

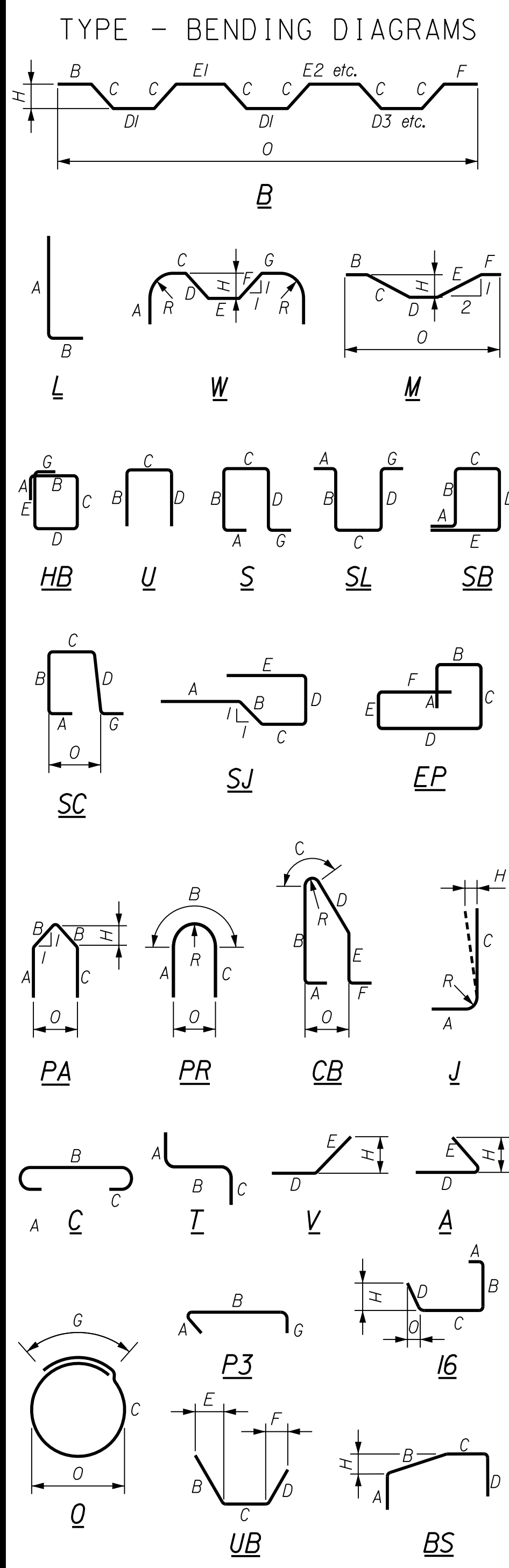
Date: 10/19/2018

Username:

Division:

Filename: ... \067_Reinforcing_Schedule_1.dgn

STRAIGHT BARS						BENT BARS																			
MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION			
SWING SPAN						APPROACH SPANS						SWING SPAN													
S400G	67	40'	Longitudinal Bars	AP500G	64	3'	Corner of Drains	S550G	332	31'	C	30'-2"	5"	5"									Transverse Primary Reinforcement		
S401G	134	30'	Longitudinal Bars	AP501G	24	30'	Longitudinal Curb Reinforcement	S551G	326	5'-6.5"	HB	1'-.5"	1'-1.5"	1'-2.5"	1'-1.5"	1'-.5"							Curb Stirrups		
S402G	67	20'-7.5"	Longitudinal Bars	AP502G	6	31'-6"	Longitudinal Curb Reinforcement	APPROACH SPANS																	
S403G	21	4'-7"	Longitudinal Bars under deck (BOTH)	AP503G	6	27'	Longitudinal Curb Reinforcement	AP550G	488	2'-1"	U		10"	5"	10"								Curb Strirrup		
S404G	12	4'-4.4"	Longitudinal Bars under deck (BOTH)	AP600G	20	26'-8"	Transverse Bars at Deck Joints	AP551G	486	1'-9"	L	8"	1'-1"										Curb Strirrup		
S405G	10	4'-2"	Longitudinal Bars under deck (BOTH)	AP601G	8	26'-10.5"	Curved Bars at East Joint	PIER 1																	
S406G	8	3'-11.75"	Longitudinal Bars under deck (BOTH)	AP602G	8	27'	Curved Bars at West Joint	1P450S	6	3'-1.5"	L	1'-6.5"	1'-7"										Pier 1 - Details 1 and 2		
S407G	4	3'-9"	Longitudinal Bars under deck (EAST)	PIER 1						1P451S	4	3'-.75"	L	1'-.75"	2"								Pier 1 - Details 1 and 2		
S408G	4	3'-6.75"	Longitudinal Bars under deck (BOTH)	PIER 1						1P452S	11	2'-5.25"	L	1'-.75"	1'-4.5"								Pier 1 - Details 1 and 2		
S409G	6	3'-5.5"	Longitudinal Bars under deck (BOTH)	PIER 1						1P453S	6	2'-11"	L	1'-9"	1'-2"								Pier 1 - Details 1 and 2		
S410G	8	3'-3.25"	Longitudinal Bars under deck (BOTH)	PIER 1						1P454S	4	2'-2.75"	L	1'-.75"	1'-2"								Pier 1 - Details 1 and 2		
S411G	4	3'-0.75"	Longitudinal Bars under deck (BOTH)	PIER 1						PIER 3															
S412G	17	5'-1.75"	Longitudinal Bars under deck (WEST)	PIER 3						3P450S	4	1'-6.75"	L	10.75"	8"								Pier 3 - Detail 4		
S413G	8	4'-11"	Longitudinal Bars under deck (WEST)	PIER 3						3P451S	4	1'-11.75"	L	10.75"	1'-1"								Pier 3 - Detail 4		
S414G	6	4'-8.5"	Longitudinal Bars under deck (EAST)	PIER 3						3P452S	10	2'-3.25"	L	10.75"	1'-4.5"								Pier 3 - Details 3 and 4		
S415G	4	3'-9.5"	Longitudinal Bars under deck (WEST)	PIER 3						3P453S	6	2'-8"	L	1'-7"	1'-1"								Pier 3 - Detail 4		
S416G	2	3'-3.5"	Longitudinal Bars under deck (WEST)	PIER 3						3P454S	5	2'-4"	L	1'-7"	9"								Pier 3 - Detail 4		
S417G	2	4'-5"	Longitudinal Bars under deck (WEST)	PIER 3																					
S500G	12	40'	Longitudinal Curb Reinforcement																						
S501G	6	34'-9"	Longitudinal Curb Reinforcement																						
S502G	18	30'-2"	Bottom of Deck (BOTH)																						
S503G	1	28'-10"	Bottom of Deck (EAST)																						
S504G	1	30'-0"	Bottom of Deck (WEST)																						
S505G	10	30'-6"	EAST Deck Curved																						
S506G	10	31'	WEST Deck Curved																						



All dimensions are out-to-out of bar.

Bending details and hooks shall conform to the recommendations of the current revision of ACI Standard 315 and ACI Standard 318.

Reinforcing Bar:
 Superstructure - ASTM A615/A767, Grade 60, Galvanized
 Substructure - ASTM A995, Grade 75, Stainless

GENERAL NOTES

- The first two digits following the letter(s) of the mark indicate the size of the bar:
 Mark *A502* - bar size #5
 Mark *P805* - bar size #8
 Mark *S650* - bar size #6
- Each crank bar, Type B, may be replaced by two (2) straight bars (one top and one bottom) of the same bar size as the crank bar. Payment in either case shall be based on crank bars as schedule on the plans.

REINFORCING KEY
 S = Stainless
 G = Galvanized



STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 STP-2260(700)
 WIN 22607.00
 BRIDGE NO. 2039
 BRIDGE PLANS

BARTERS ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

REINFORCING SCHEDULE
(1 OF 2)

SHEET NUMBER
67
 OF 132

DATE: 10/19/2018
 SIGNATURE: [Signature]
 P.E. NUMBER: 10075
 DATE: 10/19/2018

PROJ. MANAGER: L. TIMBERLAKE
 DESIGN-DETAILED: T. AQUILAR
 CHECKED-REVIEWED: T. MCALIFFE
 DESIGNS-DETAILED: B. COLEBURN
 REVISIONS: 1, 2, 3, 4
 FIELD CHANGES

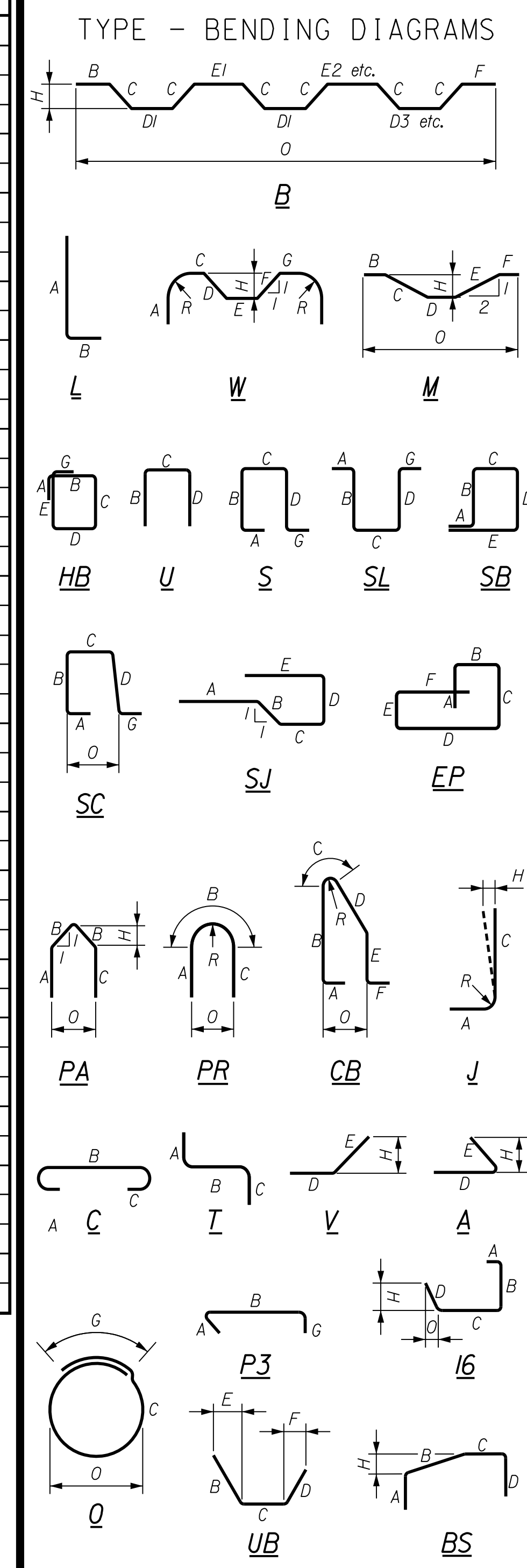
Date: 10/19/2018

Username:

Division:

Filename: ... \068_Reinforcing_Schedule_2.dgn

STRAIGHT BARS				BENT BARS																				
MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	LOCATION	MARK	QTY.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION		
CIP PIER 2				PC PIER 2				CIP PIER 2																
2P500S	84	19'-6"	Horizontal Bars - Footing	2P500S	84	19'-6"	Horizontal Bars - Footing	2P350S	416	4'-0.5"	Plan	6"	3'-2.5"	4"									Column Ties	
2P501S	48	18'-6"	Horizontal Bars Cap	2P501S	82	18'-6"	Horizontal Bars - Cap	2P550S	84	4'	U		1'	2'	1'								Footing	
				2P502S	24	12'-10"	Closure Vertical Bars	2P551S	10	7'-10.5"	M			1'-6"	3'-6.5"	2'							Corbel	
				2P800S	78	18'-6"	Horizontal Bars - Cap	2P552S	4	5'-6"	U		1'-9"	2'	1'-9"								Corbel	
								2P553S	4	7'-5"	U		2'-8.5"	2"	2'-8.5"								Corbel	
								SP554S	8	12'-8"	U		4'-6"	2'	4'-6"								Corbel	
								2P555S	2	12'-5"	U		4'-4.5"	2'	4'-4.5"								Corbel	
								2P556S	2	11'-8"	U		4'	2'	4'								Corbel	
								2P557S	2	10'-11.5"	U		3'-7.75"	2'	3'-7.75"								Corbel	
								2P558S	2	9'-3"	U		2'-9.5"	2'	2'-9.5"								Corbel	
								2P559S	100	23'-11"	L	17'-6"	6'-5"										Column	
								2P560S	80	3'-6"	U		1'	1'-6"	1'								Cap	
								2P650S	10	7'-3"	U		1'-9"	4'-6"	1'								Corbel	
								2P651S	4	5'-6"	U		1'	3'-6"	1'								Pedestal	
								2P652S	4	4'-9"	U		1'	2'-9"	1'								Pedestal	
								2P850S	108	12'-10"	L	11'-6"	1'-4"										Column	
								2P851S	108	9'-5.5"	L	8'-1.5"	1'-4"										Column	
								PC PIER 2																
								2P550S	84	4'	U		1'	2'	1'								Footing	
								2P551S	10	7'-10.5"	M			1'-6"	3'-6.5"	2'							Corbel	
								2P552S	4	5'-6"	U		1'-9"	2'	1'-9"								Corbel	
								2P553S	4	7'-5"	U		2'-8.5"	2"	2'-8.5"								Corbel	
								2P554S	8	12'-8"	U		4'-6"	2'	4'-6"								Corbel	
								2P555S	2	12'-5"	U		4'-4.5"	2'	4'-4.5"								Corbel	
								2P556S	2	11'-8"	U		4'	2'	4'								Corbel	
								2P557S	2	10'-11.5"	U		3'-7.75"	2'	3'-7.75"								Corbel	
								2P558S	2	9'-3"	U		2'-9.5"	2'	2'-9.5"								Corbel	
								2P560S	80	3'-6"	U		1'	1'-6"	1'								Cap	
								2P561S	96	6'-8.5"	O		4'-8.5"				2'					1'-6"	CMP Void	
								2P562S	24	7'	U		2'	3'	2'								Closure	
								2P650S	10	7'-3"	U		1'-9"	4'-6"	1'								Corbel	
								2P651S	4	5'-6"	U		1'	3'-6"	1'								Pedestal	
								2P652S	4	4'-9"	U		1'	2'-9"	1'								Pedestal	
								2P852S	144	6'-9"	L	5'-5"	1'-4"										CMP Void	



All dimensions are out-to-out of bar.
 Bending details and hooks shall conform to the recommendations of the current revision of ACI Standard 315 and ACI Standard 318.
 Reinforcing Bar:
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 Substructure - ASTM A995, Grade 75, Stainless

- GENERAL NOTES**
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REINFORCING KEY
 S = Stainless
 G = Galvanized



STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
STP-2260(700)
 WIN 22607.00
 BRIDGE NO. 2039
 BRIDGE PLANS

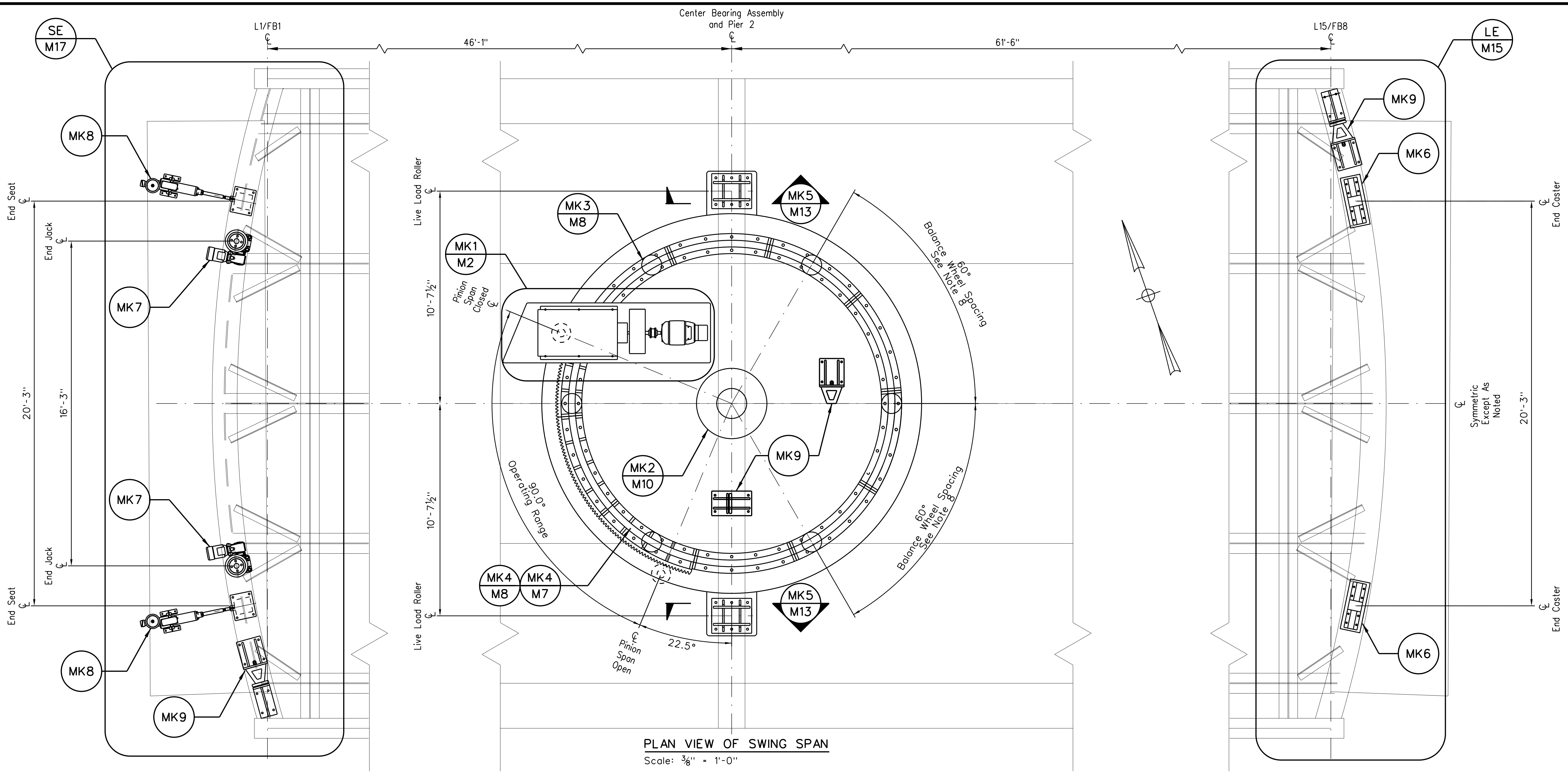
THOMAS KENDRICK
 No. 10075
 REGISTERED PROFESSIONAL ENGINEER

Signature: *Thomas Kendrick*
 DATE: 10/19/2018

PROJ. MANAGER	L. TIMBERLAKE	BY	DATE
DESIGN-DETAILED	T. AQUILAR	D. DEPAOLO	10-19-18
CHECKED-REVIEWED	T. MCALLIFFE	T. KENDRICK	10-19-18
DESIGNS DETAILLED	B. COLEBURN	S. OZANA	10-19-18
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTERS ISLAND BRIDGE
 BACK RIVER
 BOOTHBAY LINCOLN COUNTY
REINFORCING SCHEDULE (2 OF 2)

SHEET NUMBER
68
 OF 132



PLAN VIEW OF SWING SPAN
Scale: 3/8" = 1'-0"

MECHANICAL WORK IDENTIFICATION SCHEDULE

MARK NO.	QTY. REQ'D.	COMPONENT	DESCRIPTION (SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION)	REFERENCE SHEETS
MK1	1	Span Drive Machinery	Furnish and install new Span Drive Machinery.	M1, M2
MK2	1	Center Bearing Assembly	Furnish and install new Center Bearing Assembly.	M1, M10
MK3	6	Balance Wheel Assemblies	Furnish and install new Balance Wheel Assemblies.	M1, M8
MK4	10	Rack/Track Segments	Furnish and install new Rack (3) and Track (7) segments.	M1, M7, M8
MK5	2	Center Live Load Rollers	Furnish and install new Live Load Rollers.	M1, M13
MK6	2	End Casters	Furnish and install new End Casters.	M1, M15
MK7	2	End Jacks	Furnish and install new End Jacks.	M1, M17
MK8	2	End Seats	Furnish and install new End Seats.	M1, M17
MK9	3	End Stops	Furnish and install new End Stops.	M1, M20, M21

SWING SPAN OPERATING MACHINERY GENERAL NOTES (SHEETS M1 THROUGH M21)

- All machinery is designed in accordance with the AASHTO LRFD Movable Highway Bridge Design Specifications, 2nd Edition 2007 with latest revisions, except as noted otherwise.
- All dimensions shown on the machinery drawings are in inches and all surface finishes are microinches unless noted otherwise.
- All dimensions shown on the machinery drawings are nominal and shall be coordinated with all other drawings as required to provide a functional system.
- The Contractor shall provide shop drawings for all components. Shop drawings shall dimension all parts with the appropriate tolerances to obtain the required fits between mating parts. Except as otherwise noted on these drawings, fits and finishes shall comply with the AASHTO specifications.
- See Special Provisions for additional details, information, and requirements related to the work indicated on these Contract Plans.
- All layout dimensions are references to ambient temperature of 70°F and shall be compensated for temperature variations greater than 5°F.
- Coordinate all Mechanical work with Structural and Electrical interfaces as required to ensure proper fit-up and to provide functional systems.
- Angular spacing of balance wheels is for reference only. Coordinate with structural drawings to set location of wheel supports at stringers so that wheel centerline coincides with track pitch line within 1/16" in assembled condition.
- Machinery demolition is not depicted in the plan set, unless explicitly stated elsewhere. All existing machinery of each machinery system identified for replacement in these plans shall be removed and shall become the property of the Contractor to be properly disposed of in accordance with applicable local, state, and/or federal regulations.
- The mechanical machinery systems provided under this contract shall be installed to start, move, hold, and seat the swing span in a smooth and controlled manner with no unusual noise, vibration, or impact to the satisfaction of the Engineer and Owner. Any adjustments necessary to satisfy this requirement shall be made at no additional cost to the Owner.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)
BRIDGE NO. 2039
WIN
22607.00
BRIDGE PLANS

PROJ. MANAGER	DATE
R. TOSOLT	10-01-18

BY	DATE
M. BROGIE	07-30-18
R. TOSOLT	10-01-18

SIGNATURE	DATE
<i>[Signature]</i>	10-02-2018

BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

MECHANICAL WORK
IDENTIFICATION

SHEET NUMBER
69
OF 132

M1

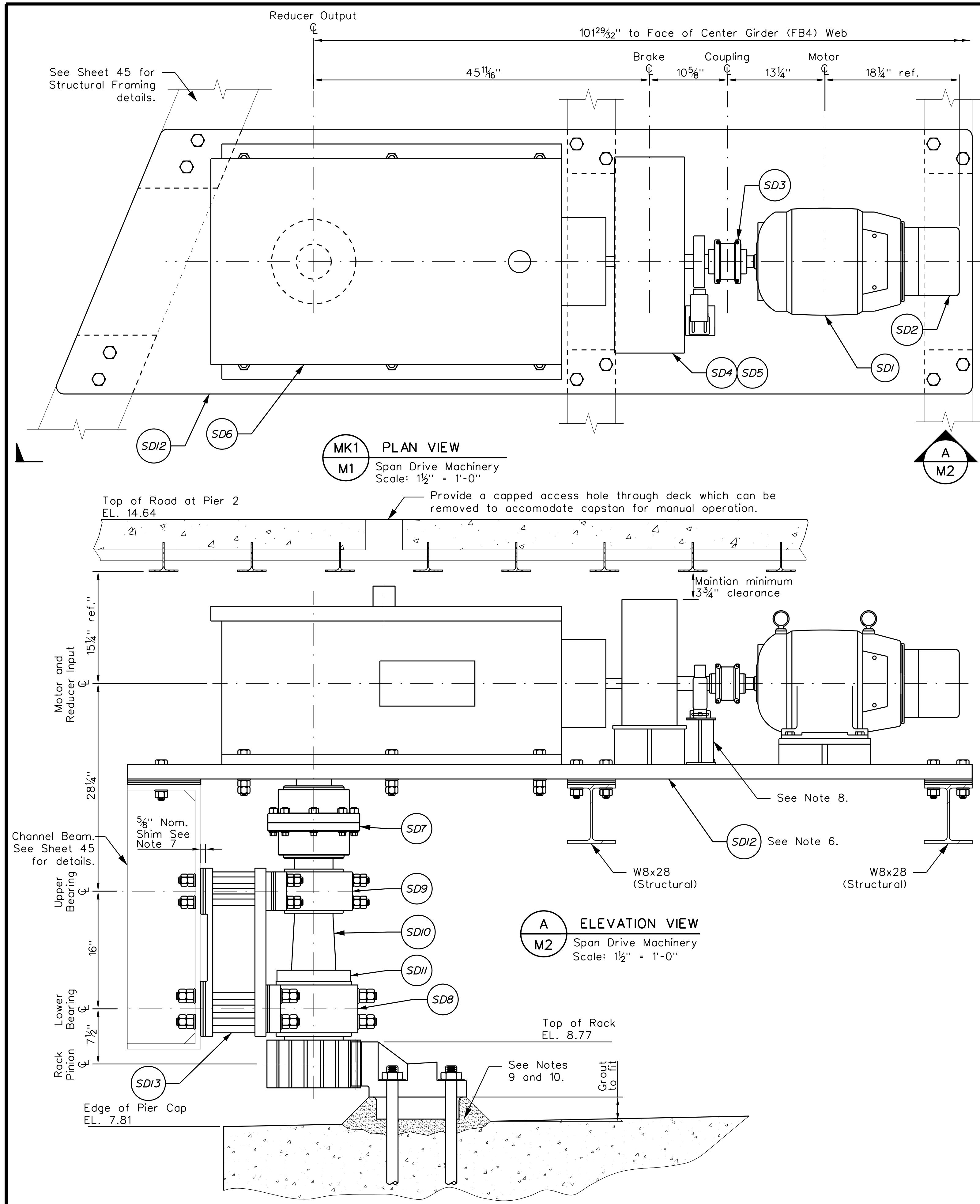
ENGINEER OF RECORD:
800 HYDE PARK, DOYLESTOWN, PA 19022, USA
TEL: (215) 340-2630 www.sobengineering.com

Date: 10/2/2018

Username: common

Division: BRIDGE

Filename: ... \070_Span Drive_1.dgn



SPAN DRIVE OPERATING MACHINERY SCHEDULE

MARK NO.	QTY. REQ'D.	COMPONENT	DESCRIPTION (SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION)	REFERENCE SHEETS
SD1	1	Motor	7.5HP@900 rpm electric motor with integral resolver. NEMA Design D. Frame 256T. Motor shaft to extend through resolver and disc brake for manual operation. Provide safety limit switch to prevent electrical operation during manual operation. See Electrical Special Provisions for details.	M2
SD2	1	Disc Brake	Solenoid actuated disc brake. Rated for 35 ft-lb. mount to back of motor. provide through shaft extension. See Electrical Special Provisions for details.	M2
SD3	1	Motor Coupling	Double engagement grid coupling with horizontally split cover. Min. rating 6050 in-lb.	M2
SD4	1	Thrustor Brake	Thrustor operated, spring set drum brake. 5" brakewheel. Set torque to 50 ft-lb. 3 second time delay on set.	M2
SD5	1	Brake Cover	NEMA 3R stainless steel removable enclosure with vertical split.	M2
SD6	1	Reducer	Quadruple reduction spiral bevel reducer. Horizontal input shaft, vertical down output shaft. Provide service factor of 1.5 of 7.5HP at 900 RPM input. Ratio 187.25. Extend input shaft to suit brake. Provide vertical up shaft extension off 3rd intermediate pinion to accommodate ceremonial manual operation.	M2
SD7	1	Gear Coupling	Double engagement vertical gear coupling. Min rating 270,900 in-lb.	M2
SD8	1	Lower Bearing Assembly	One assembly required.	M2, M4
SD8A	1	Bearing Housing	Steel Plate. Material: ASTM A36.	M2, M4
SD8B	2	Split Bushing	Bronze. Material: ASTM B22 C93700.	M2, M4
SD8C	2	Liner	Brass.	M2, M4
SD8D	4	Cap Bolt	Turned Bolt with square head. Material: ASTM A325.	M2, M4
SD8E	4	Mounting Stud	Turned Stud. Material: ASTM A449.	M2, M4
SD9	1	Upper Bearing Assembly	One assembly required.	M2, M5
SD9A	1	Bearing Housing	Steel Plate. Material: ASTM A36.	M2, M5
SD9B	2	Split Bushing	Bronze. Material: ASTM B22 C93700.	M2, M5
SD9C	2	Liner	Brass.	M2, M5
SD9D	4	Cap Bolt	Turned Bolt with square head. Material: ASTM A325.	M2, M5
SD9E	4	Mounting Stud	Turned Stud. Material: ASTM A449.	M2, M5
SD10	1	Rack Pinion Shaft	Steel Forging. Material: ASTM A291 Grade 3 Class C.	M2, M3
SD11	1	Thrust Collar	Steel Forging. Material: ASTM A291 Grade 3 Class C.	M2, M3
SD12	1	Motor/Reducer Baseplate	Steel Weldment. Material: ASTM A709 Grade 50.	M2, M6
SD13	1	Rack Pinion Bearing Support Frame	Steel Weldment. Material: ASTM A709 Grade 50.	M2, M6

SHEET NOTES

- See Sheet M1 for General Notes applicable to the work.
- Provide 1/2" nominal shims under machinery items SD1, SD4, SD8, and SD9.
- The Motor, Brake, and Reducer shall be shop aligned and assembled on the Baseplate and shipped to the field as an assembly. Provide 1/2" shims between the Baseplate and the structural supports to facilitate alignment. Install with turned bolts.
- See Sheet M6 for Rack Pinion Bearing Support Frame assembly notes.
- All fasteners, hardware, shims, etc. which are not explicitly identified in the schedule but are required to produce completed assemblies and provide a functional system are incidental to this work and shall be provided as part of this work at no additional cost.
- Adjust shim between Baseplate SD12 and support steel to set proper elevation. Secure with 3/8" high strength bolts via turn-of-nut method. Provide 2 bolts through each mounting pad/shim set, 6 locations as shown.
- Provide 5/8" shim between Bearing Support Frame SD13 and support steel. See Sheet M6 for suggested installation sequence.
- Coordinate mounting of speed switch provided under Electrical Work.
- Grout thickness under rack and track segments varies due to slope of pier. Locally excavate pier at rack lug locations as necessary to provide minimum 1" gap under each lug to facilitate grout flow.
- For Rack segments, provide 1" drain holes through grout. Locate in-line with Rack drain holes. For Track segments, provide 2" drain holes through grout equally spaced between anchor bolts.

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 STP-2260(700)
 BRIDGE NO. 2039
 WIN 22607.00
 BRIDGE PLANS

PROJ. MANAGER: R. TOSOLT
 CHECKED-REVIEWED: R. TOSOLT / P. BANLOW
 DESIGNED-Detailed: R. TOSOLT
 DESIGNED-Detailed: R. TOSOLT
 REVISIONS: 1, 2, 3, 4

DATE: 07-30-18
 DATE: 10-01-18

SIGNATURE: [Signature]
 P.E. NUMBER: 15216
 DATE: 10-02-2018

BARTER'S ISLAND BRIDGE
 BACK RIVER
 LINCOLN COUNTY
 BOOTHBAY
 SPAN DRIVE MACHINERY
 ARRANGEMENT & SCHEDULE

SHEET NUMBER
70
 OF 132

ENGINEER OF RECORD:
SOB
 ENGINEERING
 800 HYDE PARK, DOYLESTOWN, PA 18020, USA
 TEL: (262) 340-2630 www.sobengineering.net

Date: 10/2/2018

Username: common

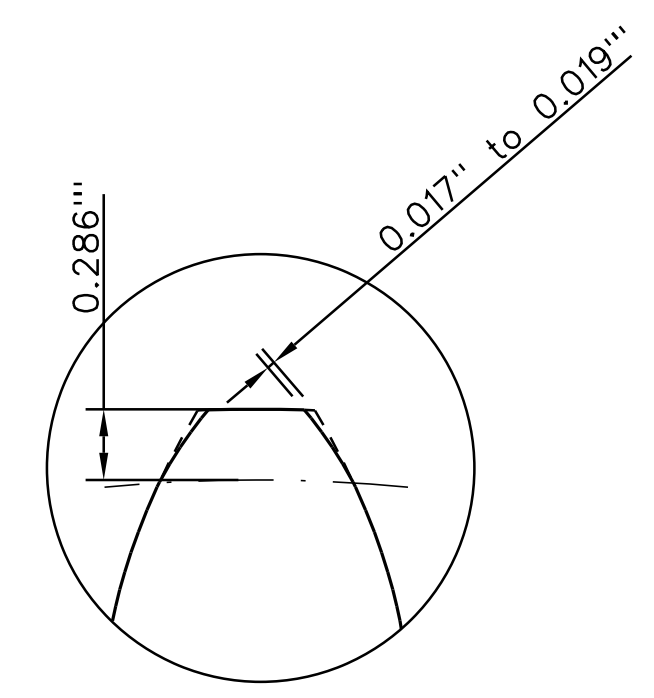
Division: BRIDGE

Filename: ... \071_Span Drive_2.dgn

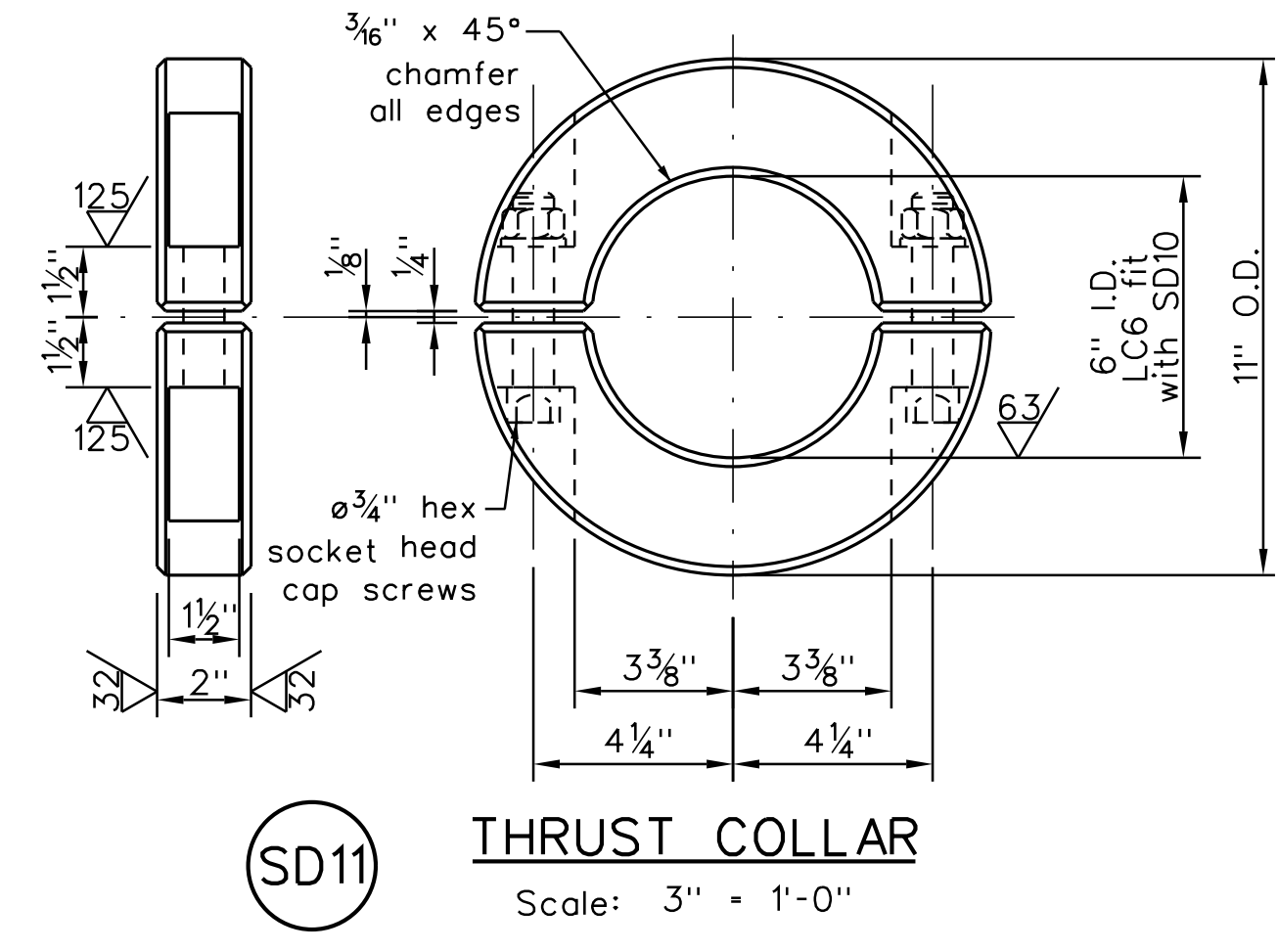
GEAR TOOTH DETAILS	
DESCRIPTION	Rack Pinion (SD12)
TOOTH FORM	Involute Full Depth
CIRCULAR PITCH	2"
NUMBER OF TEETH	18
PRESSURE ANGLE	20 degree
BACKLASH	See Note 6.
PITCH DIAMETER	11.459"
WHOLE DEPTH	1.433"
ADDENDUM	0.637"
DEDENDUM	0.796"
CIRCULAR THICKNESS	1.000" (nom)
TOOTH PROFILE SURFACE FINISH	125
AGMA QUALITY NO. (PER AGMA 2000-A88)	8

SHEET NOTES

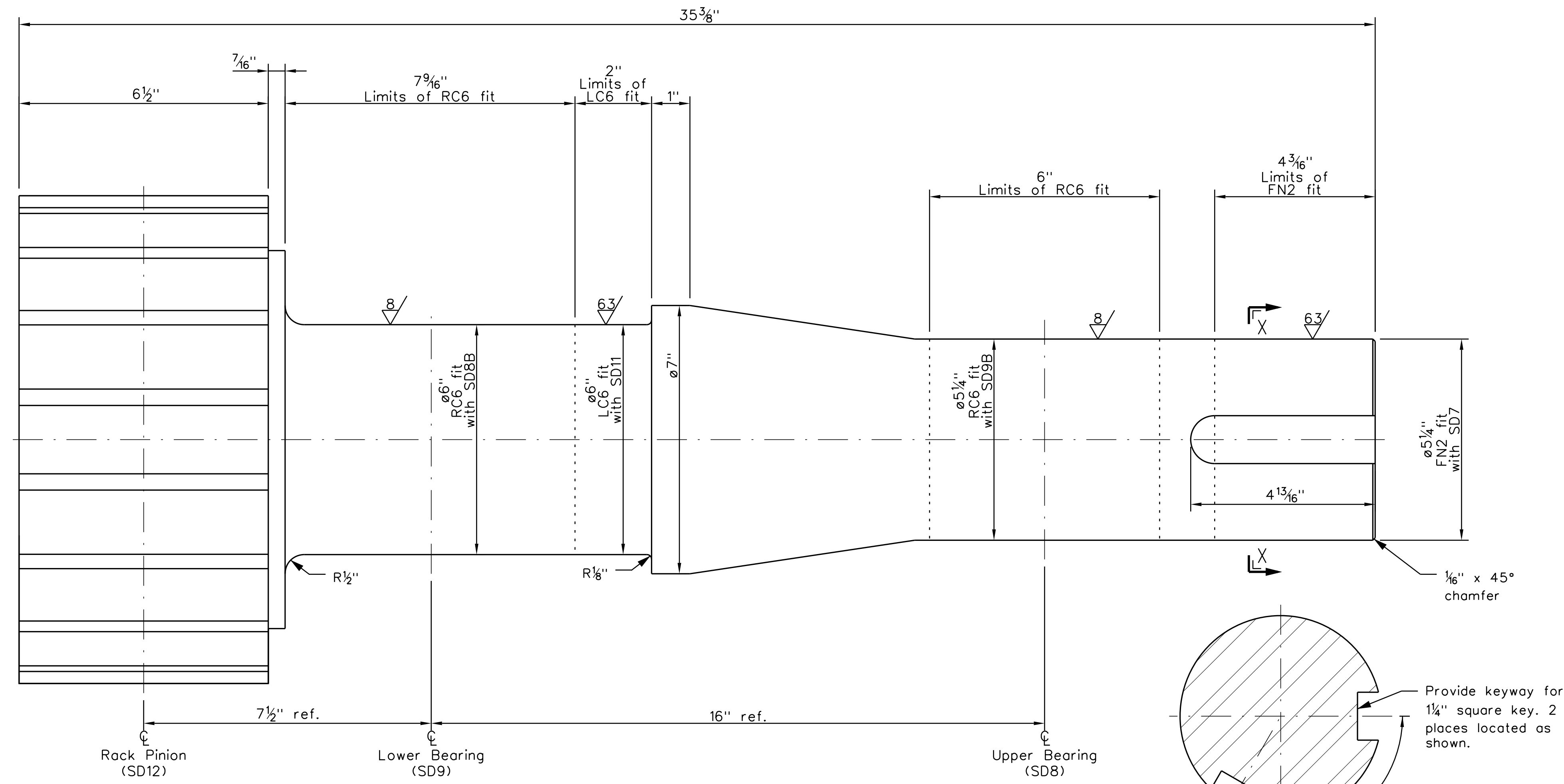
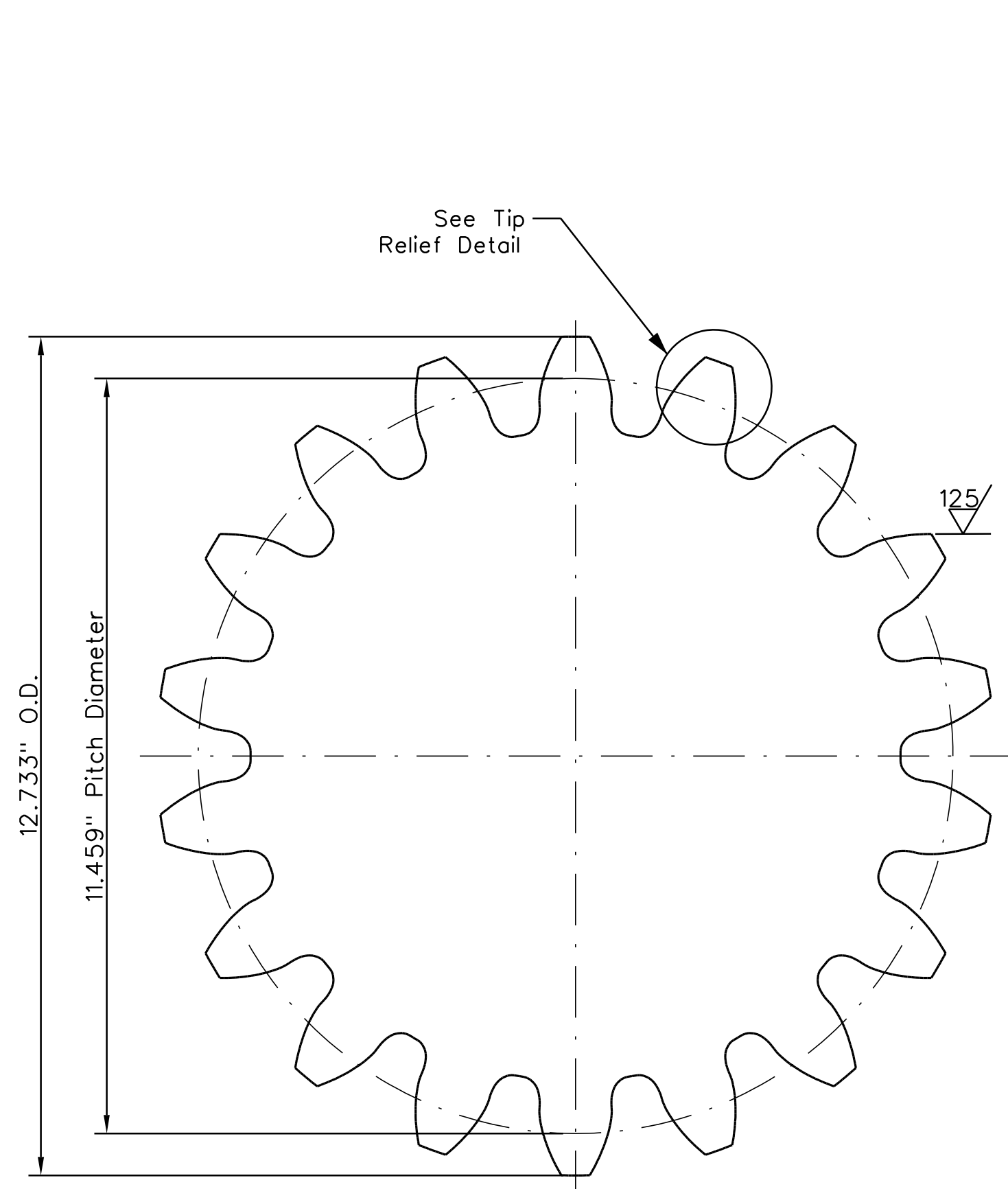
1. See Sheet M1 for General Notes applicable to this drawing.
2. See Span Drive Machinery Schedule on Sheet M2 for materials and quantities.
3. All dimensions are finished dimensions unless otherwise noted. Add stock for fabrication as necessary to ensure complete cleanup of machined surfaces.
4. Scribe v-notch Pitch Line (P.L.) 1/16" deep on top surface of pinion teeth.
5. Break all sharp edges.
6. All gearing backlash to be taken from Rack (R1).
7. Modify tooth profile on both flanks of pinion tooth to provide tip relief at the outer diameter as shown in Tip Relief Detail. Profile modification shall be smooth parabolic curve starting at depth shown.



TIP RELIEF DETAIL
See Note 7.



THRUST COLLAR
Scale: 3" = 1'-0"



RACK PINION SHAFT
Scale: 6" = 1'-0"
Provide 125 microinch finish U.O.N.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		STP-2260(700)		BRIDGE NO. 2039		WIN 22607.00		BRIDGE PLANS	
BARTER'S ISLAND BRIDGE BACK RIVER BOOTHBAY		LINCOLN COUNTY		SPAN DRIVE MACHINERY DETAILS I		SHEET NUMBER		71	
PROJ. MANAGER	CHECKED-REVIEWED	DESIGN-DETAILED	R. TOSOLT	BY	M. BROGIE	DATE	07-30-18	SIGNATURE	152/6
DESIGN-DETAILED	DESIGN-DETAILED	DESIGN-DETAILED	DESIGN-DETAILED	REVISIONS 1	REVISIONS 2	REVISIONS 3	REVISIONS 4	P.E. NUMBER	10-02-2018
							FIELD CHANGES	DATE	

M3

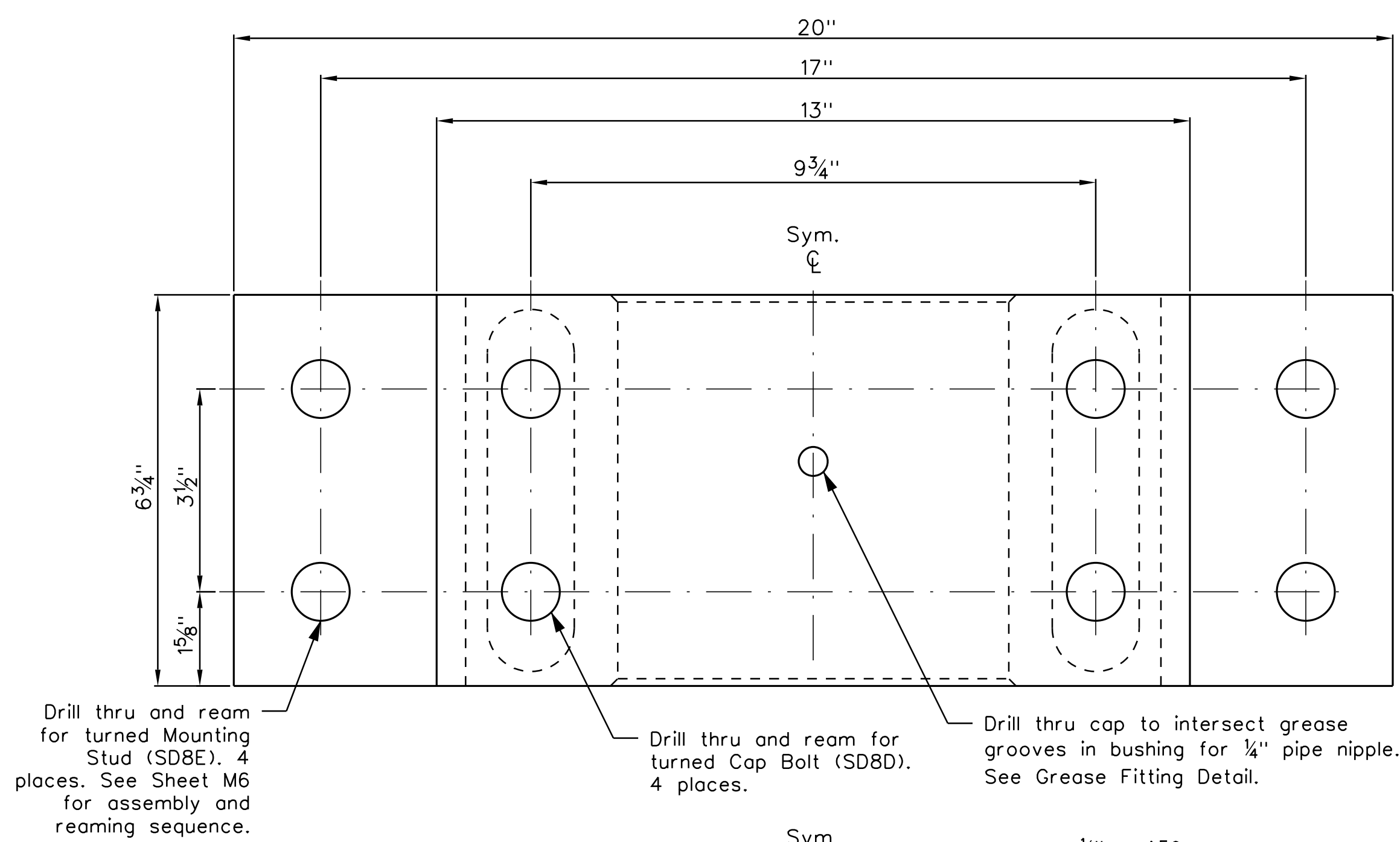
ENGINEER OF RECORD:
SJB
ENGINEERING
800 HYDE PARK, DOYLESTOWN, PA 19902, USA
TEL: (717) 340-5830 www.sjbeengineering.net

Date: 10/2/2018

Username: common

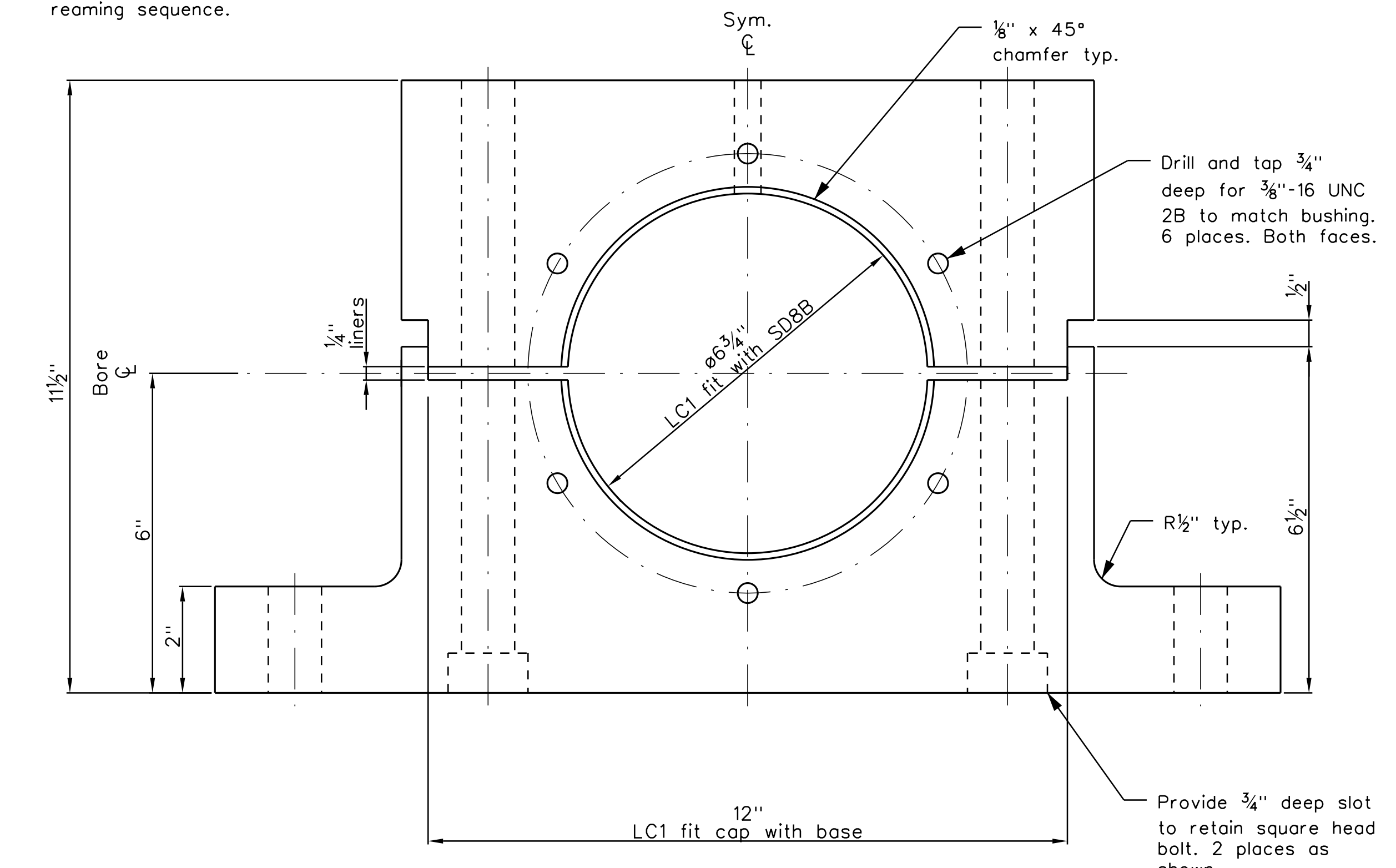
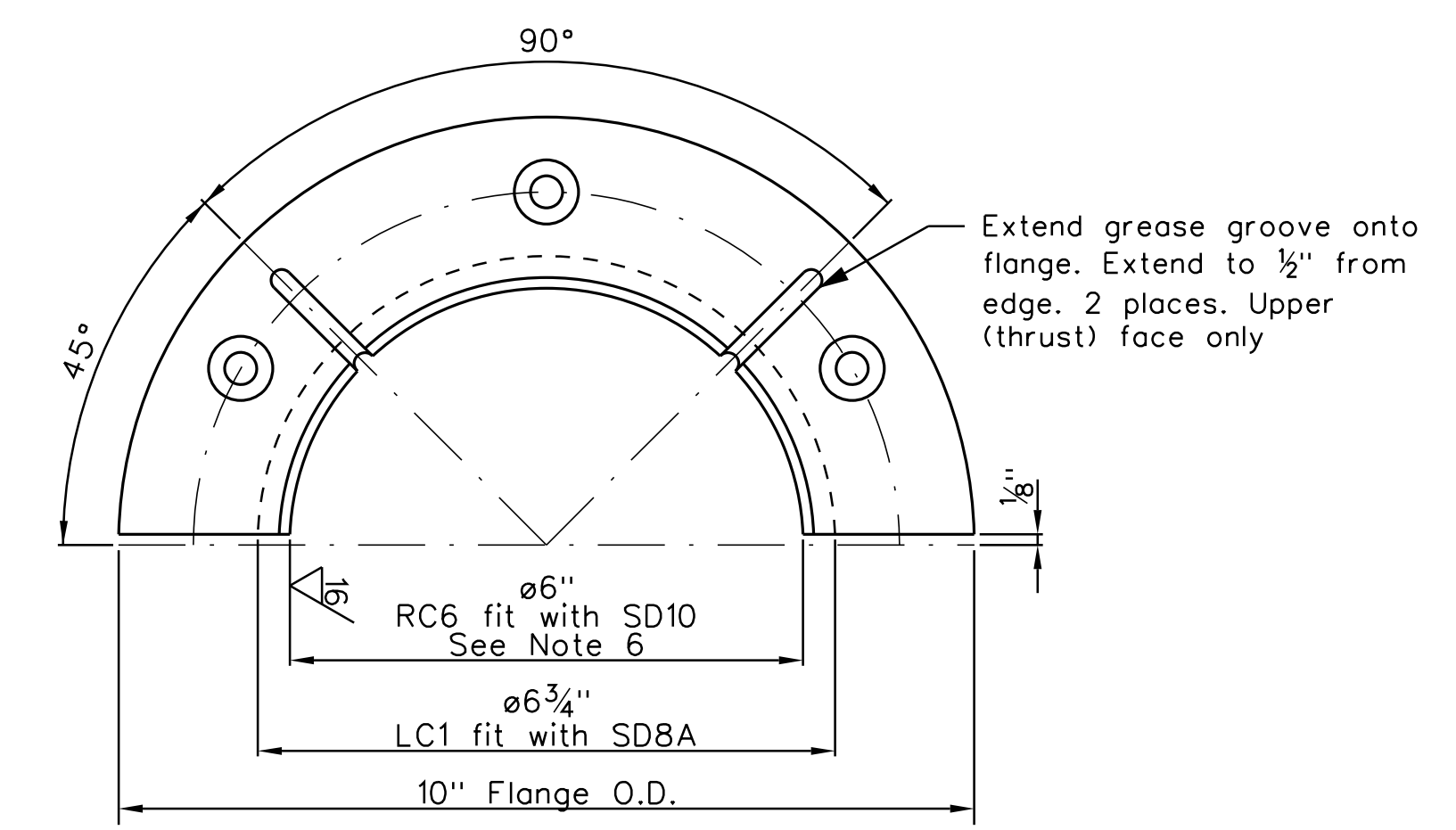
Division: BRIDGE

Filename: ... \072_Span Drive_3.dgn

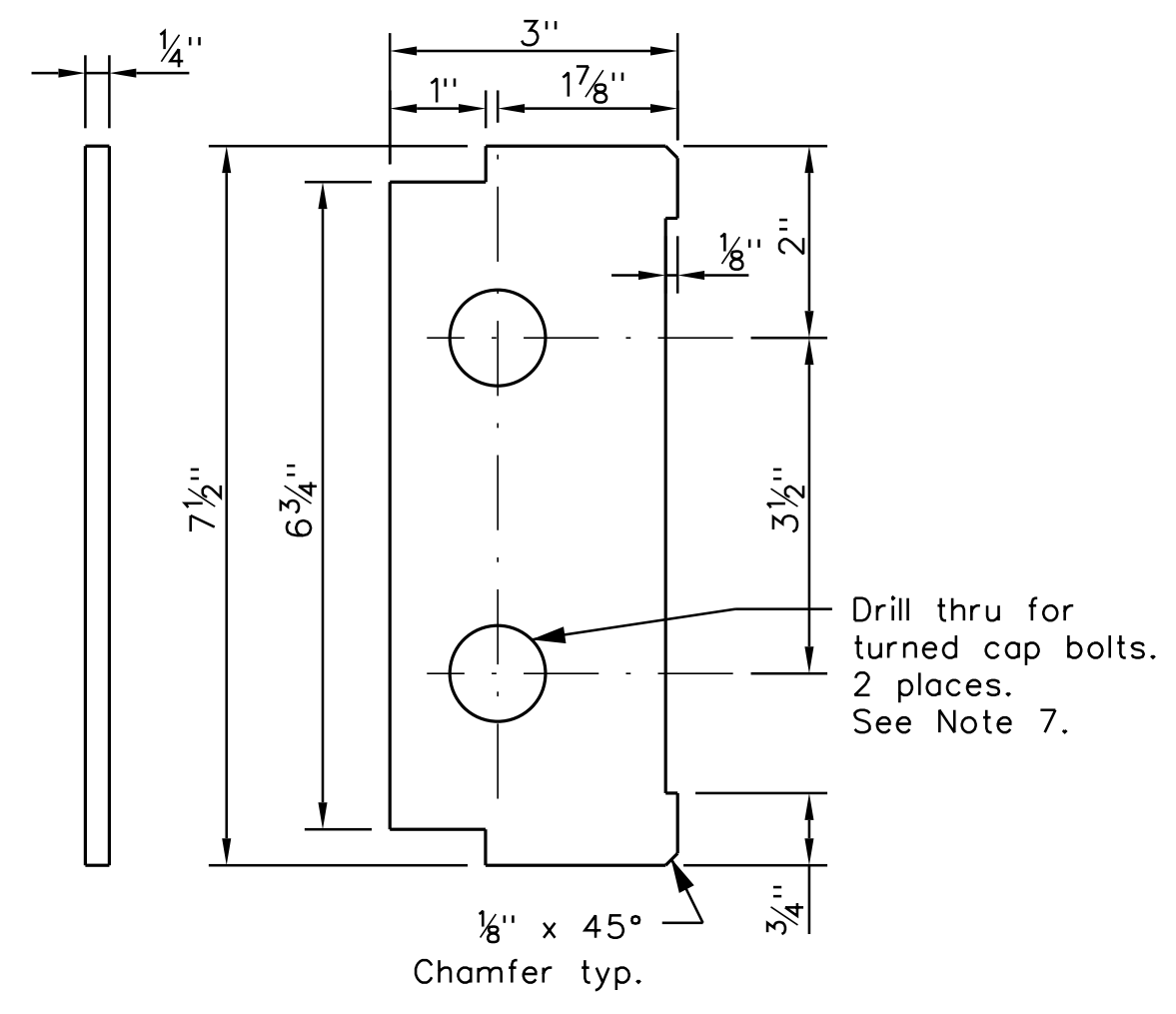


SHEET NOTES

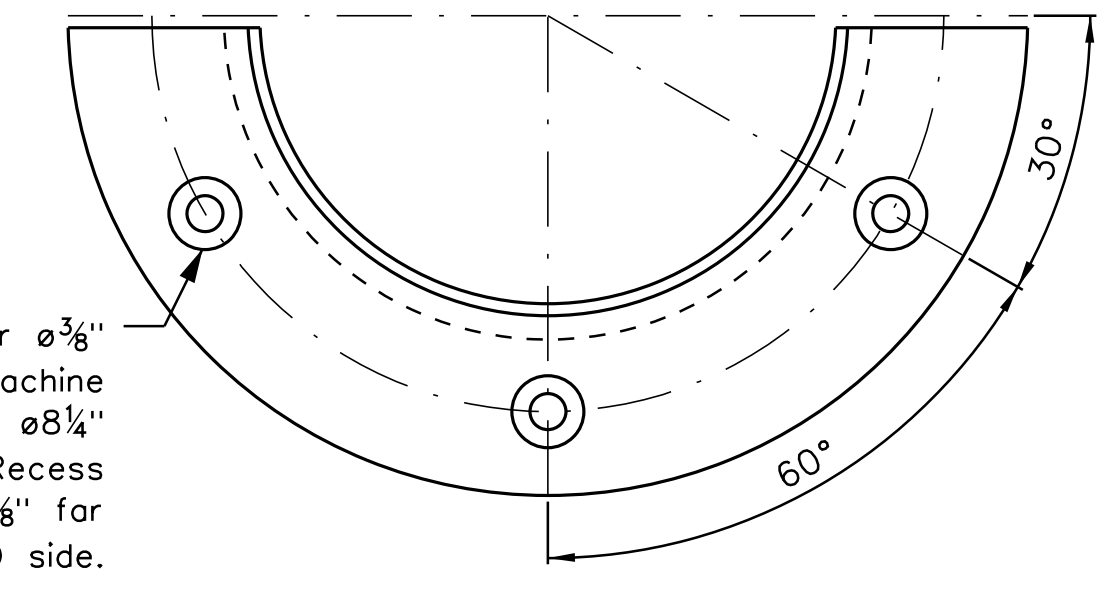
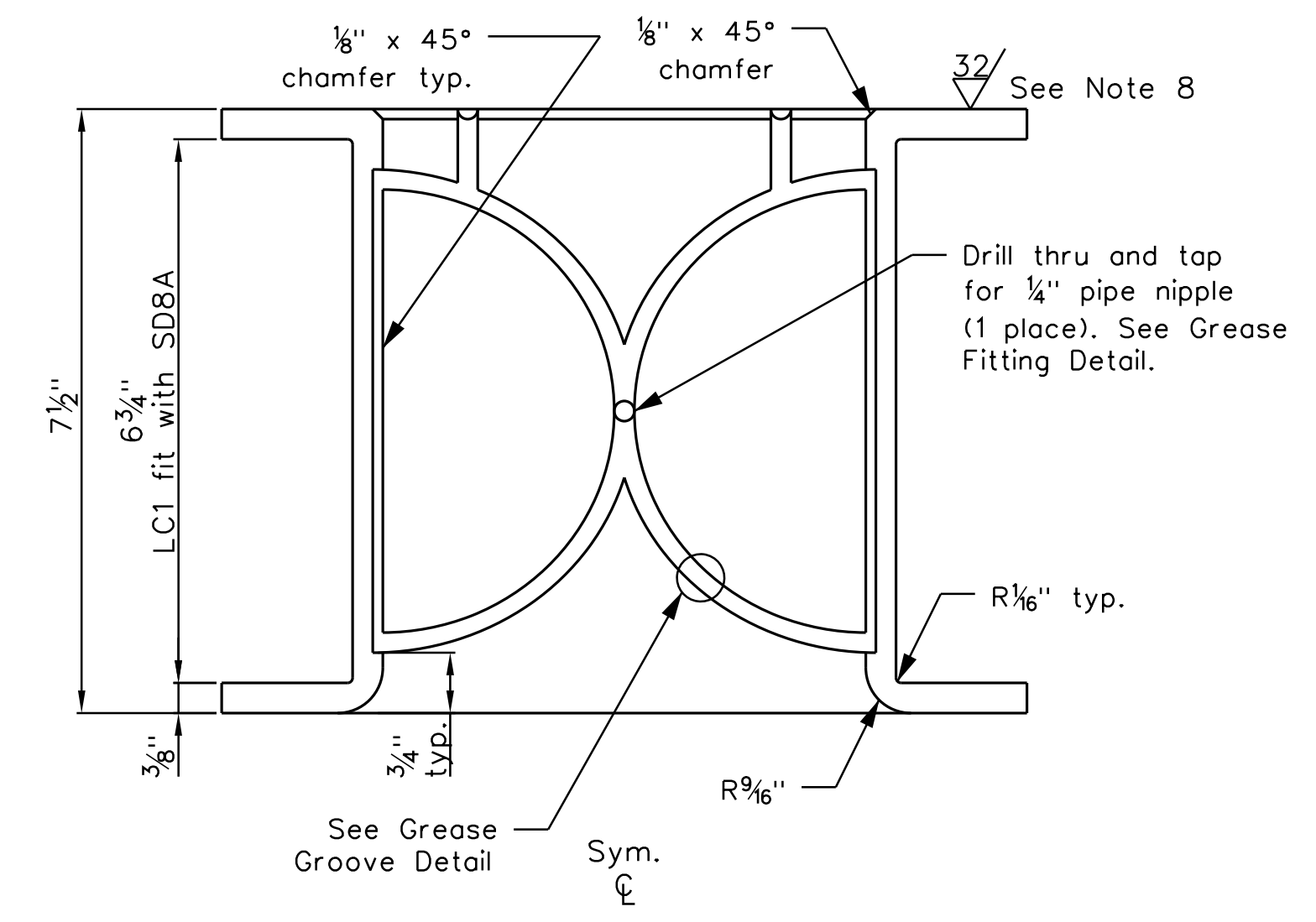
1. See Sheet M1 for General Notes applicable to this drawing.
2. See Span Drive Machinery Schedule on Sheet M2 for materials and quantities.
3. All dimensions are finished dimensions unless otherwise noted. Add stock for fabrication as necessary to ensure complete cleanup of machined surfaces.
4. Grease grooves for all bushings shall be machine cut per detail on this sheet. Break all sharp edges, particularly along chamfers, and deburr grooves where grease port intersects grooves in cap.
5. Machine split in cap and base bushing flush with the split in the bearing housing after assembly.
6. Perform finish machining of bushing bore and bearing mounting turned bolt holes following shop assembly.
7. Drill and ream bearing liners together with bearing housing. Each bearing liner shall be brass and provide a total thickness of 1/4", consisting of 1/8" solid, 1/6" solid, and 1/6" laminated (0.003" peel-away laminations).
8. Provide 125 microinch finish for all parts on this sheet unless otherwise noted.



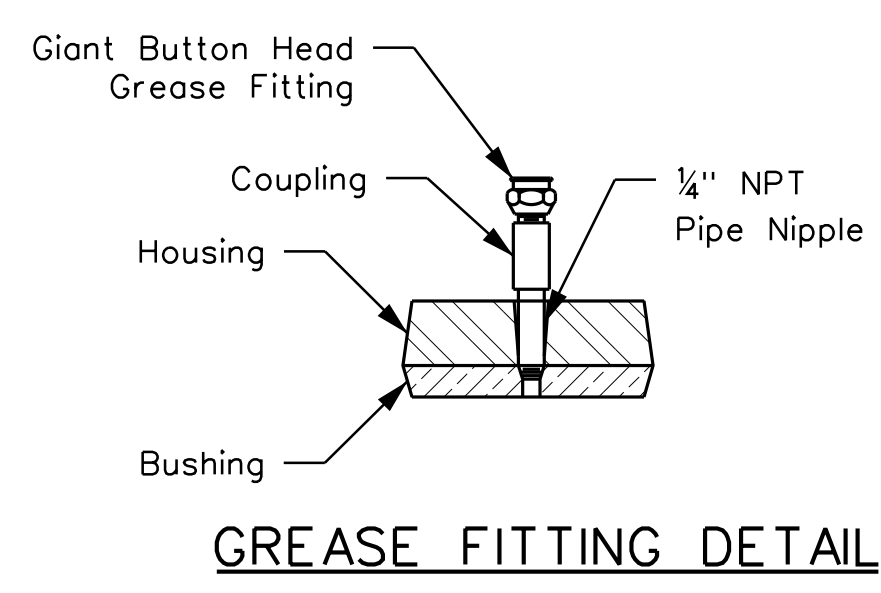
SD8A LOWER BEARING HOUSING
Scale: 6" = 1'-0"



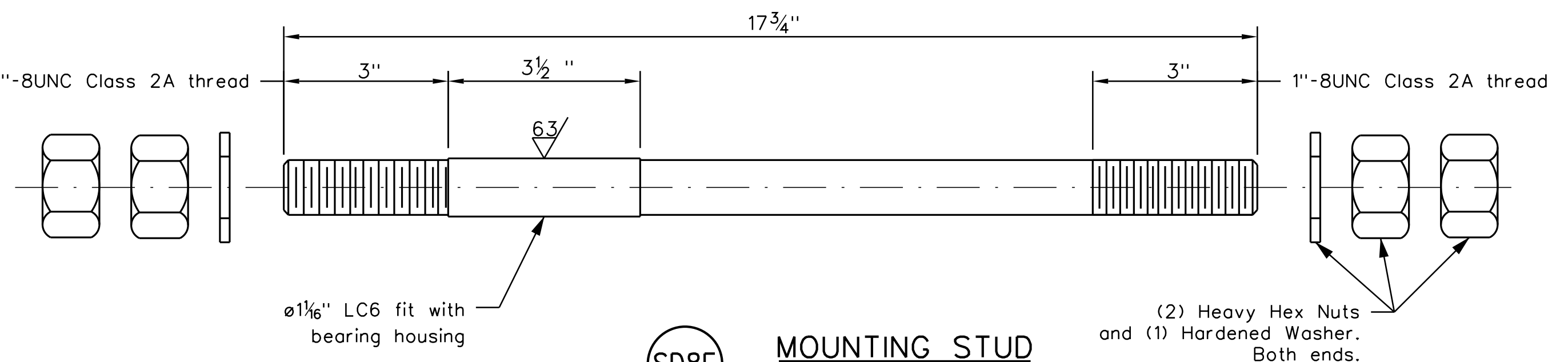
SD8C LOWER BEARING LINER
Scale: 6" = 1'-0"



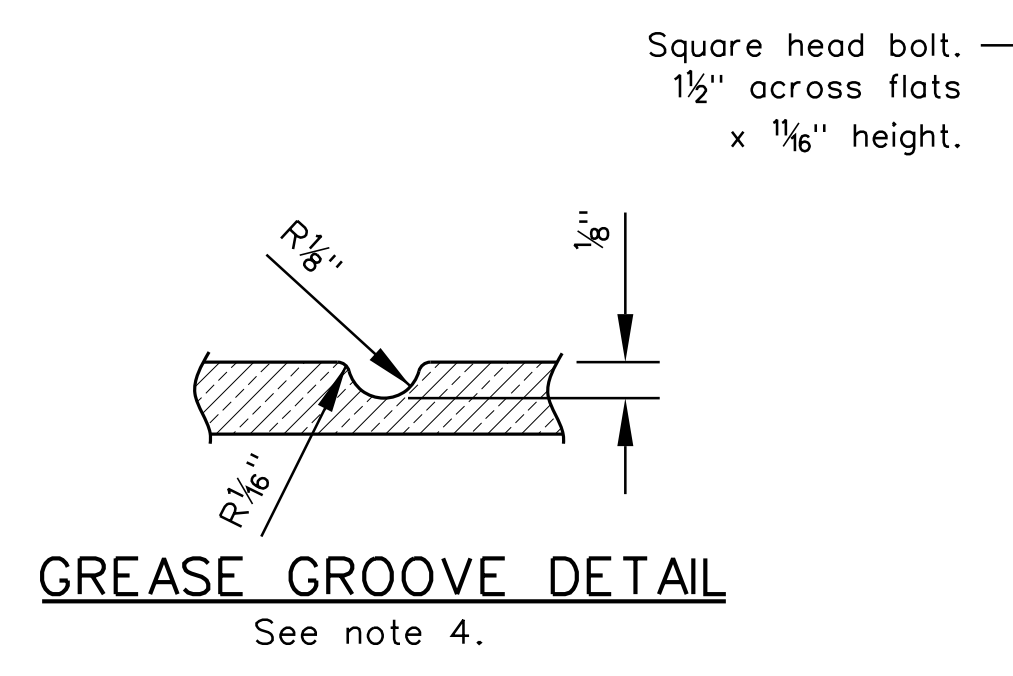
SD8B LOWER BEARING SPLIT BUSHING
Scale: 6" = 1'-0"



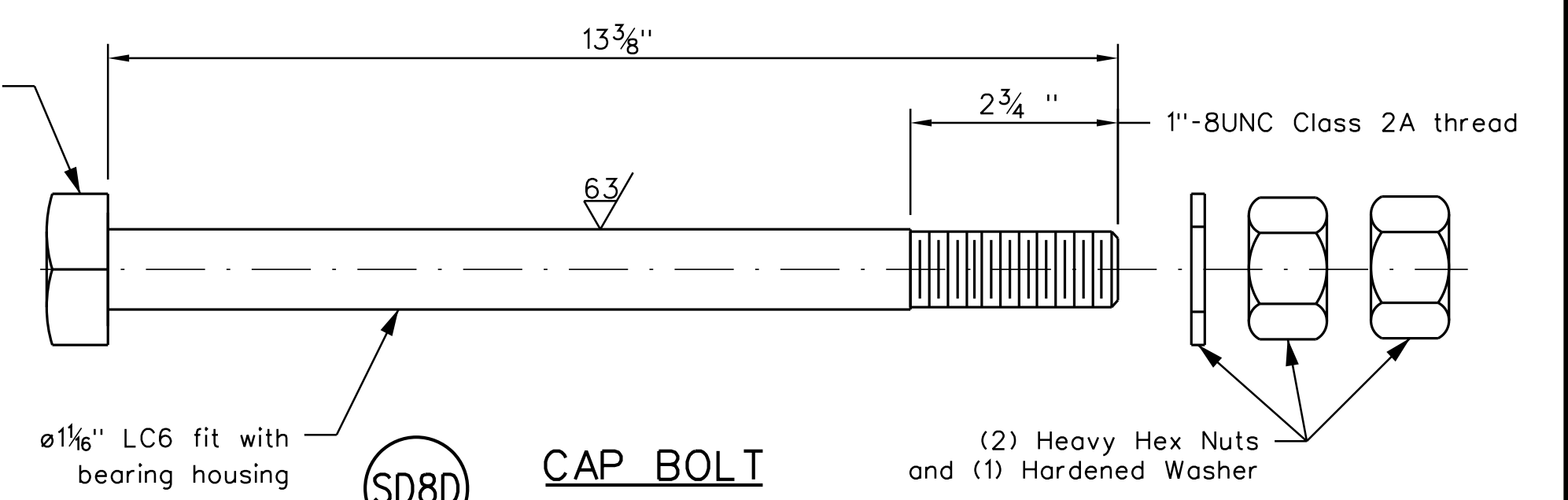
GREASE FITTING DETAIL



SD8E MOUNTING STUD
Scale: 6" = 1'-0"



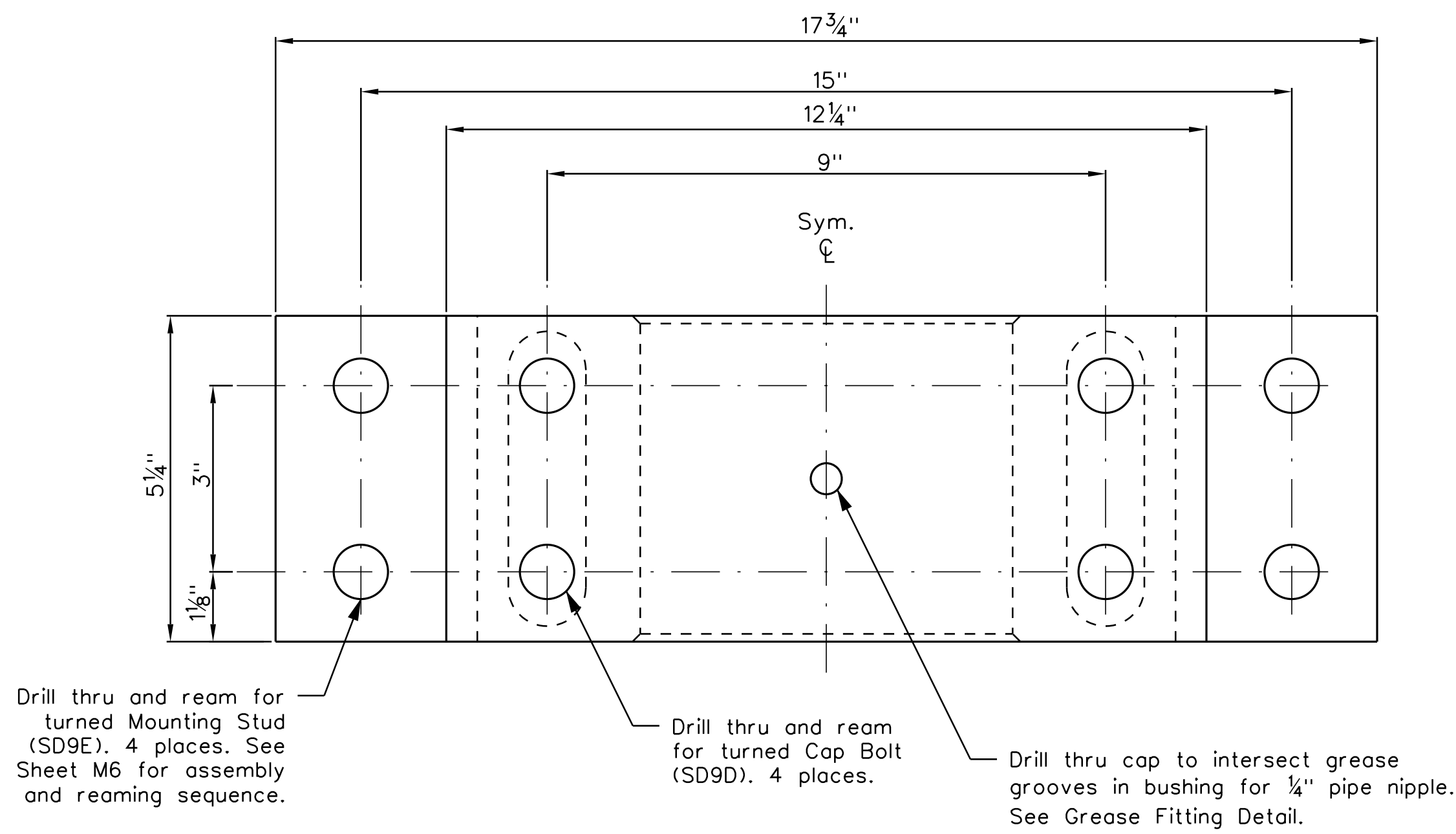
GREASE GROOVE DETAIL



SD8D CAP BOLT
Scale: 6" = 1'-0"

STATE OF MAINE DEPARTMENT OF TRANSPORTATION STP-2260(700)		BRIDGE NO. 2039 22607.00 WIN		BRIDGE PLANS	
PROJ. MANAGER	DATE	BY	DATE	SIGNATURE	DATE
DESIGN-DETAILED	09-24-18	M.BROGIE	10-01-18	ROBERT JOHN TOSOLT	10-02-2018
CHECKED-REVIEWED		R.TOSOLT			
DESIGN-DETAILED		P.BANLOW			
DESIGN-DETAILED		R.TOSOLT			
REVISIONS 1					
REVISIONS 2					
REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					
BARTER'S ISLAND BRIDGE BACK RIVER BOOTHBAY			LINCOLN COUNTY SPAN DRIVE MACHINERY DETAILS II		
SHEET NUMBER			72		
OF 132			M4		

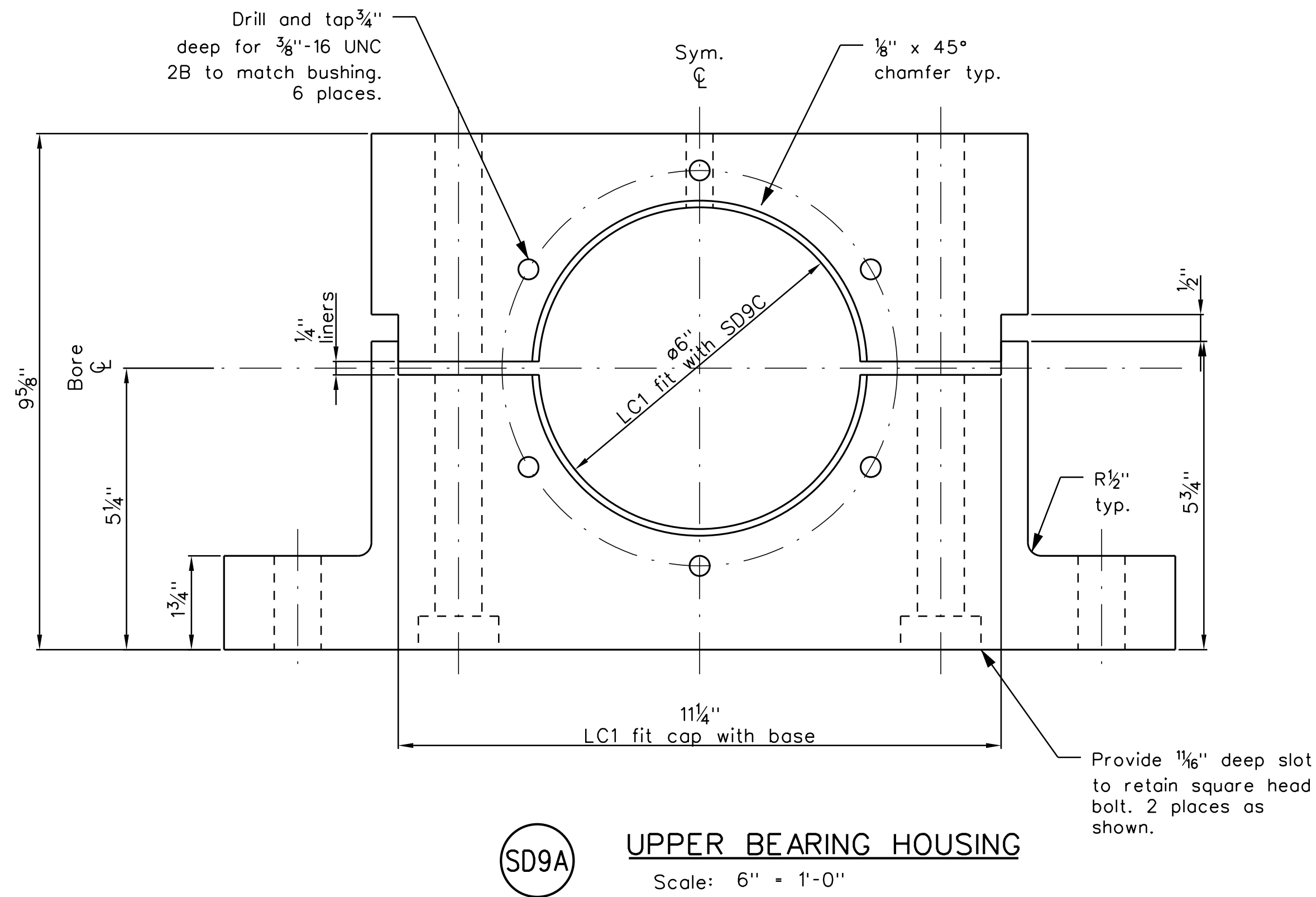
ENGINEER OF RECORD:
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ENGINEERING
800 HYDE PARK, DOWLESTOWN, PA 19022, USA
TEL: (267) 340-9630 www.sobengineering.net



Drill thru and ream for turned Mounting Stud (SD9E). 4 places. See Sheet M6 for assembly and reaming sequence.

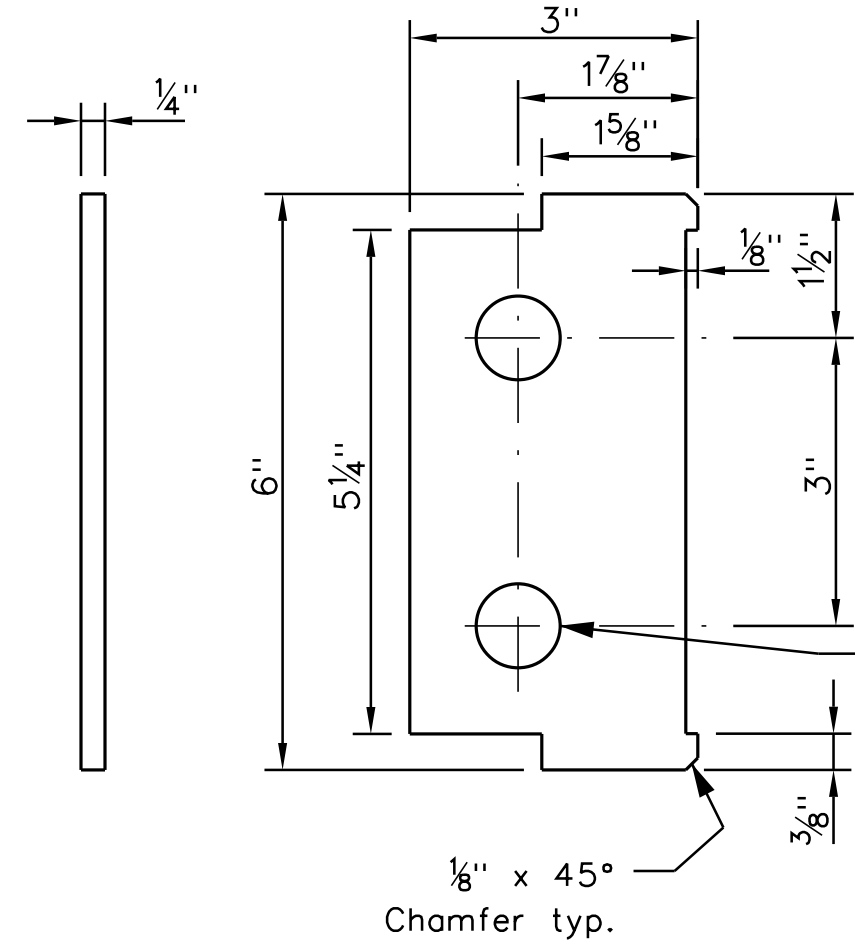
Drill thru and ream for turned Cap Bolt (SD9D). 4 places.

Drill thru cap to intersect grease grooves in bushing for 1/4" pipe nipple. See Grease Fitting Detail.

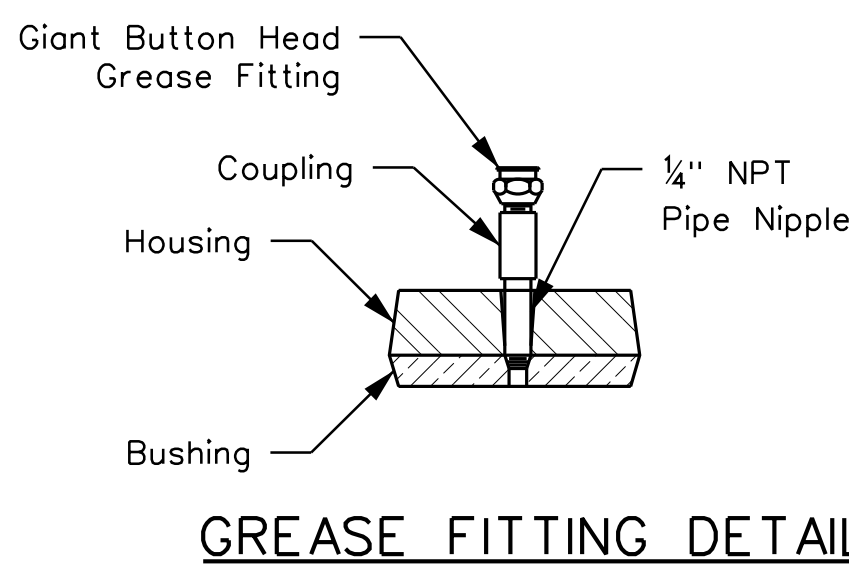


SHEET NOTES

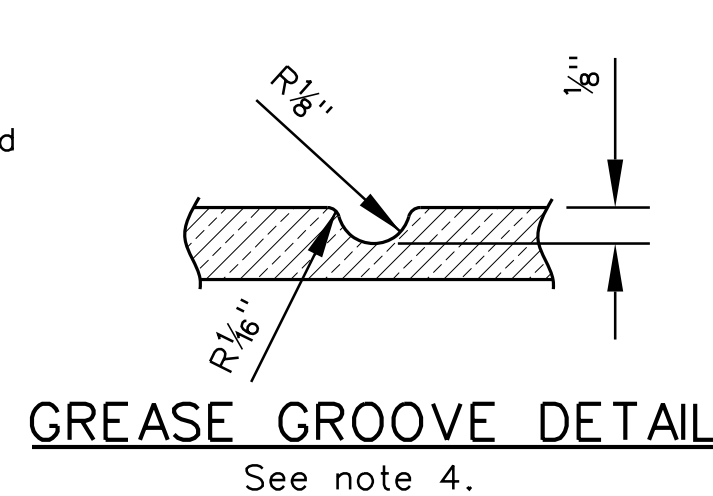
- See Sheet M1 for General Notes applicable to this drawing.
- See Span Drive Machinery Schedule on Sheet M2 for materials and quantities.
- All dimensions are finished dimensions unless otherwise noted. Add stock for fabrication as necessary to ensure complete cleanup of machined surfaces.
- Grease grooves for all bushings shall be machine cut per detail on this sheet. Break all sharp edges, particularly along chamfers, and deburr grooves where grease port intersects grooves in cap.
- Machine split in cap and base bushing flush with the split in the bearing housing after assembly.
- Perform finish machining of bushing bore and bearing mounting turned bolt holes following shop assembly.
- Drill and ream bearing liners together with bearing housing. Each bearing liner shall be brass and provide a total thickness of 1/4", consisting of 1/8" solid, 1/16" solid, and 1/16" laminated (0.003" peel-away laminations).
- Provide 125 microinch finish for all parts on this sheet unless otherwise noted.



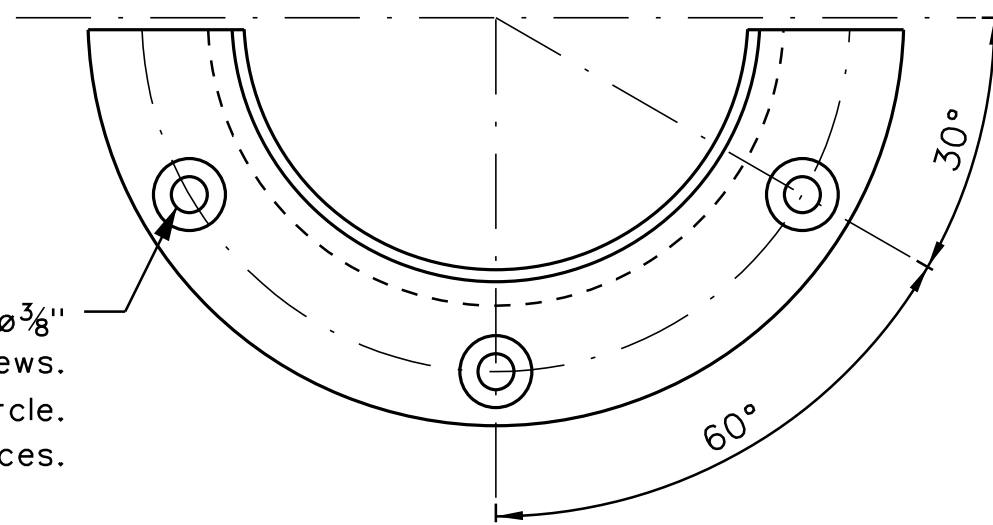
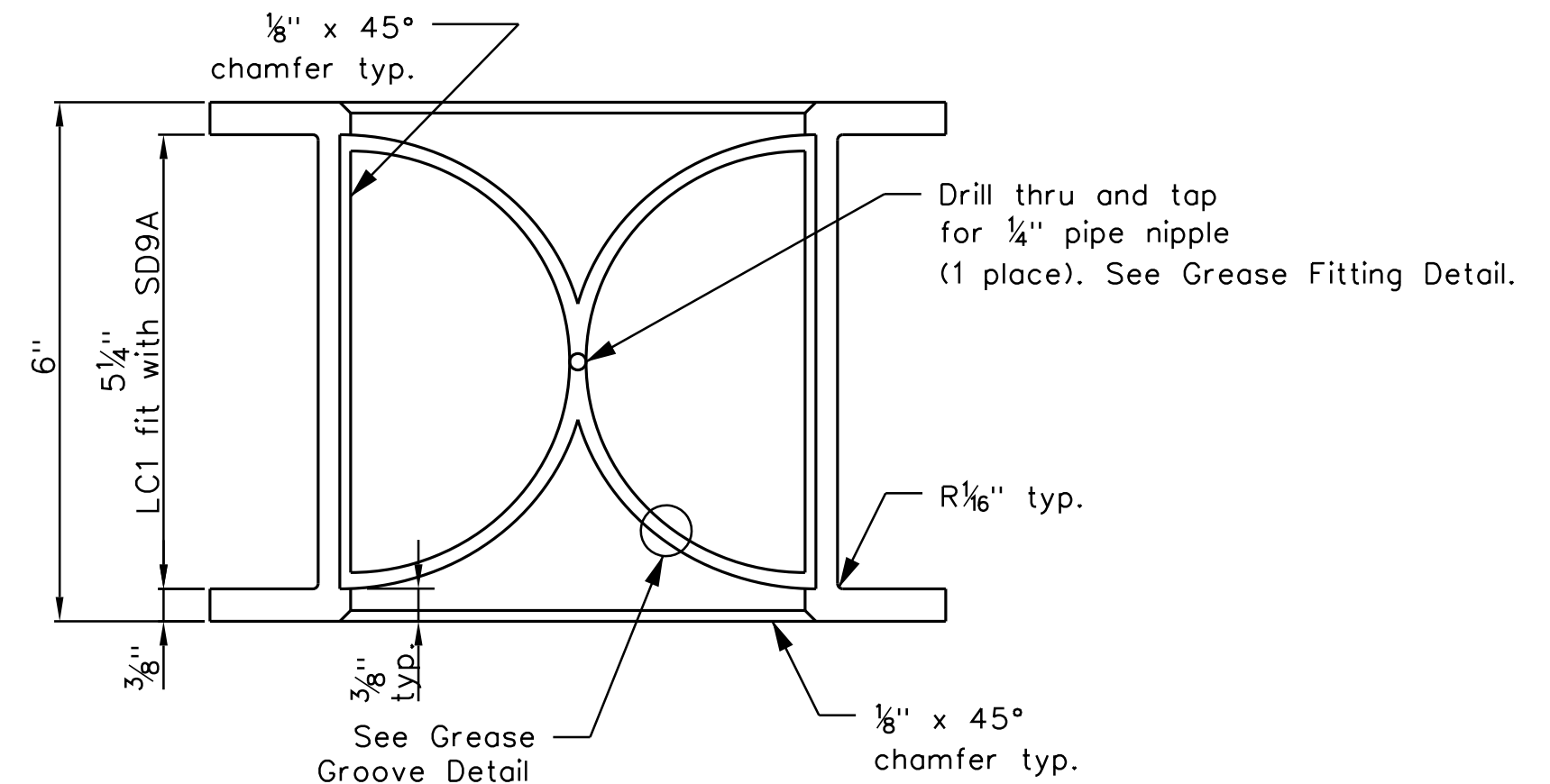
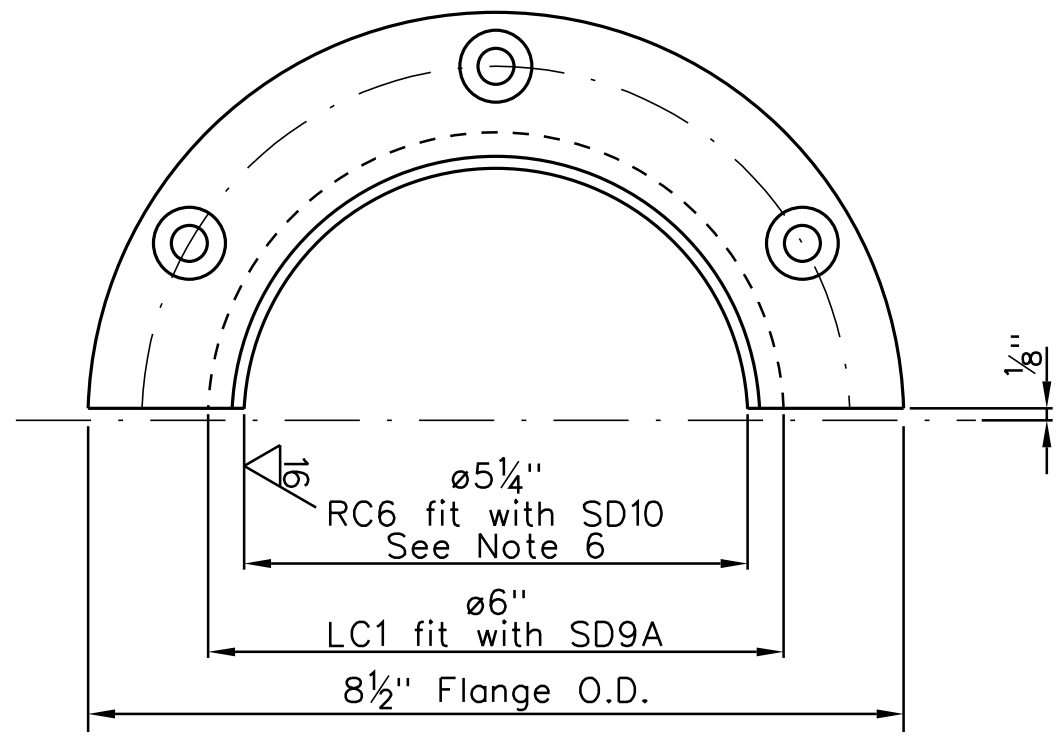
Drill thru for turned cap bolt. 2 places. See Note 7.



GREASE FITTING DETAIL

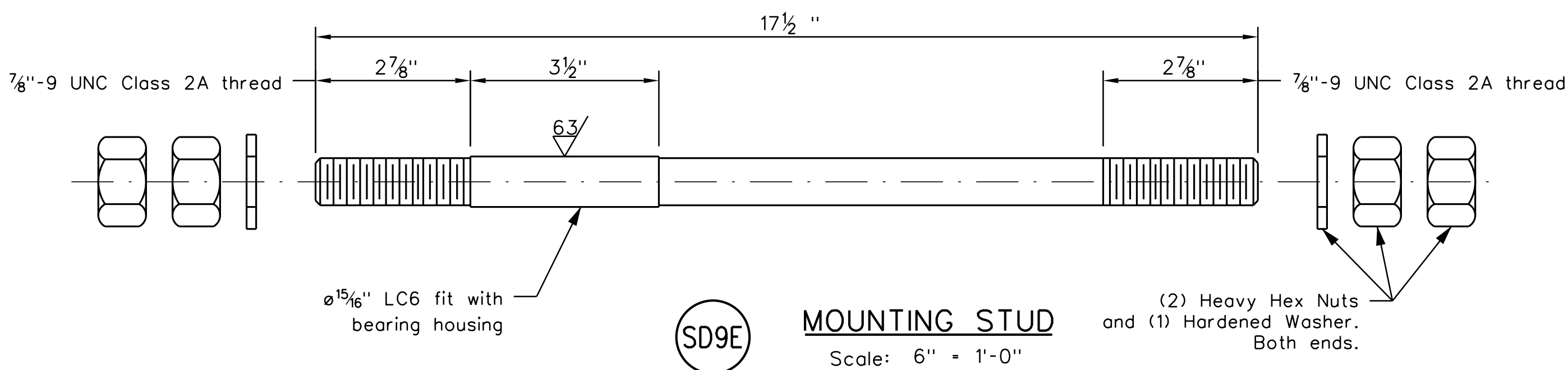


GREASE GROOVE DETAIL

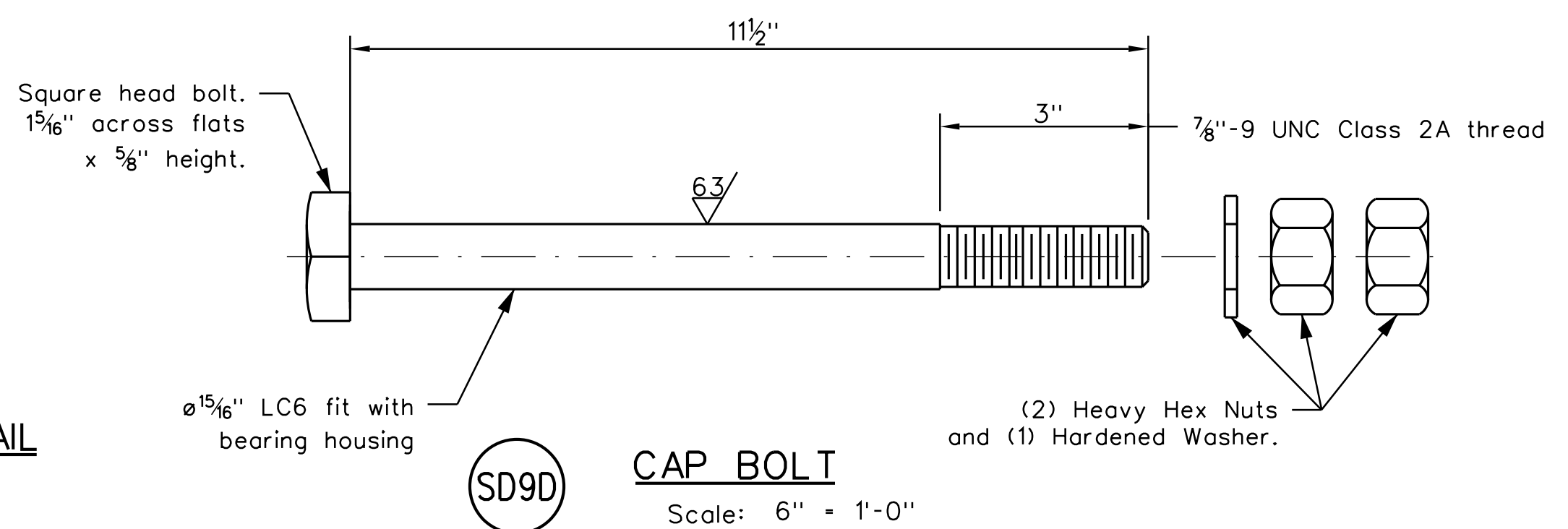


SD9B UPPER BEARING SPLIT BUSHING

Scale: 6" = 1'-0"
Provide 125 microinch finish U.O.N.



(2) Heavy Hex Nuts and (1) Hardened Washer. Both ends.

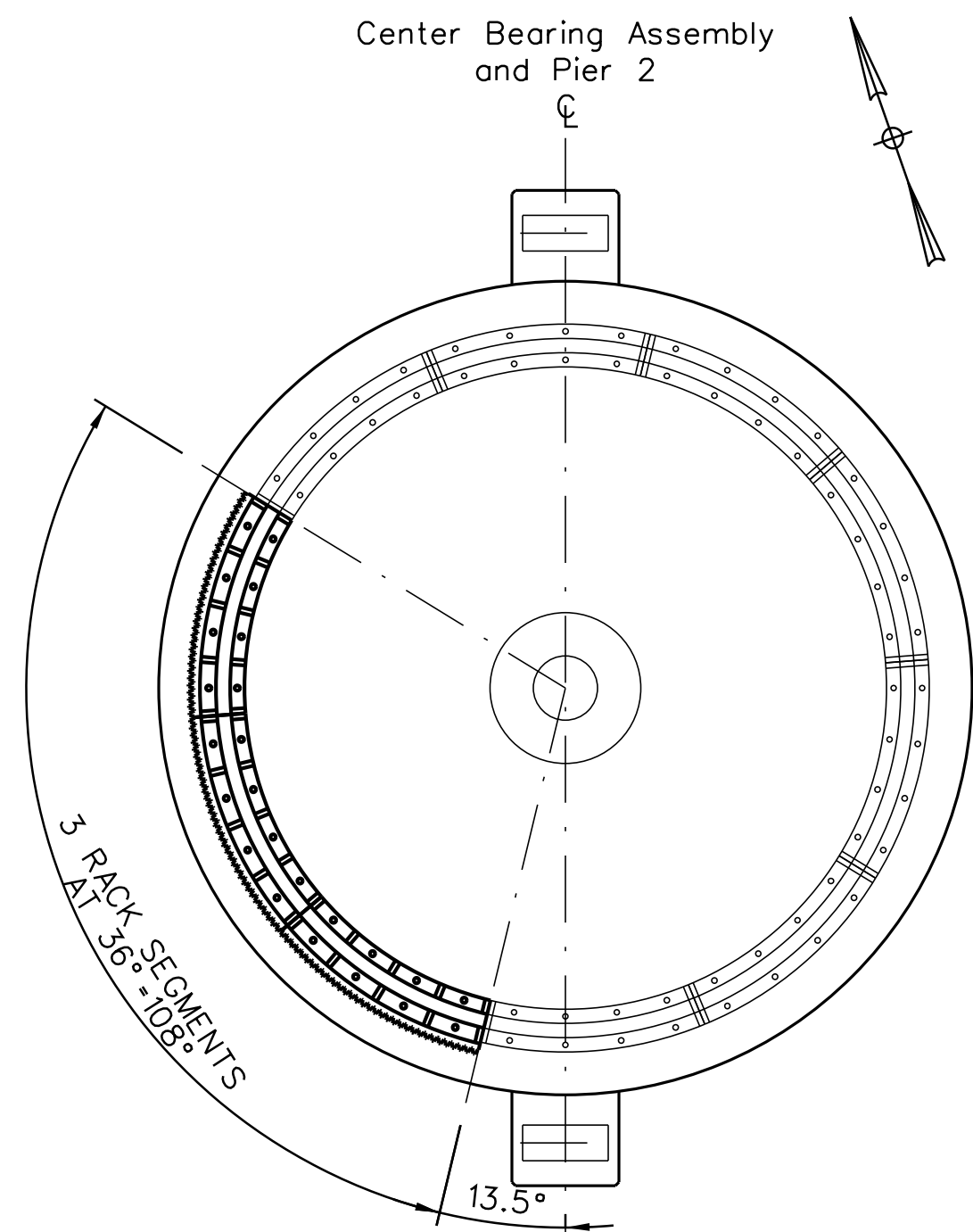


(2) Heavy Hex Nuts and (1) Hardened Washer.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		STP-2260(700)		BRIDGE NO. 2039		BRIDGE PLANS	
BARTER'S ISLAND BRIDGE BACK RIVER BOOTHBAY		LINCOLN COUNTY		SPAN DRIVE MACHINERY DETAILS III		SHEET NUMBER	
PROJ. MANAGER		BY		DATE		SIGNATURE	
DESIGN-DETAILED		M.BROGIE		09-24-18		ROBERT JOHN TOSOLT	
CHECKED-REVIEWED		R.TOSOLT		10-01-18		15216	
DESIGNS-DETAILED						P.E. NUMBER	
REVISIONS 1						10-02-2018	
REVISIONS 2						DATE	
REVISIONS 3							
REVISIONS 4							
FIELD CHANGES							

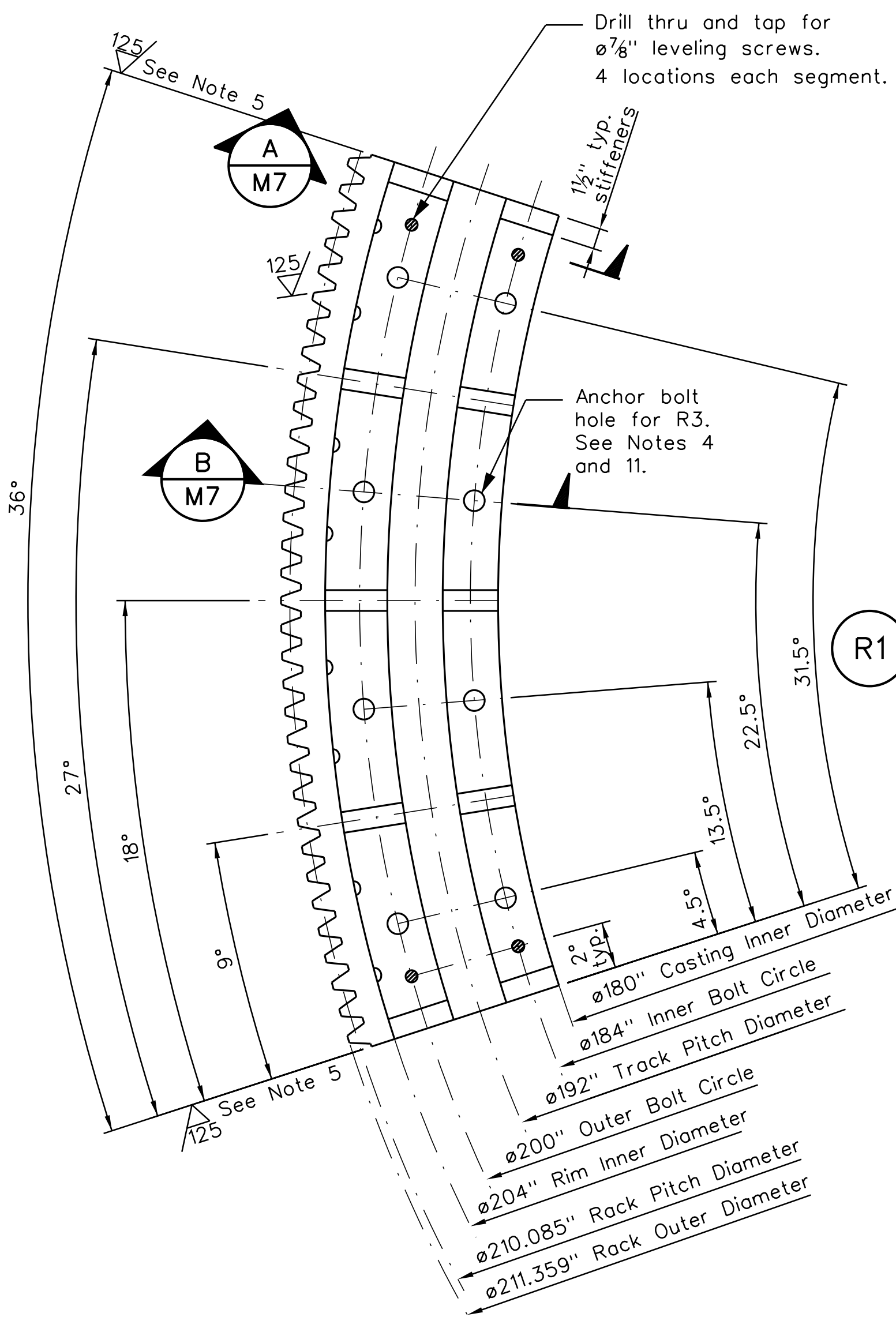
M5

ENGINEER OF RECORD:
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ENGINEERING
800 HYDE PARK, DOYLESTOWN, PA 19902, USA
TEL: (717) 340-5830 www.sobengineering.net

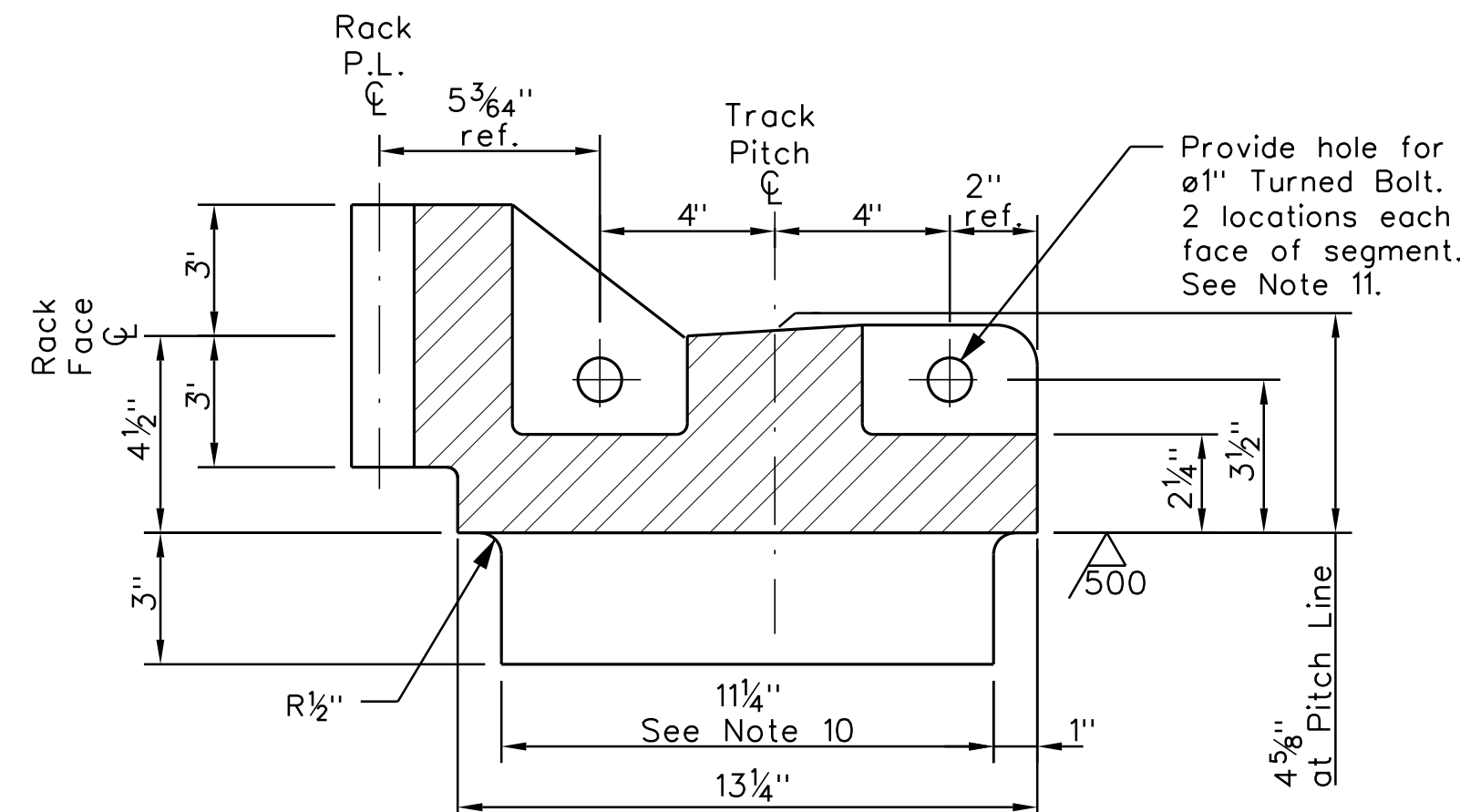


MK4 PLAN VIEW
M1 Scale: 1/4" = 1'-0"

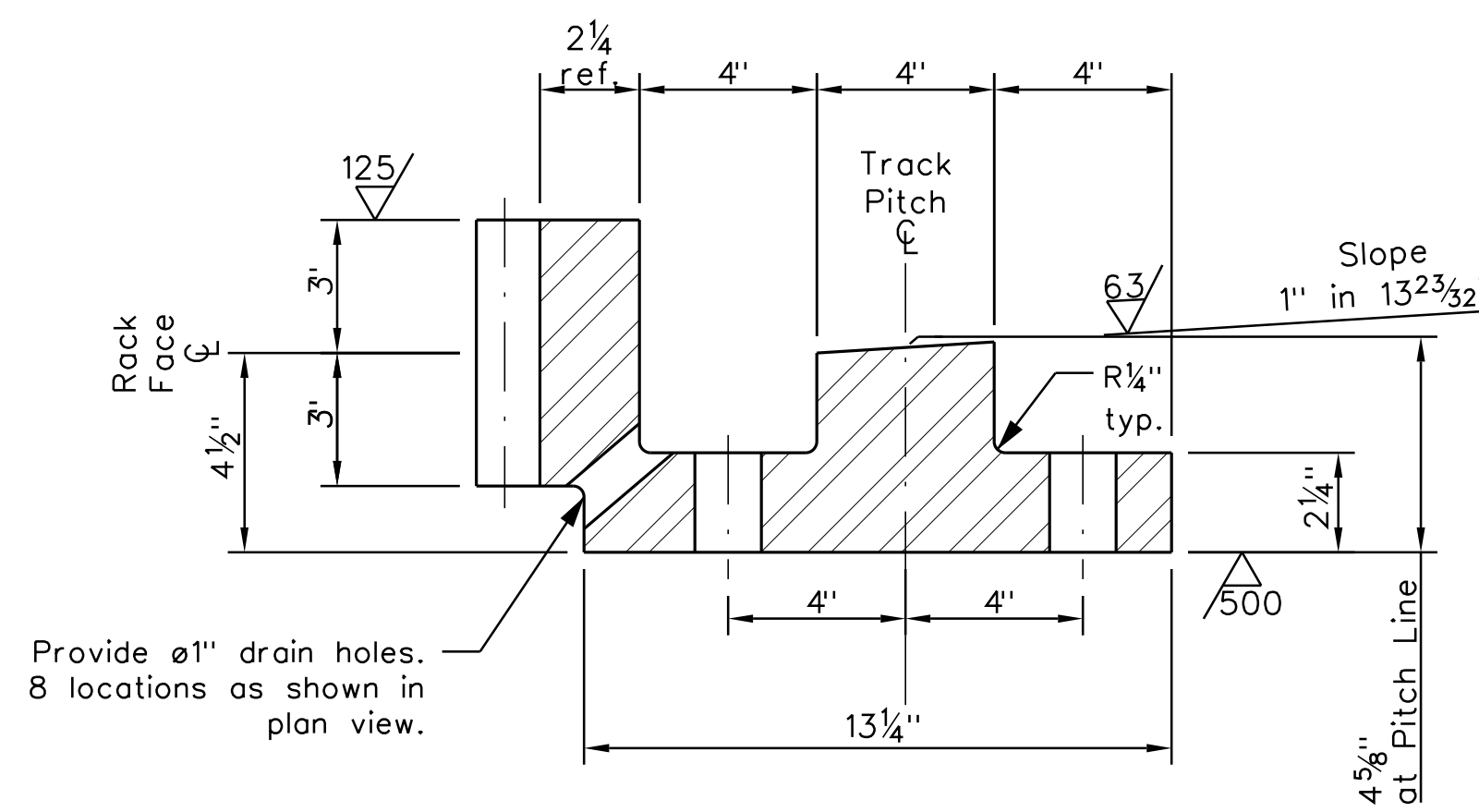
RACK SEGMENT SCHEDULE				
MARK NO.	QTY. REQ'D.	COMPONENT	DESCRIPTION (SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION)	REFERENCE SHEETS
R1	3	Rack Segment	Steel Casting. Material: ASTM A148 Grade 90-60.	M7
R2	6	Connection Bolts	High Strength Bolt. Material ASTM A325.	M7
R3	24	Anchor Bolts	ø1 1/4" x 17" long anchor bolt. Material: ASTM A193 Grade B7.	M7



R1 RACK SEGMENT
Scale: 1/2" = 1'-0"



A SECTION
M7 Scale: 3" = 1'-0"

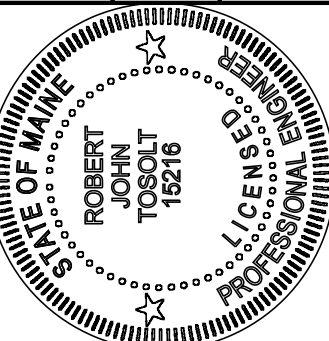


B SECTION
M7 Scale: 3" = 1'-0"

GEAR TOOTH DETAILS	
DESCRIPTION	Rack (R1)
TOOTH FORM	Involute Full Depth
CIRCULAR PITCH	2"
NUMBER OF TEETH	33 per segment
PRESSURE ANGLE	20 degree
BACKLASH	0.080" - 0.110"
PITCH DIAMETER	210.085"
WHOLE DEPTH	1.433"
ADDENDUM	0.637"
DEDENDUM	0.796"
CIRCULAR THICKNESS	1.000" (nom)
TOOTH PROFILE SURFACE FINISH	125
AGMA QUALITY NO. (PER AGMA 2000-A88)	8

SHEET NOTES

- See Sheet M1 for General Notes applicable to the work.
- All dimensions are finished dimensions unless otherwise noted. Add stock for fabrication as necessary to ensure complete cleanup of machined surfaces.
- Scribe v-notch pitch line (P.L.) 1/16" deep on top surface of balance wheel track and rack.
- Drill thru ø1 3/8" for ø1 1/4" anchor bolts. 8 locations each segment. Spot face as required. Back fill annulus with grout following acceptance of alignment.
- Finish ends of rack segments to provide uniform contact at mating surfaces.
- Assemble segments in shop together with track segments to demonstrate proper fit up and dimensional verification of pitch radius across segments.
- Break all sharp edges.
- Contractor to verify anchor bolt length facilitates tensioning method. Remove excess bolt length to provide 1" of thread beyond nut.
- All backlash shall be taken from Rack. Final tooth thickness shall be verified in the shop and documented on As-Built Drawings.
- Locate 1" thick anchor lugs in line with stiffeners. 5 locations each segment.
- Spot face flange as required to ensure bolt head/nut bears squarely on flange.
- The elevation provided for the top of rack/track flange in view MK3 on sheet M8 is based on a theoretical 2 1/4" flange thickness. Due to potential variability in this thickness, the Contractor may need to provide additional machined surfaces (minimum 2 per segment) to establish uniform reference points on the top flange around the full circumference of the rack/track to facilitate installation and alignment in the field.



PROJ. MANAGER
CHECKED-REVIEWED
DESIGN-REVIEWED
DESIGNS-DETAILED
REVISIONS 1
REVISIONS 2
REVISIONS 3
REVISIONS 4
FIELD CHANGES

DATE	BY	R-TOSOLT
07-30-18	M.BROGIE	
10-01-18	R.TOSOLT	

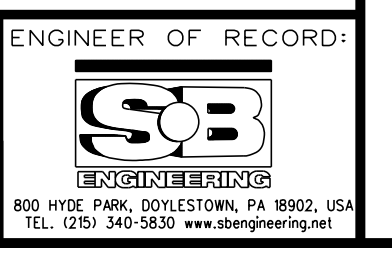
BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY
RACK DETAILS

SHEET NUMBER

75

OF 132

M7

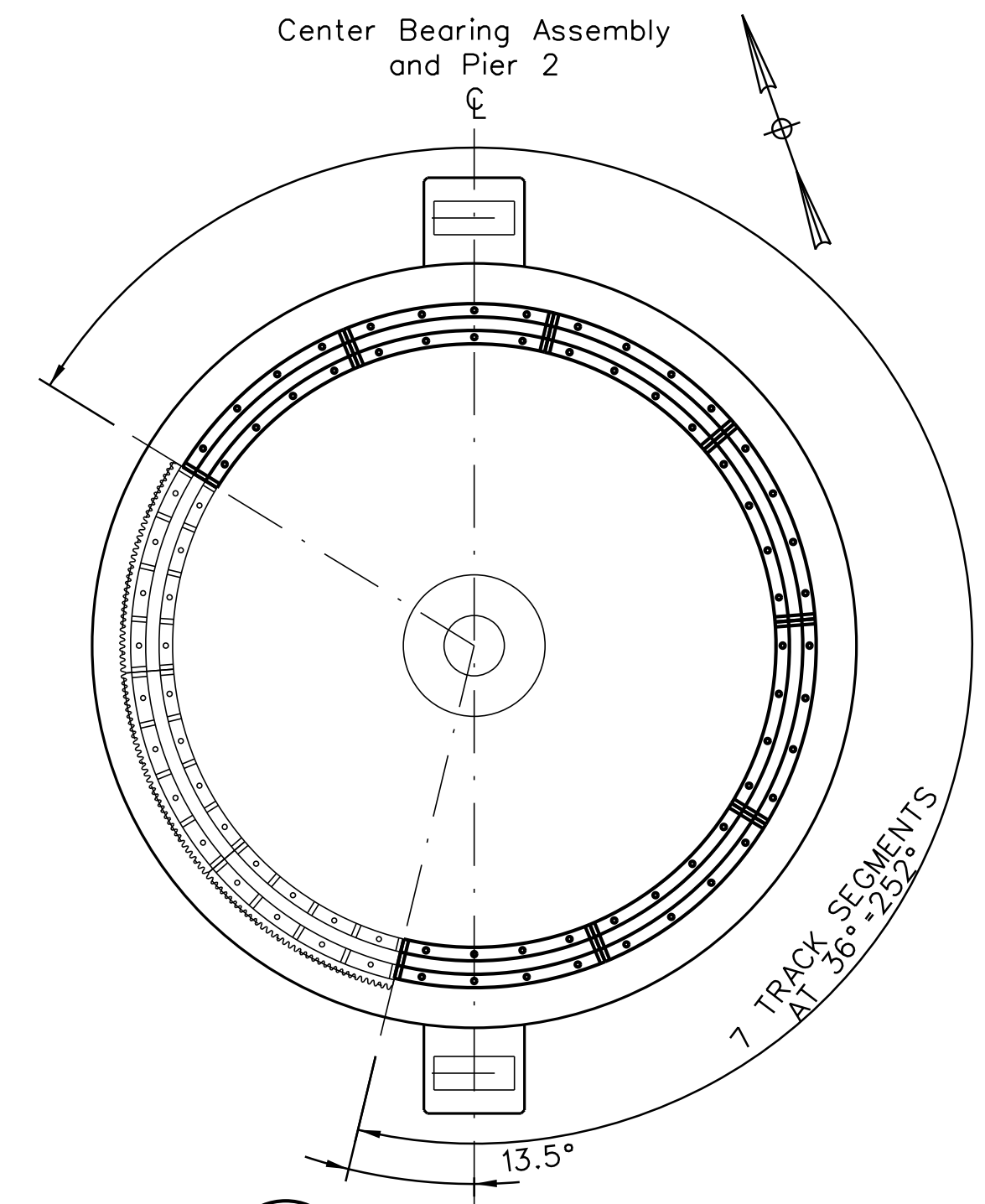


Date: 10/2/2018

Username: common

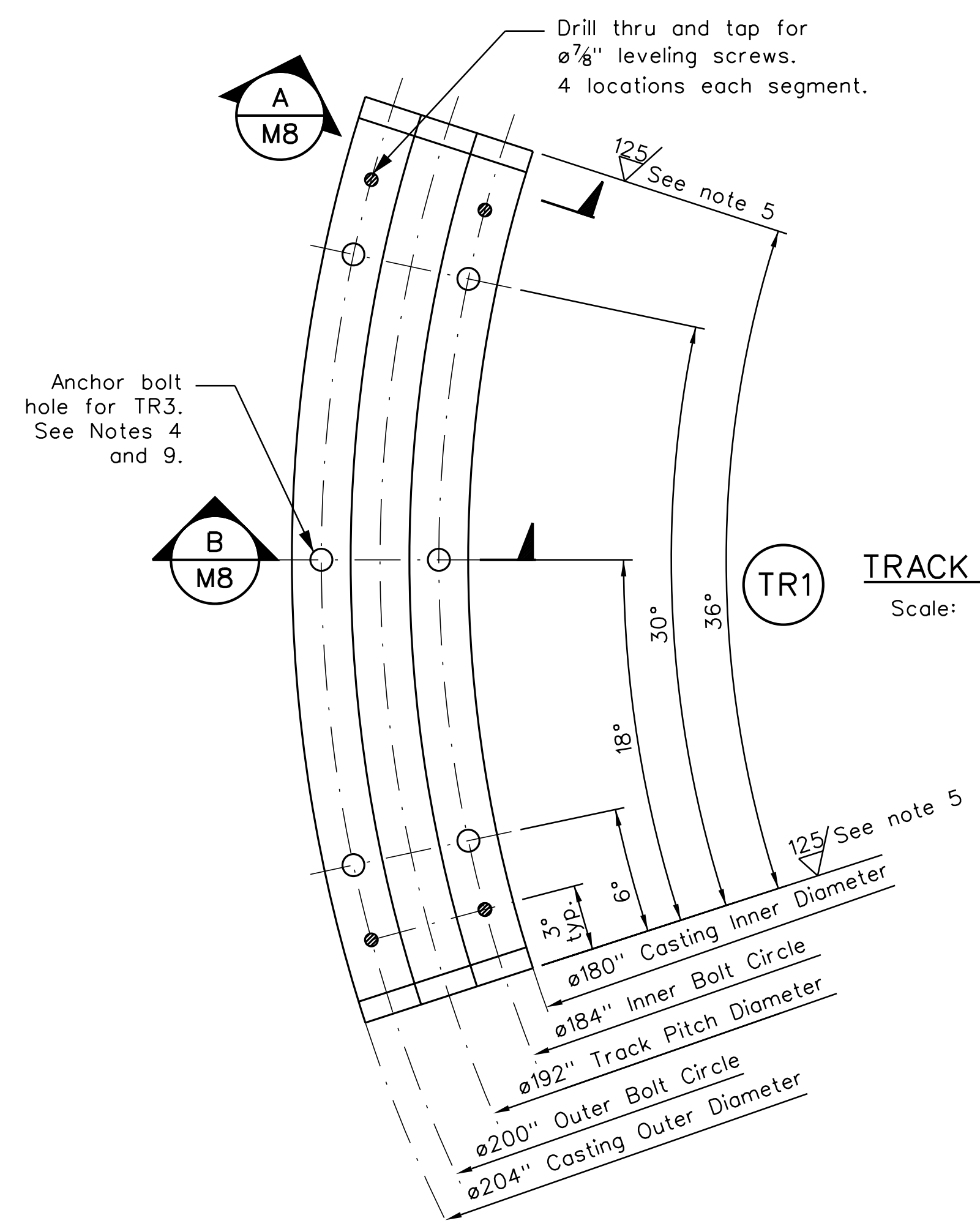
Division: BRIDGE

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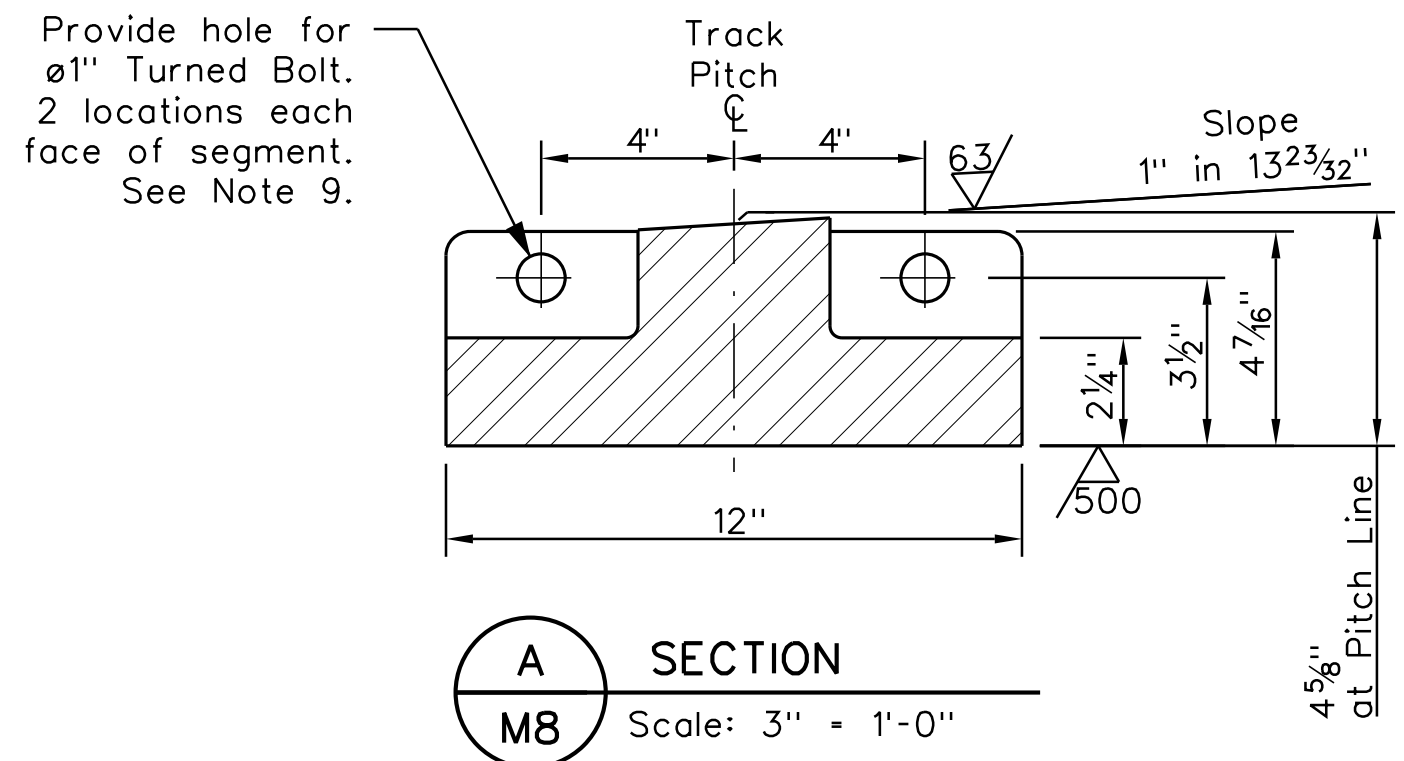


MK4
M1 PLAN VIEW
Scale: 1/4" = 1'-0"

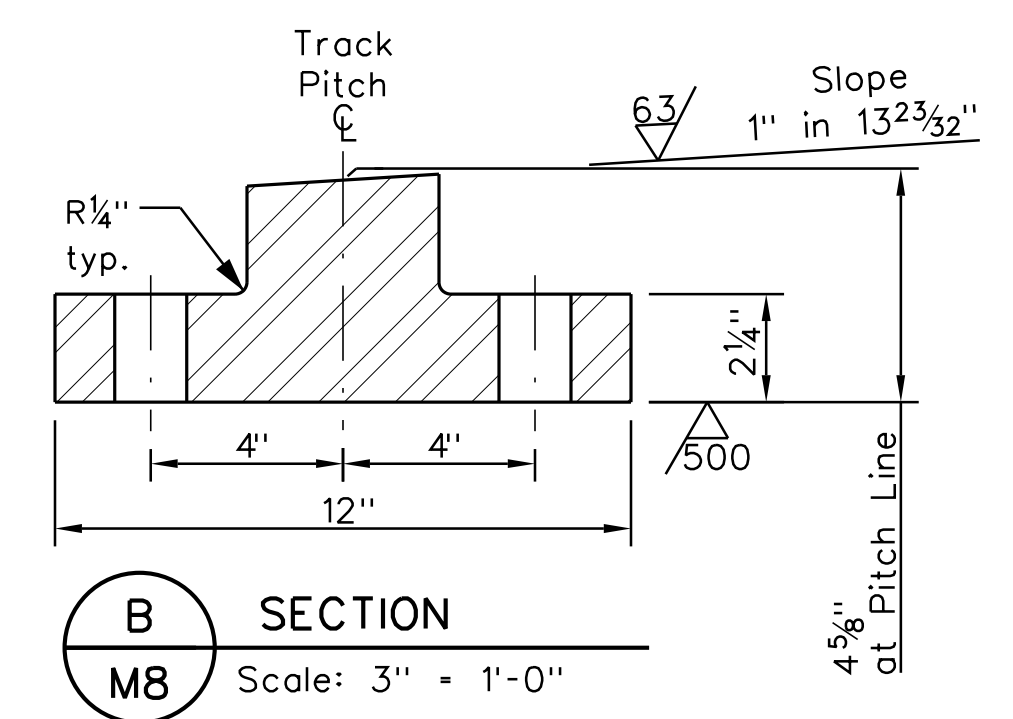
TRACK SEGMENT SCHEDULE				
MARK NO.	QTY. REQ'D.	COMPONENT	DESCRIPTION (SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION)	REFERENCE SHEETS
TR1	7	Track Segment	Steel Casting. Material: ASTM A148 Grade 80-40.	M8
TR2	14	Connection Bolts	High Strength Bolt. Material ASTM A325.	M8
TR3	42	Anchor Bolts	ø1 1/4" x 17" long anchor bolt. Material: ASTM A193 Grade B7.	M8



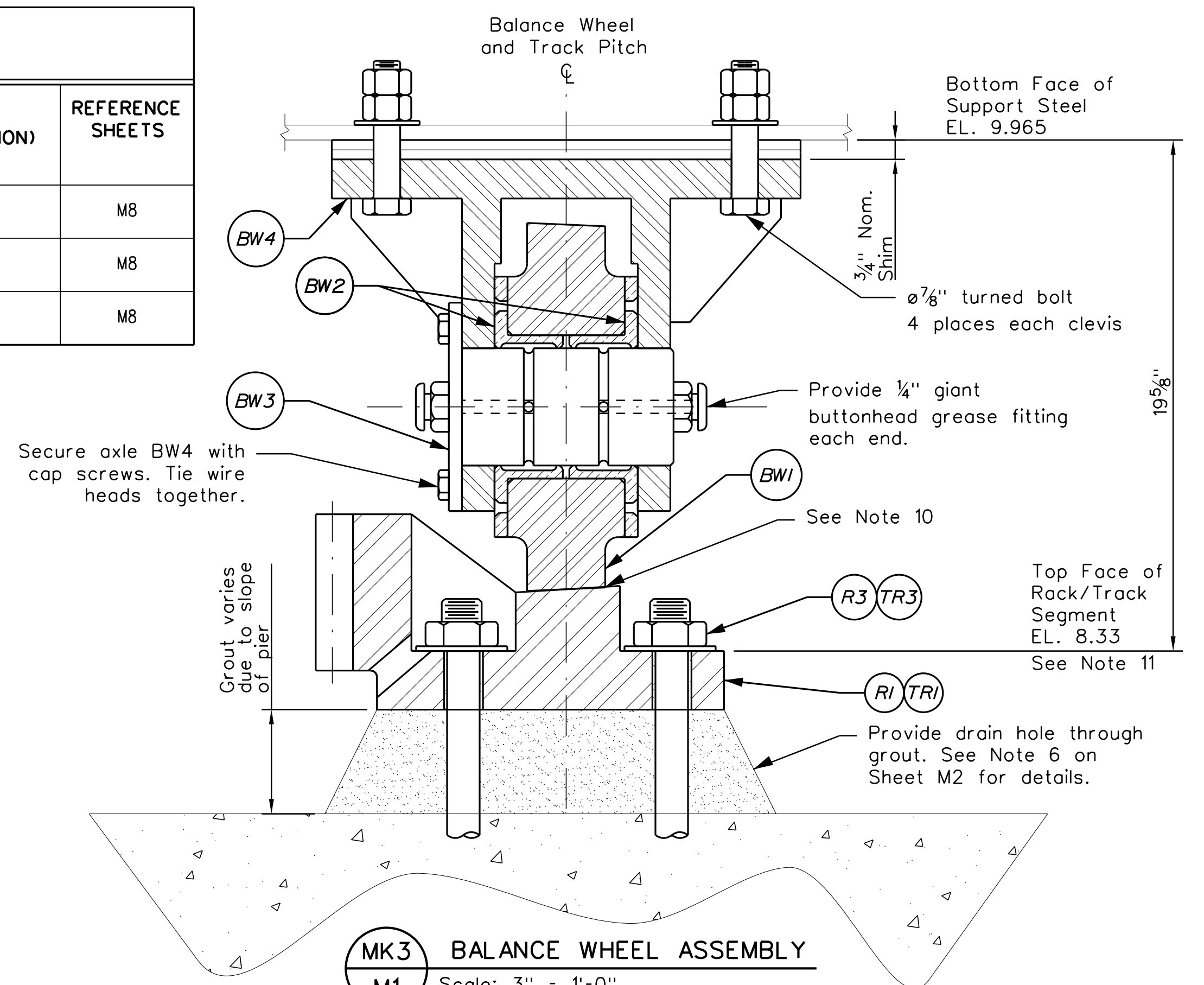
TR1
M8 TRACK SEGMENT
Scale: 1 1/2" = 1'-0"



A
M8 SECTION
Scale: 3" = 1'-0"



B
M8 SECTION
Scale: 3" = 1'-0"



MK3
M1 BALANCE WHEEL ASSEMBLY
Scale: 3" = 1'-0"
See Balance Wheel Schedule on Sheet M9 for materials, quantities, and details for parts BW1 through BW4.

SHEET NOTES

- See Sheet M1 for General Notes applicable to the work.
- All dimensions are finished dimensions unless otherwise noted. Add stock for fabrication as necessary to ensure complete cleanup of machined surfaces.
- Scribe v-notch pitch line (P.L.) 1/16" deep on top surface of balance wheel track.
- Drill thru ø1 3/8" for ø1 1/4" anchor bolts. 6 locations each segment. Spot face as required. Back fill annulus with grout following acceptance of alignment.
- Finish ends of track segments to provide uniform contact at mating surfaces.
- Assemble segments in shop together with rack segments to demonstrate proper fit and dimensional verification of pitch radius across segments.
- Break all sharp edges.
- Contractor to verify anchor bolt length facilitates tensioning method. Remove excess bolt length to provide 1" of thread beyond nut.
- Spot face holes as required to ensure bolt head/nut bears squarely on flange.
- Provide 1/8" clearance between each wheel and track with span supported on the center bearing and no contact at the end casters, end jacks/seats, and live load rollers.
- The elevation provided for the top of rack/track flange in view MK3 on sheet M8 is based on a theoretical 2 1/4" flange thickness. Due to potential variability in this thickness, the Contractor may need to provide additional machined surfaces (minimum 2 per segment) to establish uniform reference points on the top flange around the full circumference of the rack/track to facilitate installation and alignment in the field.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)
BRIDGE NO. 2039
WIN 22607.00
BRIDGE PLANS

PROJ. MANAGER: [Signature]
DATE: 10-01-18
BY: M.BROGIE
CHECKED/REVIEWED: R.TOSOLT
DESIGNED/REVIEWED: P.BANDLOW
DESIGNED/REVIEWED: R.TOSOLT
REVISIONS: 1
REVISIONS: 2
REVISIONS: 3
REVISIONS: 4
FIELD CHANGES

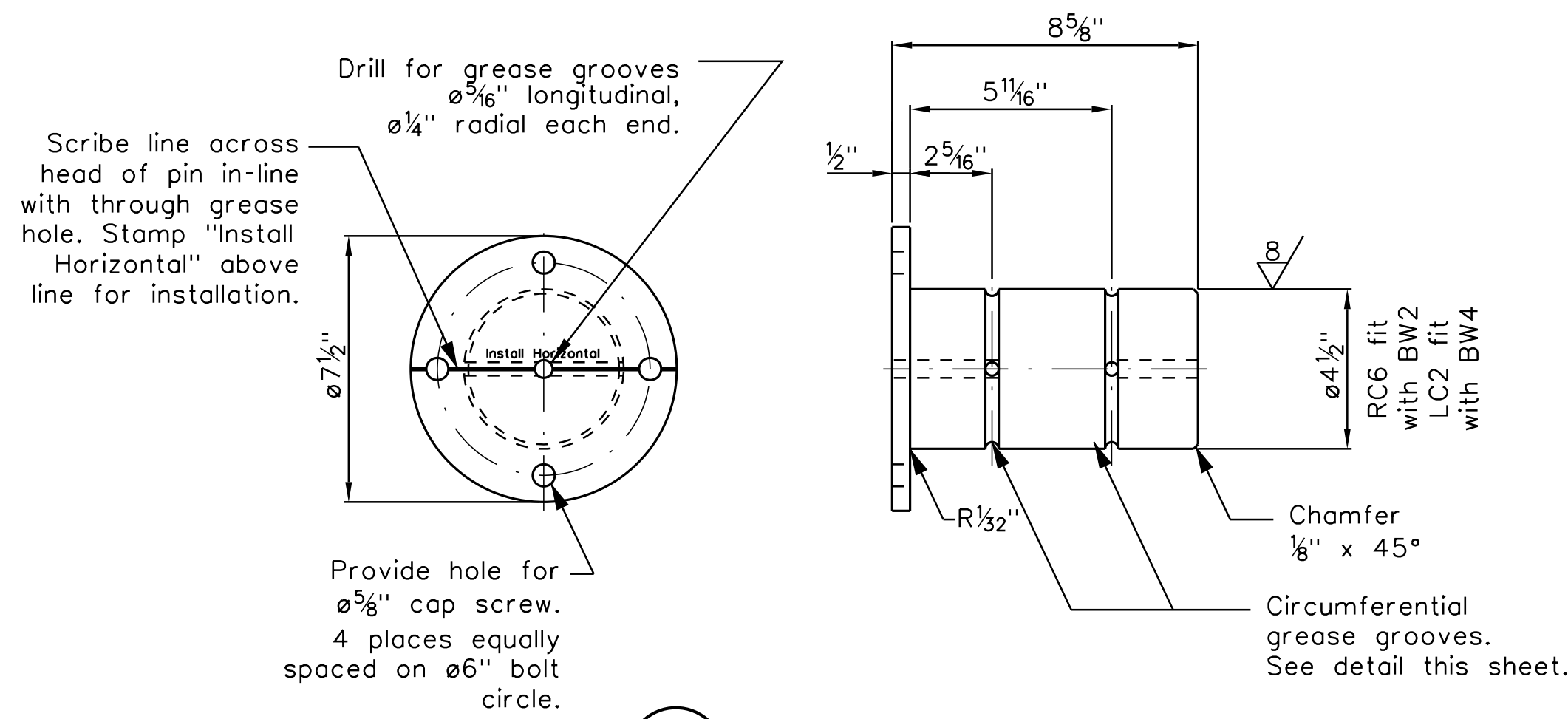
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P.E. NUMBER: 15216
DATE: 10-02-2018

BARTER'S ISLAND BRIDGE
BACK RIVER
LINCOLN COUNTY
BOOTHBAY
BALANCE WHEEL
TRACK DETAILS

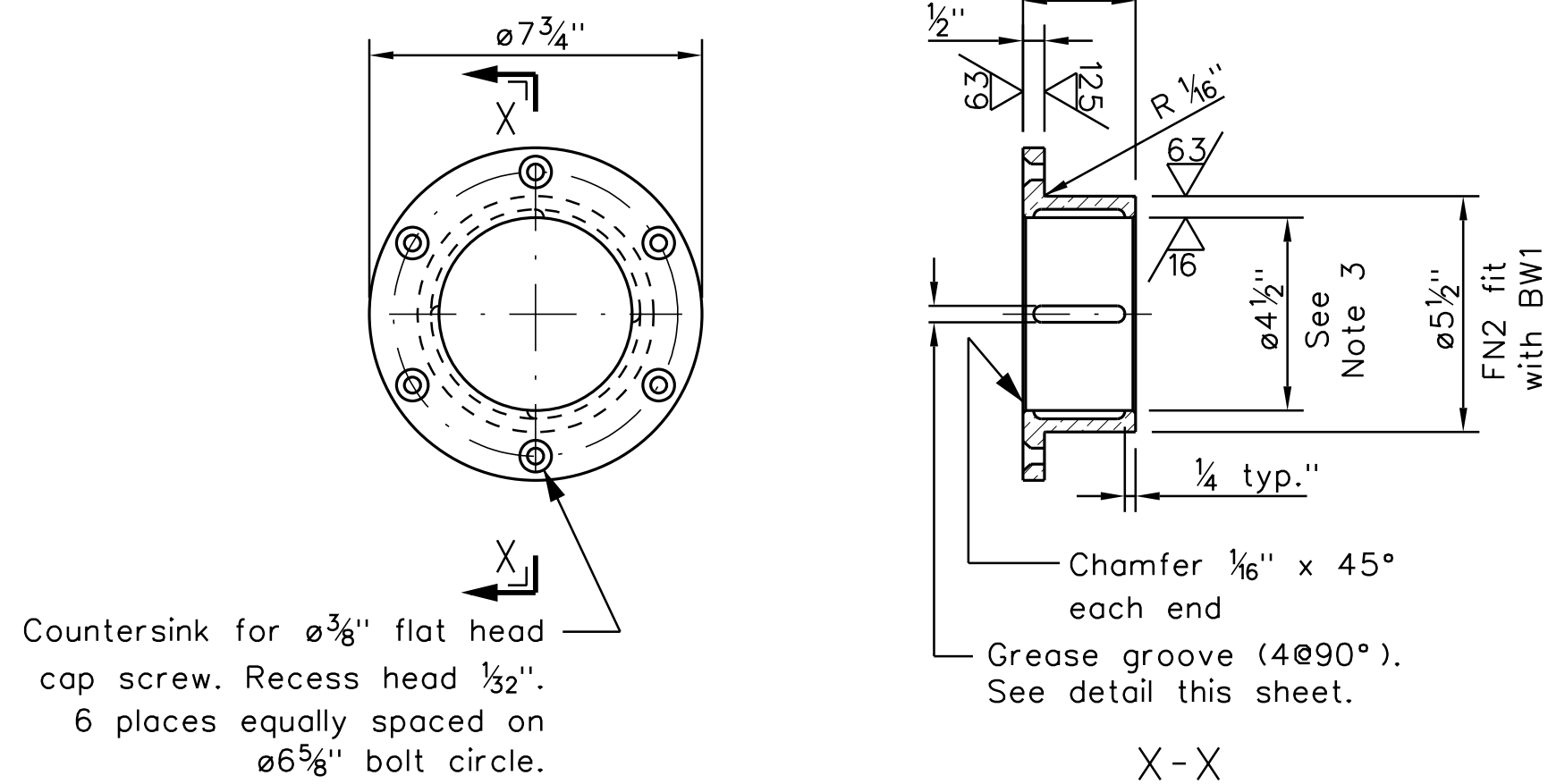
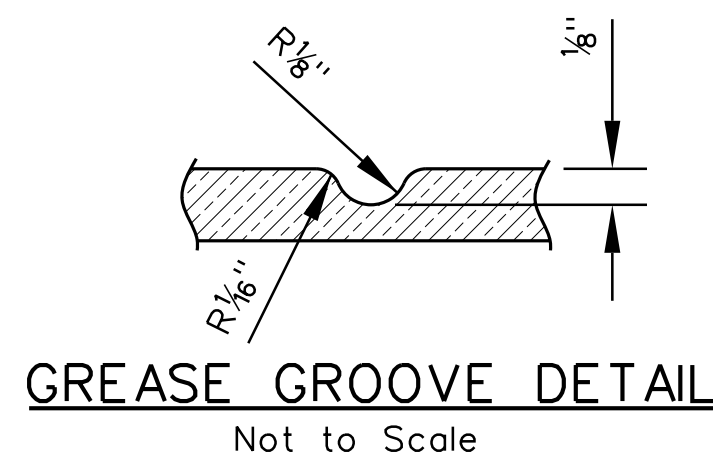
SHEET NUMBER
76
OF 132

M8

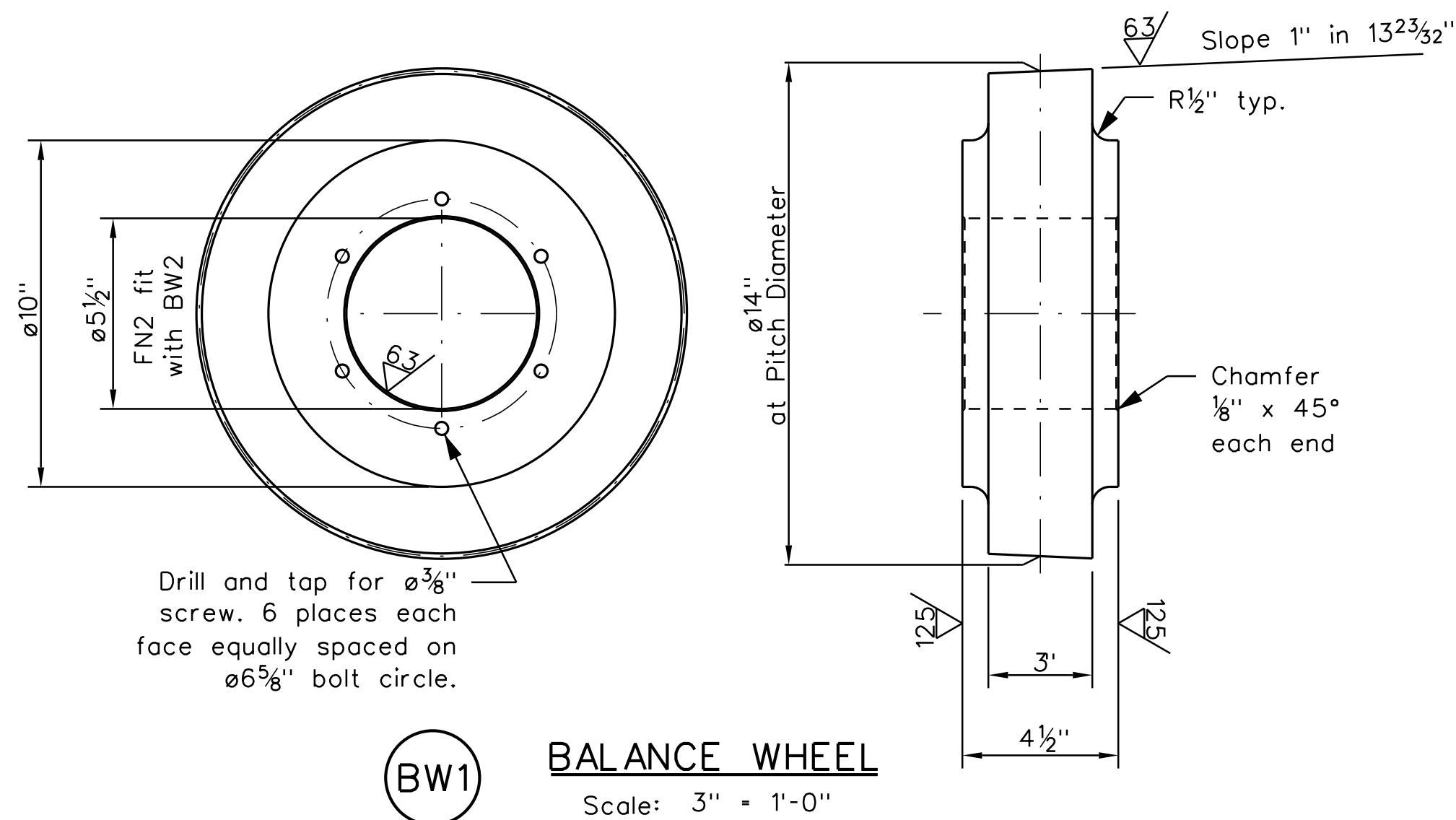
ENGINEER OF RECORD:
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ENGINEERING
800 HYDE PARK, DOYLESTOWN, PA 19902, USA
TEL: (717) 340-2630 www.sobengineering.com



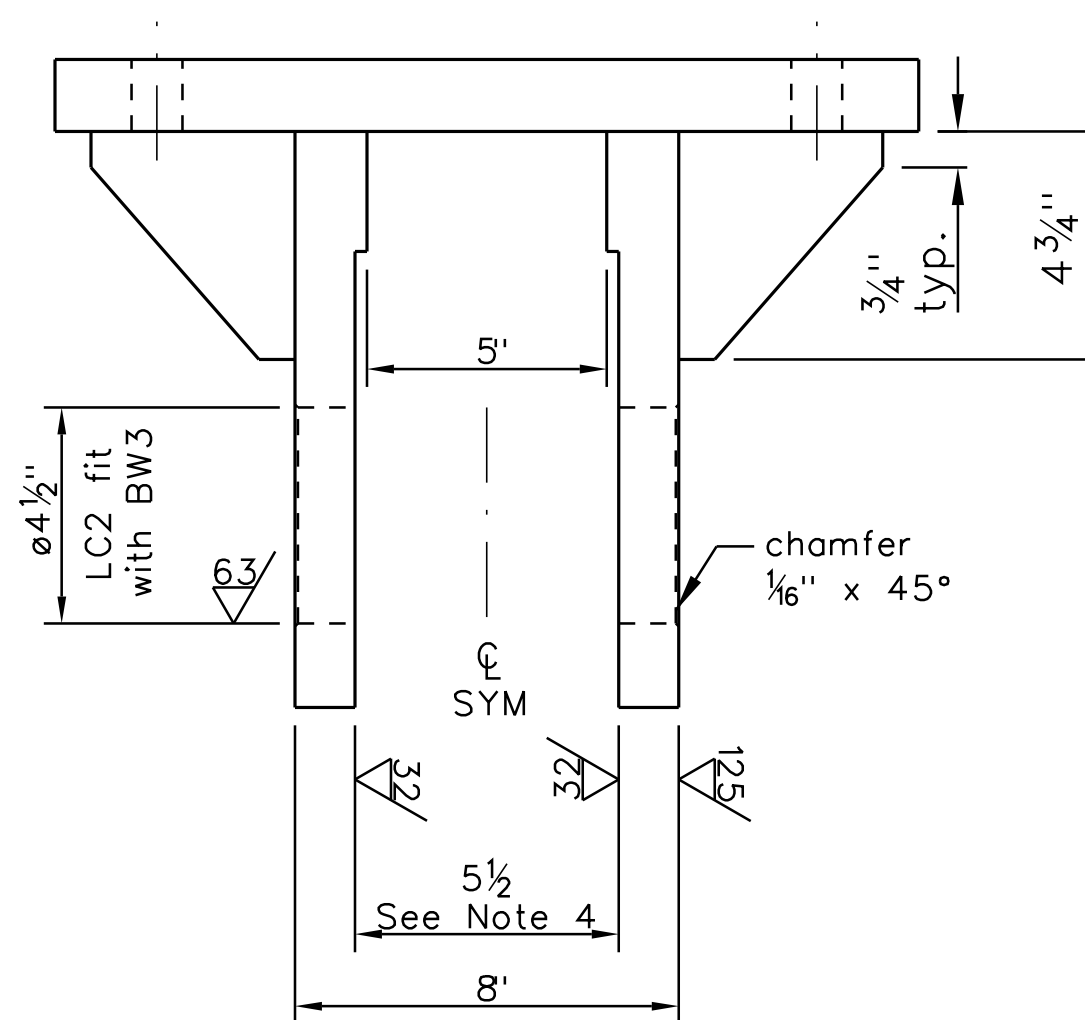
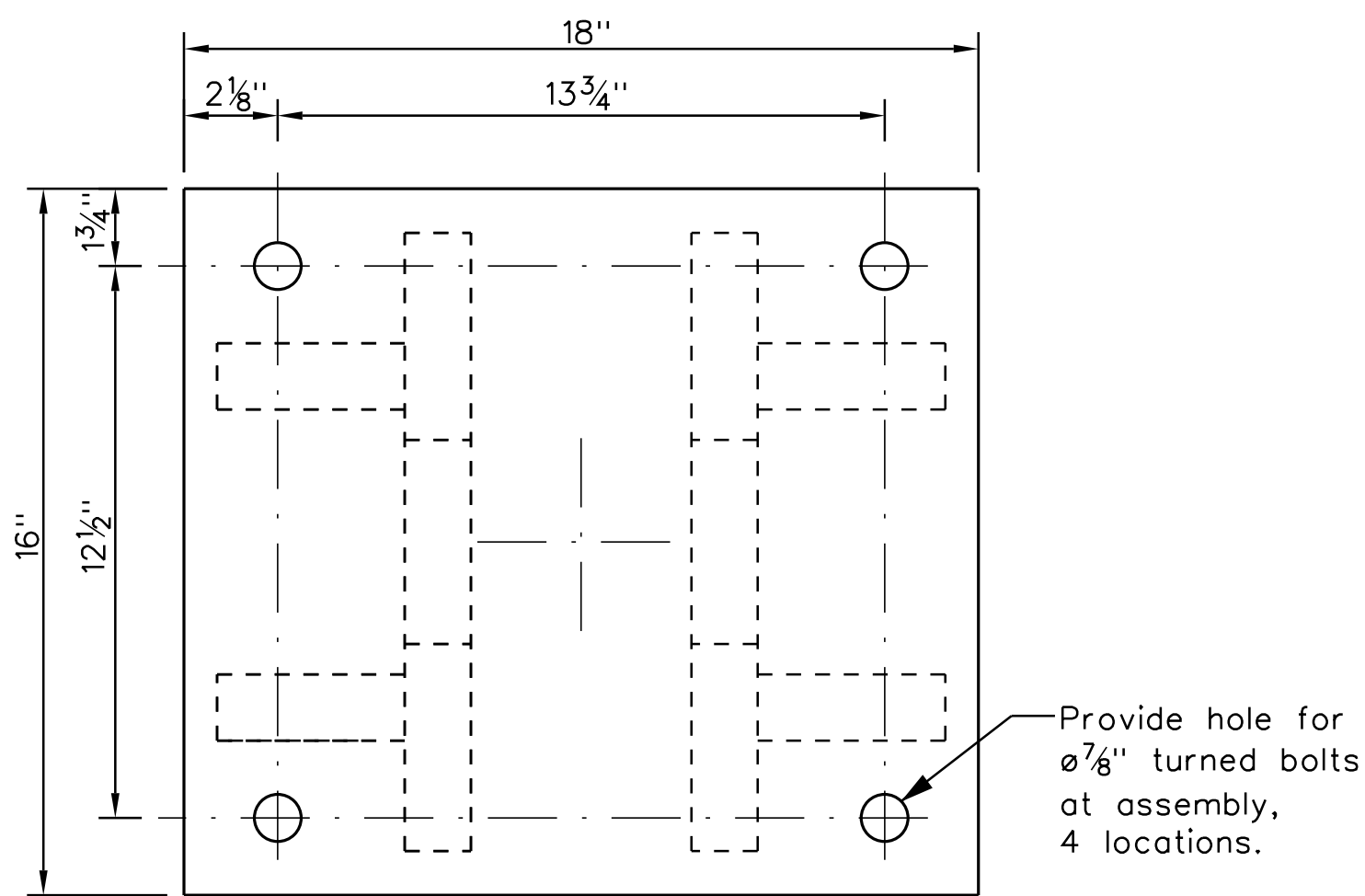
BW3
BALANCE WHEEL AXLE
 Scale: 3" = 1'-0"
 Provide 125 microinch finish U.O.N.



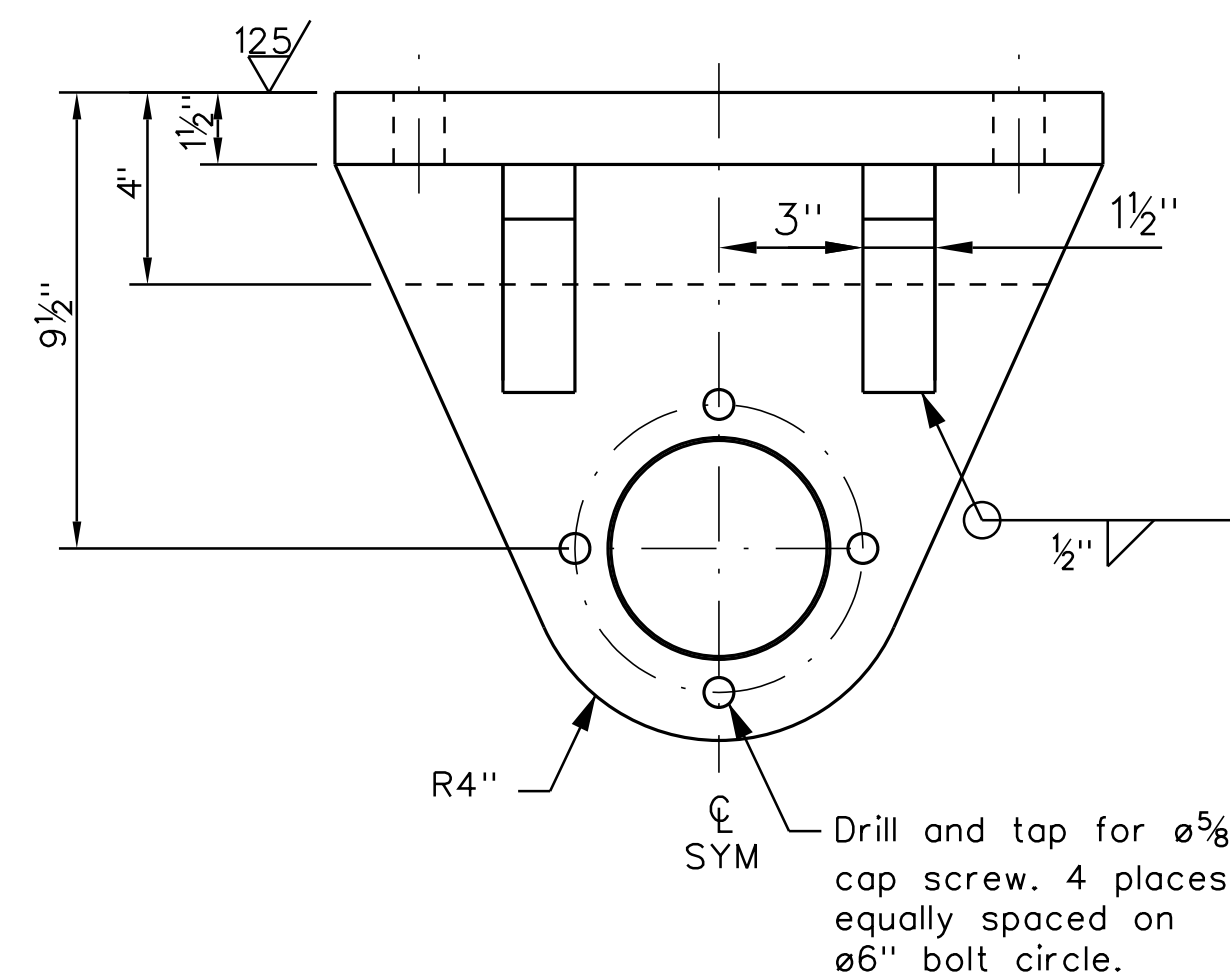
BW2
BALANCE WHEEL BUSHING
 Scale: 3" = 1'-0"



BW1
BALANCE WHEEL
 Scale: 3" = 1'-0"



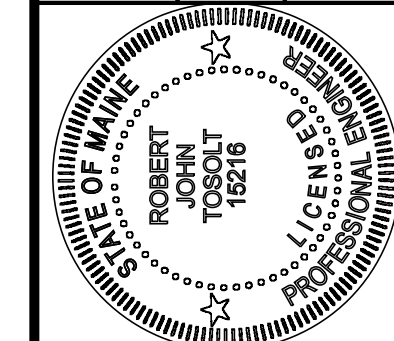
BW4
BALANCE WHEEL CLEVIS
 Scale: 3" = 1'-0"
 See Notes 4, 5 and 6 for fabrication details.



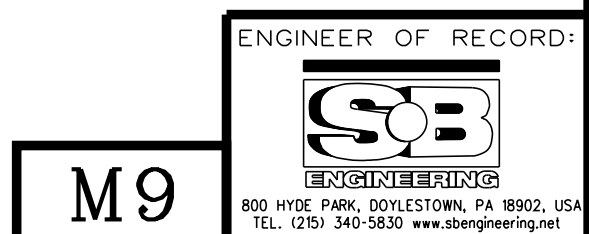
BALANCE WHEEL SCHEDULE				
MARK NO.	QTY. REQ'D.	COMPONENT	DESCRIPTION (SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION)	REFERENCE SHEETS
BW1	6	Balance Wheel	Steel Forging. Material: ASTM A668 Class D.	M8, M9
BW2	12	Bushing	Bronze. Material: ASTM B22 Alloy C93700.	M8, M9
BW3	6	Axle	Steel Forging. Material: ASTM A668 Class G.	M8, M9
BW4	6	Clevis	Steel Weldment or Casting. Material: ASTM A709 Grade 50 or ASTM A148 Grade 80-40.	M8, M9

SHEET NOTES

- See Sheet M1 for General Notes applicable to the work.
- See Sheet M8 for assembly view.
- Bore bushings in-line after assembly in Balance Wheel BW1. Provide RC6 fit with Axle BW3.
- Machine clevis ears to provide 0.030" to 0.060" thrust clearance with face of Balance Wheel Bushings at assembly.
- Clevis Fabrication: All welds $\frac{5}{8}$ " groove welds except as noted.
- Stress relieve weldment prior to machining.
- All dimensions are finished dimensions unless otherwise noted. Add stock for fabrication as necessary to ensure complete cleanup of machined surfaces.



PROJ. MANAGER	R. TOSOLT	DATE	10-02-2018
DESIGN-DETAILED	R. TOSOLT	BY	R. TOSOLT
CHECKED-REVIEWED	P. BANLOW	DATE	07-30-18
DESIGNS-DETAILED	R. TOSOLT	SIGNATURE	15216
REVISIONS 1		P.E. NUMBER	10-02-2018
REVISIONS 2		DATE	
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			



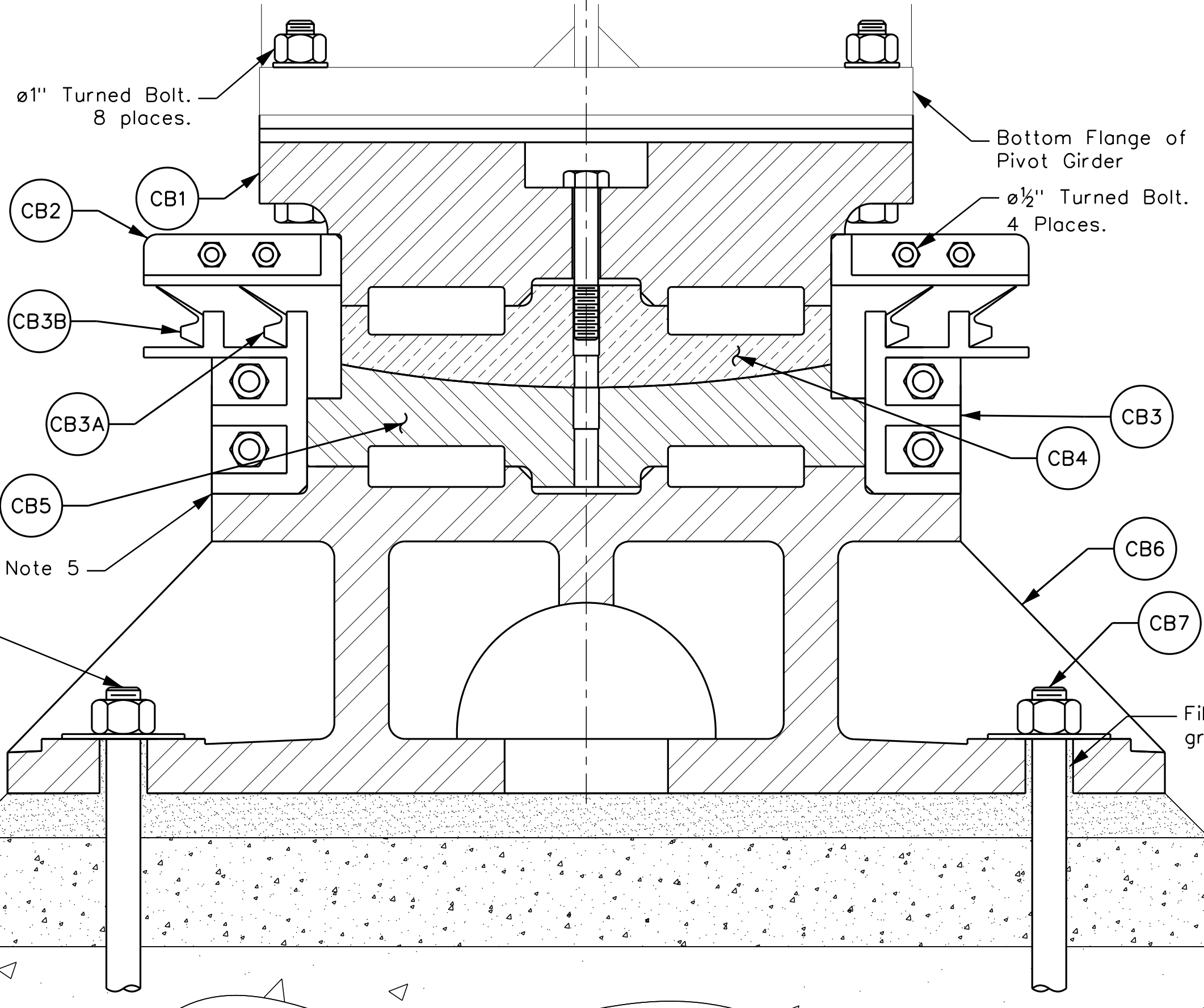
ENGINEER OF RECORD:
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 800 HYDE PARK, DOYLESTOWN, PA 19902, USA
 TEL: (717) 340-5830 www.sobengineering.net

Date: 10/2/2018

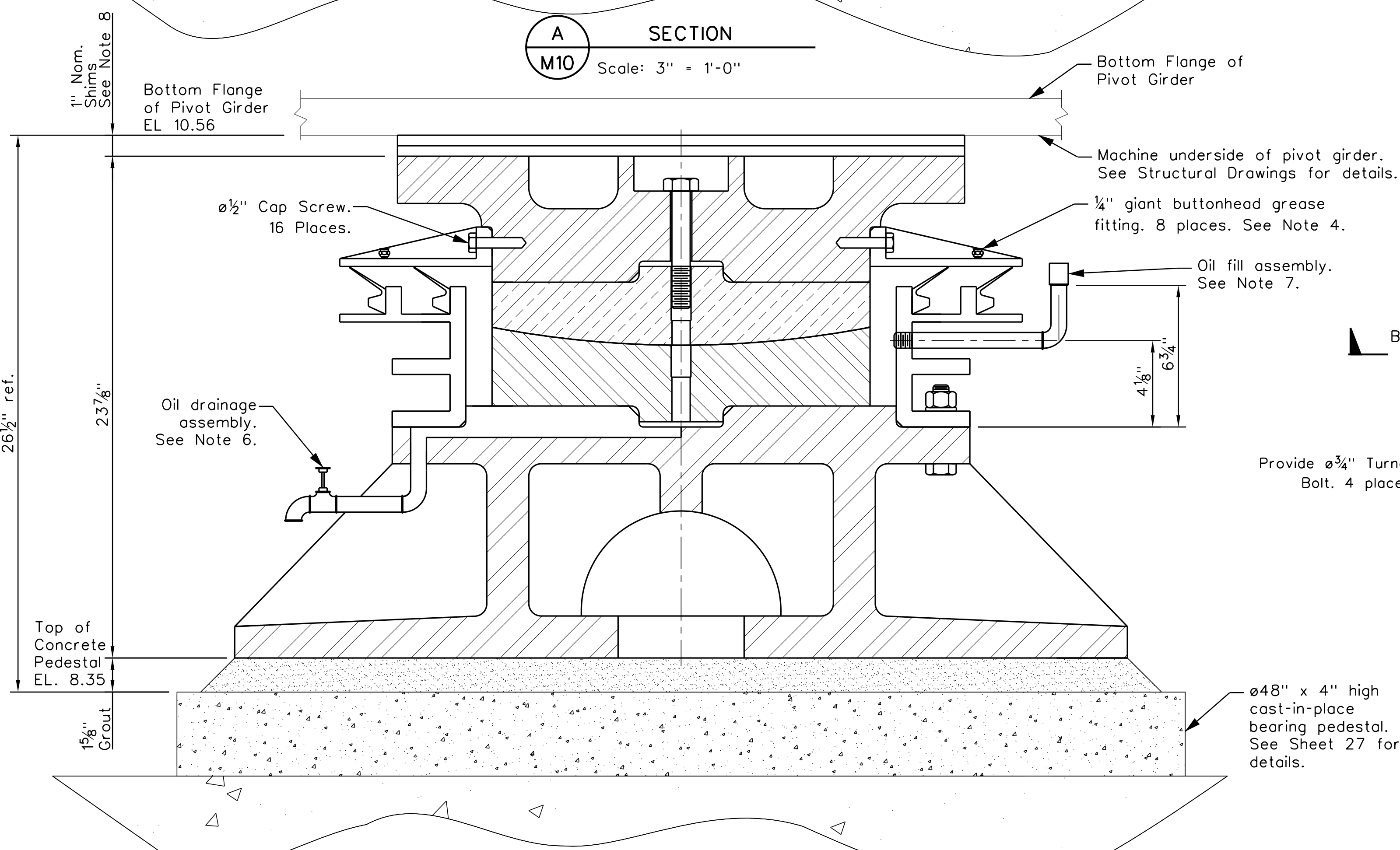
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Division: BRIDGE

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A SECTION
M10 Scale: 3" = 1'-0"



B SPLIT SECTION
M10 Scale: 3" = 1'-0"

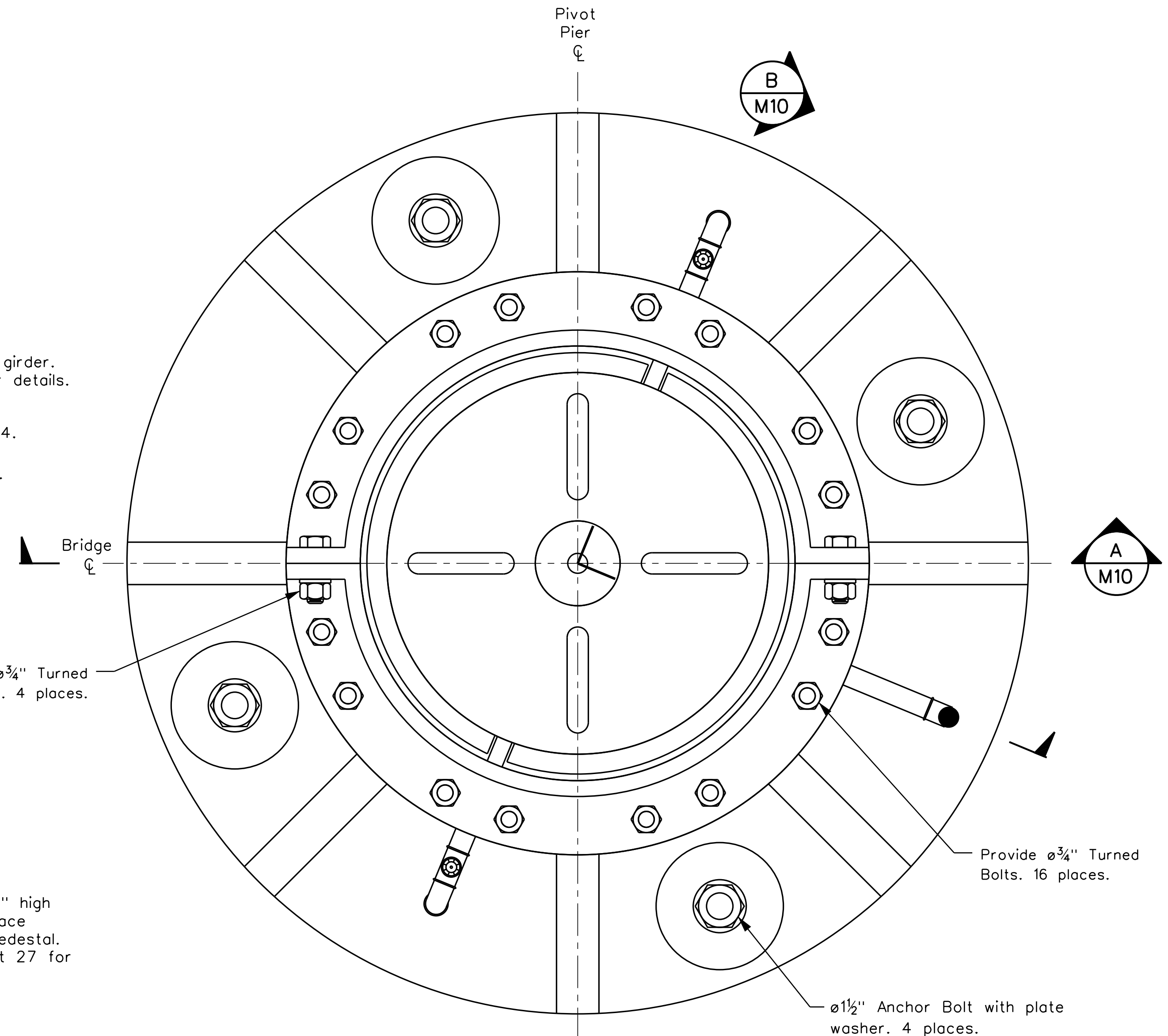
SHEET NOTES

1. See Sheet M1 for General Machinery Notes.
2. Work this drawing with Sheets M11 and M12.
3. Clean spherical surfaces of both discs and coat them with a light oil containing molybdenum disulfide additive just prior to lowering swing span onto the bearing.
4. Fill annular cavity between inner and outer seals with grease.
5. Seal all mating surfaces of oil box with liquid gasket. Submit proposed gasket for approval.
6. Use 3/4" NPT pipe and fittings (Brass) and bronze shut off valve. 2 places.
7. Use 3/4" NPT pipe and fittings (Brass). Scribe line 1" below top to indicate proper oil level.
8. Provide tapered shims as necessary to align bearing after full dead load has been applied.

Fill void between anchor bolt and bottom casting with grout after acceptance of alignment by the Engineer.

CENTER BEARING SCHEDULE

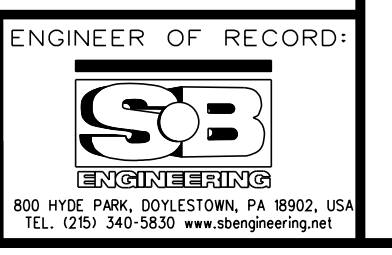
MARK NO.	QTY. REQ'D.	COMPONENT	DESCRIPTION (SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION)	REFERENCE SHEETS
CB1	1	Pivot Top Casting	Cast Steel. Material: ASTM A148 Grade 90-60.	M10, M11
CB2	1	Dust Skirt Assembly	Cast Steel. Material: ASTM A27 Grade N-2.	M10, M12
CB3	1	Oil Box Assembly	Cast Steel. Material: ASTM A27 Grade N-2.	M10, M12
CB3A	1	Inner Seal	SKF 470556 V-RING SEAL	M10
CB3B	1	Outer Seal	SKF 470711 V-RING SEAL	M10
CB4	1	Top Disc	Bronze. Material: ASTM B22 Alloy C91300.	M10, M12
CB5	1	Bottom Disc	Forged Steel. Material: ASTM A668 Class M.	M10, M12
CB6	1	Pivot Bottom Casting	Cast Steel. Material: ASTM A148 Grade 90-60.	M10, M11
CB7	4	Anchor Bolt	ø1 1/2" x 9" Embedment. Material: ASTM A193 Grade B7.	M10



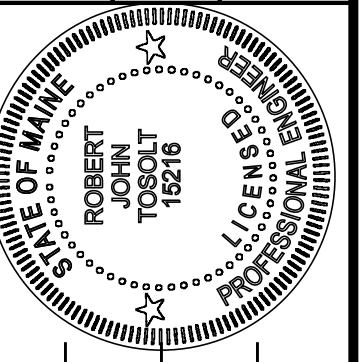
MK2 PLAN VIEW
M1 Scale: 3" = 1'-0"

Structure, Pivot Top Casting, and Dust Skirt not shown for clarity in this view.

M10



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)
BRIDGE NO. 2039
WIN 22607.00
BRIDGE PLANS



DATE: 10-02-2018
SIGNATURE: [Signature]
P.E. NUMBER: 15216

PROJ. MANAGER	BY	DATE
R. TOSOLT	M. BROGIE	07-30-18
DESIGN-DETAILED	R. TOSOLT	10-01-18
CHECKED-REVIEWED	J. WILLIAMS	
DESIGNS-DETAILED		
DESIGNS-DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY
CENTER BEARING
SCHEDULE & ARRANGEMENT

SHEET NUMBER

78

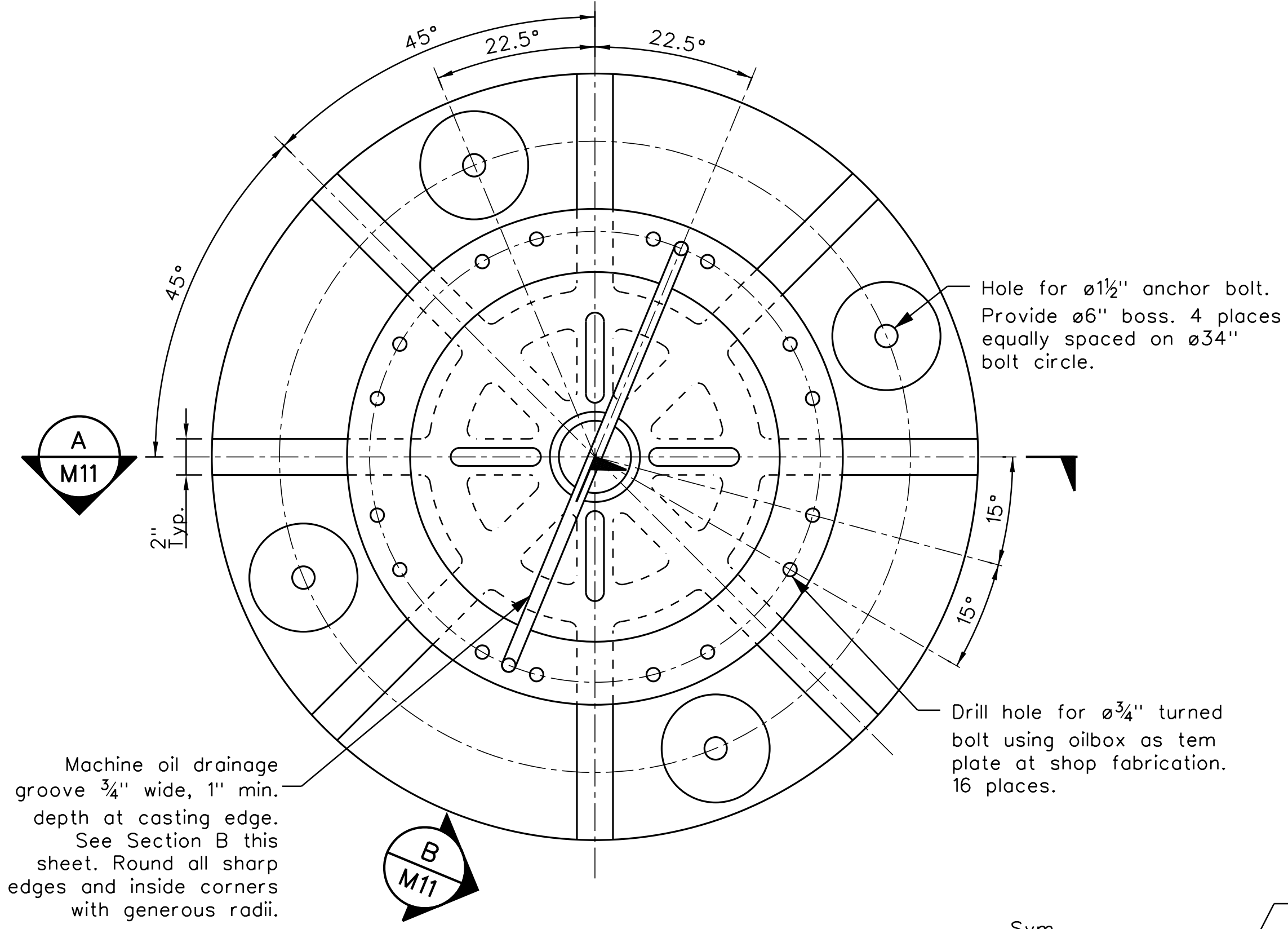
OF 132

Date: 10/2/2018

Username: common

Division: BRIDGE

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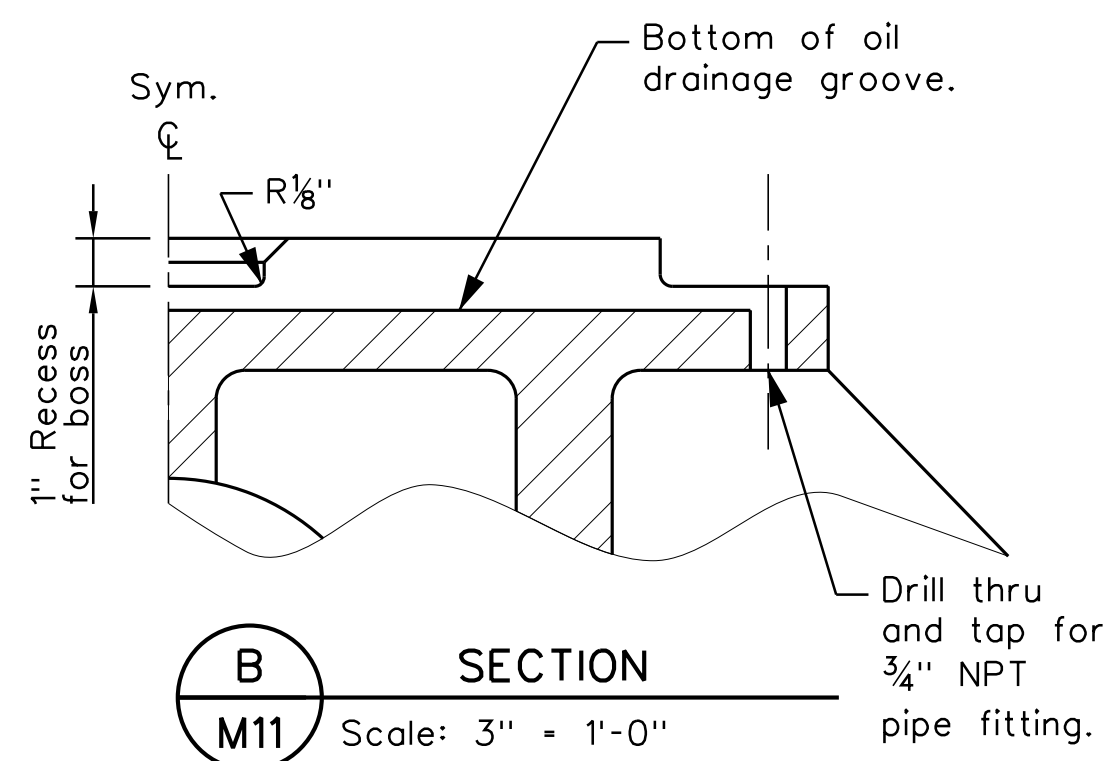


Machine oil drainage groove 3/4" wide, 1" min. depth at casting edge. See Section B this sheet. Round all sharp edges and inside corners with generous radii.

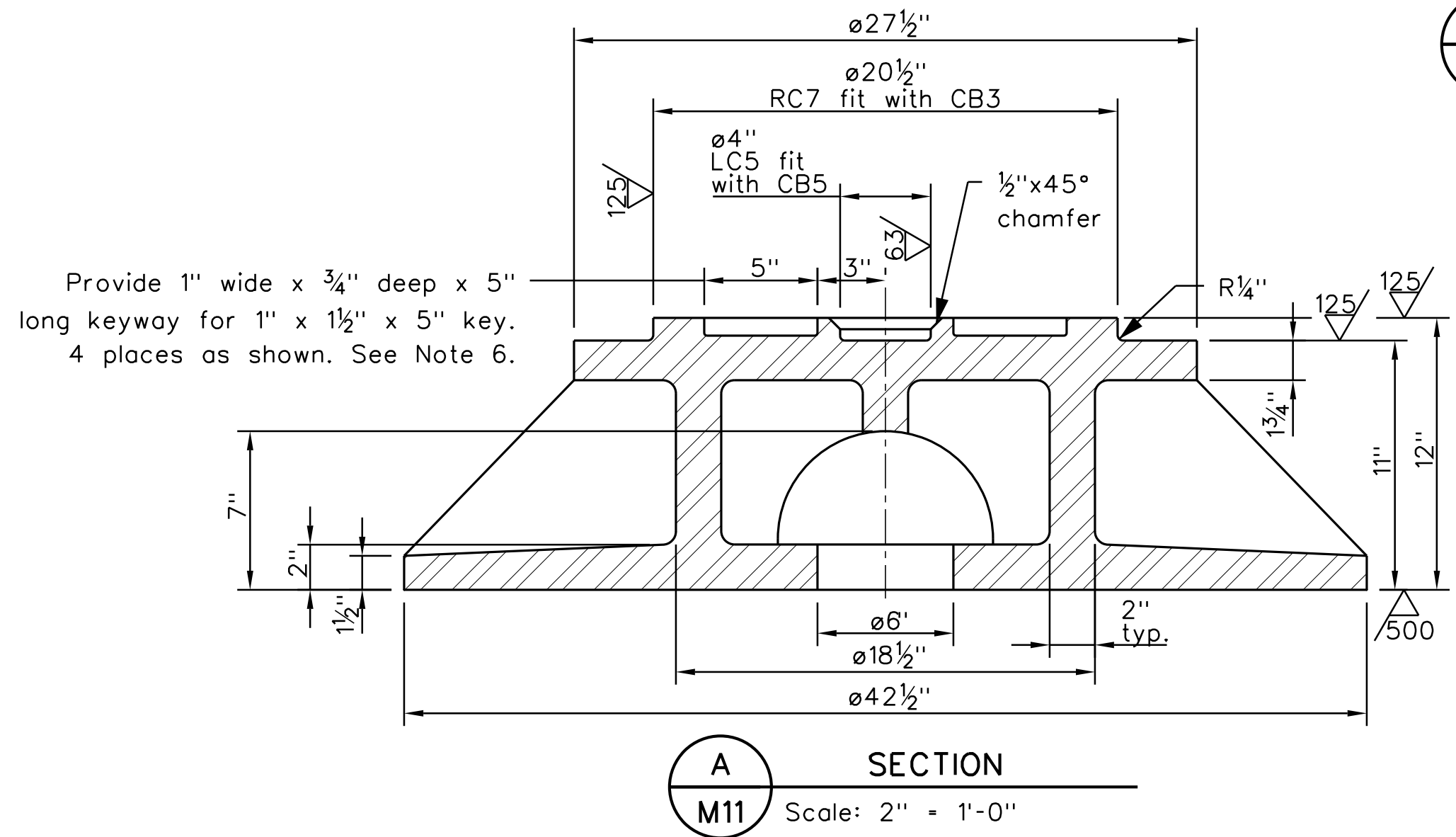
Hole for ø1½" anchor bolt. Provide ø6" boss. 4 places equally spaced on ø34" bolt circle.

Drill hole for ø3/4" turned bolt using oilbox as tem plate at shop fabrication. 16 places.

CB6
PIVOT BOTTOM CASTING
Scale: 2" = 1'-0"
All surfaces as-cast except as noted.

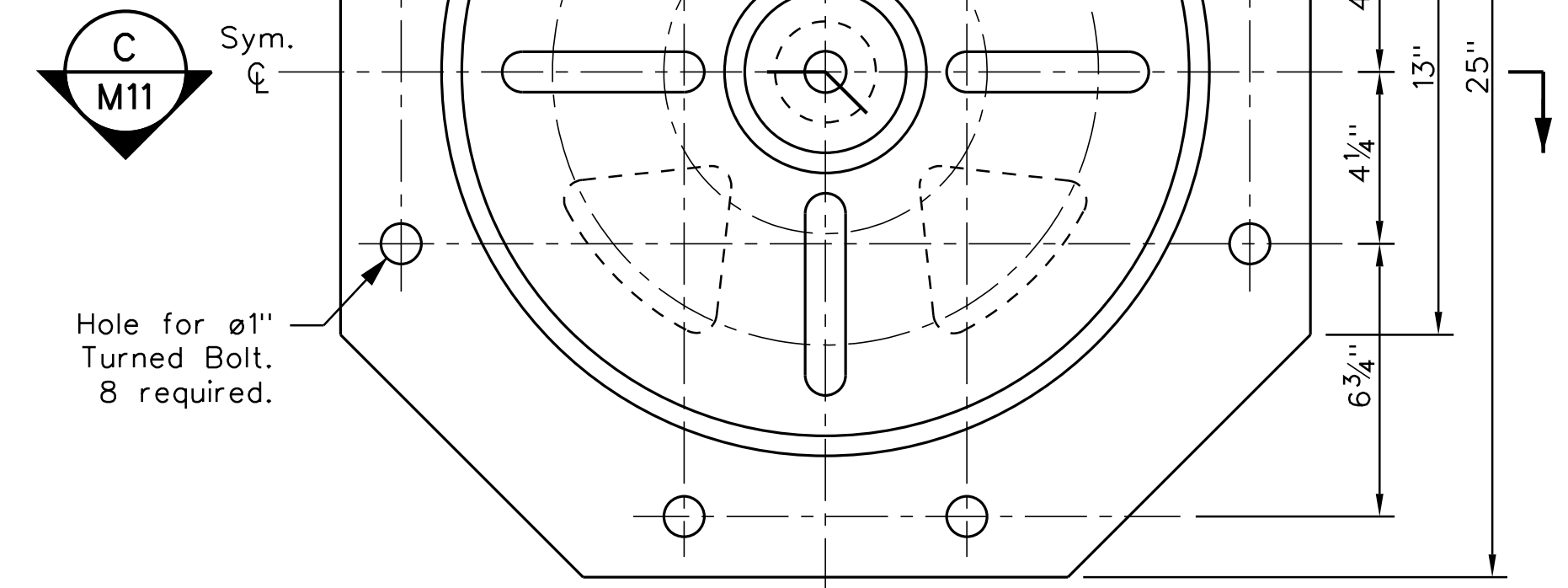


B
SECTION
M11 Scale: 3" = 1'-0"

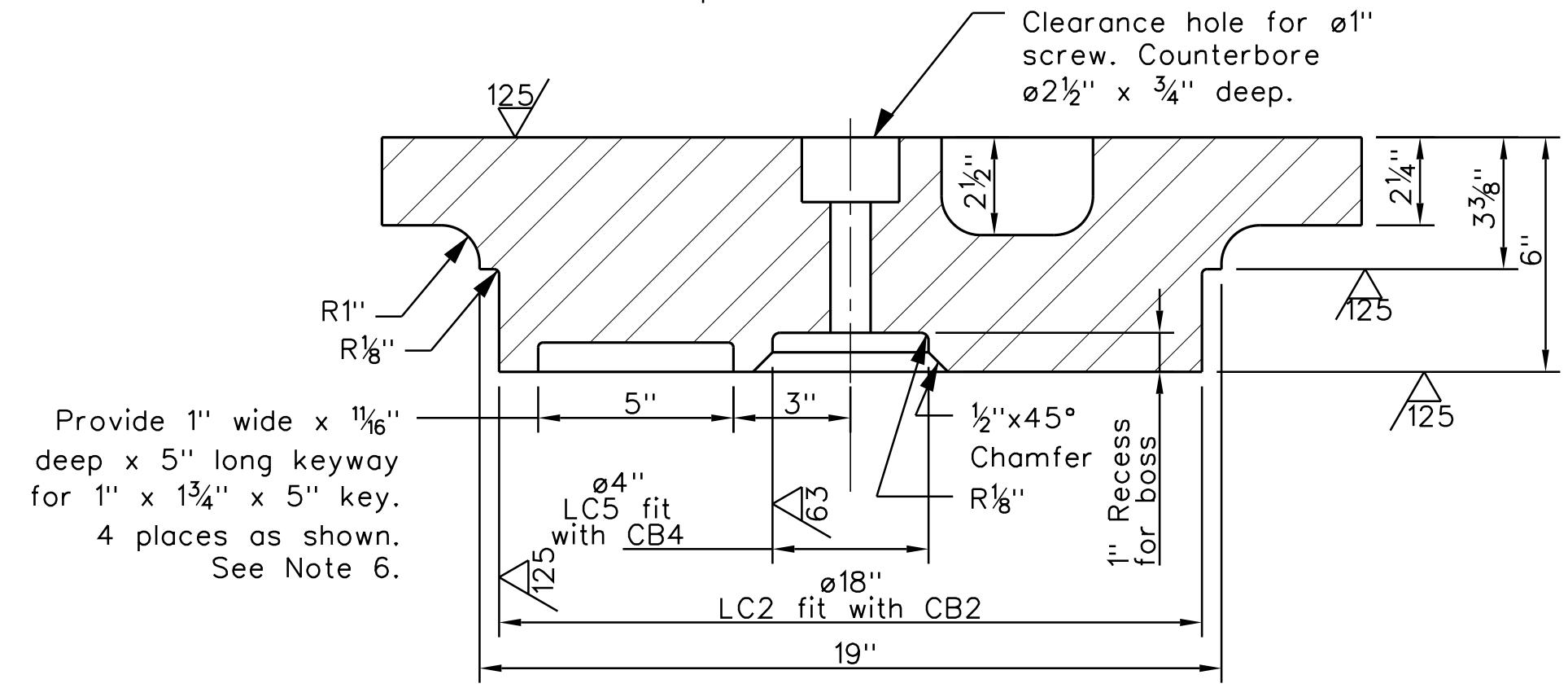


A
SECTION
M11 Scale: 2" = 1'-0"

Provide core 2½" deep. All radii (depth and width) 1". Inner radii centered on ø8" circle. Outer radii centered on ø13½" circle. Outer centers spaced 4". 4 required equally spaced as shown.



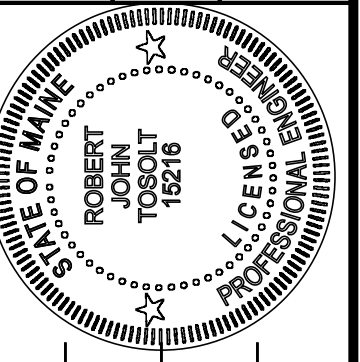
CB1
PIVOT TOP CASTING
Scale: 3" = 1'-0"
All surfaces as-cast except as noted.



C
SECTION
M11 Scale: 3" = 1'-0"

SHEET NOTES

- See Sheet M1 for General Machinery notes.
- See Center Bearing Schedule on Sheet M10 for materials and quantities.
- All casting radii to be 1/2" min. unless otherwise noted.
- Pivot top casting to be drilled and tapped for ø1/2" screws to secure Dust Skirt (CB2). Use Dust Skirt as a template to locate holes for assembly in shop.
- All dimensions are finished dimensions unless otherwise noted. Add stock for fabrication as necessary to ensure complete cleanup of machined surfaces.
- Key and Keyway Note to coordinate fit-up of pivot castings (CB1 and CB6) and mating discs (CB4 and CB5).
 - Centerline of keyways shall be in-line and shall intersect central boss and recess as shown.
 - Mill keyway depth as indicated in part details. Provide 1/8" radius in bottom of all keyways.
 - All keyways shall be accurately positioned so that bosses on top of top disc and on bottom of bottom disc engage properly into recesses on pivot castings without altering bosses or recesses in any way.
 - Provide 5/32" chamfer along top and bottom edge of all keys.
 - Provide LC4 side fit between keys and keyways. Provide 0.025" to 0.035" clearance for top/bottom fit.



DATE: 10-02-2018
P.E. NUMBER: 15216
SIGNATURE: [Signature]
DATE: 10-02-2018

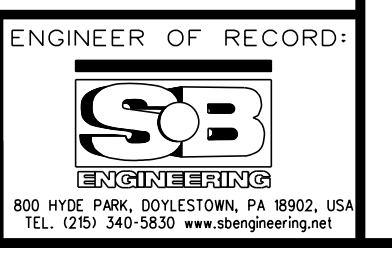
PROJ. MANAGER	BY	DATE
R. TOSOLT	M. BROGIE	07-30-18
DESIGN-DETAILED	R. TOSOLT	10-01-18
CHECKED-REVIEWED	J. WILLIAMS	
DESIGN-DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

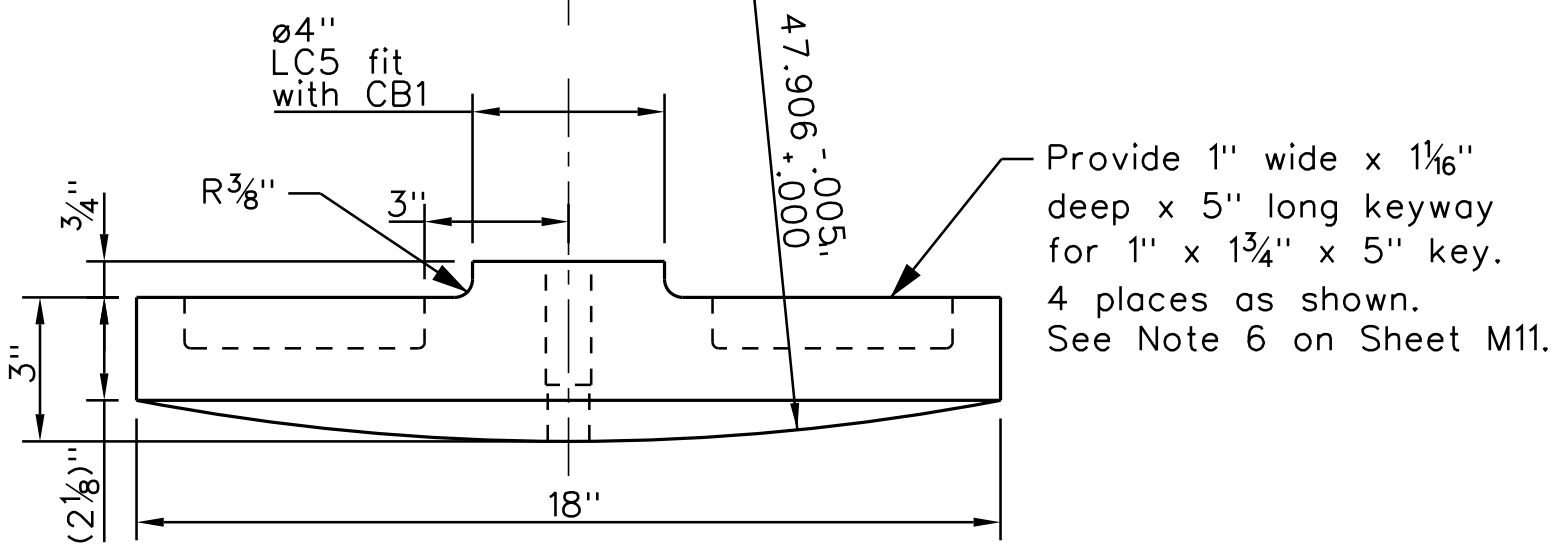
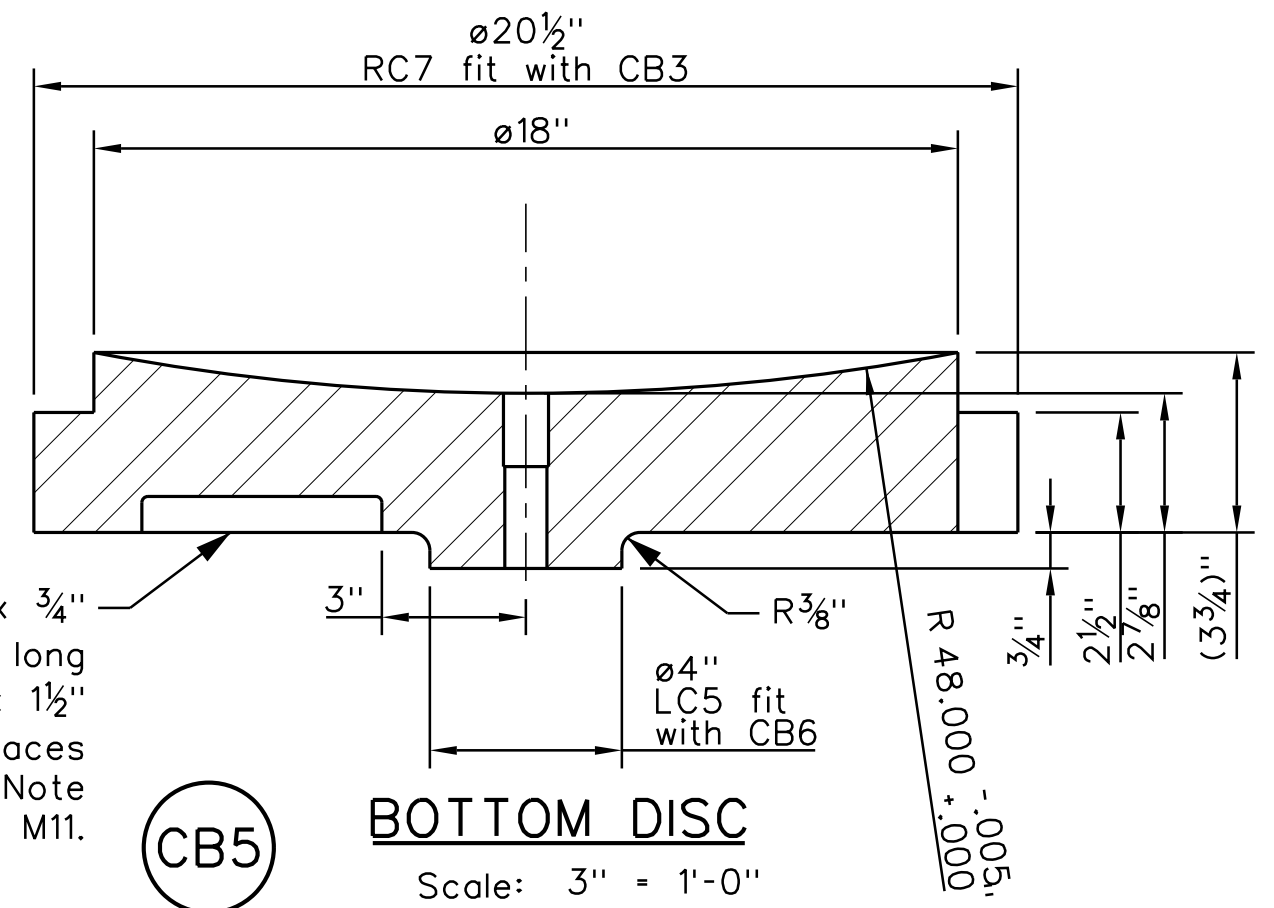
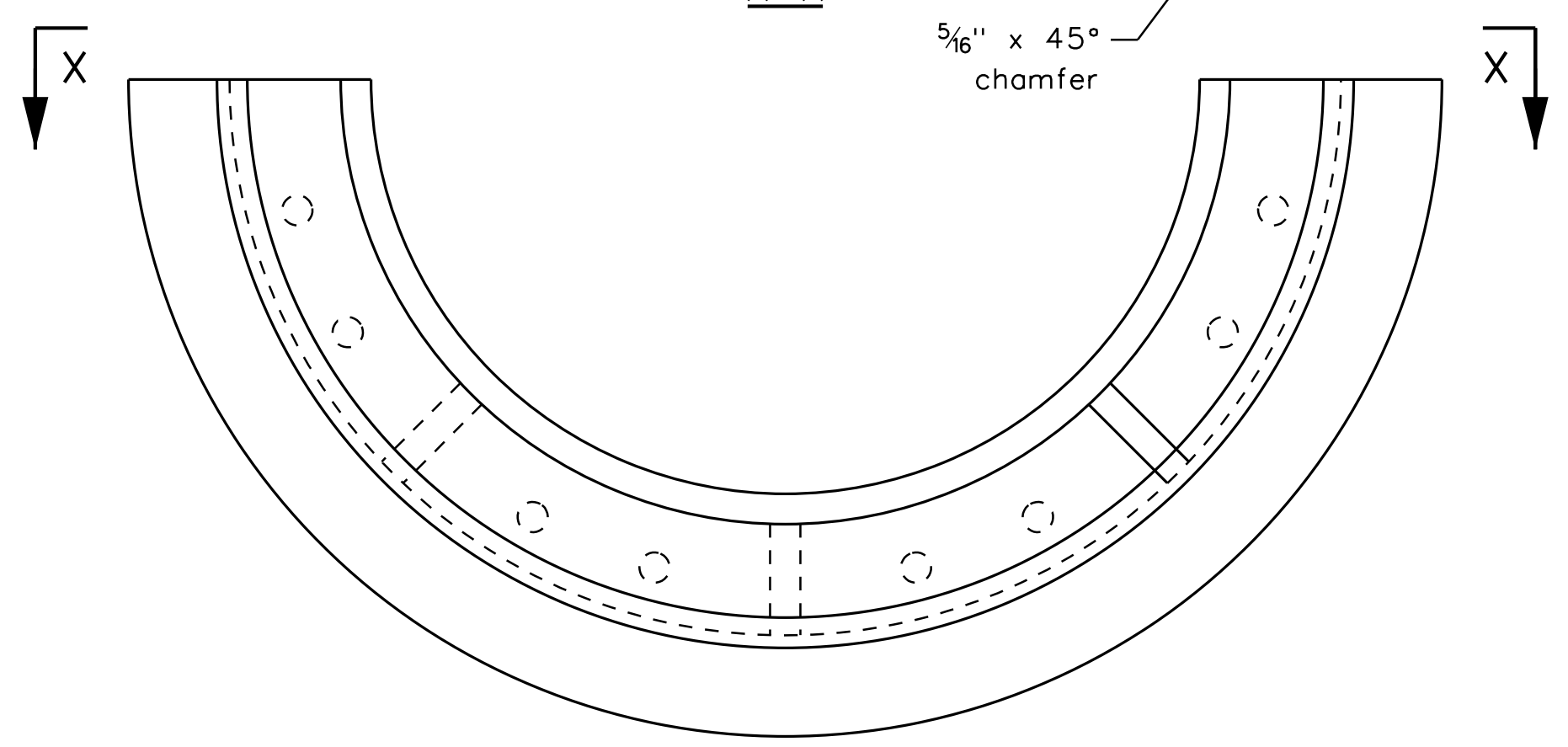
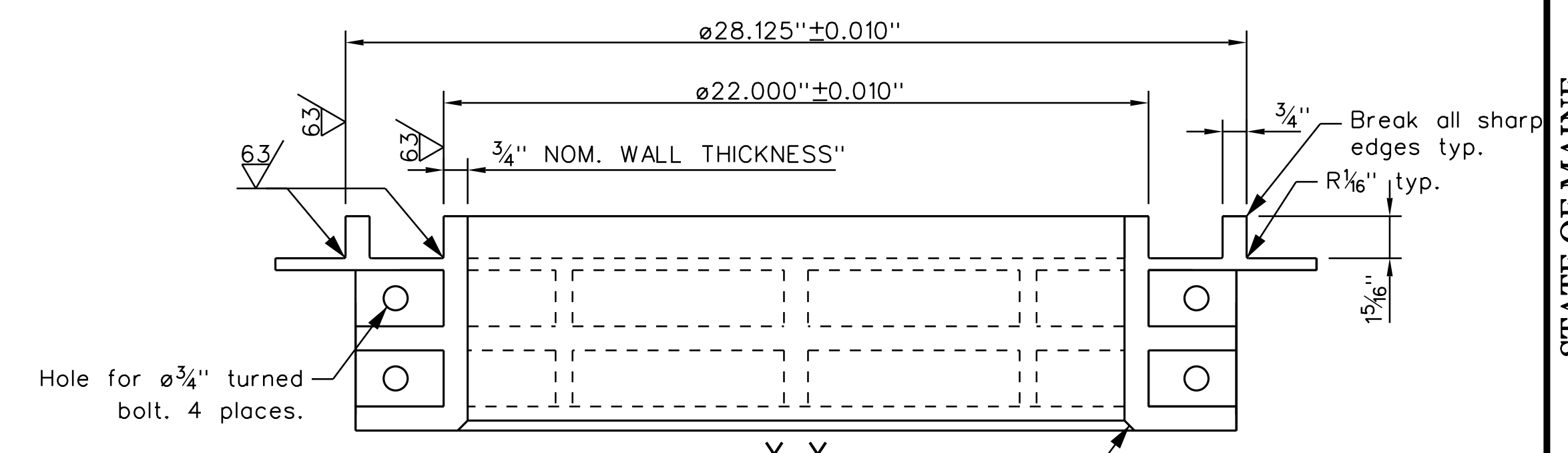
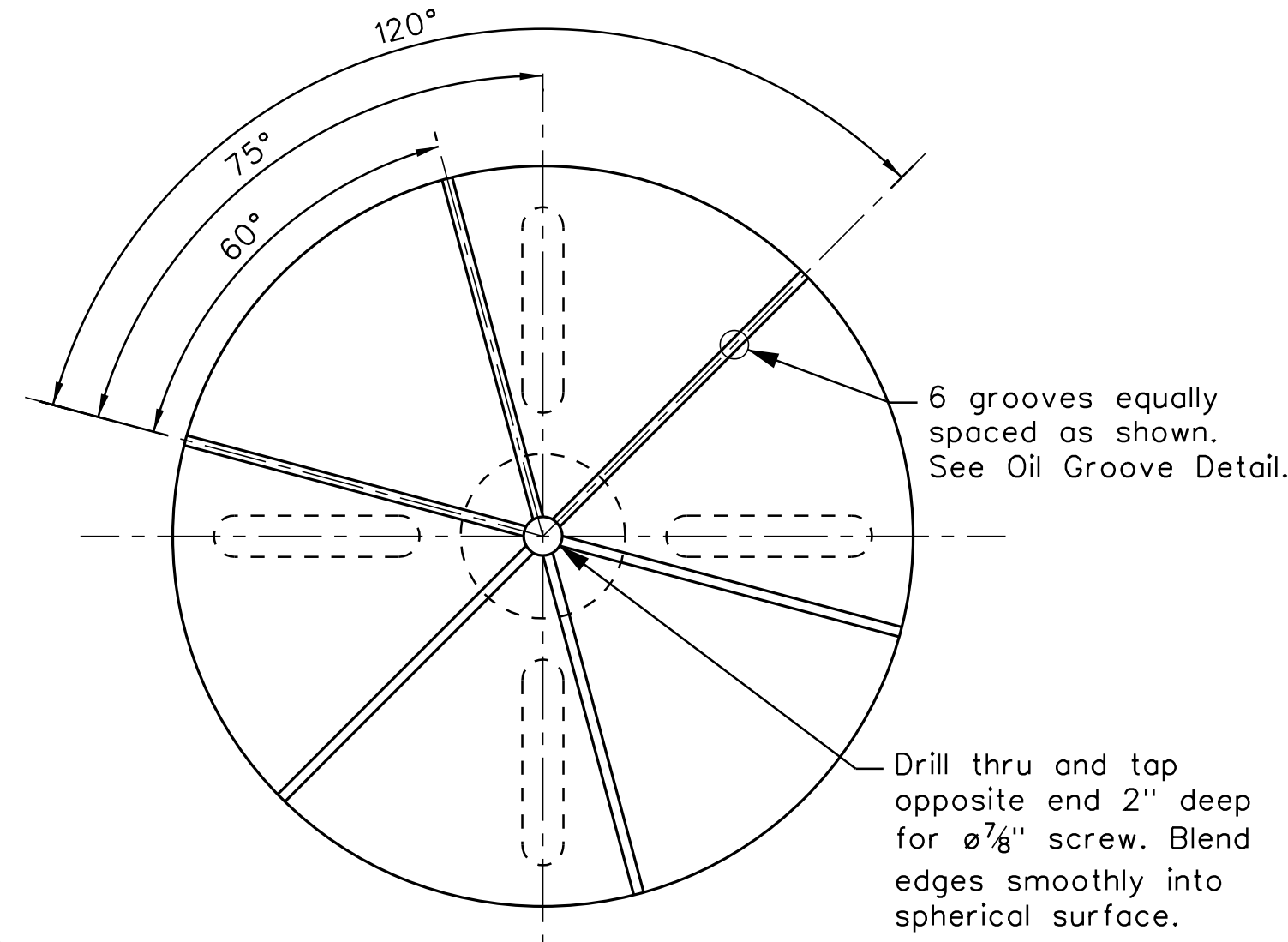
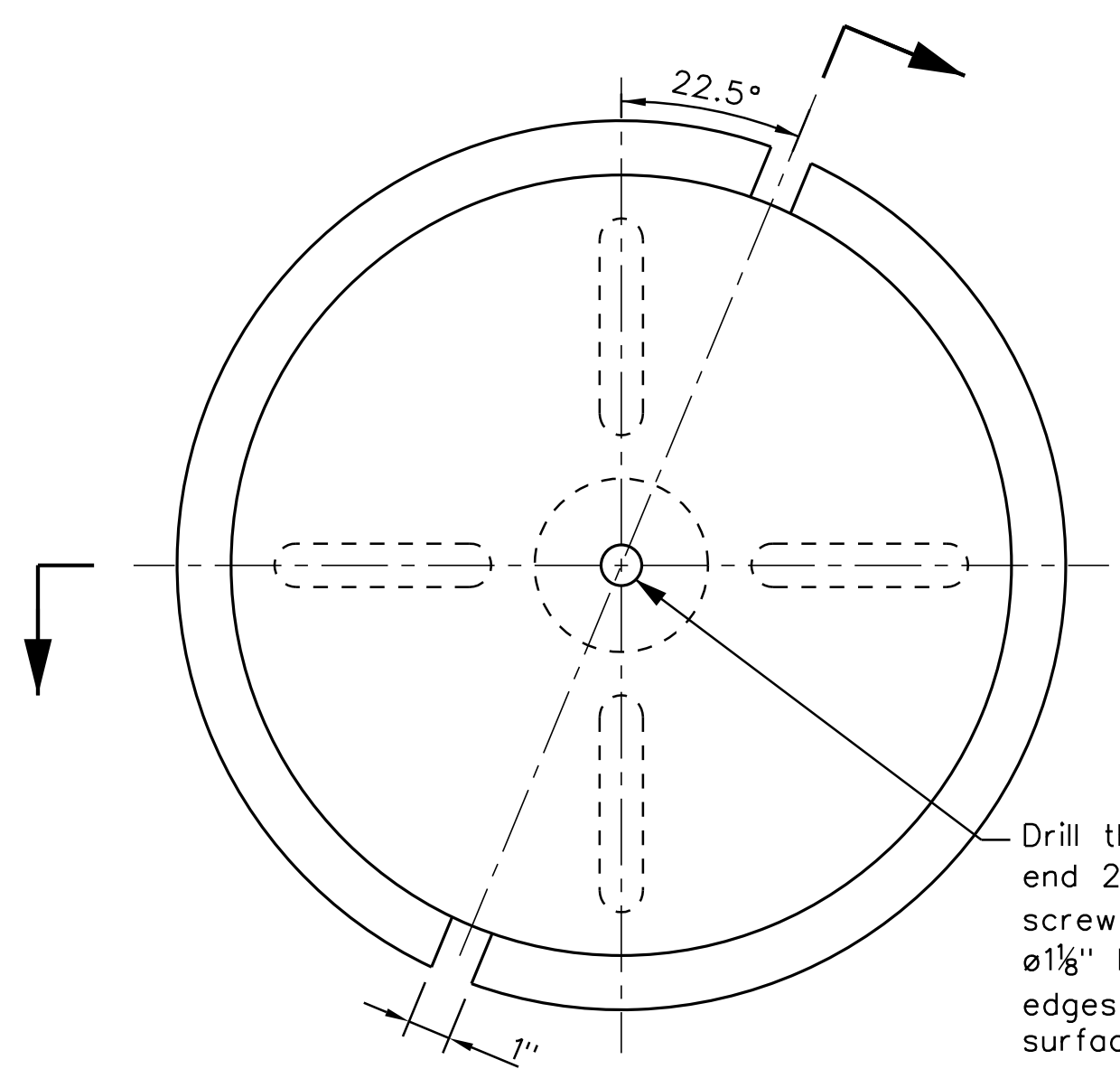
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79

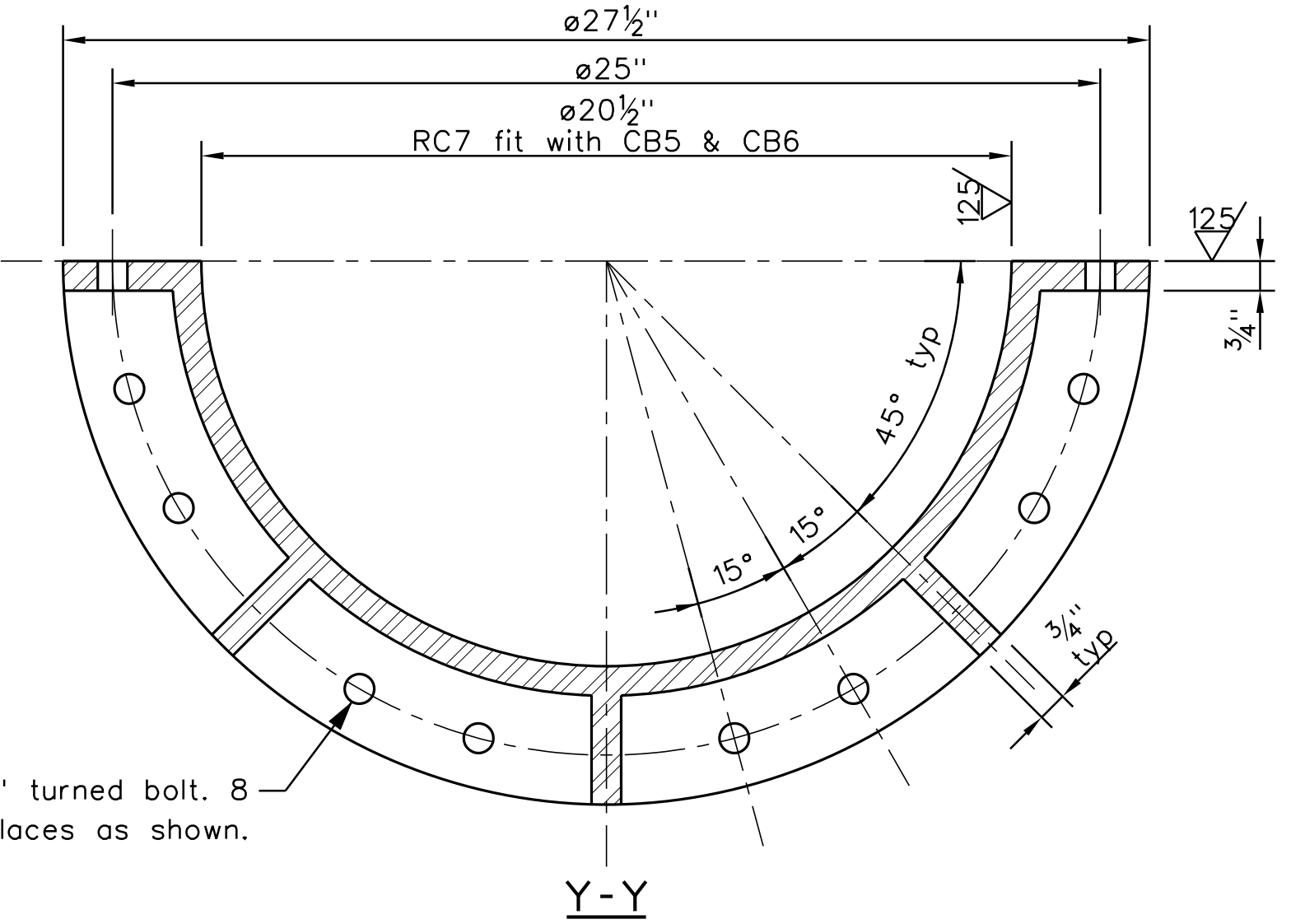
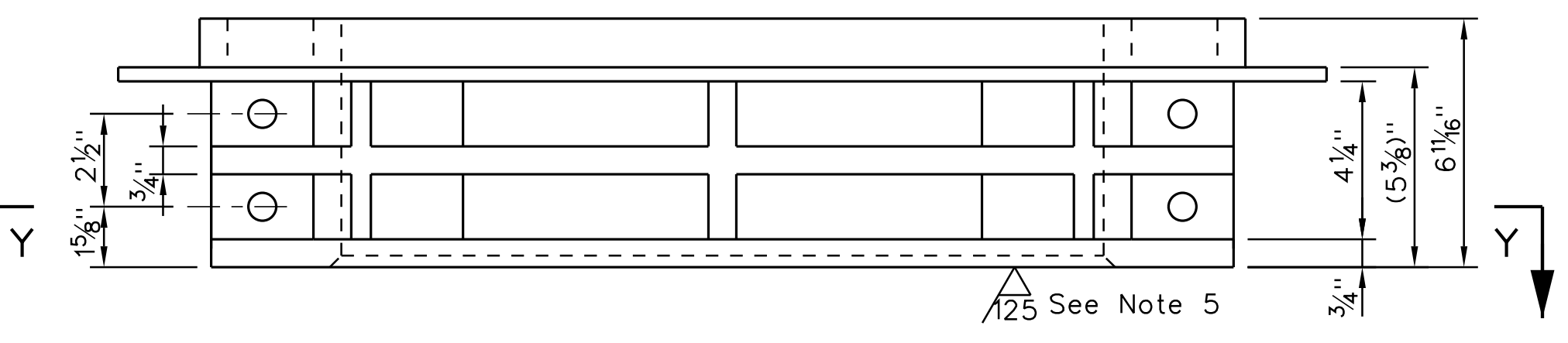
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M11

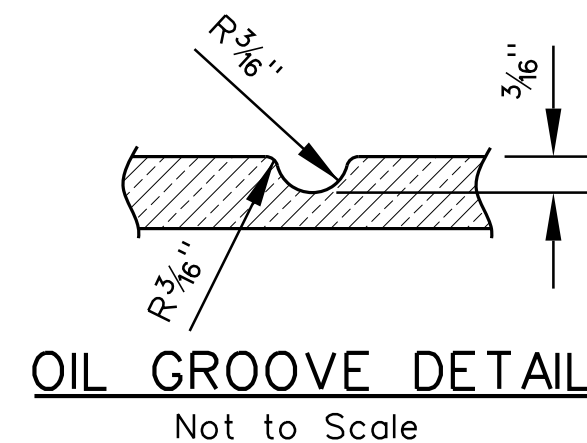




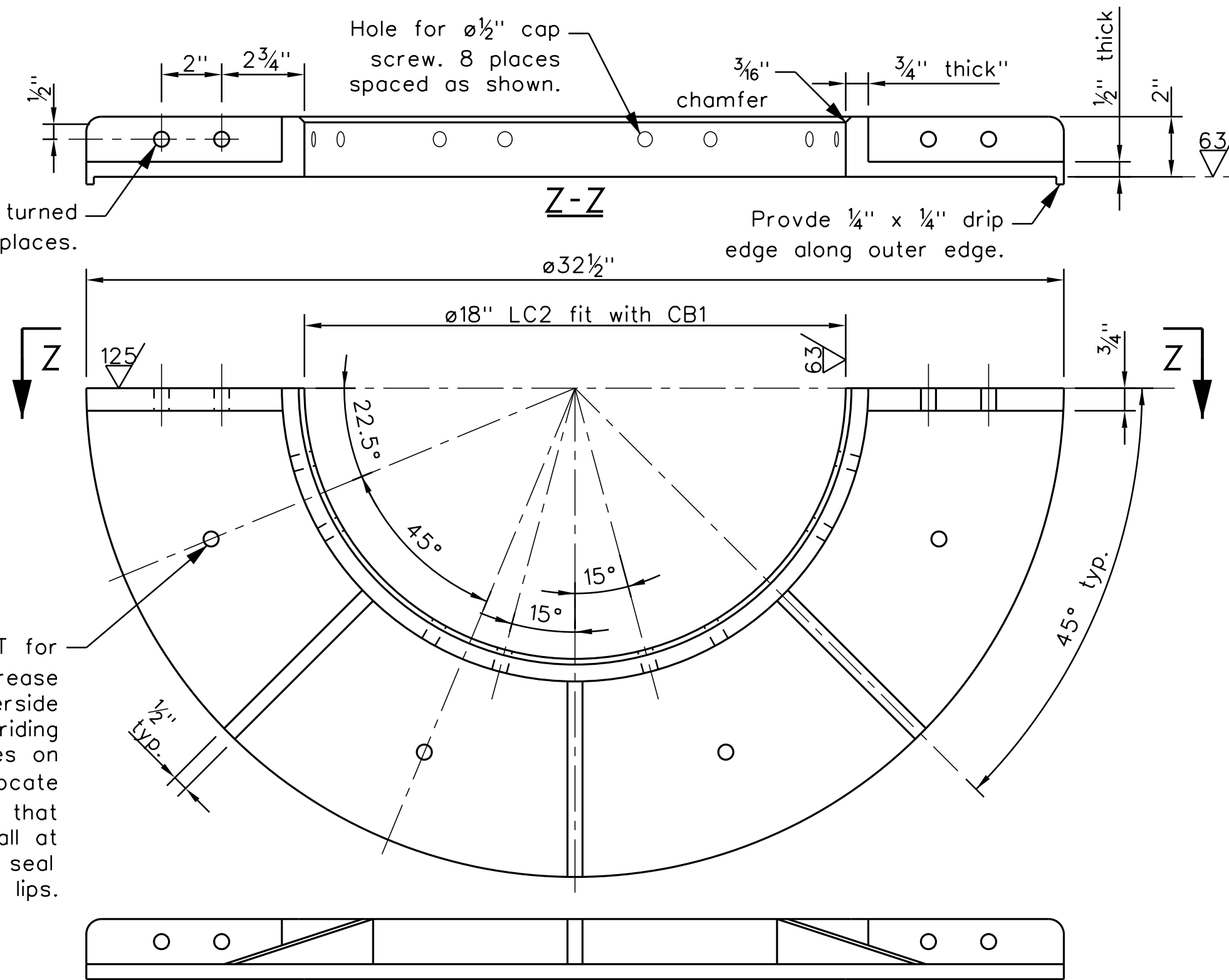
CB4 TOP DISC
Scale: 3" = 1'-0"
Provide 125 microinch finish U.O.N.



CB3 OIL BOX ASSEMBLY
Scale: 3" = 1'-0"
2 pieces required for full assembly. All surfaces as cast except as noted.



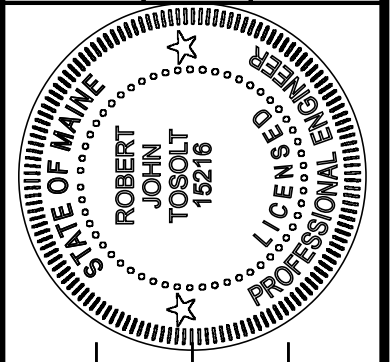
OIL GROOVE DETAIL
Not to Scale



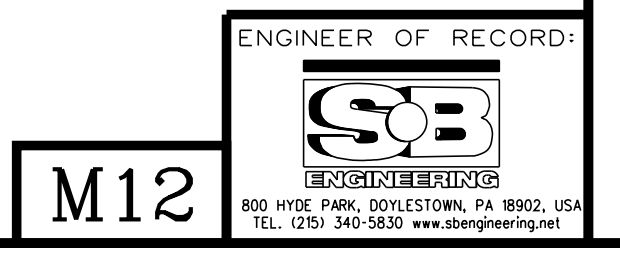
CB2 DUST SKIRT ASSEMBLY
Scale: 3" = 1'-0"
2 pieces required for full assembly. All surfaces as cast except as noted.

- SHEET NOTES**
- See Sheet M1 for General Machinery notes.
 - See Center Bearing Schedule on Sheet M10 for materials and quantities.
 - All casting radii to be 1/2" min. unless otherwise noted.
 - All dimensions are finished dimensions unless otherwise noted. Add stock for fabrication as necessary to ensure complete cleanup of machined surfaces.
 - Machine bottom surface of dust skirt and oil box flat and perpendicular to bore.

Drill and tap 1/2" NPT for giant buttonhead grease fitting. Blend underside smoothly into seal riding surface. 4 places on nominal R14 1/4" - locate at shop assembly so that grease ports fall at midpoint between seal lips.



DESIGNED	R. TOSOLT	DATE	07-30-18
CHECKED	R. TOSOLT	DATE	10-01-18
DESIGNED	J. WILLIAMS	SIGNATURE	15216
DESIGNED	R. TOSOLT	P.E. NUMBER	10-02-2018
REVISIONS 1		DATE	
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

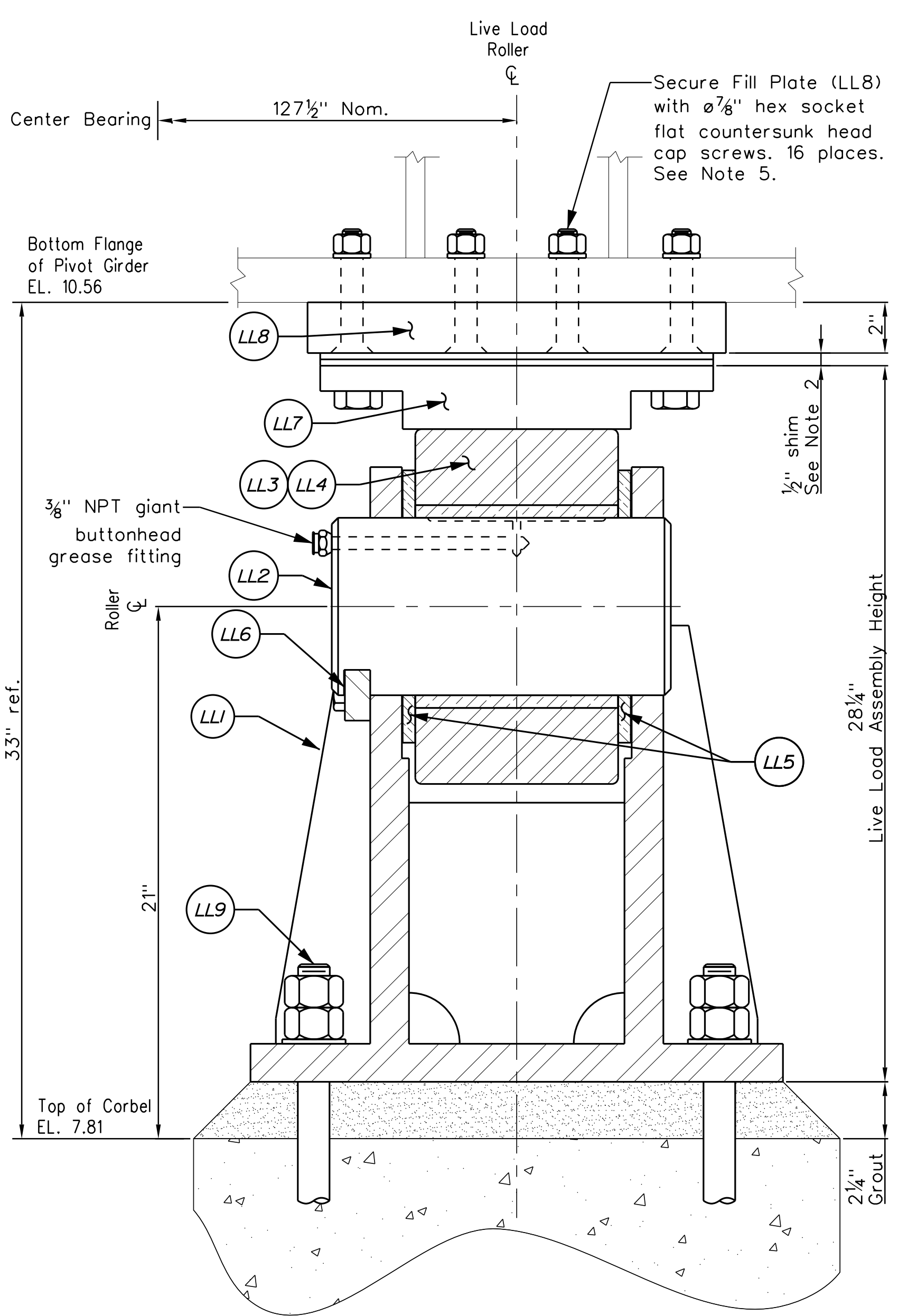


Date: 10/2/2018

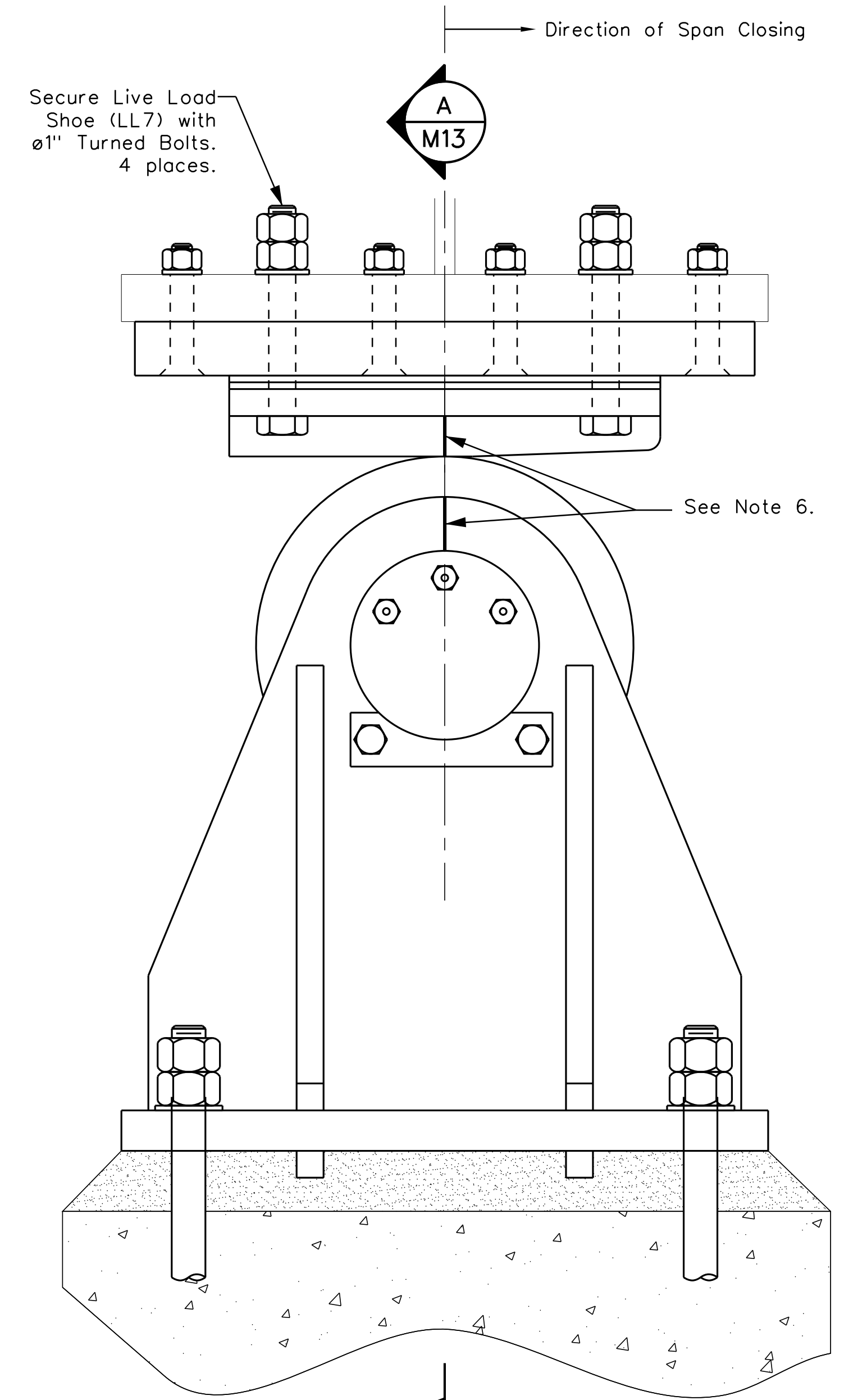
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Division: BRIDGE

Filename: ... \081_Live Load Roller_1.dgn



A
M13 SECTION
Scale: 3" = 1'-0"

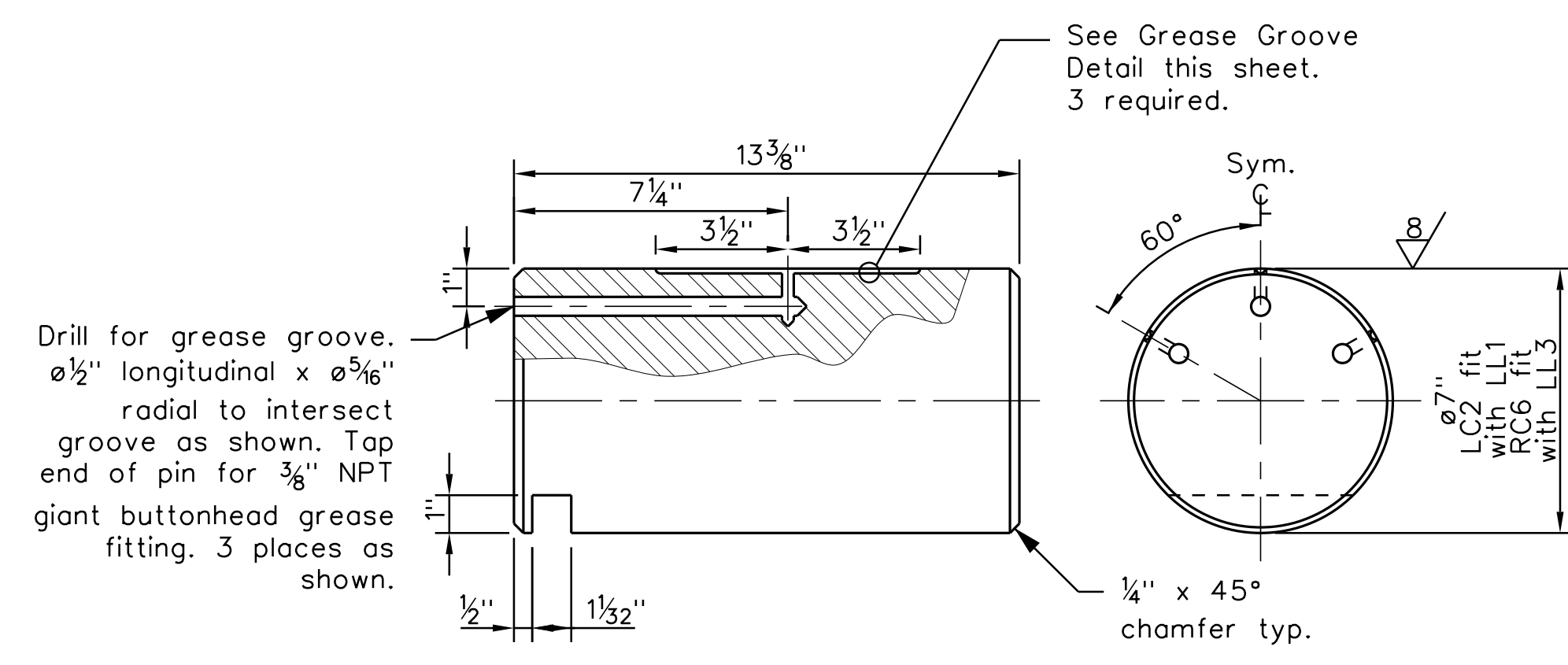


MK5
M1 LIVE LOAD ROLLER ASSEMBLY
Scale: 3" = 1'-0"

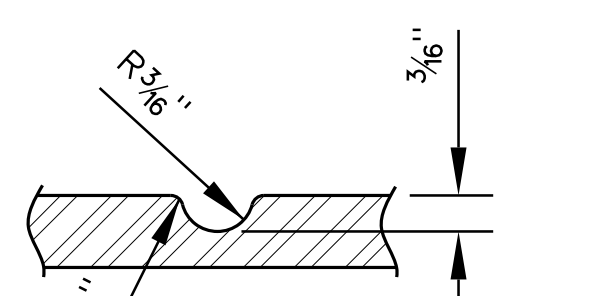
LIVE LOAD ROLLER ASSEMBLY SCHEDULE				
MARK NO.	QTY. REQ'D.	COMPONENT	DESCRIPTION (SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION)	REFERENCE SHEETS
LL1	2	Live Load Clevis	Weldment. Material: ASTM A709 Grade 50.	M13, M14
LL2	2	Live Load Pin	Steel Forging. Material: ASTM A668 Class M.	M13
LL3	2	Live Load Bushing	Bronze. Material: ASTM B22 Alloy C91300.	M13
LL4	2	Live Load Roller	Steel Forging. Material: ASTM A668 Class M.	M13
LL5	4	Live Load Thrust Washer	Bronze. Material: ASTM B22 Alloy C93700.	M13, M14
LL6	2	Live Load Keeper Plate	Steel Plate. Material: ASTM A709 Grade 50.	M13, M14
LL7	2	Live Load Shoe	Steel Forging. Material: ASTM A668 Class L.	M13, M14
LL8	2	Live Load Fill Plate	Steel Plate. Material: ASTM A709 Grade 50.	M13, M14
LL9	8	Anchor Bolts	ø1 1/4" x 12" embedment. Material: ASTM A193 Grade B7.	M13

SHEET NOTES

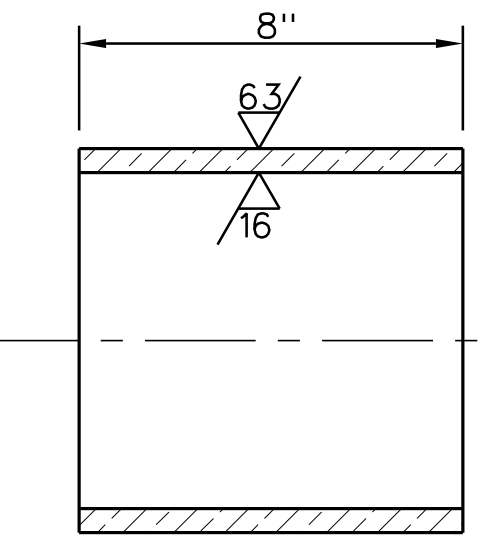
- See Sheet M1 for General Notes applicable to the work.
- Shim Live Load Shoes to provide firm contact with the Live Load Rollers with the Bridge closed and the End Lifts driven.
- All dimensions are finished dimensions unless otherwise noted. Add stock for fabrication as necessary to ensure complete cleanup of machined surfaces.
- Bore Bushing LL3 after assembly with Roller LL4.
- Secure fill plate to pivot girder bottom flange in shop with hex socket flat countersunk head bolts. Tighten per Turn-of-Nut method. Recess bolt heads to allow for up to 1/8" of material removal. Machine to ensure planar mounting surface after bolting to girder.
- Locate clevis (LL1) such that at full closed position scribe lines on the celvis and shoe (LL7) align within 1/16". Grout into position and secure with anchor bolts (LL9).



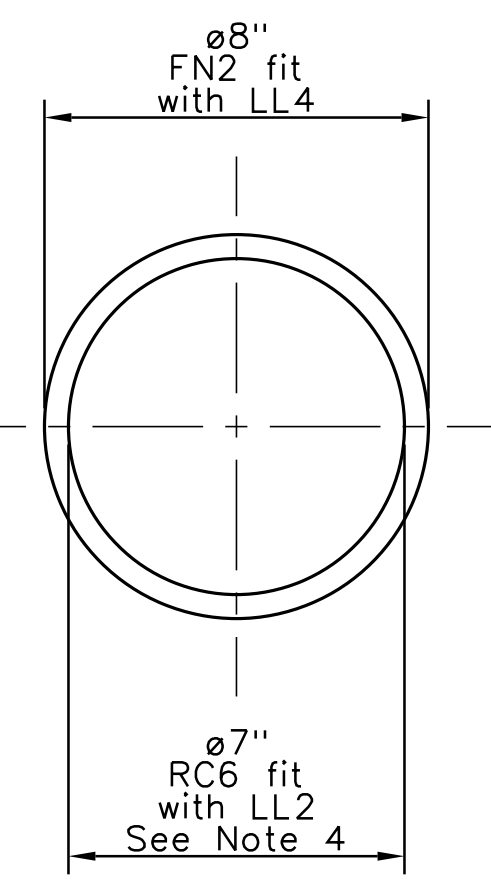
LL2 LIVE LOAD PIN
Scale: 3" = 1'-0"
Prove 125 microinch surface finish U.O.N.



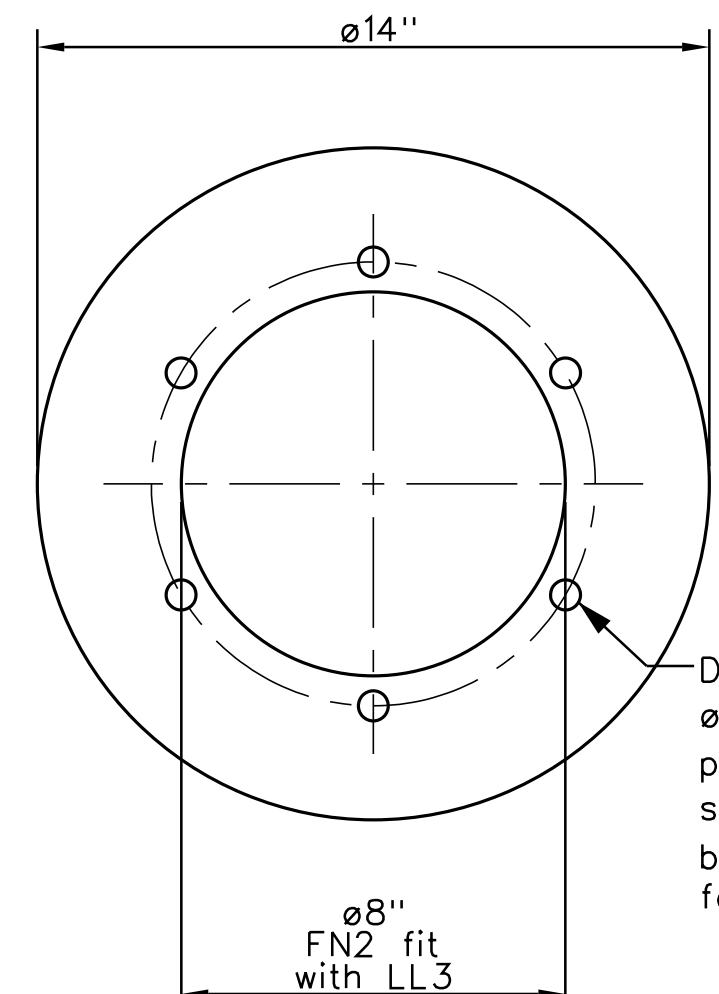
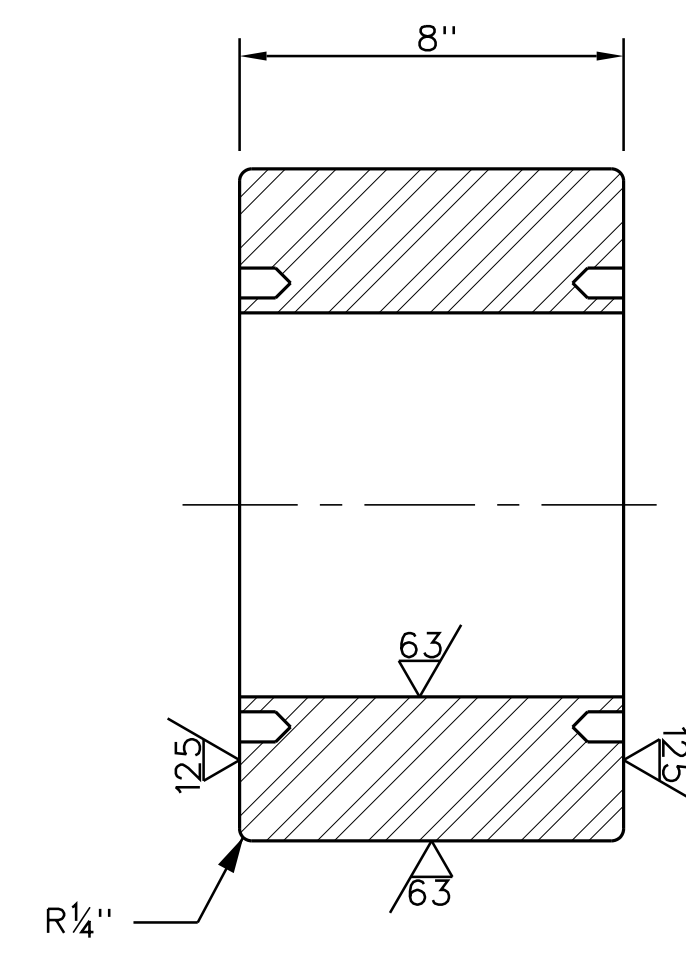
GREASE GROOVE DETAIL
Not to Scale



LL3 LIVE LOAD BUSHING
Scale: 3" = 1'-0"



LL4 LIVE LOAD ROLLER
Scale: 3" = 1'-0"



Drill and tap for ø 8/8" screw. 6 places equally spaced on ø 9 1/4" bolt circle. Both faces.

STATE OF MAINE
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STP-2260(700)
BRIDGE NO. 2039
WIN 22607.00
BRIDGE PLANS

BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY
LIVE LOAD ROLLER
SCHEDULE & ARRANGEMENT

PROJ. MANAGER: R. TOSOLT
DESIGN-DETAILED: M. BROGIE
CHECKED-REVIEWED: R. TOSOLT
DESIGN-DETAILED: J. WILLIAMS
DESIGN-DETAILED: R. TOSOLT
REVISIONS: 1
REVISIONS: 2
REVISIONS: 3
REVISIONS: 4
FIELD CHANGES

DATE: 07-30-18
10-01-18
SIGNATURE: R. TOSOLT
152/16
P.E. NUMBER: 10-02-2018
DATE: 10-02-2018

SHEET NUMBER
81
OF 132

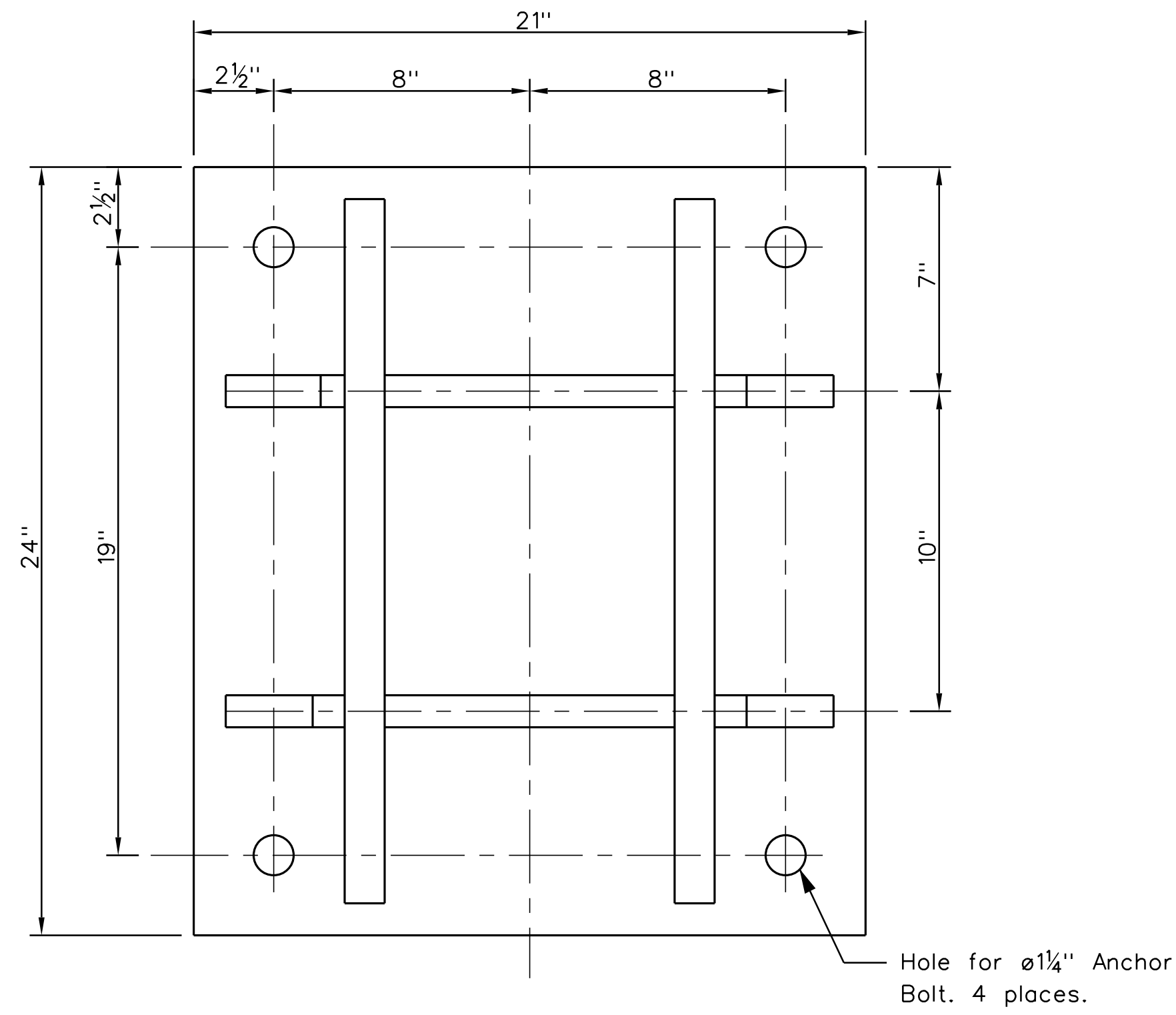
ENGINEER OF RECORD:
SJB
ENGINEERING
800 HYDE PARK, DOYLESTOWN, PA 18020, USA
TEL: (717) 342-2620 www.sjbeengineering.com

Date: 10/2/2018

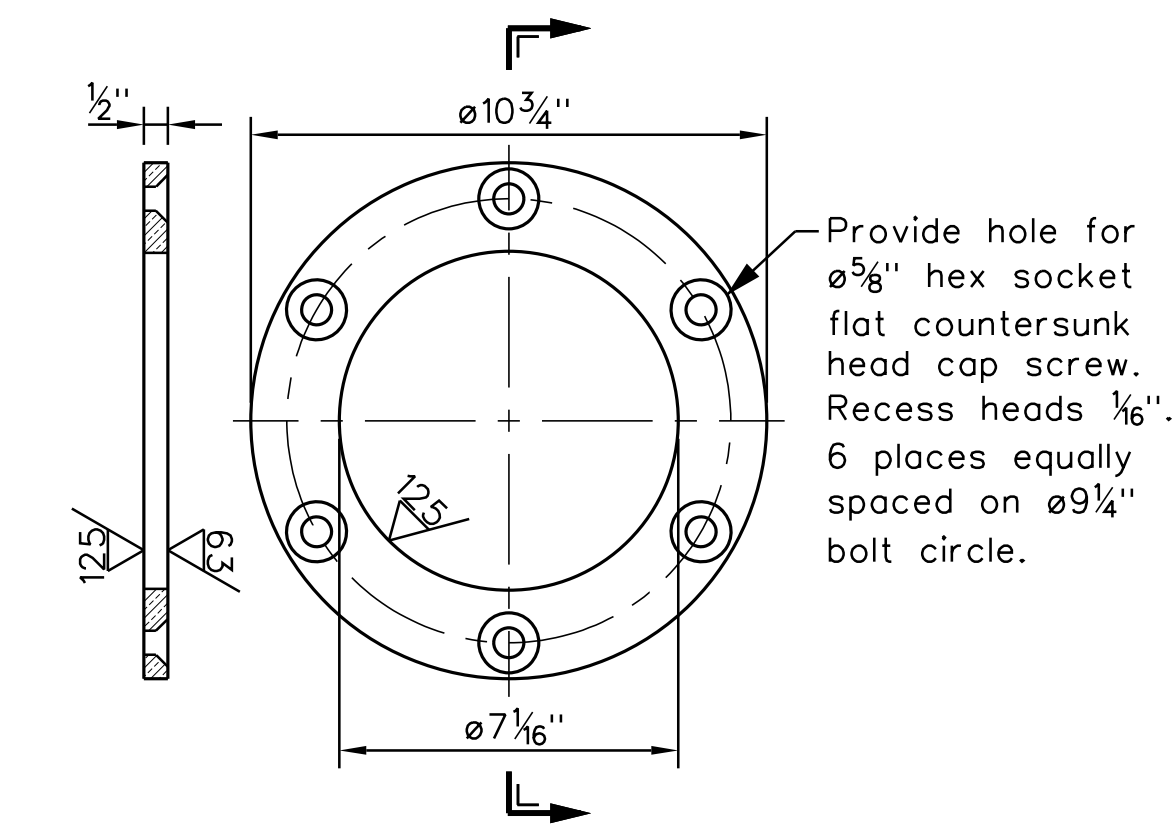
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Division: BRIDGE

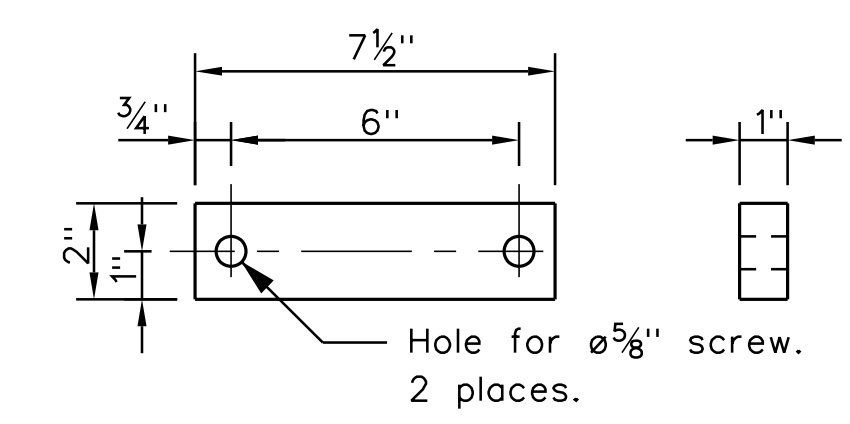
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LL1 **LIVE LOAD CLEVIS**
 Scale: 3" = 1'-0"
 See Notes 5 & 6 for fabrication details.

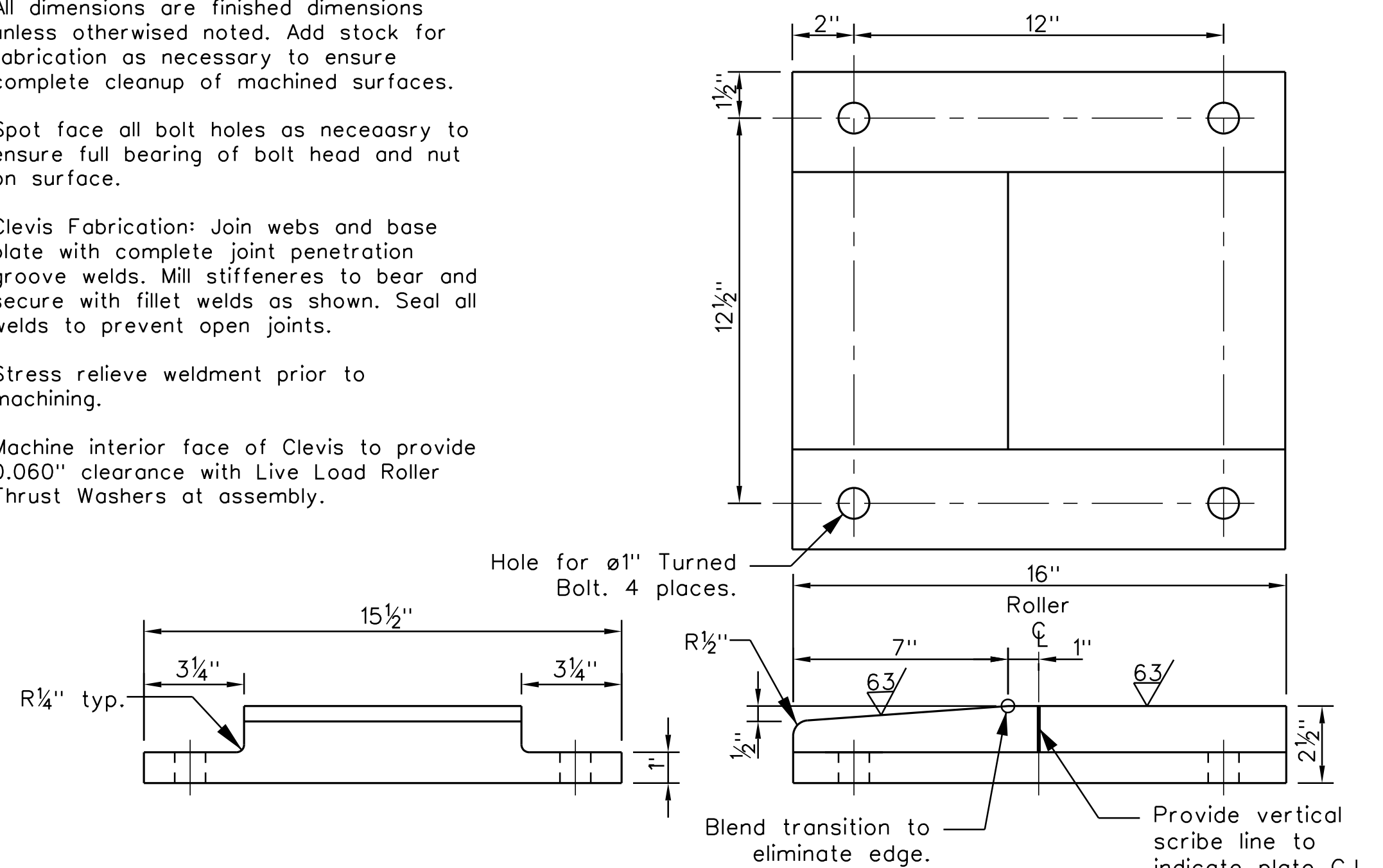


LL5 **LIVE LOAD THRUST WASHER**
 Scale: 3" = 1'-0"

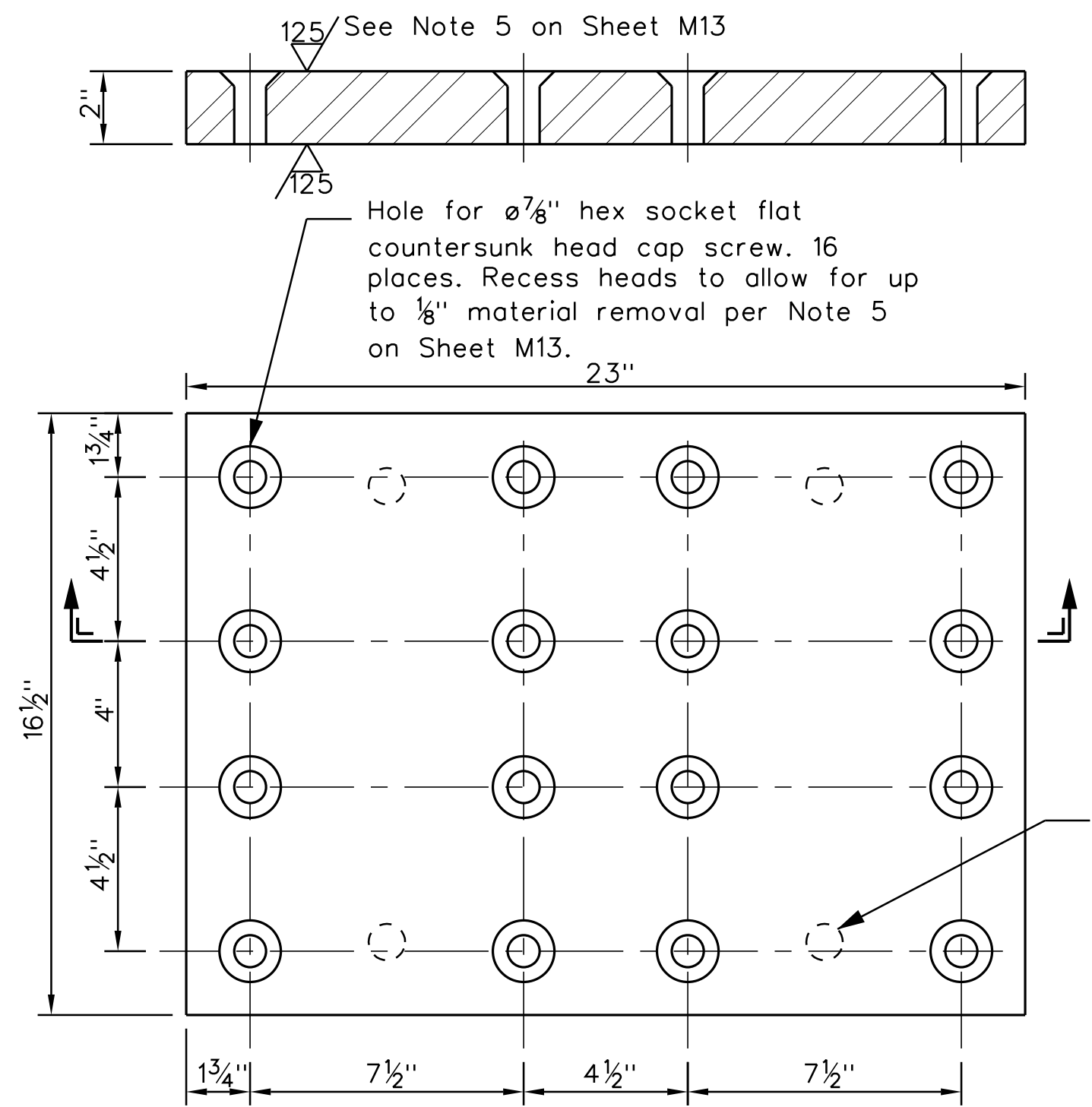
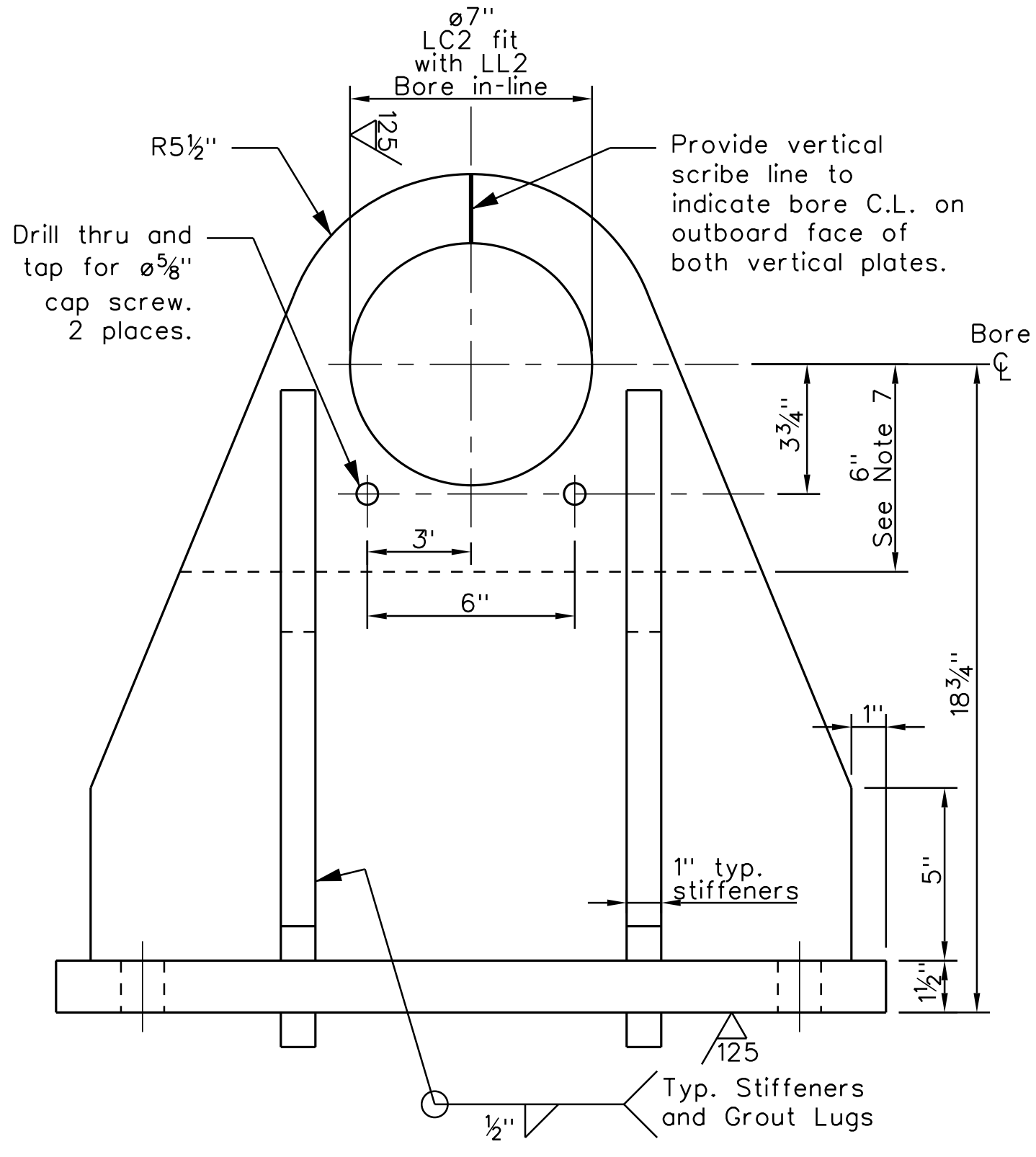
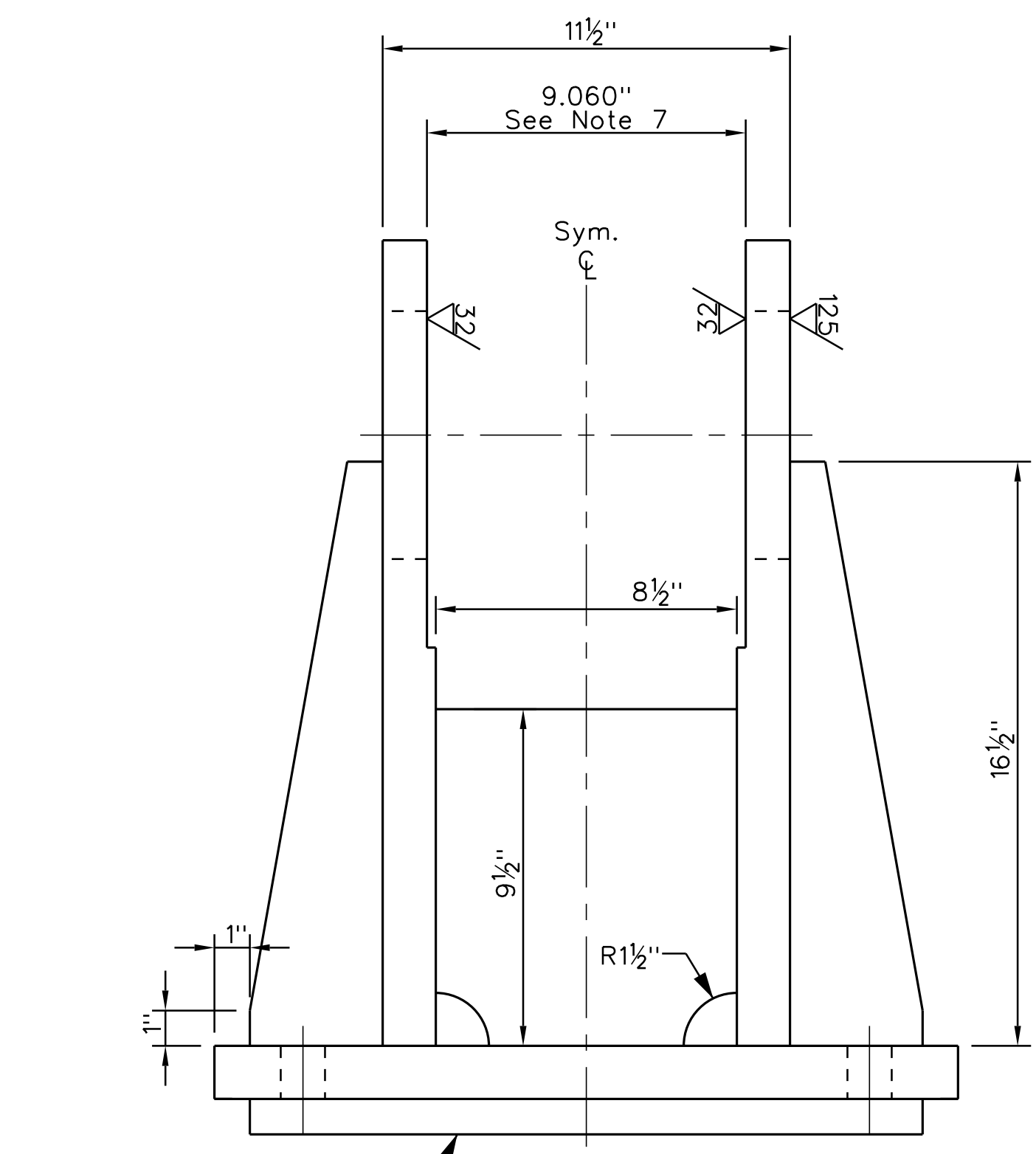


LL6 **LIVE LOAD KEEPER PLATE**
 Scale: 3" = 1'-0"
 Provide 125 microinch surface finish U.O.N.

- SHEET NOTES**
1. See Sheet M1 for General Notes applicable to the work.
 2. See Live Load Roller Schedule on Sheet M13 for materials and quantities.
 3. All dimensions are finished dimensions unless otherwise noted. Add stock for fabrication as necessary to ensure complete cleanup of machined surfaces.
 4. Spot face all bolt holes as necessary to ensure full bearing of bolt head and nut on surface.
 5. Clevis Fabrication: Join webs and base plate with complete joint penetration groove welds. Mill stiffeners to bear and secure with fillet welds as shown. Seal all welds to prevent open joints.
 6. Stress relieve weldment prior to machining.
 7. Machine interior face of Clevis to provide 0.060" clearance with Live Load Roller Thrust Washers at assembly.



LL7 **LIVE LOAD SHOE**
 Scale: 3" = 1'-0"
 Provide 125 microinch surface finish U.O.N.



LL8 **LIVE LOAD FILL PLATE**
 Scale: 3" = 1'-0"

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		STP-2260(700)		BRIDGE NO. 2039		BRIDGE PLANS	
BARTER'S ISLAND BRIDGE BACK RIVER BOOTHBAY		LINCOLN COUNTY		WIN 22607.00			
PROJ. MANAGER		DATE		SIGNATURE		DATE	
DESIGN-DETAILED		07-30-18		15/2/16		10-02-2018	
CHECKED-REVIEWED		10-01-18		P.E. NUMBER		10-02-2018	
DESIGN-DETAILED				REVISIONS 1			
				REVISIONS 2			
				REVISIONS 3			
				REVISIONS 4			
				FIELD CHANGES			
SHEET NUMBER				82			
OF 132				OF 132			

M14

ENGINEER OF RECORD:

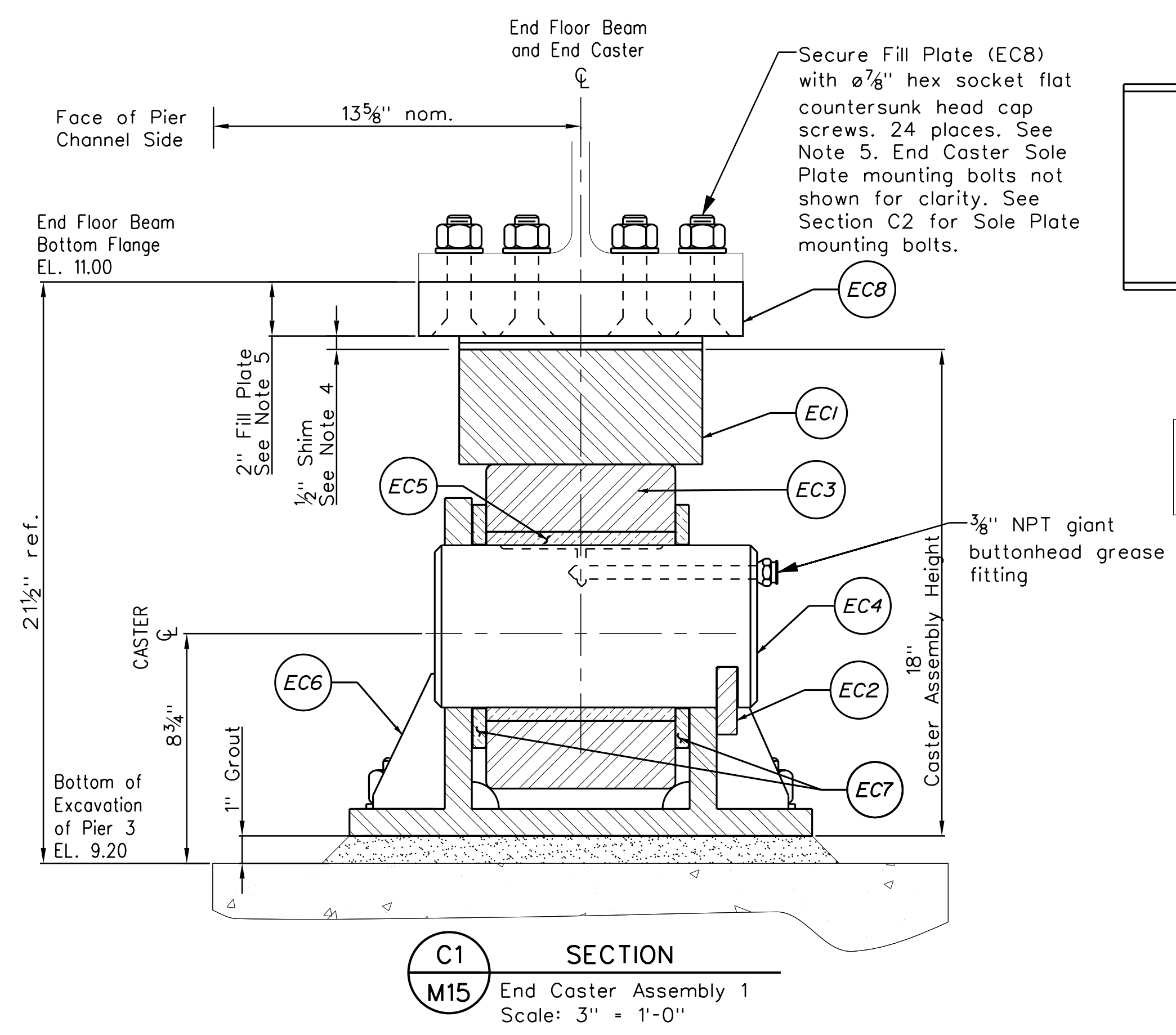
 800 HYDE PARK, DOYLESTOWN, PA 18022, USA
 TEL: (717) 342-2630 www.sobengineering.net

Date: 10/2/2018

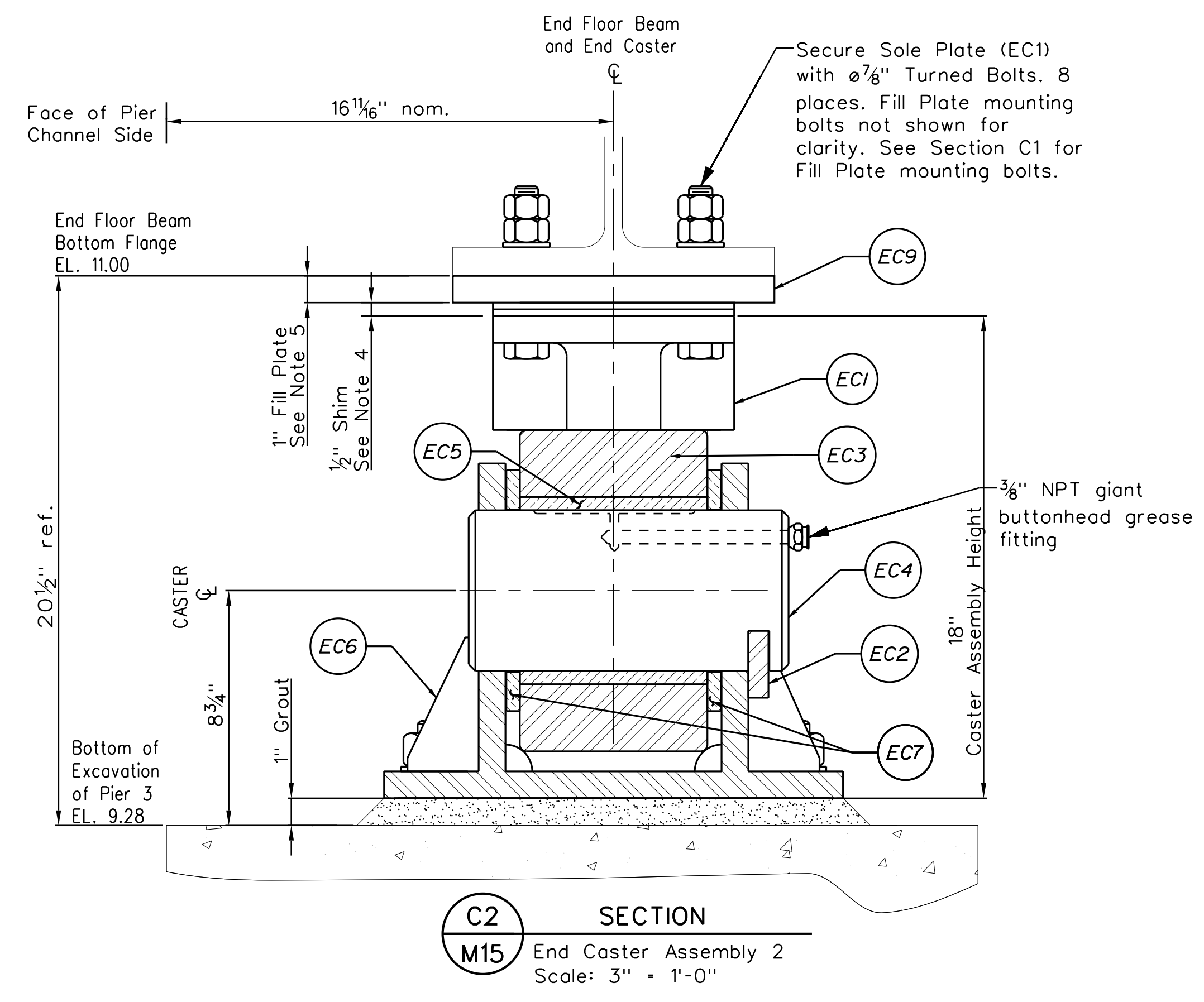
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Division: BRIDGE

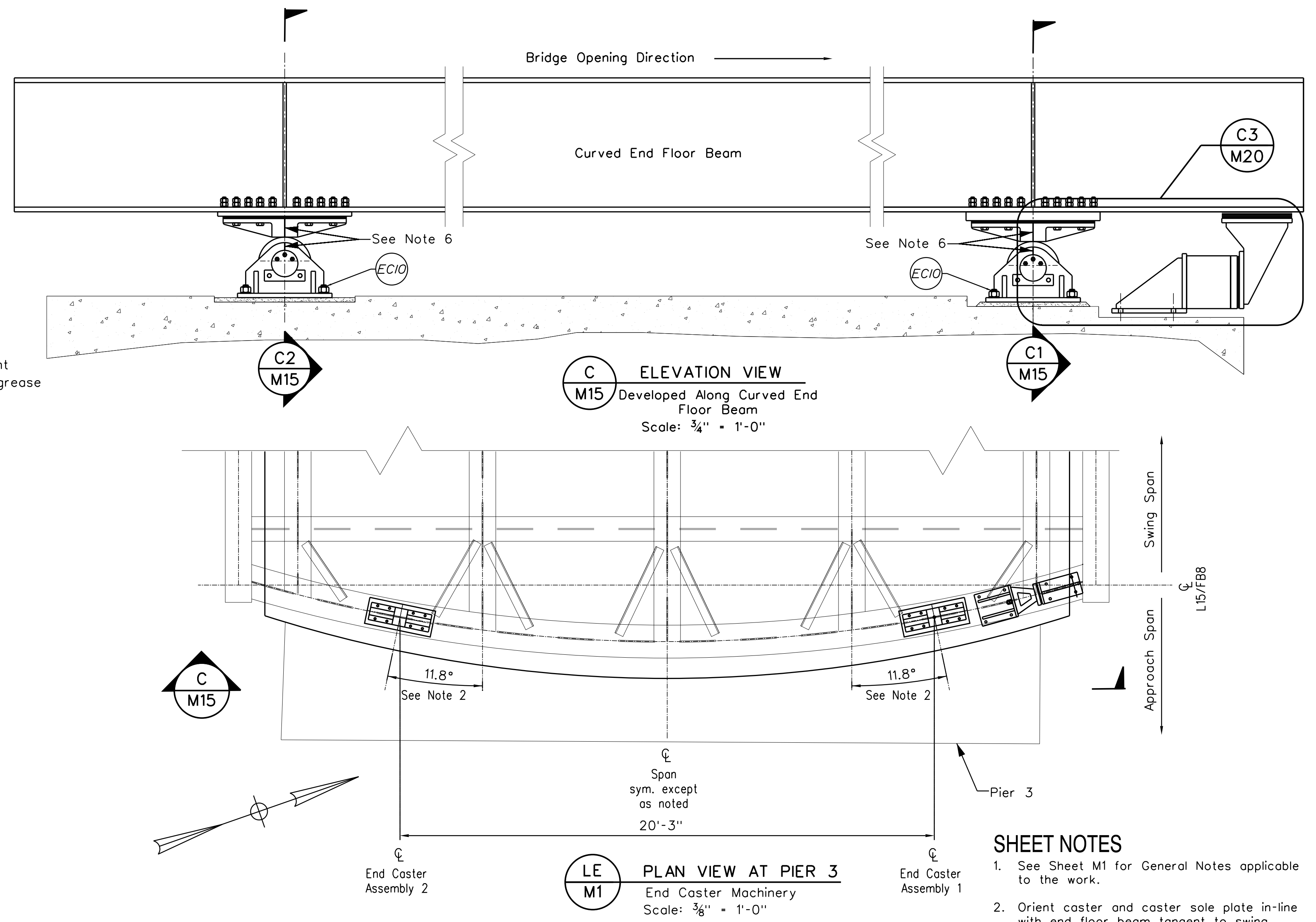
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C1
M15 SECTION
End Caster Assembly 1
Scale: 3" = 1'-0"



C2
M15 SECTION
End Caster Assembly 2
Scale: 3" = 1'-0"



C
M15 ELEVATION VIEW
Developed Along Curved End Floor Beam
Scale: 3/4" = 1'-0"

LE
M1 PLAN VIEW AT PIER 3
End Caster Machinery
Scale: 3/8" = 1'-0"

END SUPPORT CASTER SCHEDULE				
MARK NO.	QTY. REQ'D.	COMPONENT	DESCRIPTION (SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION)	REFERENCE SHEETS
EC1	2	End Caster Sole Plate	Steel Plate. Material: ASTM 668 Class L.	M15, M16
EC2	2	End Caster Keeper Plate	Steel Plate. Material: ASTM A709 Grade 50.	M15, M16
EC3	2	End Caster Roller	Forged Steel. Material: ASTM A668 Class M.	M15, M16
EC4	2	End Caster Pin	Forged Steel. Material: ASTM A668 Class M.	M15, M16
EC5	2	End Caster Bushing	Bronze. Material: ASTM B22 Alloy C91300.	M15, M16
EC6	2	End Caster Clevis	Steel Weldment. Material: ASTM A709 Grade 50.	M15, M16
EC7	4	End Caster Thrust Washer	Bronze. Material: ASTM B22 Alloy C93700.	M15, M16
EC8	1	2" Fill Plate	Steel Plate. Material: ASTM A709 Grade 50. See Note 5.	M15, M16
EC9	1	1" Fill Plate	Steel Plate. Material: ASTM A709 Grade 50. See Note 5.	M15, M16
EC10	8	Anchor Bolts	ø1 1/4" x 12" embedment. Material: ASTM A193 Grade B7.	M15

SHEET NOTES

- See Sheet M1 for General Notes applicable to the work.
- Orient caster and caster sole plate in-line with end floor beam tangent to swing radius.
- Use bolt holes in caster sole plate as a template to locate and drill holes through girder and fill plate. See Special Provisions for hole tolerance.
- Shim sole plates to provide 0.000" to 0.005" clearance with end caster rollers prior to driving end jacks and seats. This work requires the bridge to be closed and properly balanced.
- Secure fill plates to underside of end floor beam in shop with hex socket flat countersunk head bolts. Tighten bolts per Turn-of-Nut method. Recess bolt heads to allow for up to 1/8" of material removal. Machine to ensure planar mounting surface.
- Locate clevis (EC6) at full closed position so that the scribe lines on clevis and sole plate (EC1) align within 1/16". Grout into position and secure with anchor bolts (EC10).
- See structural sheets for pier excavation work.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)
BRIDGE NO. 2039
WIN 22607.00
BRIDGE PLANS

PROJ. MANAGER: R. TOSOLT
DESIGN-DETAILED: M. BROGIE
CHECKED-REVIEWED: R. TOSOLT
DESIGN-DETAILED: R. TOSOLT
REVISIONS: 1, 2, 3, 4

DATE: 09-24-18
10-01-18

SIGNATURE: [Signature]
P.E. NUMBER: 15216
DATE: 10-02-2018

BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY
END SUPPORT CASTER
SCHEDULE & ARRANGEMENT

SHEET NUMBER
83
OF 132

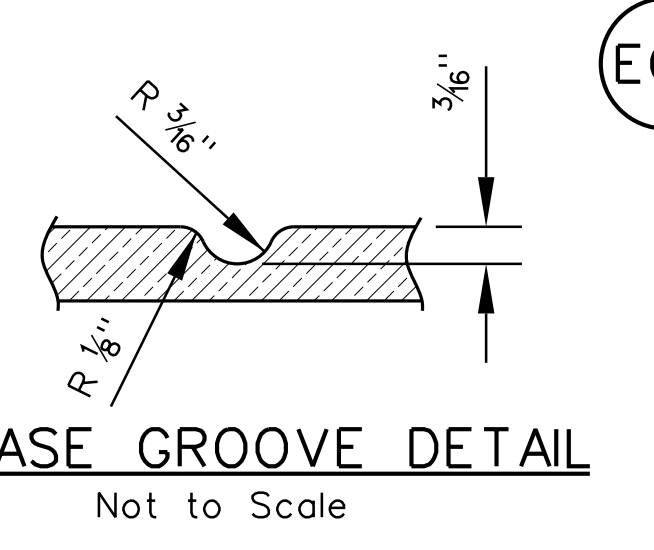
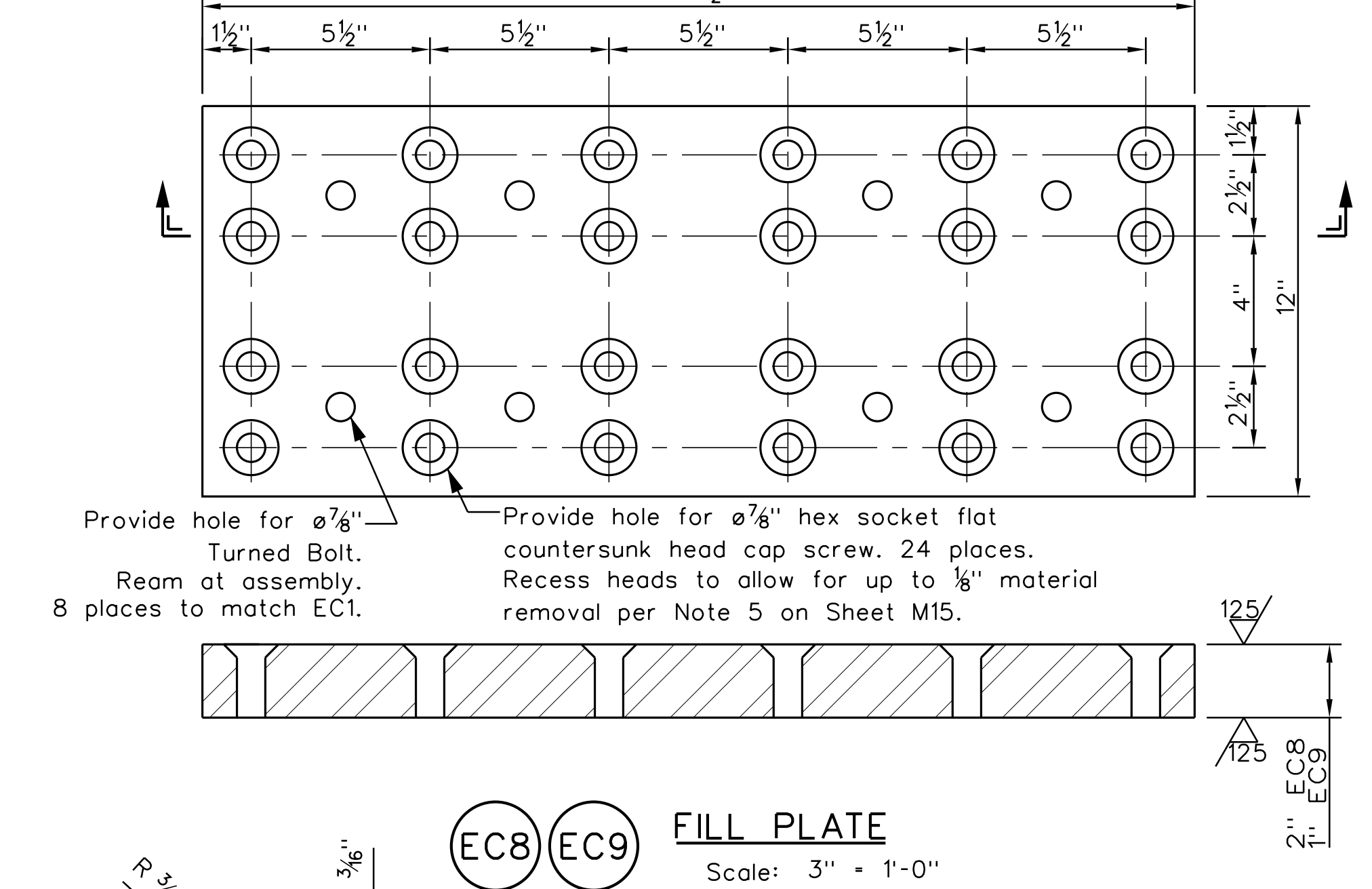
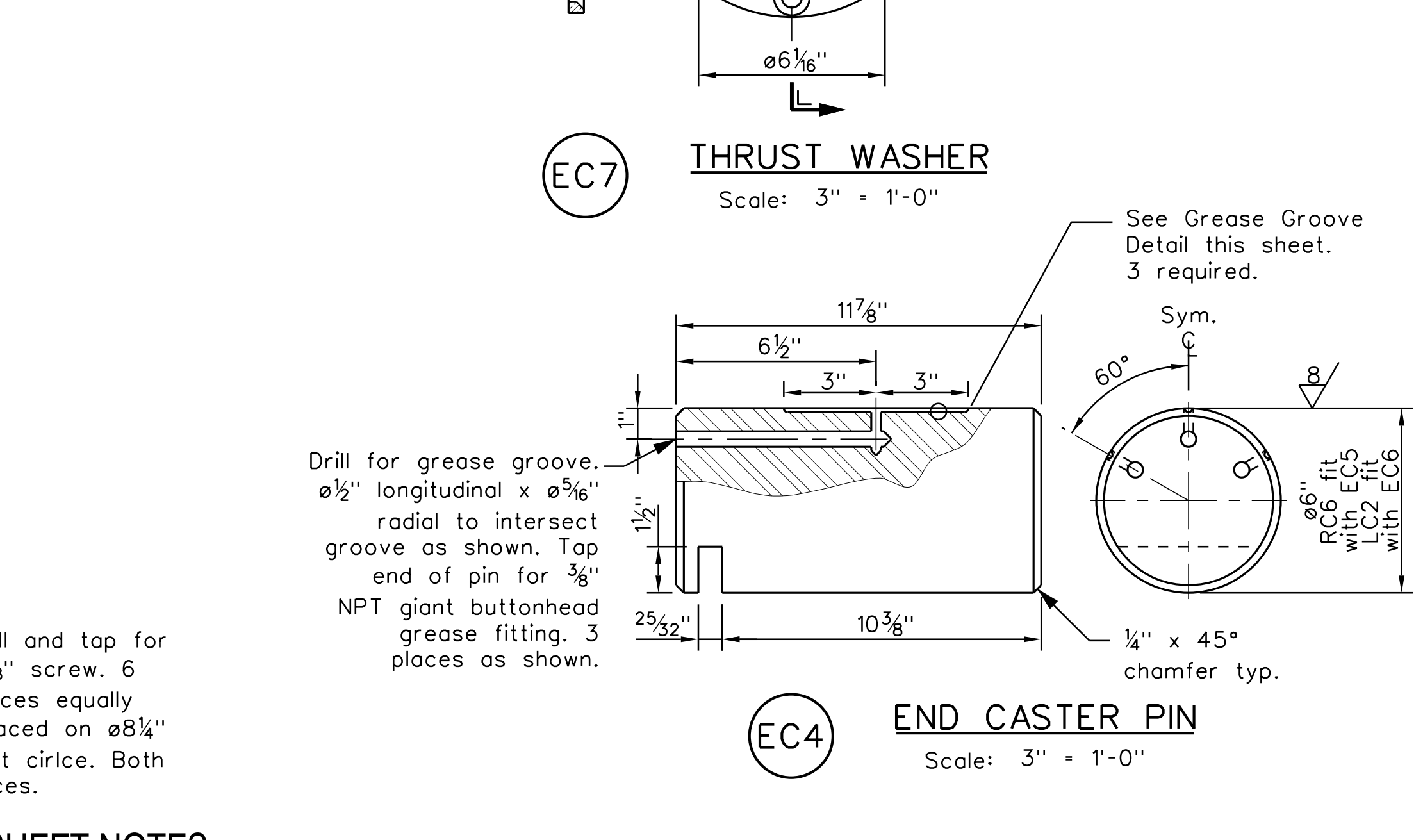
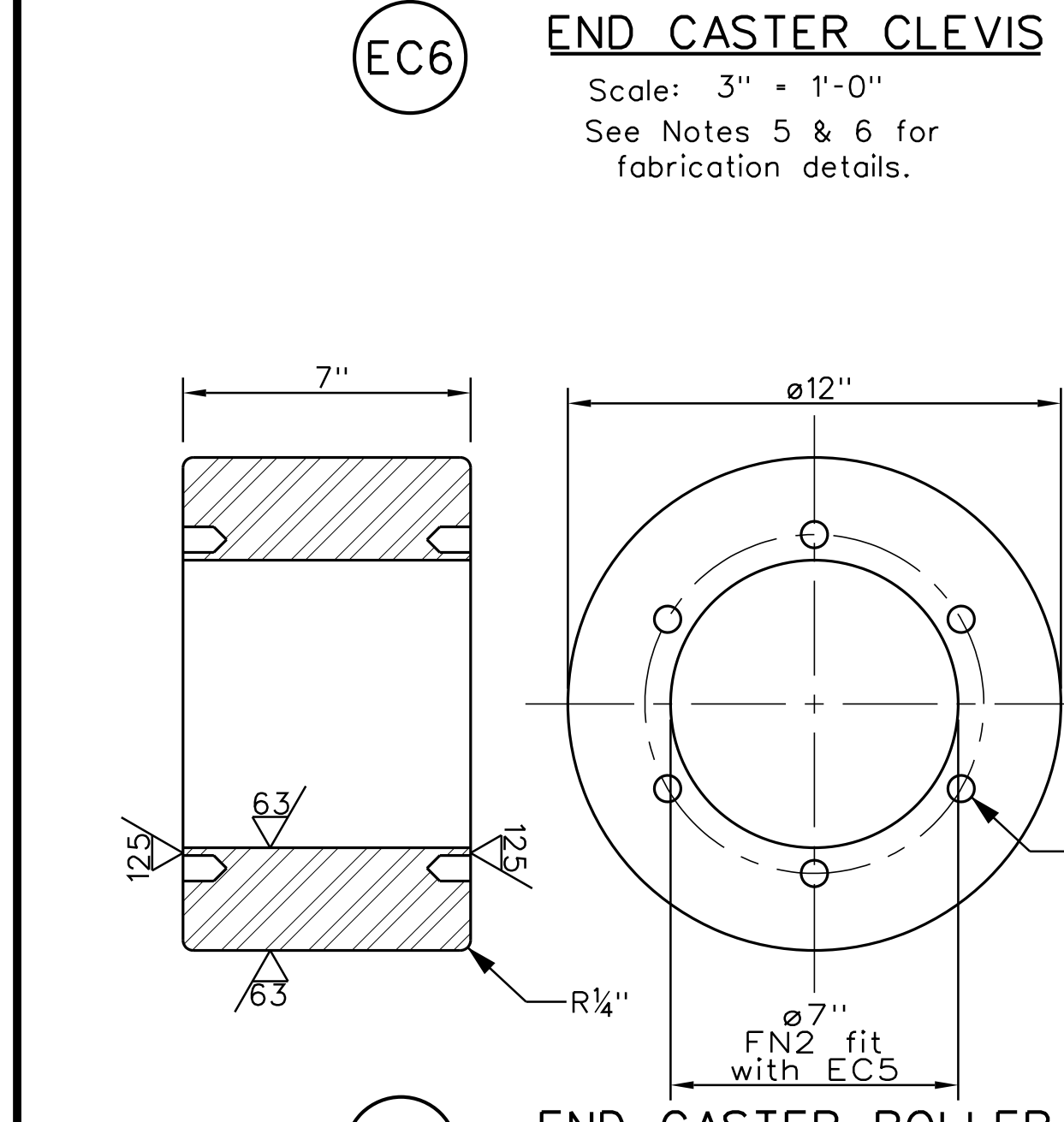
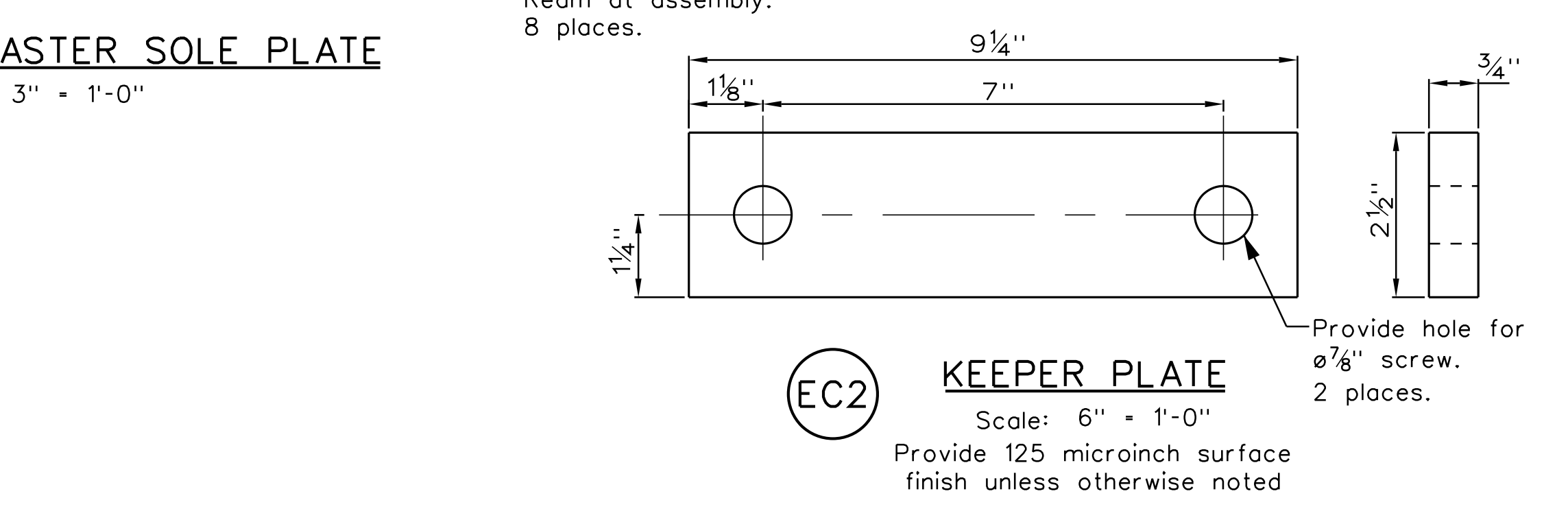
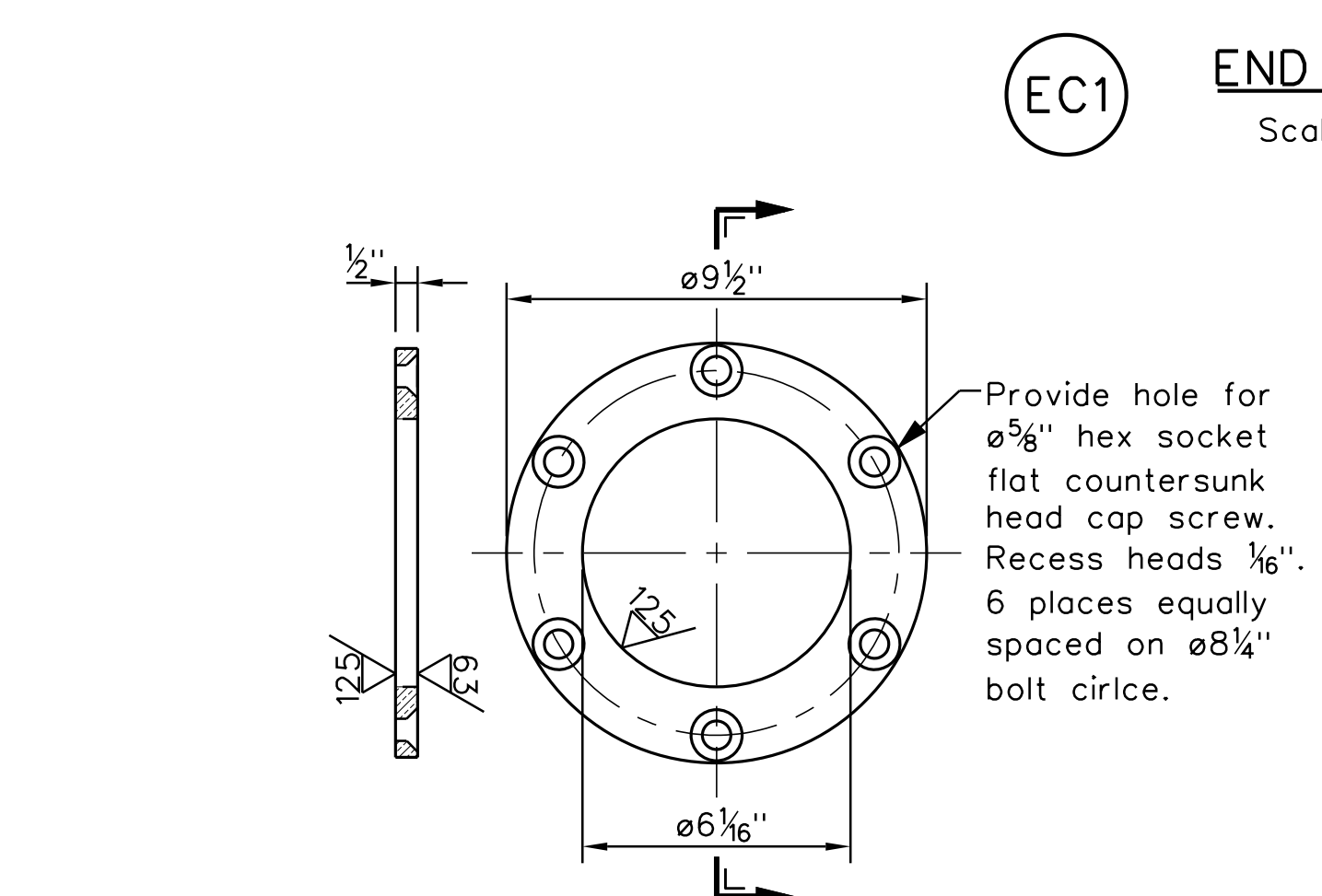
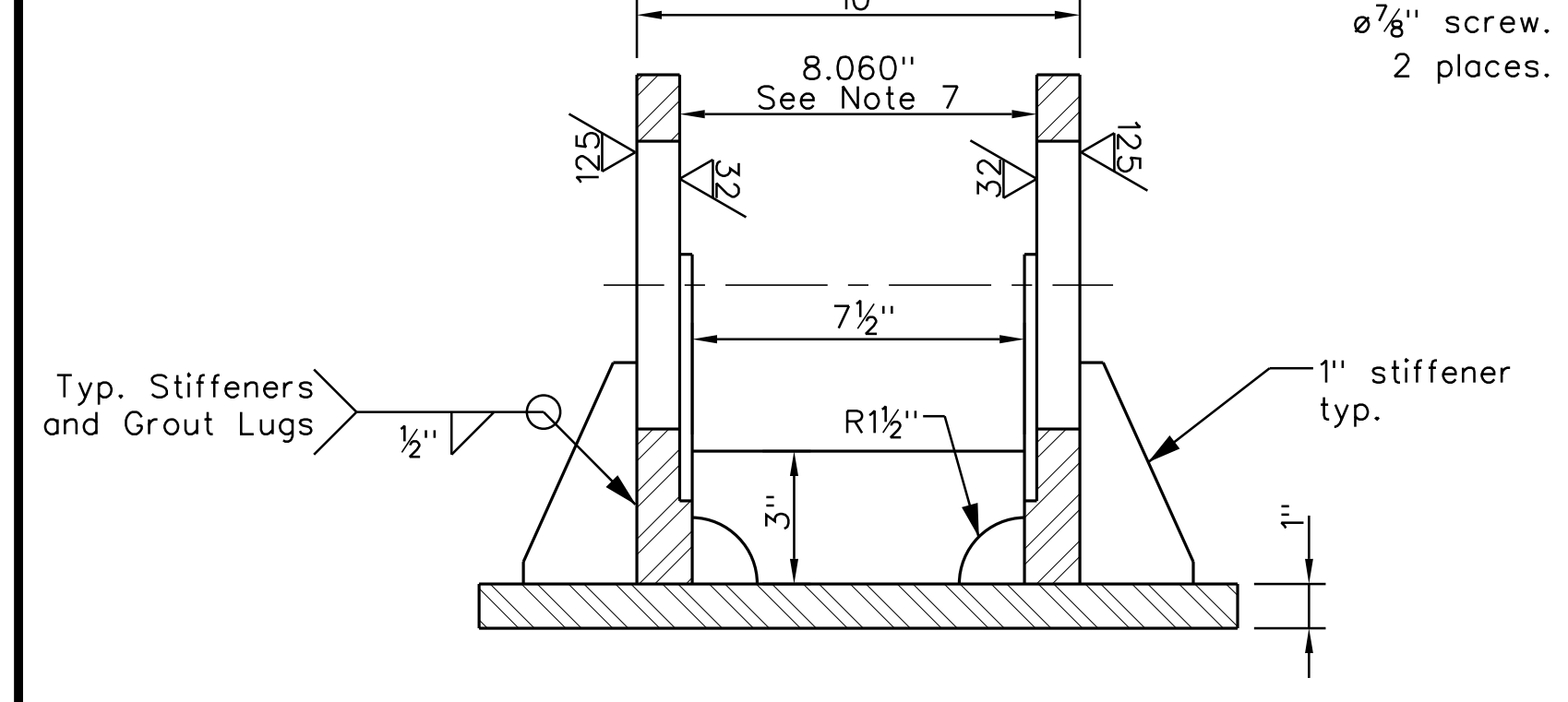
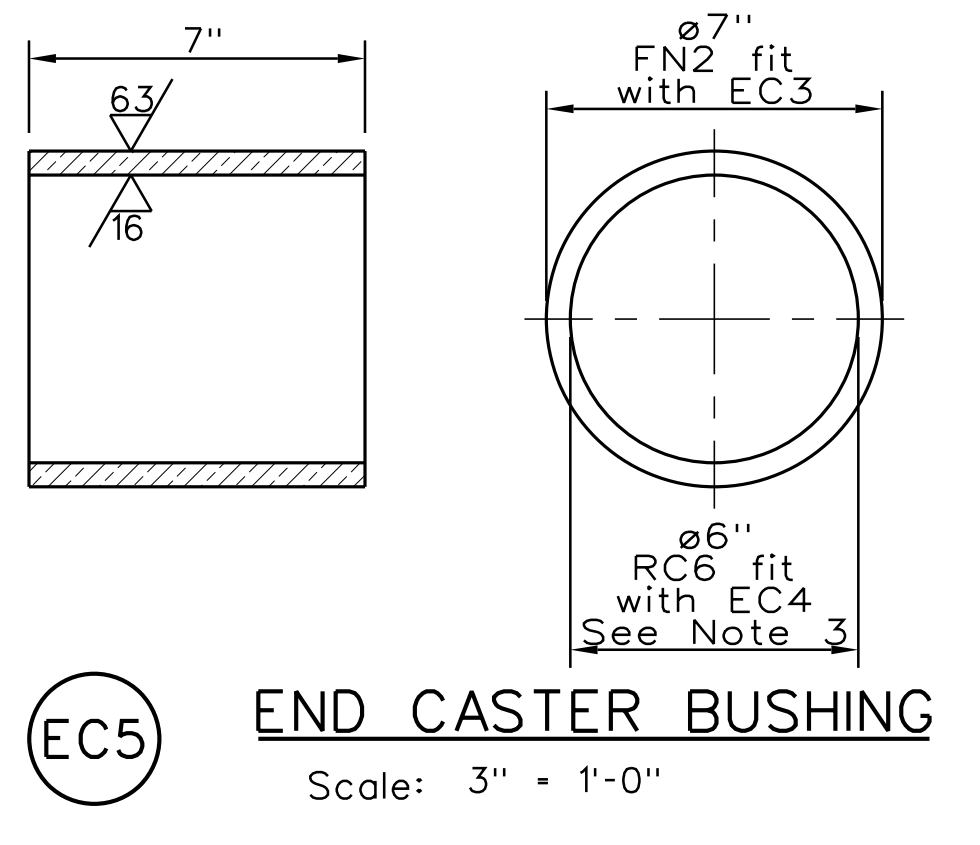
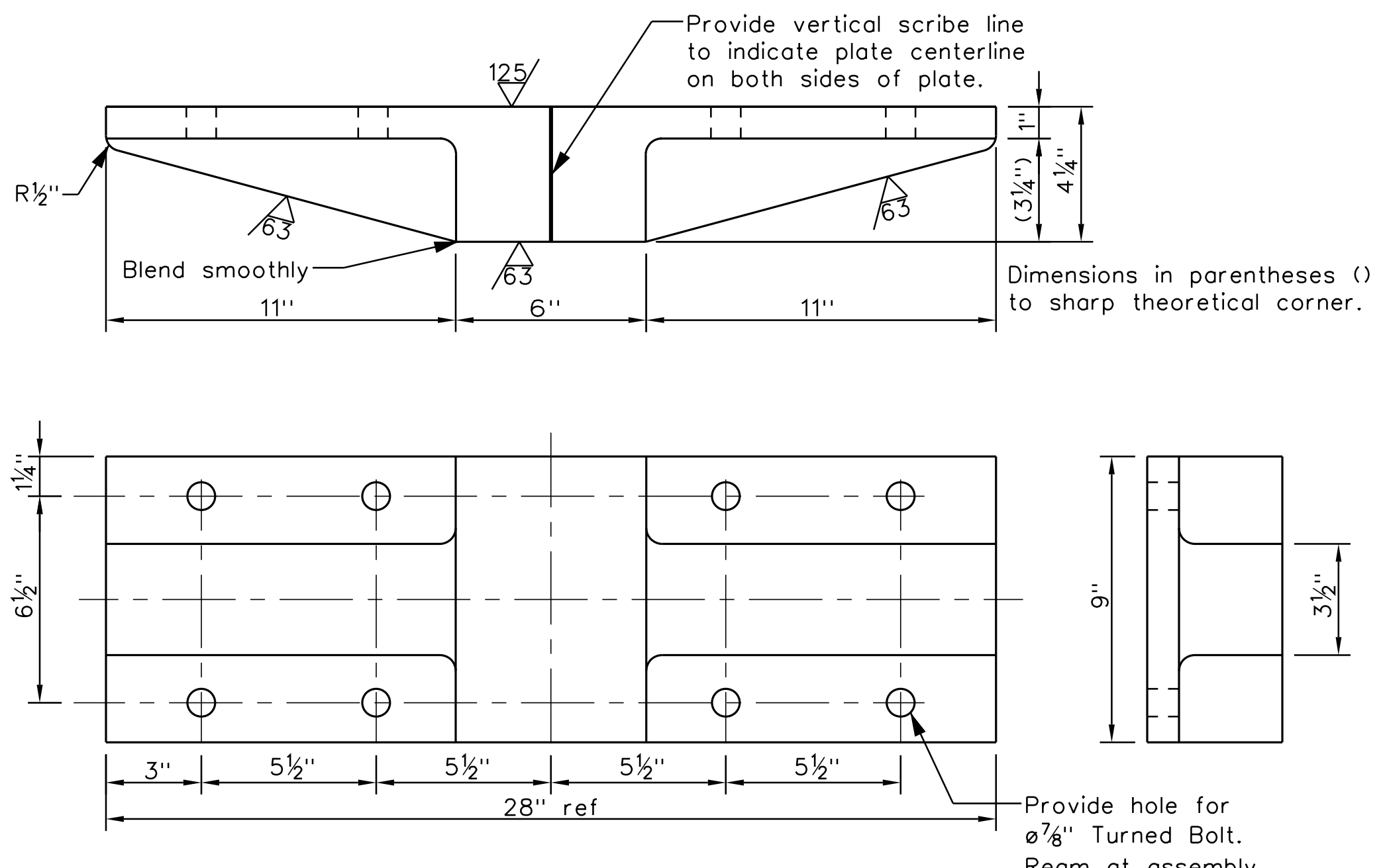
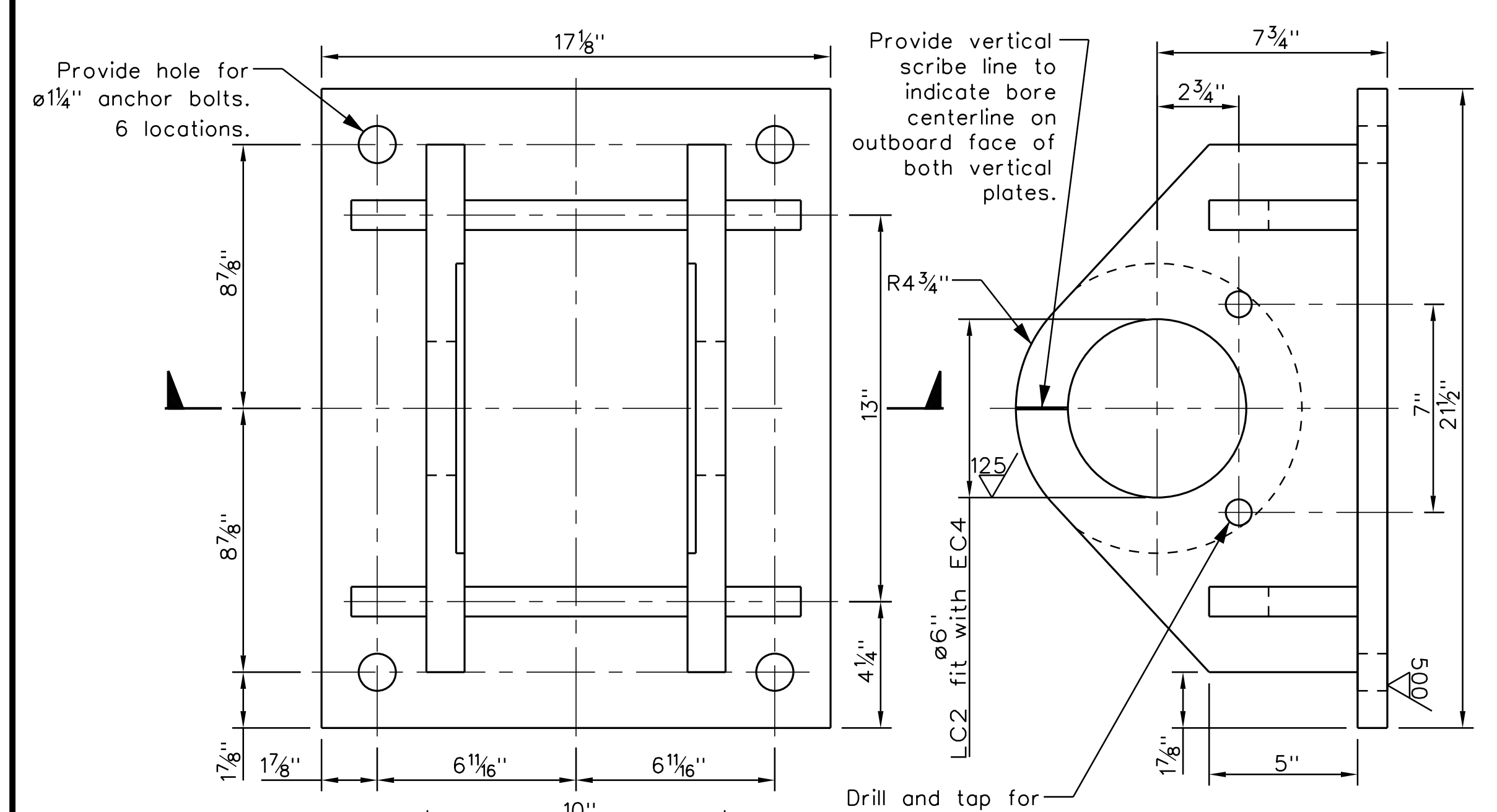
ENGINEER OF RECORD:
SOB
ENGINEERING
800 HYDE PARK, DOYLESTOWN, PA 18902, USA
TEL: (717) 342-3630 www.sobengineering.net

Date: 10/2/2018

Username: common

Division: BRIDGE

Filename: ... \084_End_Support_Caster_2.dgn



- SHEET NOTES**
- See Sheet M1 for General Notes applicable to the work.
 - See End Support Caster Schedule on Sheet M15 for materials and quantities.
 - Bore Bushing EC5 after assembly with Roller EC3.
 - All dimensions are finished dimensions unless otherwise noted. Add stock for fabrication as necessary to ensure complete cleanup of machined surfaces.
 - Clevis Fabrication: Join webs and base plate with complete joint penetration groove welds. Mill stiffeners to bear and secure with fillet welds as shown. Seal all welds to prevent open joints.
 - Stress relieve weldment prior to machining.
 - Machine interior faces of clevis ears to provide 0.060" clearance with end caster thrust washers for 9 3/4" about bore.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)

BRIDGE NO. 2039
WIN 22607.00
BRIDGE PLANS

BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY
END SUPPORT CASTER
DETAILS

SHEET NUMBER
84
OF 132

ENGINEER OF RECORD:
SOB
ENGINEERING
800 HYDE PARK, DOWLESTOWN, PA 19022, USA
TEL: (215) 340-9830 www.sobengineering.com

M16

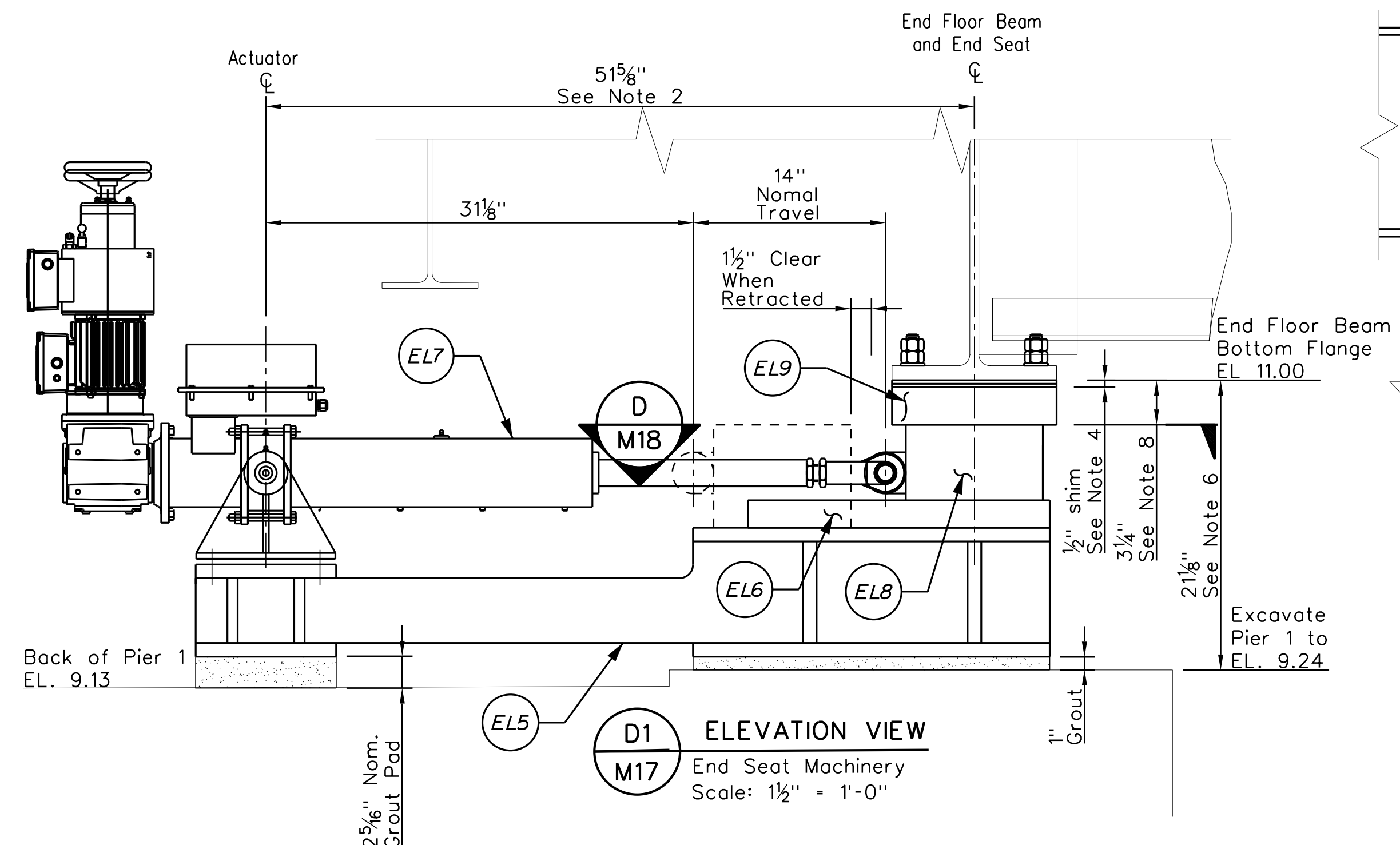
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CHECKED-REVIEWED	R. TOSOLT / M. BROGIE	DATE	07-30-18
DESIGN-REVIEWED	R. TOSOLT / R. TOSOLT	DATE	10-01-18
DESIGNS DETAILING		SIGNATURE	
REVISIONS 1		P.E. NUMBER	15216
REVISIONS 2		DATE	10-02-2018
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

Date: 10/2/2018

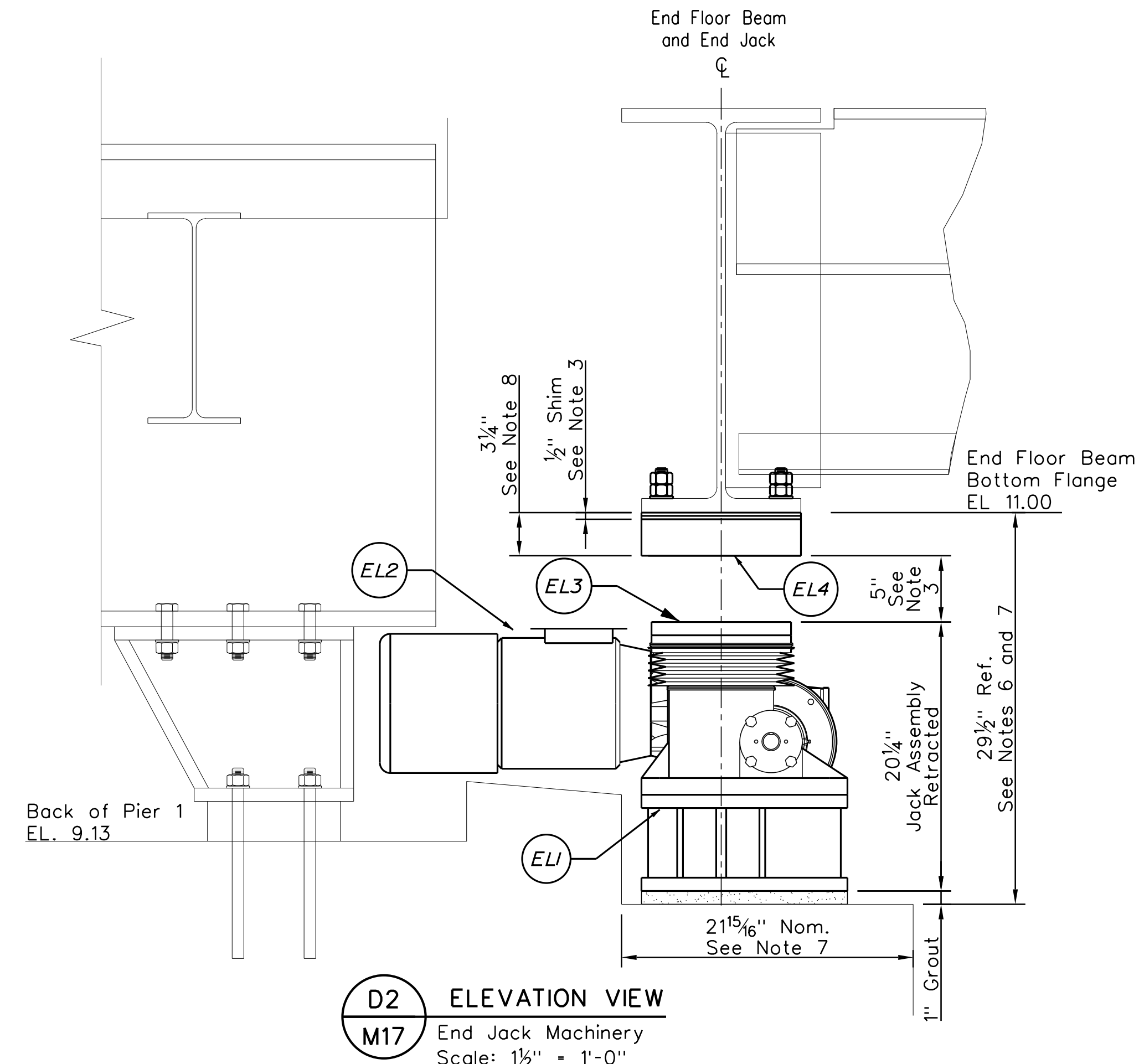
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Division: BRIDGE

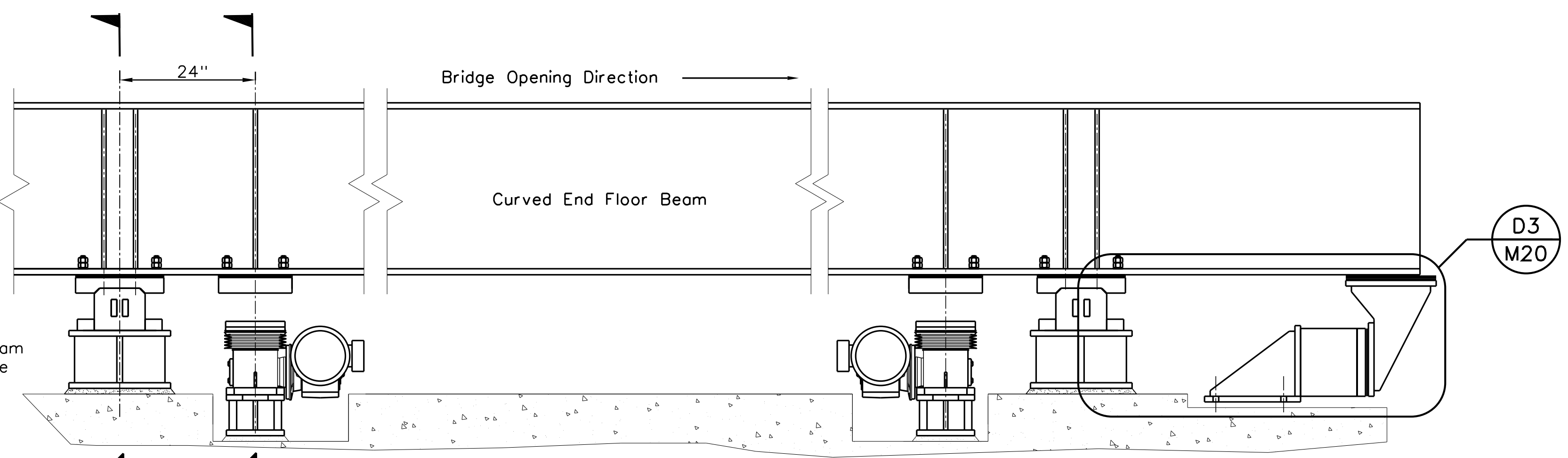
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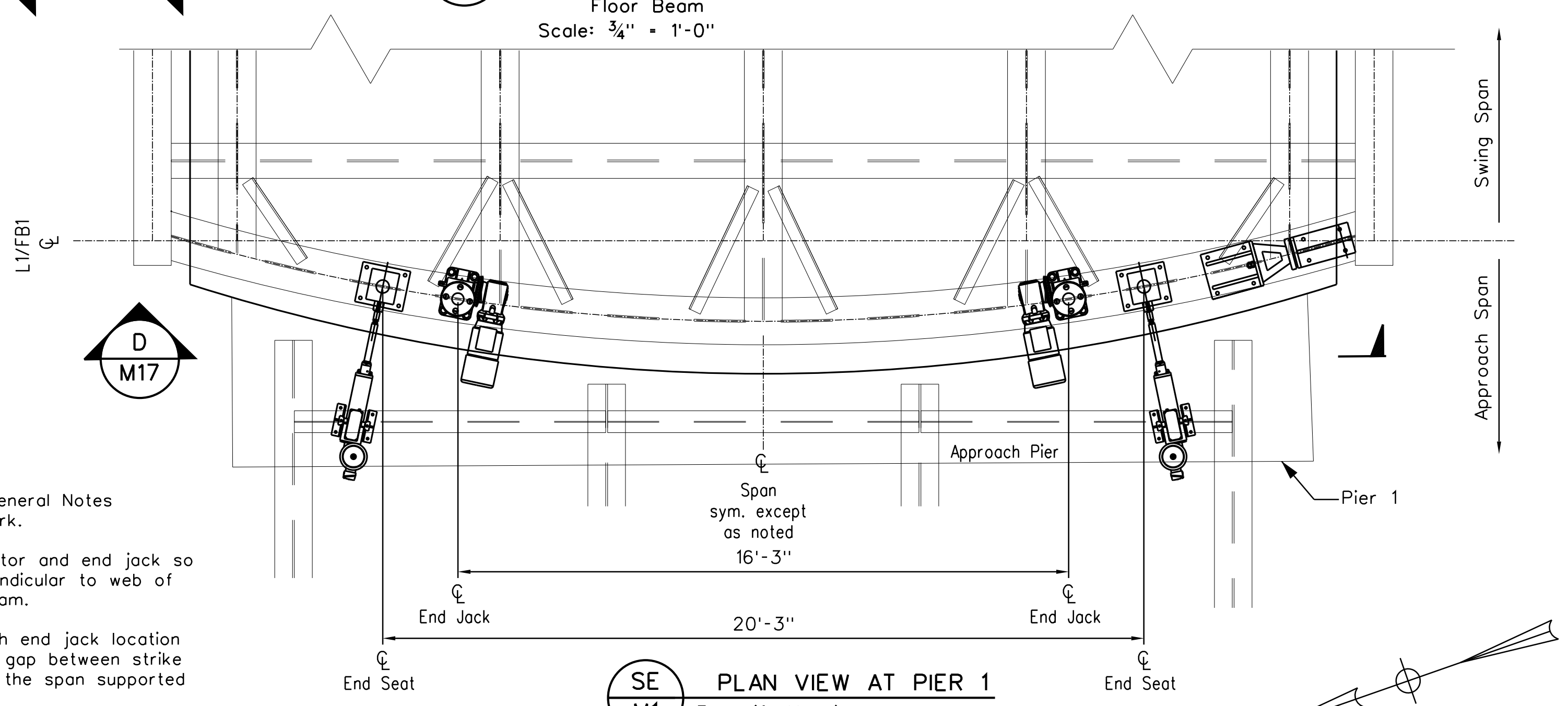
D1 ELEVATION VIEW
End Seat Machinery
Scale: 1 1/2" = 1'-0"



D2 ELEVATION VIEW
End Jack Machinery
Scale: 1 1/2" = 1'-0"



D ELEVATION VIEW
Developed Along Curved End Floor Beam
Scale: 3/4" = 1'-0"



SE PLAN VIEW AT PIER 1
End Lift Machinery
Scale: 3/8" = 1'-0"

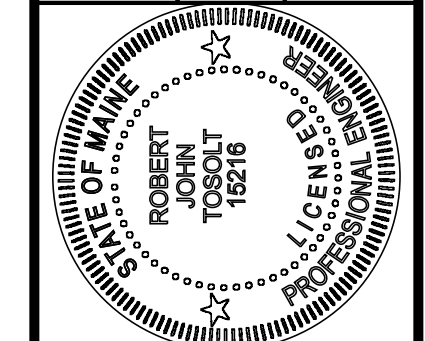
SHEET NOTES

- See Sheet M1 for General Notes applicable to the work.
- Orient end lift actuator and end jack so that axes are perpendicular to web of curved end floor beam.
- Adjust shims at each end jack location to provide indicated gap between strike plate and shoe with the span supported on the end seats.
- Adjust shims at each shoe location to achieve the reactions provided in the special provisions.
- Span shall be properly balanced and balance wheels shall be installed and adjusted prior to installing jacks and shoes.
- View D1 and D2 show position of end floor beam relative to top of pier with span in supported position. Free position of span (jacks and seats withdrawn) will result in end floor beam being approximately 1" lower than indicated.
- Provide localized cutout in pier cap to accommodate end jack base. Dimensions vary due to skew orientation.
- The distance from underside of floor beam to contact surface of strike plates EL4 and EL8 shall not vary by more than 1/16".
- Coordinate mounting of limit switches provided under Electrical Work to indicate limits of travel for end jacks and actuators. Limit switch mounting shall be durable, weatherproof, and located so as not to obstruct span travel.
- See Structural Sheets for pier excavation work.

END LIFT ASSEMBLY SCHEDULE

MARK NO.	QTY. REQ'D.	COMPONENT	DESCRIPTION (SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION)	REFERENCE SHEETS
EL1	2	End Jack Support	Steel Weldment. Material: ASTM A709 Grade 50.	M17, M19
EL2	2	End Jack	35 Ton Screw Jack with 6" Stroke.	M17
EL3	2	End Jack Shoe	Steel Plate. Material: ASTM A709 Grade 50.	M17, M18
EL4	2	End Jack Strike Plate	Bronze. Material: ASTM B22 Alloy C93700.	M17, M19
EL5	2	End Seat Support	Steel Weldment. Material: ASTM A709 Grade 50.	M17, M18
EL6	4	End Seat Guide Blocks	Bronze. Material: ASTM B22 Alloy C93700.	M17, M18
EL7	2	End Seat Actuator	Linear Actuator. 2,200 lb. Thrust Force, 15" Stroke.	M17
EL8	2	End Seat Shoe	Steel Plate. Material: ASTM A668 Class M.	M17, M18
EL9	2	End Seat Strike Plate	Bronze Plate. Material: ASTM B22 Alloy C91100.	M17, M18

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)
BRIDGE NO. 2039
BRIDGE PLANS
WIN
22607.00



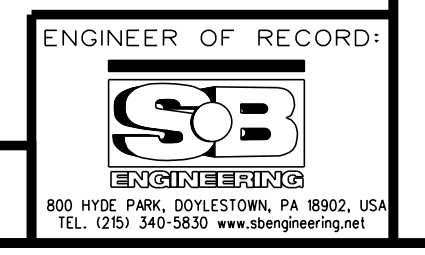
PROJ. MANAGER	BY	DATE
R. TOSOLT	M. BROGIE	09-24-18
CHECKED-REVIEWED	DESIGN-DETAILED	DESIGN-DETAILED
R. TOSOLT	R. TOSOLT	R. TOSOLT
10-01-18	10-01-18	10-01-18
REVISIONS	DATE	DESCRIPTION
1	10-02-2018	15216
2		
3		
4		

BARTER'S ISLAND BRIDGE
BACK RIVER
LINCOLN COUNTY
BOOTHBAY
END LIFT ASSEMBLY
SCHEDULE & ARRANGEMENT

SHEET NUMBER

85

OF 132

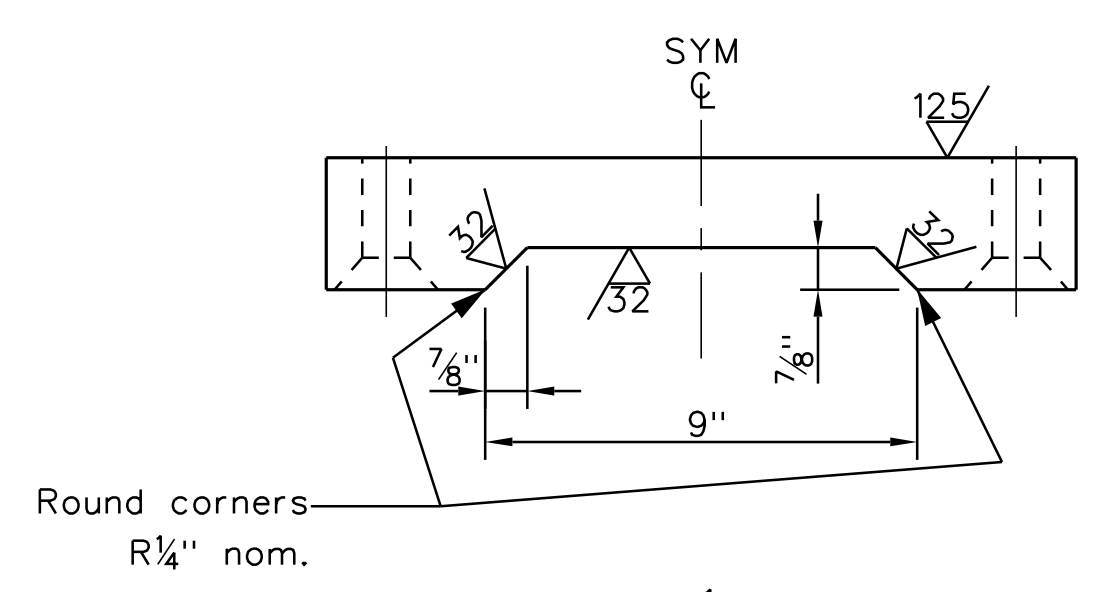


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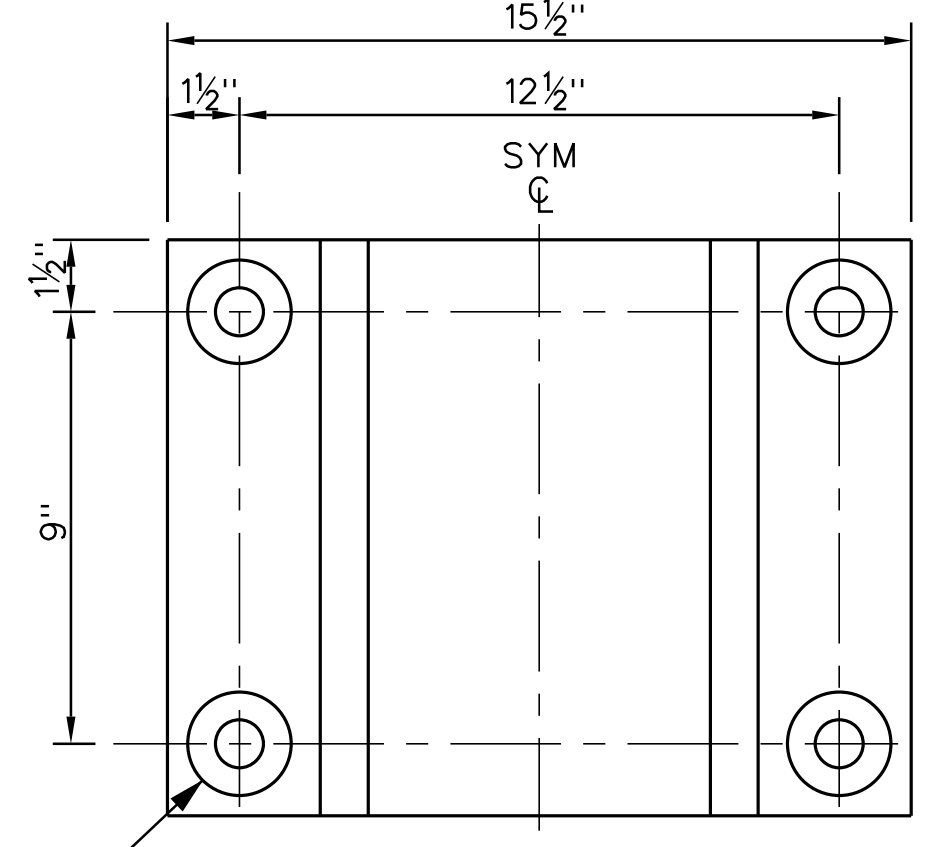
Username: common

Division: BRIDGE

Filename: ...Mechanical\086_End Lift_2.dgn



Round corners
R 1/4" nom.

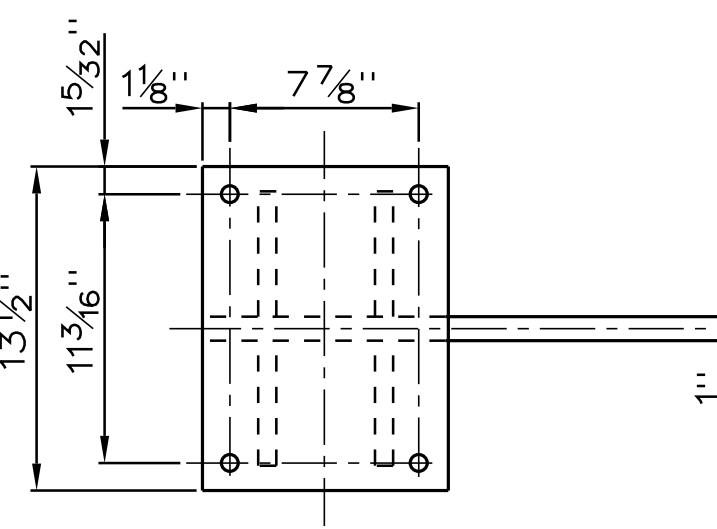
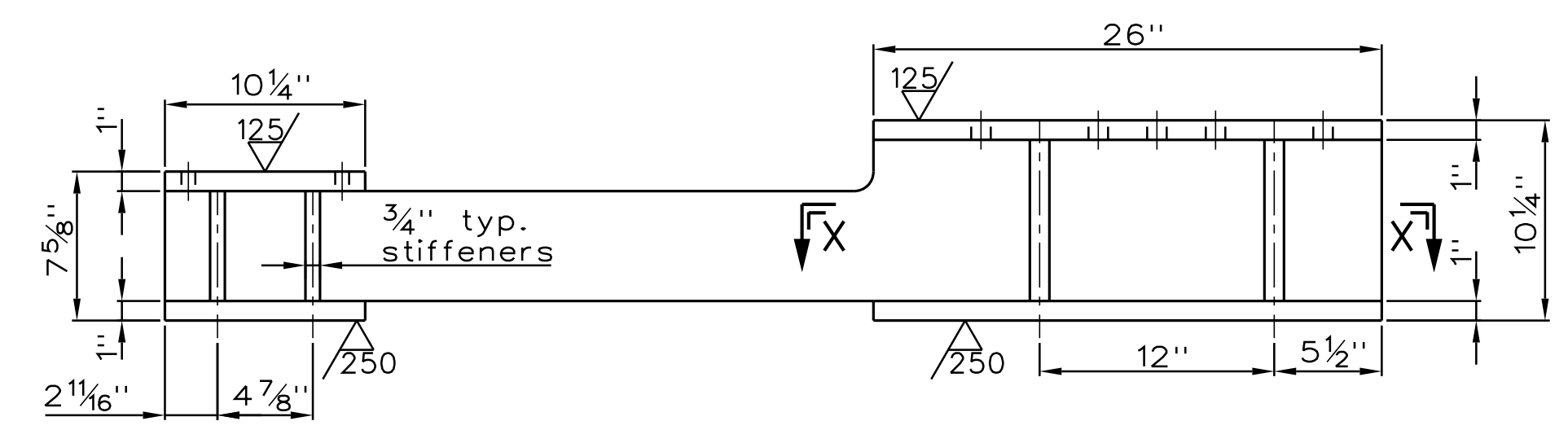


Drill thru and countersink for $\varnothing 1"$ hex socket flat countersunk head turned bolt. Recess heads 1/8". 4 places.

EL9

END SEAT STRIKE PLATE

Scale: 3" = 1'-0"
Provide 125 microinch finish U.O.N.

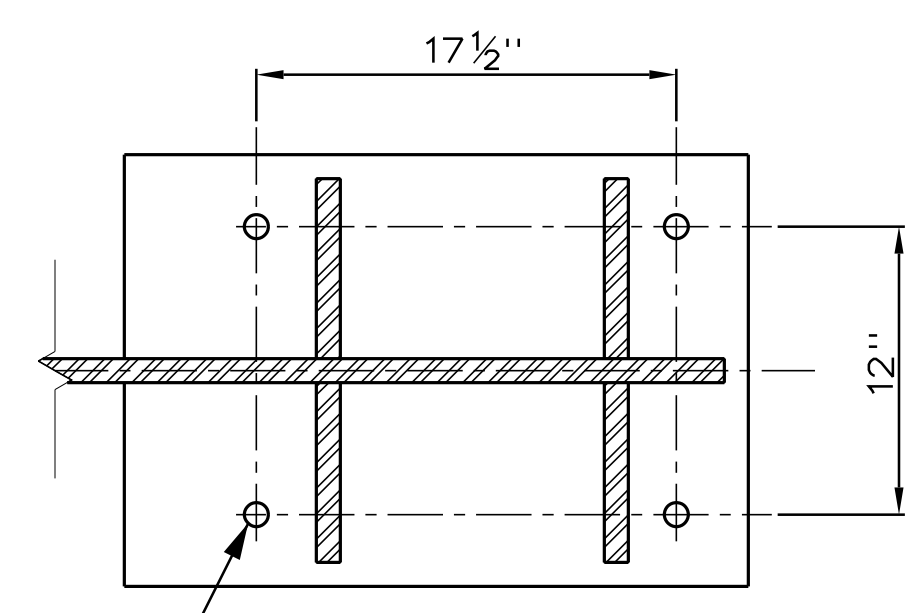


See Note 4

EL5

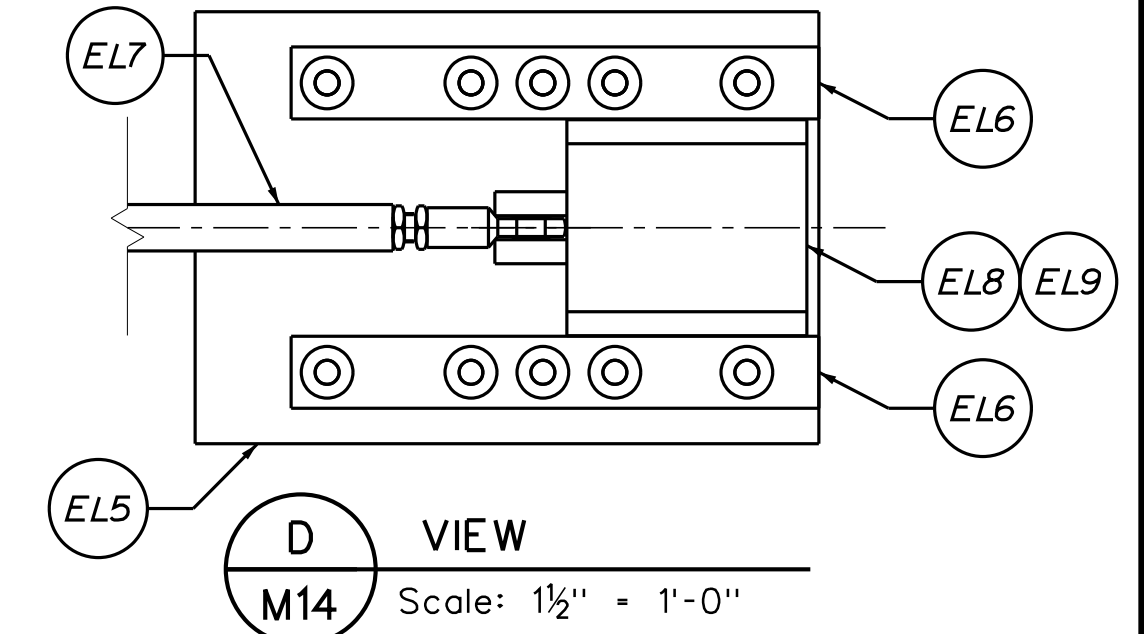
END SEAT SUPPORT

Scale: 1 1/2" = 1'-0"
See Notes 5 and 6 for fabrication details.

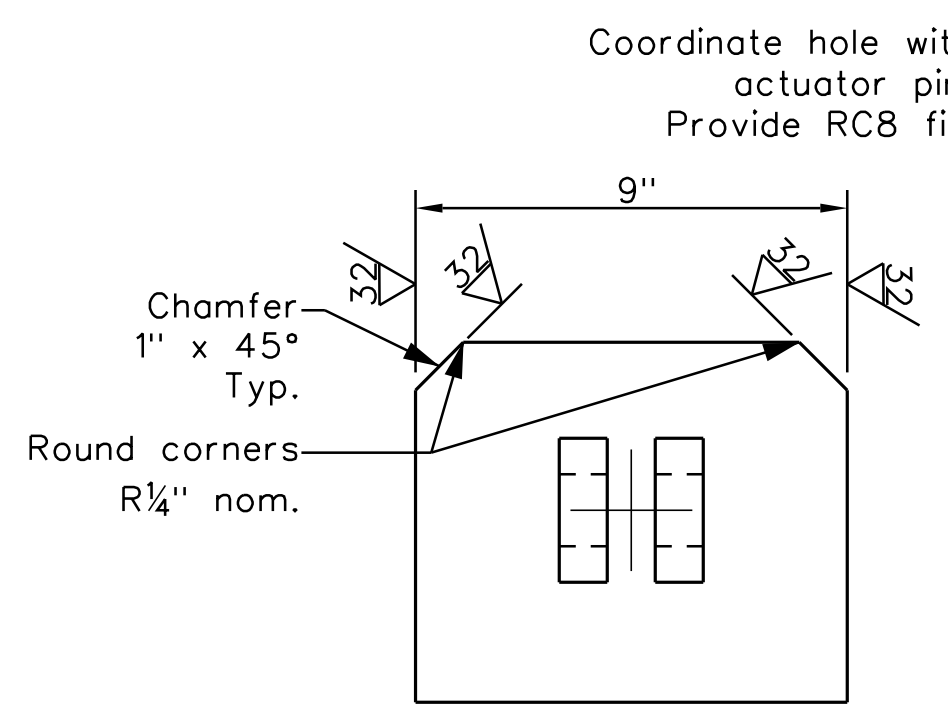


Provide hole for $\varnothing 1"$ anchor bolt. 4 Places.

X-X



D VIEW
Scale: 1 1/2" = 1'-0"

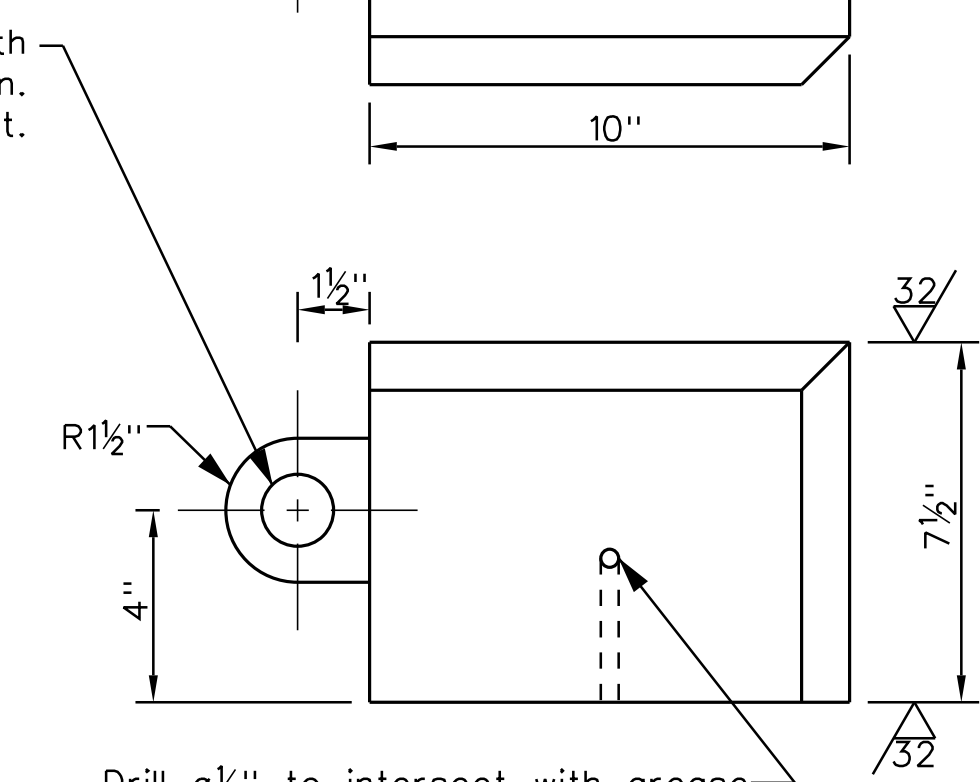


Chamfer 1" x 45° Typ.
Round corners R 1/4" nom.

EL8

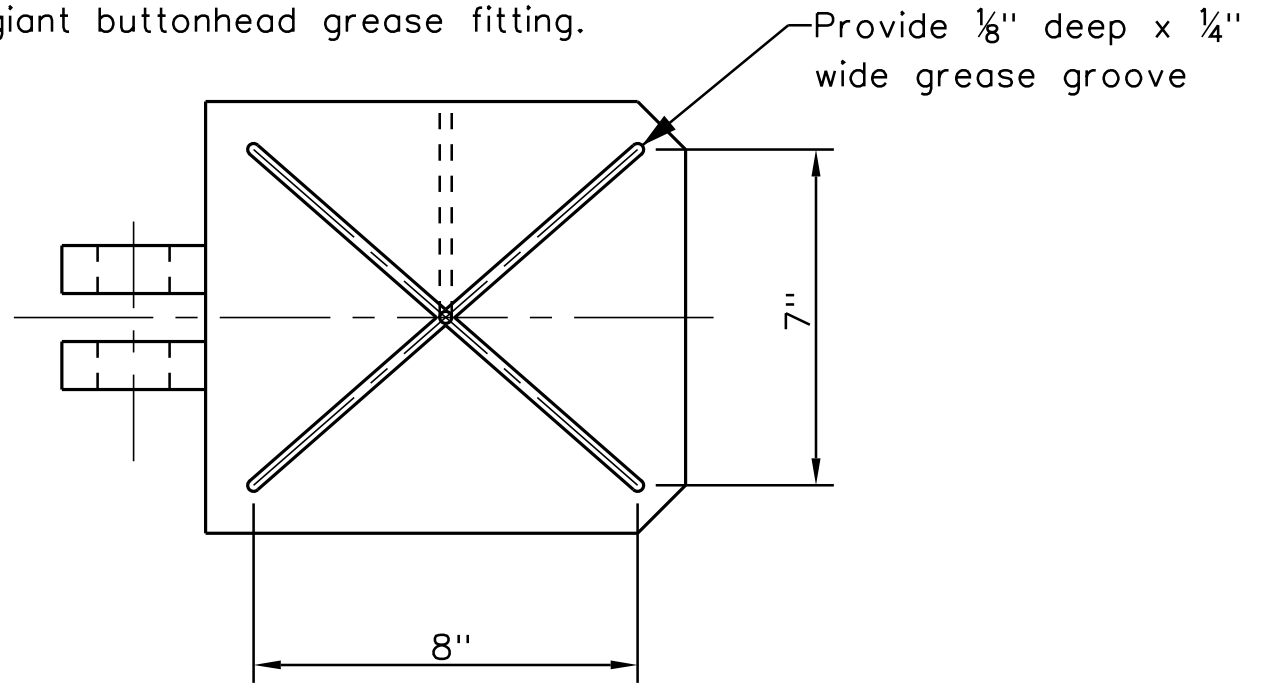
END SEAT SHOE

Scale: 3" = 1'-0"
Provide 125 microinch finish U.O.N.

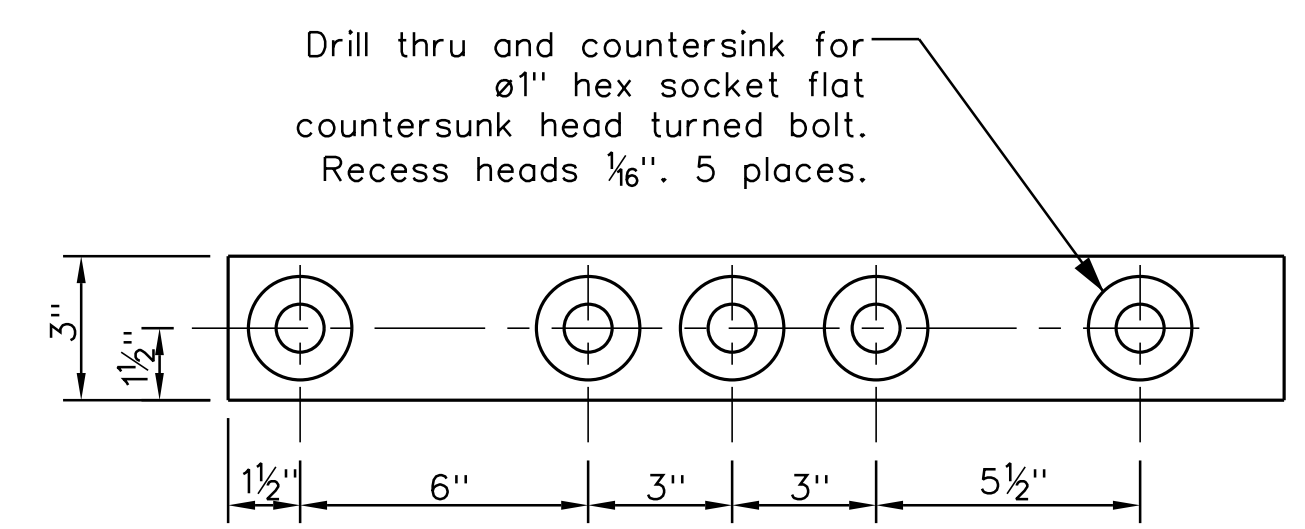


Coordinate hole with actuator pin. Provide RC8 fit.

Drill $\varnothing 1/4"$ to intersect with grease groove as shown. Tap for 1/2" NPT for giant buttonhead grease fitting.



Provide 1/8" deep x 1/4" wide grease groove



Drill thru and countersink for $\varnothing 1"$ hex socket flat countersunk head turned bolt. Recess heads 1/8". 5 places.

EL6

END SEAT GUIDE BLOCKS

Scale: 3" = 1'-0"
Provide 125 microinch finish U.O.N.

SHEET NOTES

1. See Sheet M1 for General Notes applicable to the work.
2. See End Lift Assembly Schedule on Sheet M17 for materials and quantities.
3. All dimensions are finished dimensions unless otherwise noted. Add stock for fabrication as necessary to ensure complete cleanup of machined surfaces.
4. Shop align Guide Blocks (EL6) on End Seat Support (EL5) to provide 0.030" side clearance with Shoe (EL8). Drill and ream for turned bolts after achieving alignment.
5. End Seat Support Fabrication: Join webs and top and bottom plates with complete joint penetration groove welds. Mill stiffeners to bear and secure with 3/8" fillet welds.
6. Stress relieve weldment prior to machining.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		STP-2260(700)		BRIDGE NO. 2039		BRIDGE PLANS	
BARTER'S ISLAND BRIDGE BACK RIVER BOOTHBAY		LINCOLN COUNTY		END LIFT ASSEMBLY DETAILS I		SHEET NUMBER	
PROJ. MANAGER		DATE		SIGNATURE		DATE	
DESIGN-DETAILED		09-24-18		ROBERT JOHN TOSOLT		15/2/16	
CHECKED-REVIEWED		10-01-18		P.E. NUMBER		10-02-2018	
DESIGN-DETAILED				REVISIONS 1			
				REVISIONS 2			
				REVISIONS 3			
				REVISIONS 4			
				FIELD CHANGES			
ENGINEER OF RECORD:		86		OF 132		WIN 22607.00	
S18		S18		S18		S18	

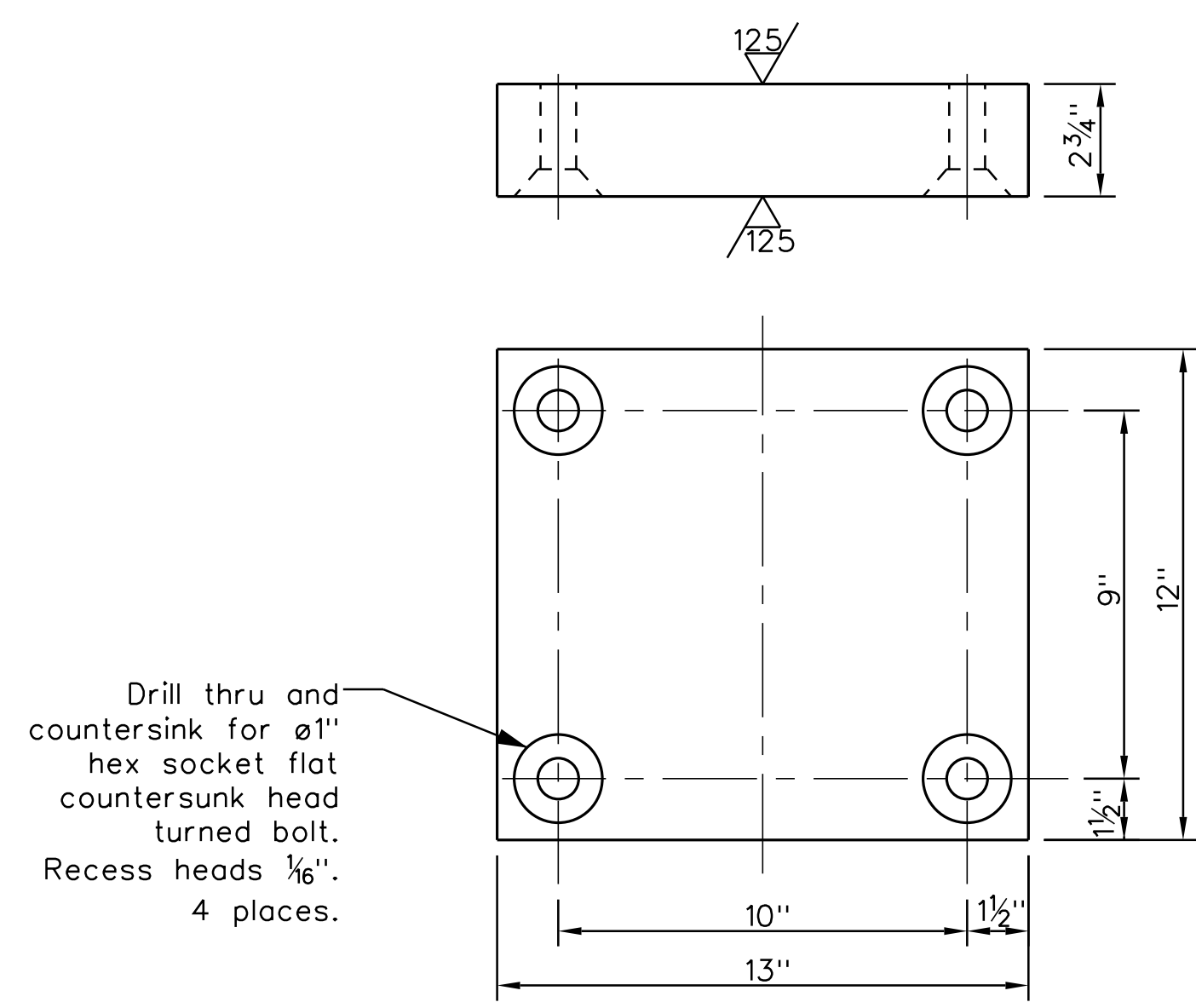
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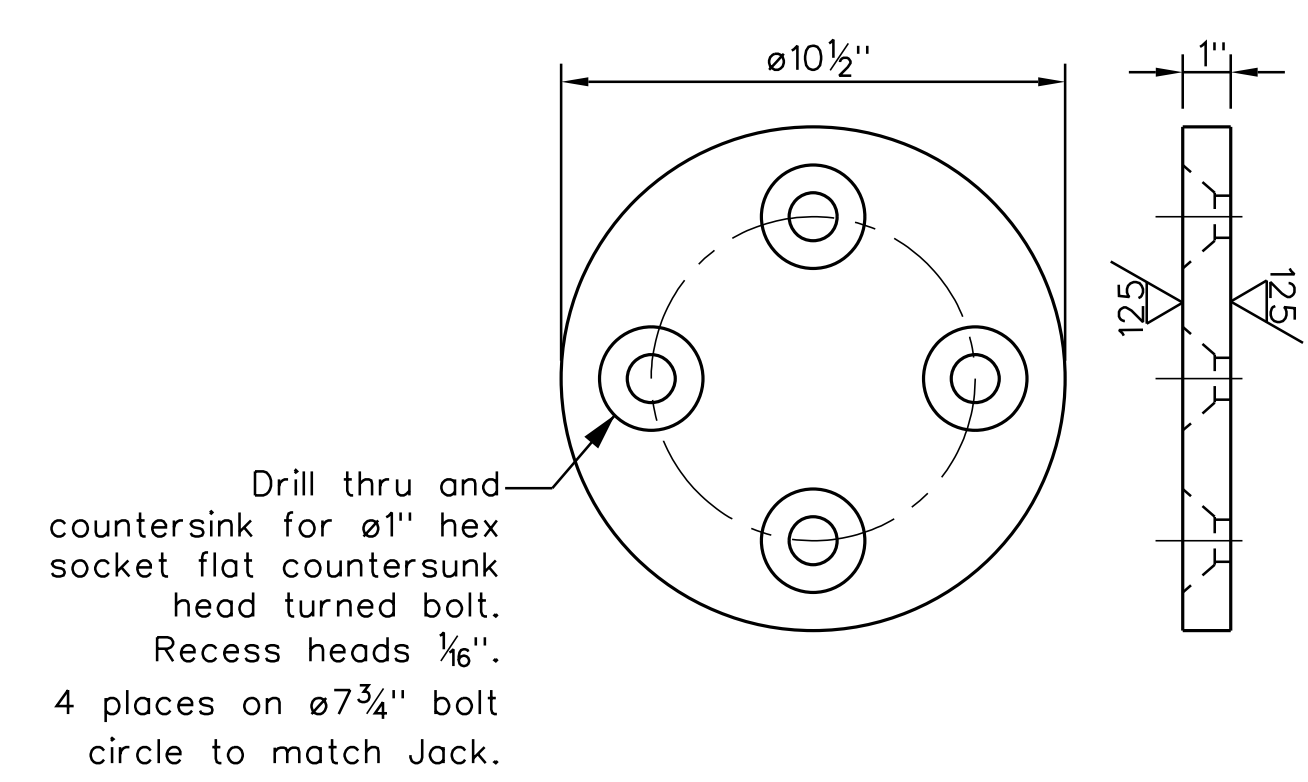
800 HYDE PARK, DOYLESTOWN, PA 19922, USA
TEL: (717) 340-5830 www.s18engineering.net

SHEET NOTES

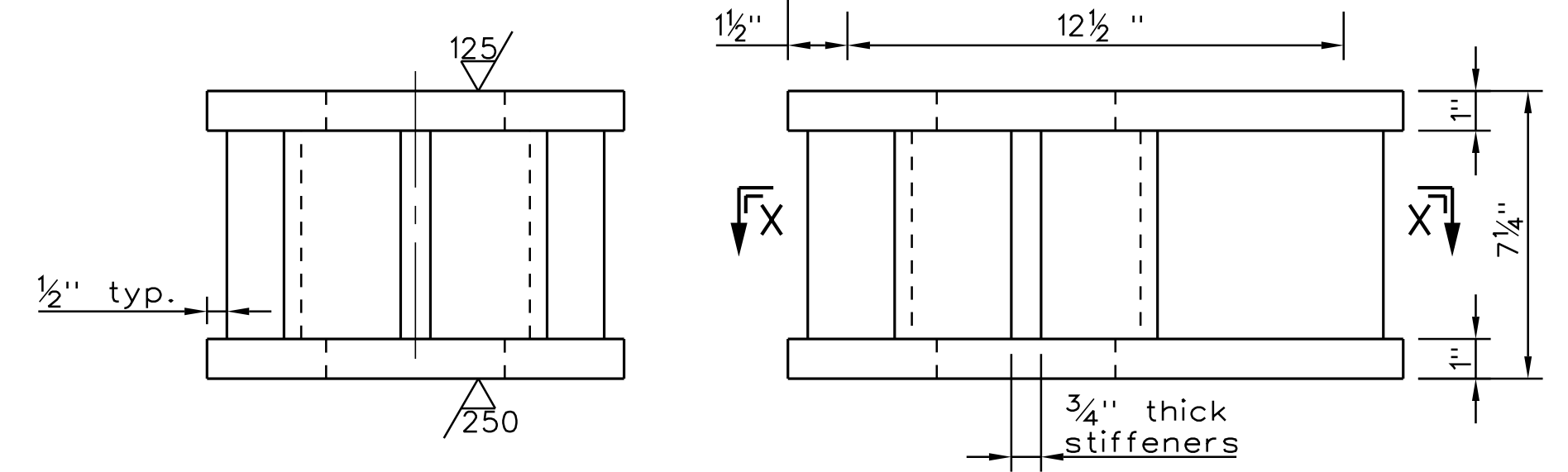
1. See Sheet M1 for General Notes applicable to the work.
2. See End Lift Assembly Schedule on Sheet M17 for materials and quantities.
3. All dimensions are finished dimensions unless otherwise noted. Add stock for fabrication as necessary to ensure complete cleanup of machined surfaces.



EL4 **END JACK STRIKE PLATE**
Scale: 3" = 1'-0"

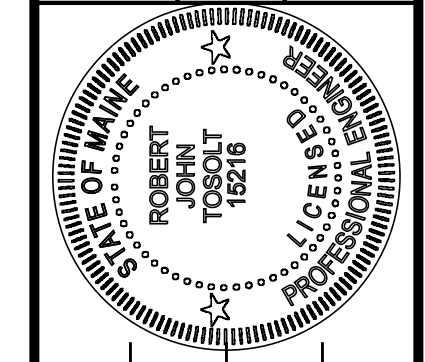
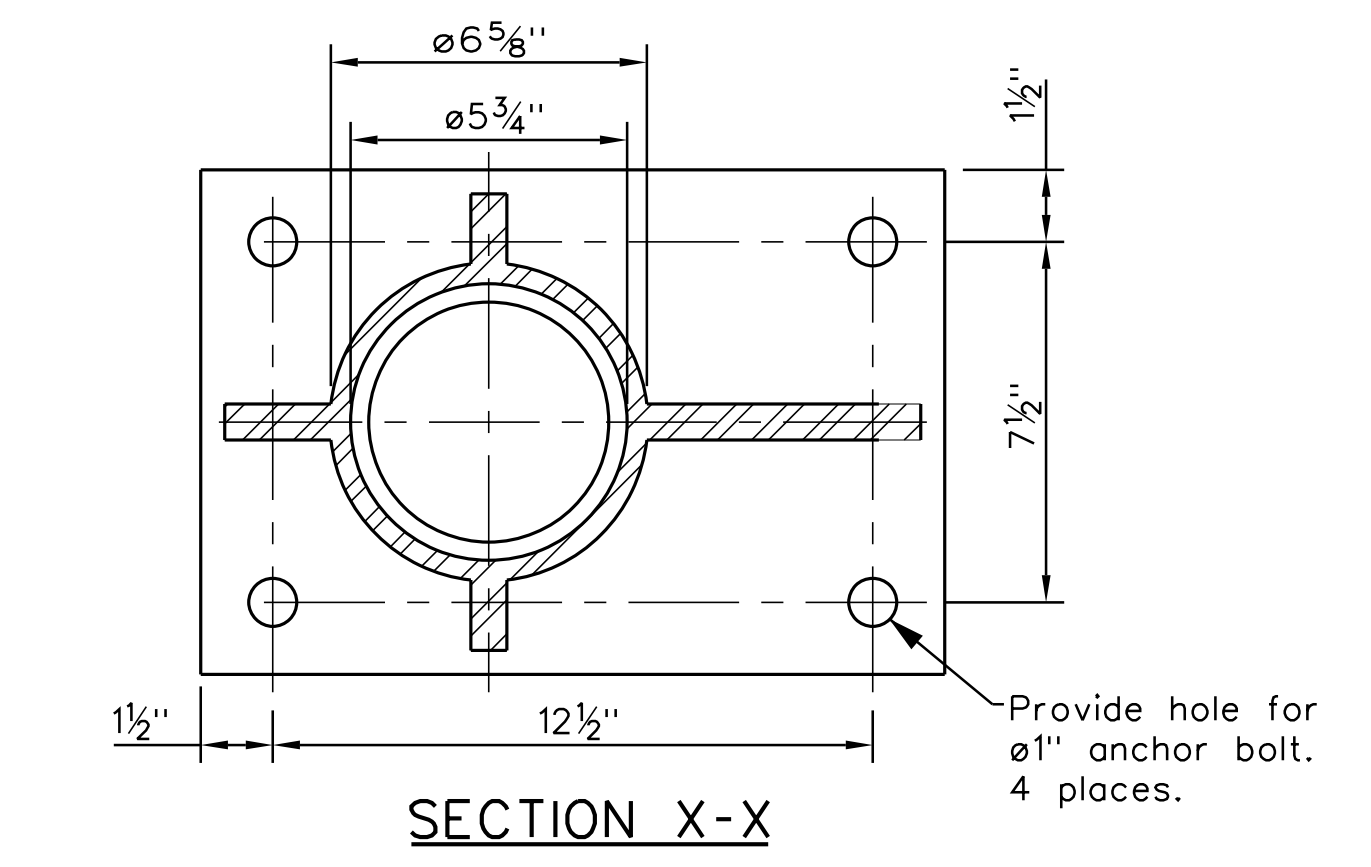


EL3 **END JACK SHOE**
Scale: 3" = 1'-0"



EL1 **END JACK SUPPORT**
Scale: 3" = 1'-0"

Fabrication Details: All web and stiffener welds shall develop full strength of plate. Stress relieve prior to machining.



PROJ. MANAGER: [Signature]
BY: M. BROGIE
DATE: 07-30-18
CHECKED-REVIEWED: R. TOSOLT
DESIGN-REVIEWED: R. TOSOLT
DESIGNS-DETAILED: R. TOSOLT
REVISIONS: 1
REVISIONS: 2
REVISIONS: 3
REVISIONS: 4
FIELD CHANGES

PROJ. MANAGER	BY	DATE
DESIGN-DETAILED	M. BROGIE	07-30-18
CHECKED-REVIEWED	R. TOSOLT	10-01-18
DESIGN-REVIEWED	R. TOSOLT	10-01-18
DESIGNS-DETAILED	R. TOSOLT	10-01-18
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FIELD CHANGES		

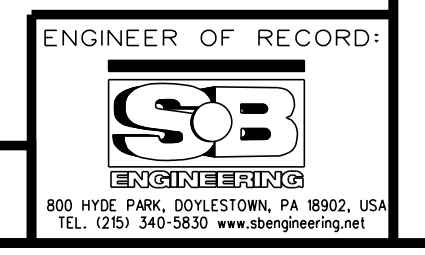
BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY
END LIFT ASSEMBLY
DETAILS II

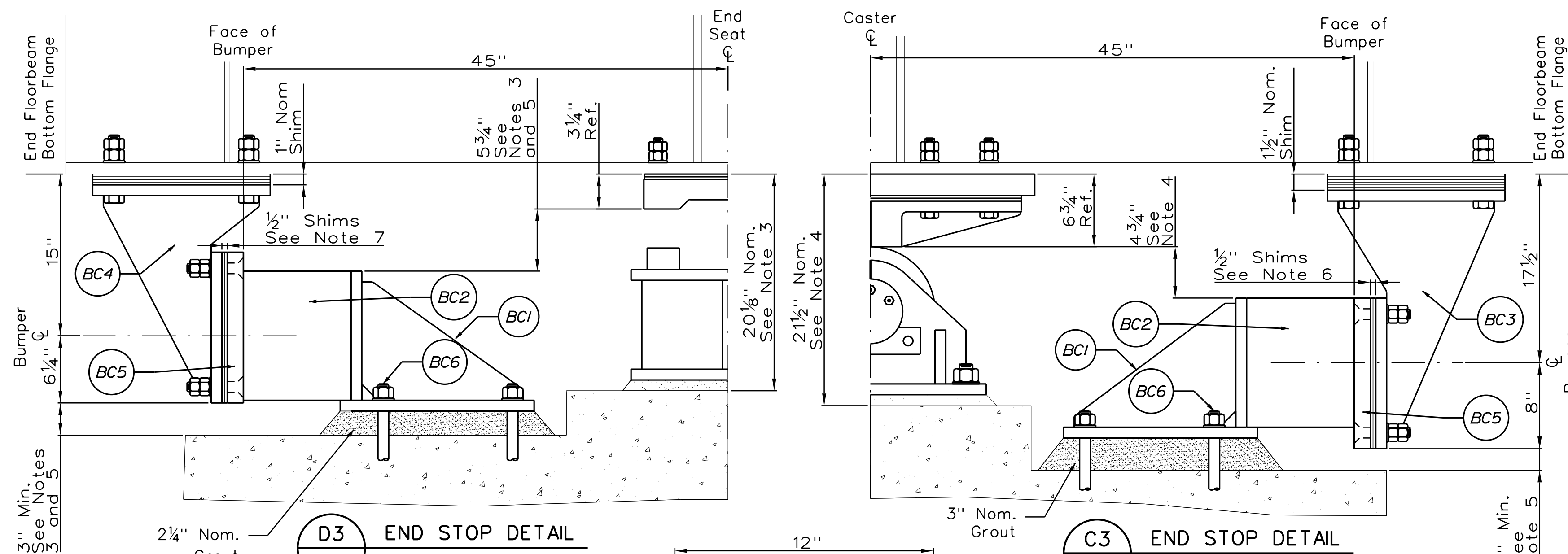
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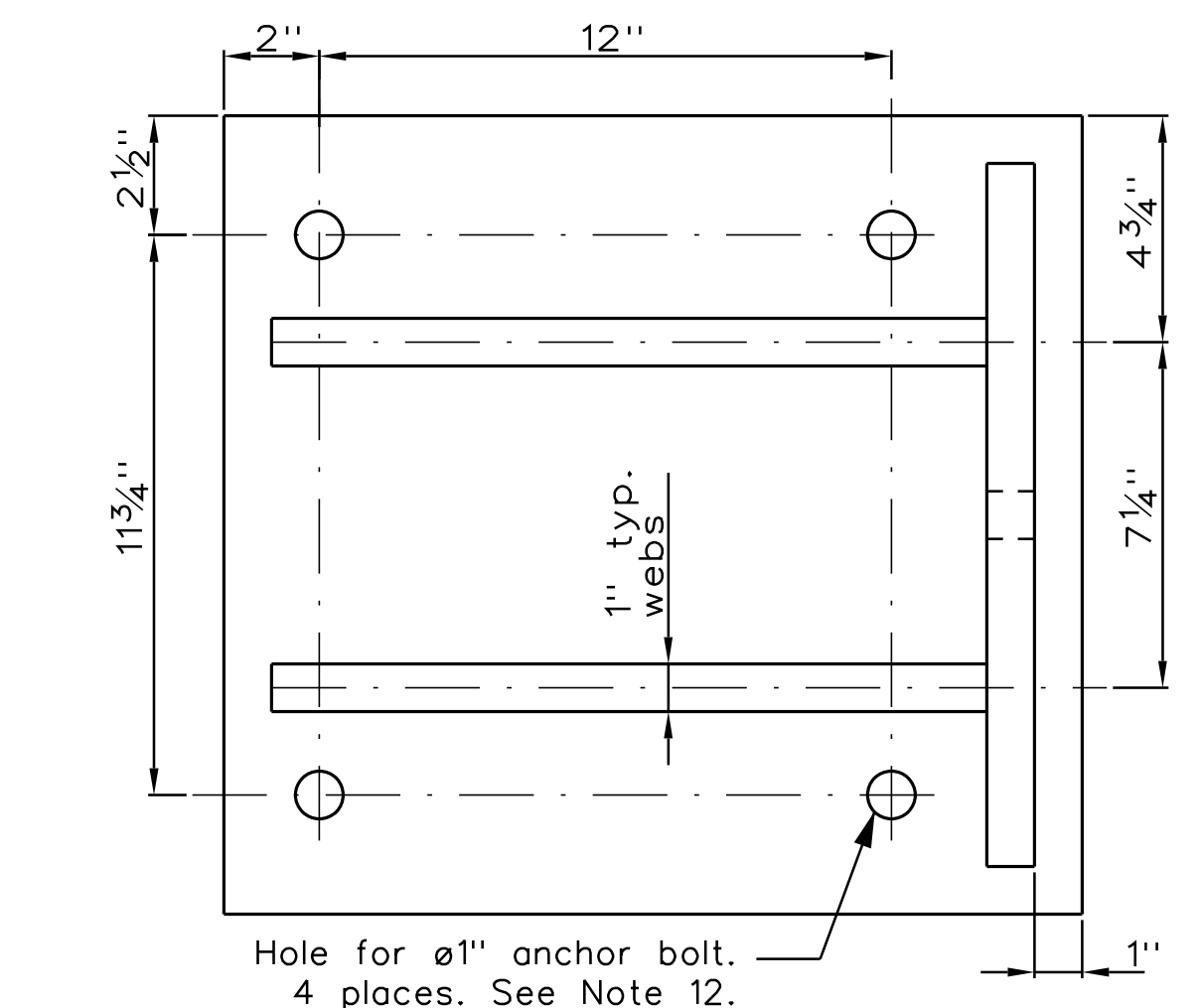
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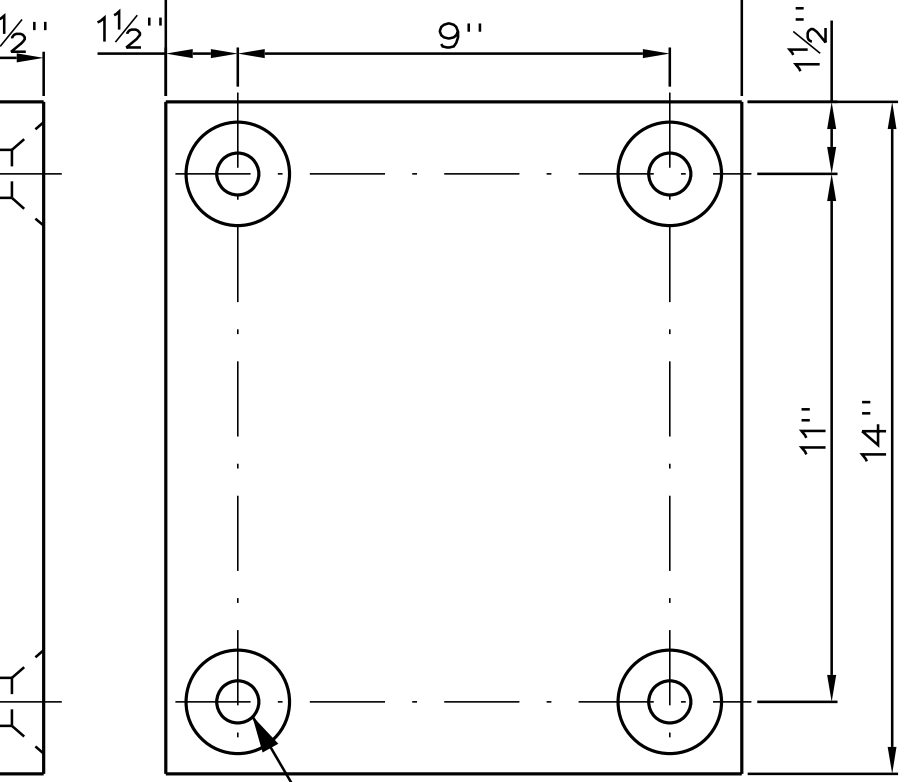


D3 END STOP DETAIL
M17 Short End of Span
Scale: 1/2" = 1'-0"

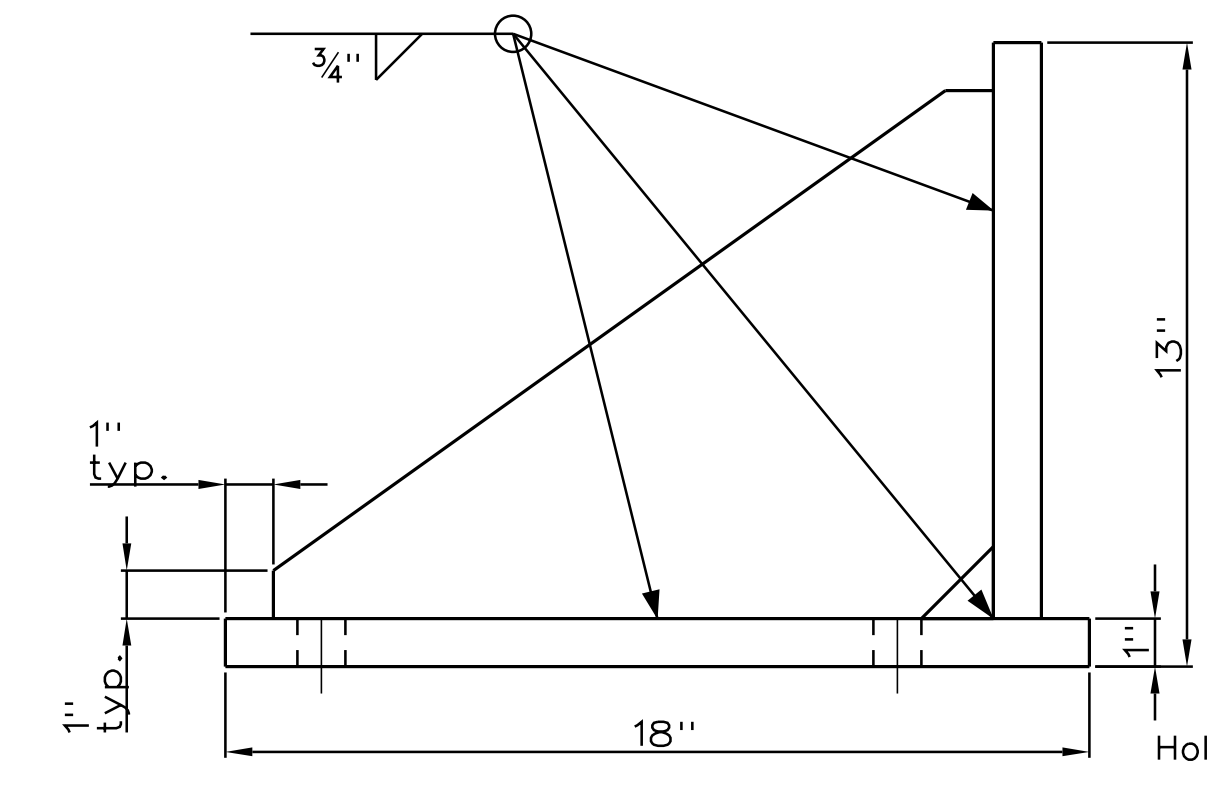
C3 END STOP DETAIL
M15 Long End of Span
Scale: 1/2" = 1'-0"



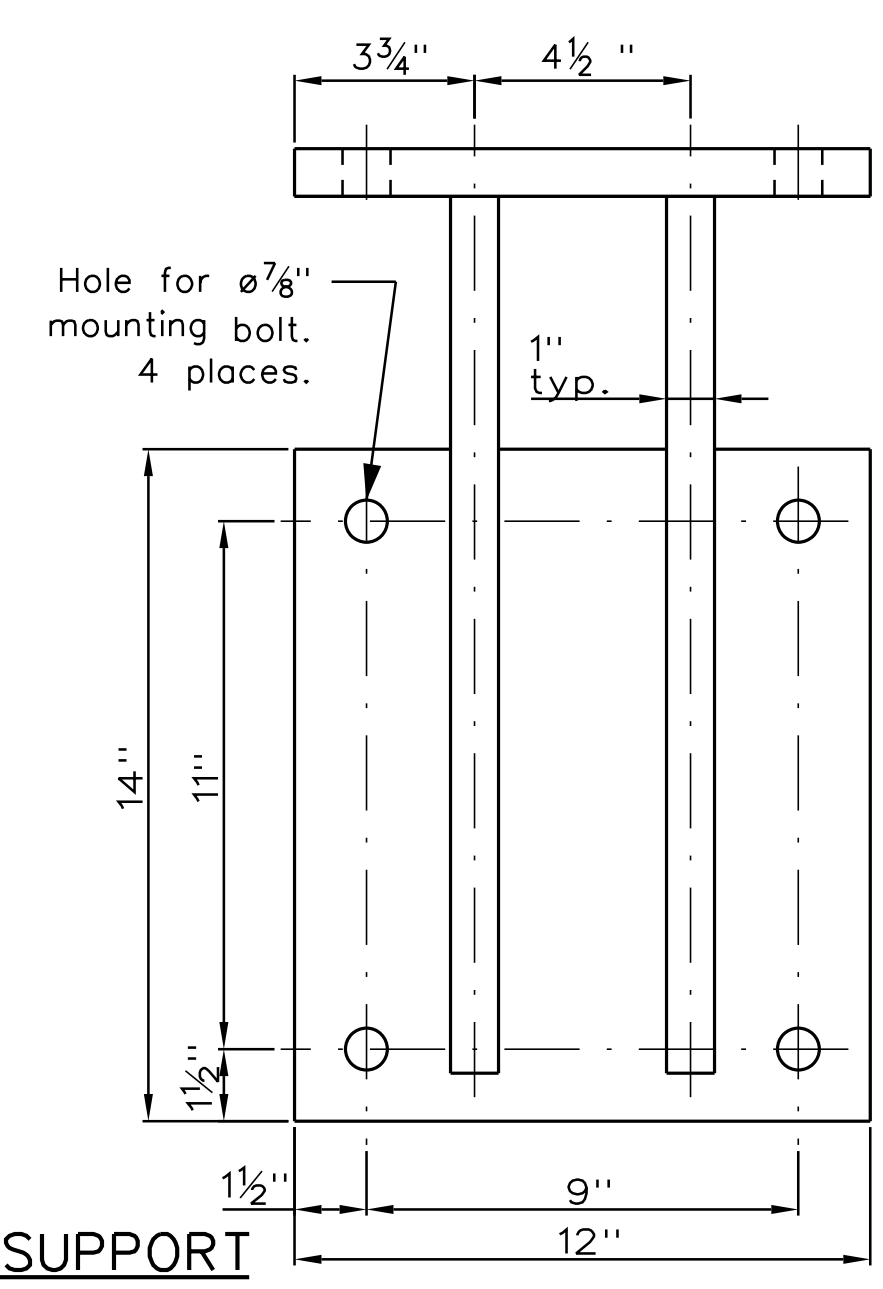
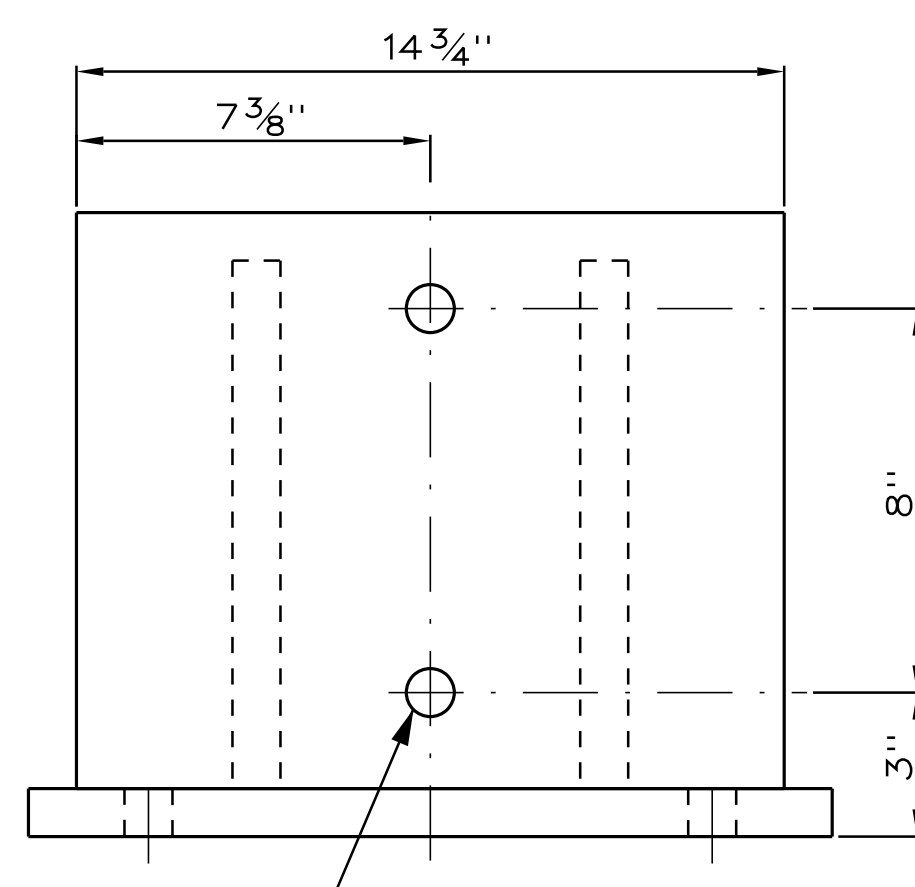
BC5 STRIKE PLATE
Scale: 3" = 1'-0"



BC3 BC4 STRIKE PLATE SUPPORT
Scale: 3" = 1'-0"



BC1 END STOP SUPPORT
Scale: 3" = 1'-0"



BC2 END STOP BUMPER
Scale: 3" = 1'-0"

SPAN CLOSED END STOP SCHEDULE				
MARK NO.	QTY. REQ'D.	COMPONENT	DESCRIPTION (SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION)	REFERENCE SHEETS
BC1	2	End Stop Support	Steel Weldment. Material: ASTM A709 Grade 50.	M20
BC2	2	End Stop Bumper	Elastomeric Trapezoidal Bumper. Longwood 10R or similar.	M20
BC3	1	Strike Plate Support (Long)	Steel Weldment. Material: ASTM A709 Grade 50.	M20
BC4	1	Strike Plate Support (Short)	Steel Weldment. Material: ASTM A709 Grade 50.	M20
BC5	2	Strike Plate	Steel Plate. Material: ASTM A709 Grade 50.	M20
BC6	6	Anchor Bolts	ø1" x 12" embedment. Material: ASTM A193 Grade B7.	M20

SHEET NOTES

- See Sheet M1 for General Notes applicable to the work.
- Orient end stops in-line with end floor beam tangent to swing radius.
- Short end of span shown in free hanging position prior to driving jacks and seats. Install bumper assembly at short end to achieve indicated dimensions.
- Long end of span shown supported on end caster. Install bumper assembly at long end to achieve indicated dimensions.
- Excavate top of pier from bumper assembly support to edge of pier to provide indicated minimum clearances of low steel on moving span over top of pier and/or bumper support.
- Shim strike plate at long end of span to contact bumper with span in full closed position.
- Shim strike plate at short end of span for 1/16" clearance with span in full closed position.
- All welding shall conform to AWS D1.1.
- Stress relieve weldments prior to machining.
- Bumpers shall be installed to set position of span at full closed position prior to driving jacks and end seats. See Special Provisions for additional details.
- All dimensions are finished dimensions unless otherwise noted. Add stock for fabrication as necessary to ensure complete cleanup of machined surfaces.
- Secure each end stop support with 3 anchor bolts, leaving open leading hole at pier edge. Fill this open hole with grout as part of grouting process.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)

BRIDGE NO. 2039 WIN 22607.00 BRIDGE PLANS

	SIGNATURE ROBERT JOHN TOSOLT 15216	DATE 10-02-2018	
PROJ. MANAGER R. TOSOLT	BY M. BROGIE	DATE 09-24-18	STATE OF MAINE DEPARTMENT OF TRANSPORTATION BRIDGE NO. 2039 WIN 22607.00 BRIDGE PLANS
DESIGN-DETAILED R. TOSOLT	CHECKED-REVIEWED R. CERWACKY R. TOSOLT	DATE 10-01-18	SIGNATURE ROBERT JOHN TOSOLT 15216
DESIGNS-DETAILED R. TOSOLT	REVISIONS 1 2 3 4	DATE 10-02-2018	P.E. NUMBER 15216
REVISIONS 1 REVISIONS 2 REVISIONS 3 REVISIONS 4	FIELD CHANGES	DATE	DATE

BARTER'S ISLAND BRIDGE
BACK RIVER
LINCOLN COUNTY
BOOTHBAY
SPAN CLOSED END STOP
SCHEDULE & DETAILS

SHEET NUMBER
88
OF 132

ENGINEER OF RECORD:

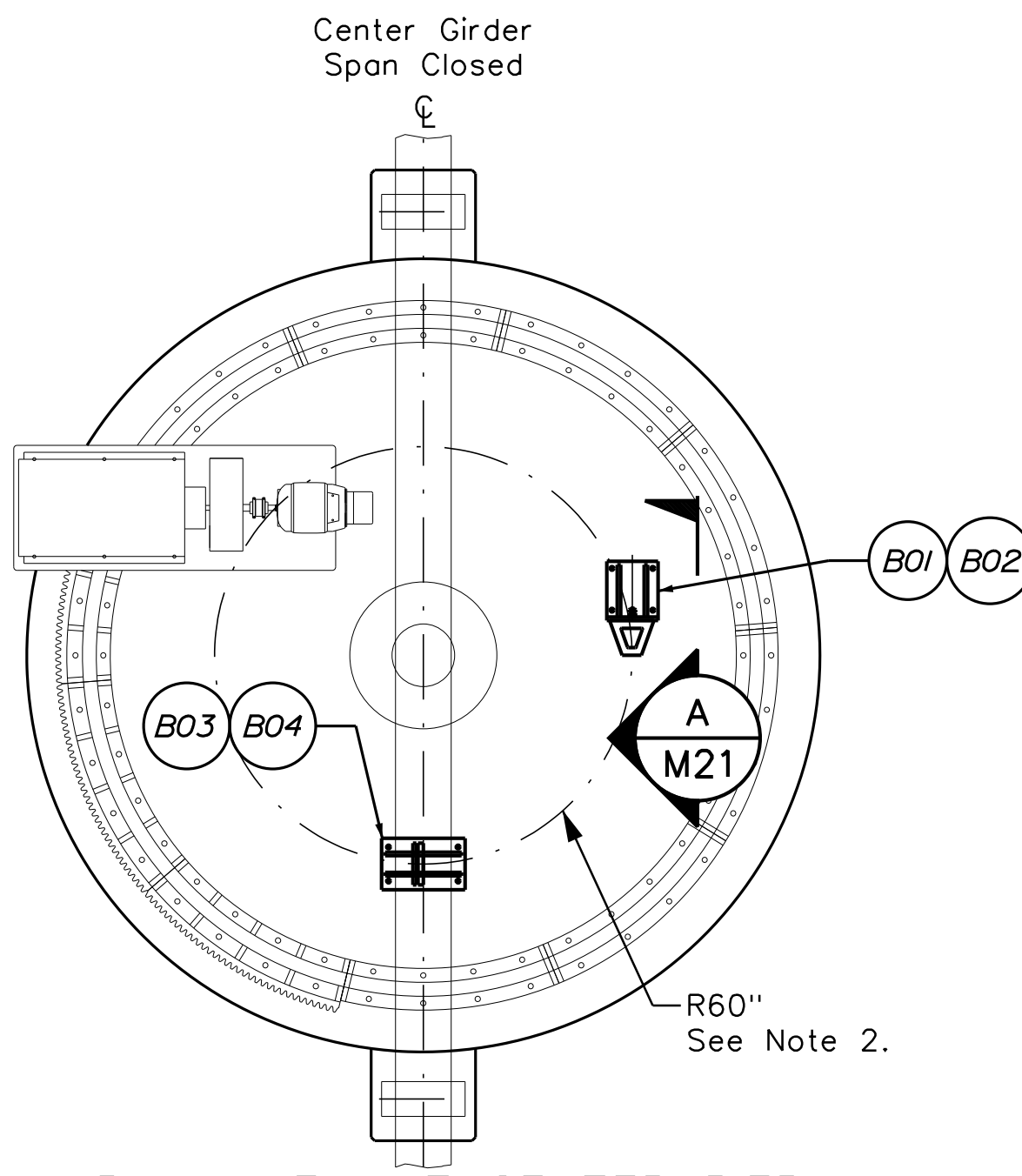
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800 HYDE PARK, DOWLESTOWN, PA 19902, USA
TEL: (717) 340-3630 www.sobengineering.net

Date: 10/12/2018

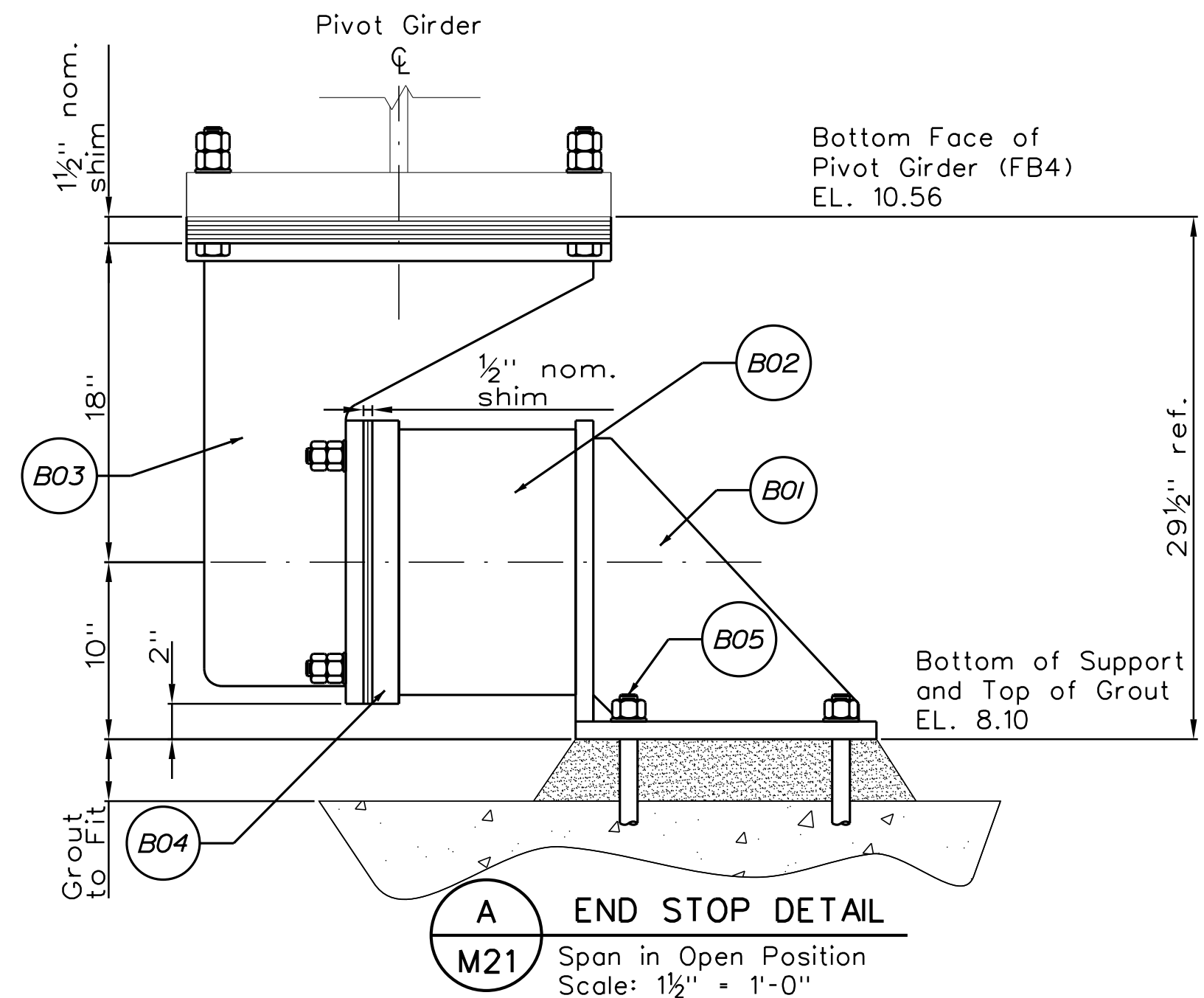
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Division: BRIDGE

Filename: ... \089_Full Open Bumper.dgn



PLAN VIEW AT CENTER PIER
Scale: 1/4" = 1'-0"

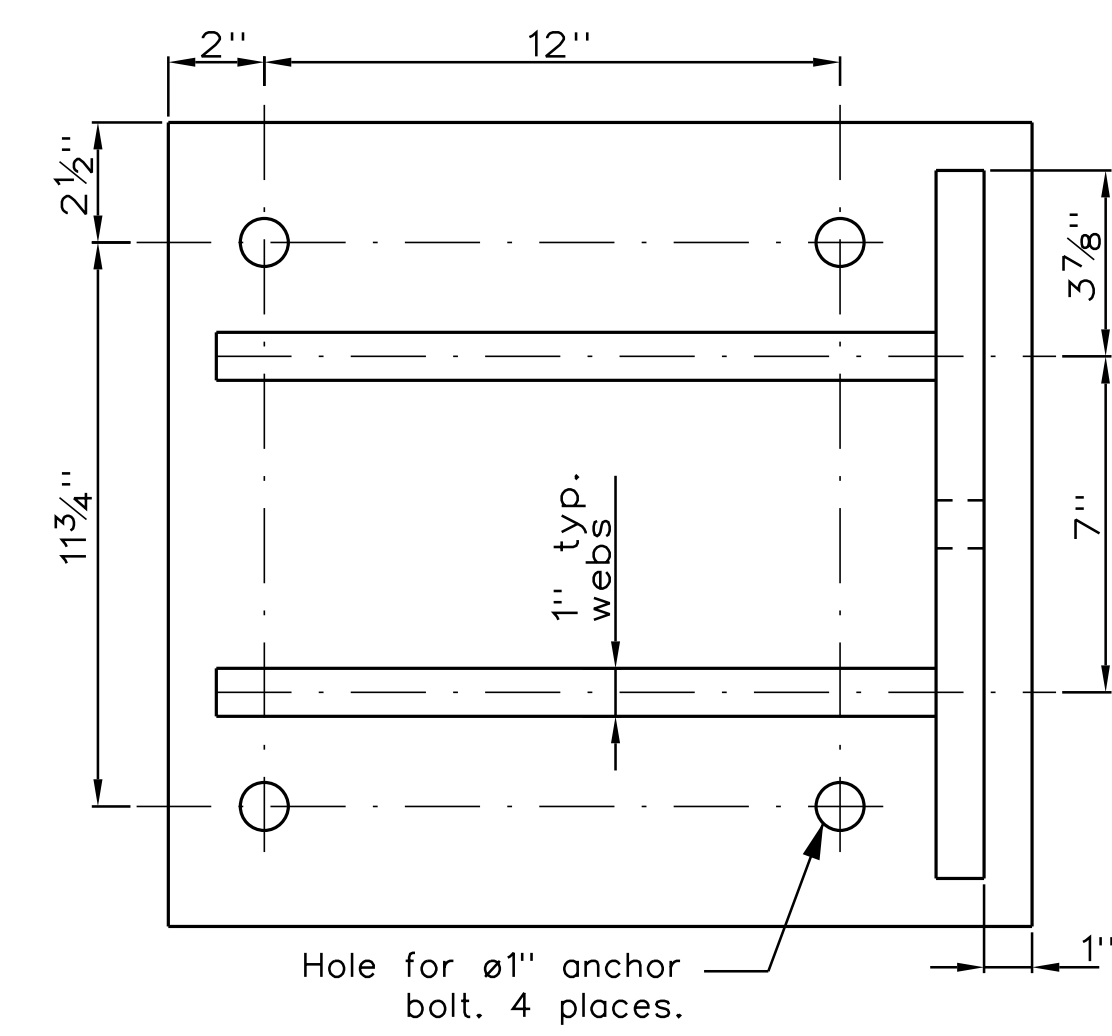


END STOP DETAIL
Scale: 1 1/2" = 1'-0"

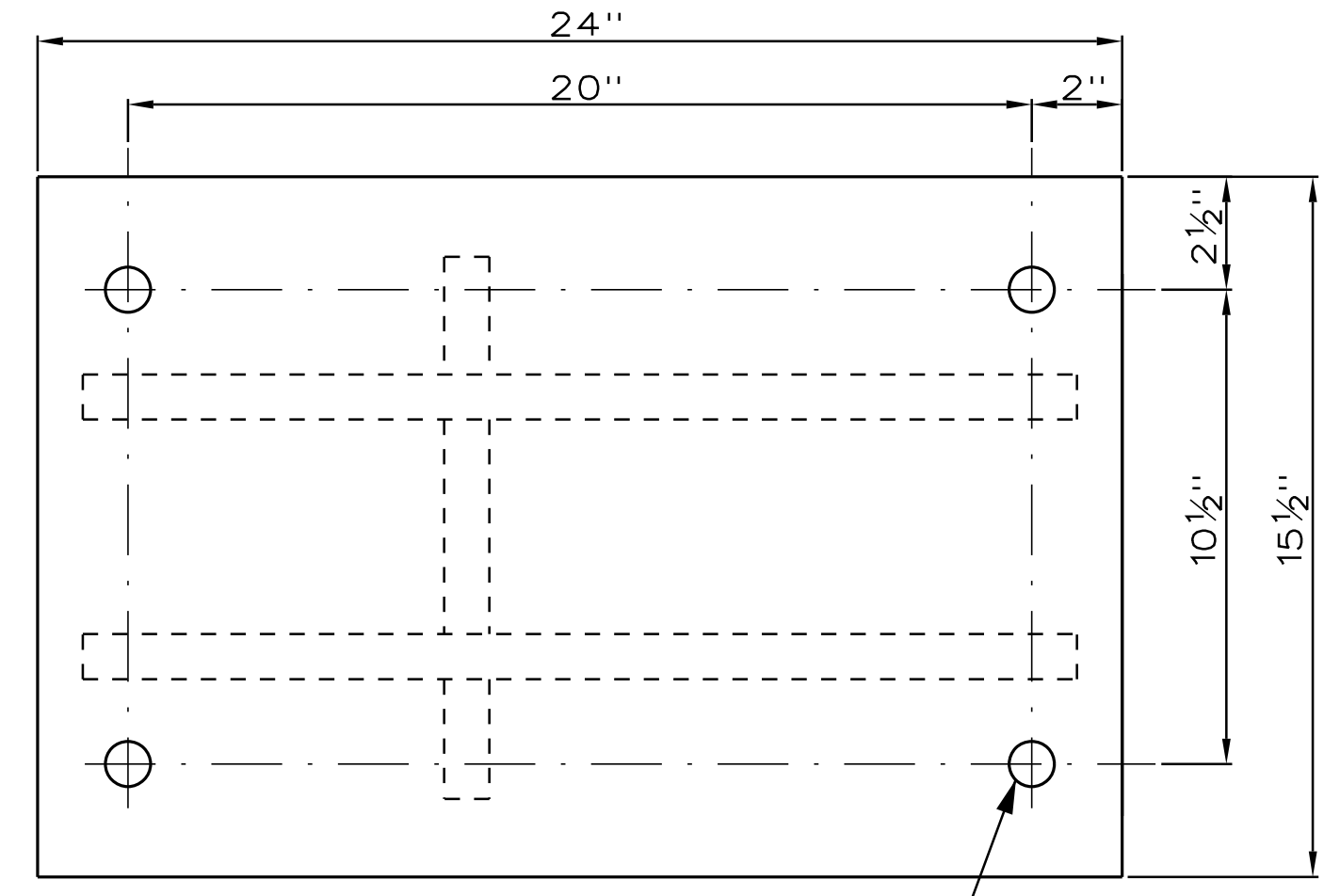
SPAN OPEN END STOP SCHEDULE				
MARK NO.	QTY. REQ'D.	COMPONENT	DESCRIPTION (SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION)	REFERENCE SHEETS
B01	1	End Stop Support	Steel Weldment. Material: ASTM A709 Grade 50.	M21
B02	1	End Stop Bumper	Elastomeric Trapezoidal Bumper. Longwood 10R or similar.	M21
B03	1	Strike Plate Support	Steel Weldment. Material: ASTM A709 Grade 50.	M21
B04	1	Strike Plate	Steel Plate. Material: ASTM A709 Grade 50.	M21
B05	4	Anchor Bolts	ø1" x 12" embedment. Material: ASTM A193 Grade B7.	M21

SHEET NOTES

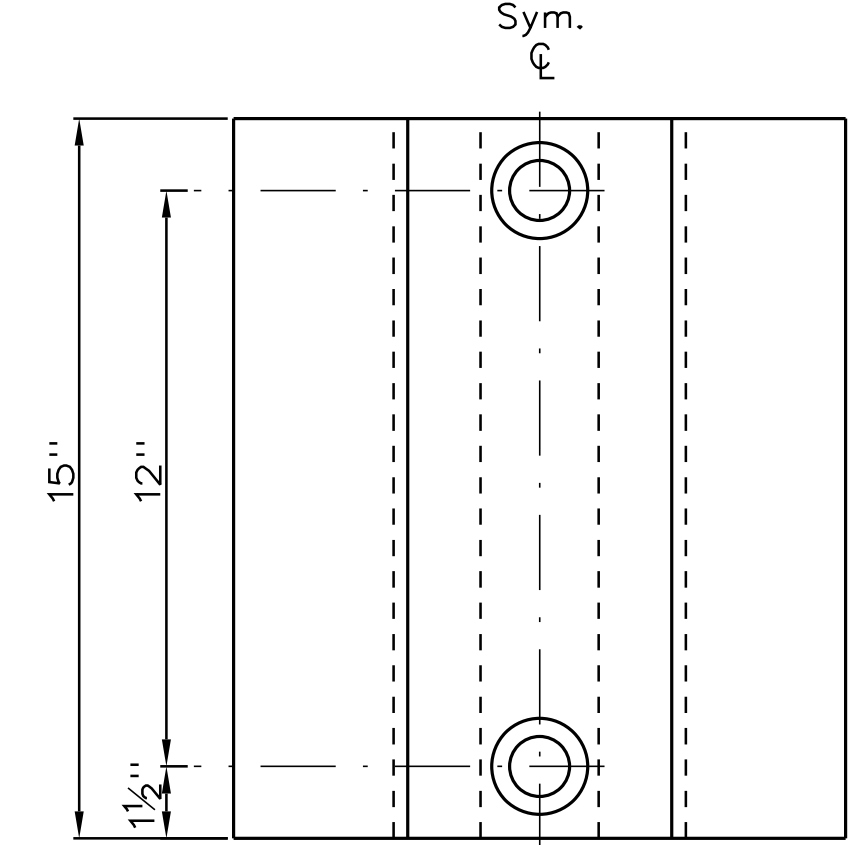
- See Sheet M1 for General Notes applicable to the work.
- Orient end stops so that contact surface of strike plate is in-line with pivot girder axis.
- Perform all welding per AWS D1.1.
- Stress relieve weldments prior to machining.
- Shim strike plate to provide 1/8" clearance with bumper with span in full open position.
- All dimensions are finished dimensions unless otherwise noted. Add stock for fabrication as necessary to ensure complete cleanup of machined surfaces.



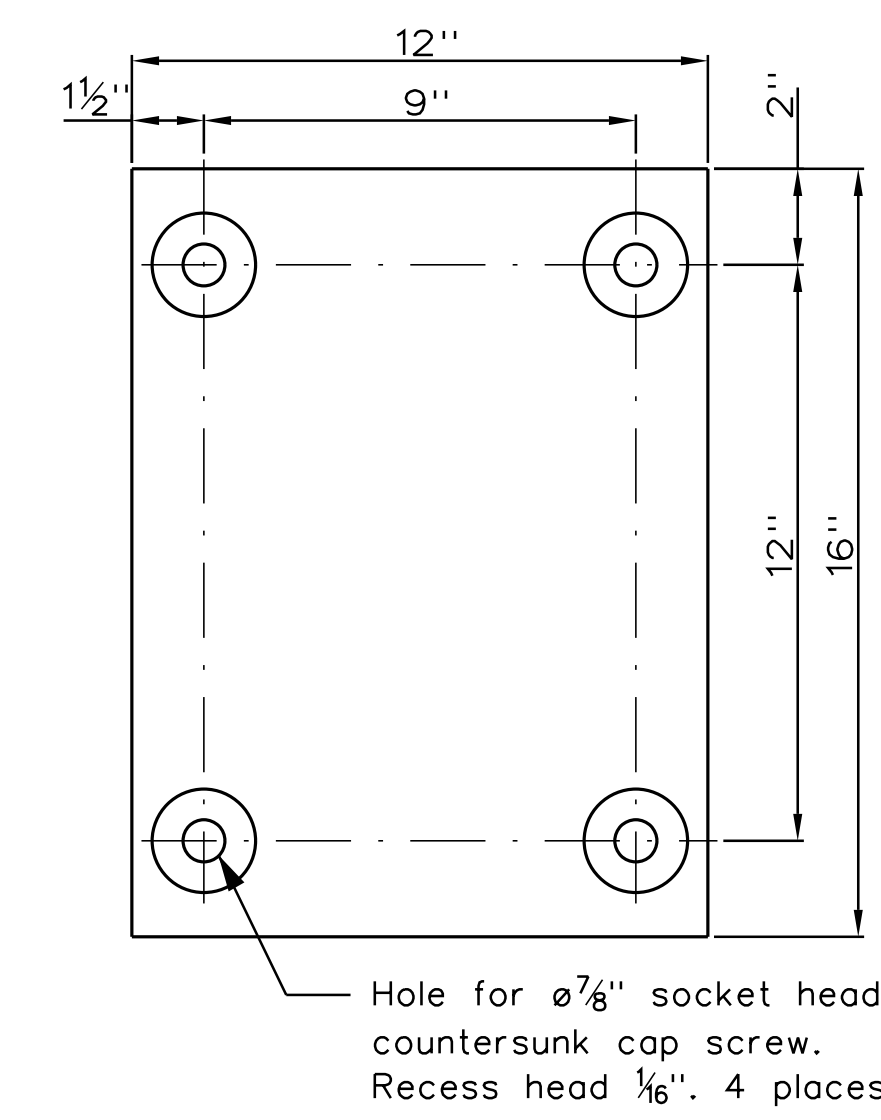
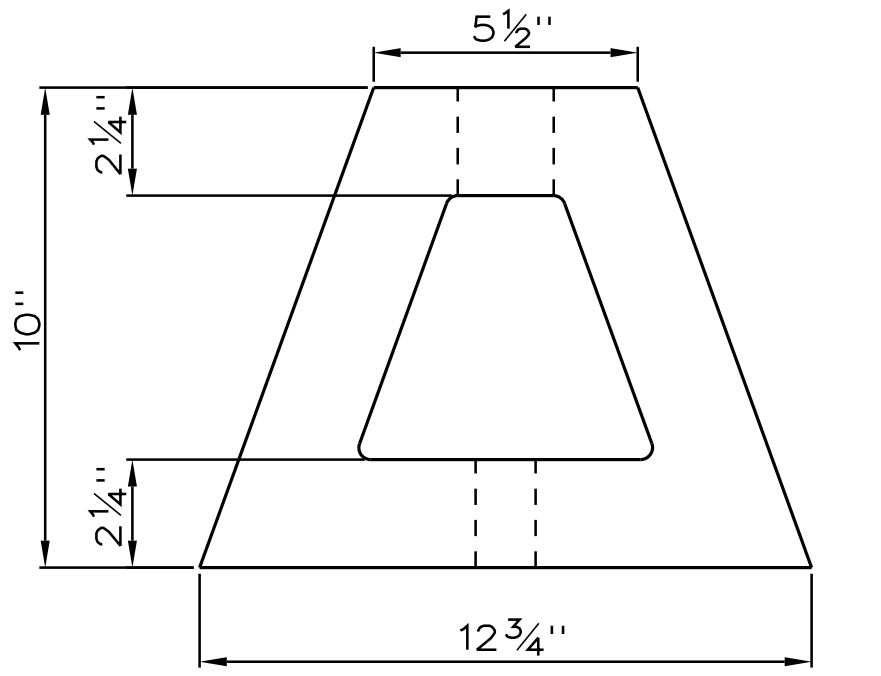
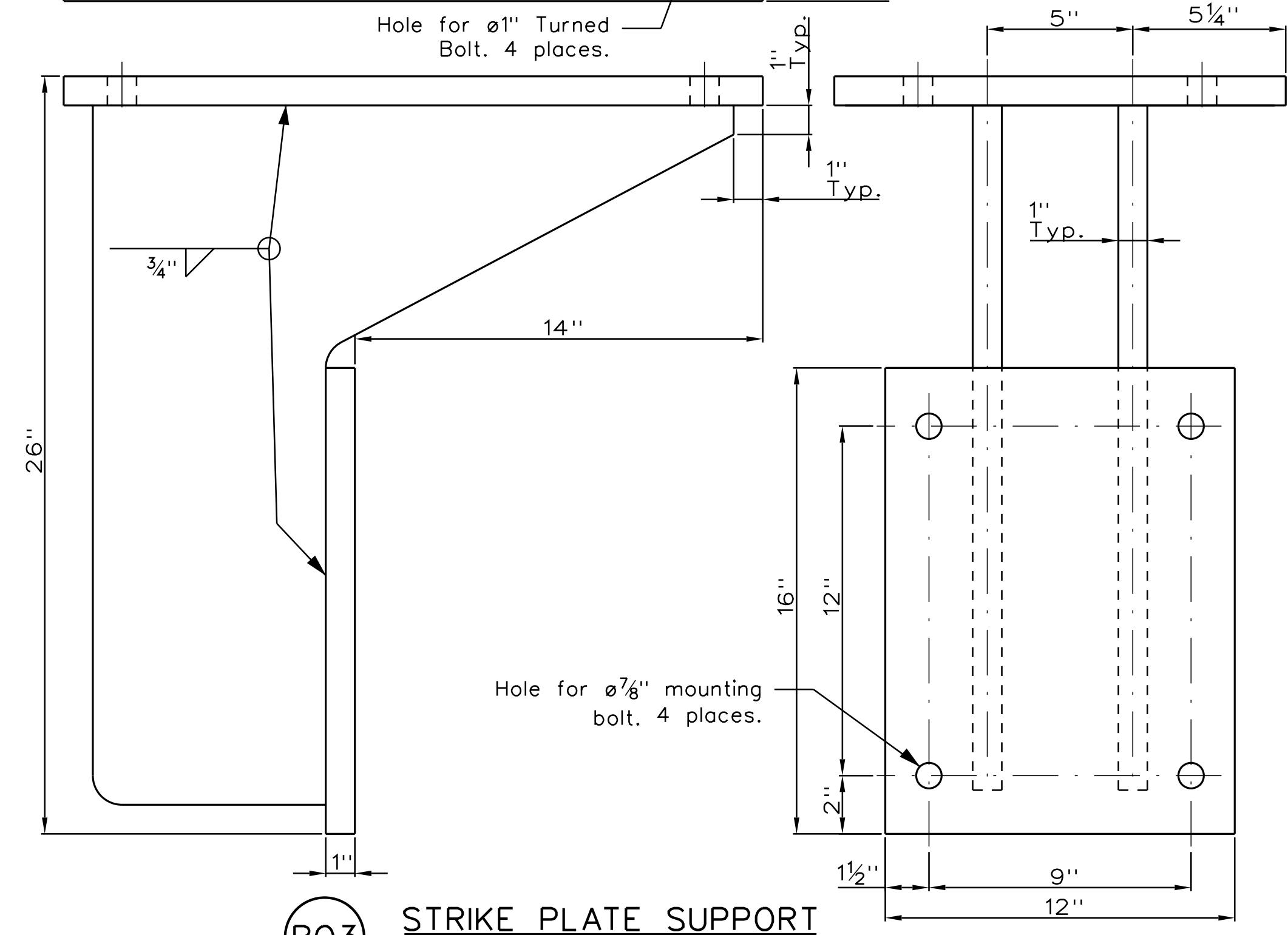
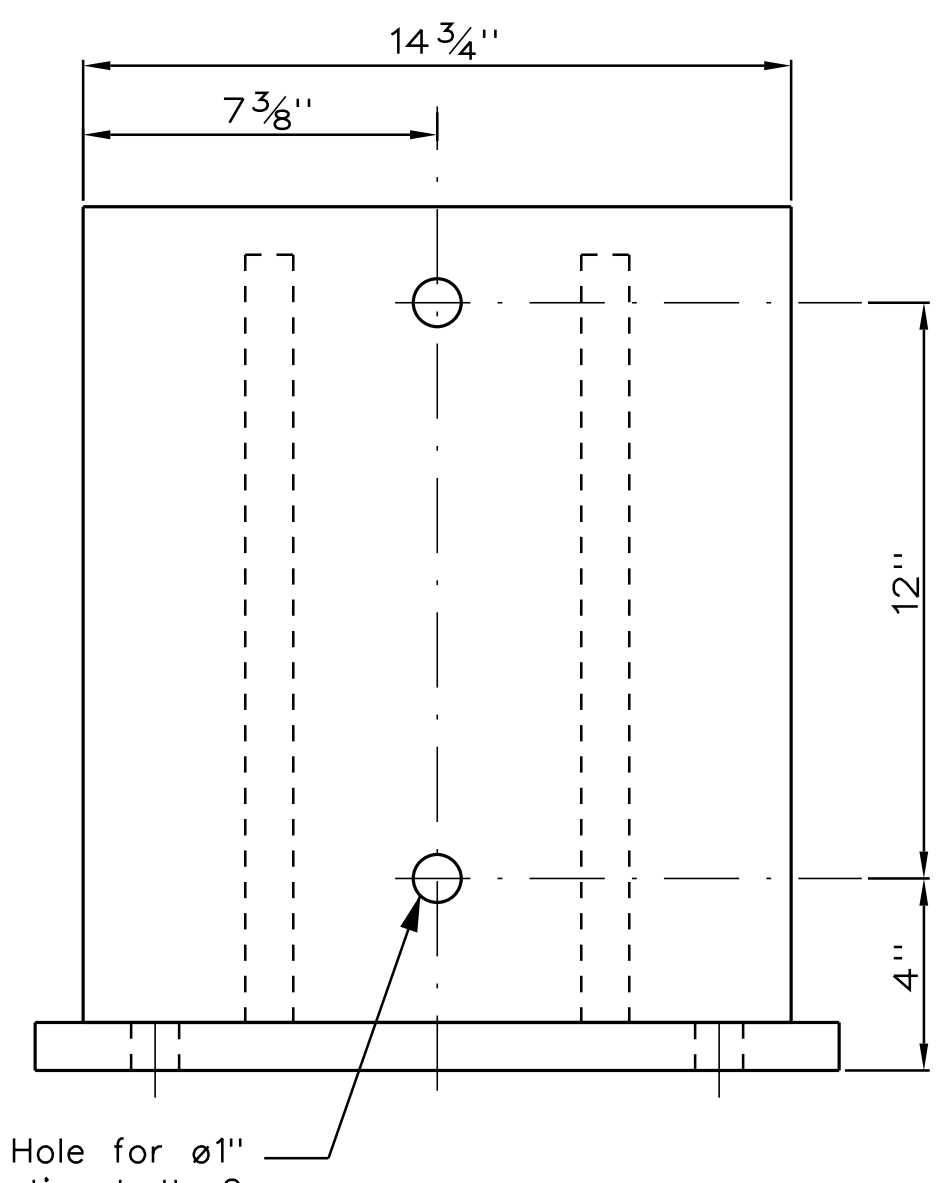
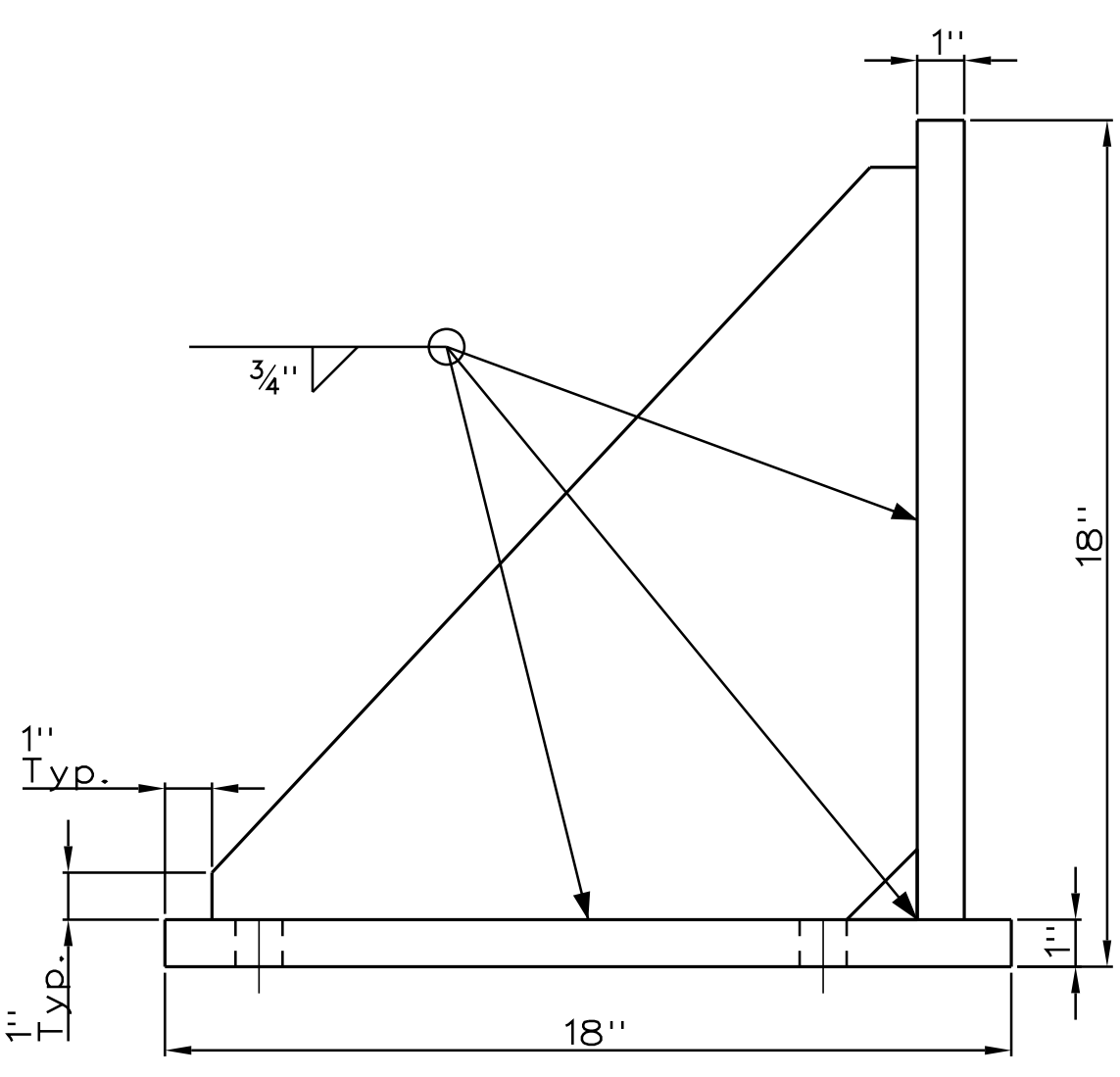
B01 END STOP SUPPORT
Scale: 3" = 1'-0"



B03 STRIKE PLATE SUPPORT
Scale: 3" = 1'-0"



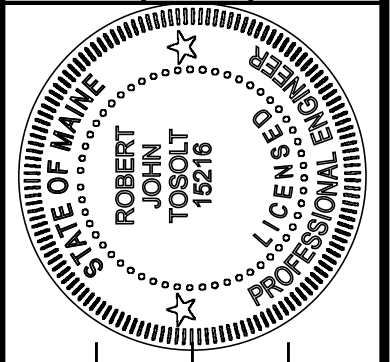
B02 END STOP BUMPER
Scale: 3" = 1'-0"



B04 STRIKE PLATE
Scale: 3" = 1'-0"

M21
ENGINEER OF RECORD:
SOB ENGINEERING
800 HYDE PARK, DOYLESTOWN, PA 19020, USA
TEL: (267) 340-5830 www.sobengineering.com

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)
BRIDGE NO. 2039
WIN 22607.00
BRIDGE PLANS



DATE: 10-02-2018
SIGNATURE: [Signature]
P.E. NUMBER: 15216
DATE: 10-02-2018

PROJ. MANAGER	BY	DATE
R. TOSOLT	M. BROGIE	09-24-18
CHECKED-REVIEWED	R. CERWACKY	10-01-18
DESIGN-DETAILED	R. TOSOLT	10-01-18
DESIGN-REVIEWED	R. TOSOLT	10-01-18
DESIGN-DETAILED	R. TOSOLT	10-01-18
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY
SPAN OPEN END STOP
SCHEDULE & DETAILS

SHEET NUMBER
89
OF 132

ELECTRICAL DRAWING INDEX

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92	SYMBOLS AND ABBREVIATIONS SHEET 2
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94	SITE POWER DISTRIBUTION PLAN
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98	PIER ELECTRICAL POWER DISTRIBUTION PLAN
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124	LIMIT SWITCH DEVELOPMENT
125	TRAFFIC CONTROL AND GATE INSTALLATION DETAILS
126	TRAFFIC GATE DETAILS
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131	MISCELLANEOUS ELECTRICAL DETAILS

GENERAL NOTES FOR ELECTRICAL WORK:

- DEMOLITION OF EXISTING ELECTRICAL EQUIPMENT CONTRACTOR SHALL DE-ENERGIZE ALL POWER SOURCES SERVING THE ELECTRICAL EQUIPMENT AND ELECTRICAL DISTRIBUTION SYSTEM TO BE DEMOLISHED. CONTRACTOR SHALL REMOVE ALL CIRCUIT WIRING CABLES BACK TO SOURCE POWER PANEL. THE CONTRACTOR SHALL REMOVE AND DISPOSE THE DEMOLISHED EQUIPMENT AND MATERIALS IN ACCORDANCE WITH SPECIFICATIONS AND APPLICABLE REGULATORY REQUIREMENTS.
- CONTRACTOR SHALL FURNISH AND INSTALL, TEST AND COMMISSION ELECTRICAL SYSTEM, EQUIPMENT, APPARATUS, APPLIANCES, MATERIALS, AND ACCESSORIES REQUIRED FOR THE CONSTRUCTION AND PLACE INTO OPERATION A FULLY FUNCTIONAL MOVABLE BRIDGE. THE CONTRACTOR SHALL PERFORM THE WORK AS INDICATED ON DRAWINGS AND SHALL COMPLY WITH PROJECT SPECIFICATIONS AND CONTRACTUAL REQUIREMENTS.
- DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERALLY THE LOCATIONS OF MATERIAL AND EQUIPMENTS. THESE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE WORK WITH EXISTING CONDITIONS AND SHALL COOPERATE WITH OTHER TRADES IN MAKING MINOR FIELD ADJUSTMENT NECESSARY FOR WORK COMPLETION. THE CONTRACTOR SHALL DETERMINE, VERIFY, AND COORDINATE THE CONSTRUCTION REQUIREMENTS WITH THE EXISTING CONDITIONS. THE CONTRACTOR SHALL ALSO COORDINATE WITH EXISTING UTILITY SERVICE PROVIDER AND TRADES FOR THE CONSTRUCTION OF THE SITE ELECTRICAL DISTRIBUTION SYSTEM.
- MATERIALS AND WORKMANSHIP SHALL COMPLY WITH APPLICABLE BUILDING CODES, SPECIFICATIONS, LOCAL ORDINANCES, AND INDUSTRIAL STANDARDS; IN CASE OF DIFFERENCES, MOST STRINGENT SHALL GOVERN. APPLICABLE BUILDING CODES AND STANDARDS SHALL INCLUDE PROVINCIAL AND/OR FEDERAL LAWS, LOCAL ORDINANCES, LOCAL UTILITY REGULATIONS AND THE APPLICABLE REQUIREMENTS OF THE FOLLOWING NATIONALLY ACCEPTED LATEST VERSION OF CODES AND STANDARDS: NATIONAL BUILDING CODE, NATIONAL ELECTRICAL CODE (NEC), AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS (AASHTO) AND APPLICABLE REQUIREMENTS OF THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA).
- CONTRACTOR SHALL FIELD LOCATE ELECTRICAL EQUIPMENT SUCH THAT ACCESS AND WORK SPACE ARE MAINTAINED TO PERMIT READY AND SAFETY OPERATION MAINTENANCE OF EQUIPMENT PER THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.
- DIMENSIONS OF EXISTING CONSTRUCTION ARE APPROXIMATE; CONTRACTOR SHALL MAKE NECESSARY FIELD MEASUREMENTS OF EXISTING STRUCTURES AND EQUIPMENT AND VERIFY DIMENSIONS PRIOR TO FABRICATION AND CONSTRUCTION. EXACT LOCATIONS ARE TO BE DETERMINED IN THE FIELD TO AVOID CONFLICTS WITH EXISTING STRUCTURE, EQUIPMENT, AND UTILITIES.
- SIZING OF CIRCUIT WIRING AND PROTECTION DEVICES FOR THE EQUIPMENT ARE BASED UPON DESIGN LOADS. PRIOR TO INSTALLATION, CONTRACTOR SHALL CONFIRM THE ACTUAL EQUIPMENT LOADS USING NAMEPLATE DATA OR CERTIFIED SHOP DRAWINGS. IF EQUIPMENT PROVIDED IS DIFFERENT THAN THE BASIS OF DESIGN, THEN THE CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH THE DEPARTMENTAL REPRESENTATIVE AND PROVIDE ELECTRICAL REQUIREMENTS FOR CHANGES AT NO ADDITIONAL COST TO OWNER.
- QUANTITY OF CONTROL SYSTEM CIRCUIT CABLES/CONDUCTORS SHOWN ON DRAWINGS ARE DIAGRAMMATIC AND MAY NOT REFLECT THE ACTUAL NUMBER OF CONDUCTORS REQUIRED. THE CONTRACTOR SHALL PROVIDE THE QUANTITY AS NECESSARY TO PROVIDE A COMPLETE OPERATIONAL CONTROL SYSTEM.
- ALL ELECTRICAL WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES AND SHALL BE SCHEDULED CONSISTENT WITH THE OVERALL CONSTRUCTION STAGING SEQUENCE.
- THE PLANS ARE DIAGRAMMATIC AND ARE NOT TO BE SCALED. THE LOCATIONS OF EQUIPMENT AND ROUTING OF CONDUITS SHOWN ON THE CONTRACT DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS IN THE FIELD AND PREPARING SCALED SHOP DRAWINGS.
- ALL NEW CONDUITS AND FITTINGS INSTALLED ON THE BRIDGE STRUCTURE, PIER, OR EQUIPMENT PITS SHALL BE PVC COATED HOT DIPPED GALVANIZED RIGID STEEL (3/4" MINIMUM) UNLESS OTHERWISE NOTED, AND SHALL MEET ALL THE ADDITIONAL REQUIREMENTS FOR MATERIAL, CONSTRUCTION AND INSTALLATION CONTAINED IN THE SPECIFICATION.
- THE LOCATION AND NUMBER OF RACEWAYS AND JUNCTION BOXES SHOWN ON THE PLANS ARE OF SCHEMATIC TYPE AND DO NOT REPRESENT EXACT LOCATIONS OR QUANTILY REQUIRED. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL REQUIRED RACEWAYS, JUNCTION BOXES, CONDUIT FITTINGS, ELBOWS, AND HARDWARE FOR A COMPLETE INSTALLATION IN ACCORDANCE WITH THE NEC WHETHER OR NOT THEY ARE EXPLICITLY SHOWN OR INDICATED ON THE CONTRACT DRAWINGS. EXACT CONDUIT STUB-UP AND ENTRANCE LOCATIONS ARE TO BE DETERMINED BY THE CONTRACTOR BASED ON SUPPLIED MANUFACTURER'S SHOP DRAWINGS OF THE RESPECTIVE EQUIPMENT.
- THE CONTRACTOR SHALL FURNISH AND INSTALL EXPANSION FITTINGS OF THE APPROVED TYPE WHEREVER CONDUITS PASS THROUGH STRUCTURAL EXPANSION JOINTS. DEFLECTION FITTINGS SHALL ALSO BE FURNISHED AND INSTALLED AS NECESSARY.
- THE CONTRACTOR SHALL PROVIDE SERVICE OF A QUALIFIED SYSTEM INTEGRATION COMPANY TO DEVELOP AND PRODUCE SUBSTANTIALLY COMPLETED ELECTRICAL INSTALLATION SHOP DRAWINGS AS INTEGRATED SYSTEM FOR DEPARTMENTAL REPRESENTATIVE'S REVIEW, AND FOR CONSTRUCTION.

Date: 10/2/2018

Username: common

Filename: ... \090_Electrical_Drawing_Index_And_General_Notes.dwg

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)
WIN
22607.00
BRIDGE NO. 2039
BRIDGE PLANS

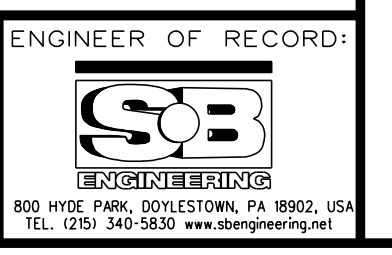


Kim Wagner
SIGNATURE
15223
P.E. NUMBER
10-02-2018
DATE

DATE	BY	R. TOSOLT	PROJ. MANAGER
8-10-2018	JRK/PK	J. KOSCIJ	J. KOSCIJ
10-2-2018	K. WAGNER	J. KOSCIJ	J. KOSCIJ

BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY
ELECTRICAL DRAWING INDEX
AND GENERAL NOTES

SHEET NUMBER
90
OF 132



800 HYDE PARK, DOYLESTOWN, PA 18902, USA
TEL: (717) 345-5830 www.sobengineering.net

Date: 10/2/2018

Username: common

Filename: ... \091_Symbols_And_Abbreviation_Sheet_Dwg.dgn: BRIDGE

	UTILITY SOURCE		DUTY: GENERATOR ESP = EMERGENCY STANDBY POWER LTP = LIMITED TIME RUNNING POWER PRP = PRIME RUNNING POWER COP = CONTINUOUS OPERATING POWER		ELECTRONIC OVERLOAD
	POWER TRANSFORMER		MOTOR		CONTACT N.O. (NORMALLY OPEN)
	ISOLATION TRANSFORMER		ELECTRICAL LUMP LOAD		CONTACT N.C. (NORMALLY CLOSED)
	DRAWOUT, MEDIUM VOLTAGE		BATTERY		MULTIFUNCTION METER WITH METERING PARAMETERS: (KVA, KW, KVAR, PF, V, I, F) * INDICATE HARMONIC & WAVEFORM CAPTURE CAPABILITY
	CIRCUIT BREAKER, DRAWOUT LOW VOLTAGE M.O. = MANUALLY OPERATED E.O. = ELECTRICALLY OPERATED SST = SOLID STATE TRIP UNIT I = INSTANTANEOUS S = SHORT TIME L = LONG TIME G = GROUND GA = GROUND ALARM ONLY		CAPACITOR(S)		SINGLE FUNCTION METERING: A = AMMETER D = DEMAND METER ET = ELAPSED TIME METER F = FREQUENCY METER PF = POWER FACTOR METER V = VOLTAGE METER VA = VOLTAMPERE METER VAR = VAR METER W = WATT METER WH = WATTHOUR METER
	MOLDED CASE CIRCUIT BREAKER		RESISTOR(S)		MULTIFUNCTION PROTECTIVE RELAY (PROTECTIVE FUNCTIONS AS INDICATED)
	LV CIRCUIT BREAKER WITH: * K = KEY INTERLOCK * S = SHUNT TRIP		VOLTAGE TRANSFORMER		PROTECTIVE DEVICES 11 = MULTIFUNCTION RELAY 15 = SPEED OR FREQUENCY MATCHING RELAY 21 = DISTANCE RELAY 24 = VOLTS PER HERTZ RELAY 25 = SYNC CHECK RELAY 27 = UNDERVOLTAGE RELAY 32 = DIRECTIONAL POWER RELAY 33 = POSITION SWITCH 38 = BEARING PROTECTIVE DEVICE 40 = FIELD RELAY 42 = CONTACTOR 43 = MANUAL TRANSFER OR SELECTOR DEVICE 46 = REVERSE PHASE CURRENT RELAY 47 = REVERSE PHASE VOLTAGE RELAY 49 = MACHINE OR TRANSFORMER THERMAL RELAY 50 = INSTANTANEOUS OVERCURRENT RELAY 51 = PHASE TIME OVERCURRENT RELAY 51G = GROUND TIME OVERCURRENT RELAY 51N = NEUTRAL OVERCURRENT RELAY 51V = VOLTAGE RESTRAINED OVERCURRENT RELAY 52 = AC CIRCUIT BREAKER 59 = OVERVOLTAGE RELAY 60 = VOLTAGE OR CURRENT BALANCE RELAY 62 = TIME DELAY RELAY 63 = PRESSURE SWITCH 67 = DIRECTIONAL OVERCURRENT RELAY 67N = NEUTRAL DIRECTIONAL OVERCURRENT RELAY 74 = ALARM RELAY 76 = DC OVERCURRENT RELAY 810 = OVERFREQUENCY RELAY 81U = UNDERFREQUENCY RELAY 86 = LOCKOUT RELAY 87 = DIFFERENTIAL CURRENT RELAY 94 = TRIPPING OR TRIP FREE RELAY
	MINIATURE CIRCUIT BREAKER		CURRENT TRANSFORMER POLARITY		DEVICES: AS = AMMETER SWITCH E = EMERGENCY STOP PUSHBUTTON GFS = GROUND FAULT SENSOR J = JOG PUSHBUTTON LR = LOCAL/REMOTE SWITCH HOA = HAND/OFF/AUTO SWITCH LS = LIMIT SWITCH OT = OVERTORQUE SWITCH SS = SYNCHRONIZING SWITCH VS = VOLTMETER SWITCH
	CURRENT LIMITING DEVICE		CURRENT TRANSFORMER, ZERO SEQUENCE		POWER BUS CONDUCTOR
	NON-FUSED DISCONNECT SWITCH		SURGE ARRESTOR		POWER CABLE
	FUSED DISCONNECT SWITCH		SURGE CAPACITOR		BUS DUCT
	COMBINATION MOTOR STARTER TYPE: FVNR = FULL VOLTAGE NON-REVERSING FVR = FULL VOLTAGE REVERSING 2S = TWO SPEED		SURGE PROTECTION DEVICE		CABLE BUS
	TRANSFER SWITCH (AUTOMATIC MANUAL) TYPE: M = MANUAL A = AUTO BP = WITHBYPASS		DELTA CONNECTION		CONTROL CIRCUIT
	CONVERTER		WYE CONNECTION		ELECTRICAL NODE
	ADJUSTABLE SPEED DRIVE		OPEN DELTA		MULTIPLE CONDUCTOR CONNECTION
	PANELBOARD		BROKEN DELTA		EQUIPMENT BOUNDARY
	CONTROL PANEL TYPE: LC = LIGHTING CONTACTOR CP = CONTROL PANEL		SOLIDLY GROUNDED WYE		
			RESISTIVELY GROUNDED WYE		
			GROUND		
			FUSE		


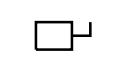


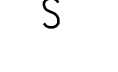

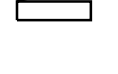
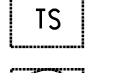
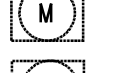
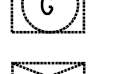
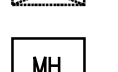
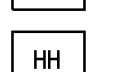
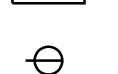






ABBREVIATIONS

A, AMP	AMPERE
AF	AMP FRAME
AT	AAMP TRIP
AM	AMMETER
ATS	AUTOMATIC TRANSFER SWITCH
AUX	AUXILIARY
BP	BYPASS
C	CONDUIT
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CP	CONTROL PANEL
CR	CONTROL RELAY
CT	CURRENT TRANSFORMER
DISC	DISCONNECT
DWG	DRAWING
EM	EMERGENCY
ENC	ENCODER
EOT	END OF TRAVEL
ESTOP	EMERGENCY STOP
F.C.	FULLY CLOSED
FO	FIBER OPTIC
F.O.	FULLY OPEN
FPR	FEEDER PROTECTION RELAY
FRE	FIBERGLASS REINFORCED EPOXY
FU	FUSE
FVR	FULL VOLTAGE REVERSING
FVNR	FULL VOLTAGE NON REVERSING
GEN	GENERATOR
GND	GROUND
HP	HORSE POWER
HPU	HYDRAULIC POWER UNIT
HMI	HUMAN MACHINE INTERFACE
IL	INDICATOR LIGHTS
I/O	INPUT / OUTPUT
JB	JUNCTION BOX
KAIC	INTERRUPT CURRENT
KW	KILOWATT
KVA	KILOVOLT-AMPERES
LA	LIGHTING ARRESTOR
LGT	LIGHT
LP	LIGHTING PANEL
LS	LIMIT SWITCH
M	MOTOR STARTER
MAB	MACHINERY BRAKE
MCCB	MOLDED CASE CIRCUIT BREAKER
MCC	MOTOR CONTROL CABINET
MPCB	MOTOR PROTECTION CIRCUIT BREAKER
MCP	MOTOR CIRCUIT PROTECTOR
MLO	MAIN LUG ONLY
MOB	MOTOR BRAKE
N	NORTH
NAV.	NAVIGATION
N.C.	NORMALLY CLOSED / NEARLY CLOSED
NE	NORTH EAST
N	NEUTRAL
N.O.	NORMALLY OPEN / NEARLY OPEN
NOC	NORTH ON-COMING
NOG	NORTH OFF-GOING
NTS	NOT TO SCALE
NW	NORTH WEST
OC	OVERCURRENT
OL	OVERLOAD
OT	OVER TRAVEL
P	POLE
PA	PUBLIC ADDRESS
PE	PROTECTIVE EARTH CONDUCTOR OR PROTECTIVE EARTH
PB	PUSH BUTTON / PULL BOX
PLC	PROGRAMMABLE LOGIC CONTROLLER
PM	POWER MONITOR
PP	POWER PANEL
RECPT	RECEPTACLE
RES	RESISTOR
RGS	RIGID GALVANIZED STEEL
S	SOUTH
SE	SOUTHEAST
SLS	SPAN LOCK
SP	SPAN
SPD	SURGE PROTECTION DEVICE
SW	SWITCH/SOUTHWEST
TD	TIME DELAY
TG	TRAFFIC GATE
THERMO	THERMOSTAT
T	EARTH
TS	THERMOSTAT SWITCH
TT	EARTHING SYSTEM
TYP	TYPICAL
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTAGE
VM	VOLTMETER
WG	WEDGE
WM	WATTMETER
WP	WEATHERPROOF
XMFR	TRANSFORMER

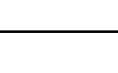

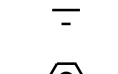

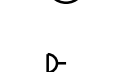

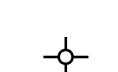


STATE OF MAINE DEPARTMENT OF TRANSPORTATION		STP-2260(700)		BRIDGE NO. 2039 WIN 22607.00 BRIDGE PLANS	
BARTER'S ISLAND BRIDGE BACK RIVER BOOTHBAY		LINCOLN COUNTY		SYMBOLS AND ABBREVIATIONS SHEET 1	
SHEET NUMBER		91		OF 132	

ENGINEER OF RECORD:
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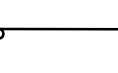

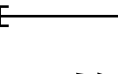
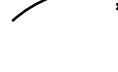
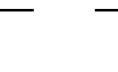


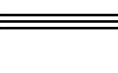




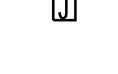
POWER

-  TRANSFORMER
-  NON-FUSED DISCONNECT SWITCH
-  FUSED DISCONNECT SWITCH
-  COMBINATION DISCONNECT WITH STARTER
-  HORSEPOWER RATED DISCONNECT SWITCH
-  PANELBOARD, 480Y/277V OR 480V
-  PANELBOARD, 208Y/120V OR 120/240V
-  TRANSFER SWITCH (AUTOMATIC OR MANUAL)
-  MOTOR
-  GENERATOR
-  CONTROL PANEL
-  MANHOLE
-  HANDHOLE
-  SINGLE RECEPTACLE
-  DUPLEX RECEPTACLE
-  FOURPLEX RECEPTACLE
-  SPECIAL PURPOSE RCPT OR CONNECTION, RATING AS INDICATED
-  FLOOR RECEPTACLE
- RECEPTACLE OPTIONS, IF REQ'D. (TYP):
 GF1 = GROUND FAULT INTERRUPTING
 IG = ISOLATED GROUND
 S = SWITCH AND OUTLET
 WP = WEATHERPROOF
 XP = EXPLOSIONPROOF
-  FLOOR MOUNTED SPECIAL PURPOSE RCPT OR CONNECTION, RATING AS INDICATED

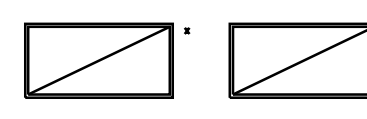
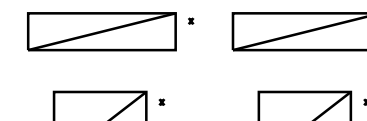
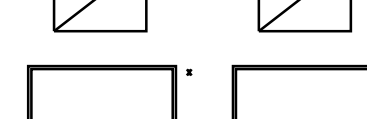
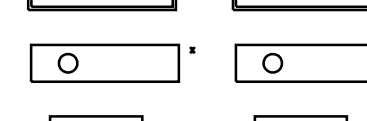

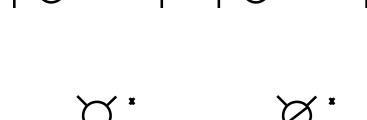



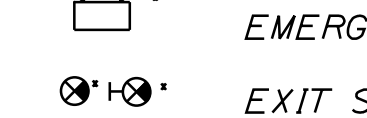

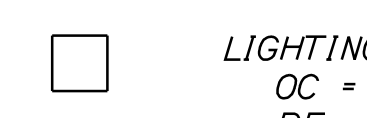
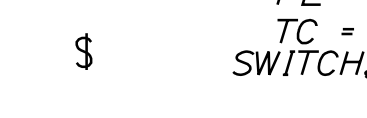
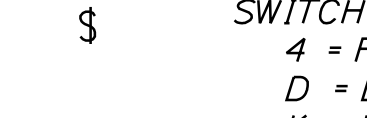



GROUNDING

-  GROUND CONDUCTOR
-  LIGHTNING PROTECTION CONDUCTOR
-  GROUND
-  GROUND ROD
-  LIGHTNING PROTECTION AIR TERMINAL
-  GROUNDING CONNECTION TO STRUCTURE
-  FLUSH GROUND PLATE
-  GROUND BONDING CONNECTION
-  GROUNDING PIGTAIL




RACEWAY

-  RIGID CONDUIT
-  FLEXIBLE CONDUIT
-  CONDUIT STUB OUT WITH CAP
-  CONDUIT HOMERUN
* OF ARROWS INDICATES * OF CKTS- SOURCE,CKT*
-  CONDUIT
 DB = DUCTBANK
 EM = EMBEDDED
 EX = EXPOSED
 UG = UNDERGROUND DIRECT BURIAL
-  CABLE TRAY
-  BUS DUCT
-  MEDIUM VOLTAGE POWER CABLE TERMINATION
-  CONDUIT TURN-DOWN
-  CONDUIT TURN-UP
-  CONDUIT TEE BELOW
-  WALL MOUNTED JUNCTION BOX
-  FLOOR OR CEILING MOUNTED JUNCTION BOX

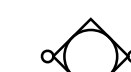
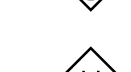
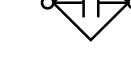
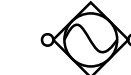




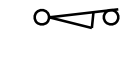

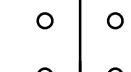

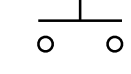
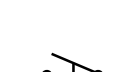
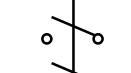
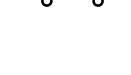
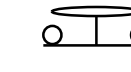



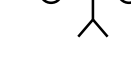
LIGHTING

-  RECESSED, 2' X 4' STYLE
(* FIXTURE TYPE , SHADED PORTION DENOTE EMERGENCY FIXTURE)
-  RECESSED, 1' X 4' STYLE
(* FIXTURE TYPE , SHADED PORTION DENOTE EMERGENCY FIXTURE)
-  RECESSED, SQUARE
(* FIXTURE TYPE , SHADED PORTION DENOTE EMERGENCY FIXTURE)
-  SURFACE MOUNTED, 2' X 4' STYLE
(* FIXTURE TYPE , SHADED PORTION DENOTE EMERGENCY FIXTURE)
-  SURFACE MOUNTED, 1' X 4' STYLE
(* FIXTURE TYPE , SHADED PORTION DENOTE EMERGENCY FIXTURE)
-  SURFACE MOUNTED, SQUARE
(* FIXTURE TYPE , SHADED PORTION DENOTE EMERGENCY FIXTURE)
-  SURFACE MOUNTED, STRIP
(* FIXTURE TYPE , SHADED PORTION DENOTE EMERGENCY FIXTURE)
-  RECESSED MOUNTED FIXTURE
(* FIXTURE TYPE , SHADED PORTION DENOTE EMERGENCY FIXTURE)
-  CEILING MOUNTED FIXTURE
(* FIXTURE TYPE , SHADED PORTION DENOTE EMERGENCY FIXTURE)
-  WALL MOUNTED FIXTURE
(* FIXTURE TYPE , SHADED PORTION DENOTE EMERGENCY FIXTURE)
-  POLE MOUNTED FIXTURE
(* FIXTURE TYPE , SHADED PORTION DENOTE EMERGENCY FIXTURE)
-  EMERGENCY BATTERY OPERATED UNIT
-  EXIT SIGN, SINGLE FACE, CEILING OR WALL MOUNTED
-  EXIT SIGN, DOUBLE FACE, CEILING OR WALL MOUNTED
-  EXIT SIGN, ARROW INDICATES DIRECTION
-  LIGHTING CONTROL: LC = LIGHTING CONTACTOR
 OC = OCCUPANCY SENSOR
 PE = PHOTOELECTRIC CELL
 TC = TIME CLOCK
 SWITCH, SINGLE POLE
-  SWITCH: 3 = THREE-WAY
 4 = FOUR-WAY
 D = DIMMER
 K = KEY OPERATED
 P = PILOT
 a,b,c = DENOTES SWITCHING CONTROL

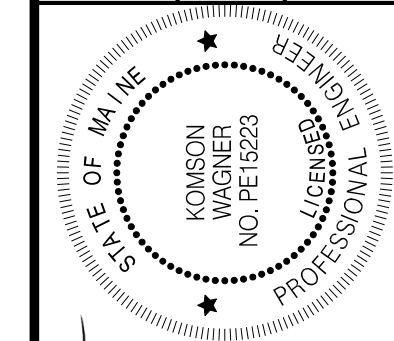
COMMUNICATION

-  TELEPHONE PANEL
-  TELEPHONE TERMINAL BOARD
-  AMPLIFIER
-  TELEPHONE OUTLET, WALL
-  DATA OUTLET, WALL
-  COMBINATION TELEPHONE/DATA OUTLET, WALL
-  TELEPHONE OUTLET, FLOOR
-  DATA OUTLET, FLOOR
-  COMBINATION TELEPHONE/DATA OUTLET, FLOOR
-  TELECOMMUNICATIONS SERVICE POLE
-  TELEVISION OUTLET, WALL
-  CLOCK
-  PUBLIC ADDRESS SPEAKER
-  PUBLIC ADDRESS MICROPHONE OUTLET
-  PUBLIC ADDRESS VOLUME CONTROL
-  INTERCOM STATION, *M INDICATES MASTER
-  PUSH BUTTON
-  CCTV SURVEILLANCE CAMERA, FIXED
-  CCTV SURVEILLANCE CAMERA, PAN/ZOOM/TILT
-  ROADWAY LIGHT
-  TRAFFIC SIGNAL

CONTROL SCHEMATIC

-  I/O INPUT (DISCRETE)
-  I/O OUTPUT (DISCRETE)
-  I/O INPUT (ANALOG)
-  I/O OUTPUT (ANALOG)
-  NORMALLY OPEN LIMIT SWITCH, CONTACT CLOSSES ON REACHING LIMIT
-  NORMALLY CLOSED LIMIT SWITCH, CONTACT OPENS ON REACHING LIMIT
-  SELECTOR SWITCH
-  NORMALLY OPEN PUSHBUTTON, MOMENTARY CONTACT UNLESS OTHERWISE NOTED
-  DISCONNECT SWITCH
-  EMERGENCY STOP
-  NORMALLY CLOSED PUSHBUTTON, MOMENTARY CONTACT UNLESS OTHERWISE NOTED
-  NORMALLY CLOSED TIME DELAY CONTACT - ON-DELAY
-  NORMALLY OPEN TIME DELAY CONTACT - ON-DELAY
-  NORMALLY CLOSED TIME DELAY CONTACT - OFF-DELAY
-  NORMALLY OPEN TIME DELAY CONTACT - OFF-DELAY
-  LEVEL SWITCH
-  FLOW SWITCH
-  PRESSURE SWITCH
-  INDICATION LIGHTS
 G - GREEN
 A - AMBER
 R - RED
 W - WHITE
-  TWO WIRES CROSSING AND CONNECTED
-  TWO WIRES CROSSING AND NOT CONNECTED

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
STP-2260(700)
 BRIDGE NO. 2039
 WIN
 22607.00
 BRIDGE PLANS



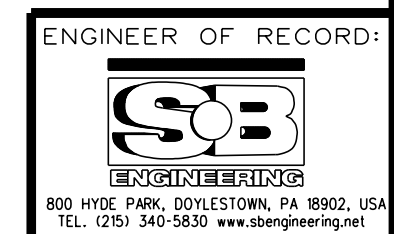
K. Wagner
 SIGNATURE
 15223
 P.E. NUMBER
 10-02-2018
 DATE

PROJ. MANAGER	R. TOSOL	BY	DATE
DESIGN-DETAILED J. KOSCI	J. KOSCI	ARK, PK	8-10-2018
CHECKED-REVIEWED J. KOSCI	J. KOSCI	K. WAGNER	10-2-2018
DESIGNS-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTER'S ISLAND BRIDGE
 BACK RIVER
 LINCOLN COUNTY
 BOOTHBAY
SYMBOLS AND ABBREVIATIONS SHEET 2

SHEET NUMBER

92
 OF 132



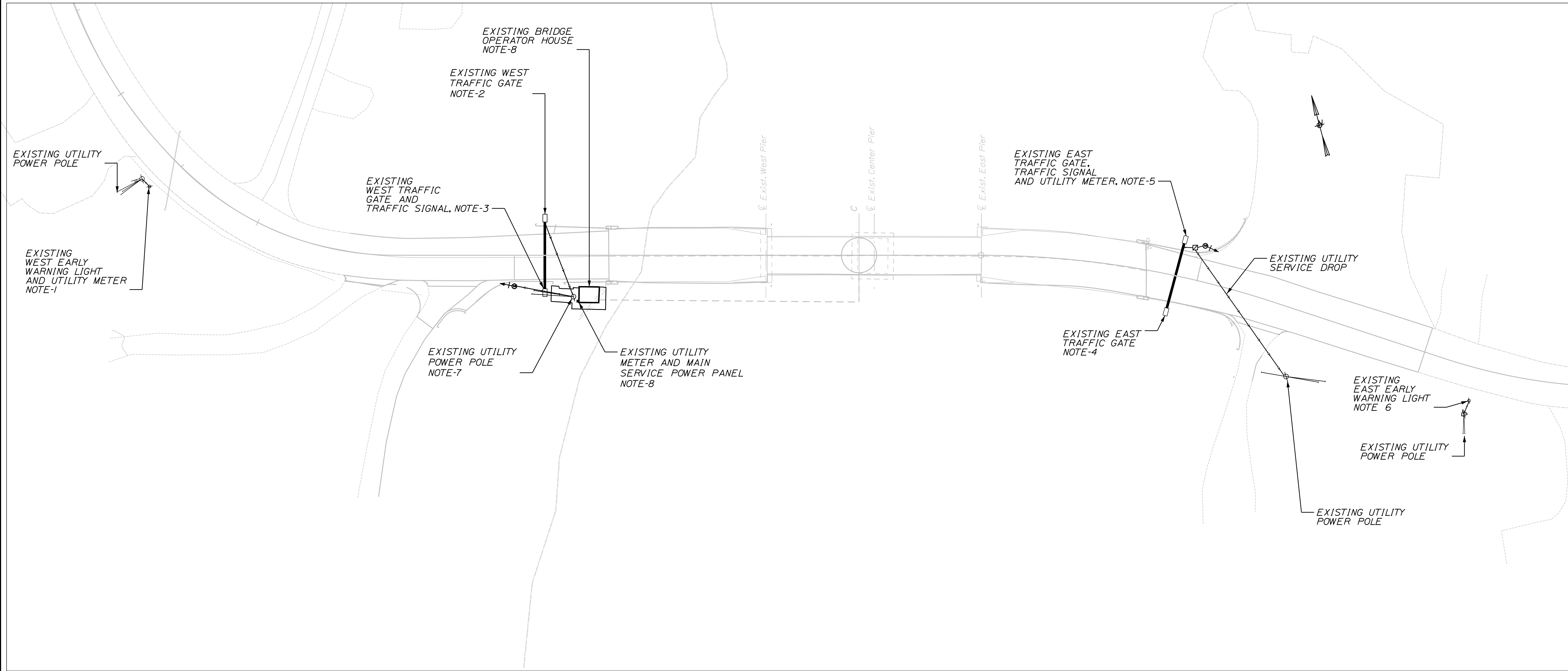
800 HYDE PARK, DOTHLESTOWN, PA 19902, USA
 TEL: (215) 340-5830 www.sobengineering.net

Date: 10/12/2018

Username: common

Division: BRIDGE

Filename: ... \093_Electrical_Demolition_Plan.dgn



ELECTRICAL DEMOLITION NOTES:

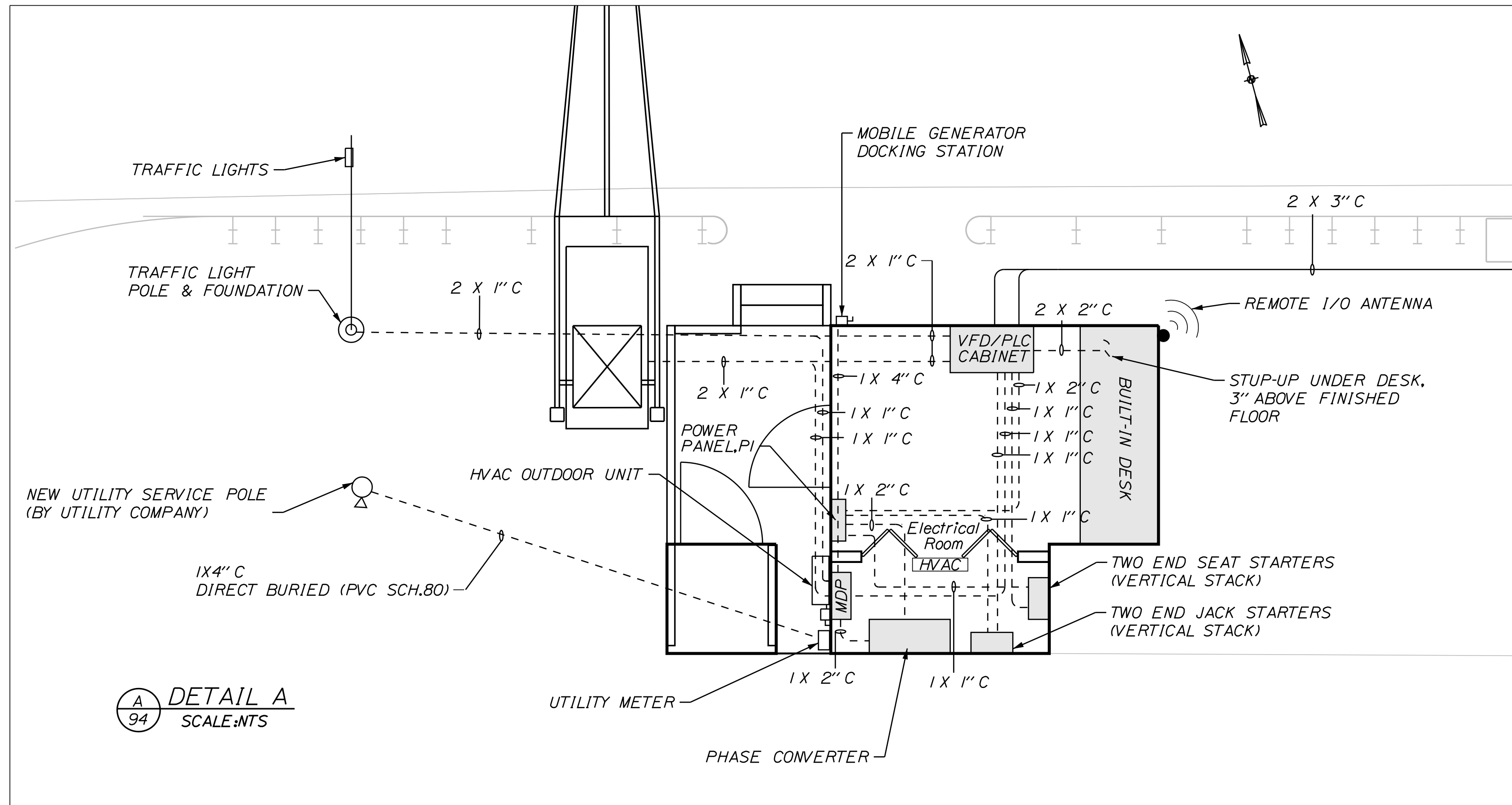
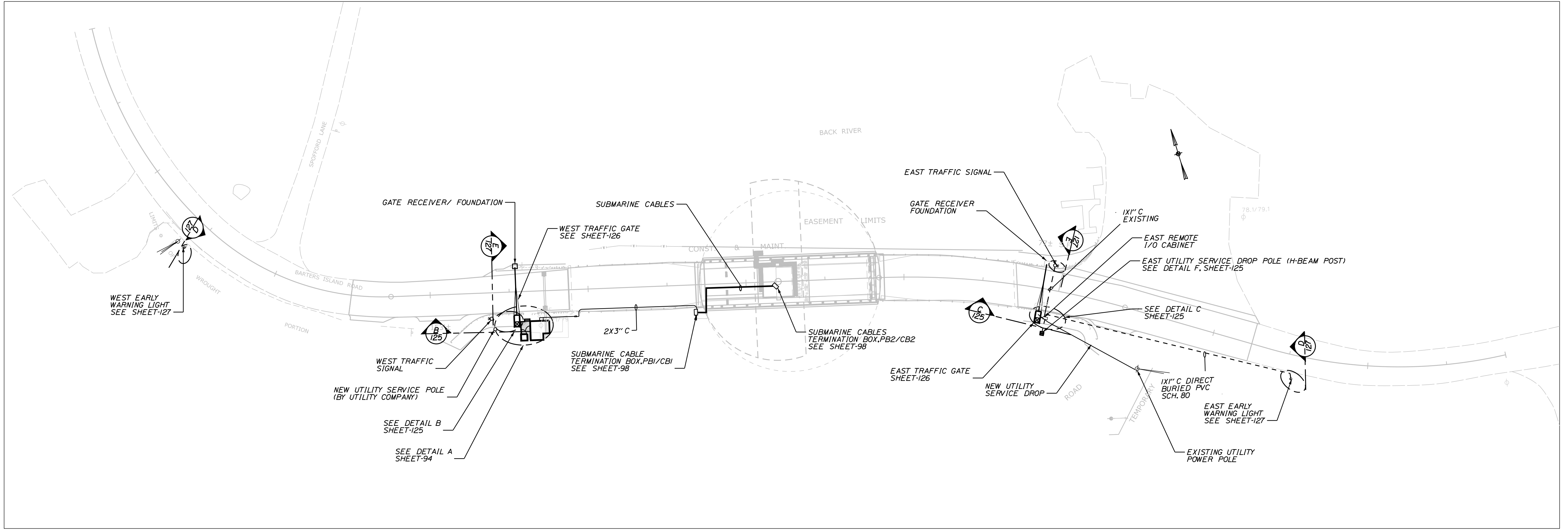
1. REMOVE EXISTING WEST EARLY WARNING LIGHT POLE, LIGHT FIXTURE, SIGNAGE, METERING, ELECTRICAL BOXES, AND OVERHEAD SECONDARY ELECTRICAL SERVICE CONDUCTORS.
2. REMOVE EXISTING WEST TRAFFIC GATE INCLUDING GATE ARMS, ALL THE SUPPORT STRUCTURES, LIGHTS, OVERHEAD SECONDARY ELECTRICAL SERVICE CONDUCTORS, AND CIRCUIT WIRING AND CONDUITS.
3. REMOVE EXISTING WEST TRAFFIC GATE, SIGNAL LIGHTS, AND SIGNAGE INCLUDING GATE ARMS, ALL THE SUPPORT STRUCTURES, LIGHTS, OVERHEAD ELECTRICAL SERVICE CONDUCTORS, ELECTRICAL BOXES, CIRCUIT WIRING AND CONDUITS.
4. REMOVE EXISTING EAST TRAFFIC GATE INCLUDING GATE ARMS, ALL THE SUPPORT STRUCTURES, LIGHTS, OVERHEAD SECONDARY ELECTRICAL SERVICE CONDUCTORS, AND CIRCUIT WIRING AND CONDUITS.
5. REMOVE EXISTING EAST TRAFFIC GATE, SIGNAL LIGHTS, AND SIGNAGE INCLUDING GATE ARMS, ALL THE SUPPORT STRUCTURES, LIGHTS, OVERHEAD ELECTRICAL SERVICE CONDUCTORS, METER, ELECTRICAL BOXES, CIRCUIT WIRING AND CONDUITS.
6. REMOVE EXISTING EAST EARLY WARNING LIGHT POLE, LIGHT FIXTURE, SIGNAGE, METERING, ELECTRICAL BOXES, AND OVERHEAD SECONDARY ELECTRICAL SERVICE CONDUCTORS.
7. CONTRACTOR SHALL REMOVE EXISTING ELECTRICAL SERVICE AND COORDINATE WITH UTILITY COMPANY FOR THE RELOCATION OF ELECTRICAL POWER POLE AND OVERHEAD ELECTRICAL SERVICE CONDUCTOR.
8. CONTRACTOR SHALL REMOVE EXISTING ELECTRICAL SERVICE, UTILITY METER AND MAIN ELECTRICAL SERVICE POWER PANEL AND BRANCH CIRCUIT LOADS WIRING AND CONDUITS INCLUDING LIGHTS, RECEPTACLES, KITCHEN APPLIANCES AND HVAC UNITS.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		STP-2260(700)	
BRIDGE NO. 2039		WIN 22607.00	
BRIDGE PLANS			
		SIGNATURE 15223	
DATE 8-10-2018		DATE 10-2-2018	
BY K. WAGNER		P.E. NUMBER 15223	
R. TOSOL J. KOSCIJ		DATE 10-2-2018	
DESIGN-DETAILED J. KOSCIJ		REVISIONS 1	
CHECKED-REVIEWED J. KOSCIJ		REVISIONS 2	
DESIGNS DETAILED		REVISIONS 3	
REVISIONS 1		REVISIONS 4	
REVISIONS 2		FIELD CHANGES	
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
BARTER'S ISLAND BRIDGE BACK RIVER LINCOLN COUNTY BOOTHBAY ELECTRICAL DEMOLITION PLAN			
SHEET NUMBER			
93			
OF 132			
ENGINEER OF RECORD: 800 HYDE PARK, DOTHAMSTOWN, PA 19022, USA TEL: (215) 340-5830 www.sobengineering.net			

Date: 10/12/2018

Username: common

Filename: ... \094_Site_Power_Distribution_Plan.dgn Division: BRIDGE

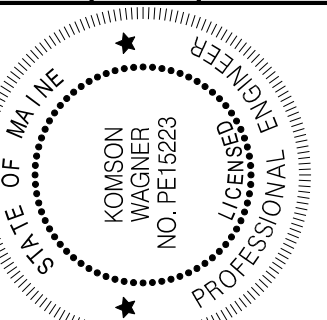


NOTES:

1. CONTRACTOR WILL FIELD LOCATE ELECTRICAL EQUIPMENT SUCH THAT ACCESS AND WORK SPACE CLEARANCES ARE MAINTAINED PER THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.
2. THE CONTRACTOR WILL CONDUCT AN INVESTIGATION OF UNDER WATER TERRAIN CONDITIONS ALONG THE SUBMARINE CABLE ROUTES AND THE IMPACTED VICINITY AND VERIFY THE LOCATION AND CHARACTERISTICS OF ALL EXISTING FEATURES AND POSSIBLE INTERFERENCES ABOVEGROUND, UNDERGROUND, AND BELOW WATER PRIOR TO CONSTRUCTION. THE CONTRACTOR WILL EXERCISE CARE TO NOT DAMAGE EXISTING UTILITIES OR STRUCTURE IN THE VICINITY OF CONSTRUCTION AREA.
3. THE CONTRACTOR WILL NOTIFY AND COORDINATE WITH US COAST GUARD OF CONSTRUCTION IMPACTS ON MARINE TRAFFIC; AND WITH THE LOCAL AGENCIES OF CONSTRUCTION IMPACTS ON VEHICULAR TRAFFIC; AND WITH THE UTILITY COMPANIES TO IDENTIFY ALL EXISTING UNDERGROUND AND BELOW WATER UTILITIES BEFORE EXCAVATING, DREDGING, OR PLOWING THE CHANNEL BOTTOM FOR THE SUBMARINE CABLE INSTALLATION. NOTIFY THE US COAST GUARD PRIOR TO BEGINNING ANY WORK IN OR OVER THE WATERWAY AND COMPLY WITH ALL USCG REQUIREMENTS.
4. THE CONTRACTOR SHALL FIELD COORDINATE UNDERGROUND CONDUIT AND EMBEDDED CONDUIT TURNUP LOCATIONS WITH THE ELECTRICAL EQUIPMENT INSTALLATION. THE CONDUIT ENTRY INTO ELECTRICAL EQUIPMENT SHALL BE BASED ON THE ACTUAL EQUIPMENT SUPPLIED BY THE CONTRACTOR.
5. THE CONTRACTOR SHALL COORDINATE WITH THE LOCAL UTILITY COMPANY FOR THE NEW ELECTRICAL SERVICES, ON THE WEST SIDE AND FOR THE DISCONNECTION AND RECONNECTION TO THE EXISTING UTILITY SERVICE ON THE EAST SIDE. THE CONTRACTOR IS RESPONSIBLE FOR FEEDER CIRCUIT WIRING AND RACEWAY BEGINNING FROM THE UTILITY SERVICE TRANSFORMER SECONDARY TERMINAL CONNECTION.

A
94
DETAIL A
SCALE: NTS

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)
WIN
22607.00
BRIDGE NO. 2039
BRIDGE PLANS



Signature: *Kim Wagner*
SIGNATURE: 15223
P.E. NUMBER: 10-02-2018
DATE

PROJ. MANAGER	R. TOSOLT	DATE
DESIGN-DETAILED	J. KOSCIL	8-10-2018
CHECKED-REVIEWED	J. KOSCIL	10-2-2018
DESIGNED-DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BARTER'S ISLAND BRIDGE
BACK RIVER
LINCOLN COUNTY
BOOTHBAY
SITE POWER DISTRIBUTION
PLAN

SHEET NUMBER

94

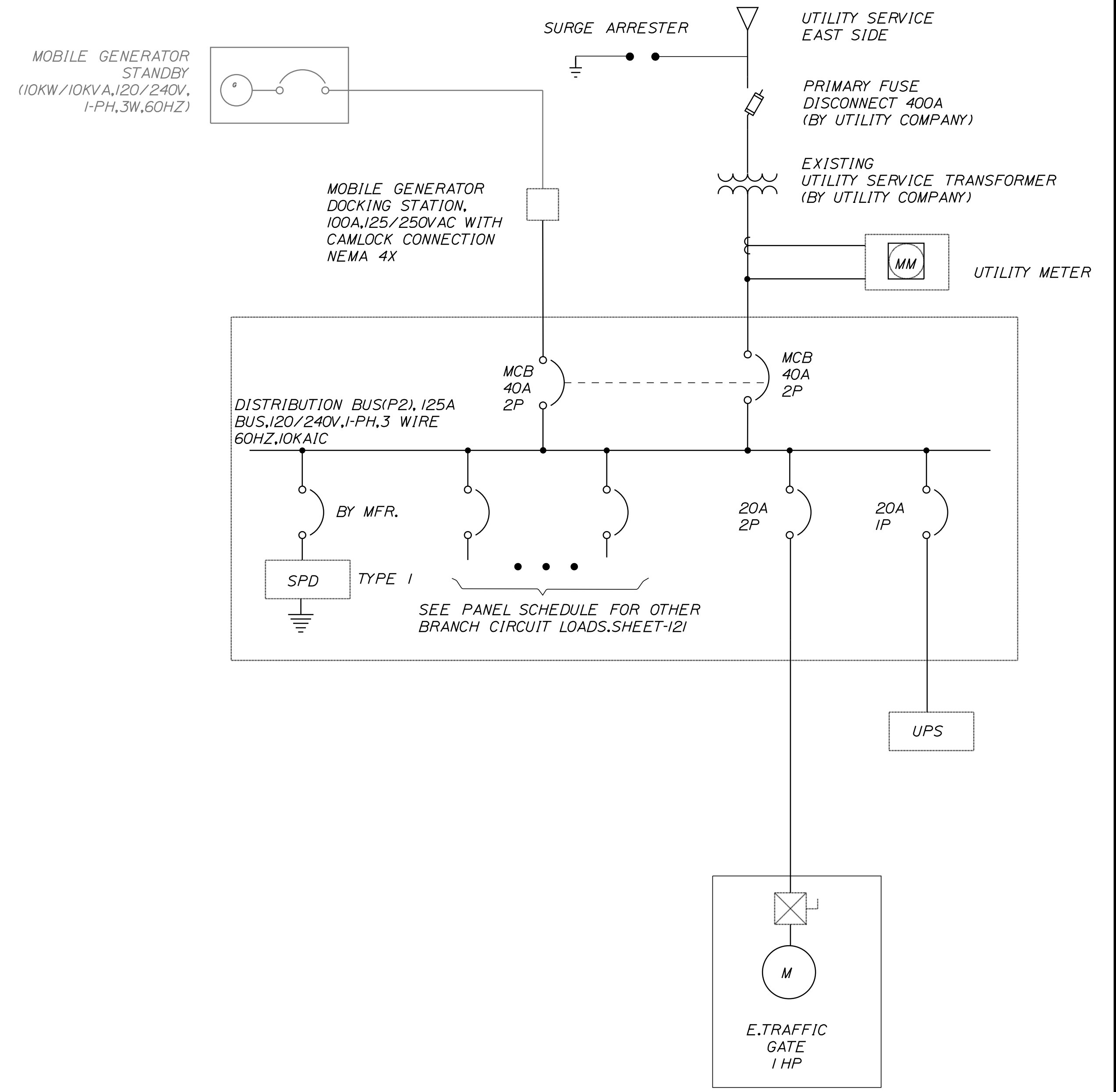
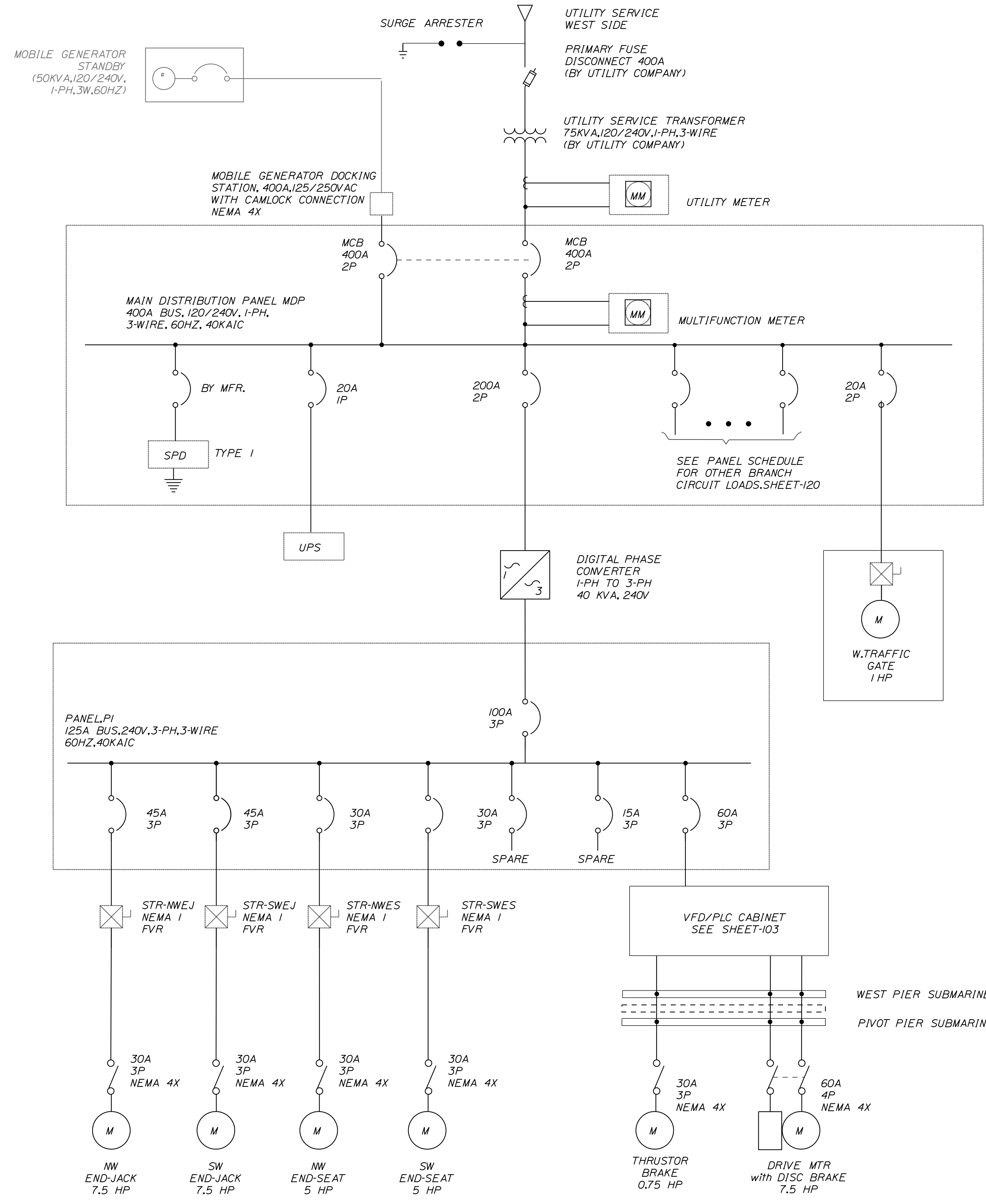
OF 132



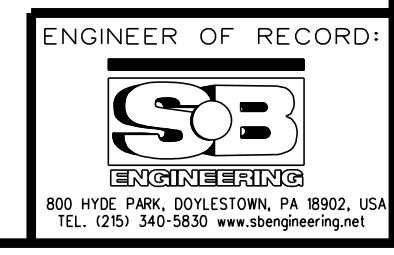
Date: 10/2/2018

Username: common

Filename: ... \095_Electrical_One_Line_Diagram.dgn Division: BRIDGE



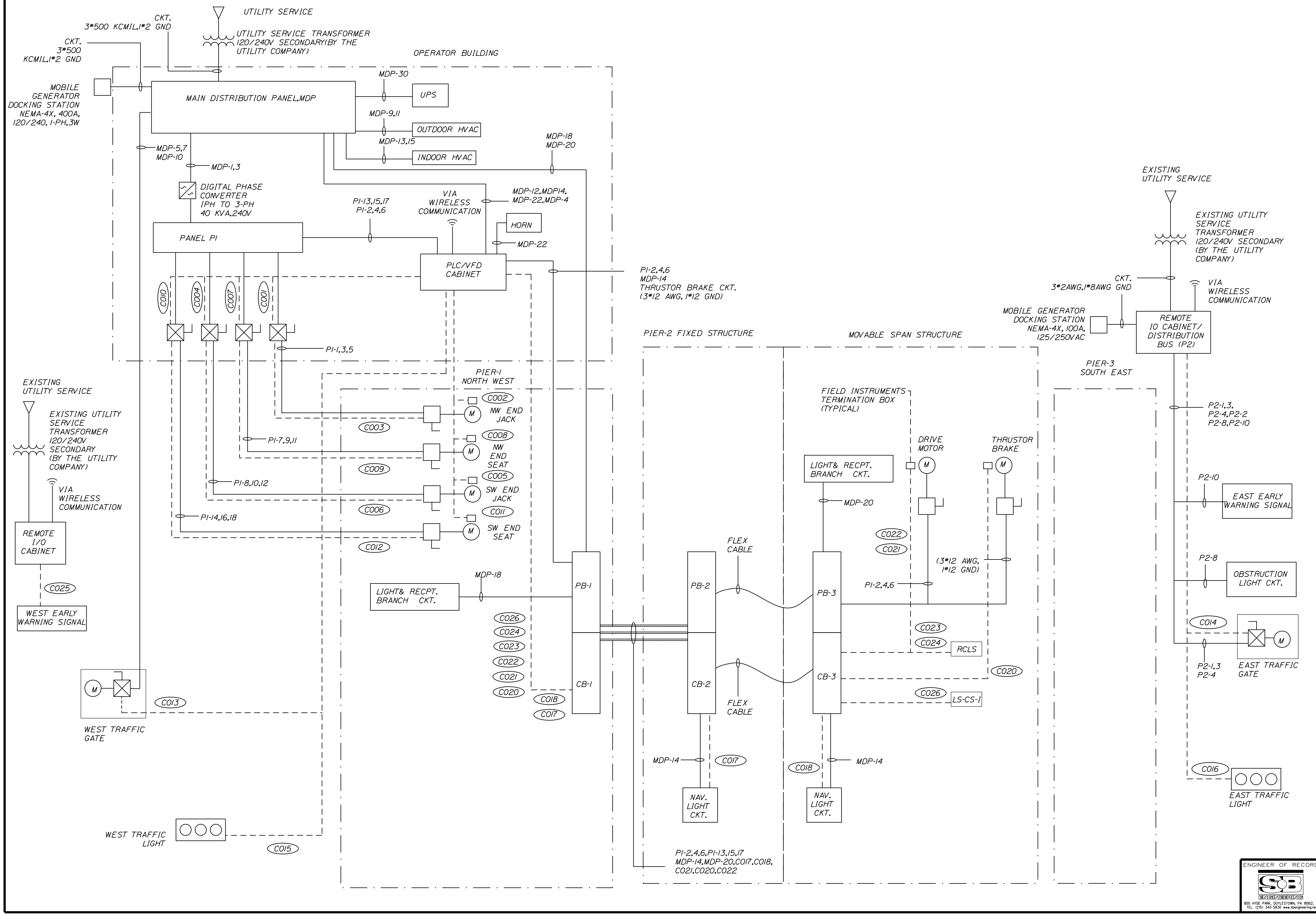
STATE OF MAINE DEPARTMENT OF TRANSPORTATION		STP-2260(700)		BRIDGE NO. 2039		WIN		22607.00		BRIDGE PLANS	
BARTER'S ISLAND BRIDGE BACK RIVER BOOTHBAY		LINCOLN COUNTY		ELECTRICAL ONE LINE DIAGRAM		SHEET NUMBER		95		OF 132	
PROJ. MANAGER		R. TOSOLT		BY		DATE		SIGNATURE		DATE	
DESIGN-DETAILED		J. KOSOL		J. KOSOL		8-10-2018		K. WAGNER		10-2-2018	
CHECKED-REVIEWED		J. KOSOL		K. WAGNER		10-2-2018		15223		10-02-2018	
DESIGNS-DETAILED								P.E. NUMBER		DATE	
REVISIONS 1											
REVISIONS 2											
REVISIONS 3											
REVISIONS 4											
FIELD CHANGES											



Date: 10/2/2018

Username: common

Filename: ... \096_Power_Distribution_Block_Diagram.dwg

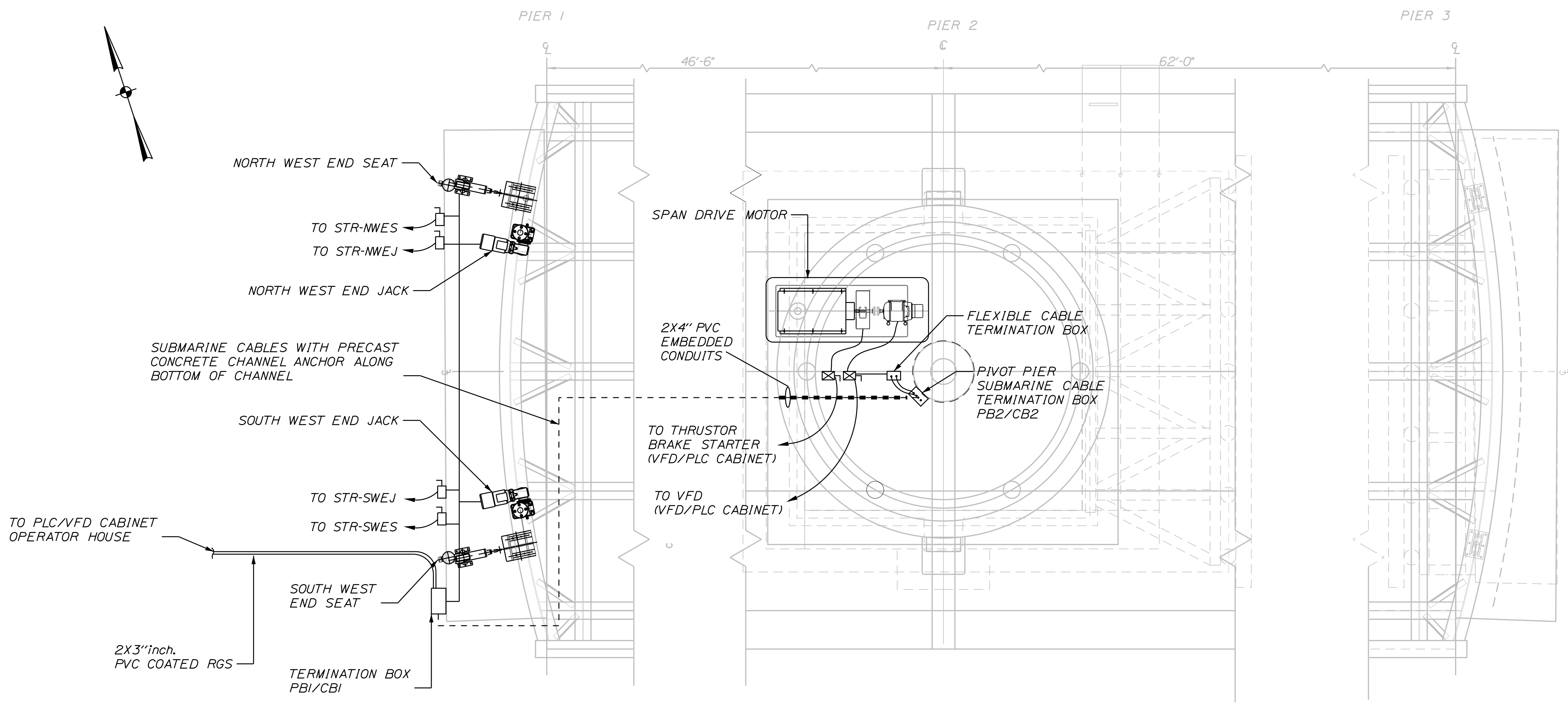


STATE OF MAINE DEPARTMENT OF TRANSPORTATION		STP-2260(700)		BRIDGE NO. 2039		WIN 22607.00		BRIDGE PLANS	
		SIGNATURE K. WAGNER		DATE 10-2-2018		P.E. NUMBER 15223		DATE 10-02-2018	
PROJ. MANAGER	R. TOSOL	CHECKED	J. KOSOL	DESIGNED	J. KOSOL	REVISIONS 1	REVISIONS 2	REVISIONS 3	REVISIONS 4
DATE	8-10-2018	BY	K. WAGNER	DATE	10-2-2018	FIELD CHANGES			
BARTER'S ISLAND BRIDGE BACK RIVER BOOTHBAY					LINCOLN COUNTY POWER DISTRIBUTION BLOCK DIAGRAM				
SHEET NUMBER					96				
OF 132									

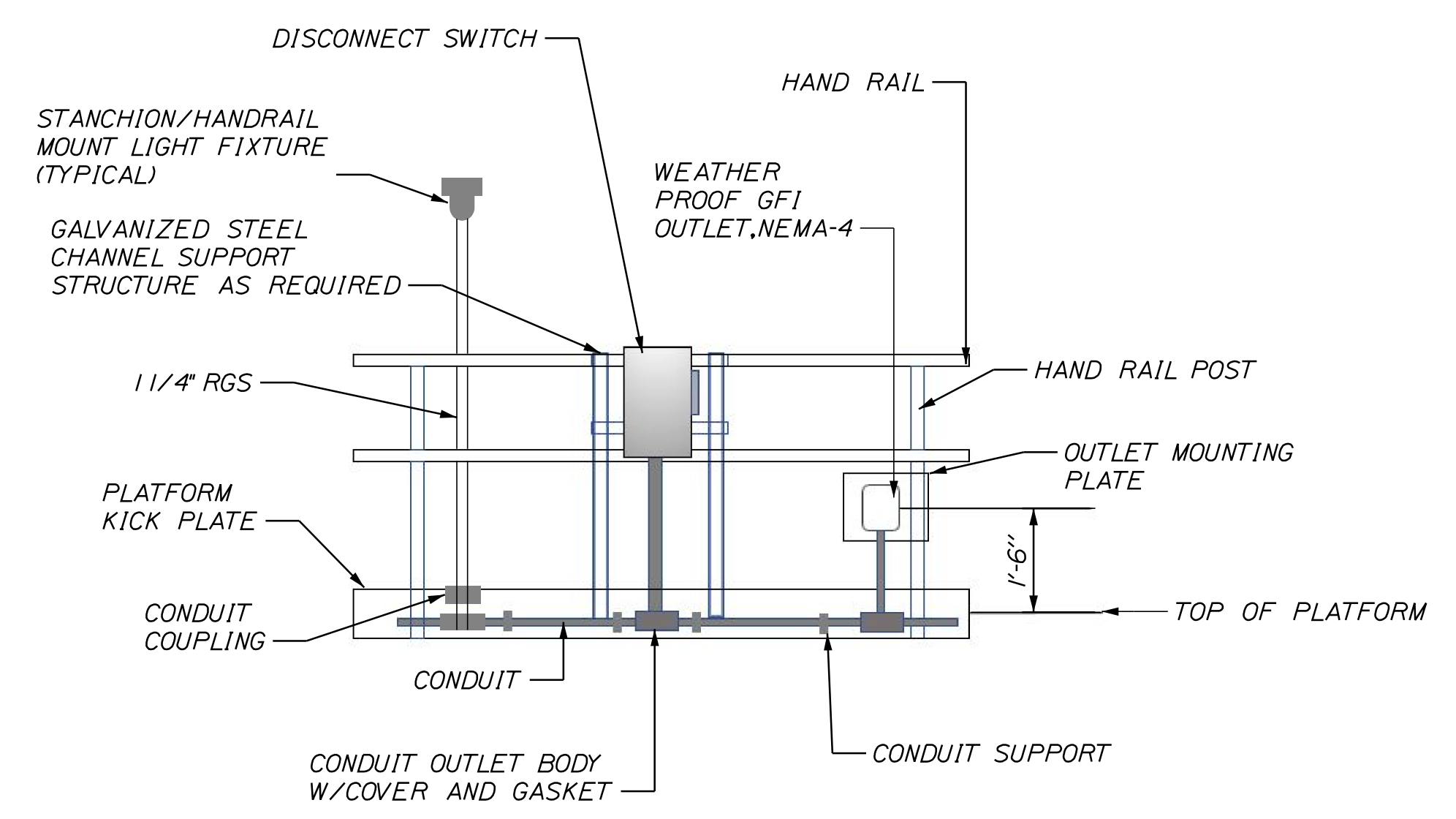
Date: 10/2/2018

Username: common

Filename: ... \098_Pier_Electrical_Power_Distribution\PIER.dwg



PLAN VIEW OF SWING SPAN
SCALE: NTS

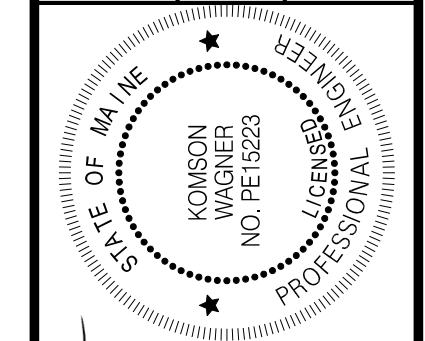


DISCONNECT SWITCH AND RECEPTACLE INSTALLATION DETAIL
SCALE: NTS

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD LOCATE LOCAL DISCONNECT SWITCHES AT READILY ACCESSIBLE LOCATION ON THE MAINTENANCE CATWALK/PLATFORM.
2. CONTRACTOR SHALL PROVIDE MOUNTING BRACKETS AND HARDWARE FOR ELECTRICAL EQUIPMENT AS REQUIRED.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)
BRIDGE NO. 2039
WIN
22607.00
BRIDGE PLANS



Signature: K. Wagner
SIGNATURE: 15223
P.E. NUMBER: 10-02-2018
DATE

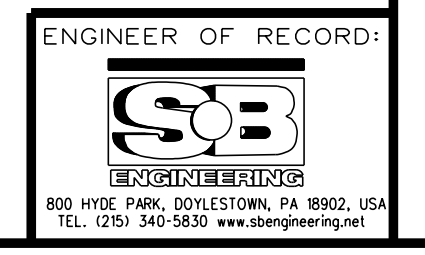
PROJ. MANAGER	R. TOSOLT	BY	DATE
DESIGN-DETAILED	J. KOSCI	JRK/PK	8-10-2018
CHECKED-REVIEWED	J. KOSCI	K. WAGNER	10-2-2018
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY
LINCOLN COUNTY
PIER ELECTRICAL POWER
DISTRIBUTION PLAN

SHEET NUMBER

98

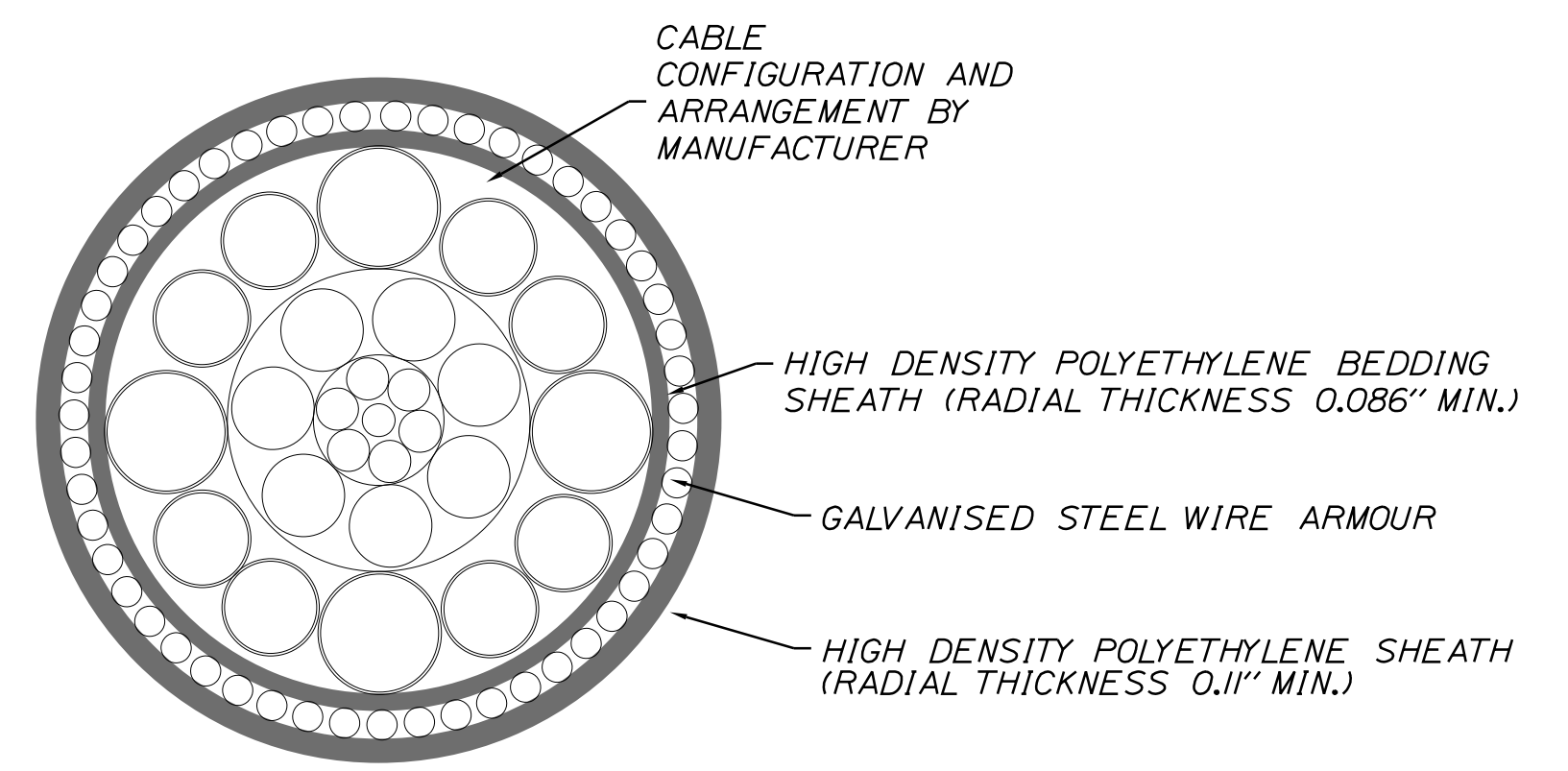
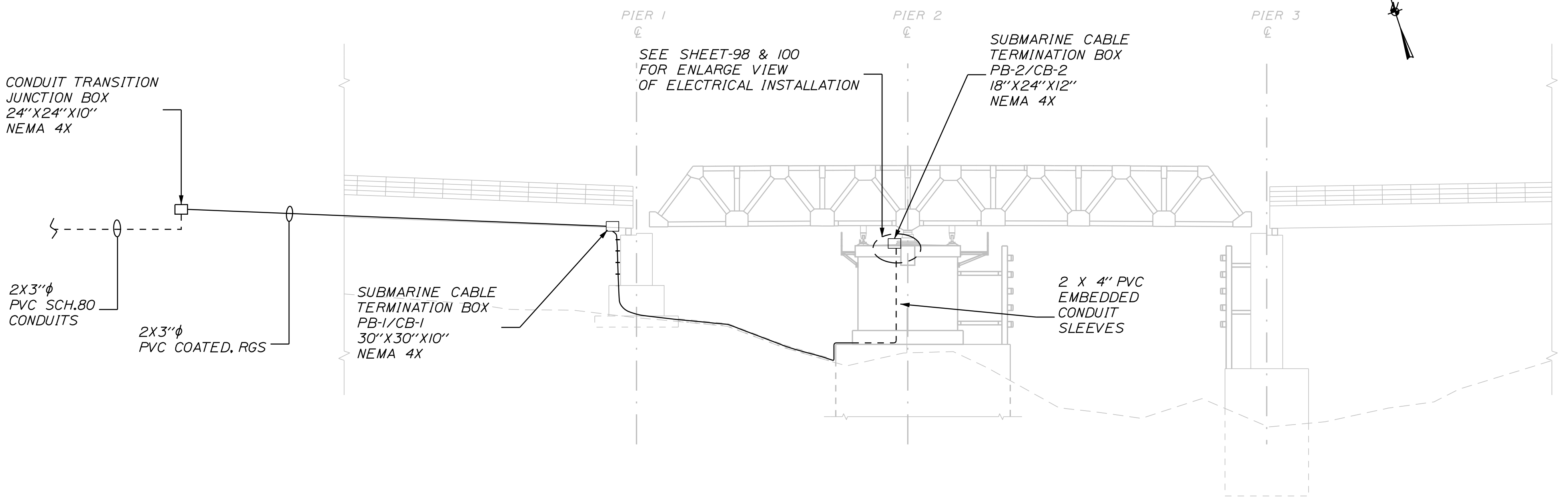
OF 132



Date: 10/2/2018

Username: common

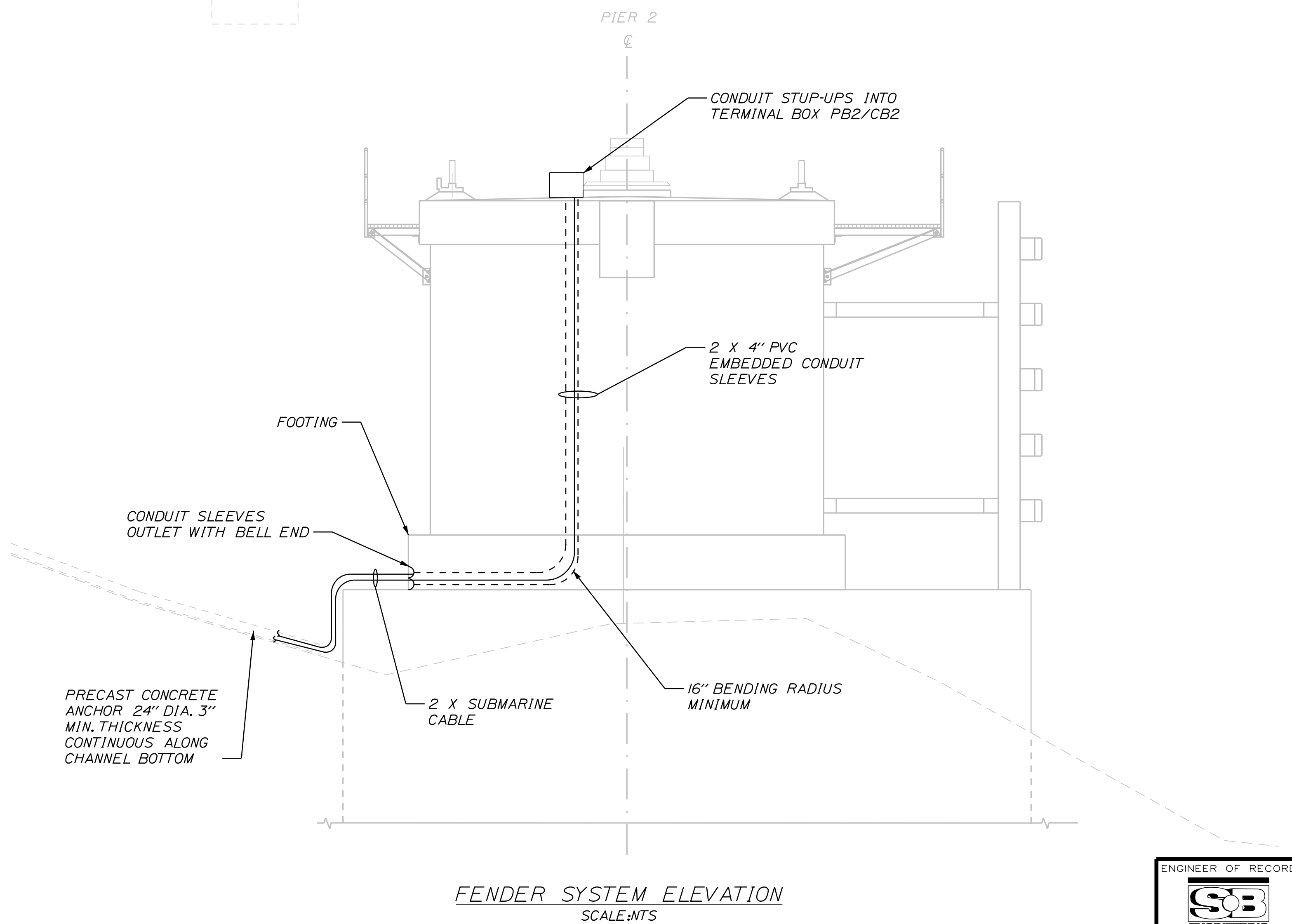
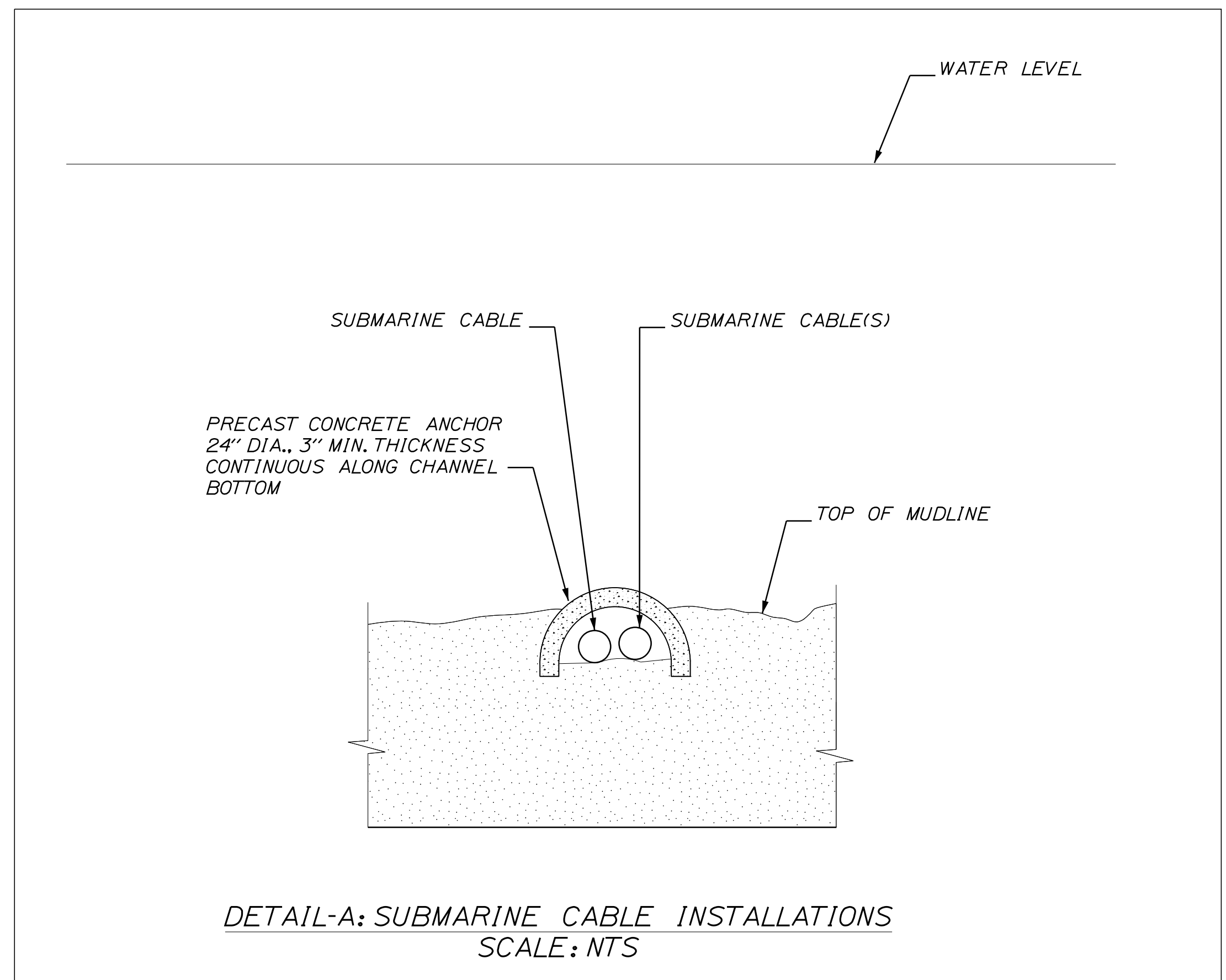
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REQUIRED SUBMARINE CABLE CONTENT:

1. 20 CORES (*12AWG, CLASS 5 TINNED COPPER, CROSS LINKED POLYETHYLENE INSULATION).
2. 9 CORES (*10AWG, CLASS 5 TINNED COPPER, CROSS LINKED POLYETHYLENE INSULATION).
3. 2-PAIR, SHIELDED TWISTED PAIR (STP) CABLE.
4. 4 CORES (*6AWG, CLASS 5 TINNED COPPER, CROSS LINKED POLYETHYLENE INSULATION)

CONTRACTOR SHALL OPTIMIZE CABLE CONFIGURATION AND ARRANGEMENT TO MINIMIZE THE OVERALL DIAMETER OF THE CABLE.



STATE OF MAINE DEPARTMENT OF TRANSPORTATION		STP-2260(700)		BRIDGE NO. 2039	BRIDGE PLANS
KONSON NO. PE16223 PROFESSIONAL ENGINEER		SIGNATURE 15223		DATE 10-02-2018	
R. TOSOLT PROJ. MANAGER		BY DATE		REVISIONS	
DESIGN-DETAILED CHECKED-REVIEWED		DATE		REVISIONS 1	
DESIGN-DETAILED		DATE		REVISIONS 2	
DESIGN-DETAILED		DATE		REVISIONS 3	
DESIGN-DETAILED		DATE		REVISIONS 4	
DESIGN-DETAILED		DATE		FIELD CHANGES	
BARTER'S ISLAND BRIDGE BACK RIVER LINCOLN COUNTY BOOTHBAY					
POWER DISTRIBUTION AND ELEVATION					
SHEET NUMBER					
99					
OF 132					

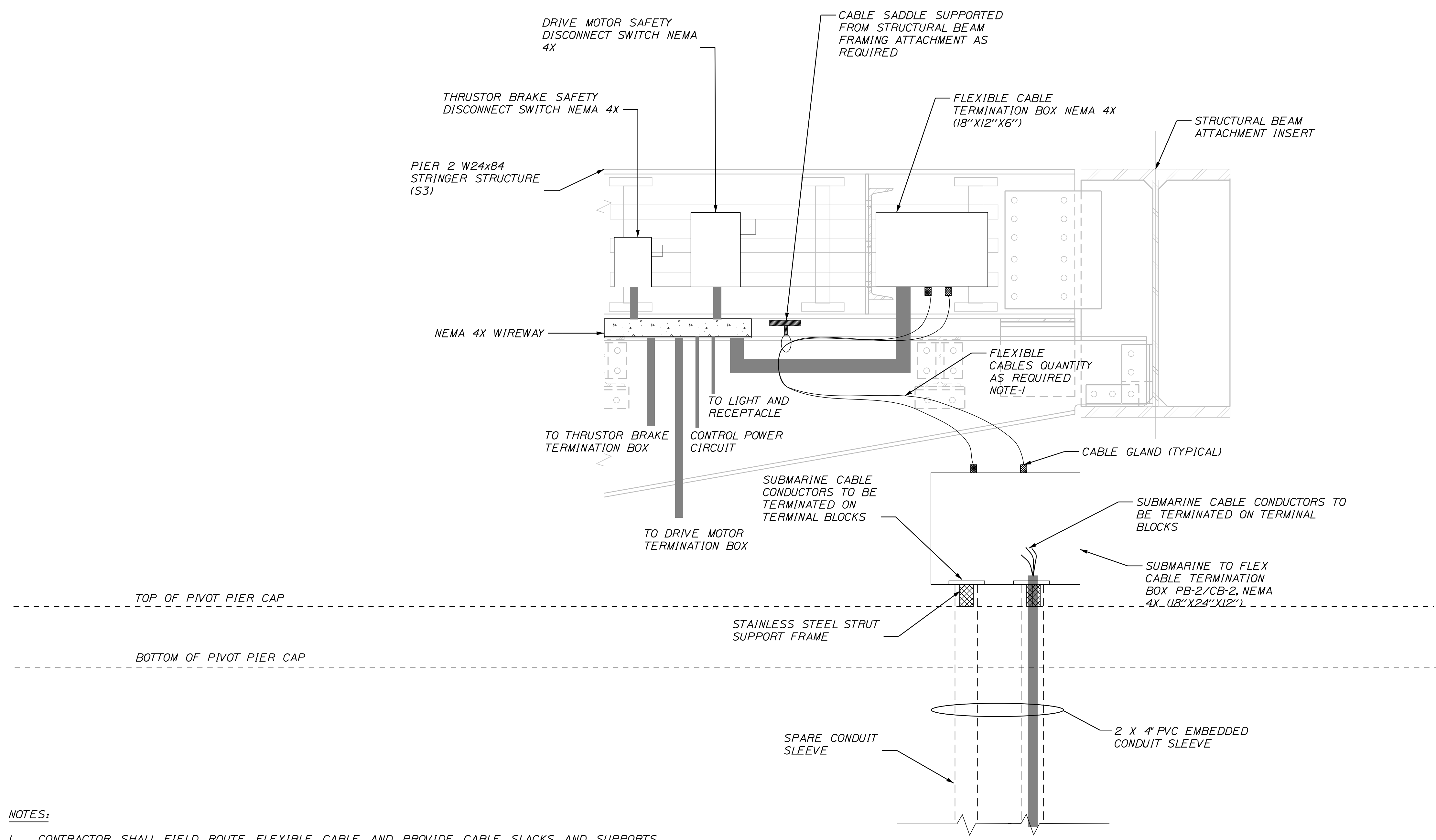
ENGINEER OF RECORD:

 800 HYDE PARK, DOTHAM, PA 19902, USA
 TEL: (215) 340-5830 www.sobengineering.net

Date: 10/12/2018

Username: common

Filename: ... \100_Electrical_Equipment_Installation_Details\BIBRIDGE

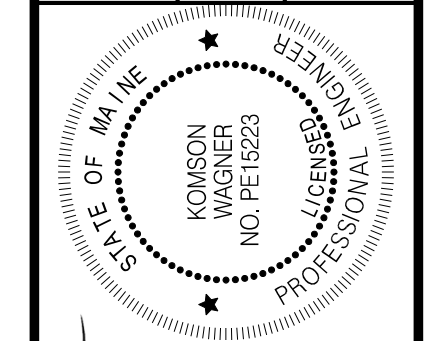


NOTES:

- CONTRACTOR SHALL FIELD ROUTE FLEXIBLE CABLE AND PROVIDE CABLE SLACKS AND SUPPORTS AS REQUIRED TO AVOID INTERFERENCE DURING BRIDGE SPAN MOVEMENT.

SEE DRAWING SHEET 99 FOR CONTINUATION

PIVOT PIER POWER DISTRIBUTION ELEVATION
SCALE: N.T.S.



Signature: *Kim Wagner*
SIGNATURE: 15223
P.E. NUMBER: 10-02-2018
DATE

PROJ. MANAGER	R. TOSOL	DATE	8-10-2018
DESIGN-DETAILED	J. KOSOL	BY	IRK PK
CHECKED-REVIEWED	J. KOSOL		K. WAGNER
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY
ELECTRICAL EQUIPMENT
INSTALLATION DETAILS

SHEET NUMBER

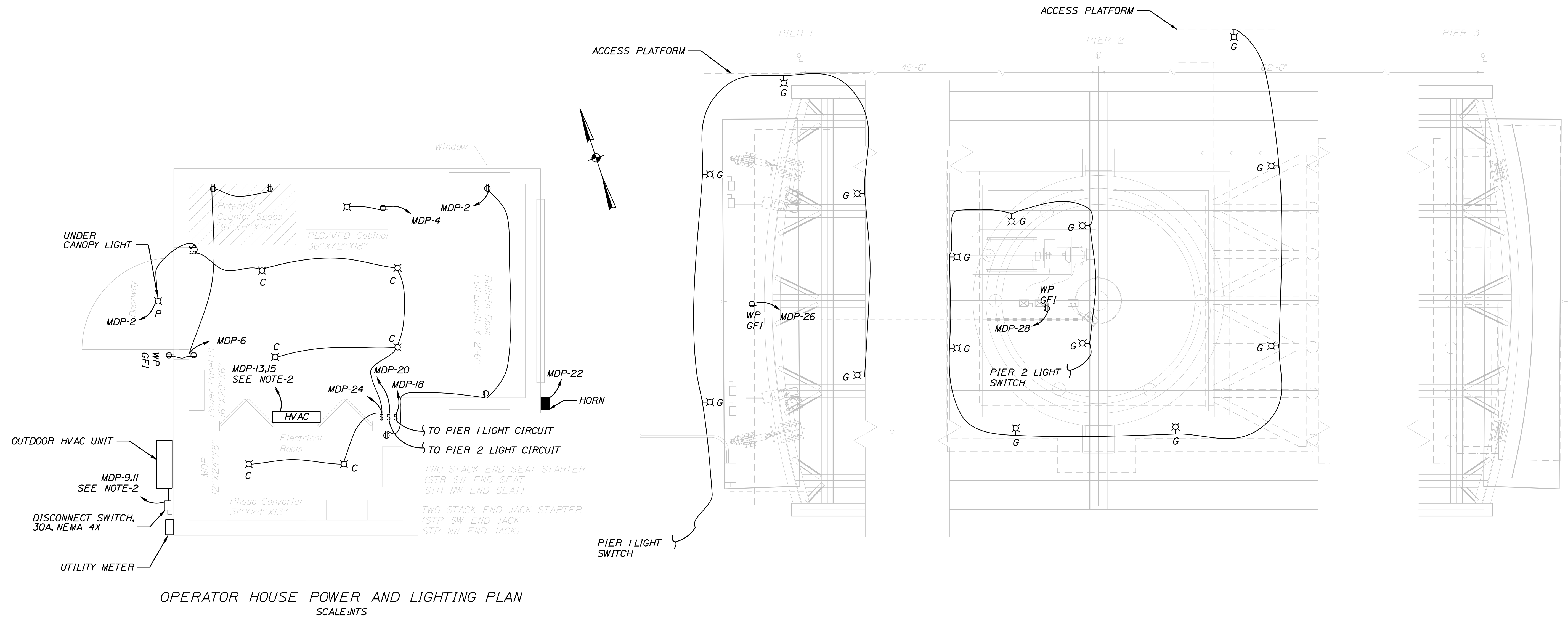
100
OF 132



Date:10/2/2018

Username: common

Filename: ... \101_Lighting_And_Receptacle_Plan.dgn Division: BRIDGE



OPERATOR HOUSE POWER AND LIGHTING PLAN
SCALE:NTS

BRIDGE STRUCTURE LIGHTING PLAN
SCALE:NTS

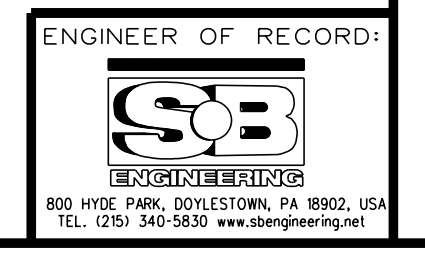
NOTES:

- SEE LIGHTING FIXTURE SCHEDULE ON DRAWING SHEET 122.
- CONTRACTOR SHALL PROVIDE SPLIT AIR CONDITION UNIT WITH MINIMUM SYSTEM CAPACITY AS INDICATED ON THE DESIGN DRAWING. CONTRACTOR SHALL PROVIDE ALL OF THE REQUIRED PIPING (REFRIGERANT LIQUID LINE, VAPOR LINE) AND CONNECTIONS BETWEEN THE INDOOR UNIT AND OUTDOOR UNIT OF THE SPLIT SYSTEM. CONTRACTOR SHALL INSTALL THE AIR CONDITION UNIT PER MANUFACTURER INSTRUCTION AND RECOMMENDATIONS. PROVIDE CIRCUIT WIRING AND RACWAY AS REQUIRED.

**AIR CONDITION UNIT (INDOOR/OUTDOOR SPLIT SYSTEM).
MINIMUM PERFORMANCE REQUIREMENTS:**

COOLING CAPACITY(BTU/HR): 11,000; SEER (MINIMUM):25.5; EER(MINIMUM):13.75
 HEATING CAPACITY(BTU/HR): 12,000; HSPF: 12.0
 FAN MOTOR/DRIVE: BRUSHLESS DIGITALLY CONTROLLED/DIRECT
 POWER SUPPLY (V/Hz/PHASE): 208-230/60/1
 COOLING POWER INPUT (kW): 0.80
 HEATING POWER INPUT (kW): 0.75
 PROGRAMMABLE THERMOSTAT
 CONTROL FEATURES: ON/OFF TIMER; 4-WAY AUTO SWING; AUTO CHANGOVER,
 AUTO RESTART; COOLING ONLY SWITCH; DEHUMIDIFY MODE; SMART AC
 MODULE.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION STP-2260(700)		BRIDGE NO. 2039 WIN 22607.00 BRIDGE PLANS	
PROJ. MANAGER	R. TOSOL	DATE	8-10-2018
DESIGN-DETAILED	J. KOSOL	BY	K. WAGNER
CHECKED-REVIEWED	J. KOSOL	DATE	10-2-2018
DESIGN-DETAILED		SIGNATURE	15223
REVISIONS 1		P.E. NUMBER	10-02-2018
REVISIONS 2		DATE	
REVISIONS 3		FIELD CHANGES	
REVISIONS 4			
BARTER'S ISLAND BRIDGE BACK RIVER LINCOLN COUNTY BOOTHBAY		LIGHTING AND RECEPTACLE PLAN	
SHEET NUMBER		101	
		OF 132	

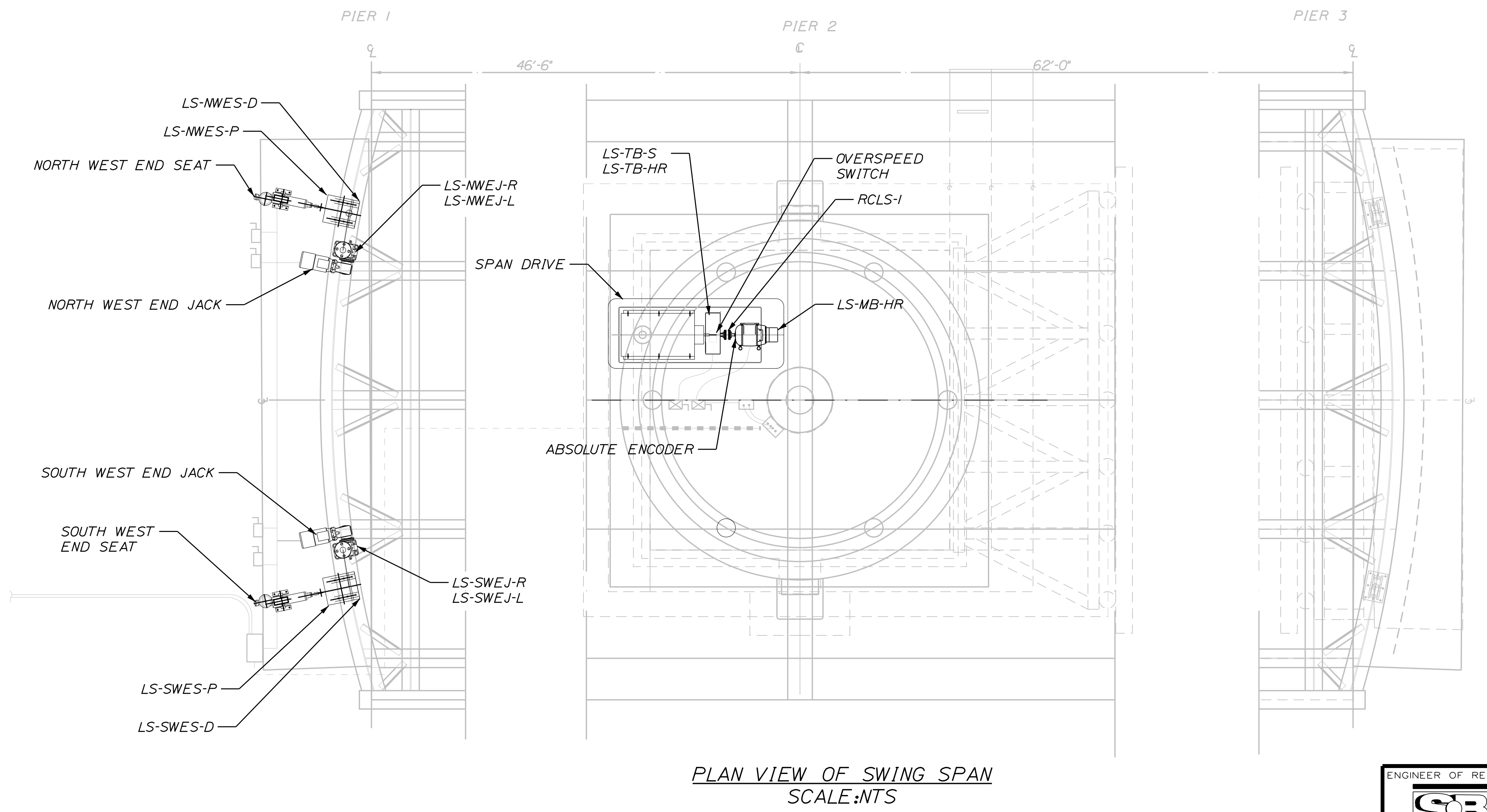
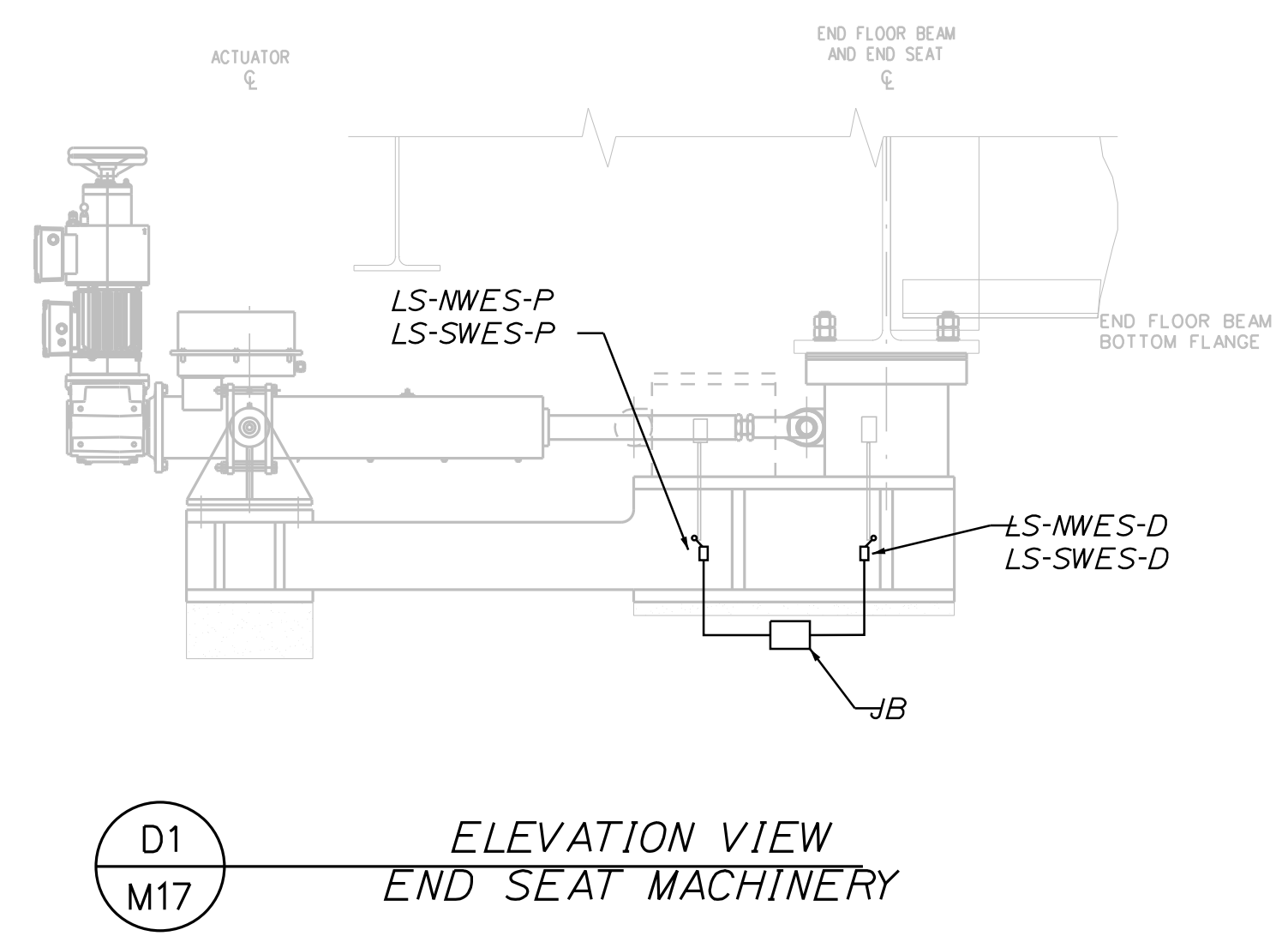
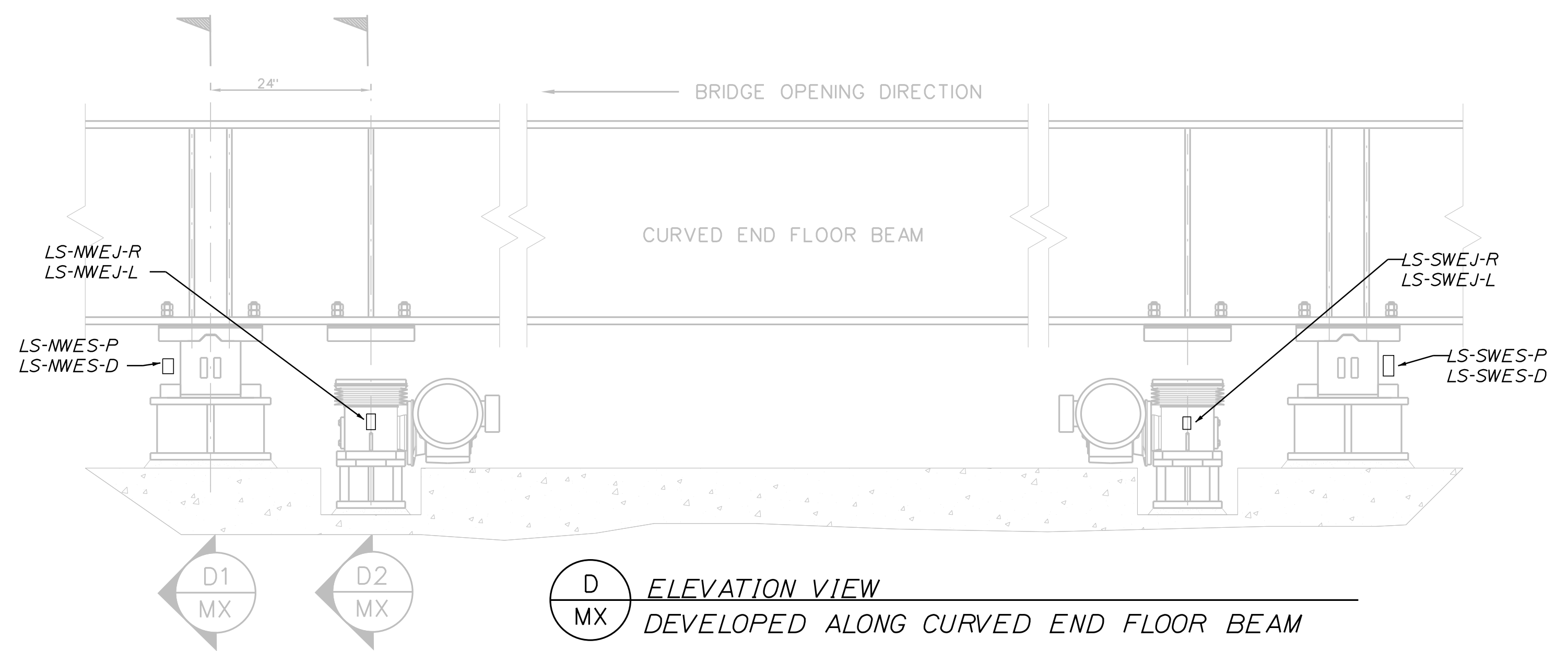
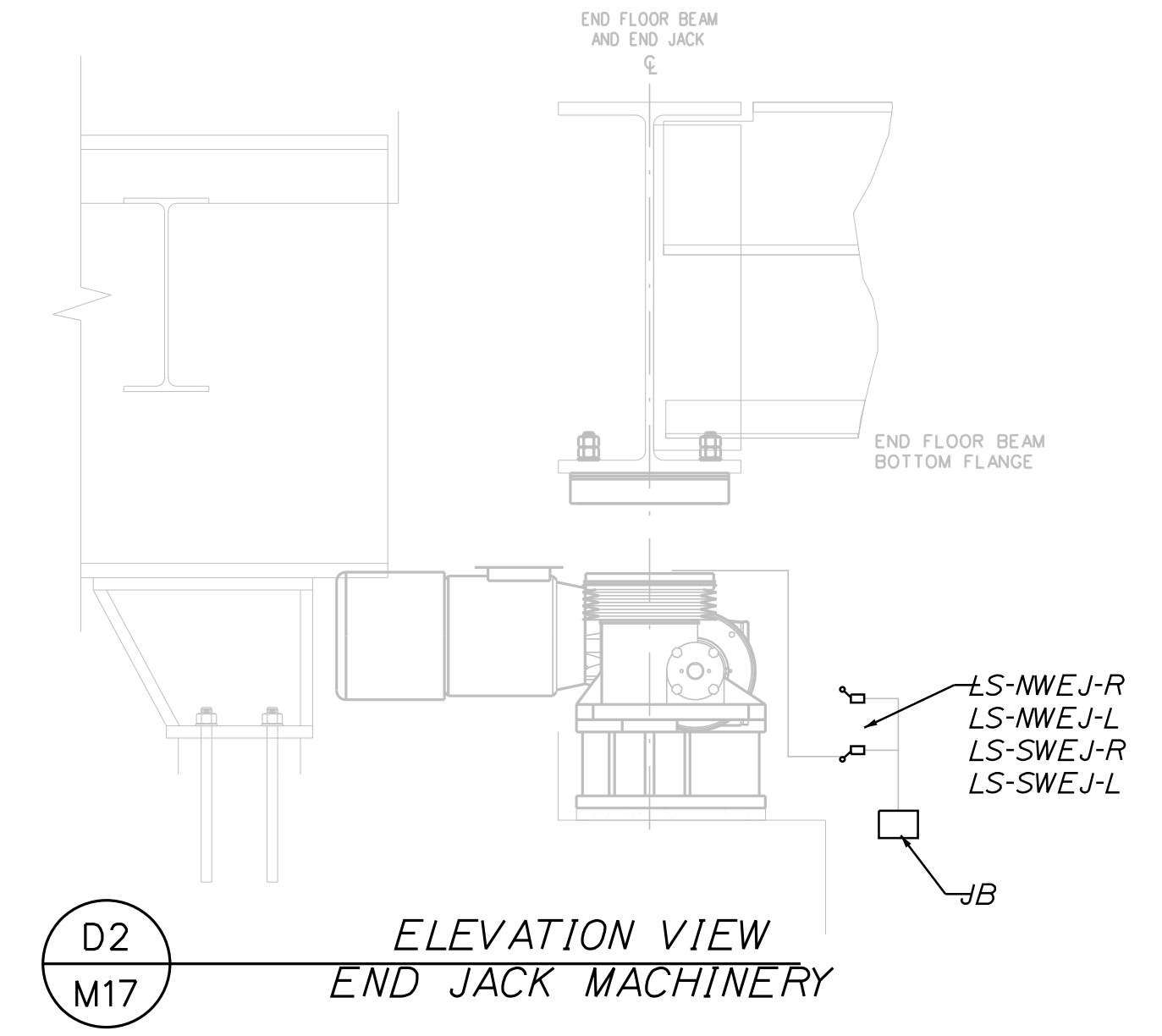


800 HYDE PARK, DOYLESTOWN, PA 19902, USA
 TEL: (215) 340-5830 www.sobengineering.net

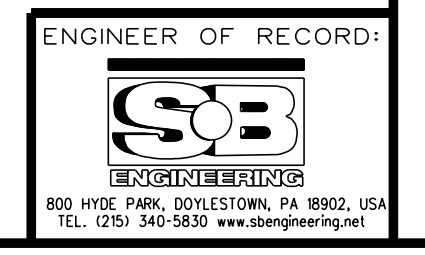
Date: 10/2/2018

Username: common

Filename: ... \102_Field_Device_Location_Plan.dgn Division: BRIDGE



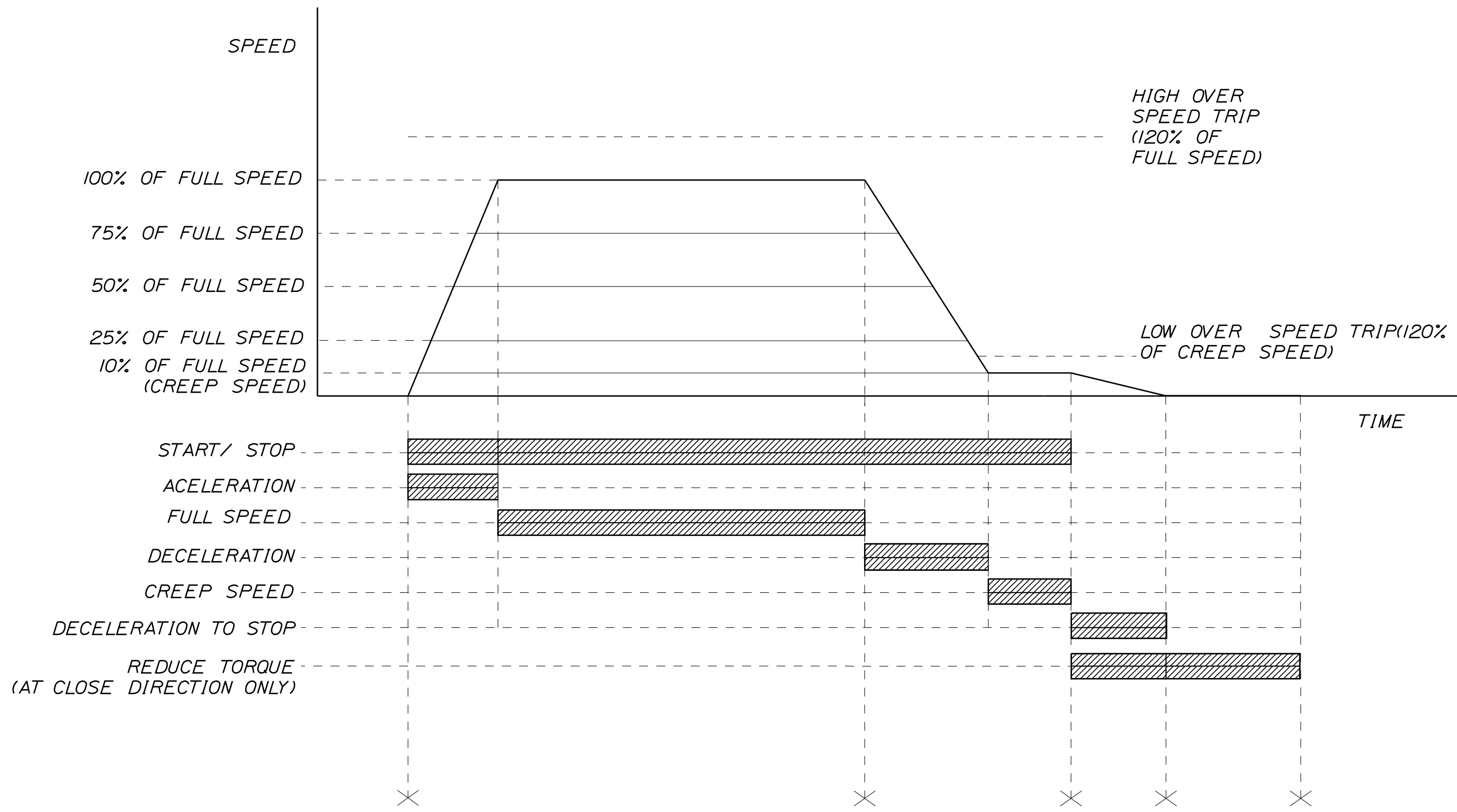
STATE OF MAINE DEPARTMENT OF TRANSPORTATION STP-2260(700)		BRIDGE NO. 2039 WIN 22607.00 BRIDGE PLANS	
		SIGNATURE: <i>K. Wagner</i> P.E. NUMBER: 15223 DATE: 10-02-2018	
PROJ. MANAGER	R. TOSOL	BY	DATE
DESIGN DETAILED	J. KOSCI	JRK PK	8-10-2018
CHECKED/REVIEWED	J. KOSCI	K. WAGNER	10-2-2018
DESIGN DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
BARTER'S ISLAND BRIDGE BACK RIVER LINCOLN COUNTY BOOTHBAY			
FIELD DEVICE LOCATION PLAN			
SHEET NUMBER		102	
		OF 132	



Date: 10/12/2018

Username: common

Filename: ... \103_Bridge_Operation_Control_Diagram\Media\Bridges\1030606.dgn

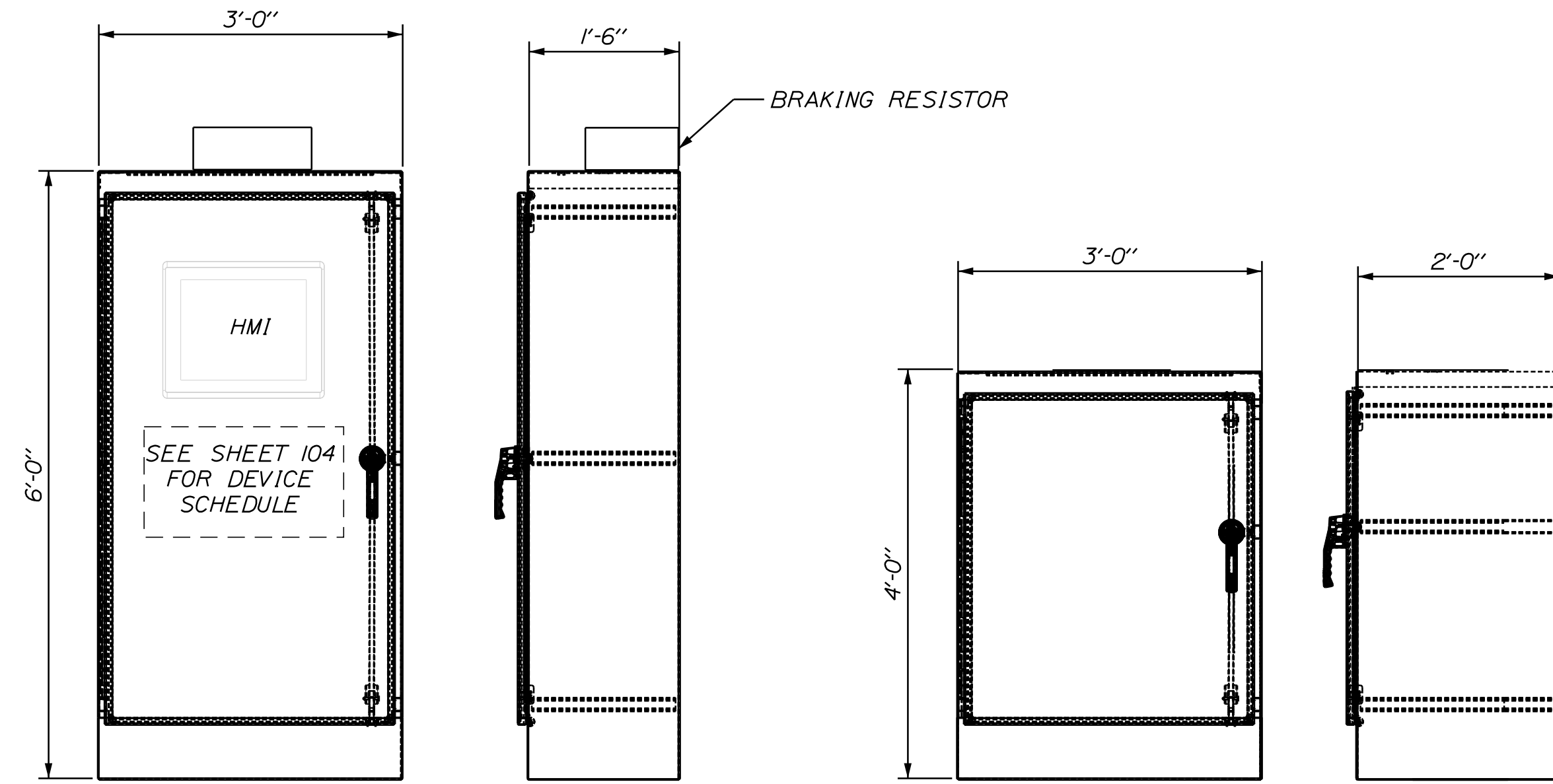


FROM FULLY CLOSED TO FULLY OPEN	SPAN OPEN CONTROL SWITCH	NEAR OPEN LS	FULLY OPENED LS	RAMP SPEED TO STOP	
FROM FULLY OPEN TO FULLY CLOSED	SPAN CLOSE CONTROL SWITCH	NEAR CLOSE LS	FULLY CLOSED LS	RAMP SPEED TO STOP	BRAKE SET

BRIDGE OPERATION CONTROL DIAGRAM
SCALE:NTS

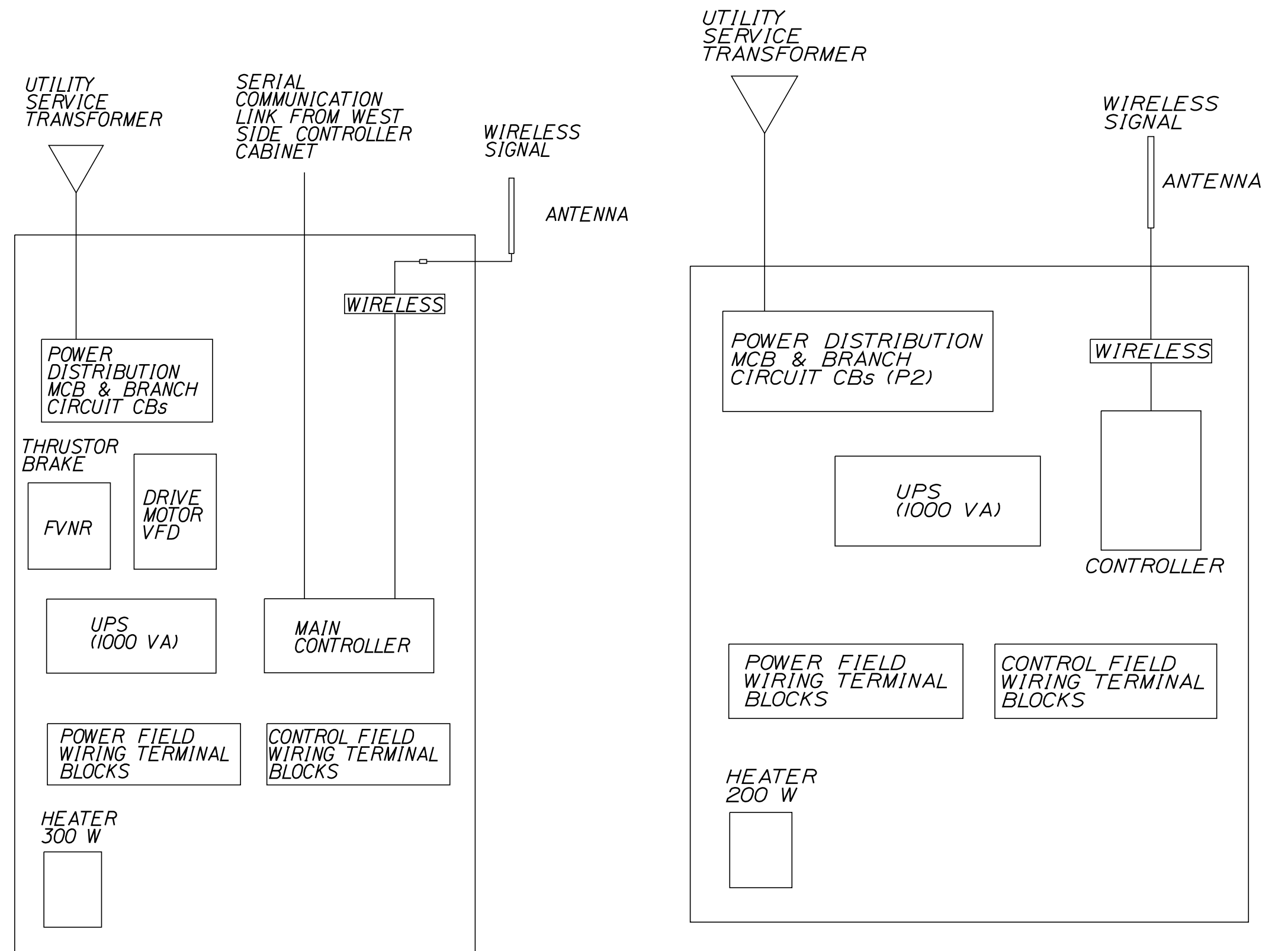
BRIDGE CONTROL SYSTEM GENERAL NOTES:

1. THE CONTROL DRAWINGS ARE PROVIDED TO CONVEY PRINCIPLE EQUIPMENT AND COMPONENTS, CONCEPTUAL LAYOUT OF CONTROL PANEL(S), FUNCTIONAL AND PERFORMANCE REQUIREMENTS OF THE CONTROL SYSTEM. THE BIDDING DESIGN DOCUMENT IS NOT THE INTENT TO PRESENT ALL THE DETAILED DESIGN INFORMATION FOR EACH COMPONENT AND SYSTEM. THE CONTRACTOR SHALL DEVELOP A MORE-SPECIFIC DESIGN BASED ON THE ACTUAL EQUIPMENT BEING SUPPLIED FOR THE PROJECT.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, ENGINEERING, FABRICATION, ASSEMBLY, AND PERFORMANCE OF THE BRIDGE CONTROL SYSTEM AND ALL INTEGRAL COMPONENTS, INCLUDING COMPLIANCE WITH ALL APPLICABLE STANDARDS, CODES, RULES, AND REGULATIONS OF GOVERNING BODIES HAVING JURISDICTION. THE SYSTEM SHALL BE INTEGRATED AS A COMPLETE SYSTEM AND MEET THE FUNCTIONAL AND PERFORMANCE REQUIREMENTS AS INDICATED ON DRAWINGS AND IN THE PROJECT SPECIFICATION.
3. THE BRIDGE CONTROL SYSTEM CONSISTS OF AUTOMATION CONTROL SYSTEM INCLUDING, SOFTWARE AND HARDWARE, MONITORING AND CONTROL LOGIC PROGRAMMING, INPUT/OUTPUT DEVICE, HUMAN-MACHINE-INTERFACE (HMI), COMMUNICATION DEVICE, FIELD INSTRUMENTATIONS, VARIABLE FREQUENCY DRIVE, MACHINERY DRIVE MOTOR(S), BRAKING SYSTEM, TRAFFIC CONTROL INTERFACE EQUIPMENT, WARNING SYSTEM, CIRCUIT WIRING, AND MISCELLANEOUS ELECTRICAL DEVICES INTEGRATED TO FORM A FUNCTIONAL AND OPERATIONAL SYSTEM.
4. THE CONTRACTOR SHALL PROVIDE QUALIFIED SYSTEM INTEGRATOR TO COORDINATE AND PERFORM ELECTRICAL AND CONTROL SYSTEM INTEGRATION. CONTRACTOR SHALL DESIGNATE AN INDIVIDUAL (SUCH AS THE CONTROL SYSTEM SUPPLIER) TO ACT AS THE PROJECT'S CONTROL SYSTEMS INTEGRATOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DETAIL DESIGN DEVELOPMENT, COORDINATION, TESTING AND COMMISSIONING OF THE ENTIRE ELECTRICAL AND CONTROL SYSTEM FOR THE BRIDGE.
5. THE CONTRACTOR SHALL PROVIDE VENDOR SHOP DRAWINGS AND CONTROL SYSTEM INTEGRATION DRAWINGS SHOWING THE PHYSICAL LAYOUT, DIMENSIONS OF EQUIPMENT, CONTROL SCHEMATICS, POINT-TO-POINT ELECTRICAL INTERCONNECTION DIAGRAMS IN SUFFICIENT DETAILS FOR CONSTRUCTION, FACTORY ACCEPTANCE TESTS, FIELD TESTING AND COMMISSIONING, AND FOR OPERATION, MAINTENANCE AND REPAIR WORKS.
6. THE CONTRACTOR SHALL IDENTIFY ANY CONSTRUCTABILITY ISSUES OR CONFLICTS BETWEEN MANUFACTURERS SHOP DRAWINGS AND CONTRACT DOCUMENTS (DRAWINGS AND SPECIFICATION) DURING THE CONTRACTOR SHOP DRAWING REVIEW AND INSTALLATION DRAWING DEVELOPMENT PROCESS. THE CONTRACTOR SHALL ALSO IDENTIFY VARIATIONS BETWEEN CONTRACT DOCUMENTS AND PRODUCT OR SYSTEM LIMITATIONS OR FUNCTIONALITY THAT MAY BE DETRIMENTAL TO THE SUCCESSFUL PERFORMANCE OR OPERATION OF THE COMPLETED WORK. THE CONTRACTOR SHALL SUBMIT PROPOSED RESOLUTIONS FOR REVIEW AND APPROVAL BY THE ENGINEER.
7. EQUIPMENT INDICATED BY MANUFACTURER, BRAND NAME AND/OR BY MODEL NUMBER OR OTHER SPECIFIC IDENTIFICATION ARE INTENDED TO FORM THE BASIS OF THE DESIGN. EQUIPMENT BY OTHER MANUFACTURER ARE ACCEPTABLE PROVIDED THAT IT MEETS THE CONTRACT REQUIREMENTS AND THAT IT IS EQUAL IN FUNCTION, PERFORMANCE, QUALITY AND OTHER SALIENT FEATURES TO THAT IN THE ACCEPTED CONTRACT PROPOSAL. THE CONTRACT MUST PROVIDE DOCUMENT SHOWING CLEAR EVIDENCE BY COMPARISON OF EQUAL IN FUNCTION, PERFORMANCE, QUALITY AND SALIENT FEATURES OF SUBSTITUTIONS OF EQUAL NAMED PRODUCTS BY OTHER MANUFACTURERS.



VFD/PLC CABINET

EAST SIDE REMOTE I/O CABINET



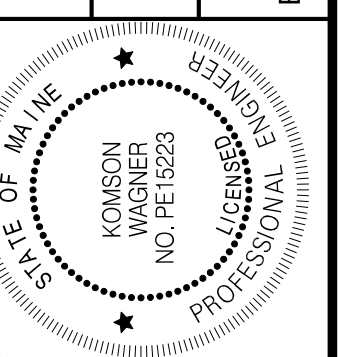
36" X 72" X 18" (WXHXD), NEMA 4X, STAINLESS STEEL ENCLOSURE

36" X 48" X 24" (WXHXD), NEMA 4X, STAINLESS STEEL ENCLOSURE

VFD/PLC CABINET
SCALE:NTS

EAST SIDE REMOTE I/O CABINET

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)
BRIDGE NO. 2039
WIN
22607.00
BRIDGE PLANS



PROF. ENGINEER
KONSIN
NO. PE16223
SIGNATURE: [Signature]
15223
P.E. NUMBER
10-02-2018
DATE

PROJ. MANAGER	R. TOSOLT	DATE	8-10-2018
DESIGN-DETAILED	J. KOSCIJ	BY	JRK/PK
CHECKED-REVIEWED	J. KOSCIJ	DATE	10-2-2018
DESIGN-DETAILED			
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTER'S ISLAND BRIDGE
BACK RIVER
LINCOLN COUNTY
BOOTHBAY
BRIDGE OPERATION CONTROL
DIAGRAM & VFD/PLC CABINET

SHEET NUMBER

103

OF 132



Date:10/2/2018

Username: common

Division: BRIDGE

Filename: ... \Electrical\104_Hmi_Screens.dgn

This HMI screen displays various operational controls and status indicators. At the top left, there are 'TRAFFIC LIGHT SIGNAL INDICATIONS' with three indicator lights and two large buttons labeled 'GOTO RED' and 'GOTO GREEN'. Below these are 'SOUND HORN' and 'ALL GATES CLOSED'/'ALL GATES OPENED' buttons. The center features 'SPAN ANGULAR POSITION INDICATIONS' with a digital display showing '-0.17°' and two status buttons: 'BRIDGE SPAN FULLY OPENED' and 'BRIDGE SPAN FULLY CLOSED'. A large red 'Stop' button is labeled 'STOP COMMAND'. To the right, there are 'SYSTEM FAULT(S)', 'CONTROL SYSTEM RESET', and a large yellow 'EMERGENCY STOP' button. At the bottom right, there are 'COMMON ALARMS' and 'ALARMS & INDICATIONS SCREEN' buttons. The bottom left has 'CLOSE TRAFFIC GATE' and 'OPEN TRAFFIC GATE' buttons, and the bottom center has 'OPEN BRIDGE COMMAND' and 'CLOSE BRIDGE COMMAND' buttons.

HMI OPERATION SCREEN
SCALE:NTS

This HMI screen is dedicated to 'INDICATIONS AND ALARMS'. It features a 'VARIABLE FREQUENCY DRIVE' section with 'FAULTS' and 'RUNNING' indicators. Below this, there are pairs of indicator lights for 'NW END SEAT DRIVEN', 'SW END SEAT RETRACTED', 'NW END JACK RAISED', and 'NW END JACK LOWERED'. Similar pairs are shown for 'SW END JACK RAISED' and 'SW END JACK LOWERED'. There are also indicators for 'DISC BRAKE RELEASED/SET' and 'THRUSTOR BRAKE RELEASED/SET'.

HMI ALARMS AND INDICATION SCREEN
SCALE:NTS

This HMI screen provides manual control for various bridge components. It is organized into a grid of sections: 'DISC BRAKE', 'NW TRAFFIC GATE', 'NW END JACK', 'NW END SEAT', 'THRUSTOR BRAKE', 'SW TRAFFIC GATE', 'SW END JACK', and 'SW END SEAT'. Each section contains two buttons (e.g., 'RELEASE BRAKE' and 'SET BRAKE') and two indicator lights. At the bottom left, there is a blue square button labeled 'ENABLE/DISABLE MANUAL CONTROL BUTTON(S)'.

HMI MANUAL CONTROL SCREEN
SCALE:NTS

This diagram shows the layout of operators for the VFD/PLC cabinet door. It includes a vertical 'OFF/ON' selector, four 'G' buttons for 'FULLY CLOSED', 'NEARLY CLOSED', 'NEARLY OPEN', and 'FULLY OPEN', a 'RESET' button, and a 'NAV LIGHTS' indicator. Below these are 'R', 'A', and 'G' buttons, 'GO TO RED' and 'GO TO GREEN' buttons, 'HORN' and 'STOP' buttons, and 'CLOSE GATE', 'RAISE GATE', 'OPEN BRIDGE', and 'CLOSE BRIDGE' buttons.

VFD/PLC CABINET DOOR OPERATORS
SCALE:NTS

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)
BRIDGE NO. 2039
WIN 22607.00
BRIDGE PLANS

PROJ. MANAGER: R. TOSOL
DESIGN-DETAILED: J. KOSCI
CHECKED-REVIEWED: J. KOSCI
DESIGN-DETAILED: J. KOSCI
REVISIONS: 1
REVISIONS: 2
REVISIONS: 3
REVISIONS: 4
FIELD CHANGES

DATE: 8-10-2018
BY: JRP/PK
K. WAGNER
SIGNATURE: [Signature]
P.E. NUMBER: 15223
DATE: 10-02-2018

BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY
HMI SCREENS

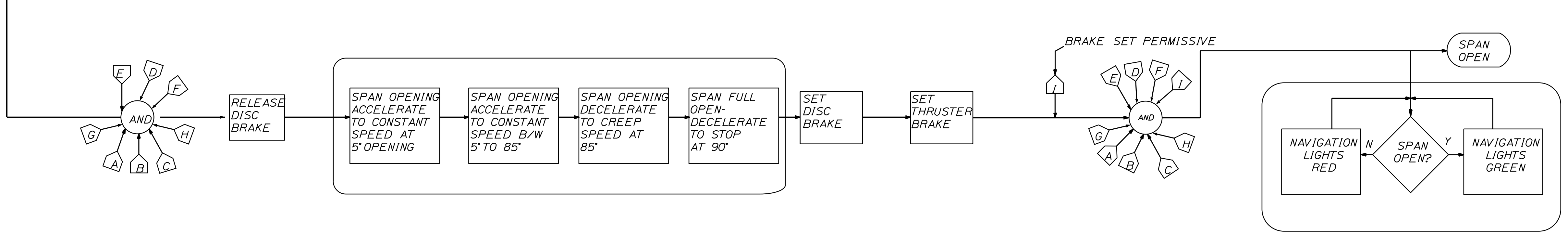
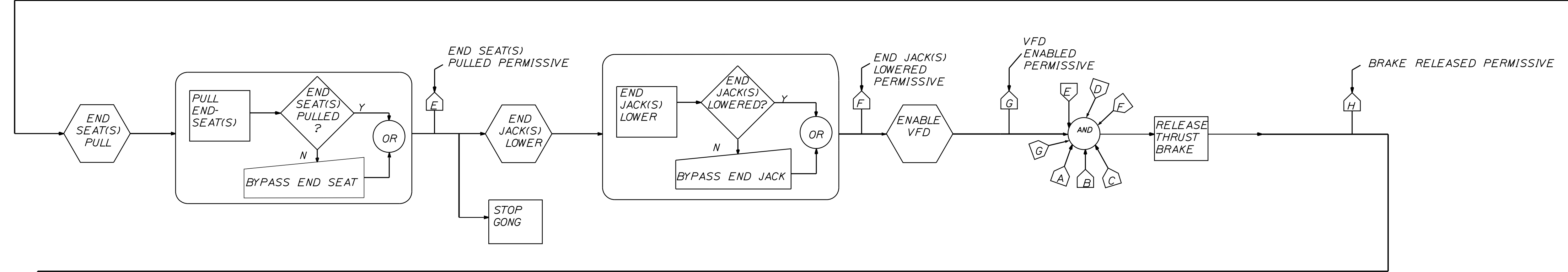
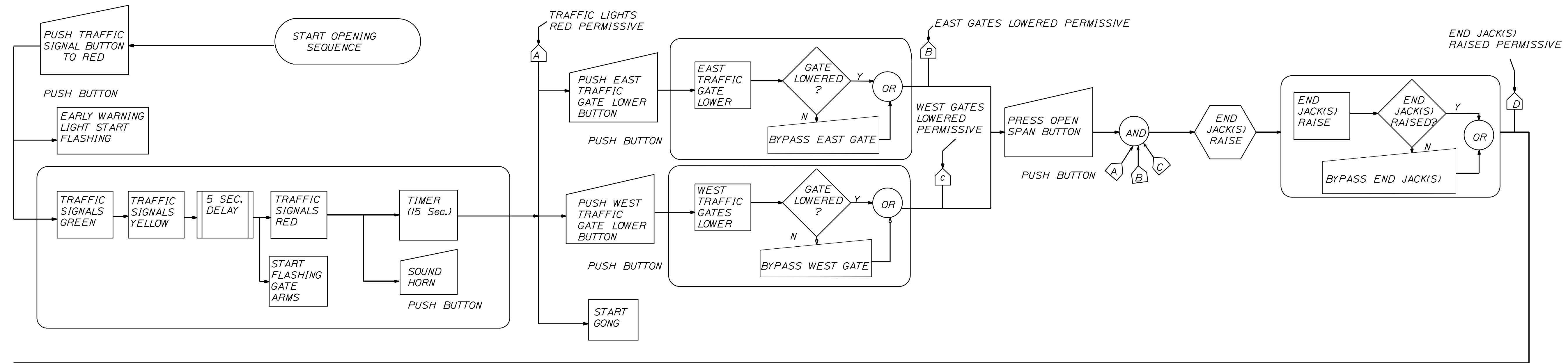
SHEET NUMBER
104
OF 132

ENGINEER OF RECORD:
SOB
ENGINEERING
800 HYDE PARK, DOYLESTOWN, PA 19902, USA
TEL: (215) 340-5830 www.sobengineering.net

Date: 10/2/2018

Username: common

Filename: ... \105_Bridge_Operation_Sequence.dwg: BRIDGE



BRIDGE CONTROL SYSTEM SEQUENCE OF OPERATION - OPENING

FLOWCHART LEGEND

	CONTINUE A PROCESS START, STOP		ENABLE A PROCESS DEVICE OR ROUTINE, ITERATION
	DECISION		ACTION OR PROCESS
	MESSAGE		LOGICAL OR's
	TIMER, DELAY		LOGICAL AND's
	INPUT, SWITCH		CONNECTOR LINES DATA FLOW
			INSERT FLAG

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)

BRIDGE NO. 2039
WIN 22607.00
BRIDGE PLANS

PROJ. MANAGER: [Signature]
DESIGNED: J. KOSCIJ
CHECKED: J. KOSCIJ
DESIGNED: J. KOSCIJ
DESIGNED: J. KOSCIJ
REVISIONS: 1
REVISIONS: 2
REVISIONS: 3
REVISIONS: 4
FIELD CHANGES

DATE: 8-10-2018
BY: JRK, PK
K. WAGNER
SIGNATURE: [Signature]
P.E. NUMBER: 15223
DATE: 10-02-2018

BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY
BRIDGE OPERATION OPENING SEQUENCE

SHEET NUMBER
105
OF 132

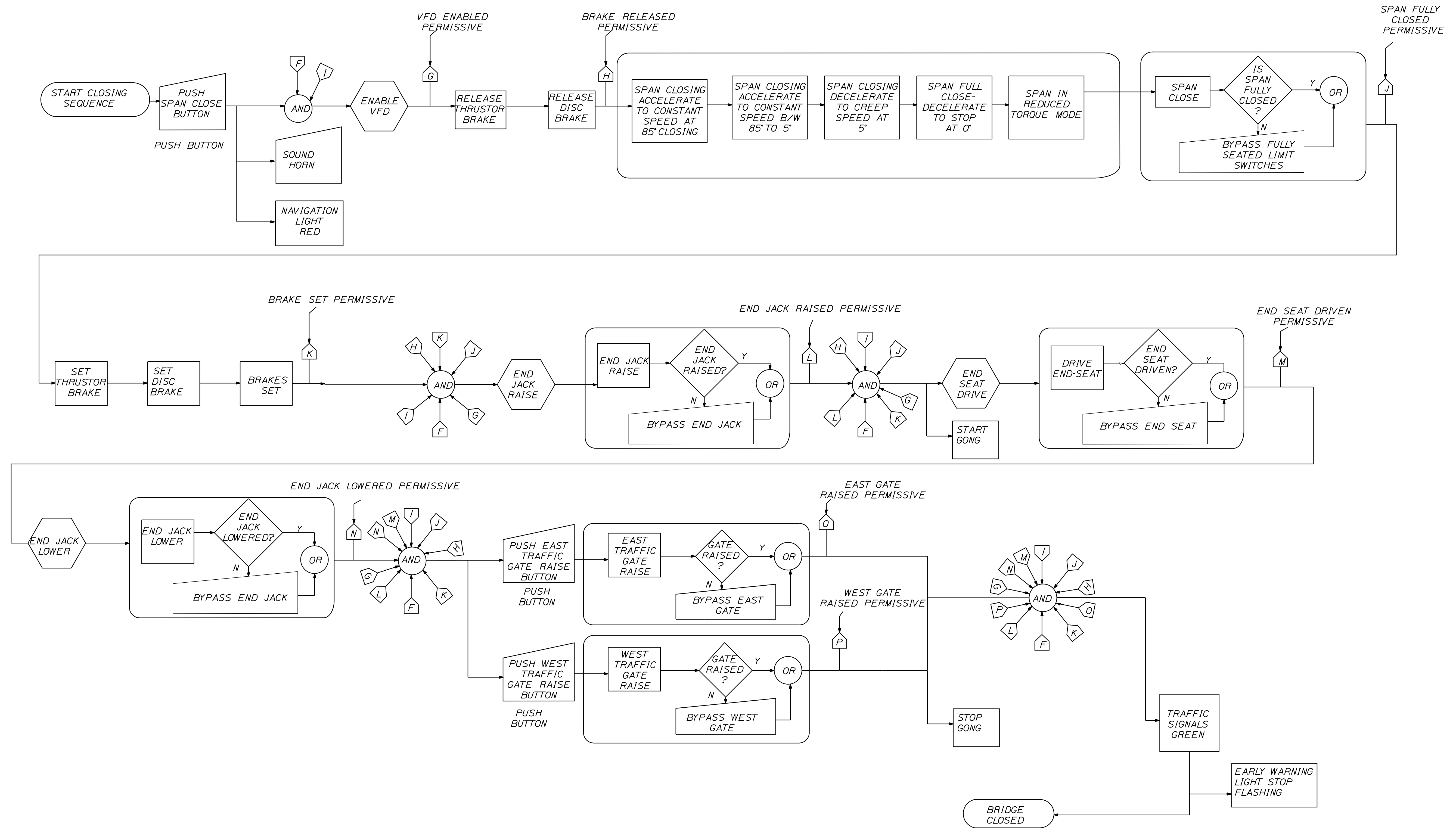
ENGINEER OF RECORD:

800 HYDE PARK, DOYLESTOWN, PA 19902, USA
TEL: (215) 340-5830 www.sobengineering.net

Date: 10/12/2018

Username: common

Filename: ... \106_Bridge_Operation_Closing_Sequence.dwg

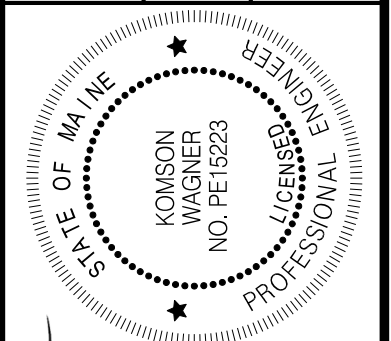


BRIDGE CONTROL SYSTEM SEQUENCE OF OPERATION - CLOSING

FLOWCHART LEGEND

	CONTINUE A PROCESS START, STOP		ENABLE A PROCESS DEVICE OR ROUTINE, ITERATION
	DECISION		ACTION OR PROCESS
	MESSAGE		LOGICAL OR's
	TIMER, DELAY		LOGICAL AND's
	INPUT, SWITCH		CONNECTOR LINES DATA FLOW
			INSERT FLAG

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)
BRIDGE NO. 2039
WIN
22607.00
BRIDGE PLANS

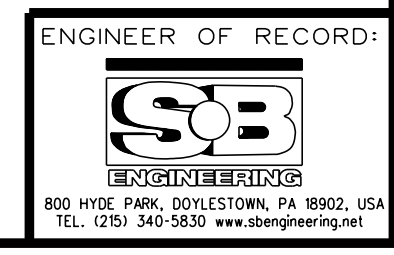


PROJ. MANAGER
DESIGN-DETAILED
CHECKED-REVIEWED
DESIGNS-DETAILED
REVISIONS 1
REVISIONS 2
REVISIONS 3
REVISIONS 4
FIELD CHANGES

DATE	8-10-2018	SIGNATURE	15223
BY	JRK, PK	P.E. NUMBER	10-02-2018
DATE	10-2-2018	DATE	

BARTER'S ISLAND BRIDGE
BACK RIVER
LINCOLN COUNTY
BOOTHBAY
BRIDGE OPERATION CLOSING
SEQUENCE

SHEET NUMBER
106
OF 132

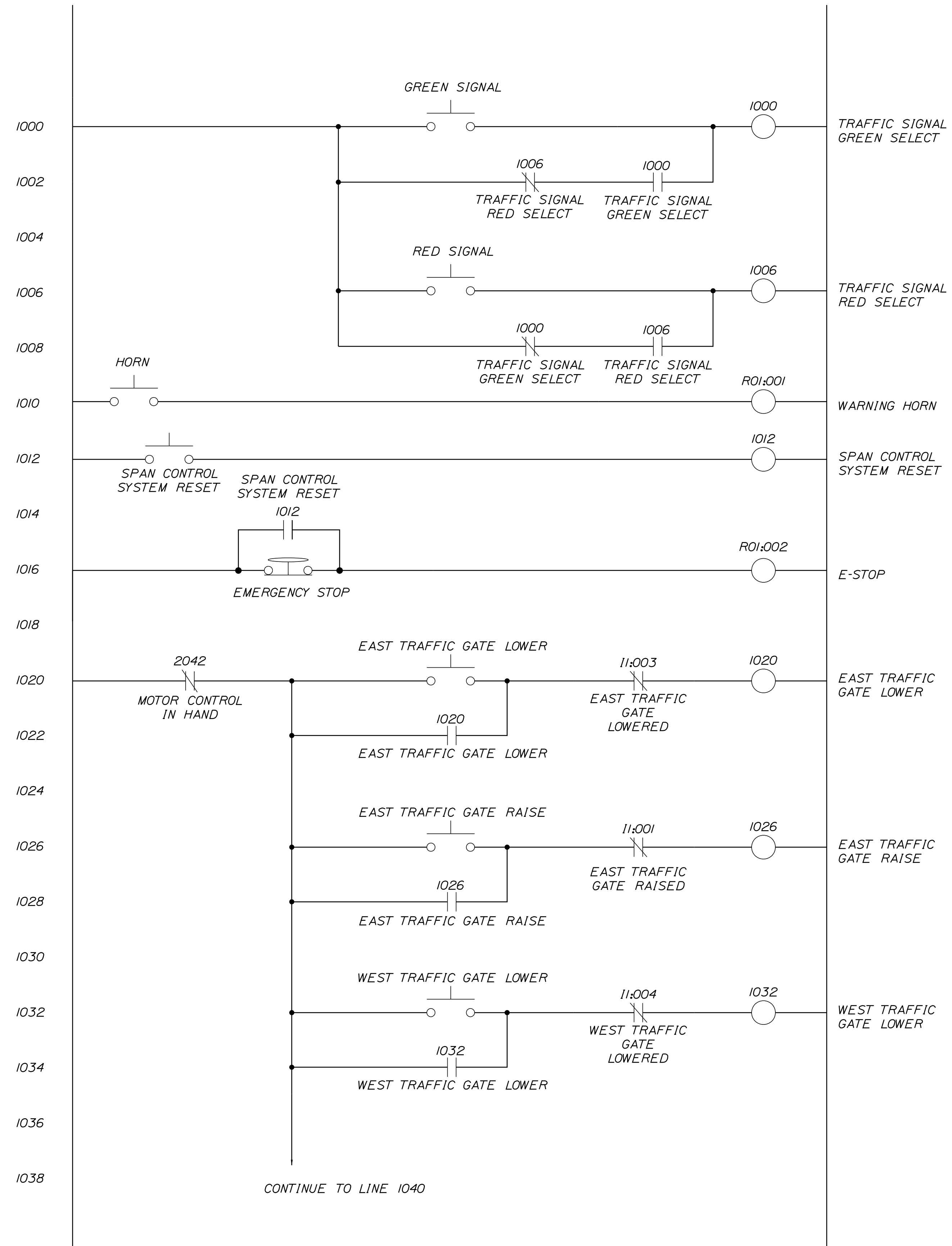


Date: 10/12/2018

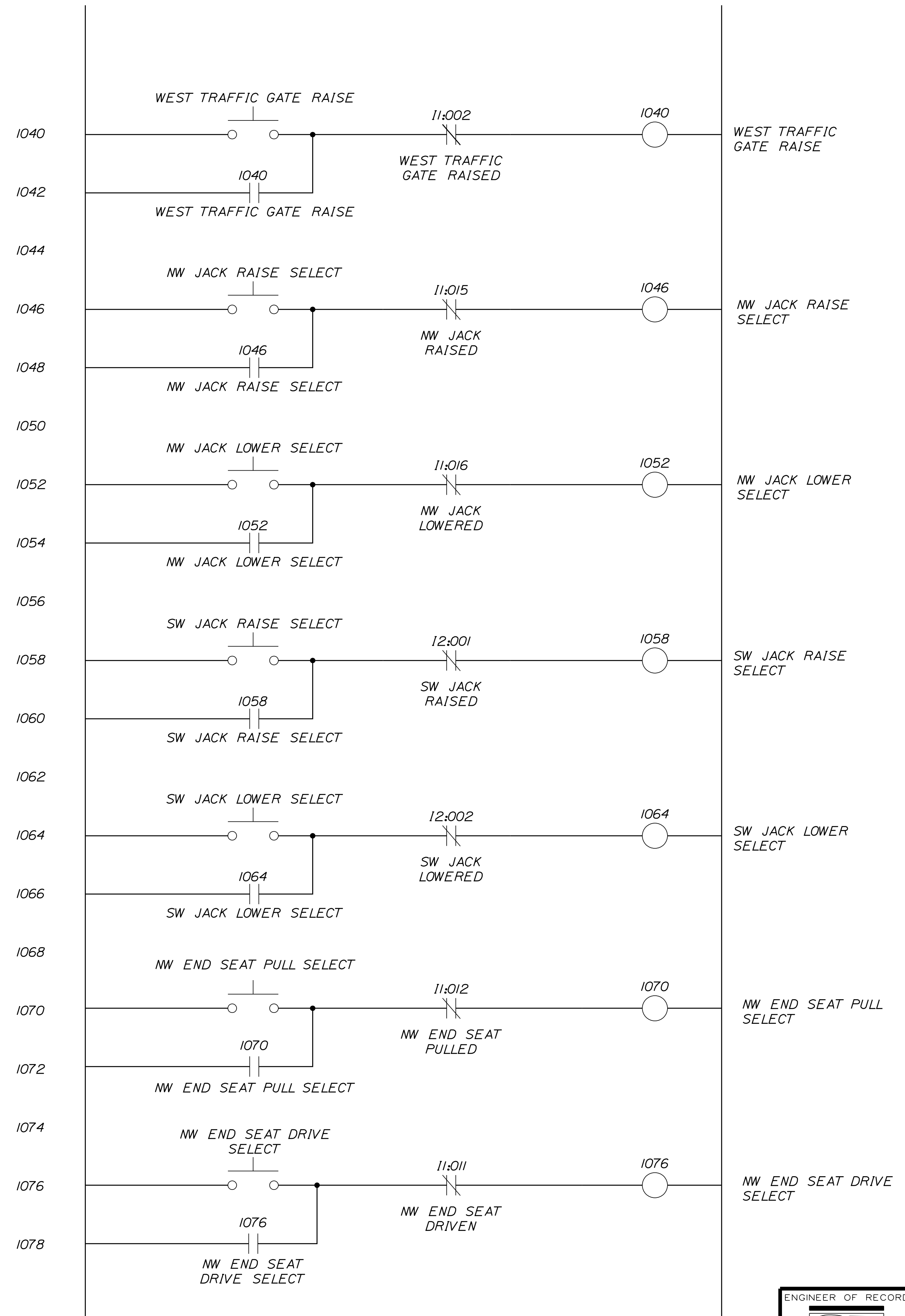
Username: common

Filename: ... \107_Control_Schematic_Diagram_1_of_7.dwg: BRIDGE

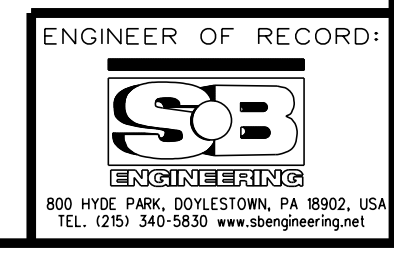
SPAN OPERATION



SPAN OPERATION



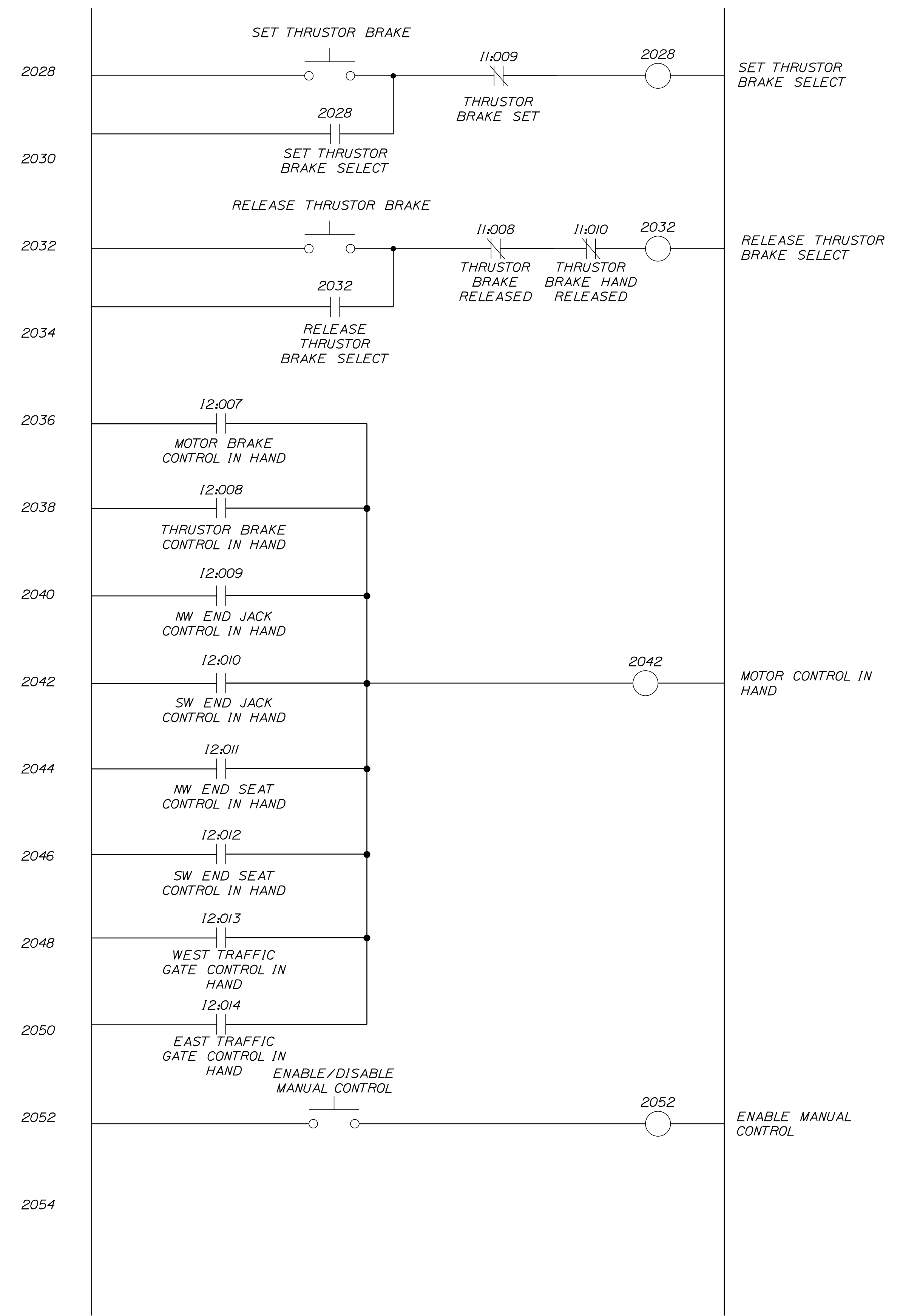
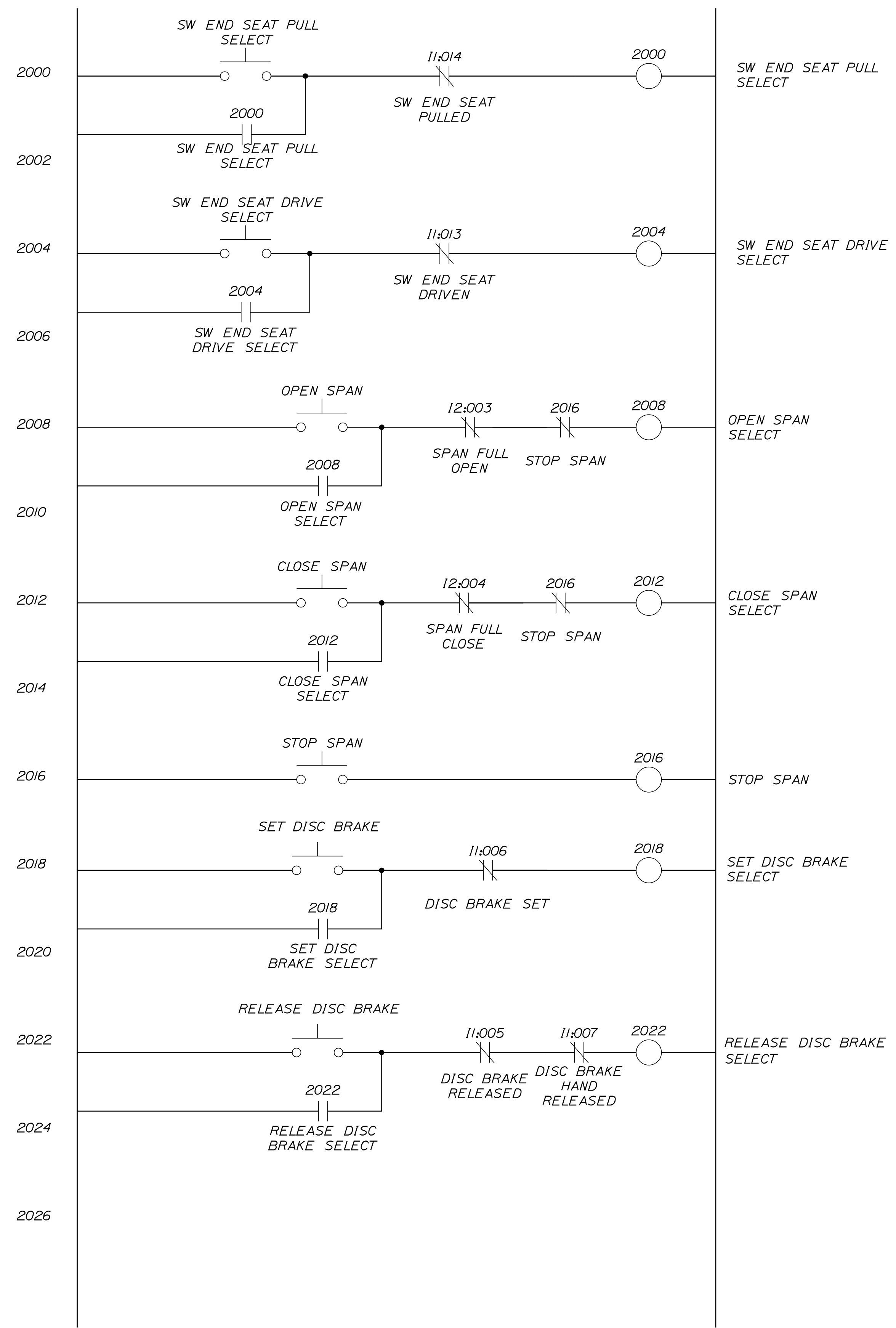
STATE OF MAINE DEPARTMENT OF TRANSPORTATION		STP-2260(700)		BRIDGE NO. 2039		BRIDGE PLANS	
		SIGNATURE		P.E. NUMBER		DATE	
		15223		10-02-2018			
PROJ. MANAGER	DESIGN-REVIEWED	CHECKED	DATE	BY	DATE	REVISIONS	FIELD CHANGES
L. KOSCI	L. KOSCI	K. WAGNER	8-10-2018	K. WAGNER	10-2-2018	1	
BARTER'S ISLAND BRIDGE BACK RIVER BOOTHBAY LINCOLN COUNTY FUNCTIONAL CONTROL LOGIC 1 OF 7							
SHEET NUMBER						107	
OF 132							



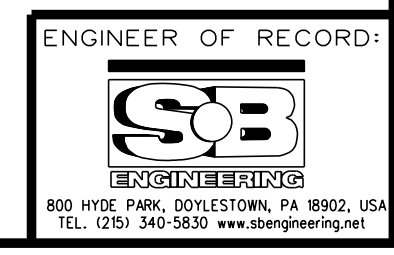
Date: 10/2/2018

Username: common

Filename: ... \108_Control_Schematic_Diagram_2_01\Div\stg: BRIDGE



STATE OF MAINE DEPARTMENT OF TRANSPORTATION		STP-2260(700)		BRIDGE NO. 2039		WIN		22607.00		BRIDGE PLANS	
BARTER'S ISLAND BRIDGE BACK RIVER BOOTHBAY		LINCOLN COUNTY		FUNCTIONAL CONTROL LOGIC		2 OF 7		SHEET NUMBER		108	
PROJ. MANAGER		R. TOSOLT		DESIGN DETAIL		CHECKED		DATE		SIGNATURE	
DESIGN DETAIL		R. TOSOLT		J. KOSCI		J. KOSCI		8-10-2018		K. WAGNER	
DESIGN DETAIL		DESIGN DETAIL		DESIGN DETAIL		DESIGN DETAIL		10-2-2018		15223	
REVISIONS 1		REVISIONS 2		REVISIONS 3		REVISIONS 4		P.E. NUMBER		DATE	
REVISIONS 1		REVISIONS 2		REVISIONS 3		REVISIONS 4		10-02-2018		10-02-2018	
FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES	
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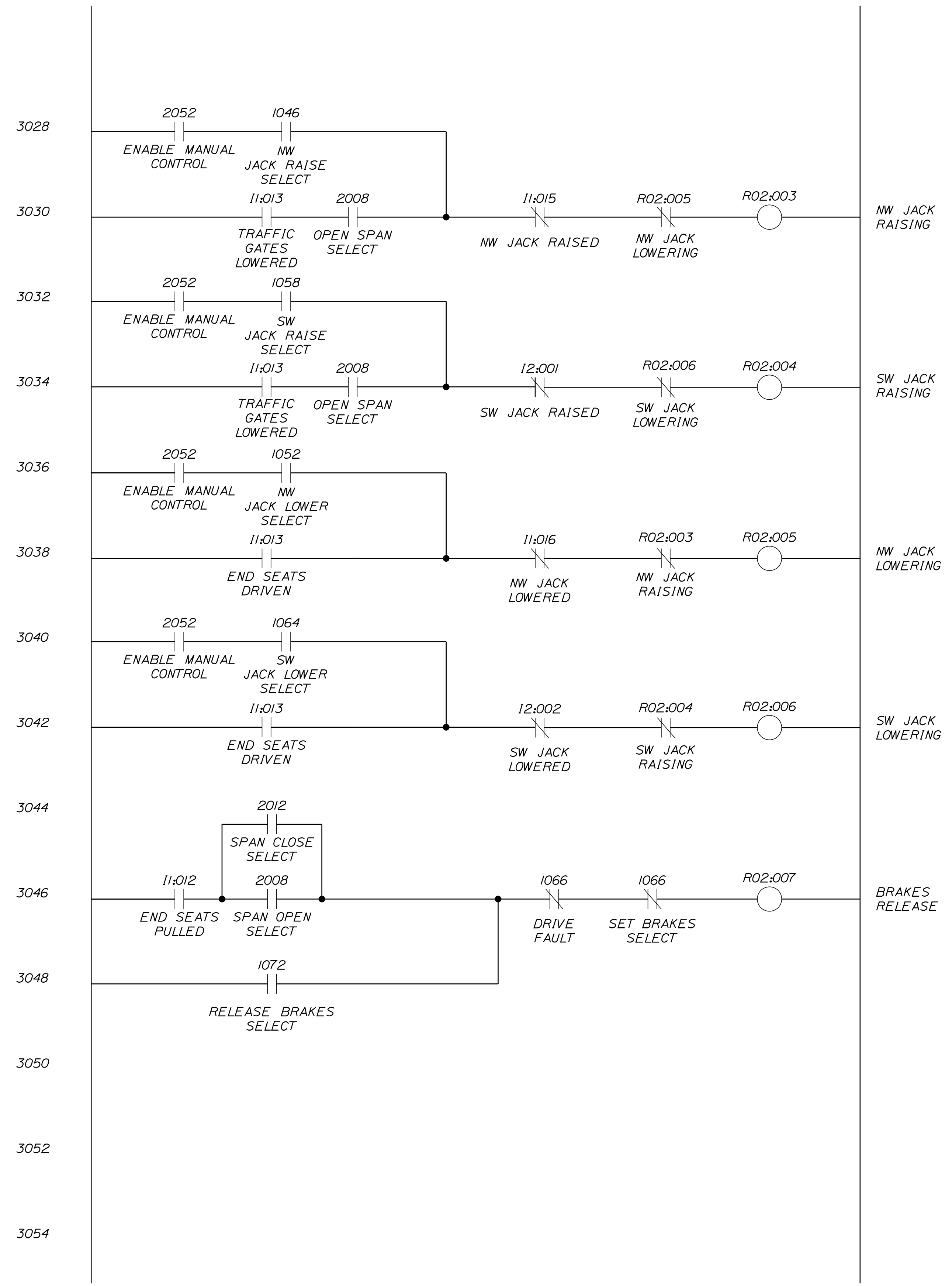
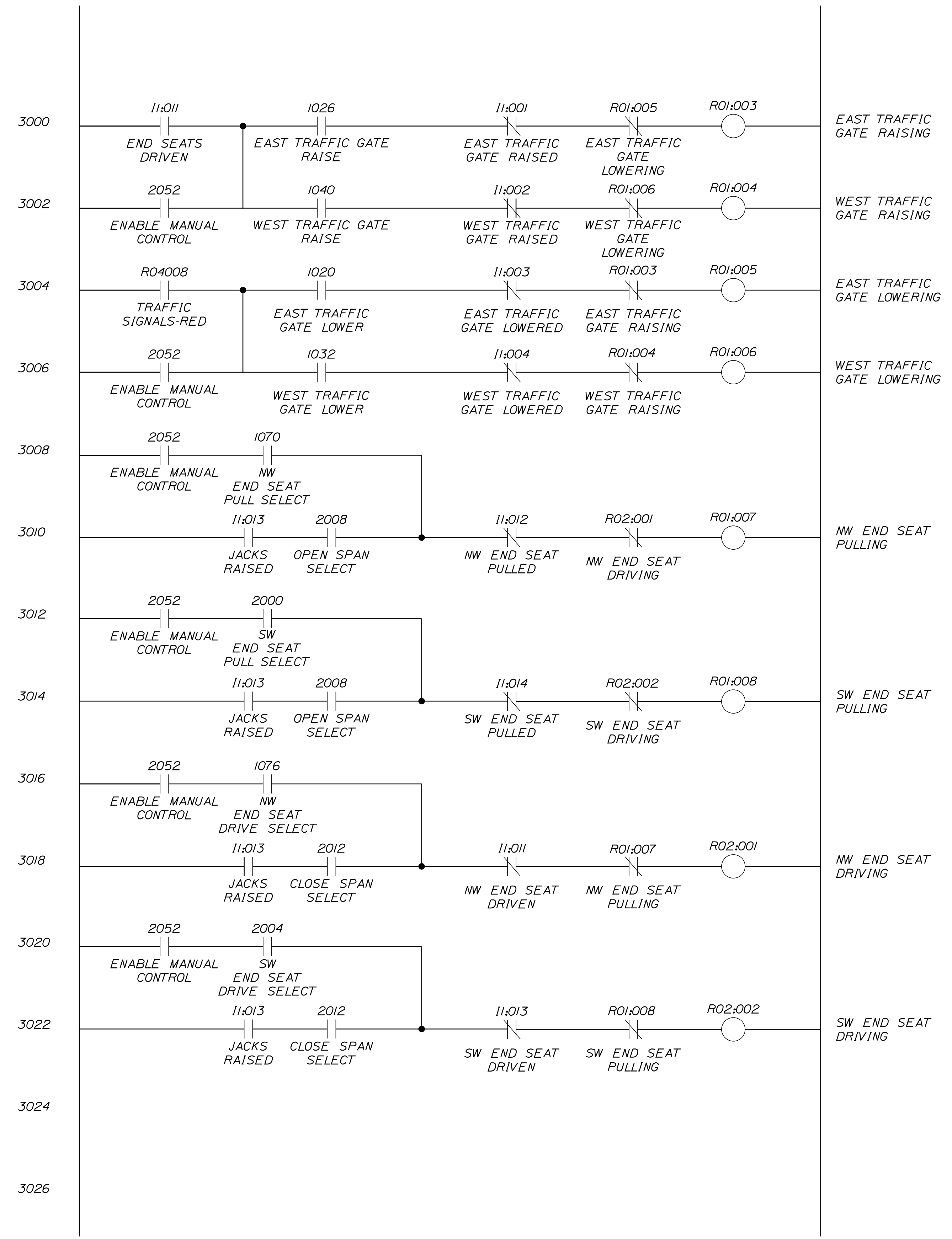


ENGINEER OF RECORD:
108
OF 132

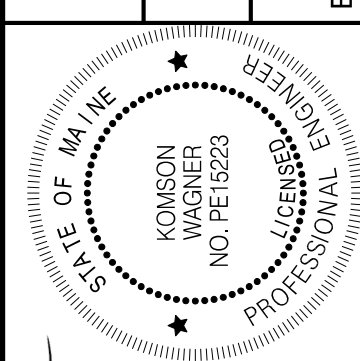
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Username: common

Filename: ... \109_Control_Schematic_Diagram_3_0\FD\109_Bridge

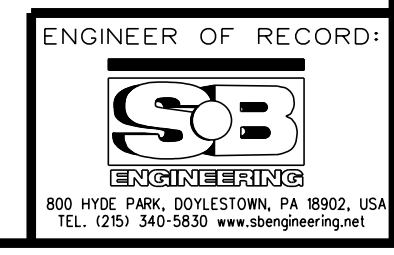


STATE OF MAINE DEPARTMENT OF TRANSPORTATION		STP-2260(700)	BRIDGE NO. 2039	BRIDGE PLANS
BARTER'S ISLAND BRIDGE BACK RIVER BOOTHBAY		LINCOLN COUNTY		
FUNCTIONAL CONTROL LOGIC		3 OF 7		
SHEET NUMBER		109		
OF 132		WIN 22607.00		



K. WAGNER
 PROFESSIONAL ENGINEER
 STATE OF MAINE
 LICENSE NO. PE15223

PROJ. MANAGER	R. TOSOLT	BY	DATE
DESIGN-DETAILED: J. KOSCIJ CHECKED-REVIEWED: J. KOSCIJ DESIGNS DET AILED: J. KOSCIJ	J. KOSCIJ K. WAGNER	8-10-2018 10-2-2018	
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

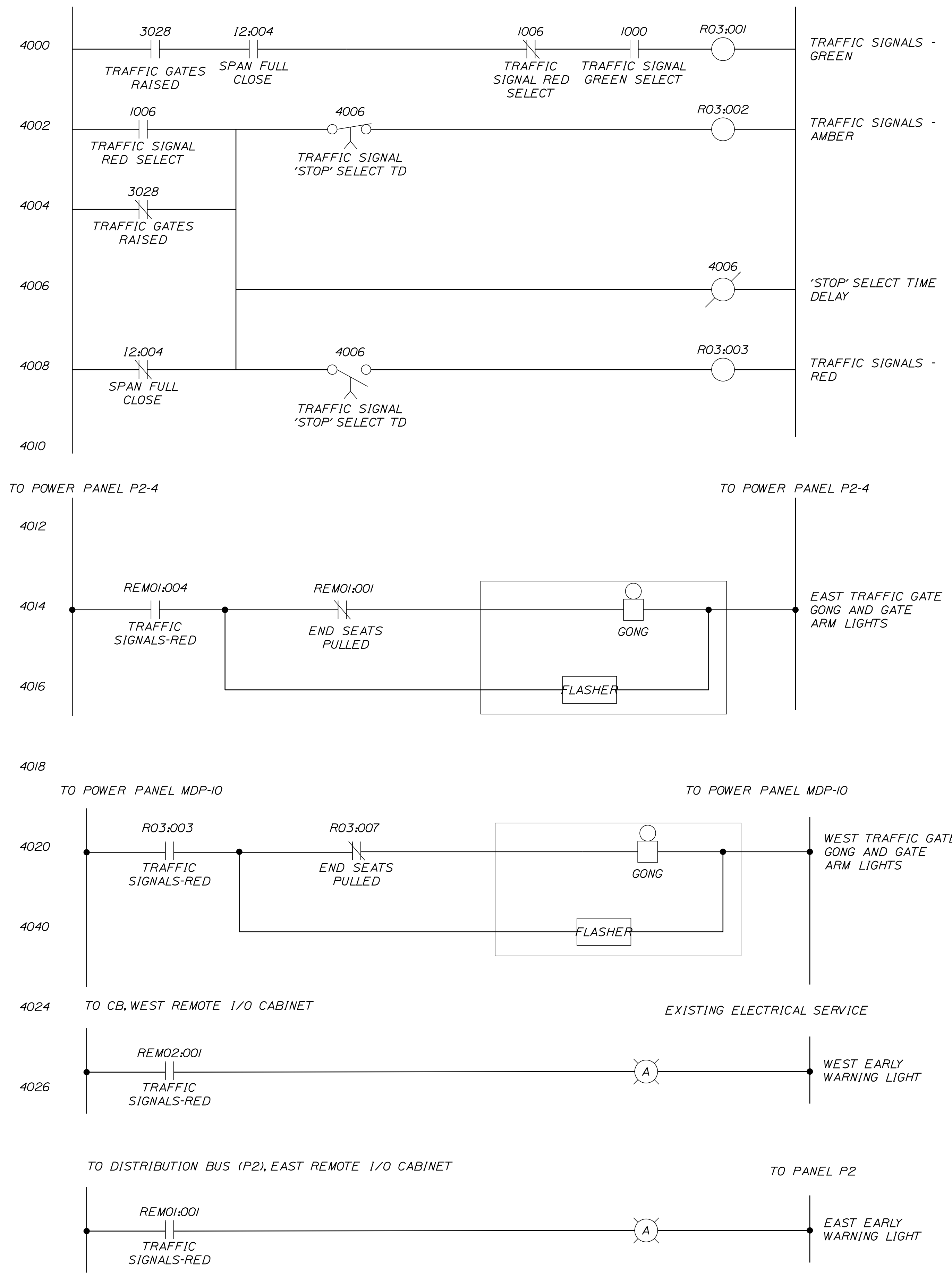


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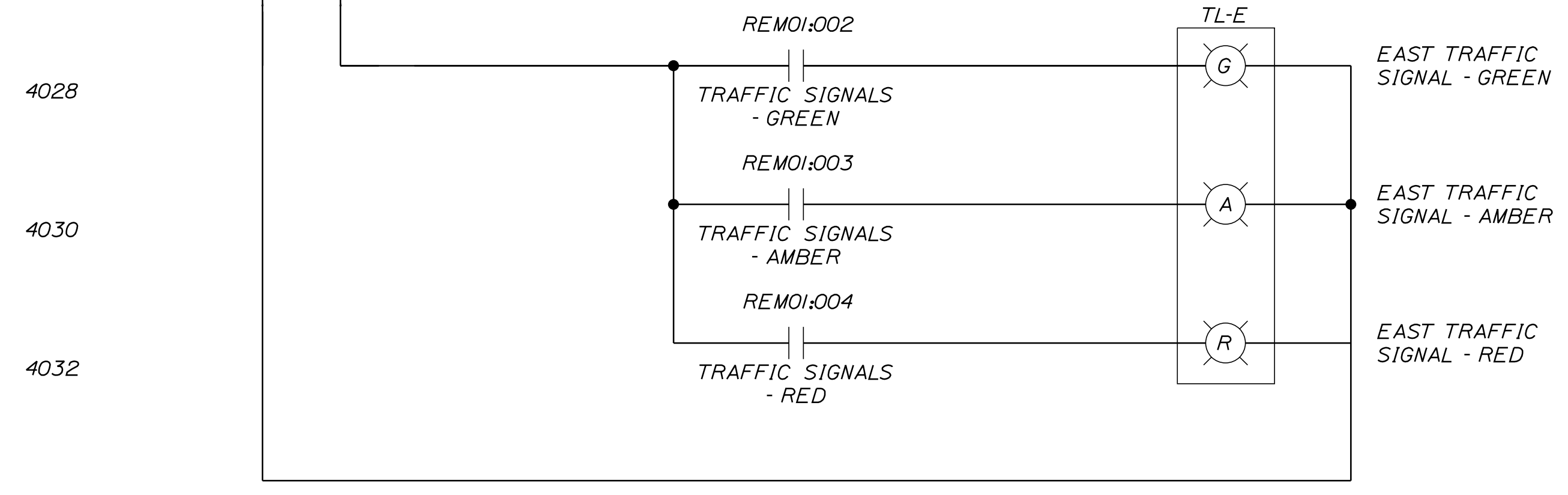
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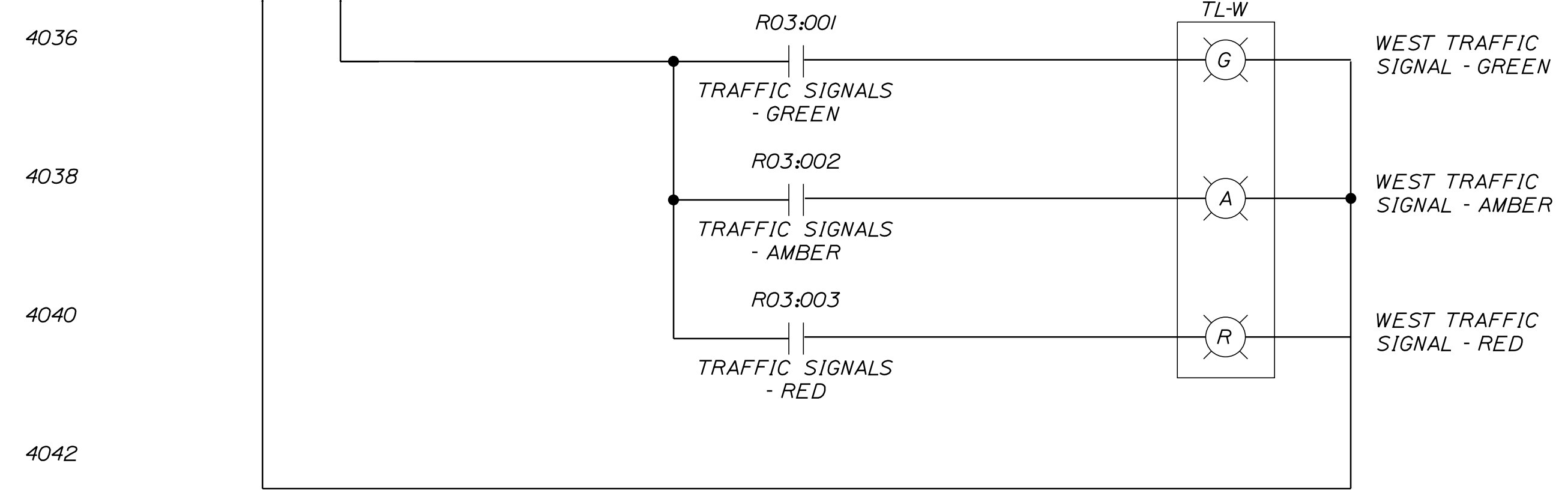
TRAFFIC SIGNAL CONTROL



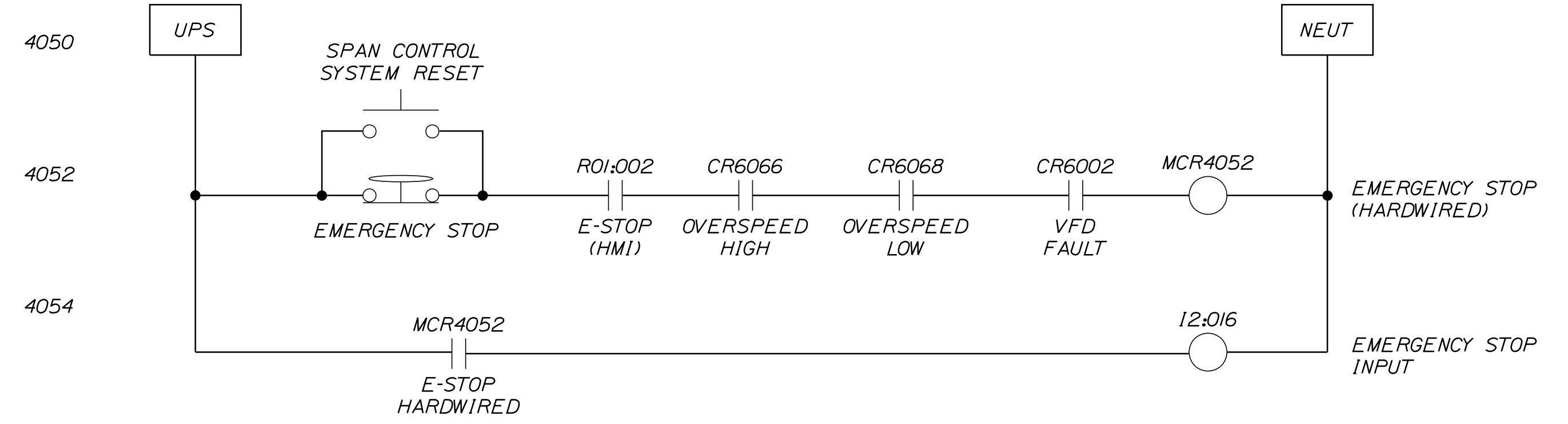
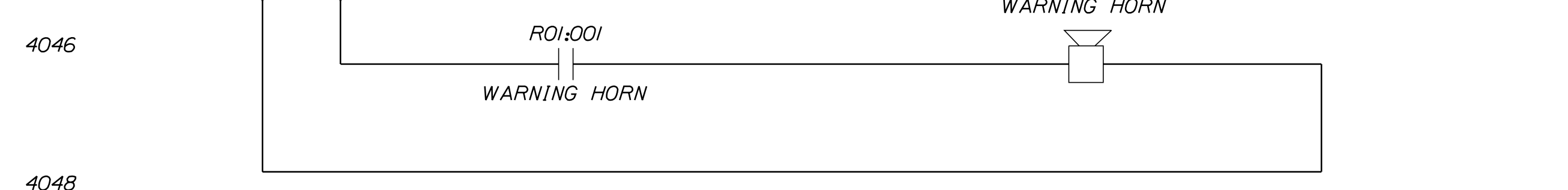
TO DISTRIBUTION BUS (P2) CKT. P2-2



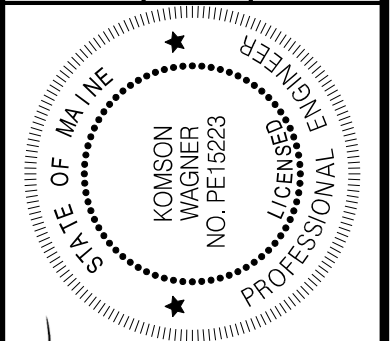
TO POWER PANEL MDP-8, CKT. MDP-8



TO POWER PANEL MDP-22, CKT. MDP-22



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)
BRIDGE NO. 2039
WIN
22607.00
BRIDGE PLANS

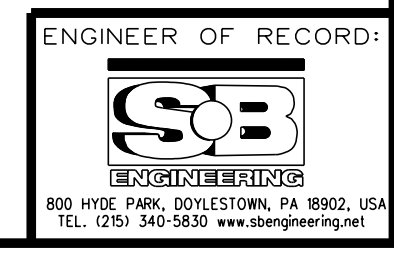


PROJ. MANAGER
DESIGN-DETAILED
CHECKED-REVIEWED
DESIGNS-DETAILED
REVISIONS 1
REVISIONS 2
REVISIONS 3
REVISIONS 4
FIELD CHANGES

DATE	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
8-10-2018	J. KOSCIJ	10-2-2018	<i>K. Wagner</i>	15223	10-02-2018

BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY
LINCOLN COUNTY
FUNCTIONAL CONTROL LOGIC
4 OF 7

SHEET NUMBER
110
OF 132

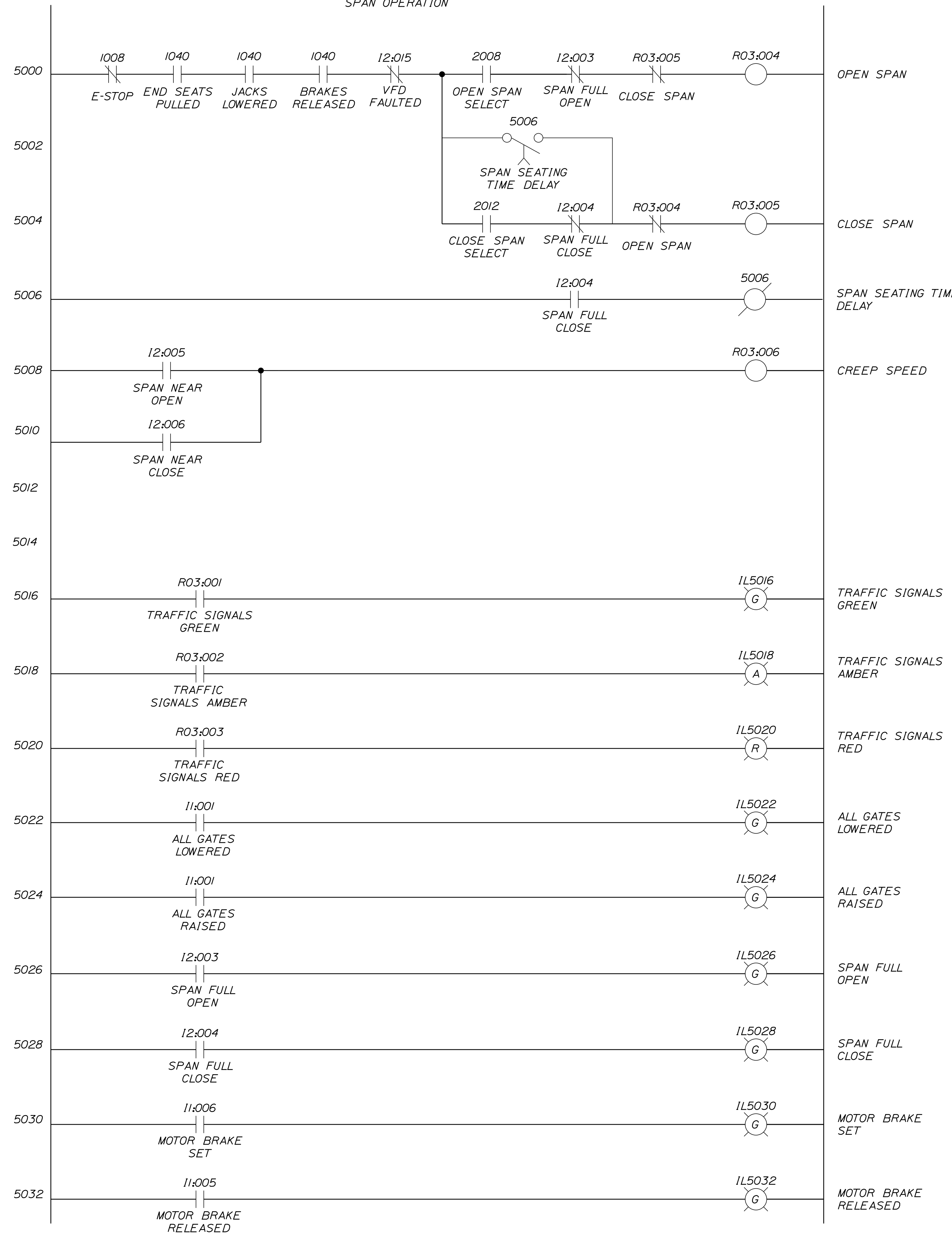


Date: 10/2/2018

Username: common

Filename: ... \111_Control_Schematic_Diagram_5_Of_Division: BRIDGE

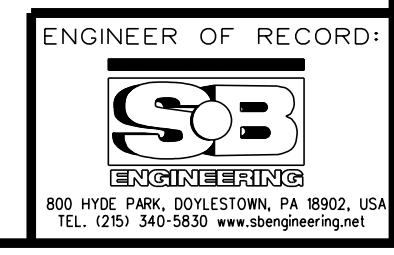
SPAN OPERATION

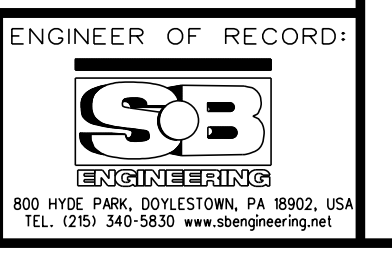
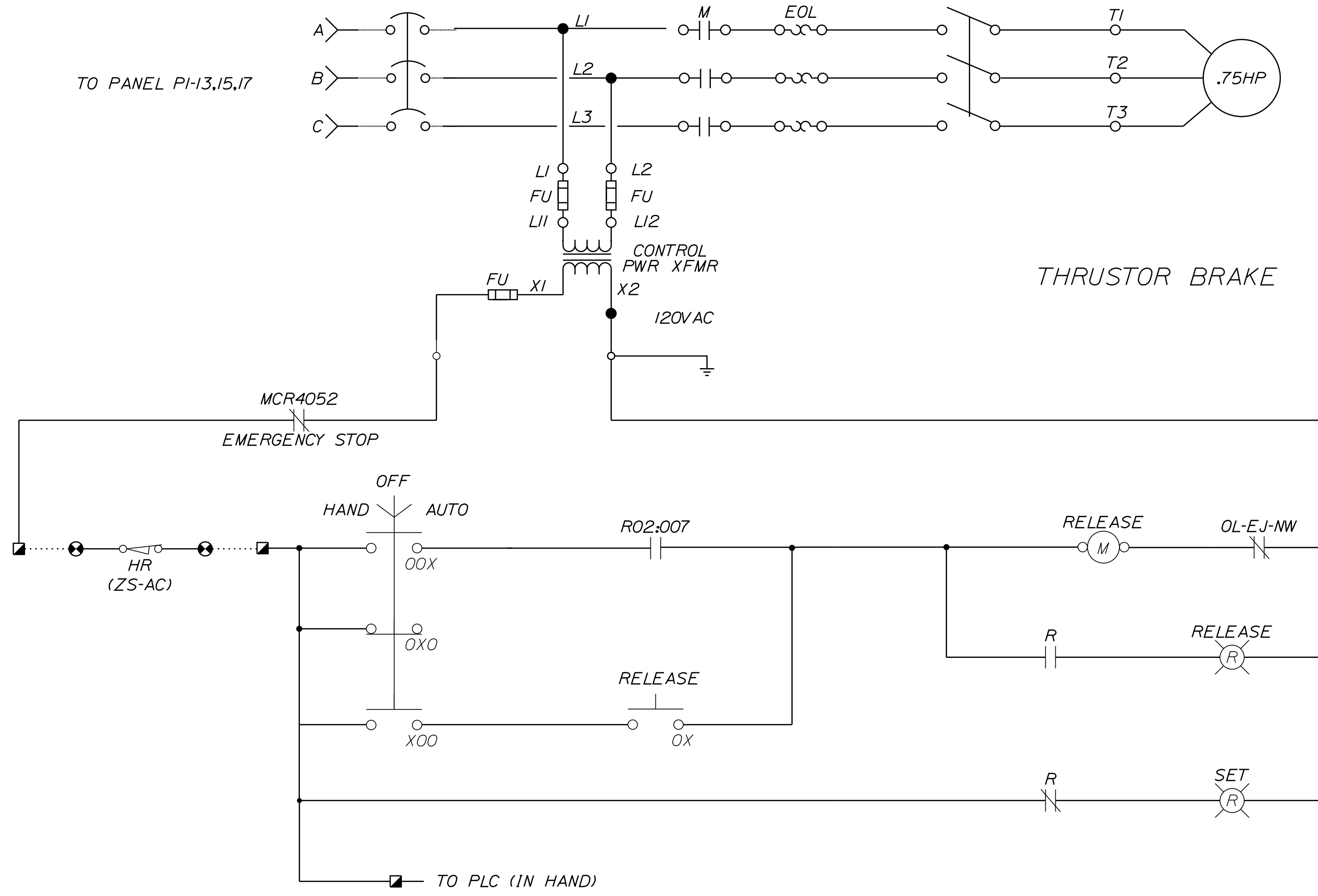


SPAN OPERATION STATUS INDICATION



STATE OF MAINE DEPARTMENT OF TRANSPORTATION		STP-2260(700)		BRIDGE NO. 2039		BRIDGE PLANS	
KONSON NO. PE16223		SIGNATURE 15223		P.E. NUMBER 10-02-2018		DATE	
PROJ. MANAGER	DESIGN-DETAILED	CHECKED-REVIEWED	DESIGN-DETAILED	REVISIONS 1	REVISIONS 2	REVISIONS 3	REVISIONS 4
BY	DATE	BY	DATE	FIELD CHANGES			
R. TOSOLT	8-10-2018	J.R.K. PK	10-2-2018				
J. KOSCIJ		K. WAGNER					
BARTER'S ISLAND BRIDGE BACK RIVER BOOTHBAY LINCOLN COUNTY				FUNCTIONAL CONTROL LOGIC 5 OF 7			
SHEET NUMBER				111			
				OF 132			





SHEET NUMBER

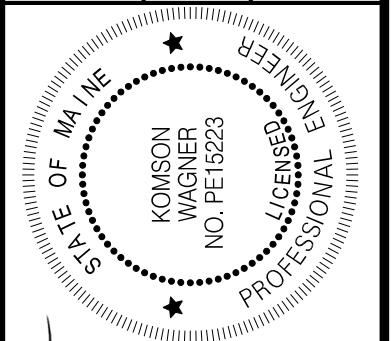
114

OF 132

BARTER'S ISLAND BRIDGE
 BACK RIVER
 BOOTHBAY LINCOLN COUNTY
**BRAKE STARTER CONTROL
 DIAGRAM**

PROJ. MANAGER	R. TOSOLT
DESIGN DETAILED	J. KOSCI
CHECKED-REVIEWED	J. KOSCI
DESIGN DETAILED	
REVISIONS 1	
REVISIONS 2	
REVISIONS 3	
REVISIONS 4	
FIELD CHANGES	

BY: K. WAGNER
 DATE: 10-2-2018
 SIGNATURE: [Signature]
 P.E. NUMBER: 15223
 DATE: 10-02-2018

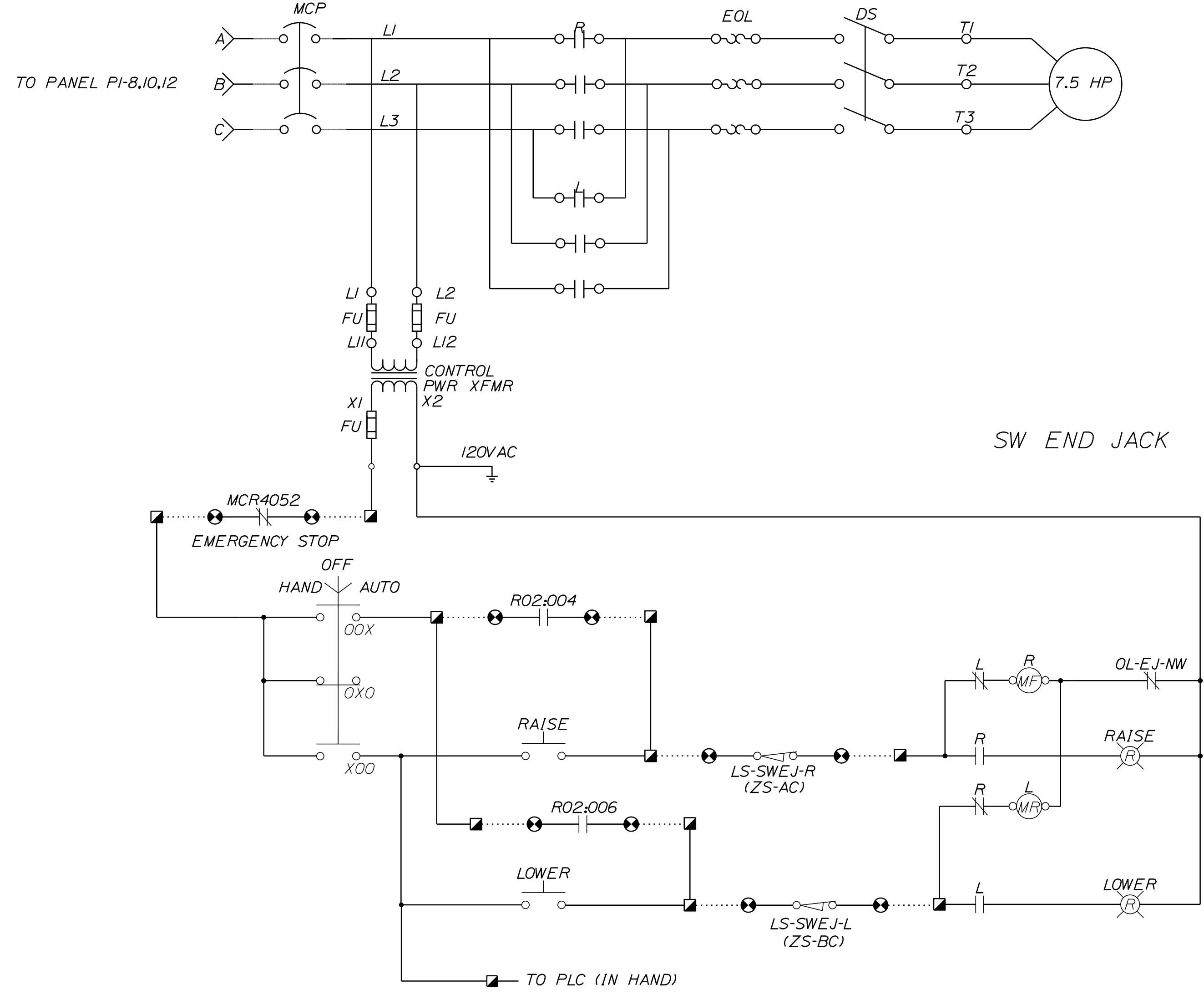
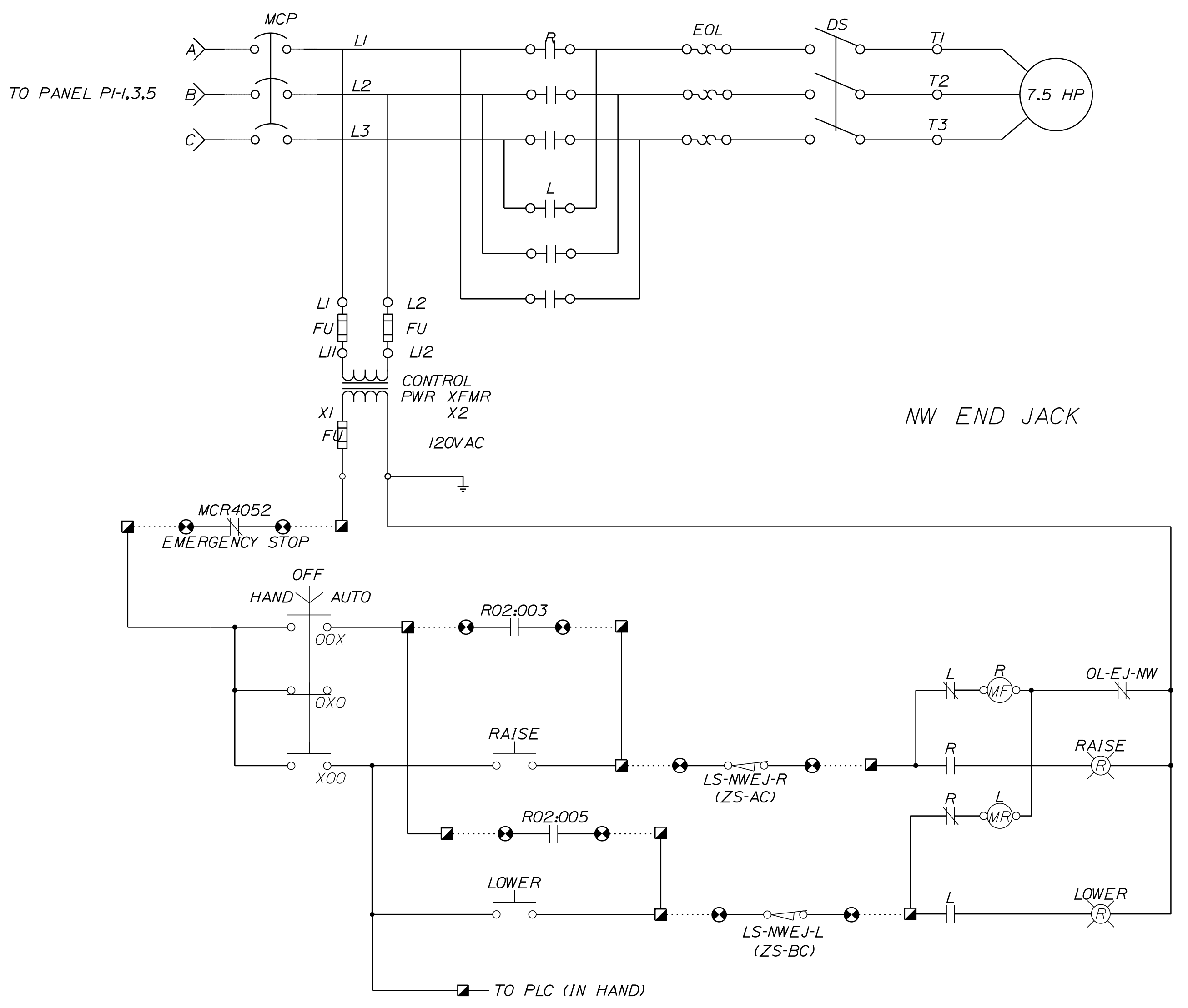


STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
STP-2260(700)
 BRIDGE NO. 2039
 WIN
 22607.00
 BRIDGE PLANS

Date: 10/2/2018

Username: common

Filename: ... \115_Jack_Starter_Diagrams.dg Division: BRIDGE



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)

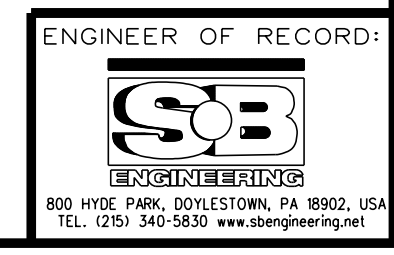
BRIDGE NO. 2039
WIN
22607.00
BRIDGE PLANS

PROJ. MANAGER
DESIGN DETAILER
CHECKED-REVIEWED
DESIGN DETAILER
REVISIONS 1
REVISIONS 2
REVISIONS 3
REVISIONS 4
FIELD CHANGES

BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY
LINCOLN COUNTY
END JACK STARTER CONTROL
DIAGRAMS

SHEET NUMBER

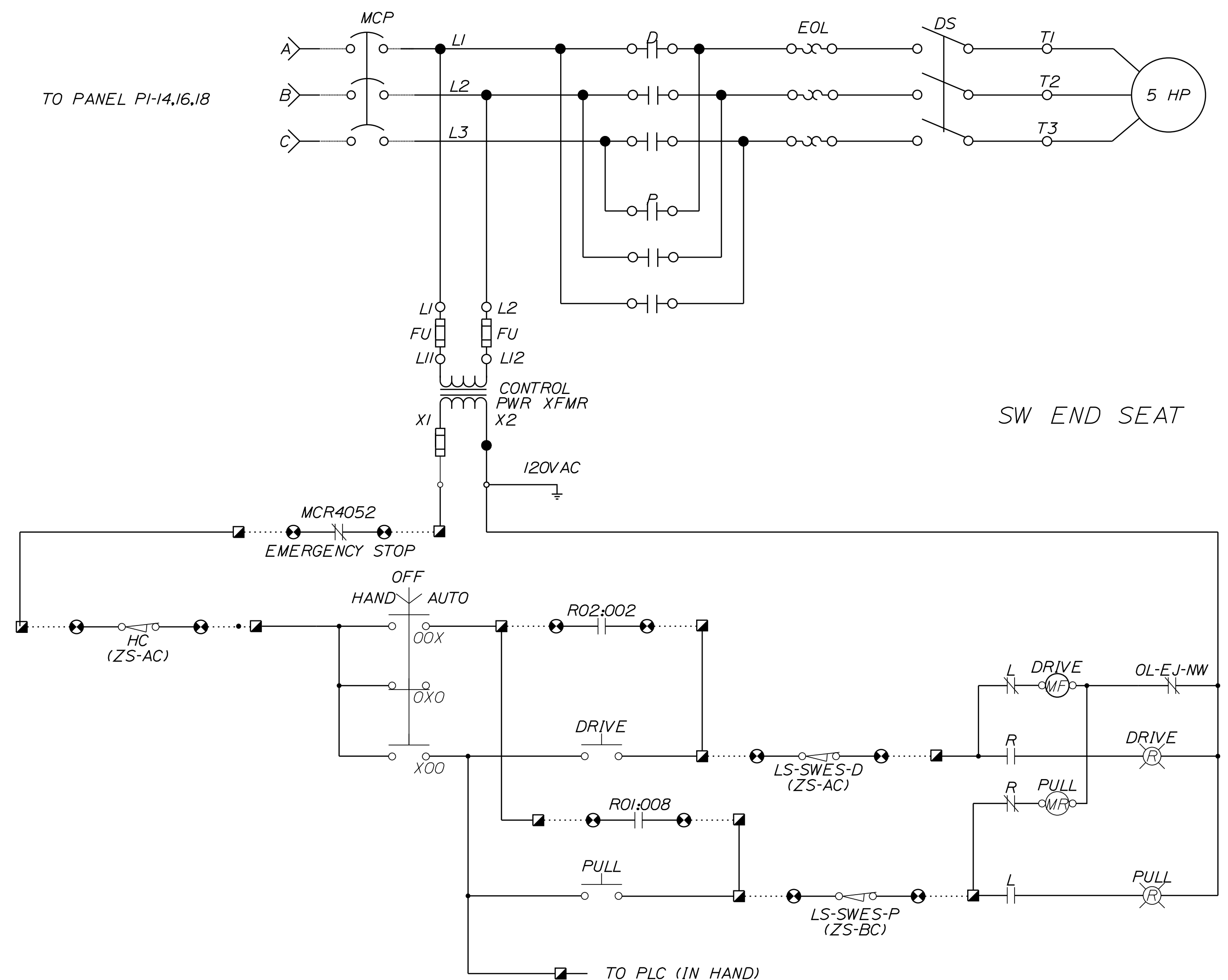
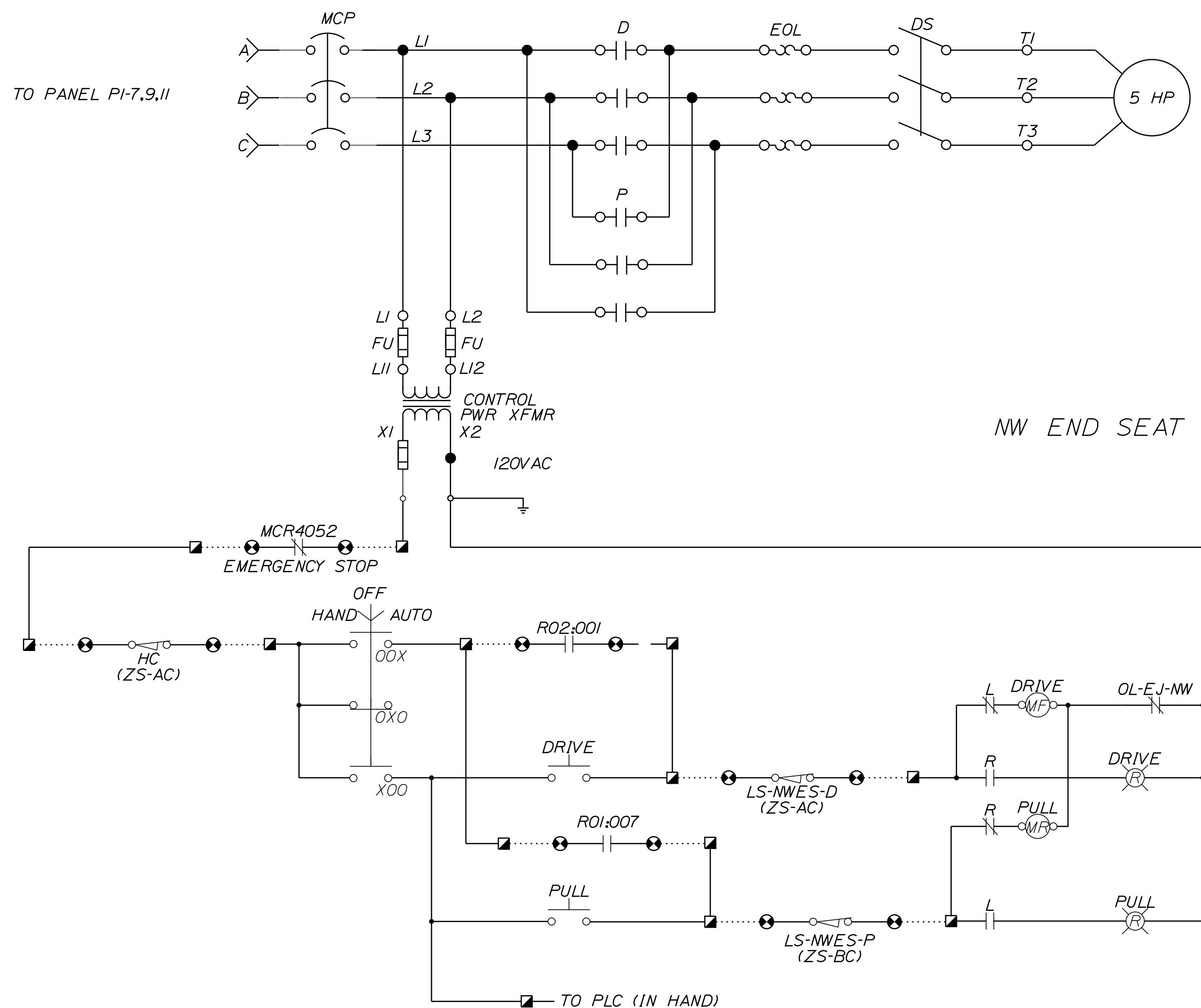
115
OF 132



Date: 10/2/2018

Username: common

Filename: ... \116_Sect_Starter_Control_Diagrams.dg Division: BRIDGE



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)



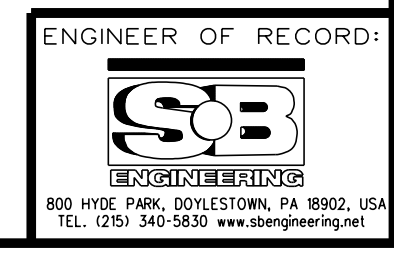
BRIDGE NO. 2039
WIN 22607.00
BRIDGE PLANS

PROJ. MANAGER	R. TOSOLT	DATE	8-10-2018
DESIGN-DETAILED	J. KOSCIJ	BY	K. WAGNER
CHECKED-REVIEWED	J. KOSCIJ	DATE	10-2-2018
DESIGN-DETAILED		SIGNATURE	15223
REVISIONS 1		P.E. NUMBER	10-02-2018
REVISIONS 2		DATE	
REVISIONS 3		FIELD CHANGES	
REVISIONS 4			

BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY
END SEAT STARTER CONTROL
DIAGRAMS

SHEET NUMBER

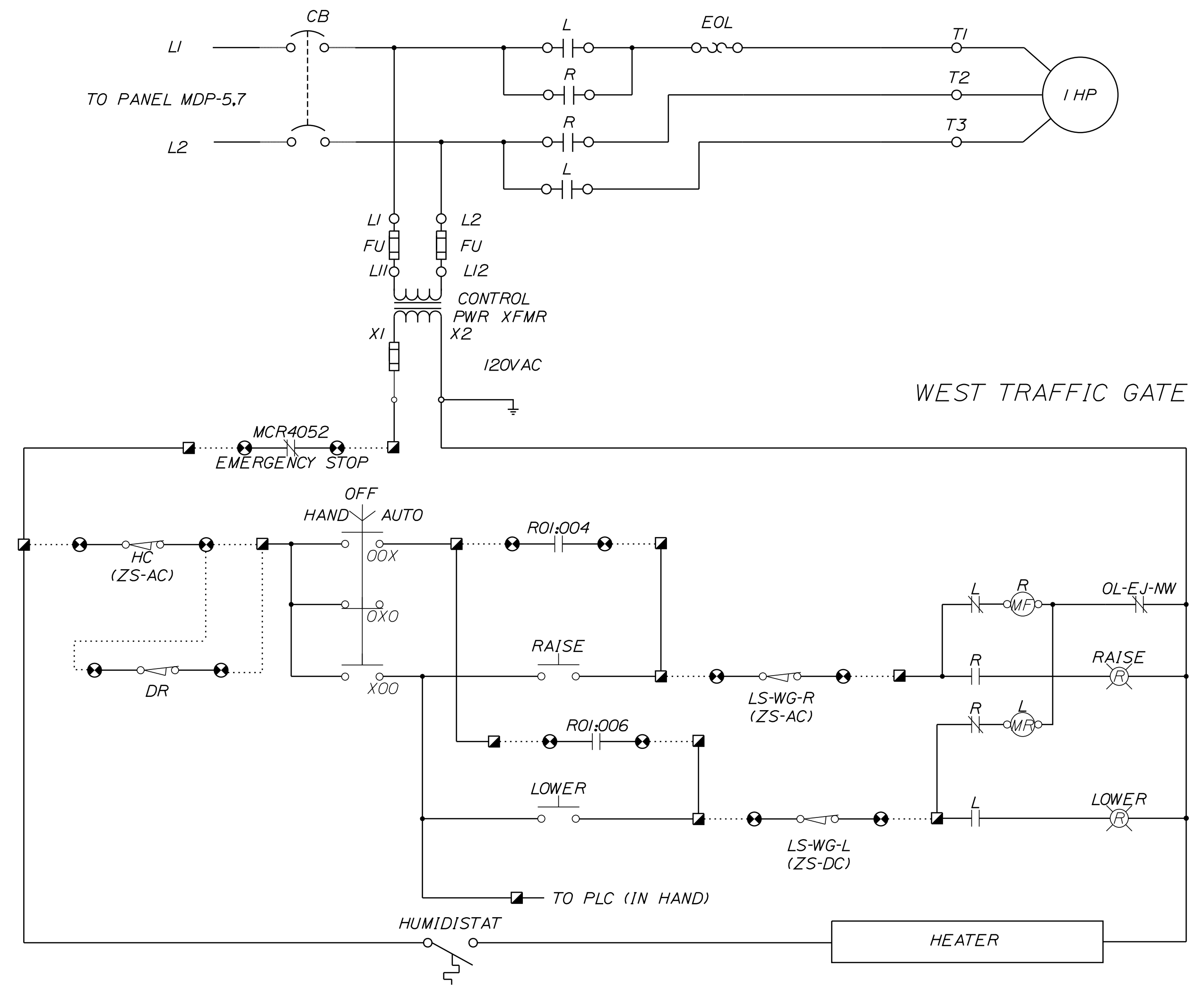
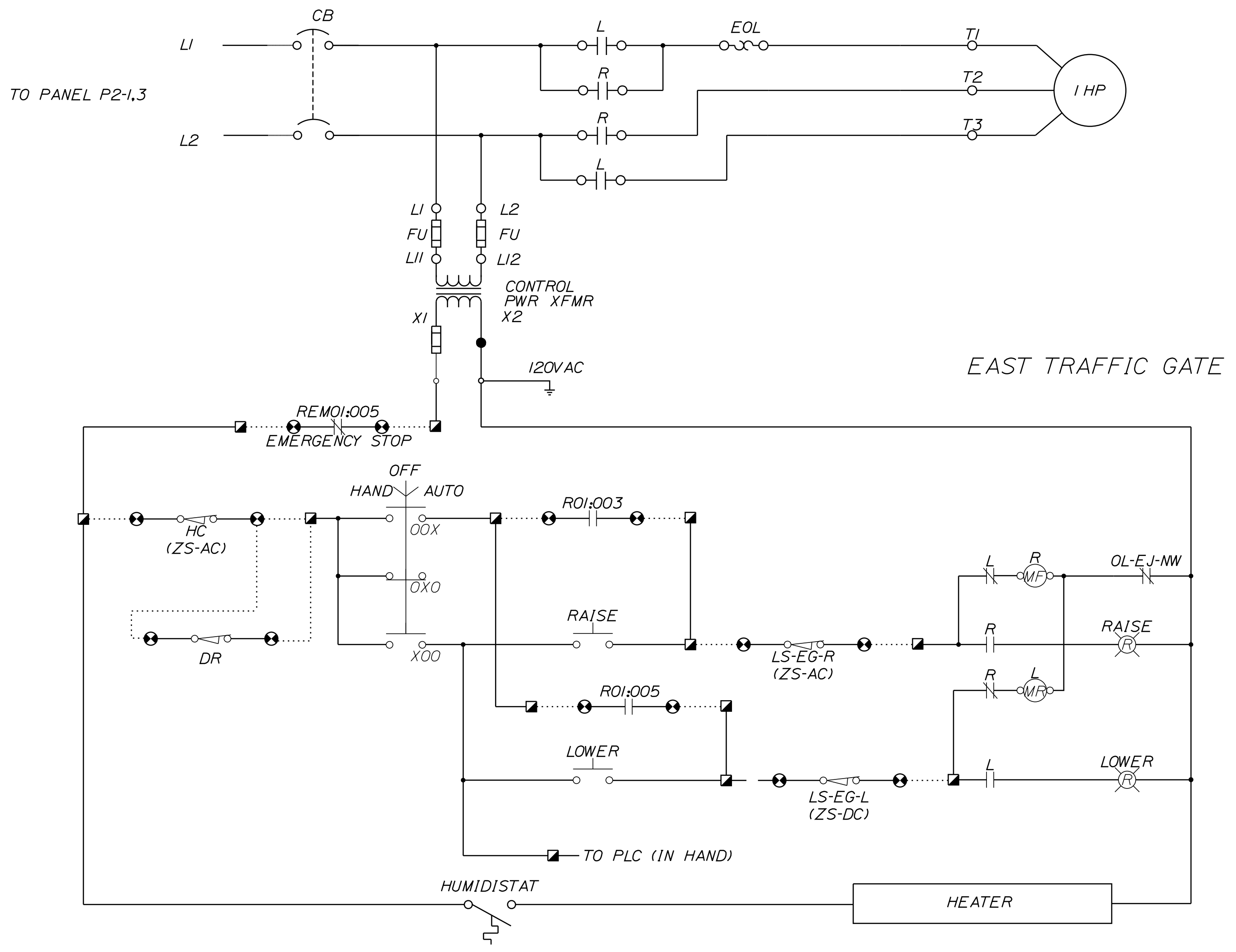
116
OF 132



Date: 10/2/2018

Username: common

Filename: ... \117_Traffic_Gates_Starter_Control_Diagrams\117Bridg



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)

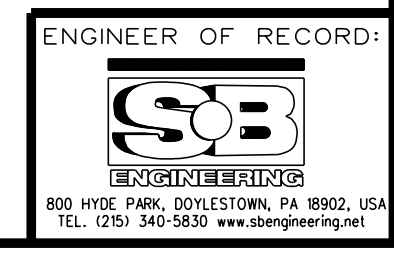
BRIDGE NO. 2039
WIN
22607.00
BRIDGE PLANS

PROJ. MANAGER	R. TOSOL	DATE
DESIGN-DETAILED	J. KOSCI	8-10-2018
CHECKED-REVIEWED	J. KOSCI	10-2-2018
DESIGN-DETAILED	K. WAGNER	
DESIGN-DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY
TRAFFIC GATE STARTER
CONTROL DIAGRAMS

SHEET NUMBER

117
OF 132



Date: 10/2/2018

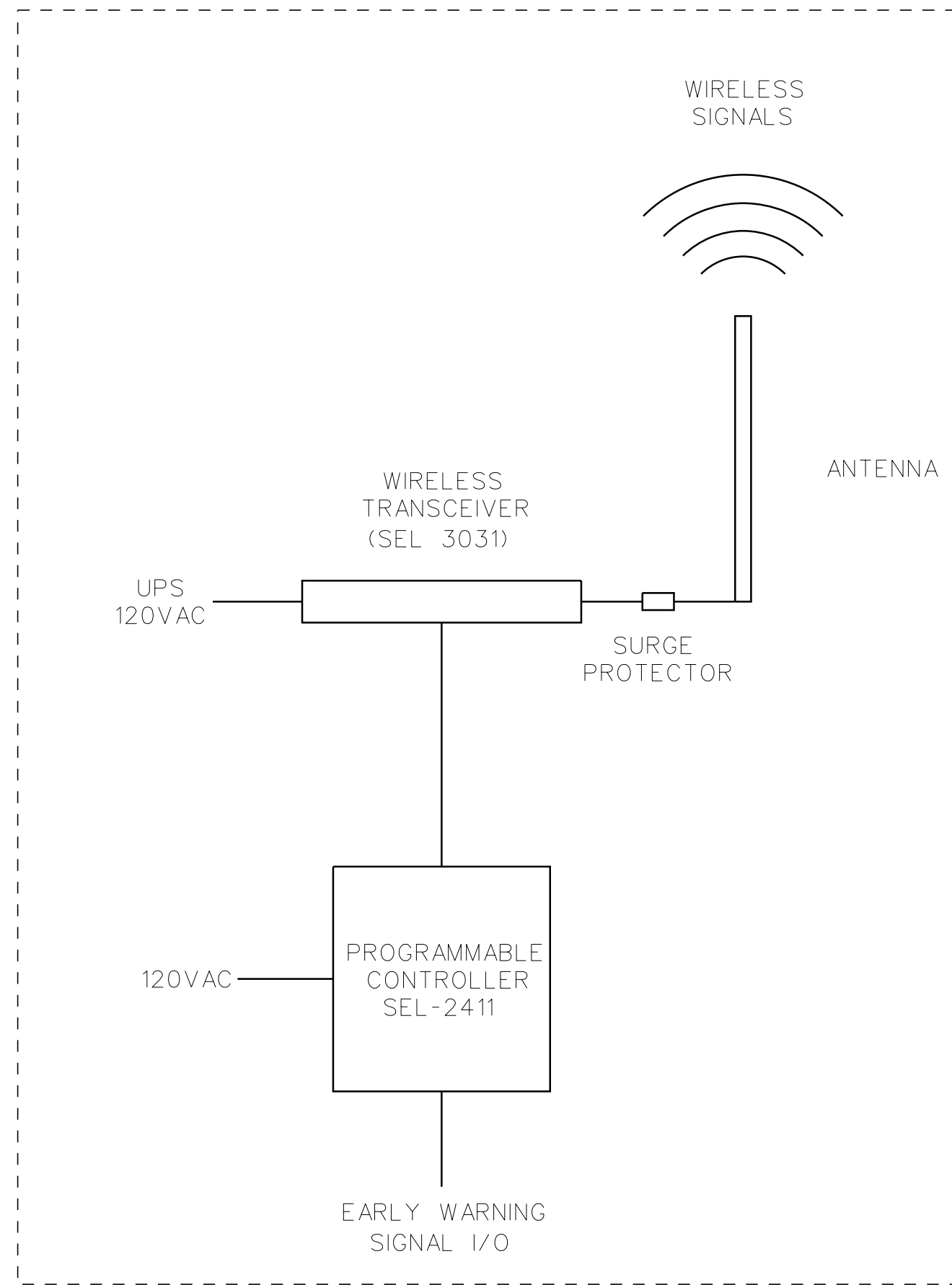
Username: common

Division: BRIDGE

Filename: ... \118_Network_Diagram.dgn

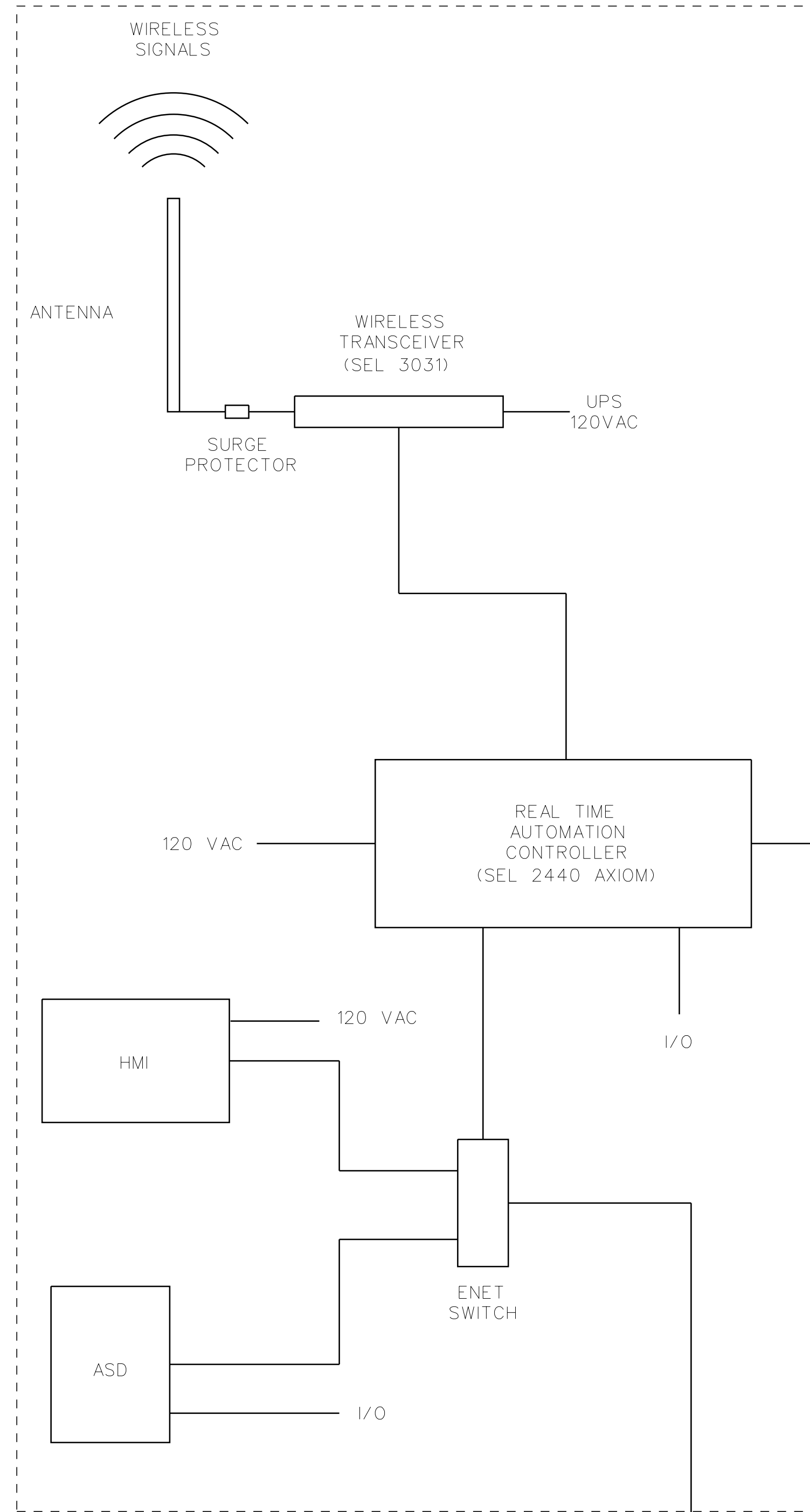
WEST SIDE EARLY WARNING SIGNAL CABINET

24" X 36" X 18" (WXHXD), NEMA 4X,
STAINLESS STEEL ENCLOSURE



NOTES:

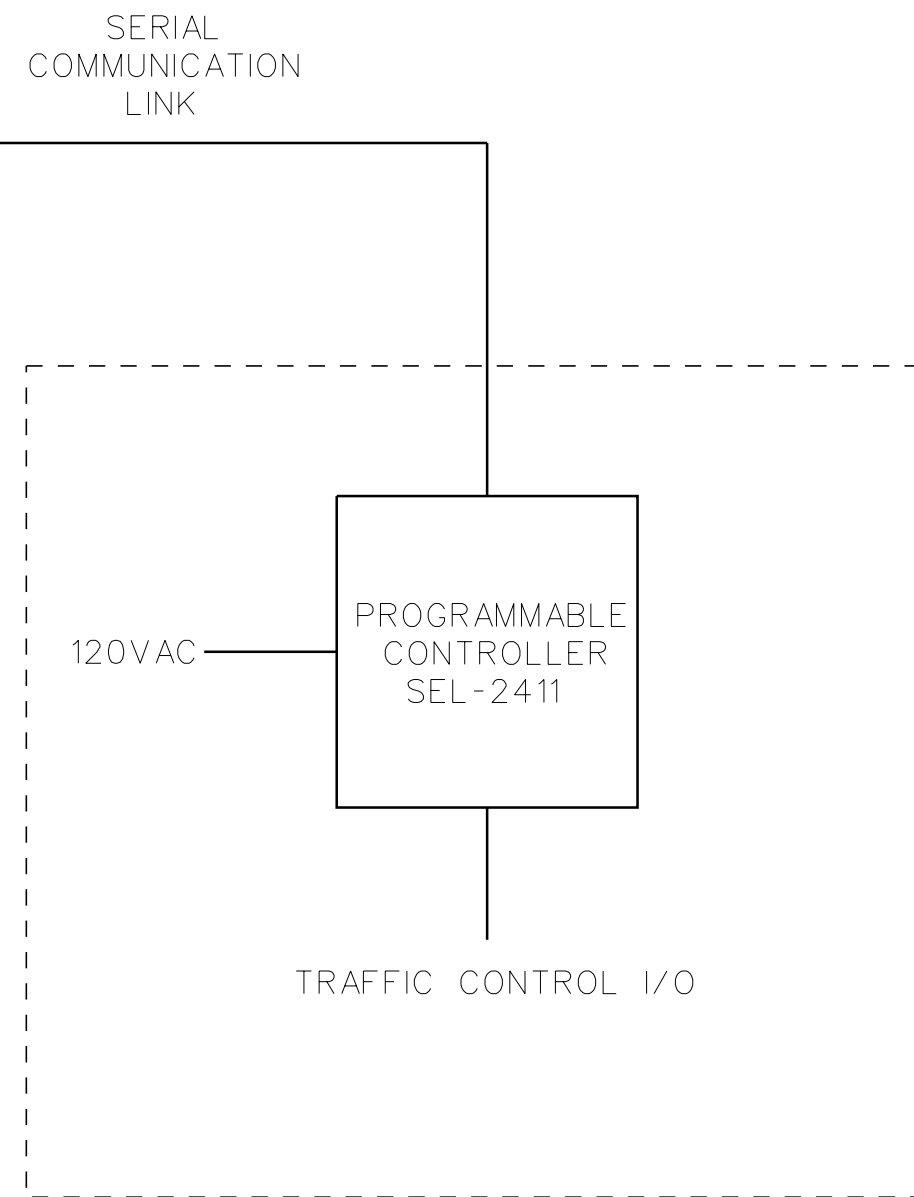
- 1. SEE BRIDGE CONTROL SYSTEM GENERAL NOTES DRAWING SHEET 95.



36" X 72" X 18" (WXHXD), NEMA 4X,
STAINLESS STEEL ENCLOSURE

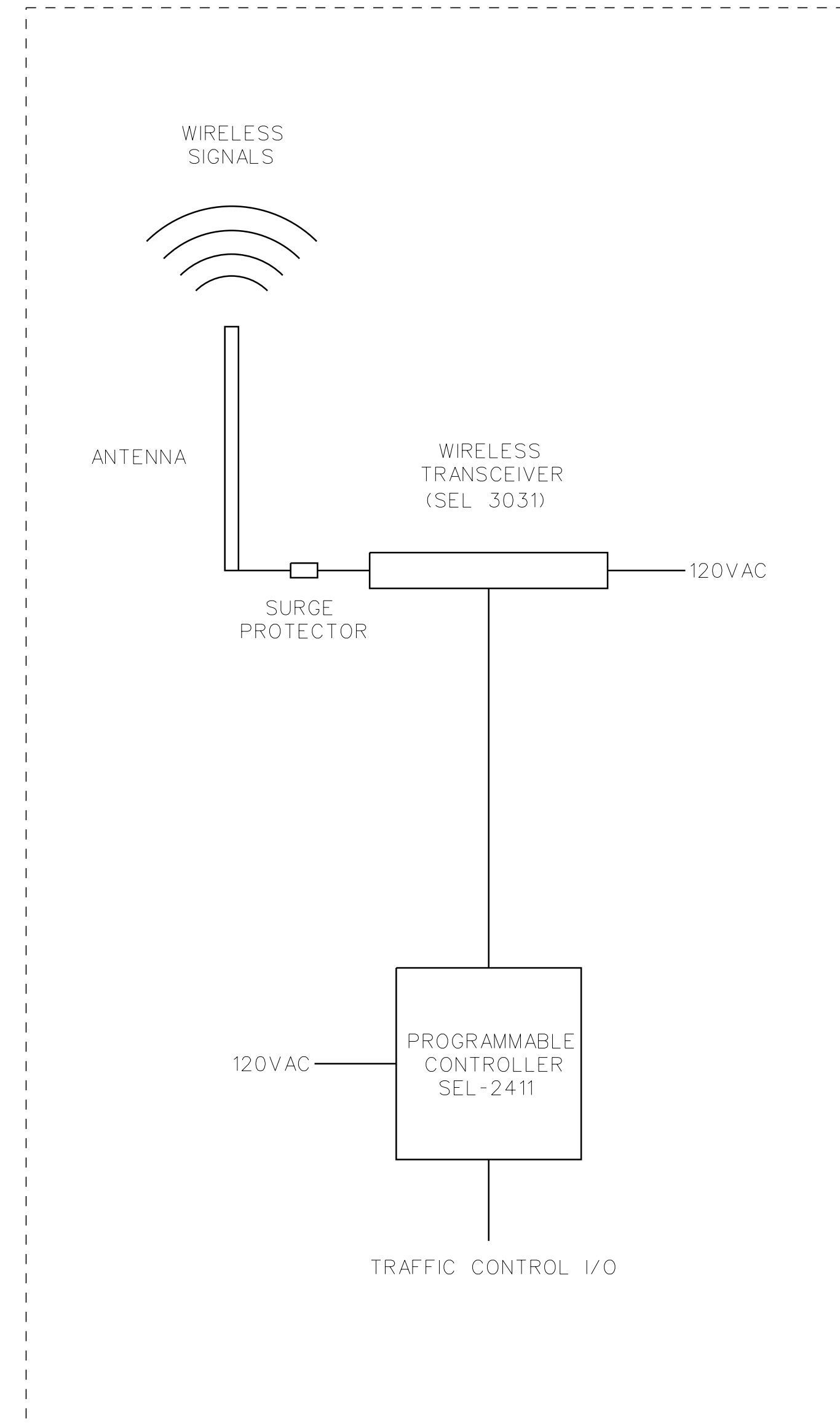
WEST SIDE MAIN CONTROLLER CABINET

COMPUTER WORK STATION



36" X 36" X 18" (WXHXD), NEMA 4X,
STAINLESS STEEL ENCLOSURE

WEST SIDE TRAFFIC CONTROL CABINET



36" X 48" X 24" (WXHXD), NEMA 4X,
STAINLESS STEEL ENCLOSURE

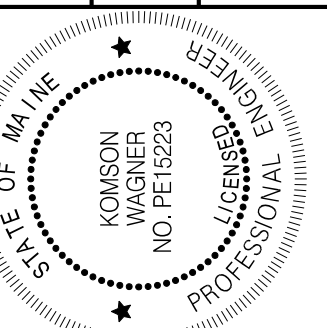
**EAST SIDE TRAFFIC CONTROL AND
EARLY WARNING SIGNAL CABINET**

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

WIN
22607.00

BRIDGE NO. 2039
BRIDGE PLANS



Signature: *K. Wagner*
 SIGNATURE: 15223
 P.E. NUMBER: 10-02-2018
 DATE

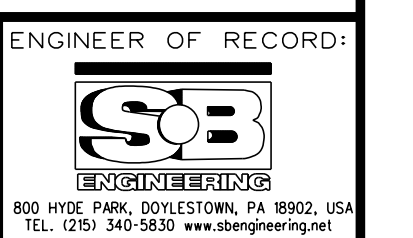
PROJ. MANAGER	R. TOSOLT	BY	DATE
DESIGN-DETAILED	J. KOSCI	JRK, PK	8-10-2018
CHECKED-REVIEWED	J. KOSCI	K. WAGNER	10-2-2018
DESIGN-DETAILED			
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTER'S ISLAND BRIDGE
 BACK RIVER
 BOOTHBAY LINCOLN COUNTY
NETWORK DIAGRAM

SHEET NUMBER

118

OF 132



Date: 10/2/2018

Username: common

Division: BRIDGE

Filename: ... \119_Control_Cable_Schedule.dgn

CONTROL CABLE SCHEDULE

CABLE TAG	SOURCE	DESTINATION	CABLE VOLTAGE CLASS	CONTROL VOLTAGE/ANALOG SIGNAL	SIGNAL TYPE	CONTROL FUNCTION	CIRCUIT CONDUCTOR	MULTI-CONDUCTOR CABLE ASSIGNMENT
C001	PLC/VFD CABINET	NORTHWEST END JACK STARTER	600V	120V	DIGITAL	RAISE END JACK	2-#12AWG	
	PLC/VFD CABINET	NORTHWEST END JACK STARTER	600V	120V	DIGITAL	LOWER END JACK	2-#12AWG	
	PLC/VFD CABINET	NORTHWEST END JACK STARTER	600V	120V	DIGITAL	END JACK CONTROL 'IN HAND'	2-#12AWG	
	PLC/VFD CABINET	NORTHWEST END JACK STARTER	600V	120V	DIGITAL	EMERGENCY STOP CONTACT	2-#12AWG	
C002	PLC/VFD CABINET	NORTHWEST END JACK	600V	120V	DIGITAL	END JACK RAISED LIMIT	2-#12AWG	
	PLC/VFD CABINET	NORTHWEST END JACK	600V	120V	DIGITAL	END JACK LOWERED LIMIT	2-#12AWG	
C003	NORTHWEST END JACK STARTER	NORTHWEST END JACK	600V	120V	DIGITAL	END JACK RAISED LIMIT	2-#12AWG	
	NORTHWEST END JACK STARTER	NORTHWEST END JACK	600V	120V	DIGITAL	END JACK LOWERED LIMIT	2-#12AWG	
C004	PLC/VFD CABINET	SOUTHWEST END JACK STARTER	600V	120V	DIGITAL	RAISE END JACK	2-#12AWG	
	PLC/VFD CABINET	SOUTHWEST END JACK STARTER	600V	120V	DIGITAL	LOWER END JACK	2-#12AWG	
	PLC/VFD CABINET	SOUTHWEST END JACK STARTER	600V	120V	DIGITAL	END JACK CONTROL 'IN HAND'	2-#12AWG	
	PLC/VFD CABINET	SOUTHWEST END JACK STARTER	600V	120V	DIGITAL	EMERGENCY STOP CONTACT	2-#12AWG	
C005	PLC/VFD CABINET	SOUTHWEST END JACK	600V	120V	DIGITAL	END JACK RAISED LIMIT	2-#12AWG	
	PLC/VFD CABINET	SOUTHWEST END JACK	600V	120V	DIGITAL	END JACK LOWERED LIMIT	2-#12AWG	
C006	SOUTHWEST END JACK STARTER	SOUTHWEST END JACK	600V	120V	DIGITAL	END JACK RAISED LIMIT	2-#12AWG	
	SOUTHWEST END JACK STARTER	SOUTHWEST END JACK	600V	120V	DIGITAL	END JACK LOWERED LIMIT	2-#12AWG	
C007	PLC/VFD CABINET	NORTHWEST END SEAT STARTER	600V	120V	DIGITAL	PULL END SEAT	2-#12AWG	
	PLC/VFD CABINET	NORTHWEST END SEAT STARTER	600V	120V	DIGITAL	DRIVE END SEAT	2-#12AWG	
	PLC/VFD CABINET	NORTHWEST END SEAT STARTER	600V	120V	DIGITAL	END SEAT CONTROL 'IN HAND'	2-#12AWG	
	PLC/VFD CABINET	NORTHWEST END SEAT STARTER	600V	120V	DIGITAL	EMERGENCY STOP CONTACT	2-#12AWG	
C008	PLC/VFD CABINET	NORTHWEST END SEAT	600V	120V	DIGITAL	END SEAT PULLED LIMIT	2-#12AWG	
	PLC/VFD CABINET	NORTHWEST END SEAT	600V	120V	DIGITAL	END SEAT DRIVEN LIMIT	2-#12AWG	
C009	NORTHWEST END SEAT STARTER	NORTHWEST END SEAT	600V	120V	DIGITAL	END SEAT PULLED LIMIT	2-#12AWG	
	NORTHWEST END SEAT STARTER	NORTHWEST END SEAT	600V	120V	DIGITAL	END SEAT DRIVEN LIMIT	2-#12AWG	
C010	PLC/VFD CABINET	SOUTHWEST END SEAT STARTER	600V	120V	DIGITAL	PULL END SEAT	2-#12AWG	
	PLC/VFD CABINET	SOUTHWEST END SEAT STARTER	600V	120V	DIGITAL	DRIVE END SEAT	2-#12AWG	
	PLC/VFD CABINET	SOUTHWEST END SEAT STARTER	600V	120V	DIGITAL	END SEAT CONTROL 'IN HAND'	2-#12AWG	
	PLC/VFD CABINET	SOUTHWEST END SEAT STARTER	600V	120V	DIGITAL	EMERGENCY STOP CONTACT	2-#12AWG	
C011	PLC/VFD CABINET	SOUTHWEST END SEAT	600V	120V	DIGITAL	END SEAT PULLED LIMIT	2-#12AWG	
	PLC/VFD CABINET	SOUTHWEST END SEAT	600V	120V	DIGITAL	END SEAT DRIVEN LIMIT	2-#12AWG	
C012	SOUTHWEST END SEAT STARTER	SOUTHWEST END SEAT	600V	120V	DIGITAL	END SEAT PULLED LIMIT	2-#12AWG	
	SOUTHWEST END SEAT STARTER	SOUTHWEST END SEAT	600V	120V	DIGITAL	END SEAT DRIVEN LIMIT	2-#12AWG	
C013	PLC/VFD CABINET	WEST TRAFFIC GATE	600V	120V	DIGITAL	RAISE TRAFFIC GATE	2-#12AWG	
	PLC/VFD CABINET	WEST TRAFFIC GATE	600V	120V	DIGITAL	LOWER TRAFFIC GATE	2-#12AWG	
	PLC/VFD CABINET	WEST TRAFFIC GATE	600V	120V	DIGITAL	TRAFFIC GATE CONTROL 'IN HAND'	2-#12AWG	
	PLC/VFD CABINET	WEST TRAFFIC GATE	600V	120V	DIGITAL	EMERGENCY STOP CONTACT	2-#12AWG	
	PLC/VFD CABINET	WEST TRAFFIC GATE	600V	120V	DIGITAL	TRAFFIC GATE RAISED	2-#12AWG	
C014	PLC/VFD CABINET	WEST TRAFFIC GATE	600V	120V	DIGITAL	TRAFFIC GATE LOWERED	2-#12AWG	
	EAST REMOTE IO CABINET	EAST TRAFFIC GATE	600V	120V	DIGITAL	RAISE TRAFFIC GATE	2-#12AWG	
	EAST REMOTE IO CABINET	EAST TRAFFIC GATE	600V	120V	DIGITAL	LOWER TRAFFIC GATE	2-#12AWG	
	EAST REMOTE IO CABINET	EAST TRAFFIC GATE	600V	120V	DIGITAL	TRAFFIC GATE CONTROL 'IN HAND'	2-#12AWG	
	EAST REMOTE IO CABINET	EAST TRAFFIC GATE	600V	120V	DIGITAL	EMERGENCY STOP CONTACT	2-#12AWG	
	EAST REMOTE IO CABINET	EAST TRAFFIC GATE	600V	120V	DIGITAL	TRAFFIC GATE RAISED	2-#12AWG	
C015	PLC/VFD CABINET	WEST TRAFFIC LIGHT	600V	120V	DIGITAL	TRAFFIC LIGHT CONTROL	4-#12AWG	
	EAST REMOTE IO CABINET	EAST TRAFFIC LIGHT	600V	120V	DIGITAL	TRAFFIC LIGHT CONTROL	4-#12AWG	
C017	PLC/VFD CABINET	PIVOT PIER NAV LIGHT	600V	120V	DIGITAL	NAVIGATION LIGHT CONTROL	2-#12AWG	
C018	PLC/VFD CABINET	MOVABLE SPAN NAV LIGHT	600V	120V	DIGITAL	NAVIGATION LIGHT CONTROL	2-#12AWG	
C019	PLC/VFD CABINET	THRUSTOR BRAKE STARTER	600V	120V	DIGITAL	RELEASE BRAKE	2-#12AWG	
	PLC/VFD CABINET	THRUSTOR BRAKE STARTER	600V	120V	DIGITAL	BRAKE CONTROL 'IN HAND'	2-#12AWG	
C020	PLC/VFD CABINET	THRUSTOR BRAKE	600V	120V	DIGITAL	BRAKE SET	2-#12AWG	
	PLC/VFD CABINET	THRUSTOR BRAKE	600V	120V	DIGITAL	BRAKE RELEASED	2-#12AWG	
	PLC/VFD CABINET	THRUSTOR BRAKE	600V	120V	DIGITAL	BRAKE HAND RELEASED	2-#12AWG	
C021	PLC/VFD CABINET	MOTOR DISC BRAKE	600V	120V	DIGITAL	RELEASE BRAKE	2-#12AWG	
C022	PLC/VFD CABINET	ENCODER	600V	120V	ANALOG	SPAN POSITION INDICATION	4-#12AWG SHIELDED TP CABLE	

C023	PLC/VFD CABINET	SPAN OPEN LIMIT SWITCHES	600V	120V	DIGITAL	SPAN POSITION INDICATION	4-#12AWG
C024	PLC/VFD CABINET	SPAN CLOSED LIMIT SWITCHES	600V	120V	DIGITAL	SPAN POSITION INDICATION	4-#12AWG
C025	WEST REMOTE I/O CABINET	WEST EARLY WARNING LIGHT	600V	120V	DIGITAL	EARLY WARNING	2-#12AWG
C026	PLC/VFD CABINET	PIVOT PIER	600V	120V	DIGITAL	CAPSTAN INSERTED LIMIT SWITCH	2-#12AWG

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2260(700)

BRIDGE PLANS
WIN
22607.00

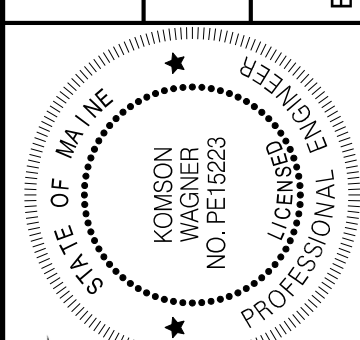
BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY

CONTROL CABLE SCHEDULE

SHEET NUMBER

119

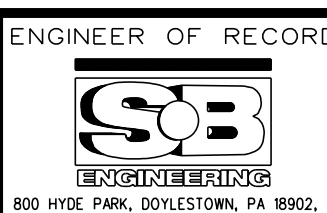
OF 132



SIGNATURE: *K. Wagner*
 P.E. NUMBER: 15223
 DATE: 10-02-2018

PROJ. MANAGER	R. TOSOLT
DESIGN-DETAILED	J. KOSCIJ
CHECKED-REVIEWED	J. KOSCIJ
DESIGN-DETAILED	J. KOSCIJ
REVISIONS 1	
REVISIONS 2	
REVISIONS 3	
REVISIONS 4	
FIELD CHANGES	

DATE	8-10-2018
BY	JRK/PK
DATE	10-2-2018
BY	K. WAGNER



ENGINEER OF RECORD:
800 HYDE PARK, DOYLESTOWN, PA 19902, USA
TEL: (215) 340-5830 www.sobengr.com

PANEL: MDP SERVICE ENTRANCE RATED, 400A BUS, 120/240V, SINGLE-PHASE, 3-WIRE, GROUND NEUTRAL, 60 HZ, 40KAIC MIN. MAIN BREAKER 1: 400AF (UTILITY SOURCE)													MULTI-FUNCTION, POWER QUALITY METERING LOCATION: OPERATOR BUILDING	
NOTES	WIRING REQUIREMENT	BRANCH CIRCUIT LOAD DESCRIPTION	LOAD (VA)	CIRCUIT CONNECTION	CIRCUIT BREAKER	SPACE #/PHASE			CIRCUIT BREAKER	CIRCUIT CONNECTION	LOAD (VA)	BRANCH CIRCUIT LOAD DESCRIPTION	WIRING REQUIREMENT	NOTES
	2* 4/ 0 AWG ,1*4 GND ,2"C	DIGITAL PHASE CONVERTER	20000	LI-L2	200/2	1	LI	2	20/1	LI-N	1000	OPERATOR KIOSK DESK RECEPTACLES	2*12 AWG,1*12 GND,3/4"C	
			20000	LI-L2		3	L2	4	20/1	L2-N	1000	PLC CABINET LIGHT AND RECEPTACLE	2*12 AWG,1*12 GND,3/4"C	
	2*12 AWG,1*12 GND,3/4"C	WEST TRAFFIC GATE	920	LI-L2	20/2	5	LI	6	20/1	LI-N	1500	OPERATOR HOUSE RECEPTACLES	2*12 AWG,1*12 GND,3/4"C	
			920	LI-L2		7	L2	8	20/1	L2-N	200	WEST TRAFFIC LIGHT	2*12 AWG,1*12 GND,3/4"C	
	2*12 AWG,1*12 GND,3/4"C	HVAC OUTDOOR UNIT	1300	LI-L2	15/2	9	LI	10	20/1	LI-N	100	WEST TRAFFIC GATE GONG AND GATE LIGHTS	2*12 AWG,1*12 GND,3/4"C	
			1300	LI-L2		11	L2	12	20/1	L2-N	150	NAVIGATION LIGHT CONTROL	2*12 AWG,1*12 GND,3/4"C	
	2*12 AWG,1*12 GND,3/4"C	HVAC INDOOR UNIT	4000	LI-L2	15/2	13	LI	14	20/1	LI-N	150	NAVIGATION LIGHT	2*12 AWG,1*12 GND,3/4"C	
			4000	LI-L2		15	L2	16	20/1	L2-N		SPARE		
		SPARE		LI-N	15/1	17	LI	18	20/1	LI-N	70	PIER-1 LIGHTS	2*12 AWG,1*12 GND,3/4"C	
						19	L2	20	20/1	L2-N	150	PIER-2 LIGHTS	2*12 AWG,1*12 GND,3/4"C	
						21	LI	22	20/1	LI-N	50	HORN	2*12 AWG,1*12 GND,3/4"C	
						23	L2	24	20/1	L2-N	150	OPERATOR HOUSE LIGHTS AND CANOPY LIGHT	2*12 AWG,1*12 GND,3/4"C	
						25	LI	26	20/1	LI-N	300	PIER-1 RECEPTACLES	2*12 AWG,1*12 GND,3/4"C	
						27	L2	28	20/1	L2-N	300	PIER-2 RECEPTACLES	2*12 AWG,1*12 GND,3/4"C	
						29	LI	30	20/1	LI-N	1000	UPS	2*12 AWG,1*12 GND,3/4"C	
						31	L2	32						
						33	LI	34						
						35	L2	36						
						37	LI	38						
						39	L2	40						
						41	LI	42						
						43	L2	44						
						TOTAL (KVA)								
		SUB-TOTAL LEFT SIDE (KVA)	52.440			58.56					6.12	SUB-TOTAL RIGHT SIDE (KVA)		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)
WIN 22607.00
BRIDGE NO. 2039
BRIDGE PLANS

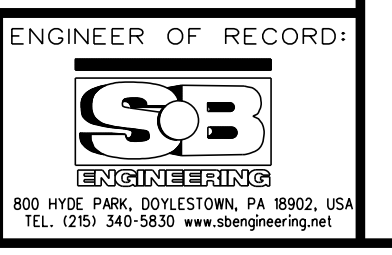
PROFESSIONAL ENGINEER
STATE OF MAINE
KAYSON KOSCIK
NO. PE15223
SIGNATURE: *Kayson Kosciik*
15223
P.E. NUMBER
10-02-2018
DATE

PROJ. MANAGER: R. TOSOLT
CHECKED-REVIEWED: J. KOSCIK
DESIGNS DETAILED: J. KOSCIK
DESIGNS DETAILED: J. KOSCIK
REVISIONS 1
REVISIONS 2
REVISIONS 3
REVISIONS 4
FIELD CHANGES

DATE: 8-10-2018
BY: JRK, PK
K. WAGNER
10-2-2018

BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY
PANELBOARD SCHEDULE
SHEET 1 OF 2

SHEET NUMBER
120
OF 132



Date: 10/2/2018

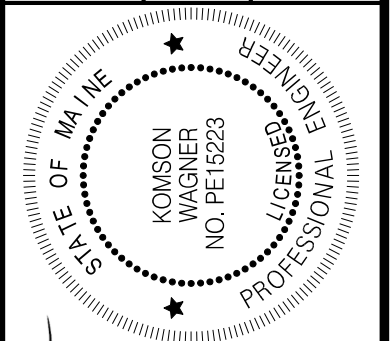
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PANEL: P1 SERVICE ENTRANCE RATED, 125A BUS, 240V, THREE-PHASE, 3-WIRE, GROUNDED NEUTRAL, 60 HZ, 40KAIC MIN. MAIN BREAKER: 1:100AF (UTILITY SOURCE)										LOCATION: OPERATOR BUILDING			
NOTES	WIRING REQUIREMENT	BRANCH CIRCUIT LOAD DESCRIPTION	LOAD (VA)	CIRCUIT CONNECTION	CIRCUIT BREAKER	SPACE #/PHASE		CIRCUIT BREAKER	CIRCUIT CONNECTION	LOAD (VA)	BRANCH CIRCUIT LOAD DESCRIPTION	WIRING REQUIREMENT	NOTES
	3*10 AWG, 1*10 GND, 1 inch C	NORTH WEST END-JACK MOTOR	3050	3-PH	45/3	1	A	2	60/3	3050	DRIVE MOTOR VFD/PLC CABINET	3/C*6AWG, 3*10 GND, SHIELD VFD CABLE .2 1/2 inch C	
3050			3-PH	3		B	4	3050					
3050			3-PH	5		C	6	3050					
	3*10 AWG, 1*10 GND, 3/4 inch C	NORTH WEST END-SEAT MOTOR	2080	3-PH	30/3	7	A	8	45/3	3050	SOUTH WEST END-JACK MOTOR	3*10 AWG, 1*10 GND, 1 inch C	
2080			3-PH	9		B	10	3050					
2080			3-PH	11		C	12	3050					
	SPARE	SPARE		3-PH	15/3	13	A	14	30/3	2080	SOUTH WEST END-SEAT MOTOR	3*10 AWG, 1*10 GND, 3/4 inch C	
			3-PH	15		B	16	2080					
			3-PH	17		C	18	2080					
	SPARE	SPARE		3-PH	30/3	19	A	20			SPARE		
			3-PH	21		B	22						
			3-PH	23		C	24						
				3-PH		25	A	26					
				3-PH		27	B	28					
				3-PH		29	C	30					
				3-PH		31	A	32					
				3-PH		33	B	34					
				3-PH		35	C	36					
						TOTAL (KVA)							
		SUB-TOTAL LEFT SIDE (KVA)	15.39			39.93				24.54	SUB-TOTAL RIGHT SIDE (KVA)		

PANEL: P2 (DISTRIBUTION BUS) 125A BUS, 120/240 V SINGLE-PHASE, 3-WIRE, 60HZ, 10KAIC MIN. MAIN BREAKER: 40A/2P										LOCATION: WITHIN REMOTE I/O CABINET			
NOTES	WIRING REQUIREMENT	BRANCH CIRCUIT LOAD DESCRIPTION	LOAD (VA)	CIRCUIT CONNECTION	CIRCUIT BREAKER	SPACE #/PHASE		CIRCUIT BREAKER	CIRCUIT CONNECTION	LOAD (VA)	BRANCH CIRCUIT LOAD DESCRIPTION	WIRING REQUIREMENT	NOTES
	2*12 AWG, 1*12 GND, 3/4 inch C	EAST TRAFFIC GATE	920	LI-L2	20/2	1	LI	2	20/1	L-N	200	EAST TRAFFIC LIGHT	2*12 AWG, 1*12 GND, 3/4" C
			920	LI-L2		3	L2	4	20/1	L-N	100	EAST TRAFFIC GATE GONG AND GATE LIGHTS	2*12 AWG, 1*12 GND, 3/4" C
		SPARE		LI-L2		5	LI	6	20/1	L-N	1000	REMOTE I/O CABINET/UPS	2*12 AWG, 1*12 GND, 3/4" C
		SPARE		LI-L2		7	L2	8	20/1	L-N	50	OBSTRUCTION LIGHT	2*12 AWG, 1*12 GND, 3/4" C
		SPARE		LI-L2		9	LI	10	20/1	L-N	100	EAST EARLY WARNING LIGHT	2*12 AWG, 1*12 GND, 3/4" C
		SPARE		LI-L2		11	L2	12		L-N		SPARE	
		SPARE		LI-L2		13	LI	14		L-N		SPARE	
						15	L2	16		L-N		SPARE	
						17	LI	18		L-N		SPARE	
						19	L2	20		L-N		SPARE	
						21	LI	22					
						23	L2	24					
						TOTAL (KVA)							
		SUB-TOTAL LEFT SIDE (KVA)	1.008			2.458				1.450	SUB-TOTAL RIGHT SIDE (KVA)		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)
WIN 22607.00
BRIDGE NO. 2039
BRIDGE PLANS



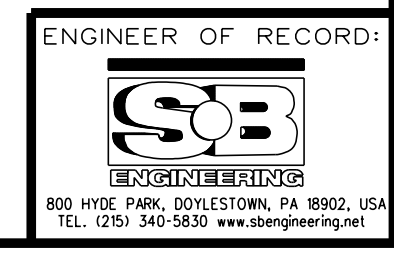
Koson Kozson
SIGNATURE
15223
P.E. NUMBER
10-02-2018
DATE

PROJ. MANAGER	R. TOSOLT	DATE	8-10-2018
DESIGN-DETAILED	J. KOSCIJ	BY	K. WAGNER
CHECKED-REVIEWED	J. KOSCIJ	DATE	10-2-2018
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY
PANELBOARD SCHEDULE
SHEET 2 OF 2

SHEET NUMBER

121
OF 132



LIGHTING FIXTURE SCHEDULE											
TYPE		QUANTITY	MOUNTING		LAMPS	FIXTURE			MANUFACTURER	CATALOG NUMBER	REMARKS
CODE	DESCRIPTION		TYPE	LOCATION		VOLTAGE	WATTAGE	DESCRIPTION			
G	INDUSTRIAL GENERAL LIGHT	15	SURFACE MOUNTED	AS INDICATED ON DRAWINGS	LED	120-277	11	LED FIXTURE, HIGH EFFICIENCY, CORROSION RESISTANT, IP66; CAST ALUMINUM HOUSING; JLI598 FOR USE IN WET LOCATIONS; VANDAL RESISTANT GLOBE; OPERATING TEMPERATURES : -30°C TO 40°C	HUBBELL	VBGL-1 (CEILING/PENDANT) VWGL-1 (WALL)	
C	ENCLOSED ROOM GENERAL	7	SURFACE MOUNTED	AS INDICATED ON DRAWINGS	LED	120	15	7" DIAMETER, FLUSH MOUNT, LED FIXTURE, HIGH EFFICIENCY, CORROSION RESISTANT, DIE-CAST ALUMINUM CONSTRUCTION, RATED FOR USE IN WET LOCATIONS, DIMMABLE OPERATING TEMPERATURES : -25°C TO 40°C	AMAX LIGHTING	LED-SM7DL-BRONZE	
P	CANOPY LIGHT	1	SURFACE MOUNTED	AS INDICATED ON DRAWINGS	LED	120	16.6	RUGGED CAST-ALUMINUM TOP-PLATE AND OUTER-RING ARE PROTECTED BY A THERMOSET POWDER COAT FINISH THAT PROVIDES SUPERIOR RESISTANCE TO CORROSION AND WEATHERING. FIXTURE OPERATES AT 120 VOLTS, 60 HZ., 16.6 WATTS; OPERATING TEMPERATURE -40 °C TO 40 °C., SURGE PROTECTION = 2.5KV UL LISTED TO U.S. AND CANADIAN SAFETY STANDARDS FOR WET LOCATIONS, TESTED IN ACCORDANCE WITH IESNA LM-79 AND LM-80 STANDARDS; 5-YEAR LIMITED WARRANTY	LITHONIA	OLCFM-DDB	

NAVIGATION LIGHT FIXTURE SCHEDULE											
TYPE		QUANTITY	MOUNTING		LAMPS	FIXTURE			MANUFACTURER	CATALOG NUMBER	REMARKS
CODE	DESCRIPTION		TYPE	LOCATION		VOLTAGE	WATTAGE	DESCRIPTION			
A	PIER FENDER LIGHT	2	FIXED BRACKET MOUNTED ON STRUCTURAL STEEL	AS INDICATED ON DRAWINGS	LED [RED] [100,000 HOUR]	120	34.5	THE NAVIGATION LIGHT DESIGNED FOR USE AS A MARINE SIGNAL LIGHT FOR MARKING STATIONARY PIERS AND FENDERS, PER COAST GUARD REQUIREMENTS; DIE-CAST ALUMINUM HOUSING; HEAVY DUTY ALUMINUM MOUNTING BRACKETS; STAINLESS STEEL HARDWARE; ENCLOSURE RATING IP66 MINIMUM; OPERATING TEMPERATURES : -25°C TO 50°C	B&B ROADWAY	MODEL PL-VR	PIVOT PIER FENDER: 180° RED FACING CHANNEL
B	SPAN CLEARANCE LIGHT	1	BRACKET/STEM MOUNTED ON STRUCTURAL STEEL	AS INDICATED ON DRAWINGS	LED [RED / GREEN] [100,000 HOUR]	120	60	THE NAVIGATION LIGHT DESIGNED FOR USE AS A MARINE SIGNAL LIGHT FOR MARKING OF MOVING BRIDGE SPAN, PER COAST GUARD REQUIREMENTS; DIE-CAST ALUMINUM HOUSING; HEAVY DUTY ALUMINUM MOUNTING BRACKETS; STAINLESS STEEL HARDWARE; ENCLOSURE RATING IP66 MINIMUM; OPERATING TEMPERATURES : -25°C TO 50°C	B&B ROADWAY	MODEL SS	SWING SPAN: 90° GREEN IN OPPOSITE FACE. GREEN LIGHT FACING CHANNEL WHEN SPAN IS IN OPENED POSITION; 90° RED LIGHT FACING CHANNEL WHEN SPAN CLOSE.
C	SPAN CLEARANCE LIGHT	1	FIXED BRACKET MOUNTED ON STRUCTURAL STEEL	AS INDICATED ON DRAWINGS	LED [RED] [100,000 HOUR]	120	34.5	THE NAVIGATION LIGHT DESIGNED FOR USE AS A MARINE SIGNAL LIGHT FOR MARKING OF MOVING BRIDGE SPAN, PER COAST GUARD REQUIREMENTS; DIE-CAST ALUMINUM HOUSING; HEAVY DUTY ALUMINUM MOUNTING BRACKETS; STAINLESS STEEL HARDWARE; ENCLOSURE RATING IP66 MINIMUM; OPERATING TEMPERATURES : -25°C TO 50°C	B&B ROADWAY	MODEL SS	PIVOT PIER FENDER: 90° GREEN IN OPPOSITE FACE. GREEN LIGHT FACING CHANNEL WHEN SPAN IS IN OPENED POSITION
D	SPAN CLEARANCE LIGHT	1	BRACKET/STEM MOUNTED ON STRUCTURAL STEEL	AS INDICATED ON DRAWINGS	LED [GREEN] [100,000 HOUR]	120	34.5	THE NAVIGATION LIGHT DESIGNED FOR USE AS A MARINE SIGNAL LIGHT FOR MARKING OF MOVING BRIDGE SPAN, PER COAST GUARD REQUIREMENTS; DIE-CAST ALUMINUM HOUSING; HEAVY DUTY ALUMINUM MOUNTING BRACKETS; STAINLESS STEEL HARDWARE; ENCLOSURE RATING IP66 MINIMUM; OPERATING TEMPERATURES : -25°C TO 50°C	B&B ROADWAY	MODEL SS	SWING SPAN: 90° GREEN IN OPPOSITE FACE. GREEN LIGHT FACING CHANNEL WHEN SPAN IS IN OPENED POSITION

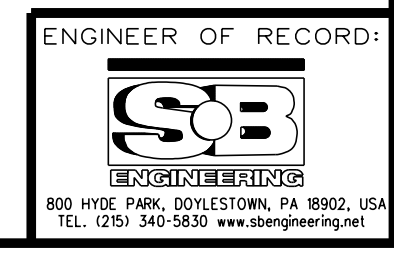
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)
BRIDGE NO. 2039
WIN
22607.00
BRIDGE PLANS

Professional Engineer Seal for KOSMOS NO. PE16263
 Signature: [Handwritten Signature]
 SIGNATURE: 15223
 P.E. NUMBER: 10-02-2018
 DATE: 10-2-2018

PROJ. MANAGER	R. TOSOLT	BY	DATE
DESIGN-DETAILED	J. KOSCIL	JRK/PK	8-10-2018
CHECKED-REVIEWED	J. KOSCIL	K. WAGNER	10-2-2018
DESIGN-DETAILED			
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY
LIGHT FIXTURE SCHEDULES

SHEET NUMBER
122
OF 132



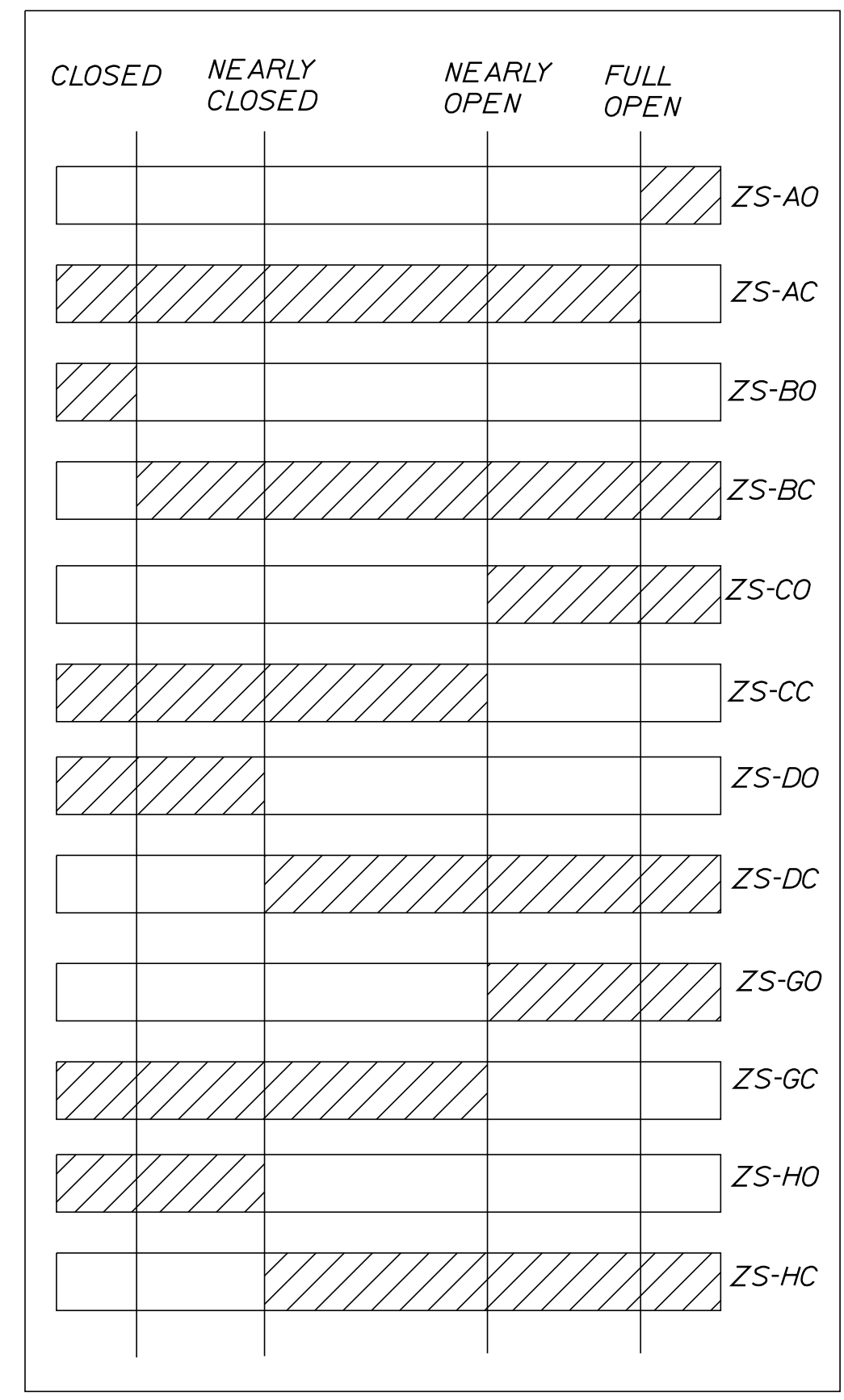
PLC I/O LIST		
FIELD DEVICE	FUNCTION	I/O TYPE
EAST REMOTE I/O CONTROLLER		
LIMIT SWITCH	EAST TRAFFIC GATE DOOR OPEN	INPUT
LIMIT SWITCH	EAST TRAFFIC GATE RAISED	INPUT
LIMIT SWITCH	EAST TRAFFIC GATE LOWERED	INPUT
E-STOP	EAST TRAFFIC GATE E-STOP	OUTPUT
STARTER	EAST TRAFFIC GATE RAISING	OUTPUT
STARTER	EAST TRAFFIC GATE LOWERING	OUTPUT
GATE GONG/FLASHER	EAST GATE GONG AND FLASHER	OUTPUT
STARTER HOA SWITCH	EAST TRAFFIC GATE CONTROL IN HAND	INPUT
TRAFFIC LIGHT	EAST TRAFFIC SIGNALS - GREEN	OUTPUT
TRAFFIC LIGHT	EAST TRAFFIC SIGNALS - AMBER	OUTPUT
TRAFFIC LIGHT	EAST TRAFFIC SIGNALS - RED	OUTPUT
WARNING LIGHT	EAST EARLY WARNING LIGHT	OUTPUT
WEST REMOTE I/O CONTROLLER		
LIMIT SWITCH	EAST TRAFFIC GATE DOOR OPEN	INPUT
LIMIT SWITCH	WEST TRAFFIC GATE RAISED	INPUT
LIMIT SWITCH	WEST TRAFFIC GATE LOWERED	INPUT
E-STOP	WEST TRAFFIC GATE E-STOP	OUTPUT
STARTER	WEST TRAFFIC GATE RAISING	OUTPUT
STARTER	WEST TRAFFIC GATE LOWERING	OUTPUT
GATE GONG/FLASHER	WEST GATE GONG AND FLASHER	OUTPUT
STARTER HOA SWITCH	WEST TRAFFIC GATE CONTROL IN HAND	INPUT
TRAFFIC LIGHT	WEST TRAFFIC SIGNALS - GREEN	OUTPUT
TRAFFIC LIGHT	WEST TRAFFIC SIGNALS - AMBER	OUTPUT
TRAFFIC LIGHT	WEST TRAFFIC SIGNALS - RED	OUTPUT
MAIN I/O CONTROLLER		
LIMIT SWITCH	MOTOR BRAKE RELEASED	INPUT
LIMIT SWITCH	MOTOR BRAKE SET	INPUT
LIMIT SWITCH	MOTOR BRAKE HAND RELEASED	INPUT
LIMIT SWITCH	THRUSTOR BRAKE RELEASED	INPUT
LIMIT SWITCH	THRUSTOR BRAKE SET	INPUT
LIMIT SWITCH	THRUSTOR BRAKE HAND RELEASED	INPUT
LIMIT SWITCH	END SEATS DRIVEN	INPUT
LIMIT SWITCH	END SEATS PULLED	INPUT
LIMIT SWITCH	JACKS RAISED	INPUT
LIMIT SWITCH	JACKS LOWERED	INPUT
LIMIT SWITCH	SPAN FULL OPEN	INPUT
LIMIT SWITCH	SPAN FULL CLOSE	INPUT
LIMIT SWITCH	SPAN NEAR OPEN	INPUT
LIMIT SWITCH	SPAN NEAR CLOSE	INPUT

PLC I/O LIST		
FIELD DEVICE	FUNCTION	I/O TYPE
LIMIT SWITCH	CAPSTAN INSERTED	INPUT
STARTER HOA SWITCH	THRUSTOR BRAKE CONTROL IN HAND	INPUT
STARTER HOA SWITCH	NW JACK CONTROL IN HAND	INPUT
STARTER HOA SWITCH	SW JACK CONTROL IN HAND	INPUT
STARTER HOA SWITCH	NW END SEAT CONTROL IN HAND	INPUT
STARTER HOA SWITCH	SW END SEAT CONTROL IN HAND	INPUT
E-STOP	E-STOP PRESSED	INPUT
STARTER	NW END SEAT PULLING	OUTPUT
STARTER	SW END SEAT PULLING	OUTPUT
STARTER	NW END SEAT DRIVING	OUTPUT
STARTER	SW END SEAT DRIVING	OUTPUT
STARTER	NW JACK RAISING	OUTPUT
STARTER	SW JACK RAISING	OUTPUT
STARTER	NW JACK LOWERING	OUTPUT
STARTER	SW JACK LOWERING	OUTPUT
STARTER	BRAKES RELEASE	OUTPUT
LIMIT SWITCH	SPAN FULL CLOSE (GO TO REDUCED TORQUE)	OUTPUT
LIMIT SWITCH	SPAN NEAR CLOSE (GO TO CREEP SPEED)	OUTPUT
WEST SIDE EARLY WARNING LIGHT CONTROLLER		
WARNING LIGHT	WEST EARLY WARNING LIGHT	OUTPUT

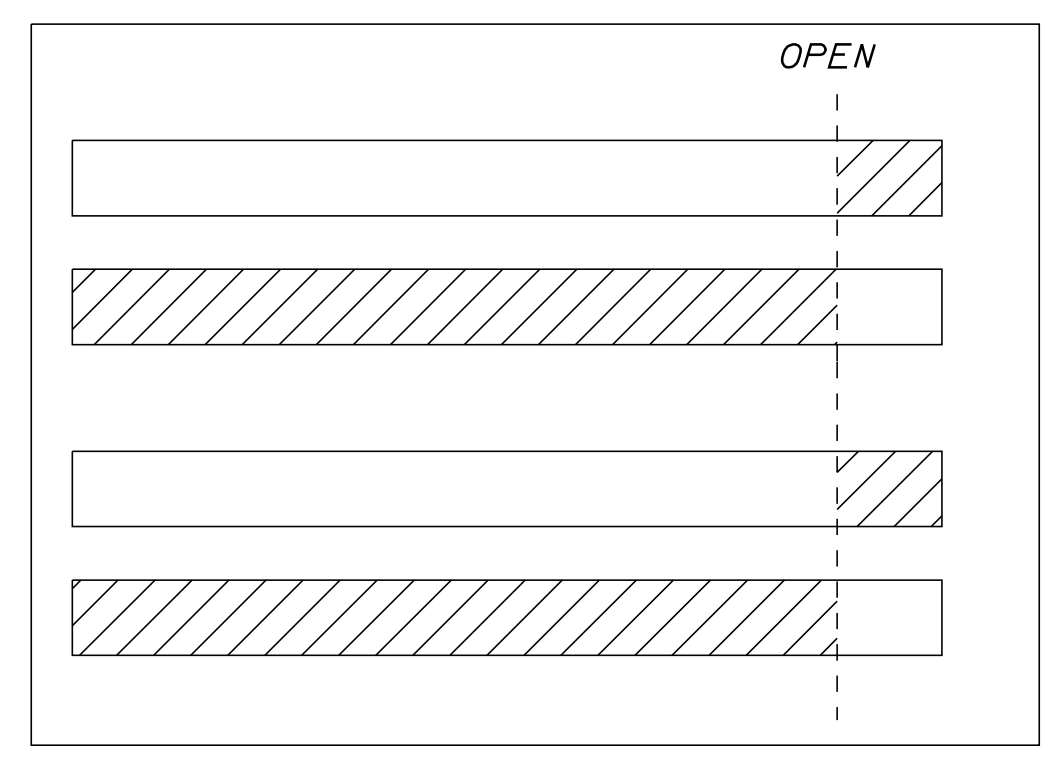
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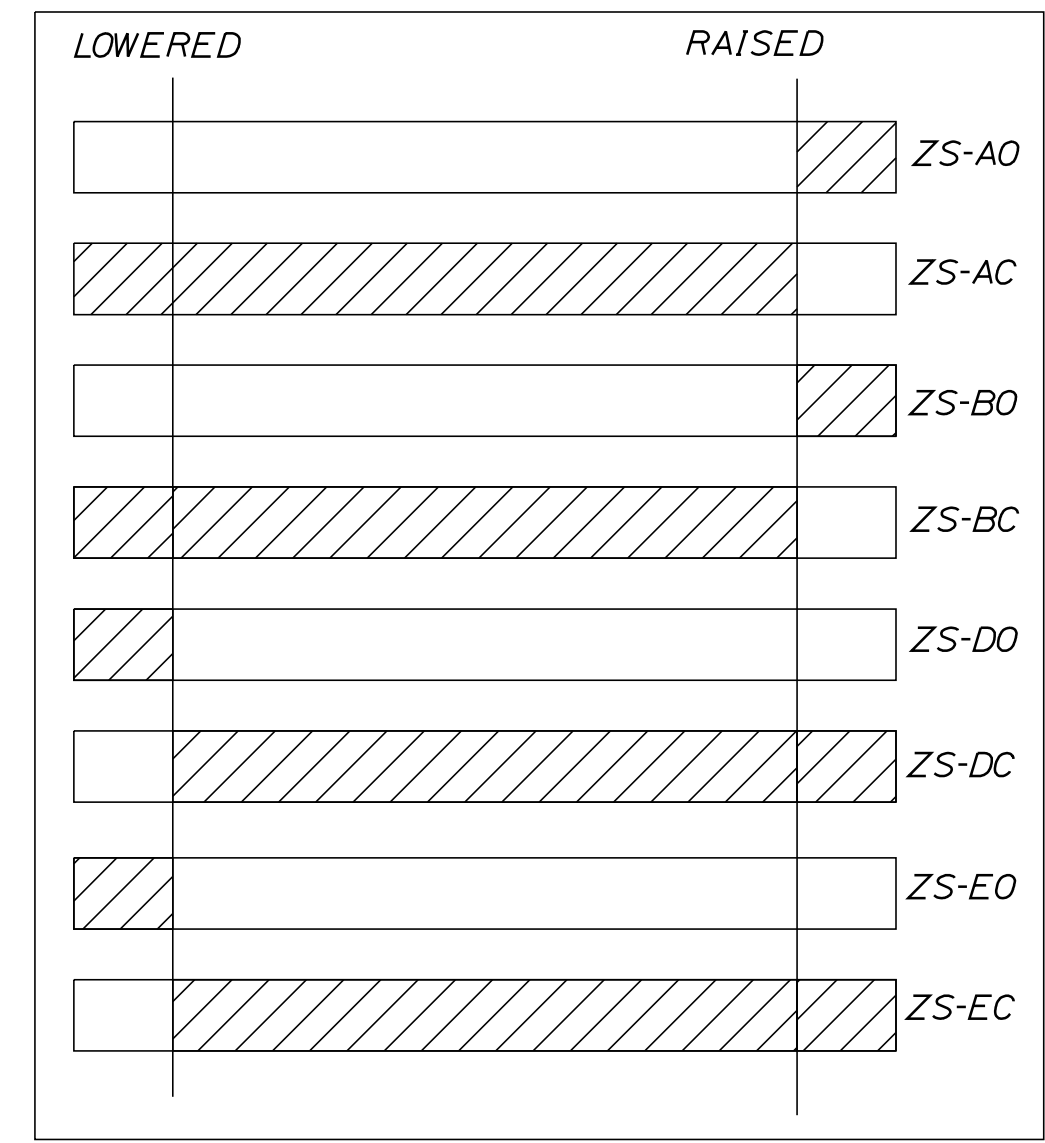
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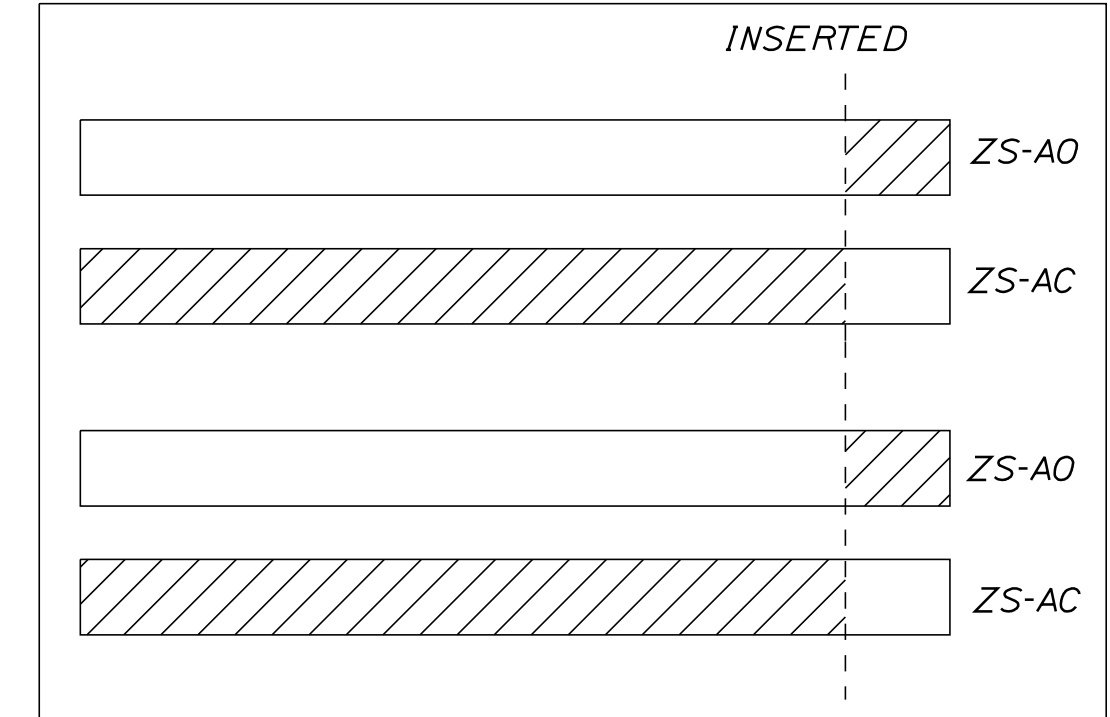
BRIDGE SPAN POSITION
ROTARY CAM LIMIT SWITCHES
BRIDGE SPAN POSITION LIMIT SWITCH RCLS-CI



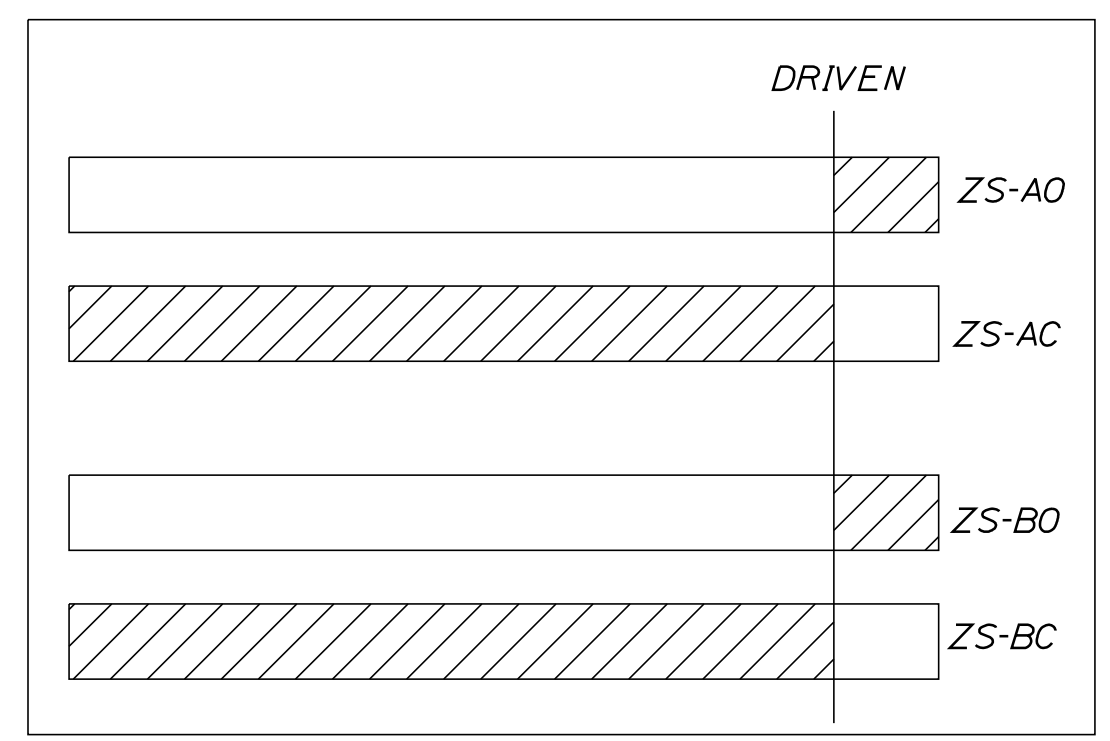
TRAFFIC GATE DOOR LEVER
LIMIT SWITCH
DOOR LS-WG-DR
DOOR LS-EG-DR



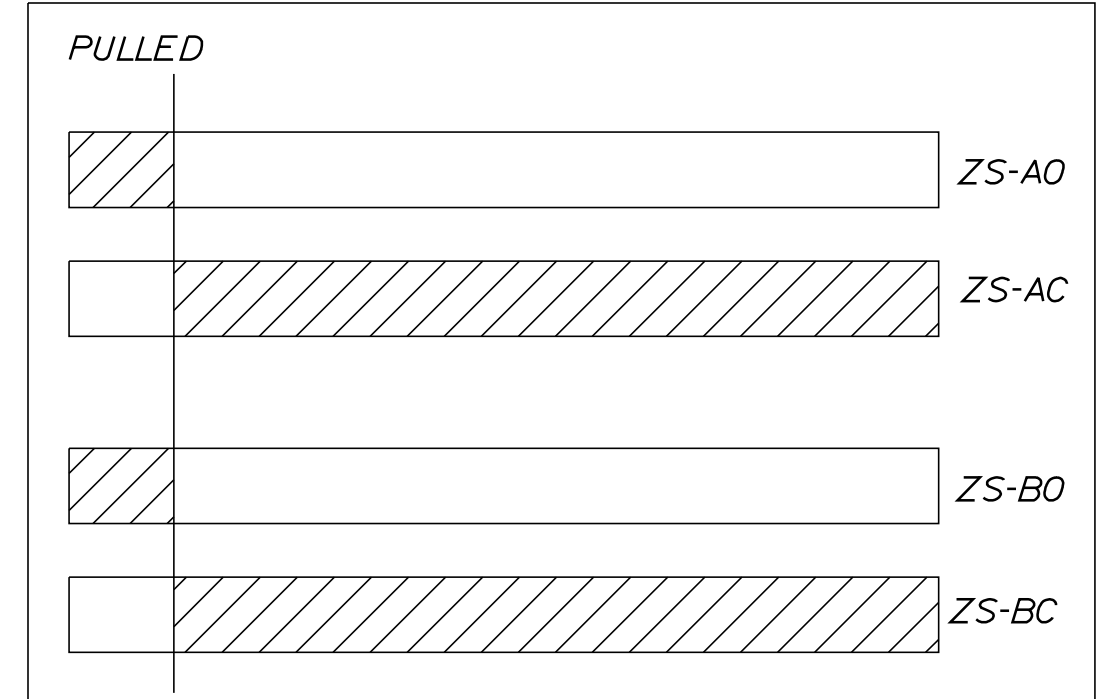
SPAN END JACK
RCLS
SOUTHWEST END SEAT LS-SWEJ-R
NORTHWEST END SEAT LS-NWEJ-R
SOUTHWEST END SEAT LS-SWEJ-L
NORTHWEST END SEAT LS-NWEJ-L



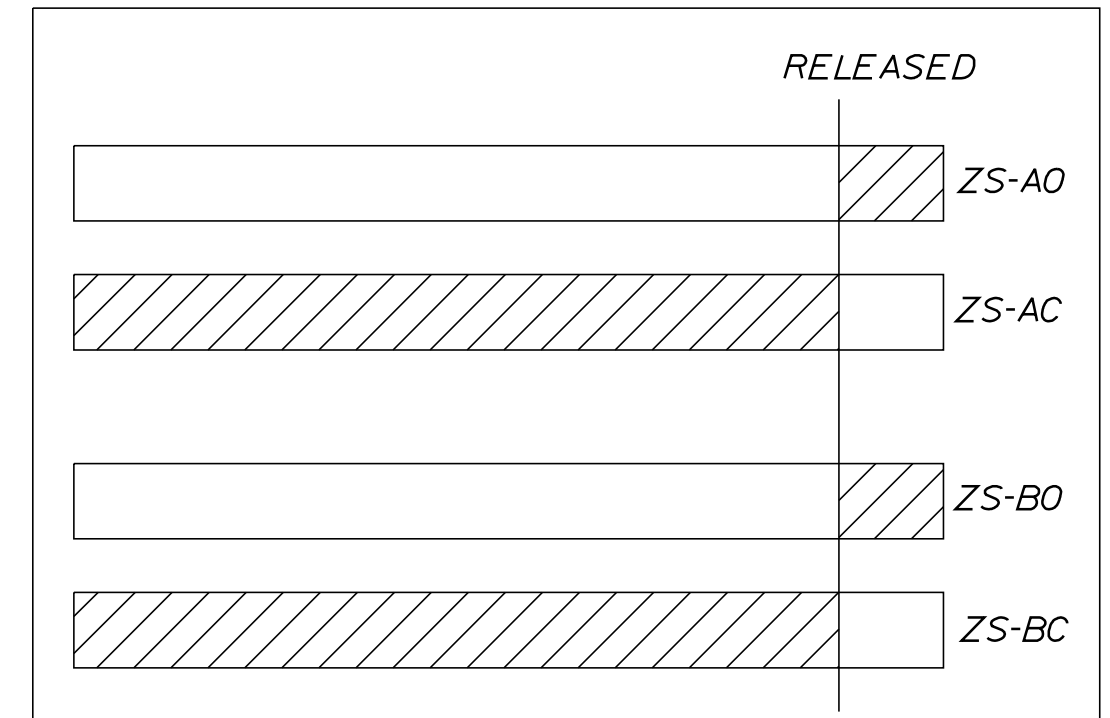
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LEVER LIMIT SWITCH
HAND CRANK LS-WG-HC
HAND CRANK LS-EG-HC



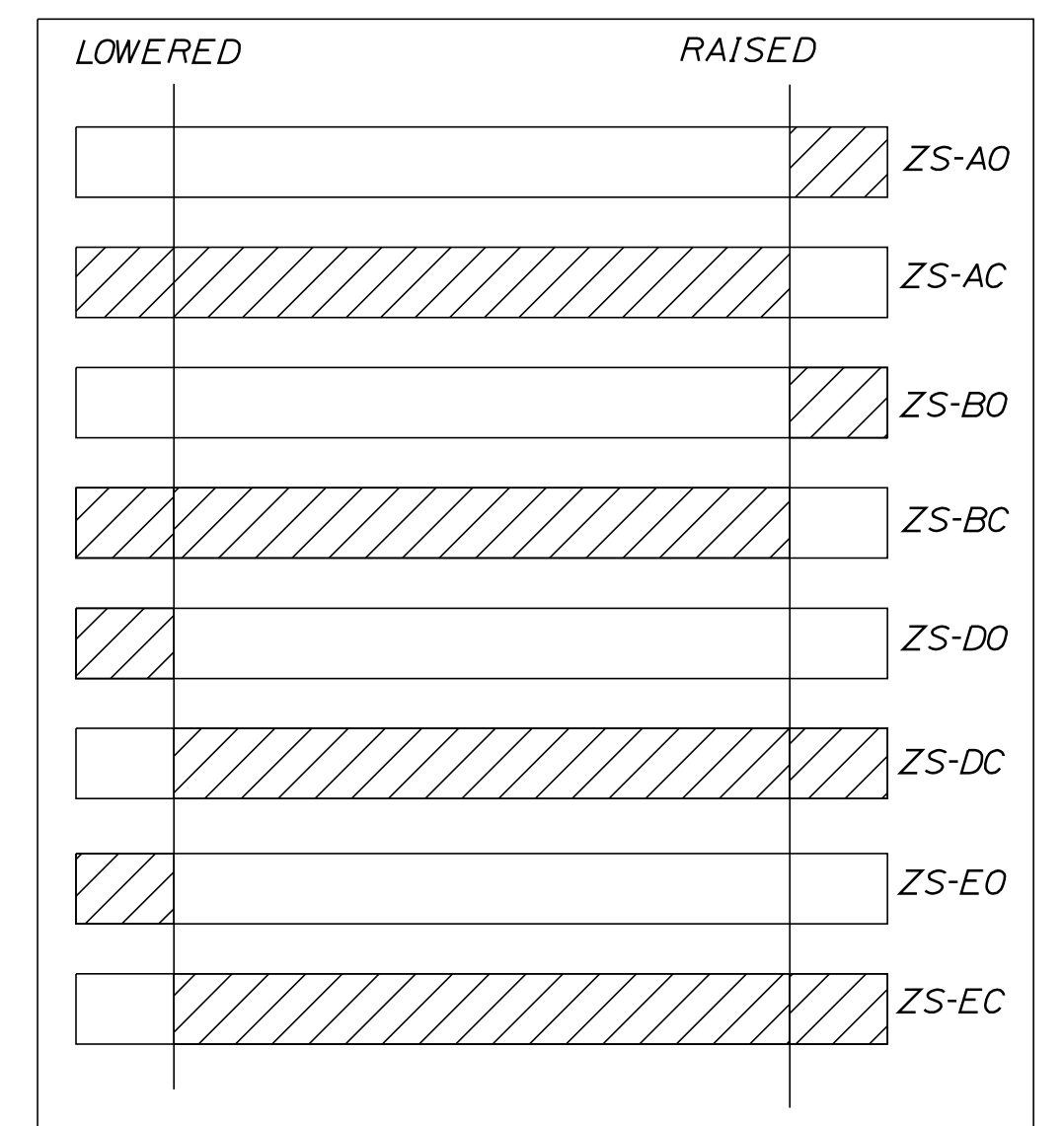
SPAN END SEAT
LEVER LIMIT SWITCHES
SOUTHWEST END SEAT LS-SWES-D
NORTHWEST END SEAT LS-NWES-D



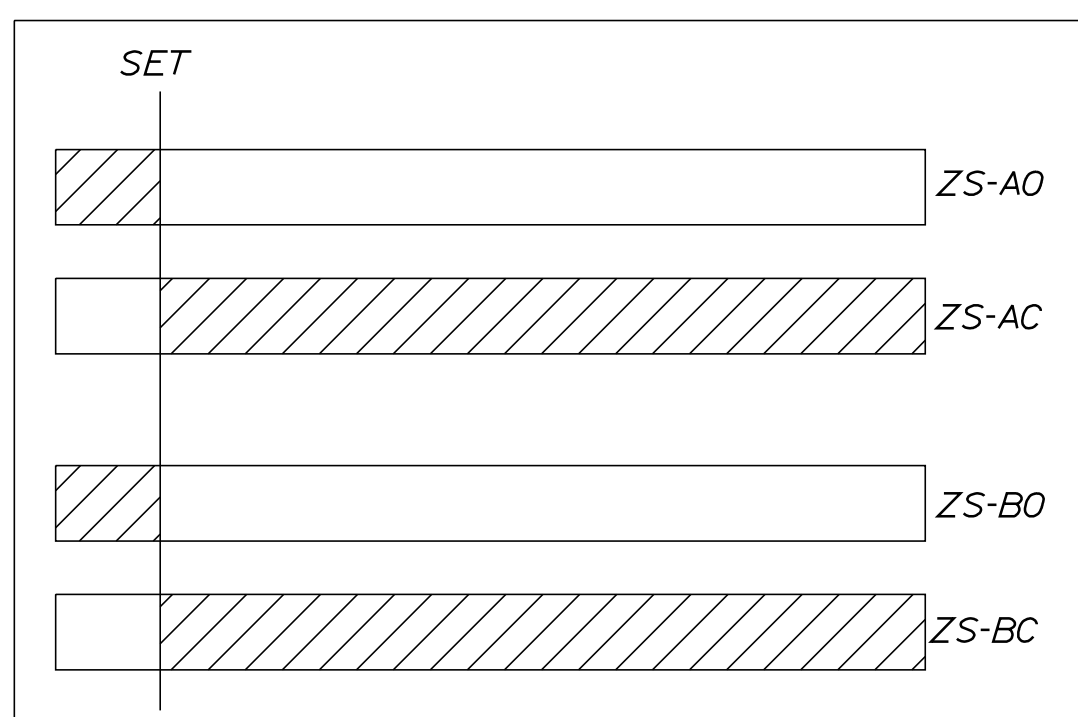
SPAN END SEAT
LEVER LIMIT SWITCHES
SOUTHWEST END SEAT LS-SWES-P
NORTHWEST END SEAT LS-NWES-P



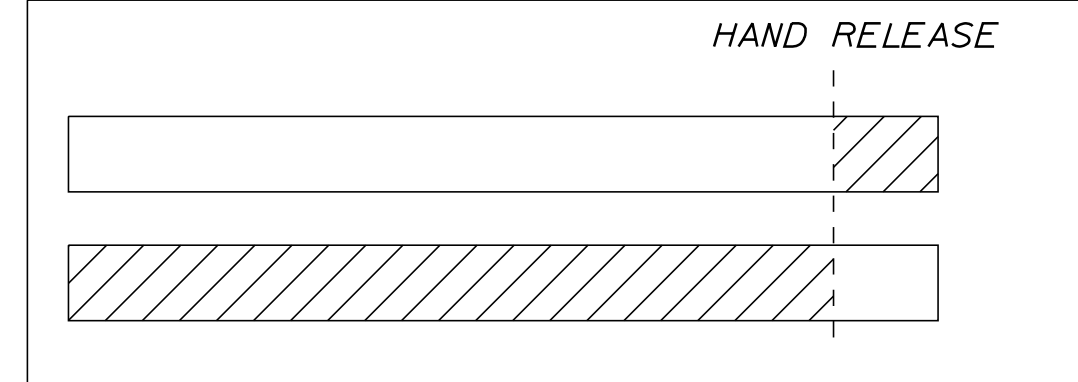
THRUSTOR BRAKE
LEVER LIMIT SWITCH
THRUSTOR BRAKE LS-TB-R



GATE LIMIT SWITCHES
TRAFFIC GATE POSITION
LIMIT SWITCH LS-EG-R, LS-WG-R
LS-EG-L, LS-WG-L



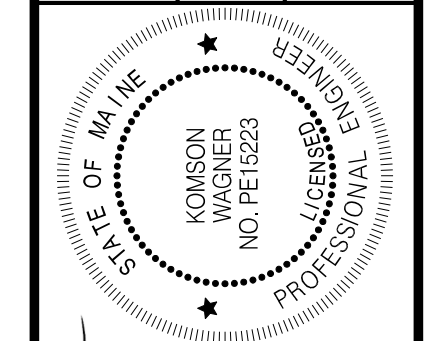
THRUSTOR BRAKE
LEVER LIMIT SWITCH
THRUSTOR BRAKE LS-TB-S



BRAKE HAND RELEASED
LEVER LIMIT SWITCHES
MOTOR BRAKE LS-MB-HR
THRUSTOR BRAKE LS-TB-HR

NOTE:
NEARLY CLOSED AND NEAR FULLY OPENED ANGULAR POSITIONS SHALL BE FIELD
ADJUSTED FOR OPTIMUM CLOSING AND OPENING OPERATIONS.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)
BRIDGE NO. 2039
WIN
22607.00
BRIDGE PLANS



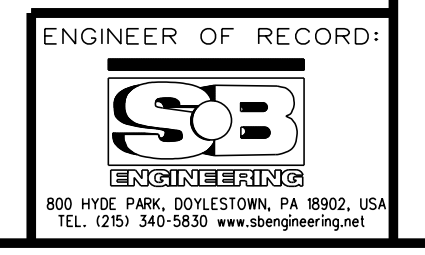
PROJ. MANAGER	DATE	BY	R. TOSOLT
DESIGN-DETAILED	8-10-2018	J. KOSCIOL	
CHECKED-REVIEWED	10-2-2018	K. WAGNER	
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY
LIMIT SWITCH DEVELOPMENT

SHEET NUMBER

124

OF 132

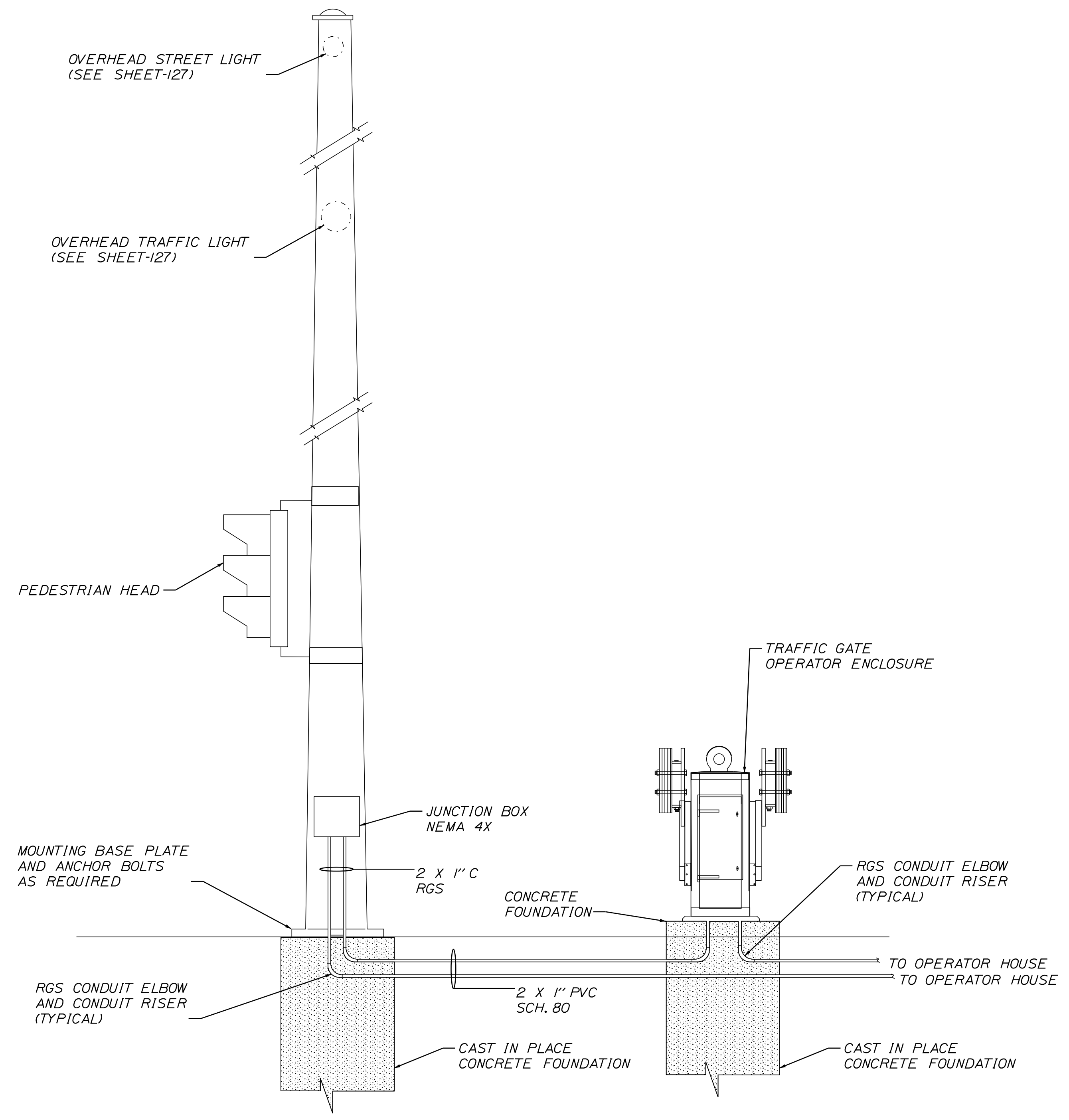


800 HYDE PARK, DOYLESTOWN, PA 19902, USA
TEL: (215) 340-5830 www.sobengineering.net

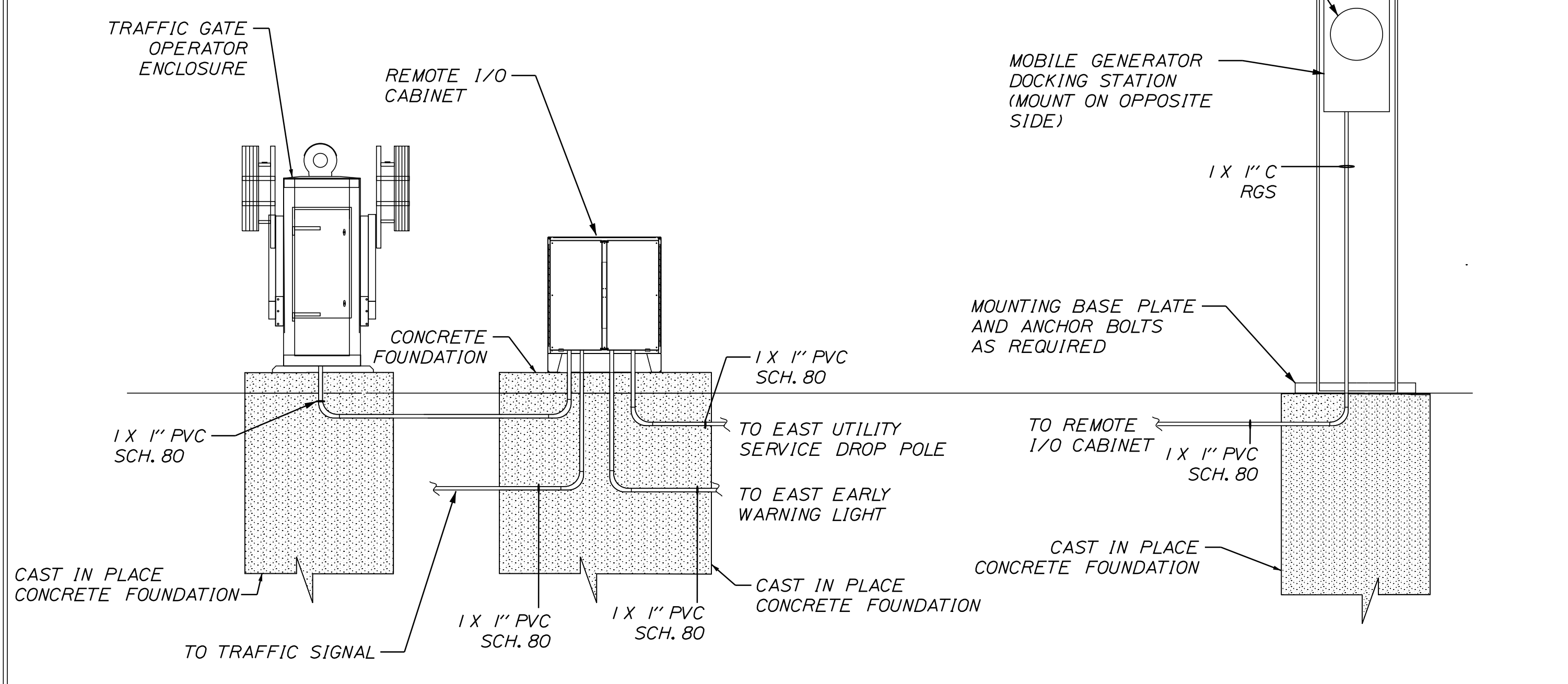
Date: 10/2/2018

Username: common

Filename: ... \125_Traffic_Control_And_Gate_Installation\Details\Detail.dwg



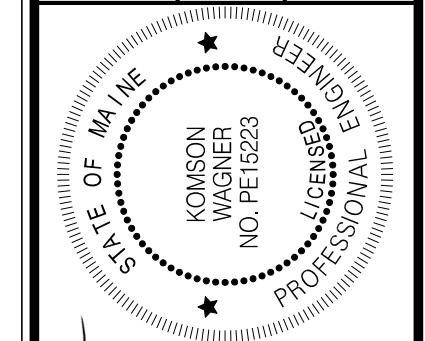
B
94 WEST SIDE TRAFFIC GATE ELEVATION VIEW
SCALE: N.T.S



C
94 EAST SIDE TRAFFIC GATE ELEVATION VIEW
SCALE: N.T.S

F
94 EAST UTILITY SERVICE DROP POLE
SCALE: N.T.S

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)



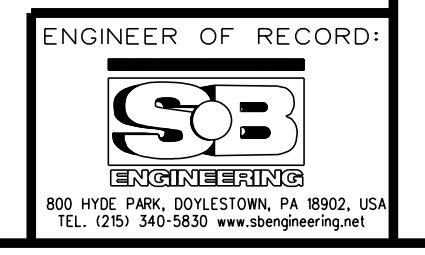
PROJ. MANAGER: J. KOSCIOL
DESIGN: J. KOSCIOL
CHECKED: K. WAGNER
DATE: 8-10-2018

DATE	BY	R. TO SOLT	PROJ. MANAGER	DESIGN	CHECKED	DATE
8-10-2018	J. KOSCIOL	J. KOSCIOL	J. KOSCIOL	DESIGN	K. WAGNER	10-2-2018
				DESIGN		
				REVISIONS		
				REVISIONS		
				REVISIONS		
				REVISIONS		
				FIELD CHANGES		

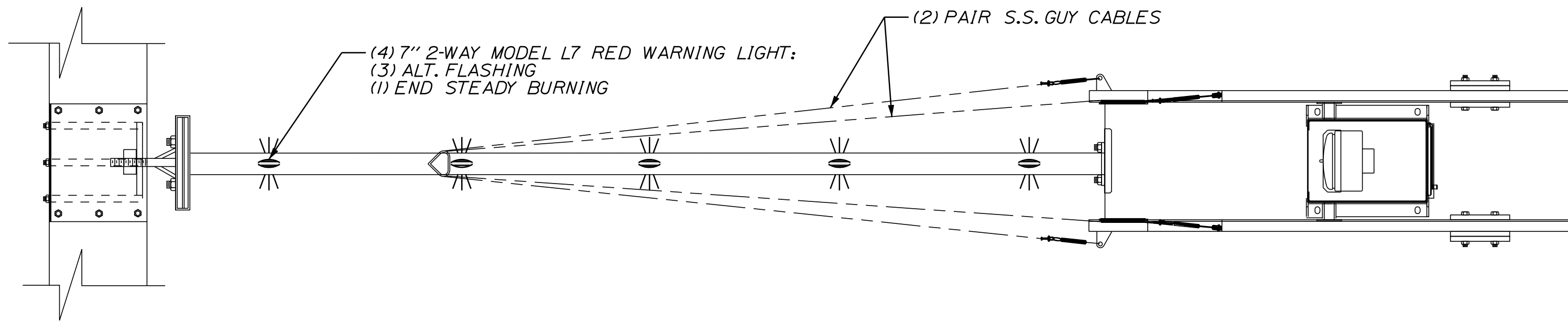
SIGNATURE: [Signature]
15223
P.E. NUMBER
10-02-2018
DATE

BARTER'S ISLAND BRIDGE
BACK RIVER
LINCOLN COUNTY
BOOTHBAY
TRAFFIC CONTROL AND GATE
INSTALLATION DETAILS

SHEET NUMBER
125
OF 132



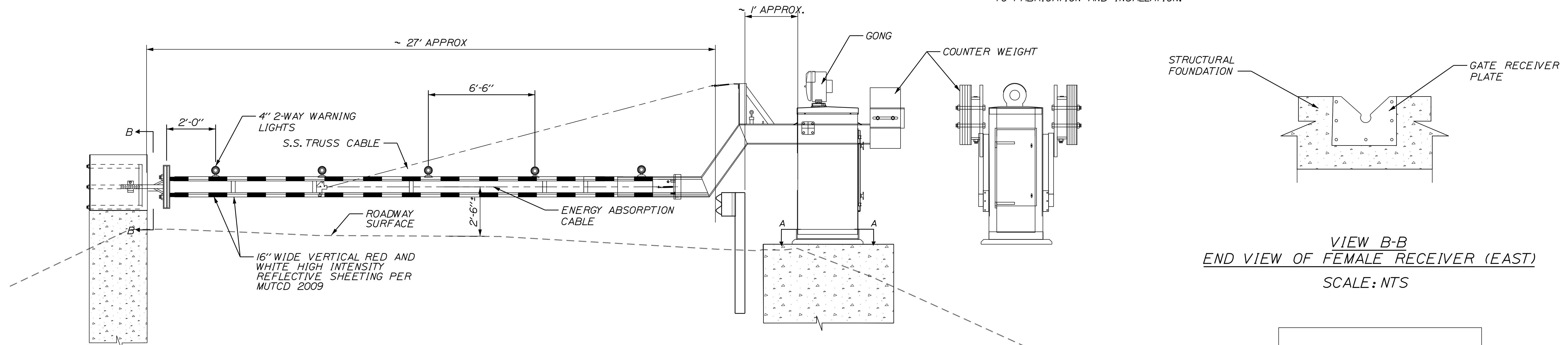
BRIDGE NO. 2039
WIN
22607.00
BRIDGE PLANS



RESISTANCE BARRIER TRAFFIC GATE PLAN VIEW
 (EAST SHOWN WEST SIMILAR)
 SCALE:NTS

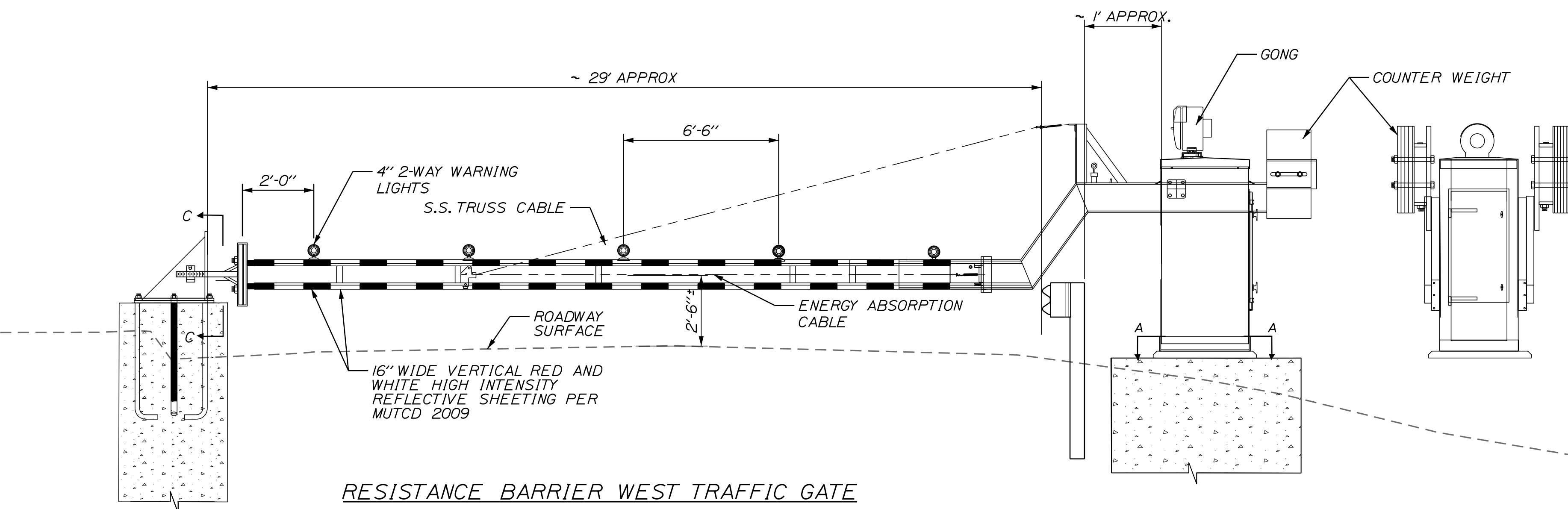
ELECTRICAL DEMOLITION NOTES:

1. BARRIER GATES ARE TO BE STANDARD DOUBLE RAIL ARM WITH RESISTANCE CABLES. THE VEHICULAR CRASH PENETRATION DISTANCE OF THE GATE SHALL BE NO GREATER THAN 13'-3".
2. AS PER AASHTO GATES SHALL BE SPECIFIED TO OPERATE RELIABLY AT THE MAXIMUM WIND VELOCITY AND ICE BUILD UP ON GATE ARMS FOR WHICH THE MOVABLE BRIDGE IS CONSIDERED OPERATIONAL.
3. OPERATOR HOUSING, RECEIVER, SIDE ARM TUBES, AND COUNTERWEIGHTS TO BE HOT DIPPED GALVANIZED STEEL.
4. DOORS TO BE HINGED, REMOVABLE, LOCKABLE, AND KEYPED ALIKE.
5. (2) BARRIER GATES REQUIRED AS SHOWN.
6. LOCATE GATE HOUSING AND RECEIVER PLATES AT ELEVATION SUCH THAT ARM CENTERLINE HEIGHT ABOVE ROADWAY SURFACE OF 24" ±2" IS MAINTAINED.
7. MANUFACTURER TO FURNISH TEMPLATE FOR SETTING ANCHOR BOLTS. BOLTS PER PROJECT ENGINEER SPECIFICATIONS (FOR EACH GATE). CONTRACTOR TO FURNISH ANCHOR BOLTS.
8. GATE HOUSING AND ANCHORAGE MUST BE ON FLAT AND LEVEL SURFACE WITH BASE OF HOUSING APPROXIMATELY 4" ABOVE FINISHED GRADE.
9. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS, PAYING CLOSE ATTENTION TO MANUFACTURER SHOP DRAWING, PLACEMENT AND INSTALLATION OF GATE FOUNDATIONS IN RELATION TO ROAD FINISH GRADE PROFILE, DISTANCE AND CLEARANCE FROM GUARD RAIL. THE GATE ARM SHOULD NOT BE FABRICATED UNTIL ALL DIMENSION HAVE BEEN FIELD VERIFIED.
10. THE GATE ARM LENGTH AND CONFIGURATION SHALL BE CUSTOMIZED TO FIT SITE ARRANGEMENT BASE ON ACTUAL PLACEMENT OF GATE OPERATOR ENCLOSURE AND THE BARRIER GATE RECEIVER ON THE OPPOSITE END. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE GATE ARM LENGTH AND CONFIGURATION WITH THE MANUFACTURER TO ENSURE PROPER ALIGNMENT AND GUARD RAIL AND ROADWAY CLEARANCES.
11. CONTRACTOR SHALL SUBMIT MANUFACTURER SHOP DRAWING AND SITE INSTALLATION DRAWING SHOWING ALL DIMENSION NECESSARY TO ENSURE PROPER INSTALLATION, ALIGNMENT AND CLEARANCES FOR APPROVAL PRIOR TO FABRICATION AND INSALLATION.



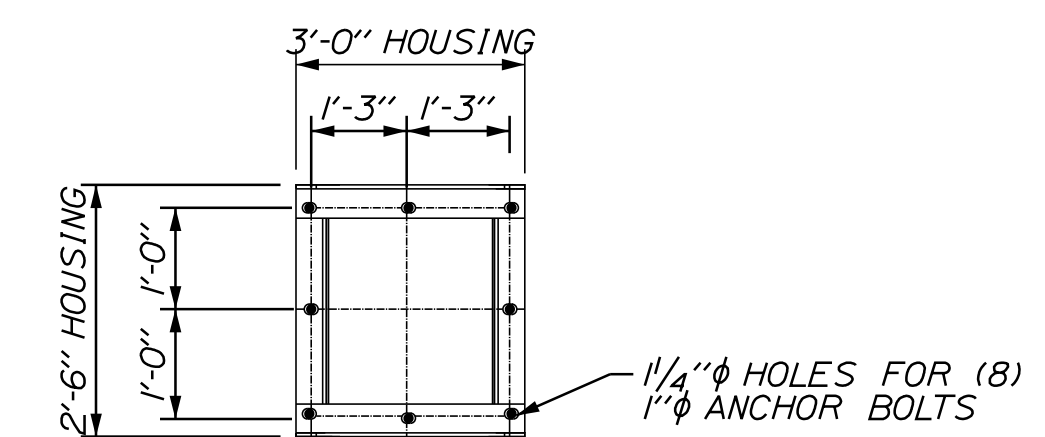
RESISTANCE BARRIER EAST TRAFFIC GATE
 SCALE:NTS

VIEW B-B
 END VIEW OF FEMALE RECEIVER (EAST)
 SCALE:NTS

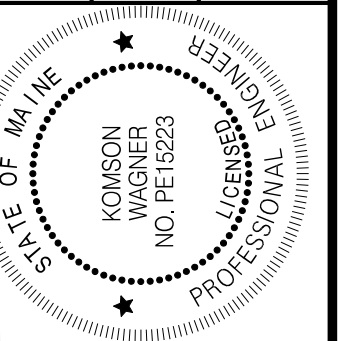


RESISTANCE BARRIER WEST TRAFFIC GATE
 SCALE:NTS

VIEW C-C
 END VIE OF FEMALE RECEIVER (WEST)
 SCALE:NTS



SECTION A-A
 MOUNTING DIMENSION



PROJ. MANAGER	R. TOSOLT	BY	J. KOSCIL	DATE	8-10-2018
DESIGN-DETAILED	J. KOSCIL	CHECKED-REVIEWED	J. KOSCIL	SIGNATURE	15223
DESIGN-REVIEWED	J. KOSCIL	DESIGN-DETAILED	K. WAGONER	P.E. NUMBER	10-02-2018
DESIGN-DETAILED		DESIGN-REVIEWED		DATE	
REVISIONS 1		REVISIONS 2			
REVISIONS 3		REVISIONS 4			
FIELD CHANGES					

SHEET NUMBER

126

OF 132



Date:10/2/2018

Username: common

Division: BRIDGE

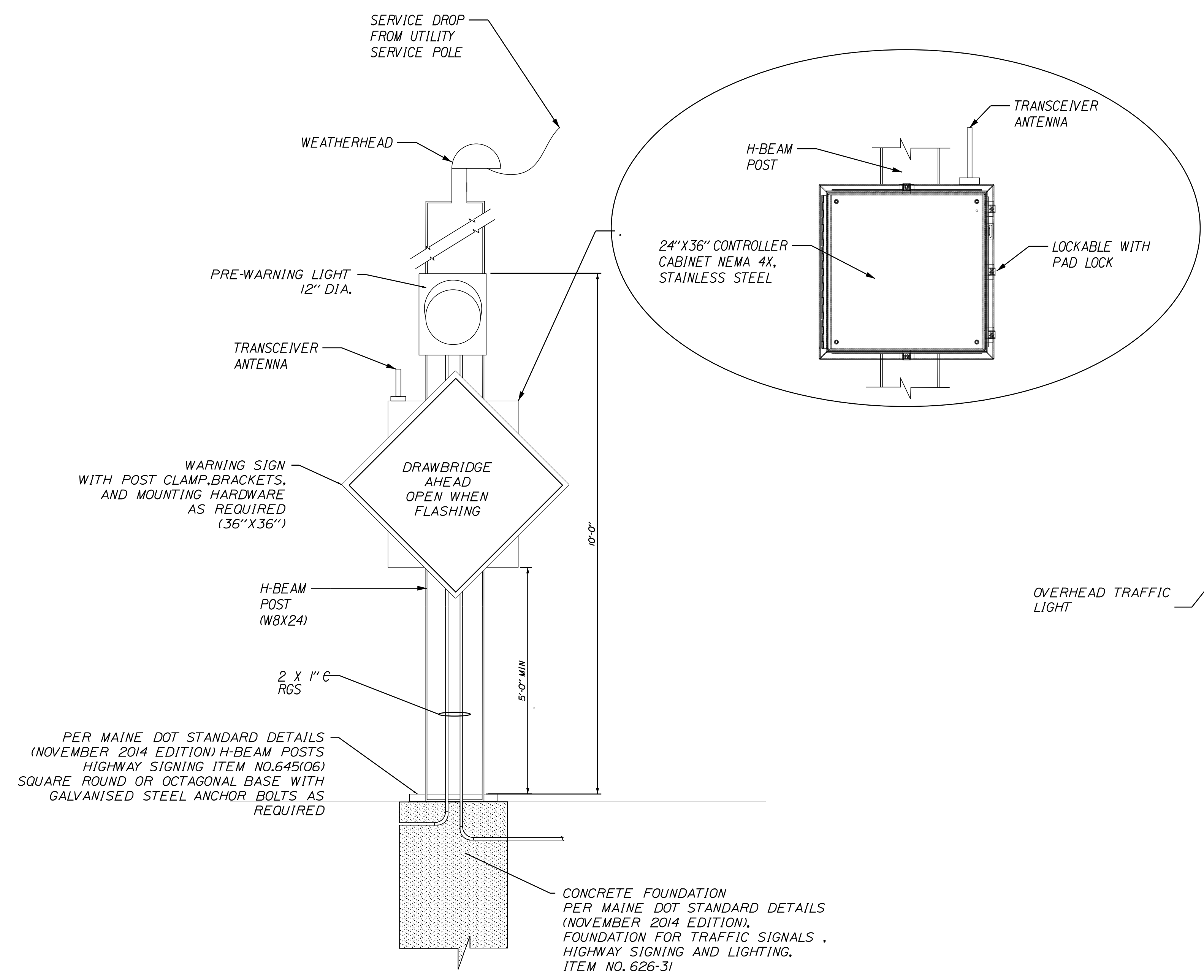
Filename: ... \126_Traffic_Gate_Details.dgn

Date: 10/2/2018

Username: common

Division: BRIDGE

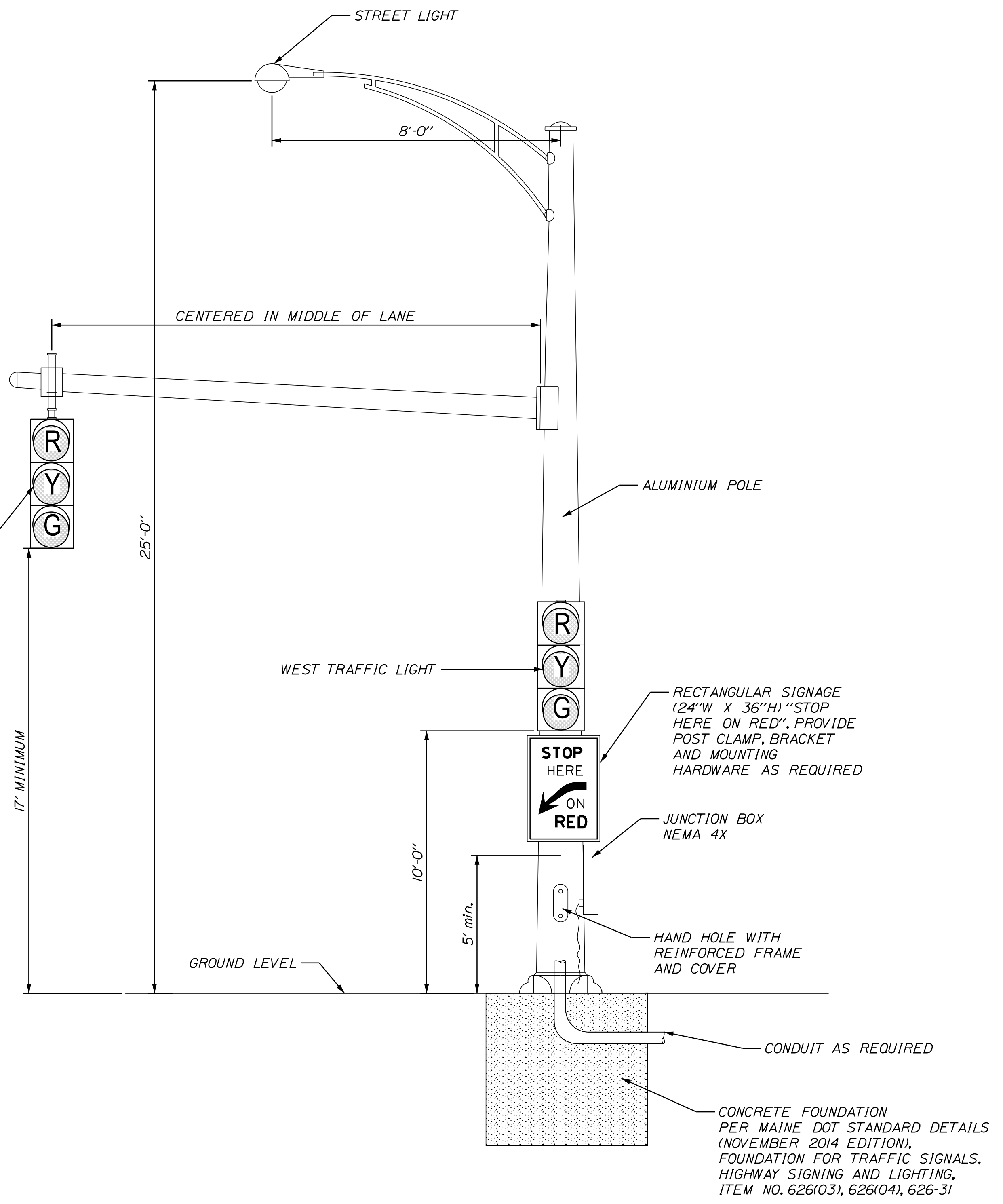
Filename: ... \127_Early_Warning_Light.dgn



D
94 **DETAIL EARLY WARNING LIGHT**
SCALE: N.T.S

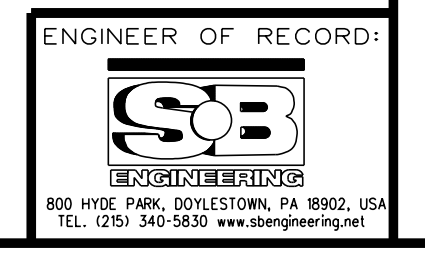
NOTES:

1. ALL WORK FOR TRAFFIC SIGNAL LIGHT, SIGN, AND ASSOCIATED INSTALLATION SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THE CURRENT EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICE FOR STREETS AND HIGHWAYS", FHWA, AND TO "STANDARD HIGHWAY SIGNS".
2. EAST SIDE EARLY WARNING LIGHT DOES NOT HAVE I/O CABINET.



E
125 **TRAFFIC LIGHT**
SCALE: N.T.S

STATE OF MAINE DEPARTMENT OF TRANSPORTATION STP-2260(700)		BRIDGE NO. 2039 WIN 22607.00 BRIDGE PLANS
PROJ. MANAGER	DATE	DATE
DESIGN-DETAILED	BY	DATE
CHECKED-REVIEWED	DATE	DATE
DESIGN-DETAILED	DATE	DATE
REVISIONS 1	DATE	DATE
REVISIONS 2	DATE	DATE
REVISIONS 3	DATE	DATE
REVISIONS 4	DATE	DATE
FIELD CHANGES	DATE	DATE
BARTER'S ISLAND BRIDGE BACK RIVER BOOTHBAY LINCOLN COUNTY		EARLY WARNING LIGHT
SHEET NUMBER		127
OF 132		

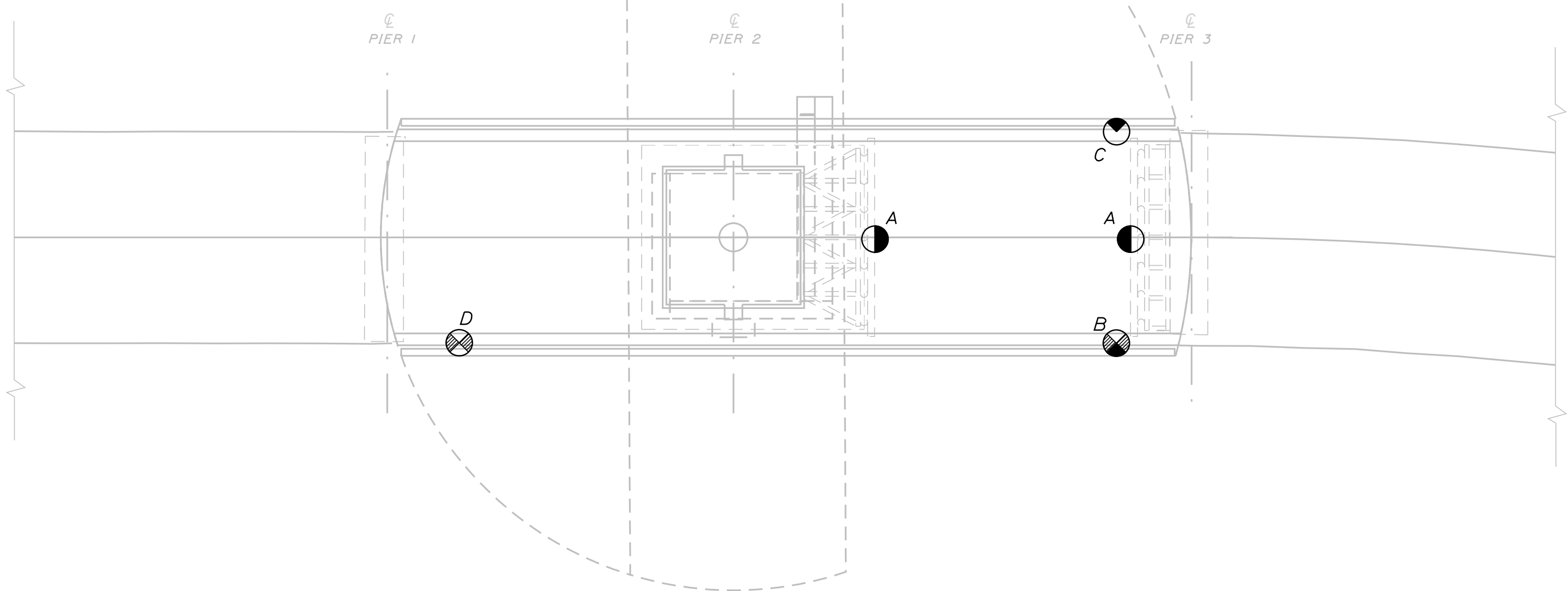
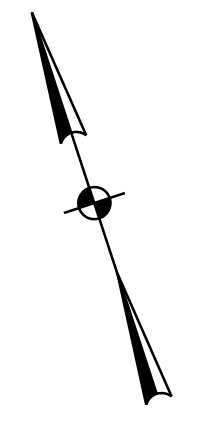


Date: 10/12/2018

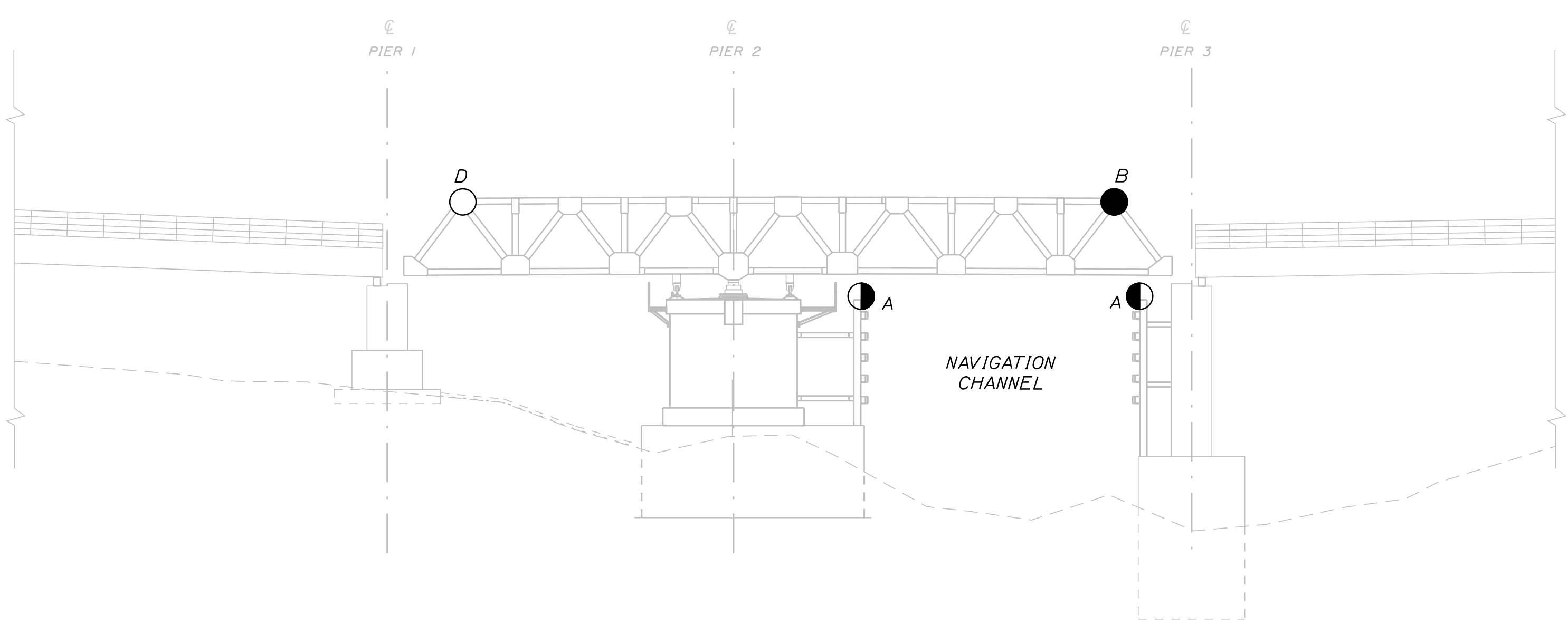
Username: common

Division: BRIDGE

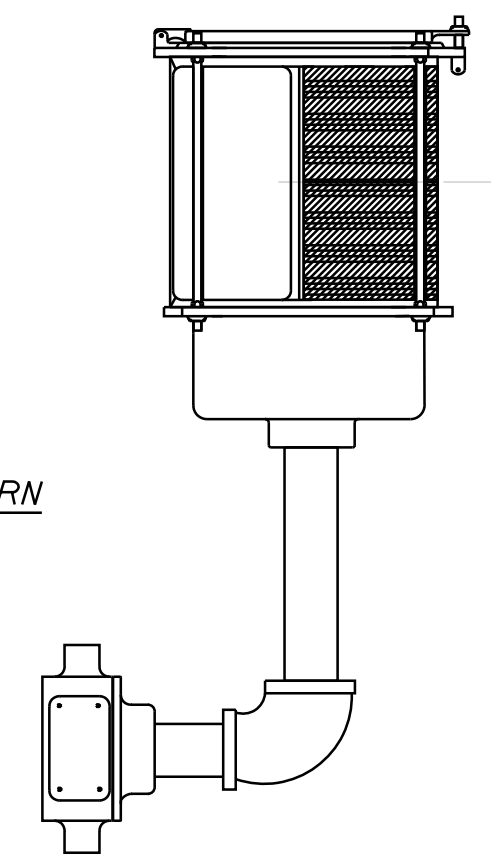
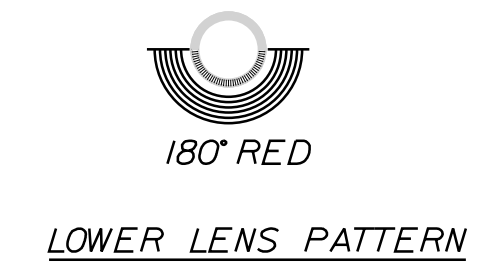
Filename: ... \128_Navigation_Lighting_Layout.dgn



NAVIGATION LIGHTING LAYOUT PLAN VIEW
SCALE: NTS



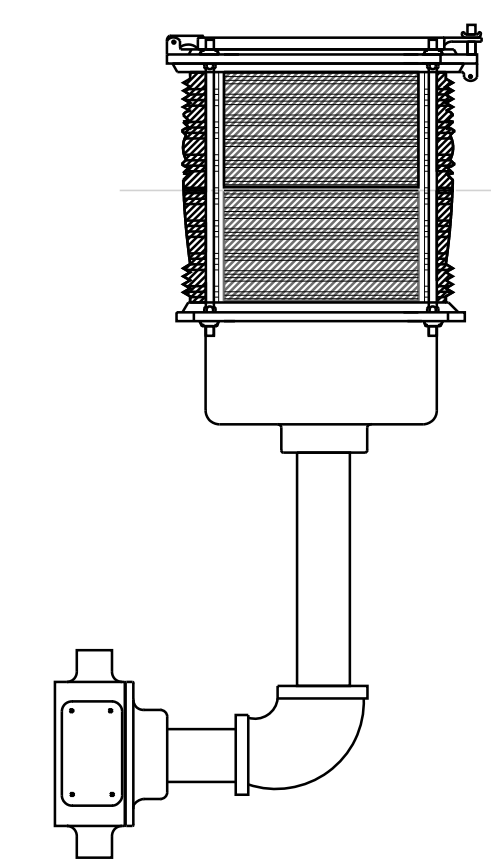
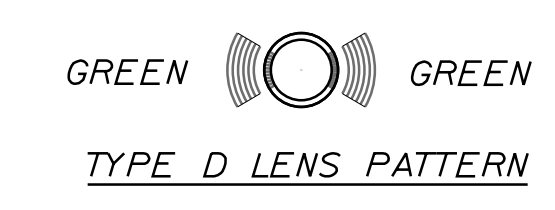
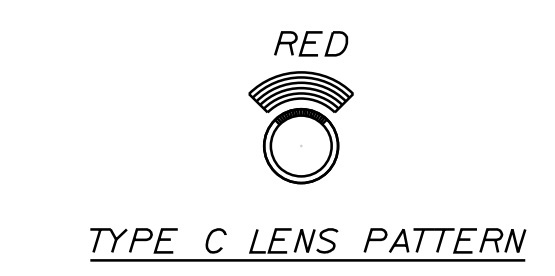
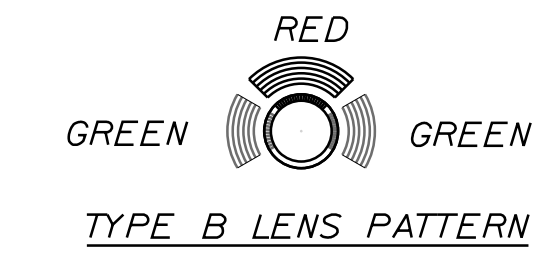
NAVIGATION LIGHTING LAYOUT ELEVATION VIEW
SCALE: NTS



TYPICAL PIVOT PIER FENDER LIGHT: TYPE A
SCALE: NTS

NOTE:

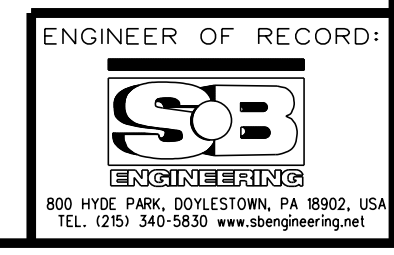
- 1. RED LIGHT FACES NAVIGATION CHANNEL WHEN SPAN LEAF IS IN CLOSE POSITION; GREEN LIGHT FACES NAVIGATION CHANNEL WHEN SPAN LEAF IS IN FULLY OPENED POSITION



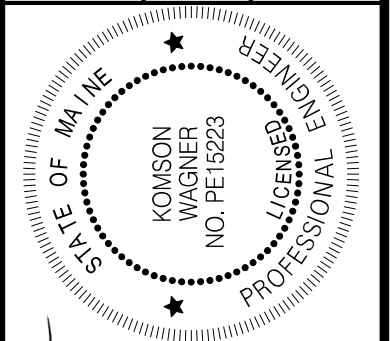
TYPICAL SWING SPAN NAVIGATION LIGHT: TYPE B, TYPE C, TYPE D
SCALE: NTS

LENS TYPE:	A	B	C	D
LENS COLOR:	BLANK	GREEN	RED	

BRIDGE NAVIGATION LIGHT KEY



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)
WIN
22607.00
BRIDGE NO. 2039
BRIDGE PLANS



PROJ. MANAGER: *Ron Wagner*
DESIGN-DETAILED: J. KOSCIK
CHECKED-REVIEWED: J. KOSCIK
DESIGN-DETAILED: J. KOSCIK
DESIGN-DETAILED: J. KOSCIK
REVISIONS 1: _____
REVISIONS 2: _____
REVISIONS 3: _____
REVISIONS 4: _____
FIELD CHANGES: _____

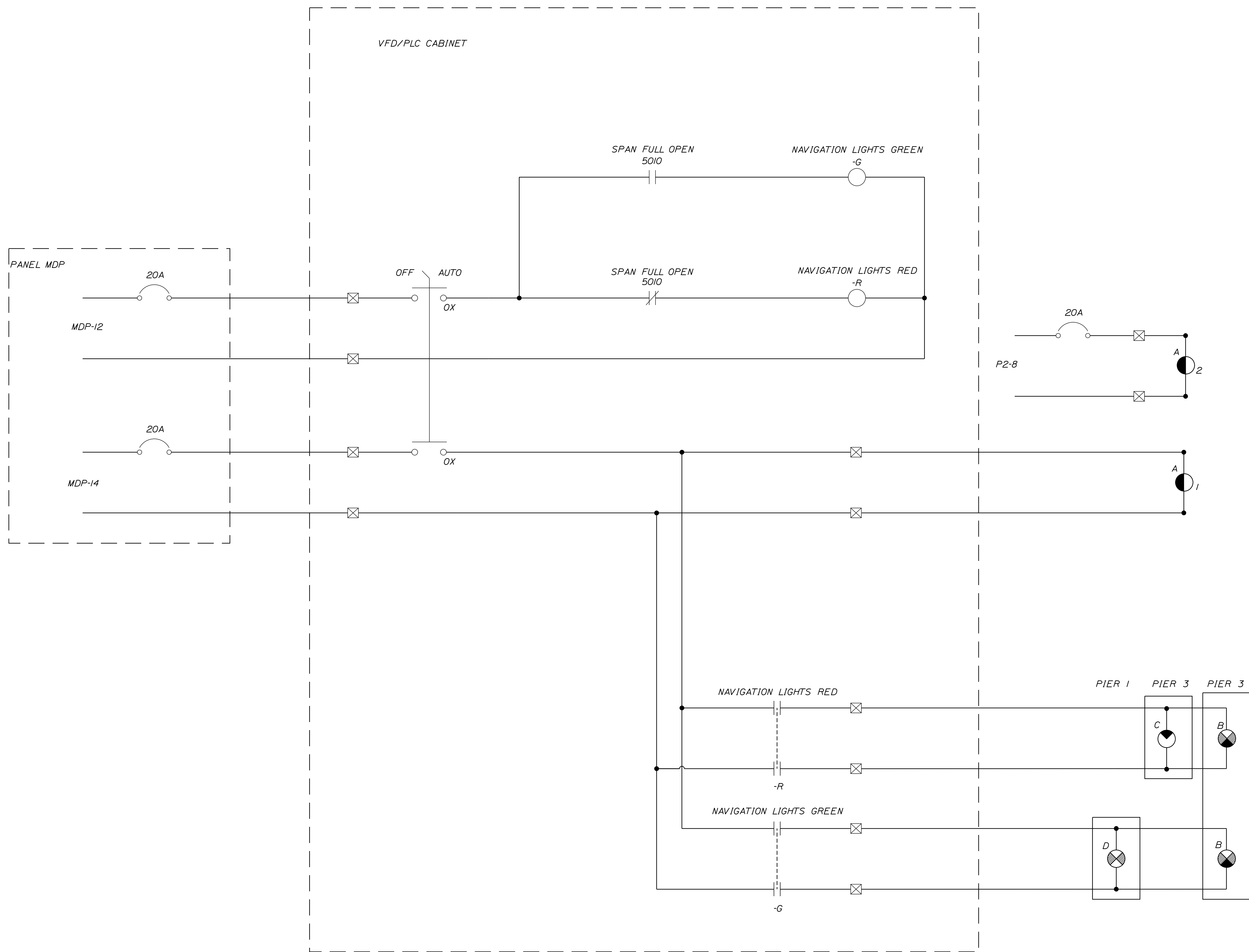
DATE: 8-10-2018
BY: ARK: PK
K. WAGNER
SIGNATURE: *Ron Wagner*
P.E. NUMBER: 15223
DATE: 10-02-2018

BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY
LINCOLN COUNTY
NAVIGATION LIGHTING LAYOUT

SHEET NUMBER

128

OF 132



NAVIGATION LIGHTING CONTROL

OBSTRUCTION LIGHT ON PIER-3

OBSTRUCTION LIGHT ON PIER-2

SPAN POSITION LIGHT (RED LAMPS) ON PIVOT PIER MOVING STRUCTURE

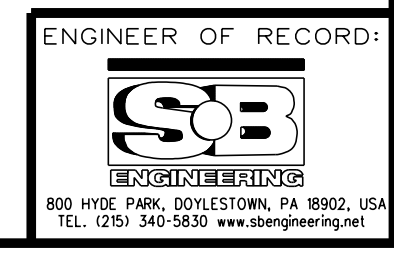
SPAN POSITION LIGHT (GREEN LAMPS) ON PIVOT PIER MOVING STRUCTURE



PROJ. MANAGER: *Kim Wagner*
 CHECKED-REVIEWED: J. KOSMOS
 DESIGNED-Detailed: J. KOSMOS
 REVISIONS: 1, 2, 3, 4

PROJ. MANAGER	R. TOSOLT	BY	DATE
J. KOSMOS	J. KOSMOS	K. WAGNER	8-10-2018
J. KOSMOS	J. KOSMOS	K. WAGNER	10-2-2018

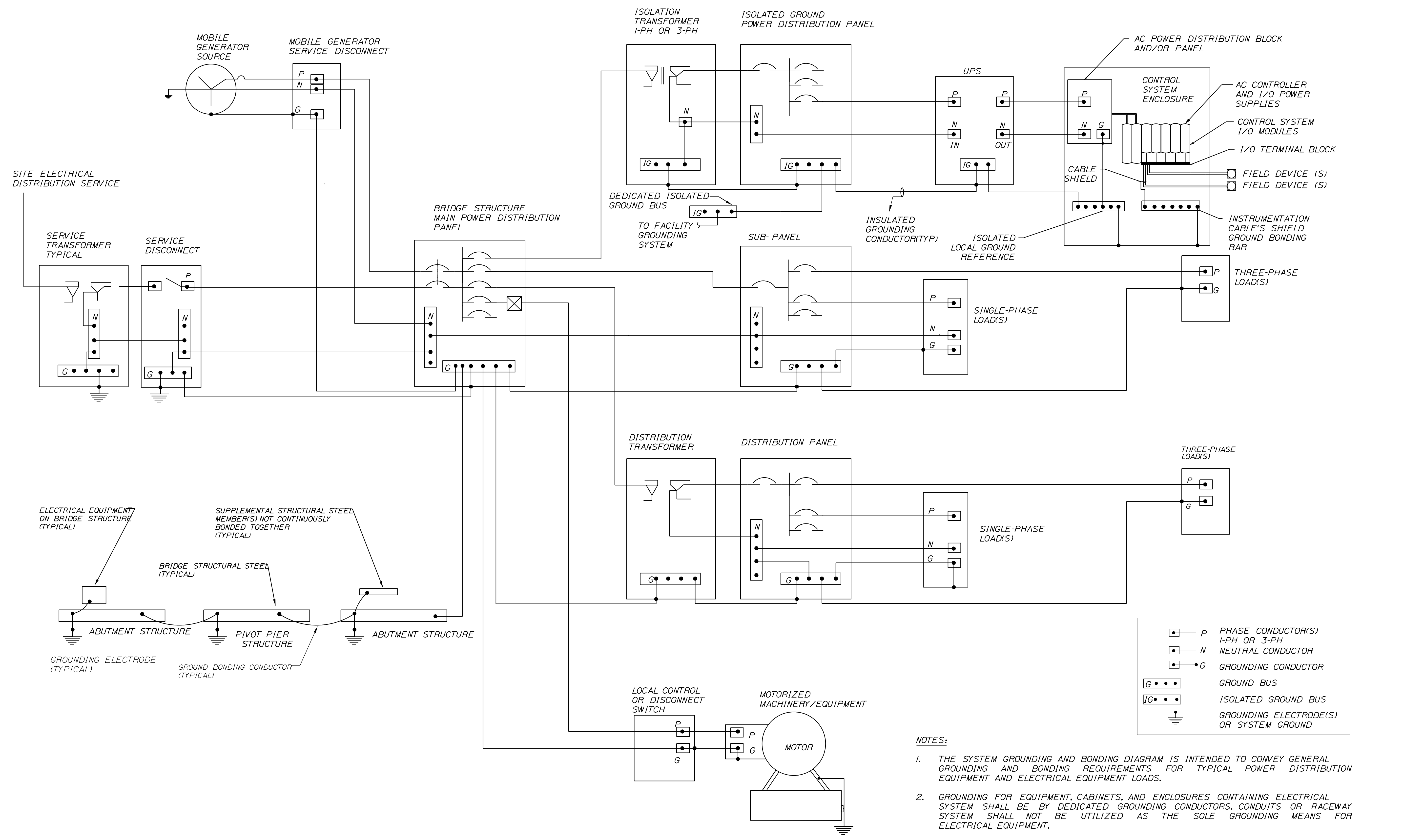
BARTER'S ISLAND BRIDGE
 BACK RIVER
 BOOTHBAY LINCOLN COUNTY
 NAVIGATION LIGHTING CONTROL



Date: 10/2/2018

Username: common

Filename: ... \130_Grounding_And_Bonding_Details.dwg Division: BRIDGE

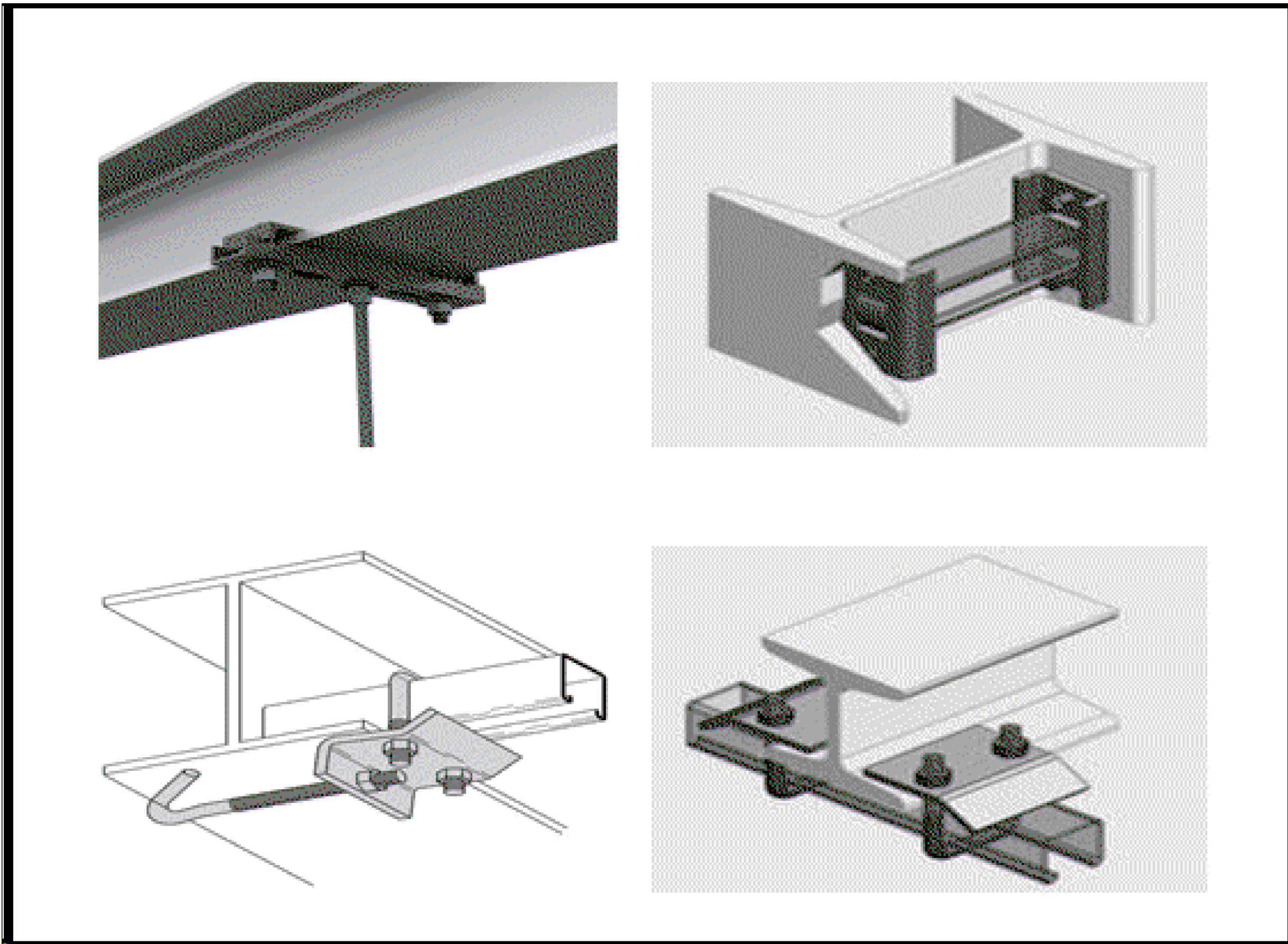


BRIDGE GROUNDING AND BONDING SCALE: NTS

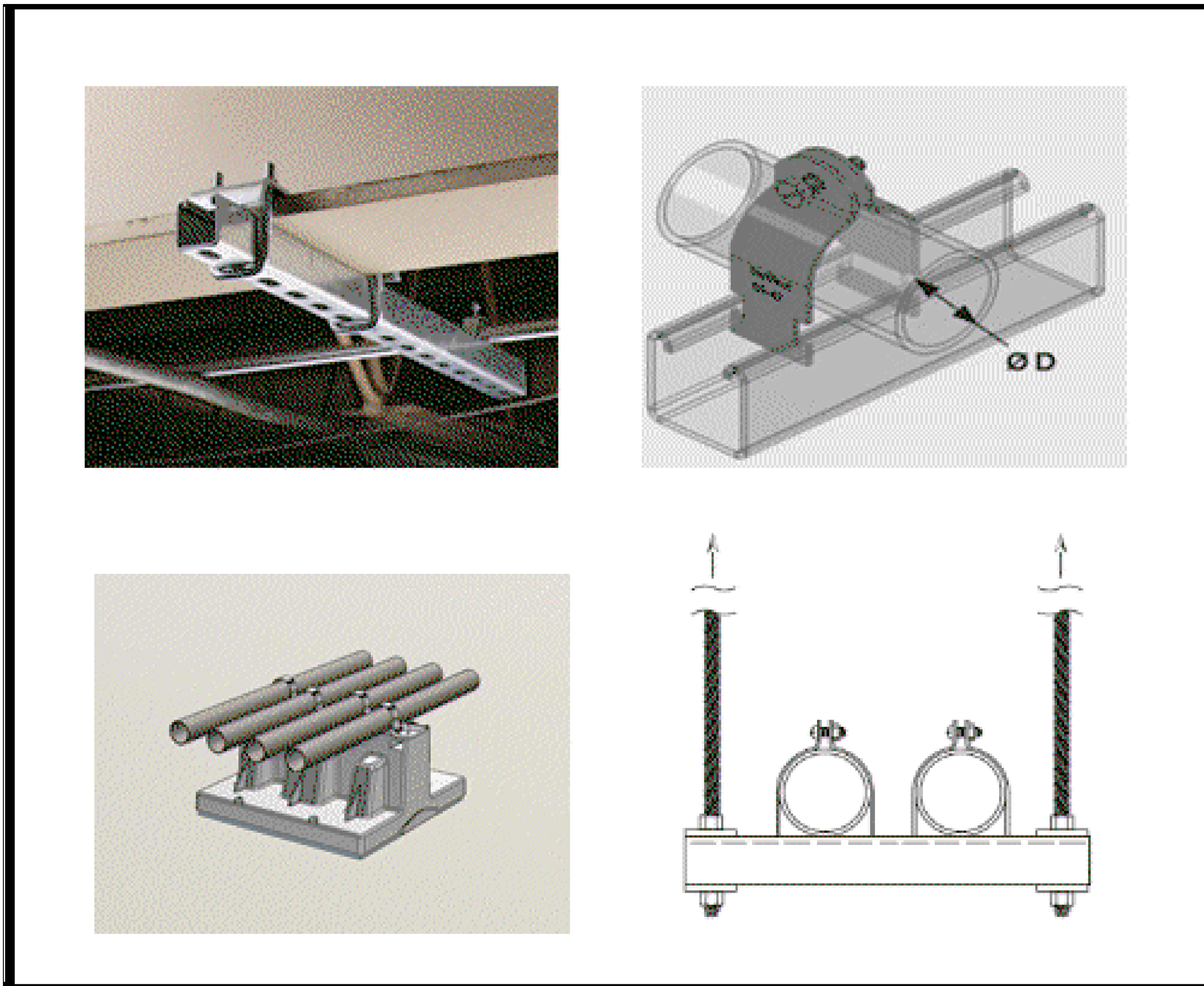
NOTES:

1. THE SYSTEM GROUNDING AND BONDING DIAGRAM IS INTENDED TO CONVEY GENERAL GROUNDING AND BONDING REQUIREMENTS FOR TYPICAL POWER DISTRIBUTION EQUIPMENT AND ELECTRICAL EQUIPMENT LOADS.
2. GROUNDING FOR EQUIPMENT, CABINETS, AND ENCLOSURES CONTAINING ELECTRICAL SYSTEM SHALL BE BY DEDICATED GROUNDING CONDUCTORS. CONDUITS OR RACEWAY SYSTEM SHALL NOT BE UTILIZED AS THE SOLE GROUNDING MEANS FOR ELECTRICAL EQUIPMENT.
3. BRIDGE STRUCTURAL STEEL AND ATTACHED ELECTRICAL EQUIPMENT ON THE BRIDGE STRUCTURE SHALL BE GROUNDED BY DIRECT CONNECTION TO A SUITABLE GROUNDING ELECTRODE OF ONE OF THE FOLLOWING TYPES: STRUCTURAL STEEL PIPE OR SHEET PILES, COPPER GROUND ROD DRIVEN AT LEAST 3-METER INTO THE GROUND IMMEDIATELY ADJACENT BRIDGE STRUCTURE, OR STAINLESS STEEL PLATE OF AT LEAST 1 METER SQUARE OF EXPOSED AREA SUBMERSED BELOW THE WATER LEVELS AT ALL TIMES. COPPER CONDUCTOR SIZE 1/0 AWG, MINIMUM SHALL BE USED TO CONNECT BRIDGE STRUCTURE TO GROUNDING ELECTRODE.

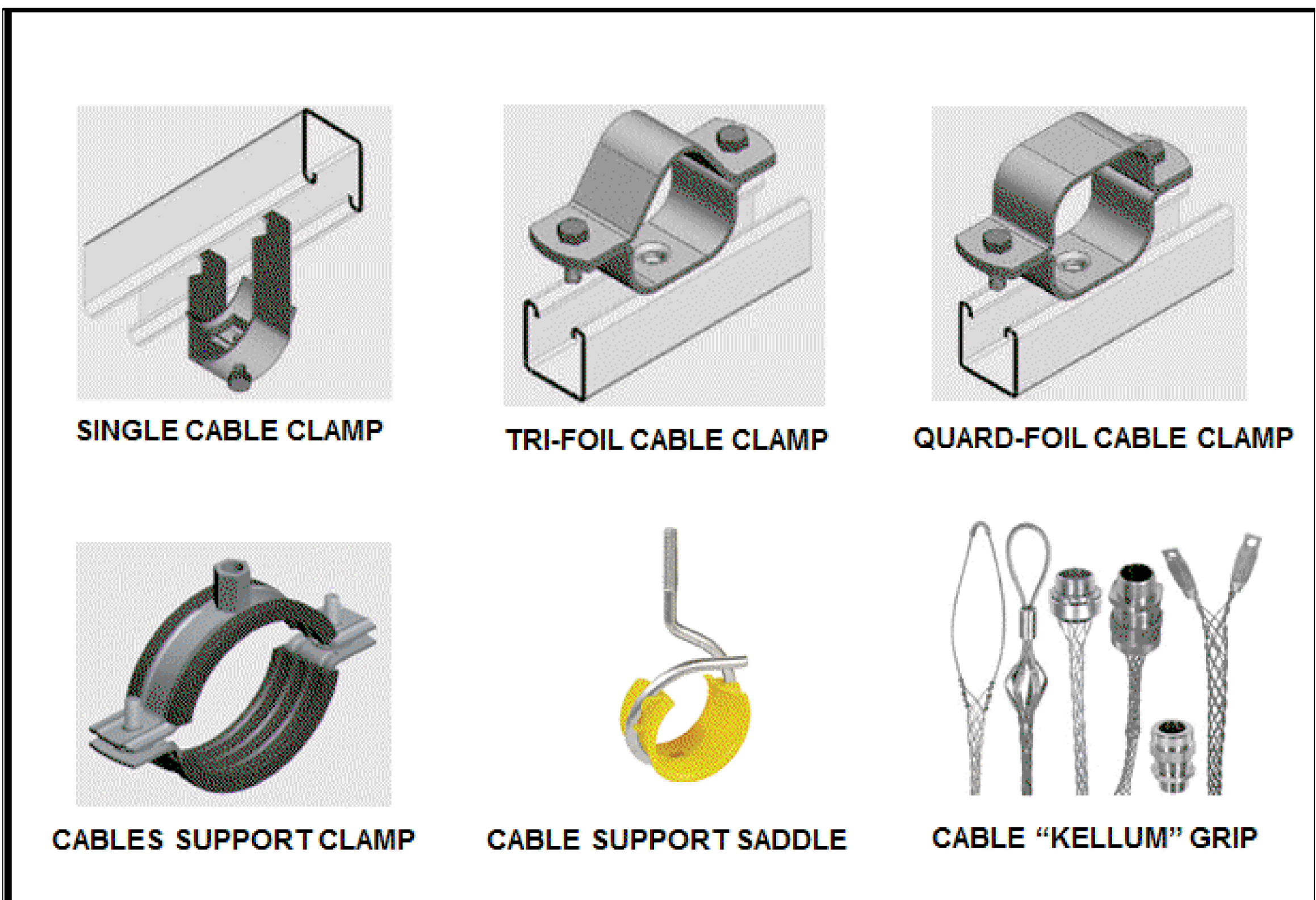
STATE OF MAINE DEPARTMENT OF TRANSPORTATION		STP-2260(700)		BRIDGE PLANS	
BARTER'S ISLAND BRIDGE BACK RIVER BOOTHBAY		LINCOLN COUNTY		BRIDGE NO. 2039	
ENGINEER OF RECORD: SOB ENGINEERING		SIGNATURE K. WAGNER		DATE 10-02-2018	
PROJ. MANAGER R. TOSOLT		CHECKED/REVIEWED J. KOSCIJ		DESIGN NO. 15223	
DESIGN DETAILER J. KOSCIJ		DESIGNED/REVIEWED K. WAGNER		P.E. NUMBER 15223	
DESIGN DETAILER J. KOSCIJ		DESIGNED/REVIEWED K. WAGNER		DATE 10-02-2018	
REVISIONS 1		REVISIONS 2		REVISIONS 3	
REVISIONS 4		REVISIONS 5		REVISIONS 6	
FIELD CHANGES		FIELD CHANGES		FIELD CHANGES	
SHEET NUMBER		130		OF 132	



ACCEPTABLE BEAMS CLAMP ATTACHMENTS TO STRUCTURAL (TYPICAL)
SCALE: N.T.S



CONDUIT SUPPORT INSTALLATION DETAILS (TYPICAL)
SCALE: N.T.S



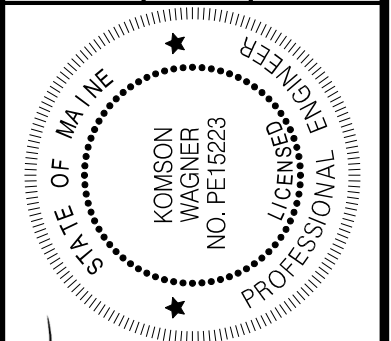
ACCEPTABLE CABLE SUPPORTS (TYPICAL)
SCALE: N.T.S

NOTES:

1. MAXIMUM DISTANCE BETWEEN CONDUIT SUPPORT SHALL NOT EXCEED 6 FEET INTERVAL.



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2260(700)
BRIDGE NO. 2039 WIN 22607.00
BRIDGE PLANS



K. Wagner
SIGNATURE
15223
P.E. NUMBER
10-02-2018
DATE

PROJ. MANAGER	R. TOSOLI	BY	DATE
DESIGN-DETAILED	J. KOSCI	JRK/PK	8-10-2018
CHECKED-REVIEWED	J. KOSCI	K. WAGNER	10-2-2018
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BARTER'S ISLAND BRIDGE
BACK RIVER
BOOTHBAY LINCOLN COUNTY
MISCELLANEOUS ELECTRICAL
DETAILS

SHEET NUMBER

131

OF 132

PLAN LEGEND

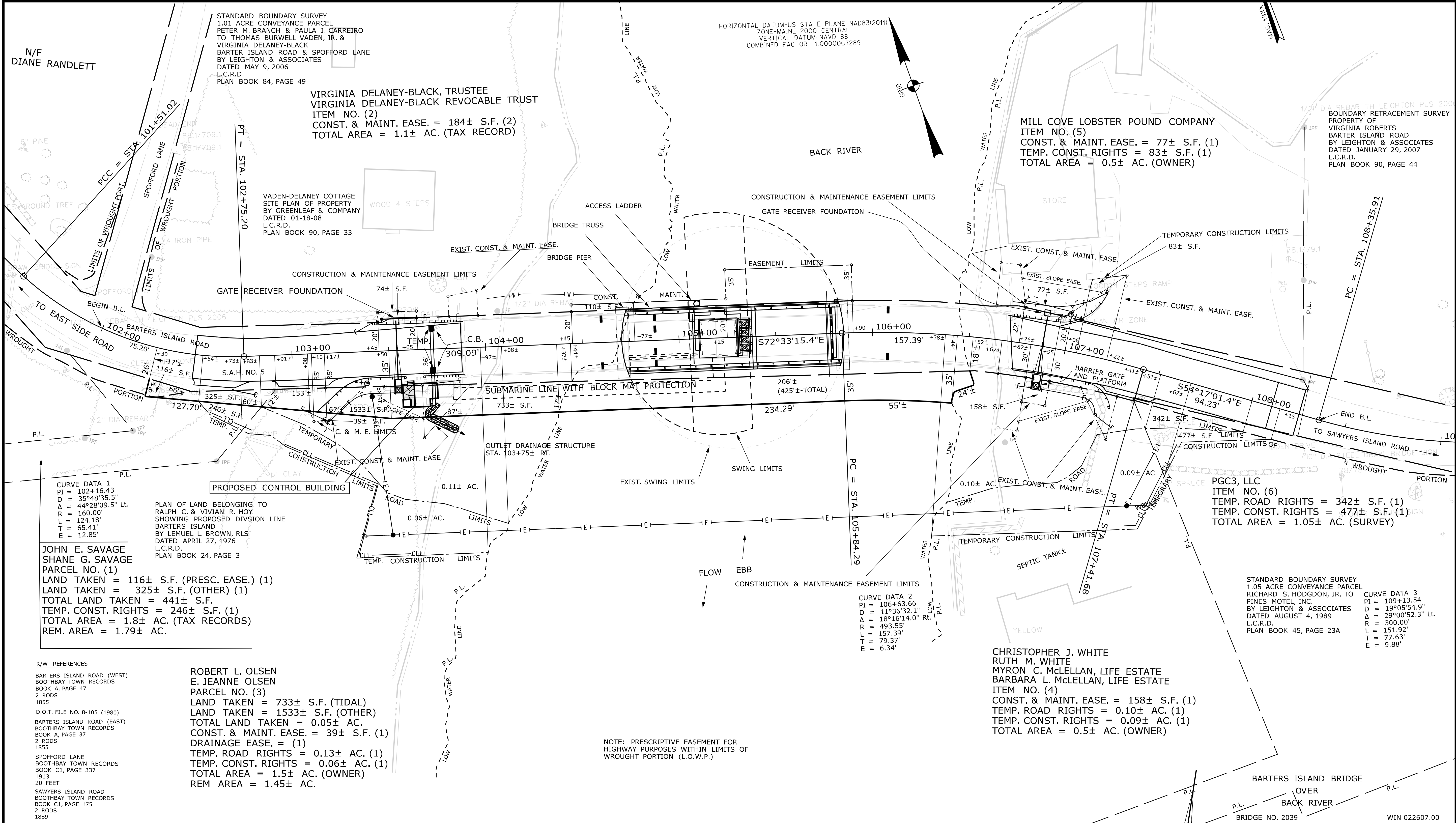
Existing	Proposed	Existing	Proposed
Sanitary Sewer	Telephone Line	Travelled Way	Ditch
Electric Line	Water Line	Catch Basin	Manhole
Underdrain Line	Gas Line	Sewer Manhole	Utility Pole
Guardrail	Culvert	Fire Hydrant	Curbing

STATE OF MAINE
REGISTRY OF DEEDS

COUNTY RECEIVED _____
at _____ h _____ m _____ M and recorded in
Plan Book _____, Page _____
Attest: _____ REGISTER

THIS PLAN WAS PREPARED IN CONNECTION WITH THE DEPARTMENT'S ACQUISITION OF REAL PROPERTY FOR TRANSPORTATION PURPOSES. IT CANNOT BE USED TO ESTABLISH LEGAL BOUNDARIES BETWEEN ADJUTING PROPERTY OWNERS.

Scale of Feet: 0 25 50 75 100



ITEM	EXISTING	CONDITION	PLAN	TECH	CHECKED
AREAS				D.W.B.	D.S.G.
FINAL RIGHT OF WAY				D.W.B.	
CONSTRUCTION LIMITS				D.W.B.	

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION - AUGUSTA, ME 04333-0016 - 207-624-3460
BOOTHBAY
RIGHT OF WAY MAP

REVISIONS				PLAN FILED IN PLAN BOOK				PAGE COUNTY RECORD				DAVID BERNHARDT COMMISSIONER JOYCE NOEL TAYLOR CHIEF ENGINEER	STATE AID HIGHWAY NO. 5 BARTERS ISLAND ROAD		SHEET NUMBER 132 OF 132
NO.	DATE	DESCRIPTION	BY	NO.	GRANTOR	INSTRUMENT	DATE	BOOK	PAGE	COND.	DATE		BOOK	PAGE	
							6/26/18	5272	100					SCALE 1" = 25'	SHEET 1 OF 1
													FEDERAL AID PROJECT NO. STP-2260(700)		D.O.T. FILE NO. 8-185

Date: 10/23/2018

Username: Don.Burns

Division: ROW

Filename: ... \00\ROW\MSTA001_RWP\PLANT.dgn

WIN 022607.00