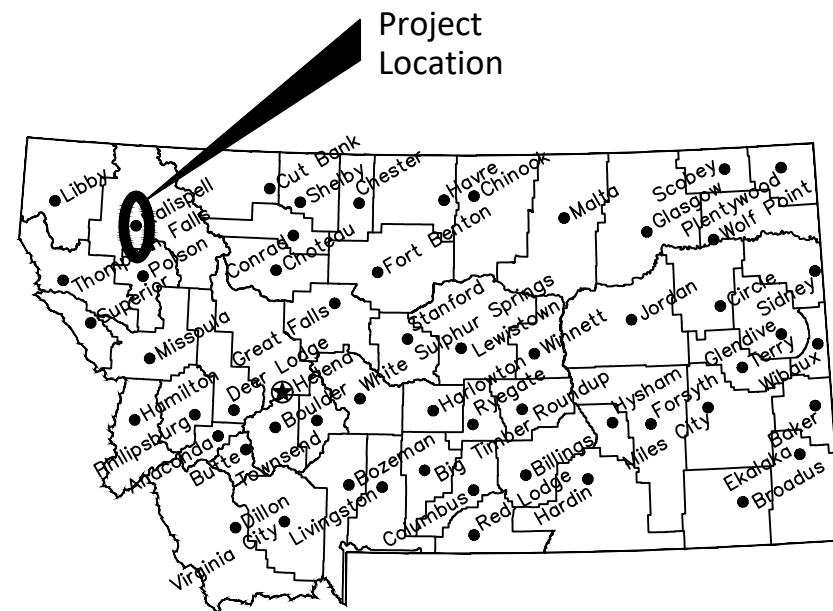


MONTANA FISH, WILDLIFE & PARKS Lone Pine State Park Pedestrian Bridge Project

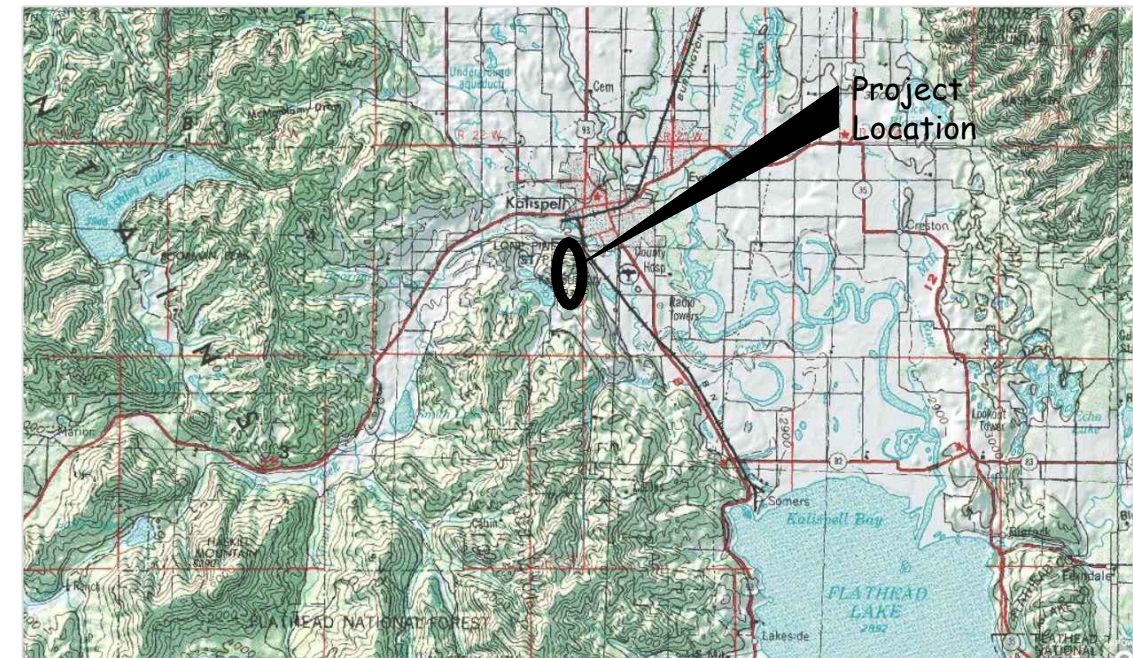
Near Kalispell, Montana

FWP # 7196112



Location Map

No Scale



Vicinity Map

No Scale

North



MONTANA FISH, WILDLIFE AND PARKS
DESIGN AND CONSTRUCTION

MAILING ADDRESS: PO BOX 200701
HELENA, MT 59620-0701
TEL 406.841.4000
FAX 406.841.4004
fwp.mt.gov/Doing Business/Design&Construction

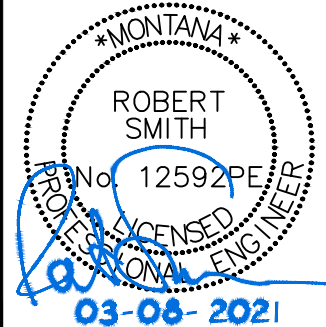
A2Z ENGINEERING, PLLC

MAILING ADDRESS: 138 EAST CENTER STREET, SUITE A
KALISPELL, MONTANA 59901
TEL 406.755.7888
FAX 406.755.7880
a2z-engineering.com

DRAWING INDEX

Sheet 1 of 9.....Cover Sheet
Sheet 2a of 9.....Limits Exhibit
Sheet 2b of 9.....Existing Condition Siteplan
Sheet 3 of 9.....New Bridge Plan View
Sheet 4 of 9.....New Bridge Profile View

Sheet 5 of 9.....East Abutment Plan View
Sheet 6 of 9.....West Abutment Plan View
Sheet 7 of 9.....East Abutment Section
Sheet 8 of 9.....West Abutment Section
Sheet 9 of 9.....Abutments Struct. Plan View



R Smith March 8, 2021
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Cover Sheet
Lone Pine State Park Pedestrian Bridge Project

SHEET: 1 of 9

Keyed Notes for Siteplan:

- A. Existing Lone Pine Road
 - B. Existing visitor's center
 - C. Existing entrance kiosk
 - D. Existing picnic shelter
 - E. Existing parking area
 - F. Existing paved trail
 - G. Existing gravel trail
 - H. Existing lookout platform
 - J. Existing pedestrian bridge location
 - K. Project benchmark location
-
- L. F.W.P. trail closure signs at all access points
 - M. Limits of disturbance (see note #2 below)
 - N. Landscaped & irrigated area, do not disturb
 - O. Contractor staging and materials storage area
 - P. Additional contractor personnel parking
 - Q. Maintain at least one open traffic lane

Construction Limits Notes:

1. This exhibit shows the limits of contractor access and disturbance.
2. Contractor to install temporary orange safety fencing around the "limits of disturbance" area at the bridge site prior to start of demolition. Area to be closed when workers not present.
3. Road to have at least one passable lane until abutment and bridge replacement work begins. See special conditions for times of total road closure.

Re-vegetation Seed Mix Note:

Furnish seed and seed mixture, free of all prohibited noxious weed seed or any other weed seed prohibited by state or local ordinance. Verify seed mixtures with Montana F.W.P. prior to use on site.

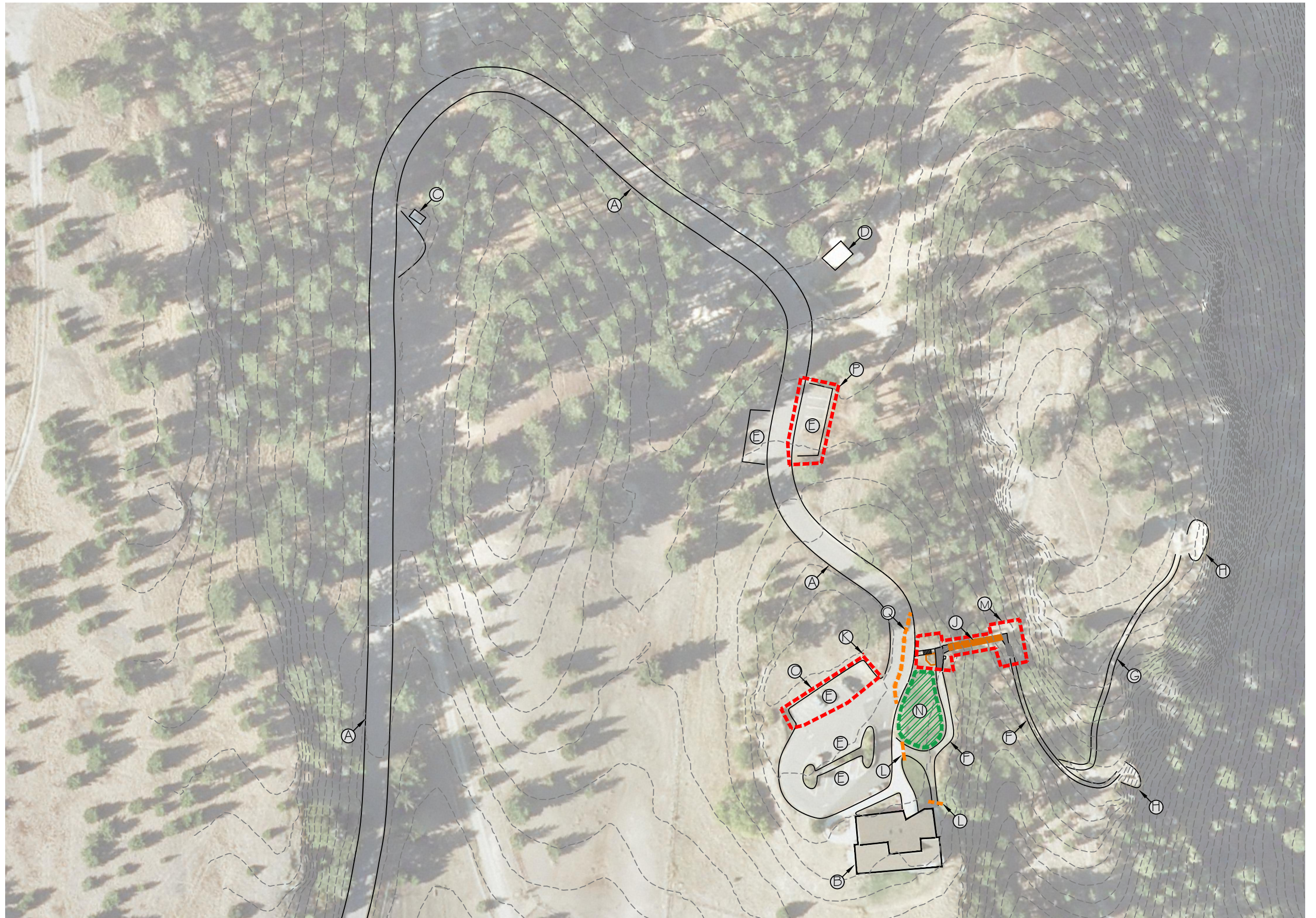
Time of Closure / Visitor Disruption Note:

Lone Pine State Park has high daily visitation levels and F.W.P. must minimize the time of disruption caused by this project.

Sitework must not start until after Labor Day 2021.

Contractor must proceed without delay once existing bridge is demolished.

Total road closure cannot exceed three weeks and preferably much less.



Scale:



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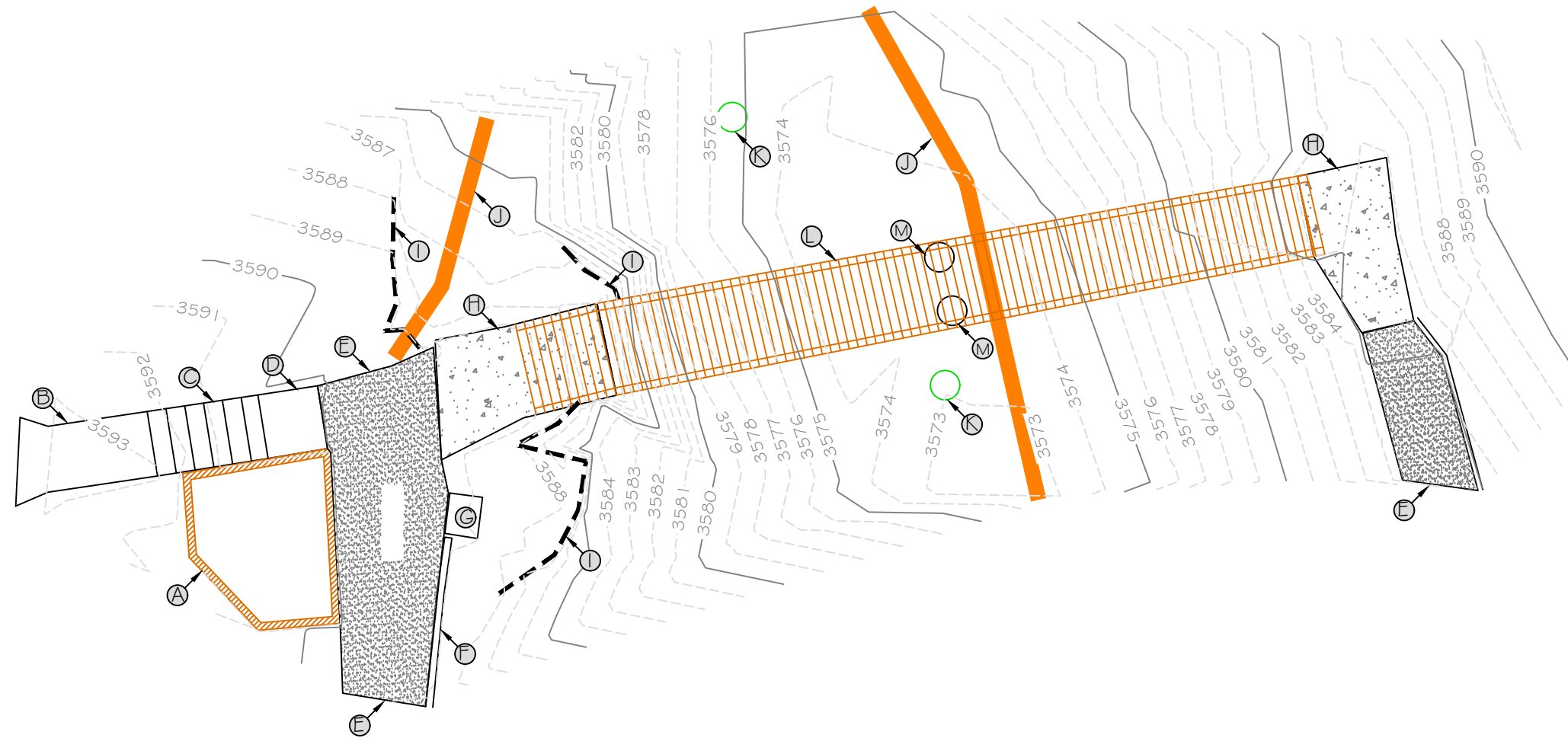
**Montana Fish,
Wildlife & Parks**

Project Area Location / Limits
Lone Pine State Park Pedestrian Bridge Project

SHEET: 2a
of 9

- Keyed Notes for Siteplan:**
- A. Existing landscaping bed
 - B. Existing concrete stair top landing
 - C. Existing concrete stairs
 - D. Existing concrete stair lower landing
 - E. Existing asphalt trail area
 - F. Existing 6" concrete curb / wall
 - G. Existing informational sign
 - H. Existing concrete bridge landing area
 - I. Existing edge of bedrock outcropping
 - J. Existing walking trail
 - K. Existing large tree
 - L. Existing wooden bridge
 - M. Existing bridge support poles

Temporary Benchmark Note: Project benchmark is located on top of bolt of light pole painted red, approximately 60 feet west of existing stairs. Assumed elevation is 3600.00



Scale:



Robert Smith, PE DRAWN BY: Robert Smith, PE DATE: March 8, 2021	REVISOR: _____ DATE: _____	APPROVED BY: _____ DATE: _____
John Thomas, PE CHECKED BY: John Thomas, PE DATE: March 8, 2021	APPROVED BY: _____ DATE: _____	APPROVED BY: _____ DATE: _____



Existing Condition Siteplan

Lone Pine State Park Pedestrian Bridge Project

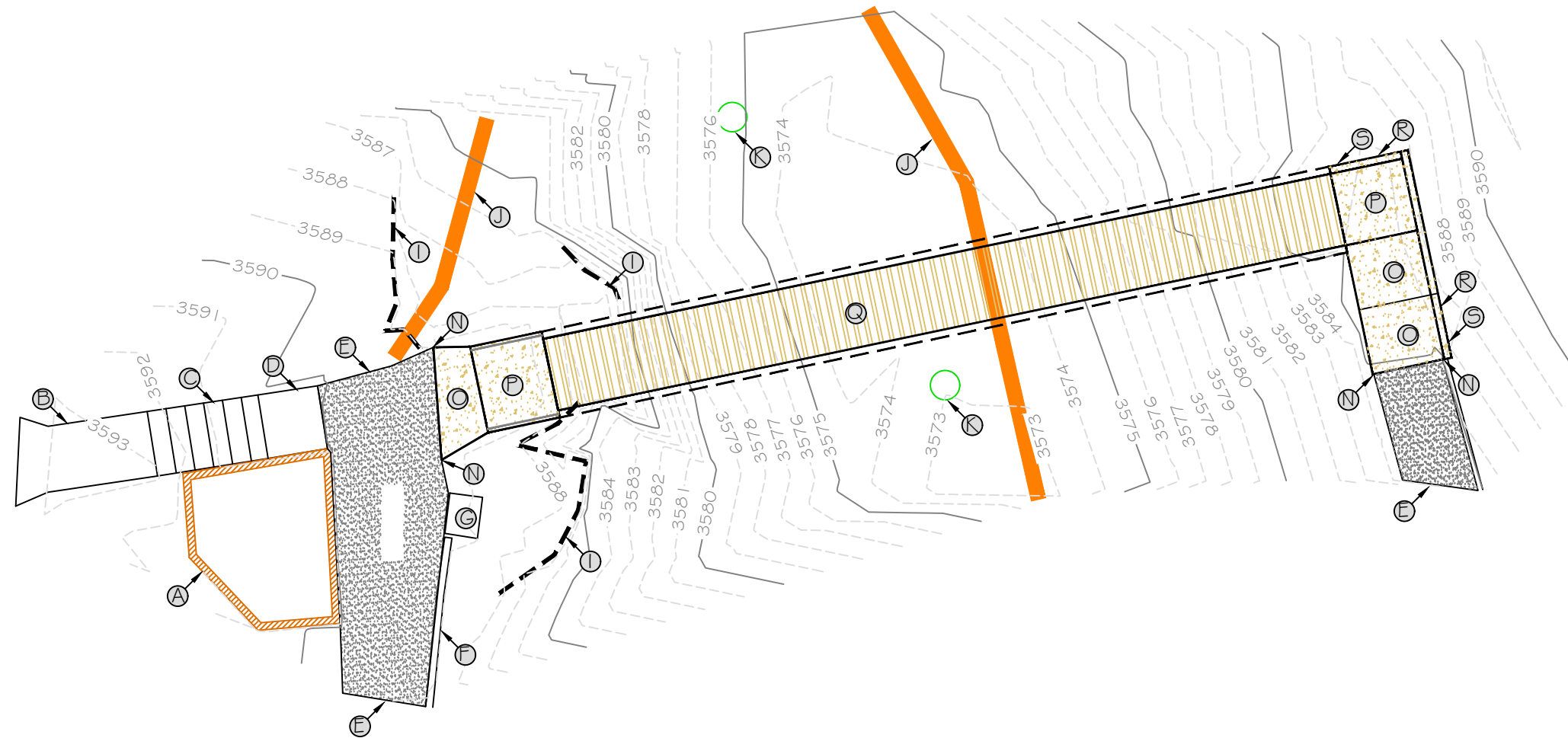
SHEET: 2b of 9

Keyed Notes for Siteplan:

- A. Existing landscaping bed
- B. Existing concrete stair top landing
- C. Existing concrete stairs
- D. Existing concrete stair lower landing
- E. Existing asphalt trail area
- F. Existing 6" concrete curb / wall
- G. Existing informational sign
- I. Existing edge of bedrock outcropping
- J. Existing walking trail
- K. Existing large tree

- N. Limit of demolition / new work
- O. Proposed concrete transition apron
- P. Proposed 5 ft x 5 ft concrete landing
- Q. Proposed 55 ft x 5 ft bridge
- R. Proposed 6" wide x 6" tall curbing
- S. Proposed hand railing in curbing

Temporary Benchmark Note: Project benchmark is located on top of bolt of light pole painted red, approximately 60 feet west of existing stairs. Assumed elevation is 3600.00



Scale:



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REVISED BY: DATE:

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John Thomas, PE March 8, 2021
 CHECKED BY: DATE:

APPROVED BY: DATE:

APPROVED BY: DATE:



**Montana Fish,
 Wildlife & Parks**

New Bridge Plan View
 Lone Pine State Park Pedestrian Bridge Project

SHEET: 3 of 9

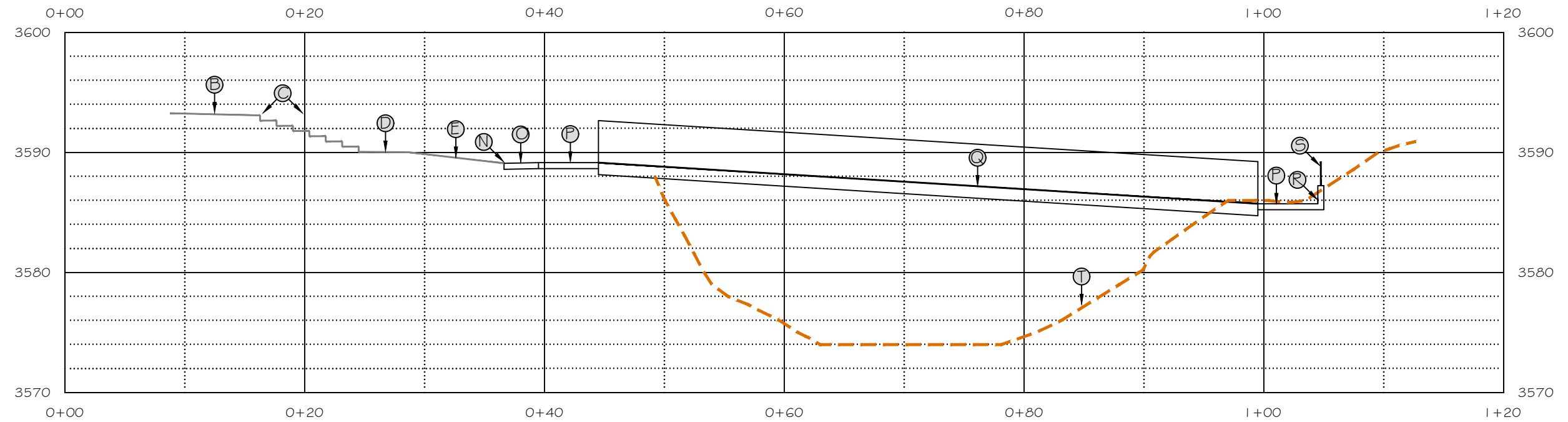
Keyed Notes for Siteplan:

- B. Existing concrete stair top landing
- C. Existing concrete stairs
- D. Existing concrete stair lower landing
- E. Existing asphalt trail area
- I. Existing edge of bedrock outcropping

- N. Limit of demolition / new work
- O. Proposed concrete transition apron
- P. Proposed 5 ft x 5 ft concrete landing
- Q. Proposed 55 ft x 5 ft bridge
- R. Proposed 6" wide x 6" tall curbing
- S. Proposed hand railing in curbing

- T. Existing ground profile

Temporary Benchmark Note: Project benchmark is located on top of bolt of light pole painted red, approximately 60 feet west of existing stairs. Assumed elevation is 3600.00



Robert Smith, PE	March 8, 2021
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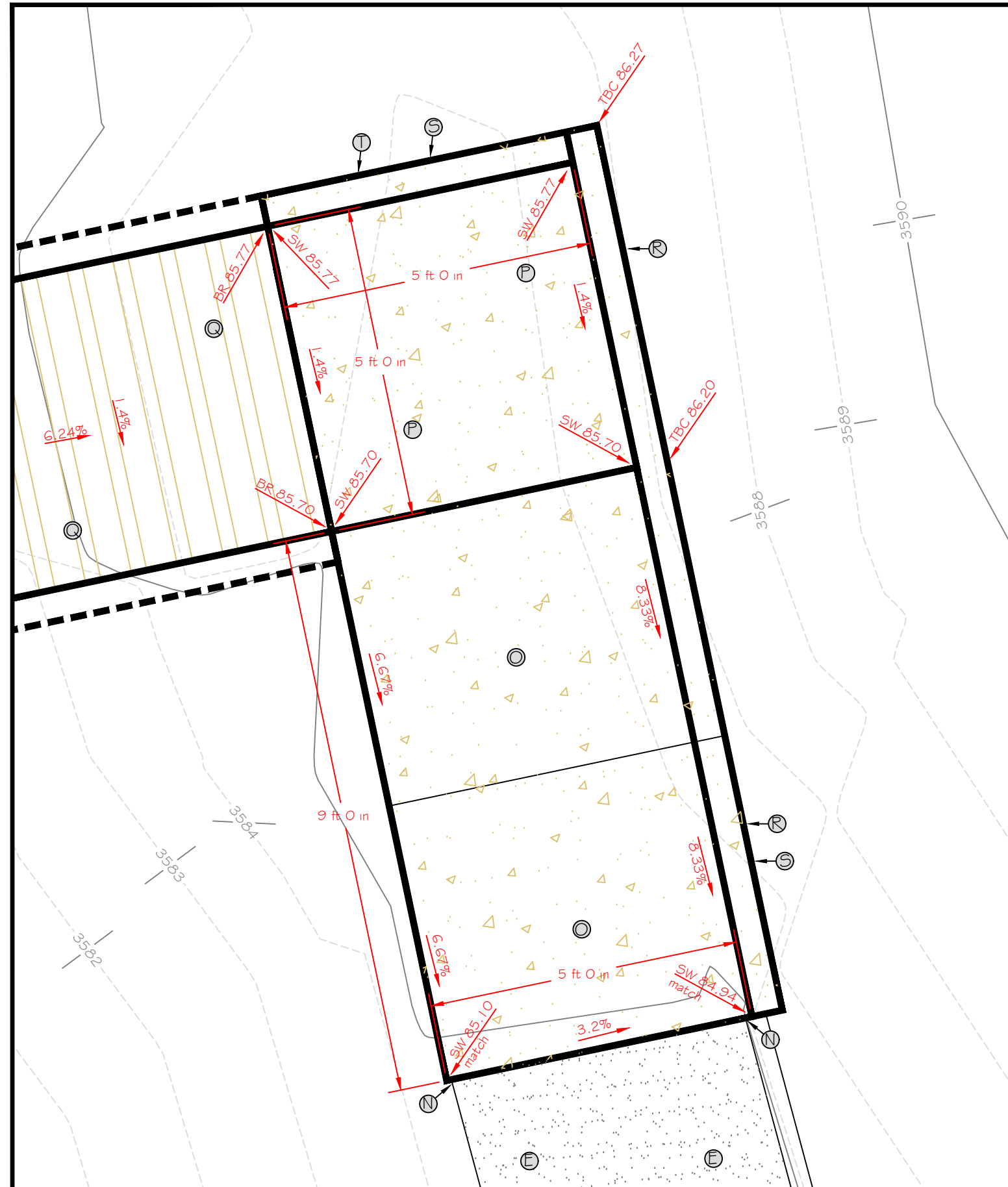
New Bridge Profile View

Lone Pine State Park Pedestrian Bridge Project

SHEET: 4 of 9

- Keyed Notes for Siteplan:**
- E. Existing asphalt trail area
 - N. Limit of demolition / new work
 - O. Proposed concrete transition apron
 - P. Proposed 5 ft x 5 ft concrete landing
 - Q. Proposed 55 ft x 5 ft bridge
 - R. Proposed 6" wide x 18" tall curbing
 - S. Proposed hand railing in curbing
 - T. Proposed 6" wide x 6" tall curbing

Temporary Benchmark Note: Project benchmark is located on top of bolt of light pole painted red, approximately 60 feet west of existing stairs. Assumed elevation is 3600.00



Scale:



Robert Smith, PE March 8, 2021
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John Thomas, PE March 8, 2021
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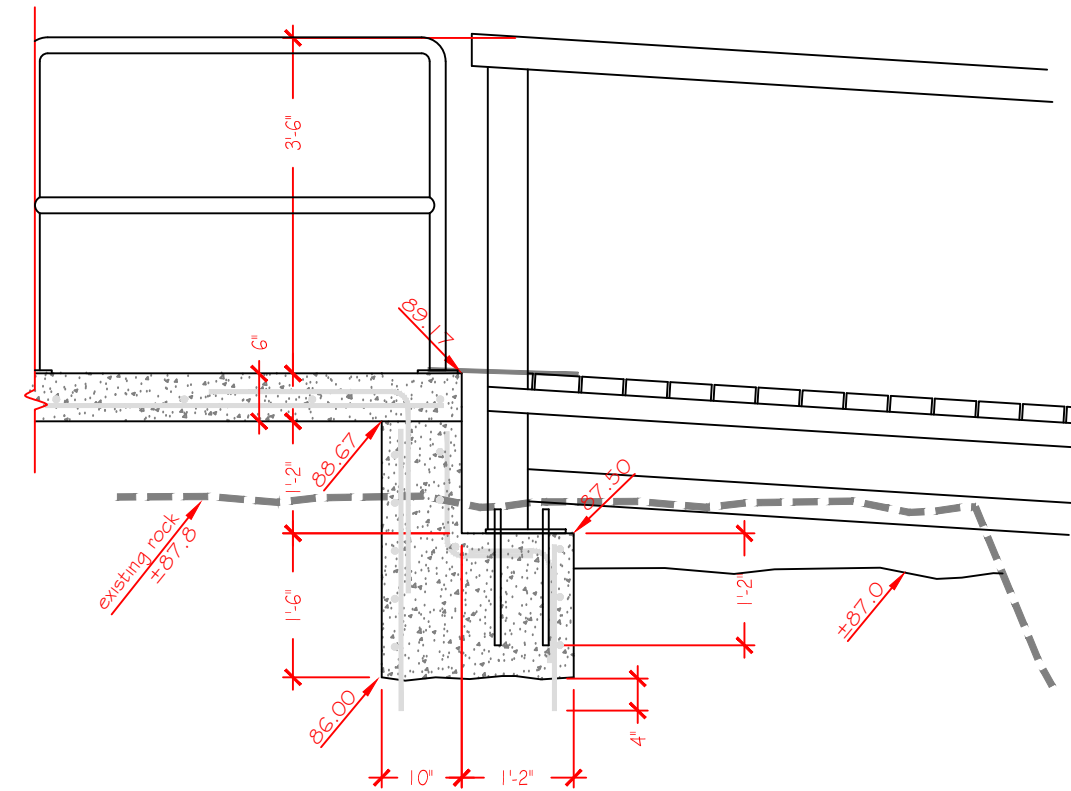
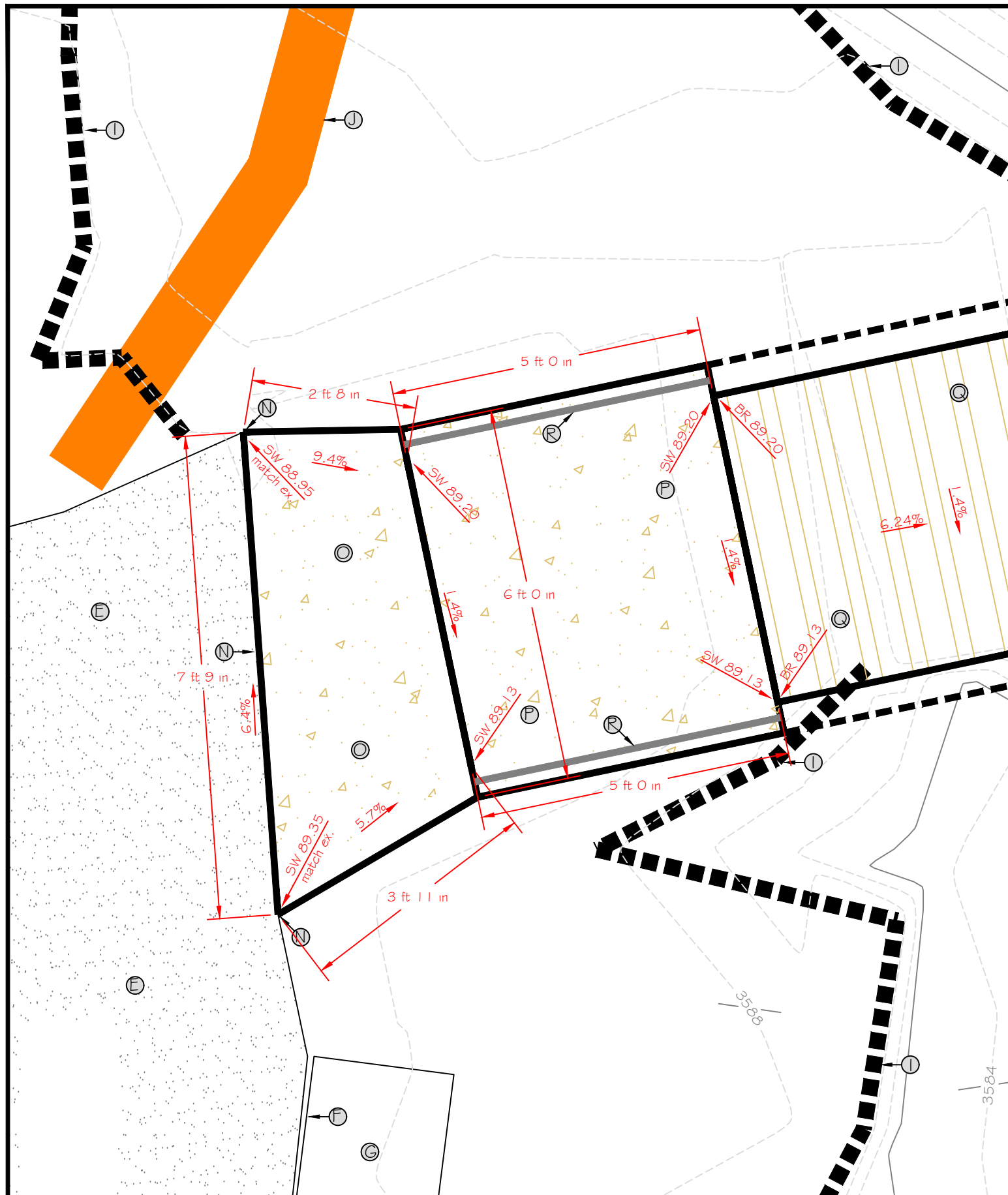
East End Abutment Plan

Lone Pine State Park Pedestrian Bridge Project

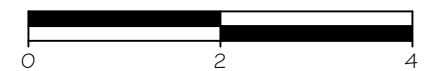
SHEET: 5 of 9

- Keyed Notes for Siteplan:
- E. Existing asphalt trail area
 - F. Existing 6" concrete curb / wall
 - G. Existing informational sign
 - I. Existing edge of bedrock outcropping
 - J. Existing walking trail
-
- N. Limit of demolition / new work
 - O. Proposed concrete transition apron
 - P. Proposed 5 ft x 5 ft concrete landing
 - Q. Proposed 55 ft x 5 ft bridge
 - R. Handrailing

Temporary Benchmark Note: Project benchmark is located on top of bolt of light pole painted red, approximately 60 feet west of existing stairs. Assumed elevation is 3600.00



Scale:



Robert Smith, PE March 8, 2021
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John Thomas, PE March 8, 2021
 CHECKED BY: DATE:

REVISED BY: DATE:

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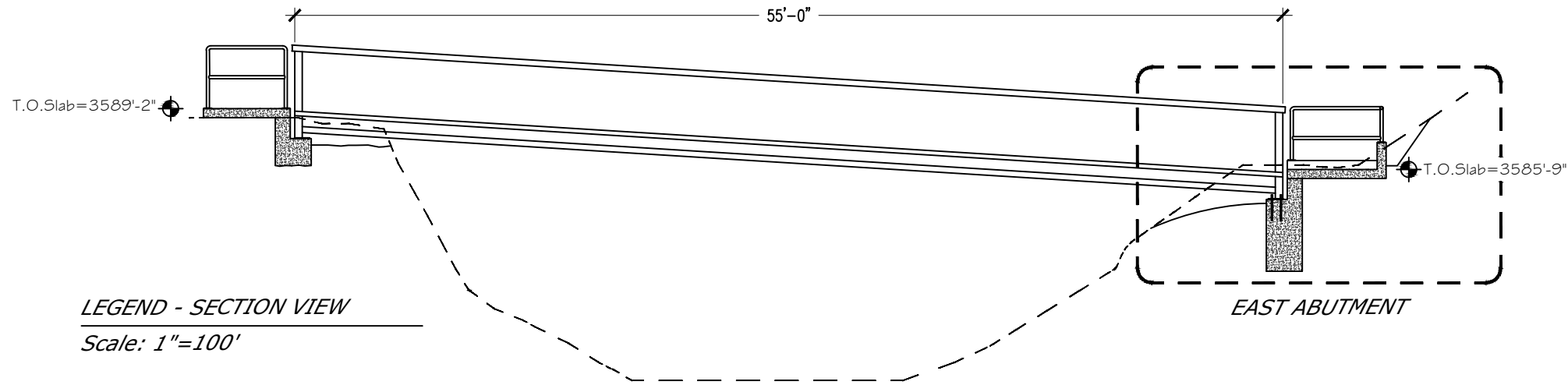


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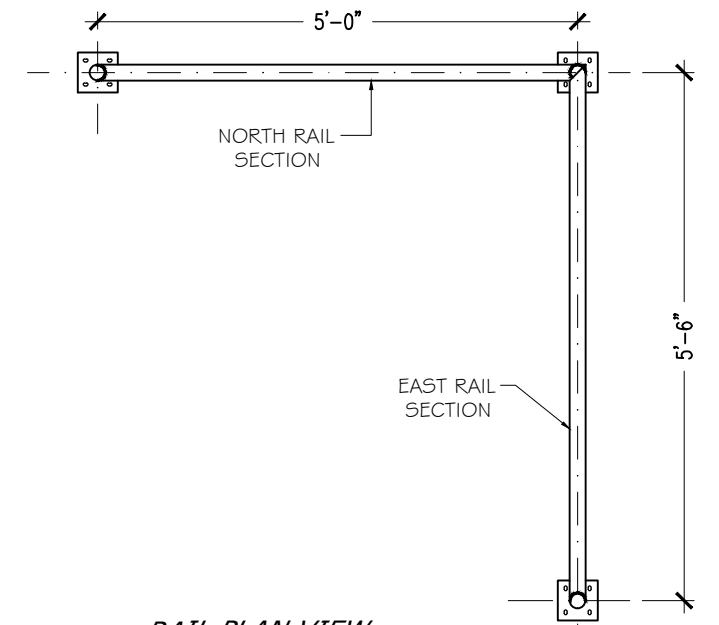
West End Abutment Plan

Lone Pine State Park Pedestrian Bridge Project

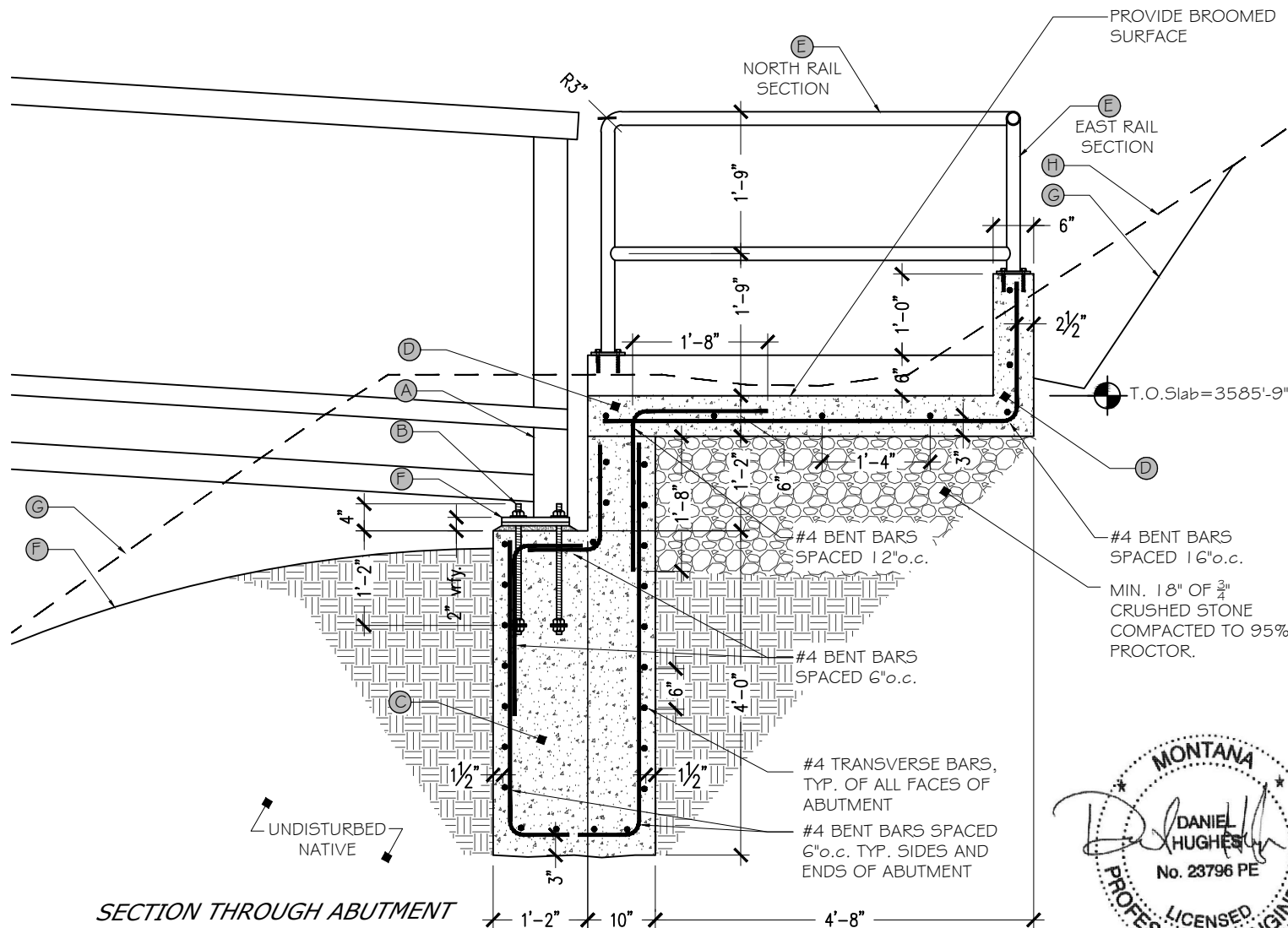
SHEET: 6 of 9



LEGEND - SECTION VIEW
Scale: 1"=100'



RAIL PLAN VIEW
Scale: 1/2"=1'

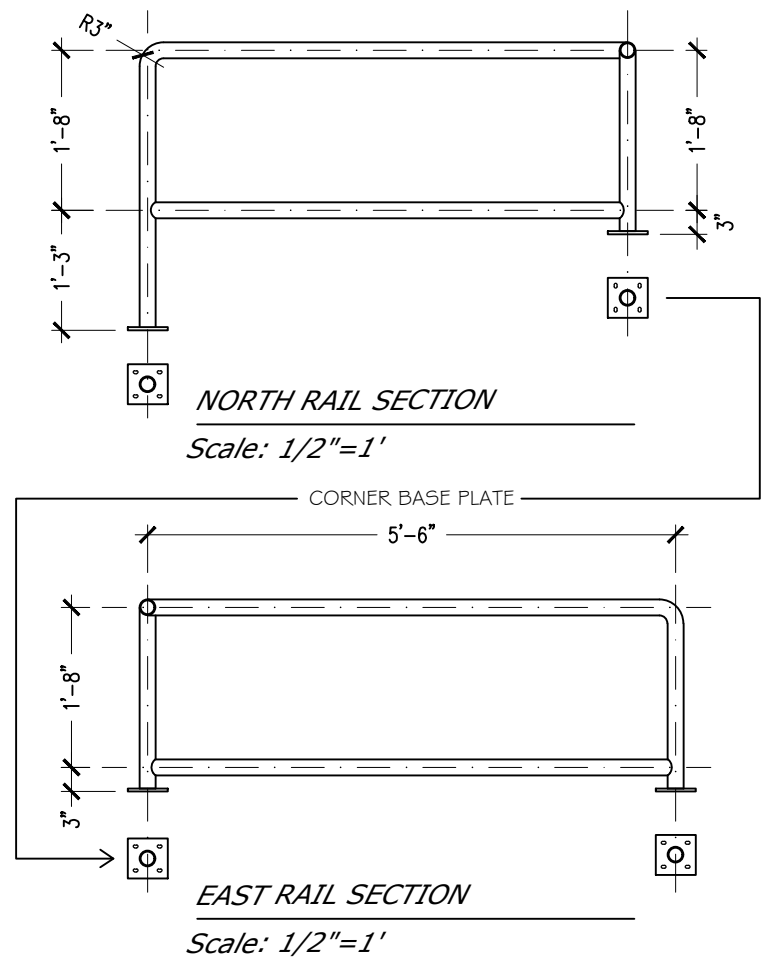


SECTION THROUGH ABUTMENT
Scale: 1/2"=1'

PLAN NOTES

- (A) PREFABRICATED STEEL BRIDGE FOR PEDESTRIAN TRAFFIC. 5'-0" CLEAR WIDTH BETWEEN HAND RAILS. 55'-0" SPAN. 3'-6" RAILING HEIGHT. 2" WOOD PLANK DECKING.
- (B) GALVANIZED THREADED ANCHORS - GRADE AND DIA. DESIGNED BY BRIDGE MANUFACTURER. WET SET ANCHOR W/ DBL. NUT AND WASHER ON EMBEDDED END. EPOXY EMBED ALSO ALLOWED USING SIMPSON "SET" OR EQ. USE TEMPLATE OF BRIDGE BEARING PLATE FOR CORRECT PLACEMENT
- (C) REINFORCED CONCRETE ABUTMENT AS SHOWN. 5000psi AT 28 DAYS. 5% TO 7% AIR ENTRAINMENT (AS MEASURED AT POINT OF PLACEMENT). W/C RATIO = 0.45. PLACTICIZER IF NEEDED.
- (D) REINFORCED CONCRETE LANDING AND CURB AS SHOWN. 5000psi AT 28 DAYS. 5% TO 7% AIR ENTRAINMENT (AS MEASURED AT POINT OF PLACEMENT). W/C RATIO = 0.45. DO NOT OVERWORK SURFACE. DO NOT TRAP BLEED WATER. MIN. SLOPE = 1/8" PER 1'-0". PLACTICIZER IF NEEDED. PROVIDE BROOMED SURFACE.
- (E) 2" od SCHEDULE 40 WELDED PIPE RAILING AND SCHEDULE 80 POSTS. PAINTED TO MATCH EXISTING HAND RAILS ON SITE. T.O.Top Rail = 3'-6" ABOVE WALK SURFACE. PROVIDE 5"x5"x3/8" BEARING PLATE UNDER EA. RAIL (NEWEL) POST W/ (4) 7/16" HOLES FOR (4) STAINLESS 3/8"x4" SIMPSON TITEN OR EQ. THREADED ANCHORS. WEDGE ANCHORS NOT ALLOWED. ALL WELDS = 3/16" FILLET ALL AROUND
- (F) PROPRIETARY BRIDGE BEARING PLATE AND LOWER SETTING PLATE (SUPPLIED BY MANUFACTURER) (TRUE NORTH STEEL BRIDGE FOOT SHOWN). PROVIDE 4000psi NON-SHRINK GROUT UNDER LOWER BEARING PLATE TO LEVEL.
- (G) NEW GRADE (APPROX.)
- (H) EXISTING GRADE (APPROX.)

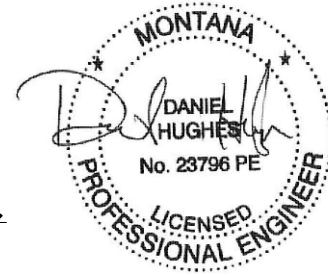
- INTEGRITY OF BRIDGE IS DEPENDANT UPON FREQUENT UPKEEP AND MAINTENANCE. MAINTENANCE ITEMS MAY INCLUDE BUT ARE NOT LIMITED TO: REPLACEMENT OF PLANK DECKING WHEN COMPROMISED, KEEPING ALL BOLTING SNUG, INSURING CORROSION IS CONTROLLED, MAINTAINING EROSION CONTROL, ETC.



NORTH RAIL SECTION
Scale: 1/2"=1'

EAST RAIL SECTION
Scale: 1/2"=1'

- ON AN ANNUAL BASIS, CHECK TIGHTNESS OF RAIL (NEWEL) POST BASE PLATE ANCHORS. INSPECT RAILING FOR DAMAGE AND APPLY TOUCH -UP PAINT AS REQUIRED.



Daniel Hughes, PE March 17, 2021
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APPROVED BY: DATE:

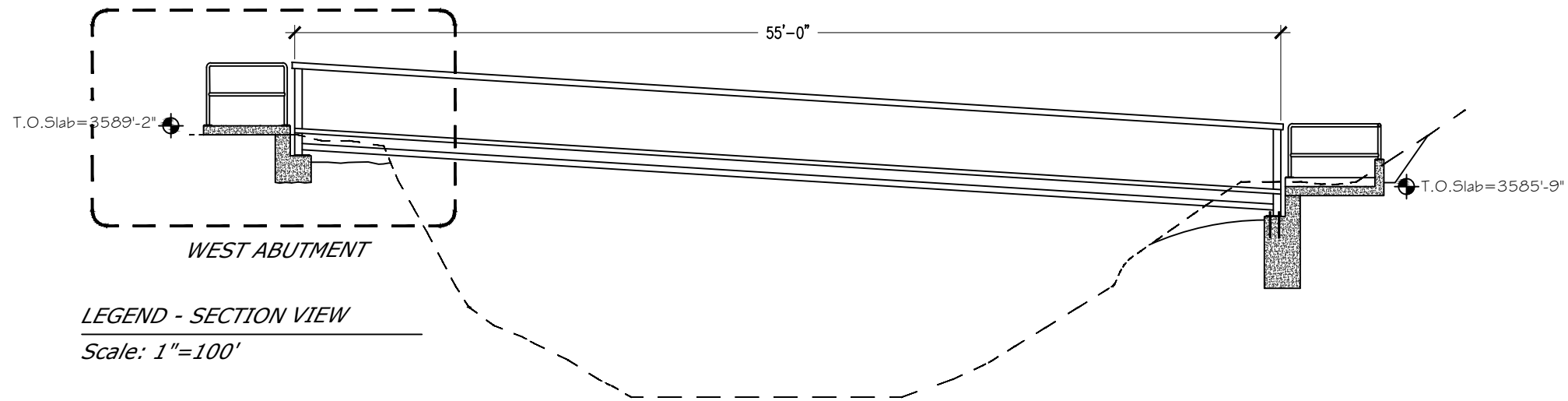
APPROVED BY: DATE:



Montana Fish, Wildlife & Parks

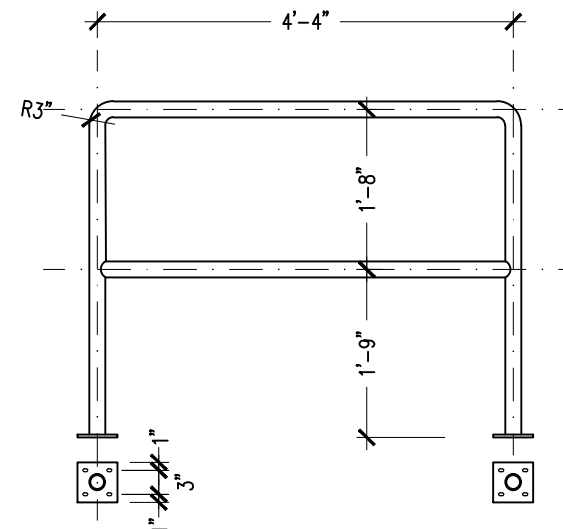
Bridge Abutment - East End
Lone Pine State Park Pedestrian Bridge Project

SHEET: 7 of 9



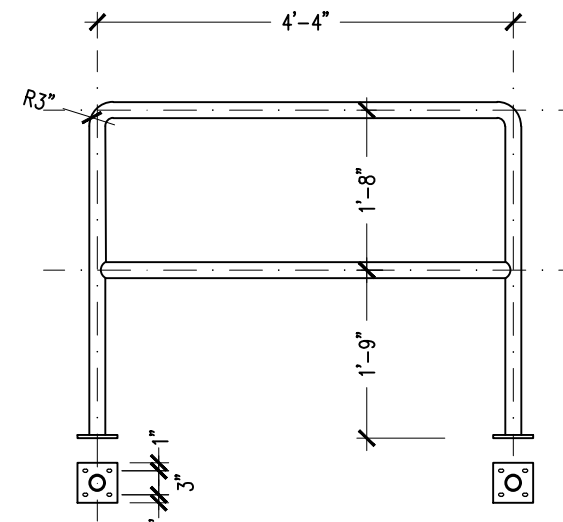
LEGEND - SECTION VIEW

Scale: 1"=100'



NORTH RAIL

Scale: 1/2"=1'



SOUTH RAIL

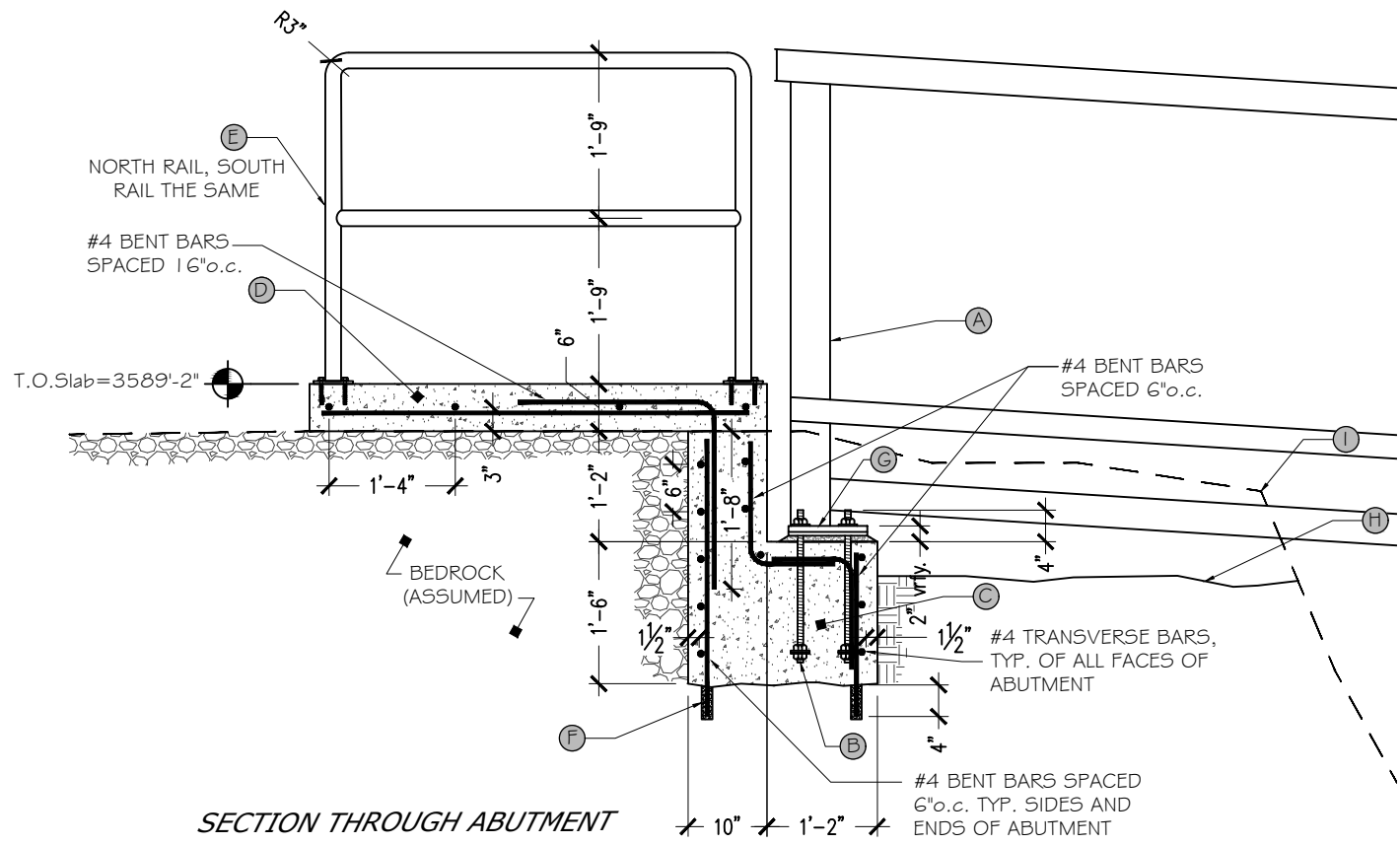
Scale: 1/2"=1'

- ON AN ANNUAL BASIS, CHECK TIGHTNESS OF RAIL (NEWEL) POST BASE PLATE ANCHORS. INSPECT RAILING FOR DAMAGE AND APPLY TOUCH -UP PAINT AS REQUIRED.

- ON AN ANNUAL BASIS, CHECK TIGHTNESS OF RAIL (NEWEL) POST BASE PLATE ANCHORS. INSPECT RAILING FOR DAMAGE AND APPLY TOUCH -UP PAINT AS REQUIRED.

PLAN NOTES

- A PREFABRICATED STEEL BRIDGE FOR PEDESTRIAN TRAFFIC. 5'-0" CLEAR WIDTH BETWEEN HAND RAILS. 55'-0" SPAN. 3'-6" RAILING HEIGHT. 2" WOOD PLANK DECKING.
- B GALVANIZED THREADED ANCHORS - GRADE AND DIA. DESIGNED BY BRIDGE MANUFACTURER. WET SET ANCHOR W/ DBL. NUT AND WASHER ON EMBEDDED END. EPOXY EMBED ALSO ALLOWED USING SIMPSON "SET" OR EQ. USE TEMPLATE OF BRIDGE BEARING PLATE FOR CORRECT PLACEMENT
- C REINFORCED CONCRETE ABUTMENT AS SHOWN. 5000psi AT 28 DAYS. 5% TO 7% AIR ENTRAINMENT (AS MEASURED AT POINT OF PLACEMENT). W/C RATIO = 0.45. PLACTICIZER IF NEEDED.
- D REINFORCED CONCRETE LANDING AND CURB AS SHOWN. 5000psi AT 28 DAYS. 5% TO 7% AIR ENTRAINMENT (AS MEASURED AT POINT OF PLACEMENT). W/C RATIO = 0.45. DO NOT OVERWORK SURFACE, DO NOT TRAP BLEED WATER. MIN. SLOPE = 1/8" PER 1'-0". PLACTICIZER IF NEEDED. PROVIDE BROOMED SURFACE.
- E 2" od SCHEDULE 40 WELDED PIPE RAILING AND SCHEDULE 8- POSTS. PAINTED TO MATCH EXISTING HAND RAILS ON SITE. T.O.Top Rail = 3'-6" ABOVE WALK SURFACE. PROVIDE 5"x5"x3/8" BEARING PLATE UNDER EA. RAIL (NEWEL) POST W/ (4) 1/2" HOLES FOR (4) STAINLESS 3/8"x4" SIMPSON TITEN OR EQ. THREADED ANCHORS. WEDGE ANCHORS NOT ALLOWED. ALL WELDS = 1/8" FILLET ALL AROUND
- F DRILL BEDROCK AND BRUSH/BLOW HOLE IN PREP FOR EPOXY EMBED. USE EXTERIOR GRADE EPOXY SUCH AS SIMPSON "SET" OR EQ.
- G PROPRIETARY BRIDGE BEARING PLATE AND LOWER SETTING PLATE (SUPPLIED BY MANUFACTURER) (TRUE NORTH STEEL BRIDGE FOOT SHOWN). PROVIDE 4000psi NON-SHRINK GROUT UNDER LOWER BEARING PLATE TO LEVEL.
- H NEW GRADE (APPROX.)
- I EXISTING GRADE (APPROX.)



SECTION THROUGH ABUTMENT

Scale: 1/2"=1'

- INTEGRITY OF BRIDGE IS DEPENDANT UPON FREQUENT UPKEEP AND MAINTENANCE. MAINTENANCE ITEMS MAY INCLUDE BUT ARE NOT LIMITED TO: REPLACEMENT OF PLANK DECKING WHEN COMPROMISED, KEEPING ALL BOLTING TIGHT, INSURING CORROSION IS CONTROLLED, MAINTAINING EROSION CONTROL, ETC.



Daniel Hughes, PE	March 17, 2021
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John Thomas, PE	March 17, 2021
CHECKED BY:	DATE:

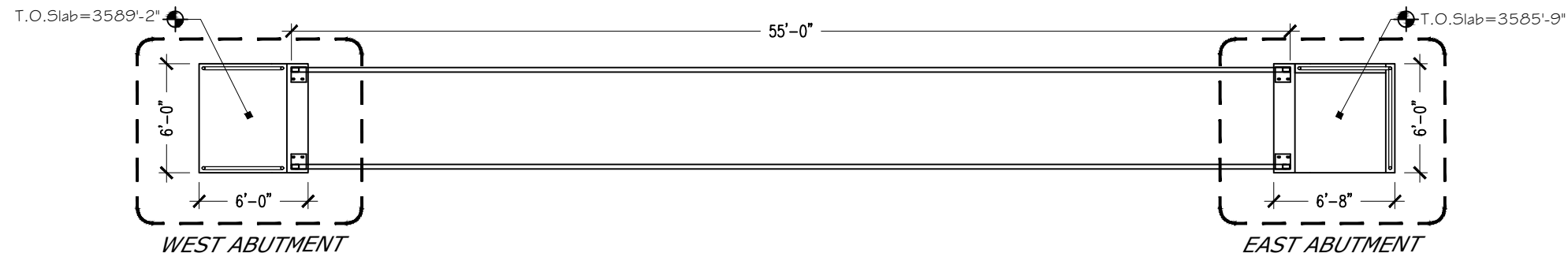
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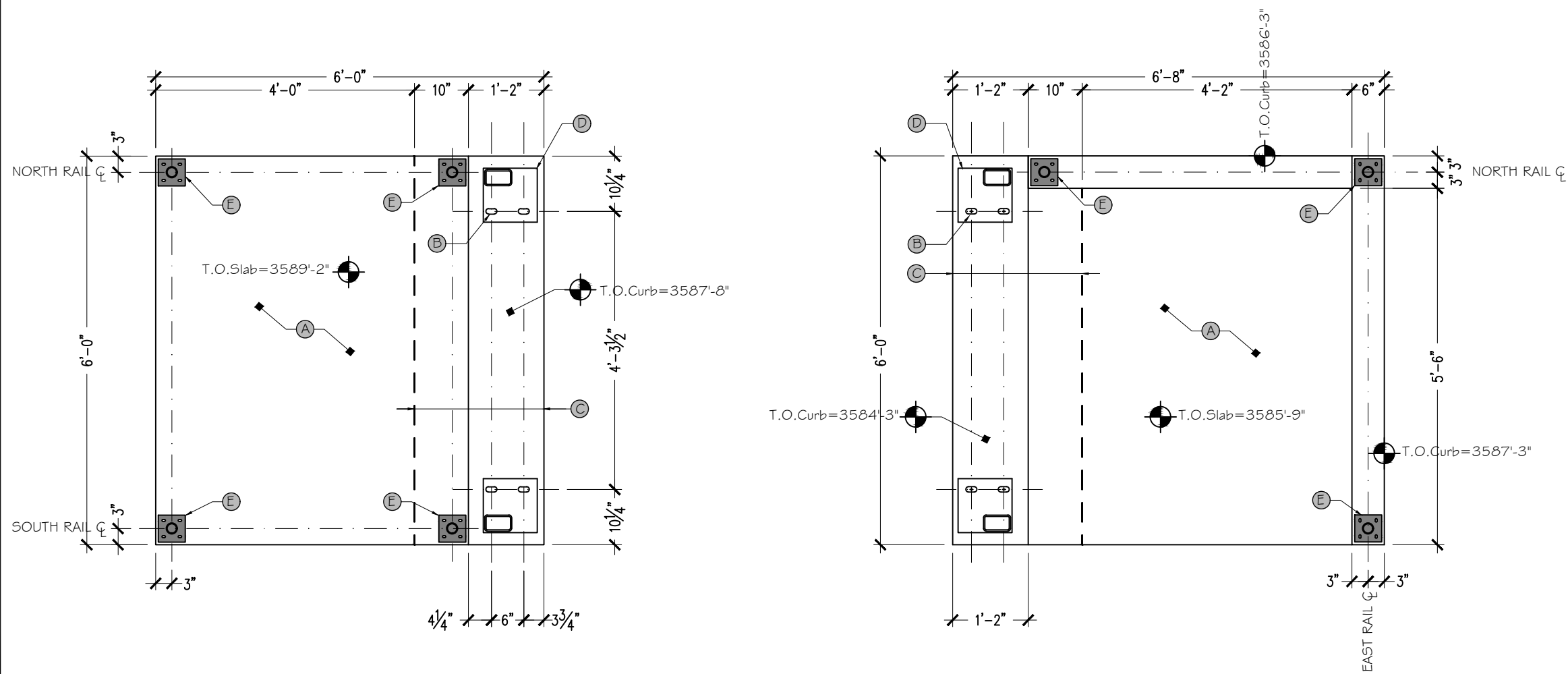


Bridge Abutment - West End
Lone Pine State Park Pedestrian Bridge Project

SHEET 8 of 9



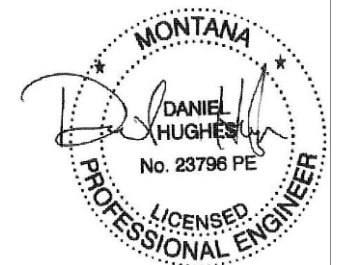
LEGEND - PLAN VIEW
Scale: 1"=100'



WEST ABUTMENT - PLAN VIEW
Scale: 1/2"=1'

EAST ABUTMENT - PLAN VIEW
Scale: 1/2"=1'

- PLAN NOTES
- (A) REINFORCED CONCRETE LANDING AND CURBS AS SHOWN. 5000psi AT 28 DAYS. 5% TO 7% AIR ENTRAINMENT (AS MEASURED AT POINT OF PLACEMENT. W/C RATIO = 0.45. DO NOT OVERWORK SURFACE, DO NOT TRAP BLEED WATER. MIN. SLOPE = 1/8" PER 1'-0". PLACTICIZER IF NEEDED.
 - (B) GALVANIZED THREADED ANCHORS - GRADE AND DIA. DESIGNED BY BRIDGE MANUFACTURER. WET SET ANCHOR W/ DBL. NUT AND WASHER ON EMBEDDED END. EPOXY EMBED ALSO ALLOWED. USE TEMPLATE OF BRIDGE BEARING PLATE FOR CORRECT PLACEMENT
 - (C) REINFORCED CONCRETE ABUTMENT AS SHOWN. 5000psi AT 28 DAYS. 5% TO 7% AIR ENTRAINMENT (AS MEASURED AT POINT OF PLACEMENT). W/C RATIO = 0.45. PLACTICIZER IF NEEDED.
 - (D) PROPRIETARY BRIDGE BEARING PLATE (BY MANUFACTURER) (TRUE NORTH STEEL BRIDGE FOOT SHOWN).
 - (E) 5"x5"x3/8" BEARING PLATE UNDER EA. RAIL POST W/ (4) 7/16" HOLES ELONGATED 1/4" FOR (4) STAINLESS 3/8"x4" SIMPSON TITEN OR EQ. THREADED ANCHORS. WEDGE ANCHORS NOT ALLOWED. ALL WELDS = 3/16" FILLET ALL AROUND



Daniel Hughes, PE March 17, 2021
DRAWN BY: DATE:

John Thomas, PE March 17, 2021
CHECKED BY: DATE:

REVISED BY: DATE:
APPROVED BY: DATE:

APPROVED BY: DATE:
APPROVED BY: DATE:



Montana Fish,
Wildlife & Parks

Bridge Abutments - Plan View

Lone Pine State Park Pedestrian Bridge Project

SHEET: 9
of 9