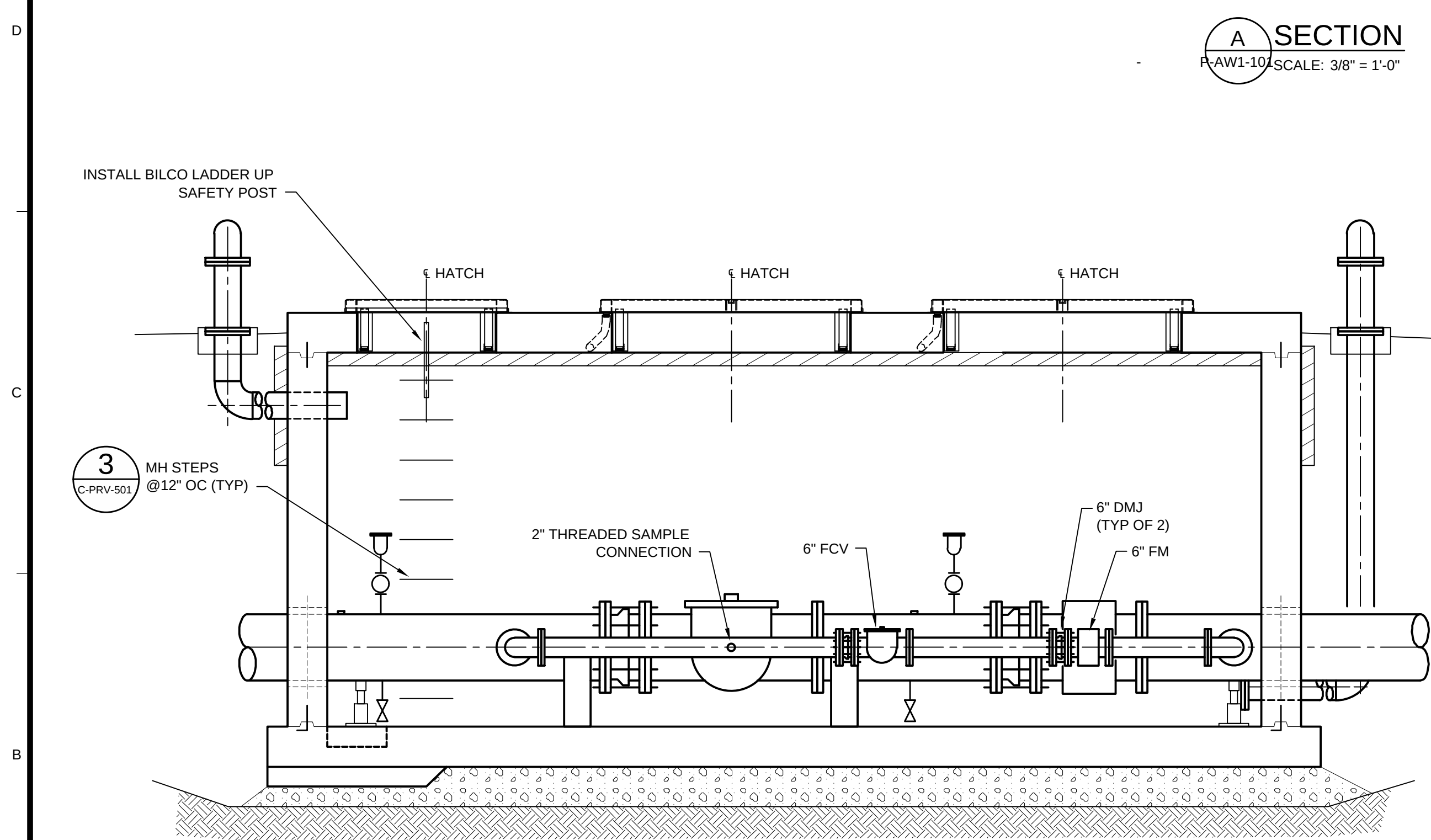
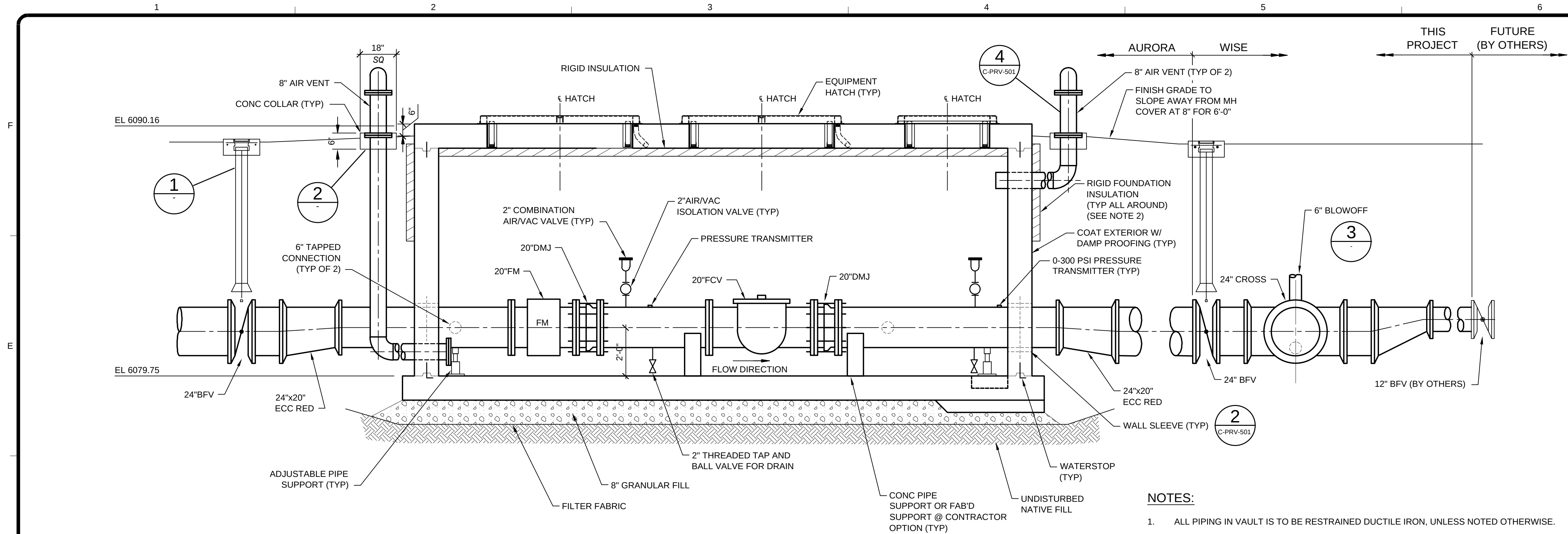
**SOUTH METRO WISE AUTHORITY
CONNECTIONS**
**VAULT
UPPER AND LOWER
PLANS**

Project No.: 133-08362-15001
Designed By: WJR
Drawn By: TRS
Checked By: BSJ

P-AW1-101

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Bar Measures 1 inch

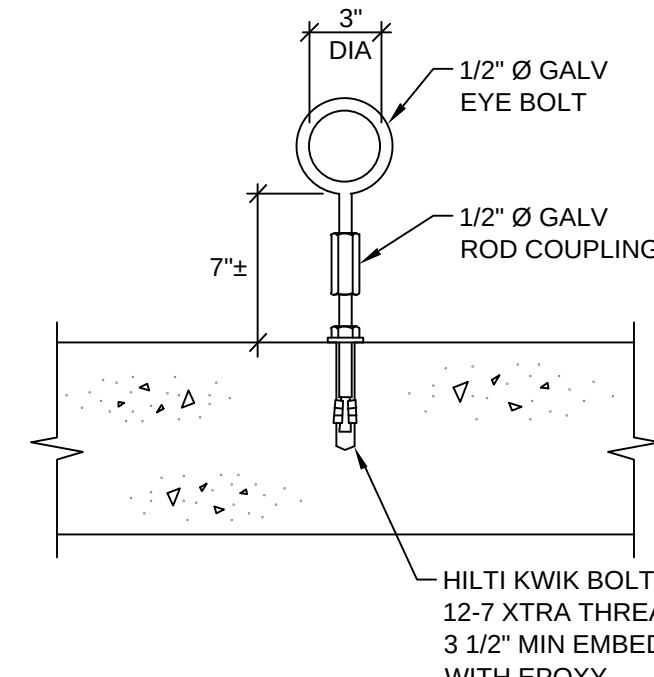
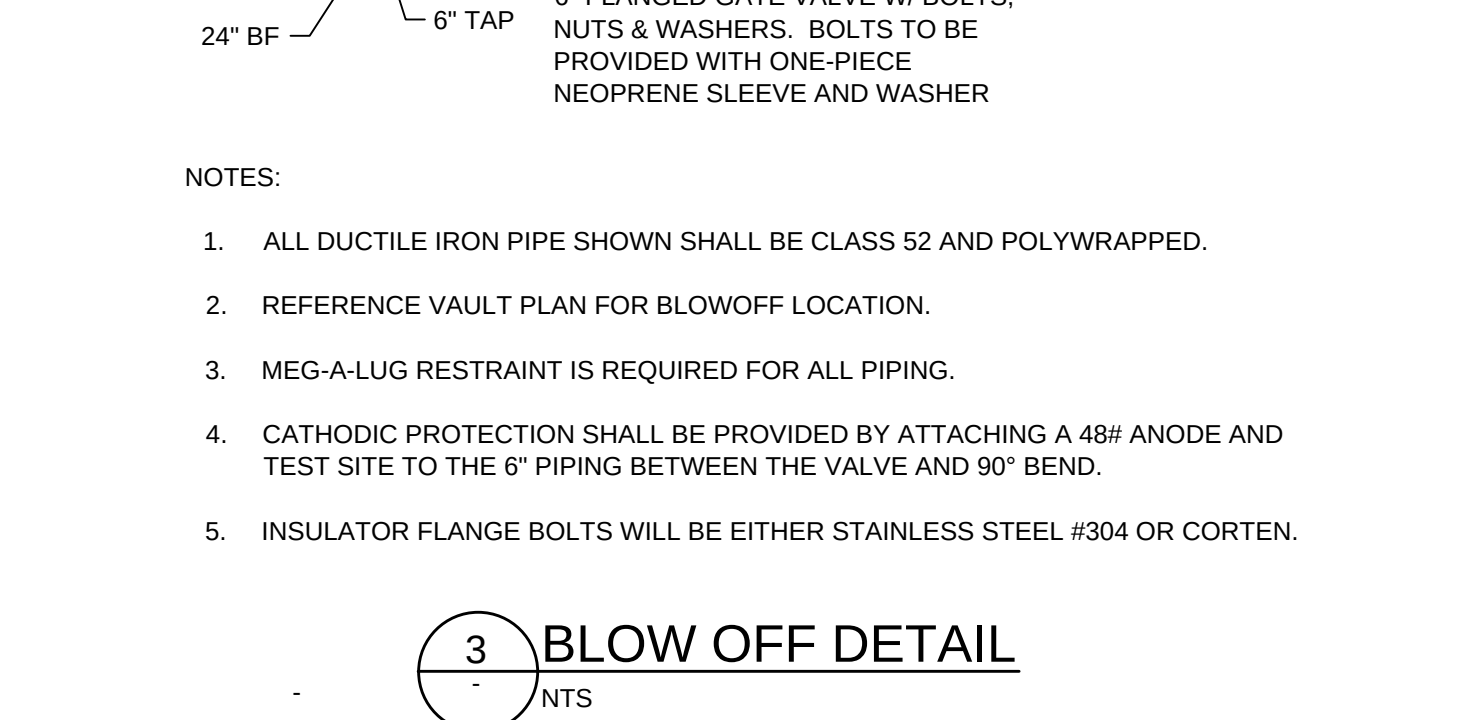
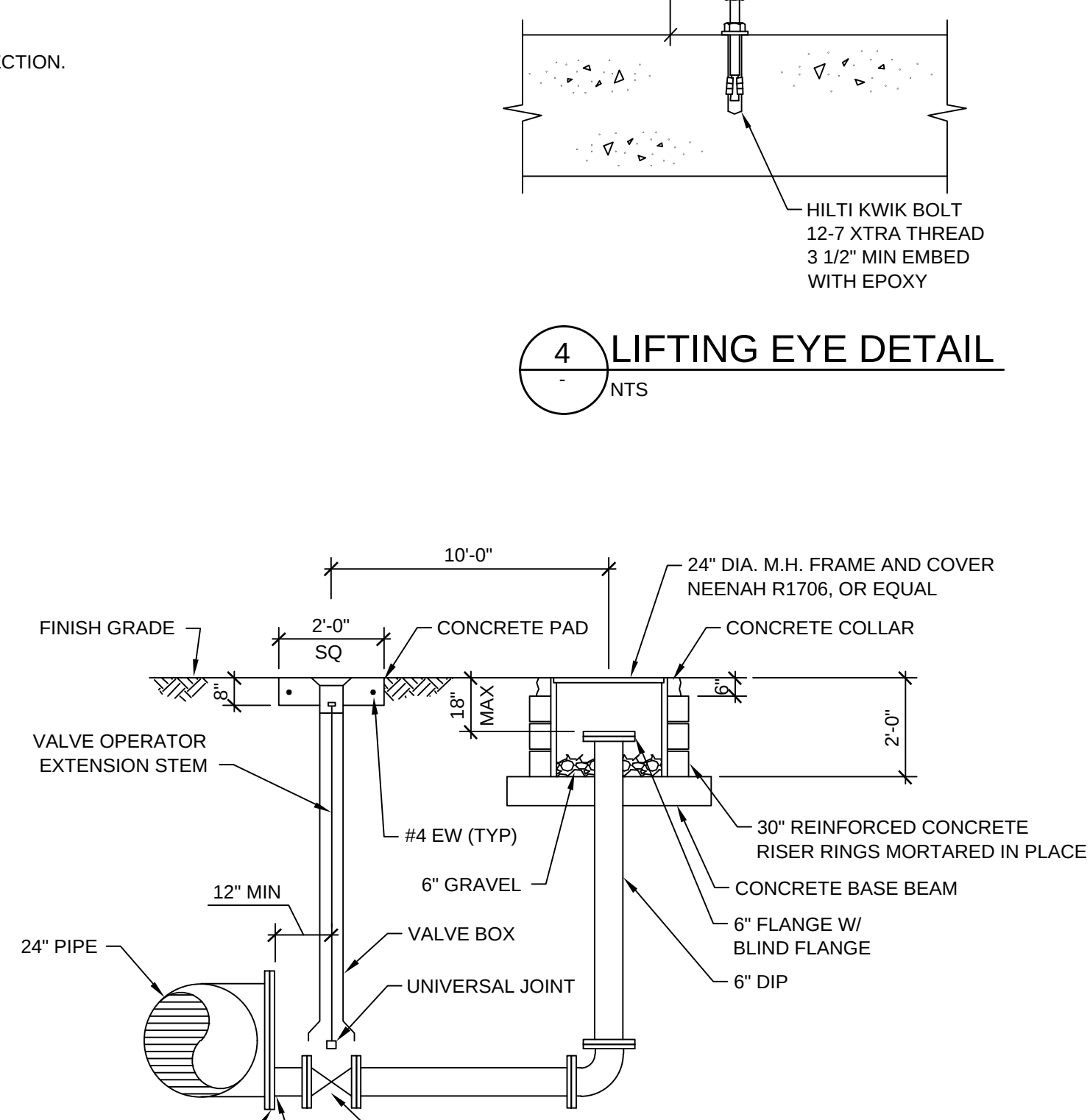
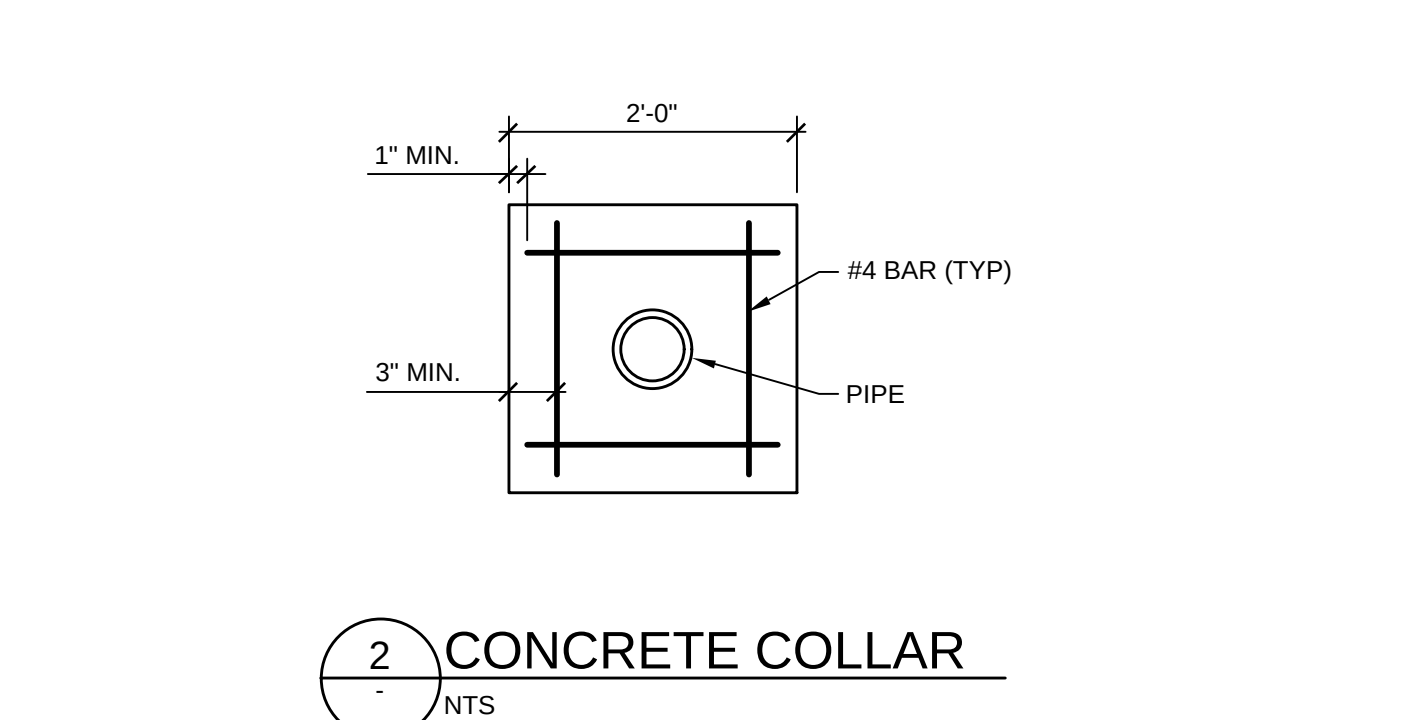
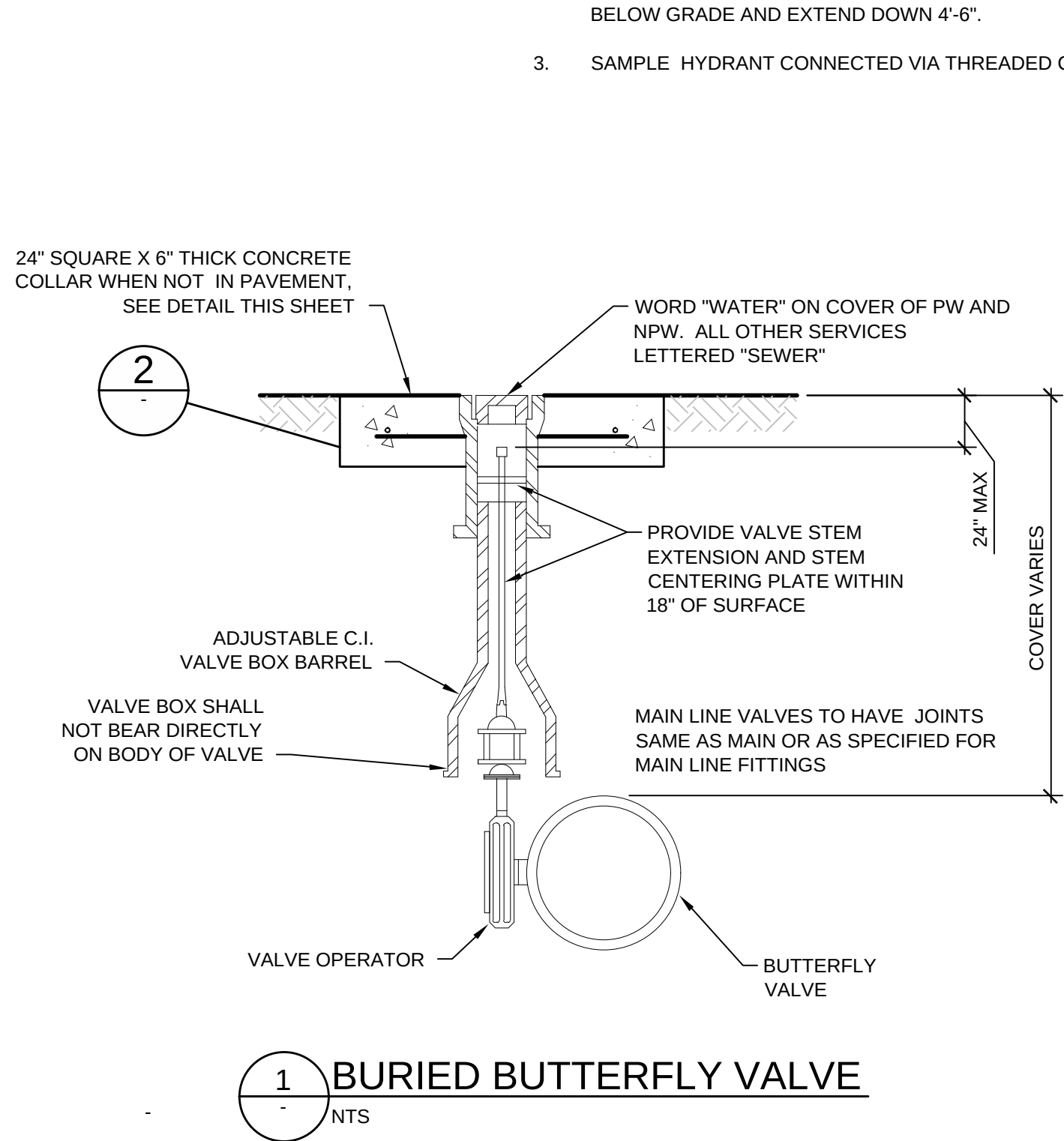
1/12/2016 9:43:54 AM - T:\08362\133-08362-15001\CAD\SHSHEETFILES\1-AW1-102 VAULT SECTION.DWG - SPERRY, TY



VERTICAL DATUM EQUATION:
NAVD88 DATUM = NGVD29 DATUM + 3.1 FEET.

BENCHMARK NOTES:

- BASIS OF BEARINGS: THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 19, TOWNSHIP 5 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN IS CONSIDERED TO BEAR NORTH 89°26'01" EAST.
- BENCHMARK: CITY OF AURORA BENCHMARK 5S6519SW001 BEING A 3" BRASS CAP STAMPED "SLP - 125.5 2005" LOCATED AT THE SOUTHWEST CORNER OF SOUTH MAIN STREET AND SOUTH SOUTHLANDS PARKWAY ON AN INLET NEAR THE SOUTH PCR. NGVD29 ELEV=6064.46'.



- NOTES:**
- ALL PIPING IN VAULT IS TO BE RESTRAINED DUCTILE IRON, UNLESS NOTED OTHERWISE.
 - PROVIDE 2" OF RIGID INSULATION ALL AROUND STRUCTURE. TERMINATE INSULATION 6" BELOW GRADE AND EXTEND DOWN 4'-6".
 - SAMPLE HYDRANT CONNECTED VIA THREADED CONNECTION.

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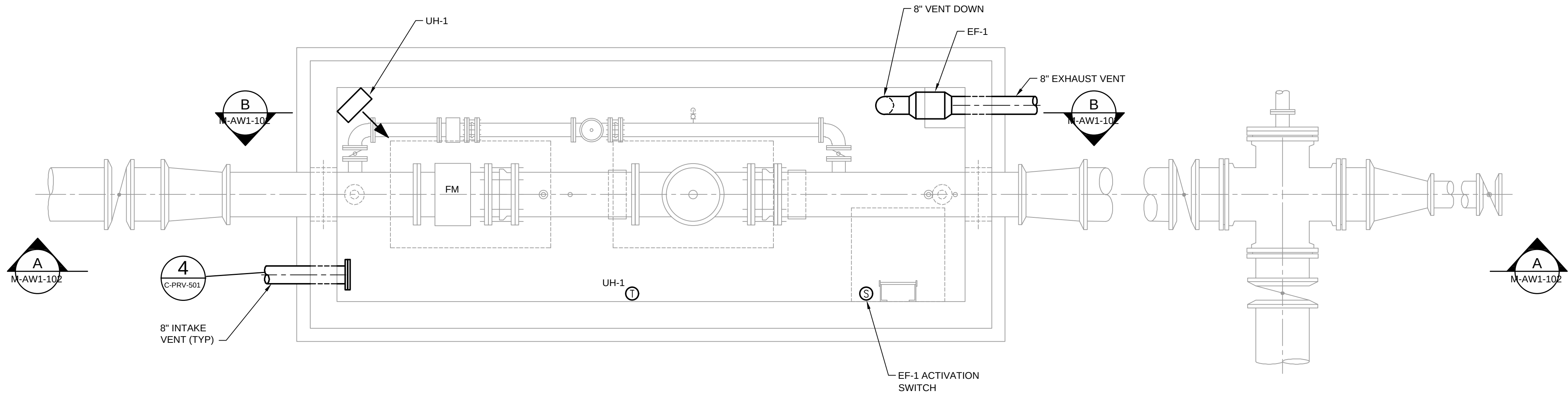
**SOUTH METRO WISE AUTHORITY
CONNECTIONS
VAULT SECTIONS**

Project No.: 133-08362-15001
Designed By: WJR
Drawn By: TRS
Checked By: BSJ

P-AW1-102

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Bar Measures 1 inch

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LOWER PLAN
SCALE: 3/8" = 1'-0"

- NOTES:
1. MOUNT THERMOSTAT 48" AFF.
 2. MOUNT UH-1 TO VAULT WITH MANUFACTURER PROVIDED MOUNTING BRACKET.
 3. REFERENCE P-SERIES DRAWINGS FOR VAULT DETAILS.
 4. MOUNT EF-1 TO VAULT WITH MANUFACTURER PROVIDED MOUNTING SYSTEM.

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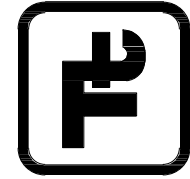
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SOUTH METRO WISE AUTHORITY
CONNECTIONS
VAULT PLAN

Project No.:	133-08362-15001
Designed By:	LR
Drawn By:	TRS
Checked By:	LR

M-AW1-101

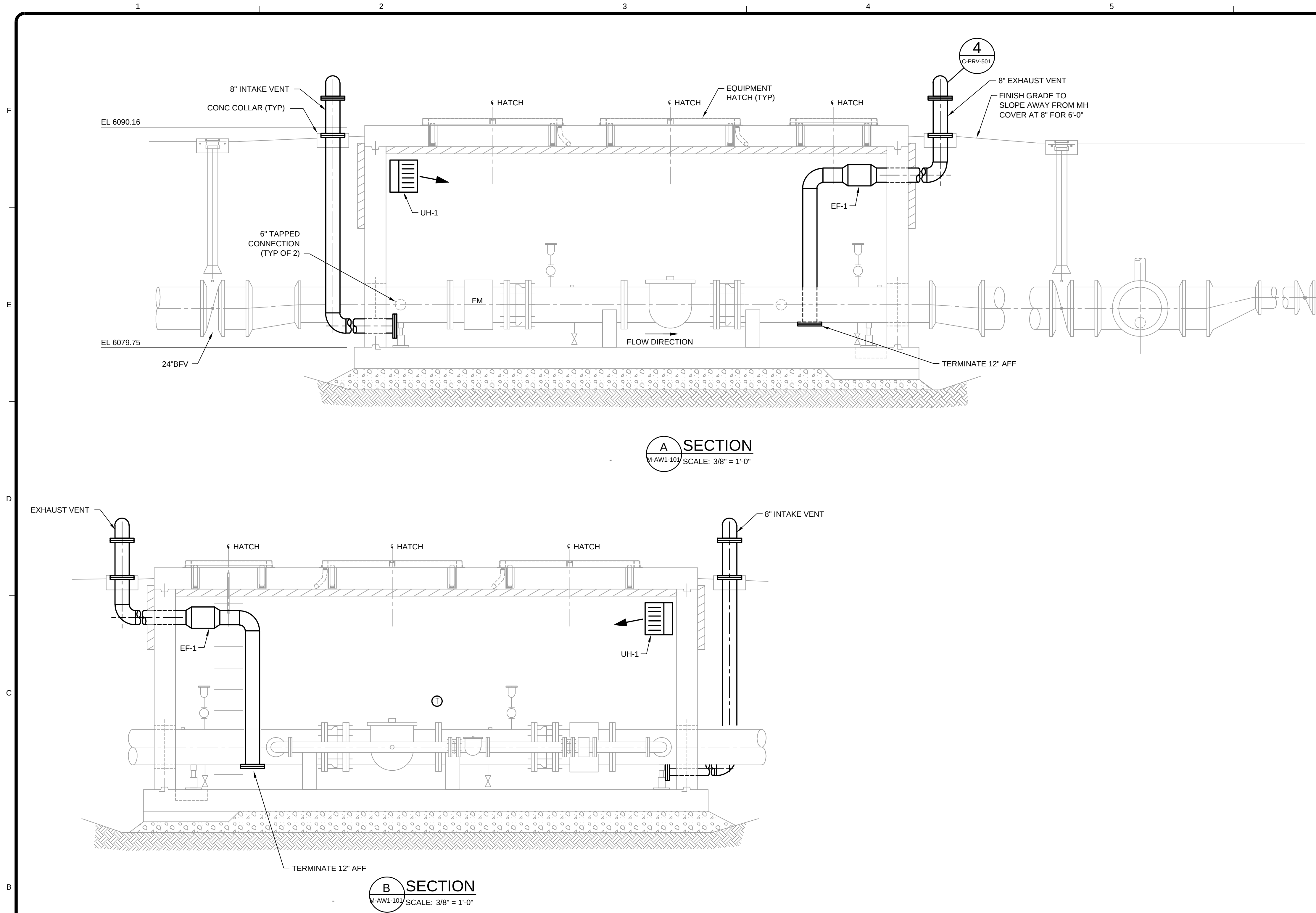
Bar Measures 1 inch

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NOTES:

1. MOUNT THERMOSTAT 48" AFF.
2. MOUNT UH-1 TO VAULT WITH MANUFACTURER PROVIDED MOUNTING BRACKET.
3. REFERENCE P-SERIES DRAWINGS FOR VAULT DETAILS.
4. MOUNT EF-1 TO VAULT WITH MANUFACTURER PROVIDED MOUNTING SYSTEM.

UNIT HEATER SCHEDULE								
TAG	LOCATION	CAPACITY (KW)	AIR FLOWRATE (CFM)	MOTOR			MANUFACTURER AND MODEL (OR APPROVED EQUAL)	REMARKS
				HP	V/HZ/PH	AMPS		
UH-1	VAULT	5	400	1/125	240/60/1	21	TRANE UHEC-053DAC	SPACE THERMOSTAT CONTROLLED. UNIT HEATER SHALL MAINTAIN SPACE TEMPERATURE OF 50F.

EXHAUST FAN SCHEDULE											
TAG	LOCATION	TYPE	CFM	ESP (INWC)						MANUFACTURER AND MODEL (OR APPROVED EQUAL)	REMARKS
					BHP	HP	V/PH/HZ	RPM	FLA		
EF-1	VAULT	INLINE	200	0.3	0.03	1/6	115/1/60	1725	3.4	GREENHECK SQ-75-VG	ALUMINUM CONSTRUCTION WITH SOLID STATE SPEED CONTROLLER

NOTES:

1.) PERFORMANCE SHOWN IS AT SITE CONDITIONS OF 5000 FT AMSL



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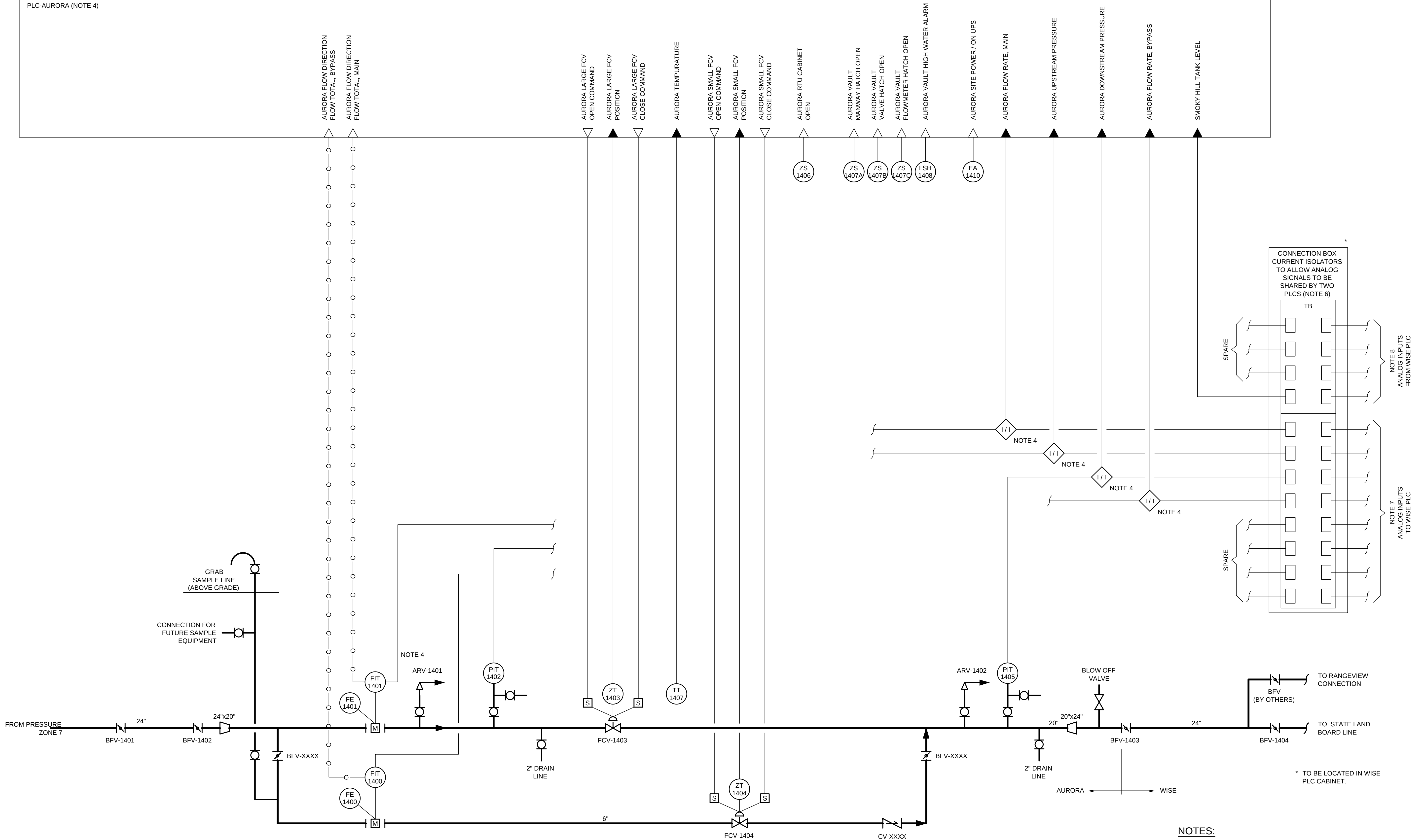
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SOUTH METRO WISE AUTHORITY
CONNECTIONS
VAULT SECTIONS

Project No.:	133-08362-15001
Designed By:	LR
Drawn By:	TRS
Checked By:	LR

M-AW1-102

Bar Measures 1 inch



- NOTES:**
- SEE P&ID LEGEND & ABBREVIATIONS ON DRAWING G-003.
 - LOCAL CONTROL DEVICES SUCH AS INDICATING LIGHTS AND SWITCHES, LOCATED ON CONTROL PANELS OR AT EQUIPMENT, MAY NOT BE SHOWN ON THIS P&ID.
 - SYSTEM CODE IS AW1, UNLESS NOTED OTHERWISE.
 - PROGRAMMABLE LOGIC CONTROLLER (PLC) AND SIGNAL BOOSTER/ISOLATORS ARE LOCATED INSIDE THE PLC ENCLOSURE.
 - MOUNT FLOW TRANSMITTER IN PLC PANEL.
 - SIGNAL ISOLATION JUNCTION BOX LOCATED IN THE WISE PLC CABINET.
 - WIRE (8) ANALOG OUTPUTS FROM AURORA PLC TO WISE PLC.
 - WIRE (4) ANALOG OUTPUTS FROM WISE PLC TO AURORA PLC.

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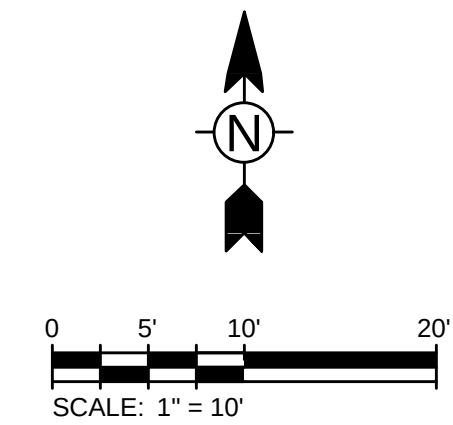
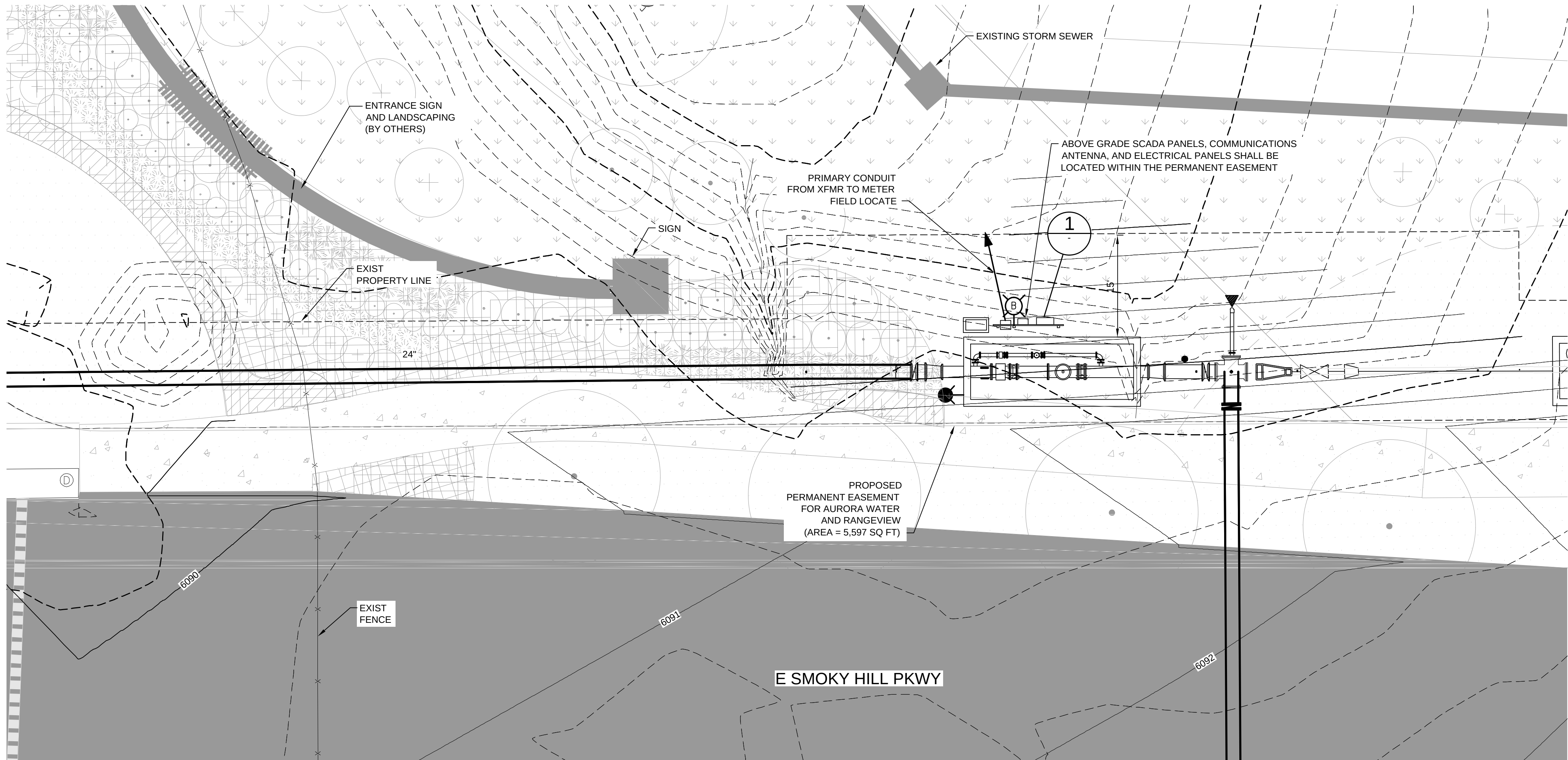
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2	11/03/15	ISSUED FOR PERMITTING	BSJ
3	12/17/15	95% ISSUED FOR REVIEW	BSJ

SOUTH METRO WISE AUTHORITY
CONNECTIONS
P&ID
AURORA CONNECTION

Project No.:	133-08362-15001
Designed By:	DI
Drawn By:	TRS
Checked By:	BSJ

I-AW1-002

1/12/2016 9:45:28 AM - T:\09362\133-08362-15001\CAD\SHSHEET\FILES-E-AW1-001 ELECTRICAL SITE PLAN.DWG - SPERRY, TY

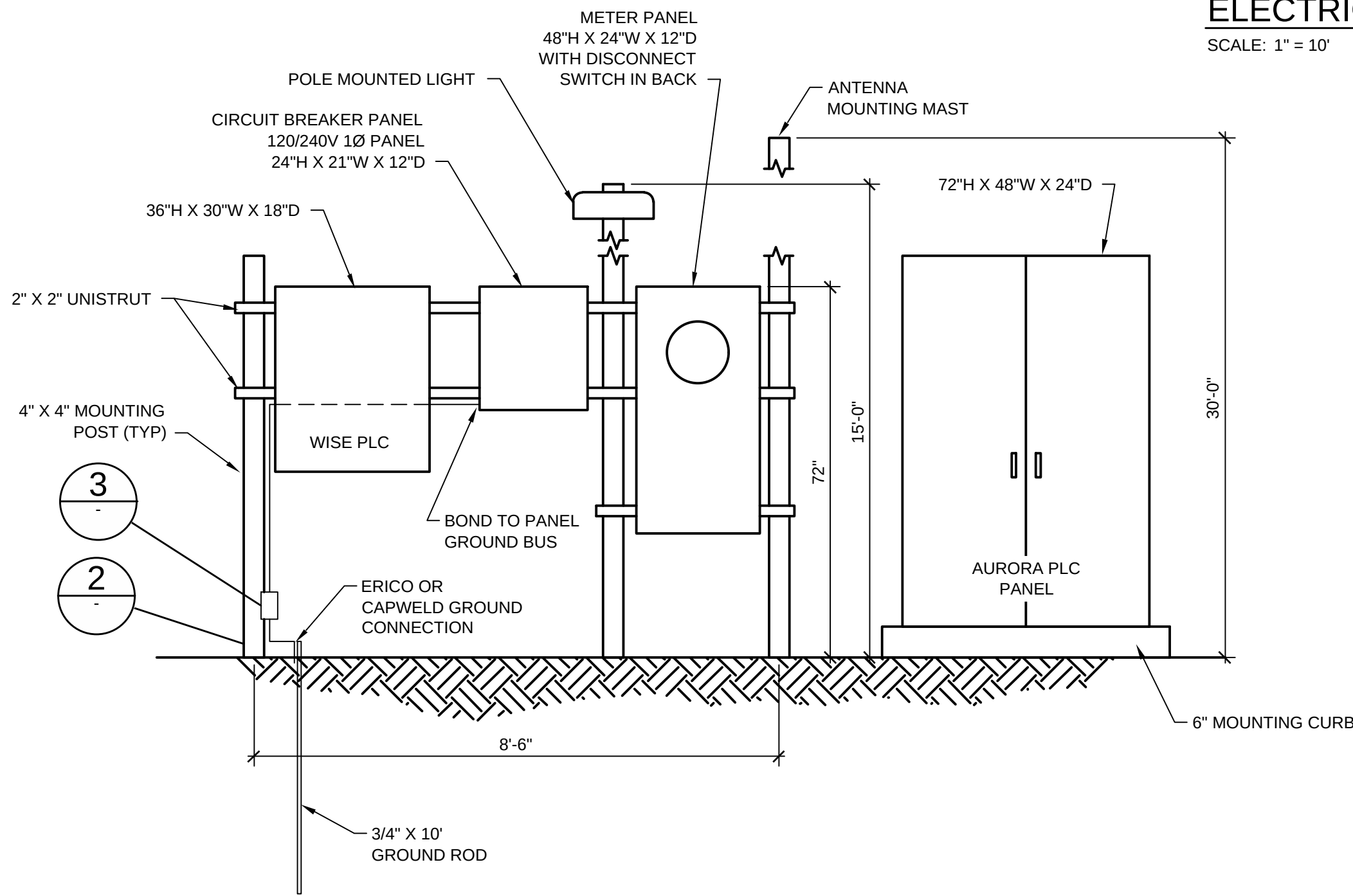


VERTICAL DATUM EQUATION:
NAVD88 DATUM = NGVD29 DATUM + 3.1 FEET.

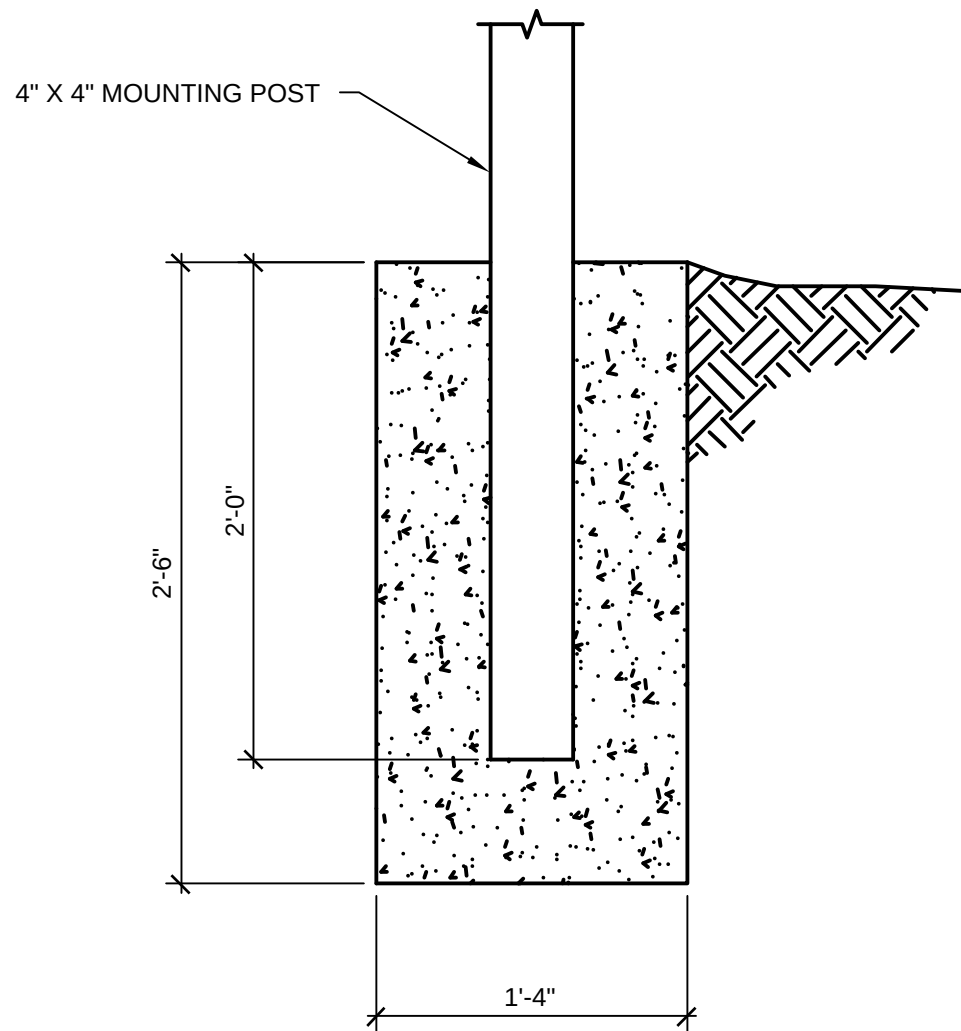
- BENCHMARK NOTES:**
1. **BASIS OF BEARINGS:** THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 19, TOWNSHIP 5 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN IS CONSIDERED TO BEAR NORTH 89°26'01" EAST.
 2. **BENCHMARK:** CITY OF AURORA BENCHMARK 5S6519SW001 BEING A 3" BRASS CAP STAMPED "SLP - 125.5 2005" LOCATED AT THE SOUTHWEST CORNER OF SOUTH MAIN STREET AND SOUTH SOUTHLANDS PARKWAY ON AN INLET NEAR THE SOUTH PCR. NGVD29 ELEV=6064.46'.

- NOTES:**
1. ALL EQUIPMENT PANELS TO BE NEMA 4X STAINLESS STEEL.
 2. WISE AND AURORA PLC CABINETS TO EACH HAVE UNINTERRUPTIBLE POWER SUPPLY (UPS).
 3. ISOLATE DISSIMILAR METALS ON EQUIPMENT RACK IF NECESSARY.

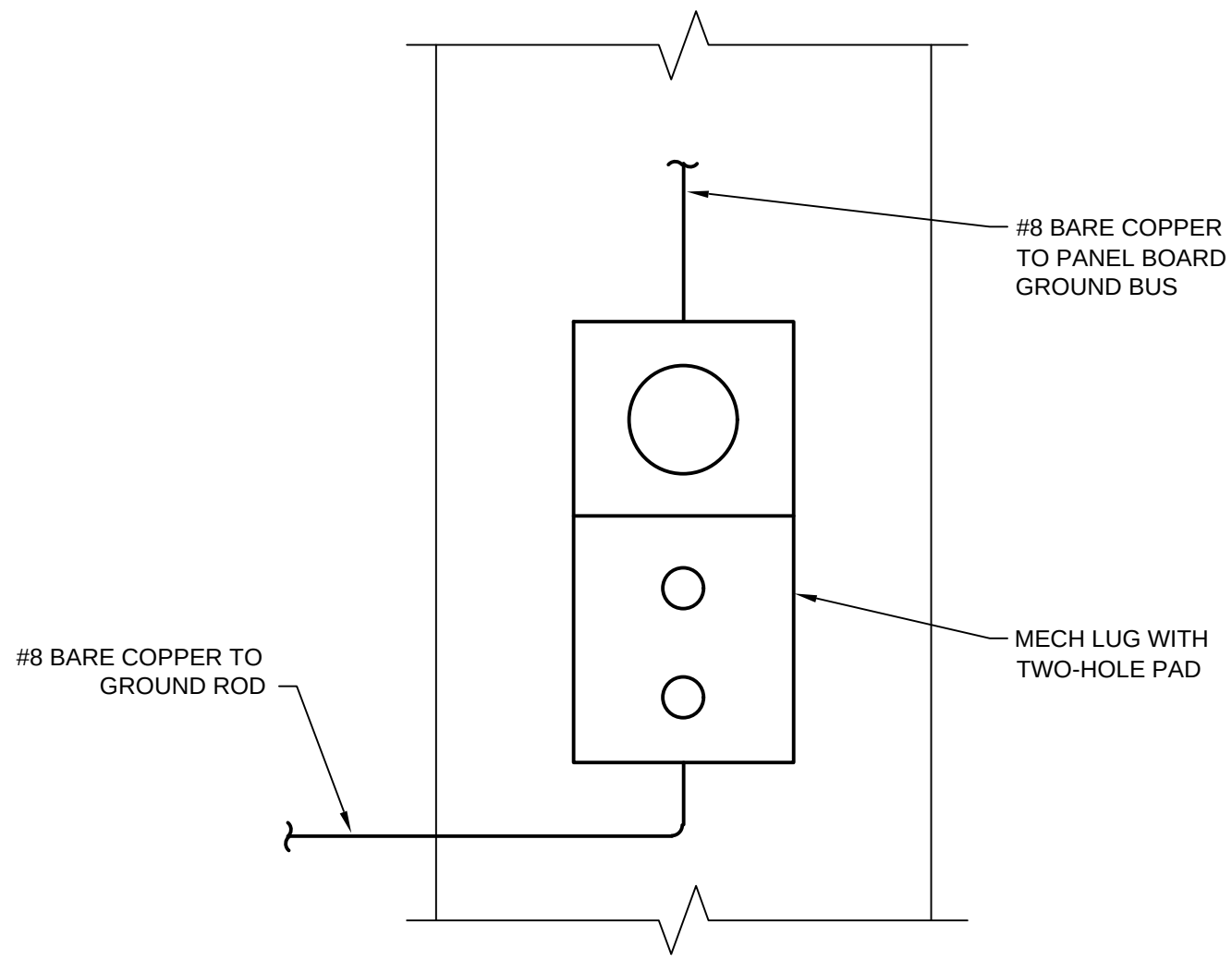
ELECTRICAL SITE PLAN
SCALE: 1" = 10'



1 GROUNDING & PANEL DETAIL
NTS



2 MOUNTING POST DETAIL
NTS



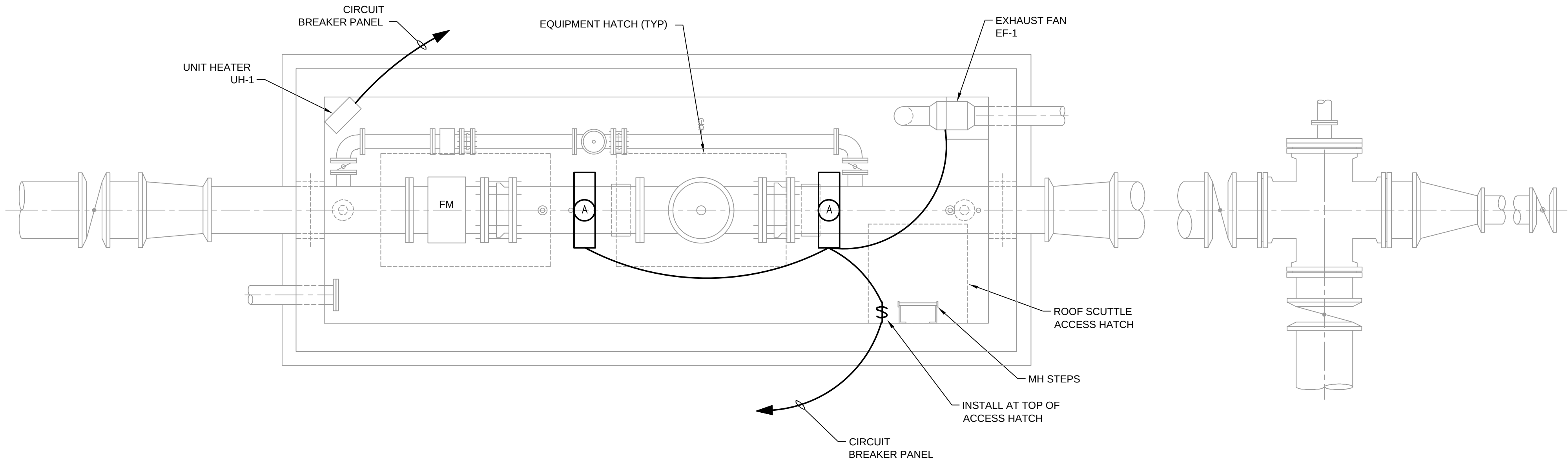
3 H-FRAME GROUNDING LUG DETAIL
NTS

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1	10/16/15	60% ISSUED FOR REVIEW	BSJ
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SOUTH METRO WISE AUTHORITY
CONNECTIONS
ELECTRICAL SITE PLAN

Project No.:	133-08362-15001
Designed By:	DI
Drawn By:	TRS
Checked By:	WJR

1/12/2016 9:45:42 AM - T:\08362\133-08362-15001\CAD\SHEETFILES\E-AW1-101 VAULT ELECTRICAL PLANS.DWG - SPERRY, TY



LOWER PLAN
SCALE: 3/8" = 1'-0"

FIXTURE TYPE	SYMBOL	LAMP WATTS	INPUT WATTS	VOLTS	QTY	LIGHTING FIXTURE SCHEDULE		
						FIXTURE DESCRIPTION	MOUNTING	MANUFACTURER & CATALOG NO.
A		LED	27W	120W	2	LED WET LOCATION.	CEILING	LITHONIA DMW2-L24-3000LM-ACL- MD-120-GZ1-40K
B		LED	45W	120W	1	LED AREA LIGHT WITH MOTION / AMBIENT SENSOR.	15' POLE	LITHONIA DSX0 LED-20C-700-40K- TIS-120-SPA-PIR

GENERAL NOTES:

- THIS DRAWING SHALL BE WORKED IN CONJUNCTION WITH THE PLAN DRAWINGS, CABLE AND RACEWAY SCHEDULES.
- CIRCUIT BREAKERS IN LIGHTING PANELBOARDS SHALL BE LABELED SHOWING AMPERE RATING & CIRCUIT NO.
- FIXTURE CONNECTIONS SHALL BE MADE WITH 200°C, TYPE SSF-2 FIXTURE WIRE.
- A GROUND CONDUCTOR SHALL BE CARRIED IN ALL LIGHTING & RECEPTACLE CONDUITS.
- CONDUIT ROUTING SHOWN DIAGRAMMATICALLY. FIELD TO DETERMINE FINAL ROUTING TO AVOID INTERFERENCE WITH PIPING AND STRUCTURES. CONDUIT & FIXTURE ELEVATIONS ARE APPROXIMATE AND ARE GIVEN FOR REFERENCE ONLY.
- ALL LIGHTING AND RECEPTACLE WIRES SHALL BE IDENTIFIED AT EACH END WITH PANEL NUMBER & CIRCUIT NUMBER.
- ALL UNUSED OPENINGS IN FIXTURES, DEVICES, FITTINGS ETC. SHALL BE PLUGGED.
- FIXTURES TO BE SUPPLIED WITH ALL NECESSARY MOUNTING ACCESSORIES.

PRELIMINARY
NOT FOR CONSTRUCTION

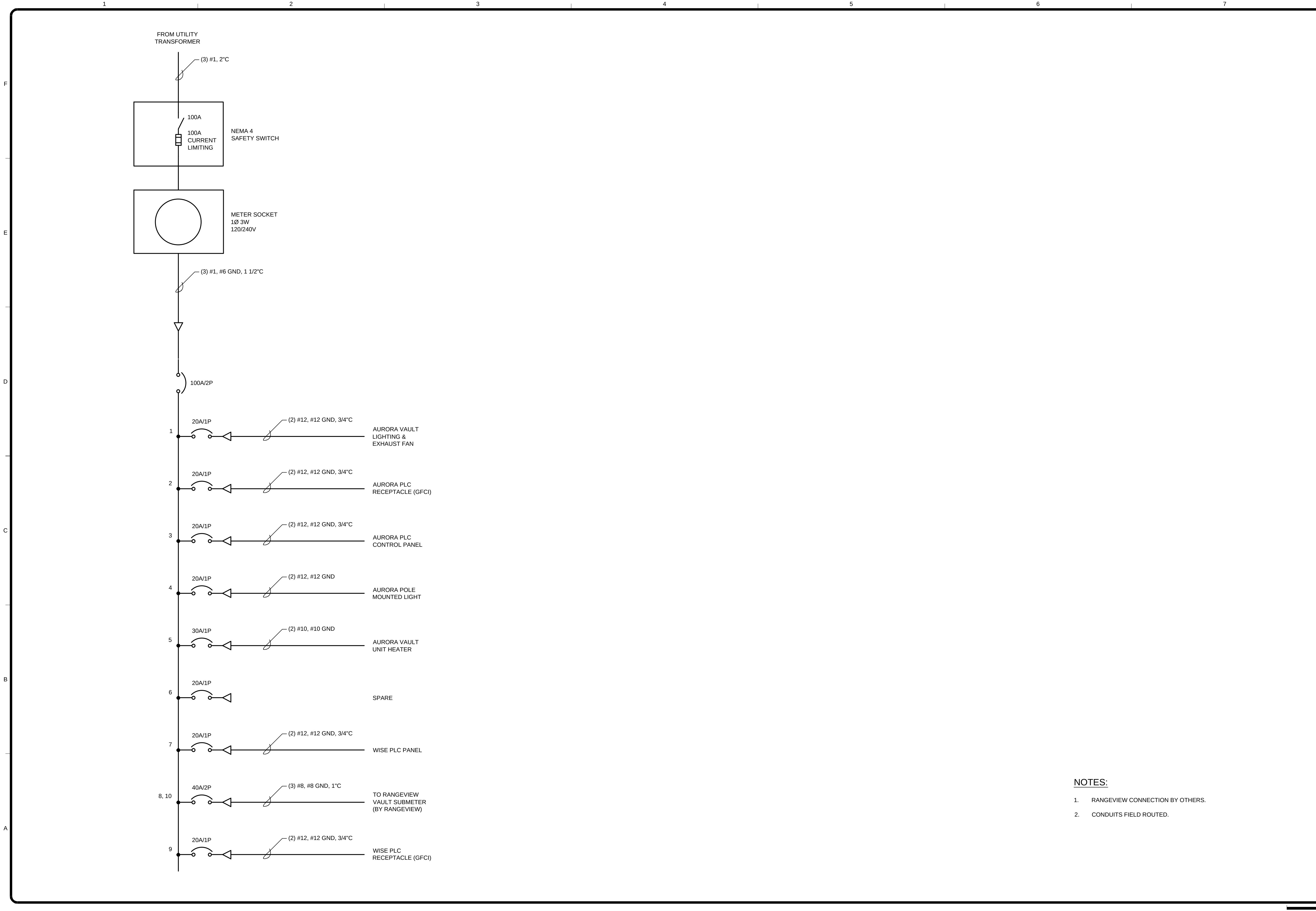
MARK	DATE	DESCRIPTION			BY
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1	10/16/15	60% ISSUED FOR REVIEW	BSJ		
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3	12/17/15	95% ISSUED FOR REVIEW	BSJ		

SOUTH METRO WISE AUTHORITY
CONNECTIONS
VAULT
ELECTRICAL PLAN

Project No.:	133-08362-15001
Designed By:	TM
Drawn By:	TRS
Checked By:	BSJ

E-AW1-101

1/12/2016 9:45:53 AM - T:\08362\133-08362-15001\CAD\SHEETFILES\E-AW1-301 AURORA ONE LINE DIAGRAM.DWG - SPERRY, TY



- NOTES:
- RANGEVIEW CONNECTION BY OTHERS.
 - CONDUITS FIELD ROUTED.

**TETRA TECH**

www.tetrattech.com
1576 Sherman St., Suite 100
Denver, CO 80203
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SOUTH METRO WISE AUTHORITY

CONNECTIONS

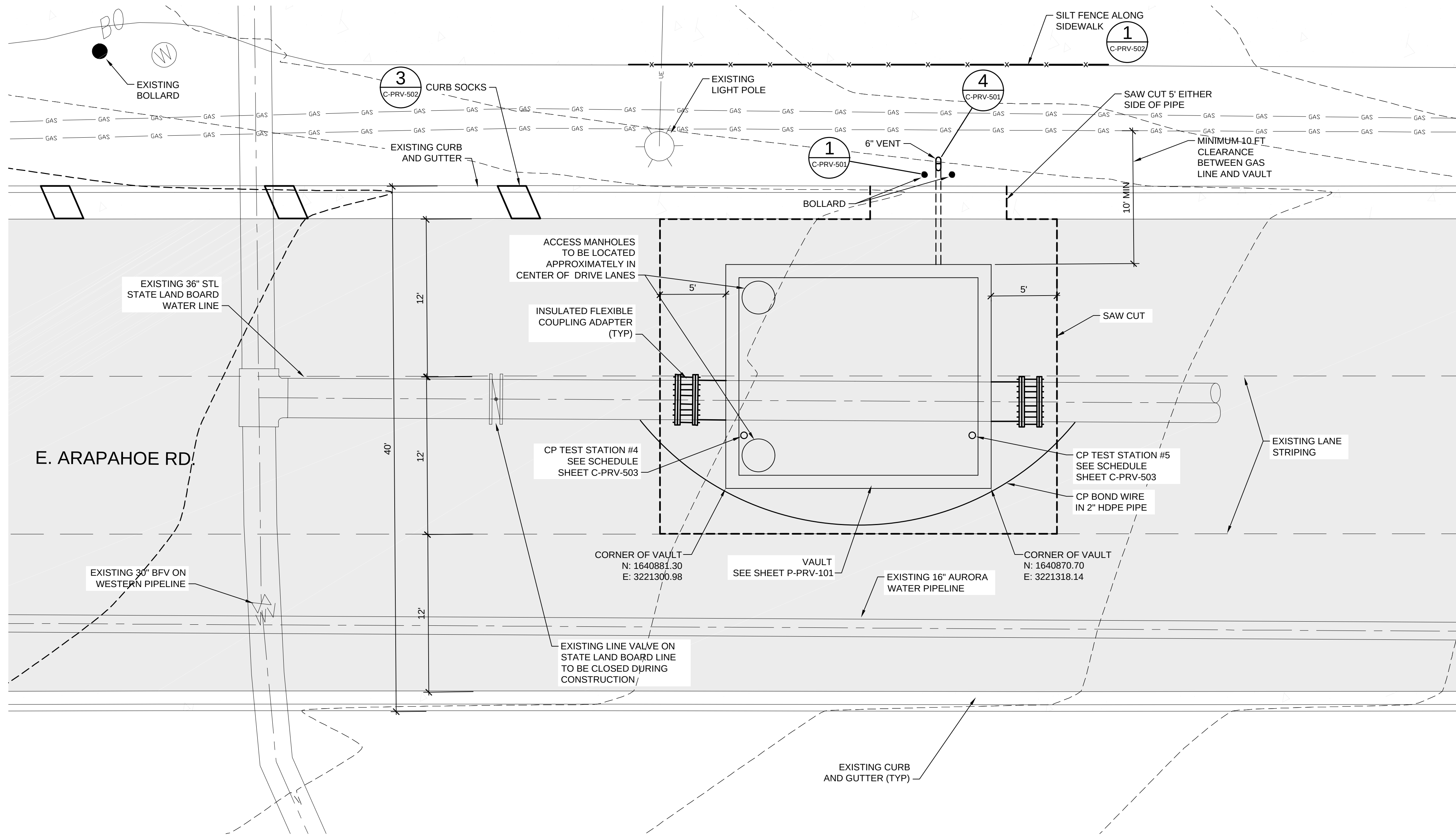
AURORA AND RANGEVIEW
ONE-LINE DIAGRAM

Project No.:	133-08362-15001
Designed By:	JH
Drawn By:	TRS
Checked By:	BSJ

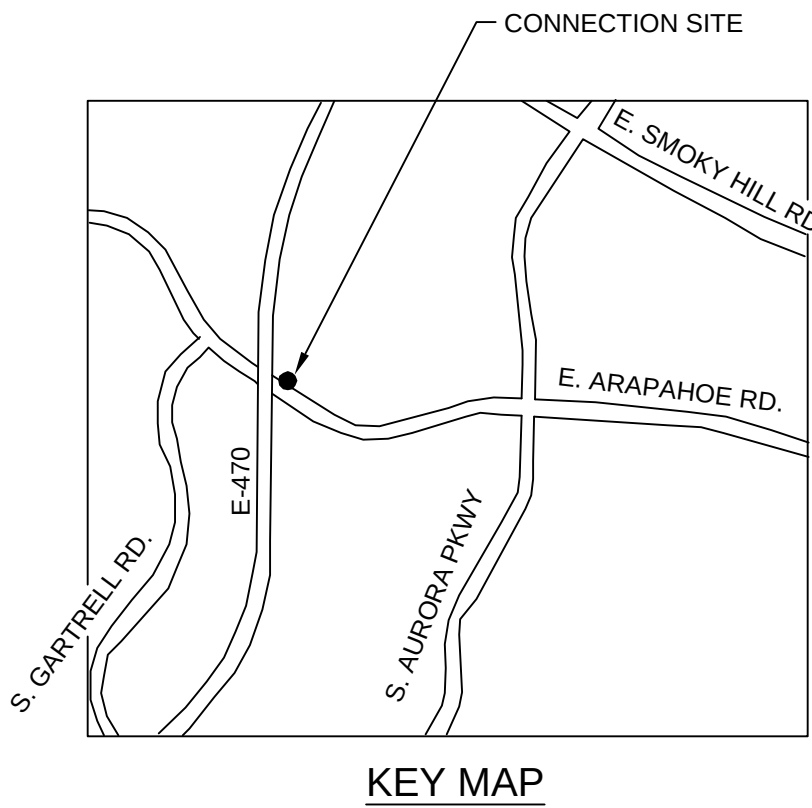
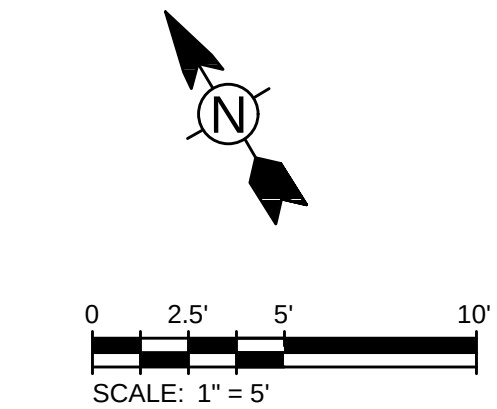
E-AW1-301

Copyright: Tetra Tech
Bar Measures 1 inch

1/12/2016 9:46:13 AM - T:\08362\133-08362-15001\CAD\SHEETFILES\C-PRV-202 PLAN AND PROFILE.DWG - SPERRY.TY



PRV VAULT PLAN
SCALE: 1" = 5'



VERTICAL DATUM EQUATION:
NAVD88 DATUM = NGVD29 DATUM + 3.1 FEET.

BENCHMARK NOTES:

1. BASIS OF BEARINGS: THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 19, TOWNSHIP 5 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN IS CONSIDERED TO BEAR NORTH 89°26'01" EAST.
2. BENCHMARK: CITY OF AURORA BENCHMARK 5S6519SW001 BEING A 3" BRASS CAP STAMPED "SLP - 125.5 2005" LOCATED AT THE SOUTHWEST CORNER OF SOUTH MAIN STREET AND SOUTH SOUTHLANDS PARKWAY ON AN INLET NEAR THE SOUTH PCR. NGVD29 ELEV=6064.46'.

NOTES:

1. UNLESS NOTED OTHERWISE, ALL PIPES ARE PRIVATE.
2. PLACE THE TRENCH SPOILS ON UPHILL SIDE OF THE TRENCH.



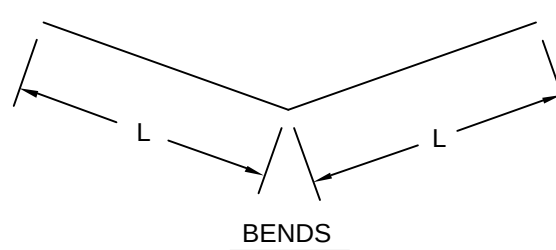
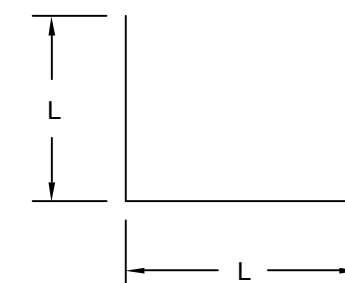
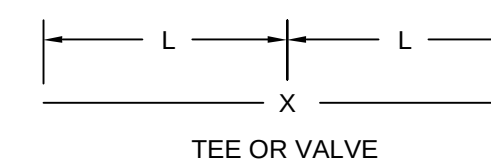
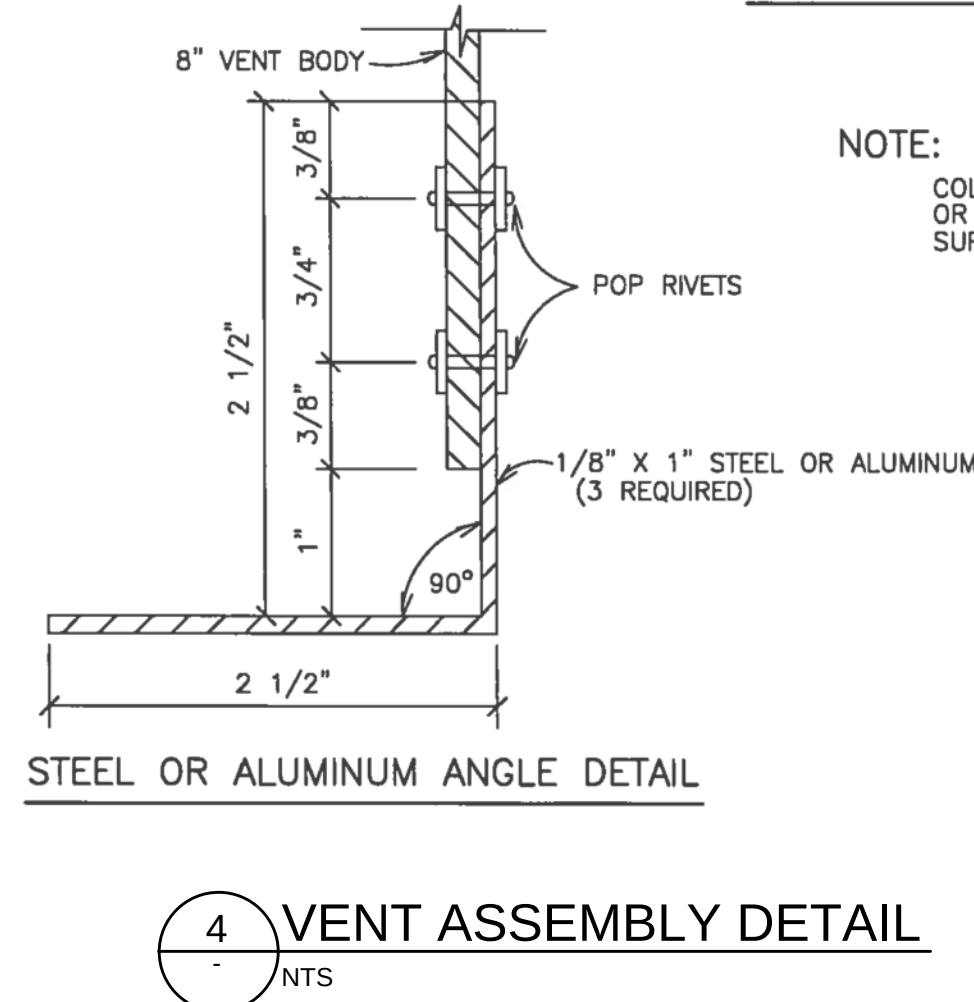
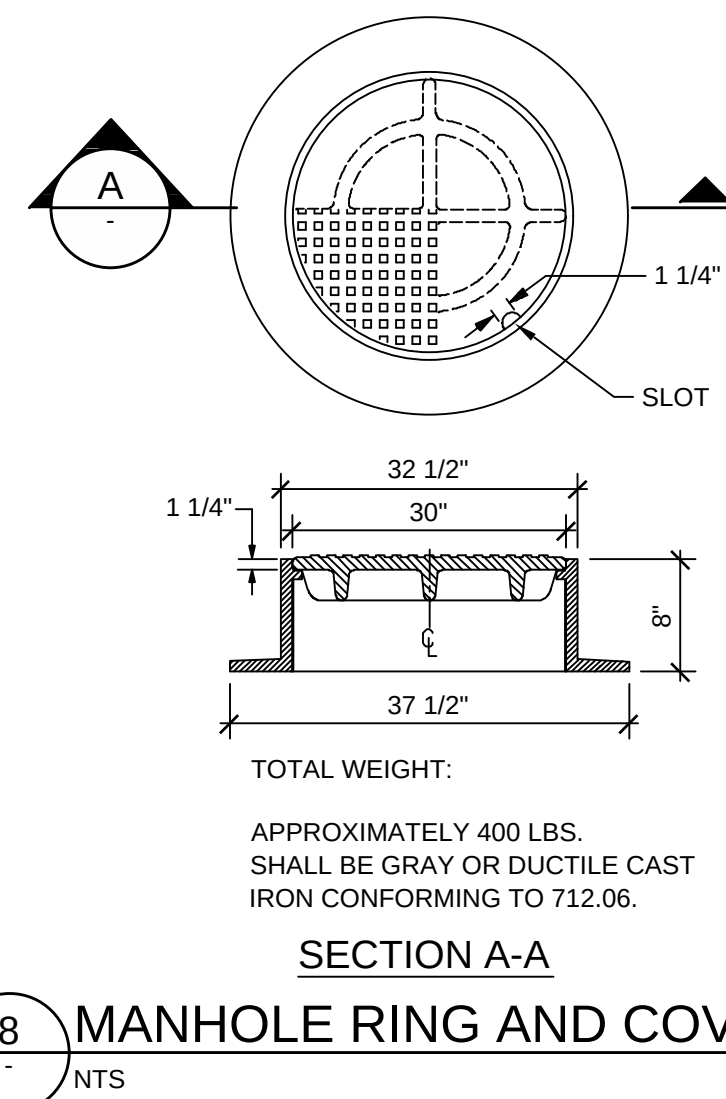
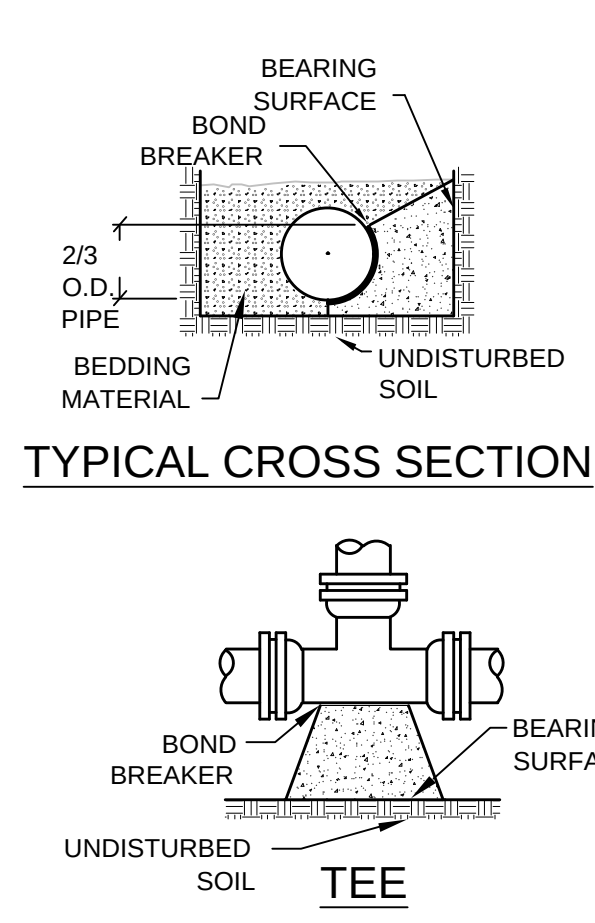
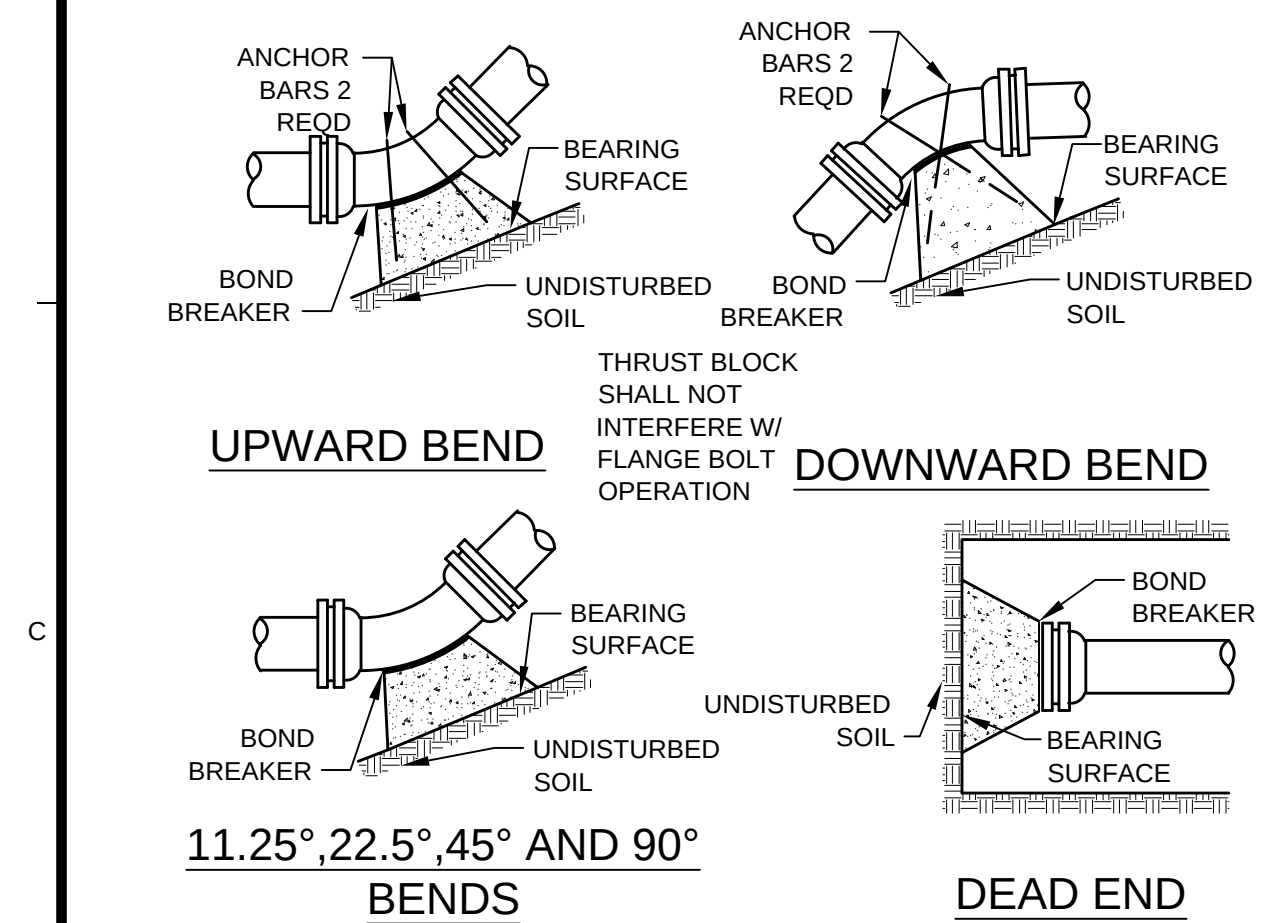
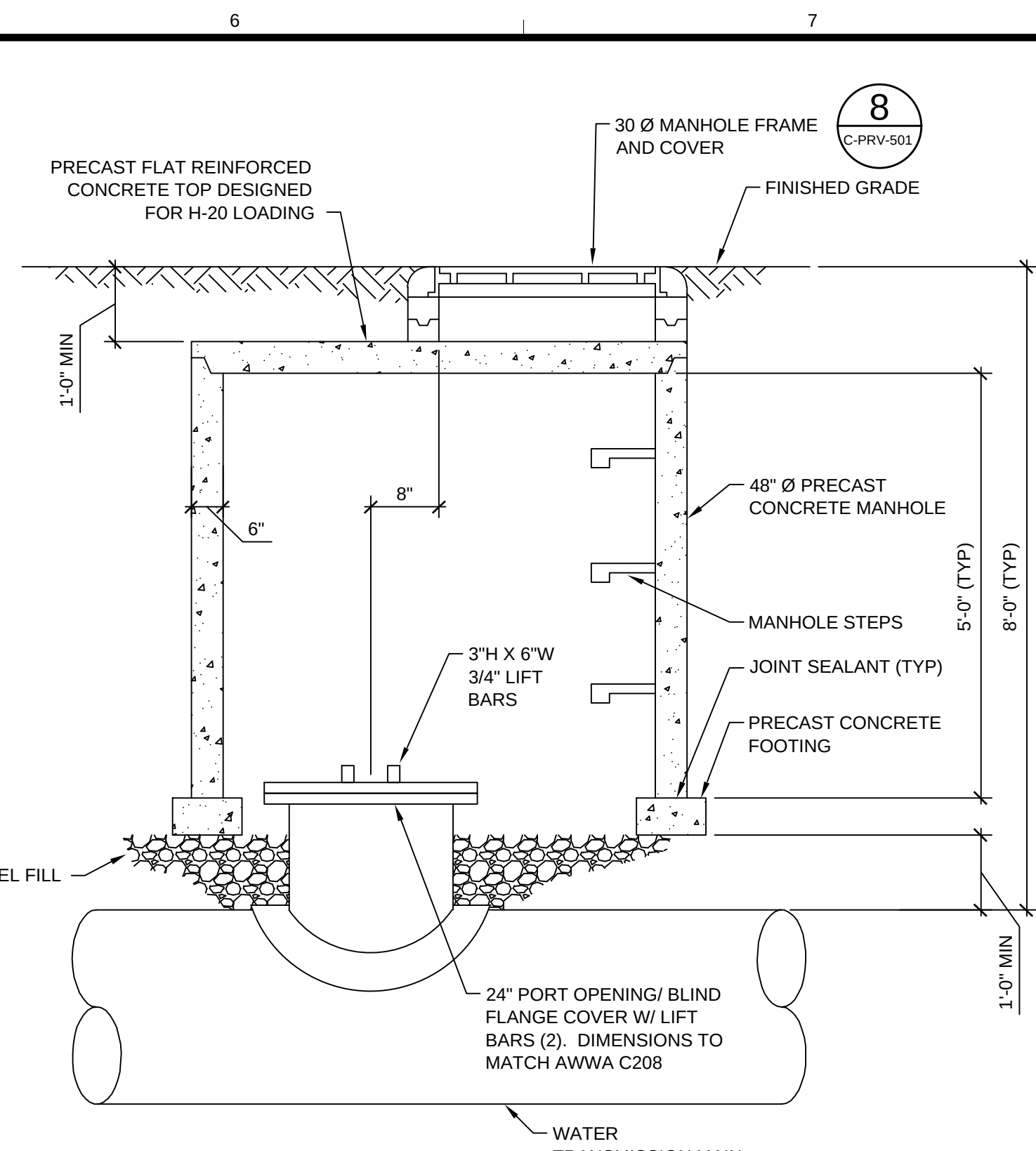
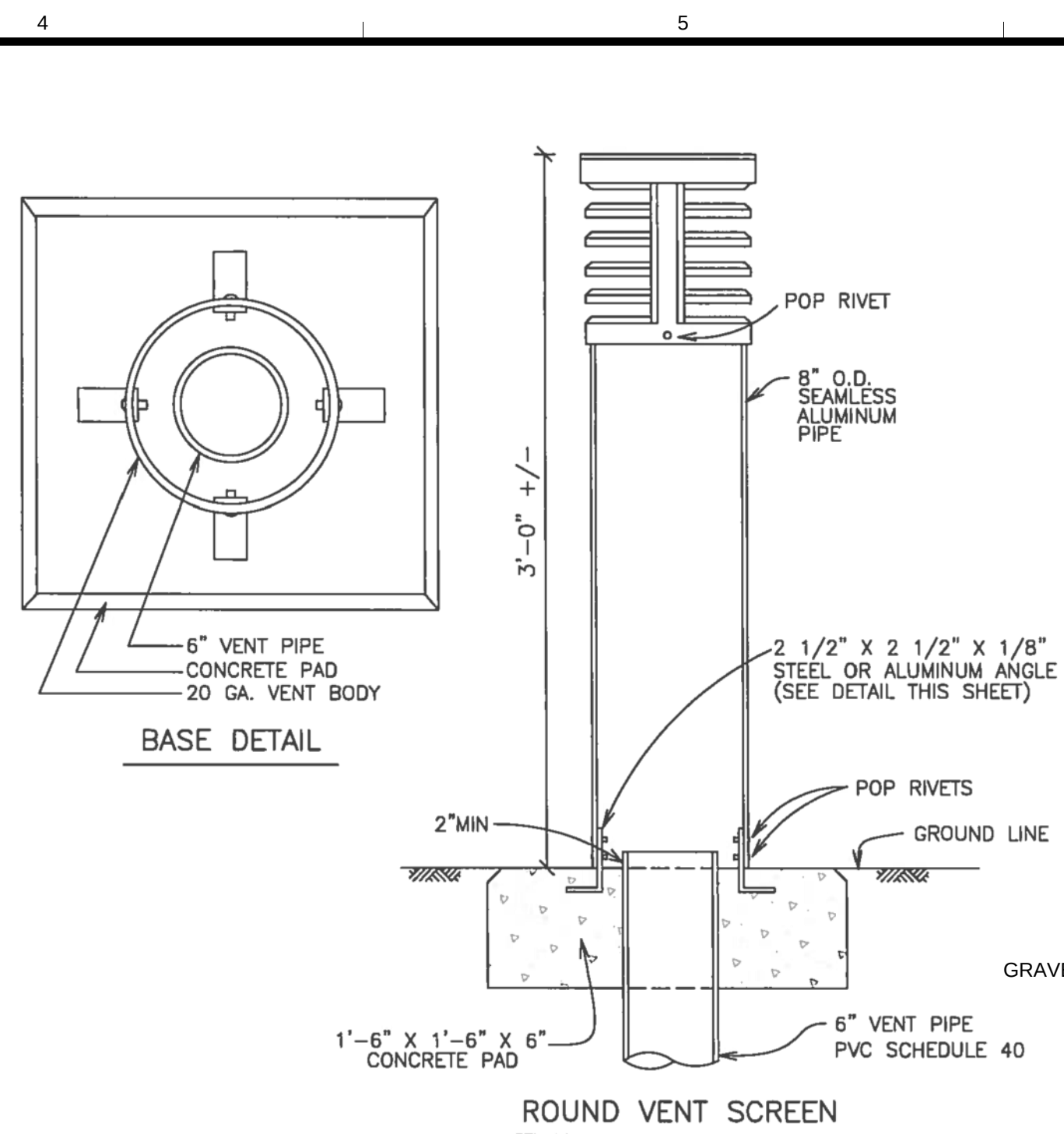
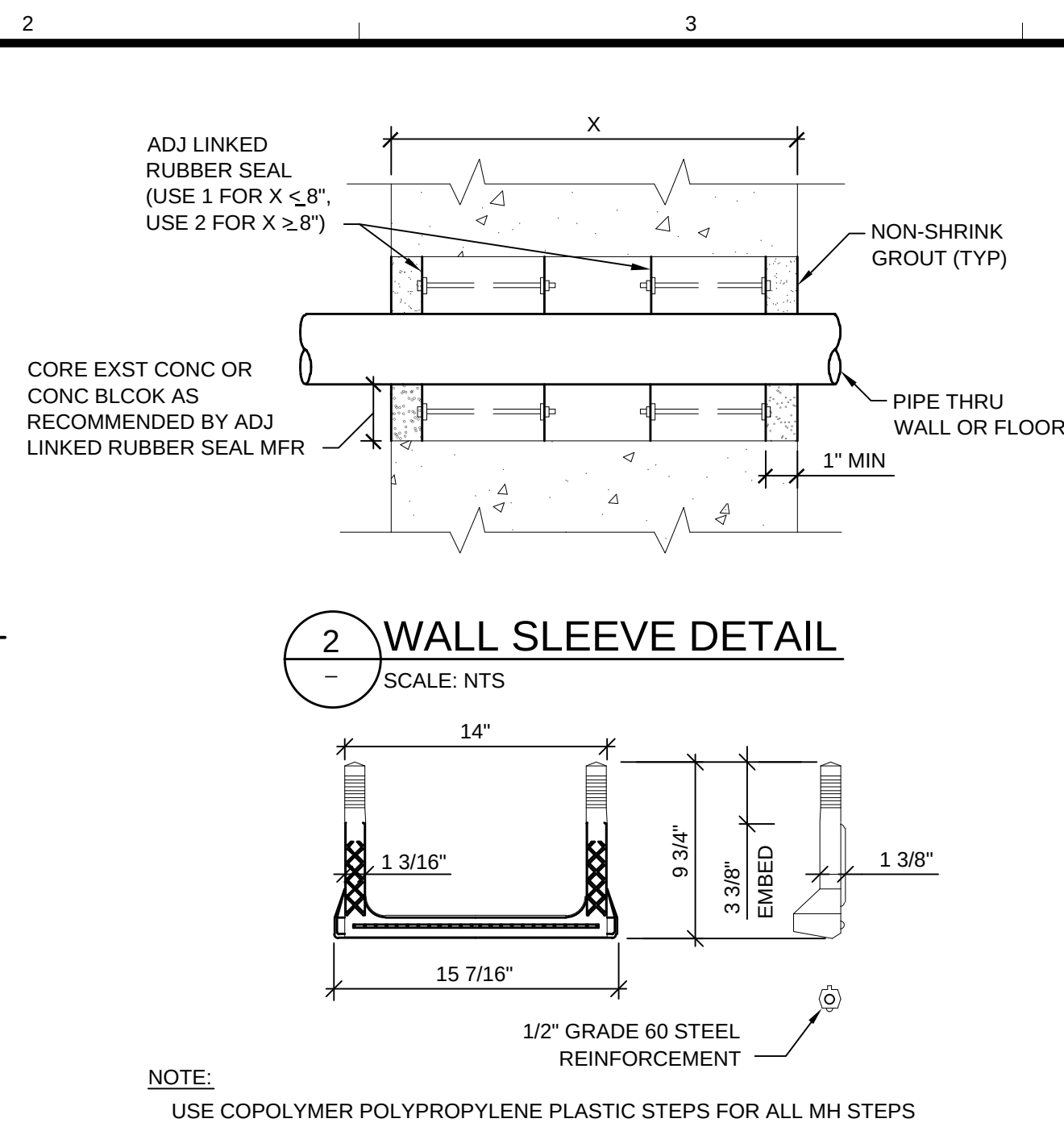
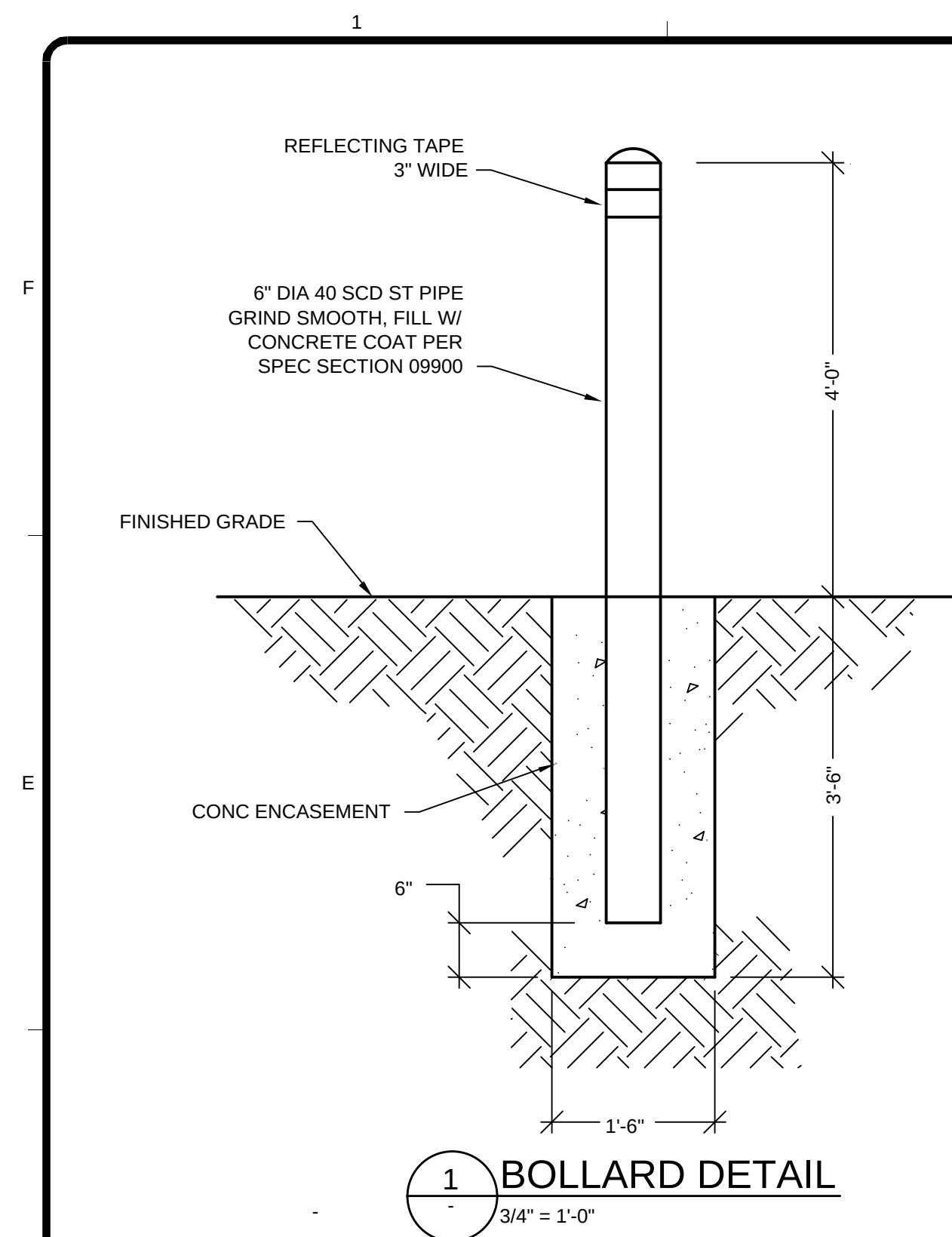
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SOUTH METRO WISE AUTHORITY
CONNECTIONS
ARAPAHOE RD. & E-470
PRV SITE PLAN AND
EROSION CONTROL PLAN

Project No.:	133-08362-15001
Designed By:	WJR
Drawn By:	TRS
Checked By:	BSJ



NOTES:

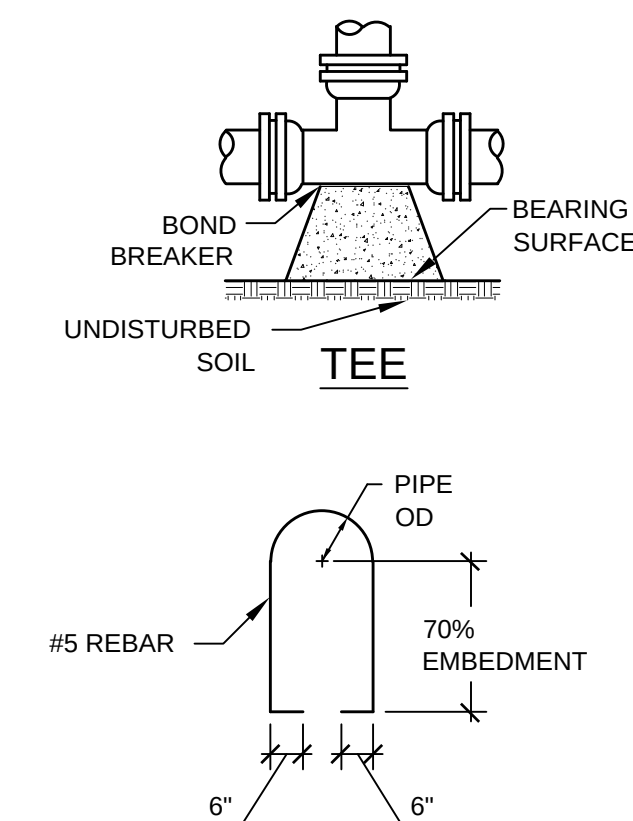
- LENGTHS OF PIPE MEASURED EACH WAY FROM VALVES AND BENDS.
- D=DIAMETER,L=LENGTH,G=GRADE
M.S.=MILD STEEL,H.S.=HIGH STRENGTH
- MINIMUM 7.0' GROUND COVER REQUIRED.
- BASED ON 250 PSI INTERNAL PRESSURE WITH WATER HAMMER
- M.S. MEANS MILD STEEL ROD A.S.T.M. STANDARD DESIGNATION A-36.
- H.S. MEANS HIGH STRENGTH ROD A.S.T.M. STANDARD DESIGNATION A-193 GRADE B-7.
- NUTS SHALL BE A.S.T.M. STANDARD DESIGNATION A-307 GRADE A OR B HEXAGON HEAVY SERIES.
- SEE TIE ROD DETAIL DRAWING,ALSO,TIE ROD COUPLING DETAILS, CLAMP DETAILS AND SET CLAMP DETAILS.
- LENGTH REFERS TO THE AMOUNT OF PIPE WHICH MUST BE TIED TOGETHER AND IS NOT NECESSARILY THE LENGTH OF THE RODS.

PIPE SIZE	TEE, WYE, PLUG OR CAP	BENDS			
		90°	45°	22.5°	11.25°
4"	1.4	2.0	1.1	0.6	0.3
6"	3.2	4.5	2.4	1.2	0.6
8"	5.7	8.0	4.3	2.2	1.1
10"	8.8	12.5	6.8	3.4	1.7
12"	12.7	18.0	9.7	5.0	2.5
14"	17.3	24.5	13.3	6.8	3.4
18"	28.6	40.5	21.9	11.2	5.6
24"	50.9	72.0	39.0	19.9	10.0
30"	79.5	112.5	60.9	31.0	15.6
36"	114.5	161.9	87.6	44.7	22.4
42"	155.9	220.4	119.3	60.8	30.6
48"	203.6	287.9	155.8	79.4	39.9

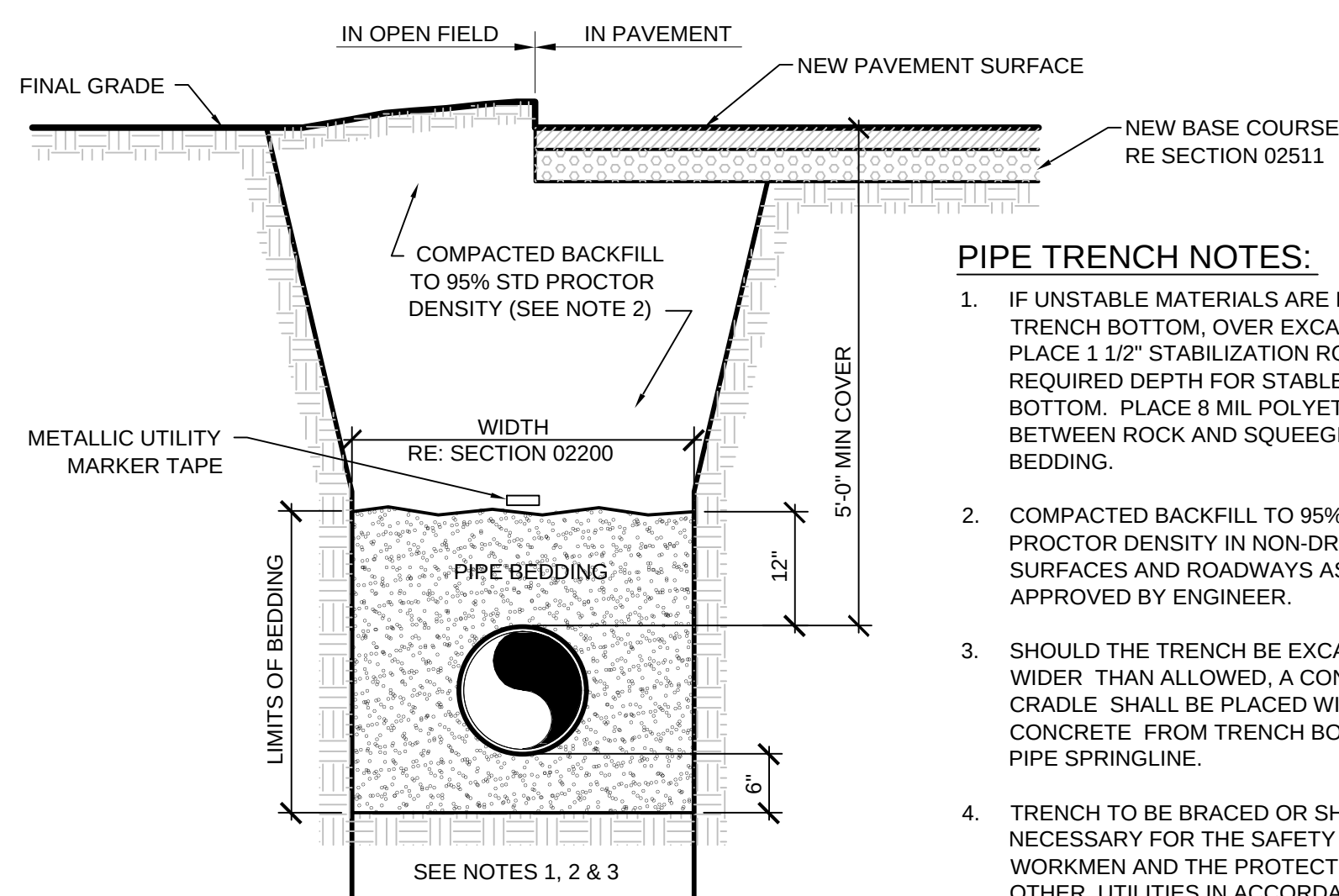
MINIMUM BEARING SURFACE AREA

NOTES:

1. BEARING SURFACES SHOWN IN CHART ARE MINIMUM SQUARE FEET.
2. BASED ON SOIL BEARING CAPACITY OF 2,000 lb/s.f.
3. TEST PRESSURE = 150 psi
4. TYPE II PORTLAND CEMENT, USE 3000 lb CONCRETE
5. FOR DIFFERENT TEST PRESSURES AND SOIL BEARING PRESSURES, USE THE EQUATION:
BEARING AREA: (TEST PRESSURE/150 psi) x (2,000/SOIL BEARING PRESSURE) x TABLE VALUE

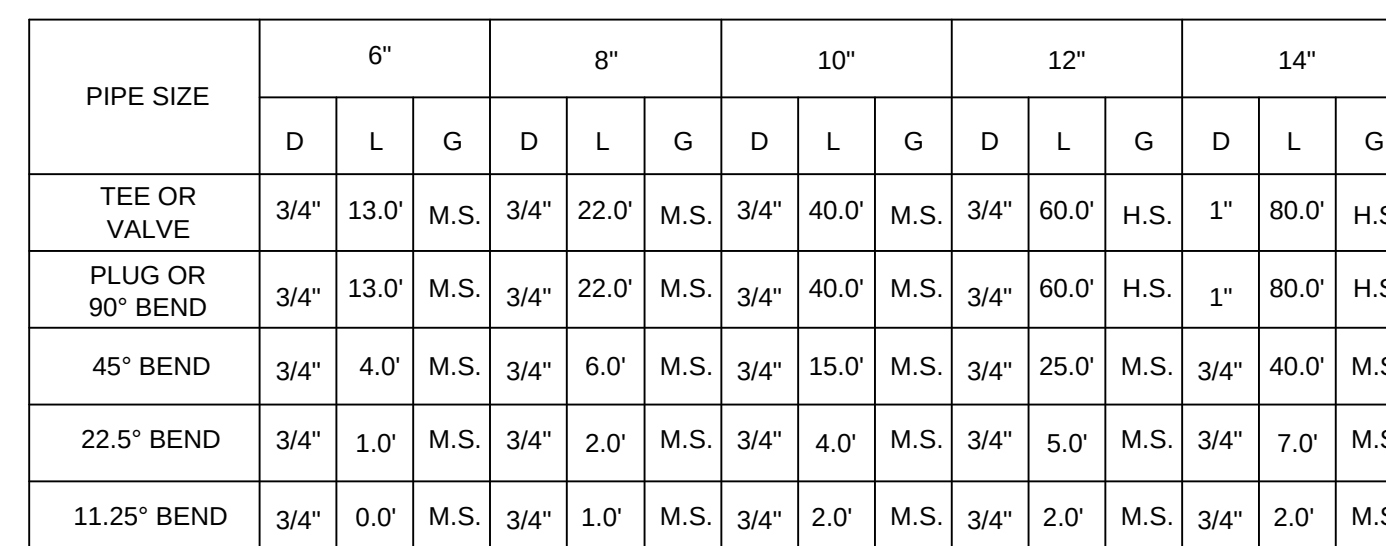


8 MANHOLE RING AND COVER



PIPE TRENCH NOTES:

1. IF UNSTABLE MATERIALS ARE FOUND IN TRENCH BOTTOM, OVER EXCAVATE AND PLACE 1 1/2" STABILIZATION ROCK TO REQUIRED DEPTH FOR STABLE TRENCH BOTTOM. PLACE 8 MIL POLYETHYLENE BETWEEN ROCK AND SQUEEGEE BEDDING.
2. COMPACTED BACKFILL TO 95% STD PROCTOR DENSITY IN NON-DRIVING SURFACES AND ROADWAYS AS APPROVED BY ENGINEER.
3. SHOULD THE TRENCH BE EXCAVATED WIDER THAN ALLOWED, A CONCRETE CRADLE SHALL BE PLACED WITH 2500psi CONCRETE FROM TRENCH BOTTOM TO PIPE SPRINGLINE.
4. TRENCH TO BE BRACED OR SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKMEN AND THE PROTECTION OF OTHER UTILITIES IN ACCORDANCE WITH LOCAL, AND NATIONAL SAFETY REGULATIONS.
5. MINIMUM COVER TO BE 5'-0" BELOW FINAL GRADE, UNLESS SHOWN OTHERWISE.



9 LENGTH OF RESTRAINED PIPE

MARK	DATE	DESCRIPTION	BY
1	10/16/15	60% ISSUED FOR REVIEW	BSJ
2	11/03/15	ISSUED FOR PERMITTING	BSJ
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SOUTH METRO WISE AUTHORITY

CONNECTIONS

CIVIL DETAILS

Project No.:	133-08362-1500
Designed By:	AD
Drawn By:	TRS
Checked By:	BS

C.O.A.

7

C-PRV-501

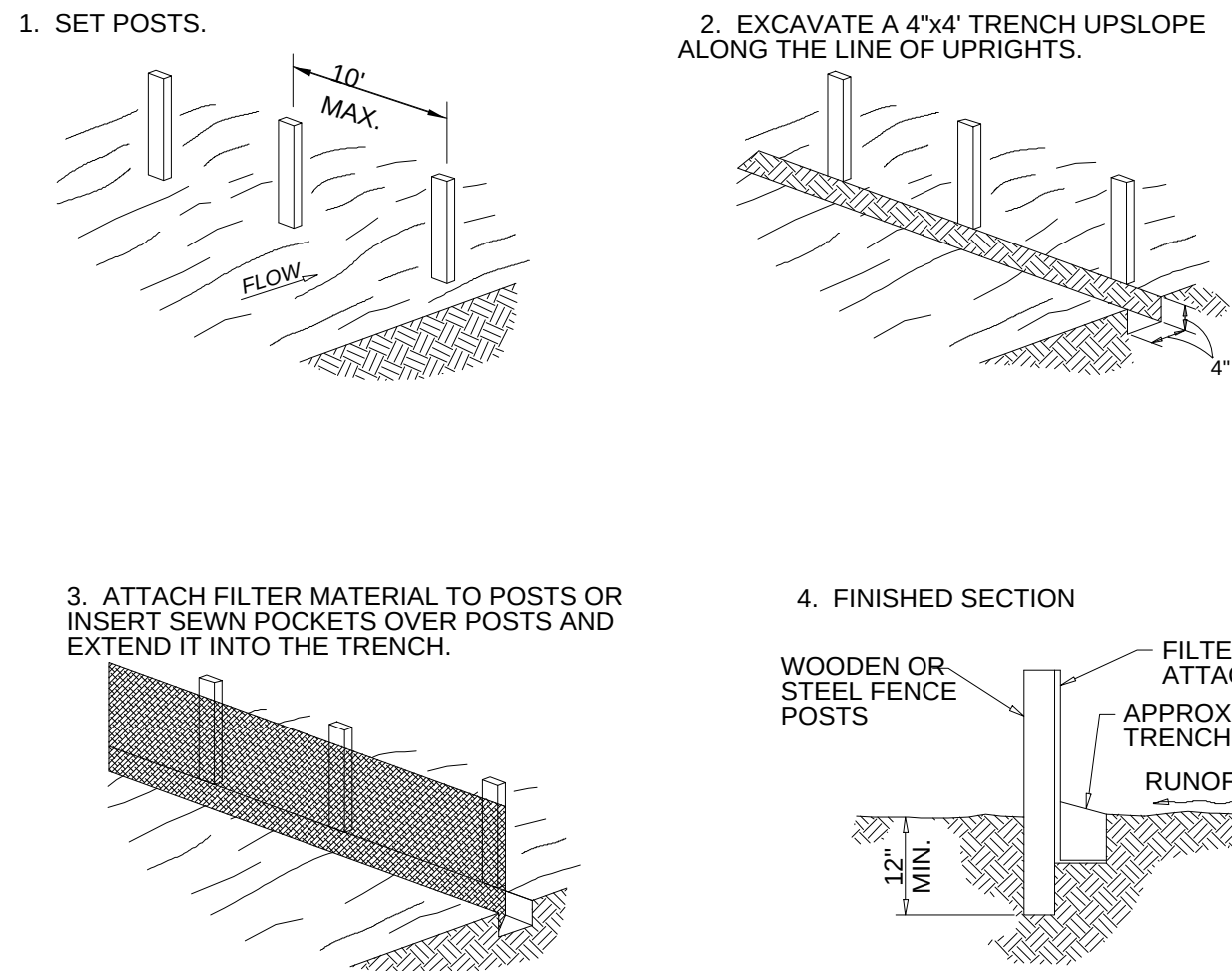
1/2/2016 9:46:41 AM - T:\09362\133-08362-1500\CAD\SHEETFILES\C-PRV-502 EROSION CONTROL DETAILS.DWG - SPERRY, TY

F
E
D
C
B
A

COA EROSIONS CONTROL AND STORM WATER NOTES:

STANDARD STATEMENT AND NOTES FOR SWMP DESIGN DRAWINGS "PURSUANT TO SECTIONS 138 -440 AND 138-442 OF THE AURORA MUNICIPAL CODE, THE PERMITTEE SHALL LOCATE, INSTALL, AND MAINTAIN ALL BEST MANAGEMENT PRACTICES, INCLUDING, BUT NOT LIMITED TO, EROSION CONTROLS, SEDIMENT CONTROLS, DRAINAGE CONTROLS, AND WATER QUALITY BMPs AS INDICATED IN THE APPROVED STORMWATER MANAGEMENT PLAN (SWMP). THE FOLLOWING NOTES ARE A REQUIREMENT AND SHALL BE INCLUDED ON THE SWMP DESIGN DRAWINGS DEVELOPED FOR THIS PROJECT AND SUBMITTED FOR APPROVAL BY THE CITY. BMP INSTALLATIONS SHALL BE INSTALLED PER THE COA STANDARD DETAIL IN EFFECT AT THE TIME OF INSTALLATION OR PER THE APPROVED SWMP DESIGN DRAWING, A COA APPROVED VARIANCE, OR A COA APPROVED DESIGN DRAWING PLAN AMENDMENT."

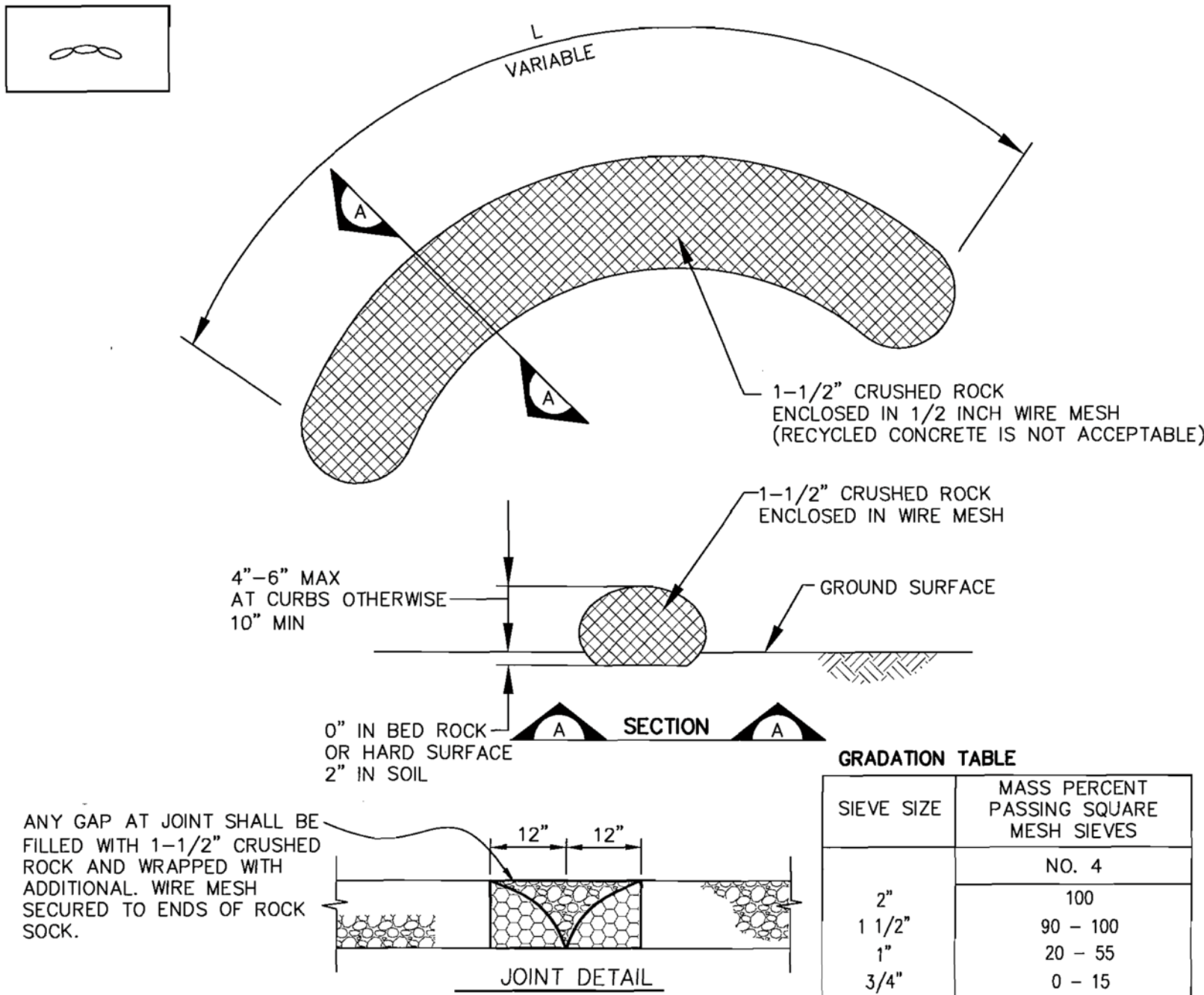
- THE PERMITTEE SHALL BE RESPONSIBLE FOR REMEDIATION OF ANY ADVERSE IMPACTS TO ADJACENT WATERWAYS, WETLANDS, STORM SEWERS, STORM SEWER APPURTENANCES, OTHER PROPERTIES, ETC., RESULTING FROM WORK DONE AS PART OF THIS PROJECT.
- ADDITIONAL EROSION AND SEDIMENT CONTROL BMPs MAY BE REQUIRED DURING AND AFTER CONSTRUCTION AND SHALL BE EXECUTED AND COMPLETED BY THE PERMITTEE. THE PERMITTEE SHALL PLAN, INSTALL, AND MAINTAIN ALL EROSION, AND SEDIMENT CONTROL MEASURES, INCLUDING DRAINAGE AND WATER QUALITY BMPs AS INDICATED ON THIS PLAN AND AS NECESSARY TO REDUCE THE DISCHARGE OF POLLUTANTS TO THE MAXIMUM EXTENT PRACTICABLE ADVERSE IMPACTS, EROSION AND SEDIMENT DEPOSITION ONTO PAVED SECTIONS, INTO STORM SEWERS, STORM SEWER APPURTENANCES, RECEIVING WATERS, OR OFF THE PROJECT SITE.
- THE PERMITTEE SHALL TAKE APPROPRIATE PREVENTIVE MEASURES TO MINIMIZE TO THE MAXIMUM EXTENT PRACTICABLE DIRT AND MUD FROM BEING TRACKED OR DEPOSITED ONTO PAVED SECTIONS VIA MULTIPLE BMPs. SEDIMENT, MUD, AND CONSTRUCTION DEBRIS THAT MAY BE TRACKED, DEPOSITED, OR ACCUMULATED ON PAVED SECTIONS, IN THE FLOW LINES, PRIVATE PROPERTY, AND/OR PUBLIC RIGHTS -OF-WAY OF THE CITY AS A RESULT OF THIS CONSTRUCTION PROJECT SHALL BE CLEANED UP.
- AREAS REACHING SUBSTANTIAL COMPLETION OF GRADING AND TOPSOIL PLACEMENT OPERATIONS MUST BE DRILL SEEDED AND CRIMP MULCHED WITHIN 14 DAYS OF SUBSTANTIAL COMPLETION OF GRADING AND TOPSOIL OPERATIONS. IF AN INCOMPLETE AREA IS TO REMAIN INACTIVE FOR LONGER THAN 30 DAYS, IT MUST BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE LANDSCAPED WITHIN 14 DAYS FROM THE SUSPENSION OR COMPLETION OF LAND DISTURBANCE ACTIVITIES.
- THIS APPROVED SWMP DESIGN DRAWING, THE ASSOCIATED APPROVED SWMP NARRATIVE, A COPY OF THE STORMWATER QUALITY DISCHARGE PERMIT, AND THE RULES AND REGULATIONS REGARDING STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES MANUAL SHALL BE KEPT ON SITE AT ALL TIMES.



1 SILT FENCE DETAIL
- NTS

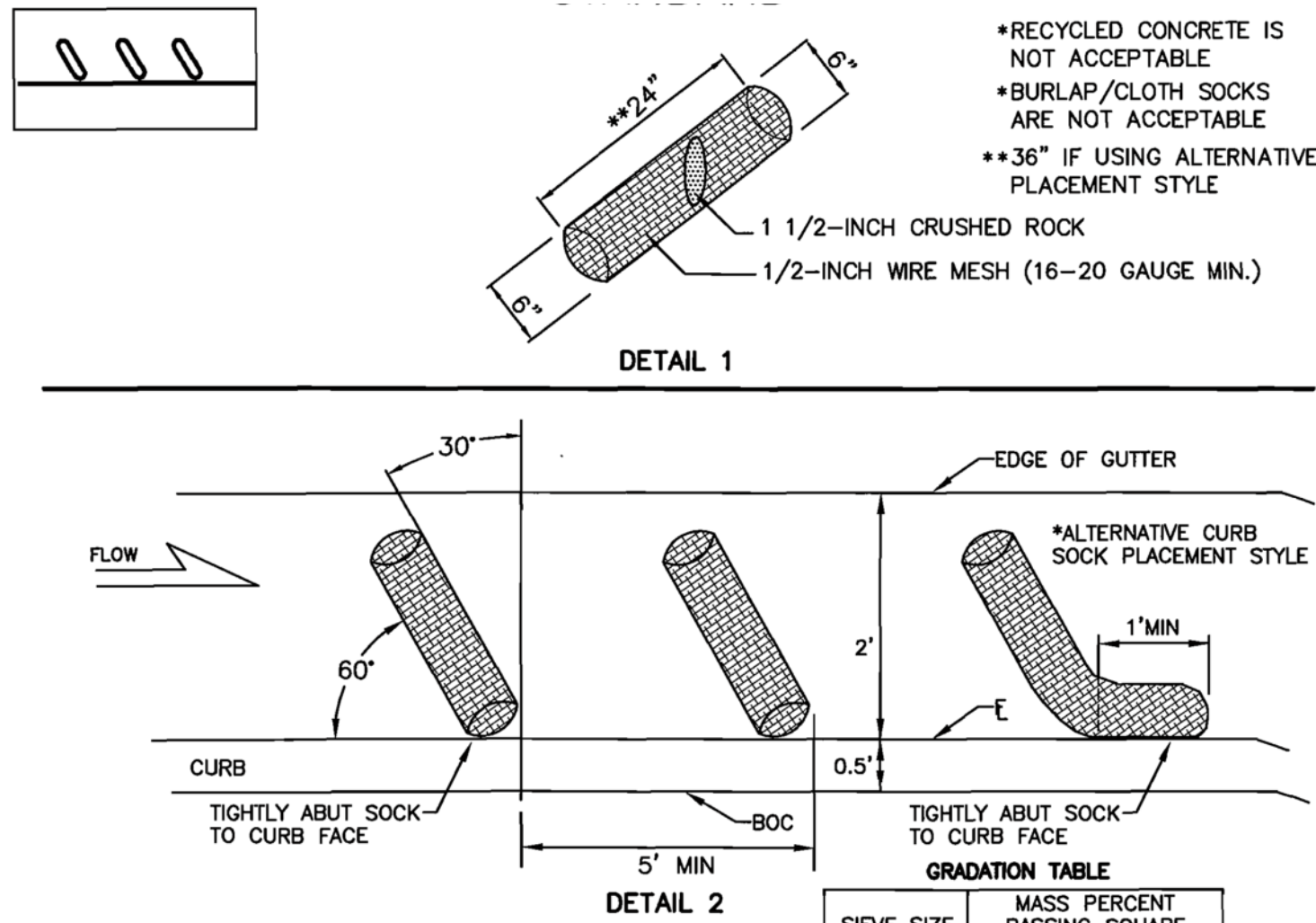
2 ROCK SOCKS DETAIL
- NTS

- ACCUMULATED SEDIMENT AND DEBRIS SHALL BE REMOVED FROM A BMP (MAINTENANCE) WHEN THE SEDIMENT LEVEL OR DEBRIS ADVERSELY IMPACTS THE FUNCTIONING OF THE BMP OR AS DEFINED WITHIN THE RULES AND REGULATIONS REGARDING STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES MANUAL, WHICHEVER IS MORE RESTRICTIVE. IF MAINTENANCE OF THE BMP DOES NOT RESTORE THE INTENDED FUNCTION, THEN THE BMP MUST BE REPLACED.
- THE DISCHARGING OF CEMENT, CONCRETE, OR MORTAR FROM READY MIX DELIVERY TRUCKS, PUMP TRUCKS, BATCH PLANTS OR SMALL MECHANICAL MIXERS DIRECTLY ONTO PAVED SURFACES OR DISTURBED GROUND HAVING NO CONTAINMENT IS PROHIBITED. THE DISPOSAL OF ANY LIQUID WASTES OR WASH WATER FROM ANY OPERATIONS SUCH AS PAINTING, DRYWALL, OR TILE INSTALLATIONS DIRECTLY ONTO PAVED SURFACES OR THE GROUND WITHOUT CONTAINMENT IS PROHIBITED. THE PERMITTEE SHALL PROTECT ALL CURB FLOW LINES, ADJACENT WATERWAYS, WETLANDS, STORM SEWERS, STORM SEWER APPURTENANCES, OTHER PROPERTIES, ETC., ADJACENT TO ANY LOCATION WHERE PAVEMENT CUTTING OPERATIONS INVOLVING WHEEL CUTTING, SAW CUTTING OR ABRASIVE WATER JET CUTTING ARE TO TAKE PLACE.
- IT SHALL BE THE RESPONSIBILITY OF THE PERMITTEE TO RESOLVE CONSTRUCTION PROBLEMS DUE TO CHANGING CONDITIONS OR DESIGN ERRORS THEY MAY ENCOUNTER DURING THE PROGRESS OF ANY PORTION OF THE WORK. IF CONDITIONS IN THE FIELD REQUIRE CHANGES AND THE PROPOSED MODIFICATIONS TO THE APPROVED PLANS INVOLVE SIGNIFICANT CHANGES TO THE CHARACTER OF THE WORK OR TO FUTURE CONTIGUOUS PUBLIC OR PRIVATE IMPROVEMENTS, THE CONTRACTOR, THROUGH THE ENGINEER OF RECORD, SHALL BE RESPONSIBLE TO REVISE PLANS AND SUBMIT THEM TO THE CITY OF AURORA FOR APPROVAL PRIOR TO ANY FURTHER CONSTRUCTION RELATED TO THAT PORTION OF THE WORK. ANY CONTROLS, FEATURES OR IMPROVEMENTS NOT CONSTRUCTED IN ACCORDANCE WITH THE APPROVED SWMP, CITY OF AURORA STANDARD DETAIL DESIGNS, CITY OF AURORA APPROVED VARIANCES, OR AN APPROVED DESIGN DRAWING AMENDMENT SHALL BE REMOVED AND THE CONTROLS, FEATURES AND/OR IMPROVEMENTS SHALL BE RECONSTRUCTED.
- SECONDARY CONTAINMENT FEATURES SHALL BE IN PLACE FOR ANY BULK FUEL STORAGE, MIXERS, GENERATORS, OR ANY OTHER SPILL OR LEAK SOURCE THAT REMAINS ONSITE FOR A PERIOD LONGER THAN 7 CALENDAR DAYS. A RECOVERY OR SALVAGE DRUM SHALL BE KEPT ON -SITE FOR STORAGE OF CONTAMINATED SOILS.
- STRAW BALES AND RECYCLED ASPHALT OR CONCRETE ARE NOT ACCEPTABLE FOR THE CONSTRUCTION OF BMPs WITHIN THE CITY OF AURORA AND MAY NOT BE USED.



- NOTES:
- SEE PLAN VIEW FOR:
 - LOCATIONS OF ROCK SOCKS
 - ROCK SOCK SECTION APPLIES TO CULVERT INLET FILTER AND INLET PROTECTION.
 - CRUSHED ROCK SHALL BE FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON SHEET 1 (1-1/2" MINUS).
 - WIRE MESH SHALL BE FABRICATED OF 16-20 GAUGE WIRE TWISTED INTO A MESH WITH A MAXIMUM OPENING OF 1/2" INCH. ROLL WIDTH SHALL BE 48". 16-20 GAUGE CHICKEN WIRE MAY BE USED IF DOUBLE WRAPPED WITH NO MORE THAN 1/2" OPENINGS.
 - WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6" CENTERS ALONG ALL JOINTS AND AT 2' CENTERS ON ENDS OF SOCKS
 - FOR CONCENTRATED FLOW AREAS THE ENDS OF THE ROCK SOCKS SHALL BE 12" HIGHER THAN THE CENTER OF THE SOCK.
 - SEDIMENT ACCUMULATED UPSTREAM OF THE ROCK SOCK SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF THE FILTER IS AT HALF THE HEIGHT OF THE BMP.

GRADATION TABLE	
SIEVE SIZE	MASS PERCENT PASSING SQUARE MESH SIEVES
	NO. 4
2"	100
1 1/2"	90 - 100
1"	20 - 55
3/4"	0 - 15
3/8"	0 - 5
MATCHES SPECIFICATIONS FOR NO. 4 COARSE AGGREGATE FOR CONCRETE PER AASHTO M43. ALL ROCK SHALL BE FRACTURED FACE, ALL SIDES.	



MAXIMUM SPACING ALONG STREET GRADE	
STREET SLOPE	CURB SOCK SPACING (ft)
0.5%	100
1.0%	100
2.0%	75
3.0%	50
4.0%	50
5.0%	50
6.0%	25
7.0%	25
8.0%	25

GRADATION TABLE	
SIEVE SIZE	MASS PERCENT PASSING SQUARE MESH SIEVES
	NO. 4
2"	100
1 1/2"	90 - 100
1"	20 - 55
3/4"	0 - 15
3/8"	0 - 5
MATCHES SPECIFICATIONS FOR NO. 4 COARSE AGGREGATE FOR CONCRETE PER AASHTO M43. ALL ROCK SHALL BE FRACTURED FACE, ALL SIDES.	

- NOTES:
- SOCKS WILL BE USED UPGRADIENT OF INLET ANGLED AS SHOWN AND SHALL BE FLUSH WITH CURB.
 - FOR IPS AND IPO NO LESS THAN THREE 6-INCH DIAMETER SOCKS MUST BE USED IN SEQUENCE, SPACED NO MORE THAN FIVE FEET APART, WHEN SHOWN ON PLAN.
 - INCLINE AT 30 DEGREES FROM PERPENDICULAR, OPPOSITE THE DIRECTION OF FLOW (SEE DETAIL 2).
 - A MINIMUM OF THREE CURB SOCKS SHALL BE PLACED DOWNSTREAM OF ANY DISTURBED AREA AND ALONG ALL CURBS FRONTING DISTURBED AREA, SPACED PER THE TABLE.
 - SOCKS WILL BE USED AT ANY LOCATION ALONG A CURB TO CONTROL SEDIMENT AS DIRECTED BY CITY.
 - 16-20 GAUGE CHICKEN WIRE IS AN ACCEPTABLE ALTERNATIVE IF DOUBLE WRAPPED WITH NO MORE THAN 1/2 INCH OPENINGS.

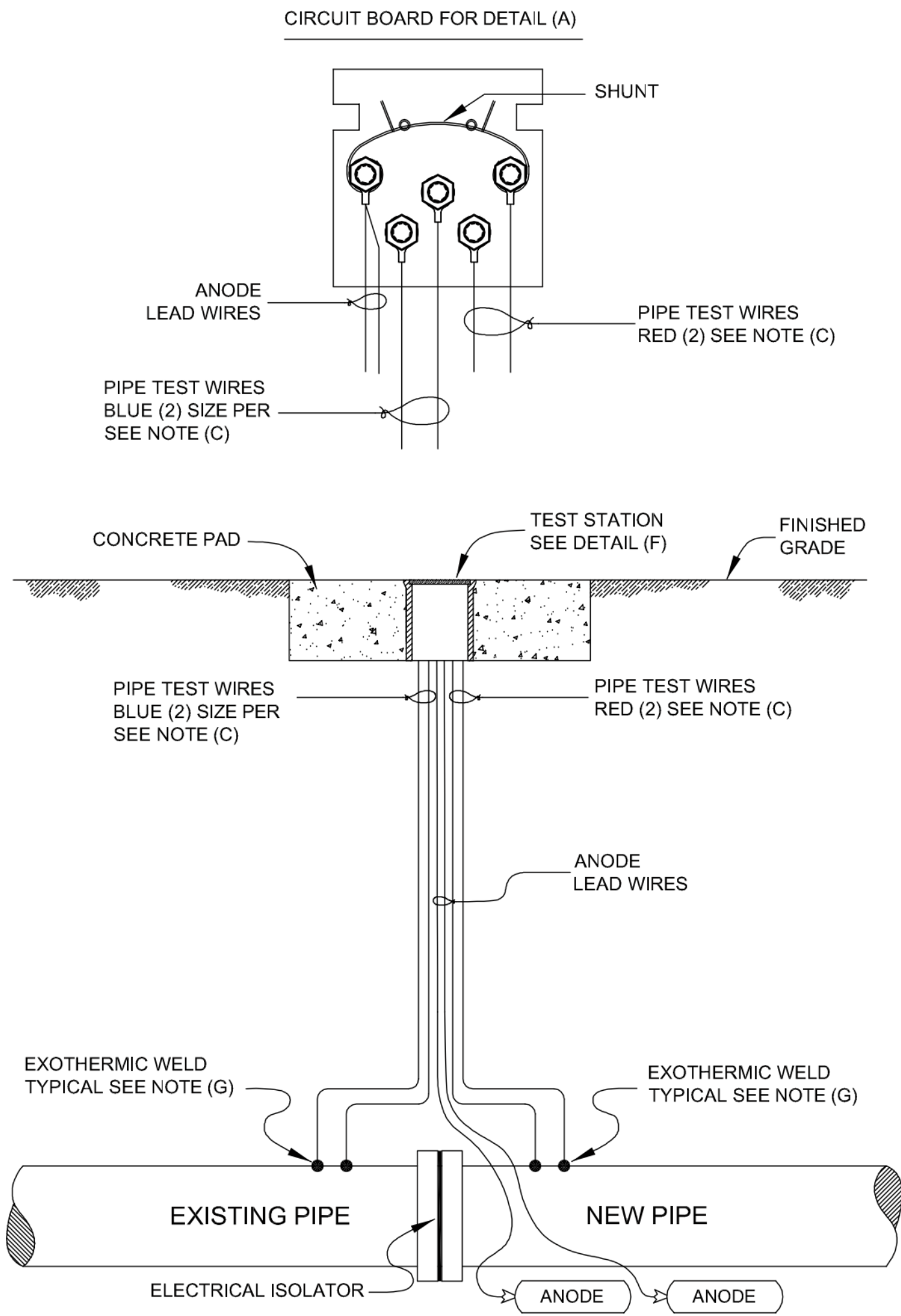
3 CURB SOCKS DETAIL
- NTS

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NOT FOR CONSTRUCTION

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1	10/16/15	60% ISSUED FOR REVIEW	BSJ
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SOUTH METRO WISE AUTHORITY
CONNECTIONS
EROSION CONTROL
DETAILS

Project No.:	133-08362-15001
Designed By:	AD
Drawn By:	TRS
Checked By:	BSJ

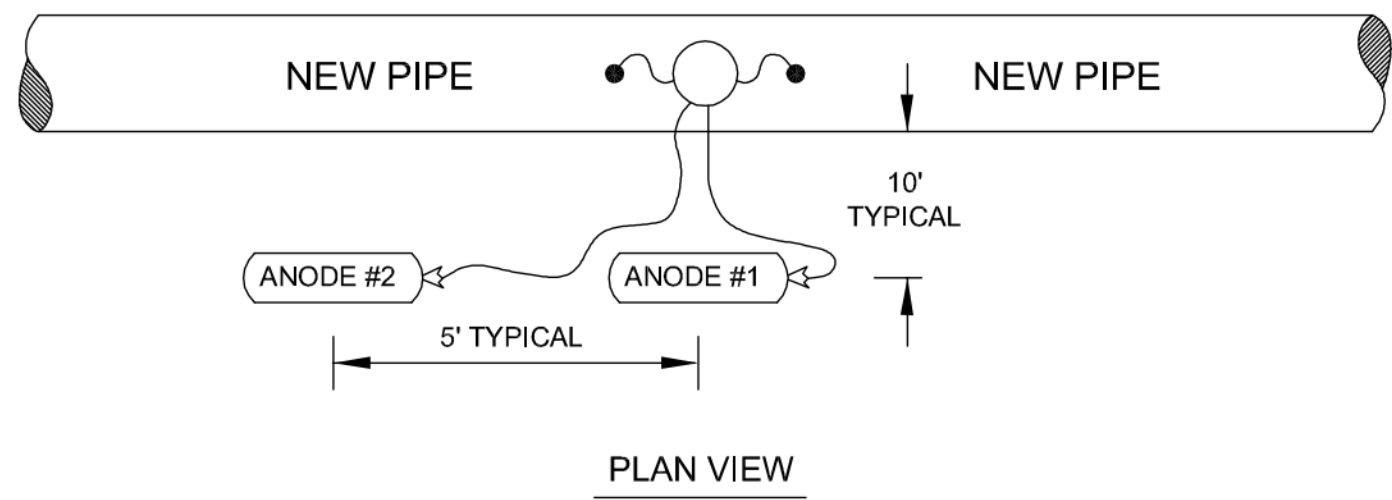
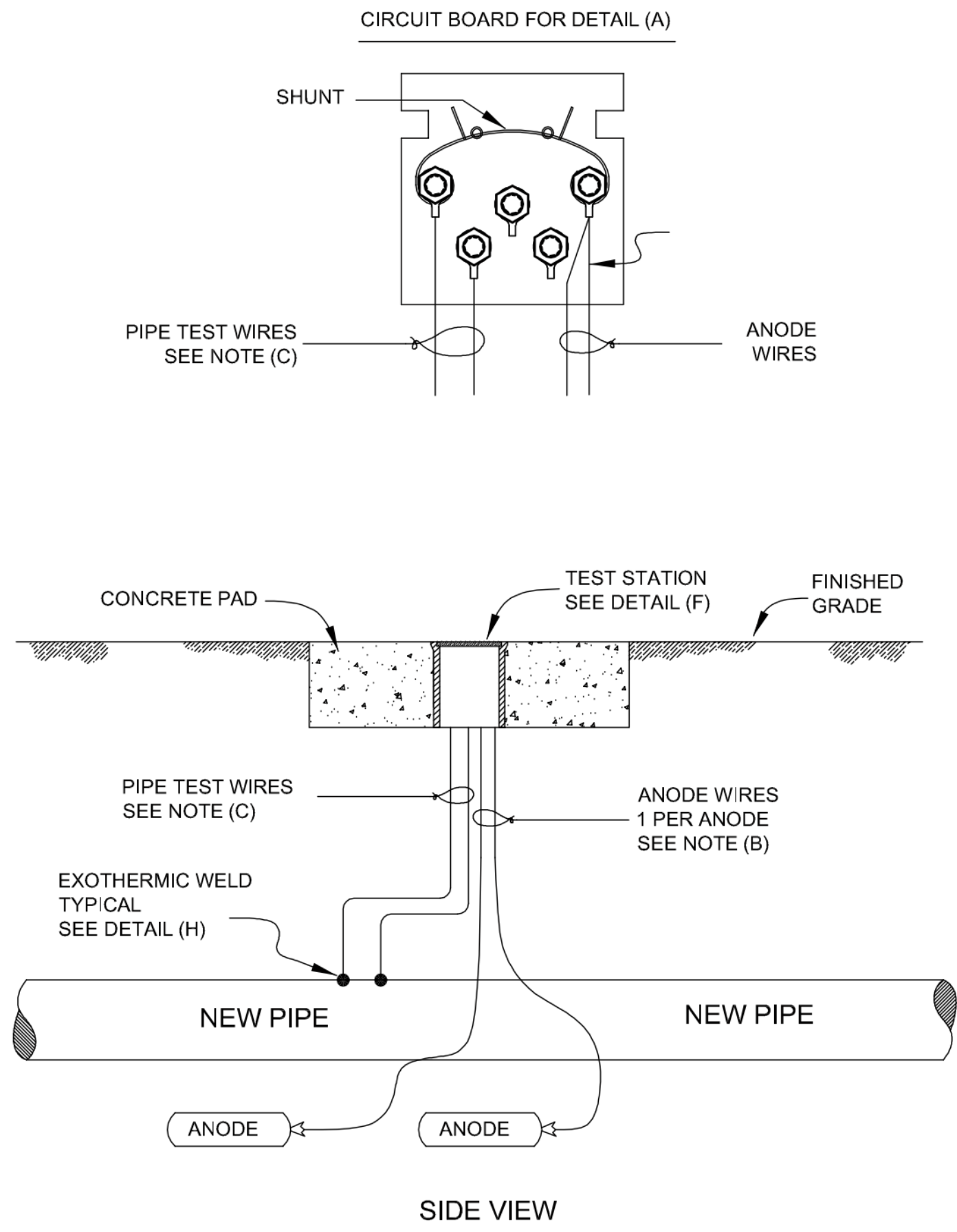


C DETAIL: TEST STATION AT INSULATOR
SCALE: NONE

REQUIRED WHERE PIPELINE CONNECTS TO FUTURE METALLIC PIPELINE
A PVC SPOOL CAN ALSO BE USED IN PLACE OF AN INSULATING FITTING

CATHODIC PROTECTION DETAIL NOTES

- A - ANODE = = 48 LB PREPACKAGED MAGNESIUM ANODE
- B - ANODE WIRE #12AWG STRANDED WITH BLACK RHW INSULATION
- C - PIPE TEST WIRES #8AWG TYPE RHH RED STRANDED COPPER TEST WIRE
- D - JOINT BOND 2 #4AWG HMWPE STRANDED 18" LONG
- E - TEST STATION CHRISTY G3 TRAFFIC RATED WITH CI LID INSCRIBED CP TEST
- 1 - PROVIDE AS-BUILT SKETCH IF ANODES NOT PLACED AS SHOWN



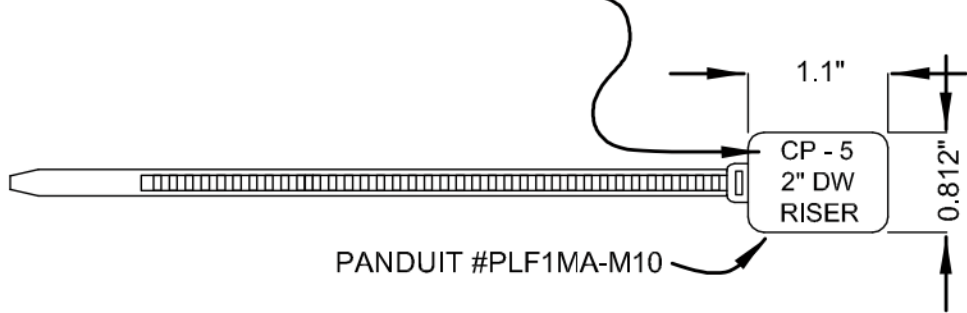
A DETAIL: ANODE TEST STATION
SCALE: NONE

DO NOT LOCATE TEST STATIONS IN ROAD. OFFSET OUTSIDE OF ROADWAY/SIDEWALKS.
NOTE OFFSET TO PIPE IN TEST STATION AND "AS-BUILT" DRAWINGS.
ANODES SHOWN ALONG PIPE. ALTERNATE TO FIELD LOCATE WITH TEST STATION
AVOID OTHER UNDERGROUND STRUCTURES. MINIMUM WIRE BURIAL DEPTH 2FT.

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1/12/2016 9:47:02 AM - T:\08362\133-08362-15001\CAD\SHEETFILES\C-PRV-503 CATHODIC PROTECTION DETAILS.DWG - SPERRY, TY

USE BLACK PANDUIT MARKER #PFX-0
OR EQUIVALANT TO INDICATE:
LINE 1 - CP ID#
LINE 2 - PIPE ID (SIZE AND SERVICE)
LINE 3 - FITTING DESCRIPTION

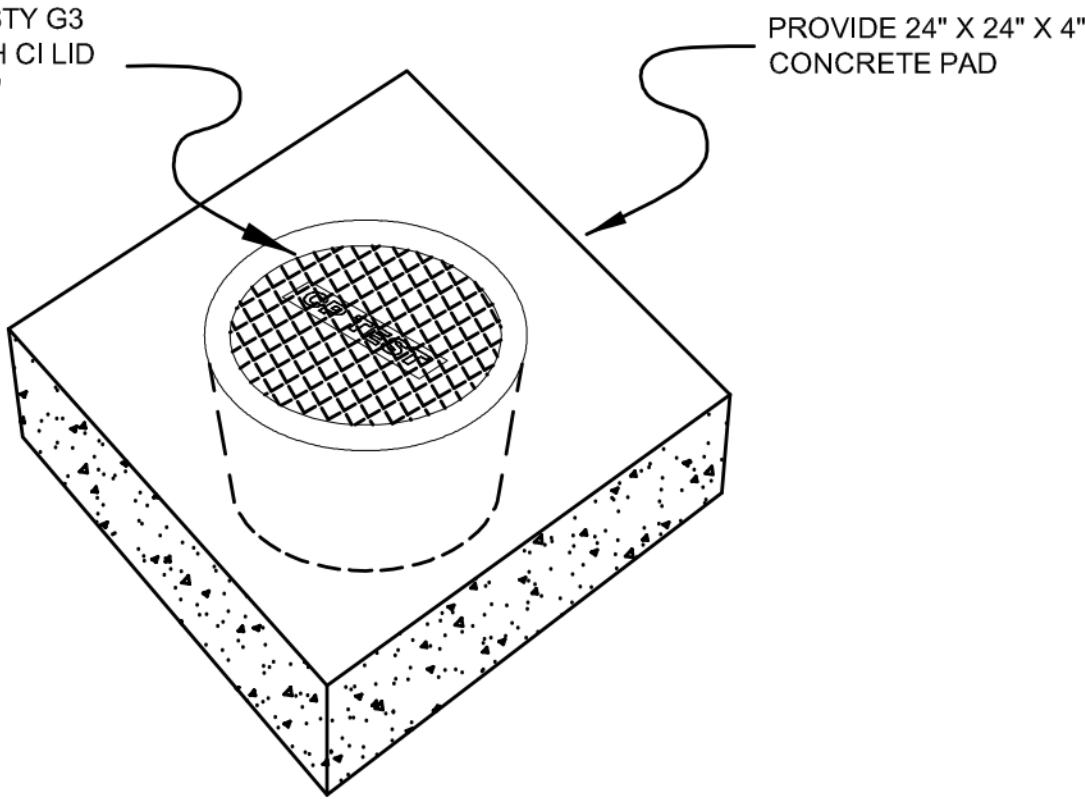


ALTERNATE MARKINGS ANODE, REFERENCE CELL, PRC
LINE 1 - CP ANODE (mG/zN) PRC
LINE 2 - SIZE (LB) LOCATION
LINE 3 - # #

PROVIDE FOR EACH TEST WIRE, IN TEST STATION
IF TEST STATION IS NOT LOCATED OVER PIPE
INDICATE OFFSET DIRECTION AND DISTANCE

E DETAIL: PANDUIT WIRE MARKER
SCALE: NONE

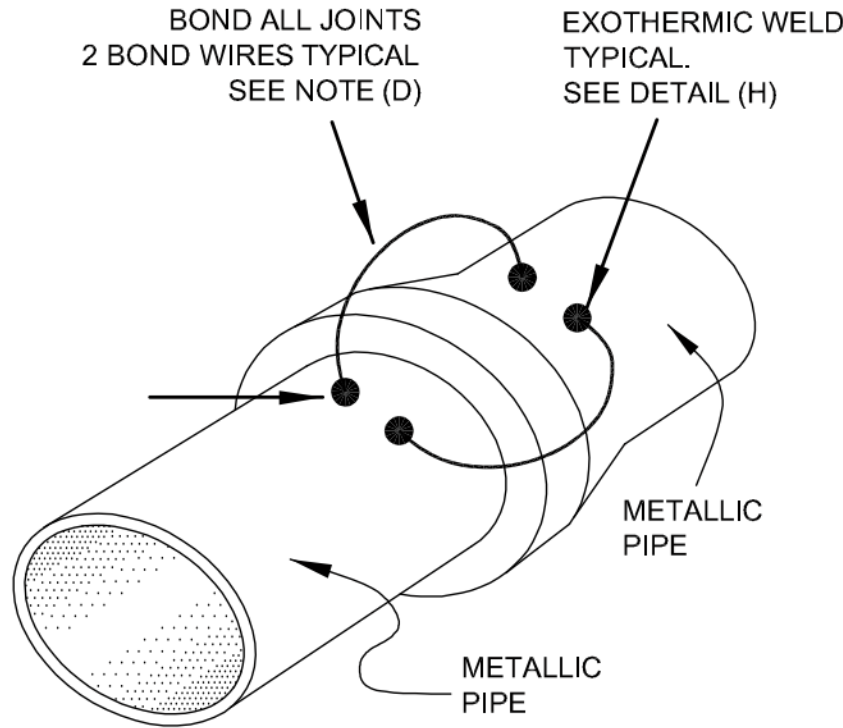
TEST STATION CHRISTY G3
TRAFFIC RATED WITH CI LID
INSCRIBED "CP TEST"



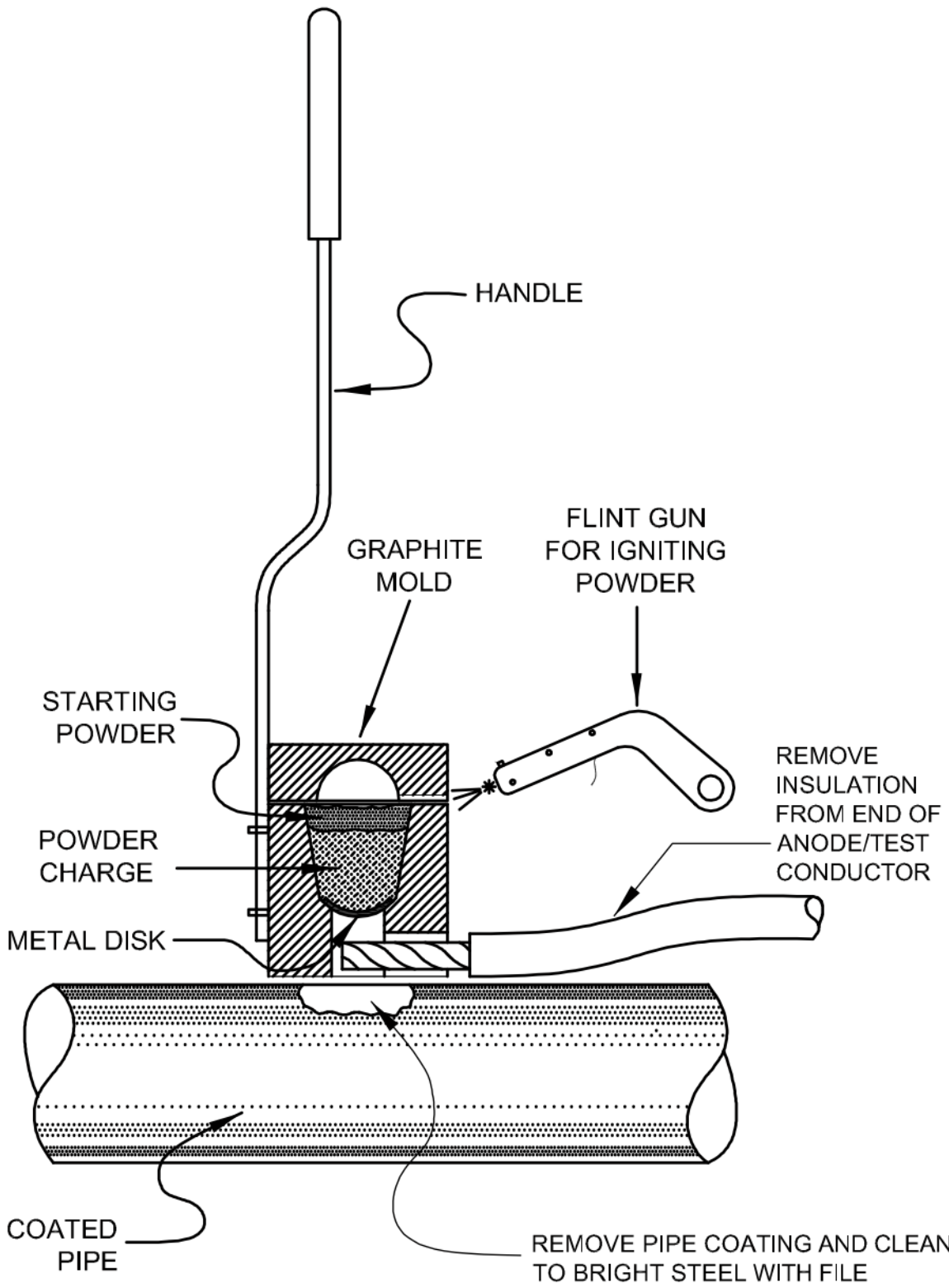
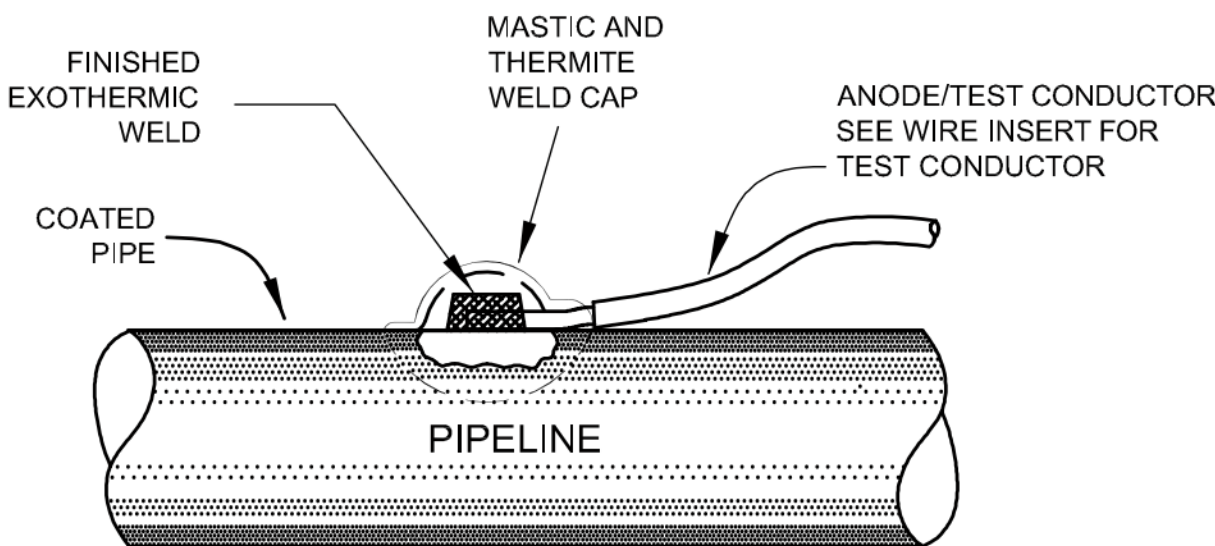
PROVIDE 15" SLACK WIRE
IN TEST STATION

F DETAIL: ANODE TEST STATION
SCALE: NONE

BOND ALL JOINTS
2 BOND WIRES TYPICAL
SEE NOTE (D)



D DETAIL: JOINT BOND
SCALE: NONE



DETAIL NOTES:

- SEE MANUFACTURERS DATA FOR PROPER MOLD, CHARGE SELECTION AND SAFETY PRECAUTIONS.
- REMOVE EXCESS SLAG FROM WELD AND TEST WITH HAMMER FOR GOOD BOND.
- MASTIC AND PERFORMED PLASTIC SHEATH COATING MUST COVER ALL EXPOSED METAL SURFACE AND CONTAIN NO VOIDS. POLY WRAP SHALL BE REPAIRED IF APPLICABLE.
- DO NOT WELD TO COPPER. USE SILVER SOLDERING OR MECHANICAL CLAMPS.

H DETAIL: EXOTHERMIC WELD
SCALE: NONE

CATHODIC PROTECTION DETAIL NOTES

- A - ANODE = 48 LB PREPACKAGED MAGNESIUM ANODE
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- C - PIPE TEST WIRES #8AWG TYPE RHH RED STRANDED COPPER TEST WIRE
- D - JOINT BOND 2 #4AWG HMWPE STRANDED 18" LONG
- E - TEST STATION CHRISTY G3 TRAFFIC RATED WITH CI LID INSCRIBED CP TEST
- 1 - PROVIDE AS-BUILT SKETCH IF ANODES NOT PLACED AS SHOWN



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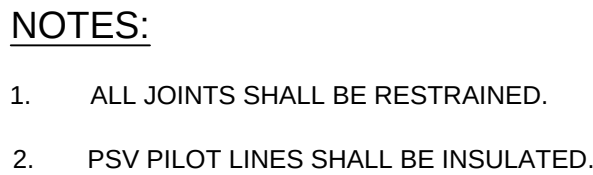
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SOUTH METRO WISE AUTHORITY
CONNECTIONS
CATHODIC PROTECTION
DETAILS

Project No.:	133-08362-15001
Designed By:	BSJ
Drawn By:	TRS
Checked By:	BSJ

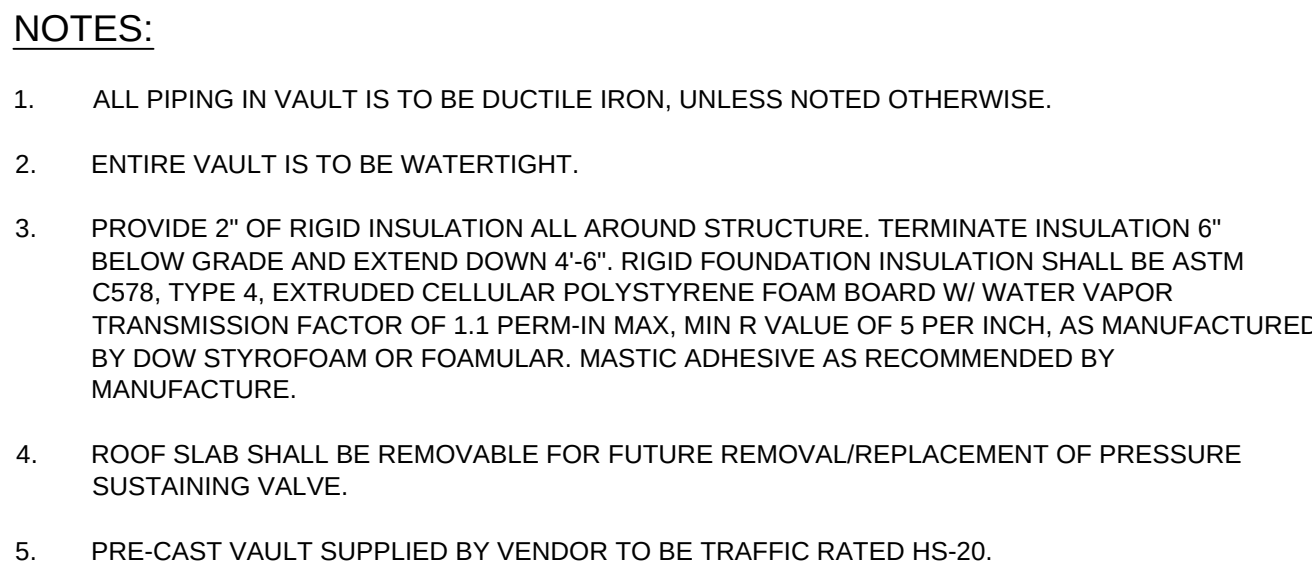
C-PRV-505



VERTICAL DATUM EQUATION:
NAVD88 DATUM = NGVD29 DATUM + 3.1 FEET.

BENCHMARK NOTES:

1. BASIS OF BEARINGS: THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 19, TOWNSHIP 5 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN IS CONSIDERED TO BEAR NORTH 89°26'01" EAST.
2. BENCHMARK: CITY OF AURORA BENCHMARK S56519SW001 BEING A 3" BRASS CAP STAMPED "SLP - 125.5 2005" LOCATED AT THE SOUTHWEST CORNER OF SOUTH MAIN STREET AND SOUTH SOUTHLANDS PARKWAY ON AN INLET NEAR THE SOUTH P.C. NGVD20 ELEV=6064.46'.



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SOUTH METRO WISE AUTHORITY
 CONNECTIONS
 ARAPAHOE RD. & E-470
 VAULT
 PLAN AND SECTION

Project No.:	133-08362-15001
Designed By:	WJR
Drawn By:	TRS
Checked By:	BSJ

2/23/2016 9:04:35 AM - T:\030362\133-08362-15001\CAD\SHSHEETFILES\G-002-CON OVERALL VICINITY MAP.DWG - SPERRY, TY



COA UTILITY NOTES:

1. ALL MATERIALS, WORKMANSHIP, CONSTRUCTION DETAILS, AND TESTING FOR THE WATER LINE CONSTRUCTION SHALL CONFORM TO STANDARDS AND SPECIFICATIONS REGARDING WATER, SANITARY SEWER AND STORM DRAINAGE INFRASTRUCTURE, LATEST REVISION AS SET FORTH BY THE CITY OF AURORA WATER DEPARTMENT, LATEST REVISION.

2. ALL FIRE HYDRANTS SHALL BE LOCATED NOT LESS THAN THREE FEET - SIX INCHES (3' - 6") AND NOT MORE THAN 8 FEET FROM THE BACK OF CURB TO THE CENTER OF THE HYDRANT AND BE UNOBSTRUCTED ON THE STREET SIDE. MINIMUM CLEARANCE ON ALL OTHER SIDES SHALL BE 5 FEET. FIRE HYDRANTS MUST BE GRADE STAKED IN THE FIELD. FIRE HYDRANTS ARE NOT ALLOWED IN SIDEWALKS.
3. ALL FIRE HYDRANTS MUST BE GRADE STAKED IN THE FIELD WHENEVER CURB AND GUTTER HAS NOT BEEN INSTALLED.

4. ALL UTILITY EASEMENTS MUST REMAIN UNOBSTRUCTED AND FULLY ACCESSIBLE ALONG THEIR ENTIRE LENGTH FOR MAINTENANCE EQUIPMENT.

5. WATER MAIN RESTRAINT SHALL BE IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS REGARDING WATER, SANITARY SEWER AND STORM DRAINAGE INFRASTRUCTURE, LATEST REVISION. MEGALUGS OR UNI-FLANGE MAY BE USED IN PLACE OF RODS AND CLAMPS.
6. WATER LINE VALVES ARE NOT ALLOWED IN CROSS PANS.

7. ALL WATER METERS, WATER SERVICE LINES AND SANITARY SEWER SERVICE LINES ARE NOT ALLOWED IN OR UNDER DRIVEWAYS.

8. ALL SANITARY SERVICE LINES SHALL BE TEES OFF OF MAINS. WYES SHALL BE USED FOR LOTS AT BACK OF CUL-DE-SACS.
9. WATER PRESSURE ZONE 7. ZERO (0) PSI @ ELEVATION 6190 STATIC. A PRESSURE REDUCING VALVE (PRV) IS REQUIRED WHEN THE PRESSURE AT THE UNIT IS GREATER THAN (80) PSI. PRV'S ARE NOT ALLOWED IN CITY OF AURORA OWNED AND MAINTAINED METER PITS.

10. ADJUST ALL MANHOLES, FIRE HYDRANTS, AND VALVE BOXES TO GRADE PER AURORA WATER STANDARDS AND SPECIFICATIONS REGARDING WATER, SANITARY SEWER AND STORM SEWER INFRASTRUCTURE, LATEST REVISION, AS NECESSARY.

GENERAL NOTES:

1. HORIZONTAL AND VERTICAL CONTROL: NAD 83 / 92 (BASIS OF AURORA GRID) NGVD 29. VERTICAL DATUM ADJUSTMENT NAVD88 DATUM = NGVD29 DATUM + 3.1 FEET.

2. CALL BEFORE YOU DIG. CONTRACTOR SHALL VERIFY LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STRUCTURES, WHETHER INDICATED ON THE DRAWINGS OR NOT, IN THE FIELD IN ADVANCE OF EXCAVATING, BY CONTACTING ALL UTILITIES AND OTHER AGENCIES, AND BY PROSPECTING. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL, DEMOLITION, RECONSTRUCTION, AND RECONNECTION OF EXISTING FACILITIES AS REQUIRED TO COMPLETE THE WORK. IF REQUIRED AFTER FIELD VERIFICATION, CONTRACTOR SHALL COORDINATE WITH THE ENGINEER TO DETERMINE ANY NECESSARY MODIFICATIONS TO PROPOSED NEW WORK.

3. BEFORE CONSTRUCTION IS STARTED, CONTRACTOR SHALL COORDINATE WITH THE OWNER OF EACH UTILITY AND DEFINE THE REQUIREMENTS AND METHODS TO ACCOMMODATE THE PROTECTION, TEMPORARY SUPPORT, ADJUSTMENT, OR RELOCATION OF ANY UTILITIES AFFECTED BY THE PROPOSED NEW WORK.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL PROPERTY CORNER MARKERS. PROPERTY CORNER MARKERS DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REESTABLISHED BY A PROFESSIONAL SURVEYOR LICENSED IN THE STATE OF COLORADO.
5. CONTRACTOR SHALL PROTECT AND MAINTAIN ALL EXISTING TREES, SHRUBS, AND PLANTS UNLESS OTHERWISE NOTED.

6. CONTRACTOR SHALL INSTALL ALL PIPELINES, PAVING, WALKWAYS, AND CURB AND GUTTER AT A UNIFORM GRADE BETWEEN ELEVATIONS DEPICTED ON THE DRAWINGS.

7. FOR ALL SITE GRADING, SMOOTH PARABOLIC TRANSITIONS SHALL BE MADE BETWEEN CHANGES IN SLOPE. PARABOLIC ROUNDING SHALL APPLY TO ALL CUT AND FILL SECTIONS.

8. FINISH GRADE NEAR ACCESS HATCHES WILL SLOPE GENERALLY AWAY FROM STRUCTURE.

9. RESTRAINED JOINTS SHALL BE PROVIDED FOR ALL BURIED PRESSURE PIPING.
10. UNLESS OTHERWISE SPECIFIED, INDICATED ON THE DRAWINGS, OR UNLESS APPROVED IN ADVANCE BY THE OWNER, INSTALL PIPELINES SLOPING DOWNWARD FROM AN AIR VALVE. MINIMUM 5'-0" COVER AT MANHOLE OR AT MANUAL ARV TO A BLOWOFF, AND PROVIDE THE SPECIFIED MINIMUM PIPE COVER. MINIMUM PIPE COVER SHALL BE FROM THE EXISTING, PROPOSED OR FUTURE GROUND SURFACE OR ROAD PROFILE, WHICHEVER GROUND SURFACE OR ROAD PROFILE IS APPLICABLE AS INDICATED ON THE DRAWINGS. IF THE PROPOSED GROUND SURFACE IS ABOVE THE EXISTING GROUND SURFACE INDICATED ON THE DRAWINGS AND IS NOT THE ACTUAL GROUND SURFACE AT THE TIME OF PIPELINE INSTALLATION, INSTALL THE PIPELINE TO PROVIDE MINIMUM PIPE COVER FROM THE PROPOSED GRADE IF ACCEPTABLE TO THE ENGINEER. HIGH POINTS IN THE PIPELINE WILL NOT BE PERMITTED EXCEPT AT LOCATIONS OF AIR VALVES AS INDICATED ON THE DRAWINGS. REVIEW THE PIPELINE PROFILE REQUIREMENTS WITH THE ENGINEER PRIOR TO PREPARING LAYING SCHEDULES AND PERFORMING FIELD STAKING.
11. CONTRACTOR SHALL FIELD VERIFY LOCATION, ELEVATION, AND ARRANGEMENT OF CONNECTIONS OF NEW PIPELINES WITH EXISTING PIPELINES BASED ON FIELD CONDITIONS, INCLUDING EXPOSED EXISTING PIPING PRIOR TO FABRICATING NEW PIPING. CONTRACTOR SHALL PROVIDE FITTINGS, ADAPTERS, SOLID SLEEVE COUPLINGS, AND HARNESSSED MECHANICAL COUPLING; ROTATE FITTINGS; DEFLECT JOINTS; AND MODIFY EXISTING PIPING AS APPLICABLE AND AS REQUIRED TO MAKE CONNECTIONS, INCLUDING ADJUSTMENTS FOR ANY OFFSETS IN CENTERLINE ELEVATIONS BETWEEN PIPELINES. CONTRACTOR SHALL PROVIDE TEMPORARY PLUG WITH FACTORY OUTLET SIZED AS REQUIRED FOR CONTRACTOR'S TESTING AND DISINFECTION WORK BEFORE MAKING CONNECTION, WHEN APPLICABLE. CONTRACTOR SHALL COORDINATE MAKING EACH CONNECTION WITH THE OWNER.

12. ALL DIP SHALL BE PROTECTED WITH A MINIMUM OF ONE WRAP OF POLYETHYLENE ENCASEMENT.

13. ALL OWNERSHIP, RIGHT-OF-WAY, AND EASEMENT INFORMATION WAS OBTAINED FROM THE DOUGLAS / ARAPAHOE COUNTY ASSESSORS OFFICE. NO TITLE COMMITMENT WAS PROVIDED TO FARNSWORTH GROUP, THEREFORE, THE SURVEYOR DOES NOT GUARANTEE ALL RECORDED INFORMATION AS SHOWN HEREIN.
14. CONTRACTOR SHALL REMOVE AND REPLACE ALL EXISTING FENCING DISTURBED BY CONSTRUCTION ACTIVITIES ALONG THE ENTIRE PIPELINE ROUTE, WHETHER OR NOT IT IS IDENTIFIED ON THE DRAWINGS. REPLACEMENT FENCING SHALL MATCH ORIGINAL FENCING AND SHALL BE CONSTRUCTED OF ENTIRELY NEW MATERIALS UNLESS APPROVED IN ADVANCE BY OWNER.

15. CONTRACTOR SHALL OPEN CUT EXISTING GRAVEL AND ASPHALT SURFACED ROADS WHERE INDICATED ON THE DRAWINGS. THICKNESS AND TYPE OF REPLACEMENT ASPHALT, BASE COURSE, AND AGGREGATE ROAD BASE SHALL, AS A MINIMUM, MATCH EXISTING SURFACING.

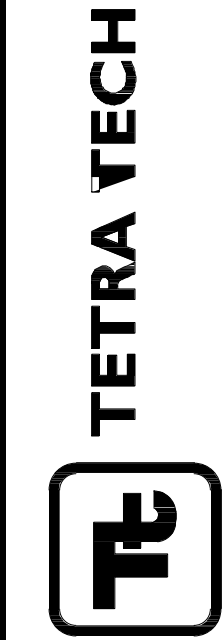
16. PIPE JOINTS MAY BE DEFLECTED AS NECESSARY TO INSTALL PIPELINE ALONG THE LINES AND GRADES SHOWN. THE PIPE VERTICAL ALIGNMENT MAY BE SLIGHTLY ADJUSTED TO ACHIEVE 5 FOOT OF COVER, HOWEVER NO NEW HIGH POINTS OR LOW POINTS SHALL BE CREATED. MAXIMUM JOINT PULL OUT FOR HORIZONTAL CURVES AND VERTICAL SLOPE CHANGES WITH DEFLECTED JOINTS SHALL BE 75 PERCENT OF THE MANUFACTURER'S MAXIMUM ALLOWABLE PULL OUT FOR THE PARTICULAR TYPE OF JOINT BEING DEFLECTED. VERTICAL SLOPE CHANGES SHOWN ON THE DRAWINGS TO BE POINT DEFLECTIONS SHALL BE DISTRIBUTED OVER MULTIPLE PIPE JOINTS TO LIMIT THE PULL OUT PER JOINT TO THE ABOVE LIMIT.

17. CONTRACTOR TO CONFINE ITS CONSTRUCTION DISTURBANCE TO WITHIN THE PERMANENT AND TEMPORARY EASEMENTS.
18. ALL OPEN CUT ROADS AND STREETS SHALL HAVE A MINIMUM OF ONE LANE OPEN AT ALL TIMES FOR EMERGENCY ACCESS. CONTRACTOR SHALL ALSO PROVIDE TRAFFIC CONTROL AT ALL OPEN CUT ROAD AND STREET CROSSINGS.

NOTES:

1. THIS MAP INCLUDES THE FACILITY LOCATIONS OF ALL THE SUB-PACKAGES IN THE OVERALL DESIGN/BUILD PACKAGE. INCLUDED IN THIS SUB-PACKAGE ARE THE FOLLOWING:

* TEMPORARY CONNECTION TO AURORA WATER
* PRESSURE SUSTAINING VALVE
2. ITEMS DENOTED WITH " * " ARE NOT PART OF THIS CONTRACT, AND WILL BE CONSTRUCTED BY OTHERS.



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4	02/22/16	100% ISSUED FOR CONSTRUCTION	BSJ

SOUTH METRO WISE AUTHORITY	
CONNECTIONS	
OVERALL VICINITY MAP	
Project No.: 133-08362-15001	
Designed By: BSJ	
Drawn By: TRS	
Checked By: BSJ	

C.O.A.

3

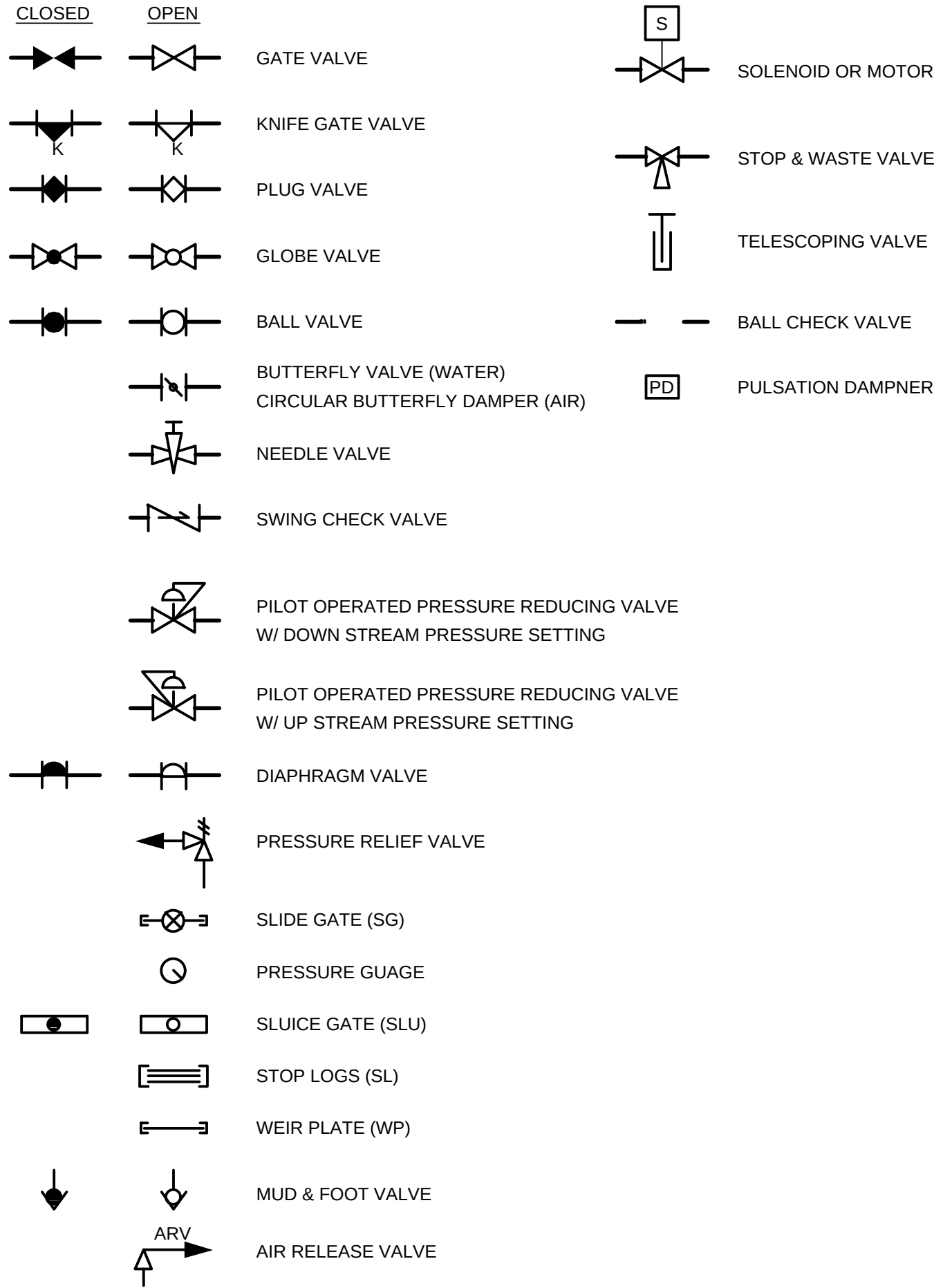
G-002

Bar Measures 1 inch

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2/23/2016 9:04:45 AM - T:\08362\133-08362-15001\CAD\SHSHEETFILES\G-003-COV P&ID LEGEND.DWG - SPERRY, TY

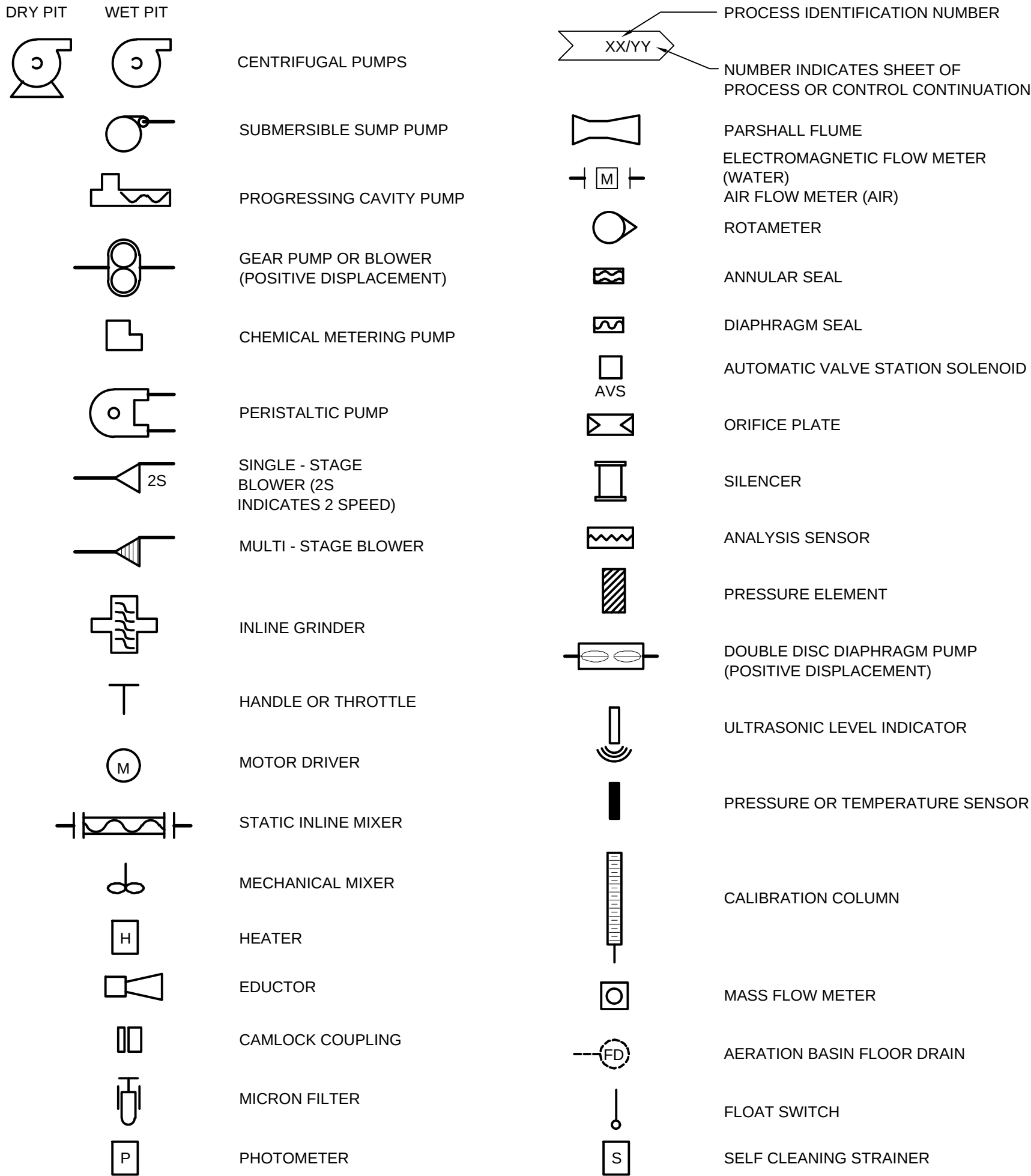
VALVE SYMBOLS



INSTRUMENT IDENTIFICATION LETTERS (INSTRUMENT SOCIETY OF AMERICA)

	FIRST - LETTER		SUCCEEDING - LETTERS		
	MEASURED OR INITIATING VARIABLE		READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONTROL			CONTROL	CLOSED
D	USER'S CHOICE	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE	MOMENTARY			MIDDLE, INTERMEDIATE
N	TORQUE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	FAILURE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

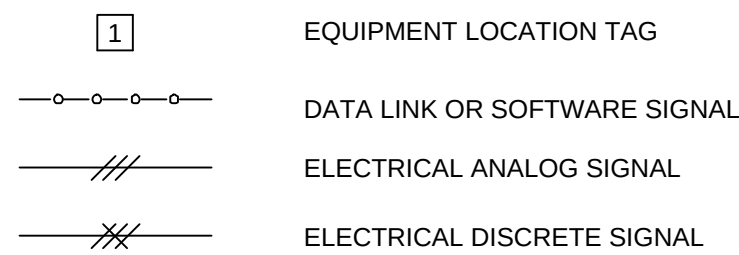
P&ID EQUIPMENT SYMBOLS



COMMON INSTRUMENT & DEVICE DESIGNATIONS

TAG	DESIGNATION
DO	DISSOLVED OXYGEN
FE	FLOW ELEMENT
FIT	FLOW INDICATOR/TRANSMITTER
HC	HAND CONTROL
HOA	HAND-OFF-AUTO
HS	HAND SWITCH
OCA	OPEN-CLOSE-AUTO
OCSA	OPEN-CLOSE-STOP-AUTO
ORP	OXYGEN REDUCTION POTENTIAL
PSL	PRESSURE SWITCH LOW
PSH	PRESSURE SWITCH HIGH
SC	SPEED COMMAND
SI	SPEED INDICATION
SS	SUSPENDED SOLIDS OR START-STOP
UA	EQUIPMENT FAULT STATUS
YL	EQUIPMENT RUNNING STATUS
YS	EQUIPMENT IN AUTO OR REMOTE STATUS
ZSC	VALVE POSITION FULL CLOSE
ZSI	VALVE POSITION INDICATOR
ZSO	VALVE POSITION FULL OPEN

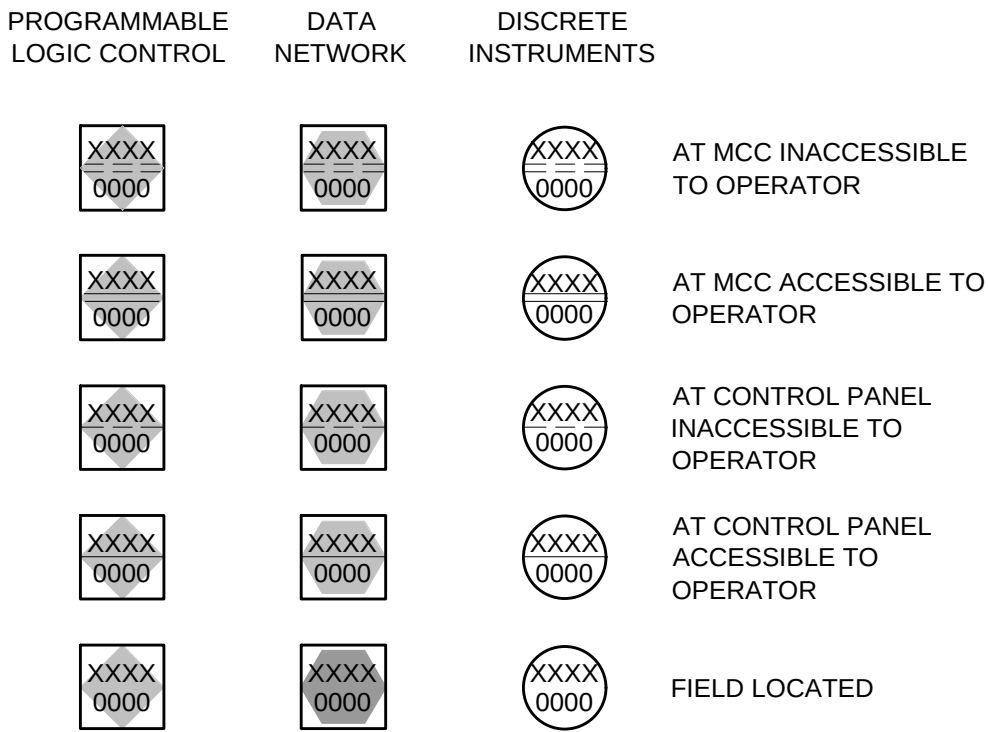
INSTRUMENTATION LEGEND



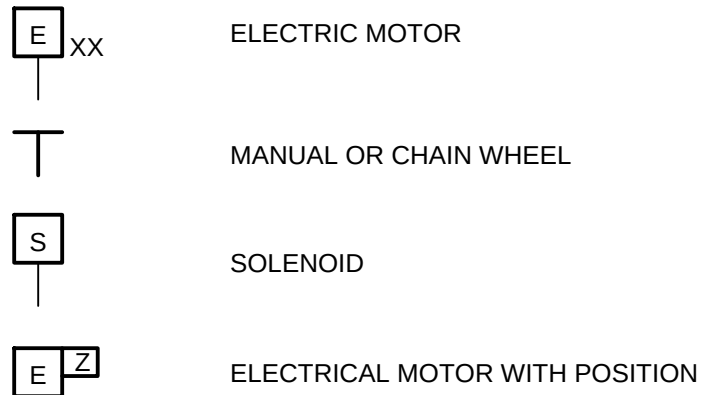
GENERAL NOTES

- THIS IS A STANDARD LEGEND, THEREFORE NOT ALL OF THIS INFORMATION MAY BE USED ON THIS PROJECT.
- P & ID INSTRUMENTATION DETAILS DO NOT REPRESENT INSTRUMENTS AND CONTROLS INTEGRAL TO VENDOR SUPPLIED CONTROL PANELS OR EQUIPMENT. SEE EQUIPMENT SPECIFICATIONS FOR THIS INFORMATION.
- P & ID DOES NOT REPRESENT CONTROL STRATEGIES OR INTERACTIONS. REFERENCE SECTION 16905, ELECTRICAL ELEMENTARY SCHEMATICS FOR THIS INFORMATION.
- P & ID DOES NOT REPRESENT EQUIPMENT HARDWIRED INTERLOCK AND ENABLE CIRCUITRY. REFERENCE MCC CONTROL NARRATIVES FOR THIS INFORMATION.

P&ID INSTRUMENT SYMBOLS



ACTUATOR SYMBOLS



NOTE:
ON LOSS OF PRIMARY POWER (PNEUMATIC OR ELECTRIC)

FO = FAIL OPEN
FC = FAIL CLOSED
FLP = FAIL TO LAST POSITION

PIPING SERVICE ABBREVIATIONS

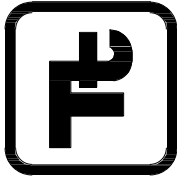
AIR	PROCESS AIR	PEFF	PRIMARY EFFLUENT
BIO	BIOSOLIDS	PD	PUMPED DRAIN
BWS	BACKWASH SUPPLY	POL	POLYMER
BWW	BACKWASH WASTE	POL SOL	POLYMER SOLUTION
		PSC	PRIMARY SCUM
		PW	POTABLE WATER
CA	COMPRESSED AIR		
CD	CHEMICAL DRAIN	RAS	RETURN ACTIVATED SLUDGE
CEN	CENTRATE	RRAS	RAPID RETURN ACTIVATED SLUDGE
CG	CHLORINE GAS	RW	REUSE WATER
CH	CHEMICAL		
CLS	CHLORINE SOLUTION	SAN	SANITARY SEWER
CV	CHLORINE VENT	SCN	SCREENINGS
CW	COLD POTABLE WATER	SE	SECONDARY EFFLUENT
		SHC	SODIUM HYPOCHLORITE
		SLC	SLOPPY CAKE
D	DRAIN	SNT	SUPERNATANT (DIGESTER)
DBIO	DEWATERED BIOSOLIDS	SSC	SECONDARY SCUM
FAD	FOUL AIR DUCT	ST	SLUDGE TRANSFER
FEFF	FINAL EFFLUENT	STM	STORM SEWER
FM	FORCEMAIN	SW	SOFTENED WATER
FO	FIBER OPTIC		
FS	FERRIC SULFATE	TEFF	TERTIARY EFFLUENT
		TD	TANK DRAIN
GR	GRIT	TSL	THICKENED SLUDGE
GU	GRIT UNDERDRAIN	TWAS	THICKENED WASTE ACTIVATED SLUDGE
HOCl	HYPOCHLORITE	V	SANITARY VENT
HW	HOT WATER		
		W	WATER
ML	MIXED LIQUOR	WAS	WASTE ACTIVATED SLUDGE
		WW	WASTEWATER (INFLUENT TO PLANT)
NPW	NON-POTABLE WATER	WWFM	WASTEWATER FORCE MAIN
OF	OVERFLOW		
OSA	OUTSIDE AIR		

AURORA CONNECTION & PRV CONNECTION SURVEY CONTROL NOTES

- BASIS OF BEARINGS: THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 19, TOWNSHIP 5 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN IS CONSIDERED TO BEAR NORTH 89°26'01" EAST.
 - BENCHMARK: CITY OF AURORA BENCHMARK 5S6519SW001 BEING A 3" BRASS CAP STAMPED "SLP - 125.5 2005" LOCATED AT THE SOUTHWEST CORNER OF SOUTH MAIN STREET AND SOUTH SOUTHLANDS PARKWAY ON AN INLET NEAR THE SOUTH PCR.
- NGVD29 ELEV=6064.46'
- PROJECT COORDINATES ARE DERIVED FROM COLORADO STATE PLANE CENTRAL NAD83(92) COORDINATES USING THE FOLLOWING FORMULAS:

PROJECT NORTHING = (STATE PLANE NORTHING * 1.0003094706) - 112.30'
PROJECT EASTING = (STATE PLANE EASTING * 1.0003094706) - 220.23'

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MARK	DATE	DESCRIPTION	BY
1	10/16/15	60% ISSUED FOR REVIEW	BSJ
2	11/03/15	ISSUED FOR PERMITTING	BSJ
3	01/19/16	95% ISSUED FOR REVIEW	BSJ
4	02/22/16	100% ISSUED FOR CONSTRUCTION	BSJ

SOUTH METRO WISE AUTHORITY
CONNECTIONS
P&ID LEGEND
AND ABBREVIATIONS

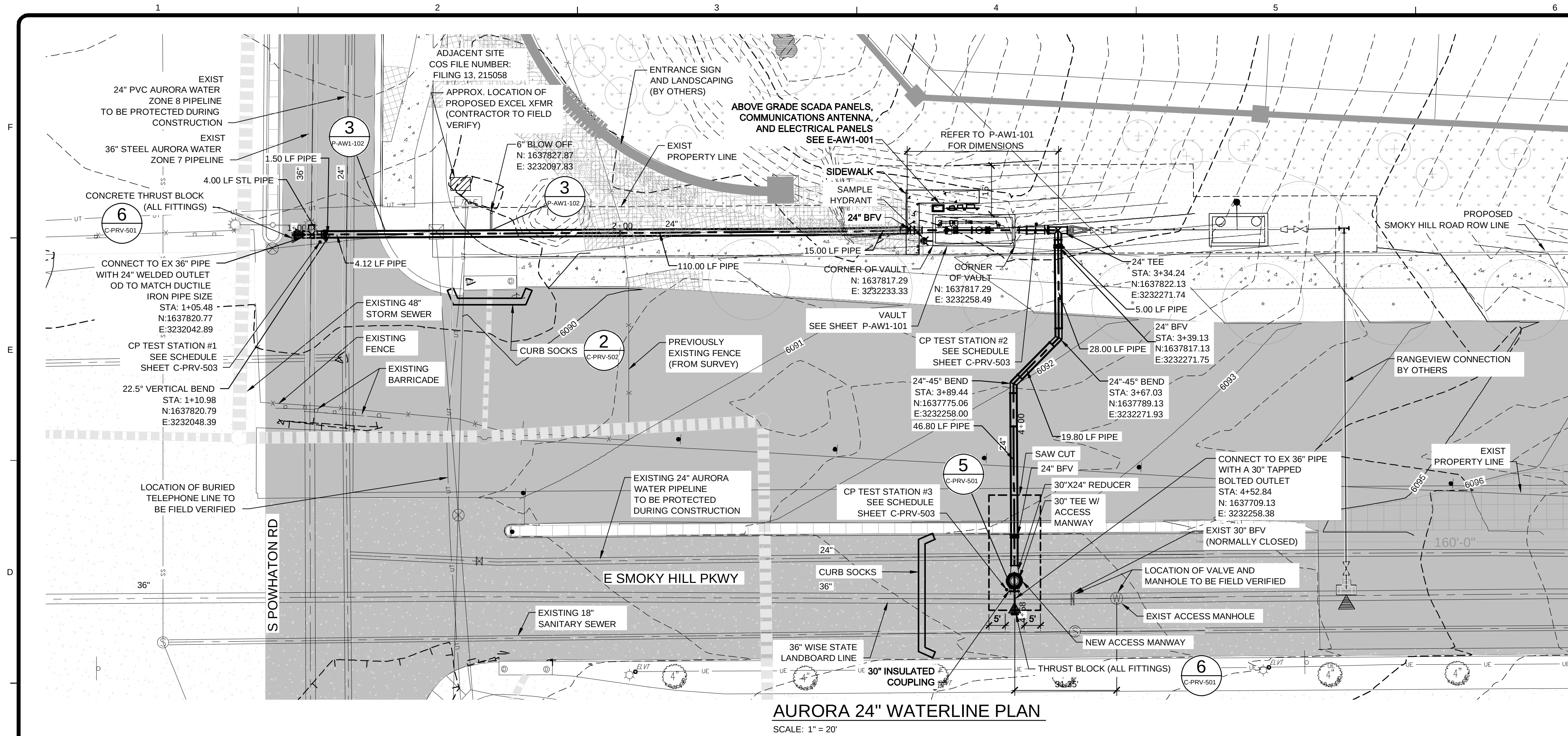
Project No.:	133-08362-15001
Designed By:	JLC
Drawn By:	TRS
Checked By:	BSJ

C.O.A.

4

G-003

2/23/2016 3:51:00 PM -T:\08362133-08362-15001\CADD\SHEET\ESC-AW1-201-24" WATERLINE PLAN AND PROFILE STA 1+00 TO 5+00.DWG - SPERRY, TY

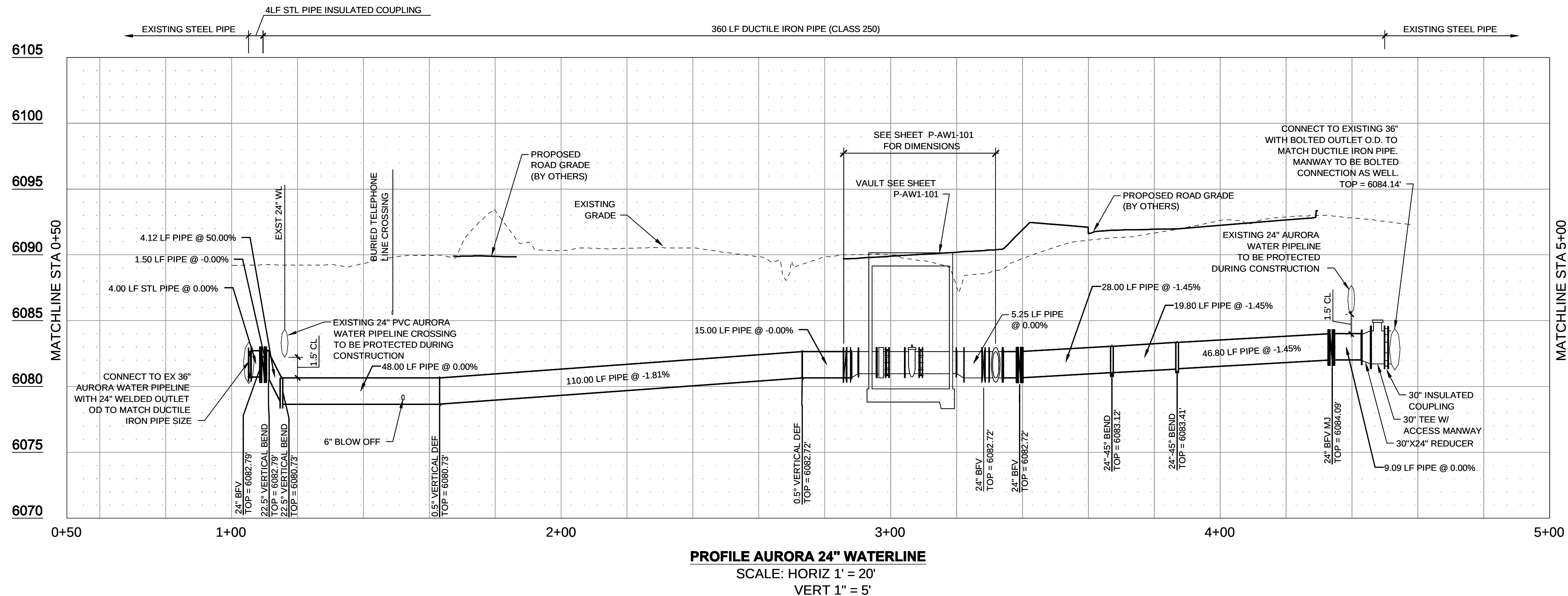


AREA MAP

VERTICAL DATUM EQUATION:
NAVD88 DATUM = NGVD29 DATUM + 3.1 FEET.

BENCHMARK NOTES:

- BASIS OF BEARINGS:** THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 19, TOWNSHIP 5 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN IS CONSIDERED TO BEAR NORTH 89°26'01" EAST.
- BENCHMARK:** CITY OF AURORA BENCHMARK 5S6519SW001 BEING A 3" BRASS CAP STAMPED "SLP - 125.5 2005" LOCATED AT THE SOUTHWEST CORNER OF SOUTH MAIN STREET AND SOUTH SOUTHLANDS PARKWAY ON AN INLET NEAR THE SOUTH PCR. NGVD29 ELEV=6064.46'.



NOTES:

- RANGEVIEW CONNECTION AND ALL APPURTENANCES BY OTHERS.
- UNLESS NOTED OTHERWISE, ALL PIPES ARE PRIVATE.
- RESTORE SITE TO CONDITIONS FOUND PRIOR TO BEGINNING WORK. REPAIR ALL CONCRETE AND ASPHALT ROADWAYS. REPLACE CURB AND GUTTER, AND SEED LANDSCAPE AREAS TO MATCH.
- REPLACE ENTIRE CONCRETE PANEL SECTIONS WHEN DISTURBED.
- PLACE THE TRENCH SPOILS ON UPHILL SIDE OF THE TRENCH.
- ALL NEW PIPE TO BE RESTRAINED.
- WARNING TAPE TO BE PROVIDED FOR ALL BURIED PIPING.

BY	DATE	DESCRIPTION	MARK
BSJ	10/16/15	60% ISSUED FOR REVIEW	1
BSJ	11/03/15	ISSUED FOR PERMITTING	2
BSJ	01/19/16	95% ISSUED FOR REVIEW	3
BSJ	02/22/16	100% ISSUED FOR CONSTRUCTION	4

SOUTH METRO WISE AUTHORITY		CONNECTIONS	
POWHATON ST. & SMOKY HILL RD.		24" WATERLINE	
EROSION CONTROL PLAN		Project No.: 133-08362-15001	
Designed By: WJR		Drawn By: CFW	
Checked By: BSJ		C.O.A.	

5

C-AW1-201



2/23/2016 9:05:41 AM - T:\08362\133-08362-15001\CAD\SHSHEETFILES\1-AW1-101 VAULT UPPER AND LOWER PLANS.DWG - SPERRY, TY

F
E
D
C
B
A

1

2

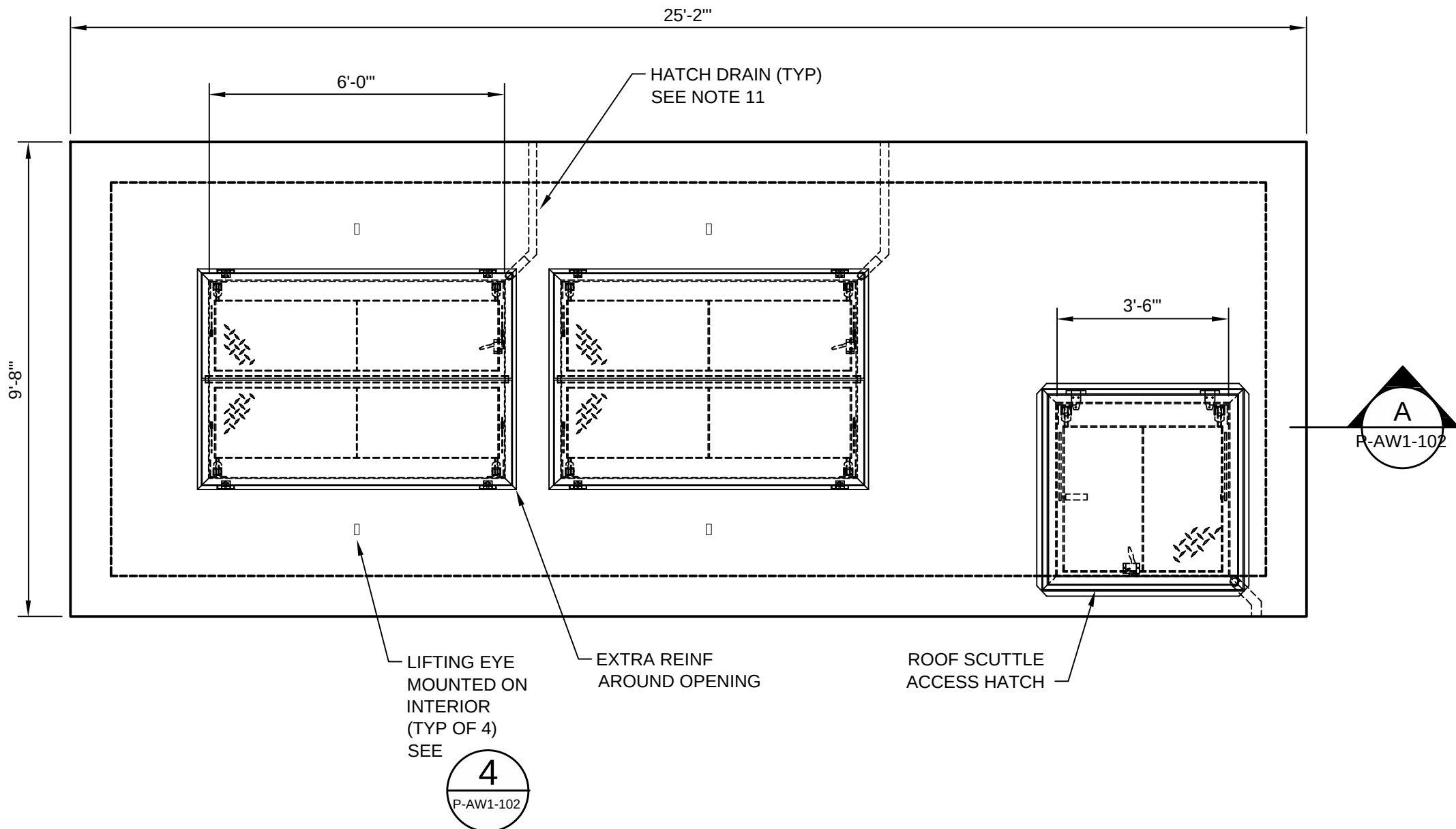
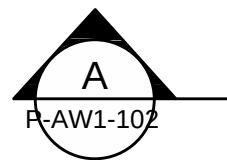
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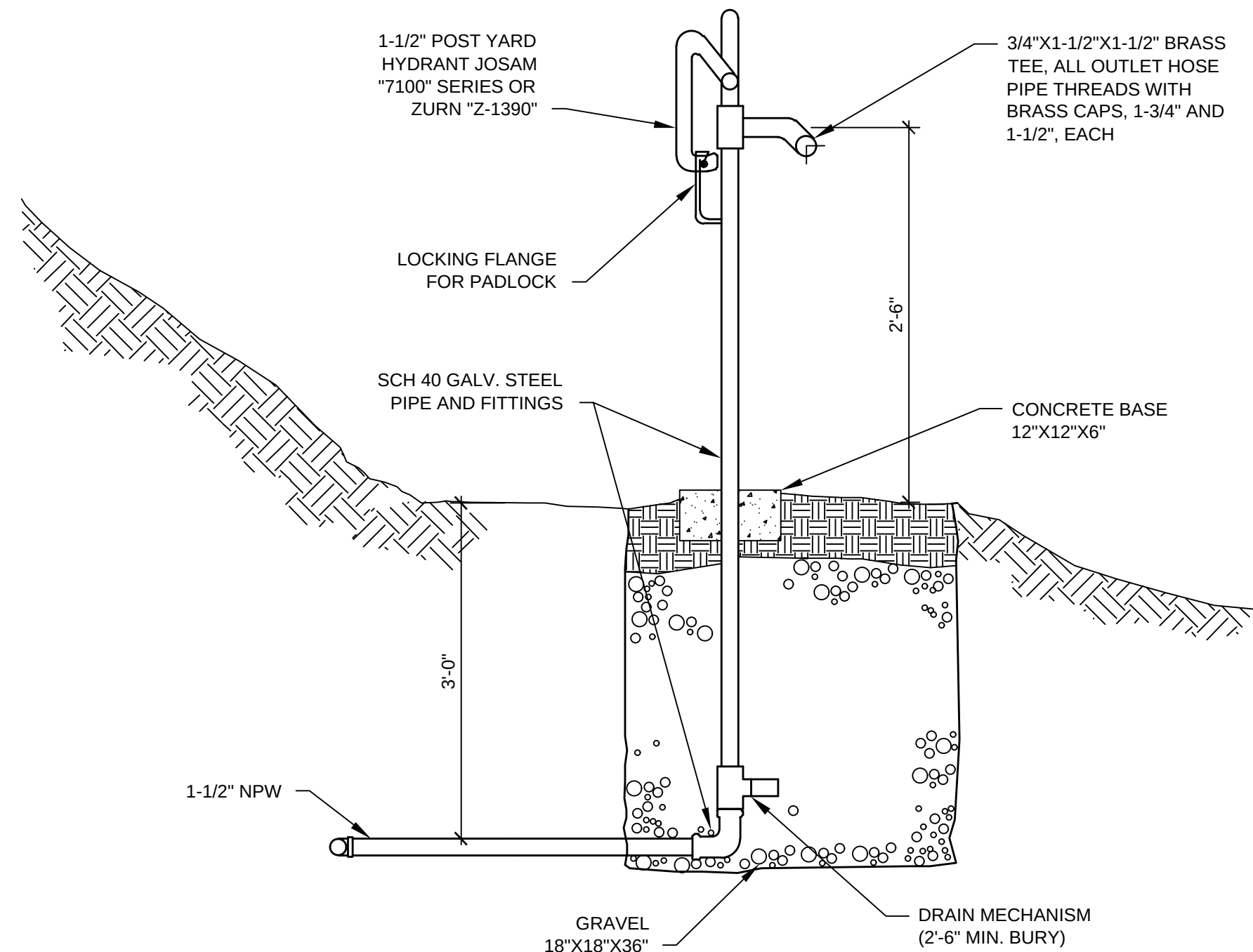
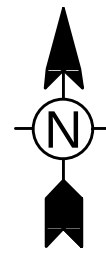
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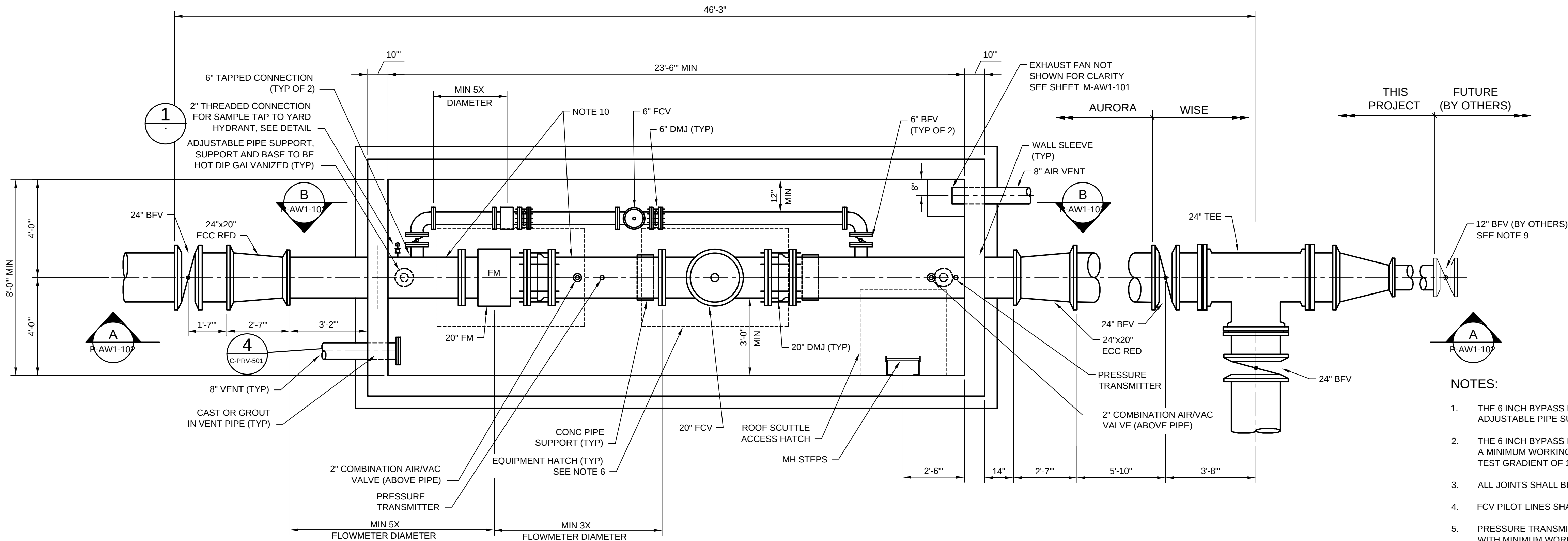
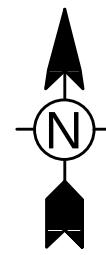
7



UPPER PLAN
SCALE: 3/8" = 1'-0"



1 FROST PROOF YARD HYDRANT
SCALE: NTS



LOWER PLAN
SCALE: 3/8" = 1'-0"

NOTES:

- THE 6 INCH BYPASS LINE SHALL HAVE AT LEAST ONE ADJUSTABLE PIPE SUPPORT.
- THE 6 INCH BYPASS PIPE, VALVES, AND FITTINGS ARE TO HAVE A MINIMUM WORKING PRESSURE RATING OF 250 PSI (WITH A TEST GRADIENT OF 1.5 TIMES WORKING PRESSURE).
- ALL JOINTS SHALL BE RESTRAINED.
- FCV PILOT LINES SHALL BE INSULATED.
- PRESSURE TRANSMITTER TAPS TO BE 1/2" WITH BALL VALVE WITH MINIMUM WORKING PRESSURE RATING OF 250 PSI.
- HATCH OVER THE FLOW METER AND FCV SHALL BE BILCO JD-3AL (48"x72"). THE ROOF SCUTTLE SHALL BE A BILCO TYPE E-50 ROOF HATCH WITH A LADDER-UP SAFETY POST AND RAILING SYSTEM TO MEET OSHA CFR 1910.23.
- VAULT INTERIOR LIGHTING IS REQUIRED.
- ELECTRICAL RECEPTACLE OUTLET REQUIRED NEAR THE TOP OF THE LADDER AND INSIDE VAULT.
- WORK ON RANGEVIEW CONNECTION WILL COINCIDE WITH THIS WORK. 12" VALVE TO BE PURCHASED BY RANGEVIEW AND INSTALLED BY DESIGN BUILDER TO MARK THE LIMITS OF CONSTRUCTION.
- PROVIDE INSULATING FLANGES EITHER SIDE OF MAIN LINE AND BYPASS FLOWMETERS, 4 TOTAL.
- HATCH DRAIN DAYLIGHT LOCATION TO BE FIELD DETERMINED.

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4	02/22/16	100% ISSUED FOR CONSTRUCTION	BSJ

SOUTH METRO WISE AUTHORITY	CONNECTIONS
VAULT	UPPER AND LOWER PLANS

Project No.:	133-08362-15001
Designed By:	WJR
Drawn By:	TRS
Checked By:	BSJ

P-AW1-101

Bar Measures 1 inch

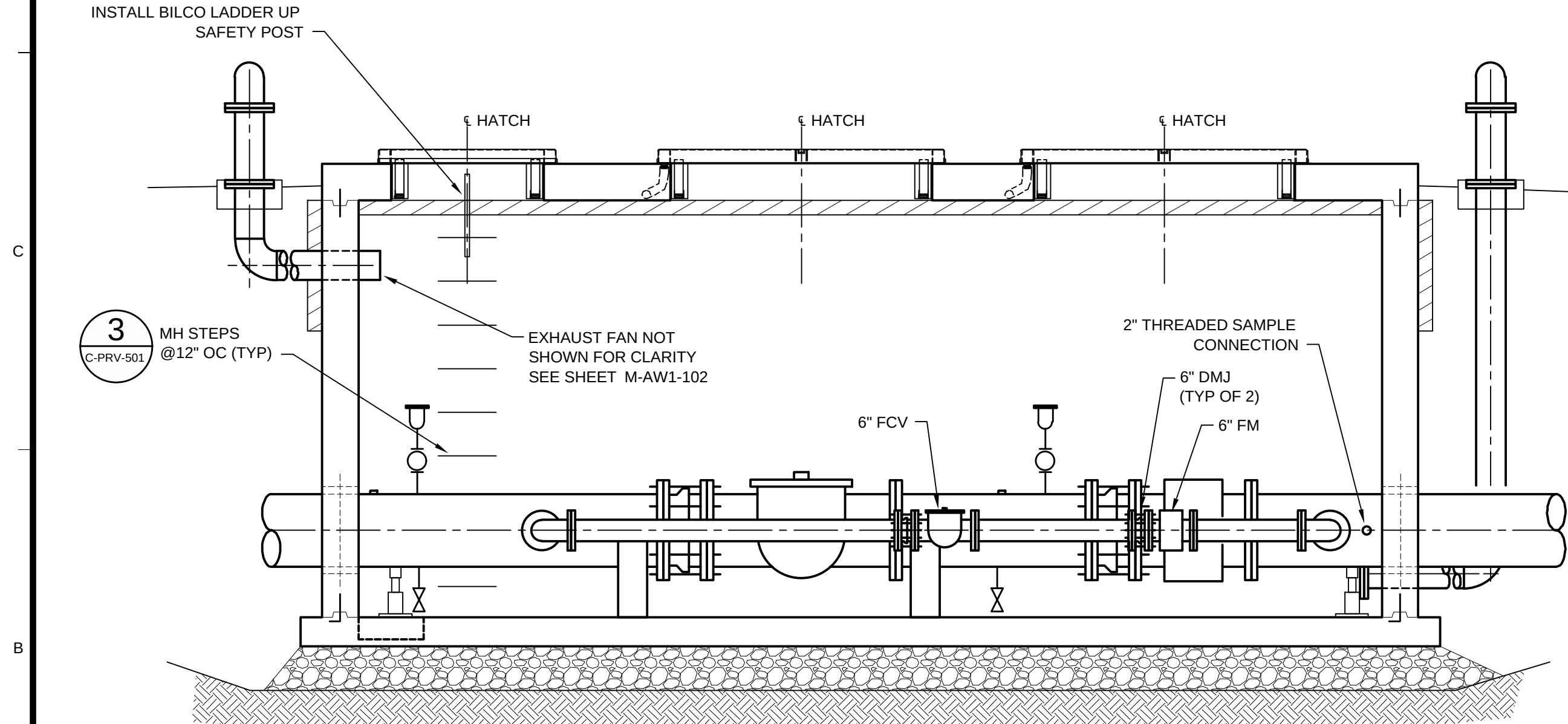
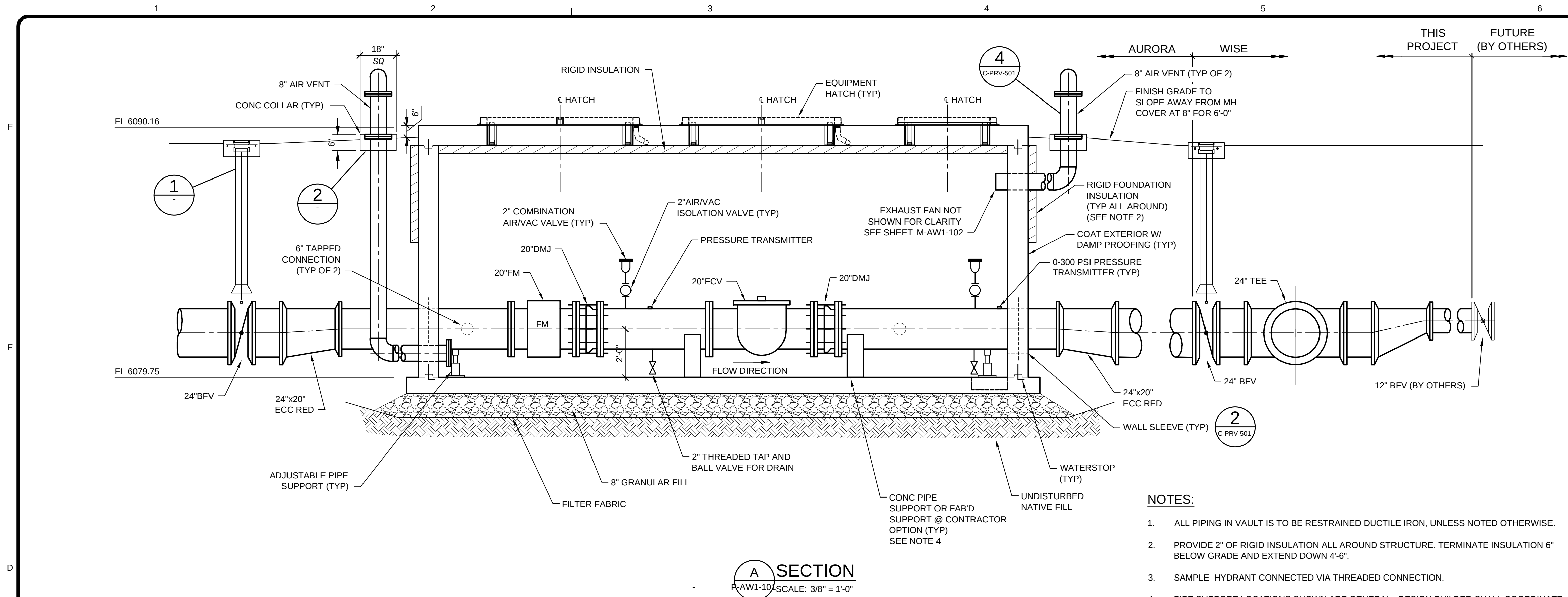
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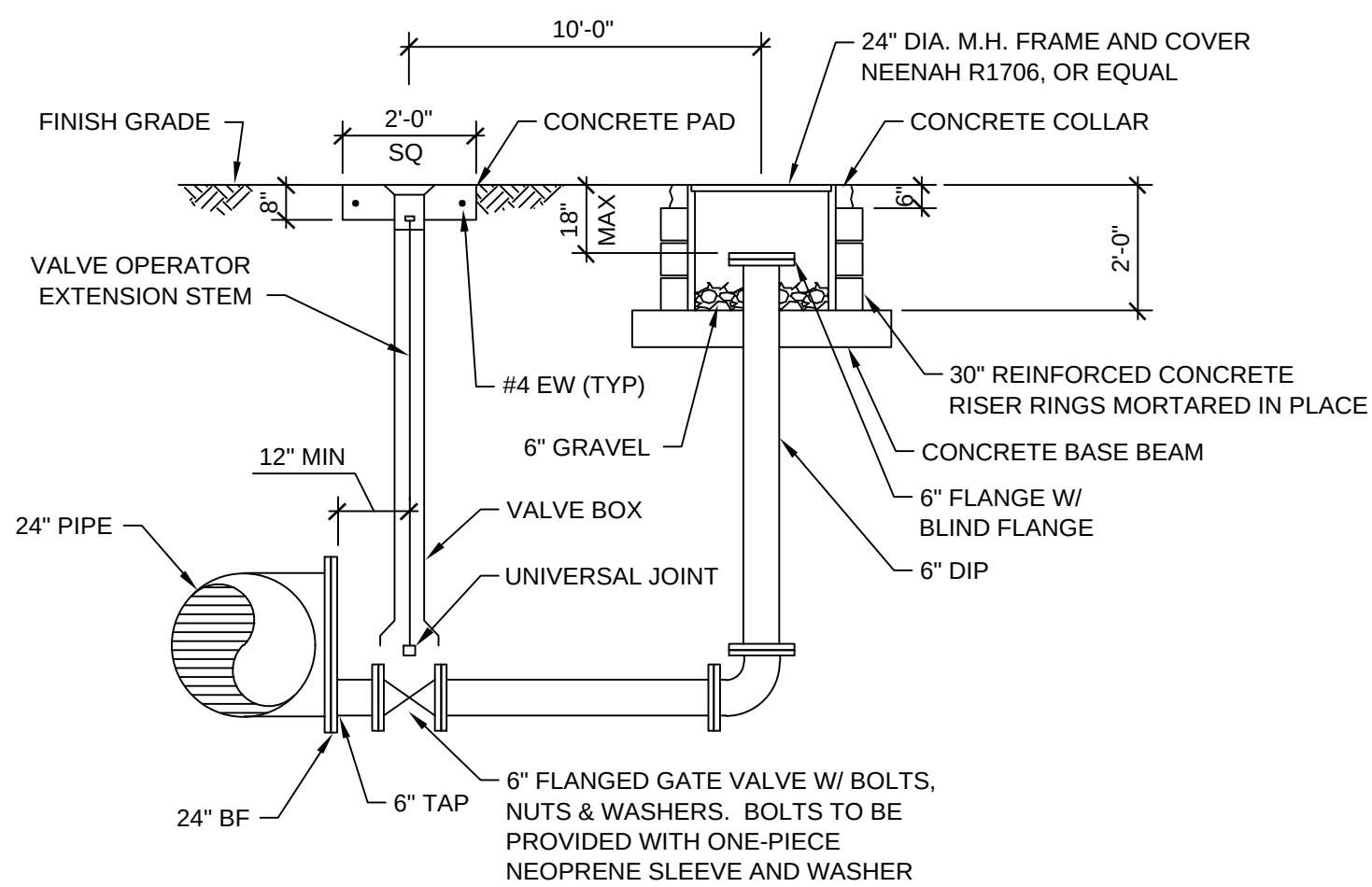
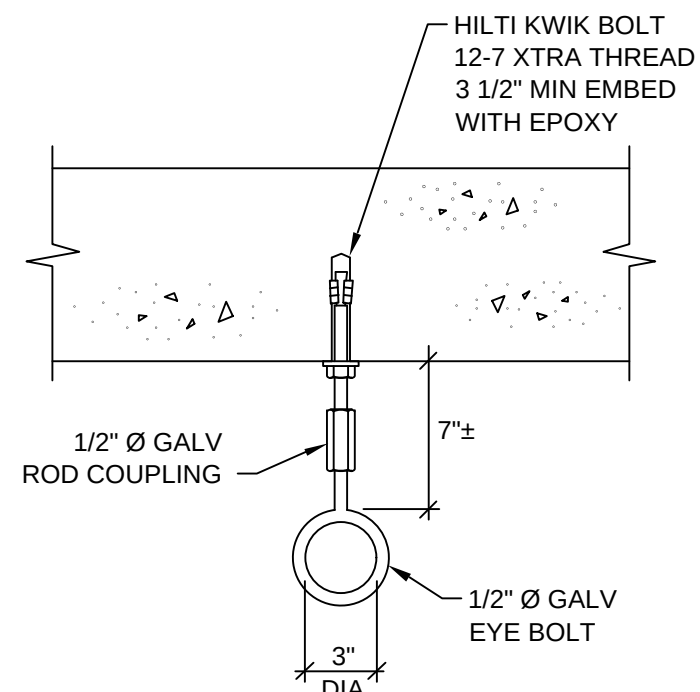
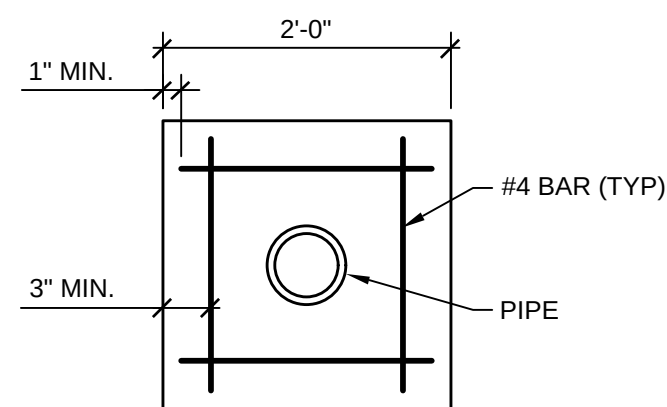
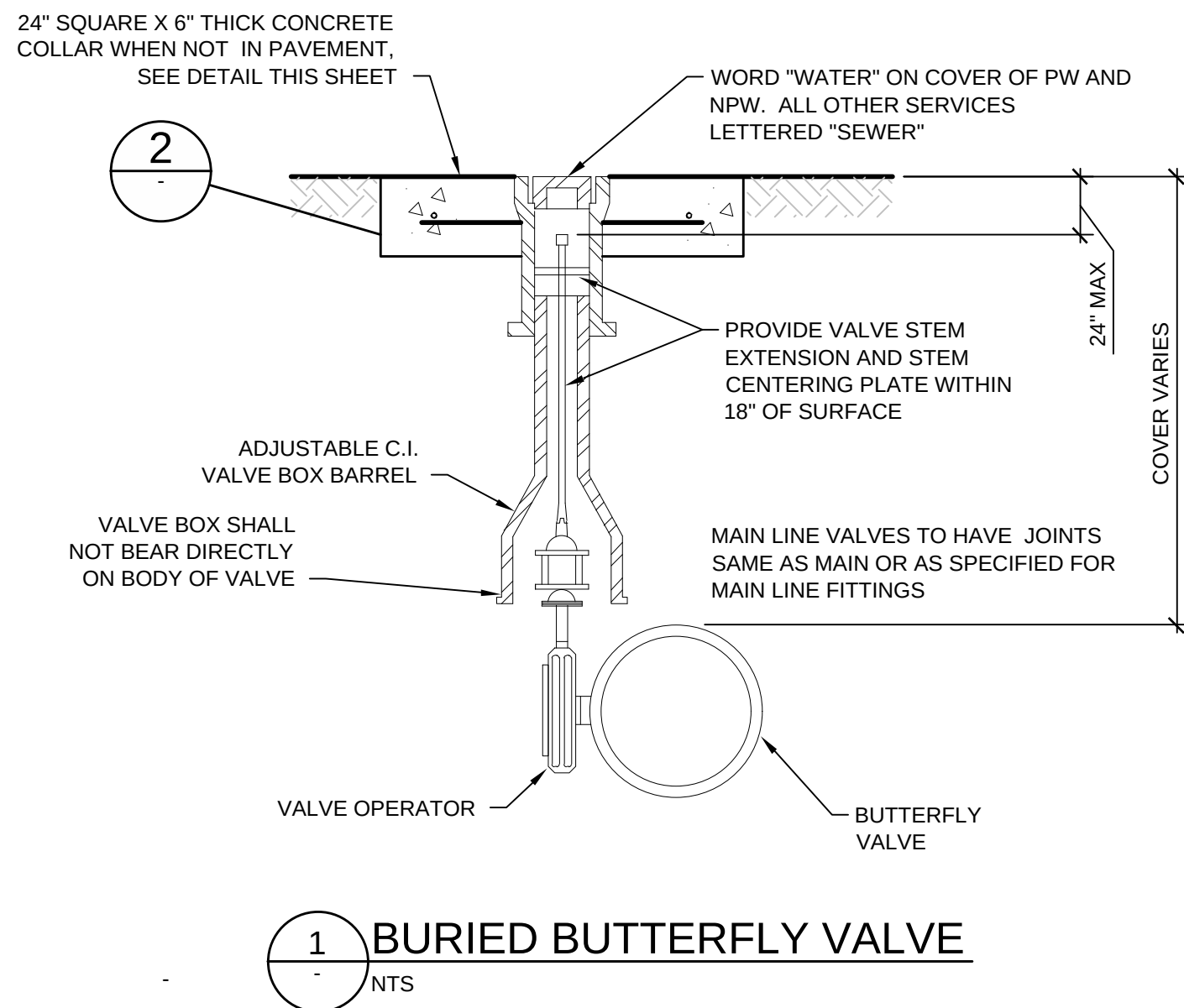
2/23/2016 9:05:57 AM - T:\08362\133-08362-15001\CAD\DWG\FILES\1-AW1-102 VAULT SECTION.DWG - SPERRY, TY



VERTICAL DATUM EQUATION:
NAVD88 DATUM = NGVD29 DATUM + 3.1 FEET.

BENCHMARK NOTES:

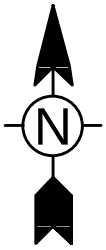
- BASIS OF BEARINGS: THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 19, TOWNSHIP 5 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN IS CONSIDERED TO BEAR NORTH 89°26'01" EAST.
- BENCHMARK: CITY OF AURORA BENCHMARK 5S6519SW001 BEING A 3" BRASS CAP STAMPED "SLP - 125.5 2005" LOCATED AT THE SOUTHWEST CORNER OF SOUTH MAIN STREET AND SOUTH SOUTHLANDS PARKWAY ON AN INLET NEAR THE SOUTH PCR. NGVD29 ELEV=6064.46'.



- NOTES:
- ALL DUCTILE IRON PIPE SHOWN SHALL BE CLASS 52 AND POLYWRAPPED.
 - REFERENCE VAULT PLAN FOR BLOWOFF LOCATION.
 - MEG-A-LUG RESTRAINT IS REQUIRED FOR ALL PIPING.
 - CATHODIC PROTECTION SHALL BE PROVIDED BY ATTACHING A 48# ANODE AND TEST SITE TO THE 6" PIPING BETWEEN THE VALVE AND 90° BEND.
 - INSULATOR FLANGE BOLTS WILL BE EITHER STAINLESS STEEL #304 OR CORTEN.



MARK	DATE	DESCRIPTION	BY
1	10/16/15	60% ISSUED FOR REVIEW	BSJ
2	11/03/15	ISSUED FOR PERMITTING	BSJ
3	01/19/16	95% ISSUED FOR REVIEW	BSJ
4	02/22/16	100% ISSUED FOR CONSTRUCTION	BSJ



SCALE: 3/8" = 1'-0"

1. MOUNT THERMOSTAT AND HUMIDISTAT 48" AFF.
2. MOUNT UH-1 TO VAULT WITH MANUFACTURER PROVIDED MOUNTING BRACKET.
3. REFERENCE P-SERIES DRAWINGS FOR VAULT DETAILS.
4. MOUNT EF-1 TO VAULT WITH MANUFACTURER PROVIDED MOUNTING SYSTEM.

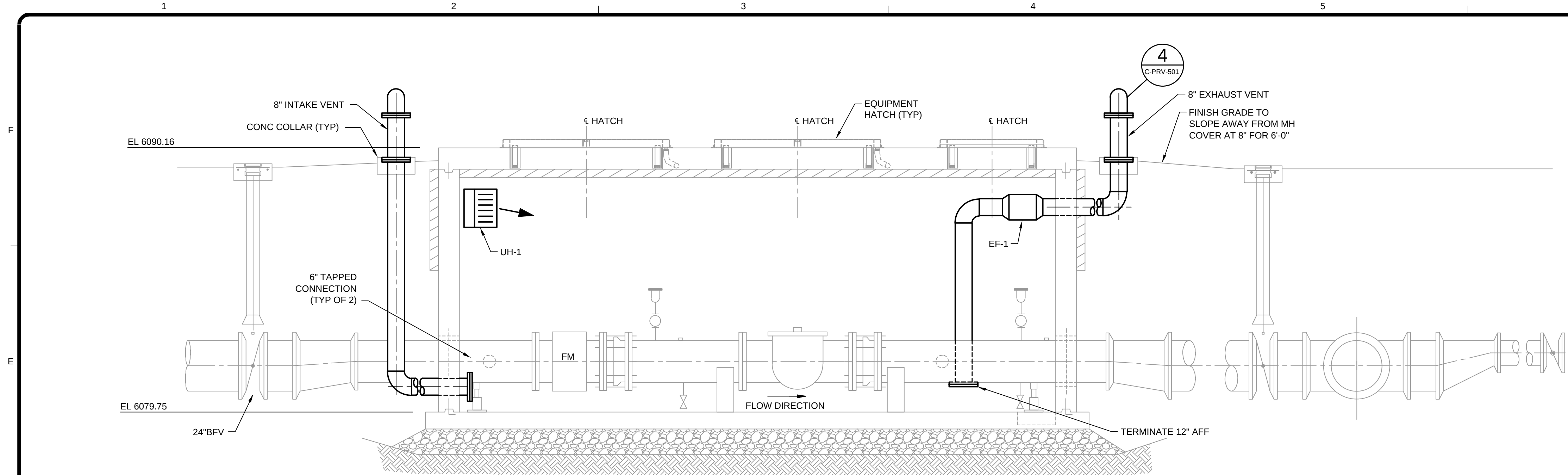
SOUTH METRO WISE AUTHORITY	CONNECTIONS	VAULT PLAN
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M-AW1-101

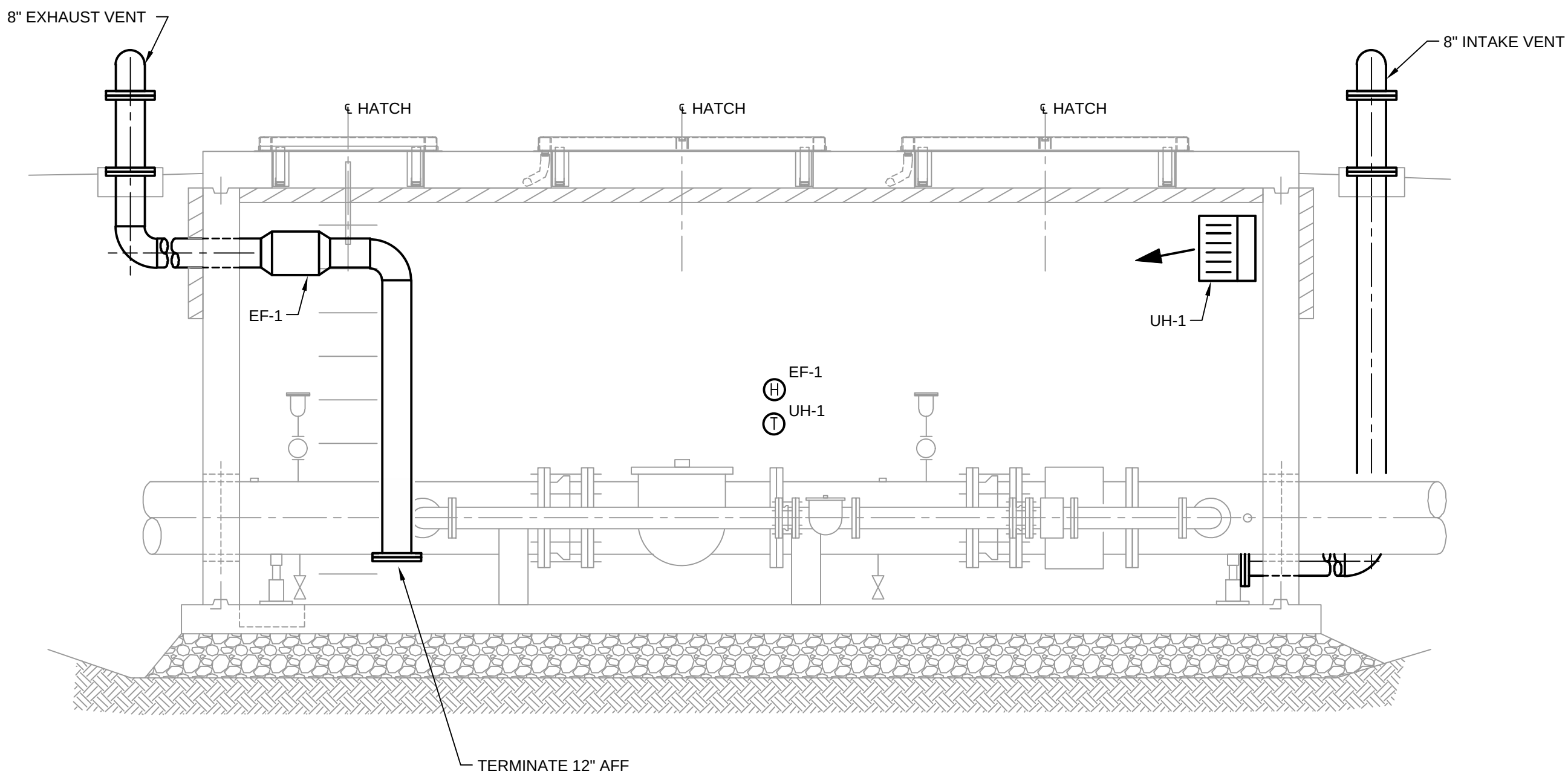


Bar Measures 1 inch

2/23/2016 9:06:25 AM - T:\08362\133-08362-15001\CAD\ISHEETFILES\M-AW1-102 VAULT SECTION.DWG - SPERRY, TY



A SECTION
M-AW1-102 SCALE: 3/8" = 1'-0"



B SECTION
M-AW1-102 SCALE: 3/8" = 1'-0"

NOTES:

1. MOUNT THERMOSTAT AND HUMIDISTAT 48" AFF.
2. MOUNT UH-1 TO VAULT WITH MANUFACTURER PROVIDED MOUNTING BRACKET.
3. REFERENCE P-SERIES DRAWINGS FOR VAULT DETAILS.
4. MOUNT EF-1 TO VAULT WITH MANUFACTURER PROVIDED MOUNTING SYSTEM.

UNIT HEATER SCHEDULE									
TAG	LOCATION	CAPACITY (KW)	AIR FLOWRATE (CFM)	MOTOR			MANUFACTURER AND MODEL (OR APPROVED EQUAL)	REMARKS	
				HP	V/HZ/PH	AMPS			
UH-1	VAULT	5	400	1/125	240/60/1	21	TRANE UHEC-053DACA	SPACE THERMOSTAT CONTROLLED. UNIT HEATER SHALL MAINTAIN SPACE TEMPERATURE OF 50F.	

EXHAUST FAN SCHEDULE												
TAG	LOCATION	TYPE	CFM	ESP (INWC)						MODEL (OR APPROVED EQUAL)	REMARKS	
					BHP	HP	V/PH/HZ	RPM	FLA			
EF-1	VAULT	INLINE	200	0.3	0.03	1/6	115/1/60	1725	3.4	GREENHECK SQ-75-VG	ALUMINUM CONSTRUCTION WITH SOLID STATE SPEED CONTROLLER. SPACE HUMIDISTAT CONTROLLED. EXHAUST FAN SHALL MAINTAIN SPACE RELATIVE HUMIDITY OF 60% OR LESS.	

NOTES:
1) PERFORMANCE SHOWN IS AT SITE CONDITIONS OF 5000 FT AMSL

NOTES:
1.) PERFORMANCE SHOWN IS AT SITE CONDITIONS OF 5000 FT AMSL

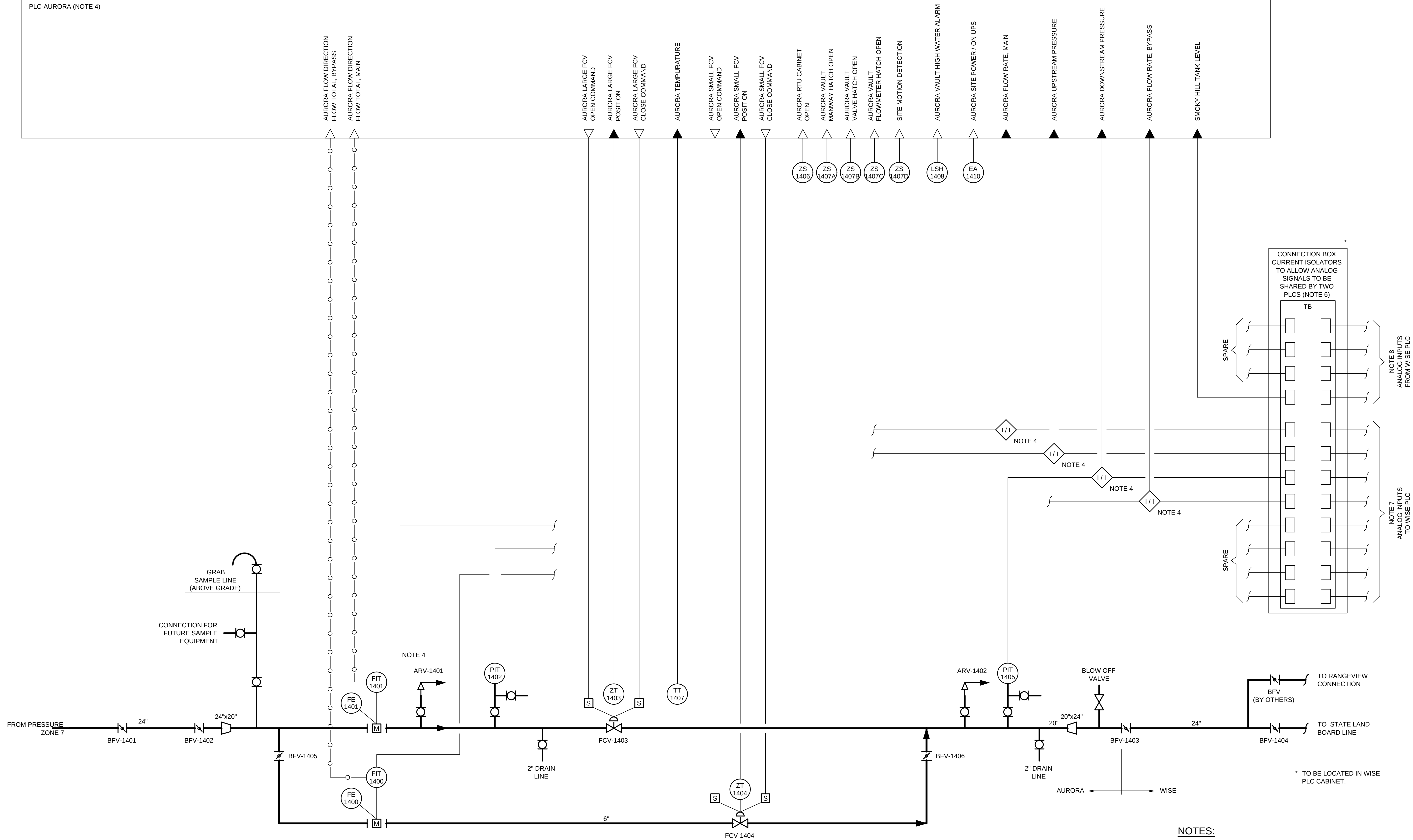


MARK	DATE	DESCRIPTION	BY
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2	11/03/15	ISSUED FOR PERMITTING	BSJ
3	01/19/16	95% ISSUED FOR REVIEW	BSJ
4	02/22/16	100% ISSUED FOR CONSTRUCTION	BSJ

SOUTH METRO WISE AUTHORITY
CONNECTIONS
VAULT SECTIONS

Project No.:	133-08362-15001
Designed By:	LR
Drawn By:	TRS
Checked By:	LR

M-AW1-102



- ## NOTES:
1. SEE P&ID LEGEND & ABBREVIATIONS ON DRAWING G-003.
 2. ALL CONTROL DEVICES SUCH AS INDICATING LIGHTS AND SWITCHES, LOCATED ON CONTROL PANELS OR AT EQUIPMENT, MAY NOT BE SHOWN ON THIS P&ID.
 3. SYSTEM CODE IS AW1, UNLESS NOTED OTHERWISE.
 4. PROGRAMMABLE LOGIC CONTROLLER (PLC) AND SIGNAL BOOSTER/SOLATORS ARE LOCATED INSIDE THE PLC ENCLOSURE.
 5. MOUNT FLOW TRANSMITTER IN PLC PANEL.
 6. SIGNAL ISOLATION JUNCTION BOX LOCATED IN THE WISE PLC CABINET.
 7. WIRE (8) ANALOG OUTPUTS FROM AURORA PLC TO WISE PLC.
 8. WIRE (4) ANALOG OUTPUTS FROM WISE PLC TO AURORA PLC.

MARK	DATE	DESCRIPTION	BY
1	10/16/15	60% ISSUED FOR REVIEW	BSJ
2	1/10/16	ISSUED FOR PERMITTING	BSJ
3	01/19/16	95% ISSUED FOR REVIEW	BSJ
4	02/22/16	100% ISSUED FOR CONSTRUCTION	BSJ

SOUTH METRO WISE AUTHORITY CONNECTIONS P&ID AURORA CONNECTION	Project No.: 133-08362-15001
	Designed By: DI
	Drawn By: TRS
	Checked By: BSJ

I-AW1-002



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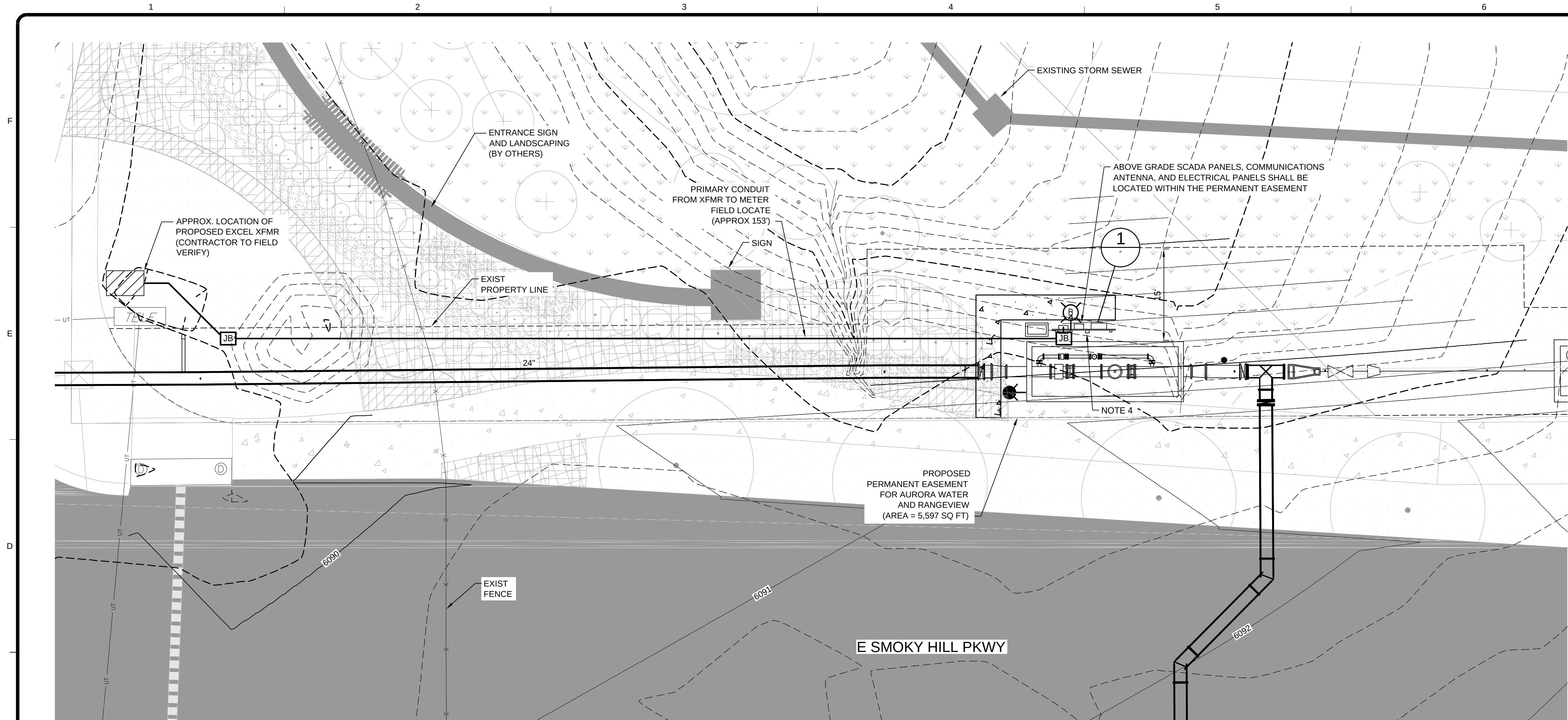
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2/23/2016 9:06:50 AM - T:\08362\133-08362-15001\CAD\SHSHEET\FILES-E-AW1-001 ELECTRICAL SITE PLAN.DWG - SPERRY, TY



VERTICAL DATUM EQUATION:

NAVD88 DATUM = NGVD29 DATUM + 3.1 FEET.

BENCHMARK NOTES:

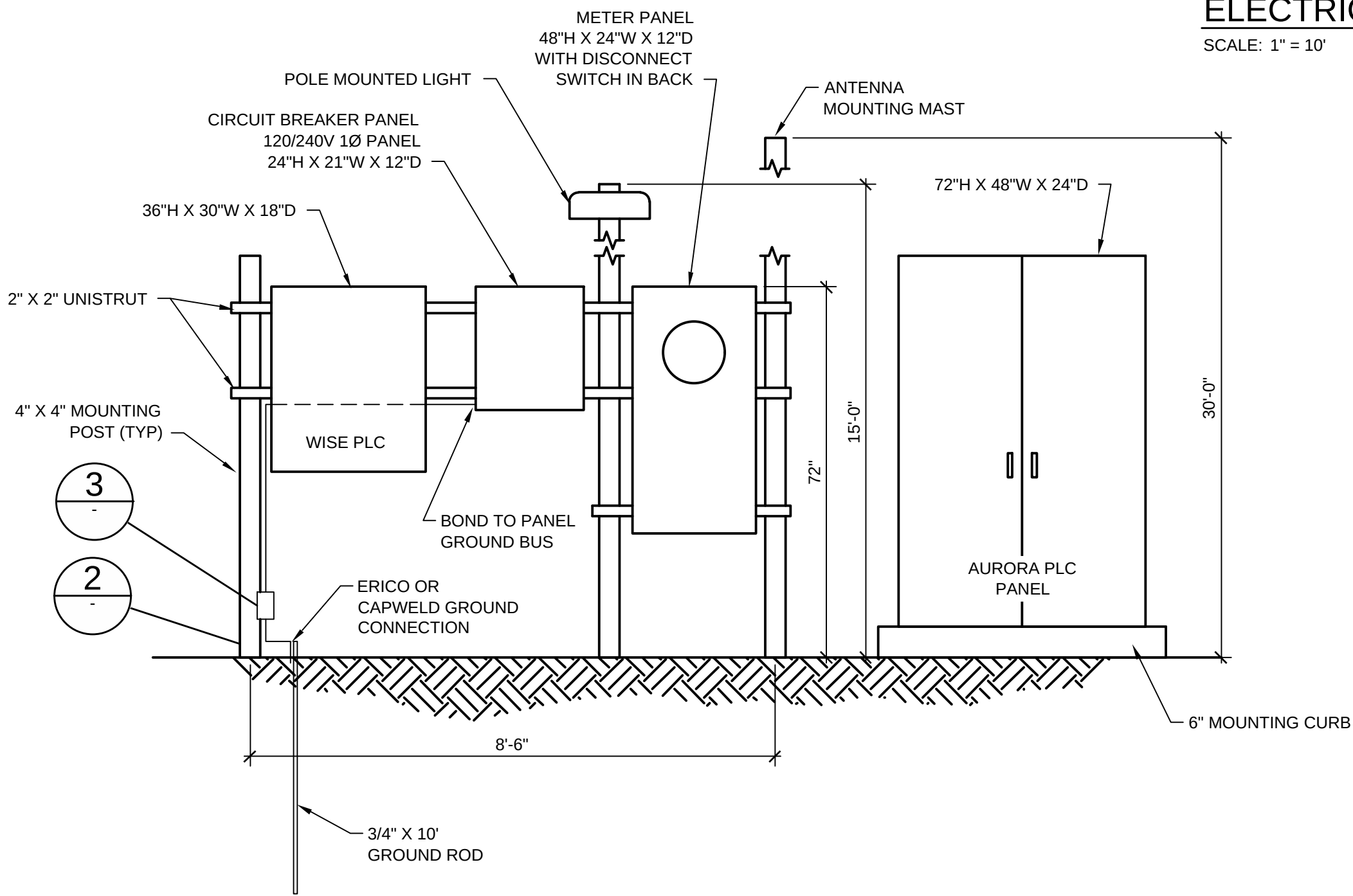
1. BASIS OF BEARINGS: THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 19, TOWNSHIP 5 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN IS CONSIDERED TO BEAR NORTH 89°26'01" EAST.
2. BENCHMARK: CITY OF AURORA BENCHMARK 5S6519SW001 BEING A 3" BRASS CAP STAMPED "SLP - 125.5 2005" LOCATED AT THE SOUTHWEST CORNER OF SOUTH MAIN STREET AND SOUTH SOUTHLANDS PARKWAY ON AN INLET NEAR THE SOUTH PCR. NGVD29 ELEV=6064.46'

NOTES:

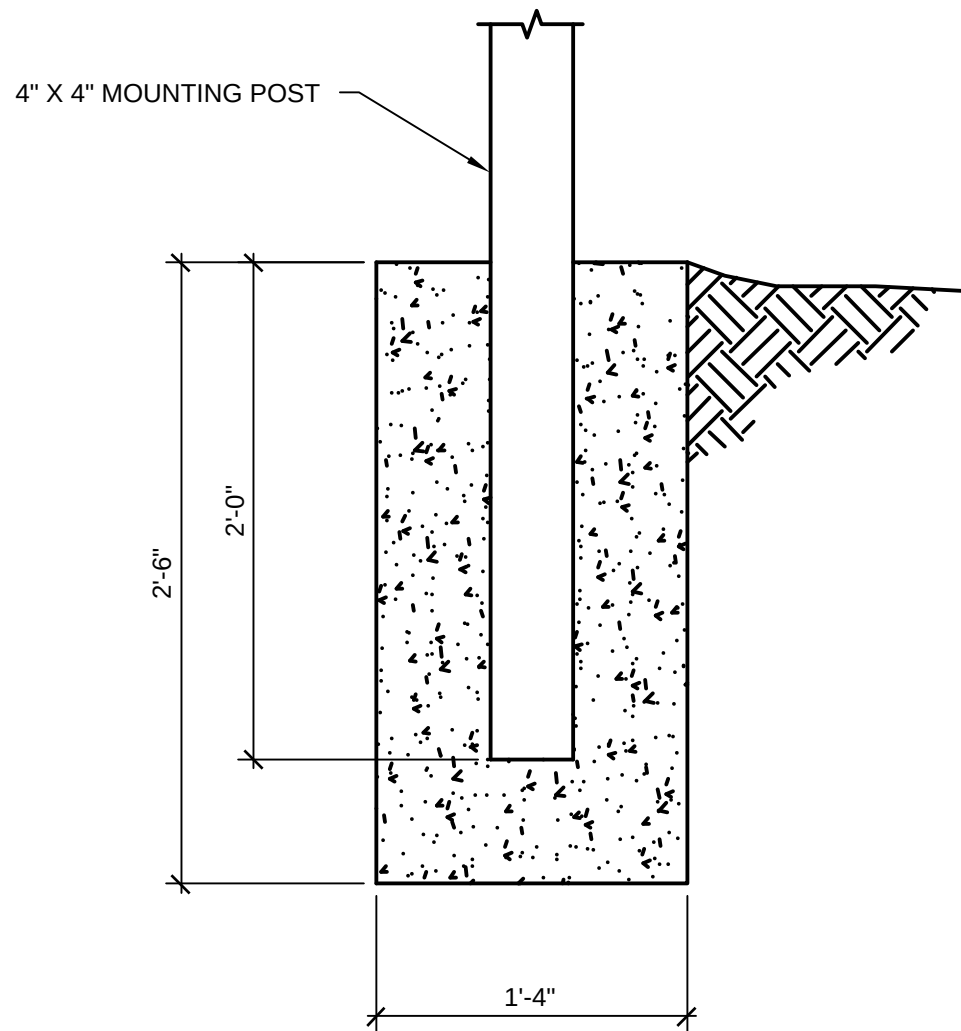
1. ALL EQUIPMENT PANELS TO BE NEMA 4X STAINLESS STEEL.
2. WISE AND AURORA PLC CABINETS TO EACH HAVE UNINTERRUPTIBLE POWER SUPPLY (UPS).
3. ISOLATE DISSIMILAR METALS ON EQUIPMENT RACK IF NECESSARY.
4. MOTION DETECTOR ZS-1407D MOUNTED ON SOUTH SIDE OF PANEL POINTED AT VAULT.

ELECTRICAL SITE PLAN

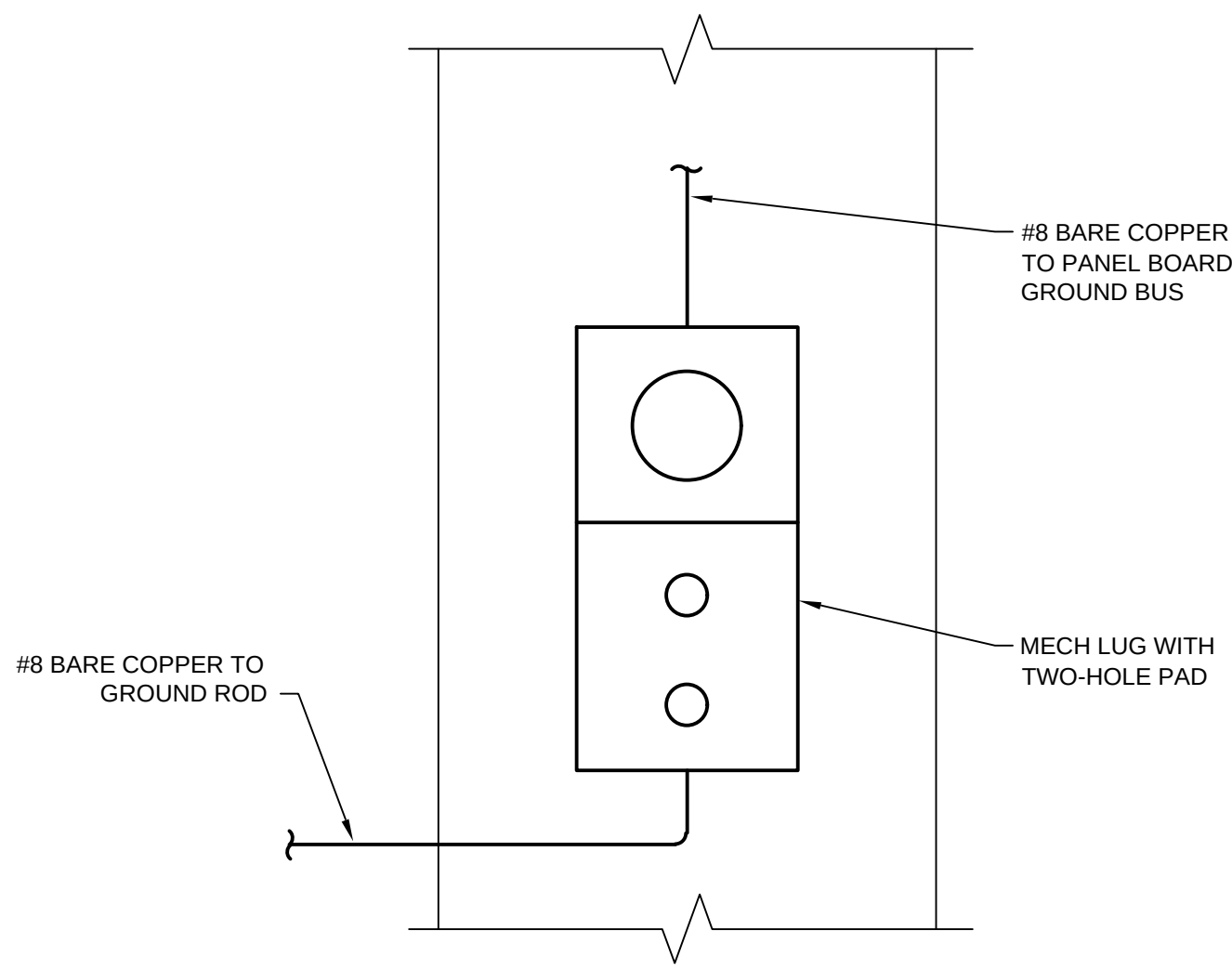
SCALE: 1" = 10'



1 GROUNDING & PANEL DETAIL
NTS



2 MOUNTING POST DETAIL
NTS



3 H-FRAME GROUNDING LUG DETAIL
NTS



MARK	DATE	DESCRIPTION	BY
1	10/16/15	60% ISSUED FOR REVIEW	BSJ
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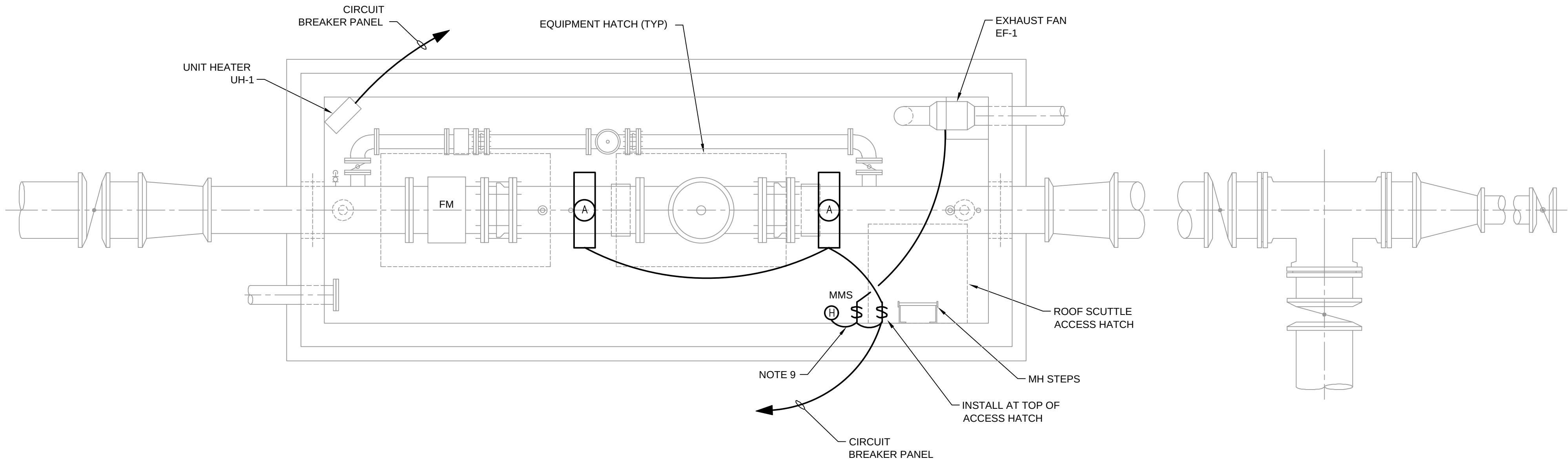
SOUTH METRO WISE AUTHORITY
CONNECTIONS
ELECTRICAL SITE PLAN

Project No.: 133-08362-15001
Designed By: DI
Drawn By: TRS
Checked By: WJR

E-AW1-001

Bar Measures 1 inch

2/23/2016 9:07:05 AM - T:\08362\133-08362-15001\CAD\SHEETFILES\E-AW1-101_VAULT ELECTRICAL PLANS.DWG - SPERRY, TY



FIXTURE TYPE	SYMBOL	LAMP WATTS	INPUT WATTS	VOLTS	QTY	LIGHTING FIXTURE SCHEDULE		
						FIXTURE DESCRIPTION	MOUNTING	MANUFACTURER & CATALOG NO.
A		LED	27W	120W	2	LED WET LOCATION.	CEILING	LITHONIA DMW2-L24-3000LM-ACL- MD-120-GZ1-40K
B		LED	45W	120W	1	LED AREA LIGHT WITH MOTION / AMBIENT SENSOR.	15' POLE	LITHONIA DSX0 LED-20C-700-40K- TIS-120-SPA-PIR

GENERAL NOTES:

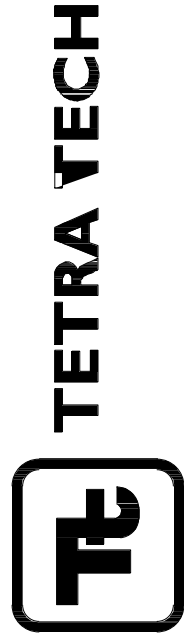
- THIS DRAWING SHALL BE WORKED IN CONJUNCTION WITH THE PLAN DRAWINGS, CABLE AND RACEWAY SCHEDULES.
- CIRCUIT BREAKERS IN LIGHTING PANELBOARDS SHALL BE LABELED SHOWING AMPERE RATING & CIRCUIT NO.
- FIXTURE CONNECTIONS SHALL BE MADE WITH 200°C, TYPE SSF-2 FIXTURE WIRE.
- A GROUND CONDUCTOR SHALL BE CARRIED IN ALL LIGHTING & RECEPTACLE CONDUITS.
- CONDUIT ROUTING SHOWN DIAGRAMMATICALLY. FIELD TO DETERMINE FINAL ROUTING TO AVOID INTERFERENCE WITH PIPING AND STRUCTURES. CONDUIT & FIXTURE ELEVATIONS ARE APPROXIMATE AND ARE GIVEN FOR REFERENCE ONLY.
- ALL LIGHTING AND RECEPTACLE WIRES SHALL BE IDENTIFIED AT EACH END WITH PANEL NUMBER & CIRCUIT NUMBER.
- ALL UNUSED OPENINGS IN FIXTURES, DEVICES, FITTINGS ETC. SHALL BE PLUGGED.
- FIXTURES TO BE SUPPLIED WITH ALL NECESSARY MOUNTING ACCESSORIES.
- PROVIDE MANUAL MOTOR STARTER WITH HUMIDISTAT FOR AUTOMATIC CONTROL OF EF-1.

SOUTH METRO WISE AUTHORITY
CONNECTIONS
VAULT
ELECTRICAL PLAN

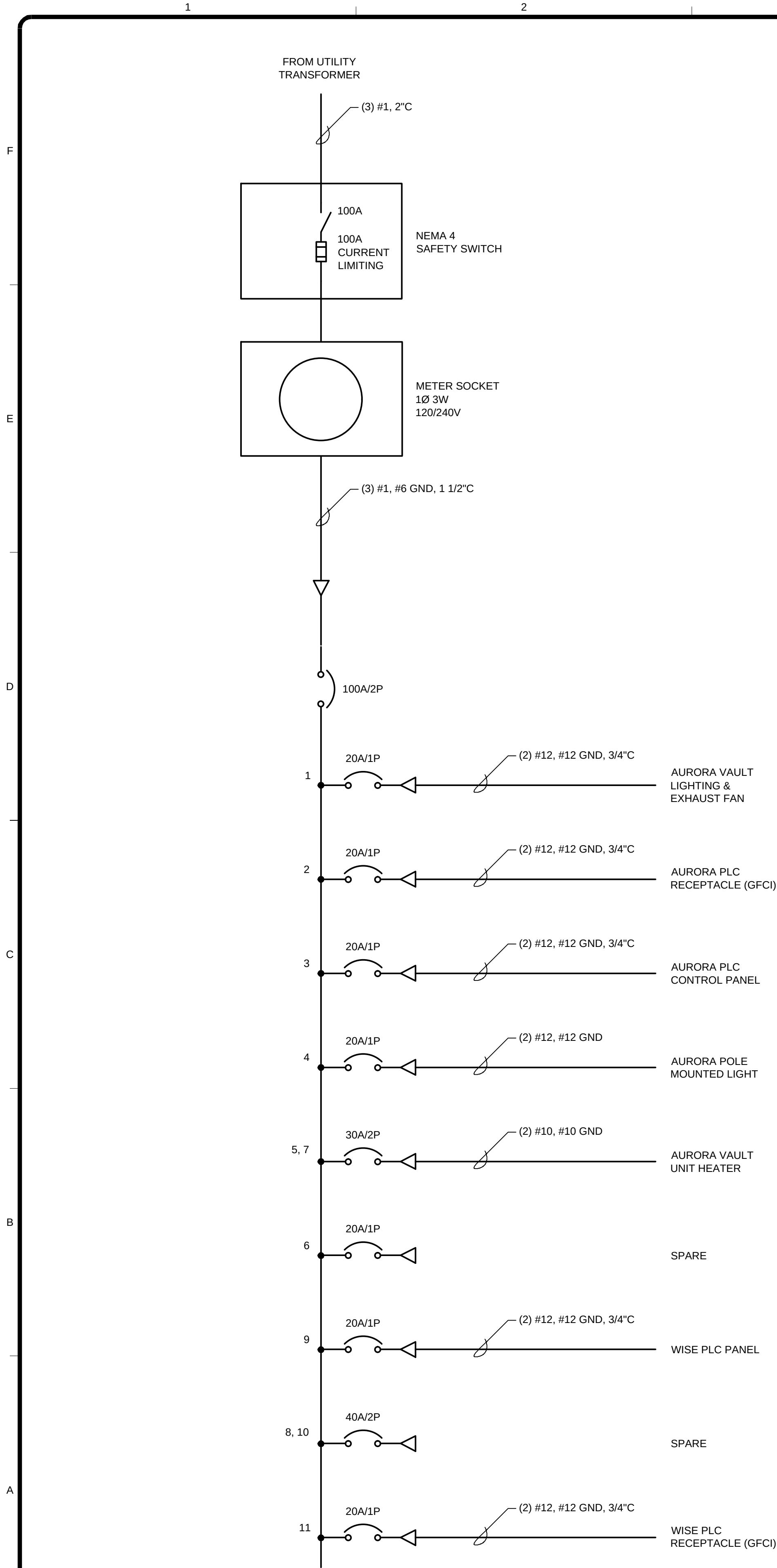
Project No.: 133-08362-15001
Designed By: TM
Drawn By: TRS
Checked By: BSJ

E-AW1-101

Bar Measures 1 inch



2/23/2016 9:07:16 AM - T:\08362\133-08362-15001\CAD\SHEETFILES\E-AW1-301 AURORA ONE LINE DIAGRAM.DWG - SPERRY, TY



PANEL: LP-1		VOLTAGE: 120/240 V.		TYPE: LIGHTING & APPLIANCE	
FED FROM: SERVICE DISCONNECT		1 PH		MOUNTING: SURFACE	
100 AMP MAIN RATED @ 80%		3 W.		PANEL COVER: (SEE SPECIFICATION)	
100 AMP MAIN LUGS		60 HZ		NEUTRAL BUS: YES	
(SEE SPECIFICATION) BUSING				GROUND BUS: YES	
				ISOLATED GND: NO	
10K SYMMETRICAL RMS AMPS		NOTE 1: []		NOTE 2: []	
10K PANEL SHORT CIRCUIT RATING		NOTE 3: []		NOTE 4: []	

NOTE	WIRE SIZE	DESCRIPTION	CCT VA	BREAKER AMP / P	CCT PH CCT AMP / P	CCT VA	DESCRIPTION	WIRE SIZE	NOTE
# 12		VAULT LIGHTING AND EXHAUST FAN	482	20 / 1	1 A 2	20 / 1	180 AURORA PLC RECEPTACLE	# 12	
# 12		AURORA PLC CONTROL PANEL	800	20 / 1	3 B 4	20 / 1	45 AURORA POLE MOUNTED LIGHT	# 12	
# 10		VAULT UNIT HEATER	5040	30 / 2	5 A 6	20 / 1	SPARE		
					7 B 8	40 / 2	SPARE		
# 12		WISE PLC CONTROL PANEL	800	20 / 1	9 A 10		SPARE		
# 12		WISE PLC RECEPTACLE	180	20 / 1	11 B 12		SPACE		
		SPACE			13 A 14		SPACE		
		SPACE			15 B 16		SPACE		
		SPACE			17 A 18		SPACE		
		SPACE			19 B 20		SPACE		
		SPACE			21 A 22		SPACE		
		SPACE			23 B 24		SPACE		
		SPACE			25 A 26		SPACE		
		SPACE			27 B 28		SPACE		
		SPACE			29 A 30		SPACE		

PANEL LOADING SUMMARY		
LOAD TYPE	PHASES	TOTAL
INCANDESCENT	0.46	0.05
FLUORESCENT	0.00	0.00
RECEPTACLES	0.18	0.18
MOTORS	0.00	0.00
APPLIANCE	0.00	0.00
HEAT	2.52	2.52
COMPUTER	0.80	0.80
MISC.	0.00	0.00
OTHER	0.00	0.00
TOTAL	3.96	3.55

NEC DEMAND LOAD SUMMARY		
LOAD TYPE	KW	KVA
INCANDESCENT	0.51	0.51
FLUORESCENT	0.00	0.00
RECEPTACLES	0.00	0.00
FIRST 10 KVA	0.34	0.36
REMAINDER	0.00	0.00
MOTORS	0.00	0.00
LARGEST	0.00	0.00
REMAINDER	0.00	0.00
APPLIANCES	0.00	0.00
HEAT	5.04	5.04
COMPUTER	1.20	1.20
MISC.	0.00	0.00
OTHER	0.00	0.00
25 % SPARE	1.69	1.88
TOTAL	9	9

MIN PANEL AMPACITY	45	AMPERES
--------------------	----	---------

CIRCUIT BREAKER PANEL SCHEDULE

NTS

- NOTES:
- RANGEVIEW CONNECTION BY OTHERS.
 - CONDUITS FIELD ROUTED.
 - WISE AND AURORA PLC CABINETS TO EACH HAVE UNINTERRUPTIBLE POWER SUPPLY (UPS).



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Professional Engineer
02/21/2016

MARK	DATE	DESCRIPTION	BY
1	10/16/15	60% ISSUED FOR REVIEW	BSJ
2	11/03/15	ISSUED FOR PERMITTING	BSJ
3	01/19/16	95% ISSUED FOR REVIEW	BSJ
4	02/22/16	100% ISSUED FOR CONSTRUCTION	BSJ

SOUTH METRO WISE AUTHORITY

CONNECTIONS

AURORA AND RANGEVIEW ONE-LINE DIAGRAM

Project No.: 133-08362-15001

Designed By: JH

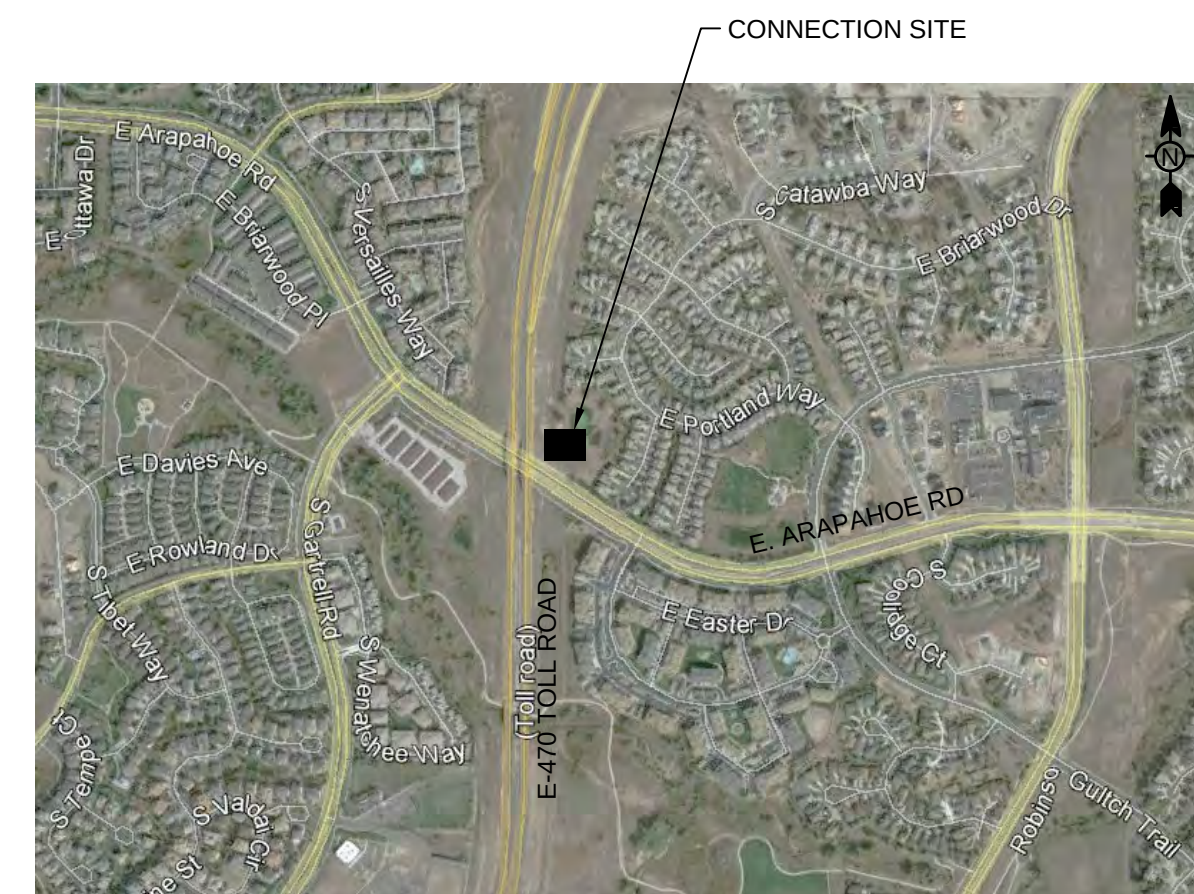
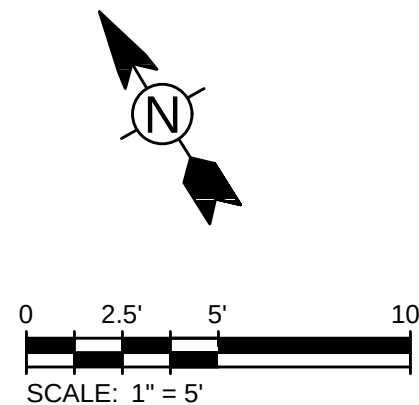
Drawn By: TRS

Checked By: BSJ

E-AW1-301

Copyright: Tetra Tech

Bar Measures 1 inch



VERTICAL DATUM EQUATION:

NAVD88 DATUM = NGVD29 DATUM + 3.1 FEET.

BENCHMARK NOTES:

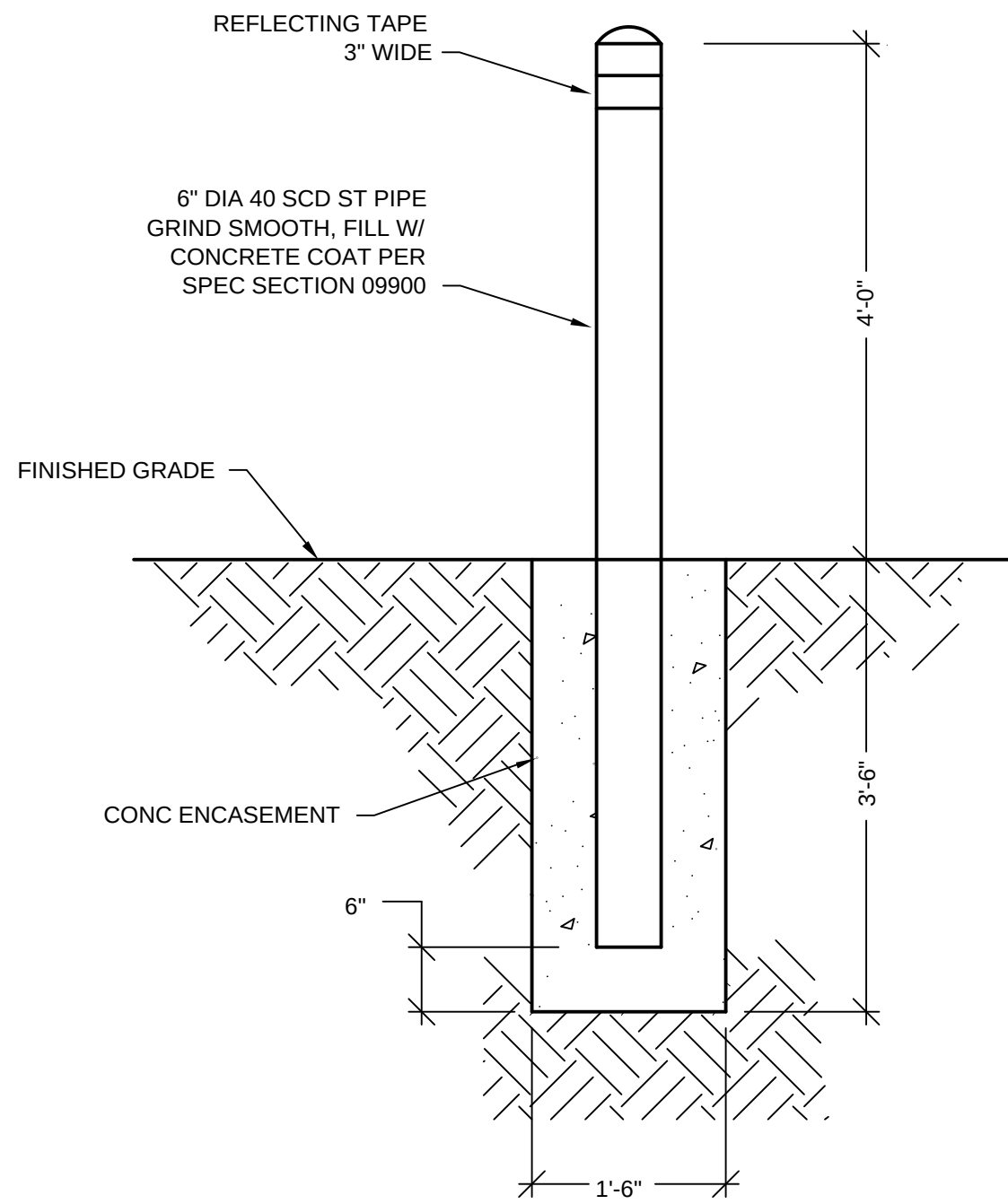
1. **BASIS OF BEARINGS:** THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 19, TOWNSHIP 5 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN IS CONSIDERED TO BEAR NORTH 89°26'01" EAST.
2. **BENCHMARK:** CITY OF AURORA BENCHMARK 5S6519SW001 BEING A 3" BRASS CAP STAMPED "SLP - 125.5 2005" LOCATED AT THE SOUTHWEST CORNER OF SOUTH MAIN STREET AND SOUTH SOUTHLANDS PARKWAY ON AN INLET NEAR THE SOUTH PCR. NGVD29 ELEV=6064.46'.

NOTES:

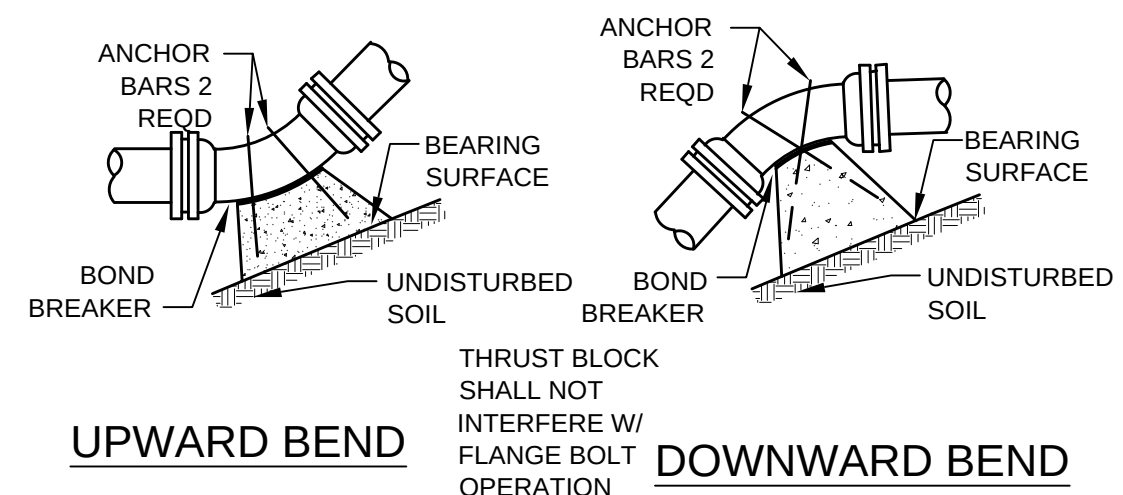
1. UNLESS NOTED OTHERWISE, ALL PIPES ARE PRIVATE.
2. PLACE THE TRENCH SPOILS ON UPHILL SIDE OF THE TRENCH.

SOUTH METRO WISE AUTHORITY CONNECTIONS ARAPAHOE RD. & E-470 PRV SITE PLAN AND EROSION CONTROL PLAN	
Project No.:	133-08362-15001
Designed By:	WJR
Drawn By:	TRS
Checked By:	BSJ



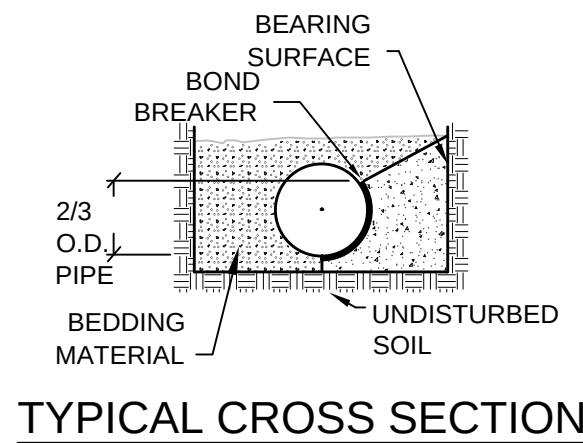


1 BOLLARD DETAIL
3/4" = 1'-0"

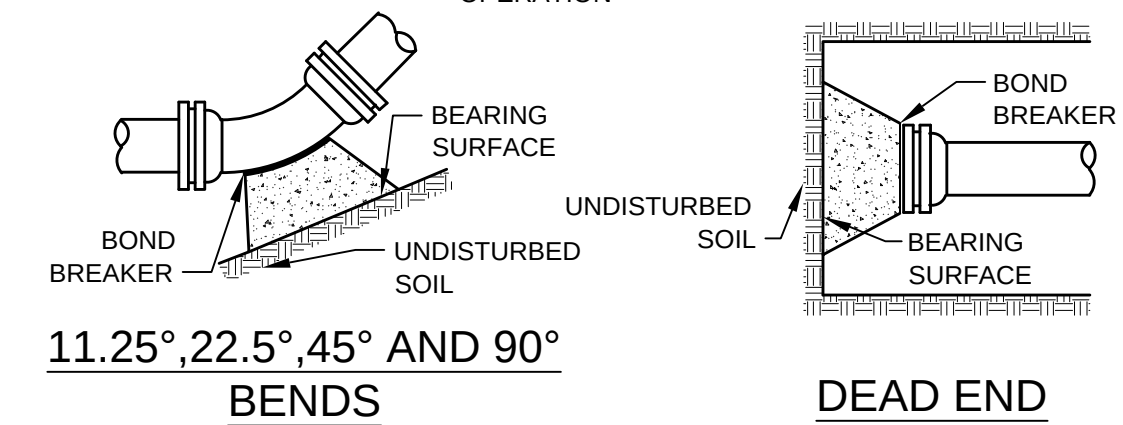


NOTE:
USE COPOLYMER POLYPROPYLENE PLASTIC STEPS FOR ALL MH STEPS

2 WALL SLEEVE DETAIL
SCALE: NTS



3 PLASTIC MANHOLE STEP DETAIL
NTS



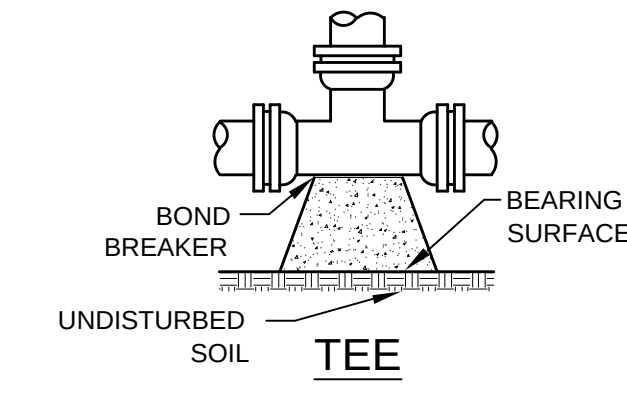
UPWARD BEND
DOWNWARD BEND
DEAD END
11.25°, 22.5°, 45° AND 90° BENDS

PIPE SIZE	TEE, WYE, PLUG OR CAP	BENDS			
		90°	45°	22.5°	11.25°
4"	1.4	2.0	1.1	0.6	0.3
6"	3.2	4.5	2.4	1.2	0.6
8"	5.7	8.0	4.3	2.2	1.1
10"	8.8	12.5	6.8	3.4	1.7
12"	12.7	18.0	9.7	5.0	2.5
14"	17.3	24.5	13.3	6.8	3.4
18"	28.6	40.5	21.9	11.2	5.6
24"	50.9	72.0	39.0	19.9	10.0
30"	79.5	112.5	60.9	31.0	15.6
36"	114.5	161.9	87.6	44.7	22.4
42"	155.9	220.4	119.3	60.8	30.6
48"	203.6	287.9	155.8	79.4	39.9

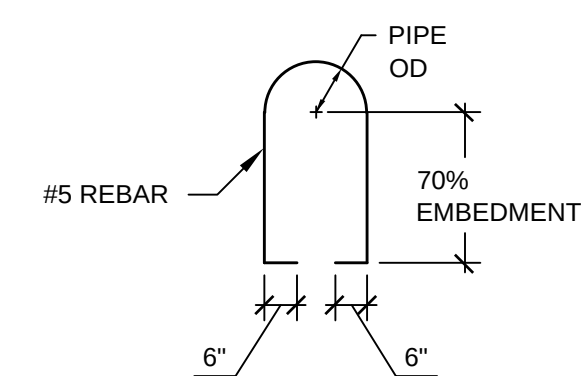
MINIMUM BEARING SURFACE AREA

- NOTES:
- BEARING SURFACES SHOWN IN CHART ARE MINIMUM SQUARE FEET.
 - BASED ON SOIL BEARING CAPACITY OF 2,000 lb/s.f.
 - TEST PRESSURE = 150 psi
 - TYPE II PORTLAND CEMENT, USE 3000 lb CONCRETE
 - FOR DIFFERENT TEST PRESSURES AND SOIL BEARING PRESSURES, USE THE EQUATION: BEARING AREA: (TEST PRESSURE/150 psi) x (2,000/SOIL BEARING PRESSURE) x TABLE VALUE

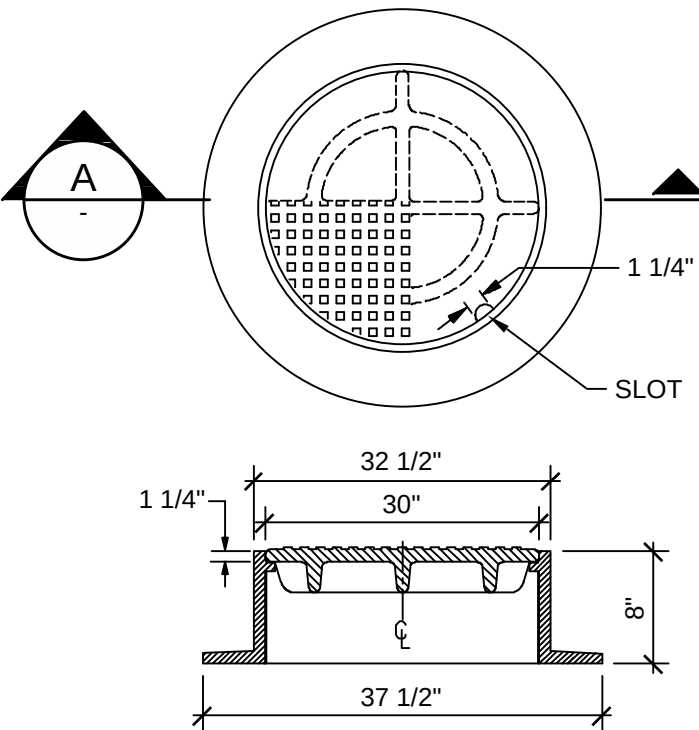
6 THRUST BLOCK DETAIL
NTS



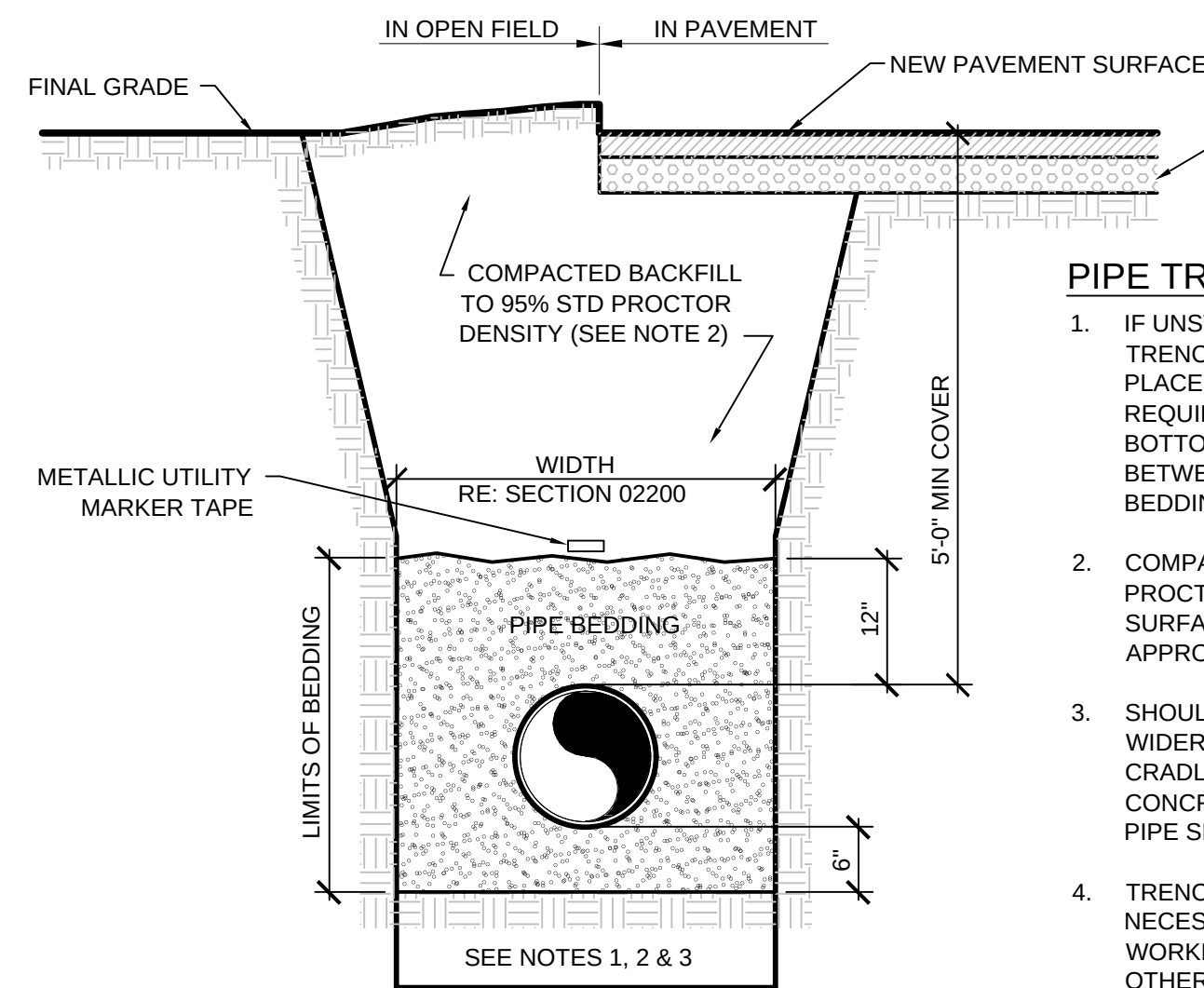
TYPICAL CROSS SECTION
TEE



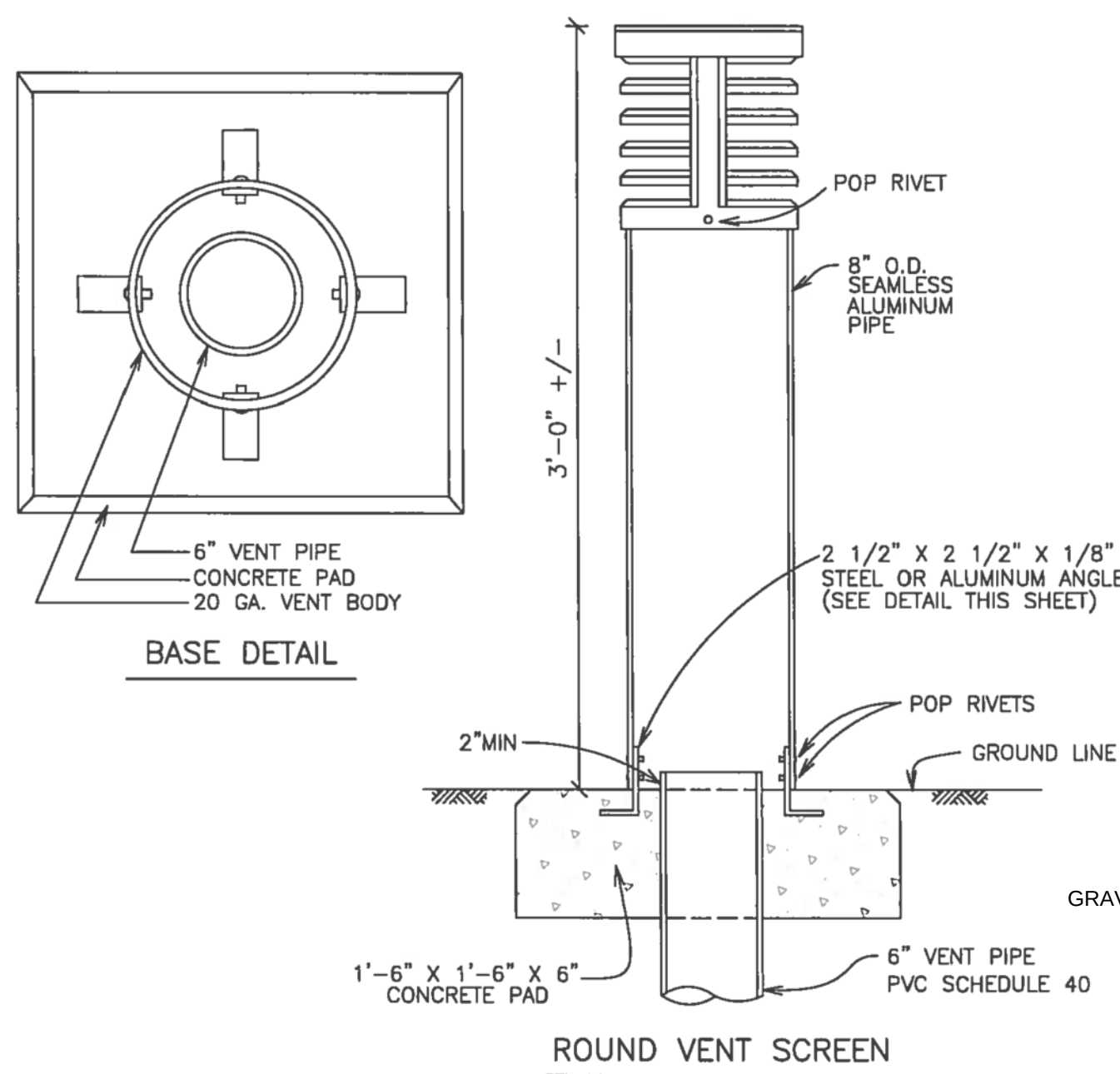
TEE
#5 REBAR



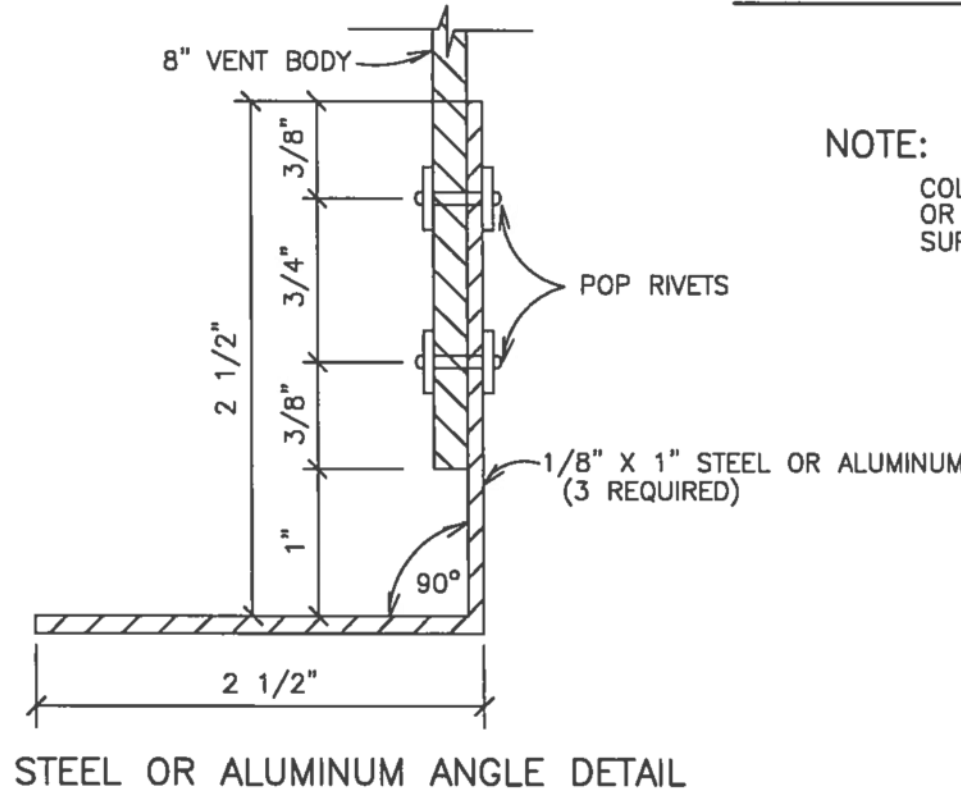
8 MANHOLE RING AND COVER
NTS



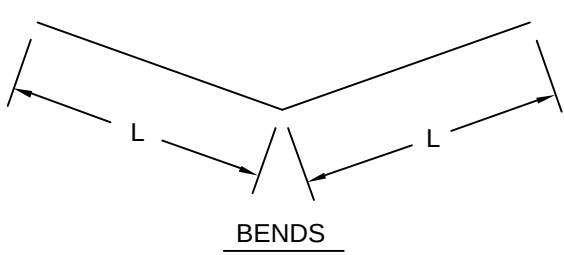
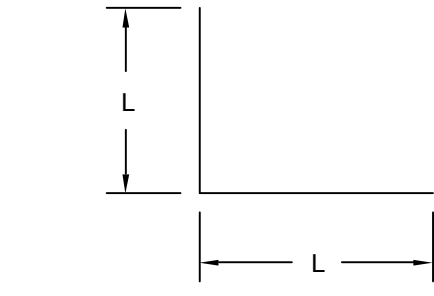
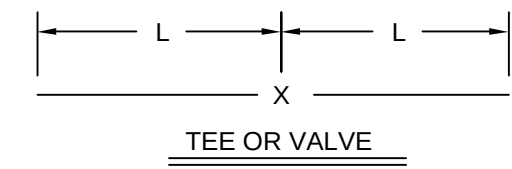
7 TYPICAL PIPE TRENCH SECTION
NTS



ROUND VENT SCREEN



4 VENT ASSEMBLY DETAIL
NTS

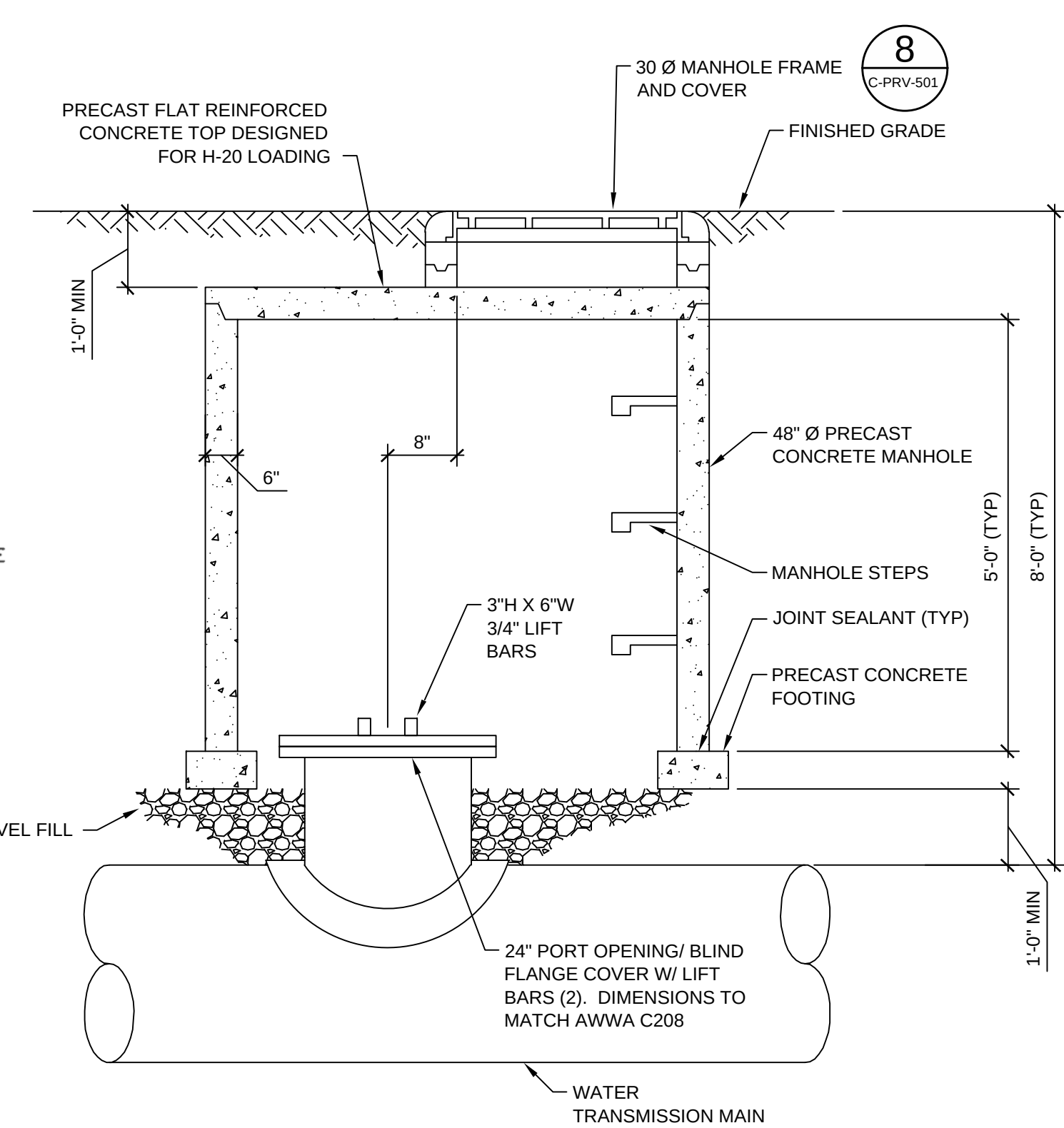


- PIPE TRENCH NOTES:
- IF UNSTABLE MATERIALS ARE FOUND IN TRENCH BOTTOM, OVER EXCAVATE AND PLACE 1 1/2" STABILIZATION ROCK TO REQUIRED DEPTH FOR STABLE TRENCH BOTTOM. PLACE 8 MIL POLYETHYLENE BETWEEN ROCK AND SQUEEGEE BEDDING.
 - COMPACTED BACKFILL TO 95% STD PROCTOR DENSITY IN NON-DRIVING SURFACES AND ROADWAYS AS APPROVED BY ENGINEER.
 - SHOULD THE TRENCH BE EXCAVATED WIDER THAN ALLOWED, A CONCRETE CRADLE SHALL BE PLACED WITH 2500psi CONCRETE FROM TRENCH BOTTOM TO PIPE SPRINGLINE.
 - TRENCH TO BE BRACED OR SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKMEN AND THE PROTECTION OF OTHER UTILITIES IN ACCORDANCE WITH LOCAL, AND NATIONAL SAFETY REGULATIONS.
 - MINIMUM COVER TO BE 5'-0" BELOW FINAL GRADE, UNLESS SHOWN OTHERWISE.

PIPE SIZE	6"			8"			10"			12"			14"		
	D	L	G	D	L	G	D	L	G	D	L	G	D	L	G
TEE OR VALVE	3/4"	13.0'	M.S.	3/4"	22.0'	M.S.	3/4"	40.0'	M.S.	3/4"	60.0'	H.S.	1"	80.0'	H.S.
PLUG OR 90° BEND	3/4"	13.0'	M.S.	3/4"	22.0'	M.S.	3/4"	40.0'	M.S.	3/4"	60.0'	H.S.	1"	80.0'	H.S.
45° BEND	3/4"	4.0'	M.S.	3/4"	6.0'	M.S.	3/4"	15.0'	M.S.	3/4"	25.0'	M.S.	3/4"	40.0'	M.S.
22.5° BEND	3/4"	1.0'	M.S.	3/4"	2.0'	M.S.	3/4"	4.0'	M.S.	3/4"	5.0'	M.S.	3/4"	7.0'	M.S.
11.25° BEND	3/4"	0.0'	M.S.	3/4"	1.0'	M.S.	3/4"	2.0'	M.S.	3/4"	2.0'	M.S.	3/4"	2.0'	M.S.

9 LENGTH OF RESTRAINED PIPE
NTS

5 ACCESS MANWAY DETAIL
NTS



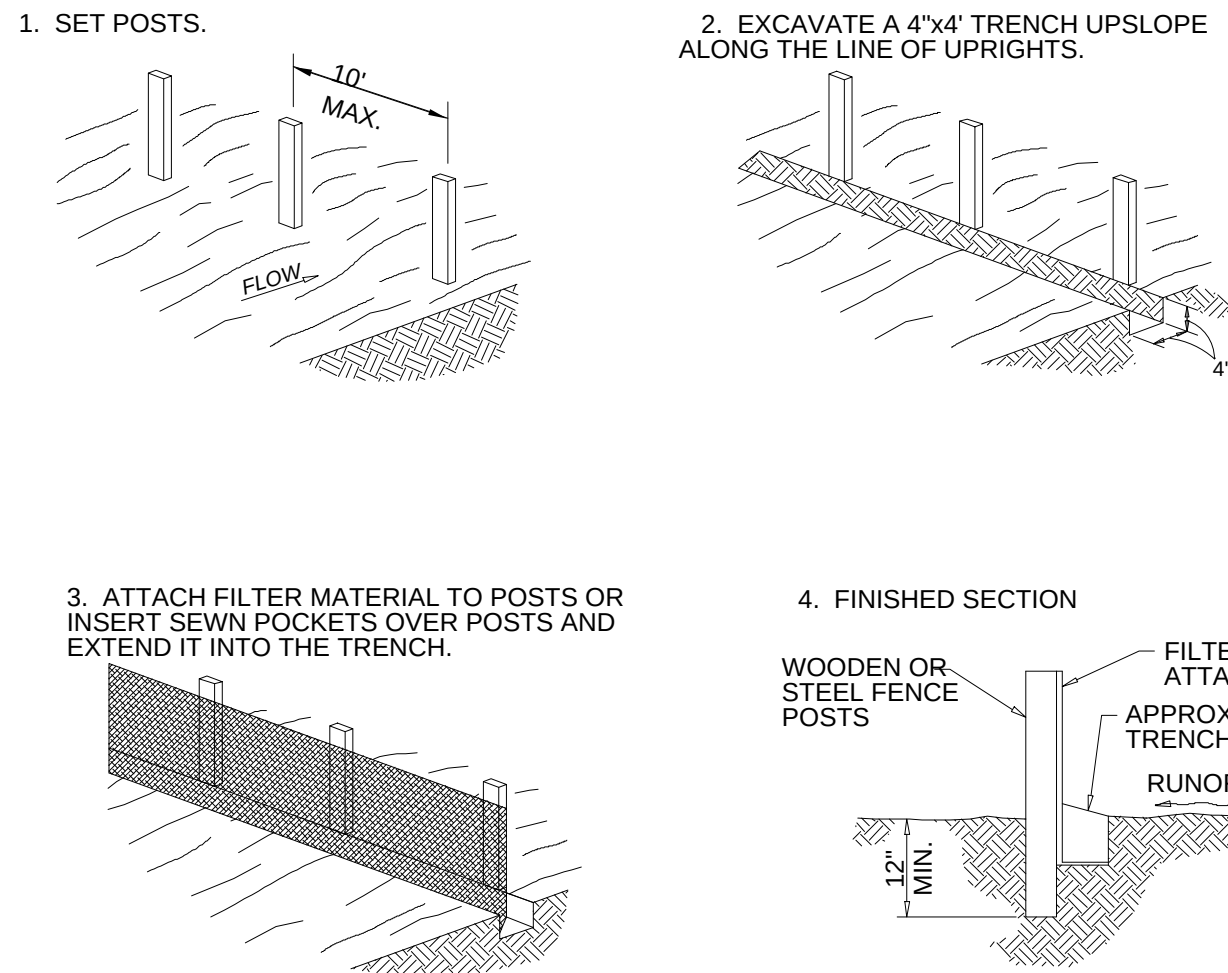
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D
C
B
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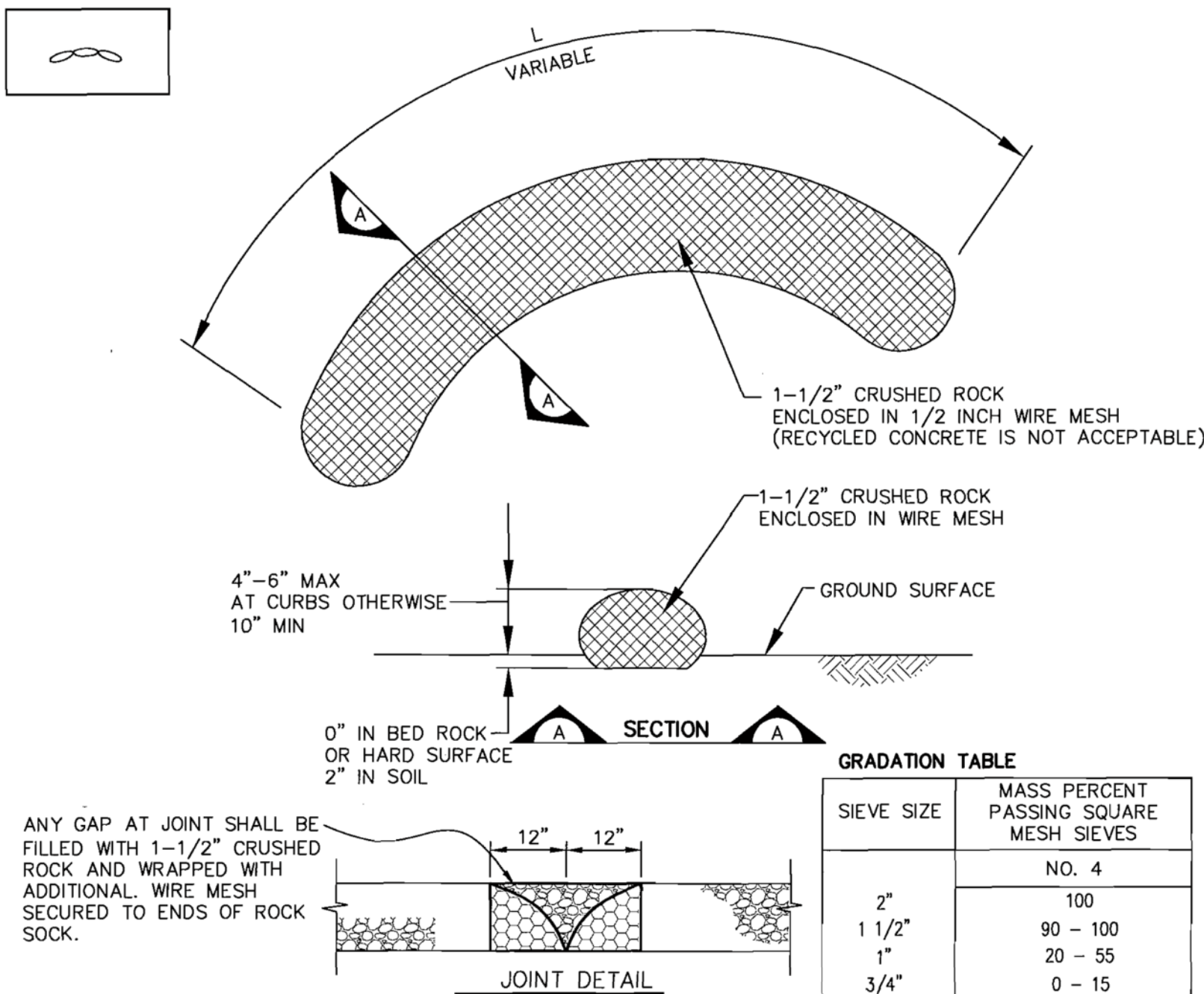
COA EROSIONS CONTROL AND STORM WATER NOTES:

STANDARD STATEMENT AND NOTES FOR SWMP DESIGN DRAWINGS "PURSUANT TO SECTIONS 138 -440 AND 138-442 OF THE AURORA MUNICIPAL CODE, THE PERMITTEE SHALL LOCATE, INSTALL, AND MAINTAIN ALL BEST MANAGEMENT PRACTICES, INCLUDING, BUT NOT LIMITED TO, EROSION CONTROLS, SEDIMENT CONTROLS, DRAINAGE CONTROLS, AND WATER QUALITY BMPS AS INDICATED IN THE APPROVED STORMWATER MANAGEMENT PLAN (SWMP). THE FOLLOWING NOTES ARE A REQUIREMENT AND SHALL BE INCLUDED ON THE SWMP DESIGN DRAWINGS DEVELOPED FOR THIS PROJECT AND SUBMITTED FOR APPROVAL BY THE CITY. BMP INSTALLATIONS SHALL BE INSTALLED PER THE COA STANDARD DETAIL IN EFFECT AT THE TIME OF INSTALLATION OR PER THE APPROVED SWMP DESIGN DRAWING, A COA APPROVED VARIANCE, OR A COA APPROVED DESIGN DRAWING PLAN AMENDMENT."

- THE PERMITTEE SHALL BE RESPONSIBLE FOR REMEDIATION OF ANY ADVERSE IMPACTS TO ADJACENT WATERWAYS, WETLANDS, STORM SEWERS, STORM SEWER APPURTENANCES, OTHER PROPERTIES, ETC., RESULTING FROM WORK DONE AS PART OF THIS PROJECT.
- ADDITIONAL EROSION AND SEDIMENT CONTROL BMPS MAY BE REQUIRED DURING AND AFTER CONSTRUCTION AND SHALL BE EXECUTED AND COMPLETED BY THE PERMITTEE. THE PERMITTEE SHALL PLAN, INSTALL, AND MAINTAIN ALL EROSION, AND SEDIMENT CONTROL MEASURES, INCLUDING DRAINAGE AND WATER QUALITY BMPS AS INDICATED ON THIS PLAN AND AS NECESSARY TO REDUCE THE DISCHARGE OF POLLUTANTS TO THE MAXIMUM EXTENT PRACTICABLE ADVERSE IMPACTS, EROSION AND SEDIMENT DEPOSITION ONTO PAVED SECTIONS, INTO STORM SEWERS, STORM SEWER APPURTENANCES, RECEIVING WATERS, OR OFF THE PROJECT SITE.
- THE PERMITTEE SHALL TAKE APPROPRIATE PREVENTIVE MEASURES TO MINIMIZE TO THE MAXIMUM EXTENT PRACTICABLE DIRT AND MUD FROM BEING TRACKED OR DEPOSITED ONTO PAVED SECTIONS VIA MULTIPLE BMPS. SEDIMENT, MUD, AND CONSTRUCTION DEBRIS THAT MAY BE TRACKED, DEPOSITED, OR ACCUMULATED ON PAVED SECTIONS, IN THE FLOW LINES, PRIVATE PROPERTY, AND/OR PUBLIC RIGHTS -OF-WAY OF THE CITY AS A RESULT OF THIS CONSTRUCTION PROJECT SHALL BE CLEANED UP.
- AREAS REACHING SUBSTANTIAL COMPLETION OF GRADING AND TOPSOIL PLACEMENT OPERATIONS MUST BE DRILL SEEDED AND CRIMP MULCHED WITHIN 14 DAYS OF SUBSTANTIAL COMPLETION OF GRADING AND TOPSOIL OPERATIONS. IF AN INCOMPLETE AREA IS TO REMAIN INACTIVE FOR LONGER THAN 30 DAYS, IT MUST BE DRILL SEEDED AND CRIMP MULCHED OR OTHERWISE LANDSCAPED WITHIN 14 DAYS FROM THE SUSPENSION OR COMPLETION OF LAND DISTURBANCE ACTIVITIES.
- THIS APPROVED SWMP DESIGN DRAWING, THE ASSOCIATED APPROVED SWMP NARRATIVE, A COPY OF THE STORMWATER QUALITY DISCHARGE PERMIT, AND THE RULES AND REGULATIONS REGARDING STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES MANUAL SHALL BE KEPT ON SITE AT ALL TIMES.

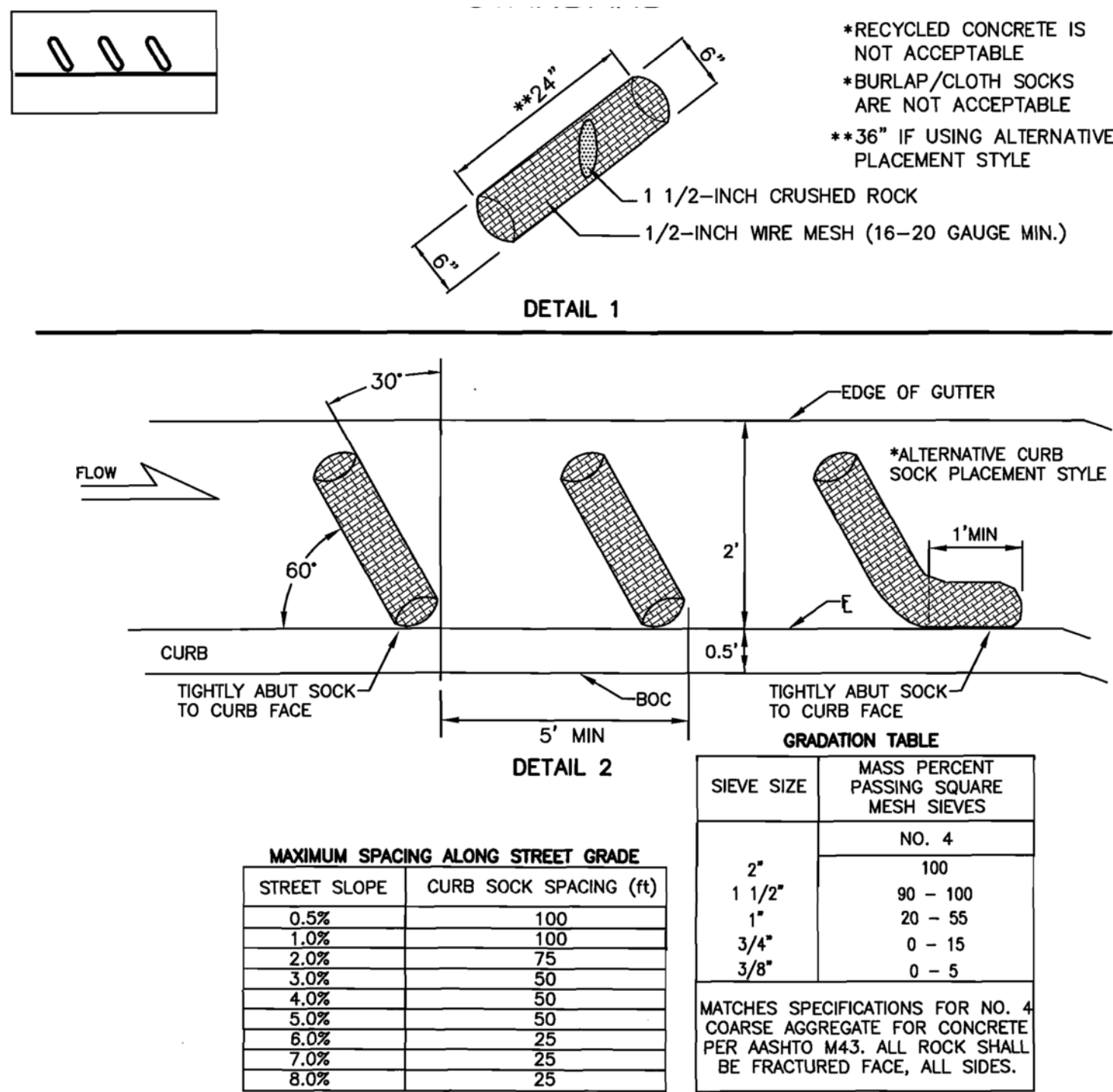


1 SILT FENCE DETAIL
- NTS



- NOTES:
- SEE PLAN VIEW FOR:
 - LOCATIONS OF ROCK SOCKS
 - ROCK SOCK SECTION APPLIES TO CULVERT INLET FILTER AND INLET PROTECTION.
 - CRUSHED ROCK SHALL BE FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON SHEET 1 (1-1/2" MINUS).
 - WIRE MESH SHALL BE FABRICATED OF 16-20 GAUGE WIRE TWISTED INTO A MESH WITH A MAXIMUM OPENING OF 1/2" INCH. ROLL WIDTH SHALL BE 48". 16-20 GAUGE CHICKEN WIRE MAY BE USED IF DOUBLE WRAPPED WITH NO MORE THAN 1/2" OPENINGS.
 - WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6" CENTERS ALONG ALL JOINTS AND AT 2' CENTERS ON ENDS OF SOCKS
 - FOR CONCENTRATED FLOW AREAS THE ENDS OF THE ROCK SOCKS SHALL BE 12" HIGHER THAN THE CENTER OF THE SOCK.
 - SEDIMENT ACCUMULATED UPSTREAM OF THE ROCK SOCK SHALL BE REMOVED WHEN THE SEDIMENT DEPTH UPSTREAM OF THE FILTER IS AT HALF THE HEIGHT OF THE BMP.

2 ROCK SOCKS DETAIL
- NTS



- NOTES:
- SOCKS WILL BE USED UPGRADIENT OF INLET ANGLED AS SHOWN AND SHALL BE FLUSH WITH CURB.
 - FOR IPS AND IPO NO LESS THAN THREE 6-INCH DIAMETER SOCKS MUST BE USED IN SEQUENCE, SPACED NO MORE THAN FIVE FEET APART, WHEN SHOWN ON PLAN.
 - INCLINE AT 30 DEGREES FROM PERPENDICULAR, OPPOSITE THE DIRECTION OF FLOW (SEE DETAIL 2).
 - A MINIMUM OF THREE CURB SOCKS SHALL BE PLACED DOWNSTREAM OF ANY DISTURBED AREA AND ALONG ALL CURBS FRONTING DISTURBED AREA, SPACED PER THE TABLE.
 - SOCKS WILL BE USED AT ANY LOCATION ALONG A CURB TO CONTROL SEDIMENT AS DIRECTED BY CITY.
 - 16-20 GAUGE CHICKEN WIRE IS AN ACCEPTABLE ALTERNATIVE IF DOUBLE WRAPPED WITH NO MORE THAN 1/2 INCH OPENINGS.

3 CURB SOCKS DETAIL
- NTS

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PROFESSIONAL ENGINEER
3889
02/21/2016

MARK	DATE	DESCRIPTION	BY
1	10/16/15	60% ISSUED FOR REVIEW	BSJ
2	11/03/15	ISSUED FOR PERMITTING	BSJ
3	01/19/16	95% ISSUED FOR REVIEW	BSJ
4	02/22/16	100% ISSUED FOR CONSTRUCTION	BSJ

SOUTH METRO WISE AUTHORITY
CONNECTIONS
EROSION CONTROL
DETAILS

Project No.: 133-08362-15001
Designed By: AD
Drawn By: TRS
Checked By: BSJ

2/23/2016 9:08:18 AM - T:\08362\133-08362-15001\CAD\SHEETFILES\C-PRV-503 CATHODIC PROTECTION DETAILS.DWG - SPERRY, TY

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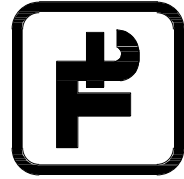
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4

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7



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SOUTH METRO WISE AUTHORITY
CONNECTIONS
CATHODIC PROTECTION
DETAILS

Project No.: 133-08362-15001
Designed By: BSJ
Drawn By: TRS
Checked By: BSJ

C-PRV-503

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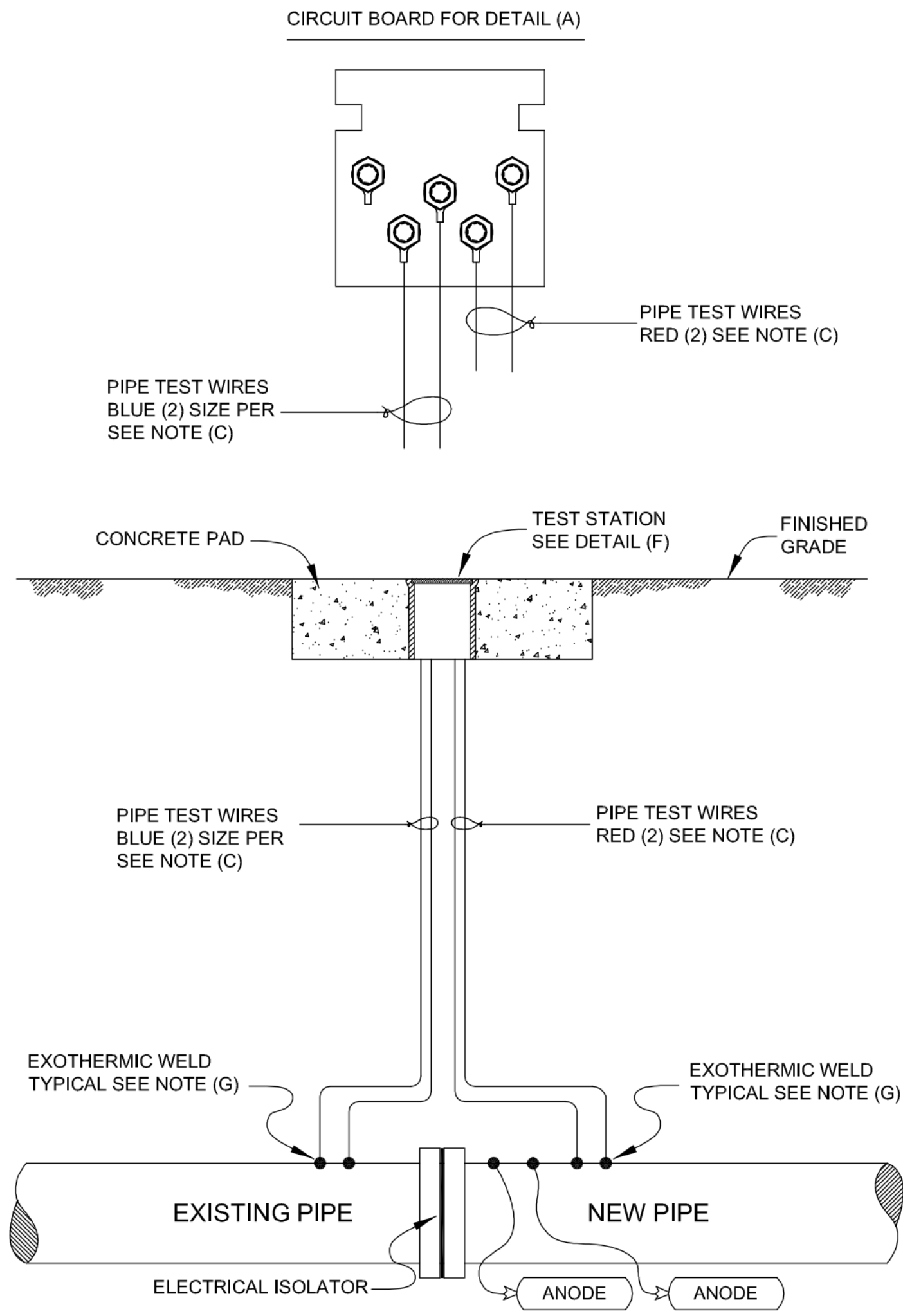
Bar Measures 1 inch

GENERAL NOTES

1. THE CATHODIC PROTECTION DRAWINGS ARE A GENERAL INTERPRETATION OF THE PROJECT PLANS AND SPECIFICATIONS, FIELD ADJUSTMENTS AND CHANGES MAY BE REQUIRED BASED ON ACTUAL BURIED PIPE MATERIAL USED, OR THE FINAL LOCATION OF BURIED PIPING.
2. ALL METALLIC FITTINGS AND COMPONENTS SHALL HAVE AN EFFECTIVE DIELECTRIC COATING AS SPECIFIED IN THE SPECIFICATIONS. ALL BOLTS, UNCOATED FITTINGS SHALL BE COATED WITH COLD-APPLIED WAX PRIMER AND #1 WAX-TAPE, TRENTON CORP PHONE (313) 426-3955 OR APPROVED EQUAL.
3. INSTALL ALL ANODES PER DETAILS HEREIN AND 10' DISTANCE AWAY AND THE TOP OF THE ANODE BELLOW THE BOTTOM OF THE STRUCTURE OF INTEREST. LOWER ANODES INTO HOLE WITH ROPE OR BY GRASPING THE CLOTH GATHER, DO NOT USE WIRE. INSTALL ANODE DRY, REMOVE PROTECTIVE PLASTIC BAGS. BACKFILL AROUND AND OVER ANODE IN 6' LAYERS OF SELECT FINE SOILS (SAND OR GRAVEL SHALL NOT BE USED) HAND TAMPING EACH LAYER, DO NOT DAMAGE ANODE OR ANODE WIRING. AFTER SOIL IS 6' ABOVE ANODE TOP, ADD MINIMUM 5 GALLONS WATER AND ALLOW TO SOAK IN. CONTINUE TO BACKFILL HOLE IN 6' LAYERS, TAMPING EACH LAYER. ANY INSTALLATION DEVIATION(S) FROM THOSE INDICATED IN THE DETAILS SHALL BE DOCUMENTED BY THE INSTALLATION CONTRACTOR WITH A SITE "AS-BUILT" SKETCH. THIS SKETCH SHALL INCLUDE A MINIMUM OF TWO MEASURED DIMENSIONS REFERENCED TO PERMANENT ABOVE GROUND FEATURES SEE NOTE #7 BELLOW.
4. CONNECT ALL PIPE TEST LEADS TO BURIED METALLIC STEEL DI/CI PIPING OR FITTINGS WITH EXOTHERMIC WELDING. ALL EXOTHERMIC WELDS MUST BE CLEANED AND COATED WITH MASTIC AND PRE-FORMED PLASTIC SHEATH AS INDICATED BY THE MANUFACTURER, SEE DETAIL (H). USE CARE WHEN WELDING TO TAP/SADDLES SO AS NOT TO DAMAGE GASKET MATERIALS OR THIN METALS. MAKE WELDS TO FLANGE WHERE POSSIBLE.
5. ALL GROUPS OF METALLIC PIPE FITTINGS OR COMPONENTS MUST BE MADE ELECTRICALLY CONTINUOUS THROUGH THE INSTALLATION OF #2 4AWG HMWPE JOINT BONDS FOR EACH JOINT. SEE DETAIL (D).
6. TERMINATE ALL ANODES AND TEST WIRES IN TEST STATIONS AS INDICATED.
7. THE INSTALLATION CONTRACTOR IS RESPONSIBLE TO MAINTAIN A LOG OF THE CATHODIC PROTECTION MATERIALS INCLUDING TEST DATA AND DIMENSIONED LOCATIONS OF ANODES AND TEST STATIONS (SEE AC&C DATA LOG).
8. DO NOT LOCATE TEST STATIONS IN ROAD, OFFSET OUTSIDE OF ROADWAY/SIDEWALKS. NOTE OFFSET TO PIPE IN TEST STATION AND "AS-BUILT" DRAWINGS.

TEST STATION SCHEDULE

ID	SHEET NO.	LOCATION	DETAIL	NO. OF TEST STATIONS	NO. OF ANODES	ANODE SIZE	REMARKS
CP #1	C-AW1-201	N: 1637818.48 E: 3232045.32	C / C-PRV-504	1	2	48 lb	36" X 24" TEE CONNECTION
CP #2	C-AW1-201	N: 1637824.00 E: 3232265.06	A / C-PRV-504	1	2	48 lb	24" X 24" TEE
CP #3	C-AW1-201	N: 1637711.80 E: 3232255.99	C / C-PRV-504	1	2	48 lb	30" X 24" TEE CONNECTION
CP #4	C-PRV-202	INSIDE VAULT NW WALL	C / C-PRV-504	1	1	48 lb	36" PIPE (IN)
CP #5	C-PRV-202	INSIDE VAULT SE WALL	C / C-PRV-504	1	1	48 lb	36" PIPE (OUT)

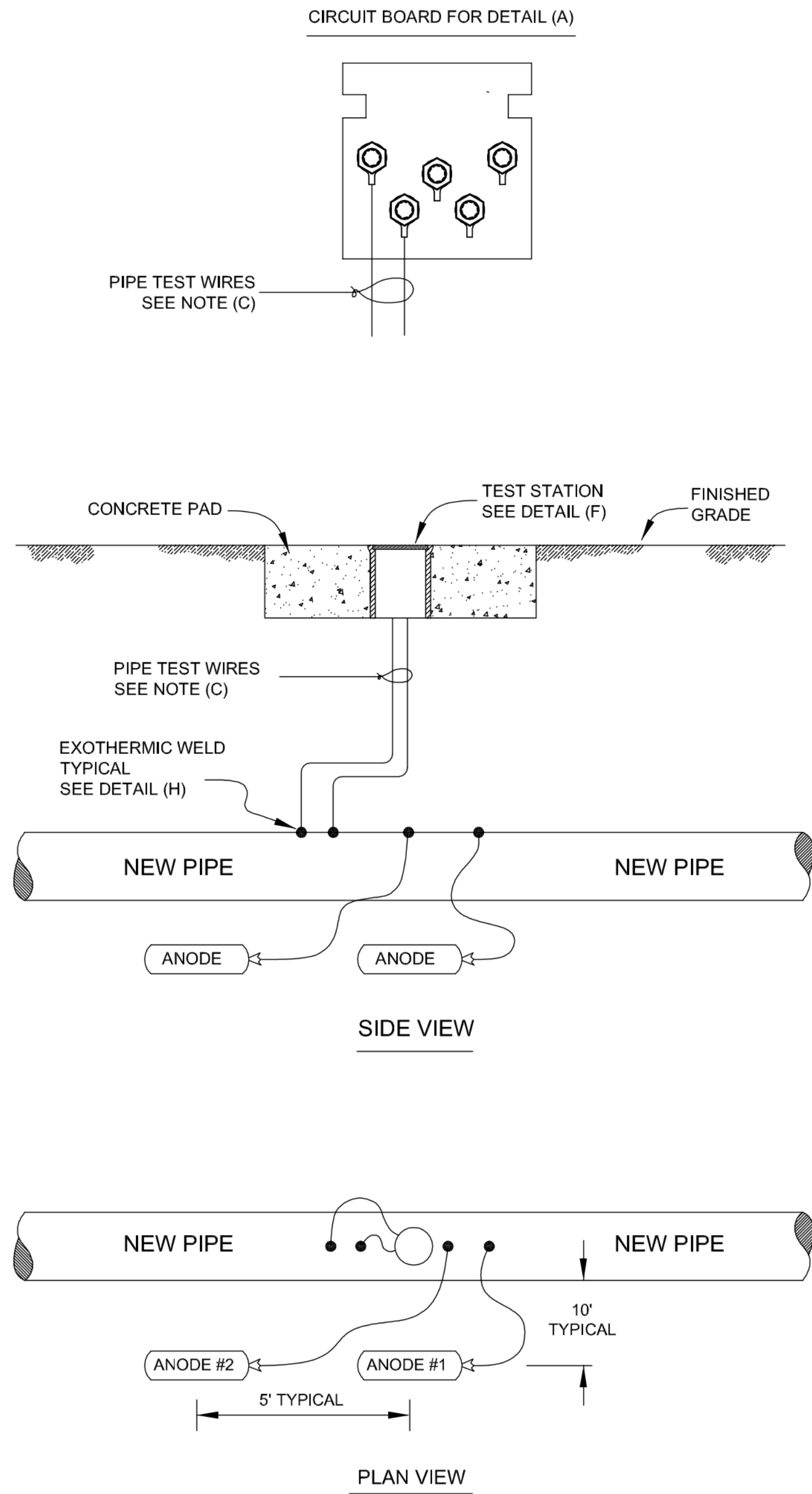


C DETAIL: TEST STATION AT INSULATOR
SCALE: NONE

REQUIRED WHERE PIPELINE CONNECTS TO FUTURE METALLIC PIPELINE
A PVC SPOOL CAN ALSO BE USED IN PLACE OF AN INSULATING FITTING

CATHODIC PROTECTION DETAIL NOTES

- A - ANODE = 20" DIP WATER MAIN = 48 LB PREPACKAGED MAGNESIUM ANODE
- B - ANODE WIRE # 12AWG Solid WITH BLACK RHW INSULATION
- C - PIPE TEST WIRES # 8AWG TYPE RHH RED STRANDED COPPER TEST WIRE
- D - JOINT BOND 2 # 2AWG HMWPE STRANDED 18" LONG
- E - TEST STATION CHRISTY G3 TRAFFIC RATED WITH CI LID INSCRIBED CP TEST
- 1 - PROVIDE AS-BUILT SKETCH IF ANODES NOT PLACED AS SHOWN

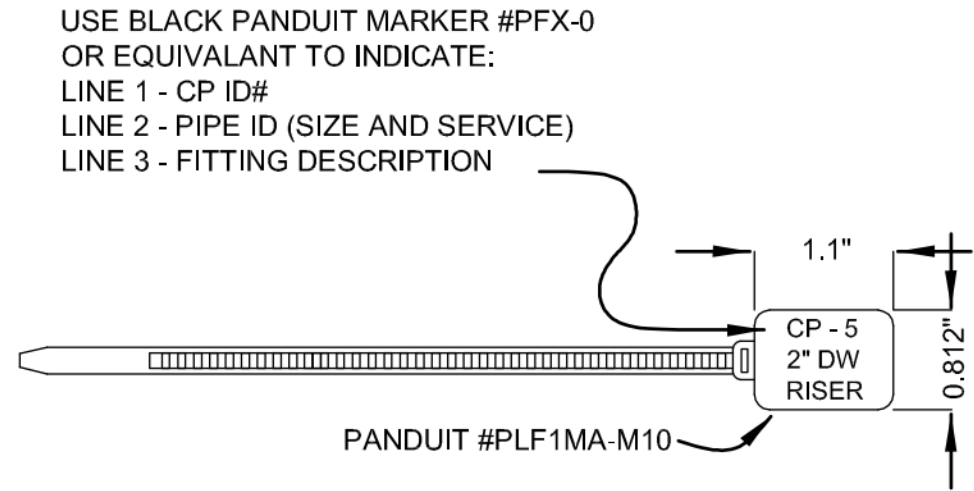


A DETAIL: ANODE TEST STATION
SCALE: NONE

DO NOT LOCATE TEST STATIONS IN ROAD. OFFSET OUTSIDE OF ROADWAY/SIDEWALKS.
NOTE OFFSET TO PIPE IN TEST STATION AND "AS-BUILT" DRAWINGS.
ANODES SHOWN ALONG PIPE, ALTERNATE TO FIELD LOCATE WITH TEST STATION
AVOID OTHER UNDERGROUND STRUCTURES. MINIMUM WIRE BURIAL DEPTH 2FT.

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1	10/16/15	60% ISSUED FOR REVIEW	BSJ
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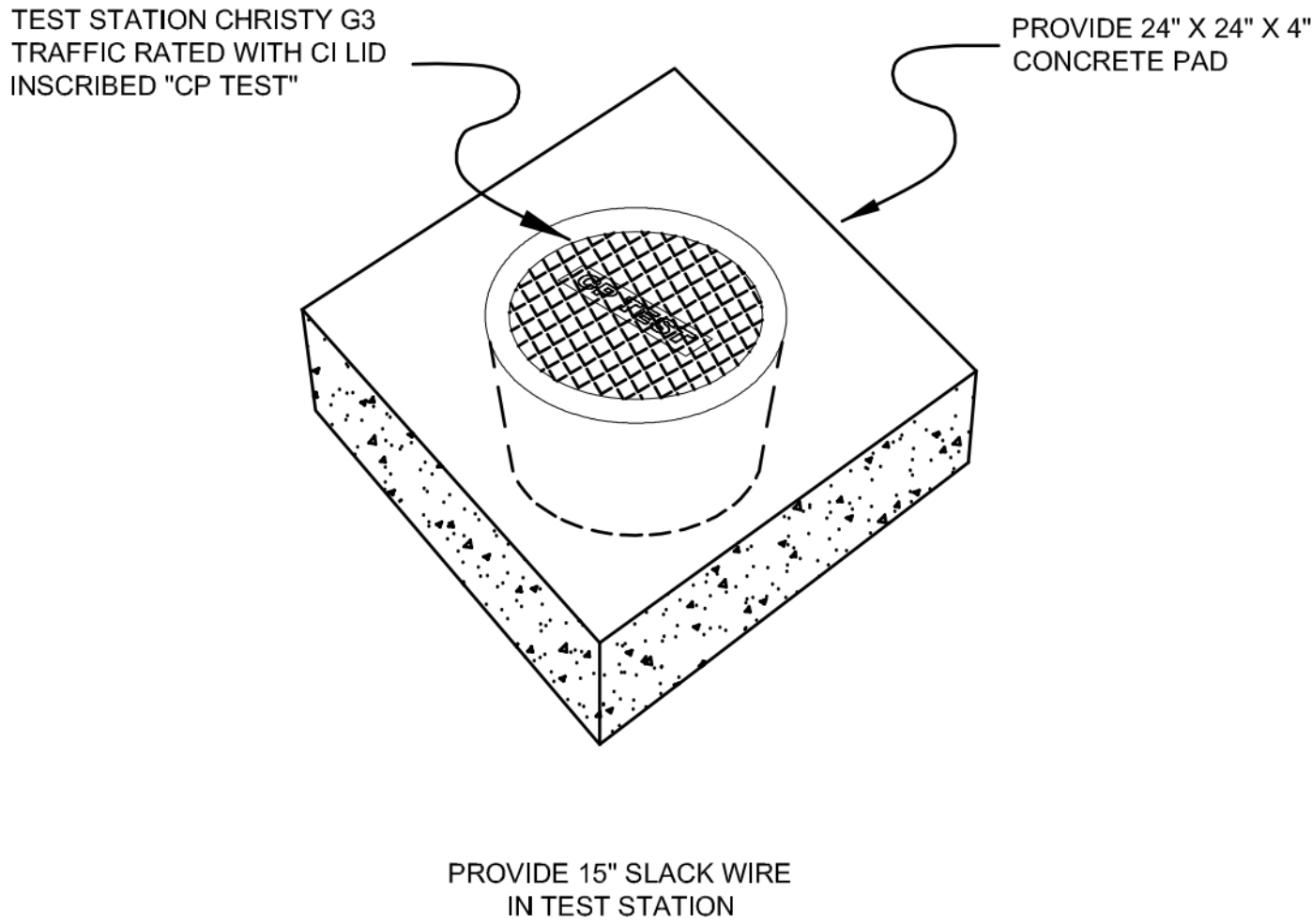
2/23/2016 9:08:27 AM - T:\08362\133-08362-15001\CAD\SHEET\LES-C-PRV-503 CATHODIC PROTECTION DETAILS.DWG - SPERRY, TY



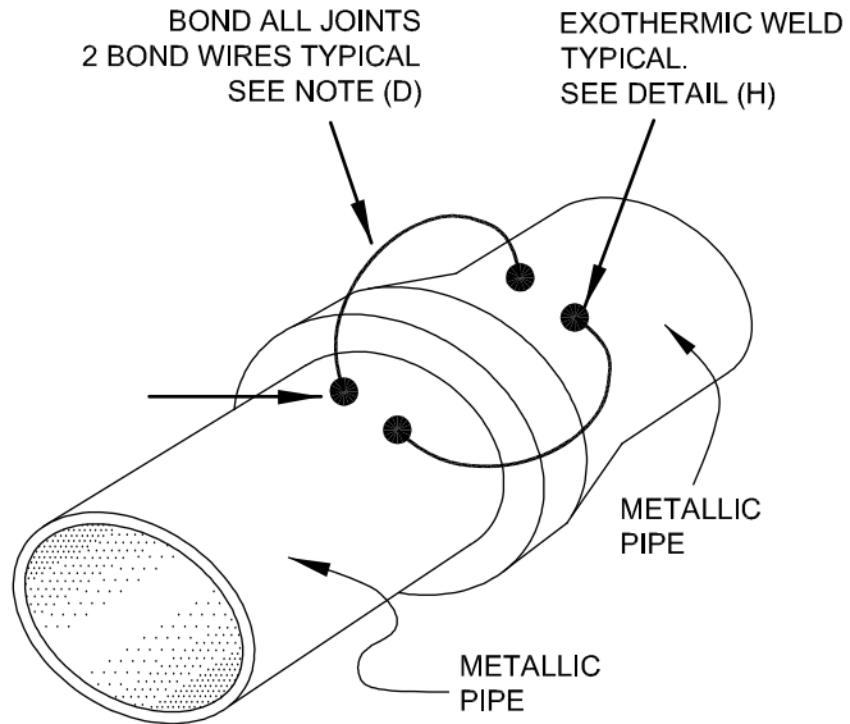
ALTERNATE MARKINGS ANODE, REFERENCE CELL, PRC
LINE 1 - CP ANODE (mG/zN) PRC
LINE 2 - SIZE (LB) LOCATION
LINE 3 - # #

PROVIDE FOR EACH TEST WIRE, IN TEST STATION
IF TEST STATION IS NOT LOCATED OVER PIPE
INDICATE OFFSET DIRECTION AND DISTANCE

E DETAIL: PANDUIT WIRE MARKER
SCALE: NONE

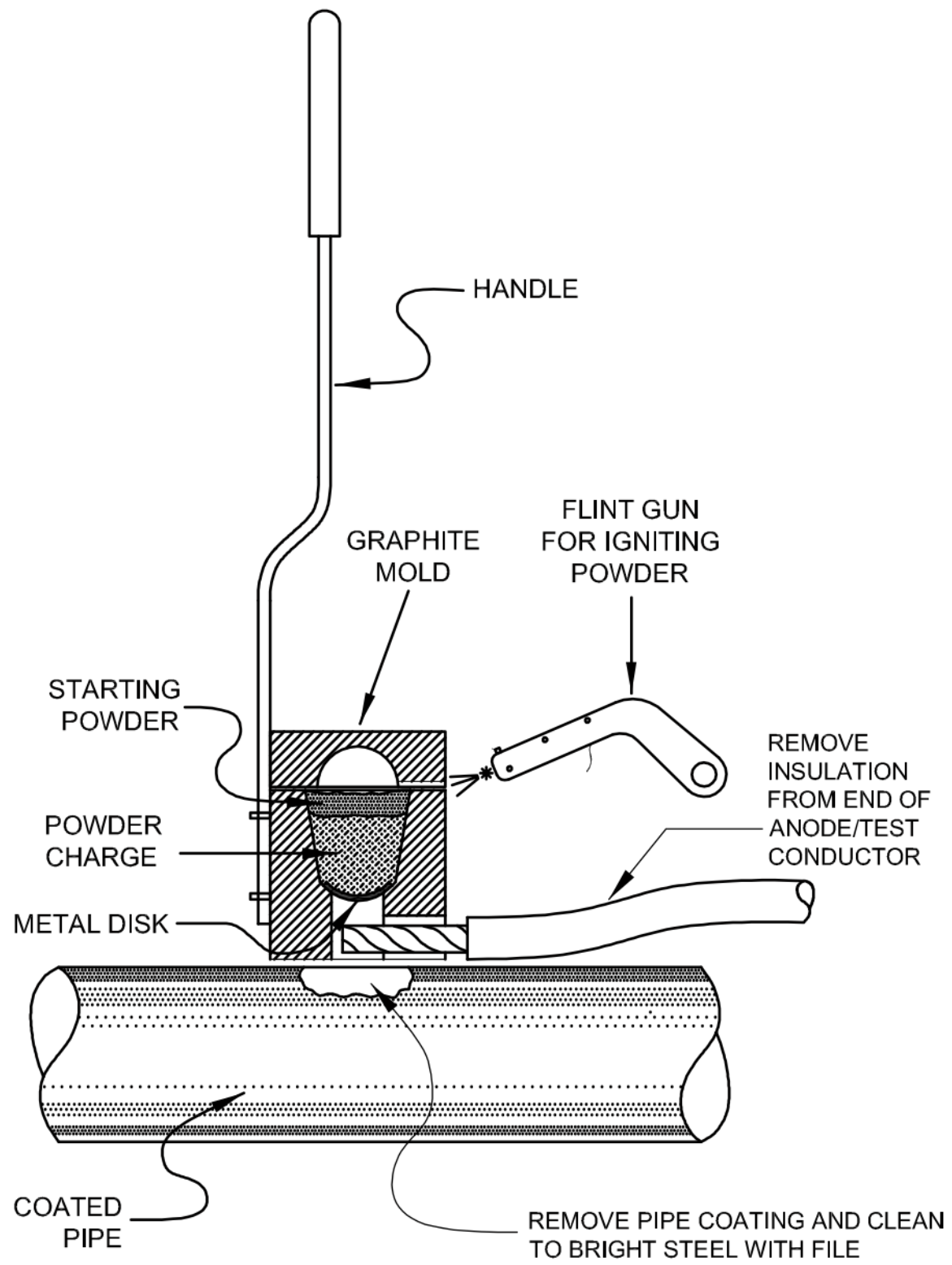
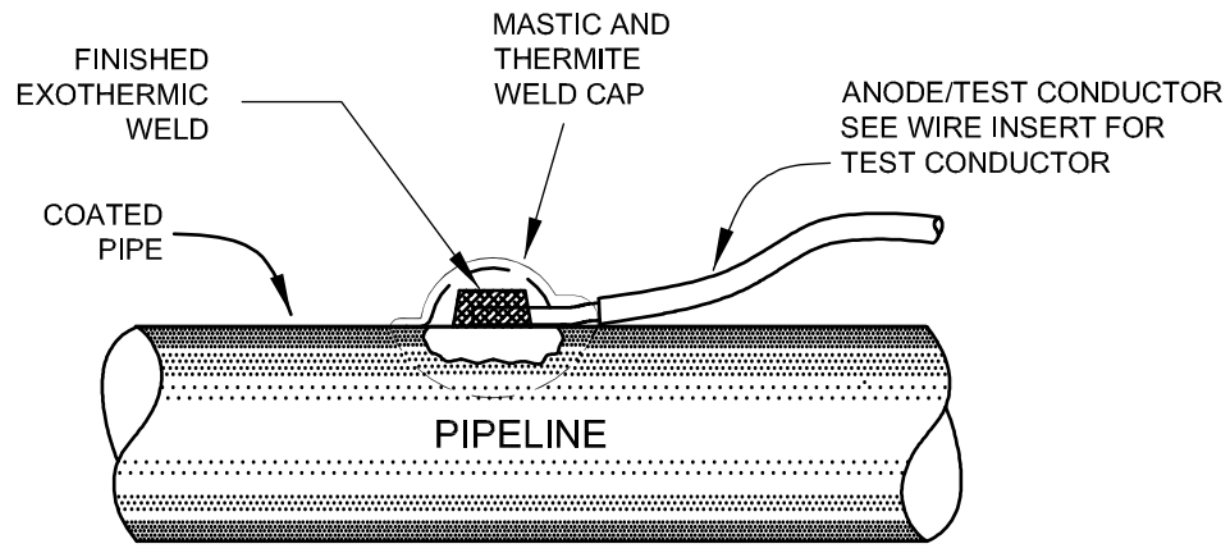


F DETAIL: ANODE TEST STATION
SCALE: NONE



REQUIRED AT ALL MECHANICAL JOINTS
MJ FOLLOWER RINGS SHALL BE BONDED IF POSSIBLE

D DETAIL: JOINT BOND
SCALE: NONE



DETAIL NOTES:

- SEE MANUFACTURERS DATA FOR PROPER MOLD. CHARGE SELECTION AND SAFETY PRECAUTIONS.
- REMOVE EXCESS SLAG FROM WELD AND TEST WITH HAMMER FOR GOOD BOND.
- MASTIC AND PERFORMED PLASTIC SHEATH COATING MUST COVER ALL EXPOSED METAL SURFACE AND CONTAIN NO VOIDS. POLY WRAP SHALL BE REPAIRED IF APPLICABLE.
- DO NOT WELD TO COPPER. USE SILVER SOLDERING OR MECHANICAL CLAMPS.

H DETAIL: EXOTHERMIC WELD
SCALE: NONE

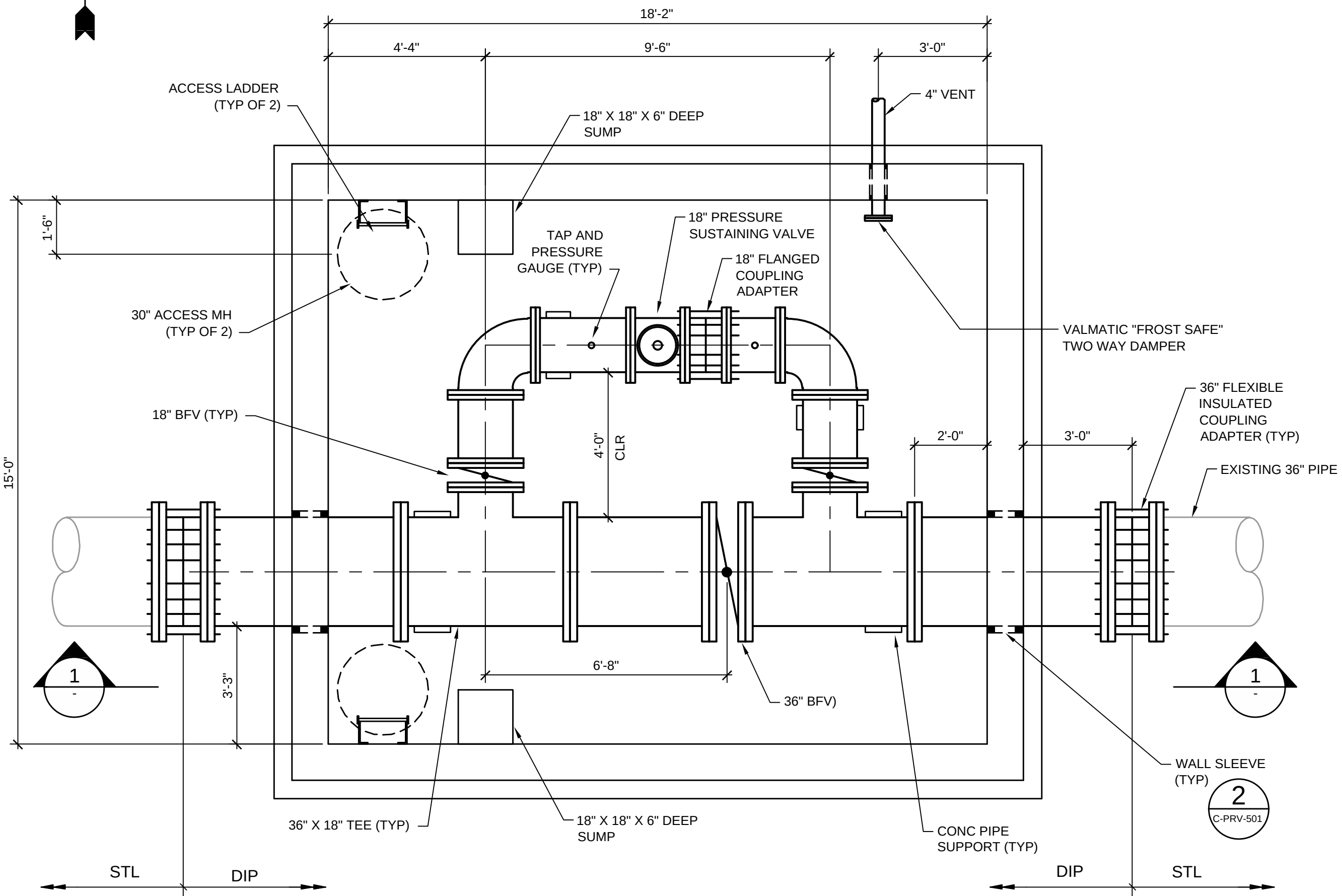
CATHODIC PROTECTION DETAIL NOTES

- A - ANODE = 48 LB PREPACKAGED MAGNESIUM ANODE
B - ANODE WIRE # 12AWG SOLID WITH BLACK RHW INSULATION
C - PIPE TEST WIRES # 8AWG TYPE RHH RED STRANDED COPPER TEST WIRE
D - JOINT BOND 2 # 2AWG HMWPE STRANDED 18" LONG
E - TEST STATION CHRISTY G3 TRAFFIC RATED WITH CI LID INSCRIBED CP TEST
1 - PROVIDE AS-BUILT SKETCH IF ANODES NOT PLACED AS SHOWN

MARK	DATE	DESCRIPTION	BY
1	10/16/15	60% ISSUED FOR REVIEW	BSJ
2	11/03/15	ISSUED FOR PERMITTING	BSJ
3	01/19/16	95% ISSUED FOR REVIEW	BSJ
4	02/22/16	100% ISSUED FOR CONSTRUCTION	BSJ

2/23/2016 9:08:40 AM - T:\09362\133-08362-15001\CAD\DWG\FILES\1-PRV-101 VAULT PLANS AND SECTION.DWG - SPERRY, TY

F
E
D
C
B
A

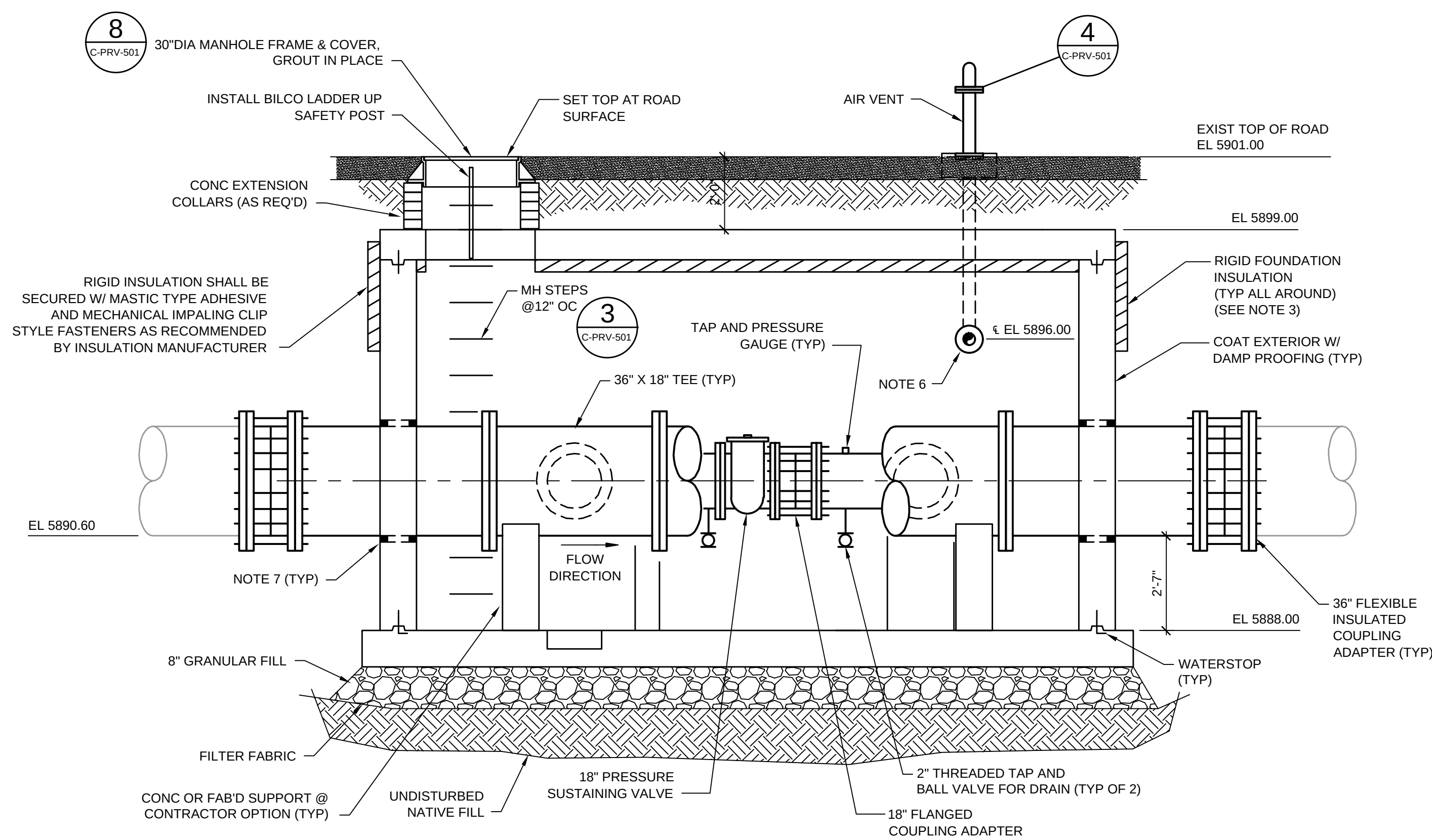


NOTES:

- ALL JOINTS SHALL BE RESTRAINED.
- PSV PILOT LINES SHALL BE INSULATED.

PLAN

SCALE: 3/8" = 1'-0"



NOTES:

- ALL PIPING IN VAULT IS TO BE DUCTILE IRON, UNLESS NOTED OTHERWISE.
- ENTIRE VAULT IS TO BE WATERTIGHT.
- PROVIDE 2" OF RIGID INSULATION ALL AROUND STRUCTURE. TERMINATE INSULATION 6" BELOW GRADE AND EXTEND DOWN 4'-6". RIGID FOUNDATION INSULATION SHALL BE ASTM C578, TYPE 4, EXTRUDED CELLULAR POLYSTYRENE FOAM BOARD W/ WATER VAPOR TRANSMISSION FACTOR OF 1.1 PERM-IN MAX, MIN R VALUE OF 5 PER INCH, AS MANUFACTURED BY DOW STYROFOAM OR FOAMULAR. MASTIC ADHESIVE AS RECOMMENDED BY MANUFACTURE.
- ROOF SLAB SHALL BE REMOVABLE FOR FUTURE REMOVAL/REPLACEMENT OF PRESSURE SUSTAINING VALVE.
- PRE-CAST VAULT SUPPLIED BY VENDOR TO BE TRAFFIC RATED HS-20.
- PRV VENT PENETRATION SHALL HAVE THE OPTION TO BLOCK OUT AND GROUT, OR PROVIDE A WALL SLEEVE AND LINK SEAL. DESIGN BUILDER SHALL COORDINATE IN FIELD.
- 36" PIPE PENETRATIONS THROUGH PRV WALLS SHALL HAVE BLOCKOUT AND MECHANICAL LINK SEALS.

SECTION

SCALE: 3/8" = 1'-0"

VERTICAL DATUM EQUATION:

NAVD88 DATUM = NGVD29 DATUM + 3.1 FEET.

BENCHMARK NOTES:

- BASIS OF BEARINGS: THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 19, TOWNSHIP 5 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN IS CONSIDERED TO BEAR NORTH 89°26'01" EAST.
- BENCHMARK: CITY OF AURORA BENCHMARK 5S6519SW001 BEING A 3" BRASS CAP STAMPED "SLP - 125.5 2005" LOCATED AT THE SOUTHWEST CORNER OF SOUTH MAIN STREET AND SOUTH SOUTHLANDS PARKWAY ON AN INLET NEAR THE SOUTH PCR. NGVD29 ELEV=6064.46'.



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SOUTH METRO WISE AUTHORITY
CONNECTIONS
ARAPAHOE RD. & E-470
VAULT
PLAN AND SECTION

Project No.: 133-08362-15001
Designed By: WJR
Drawn By: TRS
Checked By: BSJ

C.O.A.

9

P-PRV-101

Bar Measures 1 inch

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