HERBERT HOOVER DIKE REHABILITATION
STRUCTURE REPLACEMENT

S-291 (IP-3) RECONSTRUCTION

INDEX TO DRAWINGS

DWG NO	TITLE
	GENERAL
G-01	INDEX OF DRAWINGS
G-02	ABBREVIATIONS AND REFERENCE SYMBOLOGY
G-03	SITE ACCESS, CONTROL MARKERS, VICINITY, AND LOCATION MAP
G-04	WORK LIMITS AND BORING LOCATIONS
	SURVEY
V-01	EXISTING CONDITIONS PLAN
	CIVIL
C-01	PHASE I - COFFERDAM PLAN
C-02	PHASE I - COFFERDAM CONTOUR PLAN
C-03	PHASE I - COFFERDAM CROSS SECTIONS
C-04	PHASE I - COFFERDAM ARMORING PLAN AND SECTIONS
C-05	PHASE II - EXCAVATION PLAN
C-06	PHASE II - EXCAVATION CONTOUR PLAN
C-07	PHASE II - EXCAVATION CROSS SECTIONS
C-08	PHASE II - EXCAVATION SEEPAGE PROTECTION PLAN
C-09	PHASE III - STRUCTURE INSTALLATION PLAN
C-10	PHASE III - STRUCTURE INSTALLATION CROSS SECTIONS
C-11	PHASE III - STRUCTURE INSTALLATION DETAILS - DRAINAGE
C-12	PHASE IV PT I - EMBANKMENT & CHANNEL RECONSTRUCTION GRADING PLAN
C-13	PHASE IV PT I - EMBANKMENT & CHANNEL RECONSTRUCTION GRADING PLAN
C-14	PHASE IV PT I - EMBANKMENT & CHANNEL RECONSTRUCTION CONTOUR PLAN
C-15	PHASE IV PT II - EMBANKMENT & CHANNEL RECONSTRUCTION GRADING PLAN
C-16	PHASE IV PT II - EMBANKMENT & CHANNEL RECONSTRUCTION CONTOUR PLAN
C-17	PHASE IV PT III - STEEL SHEET PILE COFFERDAM AND CULVERT ABANDONMENT PLAN
C-18	PHASE IV PT IV - EXISTING CHANNEL BACKFILL SITE PLAN
C-19	PHASE IV PT IV - EXISTING CHANNEL BACKFILL CONTOUR PLAN
C-20	PHASE IV PT V - EMBANKMENT RECONSTRUCTION SITE PLAN
C-21	PHASE IV PT V - EMBANKMENT RECONSTRUCTION CONTOUR PLAN
C-22	PHASE IV - EMBANKMENT AND CHANNEL CROSS SECTIONS AND DETAILS
C-23	PHASE IV EMBANKMENT AND CHANNEL RECONSTRUCTION SURFACING PLAN
C-24	PHASE IV EMBANKMENT RECONSTRUCTION SECTIONS AND DETAILS
C-25	UTILITY SITE PLAN
C-26	DETAILS - BARBED WIRE FENCE
	STRUCTURAL
S-01	GENERAL NOTES
S-02	GENERAL PLAN AND PROFILE
S-03	HEADWALL ELEVATIONS
S-04	FOUNDATION PLAN AND SECTIONS
S-05	FOUNDATION SECTIONS AND DETAILS
S-06	PLAN EL 8.0 AND EL 17.5
S-07	PLAN EL 30.6
S-08	SECTIONS
S-09	SECTIONS
S-10	SECTIONS
S-11	FOUNDATION PLAN AND SECTIONS
S-12	FOUNDATION SECTIONS AND DETAILS
S-13	PLAN EL 8.0 AND EL 17.5
S-14	PLAN EL 30.5
S-15	SECTIONS
S-16	SECTIONS
S-17	SECTIONS
S-18	CONCRETE ENCASEMENT

DWG NO	TITLE
	NEXT SECTION
S-19	CONCRETE ENCASEMENT CONSTRUCTION SEQUENCE
S-20	REINFORCEMENT
S-21	REINFORCEMENT
S-22	REINFORCEMENT
S-23	REINFORCEMENT
S-24	REINFORCEMENT
S-25	REINFORCEMENT
S-26	REINFORCEMENT
S-27	REINFORCEMENT
S-28	REINFORCEMENT
S-29	REINFORCEMENT
S-30	CULVERT REINFORCEMENT
S-31	LANDSIDE HEADWALL SCOUR CUTOFF WALLS
S-31A	LAKESIDE HEADWALL SCOUR CUTOFF WALLS
S-32	LAKESIDE WINGWALL
S-33	LANDSIDE WINGWALL
S-34	REINFORCEMENT
S-35	REINFORCEMENT
S-36	BULKHEAD SLOT DETAILS AND METAL FABRICATIONS
S-37	BULKHEAD SILL AND OPERATING PLATFORM ARMOUR DETAILS
S-38	LAKESIDE HEADWALL FIXTURES
S-39	LANDSIDE HEADWALL FIXTURES
S-40	HEADWALL ACCESSORIES
S-41	RAILING PLAN AND ELEVATION
S-42	LAKESIDE HEADWALL RAILING PLAN AND ELEVATION
S-43	LANDSIDE HEADWALL RAILING PLAN AND ELEVATION
S-44	TYPICAL DETAILS MANATEE SCREEN PLAN AND SECTIONS
S-45	84"x84" COMBINATION GATE. GATE ASSEMBLY ELEVATION AND SECTIONS
S-45A	DUAL LEAF GATE. GATE ASSEMBLY ELEVATION AND SECTIONS
S-46	84"x84" COMBINATION GATE. GATE ASSEMBLY ELEVATION AND SECTIONS
S-47	84"x84" COMBINATION GATE. FRAME ASSEMBLY ELEVATION AND WALL THIMBLE
S-48	84"x84" COMBINATION GATE. FRAME ASSEMBLY ELEVATION AND SECTIONS
S-49	84"x84" SLIDE GATE ASSEMBLY, ELEVATION AND SECTIONS
S-50	84"x84" COMBINATION GATE. SLIDE GATE ASSEMBLY, ELEVATION AND SECTIONS
S-51	84"x84" COMBINATION GATE. FLAP GATE ASSEMBLY
S-52	84"x84" COMBINATION GATE. FLAP GATE PIVOT ARM ASSEMBLY
S-53	TYPICAL CONTROL BUILDING
S-54	MISCELLANEOUS CONCRETE DETAILS
S-55	TYPICAL HANDRAIL DETAILS
S-56	TYPICAL HANDRAIL DETAILS
S-57	RUNG LADDER AND FALL PROTECTION ANCHOR DETAILS
S-58	VERTICAL LADDERS AND SHIP LADDER DETAILS
S-59	REMOVEABLE FALL PRROTECTION COVERS
S-60	SIGN DETAILS
S-61	PHASE I STEEL COFFERDAM PLAN AND DETAILS
S-62	LANDSIDE PHASE IV STEEL COFFERDAM PLAN AND DETAILS
S-63	LAKESIDE PHASE IV STEEL COFFERDAM ELEVATIONS
S-64	STILLING WELL INSTRUMENTATION PLATFORM PLAN AND ELEVATION
S-65	STILLING WELL PLATFORM SECTIONS AND DETAILS
A	**MECHANICAL**
M-01	LAKESIDE HEADWALL STILLING WELL PLAN AND ELEVATION
M-02	LANDSIDE STIILING WELL SECTIONS AND DETAILS
M-03	STILLING WELL SECTIONS AND DETAILS
M-04	STILLING WELL SECTIONS AND SCHEMATIC

DWG NO	TITLE
A	**ELECTRICAL**
E-01	SYMBOL LEGEND
E-02	ABBREVIATIONS AND GENERAL NOTES
E-03	SITE PLAN
E-04	STRUCTURAL ELECTRICAL PLAN SHEET 1
E-05	STRUCTURAL ELECTRIC PLAN SHEET 2
E-06	OPERATING PLATFORM DETAILS
E-07	CONTROL SCHEMATIC
E-08	CONDUIT AND CIRCUIT SCHEDULES
E-09	ELECTRICAL DETAILS SHEET 1
E-10	ELECTRICAL DETAILS SHEET 2
E-11	ELECTRICAL DETAILS SHEET 3
E-12	LANDSIDE CULVERT GATE ELECTRICAL PLAN
E-13	LANDSIDE OPERATING PLATFORM DETAILS
E-14	LANDSIDE CONTROL SCHEMATIC SHEET 1
E-15	LANDSIDE CONTROL SCHEMATIC SHEET 2
	TELECOMMUNICATIONS
T-01	SCADA LEGEND AND SYMBOLS
T-02	SUTRON SYSTEM MONITORING DIAGRAM
T-03 A	SUTRON SYSTEM COMPONETS
T-04	SUTRON PANEL WIRING DIAGRAM SHEET 1
T-05	SUTRON PANEL WIRING DIAGRAM SHEET 2
T-06	ANTENNA POLE DETAILS
T-07	CAMERA POLE DETAILS
T-08	INCLINOMETER INSTALLATION DETAILS
T-09	INCLINOMETER DETAILS
T-10	RTU BRACKET
	RESOURCE
R-01	HP_CULVERT_SHEET_1_DO_463-25,182-1
R-02	HP_CULVERT_SHEET_2_DO_463-25,182-1
R-03	HP_CULVERT_SHEET_3_DO_463-25,182-1

US Army Corps of Engineers
Jacksonville District

No.	SYM	ZONE	DESCRIPTION
3	A	A-6, C-3	REVISED TO ACCOMPANY AMENDMENT NO. 002.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

DESIGNED BY: M.J.B.
DRWN BY: M.J.B.
CKD BY: E.G.M.
DATE: JANUARY 2015
SOLICITATION NO.: W912EP-16-R-0010
SUBMITTED BY: N/A
CONTRACT NO.: N/A
PLOT SCALE: As shown
PLOT DATE: May 10, 2016
FILE NUMBER: N/A
FILE NAME: 114527-HHDRCRIP1-GI001.DGN

HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

S-291 (IP-3) RECONSTRUCTION

GENERAL

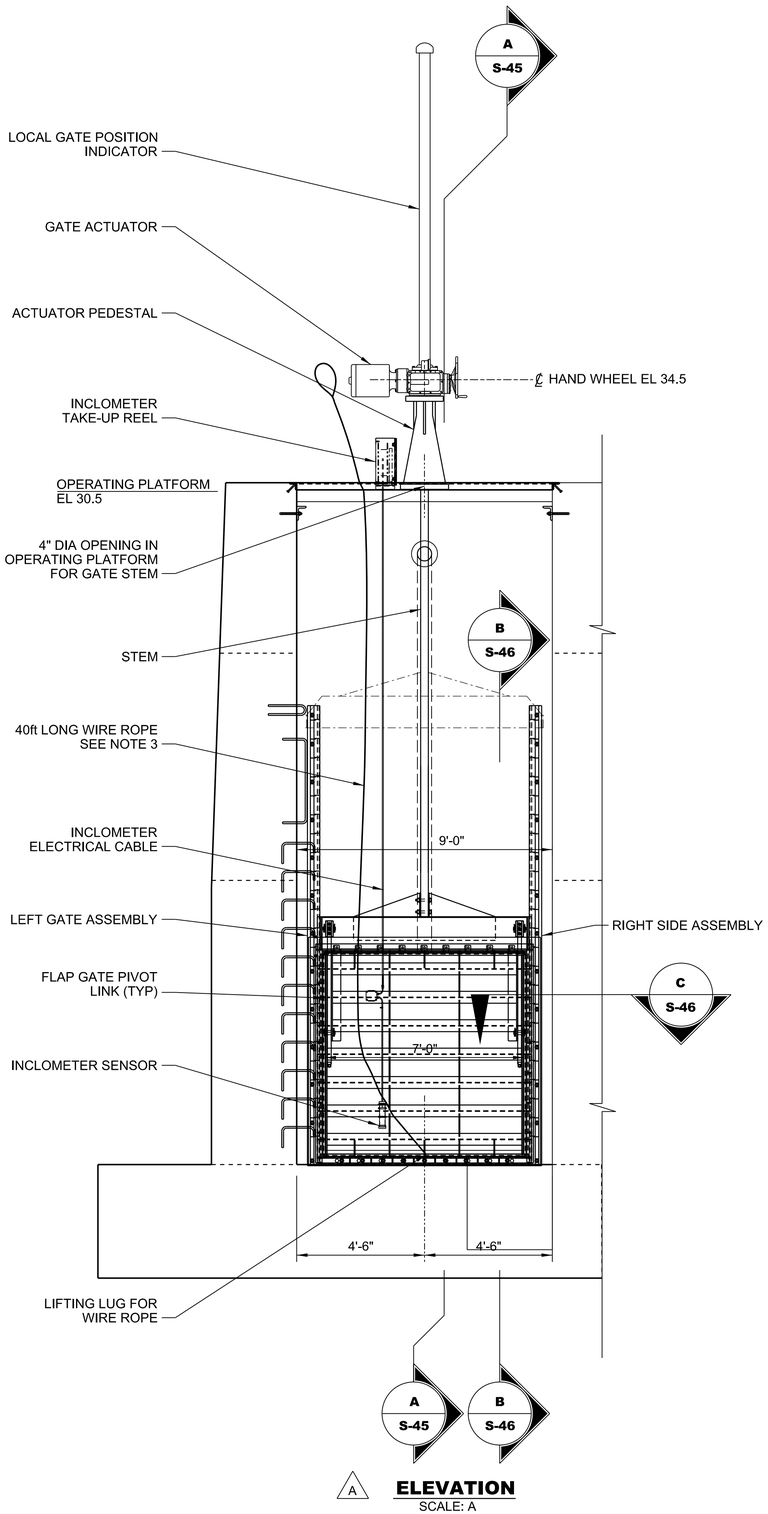
INDEX OF DRAWINGS

DRAWING NO.

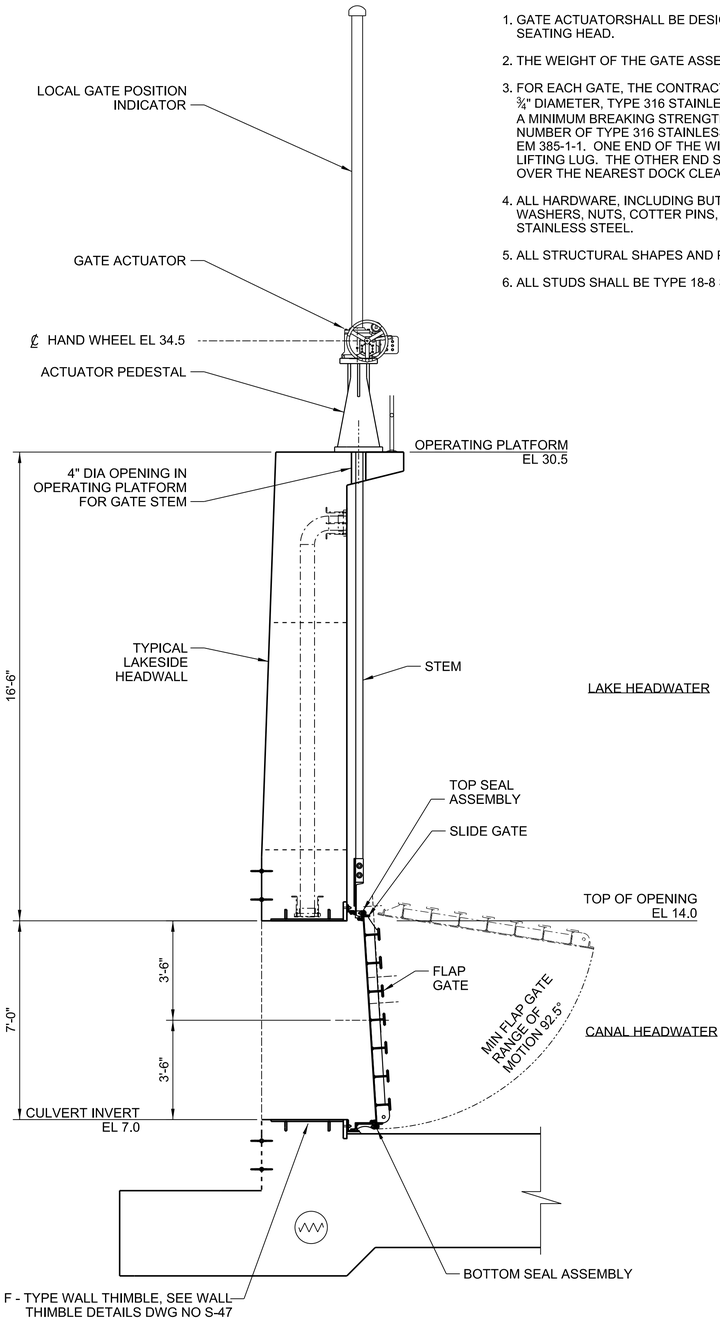
G-01

GI001.DGN

pw:\\COE-SAJPWP02JAX.saj.ds.usace.army.mil:SAJPW\Documents\C&SF\Herbert Hoover Dike Rehabilitation\03-Culvert Rehabilitation\S-292(IP-1), S-290(IP-2), S-291(IP-3) Culvert Reconstruction\070 - Plans\IP-3\01 General\G-01



A **ELEVATION**
SCALE: A



A **SECTION**
SCALE: A

NOTES:

1. GATE ACTUATORSHALL BE DESIGNED FOR A 10ft UNSEATING HEAD AND A 16ft SEATING HEAD.
2. THE WEIGHT OF THE GATE ASSEMBLY IS APPROXIMATELY 4,500 POUNDS.
3. FOR EACH GATE, THE CONTRACTOR SHALL PROVIDE A 40-FOOT LENGTH OF ¾" DIAMETER, TYPE 316 STAINLESS STEEL WIRE ROPE, CLASS 6x19 IWRC, WITH A MINIMUM BREAKING STRENGTH OF 42,000 POUNDS. PROVIDE AN ADEQUATE NUMBER OF TYPE 316 STAINLESS STEEL WIRE ROPE CLIPS IN ACCORDANCE WITH EM 385-1-1. ONE END OF THE WIRE ROPE SHALL BE SECURED TO EACH FLAP GATE'S LIFTING LUG. THE OTHER END SHALL HAVE A 12-INCH LONG EYE LOOP PLACED OVER THE NEAREST DOCK CLEAT AT THE TOP OF THE OPERATING PLATFORM.
4. ALL HARDWARE, INCLUDING BUT NOT LIMITED TO BOLTS, FLAT WASHERS, LOCK WASHERS, NUTS, COTTER PINS, CAP SCREWS AND MACHINE SCREWS SHALL BE STAINLESS STEEL.
5. ALL STRUCTURAL SHAPES AND PLATES SHALL BE TYPE 304L OR TYPE 316L STAINLESS STEEL.
6. ALL STUDS SHALL BE TYPE 18-8 STAINLESS STEEL.

GRAPHIC SCALE
"A" 24" 12" 0 2' 4' 6'

US Army Corps of Engineers
Jacksonville District

No.	SYM	ZONE	DESCRIPTION
1	A	A7	TO ACCOMPANY AMENDMENT 0002

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

DESIGNED BY: C.B.G.
DRWN BY: W.E.S.
SUBMITTED BY: N/A
APPROVED: N/A
DATE: MARCH 2015
CKD BY: J.S.F.
PLOT DATE: May 11, 2015
SOLICITATION NO.: W912EP-16-R-0010
CONTRACT NO.: N/A
FILE NUMBER: N/A
PLOT SCALE: AS SHOWN
FILE NAME: 114527-HHDCRIP3-SF545.DGN

HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

S-291 (IP-3) RECONSTRUCTION

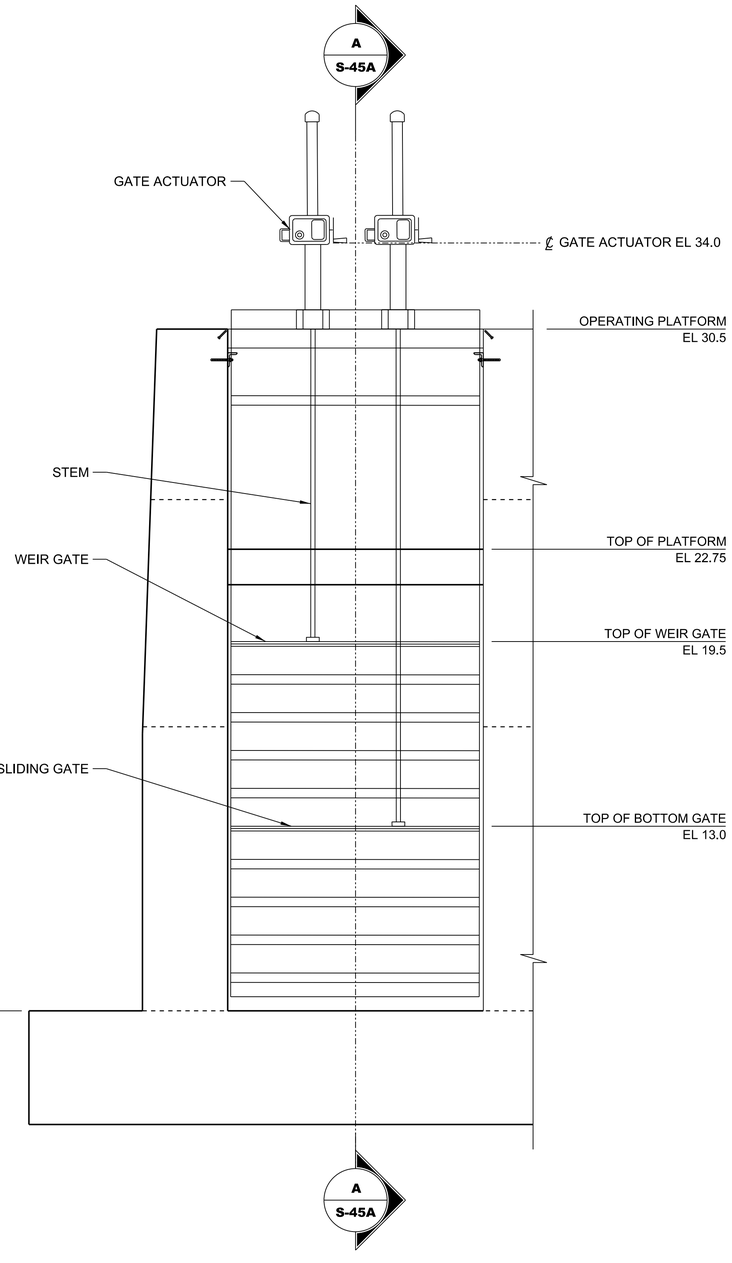
STRUCTURAL

84"x84" COMBINATION GATE GATE ASSEMBLY ELEVATION AND SECTIONS

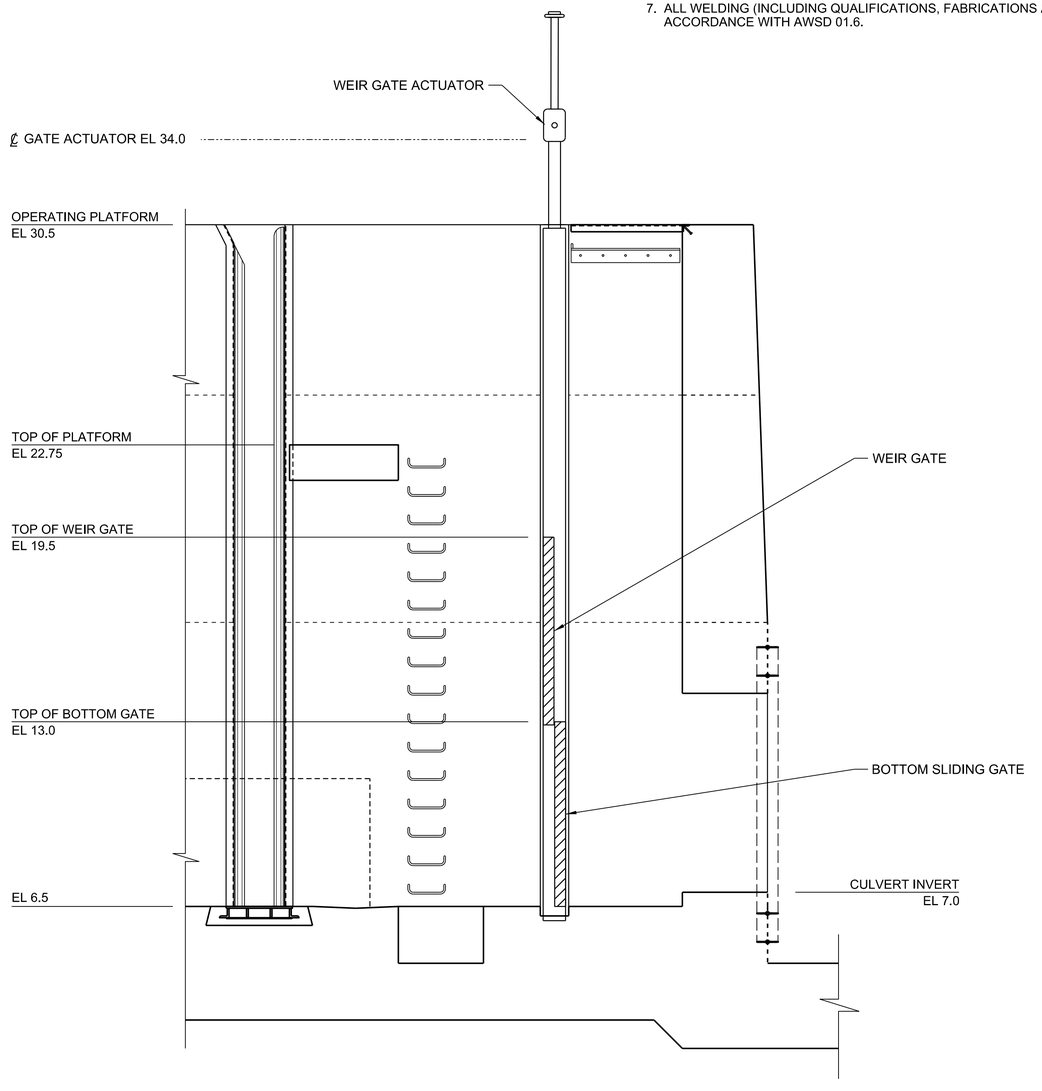
DRAWING NO.
S-45

NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF THE DOUBLE LEAF SLIDE GATES. THE GATES SHALL BE DESIGNED AS A COMPLETE SYSTEM AND SHOULD EMPHASIZE SIMPLE EFFICIENT INSTALLATION.
2. ACTUAL DIMENSIONS TO BE SUPPLIED BY GATE MANUFACTURER.
3. GATE ACTUATOR SHALL BE DESIGNED FOR UNSEATING AND SEATING HEAD OF 11.5ft.
4. ALL HARDWARE, INCLUDING BUT NOT LIMITED TO BOLTS, FLAT WASHERS, LOCK WASHERS, NUTS, COTTER PINS, CAP SCREWS AND MACHINE SCREWS SHALL BE STAINLESS STEEL.
5. ALL STRUCTURAL SHAPES AND PLATES SHALL BE TYPE 304L OR TYPE 316L STAINLESS STEEL.
6. ALL STUDS SHALL BE TYPE 18-8 STAINLESS STEEL.
7. ALL WELDING (INCLUDING QUALIFICATIONS, FABRICATIONS AND INSPECTIONS) SHALL BE IN ACCORDANCE WITH AWSD 01.6.



A **ELEVATION**
SCALE: A



A **SECTION**
SCALE: A

GRAPHIC SCALE
"A" 24" 12" 0 2' 4' 6'

US Army Corps of Engineers
Jacksonville District

No.	SYM	ZONE	DESCRIPTION
1	A	A8	TO ACCOMPANY AMENDMENT 0002

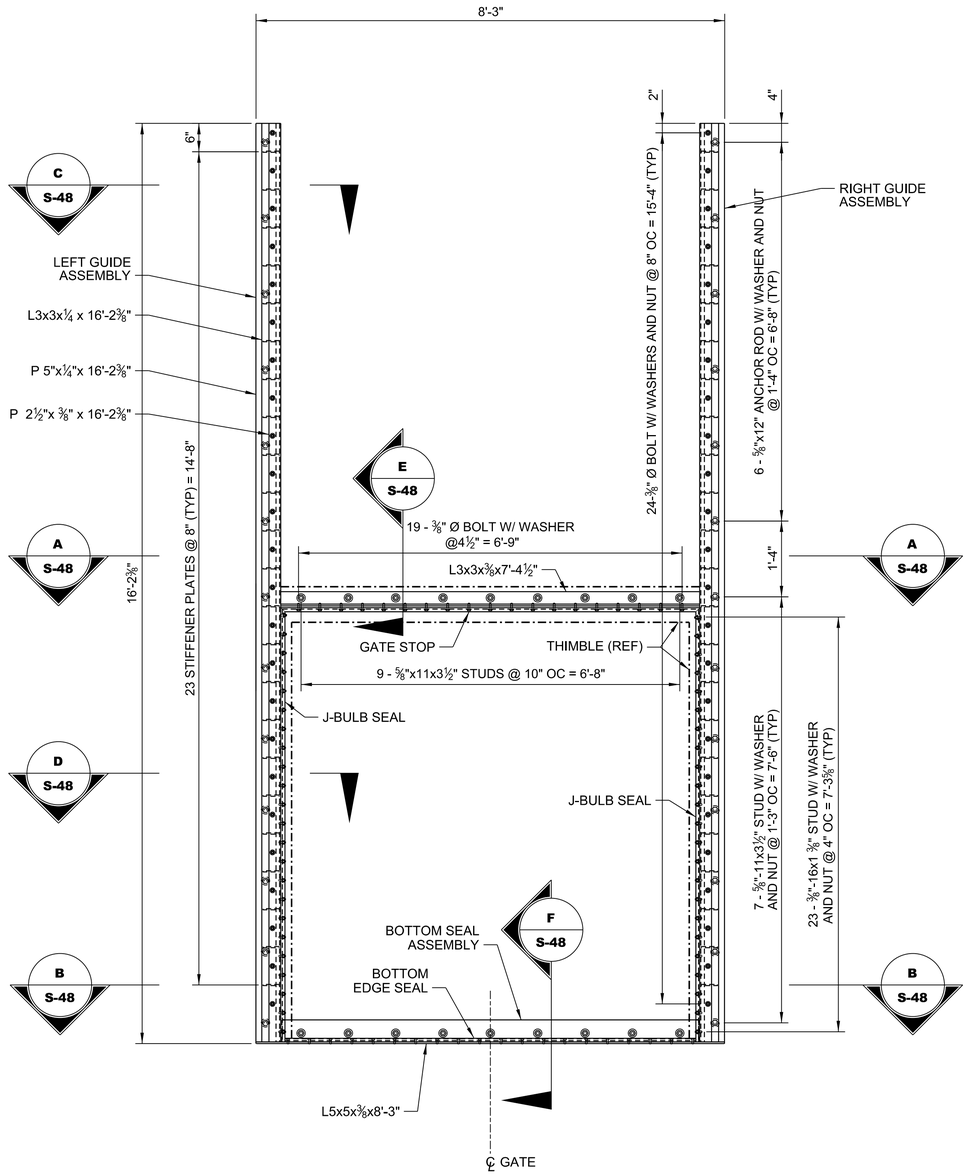
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

DESIGNED BY: C.B.G.
DRN BY: W.E.S.
CKD BY: J.S.F.
SUBMITTED BY: N/A
DATE: MARCH 2015
SOLICITATION NO.: W912EP-16-R-0010
CONTRACT NO.: N/A
PLOT SCALE: As shown
PLOT DATE: May 11, 2016
FILE NUMBER: N/A
FILE NAME: 114527-HHDCRIP3-SF545A.DGN

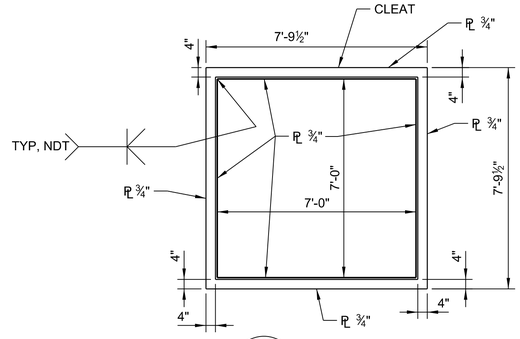
HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

S-291 (IP-3) RECONSTRUCTION
STRUCTURAL
DUAL LEAF GATE
GATE ASSEMBLY ELEVATION AND SECTIONS

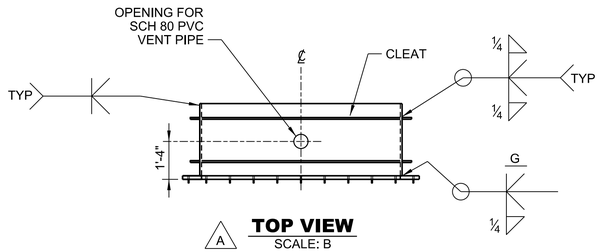
DRAWING NO.
S-45A



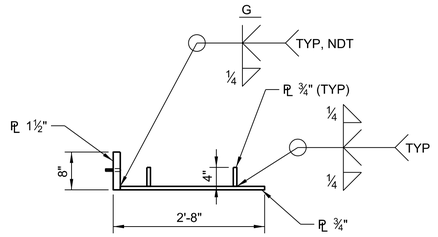
FRONT VIEW
SCALE: A



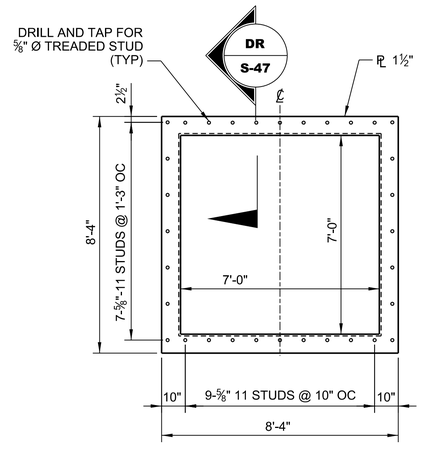
A DS S-47 **SECTION**
SCALE: B



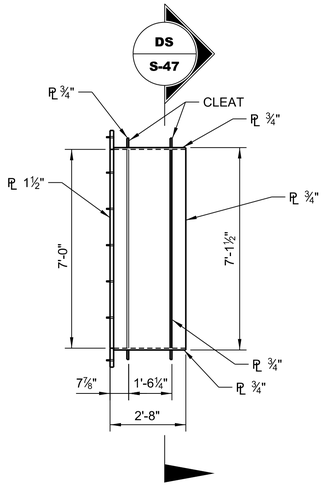
A **TOP VIEW**
SCALE: B



A DR S-47 **SECTION**
SCALE: A



FRONT VIEW
SCALE: B



SIDE VIEW
SCALE: B

TYPICAL WALL THIMBLE

GRAPHIC SCALES

"A" 12" 6" 0 1' 2' 3'

"B" 24" 12" 0 2' 4' 6'

US Army Corps of Engineers
Jacksonville District

No.	SYM	ZONE	DESCRIPTION
3	⚠	B2,B4,C4	TO ACCOMPANY AMENDMENT 0002

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

DESIGNED BY: C.B.G.
DRAWN BY: W.E.S.
SUBMITTED BY: N/A
APPROVED BY:
DATE: MARCH 2015
CKD BY: J.S.F.
SOLICITATION NO.: W912EP-16-R-0010
CONTRACT NO.: N/A
PLOT SCALE: May 11, 2017
PLOT DATE:
FILE NUMBER: N/A
FILE NAME: 114527-HHDRCRIP3-SF547.DGN

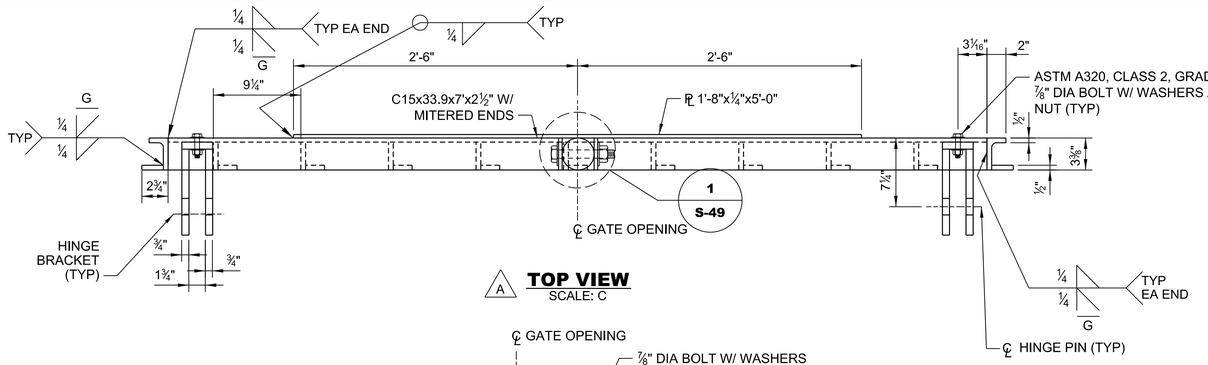
HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

S-291 (IP-3) RECONSTRUCTION
STRUCTURAL
84"x84" COMBINATION GATE
FRAME ASSEMBLY ELEVATION AND WALL THIMBLE

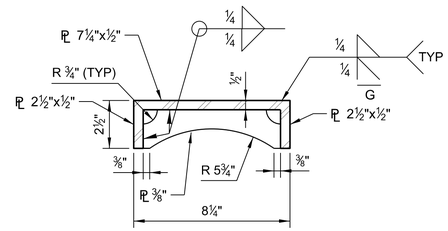
DRAWING NO.
S-47

pw:\\COE-SAJPWP02JAX.saj.ds.usace.army.mil:SAJPW\Documents\C&SF\Herbert Hoover Dike Rehabilitation\03-Culvert Reconstruction\070 - Plans\IP-3\07 Structures\S-47

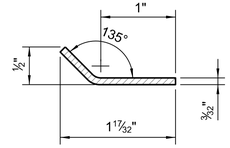
SAFETY ON THIS JOB DEPENDS ON YOU



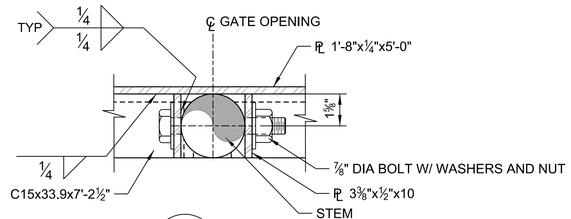
A **TOP VIEW**
SCALE: C



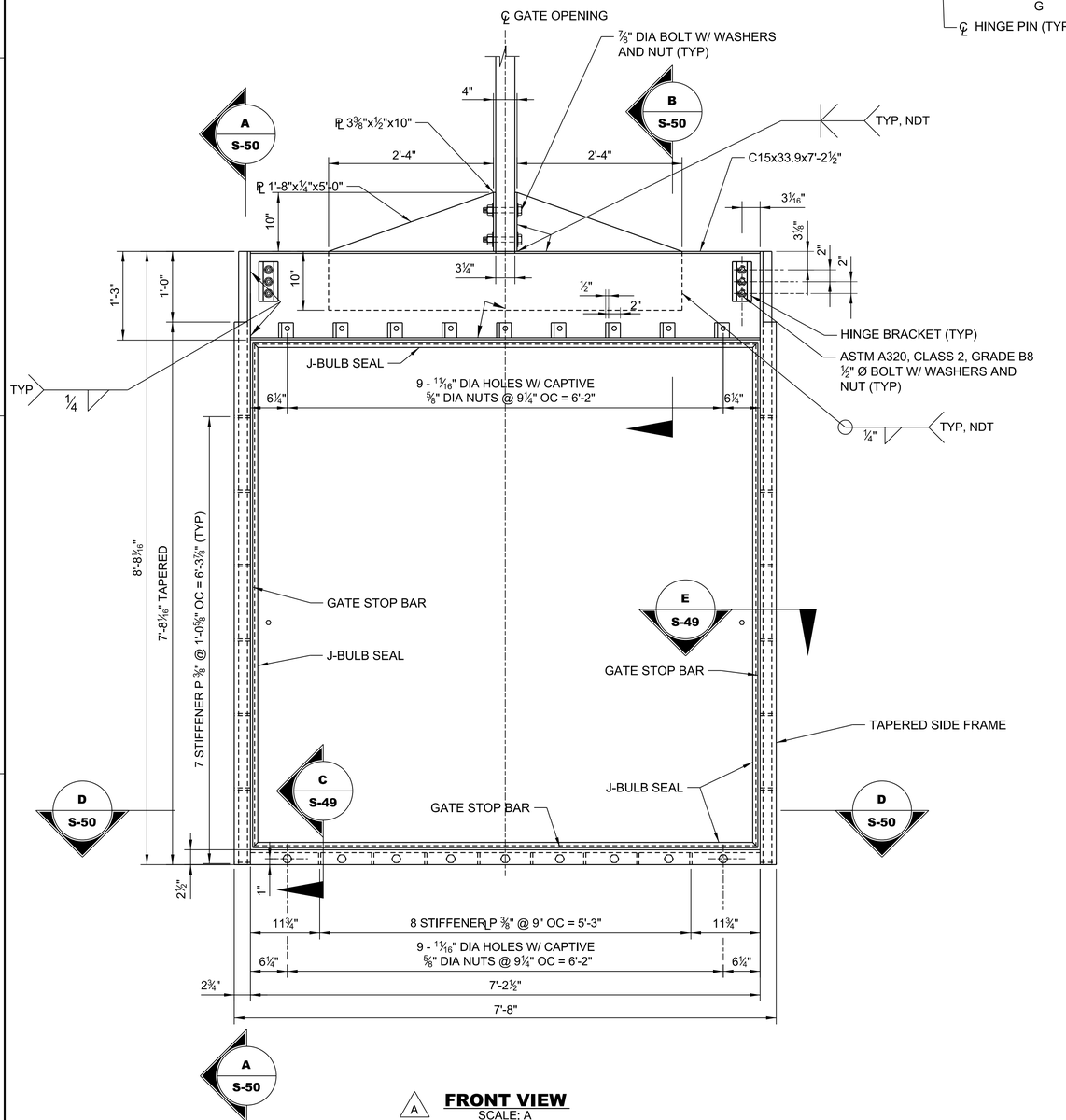
BOTTOM FRAME DETAIL
SCALE: B



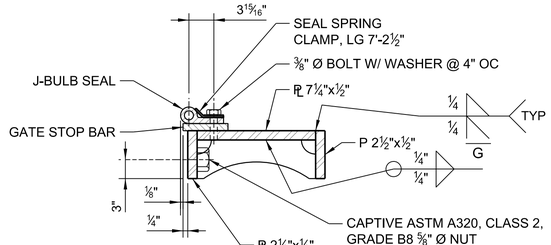
SEAL SPRING CLAMP DETAIL
SCALE: N.T.S.



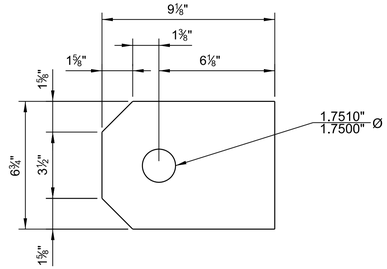
1 S-49 **DETAIL**
SCALE: B



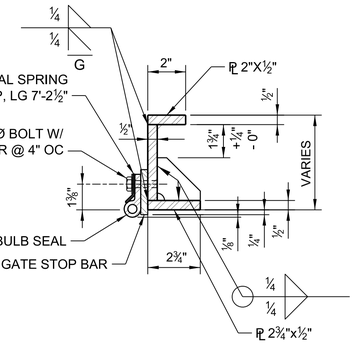
A **FRONT VIEW**
SCALE: A



C S-49 **SECTION**
SCALE: B

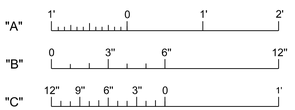


A 2 S-50 **HINGE BRACKET DETAIL**
SCALE: B



E S-49 **SECTION**
SCALE: B

GRAPHIC SCALES



US Army Corps of Engineers
Jacksonville District

No.	SYM	ZONE	DESCRIPTION
3	⚠	A4,A7,D7	TO ACCOMPANY AMENDMENT 0002

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

DESIGNED BY: C.B.G.
DRAWN BY: W.E.S.
CKD BY: J.S.F.
SUBMITTED BY: N/A
DATE: MARCH 2015
SOLICITATION NO.: W912EP-16-R-0010
CONTRACT NO.: N/A
PLOT SCALE: 1:1
PLOT DATE: May 11, 2016
FILE NUMBER: N/A
FILE NAME: 114527-HHDRCRIP3-SF549.DGN

HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

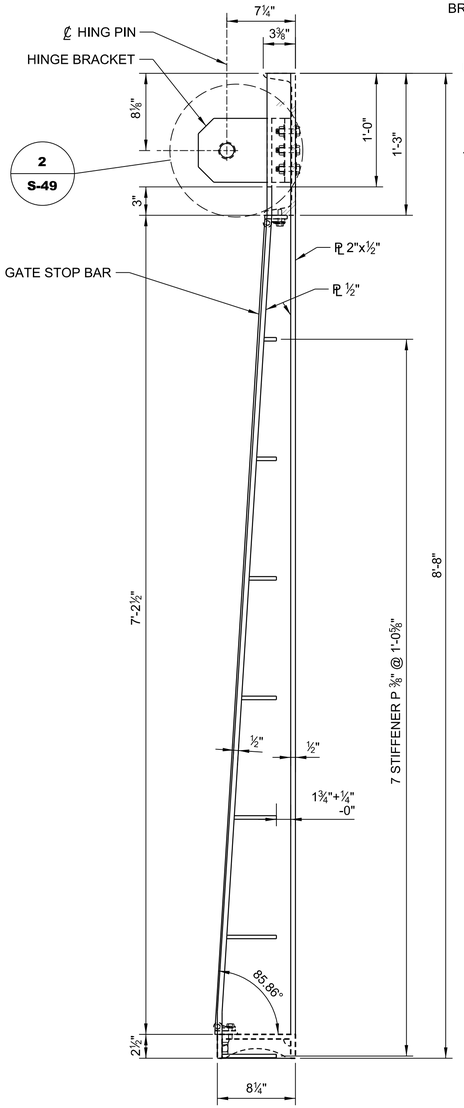
S-291 (IP-3) RECONSTRUCTION

STRUCTURAL

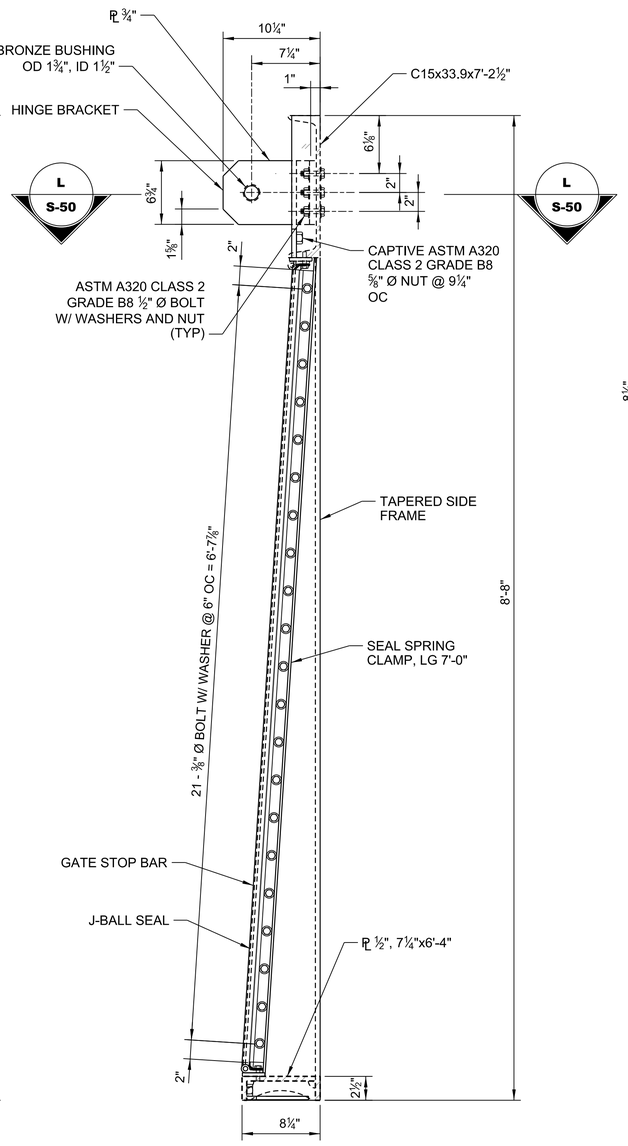
84"X84" COMBINATION GATE
SLIDE GATE ASSEMBLY, ELEVATION AND SECTIONS

DRAWING NO.
S-49

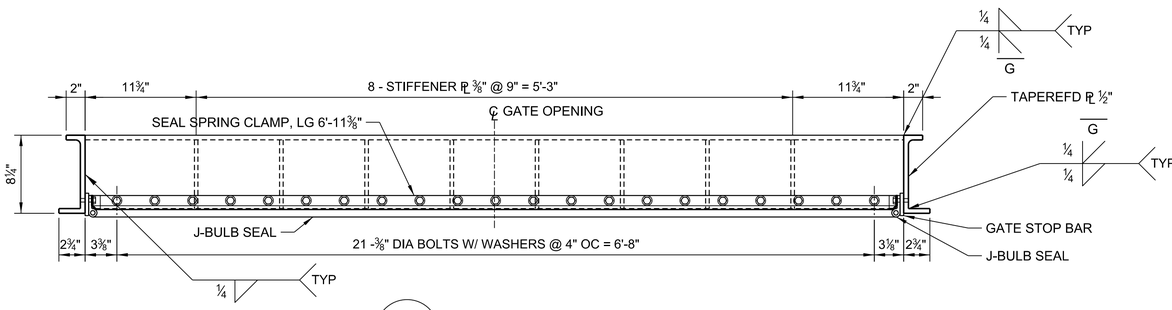
pw:\\COE-SAJPWP02JAX.saj.ds.usace.army.mil:SAJPW\Documents\C&SF\Herbert Hoover Dike Rehabilitation\03-Culvert Rehabilitation\S-292(IP-1), S-290(IP-2), S-291(IP-3) Culvert Reconstruction\070 - Plans\IP-3\07 Structures\S-49



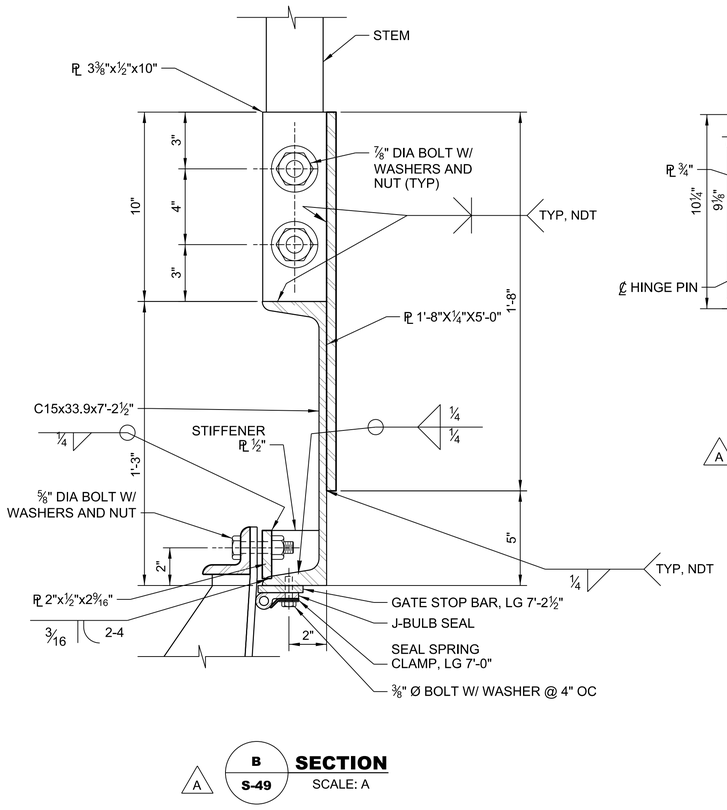
SIDE VIEW
SCALE: B



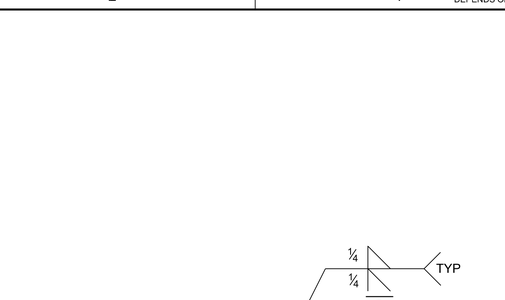
A **A** **S-49** **SECTION**
SCALE: B



D **D** **S-49** **SECTION**
SCALE: B



A **B** **S-49** **SECTION**
SCALE: A



A **L** **S-50** **SECTION**
SCALE: A

GRAPHIC SCALES

"A" 0 3" 6" 12"

"B" 12" 9" 6" 3" 0 1'

US Army Corps of Engineers
Jacksonville District

No.	SYM	ZONE	DESCRIPTION
3	⚠	A4,A6,B2	TO ACCOMPANY AMENDMENT 0002

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

DESIGNED BY: C.B.G.
DWN BY: W.E.S.
SUBMITTED BY: N/A
CHKD BY: J.S.F.
DATE: MARCH 2015
SOLICITATION NO.: W912EP-16-R-0010
CONTRACT NO.: N/A
PLOT DATE: May 11, 2016
FILE NUMBER: N/A
PLOT SCALE: 1
AS SHOWN
FILE NAME: 114527-HHDCRIP3-SF550.DGN

HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

S-291 (IP-3) RECONSTRUCTION

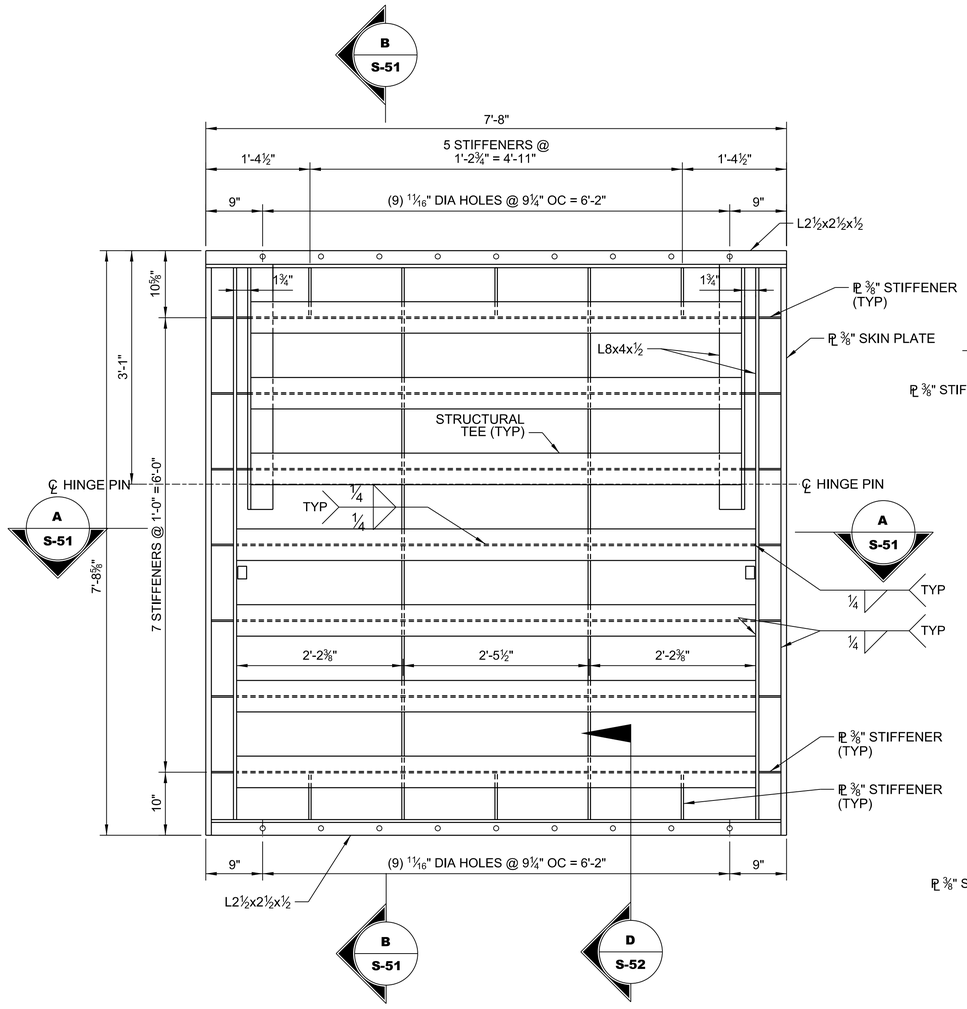
STRUCTURAL

84"x84" COMBINATION GATE
SLIDE GATE ASSEMBLY, ELEVATION AND SECTIONS

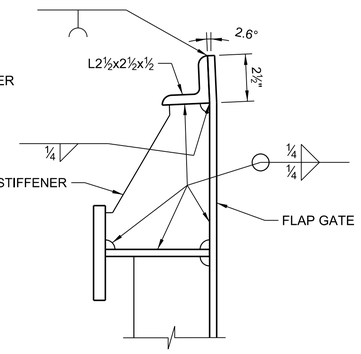
DRAWING NO.
S-50

pw:\\COE-SAJPWP02JAX.saj.ds.usace.army.mil:SAJPW\Documents\C&SF\Herbert Hoover Dike Rehabilitation\03-Culvert Reconstruction\070 - Plans\IP-3\07 Structures\S-50 (IP-1), S-290(IP-2), S-291(IP-3) Culvert Reconstruction\070 - Plans\IP-3\07 Structures\S-292(IP-1), S-290(IP-2), S-291(IP-3) Culvert Reconstruction\070 - Plans\IP-3\07 Structures\S-50

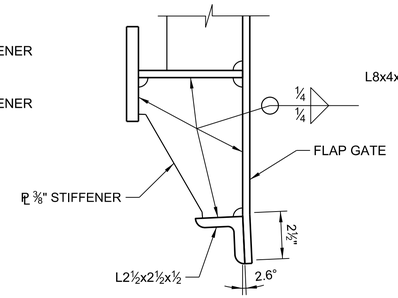
SAFETY ON THIS JOB DEPENDS ON YOU



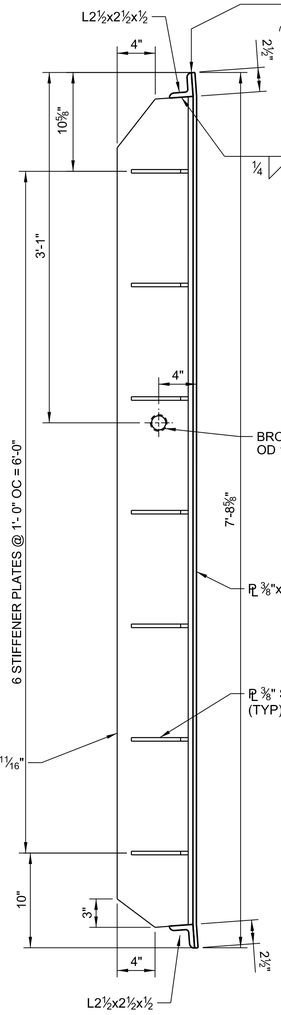
FRONT VIEW
SCALE: A



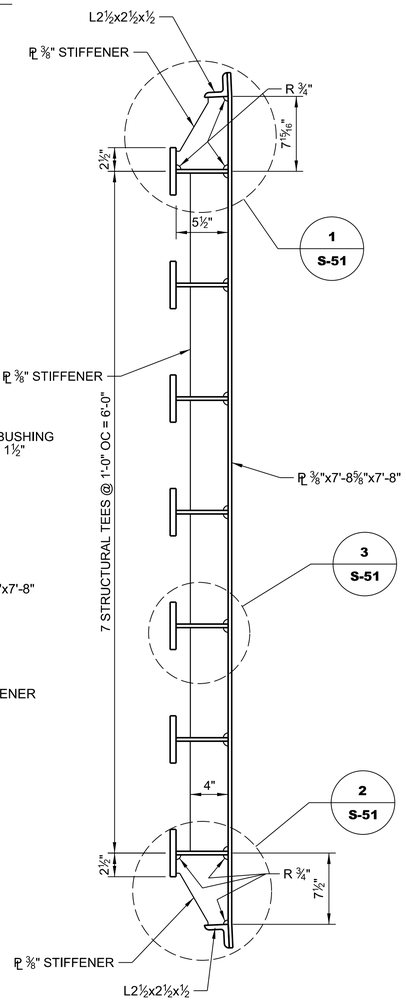
1 S-51 **DETAIL**
SCALE: B



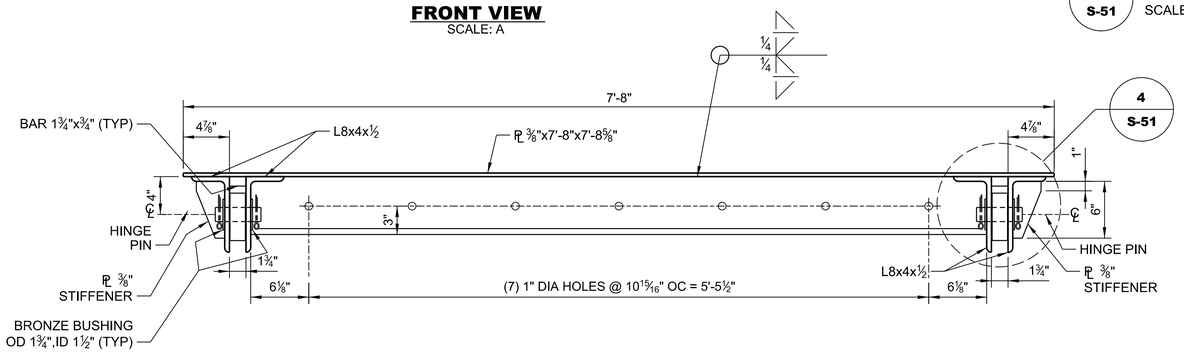
2 S-51 **DETAIL**
SCALE: B



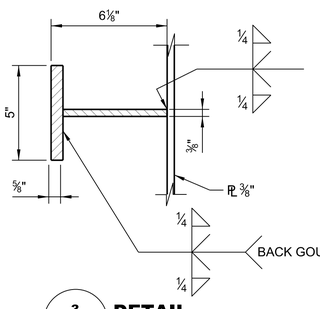
SIDE VIEW
SCALE: C



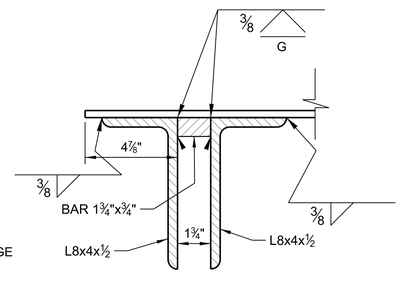
B S-51 **SECTION**
SCALE: C



A S-51 **SECTION**
SCALE: C

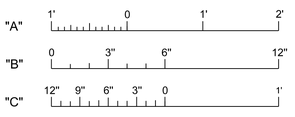


3 S-51 **DETAIL**
SCALE: B



4 S-51 **DETAIL**
SCALE: B

GRAPHIC SCALES



US Army Corps of Engineers
Jacksonville District

No.	SYM	ZONE	DESCRIPTION
1	A	A1	TO ACCOMPANY AMENDMENT 0002

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

DESIGNED BY: C.B.G.
DRWN BY: W.E.S.
SUBMITTED BY: N/A
PLOT SCALE: As Shown
FILE NAME: 114527-HHDRCRIP3-SF551.DGN
DATE: MARCH 2015
SOLICITATION NO.: W912EP-16-R-0010
CONTRACT NO.: N/A
PLOT DATE: May 11, 2016
FILE NUMBER: N/A

HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

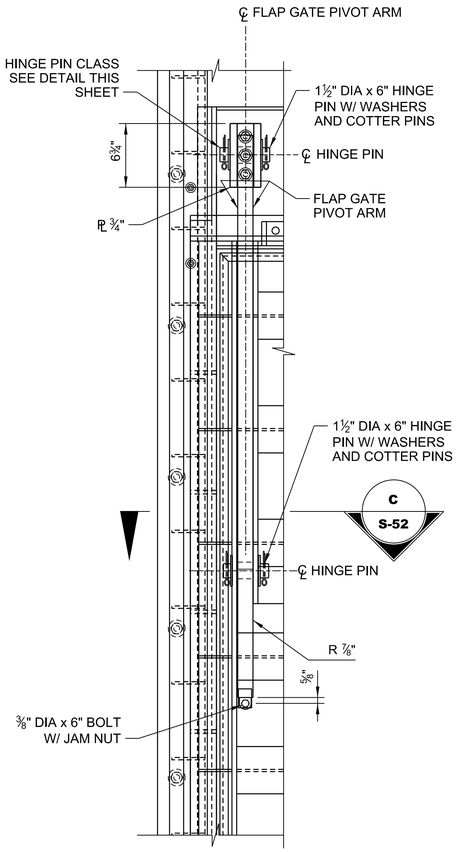
S-291 (IP-3) RECONSTRUCTION

STRUCTURAL

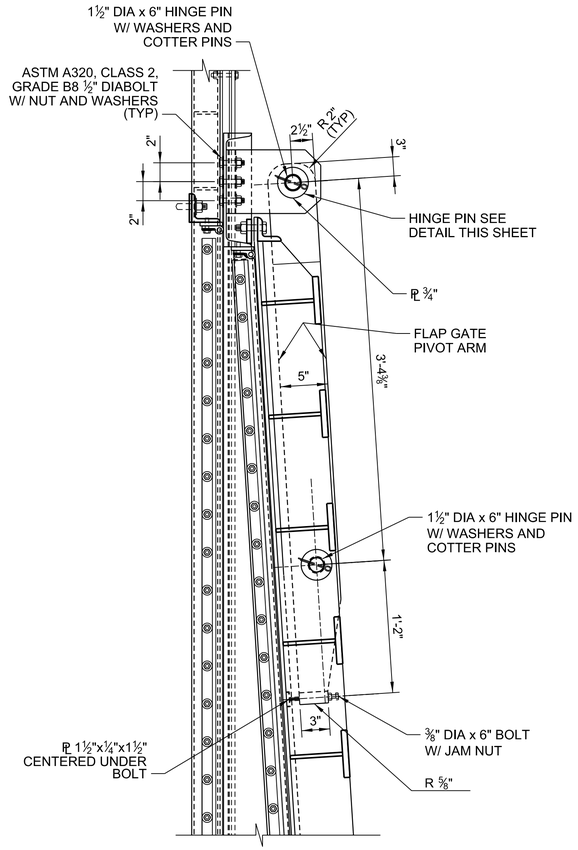
84"x84" COMBINATION GATE FLAP GATE ASSEMBLY

DRAWING NO.
S-51
A

pw:\\COE-SAJPWP02.JAX.saj.ds.usace.army.mil:SAJPW\Documents\C&SF\Herbert Hoover Dike Rehabilitation\03-Culvert Reconstruction\070 - Plans\IP-3\07 Structures\S-51



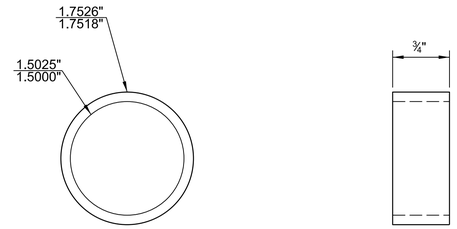
FRONT VIEW
SCALE: C



SIDE VIEW
SCALE: C

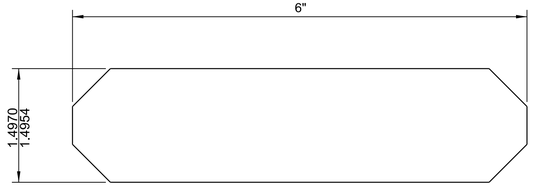
NOTES:

1. ONE FLAP GATE PIVOT ARM IS SHOWN ON THE DRAWING, BUT THE GATE ASSEMBLY REQUIRES 2 FLAP GATE PIVOT ARMS.



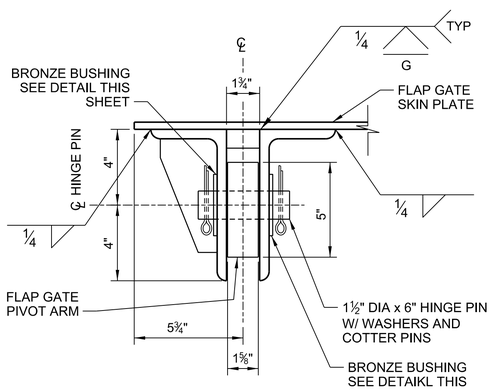
BRONZE BUSHING
SCALE: N.T.S.

CLASS FN2 FIT TO PLATE
CALSS RC7 FIT TO PIN

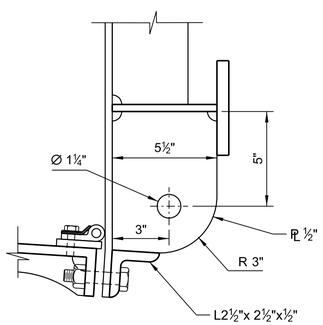


HING PIN
SCALE: N.T.S.

CALSS RC7 RUNNING FIT TO BUSHING



C S-52 **SECTION**
SCALE: B



D S-52 **SECTION**
SCALE: B

GRAPHIC SCALES

"B" 0 3" 6" 12"

"C" 12" 9" 6" 3" 0 1'

US Army Corps of Engineers, Jacksonville District

No.	STM	ZONE	DESCRIPTION
1	A1		TO ACCOMPANY AMENDMENT 0002

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

DESIGNED BY: C.B.G.
DRWN BY: W.E.S.
SUBMITTED BY: N/A
PLOT SCALE: As Shown
PLOT DATE: May 11, 2015
DATE: MARCH 2015
SOLICITATION NO.: W912EP-16-R-0010
CONTRACT NO.: N/A
FILE NUMBER: N/A
FILE NAME: 114527-HHDRCRIP3-SF552.DGN

HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

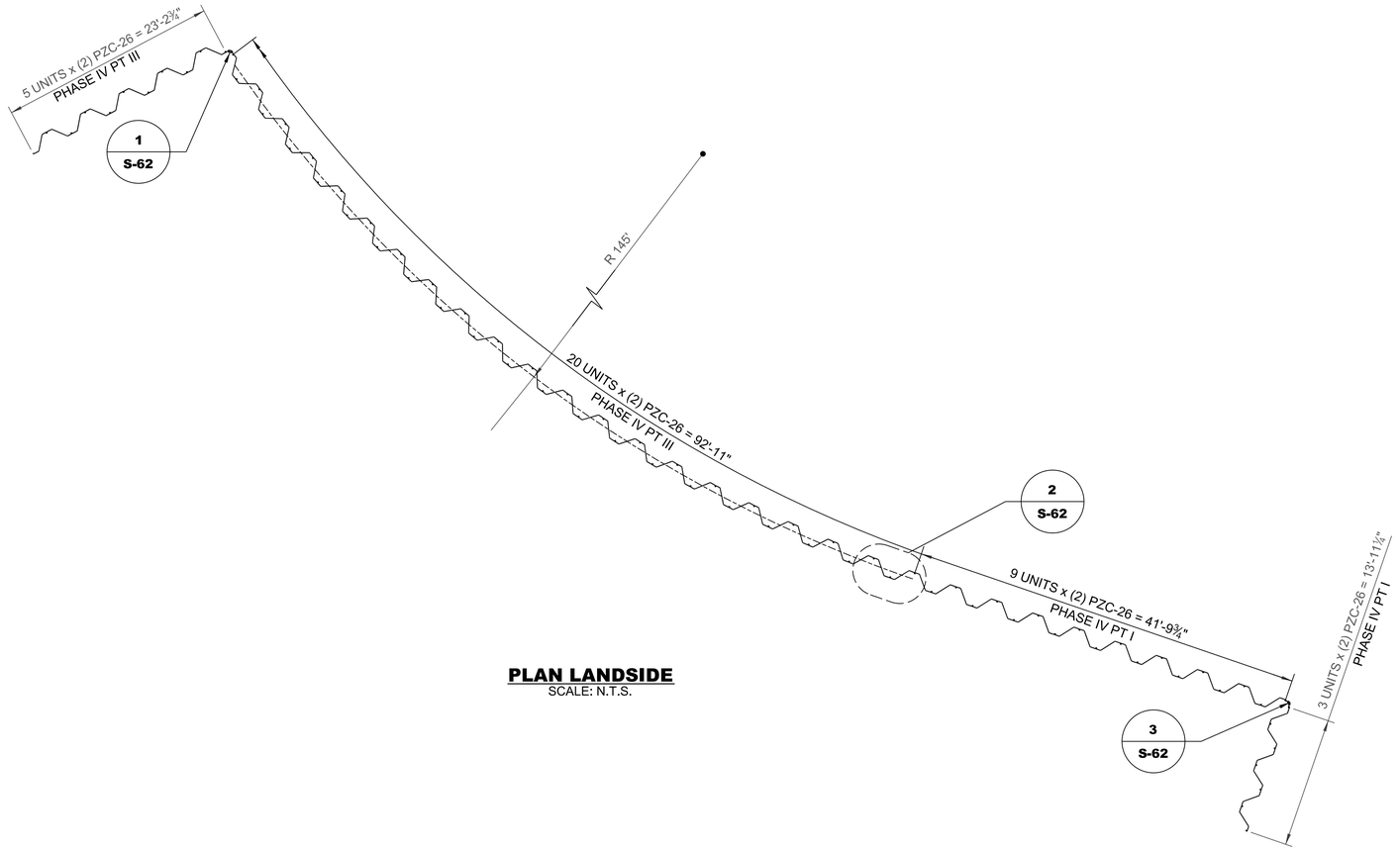
S-291 (IP-3) RECONSTRUCTION

STRUCTURAL

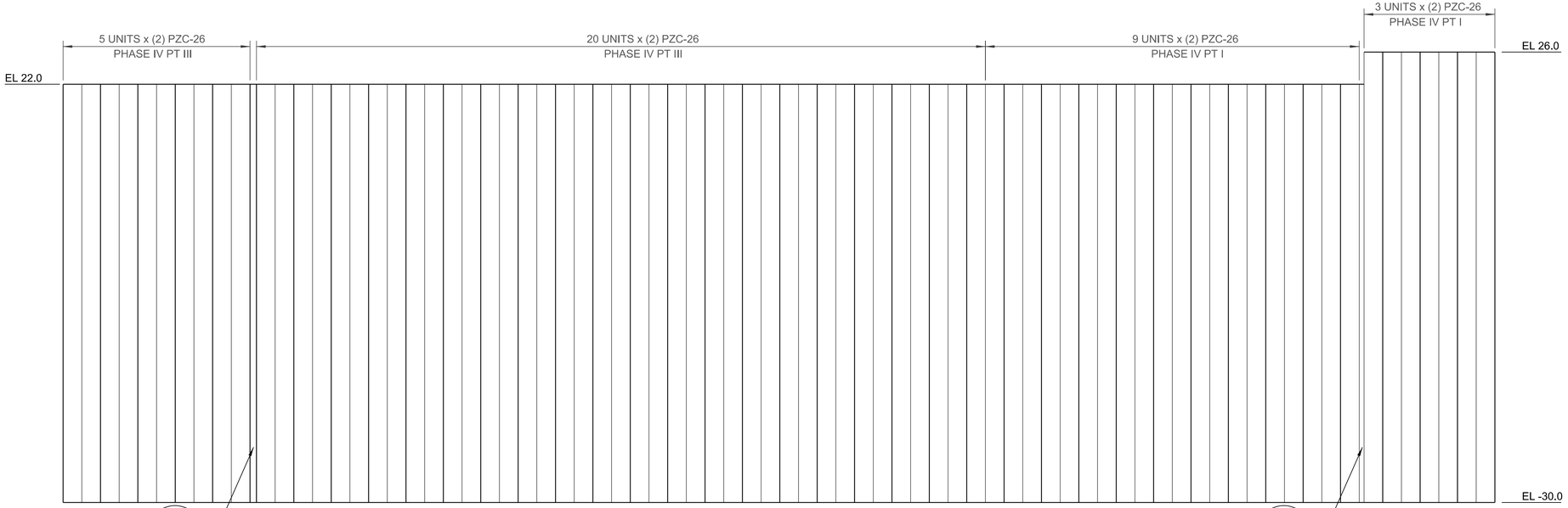
84"x84" COMBINATION GATE FLAP GATE PIVOT ARM ASSEMBLY

DRAWING NO.
A
S-52

pw:\\COE-SAJPWP02JAX.saj.ds.usace.army.mil:SAJPWDocuments\C&SF\Herbert Hoover Dike Rehabilitation\03-Culvert Reconstruction\070 - Plans\IP-3\07 Structures\S-52



PLAN LANDSIDE
SCALE: N.T.S.



A **ELEVATION LANDSIDE**
SCALE: N.T.S.

GENERAL NOTES:

1. THE CONTRACTOR MAY USE OTHER HOT-ROLLED COMBINATION STEEL H-PILE PLUS SHEET PILE SECTIONS PROVIDED THE STEEL COFFERDAM WALL MEETS OR EXCEEDS THE FOLLOWING MINIMUM REQUIREMENTS:

   a. MINIMUM SECTION MODULUS: 48.4 INCHES^3 PER FOOT OF WALL
   b. MINIMUM MOMENT OF INERTIA: 428.0 INCHES^4 PER FOOT OF WALL

2. CONTRACTOR SHALL MAINTAIN OVERALL CENTERLINES AND ALIGNMENT.

3. THE CONTRACTOR SHALL NOT USE PIPE PILE WALLS.

4. CONTRACTOR SHALL SUBMIT A PILE LAYOUT PLAN FOR THE ACTUAL PILE SECTIONS APPROVED FOR USE.

5. FABRICATED CORNER SECTIONS AND NON-STANDARD CONNECTIONS MAY BE RIVETED, BOLTED, OR WELDED. FABRICATED SECTIONS SHALL CONFORM TO THE PILING MANUFACTURER'S RECOMMENDATIONS FOR FABRICATED SECTIONS.

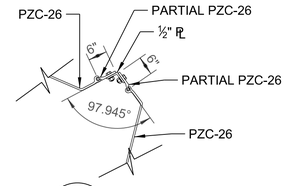
6. PILES PULLED AND RE-USED SHALL BE INSPECTED AND APPROVED BY THE GOVERNMENT.

7. REFER TO DWG NO. C-12 THROUGH C-21 FOR COFFERDAM PLANS.

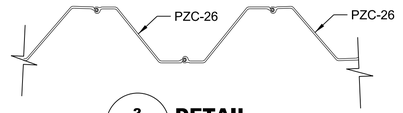
8. COFFERDAM SHALL REMAIN IN PLACE UNTIL THE EMBANKMENT IS RECONSTRUCTED TO THE DESIGN TEMPLATE AND ACCEPTED.

9. DIFFICULT DRIVING CONDITIONS DUE TO LIMESTONE, SANDSTONE, HIGHLY CEMENTED AND/OR DENSE MATERIALS MAY BE ENCOUNTERED. SEE SPECIFICATION SECTIONS 00 31 32 GEOTECHNICAL DATA REPORT AND 31 41 16 METAL SHEET PILING FOR ADDITIONAL INFORMATION.

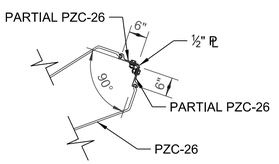
10. DRIVEN PILE COFFERDAM IS NOT WATER TIGHT.



1 S-62 **DETAIL**
SCALE: N.T.S.



2 S-62 **DETAIL**
SCALE: N.T.S.



3 S-62 **DETAIL**
SCALE: N.T.S.

US Army Corps of Engineers
Jacksonville District

No.	SYM	ZONE	DESCRIPTION
1	A6		TO ACCOMPANY AMENDMENT 0002

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

DESIGNED BY: C.B.G.
DRN BY: W.E.S.
CKD BY: J.S.F.
SUBMITTED BY: N/A
PLOT SCALE: As shown
PLOT DATE: May 11, 2016
DATE: JANUARY 2016
SOLICITATION NO.: W912EP-16-R-0010
CONTRACT NO.: N/A
FILE NUMBER: N/A
FILE NAME: 114527-HHDRCRIP3-SC562.DGN

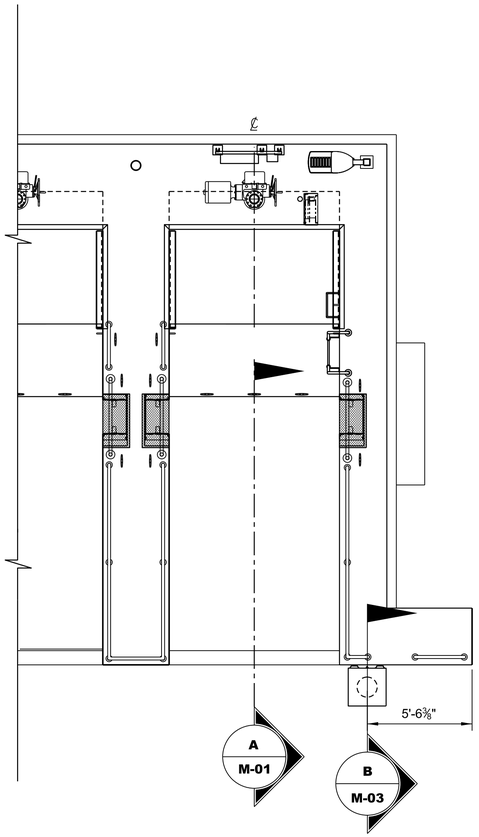
HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

S-291 (IP-3) RECONSTRUCTION

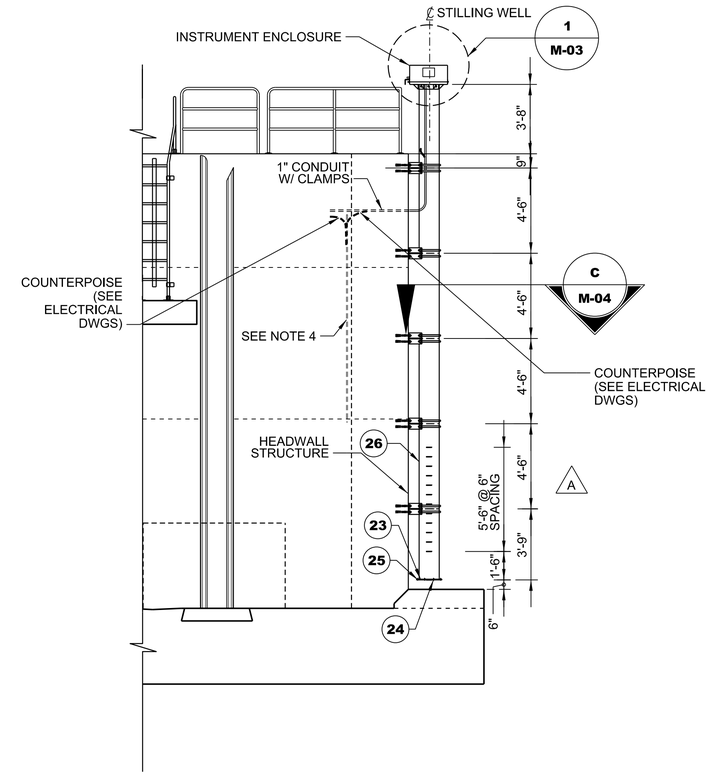
STRUCTURAL
LANDSIDE
PHASE IV STEEL COFFERDAM PLAN AND DETAILS

DRAWING NO.
S-62

pw:\\COE-SAJPWP02.JAX.saj.ds.usace.army.mil:SAJPW\Documents\C&SF\Herbert Hoover Dike Rehabilitation\03-Culvert Reconstruction\070 - Plans\IP-3\07 Structures\S-62



LAKESIDE PLAN
SCALE: A



LAKESIDE ELEVATION
A / M-01 SCALE: A

NOTES:

1. SEE DRAWINGS S-02 AND S-03 FOR LOCATION OF STILLING WELLS.
2. FOR FEATURES NOTED USING CIRCLE CALLOUTS (#), REFER TO DRAWING M-03 FOR THE SCHEDULE.
3. GROUND ALL METAL PARTS TO CONTROL BUILDING GROUNDING GRID.
4. 3/4-INCH DIA. COPPER CLAD GROUNDING ROD, 10' LONG MINIMUM. SEE ELECTRICAL SPECIFICATIONS.
5. (A) THE STILLING WELL SHALL BE INSTALLED PLUMB WITH NO MORE THAN 1/2" DEVIATION FROM VERTICAL OVER THE HEIGHT OF THE STILLING WELL.
6. ALL CONDUITS SHALL HAVE PULL STRINGS OR CONDUCTORS INSTALLED PER THE RTU DRAWINGS, OR CIRCUIT SCHEDULE ON ELECTRICAL DRAWINGS.
7. CONTRACTOR SHALL FIELD-VERIFY PIPE LENGTHS AND ELEVATIONS BEFORE CONSTRUCTION.
8. DIMENSIONS AND ELEVATIONS SHOWN SHALL BE VERIFIED BY THE CONTRACTOR WHO IS SOLELY RESPONSIBLE FOR THE PROPER INSTALLATION OF THE STILLING WELL.

GRAPHIC SCALE

"A" 24" 12" 0 2' 4' 6' 8' 10'

US Army Corps of Engineers
Jacksonville District

No.	SYM	ZONE	DESCRIPTION
2	A	C-3, D-2	REVISED TO ACCOMPANY AMENDMENT NO. 0002.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

DESIGNED BY: M.D. | DATE: MARCH 2015
DWN BY: J.D.H. | CKD BY: S.J.P. | SOLICITATION NO.: W912EP-16-R-0010
SUBMITTED BY: N/A | CONTRACT NO.: N/A
PLOT SCALE: As shown | PLOT DATE: May 04, 2016 | FILE NUMBER: N/A
FILE NAME: 114527-HHDRCRIP3-MI101.DGN

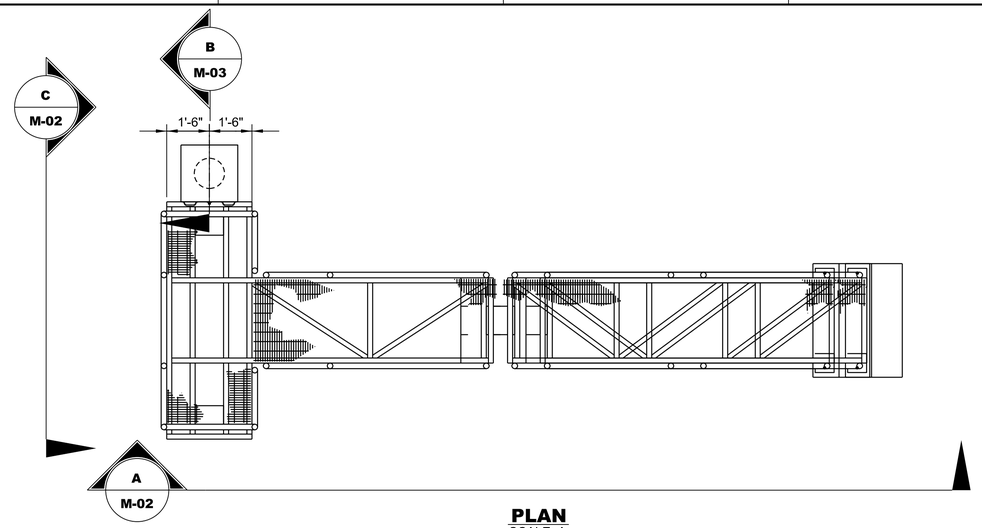
HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

S-291 (IP-3) RECONSTRUCTION

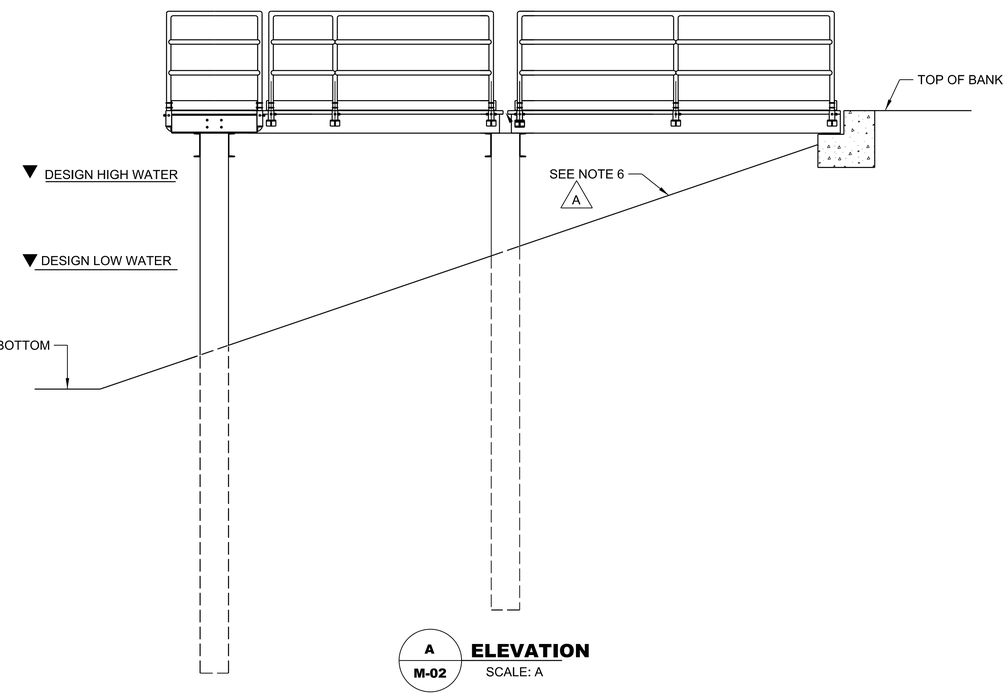
MECHANICAL

LAKESIDE STILLING WELL PLAN AND ELEVATION

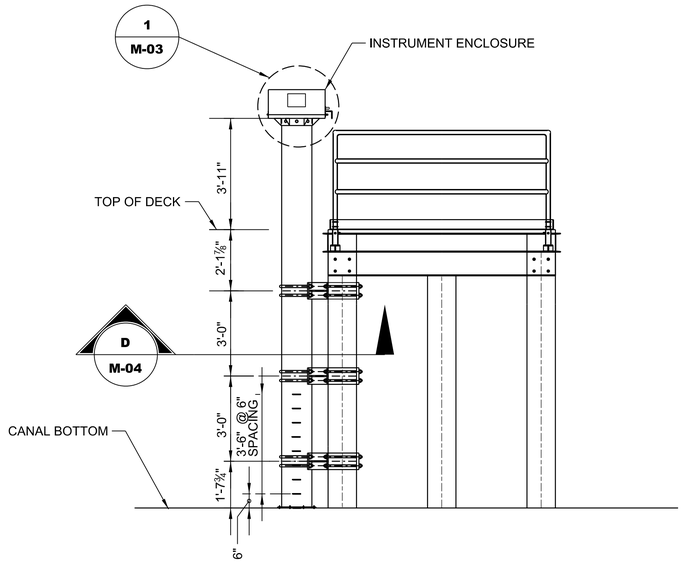
DRAWING NO.
M-01



PLAN
SCALE: A



A M-02 **ELEVATION**
SCALE: A



C M-02 **ELEVATION**
SCALE: A

WALKWAY STILLING WELL TABLE				
STRUCTURE	TOP OF BANK (FT-NAVD88)	DESIGN HIGH WATER (FT-NAVD88)	DESIGN LOW WATER (FT-NAVD88)	CANAL BOTTOM (FT-NAVD88)
IP-3	19.5 +/-	16.9	13.9	9.7

GENERAL NOTES:

1. SEE DRAWINGS S-64 AND S-65 FOR LOCATION OF THE LANDSIDE STILLING WELL.
2. THE STILLING WELL SHALL BE INSTALLED PLUMB WITH NO MORE THAN 1/2" DEVIATION FROM VERTICAL OVER THE HEIGHT OF THE STILLING WELL.
3. ALL CONDUITS SHALL HAVE PULL STRINGS OR CONDUCTORS INSTALLED PER THE RTU DRAWINGS, OR CIRCUIT SCHEDULE ON ELECTRICAL DRAWINGS.
4. CONTRACTOR SHALL FIELD-VERIFY PIPE LENGTHS AND ELEVATIONS BEFORE CONSTRUCTION.
5. (A) DIMENSIONS AND ELEVATIONS SHOWN SHALL BE VERIFIED BY THE CONTRACTOR WHO IS SOLELY RESPONSIBLE FOR THE PROPER INSTALLATION OF THE STILLING WELL.
6. FOR SLOPE, SEE CIVIL DRAWINGS.

GRAPHIC SCALE
"A" 24" 12" 0 2' 4' 6'

US Army Corps of Engineers
Jacksonville District

No.	SYM	ZONE	DESCRIPTION
2	A	C-6, D-2	REVISED TO ACCOMPANY AMENDMENT NO. 0002.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

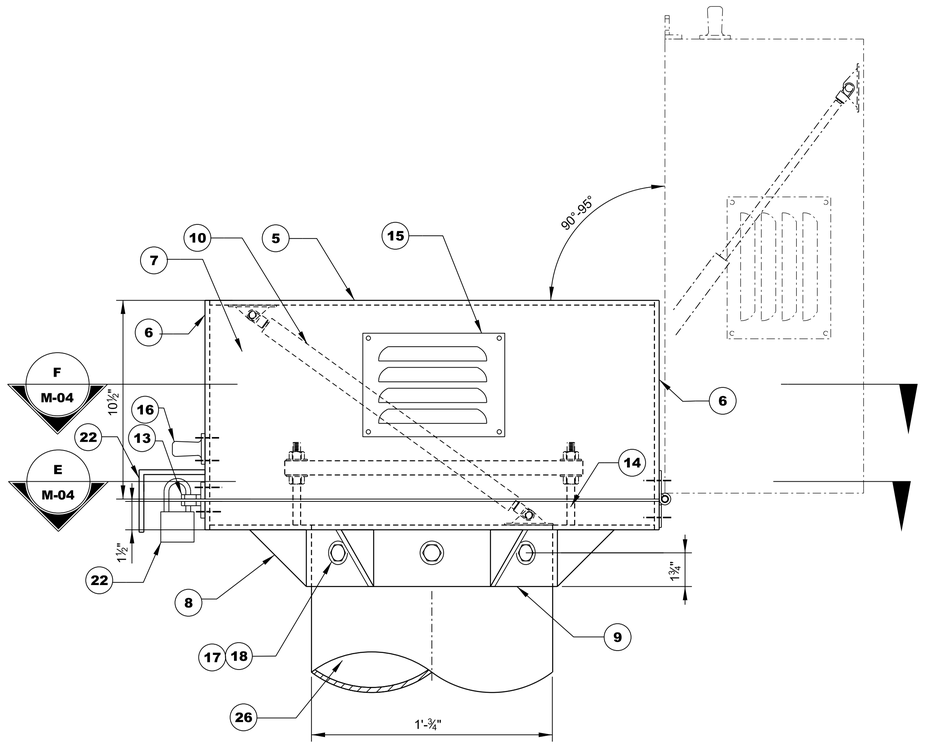
DESIGNED BY: M.D.
DRN BY: J.D.H.
CKD BY: S.J.P.
DATE: APRIL 2016
SOLICITATION NO.: W912EP-16-R-0010
SUBMITTED BY: N/A
CONTRACT NO.: N/A
PLOT SCALE: As Shown
PLOT DATE: May 04, 2016
FILE NUMBER: N/A
FILE NAME: 114527-HHDRCRIP3-MI102

HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

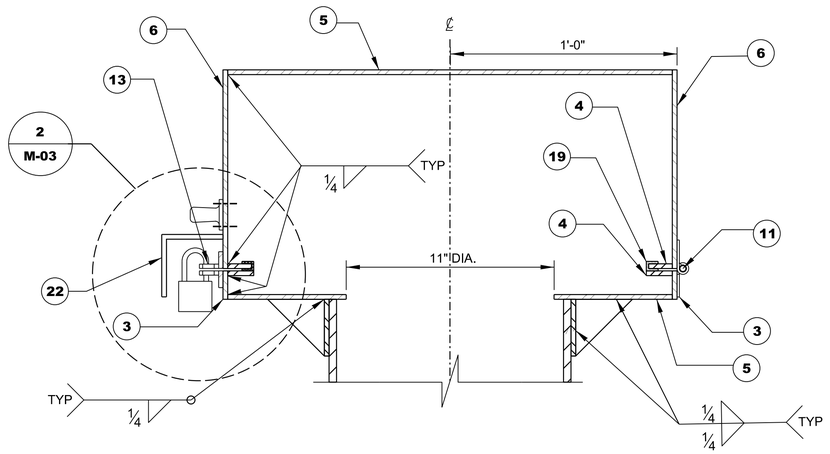
S-291 (IP-3) RECONSTRUCTION

MECHANICAL
LANDSIDE STILLING WELL
PLAN AND ELEVATIONS

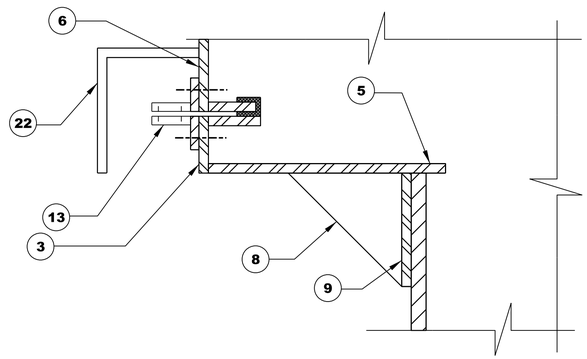
DRAWING NO.
M-02



1 **DETAIL**
M-01 M-02 SCALE: A



B **SECTION**
M-01 M-02 SCALE: A



2 **DETAIL**
M-03 SCALE: N.T.S.

NOTES:

1. ALL MACHINE SCREWS USED SHALL BE STAINLESS STEEL AND TAMPER RESISTANT TYPE, W/ STAINLESS STEEL WASHERS AND STAINLESS STEEL SELF-LOCKING HEX NUTS.
2. ALL BOLTS, NUTS, AND WASHERS SHALL BE STAINLESS STEEL.
3. PIANO HINGE SHALL BE MOUNTED TO ENCLOSURE WITH NO. 10 MACHINE SCREWS @ 4" OC IN BOTH LEAFS.
4. (A) MATERIAL QUANTITIES AND DETAILS SHOWN ARE FOR THE LAKESIDE AND LANDSIDE STILLING WELLS. AN ADDITIONAL PARTS LIST IS ON KEY NOTES ON DWG M-04.
5. FOR ELECTRONIC COMPONENTS, SEE KEY NOTES ON DWG M-04.

PARTS LIST

◯	QTY	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION
1	2	1 ½" x 24" x ¼" PLATE	5083-0 ALUMINUM
2	4	1 ⅜" x 20 ¾" x ¼" PLATE	5083-0 ALUMINUM
3	2	1 ½" x 23 ½" x ¼" PLATE	5083-0 ALUMINUM
4	4	1 ⅜" x 23 ½" x ¼" PLATE	5083-0 ALUMINUM
5	2	23 ½" x 23 ½" x ¼" PLATE	5083-0 ALUMINUM
6	2	10 ½" x 23 ½" x ¼" PLATE	5083-0 ALUMINUM
7	2	10 ½" x 24 ¼" x ¼" PLATE	5083-0 ALUMINUM
8	6	GUSSET: 3" x 3" x ¼" PLATE	5083-0 ALUMINUM
9	1	COLLAR: 3" WIDE, 12 ⅞" ID, ¼" PLATE W/ ⅝" HOLES	5083-0 ALUMINUM
10	1	GAS SPRING, OPEN ASSIST: 26 ⅜" EXT LENGTH	STAINLESS STEEL
11	1	PIANO HINGE: 3" WIDTH, ⅜" PIN Ø, ⅛" THK LEAF	STAINLESS STEEL,T316
12	1	INSTRUMENT BOARD: ¾" x 4" x 16"	STARBOARD POLYMER
13	1	PADLOCK EYE: 90° ANGLE, ¼" THICK, ⅝" EYE ID	STAINLESS STEEL
14	2	⅜-16 X 4 ½" THREADED STUD W/ 2 NUTS & 2 WASHERS	STAINLESS STEEL
15	2	LOUVER: 5 ½" x 7 ½" W/ SST INSECT SCREEN	STAINLESS STEEL
16	2	HANDLE: 1" x ⅝" GRIP, 2" PROJECTION, 6 ⅝" LG	STAINLESS STEEL
17	6	FLAT HEAD BOLT: ½"-13 x 1 ½", W/ FLAT WASHER	STAINLESS STEEL
18	6	(A) SELF-LOCKING NUT: ½"-13, W/ NYLON INSERT	STAINLESS STEEL
19	8LF	EDGE TRIM: ¼" INNER WIDTH, ⅝" LG, ½" WIDE	NEOPRENE
20	10	⅞" U-BOLT WITH NUTS AND WASHERS	STAINLESS STEEL
21	20	¾" SST WEDGE TYPE ANCHOR BOLTS	STAINLESS STEEL
22	1	COMBINATION PADLOCK AND PROTECTOR GRAINGER PART NOS.	1U172 & 4AXZ7
23	1	12" PIPE FLANGE SLIP ON WELDED	STAINLESS STEEL
24	1	⅜" BLIND FLANGE PLATE	STAINLESS STEEL
25	6	⅜" X 3" FLANGE BOLTS	STAINLESS STEEL
26	1	12 INCH WELL CASING	STAINLESS STEEL
27	12	3/4" ROD WITH THREADED ENDS WITH NUTS AND WASHERS	STAINLESS STEEL
28	3	1'-6" X 7" X 1/2" PLATE (PROVIDE BOLT HOLES AS REQUIRED)	STAINLESS STEEL

GRAPHIC SCALE
"A" 0 3" 6" 12"

US Army Corps of Engineers, Jacksonville District

No.	SYM	ZONE	DESCRIPTION
2	A	B-4, D-3	REVISED TO ACCOMPANY AMMENDMENT NO. 0002.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

DESIGNED BY: M.D.
DWN BY: J.D.H.
CKD BY: S.J.P.
SUBMITTED BY: N/A
DATE: MARCH 2015
SOLICITATION NO.: W912EP-16-R-0010
CONTRACT NO.: N/A
PLOT SCALE: As shown
PLOT DATE: May 04, 2016
FILE NUMBER: N/A
FILE NAME: 114527-HHDRCRIP3-MI503.DGN

HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

S-291 (IP-3) RECONSTRUCTION

MECHANICAL
STILLING WELL
SECTIONS AND DETAILS

DRAWING NO.
M-03

pw:\\COE-SAJPWP02.JAX.saj.ds.usace.army.mil:SAJPW\Documents\C&SF\Herbert Hoover Dike Rehabilitation\03-Culvert Reconstruction\070 - Plans\IP-3\114 Mechanical\M-03.*

ELECTRICAL SYMBOL LEGEND

(NOT ALL SYMBOLS WILL APPLY TO THIS PROJECT)

PLAN

LP-1/3/5 — HOME RUN TO PANEL "LP". CIRCUITS #1/3/5. CROSS MARKS INDICATE NUMBER OF CONDUCTORS. LONGER MARK INDICATE NEUTRAL.

EXPOSED CONDUIT

CONDUIT RUN UNDERGROUND OR IN CONCRETE

CONDUIT RUN - CHANGE IN ELEVATION

CONDUIT BENDS TOWARD OBSERVER

CONDUIT BENDS AWAY FROM OBSERVER

CONDUIT CAPPED

S — SINGLE POLE SWITCH

15A, 125V, DUPLEX RECEPTACLE, NEMA 5-15R

DISCONNECT SWITCH

M — MOTOR, HORSEPOWER AS SHOWN

TX — TRANSFORMER

H — HEATER

A — AIR TERMINAL

IR — IR MOTION DETECTOR

BALANCED MAGNETIC SWITCH

SECURITY ALARM HORN

KEYPAD

GROUND ROD, ¾" X 10'

GROUND ROD CONNECTION

GROUND CONNECTION

EXISTING POLE

NEW POLE

EXISTING POLE TO BE REMOVED

EXISTING TRANSFORMER

NEW TRANSFORMER

EXISTING GUY

NEW GUY

P — DUCTBANK FOR UNDERGROUND ELECTRICAL SERVICE TO PUMPS

F — DUCT BANK FOR UNDERGROUND FIBER OPTIC CABLE

M — DUCT BANK FOR UNDERGROUND MONITORING WELL, CAMERA, AND PUMP RECEPTACLE POWER WIRING

C — DUCT BANK FOR UNDERGROUND CONTROL WIRING

I — DUCT BANK FOR UNDERGROUND INJECTION WELL POWER WIRING

NT — NEW OVERHEAD TELEPHONE LINE

T — EXISTING OVERHEAD TELEPHONE LINE

NT — EXISTING UNDERGROUND TELEPHONE LINE

T — NEW UNDERGROUND TELEPHONE LINE

NE — NEW OVERHEAD FPL POWER LINE

E — EXISTING OVERHEAD FPL POWER LINE

ES — NEW ELECTRICAL SECONDARY UNDERGROUND

P-1 — POLE DESIGNATION NUMBER: E=EXISTING POLE P=NEW POLE

J1 — "J" JUNCTION BOX OR FITTING "H" ELECTRICAL HANDHOLE "M" MONITORING WELL PANEL

T — GROUNDING TEST WELL

SCHEMATIC DIAGRAM

NORMALLY OPEN CONTACT

NORMALLY CLOSED CONTACT

NORMALLY OPEN PUSH-BUTTON MOMENTARY CLOSE

NORMALLY CLOSED PUSH-BUTTON MOMENTARY OPEN

SINGLE POLE TOGGLE SWITCH, ("ON-OFF", ETC.)

GROUND CONNECTION

OL — (MAGNETIC) OVERLOAD RELAY CONTACTS

M — MOTOR

PRESSURE SWITCH

HEATER

N.O. LIMIT SWITCH

42 — MOTOR STARTER RELAY (42) O=OPEN, C=CLOSE

R — INDICATING LIGHT: G=GREEN, R=RED, Y=YELLOW, B=BLUE

CROSSING OF CONDUCTORS, NOT CONNECTED

CONNECTION OF CONDUCTORS, FITTING AS REQUIRED

AIR CIRCUIT BREAKER

DISCONNECT SWITCH

FUSE

FUSED DISCONNECT SWITCH

OVERLOAD COIL

MAGNETIC OVERLOAD

COMPONENTS OR DEVICES LOCATED AT MCC

COMPONENTS OR DEVICES LOCATED AT EQUIPMENT

TS — TRANSIENT SUPPRESSOR

CONTROL TRANSFORMER

SINGLE LINE DIAGRAM

50A — MOLDED CASE CIRCUIT BREAKER, 2 POLE UNLESS OTHERWISE NOTED: 50A - TRIP RATING IN AMPERE

ELECTRICAL ENCLOSURE OUTLINE

30A — AS NOTED 2 POLE UNLESS NON-FUSED DISCONNECT SWITCH, SIZE OTHERWISE NOTED

30A — FUSED DISCONNECT SWITCH, SIZE AS NOTED, 2 POLE UNLESS OTHERWISE NOTED

MTR — MOTOR HP AS SHOWN 3 PHASE UNLESS NOTED

OTS — OPEN TORQUE SWITCH

CTS — CLOSE TORQUE SWITCH

OLS — OPEN LIMIT SWITCH

CLS — CLOSE LIMIT SWITCH

GIL — GREEN INDICATING LIGHT

RIL — RED INDICATING LIGHT

YIL — YELLOW INDICATING LIGHT

BIL — BLUE INDICATING LIGHT

MC O — MAGNETIC CONTACTOR, OPEN

MC C — MAGNETIC CONTACTOR, CLOSE

MT WV — MANUAL TRANSFER DEVICE, WATER VALVE

A — AMMETER

V — VOLTMETER

W — WATTMETER

F — FREQUENCY METER

DM — DIGITAL METER

TVSS — TRANSIENT VOLTAGE SURGE SUPPRESSOR AND ARRESTER

PUSH BUTTONS WITH INDICATOR LIGHTS

TRANSFORMER, SIZE AS SHOWN

SAFETY ON THIS JOB DEPENDS ON YOU

US Army Corps of Engineers, Jacksonville District

No.	SYM	ZONE	DESCRIPTION
1	1	D-2	REVISED TO ACCOMPANY AMENDMENT NO. 0002.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

DESIGNED BY: V.L.
DWN BY: J.D.H.
CKD BY: S.J.P.
SUBMITTED BY: M.A.
DATE: OCTOBER 2015
SOLICITATION NO.: W912EP-16-R-0010
CONTRACT NO.: N/A
PLOT SCALE: As shown
PLOT DATE: May 10, 2016
FILE NUMBER: N/A
FILE NAME: 114527-HHDRCRIP3-E-001.DGN

HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

S-291 (IP-3) RECONSTRUCTION

ELECTRICAL

SYMBOL LEGEND

DRAWING NO.

E-01

pw:\\COE-SAJPWP02.JAX.saj.ds.usace.army.mil:SAJPW\Documents\C&SF\Herbert Hoover Dike Rehabilitation\03-Culvert Reconstruction\070 - Plans\IP-3\15 Electrical\E-01**

PROJECT ABBREVIATIONS

A	AMPERES
AF	AMP FRAME
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CURRENT
AM	AMMETER
AOL	ANNUNCIATOR ON LIGHT
AS	AMMETER SWITCH
AT	ANNUNCIATOR TEST, AMP TRIP
BC	BARE COPPER WIRE TYPE BC1
BK	BLACK
BKR	BREAKER
BL	BLUE
BMS	BALANCED MAGNETIC SWITCH
BMWS	BISTATIC MICROWAVE SENSOR
BN	BROWN
C	CLOSE, CONDUIT
CDB	CONCRETE DUCT BANK
CGB	COMMUNICATIONS GROUND BAR
CP	CONTROL PANEL
CR	CONTROL RELAY
CS	CIRCUIT BREAKER CONTROL SWITCH
CT	CURRENT TRANSFORMER
CTB	CURRENT TEST BLOCK
DC	DIRECT CURRENT
DPM	DIGITAL POWER MONITOR
DS	DISCONNECT SWITCH
E	EAST
EBC	ENGINE BATTERY CHARGER
EL	ELEVATION
ELEC	ELECTRICAL
EM	ELECTRIC MOTOR
EW	EXTRACTION WELL
EWH	ELECTRIC WATER HEATER
EXT	EXTERIOR
FLR	FLOOR
FPL	FLORIDA POWER AND LIGHT
G,GN	GREEN, GROUND
GB	GROUND BAR
GFI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
HP	HORSEPOWER
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HZ	HERTZ
I&C	INSTRUMENTATION AND CONTROLS
IRH	INFRARED HEATER
IW	INJECTION WELL
JB	JUNCTION BOX
JWH	JACKET WATER HEATER
KVA	KILOVOLT AMPERES
KVAR	KILOVAR
KVH	KILOVARHOUR
KW	KILOWATTS
KWH	KILOWATTHOUR
LA	LIGHTNING ARRESTOR
LOR	LOCAL-OFF-REMOTE, LOCKOUT RELAY
LTS	LIGHTS
LV	LOW VOLTAGE (600V OR LESS)

MBP	MANUAL BYPASS
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MAIN CONTROL PANEL
MECH	MECHANICAL
MOD	MOTOR OPERATED DAMPER
MOV	MOTOR OPERATED VALVE
MS	MOTOR STARTER
MW	MONITORING WELL
N	NORTH
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
O	ORANGE
OAS	OFF-AUTO SWITCH
OHE	OVERHEAD UTILITY
OL	OVERLOAD
OPER	OPERATING
1 PH	SINGLE PHASE
3 PH	THREE PHASE
P	POLE
PLC	PROGRAMMABLE LOGIC CONTROLLER
P/S	POWER SUPPLY
PF	POWER FACTOR
PFC	POWER FACTOR CAPACITOR
PT	POTENTIAL TRANSFORMER
PTT	PUSH TO TEST
PU	PICK-UP
R	RACEWAY, RED
REC	RECEPTACLE
REF	REFRIGERATOR
RTM	RUNTIME METER
RGS	RIGID GALVANIZED STEEL
S	SOUTH
SCC	STATION CONTROL PANEL
SLC	STRUCTURE LOCAL CONTROL
SP	SPARE
SST	SOLID-STATE TRIP
ST	SHUNT TRIP
SW	SWITCH
T	TRANSFORMER
TP	TELEPHONE DISTRIBUTION PANEL
TS	TEMPERATURE SWITCH
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
UGE	UNDERGROUND UTILITY
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTS
VAC	AC VOLTS
VDC	DC VOLTS
VM	VOLTMETER
VR	VIBRATION RELAY
VRS	VOLTAGE REGULATOR AUTO-OFF-MANUAL SWITCH
VS	VOLTMETER PHASE SELECTING SWITCH
W	WHITE, WIRE, WEST
WHD	KILOWATT HOUR METER WITH DEMAND REGISTER
WM	WATTMETER
WP	WEATHERPROOF
XFMR	TRANSFORMER
Y	YELLOW

GENERAL NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR.
2. UTILITY WORK SUCH AS POWER LINE SHALL BE COORDINATED WITH THE CONTRACTING OFFICER'S REPRESENTATIVE AND UTILITY COMPANY.

   GLADES ELECTRIC COOPERATIVE, INC.
   P.O. BOX 519
   MOORE HAVEN , FL 33471-0519
   MARK GOODWIN
   TELEPHONE: 1-800-226-4024, EXT. 6216
3. (A) CONTRACTOR SHALL BE RESPONSIBLE FOR ANY TEMPORARY UTILITY REQUIRED DURING THE CONTRACT AT NO COST TO GOVERNMENT.
4. ALL WORK SHALL BE DONE BY CONTRACTOR UNLESS OTHERWISE NOTED.
5. ALL CONSTRUCTION WORK SHALL BE DONE IN A THOROUGH AND WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) AND NATIONAL ELECTRICAL SAFETY CODE (NESC) SHALL BE FOLLOWED EXCEPT WHERE LOCAL REGULATIONS ARE MORE STRINGENT IN WHICH CASE THE LOCAL REGULATIONS SHALL GOVERN.
6. WIRING DIAGRAM, ONE-LINE DIAGRAM, CONDUIT AND CIRCUIT SCHEDULES, AND ELECTRICAL PLANS SHALL BE WORKED TOGETHER. CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE LAYOUTS AND INSTALLATION OF EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S DATA FOR PROPER FUNCTIONING OF ALL SYSTEMS.
7. COORDINATE EXPOSED CONDUIT INSTALLED ON STRUCTURE ACCORDINGLY AND MAINTAIN SAFE OPERATION REQUIREMENTS BY NEC AND NESC. NO CONDUIT SHALL BE INSTALLED ON HANDRAIL, LADDER, OR SIMILAR FEATURES UNLESS OTHERWISE NOTED. CONDUIT SHALL BE ROUTED INSIDE BUILDING IF POSSIBLE. CONDUIT INSTALLED IN FINISHED INTERIOR AREAS SHALL BE CONCEALED FROM VIEW.
8. (A) ALL EXPOSED CONDUIT SHALL BE PVC COATED RGS. ALL BURIED OR EMBEDDED CONDUIT SHALL BE PVC SCHEDULE 80. USE PVC SCHEDULE 80 ENCASED IN CONCRETE FOR PRIMARY POWER LINE AND WHERE BURIED AND SUBJECT TO VEHICULAR TRAFFIC. PROVIDE FLEXIBLE CONDUIT TERMINATIONS TO HOIST ASSEMBLY.
9. IN THE AREAS WHERE CABLES CROSS GAS, SEWAGE AND OTHER UTILITY FACILITIES, SERVICE CABLE SHALL BE PROTECTED BY PVC SCH 80 PLASTIC CONDUIT AND KEPT AT A MINIMUM SEPARATION OF 13 INCHES FROM THE OTHER UTILITY LINES.
10. INSTRUMENTATION WIRING SHALL BE SEPARATED FROM POWER WIRING. MINIMUM DISTANCE ALLOWED BETWEEN POWER WIRING CONDUIT AND INSTRUMENTATION WIRING CONDUIT INSTALLED PARALLEL SHALL BE 12 INCHES. POWER WIRING CONDUIT SHALL ONLY CROSS INSTRUMENTATION WIRING CONDUIT PERPENDICULARLY AT RIGHT ANGLES WITH 6 INCHES SEPARATION.
11. PROVIDE CONDUIT SEALING WITH PUTTY MATERIAL AT ALL CONDUIT PENETRATIONS THROUGH WALLS, ENCLOSURES OR PANELS.
12. ALL CONDUCTORS SHALL BE COPPER WITH XHHW2 OR EPR, 10 AWG OR LARGER UNLESS OTHERWISE SPECIFIED.
13. ALL CONDUCTORS IN SIZE OF #12 AWG AND LARGER SHALL BE COLOR CODED INSULATION.
14. ALL CIRCUIT BREAKERS SHALL BE ABLE TO ACCEPT LOCKOUT DEVICES.
15. MAXIMUM RESISTANCE-TO-GROUND OF GROUNDING SYSTEM SHALL NOT EXCEED FIVE OHMS UNDER DRY CONDITIONS. SEE SPECIFICATIONS.
16. PROVIDE RAINPROOF CONCRETE PULL BOX, AS REQUIRED, WITH COVER, NEMA 4X. PULL BOX SHALL BE FLUSH WITH SIDEWALKS OR CURBS OR PLACED ON GRADED GROUND LEVEL AND SIZED IN ACCORDANCE WITH NEC AND NESC OR FPL REQUIREMENTS.
17. WHERE CONCENTRIC RING KNOCKOUTS ARE BEING UTILIZED, PROVIDE BONDING JUMPERS FROM BUSHING TO ENCLOSURE.
18. CONTRACTOR SHALL PERFORM LOCKOUT TAGOUT DURING ELECTRICAL WORK.
19. CONTRACTOR SHALL PROVIDE PROPER GROUNDING TO ALL EXTERIOR METAL PARTS INCLUDING METAL FRAMES (SUCH AS DOOR, WINDOW, EXHAUST FAN, AND ETC.) AND ALL THE RAILINGS AT THE STRUCTURE.
20. ALL MOUNTING HEIGHTS ARE APPROXIMATELY TO THE BOTTOM OF FIXTURE. CONTRACTOR SHALL MAKE ADJUSTMENTS AS NECESSARY TO ACCOMMODATE THE STRUCTURE.
21. LIGHT POLE, CAMERA POLE, AND ANTENNA POLE SHALL MEET WIND LOAD CRITERIA. SEE SPECIFICATIONS.
22. ALL ELECTRICAL AND CONTROL ENCLOSURES OR PANELS LOCATED OUTSIDE THE STRUCTURE SHALL BE ABLE TO ACCEPT PADLOCK. PROVIDE SAME KEY FOR ALL PADLOCKS. SEE SPECIFICATIONS.
23. EXTERIOR ENCLOSURES OR PANELS SHALL BE NEMA 4X AND STAINLESS STEEL.
24. PROVIDE PROTECTIVE BOLLARDS FOR UTILITY HANDHOLE AS REQUIRED BY LOCAL UTILITY.

LIGHTING FIXTURE SCHEDULE

TYPE	LAMP	VOLTAGE	DESCRIPTION	MOUNTING STYLE AND HEIGHT
(A)	LED	120V	59LED 59 WATTS, 4100K CRI 65, 55" IMPACT-RESISTANT POLYCARBONATE HOUSING, ENCLOSED AND GASKETED, 20-GAUGE STEEL CHANNEL AND COVER, CLEAR IMPACT-RESISTANT POLYCARBONATE LENS, ASYMMETRIC (ASY) DIST.	SURFACE MOUNTED TO CONTROL BUILDING CEILING
(C)	LED	120V	63LED 74 WATTS, 4100K CRI 65, ALUMINUM HOUSING, DARK BRONZE FINNISH, ENCLOSED AND GASKETED, TYPE III DIST, IMPACT-RESISTANT AND TEMPERED GLASS LENS WITH VANDAL GUARD, PHOTOCELL	CONTROL BUILDING EXTERIOR WALL MOUNTED 7'-6" AFF
(D)	LED	120V	63LED 108 WATTS, 4100K CRI 65, ALUMINUM HOUSING, DARK BRONZE FINNISH, ENCLOSED AND GASKETED, TYPE III DIST, IMPACT-RESISTANT AND TEMPERED GLASS LENS WITH VANDAL GUARD, INTEGRAL ARM, PHOTOCELL. 10' POLE, 4" ROUND ALUMINUM SHAFT, HINGED BASE WITH HANDHOLE, DARK BRONZE FINISH	POLE MOUNTED 10' HEIGHT AT LAKESIDE AND LANDSIDE OPERATING PLATFORM

US Army Corps of Engineers, Jacksonville District

No.	SYM	ZONE	DESCRIPTION
2	A	C-4, D-4	REVISED TO ACCOMPANY AMENDMENT NO. 0002.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

DESIGNED BY: V.L.
DRWN BY: J.D.H.
SUBMITTED BY: N/A
PLOT SCALE: AS SHOWN
PLOT DATE: May 10, 2016
DATE: OCTOBER 2015
CHD BY: S.J.P.
SOLICITATION NO.: W912EP-16-R-0010
CONTRACT NO.: N/A
FILE NUMBER: N/A
FILE NAME: 114527-HHDRCRIP3-E-02.DGN

HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

S-291 (IP-3) RECONSTRUCTION

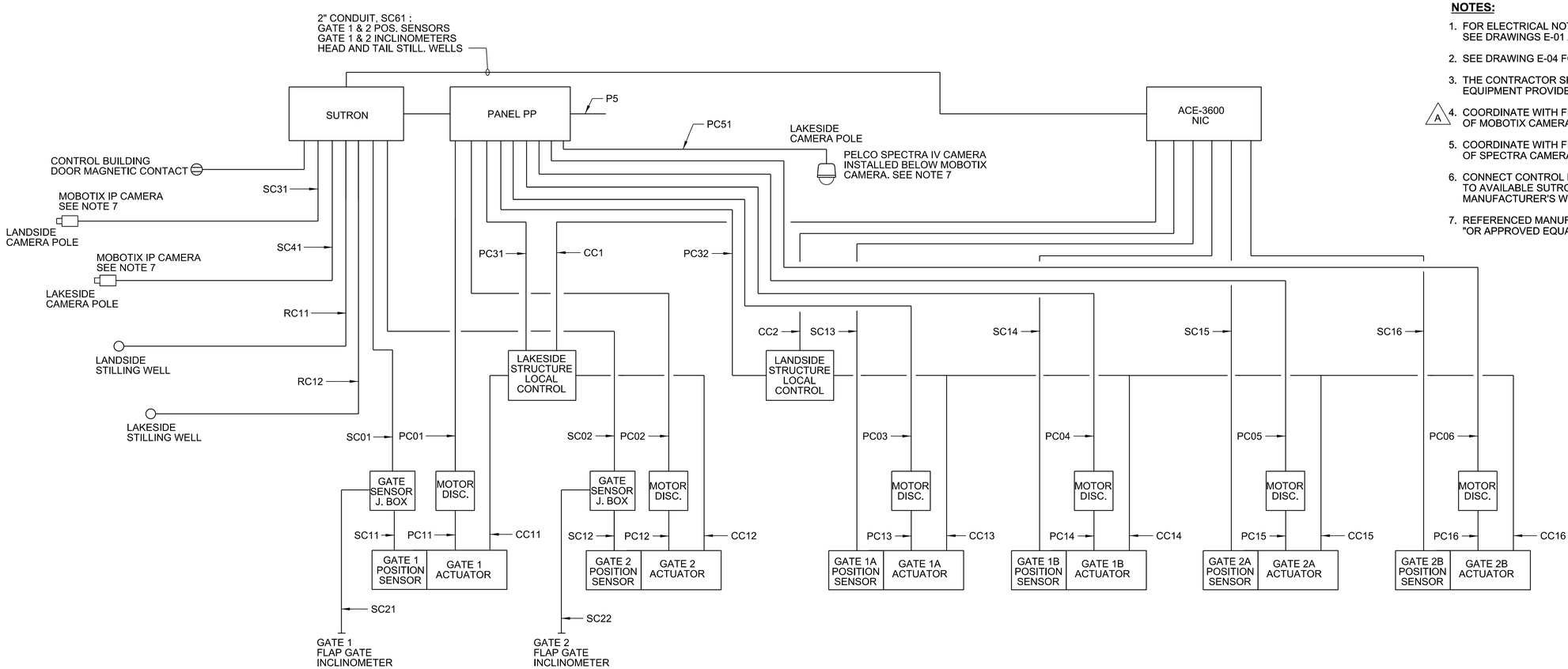
ELECTRICAL

ABREVIATIONS AND GENERAL NOTES

DRAWING NO.

E-02

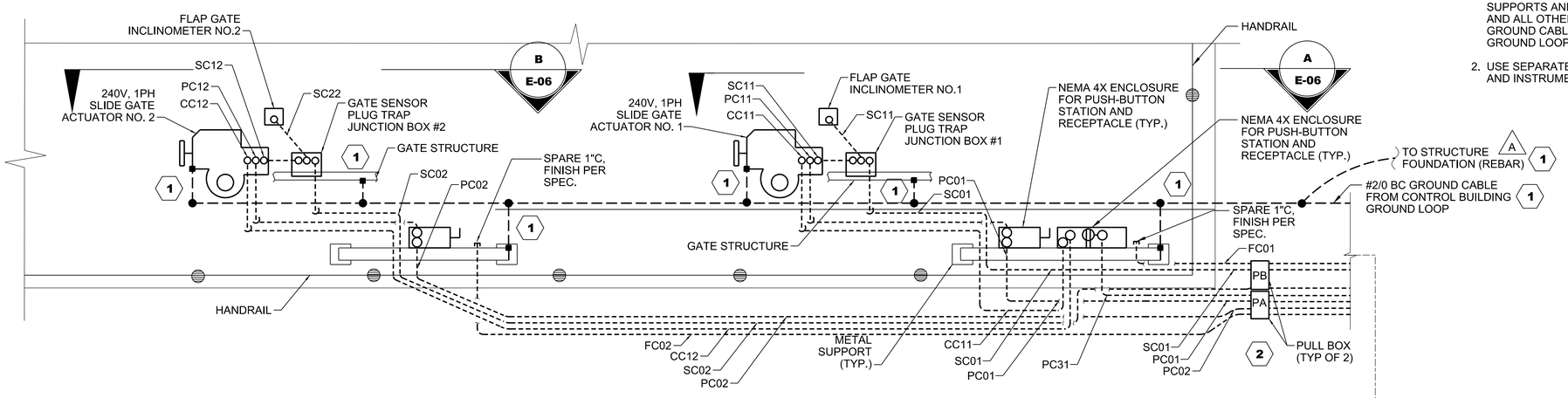
pw:\\COE-SAJPW\P02\JAX.saj.ds.usace.army.mil:SAJPW\Documents\C&SF\Herbert Hoover Dike Rehabilitation\03-Culvert Rehabilitation\S-292(IP-1), S-290(IP-2), S-291(IP-3) Culvert Reconstruction\070 - Plans\IP-3\15 Electrical\E-02 *



CONDUIT BLOCK DIAGRAM
SCALE: N.T.S.

NOTES:

1. FOR ELECTRICAL NOTES, LEGEND, AND ABBREVIATIONS, SEE DRAWINGS E-01 AND E-02.
2. SEE DRAWING E-04 FOR NOTES AND CONTINUATION.
3. THE CONTRACTOR SHALL COORDINATE DESIGN WITH EQUIPMENT PROVIDED.
4. (A) COORDINATE WITH FIELD OFFICE FOR PROPER LOCATIONS OF MOBOTIX CAMERAS. SEE DRAWING T-07.
5. COORDINATE WITH FIELD OFFICE FOR PROPER LOCATION OF SPECTRA CAMERA. SEE DRAWING T-07.
6. CONNECT CONTROL BUILDING DOOR MAGNETIC CONTACT TO AVAILABLE SUTRON XPERT ANALOG I/O MODULE PER MANUFACTURER'S WIRING DIAGRAM.
7. REFERENCED MANUFACTURERS SHALL BE CONSIDERED "OR APPROVED EQUAL."



LAKESIDE CULVERT GATE ELECTRICAL PLAN
SCALE: N.T.S.

CONTINUED ON DWG E-04

KEY NOTES:

1. BOND TO STRUCTURAL FOUNDATION (REBARS), METAL SUPPORTS AND FRAMES, GATE EQUIPMENT, HANDRAILS, AND ALL OTHER EXPOSED METALS TO #2/0 AWG BC GROUND CABLE THAT CONNECTS TO CONTROL BUILDING GROUND LOOP. SEE GROUNDING DETAILS ON DWG E-10.
2. USE SEPARATE PULL BOXES FOR POWER WIRING CONDUITS AND INSTRUMENTATION WIRING CONDUITS.

US Army Corps of Engineers, Jacksonville District

No.	SYM	ZONE	DESCRIPTION
2	A	A-2, D-2	REVISED TO ACCOMANY AMMENDMENT NO. 0002.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

DESIGNED BY: V.L.
DWN BY: J.D.H.
CKD BY: J.H.H.
SUBMITTED BY: N/A
DATE: OCTOBER 2015
SOLICITATION NO.: W912EP-16-R-0010
CONTRACT NO.: N/A
PLOT SCALE: 1
PLOT DATE: May 10, 2016
AS SHOWN
FILE NUMBER: N/A
FILE NAME: 114527-HHDRCRIP3-EP605.DGN

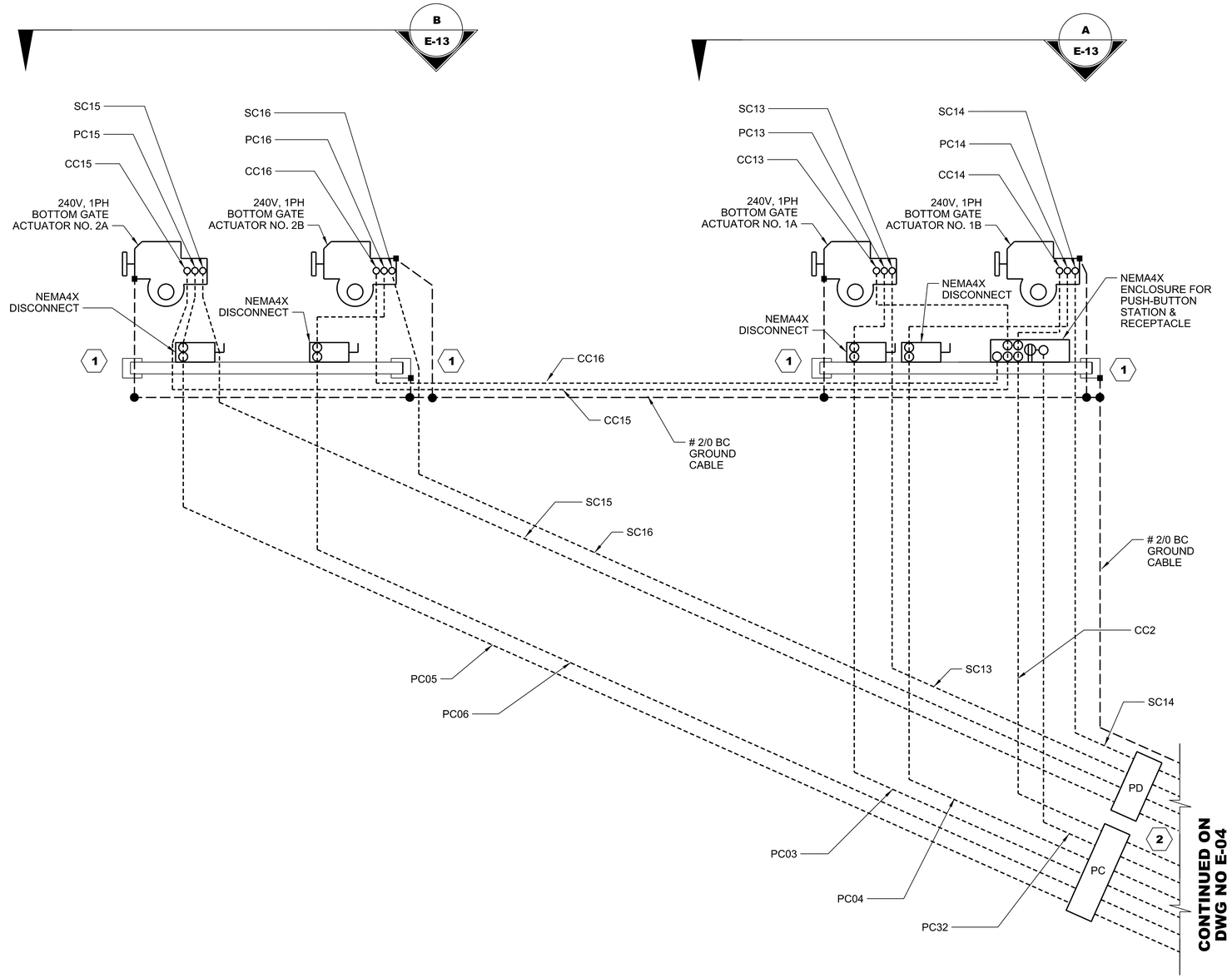
HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

S-291 (IP-3) RECONSTRUCTION

ELECTRICAL
STRUCTURAL ELECTRICAL PLAN
SHEET 2

DRAWING NO.
E-05

pw:\\COE-SAJPWP02JAX.saj.ds.usace.army.mil:SAJPW\Documents\C&SF\Herbert Hoover Dike Rehabilitation\03-Culvert Rehabilitation\S-292(IP-1), S-290(IP-2), S-291(IP-3) Culvert Reconstruction\070 - Plans\IP-3115 Electrical\E-05 *



LANDSIDE CULVERT GATE ELECTRICAL PLAN

SCALE: N.T.S.

NOTES:

1. FOR ELECTRICAL NOTES, LEGEND, AND ABBREVIATIONS, SEE DRAWINGS E-01 AND E-02.
2. SEE DRAWING E-04 FOR NOTES AND CONTINUATION.
3. (A) THE CONTRACTOR SHALL COORDINATE DESIGN WITH EQUIPMENT PROVIDED.
4. COORDINATE WITH FIELD OFFICE FOR PROPER LOCATIONS OF MOBOTIX CAMERAS. SEE DRAWING T-07.
5. COORDINATE WITH FIELD OFFICE FOR PROPER LOCATION OF SPECTRA CAMERA. SEE DRAWING T-07.
6. CONNECT CONTROL BUILDING DOOR MAGNETIC CONTACT TO AVAILABLE SUTRON XPERT ANALOG I/O MODULE PER MANUFACTURER'S WIRING DIAGRAM.
7. REFERENCED MANUFACTURERS SHALL BE CONSIDERED "OR APPROVED EQUAL."

KEY NOTES:

1. BOND TO STRUCTURAL FOUNDATION (REBARS), METAL SUPPORTS AND FRAMES, GATE EQUIPMENT, HANDRAILS, AND ALL OTHER EXPOSED METALS TO #2/0 AWG BC GROUND CABLE THAT CONNECTS TO CONTROL BUILDING GROUND LOOP. SEE GROUNDING DETAILS ON DRAWING E-10.
2. PROVIDE SEPARATE PULL BOXES FOR POWER WIRING AND INSTRUMENTATION WIRING.

US Army Corps of Engineers
Jacksonville District

No.	SYM	ZONE	DESCRIPTION
1	A	D-3	REVISED TO ACCOMPANY AMENDMENT NO. 0002.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

DESIGNED BY: V.L.
DRWN BY: J.D.H.
SUBMITTED BY: N/A
PLOT SCALE: As Shown
FILE NAME: 114527-HHDRCRIP3-EP612.DGN
DATE: APRIL 2016
CKD BY: J.H.H.
SOLICITATION NO.: W912EP-16-R-0010
CONTRACT NO.: N/A
PLOT DATE: May 10, 2016
FILE NUMBER: N/A

HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

S-291 (IP-3) RECONSTRUCTION

ELECTRICAL

LANDSIDE CULVERT GATE ELECTRICAL PLAN

DRAWING NO.
E-12

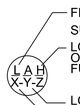
pw:\\COE-SAJPWP02JAX.saj.ds.usace.army.mil:SAJPW\Documents\C&SF\Herbert Hoover Dike Rehabilitation\03-Culvert Rehabilitation\S-292(IP-1), S-290(IP-2), S-291(IP-3) Culvert Reconstruction\070 - Plans\IP-3\15 Electrical\E-12 *

INSTRUMENT, SYSTEMS, AND AUTOMATION SOCIETY TABLE

LETTER	FIRST LETTER		A SUCCEEDING LETTERS		
	PROCESS OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS (*)		ALARM		USERS CHOICE (*)
B	BURNER FLAME		USERS CHOICE (*)	USERS CHOICE (*)	
C	CONDUCTIVITY			CONTROL	CLOSE
D	DENSITY (S.G.)	DIFFERENTIAL			
E	VOLTAGE		PRIMARY ELEMENT		
F	FLOW RATE	RATIO			
G	GAUGE		GLASS	GATE	
H	HAND (MANUAL)				HIGH
I	CURRENT		INDICATE		
J	POWER	SCAN			
K	TIME OR SCHEDULE			CONTROL STATION	
L	LEVEL OR LIMIT		LIGHT (PILOT)		LOW
M	MOTION				MIDDLE
N	TORQUE		USERS CHOICE (*)	USERS CHOICE (*)	NORMAL
O	LOOP VEH. DETECTOR		OFFICE		OPEN
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)		
Q	QUANTITY OR EVENT		INTEGRATE		
R	RATIO		RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE (*)		MULTIFUNCTION (*)		
V	VISCOSITY			VALVE	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED (*)		UNCLASSIFIED (*)	UNCLASSIFIED (*)	UNCLASSIFIED (*)
Y	PHOTO CELL		LIGHT SOURCE	RELAY OR COMPUTE (*)	
Z	POSITION			DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

(*) WHEN USED, EXPLANATION IS SHOWN ADJACENT TO INSTRUMENT SYMBOL

INSTRUMENT IDENTIFICATION



- FIRST LETTER(S)
- SUCCEEDING LETTERS
- LOOP NUMBER MODIFIER (USED WITH TWO OR MORE INSTRUMENTS HAVING THE SAME FUNCTIONAL LOOP IDENTIFICATION)
- LOOP NUMBER
- UNIT PROCESS NUMBER


FIELD MOUNTED INSTRUMENT


REAR OF PANEL MOUNTED INSTRUMENT


FRONT OF PANEL MOUNTED INSTRUMENT


MOTOR STATUS/CONTROL WITH INTERLOCKS (OFTEN LOCATED IN MCC)


PLC (PROGRAMMABLE LOGIC CONTROLLER)

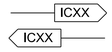

TELEMETRY EQUIPMENT


ALARM ANNUNCIATOR OR STATUS INDICATION LIGHT

TIMER

INSTRUMENT LINE SYMBOLS

- PRIMARY PROCESS FLOW
- FUTURE PRIMARY PROCESS FLOW
- SECONDARY PROCESS FLOW, CONNECTION TO PROCESS FLOW, MECHANICAL LINK OR INSTRUMENT SUPPLY
- ELECTRICAL SIGNAL (DISCRETE)
- ELECTRICAL SIGNAL (ANALOG)
- FIBER OPTIC DATA HIGHWAY
- PROCESS OR SIGNAL CONTINUED SOMEWHERE ELSE (X=1,2,3)



VALVES AND GATES

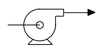
- BUTTERFLY
- GATE
- SWING CHECK
- BALL
- GLOBE
- DIAPHRAGM
- PLUG
- 3-WAY GLOBE
- CULVERT GATE
- PRESSURE SUSTAINING VALVE
- AIR RELEASE VALVE

NOTES:

1. THE INSTRUMENT AND CONTROL SUPPLIER SHALL HAVE A U.L. APPROVED PANEL SHOP.
2. ALL CONTROL PANELS SHALL BE FURNISHED AND INSTALLED WITH A 1P-15A CIRCUIT BREAKER.
3. COMPONENTS AND PANELS SHOWN WITH A DOUBLE ASTERISK (**) ARE TO BE PROVIDED AS PART OF A PACKAGED SYSTEM, MECHANICAL SYSTEM OR PROVIDED AS PART OF THE ELECTRICAL SYSTEM.
4. COMPONENTS AND PANELS SHOWN WITH A DIAMOND (◆) ARE TO BE PROVIDED UNDER SECTION "INSTRUMENTATION, CONTROLS AND MONITORING SYSTEM - GENERAL PROVISIONS"
5. NOT ALL SYMBOLS, LEGEND INFORMATION, ABBREVIATIONS, AND NOTES SHALL BE USED FOR THIS PROJECT.

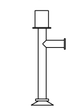
INSTRUMENTATION LEGEND

PUMPS AND COMPRESSORS


CENTRIFUGAL PUMP


CENTRIFUGAL PUMP (WET PIT)


AIR COMPRESSOR


VERTICAL TURBINE PUMP


METERING PUMP


PROGRESSING CAVITY PUMP


SUMP PUMP

ACTUATOR OR OPERATORS

SOLENOID VALVE

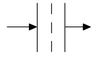
MOTOR

HYDRAULIC

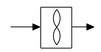
PNEUMATIC

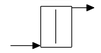
PRIMARY ELEMENTS


WEIR


ORIFICE PLATE


VENTURI


PROPELLER METER


ROTAMETER


ELECTROMAGNETIC FLOWMETER


VORTEX METER


LEVEL (BUBBLE TUBE)


SUSPENDED SOLIDS


LEVEL (FLOAT)

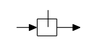

LEVEL (ULTRASONIC)


ULTRASONIC FLOWMETER (CLAMP-ON)

RF ADMITTANCE


PARSHALL FLUME


DENSITY METER (X: N = NUCLEAR O = OPTICAL U = ULTRASONIC)


PITOT-STATIC

INSTRUMENT ABBREVIATIONS

ACC	ACCELERATION
AT	AUTO-TEST
BFP	BELT FILTER PRESS
CL2	CHLORINE
CLW	CLEARWELL
COM	COMMON
COND	CONDUCTIVITY
CP	CONTROL PANEL
DI, AI	DIGITAL INPUT, ANALOG INPUT
DO, AO	DIGITAL OUTPUT, ANALOG OUTPUT
D.O.	DISSOLVED OXYGEN
DR	DISTANCE RELAY
EFFL	EFFLUENT
EP	ELECTRICAL PANEL
ES	EMERGENCY STOP
ETM	ELAPSED TIME METER
FD	CHEMICAL FEEDER
FIL	FILTER
FIS	FLOW INDICATING SWITCH
FOC	FIBER OPTIC CABLE
FRS	FORWARD-REVERSE-STOP
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
HLO	HIGH-LOW-OFF
HLOR	HIGH-LOW-OFF-REMOTE
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
HOTC	HAND-OFF-TIMER-COMPUTER
H/L	HIGH LOW
HSP	HIGH SERVICE PUMP
IND	INDICATION
INFL	INFLUENT
JP	JOCKEY PUMP
LOR	LOCAL-REMOTE-OFF
LOS	LOCK-OUT-STOP
LPU	LINE PROTECTION UNIT
LR	LOCAL-REMOTE
MCC	MOTOR CONTROL CENTER
MCP	MAIN CONTROL PANEL
ME	MISCELLANEOUS EQUIPMENT
M.G.	MILLION GALLON
MOA	MANUAL-OFF-AUTO
MOV	MOTOR OPERATED VALVE
OCA	OPEN-CLOSE-AUTO
OC	OPEN-CLOSE
OO	ON-OFF
ORP	OXIDATION REDUCTION POTENTIAL
OSC	OPEN-CLOSE-STOP
OSCR	OPEN-CLOSE-STOP-REMOTE
PAFM	POWER APPLIED FOR MOTION
PRES	PRESSURE
PH	HYDROGEN ION CONCENTRATION
RES	RESTORE
REF	REFERENCE
RF	RF (ADMITTANCE) LEVEL MONITOR
RIP	REMOTE I/O PANEL
RLS	RAISE LOWER STOP
RSP	REMOTE SET POINT
SA	SURGE ARRESTER
SCC	STATION CONTROL CENTER
SEC	SECONDARY
SF	SONIC FLOWMETER
SP	SETPOINT
SSL	SPEED SWITCH LOW
SS	STOP/START
SST	STAINLESS STEEL
STOR	STORAGE
SUS	SUSPENDED SOLIDS
SSRVS	SOLID STATE REDUCED VOLTAGE STARTER
TD	THERMAL DISPERSION
TP	TRANSFER PUMP
VFD	VARIABLE FREQUENCY DRIVE

US Army Corps of Engineers, Jacksonville District

No.	SYM	ZONE	DESCRIPTION
1	A-1	D-5	REVISED TO ACCOMPANY AMMENDMENT NO. 0002.

DESIGNED BY: V.L.
DWN BY: J.D.H.
CKD BY: J.H.H.
SUBMITTED BY: N/A
DATE: OCTOBER 2015
SOLICITATION NO.: W912EP16-R-0010
CONTRACT NO.: N/A
PLOT SCALE: As shown
PLOT DATE: May 09, 2016
FILE NUMBER: N/A
FILE NAME: 114527-HHDRCRIP3-TS001.DGN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

S-291 (IP-3) RECONSTRUCTION

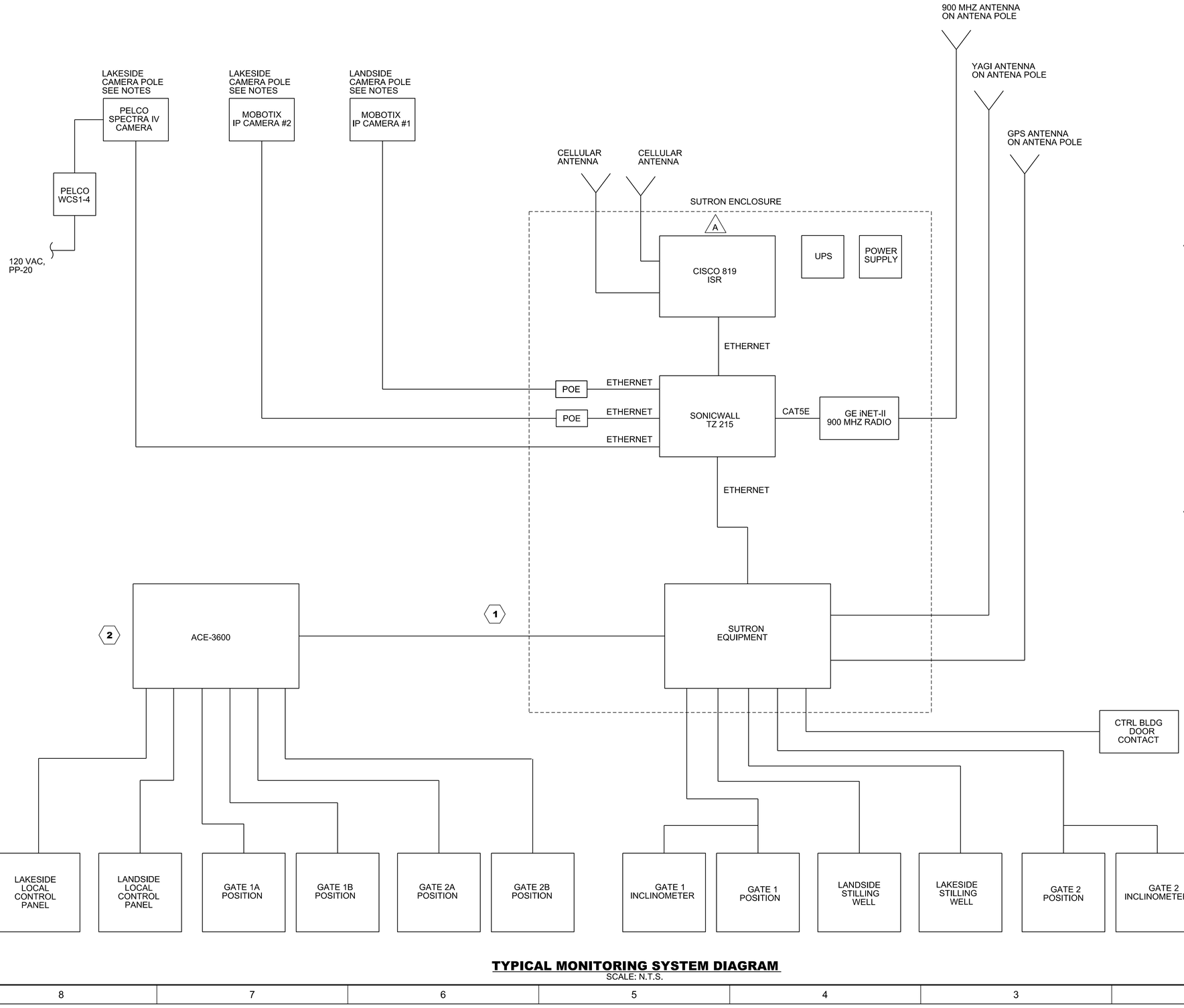
TELECOMMUNICATIONS

SCADA LEGEND AND SYMBOLS

DRAWING NO.

T-01

pw:\\COE-SAJPWP02.JAX.saj.ds.usace.army.mil:SAJPW\Documents\C&SF\Herbert Hoover Dike Rehabilitation\03-Culvert Reconstruction\070 - Plans\IP-3\17 Telecommunications\T-01*



TYPICAL MONITORING SYSTEM DIAGRAM

SCALE: N.T.S.

NOTES:

1. SEE STRUCTURAL GENERAL PLAN FOR LOCATIONS OF CAMERA AND ANTENNA POLES.
2. SEE DRAWINGS E-03 THROUGH E-15 FOR ELECTRICAL.
3. SEE DRAWINGS T-03 THROUGH T-05 FOR TELEMETRY.
4. SEE DRAWING T-06 FOR ANTENNA POLE DETAILS. SEE DRAWING T-07 FOR CAMERA POLE DETAILS. SEE DRAWING T-08 AND T-09 FOR INCLINOMETER INSTALLATION DETAILS.
5. PROVIDE MOUNTING HARDWARE SUCH AS ANCHOR BOLTS, LOCKNUTS, AND ETC., POLE STRAP OR ADAPTER, AND OTHER ACCESSORIES FOR PROPER INSTALLATION OF CAMERA, ANTENNA AND OTHER EQUIPMENT PER MANUFACTURER' S RECOMMENDATIONS.
6. PROVIDE POWER-OVER-ETHERNET (POE) TRANSFORMERS AND MOUNTING HARDWARE PER MANUFACTURER' S RECOMMENDATIONS FOR MOBOTIX CAMERAS INSIDE THE SUTRON CABINET.
7. PROVIDE A POWER CIRCUIT FOR PELCO WCS1-4 ON CAMERA POLE. FIELD COORDINATES LOCATION.

A 8. PROVIDE CISCO 819 INTEGRATED SERVICE ROUTER (ISR) OR APPROVED EQUAL INSIDE THE SUTRON. FIELD COORDINATES CELLULAR ANTENNA LOCATION OUTSIDE THE CABINET.

9. PROVIDE SONICWALL TZ 215 OR APPROVED EQUAL INSIDE THE SUTRON CABINET.
10. PROVIDE GE iNET-II 900 RADIO INSIDE THE SUTRON CABINET. PROVIDE A 900 MHZ ANTENNA MOUNTING ON POLE AS INDICATED. PROVIDE ONE SPARE RADIO.
11. PROVIDE ONE SPARE CAT5E LINE IN 1-INCH CONDUIT FROM SUTRON CABINET TO EACH CAMERA POLE. PROVIDE ONE SPARE CAT5E LINE IN 2-INCH CONDUIT FROM SUTRON CABINET TO ANTENNA POLE. PROVIDE A NEMA 4X STAINLESS STEEL JUNCTION BOX MOUNTING ON POLE FOR EACH CAT5E LINE. FIELD COORDINATES PROPER LOCATIONS AND SIZE OF JUNCTION BOXES.
12. 3G/4G MODEM/ROUTER CAPABLE OF USING ATT OR VERIZON 3G/4G SERVICE SHALL BE PROVIDED.
13. PROVIDE A CIRCUIT FOR SHELTER DOOR SECURITY ALARM CONTACT.
14. PROVIDE SURGE SUPPRESSION FOR ALL CABLES TO CAMERA.

A 15. WITH THE EXCEPTION OF THE GE INET RADIO AND THE SUTRON EQUIPMENT, REFERENCED MANUFACTURERS SHALL BE CONSIDERED "OR APPROVED EQUAL."

CAMERA NOTES:

1. PROVIDE MOBOTIX ALLROUNDDUAL M15 WITH MX-SM-D23-PW, MX-SMN23-BL, SURGE PROTECTOR MX-OVERVOLTAGE-PROTECTION-BOX-RJ45 AND MX-SM-OPT-POL POLORIZATION FILTER. EACH CAMERA SHALL HAVE AN SD 64GB CARD INSTALLED.
2. PELCO CAMERA SHALL HAVE TXB-N MODULE.

KEYNOTES:

1. PROVIDE DUPLICATE ANALOG INPUTS (AI) FROM GATE 1 AND 2 POSTION SENSORS, GATE 1 AND 2 INCLINOMETERS, AND HEADWATER AND TAILWATER STILLING WELLS IN 2" CONDUIT FOR MOTOROLA ACE-3600.
2. PROVIDE A 36" X 30" X 12" NEMA 4 ENCLOSURE FOR MOTOROLA ACE-3600 TELEMETRY SYSTEM (NIC) FOR FUTURE REMOTE OPERATION FROM SOUTH FLORIDA WATER MANAGEMENT DISTRICT (SFWMD). CABLES FED THROUGH INSIDE ACE-3600 ENCLOSURE SHALL BE PROPERLY LABELED. PROVIDE ADDITIONAL 5 FEET FOR EACH CABLE AND ROLLED UP NEATLY IN SEPARATE BUNDLES FOR SPECIFIC FUNCTION INSIDE THE ENCLOSURE. SFWMD SHALL FURNISH AND INSTALL ACE-3600 SYSTEM AND ALL OTHER REQUIRED EQUIPMENT AND PROVIDE COMPLETE WIRING AND OPERATION SOFTWARE.

US Army Corps of Engineers, Jacksonville District

No.	SYM	ZONE	DESCRIPTION
3	A	B-2, C-2/5	REVISED TO ACCOMPANY AMENDMENT NO. 0002.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

DESIGNED BY: V.L.
DWN BY: J.D.H.
CKD BY: J.H.H.
SUBMITTED BY: N/A
DATE: OCTOBER 2015
SOLICITATION NO.: W912EP-16-R-0010
CONTRACT NO.: N/A
PLOT SCALE: As shown
PLOT DATE: May 09, 2016
FILE NUMBER: N/A
FILE NAME: 114527-HHDRCRIP3-TS602.DGN

HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

S-291 (IP-3) RECONSTRUCTION

TELECOMMUNICATIONS

SUTRON SYSTEM MONITORING DIAGRAM

DRAWING NO.

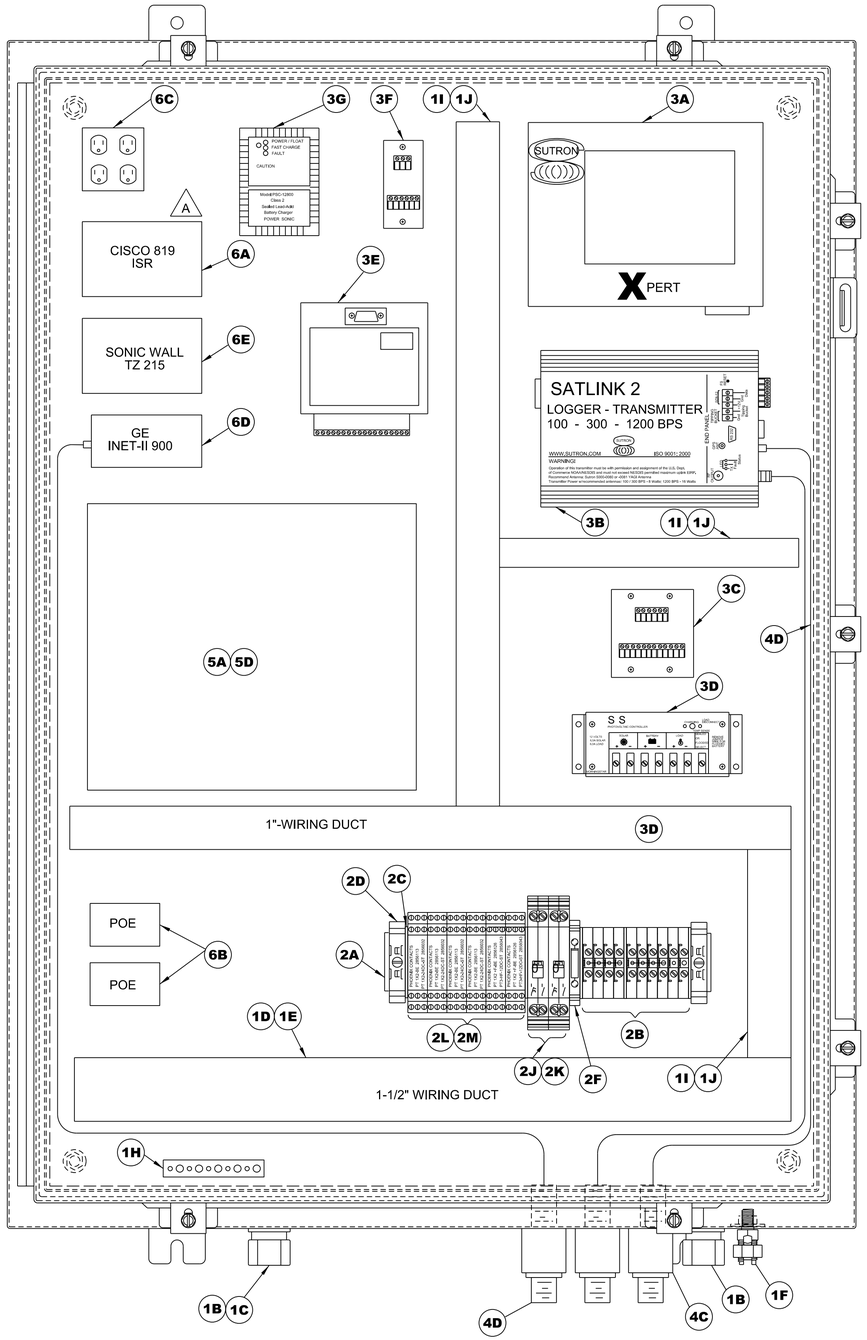
T-02

SAFETY ON THIS JOB DEPENDS ON YOU

NOTE:

1. CONTRACTOR SHALL COORDINATE WITH EQIPMENT PROVIDED.

3. REFERENCED ITEMS: 1A THRU 2M, 3D, 3G, 3J, 5A, 5B, 5C, 6A, AND 6E SHALL BE MANUFACTURERS AS SHOWN "OR APPROVED EQUAL."



SUTRON PANEL LAYOUT

SCALE: N.T.S

SUTRON SYSTEM COMPONENTS

REF #	MANUFACTURER	PART #	DESCRIPTION
1A	HOFFMAN	A-48H3612SSLP, ADP1	48H"x36W"x12D", STAINLESS STEEL ENCLOSURE WITH INTERIOR DOOR POCKET, POWDER COAT EXTERIOR WHITE
1B	CROUSE HINDS	CGFP193	GALVANIZED STEEL CORD GRIP FOR 3/8" CORD
1C	POREX	INTERSTATE SPECIALTY PRODUCTS #5541	3/8" DIA. X 1" LONG HYDROPHOBIC FILTER MATERIAL
1D	PANDUIT	F1.5X1.5LG6	1-1/2"x1-1/2" WIREWAY
1E	PANDUIT	C1.5LG6	1-1/2" WIREWAY COVER
1F	BURNDY	KC17B1	TYPE SP SERVICE GRD POST CONNECTOR
1G	HOFFMAN	A-30P24	BACK PANEL
1H	ILSCO	N1186-B	DUAL RATED GROUND BAR
1I	PANDUIT	F1X1LG6	1"x1" WIREWAY
1J	PANDUIT	C1LG6	1" WIREWAY COVER
2A	PHOENIX CONTACT		
	PHOENIX CONTACT	08 01 73 3	DIN RAIL
2B	PHOENIX CONTACT	30 04 36 2	TERMINAL BLOCK
2C	PHOENIX CONTACT	30 03 02 0	TERMINAL BLOCK END COVER
2D	PHOENIX CONTACT	08 00 88 6	END CLAMPS
2E	PHOENIX CONTACT	08 00 30 7	TERMINAL STRIP MARKER
2F	PHOENIX CONTACT	30 04 03 2	KNIFE DISCONNECT
2G	PHOENIX CONTACT	55 31 72 3	10AMP CIRCUIT BREAKER-1 POLE
2H	PHOENIX CONTACT	13 02 21 5	PARTITION PLATE
2I	PHOENIX CONTACT	02 03 25 0	FIXED BRIDGE
2J	PHOENIX CONTACT	28 56 12 6	PLUGTRAB BASE
2K	PHOENIX CONTACT	28 58 04 3	PLUGTRAB PLUG
2L	PHOENIX CONTACT	28 56 11 3	PLUGTRAB BASE
2M		28 56 03 2	PLUGTRAB PLUG
3A	SUTRON	XPERT2	MEASUREMENT AND CONTROL MODULE (DATA LOGGER)
3B	SUTRON	SATLINK-2	TRANSMITTER
3C	SUTRON	6461-1242-1	POWER TERMINATION
3D	MORNINGSTAR	SS-6	SOLAR CONTROLLER
3E	SUTRON	8080-0007	ANALOG I/O MODULE
3F	SUTRON	6461-1241	SDI-12 TERMINATION
3G	POWER SONIC	PSC-12800A	POWER SUPPLY
3H	N/A	N/A	GATE POSITION INDICATOR IN GATE ACTUATOR
3I	SUTRON	56-0540	STILLING WELL SDI-12 SHAFT ENCODER
3J	APPLIED GEOMECHANICS	A906-ST-B	APPLIED GEOMECHANICS INCLINOMETER
3K	N/A	N/A	GATE POSITION INDICATOR IN GATE ACTUATOR
4A	SUTRON	5000-0081	YAGI GOES SATELLITE ANTENNA
4B	SUTRON	5000-0170	JAM RESISTANT GPS ANTENNA
4C	SUTRON	8111-1113-1	RF COAX LIGHTNING PROTECTOR
4D	N/A	N/A	LIGHTNING PROTECTOR
4E	SUTRON	6411-1162	ANTENNA CABLE
4F	SUTRON	6411-1561	ANTENNA CABLE
5A	POWER SONIC	PS12400	12 VOLT 40 AH BATTERY
5B	POWER UP SOLAR	HPM 18/30	SOLAR PANEL MOUNTING BRACKET
5C	POWER UP SOLAR	BP SX 40	40 WATT SOLAR PANEL
5D	BATTERY SHELF	N/A	CUSTOM FABRICATED, MOUNTS TO BACK PANEL
6A	CISCO	C819HG-4G-A-K9	CISCO 819 ISR OR EQUAL
6B	N/A		POWER-OVER-ETHERNET (POE)
6C	N/A		AC QUAD-RECEPTACLE
6D	GE		GE iNET-II 900 RADIO
6E	SONICWALL		SONICWALL TZ 215

A

US Army Corps of Engineers
Jacksonville District

No.	SYM	ZONE	DESCRIPTION
2	A	A-4, D-7	REVISED TO ACCOMPANY AMENDMENT NO. 0002.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

DESIGNED BY: V.L.
DWN BY: J.D.H.
CKD BY: J.H.H.
SUBMITTED BY: N/A
DATE: OCTOBER 2015
SOLICITATION NO.: W912EP-16-R-0010
CONTRACT NO.: N/A
PLOT SCALE: As shown
PLOT DATE: May 09, 2017
FILE NUMBER: N/A
FILE NAME: 114527-HHDRCRIP3-T2103.DGN

HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

S-291 (IP-3) RECONSTRUCTION

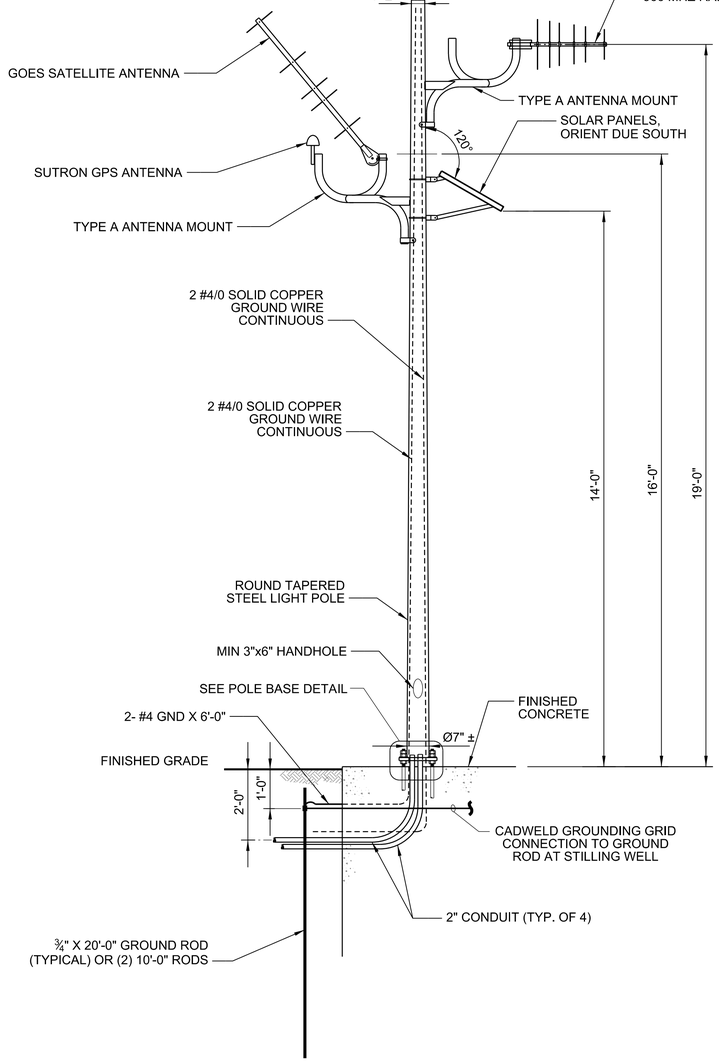
TELECOMMUNICATIONS

SUTRON SYSTEM COMPONETS

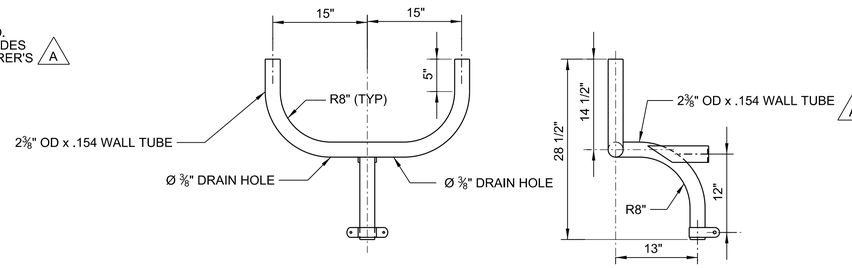
DRAWING NO.

T-03

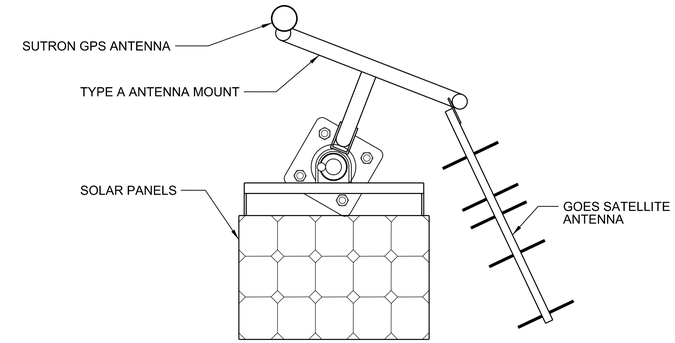
pw:\\COE-SAJPWP02JAX.saj.ds.usace.army.mil:SAJPW\Documents\C&SF\Herbert Hoover Dike Rehabilitation\03-Culvert Rehabilitation\S-292(IP-1), S-290(IP-2), S-291(IP-3) Culvert Reconstruction\070 - Plans\IP-3\17 Telecommunications\T-03*



POLE ELEVATION
SCALE: N.T.S.

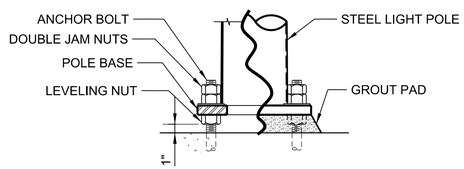


TYPE A ANTENNA MOUNT ASSEMBLY
SCALE: N.T.S.



PLAN VIEW
SCALE: N.T.S.

NOTE: SECONDARY TYPE A ANTENNA MOUNT NOT SHOWN FOR CLARITY



POLE BASE DETAIL
SCALE: N.T.S.

A PROVIDE MOUNTING HARDWARE SUCH AS ANCHOR BOLTS, LOCKNUTS, ETC., POLE STRAP OR ADAPTER, AND OTHER ACCESSORIES FOR PROPER INSTALLATION OF THE ANTENNA AND SOLAR PANEL PER MANUFACTURER'S RECOMMENDATIONS. REFERENCED MANUFACTURERS SHALL BE CONSIDERED "OR APPROVED EQUAL."

NOTES:

1. ALL ELECTRICAL WORK SHALL COMPLY WITH THE LATEST NEC AND NESC REQUIREMENTS.
2. SEE DRAWING S-02 FOR ANTENNA POLE LOCATION.
3. CONTRACTOR SHALL VERIFY ANTENNA POLE DIMENSIONS AND ADJUST ANTENNA ASSEMBLY DIMENSIONS AND ELEVATIONS AS NECESSARY.
4. A CONDUIT THAT IS EXITING THE POLE SHALL BE DIRECTED TOWARD THE CONTROL BUILDING.
5. BASE POLE ANCHORING SYSTEM SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

US Army Corps of Engineers, Jacksonville District

No.	SYM	ZONE	DESCRIPTION
3	A	A-4, D-1/7	REVISED TO ACCOMPANY AMENDMENT NO. 0002.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

DESIGNED BY: V.L.
DRWN BY: J.D.H.
CKD BY: J.H.H.
SUBMITTED BY: N/A
DATE: OCTOBER 2015
SOLICITATION NO.: W912EP-16-R-0010
CONTRACT NO.: N/A
PLOT SCALE: As Shown
PLOT DATE: May 09, 2017
FILE NUMBER: N/A
FILE NAME: 114527-HHDRCRIP3-TS506.DGN

HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

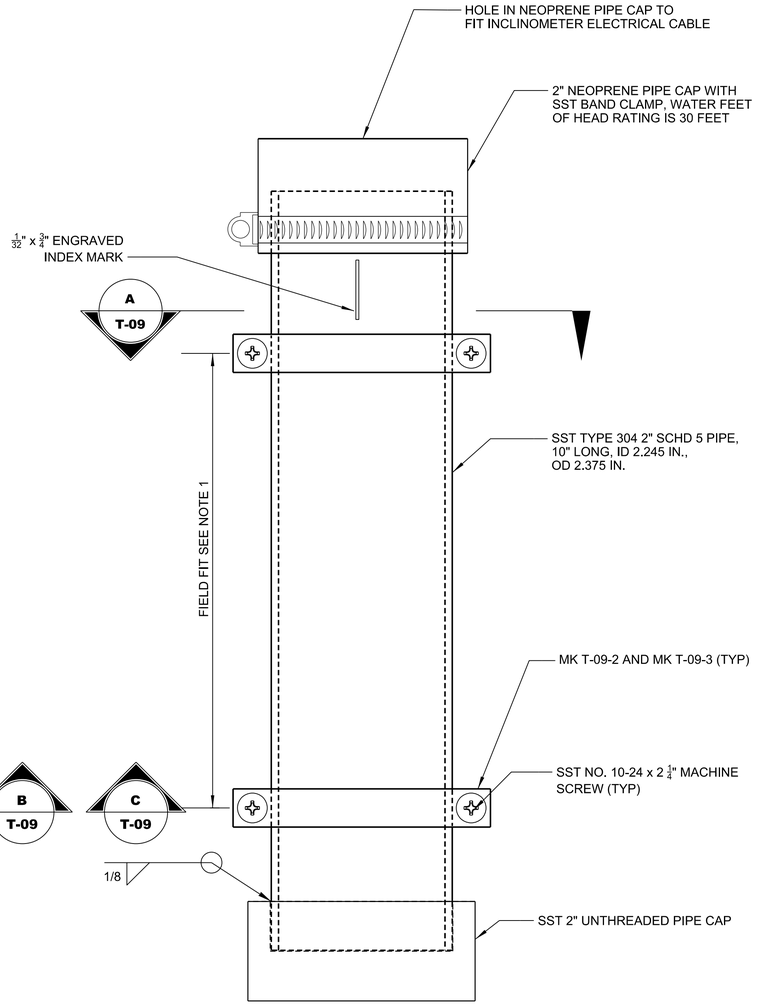
S-291 (IP-3) RECONSTRUCTION

TELECOMMUNICATIONS

ANTENNA POLE DETAILS

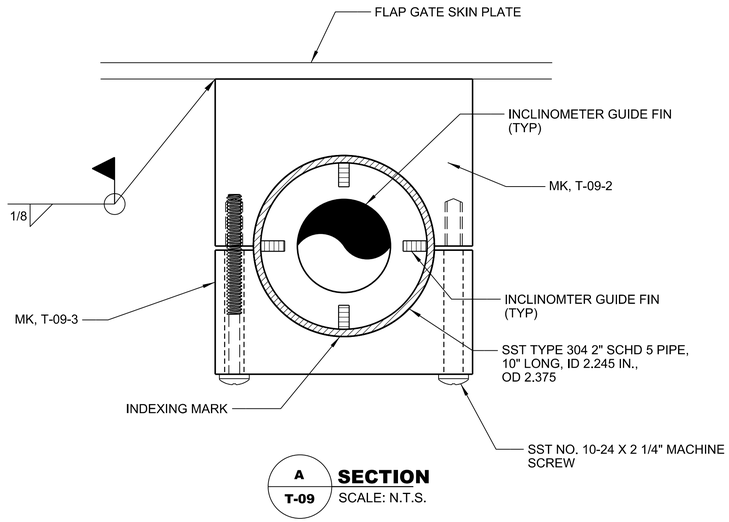
DRAWING NO.

T-06

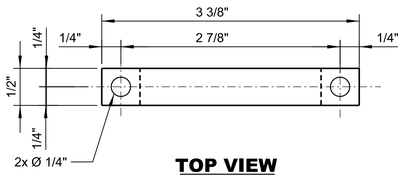


PLAN
SCALE: A

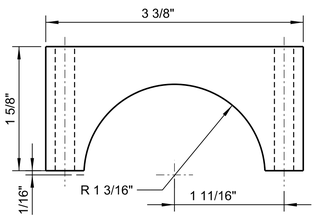
A



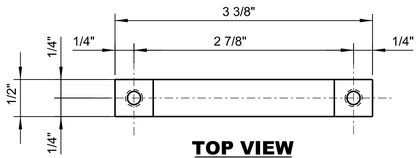
A T-09 **SECTION**
SCALE: N.T.S.



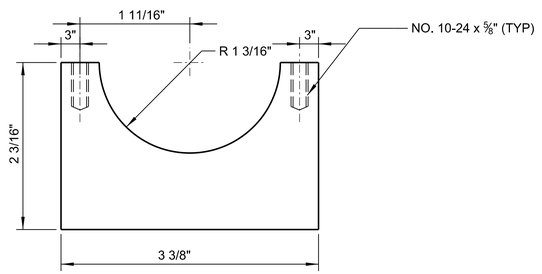
TOP VIEW
SCALE: N.T.S.



B T-09 **SECTION VIEW**
SCALE: N.T.S.



TOP VIEW
SCALE: N.T.S.



C T-09 **SECTION VIEW**
SCALE: N.T.S.

NOTES:

1. COMBINATION GATE SHOWN IS ONLY A CONCEPTUAL REPRESENTATION AND MAY NOT ACCURATELY SHOW THE ITEM(S) ACTUALLY INSTALLED. CONTRACTOR SHALL COORDINATE LOCATION AND MOUNTING OF GATE POSITION SENSORS WITH THE GATE MANUFACTURER.
2. INCLINOMETER SHALL BE INSTALLED WITH THE +X AXIS FACING AND PERPINDICULAR TO THE FLAP GATE SKIN PLATE.
3. PART NUMBERS FOR INCLINOMETER ARE BASED ON APPLIED GEOMECHANICS.
4. CONTRACTOR SHALL ENSURE THE INCLINOMETER DOES NOT ROTATE, SLIDE, SPIN, OR OTHERWISE MOVE ON ITS' X, Y, AND Z AXIS ONCE IT IS INSTALLED IN THE MK T-09-1 SENSOR HOUSING WITH BOTH PIPE CAPS INSTALLED.

INCLINOMETER HOUSING M.K. T-09-1
MATL: TYPE ASTM A 572, GR 50 1 REQ'D.

TOP CLAMP PORTION M.K. T-09-3
MATL: TYPE 304 SST 2 REQ'D.

CLAMP BASE M.K. T-09-2
MATL: TYPE 304 SST 2 REQ'D.

US Army Corps of Engineers, Jacksonville District

No.	SYM	ZONE	DESCRIPTION
1	A	A-7	REVISED TO ACCOMPANY AMMENDMENT NO. 0002.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

DESIGNED BY: V.L.
DRWN BY: J.D.H.
SUBMITTED BY: N/A
CHKD BY: S.J.P.
DATE: OCTOBER 2015
SOLICITATION NO.: W912EP-16-R-0010
CONTRACT NO.: N/A
PLOT SCALE: As shown
PLOT DATE: May 09, 2016
FILE NUMBER: N/A
FILE NAME: 114527-HHDRCRIP3-TS509.DGN

HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

S-291 (IP-3) RECONSTRUCTION

TELECOMMUNICATIONS

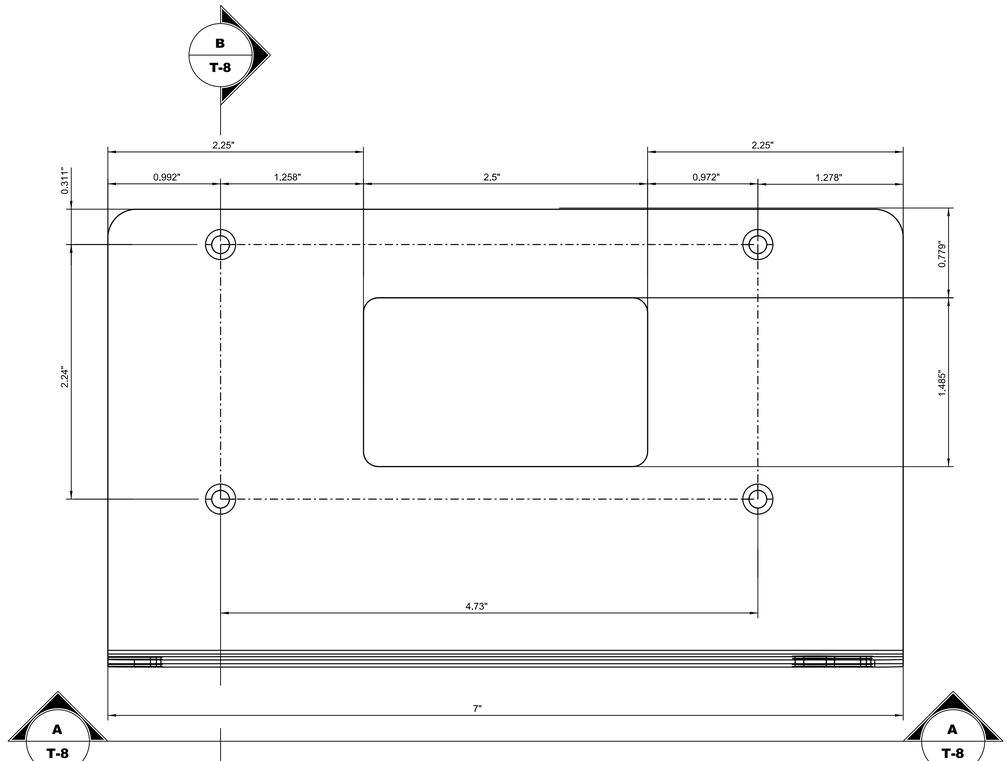
INCLINOMETER DETAILS

DRAWING NO.
T-09

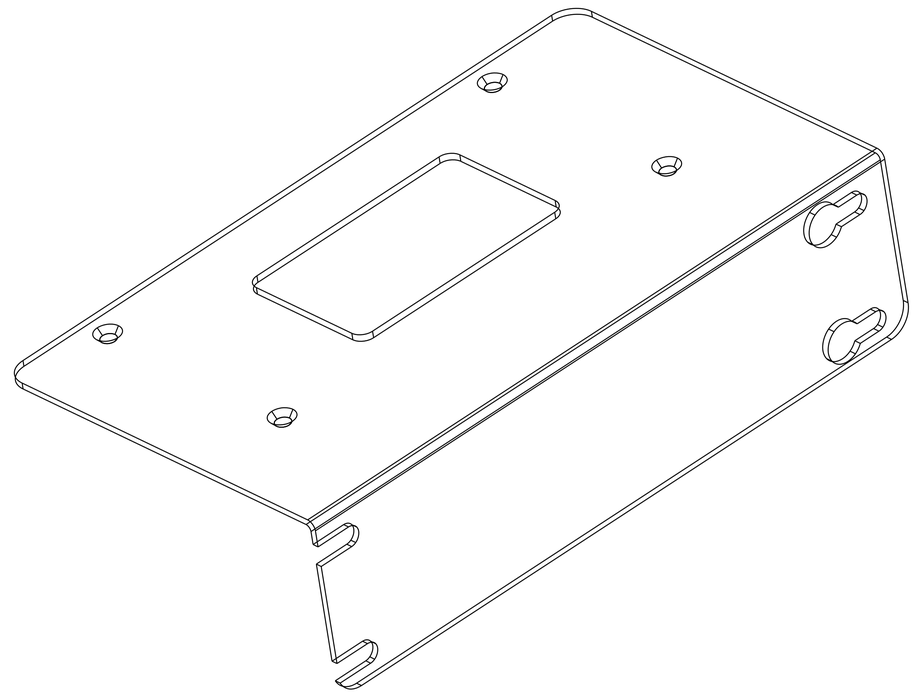
SAFETY ON THIS JOB DEPENDS ON YOU

NOTES:

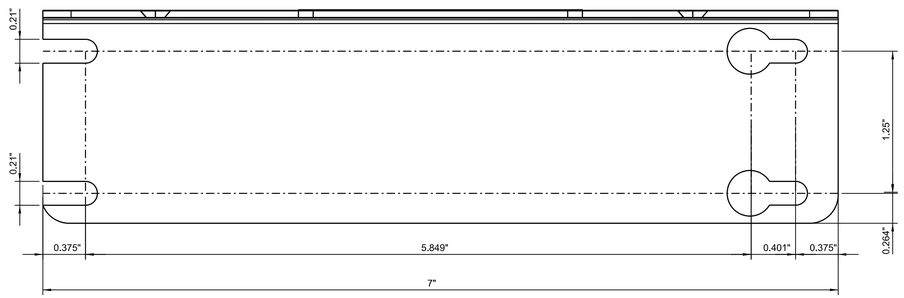
A
1. MATERIAL IS 300 SERIES STAINLESS STEEL.
2. DRAWING SHOWN IS CONCEPT DRAWING. DESIGN AND FABRICATE BRACKET FOR GE MDS INET-II 900 RADIO.



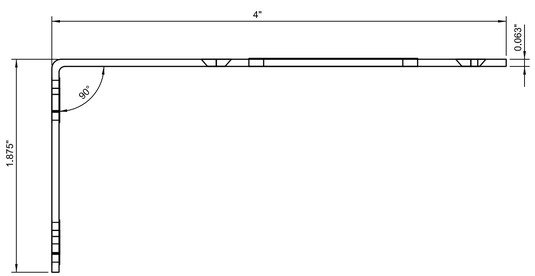
RTU PLAN BRACKET PLAN
SCALE: A



RTU RADIO BRACKET ISOMETRIC
SCALE: A



ELEVATION A
SCALE: A



B
T-8 **SECTION**
SCALE: A

GRAPHIC SCALES

"A" 1" 3/4"" 1/2" 1/4" 0 1"

US Army Corps of Engineers
Jacksonville District

No.	SYM	ZONE	DESCRIPTION
1	A	D-2	REVISED TO ACCOMPANY AMMENDMENT NO. 0002.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

DESIGNED BY: V.L.
DRN BY: J.D.H.
CKD BY: J.H.H.
SUBMITTED BY: N/A
DATE: OCTOBER 2015
SOLICITATION NO.: W912EP16-R-0010
CONTRACT NO.: N/A
PLOT SCALE: As Shown
PLOT DATE: May 09, 2016
FILE NUMBER: N/A
FILE NAME: 114527-HHDRCRIP3-TS508.DGN

HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

S-291 (IP-3) RECONSTRUCTION
TELECOMMUNICATIONS
RTU RADIO BRACKET

DRAWING NO.
T-10