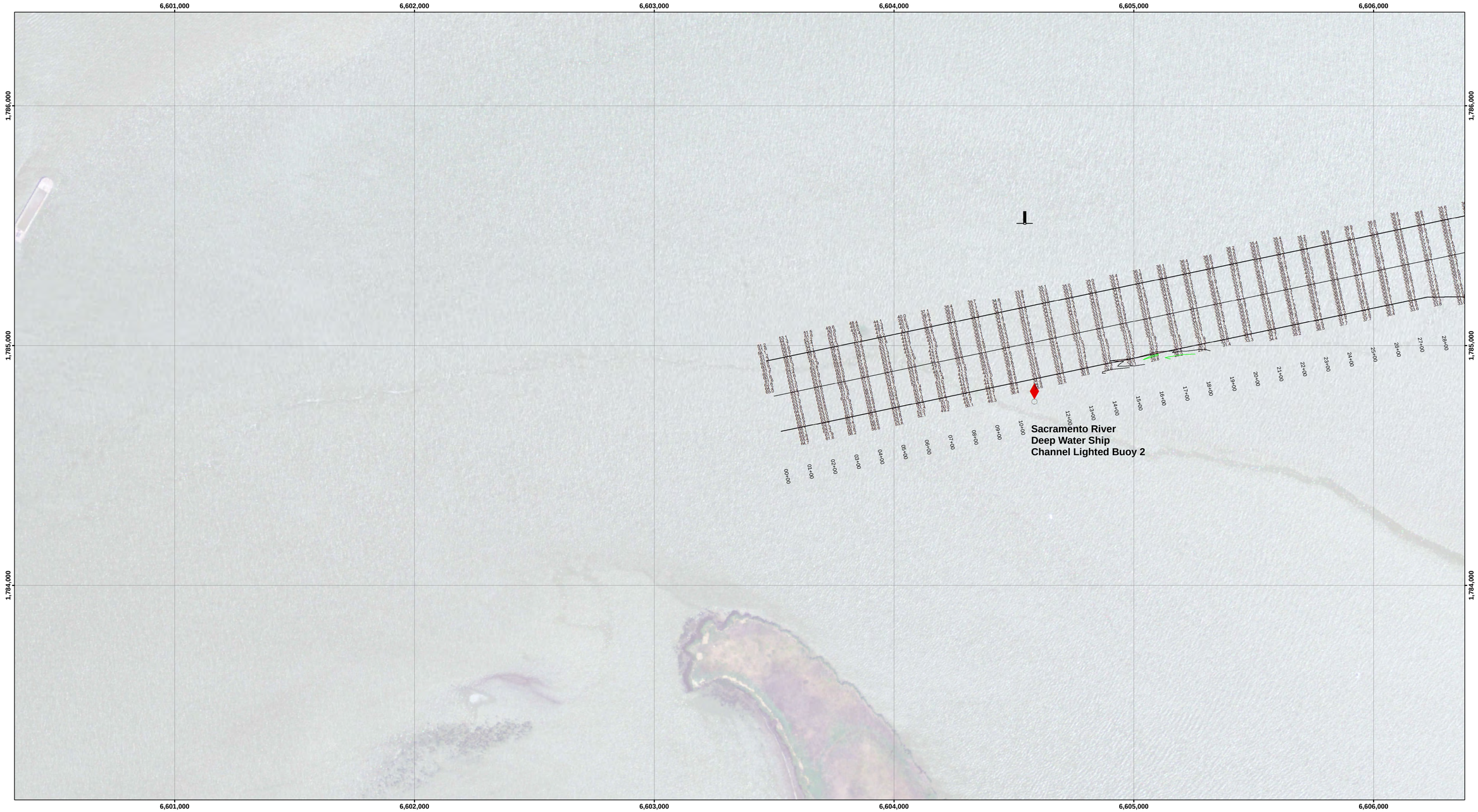

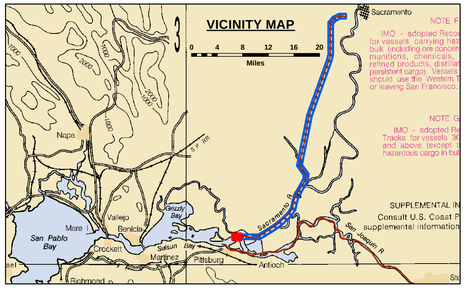

Feet
0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
- Cable Overhead
- Contour Line
- Cable Area
- Placement Area
- Anchorage Area
- Obstruction Point
- Wrecks-Submerged
- Shoaling Area
- Shoalest Sounding**
- Beacon, General
- Red Navigation Buoy
- Green Navigation Buoy

NOTES:
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SOUNDINGS ARE BASED ON THE DATUM OF MEAN LOWER LOW WATER AT THE LOCALITY.

NORTH AMERICAN DATUM OF 1983 (NAD83), PROJECTED TO THE STATE PLANE COORDINATE SYSTEM (SPCS), CA ZONE II (0402). DISTANCE UNITS IN U.S. SURVEY FEET.

PLANE GRID AND COORDINATES ARE BASED ON LAMBERT PROJECTION, NAD 83, ZONE II CALIFORNIA AS DESCRIBED IN SPECIAL PUBLICATION NO. 235, PUBLISHED BY THE NATIONAL OCEAN SURVEY.

PROJECT DEPTH: -30'

VERTICAL DATUM: MLLW

THE LOCATION OF NAVIGATION AIDS ARE BASED ON AND PROVIDED BY THE U.S. COAST GUARD

CONTROLS:
LOCATION: RIO VISTA
NOAA STATION: 9415316
BENCHMARK: 5316 B 1996 (NO PID)
TIDE GAUGE: NAIL @ 8.2 FT MLLW
METADATA: NAIL SET BY USACE 31 MARCH, 2014

LOCATION: PORT OF WEST SACRAMENTO
NOAA STATION: 9416131
BENCHMARK: POWS1 (No PID)
TIDE GAUGE: NAIL @ 10.0 FT MLLW
METADATA: NAIL SET BY USACE 8 APRIL, 2014

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US Army Corps of Engineers
District: CESPK

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Chart Date:	May 17, 2016
Surveyed By:	
Designed by:	
Plotted By:	PDT
Drawn by:	PDT
Checked By:	PDT

PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT COLONEL, C.E. DISTRICT ENGINEER

Submitted:
Hydro Survey Team Leader

Recommended:
Chief, Hydro Survey Section

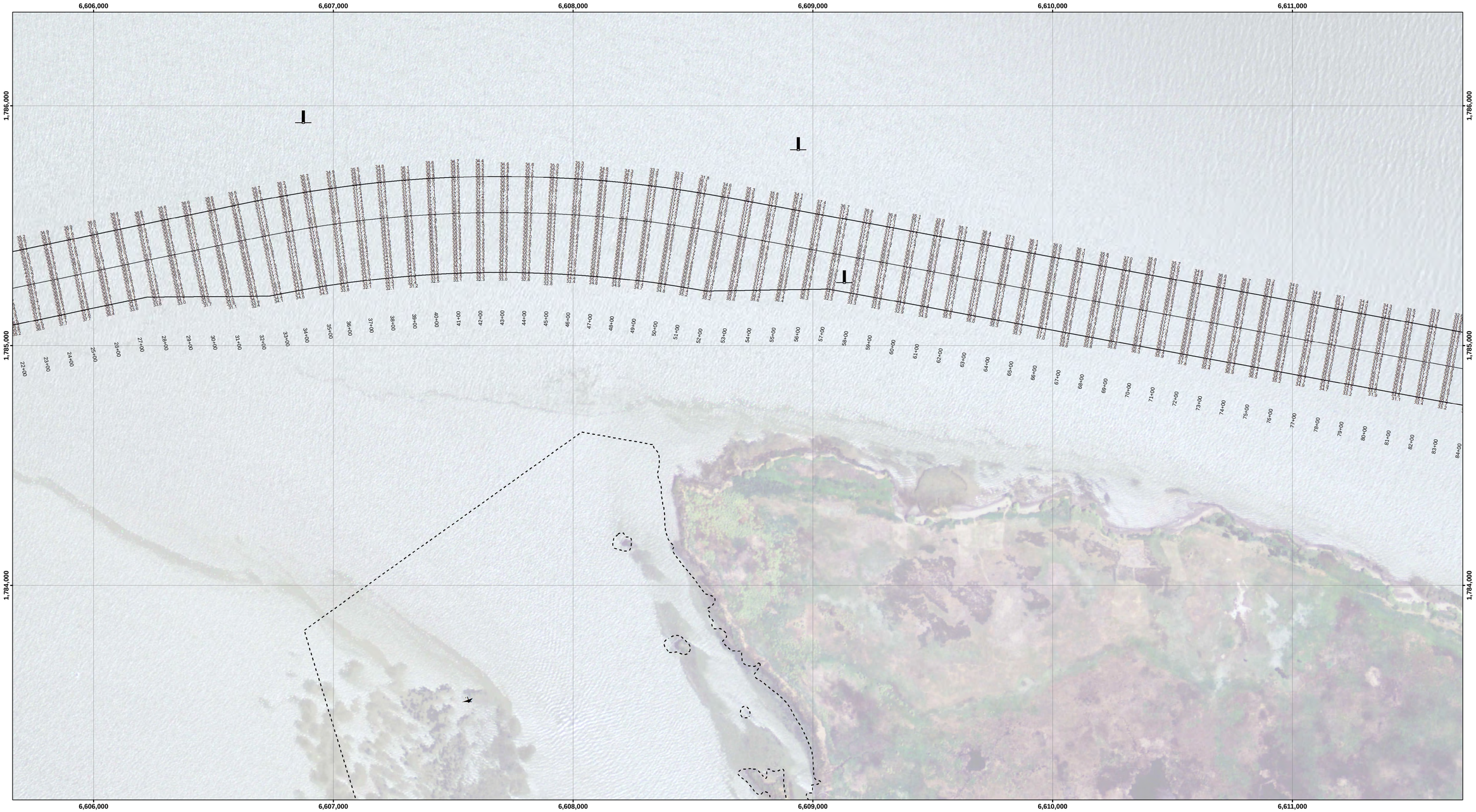
Approved:
Chief, Construction Branch

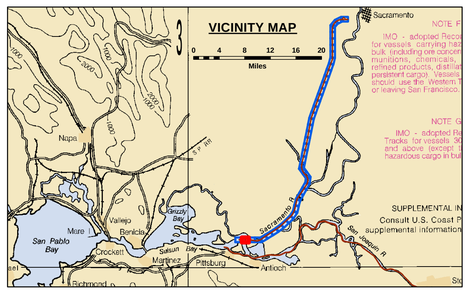
CALIFORNIA

SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
1 of 45





Feet

0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
- Cable Overhead
- Contour Line
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PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT COLONEL, C.E. DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

Surveyed By:
Plotted By: PDT
Checked By: PDT
Chart Date: May 17, 2016
Designed by:
Drawn by: PDT

CALIFORNIA
SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
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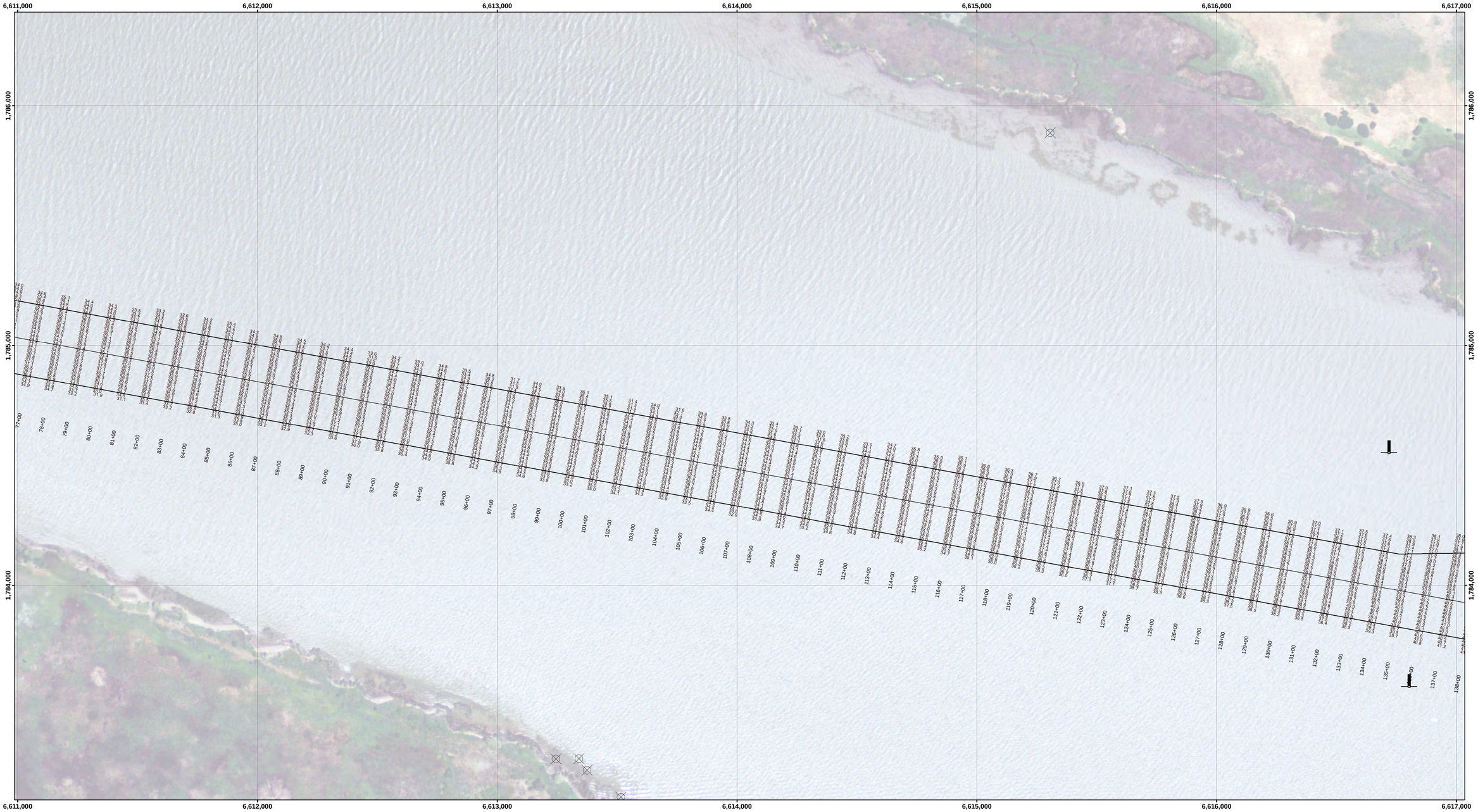

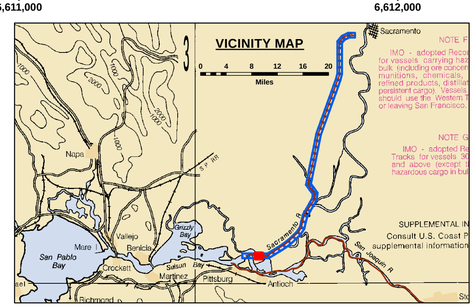

Feet
0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
- Cable Overhead
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Surveyed By:	Chart Date: May 17, 2016
Plotted By: PDT	Designed by:
Checked By: PDT	Drawn by: PDT

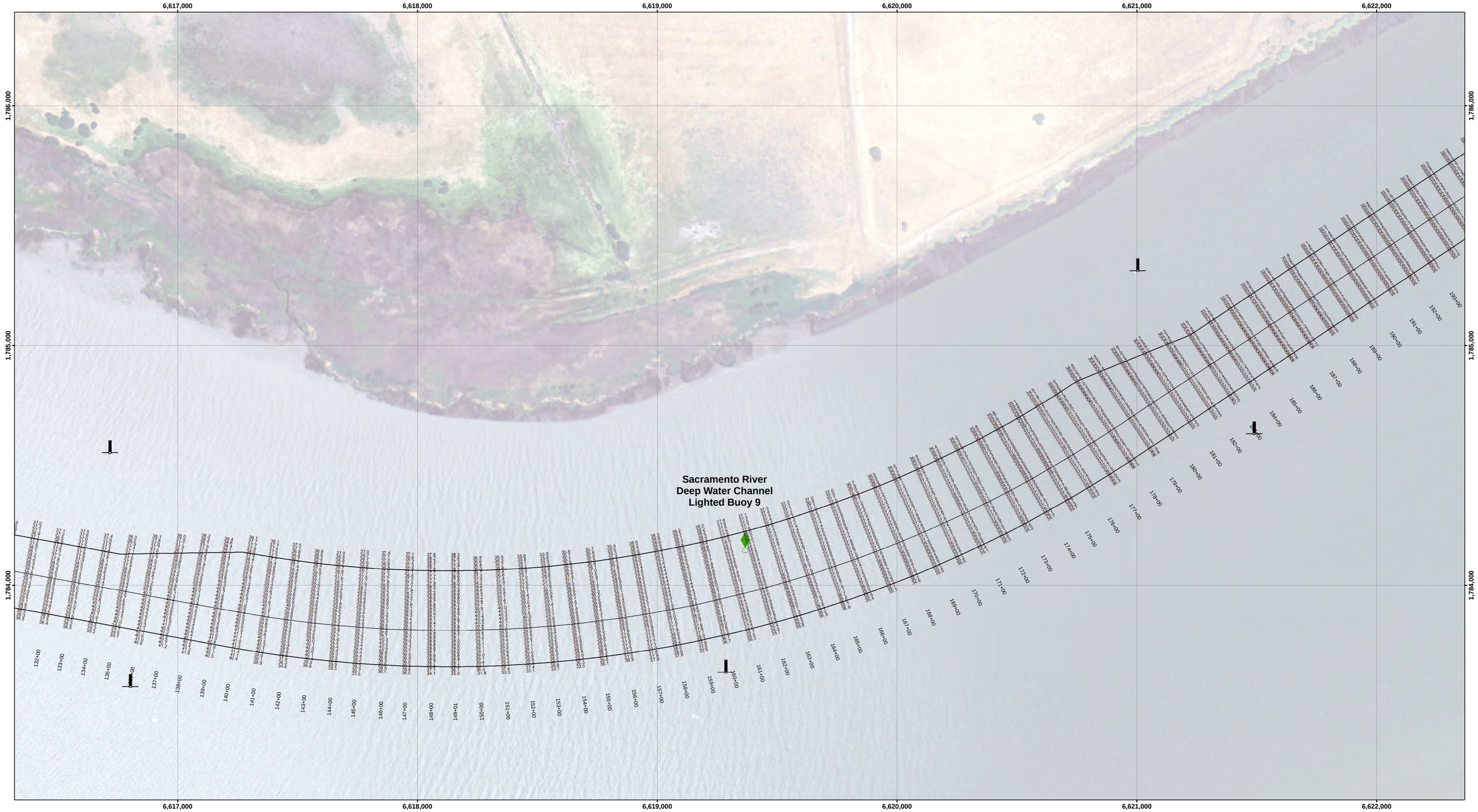
PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT COLONEL, C.E., DISTRICT ENGINEER

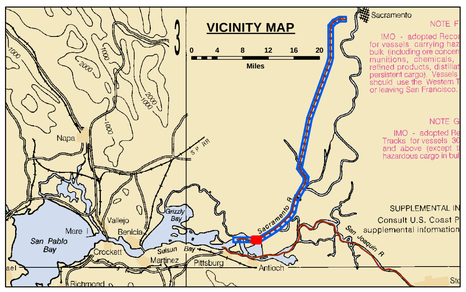
Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

CALIFORNIA
SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
3 of 45





Feet

0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
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Chart Date:	May 17, 2016
Surveyed By:	
Designed by:	
Plotted By:	PDT
Drawn by:	PDT
Checked By:	PDT

PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT COLONEL, C.E. - DISTRICT ENGINEER

Submitted _____
Hydro Survey Team Leader

Recommended _____
Chief, Hydro Survey Section

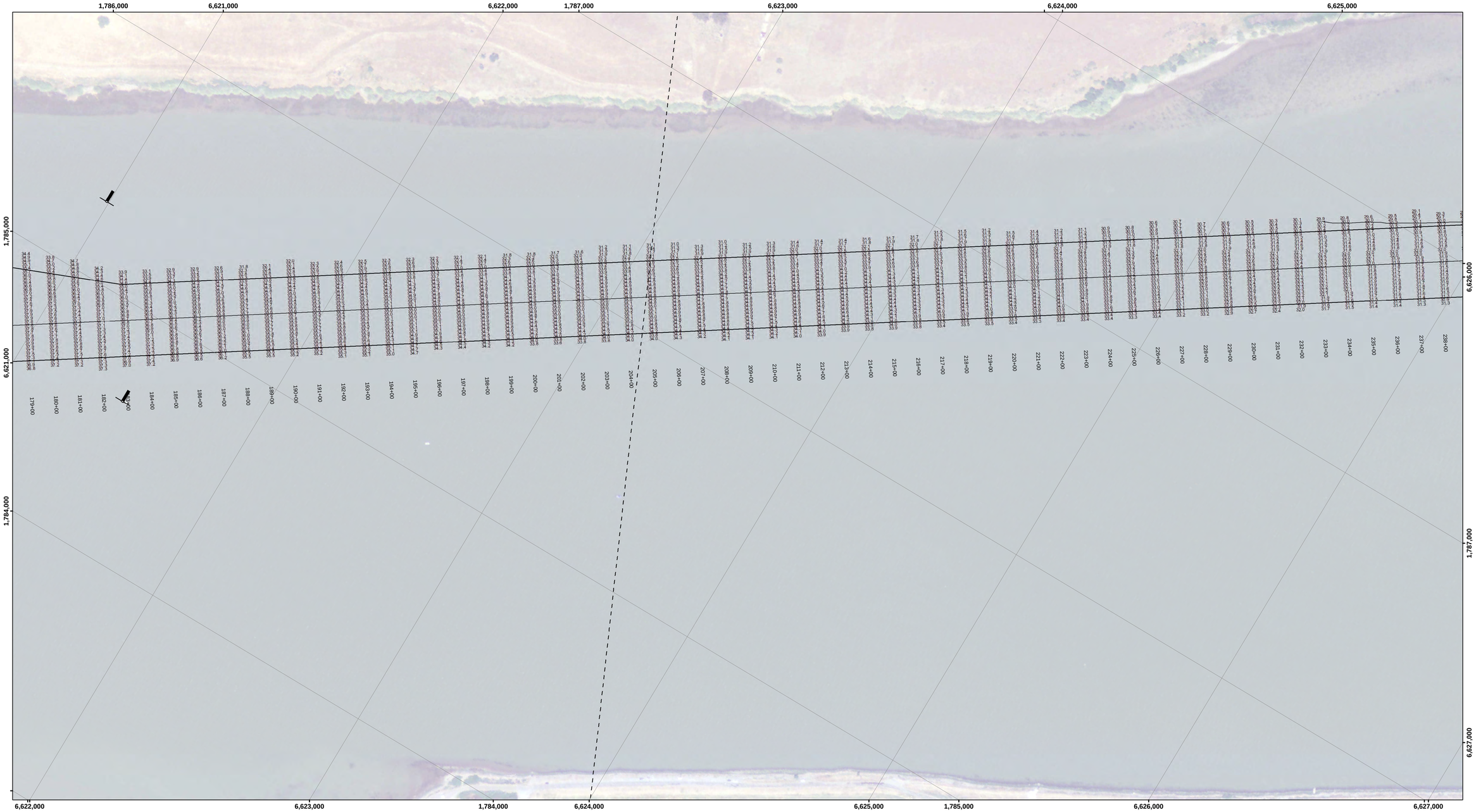
Approved _____
Chief, Construction Branch

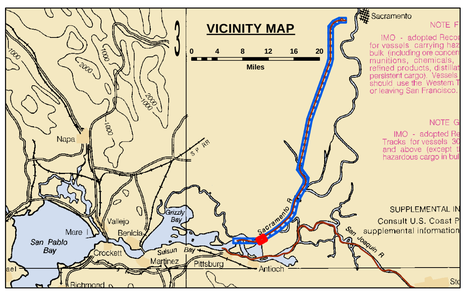
CALIFORNIA

SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
4 of 45





Feet
0 400 800 1,200

LEGEND

- Federal Navigation Channel
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US Army Corps of Engineers
District: CESPK

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PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT COLONEL, C.E. DISTRICT ENGINEER

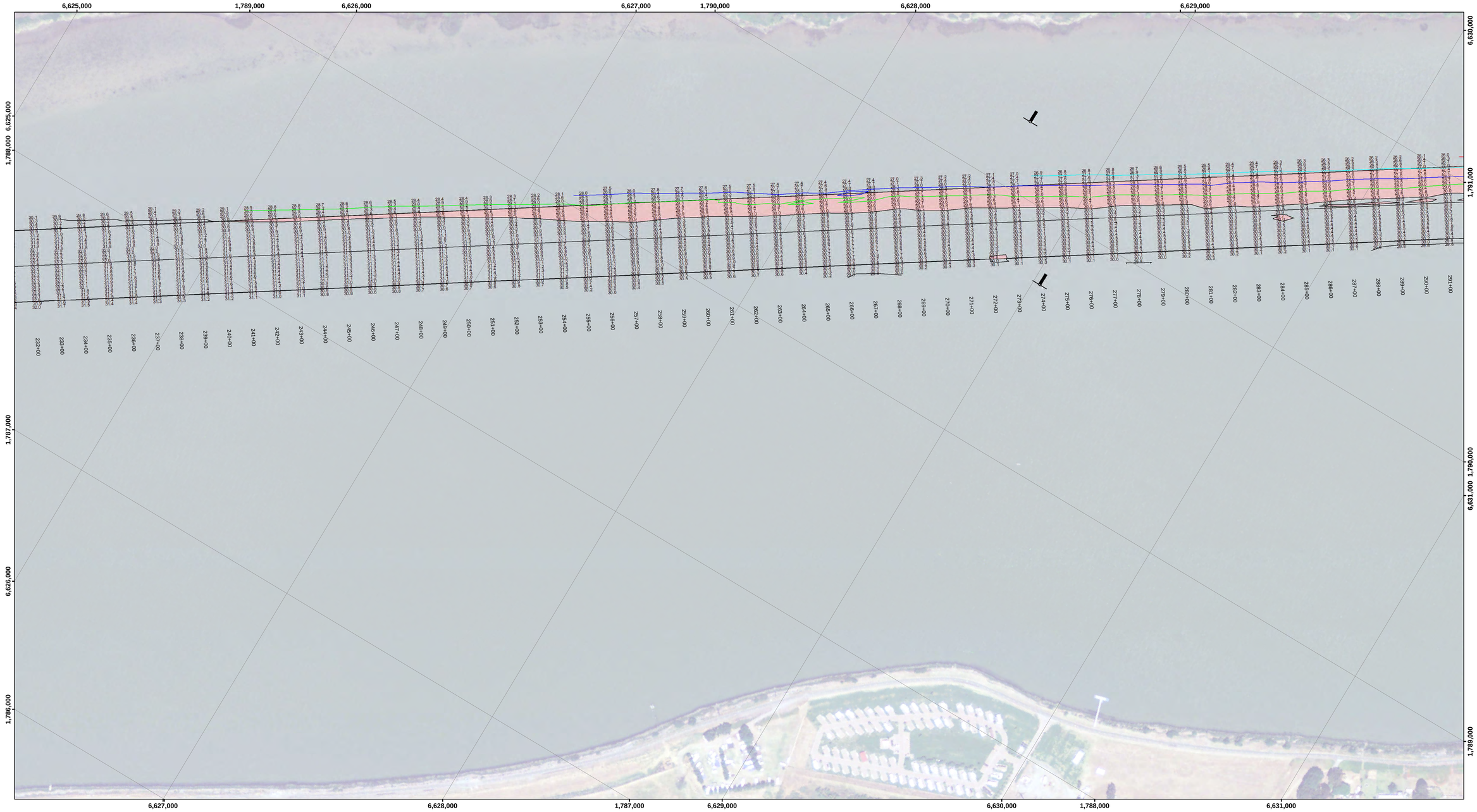
Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

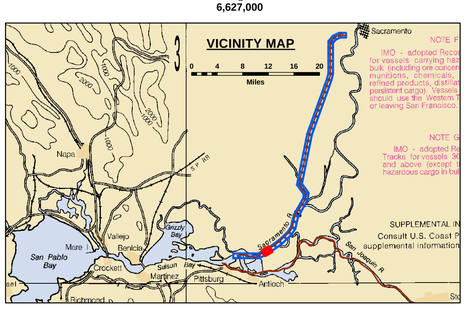
Surveyed By:
Plotted By: PDT
Checked By: PDT
Chart Date: May 17, 2016
Designed by:
Drawn by: PDT

SAN JOAQUIN COUNTY CALIFORNIA

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
5 of 45





Feet
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LEGEND

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PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT. COLONEL, C.E. DISTRICT ENGINEER

Surveyed By:		Chart Date:	May 17, 2016
Plotted By:	PDT	Designed by:	
Drawn by:	PDT	Checked By:	PDT

Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

SAN JOAQUIN COUNTY CALIFORNIA

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

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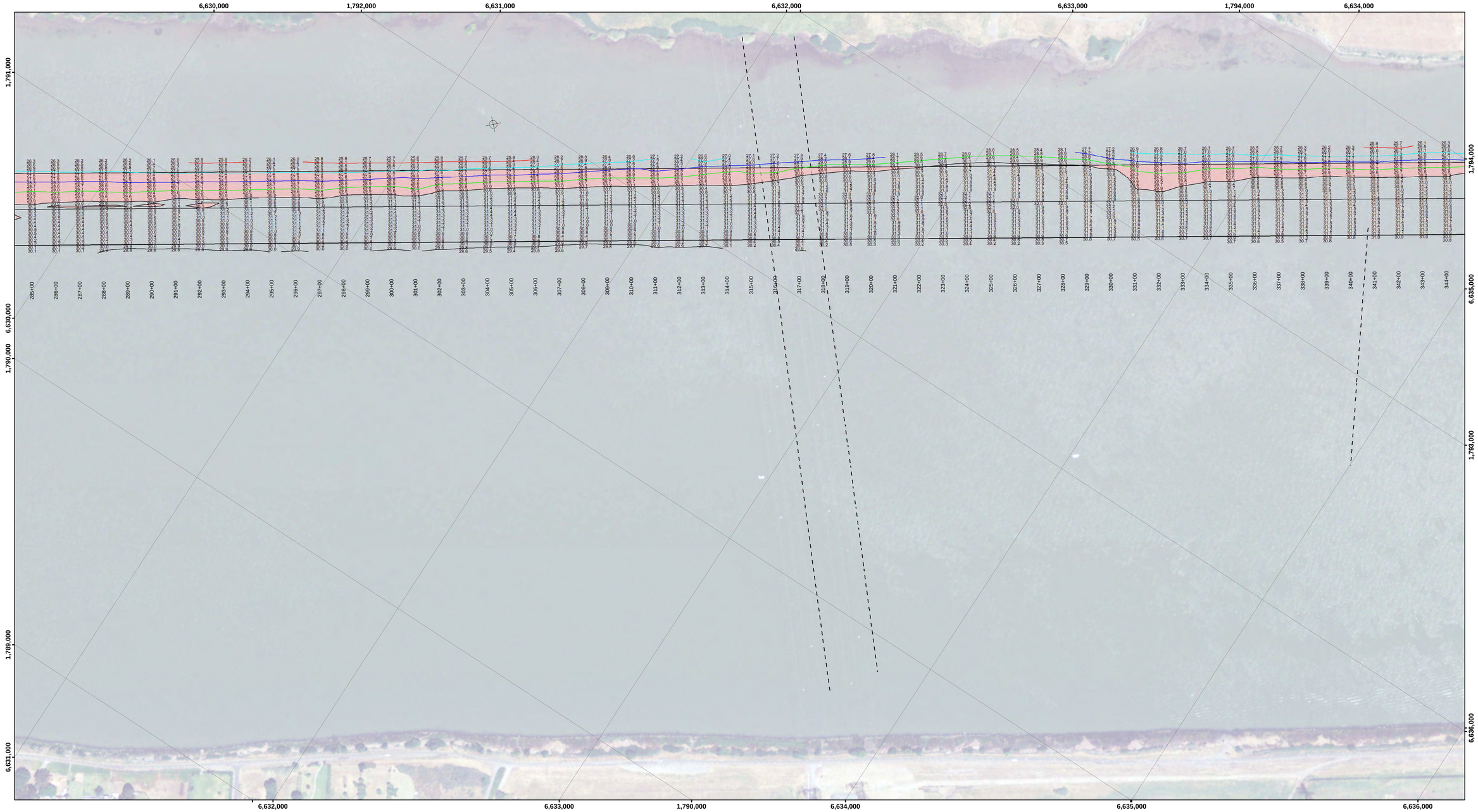

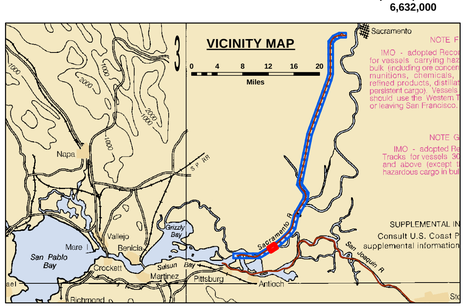

Feet
0 400 800 1,200

LEGEND

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BENCHMARK: 5316 B 1996 (NO PID)
TIDE GAUGE: NAIL @ 8.2 FT MLLW
METADATA: NAIL SET BY USACE 31 MARCH, 2014

LOCATION: PORT OF WEST SACRAMENTO
NOOA STATION: 9416131
BENCHMARK: POWS1 (No PID)
TIDE GAUGE: NAIL @ 10.0 FT MLLW
METADATA: NAIL SET BY USACE 8 APRIL, 2014

ALL HORIZONTAL POSITIONS AND MLLW ELEVATIONS WERE POST-PROCESSED USING PUBLIC GPS REFERENCE STATIONS IN THE AREA.

US Army Corps of Engineers
District: CESPK

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PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT. COLONEL, C.E., DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader	Surveyed By:	Chart Date: May 17, 2016
Recommended: Chief, Hydro Survey Section	Plotted By: PDT	Designed by:
Approved: Chief, Construction Branch	Checked By: PDT	Drawn by: PDT

SAN JOAQUIN COUNTY CALIFORNIA

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
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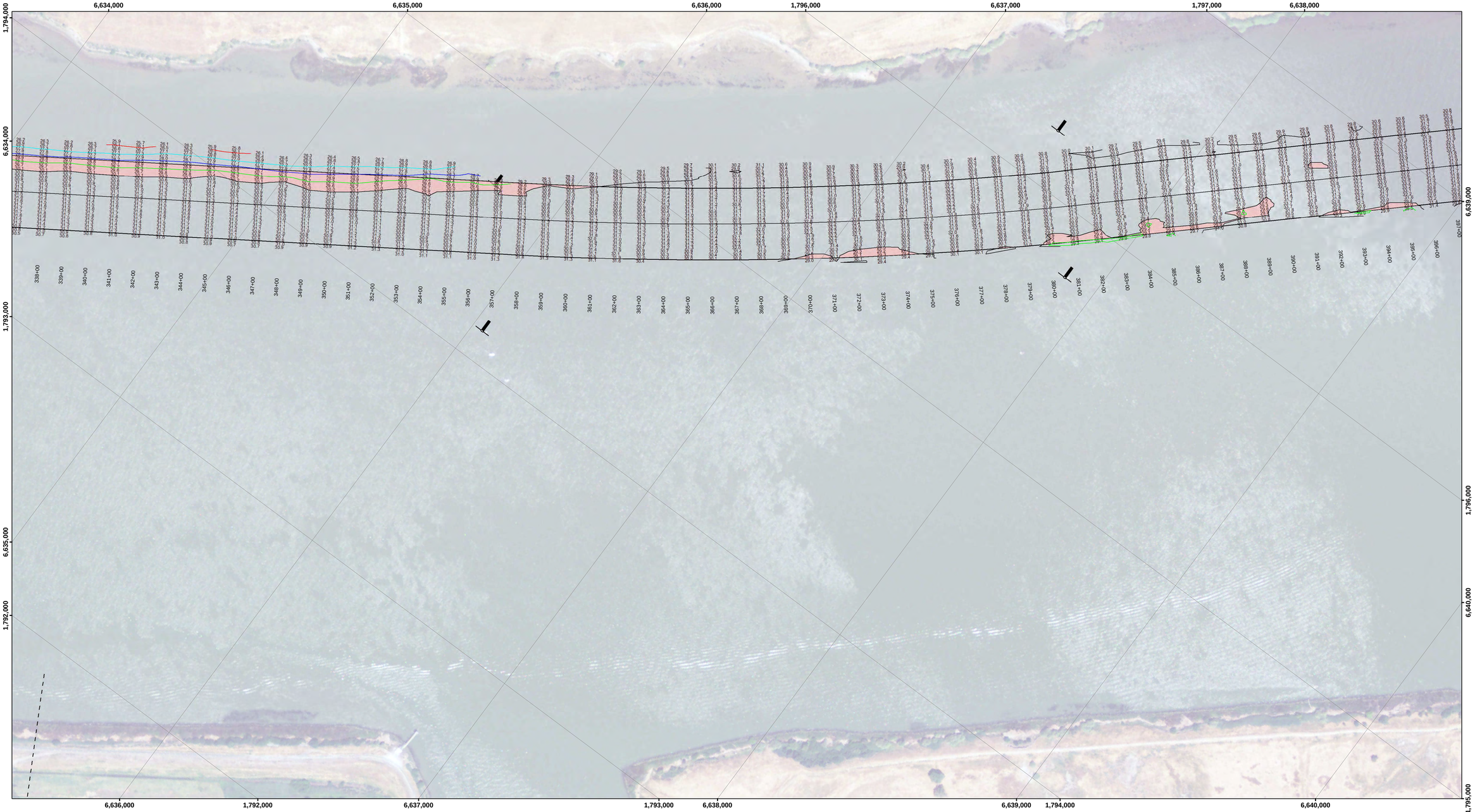

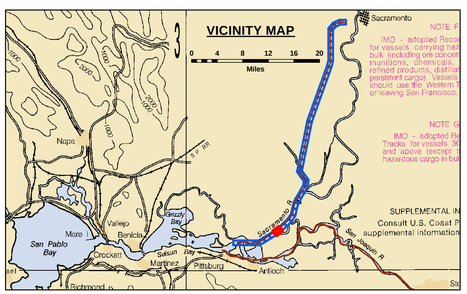

Feet
0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
- Cable Overhead
- Contour Line
- Cable Area
- Placement Area
- Anchorage Area
- Obstruction Point
- Wrecks-Submerged
- Shoaling Area
- Shoalest Sounding**
- Beacon, General
- Red Navigation Buoy
- Green Navigation Buoy

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NORTH AMERICAN DATUM OF 1983 (NAD83), PROJECTED TO THE STATE PLANE COORDINATE SYSTEM (SPCS), CA ZONE II (0402). DISTANCE UNITS IN U.S. SURVEY FEET.

PLANE GRID AND COORDINATES ARE BASED ON LAMBERT PROJECTION, NAD 83, ZONE II CALIFORNIA AS DESCRIBED IN SPECIAL PUBLICATION NO. 235, PUBLISHED BY THE NATIONAL OCEAN SURVEY.

PROJECT DEPTH: -30'

VERTICAL DATUM: MLLW

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JOHN C. MORROW
LT. COLONEL, C.E., DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

Surveyed By:
Plotted By: PDT
Checked By: PDT
Chart Date: May 17, 2016
Designed by:
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SAN JOAQUIN COUNTY CALIFORNIA

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

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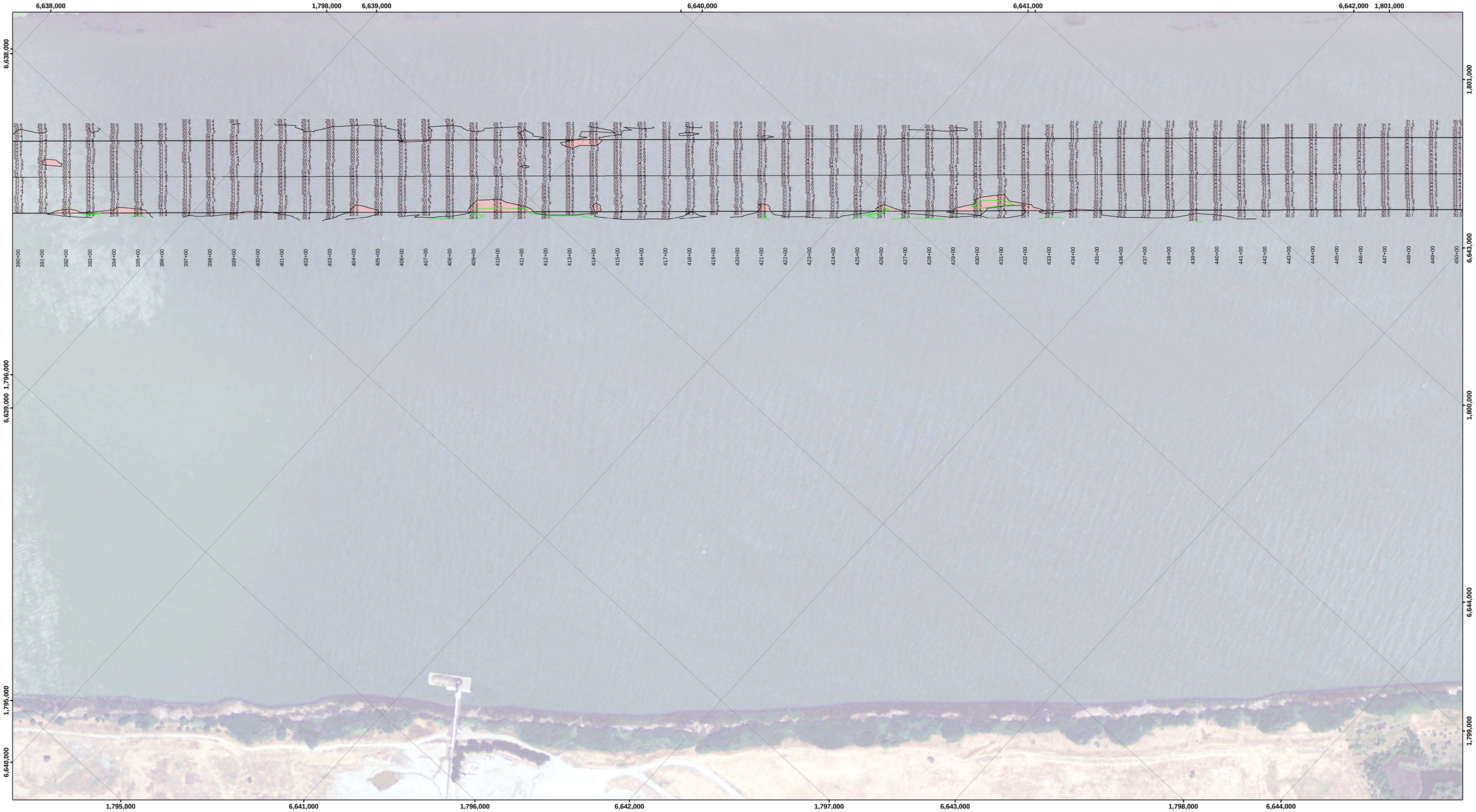

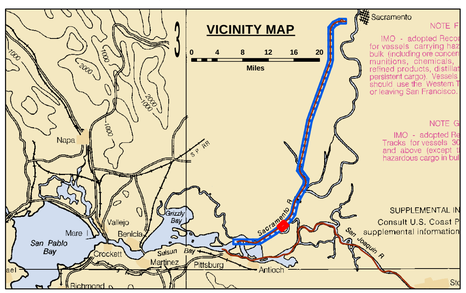

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0 400 800 1,200

LEGEND

- Federal Navigation Channel
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JOHN C. MORROW
LT. COLONEL, C.E., DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader	Surveyed By:	Chart Date: May 17, 2016
Recommended: Chief, Hydro Survey Section	Plotted By: PDT	Designed by:
Approved: Chief, Construction Branch	Checked By: PDT	Drawn by: PDT

SAN JOAQUIN COUNTY CALIFORNIA

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
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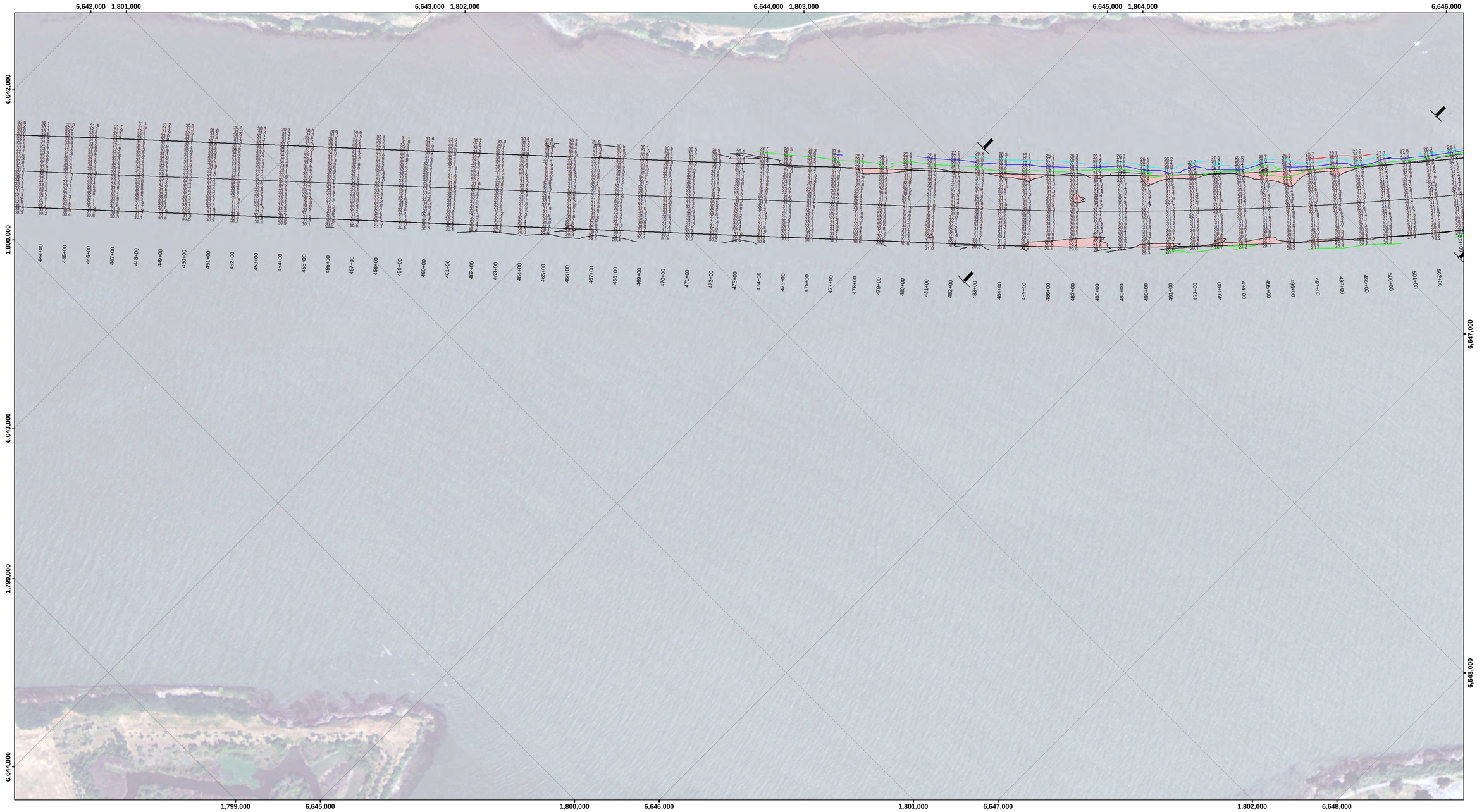

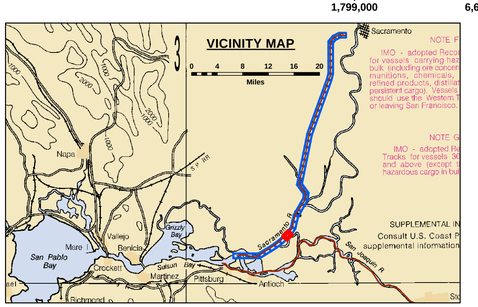

Feet
0 400 800 1,200

LEGEND

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- Federal Navigation Center Line
- Cable Submarine
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Surveyed By:		Chart Date:	May 17, 2016
Plotted By:	PDT	Designed by:	
Checked By:	PDT	Drawn by:	PDT

PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT COLONEL, C.E. DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

CALIFORNIA
SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

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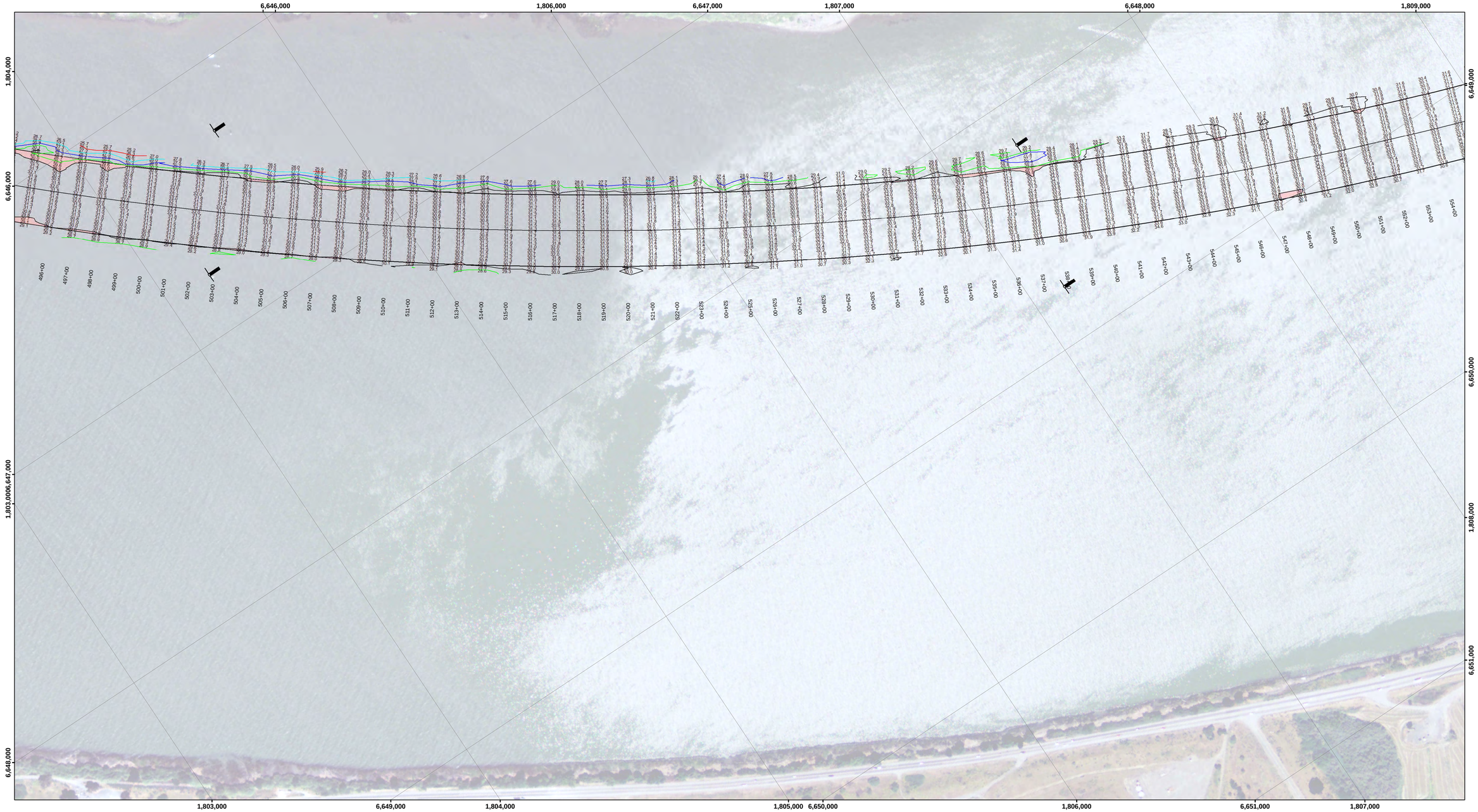
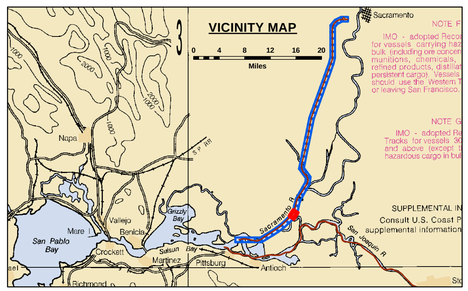
10 of 45





Feet

0 400 800 1,200

LEGEND

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JOHN C. MORROW
LT. COLONEL, C.E., DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

Surveyed By:
Plotted By: PDT
Checked By: PDT
Chart Date: May 17, 2016
Designed by:
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SAN JOAQUIN COUNTY CALIFORNIA

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

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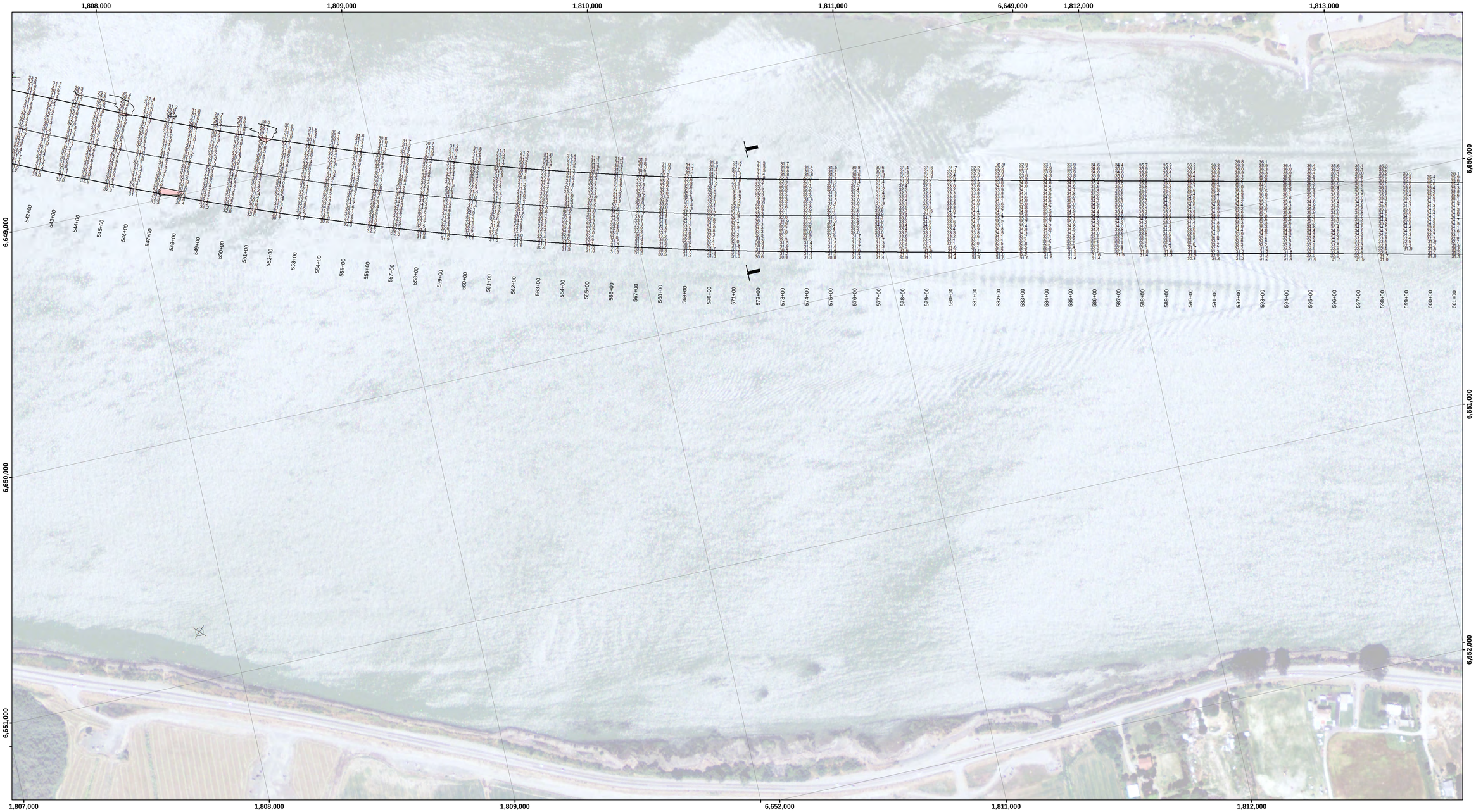
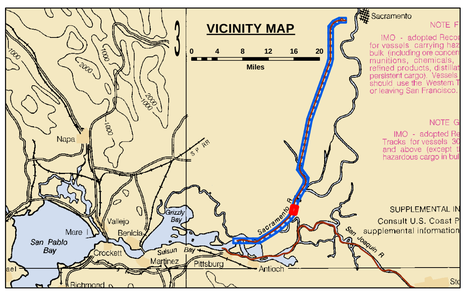
11 of 45





Feet

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LEGEND

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Surveyed By:	Chart Date: May 17, 2016
Plotted By: PDT	Designed by:
Checked By: PDT	Drawn by: PDT

PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT COLONEL, C.E. DISTRICT ENGINEER

Submitted:
Hydro Survey Team Leader

Recommended:
Chief, Hydro Survey Section

Approved:
Chief, Construction Branch

CALIFORNIA

SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

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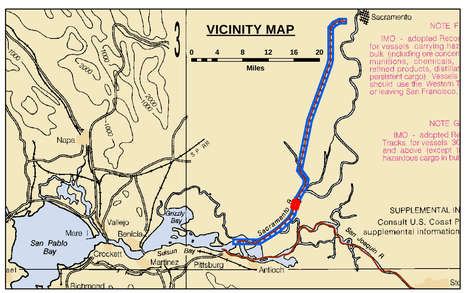

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PREPARED UNDER THE DIRECTION OF
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LT COLONEL, C.E. DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

Surveyed By: | Chart Date: May 17, 2016
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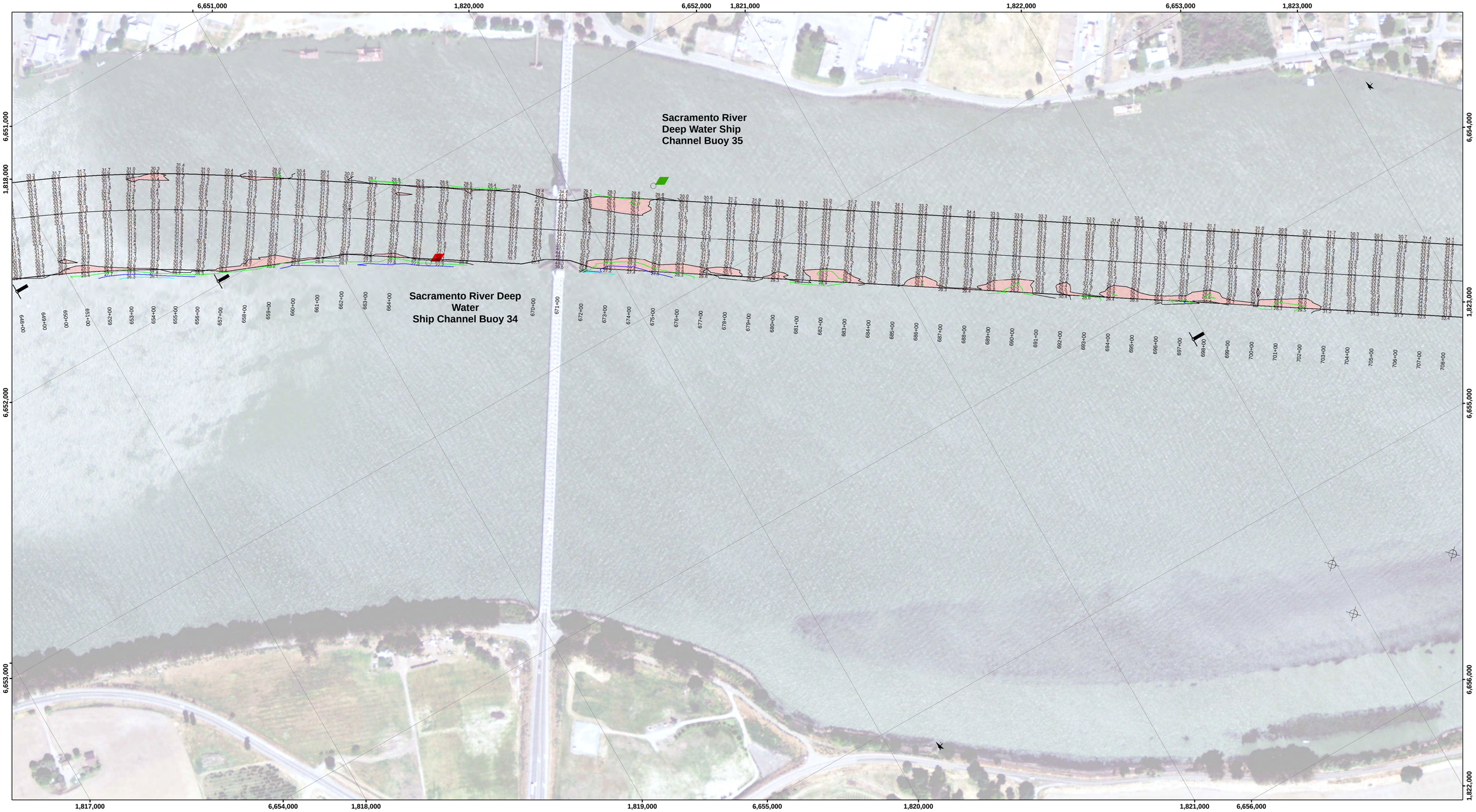

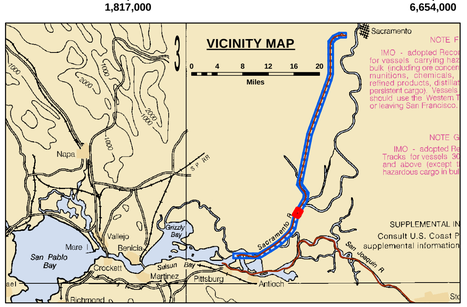

Feet

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LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
- Cable Overhead
- Contour Line
- Cable Area
- Placement Area
- Anchorage Area
- Obstruction Point
- Wrecks-Submerged
- Shoaling Area
- Shoalest Sounding**
- Beacon, General
- Red Navigation Buoy
- Green Navigation Buoy

NOTES:
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SOUNDINGS WERE TAKEN BY FATHOMETER AND ARE SHOWN TO THE NEAREST TENTH OF A FOOT.

SOUNDINGS ARE BASED ON THE DATUM OF MEAN LOWER LOW WATER AT THE LOCALITY.

NORTH AMERICAN DATUM OF 1983 (NAD83), PROJECTED TO THE STATE PLANE COORDINATE SYSTEM (SPCS), CA ZONE II (0402). DISTANCE UNITS IN U.S. SURVEY FEET.

PLANE GRID AND COORDINATES ARE BASED ON LAMBERT PROJECTION, NAD 83, ZONE II CALIFORNIA AS DESCRIBED IN SPECIAL PUBLICATION NO. 235, PUBLISHED BY THE NATIONAL OCEAN SURVEY.

PROJECT DEPTH: -30'

VERTICAL DATUM: MLLW

THE LOCATION OF NAVIGATION AIDS ARE BASED ON AND PROVIDED BY THE U.S. COAST GUARD

CONTROLS:
LOCATION: RIO VISTA
NOOA STATION: 9415316
BENCHMARK: 5316 B 1996 (NO PID)
TIDE GAUGE: NAIL @ 8.2 FT MLLW
METADATA: NAIL SET BY USACE 31 MARCH, 2014

LOCATION: PORT OF WEST SACRAMENTO
NOOA STATION: 9416131
BENCHMARK: POWS1 (No PID)
TIDE GAUGE: NAIL @ 10.0 FT MLLW
METADATA: NAIL SET BY USACE 8 APRIL, 2014

ALL HORIZONTAL POSITIONS AND MLLW ELEVATIONS WERE POST-PROCESSED USING PUBLIC GPS REFERENCE STATIONS IN THE AREA.

US Army Corps of Engineers
District: CESPK

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PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT. COLONEL, C.E., DISTRICT ENGINEER

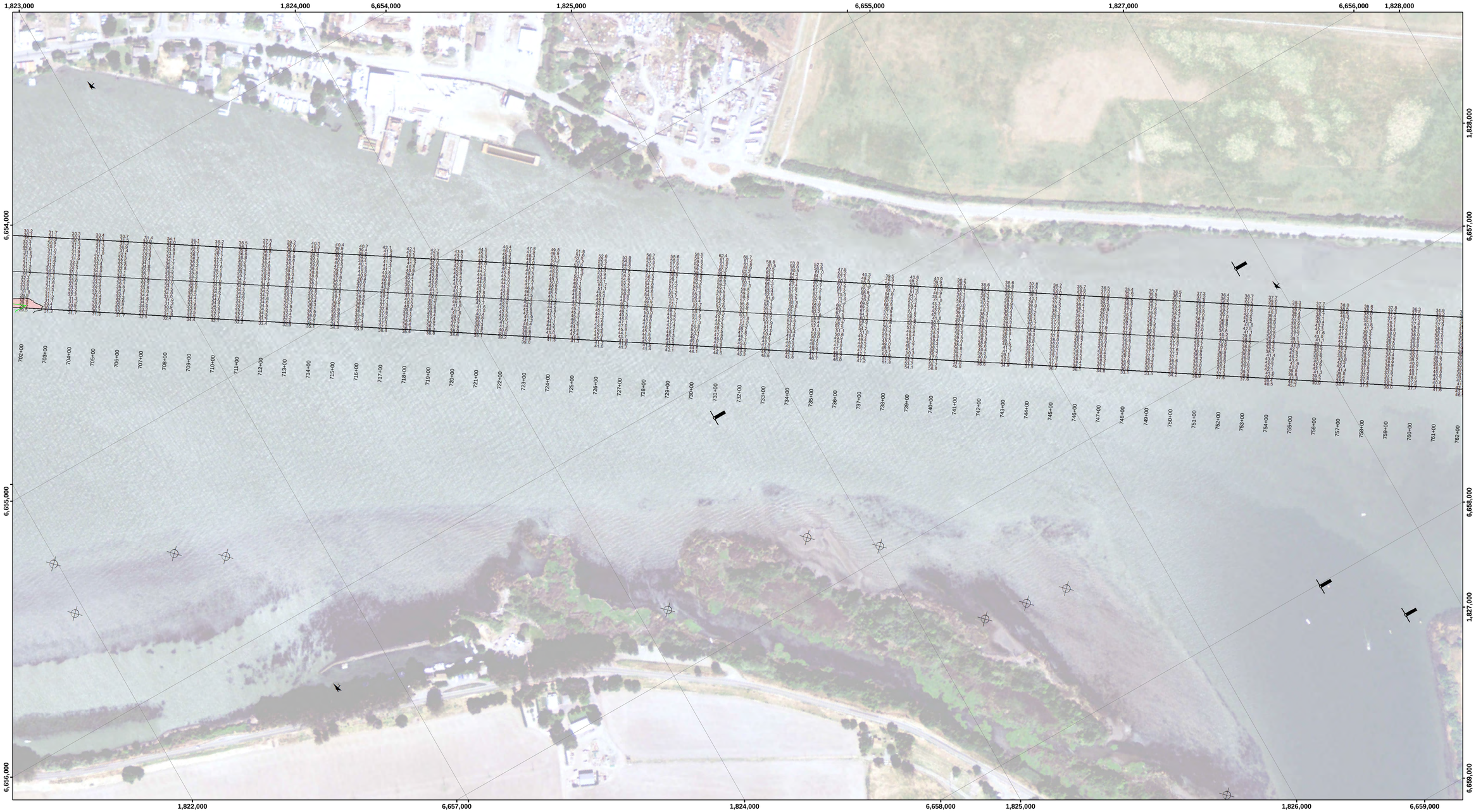
Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

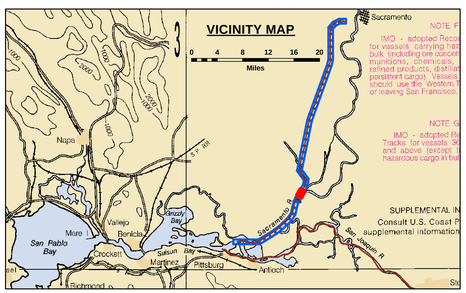
Surveyed By:
Plotted By: PDT
Checked By: PDT
Chart Date: May 17, 2016
Designed by:
Drawn by: PDT

SAN JOAQUIN COUNTY CALIFORNIA

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
14 of 45





Feet

0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
- Cable Overhead
- Contour Line
- Cable Area
- Placement Area
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US Army Corps of Engineers
District: CESPK

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Chart Date:	May 17, 2016
Surveyed By:	
Designed by:	
Plotted By:	PDT
Drawn by:	PDT
Checked By:	PDT

PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT. COLONEL, C.E., DISTRICT ENGINEER

Submitted: _____
Hydro Survey Team Leader

Recommended: _____
Chief, Hydro Survey Section

Approved: _____
Chief, Construction Branch

CALIFORNIA

SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
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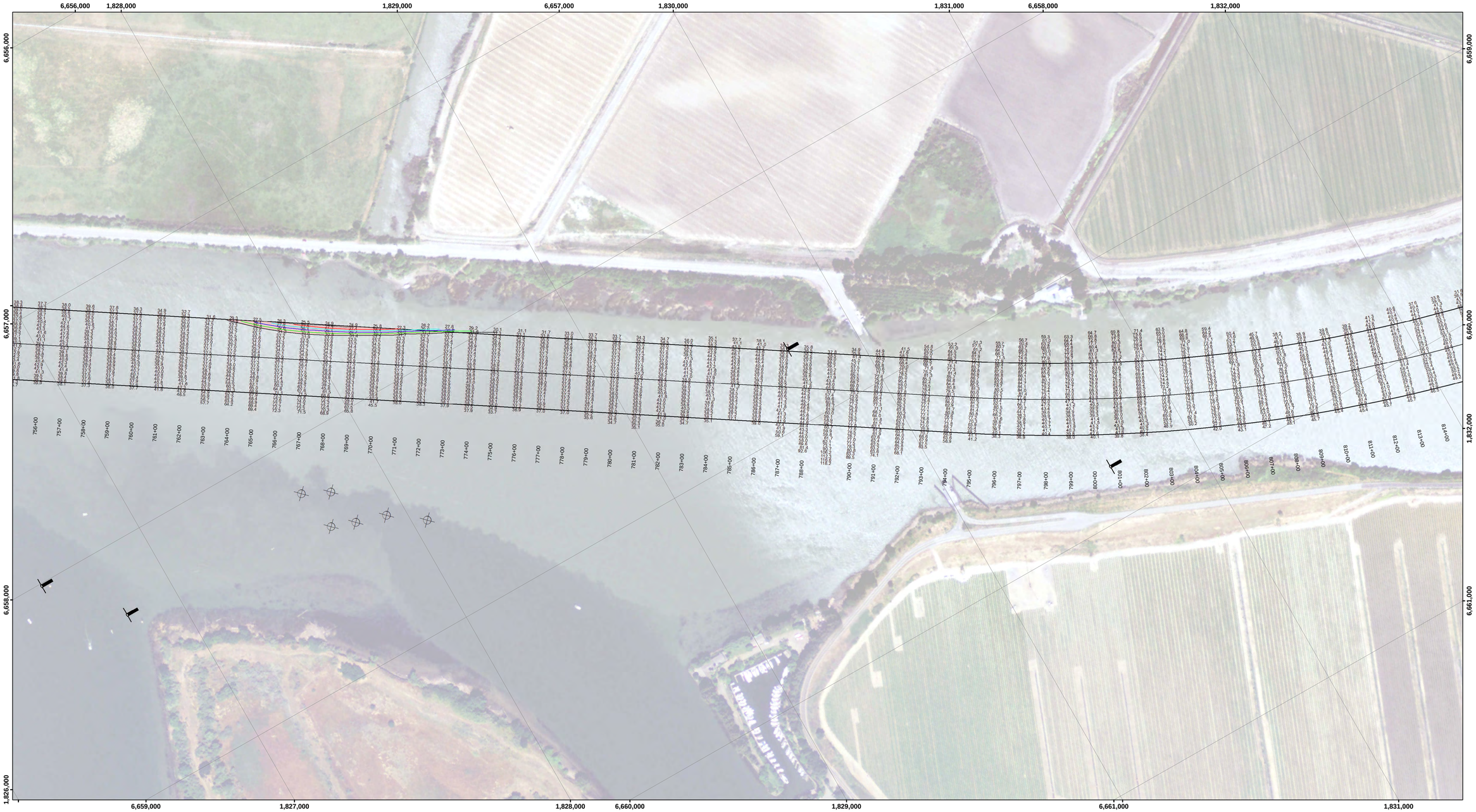

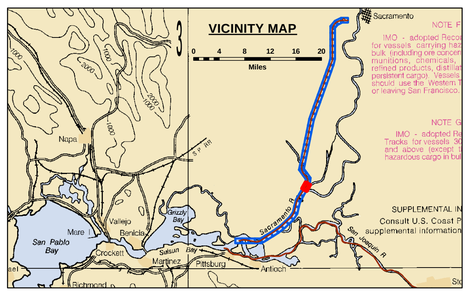

Feet

0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
- Cable Overhead
- Contour Line
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- Placement Area
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NOOA STATION: 9415316
BENCHMARK: 5316 B 1996 (NO PID)
TIDE GAUGE: NAIL @ 8.2 FT MLLW
METADATA: NAIL SET BY USACE 31 MARCH, 2014

LOCATION: PORT OF WEST SACRAMENTO
NOOA STATION: 9416131
BENCHMARK: POWS1 (No PID)
TIDE GAUGE: NAIL @ 10.0 FT MLLW
METADATA: NAIL SET BY USACE 8 APRIL, 2014

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US Army Corps of Engineers
District: CESPK

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PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT COLONEL, C.E. DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

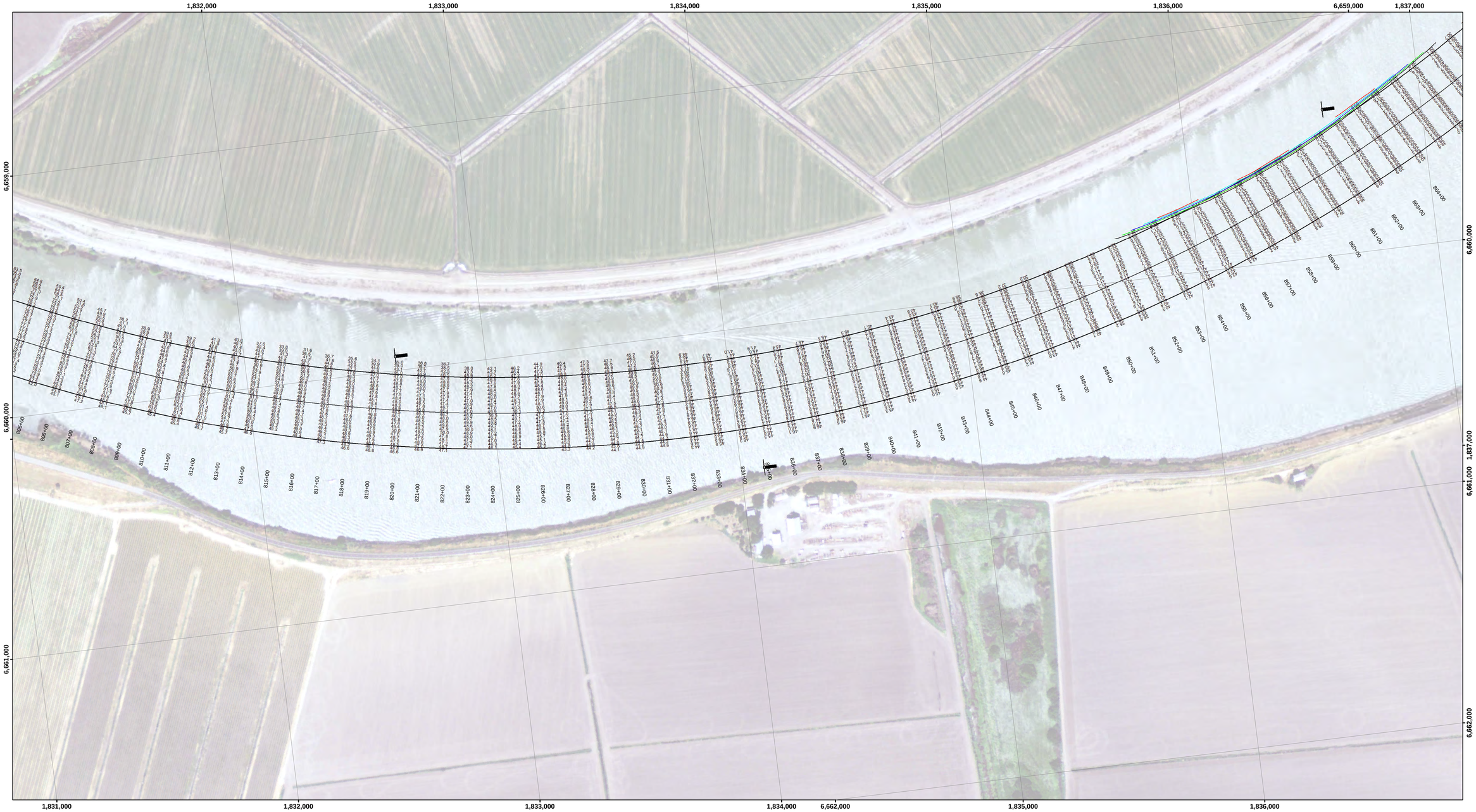
Surveyed By:	Chart Date: May 17, 2016	
Plotted By: PDT	Designed by:	
Checked By: PDT	Drawn by: PDT	

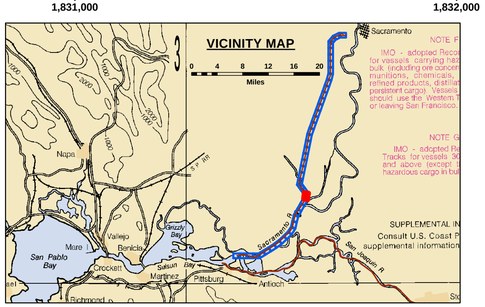
CALIFORNIA

SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
16 of 45





Feet
0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
- Cable Overhead
- Contour Line
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PROJECT DEPTH: -30'

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CONTROLS:
LOCATION: RIO VISTA
NOOA STATION: 9415316
BENCHMARK: 5316 B 1996 (NO PID)
TIDE GAUGE: NAIL @ 8.2 FT MLLW
METADATA: NAIL SET BY USACE 31 MARCH, 2014

LOCATION: PORT OF WEST SACRAMENTO
NOOA STATION: 9416131
BENCHMARK: POWS1 (No PID)
TIDE GAUGE: NAIL @ 10.0 FT MLLW
METADATA: NAIL SET BY USACE 8 APRIL, 2014

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US Army Corps of Engineers
District: CESPK

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PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT. COLONEL, C.E., DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

Surveyed By:
Plotted By: PDT
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Chart Date: May 17, 2016
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CALIFORNIA
SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

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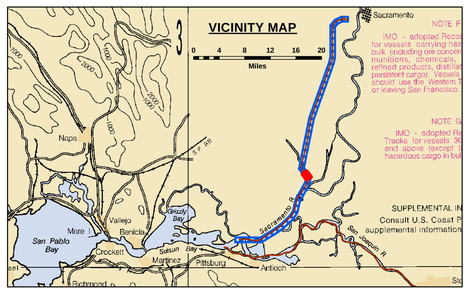

Feet

0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
- Cable Overhead
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- Placement Area
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PROJECT DEPTH: -30'

VERTICAL DATUM: MLLW

THE LOCATION OF NAVIGATION AIDS ARE BASED ON AND PROVIDED BY THE U.S. COAST GUARD

CONTROLS:
LOCATION: RIO VISTA
NOOA STATION: 9415316
BENCHMARK: 5316 B 1996 (NO PID)
TIDE GAUGE: NAIL @ 8.2 FT MLLW
METADATA: NAIL SET BY USACE 31 MARCH, 2014

LOCATION: PORT OF WEST SACRAMENTO
NOOA STATION: 9416131
BENCHMARK: POWS1 (No PID)
TIDE GAUGE: NAIL @ 10.0 FT MLLW
METADATA: NAIL SET BY USACE 8 APRIL, 2014

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US Army Corps of Engineers
District: CESPK

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PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT COLONEL, C.E. DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

Surveyed By:
Plotted By: PDT
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SAN JOAQUIN COUNTY CALIFORNIA

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

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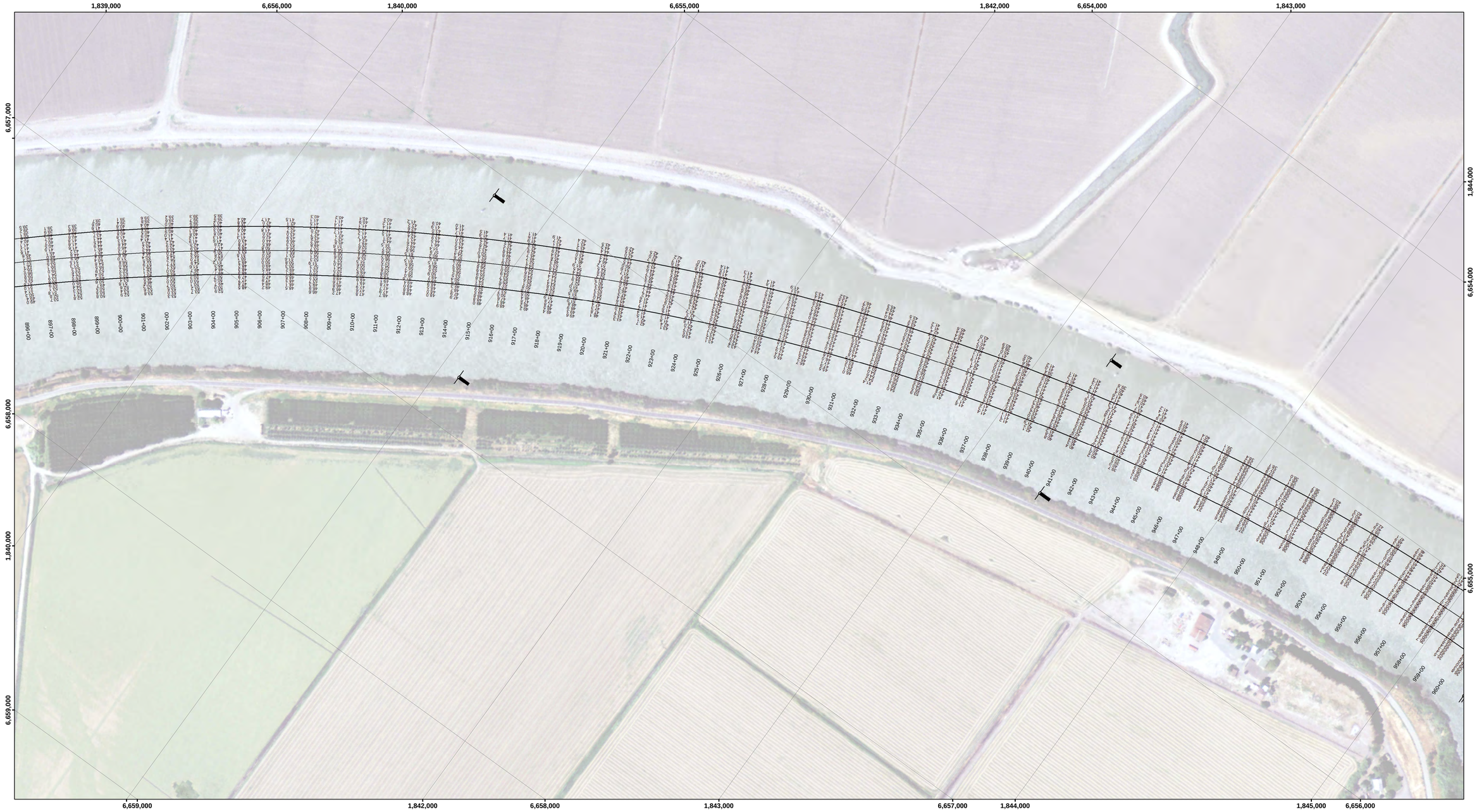
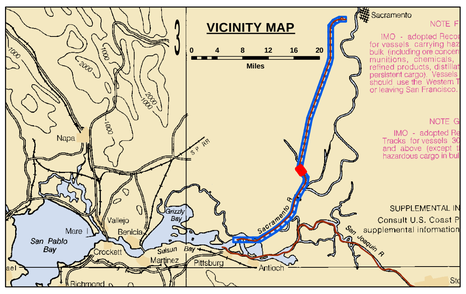
18 of 45





Feet

0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
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PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT. COLONEL, C.E. DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

Surveyed By:
Plotted By: PDT
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Chart Date: May 17, 2016
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CALIFORNIA
SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

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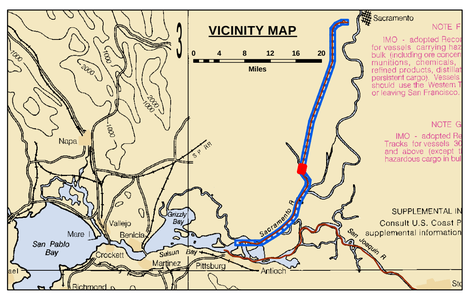

Feet
0 400 800 1,200

LEGEND

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Surveyed By:	Chart Date: May 17, 2016
Plotted By: PDT	Designed by:
Drawn by: PDT	Checked By: PDT

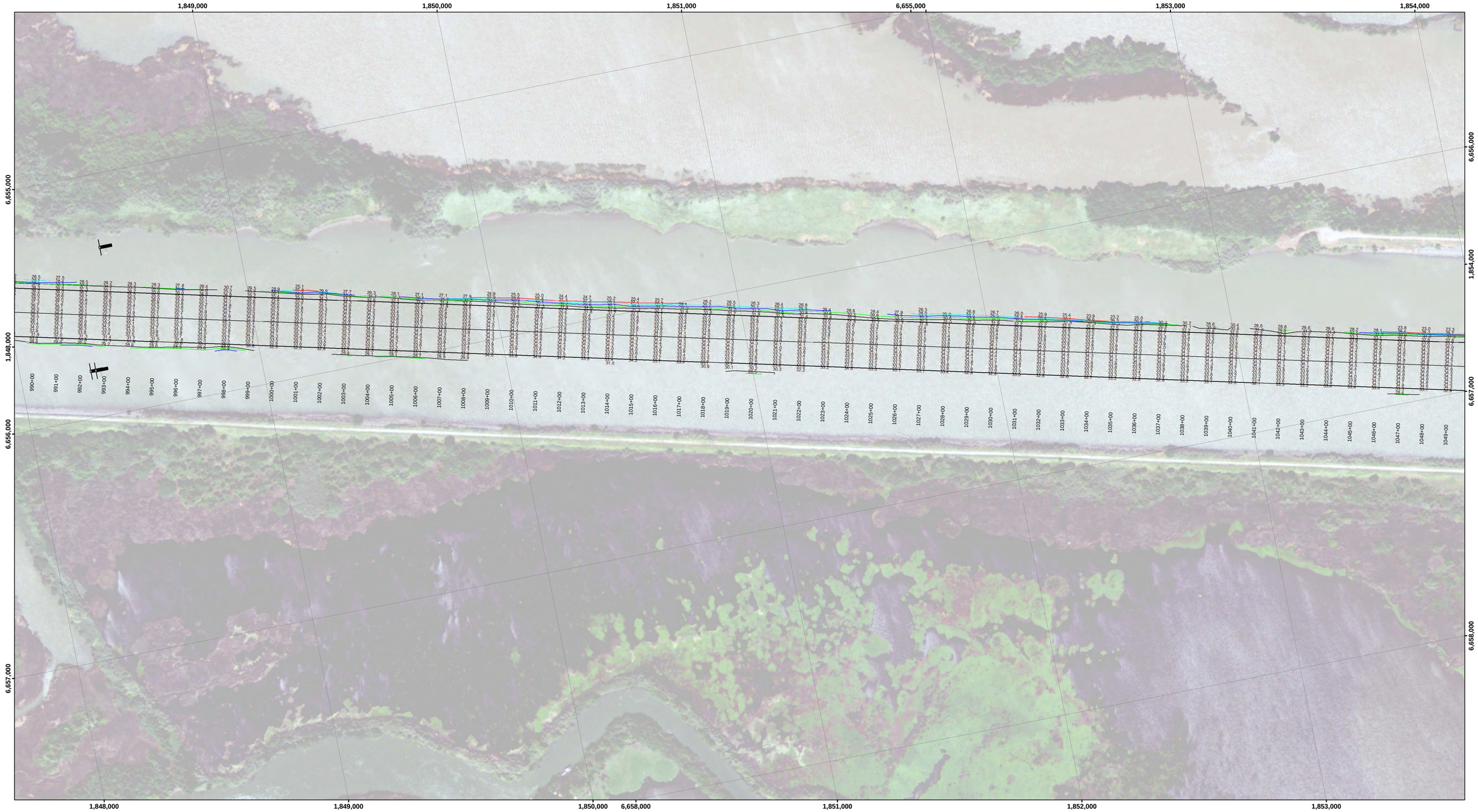
PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT COLONEL, C.E. DISTRICT ENGINEER

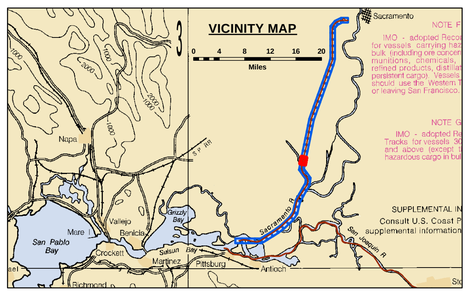
Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

CALIFORNIA
SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
20 of 45





Feet

0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
- Cable Overhead
- Contour Line
- Cable Area
- Placement Area
- Anchorage Area
- Obstruction Point
- Wrecks-Submerged
- Shoaling Area
- Shoalest Sounding**
- Beacon, General
- Red Navigation Buoy
- Green Navigation Buoy

NOTES:
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SOUNDINGS WERE TAKEN BY FATHOMETER AND ARE SHOWN TO THE NEAREST TENTH OF A FOOT.

SOUNDINGS ARE BASED ON THE DATUM OF MEAN LOWER LOW WATER AT THE LOCALITY.

NORTH AMERICAN DATUM OF 1983 (NAD83), PROJECTED TO THE STATE PLANE COORDINATE SYSTEM (SPCS), CA ZONE II (0402). DISTANCE UNITS IN U.S. SURVEY FEET.

PLANE GRID AND COORDINATES ARE BASED ON LAMBERT PROJECTION, NAD 83, ZONE II CALIFORNIA AS DESCRIBED IN SPECIAL PUBLICATION NO. 235, PUBLISHED BY THE NATIONAL OCEAN SURVEY.

PROJECT DEPTH: -30'

VERTICAL DATUM: MLLW

THE LOCATION OF NAVIGATION AIDS ARE BASED ON AND PROVIDED BY THE U.S. COAST GUARD

CONTROLS:
LOCATION: RIO VISTA
NOOA STATION: 9415316
BENCHMARK: 5316 B 1996 (NO PID)
TIDE GAUGE: NAIL @ 8.2 FT MLLW
METADATA: NAIL SET BY USACE 31 MARCH, 2014

LOCATION: PORT OF WEST SACRAMENTO
NOOA STATION: 9416131
BENCHMARK: POWS1 (No PID)
TIDE GAUGE: NAIL @ 10.0 FT MLLW
METADATA: NAIL SET BY USACE 8 APRIL, 2014

ALL HORIZONTAL POSITIONS AND MLLW ELEVATIONS WERE POST-PROCESSED USING PUBLIC GPS REFERENCE STATIONS IN THE AREA.

US Army Corps of Engineers
District: CESPK

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PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT. COLONEL, C.E., DISTRICT ENGINEER

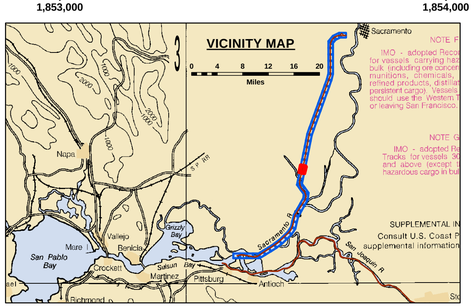
Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

Surveyed By:
Plotted By: PDT
Checked By: PDT
Chart Date: May 17, 2016
Designed by:
Drawn by: PDT

SAN JOAQUIN COUNTY CALIFORNIA

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
21 of 45



Feet
0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
- Cable Overhead
- Contour Line
- Cable Area
- Placement Area
- Anchorage Area
- Obstruction Point
- Wrecks-Submerged
- Shoaling Area
- Shoalest Sounding**
- Beacon, General
- Red Navigation Buoy
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PROJECT DEPTH: -30'

VERTICAL DATUM: MLLW

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CONTROLS:
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NOOA STATION: 9415316
BENCHMARK: 5316 B 1996 (NO PID)
TIDE GAUGE: NAIL @ 8.2 FT MLLW
METADATA: NAIL SET BY USACE 31 MARCH, 2014

LOCATION: PORT OF WEST SACRAMENTO
NOOA STATION: 9416131
BENCHMARK: POWS1 (No PID)
TIDE GAUGE: NAIL @ 10.0 FT MLLW
METADATA: NAIL SET BY USACE 8 APRIL, 2014

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US Army Corps of Engineers
District: CESPK

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Surveyed By:		Chart Date:	May 17, 2016
Plotted By:	PDT	Designed by:	
Checked By:	PDT	Drawn by:	PDT

PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT COLONEL, C.E., DISTRICT ENGINEER

Submitted _____
Hydro Survey Team Leader

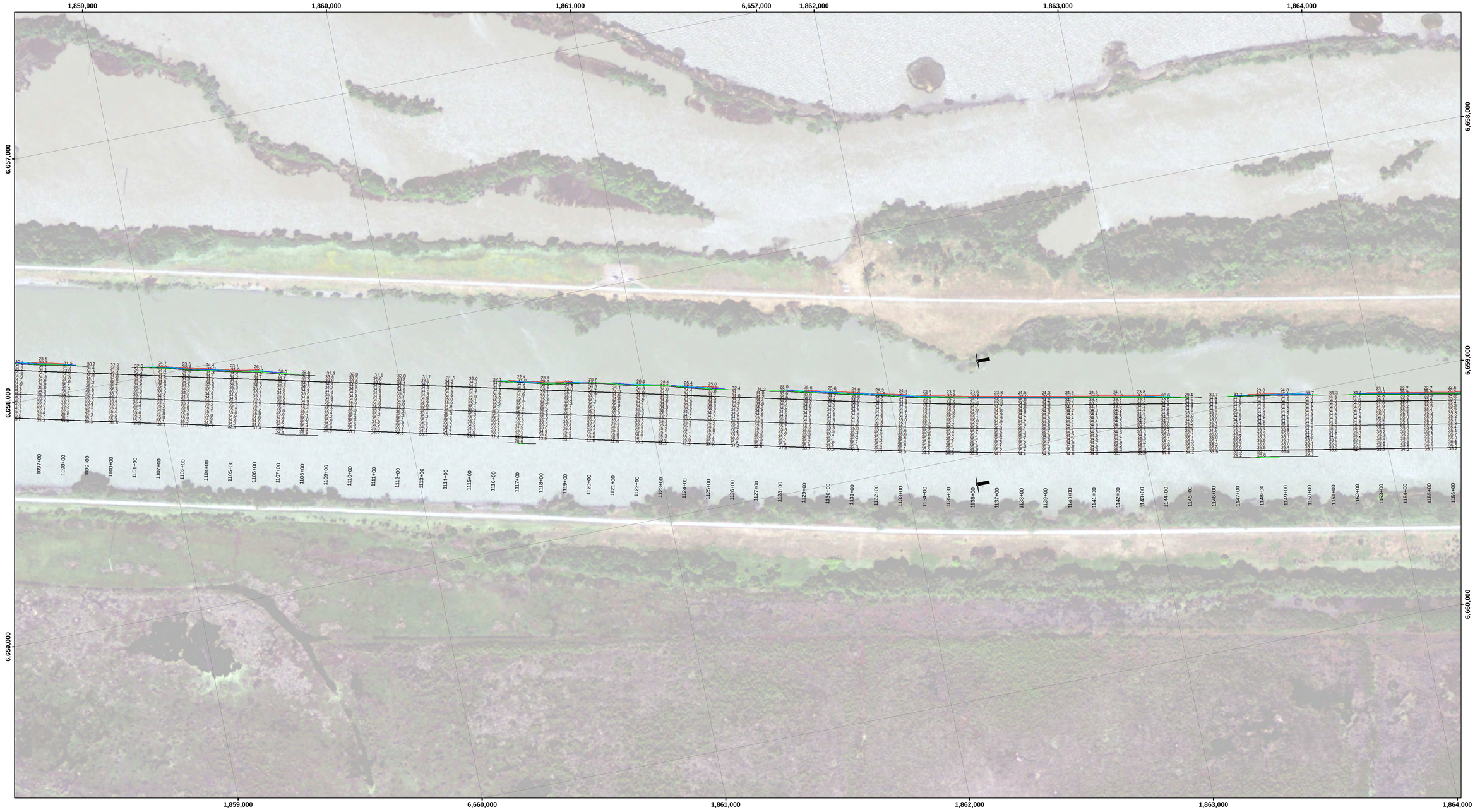
Recommended _____
Chief, Hydro Survey Section

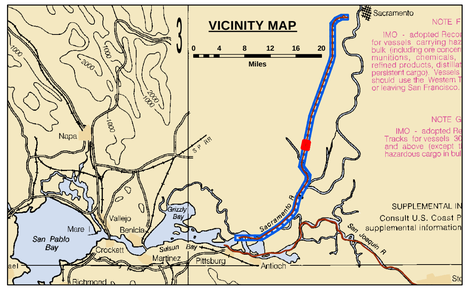
Approved _____
Chief, Construction Branch

CALIFORNIA
SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
22 of 45





Feet
0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
- Cable Overhead
- Contour Line
- Cable Area
- Placement Area
- Anchorage Area
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- Shoaling Area
- Shoalest Sounding**
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PROJECT DEPTH: -30'

VERTICAL DATUM: MLLW

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CONTROLS:
LOCATION: RIO VISTA
NOOA STATION: 9415316
BENCHMARK: 5316 B 1996 (NO PID)
TIDE GAUGE: NAIL @ 8.2 FT MLLW
METADATA: NAIL SET BY USACE 31 MARCH, 2014

LOCATION: PORT OF WEST SACRAMENTO
NOOA STATION: 9416131
BENCHMARK: POWS1 (No PID)
TIDE GAUGE: NAIL @ 10.0 FT MLLW
METADATA: NAIL SET BY USACE 8 APRIL, 2014

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US Army Corps of Engineers
District: CESPK

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Chart Date:	May 17, 2016
Surveyed By:	
Plotted By:	PDT
Designed By:	
Checked By:	PDT
Drawn By:	PDT

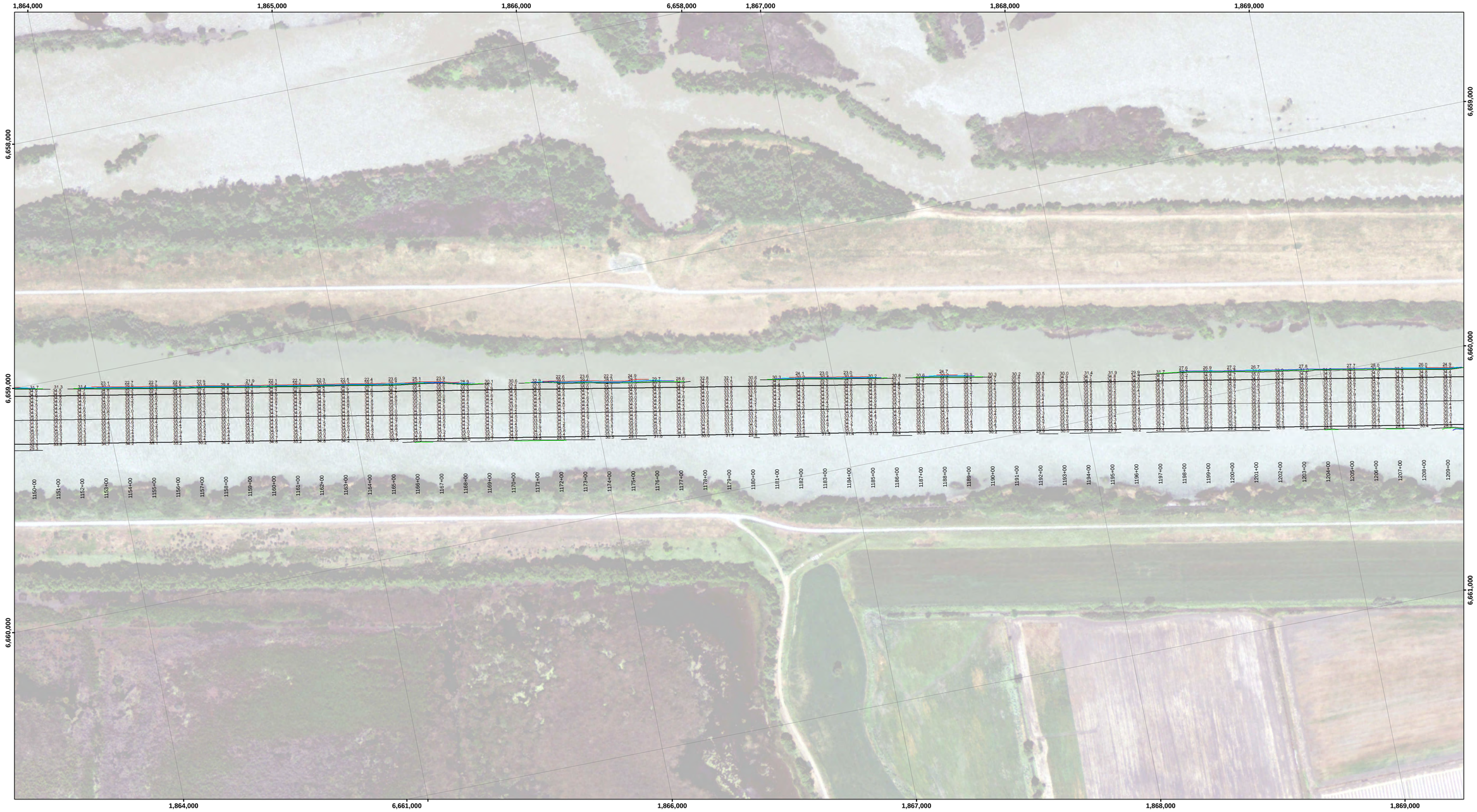
PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT. COLONEL, C.E. DISTRICT ENGINEER

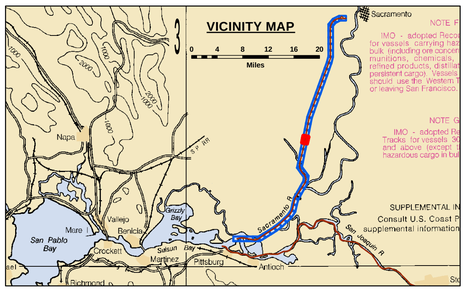
Submitted: Hydro Survey Team Leader
Recommended: Chief Hydro Survey Section
Approved: Chief, Construction Branch

CALIFORNIA
SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
23 of 45





Feet
0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
- Cable Overhead
- Contour Line
- Cable Area
- Placement Area
- Anchorage Area
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PROJECT DEPTH: -30'

VERTICAL DATUM: MLLW

THE LOCATION OF NAVIGATION AIDS ARE BASED ON AND PROVIDED BY THE U.S. COAST GUARD

CONTROLS:
LOCATION: RIO VISTA
NOOA STATION: 9415316
BENCHMARK: 5316 B 1996 (NO PID)
TIDE GAUGE: NAIL @ 8.2 FT MLLW
METADATA: NAIL SET BY USACE 31 MARCH, 2014

LOCATION: PORT OF WEST SACRAMENTO
NOOA STATION: 9416131
BENCHMARK: POWS1 (No PID)
TIDE GAUGE: NAIL @ 10.0 FT MLLW
METADATA: NAIL SET BY USACE 8 APRIL, 2014

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US Army Corps of Engineers
District: CESPK

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PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT COLONEL, C.E. DISTRICT ENGINEER

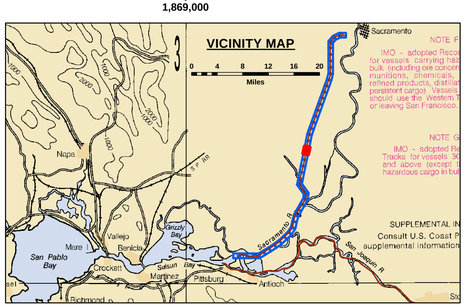
Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

Surveyed By:
Plotted By: PDT
Checked By: PDT
Drawn by: PDT
Chart Date: May 17, 2016
Designed by:

CALIFORNIA
SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
24 of 45



Feet
0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
- Cable Overhead
- Contour Line
- Cable Area
- Placement Area
- Anchorage Area
- Obstruction Point
- Wrecks-Submerged
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- Shoalest Sounding**
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- Red Navigation Buoy
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PROJECT DEPTH: -30'

VERTICAL DATUM: MLLW

THE LOCATION OF NAVIGATION AIDS ARE BASED ON AND PROVIDED BY THE U.S. COAST GUARD

CONTROLS:
LOCATION: RIO VISTA
NOAA STATION: 9415316
BENCHMARK: S316 B 1996 (NO PID)
TIDE GAUGE: NAIL @ 8.2 FT MLLW
METADATA: NAIL SET BY USACE 31 MARCH, 2014

LOCATION: PORT OF WEST SACRAMENTO
NOAA STATION: 9416131
BENCHMARK: POWS1 (No PID)
TIDE GAUGE: NAIL @ 10.0 FT MLLW
METADATA: NAIL SET BY USACE 8 APRIL, 2014

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US Army Corps of Engineers
District: CESPK

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Surveyed By:		Chart Date:	May 17, 2016
Plotted By:	PDT	Designed by:	
Hydro Survey Team Leader			
Chief, Hydro Survey Section		Drawn by:	PDT
Chief, Construction Branch		Checked By:	PDT

PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT COLONEL, C.E. DISTRICT ENGINEER

Submitted:
Recommended:
Approved:

CALIFORNIA
SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

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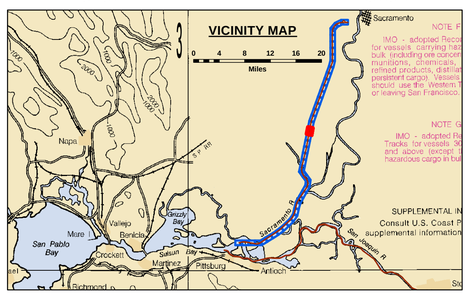
25 of 45



Feet

0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
- Cable Overhead
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- Placement Area
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US Army Corps of Engineers
District: CESPK

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Surveyed By:	
Plotted By:	PDT
Designed by:	
Drawn by:	PDT
Checked By:	PDT
Chart Date:	May 17, 2016

PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT COLONEL, C.E. DISTRICT ENGINEER

Submitted _____
Hydro Survey Team Leader

Recommended _____
Chief, Hydro Survey Section

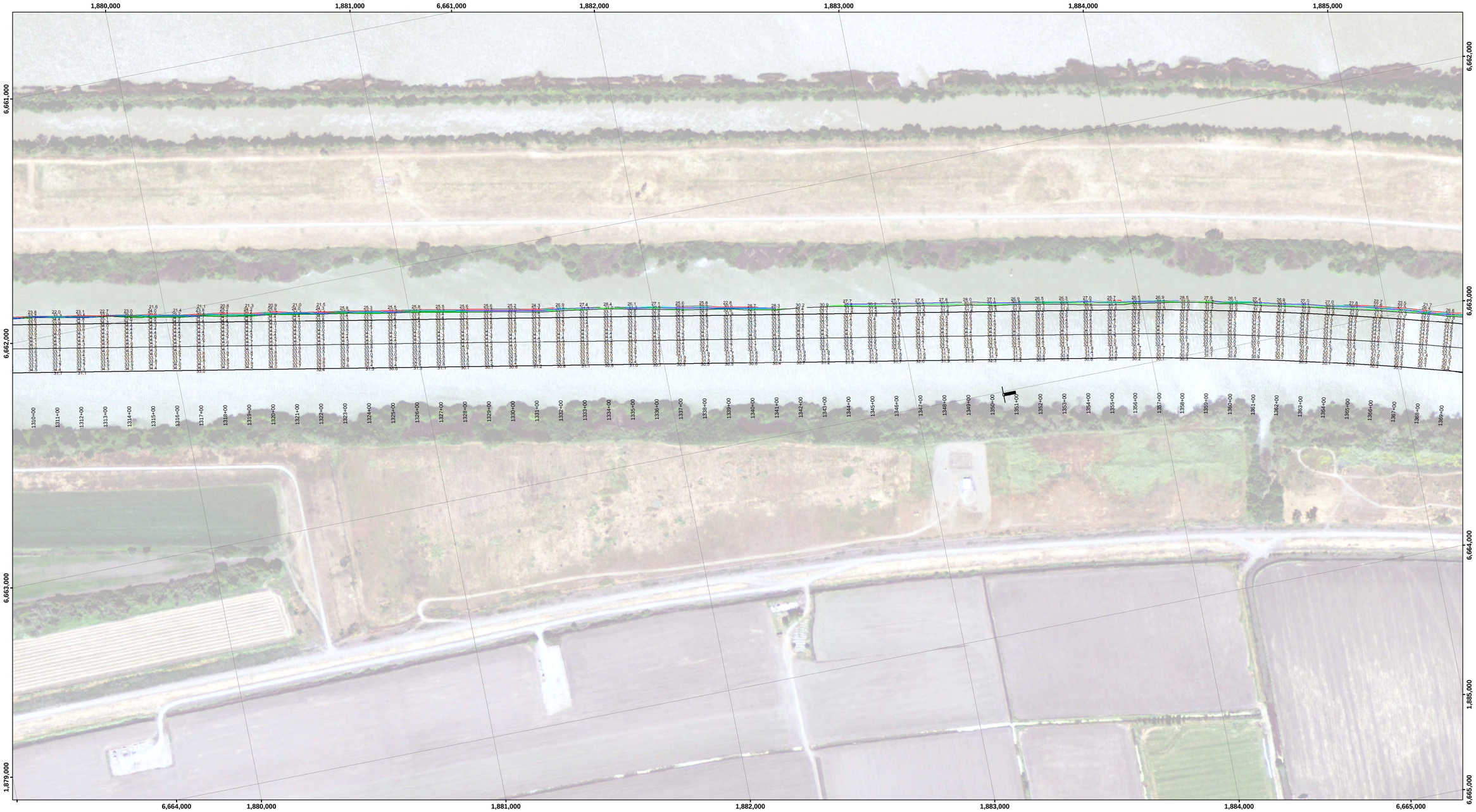
Approved _____
Chief, Construction Branch

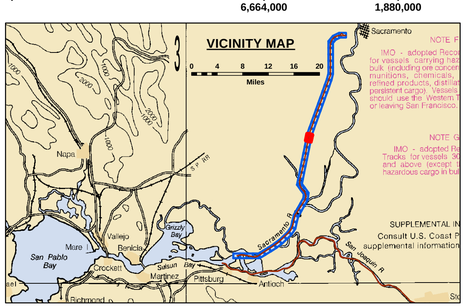
CALIFORNIA

SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
26 of 45





Feet

0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
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NOOA STATION: 9415316
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US Army Corps of Engineers
District: CESPK

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Surveyed By:		Chart Date:	May 17, 2016
Plotted By:	PDT	Designed by:	
Checked By:	PDT	Drawn by:	PDT

PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT COLONEL, C.E. DISTRICT ENGINEER

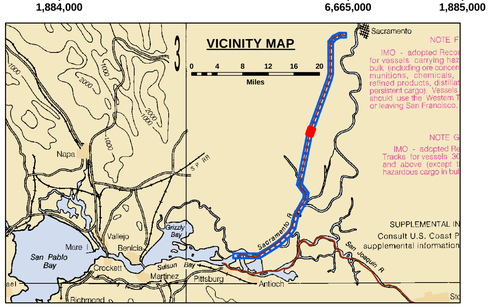
Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

CALIFORNIA

SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
27 of 45



Feet
0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
- Cable Overhead
- Contour Line
- Cable Area
- Placement Area
- Anchorage Area
- Obstruction Point
- Wrecks-Submerged
- Shoaling Area
- Shoalest Sounding**
- Beacon, General
- Red Navigation Buoy
- Green Navigation Buoy

NOTES:
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NORTH AMERICAN DATUM OF 1983 (NAD83), PROJECTED TO THE STATE PLANE COORDINATE SYSTEM (SPCS), CA ZONE II (0402). DISTANCE UNITS IN U.S. SURVEY FEET.

PLANE GRID AND COORDINATES ARE BASED ON LAMBERT PROJECTION, NAD 83, ZONE II CALIFORNIA AS DESCRIBED IN SPECIAL PUBLICATION NO. 235, PUBLISHED BY THE NATIONAL OCEAN SURVEY.

PROJECT DEPTH: -30'

VERTICAL DATUM: MLLW

THE LOCATION OF NAVIGATION AIDS ARE BASED ON AND PROVIDED BY THE U.S. COAST GUARD

CONTROLS:
LOCATION: RIO VISTA
NOOA STATION: 9415316
BENCHMARK: 5316 B 1996 (NO PID)
TIDE GAUGE: NAIL @ 8.2 FT MLLW
METADATA: NAIL SET BY USACE 31 MARCH, 2014

LOCATION: PORT OF WEST SACRAMENTO
NOOA STATION: 9416131
BENCHMARK: POWS1 (No PID)
TIDE GAUGE: NAIL @ 10.0 FT MLLW
METADATA: NAIL SET BY USACE 8 APRIL, 2014

ALL HORIZONTAL POSITIONS AND MLLW ELEVATIONS WERE POST-PROCESSED USING PUBLIC GPS REFERENCE STATIONS IN THE AREA.

US Army Corps of Engineers
District: CESPK

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LT. COLONEL, C.E. DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

Surveyed By:
Plotted By: PDT
Designed by:
Checked By: PDT
Drawn by: PDT
Chart Date: May 17, 2016

CALIFORNIA
SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

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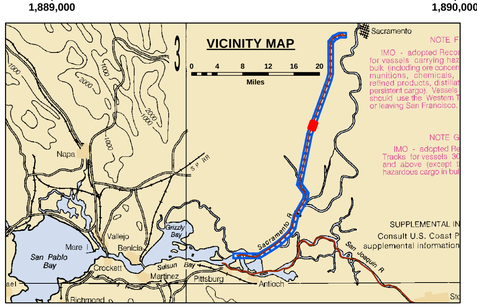

Feet
0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
- Cable Overhead
- Contour Line
- Cable Area
- Placement Area
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CALIFORNIA
SAN JOAQUIN COUNTY

SACRAMENTO RIVER
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09-12 FEBRUARY 2016

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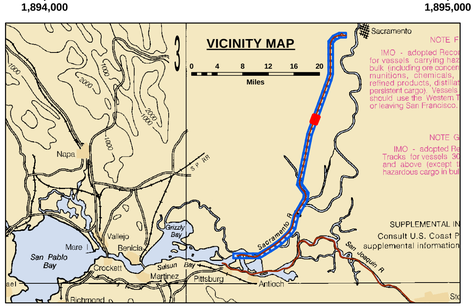

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0 400 800 1,200

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- Federal Navigation Center Line
- Cable Submarine
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Submitted: Hydro Survey Team Leader
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Approved: Chief, Construction Branch

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Plotted By: PDT
Checked By: PDT
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CALIFORNIA
SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
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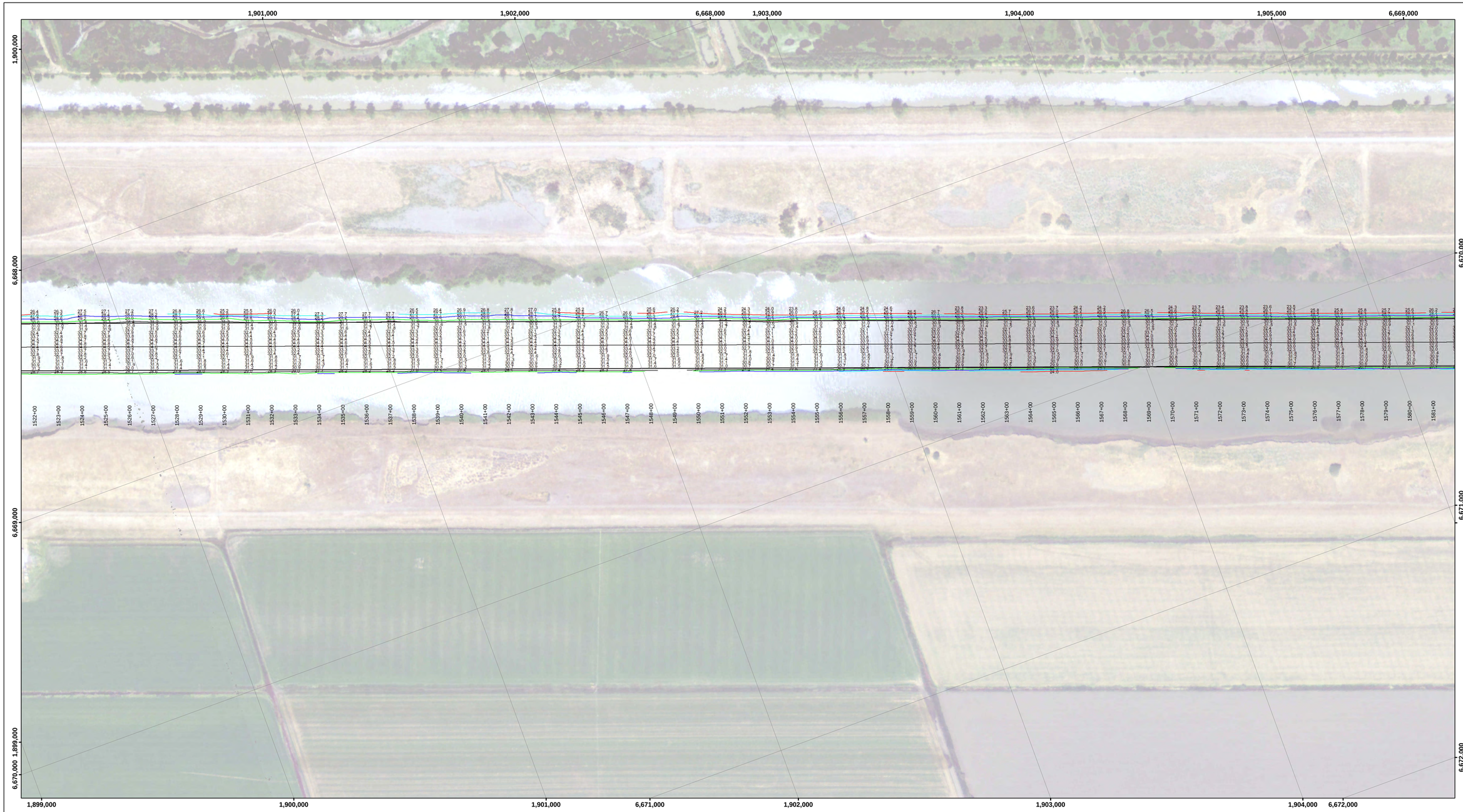

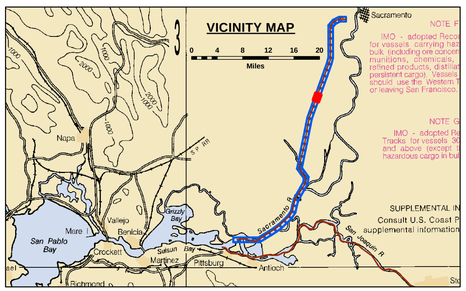

Feet

0 400 800 1,200

LEGEND

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LT COLONEL, C.E. DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

Surveyed By:
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Checked By: PDT
Chart Date: May 17, 2016
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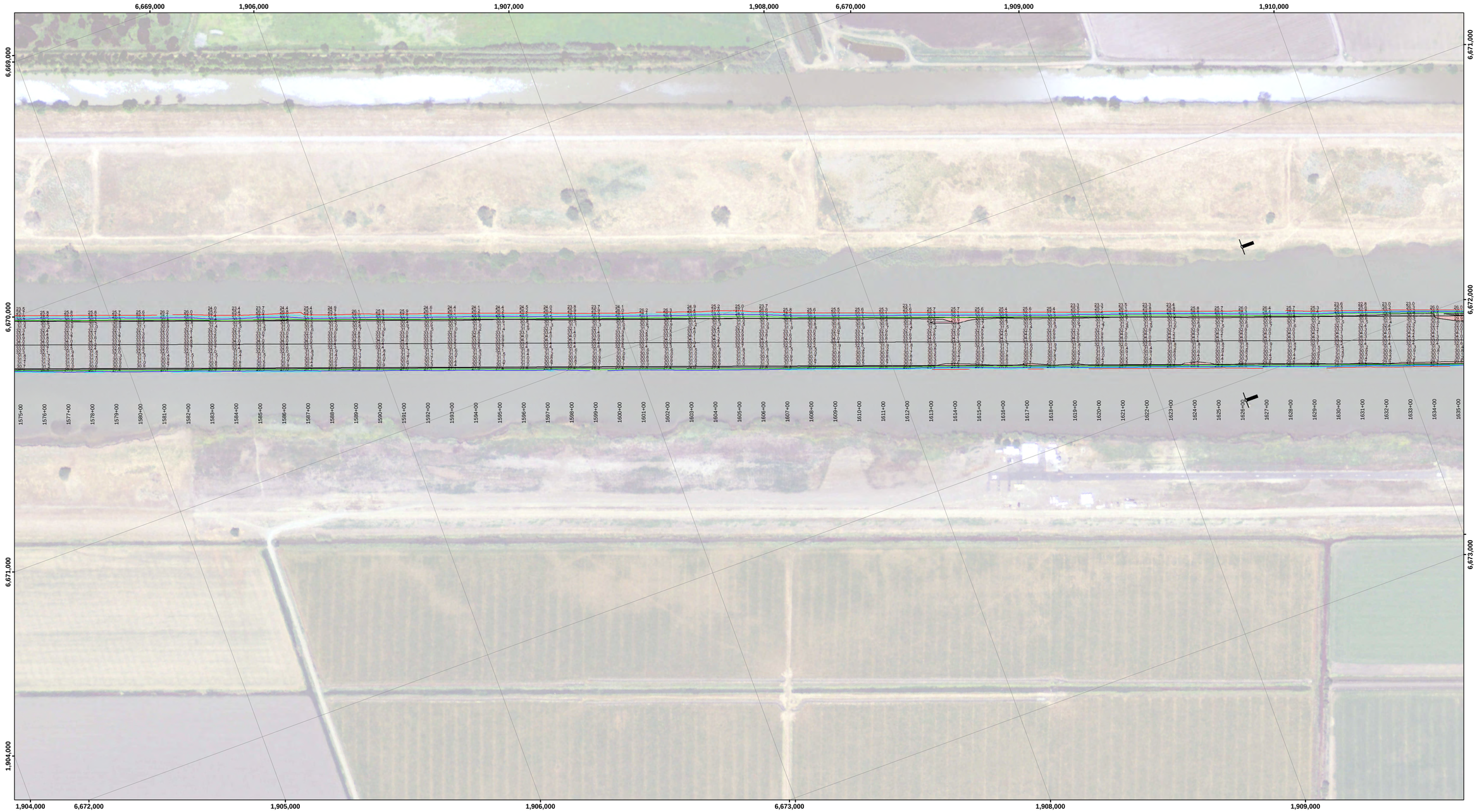
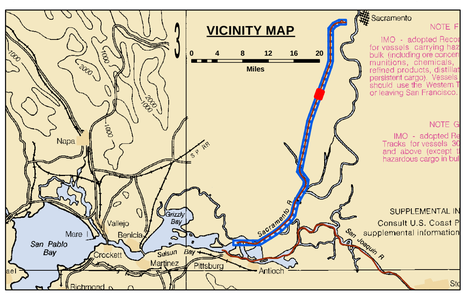
CALIFORNIA
SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
31 of 45





Feet
0 400 800 1,200

LEGEND

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SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

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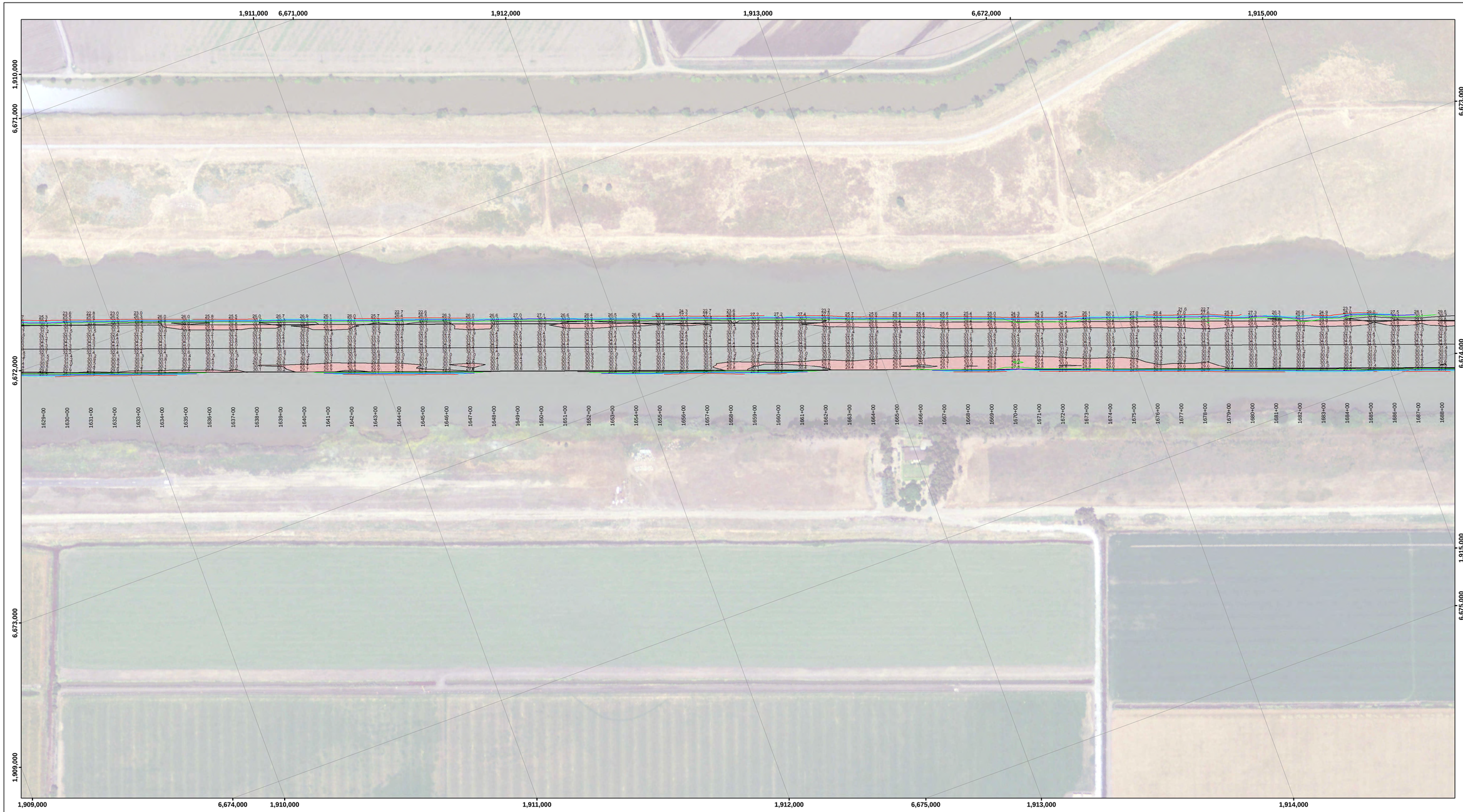

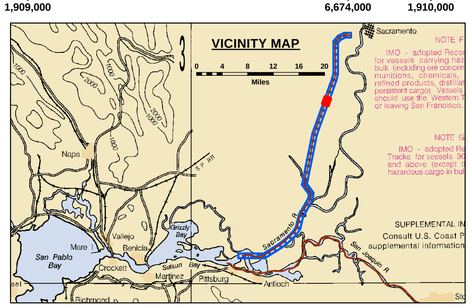

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Submitted: Hydro Survey Team Leader
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CALIFORNIA
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SACRAMENTO RIVER
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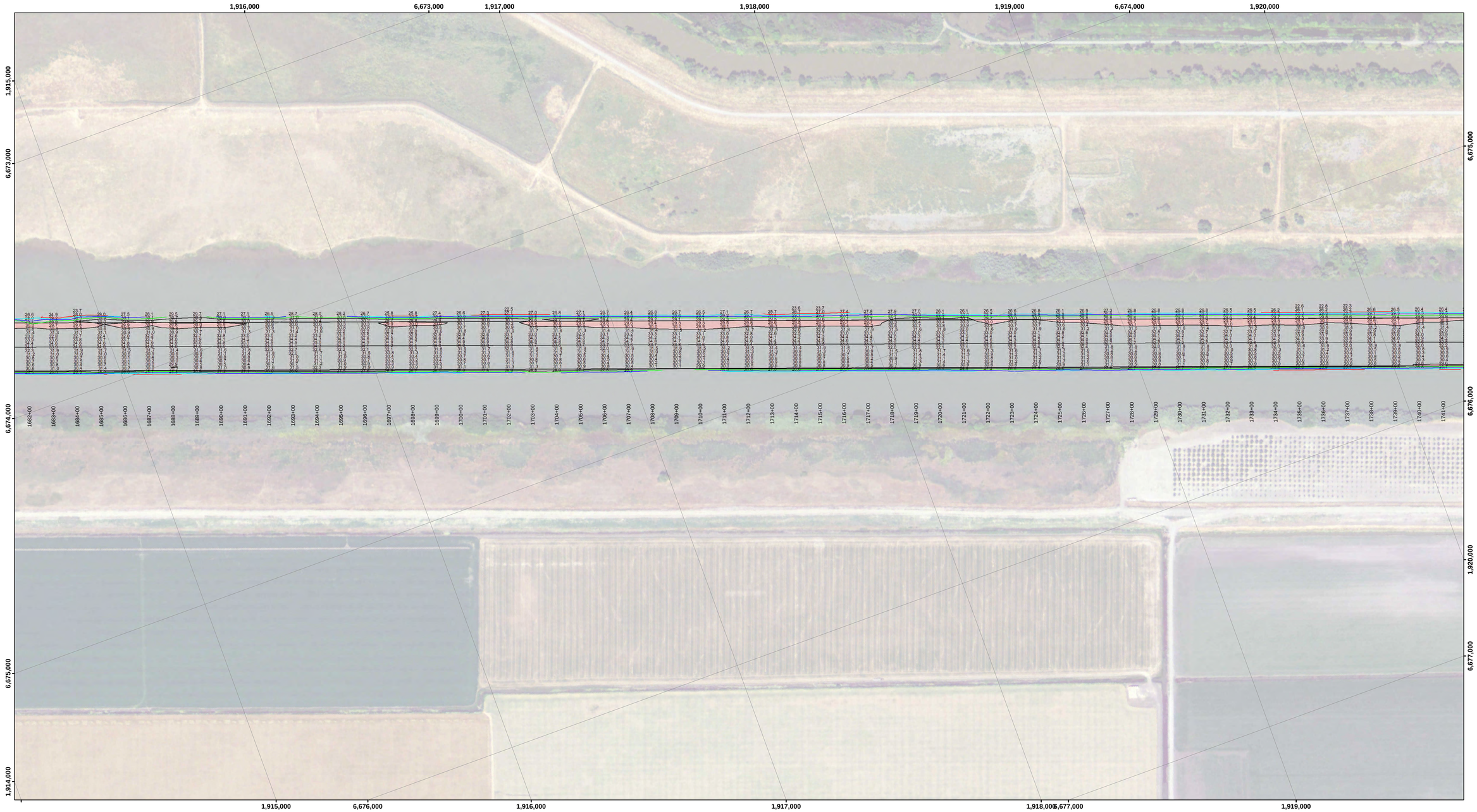

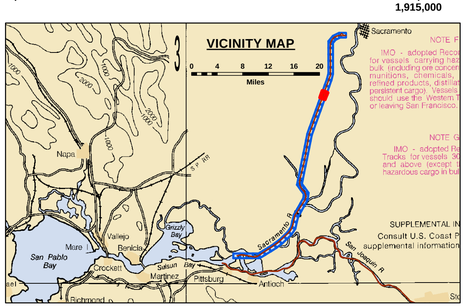

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THE LOCATION OF NAVIGATION AIDS ARE BASED ON AND PROVIDED BY THE U.S. COAST GUARD

CONTROLS:
LOCATION: RIO VISTA
NOAA STATION: 9415316
BENCHMARK: 5316 B 1996 (NO PID)
TIDE GAUGE: NAIL @ 8.2 FT MLLW
METADATA: NAIL SET BY USACE 31 MARCH, 2014

LOCATION: PORT OF WEST SACRAMENTO
NOAA STATION: 9416131
BENCHMARK: POWS1 (No PID)
TIDE GAUGE: NAIL @ 10.0 FT MLLW
METADATA: NAIL SET BY USACE 8 APRIL, 2014

ALL HORIZONTAL POSITIONS AND MLLW ELEVATIONS WERE POST-PROCESSED USING PUBLIC GPS REFERENCE STATIONS IN THE AREA.

US Army Corps of Engineers
District: CESPK

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Surveyed By:	
Chart Date:	May 17, 2016
Plotted By:	PDT
Designed by:	
Checked By:	PDT
Drawn by:	PDT

PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT. COLONEL, C.E. DISTRICT ENGINEER

Submitted: _____
Hydro Survey Team Leader

Recommended: _____
Chief, Hydro Survey Section

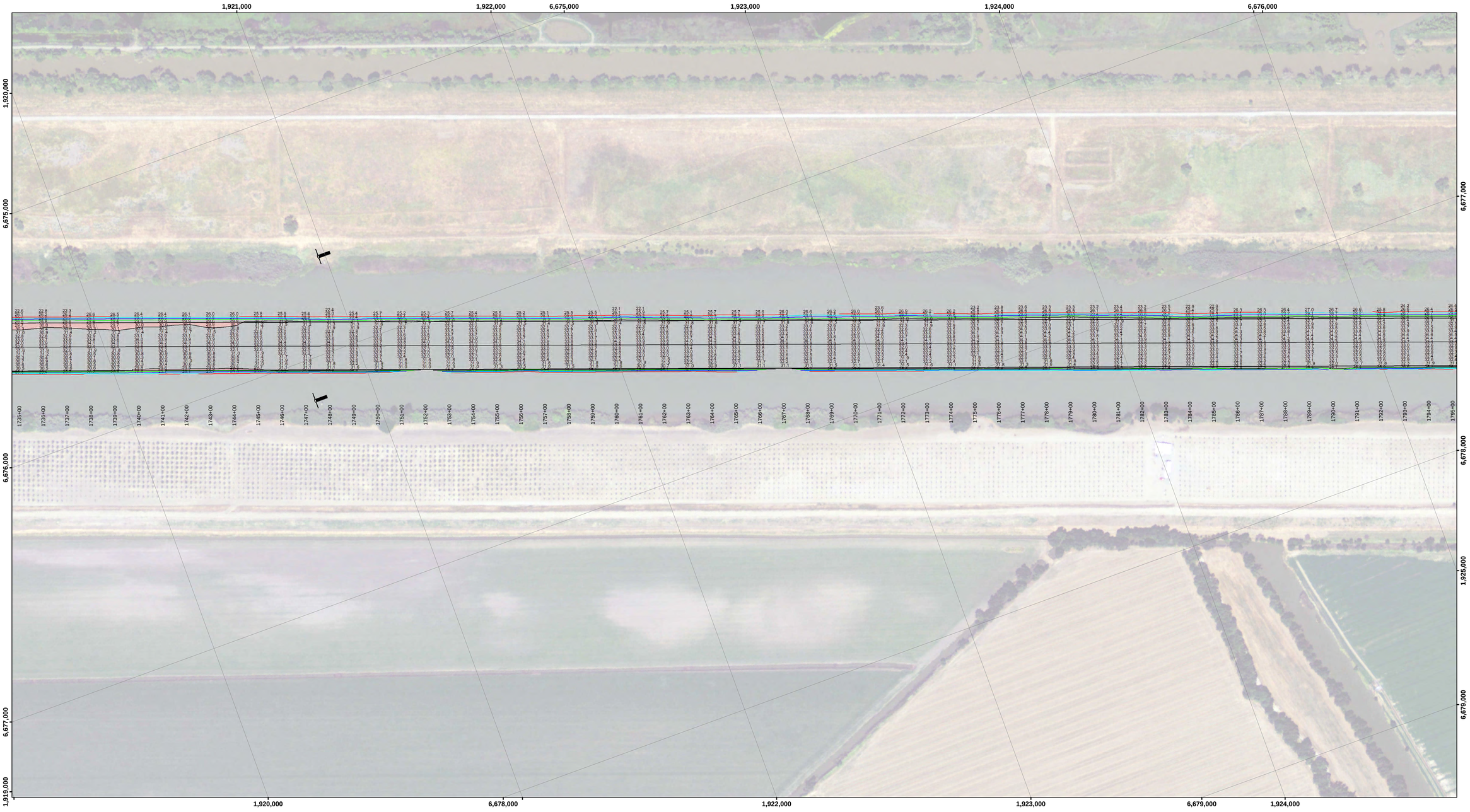
Approved: _____
Chief, Construction Branch

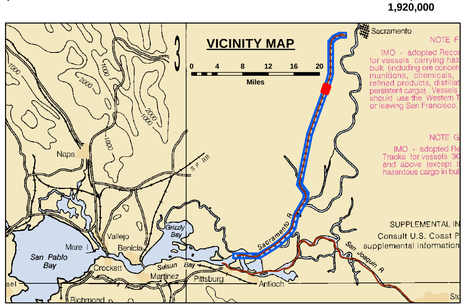
CALIFORNIA

SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
34 of 45





Feet
0 400 800 1,200

LEGEND

Federal Navigation Channel	Cable Area	Shoaling Area
Federal Navigation Center Line	Placement Area	Shoalest Sounding**
Cable Submarine	Anchorage Area	Beacon, General
Cable Overhead	Obstruction Point	Red Navigation Buoy
Contour Line	Wrecks-Submerged	Green Navigation Buoy

NOTES:
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US Army Corps of Engineers
District: CESPK

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PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT. COLONEL, C.E., DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

Surveyed By:	Chart Date: May 17, 2016
Plotted By: PDT	Designed by:
Checked By: PDT	Drawn by: PDT

SAN JOAQUIN COUNTY CALIFORNIA

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
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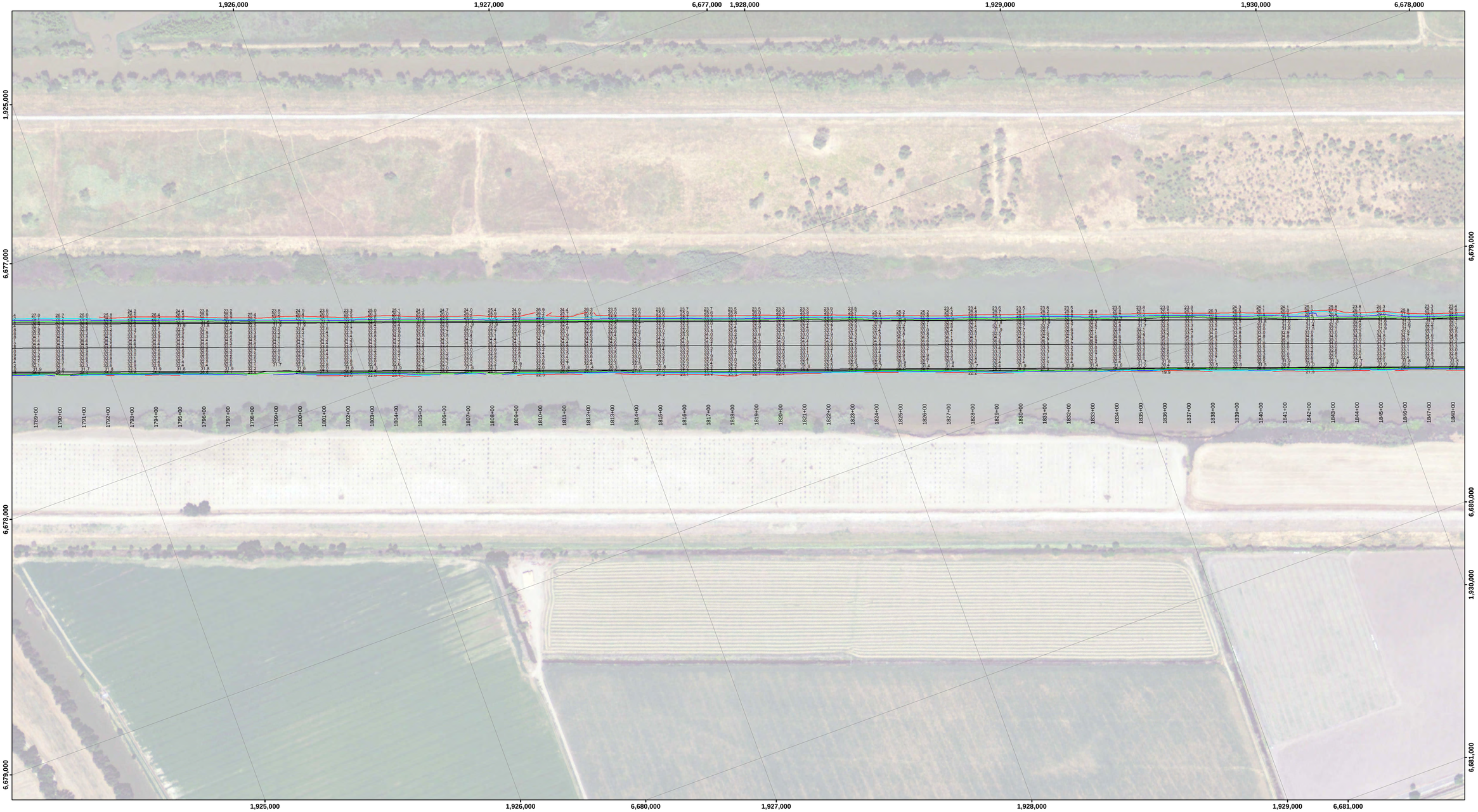

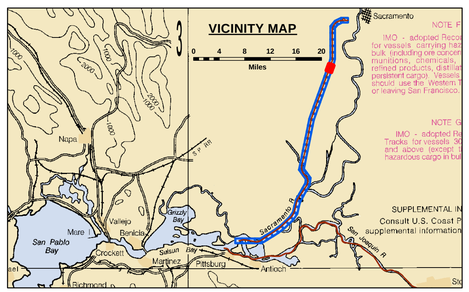

Feet
0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
- Cable Overhead
- Contour Line
- Cable Area
- Placement Area
- Anchorage Area
- Obstruction Point
- Wrecks-Submerged
- Shoaling Area
- Shoalest Sounding**
- Beacon, General
- Red Navigation Buoy
- Green Navigation Buoy

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US Army Corps of Engineers
District: CESPK

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PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT. COLONEL, C.E. DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

Surveyed By:
Plotted By: PDT
Checked By: PDT
Chart Date: May 17, 2016
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Drawn by: PDT

SAN JOAQUIN COUNTY CALIFORNIA

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
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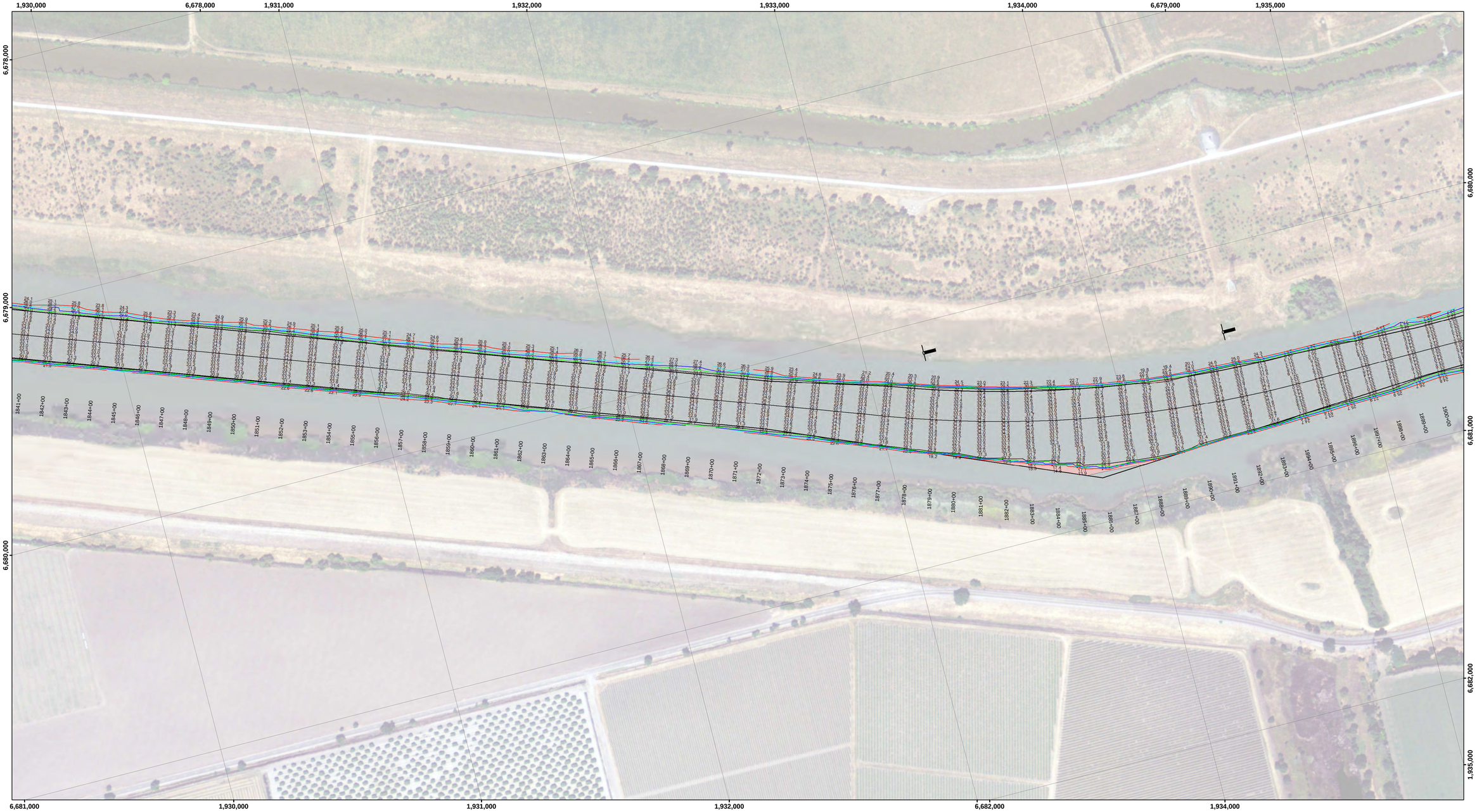

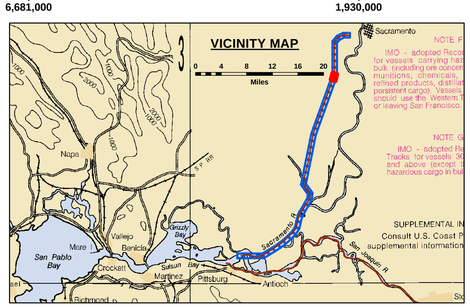

Feet

0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
- Cable Overhead
- Contour Line
- Cable Area
- Placement Area
- Anchorage Area
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- Wrecks-Submerged
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- Shoalest Sounding**
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US Army Corps of Engineers
District: CESPK

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Surveyed By:	Chart Date: May 17, 2016
Plotted By: PDT	Designed by:
Checked By: PDT	Drawn by: PDT

PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT. COLONEL, C.E. DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

SAN JOAQUIN COUNTY CALIFORNIA

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
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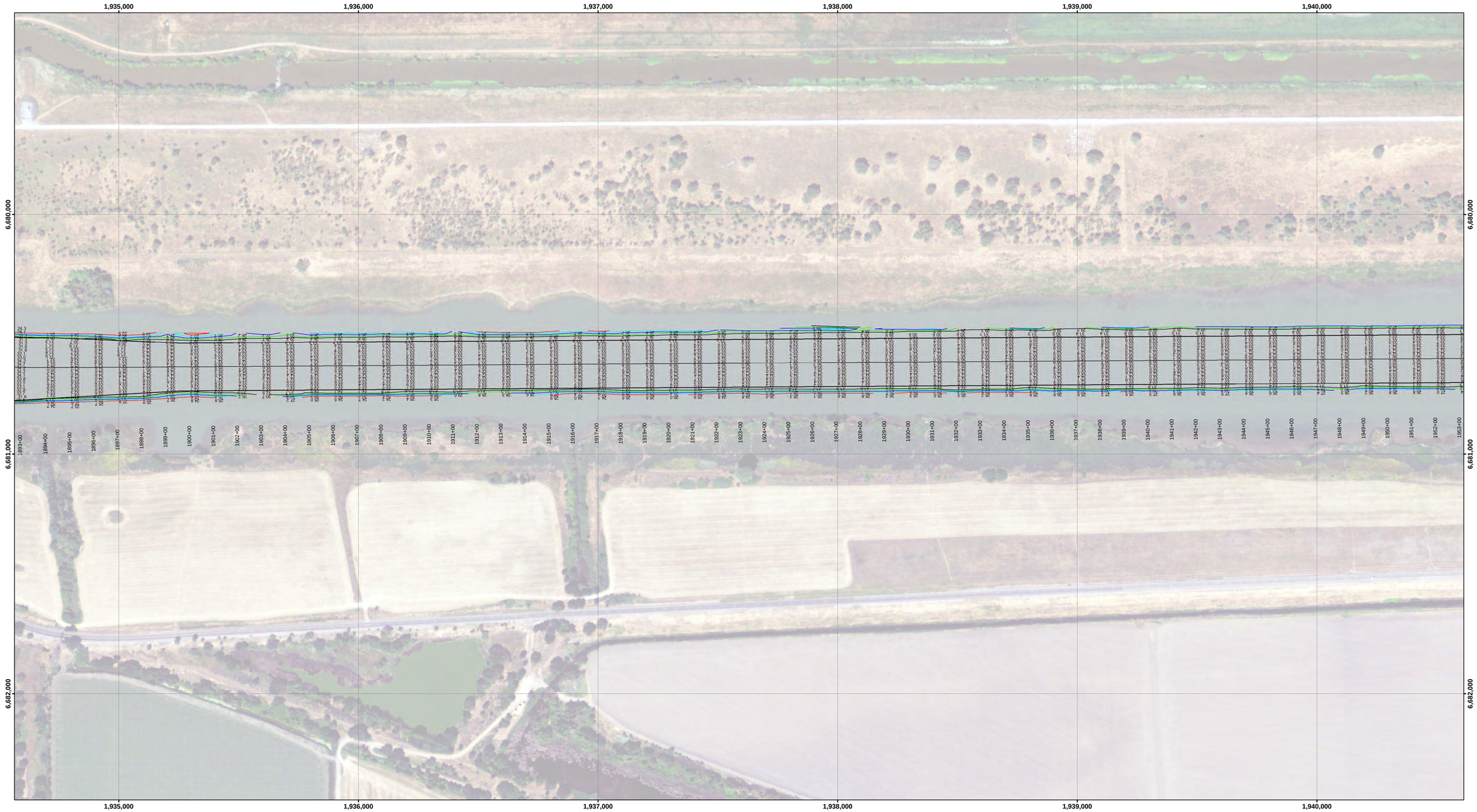

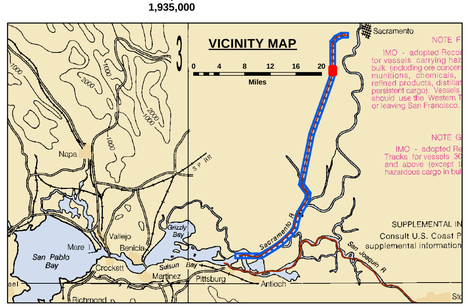

Feet
0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
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US Army Corps of Engineers
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Plotted By: PDT	Designed by:		
Checked By: PDT	Drawn by: PDT		

PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT. COLONEL, C.E., DISTRICT ENGINEER

Submitted: _____
Hydro Survey Team Leader

Recommended: _____
Chief, Hydro Survey Section

Approved: _____
Chief, Construction Branch

CALIFORNIA

SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

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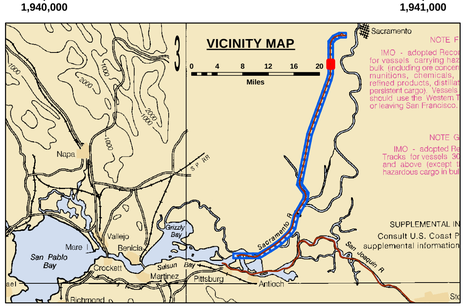

Feet
0 400 800 1,200

LEGEND

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Plotted By:	PDT
Drawn by:	PDT
Checked By:	PDT

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JOHN C. MORROW
LT COLONEL, C.E., DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

CALIFORNIA
SAN JOAQUIN COUNTY

SACRAMENTO RIVER
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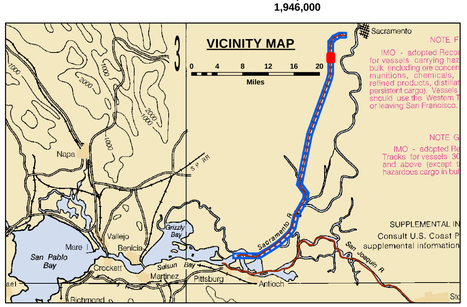

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PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT. COLONEL, C.E. DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

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CALIFORNIA
SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

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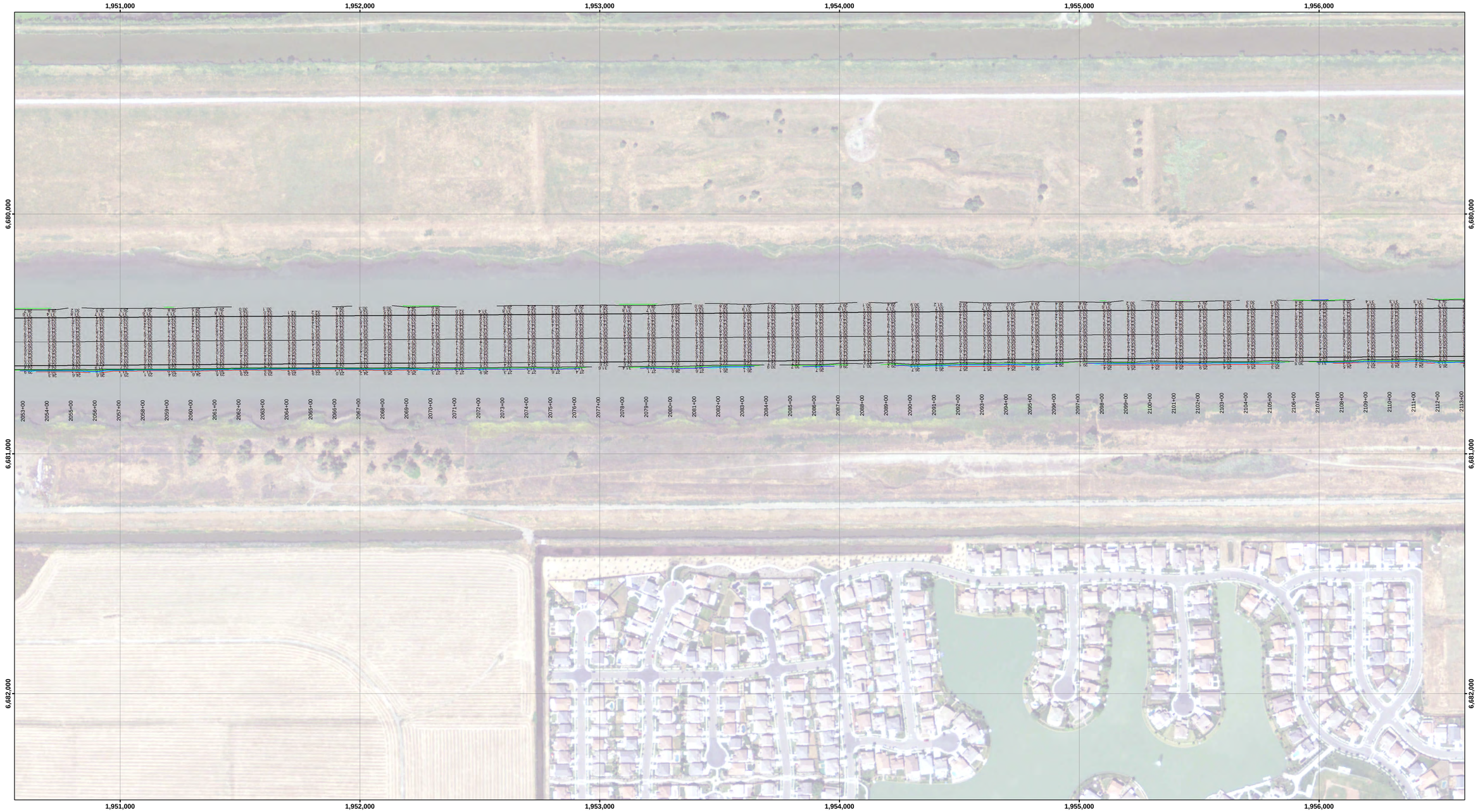

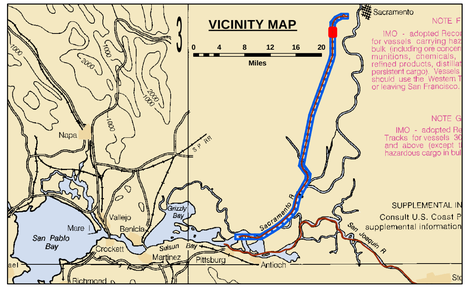

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- Shoalest Sounding**
- Beacon, General
- Red Navigation Buoy
- Green Navigation Buoy

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SOUNDINGS ARE BASED ON THE DATUM OF MEAN LOWER LOW WATER AT THE LOCALITY.

NORTH AMERICAN DATUM OF 1983 (NAD83), PROJECTED TO THE STATE PLANE COORDINATE SYSTEM (SPCS), CA ZONE II (0402). DISTANCE UNITS IN U.S. SURVEY FEET.

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PROJECT DEPTH: -30'

VERTICAL DATUM: MLLW

THE LOCATION OF NAVIGATION AIDS ARE BASED ON AND PROVIDED BY THE U.S. COAST GUARD

CONTROLS:
LOCATION: RIO VISTA
NOOA STATION: 9415316
BENCHMARK: 5316 B 1996 (NO PID)
TIDE GAUGE: NAIL @ 8.2 FT MLLW
METADATA: NAIL SET BY USACE 31 MARCH, 2014

LOCATION: PORT OF WEST SACRAMENTO
NOOA STATION: 9416131
BENCHMARK: POWS1 (No PID)
TIDE GAUGE: NAIL @ 10.0 FT MLLW
METADATA: NAIL SET BY USACE 8 APRIL, 2014

ALL HORIZONTAL POSITIONS AND MLLW ELEVATIONS WERE POST-PROCESSED USING PUBLIC GPS REFERENCE STATIONS IN THE AREA.

US Army Corps of Engineers
District: CESPK

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Surveyed By:		Chart Date:	May 17, 2016
Plotted By:	PDT	Designed by:	
Checked By:	PDT	Drawn by:	PDT

PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT COLONEL, C.E. DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

CALIFORNIA
SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
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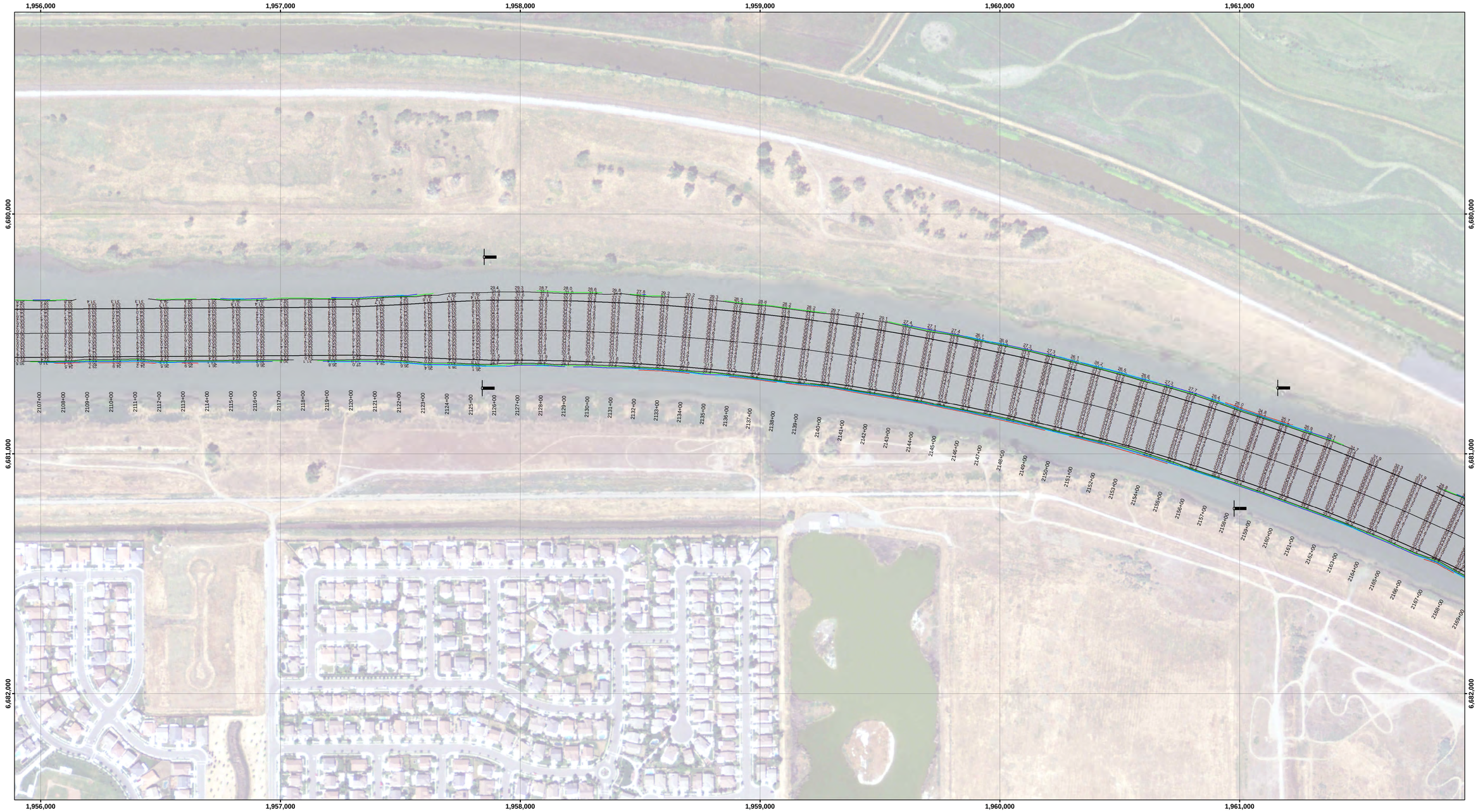

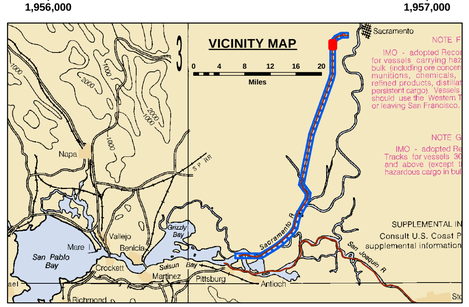

Feet
0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
- Cable Overhead
- Contour Line
- Cable Area
- Placement Area
- Anchorage Area
- Obstruction Point
- Wrecks-Submerged
- Shoaling Area
- Shoalest Sounding**
- Beacon, General
- Red Navigation Buoy
- Green Navigation Buoy

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PROJECT DEPTH: -30'

VERTICAL DATUM: MLLW

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CONTROLS:
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NOOA STATION: 9415316
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TIDE GAUGE: NAIL @ 8.2 FT MLLW
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LOCATION: PORT OF WEST SACRAMENTO
NOOA STATION: 9416131
BENCHMARK: POWS1 (No PID)
TIDE GAUGE: NAIL @ 10.0 FT MLLW
METADATA: NAIL SET BY USACE 8 APRIL, 2014

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US Army Corps of Engineers District: CESPK

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PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT. COLONEL, C.E. DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

Surveyed By:
Plotted By: PDT
Checked By: PDT
Chart Date: May 17, 2016
Designed by:
Drawn by: PDT

CALIFORNIA
SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

Sheet Reference Number
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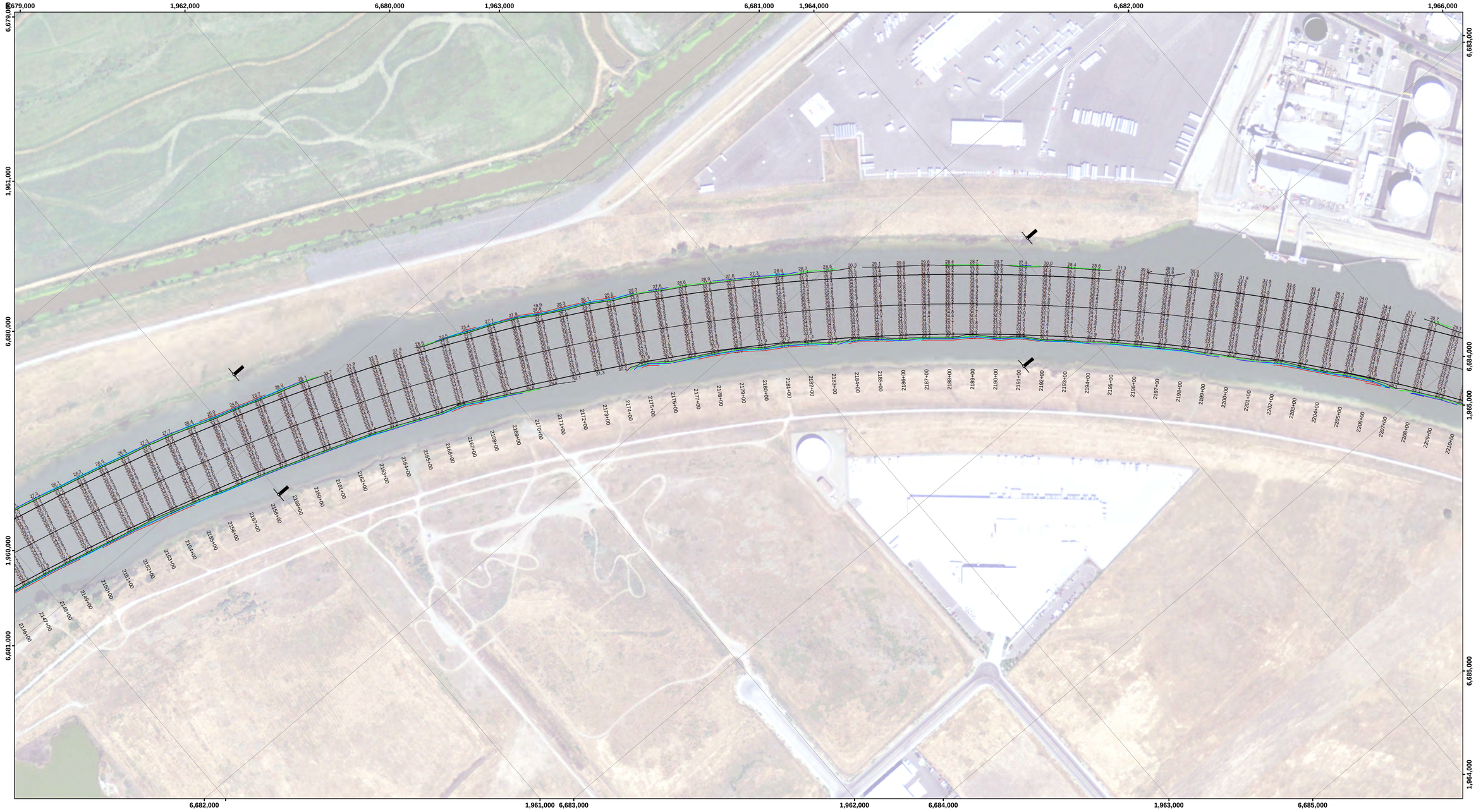

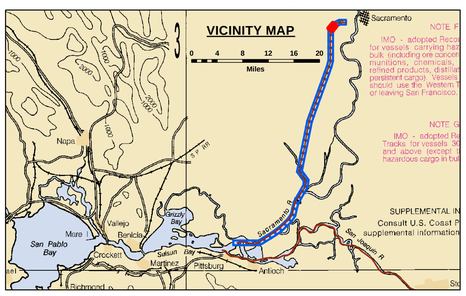

Feet
0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
- Cable Overhead
- Contour Line
- Cable Area
- Placement Area
- Anchorage Area
- Obstruction Point
- Wrecks-Submerged
- Shoaling Area
- Shoalest Sounding**
- Beacon, General
- Red Navigation Buoy
- Green Navigation Buoy

NOTES:
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PROJECT DEPTH: -30'

VERTICAL DATUM: MLLW

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CONTROLS:
LOCATION: RIO VISTA
NOAA STATION: 9415316
BENCHMARK: 5316 B 1996 (NO PID)
TIDE GAUGE: NAIL @ 8.2 FT MLLW
METADATA: NAIL SET BY USACE 31 MARCH, 2014

LOCATION: PORT OF WEST SACRAMENTO
NOAA STATION: 9416131
BENCHMARK: POWS1 (No PID)
TIDE GAUGE: NAIL @ 10.0 FT MLLW
METADATA: NAIL SET BY USACE 8 APRIL, 2014

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US Army Corps of Engineers
District: CESPK

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Surveyed By:
Chart Date: May 17, 2016
Plotted By: PDT
Designed by:
Checked By: PDT
Drawn by: PDT

PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT. COLONEL, C.E. DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

CALIFORNIA
SAN JOAQUIN COUNTY

SACRAMENTO RIVER
CONDITION SURVEY
09-12 FEBRUARY 2016

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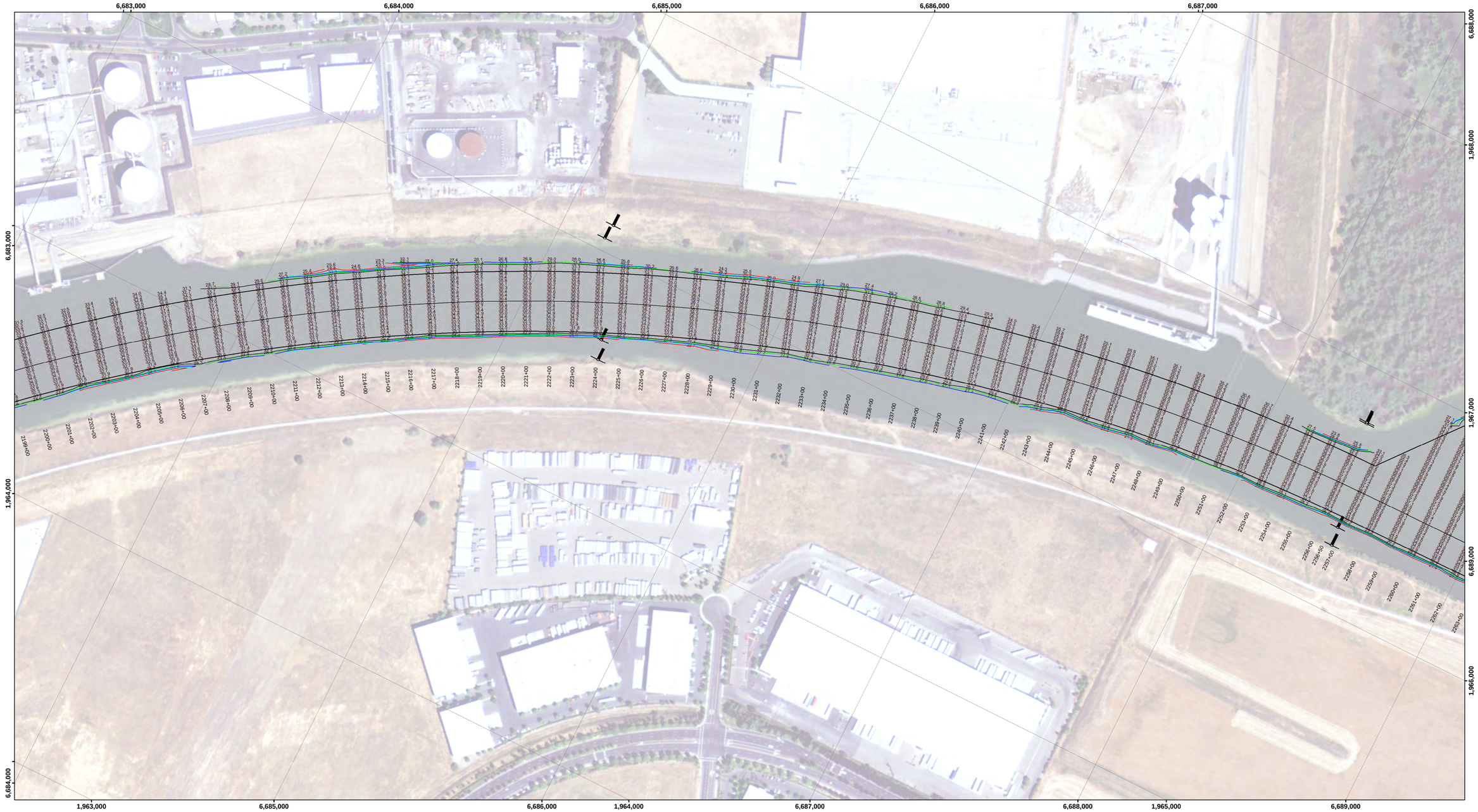

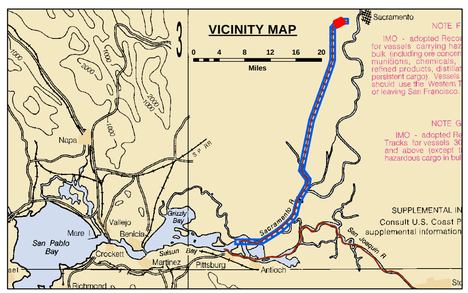

Feet

0 400 800 1,200

LEGEND

- Federal Navigation Channel
- Federal Navigation Center Line
- Cable Submarine
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PREPARED UNDER THE DIRECTION OF
JOHN C. MORROW
LT COLONEL, C.E., DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

Surveyed By:	Chart Date: May 17, 2016
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CALIFORNIA

SAN JOAQUIN COUNTY

SACRAMENTO RIVER
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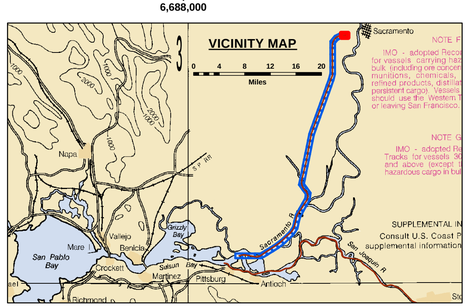

Feet

0 400 800 1,200

LEGEND

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Surveyed By:	
Designed By:	
Plotted By:	PDT
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Checked By:	PDT

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JOHN C. MORROW
LT COLONEL, C.E. DISTRICT ENGINEER

Submitted: Hydro Survey Team Leader
Recommended: Chief, Hydro Survey Section
Approved: Chief, Construction Branch

CALIFORNIA
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CONDITION SURVEY
09-12 FEBRUARY 2016

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