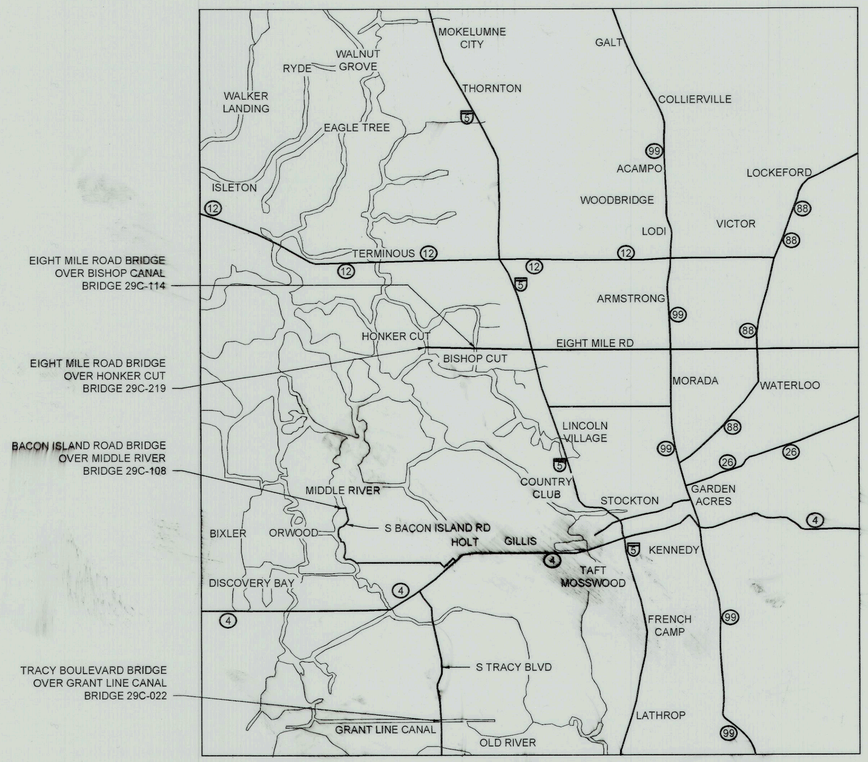
INDEX OF SHEETS

COUNTY OF SAN JOAQUIN
DEPARTMENT OF PUBLIC WORKS
STOCKTON, CALIFORNIA

PROJECT PLANS FOR
MOVABLE SPAN BRIDGES PROJECT
BRIDGE NOS.:
BACON ISLAND ROAD BRIDGE 29C-108 OVER MIDDLE RIVER
TRACY BOULEVARD BRIDGE 29C-022 OVER GRANT LINE CANAL
EIGHT MILE ROAD BRIDGE 29C-114 OVER BISHOP CANAL
EIGHT MILE ROAD BRIDGE 29C-219 OVER HONKER CUT
FEDERAL AID PROJECT NO. BRLS-5929(229)

TO BE SUPPLEMENTED BY STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION REVISED 2018 STANDARD PLANS AND STANDARD SPECIFICATION DATED 2018 AND SAN JOAQUIN COUNTY IMPROVEMENT STANDARDS DATED DECEMBER 2014 AND MODIFIED AUGUST 2022



LOCATION MAP
(NOT TO SCALE)

COUNTY OF SAN JOAQUIN

SUBMITTED: November 22, 2022
DATE

APPROVED BY:
FRITZ BUCHMAN, C.E., T.E., CFM DATE
DIRECTOR OF SAN JOAQUIN PUBLIC WORKS

REGISTERED PROFESSIONAL ENGINEER TEODOR KOSTADINOV 21282 ELECTRICAL STATE OF CALIFORNIA

APPROVED BY: 11/18/22
TEODOR KOSTADINOV, PE DATE

REGISTERED PROFESSIONAL ENGINEER PAUL M. SKELTON 32487 MECHANICAL STATE OF CALIFORNIA

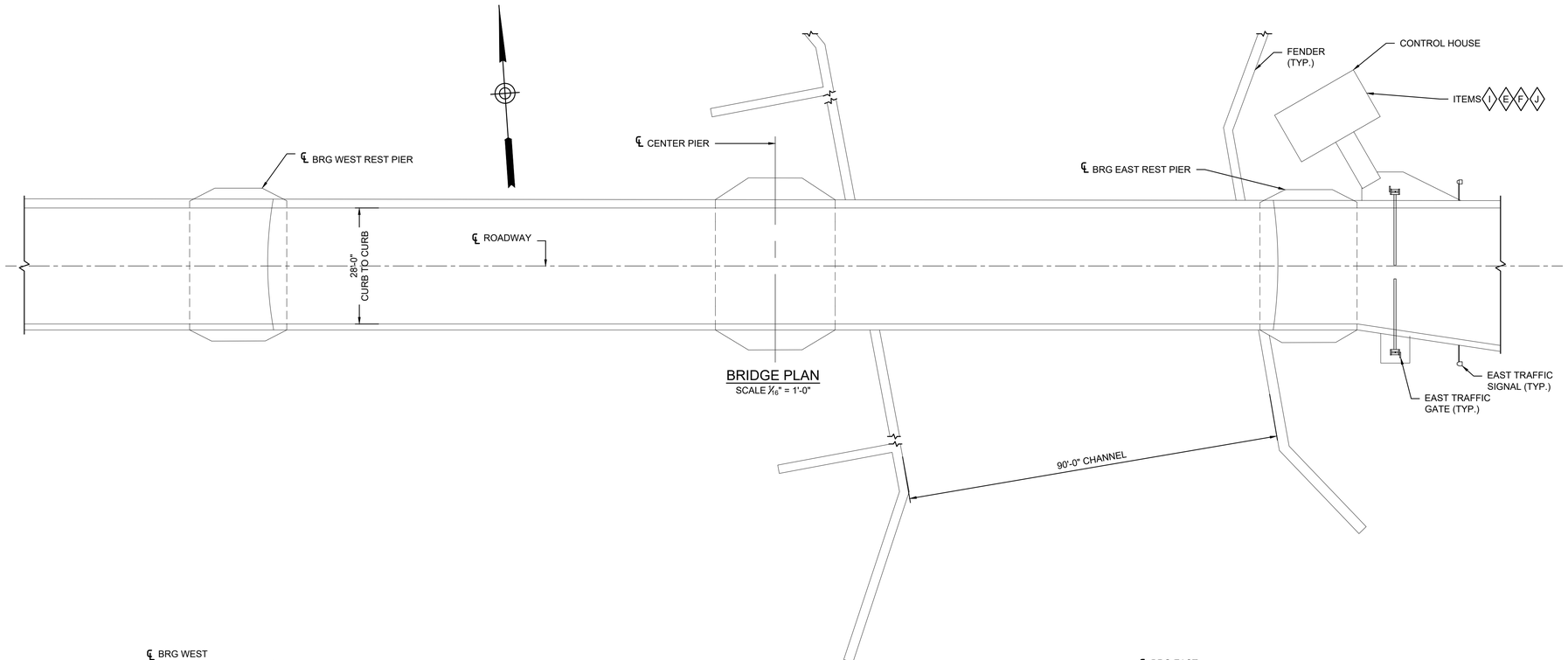
APPROVED BY: 11/18/22
PAUL SKELTON, PE DATE

100% SUBMISSION

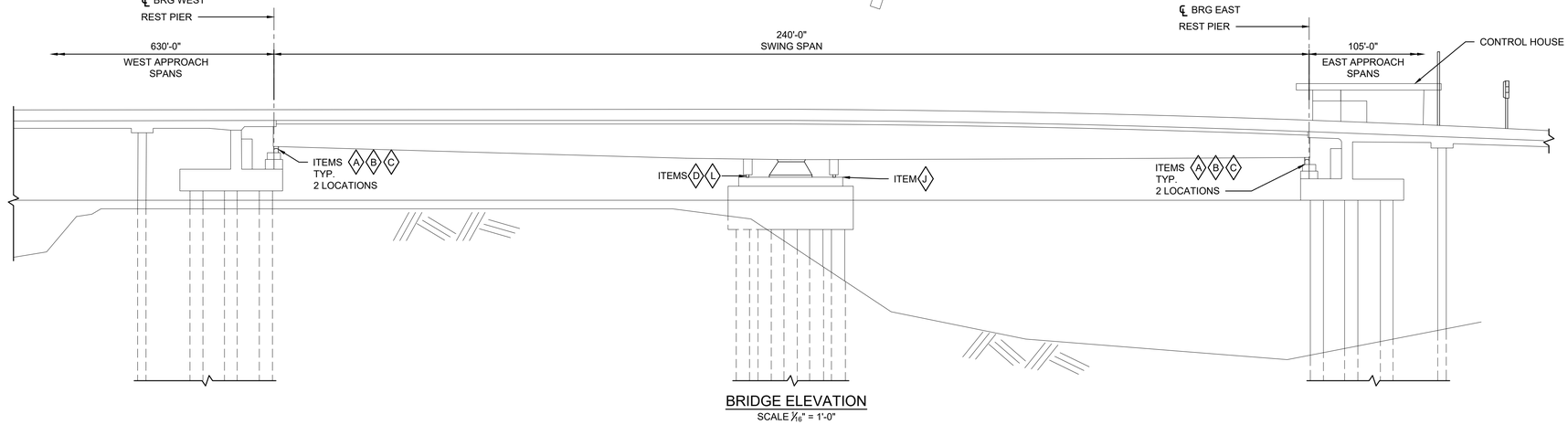
COUNTY OF SAN JOAQUIN							MOVABLE SPAN BRIDGES PROJECT FEDERAL AID PROJECT NO. BRLS-5929(229)								Hardesty & Hanover 1501 BROADWAY, NY, NY 10036	TITLE SHEET	AB-G-01
DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE			1 OF 75
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	A. ZWEIBEL	11/18/22	Michael Cheung	11/21/22		11/22/22	NO SCALE			

REGISTERED PROFESSIONAL ENGINEER TEODOR KOSTADINOV 21282 11/18/22 ELECTRICAL STATE OF CALIFORNIA

$USER $TIME $DATE $REQUEST



BRIDGE PLAN
SCALE 1/8" = 1'-0"



BRIDGE ELEVATION
SCALE 1/16" = 1'-0"

GENERAL NOTES

1. AS-BUILT DRAWINGS OF THE BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER ARE PROVIDED IN THE INFORMATIONAL HANDOUT AS DESCRIBED IN SECTIONS 2 AND 5 OF THE SPECIFICATIONS.
2. MHW DATUM IS NAVD88.

SCOPE OF WORK

A. REGROUT UNDER THE SOUTH SPAN LOCK BAR GUIDE.

B. REPLACE ALL FLEXIBLE HOSES OF THE EAST AND WEST REST PIER MACHINERY SYSTEMS.

C. REPLACE THE HYDRAULIC POWER UNITS AND HYDRAULIC CABINETS OF THE EAST AND WEST REST PIER MACHINERY SYSTEMS.

D. REPLACE THE CENTER WEDGE HYDRAULIC ACTUATORS.

E. REPLACE EXISTING SWING SPAN DRIVE CONTROL KNOB WITH NEW SWING SPAN CONTROL SWITCH.

F. REPLACE EXISTING MAGNETIC BRAKE AND CLUTCH CONTROL SYSTEM WITH NEW EDDY CURRENT DRIVE CONTROLLER AND RELATED CONTROL LOGIC.

G. REPLACE EXISTING FLASHING BEACON UNIT WITH NEW FLASHING BEACON UNIT.

H. REMOVE EXISTING KEYED SWITCH SS6 ON CONTROL DESK

I. FURNISH AND INSTALL NEW INTERPOSING RELAY CR12.

J. FURNISH AND INSTALL NEW TWISTED SHIELDED PAIR (TSP) FROM MOTOR CONTROL CENTER TO EAST SUBMARINE TERMINATION CABINET.

K. FURNISH AND INSTALL NEW ARMORED INSTRUMENTATION CABLE FROM SUBMARINE CABLE SC2 TO DRIVE CABINET ON PIVOT PIER.

L. REHABILITATE EXISTING RIGHT ANGLE REDUCERS.

$REQUEST $USER $TIME $DATE

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
PAUL M. SKLAR
82450
11/18/22
MECHANICAL
STATE OF CALIFORNIA

GENERAL PLAN AND ELEVATION
BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER
(BRIDGE NO. 29C-108)

BI-G-01

GENERAL NOTES:

EXISTING PLANS

AS-BUILT PLANS ENTITLED BACON ISLAND ROAD BRIDGE NO. 29C-108 ARE AVAILABLE IN THE INFORMATIONAL HANDOUT FOR THIS PROJECT FOUND ON WWW.BIDEXPRESS.COM.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

SCHEDULE AND PROSECUTION OF WORK

1. THE PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. NOTE THE FOLLOWING SCHEDULE RESTRICTIONS:

2. CONSTRUCTION SHALL TAKE PLACE DURING THE THREE-MONTH PERIOD BETWEEN NOVEMBER 1 AND THE FOLLOWING JANUARY 31. THE BRIDGE MUST BE OPERABLE FOR WATERWAY TRAFFIC FROM FEBRUARY 1 THROUGH OCTOBER 31 OF ANY CALENDAR YEAR. DURING CONSTRUCTION THE CHANNEL WILL REMAIN OPEN TO SMALL VESSELS THAT DO NOT REQUIRE BRIDGE OPENINGS. THE CONTRACTOR MUST COORDINATE WITH THE US COAST GUARD (USCG) FOR ANY ANTICIPATED WATERWAY CLOSURES THAT WILL IMPACT SMALL VESSELS AS WELL AS FOR THE THREE-MONTH CLOSURE TO VESSELS THAT WOULD REQUIRE BRIDGE OPENINGS. THE CONTRACTOR MUST CONTACT THE USCG WITHIN 60 DAYS OF NOTICE TO PROCEED TO PROVIDE A CONSTRUCTION SCHEDULE THAT INCLUDES NAVIGATION RESTRICTIONS.

3. BACON ISLAND ROAD CAN BE OPEN TO SINGLE LANE TRAFFIC FOR BRIEF PERIODS TO ALLOW FOR DELIVERY OF MATERIALS. THE CONTRACTOR SHALL PROVIDE FLAGMEN/TEMPORARY SIGNALS/SIGNING IN ACCORDANCE WITH MAINTENANCE OF TRAFFIC PLANS. SINGLE LANE TRAFFIC IS ALLOWED ONLY BETWEEN THE HOURS OF 9 A.M. AND 3 P.M. TRAFFIC CAN BE STOPPED FOR TEST OPENINGS BETWEEN THE HOURS OF 9 A.M. AND 3 P.M., BUT ONLY FOR THE DURATION OF AN OPENING/CLOSING CYCLE. FLAGMEN SHALL PROVIDE TRAFFIC CONTROL DURING TEST OPENINGS.

4. PROVIDE THE ENGINEER WITH A COMPLETE PROJECT SCHEDULE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS WITHIN 60 DAYS OF NOTICE TO PROCEED. THE SCHEDULE MUST REFLECT CLOSURES OF THE WATERWAY TO VESSELS THAT REQUIRE BRIDGE OPENINGS, AND SINGLE LANE TRAFFIC PERIODS.

5. PROVIDE PLANS FOR CLEAN-UP OF THE WATERWAY SHOULD SPILLS OF OIL, OTHER FLUIDS, OR DEBRIS FROM CONSTRUCTION OR OTHER TYPES OF POLLUTANTS BE ACCIDENTALLY DISCHARGED INTO IT.

6. OBTAIN PERMISSION FROM THE ENGINEER A MINIMUM OF 48 HOURS PRIOR TO ANY CONSTRUCTION SCHEDULE CHANGE.

7. NO ADDITIONAL PAYMENT WILL BE MADE FOR WORK PERFORMED ON A SATURDAY, SUNDAY, OR LEGAL HOLIDAY TO SATISFY SCHEDULE REQUIREMENTS.

8. MAINTAIN VEHICULAR ACCESS TO ALL BUSINESSES AND COMMERCIAL PROPERTIES ON EACH SIDE OF THE WATERWAY, INCLUDING DURING PERIODS OF SINGLE LANE TRAFFIC.

9. ALTHOUGH THE WATERWAY WILL BE CLOSED TO VESSELS THAT REQUIRE BRIDGE OPENINGS, IT WILL REMAIN OPEN TO SMALL VESSELS. EVERY EFFORT SHOULD BE MADE TO MINIMIZE OBSTRUCTION OF THE CHANNEL BY BARGES OR OTHER EQUIPMENT. BARGES CAN BE ANCHORED OUTSIDE THE LIMITS OF THE CHANNEL.

10. UPON COMPLETION OF ALL WORK, THE CONTRACTOR SHALL TRAIN THE COUNTY'S MAINTENANCE STAFF AND DEMONSTRATE TEST OPENINGS.

US COAST GUARD AND PORT OF SAN FRANCISCO NOTIFICATION

1. THE 11TH COAST GUARD DISTRICT WILL NEED TO BE CONTACTED AT LEAST 60 DAYS PRIOR TO THE START OF WORK ON THE SITE TO COORDINATE IN-WATER WORK INCLUDING BARGE. CONTACT INFORMATION:
   MR. CARL HAUSNER
   COMMANDER, 11TH/ COAST GUARD DISTRICT
   COAST GUARD ISLAND BUILDING 50-2
   ALAMEDA, CA 94501-5100
   PHONE: 510-437-3516
   CARL.T.HAUSNER@USCG.MIL

2. PROVIDE THE COAST GUARD WITH A SCHEDULE AND A TIME FRAME FOR REPAIR WORK ON THE MOVABLE SPAN AND DESCRIBE ANY TEMPORARY CONSTRUCTION AIDS AND WORK WITHIN THE LIMITS OF THE CHANNEL IN ACCORDANCE WITH USCG WORK PROPOSAL REQUIREMENTS.

3. THE CONTRACTOR MUST NOTIFY THE CAPTAIN OF THE PORT OF SAN FRANCISCO IF A BARGE WILL BE ANCHORED OR STUDDED IN A MANNER THAT WILL UTILIZE THE CHANNEL BOTTOM.

COORDINATION OF DOCUMENTS

1. IN THE EVENT OF A DISCREPANCY BETWEEN THE PLANS AND THE SPECIFICATIONS, BRING THE DISCREPANCY TO THE ATTENTION OF THE ENGINEER FOR THEIR INTERPRETATION. IF IT IS NOT BROUGHT TO THE ENGINEER'S ATTENTION, THE DETAIL SHOWING OR DESCRIBING THE HIGHER QUALITY INTERPRETATION WILL GOVERN.

2. IF AN ITEM IS LISTED OR DESCRIBED IN THE SPECIFICATIONS AND IS NOT SPECIFICALLY SHOWN ON THE PLANS, IT IS CONSIDERED A PART OF THE WORK AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

3. IF AN ITEM IS SHOWN ON THE PLANS AND IS NOT SPECIFICALLY LISTED OR DESCRIBED IN THE SPECIFICATIONS, IT IS CONSIDERED PART OF THE WORK AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

4. SAN JOAQUIN COUNTY WILL NOT PAY FOR ANY COSTS ASSOCIATED WITH THE COORDINATION OF DOCUMENTS. THE COSTS FOR THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT MUST BE DISTRIBUTED AMONG THE COSTS OF INDIVIDUAL ITEMS.

WORK RESTRICTIONS

1. COMPLY WITH ALL LOCAL ORDINANCES THAT APPLY TO LOCAL STREET WORK OPERATIONS, INCLUDING THOSE PERTAINING TO WORKING DURING NIGHTTIME HOURS. FURNISH ANY ORDINANCE VARIANCE ISSUED BY THE MUNICIPALITY OR REQUIRED PERMITS TO THE ENGINEER, IN WRITING, 3 DAYS PRIOR TO PERFORMING SUCH WORK.

2. DO NOT REMOVE ANY EXISTING TREES, STREET LIGHT POLES, HYDRANTS, AND OTHER UTILITY POLES WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER. CONDUCT AN ON-SITE VISIT PRIOR TO BIDDING TO DETERMINE ANY SPECIAL MEASURES REQUIRED FOR PROPER CLEARANCE BETWEEN TREES, HYDRANTS, AND POLES AND THE CONSTRUCTION EQUIPMENT.

IN-STREAM WORK RESTRICTIONS

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO AVOID CONSTRUCTION IN AND/OR LIMIT DEBRIS FROM ENTERING THE WATER. ANY MATERIAL THAT DOES FALL INTO THE WATER SHALL BE REMOVED AS SOON AS POSSIBLE. ALL PROJECTS INVOLVING JURISDICTIONAL WATERS OF THE UNITED STATES ARE SUBJECT TO REGULATION UNDER SECTIONS 404 AND 401 OF THE CLEAN WATER ACT. IT IS ANTICIPATED THAT NO PERMANENT IN-STREAM WORK WILL BE REQUIRED. ANY WORK IN THE WATER, PERMANENT OR TEMPORARY, WILL REQUIRE A PERMIT AND AUTHORIZATION BY THE UNITED STATE ARMY CORPS OF ENGINEERS.

DESIGN SPECIFICATIONS

AASHTO STANDARD SPECIFICATIONS FOR MOVABLE HIGHWAY BRIDGES

DESIGN DATA

1. CONCRETE - MINIMUM COMPRESSIVE STRENGTH 4.0 KSI

2. REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI

3. STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50 KSI UNLESS NOTED ON PLANS OR IN SPECIFICATIONS.

PUBLIC OUTREACH

THE CONTRACTOR MUST ARRANGE AN INFORMATIONAL MEETING FOR THE GENERAL PUBLIC TWO WEEKS PRIOR TO THE START OF CONSTRUCTION CONCERNING THE PROJECT SCOPE AND TIMING. MEETING SITE MUST BE IN A PUBLIC LOCATION (I.E.: SCHOOL, PARK, FIRE HOUSE…) WITHIN THREE BLOCKS OF PROJECT SITE UNLESS OTHERWISE APPROVED BY THE ENGINEER. A PUBLIC ADDRESS (PA) SYSTEM WILL BE REQUIRED FOR THE MEETING. LOCATION AND TIME OF THE MEETING MUST BE APPROVED BY THE ENGINEER. THE CONTRACTOR MUST PERFORM PUBLIC OUTREACH BY ADVERTISING THE MEETING IN THE LOCAL NEWSPAPER AND SENDING WRITTEN NOTIFICATIONS TO THE RESIDENTS LOCATED WITHIN PROJECT LIMITS. FULL COMPENSATION FOR PERFORMING THIS MEETING, INCLUDING ACQUIRING MEETING SITE, SUPPLYING PA SYSTEM, ADVERTISING, NOTIFYING RESIDENTS, AND ALL OTHER INCIDENTALS, MUST BE CONSIDERED AS INCLUDED IN THE PRICES PAID FOR VARIOUS CONTRACT ITEMS OF WORK AND NO SEPARATE PAYMENT WILL BE MADE THEREFOR.

QUANTITIES			
ITEM No.	DESCRIPTION	UNIT	QUANTITY
70731	LEAD COMPLIANCE PLAN	LS	1
120010	TRAFFIC CONTROL SYSTEM	LS	1
120090	CONSTRUCTION AREA SIGNS	LS	1
130200	WATER POLLUTION CONTROL PLAN	LS	1
880010	PVC COATED RIGID GALVANIZED STEEL CONDUIT – 1 INCH	LF	25
880030	STAINLESS STEEL NEMA 4 RATED ELECTRICAL BOX - 6 BY 6 BY 4 INCHES	EA	2
880040	INSULATED CONDUCTOR NO. 12 AWG	LF	50
880050	TWISTED SHIELDED CABLE	LF	60
880060	GROUND WIRE NO. 12 AWG	LF	10
880070	BRIDGE ELECTRICAL EQUIPMENT	LS	1
880080	BRIDGE SYSTEM TESTING	LS	1
880090	ELECTRICAL EQUIPMENT DEMOLITION	LS	1
980000	BRIDGE MACHINERY	LS	1
999990	MOBILIZATION (10%)	LS	1

ABBREVIATIONS

ϕ	PHASE
A, AMP	AMPERES
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ACCEL.	ACCELERATE
APPROX.	APPROXIMATE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWG	AMERICAN WIRE GAUGE
BOT.	BOTTOM
BR, BRG	BRIDGE
C	CELSIUS
CA	CALIFORNIA
CB	CIRCUIT BREAKERS
CCW	COUNTERCLOCKWISE
CL, ℄	CENTERLINE
CONC	CONCRETE
CPT	CONTROL POWER TRANSFORMER
CW	CLOCKWISE
DECEL.	DECELERATE
DEG, °	DEGREE
DIA., Ø	DIAMETER
DWG	DRAWING
E	EAST
EA	EACH
EL	ELEVATION
EQ. SPA.	EQUALLY SPACED
ESTOP	EMERGENCY STOP
EXIST	EXISTING
F	FAHRENHEIT
FRP	FIBER REINFORCED PLASTIC
GAL	GALLON
GIS	GEOGRAPHIC INFORMAITON SYSTEM
GPM	GALLONS PER MINUTE
H.D.	HOT DIPPED
HP	HORSEPOWER
HPU	HYDRAULIC POWER UNIT
HZ	HERTZ
IN	INCH
JB	JUNCTION BOX
JT	JOINT
KSI	KIPS PER SQUARE INCH
LB	POUND
LF	LINEAR FEET
LFMC	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT
LS	LUMP SUM
LS	LEVEL SWITCH
LTG	LIGHTING
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MIN	MINIMUM
MPH	MILES PER HOUR
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
N	NORTH
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
N.T.S.	NOT TO SCALE
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NO.	NUMBER
OEM	ORIGINAL EQUIPMENT MANUFACTURER
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN
PL, ₹	PLATE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R/W	RIGHT OF WAY
RD	ROAD
REF.	REFERENCE
RGS	RIGID GALVANIZED STEEL
RPM	ROTATIONS PER MINUTE
S	SOUTH
S.S., SS	STAINLESS STEEL
SEC	SECONDS
SPEC	SPECIFICATION
SQ.	SQUARE
TEFC	TOTALLY ENCLOSED, FAN-COOLED
TS	TEMPERATURE SWITCH
TSP	TWISTED SHIELDED PAIR
TYP.	TYPICAL
UL	UNDERWRITERS LABORATORIES
USACE	UNITED STATES ARMY CORPS OF ENGINEERS
USCG	UNITED STATES COAST GUARD
UV	ULTRAVIOLET
V	VOLTS
W	WEST
W/	WITH

$USER $TIME $DATE $REQUEST

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
PAUL M. SKELTON
32460
11/18/22
MECHANICAL
STATE OF CALIFORNIA

GENERAL NOTES

BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER
(BRIDGE NO. 29C-108)

BI-G-02

NOTES:

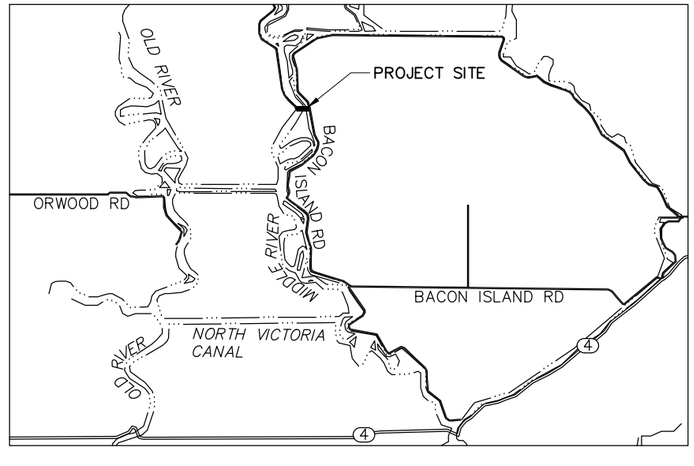
1. THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGN WORK ONLY.
2. LOCATION OF CONSTRUCTION AREA SIGNS ARE APPROXIMATE. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.

LEGEND:

4 CONSTRUCTION AREA SIGN

CONSTRUCTION AREA SIGNS (STATIONARY MOUNTED)

SIGN No. (X)	SIGN CODE	PANEL SIZE (IN X IN)	SIGN MESSAGE	POST SIZE (IN X IN)	No. OF POSTS (EA)	No. OF SIGNS (EA)
A	W20-1	48 X 48	ROAD WORK AHEAD	4 X 6	1	4
B	G20-2	36 X 18	END ROAD WORK	4 X 4	1	4



VICINITY MAP
NOT TO SCALE

FINAL 100% SUBMITTAL

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
C. SILVA	–	M. SANCHEZ	–	C. SILVA	–	M. SANCHEZ	–	–	–	–	–	–	–	NO SCALE

DWG FILE s:\Client\hardesty & hanover\h23-100 5 movable br\500-design\505-CAD\H23100_Bacon Island CS1.dwg

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100 RANCHO CORDOVA, CA 95670
P: 916.368.9181

REGISTERED PROFESSIONAL ENGINEER — MICHAEL A. QUINCY — No. 68254 — 6/30/24 — CIVIL — STATE OF CALIFORNIA

CONSTRUCTION AREA SIGNS

BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER
BRIDGE No. 29C-108

BI-G-03

4 OF 75

$REQUEST $TIME $DATE $USER

NOTES:

1. THIS PLAN ACCURATE FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING ONLY.
2. SIGN LOCATIONS ARE APPROXIMATE. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
3. SIGN SPACING AND TRAFFIC HANDLING SHALL BE PER THE MOST CURRENT CA MUTCD AT 25 MPH
4. TRAFFIC CONTROL FOR ONE-LANE CLOSURES SHALL BE LIMITED FROM 9:00 AM TO 3:00 PM. REFER TO PROJECT SPECIFICATION FOR WORKING DAY RESTRICTIONS.
5. MAINTAIN ACCESS TO ALL ROADS AND DRIVEWAYS AT ALL TIMES AND DO NOT BLOCK LEVEE ACCESS GATES WITH CONSTRUCTION VEHICLES AND EQUIPMENT STAGING.
6. STATIONING REFERENCE POINTS SHOWN ARE NOT TIED TO ANY COORDINATE SYSTEM OR SURVEY DATA, BUT ARE FROM BEST APPROXIMATIONS USING THE COUNTY GIS RIGHT OF WAY DATA AND BING IMAGERY.
7. DO NOT IMPLEMENT LANE CLOSURE(S) IF NOT NECESSARY.

CONSTRUCTION (STAGE 1):

1. NORTH SIDE LANE CLOSURE IN CONJUNCTION WITH NORTH SIDE BRIDGE IMPROVEMENT. REFER TO ELECTRICAL AND MECHANICAL PLANS FOR BRIDGE REPAIR DETAILS.

ABBREVIATIONS:

Exist RD LTG = EXISTING ROAD LIGHTING

Exist R/W (APPROX) = EXISTING RIGHT-OF-WAY (APPROXIMATE)

LEGEND:

- DIRECTION OF TRAFFIC
- CONSTRUCTION AREA SIGN
- PORTABLE DELINEATOR
- WORK AREA (CLOSED TO TRAFFIC)
- FLAGGER
- STATIONING REFERENCE POINT

CONSTRUCTION AREA SIGNS

SIGN CODE	PANEL SIZE (IN X IN)	SIGN MESSAGE	No. OF SIGNS (EA)
W20-1	48 X 48	ROAD WORK AHEAD	4
C9A(CA)	48 X 48	<<FLAGGER SYMBOL>>	4
W3-4	48 X 48	BE PREPARED TO STOP	4

FINAL 100% SUBMITTAL

COUNTY OF SAN JOAQUIN	MOVABLE SPAN BRIDGES PROJECT FEDERAL AID PROJECT NO. BRLS-5929(229)	QUINCY ENGINEERING	STAGE 1 CONSTRUCTION AND TRAFFIC HANDLING PLAN	BI-G-04
		11017 COBBLEROCK DRIVE, SUITE 100 RANCHO CORDOVA, CA 95670 P: 916.368.9181	BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER BRIDGE NO. 29C-108	5 OF 75

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
C. SILVA	3/16/2018	M. SANCHEZ	8/8/2018	C. SILVA	3/16/2018	M. SANCHEZ								1"=50'

REGISTERED PROFESSIONAL ENGINEER MICHAEL A. SANCHEZ No. GE9254 6/30/24 CIVIL STATE OF CALIFORNIA

DWG FILE s:\Client\hardesty & hanover\h23-100 5 movable br\500-design\505-CAD\H23100_SC_BI Stg1.dwg

$REQUEST $DATE $TIME $USER

DATE PLOTTED: Tuesday, November 22, 2022 TIME PLOTTED: 9:35:20 AM, Kevin Beltran

NOTES:

1. THIS PLAN ACCURATE FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING ONLY.
2. SIGN LOCATIONS ARE APPROXIMATE. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
3. SIGN SPACING AND TRAFFIC HANDLING SHALL BE PER THE MOST CURRENT CA MUTCD AT 25 MPH
4. TRAFFIC CONTROL FOR ONE–LANE CLOSURES SHALL BE LIMITED FROM 9:00 AM TO 3:00 PM. REFER TO PROJECT SPECIFICATIONS FOR WORKING DAY RESTRICTIONS.
5. MAINTAIN ACCESS TO ALL ROADS AND DRIVEWAYS AT ALL TIMES AND DO NOT BLOCK LEVEE ACCESS GATES WITH CONSTRUCTION VEHICLES AND EQUIPMENT STAGING.
6. STATIONING REFERENCE POINTS SHOWN ARE NOT TIED TO ANY COORDINATE SYSTEM OR SURVEY DATA, BUT ARE FROM BEST APPROXIMATIONS USING THE COUNTY GIS RIGHT OF WAY DATA AND BING IMAGERY.
7. DO NOT IMPLEMENT LANE CLOSURE(S) IF NOT NECESSARY.

CONSTRUCTION (STAGE 2):

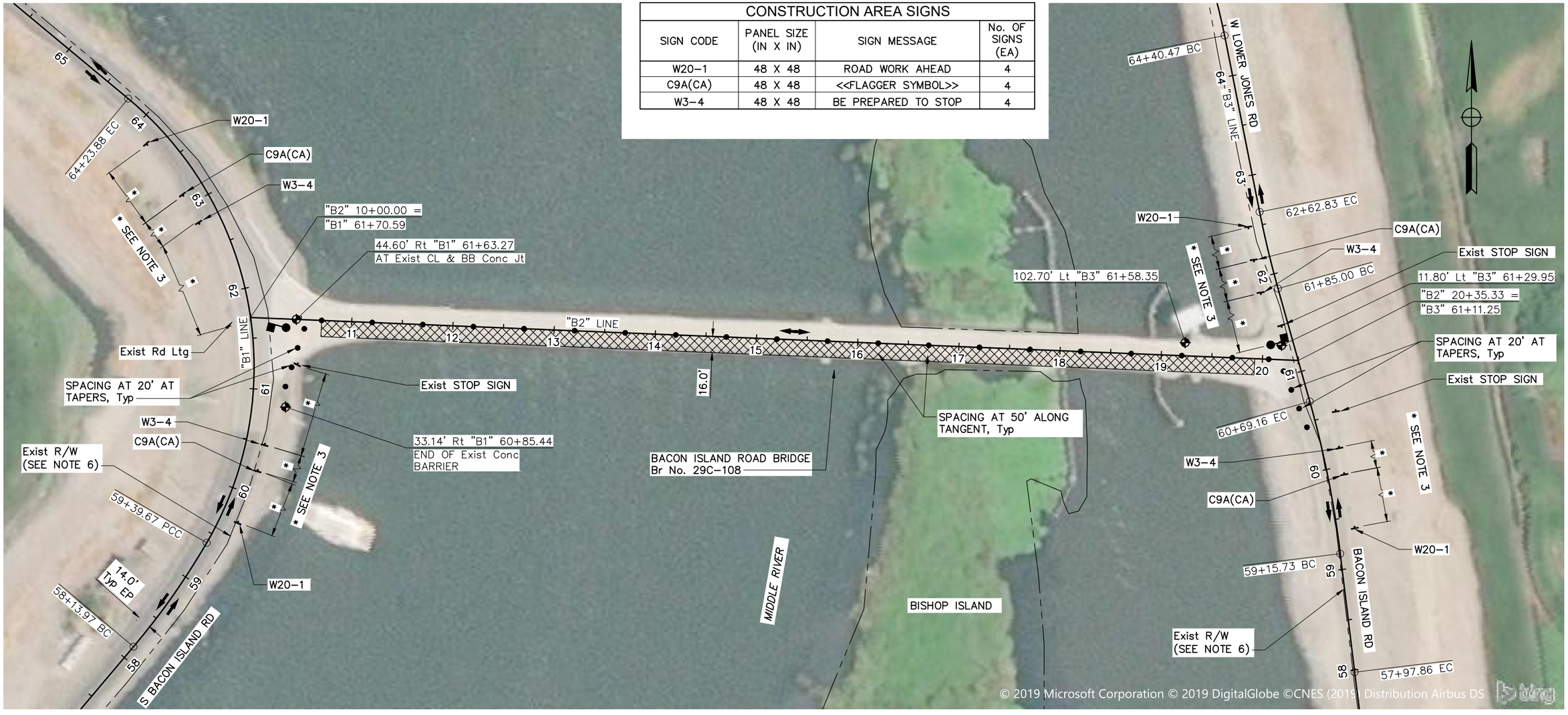
1. SOUTH SIDE LANE CLOSURE IN CONJUNCTION WITH SOUTH SIDE BRIDGE IMPROVEMENT. REFER TO ELECTRICAL AND MECHANICAL PLANS FOR BRIDGE REPAIR DETAILS.

LEGEND:

- DIRECTION OF TRAFFIC
- CONSTRUCTION AREA SIGN
- PORTABLE DELINEATOR
- WORK AREA (CLOSED TO TRAFFIC)
- FLAGGER
- STATIONING REFERENCE POINT

CONSTRUCTION AREA SIGNS

SIGN CODE	PANEL SIZE (IN X IN)	SIGN MESSAGE	No. OF SIGNS (EA)
W20–1	48 X 48	ROAD WORK AHEAD	4
C9A(CA)	48 X 48	<<FLAGGER SYMBOL>>	4
W3–4	48 X 48	BE PREPARED TO STOP	4



FINAL 100% SUBMITTAL

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS–5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
C. SILVA	3/15/2018	M. SANCHEZ	3/14/2018	C. SILVA	8/8/2018	M. SANCHEZ								1"=50'

DWG FILE s:\Client\hardesty & hanover\h23–100 5 movable br\500–design\505–CAD\H23100_SC_BI Stg2.dwg

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE
100 RANCHO CORDOVA, CA 95670
P: 916.368.9181

REGISTERED PROFESSIONAL ENGINEER — MICHAEL A. SANCHEZ — No. C 66254 — 6/30/24 — CIVIL — STATE OF CALIFORNIA

STAGE 2 CONSTRUCTION AND TRAFFIC HANDLING PLAN

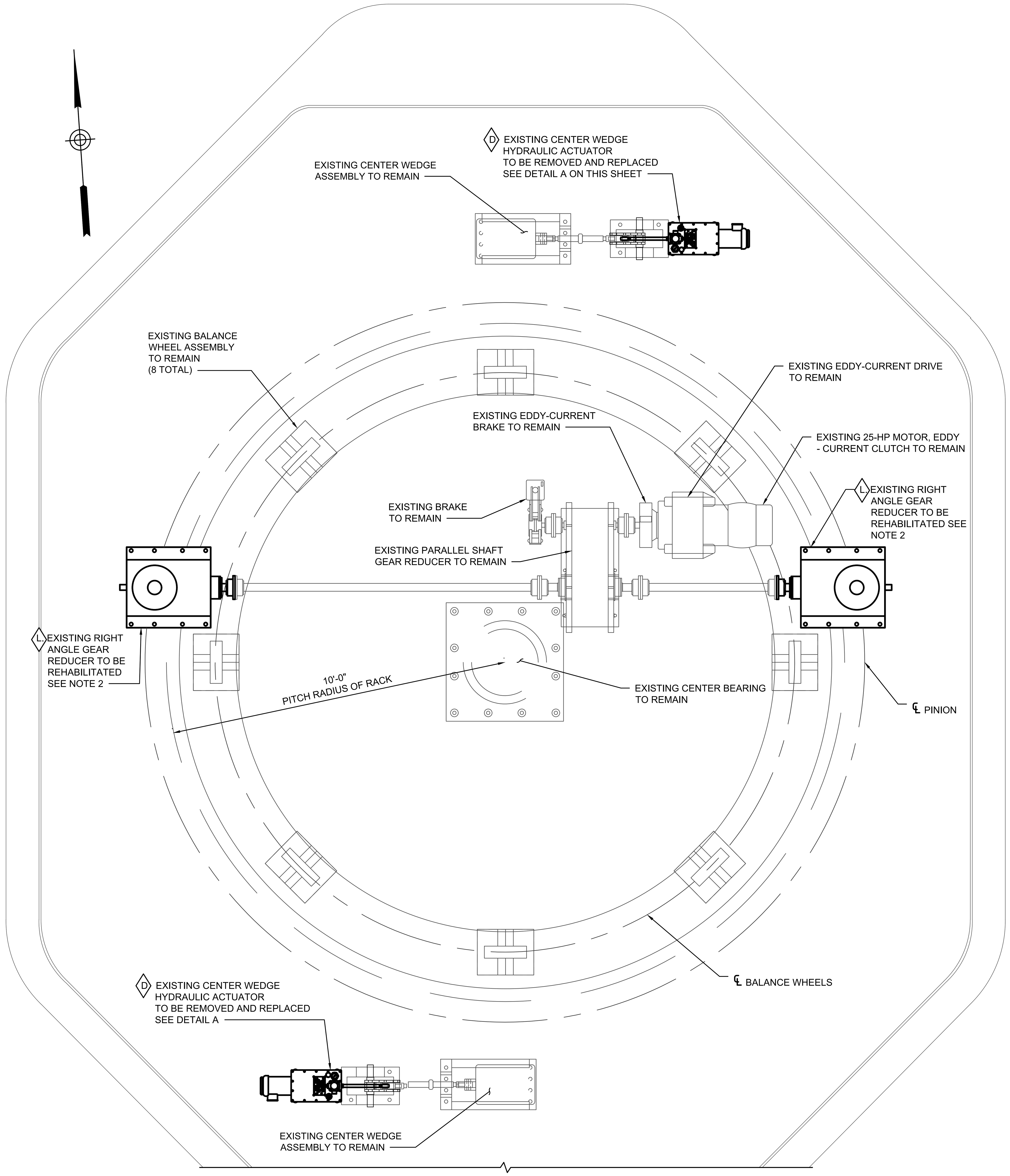
BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER
BRIDGE NO. 29C–108

BI–G–05

6 OF 75

$REQUEST $TIME $DATE $USER

TIME PLOTTED: 9:35:38 AM, Kevin Beltran
DATE PLOTTED: Tuesday, November 22, 2022



CENTER PIER REMOVAL PLAN

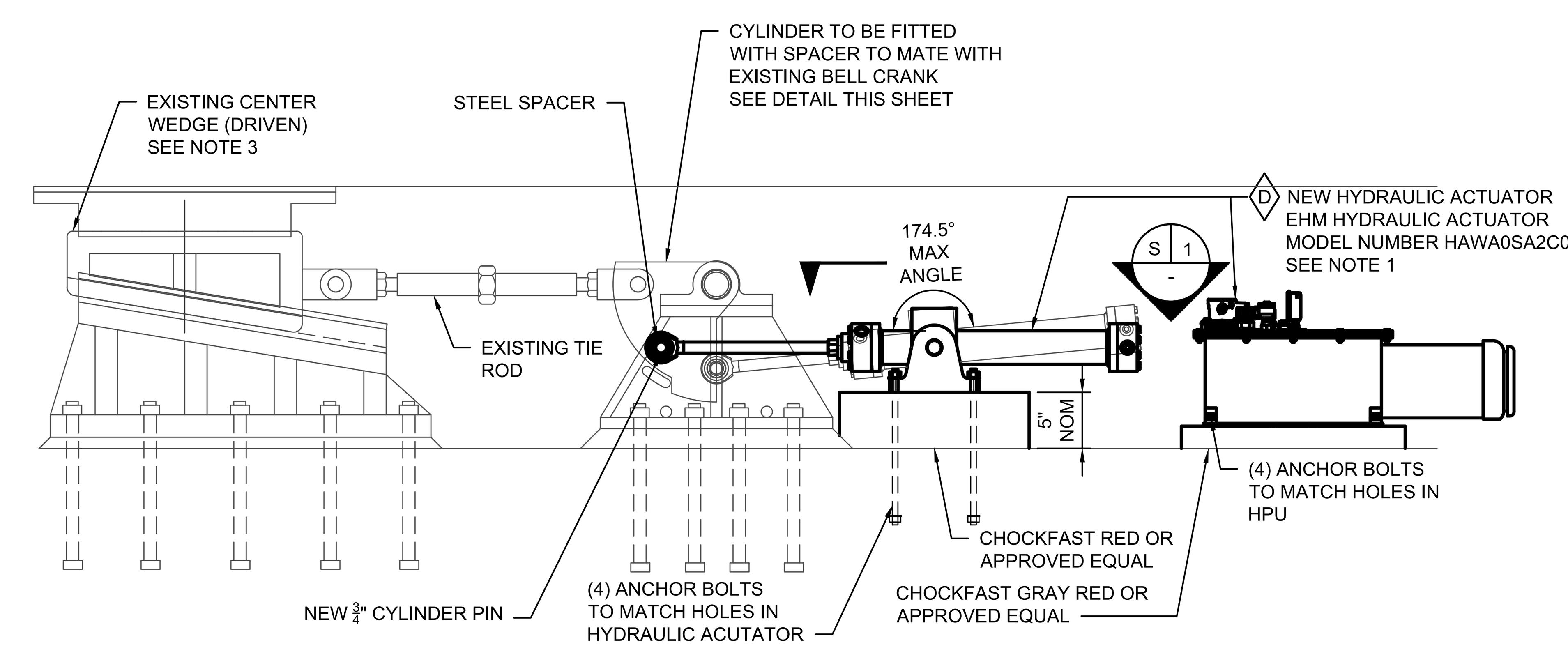
SCALE ½" = 1'-0"

MECHANICAL ITEMS OF WORK AT CENTER PIER

- D REPLACE THE CENTER WEDGE HYDRAULIC ACTUATORS.
- L REHABILITATE EXISTING RIGHT ANGLE REDUCERS.

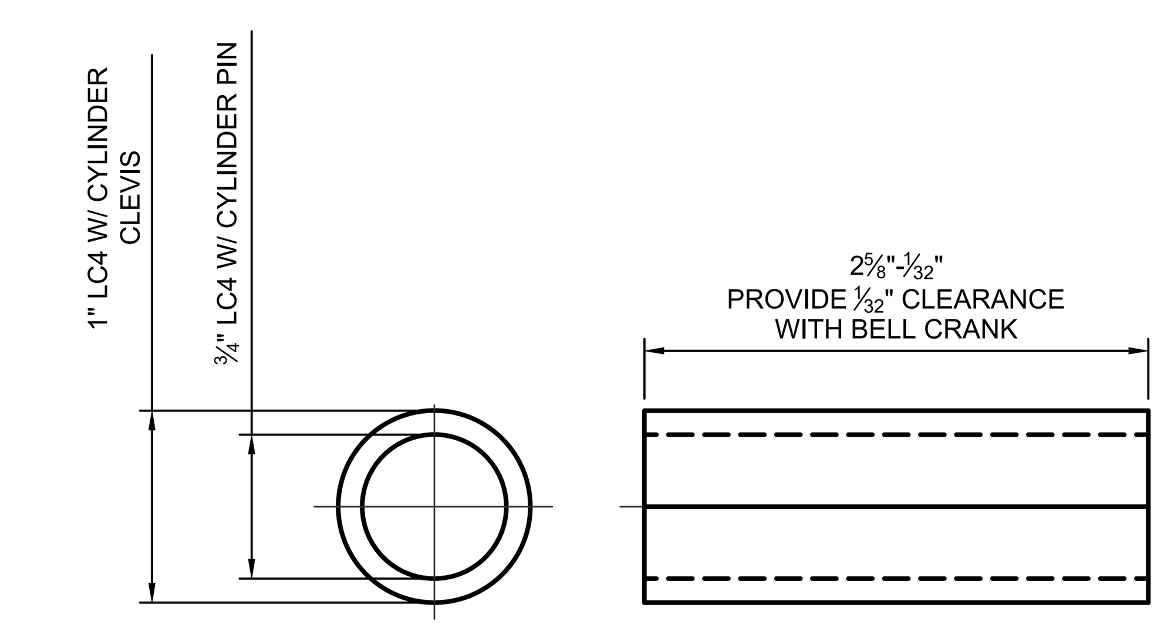
NOTES

1. CYLINDER SHALL BE ORDERED WITH A CUSTOM STROKE OF 12". ACTUATOR TO INCLUDE PILOT OPERATED CHECK VALVES MOUNTED IN CYLINDER MANIFOLDS. RELIEF VALVES SHALL BE SET TO MATCH THE EXISTING ACTUATOR FORCES.
2. GEARBOX TO BE REMOVED AND REHABILITATED BY THE OEM (BRAD FOOTE GEAR WORKS) PER QUOTE# 032620-67 ITEM 3639-900-M (OPTION B) ISSUED ON 5/12/20 AND UPGRADED SO A RATING OF 12.5 HP@ 28.5 RPM WITH A SERVICE FACTOR OF 1.5 MINIMUM AT THE EXISTING GEAR RATIO (7.79:1). INSTALL REHABILITATED GEARBOX USING EXISTING BOLT HOLES IN THE STRUCTURE AND SUCH THAT THE COUPLING ALIGNMENT MEETS COUPLING MANUFACTURER REQUIREMENTS. TURNED BOLTS MAY BE REUSED IF IN GOOD CONDITION AND TENSIONED BOLTS SHALL BE REPLACED IN KIND. THE COUPLING HALVES ON THE REDUCER INPUT AND OUTPUT SHAFTS SHALL BE REPLACED AS PART OF THIS WORK.
3. CENTER WEDGES SHALL REMAIN DRIVEN AND SECURED WHILE THE ACTUATOR IS BEING REPLACED.



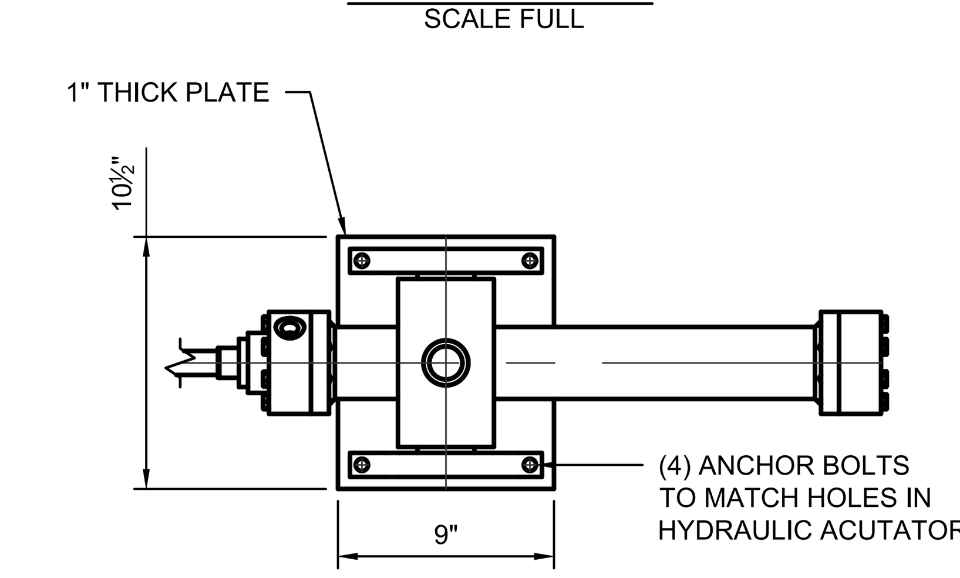
DETAIL A: CENTER WEDGE ASSEMBLY ELEVATION

SCALE 1" = 1'-0"



STEEL SPACER

SCALE FULL



SECTION 1: HYDRAULIC ACTUATOR MOUNTING PLATE

SCALE 1½" = 1'-0"

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

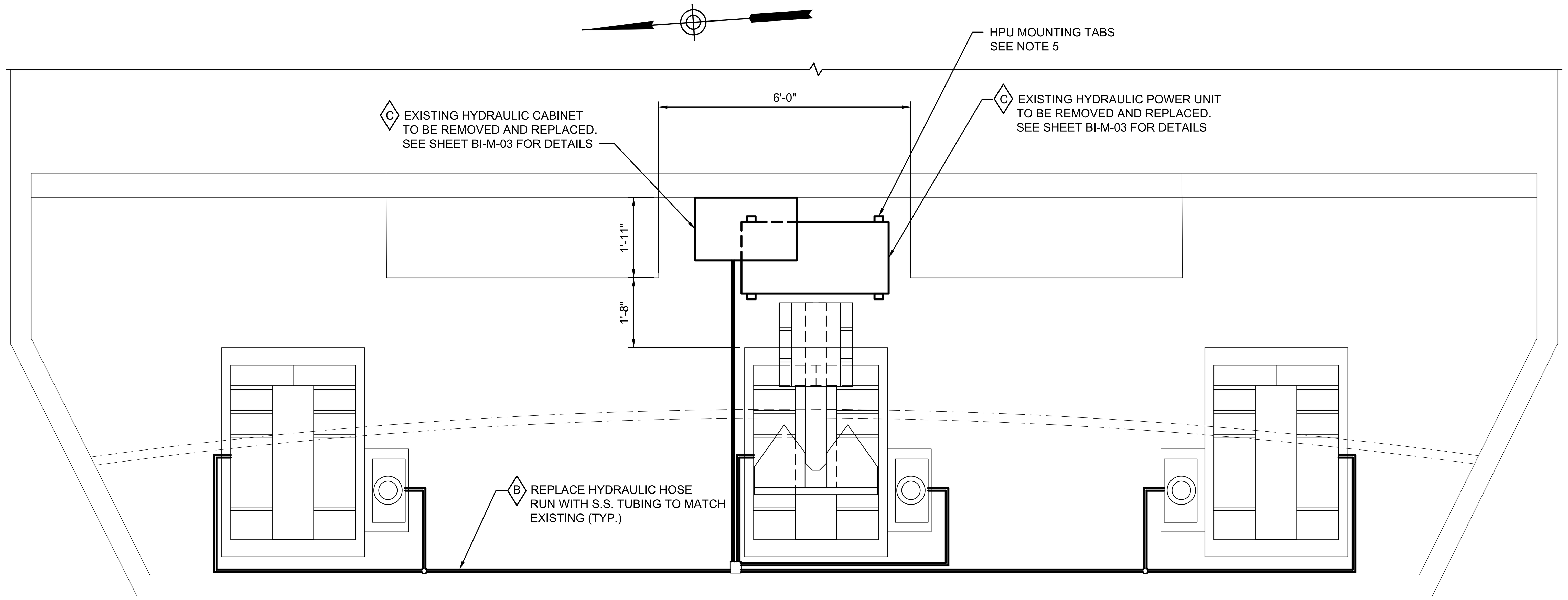
Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER PAUL M. SKE... 11/18/22 MECHANICAL STATE OF CALIFORNIA

CENTER PIER REHABILITATION PLAN
BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER
(BRIDGE NO. 29C-108)

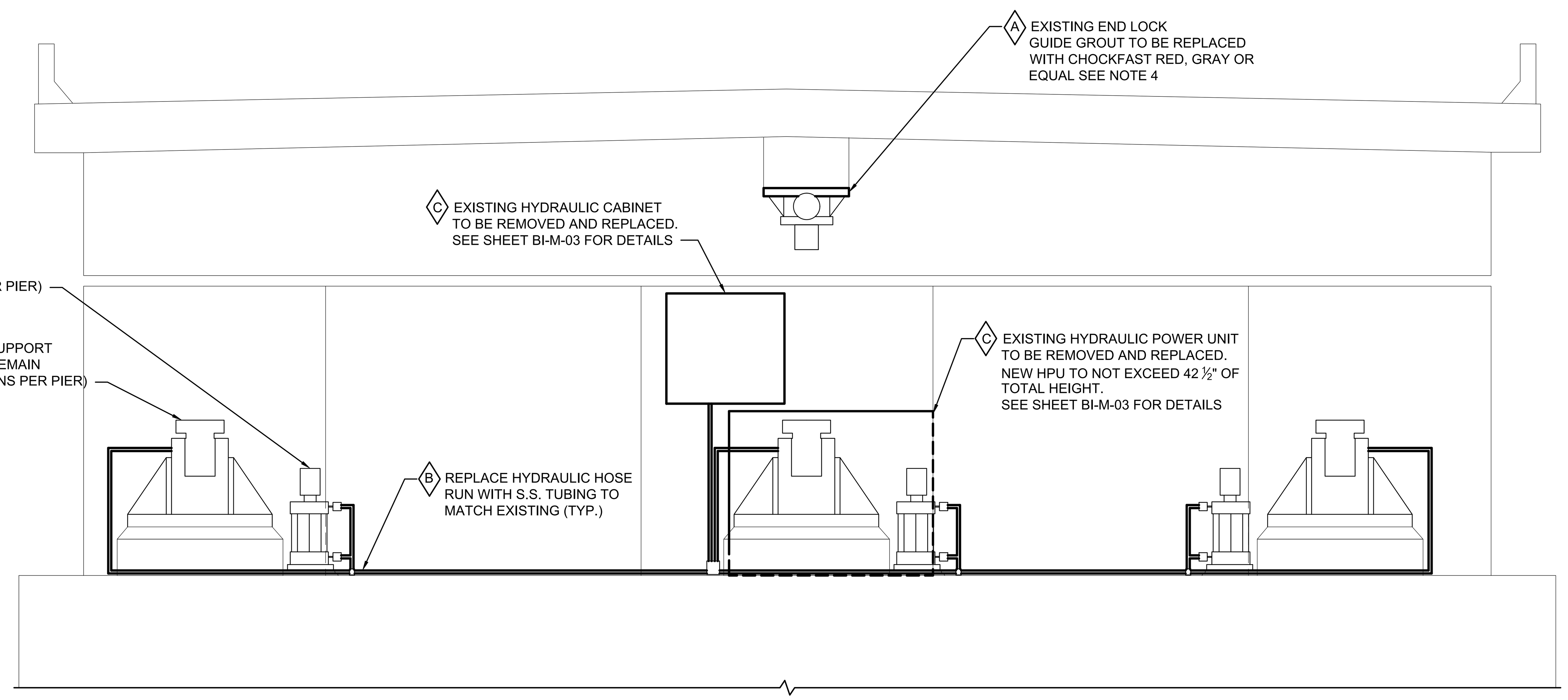
BI-M-01

$USER $TIME $DATE $REQUEST



REST PIER PLAN

SCALE ½" = 1'-0"
EAST REST PIER SHOWN, WEST REST PIER SIMILAR



REST PIER ELEVATION

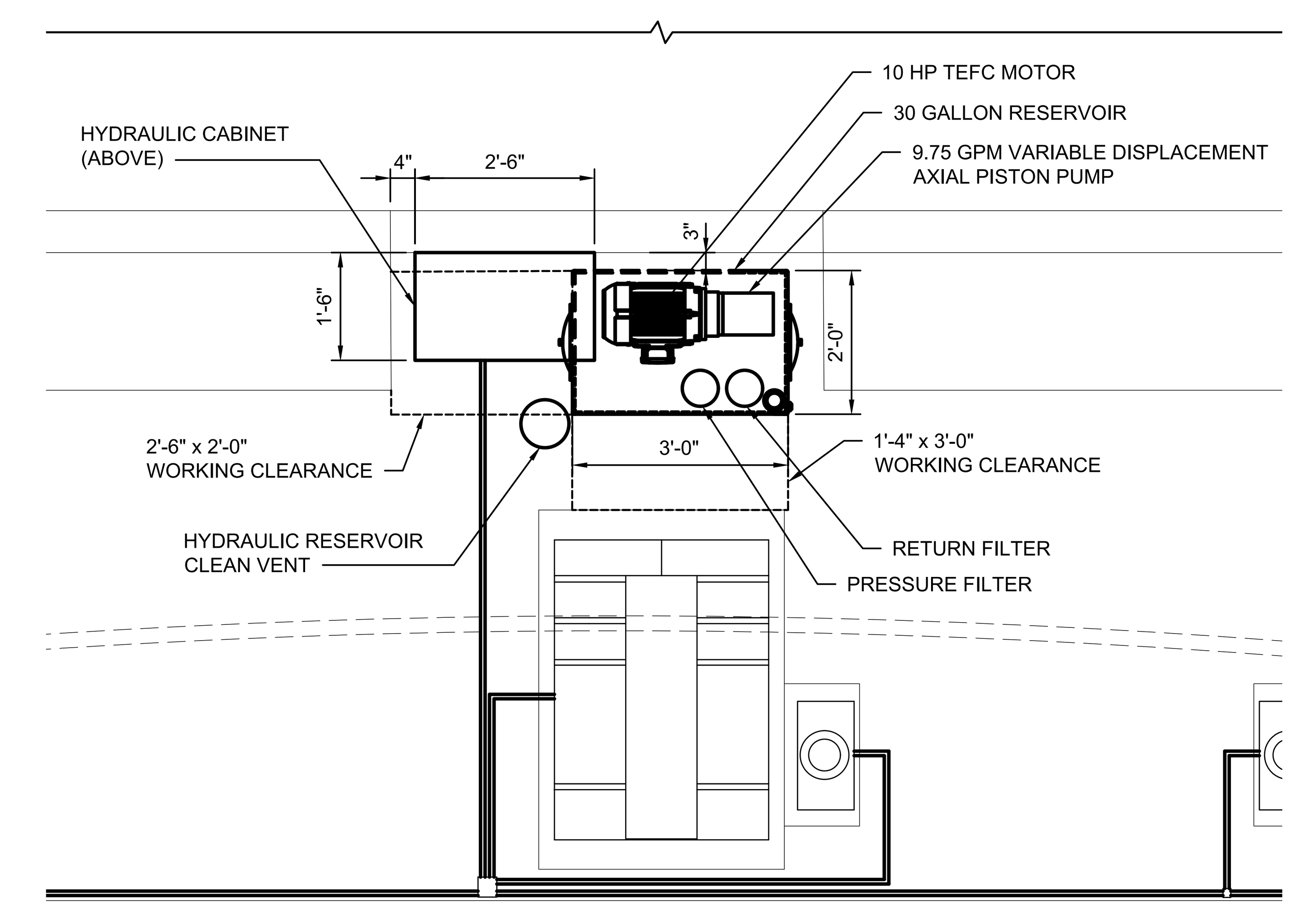
SCALE ½" = 1'-0"
EAST REST PIER SHOWN, WEST REST PIER SIMILAR

MECHANICAL ITEMS OF WORK AT REST PIER

- A REPLACE THE GROUT UNDER THE SOUTH SPAN LOCK BAR GUIDE.
- B REPLACE ALL FLEXIBLE HOSES OF THE EAST AND WEST REST PIER MACHINERY SYSTEMS.
- C REMOVE AND REPLACE THE HYDRAULIC POWER UNITS AND HYDRAULIC CABINETS OF THE EAST AND WEST REST PIER MACHINERY SYSTEMS.

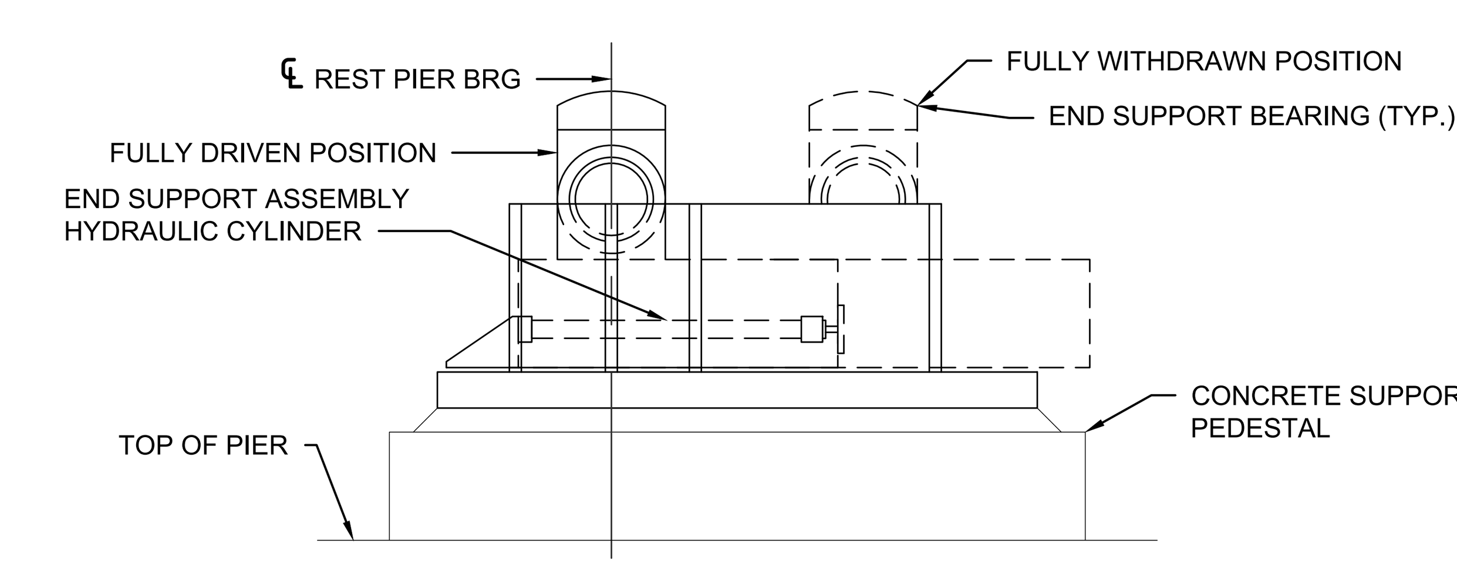
NOTES

1. NEW HYDRAULIC POWER UNITS TO MEET THE REQUIREMENTS IN BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER SPECIFICATION FOR ITEM 98.2.1 BRIDGE MACHINERY, SECTIONS 98-2.02D THROUGH 98-2.02S.
2. THE SOUTH SPAN LOCK BAR SHALL BE REALIGNED AS PART OF THE REGROUTING PROCESS. THE END LOCK BASE SHALL BE REPOSITIONED TO PROVIDE SMOOTH OPERATION THROUGHOUT THE FULL STROKE OF THE BAR AND SUCH THAT BOTH LOCK BARS ARE CENTERED WITHIN THEIR RECEIVERS WHILE THE ROADWAY AND END LIFTS ARE ALIGNED. AT NO POINT MAY A LOCK BAR FORCE THE BRIDGE TO ROTATE AND BIND AGAINST THE BAR ON THE OTHER END OF THE BRIDGE. ANCHOR BOLTS ON THE END LOCK BASE AND SHIMS ON THE END LOCK GUIDE BRACKET MAY NEED TO BE REPLACED AS PART OF THIS WORK.
3. SPAN LOCKS SHALL BEGIN DRIVING IN SYNC AND THE FLOW RATES SHALL BE FINE TUNED SUCH THAT THEY DRIVE AT APPROXIMATELY THE SAME SPEED.
4. NEW GROUT PAD SHALL BE APPROXIMATELY 24" BY 21" BY 2" THICK TO MATCH END LOCK GUIDE BASE.
5. HPU SHALL BE SECURED BY WEDGE TYPE ANCHOR BOLTS. SEE BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER SPECIFICATION ITEM 98.2.1 BRIDGE MACHINERY, SECTION 98-2.02E FOR FURTHER DETAILS.



HPU INSTALLATION PLAN

SCALE ½" = 1'-0"



END SUPPORT ASSEMBLY SIDE ELEVATION

SCALE ¾" = 1'-0"
SOUTH END SUPPORT SHOWN, NORTH END SUPPORT SIMILAR

$USER $TIME $DATE $REQUEST

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

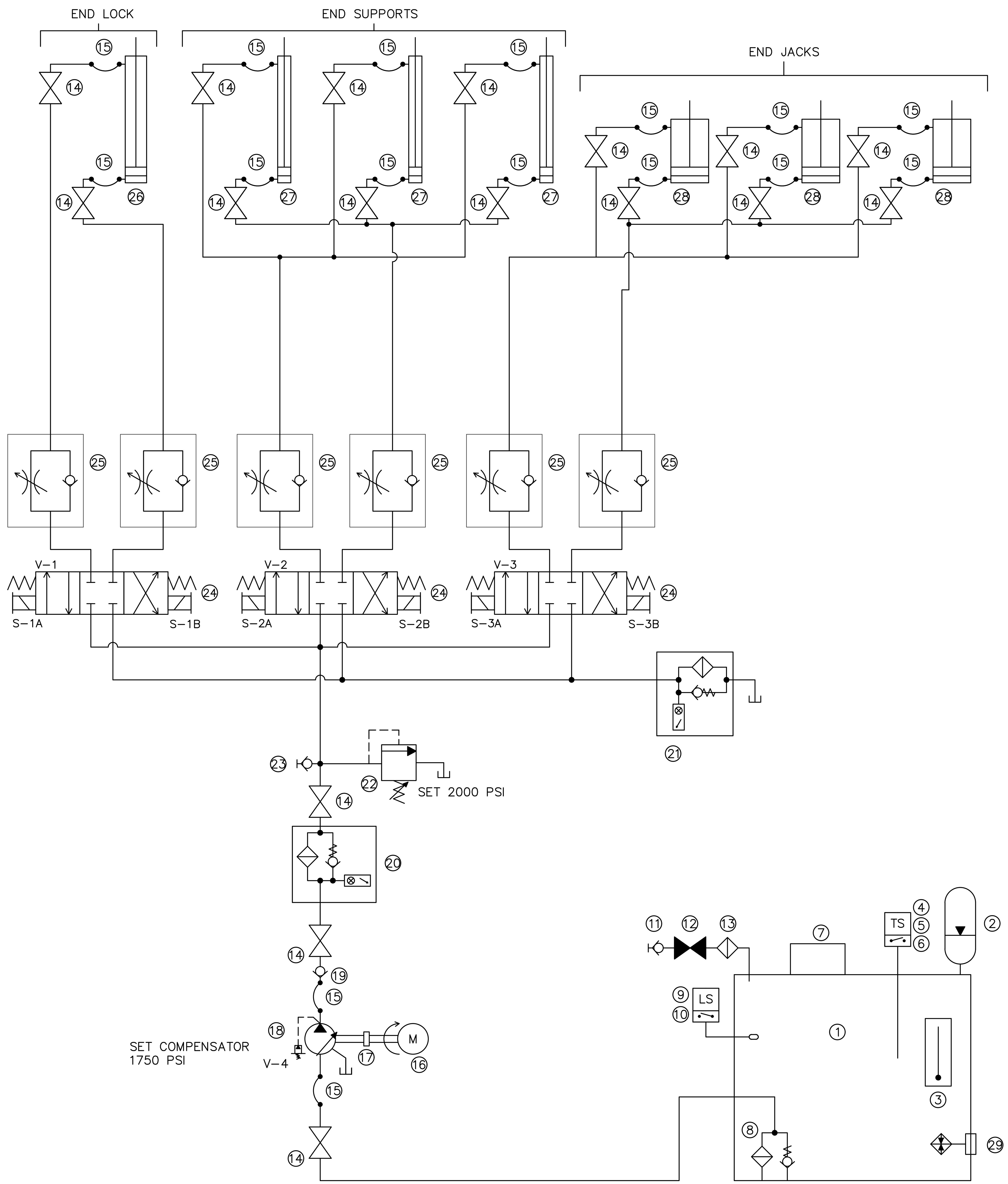
DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER PAUL M. SKELTON 11/18/22 MECHANICAL STATE OF CALIFORNIA

REST PIER REHABILITATION PLAN
BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER
(BRIDGE NO. 29C-108)

BI-M-02



HYDRAULIC ITEMS

ITEM: DESCRIPTION:

1. RESERVOIR, 30 GALLONS, JIC CONFIGURATION
2. 5 GALLON RESERVOIR ISOLATOR
3. LEVEL INDICATOR WITH INTEGRAL THERMOMETER
4. TEMPERATURE SWITCH LOW TEMPERATURE LOCAL ALARM SET 50 DEGREES FAHRENHEIT
5. TEMPERATURE SWITCH HIGH TEMPERATURE LOCAL ALARM SET TO 120 DEGREES FAHRENHEIT
6. TEMPERATURE SWITCH HIGH TEMPERATURE SHUT OFF, SET 140 DEGREES FAHRENHEIGHT
7. CONTROL VALVE MANIFOLD
8. FLUID SUPPLY STRAINER WITH BYPASS. STRAINER AND BYPASS TO MEET PUMP OEM RECOMMENDATIONS.
9. LEVEL SWITCH, LOW LEVEL LOCAL WARNING
10. LEVEL SWITCH, LOW LEVEL SHUT OFF
11. QUICK DISCONNECT COUPLING
12. BALL VALVE, NORMALLY CLOSED
13. FILTER WITH 10 MICRON ABSOLUTE RATING (MINIMUM), 99% EFFICIENT
14. BALL VALVE, NORMALLY OPEN
15. FLEXIBLE HOSE
16. HPU MOTOR, 10 HP
17. FLEXIBLE COUPLING
18. 3000 PSI MINIMUM 9.75 GPM PRESSURE COMPENSATED VARIABLE DISPLACEMENT AXIAL PISTON PUMP WITH ADJUSTABLE MAXIMUM VOLUME STOP. PUMP SHALL BE EATON PVB10 SERIES OR APPROVED EQUAL.
19. CHECK VALVE
20. PRESSURE FILTER WITH BYPASS @ 30PSI, 10 MICRON ABSOLUTE (MINIMUM), LOCAL BYPASS INDICATION, 99% EFFICIENT
21. RETURN FILTER WITH BYPASS @ 90 PSI, 10 MICRON ABSOLUTE (MINIMUM) LOCAL BYPASS INDICATION, 99% EFFICIENT
22. RELIEF VALVE
23. STAUFF SIZE 20 TEST PORT
24. 4/3 SOLENOID OPERATED DIRECTIONAL CONTROL VALVE WITH MANUAL OVERRIDE
25. FLOW CONTROL VALVE WITH REVERSE CHECK
26. EXISTING SPAN LOCK CYLINDER
27. EXISTING END SUPPORT CYLINDERS
28. EXISTING END JACK CYLINDERS
29. LOW WATT DENSITY RESERVOIR HEATER

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					NO SCALE

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER PAUL M. SKELTON MECHANICAL 11/18/22 STATE OF CALIFORNIA

HYDRAULIC SCHEMATIC
BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER
(BRIDGE NO. 29C-108)

BI-M-03

GENERAL

1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE STATE OF CALIFORNIA,, THE COUNTY OF SAN JOAQUIN, THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, AND THE REGULATIONS OF THE UNDERWRITERS LABORATORIES. ALL ELECTRICAL INSTALLATIONS SHALL CONFORM TO THE 2017 NATIONAL ELECTRIC CODE OR LATER.

2. ALL ELECTRICAL WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES AND SHALL BE SCHEDULED CONSISTENT WITH THE OVERALL CONSTRUCTION STAGING SEQUENCE. ELECTRICAL REMOVAL WORK SHALL BE PERFORMED AND COORDINATED WITH THE ELECTRICAL INSTALLATION WORK.

3. CONTRACTOR SHALL PERFORM ALL WORK WITH DUE RESPECT FOR LIFE AND PROPERTY IN THE VICINITY OF THE WORK AREA. CONTRACTOR ALONE SHALL BE RESPONSIBLE FOR PROTECTION OF SAME FROM ANY HARM OR DAMAGE DURING THE ENTIRE CONSTRUCTION PERIOD. ANY HARM OR DAMAGE SHALL BE RECTIFIED TO THE ENTIRE SATISFACTION OF THE COUNTY OF SAN JOAQUIN AT NO ADDITIONAL COST.

4. EXISTING DIMENSIONS AND DETAILS SHOWN IN THE PLANS ARE BASED ON AVAILABLE INFORMATION TAKEN FROM EXISTING PLANS, FIELD MEASUREMENTS, AND FIELD INSPECTIONS. ALL EXISTING DIMENSIONS AND DETAILS THAT AFFECT THE WORK CALLED FOR IN THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO START OF WORK. IN THE EVENT THAT EXISTING CONDITIONS OR DETAILS VARY FROM THOSE SHOWN ON THESE DRAWINGS, THE CONTRACTOR MUST MAKE THE NECESSARY DRAWINGS SHOWING THE EXISTING CONDITIONS AND SUBMIT TO THE COUNTY OF SAN JOAQUIN FOR REVIEW AND RESOLUTION.

5. THE ELECTRICAL EQUIPMENT AND RACEWAY LAYOUTS SHOWN IN THE CONTRACT DOCUMENTS ARE DIAGRAMMATIC IN NATURE AND INTENDED TO SHOW A CONCEPTUAL LAYOUT. SCALES ARE APPROXIMATE AND NOT EVERY DETAIL OR EXACT LOCATION OF EQUIPMENT AND/OR CONDUIT IS SHOWN. EXISTING CONDITIONS SHALL BE VERIFIED IN THE FIELD. WHILE MAJOR EQUIPMENT IS SHOWN, NOT EVERY DETAIL OR EXACT LOCATION OF ALL EQUIPMENT AND/OR CONDUIT MAY BE SHOWN. SIZES OF EQUIPMENT MAY VARY, DEPENDING ON THE MANUFACTURER SELECTED. THE CONTRACTOR SHALL FOLLOW THESE LAYOUTS AS CLOSELY AS POSSIBLE, REALIZING THAT ACTUAL INSTALLATIONS MAY VARY SLIGHTLY DUE TO THE FIELD CONDITIONS AND STRUCTURAL MECHANICAL COORDINATION. THE CONTRACTOR SHALL VERIFY ALL THE DIMENSIONS RELATED TO ELECTRICAL EQUIPMENT INSTALLATION PRIOR TO PERFORMING THE ACTUAL INSTALLATION. ANY DEVIATIONS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL ANY DEVIATIONS IN PROPOSED CABLE AND CONDUIT ROUTINGS.

6. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL REQUIRED BOXES, CONDUIT FITTINGS, ELBOWS, AND HARDWARE FOR A COMPLETE INSTALLATION WHETHER OR NOT THEY ARE EXPLICITLY SHOWN OR INDICATED ON THE CONTRACT DRAWINGS.

7. THESE PLANS AND SPECIFICATIONS DO NOT NECESSARILY SHOW ALL ASPECTS OF THE REQUIRED INSTALLATION. PERFORM ALL WORK NECESSARY, TO PROVIDE FULLY OPERATIONAL SYSTEMS THAT ARE IN COMPLIANCE WITH ALL STATED CONTRACT REQUIREMENTS, WHETHER SHOWN ON THE PLANS OR NOT. PRESENTATION OF INCOMPLETE INFORMATION OR OMISSIONS OF DETAILS FOR ITEMS WHICH ARE NECESSARY TO CARRY OUT THE INTENT OF THE DRAWINGS AND SPECIFICATIONS, OR WHICH ARE CUSTOMARILY PERFORMED, SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING SUCH OMISSIONS AND DETAILS OF WORK, AT NO EXTRA COST.

8. ANY APPARATUS, DEVICE, CIRCUIT, APPLIANCE, MATERIAL, OR LABOR NOT HEREIN SPECIFICALLY MENTIONED OR INCLUDED, BUT THAT MAY BE FOUND NECESSARY TO COMPLETE OR PERFECT THE INSTALLATION AND EQUIPMENT IN A MANNER ACCEPTABLE TO THE ENGINEER, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AS IF SPECIFICALLY INCLUDED IN THESE DRAWINGS.

9. IN ANY CASE OF DISCREPANCIES IN NOTED DETAILS, CATALOG NUMBERS, AND DESCRIPTIONS, OR WHERE MULTIPLE INTERPRETATIONS OF THE PLANS MAY BE REASONABLY MADE, SUBMIT A WRITTEN INQUIRY TO THE ENGINEER, WHO WILL MAKE DETERMINATION IN WRITING. ANY DEVIATION FROM THE PLANS AND SPECIFICATIONS OR INTERPRETATIONS MADE BY THE CONTRACTOR WITHOUT WRITTEN APPROVAL BY THE ENGINEER SHALL BE AT THE CONTRACTOR'S OWN RISK AND EXPENSE. IN THE CASE OF DISCREPANCY BETWEEN SPECIFICATIONS AND PLANS, THE MORE STRINGENT SHALL GOVERN.

10. ALL TEMPORARY WORKS AND SUPPORTS REQUIRED TO COMPLETE THE WORK SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL BE CONSIDERED INCIDENTAL TO THE OTHER WORK ITEMS.

11. ALL ELECTRICAL COMPONENTS AND MATERIAL SHOWN ON THE CONTRACT DRAWINGS ARE NEW UNLESS OTHERWISE NOTED.

12. THE CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING AS REQUIRED FOR THE REMOVAL AND INSTALLATION OF ELECTRICAL COMPONENTS, HANGERS, SUPPORTS, ETC. ALL PATCHING SHALL BE DONE SO AS TO LEAVE THE AREA IN ITS ORIGINAL CONDITION AS A MINIMUM OR AS OTHERWISE REQUIRED BY THE ENGINEER.

13. CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL CONSTRUCTION DEBRIS IN THE VICINITY OF THE WORK. THE CONTRACTOR SHALL CONTROL CLEANING TO PREVENT DIRT OR DUST FROM LEAVING THE JOB SITE AND INFILTRATING AREAS NOT INVOLVED IN THE PROJECT. AT THE COMPLETION OF THE WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LEAVING THE SITE IN A CLEAN, ORDERLY STATE.

14. EXISTING ELECTRICAL CABLE, WIRES, CONDUIT, CONDUIT HANGERS, SUPPORTS, CLAMPS, ETC, THAT ARE BEING REPLACED SHALL NOT BE REUSED. ALL SUCH PARTS SHALL BE REMOVED AND PROPERLY DISPOSED OF.

15. THE CONTRACTOR MAY PROPOSE REMOVAL OF COMPONENTS OF THE EXISTING STRUCTURE IN ORDER TO ACCOMMODATE PROPOSED ELECTRICAL WORK. ANY SUCH PROPOSALS SHALL BE SUBMITTED TO THE COUNTY OF SAN JOAQUIN FOR APPROVAL. ALL REMOVED ITEMS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE COUNTY OF SAN JOAQUIN PRIOR TO THE COMPLETION OF WORK.

16. THE CONTRACTOR SHALL COMPLY WITH THE COUNTY OF SAN JOAQUIN'S REQUIREMENTS FOR BUILDING SECURITY AND ACCESS. BUILDING ACCESS AND STORAGE AREAS FOR NECESSARY CONSTRUCTION MATERIALS AND EQUIPMENT SHALL BE COORDINATED WITH THE COUNTY OF SAN JOAQUIN.

17. THE CONTRACTOR SHALL REMOVE AND RE-EXECUTE ALL UNSATISFACTORY WORK AT NO ADDITIONAL COST TO THE COUNTY OF SAN JOAQUIN.

18. ALL STRUCTURAL, MECHANICAL AND ARCHITECTURAL BACKGROUND INFORMATION SHOWN IN THE ELECTRICAL PLANS IS FOR REFERENCE ONLY.

19. CONDUIT PENETRATIONS THROUGH WALLS AND FLOORS OF BUILDINGS SHALL BE SEALED WITH AN APPROVED FIRE-STOP SEALANT.

20. ALL CONDUITS AND FITTINGS USED IN ONE CONTINUOUS RUN SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER.

21. THE CONTRACTOR SHALL FURNISH AND INSTALL ENGRAVED BRASS TAGS AT BOTH ENDS OF ALL RACEWAY RUNS IDENTIFYING THEM WITH THE FINAL CONDUIT DESIGNATIONS WHICH SHALL COINCIDE WITH THOSE IN THE CONTRACTOR'S FINAL AS-BUILT DRAWINGS. PAYMENT FOR THESE TAGS SHALL BE UNDER THE VARIOUS PAY ITEMS TO WHICH THE RACEWAYS PERTAIN.

22. ENCLOSURES WHERE SHOWN IN THE PLANS SHALL BE NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION (NEMA) 4X STAINLESS STEEL WITH CONTINUOUS HINGES AND LATCHES, UNLESS OTHERWISE NOTED.

23. ALL NEW CONDUCTORS INSTALLED IN CONDUIT SHALL BE INSTALLED WITH GROUND CONDUCTORS. GROUND CONDUCTORS SHALL BE PROVIDED IN ALL NEW FLEXIBLE CABLES. GROUND CONDUCTOR SHALL BE SIZED AS PER THE NEC OR MINIMUM SIZE #14 AWG. WHICHEVER IS LARGER. ALL CABINETS, TERMINAL AND JUNCTION BOXES SHALL BE GROUNDED IN ACCORDANCE WITH THE NEC.

24. ALL CONDUCTORS SHALL BE CONNECTED TO TERMINAL BLOCKS OR DEVICES. SPLICES SHALL NOT BE PERMITTED WITHIN EQUIPMENT ENCLOSURES, BOXES OR CONDUIT FITTINGS.

25. ALL EQUIPMENT NOTED AS PROPOSED SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

26. PRIOR TO THE COMMENCEMENT OF ANY WORK, THE CONTRACTOR SHALL SUBMIT A COMPREHENSIVE STAGING PLAN IN ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS WHICH SHALL CLEARLY DEFINE SPECIFIC MILESTONE DATES TO THE ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR ALL OTHER CONSTRUCTION THAT MAY AFFECT OPERATIONS OR SCHEDULE.

27. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS RELATING TO ELECTRICAL EQUIPMENT INSTALLATIONS PRIOR TO PERFORMING THE ACTUAL INSTALLATIONS. ANY DEVIATIONS NOTED AS PART OF THE FIELD VERIFICATION OR CONSTRUCTION DEVIATIONS REGARDING THE STRUCTURE, SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

GENERAL (CONTINUED)

28. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN THE LOCATIONS DEPICTED ON THE PLANS. DEVIATIONS IN LOCATION SHALL BE PERMITTED ONLY UPON APPROVAL BY THE ENGINEER.

29. UPON COMPLETION OF ELECTRICAL INSTALLATION, THE CONTRACTOR SHALL TEST THE COMPLETE ELECTRICAL SYSTEM FOR ACCEPTANCE. PRIOR TO TESTING, THE CONTRACTOR SHALL SUBMIT A COMPLETE TESTING PROCEDURE FOR APPROVAL. THE SYSTEM SHALL BE TESTED STEP BY STEP FOR SHORT CIRCUITS, GROUNDS, PROPER OPERATION AND INTERLOCKS IN THE PRESENCE OF THE ENGINEER, ALL FINDINGS SHALL BE RECORDED AND DEFICIENCIES CORRECTED. SEE SPECIFICATIONS FOR ADDITIONAL TESTING REQUIREMENTS.

30. WIREWAYS WHERE SHOWN IN THE PLANS SHALL BE NEMA 4X STAINLESS STEEL WITH CONTINUOUS HINGES AND LATCHES. SIZES AS REQUIRED TO MEET NEC.

31. ALL ABOVE GROUND OUTDOOR CONDUITS SHALL BE PVC-RGS UNLESS NOTED OTHERWISE. ALL UNDERGROUND OR EMBEDDED IN BARRIERS/CONCRETE CONDUITS SHALL BE PVC-SCHEDULE 80 UNLESS NOTED OTHERWISE.

GENERAL SCOPE OF WORK

1. THE BACON ISLAND ROAD MOVABLE BRIDGE SHALL HAVE NEW ELECTRICAL EQUIPMENT INSTALLED ALONGSIDE EXISTING EQUIPMENT ON THE EXISTING MOVABLE BRIDGE AS SHOWN ON THE PLANS AND DESCRIBED IN THE SPECIFICATIONS.

2. FINAL TESTING OF THE ELECTRICAL EQUIPMENT IN THE SHOP (PRIOR TO DELIVERY) SHALL BE DONE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

3. DURING SHIPMENT OF ALL MATERIALS TO THE WORK SITE, SUPPORTS AND PROTECTIVE MEASURES NECESSARY TO ENSURE SHIPMENT WITHOUT DAMAGE TO THE ELECTRICAL EQUIPMENT SHALL BE INCLUDED WITH THIS WORK. DAMAGE TO ELECTRICAL EQUIPMENT DURING SHIPPING AND HANDLING SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE COUNTY. COMPONENTS DAMAGED BEYOND REPAIR, TO THE COUNTY OF SAN JOAQUIN'S SATISFACTION, SHALL BE REPLACED BY THE CONTRACTOR AT NO COST TO THE COUNTY.

4. SITE ACCEPTANCE TESTING SHALL BE CONDUCTED AFTER COMPLETE INSTALLATION. THE CONTRACTOR SHALL PROVIDE WRITTEN VERIFICATION THAT THEY HAVE PERFORMED THIS FINAL INSPECTION AND INDICATE TESTING RESULTS.

5. DETAILED PROGRESS REPORTS AND PROJECTED DELIVERY SCHEDULES SHALL BE PROVIDED THROUGHOUT THE PROJECT. UPDATED SCHEDULES SHALL BE PROVIDED TO THE COUNTY OF SAN JOAQUIN NO LESS FREQUENTLY THAN BI-WEEKLY.

6. ACCOMMODATION AND PROVISION OF ACCESS TO THE SHOP WORK BY COUNTY OF SAN JOAQUIN STAFF AND INSPECTORS SHALL BE GRANTED AT THE REQUEST OF THE COUNTY OF SAN JOAQUIN.

MOUNTING METHOD NOTES

1. WHERE MOUNTING ITEMS SUCH THAT DISSIMILAR METALS MAY BE IN CONTACT WITH EACH OTHER, PROVIDE NEOPRENE SPACERS OR GASKETS TO PREVENT CONTACT. THIS REQUIREMENT WILL NOT BE REQUIRED SPECIFICALLY FOR THE CASE OF CONTACT BETWEEN CARBON STEEL AND STAINLESS STEEL.

JUNCTION BOX, PULL BOX, CABINET, AND FITTING NOTES

1. FURNISH AND INSTALL JUNCTION AND PULL BOXES, REDUCERS, AND OTHER FITTINGS AS REQUIRED BY THESE SPECIFICATIONS OR WHERE REQUIRED BY THE NATIONAL ELECTRIC CODE (NEC), OR WHERE REQUIRED TO FACILITATE PULLING, WHETHER SHOWN ON PLANS OR NOT.

2. CONDUIT TOP ENTRY IS NOT PERMITTED FOR OUTDOOR CABINETS THAT CONTAIN ELECTRICAL EQUIPMENT. ALL WET AND OUTDOOR LOCATION CONDUIT FITTINGS AND HUBS SHALL BE WATERTIGHT TYPE.

AS-BUILT PLANS

1. PROVIDE AS-BUILT PLANS SHOWING THE FINAL LOCATIONS, DETAILS, AND METHODS FOR ALL ELECTRICAL INSTALLATIONS. AS-BUILT PLANS SHALL BE DEVELOPED USING THIS PLAN SET, THE EXISTING ELECTRICAL SYSTEM PLAN SET, AND ALL CHANGES OF PLAN AS A BASIS. USE EITHER A "RED-LINE" METHOD THAT SHOWS REVISIONS, OR A COMPUTERIZED METHOD WHICH REVISES THE ELECTRONIC FILES. MATCH THE LEVEL OF DETAIL SHOWN ON THESE PLANS. SUBSTITUTE DETAILS SHALL BE PROVIDED WHERE THE DETAILS ON THIS SHEET ARE MODIFIED OR ALTERNATE DETAILS ARE APPROVED BY THE ENGINEER. IT WILL NOT BE PERMISSIBLE TO "X" OUT DETAILS WITHOUT PROVIDING NEW VERSIONS.

2. IN ADDITION TO PROVIDING AS-BUILT PLANS FOR THE PLANS INCLUDED HEREIN, PROVIDE AS-BUILT PLANS FOR THE FOLLOWING:
   - 2.1. CONTROL SYSTEM SCHEMATICS.
   - 2.2. RACEWAY SCHEDULES NOTING SIZE, TYPE, CIRCUITS.
   - 2.3. WIRE NUMBERS.
   - 2.4. WIRING TERMINATION DESIGNATIONS.

3. INTEGRATE EXISTING EQUIPMENT TO REMAIN INTO THE AS-BUILTS TO PROVIDE A COMPLETE SET.

ELECTRICAL MACHINERY AND EQUIPMENT NOTES

1. COORDINATE, VERIFY, AND INCORPORATE PROPER CLEARANCES BETWEEN ELECTRICAL ENCLOSURES TO ALLOW FOR INSTALLATION OF EQUIPMENT AS SHOWN ON THE PLANS. SEE MACHINERY/MECHANICAL PLANS FOR ADDITIONAL REQUIREMENTS.

2. PLANS MAY NOT SHOW DETAILED CONSTRUCTION METHODS OR DIMENSIONS FOR EQUIPMENT MOUNTING SUPPORTS. WHERE NOT SHOWN, CONTRACTOR SHALL DEVELOP SCALED SHOP DRAWINGS SHOWING CONSTRUCTION OF THE MOUNTING, AND ALL ATTACHED EQUIPMENT FOR REVIEW AND APPROVAL. INTERCONNECTED EQUIPMENT SHALL BE SUBMITTED AS A COMPLETE SHOP DRAWING SUBMISSION.

3. MODEL NUMBERS SHOWN ON PLANS ARE PROVIDED FOR REFERENCE ONLY. MODEL NUMBERS MAY NOT BE COMPLETE. IN CASE OF DISCREPANCY BETWEEN MODEL NUMBERS AND STATED SPECIFICATIONS, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL MODEL NUMBERS AND PROVIDING COMPLETE MODEL INFORMATION FOR ALL EQUIPMENT THROUGH THE SHOP DRAWING PROCESS.

4. ALL CONTROL PANELS, TEMPORARY AND PERMANENT SHALL BE CONSTRUCTED FOLLOWING NFPA 70, NEC ARTICLE 409 - INDUSTRIAL CONTROL PANELS.

5. ALL CIRCUIT BREAKERS (CB) (EXCEPT FOR BRANCH CB IN LIGHTING PANELS) , MOTOR CIRCUIT PROTECTORS, CONTACTORS, AND OVERLOADS SHALL BE PROVIDED WITH A MINIMUM OF 2 NORMALLY OPEN (N.O.) AND 2 NORMALLY CLOSED (N.C.) AUXILIARY CONTACTS UNLESS OTHERWISE NOTED.

6. ALL ELECTRICAL PARTS SHALL BE COMPLETELY PROTECTED FROM WEATHER, DIRT, AND ALL OTHER INJURIOUS CONDITIONS DURING MANUFACTURE AND SHIPMENT.

7. COVERS FOR ALL EQUIPMENT SHALL BE EASILY REMOVABLE AND REPLACEABLE WITHOUT DISASSEMBLY OF ANY COMPONENT EXCEPT THE ONE REQUIRING ACCESS. CLEARANCES BETWEEN EQUIPMENT SHALL BE INCREASED TO MEET THIS REQUIREMENT.

8. THE CONTRACTOR SHALL PROVIDE IN-SIGHT (LOCAL) DISCONNECT SWITCH, EITHER SINGLE POLE, DOUBLE POLE OR THREE POLE AS REQUIRED FOR EACH ELECTRICAL APPLIANCE MODIFIED SUCH AS ELECTRICAL WATER HEATER, AIR CONDITIONER, VENTILATION FAN ETC., WHETHER SHOWN OR NOT ON THE CONTRACT PLANS.

$REQUEST $USER $TIME $DATE

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					NO SCALE

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

100% SUBMISSION

ELECTRICAL GENERAL NOTES I
BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER
(BRIDGE NO. 29C-108)

BI-E-01

10
OF
75

CONDUITS, CABLE, AND WIRING NOTES

1. WHERE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IS NOT SHOWN ON THE DRAWINGS, PROVIDE AN ADDITIONAL EQUIPMENT GROUNDING CONDUCTOR, SIZED IN ACCORDANCE WITH THE NEC.

2. QUANTITY OF CONTROL SYSTEM CABLES/WIRES SHOWN ON THE DRAWINGS MAY NOT REFLECT THE ACTUAL NUMBER REQUIRED TO PROVIDE THE STATED SYSTEM OPERATION. THE CONTRACTOR SHALL INSTALL THE QUANTITY OF CABLES/WIRES AS ARE NECESSARY FOR THE INITIAL INSTALLATION, PLUS A MINIMUM OF 10% SPARE.

3. LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT (LFMC) SHALL BE USED ONLY FOR APPLICATIONS THAT REQUIRE A HIGH DEGREE OF FLEXIBILITY OR TO ACCOMMODATE MOVING OR VIBRATING PARTS. SUBSTITUTION OF OTHER CONDUIT TYPES WITH LFMC SHALL NOT BE MADE SOLELY BASED ON CONVENIENCE OF INSTALLATION. USE LFMC FOR FINAL CONNECTIONS TO MOTOR AND LIMIT SWITCHES. MAXIMUM LENGTH SIX (6) FEET. DO NOT ATTACH CONDUIT TO MOTOR FOUNDATION.

4. SUPPORT CONDUIT EVERY FIVE (5) FEET. MAXIMUM SPACING FOR CONDUIT SUPPORTS DUE TO FIELD CONDITIONS MAY BE EXTENDED UP TO SIX (6) FEET UPON ENGINEER'S APPROVAL. DEVIATION FROM THIS REQUIREMENT SHALL BE AT THE SOLE DISCRETION OF THE ENGINEER. DO NOT SUPPORT BOXES OR CABINETS FROM CONDUIT. INSTALL ALL CONDUIT PER THE NEC AND AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) STANDARDS. LIMIT TOTAL ANGULAR CONDUIT BENDS BETWEEN PULL BOXES TO 270° OR 360° WITH APPROVAL OF ENGINEER. RADIUS OF CONDUIT BEND SHALL BE PER THE NEC.

5. WHERE MULTIPLE CIRCUIT CONDUCTORS ARE INSTALLED WITHIN THE SAME CONDUIT, VERIFY THAT ALL CONDUCTORS ARE SIZED IN ACCORDANCE WITH NEC DERATING REQUIREMENTS. INSTALL UPSIZED CABLES/LARGER CONDUIT AT NO ADDITIONAL COST TO ACCOMMODATE THE INCREASED WIRING SIZE IF NECESSARY TO COMPLY WITH THIS PROVISION.

6. ALL CONDUIT PROVIDED SHALL BE SUNLIGHT AND ULTRAVIOLET (UV) RESISTANT, AND SHALL BE RATED FOR SUCH INSTALLATION, WHETHER INSTALLED IN EXTERIOR LOCATIONS OR NOT.

7. EXACT CONDUIT STUB-UP LOCATIONS ARE TO BE DETERMINED BY THE CONTRACTOR BASED ON CERTIFIED MANUFACTURER'S DRAWINGS OF THE RESPECTIVE EQUIPMENT. INSTALL CONDUIT COMPATIBLE WITH EQUIPMENT FURNISHED.

8. FURNISH AND INSTALL EXPANSION FITTINGS OF THE APPROVED TYPE WHEREVER CONDUITS PASS THROUGH OR ACROSS STRUCTURAL EXPANSION JOINTS. EXPANSION/DEFLECTION FITTINGS NOT SHOWN ON THE PLANS SHALL BE FURNISHED AND INSTALLED AS NECESSARY AT NO ADDITIONAL COST.

9. ALL CONDUITS SHALL BE INSTALLED USING THE MANUFACTURER'S RECOMMENDED INSTALLATION METHODS, TOOLS AND MATERIALS. ALL FIELD THREADS SHALL BE COATED USING CONDUIT MANUFACTURER'S RECOMMENDED COATING.

10. MINOR DAMAGE TO CONDUIT DURING INSTALLATION SHALL BE REPAIRED, WHILE ANY CONDUIT WITH SEVERE DAMAGE SHALL BE REPLACED. THE DETERMINATION OF LEVEL OF DAMAGE, MINOR OR SEVERE, SHALL BE MADE BY THE OWNER.

11. ALL CONDUCTORS SHALL HAVE 90°C RATED XHHW-2 INSULATION UNLESS NOTED OTHERWISE.

QUALITY ASSURANCE / STANDARD PRODUCTS

1. MATERIALS AND EQUIPMENT SHALL BE THE STANDARD CATALOGUED PRODUCTS OF MANUFACTURERS REGULARLY ENGAGED IN PRODUCTION OF SUCH MATERIALS OR EQUIPMENT AND SHALL BE MANUFACTURER'S LATEST STANDARD DESIGN THAT COMPLIES WITH THE CONTRACT DOCUMENTS. MATERIALS AND EQUIPMENT SHALL ESSENTIALLY DUPLICATE ITEMS THAT HAVE BEEN IN SATISFACTORY COMMERCIAL OR INDUSTRIAL USE FOR AT LEAST TWO YEARS.

MANUFACTURER'S RECOMMENDATIONS

1. WHERE INSTALLATION PROCEDURES OR ANY PART THEREOF ARE REQUIRED TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL BEING INSTALLED, PRINTED COPIES OF THESE RECOMMENDATIONS SHALL BE FURNISHED TO THE ENGINEER PRIOR TO INSTALLATION. INSTALLATION OF THE ITEM WILL NOT BE ALLOWED TO PROCEED UNTIL THE RECOMMENDATIONS ARE RECEIVED. FAILURE TO FURNISH THESE RECOMMENDATIONS CAN BE CAUSE FOR REJECTION OF THE MATERIAL. THE FABRICATOR SHALL PROVIDE AS PART OF THE WORK ALL SPECIAL MACHINING AND INSTALLATION REQUIRED BY THE COMPONENT MANUFACTURER.

CODES AND STANDARDS

1. WORK UNDER NEW ITEMS SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE LATEST EDITION OF CODES AND STANDARDS ISSUED BY, BUT NOT LIMITED TO, THE FOLLOWING ORGANIZATIONS AND PUBLICATIONS WHOSE ABBREVIATIONS SHALL BE AS SHOWN:

   1.1. AMERICAN NATIONAL STANDARDS INSTITUTE - ANSI
   1.2. AMERICAN SOCIETY FOR TESTING AND MATERIALS - ASTM
   1.3. FEDERAL AVIATION ASSOCIATION - FAA
   1.4. INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS - IEEE
   1.5. INSULATED CABLE ENGINEERS ASSOCIATION - ICEA
   1.6. INSULATED POWER CABLE ENGINEERS ASSOCIATION - IPCEA
   1.7. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION - NEMA
   1.8. INTERNATIONAL ELECTRICAL TESTING ASSOCIATION - NETA
   1.9. NATIONAL FIRE PROTECTION ASSOCIATION - NFPA
      1.9.1. NFPA 70: NATIONAL ELECTRIC CODE - NEC
      1.9.2. NFPA 70E: STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE
      1.9.3. NFPA 101: LIFE SAFETY CODE
   1.10. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION - OSHA
   1.11. UNDERWRITER'S LABORATORY - UL
   1.12. ALL OTHER APPLICABLE LOCAL RULES AND ORDINANCES

2. THE WORK SHALL MEET THE REQUIREMENTS OF ALL OTHER CODES AND STANDARDS AS SPECIFIED IN THE CONTRACT DOCUMENTS. WHERE CODES AND STANDARDS ARE MENTIONED FOR ANY ITEM, IT IS INTENDED TO CALL PARTICULAR ATTENTION TO THEM, IT IS NOT INTENDED THAT ANY OTHER CODES AND STANDARDS BE OMITTED IF NOT MENTIONED.

MEASUREMENTS AND VERIFICATION

1. DIMENSIONS INDICATED ON THE PLANS ARE NOMINAL AND ARE INTENDED FOR GUIDANCE ONLY. ALL VARIATIONS FROM THE NOMINAL DIMENSIONS ON THE PLANS SHALL BE NOTED ON THE SHOP DRAWINGS.

DEFECTIVE MATERIALS AND WORKMANSHIP

1. ALL NEW PARTS AND COMPONENTS REJECTED DURING INSPECTION AND TESTING THAT ARE NOT MADE ACCEPTABLE SHALL BE REPLACED WITHOUT ADDITIONAL COST.

2. DELAYS RESULTING FROM THE REJECTION OF MATERIAL, EQUIPMENT OR WORK SHALL NOT BE THE BASIS OF ANY CLAIM.

3. ALL DEFECTS FOUND DURING THE GUARANTEE PERIOD RESULTING FROM FAULTY MATERIAL, COMPONENTS OR WORKMANSHIP SHALL BE CORRECTED BY THE FABRICATOR WITHOUT COST. IN THE EVENT THAT THE FABRICATOR DOES NOT MAKE THE CORRECTIONS IN A TIMELY MANNER, THE COUNTY OF SAN JOAQUIN RERSERVES THE RIGHT TO MAKE NECESSARY CORRECTIONS WITH ITS OWN FORCES AND CHARGE THE RESULTING COSTS TO THE FABRICATOR.

ELECTRICAL SCOPE OF WORK

1. DEMOLITION OF EXISTING SWING SPAN DRIVE CONTROL KNOB AS SHOWN ON PLANS.
2. DEMOLITION OF EXISTING MAGNETIC BRAKE AND CLUTCH CONTROL SYSTEM AS SHOWN ON PLANS.
3. DEMOLITION OF EXISTING FLASHING BEACON UNIT AS SHOWN ON PLANS.
4. DEMOLITION OF EXISTING KEYED SWITCH SS6 (EXISTING SPAN OPEN/CLOSE SELECTOR SWITCH) AS SHOWN ON PLANS.
5. FURNISH AND INSTALL NEW SWING SPAN CONTROL SWITCH AS SHOWN ON PLANS.
6. FURNISH AND INSTALL NEW EDDY CURRENT DRIVE CONTROLLER AS SHOWN ON PLANS.
7. FURNISH AND INSTALL NEW RELATED LOGIC TO EDDY CURRENT DRIVE AS SHOWN ON PLANS.
8. FURNISH AND INSTALL NEW FLASHING BEACON UNIT AS SHOWN ON PLANS.
9. FURNISH AND INSTALL NEW INTERPOSING RELAY FOR EXISTING RELAY CR12 AS SHOWN ON PLANS.
10. FURNISH AND INSTALL NEW TWISTED SHIELDED PAIR FROM MOTOR CONTROL CENTER TO EAST SUBMARINE CABLE TERMINATION CABINET AS SHOWN ON PLANS.
11. FURNISH AND INSTALL NEW ARMORED INSTRUMENTATION CABLE FROM SUBMARINE CABLE SC2 TO DRIVE CABINET ON PIVOT PIER AS SHOWN ON PLANS.

ELECTRICAL CONSTRUCTION SEQUENCE

1. PHASE I: PRE-MARINE OUTAGE
   1.1. INSTALL NEW CONDUIT FROM MOTOR CONTROL CENTER TO SUBMARINE TERMINATION CABINET IN CONTROL HOUSE AS SHOWN ON PLANS.
   1.2. INSTALL NEW TWISTED SHIELDED PAIR FROM THE SUBMARINE TERMINATION CABINET TO MOTOR CONTROL CENTER AS SHOWN ON PLANS.
   1.3. INSTALL NEW ARMORED TWISTED SHIELDED PAIR FROM PIVOT PIER SUBMARINE TERMINATION CABINET TO LOCAL MOTOR JUNCTION BOX AS SHOWN ON PLANS.
   1.4. INSTALL NEW CONDUIT AND/OR CONDUCTORS TO EDDY CURRENT DRIVE JUNCTION BOX, AND REWIRE TO ACCOMMODATE THE TACHOMETER FEEDBACK AS SHOWN ON PLANS.
2. PHASE II: MARINE OUTAGE
   2.1. REMOVE THE EXISTING EDDY CURRENT KNOB AND SWITCH SS6 ON THE CONTROL DESK AND THE ASSOCIATED EQUIPMENT IN THE MOTOR CONTROL CENTER AND RELAY CABINET AS SHOWN ON PLANS.
   2.2. INSTALL NEW SELECTOR SWITCH ON THE CONTROL DESK AS SHOWN ON PLANS.
   2.3. INSTALL NEW EDDY CURRENT DRIVE AND TERMINATE AS SHOWN ON PLANS.
   2.4. EXECUTE CONTROL SYSTEM MODIFICATIONS AS SHOWN ON PLANS.
3. PHASE III: TESTING AND COMMISSIONING
   3.1. STARTUP NEW SYSTEM, TROUBLESHOOT, AND COMMISSION SYSTEM.

$USER $TIME $DATE $REQUEST

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS–5929(229)

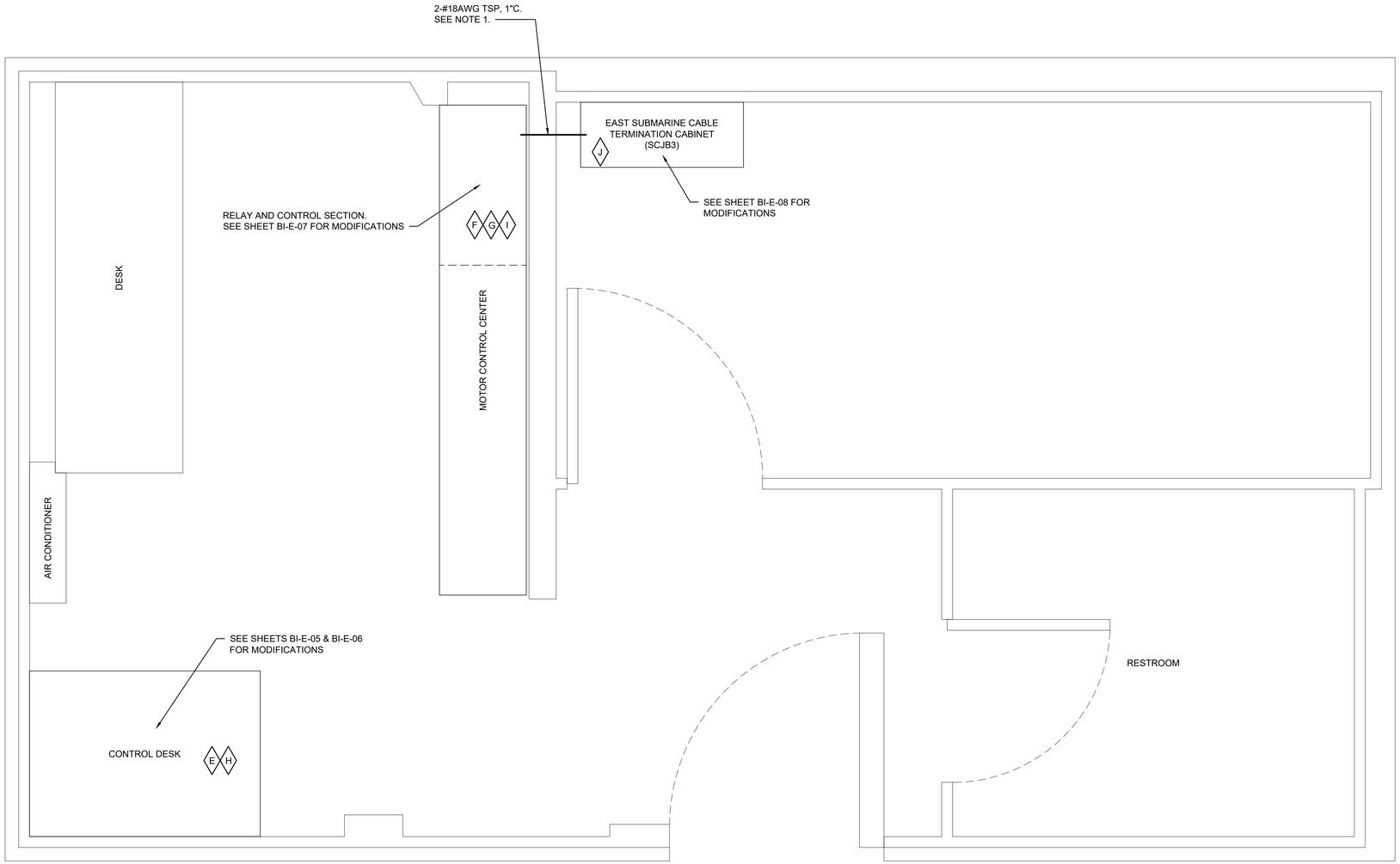
DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					NO SCALE

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

ELECTRICAL GENERAL NOTES II
BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER
(BRIDGE NO. 29C–108)

BI–E–02



CONTROL HOUSE LAYOUT

SCALE: 1" = 1'-0"

SCOPE OF WORK

E. REPLACE EXISTING SWING SPAN DRIVE CONTROL KNOB WITH NEW SWING SPAN CONTROL SWITCH.

F. REPLACE EXISTING MAGNETIC BRAKE AND CLUTCH CONTROL SYSTEM WITH NEW EDDY CURRENT DRIVE CONTROLLER AND RELATED CONTROL LOGIC.

G. REPLACE EXISTING FLASHING BEACON UNIT WITH NEW FLASHING BEACON UNIT.

H. REMOVE EXISTING KEYED SWITCH SS6 ON CONTROL DESK

I. FURNISH AND INSTALL NEW INTERPOSING RELAY CR12.

J. FURNISH AND INSTALL NEW TWISTED SHIELDED PAIR (TSP) FROM MOTOR CONTROL CENTER TO EAST SUBMARINE TERMINATION CABINET.

NOTE:

1. CORE DRILL THROUGH WALL FOR CONDUIT. SEAL ANNULAR SPACE WITH FIRE BARRIER FIRE STOPPING CAULK MATERIAL.

$REQUEST $USER $TIME $DATE

COUNTY OF SAN JOAQUIN							MOVABLE SPAN BRIDGES PROJECT FEDERAL AID PROJECT NO. BRLS-5929(229)							
DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

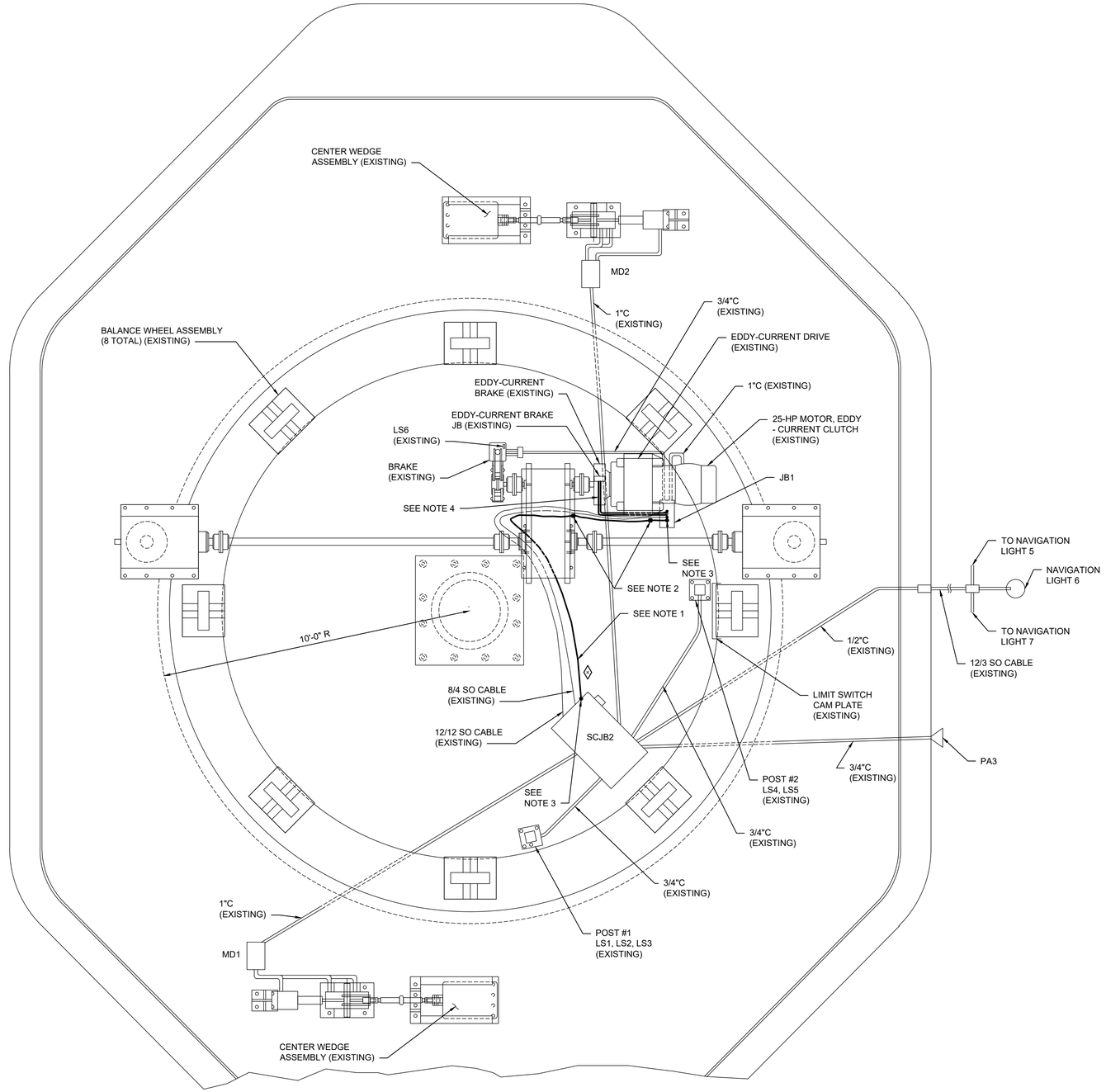
REGISTERED PROFESSIONAL ENGINEER TSVETOMIR KOSTADINOV 21282 ELECTRICAL STATE OF CALIFORNIA 11/18/22

100% SUBMISSION

CONTROL ROOM LAYOUT – PROPOSED

BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER (BRIDGE NO. 29C-108)

BI-E-03



CENTER PIER LAYOUT

SCALE: 1/2"=1'-0"

SCOPE OF WORK

K. FURNISH AND INSTALL NEW ARMORED INSTRUMENTATION CABLE FROM SUBMARINE CABLE SC2 TO DRIVE CABINET ON PIVOT PIER.

NOTES:

1. CONTRACTOR SHALL FURNISH AND INSTALL AN ARMORED #18-AWG INSTRUMENTATION CABLE WITH A MINIMUM OF 4 TWISTED SHIELDED PAIRS. ARMORED INSTRUMENTATION CABLE SHALL AT A MINIMUM BE RATED FOR 600V, HAVE ABRASION RESISTANT JACKET, ARMOR, AND SHEATH, AND BE RATED FOR MARINE ENVIRONMENTS SUCH AS NEXANS AMERCABLE SHIELDED PAIRS INSTRUMENTATION CABLE - GEXOL INSULATED (PART NUMBER 37-102-604-BS) OR APPROVED EQUAL.
2. SEE DETAIL TYPICAL DRAG CABLE MOUNTING DETAIL ON SHEET BI-E-13.
3. CONTRACTOR SHALL CREATE NEW OPENING ON BOTTOM PANEL OF EXISTING JUNCTION BOX JB1 FOR ARMORED #18-AWG INSTRUMENTATION CABLE. CONTRACTOR SHALL FURNISH STRAIN RELIEF CABLE GRIP FOR ATTACHING INSTRUMENTATION CABLE TO JUNCTION BOX. CABLE GRIP SHALL HAVE A SS GRIP, SS LIQUID-TIGHT FITTINGS, SS MESH, AND NEOPRENE LIQUID-TIGHT BUSHING. SEE JUNCTION BOX JB1 DETAIL ON SHEET BI-E-13.
4. CONTRACTOR SHALL REUSE EXISTING 3/4" CONDUIT AND EXISTING 4-#12AWG CABLES. CONTRACTOR SHALL FURNISH AND INSTALL 1-#18AWG TWISTED SHIELDED PAIR AND WIRE TO THE EDDY CURRENT DRIVE TACHOMETER GENERATOR OUTPUT. PRIOR TO REINSTALLING THE EXISTING 4-#12AWG CONDUCTORS, THE CONTRACTOR SHALL INSPECT THE CABLE INSULATION FOR ANY SIGNS OF DAMAGE DUE TO REINSTALLATION. IF ANY IS FOUND, THE CONTRACTOR SHALL SUBMIT FOR REVIEW AND RESOLUTION BY THE ENGINEER.

$REQUEST $TIME $DATE $USER

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

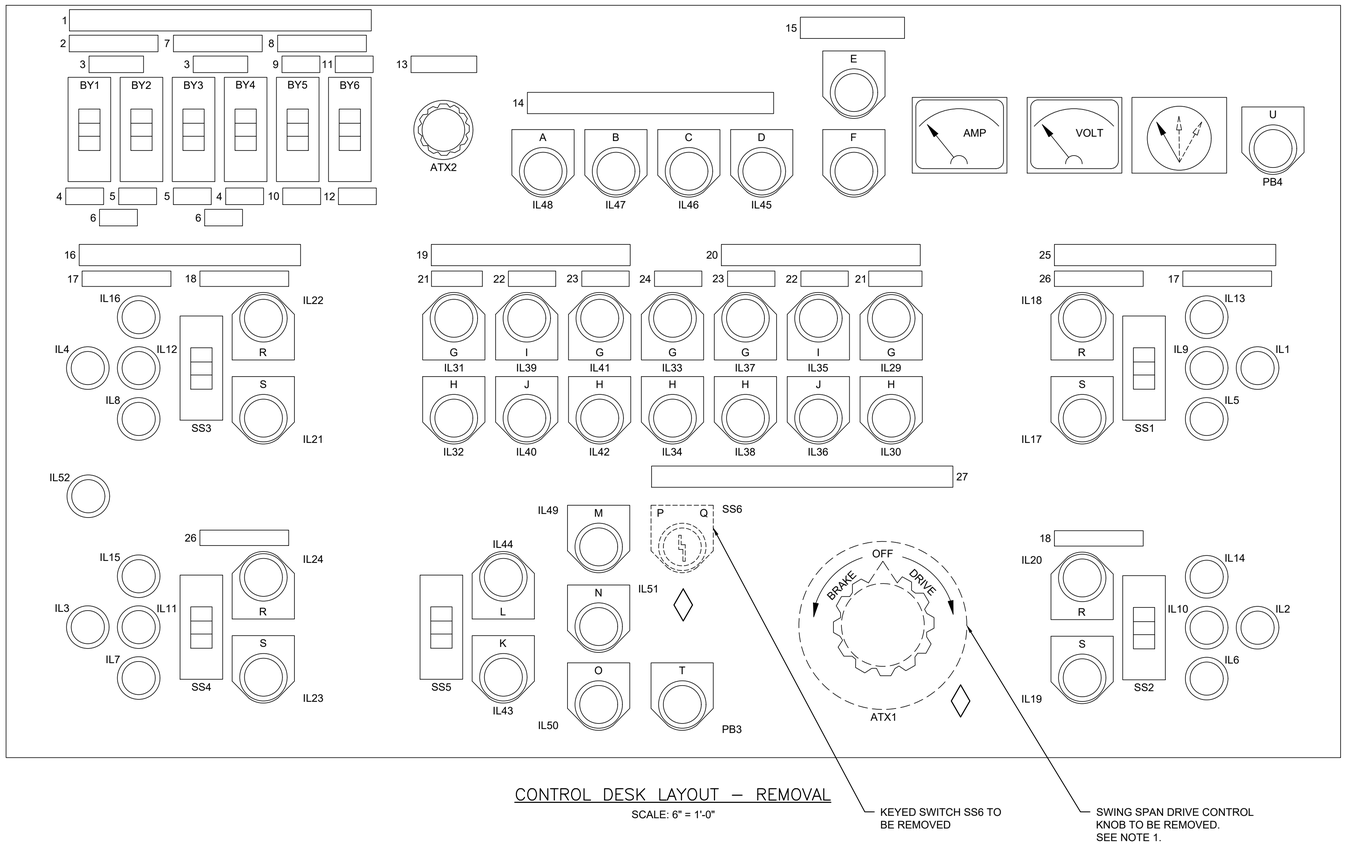
Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER TEODOR KOSTADINOV 21282 ELECTRICAL STATE OF CALIFORNIA 11/18/22

CENTER PIER LAYOUT – PROPOSED
BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER
(BRIDGE NO. 29C-108)

BI-E-04

13 OF 75



CONTROL DESK LAYOUT – REMOVAL

SCALE: 6" = 1'-0"

KEYED SWITCH SS6 TO BE REMOVED

SWING SPAN DRIVE CONTROL KNOB TO BE REMOVED. SEE NOTE 1.

PHENOLIC NAMEPLATE SCHEDULE

(FOR REFERENCE ONLY)

NO.	INSCRIPTION
1	BYPASS SWITCHES
2	WEST GATES
3	LOWER
4	ON COMING
5	OFF GOING
6	RAISE
7	EAST GATES
8	SWING SPAN
9	UNLOCK
10	LOCK
11	OPEN
12	CLOSE
13	CONSOLE LIGHTS
14	SWING SPAN INDICATION
15	MASTER SWITCH
16	EAST APPROACH
17	SIGNALS
18	OFF GOING GATES
19	EAST PIER
20	WEST PIER
21	PIN
22	JACKS
23	SUPPORTS
24	WEDGES
25	WEST APPROACH
26	ON COMING GATES
27	SWING SPAN DRIVE

LEGEND PLATE SCHEDULE

LETTER	INSCRIPTION	LETTER	INSCRIPTION
A	BRIDGE ALIGNED	K	UNLOCK
B	NEARLY CLOSED	L	LOCK
C	NEARLY OPEN	M	MOTOR
D	FULLY OPEN	N	BRAKE RELEASED
E	ON	O	BRAKE SET
F	OFF	P	CLOSE
G	PULLED	Q	OPEN
H	DRIVEN	R	RAISE
I	RAISED	S	LOWER
J	LOWERED	T	OPERATE
		U	HORN

SCOPE OF WORK

(E) REPLACE EXISTING SWING SPAN DRIVE CONTROL KNOB WITH NEW SWING SPAN CONTROL SWITCH.

(H) REMOVE EXISTING KEYED SWITCH SS6 ON CONTROL DESK

NOTE:

1. CONTRACTOR SHALL PROTECT AND PRESERVE EXISTING CONDUCTORS, AND SHALL REUSE THEM WITH NEW 3 POSITION SELECTOR SWITCH.

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS–5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

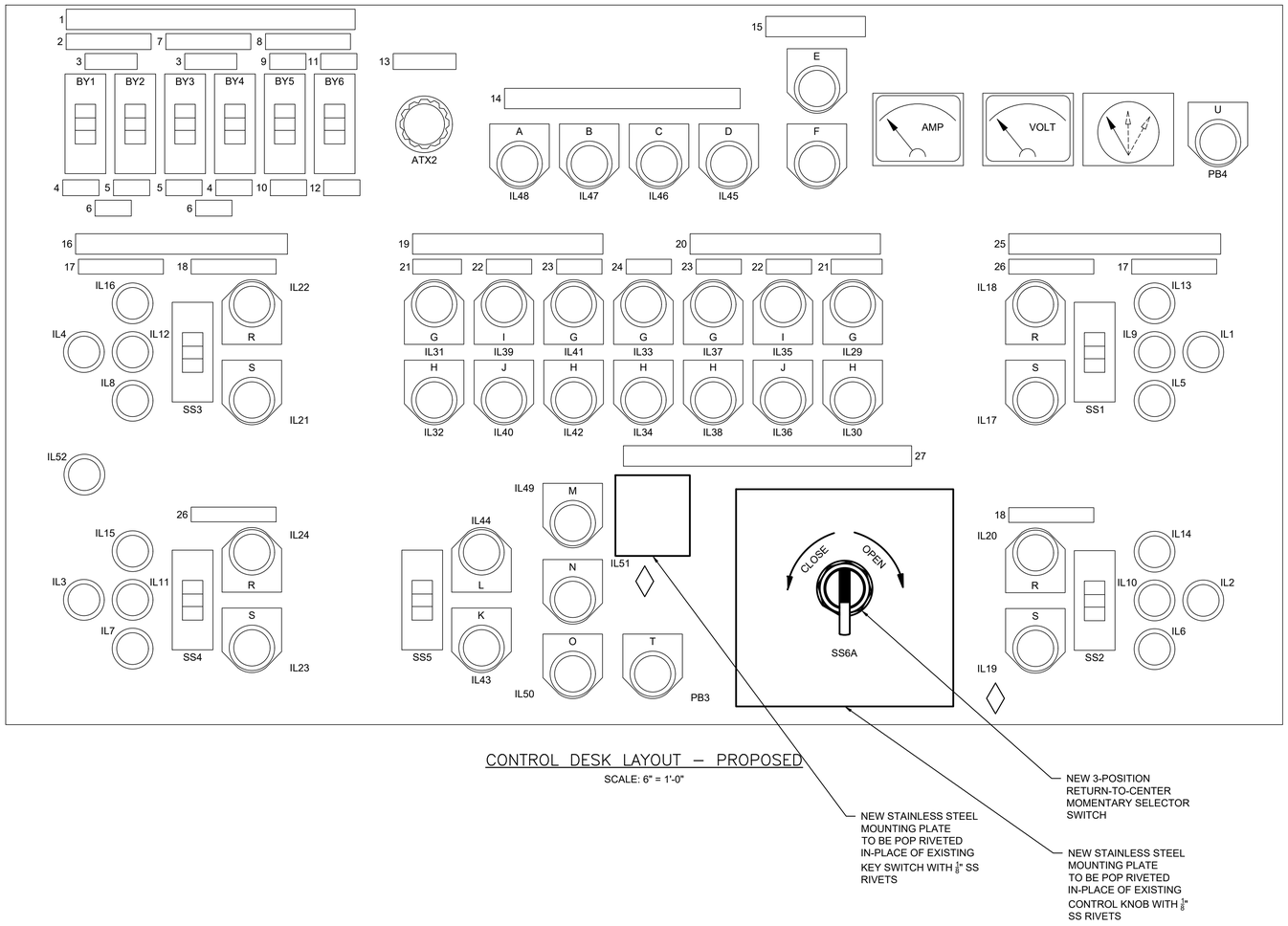
REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

CONTROL DESK LAYOUT – REMOVAL
BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER
(BRIDGE NO. 29C–108)

BI–E–05

14
OF
75

$USER $TIME $DATE $REQUEST



CONTROL DESK LAYOUT – PROPOSED

SCALE: 6" = 1'-0"

NEW STAINLESS STEEL MOUNTING PLATE TO BE POP RIVETED IN-PLACE OF EXISTING KEY SWITCH WITH $\frac{1}{8}$" SS RIVETS

NEW 3-POSITION RETURN-TO-CENTER MOMENTARY SELECTOR SWITCH

NEW STAINLESS STEEL MOUNTING PLATE TO BE POP RIVETED IN-PLACE OF EXISTING CONTROL KNOB WITH $\frac{1}{8}$" SS RIVETS

SCOPE OF WORK

(E) REPLACE EXISTING SWING SPAN DRIVE CONTROL KNOB WITH NEW SWING SPAN CONTROL SWITCH.

(H) REMOVE EXISTING KEYED SWITCH SS6 ON CONTROL DESK

PHENOLIC NAMEPLATE SCHEDULE

(FOR REFERENCE ONLY)

NO.	INSCRIPTION
1	BYPASS SWITCHES
2	WEST GATES
3	LOWER
4	ON COMING
5	OFF GOING
6	RAISE
7	EAST GATES
8	SWING SPAN
9	UNLOCK
10	LOCK
11	OPEN
12	CLOSE
13	CONSOLE LIGHTS
14	SWING SPAN INDICATION
15	MASTER SWITCH
16	EAST APPROACH
17	SIGNALS
18	OFF GOING GATES
19	EAST PIER
20	WEST PIER
21	PIN
22	JACKS
23	SUPPORTS
24	WEDGES
25	WEST APPROACH
26	ON COMING GATES
27	SWING SPAN DRIVE

LEGEND PLATE SCHEDULE

LETTER	INSCRIPTION	LETTER	INSCRIPTION
A	BRIDGE ALIGNED	K	UNLOCK
B	NEARLY CLOSED	L	LOCK
C	NEARLY OPEN	M	MOTOR
D	FULLY OPEN	N	BRAKE RELEASED
E	ON	O	BRAKE SET
F	OFF	P	CLOSE
G	PULLED	Q	OPEN
H	DRIVEN	R	RAISE
I	RAISED	S	LOWER
J	LOWERED	T	OPERATE
		U	HORN

$USER $TIME $DATE $REQUEST

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS–5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

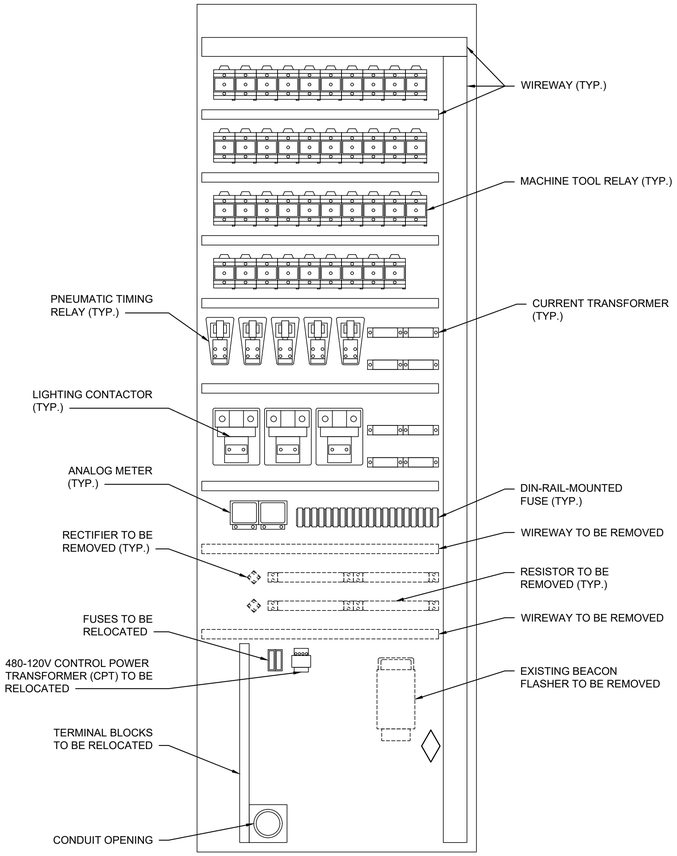
REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

100% SUBMISSION

CONTROL DESK LAYOUT – PROPOSED
BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER
(BRIDGE NO. 29C–108)

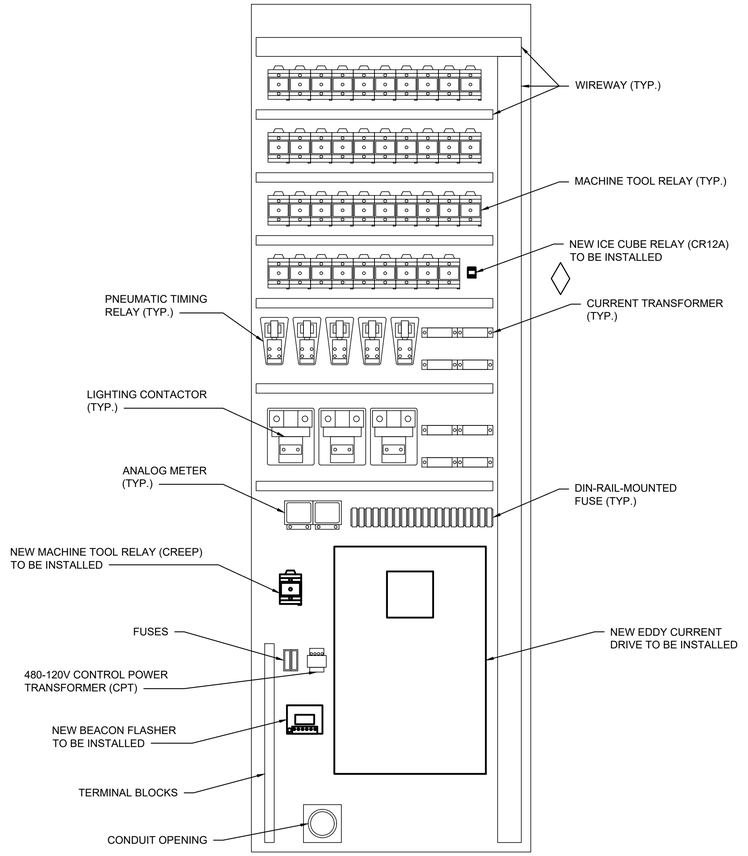
BI–E–06

15
OF
75



RELAY PANEL – EXISTING

SCALE: 1-1/2" = 1'-0"



RELAY PANEL – PROPOSED

SCALE: 1-1/2" = 1'-0"

SCOPE OF WORK

F. REPLACE EXISTING MAGNETIC BRAKE AND CLUTCH CONTROL SYSTEM WITH NEW EDDY CURRENT DRIVE CONTROLLER AND RELATED CONTROL LOGIC.

G. REPLACE EXISTING FLASHING BEACON UNIT WITH NEW FLASHING BEACON UNIT.

L. FURNISH AND INSTALL NEW INTERPOSING RELAY CR12.

$REQUEST $USER $TIME $DATE

100% SUBMISSION

BI–E–07

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS–5929(229)

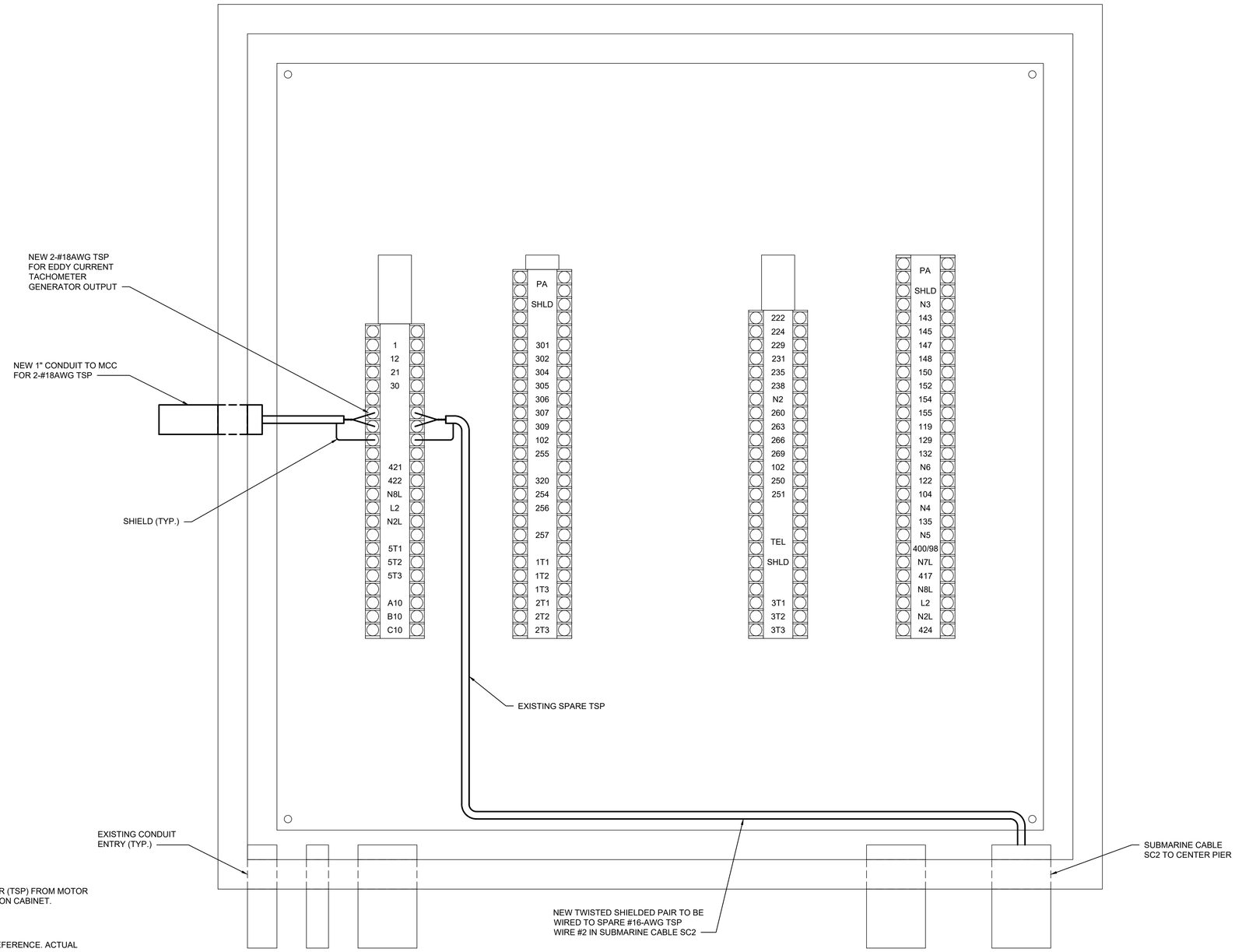
DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

RELAY CABINET – MODIFICATIONS

BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER
(BRIDGE NO. 29C–108)



EAST SUBMARINE CABLE TERMINATION CABINET (SCJB3)

SCALE: 6" = 1'-0"

SCOPE OF WORK

J. FURNISH AND INSTALL NEW TWISTED SHIELDED PAIR (TSP) FROM MOTOR CONTROL CENTER TO EAST SUBMARINE TERMINATION CABINET.

NOTES:

1. LOCATION OF TERMINAL BLOCKS PROVIDED FOR REFERENCE. ACTUAL POSITION MAY VARY.
2. ONLY TERMINAL DESIGNATIONS FOR EXISTING CONDUCTORS ARE SHOWN. EXISTING CONDUCTORS ARE OMITTED FOR CLARITY. NEW TWISTED SHIELDED PAIR SHALL BE WIRED TO EXISTING SPARE TERMINAL BLOCKS. CONTRACTOR SHALL FIELD VERIFY EXISTING SPARE TERMINAL BLOCKS.

$REQUEST $USER $TIME $DATE

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
ELECTRICAL
STATE OF CALIFORNIA
11/18/22

SUBMARINE CABLE TERMINATION CABINET – PROPOSED

BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER
(BRIDGE NO. 29C-108)

BI-E-08

17
OF
75

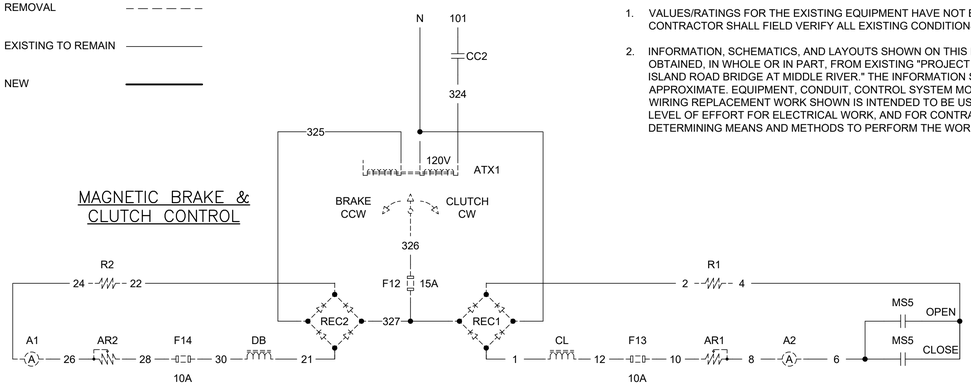
LEGEND:

1. REMOVAL
2. EXISTING TO REMAIN
3. NEW

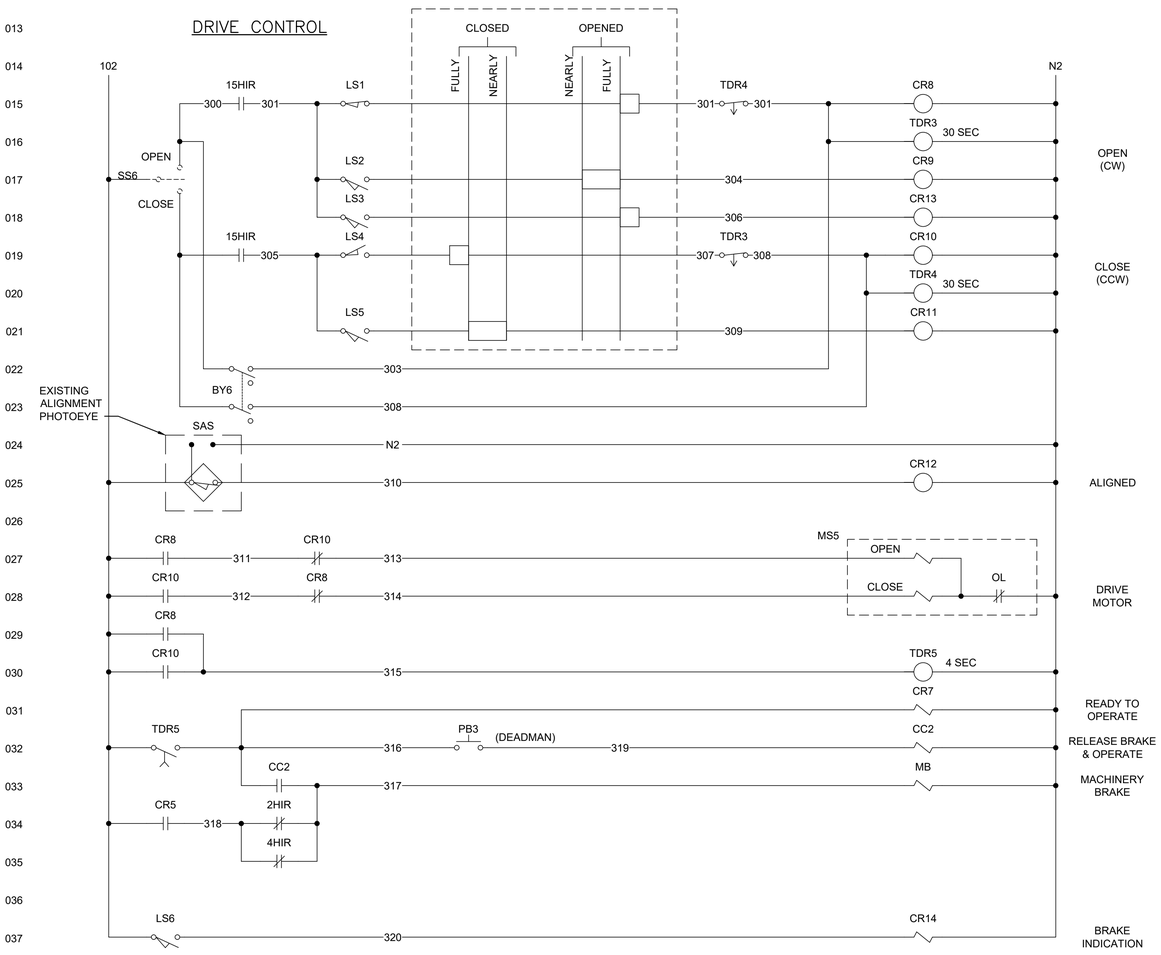
NOTES:

1. VALUES/RATINGS FOR THE EXISTING EQUIPMENT HAVE NOT BEEN VERIFIED. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
2. INFORMATION, SCHEMATICS, AND LAYOUTS SHOWN ON THIS DRAWING WAS OBTAINED, IN WHOLE OR IN PART, FROM EXISTING "PROJECT PLANS FOR BACON ISLAND ROAD BRIDGE AT MIDDLE RIVER." THE INFORMATION SHOWN IS APPROXIMATE. EQUIPMENT, CONDUIT, CONTROL SYSTEM MODIFICATIONS, AND WIRING REPLACEMENT WORK SHOWN IS INTENDED TO BE USED TO SHOW LEVEL OF EFFORT FOR ELECTRICAL WORK, AND FOR CONTRACTOR'S USE IN DETERMINING MEANS AND METHODS TO PERFORM THE WORK.

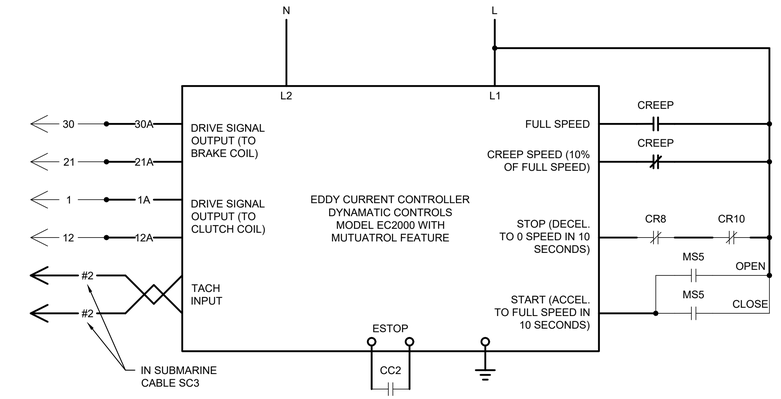
MAGNETIC BRAKE & CLUTCH CONTROL



DRIVE CONTROL



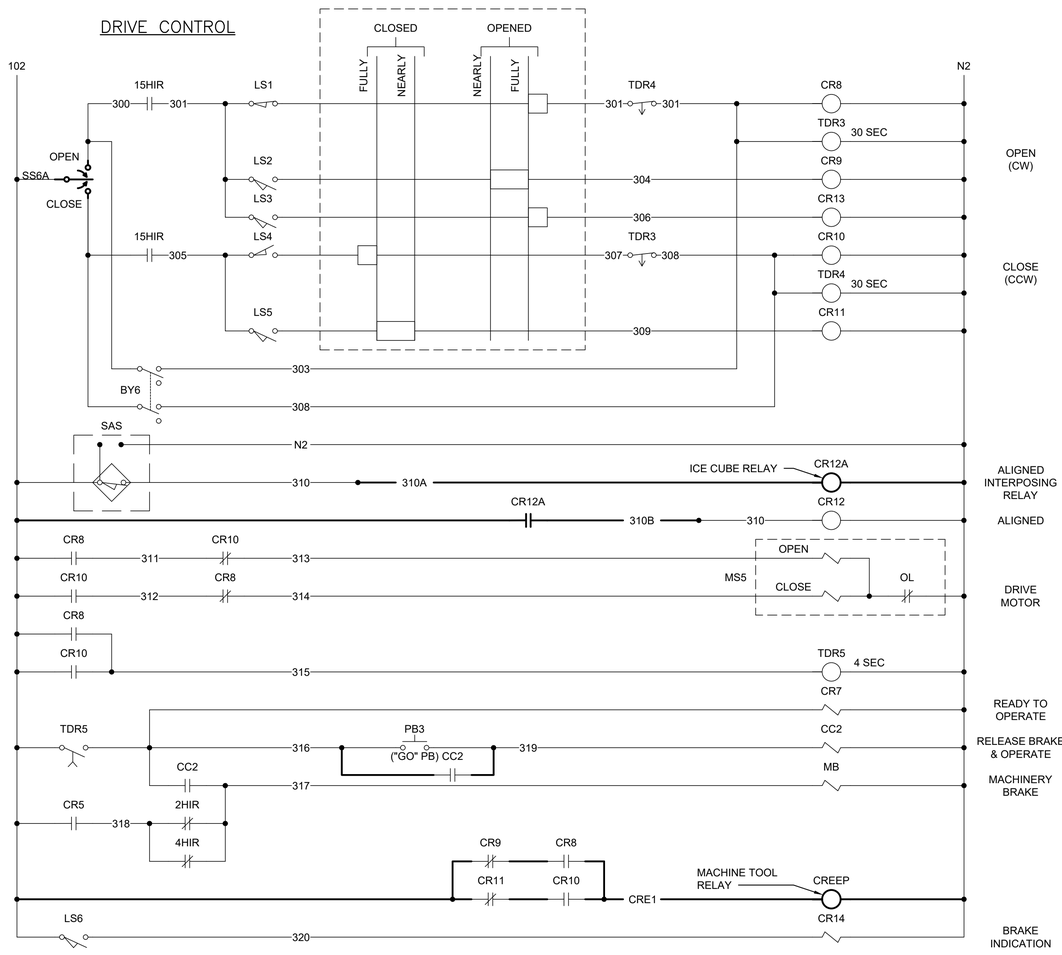
DRIVE CONTROL SYSTEM – EXISTING



SCOPE OF WORK

- E. REPLACE EXISTING SWING SPAN DRIVE CONTROL KNOB WITH NEW SWING SPAN CONTROL SWITCH.
- F. REPLACE EXISTING MAGNETIC BRAKE AND CLUTCH CONTROL SYSTEM WITH NEW EDDY CURRENT DRIVE CONTROLLER AND RELATED CONTROL LOGIC.
- G. REPLACE EXISTING FLASHING BEACON UNIT WITH NEW FLASHING BEACON UNIT.
- H. REMOVE EXISTING KEYED SWITCH SS6 ON CONTROL DESK .
- I. FURNISH AND INSTALL NEW INTERPOSING RELAY CR12.
- J. FURNISH AND INSTALL NEW TWISTED SHIELDED PAIR (TSP) FROM MOTOR CONTROL CENTER TO EAST SUBMARINE TERMINATION CABINET.

DRIVE CONTROL



DRIVE CONTROL SYSTEM – PROPOSED

100% SUBMISSION

BI-E-09

18 OF 75

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					NO SCALE

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
THEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

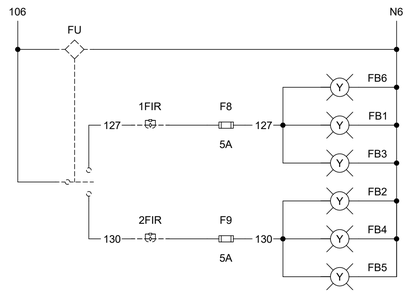
DRIVE CONTROL SYSTEM – MODIFICATIONS

BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER
(BRIDGE NO. 29C-108)

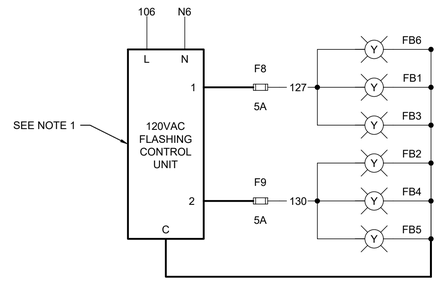
$REQUEST $TIME $DATE $USER

LEGEND:

1. REMOVAL – – – – – –
2. EXISTING TO REMAIN ————————
3. NEW ▬▬▬▬▬▬



FLASHING BEACONS CIRCUIT – EXISTING



FLASHING BEACONS CIRCUIT – PROPOSED

SCOPE OF WORK

G REPLACE EXISTING FLASHING BEACON UNIT WITH NEW FLASHING BEACON UNIT.

NOTES:

1. FLASHER UNIT SHALL NOT BE LARGER THAN UNIT SHOWN. FLASHER UNIT SHALL INPUT 120VAC AND HAVE ITS ALTERNATING CIRCUITS FLASH AT 120VAC. FLASHER SHALL BE AS MANUFACTURED BY B&B ROADWAY MODEL NUMBER FL-120 OR APPROVED EQUAL.
2. VALUES/RATINGS FOR THE EXISTING EQUIPMENT HAVE NOT BEEN VERIFIED. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
3. INFORMATION, SCHEMATICS, AND LAYOUTS SHOWN ON THIS DRAWING WAS OBTAINED, IN WHOLE OR IN PART, FROM EXISTING "PROJECT PLANS FOR BACON ISLAND ROAD BRIDGE AT MIDDLE RIVER." THE INFORMATION SHOWN IS APPROXIMATE. EQUIPMENT, CONDUIT, CONTROL SYSTEM MODIFICATIONS, AND WIRING REPLACEMENT WORK SHOWN IS INTENDED TO BE USED TO SHOW LEVEL OF EFFORT FOR ELECTRICAL WORK, AND FOR CONTRACTOR'S USE IN DETERMINING MEANS AND METHODS TO PERFORM THE WORK.

$TIME $USER $DATE $REQUEST

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS–5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					NO SCALE

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

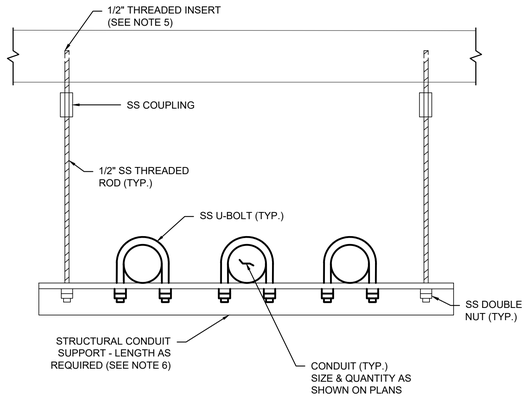
REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

FLASHING BEACON
CIRCUIT – MODIFICATIONS

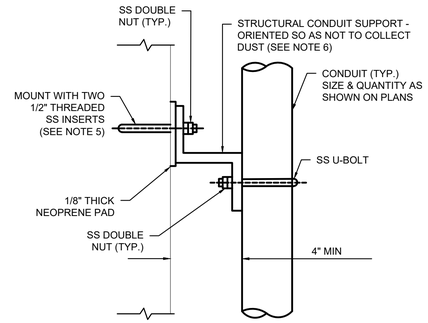
BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER
(BRIDGE NO. 29C–108)

BI–E–10

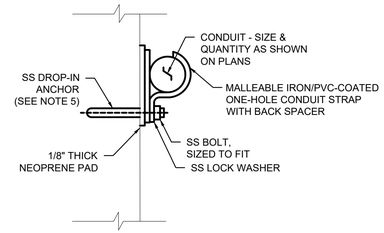
19
OF
75



METHOD 1
(HANGING FROM CONCRETE)

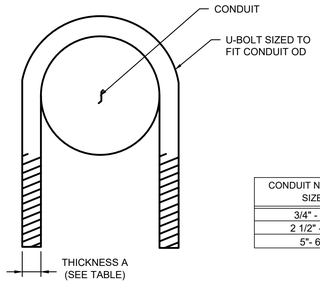


METHOD 2
(STANDOFF ATTACHMENT ON CONCRETE)



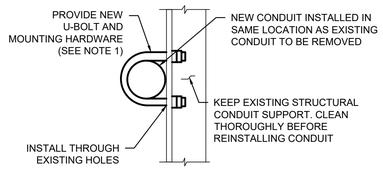
METHOD 3
(DIRECT TO CONCRETE)

CONDUIT ATTACHMENT METHODS TO CONCRETE
(NOT TO SCALE)



CONDUIT NOMINAL SIZE	U-BOLT THICKNESS (A) MINIMUM
3/4" - 2"	3/8"
2 1/2" - 4"	1/2"
5"- 6"	5/8"

U-BOLT DIMENSIONS



REINSTALLATION OF CONDUIT IN SAME LOCATION AS EXISTING
(TYPICAL FOR ALL MOUNTING CASES)

NOTES:

1. CONDUIT MOUNTING METHODS SHOWN ARE INTENDED TO GIVE OVERVIEW OF ACCEPTABLE STANDARD OF QUALITY. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ACTUAL CONDUIT MOUNTING AND/OR SUPPORTING METHODS TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER. IN GENERAL, REPLACED CONDUITS SHALL BE REINSTALLED ACCORDING TO EXISTING DETAILS. WHERE REPLACING CONDUIT, MOUNTING SHALL BE BROUGHT UP TO STANDARD OF QUALITY SHOWN ON THIS SHEET.
2. CONDUIT MOUNTING METHODS SHOWN ARE BASED ON RGS AND PVCRGS CONDUIT. ADAPT DETAILS AS REQUIRED TO ACCOMMODATE OTHER TYPES OF CONDUITS, SUCH AS RECOMMENDED BY CONDUIT MANUFACTURER(S).
3. PROVIDE SHOP DRAWINGS FOR ALL MATERIALS AND METHODS USED FOR CONDUIT MOUNTING, INCLUDING DRILLING OF STRUCTURAL STEEL. CONTRACTOR MAY PROPOSE ALTERNATE METHODS OF CONDUIT MOUNTING PROVIDED THEY MEET THE SAME STANDARD OF QUALITY SHOWN.
4. UNLESS OTHERWISE NOTED, ALL STAINLESS STEEL PROVIDED SHALL BE TYPE 316 OR BETTER.
5. THREADED INSERT/DROP-IN ANCHORS SHALL BE TYPE A4 STAINLESS STEEL OR BETTER, ANCHORED TO THE CONCRETE USING AN EPOXY SYSTEM. THE ASSEMBLY SHALL BE PROVIDED BY A SINGLE MANUFACTURER RATED FOR OVERHEAD USE IN CRACKED CONCRETE UNDER SEISMIC CONDITIONS, IN DAMP CONDITIONS/HEAVY CONDENSATION, ANCHORS SHALL BE INSTALLED AS PER MANUFACTURER'S DIRECTIONS, AND SHALL HAVE A PULL OUT STRENGTH GREATER THAN 2000 POUNDS.
6. STRUCTURAL CONDUIT SUPPORTS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123. STRUCTURAL CONDUIT SUPPORTS SHALL CONSIST OF 3/8" THICK ANGLES, ZEES, AND PLATES, CONFIGURED AS REQUIRED TO MEET FIELD CONDITIONS. ANGLES AND PLATES SHALL BE 2 1/2"X2 1/2" MINIMUM. HOLES SHALL BE DRILLED FOR U-BOLTS AND ATTACHMENTS AS REQUIRED.

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
K. LEE	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

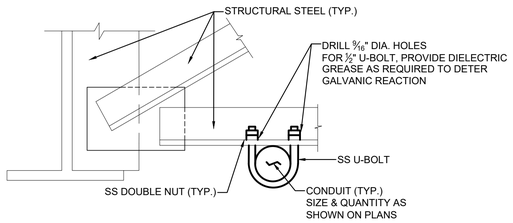
REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

CONDUIT MOUNTING DETAILS I
BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER
(BRIDGE NO. 29C-108)

BI-E-11

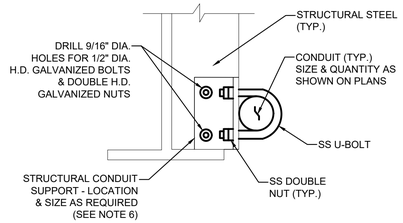
20
OF
75

$REQUEST $USER $DATE $TIME



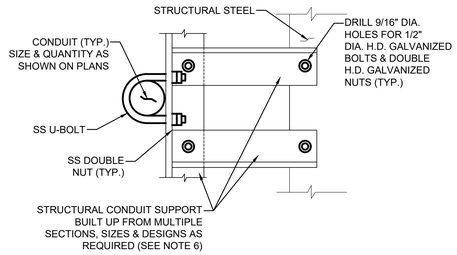
METHOD A

(USE OF EXISTING STEEL FOR DIRECT CONDUIT MOUNTING)



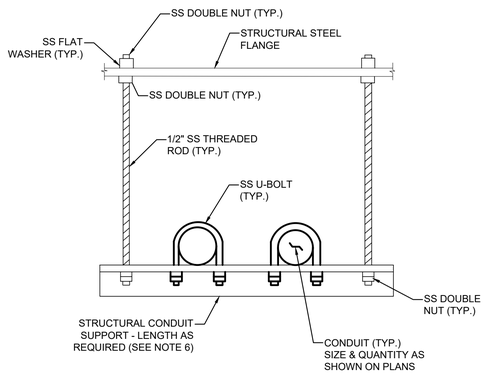
METHOD B

(CONDUIT ATTACHMENT TO STRUCTURAL STEEL)



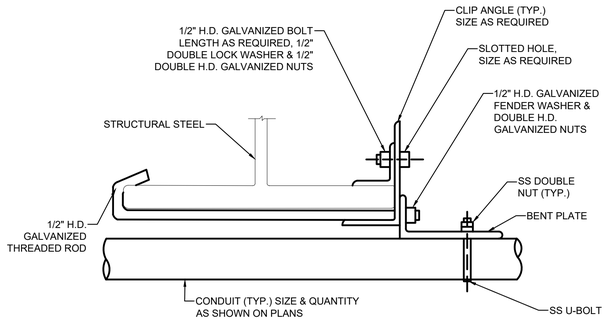
METHOD C

(BUILT-UP STRUCTURAL CONDUIT SUPPORT)



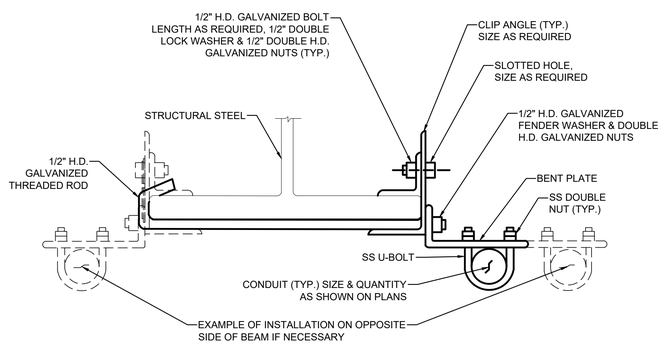
METHOD D

(HANGING FROM STRUCTURAL STEEL)



METHOD E

(HANGING FROM STRUCTURAL STEEL - PERPENDICULAR)



METHOD F

(HANGING FROM STRUCTURAL STEEL - PARALLEL)

CONDUIT ATTACHMENT METHODS TO STRUCTURAL STEEL

(NOT TO SCALE)

$REQUEST $TIME $DATE $USER

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
K. LEE	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

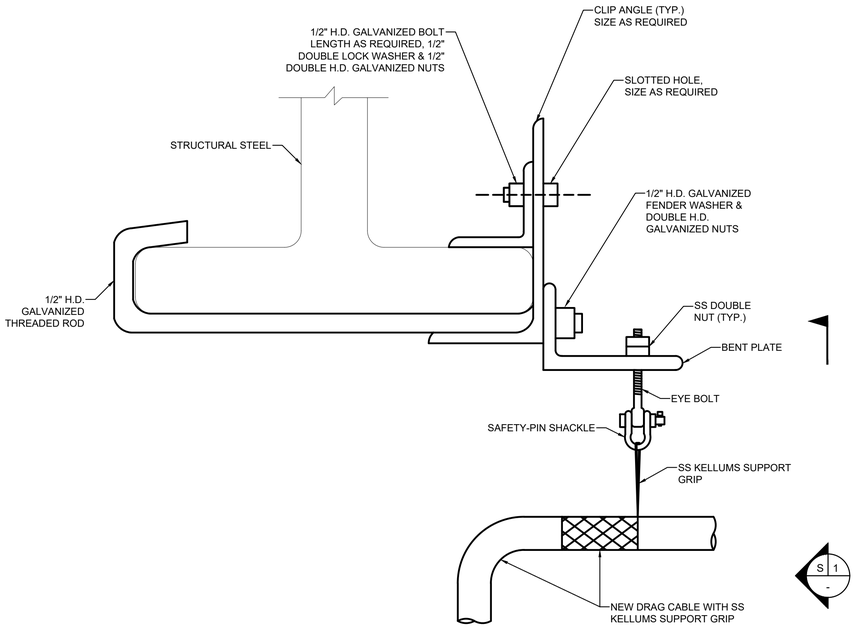
REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

CONDUIT MOUNTING DETAILS II

BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER
(BRIDGE NO. 29C-108)

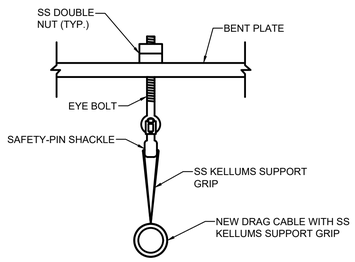
BI-E-12

21 OF 75



TYPICAL DRAG CABLE MOUNTING DETAIL

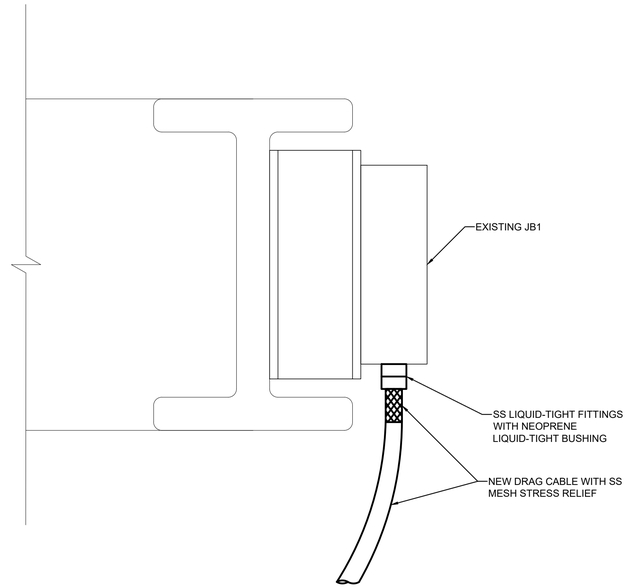
SCALE: N.T.S.



S|1 / -

TYPICAL DRAG CABLE MOUNTING SECTION

SCALE: N.T.S.



JUNCTION BOX JB1 DETAIL

SCALE: N.T.S.

SCOPE OF WORK

K FURNISH AND INSTALL NEW ARMORED INSTRUMENTATION CABLE FROM SUBMARINE CABLE SC2 TO DRIVE CABINET ON PIVOT PIER.

NOTES:

1. CONDUIT MOUNTING METHODS SHOWN ARE INTENDED TO GIVE OVERVIEW OF ACCEPTABLE STANDARD OF QUALITY. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ACTUAL CONDUIT MOUNTING AND/OR SUPPORTING METHODS TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
2. PROVIDE SHOP DRAWINGS FOR ALL MATERIALS AND METHODS USED FOR CONDUIT MOUNTING, INCLUDING DRILLING OF STRUCTURAL STEEL. CONTRACTOR MAY PROPOSE ALTERNATE METHODS OF CONDUIT MOUNTING PROVIDED THEY MEET THE SAME STANDARD OF QUALITY SHOWN.
3. UNLESS OTHERWISE NOTED, ALL STAINLESS STEEL PROVIDED SHALL BE TYPE 316 OR BETTER.
4. STRUCTURAL CONDUIT SUPPORTS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123. STRUCTURAL CONDUIT SUPPORTS SHALL CONSIST OF 3/8" THICK ANGLES, ZEES, AND PLATES, CONFIGURED AS REQUIRED TO MEET FIELD CONDITIONS. ANGLES AND PLATES SHALL BE 2 1/2"X2 1/2" MINIMUM. HOLES SHALL BE DRILLED FOR U-BOLTS AND ATTACHMENTS AS REQUIRED.

$REQUEST $TIME $DATE $USER

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
K. LEE	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					NO SCALE

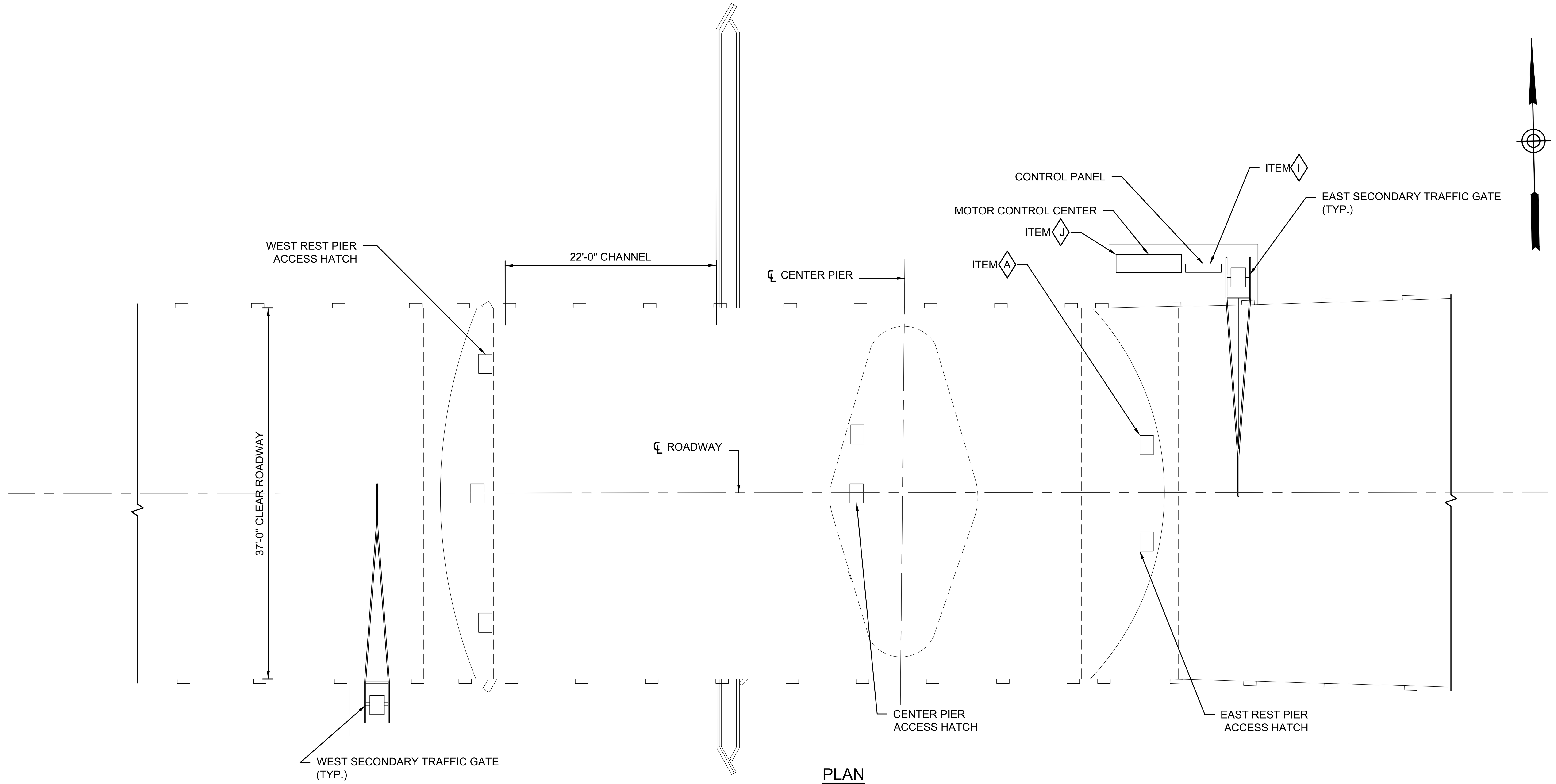
Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

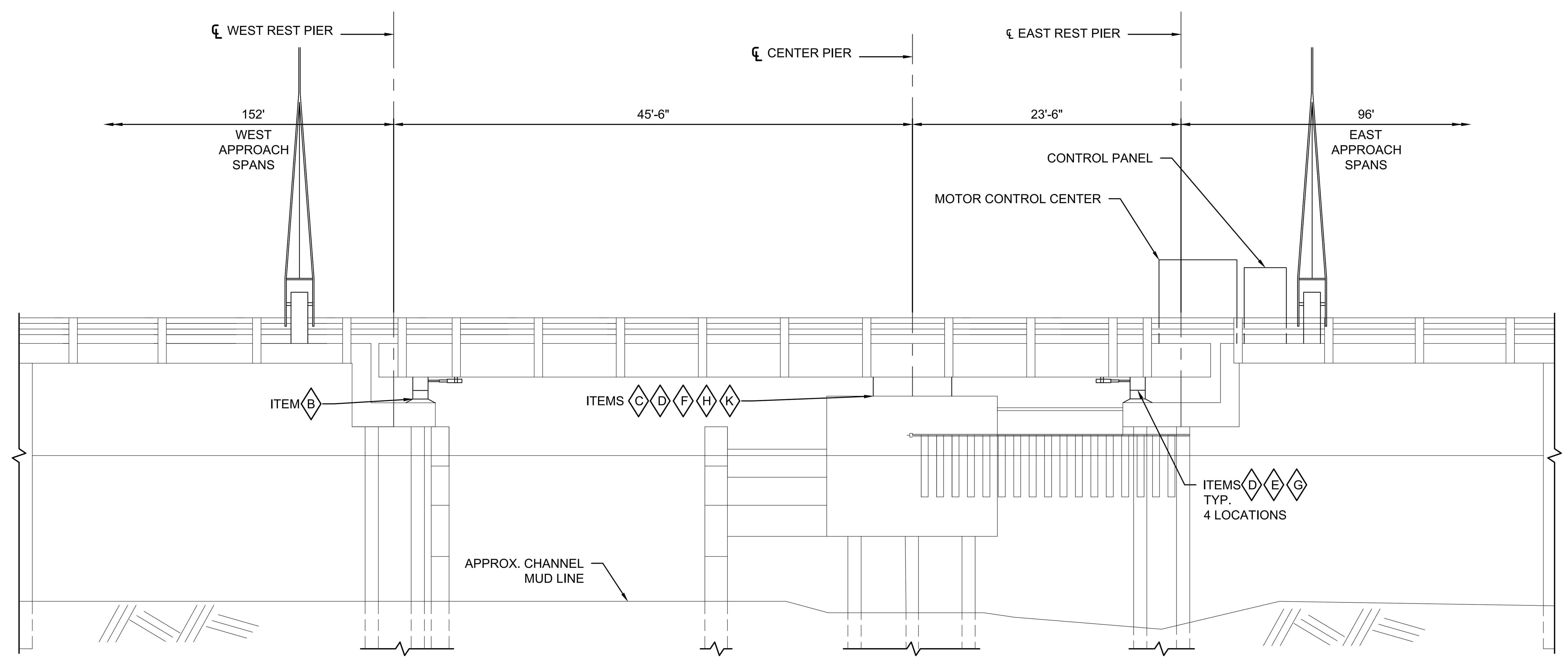
MISCELLANEOUS DETAILS
BACON ISLAND ROAD BRIDGE OVER MIDDLE RIVER
(BRIDGE NO. 29C-108)

BI-E-13

22
OF
75



PLAN
SCALE 1/8" = 1'-0"



ELEVATION
SCALE 1/8" = 1'-0"

GENERAL NOTES

1. AS-BUILT DRAWINGS OF THE EIGHT MILE ROAD BRIDGE OVER BISHOP CUT WILL BE PROVIDED IN INSTRUCTIONAL HANDOUT AS DESCRIBED IN SECTIONS 2 AND 5 OF THE SPECIFICATIONS.

SCOPE OF WORK

A. REPLACE NORTH EAST JACK MOTOR.

B. REPAIR THE CRACKED GROUT AT THE SOUTHWEST END JACK REST PIER BEARING PLATE.

C. REHABILITATE THE FOUR SHOE BRAKES INCLUDING REPLACEMENT OF THE SPRINGS AND SPRING RODS.

D. CLEAN AND PAINT ALL NON-MOVING BRIDGE MACHINERY COMPONENTS, INCLUDING RIM BEARING ASSEMBLY, CENTER PIN ASSEMBLY, BRAKE ASSEMBLIES, CENTER ROLLERS AND END JACKS.

E. REPLACE ALL FOUR END BEARING LOCK ACTUATORS.

F. REPLACE ALL FLEXIBLE HOSES AND DETERIORATED FITTINGS OF THE TURNING MACHINERY SYSTEM.

G. REPLACE THE GROUT UNDER THE END LOCK BEARING SEATS ON THE REST PIERS. ELIMINATE THE RUBBER SHIMS.

H. REPLACE THE HYDRAULIC POWER UNIT.

I. REPLACE EXISTING GATE CONTROL SWITCHES AND EXISTING RELATED LOGIC WITH NEW MOMENTARY SPRING RETURN TO CENTER SELECTOR SWITCHES AND NEW RELATED LOGIC. REPLACE EXISTING END JACKS CONTROL SWITCHES AND EXISTING RELATED LOGIC WITH NEW KEYED SELECTOR SWITCHES AND NEW RELATED LOGIC. REPLACE EXISTING END LOCKS CONTROL SWITCHES AND EXISTING RELATED LOGIC WITH NEW KEYED SELECTOR SWITCHES AND NEW RELATED LOGIC. REPLACE EXISTING SWING SPAN OPERATION SWITCHES AND EXISTING RELATED LOGIC WITH NEW SWITCHES AND NEW RELATED LOGIC.

J. REPLACE EXISTING HYDRAULIC PUMP MOTOR CIRCUIT PROTECTOR WITH NEW MOLDED CASE CIRCUIT BREAKER, AND REMOVE EXISTING HYDRAULIC PUMP MOTOR OVERLOAD

K. INSTALL NEW LOCAL CONTROL PANEL AND NEW AUDIBLE ALARM.

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
PAUL M. SKELTON
11/18/22
MECHANICAL
STATE OF CALIFORNIA

GENERAL PLAN AND ELEVATION
EIGHT MILE ROAD BRIDGE OVER BISHOP CUT
(BRIDGE NO. 29C-114)

BC-G-01

$REQUEST $DATE $TIME $USER

GENERAL NOTES:

EXISTING PLANS

AS-BUILT PLANS ENTITLED EIGHT MILE ROAD BRIDGE NO. 29C-114 ARE AVAILABLE IN THE INFORMATIONAL HANDOUT FOR THIS PROJECT FOUND ON BIDEXPRESS.COM.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

SCHEDULE AND PROSECUTION OF WORK

1. THE PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. NOTE THE FOLLOWING SCHEDULE RESTRICTIONS:
2. CONSTRUCTION SHALL TAKE PLACE DURING THE THREE-MONTH PERIOD BETWEEN NOVEMBER 1 AND THE FOLLOWING JANUARY 31. THE BRIDGE MUST BE OPERABLE FOR WATERWAY TRAFFIC FROM FEBRUARY 1 THROUGH OCTOBER 31 OF ANY CALENDAR YEAR. DURING CONSTRUCTION THE CHANNEL WILL REMAIN OPEN TO SMALL VESSELS THAT DO NOT REQUIRE BRIDGE OPENINGS. THE CONTRACTOR MUST COORDINATE WITH THE US COAST GUARD (USCG) FOR ANY ANTICIPATED WATERWAY CLOSURES THAT WILL IMPACT SMALL VESSELS AS WELL AS FOR THE THREE-MONTH CLOSURE TO VESSELS THAT WOULD REQUIRE BRIDGE OPENINGS. THE CONTRACTOR MUST CONTACT THE USCG WITHIN 60 DAYS OF NOTICE TO PROCEED TO PROVIDE A CONSTRUCTION SCHEDULE THAT INCLUDES NAVIGATION RESTRICTIONS.
3. EIGHT MILE ROAD CAN BE OPEN TO SINGLE LANE TRAFFIC FOR BRIEF PERIODS TO ALLOW FOR DELIVERY OF MATERIALS. THE CONTRACTOR SHALL PROVIDE FLAGMEN/TEMPORARY SIGNALS/SIGNING IN ACCORDANCE WITH MAINTENANCE OF TRAFFIC PLANS. SINGLE LANE TRAFFIC IS ALLOWED ONLY BETWEEN THE HOURS OF 9 A.M. AND 3 P.M. TRAFFIC CAN BE STOPPED FOR TEST OPENINGS BETWEEN THE HOURS OF 9 A.M. AND 3 P.M., BUT ONLY FOR THE DURATION OF AN OPENING/CLOSING CYCLE. FLAGMEN SHALL PROVIDE TRAFFIC CONTROL DURING TEST OPENINGS.
4. PROVIDE THE ENGINEER WITH A COMPLETE PROJECT SCHEDULE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS WITHIN 60 DAYS OF NOTICE TO PROCEED. THE SCHEDULE MUST REFLECT CLOSURES OF THE WATERWAY TO VESSELS THAT REQUIRE BRIDGE OPENINGS, AND SINGLE LANE TRAFFIC PERIODS.
5. PROVIDE PLANS FOR CLEAN-UP OF THE WATERWAY SHOULD SPILLS OF OIL, OTHER FLUIDS, OR DEBRIS FROM CONSTRUCTION OR OTHER TYPES OF POLLUTANTS BE ACCIDENTALLY DISCHARGED INTO IT.
6. OBTAIN PERMISSION FROM THE ENGINEER A MINIMUM OF 48 HOURS PRIOR TO ANY CONSTRUCTION SCHEDULE CHANGE.
7. NO ADDITIONAL PAYMENT WILL BE MADE FOR WORK PERFORMED ON A SATURDAY, SUNDAY, OR LEGAL HOLIDAY TO SATISFY SCHEDULE REQUIREMENTS.
8. MAINTAIN VEHICULAR ACCESS TO ALL BUSINESSES AND COMMERCIAL PROPERTIES ON EACH SIDE OF THE WATERWAY, INCLUDING DURING PERIODS OF SINGLE LANE TRAFFIC.
9. ALTHOUGH THE WATERWAY WILL BE CLOSED TO VESSELS THAT REQUIRE BRIDGE OPENINGS, IT WILL REMAIN OPEN TO SMALL VESSELS. EVERY EFFORT SHOULD BE MADE TO MINIMIZE OBSTRUCTION OF THE CHANNEL BY BARGES OR OTHER EQUIPMENT. BARGES CAN BE ANCHORED OUTSIDE THE LIMITS OF THE CHANNEL.
10. UPON COMPLETION OF ALL WORK, THE CONTRACTOR SHALL TRAIN THE COUNTY'S MAINTENANCE STAFF AND DEMONSTRATE TEST OPENINGS.

US COAST GUARD AND PORT OF SAN FRACISCO NOTIFICATION

1. THE 11TH COAST GUARD DISTRICT WILL NEED TO BE CONTACTED AT LEAST 60 DAYS PRIOR TO THE START OF WORK ON THE SITE TO COORDINATE IN-WATER WORK INCLUDING BARGE. CONTACT INFORMATION:
   MR. CARL HAUSNER
   COMMANDER, 11TH/ COAST GUARD DISTRICT
   COAST GUARD ISLAND BUILDING 50-2
   ALAMEDA, CA 94501-5100
   PHONE: 510-437-3516
   CARL.T.HAUSNER@USCG.MIL
2. PROVIDE THE COAST GUARD WITH A SCHEDULE AND A TIME FRAME FOR REPAIR WORK ON THE MOVABLE SPAN AND DESCRIBE ANY TEMPORARY CONSTRUCTION AIDS AND WORK WITHIN THE LIMITS OF THE CHANNEL IN ACCORDANCE WITH USCG WORK PROPOSAL REQUIREMENTS.
3. THE CONTRACTOR MUST NOTIFY THE CAPTAIN OF THE PORT OF SAN FRANCISCO IF A BARGE WILL BE ANCHORED OR STUDDED IN A MANNER THAT WILL UTILIZE THE CHANNEL BOTTOM.

COORDINATION OF DOCUMENTS

1. IN THE EVENT OF A DISCREPANCY BETWEEN THE PLANS AND THE SPECIFICATIONS, BRING THE DISCREPANCY TO THE ATTENTION OF THE ENGINEER FOR THEIR INTERPRETATION. IF IT IS NOT BROUGHT TO THE ENGINEER'S ATTENTION, THE DETAIL SHOWING OR DESCRIBING THE HIGHER QUALITY INTERPRETATION WILL GOVERN.
2. IF AN ITEM IS LISTED OR DESCRIBED IN THE SPECIFICATIONS AND IS NOT SPECIFICALLY SHOWN ON THE PLANS, IT IS CONSIDERED A PART OF THE WORK AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
3. IF AN ITEM IS SHOWN ON THE PLANS AND IS NOT SPECIFICALLY LISTED OR DESCRIBED IN THE SPECIFICATIONS, IT IS CONSIDERED PART OF THE WORK AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
4. SAN JOAQUIN COUNTY WILL NOT PAY FOR ANY COSTS ASSOCIATED WITH THE COORDINATION OF DOCUMENTS. THE COSTS FOR THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT MUST BE DISTRIBUTED AMONG THE COSTS OF INDIVIDUAL ITEMS.

WORK RESTRICTIONS

1. COMPLY WITH ALL LOCAL ORDINANCES THAT APPLY TO LOCAL STREET WORK OPERATIONS, INCLUDING THOSE PERTAINING TO WORKING DURING NIGHTTIME HOURS. FURNISH ANY ORDINANCE VARIANCE ISSUED BY THE MUNICIPALITY OR REQUIRED PERMITS TO THE ENGINEER, IN WRITING, 3 DAYS PRIOR TO PERFORMING SUCH WORK.
2. DO NOT REMOVE ANY EXISTING TREES, STREET LIGHT POLES, HYDRANTS, AND OTHER UTILITY POLES WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER. CONDUCT AN ON-SITE VISIT PRIOR TO BIDDING TO DETERMINE ANY SPECIAL MEASURES REQUIRED FOR PROPER CLEARANCE BETWEEN TREES, HYDRANTS, AND POLES AND THE CONSTRUCTION EQUIPMENT.

IN-STREAM WORK RESTRICTIONS

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO AVOID CONSTRUCTION IN AND/OR LIMIT DEBRIS FROM ENTERING THE WATER. ANY MATERIAL THAT DOES FALL INTO THE WATER SHALL BE REMOVED AS SOON AS POSSIBLE. ALL PROJECTS INVOLVING JURISDICTIONAL WATERS OF THE UNITED STATES ARE SUBJECT TO REGULATION UNDER SECTIONS 404 AND 401 OF THE CLEAN WATER ACT. IT IS ANTICIPATED THAT NO PERMANENT IN-STREAM WORK WILL BE REQUIRED. ANY WORK IN THE WATER, PERMANENT OR TEMPORARY, WILL REQUIRE A PERMIT AND AUTHORIZATION BY THE UNITED STATE ARMY CORPS OF ENGINEERS.

DESIGN SPECIFICATIONS

AASHTO STANDARD SPECIFICATIONS FOR MOVABLE HIGHWAY BRIDGES

DESIGN DATA

1. CONCRETE - MINIMUM COMPRESSIVE STRENGTH 4.0 KSI
2. REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI
3. STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50 KSI UNLESS NOTED ON PLANS OR IN SPECIFICATIONS.

PUBLIC OUTREACH

THE CONTRACTOR MUST ARRANGE AN INFORMATIONAL MEETING FOR THE GENERAL PUBLIC TWO WEEKS PRIOR TO THE START OF CONSTRUCTION CONCERNING THE PROJECT SCOPE AND TIMING. MEETING SITE MUST BE IN A PUBLIC LOCATION (I.E.: SCHOOL, PARK, FIRE HOUSE…) WITHIN THREE BLOCKS OF PROJECT SITE UNLESS OTHERWISE APPROVED BY THE ENGINEER. A PUBLIC ADDRESS (PA) SYSTEM WILL BE REQUIRED FOR THE MEETING. LOCATION AND TIME OF THE MEETING MUST BE APPROVED BY THE ENGINEER. THE CONTRACTOR MUST PERFORM PUBLIC OUTREACH BY ADVERTISING THE MEETING IN THE LOCAL NEWSPAPER AND SENDING WRITTEN NOTIFICATIONS TO THE RESIDENTS LOCATED WITHIN PROJECT LIMITS. FULL COMPENSATION FOR PERFORMING THIS MEETING, INCLUDING ACQUIRING MEETING SITE, SUPPLYING PA SYSTEM, ADVERTISING, NOTIFYING RESIDENTS, AND ALL OTHER INCIDENTALS, MUST BE CONSIDERED AS INCLUDED IN THE PRICES PAID FOR VARIOUS CONTRACT ITEMS OF WORK AND NO SEPARATE PAYMENT WILL BE MADE THEREFOR.

QUANTITIES			
ITEM No.	DESCRIPTION	UNIT	QUANTITY
070731	LEAD COMPLIANCE PLAN	LS	1
120010	TRAFFIC CONTROL SYSTEM	LS	1
120090	CONSTRUCTION AREA SIGNS	LS	1
128651	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2
130200	WATER POLLUTION CONTROL PLAN	LS	1
790030	REST PIER JACKING BRACKET	LS	1
880010	PVC COATED RIGID GALVANIZED STEEL CONDUIT - 1 INCH	LF	50
880030	STAINLESS STEEL NEMA 4 RATED ELECTRICAL BOX - 6 BY 6 BY 4 INCHES	EA	1
880130	INSULATED CONDUCTOR NO. 10 AWG	LF	200
880140	GROUND WIRE NO. 10 AWG	LF	50
880070	BRIDGE ELECTRICAL EQUIPMENT	LS	1
880080	BRIDGE SYSTEM TESTING	LS	1
880090	ELECTRICAL EQUIPMENT DEMOLITION	LS	1
980000	BRIDGE MACHINERY	LS	1
999990	MOBILLIZATION (10%)	LS	1

ABBREVIATIONS

ϕ	PHASE
A, AMP	AMPERES
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ACCEL.	ACCELERATE
APPROX.	APPROXIMATE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWG	AMERICAN WIRE GAUGE
BOT.	BOTTOM
BR, BRG	BRIDGE
C	CELSIUS
CA	CALIFORNIA
CB	CIRCUIT BREAKERS
CCW	COUNTERCLOCKWISE
CL, ℄	CENTERLINE
CONC	CONCRETE
CPT	CONTROL POWER TRANSFORMER
CW	CLOCKWISE
DECEL.	DECELERATE
DEG, °	DEGREE
DIA., Ø	DIAMETER
DWG	DRAWING
E	EAST
EA	EACH
EL.	ELEVATION
EQ. SPA.	EQUALLY SPACED
ESTOP	EMERGENCY STOP
EXIST	EXISTING
F	FAHRENHEIT
FRP	FIBER REINFORCED PLASTIC
GAL	GALLON
GIS	GEOGRAPHIC INFORMAITON SYSTEM
GPM	GALLONS PER MINUTE
H.D.	HOT DIPPED
HP	HORSEPOWER
HPU	HYDRAULIC POWER UNIT
HZ	HERTZ
IN	INCH
JB	JUNCTION BOX
JT	JOINT
KSI	KIPS PER SQUARE INCH
LB	POUND
LF	LINEAR FEET
LFMC	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT
LS	LUMP SUM
LS	LEVEL SWITCH
LTG	LIGHTING
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MIN	MINIMUM
MPH	MILES PER HOUR
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
N	NORTH
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
N.T.S.	NOT TO SCALE
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NO.	NUMBER
OEM	ORIGINAL EQUIPMENT MANUFACTURER
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN
PL, ℄	PLATE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R/W	RIGHT OF WAY
RD	ROAD
REF.	REFERENCE
RGS	RIGID GALVANIZED STEEL
RPM	ROTATIONS PER MINUTE
S	SOUTH
S.S., SS	STAINLESS STEEL
SEC	SECONDS
SPEC	SPECIFICATION
SQ.	SQUARE
TEFC	TOTALLY ENCLOSED, FAN-COOLED
TS	TEMPERATURE SWITCH
TSP	TWISTED SHIELDED PAIR
TYP.	TYPICAL
UL	UNDERWRITERS LABORATORIES
USACE	UNITED STATES ARMY CORPS OF ENGINEERS
USCG	UNITED STATES COAST GUARD
UV	ULTRAVIOLET
V	VOLTS
W	WEST
W/	WITH

$USER $TIME $DATE $REQUEST

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
PAUL M. SKELMAN
32461
11/18/22
MECHANICAL
STATE OF CALIFORNIA

GENERAL NOTES

EIGHT MILE ROAD BRIDGE OVER BISHOP CANAL
(BRIDGE NO. 29C-114)

BC-G-02

NOTES:

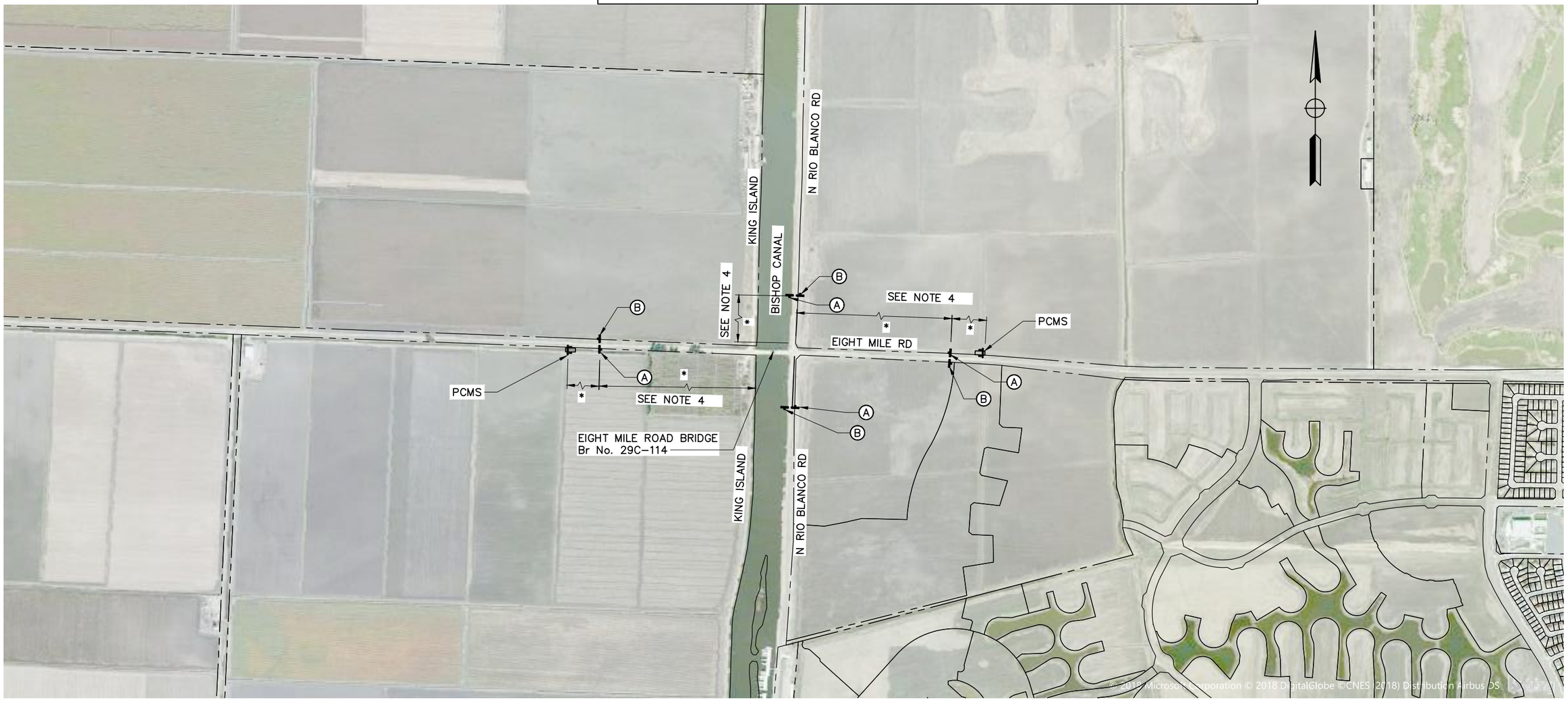
1. THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGN WORK ONLY.
2. LOCATION OF CONSTRUCTION AREA SIGNS ARE APPROXIMATE. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
3. PCMS MESSAGE TO NOTIFY TRAFFIC IN ADVANCE OF CONSTRUCTION. PCMS MESSAGES TO PROVIDE DATES & TIMES OF LANE CLOSURES EXACT MESSAGES TO BE APPROVED BY ENGINEER.
4. SIGN SPACING AND TRAFFIC HANDLING SHALL BE PER THE MOST CURRENT CA MUTCD AT 25 MPH

LEGEND:

- CONSTRUCTION AREA SIGN
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS); 2 EA

CONSTRUCTION AREA SIGNS (STATIONARY MOUNTED)

SIGN No. (X)	SIGN CODE	PANEL SIZE (IN X IN)	SIGN MESSAGE	POST SIZE (IN X IN)	No. OF POSTS (EA)	No. OF SIGNS (EA)
A	W20-1	48 X 48	ROAD WORK AHEAD	4 X 6	1	4
B	G20-2	36 X 18	END ROAD WORK	4 X 4	1	4



FINAL 100% SUBMITTAL

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
P: 916.368.9181

REGISTERED PROFESSIONAL ENGINEER — MICHAEL A SANCHEZ — No. C 68254 — 6/30/24 — CIVIL — STATE OF CALIFORNIA

CONSTRUCTION AREA SIGNS
EIGHT MILE ROAD BRIDGE OVER BISHOP CANAL
BRIDGE NO. 29C-114

BC-G-03
25 OF 75

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
C. SILVA		M. SANCHEZ		C. SILVA		M. SANCHEZ								NO SCALE

DWG FILE s:\Client\hardesty & hanover\h23-100 5 movable br\500-design\505-CAD\H23100_Bishop Cut CS3.dwg

$REQUEST $USER $TIME $DATE

TIME PLOTTED: 9:36:11 AM, Kevin Beltran
DATE PLOTTED: Tuesday, November 22, 2022

NOTES:

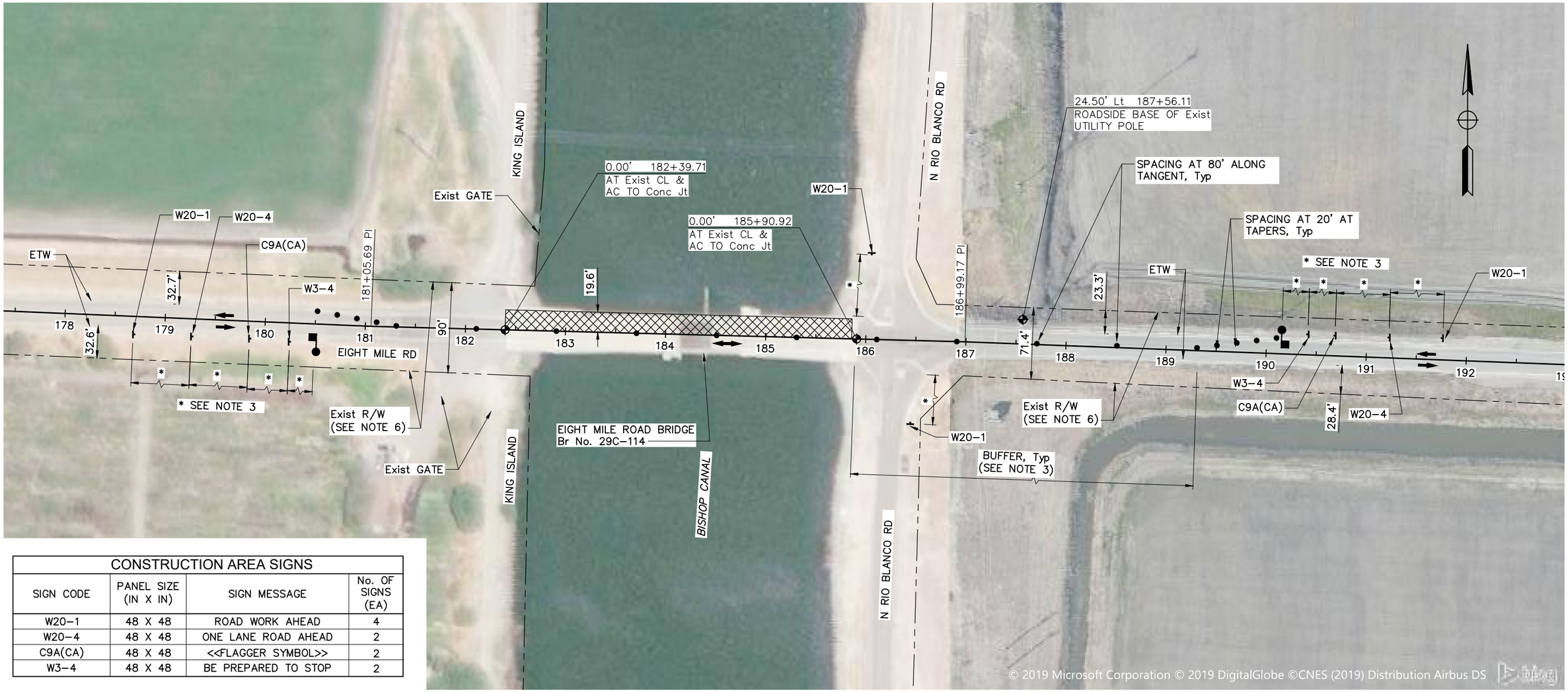
1. THIS PLAN ACCURATE FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING ONLY.
2. SIGN LOCATIONS ARE APPROXIMATE. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
3. SIGN SPACING AND TRAFFIC HANDLING SHALL BE PER THE MOST CURRENT CA MUTCD.
4. TRAFFIC CONTROL FOR ONE–LANE CLOSURES SHALL BE LIMITED FROM 9:00 AM TO 3:00 PM.
5. MAINTAIN ACCESS TO ALL ROADS AND DRIVEWAYS AT ALL TIMES AND DO NOT BLOCK LEVEE ACCESS GATES WITH CONSTRUCTION VEHICLES AND EQUIPMENT STAGING.
6. STATIONING REFERENCE POINTS SHOWN ARE NOT TIED TO ANY COORDINATE SYSTEM OR SURVEY DATA, BUT ARE FROM BEST APPROXIMATIONS USING THE COUNTY GIS RIGHT OF WAY DATA AND BING IMAGERY.
7. DO NOT IMPLEMENT LANE CLOSURE(S) IF NOT NECESSARY.

CONSTRUCTION (STAGE 1):

1. PERFORM NORTH SIDE BRIDGE IMPROVEMENTS.

LEGEND:

- DIRECTION OF TRAFFIC
- CONSTRUCTION AREA SIGN
- PORTABLE DELINEATOR
- WORK AREA (CLOSED TO TRAFFIC)
- FLAGGER
- STATIONING REFERENCE POINT



CONSTRUCTION AREA SIGNS			
SIGN CODE	PANEL SIZE (IN X IN)	SIGN MESSAGE	No. OF SIGNS (EA)
W20–1	48 X 48	ROAD WORK AHEAD	4
W20–4	48 X 48	ONE LANE ROAD AHEAD	2
C9A(CA)	48 X 48	<<FLAGGER SYMBOL>>	2
W3–4	48 X 48	BE PREPARED TO STOP	2

FINAL 100% SUBMITTAL

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS–5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
C. SILVA	3/16/2018	M. SANCHEZ	3/16/2018	C. SILVA	8/8/2018	M. SANCHEZ								1"=50'

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100 RANCHO CORDOVA, CA 95670
P: 916.368.9181

REGISTERED PROFESSIONAL ENGINEER — MICHAEL A. SANCHEZ — No. GE254 — 6/30/24 — CIVIL — STATE OF CALIFORNIA

STAGE 1 CONSTRUCTION AND TRAFFIC HANDLING PLAN

EIGHT MILE ROAD BRIDGE OVER BISHOP CANAL
BRIDGE NO. 29C–114

BC–G–04

26 OF 75

DWG FILE s:\Client\hardesty & hanover\h23–100 5 movable br\500–design\505–CAD\H23100_SC_BC Stg1.dwg

$REQUEST $TIME $DATE

TIME PLOTTED: 9:36:28 AM, Kevin Beltran
DATE PLOTTED: Tuesday, November 22, 2022

NOTES:

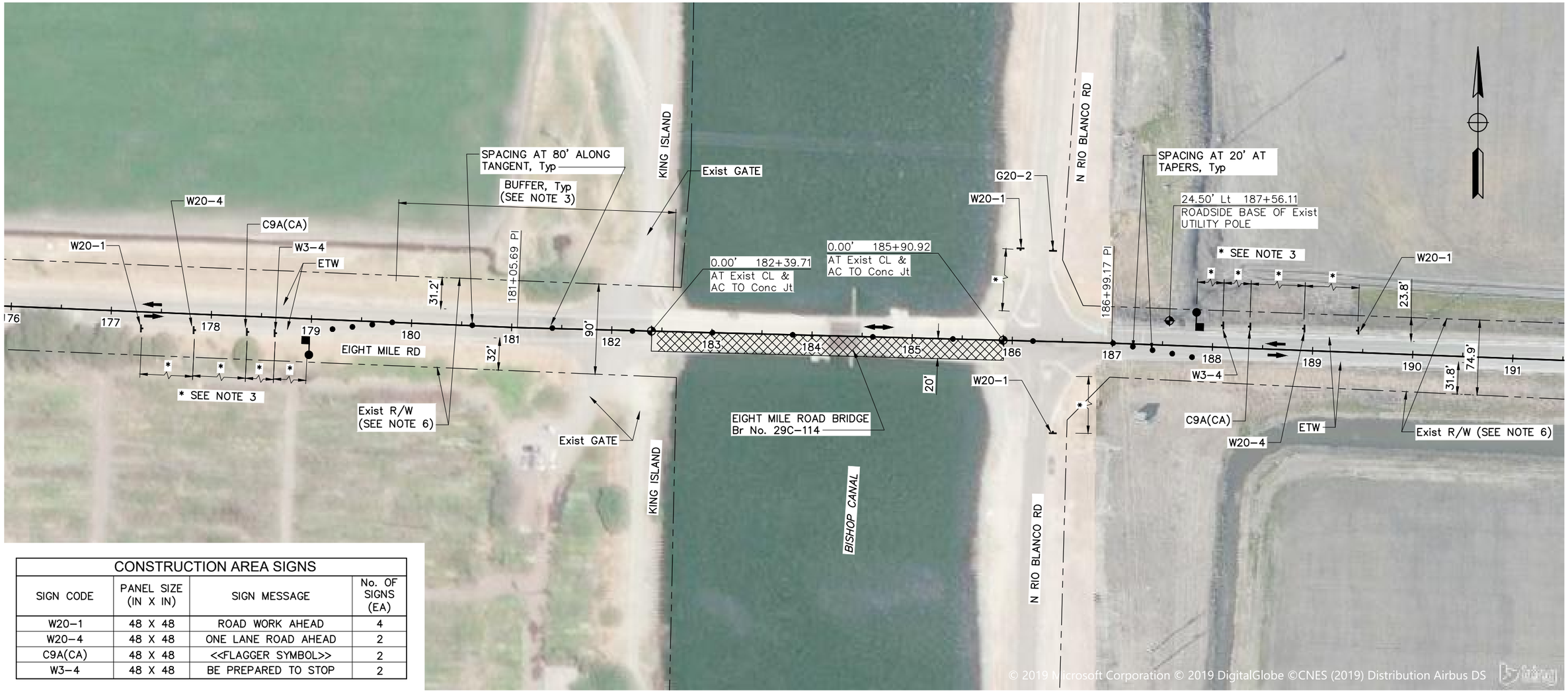
1. THIS PLAN ACCURATE FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING ONLY.
2. SIGN LOCATIONS ARE APPROXIMATE. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
3. SIGN SPACING AND TRAFFIC HANDLING SHALL BE PER THE MOST CURRENT CA MUTCD AT 25 MPH
4. TRAFFIC CONTROL FOR ONE–LANE CLOSURES SHALL BE LIMITED FROM 9:00 AM TO 3:00 PM. REFER TO PROJECT SPECIFICATIONS FOR WORKING DAY RESTRICTIONS.
5. MAINTAIN ACCESS TO ALL ROADS AND DRIVEWAYS AT ALL TIMES AND DO NOT BLOCK LEVEE ACCESS GATES WITH CONSTRUCTION VEHICLES AND EQUIPMENT STAGING.
6. STATIONING REFERENCE POINTS SHOWN ARE NOT TIED TO ANY COORDINATE SYSTEM OR SURVEY DATA, BUT ARE FROM BEST APPROXIMATIONS USING THE COUNTY GIS RIGHT OF WAY DATA AND BING IMAGERY.
7. DO NOT IMPLEMENT LANE CLOSURE(S) IF NOT NECESSARY.

CONSTRUCTION (STAGE 2):

1. SOUTH SIDE LANE CLOSURE IN CONJUNCTION WITH SOUTH SIDE BRIDGE IMPROVEMENT. REFER TO ELECTRICAL AND MECHANICAL PLANS FOR BRIDGE REPAIR DETAILS.

LEGEND:

- DIRECTION OF TRAFFIC
- CONSTRUCTION AREA SIGN
- PORTABLE DELINEATOR
- WORK AREA (CLOSED TO TRAFFIC)
- FLAGGER
- STATIONING REFERENCE POINT



CONSTRUCTION AREA SIGNS			
SIGN CODE	PANEL SIZE (IN X IN)	SIGN MESSAGE	No. OF SIGNS (EA)
W20–1	48 X 48	ROAD WORK AHEAD	4
W20–4	48 X 48	ONE LANE ROAD AHEAD	2
C9A(CA)	48 X 48	<<FLAGGER SYMBOL>>	2
W3–4	48 X 48	BE PREPARED TO STOP	2

FINAL 100% SUBMITTAL

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS–5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
C. SILVA	3/16/2018	M. SANCHEZ	3/16/2018	C. SILVA	8/8/2018	C. SILVA								1"=50'

DWG FILE s:\Client\hardesty & hanover\h23–100 5 movable br\500–design\505–CAD\H23100_SC_BC Stg2.dwg

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE
100 RANCHO CORDOVA, CA 95670
P: 916.368.9181

REGISTERED PROFESSIONAL ENGINEER — MICHAEL A SANCHEZ — No. C 68254 — 6/30/24 — CIVIL — STATE OF CALIFORNIA

STAGE 2 CONSTRUCTION AND TRAFFIC HANDLING PLAN

EIGHT MILE ROAD BRIDGE OVER BISHOP CANAL
BRIDGE NO. 29C–114

BC–G–05

27 OF 75

$REQUEST $USER $TIME $DATE

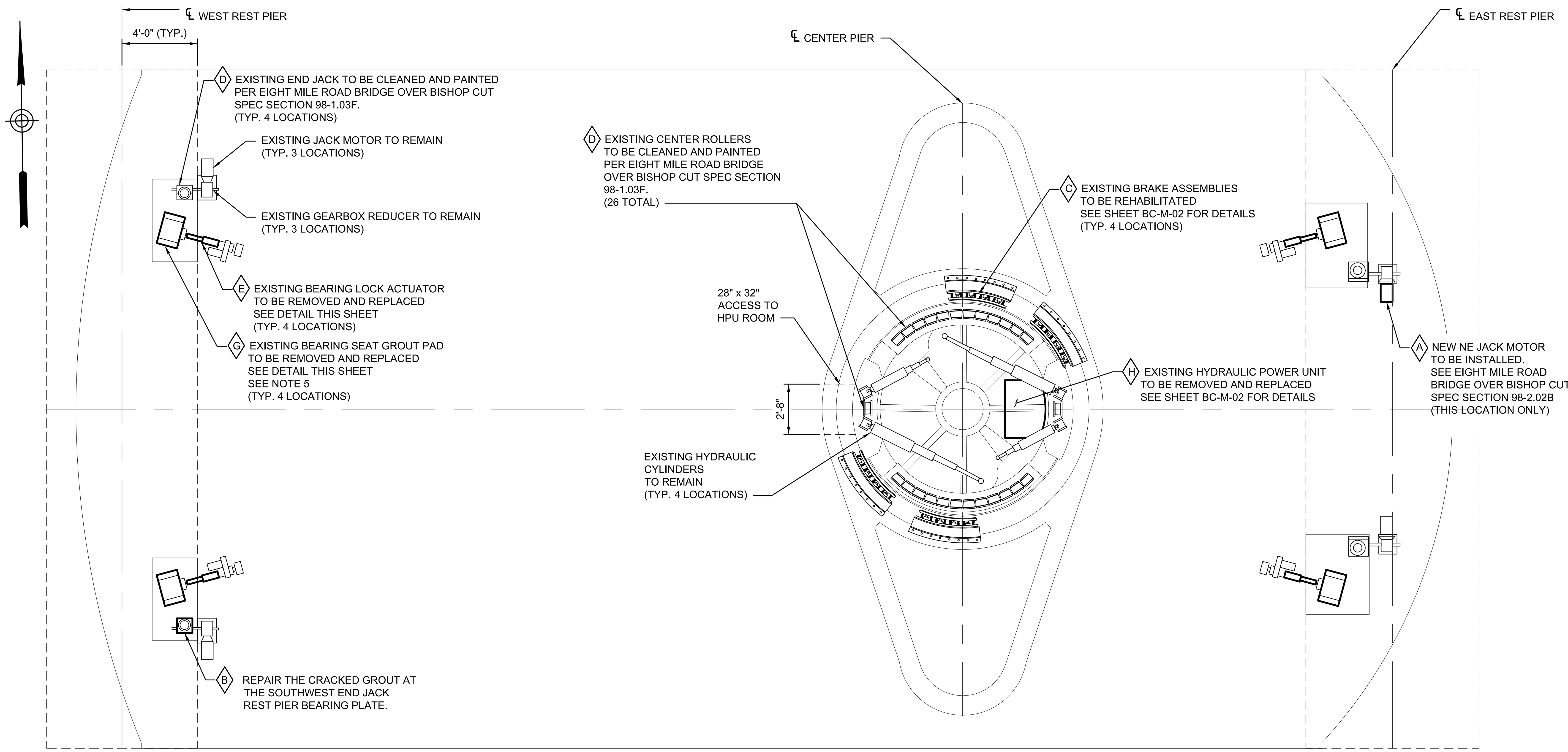
TIME PLOTTED: 9:36:43 AM, Kevin Beltran
DATE PLOTTED: Tuesday, November 22, 2022

MECHANICAL ITEMS OF WORK

- (A) REPLACE NEW NORTH EAST JACK MOTOR.
- (B) REPAIR THE CRACKED GROUT AT THE SOUTHWEST END JACK REST PIER BEARING PLATE.
- (C) REHABILITATE THE BRAKE SHOES INCLUDING THE REPLACEMENT OF THE BRAKE SPRINGS, BRAKE SHOE RODS, AND NUTS.
- (D) CLEAN AND PAINT ALL NON-MOVING BRIDGE MACHINERY COMPONENTS, INCLUDING RIM BEARING ASSEMBLY, CENTER PIN ASSEMBLY, BRAKE ASSEMBLIES, CENTER ROLLERS AND END JACKS.
- (E) REPLACE ALL FOUR END BEARING LOCK ACTUATORS IN KIND.
- (F) REPLACE ALL FLEXIBLE ISOLATION HOSES AND DETERIORATED FITTINGS OF THE TURNING MACHINERY SYSTEM IN KIND.
- (G) REPLACE THE GROUT UNDER THE END LOCK BEARING SEATS.
- (H) REPLACE THE HYDRAULIC POWER UNIT.

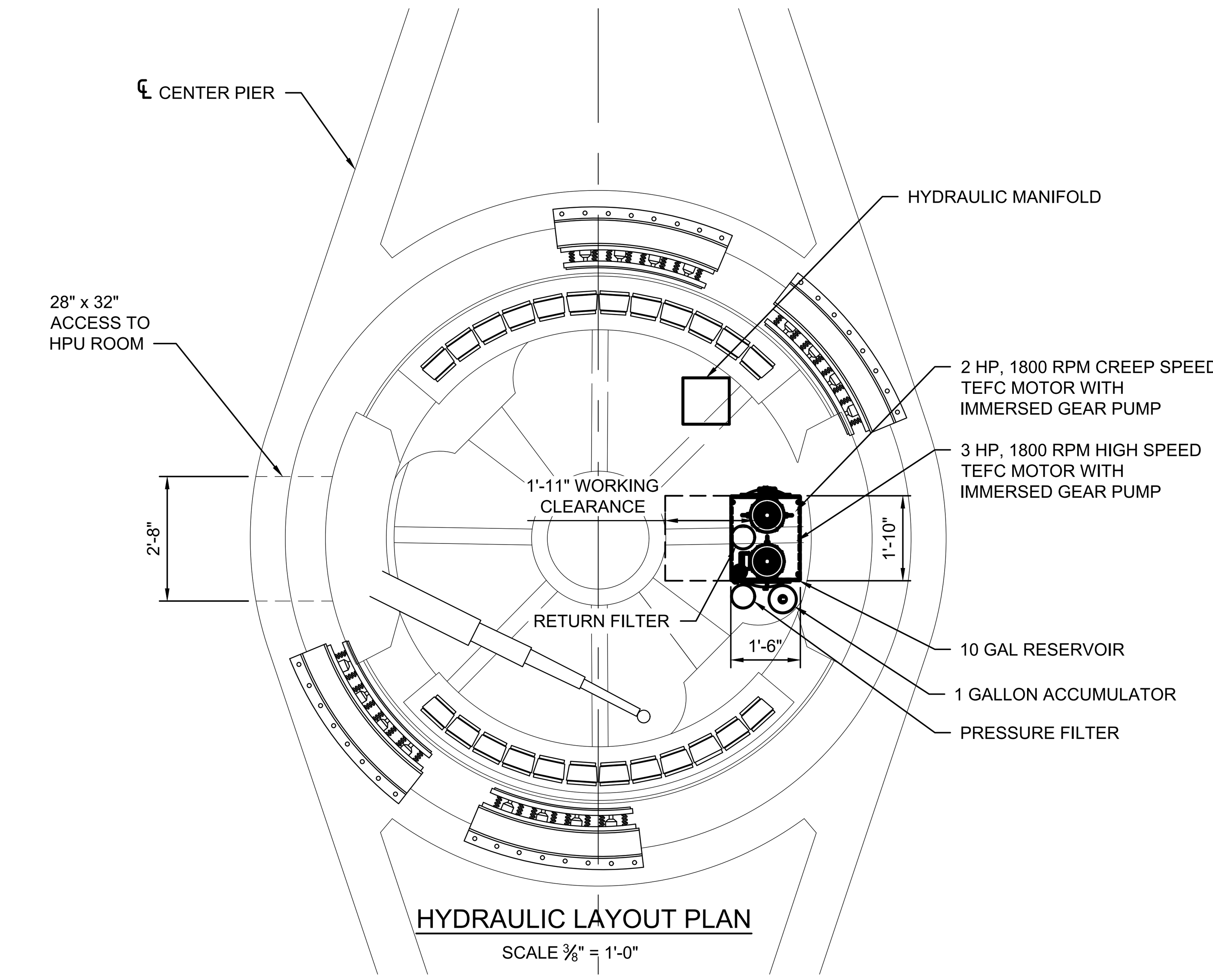
NOTES

1. NEW HOSES AND FITTINGS TO MEET THE REQUIREMENTS IN EIGHT MILE ROAD BRIDGE OVER BISHOP CUT SPECIFICATION SECTION 98-2.02H THROUGH 98-2.02K.
2. NEW HYDRAULIC POWER UNIT TO MEET THE REQUIREMENTS IN EIGHT MILE ROAD BRIDGE OVER BISHOP CUT SPECIFICATION SECTION 98-2.02D THROUGH 98-2.02S.
3. SEE SHEET BC-S-01 FOR JACKING BRACKET DETAILS.
4. CAST NEW ANCHOR BOLTS BY DRIVING THE EXISTING BEARING SHOE AND USE THE BEARING SEAT AS A TEMPLATE
5. NEW END BEARING LOCK ACTUATORS SHALL UTILIZE THE EXISTING ACTUATOR MOUNTINGS.
6. HPU SHALL BE SECURED BY WEDGE TYPE ANCHOR BOLTS. SEE EIGHT MILE ROAD BRIDGE OVER BISHOP CUT SPECIFICATION ITEM 98.2.1 BRIDGE MACHINERY, SECTION 98-2.02D FOR FURTHER DETAILS.



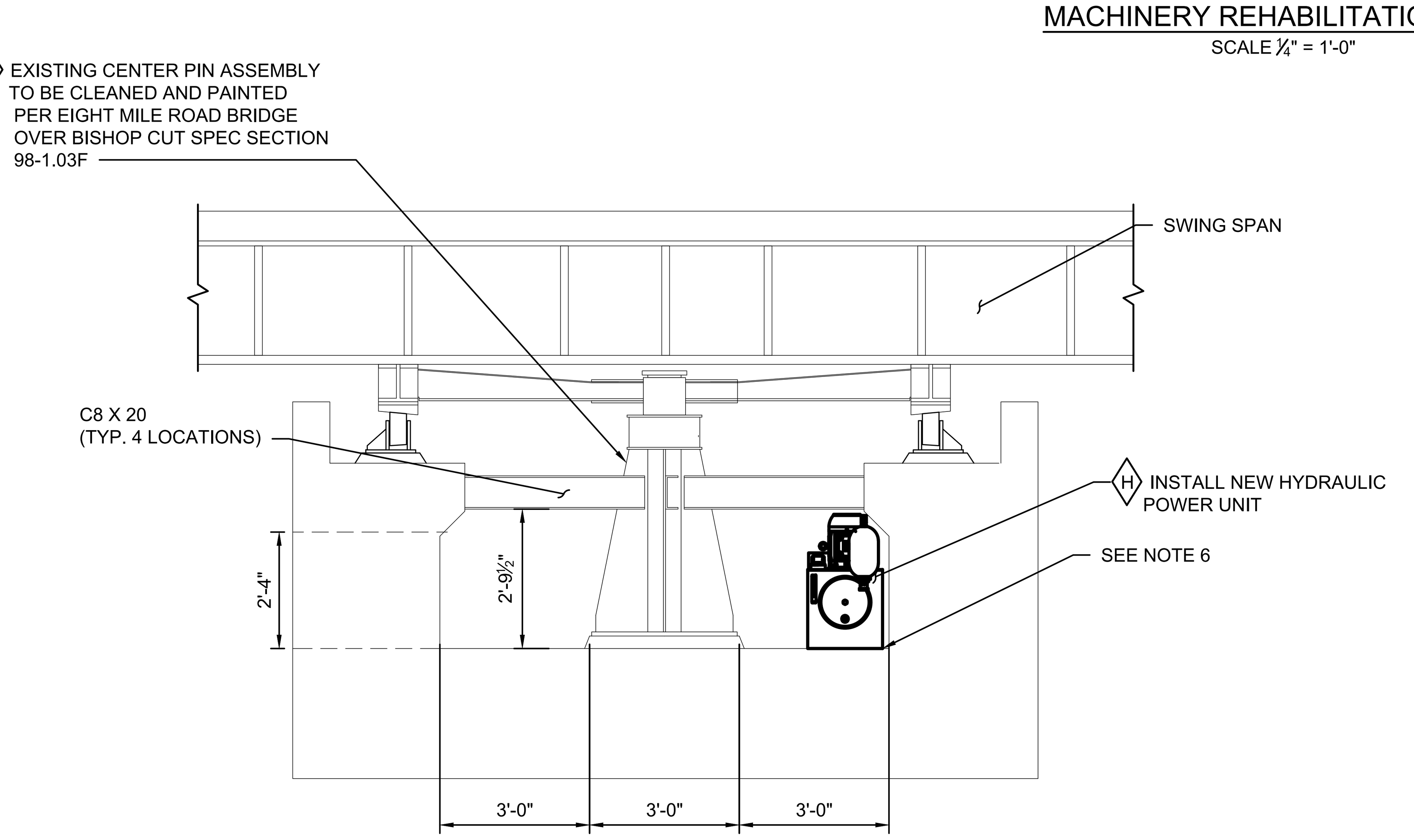
MACHINERY REHABILITATION PLAN

SCALE ⅛" = 1'-0"



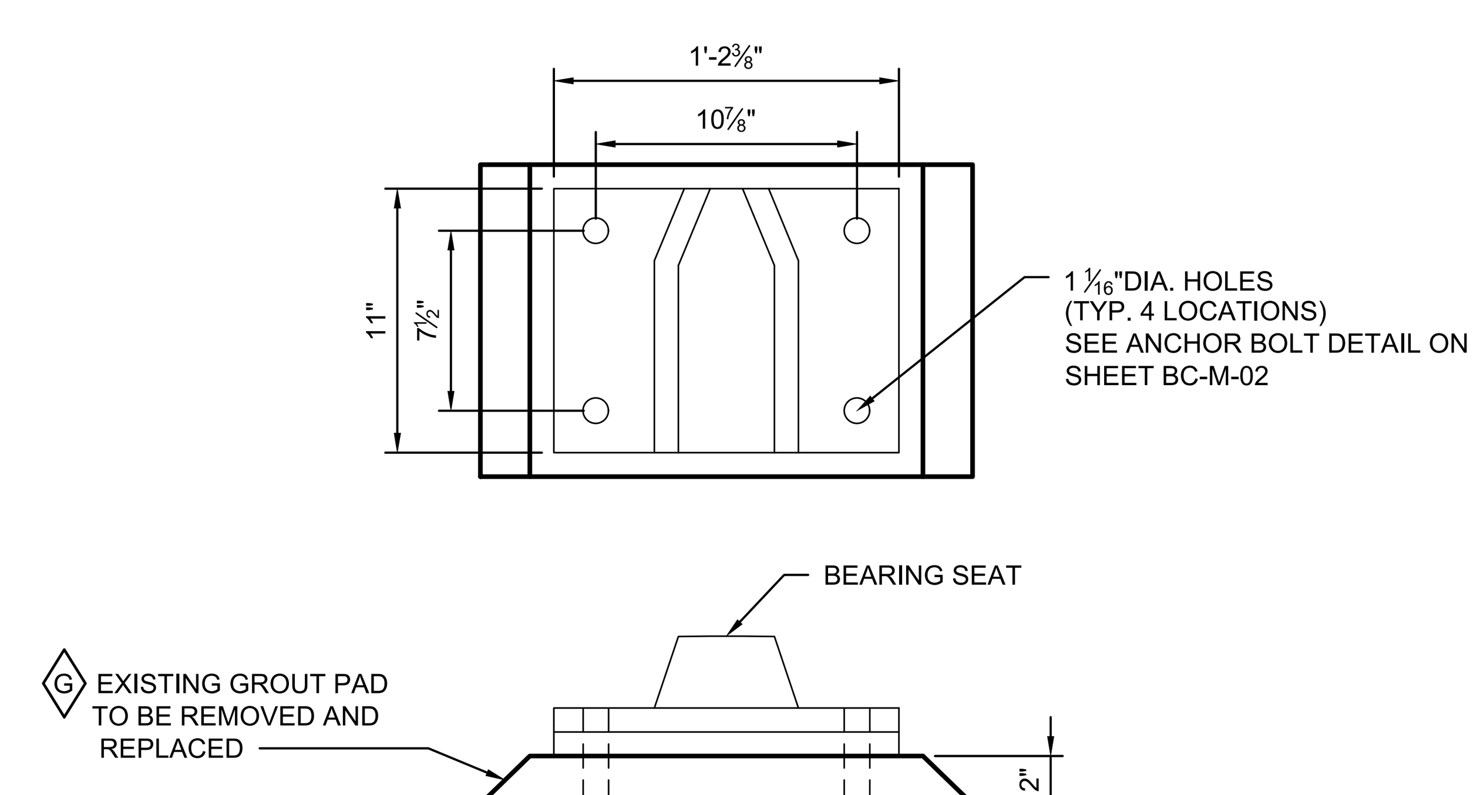
HYDRAULIC LAYOUT PLAN

SCALE ⅜" = 1'-0"



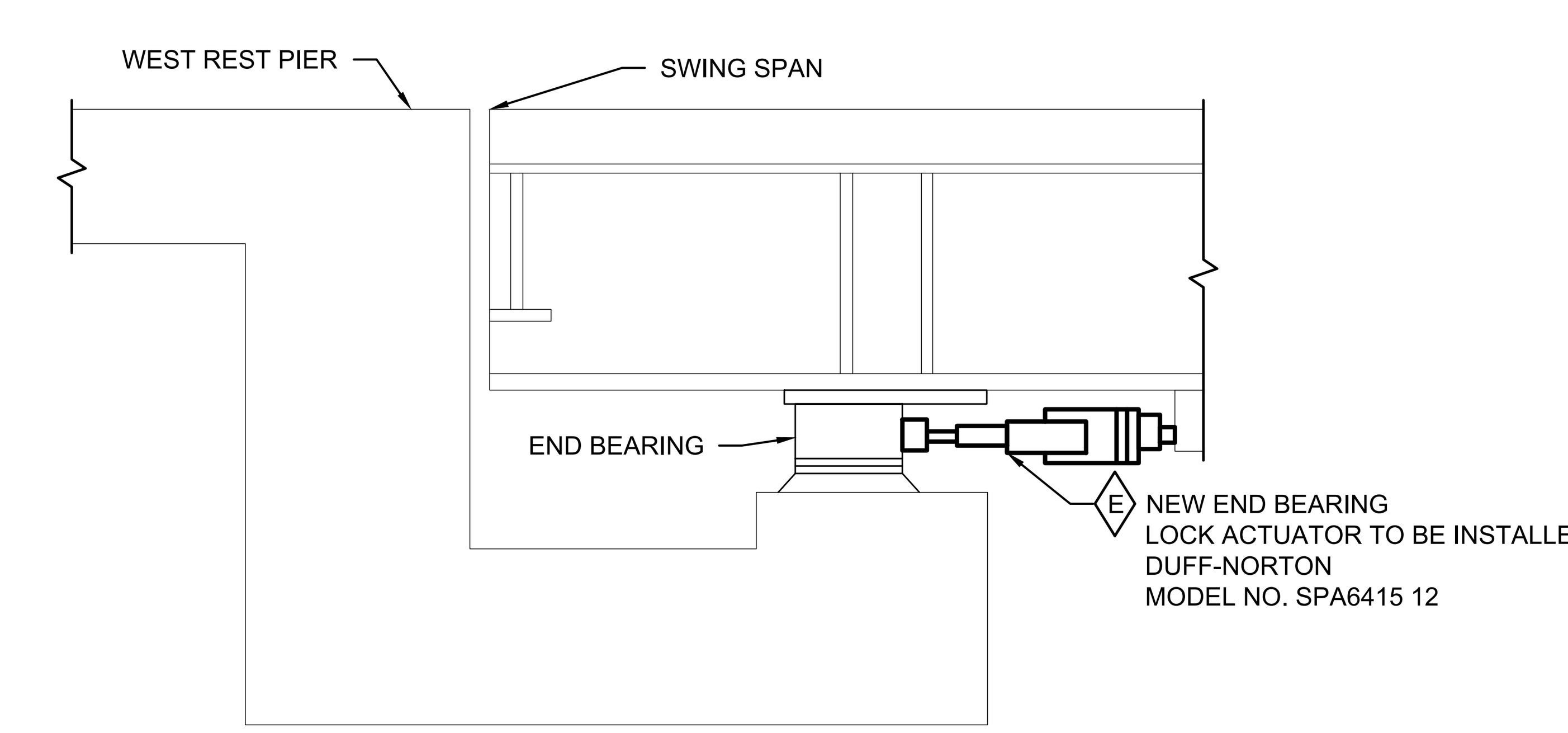
HPU ROOM ELEVATION

SCALE ⅜" = 1'-0"
HYDRAULIC CYLINDERS NOT SHOWN FOR CLARITY



DETAIL - BEARING SEAT

SCALE 1-½" = 1'-0"



DETAIL - END BEARING LOCK ACTUATOR

SCALE ½" = 1'-0"

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER PAUL M. SKELTON MECHANICAL 11/18/22 STATE OF CALIFORNIA

MACHINERY REHABILITATION PLAN
EIGHT MILE ROAD BRIDGE OVER BISHOP CUT
(BRIDGE NO. 29C-114)

BC-M-01

28 OF 75

$REQUEST $DATE $TIME $USER

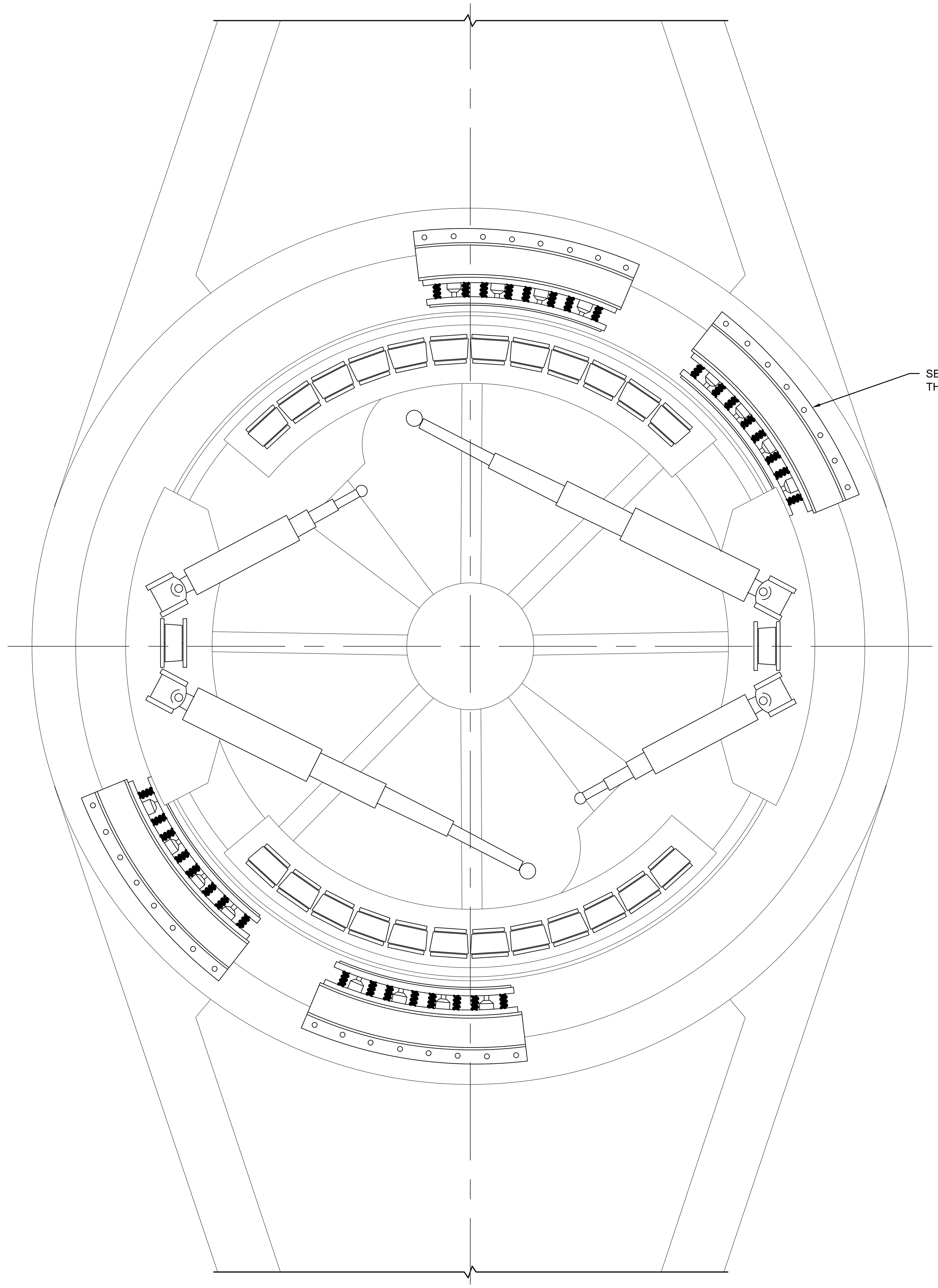
NOTES:

1. CONTRACTOR TO REMOVE A SPRING TO VERIFY FREE LENGTH, COMPRESSED LENGTH, AND SPRING CONSTANT.
2. SEE EIGHT MILE ROAD OVER BISHOP CUT SPECIFICATION ITEM 98.2.1 BRIDGE MACHINERY, SECTIONS 98-2.02S AND 98-2.02T FOR BRAKE SHOE ROD AND BRAKE SPRING MATERIAL REQUIREMENTS.
3. APPLY THREAD LOCKING COMPOUND TO BOTH ENDS OF NEW BRAKE RODS. PROVIDE NEW NUTS FOR USE WITH NEW BRAKE RODS.

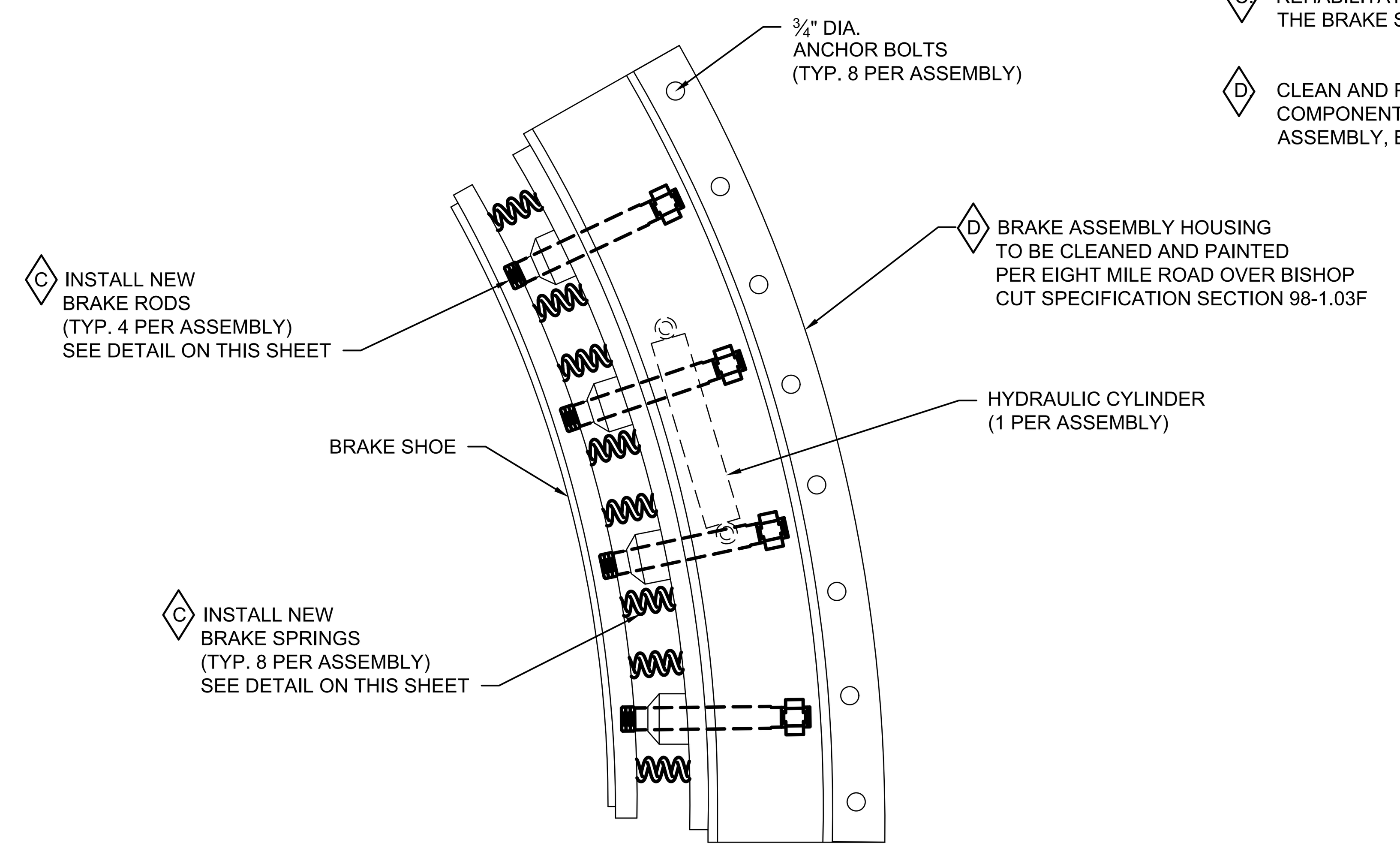
MECHANICAL ITEMS OF WORK

(C) REHABILITATE THE BRAKE SHOES INCLUDING THE REPLACEMENT OF THE BRAKE SPRINGS, BRAKE SHOE RODS, AND NUTS.

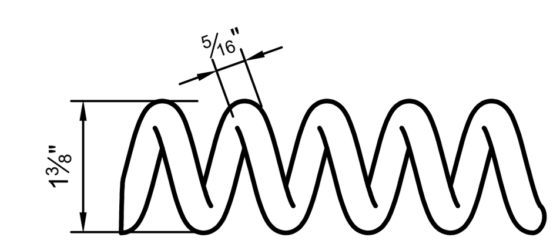
(D) CLEAN AND PAINT ALL NON-MOVING BRIDGE MACHINERY COMPONENTS, INCLUDING RIM BEARING ASSEMBLY, CENTER PIN ASSEMBLY, BRAKE ASSEMBLIES, CENTER ROLLERS AND END JACKS.



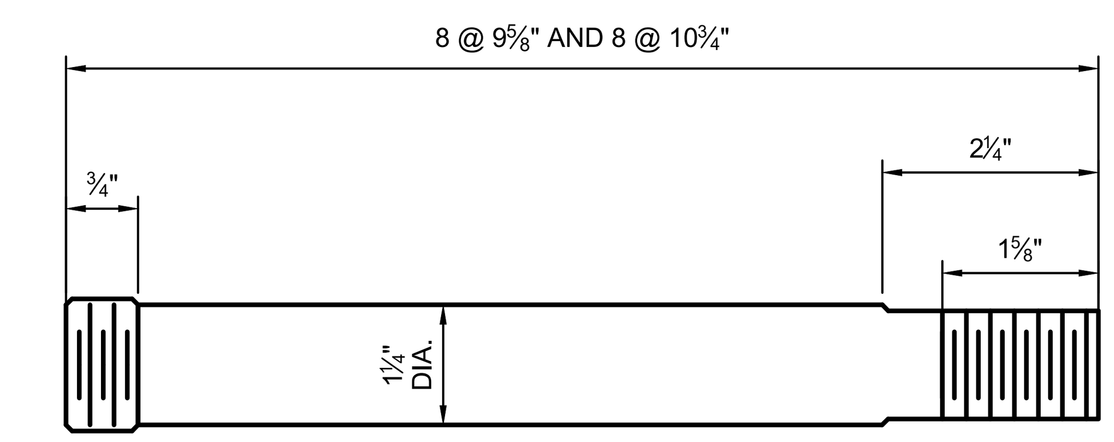
CENTER PIER PLAN
SCALE 3/4" = 1'-0"



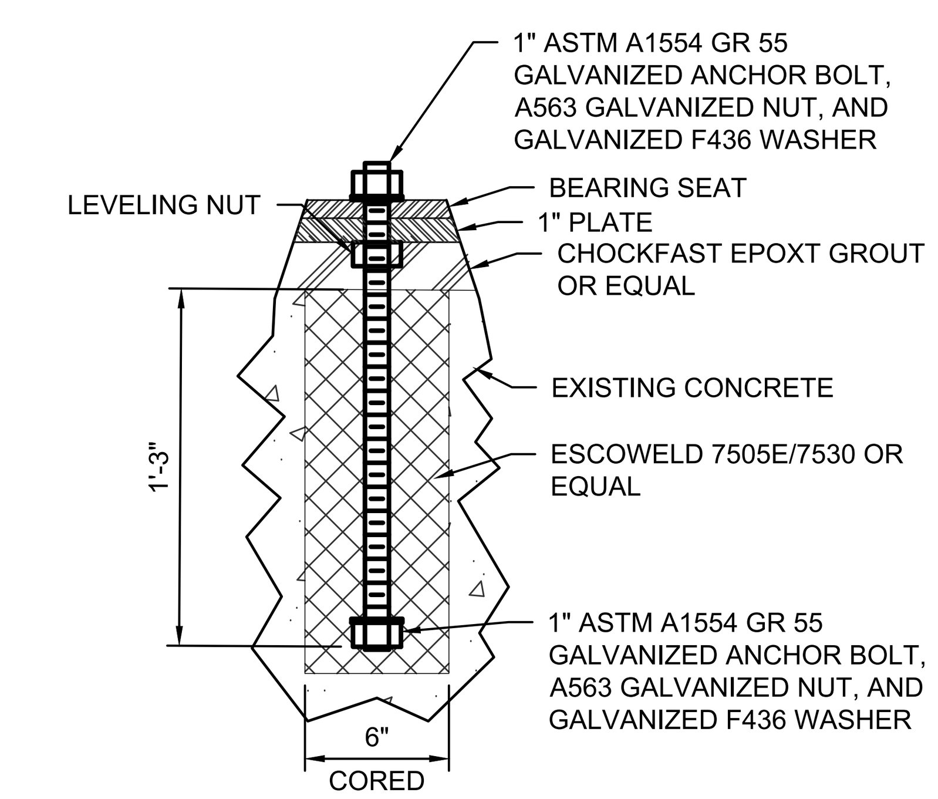
BRAKE ASSEMBLY
SCALE 1½" = 1'-0"
(4) TOTAL



BRAKE SPRING
6" = 1'-0"
16 REQUIRED PER BRAKE ASSEMBLY
64 TOTAL REQUIRED



BRAKE SHOE RODS
6" = 1'-0"
8 OF EACH REQUIRED
BODY TO HAVE 16 MICROINCH FINISH
SEE NOTE 3



BEARING SEAT ANCHOR BOLT REPLACEMENT DETAIL
SCALE 1 1/2" = 1'-0"
SEE SHEET BC-M-01 FOR BEARING SEAT DETAILS

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER PAUL M. SKELTON MECHANICAL 11/18/22 STATE OF CALIFORNIA

SPAN BRAKE DETAILS
EIGHT MILE ROAD BRIDGE OVER BISHOP CUT
(BRIDGE NO. 29C-114)

BC-M-02

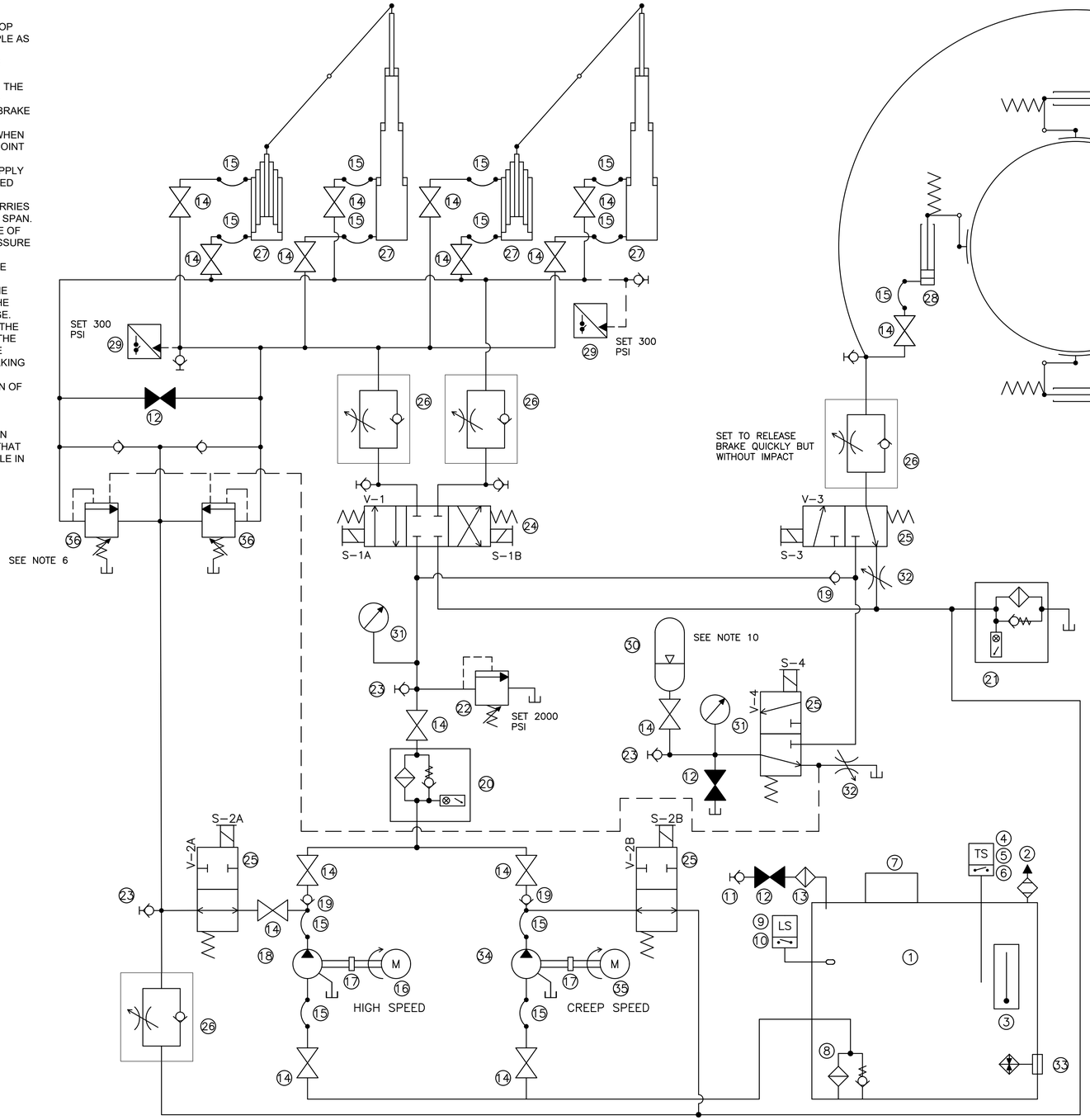
$DATE $TIME $USER $REQUEST

THEORY OF OPERATION:

1. THE DESIGN OF THE HPU IS TO PROVIDE A 2 SPEED SWING SPAN CONTROL SYSTEM WITH 2 MODES TO STOP THE SPAN, AND A REDUNDANT PUMP/MOTOR SETUP. ELECTRICAL CONTROL OF THE HPU IS KEPT AS SIMPLE AS POSSIBLE WITH SPEED CONTROL BEING A SIMPLE CREEP SPEED, FULL SPEED, FORWARD, AND REVERSE INTERFACE. ALL SPEED CHANGES, MAKEUP FLUID REQUIREMENTS, SPEED RAMPING, AND STOPPING ARE HANDLED AUTOMATICALLY BY THE HPU WITHOUT INPUT FROM THE ELECTRICAL CONTROL SYSTEM.
2. THE BRIDGE CAN BE ACCELERATED FROM A STOP TO FULL SPEED BY STEPPING THROUGH CREEP MODE. THE ACCUMULATOR ON THE BRAKE SYSTEM WILL HELP ABSORB THE INITIAL PRESSURE SPIKE AS THE BRIDGE ACCELERATES. THE BRAKE ACCUMULATOR MAY ALSO BE CHARGED PRIOR TO STARTING THE BRIDGE IF BRAKE RELEASE PRESSURES ARE FOUND TO BE TOO HIGH.
3. ONCE AT FULL SPEED THE BRIDGE CAN BE DECELERATED TO CREEP SPEED OR STOPPED AT ANY TIME. WHEN SLOWED TO CREEP THE HIGH SPEED PUMP IS REDIRECTED TO TANK VIA AN UNLOADING VALVE, AT THIS POINT THE BRIDGE WILL BE FREEWHEELING, OPERATING FASTER THAN OIL IS SUPPLIED. THE BRIDGE WILL BE SLOWED BY THE METER OUT FLOW CONTROL VALVES AND FLUID IN EXCESS OF WHAT ONE PUMP CAN SUPPLY WILL BE SUPPLIED THROUGH THE ANTI-CAVITATION CHECK VALVES AT LOW PRESSURE VIA THE HIGH SPEED PUMP PROVIDING A SMOOTH DECELERATION.
4. WHEN THE BRIDGE IS STOPPED ALL SOLENOIDS ARE DE-ENERGIZED AND THE INERTIA OF THE BRIDGE CARRIES THE SPAN FORWARD PRESSURIZING THE 1:1 RATIO COUNTER BALANCE VALVES WHICH DECELERATE THE SPAN. TO SMOOTH THIS DECELERATION THE COUNTERBALANCE VALVE SETTING IS LOWERED BY THE PRESSURE OF THE BRAKE ACCUMULATOR DRAINING OVER A FLOW CONTROL VALVE. IN THIS CONFIGURATION THE PRESSURE DROP ACROSS THE FLOW CONTROL VALVE AND THE CYLINDER PRESSURE ARE EQUAL TO THE COUNTERBALANCE SETTING. WHEN THE ACCUMULATOR IS UNLOADED THE PRESSURE DROP ACROSS THE ACCUMULATOR FLOW CONTROL VALVE SPIKES TO THE ACCUMULATOR PRESSURE DROPPING THE COUNTERBALANCE VALVE SETTING EFFECTIVELY ALLOWING THE BRIDGE TO COAST MOMENTARILY AS THE ACCUMULATOR PRESSURE BLEEDS RAMPING THE COUNTERBALANCE VALVE RELIEF SETTING BACK TO THE SPRING SETTING SMOOTHLY DECELERATING THE SPAN TO A STOP BEFORE THE PARKING BRAKES ENGAGE.
5. IF A HOSE BURSTS DURING OPERATION THE THE PRESSURE SWITCHES SHALL BE USED TO DE-ENERGIZE THE PARKING BRAKE SOLENOID TO SET THE BRAKE AND STOP THE BRIDGE WITHIN 10 SECONDS. NOTE THAT THE ENGAGEMENT OF THIS BRAKE SHALL BE SLOW ENOUGH THAT NORMAL MOMENTARY DROPS IN PRESSURE DURING OPERATION SUCH AS SWITCHING FROM FULL SPEED TO CREEP SPEED WILL NOT ALLOW THE PARKING BRAKE TO BE RELEASED LONG ENOUGH TO ENGAGE THE DRUM. SHOULD TESTING SHOW THAT THIS IS IMPOSSIBLE TO ACHIEVE A TIME DELAY 2-5 SECONDS MAY ADDED TO DELAY THE INITIAL DE-ENERGIZATION OF THE PARKING BRAKE VALVE WHEN A DROP IN PRESSURE IS DETECTED.
6. IN CASE OF PUMP OR MOTOR FAILURE THE BRIDGE CAN BE OPERATED AT REDUCED SPEED USING THE REMAINING MOTOR.
7. V-2 CAN BE REMOVED FROM THE CIRCUIT IN CASE OF SOLENOID FAILURE USING THE PROVIDED ISOLATION VALVE IF ITS ADJACENT PUMP IS USED ALONE (TWO PUMPS SHOULD NOT BE USED IN THIS CASE). NOTE THAT THE SYSTEM SHOULD BE IDLED WITH THE ISOLATION VALVE CLOSED FOR AS SHORT A PERIOD AS POSSIBLE IN THIS CONFIGURATION DUE TO HEAT ACCUMULATION THAT WILL OCCUR AT THE RELIEF.

NOTES:

1. THE ACCUMULATOR IS SIZED TO HOLD THE BRAKE OPEN FOR 3 MINUTES CONSIDERING TYPICAL VALVE LEAKAGE RATES.
2. METER OUT VALVES ARE TO PROVIDE SMOOTH DECELERATION FROM FULL SPEED TO CREEP SPEED, AND TO KEEP THE BRIDGE FROM OUTRUNNING THE OIL SUPPLY UNDER AASHTO WIND LOADS DEFINED UNDER SECTION 2.1.13 OF THE AASHTO MOVABLE BRIDGE SPECIFICATIONS.
3. FLOW CONTROL VALVE BETWEEN 1:1 COUNTERBALANCE VALVES AND TANK IS USED TO PROVIDE A SMALL PRESSURE DROP ON THE RETURN LINE TO SUPPLY MAKEUP FLUID THROUGH THE ANTI-CAVITATION CHECK VALVES WHEN DECELERATING FROM FULL SPEED TO CREEP SPEED. THIS VALVE SHOULD BE SET TO PROVIDE ENOUGH RESISTANCE FOR PROPER OPERATION AND MAY BE LEFT AT FULL OPEN IF THE RETURN FILTER PROVIDES THE NECESSARY RESISTANCE.
4. SET THE FLOW CONTROL VALVE USED TO BLEED THE ACCUMULATOR TO STOP THE BRIDGE IN 5 OR LESS SECONDS AT FULL SPEED UNDER AASHTO MOVABLE BRIDGE SPECIFICATIONS SECTION 2.5.3 WIND LOADING OF 10 PSF.
5. SET THE FLOW CONTROL VALVES ON THE PARKING BRAKE CYLINDERS TO SET AFTER 5 SECONDS SUCH THAT THEY WILL STOP THE BRIDGE IN LESS THAN 10 SECONDS IN CASE OF AN OPERATING CYLINDER HOSE BURST UNDER THE SAME WIND LOADS AS 4.
6. SET COUNTERBALANCE VALVE TO 1000 PSI INITIALLY, INCREASE UP TO 2000 PSI IN CONJUNCTION WITH ADJUSTMENTS PER NOTE 4
7. THE PRESSURE SWITCHES SHALL DE-ENERGIZE THE PARKING BRAKE SOLENOID IF PRESSURES DROP BELOW 300PSI ON BOTH SWITCHES.
8. THE TEMPERATURE HIGH/LOW AND LEVEL LOW SWITCHES SHALL GIVE AUDIBLE ALARMS IF TRIGGERED.
9. THE TEMPERATURE HIGH HIGH OR LEVEL LOW LOW SHALL POWER DOWN THE HPU AND GIVE AND AUDIBLE ALARM IF TRIGGERED.
10. PRE-CHARGE ACCUMULATOR TO 250 PSI ABOVE BRAKE RELEASE PRESSURE OR 700 PSI MINIMUM.



	S-1A	S-1B	S-2A	S-2B	S-3	S-4
BRIDGE OPEN CREEP		X		X	X	X
BRIDGE OPEN FULL SPEED		X	X	X	X	X
BRIDGE CLOSE CREEP	X			X	X	X
BRIDGE CLOSE FULL SPEED	X		X	X	X	X
NORMAL STOP/EMERGENCY STOP						

ITEM: DESCRIPTION:

1. RESERVOIR, 10 GALLONS, JIC CONFIGURATION
2. DESICCANT BREATHER FILTER, 3 MICRON ABSOLUTE 99% EFFICIENT
3. LEVEL INDICATOR WITH INTEGRAL THERMOMETER
4. TEMPERATURE SWITCH LOW TEMPERATURE AUDIBLE LOCAL ALARM SET 50 DEGREES FAHRENHEIT
5. TEMPERATURE SWITCH HIGH TEMPERATURE AUDIBLE LOCAL ALARM SET TO 120 DEGREES FAHRENHEIT
6. TEMPERATURE SWITCH HIGH TEMPERATURE SHUT OFF, SET 140 DEGREES FAHRENHEIT
7. CONTROL VALVE MANIFOLD
8. FLUID SUPPLY STRAINER WITH BYPASS. STRAINER AND BYPASS TO MEET PUMP OEM RECOMMENDATIONS.
9. LEVEL SWITCH, LOW LEVEL AUDIBLE LOCAL ALARM
10. LEVEL SWITCH, LOW LEVEL SHUT OFF
11. QUICK DISCONNECT COUPLING
12. BALL VALVE, NORMALLY CLOSED
13. FILTER WITH 10 MICRON ABSOLUTE RATING (MINIMUM), 99% EFFICIENT
14. BALL VALVE, NORMALLY OPEN
15. FLEXIBLE HOSE
16. HIGH SPEED MOTOR, 3 HP 1800RPM
17. FLEXIBLE COUPLING
18. HIGH SPEED SPEED PUMP, 2000PSI 1.7 GPM GEAR PUMP. PUMP SHALL BE PARKER PGP502A36 SERIES PUMP OR APPROVED EQUAL
19. CHECK VALVE
20. PRESSURE FILTER WITH BYPASS @ 30PSI, 10 MICRON ABSOLUTE (MINIMUM), LOCAL BYPASS INDICATION, 99% EFFICIENT
21. RETURN FILTER WITH BYPASS @ 90 PSI, 10 MICRON ABSOLUTE (MINIMUM) LOCAL BYPASS INDICATION, 99% EFFICIENT
22. RELIEF VALVE
23. STAUFF SIZE 20 TEST PORT
24. 4/3 SOLENOID OPERATED DIRECTIONAL CONTROL VALVE WITH MANUAL OVERRIDE
25. 3/2 SOLENOID OPERATED DIRECTIONAL CONTROL VALVE WITH MANUAL OVERRIDE
26. FLOW CONTROL VALVE WITH REVERSE CHECK
27. EXISTING DOUBLE ACTING TELESCOPING SPAN DRIVE CYLINDER
28. EXISTING SINGLE ACTING BRAKE CYLINDER
29. PRESSURE SWITCH
30. 1 GALLON NITROGEN CHARGED BLADDER ACCUMULATOR.
31. PRESSURE GAGE
32. FLOW CONTROL VALVE
33. LOW WATT DENSITY RESERVOIR HEATER
34. CREEP SPEED MOTOR 2HP, 1800RPM
35. CREEP SPEED PUMP, 2000PSI 1 GPM GEAR PUMP. PUMP SHALL BE PARKER PGP502A21 SERIES PUMP OR APPROVED EQUAL
36. 1:1 COUNTERBALANCE VALVE

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
K. CIAMPI	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	XX	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
PAUL M. SKEWAN
32450
11/18/22
MECHANICAL
STATE OF CALIFORNIA

HYDRAULIC SCHEMATIC
EIGHT MILE ROAD BRIDGE OVER BISHOP CUT
(BRIDGE NO. 29C-114)

BC-M-03

30 OF 75

$REQUEST $USER $TIME $DATE

GENERAL

1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE STATE OF CALIFORNIA,, THE COUNTY OF SAN JOAQUIN, THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, AND THE REGULATIONS OF THE UNDERWRITERS LABORATORIES. ALL ELECTRICAL INSTALLATIONS SHALL CONFORM TO THE 2017 NATIONAL ELECTRIC CODE OR LATER.

2. ALL ELECTRICAL WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES AND SHALL BE SCHEDULED CONSISTENT WITH THE OVERALL CONSTRUCTION STAGING SEQUENCE. ELECTRICAL REMOVAL WORK SHALL BE PERFORMED AND COORDINATED WITH THE ELECTRICAL INSTALLATION WORK.

3. CONTRACTOR SHALL PERFORM ALL WORK WITH DUE RESPECT FOR LIFE AND PROPERTY IN THE VICINITY OF THE WORK AREA. CONTRACTOR ALONE SHALL BE RESPONSIBLE FOR PROTECTION OF SAME FROM ANY HARM OR DAMAGE DURING THE ENTIRE CONSTRUCTION PERIOD. ANY HARM OR DAMAGE SHALL BE RECTIFIED TO THE ENTIRE SATISFACTION OF THE COUNTY OF SAN JOAQUIN AT NO ADDITIONAL COST.

4. EXISTING DIMENSIONS AND DETAILS SHOWN IN THE PLANS ARE BASED ON AVAILABLE INFORMATION TAKEN FROM EXISTING PLANS, FIELD MEASUREMENTS, AND FIELD INSPECTIONS. ALL EXISTING DIMENSIONS AND DETAILS THAT AFFECT THE WORK CALLED FOR IN THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO START OF WORK. IN THE EVENT THAT EXISTING CONDITIONS OR DETAILS VARY FROM THOSE SHOWN ON THESE DRAWINGS, THE CONTRACTOR MUST MAKE THE NECESSARY DRAWINGS SHOWING THE EXISTING CONDITIONS AND SUBMIT TO THE COUNTY OF SAN JOAQUIN FOR REVIEW AND RESOLUTION.

5. THE ELECTRICAL EQUIPMENT AND RACEWAY LAYOUTS SHOWN IN THE CONTRACT DOCUMENTS ARE DIAGRAMMATIC IN NATURE AND INTENDED TO SHOW A CONCEPTUAL LAYOUT. SCALES ARE APPROXIMATE AND NOT EVERY DETAIL OR EXACT LOCATION OF EQUIPMENT AND/OR CONDUIT IS SHOWN. EXISTING CONDITIONS SHALL BE VERIFIED IN THE FIELD. WHILE MAJOR EQUIPMENT IS SHOWN, NOT EVERY DETAIL OR EXACT LOCATION OF ALL EQUIPMENT AND/OR CONDUIT MAY BE SHOWN. SIZES OF EQUIPMENT MAY VARY, DEPENDING ON THE MANUFACTURER SELECTED. THE CONTRACTOR SHALL FOLLOW THESE LAYOUTS AS CLOSELY AS POSSIBLE, REALIZING THAT ACTUAL INSTALLATIONS MAY VARY SLIGHTLY DUE TO THE FIELD CONDITIONS AND STRUCTURAL MECHANICAL COORDINATION. THE CONTRACTOR SHALL VERIFY ALL THE DIMENSIONS RELATED TO ELECTRICAL EQUIPMENT INSTALLATION PRIOR TO PERFORMING THE ACTUAL INSTALLATION. ANY DEVIATIONS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL ANY DEVIATIONS IN PROPOSED CABLE AND CONDUIT ROUTINGS.

6. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL REQUIRED BOXES, CONDUIT FITTINGS, ELBOWS, AND HARDWARE FOR A COMPLETE INSTALLATION WHETHER OR NOT THEY ARE EXPLICITLY SHOWN OR INDICATED ON THE CONTRACT DRAWINGS.

7. THESE PLANS AND SPECIFICATIONS DO NOT NECESSARILY SHOW ALL ASPECTS OF THE REQUIRED INSTALLATION. PERFORM ALL WORK NECESSARY, TO PROVIDE FULLY OPERATIONAL SYSTEMS THAT ARE IN COMPLIANCE WITH ALL STATED CONTRACT REQUIREMENTS, WHETHER SHOWN ON THE PLANS OR NOT. PRESENTATION OF INCOMPLETE INFORMATION OR OMISSIONS OF DETAILS FOR ITEMS WHICH ARE NECESSARY TO CARRY OUT THE INTENT OF THE DRAWINGS AND SPECIFICATIONS, OR WHICH ARE CUSTOMARILY PERFORMED, SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING SUCH OMISSIONS AND DETAILS OF WORK, AT NO EXTRA COST.

8. ANY APPARATUS, DEVICE, CIRCUIT, APPLIANCE, MATERIAL, OR LABOR NOT HEREIN SPECIFICALLY MENTIONED OR INCLUDED, BUT THAT MAY BE FOUND NECESSARY TO COMPLETE OR PERFECT THE INSTALLATION AND EQUIPMENT IN A MANNER ACCEPTABLE TO THE ENGINEER, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AS IF SPECIFICALLY INCLUDED IN THESE DRAWINGS.

9. IN ANY CASE OF DISCREPANCIES IN NOTED DETAILS, CATALOG NUMBERS, AND DESCRIPTIONS, OR WHERE MULTIPLE INTERPRETATIONS OF THE PLANS MAY BE REASONABLY MADE, SUBMIT A WRITTEN INQUIRY TO THE ENGINEER, WHO WILL MAKE DETERMINATION IN WRITING. ANY DEVIATION FROM THE PLANS AND SPECIFICATIONS OR INTERPRETATIONS MADE BY THE CONTRACTOR WITHOUT WRITTEN APPROVAL BY THE ENGINEER SHALL BE AT THE CONTRACTOR'S OWN RISK AND EXPENSE. IN THE CASE OF DISCREPANCY BETWEEN SPECIFICATIONS AND PLANS, THE MORE STRINGENT SHALL GOVERN.

10. ALL TEMPORARY WORKS AND SUPPORTS REQUIRED TO COMPLETE THE WORK SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL BE CONSIDERED INCIDENTAL TO THE OTHER WORK ITEMS.

11. ALL ELECTRICAL COMPONENTS AND MATERIAL SHOWN ON THE CONTRACT DRAWINGS ARE NEW UNLESS OTHERWISE NOTED.

12. THE CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING AS REQUIRED FOR THE REMOVAL AND INSTALLATION OF ELECTRICAL COMPONENTS, HANGERS, SUPPORTS, ETC. ALL PATCHING SHALL BE DONE SO AS TO LEAVE THE AREA IN ITS ORIGINAL CONDITION AS A MINIMUM OR AS OTHERWISE REQUIRED BY THE ENGINEER.

13. CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL CONSTRUCTION DEBRIS IN THE VICINITY OF THE WORK. THE CONTRACTOR SHALL CONTROL CLEANING TO PREVENT DIRT OR DUST FROM LEAVING THE JOB SITE AND INFILTRATING AREAS NOT INVOLVED IN THE PROJECT. AT THE COMPLETION OF THE WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LEAVING THE SITE IN A CLEAN, ORDERLY STATE.

14. EXISTING ELECTRICAL CABLE, WIRES, CONDUIT, CONDUIT HANGERS, SUPPORTS, CLAMPS, ETC, THAT ARE BEING REPLACED SHALL NOT BE REUSED. ALL SUCH PARTS SHALL BE REMOVED AND PROPERLY DISPOSED OF.

15. THE CONTRACTOR MAY PROPOSE REMOVAL OF COMPONENTS OF THE EXISTING STRUCTURE IN ORDER TO ACCOMMODATE PROPOSED ELECTRICAL WORK. ANY SUCH PROPOSALS SHALL BE SUBMITTED TO THE COUNTY OF SAN JOAQUIN FOR APPROVAL. ALL REMOVED ITEMS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE COUNTY OF SAN JOAQUIN PRIOR TO THE COMPLETION OF WORK.

16. THE CONTRACTOR SHALL COMPLY WITH THE COUNTY OF SAN JOAQUIN'S REQUIREMENTS FOR BUILDING SECURITY AND ACCESS. BUILDING ACCESS AND STORAGE AREAS FOR NECESSARY CONSTRUCTION MATERIALS AND EQUIPMENT SHALL BE COORDINATED WITH THE COUNTY OF SAN JOAQUIN.

17. THE CONTRACTOR SHALL REMOVE AND RE-EXECUTE ALL UNSATISFACTORY WORK AT NO ADDITIONAL COST TO THE COUNTY OF SAN JOAQUIN.

18. ALL STRUCTURAL, MECHANICAL AND ARCHITECTURAL BACKGROUND INFORMATION SHOWN IN THE ELECTRICAL PLANS IS FOR REFERENCE ONLY.

19. CONDUIT PENETRATIONS THROUGH WALLS AND FLOORS OF BUILDINGS SHALL BE SEALED WITH AN APPROVED FIRE-STOP SEALANT.

20. ALL CONDUITS AND FITTINGS USED IN ONE CONTINUOUS RUN SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER.

21. THE CONTRACTOR SHALL FURNISH AND INSTALL ENGRAVED BRASS TAGS AT BOTH ENDS OF ALL RACEWAY RUNS IDENTIFYING THEM WITH THE FINAL CONDUIT DESIGNATIONS WHICH SHALL COINCIDE WITH THOSE IN THE CONTRACTOR'S FINAL AS-BUILT DRAWINGS. PAYMENT FOR THESE TAGS SHALL BE UNDER THE VARIOUS PAY ITEMS TO WHICH THE RACEWAYS PERTAIN.

22. ENCLOSURES WHERE SHOWN IN THE PLANS SHALL BE NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION (NEMA) 4X STAINLESS STEEL WITH CONTINUOUS HINGES AND LATCHES, UNLESS OTHERWISE NOTED.

23. ALL NEW CONDUCTORS INSTALLED IN CONDUIT SHALL BE INSTALLED WITH GROUND CONDUCTORS. GROUND CONDUCTORS SHALL BE PROVIDED IN ALL NEW FLEXIBLE CABLES. GROUND CONDUCTOR SHALL BE SIZED AS PER THE NEC OR MINIMUM SIZE #14 AWG. WHICHEVER IS LARGER. ALL CABINETS, TERMINAL AND JUNCTION BOXES SHALL BE GROUNDED IN ACCORDANCE WITH THE NEC.

24. ALL CONDUCTORS SHALL BE CONNECTED TO TERMINAL BLOCKS OR DEVICES. SPLICES SHALL NOT BE PERMITTED WITHIN EQUIPMENT ENCLOSURES, BOXES OR CONDUIT FITTINGS.

25. ALL EQUIPMENT NOTED AS PROPOSED SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

26. PRIOR TO THE COMMENCEMENT OF ANY WORK, THE CONTRACTOR SHALL SUBMIT A COMPREHENSIVE STAGING PLAN IN ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS WHICH SHALL CLEARLY DEFINE SPECIFIC MILESTONE DATES TO THE ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR ALL OTHER CONSTRUCTION THAT MAY AFFECT OPERATIONS OR SCHEDULE.

27. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS RELATING TO ELECTRICAL EQUIPMENT INSTALLATIONS PRIOR TO PERFORMING THE ACTUAL INSTALLATIONS. ANY DEVIATIONS NOTED AS PART OF THE FIELD VERIFICATION OR CONSTRUCTION DEVIATIONS REGARDING THE STRUCTURE, SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

GENERAL (CONTINUED)

28. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN THE LOCATIONS DEPICTED ON THE PLANS. DEVIATIONS IN LOCATION SHALL BE PERMITTED ONLY UPON APPROVAL BY THE ENGINEER.

29. UPON COMPLETION OF ELECTRICAL INSTALLATION, THE CONTRACTOR SHALL TEST THE COMPLETE ELECTRICAL SYSTEM FOR ACCEPTANCE. PRIOR TO TESTING, THE CONTRACTOR SHALL SUBMIT A COMPLETE TESTING PROCEDURE FOR APPROVAL. THE SYSTEM SHALL BE TESTED STEP BY STEP FOR SHORT CIRCUITS, GROUNDS, PROPER OPERATION AND INTERLOCKS IN THE PRESENCE OF THE ENGINEER, ALL FINDINGS SHALL BE RECORDED AND DEFICIENCIES CORRECTED. SEE SPECIFICATIONS FOR ADDITIONAL TESTING REQUIREMENTS.

30. WIREWAYS WHERE SHOWN IN THE PLANS SHALL BE NEMA 4X STAINLESS STEEL WITH CONTINUOUS HINGES AND LATCHES. SIZES AS REQUIRED TO MEET NEC.

31. ALL ABOVE GROUND OUTDOOR CONDUITS SHALL BE PVC-RGS UNLESS NOTED OTHERWISE. ALL UNDERGROUND OR EMBEDDED IN BARRIERS/CONCRETE CONDUITS SHALL BE PVC-SCHEDULE 80 UNLESS NOTED OTHERWISE.

GENERAL SCOPE OF WORK

1. THE BISHOP CANAL MOVABLE BRIDGE SHALL HAVE NEW ELECTRICAL EQUIPMENT INSTALLED ALONGSIDE EXISTING EQUIPMENT ON THE EXISTING MOVABLE BRIDGE AS SHOWN ON THE PLANS AND DESCRIBED IN THE SPECIFICATIONS.

2. FINAL TESTING OF THE ELECTRICAL EQUIPMENT IN THE SHOP (PRIOR TO DELIVERY) SHALL BE DONE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

3. DURING SHIPMENT OF ALL MATERIALS TO THE WORK SITE, SUPPORTS AND PROTECTIVE MEASURES NECESSARY TO ENSURE SHIPMENT WITHOUT DAMAGE TO THE ELECTRICAL EQUIPMENT SHALL BE INCLUDED WITH THIS WORK. DAMAGE TO ELECTRICAL EQUIPMENT DURING SHIPPING AND HANDLING SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE COUNTY. COMPONENTS DAMAGED BEYOND REPAIR, TO THE COUNTY OF SAN JOAQUIN'S SATISFACTION, SHALL BE REPLACED BY THE CONTRACTOR AT NO COST TO THE COUNTY.

4. SITE ACCEPTANCE TESTING SHALL BE CONDUCTED AFTER COMPLETE INSTALLATION. THE CONTRACTOR SHALL PROVIDE WRITTEN VERIFICATION THAT THEY HAVE PERFORMED THIS FINAL INSPECTION AND INDICATE TESTING RESULTS.

5. DETAILED PROGRESS REPORTS AND PROJECTED DELIVERY SCHEDULES SHALL BE PROVIDED THROUGHOUT THE PROJECT. UPDATED SCHEDULES SHALL BE PROVIDED TO THE COUNTY OF SAN JOAQUIN NO LESS FREQUENTLY THAN BI-WEEKLY.

6. ACCOMMODATION AND PROVISION OF ACCESS TO THE SHOP WORK BY COUNTY OF SAN JOAQUIN STAFF AND INSPECTORS SHALL BE GRANTED AT THE REQUEST OF THE COUNTY OF SAN JOAQUIN.

MOUNTING METHOD NOTES

1. WHERE MOUNTING ITEMS SUCH THAT DISSIMILAR METALS MAY BE IN CONTACT WITH EACH OTHER, PROVIDE NEOPRENE SPACERS OR GASKETS TO PREVENT CONTACT. THIS REQUIREMENT WILL NOT BE REQUIRED SPECIFICALLY FOR THE CASE OF CONTACT BETWEEN CARBON STEEL AND STAINLESS STEEL.

JUNCTION BOX, PULL BOX, CABINET, AND FITTING NOTES

1. FURNISH AND INSTALL JUNCTION AND PULL BOXES, REDUCERS, AND OTHER FITTINGS AS REQUIRED BY THESE SPECIFICATIONS OR WHERE REQUIRED BY THE NATIONAL ELECTRIC CODE (NEC), OR WHERE REQUIRED TO FACILITATE PULLING, WHETHER SHOWN ON PLANS OR NOT.

2. CONDUIT TOP ENTRY IS NOT PERMITTED FOR OUTDOOR CABINETS THAT CONTAIN ELECTRICAL EQUIPMENT. ALL WET AND OUTDOOR LOCATION CONDUIT FITTINGS AND HUBS SHALL BE WATERTIGHT TYPE.

AS-BUILT PLANS

1. PROVIDE AS-BUILT PLANS SHOWING THE FINAL LOCATIONS, DETAILS, AND METHODS FOR ALL ELECTRICAL INSTALLATIONS. AS-BUILT PLANS SHALL BE DEVELOPED USING THIS PLAN SET, THE EXISTING ELECTRICAL SYSTEM PLAN SET, AND ALL CHANGES OF PLAN AS A BASIS. USE EITHER A "RED-LINE" METHOD THAT SHOWS REVISIONS, OR A COMPUTERIZED METHOD WHICH REVISES THE ELECTRONIC FILES. MATCH THE LEVEL OF DETAIL SHOWN ON THESE PLANS. SUBSTITUTE DETAILS SHALL BE PROVIDED WHERE THE DETAILS ON THIS SHEET ARE MODIFIED OR ALTERNATE DETAILS ARE APPROVED BY THE ENGINEER. IT WILL NOT BE PERMISSIBLE TO "X" OUT DETAILS WITHOUT PROVIDING NEW VERSIONS.

2. IN ADDITION TO PROVIDING AS-BUILT PLANS FOR THE PLANS INCLUDED HEREIN, PROVIDE AS-BUILT PLANS FOR THE FOLLOWING:
   - 2.1. CONTROL SYSTEM SCHEMATICS.
   - 2.2. RACEWAY SCHEDULES NOTING SIZE, TYPE, CIRCUITS.
   - 2.3. WIRE NUMBERS.
   - 2.4. WIRING TERMINATION DESIGNATIONS.

3. INTEGRATE EXISTING EQUIPMENT TO REMAIN INTO THE AS-BUILTS TO PROVIDE A COMPLETE SET.

ELECTRICAL MACHINERY AND EQUIPMENT NOTES

1. COORDINATE, VERIFY, AND INCORPORATE PROPER CLEARANCES BETWEEN ELECTRICAL ENCLOSURES TO ALLOW FOR INSTALLATION OF EQUIPMENT AS SHOWN ON THE PLANS. SEE MACHINERY/MECHANICAL PLANS FOR ADDITIONAL REQUIREMENTS.

2. PLANS MAY NOT SHOW DETAILED CONSTRUCTION METHODS OR DIMENSIONS FOR EQUIPMENT MOUNTING SUPPORTS. WHERE NOT SHOWN, CONTRACTOR SHALL DEVELOP SCALED SHOP DRAWINGS SHOWING CONSTRUCTION OF THE MOUNTING, AND ALL ATTACHED EQUIPMENT FOR REVIEW AND APPROVAL. INTERCONNECTED EQUIPMENT SHALL BE SUBMITTED AS A COMPLETE SHOP DRAWING SUBMISSION.

3. MODEL NUMBERS SHOWN ON PLANS ARE PROVIDED FOR REFERENCE ONLY. MODEL NUMBERS MAY NOT BE COMPLETE. IN CASE OF DISCREPANCY BETWEEN MODEL NUMBERS AND STATED SPECIFICATIONS, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL MODEL NUMBERS AND PROVIDING COMPLETE MODEL INFORMATION FOR ALL EQUIPMENT THROUGH THE SHOP DRAWING PROCESS.

4. ALL CONTROL PANELS, TEMPORARY AND PERMANENT SHALL BE CONSTRUCTED FOLLOWING NFPA 70, NEC ARTICLE 409 - INDUSTRIAL CONTROL PANELS.

5. ALL CIRCUIT BREAKERS (CB) (EXCEPT FOR BRANCH CB IN LIGHTING PANELS) , MOTOR CIRCUIT PROTECTORS, CONTACTORS, AND OVERLOADS SHALL BE PROVIDED WITH A MINIMUM OF 2 NORMALLY OPEN (N.O.) AND 2 NORMALLY CLOSED (N.C.) AUXILIARY CONTACTS UNLESS OTHERWISE NOTED.

6. ALL ELECTRICAL PARTS SHALL BE COMPLETELY PROTECTED FROM WEATHER, DIRT, AND ALL OTHER INJURIOUS CONDITIONS DURING MANUFACTURE AND SHIPMENT.

7. COVERS FOR ALL EQUIPMENT SHALL BE EASILY REMOVABLE AND REPLACEABLE WITHOUT DISASSEMBLY OF ANY COMPONENT EXCEPT THE ONE REQUIRING ACCESS. CLEARANCES BETWEEN EQUIPMENT SHALL BE INCREASED TO MEET THIS REQUIREMENT.

8. THE CONTRACTOR SHALL PROVIDE IN-SIGHT (LOCAL) DISCONNECT SWITCH, EITHER SINGLE POLE, DOUBLE POLE OR THREE POLE AS REQUIRED FOR EACH ELECTRICAL APPLIANCE SUCH AS ELECTRICAL WATER HEATER, AIR CONDITIONER, VENTILATION FAN ETC., WHETHER SHOWN OR NOT ON THE CONTRACT PLANS.

$USER
$TIME
$DATE
$REQUEST

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					NO SCALE

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

100% SUBMISSION

ELECTRICAL GENERAL NOTES I

EIGHT MILE ROAD BRIDGE OVER BISHOP CUT
(BRIDGE NO. 29C-114)

BC-E-01

CONDUITS, CABLE, AND WIRING NOTES

1. WHERE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IS NOT SHOWN ON THE DRAWINGS, PROVIDE AN ADDITIONAL EQUIPMENT GROUNDING CONDUCTOR, SIZED IN ACCORDANCE WITH THE NEC.

2. QUANTITY OF CONTROL SYSTEM CABLES/WIRES SHOWN ON THE DRAWINGS MAY NOT REFLECT THE ACTUAL NUMBER REQUIRED TO PROVIDE THE STATED SYSTEM OPERATION. THE CONTRACTOR SHALL INSTALL THE QUANTITY OF CABLES/WIRES AS ARE NECESSARY FOR THE INITIAL INSTALLATION, PLUS A MINIMUM OF 10% SPARE.

3. LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT (LFMC) SHALL BE USED ONLY FOR APPLICATIONS THAT REQUIRE A HIGH DEGREE OF FLEXIBILITY OR TO ACCOMMODATE MOVING OR VIBRATING PARTS. SUBSTITUTION OF OTHER CONDUIT TYPES WITH LFMC SHALL NOT BE MADE SOLELY BASED ON CONVENIENCE OF INSTALLATION. USE LFMC FOR FINAL CONNECTIONS TO MOTOR AND LIMIT SWITCHES. MAXIMUM LENGTH SIX (6) FEET. DO NOT ATTACH CONDUIT TO MOTOR FOUNDATION.

4. SUPPORT CONDUIT EVERY FIVE (5) FEET. MAXIMUM SPACING FOR CONDUIT SUPPORTS DUE TO FIELD CONDITIONS MAY BE EXTENDED UP TO SIX (6) FEET UPON ENGINEER'S APPROVAL. DEVIATION FROM THIS REQUIREMENT SHALL BE AT THE SOLE DISCRETION OF THE ENGINEER. DO NOT SUPPORT BOXES OR CABINETS FROM CONDUIT. INSTALL ALL CONDUIT PER THE NEC AND AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) STANDARDS. LIMIT TOTAL ANGULAR CONDUIT BENDS BETWEEN PULL BOXES TO 270° OR 360° WITH APPROVAL OF ENGINEER. RADIUS OF CONDUIT BEND SHALL BE PER THE NEC.

5. WHERE MULTIPLE CIRCUIT CONDUCTORS ARE INSTALLED WITHIN THE SAME CONDUIT, VERIFY THAT ALL CONDUCTORS ARE SIZED IN ACCORDANCE WITH NEC DERATING REQUIREMENTS. INSTALL UPSIZED CABLES/LARGER CONDUIT AT NO ADDITIONAL COST TO ACCOMMODATE THE INCREASED WIRING SIZE IF NECESSARY TO COMPLY WITH THIS PROVISION.

6. ALL CONDUIT PROVIDED SHALL BE SUNLIGHT AND ULTRAVIOLET (UV) RESISTANT, AND SHALL BE RATED FOR SUCH INSTALLATION, WHETHER INSTALLED IN EXTERIOR LOCATIONS OR NOT.

7. EXACT CONDUIT STUB-UP LOCATIONS ARE TO BE DETERMINED BY THE CONTRACTOR BASED ON CERTIFIED MANUFACTURER'S DRAWINGS OF THE RESPECTIVE EQUIPMENT. INSTALL CONDUIT COMPATIBLE WITH EQUIPMENT FURNISHED.

8. FURNISH AND INSTALL EXPANSION FITTINGS OF THE APPROVED TYPE WHEREVER CONDUITS PASS THROUGH OR ACROSS STRUCTURAL EXPANSION JOINTS. EXPANSION/DEFLECTION FITTINGS NOT SHOWN ON THE PLANS SHALL BE FURNISHED AND INSTALLED AS NECESSARY AT NO ADDITIONAL COST.

9. ALL CONDUITS SHALL BE INSTALLED USING THE MANUFACTURER'S RECOMMENDED INSTALLATION METHODS, TOOLS AND MATERIALS. ALL FIELD THREADS SHALL BE COATED USING CONDUIT MANUFACTURER'S RECOMMENDED COATING.

10. MINOR DAMAGE TO CONDUIT DURING INSTALLATION SHALL BE REPAIRED, WHILE ANY CONDUIT WITH SEVERE DAMAGE SHALL BE REPLACED. THE DETERMINATION OF LEVEL OF DAMAGE, MINOR OR SEVERE, SHALL BE MADE BY THE OWNER.

11. ALL CONDUCTORS SHALL HAVE 90°C RATED XHHW-2 INSULATION UNLESS NOTED OTHERWISE.

MANUFACTURER'S RECOMMENDATIONS

1. WHERE INSTALLATION PROCEDURES OR ANY PART THEREOF ARE REQUIRED TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL BEING INSTALLED, PRINTED COPIES OF THESE RECOMMENDATIONS SHALL BE FURNISHED TO THE ENGINEER PRIOR TO INSTALLATION. INSTALLATION OF THE ITEM WILL NOT BE ALLOWED TO PROCEED UNTIL THE RECOMMENDATIONS ARE RECEIVED. FAILURE TO FURNISH THESE RECOMMENDATIONS CAN BE CAUSE FOR REJECTION OF THE MATERIAL. THE FABRICATOR SHALL PROVIDE AS PART OF THE WORK ALL SPECIAL MACHINING AND INSTALLATION REQUIRED BY THE COMPONENT MANUFACTURER.

CODES AND STANDARDS

1. WORK UNDER NEW ITEMS SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE LATEST EDITION OF CODES AND STANDARDS ISSUED BY, BUT NOT LIMITED TO, THE FOLLOWING ORGANIZATIONS AND PUBLICATIONS WHOSE ABBREVIATIONS SHALL BE AS SHOWN:

   1.1. AMERICAN NATIONAL STANDARDS INSTITUTE - ANSI
   1.2. AMERICAN SOCIETY FOR TESTING AND MATERIALS - ASTM
   1.3. FEDERAL AVIATION ASSOCIATION - FAA
   1.4. INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS - IEEE
   1.5. INSULATED CABLE ENGINEERS ASSOCIATION - ICEA
   1.6. INSULATED POWER CABLE ENGINEERS ASSOCIATION - IPCEA
   1.7. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION - NEMA
   1.8. INTERNATIONAL ELECTRICAL TESTING ASSOCIATION - NETA
   1.9. NATIONAL FIRE PROTECTION ASSOCIATION - NFPA
      1.9.1. NFPA 70: NATIONAL ELECTRIC CODE - NEC
      1.9.2. NFPA 70E: STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE
      1.9.3. NFPA 101: LIFE SAFETY CODE
   1.10. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION - OSHA
   1.11. UNDERWRITER'S LABORATORY - UL
   1.12. ALL OTHER APPLICABLE LOCAL RULES AND ORDINANCES

2. THE WORK SHALL MEET THE REQUIREMENTS OF ALL OTHER CODES AND STANDARDS AS SPECIFIED IN THE CONTRACT DOCUMENTS. WHERE CODES AND STANDARDS ARE MENTIONED FOR ANY ITEM, IT IS INTENDED TO CALL PARTICULAR ATTENTION TO THEM, IT IS NOT INTENDED THAT ANY OTHER CODES AND STANDARDS BE OMITTED IF NOT MENTIONED.

MEASUREMENTS AND VERIFICATION

1. DIMENSIONS INDICATED ON THE PLANS ARE NOMINAL AND ARE INTENDED FOR GUIDANCE ONLY. ALL VARIATIONS FROM THE NOMINAL DIMENSIONS ON THE PLANS SHALL BE NOTED ON THE SHOP DRAWINGS.

DEFECTIVE MATERIALS AND WORKMANSHIP

1. ALL NEW PARTS AND COMPONENTS REJECTED DURING INSPECTION AND TESTING THAT ARE NOT MADE ACCEPTABLE SHALL BE REPLACED WITHOUT ADDITIONAL COST.

2. DELAYS RESULTING FROM THE REJECTION OF MATERIAL, EQUIPMENT OR WORK SHALL NOT BE THE BASIS OF ANY CLAIM.

3. ALL DEFECTS FOUND DURING THE GUARANTEE PERIOD RESULTING FROM FAULTY MATERIAL, COMPONENTS OR WORKMANSHIP SHALL BE CORRECTED BY THE FABRICATOR WITHOUT COST. IN THE EVENT THAT THE FABRICATOR DOES NOT MAKE THE CORRECTIONS IN A TIMELY MANNER, THE COUNTY OF SAN JOAQUIN RERSERVES THE RIGHT TO MAKE NECESSARY CORRECTIONS WITH ITS OWN FORCES AND CHARGE THE RESULTING COSTS TO THE FABRICATOR.

ELECTRICAL SCOPE OF WORK AND CONSTRUCTION SEQUENCE

1. REMOVAL OF EXISTING HYDRAULIC PUMP MOTOR MOTOR CIRCUIT PROTECTOR AS SHOWN ON PLANS.
2. REMOVAL OF EXISTING HYDRAULIC PUMP MOTOR OVERLOAD AS SHOWN ON PLANS.
3. REMOVAL OF EXISTING TRAFFIC GATE SWITCHES AND SWITCH NAMEPLATES AS SHOWN ON PLANS.
4. REMOVAL OF EXISTING RELATED GATE CONTROL LOGIC AS SHOWN ON PLANS.
5. REMOVAL OF EXISTING END JACKS SWITCHES AS SHOWN ON PLANS.
6. REMOVAL OF EXISTING RELATED END JACKS CONTROL LOGIC AS SHOWN ON PLANS.
7. REMOVAL OF EXISTING END LOCKS SWITCHES AS SHOWN ON PLANS.
8. REMOVAL OF EXISTING END LOCKS CONTROL LOGIC AS SHOWN ON PLANS.
9. REMOVAL OF EXISTING SWING SPAN OPERATION SWITCHES AS SHOWN ON PLANS.
10. REMOVAL OF EXISTING SWING SPAN OPERATION CONTROL LOGIC AS SHOWN ON PLANS.
11. FURNISH AND INSTALL NEW MOLDED CASE CIRCUIT BREAKER AS SHOWN ON PLANS.
12. FURNISH AND INSTALL NEW TRAFFIC GATES MOMENTARY SPRING RETURN TO CENTER SELECTOR SWITCHES AND NEW SWITCH NAMEPLATES AS SHOWN ON PLANS.
13. FURNISH AND INSTALL NEW RELATED TRAFFIC GATE CONTROL LOGIC AS SHOWN ON PLANS.
14. FURNISH AND INSTALL NEW END JACKS KEYED SELECTOR SWITCHES AS SHOWN ON PLANS.
15. FURNISH AND INSTALL NEW RELATED END JACKS CONTROL LOGIC AS SHOWN ON PLANS.
16. FURNISH AND INSTALL NEW END LOCKS KEYED SELECTOR SWITCHES AS SHOWN ON PLANS.
17. FURNISH AND INSTALL NEW END LOCKS CONTROL LOGIC AS SHOWN ON PLANS.
18. FURNISH AND INSTALL NEW SWING SPAN OPERATION SWITCHES AS SHOWN ON PLANS.
19. FURNISH AND INSTALL NEW SWING SPAN OPERATION CONTROL LOGIC AS SHOWN ON PLANS.
20. FURNISH AND INSTALL NEW LOCAL CONTROL PANEL AT PIVOT PIER AS SHOWN ON PLANS.
21. FURNISH AND INSTALL NEW AUDIBLE ALARM AT PIVOT PIER AS SHOWN ON PLANS.
22. FURNISH AND INSTALL WIRING AS CALLED OUT ON PLANS.

$USER $TIME $DATE $REQUEST

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					NO SCALE

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS–5929(229)

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

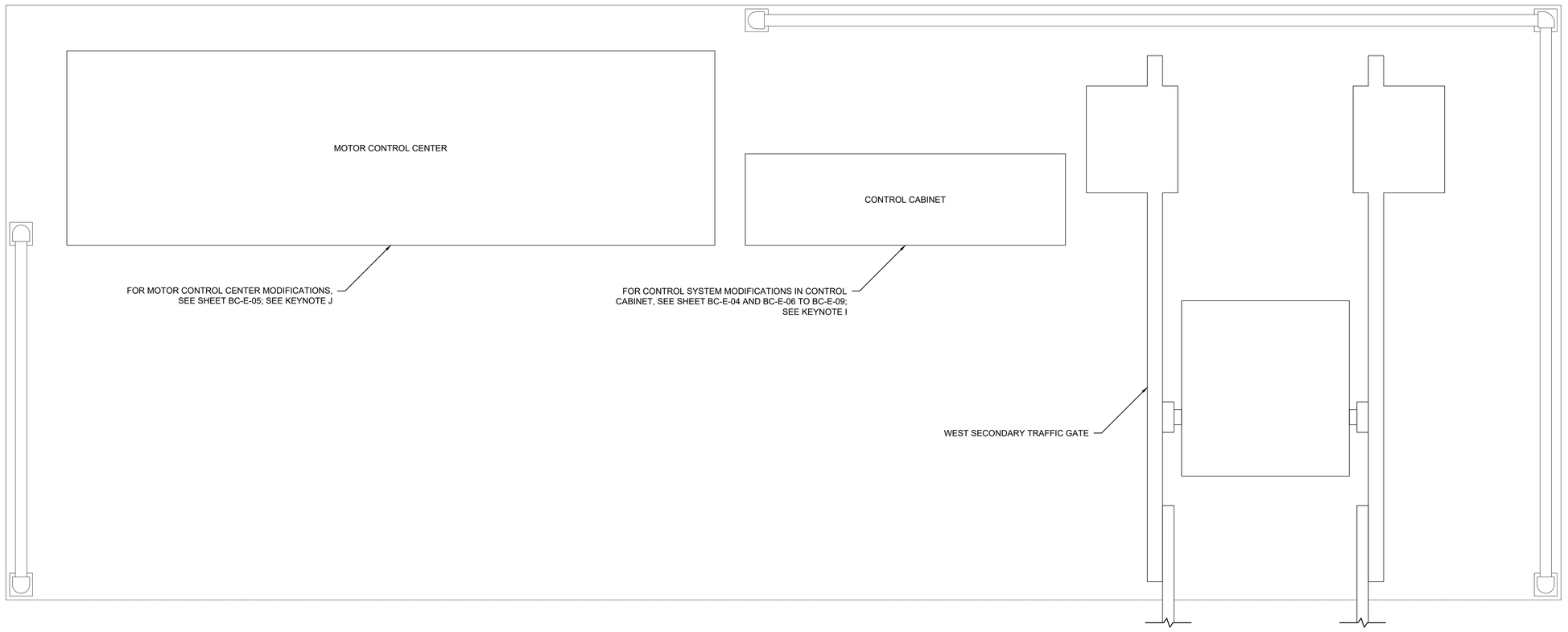
REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

100% SUBMISSION

ELECTRICAL GENERAL NOTES II
EIGHT MILE ROAD BRIDGE OVER BISHOP CUT
(BRIDGE NO. 29C–114)

BC–E–02

32
OF
75



BRIDGE CONTROL PLATFORM – PLAN VIEW

SCALE: 1-1/2" = 1'0"

SCOPE OF WORK:

(I) REPLACE EXISTING GATE CONTROL SWITCHES AND EXISTING RELATED LOGIC WITH NEW MOMENTARY SPRING RETURN TO CENTER SELECTOR SWITCHES AND NEW RELATED LOGIC. REPLACE EXISTING END JACKS CONTROL SWITCHES AND EXISTING RELATED LOGIC WITH NEW KEYED SELECTOR SWITCHES AND NEW RELATED LOGIC. REPLACE EXISTING END LOCKS CONTROL SWITCHES AND EXISTING RELATED LOGIC WITH NEW KEYED SELECTOR SWITCHES AND NEW RELATED LOGIC. REPLACE EXISTING SWING SPAN OPERATION SWITCHES AND EXISTING RELATED LOGIC WITH NEW SWITCHES AND NEW RELATED LOGIC.

(J) REPLACE EXISTING HYDRAULIC PUMP MOTOR CIRCUIT PROTECTOR WITH NEW MOLDED CASE CIRCUIT BREAKER, AND REMOVE EXISTING HYDRAULIC PUMP MOTOR OVERLOAD.

$REQUEST $USER $TIME $DATE

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS–5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

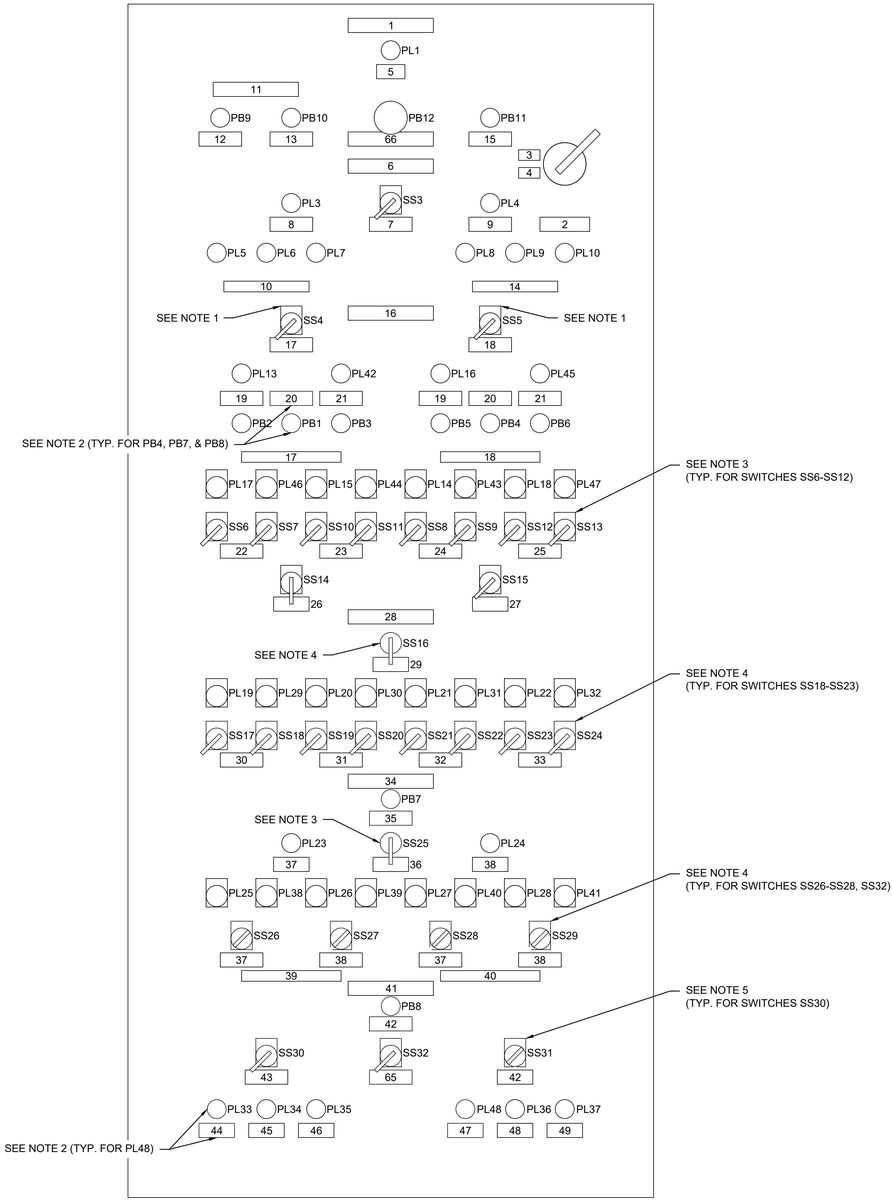
REGISTERED PROFESSIONAL ENGINEER TEODOR KOSTADINOV 21282 ELECTRICAL STATE OF CALIFORNIA 11/18/22

100% SUBMISSION

BRIDGE CONTROL PLATFORM PLAN
EIGHT MILE ROAD BRIDGE OVER BISHOP CUT
(BRIDGE NO. 29C–114)

BC–E–03

33
OF
75

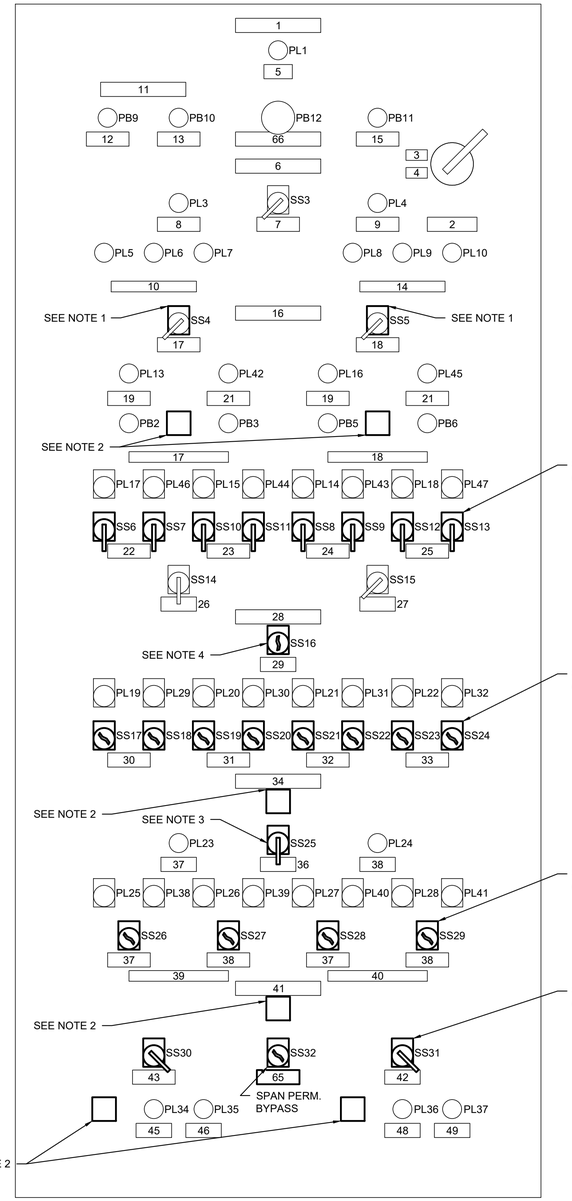


CONTROL PANEL – EXISTING

(NOT TO SCALE)

EXISTING NAMEPLATE SCHEDULE

ITEM	INSCRIPTION
1.	CONTROL PANEL
2.	CONTROL DISCONNECT
3.	OFF
4.	ON
5.	POWER ON
6.	TRAFFIC SIGNAL
7.	SIGNAL SELECTOR
8.	ADVANCE WARNING - EAST
9.	ADVANCE WARNING - WEST
10.	EAST SIGNAL
11.	SWING SPAN JOG
12.	OPEN
13.	CLOSE
14.	WEST SIGNAL
15.	AIR HORN
16.	TRAFFIC GATES
17.	EAST ON-GOING
18.	WEST ON-GOING
19.	LOWER
20.	STOP
21.	RAISE
22.	EAST OFF-GOING
23.	EAST SECONDARY
24.	WEST OFF-GOING
25.	WEST SECONDARY
26.	BELLS
27.	FLASHING LIGHTS
28.	END JACKS
29.	JACKS
30.	EAST JACK NO. 1
31.	EAST JACK NO. 2
32.	WEST JACK NO. 1
33.	WEST JACK NO. 2
34.	END LOCKS
35.	SEQUENCE STEPPER
36.	LOCKS
37.	RETRACKS
38.	EXTENDS
39.	EAST END LOCK NO. 1 AND 2
40.	WEST END LOCK NO. 1 AND 2
41.	SWING SPAN
42.	CLOSE
43.	OPEN
44.	READY TO OPEN
45.	NEARLY OPEN
46.	FULLY OPEN
47.	READY TO CLOSE
48.	NEARLY CLOSE
49.	FULLY CLOSE
50.	SERVICE DISCONNECT
51.	EAST END LOCK
52.	WEST END LOCK
53.	EAST END JACK NO. 1
54.	EAST END JACK NO. 2
55.	WEST END JACK NO. 1
56.	WEST END JACK NO. 2
57.	HYDRAULIC PUMP (NOT SHOWN)
58.	AIR HORN
59.	CONTROL DISCONNECT
60.	EAST TRAFFIC GATES
61.	WEST TRAFFIC GATES
62.	AIR HORN CONTACTOR (NOT SHOWN)
63.	AREA AND NAVIGATION LIGHTING CONTACTOR (NOT SHOWN)
64.	EMERGENCY POWER SUPPLY DISCONNECT (NOT SHOWN)
65.	SPAN ALIGNMENT CHECK
66.	SWING SPAN EMERGENCY STOP



CONTROL PANEL – PROPOSED

(NOT TO SCALE)

NOTE:

1. EXISTING SWITCH NAMEPLATES TO BE REPLACED IN-KIND WITH NEW WORDING. SEE SHEETS BC-E-06 TO BC-E-09 FOR DETAILS.
2. EXISTING PILOT LIGHTS, PUSHBUTTONS AND NAMEPLATES TO BE REMOVED AND REPLACED WITH A NEW STAINLESS STEEL MOUNTING PLATE POP RIVETED IN-PLACE WITH 1/8" SS RIVETS. SEE SHEETS BC-E-06 TO BC-E-09 FOR DETAILS.
3. EXISTING SWITCHES TO BE REPLACED WITH THREE-POSITION, SPRING RETURN-TO-CENTER SWITCHES. EXISTING SWITCHES NAMEPLATES TO BE REPLACED IN-KIND WITH NEW WORDING. SEE SHEETS BC-E-06 TO BC-E-09 FOR DETAILS.
4. EXISTING SWITCHES TO BE REPLACED WITH KEYED SELECTOR SWITCHES. EXISTING SWITCHES NAMEPLATES TO BE REPLACED IN-KIND WITH NEW WORDING. SEE SHEETS BC-E-06 TO BC-E-09 FOR DETAILS.
5. EXISTING SWITCHES TO BE REPLACED WITH SINGLE POLE, SPRING RETURN SWITCHES. EXISTING SWITCHES NAMEPLATES TO BE REPLACED IN-KIND WITH NEW WORDING. SEE SHEETS BC-E-06 TO BC-E-09 FOR DETAILS.

SCOPE OF WORK:

1. REPLACE EXISTING GATE CONTROL SWITCHES AND EXISTING RELATED LOGIC WITH NEW MOMENTARY SPRING RETURN TO CENTER SELECTOR SWITCHES AND NEW RELATED LOGIC. REPLACE EXISTING END JACKS CONTROL SWITCHES AND EXISTING RELATED LOGIC WITH NEW KEYED SELECTOR SWITCHES AND NEW RELATED LOGIC. REPLACE EXISTING END LOCKS CONTROL SWITCHES AND EXISTING RELATED LOGIC WITH NEW KEYED SELECTOR SWITCHES AND NEW RELATED LOGIC. REPLACE EXISTING SWING SPAN OPERATION SWITCHES AND EXISTING RELATED LOGIC WITH NEW SWITCHES AND NEW RELATED LOGIC.

$USER $TIME $DATE $REQUEST

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

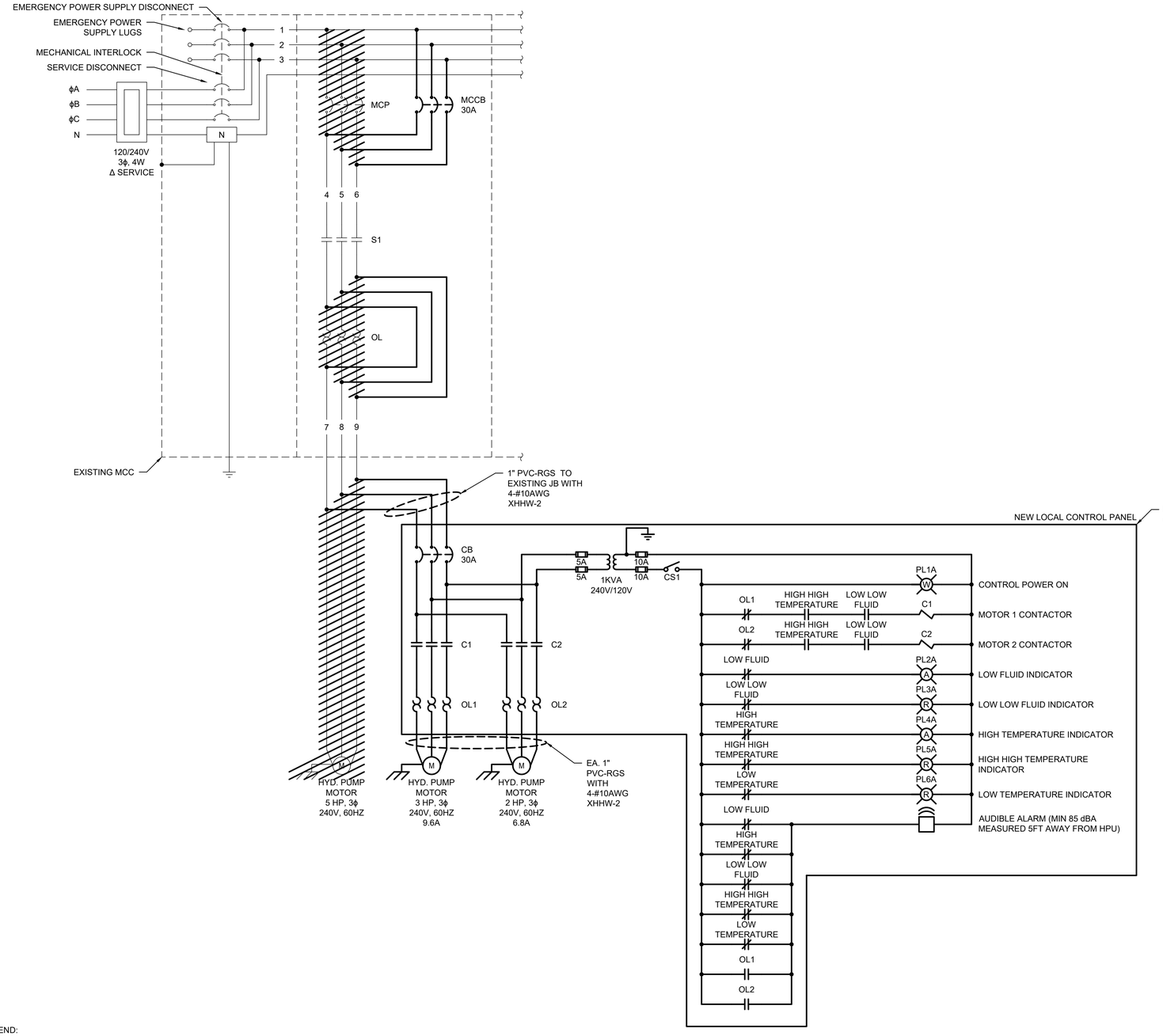
Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

CONTROL PANEL – MODIFICATIONS
EIGHT MILE ROAD BRIDGE OVER BISHOP CUT
(BRIDGE NO. 29C-114)

BC-E-04

34
OF
75



SCOPE OF WORK

(J) REPLACE EXISTING HYDRAULIC PUMP MOTOR CIRCUIT PROTECTOR WITH NEW MOLDED CASE CIRCUIT BREAKER, AND REMOVE EXISTING HYDRAULIC PUMP MOTOR OVERLOAD

(K) INSTALL NEW LOCAL CONTROL PANEL AND NEW AUDIBLE ALARM.

NOTES:

1. VALUES/RATINGS FOR THE EXISTING EQUIPMENT HAVE NOT BEEN VERIFIED. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
2. INFORMATION, SCHEMATICS, AND LAYOUTS SHOWN ON THIS DRAWING WAS OBTAINED, IN WHOLE OR IN PART, FROM EXISTING "PROJECT PLANS FOR EIGHT MILE ROAD BRIDGE NO. 1043 (29C-114) ACROSS BISHOP CANAL." THE INFORMATION SHOWN IS APPROXIMATE. EQUIPMENT, CONDUIT, CONTROL SYSTEM MODIFICATIONS, AND WIRING REPLACEMENT WORK SHOWN IS INTENDED TO BE USED TO SHOW LEVEL OF EFFORT FOR ELECTRICAL WORK, AND FOR CONTRACTOR'S USE IN DETERMINING MEANS AND METHODS TO PERFORM THE WORK.
3. ALL NEW WIRING WILL BE #10AWG. PROVIDE ALL NECESSARY CONDUIT FROM NEW CONTROL PANEL TO DEVICES AS REQUIRED. CONDUIT SHALL BE 1" PVC-RGS MIN. PROVIDE LFMC AS OUTLINED BY SPECIFICATIONS.

LEGEND:

1. EXISTING REVISION
2. EXISTING TO REMAIN
3. EXISTING TO BE REMOVED / NEW REVISION
4. NEW

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					NO SCALE

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
FEODOR KOSTADINOV
21282
ELECTRICAL
STATE OF CALIFORNIA

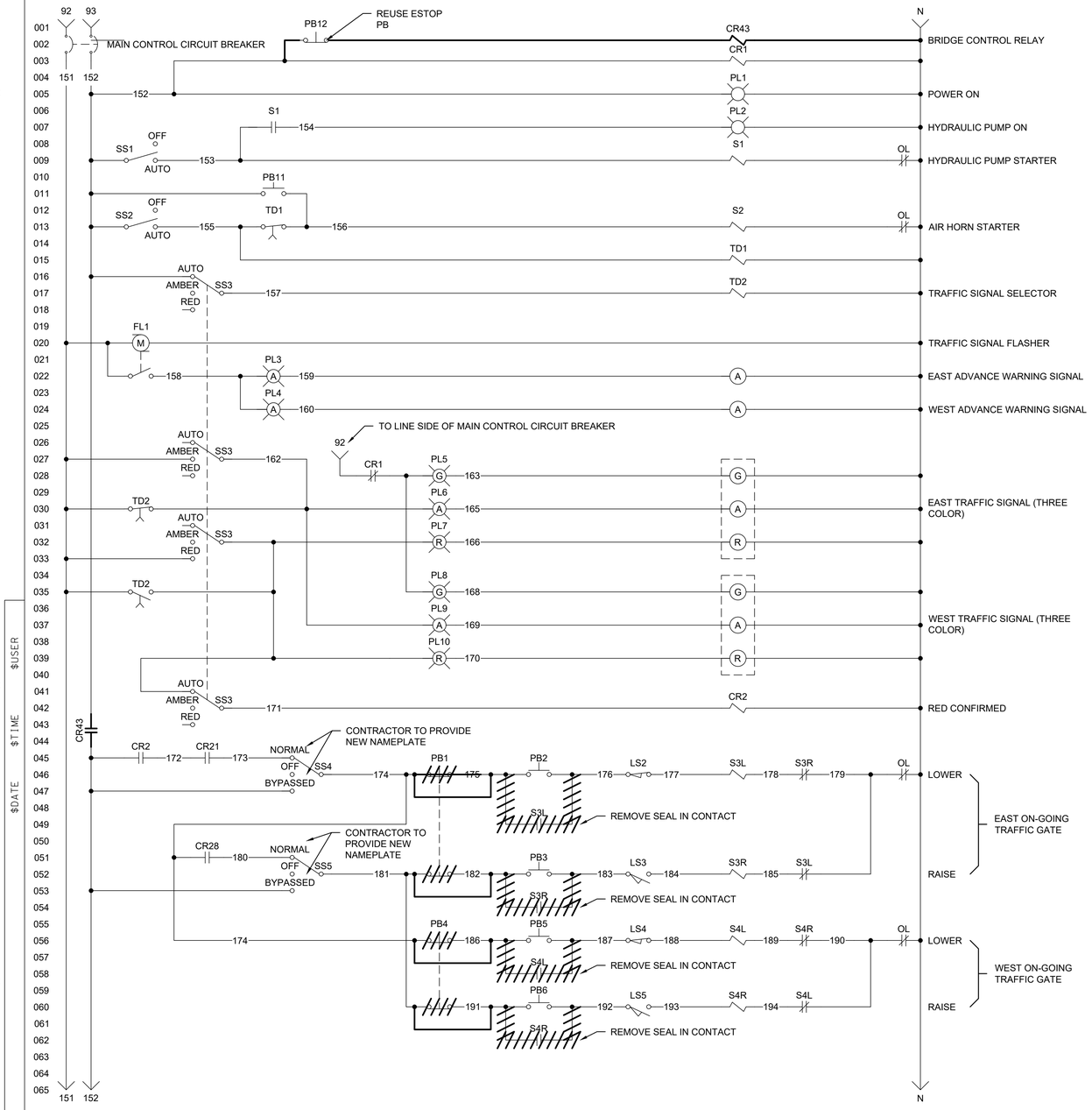
ELECTRICAL SCHEMATICS I MODIFICATIONS

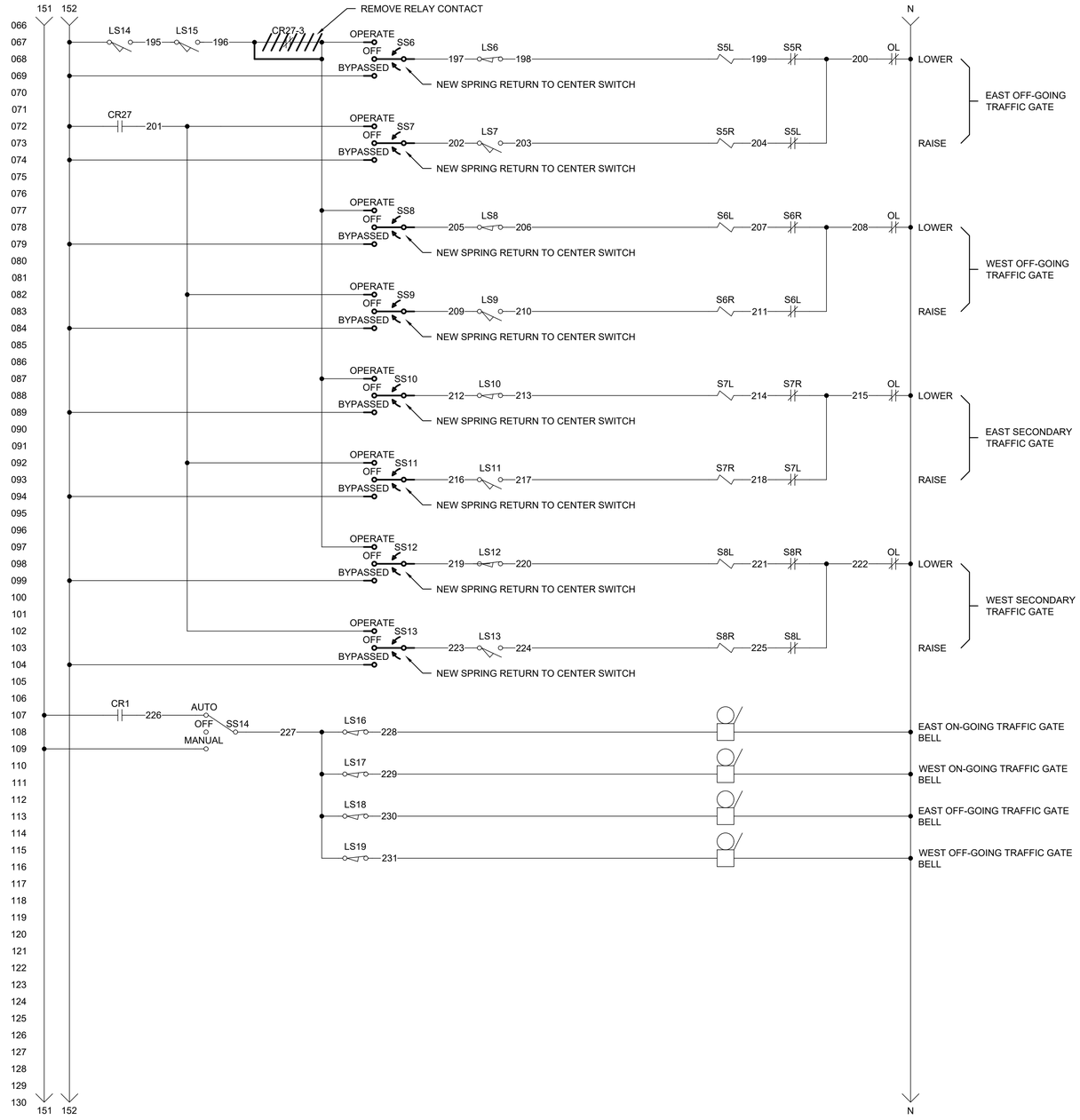
EIGHT MILE ROAD BRIDGE OVER BISHOP CUT (BRIDGE NO. 29C-114)

BC-E-05

35 OF 75

$REQUEST $USER $TIME $DATE





LEGEND:

1. EXISTING REVISION
2. EXISTING TO REMAIN
3. EXISTING TO BE REMOVED / NEW REVISION
4. NEW

SCOPE OF WORK

1. REPLACE EXISTING GATE CONTROL SWITCHES AND EXISTING RELATED LOGIC WITH NEW MOMENTARY SPRING RETURN TO CENTER SELECTOR SWITCHES AND NEW RELATED LOGIC. REPLACE EXISTING END JACKS CONTROL SWITCHES AND EXISTING RELATED LOGIC WITH NEW KEYED SELECTOR SWITCHES AND NEW RELATED LOGIC. REPLACE EXISTING END LOCKS CONTROL SWITCHES AND EXISTING RELATED LOGIC WITH NEW KEYED SELECTOR SWITCHES AND NEW RELATED LOGIC. REPLACE EXISTING SWING SPAN OPERATION SWITCHES AND EXISTING RELATED LOGIC WITH NEW SWITCHES AND NEW RELATED LOGIC.

NOTES:

1. VALUES/RATINGS FOR THE EXISTING EQUIPMENT HAVE NOT BEEN VERIFIED. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
2. INFORMATION, SCHEMATICS, AND LAYOUTS SHOWN ON THIS DRAWING WAS OBTAINED, IN WHOLE OR IN PART, FROM EXISTING "PROJECT PLANS FOR EIGHT MILE ROAD BRIDGE NO. 1043 (29C-114) ACROSS BISHOP CANAL." THE INFORMATION SHOWN IS APPROXIMATE. EQUIPMENT, CONDUIT, CONTROL SYSTEM MODIFICATIONS, AND WIRING REPLACEMENT WORK SHOWN IS INTENDED TO BE USED TO SHOW LEVEL OF EFFORT FOR ELECTRICAL WORK, AND FOR CONTRACTOR'S USE IN DETERMINING MEANS AND METHODS TO PERFORM THE WORK.
3. EXISTING WIRING TO BE REUSED WHERE POSSIBLE INSIDE THE CONTROL CABINET. ALL NEW WIRING WILL BE #10AWG.

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					NO SCALE

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER TEODOR KOSTADINOV 21282 ELECTRICAL STATE OF CALIFORNIA 11/18/22

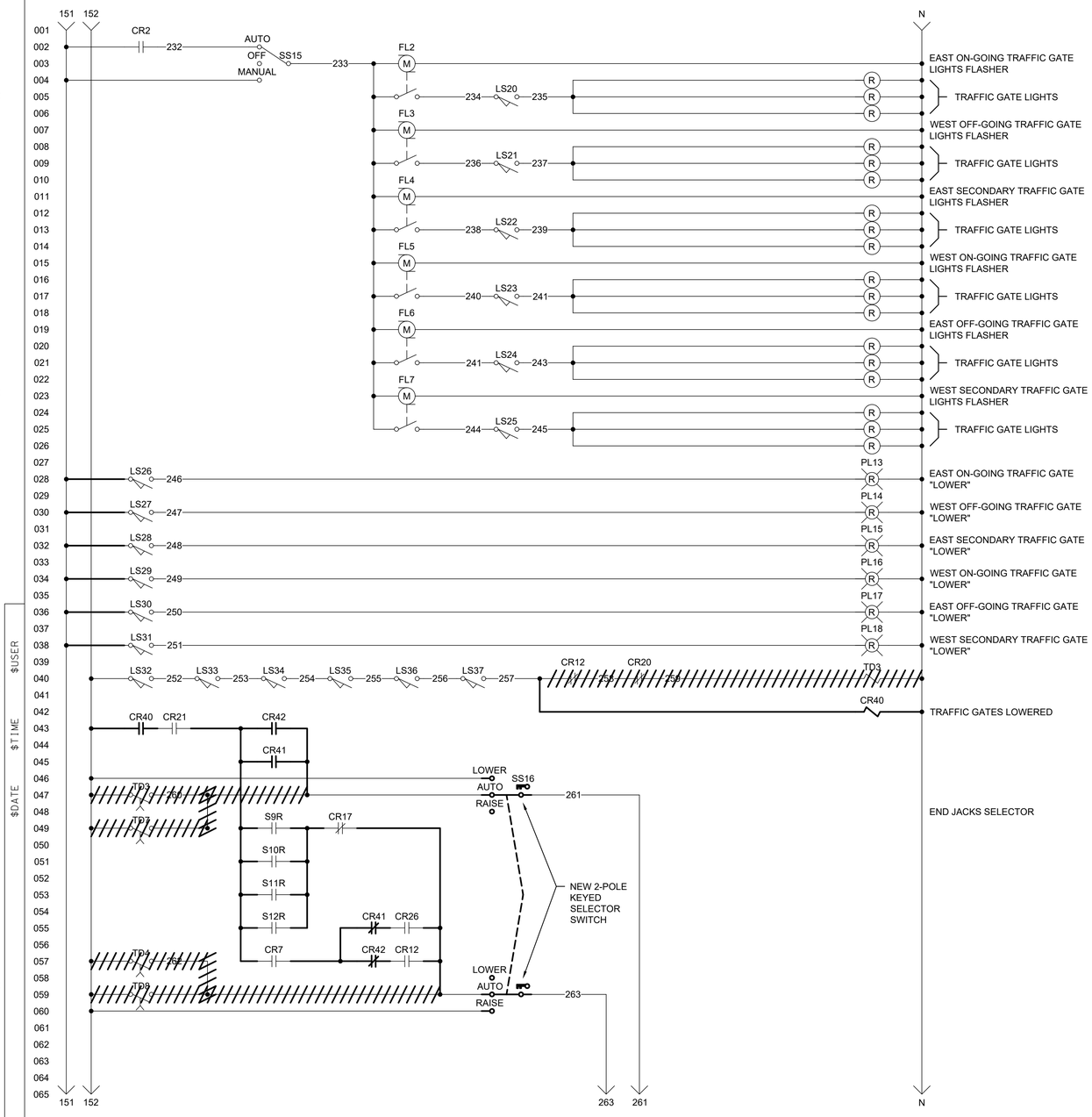
ELECTRICAL SCHEMATICS II MODIFICATIONS

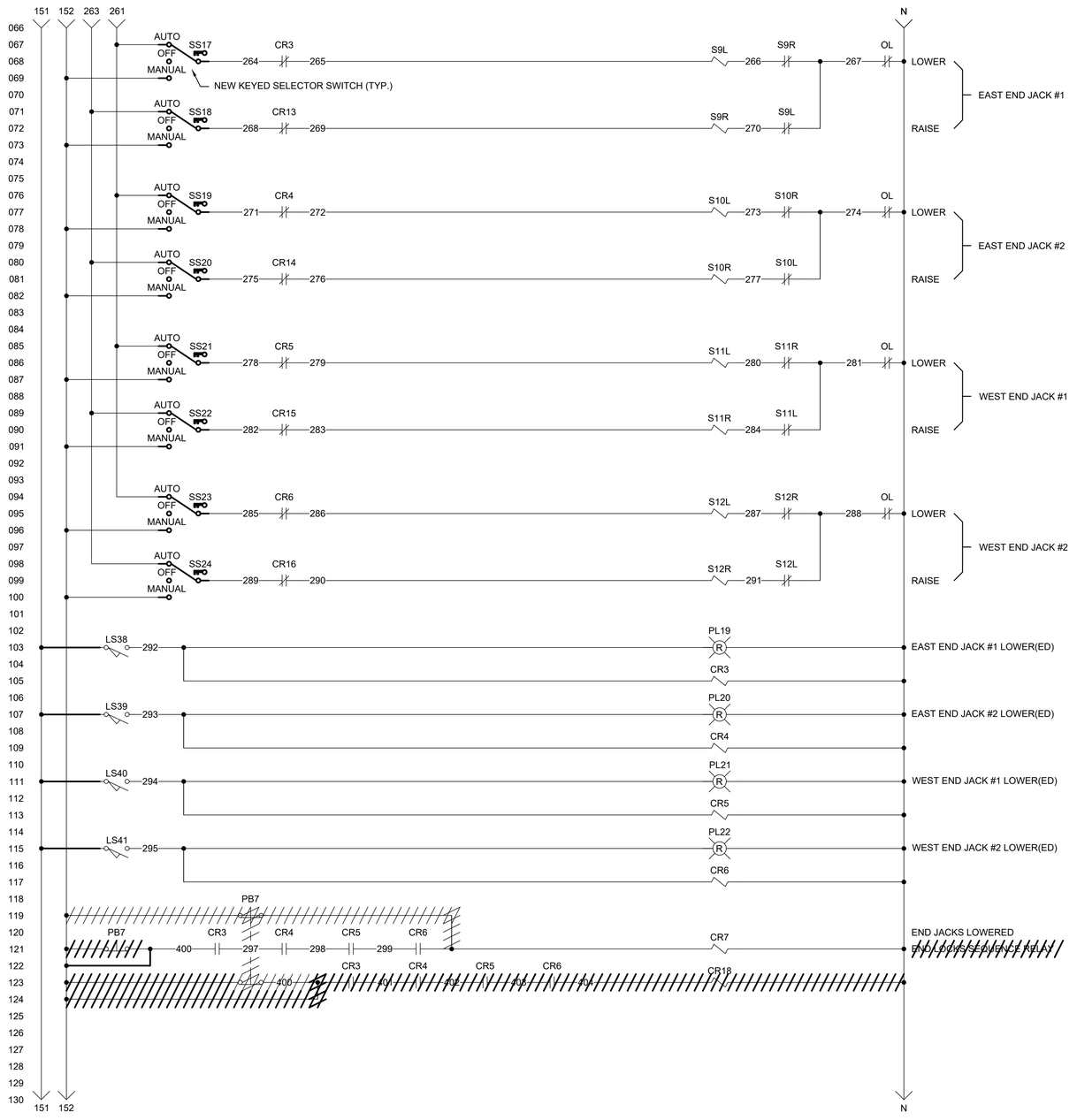
EIGHT MILE ROAD BRIDGE OVER BISHOP CUT (BRIDGE NO. 29C-114)

BC-E-06

36 OF 75

$USER $TIME $DATE $REQUEST





LEGEND:

1. EXISTING REVISION
2. EXISTING TO REMAIN
3. EXISTING TO BE REMOVED / NEW REVISION
4. NEW

SCOPE OF WORK

1. REPLACE EXISTING GATE CONTROL SWITCHES AND EXISTING RELATED LOGIC WITH NEW MOMENTARY SPRING RETURN TO CENTER SELECTOR SWITCHES AND NEW RELATED LOGIC. REPLACE EXISTING END JACKS CONTROL SWITCHES AND EXISTING RELATED LOGIC WITH NEW KEYED SELECTOR SWITCHES AND NEW RELATED LOGIC. REPLACE EXISTING END LOCKS CONTROL SWITCHES AND EXISTING RELATED LOGIC WITH NEW KEYED SELECTOR SWITCHES AND NEW RELATED LOGIC. REPLACE EXISTING SWING SPAN OPERATION SWITCHES AND EXISTING RELATED LOGIC WITH NEW SWITCHES AND NEW RELATED LOGIC.

NOTES:

1. VALUES/RATINGS FOR THE EXISTING EQUIPMENT HAVE NOT BEEN VERIFIED. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
2. INFORMATION, SCHEMATICS, AND LAYOUTS SHOWN ON THIS DRAWING WAS OBTAINED, IN WHOLE OR IN PART, FROM EXISTING "PROJECT PLANS FOR EIGHT MILE ROAD BRIDGE NO. 1043 (29C-114) ACROSS BISHOP CANAL." THE INFORMATION SHOWN IS APPROXIMATE. EQUIPMENT, CONDUIT, CONTROL SYSTEM MODIFICATIONS, AND WIRING REPLACEMENT WORK SHOWN IS INTENDED TO BE USED TO SHOW LEVEL OF EFFORT FOR ELECTRICAL WORK, AND FOR CONTRACTOR'S USE IN DETERMINING MEANS AND METHODS TO PERFORM THE WORK.
3. EXISTING WIRING TO BE REUSED WHERE POSSIBLE INSIDE THE CONTROL CABINET. ALL NEW WIRING WILL BE #10AWG.

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					NO SCALE

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
FEODOR KOSTADINOV
21282
ELECTRICAL
STATE OF CALIFORNIA

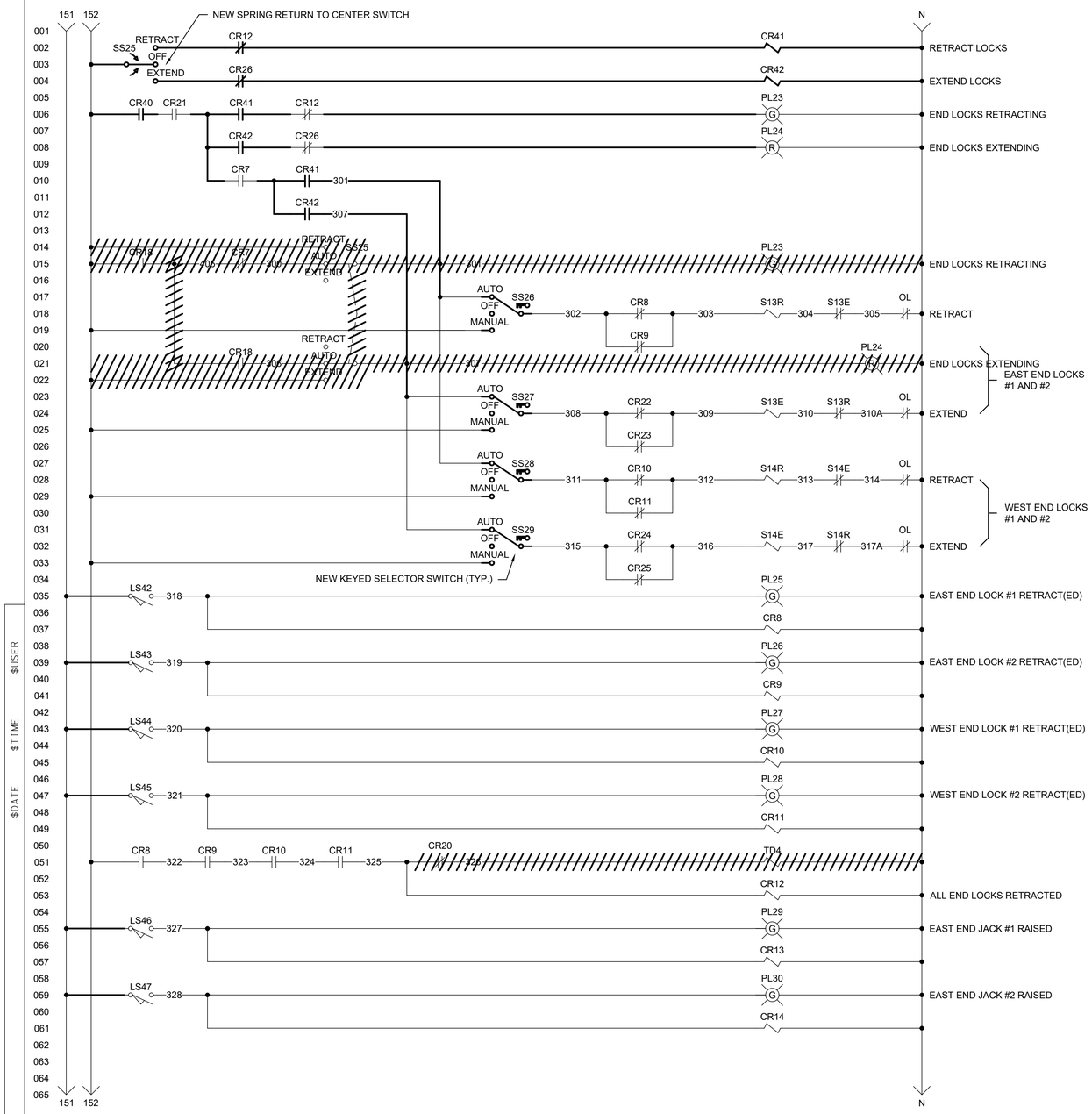
ELECTRICAL SCHEMATICS III MODIFICATIONS

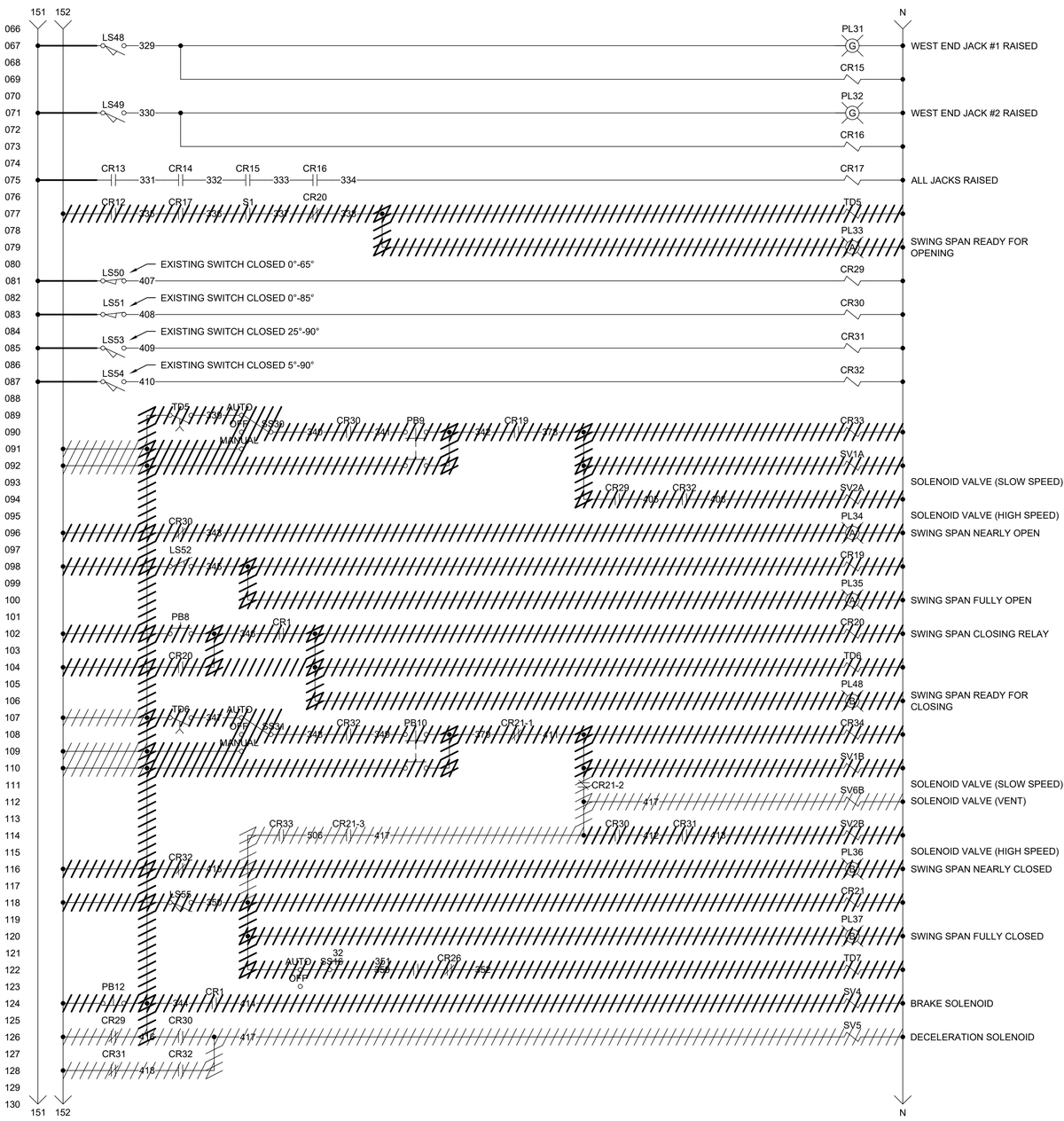
EIGHT MILE ROAD BRIDGE OVER BISHOP CUT
(BRIDGE NO. 29C-114)

BC-E-07

37 OF 75

$USER $TIME $DATE $REQUEST





LEGEND:

1. EXISTING REVISION
2. EXISTING TO REMAIN
3. EXISTING TO BE REMOVED / NEW REVISION
4. NEW

SCOPE OF WORK

1. REPLACE EXISTING GATE CONTROL SWITCHES AND EXISTING RELATED LOGIC WITH NEW MOMENTARY SPRING RETURN TO CENTER SELECTOR SWITCHES AND NEW RELATED LOGIC. REPLACE EXISTING END JACKS CONTROL SWITCHES AND EXISTING RELATED LOGIC WITH NEW KEYED SELECTOR SWITCHES AND NEW RELATED LOGIC. REPLACE EXISTING END LOCKS CONTROL SWITCHES AND EXISTING RELATED LOGIC WITH NEW KEYED SELECTOR SWITCHES AND NEW RELATED LOGIC. REPLACE EXISTING SWING SPAN OPERATION SWITCHES AND EXISTING RELATED LOGIC WITH NEW SWITCHES AND NEW RELATED LOGIC.

NOTES:

1. VALUES/RATINGS FOR THE EXISTING EQUIPMENT HAVE NOT BEEN VERIFIED. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
2. INFORMATION, SCHEMATICS, AND LAYOUTS SHOWN ON THIS DRAWING WAS OBTAINED, IN WHOLE OR IN PART, FROM EXISTING "PROJECT PLANS FOR EIGHT MILE ROAD BRIDGE NO. 1043 (29C-114) ACROSS BISHOP CANAL." THE INFORMATION SHOWN IS APPROXIMATE. EQUIPMENT, CONDUIT, CONTROL SYSTEM MODIFICATIONS, AND WIRING REPLACEMENT WORK SHOWN IS INTENDED TO BE USED TO SHOW LEVEL OF EFFORT FOR ELECTRICAL WORK, AND FOR CONTRACTOR'S USE IN DETERMINING MEANS AND METHODS TO PERFORM THE WORK.
3. EXISTING WIRING TO BE REUSED WHERE POSSIBLE INSIDE THE CONTROL CABINET. ALL NEW WIRING WILL BE #10AWG.

100% SUBMISSION

BC-E-08

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					NO SCALE

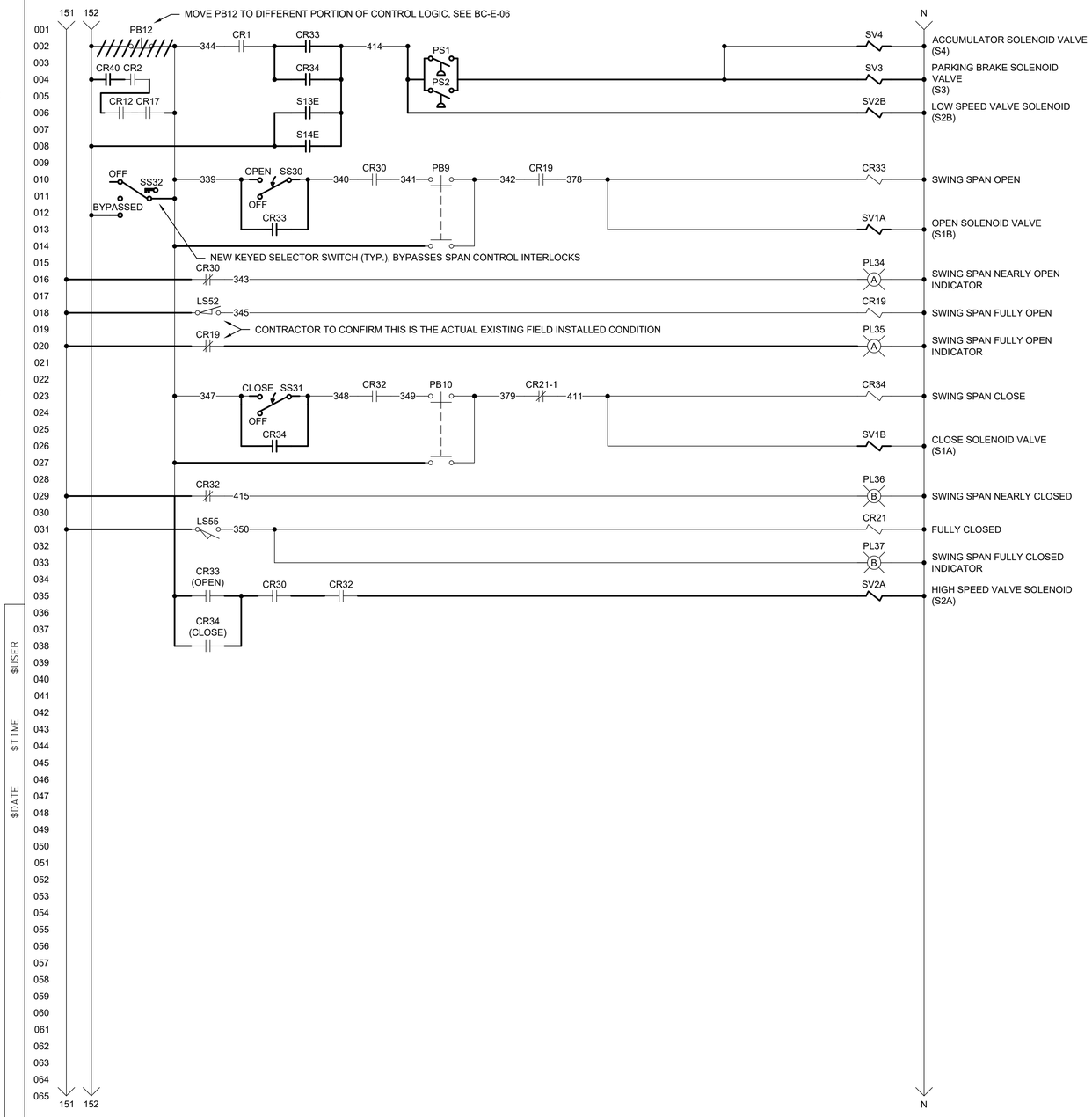
Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

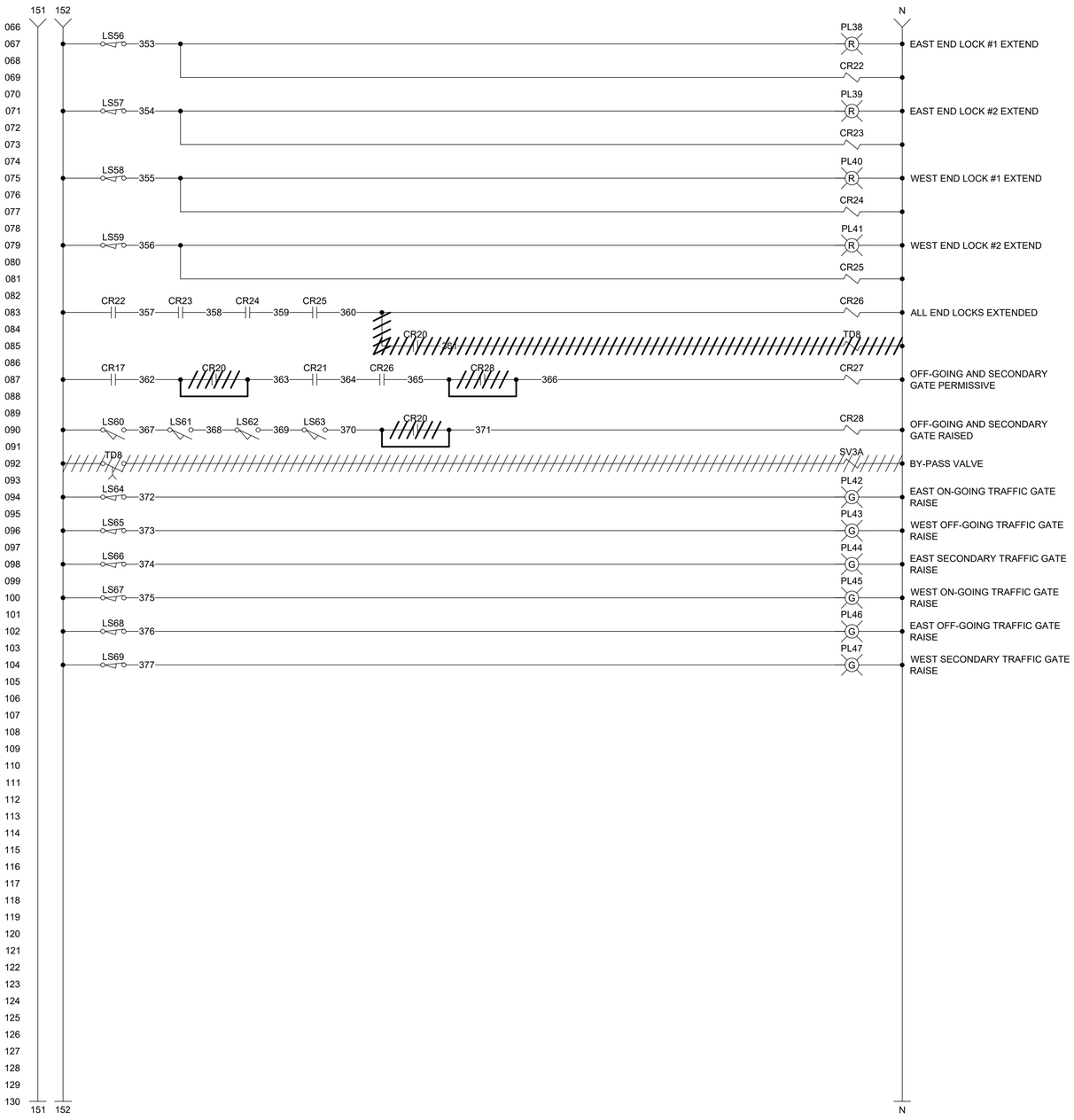
REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
ELECTRICAL
STATE OF CALIFORNIA
11/18/22

ELECTRICAL SCHEMATICS IV MODIFICATIONS

EIGHT MILE ROAD BRIDGE OVER BISHOP CUT
(BRIDGE NO. 29C-114)

38 OF 75





LEGEND:

1. EXISTING REVISION
2. EXISTING TO REMAIN
3. EXISTING TO BE REMOVED / NEW REVISION
4. NEW

SCOPE OF WORK

(1) REPLACE EXISTING GATE CONTROL SWITCHES AND EXISTING RELATED LOGIC WITH NEW MOMENTARY SPRING RETURN TO CENTER SELECTOR SWITCHES AND NEW RELATED LOGIC. REPLACE EXISTING END JACKS CONTROL SWITCHES AND EXISTING RELATED LOGIC WITH NEW KEYED SELECTOR SWITCHES AND NEW RELATED LOGIC. REPLACE EXISTING END LOCKS CONTROL SWITCHES AND EXISTING RELATED LOGIC WITH NEW KEYED SELECTOR SWITCHES AND NEW RELATED LOGIC. REPLACE EXISTING SWING SPAN OPERATION SWITCHES AND EXISTING RELATED LOGIC WITH NEW SWITCHES AND NEW RELATED LOGIC.

NOTES:

1. VALUES/RATINGS FOR THE EXISTING EQUIPMENT HAVE NOT BEEN VERIFIED. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
2. INFORMATION, SCHEMATICS, AND LAYOUTS SHOWN ON THIS DRAWING WAS OBTAINED, IN WHOLE OR IN PART, FROM EXISTING "PROJECT PLANS FOR EIGHT MILE ROAD BRIDGE NO. 1043 (29C-114) ACROSS BISHOP CANAL." THE INFORMATION SHOWN IS APPROXIMATE. EQUIPMENT, CONDUIT, CONTROL SYSTEM MODIFICATIONS, AND WIRING REPLACEMENT WORK SHOWN IS INTENDED TO BE USED TO SHOW LEVEL OF EFFORT FOR ELECTRICAL WORK, AND FOR CONTRACTOR'S USE IN DETERMINING MEANS AND METHODS TO PERFORM THE WORK.
3. EXISTING WIRING TO BE REUSED WHERE POSSIBLE INSIDE THE CONTROL CABINET. ALL NEW WIRING WILL BE #10AWG.

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					NO SCALE

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER TEODOR KOSTADINOV 21282 ELECTRICAL STATE OF CALIFORNIA 11/18/22

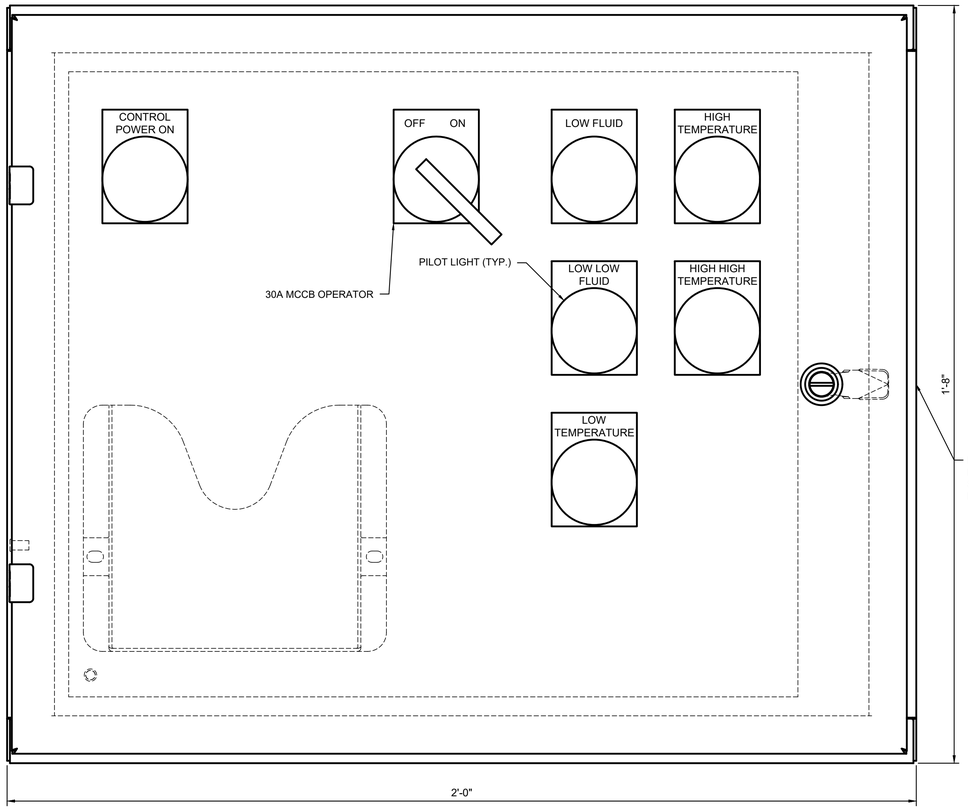
ELECTRICAL SCHEMATICS V MODIFICATIONS

EIGHT MILE ROAD BRIDGE OVER BISHOP CUT
(BRIDGE NO. 29C-114)

BC-E-09

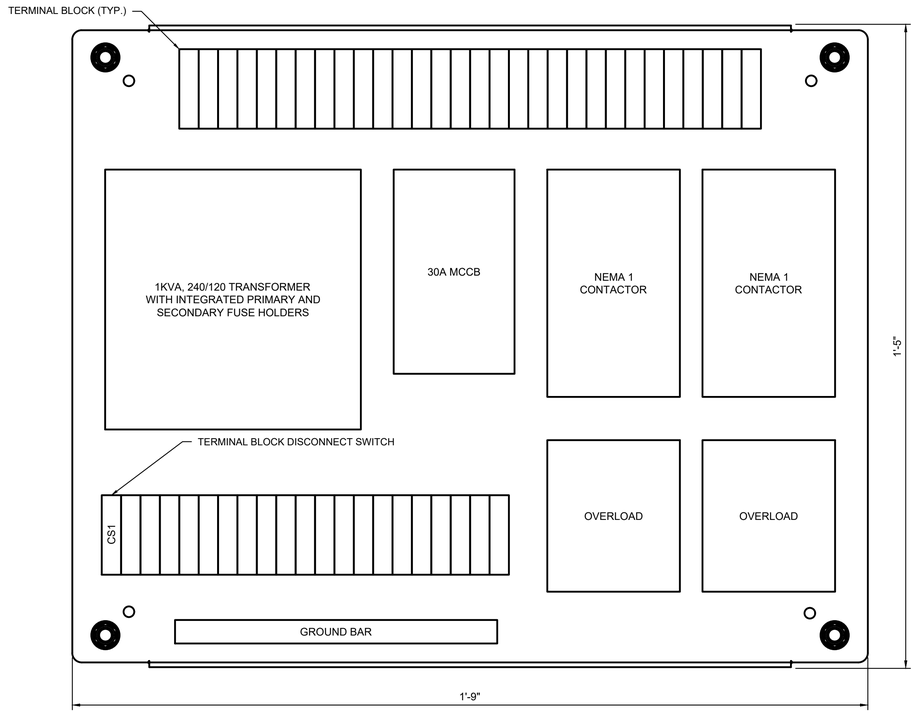
39 OF 75

$REQUEST $USER $DATE $TIME



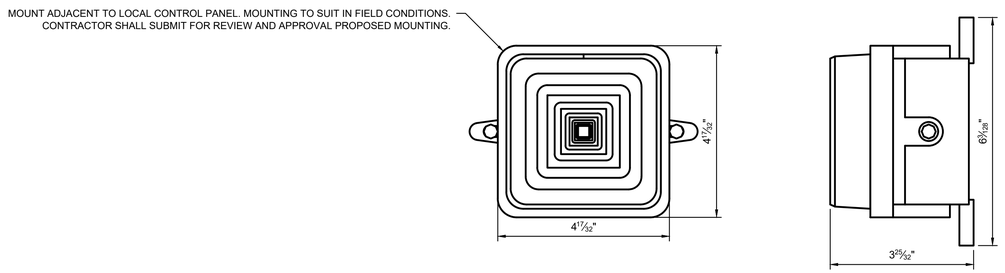
NEW LOCAL CONTROL PANEL

SCALE: 6" = 1'-0"



NEW LOCAL CONTROL PANEL – BACK PANEL

SCALE: 6" = 1'-0"



NEW AUDIBLE AIR HORN

SCALE: 6" = 1'-0"

SCOPE OF WORK:

(K) INSTALL NEW LOCAL CONTROL PANEL AND NEW AUDIBLE ALARM.

$REQUEST $TIME $DATE $USER

100% SUBMISSION

BC–E–10

COUNTY OF SAN JOAQUIN

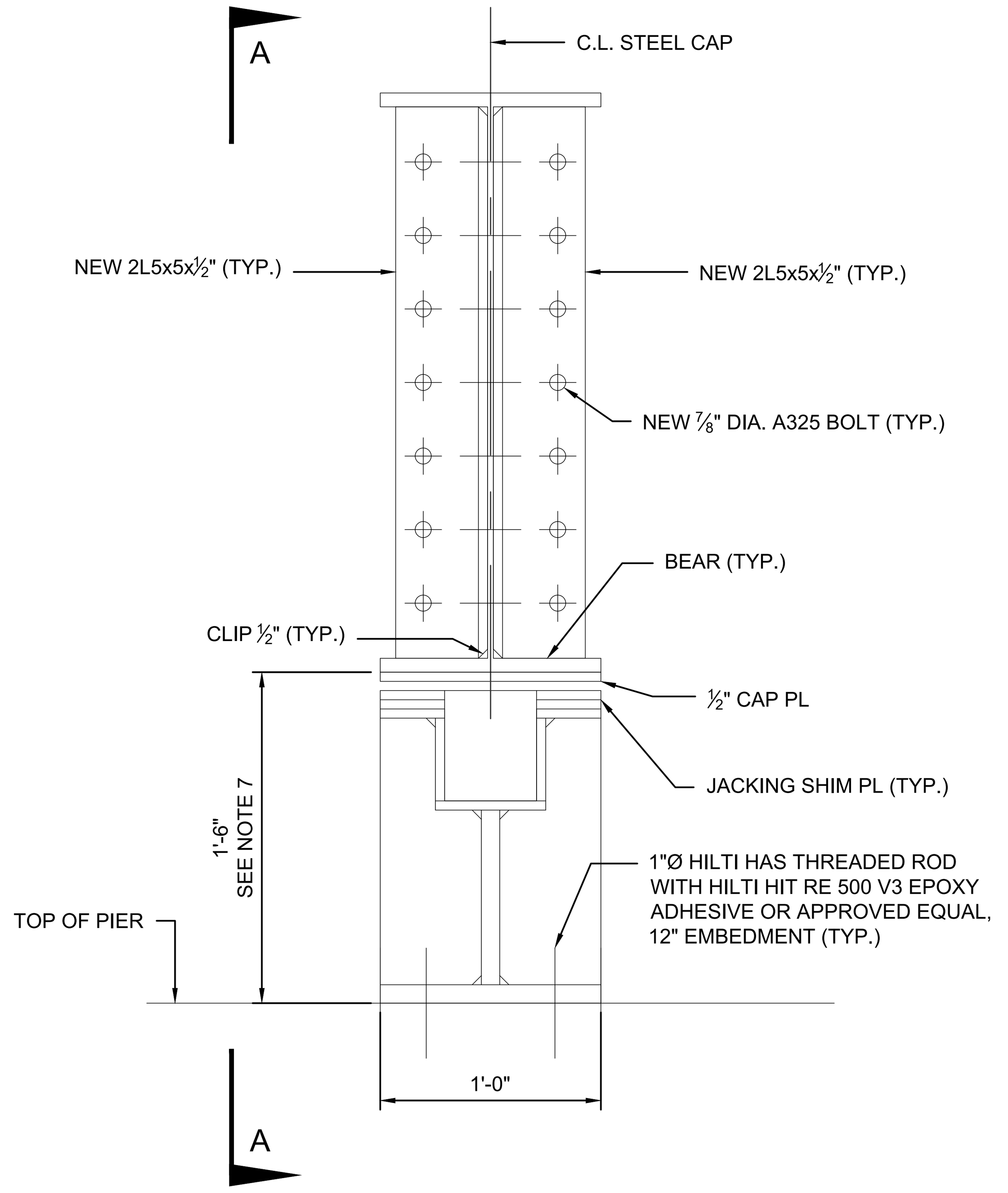
MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS–5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					NO SCALE

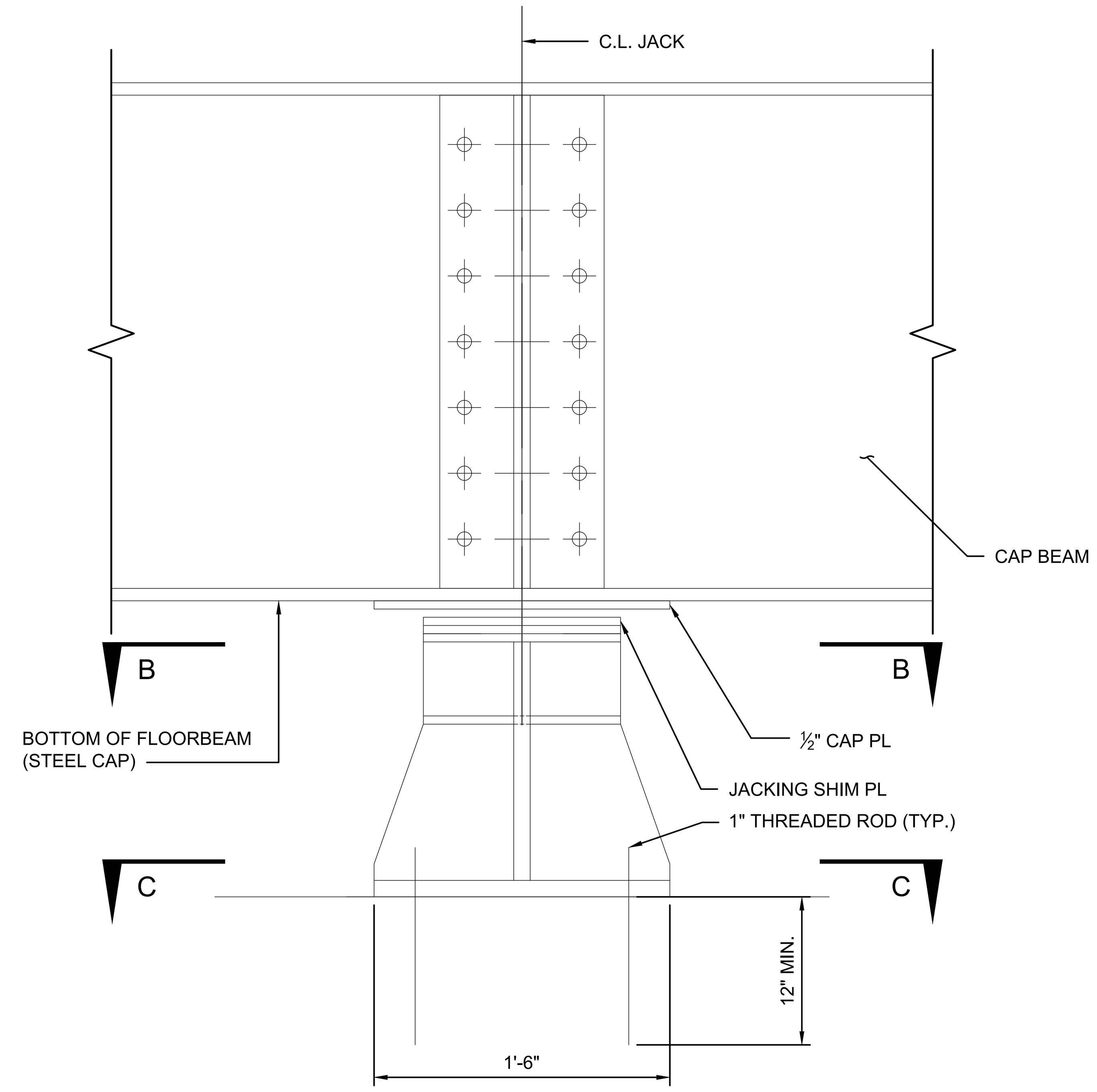
Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER TEODOR KOSTADINOV 21282 ELECTRICAL STATE OF CALIFORNIA

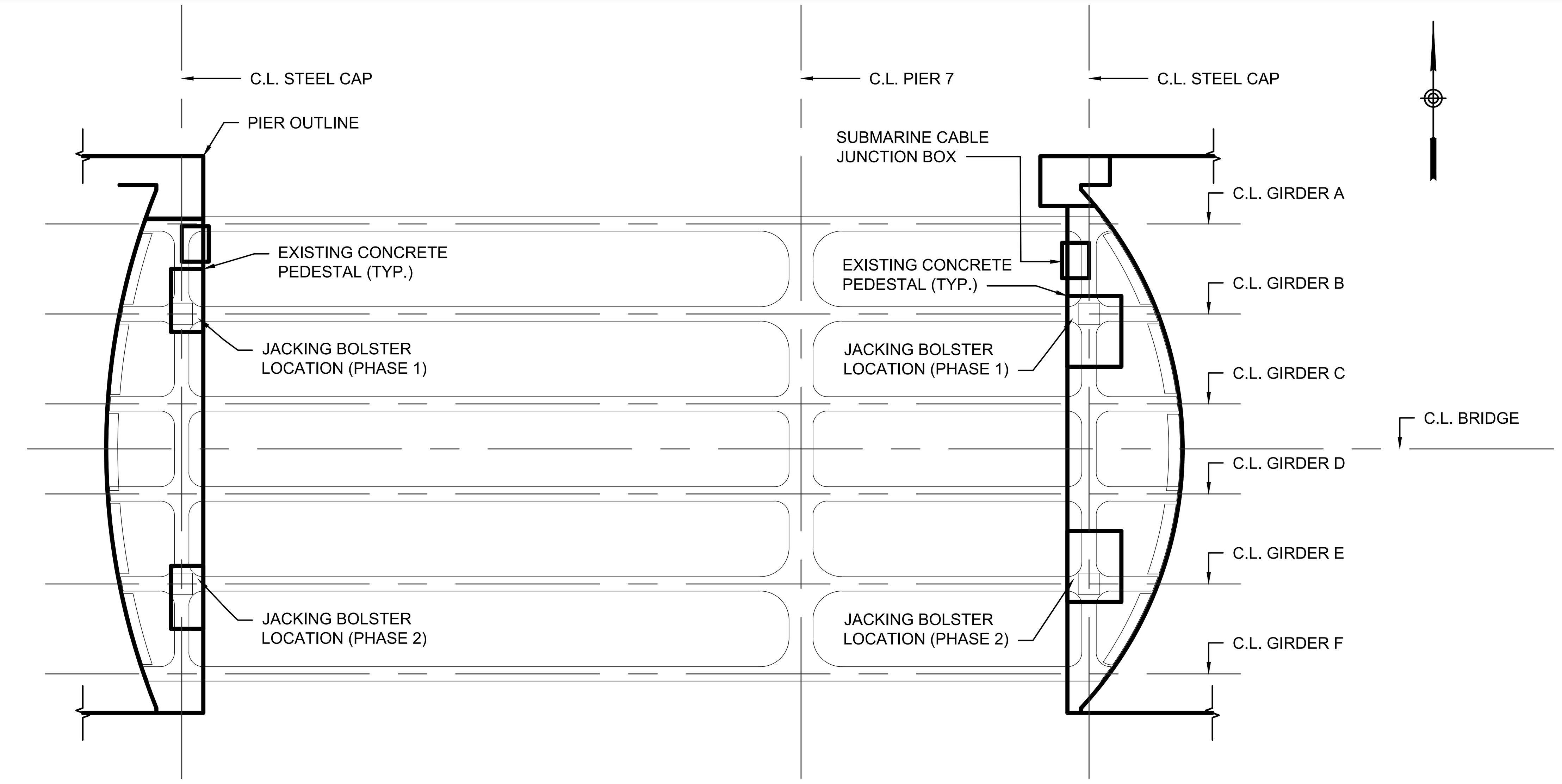
MISCELLANEOUS DETAILS
EIGHT MILE ROAD BRIDGE OVER BISHOP CUT
(BRIDGE NO. 29C–114)



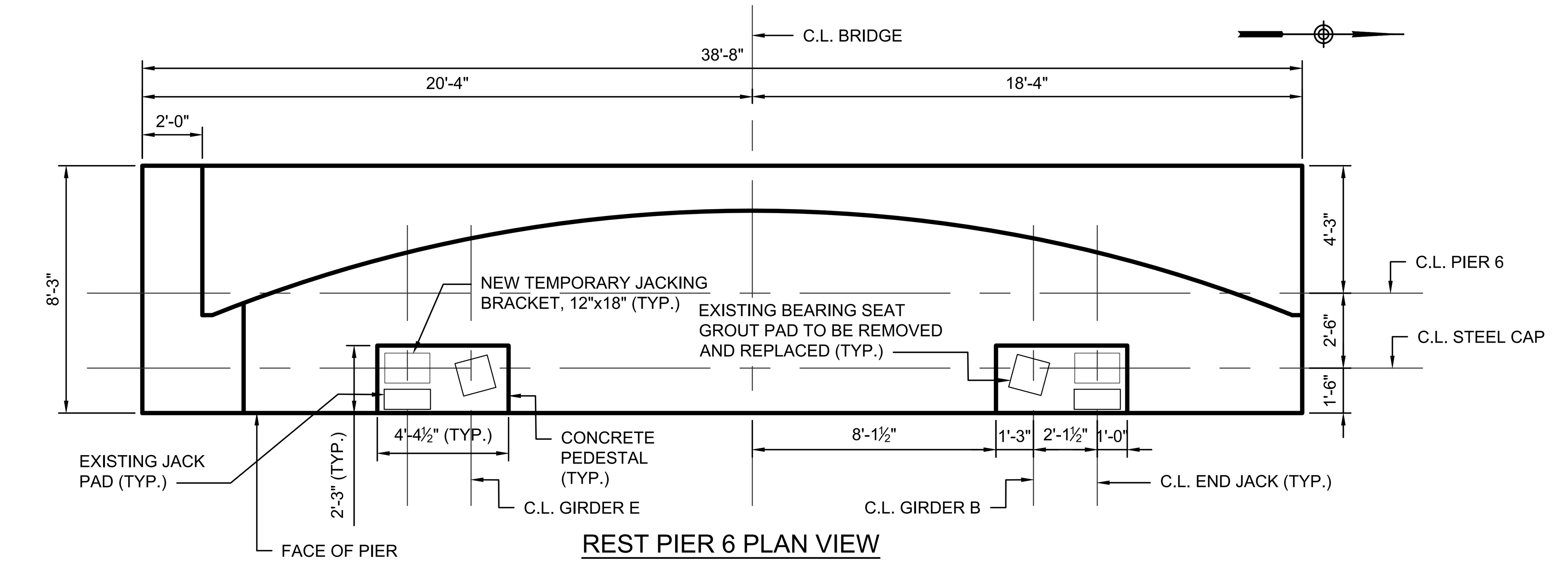
JACKING BRACKET ELEVATION
SCALE 1½" = 1'-0"



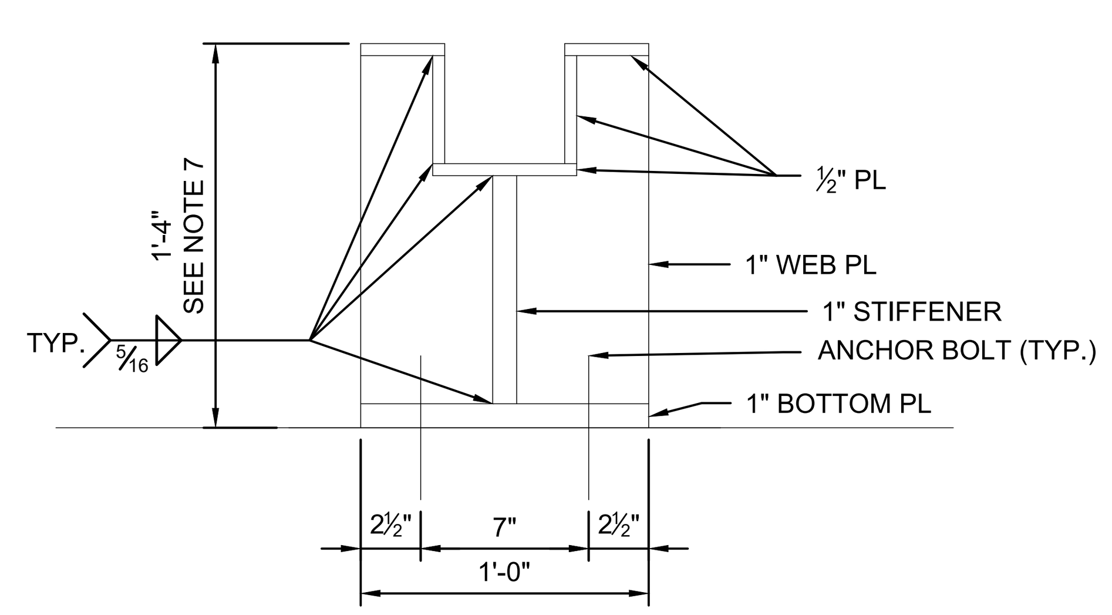
SECTION A-A
SCALE 1½" = 1'-0"



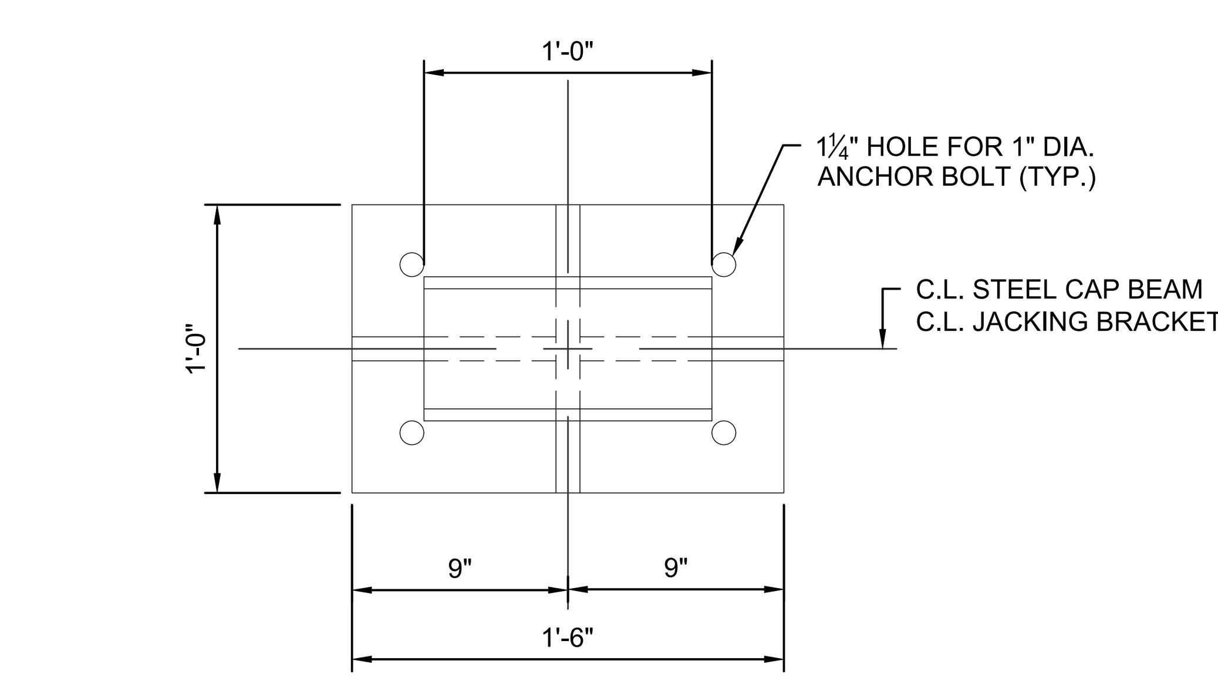
PLAN VIEW FOR JACKING BRACKET
SCALE ⅛" = 1'-0"



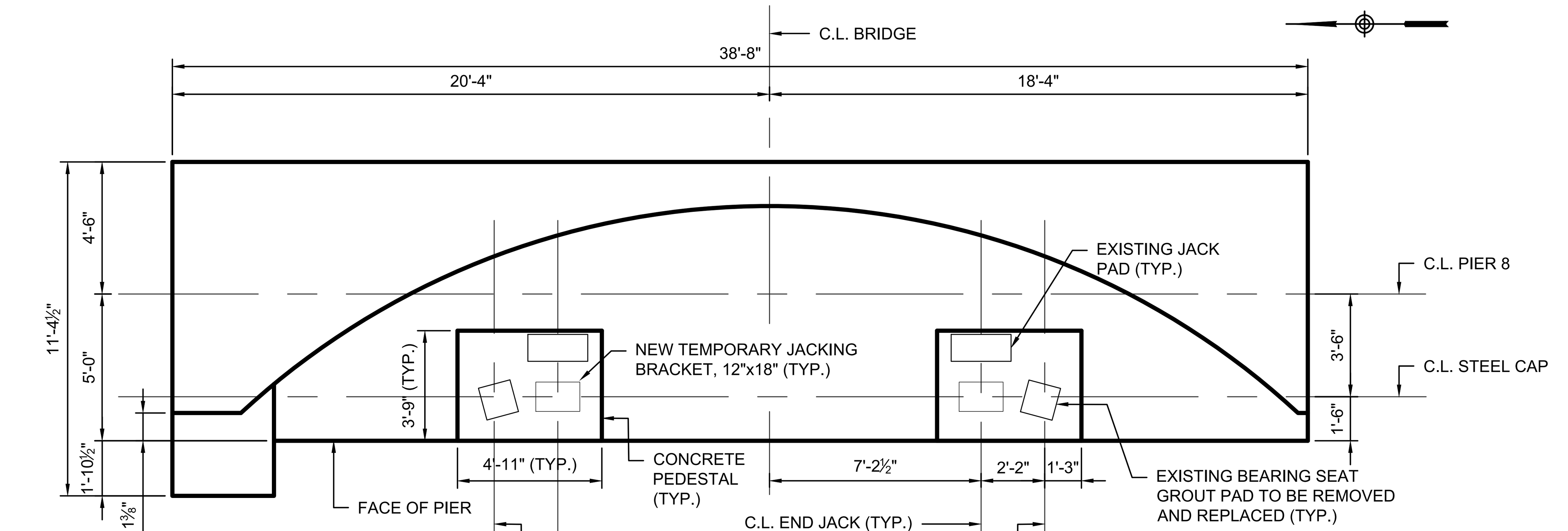
REST PIER 6 PLAN VIEW
SCALE ¼" = 1'-0"



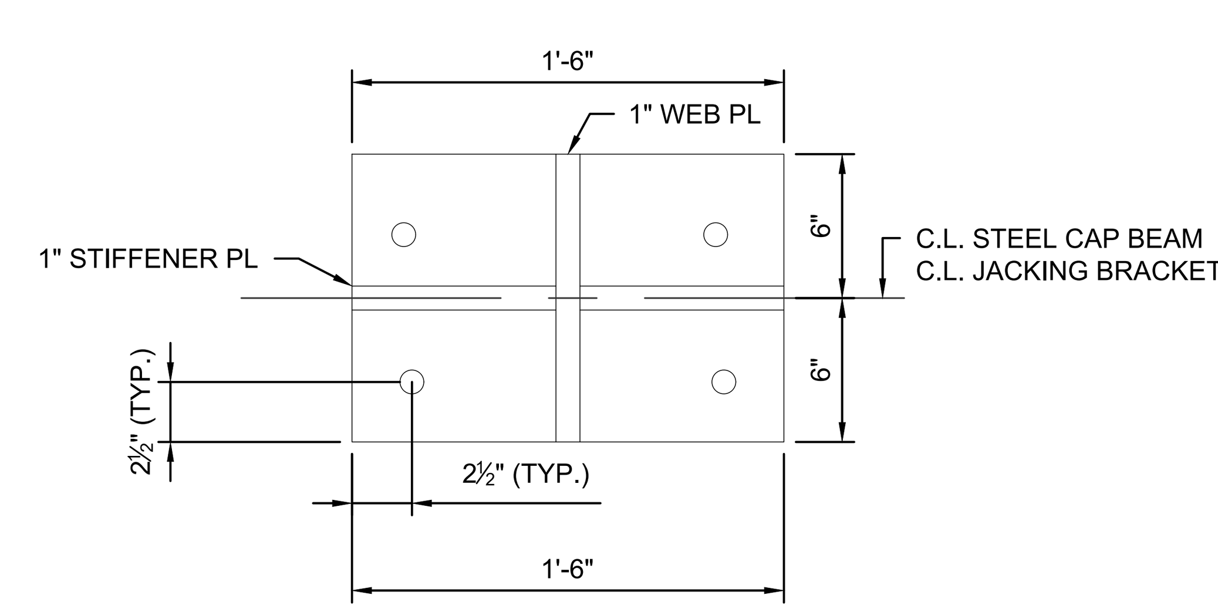
JACKING BRACKET ELEVATION DETAIL
SCALE 1½" = 1'-0"



SECTION B-B
SCALE 1½" = 1'-0"



REST PIER 8 PLAN VIEW
SCALE ¼" = 1'-0"



SECTION C-C
SCALE 1½" = 1'-0"

NOTES:
1. MAX. JACKING LOAD 100 TONS.
2. USE 3x3x⅜" PLATE WASHER WITH EACH ANCHOR BOLT AND NUT.
3. JACKING IS TO PROVIDE CLEARANCE FOR REMOVING AND REPLACING GROUT UNDER BEARINGS.
4. ONLY ONE LANE ON THE BRIDGE CAN BE OPEN TO TRAFFIC DURING JACKING AND REPLACEMENT OF GROUT.
5. CONTRACTOR SHALL JACK PIER 6 AND PIER 8 LOCATIONS UNDER EITHER EASTBOUND OR WESTBOUND LANES SIMULTANEOUSLY.
6. IT IS ANTICIPATED THAT NO MORE THAN ½" OF CLEARANCE WILL BE PROVIDED.
7. 1'-6" DIMENSION SHOWN IS FOR COST ESTIMATE PURPOSES ONLY. CONTRACTOR TO FIELD-VERIFY ACTUAL DIMENSION.
8. SHOP PRIME BRACKETS AFTER FABRICATION. AFTER JACKING IS COMPLETED, REMOVE BRACKETS AND DELIVER TO SAN JOAQUIN DEPT. OF PUBLIC WORKS FOR REUSE.
9. STIFFENER ANGLES TO REMAIN IN PLACE. ANGLES TO BE ASTM A588, FASTENERS TO BE ASTM A847.
10. PROVIDE GROUT LEVELING PAD UNDER BRACKET AS NEEDED.

100% SUBMISSION

COUNTY OF SAN JOAQUIN

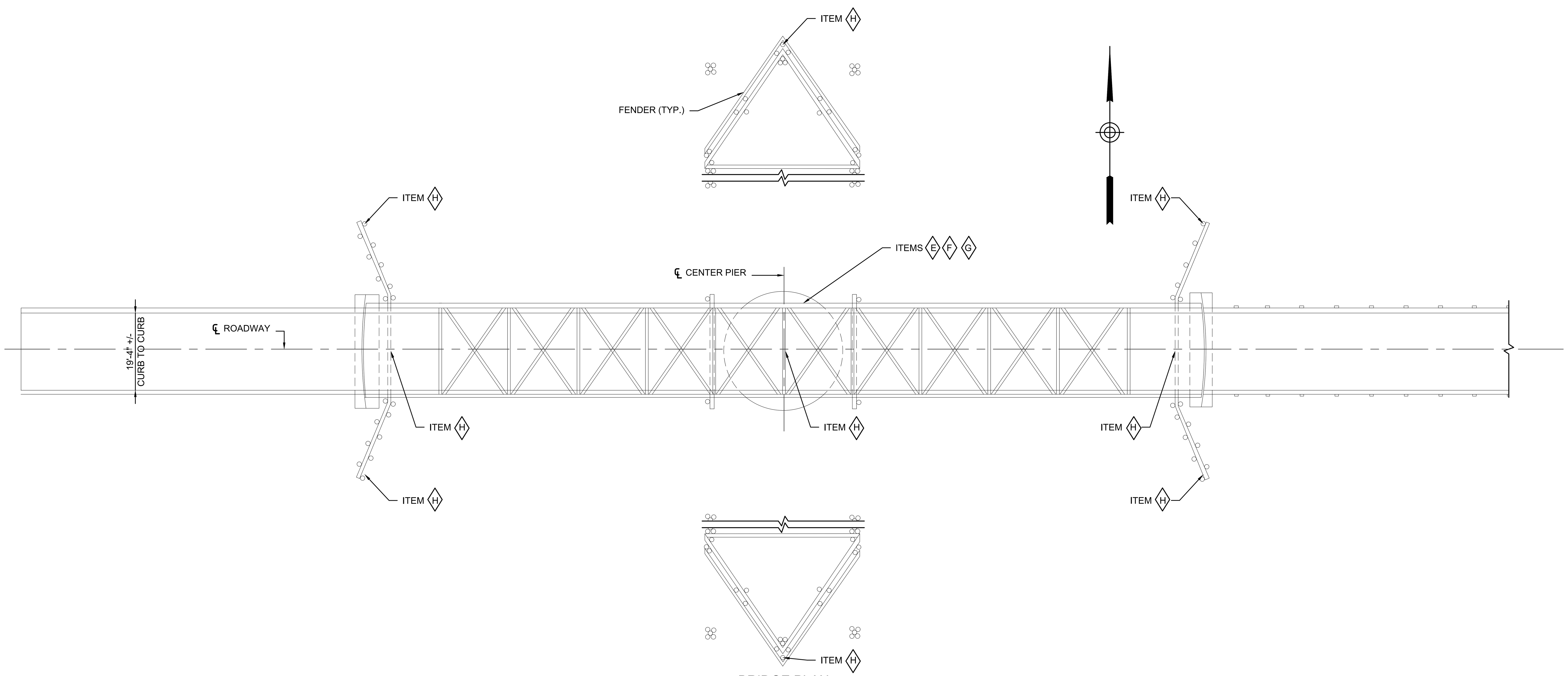
MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

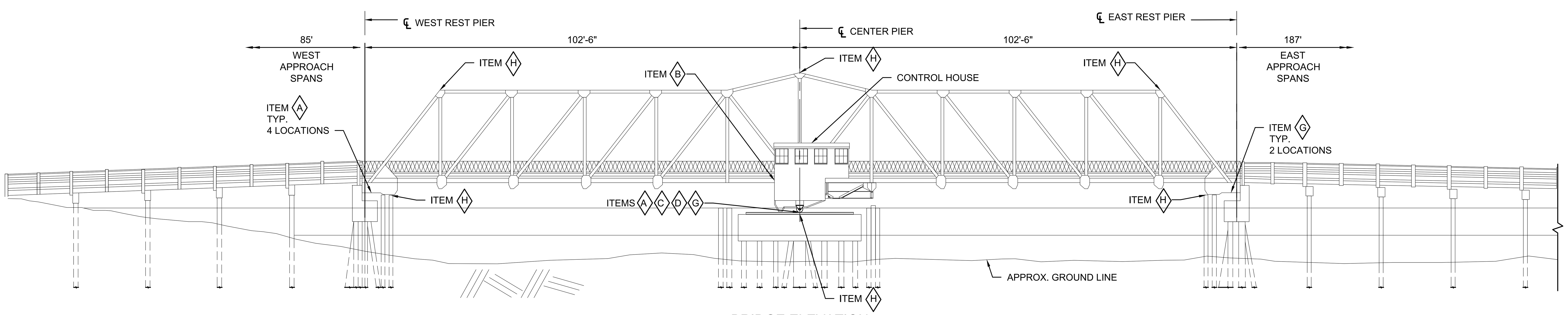
Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

JACKING BRACKET DETAILS
EIGHT MILE ROAD BRIDGE OVER BISHOP CUT
(BRIDGE NO. 29C-114)

BC-S-01



BRIDGE PLAN
SCALE 1/16" = 1'-0"



BRIDGE ELEVATION
SCALE 1/16" = 1'-0"

GENERAL NOTES

1. AS BUILT DRAWINGS OF THE EIGHT MILE ROAD BRIDGE OVER HONKER CUT ARE PROVIDED IN THE INFORMATIONAL HANDOUT AS DESCRIBED IN SECTIONS 2 AND 5 OF THE SPECIFICATIONS. .

SCOPE OF WORK

- A. ADJUST AND RE-TIME ALL CENTER AND END WEDGE CRANK SHAFTS AND CONNECTING RODS TO PROVIDE ADDITIONAL CLEARANCE FOR BRIDGE MOVEMENT.
- B. REMOVE AND REPLACE GASOLINE ENGINE, CLUTCH, AND REVERSING GEAR WITH A NEW DIESEL ENGINE INSTALLATION TO MEET THE REQUIREMENTS IN EIGHT MILE ROAD OVER HONKER CUT SPECIFICATION SECTIONS 98-2.02B AND 98-2.02D.
- C. REPLACE THE BALANCE WHEEL TRACK AND TRACK MOUNTING PLATE AND TRUE THE ELEVATION OF THE TRACK RAIL.
- D. RE-SHIM THE BALANCE WHEELS TO PROVIDE CLEARANCE WITH THE TRACK WHEN THE SWING SPAN IS IN THE CLOSED AND LOCKED POSITION.
- E. REPLACE OR REBABBIT ALL SHAFT BUSHINGS OF THE TURNING AND WEDGE MACHINERY BEARINGS. SEE SHEET HC-M-03 AND HC-M-05 FOR TABLES OF QUANTITIES AND JOURNAL DIAMETERS OF ALL BEARINGS.
- F. REPLACE ALL JAW COUPLINGS AND DAMAGED SHAFT OF THE WEDGE DRIVE MACHINERY.
- G. REBUILD THE WORM GEAR REDUCERS (3) OF THE WEDGE DRIVE MACHINERY.
- H. REPLACE 3 EXISTING NON-OPERATIONAL SPAN NAVIGATION LIGHTS WITH NEW NAVIGATIONAL LIGHTS, AND FURNISH AND INSTALL 6 NEW PIER LIGHTS WHERE REQUIRED (CENTER PIER INCLUDES FENDERS).

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER PAUL M. SKELTON MECHANICAL 11/18/22 STATE OF CALIFORNIA

GENERAL PLAN AND ELEVATION
EIGHT MILE ROAD BRIDGE OVER HONKER CUT
(BRIDGE NO. 29C-219)

HC-G-01

$REQUEST $DATE $TIME $USER

GENERAL NOTES:

EXISTING PLANS

AS-BUILT PLANS ENTITLED EIGHT MILE ROAD BRIDGE NO. 29C-219 ARE AVAILABLE IN THE INFORMATIONAL HANDOUT FOR THIS PROJECT FOUND ON WWW.BIDEXPRESS.COM.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

SCHEDULE AND PROSECUTION OF WORK

1. THE PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. NOTE THE FOLLOWING SCHEDULE RESTRICTIONS:

2. CONSTRUCTION SHALL TAKE PLACE DURING THE THREE-MONTH PERIOD BETWEEN NOVEMBER 1 AND THE FOLLOWING JANUARY 31. THE BRIDGE MUST BE OPERABLE FOR WATERWAY TRAFFIC FROM FEBRUARY 1 THROUGH OCTOBER 31 OF ANY CALENDAR YEAR. DURING CONSTRUCTION THE CHANNEL WILL REMAIN OPEN TO SMALL VESSELS THAT DO NOT REQUIRE BRIDGE OPENINGS. THE CONTRACTOR MUST COORDINATE WITH THE US COAST GUARD (USCG) FOR ANY ANTICIPATED WATERWAY CLOSURES THAT WILL IMPACT SMALL VESSELS AS WELL AS FOR THE THREE-MONTH CLOSURE TO VESSELS THAT WOULD REQUIRE BRIDGE OPENINGS. THE CONTRACTOR MUST CONTACT THE USCG WITHIN 60 DAYS OF NOTICE TO PROCEED TO PROVIDE A CONSTRUCTION SCHEDULE THAT INCLUDES NAVIGATION RESTRICTIONS.

3. EIGHT MILE ROAD CAN BE OPEN TO SINGLE LANE TRAFFIC FOR BRIEF PERIODS TO ALLOW FOR DELIVERY OF MATERIALS. THE CONTRACTOR SHALL PROVIDE FLAGMEN/TEMPORARY SIGNALS/SIGNING IN ACCORDANCE WITH MAINTENANCE OF TRAFFIC PLANS. SINGLE LANE TRAFFIC IS ALLOWED ONLY BETWEEN THE HOURS OF 9 A.M. AND 3 P.M. TRAFFIC CAN BE STOPPED FOR TEST OPENINGS BETWEEN THE HOURS OF 9 A.M. AND 3 P.M., BUT ONLY FOR THE DURATION OF AN OPENING/CLOSING CYCLE. FLAGMEN SHALL PROVIDE TRAFFIC CONTROL DURING TEST OPENINGS.

4. PROVIDE THE ENGINEER WITH A COMPLETE PROJECT SCHEDULE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS WITHIN 60 DAYS OF NOTICE TO PROCEED. THE SCHEDULE MUST REFLECT CLOSURES OF THE WATERWAY TO VESSELS THAT REQUIRE BRIDGE OPENINGS, AND SINGLE LANE TRAFFIC PERIODS.

5. PROVIDE PLANS FOR CLEAN-UP OF THE WATERWAY SHOULD SPILLS OF OIL, OTHER FLUIDS, OR DEBRIS FROM CONSTRUCTION OR OTHER TYPES OF POLLUTANTS BE ACCIDENTALLY DISCHARGED INTO IT.

6. OBTAIN PERMISSION FROM THE ENGINEER A MINIMUM OF 48 HOURS PRIOR TO ANY CONSTRUCTION SCHEDULE CHANGE.

7. NO ADDITIONAL PAYMENT WILL BE MADE FOR WORK PERFORMED ON A SATURDAY, SUNDAY, OR LEGAL HOLIDAY TO SATISFY SCHEDULE REQUIREMENTS.

8. MAINTAIN VEHICULAR ACCESS TO ALL BUSINESSES AND COMMERCIAL PROPERTIES ON EACH SIDE OF THE WATERWAY, INCLUDING DURING PERIODS OF SINGLE LANE TRAFFIC.

9. ALTHOUGH THE WATERWAY WILL BE CLOSED TO VESSELS THAT REQUIRE BRIDGE OPENINGS, IT WILL REMAIN OPEN TO SMALL VESSELS. EVERY EFFORT SHOULD BE MADE TO MINIMIZE OBSTRUCTION OF THE CHANNEL BY BARGES OR OTHER EQUIPMENT. BARGES CAN BE ANCHORED OUTSIDE THE LIMITS OF THE CHANNEL.

10. UPON COMPLETION OF ALL WORK, THE CONTRACTOR SHALL TRAIN THE COUNTY'S MAINTENANCE STAFF AND DEMONSTRATE TEST OPENINGS.

US COAST GUARD AND PORT OF SAN FRANCISCO NOTIFICATION

1. THE 11TH COAST GUARD DISTRICT WILL NEED TO BE CONTACTED AT LEAST 60 DAYS PRIOR TO THE START OF WORK ON THE SITE TO COORDINATE IN-WATER WORK INCLUDING BARGE. CONTACT INFORMATION:
   MR. CARL HAUSNER
   COMMANDER, 11TH/ COAST GUARD DISTRICT
   COAST GUARD ISLAND BUILDING 50-2
   ALAMEDA, CA 94501-5100
   PHONE: 510-437-3516
   CARL.T.HAUSNER@USCG.MIL

2. PROVIDE THE COAST GUARD WITH A SCHEDULE AND A TIME FRAME FOR REPAIR WORK ON THE MOVABLE SPAN AND DESCRIBE ANY TEMPORARY CONSTRUCTION AIDS AND WORK WITHIN THE LIMITS OF THE CHANNEL IN ACCORDANCE WITH USCG WORK PROPOSAL REQUIREMENTS.

3. THE CONTRACTOR MUST NOTIFY THE CAPTAIN OF THE PORT OF SAN FRANCISCO IF A BARGE WILL BE ANCHORED OR STUDDED IN A MANNER THAT WILL UTILIZE THE CHANNEL BOTTOM.

COORDINATION OF DOCUMENTS

1. IN THE EVENT OF A DISCREPANCY BETWEEN THE PLANS AND THE SPECIFICATIONS, BRING THE DISCREPANCY TO THE ATTENTION OF THE ENGINEER FOR THEIR INTERPRETATION. IF IT IS NOT BROUGHT TO THE ENGINEER'S ATTENTION, THE DETAIL SHOWING OR DESCRIBING THE HIGHER QUALITY INTERPRETATION WILL GOVERN.

2. IF AN ITEM IS LISTED OR DESCRIBED IN THE SPECIFICATIONS AND IS NOT SPECIFICALLY SHOWN ON THE PLANS, IT IS CONSIDERED A PART OF THE WORK AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

3. IF AN ITEM IS SHOWN ON THE PLANS AND IS NOT SPECIFICALLY LISTED OR DESCRIBED IN THE SPECIFICATIONS, IT IS CONSIDERED PART OF THE WORK AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

4. SAN JOAQUIN COUNTY WILL NOT PAY FOR ANY COSTS ASSOCIATED WITH THE COORDINATION OF DOCUMENTS. THE COSTS FOR THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT MUST BE DISTRIBUTED AMONG THE COSTS OF INDIVIDUAL ITEMS.

WORK RESTRICTIONS

1. COMPLY WITH ALL LOCAL ORDINANCES THAT APPLY TO LOCAL STREET WORK OPERATIONS, INCLUDING THOSE PERTAINING TO WORKING DURING NIGHTTIME HOURS. FURNISH ANY ORDINANCE VARIANCE ISSUED BY THE MUNICIPALITY OR REQUIRED PERMITS TO THE ENGINEER, IN WRITING, 3 DAYS PRIOR TO PERFORMING SUCH WORK.

2. DO NOT REMOVE ANY EXISTING TREES, STREET LIGHT POLES, HYDRANTS, AND OTHER UTILITY POLES WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER. CONDUCT AN ON-SITE VISIT PRIOR TO BIDDING TO DETERMINE ANY SPECIAL MEASURES REQUIRED FOR PROPER CLEARANCE BETWEEN TREES, HYDRANTS, AND POLES AND THE CONSTRUCTION EQUIPMENT.

IN-STREAM WORK RESTRICTIONS

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO AVOID CONSTRUCTION IN AND/OR LIMIT DEBRIS FROM ENTERING THE WATER. ANY MATERIAL THAT DOES FALL INTO THE WATER SHALL BE REMOVED AS SOON AS POSSIBLE. ALL PROJECTS INVOLVING JURISDICTIONAL WATERS OF THE UNITED STATES ARE SUBJECT TO REGULATION UNDER SECTIONS 404 AND 401 OF THE CLEAN WATER ACT. IT IS ANTICIPATED THAT NO PERMANENT IN-STREAM WORK WILL BE REQUIRED. ANY WORK IN THE WATER, PERMANENT OR TEMPORARY, WILL REQUIRE A PERMIT AND AUTHORIZATION BY THE UNITED STATE ARMY CORPS OF ENGINEERS.

DESIGN SPECIFICATIONS

AASHTO STANDARD SPECIFICATIONS FOR MOVABLE HIGHWAY BRIDGES

DESIGN DATA

1. CONCRETE - MINIMUM COMPRESSIVE STRENGTH 4.0 KSI

2. REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI

3. STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50 KSI UNLESS NOTED ON PLANS OR IN SPECIFICATIONS.

PUBLIC OUTREACH

THE CONTRACTOR MUST ARRANGE AN INFORMATIONAL MEETING FOR THE GENERAL PUBLIC TWO WEEKS PRIOR TO THE START OF CONSTRUCTION CONCERNING THE PROJECT SCOPE AND TIMING. MEETING SITE MUST BE IN A PUBLIC LOCATION (I.E.: SCHOOL, PARK, FIRE HOUSE...) WITHIN THREE BLOCKS OF PROJECT SITE UNLESS OTHERWISE APPROVED BY THE ENGINEER. A PUBLIC ADDRESS (PA) SYSTEM WILL BE REQUIRED FOR THE MEETING. LOCATION AND TIME OF THE MEETING MUST BE APPROVED BY THE ENGINEER. THE CONTRACTOR MUST PERFORM PUBLIC OUTREACH BY ADVERTISING THE MEETING IN THE LOCAL NEWSPAPER AND SENDING WRITTEN NOTIFICATIONS TO THE RESIDENTS LOCATED WITHIN PROJECT LIMITS. FULL COMPENSATION FOR PERFORMING THIS MEETING, INCLUDING ACQUIRING MEETING SITE, SUPPLYING PA SYSTEM, ADVERTISING, NOTIFYING RESIDENTS, AND ALL OTHER INCIDENTALS, MUST BE CONSIDERED AS INCLUDED IN THE PRICES PAID FOR VARIOUS CONTRACT ITEMS OF WORK AND NO SEPARATE PAYMENT WILL BE MADE THEREFOR.

QUANTITIES			
ITEM No.	DESCRIPTION	UNIT	QUANTITY
070731	LEAD COMPLIANCE PLAN	LS	1
120010	TRAFFIC CONTROL SYSTEM	LS	1
120090	CONSTRUCTION AREA SIGNS	LS	1
128651	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2
130200	WATER POLLUTION CONTROL PLAN	LS	1
880080	BRIDGE SYSTEM TESTING	LS	1
880090	ELECTRICAL EQUIPMENT DEMOLITION	LS	1
880160	SPAN NAVIGATION LIGHTS	EA	3
880170	PIER NAVIGATION LIGHTS WITH INTEGRAL SOLAR	EA	6
880180	PIER NAVIGATION LIGHTS WITH REMOTE SOLAR	EA	4
980000	BRIDGE MACHINERY	LS	1
999990	MOBILIZATION (10%)	LS	1

ABBREVIATIONS

ϕ	PHASE
A, AMP	AMPERES
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ACCEL.	ACCELERATE
APPROX.	APPROXIMATE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWG	AMERICAN WIRE GAUGE
BOT.	BOTTOM
BR, BRG	BRIDGE
C	CELSIUS
CA	CALIFORNIA
CB	CIRCUIT BREAKERS
CCW	COUNTERCLOCKWISE
CL, ℄	CENTERLINE
CONC	CONCRETE
CPT	CONTROL POWER TRANSFORMER
CW	CLOCKWISE
DECEL.	DECELERATE
DEG, °	DEGREE
DIA., Ø	DIAMETER
DWG	DRAWING
E	EAST
EA	EACH
EL.	ELEVATION
EQ. SPA.	EQUALLY SPACED
ESTOP	EMERGENCY STOP
EXIST	EXISTING
F	FAHRENHEIT
FRP	FIBER REINFORCED PLASTIC
GAL	GALLON
GIS	GEOGRAPHIC INFORMAITON SYSTEM
GPM	GALLONS PER MINUTE
H.D.	HOT DIPPED
HP	HORSEPOWER
HPU	HYDRAULIC POWER UNIT
HZ	HERTZ
IN	INCH
JB	JUNCTION BOX
JT	JOINT
KSI	KIPS PER SQUARE INCH
LB	POUND
LF	LINEAR FEET
LFMC	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT
LS	LUMP SUM
LS	LEVEL SWITCH
LTG	LIGHTING
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MIN	MINIMUM
MPH	MILES PER HOUR
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
N	NORTH
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
N.T.S.	NOT TO SCALE
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NO.	NUMBER
OEM	ORIGINAL EQUIPMENT MANUFACTURER
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN
PL, ℄	PLATE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R/W	RIGHT OF WAY
RD	ROAD
REF.	REFERENCE
RGS	RIGID GALVANIZED STEEL
RPM	ROTATIONS PER MINUTE
S	SOUTH
S.S., SS	STAINLESS STEEL
SEC	SECONDS
SPEC	SPECIFICATION
SQ.	SQUARE
TEFC	TOTALLY ENCLOSED, FAN-COOLED
TS	TEMPERATURE SWITCH
TSP	TWISTED SHIELDED PAIR
TYP.	TYPICAL
UL	UNDERWRITERS LABORATORIES
USACE	UNITED STATES ARMY CORPS OF ENGINEERS
USCG	UNITED STATES COAST GUARD
UV	ULTRAVIOLET
V	VOLTS
W	WEST
W/	WITH

$REQUEST $USER $DATE $TIME

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
PAUL M. SKEHAN
24451
11/18/22
MECHANICAL
STATE OF CALIFORNIA

GENERAL NOTES

EIGHT MILE ROAD BRIDGE OVER HONKER CUT
(BRIDGE NO. 29C-219)

HC-G-02

NOTES:

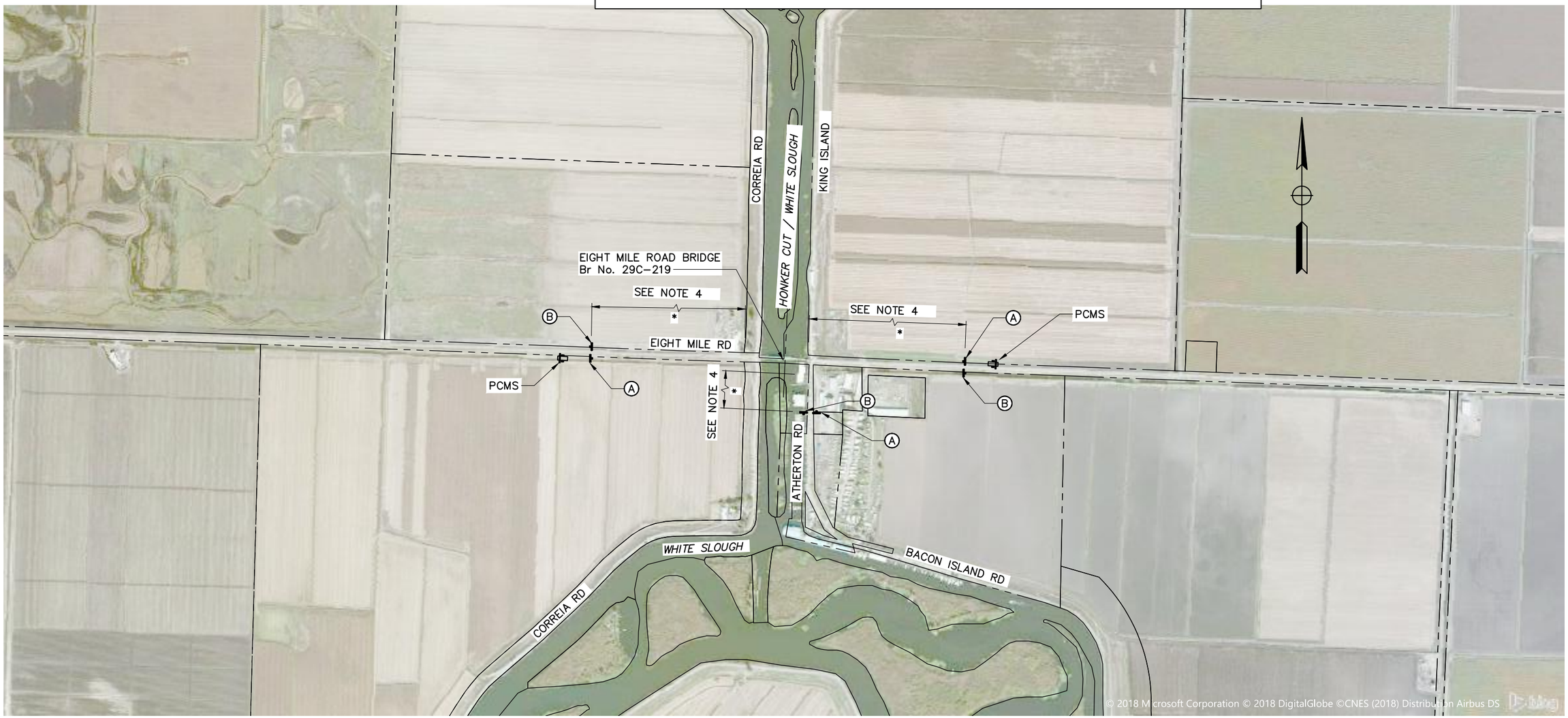
1. THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGN WORK ONLY.
2. LOCATION OF CONSTRUCTION AREA SIGNS ARE APPROXIMATE. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
3. PCMS MESSAGE TO NOTIFY TRAFFIC IN ADVANCE OF CONSTRUCTION. PCMS MESSAGES TO PROVIDE DATES & TIMES OF LANE CLOSURES EXACT MESSAGES TO BE APPROVED BY ENGINEER.
4. SIGN SPACING AND TRAFFIC HANDLING SHALL BE PER THE MOST CURRENT CA MUTCD AT 25 MPH

LEGEND:

- CONSTRUCTION AREA SIGN
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS); 2 EA

CONSTRUCTION AREA SIGNS (STATIONARY MOUNTED)

SIGN No. (X)	SIGN CODE	PANEL SIZE (IN X IN)	SIGN MESSAGE	POST SIZE (IN X IN)	No. OF POSTS (EA)	No. OF SIGNS (EA)
A	W20-1	48 X 48	ROAD WORK AHEAD	4 X 6	1	3
B	G20-2	36 X 18	END ROAD WORK	4 X 4	1	3



FINAL 100% SUBMITTAL

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
C. SILVA		M. SANCHEZ		C. SILVA		M. SANCHEZ								NO SCALE

DWG FILE s:\Client\hardesty & hanover\h23-100 5 movable br\500-design\505-CAD\H23100_Honker Cut CS2.dwg

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100 RANCHO CORDOVA, CA 95670
P: 916.368.9181

REGISTERED PROFESSIONAL ENGINEER — MICHAEL A. SANCHEZ — No. GC254 — 6/30/24 — CIVIL — STATE OF CALIFORNIA

CONSTRUCTION AREA SIGNS

EIGHT MILE ROAD BRIDGE OVER HONKER CUT
BRIDGE NO. 29C-219

HC-G-03

44
OF
75

$REQUEST $USER $TIME $DATE

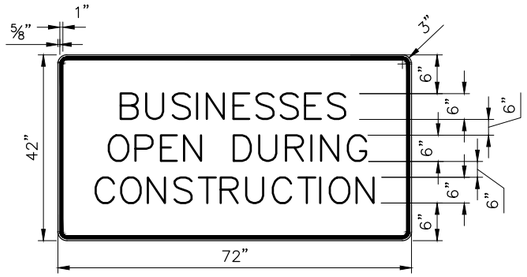
DATE PLOTTED: Tuesday, November 22, 2022 TIME PLOTTED: 9:36:47 AM, Kevin Beltran

NOTES:

1. THIS PLAN ACCURATE FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING ONLY.
2. SIGN LOCATIONS ARE APPROXIMATE. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
3. SIGN SPACING AND TRAFFIC HANDLING SHALL BE PER THE MOST CURRENT CA MUTCD AT 25 MPH
4. TRAFFIC CONTROL FOR ONE–LANE CLOSURES SHALL BE LIMITED FROM 9:00 AM TO 3:00 PM. REFER TO PROJECT SPECIFICATIONS FOR WORKING DAY RESTRICTIONS.
5. MAINTAIN ACCESS TO ALL ROADS AND DRIVEWAYS AT ALL TIMES AND DO NOT BLOCK LEVEE ACCESS GATES WITH CONSTRUCTION VEHICLES AND EQUIPMENT STAGING.
6. STATIONING REFERENCE POINTS SHOWN ARE NOT TIED TO ANY COORDINATE SYSTEM OR SURVEY DATA, BUT ARE FROM BEST APPROXIMATIONS USING THE COUNTY GIS RIGHT OF WAY DATA AND BING IMAGERY.
7. DO NOT IMPLEMENT LANE CLOSURE(S) IF NOT NECESSARY.
8. SIGN A – SR (CA) SIGNS ARE INCLUDED IN THE PAYMENT FOR CAS. REFER TO SPECIAL PROVISIONS FOR DETAILS

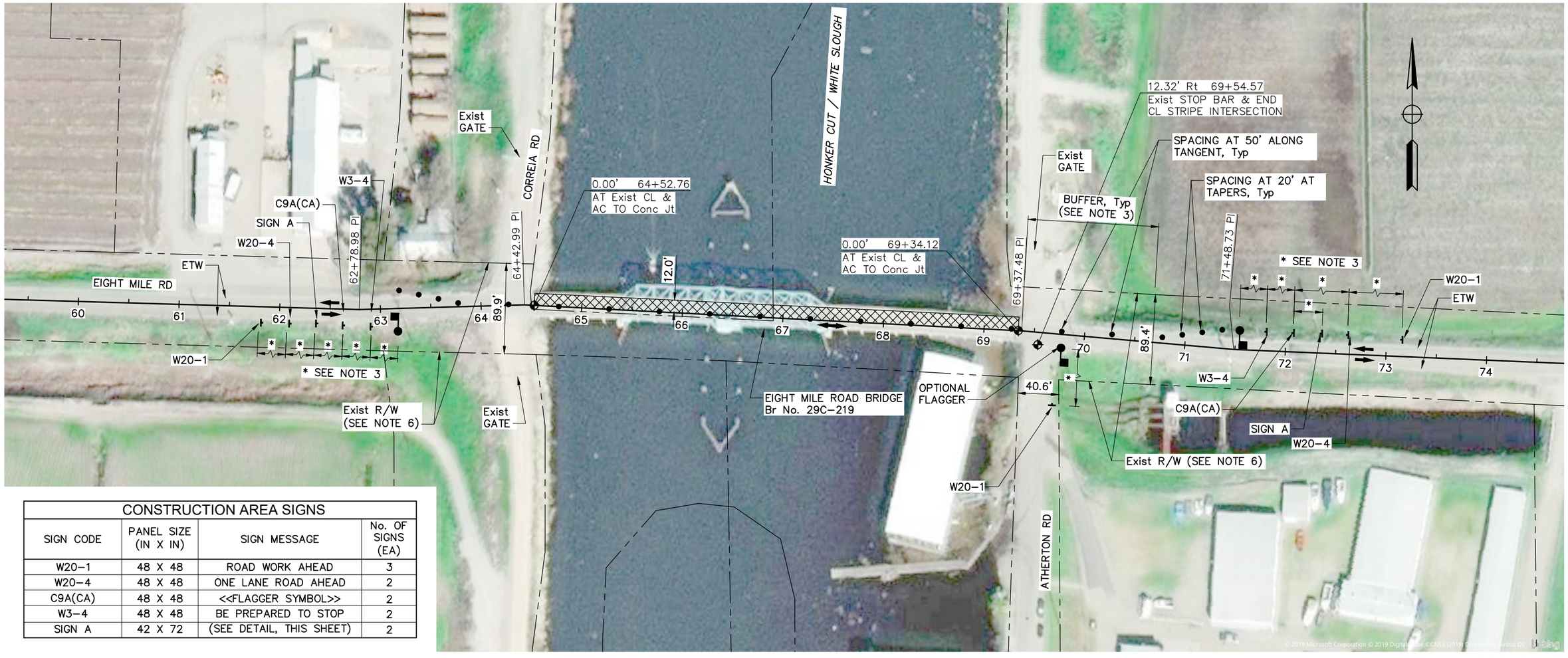
CONSTRUCTION (STAGE 1):

1. NORTH SIDE LANE CLOSURE IN CONJUNCTION WITH NORTH SIDE BRIDGE IMPROVEMENT. REFER TO ELECTRICAL AND MECHANICAL PLANS FOR BRIDGE REPAIR DETAILS.



SIGN A – SR (CA) SERIES (SPECIAL)
BORDER & LEGEND: BLACK RETROREFLECTIVE
BACKGROUND: WHITE RETROREFLECTIVE
NO SCALE

LEGEND:
- DIRECTION OF TRAFFIC
- CONSTRUCTION AREA SIGN
- PORTABLE DELINEATOR
- WORK AREA (CLOSED TO TRAFFIC)
- FLAGGER
- STATIONING REFERENCE POINT



CONSTRUCTION AREA SIGNS			
SIGN CODE	PANEL SIZE (IN X IN)	SIGN MESSAGE	No. OF SIGNS (EA)
W20–1	48 X 48	ROAD WORK AHEAD	3
W20–4	48 X 48	ONE LANE ROAD AHEAD	2
C9A(CA)	48 X 48	<<FLAGGER SYMBOL>>	2
W3–4	48 X 48	BE PREPARED TO STOP	2
SIGN A	42 X 72	(SEE DETAIL, THIS SHEET)	2

FINAL 100% SUBMITTAL

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS–5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
C. SILVA	3/11/2018	M. SANCHEZ	3/10/2018	C. SILVA	8/8/2018	M. SANCHEZ								1"=50'

DWG FILE s:\Client\hardesty & hanover\h23–100 5 movable br\500–design\505–CAD\H23100_SC_HC Stg1.dwg

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE
100 RANCHO CORDOVA, CA 95670
P: 916.368.9181

REGISTERED PROFESSIONAL ENGINEER — MICHAEL A SANCHEZ — No. C 60254 — 6/30/24 — CIVIL — STATE OF CALIFORNIA

STAGE 1 CONSTRUCTION AND TRAFFIC HANDLING PLAN

EIGHT MILE ROAD BRIDGE OVER HONKER CUT
BRIDGE NO. 29C–219

HC–G–04

45 OF 75

$REQUEST $TIME $DATE $USER

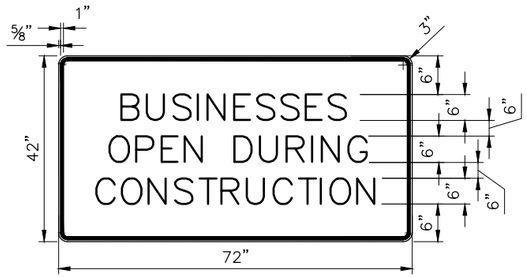
TIME PLOTTED: 9:36:06 AM, Kevin Beltran
DATE PLOTTED: Tuesday, November 22, 2022

NOTES:

1. THIS PLAN ACCURATE FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING ONLY.
2. SIGN LOCATIONS ARE APPROXIMATE. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
3. SIGN SPACING AND TRAFFIC HANDLING SHALL BE PER THE MOST CURRENT CA MUTCD AT 25 MPH
4. TRAFFIC CONTROL FOR ONE–LANE CLOSURES SHALL BE LIMITED FROM 9:00 AM TO 3:00 PM. REFER TO PROJECT SPECIFICATIONS FOR WORKING DAY RESTRICTIONS.
5. MAINTAIN ACCESS TO ALL ROADS AND DRIVEWAYS AT ALL TIMES AND DO NOT BLOCK LEVEE ACCESS GATES WITH CONSTRUCTION VEHICLES AND EQUIPMENT STAGING.
6. STATIONING REFERENCE POINTS SHOWN ARE NOT TIED TO ANY COORDINATE SYSTEM OR SURVEY DATA, BUT ARE FROM BEST APPROXIMATIONS USING THE COUNTY GIS RIGHT OF WAY DATA AND BING IMAGERY.
7. DO NOT IMPLEMENT LANE CLOSURE(S) IF NOT NECESSARY.
8. SIGN A – SR (CA) SIGNS ARE INCLUDED IN THE PAYMENT FOR CAS. REFER TO SPECIAL PROVISIONS FOR DETAILS

CONSTRUCTION (STAGE 2):

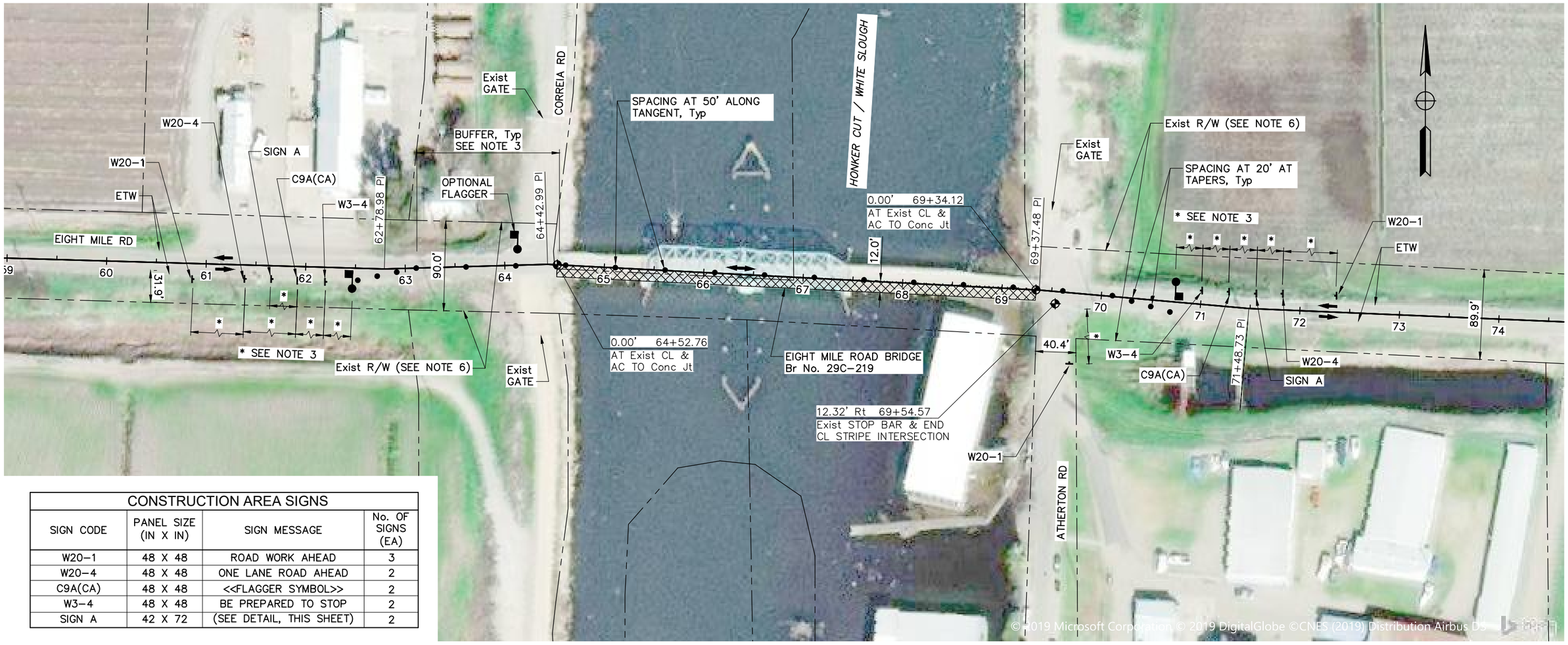
1. SOUTH SIDE LANE CLOSURE IN CONJUNCTION WITH SOUTH SIDE BRIDGE IMPROVEMENT. REFER TO ELECTRICAL AND MECHANICAL PLANS FOR BRIDGE REPAIR DETAILS.



SIGN A – SR (CA) SERIES (SPECIAL)
BORDER & LEGEND: BLACK RETROREFLECTIVE
BACKGROUND: WHITE RETROREFLECTIVE
NO SCALE

LEGEND:

- DIRECTION OF TRAFFIC
- CONSTRUCTION AREA SIGN
- PORTABLE DELINEATOR
- WORK AREA (CLOSED TO TRAFFIC)
- FLAGGER
- STATIONING REFERENCE POINT



CONSTRUCTION AREA SIGNS			
SIGN CODE	PANEL SIZE (IN X IN)	SIGN MESSAGE	No. OF SIGNS (EA)
W20–1	48 X 48	ROAD WORK AHEAD	3
W20–4	48 X 48	ONE LANE ROAD AHEAD	2
C9A(CA)	48 X 48	<<FLAGGER SYMBOL>>	2
W3–4	48 X 48	BE PREPARED TO STOP	2
SIGN A	42 X 72	(SEE DETAIL, THIS SHEET)	2

FINAL 100% SUBMITTAL

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS–5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
C. SILVA	3/11/2018	M. SANCHEZ	3/10/2018	C. SILVA	8/8/2018	M. SANCHEZ								1"=50'

DWG FILE s:\Client\hardesty & hanover\h23–100 5 movable br\500–design\505–CAD\H23100_SC_HC Stg2.dwg

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100 RANCHO CORDOVA, CA 95670
P: 916.368.9181

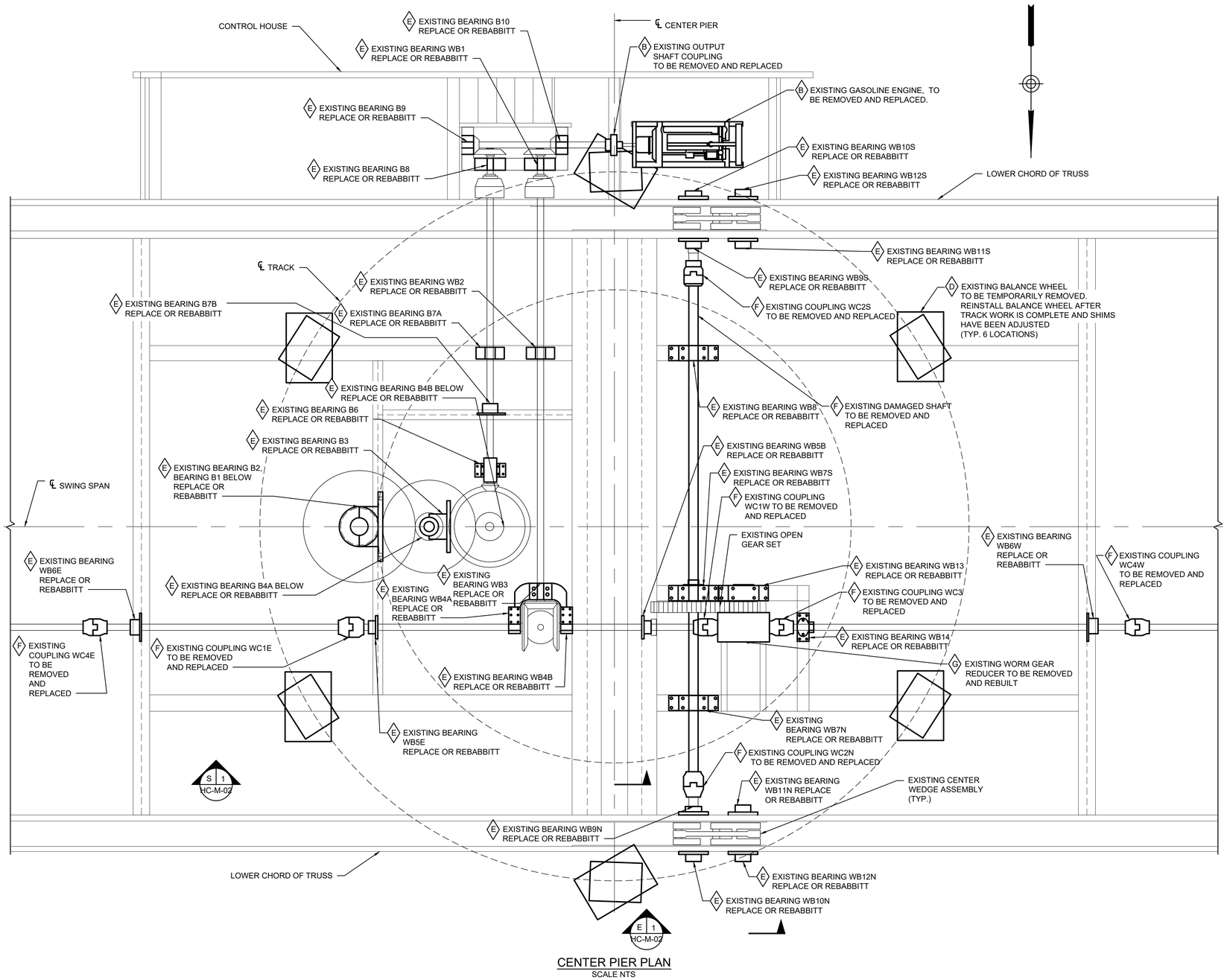
REGISTERED PROFESSIONAL ENGINEER — MICHAEL A. SANCHEZ — No. GC9254 — 6/30/24 — CIVIL — STATE OF CALIFORNIA

STAGE 2 CONSTRUCTION AND TRAFFIC HANDLING PLAN
EIGHT MILE ROAD BRIDGE OVER HONKER CUT
BRIDGE NO. 29C–219

HC–G–05
46 OF 75

$REQUEST $TIME $DATE $USER

DATE PLOTTED: Tuesday, November 22, 2022 TIME PLOTTED: 9:37:18 AM, Kevin Beltran



CENTER PIER PLAN
SCALE NTS

CENTER PIER REHABILITATION NOTES

1. SEE SHEET HC-M-03 FOR TABLE OF TURNING MACHINERY BEARING NAMES AND CORRESPONDING DIAMETERS.
2. THE BALANCE WHEEL CLEARANCE SHALL MEET THE REQUIREMENTS IN EIGHT MILE ROAD BRIDGE OVER HONKER CUT SPECIFICATION SECTION 98-2.03B.
3. ALL BEARINGS TO MEET THE REQUIREMENTS SPECIFIED IN EIGHT MILE ROAD BRIDGE OVER HONKER CUT SPECIFICATION SECTION 98-2.02F.
4. REBUILT WORM GEAR REDUCERS OF THE WEDGE DRIVE MACHINERY SHALL MEET THE REQUIREMENTS IN EIGHT MILE ROAD BRIDGE OVER HONKER CUT SPECIFICATION SECTION 98-2.02G.

MECHANICAL ITEMS OF WORK AT CENTER PIER

B REMOVE AND REPLACE GASOLINE ENGINE, CLUTCH, AND REVERSING GEAR WITH A NEW DIESEL ENGINE INSTALLATION TO MEET THE REQUIREMENTS IN EIGHT MILE ROAD BRIDGE OVER HONKER CUT SPECIFICATION SECTION 98-2.02B THROUGH 98-2.02D.

D RE-SHIM THE BALANCE WHEELS TO PROVIDE CLEARANCE WITH THE TRACK WHEN THE SWING SPAN IS IN THE CLOSED AND LOCKED POSITION.

E REPLACE OR REBABBITT ALL SHAFT BUSHINGS OF THE TURNING AND WEDGE MACHINERY BEARINGS.

F REPLACE ALL JAW COUPLINGS AND DAMAGED SHAFT OF THE CENTER WEDGE MACHINERY.

G REBUILD THE WORM GEAR REDUCERS (3) OF THE WEDGE DRIVE MACHINERY.

$REQUEST $USER $TIME $DATE

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

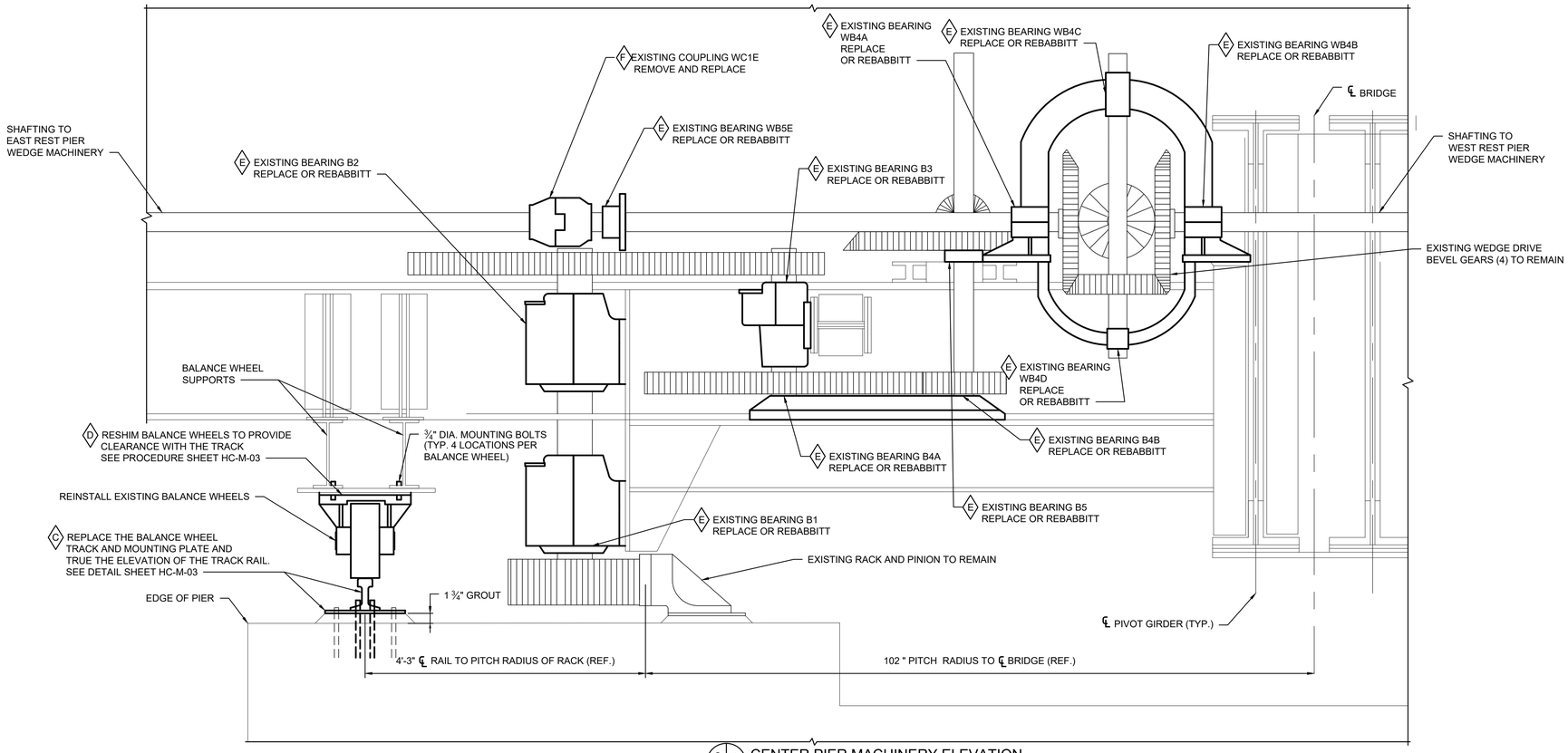
DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

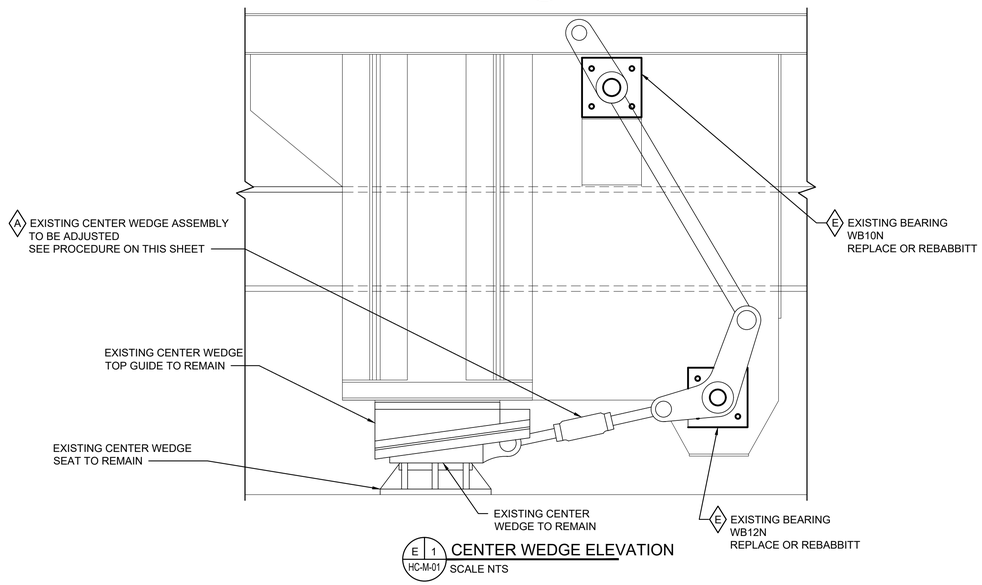
REGISTERED PROFESSIONAL ENGINEER
PAUL M. SKELTON
12/31/
8/22
MECHANICAL
STATE OF CALIFORNIA

CENTER PIER REHABILITATION PLAN
EIGHT MILE ROAD BRIDGE OVER HONKER CUT (BRIDGE NO. 29C-219)

HC-M-01



S 1 HC-M-01 CENTER PIER MACHINERY ELEVATION
SCALE NTS



E 1 HC-M-01 CENTER WEDGE ELEVATION
SCALE NTS

CENTER PIER REHABILITATION NOTES

1. DIMENSIONS SHOWN ARE BASED OFF ORIGINAL SHOP DRAWINGS AND ARE SHOWN FOR REFERENCE. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS.
2. THE FOLLOWING OUTLINES THE SUGGESTED STEPS AND GENERAL PROCEDURE TO PROPERLY SYNCHRONIZE THE WEDGE ASSEMBLIES. THE CONTRACTOR IS RESPONSIBLE FOR DEVELOPING DETAILED PROCEDURE AS PART OF THE WORK.
   - A END WEDGES SHOULD BE ADJUSTED PRIOR TO ADJUSTING THE CENTER WEDGES.
   - B DISCONNECT CENTER WEDGES FROM SHAFTING AND MACHINERY AT COUPLING WC2S OR WC2N.
   - C WITH END WEDGES DRIVEN, MANUALLY POSITION CENTER WEDGES TO ACHIEVE FULL BEARING ON EXISTING CENTER WEDGE SEAT AND TOP GUIDE.
   - D ADJUST CONNECTING ROD TOGGLE NUT TO ENSURE THAT CRANK AND CONNECTING ROD ARE IN FULLY TOGGLED POSITION.
   - E TIGHTEN TOGGLE LOCKING NUTS ON CONNECTING ROD AFTER APPROVAL BY THE INSPECTOR.
   - F FINAL PROCEDURE TO BE DEVELOPED BY THE CONTRACTOR AND SUBMITTED FOR REVIEW.
   - G CENTER WEDGE ADJUSTMENT WORK IS TO BE COORDINATED WITH ALL OTHER WORK.
3. NEW BALANCE WHEEL TRACK MOUNTING PLATE TO BE INSTALLED LEVEL AND TRUE ELEVATION. SEE EIGHT MILE ROAD BRIDGE OVER HONKER CUT SPECIFICATION SECTION 98-2.03B FOR REQUIREMENTS.
4. THE BALANCE WHEELS SHALL BE REMOVED AS A PART OF THE NEW BALANACE WHEEL TRACK MOUNTING PLATE INSTALLATION EFFORT.
5. ALL BEARINGS TO MEET THE REQUIREMENTS SPECIFIED IN EIGHT MILE ROAD BRIDGE OVER HONKER CUT SPECIFICATION SECTION 98-2.02F.
6. AS PART OF THE EFFORT TO REPLACE ALL JAW COUPLINGS, GEAR COUPLINGS CAN BE USED AT NO ADDITIONAL COST TO THE OWNER.

MECHANICAL ITEMS OF WORK AT CENTER PIER

A ADJUST AND RE-TIME ALL CENTER AND END WEDGE CRANK SHAFTS AND CONNECTING RODS TO PROVIDE ADDITIONAL CLEARANCE FOR BRIDGE MOVEMENT.

C REPLACE THE BALANCE WHEEL TRACK AND TRACK MOUNTING PLATE AND TRUE THE ELEVATION OF THE TRACK RAIL.

D RESHIM THE BALANCE WHEELS TO PROVIDE CLEARANCE WITH THE TRACK WHEN THE SWING SPAN IS IN THE CLOSED AND LOCKED POSITION.

E REPLACE OR REBABBITT ALL SHAFT BUSHINGS OF THE TURNING AND WEDGE MACHINERY BEARINGS. SEE SHEET HC-M-03 AND HC-M-05 FOR TABLES OF QUANTITIES AND JOURNAL DIAMETERS OF ALL BEARINGS.

F REPLACE JAW COUPLINGS AND DAMAGED SHAFT OF THE CENTER WEDGE DRIVE MACHINERY.

TURNING MACHINERY BEARINGS	
BEARING NAME	DIAMETER (IN)
B1	7.5000
B2	7.5000
B3	4.2880
B4A	4.2880
B4B	3.4375
B5	3.4820
B6	2.7045
B7A	2.7025
B7B	2.7025
B8	2.5900
B9	2.5900
B10	2.5900
TOTAL 12 BEARINGS	

DIAMETERS SHOWN ARE FOR REFERENCE ONLY. CONTRACTOR TO MEASURE SHAFT DIAMETERS TO PROVIDE CORRECT RC6 FIT AT THE BEARINGS.

$USER $TIME $DATE $REQUEST

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

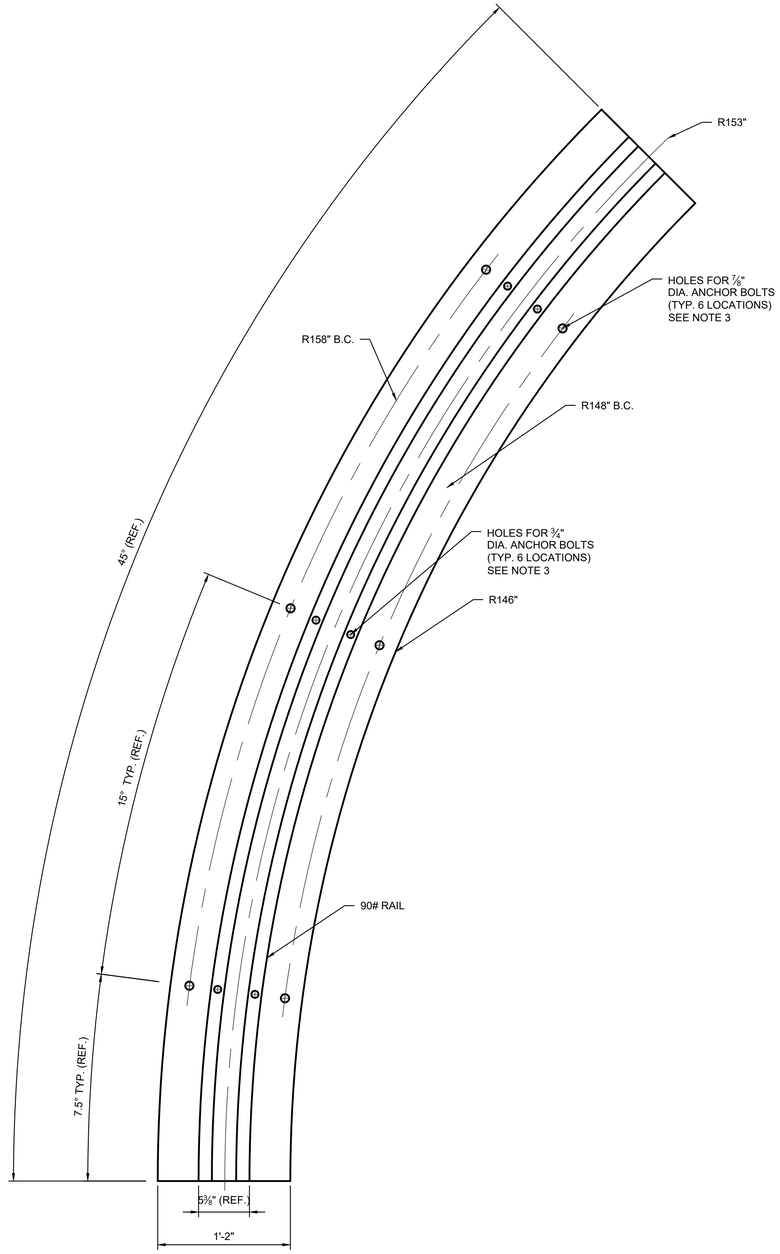
REGISTERED PROFESSIONAL ENGINEER PAUL M. SKEEHAN 32450 11/18/22 MECHANICAL STATE OF CALIFORNIA

100% SUBMISSION

CENTER PIER REHABILITATION DETAILS I
EIGHT MILE ROAD BRIDGE OVER HONKER CUT
(BRIDGE NO. 29C-219)

HC-M-02

48 OF 75



BALANCE WHEEL TRACK AND TRACK MOUNTING PLATE

SCALE 1 1/2" = 1'-0"
(8) PLATES REQUIRED
PLATE MATERIAL - ASTM A240 TYPE 316 STAINLESS STEEL

MECHANICAL INSTALLATIONS AT CENTER PIER

(C) REPLACE THE BALANCE WHEEL TRACK AND TRACK MOUNTING PLATE AND TRUE THE ELEVATION OF THE TRACK RAIL.

(D) RESHIM BALANCE WHEELS TO PROVIDE CLEARANCE WITH THE TRACK WHEN THE SWING SPAN IS IN THE CLOSED AND LOCKED POSITION.

NOTES

1. THE ADJUSTED ELEVATION OF THE BALANCE WHEEL TRACK RAIL TO MEET THE REQUIREMENTS SPECIFIED IN EIGHT MILE ROAD BRIDGE OVER HONKER CUT SPECIFICATION SECTION 98-2.03B. CONTRACTOR TO VERIFY DIMENSIONS OF BALANCE WHEEL TRACK MOUNTING PLATE.
   BALANCE WHEEL TRACK MOUNTING PLATE SUGGESTED PROCEDURE:
   - 1.1. REPLACEMENT OF THE BALANCE WHEEL TRACK MOUNTING PLATE IS TO BE DONE AFTER THE CENTER AND END WEDGES HAVE BEEN ADJUSTED.
   - 1.2. REMOVE THE BALANCE WHEELS.
   - 1.3. REMOVE TRACK TO LIFT MOUNTING PLATE OVER ANCHOR BOLTS.
   - 1.4. REMOVE EXISTING TRACK MOUNTING PLATE GROUT.
   - 1.5. INSTALL NEW BALANCE WHEEL TRACK MOUNTING PLATE AND BALANCE WHEEL TRACK WITHIN LEVEL WITH NO DEVIATIONS IN ELEVATION EXCEEDING 1/32".
   - 1.6. ADD NEW NONSHRINK EPOXY GROUT (CHOCKFAST OR EQUAL) UNDER NEW BALANCE WHEEL TRACK MOUNTING PLATE. EXISTING ANCHORS MAY BE REUSED.
   - 1.7. COORDINATE NEW BALANCE WHEEL TRACK AND MOUNTING PLATE INSTALLATION WITH BALANCE WHEEL SHIM ADJUSTMENT TO ENSURE ADEQUATE SHIMS ARE PROVIDED.
   - 1.8. REINSTALL BALANCE WHEELS OBSERVING THE SUGGESTED BALANCE WHEEL SHIMMING PROCEDURE.
   - 1.9. DEVELOP AND SUBMIT FINAL PROCEDURE FOR REVIEW.

2. THE FOLLOWING IS A SUGGESTED BALANCE WHEEL SHIMMING PROCEDURE:
   - 2.1 DRIVE THE CENTER AND END WEDGES UNTIL THEY ARE IN THE FULLY DRIVEN POSITION.
   - 2.2 WITH THE WEDGES DRIVEN, INSPECT BALANCE WHEELS AND VERIFY THAT THERE IS CLEARANCE BETWEEN ALL WHEELS AND THE TRACK.
   - 2.3 SHIM ALL BALANCE WHEELS TO ACHIEVE 1/32" CLEARANCE BETWEEN THE BOTTOM OF EACH BALANCE WHEEL AND THE TOP OF THE TRACK.
   - 2.4 RETRACT THE CENTER AND END WEDGES TO THE FULLY WITHDRAWN POSITION.
   - 2.5 INSPECT THE BALANCE WHEELS AND MEASURE CLEARANCE BETWEEN THE BOTTOM OF THE BALANCE WHEEL AND THE TOP OF THE TRACK.
   - 2.6 CONTACT WITH THE TRACK IS ACCEPTABLE AS LONG AS THE COMBINED CLEARANCE OF DIAMETRICALLY OPPOSED BALANCE WHEELS IS 1/16".
   - 2.7 DEVELOP AND SUBMIT FINAL PROCEDURE FOR REVIEW.

$USER
$TIME
$DATE
$REQUEST

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
PAUL M. SKEHAN
32451
11/18/22
MECHANICAL
STATE OF CALIFORNIA

100% SUBMISSION

CENTER PIER REHABILITATION DETAILS II
EIGHT MILE ROAD BRIDGE OVER HONKER CUT
(BRIDGE NO. 29C-219)

HC-M-03

49
OF
75

END WEDGE REHABILITATION NOTES

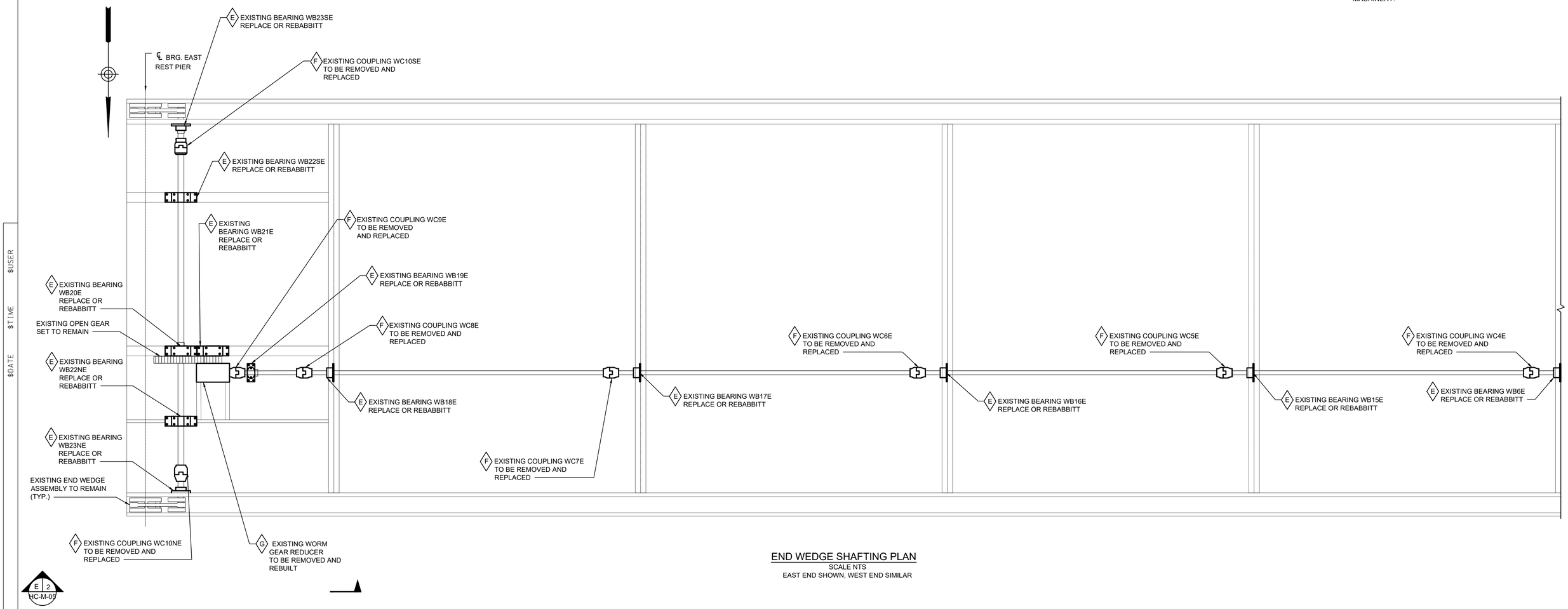
1. SEE SHEET HC-M-05 FOR TABLE OF WEDGE BEARINGS AND COUPLINGS AND THEIR CORRESPONDING DIAMETERS.
2. ALL BEARINGS TO MEET THE REQUIREMENTS SPECIFIED IN EIGHT MILE ROAD BRIDGE OVER HONKER CUT SPECIFICATIONS SECTION 98-2.02F.
3. AS PART OF THE EFFORT TO REPLACE ALL JAW COUPLINGS, GEAR COUPLINGS CAN BE USED AT NO ADDITIONAL COST TO THE OWNER.
4. THE REBUILT WORM GEAR REDUCERS SHALL MEET THE REQUIREMENTS IN EIGHT MILE ROAD BRIDGE OVER HONKER CUT SPECIFICATION SECTION 98-2.02G.
5. CONTRACTOR CAN OPTIONALLY REPLACE FLOATING SHAFTS IN KIND AT NO ADDITIONAL COST TO THE OWNER.

MECHANICAL WORK ITEMS AT END PIERS

(E) REPLACE OR REBABBITT ALL SHAFT BUSHINGS OF THE TURNING AND WEDGE MACHINERY.

(F) REPLACE ALL JAW COUPLINGS AND DAMAGED SHAFT OF THE CENTER WEDGE DRIVE MACHINERY.

(G) REBUILD WORM GEAR REDUCERS OF THE WEDGE DRIVE MACHINERY.



E 2
HC-M-05

END WEDGE SHAFTING PLAN
SCALE NTS
EAST END SHOWN, WEST END SIMILAR

$REQUEST $USER $TIME $DATE

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

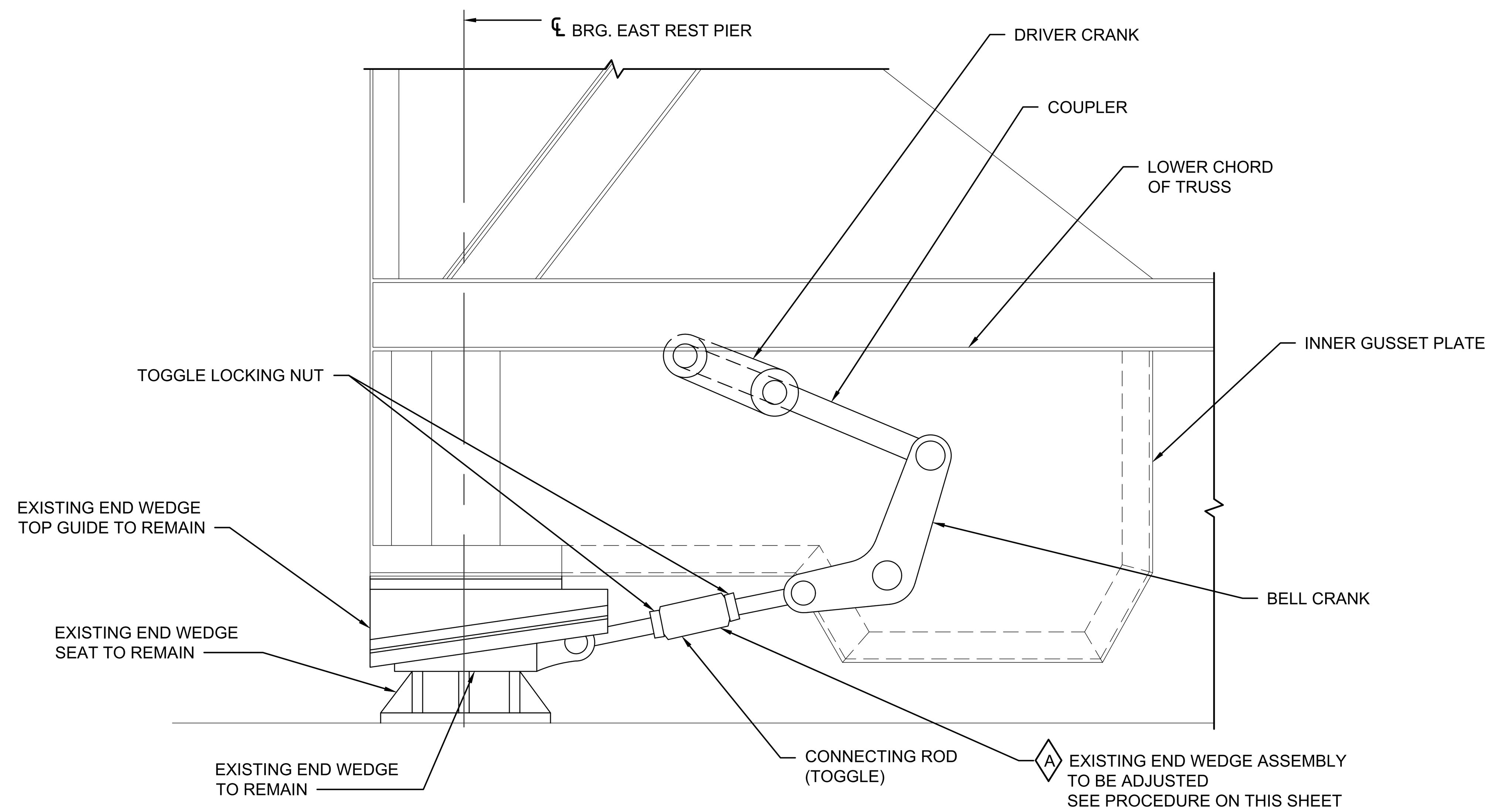
Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
PAUL M. SKEMAN
11/18/22
MECHANICAL
STATE OF CALIFORNIA

END WEDGE REHABILITATION PLAN
EIGHT MILE ROAD BRIDGE OVER HONKER CUT
(BRIDGE NO. 29C-219)

HC-M-04

50
OF
75



E 2 HC-M-04 **END WEDGE ELEVATION**
SCALE NTS
OUTER GUSSET PLATE NOT SHOWN FOR CLARITY
EAST END SHOWN, WEST END SIMILAR

MECHANICAL ITEMS OF WORK AT END PIER

(A) ADJUST AND RE-TIME ALL CENTER AND END WEDGE CRANK SHAFTS AND CONNECTING RODS TO PROVIDE ADDITIONAL CLEARANCE FOR BRIDGE MOVEMENT.

NOTES

1. THE FOLLOWING OUTLINES THE STEPS AND GENERAL PROCEDURE TO PROPERLY SYNCHRONIZE THE WEDGE ASSEMBLIES. THE CONTRACTOR IS RESPONSIBLE FOR DEVELOPING DETAILED PROCEDURE AS PART OF THE WORK.
   - 1.1 END WEDGES SHOULD BE ADJUSTED PRIOR TO ADJUSTING THE CENTER WEDGES.
   - 1.2 DISCONNECT END WEDGES AT NEAREST COUPLING.
   - 1.3 JACK EACH CORNER OF THE BRIDGE UNTIL ROADWAY IS EVEN WITH APPROACH SPAN.
   - 1.4 ENSURE END WEDGE IS IN FIRM, EVEN CONTACT WITH BOTH THE WEDGE SEAT AND TOP GUIDE WHILE THE CORNER OF THE BRIDGE IS EVEN WITH APPROACH SPAN. ADJUST LOCKING NUTS AS NEEDED TO ACHIEVE THIS CONDITION.
   - 1.5 TIGHTEN TOGGLE LOCKING NUTS ON CONNECTING ROD AFTER APPROVAL BY THE INSPECTOR.
   - 1.6 FINAL PROCEDURE TO BE DEVELOPED BY THE CONTRACTOR AND SUBMITTED FOR REVIEW.
   - 1.7 END WEDGE ADJUSTMENT WORK IS TO BE COORDINATED WITH ALL OTHER WORK.

WEDGE MACHINERY BEARINGS

BEARING NAME	DIAMETER (IN)	BEARING NAME	DIAMETER (IN)
WB1	2.71450	WB13	3.50000
WB2	2.71700	WB14E/W	2.70500
WB3	2.71700	WB15E/W	2.70500
WB4A/B/C/D	2.71450	WB16E/W	2.70500
WB5E/W	2.07500	WB17E/W	2.70500
WB6E/W	3.93750	WB18E/W	2.70500
WB7N/S	3.93750	WB19E/W	2.70500
WB8	3.93750	WB20E/W	3.93750
WB9N/S	3.93750	WB21E/W	3.50000
WB10N/S	3.93750	WB22NE/NW/SE/SW	3.93750
WB11N/S	3.93750	WB23NE/NW/SE/SW	3.93750
WB12N/S	3.93750		
TOTAL 47 BEARINGS			

DIAMETERS SHOWN ARE FOR REFERENCE ONLY. CONTRACTOR TO MEASURE SHAFT DIAMETERS TO PROVIDE CORRECT RC6 FIT AT THE BEARINGS.

WEDGE MACHINERY COUPLINGS

COUPLING NAME	DIAMETER (IN)
WC1E/W	2.71450
WC2N/S	3.9375
WC3	2.7050
WC4E/W	2.7050
WC5E/W	2.07500
WC6E/W	2.7050
WC7E/W	2.7050
WC8E/W	2.7050
WC9E/W	2.7050
WC10NE/NW/SE/SW	3.93750
TOTAL 21 COUPLINGS	

$USER $TIME $DATE $REQUEST

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER PAUL M. SKELTON 11/18/22 MECHANICAL STATE OF CALIFORNIA

HC-M-05

END WEDGE REHABILITATION DETAILS
EIGHT MILE ROAD BRIDGE OVER HONKER CUT
(BRIDGE NO. 29C-219)

GENERAL

1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE STATE OF CALIFORNIA,, THE COUNTY OF SAN JOAQUIN, THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, AND THE REGULATIONS OF THE UNDERWRITERS LABORATORIES. ALL ELECTRICAL INSTALLATIONS SHALL CONFORM TO THE 2017 NATIONAL ELECTRIC CODE OR LATER.

2. ALL ELECTRICAL WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES AND SHALL BE SCHEDULED CONSISTENT WITH THE OVERALL CONSTRUCTION STAGING SEQUENCE. ELECTRICAL REMOVAL WORK SHALL BE PERFORMED AND COORDINATED WITH THE ELECTRICAL INSTALLATION WORK.

3. CONTRACTOR SHALL PERFORM ALL WORK WITH DUE RESPECT FOR LIFE AND PROPERTY IN THE VICINITY OF THE WORK AREA. CONTRACTOR ALONE SHALL BE RESPONSIBLE FOR PROTECTION OF SAME FROM ANY HARM OR DAMAGE DURING THE ENTIRE CONSTRUCTION PERIOD. ANY HARM OR DAMAGE SHALL BE RECTIFIED TO THE ENTIRE SATISFACTION OF THE COUNTY OF SAN JOAQUIN AT NO ADDITIONAL COST.

4. EXISTING DIMENSIONS AND DETAILS SHOWN IN THE PLANS ARE BASED ON AVAILABLE INFORMATION TAKEN FROM EXISTING PLANS, FIELD MEASUREMENTS, AND FIELD INSPECTIONS. ALL EXISTING DIMENSIONS AND DETAILS THAT AFFECT THE WORK CALLED FOR IN THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO START OF WORK. IN THE EVENT THAT EXISTING CONDITIONS OR DETAILS VARY FROM THOSE SHOWN ON THESE DRAWINGS, THE CONTRACTOR MUST MAKE THE NECESSARY DRAWINGS SHOWING THE EXISTING CONDITIONS AND SUBMIT TO THE COUNTY OF SAN JOAQUIN FOR REVIEW AND RESOLUTION.

5. THE ELECTRICAL EQUIPMENT AND RACEWAY LAYOUTS SHOWN IN THE CONTRACT DOCUMENTS ARE DIAGRAMMATIC IN NATURE AND INTENDED TO SHOW A CONCEPTUAL LAYOUT. SCALES ARE APPROXIMATE AND NOT EVERY DETAIL OR EXACT LOCATION OF EQUIPMENT AND/OR CONDUIT IS SHOWN. EXISTING CONDITIONS SHALL BE VERIFIED IN THE FIELD. WHILE MAJOR EQUIPMENT IS SHOWN, NOT EVERY DETAIL OR EXACT LOCATION OF ALL EQUIPMENT AND/OR CONDUIT MAY BE SHOWN. SIZES OF EQUIPMENT MAY VARY, DEPENDING ON THE MANUFACTURER SELECTED. THE CONTRACTOR SHALL FOLLOW THESE LAYOUTS AS CLOSELY AS POSSIBLE, REALIZING THAT ACTUAL INSTALLATIONS MAY VARY SLIGHTLY DUE TO THE FIELD CONDITIONS AND STRUCTURAL MECHANICAL COORDINATION. THE CONTRACTOR SHALL VERIFY ALL THE DIMENSIONS RELATED TO ELECTRICAL EQUIPMENT INSTALLATION PRIOR TO PERFORMING THE ACTUAL INSTALLATION. ANY DEVIATIONS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL ANY DEVIATIONS IN PROPOSED CABLE AND CONDUIT ROUTINGS.

6. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL REQUIRED BOXES, CONDUIT FITTINGS, ELBOWS, AND HARDWARE FOR A COMPLETE INSTALLATION WHETHER OR NOT THEY ARE EXPLICITLY SHOWN OR INDICATED ON THE CONTRACT DRAWINGS.

7. THESE PLANS AND SPECIFICATIONS DO NOT NECESSARILY SHOW ALL ASPECTS OF THE REQUIRED INSTALLATION. PERFORM ALL WORK NECESSARY, TO PROVIDE FULLY OPERATIONAL SYSTEMS THAT ARE IN COMPLIANCE WITH ALL STATED CONTRACT REQUIREMENTS, WHETHER SHOWN ON THE PLANS OR NOT. PRESENTATION OF INCOMPLETE INFORMATION OR OMISSIONS OF DETAILS FOR ITEMS WHICH ARE NECESSARY TO CARRY OUT THE INTENT OF THE DRAWINGS AND SPECIFICATIONS, OR WHICH ARE CUSTOMARILY PERFORMED, SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING SUCH OMISSIONS AND DETAILS OF WORK, AT NO EXTRA COST.

8. ANY APPARATUS, DEVICE, CIRCUIT, APPLIANCE, MATERIAL, OR LABOR NOT HEREIN SPECIFICALLY MENTIONED OR INCLUDED, BUT THAT MAY BE FOUND NECESSARY TO COMPLETE OR PERFECT THE INSTALLATION AND EQUIPMENT IN A MANNER ACCEPTABLE TO THE ENGINEER, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AS IF SPECIFICALLY INCLUDED IN THESE DRAWINGS.

9. IN ANY CASE OF DISCREPANCIES IN NOTED DETAILS, CATALOG NUMBERS, AND DESCRIPTIONS, OR WHERE MULTIPLE INTERPRETATIONS OF THE PLANS MAY BE REASONABLY MADE, SUBMIT A WRITTEN INQUIRY TO THE ENGINEER, WHO WILL MAKE DETERMINATION IN WRITING. ANY DEVIATION FROM THE PLANS AND SPECIFICATIONS OR INTERPRETATIONS MADE BY THE CONTRACTOR WITHOUT WRITTEN APPROVAL BY THE ENGINEER SHALL BE AT THE CONTRACTOR'S OWN RISK AND EXPENSE. IN THE CASE OF DISCREPANCY BETWEEN SPECIFICATIONS AND PLANS, THE MORE STRINGENT SHALL GOVERN.

10. ALL TEMPORARY WORKS AND SUPPORTS REQUIRED TO COMPLETE THE WORK SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL BE CONSIDERED INCIDENTAL TO THE OTHER WORK ITEMS.

11. ALL ELECTRICAL COMPONENTS AND MATERIAL SHOWN ON THE CONTRACT DRAWINGS ARE NEW UNLESS OTHERWISE NOTED.

12. THE CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING AS REQUIRED FOR THE REMOVAL AND INSTALLATION OF ELECTRICAL COMPONENTS, HANGERS, SUPPORTS, ETC. ALL PATCHING SHALL BE DONE SO AS TO LEAVE THE AREA IN ITS ORIGINAL CONDITION AS A MINIMUM OR AS OTHERWISE REQUIRED BY THE ENGINEER.

13. CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL CONSTRUCTION DEBRIS IN THE VICINITY OF THE WORK. THE CONTRACTOR SHALL CONTROL CLEANING TO PREVENT DIRT OR DUST FROM LEAVING THE JOB SITE AND INFILTRATING AREAS NOT INVOLVED IN THE PROJECT. AT THE COMPLETION OF THE WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LEAVING THE SITE IN A CLEAN, ORDERLY STATE.

14. EXISTING ELECTRICAL CABLE, WIRES, CONDUIT, CONDUIT HANGERS, SUPPORTS, CLAMPS, ETC, THAT ARE BEING REPLACED SHALL NOT BE REUSED. ALL SUCH PARTS SHALL BE REMOVED AND PROPERLY DISPOSED OF.

15. THE CONTRACTOR MAY PROPOSE REMOVAL OF COMPONENTS OF THE EXISTING STRUCTURE IN ORDER TO ACCOMMODATE PROPOSED ELECTRICAL WORK. ANY SUCH PROPOSALS SHALL BE SUBMITTED TO THE COUNTY OF SAN JOAQUIN FOR APPROVAL. ALL REMOVED ITEMS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE COUNTY OF SAN JOAQUIN PRIOR TO THE COMPLETION OF WORK.

16. THE CONTRACTOR SHALL COMPLY WITH THE COUNTY OF SAN JOAQUIN'S REQUIREMENTS FOR BUILDING SECURITY AND ACCESS. BUILDING ACCESS AND STORAGE AREAS FOR NECESSARY CONSTRUCTION MATERIALS AND EQUIPMENT SHALL BE COORDINATED WITH THE COUNTY OF SAN JOAQUIN.

17. THE CONTRACTOR SHALL REMOVE AND RE-EXECUTE ALL UNSATISFACTORY WORK AT NO ADDITIONAL COST TO THE COUNTY OF SAN JOAQUIN.

18. ALL STRUCTURAL, MECHANICAL AND ARCHITECTURAL BACKGROUND INFORMATION SHOWN IN THE ELECTRICAL PLANS IS FOR REFERENCE ONLY.

19. CONDUIT PENETRATIONS THROUGH WALLS AND FLOORS OF BUILDINGS SHALL BE SEALED WITH AN APPROVED FIRE-STOP SEALANT.

20. ALL CONDUITS AND FITTINGS USED IN ONE CONTINUOUS RUN SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER.

21. THE CONTRACTOR SHALL FURNISH AND INSTALL ENGRAVED BRASS TAGS AT BOTH ENDS OF ALL RACEWAY RUNS IDENTIFYING THEM WITH THE FINAL CONDUIT DESIGNATIONS WHICH SHALL COINCIDE WITH THOSE IN THE CONTRACTOR'S FINAL AS-BUILT DRAWINGS. PAYMENT FOR THESE TAGS SHALL BE UNDER THE VARIOUS PAY ITEMS TO WHICH THE RACEWAYS PERTAIN.

22. ENCLOSURES WHERE SHOWN IN THE PLANS SHALL BE NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION (NEMA) 4X STAINLESS STEEL WITH CONTINUOUS HINGES AND LATCHES, UNLESS OTHERWISE NOTED.

23. ALL NEW CONDUCTORS INSTALLED IN CONDUIT SHALL BE INSTALLED WITH GROUND CONDUCTORS. GROUND CONDUCTORS SHALL BE PROVIDED IN ALL NEW FLEXIBLE CABLES. GROUND CONDUCTOR SHALL BE SIZED AS PER THE NEC OR MINIMUM SIZE #14 AWG. WHICHEVER IS LARGER. ALL CABINETS, TERMINAL AND JUNCTION BOXES SHALL BE GROUNDED IN ACCORDANCE WITH THE NEC.

24. ALL CONDUCTORS SHALL BE CONNECTED TO TERMINAL BLOCKS OR DEVICES. SPLICES SHALL NOT BE PERMITTED WITHIN EQUIPMENT ENCLOSURES, BOXES OR CONDUIT FITTINGS.

25. ALL EQUIPMENT NOTED AS PROPOSED SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

26. PRIOR TO THE COMMENCEMENT OF ANY WORK, THE CONTRACTOR SHALL SUBMIT A COMPREHENSIVE STAGING PLAN IN ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS WHICH SHALL CLEARLY DEFINE SPECIFIC MILESTONE DATES TO THE ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR ALL OTHER CONSTRUCTION THAT MAY AFFECT OPERATIONS OR SCHEDULE.

27. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS RELATING TO ELECTRICAL EQUIPMENT INSTALLATIONS PRIOR TO PERFORMING THE ACTUAL INSTALLATIONS. ANY DEVIATIONS NOTED AS PART OF THE FIELD VERIFICATION OR CONSTRUCTION DEVIATIONS REGARDING THE STRUCTURE, SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

GENERAL (CONTINUED)

28. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN THE LOCATIONS DEPICTED ON THE PLANS. DEVIATIONS IN LOCATION SHALL BE PERMITTED ONLY UPON APPROVAL BY THE ENGINEER.

29. UPON COMPLETION OF ELECTRICAL INSTALLATION, THE CONTRACTOR SHALL TEST THE COMPLETE ELECTRICAL SYSTEM FOR ACCEPTANCE. PRIOR TO TESTING, THE CONTRACTOR SHALL SUBMIT A COMPLETE TESTING PROCEDURE FOR APPROVAL. THE SYSTEM SHALL BE TESTED STEP BY STEP FOR SHORT CIRCUITS, GROUNDS, PROPER OPERATION AND INTERLOCKS IN THE PRESENCE OF THE ENGINEER, ALL FINDINGS SHALL BE RECORDED AND DEFICIENCIES CORRECTED. SEE SPECIFICATIONS FOR ADDITIONAL TESTING REQUIREMENTS.

30. WIREWAYS WHERE SHOWN IN THE PLANS SHALL BE NEMA 4X STAINLESS STEEL WITH CONTINUOUS HINGES AND LATCHES. SIZES AS REQUIRED TO MEET NEC.

31. ALL ABOVE GROUND OUTDOOR CONDUITS SHALL BE PVC-RGS UNLESS NOTED OTHERWISE. ALL UNDERGROUND OR EMBEDDED IN BARRIERS/CONCRETE CONDUITS SHALL BE PVC-SCHEDULE 80 UNLESS NOTED OTHERWISE.

GENERAL SCOPE OF WORK

1. THE HONKER CANAL MOVABLE BRIDGE SHALL HAVE NEW ELECTRICAL EQUIPMENT INSTALLED ALONGSIDE EXISTING EQUIPMENT ON THE EXISTING MOVABLE BRIDGE AS SHOWN ON THE PLANS AND DESCRIBED IN THE SPECIFICATIONS.

2. FINAL TESTING OF THE ELECTRICAL EQUIPMENT IN THE SHOP (PRIOR TO DELIVERY) SHALL BE DONE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

3. DURING SHIPMENT OF ALL MATERIALS TO THE WORK SITE, SUPPORTS AND PROTECTIVE MEASURES NECESSARY TO ENSURE SHIPMENT WITHOUT DAMAGE TO THE ELECTRICAL EQUIPMENT SHALL BE INCLUDED WITH THIS WORK. DAMAGE TO ELECTRICAL EQUIPMENT DURING SHIPPING AND HANDLING SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE COUNTY. COMPONENTS DAMAGED BEYOND REPAIR, TO THE COUNTY OF SAN JOAQUIN'S SATISFACTION, SHALL BE REPLACED BY THE CONTRACTOR AT NO COST TO THE COUNTY.

4. SITE ACCEPTANCE TESTING SHALL BE CONDUCTED AFTER COMPLETE INSTALLATION. THE CONTRACTOR SHALL PROVIDE WRITTEN VERIFICATION THAT THEY HAVE PERFORMED THIS FINAL INSPECTION AND INDICATE TESTING RESULTS.

5. DETAILED PROGRESS REPORTS AND PROJECTED DELIVERY SCHEDULES SHALL BE PROVIDED THROUGHOUT THE PROJECT. UPDATED SCHEDULES SHALL BE PROVIDED TO THE COUNTY OF SAN JOAQUIN NO LESS FREQUENTLY THAN BI-WEEKLY.

6. ACCOMMODATION AND PROVISION OF ACCESS TO THE SHOP WORK BY COUNTY OF SAN JOAQUIN STAFF AND INSPECTORS SHALL BE GRANTED AT THE REQUEST OF THE COUNTY OF SAN JOAQUIN.

MOUNTING METHOD NOTES

1. WHERE MOUNTING ITEMS SUCH THAT DISSIMILAR METALS MAY BE IN CONTACT WITH EACH OTHER, PROVIDE NEOPRENE SPACERS OR GASKETS TO PREVENT CONTACT. THIS REQUIREMENT WILL NOT BE REQUIRED SPECIFICALLY FOR THE CASE OF CONTACT BETWEEN CARBON STEEL AND STAINLESS STEEL.

JUNCTION BOX, PULL BOX, CABINET, AND FITTING NOTES

1. FURNISH AND INSTALL JUNCTION AND PULL BOXES, REDUCERS, AND OTHER FITTINGS AS REQUIRED BY THESE SPECIFICATIONS OR WHERE REQUIRED BY THE NATIONAL ELECTRIC CODE (NEC), OR WHERE REQUIRED TO FACILITATE PULLING, WHETHER SHOWN ON PLANS OR NOT.

2. CONDUIT TOP ENTRY IS NOT PERMITTED FOR OUTDOOR CABINETS THAT CONTAIN ELECTRICAL EQUIPMENT. ALL WET AND OUTDOOR LOCATION CONDUIT FITTINGS AND HUBS SHALL BE WATERTIGHT TYPE.

AS-BUILT PLANS

1. PROVIDE AS-BUILT PLANS SHOWING THE FINAL LOCATIONS, DETAILS, AND METHODS FOR ALL ELECTRICAL INSTALLATIONS. AS-BUILT PLANS SHALL BE DEVELOPED USING THIS PLAN SET, THE EXISTING ELECTRICAL SYSTEM PLAN SET, AND ALL CHANGES OF PLAN AS A BASIS. USE EITHER A "RED-LINE" METHOD THAT SHOWS REVISIONS, OR A COMPUTERIZED METHOD WHICH REVISES THE ELECTRONIC FILES. MATCH THE LEVEL OF DETAIL SHOWN ON THESE PLANS. SUBSTITUTE DETAILS SHALL BE PROVIDED WHERE THE DETAILS ON THIS SHEET ARE MODIFIED OR ALTERNATE DETAILS ARE APPROVED BY THE ENGINEER. IT WILL NOT BE PERMISSIBLE TO "X" OUT DETAILS WITHOUT PROVIDING NEW VERSIONS.

2. IN ADDITION TO PROVIDING AS-BUILT PLANS FOR THE PLANS INCLUDED HEREIN, PROVIDE AS-BUILT PLANS FOR THE FOLLOWING:
   - 2.1. CONTROL SYSTEM SCHEMATICS.
   - 2.2. RACEWAY SCHEDULES NOTING SIZE, TYPE, CIRCUITS.
   - 2.3. WIRE NUMBERS.
   - 2.4. WIRING TERMINATION DESIGNATIONS.

3. INTEGRATE EXISTING EQUIPMENT TO REMAIN INTO THE AS-BUILTS TO PROVIDE A COMPLETE SET.

ELECTRICAL MACHINERY AND EQUIPMENT NOTES

1. COORDINATE, VERIFY, AND INCORPORATE PROPER CLEARANCES BETWEEN ELECTRICAL ENCLOSURES TO ALLOW FOR INSTALLATION OF EQUIPMENT AS SHOWN ON THE PLANS. SEE MACHINERY/MECHANICAL PLANS FOR ADDITIONAL REQUIREMENTS.

2. PLANS MAY NOT SHOW DETAILED CONSTRUCTION METHODS OR DIMENSIONS FOR EQUIPMENT MOUNTING SUPPORTS. WHERE NOT SHOWN, CONTRACTOR SHALL DEVELOP SCALED SHOP DRAWINGS SHOWING CONSTRUCTION OF THE MOUNTING, AND ALL ATTACHED EQUIPMENT FOR REVIEW AND APPROVAL. INTERCONNECTED EQUIPMENT SHALL BE SUBMITTED AS A COMPLETE SHOP DRAWING SUBMISSION.

3. MODEL NUMBERS SHOWN ON PLANS ARE PROVIDED FOR REFERENCE ONLY. MODEL NUMBERS MAY NOT BE COMPLETE. IN CASE OF DISCREPANCY BETWEEN MODEL NUMBERS AND STATED SPECIFICATIONS, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL MODEL NUMBERS AND PROVIDING COMPLETE MODEL INFORMATION FOR ALL EQUIPMENT THROUGH THE SHOP DRAWING PROCESS.

4. ALL CONTROL PANELS, TEMPORARY AND PERMANENT SHALL BE CONSTRUCTED FOLLOWING NFPA 70, NEC ARTICLE 409 - INDUSTRIAL CONTROL PANELS.

5. ALL CIRCUIT BREAKERS (CB) (EXCEPT FOR BRANCH CB IN LIGHTING PANELS) , MOTOR CIRCUIT PROTECTORS, CONTACTORS, AND OVERLOADS SHALL BE PROVIDED WITH A MINIMUM OF 2 NORMALLY OPEN (N.O.) AND 2 NORMALLY CLOSED (N.C.) AUXILIARY CONTACTS UNLESS OTHERWISE NOTED.

6. ALL ELECTRICAL PARTS SHALL BE COMPLETELY PROTECTED FROM WEATHER, DIRT, AND ALL OTHER INJURIOUS CONDITIONS DURING MANUFACTURE AND SHIPMENT.

7. DEMOLITION OF EXISTING DC DRIVE BACKPANEL ASSEMBLY IN EXISTING DRIVE CABINETS LOCATED IN THE MCC CONTROL ROOM AS SHOWN ON PLANS (8 IN TOTAL).

8. COVERS FOR ALL EQUIPMENT SHALL BE EASILY REMOVABLE AND REPLACEABLE WITHOUT DISASSEMBLY OF ANY COMPONENT EXCEPT THE ONE REQUIRING ACCESS. CLEARANCES BETWEEN EQUIPMENT SHALL BE INCREASED TO MEET THIS REQUIREMENT.

9. THE CONTRACTOR SHALL PROVIDE IN-SIGHT (LOCAL) DISCONNECT SWITCH, EITHER SINGLE POLE, DOUBLE POLE OR THREE POLE AS REQUIRED FOR EACH ELECTRICAL APPLIANCE SUCH AS ELECTRICAL WATER HEATER, AIR CONDITIONER, VENTILATION FAN ETC., WHETHER SHOWN OR NOT ON THE CONTRACT PLANS.

$USER $TIME $DATE $REQUEST

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					NO SCALE

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

ELECTRICAL GENERAL NOTES I
EIGHT MILE ROAD BRIDGE OVER HONKER CUT
(BRIDGE NO. 29C-219)

HC-E-01

52
OF
75

CONDUITS, CABLE, AND WIRING NOTES

1. WHERE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IS NOT SHOWN ON THE DRAWINGS, PROVIDE AN ADDITIONAL EQUIPMENT GROUNDING CONDUCTOR, SIZED IN ACCORDANCE WITH THE NEC.

2. QUANTITY OF CONTROL SYSTEM CABLES/WIRES SHOWN ON THE DRAWINGS MAY NOT REFLECT THE ACTUAL NUMBER REQUIRED TO PROVIDE THE STATED SYSTEM OPERATION. THE CONTRACTOR SHALL INSTALL THE QUANTITY OF CABLES/WIRES AS ARE NECESSARY FOR THE INITIAL INSTALLATION, PLUS A MINIMUM OF 10% SPARE.

3. LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT (LFMC) SHALL BE USED ONLY FOR APPLICATIONS THAT REQUIRE A HIGH DEGREE OF FLEXIBILITY OR TO ACCOMMODATE MOVING OR VIBRATING PARTS. SUBSTITUTION OF OTHER CONDUIT TYPES WITH LFMC SHALL NOT BE MADE SOLELY BASED ON CONVENIENCE OF INSTALLATION. USE LFMC FOR FINAL CONNECTIONS TO MOTOR AND LIMIT SWITCHES. MAXIMUM LENGTH SIX (6) FEET. DO NOT ATTACH CONDUIT TO MOTOR FOUNDATION.

4. SUPPORT CONDUIT EVERY FIVE (5) FEET. MAXIMUM SPACING FOR CONDUIT SUPPORTS DUE TO FIELD CONDITIONS MAY BE EXTENDED UP TO SIX (6) FEET UPON ENGINEER'S APPROVAL. DEVIATION FROM THIS REQUIREMENT SHALL BE AT THE SOLE DISCRETION OF THE ENGINEER. DO NOT SUPPORT BOXES OR CABINETS FROM CONDUIT. INSTALL ALL CONDUIT PER THE NEC AND AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) STANDARDS. LIMIT TOTAL ANGULAR CONDUIT BENDS BETWEEN PULL BOXES TO 270° OR 360° WITH APPROVAL OF ENGINEER. RADIUS OF CONDUIT BEND SHALL BE PER THE NEC.

5. WHERE MULTIPLE CIRCUIT CONDUCTORS ARE INSTALLED WITHIN THE SAME CONDUIT, VERIFY THAT ALL CONDUCTORS ARE SIZED IN ACCORDANCE WITH NEC DERATING REQUIREMENTS. INSTALL UPSIZED CABLES/LARGER CONDUIT AT NO ADDITIONAL COST TO ACCOMMODATE THE INCREASED WIRING SIZE IF NECESSARY TO COMPLY WITH THIS PROVISION.

6. ALL CONDUIT PROVIDED SHALL BE SUNLIGHT AND ULTRAVIOLET (UV) RESISTANT, AND SHALL BE RATED FOR SUCH INSTALLATION, WHETHER INSTALLED IN EXTERIOR LOCATIONS OR NOT.

7. EXACT CONDUIT STUB-UP LOCATIONS ARE TO BE DETERMINED BY THE CONTRACTOR BASED ON CERTIFIED MANUFACTURER'S DRAWINGS OF THE RESPECTIVE EQUIPMENT. INSTALL CONDUIT COMPATIBLE WITH EQUIPMENT FURNISHED.

8. FURNISH AND INSTALL EXPANSION FITTINGS OF THE APPROVED TYPE WHEREVER CONDUITS PASS THROUGH OR ACROSS STRUCTURAL EXPANSION JOINTS. EXPANSION/DEFLECTION FITTINGS NOT SHOWN ON THE PLANS SHALL BE FURNISHED AND INSTALLED AS NECESSARY AT NO ADDITIONAL COST.

9. ALL CONDUITS SHALL BE INSTALLED USING THE MANUFACTURER'S RECOMMENDED INSTALLATION METHODS, TOOLS AND MATERIALS. ALL FIELD THREADS SHALL BE COATED USING CONDUIT MANUFACTURER'S RECOMMENDED COATING.

10. MINOR DAMAGE TO CONDUIT DURING INSTALLATION SHALL BE REPAIRED, WHILE ANY CONDUIT WITH SEVERE DAMAGE SHALL BE REPLACED. THE DETERMINATION OF LEVEL OF DAMAGE, MINOR OR SEVERE, SHALL BE MADE BY THE OWNER.

11. ALL CONDUCTORS SHALL HAVE 90°C RATED XHHW-2 INSULATION UNLESS NOTED OTHERWISE.

MANUFACTURER'S RECOMMENDATIONS

1. WHERE INSTALLATION PROCEDURES OR ANY PART THEREOF ARE REQUIRED TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL BEING INSTALLED, PRINTED COPIES OF THESE RECOMMENDATIONS SHALL BE FURNISHED TO THE ENGINEER PRIOR TO INSTALLATION. INSTALLATION OF THE ITEM WILL NOT BE ALLOWED TO PROCEED UNTIL THE RECOMMENDATIONS ARE RECEIVED. FAILURE TO FURNISH THESE RECOMMENDATIONS CAN BE CAUSE FOR REJECTION OF THE MATERIAL. THE FABRICATOR SHALL PROVIDE AS PART OF THE WORK ALL SPECIAL MACHINING AND INSTALLATION REQUIRED BY THE COMPONENT MANUFACTURER.

CODES AND STANDARDS

1. WORK UNDER NEW ITEMS SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE LATEST EDITION OF CODES AND STANDARDS ISSUED BY, BUT NOT LIMITED TO, THE FOLLOWING ORGANIZATIONS AND PUBLICATIONS WHOSE ABBREVIATIONS SHALL BE AS SHOWN:

   1.1. AMERICAN NATIONAL STANDARDS INSTITUTE - ANSI
   1.2. AMERICAN SOCIETY FOR TESTING AND MATERIALS - ASTM
   1.3. FEDERAL AVIATION ASSOCIATION - FAA
   1.4. INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS - IEEE
   1.5. INSULATED CABLE ENGINEERS ASSOCIATION - ICEA
   1.6. INSULATED POWER CABLE ENGINEERS ASSOCIATION - IPCEA
   1.7. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION - NEMA
   1.8. INTERNATIONAL ELECTRICAL TESTING ASSOCIATION - NETA
   1.9. NATIONAL FIRE PROTECTION ASSOCIATION - NFPA
      1.9.1. NFPA 70: NATIONAL ELECTRIC CODE - NEC
      1.9.2. NFPA 70E: STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE
      1.9.3. NFPA 101: LIFE SAFETY CODE
   1.10. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION - OSHA
   1.11. UNDERWRITER'S LABORATORY - UL
   1.12. ALL OTHER APPLICABLE LOCAL RULES AND ORDINANCES

2. THE WORK SHALL MEET THE REQUIREMENTS OF ALL OTHER CODES AND STANDARDS AS SPECIFIED IN THE CONTRACT DOCUMENTS. WHERE CODES AND STANDARDS ARE MENTIONED FOR ANY ITEM, IT IS INTENDED TO CALL PARTICULAR ATTENTION TO THEM, IT IS NOT INTENDED THAT ANY OTHER CODES AND STANDARDS BE OMITTED IF NOT MENTIONED.

MEASUREMENTS AND VERIFICATION

1. DIMENSIONS INDICATED ON THE PLANS ARE NOMINAL AND ARE INTENDED FOR GUIDANCE ONLY. ALL VARIATIONS FROM THE NOMINAL DIMENSIONS ON THE PLANS SHALL BE NOTED ON THE SHOP DRAWINGS.

DEFECTIVE MATERIALS AND WORKMANSHIP

1. ALL NEW PARTS AND COMPONENTS REJECTED DURING INSPECTION AND TESTING THAT ARE NOT MADE ACCEPTABLE SHALL BE REPLACED WITHOUT ADDITIONAL COST.

2. DELAYS RESULTING FROM THE REJECTION OF MATERIAL, EQUIPMENT OR WORK SHALL NOT BE THE BASIS OF ANY CLAIM.

3. ALL DEFECTS FOUND DURING THE GUARANTEE PERIOD RESULTING FROM FAULTY MATERIAL, COMPONENTS OR WORKMANSHIP SHALL BE CORRECTED BY THE FABRICATOR WITHOUT COST. IN THE EVENT THAT THE FABRICATOR DOES NOT MAKE THE CORRECTIONS IN A TIMELY MANNER, THE COUNTY OF SAN JOAQUIN RERSERVES THE RIGHT TO MAKE NECESSARY CORRECTIONS WITH ITS OWN FORCES AND CHARGE THE RESULTING COSTS TO THE FABRICATOR.

ELECTRICAL SCOPE OF WORK AND CONSTRUCTION SEQUENCE

1. REMOVAL OF EXISTING NON-OPERATIONAL NAVIGATION LIGHTS AS SHOWN ON PLANS.

2. FURNISH AND INSTALL NEW SOLAR POWERED NAVIGATION LIGHTS AS SHOWN ON PLANS.

$USER $TIME $DATE $REQUEST

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					NO SCALE

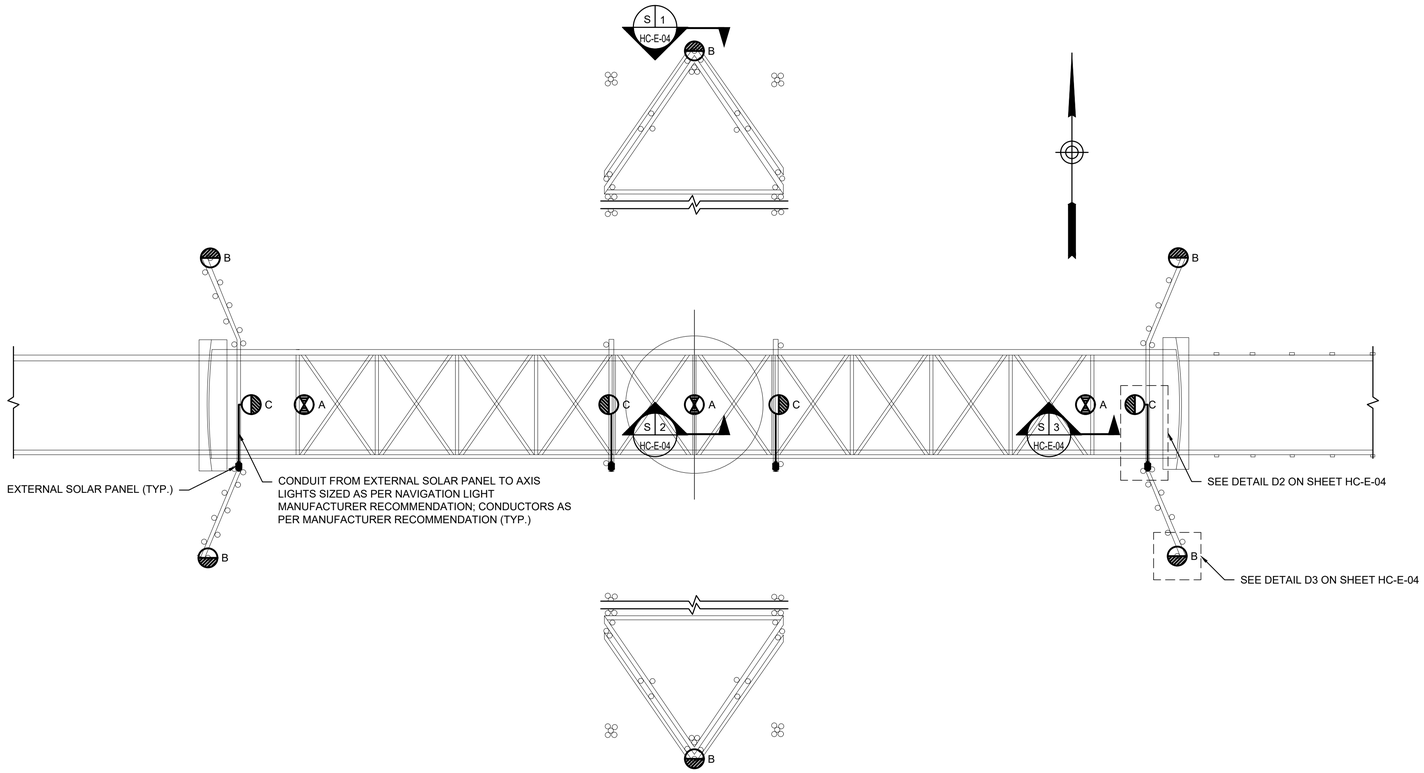
Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

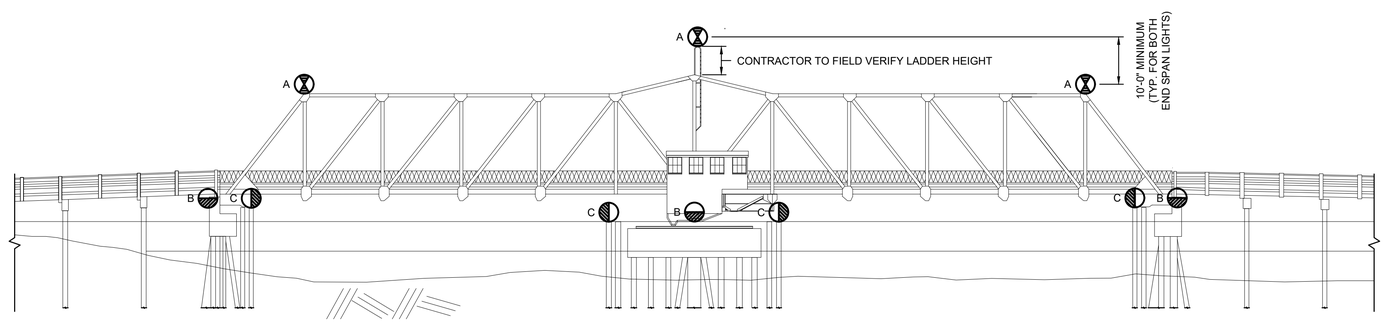
ELECTRICAL GENERAL NOTES II

EIGHT MILE ROAD BRIDGE OVER HONKER CUT
(BRIDGE NO. 29C-219)

HC-E-02



PLAN
SCALE 1/16" = 1'-0"



ELEVATION
SCALE 1/16" = 1'-0"

SCOPE OF WORK:

H REPLACE EXISTING NON-OPERATIONAL NAVIGATIONAL LIGHTS WITH NEW NAVIGATIONAL LIGHTS, AND FURNISH AND INSTALL NEW NAVIGATIONAL AND PIER LIGHTS WHERE REQUIRED.

LEGEND

A — SPAN LIGHTS WITH SOLAR PANELS
- RED (2) AND GREEN (2)
- EACH 60° FIELD
- LIGHTS 90° TO EACH OTHER

B — PIER LIGHTS WITH SOLAR PANELS
- RED
- 180° FIELD

C — AXIS LIGHTS WITH EXTERNAL SOLAR PANELS
- RED
- 180° FIELD

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
K. LEE	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

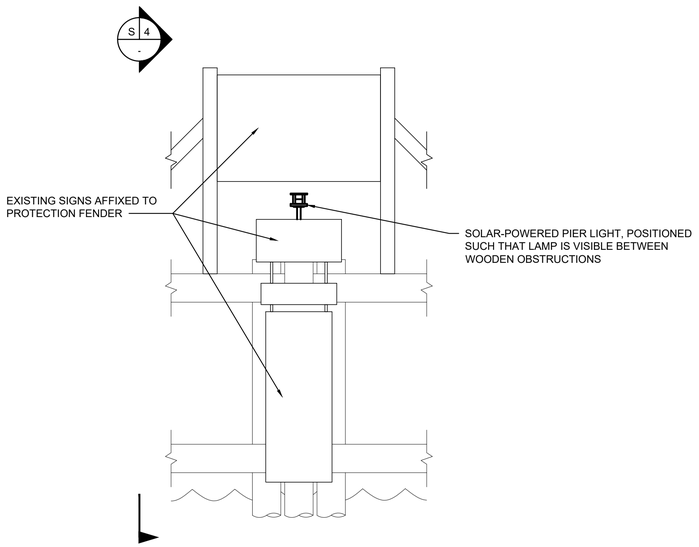
REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

NAVIGATION LIGHTING LAYOUT
EIGHT MILE ROAD BRIDGE OVER HONKER CUT
(BRIDGE NO. 29C-219)

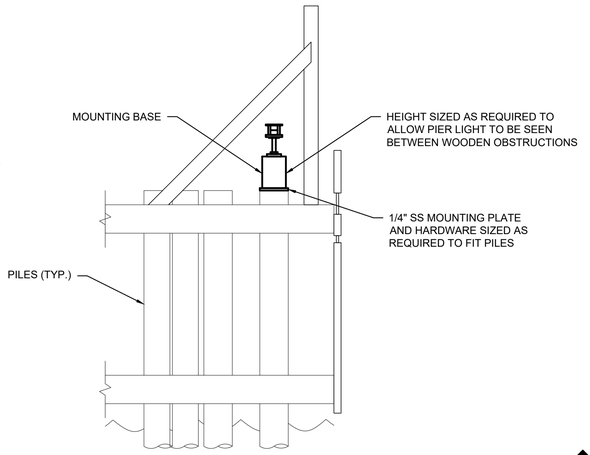
HC-E-03

54
OF
75

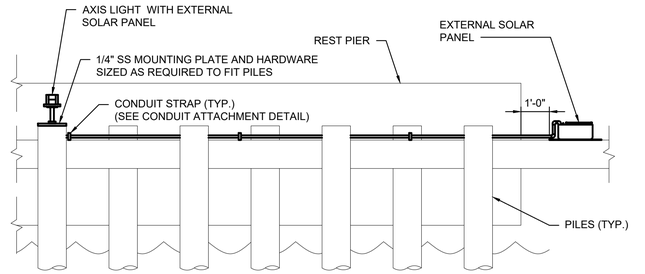
$REQUEST $TIME $DATE $USER



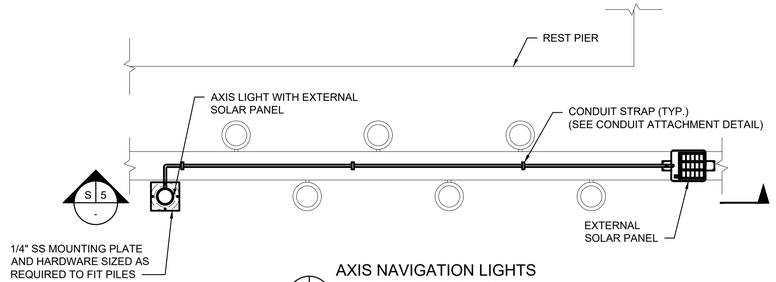
S 1 / HC-E-03 — PIER LIGHT ON NORTH CENTER FENDER
SCALE: 3/8" = 1'-0"



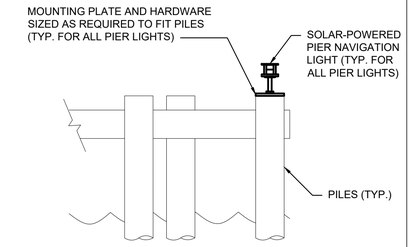
S 4 / - — PIER LIGHT ON NORTH CENTER FENDER
SCALE: 3/8" = 1'-0"



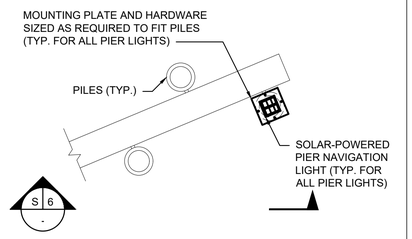
S 5 / - — AXIS NAVIGATION LIGHTS ON REST PIER PILES
(TYP. FOR REST PIERS AND PIVOT PIER)
SCALE: 3/8" = 1'-0"



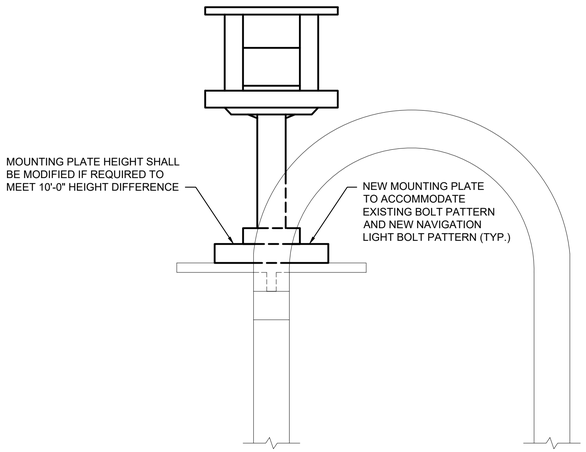
D 2 / HC-E-03 — AXIS NAVIGATION LIGHTS ON REST PIER PILES
(TYP. FOR REST PIERS AND PIVOT PIER)
SCALE: 3/8" = 1'-0"



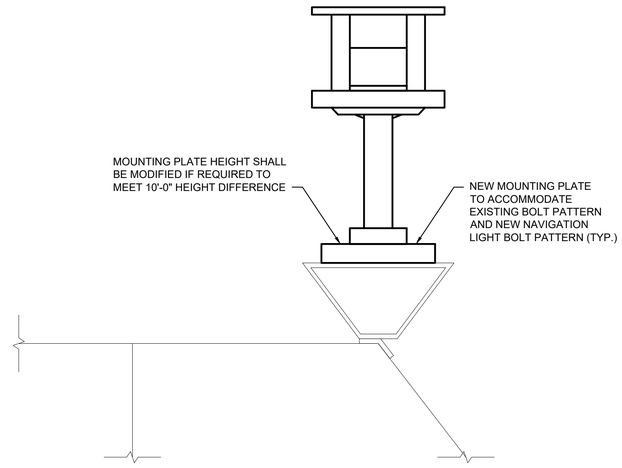
S 6 / - — PIER NAVIGATION LIGHT ON PROTECTION FENDER PILES
(TYP. FOR ALL PROTECTION FENDERS)
SCALE: 3/8" = 1'-0"



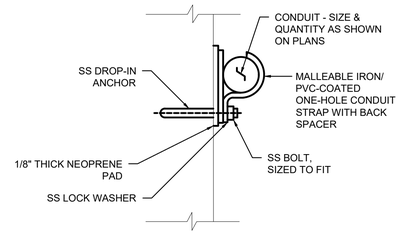
D 3 / HC-E-03 — PIER NAVIGATION LIGHT ON PROTECTION FENDER PILES
(TYP. FOR ALL PROTECTION FENDERS)
SCALE: 3/8" = 1'-0"



S 2 / HC-E-03 — SPAN LIGHT ON LADDER AT CENTER OF TRUSS
SCALE: 3" = 1'-0"



S 3 / HC-E-03 — SPAN LIGHT AT EAST TRUSS END
SCALE: 3" = 1'-0"



ATTACHING CONDUIT DIRECT TO SURFACE
SCALE: N.T.S.

SCOPE OF WORK:

H — REPLACE EXISTING NON-OPERATIONAL NAVIGATIONAL LIGHTS WITH NEW NAVIGATIONAL LIGHTS, AND FURNISH AND INSTALL NEW NAVIGATIONAL AND PIER LIGHTS WHERE REQUIRED.

NOTES:

1. CONDUIT MOUNTING METHODS AND NAV LIGHT SUPPORTS SHOWN ARE INTENDED TO GIVE OVERVIEW OF ACCEPTABLE STANDARD OF QUALITY. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ACTUAL CONDUIT/NAV LIGHT MOUNTING AND/OR SUPPORTING METHODS TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER. IN GENERAL, REPLACED CONDUITS SHALL BE REINSTALLED ACCORDING TO EXISTING DETAILS. WHERE REPLACING CONDUIT, MOUNTING SHALL BE BROUGHT UP TO STANDARD OF QUALITY SHOWN ON THIS SHEET.
2. CONDUIT MOUNTING METHODS SHOWN ARE BASED ON RGS AND PVCRGS CONDUIT. ADAPT DETAILS AS REQUIRED TO ACCOMMODATE OTHER TYPES OF CONDUITS, SUCH AS RECOMMENDED BY CONDUIT MANUFACTURER(S).
3. PROVIDE SHOP DRAWINGS FOR ALL MATERIALS AND METHODS USED FOR CONDUIT/ NAV LIGHT MOUNTING, INCLUDING DRILLING OF STRUCTURAL STEEL. CONTRACTOR MAY PROPOSE ALTERNATE METHODS OF CONDUIT MOUNTING PROVIDED THEY MEET THE SAME STANDARD OF QUALITY SHOWN. THE ENGINEER SHALL HAVE THE RIGHT TO REVIEW/APPROVE ALTERNATE METHODS.
4. UNLESS OTHERWISE NOTED, ALL STAINLESS STEEL PROVIDED SHALL BE TYPE 316 OR BETTER.
5. STRUCTURAL CONDUIT SUPPORTS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123. STRUCTURAL CONDUIT SUPPORTS SHALL CONSIST OF 3/8" THICK ANGLES, ZEES, AND PLATES, CONFIGURED AS REQUIRED TO MEET FIELD CONDITIONS. ANGLES AND PLATES SHALL BE 2 1/2"X2 1/2" MINIMUM. HOLES SHALL BE DRILLED FOR U-BOLTS AND ATTACHMENTS AS REQUIRED.

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
K. LEE	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER TEODOR KOSTADINOV 21282 11/18/22 ELECTRICAL STATE OF CALIFORNIA

NAVIGATION LIGHTING DETAILS
EIGHT MILE ROAD BRIDGE OVER HONKER CUT
(BRIDGE NO. 29C-219)

HC-E-04

55 OF 75

$REQUEST $USER $DATE $TIME

SCOPE OF WORK

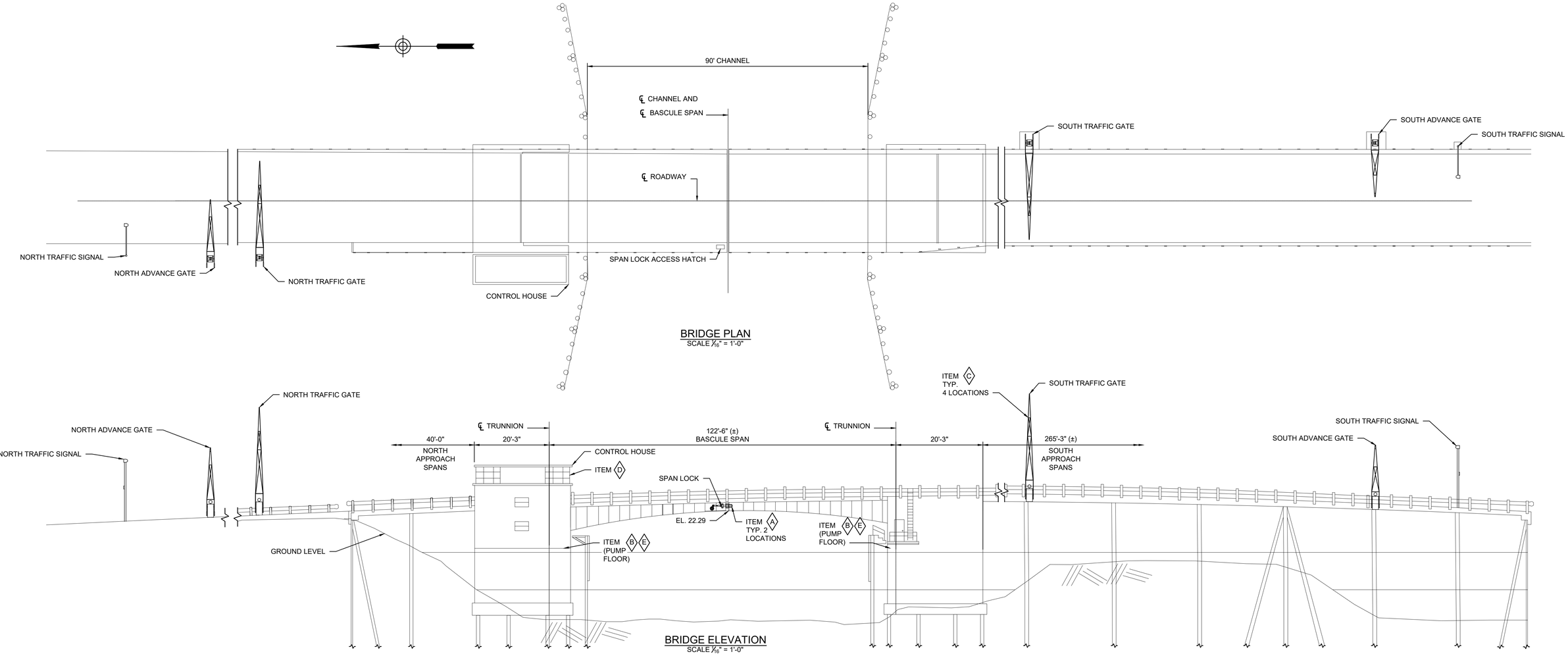
A. RE-SHIM THE CENTER SHEAR LOCK BAR GUIDES AND RECEIVING SOCKET WEAR PLATES FOR THE CORRECT RC6 CLEARANCE/FIT BETWEEN THE LOCK BARS AND WEAR PLATES.

B. REPLACE SELECT CORRODED CONDUITS IN PUMP ROOM WITH NEW CONDUITS AND CONDUCTORS.

C. REPLACE EXISTING TRAFFIC GATES AND RELATED EXISTING WIRING WITH NEW TRAFFIC GATES AND NEW WIRING. REPLACE TRAFFIC GATE CONDUIT BACK TO THE NEAREST JUNCTION BOX.

D. REPLACE EXISTING TRAFFIC GATE STARTERS IN MCC CABINET WITH NEW TRAFFIC GATE STARTERS.

E. CLEAN AND PAINT SELECT CONDUITS.



100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
PAUL M. SKEHAN
24457
11/18/22
MECHANICAL
STATE OF CALIFORNIA

GENERAL PLAN AND ELEVATION
TRACY BOULEVARD BRIDGE OVER GRANT LINE CANAL
(BRIDGE NO. 29C-022)

TB-G-01

56 OF 75

$REQUEST $TIME $DATE $USER

GENERAL NOTES:

EXISTING PLANS

AS-BUILT PLANS ENTITLED TRACY BLVD. BRIDGE NO. 29C-022 ARE AVAILABLE IN IN THE INFORMATIONAL HANDOUT FOR THIS PROJECT FOUND ON WWW.BIDEXPRESS.COM.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

SCHEDULE AND PROSECUTION OF WORK

1. THE PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. NOTE THE FOLLOWING SCHEDULE RESTRICTIONS:
2. CONSTRUCTION SHALL TAKE PLACE DURING THE THREE-MONTH PERIOD BETWEEN NOVEMBER 1 AND THE FOLLOWING JANUARY 31. THE BRIDGE MUST BE OPERABLE FOR WATERWAY TRAFFIC FROM FEBRUARY 1 THROUGH OCTOBER 31 OF ANY CALENDAR YEAR. DURING CONSTRUCTION THE CHANNEL WILL REMAIN OPEN TO SMALL VESSELS THAT DO NOT REQUIRE BRIDGE OPENINGS. THE CONTRACTOR MUST COORDINATE WITH THE US COAST GUARD (USCG) FOR ANY ANTICIPATED WATERWAY CLOSURES THAT WILL IMPACT SMALL VESSELS AS WELL AS FOR THE THREE-MONTH CLOSURE TO VESSELS THAT WOULD REQUIRE BRIDGE OPENINGS. THE CONTRACTOR MUST CONTACT THE USCG WITHIN 60 DAYS OF NOTICE TO PROCEED TO PROVIDE A CONSTRUCTION SCHEDULE THAT INCLUDES NAVIGATION RESTRICTIONS.
3. TRACY BOULEVARD CAN BE OPEN TO SINGLE LANE TRAFFIC FOR BRIEF PERIODS OF UP TO TWO WEEKS TO ALLOW FOR DELIVERY OF MATERIALS AND REPAIRS TO THE BRIDGE. THE CONTRACTOR SHALL PROVIDE FLAGMEN/TEMPORARY SIGNALS/SIGNING IN ACCORDANCE WITH MAINTENANCE OF TRAFFIC PLANS. SINGLE LANE TRAFFIC IS ALLOWED ONLY BETWEEN THE HOURS OF 9 A.M. AND 3 P.M. TRAFFIC CAN BE STOPPED FOR TEST OPENINGS BETWEEN THE HOURS OF 9 A.M. AND 3 P.M., BUT ONLY FOR THE DURATION OF AN OPENING/CLOSING CYCLE. FLAGMEN SHALL PROVIDE TRAFFIC CONTROL DURING TEST OPENINGS.
4. PROVIDE THE ENGINEER WITH A COMPLETE PROJECT SCHEDULE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS WITHIN 60 DAYS OF NOTICE TO PROCEED. THE SCHEDULE MUST REFLECT CLOSURES OF THE WATERWAY TO VESSELS THAT REQUIRE BRIDGE OPENINGS, AND SINGLE LANE TRAFFIC PERIODS.
5. PROVIDE PLANS FOR CLEAN-UP OF THE WATERWAY SHOULD SPILLS OF OIL, OTHER FLUIDS, OR DEBRIS FROM CONSTRUCTION OR OTHER TYPES OF POLLUTANTS BE ACCIDENTALLY DISCHARGED INTO IT.
6. OBTAIN PERMISSION FROM THE ENGINEER A MINIMUM OF 48 HOURS PRIOR TO ANY CONSTRUCTION SCHEDULE CHANGE.
7. NO ADDITIONAL PAYMENT WILL BE MADE FOR WORK PERFORMED ON A SATURDAY, SUNDAY, OR LEGAL HOLIDAY TO SATISFY SCHEDULE REQUIREMENTS.
8. MAINTAIN VEHICULAR ACCESS TO ALL BUSINESSES AND COMMERCIAL PROPERTIES ON EACH SIDE OF THE WATERWAY, INCLUDING DURING PERIODS OF SINGLE LANE TRAFFIC.
9. ALTHOUGH THE WATERWAY WILL BE CLOSED TO VESSELS THAT REQUIRE BRIDGE OPENINGS, IT WILL REMAIN OPEN TO SMALL VESSELS. EVERY EFFORT SHOULD BE MADE TO MINIMIZE OBSTRUCTION OF THE CHANNEL BY BARGES OR OTHER EQUIPMENT. BARGES CAN BE ANCHORED OUTSIDE THE LIMITS OF THE CHANNEL.
10. UPON COMPLETION OF ALL WORK, THE CONTRACTOR SHALL TRAIN THE COUNTY'S MAINTENANCE STAFF AND DEMONSTRATE TEST OPENINGS.

US COAST GUARD AND PORT OF SAN FRANCISCO NOTIFICATION

1. THE 11TH COAST GUARD DISTRICT WILL NEED TO BE CONTACTED AT LEAST 60 DAYS PRIOR TO THE START OF WORK ON THE SITE TO COORDINATE IN-WATER WORK INCLUDING BARGE. CONTACT INFORMATION:
   MR. CARL HAUSNER
   COMMANDER, 11TH/ COAST GUARD DISTRICT
   COAST GUARD ISLAND BUILDING 50-2
   ALAMEDA, CA 94501-5100
   PHONE: 510-437-3516
   CARL.T.HAUSNER@USCG.MIL
2. PROVIDE THE COAST GUARD WITH A SCHEDULE AND A TIME FRAME FOR REPAIR WORK ON THE MOVABLE SPAN AND DESCRIBE ANY TEMPORARY CONSTRUCTION AIDS AND WORK WITHIN THE LIMITS OF THE CHANNEL IN ACCORDANCE WITH USCG WORK PROPOSAL REQUIREMENTS.
3. THE CONTRACTOR MUST NOTIFY THE CAPTAIN OF THE PORT OF SAN FRANCISCO IF A BARGE WILL BE ANCHORED OR STUDDED IN A MANNER THAT WILL UTILIZE THE CHANNEL BOTTOM.

COORDINATION OF DOCUMENTS

1. IN THE EVENT OF A DISCREPANCY BETWEEN THE PLANS AND THE SPECIFICATIONS, BRING THE DISCREPANCY TO THE ATTENTION OF THE ENGINEER FOR THEIR INTERPRETATION. IF IT IS NOT BROUGHT TO THE ENGINEER'S ATTENTION, THE DETAIL SHOWING OR DESCRIBING THE HIGHER QUALITY INTERPRETATION WILL GOVERN.
2. IF AN ITEM IS LISTED OR DESCRIBED IN THE SPECIFICATIONS AND IS NOT SPECIFICALLY SHOWN ON THE PLANS, IT IS CONSIDERED A PART OF THE WORK AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
3. IF AN ITEM IS SHOWN ON THE PLANS AND IS NOT SPECIFICALLY LISTED OR DESCRIBED IN THE SPECIFICATIONS, IT IS CONSIDERED PART OF THE WORK AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
4. SAN JOAQUIN COUNTY WILL NOT PAY FOR ANY COSTS ASSOCIATED WITH THE COORDINATION OF DOCUMENTS. THE COSTS FOR THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT MUST BE DISTRIBUTED AMONG THE COSTS OF INDIVIDUAL ITEMS.

WORK RESTRICTIONS

1. COMPLY WITH ALL LOCAL ORDINANCES THAT APPLY TO LOCAL STREET WORK OPERATIONS, INCLUDING THOSE PERTAINING TO WORKING DURING NIGHTTIME HOURS. FURNISH ANY ORDINANCE VARIANCE ISSUED BY THE MUNICIPALITY OR REQUIRED PERMITS TO THE ENGINEER, IN WRITING, 3 DAYS PRIOR TO PERFORMING SUCH WORK.
2. DO NOT REMOVE ANY EXISTING TREES, STREET LIGHT POLES, HYDRANTS, AND OTHER UTILITY POLES WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER. CONDUCT AN ON-SITE VISIT PRIOR TO BIDDING TO DETERMINE ANY SPECIAL MEASURES REQUIRED FOR PROPER CLEARANCE BETWEEN TREES, HYDRANTS, AND POLES AND THE CONSTRUCTION EQUIPMENT.

IN-STREAM WORK RESTRICTIONS

THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO AVOID CONSTRUCTION IN AND/OR LIMIT DEBRIS FROM ENTERING THE WATER. ANY MATERIAL THAT DOES FALL INTO THE WATER SHALL BE REMOVED AS SOON AS POSSIBLE. ALL PROJECTS INVOLVING JURISDICTIONAL WATERS OF THE UNITED STATES ARE SUBJECT TO REGULATION UNDER SECTIONS 404 AND 401 OF THE CLEAN WATER ACT. IT IS ANTICIPATED THAT NO PERMANENT IN-STREAM WORK WILL BE REQUIRED. ANY WORK IN THE WATER, PERMANENT OR TEMPORARY, WILL REQUIRE A PERMIT AND AUTHORIZATION BY THE UNITED STATE ARMY CORPS OF ENGINEERS.

DESIGN SPECIFICATIONS

AASHTO STANDARD SPECIFICATIONS FOR MOVABLE HIGHWAY BRIDGES

DESIGN DATA

1. CONCRETE - MINIMUM COMPRESSIVE STRENGTH 4.0 KSI
2. REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI
3. STRUCTURAL STEEL - ASTM A709 GRADE 50 - YIELD STRENGTH 50 KSI UNLESS NOTED ON PLANS OR IN SPECIFICATIONS.

PUBLIC OUTREACH

THE CONTRACTOR MUST ARRANGE AN INFORMATIONAL MEETING FOR THE GENERAL PUBLIC TWO WEEKS PRIOR TO THE START OF CONSTRUCTION CONCERNING THE PROJECT SCOPE AND TIMING. MEETING SITE MUST BE IN A PUBLIC LOCATION (I.E.: SCHOOL, PARK, FIRE HOUSE…) WITHIN THREE BLOCKS OF PROJECT SITE UNLESS OTHERWISE APPROVED BY THE ENGINEER. A PUBLIC ADDRESS (PA) SYSTEM WILL BE REQUIRED FOR THE MEETING. LOCATION AND TIME OF THE MEETING MUST BE APPROVED BY THE ENGINEER. THE CONTRACTOR MUST PERFORM PUBLIC OUTREACH BY ADVERTISING THE MEETING IN THE LOCAL NEWSPAPER AND SENDING WRITTEN NOTIFICATIONS TO THE RESIDENTS LOCATED WITHIN PROJECT LIMITS. FULL COMPENSATION FOR PERFORMING THIS MEETING, INCLUDING ACQUIRING MEETING SITE, SUPPLYING PA SYSTEM, ADVERTISING, NOTIFYING RESIDENTS, AND ALL OTHER INCIDENTALS, MUST BE CONSIDERED AS INCLUDED IN THE PRICES PAID FOR VARIOUS CONTRACT ITEMS OF WORK AND NO SEPARATE PAYMENT WILL BE MADE THEREFOR.

QUANTITIES

ITEM No.	DESCRIPTION	UNIT	QUANTITY
070731	LEAD COMPLIANCE PLAN	LS	1
120010	TRAFFIC CONTROL SYSTEM	LS	1
120090	CONSTRUCTION AREA SIGNS	LS	1
128651	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2
130200	WATER POLLUTION CONTROL PLAN	LS	1
790000	CENTER SPAN LOCK TEMPORARY SUPPORT	LS	1
790010	MODIFICATIONS TO EXISTING TRAFFIC GATE FOUNDATION ON STRUCTURE	LS	1
790020	ON-GRADE TRAFFIC GATE FOUNDATION	LS	1
880100	TRAFFIC CONTROL EQUIPMENT	LS	1
880010	PVC COATED RIGID GALVANIZED STEEL CONDUIT - 1 INCH	LF	75
880190	PVC COATED RIGID GALVANIZED STEEL CONDUIT - 1.5 INCH	LF	25
880110	STAINLESS STEEL NEMA 4 RATED ELECTRICAL BOX - 12 BY 12 BY 8 INCHES	EA	9
880120	CAST IRON NEMA 4 RATED ELECTRICAL BOX - 24 BY 24 BY 12 INCHES	EA	1
880040	INSULATED CONDUCTOR NO. 12 AWG	LF	7200
880130	INSULATED CONDUCTOR NO. 10 AWG	LF	150
880060	GROUND WIRE NO. 12 AWG	LF	800
880140	GROUND WIRE NO. 10 AWG	LF	50
880070	BRIDGE ELECTRICAL EQUIPMENT	LS	1
880080	BRIDGE SYSTEM TESTING	LS	1
880150	TRENCHING, BACKFILLING, AND COMPACTING FOR UTILITIES	CUFT	400
880090	ELECTRICAL EQUIPMENT DEMOLITION	LS	1
980000	BRIDGE MACHINERY	LS	1
999990	MOBILIZATION (10%)	LS	1

ABBREVIATIONS

ϕ	PHASE
A, AMP	AMPERES
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ACCEL.	ACCELERATE
APPROX.	APPROXIMATE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWG	AMERICAN WIRE GAUGE
BOT.	BOTTOM
BR, BRG	BRIDGE
C	CELSIUS
CA	CALIFORNIA
CB	CIRCUIT BREAKERS
CCW	COUNTERCLOCKWISE
CL, ℄	CENTERLINE
CONC	CONCRETE
CPT	CONTROL POWER TRANSFORMER
CW	CLOCKWISE
DECEL.	DECELERATE
DEG, °	DEGREE
DIA., Ø	DIAMETER
DWG	DRAWING
E	EAST
EA	EACH
EL.	ELEVATION
EQ. SPA.	EQUALLY SPACED
ESTOP	EMERGENCY STOP
EXIST	EXISTING
F	FAHRENHEIT
FRP	FIBER REINFORCED PLASTIC
GAL	GALLON
GIS	GEOGRAPHIC INFORMAITON SYSTEM
GPM	GALLONS PER MINUTE
H.D.	HOT DIPPED
HP	HORSEPOWER
HPU	HYDRAULIC POWER UNIT
HZ	HERTZ
IN	INCH
JB	JUNCTION BOX
JT	JOINT
KSI	KIPS PER SQUARE INCH
LB	POUND
LF	LINEAR FEET
LFMC	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT
LS	LUMP SUM
LS	LEVEL SWITCH
LTG	LIGHTING
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MIN	MINIMUM
MPH	MILES PER HOUR
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
N	NORTH
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
N.T.S.	NOT TO SCALE
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NO.	NUMBER
OEM	ORIGINAL EQUIPMENT MANUFACTURER
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN
PL, ℘	PLATE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R/W	RIGHT OF WAY
RD	ROAD
REF.	REFERENCE
RGS	RIGID GALVANIZED STEEL
RPM	ROTATIONS PER MINUTE
S	SOUTH
S.S., SS	STAINLESS STEEL
SEC	SECONDS
SPEC	SPECIFICATION
SQ.	SQUARE
TEFC	TOTALLY ENCLOSED, FAN-COOLED
TS	TEMPERATURE SWITCH
TSP	TWISTED SHIELDED PAIR
TYP.	TYPICAL
UL	UNDERWRITERS LABORATORIES
USACE	UNITED STATES ARMY CORPS OF ENGINEERS
USCG	UNITED STATES COAST GUARD
UV	ULTRAVIOLET
V	VOLTS
W	WEST
W/	WITH

$USER $TIME $DATE $REQUEST

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER PAUL M. SKELTON MECHANICAL 8/22 STATE OF CALIFORNIA

GENERAL NOTES

TRACY BOULEVARD BRIDGE OVER GRANT LINE CANAL (BRIDGE NO. 29C-022)

TB-G-02

NOTES:

1. THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGN WORK ONLY.
2. LOCATION OF CONSTRUCTION AREA SIGNS ARE APPROXIMATE. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
3. PCMS MESSAGE TO NOTIFY TRAFFIC IN ADVANCE OF CONSTRUCTION. PCMS MESSAGES TO PROVIDE DATES & TIMES OF LANE CLOSURES EXACT MESSAGES TO BE APPROVED BY ENGINEER.
4. SIGN SPACING AND TRAFFIC HANDLING SHALL BE PER THE MOST CURRENT CA MUTCD AT 25 MPH

LEGEND:

- CONSTRUCTION AREA SIGN
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS); 2 EA

CONSTRUCTION AREA SIGNS (STATIONARY MOUNTED)

SIGN No. (X)	SIGN CODE	PANEL SIZE (IN X IN)	SIGN MESSAGE	POST SIZE (IN X IN)	No. OF POSTS (EA)	No. OF SIGNS (EA)
A	W20-1	48 X 48	ROAD WORK AHEAD	4 X 6	1	3
B	G20-2	36 X 18	END ROAD WORK	4 X 4	1	3

FINAL 100% SUBMITTAL

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
C. SILVA		M. SANCHEZ		C. SILVA		M. SANCHEZ								NO SCALE

DWG FILE s:\Client\hardesty & hanover\h23-100 5 movable br\500-design\505-CAD\H23100_Tracy Blvd CS5.dwg

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100 RANCHO CORDOVA, CA 95670
P: 916.368.9181

REGISTERED PROFESSIONAL ENGINEER MICHAEL A. SANCHEZ No. 60254 6/30/24 CIVIL STATE OF CALIFORNIA

CONSTRUCTION AREA SIGNS

TRACY BOULEVARD BRIDGE OVER GRANT LINE CANAL
BRIDGE NO. 29C-022

TB-G-03

58 OF 75

$USER $TIME $DATE $REQUEST

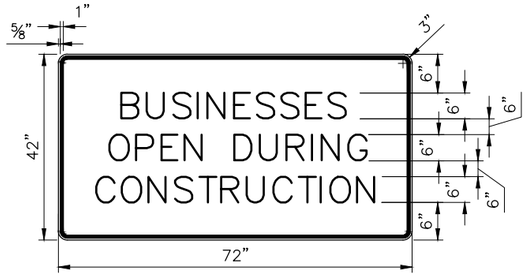
TIME PLOTTED: 9:37:22 AM, Kevin Beltran
DATE PLOTTED: Tuesday, November 22, 2022

NOTES:

1. THIS PLAN ACCURATE FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING ONLY.
2. SIGN LOCATIONS ARE APPROXIMATE. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
3. SIGN SPACING AND TRAFFIC HANDLING SHALL BE PER THE MOST CURRENT CA MUTCD AT 25 MPH
4. TRAFFIC CONTROL FOR ONE–LANE CLOSURES SHALL BE LIMITED FROM 9:00 AM TO 3:00 PM. REFER TO PROJECT SPECIFICATIONS FOR WORKING DAY RESTRICTIONS.
5. MAINTAIN ACCESS TO ALL ROADS AND DRIVEWAYS AT ALL TIMES AND DO NOT BLOCK LEVEE ACCESS GATES WITH CONSTRUCTION VEHICLES AND EQUIPMENT STAGING.
6. STATIONING REFERENCE POINTS SHOWN ARE NOT TIED TO ANY COORDINATE SYSTEM OR SURVEY DATA, BUT ARE FROM BEST APPROXIMATIONS USING THE COUNTY GIS RIGHT OF WAY DATA AND BING IMAGERY.
7. DO NOT IMPLEMENT LANE CLOSURE(S) IF NOT NECESSARY.
8. SIGN A – SR (CA) SIGNS ARE INCLUDED IN THE PAYMENT FOR CAS. REFER TO SPECIAL PROVISIONS FOR DETAILS

CONSTRUCTION (STAGE 1):

1. WEST SIDE LANE CLOSURE IN CONJUNCTION WITH WEST SIDE BRIDGE IMPROVEMENT. REFER TO ELECTRICAL AND MECHANICAL PLANS FOR BRIDGE REPAIR DETAILS.

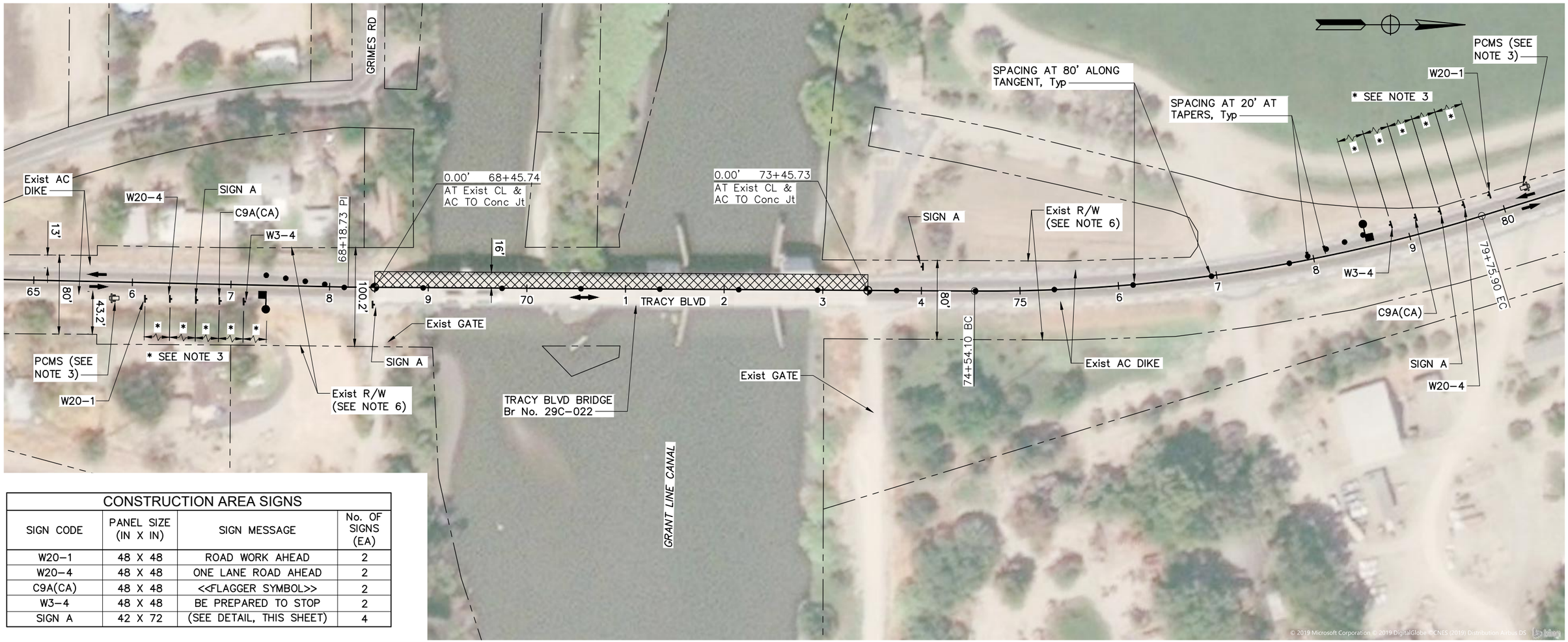


SIGN A – SR (CA) SERIES (SPECIAL)

BORDER & LEGEND: BLACK RETROREFLECTIVE
BACKGROUND: WHITE RETROREFLECTIVE
NO SCALE

LEGEND:

- DIRECTION OF TRAFFIC
- CONSTRUCTION AREA SIGN
- PORTABLE DELINEATOR
- WORK AREA (CLOSED TO TRAFFIC)
- FLAGGER
- STATIONING REFERENCE POINT



CONSTRUCTION AREA SIGNS			
SIGN CODE	PANEL SIZE (IN X IN)	SIGN MESSAGE	No. OF SIGNS (EA)
W20–1	48 X 48	ROAD WORK AHEAD	2
W20–4	48 X 48	ONE LANE ROAD AHEAD	2
C9A(CA)	48 X 48	<<FLAGGER SYMBOL>>	2
W3–4	48 X 48	BE PREPARED TO STOP	2
SIGN A	42 X 72	(SEE DETAIL, THIS SHEET)	4

FINAL 100% SUBMITTAL

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS–5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
C. SILVA	3/13/2018	M. SANCHEZ	3/12/2018	C. SILVA	8/8/2018	M. SANCHEZ								1"=50'

DWG FILE s:\Client\hardesty & hanover\h23–100 5 movable br\500–design\505–CAD\H23100_SC_TB Stg1.dwg

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100 RANCHO CORDOVA, CA 95670
P: 916.368.9181

REGISTERED PROFESSIONAL ENGINEER — MICHAEL A. SANCHEZ — No. C 66254 — 6/30/24 — CIVIL — STATE OF CALIFORNIA

STAGE 1 CONSTRUCTION AND TRAFFIC HANDLING PLAN

TRACY BOULEVARD BRIDGE OVER GRANT LINE CANAL
BRIDGE NO. 29C–022

TB–G–04

59 OF 75

$USER $TIME $DATE $REQUEST

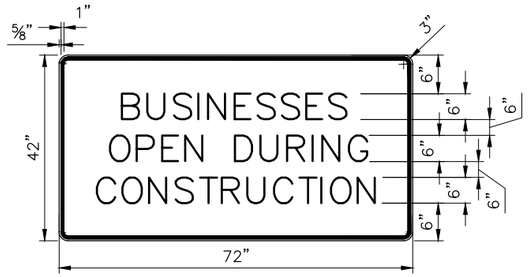
DATE PLOTTED: Tuesday, November 22, 2022
TIME PLOTTED: 9:37:51 AM, Kevin Beltran

NOTES:

1. THIS PLAN ACCURATE FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING ONLY.
2. SIGN LOCATIONS ARE APPROXIMATE. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
3. SIGN SPACING AND TRAFFIC HANDLING SHALL BE PER THE MOST CURRENT CA MUTCD AT 25 MPH
4. TRAFFIC CONTROL FOR ONE–LANE CLOSURES SHALL BE LIMITED FROM 9:00 AM TO 3:00 PM. REFER TO PROJECT SPECIFICATIONS FOR WORKING DAY RESTRICTIONS.
5. MAINTAIN ACCESS TO ALL ROADS AND DRIVEWAYS AT ALL TIMES AND DO NOT BLOCK LEVEE ACCESS GATES WITH CONSTRUCTION VEHICLES AND EQUIPMENT STAGING.
6. STATIONING REFERENCE POINTS SHOWN ARE NOT TIED TO ANY COORDINATE SYSTEM OR SURVEY DATA, BUT ARE FROM BEST APPROXIMATIONS USING THE COUNTY GIS RIGHT OF WAY DATA AND BING IMAGERY.
7. DO NOT IMPLEMENT LANE CLOSURE(S) IF NOT NECESSARY.
8. SIGN A – SR (CA) SIGNS ARE INCLUDED IN THE PAYMENT FOR CAS. REFER TO SPECIAL PROVISIONS FOR DETAILS

CONSTRUCTION (STAGE 2):

1. EAST SIDE LANE CLOSURE IN CONJUNCTION WITH EAST SIDE BRIDGE IMPROVEMENT. REFER TO ELECTRICAL AND MECHANICAL PLANS FOR BRIDGE REPAIR DETAILS.



SIGN A – SR (CA) SERIES (SPECIAL)
BORDER & LEGEND: BLACK RETROREFLECTIVE
BACKGROUND: WHITE RETROREFLECTIVE
NO SCALE

LEGEND:

- DIRECTION OF TRAFFIC
- CONSTRUCTION AREA SIGN
- PORTABLE DELINEATOR
- WORK AREA (CLOSED TO TRAFFIC)
- FLAGGER
- STATIONING REFERENCE POINT

CONSTRUCTION AREA SIGNS			
SIGN CODE	PANEL SIZE (IN X IN)	SIGN MESSAGE	No. OF SIGNS (EA)
W20–1	48 X 48	ROAD WORK AHEAD	3
W20–4	48 X 48	ONE LANE ROAD AHEAD	2
C9A(CA)	48 X 48	<<FLAGGER SYMBOL>>	3
W3–4	48 X 48	BE PREPARED TO STOP	2
SIGN A	42 X 72	(SEE DETAIL, THIS SHEET)	4

FINAL 100% SUBMITTAL

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS–5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
C. SILVA	3/12/2018	M. SANCHEZ	3/11/2018	C. SILVA	8/8/2018	M. SANCHEZ								1"=50'

DWG FILE s:\Client\hardesty & hanover\h23–100 5 movable br\500–design\505–CAD\H23100_SC_TB Stg2.dwg

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE
100 RANCHO CORDOVA, CA 95670
P: 916.368.9181

REGISTERED PROFESSIONAL ENGINEER — MICHAEL A. SANCHEZ — No. C62254 — 6/30/24 — CIVIL — STATE OF CALIFORNIA

STAGE 2 CONSTRUCTION AND TRAFFIC HANDLING PLAN

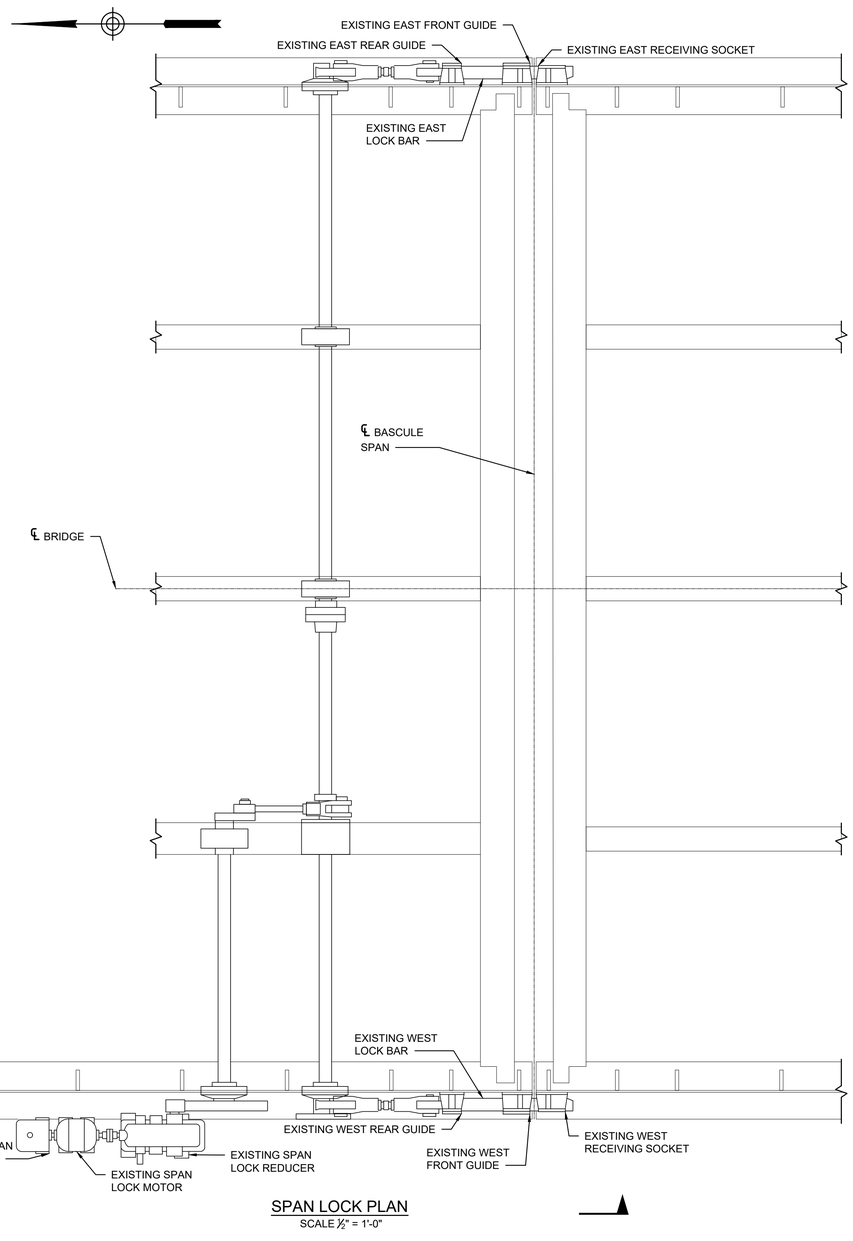
TRACY BOULEVARD BRIDGE OVER GRANT LINE CANAL
BRIDGE NO. 29C–022

TB–G–05

60
OF
75

$USER $TIME $DATE $REQUEST

TIME PLOTTED: 9:38:21 AM, Kevin Beltran
DATE PLOTTED: Tuesday, November 22, 2022



E 1 -

SPAN LOCK PLAN

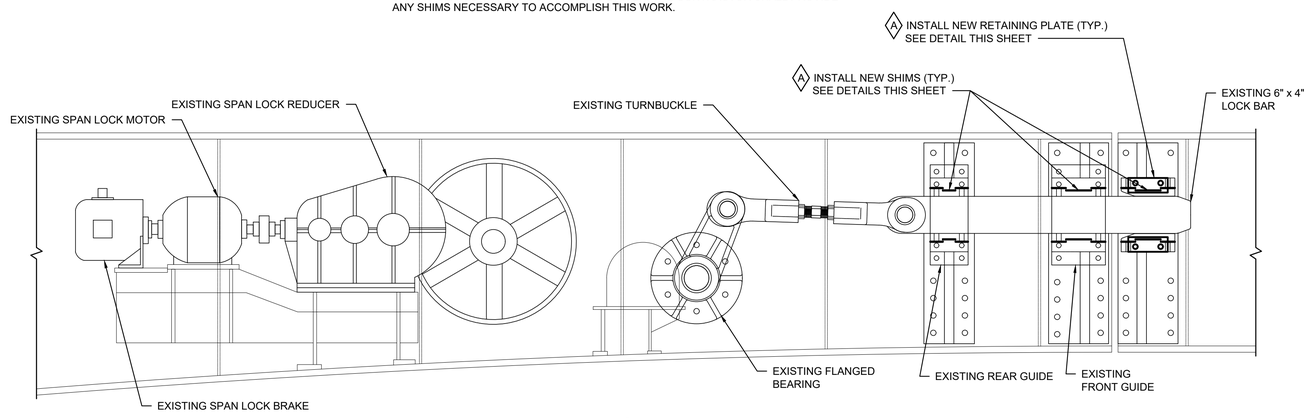
SCALE ½" = 1'-0"

MECHANICAL WORK AT SPAN LOCK

(A) RESHIM THE CENTER SHEAR LOCK BAR GUIDES AND RECEIVING SOCKET WEAR PLATES FOR THE CORRECT RC6 CLEARANCE/FIT BETWEEN THE LOCK BARS AND WEAR PLATES.

NOTES

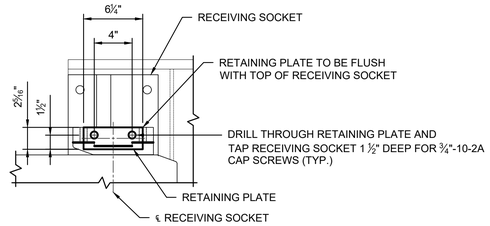
1. MAX TOTAL WEAR PLATE SHIM THICKNESS NOT TO EXCEED 3⁄16".
2. INSTALL TEMPORARY CENTER SHEAR LOCKS PRIOR TO WORKING ON THE EXISTING CENTER SHEAR LOCKS. SEE SHEET TB-S-01 FOR DETAILS.
3. EACH CENTER SHEAR LOCK IS TO BE REPAIRED WITH NO TRAFFIC ON THE LANE WHERE WORK IS BEING DONE. SEE MAINTENANCE OF TRAFFIC DRAWINGS FOR SINGLE LANE TRAFFIC CONFIGURATION.
4. THE EXISTING LIVE LOAD SHOES AND HOLD DOWNS IN THE PIERS SHALL BE ADJUSTED IN TANDEM WITH THE SPAN LOCK WORK SUCH THAT BOTH ARE IN FIRM CONTACT WHEN SPAN IS SEATED WITH THE SPAN LOCKS DRIVEN. THE CONTRACTOR SHALL PROVIDE ANY SHIMS NECESSARY TO ACCOMPLISH THIS WORK.



E 1 -

SPAN LOCK MACHINERY

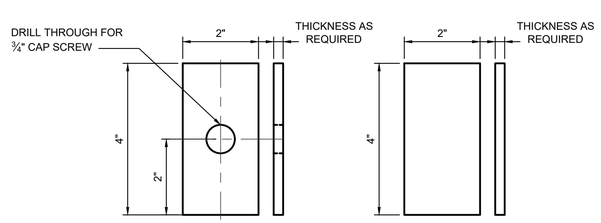
SCALE 1" = 1'-0"



D 1 -

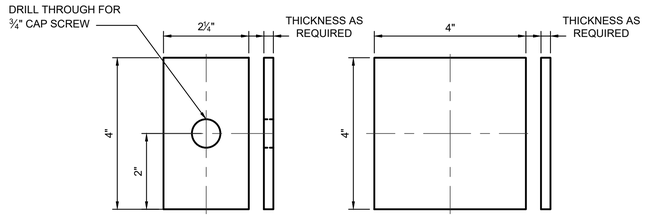
RETAINING PLATE DETAIL

SCALE 1 ½" = 1'-0"
(2) REQUIRED
MATERIAL - ¼" THICK ASTM B22 C91100 BRONZE



REAR GUIDE SHIMS DETAIL

SCALE 6" = 1'-0"
MATERIAL - ASTM B22 C91100 BRONZE
QUANTITY PER LOCK - (2) SHIMS WITH HOLE
(1) SOLID SHIM



FRONT GUIDE AND SOCKET SHIM DETAIL

SCALE 6" = 1'-0"
MATERIAL - ASTM B22 C91100 BRONZE
QUANTITY PER LOCK - (2) SHIMS WITH HOLE
(1) SOLID SHIM

100% SUBMISSION

TB-M-01

61 OF 75

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

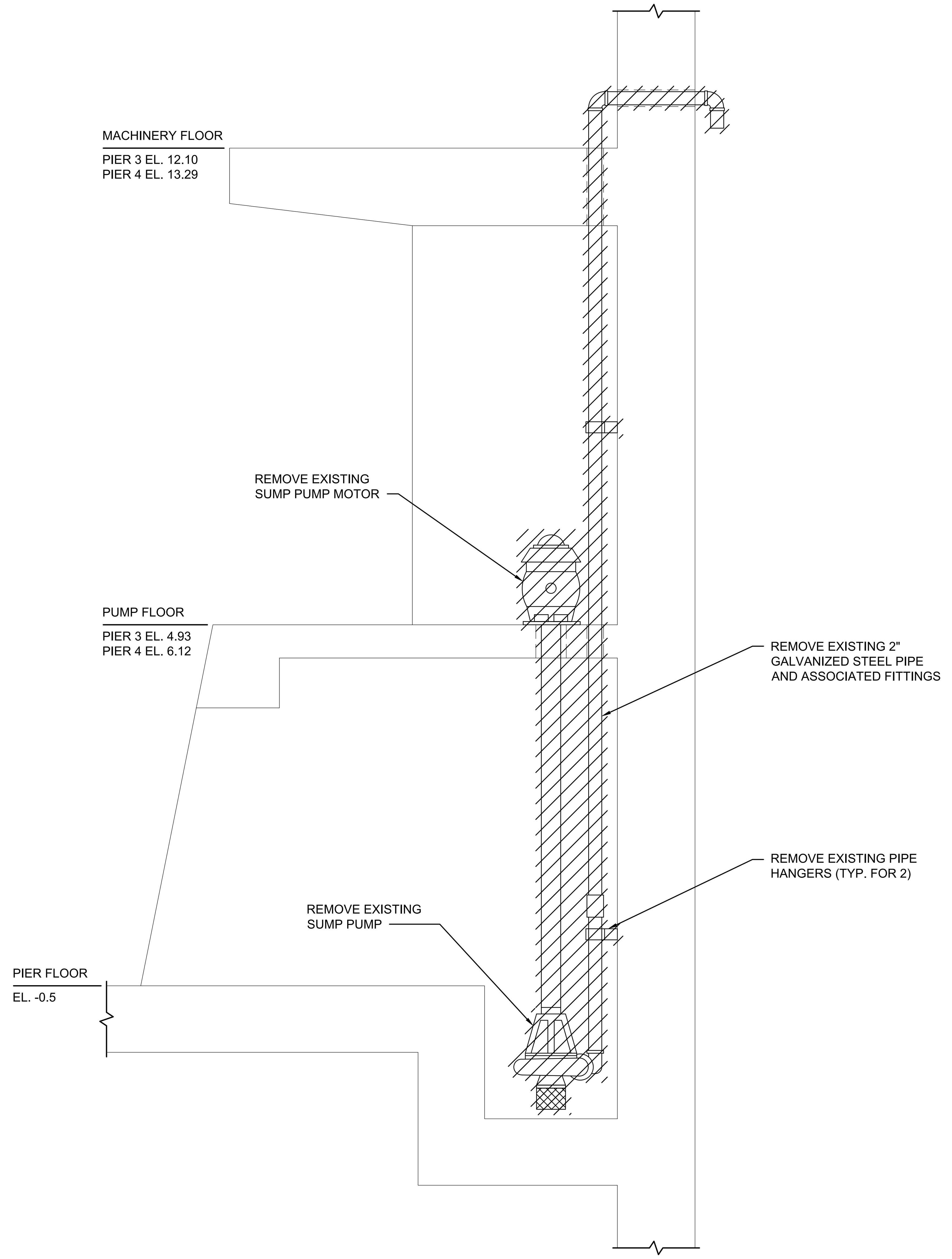
DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
PAUL M. SKELTON
12/31/22
MECHANICAL
STATE OF CALIFORNIA

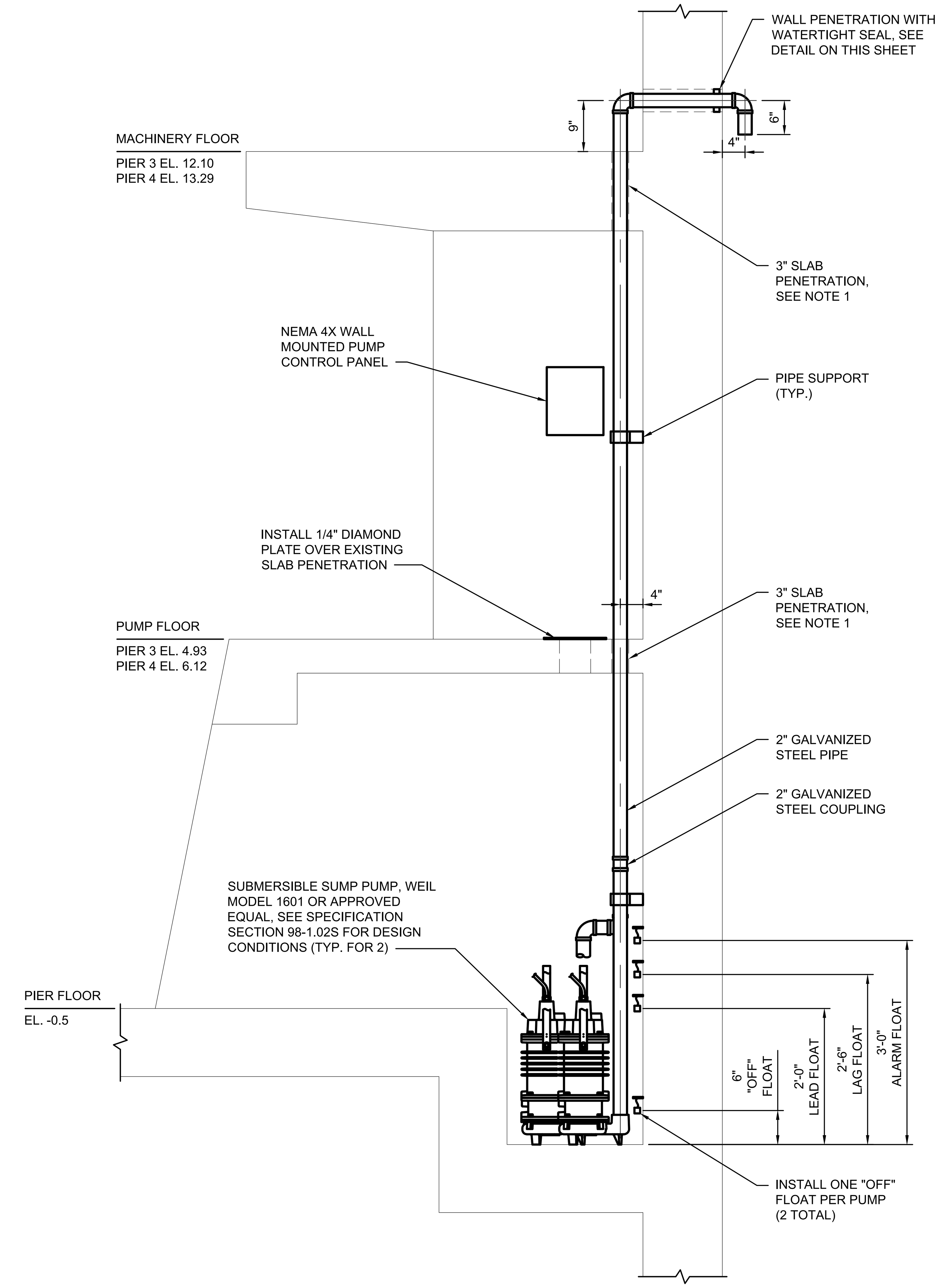
SPAN LOCK MODIFICATIONS
TRACY BOULEVARD BRIDGE OVER GRANT LINE CANAL (BRIDGE NO. 29C-022)

$REQUEST $TIME $DATE $USER



SUMP PUMP REMOVAL ELEVATION

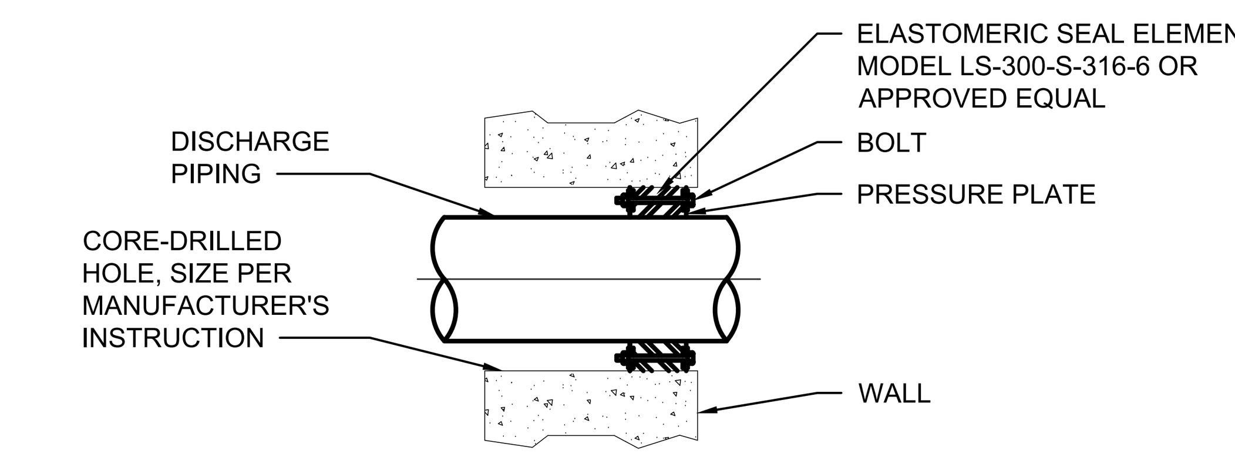
SCALE: 3/4" = 1'-0"



NOTE:
1. REUSE EXISTING SLAB PENETRATIONS WHERE POSSIBLE.

SUMP PUMP INSTALLATION ELEVATION

SCALE: 3/4" = 1'-0"



WALL PENETRATION DETAIL

NOT TO SCALE

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER PAUL M. SKELTON MECHANICAL STATE OF CALIFORNIA 11/18/22

SUMP PUMP REPLACEMENT
TRACY BOULEVARD BRIDGE OVER GRANT LINE CANAL
(BRIDGE NO. 29C-022)

TB-M-02

GENERAL

1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE STATE OF CALIFORNIA,, THE COUNTY OF SAN JOAQUIN, THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, AND THE REGULATIONS OF THE UNDERWRITERS LABORATORIES. ALL ELECTRICAL INSTALLATIONS SHALL CONFORM TO THE 2017 NATIONAL ELECTRIC CODE OR LATER.

2. ALL ELECTRICAL WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES AND SHALL BE SCHEDULED CONSISTENT WITH THE OVERALL CONSTRUCTION STAGING SEQUENCE. ELECTRICAL REMOVAL WORK SHALL BE PERFORMED AND COORDINATED WITH THE ELECTRICAL INSTALLATION WORK.

3. CONTRACTOR SHALL PERFORM ALL WORK WITH DUE RESPECT FOR LIFE AND PROPERTY IN THE VICINITY OF THE WORK AREA. CONTRACTOR ALONE SHALL BE RESPONSIBLE FOR PROTECTION OF SAME FROM ANY HARM OR DAMAGE DURING THE ENTIRE CONSTRUCTION PERIOD. ANY HARM OR DAMAGE SHALL BE RECTIFIED TO THE ENTIRE SATISFACTION OF THE COUNTY OF SAN JOAQUIN AT NO ADDITIONAL COST.

4. EXISTING DIMENSIONS AND DETAILS SHOWN IN THE PLANS ARE BASED ON AVAILABLE INFORMATION TAKEN FROM EXISTING PLANS, FIELD MEASUREMENTS, AND FIELD INSPECTIONS. ALL EXISTING DIMENSIONS AND DETAILS THAT AFFECT THE WORK CALLED FOR IN THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO START OF WORK. IN THE EVENT THAT EXISTING CONDITIONS OR DETAILS VARY FROM THOSE SHOWN ON THESE DRAWINGS, THE CONTRACTOR MUST MAKE THE NECESSARY DRAWINGS SHOWING THE EXISTING CONDITIONS AND SUBMIT TO THE COUNTY OF SAN JOAQUIN FOR REVIEW AND RESOLUTION.

5. THE ELECTRICAL EQUIPMENT AND RACEWAY LAYOUTS SHOWN IN THE CONTRACT DOCUMENTS ARE DIAGRAMMATIC IN NATURE AND INTENDED TO SHOW A CONCEPTUAL LAYOUT. SCALES ARE APPROXIMATE AND NOT EVERY DETAIL OR EXACT LOCATION OF EQUIPMENT AND/OR CONDUIT IS SHOWN. EXISTING CONDITIONS SHALL BE VERIFIED IN THE FIELD. WHILE MAJOR EQUIPMENT IS SHOWN, NOT EVERY DETAIL OR EXACT LOCATION OF ALL EQUIPMENT AND/OR CONDUIT MAY BE SHOWN. SIZES OF EQUIPMENT MAY VARY, DEPENDING ON THE MANUFACTURER SELECTED. THE CONTRACTOR SHALL FOLLOW THESE LAYOUTS AS CLOSELY AS POSSIBLE, REALIZING THAT ACTUAL INSTALLATIONS MAY VARY SLIGHTLY DUE TO THE FIELD CONDITIONS AND STRUCTURAL MECHANICAL COORDINATION. THE CONTRACTOR SHALL VERIFY ALL THE DIMENSIONS RELATED TO ELECTRICAL EQUIPMENT INSTALLATION PRIOR TO PERFORMING THE ACTUAL INSTALLATION. ANY DEVIATIONS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL ANY DEVIATIONS IN PROPOSED CABLE AND CONDUIT ROUTINGS.

6. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL REQUIRED BOXES, CONDUIT FITTINGS, ELBOWS, AND HARDWARE FOR A COMPLETE INSTALLATION WHETHER OR NOT THEY ARE EXPLICITLY SHOWN OR INDICATED ON THE CONTRACT DRAWINGS.

7. THESE PLANS AND SPECIFICATIONS DO NOT NECESSARILY SHOW ALL ASPECTS OF THE REQUIRED INSTALLATION. PERFORM ALL WORK NECESSARY, TO PROVIDE FULLY OPERATIONAL SYSTEMS THAT ARE IN COMPLIANCE WITH ALL STATED CONTRACT REQUIREMENTS, WHETHER SHOWN ON THE PLANS OR NOT. PRESENTATION OF INCOMPLETE INFORMATION OR OMISSIONS OF DETAILS FOR ITEMS WHICH ARE NECESSARY TO CARRY OUT THE INTENT OF THE DRAWINGS AND SPECIFICATIONS, OR WHICH ARE CUSTOMARILY PERFORMED, SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING SUCH OMISSIONS AND DETAILS OF WORK, AT NO EXTRA COST.

8. ANY APPARATUS, DEVICE, CIRCUIT, APPLIANCE, MATERIAL, OR LABOR NOT HEREIN SPECIFICALLY MENTIONED OR INCLUDED, BUT THAT MAY BE FOUND NECESSARY TO COMPLETE OR PERFECT THE INSTALLATION AND EQUIPMENT IN A MANNER ACCEPTABLE TO THE ENGINEER, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AS IF SPECIFICALLY INCLUDED IN THESE DRAWINGS.

9. IN ANY CASE OF DISCREPANCIES IN NOTED DETAILS, CATALOG NUMBERS, AND DESCRIPTIONS, OR WHERE MULTIPLE INTERPRETATIONS OF THE PLANS MAY BE REASONABLY MADE, SUBMIT A WRITTEN INQUIRY TO THE ENGINEER, WHO WILL MAKE DETERMINATION IN WRITING. ANY DEVIATION FROM THE PLANS AND SPECIFICATIONS OR INTERPRETATIONS MADE BY THE CONTRACTOR WITHOUT WRITTEN APPROVAL BY THE ENGINEER SHALL BE AT THE CONTRACTOR'S OWN RISK AND EXPENSE. IN THE CASE OF DISCREPANCY BETWEEN SPECIFICATIONS AND PLANS, THE MORE STRINGENT SHALL GOVERN.

10. ALL TEMPORARY WORKS AND SUPPORTS REQUIRED TO COMPLETE THE WORK SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL BE CONSIDERED INCIDENTAL TO THE OTHER WORK ITEMS.

11. ALL ELECTRICAL COMPONENTS AND MATERIAL SHOWN ON THE CONTRACT DRAWINGS ARE NEW UNLESS OTHERWISE NOTED.

12. THE CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING AS REQUIRED FOR THE REMOVAL AND INSTALLATION OF ELECTRICAL COMPONENTS, HANGERS, SUPPORTS, ETC. ALL PATCHING SHALL BE DONE SO AS TO LEAVE THE AREA IN ITS ORIGINAL CONDITION AS A MINIMUM OR AS OTHERWISE REQUIRED BY THE ENGINEER.

13. CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL CONSTRUCTION DEBRIS IN THE VICINITY OF THE WORK. THE CONTRACTOR SHALL CONTROL CLEANING TO PREVENT DIRT OR DUST FROM LEAVING THE JOB SITE AND INFILTRATING AREAS NOT INVOLVED IN THE PROJECT. AT THE COMPLETION OF THE WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LEAVING THE SITE IN A CLEAN, ORDERLY STATE.

14. EXISTING ELECTRICAL CABLE, WIRES, CONDUIT, CONDUIT HANGERS, SUPPORTS, CLAMPS, ETC, THAT ARE BEING REPLACED SHALL NOT BE REUSED. ALL SUCH PARTS SHALL BE REMOVED AND PROPERLY DISPOSED OF.

15. THE CONTRACTOR MAY PROPOSE REMOVAL OF COMPONENTS OF THE EXISTING STRUCTURE IN ORDER TO ACCOMMODATE PROPOSED ELECTRICAL WORK. ANY SUCH PROPOSALS SHALL BE SUBMITTED TO THE COUNTY OF SAN JOAQUIN FOR APPROVAL. ALL REMOVED ITEMS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE COUNTY OF SAN JOAQUIN PRIOR TO THE COMPLETION OF WORK.

16. THE CONTRACTOR SHALL COMPLY WITH THE COUNTY OF SAN JOAQUIN'S REQUIREMENTS FOR BUILDING SECURITY AND ACCESS. BUILDING ACCESS AND STORAGE AREAS FOR NECESSARY CONSTRUCTION MATERIALS AND EQUIPMENT SHALL BE COORDINATED WITH THE COUNTY OF SAN JOAQUIN.

17. THE CONTRACTOR SHALL REMOVE AND RE-EXECUTE ALL UNSATISFACTORY WORK AT NO ADDITIONAL COST TO THE COUNTY OF SAN JOAQUIN.

18. ALL STRUCTURAL, MECHANICAL AND ARCHITECTURAL BACKGROUND INFORMATION SHOWN IN THE ELECTRICAL PLANS IS FOR REFERENCE ONLY.

19. CONDUIT PENETRATIONS THROUGH WALLS AND FLOORS OF BUILDINGS SHALL BE SEALED WITH AN APPROVED FIRE-STOP SEALANT.

20. ALL CONDUITS AND FITTINGS USED IN ONE CONTINUOUS RUN SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER.

21. THE CONTRACTOR SHALL FURNISH AND INSTALL ENGRAVED BRASS TAGS AT BOTH ENDS OF ALL RACEWAY RUNS IDENTIFYING THEM WITH THE FINAL CONDUIT DESIGNATIONS WHICH SHALL COINCIDE WITH THOSE IN THE CONTRACTOR'S FINAL AS-BUILT DRAWINGS. PAYMENT FOR THESE TAGS SHALL BE UNDER THE VARIOUS PAY ITEMS TO WHICH THE RACEWAYS PERTAIN.

22. ENCLOSURES WHERE SHOWN IN THE PLANS SHALL BE NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION (NEMA) 4X STAINLESS STEEL WITH CONTINUOUS HINGES AND LATCHES, UNLESS OTHERWISE NOTED.

23. ALL NEW CONDUCTORS INSTALLED IN CONDUIT SHALL BE INSTALLED WITH GROUND CONDUCTORS. GROUND CONDUCTORS SHALL BE PROVIDED IN ALL NEW FLEXIBLE CABLES. GROUND CONDUCTOR SHALL BE SIZED AS PER THE NEC OR MINIMUM SIZE #14 AWG. WHICHEVER IS LARGER. ALL CABINETS, TERMINAL AND JUNCTION BOXES SHALL BE GROUNDED IN ACCORDANCE WITH THE NEC.

24. ALL CONDUCTORS SHALL BE CONNECTED TO TERMINAL BLOCKS OR DEVICES. SPLICES SHALL NOT BE PERMITTED WITHIN EQUIPMENT ENCLOSURES, BOXES OR CONDUIT FITTINGS.

25. ALL EQUIPMENT NOTED AS PROPOSED SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

26. PRIOR TO THE COMMENCEMENT OF ANY WORK, THE CONTRACTOR SHALL SUBMIT A COMPREHENSIVE STAGING PLAN IN ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS WHICH SHALL CLEARLY DEFINE SPECIFIC MILESTONE DATES TO THE ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR ALL OTHER CONSTRUCTION THAT MAY AFFECT OPERATIONS OR SCHEDULE.

27. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS RELATING TO ELECTRICAL EQUIPMENT INSTALLATIONS PRIOR TO PERFORMING THE ACTUAL INSTALLATIONS. ANY DEVIATIONS NOTED AS PART OF THE FIELD VERIFICATION OR CONSTRUCTION DEVIATIONS REGARDING THE STRUCTURE, SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

GENERAL (CONTINUED)

28. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN THE LOCATIONS DEPICTED ON THE PLANS. DEVIATIONS IN LOCATION SHALL BE PERMITTED ONLY UPON APPROVAL BY THE ENGINEER.

29. UPON COMPLETION OF ELECTRICAL INSTALLATION, THE CONTRACTOR SHALL TEST THE COMPLETE ELECTRICAL SYSTEM FOR ACCEPTANCE. PRIOR TO TESTING, THE CONTRACTOR SHALL SUBMIT A COMPLETE TESTING PROCEDURE FOR APPROVAL. THE SYSTEM SHALL BE TESTED STEP BY STEP FOR SHORT CIRCUITS, GROUNDS, PROPER OPERATION AND INTERLOCKS IN THE PRESENCE OF THE ENGINEER, ALL FINDINGS SHALL BE RECORDED AND DEFICIENCIES CORRECTED. SEE SPECIFICATIONS FOR ADDITIONAL TESTING REQUIREMENTS.

30. WIREWAYS WHERE SHOWN IN THE PLANS SHALL BE NEMA 4X STAINLESS STEEL WITH CONTINUOUS HINGES AND LATCHES. SIZES AS REQUIRED TO MEET NEC.

31. ALL ABOVE GROUND OUTDOOR CONDUITS SHALL BE PVC-RGS UNLESS NOTED OTHERWISE. ALL UNDERGROUND OR EMBEDDED IN BARRIERS/CONCRETE CONDUITS SHALL BE PVC-SCHEDULE 80 UNLESS NOTED OTHERWISE.

GENERAL SCOPE OF WORK

1. THE TRACY BOULEVARD MOVABLE BRIDGE SHALL HAVE NEW ELECTRICAL EQUIPMENT INSTALLED ALONGSIDE EXISTING EQUIPMENT ON THE EXISTING MOVABLE BRIDGE AS SHOWN ON THE PLANS AND DESCRIBED IN THE SPECIFICATIONS.

2. FINAL TESTING OF THE ELECTRICAL EQUIPMENT IN THE SHOP (PRIOR TO DELIVERY) SHALL BE DONE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

3. DURING SHIPMENT OF ALL MATERIALS TO THE WORK SITE, SUPPORTS AND PROTECTIVE MEASURES NECESSARY TO ENSURE SHIPMENT WITHOUT DAMAGE TO THE ELECTRICAL EQUIPMENT SHALL BE INCLUDED WITH THIS WORK. DAMAGE TO ELECTRICAL EQUIPMENT DURING SHIPPING AND HANDLING SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE COUNTY. COMPONENTS DAMAGED BEYOND REPAIR, TO THE COUNTY OF SAN JOAQUIN'S SATISFACTION, SHALL BE REPLACED BY THE CONTRACTOR AT NO COST TO THE COUNTY.

4. SITE ACCEPTANCE TESTING SHALL BE CONDUCTED AFTER COMPLETE INSTALLATION. THE CONTRACTOR SHALL PROVIDE WRITTEN VERIFICATION THAT THEY HAVE PERFORMED THIS FINAL INSPECTION AND INDICATE TESTING RESULTS.

5. DETAILED PROGRESS REPORTS AND PROJECTED DELIVERY SCHEDULES SHALL BE PROVIDED THROUGHOUT THE PROJECT. UPDATED SCHEDULES SHALL BE PROVIDED TO THE COUNTY OF SAN JOAQUIN NO LESS FREQUENTLY THAN BI-WEEKLY.

6. ACCOMMODATION AND PROVISION OF ACCESS TO THE SHOP WORK BY COUNTY OF SAN JOAQUIN STAFF AND INSPECTORS SHALL BE GRANTED AT THE REQUEST OF THE COUNTY OF SAN JOAQUIN.

MOUNTING METHOD NOTES

1. WHERE MOUNTING ITEMS SUCH THAT DISSIMILAR METALS MAY BE IN CONTACT WITH EACH OTHER, PROVIDE NEOPRENE SPACERS OR GASKETS TO PREVENT CONTACT. THIS REQUIREMENT WILL NOT BE REQUIRED SPECIFICALLY FOR THE CASE OF CONTACT BETWEEN CARBON STEEL AND STAINLESS STEEL.

JUNCTION BOX, PULL BOX, CABINET, AND FITTING NOTES

1. FURNISH AND INSTALL JUNCTION AND PULL BOXES, REDUCERS, AND OTHER FITTINGS AS REQUIRED BY THESE SPECIFICATIONS OR WHERE REQUIRED BY THE NATIONAL ELECTRIC CODE (NEC), OR WHERE REQUIRED TO FACILITATE PULLING, WHETHER SHOWN ON PLANS OR NOT.

2. CONDUIT TOP ENTRY IS NOT PERMITTED FOR OUTDOOR CABINETS THAT CONTAIN ELECTRICAL EQUIPMENT. ALL WET AND OUTDOOR LOCATION CONDUIT FITTINGS AND HUBS SHALL BE WATERTIGHT TYPE.

AS-BUILT PLANS

1. PROVIDE AS-BUILT PLANS SHOWING THE FINAL LOCATIONS, DETAILS, AND METHODS FOR ALL ELECTRICAL INSTALLATIONS. AS-BUILT PLANS SHALL BE DEVELOPED USING THIS PLAN SET, THE EXISTING ELECTRICAL SYSTEM PLAN SET, AND ALL CHANGES OF PLAN AS A BASIS. USE EITHER A "RED-LINE" METHOD THAT SHOWS REVISIONS, OR A COMPUTERIZED METHOD WHICH REVISES THE ELECTRONIC FILES. MATCH THE LEVEL OF DETAIL SHOWN ON THESE PLANS. SUBSTITUTE DETAILS SHALL BE PROVIDED WHERE THE DETAILS ON THIS SHEET ARE MODIFIED OR ALTERNATE DETAILS ARE APPROVED BY THE ENGINEER. IT WILL NOT BE PERMISSIBLE TO "X" OUT DETAILS WITHOUT PROVIDING NEW VERSIONS.

2. IN ADDITION TO PROVIDING AS-BUILT PLANS FOR THE PLANS INCLUDED HEREIN, PROVIDE AS-BUILT PLANS FOR THE FOLLOWING:
   - 2.1. CONTROL SYSTEM SCHEMATICS.
   - 2.2. RACEWAY SCHEDULES NOTING SIZE, TYPE, CIRCUITS.
   - 2.3. WIRE NUMBERS.
   - 2.4. WIRING TERMINATION DESIGNATIONS.

3. INTEGRATE EXISTING EQUIPMENT TO REMAIN INTO THE AS-BUILTS TO PROVIDE A COMPLETE SET.

ELECTRICAL MACHINERY AND EQUIPMENT NOTES

1. COORDINATE, VERIFY, AND INCORPORATE PROPER CLEARANCES BETWEEN ELECTRICAL ENCLOSURES TO ALLOW FOR INSTALLATION OF EQUIPMENT AS SHOWN ON THE PLANS. SEE MACHINERY/MECHANICAL PLANS FOR ADDITIONAL REQUIREMENTS.

2. PLANS MAY NOT SHOW DETAILED CONSTRUCTION METHODS OR DIMENSIONS FOR EQUIPMENT MOUNTING SUPPORTS. WHERE NOT SHOWN, CONTRACTOR SHALL DEVELOP SCALED SHOP DRAWINGS SHOWING CONSTRUCTION OF THE MOUNTING, AND ALL ATTACHED EQUIPMENT FOR REVIEW AND APPROVAL. INTERCONNECTED EQUIPMENT SHALL BE SUBMITTED AS A COMPLETE SHOP DRAWING SUBMISSION.

3. MODEL NUMBERS SHOWN ON PLANS ARE PROVIDED FOR REFERENCE ONLY. MODEL NUMBERS MAY NOT BE COMPLETE. IN CASE OF DISCREPANCY BETWEEN MODEL NUMBERS AND STATED SPECIFICATIONS, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL MODEL NUMBERS AND PROVIDING COMPLETE MODEL INFORMATION FOR ALL EQUIPMENT THROUGH THE SHOP DRAWING PROCESS.

4. ALL CONTROL PANELS, TEMPORARY AND PERMANENT SHALL BE CONSTRUCTED FOLLOWING NFPA 70, NEC ARTICLE 409 - INDUSTRIAL CONTROL PANELS.

5. ALL CIRCUIT BREAKERS (CB) (EXCEPT FOR BRANCH CB IN LIGHTING PANELS) , MOTOR CIRCUIT PROTECTORS, CONTACTORS, AND OVERLOADS SHALL BE PROVIDED WITH A MINIMUM OF 2 NORMALLY OPEN (N.O.) AND 2 NORMALLY CLOSED (N.C.) AUXILIARY CONTACTS UNLESS OTHERWISE NOTED.

6. ALL ELECTRICAL PARTS SHALL BE COMPLETELY PROTECTED FROM WEATHER, DIRT, AND ALL OTHER INJURIOUS CONDITIONS DURING MANUFACTURE AND SHIPMENT.

7. COVERS FOR ALL EQUIPMENT SHALL BE EASILY REMOVABLE AND REPLACEABLE WITHOUT DISASSEMBLY OF ANY COMPONENT EXCEPT THE ONE REQUIRING ACCESS. CLEARANCES BETWEEN EQUIPMENT SHALL BE INCREASED TO MEET THIS REQUIREMENT.

8. THE CONTRACTOR SHALL PROVIDE IN-SIGHT (LOCAL) DISCONNECT SWITCH, EITHER SINGLE POLE, DOUBLE POLE OR THREE POLE AS REQUIRED FOR EACH ELECTRICAL APPLIANCE SUCH AS ELECTRICAL WATER HEATER, AIR CONDITIONER, VENTILATION FAN ETC., WHETHER SHOWN OR NOT ON THE CONTRACT PLANS.

$USER
$TIME
$DATE
$REQUEST

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					NO SCALE

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

ELECTRICAL GENERAL NOTES I
TRACY BOULEVARD BRIDGE OVER GRANT LINE CANAL
(BRIDGE NO. 29C-022)

TB-E-01

63
OF
75

CONDUITS, CABLE, AND WIRING NOTES

1. WHERE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IS NOT SHOWN ON THE DRAWINGS, PROVIDE AN ADDITIONAL EQUIPMENT GROUNDING CONDUCTOR, SIZED IN ACCORDANCE WITH THE NEC.
2. QUANTITY OF CONTROL SYSTEM CABLES/WIRES SHOWN ON THE DRAWINGS MAY NOT REFLECT THE ACTUAL NUMBER REQUIRED TO PROVIDE THE STATED SYSTEM OPERATION. THE CONTRACTOR SHALL INSTALL THE QUANTITY OF CABLES/WIRES AS ARE NECESSARY FOR THE INITIAL INSTALLATION, PLUS A MINIMUM OF 10% SPARE.
3. LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT (LFMC) SHALL BE USED ONLY FOR APPLICATIONS THAT REQUIRE A HIGH DEGREE OF FLEXIBILITY OR TO ACCOMMODATE MOVING OR VIBRATING PARTS. SUBSTITUTION OF OTHER CONDUIT TYPES WITH LFMC SHALL NOT BE MADE SOLELY BASED ON CONVENIENCE OF INSTALLATION. USE LFMC FOR FINAL CONNECTIONS TO MOTOR AND LIMIT SWITCHES. MAXIMUM LENGTH SIX (6) FEET. DO NOT ATTACH CONDUIT TO MOTOR FOUNDATION.
4. SUPPORT CONDUIT EVERY FIVE (5) FEET. MAXIMUM SPACING FOR CONDUIT SUPPORTS DUE TO FIELD CONDITIONS MAY BE EXTENDED UP TO SIX (6) FEET UPON ENGINEER'S APPROVAL. DEVIATION FROM THIS REQUIREMENT SHALL BE AT THE SOLE DISCRETION OF THE ENGINEER. DO NOT SUPPORT BOXES OR CABINETS FROM CONDUIT. INSTALL ALL CONDUIT PER THE NEC AND AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) STANDARDS. LIMIT TOTAL ANGULAR CONDUIT BENDS BETWEEN PULL BOXES TO 270° OR 360° WITH APPROVAL OF ENGINEER. RADIUS OF CONDUIT BEND SHALL BE PER THE NEC.
5. WHERE MULTIPLE CIRCUIT CONDUCTORS ARE INSTALLED WITHIN THE SAME CONDUIT, VERIFY THAT ALL CONDUCTORS ARE SIZED IN ACCORDANCE WITH NEC DERATING REQUIREMENTS. INSTALL UPSIZED CABLES/LARGER CONDUIT AT NO ADDITIONAL COST TO ACCOMMODATE THE INCREASED WIRING SIZE IF NECESSARY TO COMPLY WITH THIS PROVISION.
6. ALL CONDUIT PROVIDED SHALL BE SUNLIGHT AND ULTRAVIOLET (UV) RESISTANT, AND SHALL BE RATED FOR SUCH INSTALLATION, WHETHER INSTALLED IN EXTERIOR LOCATIONS OR NOT.
7. EXACT CONDUIT STUB-UP LOCATIONS ARE TO BE DETERMINED BY THE CONTRACTOR BASED ON CERTIFIED MANUFACTURER'S DRAWINGS OF THE RESPECTIVE EQUIPMENT. INSTALL CONDUIT COMPATIBLE WITH EQUIPMENT FURNISHED.
8. FURNISH AND INSTALL EXPANSION FITTINGS OF THE APPROVED TYPE WHEREVER CONDUITS PASS THROUGH OR ACROSS STRUCTURAL EXPANSION JOINTS. EXPANSION/DEFLECTION FITTINGS NOT SHOWN ON THE PLANS SHALL BE FURNISHED AND INSTALLED AS NECESSARY AT NO ADDITIONAL COST.
9. ALL CONDUITS SHALL BE INSTALLED USING THE MANUFACTURER'S RECOMMENDED INSTALLATION METHODS, TOOLS AND MATERIALS. ALL FIELD THREADS SHALL BE COATED USING CONDUIT MANUFACTURER'S RECOMMENDED COATING.
10. MINOR DAMAGE TO CONDUIT DURING INSTALLATION SHALL BE REPAIRED, WHILE ANY CONDUIT WITH SEVERE DAMAGE SHALL BE REPLACED. THE DETERMINATION OF LEVEL OF DAMAGE, MINOR OR SEVERE, SHALL BE MADE BY THE OWNER.
11. ALL CONDUCTORS SHALL HAVE 90°C RATED XHHW-2 INSULATION UNLESS NOTED OTHERWISE.

MANUFACTURER'S RECOMMENDATIONS

1. WHERE INSTALLATION PROCEDURES OR ANY PART THEREOF ARE REQUIRED TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL BEING INSTALLED, PRINTED COPIES OF THESE RECOMMENDATIONS SHALL BE FURNISHED TO THE ENGINEER PRIOR TO INSTALLATION. INSTALLATION OF THE ITEM WILL NOT BE ALLOWED TO PROCEED UNTIL THE RECOMMENDATIONS ARE RECEIVED. FAILURE TO FURNISH THESE RECOMMENDATIONS CAN BE CAUSE FOR REJECTION OF THE MATERIAL. THE FABRICATOR SHALL PROVIDE AS PART OF THE WORK ALL SPECIAL MACHINING AND INSTALLATION REQUIRED BY THE COMPONENT MANUFACTURER.

CODES AND STANDARDS

1. WORK UNDER NEW ITEMS SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE LATEST EDITION OF CODES AND STANDARDS ISSUED BY, BUT NOT LIMITED TO, THE FOLLOWING ORGANIZATIONS AND PUBLICATIONS WHOSE ABBREVIATIONS SHALL BE AS SHOWN:
   - 1.1. AMERICAN NATIONAL STANDARDS INSTITUTE - ANSI
   - 1.2. AMERICAN SOCIETY FOR TESTING AND MATERIALS - ASTM
   - 1.3. FEDERAL AVIATION ASSOCIATION - FAA
   - 1.4. INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS - IEEE
   - 1.5. INSULATED CABLE ENGINEERS ASSOCIATION - ICEA
   - 1.6. INSULATED POWER CABLE ENGINEERS ASSOCIATION - IPCEA
   - 1.7. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION - NEMA
   - 1.8. INTERNATIONAL ELECTRICAL TESTING ASSOCIATION - NETA
   - 1.9. NATIONAL FIRE PROTECTION ASSOCIATION - NFPA
     - 1.9.1. NFPA 70: NATIONAL ELECTRIC CODE - NEC
     - 1.9.2. NFPA 70E: STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE
     - 1.9.3. NFPA 101: LIFE SAFETY CODE
   - 1.10. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION - OSHA
   - 1.11. UNDERWRITER'S LABORATORY - UL
   - 1.12. ALL OTHER APPLICABLE LOCAL RULES AND ORDINANCES
2. THE WORK SHALL MEET THE REQUIREMENTS OF ALL OTHER CODES AND STANDARDS AS SPECIFIED IN THE CONTRACT DOCUMENTS. WHERE CODES AND STANDARDS ARE MENTIONED FOR ANY ITEM, IT IS INTENDED TO CALL PARTICULAR ATTENTION TO THEM, IT IS NOT INTENDED THAT ANY OTHER CODES AND STANDARDS BE OMITTED IF NOT MENTIONED.

MEASUREMENTS AND VERIFICATION

1. DIMENSIONS INDICATED ON THE PLANS ARE NOMINAL AND ARE INTENDED FOR GUIDANCE ONLY. ALL VARIATIONS FROM THE NOMINAL DIMENSIONS ON THE PLANS SHALL BE NOTED ON THE SHOP DRAWINGS.

DEFECTIVE MATERIALS AND WORKMANSHIP

1. ALL NEW PARTS AND COMPONENTS REJECTED DURING INSPECTION AND TESTING THAT ARE NOT MADE ACCEPTABLE SHALL BE REPLACED WITHOUT ADDITIONAL COST.
2. DELAYS RESULTING FROM THE REJECTION OF MATERIAL, EQUIPMENT OR WORK SHALL NOT BE THE BASIS OF ANY CLAIM.
3. ALL DEFECTS FOUND DURING THE GUARANTEE PERIOD RESULTING FROM FAULTY MATERIAL, COMPONENTS OR WORKMANSHIP SHALL BE CORRECTED BY THE FABRICATOR WITHOUT COST. IN THE EVENT THAT THE FABRICATOR DOES NOT MAKE THE CORRECTIONS IN A TIMELY MANNER, THE COUNTY OF SAN JOAQUIN RERSERVES THE RIGHT TO MAKE NECESSARY CORRECTIONS WITH ITS OWN FORCES AND CHARGE THE RESULTING COSTS TO THE FABRICATOR.

ELECTRICAL SCOPE OF WORK

1. DEMOLITION OF CORRODED CONDUIT IN PUMP ROOM AS SHOWN ON PLANS.
2. DEMOLITION OF EXISTING WARNING GATES AS SHOWN ON PLANS.
3. FURNISH AND INSTALL CONDUITS AND CONDUCTORS AS SHOWN ON PLANS.
4. FURNISH AND INSTALL NEW WARNING GATES AS SHOWN ON PLANS.
5. CLEANING AND PAINTING SELECT CONDUITS AS SHOWN ON PLANS.

ELECTRICAL CONSTRUCTION SEQUENCE

1. PHASE I: PRE-MARINE OUTAGE
   - 1.1. CLEAN CONDUITS TO REMAIN IN PUMP ROOM & PAINT AS SHOWN ON PLANS.
2. PHASE II: MARINE OUTAGE
   - 2.1. DEMOLISH AND REMOVE EXISTING WARNING GATES.
   - 2.2. REMOVE EXISTING CONDUCTORS TO WARNING GATES.
   - 2.3. DEMOLISH WARNING GATE FOUNDATIONS.
   - 2.4. AS NEW WARNING GATE WORK IS PERFORMED, REPLACE EXISTING SEVERELY CORRODED CONDUIT TO EACH ROTARY CAM LIMIT SWITCH IN THE MACHINERY/PUMP ROOM AS SHOWN ON PLANS.
   - 2.5. REMOVE SECTION OF CONDUIT FROM WARNING GATE LOCATION TO NEAREST UPSTREAM JUNCTION BOX.
   - 2.6. FORM NEW FOUNDATIONS FOR NEW WARNING GATES.
   - 2.7. INSTALL NEW CONDUIT FROM LAST JUNCTION BOX TO NEW WARNING GATE FOUNDATIONS.
   - 2.8. MAKE STARTER MODIFICATIONS IN MOTOR CONTROL CENTER FOR WARNING GATES AS SHOWN ON PLANS.
   - 2.9. INSTALL NEW WARNING GATES ON NEW FOUNDATIONS.
   - 2.10. PULL NEW CONDUCTORS TO WARNING GATE AND TERMINATE.
3. PHASE III: TESTING AND COMMISSIONING
   - 3.1. STARTUP NEW SYSTEM, TROUBLESHOOT, AND COMMISSION SYSTEM.

$USER $TIME $DATE $REQUEST

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					NO SCALE

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

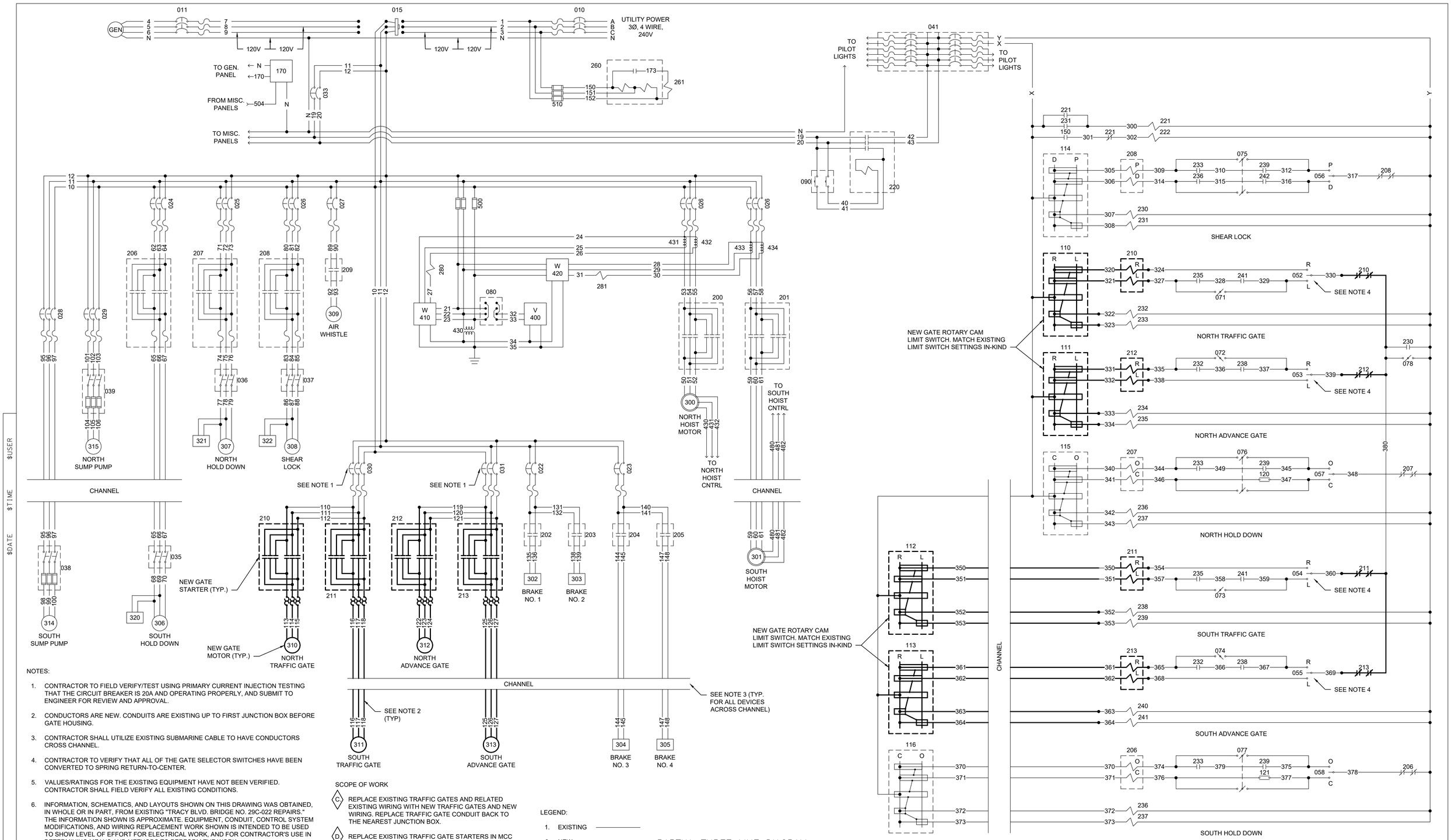
REGISTERED PROFESSIONAL ENGINEER
FEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

100% SUBMISSION

ELECTRICAL GENERAL NOTES II
TRACY BOULEVARD BRIDGE OVER GRANT LINE CANAL
(BRIDGE NO. 29C-022)

TB-E-02

64 OF 75



NOTES:

1. CONTRACTOR TO FIELD VERIFY/TEST USING PRIMARY CURRENT INJECTION TESTING THAT THE CIRCUIT BREAKER IS 20A AND OPERATING PROPERLY, AND SUBMIT TO ENGINEER FOR REVIEW AND APPROVAL.
2. CONDUCTORS ARE NEW. CONDUITS ARE EXISTING UP TO FIRST JUNCTION BOX BEFORE GATE HOUSING.
3. CONTRACTOR SHALL UTILIZE EXISTING SUBMARINE CABLE TO HAVE CONDUCTORS CROSS CHANNEL.
4. CONTRACTOR TO VERIFY THAT ALL OF THE GATE SELECTOR SWITCHES HAVE BEEN CONVERTED TO SPRING RETURN-TO-CENTER.
5. VALUES/RATINGS FOR THE EXISTING EQUIPMENT HAVE NOT BEEN VERIFIED. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS.
6. INFORMATION, SCHEMATICS, AND LAYOUTS SHOWN ON THIS DRAWING WAS OBTAINED, IN WHOLE OR IN PART, FROM EXISTING "TRACY BLVD. BRIDGE NO. 29C-022 REPAIRS." THE INFORMATION SHOWN IS APPROXIMATE. EQUIPMENT, CONDUIT, CONTROL SYSTEM MODIFICATIONS, AND WIRING REPLACEMENT WORK SHOWN IS INTENDED TO BE USED TO SHOW LEVEL OF EFFORT FOR ELECTRICAL WORK, AND FOR CONTRACTOR'S USE IN DETERMINING MEANS AND METHODS TO PERFORM THE WORK.

SCOPE OF WORK

C. REPLACE EXISTING TRAFFIC GATES AND RELATED EXISTING WIRING WITH NEW TRAFFIC GATES AND NEW WIRING. REPLACE TRAFFIC GATE CONDUIT BACK TO THE NEAREST JUNCTION BOX.

D. REPLACE EXISTING TRAFFIC GATE STARTERS IN MCC CABINET WITH NEW TRAFFIC GATE STARTERS.

LEGEND:

1. EXISTING
2. NEW

PARTIAL THREE LINE DIAGRAM

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					NO SCALE

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

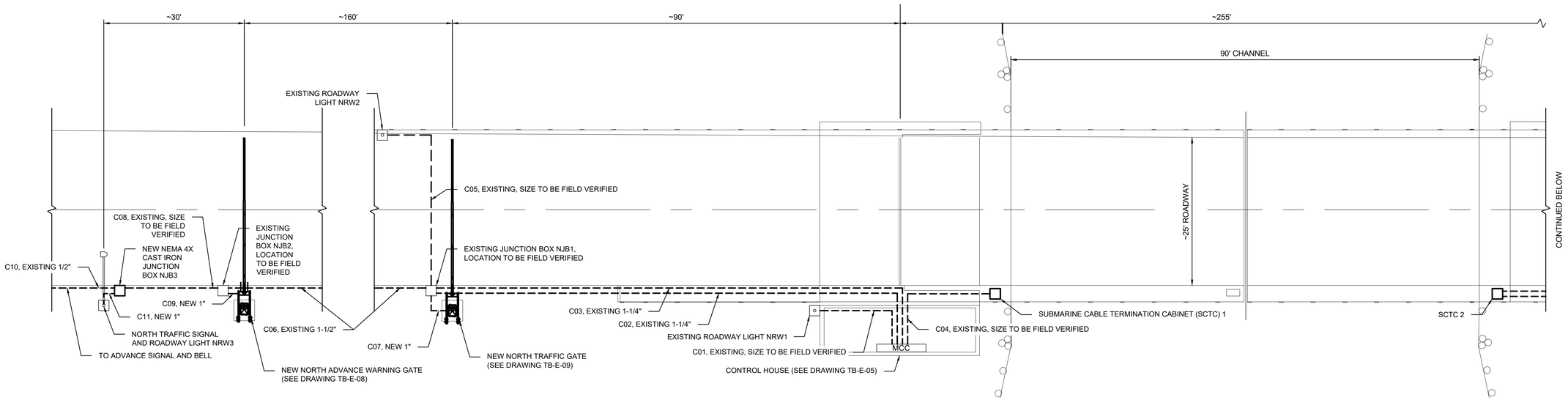
REGISTERED PROFESSIONAL ENGINEER — FEODOR KOSTADINOV — 21282 — ELECTRICAL — STATE OF CALIFORNIA

PARTIAL THREE LINE DIAGRAM
TRACY BOULEVARD BRIDGE OVER GRANT LINE CANAL (BRIDGE NO. 29C-022)

TB-E-03

65 OF 75

$USER $TIME $DATE $REQUEST



PARTIAL RISER DIAGRAM

SCALE 3/32" = 1'-0"

CONDUIT	FROM	TO	CABLES	CABLES NUMBERS (SEE NOTE 1)	GND
C01	MCC	NRW1	2-#12AWG	211, NNRW	#12AWG
C02	MCC	NJB1	16-#12AWG	122, 123, 124, 211, 217, 224, 228, 230, 331, 332, 333, 334, NAS, NNRW, NTB, NTS	#12AWG
C03	MCC	NJB1	12-#12AWG	113, 114, 115, 203, 212, 320, 321, 322, 323, NAB, NGWL, X	#12AWG
C04	MCC	SCTC 1	28-#12AWG	116, 117, 118, 125, 126 ,127, 203, 210, 212, 222, 225, 231, 232, 350, 351, 352, 353, 361, 362, 363, 634, NAB, NAS, NGWL, NSRW, NTB, NTS, X	#12AWG
C05	NJB1	NRW2	4-#12AWG	211, 211, NNRW, NNRW	#12AWG
C06	NJB1	NJB2	21-#12AWG	122, 123, 124, 203, 211, 212, 217, 224, 228, 230, 331, 332, 333, 334, NAB, NAS, NGWL, NNRW, NTB, NTS, X	#12AWG
C07	NJB1	N INNER WG	17-#12AWG	113, 114, 115, 203, 203, 212, 212, 320, 321, 322, 323, NAB, NAB, NGWL, NGWL, X, X	#12AWG
C08	NJB2	NJB3	11-#12AWG	203, 211, 217, 224, 228, 230, NAB, NAS, NNRW, NTB, NTS	#12AWG
C09	NJB2	N ADVANCE WG	14-#12AWG	122, 123, 124, 203, 203, 212, 331, 332, 333, 334, NAB, NAB, NGWL, X	#12AWG
C10	NJB3	N ADVANCE SIGNAL	4-#12AWG	203, 224, NAB, NAS	#12AWG
C11	NJB3	N TRAFFIC SIGNAL & NRW3	7-#12AWG	211, 217, 228, 230, NNRW, NTB, NTS	#12AWG
C12	SCTC 2	SJB1	16-#12AWG	125, 126, 127, 210, 222, 225, 231, 232, 361, 362, 363, 364, NAS, NSRW, NTB, NTS	#12AWG
C13	SCTC 2	SJB1	12-#12AWG	116, 117, 118, 203, 212, 350, 351, 352, 353, NAB, NGWL, X	#12AWG
C14	SJB1	SJB2	16-#12AWG	125, 126, 127, 210, 222, 225, 231, 232, 361, 362, 363, 364, NAS, NSRW, NTB, NTS	#12AWG
C15	SJB1	SJB2	12-#12AWG	116, 117, 118, 203, 212, 350, 351, 352, 353, NAB, NGWL, X	#12AWG
C16	SJB1	SRW1	4-#12AWG	210, 210, NSRW, NSRW	#12AWG
C17	SJB2	SRW2	4-#12AWG	210, 210, NSRW, NSRW	#12AWG
C18	SJB2	SJB3	21-#12AWG	125, 126, 127, 203, 210, 212, 222, 225, 231, 232, 361, 362, 363, 364, NAB, NAS, NGWL, NSRW, NTB, NTS, X	#12AWG
C19	SJB2	S INNER WG	17-#12AWG	116, 117, 118, 203, 203, 212, 212, 350, 351, 352, 353, NAB, NAB, NGWL, NGWL, X, X	#12AWG
C20	SJB3	SJB4	11-#12AWG	203, 210, 222, 225, 231, 232, NAB, NAS, NSRW, NTB, NTS	#12AWG
C21	SJB3	S ADVANCE WG	14-#12AWG	125, 126, 127, 203, 203, 212, 361, 362, 363, 364, NAB, NAB, NGWL, X	#12AWG
C22	SJB3	SJB5	4-#12AWG	203, 225, NAB, NAS	#12AWG
C23	SJB4	SJB5	7-#12AWG	210, 222, 231, 232, NSRW, NTB, NTS	#12AWG
C24	SJB5	S ADVANCE SIGNAL	4-#12AWG	203, 225, NAB, NAS	#12AWG
C25	SJB5	S TRAFFIC SIGNAL & SRW3	7-#12AWG	210, 222, 231, 232, NSRW, NTB, NTS	#12AWG

NOTE:

1. INFORMATION, CABLE NUMBERS, AND LAYOUTS SHOWN ON THIS DRAWING WAS OBTAINED, IN WHOLE OR IN PART, FROM EXISTING DRAWINGS FOR "BRIDGE ACROSS GRANT LINE CANAL" (BRIDGE 29C-22). THE INFORMATION SHOWN IS APPROXIMATE. EQUIPMENT, CONDUIT, CONTROL SYSTEM MODIFICATIONS, AND WIRING REPLACEMENT WORK SHOWN IS INTENDED TO BE USED TO SHOW LEVEL OF EFFORT FOR ELECTRICAL WORK, AND FOR CONTRACTOR'S USE IN DETERMINING MEANS AND METHODS TO PERFORM THE WORK. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS. EQUIPMENT NAMES AND CONDUIT NUMBERS ARE PROVIDED FOR CLARITY AND ARE NOT REPRESENTATIVE OF ACTUAL FIELD CONDITIONS.
2. DETAILS AND DIMENSIONS SHOWN ON THIS DRAWING DEPICT GENERAL INSTALLATION INFORMATION ONLY. IT IS THE CONTRACTOR'S ULTIMATE RESPONSIBILITY TO FIELD VERIFY ALL INFORMATION PERTINENT TO CONDUITS AND CONDUCTORS PRIOR TO BEGINNING WORK. DIMENSIONS, AT A MINIMUM, MAY VARY SLIGHTLY DUE TO FIELD CONDITIONS, ROADWAY ALIGNMENT AND SLOPE, AND CONDITION OF EXISTING CONCRETE PLATFORMS. ANY DISCREPANCIES DISCOVERED DURING CONDUCTOR INSTALLATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESOLVE AT HIS OWN COST.
3. CONDUCTORS ARE NEW. CONDUITS ARE EXISTING UP TO FIRST JUNCTION BOX BEFORE GATE HOUSING.
4. CONDUITS ARE SHOWN IN DASHED LINE FOR CLARITY.

ABBREVIATIONS:

NAB	ADVANCE BELL BREAKER NEUTRAL
NAS	ADVANCE SIGNAL BREAKER NEUTRAL
NGWL	GATE WARNING LIGHT BREAKER NEUTRAL
NNRW	NORTH ROADWAY LIGHT BREAKER NEUTRAL
NSRW	SOUTH ROADWAY LIGHT BREAKER NEUTRAL
NTB	TRAFFIC BELL BREAKER NEUTRAL
NTS	TRAFFIC SIGNAL BREAKER NEUTRAL

SCOPE OF WORK:

C REPLACE EXISTING TRAFFIC GATES AND RELATED EXISTING WIRING WITH NEW TRAFFIC GATES AND NEW WIRING. REPLACE TRAFFIC GATE CONDUIT BACK TO THE NEAREST JUNCTION BOX.

$USER $TIME $DATE $REQUEST

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

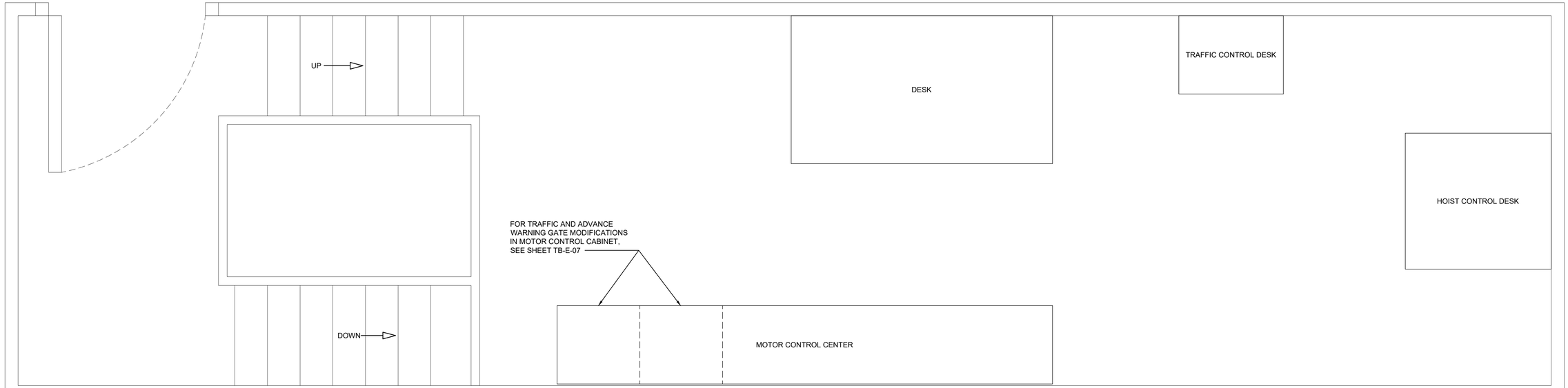
DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
K. LEE	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER TEODOR KOSTADINOV 21282 11/18/22 ELECTRICAL STATE OF CALIFORNIA

TB-E-04

PARTIAL RISER DIAGRAM
TRACY BOULEVARD BRIDGE OVER GRANT LINE CANAL
(BRIDGE NO. 29C-022)



CONTROL HOUSE – PLAN VIEW

SCALE: 1" = 1'0"

SCOPE OF WORK:

(D) REPLACE EXISTING TRAFFIC GATE STARTERS IN MCC CABINET WITH NEW TRAFFIC GATE STARTERS.

100% SUBMISSION

TB-E-05

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

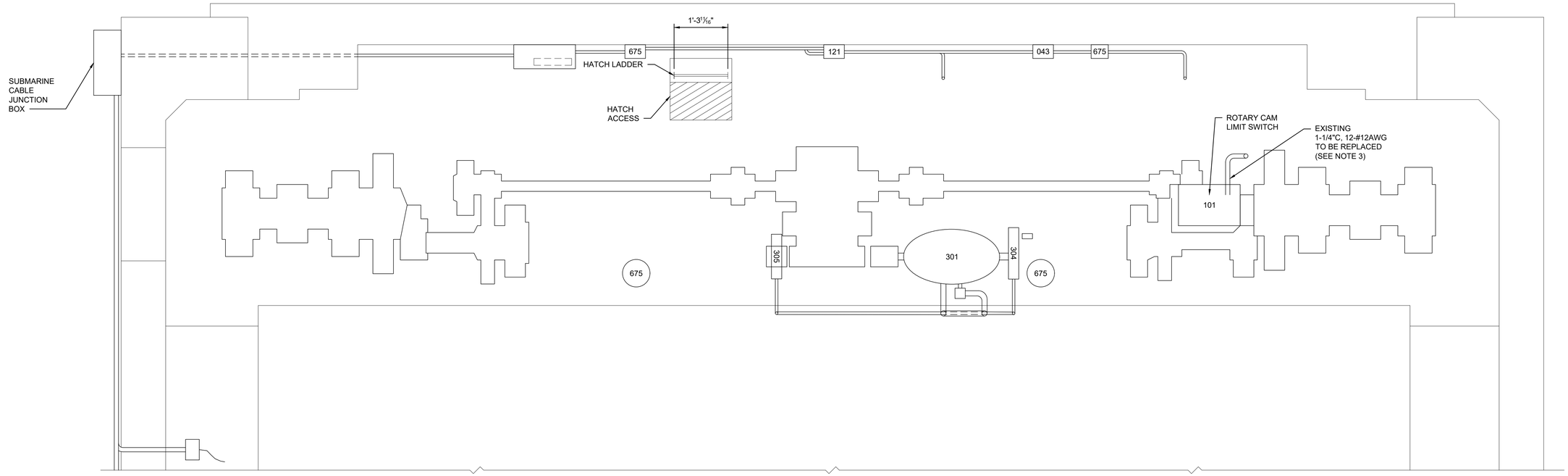
REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

CONTROL HOUSE PLAN

TRACY BOULEVARD BRIDGE OVER GRANT LINE CANAL
(BRIDGE NO. 29C-022)

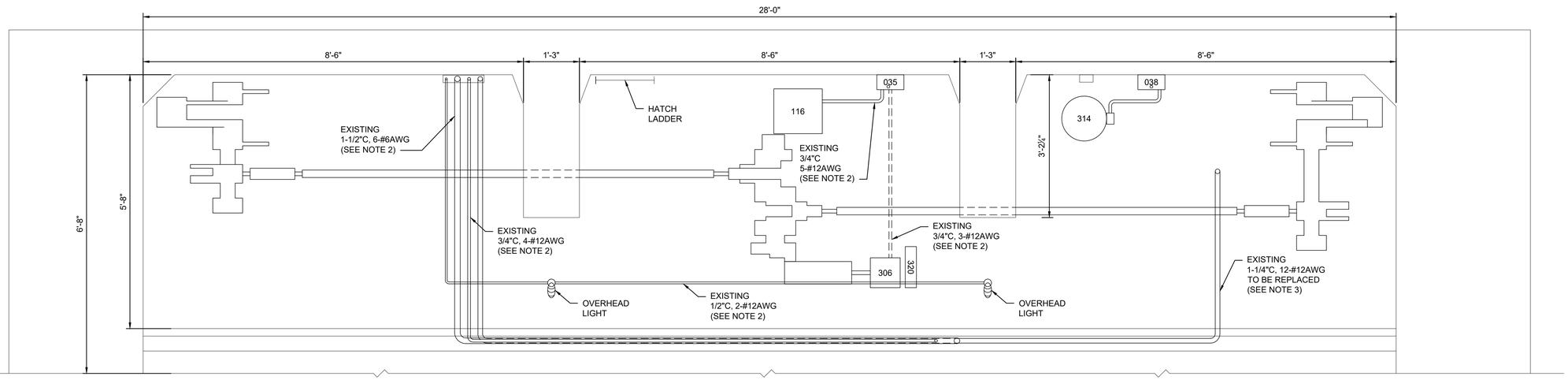
67
OF
75

$REQUEST $DATE $TIME $USER



MACHINERY ROOM – PIER #4 – PLAN VIEW

SCALE: 3/4" = 1'0"



PUMP ROOM – PIER #4 – PLAN VIEW

SCALE: 3/4" = 1'0"

NOTE:

1. PIER #4 IS SHOWN. PIER #3 IS A MIRRORED IMAGE OF PIER #4.
2. EXISTING CONDUITS TO REMAIN SHALL BE CLEANED AND PAINTED WITH CORROSION-INHIBITING ZINC RICH PAINT. (THIS IS TYPICAL FOR PIER #3.)
3. EXISTING CONDUIT TO BE REPLACED FROM ROTARY CAM LIMIT SWITCH BACK TO NEAREST JB. CONDUCTORS SHALL BE PULLED BACK AND REUSED. AFTER EXISTING CONDUIT IS REPLACED, NEW CONDUIT SHALL BE PVC COATED RGS AND SHALL BE UPSIZED TO 1-1/2" TO ALIGN WITH THE BID ITEM. (THIS IS TYPICAL FOR PIER #3.)
4. INFORMATION, SCHEMATICS, AND LAYOUTS SHOWN ON THIS DRAWING WAS OBTAINED, IN WHOLE OR IN PART, FROM EXISTING "TRACY BLVD, BRIDGE NO. 29C-022 REPAIRS." THE INFORMATION SHOWN IS APPROXIMATE. EQUIPMENT, CONDUIT, CONTROL SYSTEM MODIFICATIONS, AND WIRING REPLACEMENT WORK SHOWN IS INTENDED TO BE USED TO SHOW LEVEL OF EFFORT FOR ELECTRICAL WORK, AND FOR CONTRACTOR'S USE IN DETERMINING MEANS AND METHODS TO PERFORM THE WORK.

SCOPE OF WORK

(E) CLEAN AND PAINT SELECT CONDUITS.

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS–5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER – TEODOR KOSTADINOV – 21282 – 11/18/22 – ELECTRICAL – STATE OF CALIFORNIA

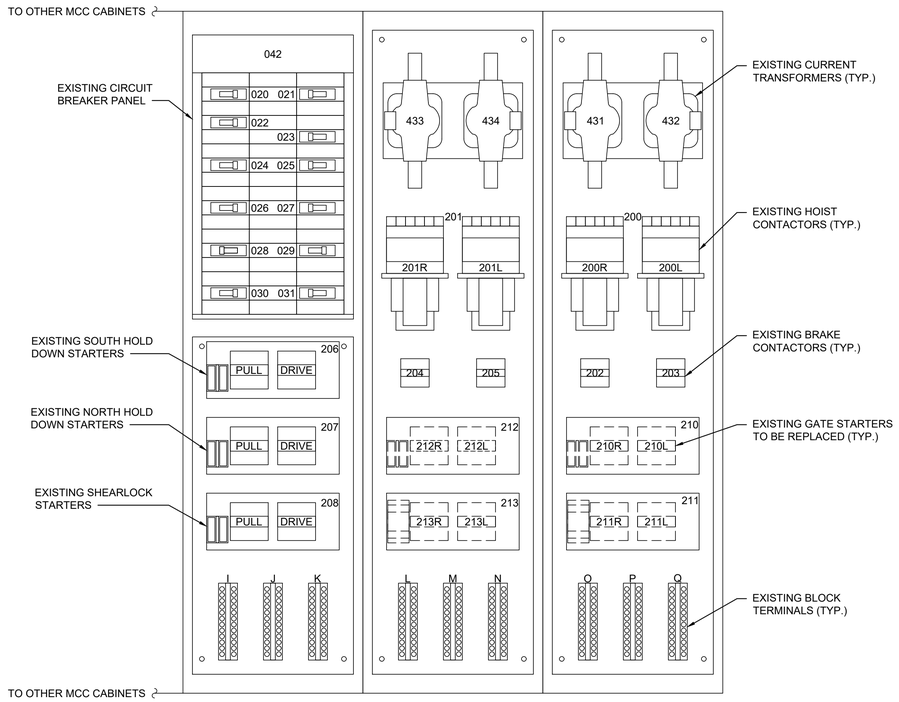
MACHINERY ROOM AND PUMP ROOM PLAN

TRACY BOULEVARD BRIDGE OVER GRANT LINE CANAL (BRIDGE NO. 29C–022)

TB–E–06

68 OF 75

$USER $TIME $DATE $REQUEST

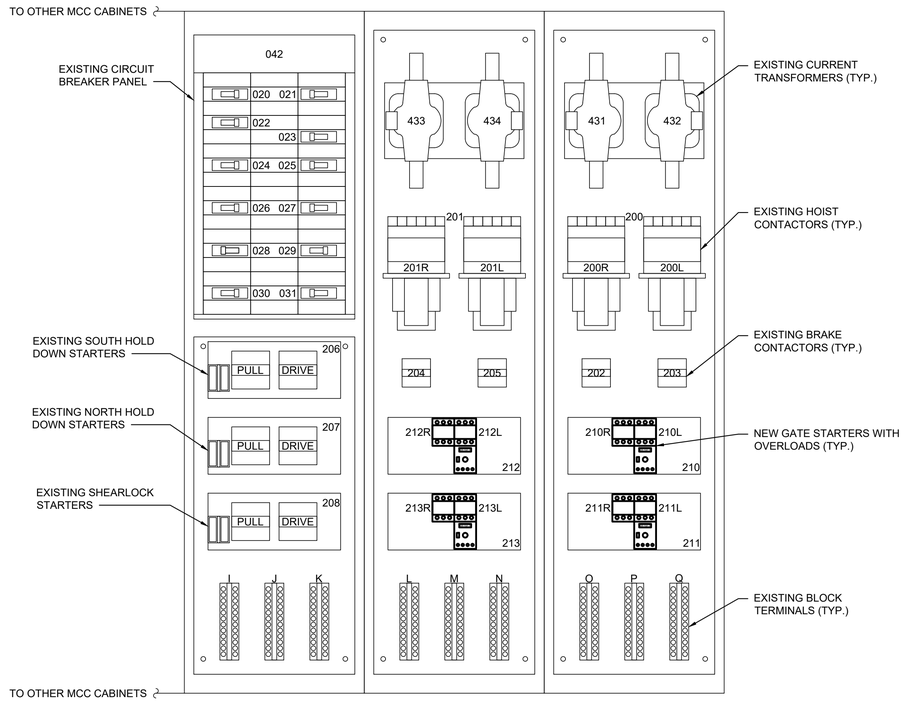


PARTIAL MOTOR CONTROL CENTER LAYOUT – EXISTING

SCALE: 1-1/2" = 1'0"

CIRCUIT BREAKER PANEL LAYOUT

NO.	LABEL
020	NORTH HOIST MOTOR
021	SOUTH HOIST MOTOR
022	NORTH BRAKES
023	SOUTH BRAKES
024	SOUTH HOLD DOWN
025	NORTH HOLD DOWN
026	AIR WHISTLE
027	SHEAR LOCK
028	NORTH SUMP PUMP OFF
029	SOUTH SUMP PUMP OFF
030	TRAFFIC GATES (SEE NOTE 2)
031	ADVANCE GATES (SEE NOTE 2)



PARTIAL MOTOR CONTROL CENTER LAYOUT – PROPOSED

SCALE: 1-1/2" = 1'0"

SCOPE OF WORK

(D) REPLACE EXISTING TRAFFIC GATE STARTERS IN MCC CABINET WITH NEW TRAFFIC GATE STARTERS.

NOTES:

1. INFORMATION, SCHEMATICS, AND LAYOUTS SHOWN ON THIS DRAWING WAS OBTAINED, IN WHOLE OR IN PART, FROM EXISTING "TRACY BLVD. BRIDGE NO. 29C-022 REPAIRS." THE INFORMATION IS APPROXIMATE. EQUIPMENT, CONDUIT, CONTROL SYSTEM MODIFICATIONS, AND WIRING REPLACEMENT WORK SHOWN IS INTENDED TO BE USED TO SHOW LEVEL OF EFFORT FOR ELECTRICAL WORK, AND FOR CONTRACTOR'S USE IN DETERMINING MEANS AND METHODS TO PERFORM THE WORK.
2. CIRCUIT BREAKERS ARE TO BE PRIMARY CURRENT INJECTION TESTED AND REUSED IF PASS ALL TESTS. IF CIRCUIT BREAKERS FAIL TEST, SUBMIT TO ENGINEER FOR REVIEW AND RESOLUTION NEW WIRING SHALL BE USED FROM EXISTING CIRCUIT BREAKERS TO NEW GATE STARTERS.

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

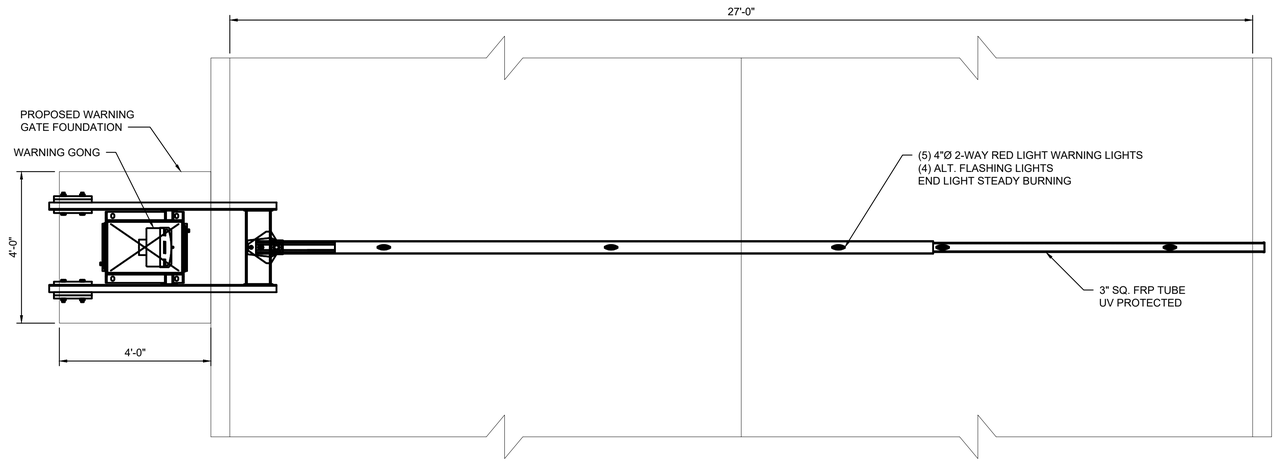
REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

MCC – MODIFICATIONS
TRACY BOULEVARD BRIDGE OVER GRANT LINE CANAL
(BRIDGE NO. 29C-022)

TB-E-07

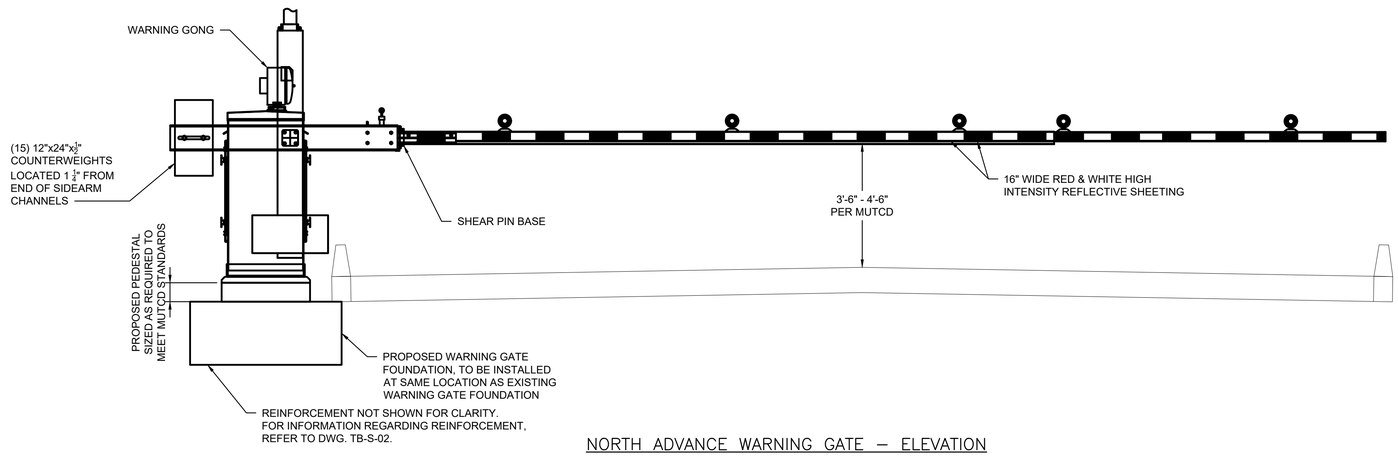
69 OF 75

$USER $TIME $DATE $REQUEST



NORTH ADVANCE WARNING GATE – PLAN

SCALE: 1/2" = 1'-0"



NORTH ADVANCE WARNING GATE – ELEVATION

SCALE: 1/2" = 1'-0"

SCOPE OF WORK

(C) REPLACE EXISTING TRAFFIC GATES AND RELATED EXISTING WIRING WITH NEW TRAFFIC GATES AND NEW WIRING. REPLACE TRAFFIC GATE CONDUIT BACK TO THE NEAREST JUNCTION BOX.

NOTES:

1. DETAILS AND DIMENSIONS SHOWN ON THIS DRAWING DEPICT GENERAL INSTALLATION INFORMATION ONLY. IT IS THE CONTRACTOR'S ULTIMATE RESPONSIBILITY TO FIELD VERIFY ALL INFORMATION PERTINENT TO THE WARNING GATES PRIOR TO ORDERING. GATE ARM LENGTHS, MOUNTING PATTERNS AND COUNTERWEIGHT DIMENSIONS, AT A MINIMUM, MAY VARY SLIGHTLY DUE TO FIELD CONDITIONS, ROADWAY ALIGNMENT AND SLOPE, AND CONDITION OF EXISTING CONCRETE PLATFORMS. ANY DISCREPANCIES DISCOVERED DURING GATE INSTALLATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESOLVE AT HIS OWN COST.
2. GATE DIMENSIONS AS SHOWN ARE BASED ON SPECIFIC PRODUCTS OF A SINGLE MANUFACTURER. ACTUAL PRODUCT SELECTED MAY BE BY ONE OF AT LEAST 3 MANUFACTURERS LISTED IN THE ELECTRICAL SPECIFICATIONS. THE CONTRACTOR SHALL MAKE ADJUSTMENTS DURING INSTALLATION SPECIFIC TO THE ACTUAL GATE PRODUCTS INSTALLED.
3. THE WEIGHT AND OFFSET OF EACH GATE ARM COUNTERWEIGHT SHALL BE AS DETERMINED BY THE MANUFACTURER FOR THE PARTICULAR GATE AND ARM LENGTH REQUIRED IN ACCORDANCE WITH THE FINAL FIELD DIMENSIONS AND CRITERIA.
4. ANCHOR BOLTS SIZE, TYPE, QUANTITY AND METHOD OF INSTALLATION SHALL BE AS REQUIRED BY THE GATE MANUFACTURER.
5. THE CONTRACTOR SHALL ADJUST ALL GATE LIMIT SWITCHES AS SHOWN IN THE ELECTRICAL CONTROL LOGIC SCHEMATICS AND AS REQUIRED BY THE MANUFACTURER.
6. CONTRACTOR TO FIELD VERIFY ARM LENGTHS AND COORDINATE WITH GATE MANUFACTURERS SO THAT THE LENGTHS MEET ALL CALIFORNIA DEPARTMENT OF TRANSPORTATION, SAN JOAQUIN COUNTY, AND MUTCD REQUIREMENTS. ARM LENGTH AND ROADWAY SLOPE MAY VARY. CONTRACTOR TO ADJUST ARM POSITION ACCORDINGLY.
7. SEE DRAWINGS TB-E-03 AND TB-E-04 FOR DETAILED WIRING AND CONDUIT INFORMATION.
8. SEE DRAWING TB-E-04 FOR LOCATION OF THE WARNING GATES.
9. SEE DRAWING TB-E-11 FOR TYPICAL WARNING GATE MOUNTING DETAIL.

$USER $TIME $DATE $REQUEST

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS–5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

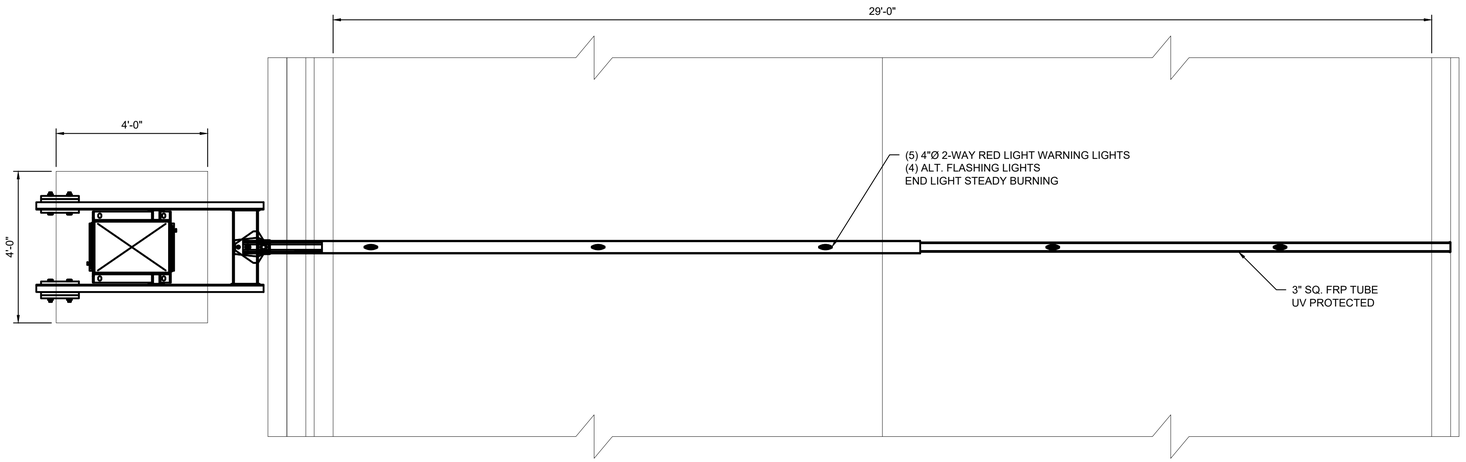
REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

100% SUBMISSION

WARNING/TRAFFIC GATE DETAILS I
TRACY BOULEVARD BRIDGE OVER GRANT LINE CANAL
(BRIDGE NO. 29C–022)

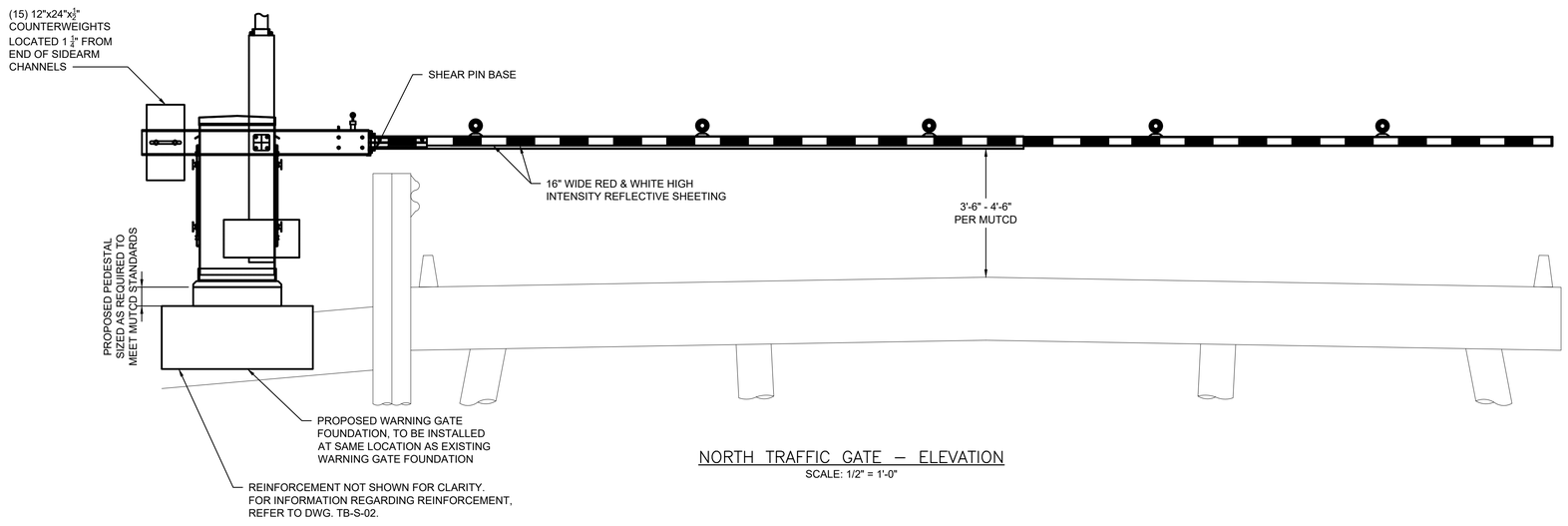
TB–E–08

70
OF
75



NORTH TRAFFIC GATE – PLAN

SCALE: 1/2" = 1'-0"



NORTH TRAFFIC GATE – ELEVATION

SCALE: 1/2" = 1'-0"

SCOPE OF WORK

(C) REPLACE EXISTING TRAFFIC GATES AND RELATED EXISTING WIRING WITH NEW TRAFFIC GATES AND NEW WIRING. REPLACE TRAFFIC GATE CONDUIT BACK TO THE NEAREST JUNCTION BOX.

NOTES:

1. DETAILS AND DIMENSIONS SHOWN ON THIS DRAWING DEPICT GENERAL INSTALLATION INFORMATION ONLY. IT IS THE CONTRACTOR'S ULTIMATE RESPONSIBILITY TO FIELD VERIFY ALL INFORMATION PERTINENT TO THE WARNING GATES PRIOR TO ORDERING. GATE ARM LENGTHS, MOUNTING PATTERNS AND COUNTERWEIGHT DIMENSIONS, AT A MINIMUM, MAY VARY SLIGHTLY DUE TO FIELD CONDITIONS, ROADWAY ALIGNMENT AND SLOPE, AND CONDITION OF EXISTING CONCRETE PLATFORMS. ANY DISCREPANCIES DISCOVERED DURING GATE INSTALLATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESOLVE AT HIS OWN COST.
2. GATE DIMENSIONS AS SHOWN ARE BASED ON SPECIFIC PRODUCTS OF A SINGLE MANUFACTURER. ACTUAL PRODUCT SELECTED MAY BE BY ONE OF AT LEAST 3 MANUFACTURERS LISTED IN THE ELECTRICAL SPECIFICATIONS. THE CONTRACTOR SHALL MAKE ADJUSTMENTS DURING INSTALLATION SPECIFIC TO THE ACTUAL GATE PRODUCTS INSTALLED.
3. THE WEIGHT AND OFFSET OF EACH GATE ARM COUNTERWEIGHT SHALL BE AS DETERMINED BY THE MANUFACTURER FOR THE PARTICULAR GATE AND ARM LENGTH REQUIRED IN ACCORDANCE WITH THE FINAL FIELD DIMENSIONS AND CRITERIA.
4. ANCHOR BOLTS SIZE, TYPE, QUANTITY AND METHOD OF INSTALLATION SHALL BE AS REQUIRED BY THE GATE MANUFACTURER.
5. THE CONTRACTOR SHALL ADJUST ALL GATE LIMIT SWITCHES AS SHOWN IN THE ELECTRICAL CONTROL LOGIC SCHEMATICS AND AS REQUIRED BY THE MANUFACTURER.
6. CONTRACTOR TO FIELD VERIFY ARM LENGTHS AND COORDINATE WITH GATE MANUFACTURERS SO THAT THE LENGTHS MEET ALL CALIFORNIA DEPARTMENT OF TRANSPORTATION, SAN JOAQUIN COUNTY, AND MUTCD REQUIREMENTS. ARM LENGTH AND ROADWAY SLOPE MAY VARY. CONTRACTOR TO ADJUST ARM POSITION ACCORDINGLY.
7. SEE DRAWINGS TB-E-03 AND TB-E-04 FOR DETAILED WIRING AND CONDUIT INFORMATION.
8. SEE DRAWING TB-E-04 FOR LOCATION OF THE WARNING GATES.
9. SEE DRAWING TB-E-11 FOR TYPICAL WARNING GATE MOUNTING DETAIL.

$USER $TIME $DATE $REQUEST

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS–5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

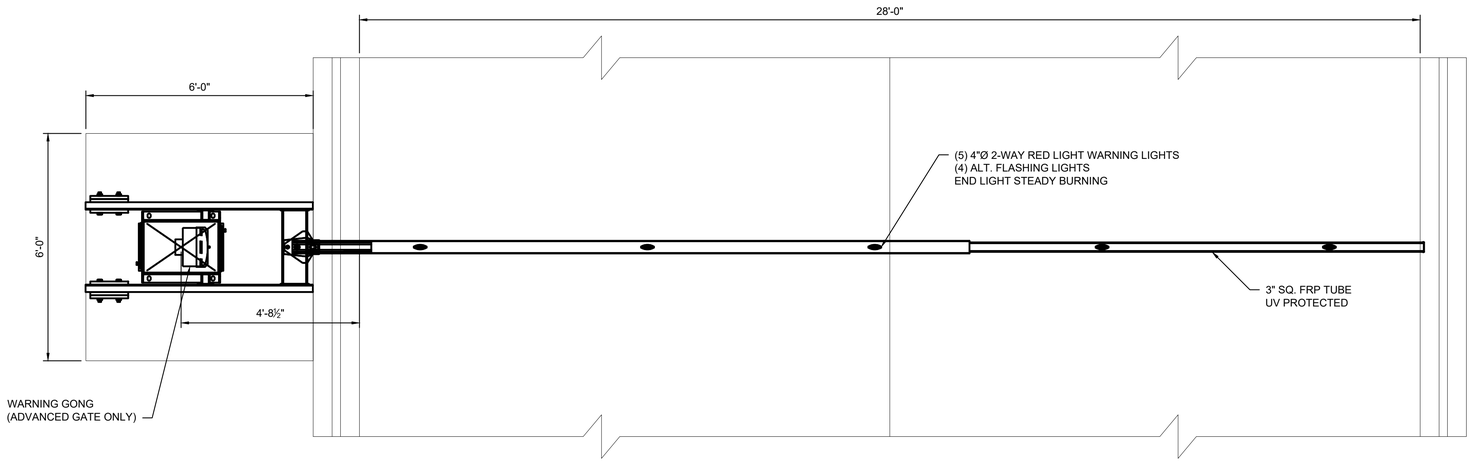
Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

WARNING/TRAFFIC GATE DETAILS II
TRACY BOULEVARD BRIDGE OVER GRANT LINE CANAL
(BRIDGE NO. 29C–022)

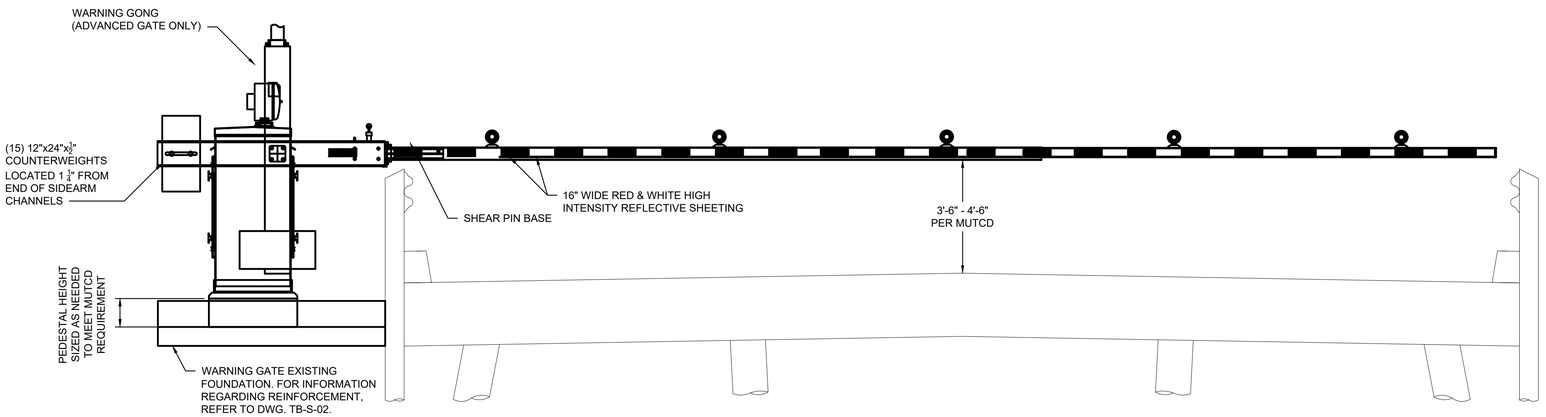
TB–E–09

71 OF 75



SOUTH ADVANCE WARNING GATE/SOUTH TRAFFIC GATE – PLAN

SCALE: 1/2" = 1'-0"



SOUTH ADVANCE WARNING GATE/SOUTH TRAFFIC GATE – ELEVATION

SCALE: 1/2" = 1'-0"

SCOPE OF WORK

(C) REPLACE EXISTING TRAFFIC GATES AND RELATED EXISTING WIRING WITH NEW TRAFFIC GATES AND NEW WIRING. REPLACE TRAFFIC GATE CONDUIT BACK TO THE NEAREST JUNCTION BOX.

NOTES:

1. DETAILS AND DIMENSIONS SHOWN ON THIS DRAWING DEPICT GENERAL INSTALLATION INFORMATION ONLY. IT IS THE CONTRACTOR'S ULTIMATE RESPONSIBILITY TO FIELD VERIFY ALL INFORMATION PERTINENT TO THE WARNING GATES PRIOR TO ORDERING. GATE ARM LENGTHS, MOUNTING PATTERNS AND COUNTERWEIGHT DIMENSIONS, AT A MINIMUM, MAY VARY SLIGHTLY DUE TO FIELD CONDITIONS, ROADWAY ALIGNMENT AND SLOPE, AND CONDITION OF EXISTING CONCRETE PLATFORMS. ANY DISCREPANCIES DISCOVERED DURING GATE INSTALLATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESOLVE AT HIS OWN COST.
2. GATE DIMENSIONS AS SHOWN ARE BASED ON SPECIFIC PRODUCTS OF A SINGLE MANUFACTURER. ACTUAL PRODUCT SELECTED MAY BE BY ONE OF AT LEAST 3 MANUFACTURERS LISTED IN THE ELECTRICAL SPECIFICATIONS. THE CONTRACTOR SHALL MAKE ADJUSTMENTS DURING INSTALLATION SPECIFIC TO THE ACTUAL GATE PRODUCTS INSTALLED.
3. THE WEIGHT AND OFFSET OF EACH GATE ARM COUNTERWEIGHT SHALL BE AS DETERMINED BY THE MANUFACTURER FOR THE PARTICULAR GATE AND ARM LENGTH REQUIRED IN ACCORDANCE WITH THE FINAL FIELD DIMENSIONS AND CRITERIA.
4. ANCHOR BOLTS SIZE, TYPE, QUANTITY AND METHOD OF INSTALLATION SHALL BE AS REQUIRED BY THE GATE MANUFACTURER.
5. THE CONTRACTOR SHALL ADJUST ALL GATE LIMIT SWITCHES AS SHOWN IN THE ELECTRICAL CONTROL LOGIC SCHEMATICS AND AS REQUIRED BY THE MANUFACTURER.
6. CONTRACTOR TO FIELD VERIFY ARM LENGTHS AND COORDINATE WITH GATE MANUFACTURERS SO THAT THE LENGTHS MEET ALL CALIFORNIA DEPARTMENT OF TRANSPORTATION, SAN JOAQUIN COUNTY, AND MUTCD REQUIREMENTS. ARM LENGTH AND ROADWAY SLOPE MAY VARY. CONTRACTOR TO ADJUST ARM POSITION ACCORDINGLY.
7. SEE DRAWINGS TB-E-03 AND TB-E-04 FOR DETAILED WIRING AND CONDUIT INFORMATION.
8. SEE DRAWING TB-E-04 FOR LOCATION OF THE WARNING GATES.
9. SEE DRAWING TB-E-11 FOR TYPICAL WARNING GATE MOUNTING DETAIL.

$USER $TIME $DATE $REQUEST

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS–5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
T. KOSTADINOV	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

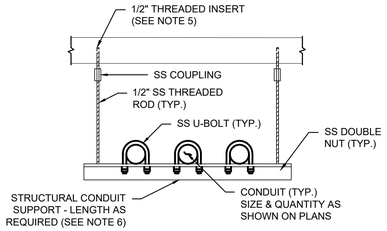
Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

WARNING/TRAFFIC GATE DETAILS III
TRACY BOULEVARD BRIDGE OVER GRANT LINE CANAL (BRIDGE NO. 29C–022)

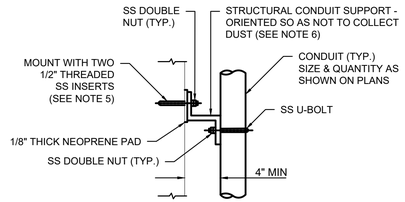
TB–E–10

72 OF 75



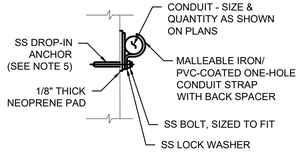
METHOD 1

(HANGING FROM CONCRETE)



METHOD 2

(STANDOFF ATTACHMENT ON CONCRETE)

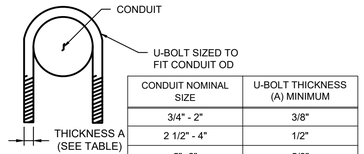


METHOD 3

(DIRECT TO CONCRETE)

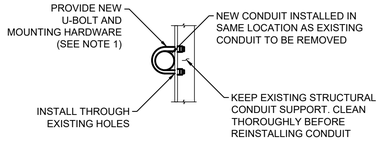
CONDUIT ATTACHMENT METHODS TO CONCRETE

(NOT TO SCALE)



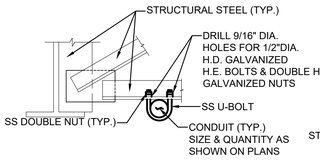
CONDUIT NOMINAL SIZE	U-BOLT THICKNESS (A) MINIMUM
3/4" - 2"	3/8"
2 1/2" - 4"	1/2"
5"- 6"	5/8"

U-BOLT DIMENSIONS



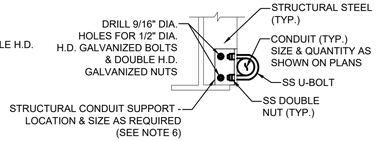
REINSTALLATION OF CONDUIT IN SAME LOCATION AS EXISTING

(TYPICAL FOR ALL MOUNTING CASES)



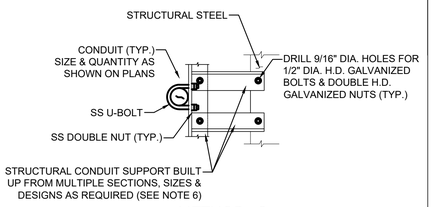
METHOD A

(USE OF EXISTING STEEL FOR DIRECT CONDUIT MOUNTING)



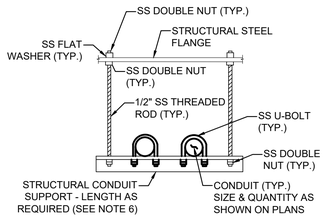
METHOD B

(CONDUIT ATTACHMENT TO STRUCTURAL STEEL)



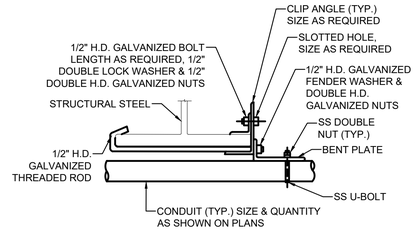
METHOD C

(BUILT-UP STRUCTURAL CONDUIT SUPPORT)



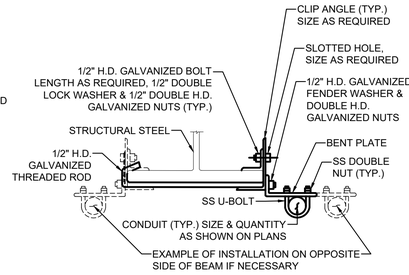
METHOD D

(HANGING FROM STRUCTURAL STEEL)



METHOD E

(HANGING FROM STRUCTURAL STEEL - PERPENDICULAR)

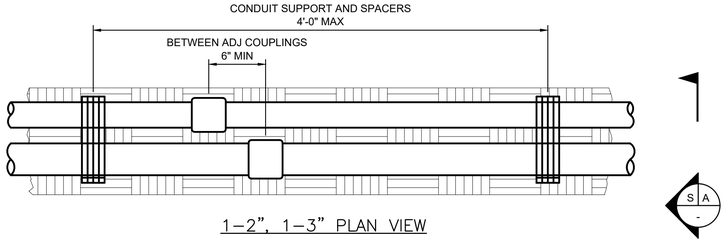


METHOD F

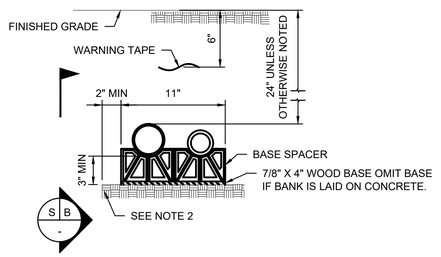
(HANGING FROM STRUCTURAL STEEL - PARALLEL)

CONDUIT ATTACHMENT METHODS TO STRUCTURAL STEEL

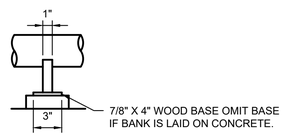
(NOT TO SCALE)



1–2", 1–3" PLAN VIEW



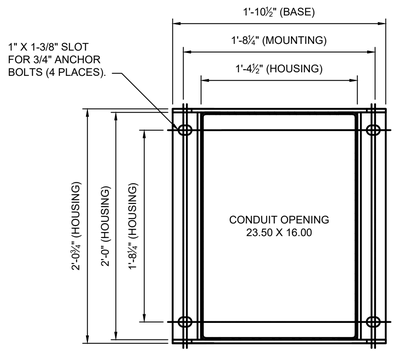
S A SECTION A-A



S B SECTION B-B

1–2", 1–3" UNDERGROUND DUCTBANK TYPICAL ARRANGEMENT

SCALE: N.T.S.



S 1 TB-E-X TRAFFIC/WARNING GATE MOUNTING DIMENSIONS

SCALE: 1" = 1'-0"

SCOPE OF WORK

C. REPLACE EXISTING TRAFFIC GATES AND RELATED EXISTING WIRING WITH NEW TRAFFIC GATES AND NEW WIRING. REPLACE TRAFFIC GATE CONDUIT BACK TO THE NEAREST JUNCTION BOX.

E. CLEAN AND PAINT SELECT CONDUITS.

NOTES:

1. CONDUIT MOUNTING METHODS SHOWN ARE INTENDED TO GIVE OVERVIEW OF ACCEPTABLE STANDARD OF QUALITY. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ACTUAL CONDUIT MOUNTING AND/OR SUPPORTING METHODS TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER. IN GENERAL, REPLACED CONDUITS SHALL BE REINSTALLED ACCORDING TO EXISTING DETAILS. WHERE REPLACING CONDUIT, MOUNTING SHALL BE BROUGHT UP TO STANDARD OF QUALITY SHOWN ON THIS SHEET.
2. CONDUIT MOUNTING METHODS SHOWN ARE BASED ON RGS AND PVCRGS CONDUIT. ADAPT DETAILS AS REQUIRED TO ACCOMMODATE OTHER TYPES OF CONDUITS, SUCH AS RECOMMENDED BY CONDUIT MANUFACTURER(S).
3. PROVIDE SHOP DRAWINGS FOR ALL MATERIALS AND METHODS USED FOR CONDUIT MOUNTING, INCLUDING DRILLING OF STRUCTURAL STEEL. CONTRACTOR MAY PROPOSE ALTERNATE METHODS OF CONDUIT MOUNTING PROVIDED THEY MEET THE SAME STANDARD OF QUALITY SHOWN.
4. UNLESS OTHERWISE NOTED, ALL STAINLESS STEEL PROVIDED SHALL BE TYPE 316 OR BETTER.
5. THREADED INSERT/DROP-IN ANCHORS SHALL BE TYPE A4 STAINLESS STEEL OR BETTER, ANCHORED TO THE CONCRETE USING AN EPOXY SYSTEM. THE ASSEMBLY SHALL BE PROVIDED BY A SINGLE MANUFACTURER RATED FOR OVERHEAD USE IN CRACKED CONCRETE UNDER SEISMIC CONDITIONS, IN DAMP CONDITIONS/HEAVY CONDENSATION, ANCHORS SHALL BE INSTALLED AS PER MANUFACTURER'S DIRECTIONS, AND SHALL HAVE A PULL OUT STRENGTH GREATER THAN 2000 POUNDS.
6. STRUCTURAL CONDUIT SUPPORTS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123. STRUCTURAL CONDUIT SUPPORTS SHALL CONSIST OF 3/8" THICK ANGLES, ZEES, AND PLATES, CONFIGURED AS REQUIRED TO MEET FIELD CONDITIONS. ANGLES AND PLATES SHALL BE 2 1/2"X2 1/2" MINIMUM. HOLES SHALL BE DRILLED FOR U-BOLTS AND ATTACHMENTS AS REQUIRED.
7. All UNDERGROUND CONDUITS ARE PVC SCHEDULE 80.
8. IN AREAS WHERE SOFT GROUND IS ENCOUNTERED INCREASE EXCAVATION DEPTH BY A MIN. OF 6 INCHES AND BACKFILL THE INCREASE WITH ROCK.

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS–5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
K. LEE	09/23/22	A. ZWEIBEL	09/23/22	T. KOSTADINOV	09/23/22	R. EISENSMITH	09/23/22	A. ZWEIBEL	11/18/22					NO SCALE

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

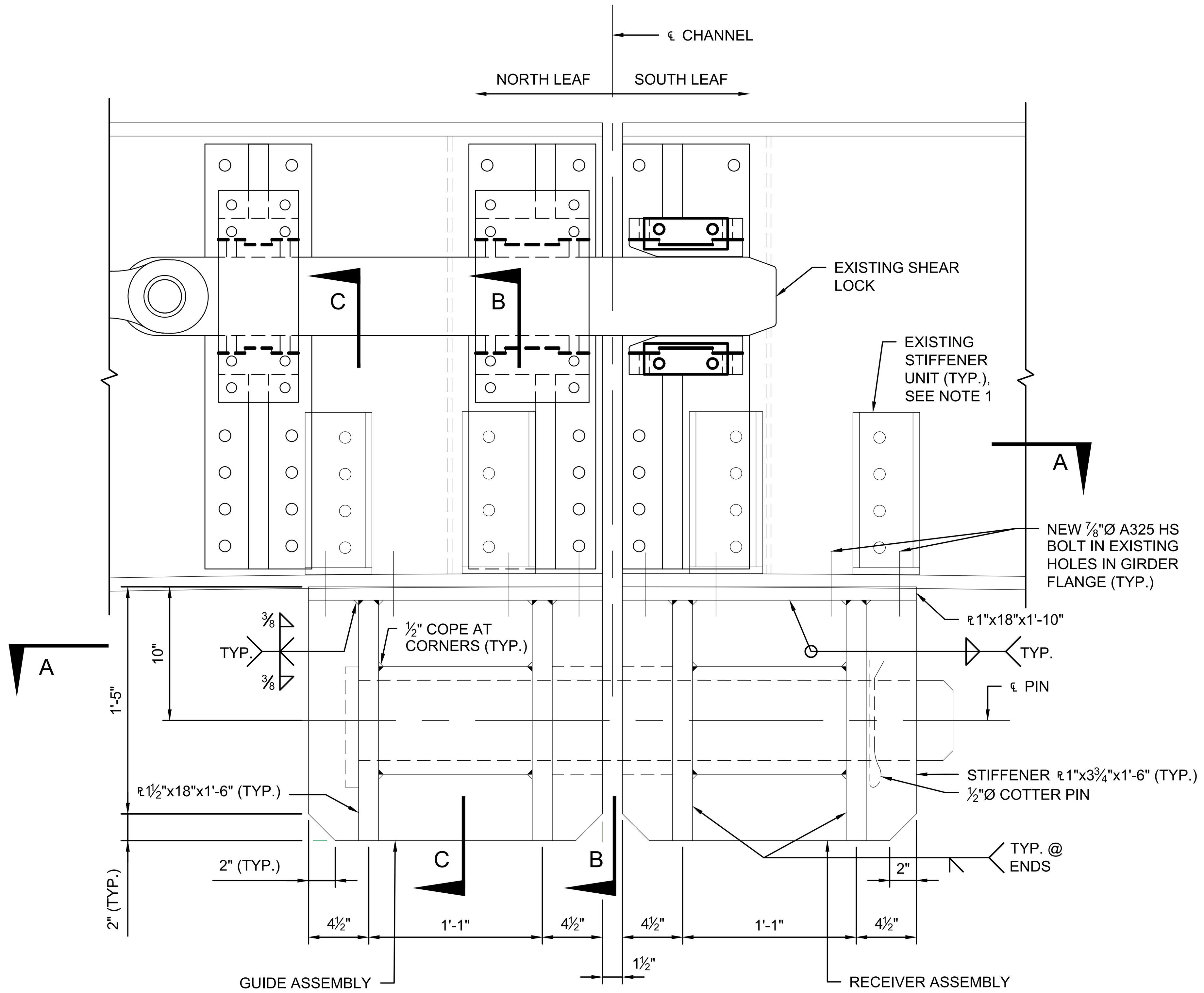
REGISTERED PROFESSIONAL ENGINEER
TEODOR KOSTADINOV
21282
11/18/22
ELECTRICAL
STATE OF CALIFORNIA

MISCELLANEOUS DETAILS
TRACY BOULEVARD BRIDGE OVER GRANT LINE CANAL
(BRIDGE NO. 29C–022)

TB–E–11

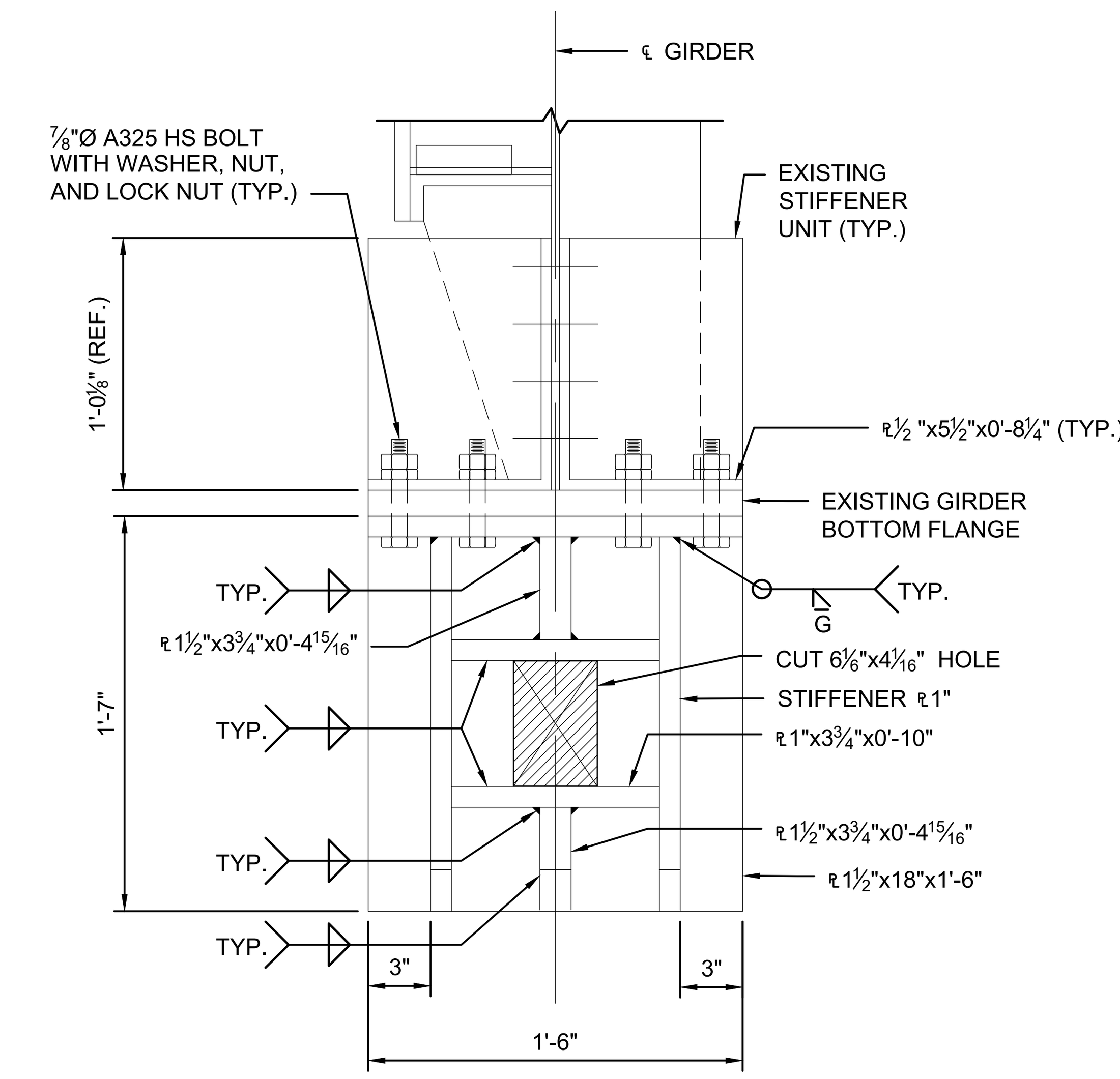
73
OF
75

$REQUEST $USER $TIME $DATE



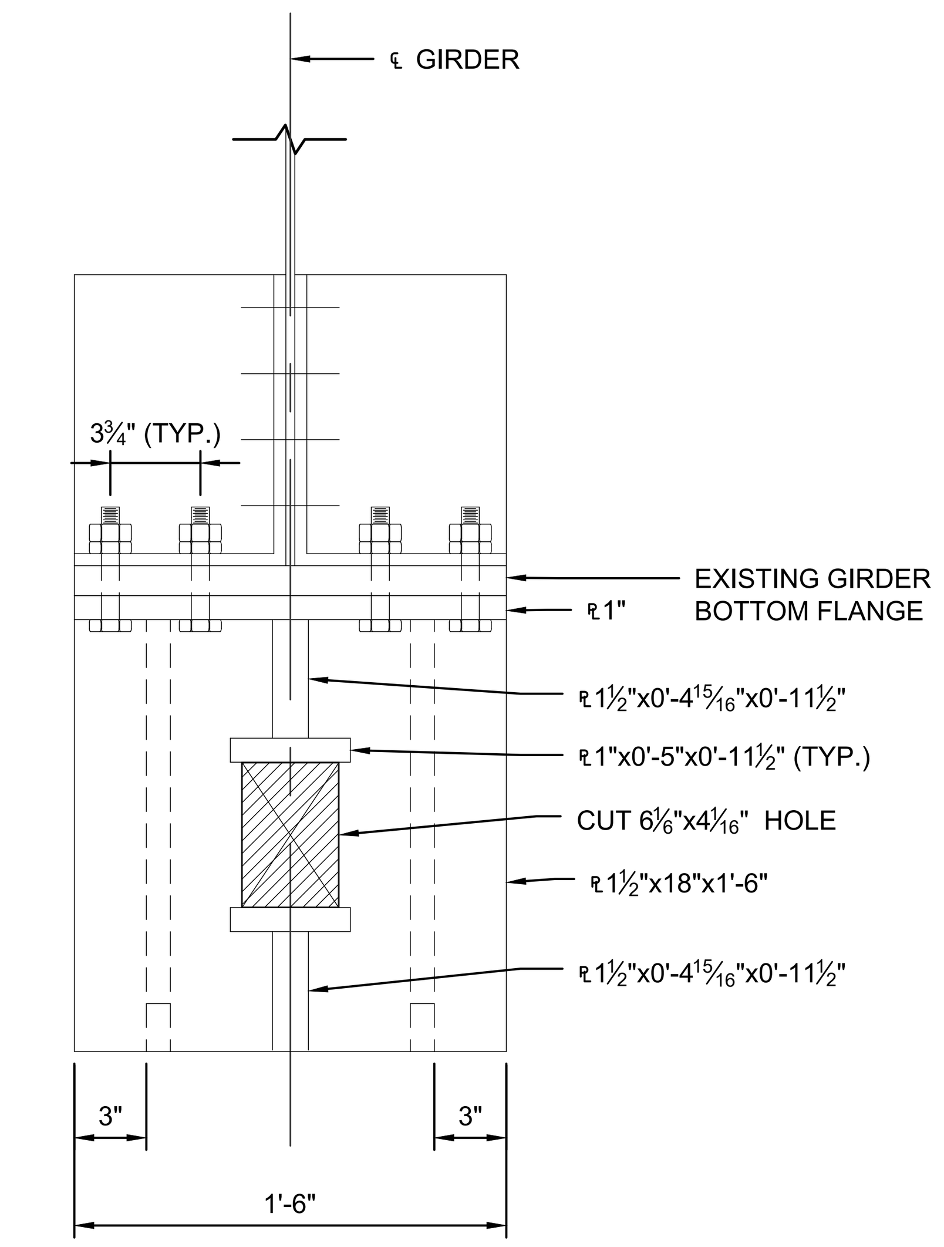
TEMPORARY SPAN LOCK ELEVATION

SCALE 1½" = 1'-0"



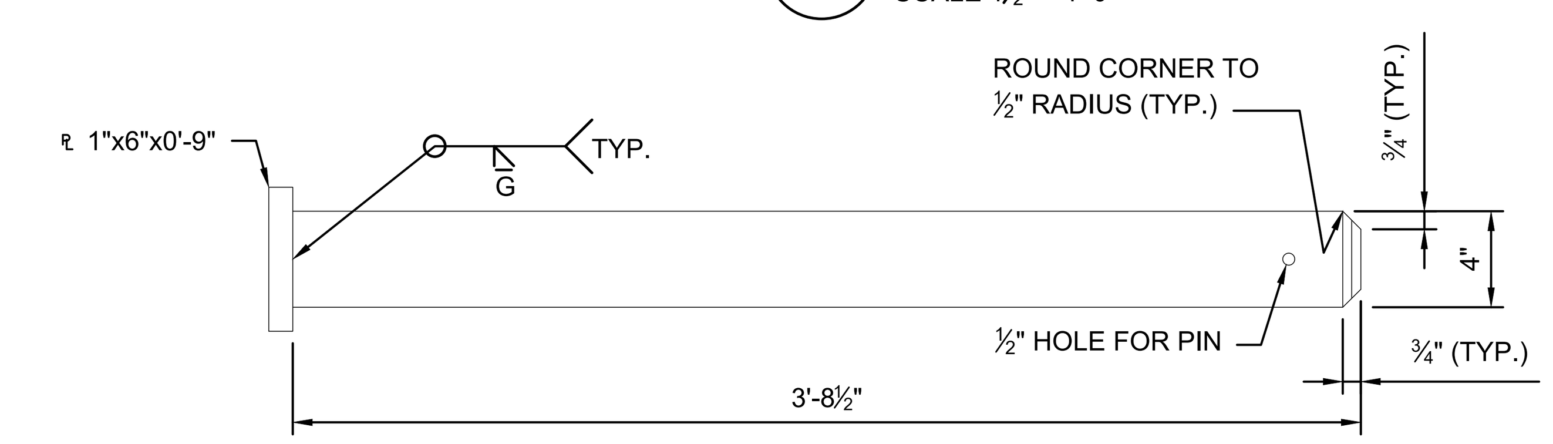
SECTION B-B

SCALE 1½" = 1'-0"

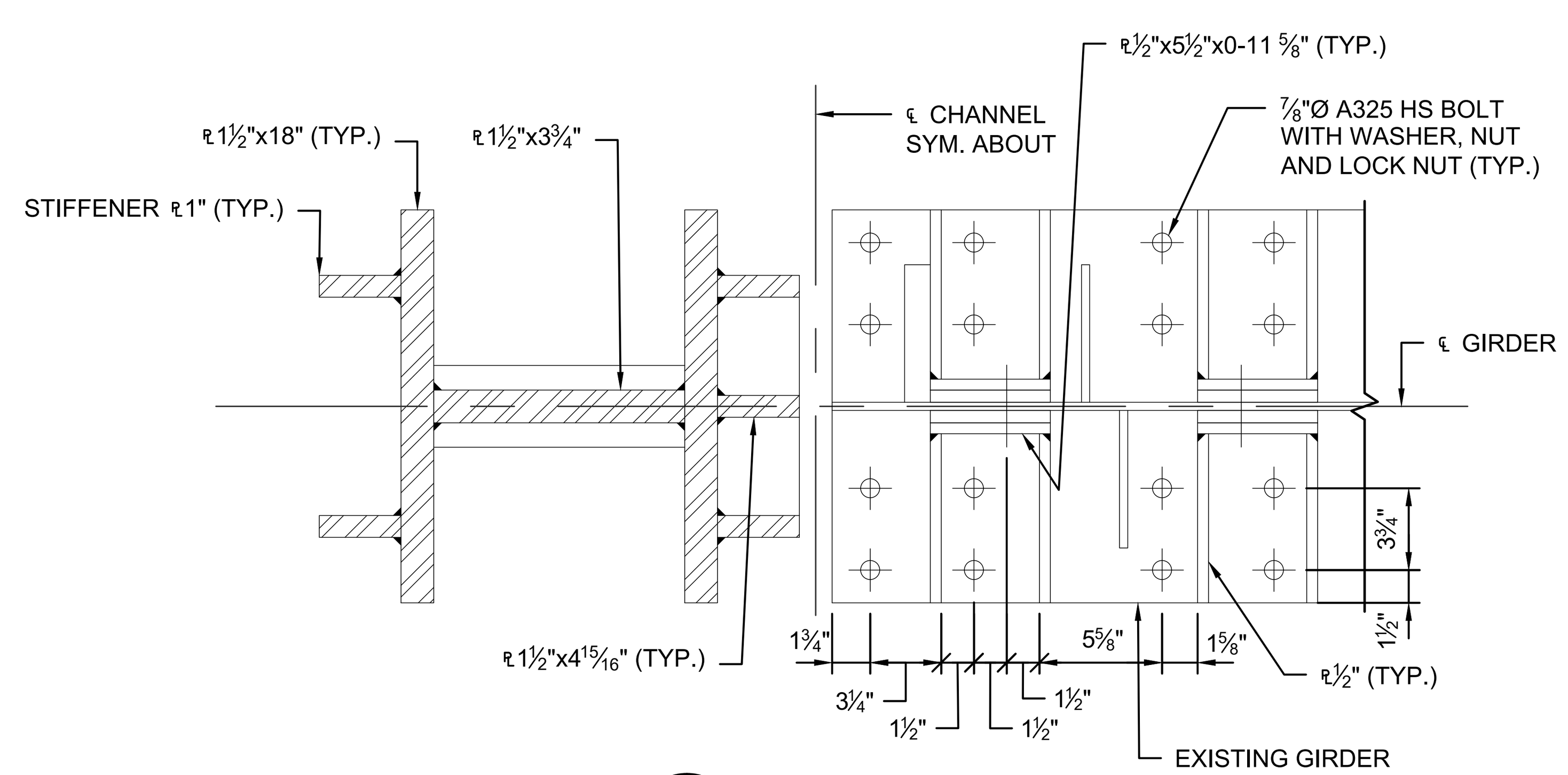


SECTION C-C

SCALE 1½" = 1'-0"

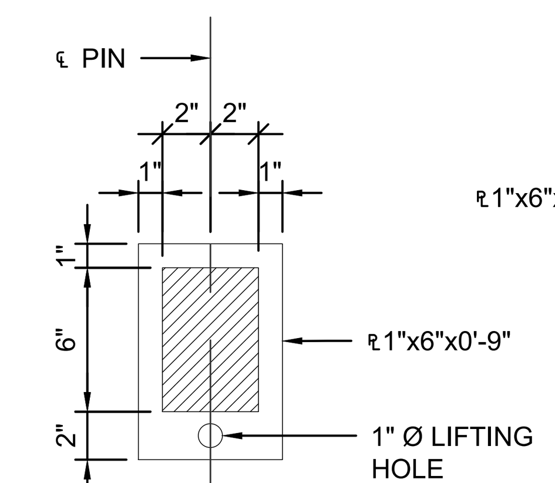


PLAN



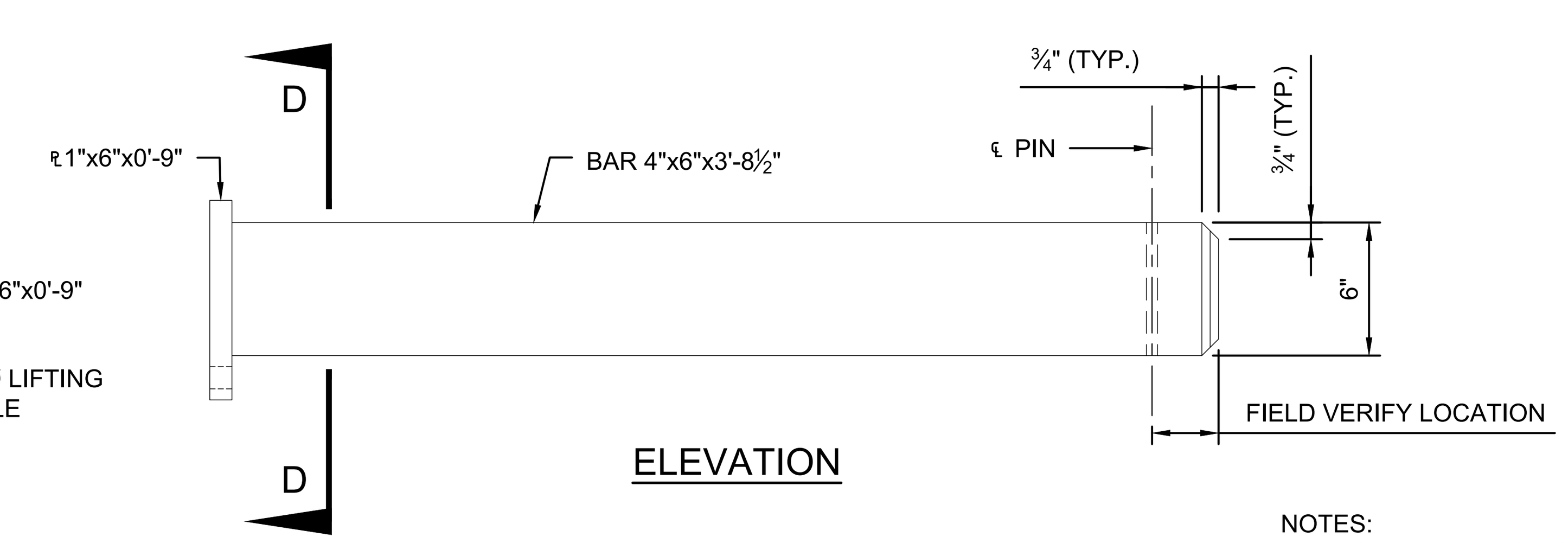
SECTION A-A

SCALE 1½" = 1'-0"



SECTION D-D

SCALE 1½" = 1'-0"



ELEVATION

SPAN LOCK PIN DETAILS

SCALE 1½" = 1'-0"

NOTES:

1. SEE DRAWING NO. TB-M-01 FOR LOCATIONS OF TEMPORARY SPAN LOCK.
2. STIFFENER UNITS AND FLANGE BOLT HOLES ARE IN PLACE FROM TEMPORARY SHEAR LOCK THAT WAS INSTALLED UNDER A PRIOR REPAIR PROJECT. REMOVE ⅞"Ø BOLTS THAT FILL FLANGE BOLT HOLES FOR CONNECTION TO TEMPORARY SHEAR LOCK. DO NOT REUSE BOLTS FOR NEW INSTALLATION.
3. INSTALL TEMPORARY SHEAR LOCKS PRIOR TO REHABILITATING EXISTING SHEAR LOCKS.
4. REMOVE TEMPORARY SHEAR LOCK AFTER REHABILITATION OF PERMANENT SHEAR LOCK IS COMPLETE. LEAVE STIFFENER UNITS IN PLACE AND FILL OPEN BOLT HOLES WITH FULLY TENSIONED ⅞"Ø A325 BOLTS.

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

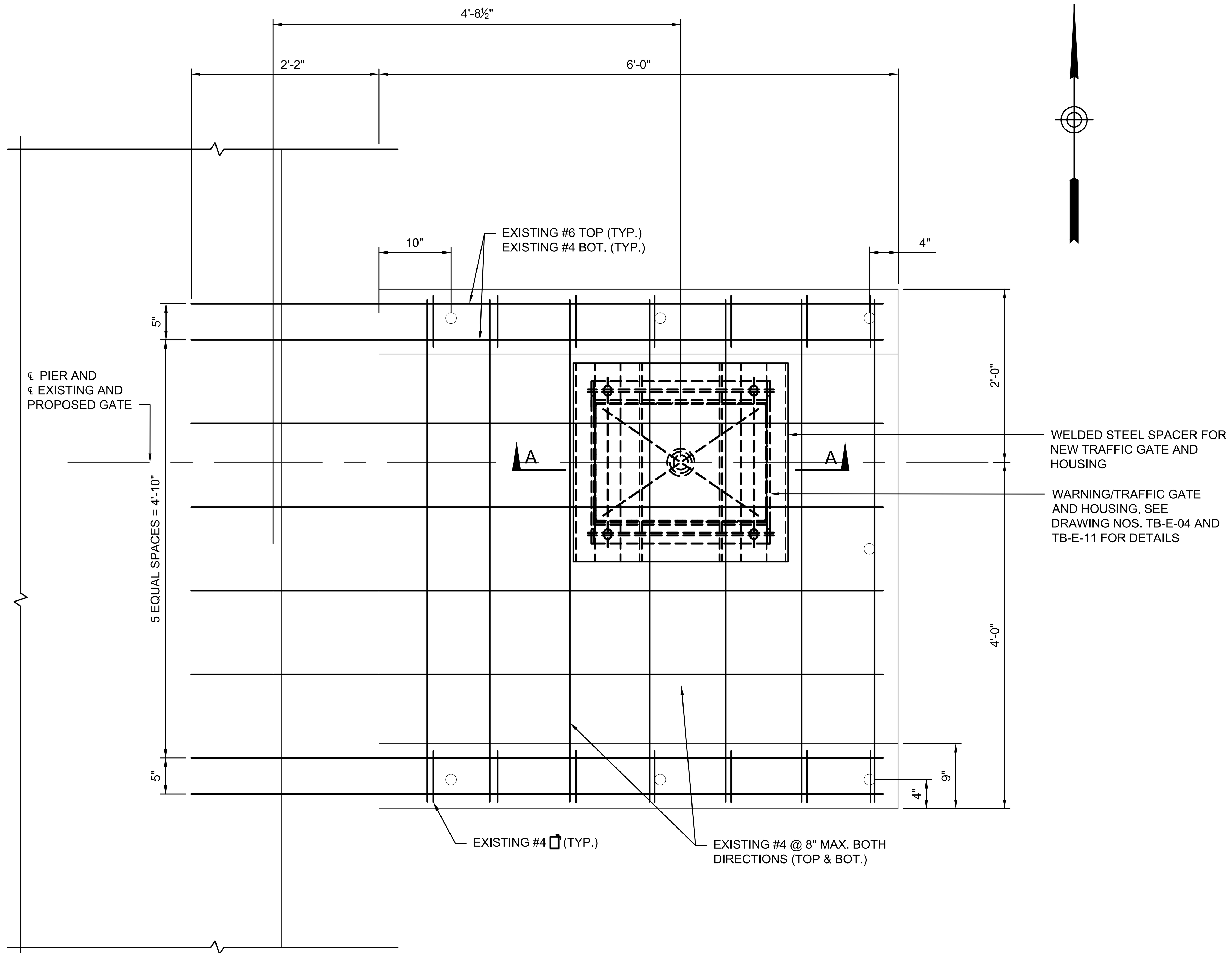
Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER PAUL M. SKELTON MECHANICAL STATE OF CALIFORNIA 11/18/22

TEMPORARY CENTER SPAN LOCK DETAILS

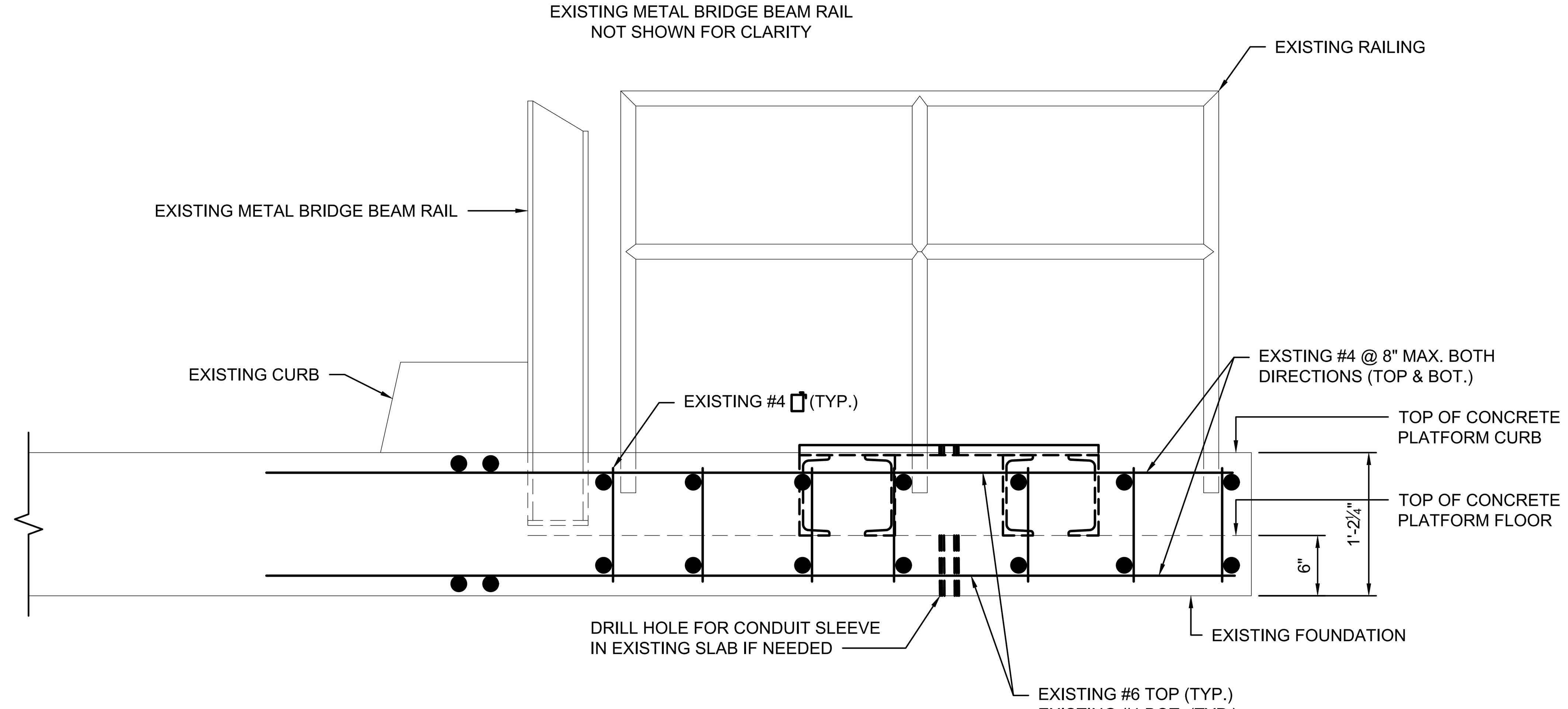
TRACY BOULEVARD BRIDGE OVER GRANT LINE CANAL (BRIDGE NO. 29C-022)

TB-S-01



PLAN

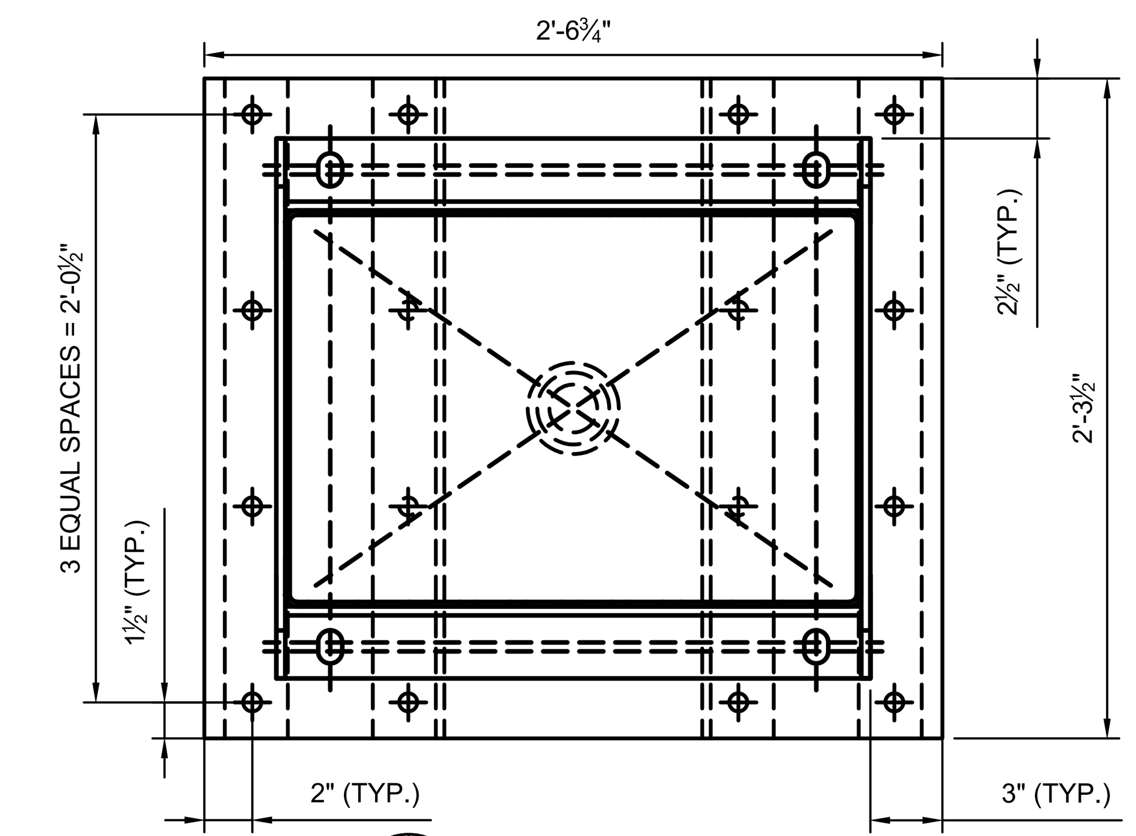
EXISTING METAL BRIDGE BEAM RAIL
NOT SHOWN FOR CLARITY



ELEVATION

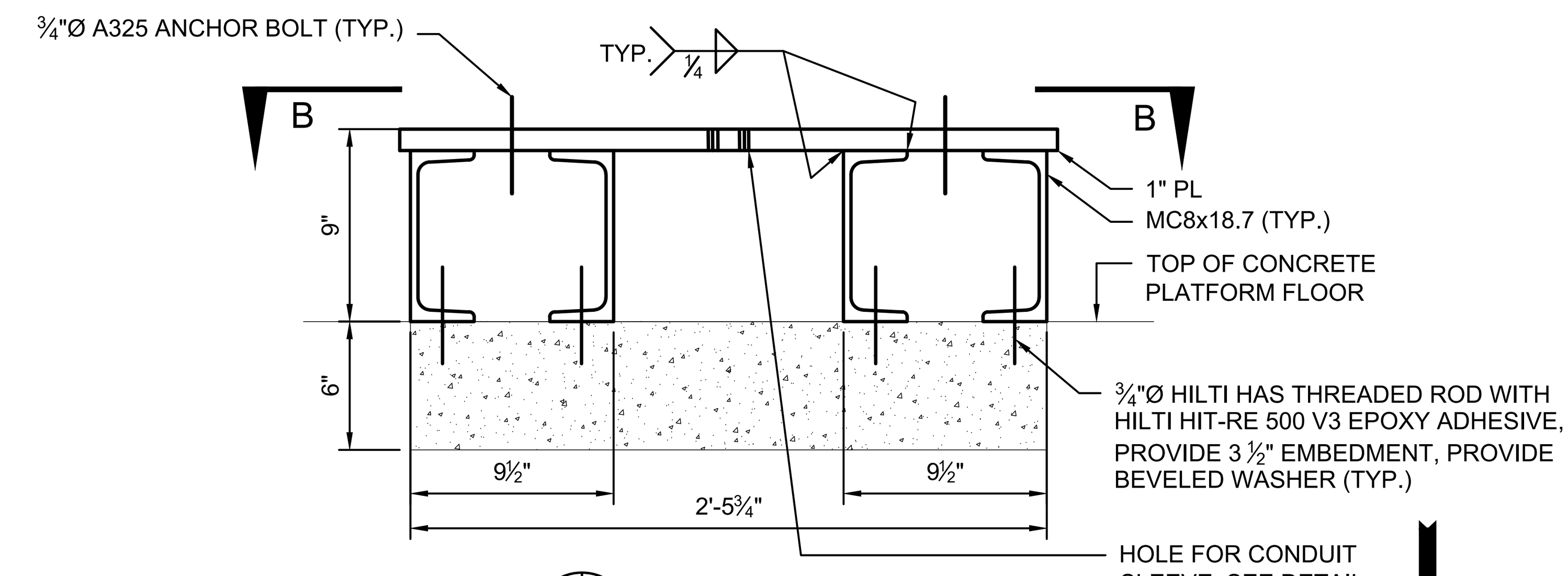
MODIFICATIONS TO EXISTING WARNING/TRAFFIC GATE FOUNDATION ON STRUCTURE

SCALE 1" = 1'-0"
NOTE: 2 REQUIRED



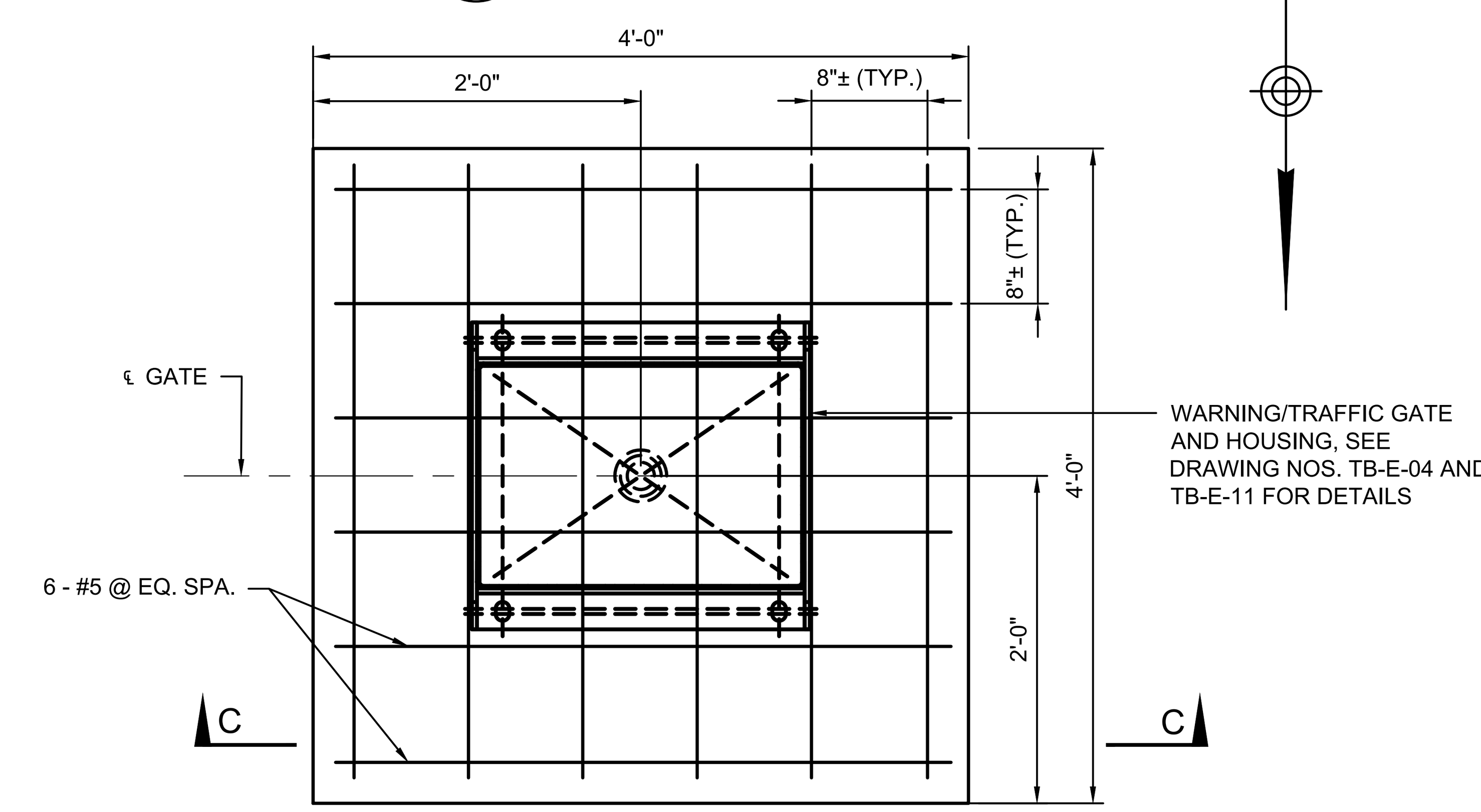
VIEW B-B

SCALE 1½" = 1'-0"

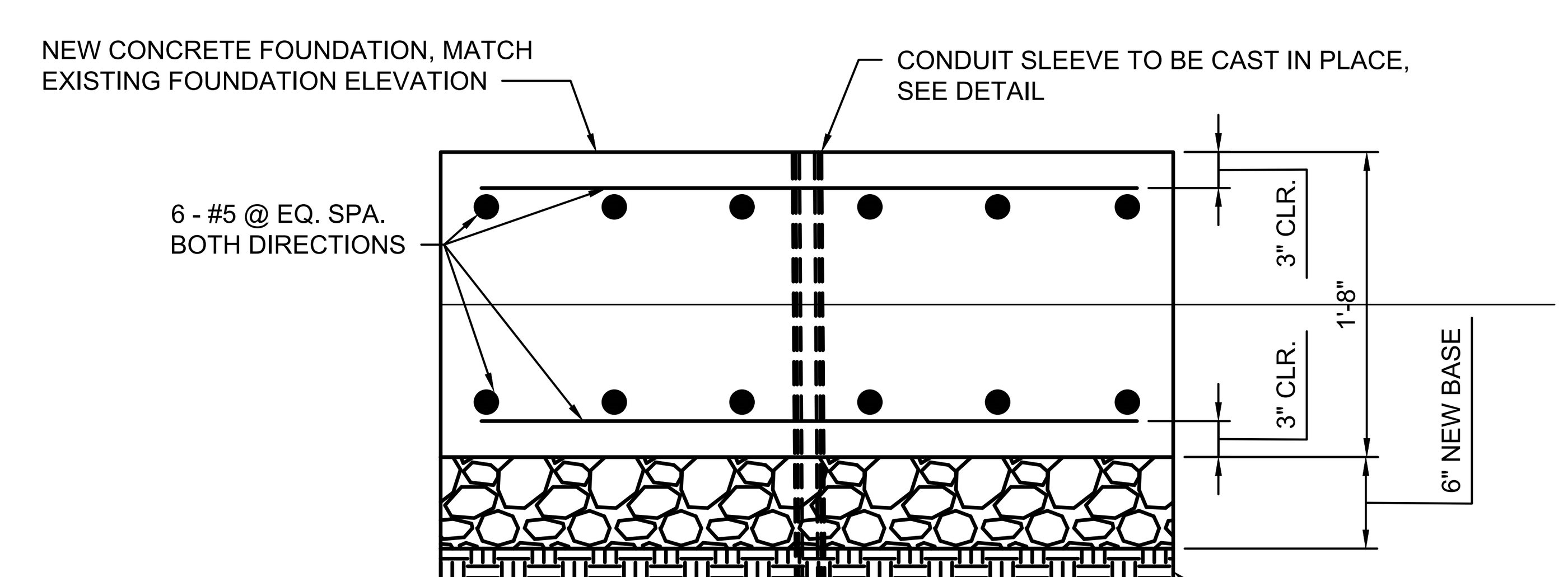


SECTION A-A

SCALE 1½" = 1'-0"



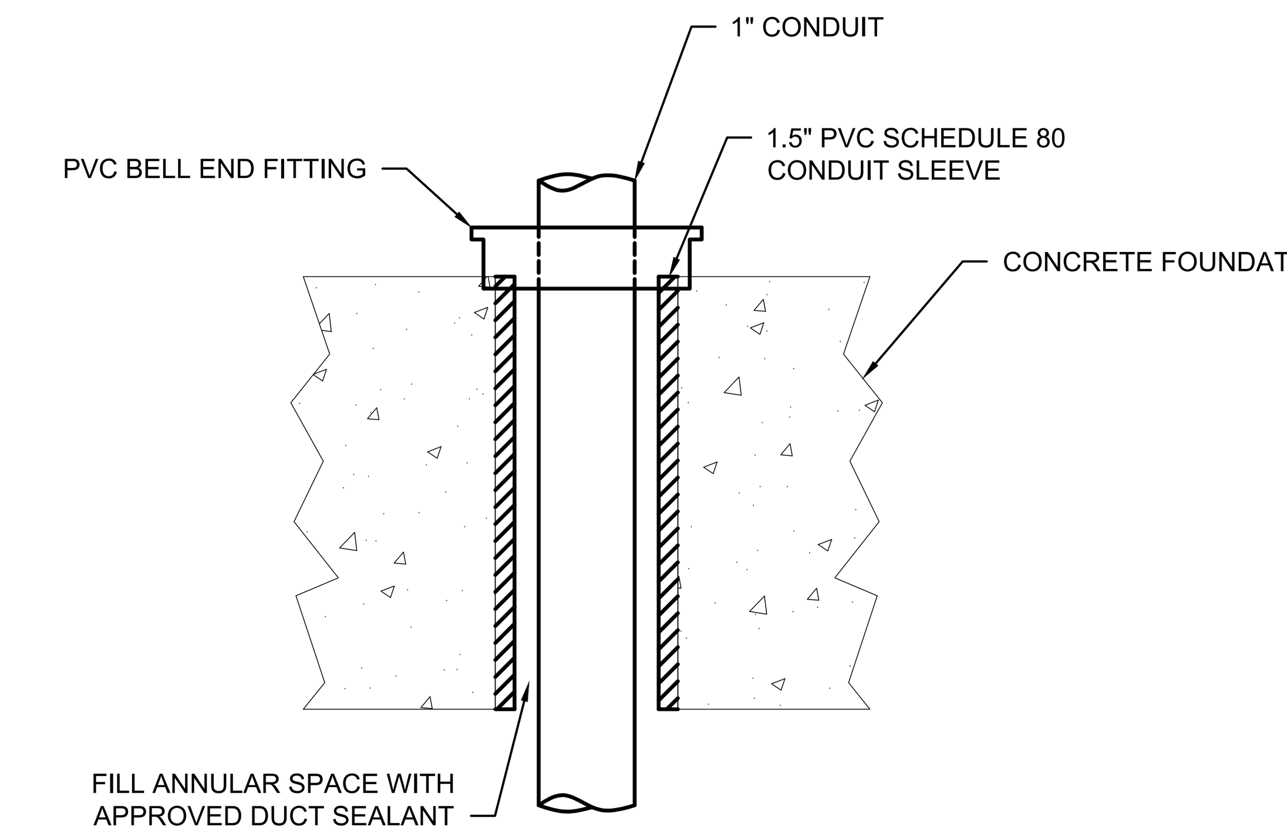
PLAN



SECTION C-C

PROPOSED ON GRADE WARNING/TRAFFIC GATE FOUNDATION

SCALE 1" = 1'-0"
NOTE: 2 REQUIRED



CONDUIT SLEEVE DETAIL

SCALE 6" = 1'-0"
NOTE: PIPE SLEEVE DETAIL SAME AT ALL LOCATIONS

NOTES:
1. COMPACT GRAVEL AND EXISTING SUBBASE BEFORE POURING GATE FOUNDATION.
2. DETERMINE EXISTING FOUNDATION ELEVATIONS BEFORE REMOVAL.
3. FOR LOCATIONS OF NEW GATES, SEE DRAWING NO. TB-E-04.
4. ALL CONCRETE AND REINFORCEMENT SHOWN IN DETAIL OF FOUNDATION ON STRUCTURE IS EXISTING.
5. STRUCTURAL STEEL SHALL BE ASTM A36 MINIMUM. BOLTS SHALL BE ASTM A325.

100% SUBMISSION

COUNTY OF SAN JOAQUIN

MOVABLE SPAN BRIDGES PROJECT
FEDERAL AID PROJECT NO. BRLS-5929(229)

DRAWN BY	DATE	PROJECT MANAGER	DATE	DESIGNED BY	DATE	CHECKED BY	DATE	SUBMITTED BY	DATE	SUBMITTED	DATE	APPROVAL	DATE	SCALE
J. GENTILE	09/23/22	A. ZWEIBEL	09/23/22	K. CIAMPI	09/23/22	J. GIMBLETTE	09/23/22	A. ZWEIBEL	11/18/22					AS SHOWN

Hardesty & Hanover
1501 BROADWAY, NY, NY 10036

REGISTERED PROFESSIONAL ENGINEER
PAUL M. SKELTON
11/18/22
MECHANICAL
STATE OF CALIFORNIA

WARNING/TRAFFIC GATE
FOUNDATION REINFORCEMENT
TRACY BOULEVARD BRIDGE OVER GRANT LINE CANAL
(BRIDGE NO. 29C-022)

TB-S-02

$REQUEST $DATE $TIME $USER