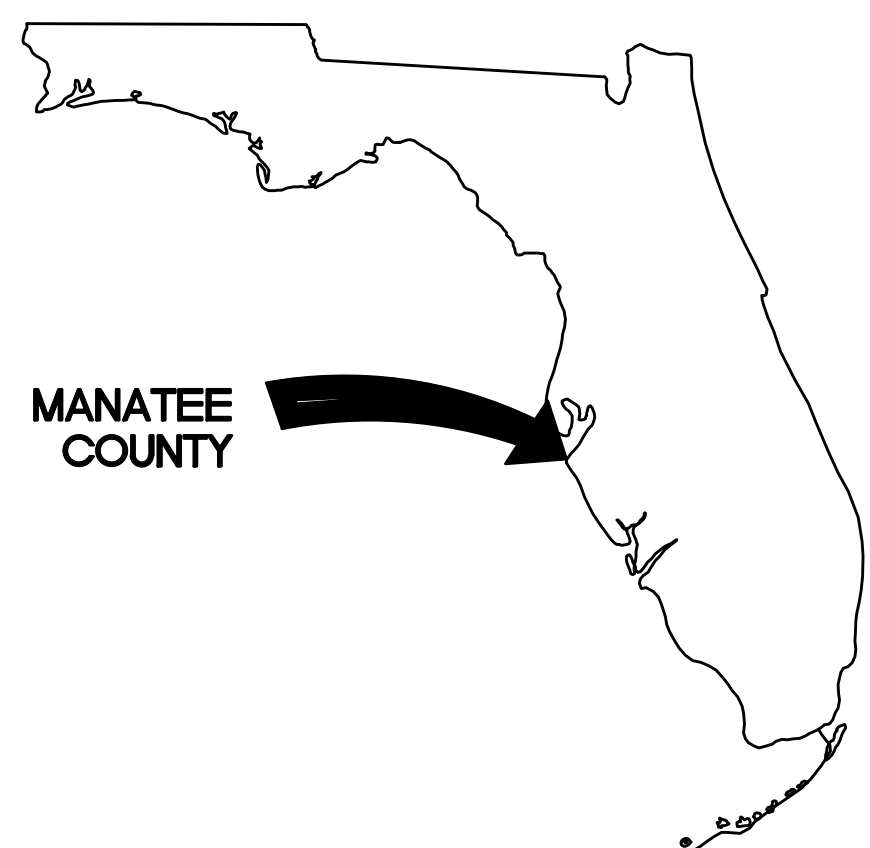
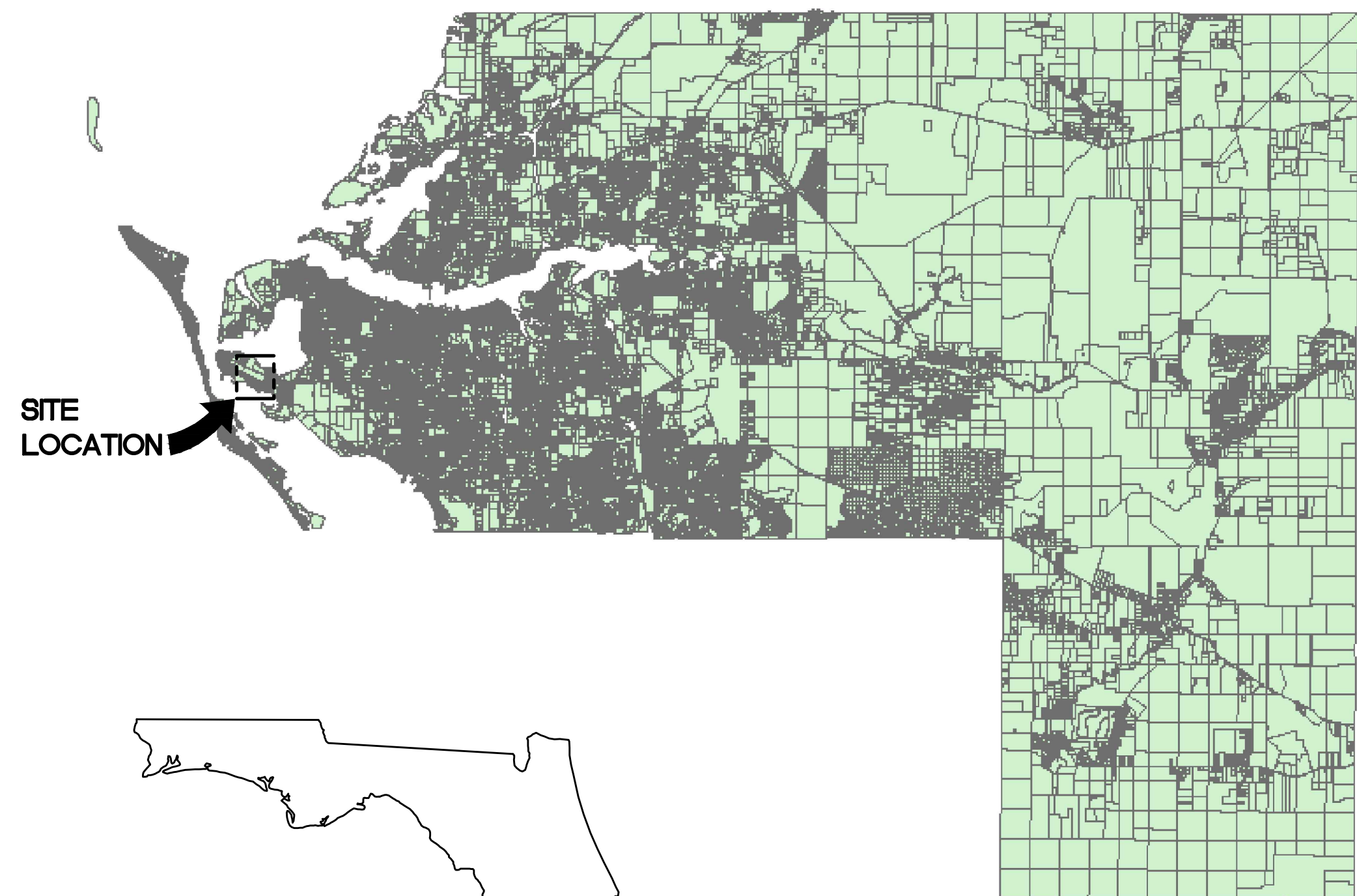




Cortez Road Injection Well Flow Meter Replacement

Manatee County, Florida



INDEX OF DRAWINGS

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G1	COVER SHEET
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D1	DEMO PLAN
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S1	PIPE SUPPORT DETAIL
I1	INSTRUMENTATION DETAILS

4350 WEST CYPRESS ST SUITE 600
TAMPA, FLORIDA 33607-4155
LB 0002934 AA C000656

JACOBS
CIVIL
COVER SHEET

MANATEE COUNTY
CORTEZ ROAD INJECTION WELL
FLOW METER REPLACEMENT
MANATEE COUNTY, FLORIDA

N.T.S.
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE	JANUARY 2019
PROJ	704019
DWG	C1
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DGN	NO.	DATE	DR	CHK	APVD	BY	APVD
			J. GOLDBACH	B. KLEIN	J. GOLDBACH	A. LEWIS	JOSEPH C. GOLDBACH FL P.E. No. 22385

GENERAL CONSTRUCTION NOTES

1. DETAILING AND DIMENSIONS OF EXISTING PIPING AND STRUCTURES IS BASED ON BEST INFORMATION AVAILABLE AND DO NOT NECESSARILY REPRESENT THE AS-CONSTRUCTED CONDITIONS. THE CONTRACTOR SHALL FIELD VERIFY DIMENSIONS AND DETAILING OF EXISTING PIPING AND STRUCTURES PRIOR TO SUBMITTING SHOP DRAWINGS.
2. CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO POSITIVELY PRECLUDE EROSION OR WASHING OF SEDIMENT FROM SITE. THE CONTRACTOR SHALL PROVIDE PERIODIC MAINTENANCE OF ALL EROSION AND SEDIMENTATION CONTROL DEVICES INSTALLED AND SHALL CLEAN-UP AND RESTORE ALL AREAS IMPACTED BY EROSION CONTROL ACTIVITIES AS THE WORK PROCEEDS
3. EXISTING SURFACES OR STRUCTURES DISTURBED BY CONSTRUCTION SHALL BE RESTORED BY CONTRACTOR TO AN EQUAL OR BETTER CONDITION. DISTURBED GRASSED AREAS SHALL BE RESTORED WITH SOD.
4. CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT, AND TOOLS TO PERFORM AND SATISFACTORILY COMPLETE THE WORK SHOWN BY THESE DRAWINGS.
5. THE CONTRACTOR SHALL USE CAUTION IN PERFORMING THE WORK TO PREVENT DAMAGE TO EXISTING UTILITY SYSTEMS AND SHALL COORDINATE WITH UTILITY COMPANIES LISTED AND OTHER UTILITY COMPANIES PRIOR TO AND DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 48 HOURS NOTICE TO UTILITY COMPANIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN FIELD LOCATES OF EXISTING UNDERGROUND UTILITIES IN THE VICINITY OF NEW CONSTRUCTION.
6. THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE SUNSHINE STATE ONE CALL OF FLORIDA, EXCAVATION GUIDE, LATEST EDITION. THE CONTRACTOR SHALL CONTACT SUNSHINE 811 (SUNSHINE811.COM) AT 1-800-432-4770 A MINIMUM OF 48 HOURS PRIOR TO THE PLANNED EXCAVATION OR CONSTRUCTION DATE TO ARRANGE FOR THE FIELD LOCATION OF BURIED UTILITIES WITHIN THE CONSTRUCTION AREA.
7. THE CONTRACTOR SHALL PERFORM THE WORK TO MINIMIZE IMPACT AND DAMAGE TO PRIVATE PROPERTY. DAMAGE TO ADJACENT PROPERTY CAUSED BY THE CONTRACTOR SHALL BE REPAIRED AND RESTORED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE COUNTY.
8. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS THAT ARE LOCATED ADJACENT TO THE NEW WORK.
9. THE CONTRACTOR SHALL PREPARE RECORD DRAWINGS AND PROVIDE O&M MATERIALS AS DESCRIBED BY THE CONSTRUCTION CONTRACT DOCUMENTS.
10. USE "316 SST" FOR CONNECTION TO EXISTING THRUST TIES TO REMAIN.

FLOWMETER NOTES

1. ELECTROMAGNETIC FLOWMETER SHALL HAVE THE FEATURES DESCRIBED BELOW AND BE EITHER AN ABB PROCESSMASTER FEP300 OR AN E&H PROLINE PROMAG L 440.
2. PROVIDE SURGE PROTECTORS FOR FIELD (EDCO SLAC OR EQUIVALENT)

DESCRIPTION	VALUE
GENERAL	
NOMINAL SIZE	24-INCH
PROCESS FLUID	RECLAIMED WATER
MINIMUM CONDUCTIVITY	5 MICRO S/CM
TEMPERATURE	32 TO 110 DEGREES F
OPERATING PRESSURE	150 PSI
DESIGN FLOW RANGE	
MINIMUM	1,562 GPM (2.25 MGD)
MAXIMUM	10,416 GPM (15 MGD)
MEASURING ACCURACY	±0.5% OR READING
LAYING LENGTH	3' ALLOWANCE
FLOW SENSOR	
LOCATION	NEMA 4X
AMBIENT TEMPERATURE	MINUS 5 TO 140 DEGREES F
MATERIALS OF CONSTRUCTION	
SENSOR HOUSING	CARBON STEEL, FACTORY FINISH COATED
FLANGES	ASME, CLASS 150, CARBON STEEL, FACTORY FINISH COATED
LINER	HARD RUBBER
ELECTRODES	STAINLESS STEEL
TRANSMITTER	
LOCATION	REMOTE MOUNT
AMBIENT TEMPERATURE	MINUS 5 TO 140 DEGREES F
POWER SUPPLY	120 VAC, 60-Hz
CURRENT OUTPUT	4 - 20 mA
DISPLAY INDICATION	MGD
COMMUNICATION	HART PROTOCOL
HOUSING	NEMA4X
ACCESSORIES	
GROUNDING RINGS	TWO, STAINLESS STEEL
SPLITTER / ISOLATOR	
SURGE PROTECTOR	ONE

CONSTRUCTION SEQUENCE REQUIREMENTS:

1. CONNECTION OF NEW PIPING TO EXISTING PIPING WILL REQUIRE INJECTION WELL TO BE SHUT DOWN.
2. CONTRACTOR SHALL SCHEDULE 4 WEEKS IN ADVANCE WITH MANATEE COUNTY UTILITIES AN ACCEPTABLE TIME WHEN INJECTION WELL CAN BE SHUT DOWN AND WHEN MANATEE COUNTY WILL HAVE SUFFICIENT POND STORAGE CAPACITY AVAILABLE (TYPICALLY DURING PERIODS OF DRY WEATHER).
3. CONTRACTOR SHALL PLAN WORK TO LIMIT TIME THAT INJECTION WELL IS SHUT DOWN TO BE NO LONGER THAN FIVE (5) DAYS. OPERATION OF WELL REQUIRES THAT FLOW AND PRESSURE INSTRUMENTATION BE FUNCTIONAL AND CONNECTED TO SCADA.
4. VALVES MAY ONLY BE OPERATED BY A REPRESENTATIVE OF MANATEE COUNTY UTILITIES.

PIPING MATERIALS AND APPURTENANCES:

1. PIPE - FLANGED, AWWA C115/A21.15, THICKNESS CLASS 53 MINIMUM, 250 PSI MINIMUM WORKING PRESSURE.
2. FLANGES SHALL BE CLASS 125 FLAT FACE, DUCTILE IRON UNLESS OTHERWISE NOTED.
3. BOLTING: ASTM A320 / A320M GRADE B 8M HEX HEAD BOLTS, ASTM A194 / A194M GRADE 8M HEAD NUTS, TYPE 316 STAINLESS STEEL WASHERS.
4. GASKETS: 1/8-INCH-THICK, HOMOGENEOUS BLACK RUBBER (EPDM), HARDNESS 60 (SHORE A), RATED TO 275 DEGREES F, CONFORMING TO ASME B16.21 AND ASTM D2000 4CA 415 A25 B35 C32 EA14 F19.
5. FITTINGS - FLANGED, AWWA C110/A21.10 DUCTILE IRON, FACED AND DRILLED, CLASS 125 FLAT FACE.
6. PIPE AND FITTING LINING - PROTECTO 401 BY INDURON COATING, OR EQUAL, 40-MILS TOTAL DFT. NEW FITTINGS LINED SAME AS PIPE.
7. PIPE, FITTINGS, AND STEEL SURFACE COATINGS -- SSPC SP-10 SURFACE PREPARATION, 1 COAT EPOXY PRIMER (2.5-MILS MINIMUM DFT), 1 COAT HIGH BUILD EPOXY (4-MILS MINIMUM DFT), 1 COAT POLYURETHANE ENAMEL (3-MILS MINIMUM DFT) Tnemec OR EQUAL. FINAL COAT COLOR TO MATCH EXISTING CONNECTING PIPE.
8. FLANGED COUPLING ADAPTERS - SMITH-BLAIR (SERIES 911) FLANGED-LOCK RESTRAINED FCA, OR EQUAL, WITH TYPE 316 STAINLESS STEEL HARDWARE, EPDM GASKETS, AND FUSION-BONDED EPOXY COATED.

SHOP DRAWINGS:

1. SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO FABRICATION AND SHIPPING OF PRODUCTS.
2. SHOP DRAWING SUBMITTALS SHALL INCLUDE THE FOLLOWING INFORMATION:
 - a) CATALOG CUT SHEETS WHICH INCLUDES INFORMATION ON THE ELECTROMAGNETIC FLOW METER, PIPE (INCLUDING LININGS AND COATINGS), FITTINGS, FLANGED COUPLING ADAPTERS, AND SADDLES.
 - DETAILED PIPE LAYOUT DRAWING PREPARED BY THE PIPE SUPPLIER.
 - c) CATALOG CUT SHEETS FOR FLOW METER TRANSMITTER SURGE PROTECTION AND ELECTRICAL AND PANEL COMPONENTS AS REQUIRED FOR NEW FLOW METER INSTALLATION.
 - d) FLOW METER FACTORY CALIBRATION SHEETS.
 - e) ELECTRICAL SITE PLAN FOR NEW CONDUIT ROUTING BETWEEN THE FLOW TRANSMITTER AND EXISTING CONTROL/ELECTRIC PANEL FOR POWER AND FLOW SIGNAL WIRING.
 - f) INSTALLATION DETAIL OF THE FLOW TRANSMITTER WHICH INCLUDES THE STANCHION MOUNT, RAIN HOOD, AND SURGE PROTECTION. MATERIAL OF CONSTRUCTION AND DIMENSIONS SHALL BE INCLUDED ON THIS DETAIL SHEET.
 - DETAILS AND DRAWINGS SHOWING MODIFICATIONS TO THE EXISTING CONTROL/ELECTRIC PANEL AND RTU PANEL FOR THE NEW FLOW SIGNAL.

GENERAL PIPING NOTES:

1. ALL FLANGED COUPLING ADAPTERS SHALL BE PROVIDED WITH THRUST TIES, AND ANCHORS, UNLESS OTHERWISE NOTED. THRUST PROTECTION SHALL BE ADEQUATE FOR TEST PRESSURE SPECIFIED.
2. HYDROSTATICALLY TEST COMPLETED PIPING AT 150 PSI. MAINTAIN TEST PRESSURE CONTINUOUSLY FOR 30 MINUTES, MINIMUM, AND FOR SUCH ADDITIONAL TIME AS NECESSARY TO CONDUCT EXAMINATIONS FOR LEAKAGE. FOR A SUCCESSFUL TEST, THERE SHALL BE NO VISIBLE LEAKAGE AND NO APPARENT DROP IN PRESSURE.

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MANATEE COUNTY
CORTEZ ROAD INJECTION WELL
FLOW METER REPLACEMENT
MANATEE COUNTY, FLORIDA

N.T.S.

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.

0 1"

DATE JANUARY 2019

PROJ 704019

DWG C2

SHEET 2 of 6

CONSTRUCTION DRAWING SET

J. GOLDBACH
DR
B. KLEIN
REVISION
CHK
AP/VD
A. LEWIS
BY
AP/VD
J. GOLDBACH
FL P.E. No. 22385
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A

B

C

D



TEMPORARY STRAP-ON FLOW METER (SEE NOTE)

WELL

BFV (TO REMAIN)

VENTURI METER INSERT (REMOVE)

LIMIT PIPE REMOVAL OUTSIDE

VALVE BUILDING

EXISTING CONDITIONS EAST ELEVATION



CONTROL VALVE BUILDING

PIPE REMOVAL LIMITS

VENTURI METER INSERT (REMOVE)

BFV (TO REMAIN)

EXISTING CONDITIONS WEST ELEVATION

NOTE:
 AFTER NEW FLOW METER PLACED INTO SERVICE AND IS OPERATING PROPERLY, SALVAGE TEMPORARY STRAP-ON METER AND DELIVER TO COUNTY. CONTRACTOR SHALL REMOVE WIRING BETWEEN STRAP-ON METER AND CONTROL PANEL.

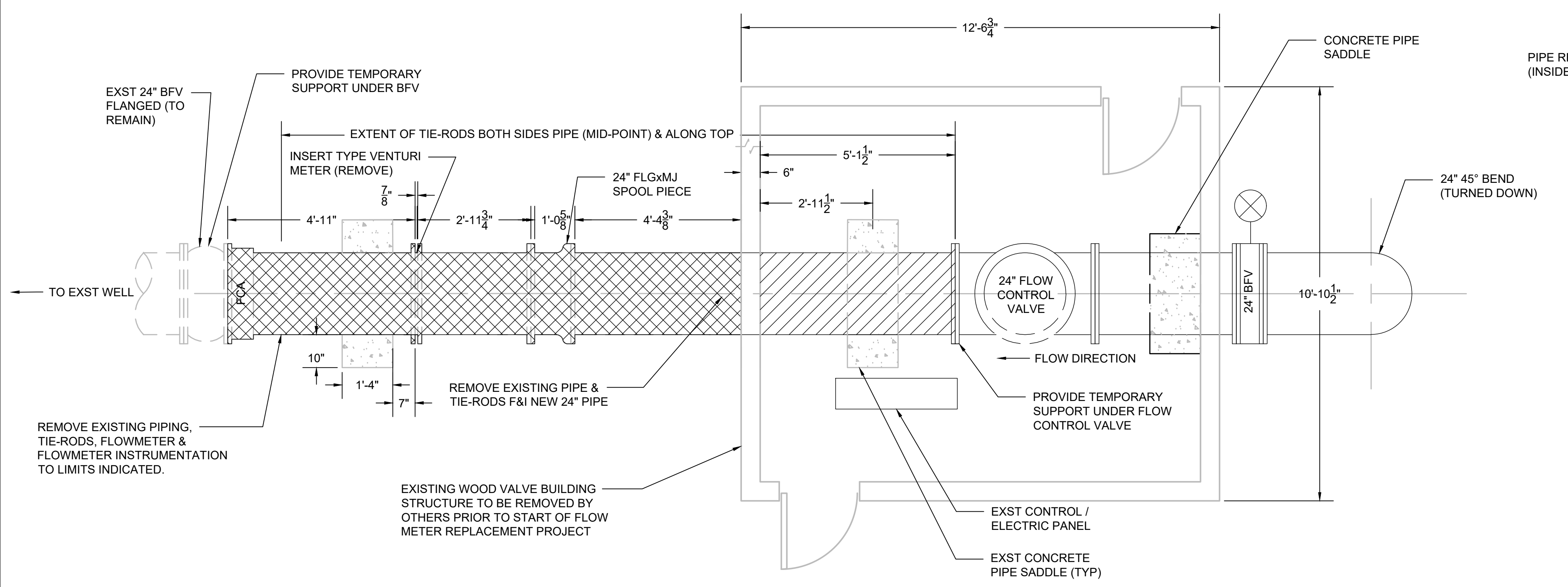


CONTROL / ELECTRIC PANEL

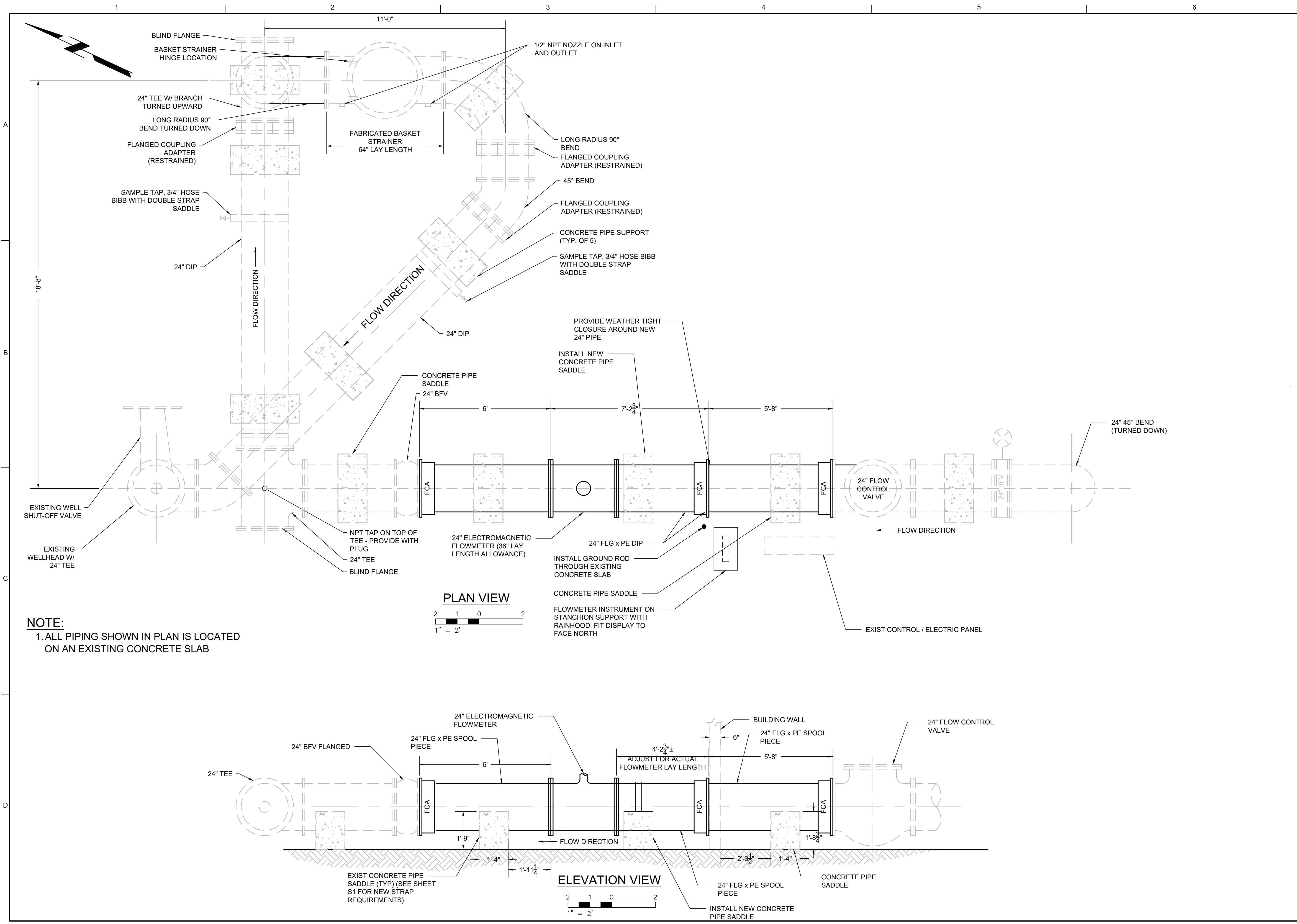
PIPE REMOVAL (INSIDE)

FLOW CONTROL VALVE

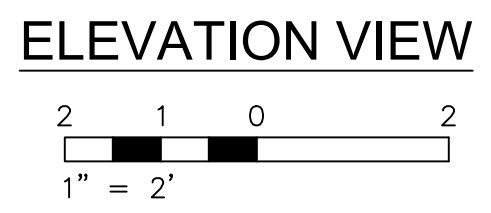
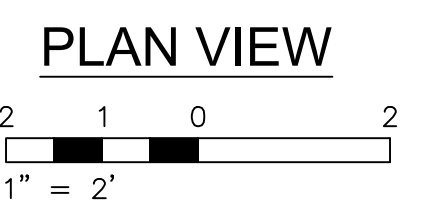
EXISTING CONDITIONS INSIDE VALVE BUILDING



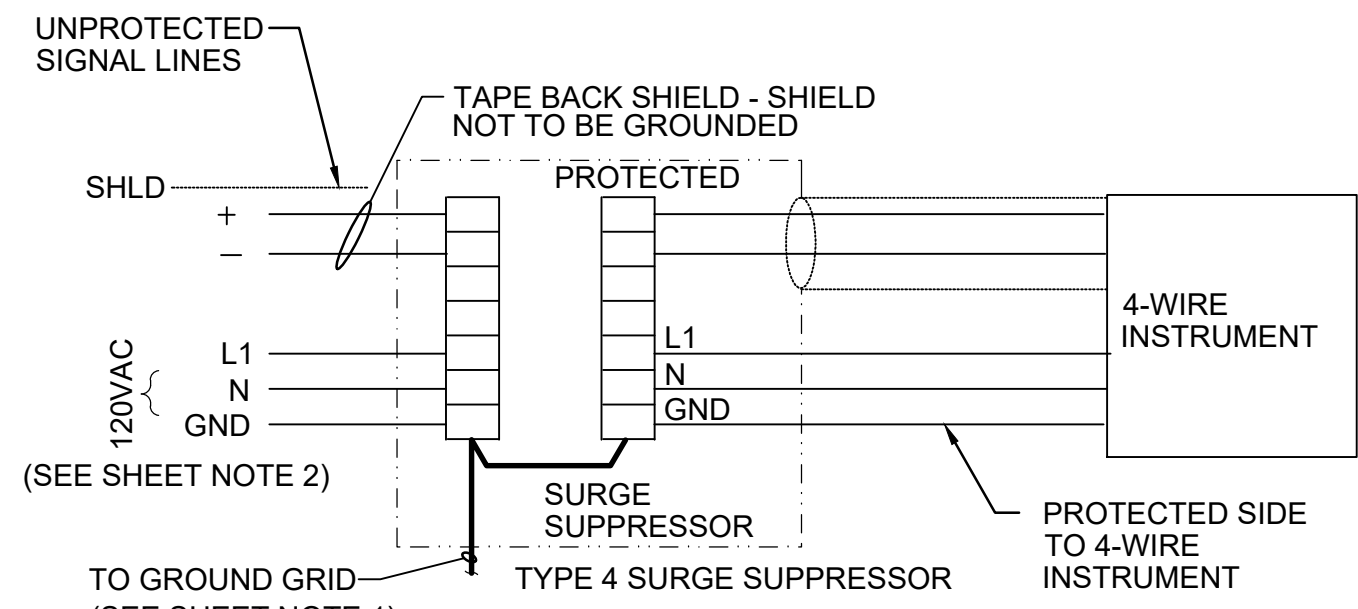
4350 WEST CYPRESS ST SUITE 600 TAMPA, FLORIDA 33607-4155 LB 0002934 AA C000656	MANATEE COUNTY CORTEZ ROAD INJECTION WELL FLOW METER REPLACEMENT MANATEE COUNTY, FLORIDA	J. GOLDBACH D/SGN	B. KLEIN CHK	A. LEWIS APVD	
JACOBS CIVIL DEMO PLAN		NO.	DATE	REVISION	
		DATE REVISION BY APVD			
		J. GOLDBACH D/SGN B. KLEIN CHK A. LEWIS APVD			
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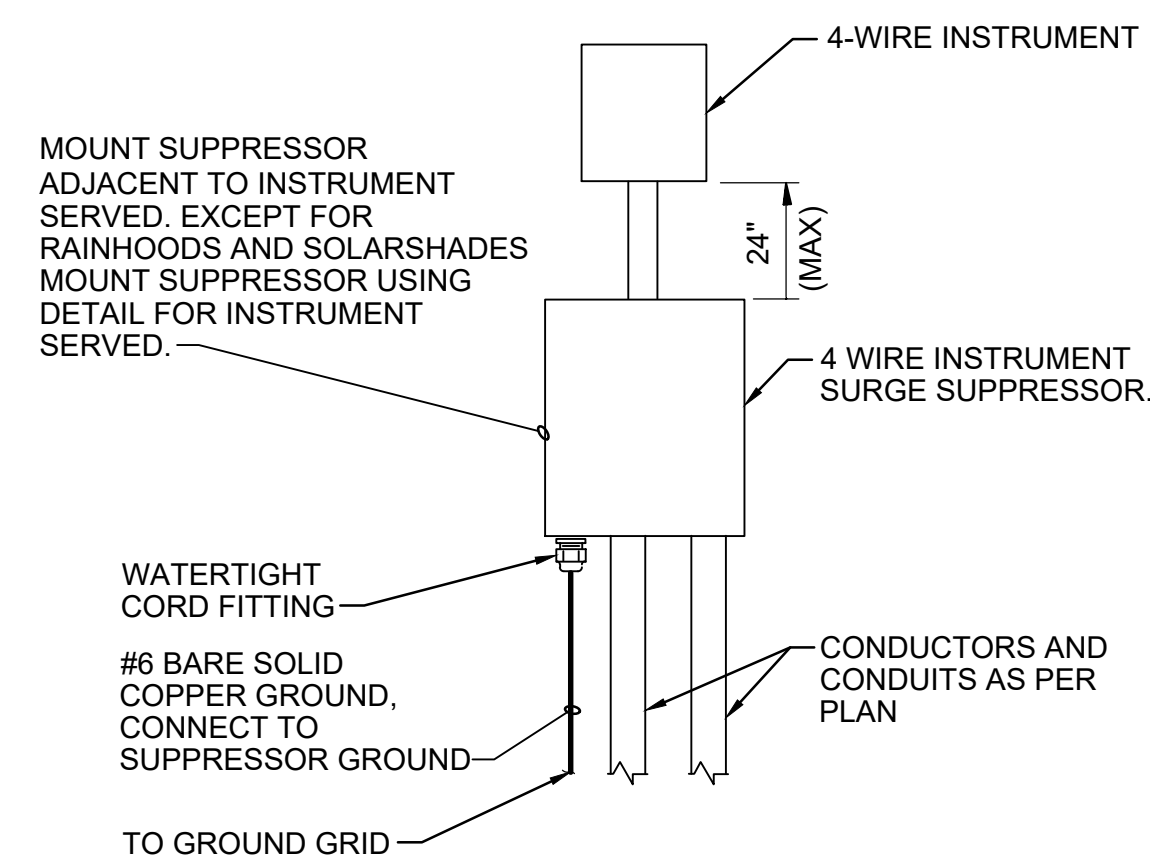
NOTE:
 1. ALL PIPING SHOWN IN PLAN IS LOCATED ON AN EXISTING CONCRETE SLAB



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DATE: JANUARY 2019		PROJ: 704019		DWG: M1		SHEET: 4 of 6	
N.T.S. VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING.		NO. DATE		REVISION		BY APVD	
DSGN		J. GOLDBACH		CHK		APVD	
DR		B. KLEIN		CHK		APVD	
NO. DATE		J. GOLDBACH		CHK		APVD	
BY APVD		A. LEWIS		BY APVD		A. LEWIS	
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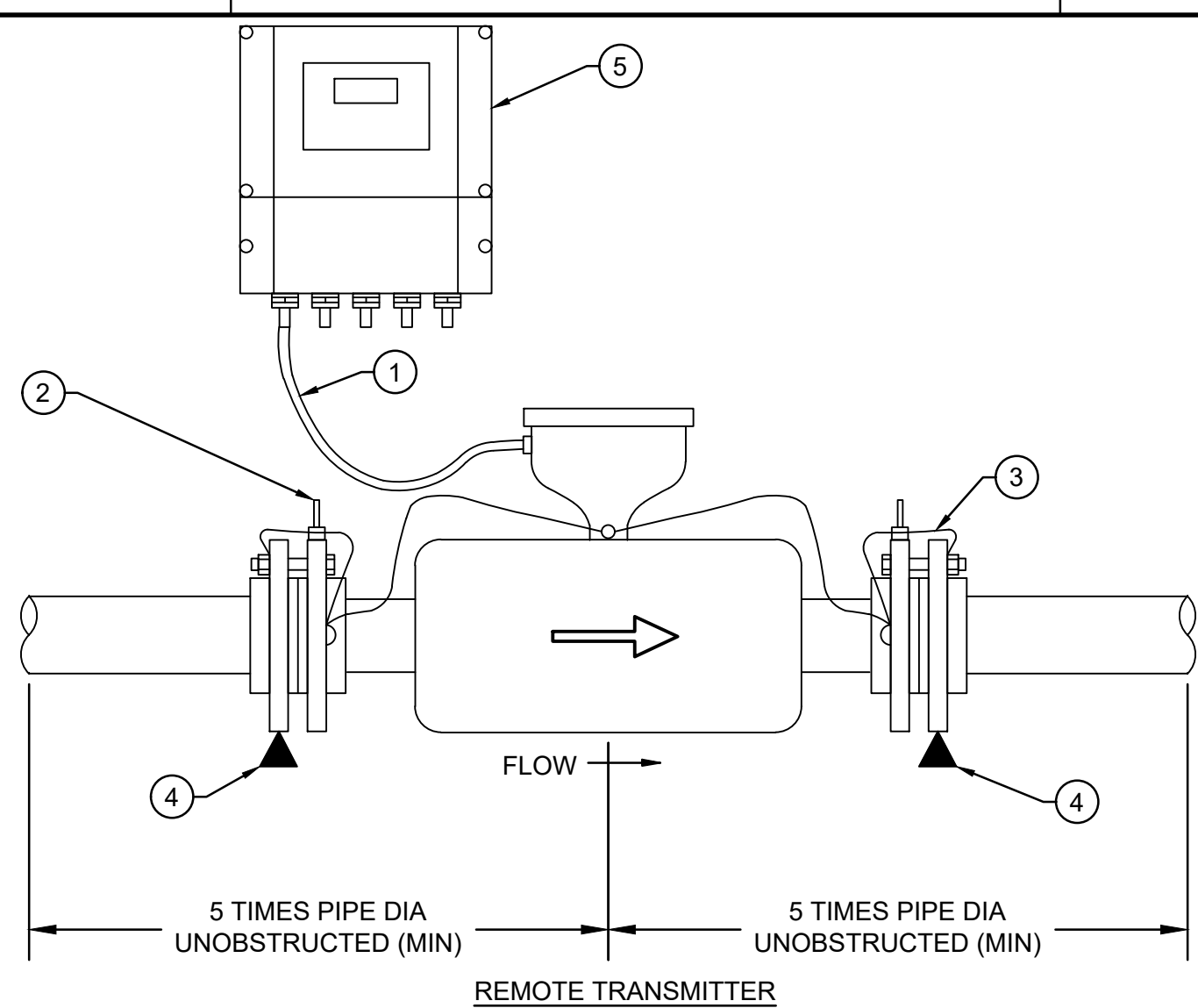


WIRING DIAGRAM



TYPE "4" SURGE SUPPRESSOR INSTALLATION 4-WIRE INSTRUMENT
NTS

4091-420BG

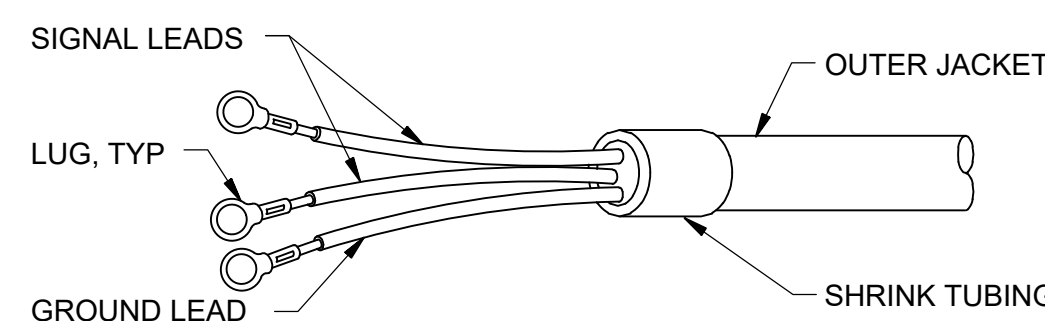
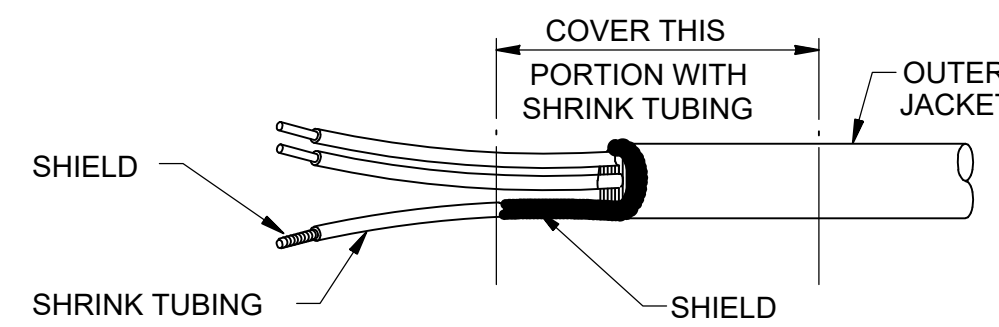
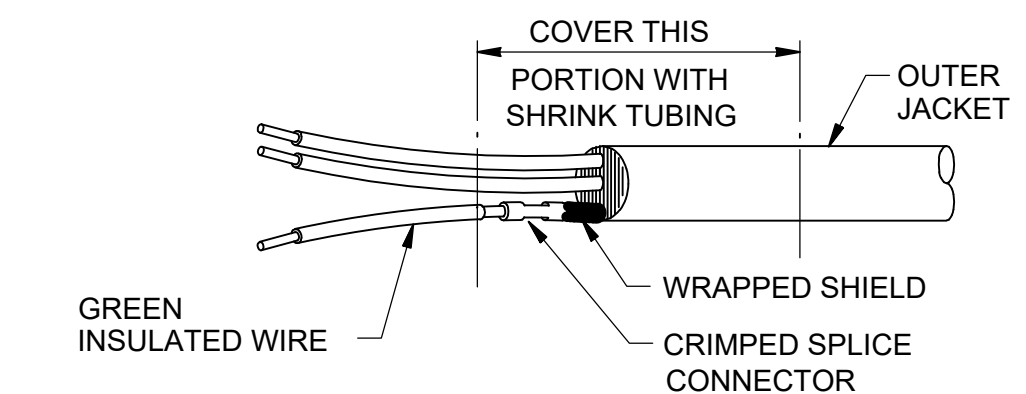


NOTES:

1. CABLE TO BE PROVIDED BY INSTRUMENT VENDOR (NO LONGER THAN 164')(REMOTE TRANSMITTER ONLY) NON-SPLICING CABLE. CONTRACTOR ROUTE CABLE IN FLEXIBLE CONDUIT.
2. REMOVABLE LIFTING LUGS FOR INSTALLING FLOW TUBE.
3. GROUNDING SHIELD, SEE NOTE 7.
4. FOUNDATION MOUNTS REQUIRED FOR METERS ABOVE 12".
5. TRANSMITTER STANCHION, SEE STANCHION MOUNTED DETAIL, 4091-383GD
6. MEASURING ELECTRODES MUST BE IN HORIZONTAL PLANE.
7. TIE GROUND RINGS TO TRANSMITTER EQUIPMENT GROUND WITH A MINIMUM OF 12 AWG GROUND WIRE.
8. ENSURE INSTRUMENT IS ADEQUATELY SUPPORTED PER MANUFACTURER'S RECOMMENDATIONS.

FLOW TRANSMITTER - MAGNETIC
NTS

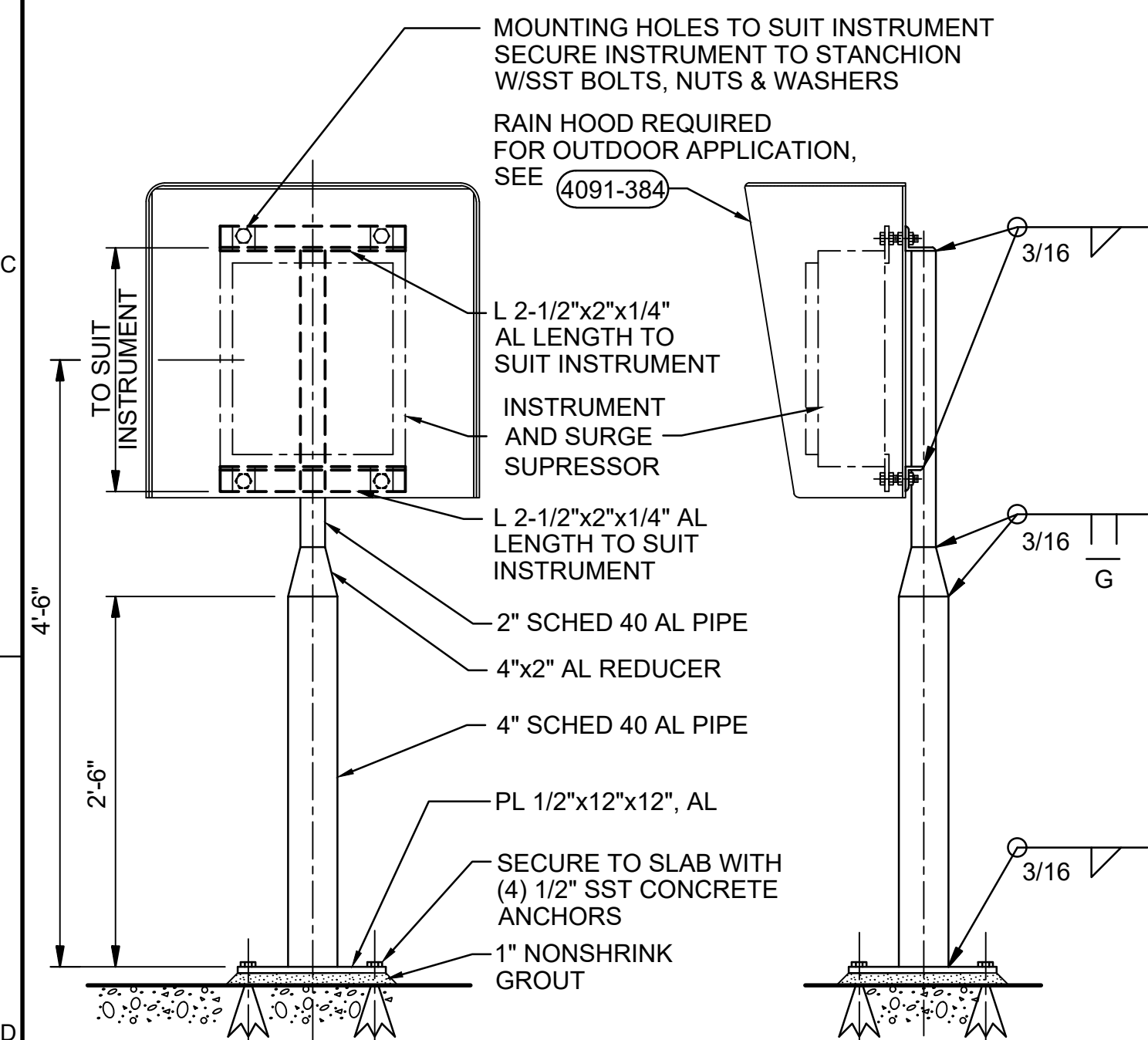
4091-273



NOTE:
SHIELD GROUNDED ONLY AT CONTROL ENCLOSURE.

TERMINATION OF SHIELDED CONTROL CABLE
NTS

4091-425G

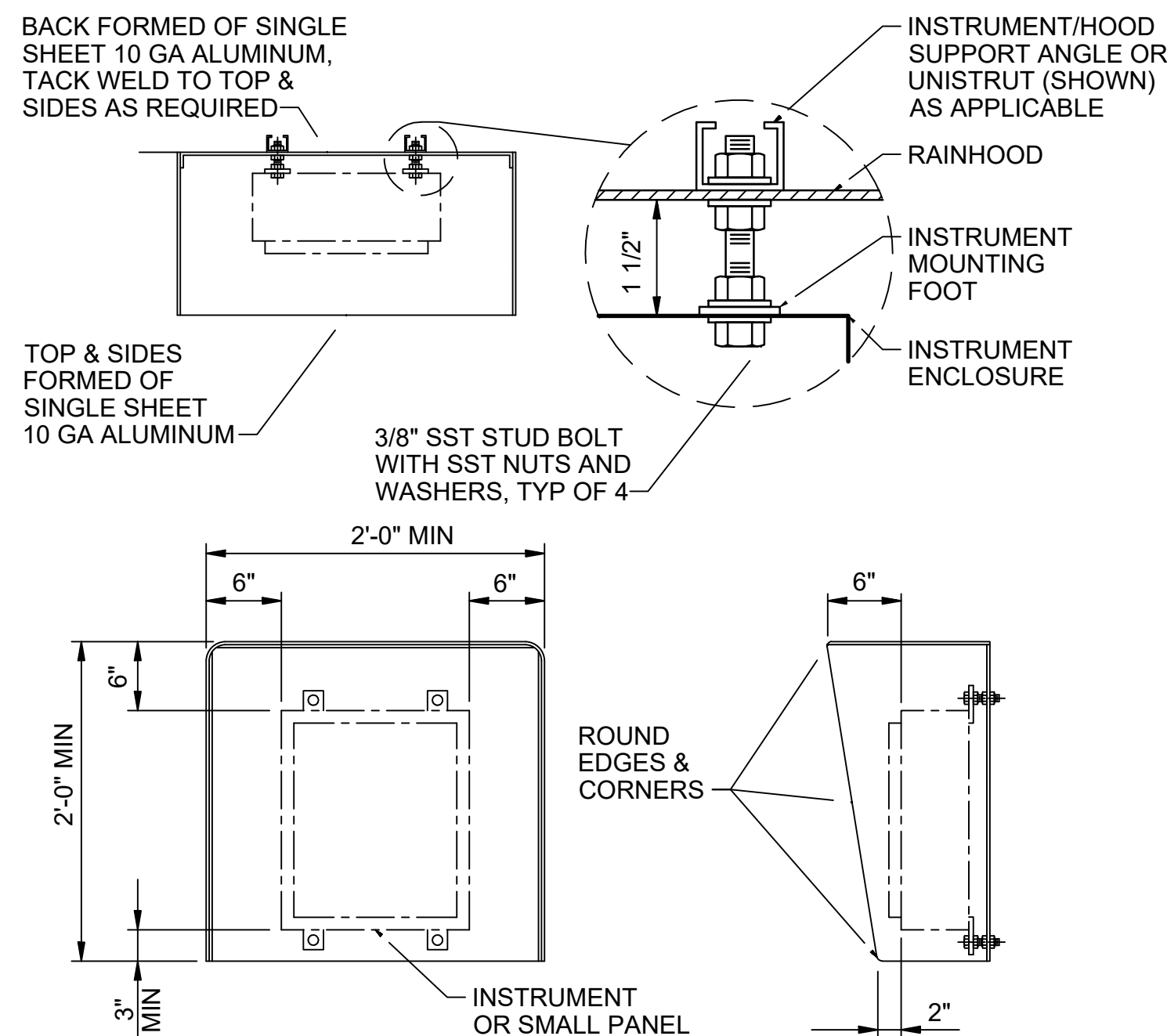


NOTES:

1. ROUND OFF ALL EXPOSED EDGES AND CORNERS.
2. PAINT ALUMINUM IN CONTACT WITH CONCRETE ACCORDING TO SPECIFICATIONS FOR PAINTING.

STANCHION SUPPORT FOR CASE MOUNTED INSTRUMENTS
NTS

4091-383GD



NOTES:

1. ALL EXPOSED EDGES TO BE GROUND SMOOTH AND BURR FREE.
2. MOUNT RAIN HOOD BETWEEN INSTRUMENT AND MOUNTING BRACKET. DRILL HOLES IN RAIN HOOD AS PER MOUNTING HOLES FOR INSTRUMENT, SEE 4091-273/4091-383GD

RAIN HOOD INSTALLATION
NTS

4091-384

SHEET NOTES:

1. BORE HOLE THRU EXISTING CONCRETE SLAB AND INSTALL GROUND ROD (5 ohms OR LESS) FOR GROUNDING RINGS AND INSTRUMENT PANEL.
2. 120 VAC POWER FOR NEW FLOW METER INSTRUMENT TO BE SUPPLIED FROM DEDICATED CIRCUIT BREAKER LOCATED INSIDE EXISTING CONTROL / ELECTRIC PANEL. CONTRACTOR TO PROVIDE CONDUIT AND CONDUCTORS BETWEEN SURGE SUPPRESSOR AND EXISTING DEDICATED CIRCUIT BREAKER.
3. CONTRACTOR TO ROUTE NEW FLOW METER 4-20MA SIGNAL LINES IN FLEXIBLE CONDUIT TO EXISTING TERMINATION INSIDE THE EXISTING CONTROL/ELECTRIC PANEL.
4. THE EXISTING FLOW METER PROVIDES A 4-20MA FLOW INDICATION FROM THE EXISTING PANEL TO AN RTU LOCATED ADJACENT TO THE ONSIDE GROUND STORAGE TANK. DISCONNECT THE EXISTING FLOW METER AND CONNECT AND TERMINATE THE NEW FLOW METER SIGNAL WIRING. REUSE THE EXISTING PANEL SIGNAL WIRING AND INPUT INTO THE RTU FOR THE CONNECTION TO THE COUNTY'S PLANT SCADA.
5. CONTRACTOR TO TEST NEW FLOW METER SIGNAL AT THE EXISTING RTU PANEL AND THE COUNTY'S PLANT SCADA LOCATION. TESTING SHALL INCLUDE FIELD CALIBRATION (FLOW SIGNAL RANGE: 0%, 25%, 50%, AND 100%) OF THE NEW FLOW TRANSMITTER WITH FLOW VERIFICATION AT THE PLANT SCADA SYSTEM FLOW DISPLAY. MAXIMUM FLOW (100%) PERMITTED TO THE WELL IS 10,416 GPM.

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MANATEE COUNTY
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MANATEE COUNTY, FLORIDA

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INSTRUMENTATION DETAILS

N.T.S.

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PROJ 704019

DWG 11

SHEET 6 of 6

CONSTRUCTION DRAWING SET

JOSEPH C. GOLDBACH
FL P.E. No. 22385

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J. GOLDBACH
B. KLEIN
R. OSEGUEDA
DR
CHK
APVD
BY
APVD

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