



DELTA
CONVEYANCE
DESIGN &
CONSTRUCTION
AUTHORITY

VOLUME 2 OF 3
ENGINEERING CONCEPT DRAWINGS

FINAL DRAFT Engineering Project Report

BETHANY RESERVOIR ALTERNATIVE

December 2021

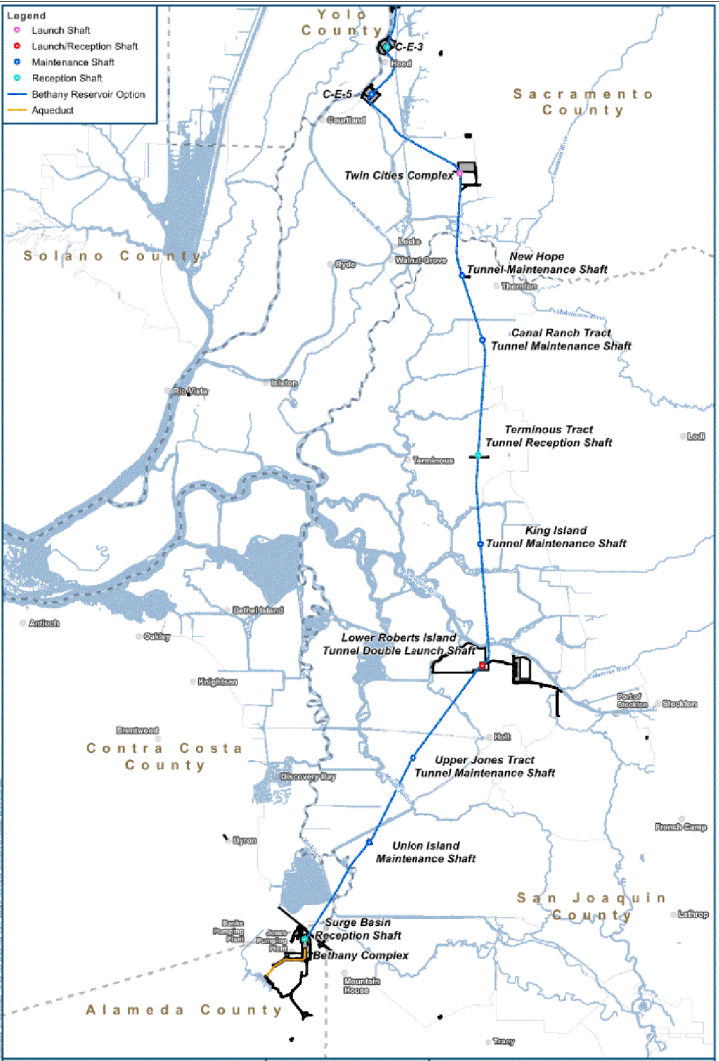


STATE OF CALIFORNIA
CALIFORNIA NATURAL RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES



DELTA CONVEYANCE PROJECT

FINAL DRAFT ENGINEERING PROJECT REPORT
BETHANY RESERVOIR ALTERNATIVE
VOLUME 2 OF 3
ENGINEERING CONCEPT DRAWINGS
DECEMBER 2021



LOCATION MAP

- NOTES:
- ENGINEERING DRAWINGS DO NOT REPRESENT A DETAILED ENGINEERING DESIGN EFFORT. INFORMATION SHOWN HAS BEEN LAID OUT USING AVAILABLE RESOURCES TO CONVEY DESIGN INTENT. FACILITY LOCATIONS AND INDICATED DIMENSIONS, STATIONS, AND ELEVATIONS ARE APPROXIMATE AND SUBJECT TO CHANGE DURING SUBSEQUENT ENGINEERING EFFORTS.
 - TOPOGRAPHIC AND BATHYMETRIC INFORMATION USED IN THE DEVELOPMENT OF THESE DRAWINGS HAVE NOT BEEN GROUND PROOFED AND ARE APPROXIMATE.
 - HORIZONTAL DATUM IS CALIFORNIA STATE PLANE E, ZONE 3, NORTH AMERICAN DATUM OF 1983 (NAD 83), SURVEY FEET.
 - ALL ELEVATIONS ARE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) UNLESS OTHERWISE SHOWN.
 - TOPOGRAPHY DATA IS BASED ON DIGITAL ELEVATION MODEL (DEM) OF THE SACRAMENTO-SAN JOAQUIN DELTA DERIVED FROM LIDAR (2017) DATA. IS FOR CONCEPTUAL REPORT USE ONLY.

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ENGINEERING PROJECT REPORT
DELTA CONVEYANCE PROJECT
SINGLE TUNNEL - BETHANY RESERVOIR ALTERNATIVE

COVER SHEET

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| PROJECT NO. | W8X97000 |
| SHEET NO. | STB-G-0001GN |
| REV | SEQUENCE NO. |

STB-G-0010GN_W8X97000.dgn

| A | | | B | | | C | | | D | | | E | | | F | | | G | | | H | | | | | | | | | | | | | | |
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| SHEET | DRAWING | | TITLE | | | | | | | | | SHEET | DRAWING | | TITLE | | | | | | | | | | | | | | | | | | | | |
| VOLUME 1 OF 1 | | | | | | | | | | | | | | | | | | VOLUME 1 OF 1 - CONTINUED | | | | | | | | | | | | | | | | | |
| GENERAL | | | | | | | | | | | | | | | | | | INTAKES - COMMON - CONTINUED | | | | | | | | | | | | | | | | | |
| 1 | STB-G-0001GN | | COVER SHEET | | | | | | | | | | | | | | | 73 | STX-S-3002IT | | INTAKES TEE SCREENS SECTION | | | | | | | | | | | | | | |
| 2 | STB-G-0010GN | | INDEX TO DRAWINGS 1 | | | | | | | | | | | | | | | 74 | STX-S-3003IT | | INTAKES VERTICAL SCREENS ELEVATION | | | | | | | | | | | | | | |
| 3 | STB-G-0011GN | | INDEX TO DRAWINGS 2 | | | | | | | | | | | | | | | 75 | STX-S-3004IT | | INTAKES TEE SCREENS ELEVATION | | | | | | | | | | | | | | |
| 4 | STB-G-0020GN | | ABBREVIATIONS AND SHEET NUMBER KEY | | | | | | | | | | | | | | | 76 | STX-S-3005IT | | INTAKES TYPICAL RADIAL GATE STRUCTURE SECTIONS AND DETAIL | | | | | | | | | | | | | | |
| 5 | STB-G-0040GN | | PROJECT SCHEMATIC | | | | | | | | | | | | | | | 77 | STX-S-9001IT | | INTAKES VERTICAL SCREEN ISOMETRIC | | | | | | | | | | | | | | |
| 6 | STB-G-0050GN | | CONVEYANCE OVERVIEW - OPTION B2 6,000 CFS AT INTAKES C-E-3 AND C-E-5 | | | | | | | | | | | | | | | 78 | STX-S-9002IT | | INTAKES TEE SCREEN ISOMETRIC | | | | | | | | | | | | | | |
| 7 | STB-G-0051GN | | CONVEYANCE OVERVIEW - OPTION B6 3,000 CFS AT INTAKE C-E-5 | | | | | | | | | | | | | | | 79 | STX-S-9003IT | | INTAKES TYPICAL CANAL AND GATE STRUCTURE ISOMETRIC | | | | | | | | | | | | | | |
| 8 | STB-G-0052GN | | CONVEYANCE OVERVIEW - OPTION B8 4,500 CFS AT INTAKES C-E-3 AND C-E-5 | | | | | | | | | | | | | | | 80 | STX-M-3001IT | | INTAKE VERTICAL SCREEN ELEVATION | | | | | | | | | | | | | | |
| 9 | STB-G-0053GN | | CONVEYANCE OVERVIEW - OPTION B10 7,500 CFS AT INTAKES C-E-2, C-E-3, AND C-E-5 | | | | | | | | | | | | | | | 81 | STX-M-3002IT | | INTAKE VERTICAL SCREEN PANEL ELEVATION | | | | | | | | | | | | | | |
| 10 | STB-G-0070GN | | OVERALL PROCESS FLOW DIAGRAM VERTICAL PLATE INTAKE SCREENS | | | | | | | | | | | | | | | 82 | STX-M-3003IT | | INTAKES TEE SCREENS ELEVATION, SECTION AND PLAN | | | | | | | | | | | | | | |
| 11 | STB-G-0075GN | | OVERALL PROCESS FLOW DIAGRAM CYLINDRICAL TEE SCREENS | | | | | | | | | | | | | | | 83 | STX-I-0001IT | | INTAKES TYPICAL VERT SCREEN PROCESS FLOW DIAGRAM | | | | | | | | | | | | | | |
| 12 | STB-G-0080GN | | OVERALL HYDRAULIC PLAN AND PROFILE (6,000 CFS) | | | | | | | | | | | | | | | 84 | STX-I-0002IT | | INTAKES TYPICAL TEE SCREEN PROCESS FLOW DIAGRAM | | | | | | | | | | | | | | |
| 13 | STB-G-0081GN | | OVERALL HYDRAULIC PLAN AND PROFILE - AQUEDUCT (6,000 CFS) | | | | | | | | | | | | | | | TUNNELS | | | | | | | | | | | | | | | | | |
| 14 | STB-G-0090GN | | BETHANY COMPLEX IMPACT AREA LIMITS (6,000 CFS) | | | | | | | | | | | | | | | 85 | STB-G-0010TN | | OVERALL SITE MAP | | | | | | | | | | | | | | |
| 15 | STB-G-0091GN | | BETHANY COMPLEX IMPACT AREA LIMITS (7,500 CFS) | | | | | | | | | | | | | | | 86 | STB-C-1060TN | | NORTH TUNNEL PLAN AND PROFILE - SHEET 1 OF 2 | | | | | | | | | | | | | | |
| 16 | STB-G-0092GN | | BETHANY COMPLEX IMPACT AREA LIMITS (3,000/4,500 CFS) | | | | | | | | | | | | | | | 87 | STB-C-1070TN | | NORTH TUNNEL PLAN AND PROFILE - SHEET 2 OF 2 | | | | | | | | | | | | | | |
| 17 | STB-G-0100GN | | BETHANY COMPLEX POST-CONSTRUCTION SITE PLAN (6,000 CFS) | | | | | | | | | | | | | | | 88 | STB-C-1090TN | | MAIN TUNNEL PLAN AND PROFILE SHEET 1 OF 5 | | | | | | | | | | | | | | |
| 18 | STB-G-0101GN | | BETHANY COMPLEX POST-CONSTRUCTION SITE PLAN (7,500 CFS) | | | | | | | | | | | | | | | 89 | STB-C-1100TN | | MAIN TUNNEL PLAN AND PROFILE SHEET 2 OF 5 | | | | | | | | | | | | | | |
| 19 | STB-G-0102GN | | BETHANY COMPLEX POST-CONSTRUCTION SITE PLAN (4,500 CFS) | | | | | | | | | | | | | | | 90 | STB-C-1110TN | | MAIN TUNNEL PLAN AND PROFILE SHEET 3 OF 5 | | | | | | | | | | | | | | |
| 20 | STB-E-0030GN | | COMMUNICATION DIAGRAM | | | | | | | | | | | | | | | 91 | STB-C-1120TN | | MAIN TUNNEL PLAN AND PROFILE SHEET 4 OF 5 | | | | | | | | | | | | | | |
| INTAKES-COMMON | | | | | | | | | | | | | | | | | | 92 | STB-C-1130TN | | MAIN TUNNEL PLAN AND PROFILE SHEET 5 OF 5 | | | | | | | | | | | | | | |
| 21 | STX-C-0005IT | | INTAKES PROJECT OVERVIEW AND KEY MAP | | | | | | | | | | | | | | | 93 | STB-C-1170TN | | TWIN CITIES DBL LAUNCH SHAFT SITE PLAN DISTURBANCE LIMITS | | | | | | | | | | | | | | |
| 22 | STX-C-0006IT | | TYPICAL VERTICAL SCREEN OPTION GROUND IMROVEMENT PLAN | | | | | | | | | | | | | | | 94 | STB-C-1180TN | | NEW HOPE TRACT MAINT SHAFT SITE PLAN DISTURBANCE LIMITS | | | | | | | | | | | | | | |
| 23 | STX-C-0007IT | | TYPICAL TEE SCREEN OPTION GROUND IMROVEMENT PLAN | | | | | | | | | | | | | | | 95 | STB-C-1190TN | | CANAL RANCH TRACT MAINT SHAFT SITE PLAN DISTURBANCE LIMITS | | | | | | | | | | | | | | |
| 24 | STX-C-0008IT | | TYPICAL VERTICAL SCREEN OPTION INTAKE FACILITY CONSTRUCTION SWPPP | | | | | | | | | | | | | | | 96 | STB-C-1200TN | | TERMINOUS TRACT RECEPTION SHAFT SITE PLAN DISTURBANCE LIMITS | | | | | | | | | | | | | | |
| 25 | STX-C-0009IT | | TYPICAL VERTICAL SCREEN OPTION INTAKE FACILITY POST CONSTRUCTION SWPPP | | | | | | | | | | | | | | | 97 | STB-C-1210TN | | KING ISLAND MAINTENANCE SHAFT SITE PLAN DISTURBANCE LIMITS | | | | | | | | | | | | | | |
| 26 | STX-C-0010IT | | TYPICAL TEE SCREEN OPTION INTAKE FACILITY CONSTRUCTION SWPPP | | | | | | | | | | | | | | | 98 | STB-C-1220TN | | LOWER ROBERTS IS. DOUBLE LAUNCH SITE PLAN DISTURBANCE LIMITS | | | | | | | | | | | | | | |
| 27 | STX-C-0011IT | | TYPICAL TEE SCREEN OPTION INTAKE FACILITY POST CONSTRUCTION SWPPP | | | | | | | | | | | | | | | 99 | STB-C-1230TN | | UPPER JONES TRACT MAINT SHAFT SITE PLAN DISTURBANCE LIMITS | | | | | | | | | | | | | | |
| 28 | STX-C-1001IT | | INTAKE 2 EXISTING PLAN | | | | | | | | | | | | | | | 100 | STB-C-1240TN | | UNION ISLAND MAINTENANCE SHAFT SITE PLAN DISTURBANCE LIMITS | | | | | | | | | | | | | | |
| 29 | STX-C-1002IT | | INTAKE 2 - VERTICAL SCREEN OPTION CONSTRUCTION PHASE OVERVIEW | | | | | | | | | | | | | | | 101 | STB-S-5160TN | | SHAFT PAD SECTION WET EXCAVATION WITH D-WALL | | | | | | | | | | | | | | |
| 30 | STX-C-1002AIT | | INTAKE 2 - VERTICAL SCREEN OPTION FINAL OVERVIEW | | | | | | | | | | | | | | | 102 | STB-S-5170TN | | SINGLE LAUNCH, RECEPTION, WORKING AND MAINTENANCE SHAFTS - PLAN AND SECTION | | | | | | | | | | | | | | |
| 31 | STX-C-1003IT | | INTAKE 2 - VERTICAL SCREEN OPTION PHASE 1 SITE PLAN | | | | | | | | | | | | | | | 103 | STB-S-5180TN | | TWIN CITIES/LOWER ROBERTS DBL LAUNCH SHAFT PLAN AND SECTION | | | | | | | | | | | | | | |
| 32 | STX-C-1005IT | | INTAKE 2 - VERTICAL SCREEN OPTION PHASE 3 SITE PLAN | | | | | | | | | | | | | | | 104 | STB-S-5190TN | | MAIN TUNNELS SEGMENT LINING OPTIONS | | | | | | | | | | | | | | |
| 33 | STX-C-1006IT | | INTAKE 2 - TEE SCREEN OPTION CONSTRUCTION PHASE OVERVIEW | | | | | | | | | | | | | | | PUMPING PLANT | | | | | | | | | | | | | | | | | |
| 34 | STX-C-1006AIT | | INTAKE 2 - TEE SCREEN OPTION FINAL OVERVIEW | | | | | | | | | | | | | | | 105 | STB-R-9001PP | | SITE PLAN RENDERING 1 | | | | | | | | | | | | | | |
| 35 | STX-C-1007IT | | INTAKE 2 - TEE SCREEN OPTION PHASE 1 SITE PLAN | | | | | | | | | | | | | | | 106 | STB-R-9002PP | | SITE PLAN RENDERING 2 | | | | | | | | | | | | | | |
| 36 | STX-C-1009IT | | INTAKE 2 - TEE SCREEN OPTION PHASE 3 SITE PLAN | | | | | | | | | | | | | | | 107 | STB-C-1001PP | | SITE PLAN (7500 CFS) | | | | | | | | | | | | | | |
| 37 | STX-C-1010IT | | INTAKE 3 EXISTING PLAN | | | | | | | | | | | | | | | 108 | STB-C-1002PP | | SITE PLAN (3000 CFS) | | | | | | | | | | | | | | |
| 38 | STX-C-10111T | | INTAKE 3 - VERTICAL SCREEN OPTION CONSTRUCTION PHASE OVERVIEW | | | | | | | | | | | | | | | 109 | STB-C-1003PP | | SITE PLAN (4500 CFS) | | | | | | | | | | | | | | |
| 39 | STX-C-1011AIT | | INTAKE 3 - VERTICAL SCREEN OPTION FINAL OVERVIEW | | | | | | | | | | | | | | | 110 | STB-C-1004PP | | SITE PLAN (6000 CFS) | | | | | | | | | | | | | | |
| 40 | STX-C-1012IT | | INTAKE 3 - VERTICAL SCREEN OPTION PHASE 1 SITE PLAN | | | | | | | | | | | | | | | 111 | STB-C-1005PP | | CONSTRUCTION SITE PLAN | | | | | | | | | | | | | | |
| 41 | STX-C-1013IT | | INTAKE 3 - VERTICAL SCREEN OPTION PHASE 2 SITE PLAN | | | | | | | | | | | | | | | 112 | STB-C-1101PP | | FINISHED SITE PLAN SURGE BASIN (6,000 CFS) | | | | | | | | | | | | | | |
| 42 | STX-C-1014IT | | INTAKE 3 - VERTICAL SCREEN OPTION PHASE 3 SITE PLAN | | | | | | | | | | | | | | | 113 | STB-C-3101PP | | SURGE BASIN CROSS SECTIONS | | | | | | | | | | | | | | |
| 43 | STX-C-1015IT | | INTAKE 3 - TEE SCREEN OPTION CONSTRUCTION PHASE OVERVIEW | | | | | | | | | | | | | | | 114 | STB-C-3102PP | | SURGE BASIN CROSS SECTIONS | | | | | | | | | | | | | | |
| 44 | STX-C-1015AIT | | INTAKE 3 - TEE SCREEN OPTION FINAL OVERVIEW | | | | | | | | | | | | | | | 115 | STB-C-3103PP | | AQUEDUCT CONNECTION PLAN AND PROFILE | | | | | | | | | | | | | | |
| 45 | STX-C-1016IT | | INTAKE 3 - TEE SCREEN OPTION PHASE 1 SITE PLAN | | | | | | | | | | | | | | | 116 | STB-E-1001PP | | ELECTRICAL BUILDING PLAN | | | | | | | | | | | | | | |
| 46 | STX-C-1017IT | | INTAKE 3 - TEE SCREEN OPTION PHASE 2 SITE PLAN | | | | | | | | | | | | | | | 117 | STB-E-3001PP | | ELECTRICAL BUILDING SECTION | | | | | | | | | | | | | | |
| 47 | STX-C-1018IT | | INTAKE 3 - TEE SCREEN OPTION PHASE 3 SITE PLAN | | | | | | | | | | | | | | | 118 | STB-E-6001PP | | ELECTRICAL ONE-LINE DIAGRAM | | | | | | | | | | | | | | |
| 48 | STX-C-1019IT | | INTAKE 5 EXISTING PLAN | | | | | | | | | | | | | | | 119 | STB-E-6002PP | | ELECTRICAL ONE-LINE DIAGRAM | | | | | | | | | | | | | | |
| 49 | STX-C-1020IT | | INTAKE 5 - VERTICAL SCREEN OPTION CONSTRUCTION PHASE OVERVIEW | | | | | | | | | | | | | | | 120 | STB-E-6003PP | | ELECTRICAL ONE-LINE DIAGRAM | | | | | | | | | | | | | | |
| 50 | STX-C-1020AIT | | INTAKE 5 - VERTICAL SCREEN OPTION FINAL OVERVIEW | | | | | | | | | | | | | | | 121 | STB-E-6004PP | | ELECTRICAL ONE-LINE DIAGRAM | | | | | | | | | | | | | | |
| 51 | STX-C-1021IT | | INTAKE 5 - VERTICAL SCREEN OPTION PHASE 1 SITE PLAN | | | | | | | | | | | | | | | 122 | STB-SM-1001PP | | FOUNDATION PLAN AT FL EL -100.50 | | | | | | | | | | | | | | |
| 52 | STX-C-1023IT | | INTAKE 5 - VERTICAL SCREEN OPTION PHASE 3 SITE PLAN | | | | | | | | | | | | | | | 123 | STB-SM-1002PP | | INTERMEDIATE PLAN AT FL EL -86.25 | | | | | | | | | | | | | | |
| 53 | STX-C-1024IT | | INTAKE 5 - TEE SCREEN OPTION CONSTRUCTION PHASE OVERVIEW | | | | | | | | | | | | | | | 124 | STB-SM-1003APP | | MOTOR LEVEL PLAN AT FL EL -72.00 | | | | | | | | | | | | | | |
| 54 | STX-C-1024AIT | | INTAKE 5 - TEE SCREEN OPTION FINAL OVERVIEW | | | | | | | | | | | | | | | 125 | STB-SM-1003BPP | | 3000 CFS ALT PLAN AT FL EL -72.00 | | | | | | | | | | | | | | |
| 55 | STX-C-1025IT | | INTAKE 5 - TEE SCREEN OPTION PHASE 1 SITE PLAN | | | | | | | | | | | | | | | 126 | STB-SM-1003CPP | | 4500 CFS ALT PLAN AT FL EL -72.00 | | | | | | | | | | | | | | |
| 56 | STX-C-1027IT | | INTAKE 5 - TEE SCREEN OPTION PHASE 3 SITE PLAN | | | | | | | | | | | | | | | 127 | STB-SM-1003DPP | | 6000 CFS ALT PLAN AT FL EL -72.00 | | | | | | | | | | | | | | |
| 57 | STX-C-1030IT | | SEDIMENTATION DRYING LAGOON TYPICAL PLAN | | | | | | | | | | | | | | | 128 | STB-SM-1004PP | | LOWER LEVEL PLAN AT FL EL 3.00 | | | | | | | | | | | | | | |
| 58 | STX-C-2001IT | | INTAKE 2 - EXISTING LEVEE PROFILE AND CROSS SECTIONS W/ FINISH GRADE | | | | | | | | | | | | | | | 129 | STB-SM-1005PP | | GROUND LEVEL PLAN AT FL EL 47.00 | | | | | | | | | | | | | | |
| 59 | STX-C-2002IT | | INTAKE 3 - EXISTING LEVEE PROFILE AND CROSS SECTIONS W/ FINISH GRADE | | | | | | | | | | | | | | | 130 | STB-SM-1006PP | | SURGE TANK & VAULT PLAN AT FL EL 46.00 | | | | | | | | | | | | | | |
| 60 | STX-C-2003IT | | INTAKE 5 - EXISTING LEVEE PROFILE AND CROSS SECTIONS W/ FINISH GRADE | | | | | | | | | | | | | | | 131 | STB-SM-3001PP | | SECTION | | | | | | | | | | | | | | |
| 61 | STX-C-3001IT | | HIGHWAY 160 TYPICAL SECTIONS AT INTAKE REALIGNMENTS | | | | | | | | | | | | | | | 132 | STB-SM-3002PP | | SECTION | | | | | | | | | | | | | | |
| 62 | STX-C-3002IT | | SITE SECTIONS | | | | | | | | | | | | | | | 133 | STB-SM-3003PP | | SECTION | | | | | | | | | | | | | | |
| 63 | STX-C-3003IT | | TYPICAL MINIMUM JURISDICTIONAL LEVEE SECTION | | | | | | | | | | | | | | | 134 | STB-SM-3004PP | | SECTION | | | | | | | | | | | | | | |
| 64 | STX-C-3030IT | | SEDIMENTATION DRYING LAGOON TYPICAL SECTIONS | | | | | | | | | | | | | | | 135 | STB-SM-3005PP | | SURGE TANK VALVE VAULT SECTIONS | | | | | | | | | | | | | | |
| 65 | STX-C-4001IT | | SEDIMENTATION DRYING LAGOON OUTLET STRUCTURE TYPICAL PLAN AND SECTION | | | | | | | | | | | | | | | 136 | STB-SM-3006PP | | SURGE TANK SECTION | | | | | | | | | | | | | | |
| 66 | STX-S-1001IT | | TYPICAL INTAKE FACILITY VERTICAL SCREEN GENERAL ARRANGEMENT & KEY PLAN | | | | | | | | | | | | | | | AQUEDUCTS | | | | | | | | | | | | | | | | | |
| 67 | STX-S-1002IT | | TYPICAL INTAKE FACILITY TEE SCREEN GENERAL ARRANGEMENT & KEY PLAN | | | | | | | | | | | | | | | 137 | STB-C-1101AQ | | BETHANY RESERVOIR AQUEDUCT SITE PLAN A | | | | | | | | | | | | | | |
| 68 | STX-S-1003IT | | INTAKES VERTICAL AND TEE SCREEN PLAN | | | | | | | | | | | | | | | 138 | STB-C-1102AQ | | JONES INLET CANAL / DMC AQUEDUCT SITE PLAN B (7500 CFS OPTION ONLY) | | | | | | | | | | | | | | |
| 69 | STX-S-1004IT | | INTAKES TYPICAL RADIAL GATE STRUCTURE PLAN | | | | | | | | | | | | | | | 139 | STB-C-1111AQ | | JONES PENSTOCK CROSSING TUNNEL PORTAL PLAN AND PROFILE | | | | | | | | | | | | | | |
| 70 | STX-S-1005IT | | TYPICAL OUTLET STRUCTURE SINGLE TUNNEL CONNECTION - PLAN AND SECTION | | | | | | | | | | | | | | | 140 | STB-C-1112AQ | | CONSERVATION EASEMENT CROSSING TUNNEL PORTAL PLAN AND PROFILE | | | | | | | | | | | | | | |
| 71 | STX-S-1006IT | | TYPICAL OUTLET STRUCTURE DUAL OUTLET CONNECTION - PLAN AND SECTION | | | | | | | | | | | | | | | 141 | STB-C-1121AQ | | SITE PLAN A BETHANY RESERVOIR DISCHARGE STRUCTURE | | | | | | | | | | | | | | |
| 72 | STX-S-3001IT | | INTAKES VERTICAL SCREENS SECTION | | | | | | | | | | | | | | | 142 | STB-C-1122AQ | | SITE PLAN B BETHANY RESERVOIR DISCHARGE STRUCTURE | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | 143 | STB-C-1132AQ | | JONES CANAL OUTLET FINISHED SITE PLAN | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | 144 | STB-C-1133AQ | | JONES CANAL OUTLET CONSTRUCTION SITE PLAN | | | | | | | | | | | | | | |

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| SHEET | | | DRAWING | | | TITLE | | |
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| VOLUME 1 OF 1 - CONTINUED | | | | | | | | |
| AQUEDUCTS - CONTINUED | | | | | | | | |
| 145 | | | STB-C-2101AQ | | | BETHANY RESERVOIR AQUEDUCT PROFILE AND SECTIONS | | |
| 146 | | | STB-C-2102AQ | | | JONES CANAL AQUEDUCT PROFILE AND SECTIONS | | |
| 147 | | | STB-C-5001AQ | | | AQUEDUCT TUNNEL DETAILS | | |
| 148 | | | STB-S-1101AQ | | | STRUCTURAL PLAN BETHANY RESERVOIR DISCHARGE STRUCTURE | | |
| 149 | | | STB-S-1111AQ | | | JONES OUTLET STRUCTURE PLAN | | |
| 150 | | | STB-S-1112AQ | | | DELTA-MENDOTA CANAL CONTROL STRUCTURE PLAN | | |
| 151 | | | STB-S-3101AQ | | | STRUCTURAL SECTIONS BETHANY RESERVOIR DISCHARGE STRUCTURE | | |
| 152 | | | STB-S-3112AQ | | | DELTA-MENDOTA CANAL CONTROL STRUCTURE SECTIONS | | |
| 153 | | | STB-S-5002AQ | | | CARV VAULT DETAILS | | |
| 154 | | | STB-S-5003AQ | | | CARV VAULT DETAILS | | |
| LEVEE IMPROVEMENTS | | | | | | | | |
| 155 | | | STB-C-1001LV | | | TWIN CITIES COMPLEX RING LEVEE SITE PLAN | | |
| 156 | | | STB-C-1002LV | | | LOWER ROBERTS LEVEE IMPROVEMENT SITE PLAN | | |
| 157 | | | STB-C-4001LV | | | TWIN CITIES COMPLEX LEVEE TYPICAL CROSS SECTIONS | | |
| 158 | | | STB-C-4002LV | | | LOWER ROBERTS LEVEE IMPROVEMENTS TYPICAL CROSS SECTION | | |
| ROADS IMPROVEMENTS | | | | | | | | |
| 159 | | | STB-G-0010HW | | | ACCESS ROAD PLAN BETHANY ALTERNATIVE KEY MAP | | |
| 160 | | | STB-C-1010HW | | | ACCESS ROAD PLAN LAMBERT ROAD WIDENING - 1 OF 2 | | |
| 161 | | | STB-C-1011HW | | | ACCESS ROAD PLAN LAMBERT ROAD WIDENING - 2 OF 2 | | |
| 162 | | | STB-C-1020HW | | | ACCESS ROAD PLAN DIERSSEN ROAD WIDENING | | |
| 163 | | | STB-C-1021HW | | | ACCESS ROAD PLAN FRANKLIN BLVD WIDENING AT DIERSSEN ROAD | | |
| 164 | | | STB-C-1030HW | | | ACCESS ROAD PLAN TWIN CITIES ROAD WIDENING | | |
| 165 | | | STB-C-1040HW | | | ACCESS ROAD PLAN INTAKE ROAD - 1 OF 2 | | |
| 166 | | | STB-C-1041HW | | | ACCESS ROAD PLAN INTAKE ROAD - 2 OF 2 | | |
| 167 | | | STB-C-1050HW | | | ACCESS ROAD PLAN INTAKE #3 ROAD | | |
| 168 | | | STB-C-1060HW | | | ACCESS ROAD PLAN INTAKE #5 ROAD | | |
| 169 | | | STB-C-1070HW | | | ACCESS ROAD PLAN NEW HOPE TRACT MAINTENANCE SHAFT | | |
| 170 | | | STB-C-1080HW | | | ACCESS ROAD PLAN CANAL RANCH TRACT MAINTENANCE SHAFT | | |
| 171 | | | STB-C-1090HW | | | ACCESS ROAD PLAN TERMINOUS TRACT RECEPTION SHAFT | | |
| 172 | | | STB-C-1100HW | | | ACCESS ROAD PLAN KING ISLAND TRACT MAINTENANCE SHAFT | | |
| 173 | | | STB-C-1110HW | | | ACCESS ROAD PLAN LOWER ROBERTS ISLAND SHAFT - 1 OF 4 | | |
| 174 | | | STB-C-1111HW | | | ACCESS ROAD PLAN LOWER ROBERTS ISLAND SHAFT - 2 OF 4 | | |
| 175 | | | STB-C-1112HW | | | ACCESS ROAD PLAN LOWER ROBERTS ISLAND SHAFT - 3 OF 4 | | |
| 176 | | | STB-C-1113HW | | | ACCESS ROAD PLAN LOWER ROBERTS ISLAND SHAFT - 4 OF 4 | | |
| 177 | | | STB-C-1120HW | | | ACCESS ROAD PLAN UPPER JONES TRACT MAINTENANCE SHAFT | | |
| 178 | | | STB-C-1130HW | | | ACCESS ROAD PLAN UNION ISLAND MAINTENANCE SHAFT | | |
| 179 | | | STB-C-1140HW | | | ACCESS ROAD PLAN BYRON HWY FRONTAGE ROAD - 1 OF 2 | | |
| 180 | | | STB-C-1141HW | | | ACCESS ROAD PLAN BYRON HWY / LINDEMANN RD I/C - 2 OF 2 | | |
| 181 | | | STB-C-1150HW | | | ACCESS ROAD PLAN MOUNTAIN HOUSE SHAFT | | |
| 182 | | | STB-C-1160HW | | | ACCESS ROAD PLAN KELSO ROAD WIDENING | | |
| 183 | | | STB-C-1165HW | | | ACCESS ROAD PLAN CONNECTOR ROAD | | |
| 184 | | | STB-C-1170HW | | | ACCESS ROAD PLAN MOUNTAIN HOUSE ROAD WIDENING - 1 OF 2 | | |
| 185 | | | STB-C-1171HW | | | ACCESS ROAD PLAN MOUNTAIN HOUSE ROAD WIDENING - 2 OF 2 | | |
| 186 | | | STB-C-1180HW | | | ACCESS ROAD PLAN BETHANY | | |
| 187 | | | STB-C-1190HW | | | ACCESS ROAD PLAN - MOUNTAIN HOUSE RD BYPASS & W. GRANT LINE RD IMPROVEMENTS | | |
| 188 | | | STB-C-4001HW | | | ACCESS ROAD TYPICAL CROSS SECTIONS - 1 OF 8 | | |
| 189 | | | STB-C-4002HW | | | ACCESS ROAD TYPICAL CROSS SECTIONS - 2 OF 8 | | |
| 190 | | | STB-C-4003HW | | | ACCESS ROAD TYPICAL CROSS SECTIONS - 3 OF 8 | | |
| 191 | | | STB-C-4004HW | | | ACCESS ROAD TYPICAL CROSS SECTIONS - 4 OF 8 | | |
| 192 | | | STB-C-4005HW | | | ACCESS ROAD TYPICAL CROSS SECTIONS - 5 OF 8 | | |
| 193 | | | STB-C-4006HW | | | ACCESS ROAD TYPICAL CROSS SECTIONS - 6 OF 8 | | |
| 194 | | | STB-C-4007HW | | | ACCESS ROAD TYPICAL CROSS SECTIONS - 7 OF 8 | | |
| 195 | | | STB-C-4008HW | | | ACCESS ROAD TYPICAL CROSS SECTIONS - 8 OF 8 | | |
| 196 | | | STB-C-5001HW | | | ACCESS ROAD CONSTRUCTION DETAILS | | |
| 197 | | | STB-C-5002HW | | | HOOD FRANKLIN ROAD PARK AND RIDE SITE PLAN | | |
| 198 | | | STB-C-5004HW | | | CHARTER WAY PARK AND RIDE SITE PLAN | | |
| RAIL | | | | | | | | |
| 199 | | | STB-C-1005RR | | | RAIL SERVED MATERIALS DEPOT CONCEPT LAYOUT - LOWER ROBERTS | | |
| 200 | | | STB-C-4001RR | | | RAIL SERVED MATERIALS DEPOT RAIL TYPICAL SECTION | | |
| 201 | | | STB-C-4002RR | | | RAIL SERVED MATERIALS DEPOT TYPICAL SECTION-RTM LOADING | | |
| 202 | | | STB-C-4003RR | | | RAIL SERVED MATERIALS DEPOT TYPICAL SECTION-TUNNEL SEGMENT UNLOADING | | |
| 203 | | | STB-C-4004RR | | | RAIL SERVED MATERIALS DEPOT TYPICAL SECTION-AGGREGATE UNLOADING | | |
| 204 | | | STB-C-4005RR | | | RAIL SERVED MATERIALS DEPOT TYPICAL SECTION-FUEL UNLOADING | | |
| 205 | | | STB-C-4006RR | | | RAIL SERVED MATERIALS DEPOT TYPICAL SECTION-DUMP TRUCK UNLOADING | | |
| 206 | | | STB-C-4007RR | | | RAIL SERVED MATERIALS DEPOT RAIL OPERATING PLAN | | |
| 207 | | | STB-C-4008RR | | | RAIL SERVED MATERIALS DEPOT RAIL OPERATING PLAN | | |
| 208 | | | STB-C-4009RR | | | RAIL SERVED MATERIALS DEPOT RAIL OPERATING PLAN | | |
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12/23/2021

FINAL DRAFT BASELINE DRAWINGS

REV

DATE

DESCRIPTION

SUB.

APPD

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"

GENERAL

ENGINEERING PROJECT REPORT
DELTA CONVEYANCE PROJECT
SINGLE TUNNEL - BETHANY RESERVOIR ALTERNATIVE

INDEX TO DRAWINGS 2

PROJECT NO.
W8X97000

SHEET NO.
STB-G-0011GN

REVSEQUENCE NO.

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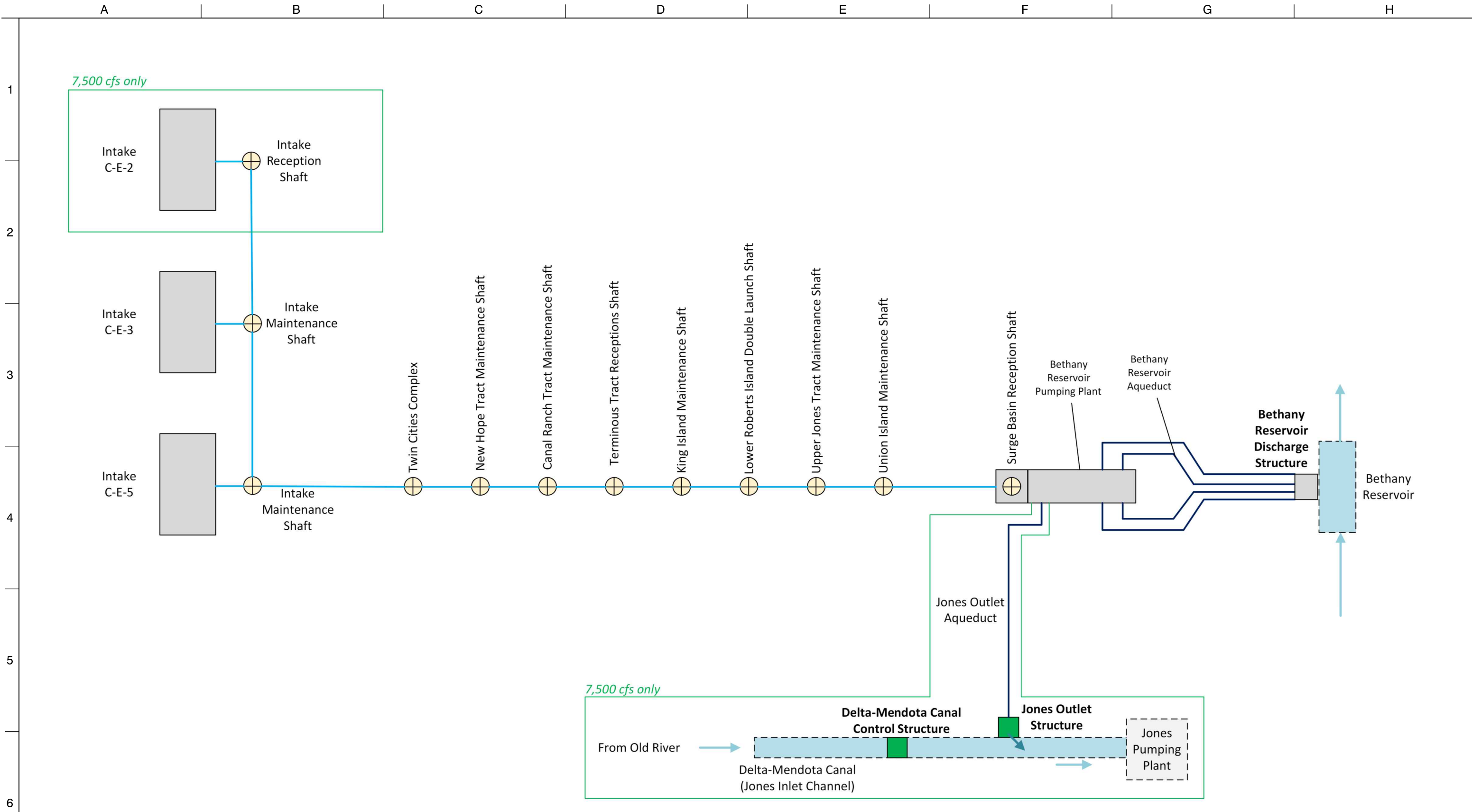
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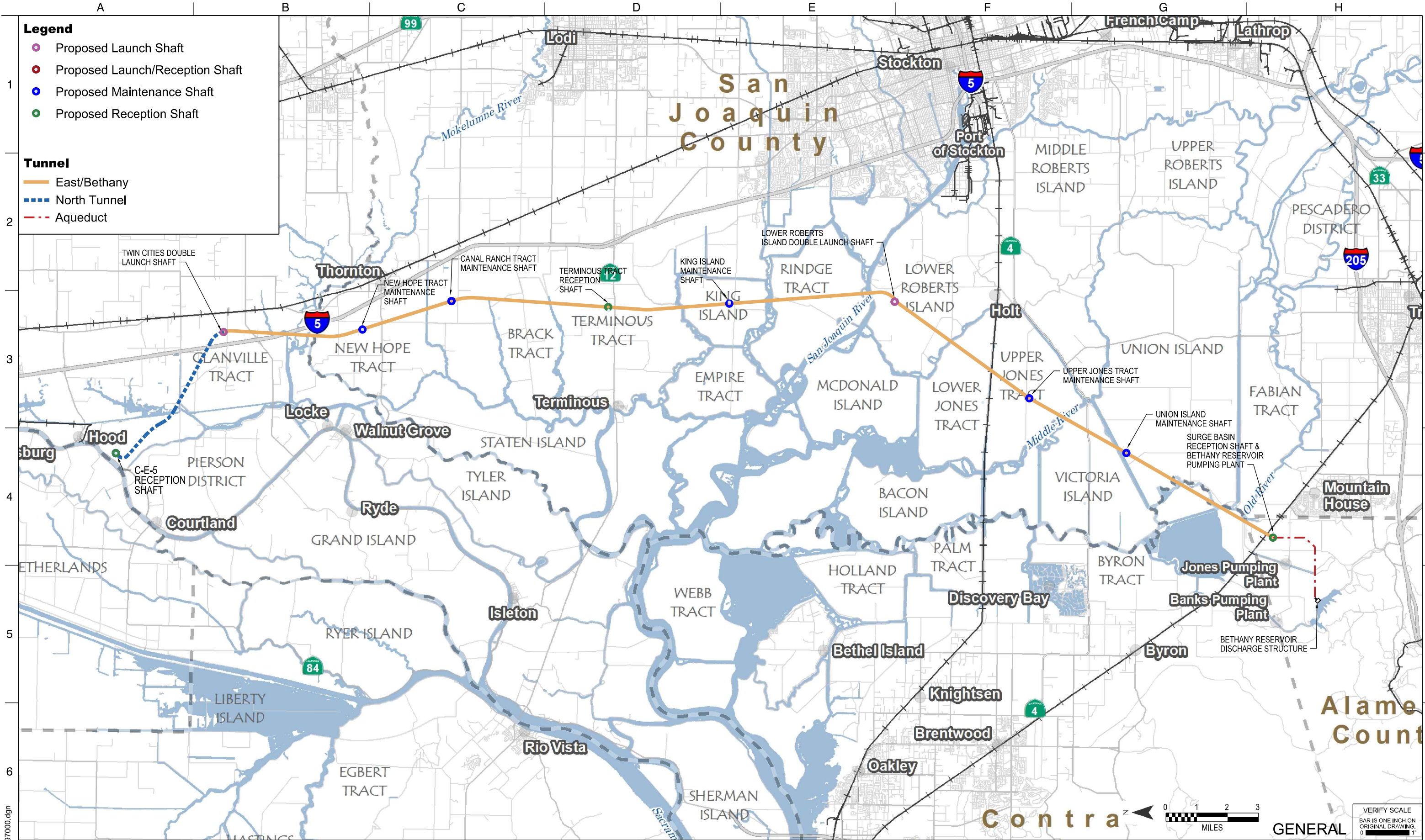
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ENGINEERING PROJECT REPORT
DELTA CONVEYANCE PROJECT
SINGLE TUNNEL - BETHANY RESERVOIR ALTERNATIVE
PROJECT SCHEMATIC

GENERAL

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| VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING. 0' 1" | |
| PROJECT NO. | W8X97000 |
| SHEET NO. | STB-G-0040GN |
| REV | SEQUENCE NO. |



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| | 12/23/2021 | FINAL DRAFT BASELINE DRAWINGS | |



DCA
DELTA CONVEYANCE DESIGN
& CONSTRUCTION AUTHORITY

ENGINEERING PROJECT REPORT
DELTA CONVEYANCE PROJECT
SINGLE TUNNEL - BETHANY RESERVOIR ALTERNATIVE
CONVEYANCE OVERVIEW - OPTION B6
3,000 CFS AT INTAKE C-E-5

VERIFY SCALE
BAR IS ONE INCH ON
ORIGINAL DRAWING.
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MILES

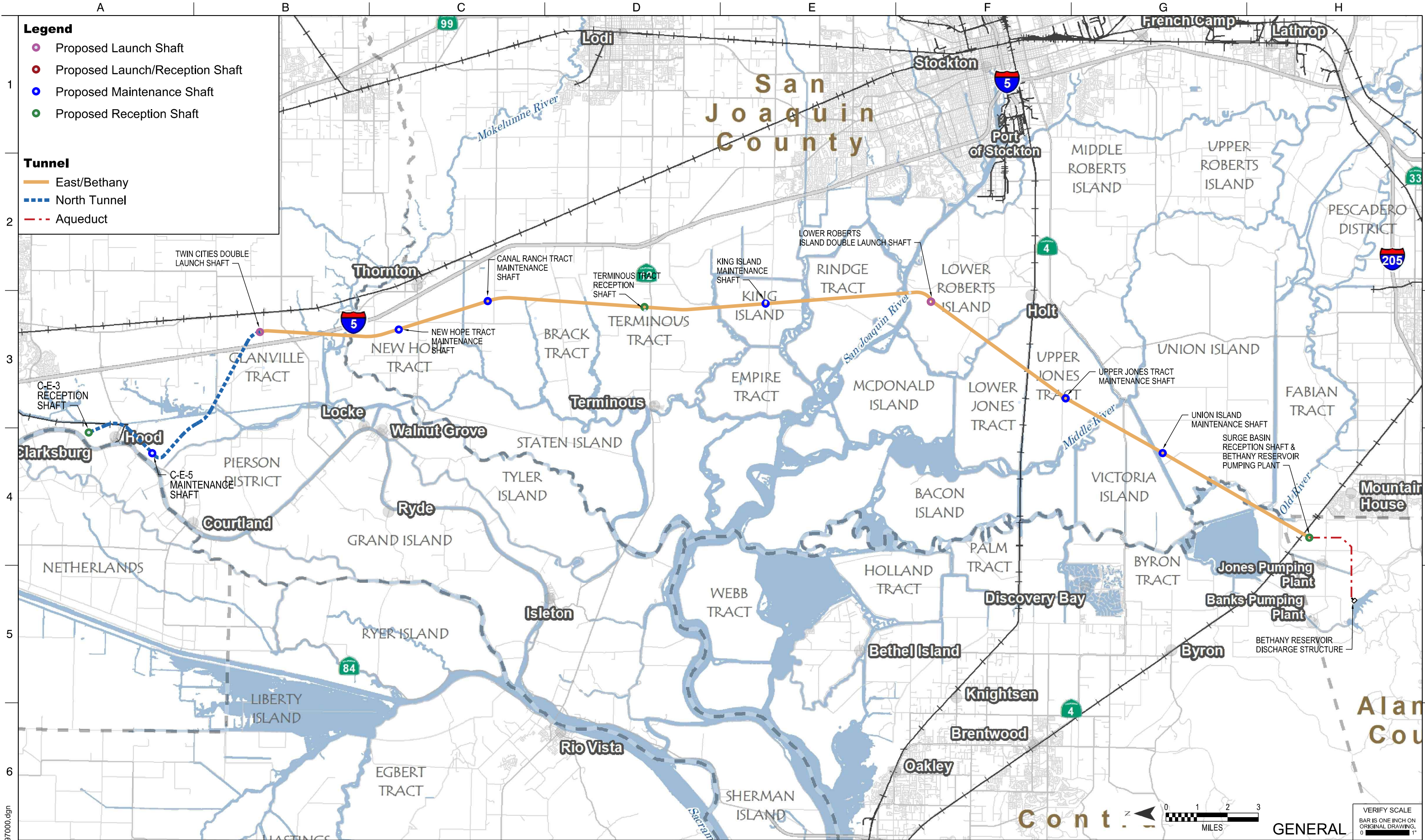
GENERAL

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| SHEET NO. | STB-G-0051GN |
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DELTA CONVEYANCE DESIGN
& CONSTRUCTION AUTHORITY

ENGINEERING PROJECT REPORT
DELTA CONVEYANCE PROJECT
SINGLE TUNNEL - BETHANY RESERVOIR ALTERNATIVE

CONVEYANCE OVERVIEW - OPTION B8
4,500 CFS AT INTAKES C-E-3 AND C-E-5

VERIFY SCALE
BAR IS ONE INCH ON
ORIGINAL DRAWING.
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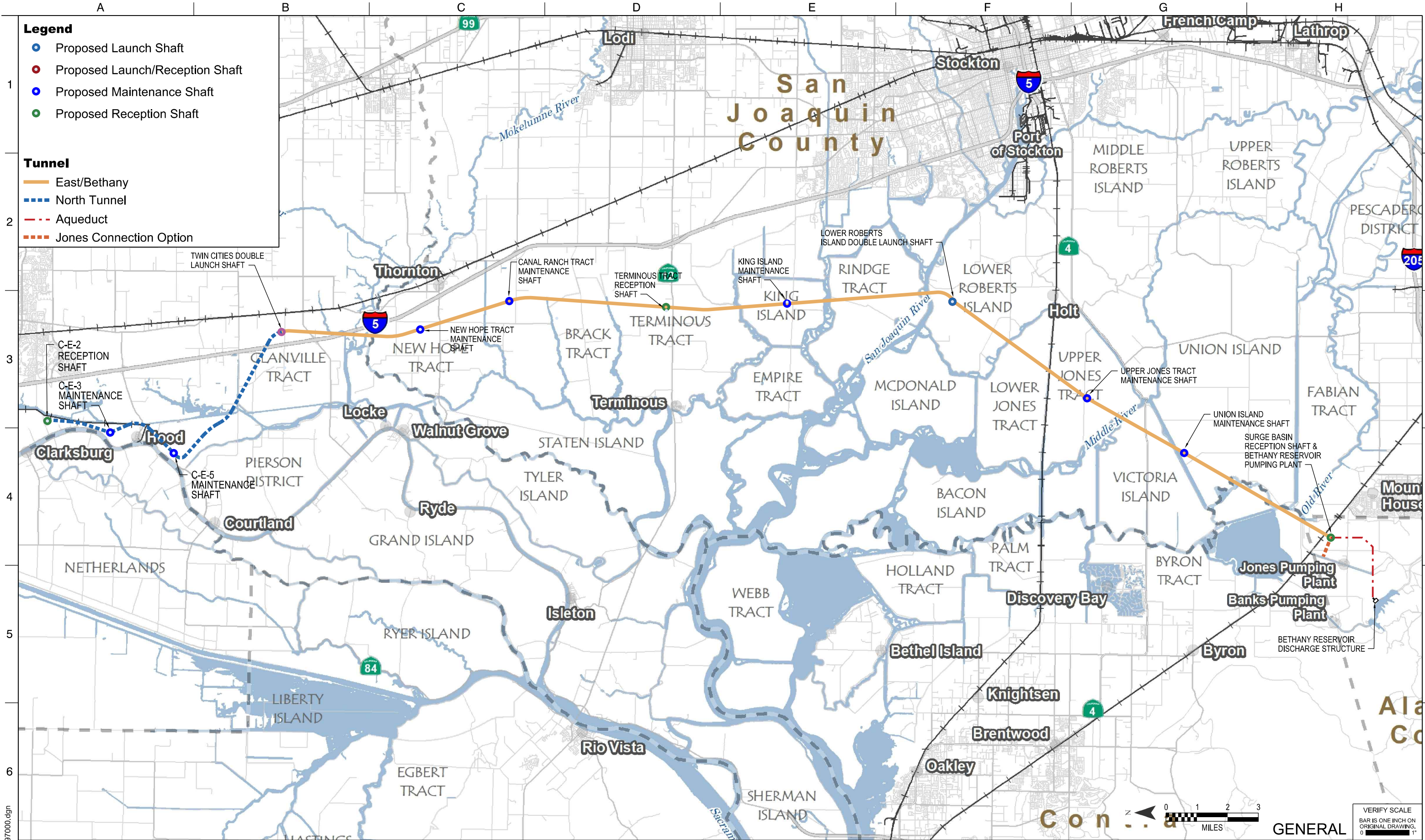
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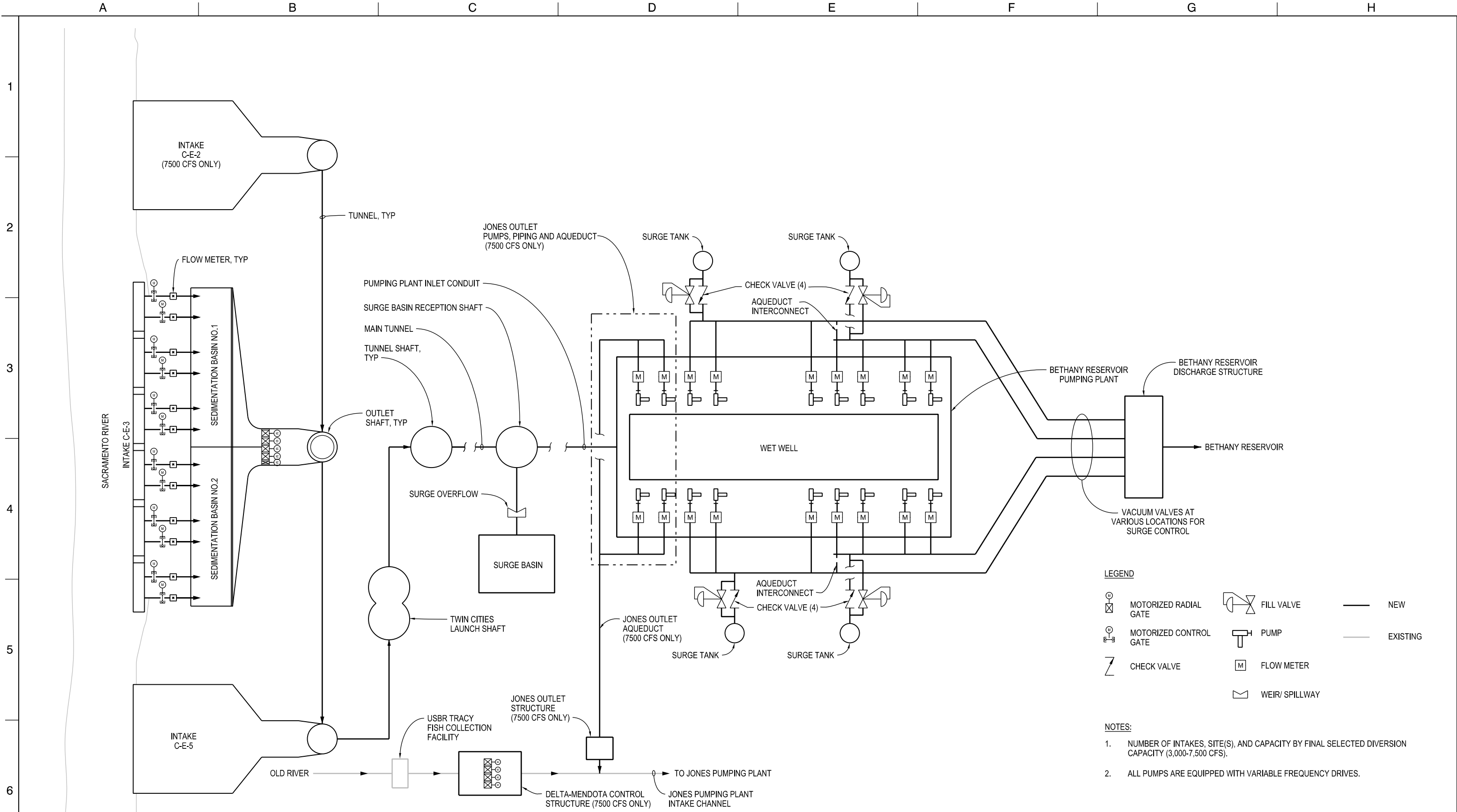
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| | | | | | DRAWN | | APPROVAL BY | | | SHEET NO. STB-G-0053GN | | | | | |
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| | | | | | | | | | | | | | | | |
| 12/23/2021 | | | FINAL DRAFT BASELINE DRAWINGS | | | | | | CONVEYANCE OVERVIEW - OPTION B10 7,500 CFS AT INTAKES C-E-2, C-E-3, AND C-E-5 | | | | | | |



LEGEND

MOTORIZED RADIAL GATE

MOTORIZED CONTROL GATE

CHECK VALVE

FILL VALVE

PUMP

FLOW METER

WEIR/ SPILLWAY

NEW

EXISTING

- NOTES:
1.

NUMBER OF INTAKES, SITE(S), AND CAPACITY BY FINAL SELECTED DIVERSION CAPACITY (3,000-7,500 CFS).
2.

ALL PUMPS ARE EQUIPPED WITH VARIABLE FREQUENCY DRIVES.

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ENGINEERING PROJECT REPORT

DELTA CONVEYANCE PROJECT

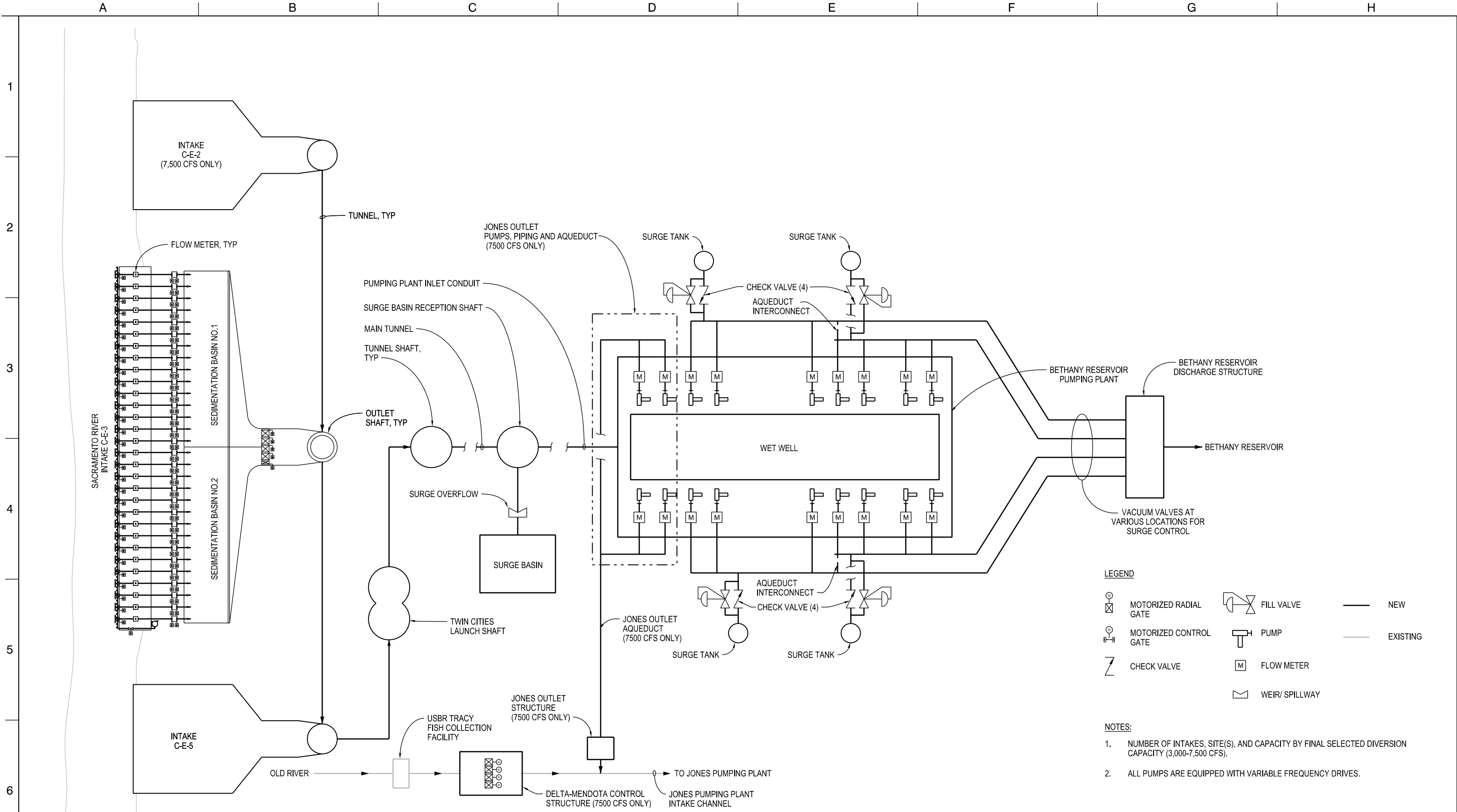
SINGLE TUNNEL - BETHANY RESERVOIR ALTERNATIVE

OVERALL PROCESS FLOW DIAGRAM

VERTICAL PLATE INTAKE SCREENS

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| VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1" | |
| PROJECT NO. | W8X97000 |
| SHEET NO. | STB-G-0070GN |
| REV | SEQUENCE NO. |

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LEGEND

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| | MOTORIZED RADIAL GATE | | FILL VALVE | | NEW |
| | MOTORIZED CONTROL GATE | | PUMP | | EXISTING |
| | CHECK VALVE | | FLOW METER | | |
| | | | WEIR/ SPILLWAY | | |

- NOTES:**
- NUMBER OF INTAKES, SITE(S), AND CAPACITY BY FINAL SELECTED DIVERSION CAPACITY (3,000-7,500 CFS).
 - ALL PUMPS ARE EQUIPPED WITH VARIABLE FREQUENCY DRIVES.

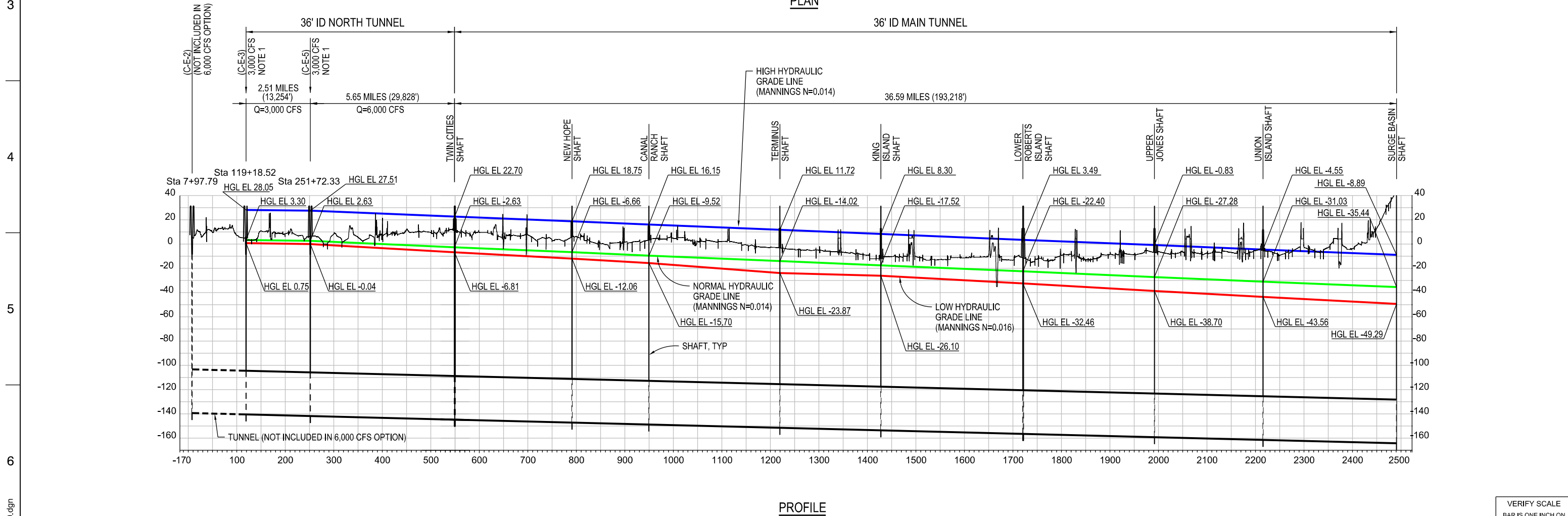
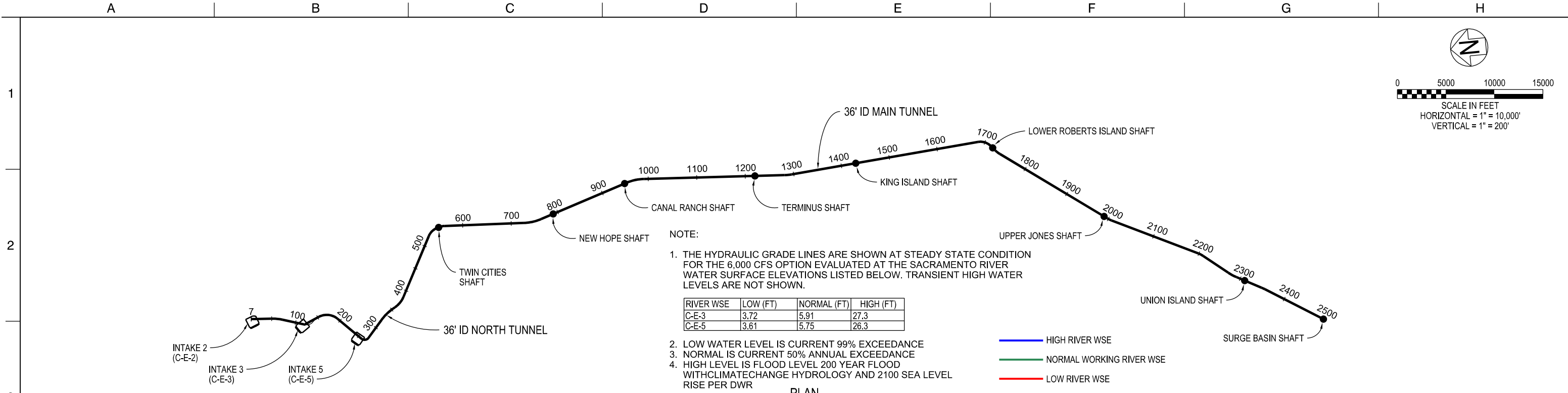
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| | 12/23/2021 | FINAL DRAFT BASELINE DRAWINGS | | |



ENGINEERING PROJECT REPORT
DELTA CONVEYANCE PROJECT
SINGLE TUNNEL - BETHANY RESERVOIR ALTERNATIVE
**OVERALL PROCESS FLOW DIAGRAM
CYLINDRICAL TEE SCREENS**

| | |
|---|--------------|
| VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1" | |
| PROJECT NO. W8X97000 | |
| SHEET NO. STB-G-0075GN | |
| REV | SEQUENCE NO. |

STB-G-0075GN_W8X97000.dgn



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|----------|----------|----------------------|--------|
| DESIGNED | S DAIGLE | APPROVAL RECOMMENDED | |
| DRAWN | M METZ | APPROVAL BY | P RYAN |
| CHECKED | | | |

12/23/2021

FINAL DRAFT BASELINE DRAWINGS

STB-G-0080GN_W8X97000.dgn

PLOT DATE:2021/11/16

PLOT TIME:4:53:51 AM

ENGINEERING PROJECT REPORT

DELTA CONVEYANCE PROJECT

SINGLE TUNNEL - BETHANY RESERVOIR ALTERNATIVE

OVERALL HYDRAULIC

PLAN AND PROFILE (6,000 CFS)

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.

PROJECT NO.

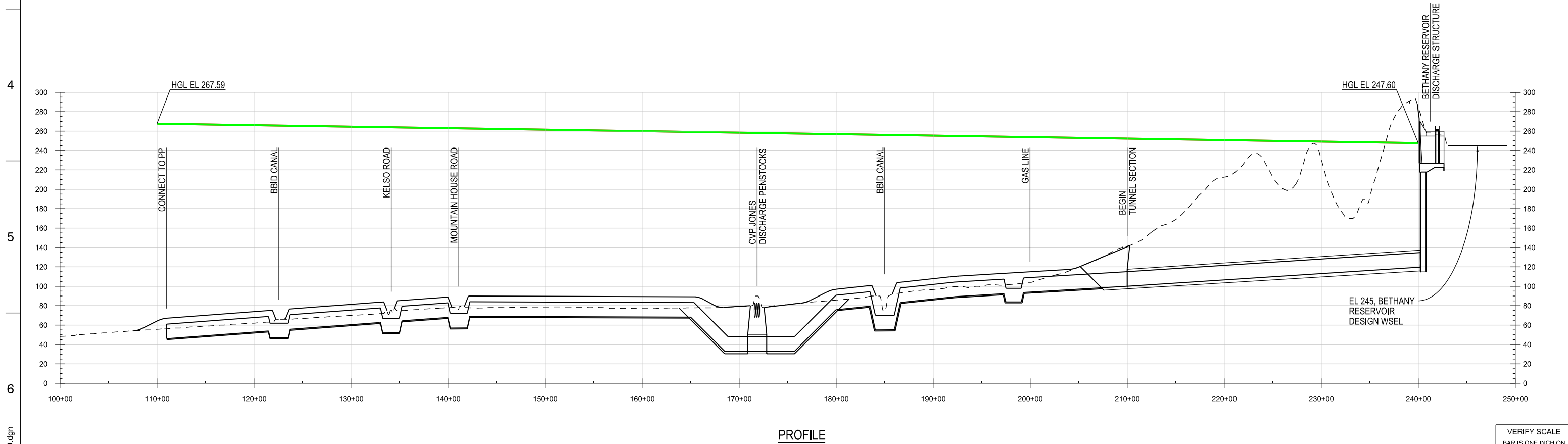
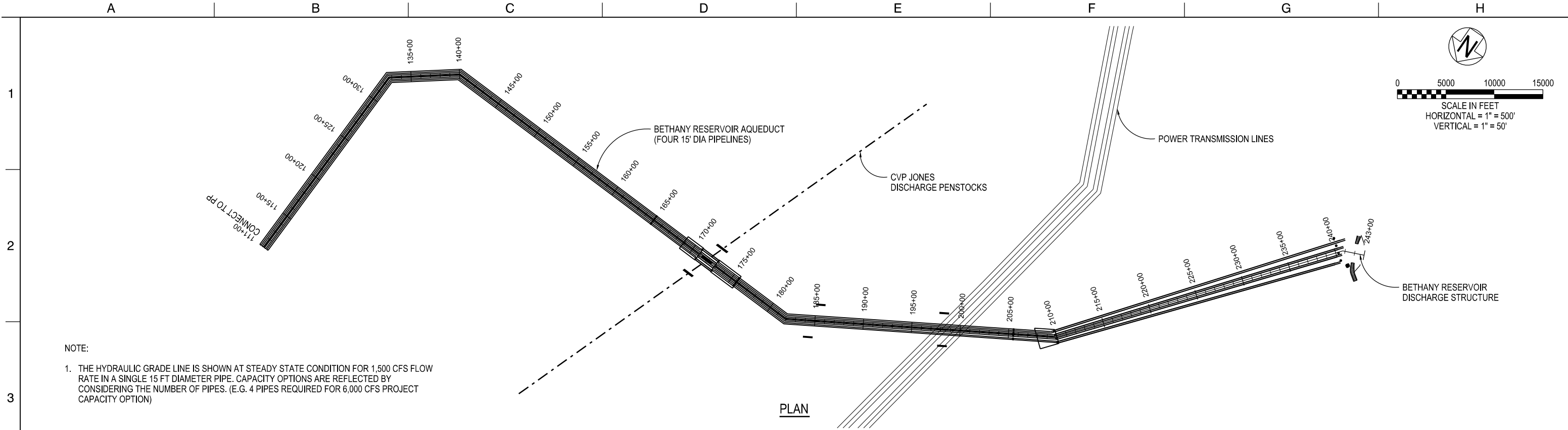
W8X97000

SHEET NO.

STB-G-0080GN

REV

SEQUENCE NO.



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| DESIGNED | | APPROVAL RECOMMENDED | |
| S DAIGLE | | | |
| DRAWN | | APPROVAL BY | |
| M METZ | | P RYAN | |
| CHECKED | | | |
| 12/23/2021 | FINAL DRAFT BASELINE DRAWINGS | SUB. | APPD |
| REV | DATE | DESCRIPTION | |



ENGINEERING PROJECT REPORT
DELTA CONVEYANCE PROJECT
SINGLE TUNNEL - BETHANY RESERVOIR ALTERNATIVE

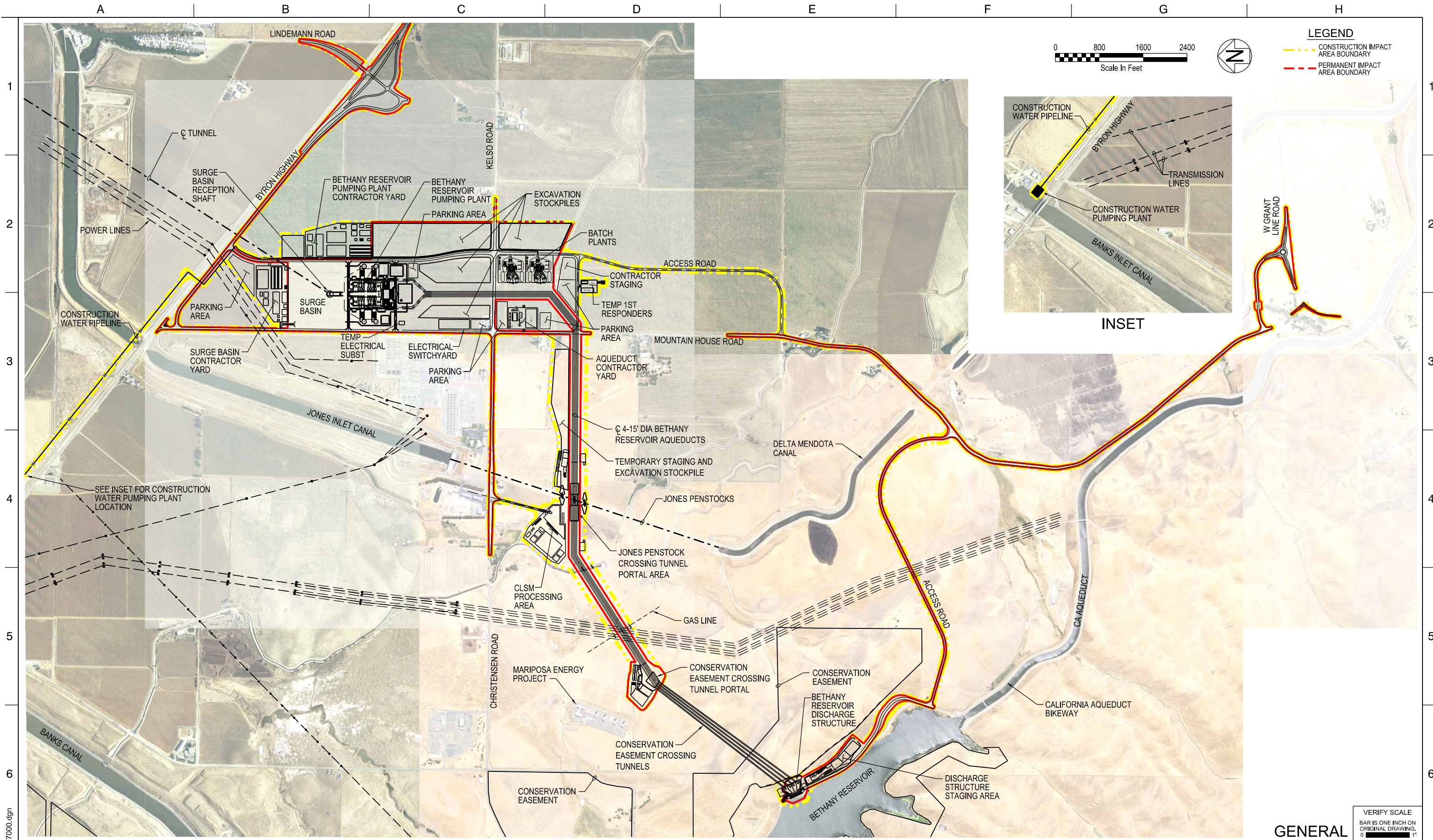
OVERALL HYDRAULIC
PLAN AND PROFILE - AQUEDUCT (6,000 CFS)

VERIFY SCALE
BAR IS ONE INCH ON
ORIGINAL DRAWING.
0' 1"

PROJECT NO.
W8X97000

SHEET NO.
STB-G-0081GN

REV SEQUENCE NO.



STB-G-0090GN_W8X97000.dgn

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| DESIGNED | APPROVAL RECOMMENDED | | | |
| DRAWN A. SCHULTZ | APPROVAL BY | | | |
| CHECKED G. BRADNER | | | | |
| 12/23/2021 | FINAL DRAFT BASELINE DRAWINGS | | | |
| REV | DATE | DESCRIPTION | SUB. | APPD |



DELTA CONVEYANCE DESIGN
& CONSTRUCTION AUTHORITY

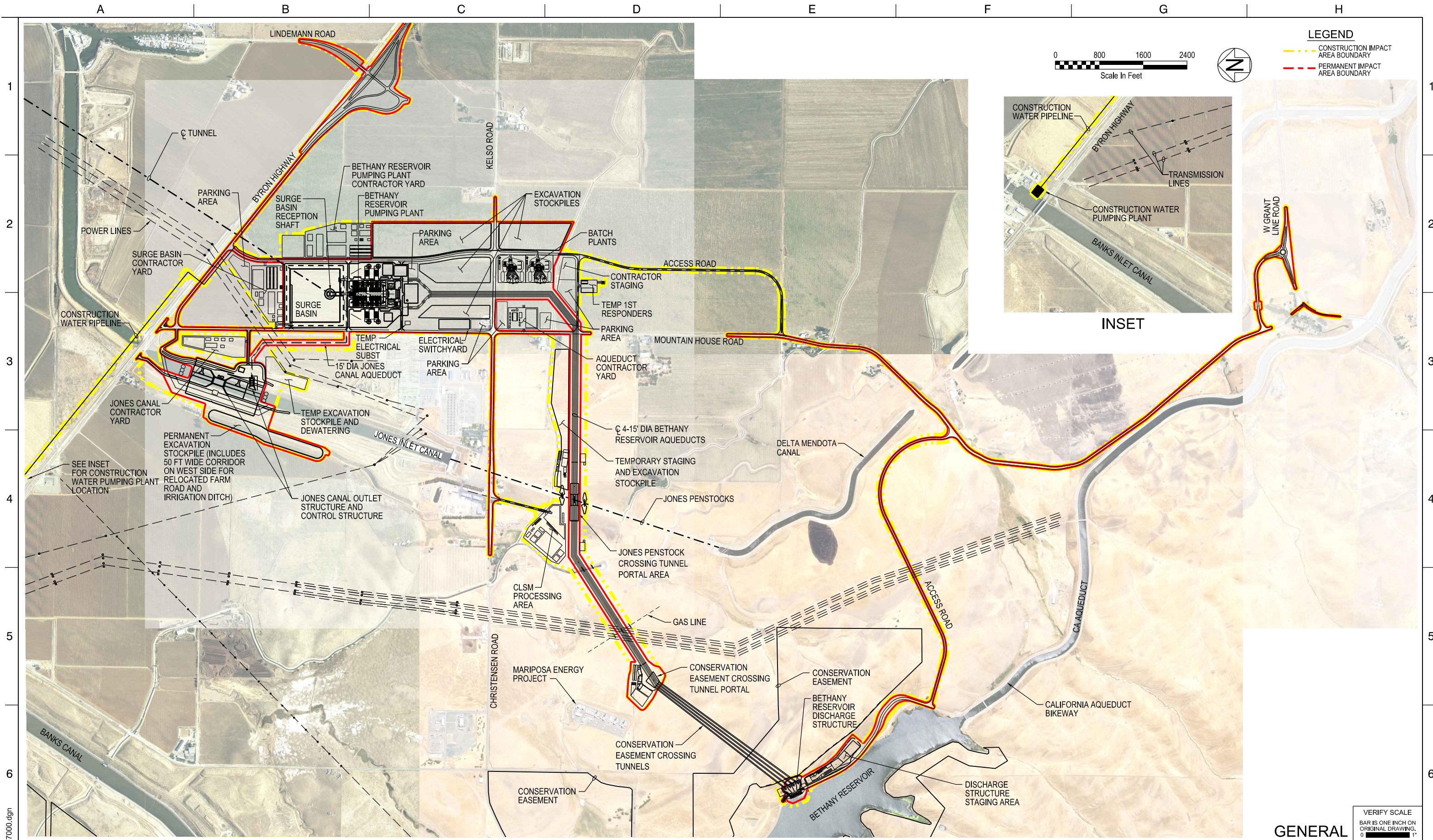
ENGINEERING PROJECT REPORT
DELTA CONVEYANCE PROJECT
SINGLE TUNNEL - BETHANY RESERVOIR ALTERNATIVE

BETHANY COMPLEX
IMPACT AREA LIMITS (6,000 CFS)

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| VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING. 0 | |
| PROJECT NO. W8X97000 | |
| SHEET NO. STB-G-0090GN | |
| REV | SEQUENCE NO. |

PLOT DATE:2021/11/16

PLOT TIME:5:00:04 AM



STB-G-0091GN_W8X97000.dgn

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| DESIGNED | APPROVAL RECOMMENDED | | | |
| DRAWN A. SCHULTZ | APPROVAL BY | | | |
| CHECKED G. BRADNER | | | | |
| 12/23/2021 | FINAL DRAFT BASELINE DRAWINGS | | | |
| REV | DATE | DESCRIPTION | SUB. | APPD |

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DELTA CONVEYANCE DESIGN
& CONSTRUCTION AUTHORITY

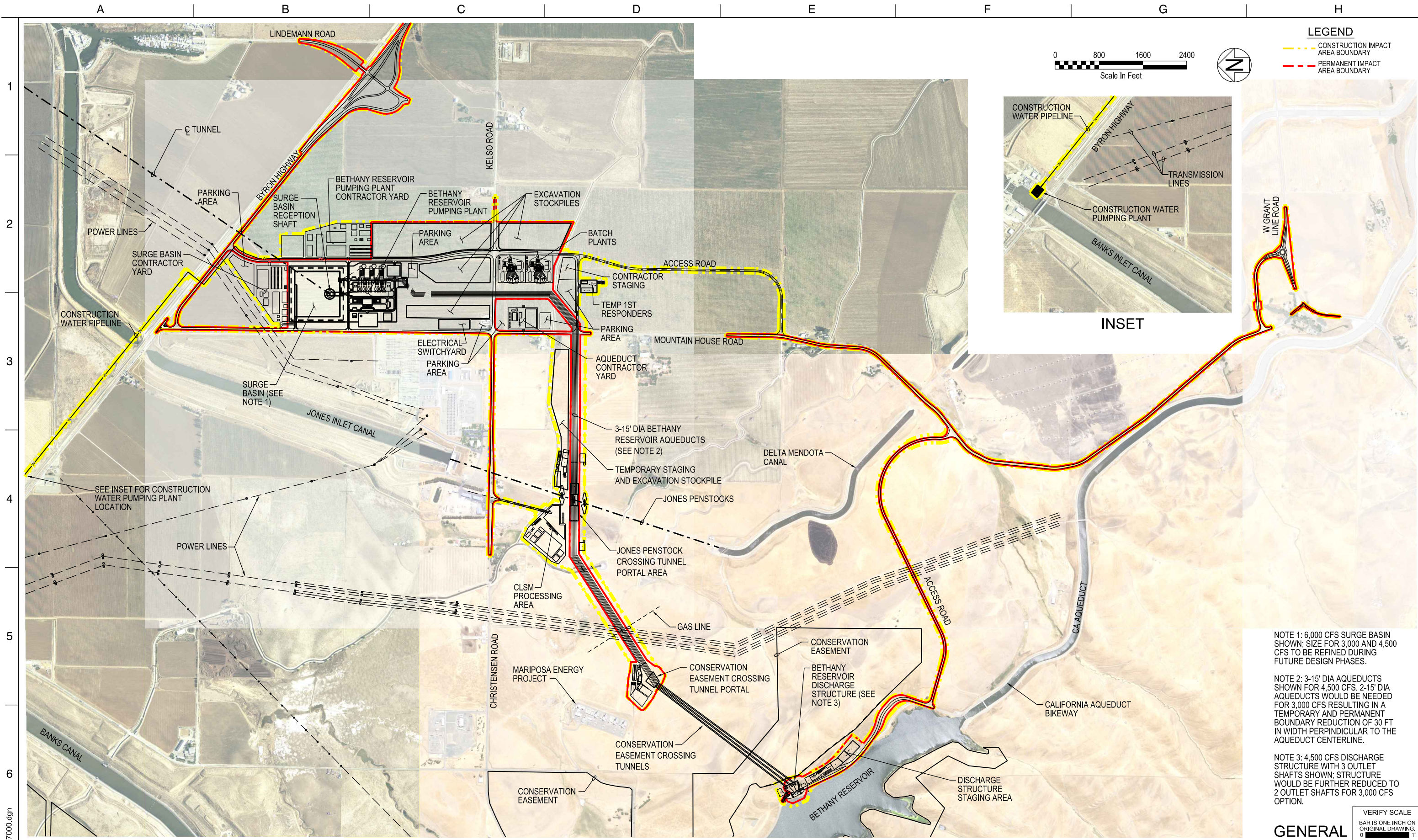
ENGINEERING PROJECT REPORT
DELTA CONVEYANCE PROJECT
SINGLE TUNNEL - BETHANY RESERVOIR ALTERNATIVE

BETHANY COMPLEX
IMPACT AREA LIMITS (7,500 CFS)

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| PROJECT NO. W8X97000 | |
| SHEET NO. STB-G-0091GN | |
| REV | SEQUENCE NO. |

GENERAL

VERIFY SCALE
BAR IS ONE INCH ON
ORIGINAL DRAWING.
0'



NOTE 1: 6,000 CFS SURGE BASIN SHOWN: SIZE FOR 3,000 AND 4,500 CFS TO BE REFINED DURING FUTURE DESIGN PHASES.

NOTE 2: 3-15' DIA AQUEDUCTS SHOWN FOR 4,500 CFS. 2-15' DIA AQUEDUCTS WOULD BE NEEDED FOR 3,000 CFS RESULTING IN A TEMPORARY AND PERMANENT BOUNDARY REDUCTION OF 30 FT IN WIDTH PERPENDICULAR TO THE AQUEDUCT CENTERLINE.

NOTE 3: 4,500 CFS DISCHARGE STRUCTURE WITH 3 OUTLET SHAFTS SHOWN; STRUCTURE WOULD BE FURTHER REDUCED TO 2 OUTLET SHAFTS FOR 3,000 CFS OPTION.

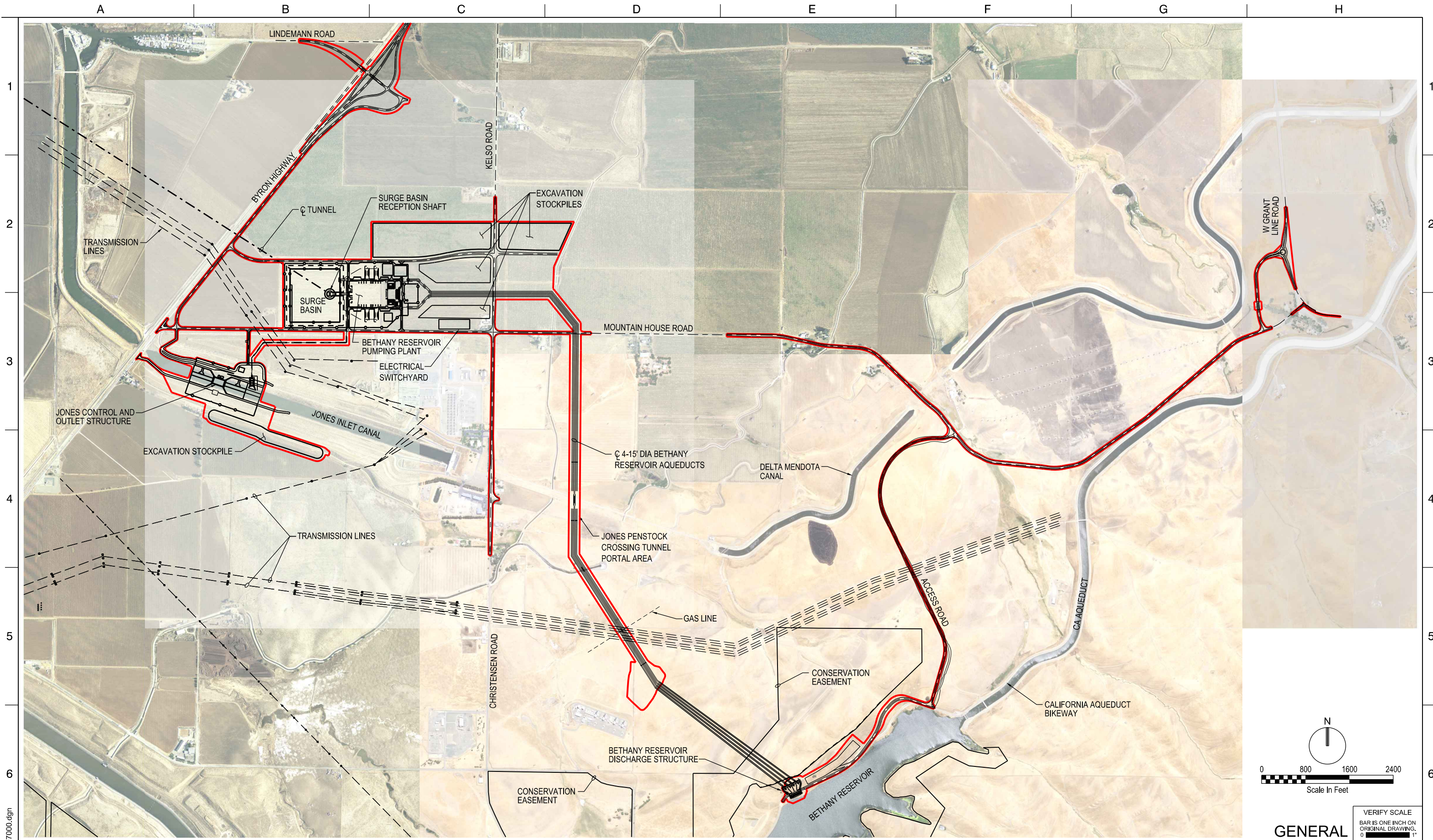
GENERAL

| | | | |
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| DESIGNED | | APPROVAL RECOMMENDED | |
| DRAWN | | APPROVAL BY | |
| A. SCHULTZ | | | |
| CHECKED | | | |
| G. BRADNER | | | |
| 12/23/2021 | FINAL DRAFT BASELINE DRAWINGS | | |
| REV | DATE | DESCRIPTION | SUB. APPD |



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| ENGINEERING PROJECT REPORT DELTA CONVEYANCE PROJECT SINGLE TUNNEL - BETHANY RESERVOIR ALTERNATIVE | | PROJECT NO. W8X97000 |
| BETHANY COMPLEX IMPACT AREA LIMITS (3,000/4,500 CFS) | | SHEET NO. STB-G-0092GN |
| | | REV SEQUENCE NO. |

STB-G-0092GN_W8X97000.dgn



GENERAL

| REV | DATE | DESCRIPTION | SUB. | APPD |
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| | 12/23/2021 | FINAL DRAFT BASELINE DRAWINGS | | |

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| DESIGNED | APPROVAL RECOMMENDED |
| DRAWN A. SCHULTZ | APPROVAL BY |
| CHECKED G. BRADNER | |



ENGINEERING PROJECT REPORT
DELTA CONVEYANCE PROJECT
SINGLE TUNNEL - BETHANY RESERVOIR ALTERNATIVE

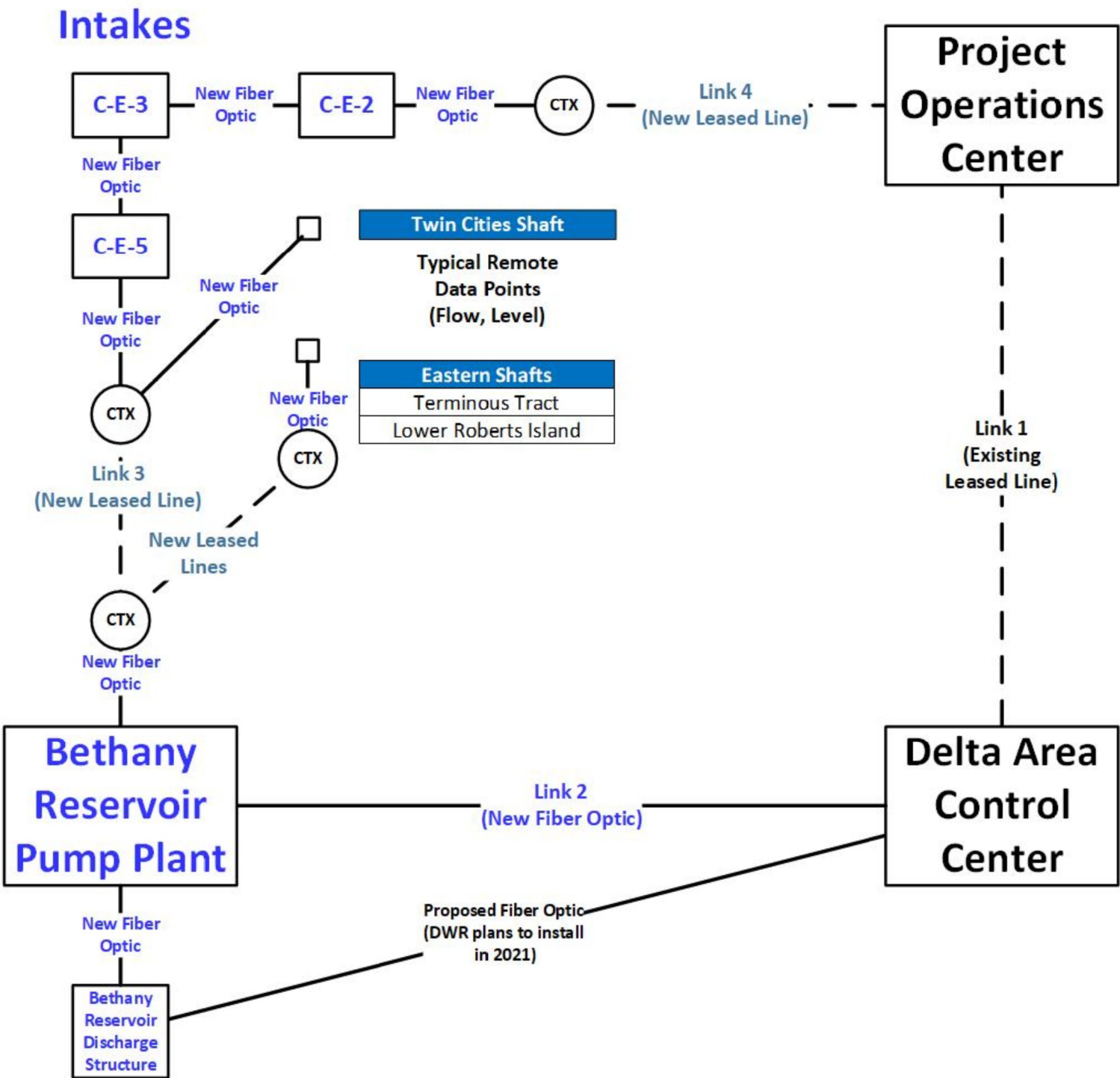
BETHANY COMPLEX
POST-CONSTRUCTION SITE PLAN (7,500 CFS)

| | |
|---------------------------|--------------|
| PROJECT NO. W8X97000 | |
| SHEET NO. STB-G-0101GN | |
| REV | SEQUENCE NO. |

STB-G-0101GN_W8X97000.dgn

Delta Conveyance Communications Diagram

| Legend | | |
|--------|----------------------------|-------|
| Symbol | Description | Count |
| | Remote Data Point | 2 |
| | Local Control Point | 4 |
| | Leased Line Point (Router) | 4 |



GENERAL

| | | | | | |
|-----|------------|-------------------------------|------|------|----------|
| | | | | | DESIGNED |
| | | | | | |
| | | | | | DRAWN |
| | | | | | |
| | 12/23/2021 | FINAL DRAFT BASELINE DRAWINGS | | | CHECKED |
| REV | DATE | DESCRIPTION | SUB. | APPD | |



ENGINEERING PROJECT REPORT
DELTA CONVEYANCE PROJECT
SINGLE TUNNEL - BETHANY RESERVOIR ALTERNATIVE
COMMUNICATION DIAGRAM

| | |
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| VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1 | |
| PROJECT NO. | W8X97000 |
| SHEET NO. | STB-E-0030GN |
| REV | SEQUENCE NO. |