



STAINLESS STEEL SLIDE GATES & WEIR GATES PRODUCT INFORMATION

2016 Edition



Mechanical Associates began manufacturing in 1993. Over the past 22 years we have developed or improved many of the products used in the water control gate market today.

Mechanical Associates introduced a domed flap gate shown in the picture to the right. The domed cover concept is based on the fact that a dome provides greater strength than a flat plate, thus eliminating the need for adding welded reinforcement on the flap gate cover. This design allows for light weight stainless steel flap gates to compete in performance and price with the heavier cast iron gates being offered today.

Today Mechanical Associates offers a full product line of water control gates as well as mud & telescoping valves.

Please contact Mechanical Associates for current prices and information on these or any new product which may have been added to our product line since the publication of this edition of our product catalog.



CONTACT INFORMATION

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INTRODUCTION



WATER CONTROL GATES & VALVES

MECHANICAL ASSOCIATES OFFERS SUPERIOR QUALITY PRODUCTS AND SUPERIOR CUSTOMER SERVICE OVER ANY OTHER COMPETITOR

MECHANICAL ASSOCIATES

began manufacturing in 1993 as a subcontractor to one of the major USA water control gate manufacturers. Today Mechanical Associates has a continually expanding product line of water control products as well as mud & telescoping valves to meet all of our customers needs.

CUSTOMER CARE

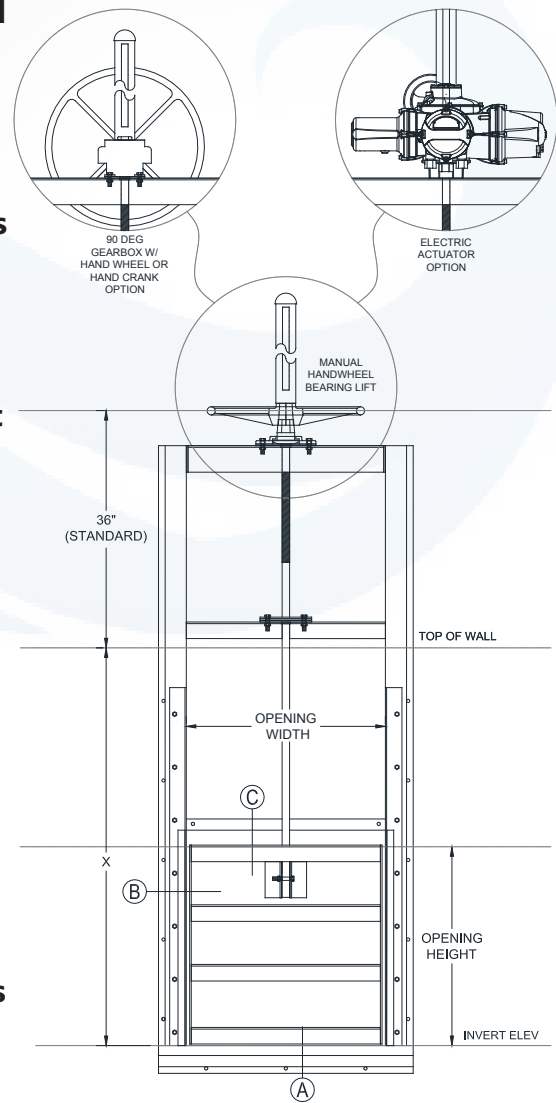
By listening to our customers over the past 22 years Mechanical Associates has developed and/or improved a variety of the products used in the water control gate market today. Through innovation and careful collaboration with our customers, Mechanical Associates provides the best possible solution to meet our clients water control needs.

QUALITY

Mechanical Associates prides itself on providing high quality American made water control products. Mechanical Associates specializes in corrosion resistant materials including Stainless Steel and Marine Grade Aluminum.

INNOVATION

Mechanical Associates' experienced staff, with over 100 years of working in the water control industry, is continually working to improve all of its products and also working with our customers to create new products.



FC-SS SERIES

STAINLESS STEEL SLIDE GATE

MEETS OR EXCEEDS ALL AWWA C561 STANDARDS

FC-SS PERFORMANCE ADVANTAGES

- Formed Channel Frame
- Superior Corrosion Resistance
- Optimum Sealing Systems
- Multiple Mounting Options
- Multiple Gate Configurations
- On And Off Seating Head Designs
- Rising And Non-Rising Stem Designs
- Can Be Designed For Any Head Pressure
- Can Be Designed For Any Opening Size (Rectangular Or Round)
- Compatible In All Potable Water Applications
- All Gates Built To Project Specifications
- Testing And Reliability
- Low Maintenance
- Ease Of Installation
- Durability

CUSTOMER SERVICE ADVANTAGES

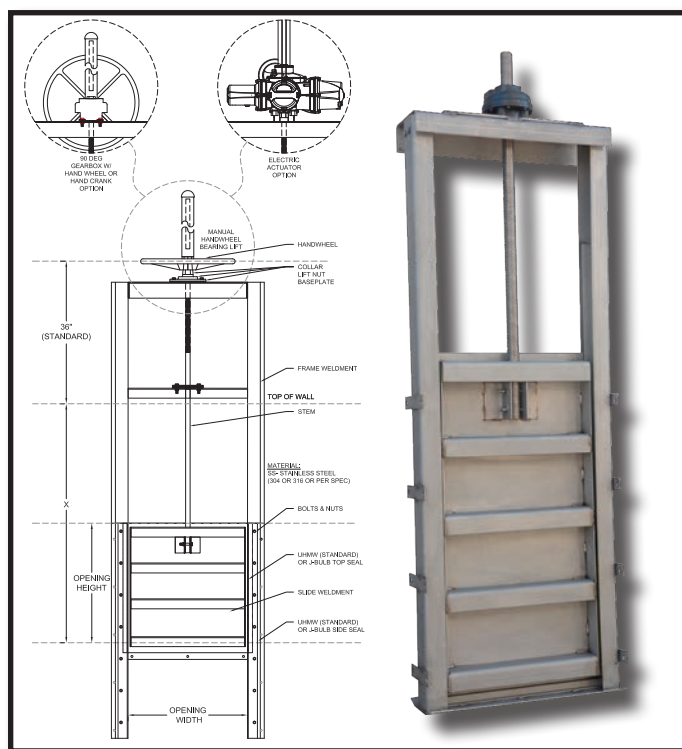
- Our Employees Have Over 100 Years Of Experience In The Water Control Industry
- Friendly Support Staff
- Innovative Design Team
- Fast & Accurate Submittals
- Production Time (Fast Delivery)
- Cost - Save Money And Time With Stainless Steel





MUNICIPAL WATER CONTROL PRODUCTS

FC-SS-SERIES STAINLESS STEEL SLIDE & WEIR GATES



STANDARD FEATURES

Models: FC-SS & FC-SS-DO

- UHMW Self Adjusting Seals Top & Sides
(Available with J-Bulb Seals)
- All Stainless Steel Construction
- On-Seating / Off-Seating Head Configuration
- Flush Bottom for Watertight Seal
- Reinforced Slide
- Easy Open / Easy Close Handwheel
- Electrical Operation Available
- Gear Actuator Available
- Pneumatic Actuator Available
- Rolled Threads on Stem
- Available with Non-Rising Stem
- Available In Downward Opening Weir
- Available in Light, Medium, & Heavy Duty
- Environmentally friendly
- Non environmentally degrading
- No toxic paints or coatings

**ALL GATES ENGINEERED PER HEAD PRESSURE
SPECIFICATION REQUIREMENT**

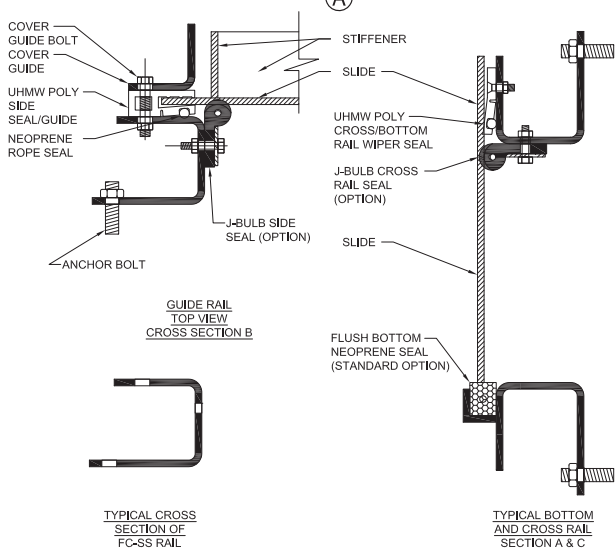
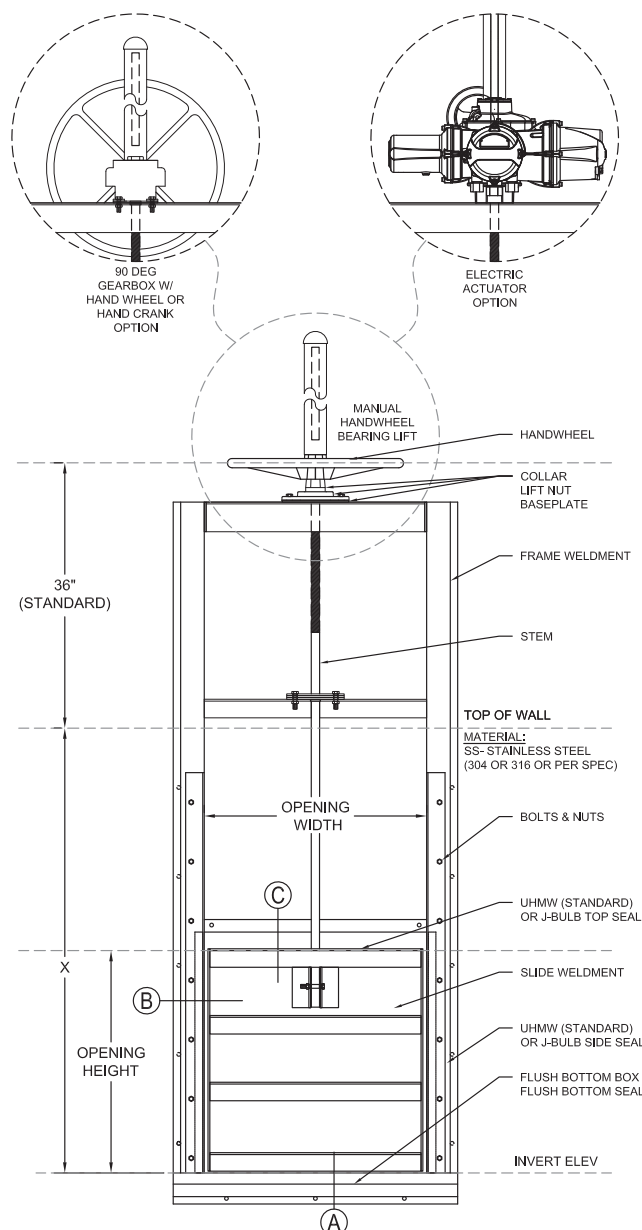
**REQUEST OUR FC-SS BROCHURE FOR ALL AVAILABLE
OPTIONS FOR THIS GATE SERIES.**

Mechanical Associates' stainless steel and aluminum gates provide long life and excellent value for the investment. Installation is quick and easy. All gates come standard with replaceable seals for easy maintenance. Stainless steel and aluminum construction will provide long life in corrosive conditions, with little or no maintenance or replacement parts required.

Also available from Mechanical Associates
Line Gates, Slide Gates, Pressure Gates, Canal Gates, Flap Gates, and more..



STAINLESS STEEL SLIDE GATE FC-SS



STANDARD FEATURES:

- All Stainless Steel Construction
- UHMW Self Adjusting Seals Top & Sides
- Seating or Off Seating Head Configuration
- Flush Bottom Neoprene for Watertight Seal
- Reinforced Slide
- Rolled Threads on Stem
- Manual Lift with Handwheel
- Easy Open / Easy Close Handwheel Actuator
- Environmentally friendly
- Non environmentally degrading
- No toxic paints or coatings

LIFT OPTIONS:

- Electric Actuator
- Geared Roller Bearing Actuator
- Manual Roller Bearing Actuator
- Pneumatic Actuator
- Non-Rising Stem

MOUNTING OPTIONS:

- Flush Mount
- Embedded
- In-Channel
- Wall Thimble
- Spigot
- Pipe Flange

FRAME OPTIONS:

- Configuration 1 Light To Medium Duty
- Configuration 2 Heavy dut
- Self Contained
- Non-Self Contained
- Downward Opening

SEAL OPTIONS:

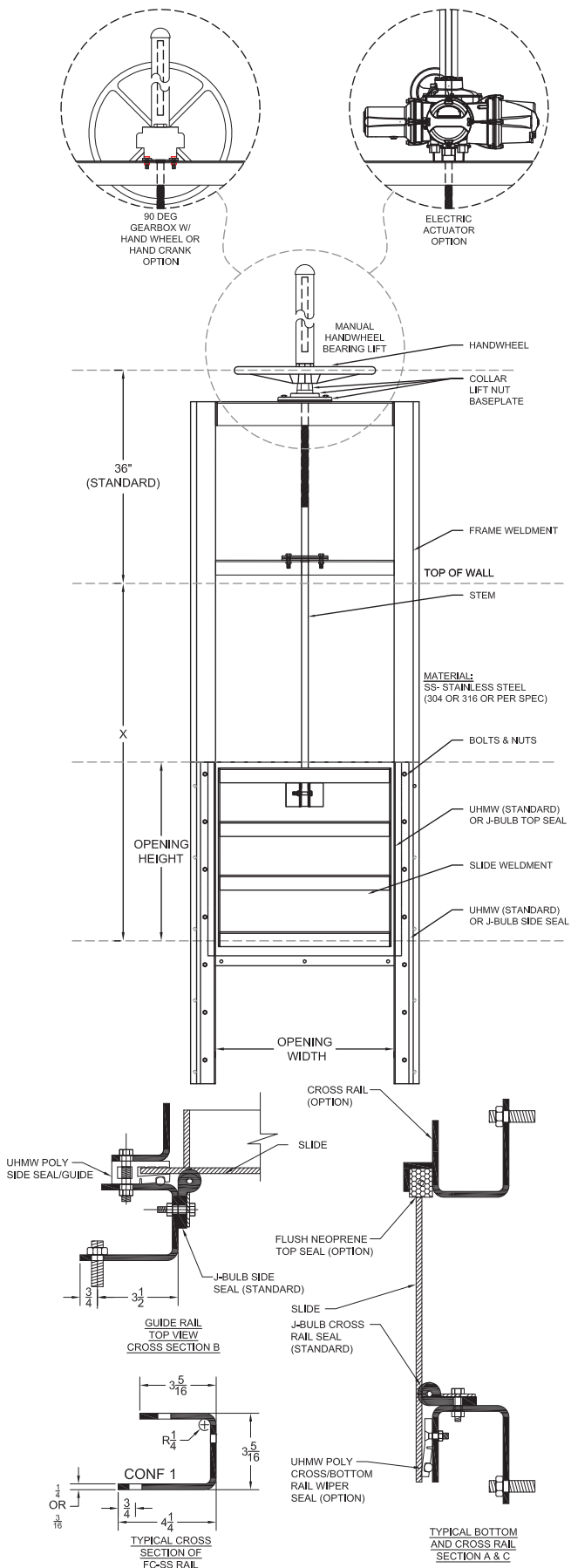
- Neoprene Or EPDM J-Bulb Seals

PARTS & MATERIALS

Handwheel	Cast Iron: ASTM-A126 CL. B
Lift Nut	Commercial Bronze
Collar	Cast Iron: ASTM-A126 CL. B
Base Plate	Aluminum Alloy 6061-T6
Bolts & Nuts	Stainless Steel ASTM A-240 TY.304 or 316
Stem	Stainless Steel ASTM A-240 TY.304 or 316
Frame Weldament	Stainless Steel ASTM A-240 TY.304 or 316
Slide Weldament	Stainless Steel ASTM A-240 TY.304 or 316
Flush Bottom Box	Stainless Steel ASTM A-240 TY.304 or 316
Flush Bottom Seal	Neoprene Rubber: ASTM D-2000
Poly Seal	UHMW
J-Bulb Seal (option)	Neoprene Rubber: ASTM D-2000

FC-SS SLIDE GATE

REV 08.23.15

**STAINLESS STEEL DOWNWARD OPENING WEIR GATE
 FC-SS-DO**

STANDARD FEATURES:

- All Stainless Steel Construction
- UHMW Self Adjusting Seals Top & Sides
- Seating or Off Seating Head Configuration
- Flush Bottom Neoprene for Watertight Seal
- Reinforced Slide
- Rolled Threads on Stem
- Manual Lift with Handwheel
- Easy Open / Easy Close Handwheel Actuator
- Environmentally friendly
- Non environmentally degrading
- No toxic paints or coatings

LIFT OPTIONS:

- Electric Actuator
- Geared Roller Bearing Actuator
- Manual Roller Bearing Actuator
- Pneumatic Actuator
- Non-Rising Stem

MOUNTING OPTIONS:

- Flush Mount
- Embedded
- In-Channel
- Wall Thimble
- Spigot
- Pipe Flange

FRAME OPTIONS:

- Configuration 1 Light To Medium Duty
- Configuration 2 Heavy dut
- Self Contained
- Non-Self Contained
- Downward Opening

SEAL OPTIONS:

- Neoprene Or EPDM J-Bulb Seals

PARTS & MATERIALS

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Lift Nut	Commercial Bronze
Collar	Cast Iron: ASTM-A126 CL. B
Base Plate	Aluminum Alloy 6061-T6
Bolts & Nuts	Stainless Steel ASTM A-240 TY.304 or 316
Stem	Stainless Steel ASTM A-240 TY.304 or 316
Frame Weldment	Stainless Steel ASTM A-240 TY.304 or 316
Slide Weldment	Stainless Steel ASTM A-240 TY.304 or 316
Flush Bottom Box	Stainless Steel ASTM A-240 TY.304 or 316
Flush Bottom Seal	Neoprene Rubber: ASTM D-2000
Poly Seal	UHMW
J-Bulb Seal (option)	Neoprene Rubber: ASTM D-2000

FC-SS SLIDE GATE

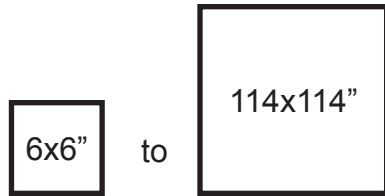
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TECHNICAL SPECIFICATIONS

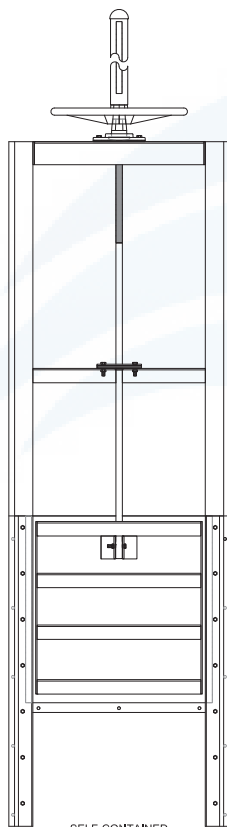
FC-SS STAINLESS STEEL SLIDE & WEIR GATES



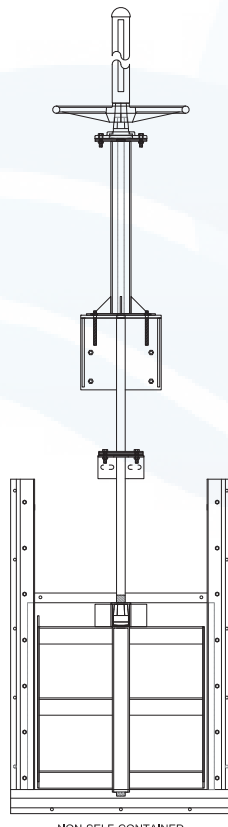
The FC-SS Slide Gate is available in any variation of sizes from 6x6" to 114x114". Please contact us about your custom needs.

		WIDTH											
HEIGHT		6	8	10	12	16	20	24	36	48	60	96	114
	6	36	48	60	72	96	120	144	216	288	360	576	684
	8	48	64	80	96	128	160	192	288	384	480	768	912
	10	60	80	100	120	160	200	240	360	480	600	9600	1140
	12	72	96	120	144	192	240	288	432	576	720	1152	1368
	16	96	128	160	192	256	320	384	576	768	960	1536	1824
	20	120	160	200	240	384	400	480	720	960	1200	1920	2280
	24	144	192	240	288	320	480	576	864	1152	1440	2304	2736
	36	216	288	360	432	576	720	864	1296	1728	2160	3456	4104
	48	288	384	480	576	768	960	1152	1728	2304	2880	4608	5472
	60	360	480	600	720	960	1200	1440	2160	2880	3600	5760	6840
	96	576	768	960	1152	1536	1920	2304	3456	4608	5760	9216	10944
	114	684	912	1140	1368	1824	2280	2736	4104	5472	6840	10944	12996

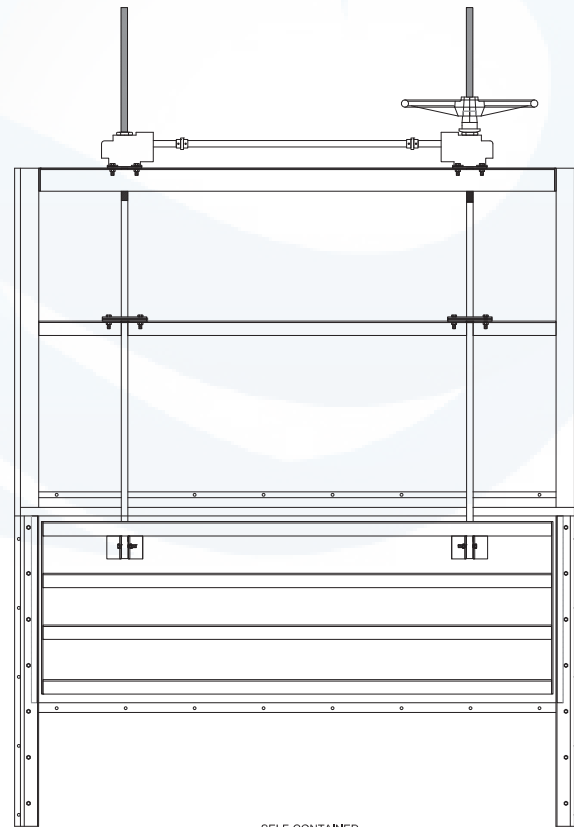
Table shows the operating area of the gate in square inches.



SELF-CONTAINED
DOWNWARD OPENING
WEIR RISING STEM



NON-SELF-CONTAINED
UPWARD OPENING
NON-RISING STEM



SELF-CONTAINED
DOWNWARD OPENING
TANDEM LIFT

Mechanical Associates' stainless steel and aluminum gates provide long life and excellent value for the investment. Installation is quick and easy. Field replaceable neoprene seats gives a drip tight seal. Stainless steel and aluminum construction will provide long life in corrosive conditions, with little or no maintenance or replacement parts required.



FC-SS SERIES

STAINLESS STEEL SLIDE GATE

SELECTION GUIDE

SEAL TYPE

- £ UHMW Polyethylene
- £ J-Bulb (Neoprene OR EPDM)
- £ Other

MATERIAL OPTIONS

- £ 304 S.S. TYPE: _____
- £ 316 S.S. TYPE: _____

MOUNTING OPTIONS

- £ In-Channel Mount (IC)
- £ Embed Mount (EMB)
- £ Flange Back (FB)
- £ Spigot Back (SP)
- £ Wall Thimble (Type _____)

SELF CONTAINED FRAME

- £ Self-Contained Frame
- £ Stem Guides (On Frame)
- £ Torque Tube

NON-SELF CONTAINED FRAME

- £ Non-Self Contained Frame
- £ Stem Guides (Wall Mounted)
- £ TOW Bracket (Top of Wall)
- £ Pedestal
- £ Floor Box

STEM OPTIONS

- £ Rising Stem
- £ Non-Rising Stem
- £ Stem Cover
- £ Position Indicator Strip

OPTIONS & ACCESSORIES

- £ Handwheel 14"
- £ Handwheel 24"
- £ Hand Crank
- £ Tee Handle
- £ Limit Nut

LIFT OPTIONS

- £ Standard (Non-Geared Lift)
- £ UHMWPE Bearing Lift (Non-Geared Lift)
- £ Needle Bearing Lift (Non-Geared Lift)
- £ Gear Actuator (Vertical)
- £ Gear Actuator (90°)
- £ Electric Actuator
- £ Air/Pneumatic Actuator
- £ Hydraulic Actuator
- £ Tandem Lift
- £ Chain Drive
- £ Handwheel Extension

FC-SS-P-EMB-Y-DO-NRS

SERIES DESIGNATION:
FC - FORMED CHANNEL

MATERIAL:
SS- STAINLESS STEEL
(304 OR 316 OR PER SPEC)

SEAL/GUIDE:
P - UHMW POLYETHYLENE
J - J-BULB (NEOPRENE OR EPDM)
PJ- POLY GUIDE W/ J-BULB SEAL
CS - CROWN SEAL
PB - PRESSURE BAR (WEDGE)

NON-RISING STEM

OPENING OPTION:
DO - DOWNWARD OPENING

FRAME CONFIGURATION:
Y - SELF-CONTAINED
X - NON SELF-CONTAINED

FRAME MOUNTING:
EMB - EMBEDDED
IC - IN-CHANNEL
FB - FLANGE BACK
SB - SPIGOT BACK
WT - WALL THIMBLE

GATE SELECTION: FC-SS-_____

DETAIL TITLE #:

STAINLESS STEEL SLIDE GATE (FC-SS)

REVISION #:

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JOB NO.

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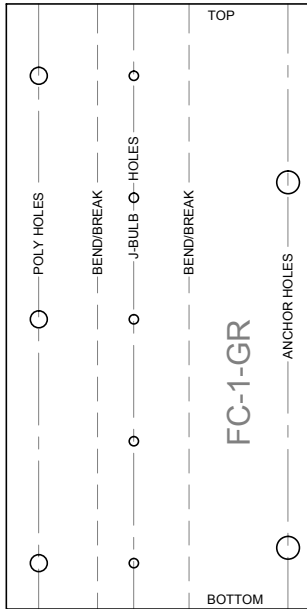
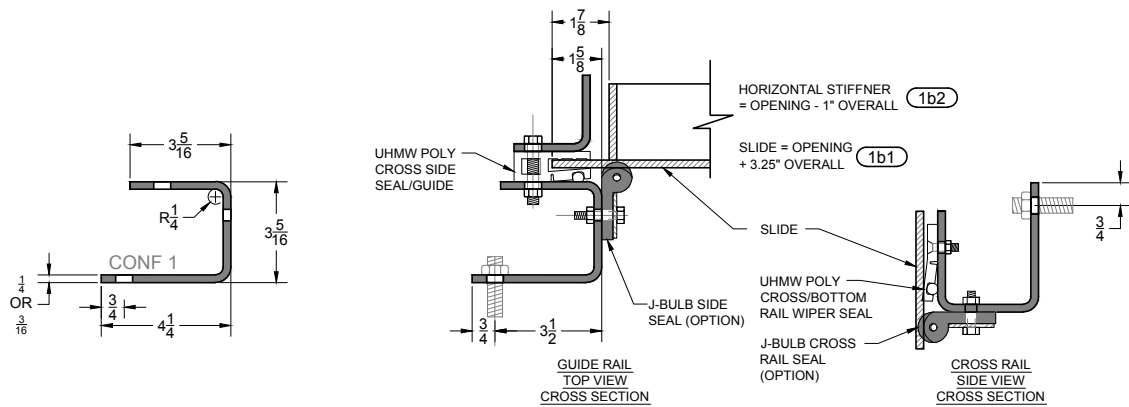


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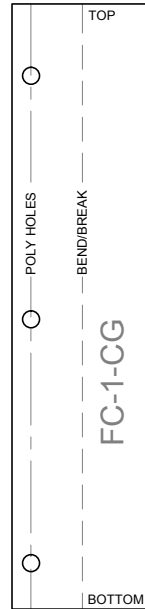
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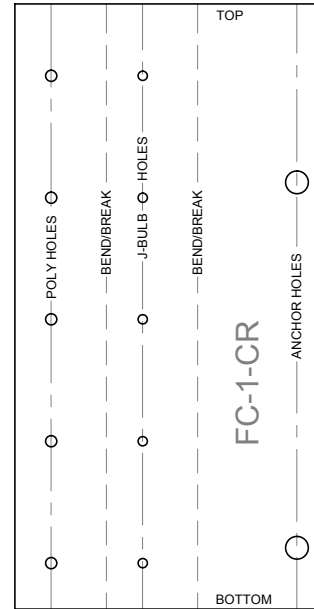
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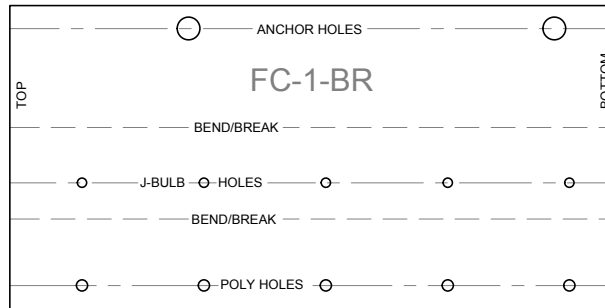
GUIDE
RAIL
(1a1)



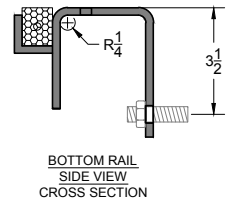
COVER
GUIDE
(1a2)



CROSS
RAIL
(1a6)



BOTTOM
RAIL
(1a6)



BOTTOM RAIL
SIDE VIEW
CROSS SECTION

DETAIL TITLE #:

FORMED CHANNEL S.S. RAIL CONFIGURATION-1

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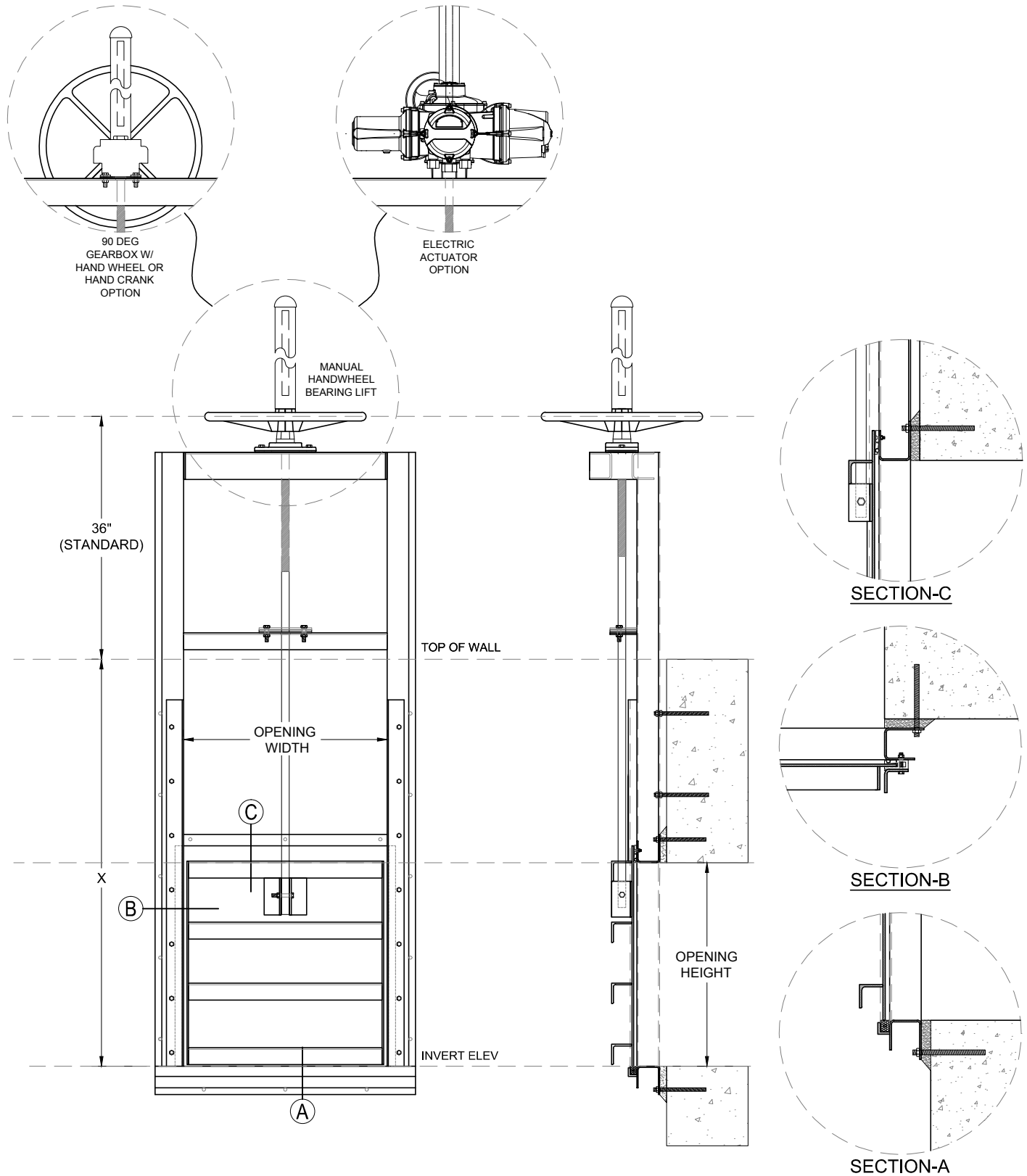
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DETAIL TITLE #:

FC-SS-P-FB-Y SLIDE GATE (FC-SS)



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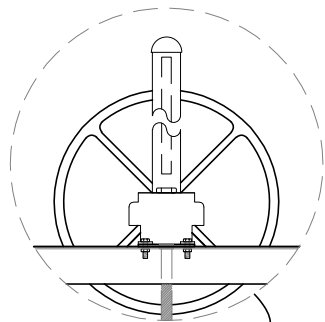
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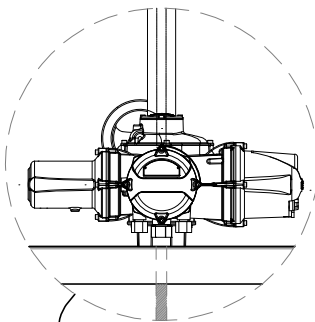
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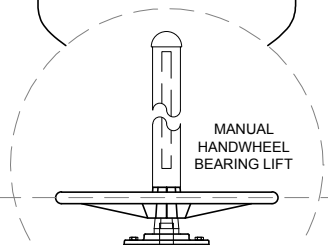
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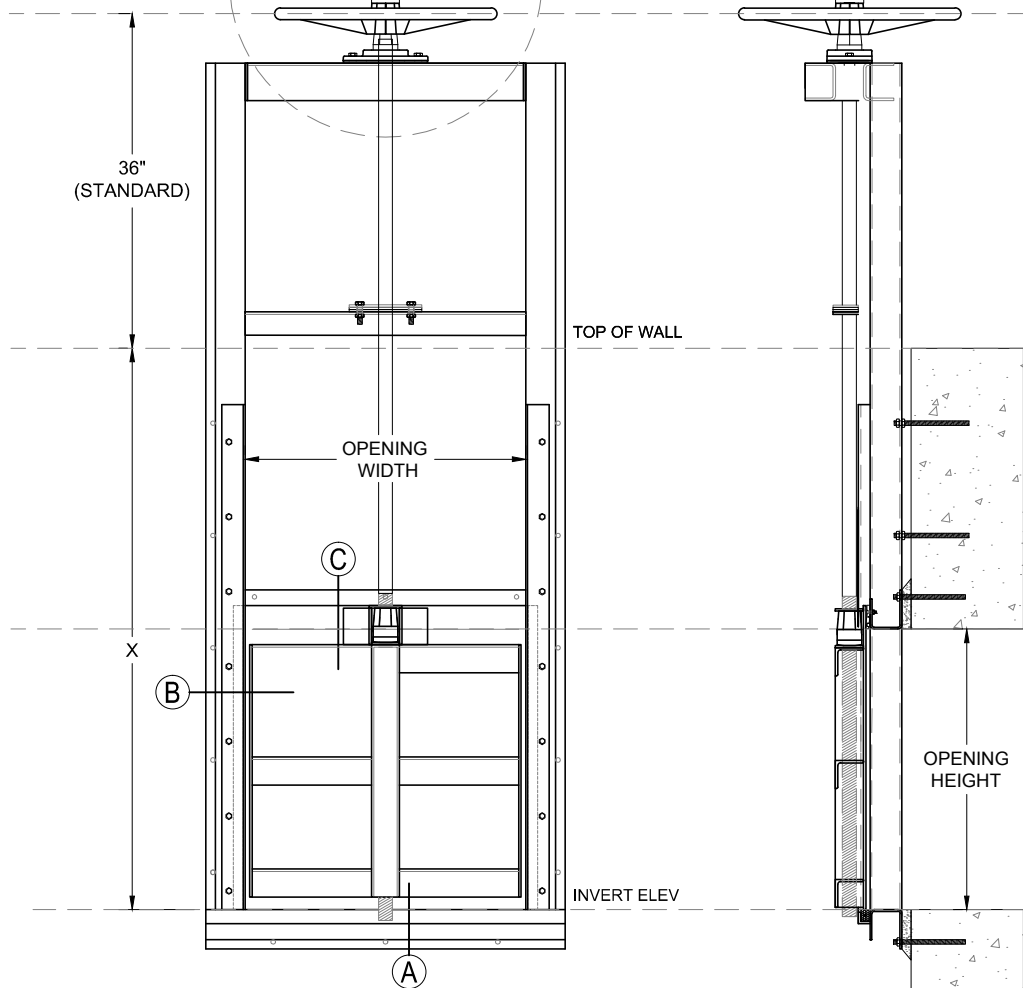
90 DEG
GEARBOX W/
HAND WHEEL OR
HAND CRANK
OPTION



ELECTRIC
ACTUATOR
OPTION



MANUAL
HANDWHEEL
BEARING LIFT



DETAIL TITLE #:

FC-SS-P-FB-Y-NRS SLIDE GATE (FC-SS)

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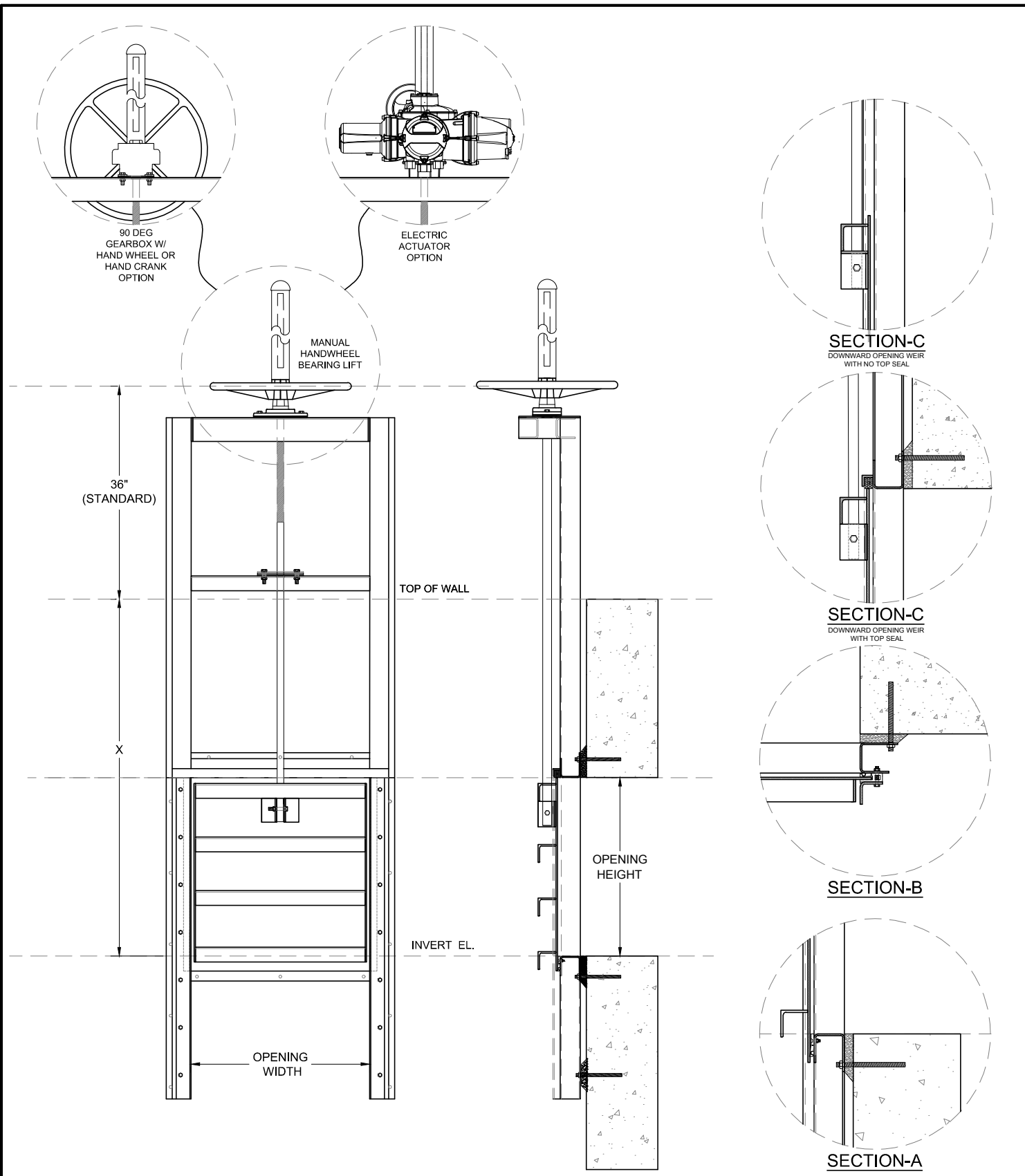


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FC-SS-P-FB-Y-DO SLIDE GATE (FC-SS)



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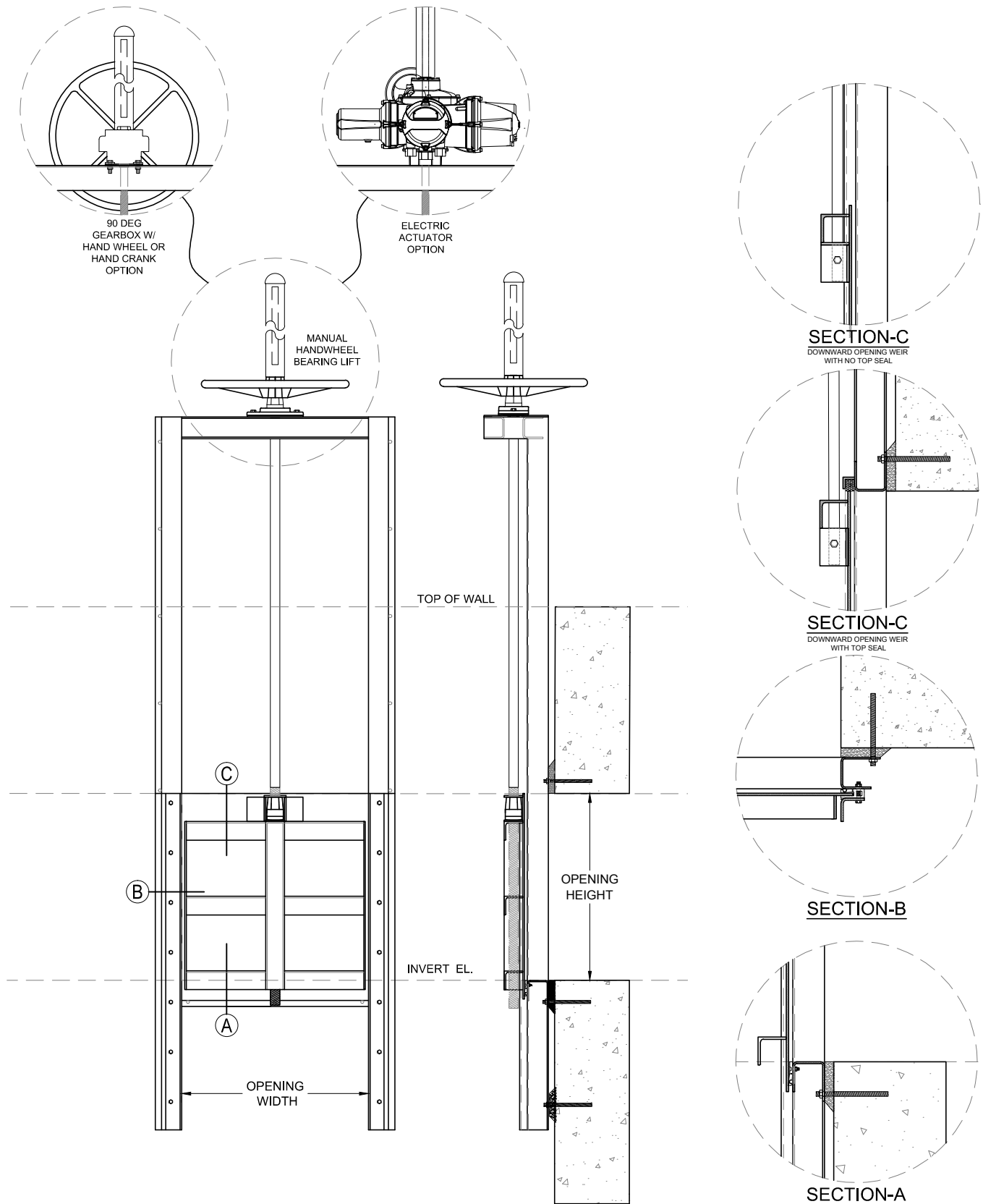
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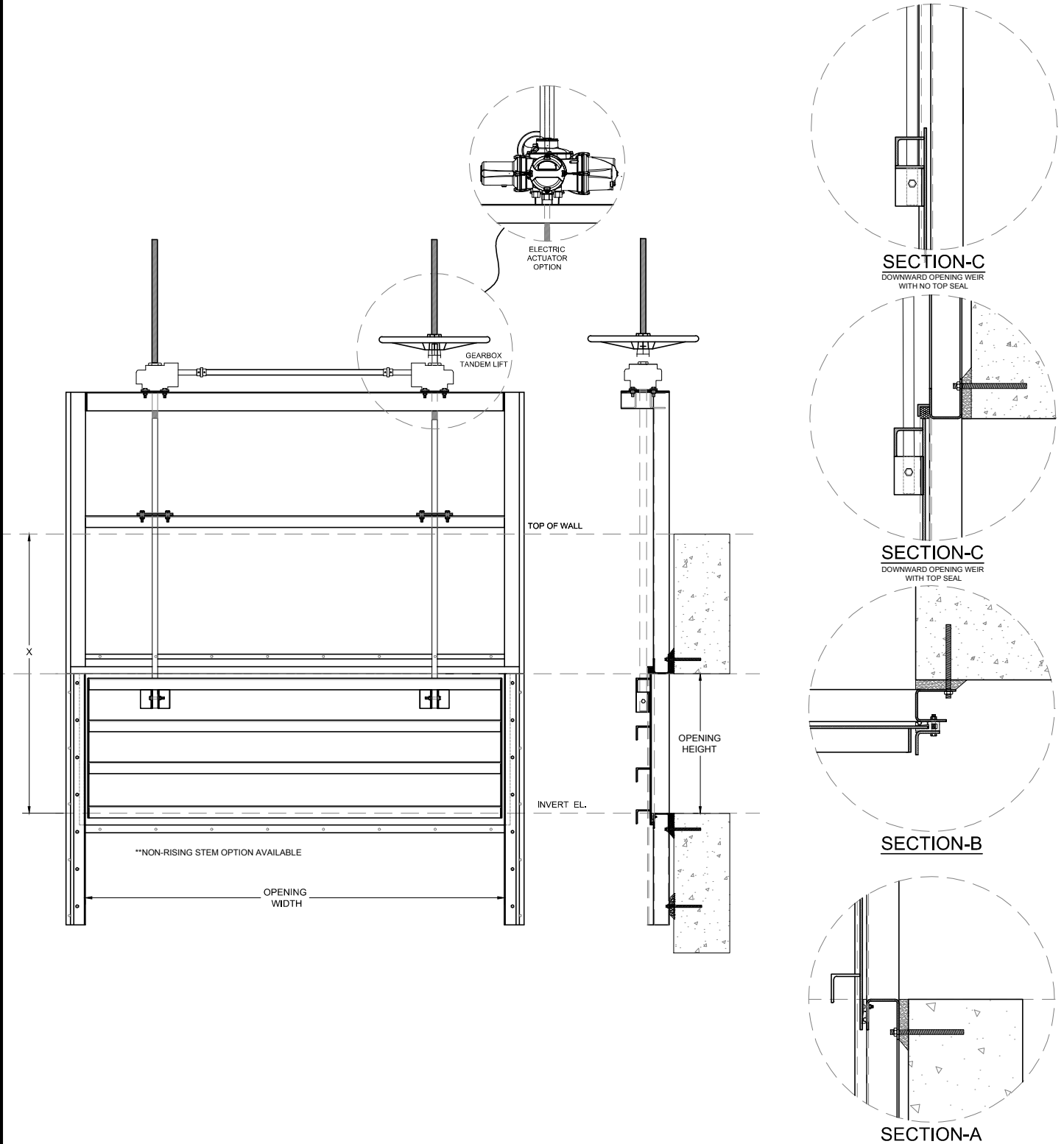
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FC-SS-P-FB-Y-DO-TANDEM SLIDE GATE (FC-SS)



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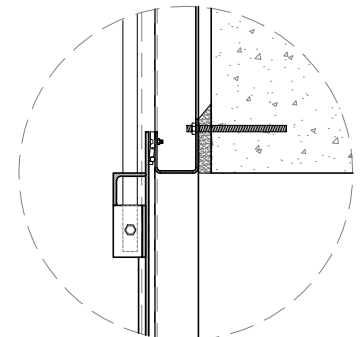
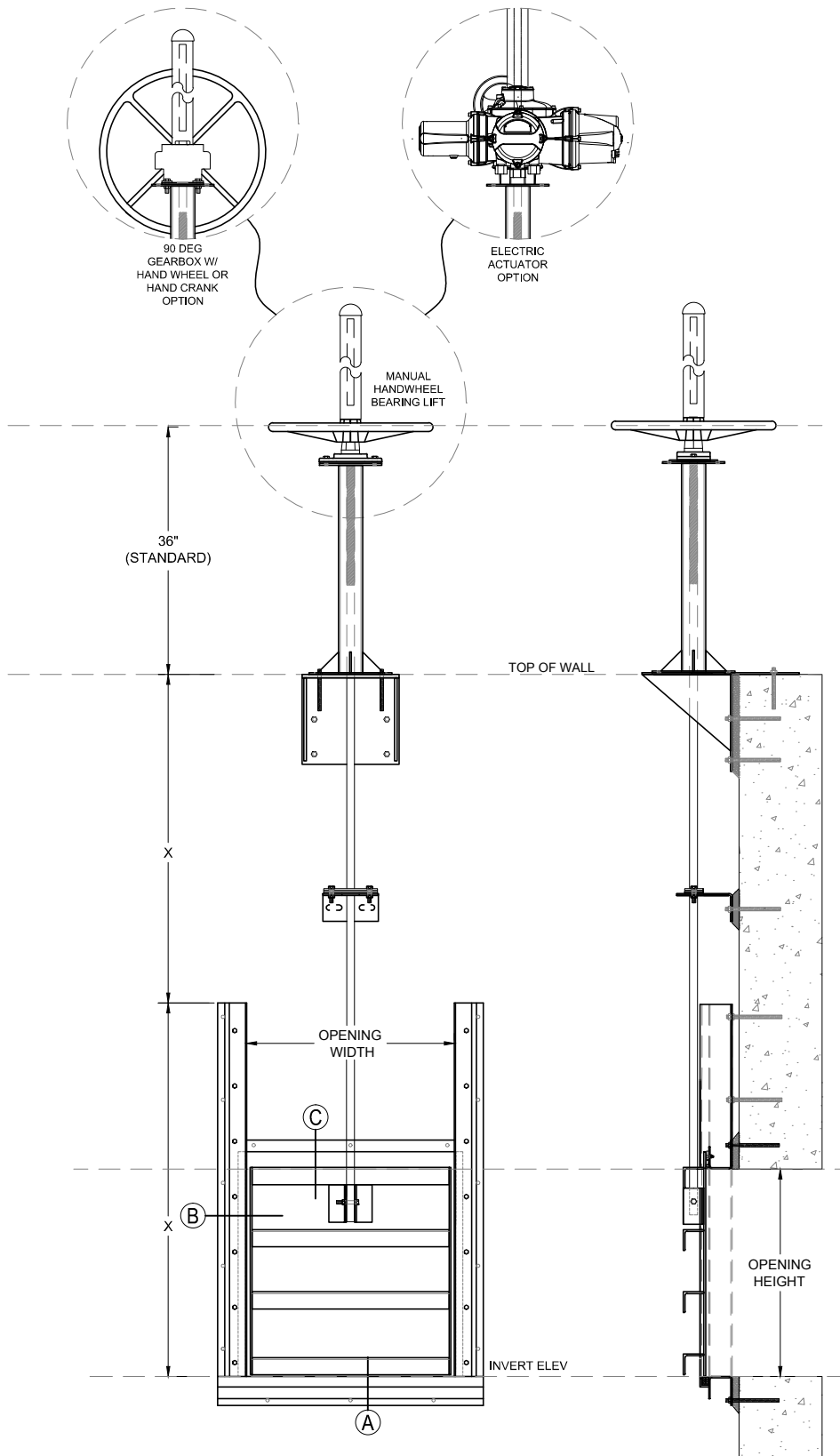
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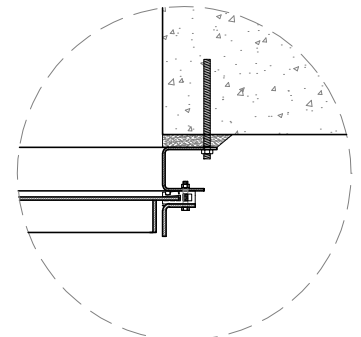
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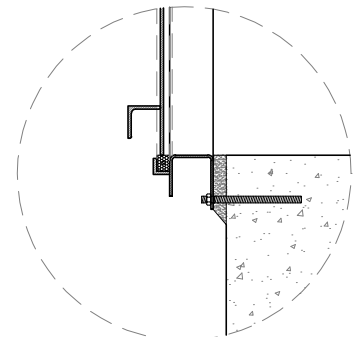
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SECTION-C



SECTION-B



SECTION-A

DETAIL TITLE #:

FC-SS-P-FB-X SLIDE GATE (FC-SS)



PROJECT:

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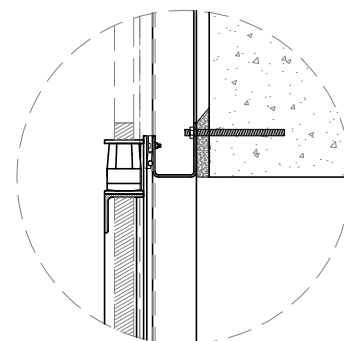
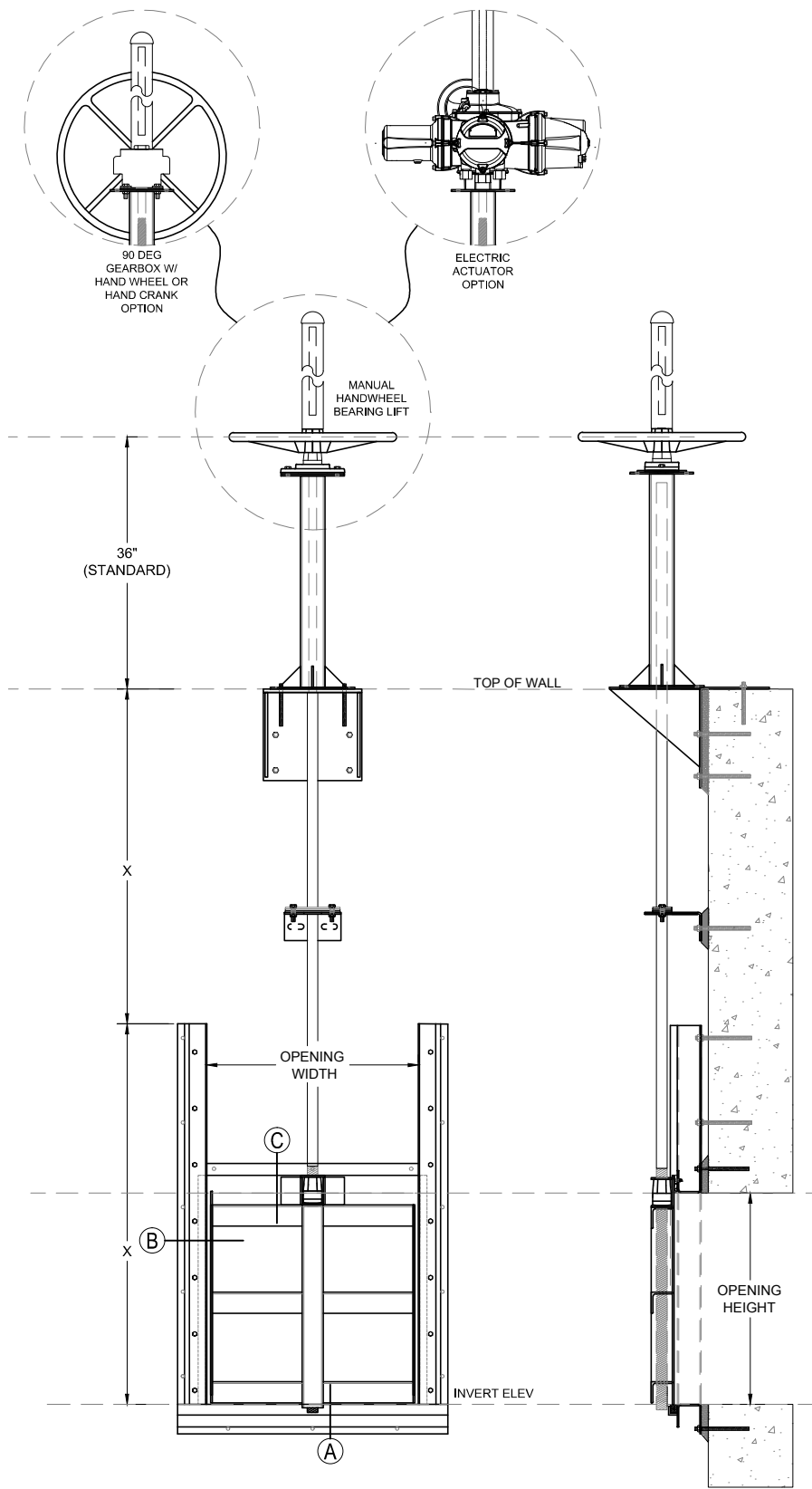
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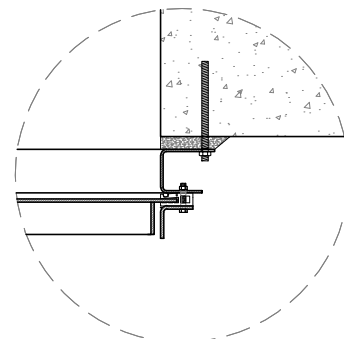
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FC-SS

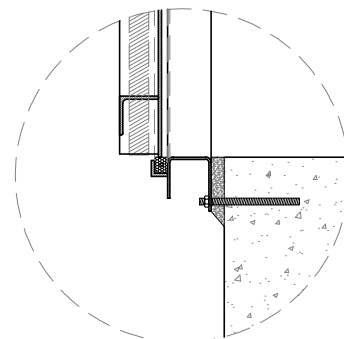
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SECTION-C



SECTION-B



SECTION-A

DETAIL TITLE #:

FC-SS-P-FB-X-NRS SLIDE GATE (FC-SS)



PROJECT:

PROJECT
CITY, ST

MECHANICAL ASSOCIATES ~ 745 BROADWAY STREET ~ FRESNO, CA 93721

REVISION #:

0

QUOTE ITEM NUMBER:

N/A

CHECKED BY:

D.E.

SCALE:

N.T.S.

MA DETAIL NO.

JOB NO.

N/A

DRAWN BY:

T.A.C.

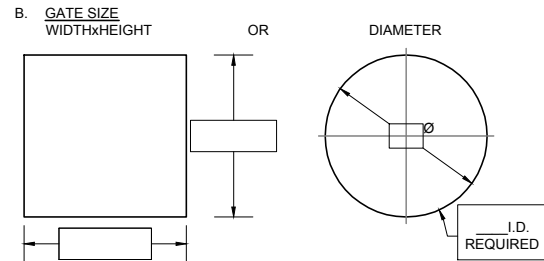
PAGE NO.

PAGE 1 OF 1

DATE:

2015

FC-SS

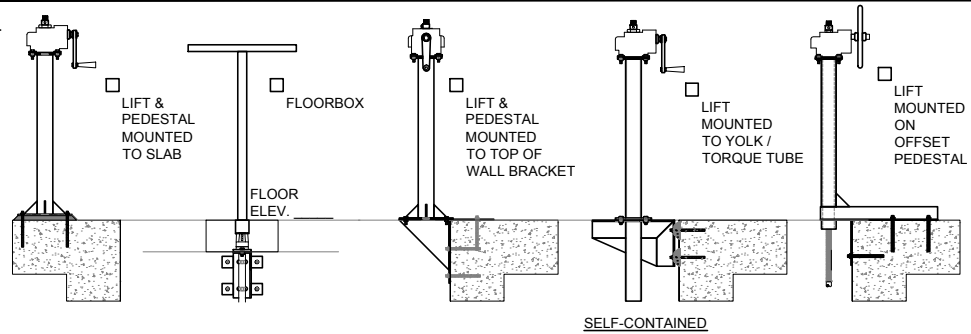


C. HOIST REQUIREMENTS

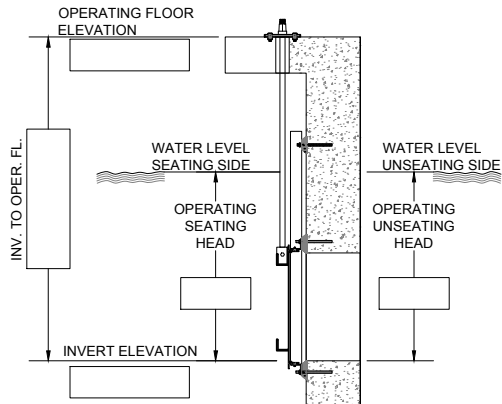
- ☐ MANUAL
☐ ELECTRIC CYLINDER
☐ OIL
- ☐ VOLTS
☐ PHASE
☐ CYCLES
☐ WATER
☐ AIR
☐ PSI
- ☐ HANDCRANK
☐ HANDWHEEL
☐ 90° GEARBOX

- ☐ STEM COVER
☐ CLEAR PLASTIC
☐ METAL
- POSITION INDICATOR
☐ MYLAR STRIP
☐ COUNTER
☐ DIAL
- ☐ RISING STEM
☐ NON-RISING STEM
☐ DOWNWARD OPENING (WEIR)

D. LIFT MOUNTING

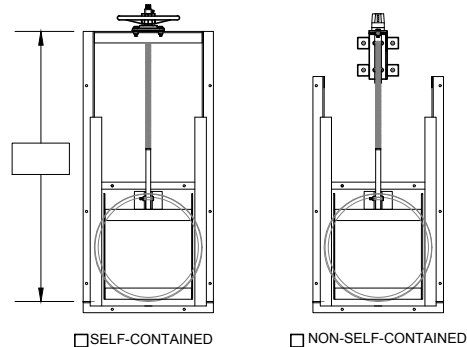


E. GATE DESIGN REQUIREMENTS



F. MISCELLANEOUS

- GATE MOUNTING TYPE
☐ CHANNEL MOUNT
☐ WALL MOUNT
☐ WEIR (DOWNWARD OPENING)
- ☐ EXISTING STRUCTURE
☐ NEW STRUCTURE
- ☐ DESIGN HEAD SEATING UNSEATING
 (DIFFERENT THAN OPERATING HEAD INDICATED)
☐ INVERT OF GATE IS FLUSH WITH INVERT OF STRUCTURE
- ☐ J BULB SEALS
☐ UHMW BEARING STRIPS
☐ GROUTLESS GASKET



G. COMMENTS

DETAIL TITLE #:

FC-SS CONFIGURATION SELECTION GUIDE



PROJECT:

PROJECT
CITY, ST

MECHANICAL ASSOCIATES ~ 745 BROADWAY STREET ~ FRESNO, CA 93721

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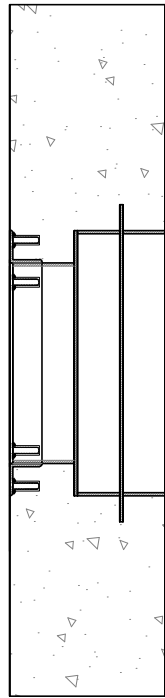
PAGE NO.

PAGE 1 OF 1

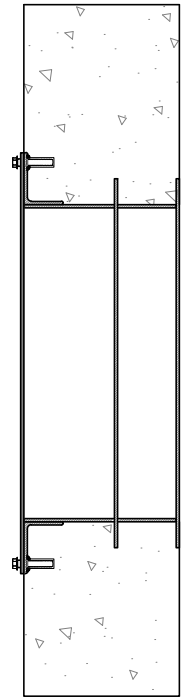
DATE:

2015

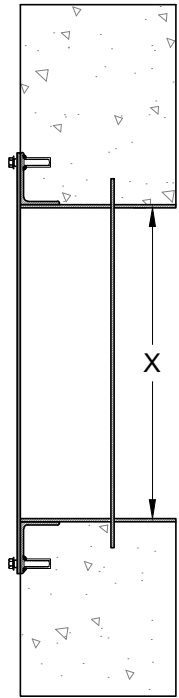
FC-SS



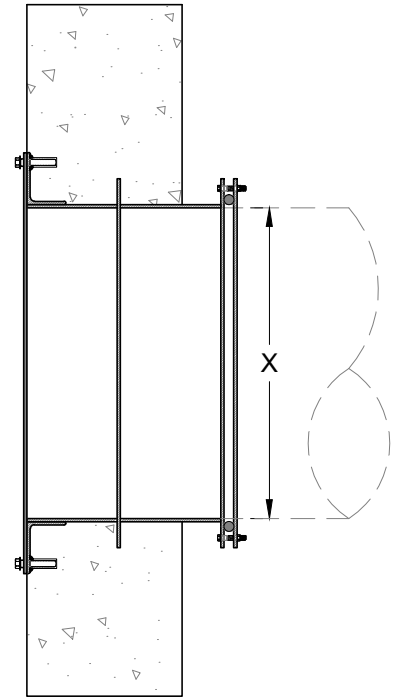
CUSTOM
WALL THIMBLE



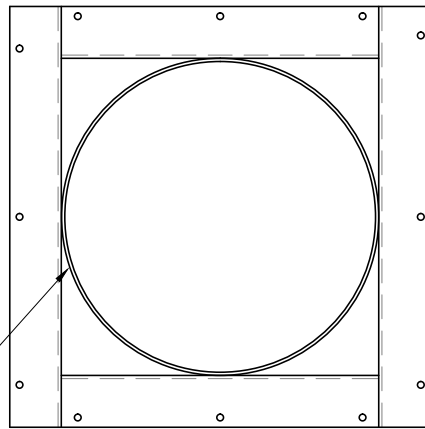
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WALL THIMBLE



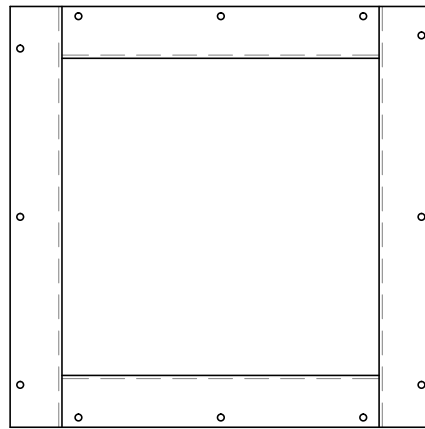
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WALL THIMBLE




TYPE "MJ"
WALL THIMBLE



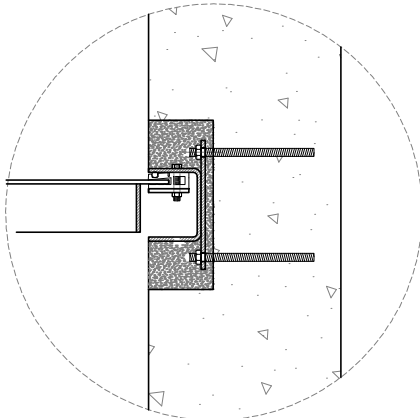
SQUARE TO
ROUND OPTION



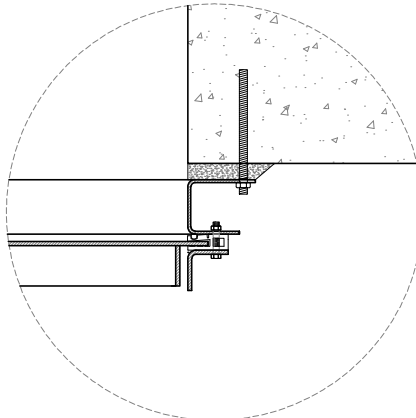
WALL THIMBLES

DETAIL TITLE #:		REVISION #:		JOB NO.	
FC-SS WALL THIMBLES		0		N/A	
		QUOTE ITEM NUMBER:		DRAWN BY:	
		N/A		T.A.C.	
		CHECKED BY:		PAGE NO.	
		D.E.		PAGE 1 OF 1	
PROJECT:		SCALE:		DATE:	
		N.T.S.		2015	
MECHANICAL ASSOCIATES ~ 745 BROADWAY STREET ~ FRESNO, CA 93721		MA DETAIL NO.		FC-SS	

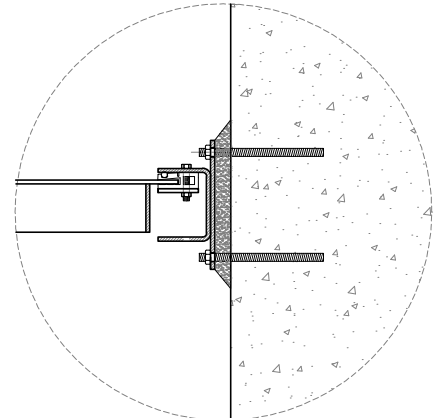
OTHER MONTING OPTIONS INCLUDE:
FLANGE TO FLANGE
SPIGOT
CURVED SURFACES



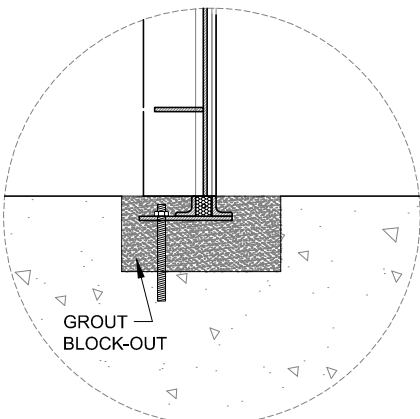
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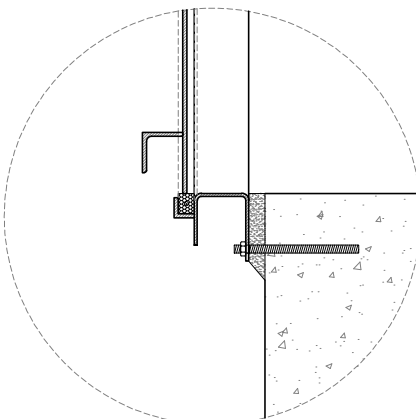
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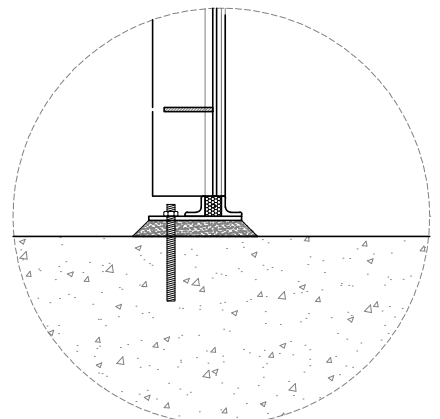
SECTION-C



SECTION-A
EMBEDDED



SECTION-A
FLANGE
BACK



SECTION-A
IN-CHANNEL

DETAIL TITLE #:

FC-SS TYPICAL MOUNTING CONFIGURATIONS



PROJECT:

PROJECT
CITY, ST

REVISION #:

0

JOB NO.

N/A

QUOTE ITEM NUMBER:

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T.A.C.

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D.E.

PAGE NO.

PAGE 1 OF 1

SCALE:

N.T.S.

DATE:

2015

MA DETAIL NO.

FC-SS

MECHANICAL ASSOCIATES ~ 745 BROADWAY STREET ~ FRESNO, CA 93721

MECHANICAL ASSOCIATES' - FORMED CHANNEL (FC-SS)

TYPICAL SPECIFICATIONS FOR FC-SS-SERIES FABRICATED SLIDE GATE

GENERAL

The gates shall be either self-contained with yoke and bench stand operators, or non-self-contained with separate stem guides and operator, in accordance with the requirements of these specifications. Specific configurations shall be as noted on the gate schedule or as shown on the plans

FRAME AND GUIDES

The gate frame shall be a rigid unit composed of stainless steel guide rails with UHMW seats upstream and downstream. These shall form a tight seal between the frame and the slide (disc). This tight seal shall provide an allowable leakage rate of no more than 0.1 gallons per minute (GPM) per peripheral foot of perimeter opening for seating heads and 0.1 GPM per peripheral foot for unseating heads. Stainless Steel retainer bars, cross bars and head rails (for self-contained gate only) shall be provided. The clear opening shall be the same size as the waterway, unless otherwise specified. The guides will be of sufficient length to support two-thirds of the height of the slide when in the full open position.

SLIDE COVER (DISC)

The slide cover (disc) shall be aluminum plate reinforced with structural shapes welded to the plate. The slide cover shall not deflect more than 1/720th of the span of the gate under the maximum head. The stem connection shall be either the clevis type, with structural members welded to the slide and a bolt to act as a pivot pin, or a threaded and bolted (or keyed) thrust nut supported in a welded nut pocket. The clevis or pocket and yoke of the gate shall be capable of taking, without damage, at least twice the rated thrust output of the operator at 40 pounds pull.

FLUSHBOTTOM CLOSURE

Gates shall be furnished with a flush seal arrangement. A resilient seal with a minimum width of exposed face of 3/4" shall be securely attached to the frame along the invert, and shall extend to the depth of the guide groove. The fabricated gates shall be Mechanical Associates Model FC-SS.

MATERIALS

Frames, Rails, Cover Slides, Yokes

Stainless Steel - ASTM A-276, Type 304 or 316, as specified

Fasteners and Anchor Bolts

Stainless Steel - ASTM F-593 and 594, Type 304 or 316, as specified

Stems

Stainless Steel - ASTM A-276, Type 304 or 316, as specified

Flushbottom Seals

Rubber - ASTM D-2000 BC 615/625 Grade BE 625

Seats

Ultra High Molecular Weight Polyethylene (UHMW PE)

Finish

Mill finish on all aluminum and stainless steel surface



TYPICAL SPECIFICATIONS FOR FC-SS SERIES FABRICATED SLIDE GATE

SECTION _____

PART 1 - GENERAL



1.01 SCOPE OF WORK

A. The CONTRACTOR shall furnish all labor, materials, equipment, and incidentals required to install and ready for operation stainless steel slide gates as shown on the Contract Drawings and as specified herein.

1.02 SUBMITTALS

A. Submittals shall be in accordance with Sections _____ and as specified herein. Submittals shall include as a minimum:

1. Shop Drawings
2. Manufacturer's operation and maintenance manuals and information.
3. Manufacturer's equipment warranty.

1.03 QUALITY ASSURANCE

A. Qualifications

1. All of the equipment specified under this Section shall be furnished by a single manufacturer with a minimum of 20-years of experience designing and manufacturing slide gates. The manufacturer shall have manufactured stainless steel slide gates for the type described herein for a minimum of 100 projects.
2. The project design is based on the Mechanical Associates FC-SS Series Fabricated Slide Gate as manufactured by Mechanical Associates of Fresno, California. Proposed alternates must be pre-approved, per addendum, at least 14-days prior to close of bid. Requests for alternates must be supplemented with detailed drawings, specifications and references. Any/all additional costs for structure modifications or other changes associated with utilizing a brand other than Mechanical Associates are to be borne by the contractor.

PART 2 - EQUIPMENT

2.01 GENERAL

- A. The gates shall be either self-contained with yoke and bench stand operators, or non-self-contained with separate stem guides and operator, in accordance with the requirements of these specifications.
- B. This gate is in compliance with the latest version of AWWA C 561.
- C. Specific configurations shall be as noted on the gate schedule or as shown on the plans.

D. Materials:

Components	Materials
Frame, Cover Slides, Yokes Stainless steel:	ASTM A 276 and/or ASTM A 240, AISI Type 304, 316, or 2205 Duplex, as specified
Stems	Stainless Steel: ASTM A 276, AISI Type 304, 316, or 2205 Duplex, as specified
Fasteners and Anchor Bolts Stainless Steel:	ASTM A 593 and 594, Type 304 CW, 316 CW, or UNS-S32205 Duplex 2205, as specified
Flushbottom Seals Rubber:	ASTM D 2000 BC 615/625 Grade BE 625
Seat/Seals	Ultra High Molecular Weight Polyethylene (UHMW)
Finish	Mill finish on all stainless steel surfaces.

2.02 FRAME AND GUIDES

A. The gate frame shall be composed of stainless steel guide rails with UHMW seat/seals upstream and downstream. The seat/seals shall form a tight seal between the frame and the slide (disc). The weir gate invert seal shall be a wiper type seal. Gate shall be designed where all seals are replaceable without removing the frame from the wall or wall thimble.

1. The UHMW seats will impinge on the slide (disc) by way of a continuous loop neoprene seal. Seal designs incorporating neoprene or other resilient side and top seals in direct contact with the slide are not acceptable.
2. The neoprene seal will perform the function of a seal between the frame and the UHMW as well as a spring force to maintain contact between the UHMW and the slide (disc).
3. This tight seal shall provide an allowable leakage rate of no more than .10 gallons per minute (GPM) per peripheral foot of perimeter opening for seating head and unseating heads.

B. Stainless steel retainer bars, cross bars and head rails (for self-contained gates only) shall be provided.

1. The clear opening shall be the same size as the waterway, unless otherwise specified.

2. The guides will be of sufficient length to support 2/3 of the height of the slide when in the full open position.

2.03 SLIDE COVER (DISC)

A. The slide cover (disc) shall be stainless steel plate reinforced with structural shapes welded to the plate.

1. The slide cover shall not deflect more than 1/720th of the span, or 1/16" at the sealing surface of the gate under maximum specified head.
2. The stem connection shall be either the clevis type, with structural members welded to the slide and a bolt or bolts to act as a pivot pin, or a threaded and bolted (or keyed) thrust nut supported in a welded nut pocket.
3. The clevis or pocket and yoke of the gate shall be capable of taking, without damage, at least twice the rated thrust output of the operator at 40 pounds of pull on a hand wheel or hand crank.

2.04 FLUSH BOTTOM CLOSURE

A. Gates shall be furnished with a flush seal arrangement. A resilient seal with a minimum width of exposed face of 1" shall be securely attached to the frame along the invert, and shall extend to the depth of the guide groove. Side seals shall be embedded into flush bottom seal to provide watertight seal around perimeter of gate.

2.05 ANCHOR BOLTS

A. Anchor hardware shall be provided by the slide gate manufacturer.

1. The size, quantity and location of the anchor hardware will be determined by the slide gate manufacturer.
2. Anchor hardware consisting of studs, nuts and washers shall be provided by the manufacturer.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Installation of the slide gates shall be done in a workmanlike manner. It shall be the responsibility of the CONTRACTOR to handle, store, and install the equipment specified in this Section in strict accordance with the Manufacturer's recommendations.
- B. The CONTRACTOR shall review the installation drawings and installation instructions prior to installing the slide gates.
- C. The slide gate frames shall be installed in a true vertical plane, square and plumb, with no twist, convergence or divergence between the vertical legs of the guide frame.
- D. The CONTRACTOR shall fill any void between the guide frames and the structure with nonshrink grout as shown on the installation drawing and in accordance with the grout manufacturer's recommendations.

3.02 FIELD TESTING

A. After installation, all slide gates will be field tested in the presence of the ENGINEER and OWNER to ensure that all items of equipment are in full compliance with this Section. Each slide gate assembly shall be water tested by the CONTRACTOR at the discretion of the ENGINEER and OWNER, to confirm that leakage does not exceed the specified allowed leakage.

END OF SECTION NOTHING FOLLOWS



SS- Stainless Steel- 304, 316

AL- Aluminum- 6061T6

P/S- Per Specification

**“Point-by-Point Comparison”
(For the Engineer)
FABRICATED STAINLESS STEEL SLIDE GATES**

	EQUAL	PROPOSED MANUFACTURER	LISTED MANUFACTURER	LISTED MANUFACTURER	LISTED MANUFACTURER	LISTED MANUFACTURER
ITEM	Y/N	Mechanical Associates	Waterman Industries	Rodney Hunt (Fontaine)	Whipps	Golden Harvest
STEEL	Y	S.S. 304 OR 316	S.S. 304 OR 316	S.S. 304 OR 316	S.S. 304 OR 316	S.S. 304 OR 316
FRAME RAIL	Y	S.S. FORMED PLATE	S.S. FORMED PLATE	S.S. FORMED PLATE	S.S. FORMED PLATE	S.S. FORMED PLATE
COVER GUIDE	Y	S.S. FLAT BAR OR FORMED PLATE	S.S. FLAT BAR OR FORMED PLATE	S.S. FLAT BAR OR FORMED PLATE	S.S. FLAT BAR OR FORMED PLATE	S.S. FLAT BAR OR FORMED PLATE
HEAD RAIL	Y	S.S. FORMED PLATE	S.S. FORMED PLATE	S.S. FORMED PLATE	S.S. FORMED PLATE	S.S. FORMED PLATE
BOTTOM RAIL	Y	S.S. FORMED PLATE	S.S. FORMED PLATE	S.S. FORMED PLATE	S.S. FORMED PLATE	S.S. FORMED PLATE
SLIDE	Y	S.S. PLATE	S.S. PLATE	S.S. PLATE	S.S. PLATE	S.S. PLATE
HORIZONTAL SLIDE STIFFENER	Y	S.S. FORMED PLATE	S.S. FORMED PLATE	S.S. FORMED PLATE	S.S. FORMED PLATE	S.S. FORMED PLATE
VERTICAL STIFFENER	Y	S.S. PLATE	S.S. FLAT BAR	S.S. FLAT BAR	S.S. FLAT BAR	S.S. FLAT BAR
HEAD RAIL GUSSETS	Y	S.S. PLATE	S.S. PLATE	S.S. PLATE	S.S. PLATE	S.S. PLATE
THIMBLE	Y	S.S. FORMED PLATE	S.S. FORMED PLATE	S.S. FORMED PLATE	S.S. FORMED PLATE	S.S. FORMED PLATE
HARDWARE	Y	S.S. 304 OR 316	S.S. 304 OR 316	S.S. 304 OR 316	S.S. 304 OR 316	S.S. 304 OR 316
CROSS RAIL SEAL	Y	UHMW PE EXTRUDED OR ASTM D 2000 NEOPRENE, EPDM	UHMW PE EXTRUDED OR ASTM D 2000 NEOPRENE, EPDM	UHMW PE EXTRUDED OR ASTM D 2000 NEOPRENE, EPDM	UHMW PE EXTRUDED OR ASTM D 2000 NEOPRENE, EPDM	UHMW PE EXTRUDED OR ASTM D 2000 NEOPRENE, EPDM
SIDE SEAL	Y	UHMW PE EXTRUDED OR ASTM D 2000 NEOPRENE, EPDM	UHMW PE EXTRUDED OR ASTM D 2000 NEOPRENE, EPDM	UHMW PE EXTRUDED OR ASTM D 2000 NEOPRENE, EPDM	UHMW PE EXTRUDED OR ASTM D 2000 NEOPRENE, EPDM	UHMW PE EXTRUDED OR ASTM D 2000 NEOPRENE, EPDM
BOTTOM SEAL	Y	UHMW PE EXTRUDED OR ASTM D 2000 NEOPRENE, EPDM	UHMW PE EXTRUDED OR ASTM D 2000 NEOPRENE, EPDM	UHMW PE EXTRUDED OR ASTM D 2000 NEOPRENE, EPDM	UHMW PE EXTRUDED OR ASTM D 2000 NEOPRENE, EPDM	UHMW PE EXTRUDED OR ASTM D 2000 NEOPRENE, EPDM
SEAL ROPE	Y	ASTM D 2000 NEOPRENE, EPDM	ASTM D 2000 NEOPRENE, EPDM	ASTM D 2000 NEOPRENE, EPDM	ASTM D 2000 NEOPRENE, EPDM	ASTM D 2000 NEOPRENE, EPDM
FLUSH SEAL	Y	ASTM D 2000 NEOPRENE, EPDM	ASTM D 2000 NEOPRENE, EPDM	ASTM D 2000 NEOPRENE, EPDM	ASTM D 2000 NEOPRENE, EPDM	ASTM D 2000 NEOPRENE, EPDM
CROWN SEAL OR “PRESSURE BAR SEAL”	Y	ASTM D 2000 NEOPRENE, EPDM	ASTM D 2000 NEOPRENE, EPDM	ASTM D 2000 NEOPRENE, EPDM	ASTM D 2000 NEOPRENE, EPDM	ASTM D 2000 NEOPRENE, EPDM
STEM	Y	S.S. 304 OR 316	S.S. 304 OR 316	S.S. 304 OR 316	S.S. 304 OR 316	S.S. 304 OR 316
STEM ATTACHMENT	Y	CLEVIS	CLEVIS	CLEVIS	CLEVIS	CLEVIS
ACTUATOR	Y	P/S	P/S	P/S	P/S	P/S
WARRANTY	Y	P/S	P/S	P/S	P/S	P/S

Mechanical Associates: Past Projects and References

Note: Gate sizes and application usage (Depending on head pressures, gates sizes can vary in the three categories)

Light Duty: 4"-30" Circular Opening Gate Sizes
Medium Duty: 31"-60" Circular Opening Gate Sizes
Heavy Duty: 61" and Up Circular Opening Gate Sizes

Light Duty: 3"x 3" -30"x30" Square Opening Gate Sizes
Medium Duty: 31"x31" -60"x60" Square Opening Gate Sizes
Heavy Duty: 61"x61" and Up Square Opening Gate Sizes

Seals:

UHMW-PE: Ultra High Molecular Weighted Polyethylene (P)

J-Bulb: D 2000 Neoprene (J)

Flush Bottom Seal: D 2000 Neoprene (FBS)

(Project Specifics available upon request)

1	Project:	Emerald Trunk Sewer Relief	Location:	Modesto, CA 95353
	Product Type:	Bulkhead Gates	Contractor:	McGuire & Hester (510)- 632-7676
	Seal Type:	P, FBS	Engineer:	Carollo /North Star Engineering Group (209)- 524-3525
	Equipment:	(5) Heavy Duty	Owner:	City of Modesto
2	Project:	Sweetster	Location:	Dayton, OH 45414
	Product Type:	DO Weir	Contractor:	R.G. Zachrich Construction, Inc. (419) 782-7846
	Seal Type:	P, FBS	Engineer:	
	Equipment:	(2) Medium Duty	Representative :	WP Kolens (440) 262-3163
3	Project:	Marcy's Orchard (Buy America Certs)	Location:	Orem, UT 84057
	Product Type:	Slide Gates	Contractor:	Geneva Pipe Company (801) 225-2416
	Seal Type:	J	Engineer:	
	Equipment:	(3) Light Duty	Owner:	
4	Project:	Walnut Creek Gun Club	Location:	Fairfield, CA 94534
	Product Type:	Flap Gate	Contractor:	
	Seal Type:	J	Engineer:	California Waterfowl Association (916) 275-1007
	Equipment:	(1) Medium Duty	Owner:	
5	Project:	GIWA Ponds 7-8	Location:	Suisun City, CA 94585
	Product Type:	Flap Gate	Contractor:	
	Seal Type:	J	Engineer:	California Waterfowl Association (916) 275-1007
	Equipment:	(1) Medium Duty	Owner:	

6	Project:		Location:	Palatka, FL 32177
	Product Type:	Slide Gate	Contractor:	
	Seal Type:	J	Engineer:	
	Equipment:	(2) Medium Duty	Owner:	St. Johns River Water Management District (386) 329-4313
7	Project:	GIWA Ponds 5-8	Location:	Suisun City, 94585
	Product Type:	Slide Gate	Contractor:	
	Seal Type:	J	Engineer:	California Waterfowl Association (916) 275-1007
	Equipment:	(2) Medium Duty	Owner:	
8	Project:	Dublin San Ramon Service District (Vactor Receiving Station)	Location:	Dublin, CA 94568
	Product Type:	Slide Gate, DO Weir Gate	Contractor:	JMB Construction Inc. Sean Quinn
	Seal Type:	J, P, FBS	Engineer:	Carollo
	Equipment:	(2) Medium Duty w/ Wall Thimbles	Owner:	Dublin San Ramon Service District (925) 828- 0515
9	Project:	City of North Pole	Location:	Fairbanks, AK 99701
	Product Type:	DO Weir	Contractor:	Ferguson Fairbanks # 3022 Tim Balty
	Seal Type:	J	Engineer:	
	Equipment:	(2) Medium Duty	Owner:	WPCC (866) 641-7330
10	Project:	North Port	Location:	North Port, AL 35473
	Product Type:	Slide Gate	Contractor:	Ferguson Doug Pugh (205) 361-4289
	Seal Type:	J	Engineer:	
	Equipment:	(1) Light Duty	Owner:	
11	Project:		Location:	Lantana, FL 33462
	Product Type:	Slide Gate	Contractor:	Contech Engineered Solutions Jacob Waugh (713) 377-0386
	Seal Type:	J	Engineer:	
	Equipment:	(1) Medium Duty	Owner:	
12	Project:	High Speed Rail Improvements (Cal Trans Project)	Location:	Madera, CA
	Product Type:	Slide Gates Dual Leaf Slide Gates	Contractor:	Clark Bros Inc. (209) 392-6144
	Seal Type:	J, P	Engineer:	
	Equipment:	(3) Light Duty (3) Medium Duty (3) Heavy Duty	Owner:	Madera Irrigation District Sean Smith (559) 673- 3514

13	Project:	Eagle Point	Location:	Philadelphia, PA 19129
	Product Type:	Slide Gate	Contractor:	
	Seal Type:	J	Engineer:	
	Equipment:	(1) Light Duty (2) Medium Duty	Representative	A & E Associates Asher Tingle (302) 324-5355
14	Project:	Ephraim City Wastewater Improvements	Location:	Ephraim City, UT 84627
	Product Type:	Sluice Gates	Contractor:	Terry R. Brotherson Excavating, Inc. Kerry (435) 469-1248
	Seal Type:	J, P	Engineer:	Jones & DeMille Engineering, Inc. (800) 748- 8575
	Equipment:	(4) Medium Duty	Owner:	City of Ephraim
15	Project:	Peacock Dam	Location:	Pinellas Park, FL 33781
	Product Type:	Slide Gate	Contractor:	Contech Engineered Solutions Crissy Sackle (800) 338-1122
	Seal Type:	P	Engineer:	
	Equipment:	(1) Light Duty	Owner:	
16	Project:	Washougal Wastewater Treatment Plant	Location:	Washougal, WA 98671
	Product Type:	Sluice Gates, DO Weir Gates, Tandem	Contractor:	Slayden Construction Group Inc./ Ferguson (360) 258-2166
	Seal Type:	P, FBS	Engineer:	Brown & Caldwell
	Equipment:	(1) Light Duty (4) Medium Duty (4) Medium Tandem Duty (2) Heavy Duty	Owner:	City of Washougal
17	Project:	Midland Scanner	Location:	Northport, AL 35476
	Product Type:	Sluice Gates	Contractor:	Ferguson (205) 361-4289
	Seal Type:	P	Engineer:	
	Equipment:	(1) Heavy Duty	Owner:	
18	Project:	Habitat Restoration (Delaware Bayshore)	Location:	Smyrna, De 19977
	Product Type:	Combination Gate	Contractor:	State of Delaware- Division of Fish & Wildlife (302) 735-3601
	Seal Type:	J	Engineer:	
	Equipment:	(1) Heavy Duty	Owner:	

19	Project:		Location:	Port Allen, LA 70767
	Product Type:	Slide Gate	Contractor:	Marchand Construction
	Seal Type:	J	Engineer:	
	Equipment:	(2) Light Duty	Representative	Coastal Culvert (337) 546-6887
20	Project:	Augmentation Pond Intake Relocation	Location:	Fraser, CO 80442
	Product Type:	Slide Gate	Contractor:	
	Seal Type:	J, P	Engineer:	
	Equipment:	(1) Medium Duty	Owner:	Winter Park Rach Water District Jim Fox (970) 726-8691
22	Project:	Morongo Band Of Mission Indians WTP Improvements	Location:	Cabazon, CA 92230
	Product Type:	Stop Gates	Contractor:	Pacific Hydrotech Corporation Sean Finnegan (951) 943-8803
	Seal Type:	P	Engineer:	Webb & Associates (760) 568-5005
	Equipment:	(7) Medium Duty	Owner:	Morongo Band Of Mission Indians
23	Project:	Eastside Water Bank Site Facilities	Location:	
	Product Type:	NRS DO Weir, NRS Sluice gate	Contractor:	Nicholas Construction Alex Silicz (661) 619-7417
	Seal Type:	P	Engineer:	Kennedy/Jenks Consultants
	Equipment:	(2) Light Duty (1) Medium Duty (3) Heavy Duty	Owner:	East Kern Water Agency
24	Project:	Planada Wastewater Treatment Plant	Location:	LeGrand, CA 95365
	Product Type:	Sluice Gates, Slide Gates, Weir Gates, Flap Gates	Contractor:	Clark Bros, Inc. (209) 392-6144
	Seal Type:	J, P, FBS	Engineer:	AM Consulting Engineers
	Equipment:	(24) Medium Duty (6) Heavy Duty (1) Flap Gate	Owner:	Planada Service District
25	Project:	Palm Meadows Estates	Location:	Boca Raton, FL 33434
	Product Type:	In Channel Sluice Gate	Contractor:	U.S. Custom Fab Lyn Campbell (954) 917-6161
	Seal Type:	P, FBS	Engineer:	
	Equipment:	(1) Heavy Duty	Owner:	

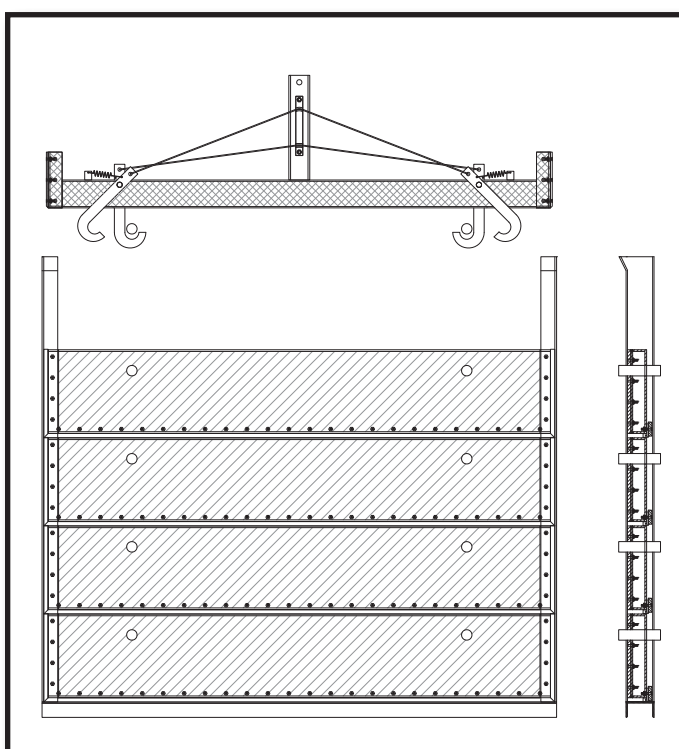


PRODUCT INFORMATION
First Edition



MUNICIPAL WATER CONTROL PRODUCTS

FC-SS-SERIES HAND PULL STOP GATES, BULKHEADS, & STOP LOGS



STAINLESS STEEL STOP GATE, BULKHEADS, & STOP LOGS STANDARD FEATURES

Model: FC-SS-SG, FC-SS-BH, FC-SS-SL

- Replaceable UHMW Self Adjusting Seals Top & Sides (Available with J-Bulb Seals)
- All Stainless Steel Construction
- On-Seating / Off-Seating Head Configuration
- Flush Bottom for Watertight Seal
- Reinforced Slide
- Multiple Handle/Lift Configuration
- Environmentally friendly
- Non environmentally degrading
- No toxic paints or coatings

**ALL GATES ENGINEERED PER HEAD PRESSURE
SPECIFICATION REQUIREMENT**

**REQUEST OUR FC-SS BROCHURE FOR ALL AVAILABLE
OPTIONS FOR THIS GATE SERIES.**

Mechanical Associates' stainless steel and aluminum gates provide long life and excellent value for the investment. Installation is quick and easy. All gates come standard with replaceable seals for easy maintenance. Stainless steel and aluminum construction will provide long life in corrosive conditions, with little or no maintenance or replacement parts required.

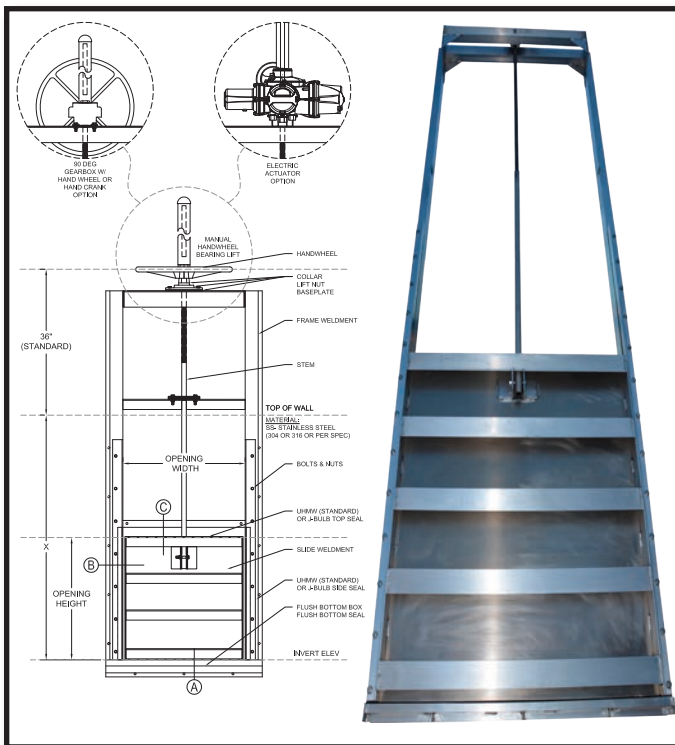
Also available from Mechanical Associates
Line Gates, Slide Gates, Pressure Gates, Canal Gates, Flap Gates, and more..





MUNICIPAL WATER CONTROL PRODUCTS

UHO-10-AL-CH ALUMINUM SLIDE & WEIR GATES



ALUMINUM SLIDE GATE

Model: UHO-10-AL-CH

- Replaceable UHMW Or Neoprene J-Bulb Seals
- All Aluminum Construction
- Stainless Steel Slide Option (SALS)
- Seating/Off Seating Head
- Flush Bottom for Watertight Seal
- Reinforced Slide
- Easy Open / Easy Close Handwheel
- Electrical Operation Available
- Gear Actuator Available
- Pneumatic Actuator Available
- Rolled Threads on Stem
- Available with Non-Rising Stem
- Available In Downward Opening Weir
- Available in Light, Medium, & Heavy Duty
- Environmentally friendly
- Non environmentally degrading
- No toxic paints or coatings

**ALL GATES ENGINEERED PER HEAD PRESSURE
SPECIFICATION REQUIREMENT**

**REQUEST OUR UHO-10-AL-CH BROCHURE FOR ALL
AVAILABLE OPTIONS FOR THIS GATE SERIES.**

Mechanical Associates' stainless steel and aluminum gates provide long life and excellent value for the investment. Installation is quick and easy. All gates come standard with replaceable seals for easy maintenance. Stainless steel and aluminum construction will provide long life in corrosive conditions, with little or no maintenance or replacement parts required.

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Line Gates, Slide Gates, Pressure Gates, Canal Gates, Flap Gates, and more..

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MUNICIPAL WATER CONTROL PRODUCTS

UHO-10-AL-CH-SERIES HAND PULL STOP GATES, BULKHEADS, & STOP LOGS



STAINLESS STEEL STOP GATE, BULKHEADS, & STOP LOGS STANDARD FEATURES

Model: UHO-10-AL-CH-SG, UHO-10-AL-CH-BH,
UHO-10-AL-CH-SL

- Replaceable UHMW Self Adjusting Seals Top & Sides (Available with J-Bulb Seals)
- All Stainless Steel Construction
- On-Seating / Off-Seating Head Configuration
- Flush Bottom for Watertight Seal
- Reinforced Slide
- Multiple Handle/Lift Configuration
- **Environmentally friendly**
- **Non environmentally degrading**
- **No toxic paints or coatings**

**ALL GATES ENGINEERED PER HEAD PRESSURE
SPECIFICATION REQUIREMENT**

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**Also available from Mechanical Associates
Line Gates, Slide Gates, Pressure Gates, Canal Gates, Flap Gates, and more..**





MUNICIPAL WATER CONTROL PRODUCTS

UHO-30 FLAP GATE



Stainless Steel Or Aluminum Flap Gate

Model: UHO-30-SS or UHO-30-AL

- All Stainless Steel Construction
- Bronze Hinge Pins
- Dual Pivot Design Available
- Replaceable Neoprene Rubber Seal
- Built for Pipe O.D. or I.D. Mounting
- Spigot Back or Flange Back Available
- Heavy Reverse Dome Cover for Higher Heads
- **Environmentally friendly**
- **Non environmentally degrading**
- **No toxic paints or coatings**

Mechanical Associates' stainless steel and aluminum gates provide long life and excellent value for the investment. Installation is quick and easy. All gates come standard with replaceable seals for easy maintenance. Stainless steel and aluminum construction will provide long life in corrosive conditions, with little or no maintenance or replacement parts required.

Also available from Mechanical Associates
Line Gates, Slide Gates, Pressure Gates, Canal Gates, Flap Gates, and more..





MUNICIPAL WATER CONTROL PRODUCTS

UHO-30-SQ STAINLESS STEEL OR ALUMINUM SQUARE FLAP GATE



Square Flap Gate

Model: UHO-30-SQ-SS Or UHO-30-SQ-AL

- All Stainless Steel Construction
- Bronze Hinge Pins
- Dual Pivot Option Available
- Adjustable Hinge Arms For Sensitive Seating
- Replaceable Neoprene Rubber Seal
- Custom Sizes Available
- Rectangular Proportions Available
- **Environmentally friendly**
- **Non environmentally degrading**
- **No toxic paints or coatings**

** Available In All Aluminum - UHO-30SQ-AL

Mechanical Associates' stainless steel and aluminum gates provide long life and excellent value for the investment. Installation is quick and easy. All gates come standard with replaceable seals for easy maintenance. Stainless steel and aluminum construction will provide long life in corrosive conditions, with little or no maintenance or replacement parts required.

Also available from Mechanical Associates
Line Gates, Slide Gates, Pressure Gates, Canal Gates, Flap Gates, and more..





MUNICIPAL WATER CONTROL PRODUCTS

UHO-MV-SS STAINLESS STEEL MUD VALVE



Mud Valve

Model: UHO-MV-SS

- 304 or 316 stainless steel construction
- Stainless steel non rising stem
- Replacable neoprene rubber seals
- Outlet configured for a standard 125 lb flan
- Operating pressure: 30 ft. of head
- Handwheel extensions available
- Will outlast cast iron, no rust or corrosion
- Available in sizes 4" - 30"
- Also available in custom sizes
- Customize Per Application
- **Non environmentally degrading**
- **No toxic paints or coatings**

Mechanical Associates' stainless steel and aluminum gates provide long life and excellent value for the investment. Installation is quick and easy. All gates come stadard with replaceable seals for easy maintenance. Stainless steel and aluminum construction will provide long life in corrosive conditions, with little or no maintenance or replacement parts required.

Also available from Mechanical Associates
Line Gates, Slide Gates, Pressure Gates, Canal Gates, Flap Gates, and more..

