

SEE BOOK OF STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION. 2010 EDITION. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE NDOT 2014 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND PER THE DESIGN BUILD SPECIAL PROVISIONS CW-08 SPECIFICATIONS AND STANDARD PLANS. WORK FOR THE LOCAL AGENCY PROJECT INFRASTRUCTURE THAT IS EITHER OWNED, OPERATED, OR MAINTAINED BY THE CITY OF LAS VEGAS SHALL COMPLY WITH THE UNIFORM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION OFF-SITE IMPROVEMENTS, CLARK COUNTY AREA NEVADA, AS AMENDED BY CITY OF LAS VEGAS SPECIAL PROVISIONS, AND THE UNIFORM STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION, CLARK COUNTY AREA NEVADA.

CERTIFICATION FOR RELEASED-FOR-CONSTRUCTION DESIGN/FINAL DESIGN/AS-BUILTS

LEAD ENGINEER Roger Philippi DATE 04/21/2020
ROGER PHILIPPI, P.E.

DESIGN QUALITY MANAGER David Dodson DATE 04/21/2020
DAVID DODSON, P.E.

THE LEAD ENGINEER AND DESIGN QUALITY MANAGER CERTIFY THAT THESE DOCUMENTS MEET THE FOLLOWING REQUIREMENTS IN ACCORDANCE WITH THE TECHNICAL PROVISIONS:

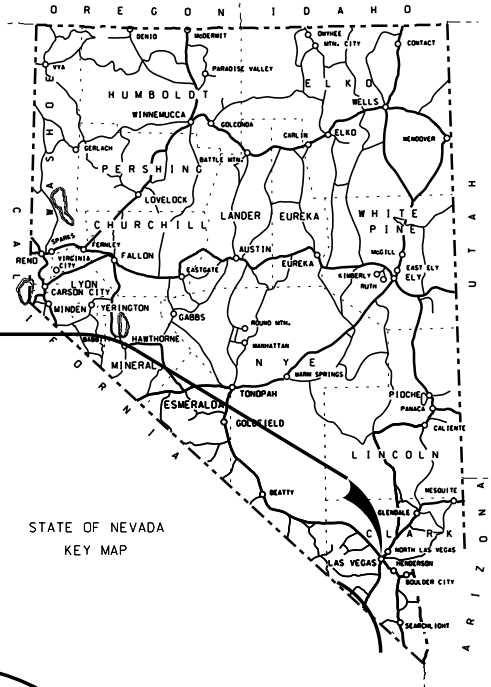
1. ALL PREVIOUS REVIEW COMMENTS AND NONCONFORMANCE REPORTS HAVE BEEN RESOLVED.
2. DESIGN IS IN ACCORDANCE WITH CONTRACT REQUIREMENTS AND CORRELATES WITH THE OVERALL DESIGN.
3. CHECKS HAVE BEEN DONE IN ACCORDANCE WITH THE APPROVED DQMP.
4. NO DESIGN EXCEPTIONS EXIST THAT HAVE NOT ALREADY BEEN APPROVED BY THE DEPARTMENT

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLANS
CLARK COUNTY
FROM THE CALIFORNIA/NEVADA STATE LINE TO 2.42 MILES
EAST OF THE JUNCTION WITH ROUTE US 093

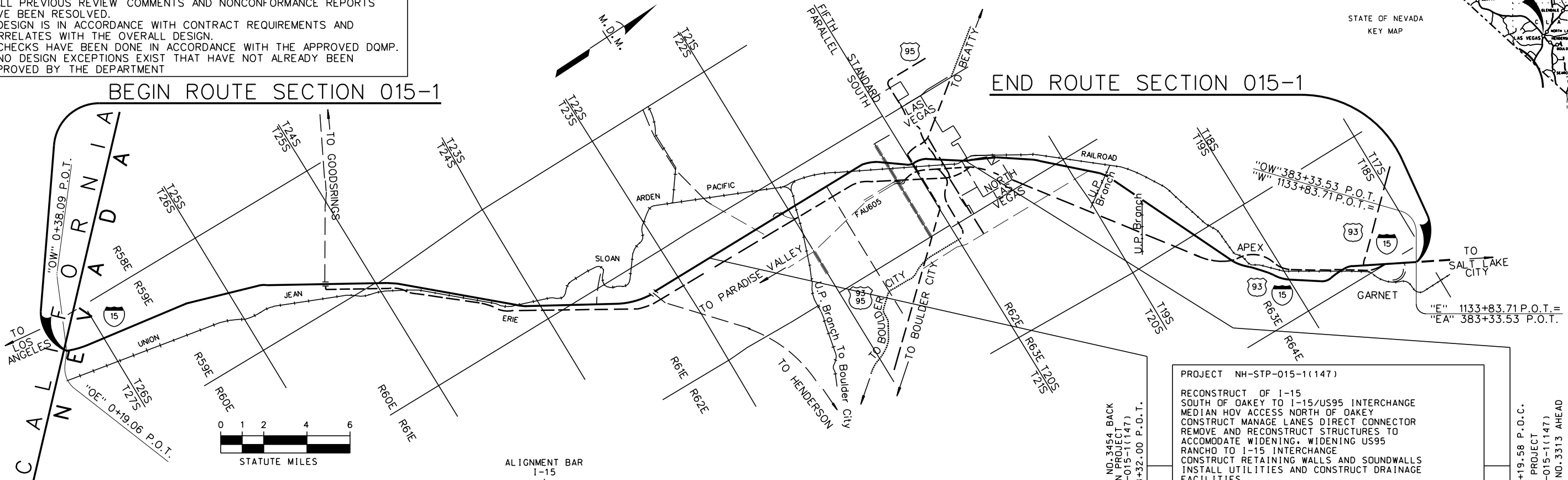
PROJECT NEON
DESIGN UNIT S1-07
BRIDGE PACKAGE 5 (H-933N/S)

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1



BEGIN ROUTE SECTION 015-1

END ROUTE SECTION 015-1



BEGIN PROJECT NH-STP-015-1(147)
"Le" 248+32.00 P.O.T.
BEGIN CONSTRUCTION
"Le" 272+49.22 P.O.T.
"Le" 674+42.17 P.O.T.
"I-15S" 674+42.17 P.C.
"I-15S" 705+19.76 P.O.C.=
18.01' LT "MS" 705+44.66 P.O.B.
"I-15S" 705+24.24 P.T.=
17.99' RT "MN" 705+20.69 P.O.B.
"MS" 770+34.26 P.O.C.
H-933S
"MS" 772+57.99 P.O.C.
"MN" 771+54.40 P.O.C.
H-933N
"MN" 773+89.48 P.O.C.
"MN" 785+45.02 P.O.C.
H-3053
"MN" 786+81.03 P.O.C.
"MS" 799+55.31 P.O.C.
I-934S
"MS" 801+67.57 P.O.T.
"MN" 800+19.52 P.O.T.
I-934N
"MN" 802+31.87 P.O.T.
"MC" 826+74.66 P.O.B.=
52.32' RT "MS" 826+74.74 P.O.C.
42.87' LT "MN" 827+18.02 P.O.C.
"MS" 826+45.91 P.O.C.
H-935S
"MS" 827+82.99 P.O.C.
"MN" 827+13.99 P.O.C.
H-935N
"MN" 828+50.70 P.O.C.
"MS" 841+02.22 P.O.C.=
101.64' LT "ES1" 845+00.00 P.O.B.
"MC" 843+25.75 P.O.C.
H-3055
"MC" 889+35.08 P.O.C.
"MN" 845+52.33 P.O.C.=
48.00' RT "NE" 845+47.26 P.O.B.
"MS" 847+10.08 P.O.C.
H-936S
"MS" 848+17.00 P.O.C.
"MN" 847+63.93 P.O.C.
H-936N
"MN" 848+68.10 P.O.C.
"MN" 859+39.55 P.O.E.=
11.54' LT "L1" 859+27.47 P.O.C.
"MS" 859+50.32 P.O.E.=
12.97' RT "L1" 859+50.00 P.O.C.
"L1" 859+62.25 P.O.C.
I-937 N/S
"L1" 861+85.74 P.O.C.
"L1" 863+86.66 P.O.C.
I-938 N/S
"L1" 864+33.72 P.O.C.
"L1" 870+23.93 P.O.C.
G-941 N/S
"L1" 871+30.04 P.O.C.
"L1" 906+19.58 P.O.C.
END CONSTRUCTION
"L1" 906+19.58 P.O.C.
END PROJECT NH-STP-015-1(147)

PROJECT NH-STP-015-1(147)

RECONSTRUCT OF I-15
SOUTH OF OAKY TO I-15/US95 INTERCHANGE
MEDIAN HOV ACCESS NORTH OF OAKY
CONSTRUCT MANAGE LANES DIRECT CONNECTOR
REMOVE AND RECONSTRUCT STRUCTURES TO
ACCOMMODATE WIDENING. WIDENING US95
RANCHO TO I-15 INTERCHANGE
CONSTRUCT RETAINING WALLS AND SOUNDWALLS
INSTALL UTILITIES AND CONSTRUCT DRAINAGE
FACILITIES

LENGTH OF BRIDGES	1.84 MILES
LENGTH OF PROJECT	12.46 MILES
LENGTH OF CONSTRUCTION	12.00 MILES
LENGTH OF ROUTE SECTION	66.73 MILES

TO BE CONTRACTED

CONTRACT NO. 3454 BACK
BEGIN PROJECT
NH-STP-015-1(147)
"Le" 248+32.00 P.O.T.

"L1" 906+19.58 P.O.C.
END PROJECT
NH-STP-015-1(147)
CONTRACT NO. 3313 AHEAD

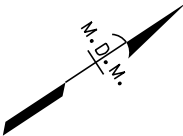
APPROVED , 20

KRISTINA SWALLOW, P.E. DIRECTOR, DEPT. OF
TRANSPORTATION

GOVERNOR STEVE SISOLAK
CHAIRMAN, TRANSPORTATION BOARD

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1A

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
PROJECT NEON
DESIGN UNIT S1-07
BRIDGE PACKAGE 5 (H-933N/S)



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ATKINS

HDR

 **R2H Engineering, Inc.**

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6750 WA-AUSTIN PKWY
SUITE 350
LAS VEGAS, NV 89119
TEL (702) 938-0000

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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-2

SHEET INCLUDED	REVISION NUMBER	ISSUE DATE	DESIGN UNIT	SHEET NUMBER	DRAWING DESCRIPTION
	1	3/6/17	S1-07	B-1	TITLE SHEET DESIGN UNIT S1-07
	1	3/6/17	S1-07	B-1A	PROJECT LOCATION SKETCH
	1	3/6/17	S1-07	B-2	BRIDGE PACKAGE 5 INDEX OF SHEETS
	1	3/6/17	S1-07	B-1501	I-15S/OAKEY PLAN
	1	3/6/17	S1-07	B-1502	I-15S/OAKEY ELEVATION
	1	3/6/17	S1-07	B-1503	I-15S/OAKEY GENERAL NOTES AND TYPICAL SECTION
	1	3/6/17	S1-07	B-1504	I-15S/OAKEY GEOMETRICS (FOUNDATION PLAN)
	1	3/6/17	S1-07	B-1505	I-15S/OAKEY 60" DIA. DRILLED SHAFT DETAILS ABUTMENTS
	1	3/6/17	S1-07	B-1506	I-15S/OAKEY 60" DIA. DRILLED SHAFT DETAILS PIER NO. 1
	1	3/6/17	S1-07	B-1507	I-15S/OAKEY ABUTMENT NO. 1 PLAN
	1	3/6/17	S1-07	B-1508	I-15S/OAKEY ABUTMENT NO. 1 ELEVATION
	1	3/6/17	S1-07	B-1509	I-15S/OAKEY ABUTMENT NO. 2 PLAN
	1	3/6/17	S1-07	B-1510	I-15S/OAKEY ABUTMENT NO. 2 ELEVATION
	1	3/6/17	S1-07	B-1511	I-15S/OAKEY ABUTMENT DETAILS 1 OF 3
	1	3/6/17	S1-07	B-1512	I-15S/OAKEY ABUTMENT DETAILS 2 OF 3
	1	3/6/17	S1-07	B-1513	I-15S/OAKEY ABUTMENT DETAILS 3 OF 3
	1	3/6/17	S1-07	B-1514	I-15S/OAKEY ISOLATION CASING DETAILS
	1	3/6/17	S1-07	B-1515	I-15S/OAKEY PIER NO. 1 PLAN
	1	3/6/17	S1-07	B-1516	I-15S/OAKEY PIER NO. 1 ELEVATION
	1	3/6/17	S1-07	B-1517	I-15S/OAKEY PIER NO. 1 DETAILS
	1	3/6/17	S1-07	B-1518	I-15S/OAKEY FRAMING PLAN
	1	3/6/17	S1-07	B-1519	I-15S/OAKEY PRESTRESSED GIRDER DETAILS SPAN 1
	1	3/6/17	S1-07	B-1520	I-15S/OAKEY PRESTRESSED GIRDER DETAILS SPAN 2
	1	3/6/17	S1-07	B-1521	I-15S/OAKEY BEARING PAD DETAILS
	1	3/6/17	S1-07	B-1522	I-15S/OAKEY INTERMEDIATE DIAPHRAGM DETAILS
	1	3/6/17	S1-07	B-1523	I-15S/OAKEY PRECAST PANELS PLAN
	1	3/6/17	S1-07	B-1524	I-15S/OAKEY PANEL DETAILS 1 OF 2 PANEL TYPE 1
	1	3/6/17	S1-07	B-1525	I-15S/OAKEY PANEL DETAILS 2 OF 2 PANEL TYPE 2
	1	3/6/17	S1-07	B-1526	I-15S/OAKEY CIP DECK DETAILS AT ABUTMENTS
	1	3/6/17	S1-07	B-1527	I-15S/OAKEY CIP DECK DETAILS AT PIER
	1	3/6/17	S1-07	B-1528	I-15S/OAKEY DECK REINFORCING PLAN
	1	3/6/17	S1-07	B-1529	I-15S/OAKEY DECK SECTION AND DETAILS
	1	3/6/17	S1-07	B-1530	I-15S/OAKEY ABUTMENT NO. 1 DIAPHRAGM PLAN
	1	3/6/17	S1-07	B-1531	I-15S/OAKEY ABUTMENT NO. 1 DIAPHRAGM ELEVATION
	1	3/6/17	S1-07	B-1532	I-15S/OAKEY ABUTMENT NO. 2 DIAPHRAGM PLAN
	1	3/6/17	S1-07	B-1533	I-15S/OAKEY ABUTMENT NO. 2 DIAPHRAGM ELEVATION
	1	3/6/17	S1-07	B-1534	I-15S/OAKEY ABUTMENT DIAPHRAGM DETAILS
	1	3/6/17	S1-07	B-1535	I-15S/OAKEY PIER NO. 1 DIAPHRAGM PLAN
	1	3/6/17	S1-07	B-1536	I-15S/OAKEY PIER NO. 1 DIAPHRAGM ELEVATION
	1	3/6/17	S1-07	B-1537	I-15S/OAKEY PIER NO. 1 DIAPHRAGM DETAILS
	1	3/6/17	S1-07	B-1538	I-15S/OAKEY CONCRETE CLASSIFICATION
	1	3/6/17	S1-07	B-1539	I-15S/OAKEY CAMBER & DEFLECTION
	1	3/6/17	S1-07	B-1540	I-15S/OAKEY FINISH GRADE ELEVATIONS
	1	3/6/17	S1-07	B-1541	I-15S/OAKEY MSE WALL DETAILS
	1	3/6/17	S1-07	B-1542	I-15S/OAKEY MSE WALL DETAILS
	1	3/6/17	S1-07	B-1543	I-15S/OAKEY APPROACH SLAB NO. 1 & 2 LAYOUT PLAN
	1	3/6/17	S1-07	B-1544	I-15S/OAKEY APPROACH SLAB REINFORCING LAYOUT
	1	3/6/17	S1-07	B-1545	I-15S/OAKEY APPROACH SLAB SECTION AND DETAILS
	1	3/6/17	S1-07	B-1546	I-15S/OAKEY APPROACH SLAB NO. 1 REINFORCEMENT TABLE
	1	3/6/17	S1-07	B-1547	I-15S/OAKEY APPROACH SLAB NO. 2 REINFORCEMENT TABLE
	1	3/6/17	S1-07	B-1548	I-15S/OAKEY EAST APPROACH SLAB NO. 2 PBS REINFORCEMENT PLAN
	1	3/6/17	S1-07	B-1549	I-15S/OAKEY WEST APPROACH SLAB NO. 2 PBS REINFORCEMENT PLAN
	1	3/6/17	S1-07	B-1550	I-15S/OAKEY EXPANSION JOINT DETAILS
	1	3/6/17	S1-07	B-1551	I-15S/OAKEY BRIDGE RAIL MOUNT DETAILS
	1	3/6/17	S1-07	B-1552	I-15S/OAKEY BRIDGE RAIL
	1	3/6/17	S1-07	B-1553	I-15S/OAKEY BAR BENDS
	1	3/6/17	S1-07	B-1554	I-15S/OAKEY BILL OF MATERIALS 1
	1	3/6/17	S1-07	B-1555	I-15S/OAKEY BILL OF MATERIALS 2
	1	3/6/17	S1-07	B-1556	I-15S/OAKEY BILL OF MATERIALS 3
	1	3/6/17	S1-07	B-1557	I-15S/OAKEY BILL OF MATERIALS 4
	1	3/6/17	S1-07	B-1558	I-15S/OAKEY BILL OF MATERIALS 5

SHEET INCLUDED	REVISION NUMBER	ISSUE DATE	DESIGN UNIT	SHEET NUMBER	DRAWING DESCRIPTION
	1	3/6/17	S1-07	B-1601	I-15N/OAKEY PLAN
	1	3/6/17	S1-07	B-1602	I-15N/OAKEY ELEVATION
	1	3/6/17	S1-07	B-1603	I-15N/OAKEY GENERAL NOTES AND TYPICAL SECTION
	1	3/6/17	S1-07	B-1603A	I-15N/OAKEY STAGED CONSTRUCTION
	1	3/6/17	S1-07	B-1604	I-15N/OAKEY GEOMETRICS (FOUNDATION PLAN)
	1	3/6/17	S1-07	B-1605	I-15N/OAKEY 60" DIA. DRILLED SHAFT DETAILS ABUTMENTS
	1	3/6/17	S1-07	B-1606	I-15N/OAKEY 60" DIA. DRILLED SHAFT DETAILS PIER NO. 1
	1	3/6/17	S1-07	B-1607	I-15N/OAKEY ABUTMENT NO. 1 PLAN
	1	3/6/17	S1-07	B-1608	I-15N/OAKEY ABUTMENT NO. 1 ELEVATION
	1	3/6/17	S1-07	B-1609	I-15N/OAKEY ABUTMENT NO. 2 PLAN
	1	3/6/17	S1-07	B-1610	I-15N/OAKEY ABUTMENT NO. 2 ELEVATION
	1	3/6/17	S1-07	B-1611	I-15N/OAKEY ABUTMENT DETAILS 1 OF 2
	1	3/6/17	S1-07	B-1612	I-15N/OAKEY ABUTMENT DETAILS 2 OF 2
	1	3/6/17	S1-07	B-1613	I-15N/OAKEY ISOLATION CASING DETAILS
	1	3/6/17	S1-07	B-1614	I-15N/OAKEY PIER NO. 1 PLAN
	1	3/6/17	S1-07	B-1615	I-15N/OAKEY PIER NO. 1 ELEVATION
	1	3/6/17	S1-07	B-1616	I-15N/OAKEY PIER NO. 1 DETAILS
	1	3/6/17	S1-07	B-1617	I-15N/OAKEY FRAMING PLAN
	1	3/6/17	S1-07	B-1618	I-15N/OAKEY PRESTRESSED GIRDER DETAILS SPAN 1
	1	3/6/17	S1-07	B-1619	I-15N/OAKEY PRESTRESSED GIRDER DETAILS SPAN 2
	1	3/6/17	S1-07	B-1620	I-15N/OAKEY BEARING PAD DETAILS
	1	3/6/17	S1-07	B-1621	I-15N/OAKEY INTERMEDIATE DIAPHRAGM DETAILS
	1	3/6/17	S1-07	B-1622	I-15N/OAKEY PRECAST PANEL PLAN
	1	3/6/17	S1-07	B-1623	I-15N/OAKEY PANEL DETAILS 1 OF 2 PANEL TYPE 1
	1	3/6/17	S1-07	B-1624	I-15N/OAKEY PANEL DETAILS 2 OF 2 PANEL TYPE 2 AND 3
	1	3/6/17	S1-07	B-1625	I-15N/OAKEY CIP DECK DETAILS AT SPAN 1
	1	3/6/17	S1-07	B-1626	I-15N/OAKEY CIP DECK DETAILS AT SPAN 2
	1	3/6/17	S1-07	B-1627	I-15N/OAKEY DECK REINFORCING PLAN TRANSVERSE BARS
	1	3/6/17	S1-07	B-1628	I-15N/OAKEY DECK REINFORCING PLAN LONGITUDINAL BARS
	1	3/6/17	S1-07	B-1629	I-15N/OAKEY DECK SECTION AND DETAILS
	1	3/6/17	S1-07	B-1630	I-15N/OAKEY ABUTMENT NO. 1 DIAPHRAGM PLAN
	1	3/6/17	S1-07	B-1631	I-15N/OAKEY ABUTMENT NO. 1 DIAPHRAGM ELEVATION
	1	3/6/17	S1-07	B-1632	I-15N/OAKEY ABUTMENT NO. 2 DIAPHRAGM PLAN
	1	3/6/17	S1-07	B-1633	I-15N/OAKEY ABUTMENT NO. 2 DIAPHRAGM ELEVATION
	1	3/6/17	S1-07	B-1634	I-15N/OAKEY ABUTMENT DIAPHRAGM DETAILS
	1	3/6/17	S1-07	B-1635	I-15N/OAKEY PIER NO. 1 DIAPHRAGM PLAN
	1	3/6/17	S1-07	B-1636	I-15N/OAKEY PIER NO. 1 DIAPHRAGM ELEVATION
	1	3/6/17	S1-07	B-1637	I-15N/OAKEY PIER NO. 1 DIAPHRAGM DETAILS
	1	3/6/17	S1-07	B-1638	I-15N/OAKEY CONCRETE CLASSIFICATION
	1	3/6/17	S1-07	B-1639	I-15N/OAKEY CAMBER & DEFLECTION
	1	3/6/17	S1-07	B-1640	I-15N/OAKEY FINISH GRADE ELEVATIONS
	1	3/6/17	S1-07	B-1641	I-15N/OAKEY MSE WALL PLAN
	1	3/6/17	S1-07	B-1642	I-15N/OAKEY MSE WALL DETAILS 1 OF 2
	1	3/6/17	S1-07	B-1642A	I-15N/OAKEY MSE WALL DETAILS 2 OF 2
	1	3/6/17	S1-07	B-1643	I-15N/OAKEY APPROACH SLAB NO. 1 & 2 LAYOUT PLAN
	1	3/6/17	S1-07	B-1644	I-15N/OAKEY APPROACH SLAB REINFORCING LAYOUT
	1	3/6/17	S1-07	B-1645	I-15N/OAKEY APPROACH SLAB SECTION AND DETAILS
	1	3/6/17	S1-07	B-1646	I-15N/OAKEY APPROACH SLAB NO. 1 REINFORCEMENT TABLE
	1	3/6/17	S1-07	B-1647	I-15N/OAKEY APPROACH SLAB NO. 2 REINFORCEMENT TABLE
	1	3/6/17	S1-07	B-1648	I-15N/OAKEY EXPANSION JOINT DETAILS
	1	3/6/17	S1-07	B-1649	I-15N/OAKEY BRIDGE RAIL MOUNT DETAILS
	1	3/6/17	S1-07	B-1650	I-15N/OAKEY BRIDGE RAIL
	1	3/6/17	S1-07	B-1651	I-15N/OAKEY BAR BENDS
	1	3/6/17	S1-07	B-1652	I-15N/OAKEY BILL OF MATERIALS 1
	1	3/6/17	S1-07	B-1653	I-15N/OAKEY BILL OF MATERIALS 2
	1	3/6/17	S1-07	B-1654	I-15N/OAKEY BILL OF MATERIALS 3
	1	3/6/17	S1-07	B-1655	I-15N/OAKEY BILL OF MATERIALS 4
	1	3/6/17	S1-07	B-1656	I-15N/OAKEY BILL OF MATERIALS 5
	1	3/6/17	S1-07	L1	BRIDGE AESTHETIC BARRIER RAIL FORMLINER TREATMENTS
	1	3/6/17	S1-07	L1A	BRIDGE AESTHETIC SUPERSTRUCTURE PAINTING LIMITS
	1	3/6/17	S1-07	L2	MAINLINE MONUMENT DETAILS SHEET 1 OF 1
	1	3/6/17	S1-07	LT1	LIGHTING PLAN LEGEND AND GENERAL NOTES
	1	3/6/17	S1-07	LT2	LIGHTING PLAN I-15N OVER OAKEY
	1	3/6/17	S1-07	LT3	LIGHTING PLAN I-15S OVER OAKEY
	1	3/6/17	S1-07	LT4	LIGHTING PLAN LIGHT MOUNTING DETAILS

1	FINAL	03/06/17
0	RFC - 73652-S1-07-R2H-BRIDGEPCKG5-SHT20B02	02/03/17
NO.	DESCRIPTION	DATE

DESIGN UNIT S1-07

AS-BUILT DRAWING

MAY 1, 2019



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

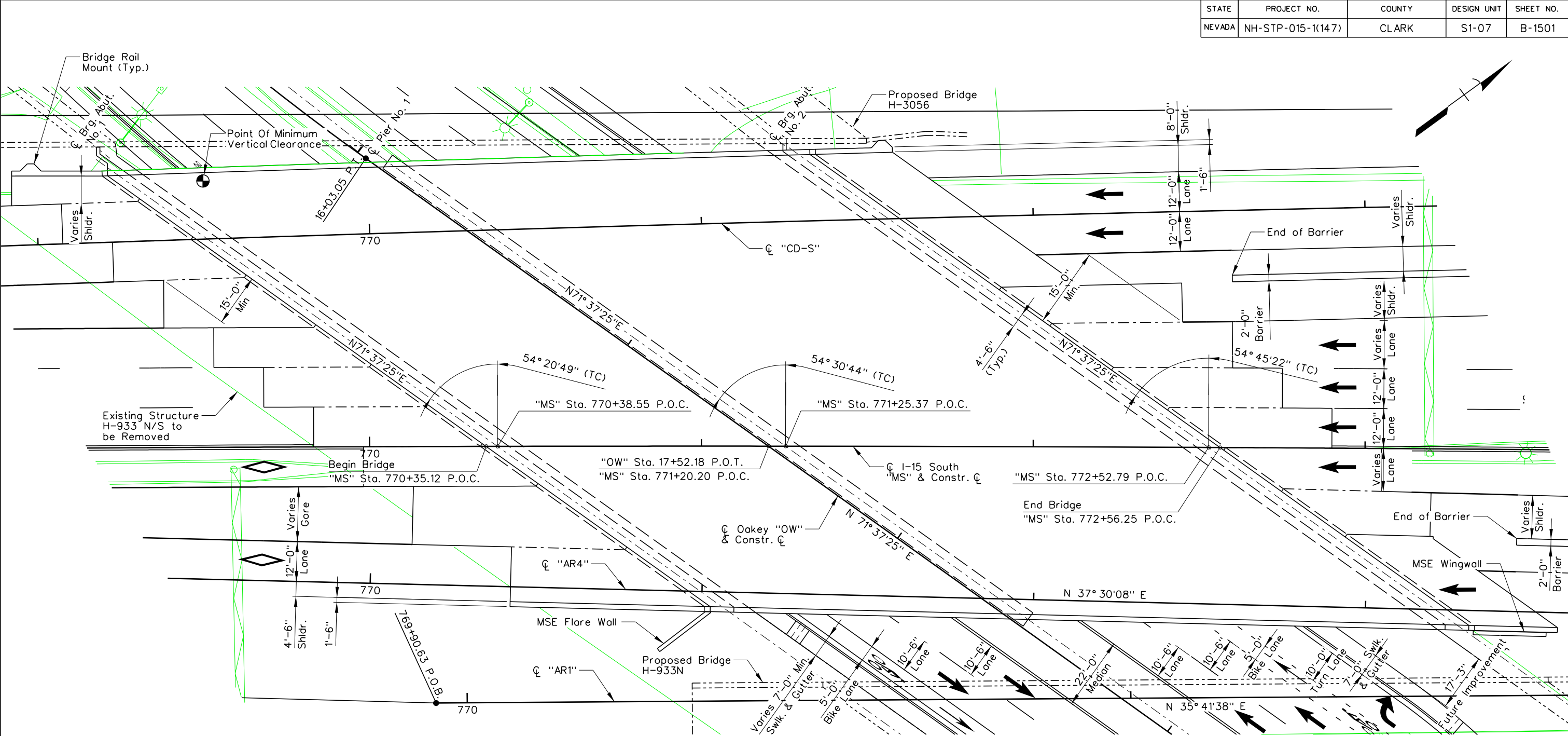
BRIDGE PACKAGE 5
INDEX OF SHEETS

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Fax: 702/263-7200
www.atkinsglobal.com

DESIGNED BY _____
DRAWN BY _____
CHECKED BY _____
REVIEWED BY _____

ATKINS

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1501



PLAN

NOTES

1. Stations and Elevations Shown Are at Top of Deck Along "MS". Top of Deck/Approach Slab is 1" Above PGL. See "Detail A" on General Notes and Typical Section Sheet.
2. Lane Widths are Measured Perpendicular to Adjacent Lanes.

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1501	02/03/17

H-933S

DESIGN UNIT S1-07
AS-BUILT DRAWING
MAY 1, 20019

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2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89162
PHONE (702) 260-7000 FAX (702) 260-7070



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/OAKEY
PLAN

DESIGNED BY JCH
DRAWN BY EAS
CHECKED BY PLK
REVIEWED BY DAA

2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
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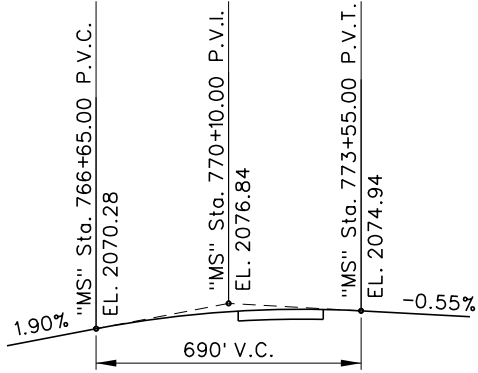
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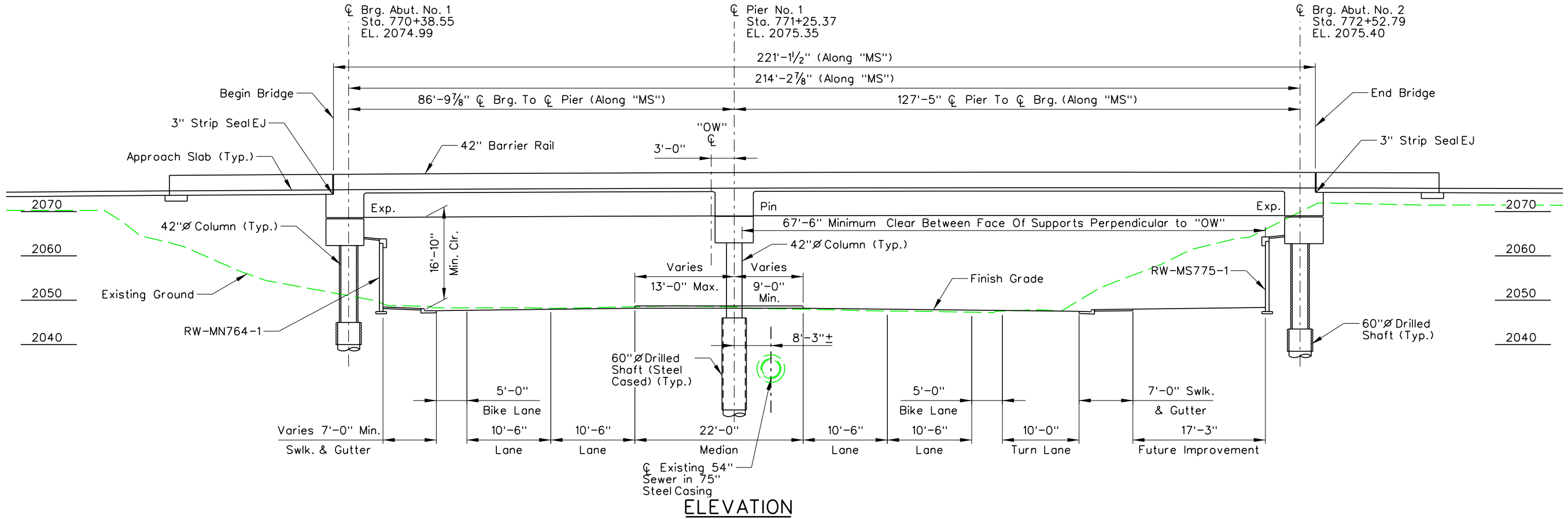
STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1502

Note: "OW" Roadway Finish Grades are Controlled by Spot Elevations. See DU S4-02 Sheets 21 and 22 for Finish Grade Elevations

PROFILE LINE "OW"



PROFILE LINE "MS"



ELEVATION

H-933S

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1502	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019

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2610 HORIZON RIDGE PARKWAY, SUITE 205
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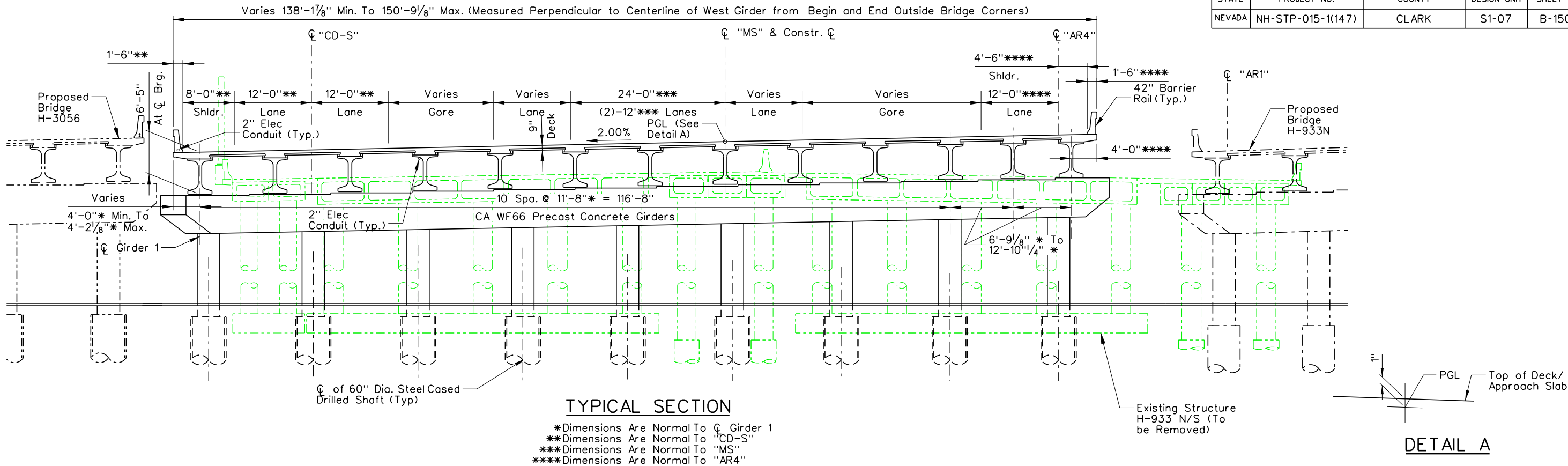


STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/OAKEY
ELEVATION

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2270 Corporate Circle
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Henderson, Nevada 89074
Telephone: 702/263-7275
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CHECKED BY PLK
REVIEWED BY DAA

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(14.7)	CLARK	S1-07	B-1503



GENERAL NOTES

- Design Specifications: AASHTO "LRFD Bridge Design Specifications, 7th Edition, 2014, with 2015 Interim Revisions.
- Construction Specifications: State of Nevada Department of Transportation "Standard Specifications for Road and Bridge Construction, 2014" Except as Noted Below and in the Technical Provisions and Special Provisions of this Contract.
- Dead Load: In accordance with Specifications with an Allowance of 38 psf for Future Wearing Surface.
- Live load: AASHTO HL-93 Loading. Overload Design based on California "Standard Permit Design Vehicles" (Maximum Overload P-13 Truck). Deck Design based on the Equivalent Strip Method with a 40.0 kip Axle.
- Seismic Load: PGA Coefficient 0.15g, Short period Coefficient (S_s) 0.40g, Long Period Coefficient (S_1) 0.15g, Site Class C Soil Profile, Detailed to Seismic Zone 3, $\gamma_{EQ} = 0$.
- Concrete: Concrete Classification and 28-day Compressive Strength Shall be as Follows:
Deck, Diaphragm, Approach Slabs and Barrier Rails: Class E Modified $f'_c = 4.0$ ksi
Prestressed Concrete Deck Panels: See Precast Panel Details
Prestressed Girder: See Prestressed Girder Details
Requirements.
Abutments, Piers, Cheekwalls, & Closure Walls: Class A Modified $f'_c = 4.0$ ksi
Columns: Class D Modified $f'_c = 4.5$ ksi
Drilled Shafts: Class S $f'_c = 4.5$ ksi

NCR 351 AND 374 ABUTMENT 1 CHANGED TO $f'_c = 4.5$ ksi

- Reinforcing Steel: Reinforcing Steel Material Specification and Grade Shall be as Follows by Placement Location:

Location	Specification and Grade
Drilled Shaft Vertical	
Pier Cap	
Abutment Cap	ASTM A615, Grade 75
Pier Diaphragm	
End Diaphragm	
Deck	
Precast Girders	
Approach Slab	ASTM A615, Grade 60
Bridge Rail	
Drilled Shaft Spirals/Hoops	ASTM A706, Grade 60
Column	

Dimensions Relating to Bar Spacing are Center-to-Center. Bending Dimensions are from Out-to-Out of the Bars. Bar Sizes Three (3) to Nine (9) are Indicated by the First Number of the Mark; Ten (10) or Larger by the First Two Numbers. Sizes Four (4) and Five (5), When Considered as bars to Control Temperature, Shrinkage, and Distribution Stresses by the Engineer, may be Adjusted upon Concurrence and Approval by the Engineer.

- Foundations: Abutments and Pier are Supported on Drilled Shaft Foundations.
- Barrier rail: Designed for TL-4
- Construction Type Code: X281
- All Exterior Concrete Surfaces to Receive Ordinary Surface Finish as per Subsection 502.03.18 of the Standard Specifications.
- All exposed concrete surfaces (excluding bridge deck) to receive stain or surface treatments as specified on Sheets L1 and L1A. Finishes to extend one foot below finish grade.
- Concrete Construction Joints Designated as a "Permissible Joint" or as an "Optional Construction Joint" may be Incorporated into the Construction at the Contractor's Option. Joints Designated as a "Construction Joint" are Considered Mandatory and shall be Incorporated into the Construction Unless Otherwise Approved in Writing by the Engineer.

ABBREVIATION LIST

ϕ	Diameter	Min.	Minimum
Dia.	Diameter	No., #	Number
Abut.	Abutment	O.D.	Outer Diameter
Alt.	Alternate	PGL	Profile Grade Line
BF	Back Face	Reinf.	Reinforcement
Brg.	Bearing	RT.	Right
Bott.	Bottom	RW	Retaining Wall
ϕ	Centerline	R/W	Right of Way
Clr.	Clear	Swlk.	Sidewalk
Constr.	Construction	SB	Southbound
D.B.A.	Deformed Bar Anchor	Shldr.	Shoulder
Diaph.	Diaphragm	Spa.	Spaces
Ea.	Each	Sta.	Station
EF	Each Face	TC	Tangent to Curve
EJ	Expansion Joint	Tot.	Total
EL.	Elevation	Typ.	Typical
Elev.	Elevation	U.N.O.	Unless Noted Otherwise
Exp.	Expansion		
FF	Front Face		
Gr.	Grade		
I.D.	Inner Diameter		
Jt.	Joint		
LT.	Left		
Long.	Longitudinal		
Max.	Maximum		

H-933S

NO.	DESCRIPTION	DATE
2	AS-BUILTS - NCR 351, 374	05/01/19
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1503	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
MAY 1, 20019

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STATE OF NEVADA
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I-15 SOAKY
GENERAL NOTES
AND TYPICAL SECTION

ATKINS

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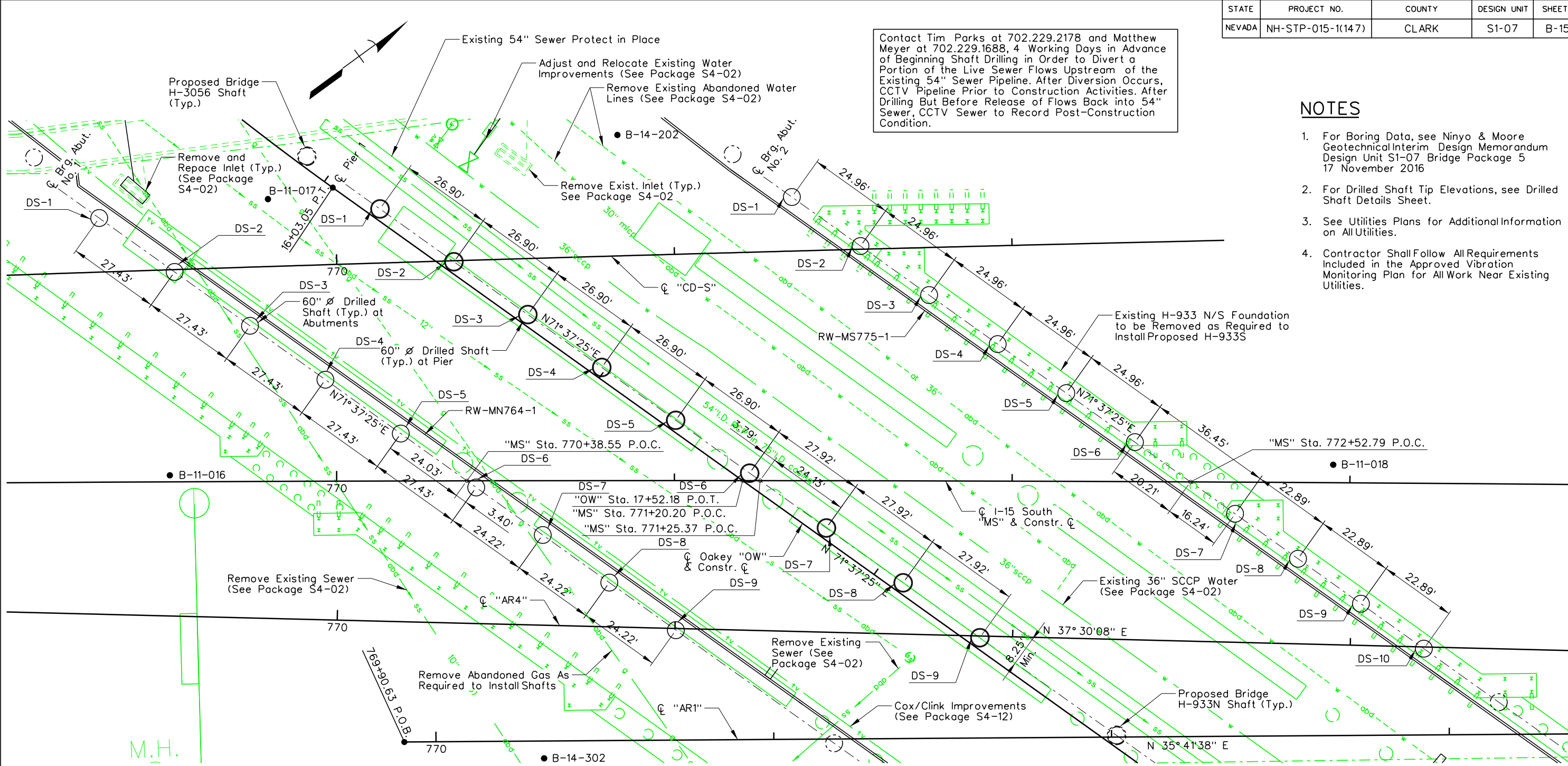
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REVIEWED BY DAA

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1504

Contact Tim Parks at 702.229.2178 and Matthew Meyer at 702.229.1688, 4 Working Days in Advance of Beginning Shaft Drilling in Order to Divert a Portion of the Live Sewer Flows Upstream of the Existing 54" Sewer Pipeline. After Diversion Occurs, CCTV Pipeline Prior to Construction Activities. After Drilling But Before Release of Flows Back into 54" Sewer, CCTV Sewer to Record Post-Construction Condition.

NOTES

- For Boring Data, see Ninyo & Moore Geotechnical Interim Design Memorandum Design Unit S1-07 Bridge Package 5 17 November 2016
- For Drilled Shaft Tip Elevations, see Drilled Shaft Details Sheet.
- See Utilities Plans for Additional Information on All Utilities.
- Contractor Shall Follow All Requirements Included in the Approved Vibration Monitoring Plan for All Work Near Existing Utilities.



FOUNDATION PLAN

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1504	02/03/17

DESIGN UNIT S1-07

AS-BUILT DRAWING

JANUARY 04, 2019

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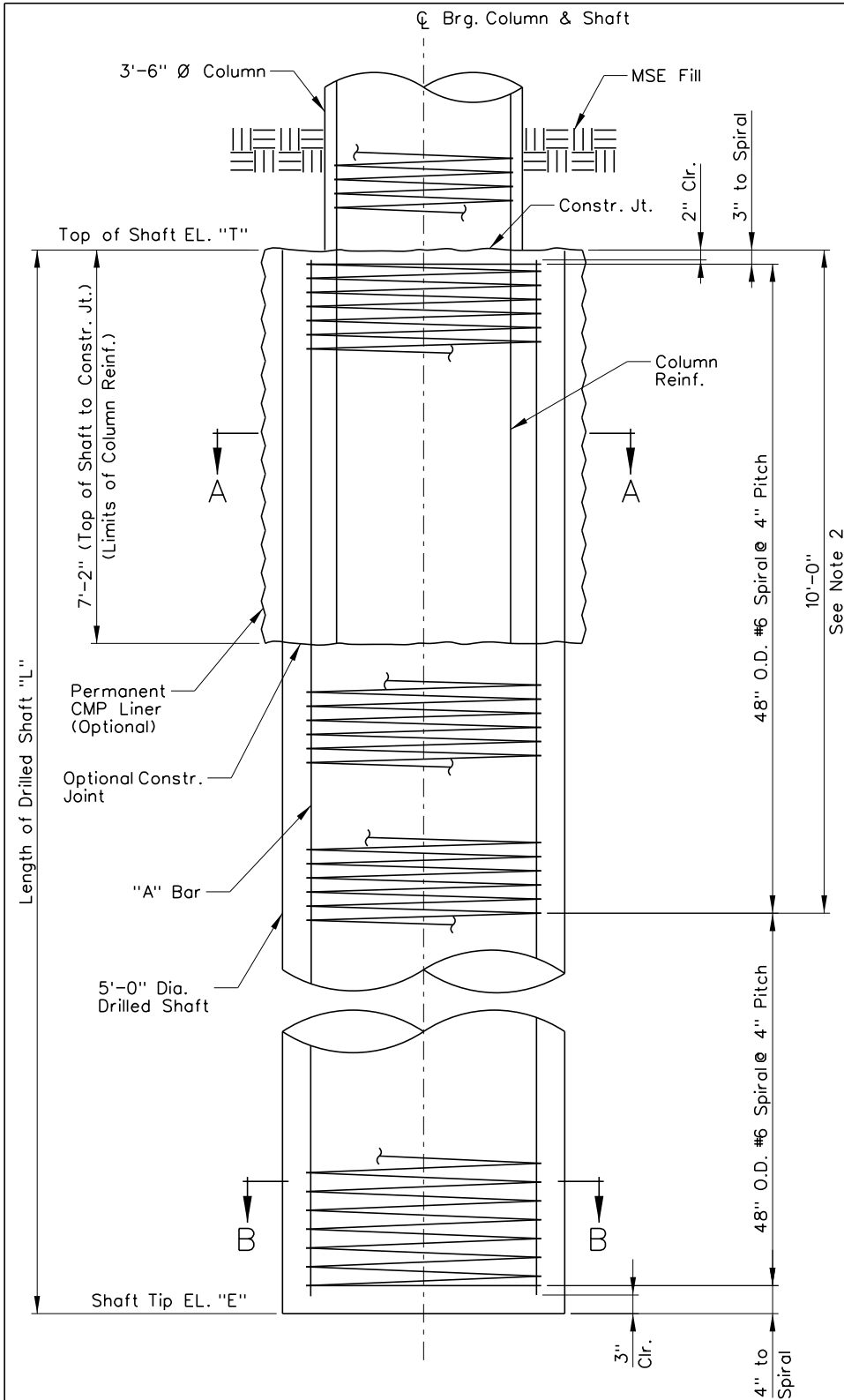
I-15 OAKLEY
GEOMETRICS
(FOUNDATION PLAN)

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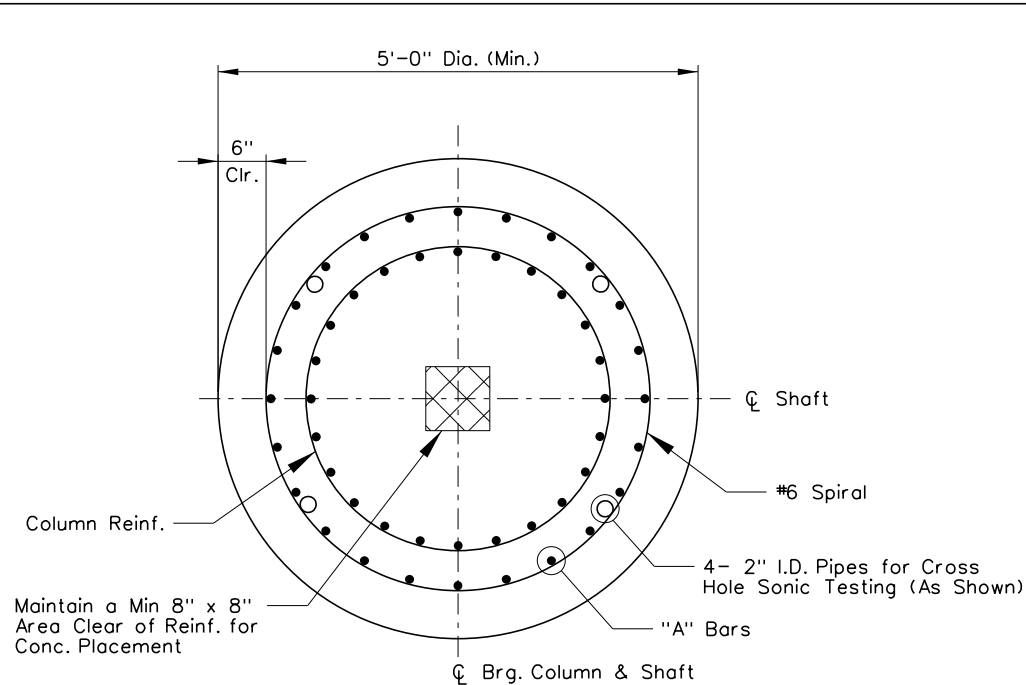
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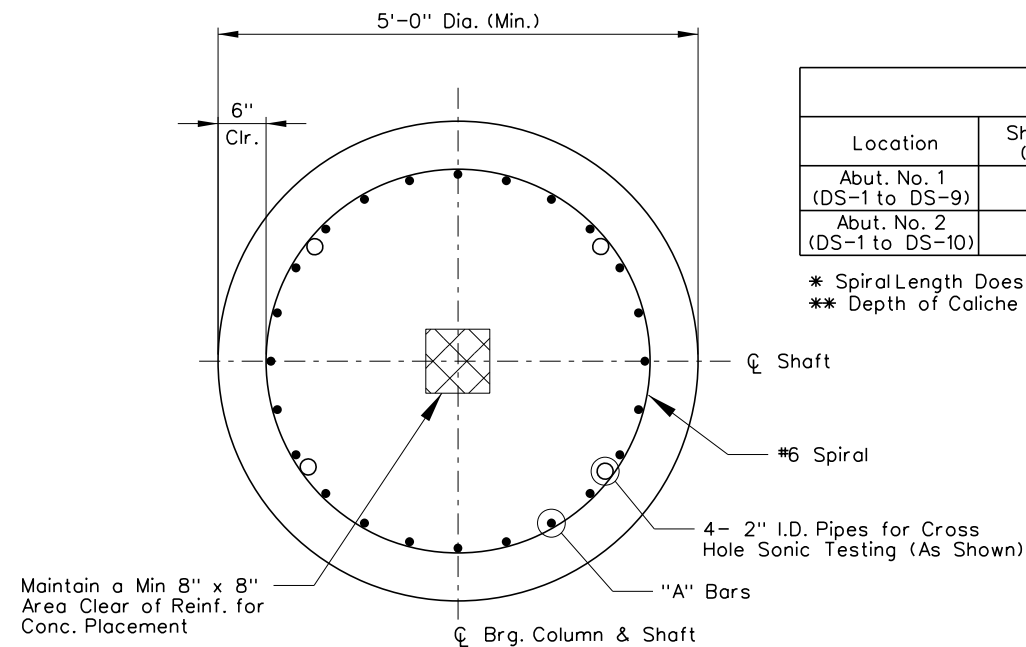
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DRILLED SHAFT ELEVATION



SECTION A-A
(Permanent CMP Liner Not Shown)



SECTION B-B

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1505

Notes:

- Elevations noted are taken through centerline of shaft/columns.
- No splices of drilled shaft longitudinal or spiral reinforcing permitted in this region.
- Lap splices of drilled shaft vertical reinforcing are permitted below the region defined in Note 2 only as detailed or specifically approved by the Engineer. Lap splices of vertical bars may be substituted with mechanical splices capable of developing 125% of the bar yield strength and conforming to Section 505.03.05 (c) of the standard specifications.
- Lap splices of drilled shaft spiral reinforcing are permitted below the region defined in Note 2. Lap splices of spiral reinforcing shall be 1/2 turn minimum, and shall terminate with a 135 degree hook around a vertical bar at each end.
- Drilled shaft spirals shall terminate at top and bottom of the shaft with 1 1/2 flat turns. At the top of drilled shaft the spiral termination shall also provide a 135 degree hook around a vertical bar.
- Roughen construction joints to 1/4" amplitude. Thoroughly clean the surface of debris and laitance.
- CSL tubes shall be water tight, capped at bottom and securely tied along the length of the drilled shaft reinforcing cage. The bottom of the CSL tubes shall come within 1" of the actual shaft tip elevation.
- Fill the CSL tubes with potable water prior to placing the drilled shaft concrete, then cap the top of CSL tubes. Grout tubes after crosshole sonic log testing and acceptance of drilled shaft. Grout shall conform to Section 509.03.14 of the Standard Specifications.

Drilled Shaft Reinforcing Table						
Location	Shaft Length ("L") (Ft.)	Top Of Shaft EL. "T" (Ft.)	Shaft Tip EL. "E" (Ft.)	Ⓐ Bars	Spiral Length *	Caliche ** (Ft.)
Abut. No. 1 (DS-1 to DS-9)	37.0'	2045.0'	2008.0'	24-10367	1444'-8"	0.0'
Abut. No. 2 (DS-1 to DS-10)	34.0'	2043.5'	2009.5'	24-10337	1333'-4"	0.0'

* Spiral Length Does Not Include Lap Splices
** Depth of Caliche Considered in Determination of Axial Capacity

2

PER NCR 338 - CSL RESULTS SHOWED THAT ABUTMENT 2 SHAFT 1 HAD 2 ANOMALIES. THE TOP TWO FEET OF THE SHAFT WERE CHIPPED OUT AND POURED BACK. ADDITIONAL ANALYSIS PROVIDED SHOWED THAT REDUCING THE SHAFT AREA BELOW THE SECOND ANOMALOUS ZONE OF THE SHAFT MET THE DESIGN PARAMETERS.

NO.	DESCRIPTION	DATE
2	AS-BUILTS - NCR 338	05/01/19
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1505	02/03/17

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AS-BUILT DRAWING
MAY 1, 20019

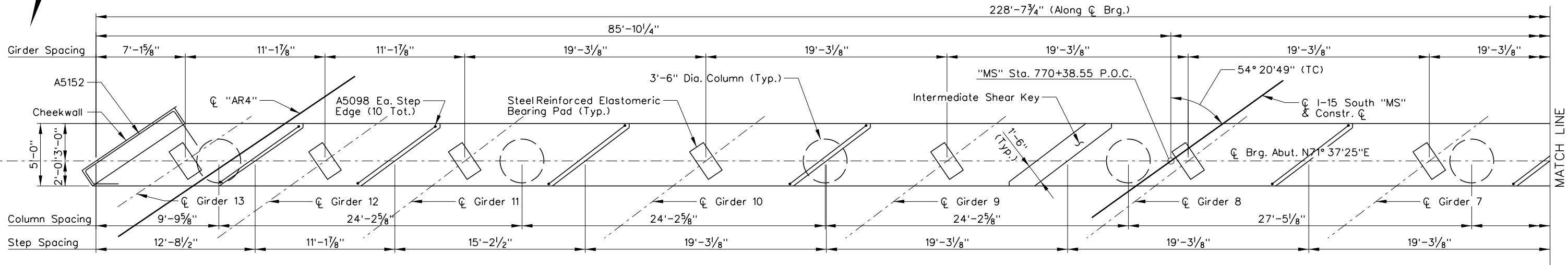
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STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15 SOAKY
60" DIA. DRILLED SHAFT DETAILS
ABUTMENT

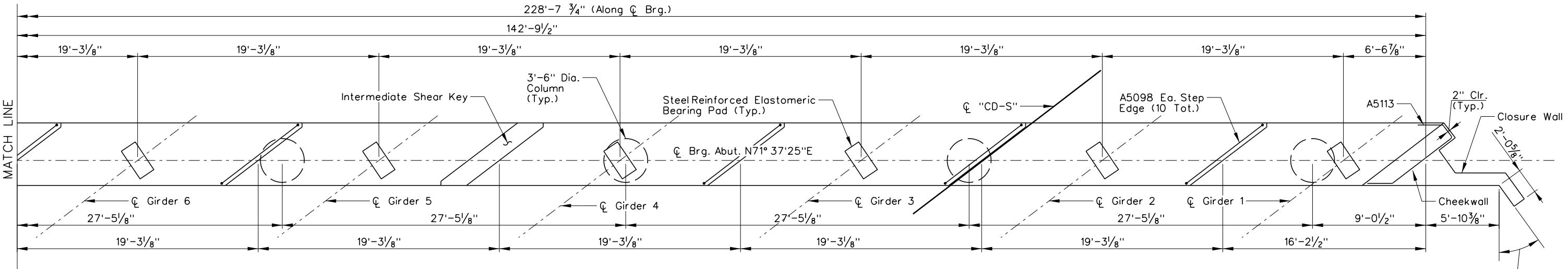
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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1507



PARTIAL PLAN



PARTIAL PLAN

- Notes:
- For Abutment No. 1 elevation, see "Abutment No. 1 Elevation" sheet.
 - All bearing surfaces shall be finished level.
 - Cheekwall and column reinforcing within the abutment cap not shown for clarity. See "Abutment Details" sheets.

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1507	02/03/17

DESIGN UNIT S1-07

AS-BUILT DRAWING

JANUARY 04, 2019



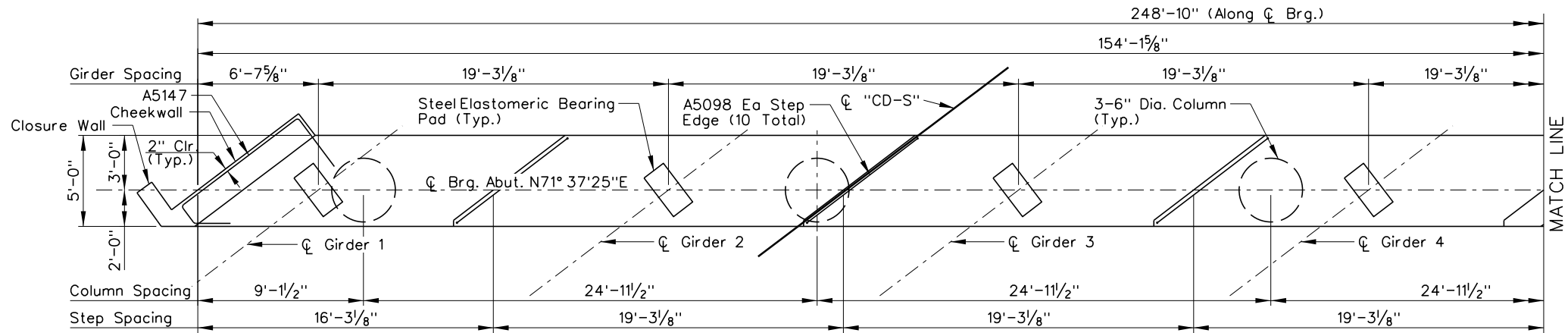
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I-15 SOAKY
ABUTMENT NO. 1 PLAN

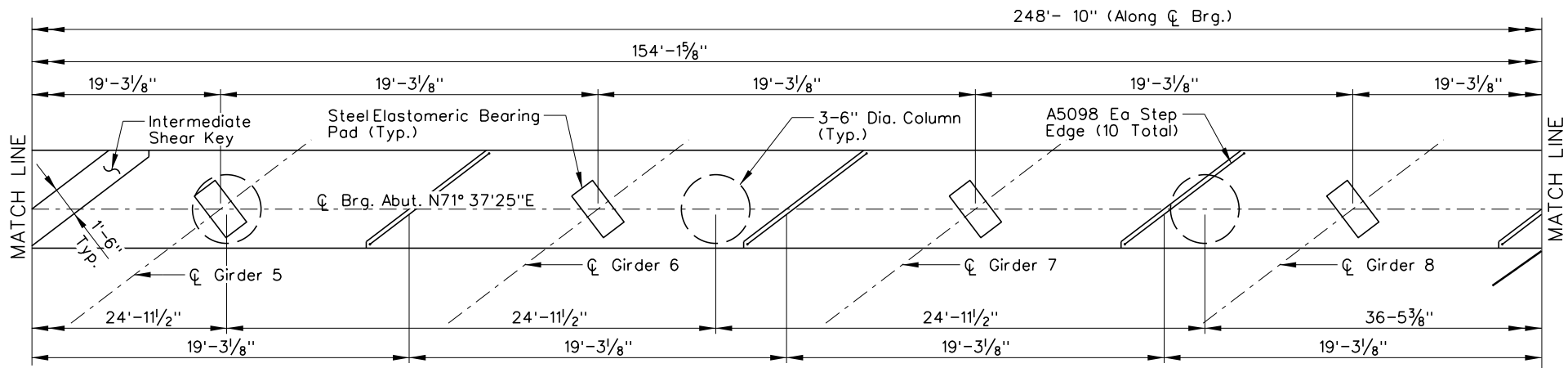
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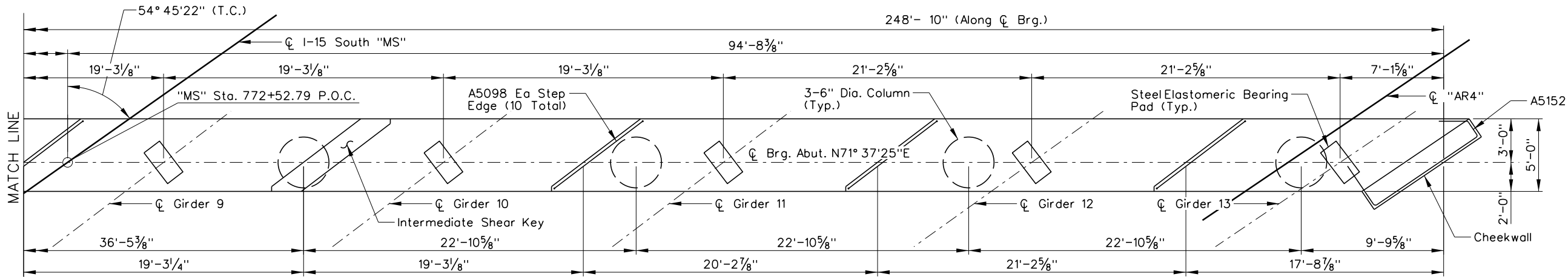
STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1509



PARTIAL PLAN



PARTIAL PLAN



PARTIAL PLAN

Notes:

1. For Abutment No. 2 elevation, see "Abutment No. 2 Elevation" sheet.
2. All bearing surfaces shall be finished level.
3. Cheekwall and column reinforcing within the abutment cap not shown for clarity. See "Abutment Details" sheets.

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NO.	DESCRIPTION	DATE
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0	RFC - 73652-S1-07-R2H-H933S-SHT20B1509	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019

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I-15 SOAKY
ABUTMENT NO. 2 PLAN

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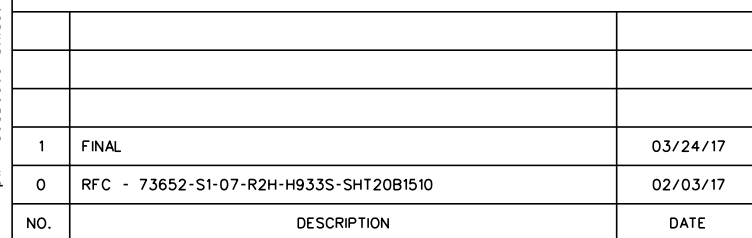
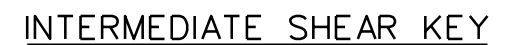
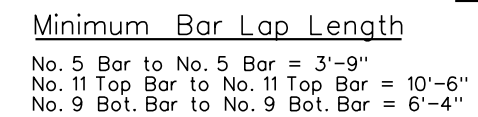
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CHECKED BY PLK
REVIEWED BY DAA

H-933S

Notes:

1. For Abutment No. 2 plan, see "Abutment No. 2 Plan" sheet.
2. All elevations are taken along C Brg.
3. For Section C-C, see "Abutment Details 1 of 3" sheet.
4. All bearing surfaces shall be finished level.
5. Maintain 2" clear cover on all reinforcement (U.N.O.)
6. Cheekwall and column reinforcing within the abutment cap not shown for clarity. See Abutment Details sheets.
7. See "Lighting Plans" for underpass lighting details.

1. For Abutment No. 2 plan, see "Abutment No. 2 Plan" sheet.
2. All elevations are taken along C Brg.
3. For Section C-C, see "Abutment Details 1 of 3" sheet.
4. All bearing surfaces shall be finished level.
5. Maintain 2" clear cover on all reinforcement (U.N.O.)
6. Cheekwall and column reinforcing within the abutment cap not shown for clarity. See Abutment Details sheets.
7. See "Lighting Plans" for underpass lighting details.



H-933S

I-15/OAKEY
ABUTMENT NO. 2 ELEVATION

AS-BUILT DRAWING
JANUARY 04, 2019



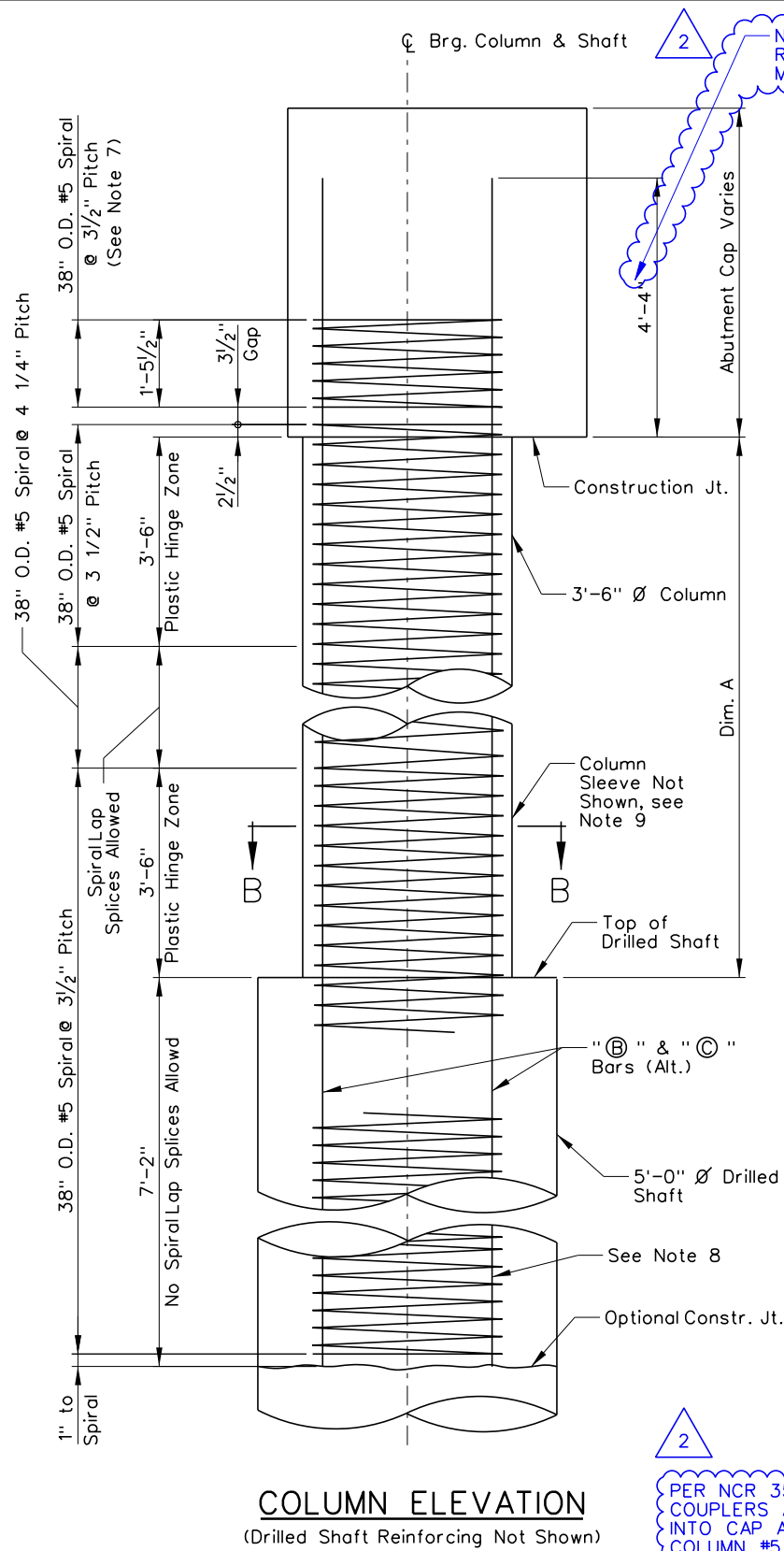
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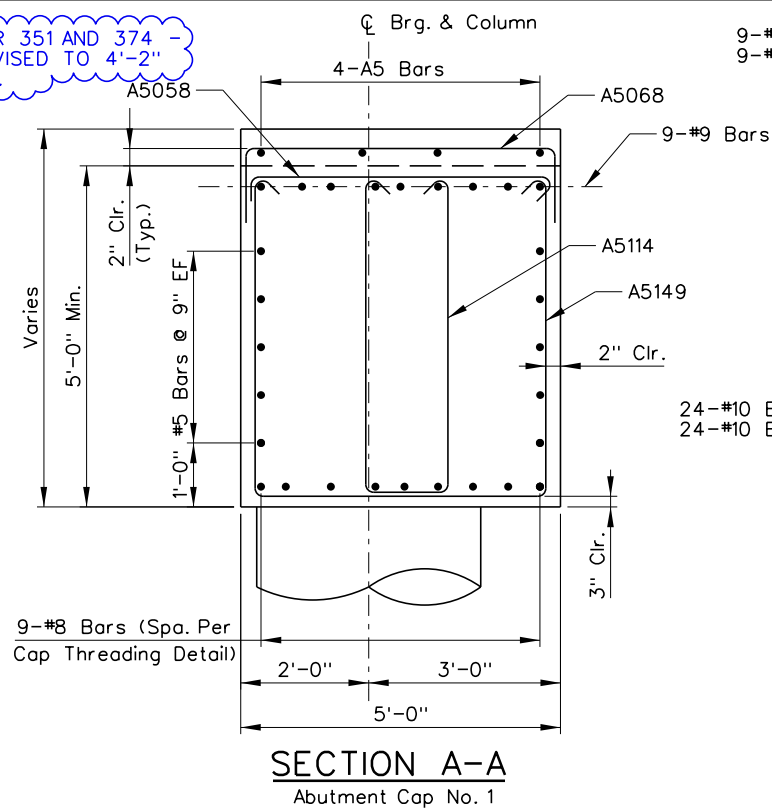
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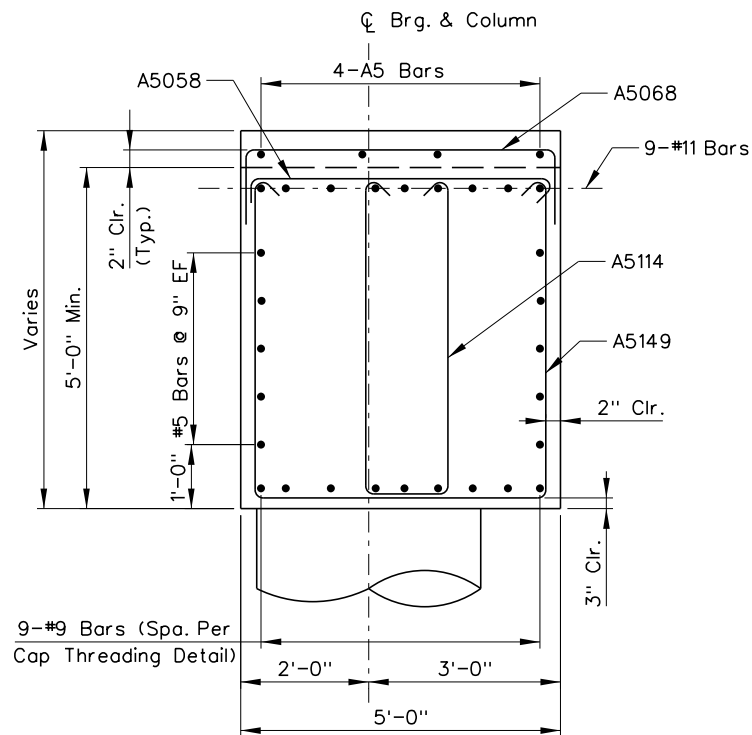
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COLUMN ELEVATION
(Drilled Shaft Reinforcing Not Shown)

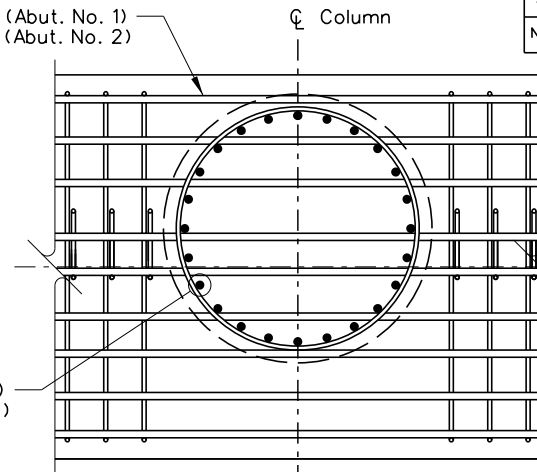


SECTION A-A
Abutment Cap No. 1

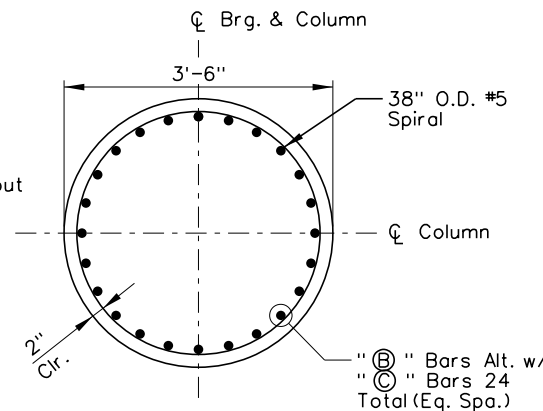


SECTION C-C
Abutment Cap No. 2

9-#8 Bot. Bars (Abut. No. 1)
9-#9 Bot. Bars (Abut. No. 2)



CAP THREADING DETAIL



SECTION B-B

Column Data Table

Column	Abut. No. 1				Abut. No. 2			
	Dim. A	Ⓑ Bars	Ⓒ Bars	Length of Main Spiral *	Dim. A	Ⓑ Bars	Ⓒ Bars	Length of Main Spiral *
No. 1	15'-7 1/2"	12-10271	12-10251	554'-6"	18'-4"	12-102910	12-102710	567'-10"
No. 2	16'-1 1/4"	12-10277	12-10257	556'-10"	18'-7 1/4"	12-10301	12-10281	569'-2"
No. 3	16'-7"	12-10281	12-10261	559'-2"	18'-10 3/4"	12-10305	12-10285	570'-6"
No. 4	17'-0 3/4"	12-10287	12-10267	561'-7"	19'-2"	12-10308	12-10288	571'-11"
No. 5	17'-6 1/2"	12-10290	12-10270	563'-11"	19'-5 1/4"	12-103011	12-102811	573'-3"
No. 6	18'-0 1/4"	12-10296	12-10276	566'-3"	19'-8 3/4"	12-10313	12-10293	574'-7"
No. 7	18'-5 1/4"	12-102911	12-102711	568'-4"	20'-1 1/2"	12-10318	12-10298	576'-7"
No. 8	18'-10 1/2"	12-10304	12-10284	570'-5"	20'-4 1/2"	12-103111	12-102911	577'-10"
No. 9	19'-3 1/2"	12-10309	12-10289	572'-6"	20'-7 3/4"	12-10322	12-10302	579'-4"
No. 10					20'-10 3/4"	12-10325	12-10305	580'-4"

* Spiral length does not include lap splices or cap spiral.

Notes:

- No splicing of column vertical reinforcing allowed.
- No splicing of column spiral reinforcing allowed in Plastic Hinge Zones, or where indicated.
- Outside of Plastic Hinge Zones, lap splices of spiral reinforcing are permitted. Lap splices of spiral reinforcing shall be 1/2 turn minimum, and shall terminate with a 135° hook around a vertical bar at each end.
- Column spirals shall terminate with 1/2 flat turns and a 135° hook around a vertical bar.
- Spirals shown may be substituted with welded hoops at an equivalent spacing.
- For Drilled Shaft Details, see Drilled Shaft Details sheet.
- Length of spiral in the cap is 96'-10" and shall follow Note 4.
- Column bars B and C vary in length. Extend all B and C bars into cap as shown. Variation in bar length occurs at bottom of column cage.
- For CMP column sleeve details, see "Isolation Casing Details" sheet.

H-933S

DESIGN UNIT S1-07
AS-BUILT DRAWING
MAY 1, 20019



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15 OAKLEY
ABUTMENT DETAILS 1 OF 3

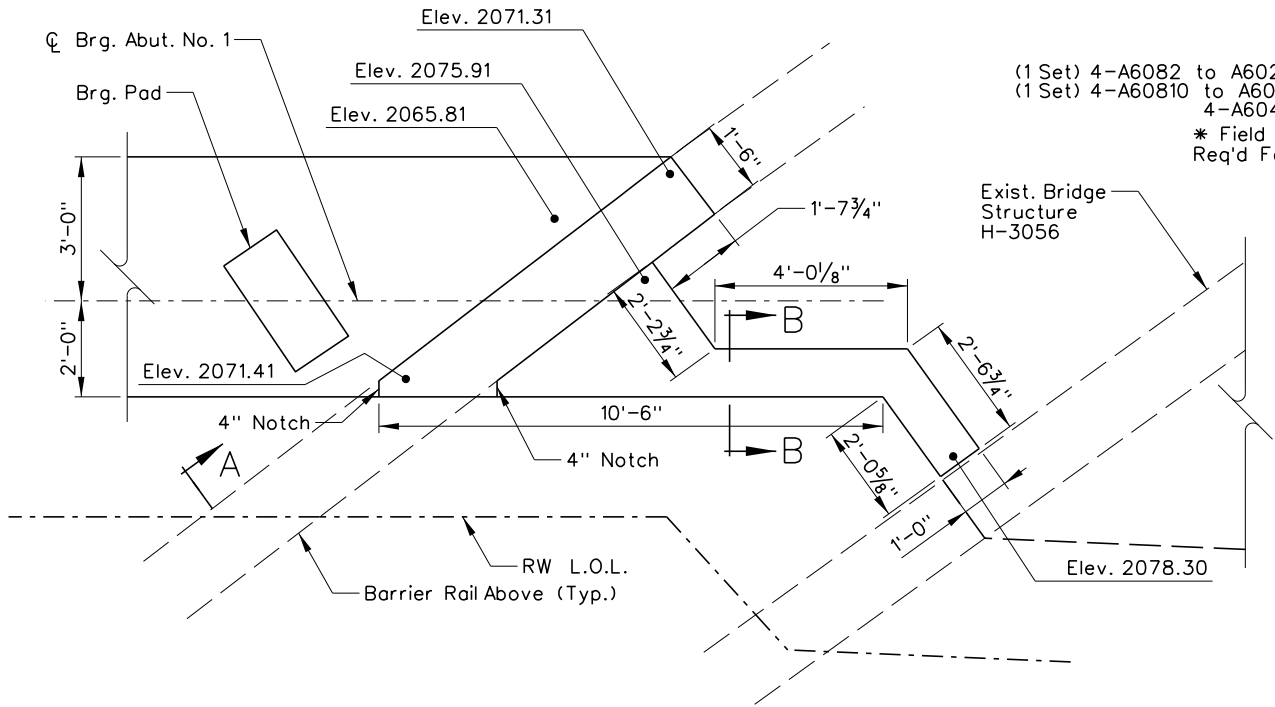
ATKINS

2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
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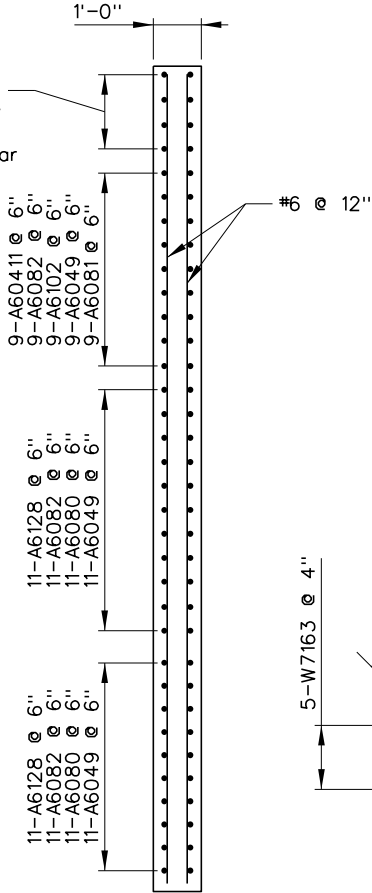
DESIGNED BY JCH
DRAWN BY EAS
CHECKED BY PLK
REVIEWED BY DAA

NO.	DESCRIPTION	DATE
2	AS-BUILTS - NCR 351, 374	05/01/19
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1511	02/03/17

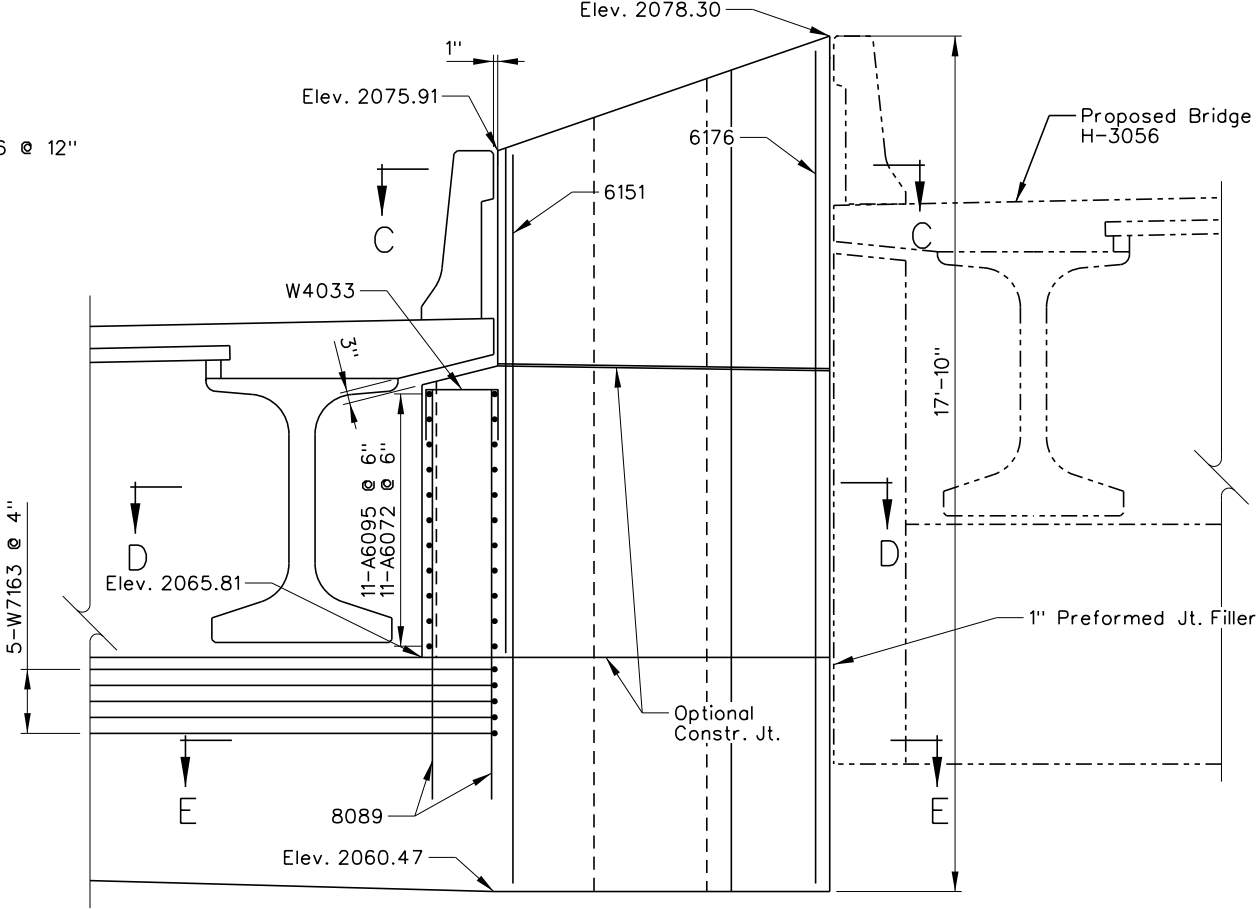
STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1512



CLOSURE WALL PLAN
(Abutment 1 West Side)

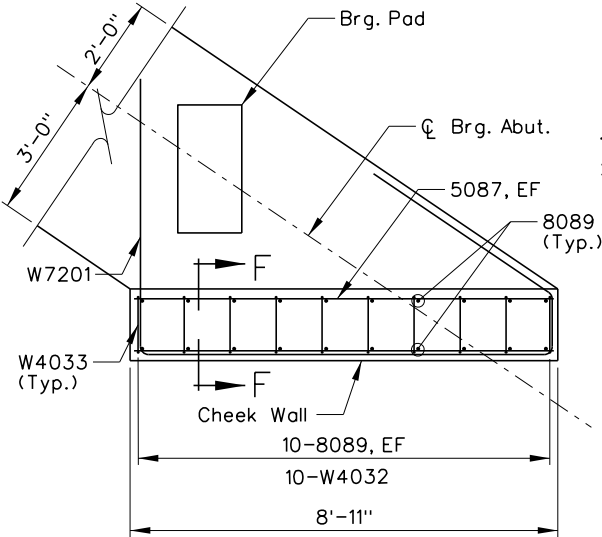


SECTION B-B

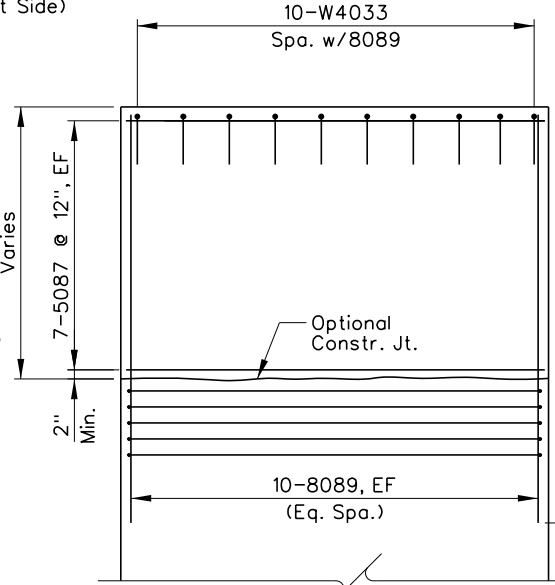


ELEVATION A-A

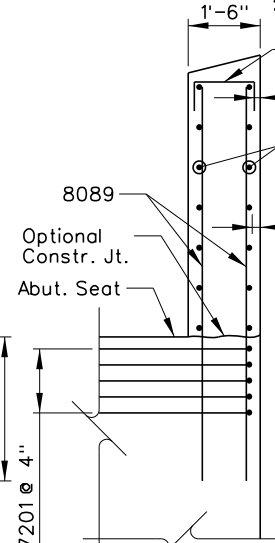
PER RF11491 - PLACE STEP IN CLOSURE WALL AT EXISTING TEMPORARY WIRE WALL (EL.=2063.00). PLACE 1" PREFORMED JT. FILLER ON TOP OF WIRE WALL.



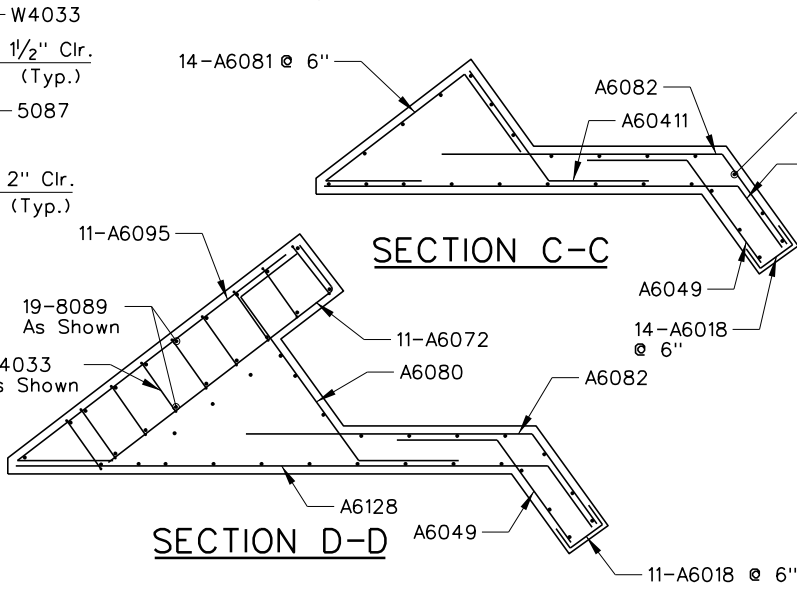
CHEEKWALL PLAN
(Abutment 1 East Cheekwall Shown
Abutment 2 East Cheekwall Similar)



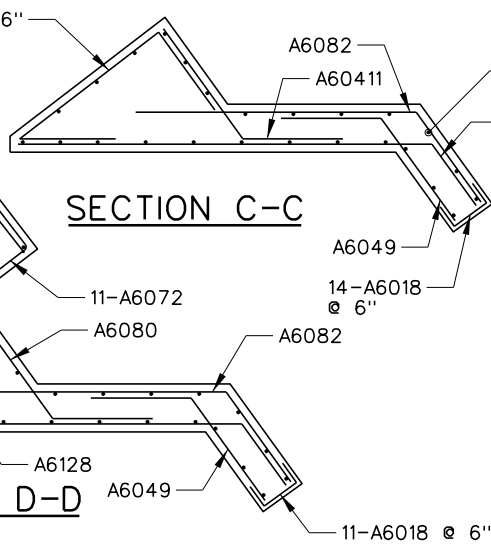
CHEEKWALL ELEVATION



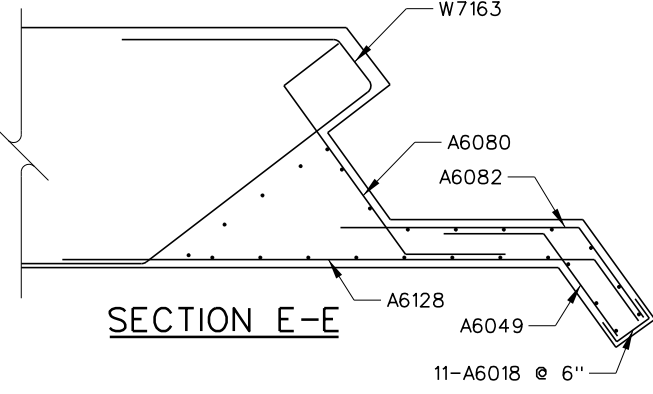
SECTION F-F



SECTION D-D



SECTION C-C



SECTION E-E

NO.	DESCRIPTION	DATE
2	AS-BUILTS - RF11491	05/01/19
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1512	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
MAY 1, 20019

R₂H ENGINEERING, INC.
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2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89162
PHONE (702) 260-7000 FAX (702) 260-7070



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15SOAKEY
ABUTMENT DETAILS 2 OF 3

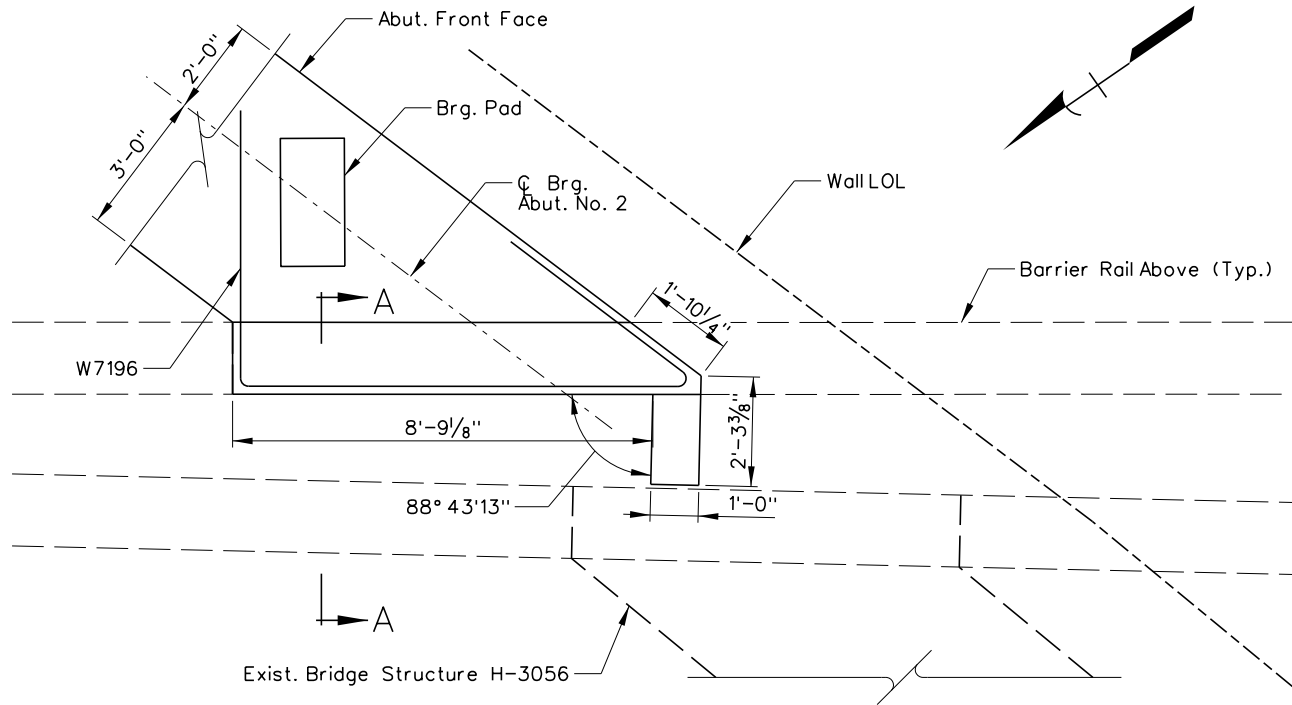
ATKINS
2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
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CHECKED BY PLK
REVIEWED BY DAA

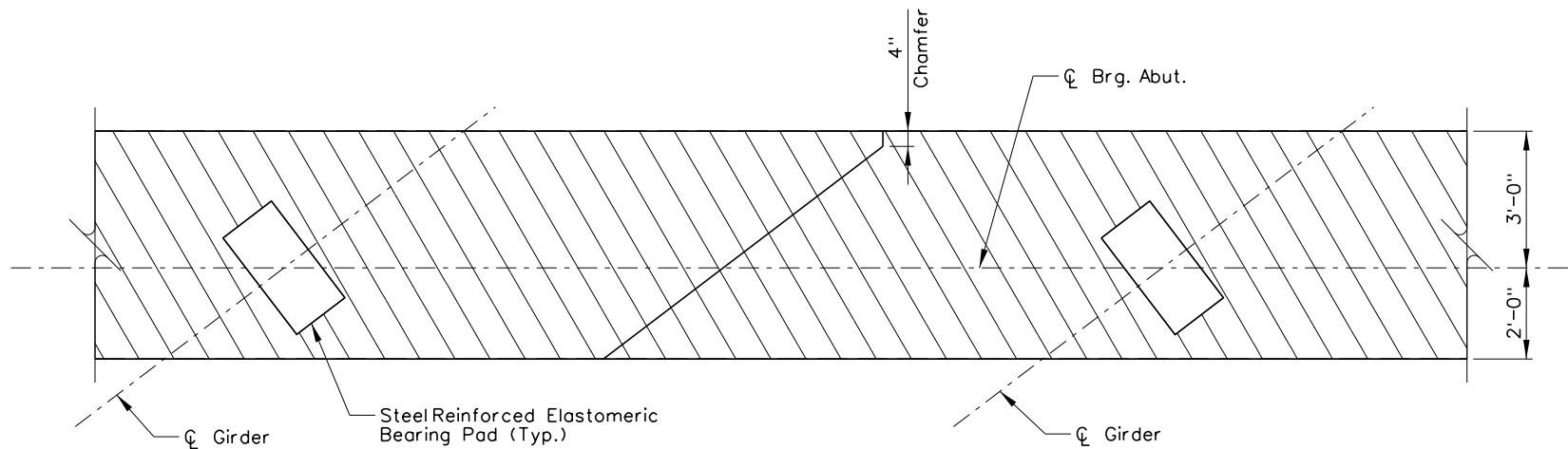
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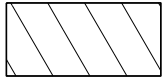
STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1513



CHEEKWALL PLAN
(Abutment 2 West Cheekwall Shown)

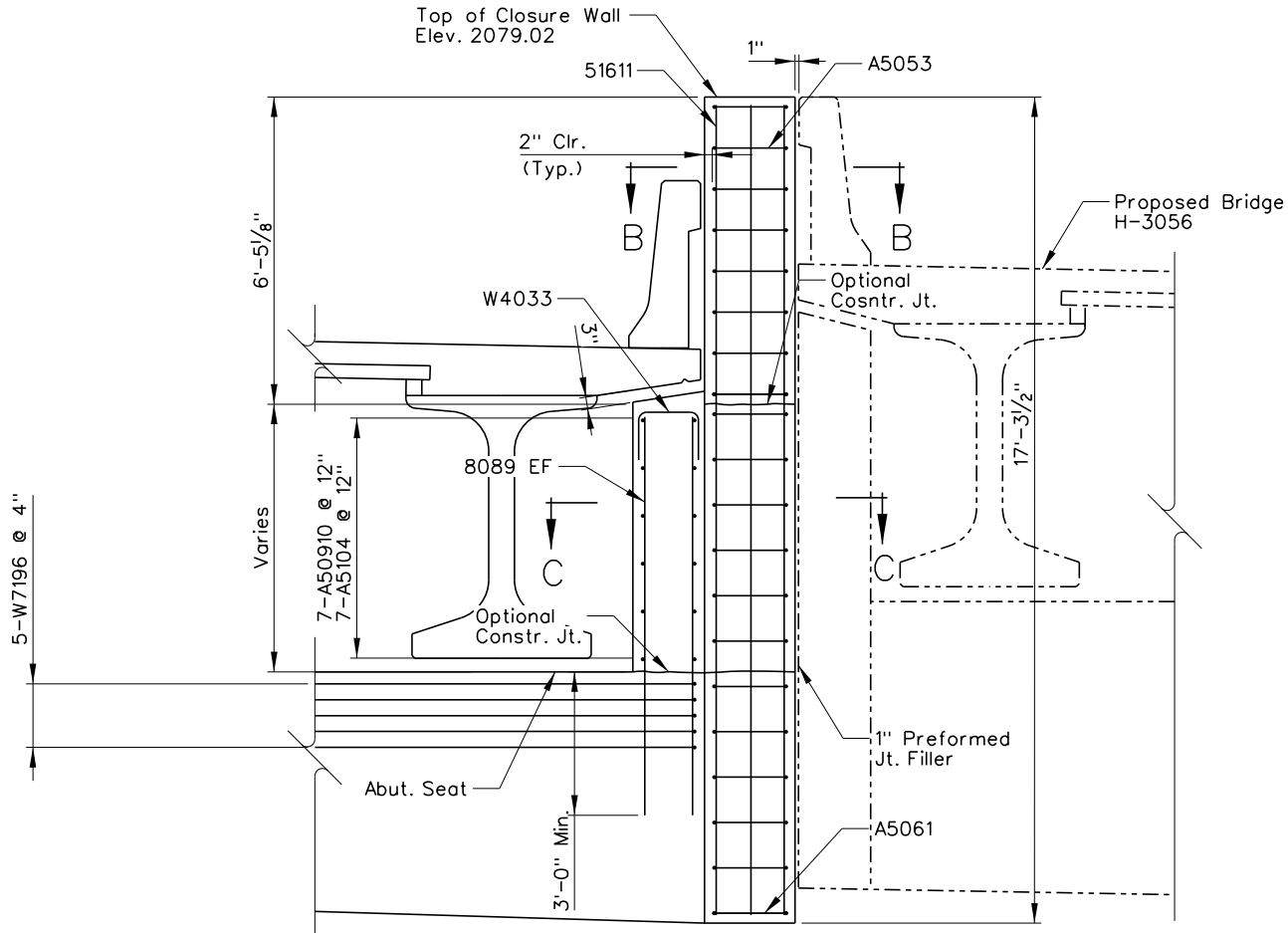


ABUTMENT PARTIAL PLAN

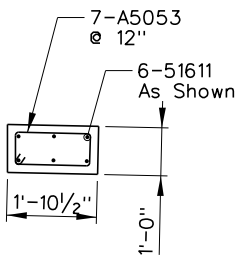


Expanded Polystyrene
(3 3/8" thickness at Abut. 1)
(3 3/8" thickness at Abut. 2)

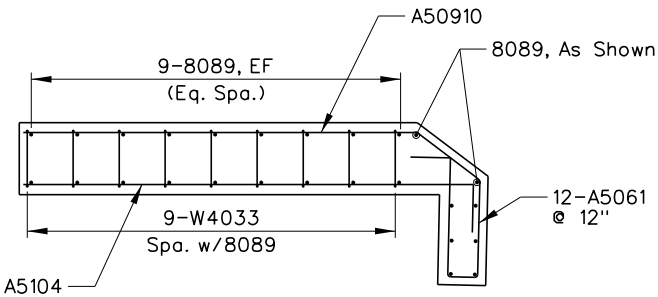
- Notes:**
- Expanded polystyrene shall be placed on both horizontal and vertical surfaces at steps in abutment cap.
 - If a construction joint is utilized, intentionally roughen the surface to an amplitude of 1/4".



SECTION A-A



SECTION B-B



SECTION C-C

H-933S

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1513	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

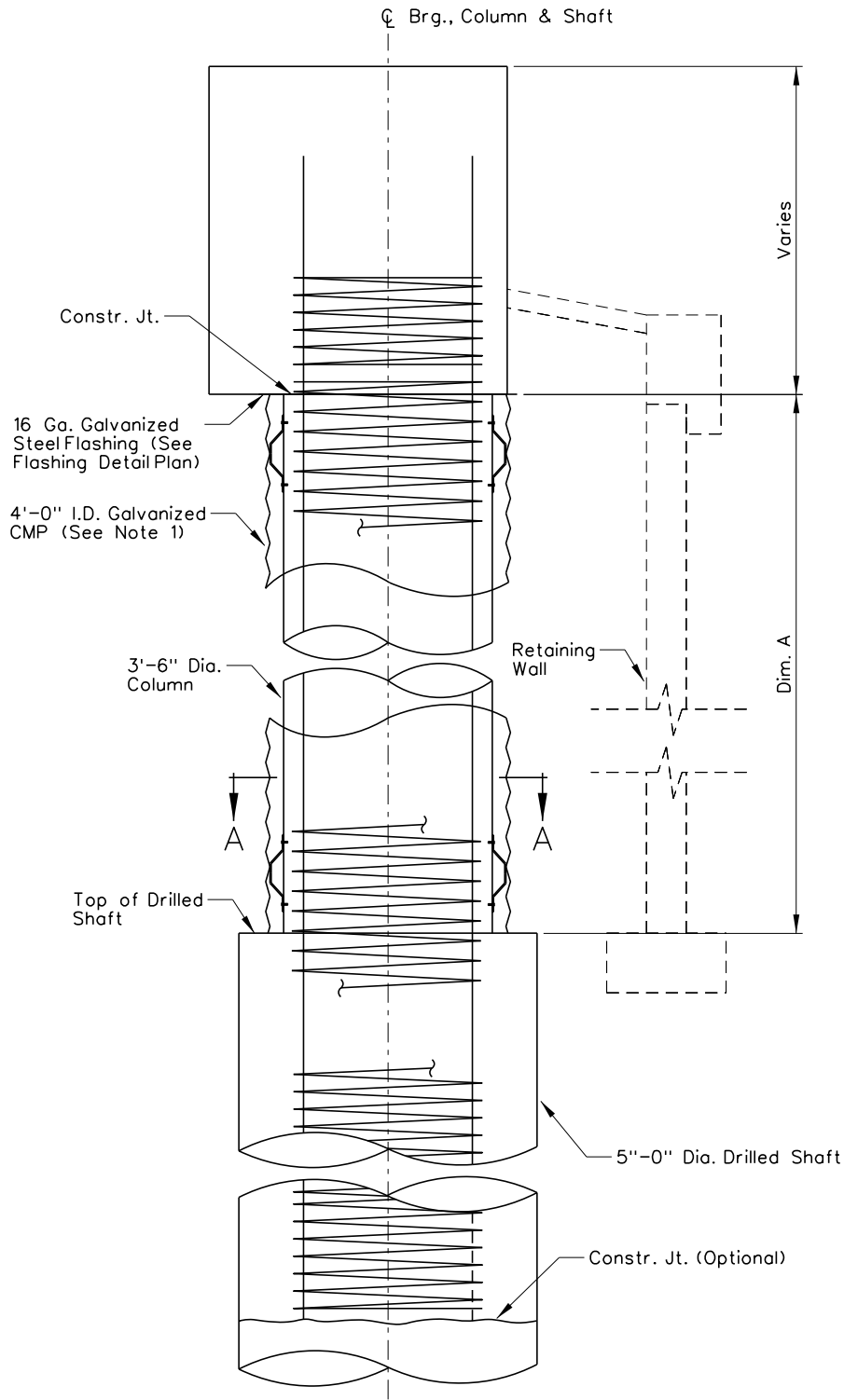
I-15 SOAKY
ABUTMENT DETAILS 3 OF 3

ATKINS

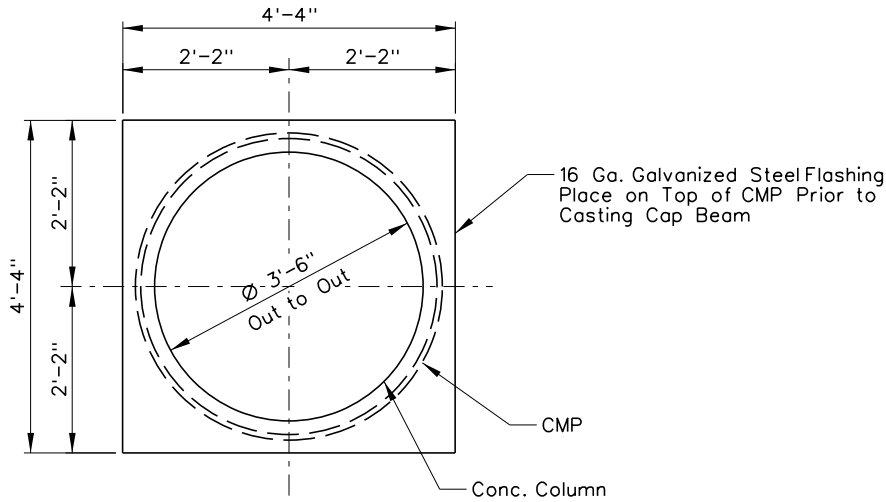
2270 Corporate Circle
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DRAWN BY EAS
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REVIEWED BY DAA

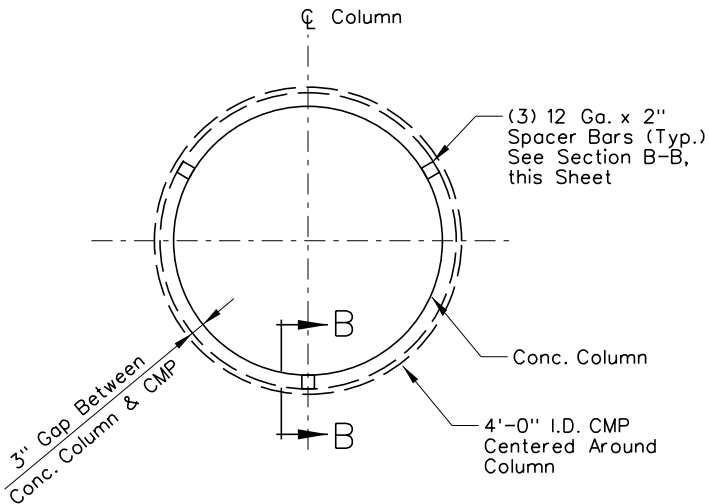
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NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1514



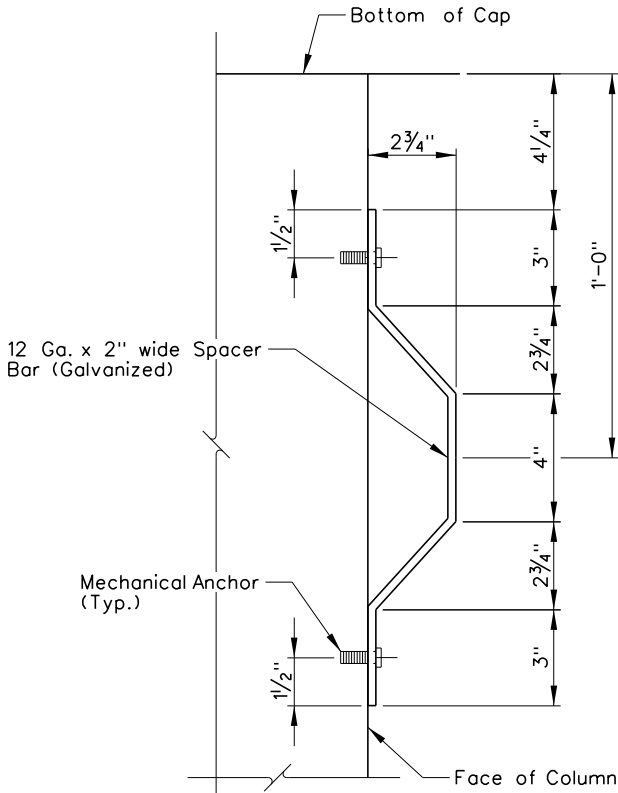
TYPICAL ABUTMENT SECTION



FLASHING DETAIL PLAN



SECTION A-A
SPACER BAR PLAN



SECTION B-B

Note: CMP Not Shown for Clarity

Notes:

- Corrugated Metal Pipe Shall be Fabricated From Pregalvanized Steel Sheets with Minimum Wall Thickness of 0.064" and Shall Conform to AASHTO M36.
- Use Three Spacer Bars per Set Equally Spaced Around the Column. Locate One Set at 1'-0" From the Top and One Set at 1'-0" From the Bottom of the Column.
- Backfill Shall Be Placed at Uniform Depth Around Columns.

H-933S

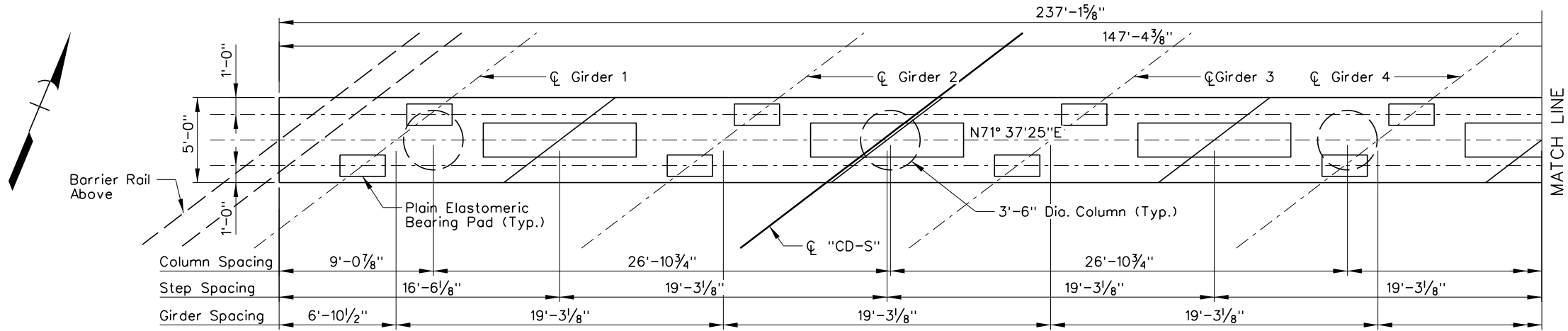
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NO.	DESCRIPTION	DATE

DESIGN UNIT S1-07 AS-BUILT DRAWING JANUARY 04, 2019	 	STATE OF NEVADA DEPARTMENT OF TRANSPORTATION I-15 SOAKEY ISOLATION CASING DETAILS	
			DESIGNED BY <u>JCH</u> DRAWN BY <u>JAP</u> CHECKED BY <u>PLK</u> REVIEWED BY <u>DAA</u>

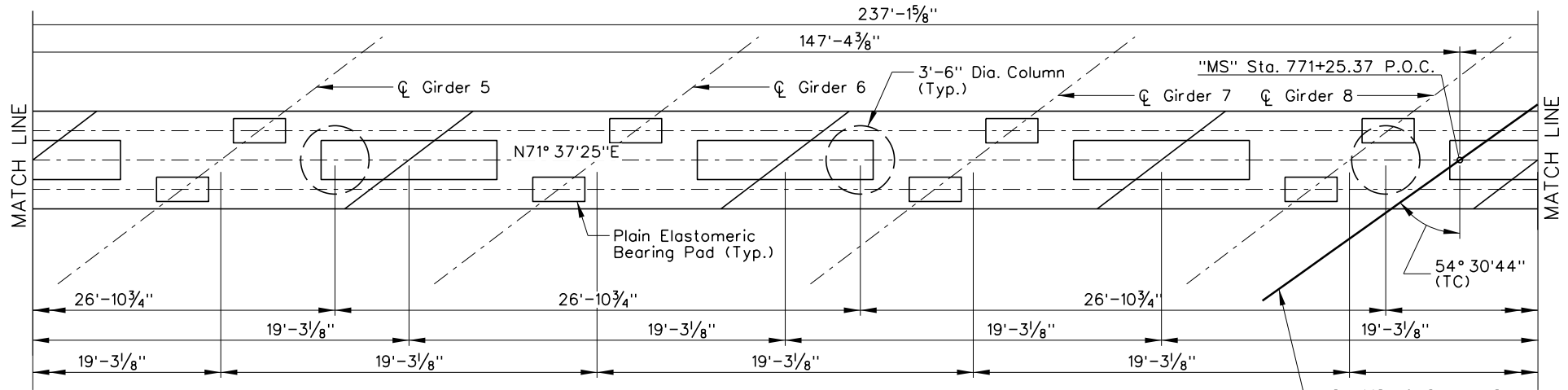
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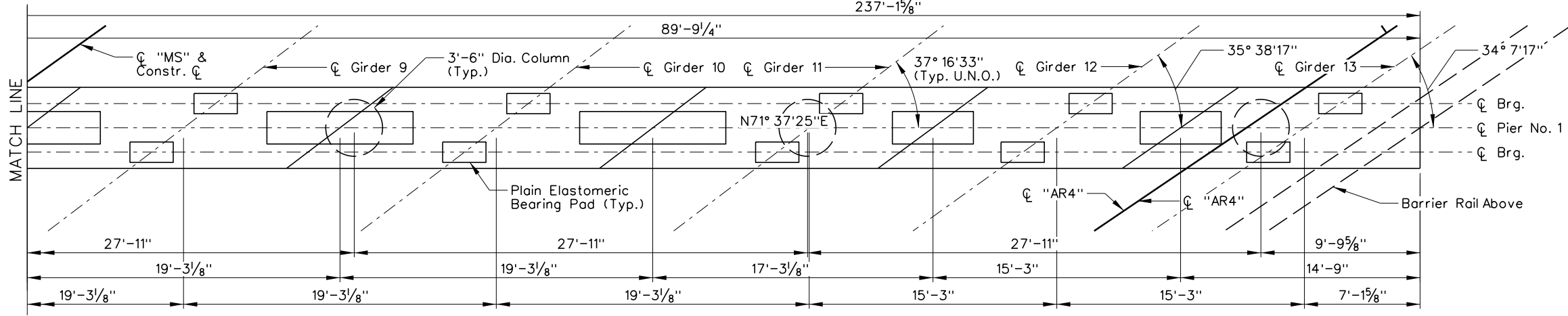
STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1515



PARTIAL PLAN



PARTIAL PLAN



PARTIAL PLAN

- Notes
- For Pier No. 1 elevation, see "Pier No. 1 Elevation" sheet.
 - All bearing surfaces shall be finished level.

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1515	02/03/17

DESIGN UNIT S1-07

AS-BUILT DRAWING

JANUARY 04, 2019

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15 SOAKY
PIER NO. 1 PLAN

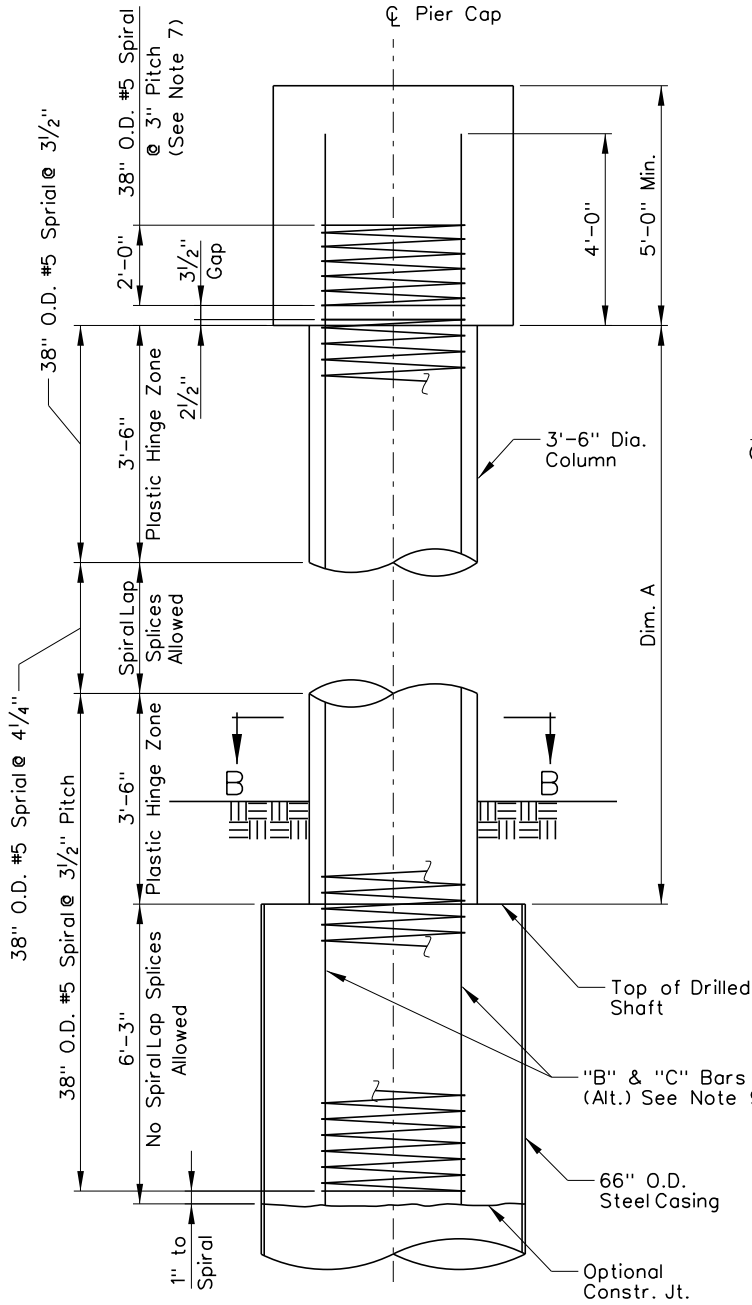
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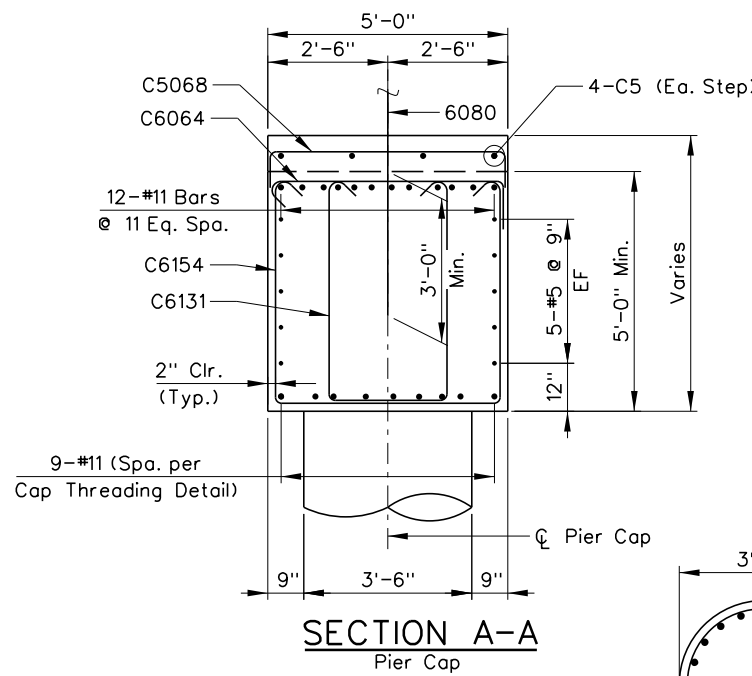
DESIGNED BY JCH
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CHECKED BY PLK
REVIEWED BY DAA

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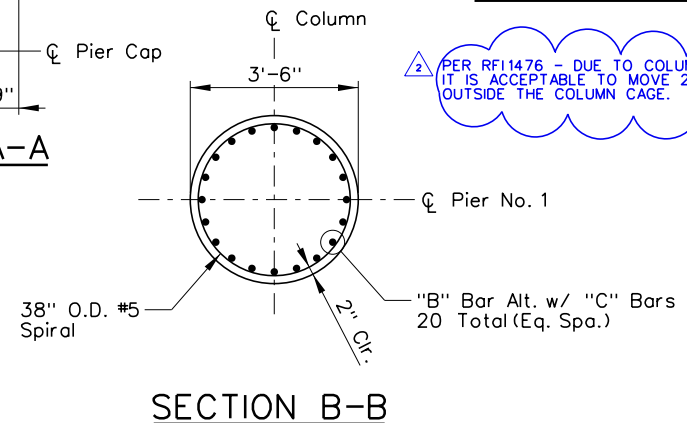
STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1517



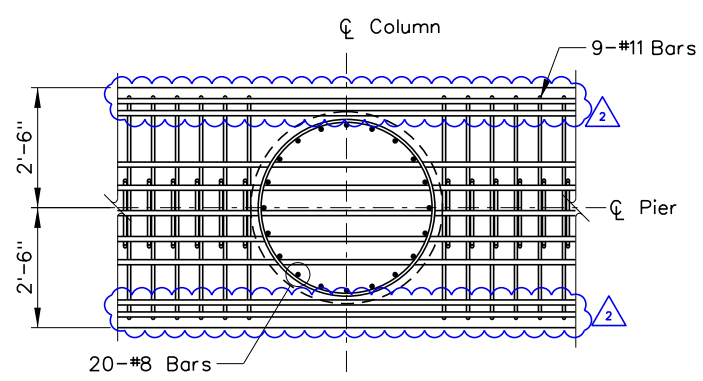
COLUMN ELEVATION
(Drilled Shaft Reinforcing Not Shown)



SECTION A-A
Pier Cap

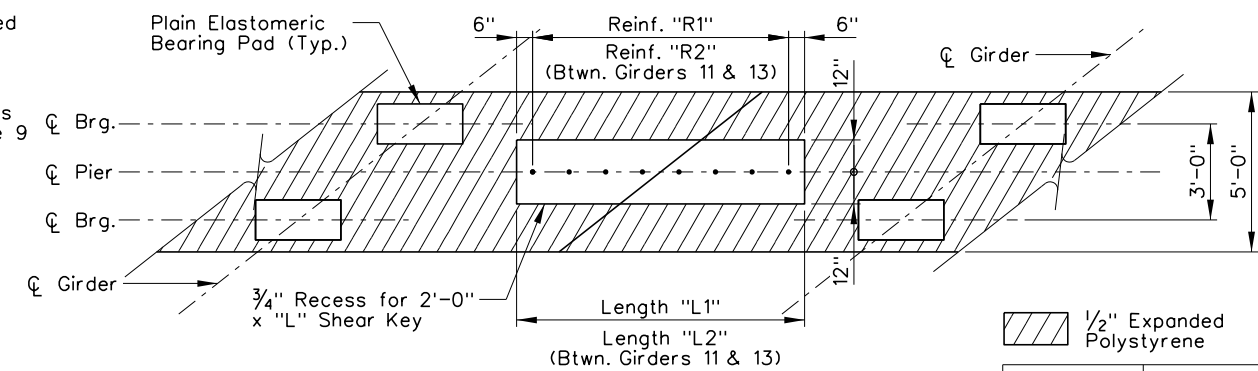


SECTION B-B



CAP THREADING DETAIL

PER RFI1476 - DUE TO COLUMN CAGE POSITION IT IS ACCEPTABLE TO MOVE 2-#11 BARS TO JUST OUTSIDE THE COLUMN CAGE.



PIER 1- PARTIAL PLAN
2'-0" x "L" x 3/4" Min. Shear Key, Ea. Bay (Typ.)

Length "L"	Reinforcing "R"
L1 = 9'-0"	R1 = 9-6080 @ 12"
L2 = 5'-0"	R2 = 5-6080 @ 12"

Column Data Table				
Column	Dim. A	"B" Bars	"C" Bars	Length of Main Spiral *
No. 1	15'-6"	10-8259	10-8239	523'-2"
No. 2	15'-11"	10-8262	10-8242	525'-2"
No. 3	16'-3 3/4"	10-8267	10-8247	527'-2"
No. 4	16'-8 3/4"	10-8270	10-8250	529'-2"
No. 5	17'-1 1/2"	10-8275	10-8255	531'-2"
No. 6	17'-6 1/2"	10-8279	10-8259	533'-2"
No. 7	17'-11 1/2"	10-8283	10-8263	535'-3"
No. 8	18'-4 1/2"	10-8288	10-8268	537'-3"
No. 9	18'-9 3/4"	10-8291	10-8271	539'-4"

* Spiral length does not include lap splices or cap spiral.

Notes

- No splicing of column vertical reinforcing allowed.
- No splicing of column spiral reinforcing allowed in Plastic Hinge Zones, or where indicated.
- Outside of Plastic Hinge Zones, lap splice of spiral reinforcing are permitted. Lap splices of spiral reinforcing shall be 1/2 turns minimum, and shall terminate with a 135 degree hook around a vertical bar at each end.
- Column spiral shall terminate with 1/2 flat turns and a 135 degree hook around a vertical bar.
- Spiral shown may be substituted with welded hoops at an equivalent spacing.
- For drilled shaft detail, see "60 Dia. Drilled Shaft Details - Pier No. 1".
- Length of spiral in the cap is 96'-10" and shall follow Note 4.
- Expanded polystyrene shall be placed on both horizontal and vertical surfaces at steps in pier cap.
- Column bars B and C vary in length. Extend all B and C bars into cap as shown. Variation in bar length occurs at bottom of column cage.

H-933S

NO.	DESCRIPTION	DATE
2	AS-BUILTS - RFI-1476	02/03/2020
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1517	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
MAY 1, 20019

R₂H ENGINEERING, INC.
CONSULTING STRUCTURAL ENGINEERS
2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89002
PHONE (702) 260-7000 FAX (702) 260-7070



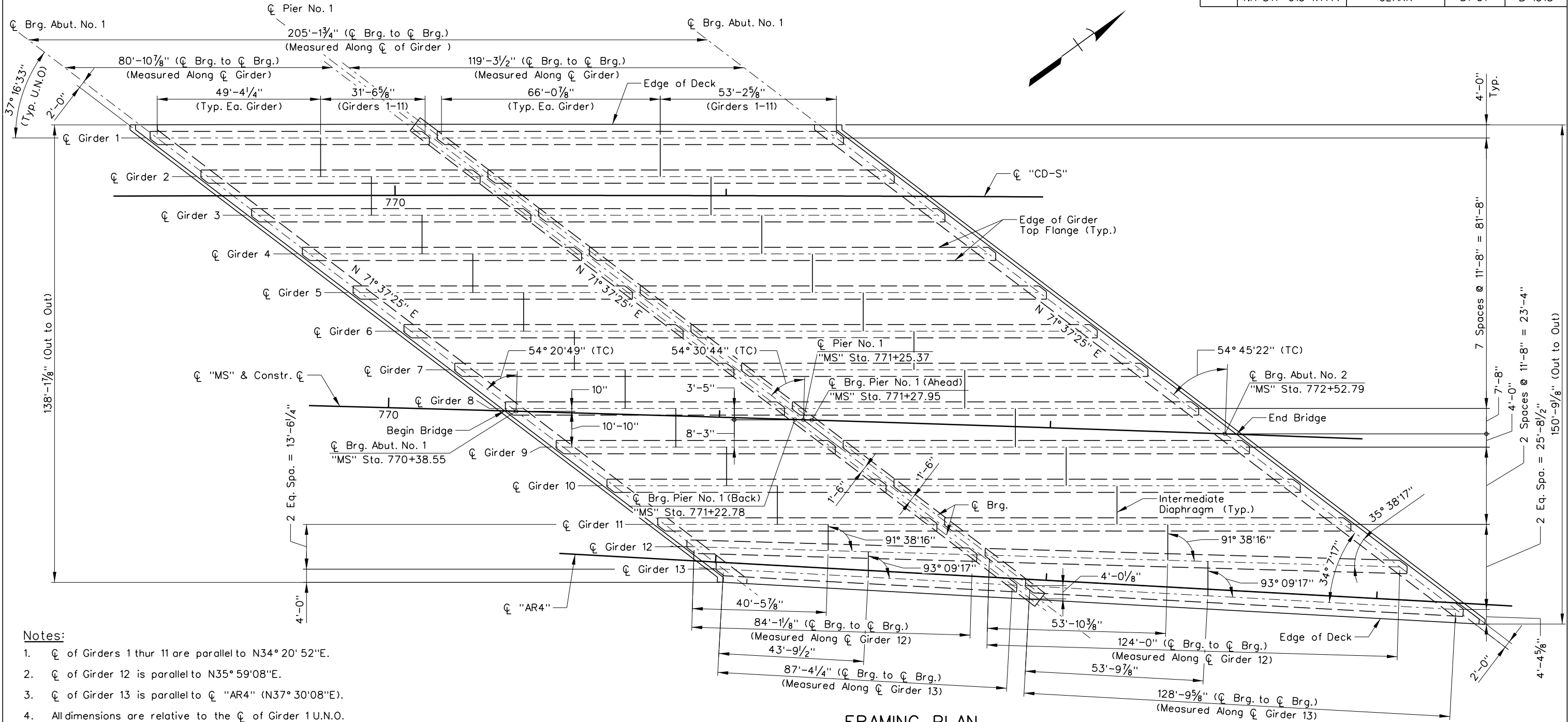
STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/OAKLEY
PIER NO. 1 DETAILS

ATKINS
2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
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Fax: 702/263-7200
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DESIGNED BY: JCH
DRAWN BY: EAS
CHECKED BY: PLK
REVIEWED BY: DAA

2/11/2020 2:51:47 PM pw:\\SUSD036343.watkins.com\\ATKANV01\\Documents\\Roads and Bridges\\Projects\\100047698 NEON FD\\Engineering\\011_Structures\\DGN\\Sheets\\B15 - H-933S\\1-15 over Oakey\\73652-S1-07-R2H-H933S-SHT20B1518.dgn

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1518



Notes:

1. ϕ of Girders 1 thru 11 are parallel to $N34^{\circ}20'52''E$.
2. ϕ of Girder 12 is parallel to $N35^{\circ}59'08''E$.
3. ϕ of Girder 13 is parallel to ϕ "AR4" ($N37^{\circ}30'08''E$).
4. All dimensions are relative to the ϕ of Girder 1 U.N.O.
5. Intermediate Diaphragm dimensions are measured along ϕ of Girder.
6. For Girder Details, see "Prestressed Girder Details" sheets.
7. For Intermediate Diaphragm Details, see "Intermediate Diaphragm Details" sheet.
8. Overhang dimensions are measured normal to ϕ of Girder.
9. 'Out to Out' dimensions are measured at 'Begin Bridge' and 'End Bridge' locations.

FRAMING PLAN

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1518	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/OAKLEY
FRAMING PLAN

DESIGNED BY JCH
DRAWN BY EAS
CHECKED BY PLK
REVIEWED BY DAA

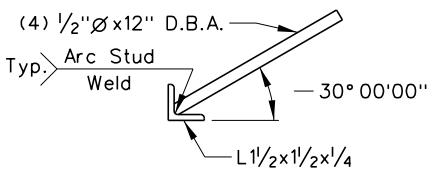
H-933S

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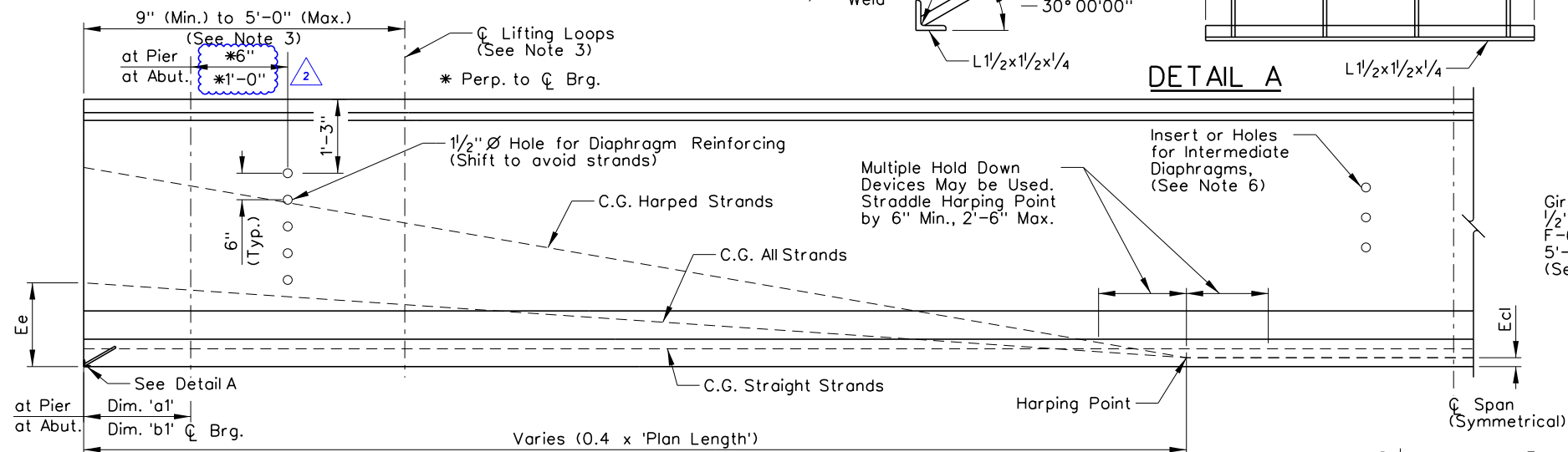
GIRDER SCHEDULE

										Min. Concrete Compressive Strength	Harped		Straight		Locations of C.G. Strands	
Span	Girder	Girder Type	θ1 / θ2 (Degrees)	L1 / L2 (Length)	Dim. 'a1'	Dim. 'b1'	Plan Length	f'ci ksi	f'cd ksi	Number of Strands	Jacking Force (kips)	Number of Strands	Jacking Force (kips)	Prestressed Force After all Losses (kips)	Ee (inch)	Ecl (inch)
2	1-11	CA WF66	52.724/52.724	27 1/4" / 27 1/4"	2'-1 1/2"	1'-3 1/2"	122'-8 1/2"	5.1	10	4	175.8	36	1581.9	1379.9	9.20	3.40
2	12	CA WF66	54.362/54.362	29" / 29"	2'-2 3/8"	1'-4"	127'-6 3/8"	5.1	10	4	175.8	36	1581.9	1415.5	9.20	3.40
2	13	CA WF66	55.879/55.879	30 5/8" / 30 5/8"	2'-3 1/4"	1'-4 5/8"	132'-5 1/2"	5.1	10	6	263.7	36	1581.9	1476.8	11.55	3.55

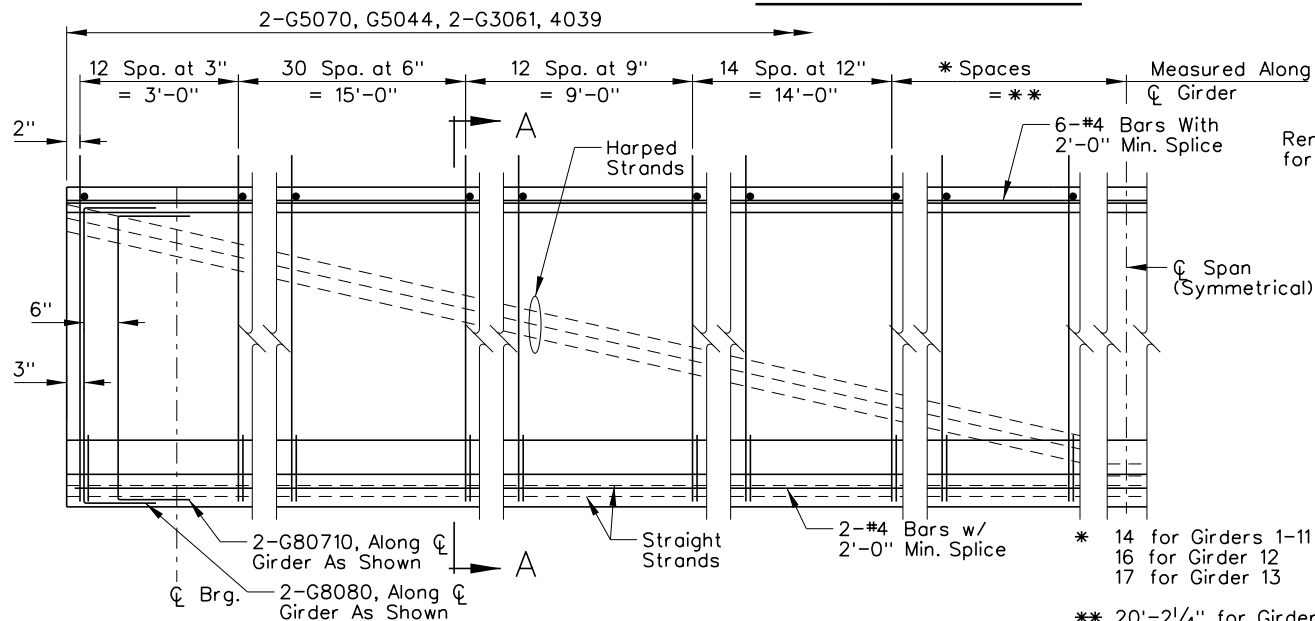
D = Total Girder depth based on Girder Type. For example "D" for CAWF66 = 66"
Ee = C.G. of all strands at end of girder
Ecl = C.G. of all strands at centerline of girder



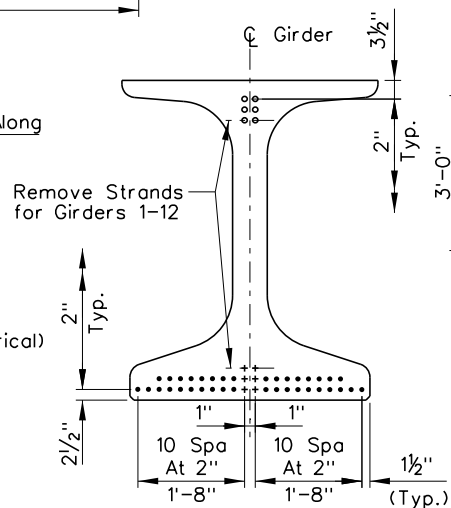
DETAIL A



GIRDER ELEVATION



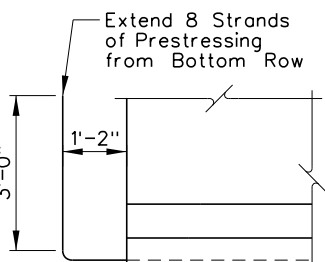
TYPICAL END ELEVATION



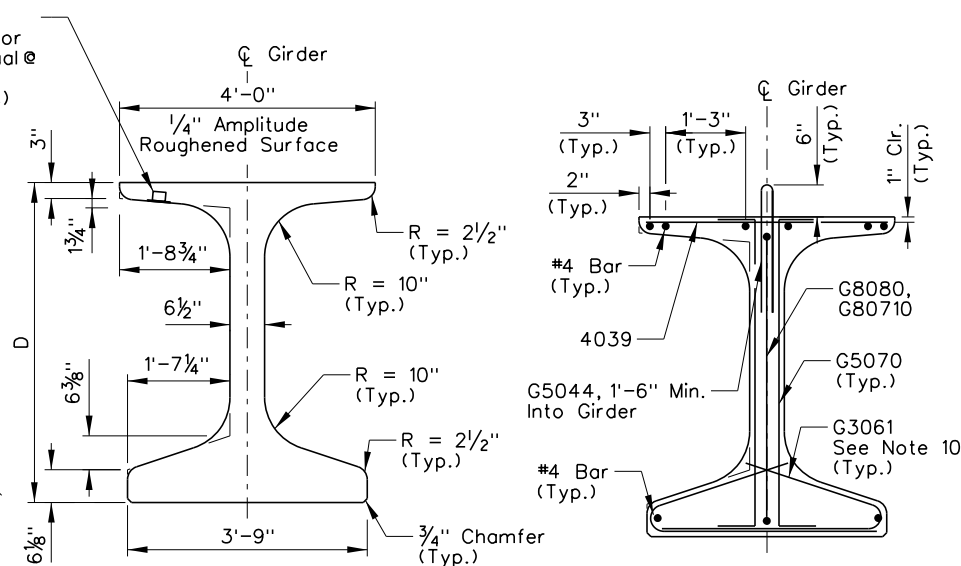
STRAND PATTERN

- Denotes Straight Strands
 - Denotes Harp Strands at Ends
 - + Denotes Harp Strands At Midspan
- 14 for Girders 1-11
16 for Girder 12
17 for Girder 13
- ** 20'-2 1/4" for Girders 1-11
22'-7 1/4" for Girder 12
25'-0 3/4" for Girder 13

Girder No. 4:
1/2" Ø Dayton Superior
F-62 Insert or Equal @
5'-0" SPA. (Max.)
(See Lighting Plans)

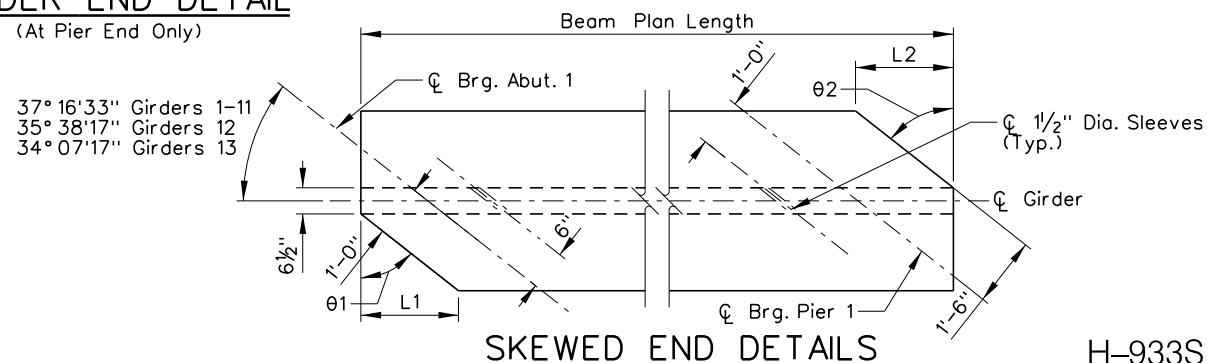


GIRDER END DETAIL
(At Pier End Only)



TYPICAL SECTION

SECTION A-A



SKEWED END DETAILS

H-933S

DESIGN UNIT S1-07

AS-BUILT DRAWING

MAY 1, 20019



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15 SOAKLEY

PRESTRESSED GIRDER DETAILS
SPAN 2

ATKINS

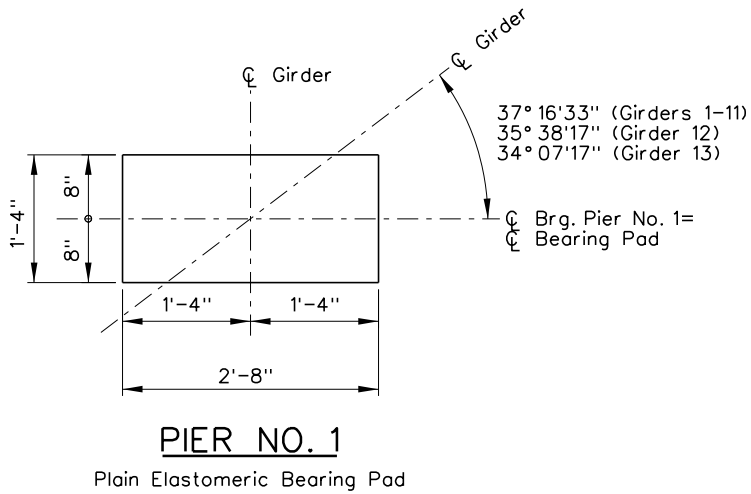
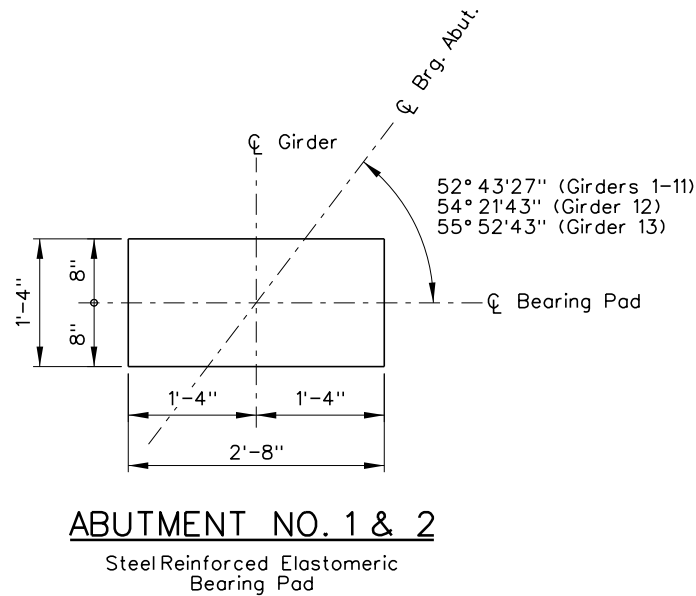
2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
www.atkinsglobal.com

DESIGNED BY JCH
DRAWN BY EAS
CHECKED BY PLK
REVIEWED BY DAA

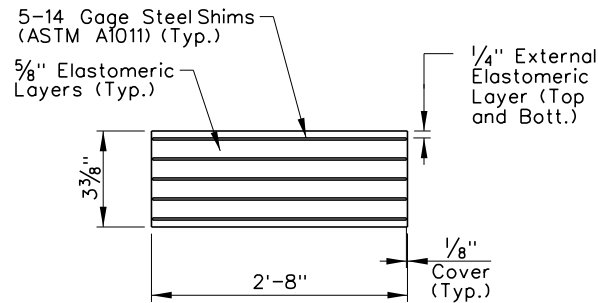
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1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1520	02/03/17

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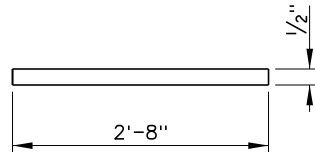
STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1521



BEARING PLAN DETAILS



STEEL REINFORCED ELASTOMERIC BEARING PAD ELEVATION



PLAIN ELASTOMERIC BEARING PAD ELEVATION

- Notes:
- Bearing elastomer compound shall be virgin neoprene rubber classified as low-temperature grade 3, with Shore A Durometer hardness of 50.
 - Steel laminates shall conform to ASTM A1011M Grade 250 (A1011 Grade 36).
 - Steel reinforced bearing pad design parameters:
Method = A
Design Load = 483 kips
Durometer Hardness = 50
Shear Modulus, Gmin = 0.095 ksi, Gmax = 0.200 ksi
 - Plain elastomeric bearing pad design parameters:
Method = A
Design Load = 207 kips
Durometer Hardness = 50
Shear Modulus, Gmin = 0.095 ksi, Gmax = 0.200 ksi
 - Longitudinal displacement includes the effect of temperature and shrinkage.

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1521	02/03/17
NO.	DESCRIPTION	DATE

H-933S

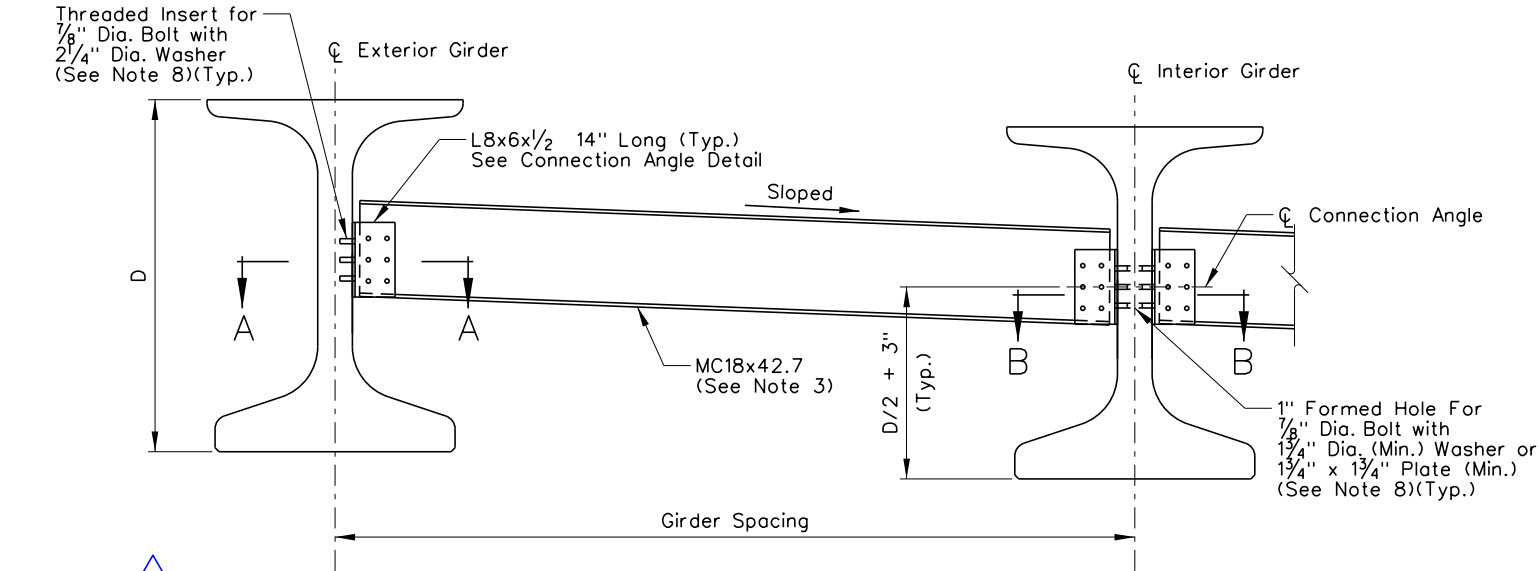
DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019



STATE OF NEVADA DEPARTMENT OF TRANSPORTATION I-15 SOAKEY BEARING PAD DETAILS	
ATKINS	DESIGNED BY JCH DRAWN BY EAS CHECKED BY PLK REVIEWED BY DAA

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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1522

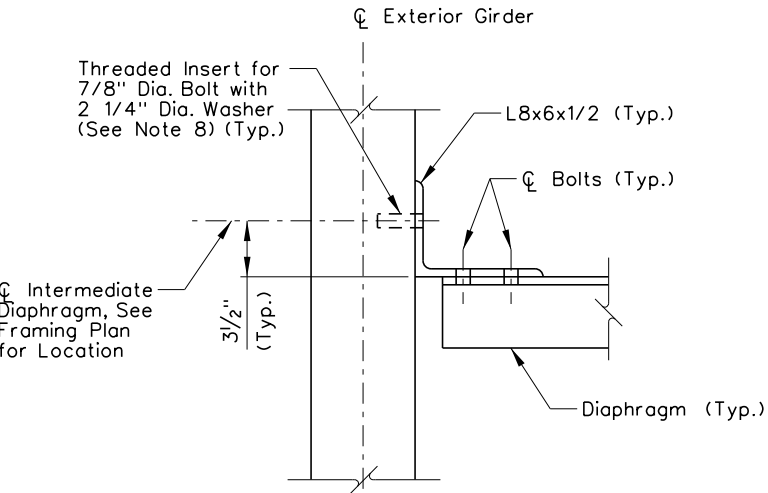


2

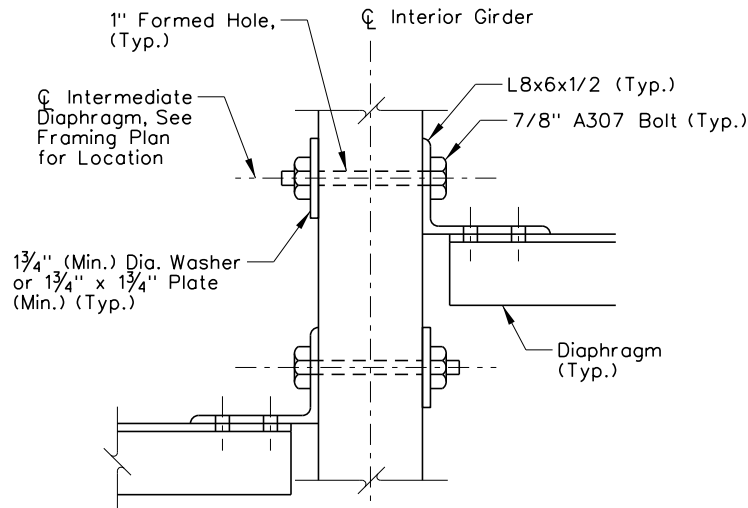
NCR 378 - THREADED INSERTS WERE PLACED INCORRECTLY IN OUTSIDE GIRDER 1, 7/8" THREADED ROD WERE DRILLED AND EPOXIED AS ANCHORS.

TYPICAL INTERMEDIATE DIAPHRAGM

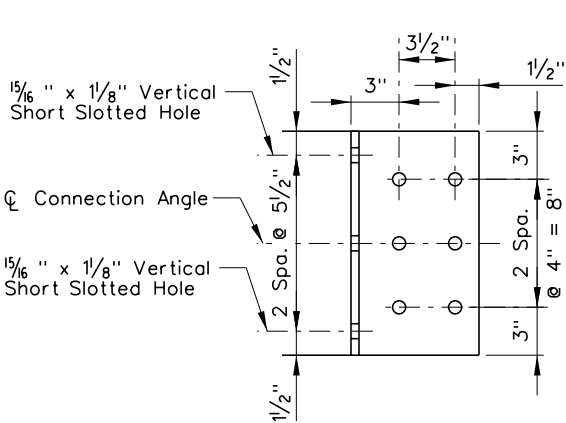
- Notes:
- All intermediate diaphragms shall be placed perpendicular to the girders. Diaphragm connections to be located on the girder web.
 - All steel shall be ASTM A709 Grade 50 and galvanized in accordance with ASTM A123.
 - Fabricate intermediate diaphragms with ends parallel to girder webs.
 - Use ASTM A307 Grade A 7/8" Dia. bolts for steel to concrete connections. Use ASTM A325 3/4" Dia. high strength bolts for steel to steel connections.
 - Washers shall be ASTM F436. All bolts, nuts, and washers shall be galvanized in accordance with ASTM A153.
 - Field drilling of diaphragm connection angles is permitted. All other holes shall be shop drilled.
 - 1/2" bent plate of equal dimensions may be substituted for MC18x42.7.
 - Place threaded inserts/formed holes perpendicular to girder web. Cast threaded inserts for bolts into exterior girders. The threaded inserts shall provide a minimum ultimate tensile capacity of 11 kips.
 - Galvanize threaded inserts for exterior girders in accordance with ASTM A153.
 - Position threaded inserts/formed holes to avoid interference with prestressing strands.



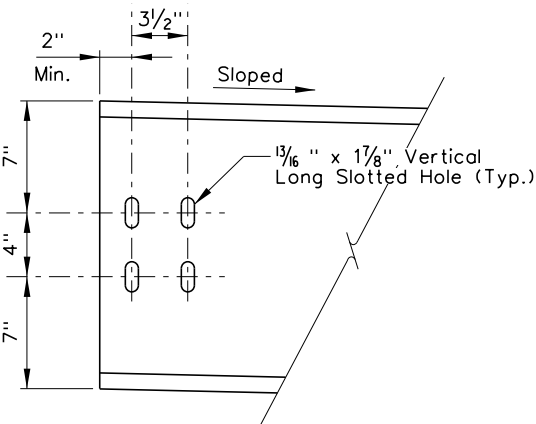
SECTION A-A



SECTION B-B



CONNECTION ANGLE



DIAPHRAGM CONNECTION

NO.	DESCRIPTION	DATE
2	AS-BUILTS - NCR 378	05/01/19
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1522	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
MAY 1, 20019

R₂H ENGINEERING, INC.
CONSULTING STRUCTURAL ENGINEERS
2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89162
PHONE (702) 260-7000 FAX (702) 260-7070

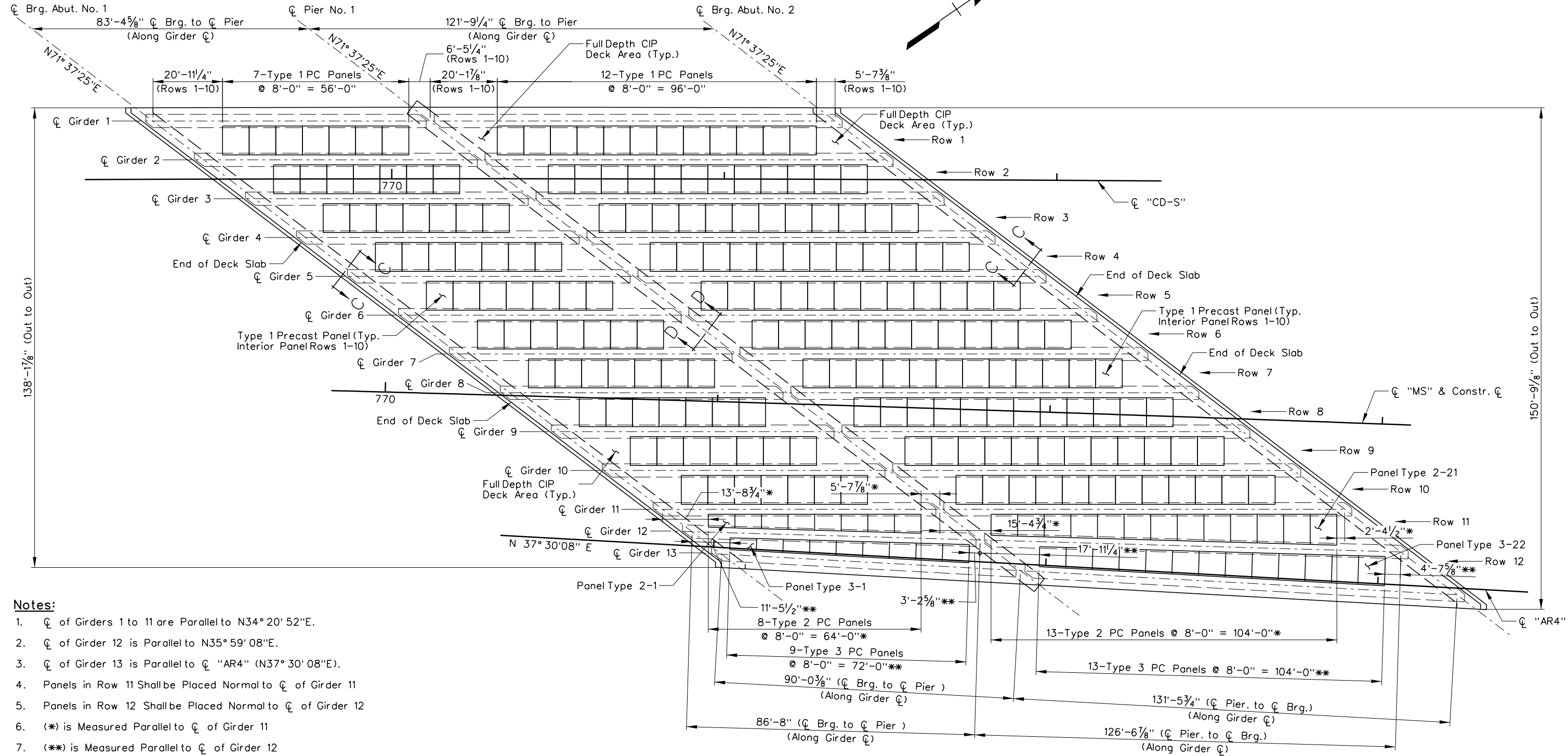


STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15 SOAKY
INTERMEDIATE
DIAPHRAGM DETAILS

ATKINS
2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
www.atkinsglobal.com
DESIGNED BY JCH
DRAWN BY EAS
CHECKED BY PLK
REVIEWED BY DAA

H-933S

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1523



- Notes:**
1. ϕ of Girders 1 to 11 are Parallel to N34° 20' 52"E.
 2. ϕ of Girder 12 is Parallel to N35° 59' 08"E.
 3. ϕ of Girder 13 is Parallel to ϕ "AR4" (N37° 30' 08"E).
 4. Panels in Row 11 Shall be Placed Normal to ϕ of Girder 11
 5. Panels in Row 12 Shall be Placed Normal to ϕ of Girder 12
 6. (*) is Measured Parallel to ϕ of Girder 11
 7. (**) is Measured Parallel to ϕ of Girder 12
 8. See "CIP Deck Details at Abutment" Sheet for Section C-C
 9. See "CIP Deck Details at Pier" Sheet for Section D-D

PANEL LAYOUT PLAN

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1523	02/03/17

H-933S

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15 SOAKY
PRECAST PANELS PLAN

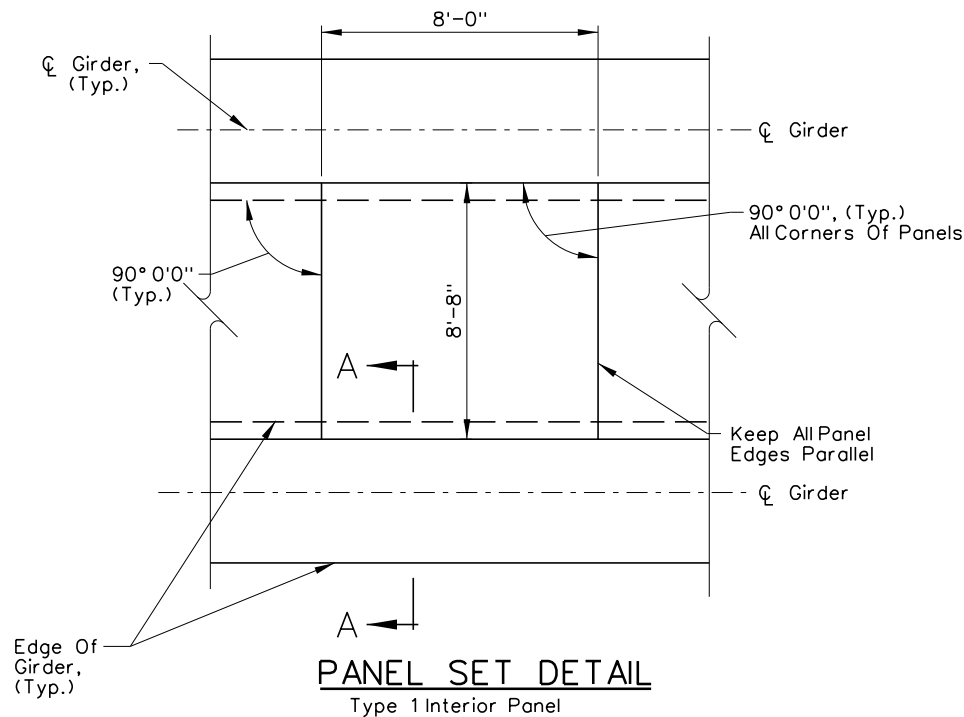
DESIGNED BY: JCH
DRAWN BY: EAS
CHECKED BY: PLK
REVIEWED BY: DAA

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Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
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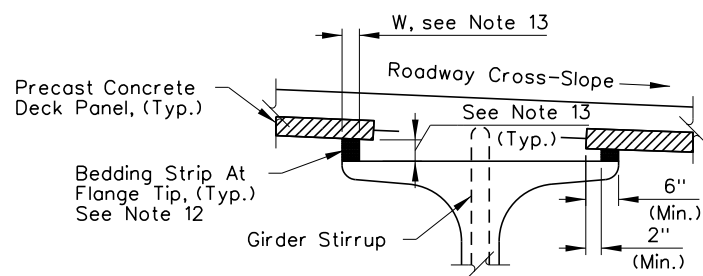
ATKINS

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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1524



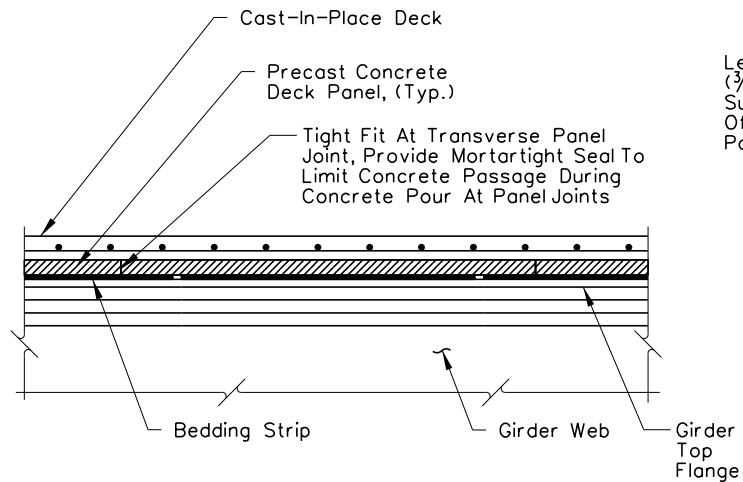
PANEL SET DETAIL
Type 1 Interior Panel



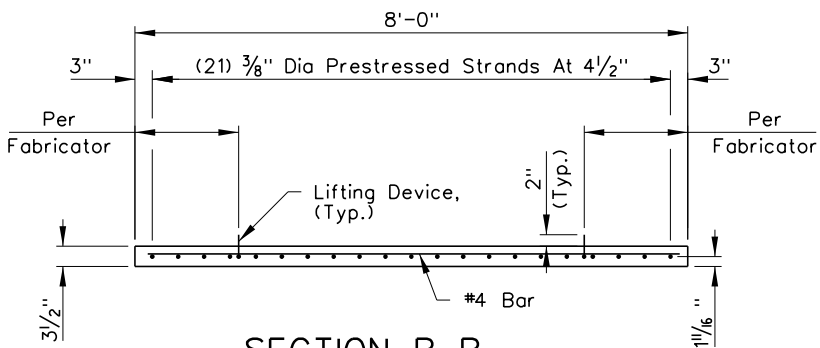
SECTION A-A

Notes:

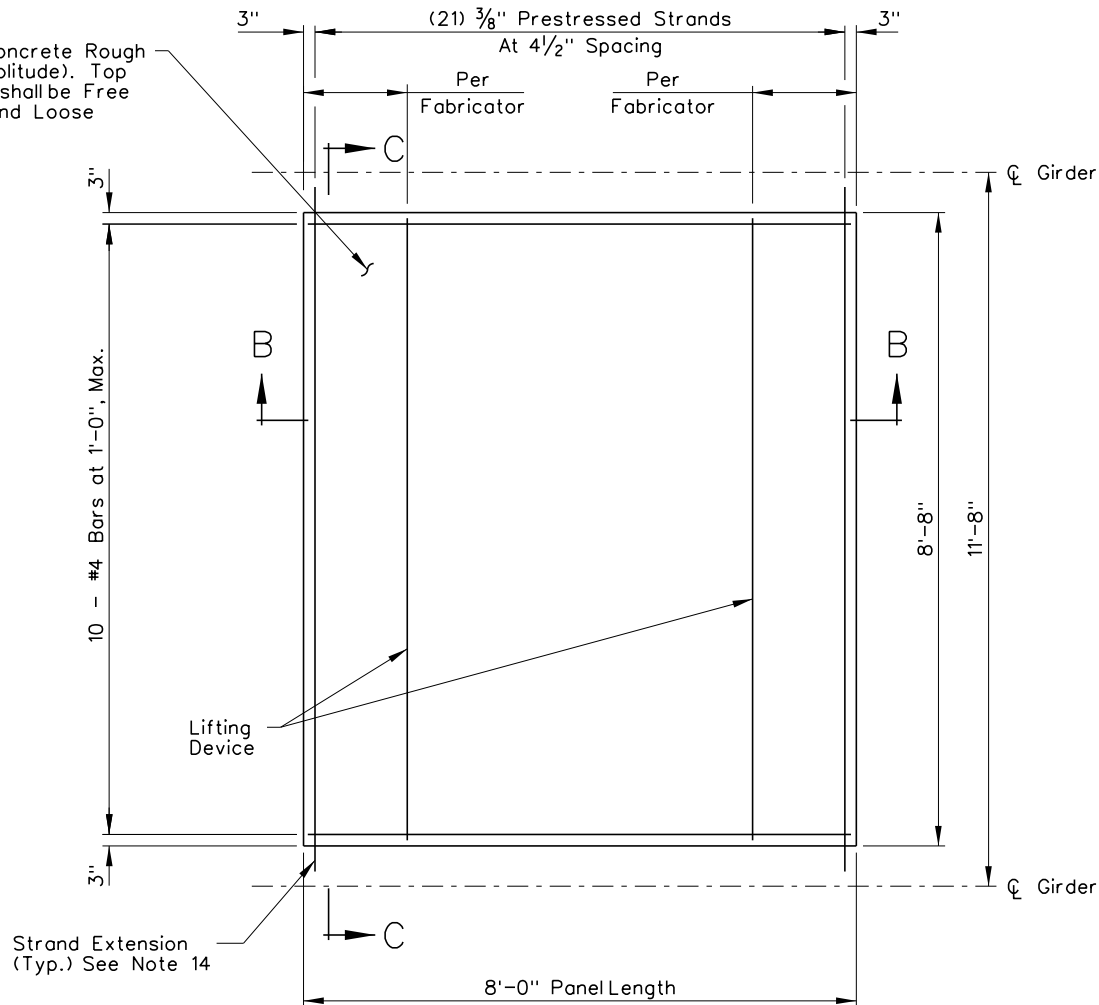
- Use $f'_{ci} = 4500$ psi and minimum 28 days strength $f'_c = 6000$ psi for precast deck panel concrete. Precast deck panels must have a minimum strength of 5000 psi at time of the deck pour.
- Use $3/8$ " dia low relaxation strands meeting the requirements of AASHTO M203 Grade 270. Minimum jacking force per strand (ff) is 17.2 kips. Estimated final force per strand (ff) is 13.9 kips.
- Installation of lifting device is mandatory. Use all four lifting devices simultaneously for lifting the panels. Provide details of lifting devices on the working drawings.
- Remove all construction debris from girders and panels prior to deck pour. Provide adequate vibration to fill voids under panels.
- Maintain the stability of the panels on the girders. Support erected panels uniformly along the length of the panel. Provide the total slab thickness shown on the superstructure details.
- Do not weld rebar.
- See "Deck Plan" and "Deck Sections" for longitudinal and transverse reinforcement over panels.
- Sawing of panels is acceptable.



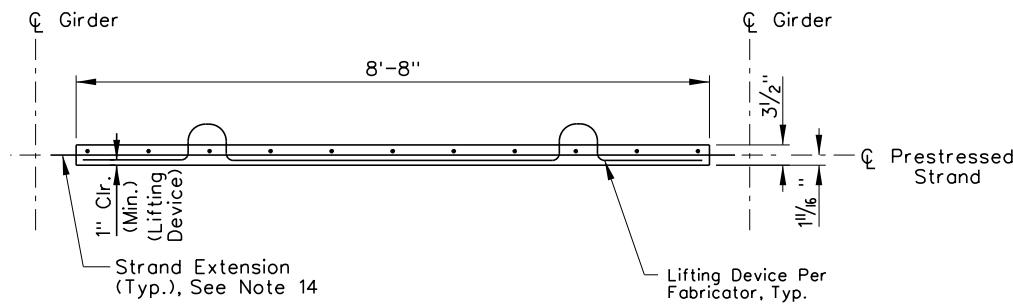
SECTION THRU TRANSVERSE PANEL JOINT



SECTION B-B



PLAN



SECTION C-C

- Panel thickness tolerance is $+1/4$ " to $-1/8$ ".
- Concentrated construction loads must not exceed 700 lbs unless the load is distributed to less than 117 psf. Total loads applied to any panel during construction must not exceed 117 psf.
- Bottom flexural cracks, sags greater than $1/2$ ", or cambers greater than $1/2$ " will be considered evidence of mishandling, overloading, or exceeding allowable tolerance, and are cause for rejecting panels at the engineer's discretion.
- Bedding strip shall be high-density extruded polystyrene with a minimum of 24.7 psi compression resistance at 5% compression deformation.
- The anticipated height of the bedding strip varies from 1" min to $3 1/2$ " max. Notify the engineer if the thickness of the bedding strip exceeds these limits. The maximum H/W ratio for bedding strips is 2.0.
- Extend strand approximately 4" to 6" from edge of panel, typically where possible. If conflicts occur, strand may be cut flush with edge of panel.

H-933S

NO.	DESCRIPTION	DATE
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0	RFC - 73652-S1-07-R2H-H933S-SHT20B1524	02/03/17

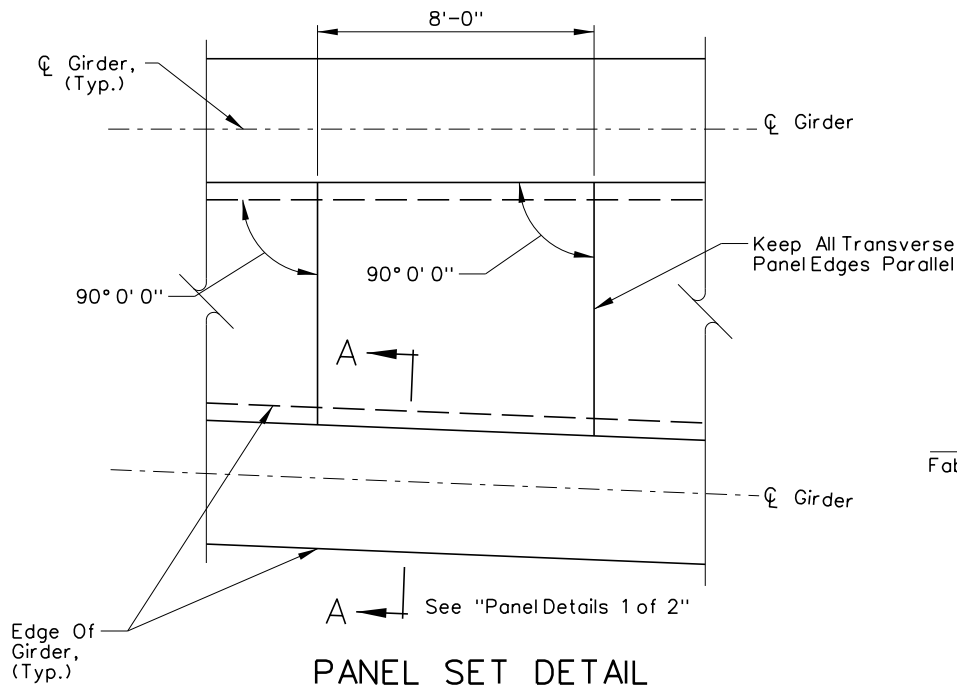
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JANUARY 04, 2019

R2H ENGINEERING, INC.
CONSULTING STRUCTURAL ENGINEERS
2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89162
PHONE (702) 260-7000 FAX (702) 260-7070



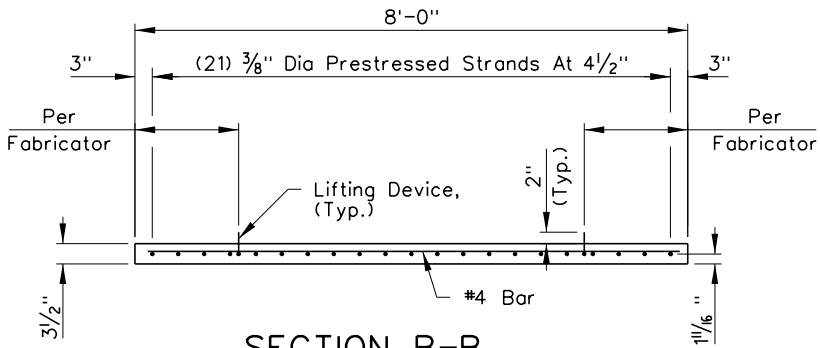
STATE OF NEVADA DEPARTMENT OF TRANSPORTATION I-15 SOAKY PANEL DETAILS 1 OF 2 PANEL TYPE 1			
ATKINS		DESIGNED BY	JCH
		DRAWN BY	EAS
		CHECKED BY	PLK
		REVIEWED BY	DAA

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1525



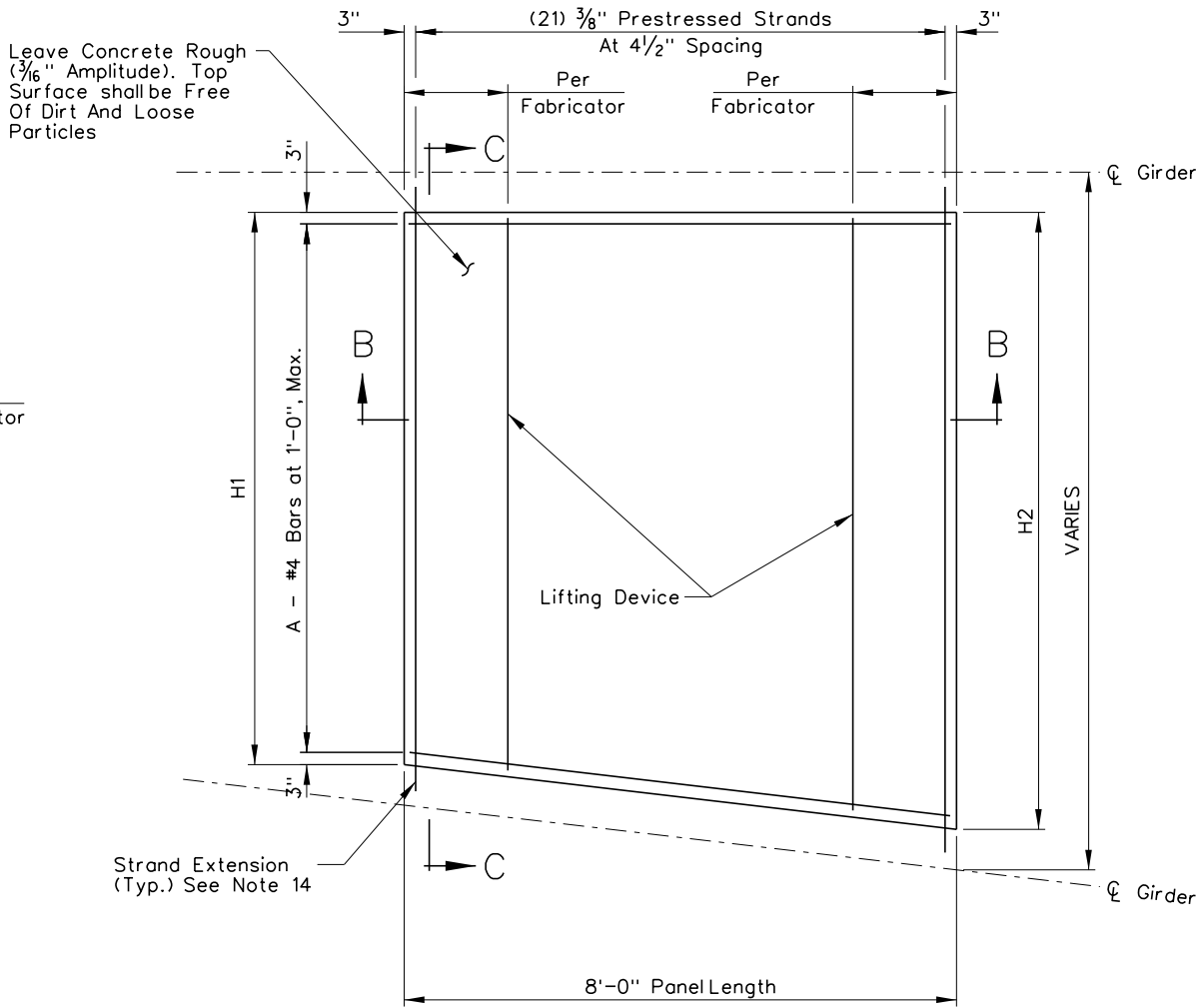
PANEL SET DETAIL
Type 2 and Type 3 Interior Panels

Type 2 Panels			
Panel Name	H1	H2	A
2-1	3'-10 3/4"	4'-1 1/2"	4
2-2	4'-1 1/2"	4'-4 1/4"	4
2-3	4'-4 1/4"	4'-7"	5
2-4	4'-7"	4'-9 3/4"	5
2-5	4'-9 3/4"	5'-0 1/2"	5
2-6	5'-1/2"	5'-3 1/4"	5
2-7	5'-3 1/4"	5'-5 15/16"	5
2-8	5'-5 15/16"	5'-8 11/16"	6
2-9	6'-3 15/16"	6'-6 11/16"	7
2-10	6'-6 11/16"	6'-9 7/16"	7
2-11	6'-9 7/16"	7'-3/16"	7
2-12	7'-0 3/16"	7'-2 15/16"	7
2-13	7'-2 15/16"	7'-5 5/8"	7
2-14	7'-5 5/8"	7'-8 3/8"	8
2-15	7'-8 3/8"	7'-11 1/8"	8
2-16	7'-11 1/8"	8'-1 7/8"	8
2-17	8'-1 7/8"	8'-4 5/8"	8
2-18	8'-4 5/8"	8'-7 3/8"	9
2-19	8'-7 3/8"	8'-10 1/8"	9
2-20	8'-10 1/8"	9'-0 7/8"	9
2-21	9'-0 7/8"	9'-3 5/8"	9

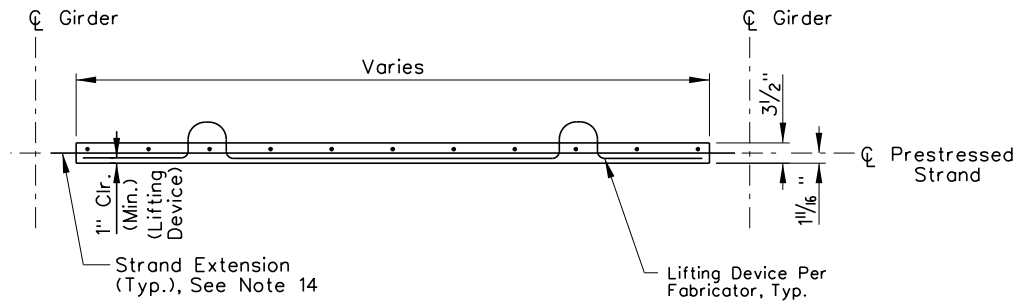


SECTION B-B

Type 3 Panels			
Panel Name	H1	H2	A
3-1	3'-6 13/16"	3'-9 5/16"	4
3-2	3'-9 5/16"	3'-11 7/8"	4
3-3	3'-11 7/8"	4'-2 7/16"	4
3-4	4'-2 7/16"	4'-4 15/16"	4
3-5	4'-4 15/16"	4'-7 1/2"	5
3-6	4'-7 1/2"	4'-10 1/16"	5
3-7	4'-10 1/16"	5'-5/8"	5
3-8	5'-0 5/8"	5'-3 1/8"	5
3-9	5'-3 1/8"	5'-5 11/16"	5
3-10	6'-3/8"	6'-2 15/16"	6
3-11	6'-2 15/16"	6'-5 1/2"	6
3-12	6'-5 1/2"	6'-8"	7
3-13	6'-8"	6'-10 9/16"	7
3-14	6'-10 9/16"	7'-1 1/8"	7
3-15	7'-1 1/8"	7'-3 5/8"	7
3-16	7'-3 5/8"	7'-6 3/16"	8
3-17	7'-6 3/16"	7'-8 3/4"	8
3-18	7'-8 3/4"	7'-11 1/4"	8
3-19	7'-11 1/4"	8'-1 13/16"	8
3-20	8'-1 13/16"	8'-4 3/8"	8
3-21	8'-4 3/8"	8'-6 15/16"	9
3-22	8'-6 15/16"	8'-9 7/16"	9



PLAN



SECTION C-C

H-933S

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1525	02/03/17
NO.	DESCRIPTION	DATE

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JANUARY 04, 2019

R₂H ENGINEERING, INC.
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2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89052
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STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15 SOAKY
PANEL DETAILS 2 OF 2
PANEL TYPE 2

ATKINS
2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
www.atkinsglobal.com

DESIGNED BY JCH
DRAWN BY EAS
CHECKED BY PLK
REVIEWED BY DAA

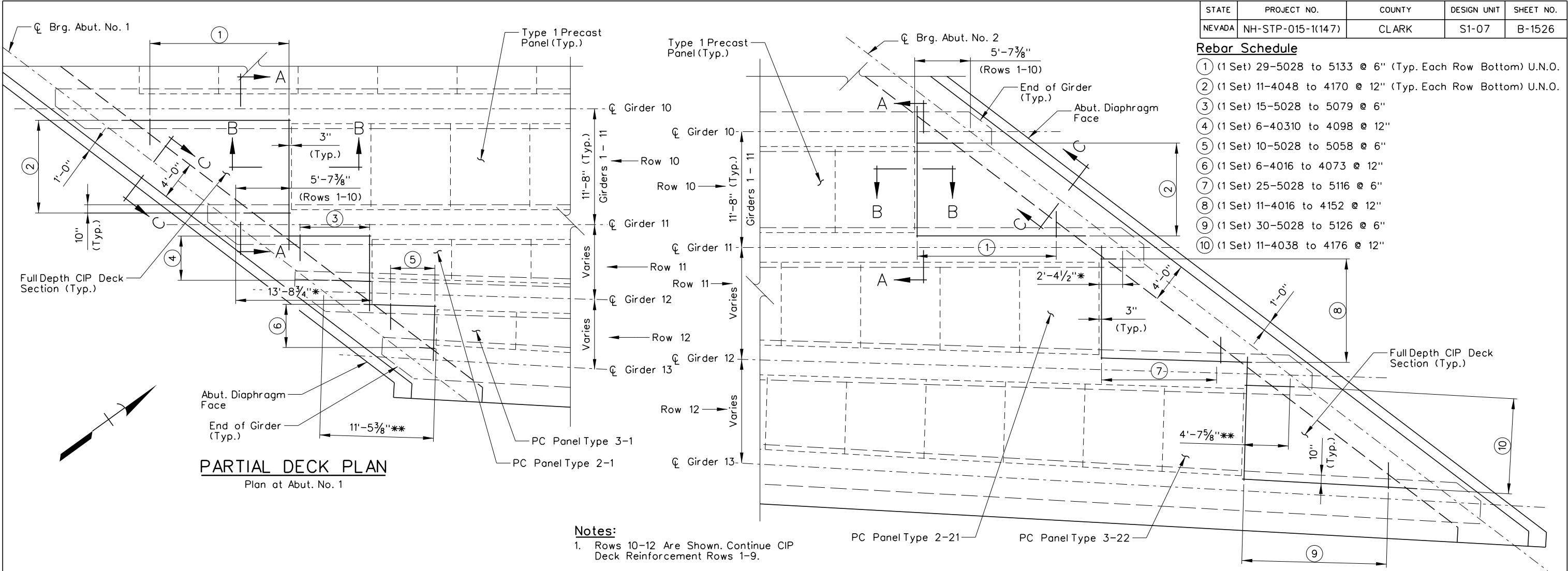
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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1526

Rebar Schedule

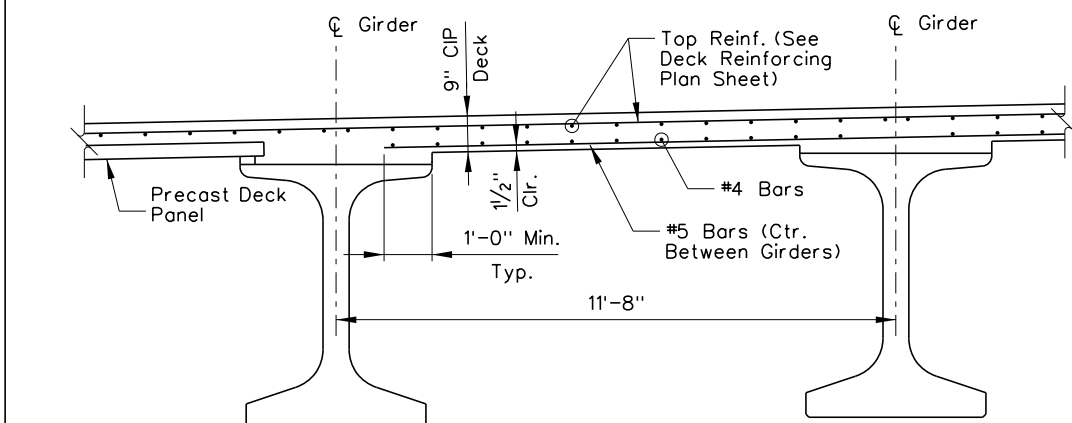
- ① (1 Set) 29-5028 to 5133 @ 6" (Typ. Each Row Bottom) U.N.O.
- ② (1 Set) 11-4048 to 4170 @ 12" (Typ. Each Row Bottom) U.N.O.
- ③ (1 Set) 15-5028 to 5079 @ 6"
- ④ (1 Set) 6-40310 to 4098 @ 12"
- ⑤ (1 Set) 10-5028 to 5058 @ 6"
- ⑥ (1 Set) 6-4016 to 4073 @ 12"
- ⑦ (1 Set) 25-5028 to 5116 @ 6"
- ⑧ (1 Set) 11-4016 to 4152 @ 12"
- ⑨ (1 Set) 30-5028 to 5126 @ 6"
- ⑩ (1 Set) 11-4038 to 4176 @ 12"



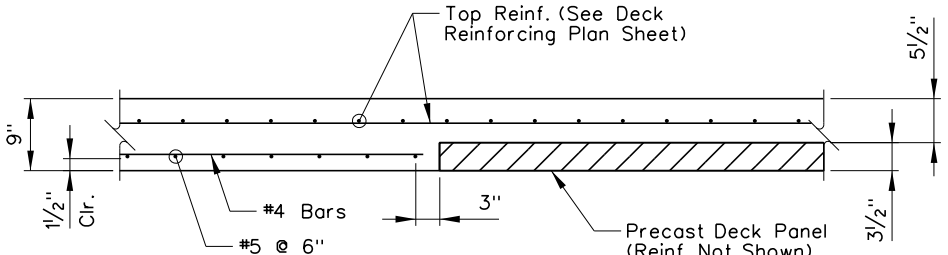
PARTIAL DECK PLAN
Plan at Abut. No. 1

- Notes:**
- 1. Rows 10-12 Are Shown. Continue CIP Deck Reinforcement Rows 1-9.
 - 2. Bottom Reinforcement is Shown. For Top Reinforcement, See "Deck Reinforcing Plan" Sheet.
 - 3. (*) Is Measured Parallel to Girder 11
 - 4. (**) Is Measured Parallel to Girder 12

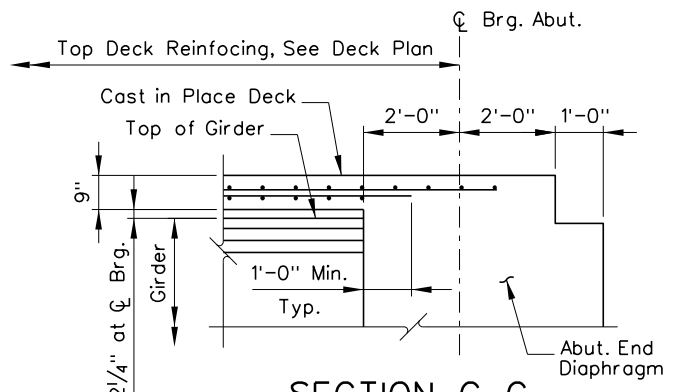
PARTIAL DECK PLAN
Plan at Abut. No. 2



SECTION A-A



SECTION B-B



SECTION C-C

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1526	02/03/17

DESIGN UNIT S1-07

AS-BUILT DRAWING

JANUARY 04, 2019

R₂H ENGINEERING, INC.
CONSULTING STRUCTURAL ENGINEERS
2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89162
PHONE (702) 260-7000 FAX (702) 260-7070

PROJECT NEON
Las Vegas

NEVADA DOT
SAFE AND CONNECTED

Kiewit

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15 OAKLEY

CIP DECK DETAILS AT ABUTMENTS

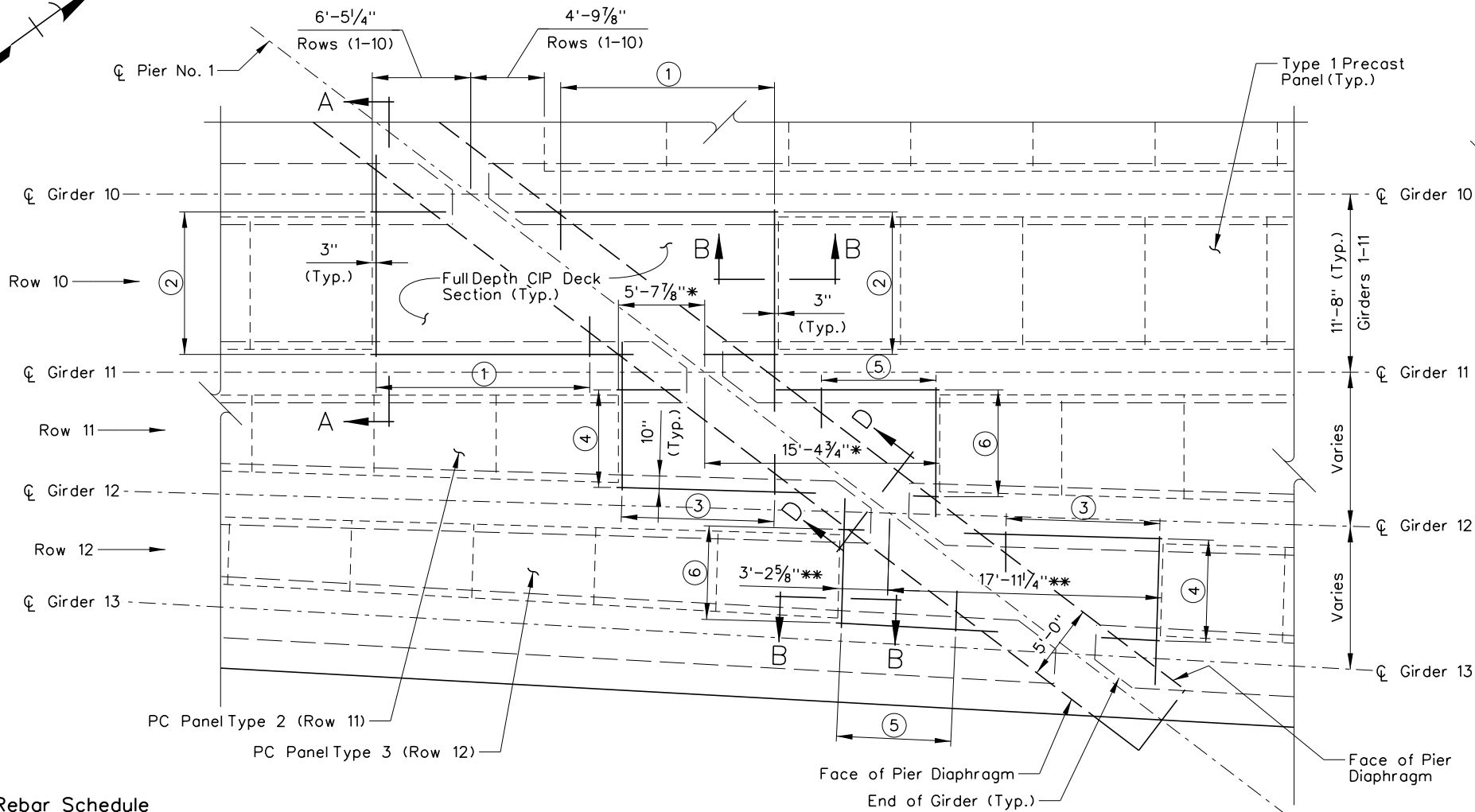
ATKINS

2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
www.atkinsglobal.com

DESIGNED BY: JCH
DRAWN BY: EAS
CHECKED BY: PLK
REVIEWED BY: DAA

H-933S

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1527



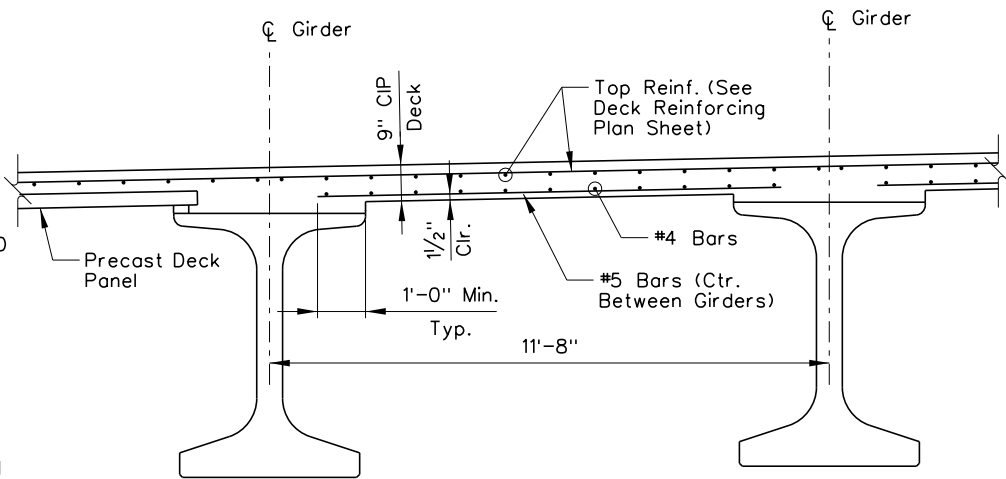
Rebar Schedule

- ① (1 Set) 29-5028 To 5133 @ 6" Spa. (Typ. Each Row Bottom) U.N.O.
- ② (1 Set) 11-4048 To 4170 @ 12" Spa. (Typ. Each Row Bottom) U.N.O.
- ③ (1 Set) 21-5028 To 5099 @ 6" Spa.
- ④ (1 Set) 8-40310 To 41210 @ 12" Spa.
- ⑤ (1 Set) 16-5028 To 5086 @ 6" Spa.
- ⑥ (1 Set) 8-4016 To 4106 @ 12" Spa.

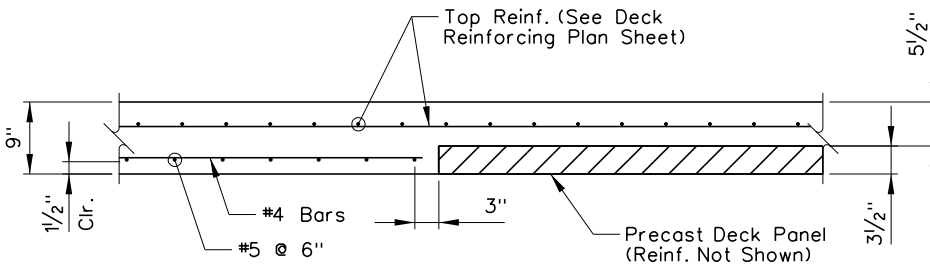
PARTIAL DECK PLAN
Plan at Pier No. 1

Notes:

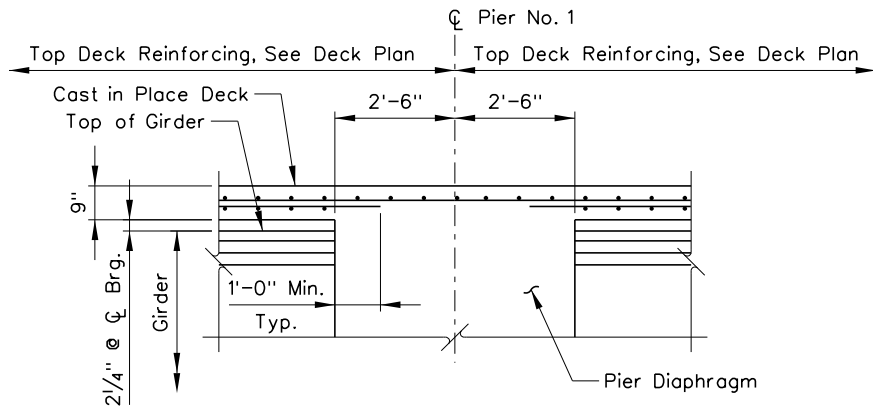
- 1. Rows 10-12 Are Shown. Continue CIP Deck Reinforcement Rows 1-9.
- 2. Bottom Reinforcement is Shown. For Top Reinforcement, See "Deck Reinforcing Plan" Sheet.
- 3. (*) Is Measured Parallel to Girder 11
- 4. (**) Is Measured Parallel to Girder 12



SECTION A-A



SECTION B-B



SECTION D-D

H-933S

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1527	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019

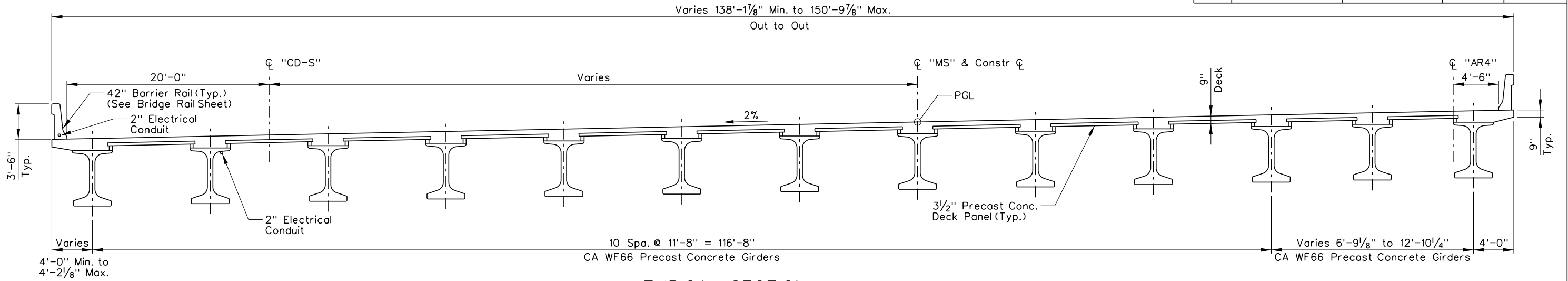
R₂H ENGINEERING, INC.
CONSULTING STRUCTURAL ENGINEERS
2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89162
PHONE (702) 260-7000 FAX (702) 260-7070



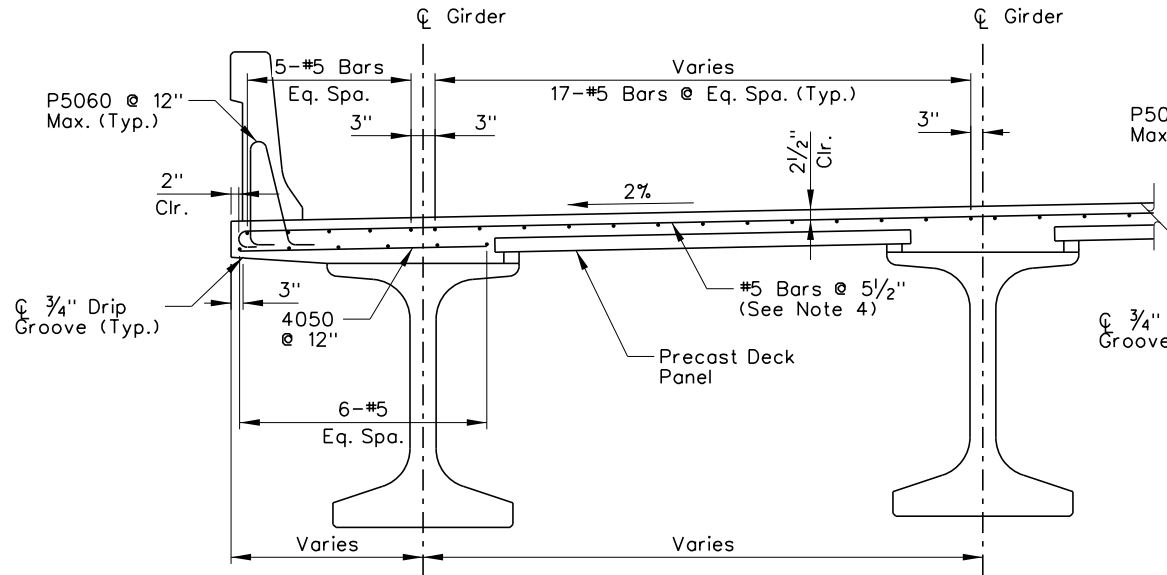
STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15 SOAKY
CIP DECK DETAILS
AT PIER

DESIGNED BY JCH
DRAWN BY EAS
CHECKED BY PLK
REVIEWED BY DAA

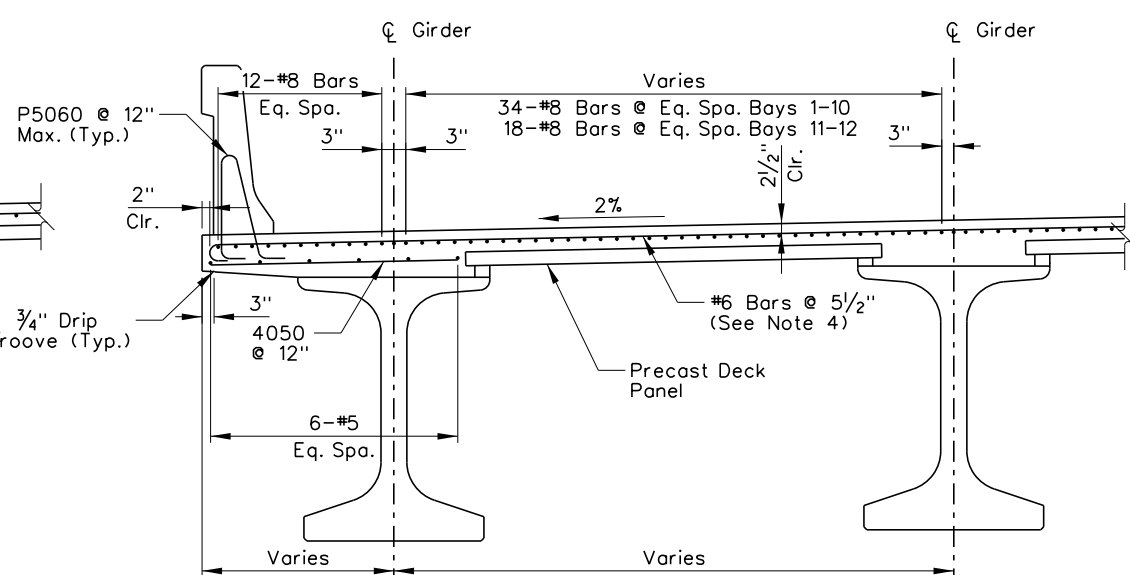
STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1529



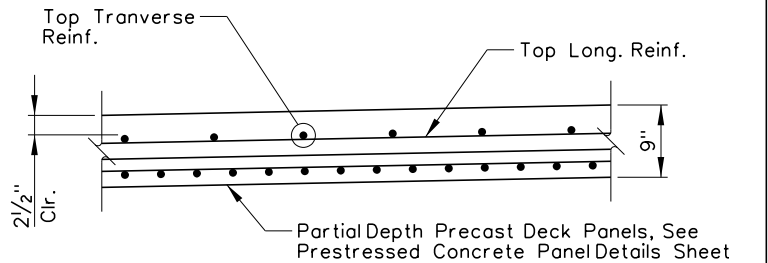
TYPICAL SECTION



PARTIAL SECTION AT ABUTMENT



PARTIAL SECTION AT PIER



TYPICAL LONGITUDNAL DECK SECTION

Notes:

- For General notes, see General Notes and Typical Section sheet.
- For Deck Plan, see Deck Plan sheet.
- All horizontal dimensions shown are perpendicular to Construction ϕ .
- Due to the severe substructure skew angle, the transverse bars of the typical sections are not fully representative. See 'Deck Reinforcing Plan' sheet for clarification of transverse reinforcement placement.

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1529	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019

R₂H ENGINEERING, INC.
CONSULTING STRUCTURAL ENGINEERS
2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89162
PHONE (702) 260-7000 FAX (702) 260-7070



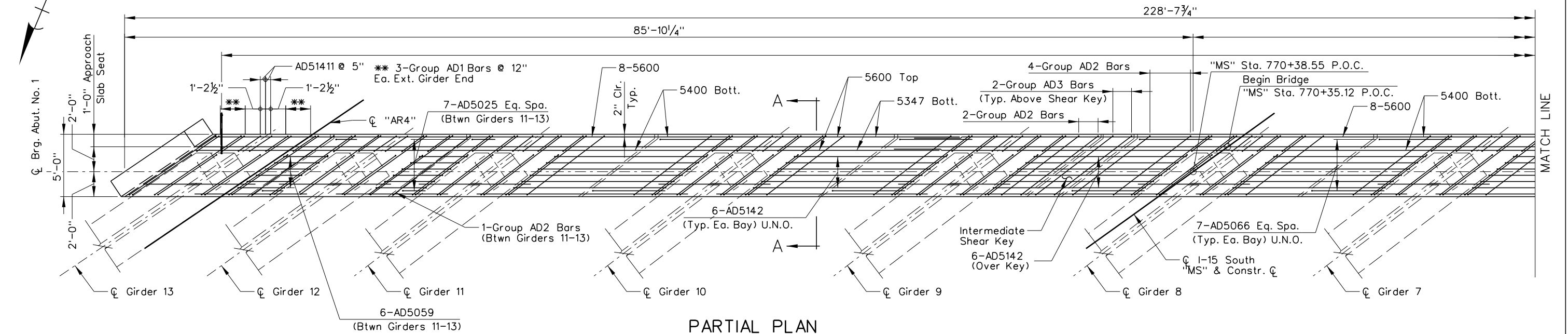
STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15 SOAKY
DECK SECTION
AND DETAILS

ATKINS
2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
www.atkinsglobal.com

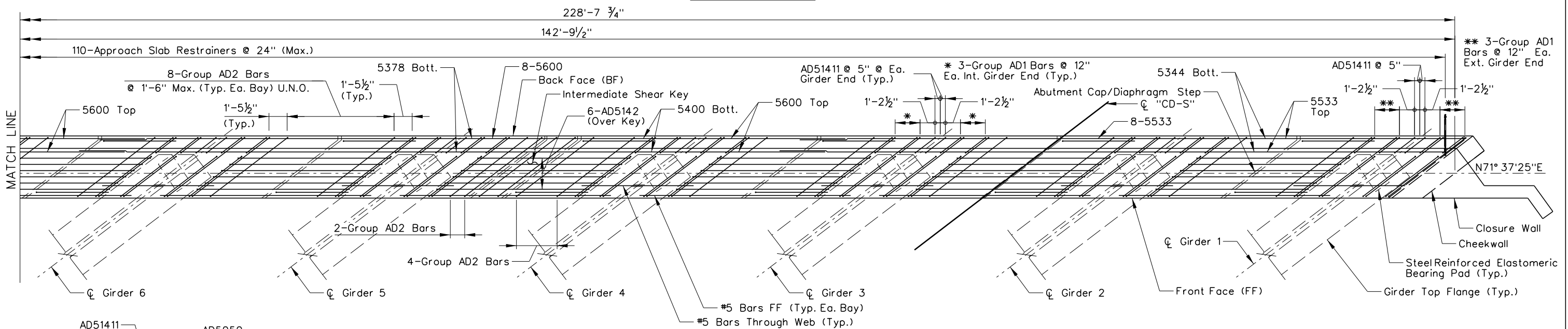
DESIGNED BY JCH
DRAWN BY EAS
CHECKED BY PLK
REVIEWED BY DAA

H-933S

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1530



PARTIAL PLAN



PARTIAL PLAN

Notes:

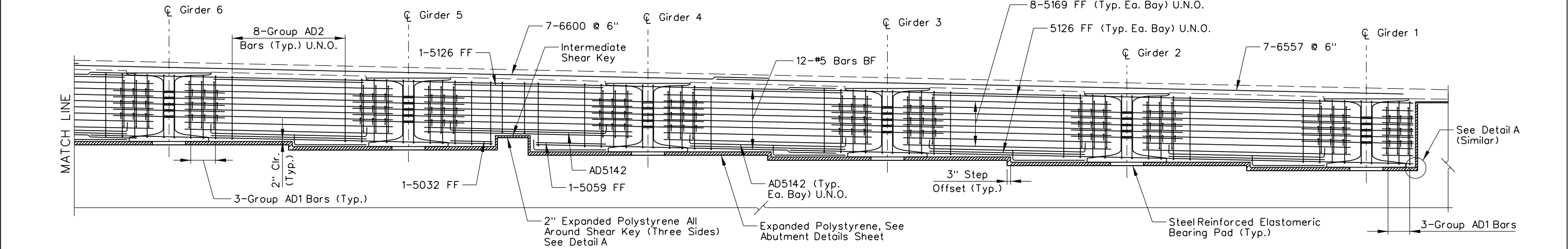
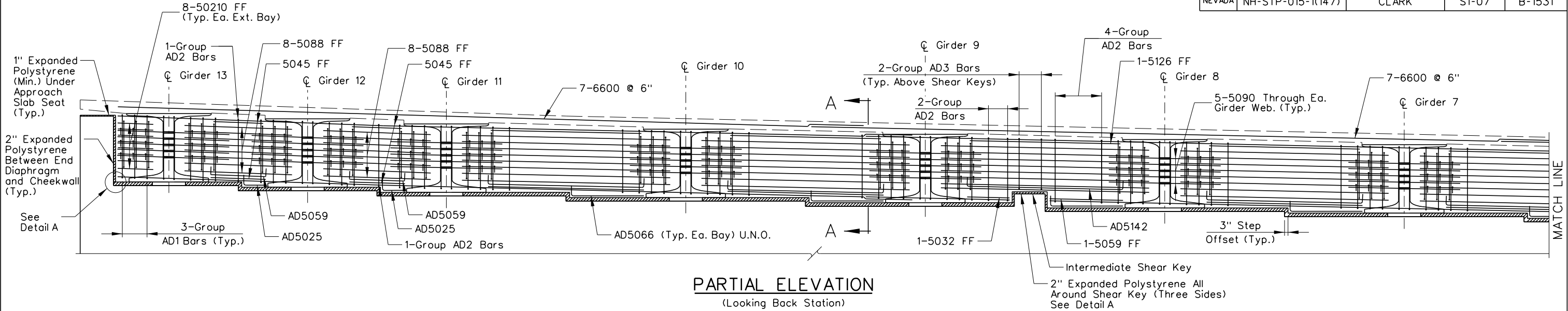
1. For Section A-A and other Details See "Abutment Diaphragm Details" Sheet
2. All Transverse Reinforcement is to be Placed Parallel to Girder Centerlines

Minimum Bar Lap Length
No. 5 Bar to No. 5 Bar = 3'-9"

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0	RFC - 73652-S1-07-R2H-H933S-SHT20B1530	02/03/17
NO.	DESCRIPTION	DATE

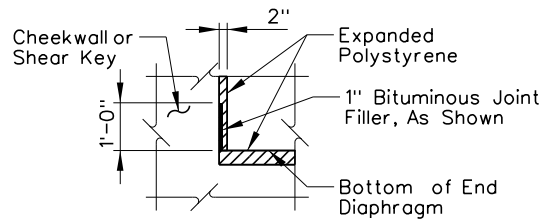
DESIGN UNIT S1-07 AS-BUILT DRAWING JANUARY 04, 2019	 	STATE OF NEVADA DEPARTMENT OF TRANSPORTATION I-15/50AKEY ABUTMENT NO. 1 DIAPHRAGM PLAN						
 R₂H ENGINEERING, INC. CONSULTING STRUCTURAL ENGINEERS 2010 HORIZON RIDGE PARKWAY, SUITE 205 LAS VEGAS, NEVADA 89052 PHONE (702) 260-7000 FAX (702) 265-7070	 	 2270 Corporate Circle Suite 200 Henderson, Nevada 89074 Telephone: 702/263-7275 Fax: 702/263-7200 www.atkinsglobal.com						
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; border-right: 1px solid black; padding: 5px;">DESIGNED BY <u>JCH</u></td> <td style="width: 33%; border-right: 1px solid black; padding: 5px;">DRAWN BY <u>JAP</u></td> <td style="width: 33%; padding: 5px;">CHECKED BY <u>PLK</u></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">REVIEWED BY <u>DAA</u></td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;"></td> </tr> </table>			DESIGNED BY <u>JCH</u>	DRAWN BY <u>JAP</u>	CHECKED BY <u>PLK</u>	REVIEWED BY <u>DAA</u>		
DESIGNED BY <u>JCH</u>	DRAWN BY <u>JAP</u>	CHECKED BY <u>PLK</u>						
REVIEWED BY <u>DAA</u>								

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1531

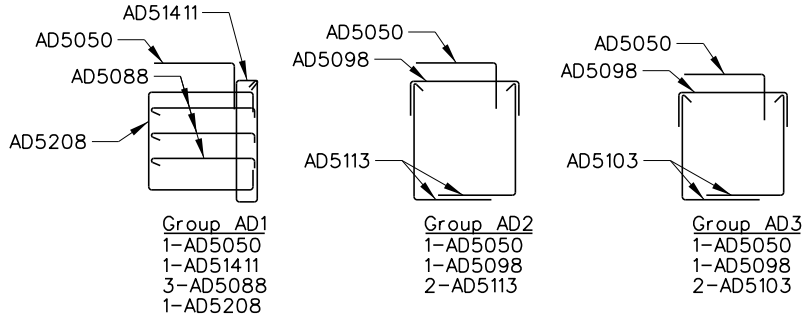


Minimum Bar Lap Length
No. 4 Bar to No. 4 Bar = 2'-0"
No. 5 Top Bar to No. 5 Top Bar = 3'-9"
No. 6 Bar to No. 6 Bar = 4'-6"

- Notes:**
- Complete Group AD2 Bars are not shown in Elevation view for clarity.
 - For Section A-A and other Details See "Abutment Diaphragm Details" Sheet.
 - All Transverse Reinforcement is to be Placed Parallel to Girder Centerlines.



PARTIAL ELEVATION
(Looking Back Station)



NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1531	02/03/17

H-933S

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019

R₂H ENGINEERING, INC.
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2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89102
PHONE (702) 260-7000 FAX (702) 260-7070



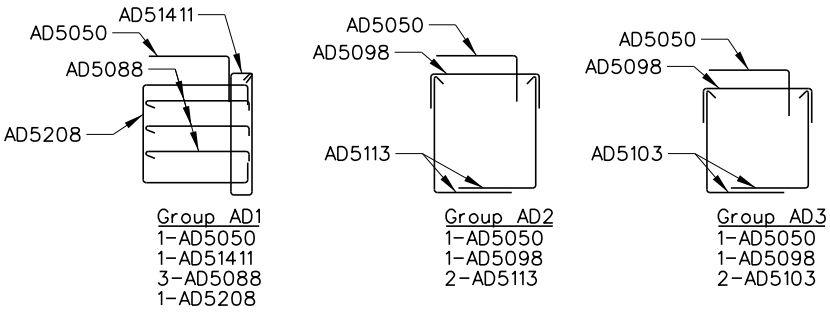
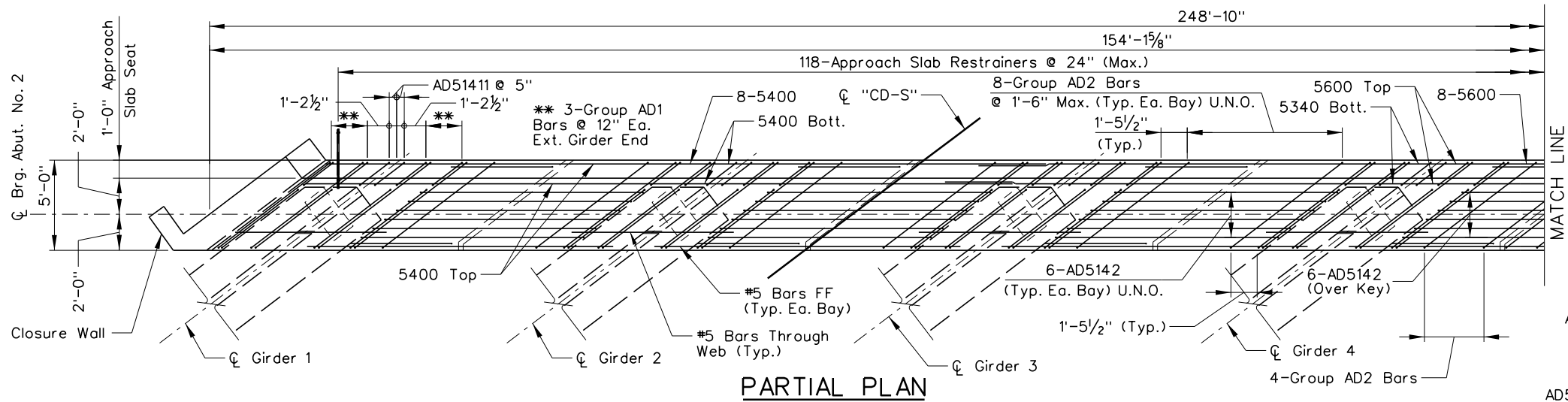
STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15 SOAKY
ABUTMENT NO.1
DIAPHRAGM ELEVATION

ATKINS
2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
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Fax: 702/263-7200
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CHECKED BY PLK
REVIEWED BY DAA

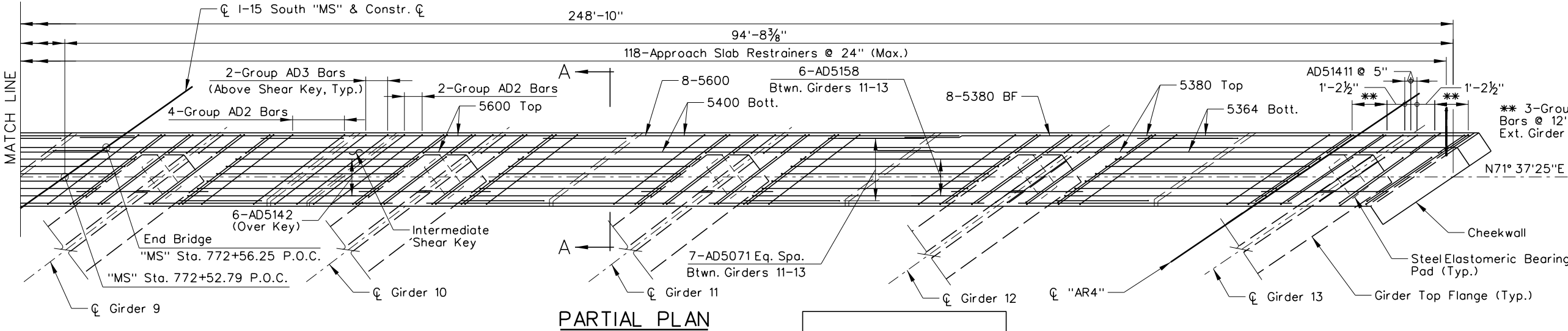
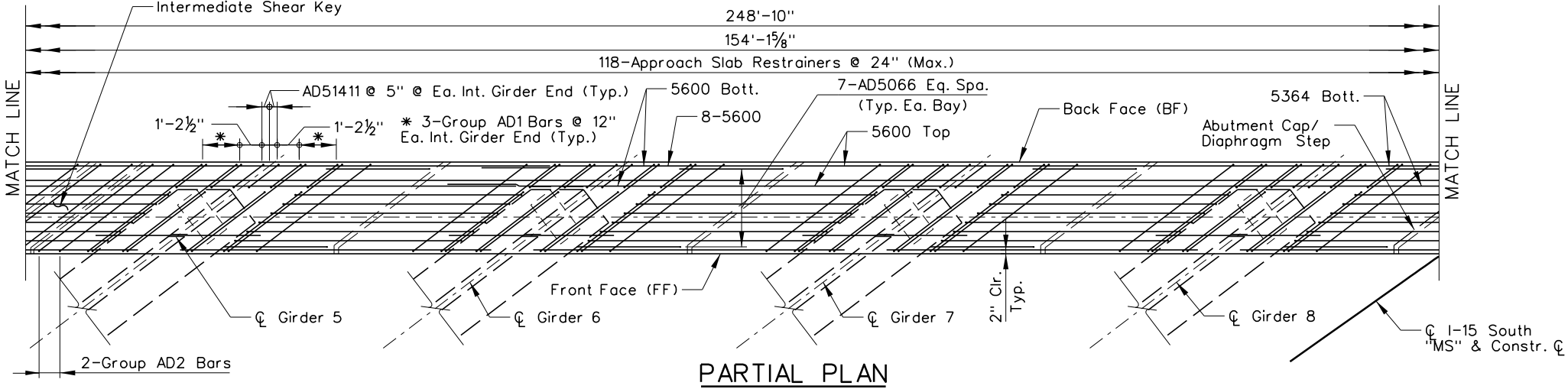
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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1532



- Notes:
- For Section A-A and other Details See "Abutment Diaphragm Details" Sheet
 - All Transverse Reinforcement is to be Placed Parallel to Girder Centerlines

Minimum Bar Lap Length
No. 5 Bar to No. 5 Bar = 3'-9"



NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1532	02/03/17

DESIGN UNIT S1-07

AS-BUILT DRAWING

JANUARY 04, 2019





STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15SOAKY
**ABUTMENT NO. 2
DIAPHRAGM PLAN**

DESIGNED BY JCH

DRAWN BY JAP

CHECKED BY PLK

REVIEWED BY DAA

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2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
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CONSULTING STRUCTURAL ENGINEERS
2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89162
PHONE (702) 260-7000 FAX (702) 260-7070

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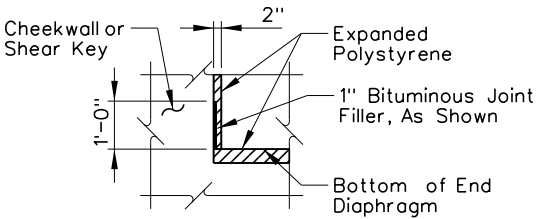
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NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1533

Notes:

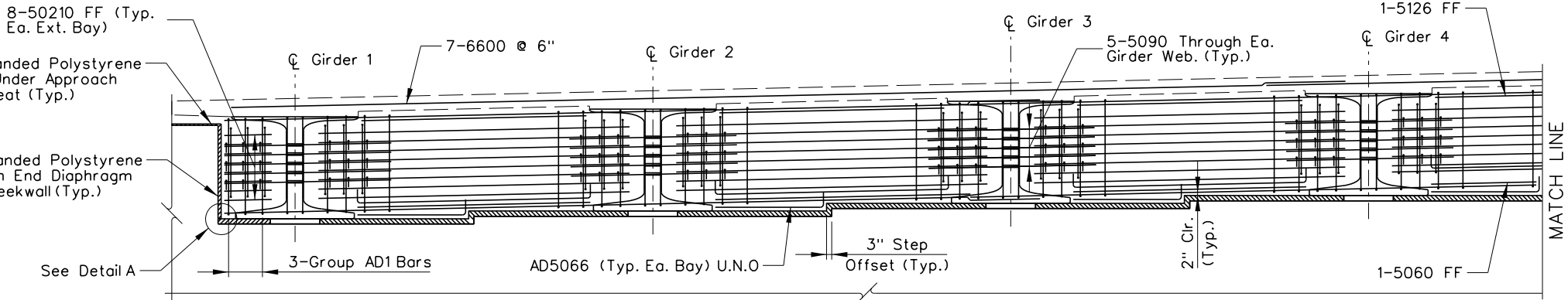
- Complete Group AD2 Bars are not shown in Elevation View for Clarity.
- For Section A-A and other Details See "Abutment Diaphragm Details" Sheet.
- All Transverse Reinforcement is to be Placed Parallel to Girder Centerlines.
- For Intermediate Shear Key Detail, See "Abutment No. 2 Elevation" Sheet.

Minimum Bar Lap Length

No. 5 Bar to No. 5 Bar = 3'-9"
No. 6 Bar to No. 6 Bar = 4'-6"

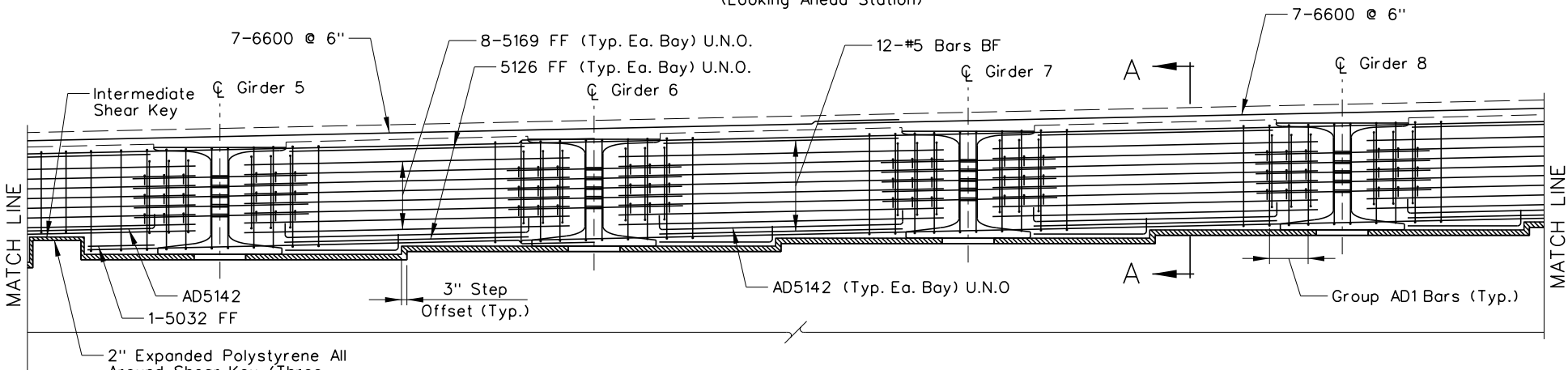


Detail A



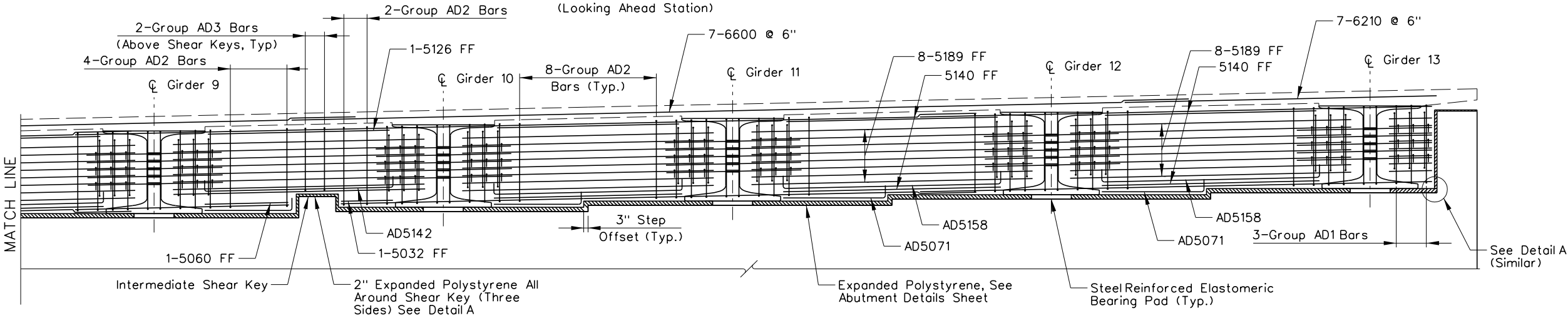
PARTIAL ELEVATION

(Looking Ahead Station)



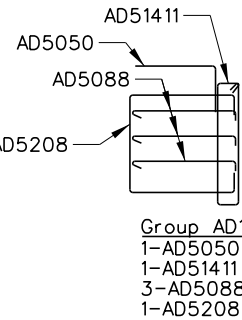
PARTIAL ELEVATION

(Looking Ahead Station)

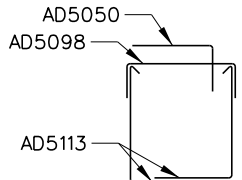


PARTIAL ELEVATION

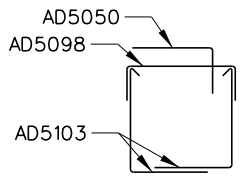
(Looking Ahead Station)



Group AD1
1-AD5050
1-AD5141
3-AD5088
1-AD5208



Group AD2
1-AD5050
1-AD5098
2-AD5113



Group AD3
1-AD5050
1-AD5098
2-AD5103

H-933S

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1533	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

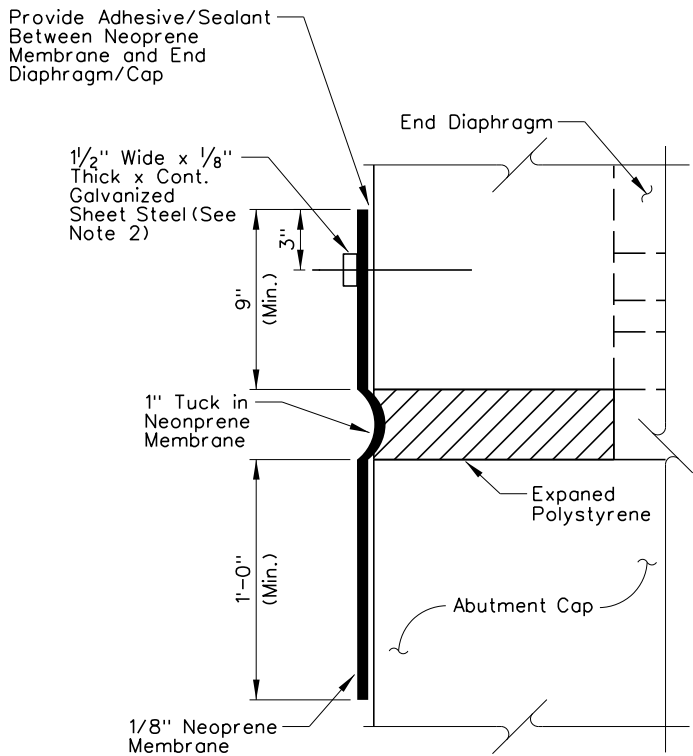
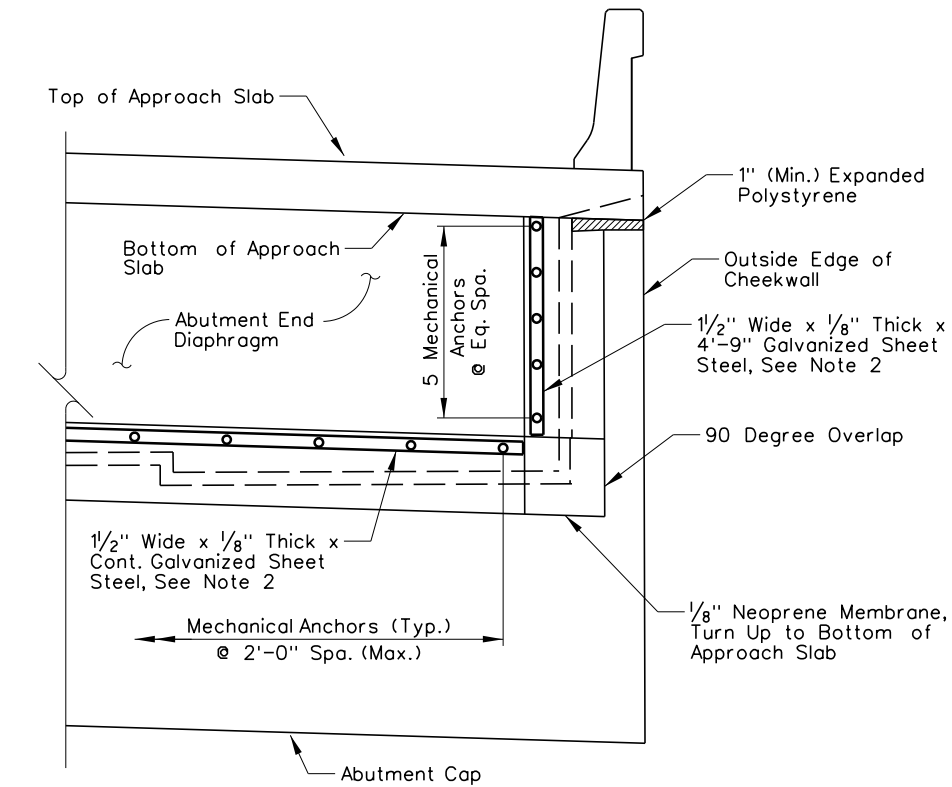
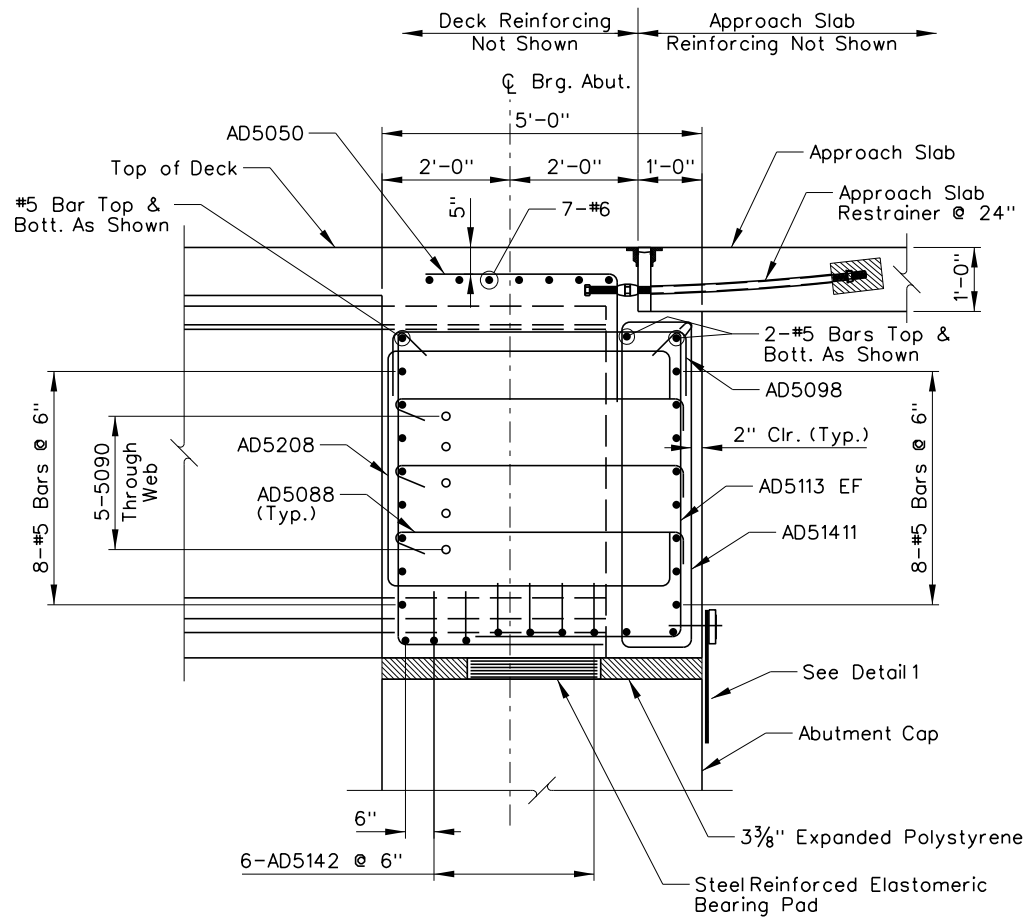
I-15SOAKEY
ABUTMENT NO. 2
DIAPHRAGM ELEVATION

ATKINS

2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
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Fax: 702/263-7200
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DRAWN BY EAS
CHECKED BY PLK
REVIEWED BY DAA

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1534



- Notes:
- For Joint Details, See Expansion Joint Details Sheet.
 - Galvanize Sheet Steel in Accordance With ASTM A123.

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1534	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019

R₂H ENGINEERING, INC.
CONSULTING STRUCTURAL ENGINEERS
2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89162
PHONE (702) 260-7000 FAX (702) 260-7070



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15 SOAKY
ABUTMENT DIAPHRAGM
DETAILS

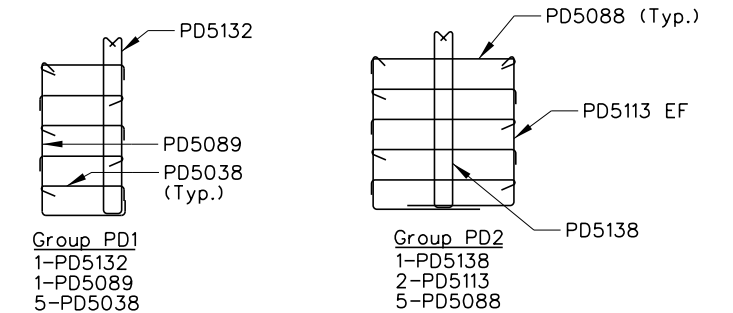
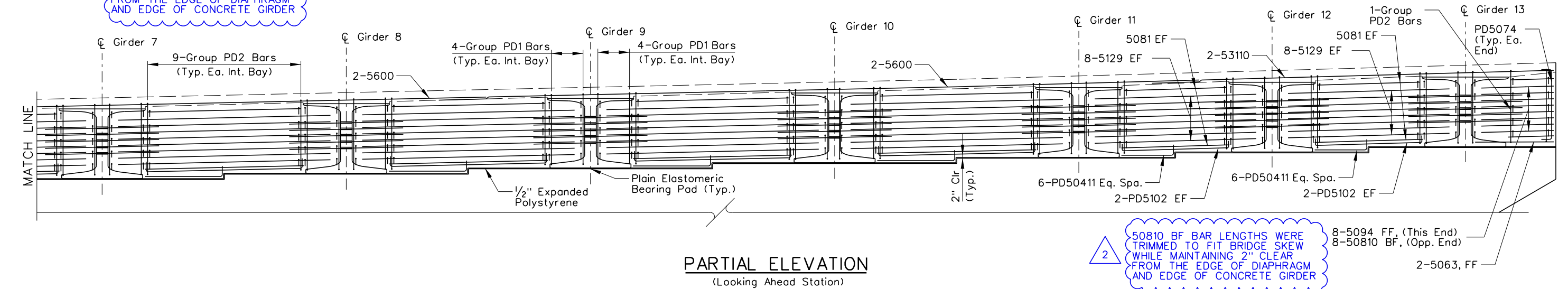
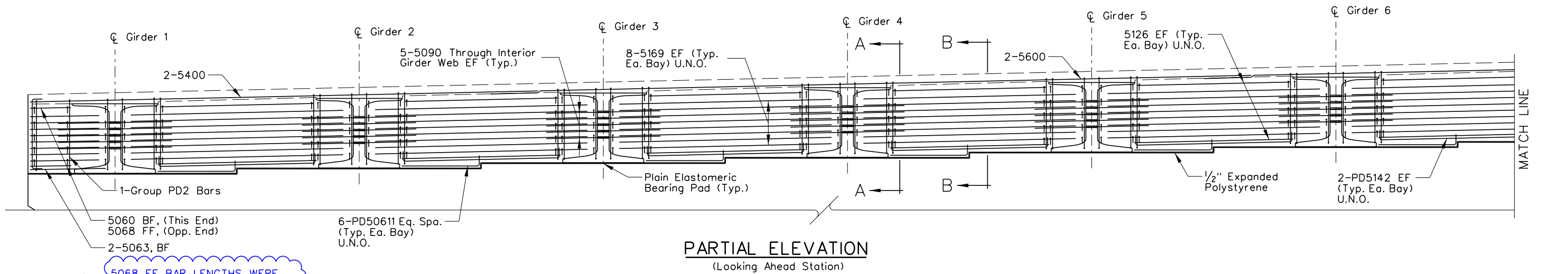
DESIGNED BY JCH
DRAWN BY EAS
CHECKED BY PLK
REVIEWED BY DAA

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Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
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H-933S

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1536



Notes:

1. Complete Group PD1 and PD2 Bars are not shown in Elevation view for clarity.
2. For Section A-A and B-B see "Pier No. 1 Diaphragm Details" sheet.
3. For Shear Key Details see "Pier No. 1 Details" sheet.

Minimum Bar Lap Length

No. 4 Bar to No. 4 Bar = 2'-0"
No. 5 Bar to No. 5 Bar = 3'-9"

2	AS-BUILT RF1-1507	02/03/2020
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1536	02/03/17
NO.	DESCRIPTION	DATE

4-933S

DESIGN UNIT S1-07

AS-BUILT DRAWING

MAY 1, 20019



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15S/OAKEY

PIER NO.1 DIAPHRAGM
ELEVATION

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Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
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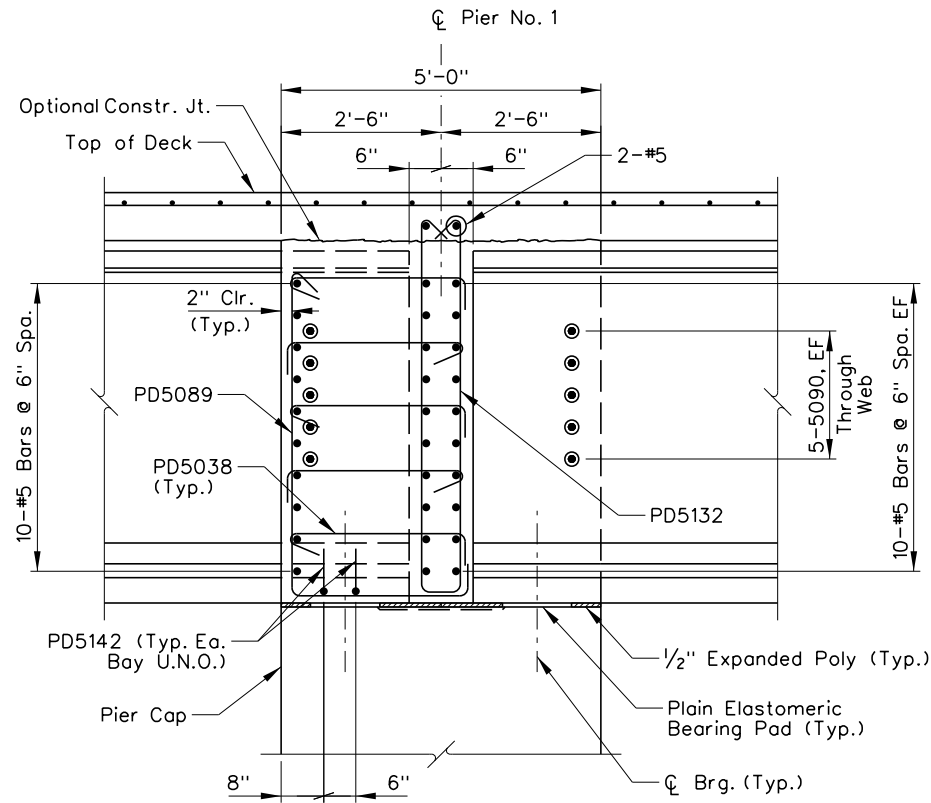
DRAWN BY JAP

CHECKED BY PLK

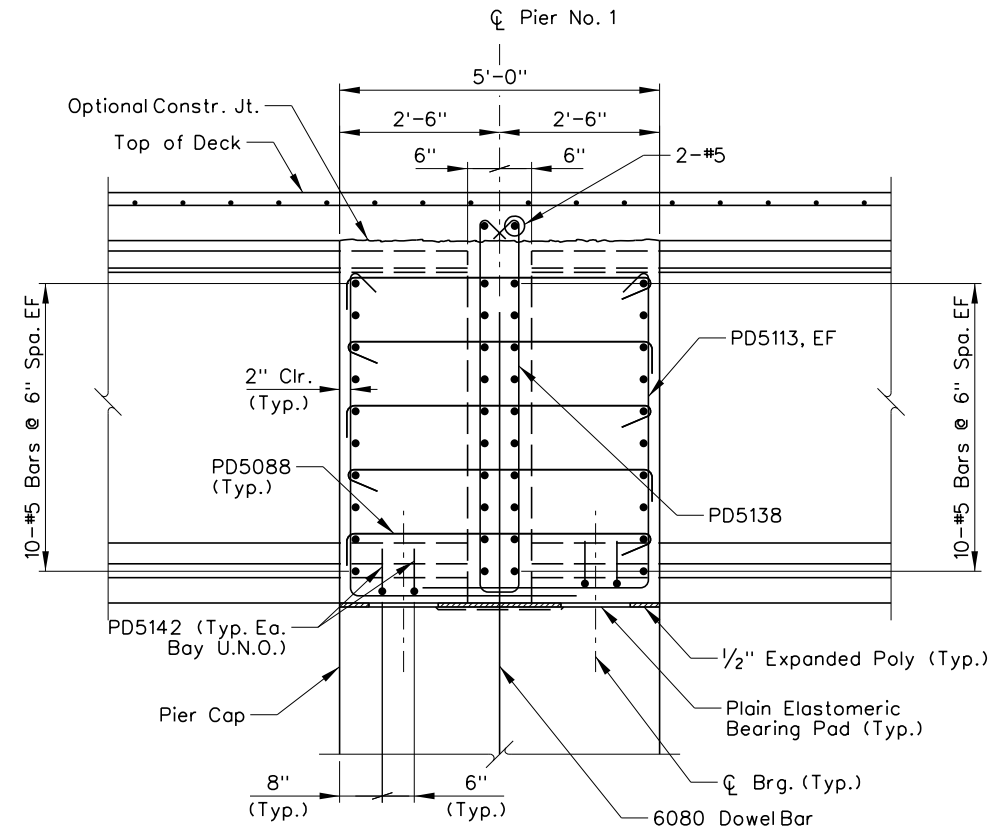
REVIEWED BY DAA

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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1537



SECTION A-A



SECTION B-B

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1537	02/03/17

DESIGN UNIT S1-07

AS-BUILT DRAWING

JANUARY 04, 2019

R₂H ENGINEERING, INC.
CONSULTING STRUCTURAL ENGINEERS
2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89102
PHONE (702) 260-7000 FAX (702) 260-7070

PROJECT NEON
Las Vegas

NEVADA DOT
SAFE AND CONNECTED

Kiewit

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15 SOAKEY

PIER NO.1 DIAPHRAGM DETAILS

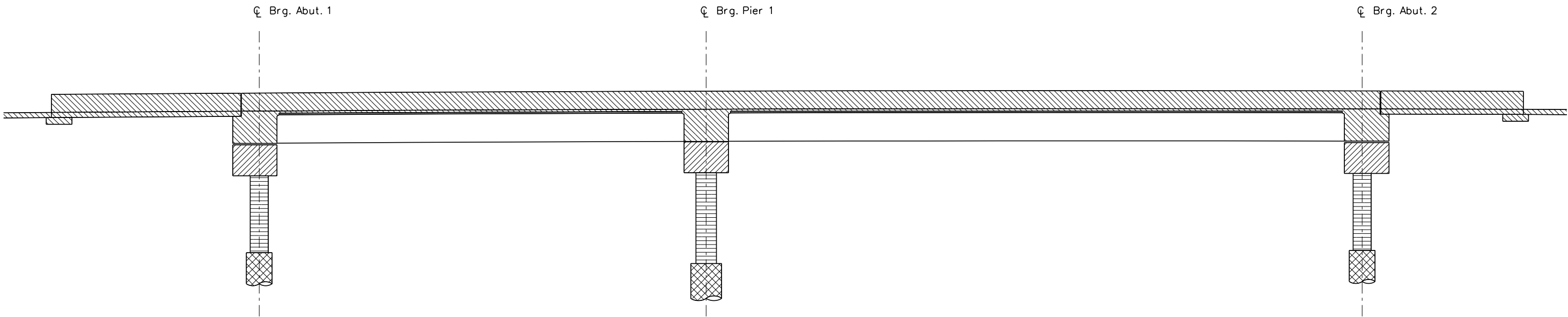
ATKINS

2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
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DESIGNED BY JCH
DRAWN BY JAP
CHECKED BY PLK
REVIEWED BY DAA

2/11/2020 2:56:23 PM pw:\\SUSD036343.watkins.com:ATKANV01\Documents\Roads and Bridges\Projects\100047698 NEON FD\Engineering\011_Structures\DGN Sheets\B15 - H-933S-I-15 over Oakey\73652-S1-07-R2H-H933S-SHT20B1537.dgn

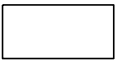
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NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1538

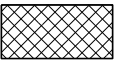


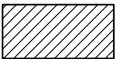
CONCRETE CLASSIFICATION DIAGRAM

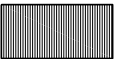
- 

Bridge Deck, Approach Slabs, Abutment Diaphragms, Pier Diaphragm, Barrier Rails
Class E Modified, f'c= 4.0 ksi
- 

Columns
Class D Modified, f'c= 4.5 ksi
- 

Precast Concrete Girders Class S,
See Prestressed Girder Details for
Concrete Strength
- 

Drilled Shafts
Class S, f'c= 4.5 ksi
- 

Abutment Cap, Cheekwalls,
Closure Walls, & Pier Cap
Class A Modified, f'c= 4.0 ksi
- 

Prestressed Deck Panels
Class DA, See Precast Panel
Details for Concrete Strength

H-933S

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1538	02/03/17
NO.	DESCRIPTION	DATE

DESIGN UNIT S1-07

AS-BUILT DRAWING

JANUARY 04, 2019



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2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89162
PHONE (702) 260-7000 FAX (702) 260-7070



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15SOAKEY

CONCRETE CLASSIFICATION



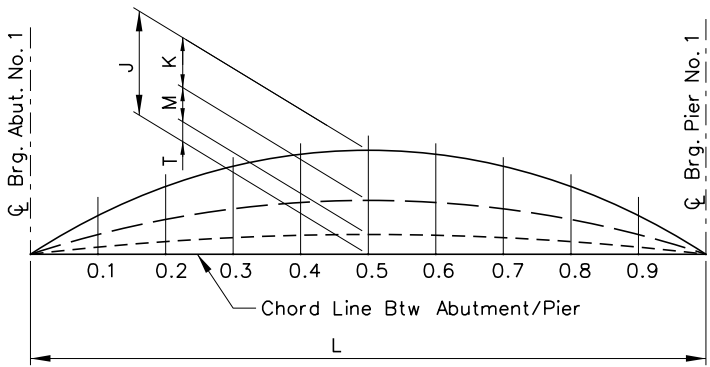
2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
www.atkinsglobal.com

DESIGNED BY JCH
DRAWN BY EAS
CHECKED BY PLK
REVIEWED BY DAA

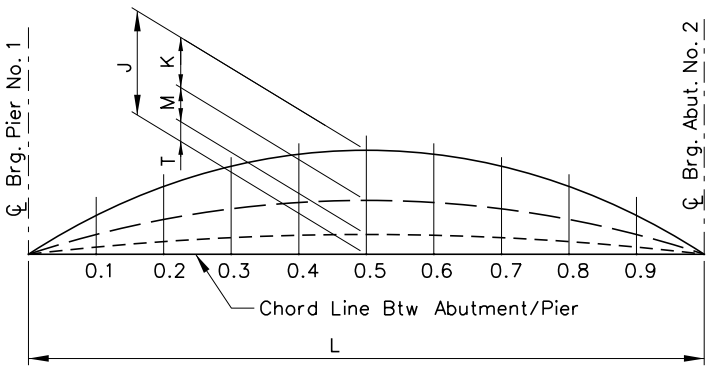
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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1539

		Deflection Diagram Table (in.)																					
		Span 1												Span 2									
		0.0L	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	1.0L	0.0L	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	1.0L
Girder 1	J	0.0	0.3	0.5	0.6	0.7	0.7	0.7	0.6	0.5	0.3	0.0	0.0	1.2	2.1	2.7	3.0	3.1	3.0	2.7	2.1	1.2	0.0
	K	0.0	-0.1	-0.2	-0.3	-0.4	-0.4	-0.4	-0.3	-0.2	-0.1	0.0	0.0	-0.6	-1.1	-1.5	-1.7	-1.8	-1.7	-1.5	-1.1	-0.6	0.0
	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.0
	T	0.0	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.0	0.0	0.7	1.0	1.2	1.2	1.3	1.2	1.2	1.0	0.6	0.0
Girders 2-10	J	0.0	0.3	0.5	0.6	0.7	0.7	0.7	0.6	0.5	0.3	0.0	0.0	1.3	2.2	2.9	3.2	3.4	3.2	2.9	2.2	1.3	0.0
	K	0.0	-0.1	-0.3	-0.4	-0.4	-0.5	-0.4	-0.4	-0.3	-0.1	0.0	0.0	-0.6	-1.2	-1.7	-1.9	-2.0	-1.9	-1.7	-1.2	-0.6	0.0
	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.0
	T	0.0	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.0	0.0	0.7	1.0	1.2	1.2	1.3	1.2	1.1	1.0	0.6	0.0
Girder 11	J	0.0	0.3	0.5	0.6	0.7	0.7	0.7	0.6	0.5	0.3	0.0	0.0	1.2	2.1	2.7	3.1	3.2	3.1	2.7	2.1	1.2	0.0
	K	0.0	-0.1	-0.3	-0.4	-0.4	-0.5	-0.4	-0.4	-0.3	-0.1	0.0	0.0	-0.6	-1.2	-1.7	-2.0	-2.1	-2.0	-1.7	-1.2	-0.6	0.0
	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	T	0.0	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.0	0.0	0.6	0.9	1.0	1.1	1.1	1.1	1.0	0.9	0.6	0.0
Girder 12	J	0.0	0.3	0.5	0.6	0.7	0.7	0.7	0.6	0.5	0.3	0.0	0.0	1.2	2.1	2.7	3.0	3.1	3.0	2.7	2.1	1.2	0.0
	K	0.0	-0.1	-0.3	-0.3	-0.4	-0.4	-0.4	-0.3	-0.3	-0.1	0.0	0.0	-0.6	-1.1	-1.5	-1.8	-1.9	-1.8	-1.5	-1.1	-0.6	0.0
	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.0
	T	0.0	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.0	0.0	0.6	0.9	1.1	1.2	1.2	1.1	1.1	0.9	0.6	0.0
Girder 13	J	0.0	0.3	0.5	0.6	0.7	0.7	0.7	0.6	0.5	0.3	0.0	0.0	1.2	2.1	2.7	3.1	3.1	3.1	2.7	2.1	1.2	0.0
	K	0.0	-0.1	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.3	-0.1	0.0	0.0	-0.6	-1.2	-1.6	-1.9	-2.0	-1.9	-1.6	-1.2	-0.6	0.0
	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	0.0
	T	0.0	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.0	0.0	0.6	0.9	1.0	1.1	1.0	1.1	1.0	0.9	0.6	0.0



DEFLECTION DIAGRAM



DEFLECTION DIAGRAM

NOTES:

- Values given in the Deflection Diagram Table are based on theoretical girder cambers and deflection estimates. Monitor girder cambers for the purpose of predicting camber values at the time of the deck pour if the predicted cambers based on filed measurements differ more than 0.5" from the theoretical "Net Girder Camber at Erection (40 days)" values as shown in the table. If the measured girder cambers create a conflict with the theoretical bottom of deck, notify the engineer immediately.
- Negative deflections indicate downward movement. Positive deflections indicate upward camber.

LEGEND

J = Net Girder Camber at Erection (40 days)
K = Non-composite Dead Load Deflection (Precast Panels, Deck, Haunch & Intermediate Diaphragms) at Erection
M = Superimposed Dead Load of Bridge Rail at Erection
T = Residual Camber After All Dead Load is Placed (Excludes DW)

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1539	02/03/17
NO.	DESCRIPTION	DATE

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15 SOAKEY
CAMBER & DEFLECTION

DESIGNED BY	JCH
DRAWN BY	EAS
CHECKED BY	PLK
REVIEWED BY	DAA

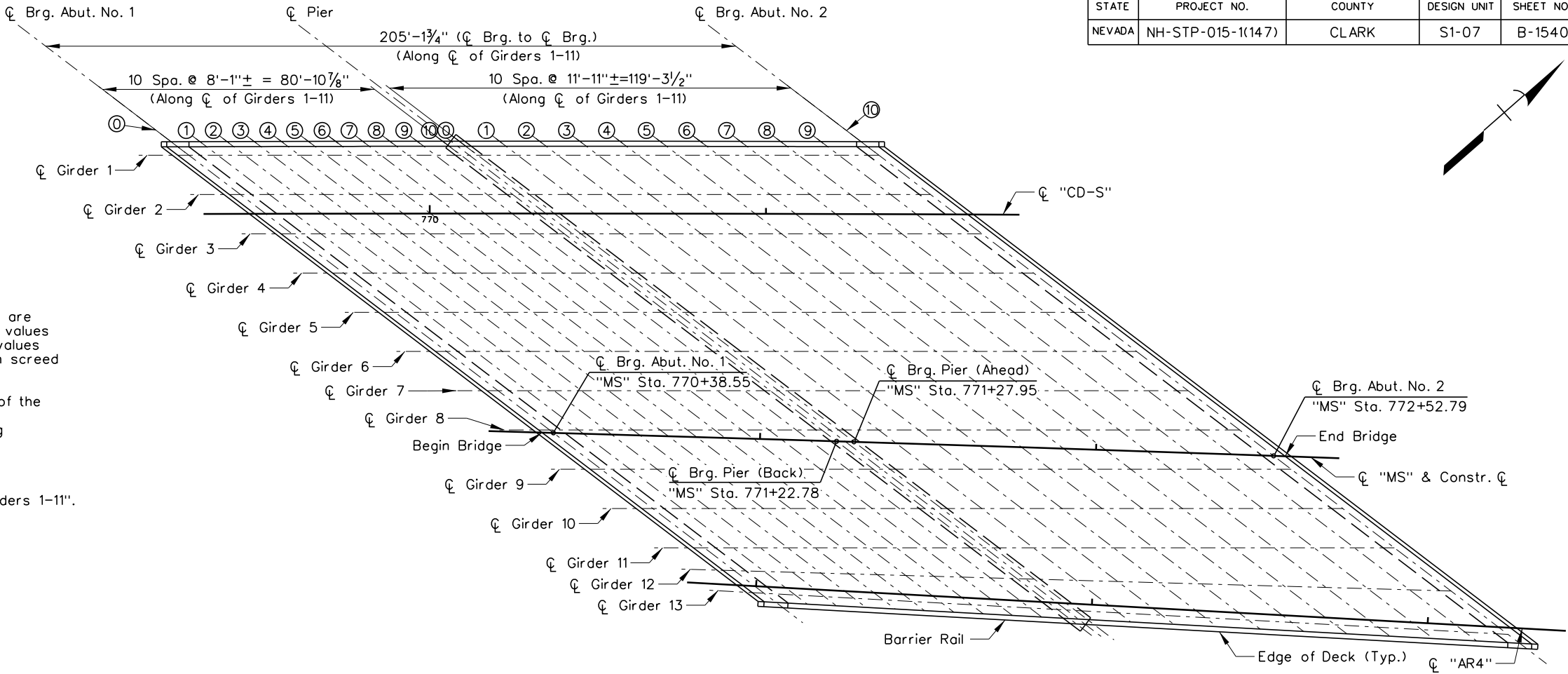
H-933S

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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1540

NOTES:

- In the Finish Grade Elevation table, the values shown are the final top of concrete deck elevations. "DL DEFL" values are dead load deflections (in feet). Add "DL DEFL" values to the final top of concrete deck elevation to obtain screed elevations for each girder.
- Dead load deflections are derived from the weight of the deck slab (includes PC deck panels), haunch, bridge rail, and soundwall. Deflections due to Future Wearing Surface (DW) are not included.
- All elevations indicated are at finished grade.
- All longitudinal dimensions are shown along "CL of Girders 1-11".



			Finish Grade Elevations (Elevations and Deflections Shown in Feet)										
			0	1	2	3	4	5	6	7	8	9	10
Span 1	Girder 1	Elevation	2072.53	2072.62	2072.69	2072.76	2072.83	2072.89	2072.95	2073.01	2073.07	2073.12	2073.17
		DL Defl.	0.00	0.01	0.02	0.03	0.03	0.03	0.03	0.03	0.02	0.01	0.00
	Girder 2	Elevation	2072.92	2072.99	2073.06	2073.12	2073.18	2073.24	2073.30	2073.35	2073.40	2073.45	2073.49
		DL Defl.	0.00	0.01	0.02	0.03	0.04	0.04	0.04	0.03	0.02	0.01	0.00
	Girder 3	Elevation	2073.28	2073.35	2073.41	2073.47	2073.53	2073.58	2073.63	2073.68	2073.73	2073.77	2073.81
		DL Defl.	0.00	0.01	0.02	0.03	0.04	0.04	0.04	0.03	0.02	0.01	0.00
	Girder 4	Elevation	2073.64	2073.70	2073.76	2073.81	2073.86	2073.91	2073.96	2074.00	2074.05	2074.09	2074.12
		DL Defl.	0.00	0.01	0.02	0.03	0.04	0.04	0.04	0.03	0.02	0.01	0.00
	Girder 5	Elevation	2073.98	2074.04	2074.09	2074.14	2074.19	2074.23	2074.28	2074.32	2074.35	2074.39	2074.42
		DL Defl.	0.00	0.01	0.02	0.03	0.04	0.04	0.04	0.03	0.02	0.01	0.00
	Girder 6	Elevation	2074.32	2074.37	2074.42	2074.46	2074.51	2074.55	2074.59	2074.62	2074.65	2074.69	2074.71
		DL Defl.	0.00	0.01	0.02	0.03	0.04	0.04	0.04	0.03	0.02	0.01	0.00
	Girder 7	Elevation	2074.65	2074.69	2074.74	2074.78	2074.82	2074.85	2074.89	2074.92	2074.95	2074.97	2075.00
		DL Defl.	0.00	0.01	0.02	0.03	0.04	0.04	0.04	0.03	0.02	0.01	0.00
Girder 8	Elevation	2074.97	2075.01	2075.05	2075.08	2075.12	2075.15	2075.18	2075.20	2075.23	2075.25	2075.27	
	DL Defl.	0.00	0.01	0.02	0.03	0.04	0.04	0.04	0.03	0.02	0.01	0.00	
Girder 9	Elevation	2075.28	2075.31	2075.35	2075.38	2075.41	2075.44	2075.46	2075.48	2075.50	2075.52	2075.53	
	DL Defl.	0.00	0.01	0.02	0.03	0.04	0.04	0.04	0.03	0.02	0.01	0.00	
Girder 10	Elevation	2075.58	2075.61	2075.64	2075.67	2075.69	2075.71	2075.73	2075.75	2075.77	2075.78	2075.79	
	DL Defl.	0.00	0.01	0.02	0.03	0.04	0.04	0.04	0.03	0.02	0.01	0.00	
Girder 11	Elevation	2075.87	2075.90	2075.92	2075.95	2075.97	2075.98	2076.00	2076.01	2076.02	2076.03	2076.04	
	DL Defl.	0.00	0.01	0.02	0.03	0.04	0.04	0.04	0.03	0.02	0.01	0.00	
Girder 12	Elevation	2076.04	2076.07	2076.10	2076.12	2076.14	2076.16	2076.18	2076.20	2076.21	2076.22	2076.22	
	DL Defl.	0.00	0.01	0.02	0.03	0.03	0.03	0.03	0.03	0.02	0.01	0.00	
Girder 13	Elevation	2076.20	2076.23	2076.26	2076.29	2076.32	2076.34	2076.36	2076.37	2076.39	2076.40	2076.41	
	DL Defl.	0.00	0.01	0.02	0.03	0.04	0.04	0.04	0.03	0.02	0.01	0.00	

			Finish Grade Elevations (Elevations and Deflections Shown in Feet)										
			0	1	2	3	4	5	6	7	8	9	10
Span 2	Girder 1	Elevation	2073.20	2073.27	2073.33	2073.39	2073.45	2073.50	2073.54	2073.58	2073.62	2073.66	2073.69
		DL Defl.	0.00	0.05	0.09	0.13	0.15	0.16	0.15	0.13	0.09	0.05	0.00
	Girder 2	Elevation	2073.52	2073.59	2073.64	2073.70	2073.74	2073.79	2073.82	2073.85	2073.88	2073.90	2073.92
		DL Defl.	0.00	0.05	0.10	0.14	0.17	0.17	0.17	0.14	0.10	0.06	0.00
	Girder 3	Elevation	2073.84	2073.89	2073.94	2073.99	2074.03	2074.07	2074.10	2074.12	2074.14	2074.16	2074.17
		DL Defl.	0.00	0.05	0.10	0.14	0.16	0.17	0.16	0.14	0.10	0.05	0.00
	Girder 4	Elevation	2074.14	2074.19	2074.24	2074.28	2074.31	2074.34	2074.36	2074.38	2074.40	2074.40	2074.41
		DL Defl.	0.00	0.05	0.10	0.14	0.16	0.17	0.16	0.14	0.10	0.05	0.00
	Girder 5	Elevation	2074.44	2074.48	2074.52	2074.55	2074.58	2074.60	2074.62	2074.63	2074.64	2074.64	2074.64
		DL Defl.	0.00	0.05	0.10	0.14	0.16	0.17	0.16	0.14	0.10	0.05	0.00
	Girder 6	Elevation	2074.73	2074.77	2074.80	2074.82	2074.84	2074.86	2074.87	2074.87	2074.87	2074.87	2074.86
		DL Defl.	0.00	0.05	0.10	0.14	0.16	0.17	0.16	0.14	0.10	0.05	0.00
	Girder 7	Elevation	2075.01	2075.04	2075.06	2075.08	2075.10	2075.10	2075.11	2075.11	2075.10	2075.09	2075.07
		DL Defl.	0.00	0.05	0.10	0.14	0.16	0.17	0.16	0.14	0.10	0.05	0.00
	Girder 8	Elevation	2075.28	2075.30	2075.32	2075.33	2075.34	2075.34	2075.34	2075.33	2075.32	2075.30	2075.27
		DL Defl.	0.00	0.05	0.10	0.14	0.16	0.17	0.16	0.14	0.10	0.05	0.00
	Girder 9	Elevation	2075.54	2075.56	2075.57	2075.57	2075.57	2075.57	2075.56	2075.54	2075.52	2075.50	2075.47
		DL Defl.	0.00	0.05	0.10	0.14	0.16	0.17	0.16	0.14	0.10	0.05	0.00
	Girder 10	Elevation	2075.80	2075.80	2075.81	2075.81	2075.80	2075.79	2075.77	2075.75	2075.72	2075.69	2075.65
		DL Defl.	0.00	0.05	0.10	0.14	0.16	0.17	0.16	0.14	0.10	0.05	0.00
	Girder 11	Elevation	2076.04	2076.04	2076.04	2076.03	2076.02	2076.00	2075.98	2075.95	2075.91	2075.87	2075.83
		DL Defl.	0.00	0.05	0.10	0.14	0.16	0.17	0.16	0.14	0.10	0.05	0.00
	Girder 12	Elevation	2076.23	2076.23	2076.23	2076.22	2076.21	2076.19	2076.17	2076.14	2076.10	2076.06	2076.01
		DL Defl.	0.00	0.05	0.10	0.13	0.16	0.16	0.16	0.13	0.10	0.05	0.00
Girder 13	Elevation	2076.41	2076.42	2076.41	2076.41	2076.39	2076.37	2076.35	2076.32	2076.28	2076.24	2076.19	
	DL Defl.	0.00	0.05	0.10	0.14	0.17	0.18	0.17	0.14	0.10	0.06	0.00	

FINISH GRADE ELEVATIONS

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1540	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019



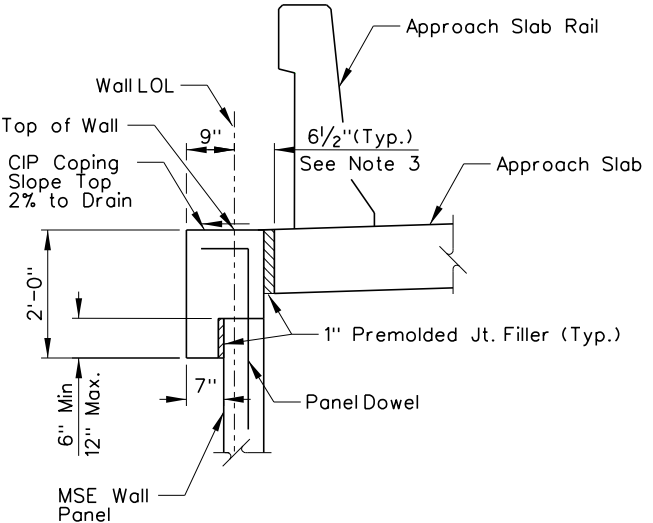
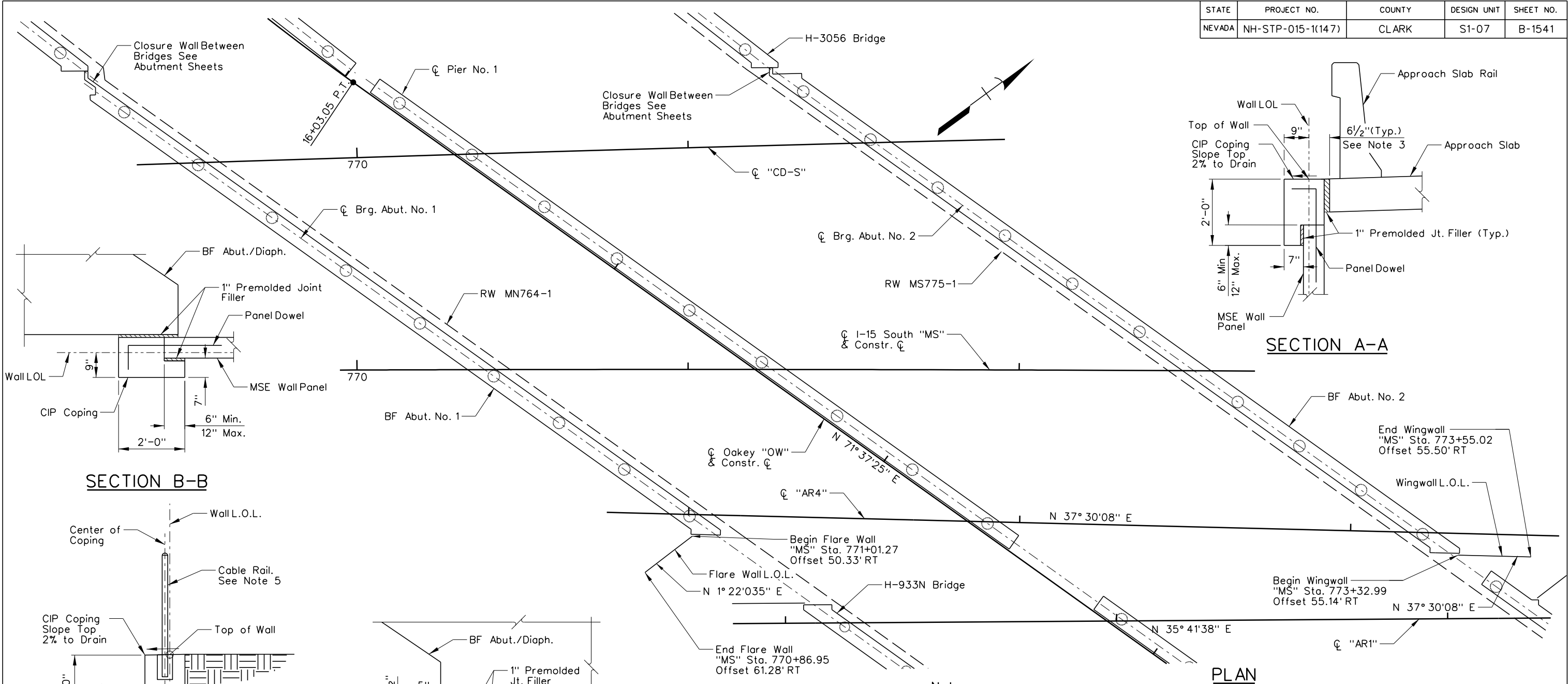
STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/OAKLEY
FINISH GRADE ELEVATIONS



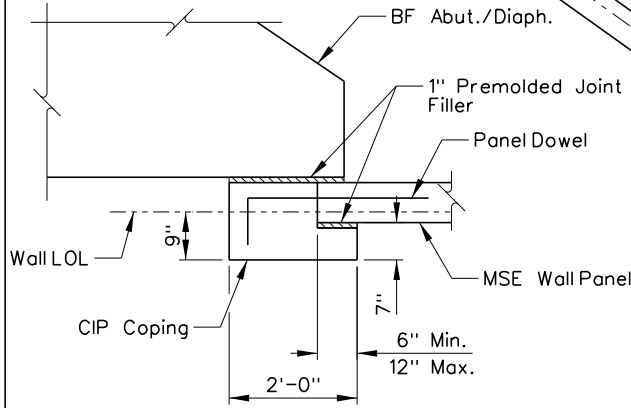
DESIGNED BY JCH
DRAWN BY EAS
CHECKED BY PLK
REVIEWED BY DAA

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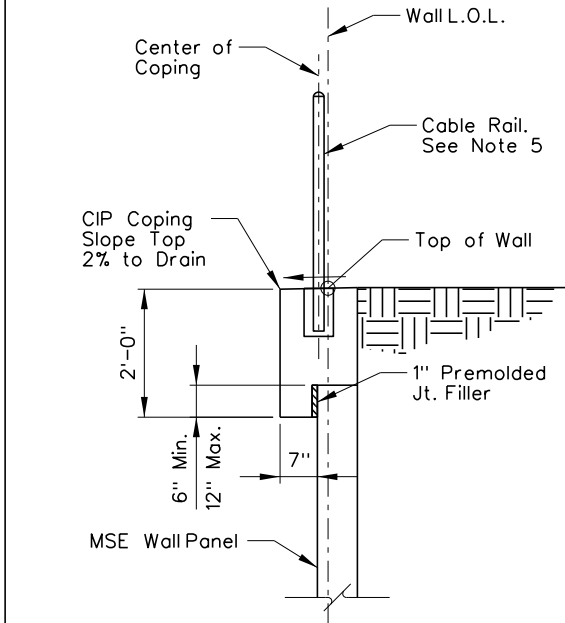
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NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1541



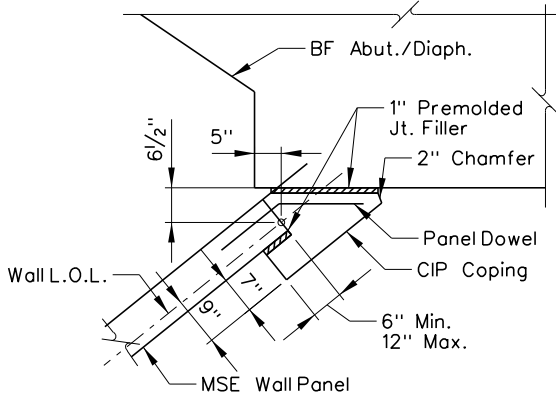
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

- Notes**
1. For MSE wall coping reinforcing not shown, see wall sheets BW801 and BW802 in Design Unit S1-03.
 2. Cast MSE wall coping against joint filler.
 3. MSE walls to receive the following treatment: 2" max. reveal; Texture 1171 Colorado Drag by Spec Formliners, Inc.; Color: Wooded Acre (DE 6130).
 4. See Design Unit: S1-03 "Wall Location Plan and General Notes" Sheet for MSE Wall General Notes.
 5. See Design Unit: S1-03 "Standard Rail Details" Sheet for Cable Railing Details
 6. See Design Unit: S1-03 Sheet BW124 "Wall Strap Table for Sloping Backfill 2H:1V Less Than 5" for MSE Wingwall Strap Data

H-933S

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1541	02/03/17

DESIGN UNIT S1-07

AS-BUILT DRAWING

JANUARY 04, 2019

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15 OAKLEY
MSE WALL DETAILS

DESIGNED BY: JCH
DRAWN BY: EAS
CHECKED BY: PLK
REVIEWED BY: DAA

2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
www.atkinsglobal.com

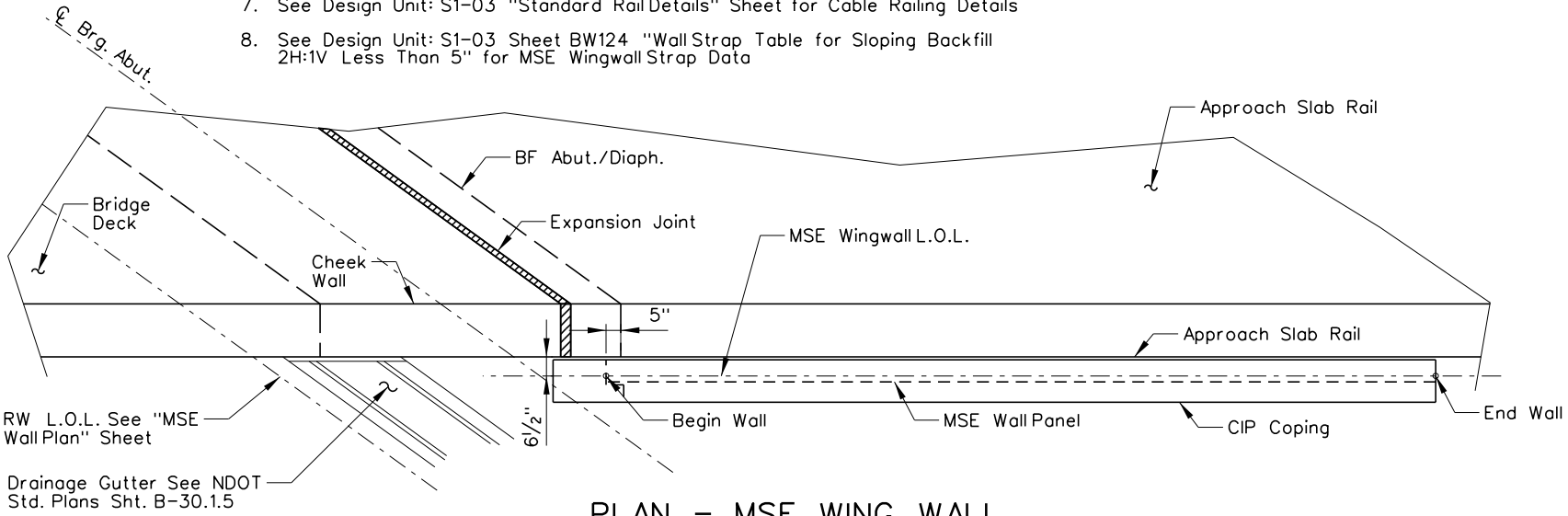
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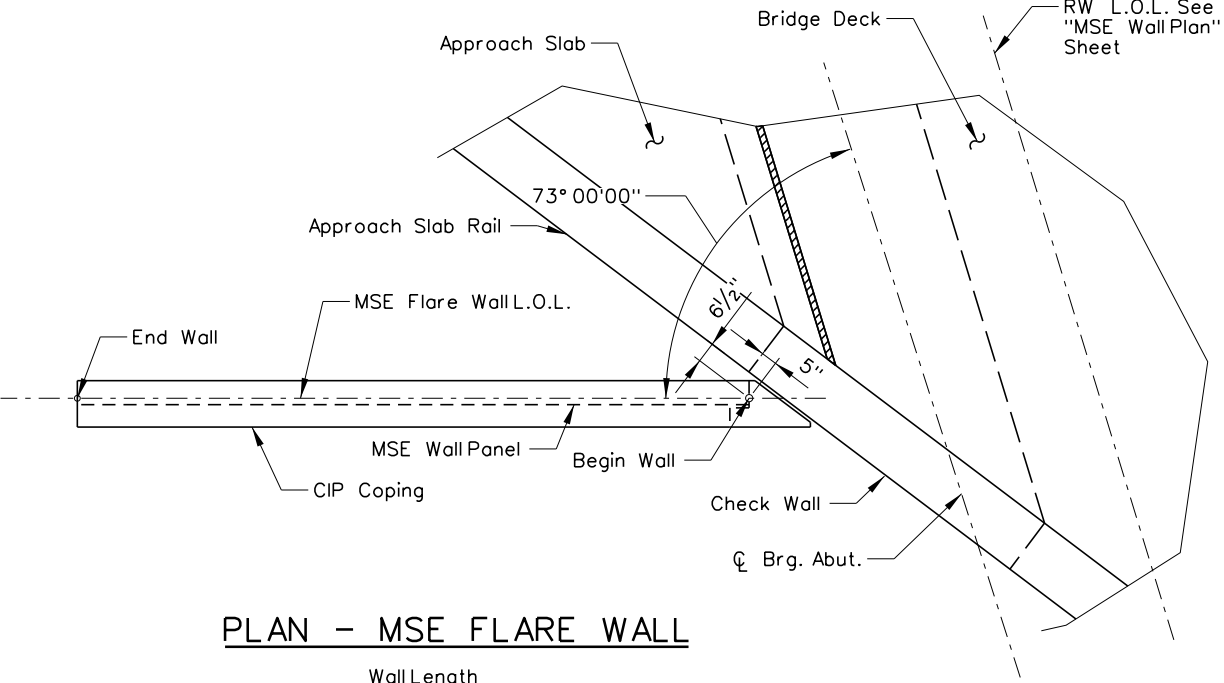
1. For MSE wingwall coping reinforcing not shown, see wall sheets BW801 and BW802 in Design Unit: S1-03.
2. Elevations A, B, and C are taken at top of coping at wall layout line (LOL).
3. Cast wingwall coping against joint filler.
4. Wingwalls to receive the following treatment: 2" max. reveal; Texture 1171 Colorado Drag by Spec Formliners, Inc.; Color: Wooded Acre (DE 6130).
5. See "MSE Wall Plan" Sheet for Sections A-A, B-B, C-C, and D-D
6. See Design Unit: S1-03 "Wall Location Plan and General Notes" Sheet for MSE Wall General Notes.
7. See Design Unit: S1-03 "Standard Rail Details" Sheet for Cable Railing Details
8. See Design Unit: S1-03 Sheet BW124 "Wall Strap Table for Sloping Backfill 2H:1V Less Than 5" for MSE Wingwall Strap Data

MSE Wall Data Table								
	Wall Length	Elev. A	Elev. B	Elev. C	Elev. D	Elev. E	Elev. F	Elev. G
Wingwall	22'-0"	2076.15	2076.06	2076.08	2064.50	2066.00	2065.00	2067.63
Flare Wall	18'-0"	2076.22	2076.22	2076.22	-	-	-	2069.91

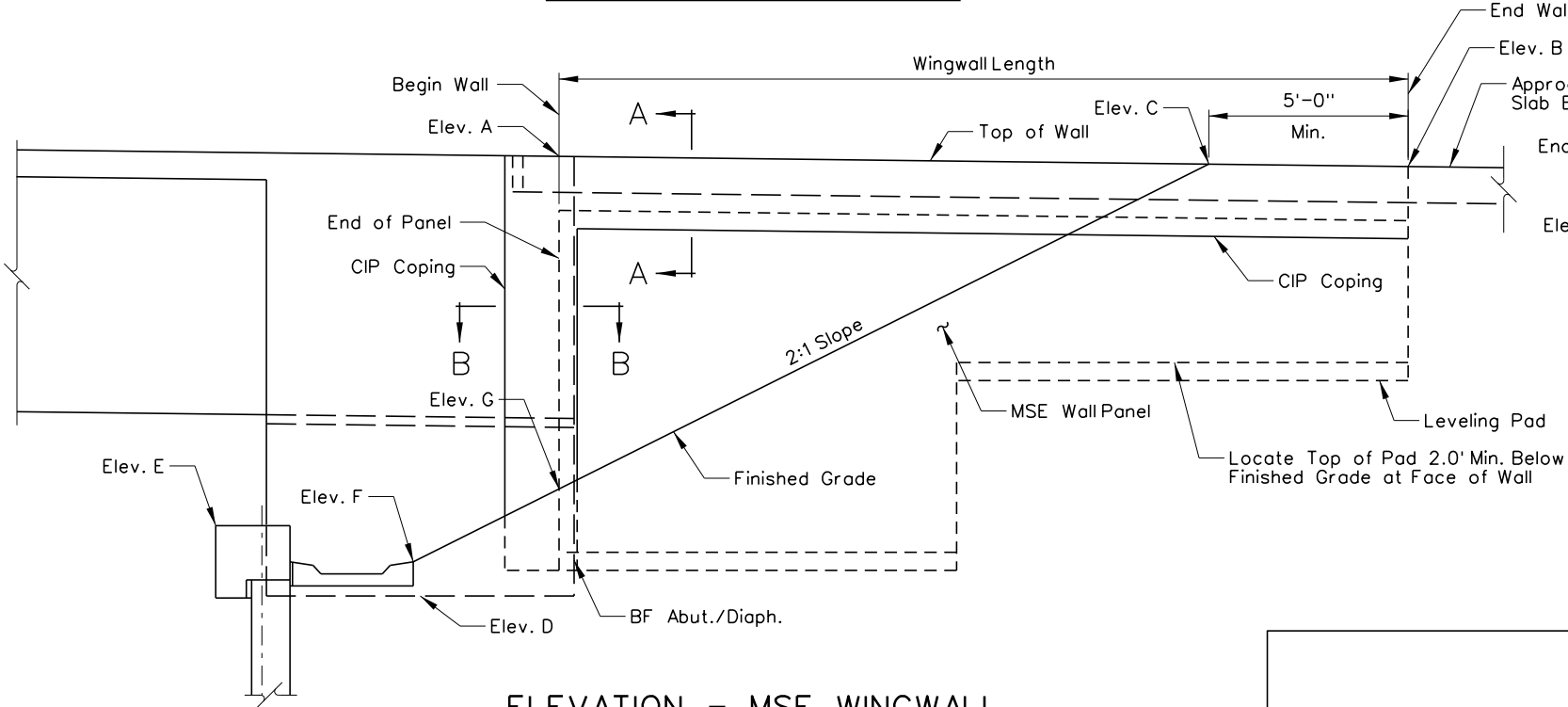
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NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1542



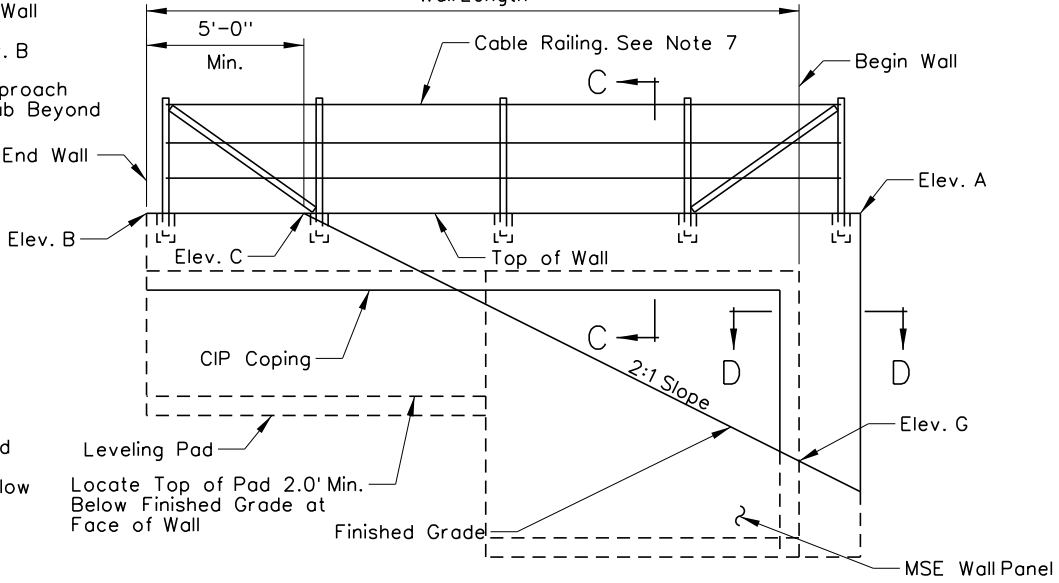
PLAN - MSE WING WALL



PLAN - MSE FLARE WALL



ELEVATION - MSE WING WALL



ELEVATION - MSE FLARE WALL

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1542	02/03/17

DESIGN UNIT S1-07

AS-BUILT DRAWING

JANUARY 04, 2019

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

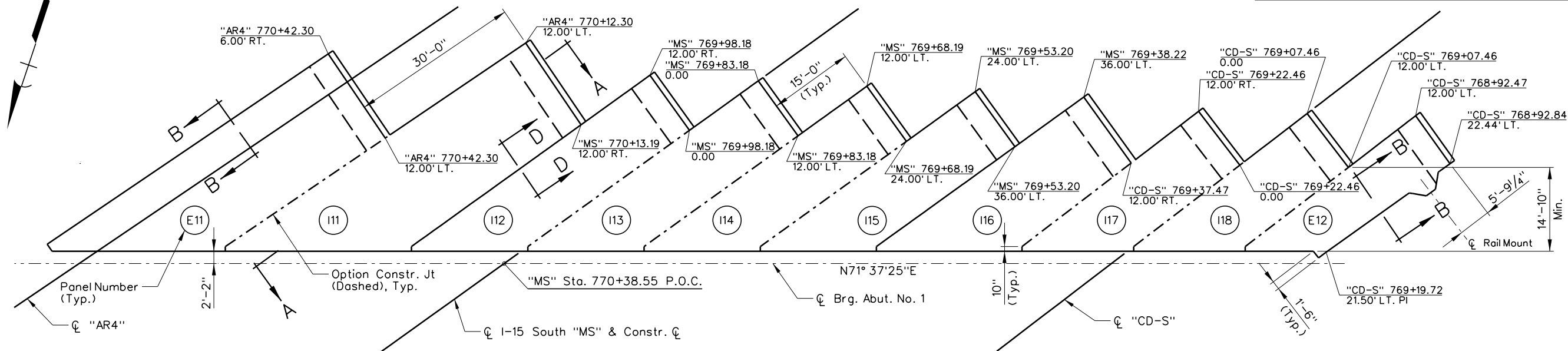
I-15 SOAKY
MSE WALL DETAILS

ATKINS

2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
www.atkinsglobal.com

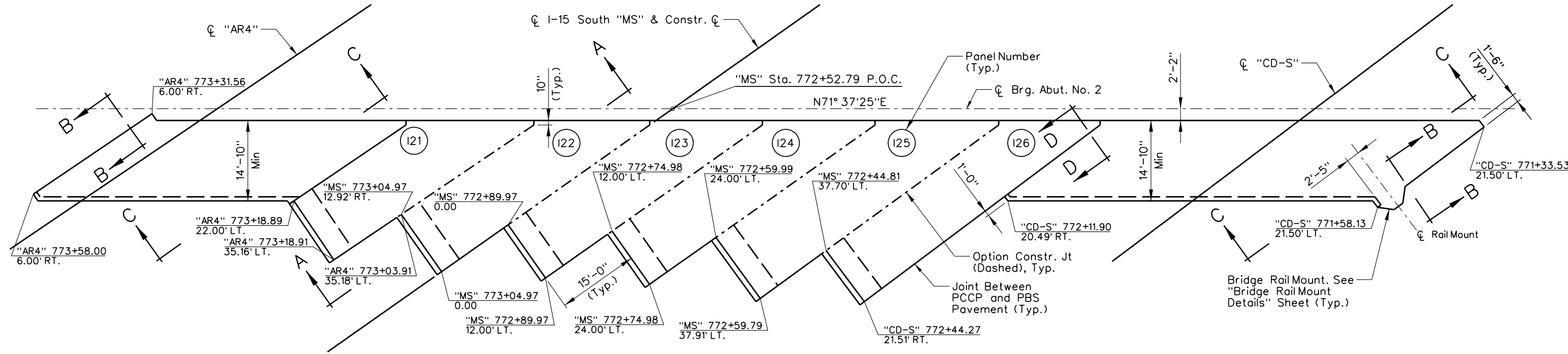
DESIGNED BY: JCH
DRAWN BY: EAS
CHECKED BY: PLK
REVIEWED BY: DAA

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1543



APPROACH SLAB NO. 1

2 NCR 424 - SOME AREAS OF CRACKING IN APPROACH SLAB NO. 1 REPAIRED WITH SIKADUR 55 SLV.



APPROACH SLAB NO. 2

- NOTES**
1. For Sections and Details See Approach Slab Details.

NO.	DESCRIPTION	DATE
2	AS-BUILTS - NCR 424	05/01/19
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1543	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
MAY 1, 20019

R₂H ENGINEERING, INC.
CONSULTING STRUCTURAL ENGINEERS
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LAS VEGAS, NEVADA 89162
PHONE (702) 260-7000 FAX (702) 260-7070



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15 SOAKY
APPROACH SLAB NO. 1 & 2
LAYOUT PLAN

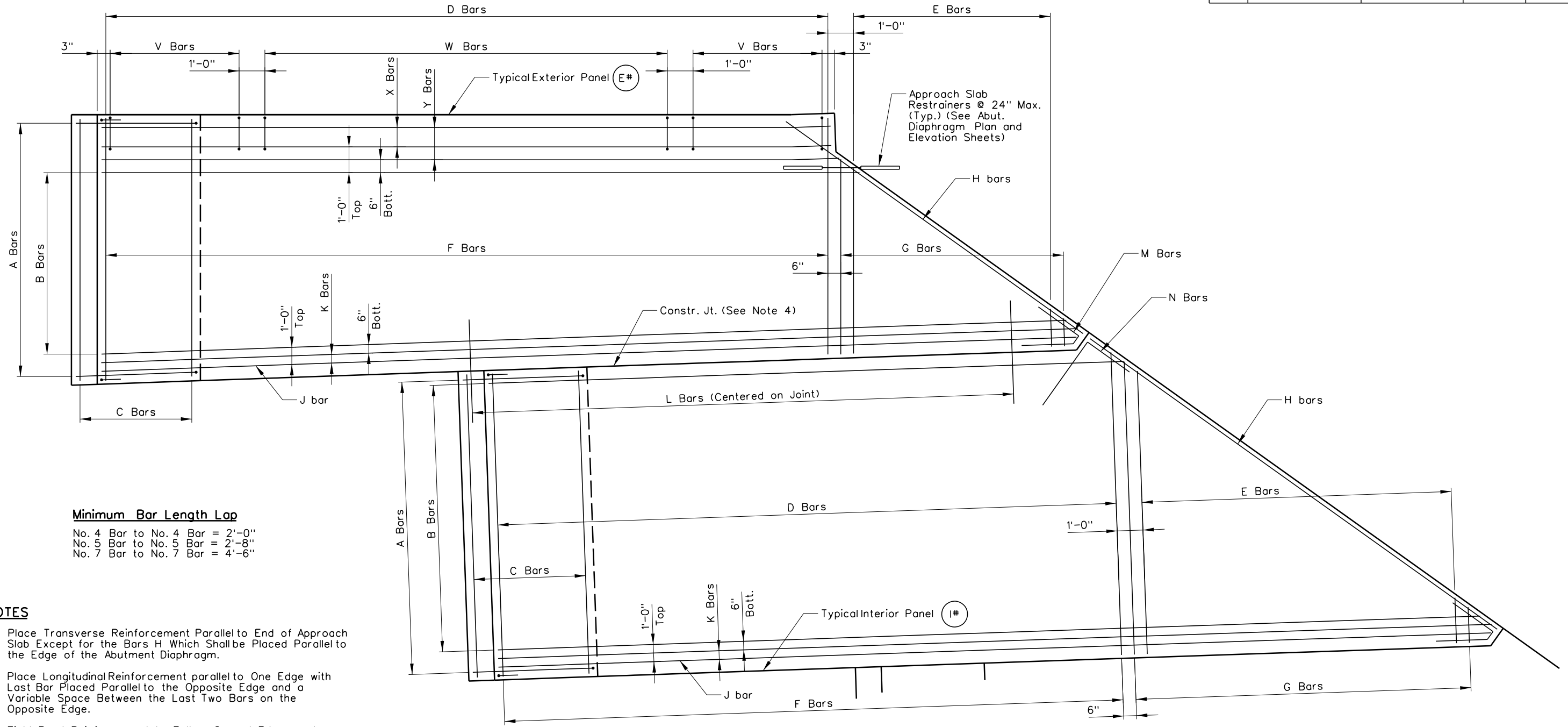
ATKINS

2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
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DESIGNED BY: JCH
DRAWN BY: EAS
CHECKED BY: PLK
REVIEWED BY: DAA

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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1544



APPROACH SLAB TYPICAL REINFORCEMENT LAYOUT PLAN

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1544	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019

R₂H ENGINEERING, INC.
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STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/50AKEY
APPROACH SLAB
REINFORCING LAYOUT

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CHECKED BY PLK
REVIEWED BY DAA

H-933S

2/11/2020 2:58:00 PM pw:\\SUSD036343.watkins.com\\ATKMAN\\Documents\\Roads and Bridges\\Projects\\100047698 NEON FD\\Engineering\\011_Structures\\DGN\\Sheets\\B15 - H-933S\\1-15 over Oakey\\73652-S1-07-R2H-H933S-SHT20B1544.dgn

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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1547

PANEL NUMBER 121	
BAR	MARK
A	14-AS5072 @ 12" & 14-AS5034 @ 12"
B	1 Set 4262 to 4439 @ 12" Top (13 Bars Per Set) & 1 Set 7262 to 7439 @ 6" Bott. (25 Bars Per Set)
C	4-51210 EqualSpaced (Bott. of Sleeper Slab)
D	27-41210 @ 12" Top
E	1 Set 4124 to 4016 @ 12" Top (17 Bars Per Set)
F	53-71210 @ 6" Bott.
G	1 Set 4128 to 4016 @ 6" Bott. (34 Bars Per Set)
H	5233 Top & Bott.
J	4443 Top
K	2-7443 @ 6" Bott.
L	24-4040 @ 12"
M	AS4049 Top & Bott. (at Chamfer)
N	AS4050 Top & Bott. (at Chamfer)

PANEL NUMBER 122	
BAR	MARK
A	13-AS5072 @ 12" & 13-AS5034 @ 12"
B	1 Set 4309 to 4464 @ 12" Top (13 Bars Per Set) & 1 Set 7309 to 7464 @ 6" Bott. (23 Bars Per Set)
C	4-5126 EqualSpaced (Bott. of Sleeper Slab)
D	1 Set 4126 to 4120 @ 12" Top (30 Bars Per Set)
E	1 Set 4126 to 4012 @ 12" Top (17 Bars Per Set)
F	1 Set 7126 to 7120 @ 6" Bott. (60 Bars Per Set)
G	1 Set 4126 to 4012 @ 6" Bott. (33 Bars Per Set)
H	5210 Top & Bott.
J	4468 Top
K	2-7468 @ 6" Bott.
L	28-4040 @ 12"
M	AS4049 Top & Bott. (at Chamfer)
N	AS4050 Top & Bott. (at Chamfer)

PANEL NUMBER 123	
BAR	MARK
A	13-AS5072 @ 12" & 13-AS5034 @ 12"
B	1 Set 4332 to 4484 @ 12" Top (12 Bars Per Set) & 1 Set 7332 to 7484 @ 6" Bott. (23 Bars Per Set)
C	4-5118 EqualSpaced (Bott. of Sleeper Slab)
D	34-4118 @ 12" Top
E	1 Set 4111 to 4012 @ 12" Top (15 Bars Per Set)
F	67-7118 @ 6" Bott.
G	1 Set 4115 to 4012 @ 6" Bott. (30 Bars Per Set)
H	5205 Top & Bott.
J	4488 Top
K	2-7488 @ 6" Bott.
L	30-4040 @ 12"
M	AS4049 Top & Bott. (at Chamfer)
N	AS4050 Top & Bott. (at Chamfer)

PANEL NUMBER 124	
BAR	MARK
A	13-AS5072 @ 12" & 13-AS5034 @ 12"
B	1 Set 4352 to 4503 @ 12" Top (12 Bars Per Set) & 1 Set 7352 to 7503 @ 6" Bott. (23 Bars Per Set)
C	4-5118 EqualSpaced (Bott. of Sleeper Slab)
D	36-4118 @ 12" Top
E	1 Set 4111 to 4012 @ 12" Top (15 Bars Per Set)
F	71-7118 @ 6" Bott.
G	1 Set 4115 to 4012 @ 6" Bott. (30 Bars Per Set)
H	5205 Top & Bott.
J	4508 Top
K	2-7508 @ 6" Bott.
L	33-4040 @ 12"
M	AS4049 Top & Bott. (at Chamfer)
N	AS4050 Top & Bott. (at Chamfer)

PANEL NUMBER 125	
BAR	MARK
A	14-AS5072 @ 12" & 14-AS5034 @ 12"
B	1 Set 4372 to 4539 @ 12" Top (13 Bars Per Set) & 1 Set 7372 to 7539 @ 6" Bott. (25 Bars Per Set)
C	4-5136 EqualSpaced (Bott. of Sleeper Slab)
D	1 Set 4137 to 4130 @ 12" Top (38 Bars Per Set)
E	1 Set 4125 to 4016 @ 12" Top (16 Bars Per Set)
F	1 Set 7137 to 7130 @ 6" Bott. (75 Bars Per Set)
G	1 Set 41210 to 4016 @ 6" Bott. (32 Bars Per Set)
H	5225 Top & Bott.
J	4541 Top
K	2-7541 @ 6" Bott.
L	34-4040 @ 12"
M	AS4049 Top & Bott. (at Chamfer)
N	AS4050 Top & Bott. (at Chamfer)

PANEL NUMBER 126	
BAR	MARK
A	12-AS5072 @ 12" & 12-AS5034 @ 12"
B	1 Set 4407 to 4538 @ 12" Top (11 Bars Per Set) & 1 Set 7407 to 7538 @ 6" Bott. (21 Bars Per Set)
C	4-5115 EqualSpaced (Bott. of Sleeper Slab)
D	1 Set 4115 to 41010 @ 12" Top (41 Bars Per Set)
E	1 Set 4106 to 4016 @ 12" Top (13 Bars Per Set)
F	1 Set 7115 to 71010 @ 6" Bott. (82 Bars Per Set)
G	1 Set 4106 to 4016 @ 6" Bott. (25 Bars Per Set)
H	5184 Top & Bott.
J	4541 Top
K	2-7541 @ 6" Bott.
L	38-4040 @ 12"
M	AS4049 Top & Bott. (at Chamfer)
N	AS4050 Top & Bott. (at Chamfer)

NOTES

1. For Sections and Details See "Approach Slab Sections and Details" Sheet.
2. Spacing Listed in Tables is Maximum Spacing. Maximum Distance From the Center of Reinforcement to Face of Concrete is 3". When Number of Bars at Spacing Shown Exceeds the Width Required Place Reinforcement at Equal Spaces.

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1547	02/03/17
NO.	DESCRIPTION	DATE

DESIGN UNIT S1-07

AS-BUILT DRAWING

JANUARY 04, 2019



R₂H ENGINEERING, INC.

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STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15SOAKEY

APPROACH SLAB NO. 2
REINFORCEMENT TABLE

ATKINS

2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
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DESIGNED BY JCH

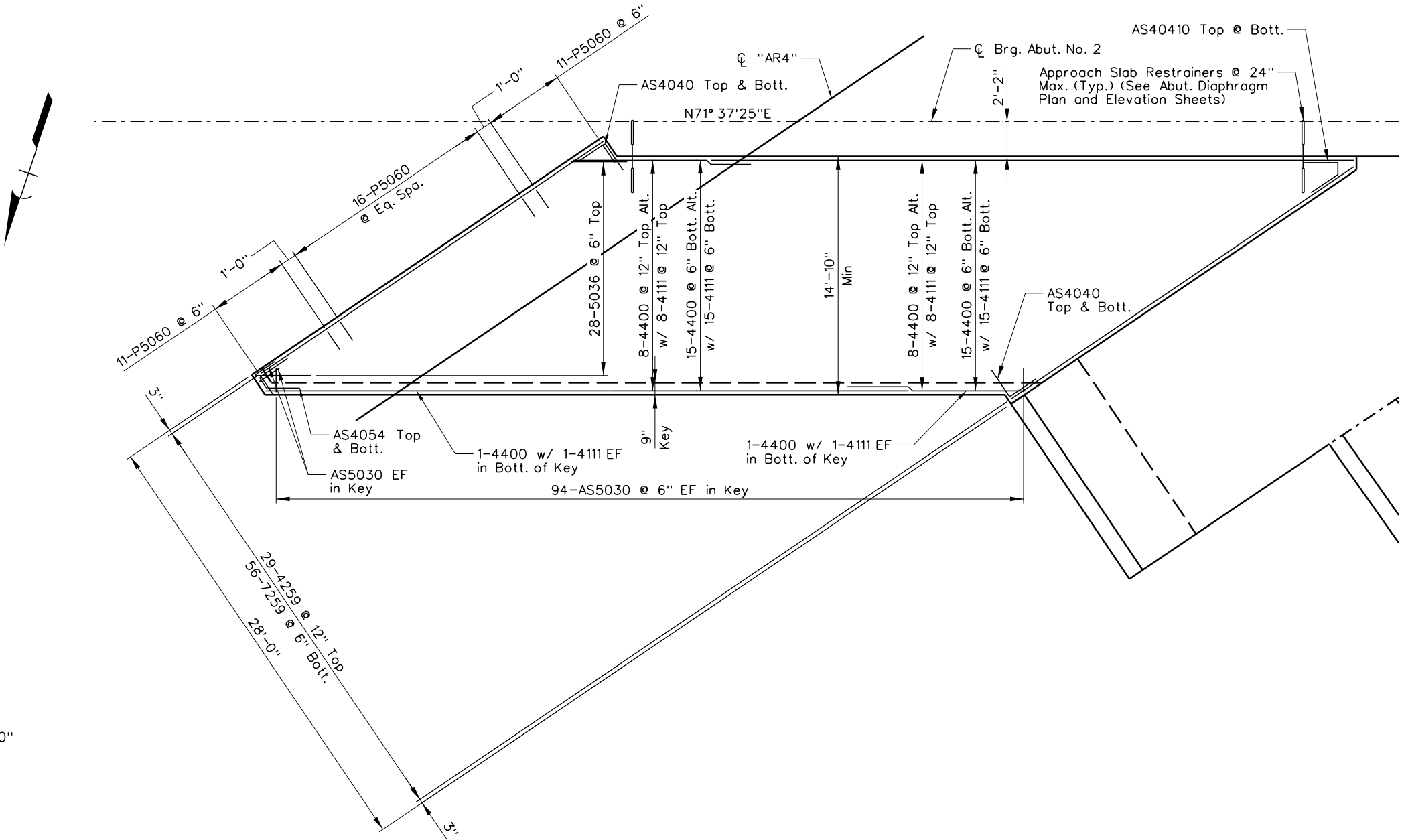
DRAWN BY EAS

CHECKED BY PLK

REVIEWED BY DAA

H-933S

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1548



Minimum Bar Length Lap
No. 4 Bar to No. 4 Bar = 2'-0"

APPROACH SLAB NO. 2 EAST
PLANTMIX BITUMINOUS SURFACE PLAN

- NOTES**
- For Sections and Details See Approach Slab Details.

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1548	02/03/17
NO.	DESCRIPTION	DATE

DESIGN UNIT S1-07

AS-BUILT DRAWING

JANUARY 04, 2019



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STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15SOAKEY

EAST APPROACH SLAB NO. 2
PBS REINFORCEMENT PLAN



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Henderson, Nevada 89074
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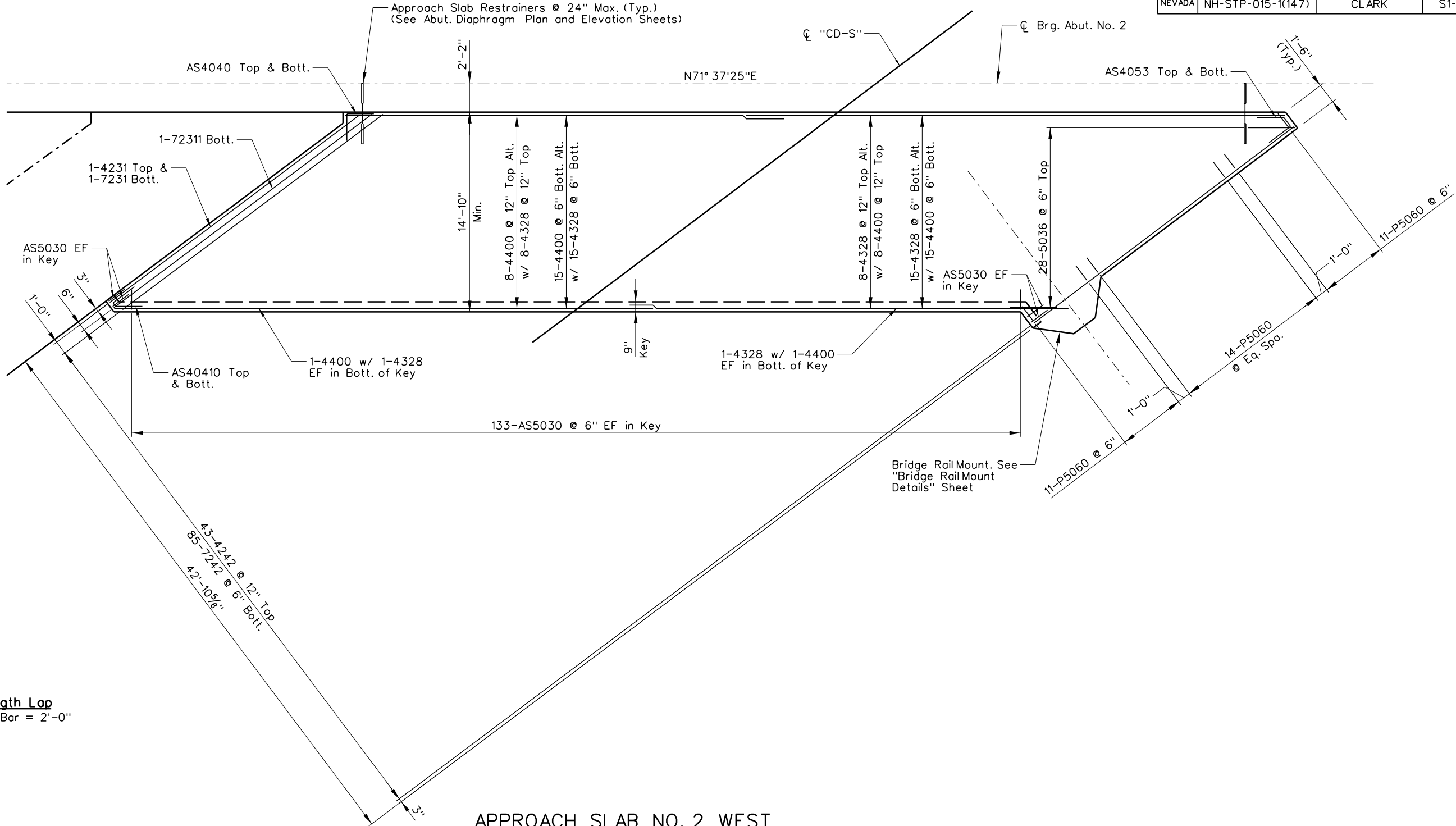
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REVIEWED BY DAA

H-933S

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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1549



Minimum Bar Length Lap
No. 4 Bar to No. 4 Bar = 2'-0"

- NOTES**
1. For Sections and Details See Approach Slab Details.

**APPROACH SLAB NO. 2 WEST
PLANTMIX BITUMINOUS SURFACE PLAN**

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1549	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019

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2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89002
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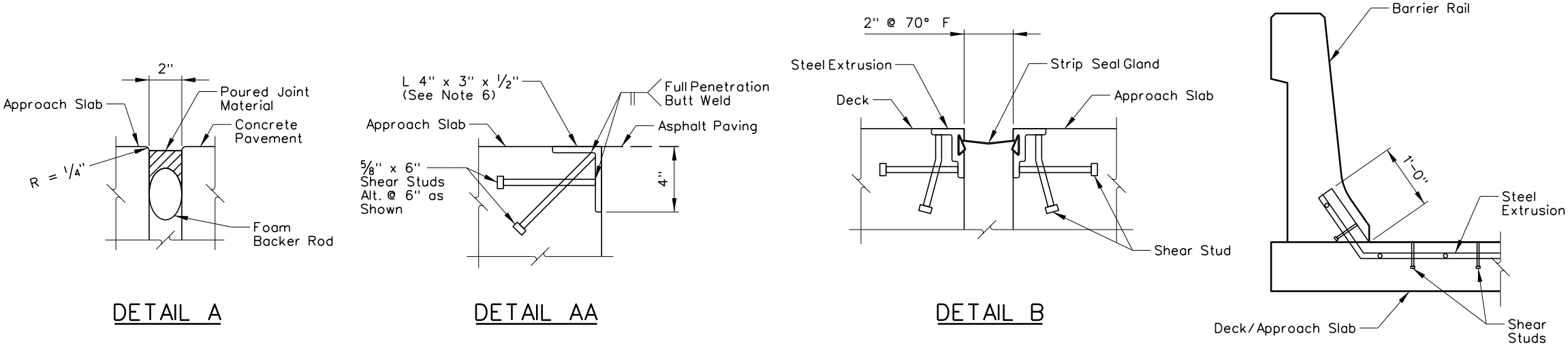
STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15SOAKEY
WEST APPROACH SLAB NO. 2
PBS REINFORCEMENT PLAN

DESIGNED BY JCH
DRAWN BY EAS
CHECKED BY PLK
REVIEWED BY DAA

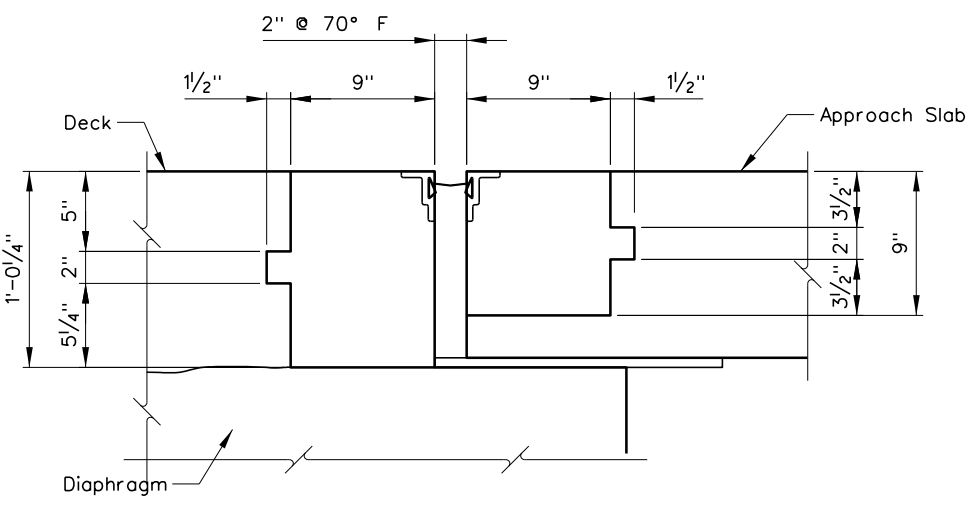
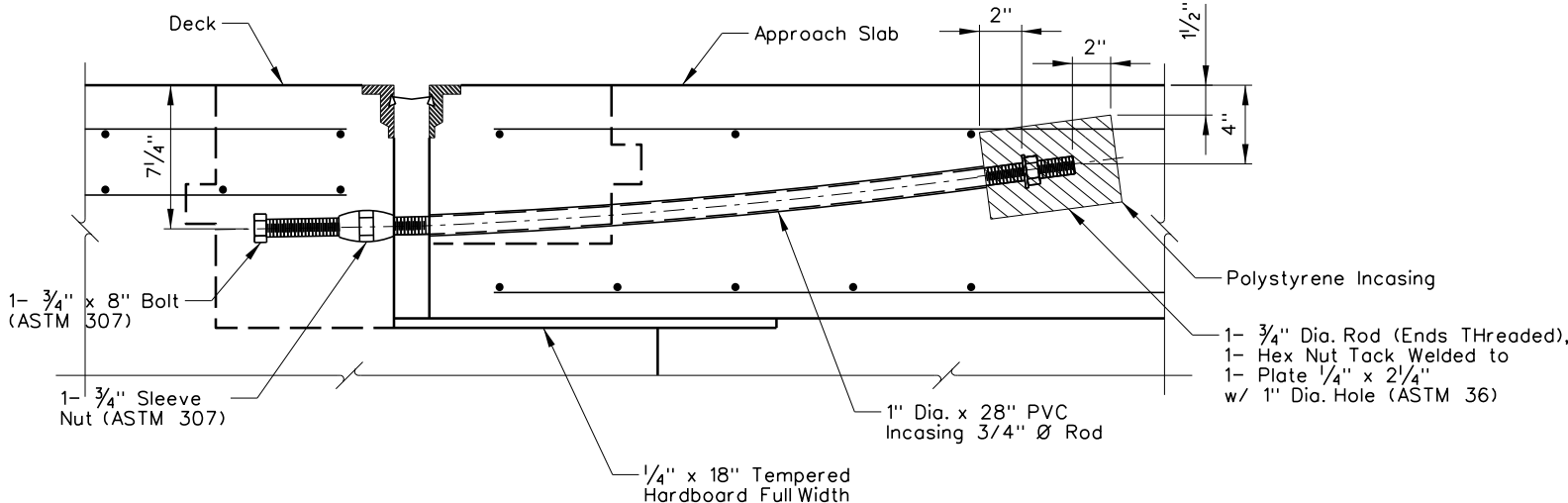
ATKINS
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Fax: 702/263-7200
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H-933S

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1550



- Notes:
1. Provide a strip seal gland with minimum movement rating of 4 inches.
 2. All structural steel and strip seal extrusions shall be AASHTO M270 Grade 36, 50, or 50W steel. Unless 50W materials is used, all welded anchorages shall be galvanized.
 3. The strip seal and poured joint manufacture's installation instructions must be followed.
 4. The strip seal gland shall be installed as a single continuous unit. No field splicing shall be permitted.
 5. The strip seal expansion joint opening shall be increased by 1/8" for every 10° F temperature fall from 70° F and shall decrease by 1/8" for every 10° F temperature rise from 70° F.
 6. Galvanized assembly after fabrication or use A588 steel. Assembly to extend full width or to the face of any bridge or barrier rails. Full penetration butt weld any field splices.
 7. All steel components of the Restrainer Assembly to be galvanized.



APPROACH SLAB RESTRAINER ASSEMBLY

BLOCK OUT DETAIL
Dimensions Are Perpendicular to Abutment C

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1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1550	02/03/17
NO.	DESCRIPTION	DATE

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019

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STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15 SOAKY
EXPANSION JOINT DETAILS

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H-933S

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GENERAL NOTES:

Applies Unless Noted Otherwise On The Drawings.

- Design Specifications:
International Building Code (IBC) 2012 With Southern Nevada Amendments
- Loading:
Wind Load
Risk Category = I
Basic Wind Speed = 105 MPH, Exposure C
 $K_z = 1.05$
 $K_{zt} = 1.0$
 $K_d = 0.85$
 $C_f = 1.8$
 $G = 0.85$
- Concrete:
Refer to bridge General Notes Sheet.
- Reinforcing:
Refer to bridge General Notes Sheet.
- Structural Steel:
Structural steel plates and shapes shall conform to ASTM A36, Min.
- Bolted Connections:
Anchor rods include hooked, headed, and threaded and nutted Anchors. The terms anchor bolt and anchor rod are used synonymously throughout these documents. Fabricate anchor bolts from material conforming to ASTM F1554 grade 55. All anchor rods shall be installed with steel washers at holes using snug tight installation unless noted otherwise.

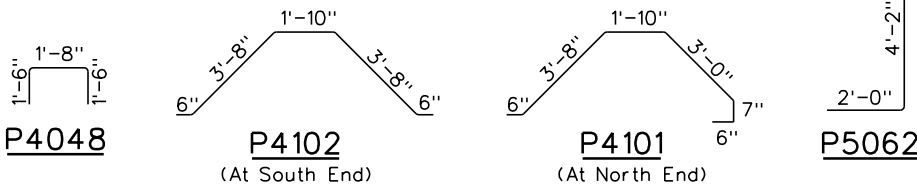
Anchor rod, washers and nuts shall be galvanized with the same process to ensure the threads match.
- Shop Drawings:
Shop drawings shall be submitted for base plates, anchor bolts and pedestal reinforcement in addition to items required by Sheet L2.
- Verify all dimensions with Sheet L2 and field conditions.
- Mainline monument not shown on this sheet. Refer to Sheet L2 for details.
- Junction box details type 2 refer to NDOT Standard Sheet T-30.1.20.

BILL OF MATERIALS

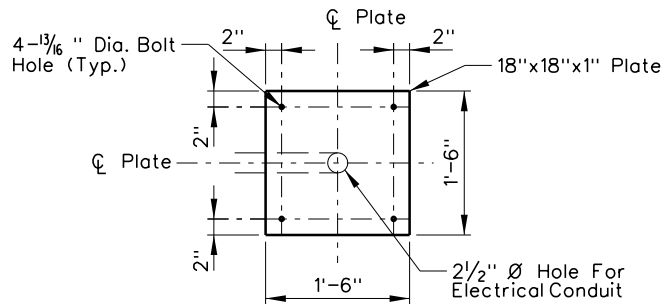
South/North West Pedestal

Mark	Size	Length	No. of Bars	Weight
40110	4	1	10	9.80 lb
5050	5	5	0	31.29 lb
P4048	P 4	4	8	18.70 lb
P5062	P 5	6	2	90.05 lb
P4102	P 4	10	2	47.54 lb
P4101	P 4	10	1	47.15 lb

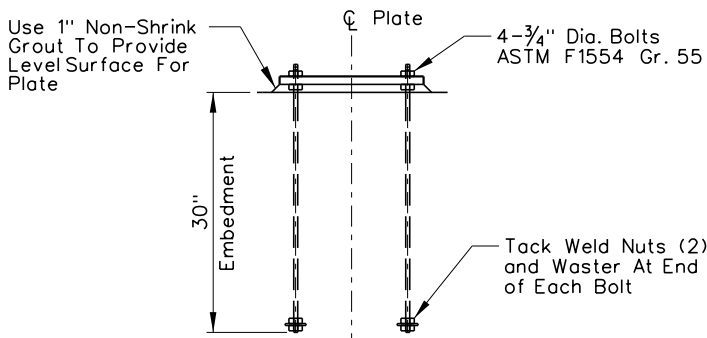
Reinforcing steel 244.53 lb



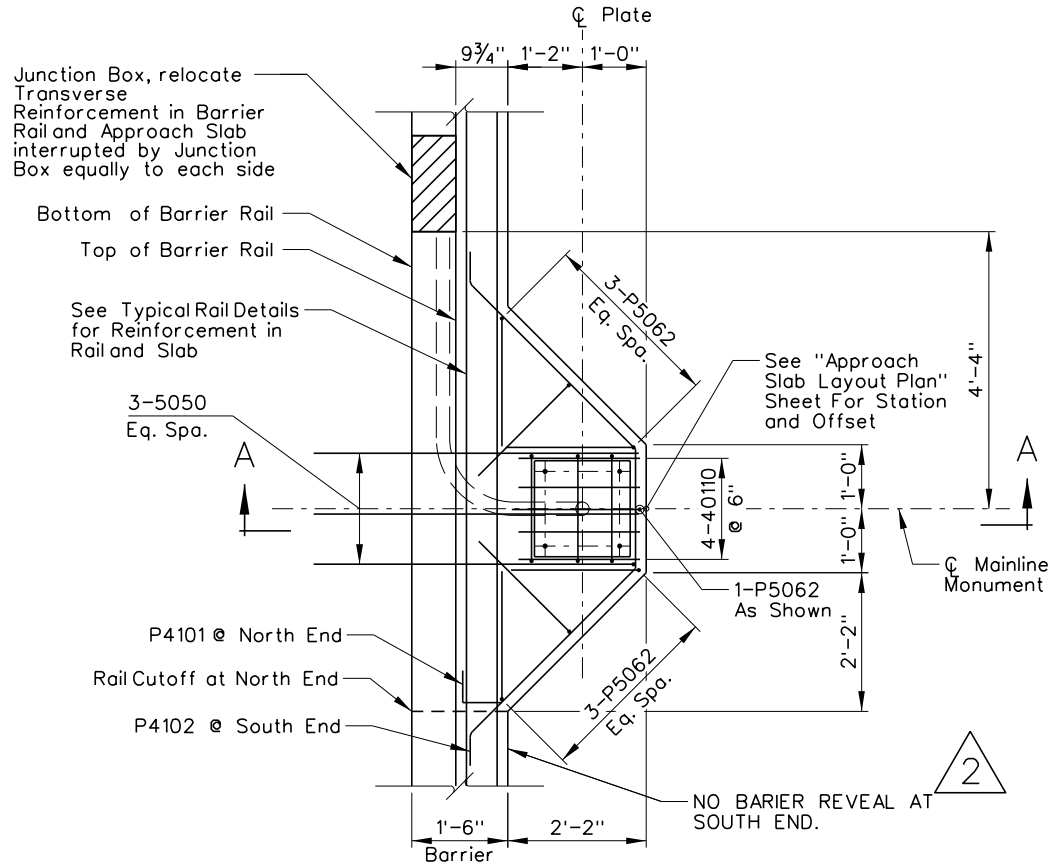
BAR BENDS



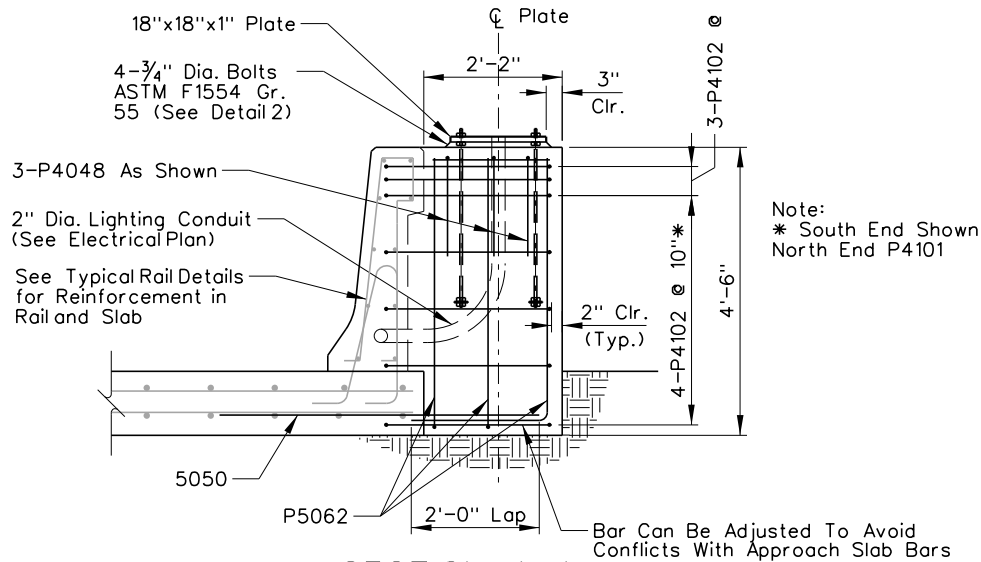
DETAIL 1



DETAIL 2



PLAN



SECTION A-A

H-933S

DESIGN UNIT S1-07
AS-BUILT DRAWING
MAY 01, 2019

R₂H ENGINEERING, INC.
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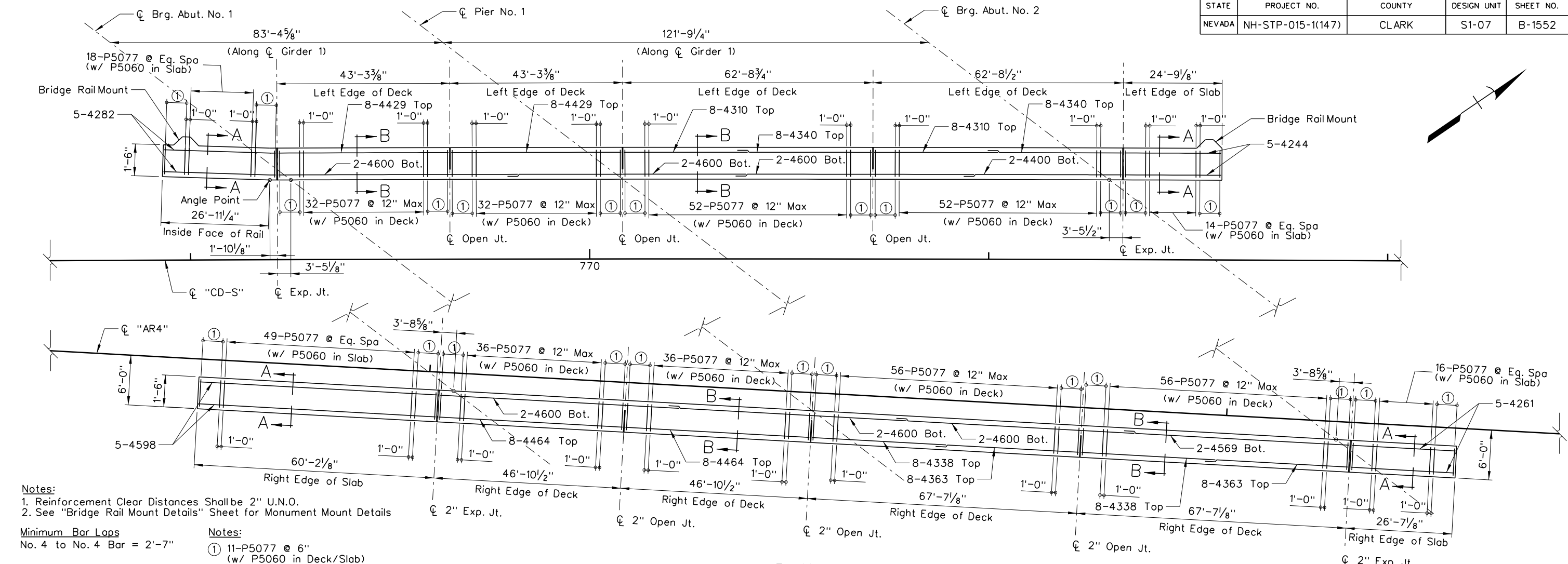
STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15 SOAKY
BRIDGE RAIL MOUNT DETAILS

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Suite 200
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Fax: 702/263-7200
www.atkinsglobal.com

DESIGNED BY JCH
DRAWN BY EAS
CHECKED BY PLK
REVIEWED BY DAA

NO.	DESCRIPTION	DATE
2	NDC 1132 - MAINLINE MONUMENT CLARIFICATION	06/21/18
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1551	02/03/17

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1552



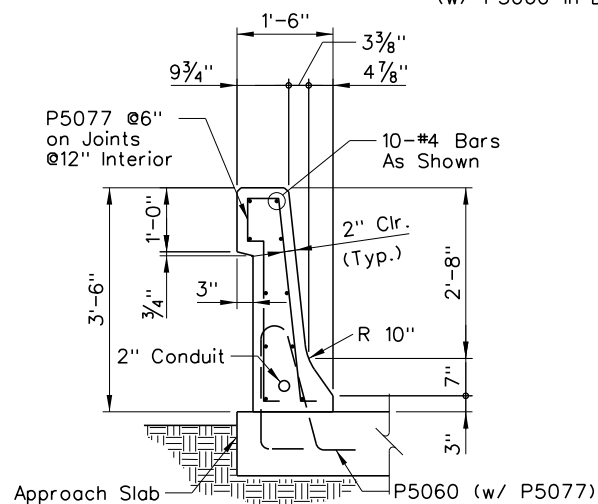
Notes:

1. Reinforcement Clear Distances Shall be 2" U.N.O.
2. See "Bridge Rail Mount Details" Sheet for Monument Mount Details

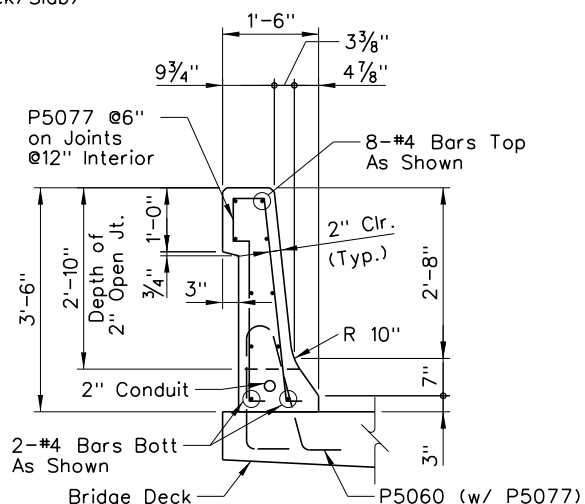
Minimum Bar Laps
No. 4 to No. 4 Bar = 2'-7"

Notes:

① 11-P5077 @ 6"
(w/ P5060 in Deck/Slab)

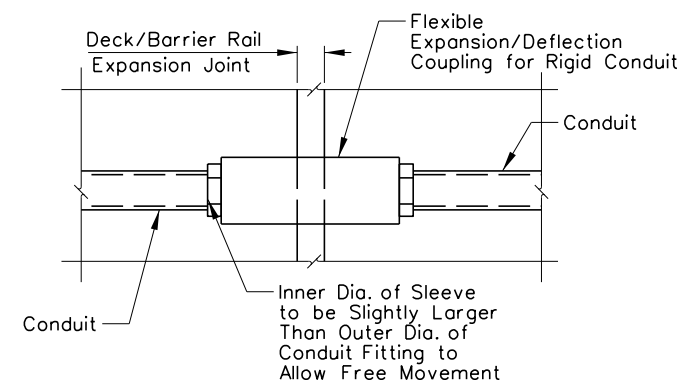


SECTION A-A

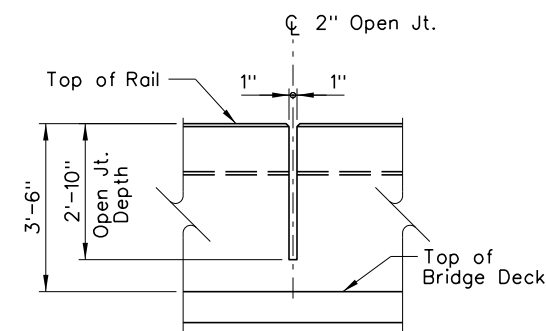


SECTION B-B

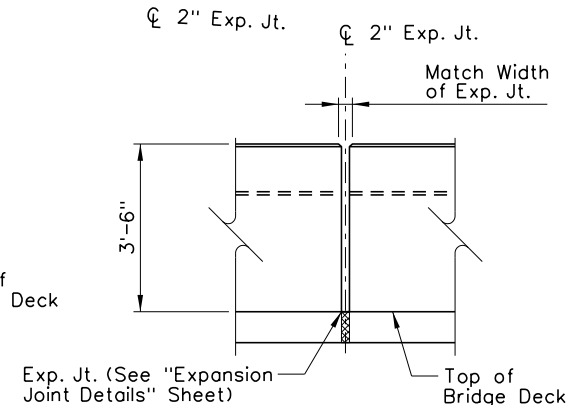
PLAN



CONDUIT EXPANSION JOINT DETAIL



OPEN JT DETAIL

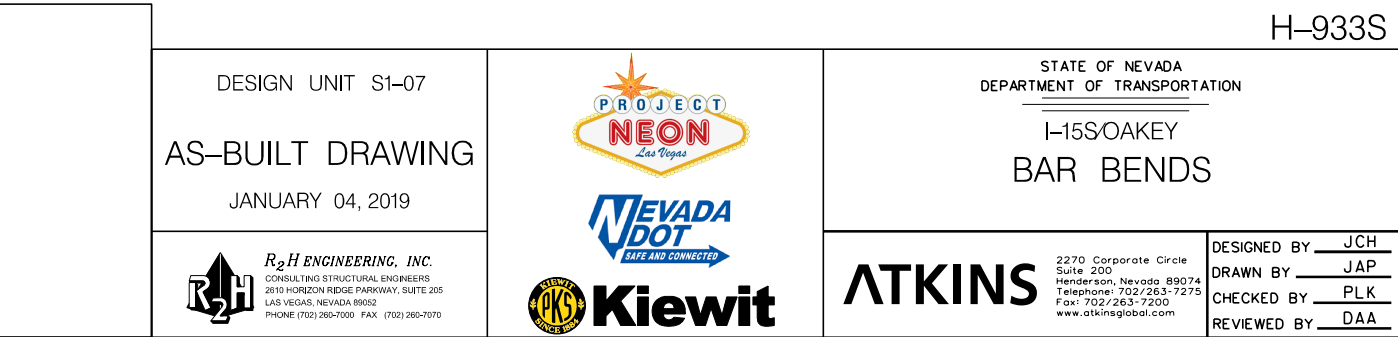
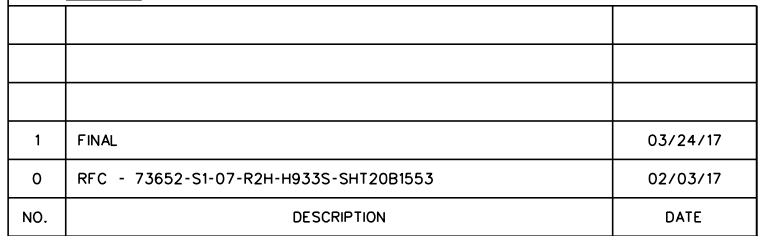


TYP EXPANSION JOINT

4-933S

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1552	02/03/17
NO.	DESCRIPTION	DATE

DESIGN UNIT S1-07 AS-BUILT DRAWING JANUARY 04, 2019	 	STATE OF NEVADA DEPARTMENT OF TRANSPORTATION I-15/50AKEY BRIDGE RAIL								
 R₂H ENGINEERING, INC. CONSULTING STRUCTURAL ENGINEERS 2610 HORIZON RIDGE PARKWAY, SUITE 205 LAS VEGAS, NEVADA 89052 PHONE (702) 260-7000 FAX (702) 260-7070	 Kiewit	ATKINS 2270 Corporate Circle Suite 200 Henderson, Nevada 89074 Telephone: 702/263-7275 Fax: 702/263-7200 www.atkinsglobal.com <table><tr><td>DESIGNED BY</td><td>JCH</td></tr><tr><td>DRAWN BY</td><td>EAS</td></tr><tr><td>CHECKED BY</td><td>PLK</td></tr><tr><td>REVIEWED BY</td><td>DAA</td></tr></table>	DESIGNED BY	JCH	DRAWN BY	EAS	CHECKED BY	PLK	REVIEWED BY	DAA
DESIGNED BY	JCH									
DRAWN BY	EAS									
CHECKED BY	PLK									
REVIEWED BY	DAA									



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											STATE	PROJECT NO.				COUNTY	DESIGN UNIT	SHEET NO.								
											NEVADA	NH-STP-015-1(147)				CLARK	S1-07	B-1554								
Abutment No. 1						Abutment No. 1 Diaphragm (Continued)																				
Mark	Size	Length		No. of Bars	Weight	AD5142	AD	5	14	2	60	886.55 lb														
5488	5	48	8	10	507.59 lb	AD5066	AD	5	6	6	70	474.57 lb	Abutment No. 2 (Continued)													
5550	5	55	0	30	1720.95 lb							A5082	A	5	8	2	22	187.39 lb								
5299	5	29	9	10	310.29 lb							Reinforcing steel	18313.84 lb						Reinforcing steel		38593.09 lb					
8490	8	49	0	9	1177.47 lb	Abutment No. 1 Cheekwalls																				
8559	8	55	9	27	4019.02 lb	Mark	Size	Length		No. of Bars	Weight															
8325	8	32	5	9	778.97 lb	8089	8	8	9	39	911.14 lb	Abutment No. 2 Diaphragm														
95111	9	51	11	9	1588.65 lb	5087	5	8	7	14	125.33 lb	Mark	Size	Length		No. of Bars	Weight									
9311	9	31	1	9	951.15 lb	W4033	W	4	3	3	19	41.25 lb	5400	5	40	0	14	584.08 lb								
9580	9	58	0	27	5324.40 lb	A6095	A	6	9	5	11	155.58 lb	5600	5	60	0	32	2002.56 lb								
A5057	A	5	5	7	314.46 lb	A6072	A	6	7	2	11	118.41 lb	5340	5	34	0	2	70.92 lb								
A5068	A	5	6	8	153 1063.86 lb	1 Set 6151	to	6	17	6	25	Bars Per Set 611.75 lb	5364	5	36	4	4	151.58 lb								
A5082	A	5	8	2	22 187.39 lb	A6049	A	6	4	9	35	249.71 lb	5380	5	38	0	10	396.34 lb								
A5113	A	5	11	3	5 58.67 lb	A6082	A	6	8	2	31	380.26 lb	5090	5	9	0	65	610.16 lb								
A5148	A	5	14	8	4 61.19 lb	1 Set A6082	to	A	6	2	10	4 Bars Per Set 33.04 lb	50210	5	2	10	16	47.28 lb								
A5199	A	5	19	9	36 741.57 lb	A6080	A	6	8	0	22	264.35 lb	5189	5	18	9	16	312.90 lb								
A5158	A	5	15	8	4 65.36 lb	A6018	A	6	1	8	35	87.62 lb	5140	5	14	0	4	58.41 lb								
A5118	A	5	11	8	4 48.67 lb	A6102	A	6	10	2	9	137.43 lb	5169	5	16	9	80	1397.62 lb								
A5135	A	5	13	5	4 55.97 lb	1 Set A60810	to	A	6	2	7	4 Bars Per Set 34.30 lb	5126	5	12	6	18	234.68 lb								
A5058	A	5	5	8	249 1471.67 lb	A6128	A	6	12	8	22	418.56 lb	5060	5	6	0	2	12.52 lb								
A5149	A	5	14	9	249 3830.68 lb	A6081	A	6	8	1	9	109.27 lb	5032	5	3	2	2	6.61 lb								
A5114	A	5	11	4	249 2943.35 lb	A60411	A	6	4	11	9	66.46 lb	6600	6	60	0	28	2523.36 lb								
A5152	A	5	15	2	5 79.09 lb	W7201	W	7	20	1	5	205.25 lb	6210	6	21	0	7	220.79 lb								
A5098	A	5	9	8	14 141.15 lb	W7163	W	7	16	3	5	166.08 lb	AD5050	AD	5	5	0	174	907.41 lb							
A5113	A	5	11	3	5 58.67 lb							AD51411	AD	5	14	11	104	1618.04 lb								
												Reinforcing steel	4115.79 lb						AD5208	AD	5	20	8	78	1681.32 lb	
Abutment No. 1 Diaphragm						Abutment No. 2																				
Mark	Size	Length		No. of Bars	Weight	Mark	Size	Length		No. of Bars	Weight															
5600	5	60	0	30	1877.40 lb	55010	5	50	10	10	530.19 lb	Abutment No. 2 Cheekwalls														
5533	5	53	3	10	555.40 lb	5550	5	55	0	30	1720.95 lb	Mark	Size	Length		No. of Bars	Weight									
5400	5	40	0	6	250.32 lb	5480	5	48	0	10	500.64 lb	8089	8	8	9	40	934.50 lb									
5347	5	34	7	2	72.14 lb	9535	9	53	5	9	1634.55 lb	5087	5	8	7	14	125.33 lb									
5378	5	37	8	2	78.57 lb	9550	9	55	0	18	3366.00 lb	W4033	W	4	3	3	19	41.25 lb								
5344	5	34	4	2	71.62 lb	9600	9	60	0	9	1836.00 lb	A50910	A	5	9	10	7	71.79 lb								
5090	5	9	0	65	610.16 lb	9505	9	50	5	9	1542.75 lb	A5104	A	5	10	4	7	75.44 lb								
50210	5	2	10	16	47.28 lb	11510	11	51	0	9	2438.67 lb	51611	5	16	11	6	105.86 lb									
5088	5	8	8	16	144.63 lb	11600	11	60	0	36	11476.08 lb	A5053	A	5	5	3	7	38.33 lb								
5045	5	4	5	4	18.43 lb	A5057	A	5	5	7	60	349.41 lb	A5061	A	5	6	1	12	76.14 lb							
5169	5	16	9	80	1397.62 lb	A5068	A	5	6	8	210	1460.20 lb	W7201	W	7	20	1	5	205.25 lb							
5126	5	12	6	18	234.68 lb	A5148	A	5	14	8	4	61.19 lb	W7196	W	7	19	6	5	199.29 lb							
5032	5	3	2	2	6.61 lb	A5199	A	5	19	9	36	741.57 lb	Reinforcing steel						1873.20 lb							
5059	5	5	9	2	11.99 lb	A5208	A	5	20	8	4	86.22 lb							H-933S							
6557	6	55	7	7	584.40 lb	A5218	A	5	21	8	4	90.39 lb														
6600	6	60	0	21	1892.52 lb	A5180	A	5	18	0	4	75.10 lb														
AD5050	AD	5	5	0	160	834.40 lb	A5058	A	5	5	8	308	1820.38 lb													
AD51411	AD	5	14	11	104	1618.04 lb	A5149	A	5	14	9	308	4738.35 lb													
AD5208	AD	5	20	8	78	1681.32 lb	A5114	A	5	11	4	308	3640.77 lb													
AD5088	AD	5	8	8	234	2115.20 lb	A5098	A	5	9	8	14	141.15 lb													
AD5098	AD	5	9	8	82	826.75 lb	A5147	A	5	14	7	5	76.05 lb													
AD5113	AD	5	11	3	156	1830.47 lb	A5152	A	5	15	2	5	79.09 lb													
AD5103	AD	5	10	3	8	85.53 lb																				
AD5059	AD	5	5	9	12	71.97 lb																				
AD5025	AD	5	2	5	14	35.29 lb																				
1	FINAL																03/24/17									
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1554																02/03/17									
NO.	DESCRIPTION																DATE									

H-933S

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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1556

Approach Slab No. 1 Panel Number E11									
Bar	Mark	Size	Length	No. of Bars	Weight				
A	AS5072	AS 5	7 2	19	142.02 lb				
A	AS5034	AS 5	3 4	19	66.06 lb				
B	1 Set 4586	to 4	35 5	17 Bars Per Set	533.26 lb				
B	1 Set 7586	to 7	35 5	33 Bars Per Set	3167.43 lb				
C	5178	5	17 8	4	73.71 lb				
D	4178	4	17 8	36	424.85 lb				
E	1 Set 4176	to 4	1 11	24 Bars Per Set	155.64 lb				
F	7178	7	17 8	72	2599.97 lb				
G	1 Set 4176	to 4	1 11	47 Bars Per Set	304.80 lb				
H	5304	5	30 4	2	63.28 lb				
N	AS4050	AS 4	5 0	2	6.68 lb				
W	P5060	P 5	6 0	71	444.32 lb				
X	4598	4	59 8	2	79.71 lb				
Y	7598	7	59 8	3	365.88 lb				
Z	5036	5	3 6	113	412.51 lb				
					Reinforcing steel	8840.11 lb			

Approach Slab No. 1 Panel Number I11									
Bar	Mark	Size	Length	No. of Bars	Weight				
A	AS5072	AS 5	7 2	19	142.02 lb				
A	AS5034	AS 5	3 4	19	66.06 lb				
B	1 Set 4635	to 4	38 1	17 Bars Per Set	576.32 lb				
B	1 Set 7634	to 7	38 1	34 Bars Per Set	3524.03 lb				
C	5172	5	17 2	4	71.62 lb				
D	1 Set 4172	to 4	18 2	39 Bars Per Set	460.25 lb				
E	1 Set 4177	to 4	1 4	25 Bars Per Set	157.95 lb				
F	1 Set 7172	to 7	18 2	77 Bars Per Set	2780.52 lb				
G	1 Set 41711	to 4	1 4	50 Bars Per Set	321.48 lb				
H	5327	5	32 7	2	67.97 lb				
J	46311	4	63 11	1	42.70 lb				
K	76311	7	63 11	2	261.29 lb				
L	4040	4	4 0	33	88.18 lb				
M	AS4049	AS 4	4 9	2	6.35 lb				
N	AS4050	AS 4	5 0	2	6.68 lb				
					Reinforcing steel	8573.40 lb			

Approach Slab No. 1 Panel Number I12									
Bar	Mark	Size	Length	No. of Bars	Weight				
A	AS5072	AS 5	7 2	13	97.17 lb				
A	AS5034	AS 5	3 4	13	45.20 lb				
B	1 Set 4513	to 4	36 5	12 Bars Per Set	351.37 lb				
B	1 Set 7513	to 7	36 5	23 Bars Per Set	2060.69 lb				
C	5118	5	11 8	4	48.67 lb				
D	4118	4	11 8	37	288.35 lb				
E	1 Set 4113	to 4	1 3	15 Bars Per Set	62.63 lb				
F	7118	7	11 8	73	1740.81 lb				
G	1 Set 4116	to 4	1 3	30 Bars Per Set	127.76 lb				
H	5203	5	20 3	2	42.24 lb				
J	4518	4	51 8	1	34.51 lb				
K	7518	7	51 8	2	211.21 lb				
L	4040	4	4 0	35	93.52 lb				
M	AS4049	AS 4	4 9	2	6.35 lb				
N	AS4050	AS 4	5 0	2	6.68 lb				
					Reinforcing steel	5217.16 lb			

Approach Slab No. 1 Panel Number I13									
Bar	Mark	Size	Length	No. of Bars	Weight				
A	AS5072	AS 5	7 2	13	97.17 lb				
A	AS5034	AS 5	3 4	13	45.20 lb				
B	1 Set 4497	to 4	34 9	12 Bars Per Set	338.01 lb				
B	1 Set 7497	to 7	34 9	23 Bars Per Set	1982.34 lb				
C	5118	5	11 8	4	48.67 lb				
D	4118	4	11 8	35	272.77 lb				
E	1 Set 4115	to 4	1 5	15 Bars Per Set	64.30 lb				
F	7118	7	11 8	69	1645.42 lb				
G	1 Set 4117	to 4	1 5	30 Bars Per Set	130.26 lb				
H	5202	5	20 2	2	42.07 lb				
J	44911	4	49 11	1	33.34 lb				
K	74911	7	49 11	2	204.06 lb				
L	4040	4	4 0	34	90.85 lb				
M	AS4049	AS 4	4 9	2	6.35 lb				
N	AS4050	AS 4	5 0	2	6.68 lb				
					Reinforcing steel	5007.48 lb			

Approach Slab No. 1 Panel Number I14									
Bar	Mark	Size	Length	No. of Bars	Weight				
A	AS5072	AS 5	7 2	13	97.17 lb				
A	AS5034	AS 5	3 4	13	45.20 lb				
B	1 Set 44710	to 4	33 0	12 Bars Per Set	323.98 lb				
B	1 Set 74710	to 7	33 0	23 Bars Per Set	1900.07 lb				
C	5118	5	11 8	4	48.67 lb				
D	4118	4	11 8	34	264.97 lb				
E	1 Set 41011	to 4	1 7	14 Bars Per Set	58.45 lb				
F	7118	7	11 8	67	1597.73 lb				
G	1 Set 4114	to 4	1 7	28 Bars Per Set	120.80 lb				
H	5202	5	20 2	2	42.07 lb				
J	4483	4	48 3	1	32.23 lb				
K	7483	7	48 3	2	197.25 lb				
L	4040	4	4 0	32	85.50 lb				
M	AS4049	AS 4	4 9	2	6.35 lb				
N	AS4050	AS 4	5 0	2	6.68 lb				
					Reinforcing steel	4827.11 lb			

Approach Slab No. 1 Panel Number I15									
Bar	Mark	Size	Length	No. of Bars	Weight				
A	AS5072	AS 5	7 2	13	97.17 lb				
A	AS5034	AS 5	3 4	13	45.20 lb				
B	1 Set 4462	to 4	31 4	12 Bars Per Set	310.62 lb				
B	1 Set 7462	to 7	31 4	23 Bars Per Set	1821.72 lb				
C	5118	5	11 8	4	48.67 lb				
D	4118	4	11 8	32	249.39 lb				
E	1 Set 4113	to 4	1 2	15 Bars Per Set	62.21 lb				
F	7118	7	11 8	64	1526.19 lb				
G	1 Set 4113	to 4	1 2	29 Bars Per Set	120.27 lb				
H	5202	5	20 2	2	42.07 lb				
J	4467	4	46 7	1	31.12 lb				
K	7467	7	46 7	2	190.43 lb				
L	4040	4	4 0	31	82.83 lb				
M	AS4049	AS 4	4 9	2	6.35 lb				
N	AS4050	AS 4	5 0	2	6.68 lb				
					Reinforcing steel	4640.90 lb			

H-933S

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1556	02/03/17
NO.	DESCRIPTION	DATE

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15SOAKEY
BILL OF MATERIALS 3

ATKINS

2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
www.atkinsglobal.com

DESIGNED BY JCH
DRAWN BY JAP
CHECKED BY PLK
REVIEWED BY DAA

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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1557

Approach Slab No. 1 Panel Number I16						Approach Slab No. 1 Panel Number I18						Approach Slab No. 2 - East Bituminous Surface					
Bar	Mark	Size	Length	No. of Bars	Weight	Bar	Mark	Size	Length	No. of Bars	Weight	Mark	Size	Length	No. of Bars	Weight	
A	AS5072	AS 5	7 2	15	112.12 lb	A	AS5072	AS 5	7 2	13	97.17 lb	4400	4	40 0	48	1282.56 lb	
A	AS5034	AS 5	3 4	15	52.15 lb	A	AS5034	AS 5	3 4	13	45.20 lb	4111	4	11 1	48	355.38 lb	
B 1 Set	4446 to	4	25 5	14	Bars Per Set 326.93 lb	B 1 Set	4380 to	4	24 1	12	Bars Per Set 248.83 lb	4259	4	25 9	29	498.83 lb	
B 1 Set	7446 to	7	25 5	27	Bars Per Set 1929.28 lb	B 1 Set	7380 to	7	24 1	23	Bars Per Set 1459.33 lb	7259	7	25 9	56	2947.45 lb	
C	5140	5	14 0	4	58.41 lb	C	5118	5	11 8	4	48.67 lb	5036	5	3 6	28	102.21 lb	
D 1 Set	4140 to	4	14 9	26	Bars Per Set 249.67 lb	D	4118	4	11 8	25	194.83 lb	AS5030	AS 5	3 0	192	600.77 lb	
E 1 Set	4144 to	4	1 5	19	Bars Per Set 99.95 lb	E 1 Set	4110 to	4	1 0	14	Bars Per Set 56.11 lb	AS4040	AS 4	4 0	4	10.69 lb	
F 1 Set	7140 to	7	14 9	52	Bars Per Set 1527.89 lb	F	7118	7	11 8	49	1168.49 lb	AS4054	AS 4	5 4	2	7.13 lb	
G 1 Set	4144 to	4	1 5	37	Bars Per Set 194.64 lb	G 1 Set	4114 to	4	1 0	28	Bars Per Set 115.34 lb	AS40410	AS 4	4 10	2	6.46 lb	
H	5255	5	25 5	2	53.02 lb	H	5194	5	19 4	2	40.33 lb	P5060	P 5	6 0	38	237.80 lb	
J	44411	4	44 11	1	30.00 lb	J	4384	4	38 4	1	25.61 lb						
K	74411	7	44 11	2	183.62 lb	K	7384	7	38 4	2	156.71 lb						
L	4040	4	4 0	29	77.49 lb	L	4040	4	4 0	22	58.78 lb						
M	AS4049	AS 4	4 9	2	6.35 lb	M	AS4049	AS 4	4 9	2	6.35 lb						
N	AS4050	AS 4	5 0	2	6.68 lb	N	AS4050	AS 4	5 0	2	6.68 lb						
					Reinforcing steel 4908.19 lb						Reinforcing steel 3728.43 lb						Reinforcing steel 6049.27 lb
Approach Slab No. 1 Panel Number I17						Approach Slab No. 1 Panel Number E12						Approach Slab No. 2 Panel Number I21					
Bar	Mark	Size	Length	No. of Bars	Weight	Bar	Mark	Size	Length	No. of Bars	Weight	Bar	Mark	Size	Length	No. of Bars	Weight
A	AS5072	AS 5	7 2	13	97.17 lb	A	AS5072	AS 5	7 2	11	82.22 lb	A	AS5072	AS 5	7 2	14	104.65 lb
A	AS5034	AS 5	3 4	13	45.20 lb	A	AS5034	AS 5	3 4	11	38.24 lb	A	AS5034	AS 5	3 4	14	48.67 lb
B 1 Set	4388 to	4	24 9	12	Bars Per Set 254.17 lb	B 1 Set	4374 to	4	29 2	7	Bars Per Set 155.48 lb	B 1 Set	4262 to	4	43 9	13	Bars Per Set 303.58 lb
B 1 Set	7388 to	7	24 9	23	Bars Per Set 1490.67 lb	B 1 Set	7374 to	7	29 2	13	Bars Per Set 883.52 lb	B 1 Set	7262 to	7	43 9	25	Bars Per Set 1786.37 lb
C	5118	5	11 8	4	48.67 lb	C	5101	5	10 1	4	42.07 lb	C	51210	5	12 10	4	53.54 lb
D	4118	4	11 8	25	194.83 lb	D 1 Set	4101 to	4	9 1	29	Bars Per Set 185.65 lb	D	41210	4	12 10	27	231.46 lb
E 1 Set	4116 to	4	1 6	14	Bars Per Set 60.79 lb	E 1 Set	4073 to	4	1 3	9	Bars Per Set 25.55 lb	E 1 Set	4124 to	4	1 6	17	Bars Per Set 78.55 lb
F	7118	7	11 8	50	1192.33 lb	F 1 Set	7101 to	7	9 1	57	Bars Per Set 1116.54 lb	F	71210	7	12 10	53	1390.26 lb
G 1 Set	4116 to	4	1 6	27	Bars Per Set 117.23 lb	G 1 Set	4077 to	4	1 3	18	Bars Per Set 53.11 lb	G 1 Set	4128 to	4	1 6	34	Bars Per Set 160.88 lb
H	5194	5	19 4	2	40.33 lb	H	5144	5	14 4	2	29.90 lb	H	5233	5	23 3	2	48.50 lb
J	4390	4	39 0	1	26.05 lb	J	4379	4	37 9	1	25.22 lb	J	4443	4	44 3	1	29.56 lb
K	7390	7	39 0	2	159.43 lb	K	7379	7	37 9	2	154.32 lb	K	7443	7	44 3	2	180.89 lb
L	4040	4	4 0	23	61.46 lb	L	4040	4	4 0	22	58.78 lb	L	4040	4	4 0	24	64.13 lb
M	AS4049	AS 4	4 9	2	6.35 lb	M	AS4049	AS 4	4 9	2	6.35 lb	M	AS4049	AS 4	4 9	2	6.35 lb
N	AS4050	AS 4	5 0	2	6.68 lb	W	P5060	P 5	6 0	40	250.32 lb	N	AS4050	AS 4	5 0	2	6.68 lb
					Reinforcing steel 3801.37 lb	X	4282	4	28 2	2	37.63 lb						Reinforcing steel 4494.06 lb
						Y	7282	7	28 2	3	172.72 lb						
						Z	5036	5	3 6	57	208.08 lb						
											Reinforcing steel 3525.69 lb						

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1557	02/03/17
NO.	DESCRIPTION	DATE

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DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019
 R2H ENGINEERING, INC. CONSULTING STRUCTURAL ENGINEERS 2610 HORIZON RIDGE PARKWAY, SUITE 205 LAS VEGAS, NEVADA 89002 PHONE (702) 260-7000 FAX (702) 260-7070

STATE OF NEVADA DEPARTMENT OF TRANSPORTATION I-15SOAKEY BILL OF MATERIALS 4	
	DESIGNED BY <u>JCH</u> DRAWN BY <u>JAP</u> CHECKED BY <u>PLK</u> REVIEWED BY <u>DAA</u>

H-933S

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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(14.7)	CLARK	S1-07	B-1558

Approach Slab No. 2 Panel Number I22						Approach Slab No. 2 Panel Number I24						Approach Slab No. 2 Panel Number I26								
Bar	Mark		Size	Length	No. of Bars	Weight	Bar	Mark		Size	Length	No. of Bars	Weight	Bar	Mark		Size	Length	No. of Bars	Weight
A	AS5072		AS 5	7 2	13	97.17 lb	A	AS5072		AS 5	7 2	13	97.17 lb	A	AS5072		AS 5	7 2	12	89.70 lb
A	AS5034		AS 5	3 4	13	45.20 lb	A	AS5034		AS 5	3 4	13	45.20 lb	A	AS5034		AS 5	3 4	12	41.72 lb
B 1 Set	4309	to	4	46 4	13 Bars Per Set	334.70 lb	B 1 Set	4352	to	4	50 3	12 Bars Per Set	342.35 lb	B 1 Set	4407	to	4	53 8	11 Bars Per Set	346.27 lb
B 1 Set	7309	to	7	46 4	23 Bars Per Set	1811.92 lb	B 1 Set	7352	to	7	50 3	23 Bars Per Set	2007.80 lb	B 1 Set	7407	to	7	53 8	21 Bars Per Set	2022.79 lb
C	5126		5	12 6	4	52.15 lb	C	5118		5	11 8	4	48.67 lb	C	5115		5	11 5	4	47.63 lb
D 1 Set	4126	to	4	12 0	30 Bars Per Set	245.49 lb	D	4118		4	11 8	36	280.56 lb	D 1 Set	4115	to	4	10 10	41 Bars Per Set	304.69 lb
E 1 Set	4126	to	4	1 2	17 Bars Per Set	77.60 lb	E 1 Set	4111	to	4	1 2	15 Bars Per Set	61.37 lb	E 1 Set	4106	to	4	1 6	13 Bars Per Set	52.10 lb
F 1 Set	7126	to	7	12 0	60 Bars Per Set	1502.34 lb	F	7118		7	11 8	71	1693.11 lb	F 1 Set	7115	to	7	10 10	82 Bars Per Set	1864.64 lb
G 1 Set	4126	to	4	1 2	33 Bars Per Set	150.63 lb	G 1 Set	4115	to	4	1 2	30 Bars Per Set	126.09 lb	G 1 Set	4106	to	4	1 6	25 Bars Per Set	100.20 lb
H	5210		5	21 0	2	43.81 lb	H	5205		5	20 5	2	42.59 lb	H	5184		5	18 4	2	38.24 lb
J	4468		4	46 8	1	31.17 lb	J	4508		4	50 8	1	33.85 lb	J	4541		4	54 1	1	36.13 lb
K	7468		7	46 8	2	190.77 lb	K	7508		7	50 8	2	207.13 lb	K	7541		7	54 1	2	221.09 lb
L	4040		4	4 0	28	74.82 lb	L	4040		4	4 0	33	88.18 lb	L	4040		4	4 0	38	101.54 lb
M	AS4049		AS 4	4 9	2	6.35 lb	M	AS4049		AS 4	4 9	2	6.35 lb	M	AS4049		AS 4	4 9	2	6.35 lb
N	AS4050		AS 4	5 0	2	6.68 lb	N	AS4050		AS 4	5 0	2	6.68 lb	N	AS4050		AS 4	5 0	2	6.68 lb
Reinforcing steel 4670.79 lb						Reinforcing steel 5087.09 lb						Reinforcing steel 5279.78 lb								
Approach Slab No. 2 Panel Number I23						Approach Slab No. 2 Panel Number I25						Approach Slab No. 2 - West Bituminous Surface								
Bar	Mark		Size	Length	No. of Bars	Weight	Bar	Mark		Size	Length	No. of Bars	Weight	Mark		Size	Length	No. of Bars	Weight	
A	AS5072		AS 5	7 2	13	97.17 lb	A	AS5072		AS 5	7 2	14	104.65 lb	4400		4	40 0	48	1282.56 lb	
A	AS5034		AS 5	3 4	13	45.20 lb	A	AS5034		AS 5	3 4	14	48.67 lb	4328		4	32 8	48	1047.42 lb	
B 1 Set	4332	to	4	48 4	12 Bars Per Set	326.65 lb	B 1 Set	4372	to	4	53 9	13 Bars Per Set	394.76 lb	4242		4	24 2	43	694.16 lb	
B 1 Set	7332	to	7	48 4	23 Bars Per Set	1915.74 lb	B 1 Set	7372	to	7	53 9	25 Bars Per Set	2322.92 lb	7242		7	24 2	85	4198.72 lb	
C	5118		5	11 8	4	48.67 lb	C	5136		5	13 6	4	56.32 lb	4231		4	23 1	1	15.42 lb	
D	4118		4	11 8	34	264.97 lb	D 1 Set	4137	to	4	13 0	38 Bars Per Set	337.40 lb	7231		7	23 1	1	47.18 lb	
E 1 Set	4111	to	4	1 2	15 Bars Per Set	61.37 lb	E 1 Set	4125	to	4	1 6	16 Bars Per Set	74.37 lb	72311		7	23 11	1	48.89 lb	
F	7118		7	11 8	67	1597.73 lb	F 1 Set	7137	to	7	13 0	75 Bars Per Set	2037.61 lb	5036		5	3 6	28	102.21 lb	
G 1 Set	4115	to	4	1 2	30 Bars Per Set	126.09 lb	G 1 Set	41210	to	4	1 6	32 Bars Per Set	153.19 lb	AS5030		AS 5	3 0	274	857.35 lb	
H	5205		5	20 5	2	42.59 lb	H	5225		5	22 5	2	46.76 lb	AS40411		AS 4	4 11	2	6.57 lb	
J	4488		4	48 8	1	32.51 lb	J	4541		4	54 1	1	36.13 lb	AS4053		AS 4	5 3	2	7.01 lb	
K	7488		7	48 8	2	198.95 lb	K	7541		7	54 1	2	221.09 lb	AS4040		AS 4	4 0	2	5.34 lb	
L	4040		4	4 0	30	80.16 lb	L	4040		4	4 0	34	90.85 lb	P5060		P 5	6 0	36	225.29 lb	
M	AS4049		AS 4	4 9	2	6.35 lb	M	AS4049		AS 4	4 9	2	6.35 lb							Reinforcing steel 8538.13 lb
N	AS4050		AS 4	5 0	2	6.68 lb	N	AS4050		AS 4	5 0	2	6.68 lb							
Reinforcing steel 4850.83 lb						Reinforcing steel 5937.75 lb														

H-933S

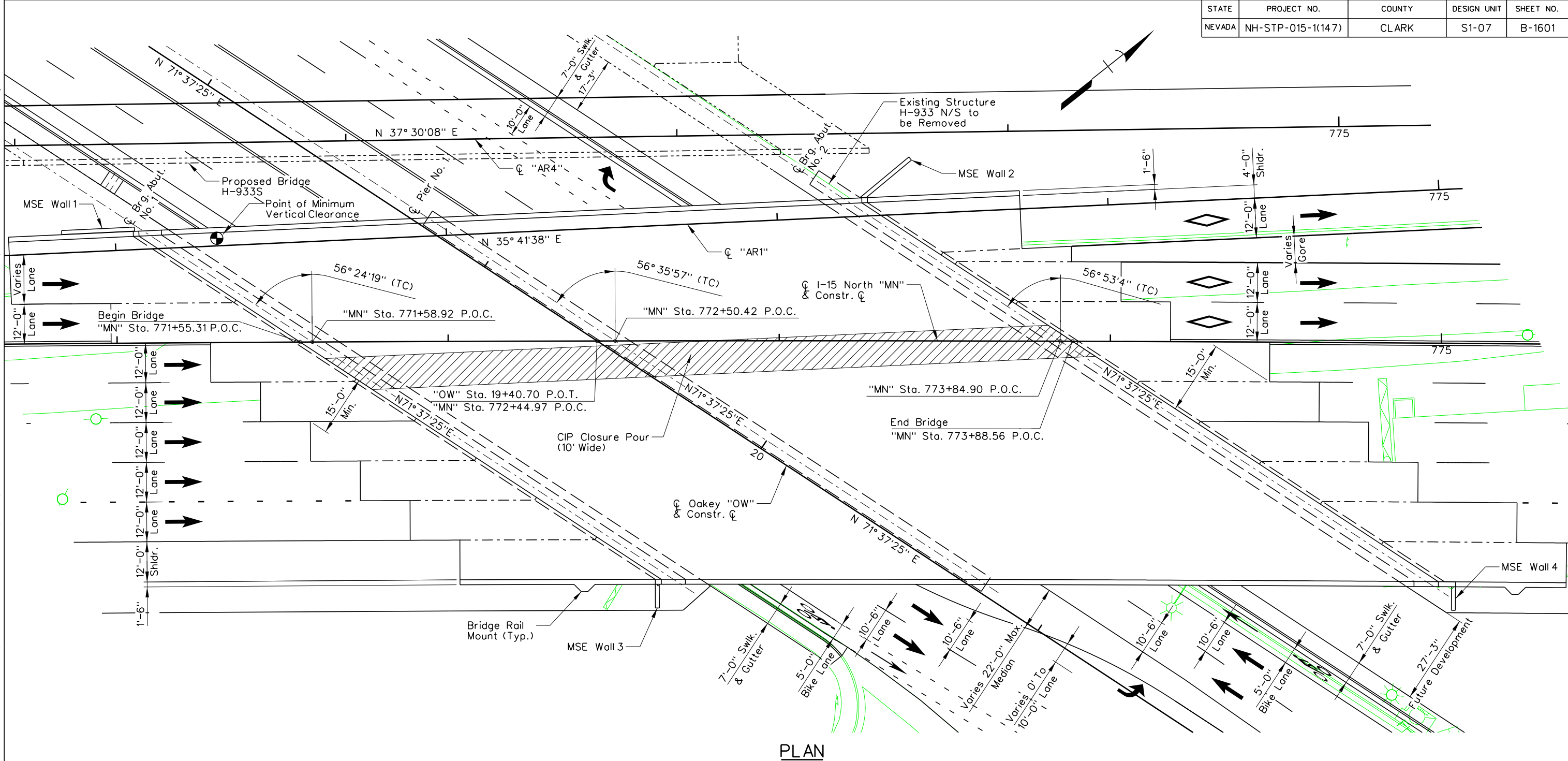
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933S-SHT20B1558	02/03/17
NO.	DESCRIPTION	DATE

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019



STATE OF NEVADA DEPARTMENT OF TRANSPORTATION I-15SOAKEY BILL OF MATERIALS 5	
ATKINS 2270 Corporate Circle Suite 200 Henderson, Nevada 89074 Telephone: 702/263-7275 Fax: 702/263-7200 www.atkinsglobal.com	DESIGNED BY <u>JCH</u> DRAWN BY <u>JAP</u> CHECKED BY <u>PLK</u> REVIEWED BY <u>DAA</u>

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1601



NOTES:

- Stations and Elevations Shown Are at Top of Deck Along "MN". Top of Deck/Approach Slab is 1" Above PGL. See "Detail A" on General Notes and Typical Section Sheet.
- Lane Widths are Measured Perpendicular to Adjacent Lanes.

"MN" Line
 $\Delta = 1^\circ 25' 23''$ Rt.
 $R = 27,003.00'$
 $L = 670.66'$
 $T = 335.35'$

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1601	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019

R₂H ENGINEERING, INC.
CONSULTING STRUCTURAL ENGINEERS
2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89162
PHONE (702) 260-7000 FAX (702) 260-7070



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/OAKEY
PLAN

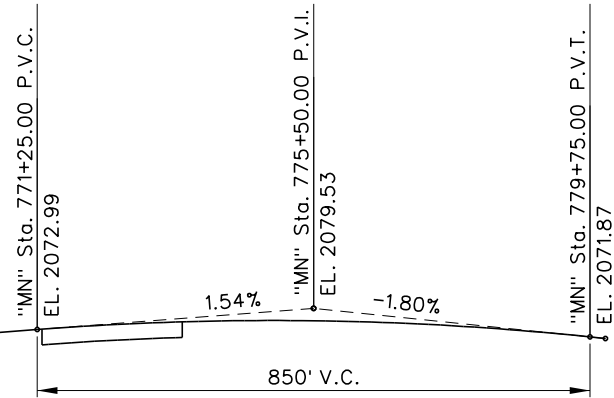
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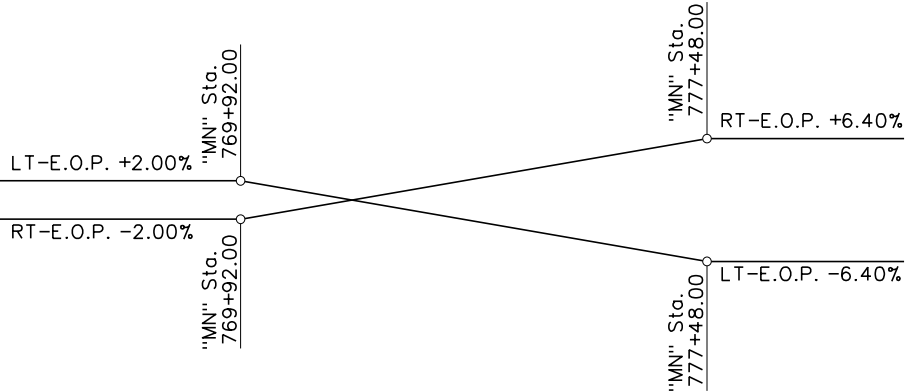
STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1602

Note: "OW" Roadway Finish Grades are Controlled by Spot Elevations. See DU S4-02 Sheets 21 and 22 for Finish Grade Elevations

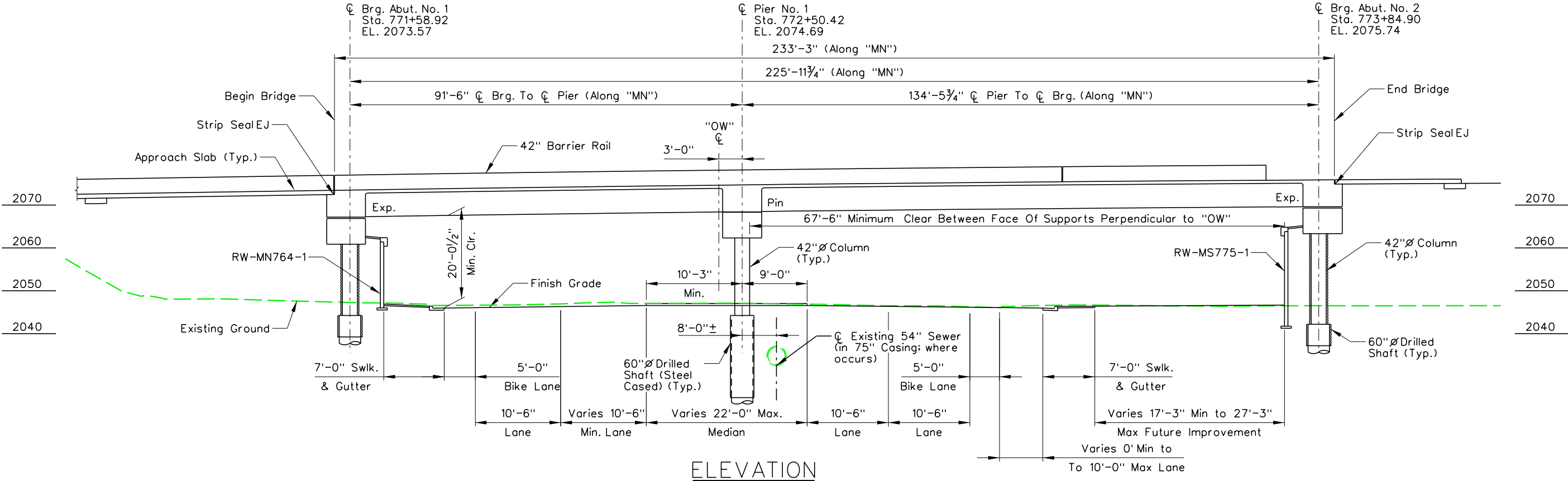
PROFILE LINE "OW"



PROFILE LINE "MN"



SUPERELEVATION "MN"



ELEVATION

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NO.	DESCRIPTION	DATE
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0	RFC - 73652-S1-07-R2H-H933N-SHT20B1602	02/03/17

DESIGN UNIT S1-07

AS-BUILT DRAWING

JANUARY 04, 2019

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STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15/OAKLEY
ELEVATION

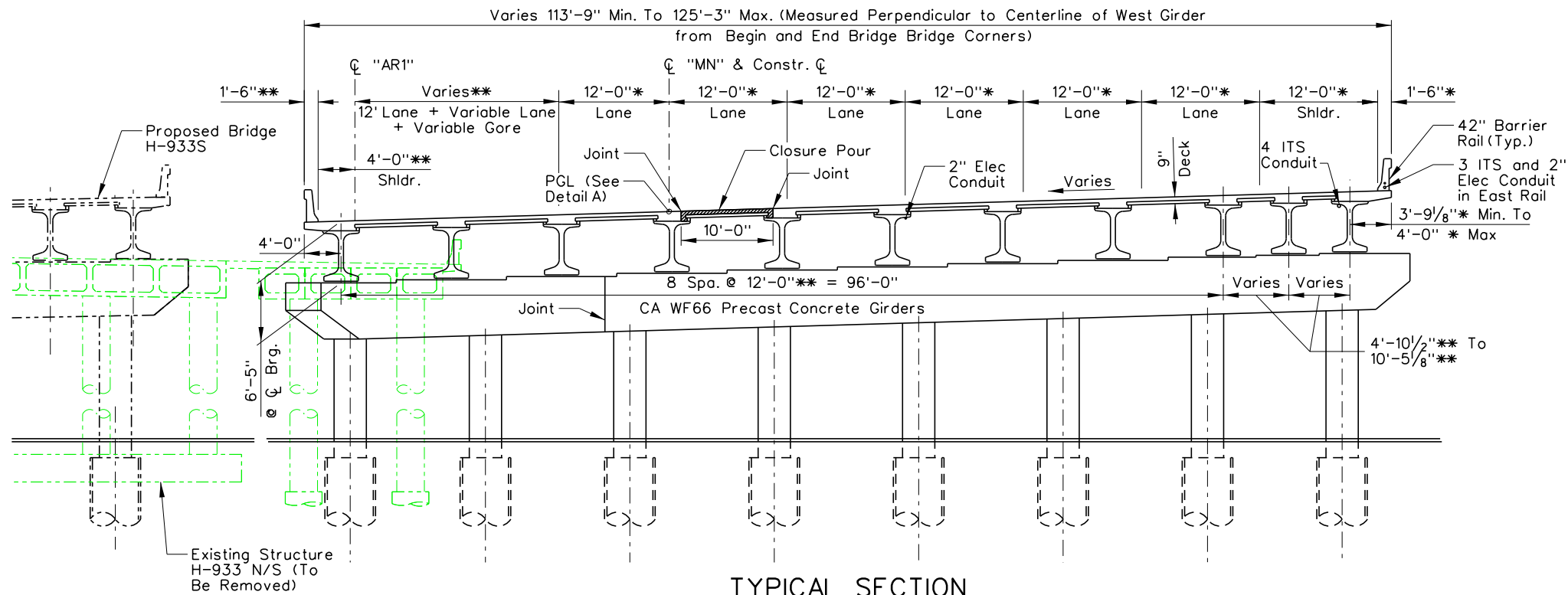
ATKINS
2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
www.atkinsglobal.com

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DRAWN BY: EAS
CHECKED BY: PLK
REVIEWED BY: DAA

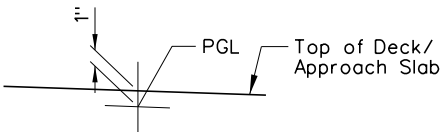
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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1603



2 NCR 264 - 4\"/>



DETAIL A

TYPICAL SECTION

*Dimensions Are Normal To "MN"
**Dimensions Are Normal To "AR1"

GENERAL NOTES

- Design Specifications: AASHTO "LRFD Bridge Design Specifications, 7th Edition, 2014, with 2015 Interim Revisions.
- Construction Specifications: State of Nevada Department of Transportation "Standard Specifications for Road and Bridge Construction, 2014" Except as Noted Below and in the Technical Provisions and Special Provisions of this Contract.
- Dead Load: In accordance with Specifications with an Allowance of 38 psf for Future Wearing Surface.
- Live load: AASHTO HL-93 Loading. Overload Design based on California "Standard Permit Design Vehicles" (Maximum Overload P-13 Truck). Deck Design based on the Equivalent Strip Method with a 40.0 kip Axle.
- Seismic Load: PGA Coefficient 0.15g, Short period Coefficient (S_S) 0.40g, Long Period Coefficient (S_L) 0.15g, Site Class C Soil Profile, Detailed to Seismic Zone 3, $\gamma_{Eq} = 0$.
- Concrete: Concrete Classification and 28-day Compressive Strength Shall be as Follows:
Deck, Diaphragm, Approach Slabs and Barrier Rails: Class E Modified $f'_c = 4.0$ ksi
Prestressed Concrete Deck Panels: See Precast Panel Details
Prestressed Girder: See Prestressed Girder Details
Abutments, Piers, & Cheekwalls: Class A Modified $f'_c = 4.0$ ksi
Columns: Class D Modified $f'_c = 4.5$ ksi
Drilled Shafts: Class S $f'_c = 4.5$ ksi

2 NCR 207 - ABUTMENT 1 AND
NCR 216 - PIER CAP CHANGED
TO $f'_c = 6.0$ ksi

- Reinforcing Steel: Reinforcing Steel Material Specification and Grade Shall be as Follows by Placement Location:

Location	Specification and Grade
Drilled Shaft Vertical Pier Cap Abutment Cap Pier Diaphragm End Diaphragm Deck	ASTM A615, Grade 75
Precast Deck Panel Forms Precast Girders Approach Slab Bridge Rail	ASTM A615, Grade 60
Drilled Shaft Spirals/Hoops Column	ASTM A706, Grade 60

Dimensions Relating to Bar Spacing are Center-to-Center. Bending Dimensions are from Out-to-Out of the Bars. Bar Sizes Three (3) to Nine (9) are Indicated by the First Number of the Mark; Ten (10) or Larger by the First Two Numbers. Sizes Four (4) and Five (5), When Considered as bars to Control Temperature, Shrinkage, and Distribution Stresses by the Engineer, may be Adjusted upon Concurrence and Approval by the Engineer.

- Foundations: Abutments and Pier are Supported on Drilled Shaft Foundations.
- Barrier rail: Designed for TL-4
- Construction Type Code: X281
- All Exterior Concrete Surfaces to Receive Ordinary Surface Finish as per Subsection 502.03.18 of the Standard Specifications.
- All exposed concrete surfaces (excluding bridge deck) to receive stain or surface treatments as specified on Sheets L1 and L1A. Finishes to extend one foot below finish grade.
- Concrete Construction Joints Designated as a "Permissible Joint" or as an "Optional Construction Joint" may be Incorporated into the Construction at the Contractor's Option. Joints Designated as a "Construction Joint" are Considered Mandatory and shall be Incorporated into the Construction Unless Otherwise Approved in Writing by the Engineer.

ABBREVIATION LIST

Ø	Diameter	Min.	Minimum
Dia.	Diameter	No., #	Number
Abut.	Abutment	O.D.	Outer Diameter
Alt.	Alternate	PGL	Profile Grade Line
BF	Back Face	Reinf.	Reinforcement
Brg.	Bearing	RT.	Right
Bott.	Bottom	RW	Retaining Wall
CL	Centerline	R/W	Right of Way
Clr.	Clear	Swlk.	Sidewalk
Constr.	Construction	SB	Southbound
D.B.A.	Deformed Bar Anchor	Shldr.	Shoulder
Diaph.	Diaphragm	Spa.	Spaces
Ea.	Each	Sta.	Station
EF	Each Face	TC	Tangent to Curve
EJ	Expansion Joint	Tot.	Total
EL	Elevation	Typ.	Typical
Elev.	Elevation	U.N.O.	Unless Noted Otherwise
Exp.	Expansion		
FF	Front Face		
Gr.	Grade		
I.D.	Inner Diameter		
Jt.	Joint		
LT.	Left		
Long.	Longitudinal		
Max.	Maximum		

H-933N

NO.	DESCRIPTION	DATE
2	AS-BUILTS - NCR 207, 213, 264	05/01/19
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1603	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
MAY 1, 2019

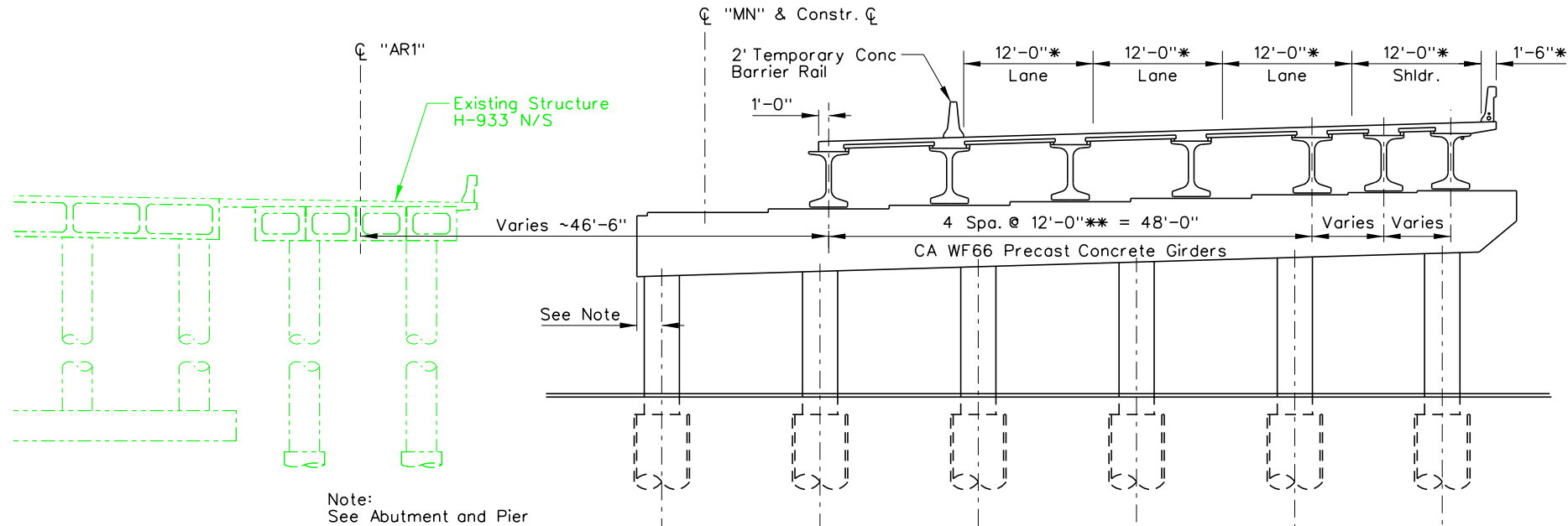
R²H ENGINEERING, INC.
CONSULTING STRUCTURAL ENGINEERS
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LAS VEGAS, NEVADA 89002
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STATE OF NEVADA DEPARTMENT OF TRANSPORTATION I-15/OAKLEY GENERAL NOTES AND TYPICAL SECTION	
ATKINS	DESIGNED BY: CAW DRAWN BY: EAS CHECKED BY: PLK REVIEWED BY: DAA

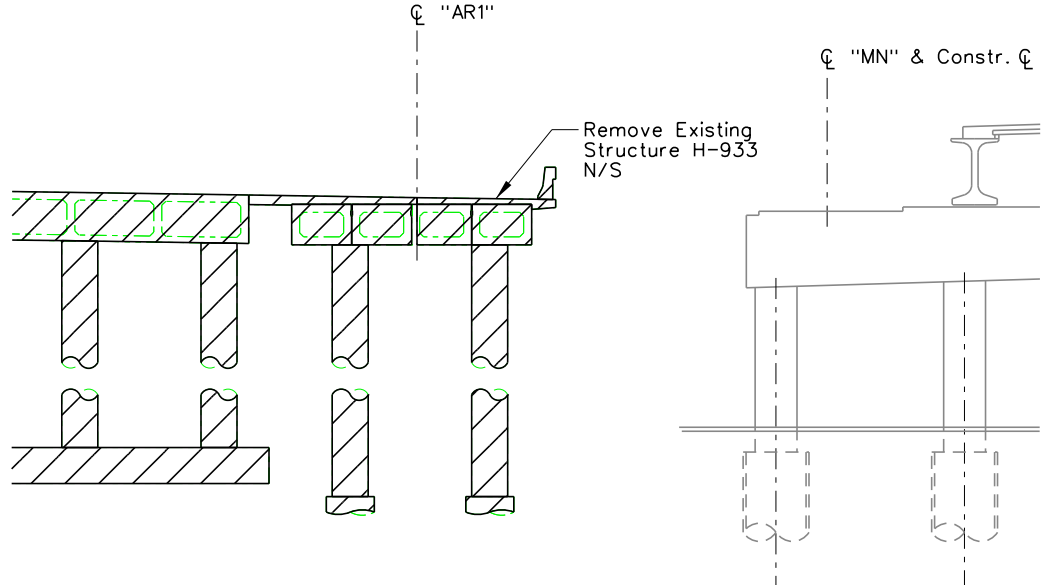
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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1603A

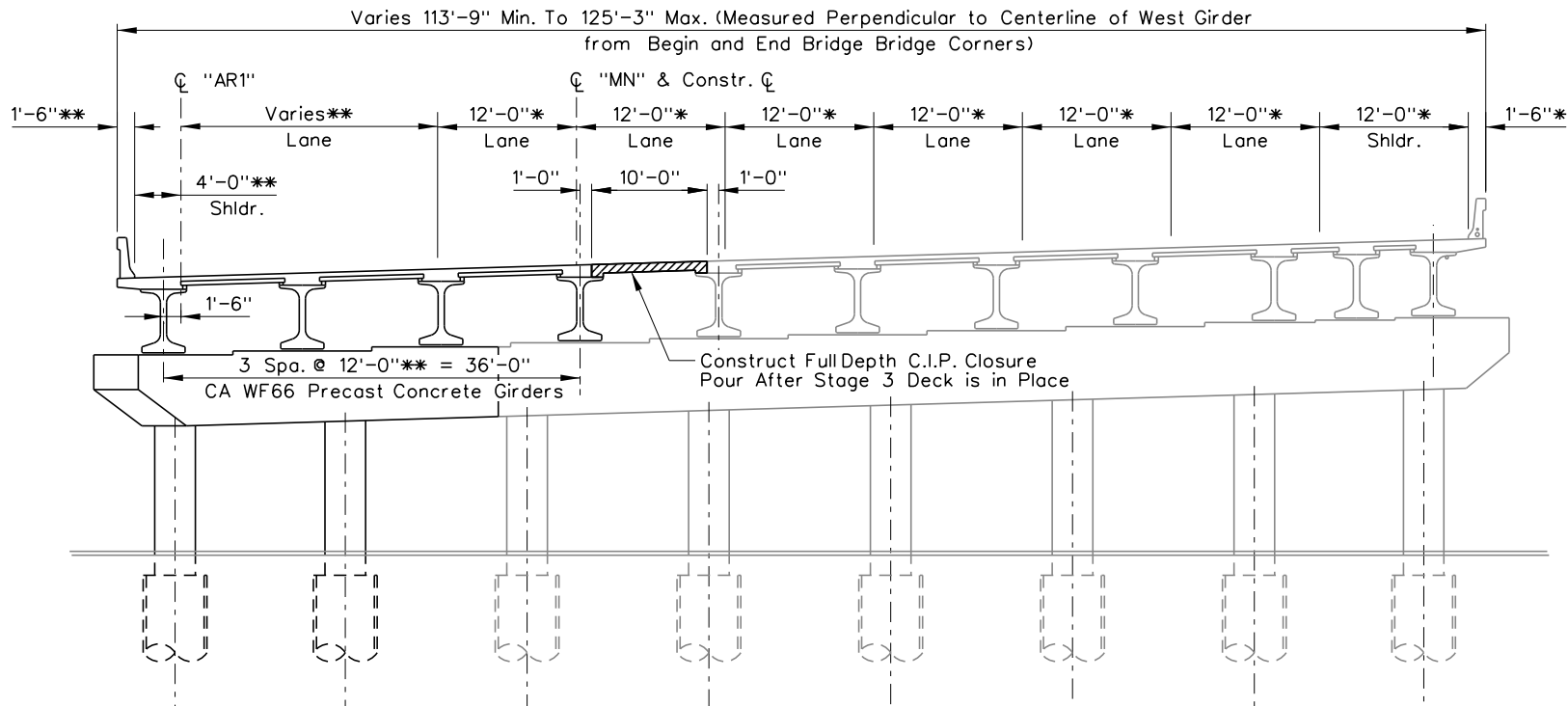


STAGE 1

*Dimensions Are Normal To "MN"
**Dimensions Are Normal To "AR1"



STAGE 2



STAGE 3

*Dimensions Are Normal To "MN"
**Dimensions Are Normal To "AR1"

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1603A	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019

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STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/OAKEY
STAGED CONSTRUCTION
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CHECKED BY: PLK
REVIEWED BY: DAA

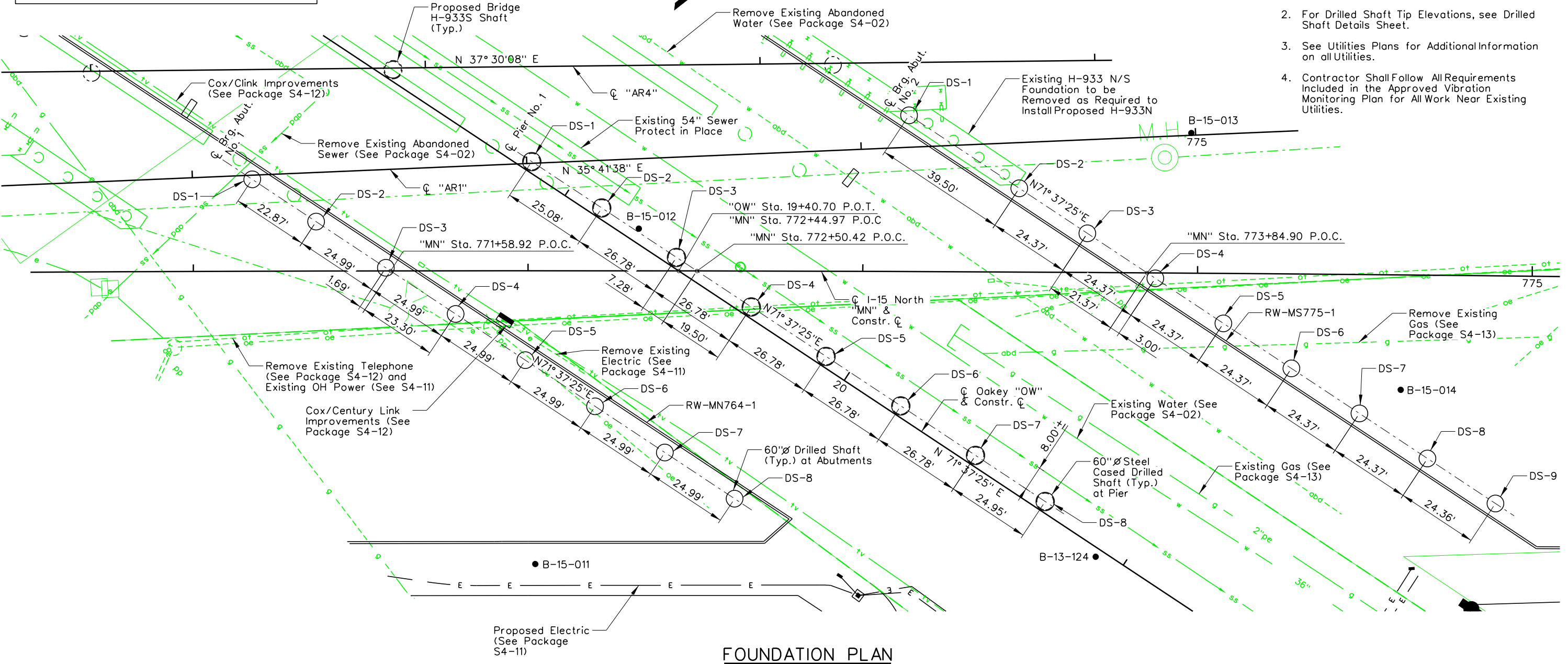
H-933N

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1604

Contact Tim Parks at 702.229.2178 and Matthew Meyer at 702.229.1688, 4 Working Days in Advance of Beginning Shaft Drilling in Order to Divert a Portion of the Live Sewer Flows Upstream of the Existing 54" Sewer Pipeline. After Diversion Occurs, CCTV Pipeline Prior to Construction Activities. After Drilling But Before Release of Flows Back into 54" Sewer, CCTV Sewer to Record Post-Construction Condition.

NOTES

- For Boring Data, see Ninyo & Moore Geotechnical Interim Design Memorandum Design Unit S1-07 Bridge Package 5 17 November 2016
- For Drilled Shaft Tip Elevations, see Drilled Shaft Details Sheet.
- See Utilities Plans for Additional Information on all Utilities.
- Contractor Shall Follow All Requirements Included in the Approved Vibration Monitoring Plan for All Work Near Existing Utilities.



FOUNDATION PLAN

H-933N

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1604	02/03/17

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AS-BUILT DRAWING
JANUARY 04, 2019

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CONSULTING STRUCTURAL ENGINEERS
2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89162
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STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/OAKLEY
GEOMETRICS
(FOUNDATION PLAN)

2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
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REVIEWED BY: DAA

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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1605

Notes:

- Elevations noted are taken through centerline of shaft/column.
- No splices of drilled shaft vertical or spiral reinforcing permitted in this region.
- Lap splices of drilled shaft vertical reinforcing are permitted below the region defined in Note 2 only as detailed or specifically approved by the Engineer. Lap splices of vertical bars may be substituted with mechanical splices capable of developing 125% of the bar yield strength and conforming to Section 505.03.05 (c) of the standard specifications.
- Lap splices of drilled shaft spiral reinforcing are permitted below the region defined in Note 2. Lap splices of spiral reinforcing shall be 1/2 turn minimum, and shall terminate with a 135 degree hook around a vertical bar at each end.
- Drilled shaft spirals shall terminate at top and bottom of the shaft with 1 1/2 flat turns. At the top of the drilled shaft the spiral termination shall also provide a 135 degree hook around a vertical bar.
- Roughen construction joints to 1/4" amplitude. Thoroughly clean the surface of debris and laitance.
- CSL tubes shall be water tight, capped at bottom and securely tied along the length of the drilled shaft reinforcing cage. The bottom of the CSL tubes shall come within 1" of the actual shaft tip elevation.
- Fill the CSL tubes with potable water prior to placing the drilled shaft concrete, then cap the top of CSL tubes. Grout tubes after crosshole sonic log testing and acceptance of drilled shaft. Grout shall conform to Section 509.03.14 of the Standard Specifications.

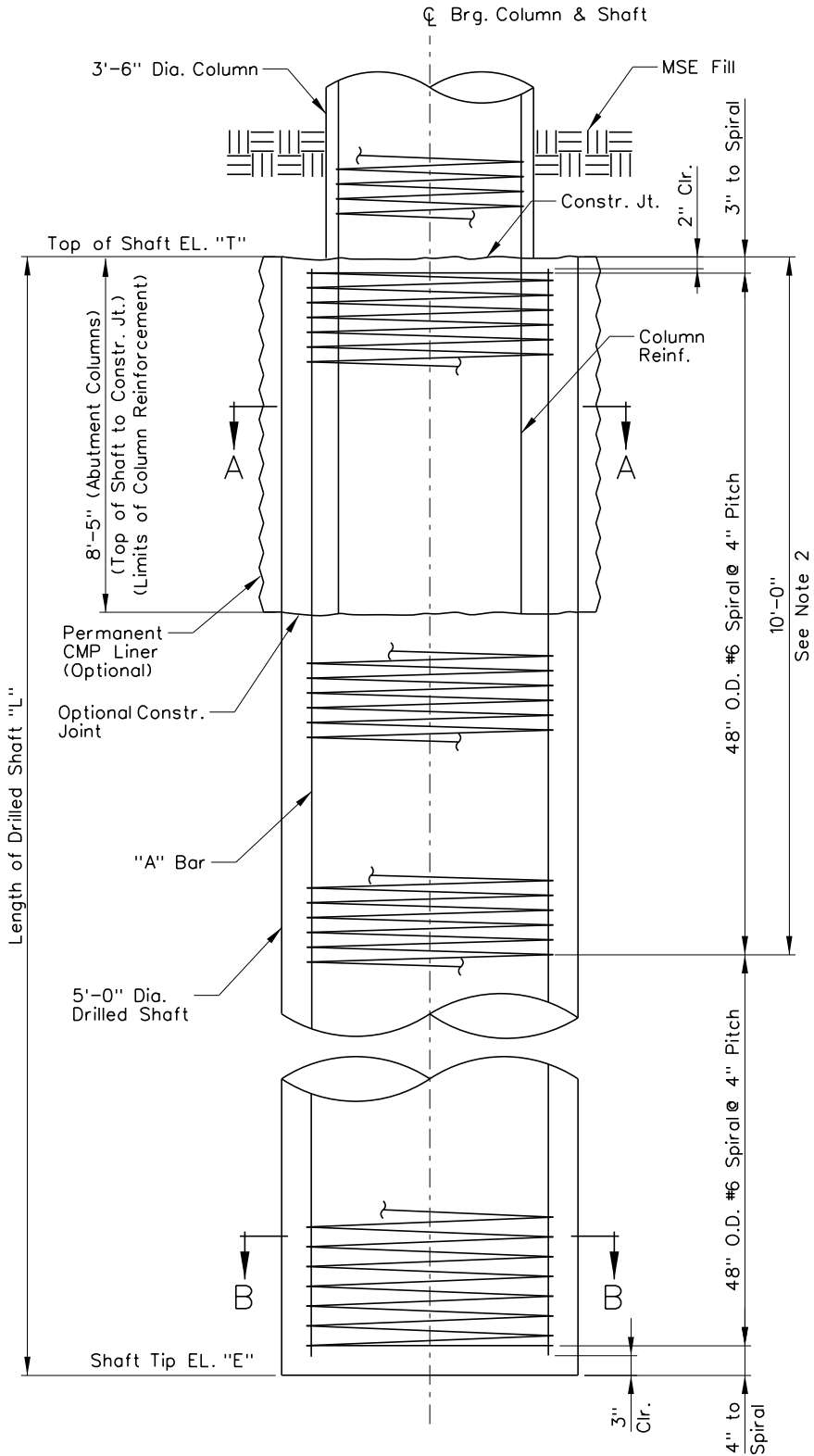
Drilled Shaft Reinforcing Table						
Location	Shaft Length ("L") (Ft.)	Top Of Shaft EL. "T" (Ft.)	Shaft Tip EL. "E" (Ft.)	Ⓐ Bars	Spiral Length *	Caliche ** (Ft.)
Abut. No. 1 (DS-1 to DS-8)	31.0	2044.25'	2013.25'	24-10277	1054'-6"	3.0'
Abut. No. 2 (DS-1 & DS-2)	50.0	2042.20'	1992.20'	24-10497	1871'-0"	4.0'
Abut. No. 2 (DS-3 to DS-9)	45.0	2042.20'	1997.20'	24-10417	1574'-0"	4.0'

* Spiral Length Does Not Include Lap Splices
** Depth of Caliche Considered in Determination of Axial Capacity

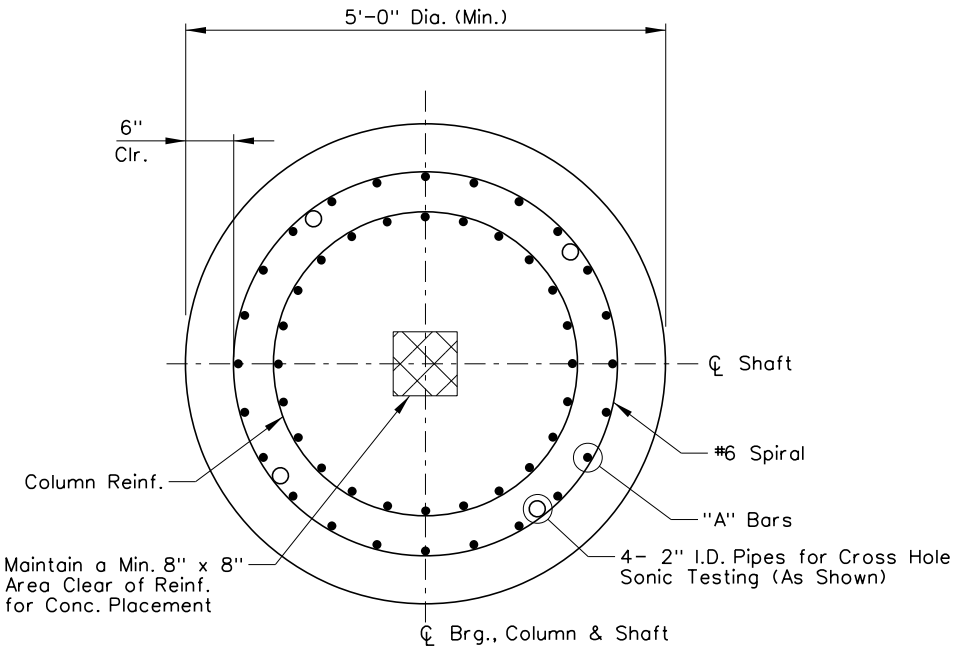
RFI-1117R1 DRILLED SHAFT END BEARING 2

2

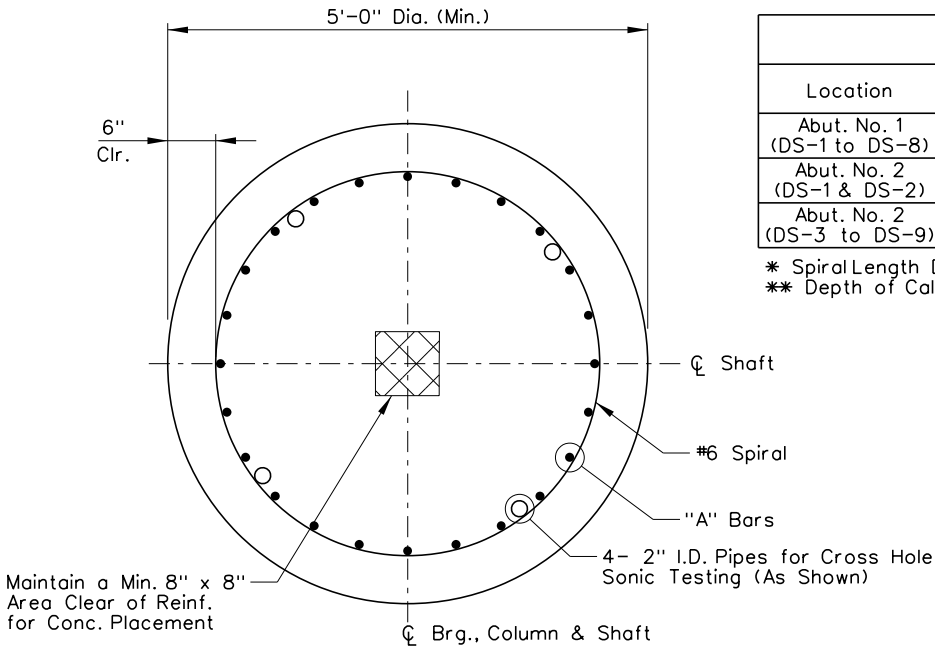
PER NCR 184 AND 185 - CSL RESULTS SHOWED THAT ABUTMENT 2 SHAFTS 5 AND 4 EACH HAD 1 ANOMALY. ADDITIONAL ANALYSIS PROVIDED SHOWED THAT NEGLECTING THE SHAFT BELOW THE ANOMALOUS ZONE OF SHAFT 5 MET THE DESIGN PARAMETERS. A CORE WAS TAKEN OF SHAFT 4, THE ANOMALOUS ZONE WAS PRESSURE CLEANED AND GROUTED BACK TO MEET THE DESIGN PARAMETERS.



DRILLED SHAFT ELEVATION



SECTION A-A
(Permanent CMP Liner Not Shown)



SECTION B-B

NO.	DESCRIPTION	DATE
2	AS-BUILTS - NCR 184, 185, FDC-1117R1	02/03/2020
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1605	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
MAY 1, 2019

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CONSULTING STRUCTURAL ENGINEERS
2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89062
PHONE (702) 260-7000 FAX (702) 260-7070



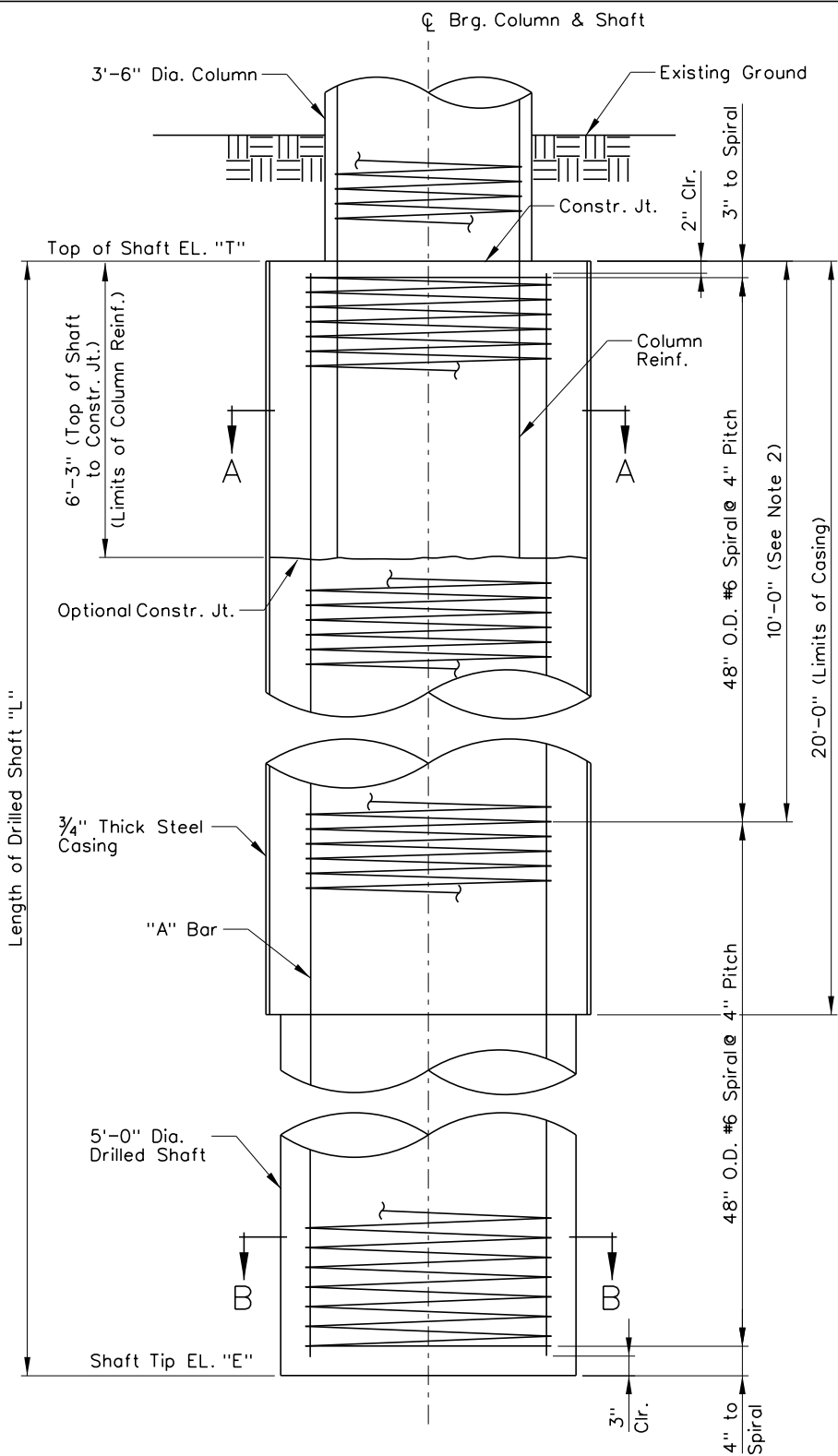
STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/OAKEY
60" DIA. DRILLED SHAFT DETAILS
ABUTMENTS

ATKINS
2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
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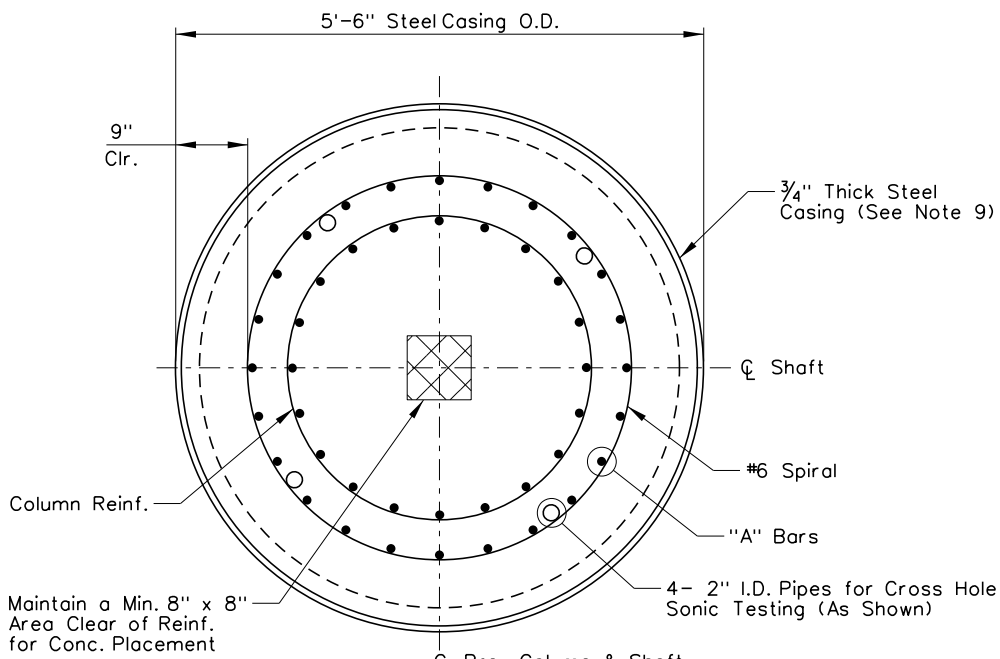
H-933N

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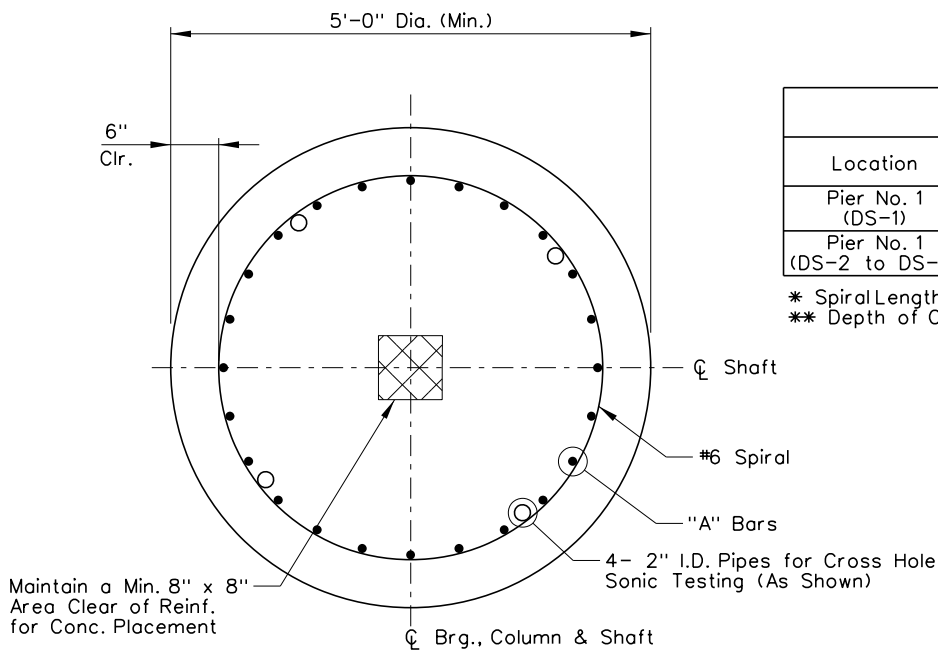
STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1606



DRILLED SHAFT ELEVATION



SECTION A-A



SECTION B-B

Notes:

- Elevations noted are taken through centerline of shaft/column.
- No splices of drilled shaft vertical or spiral reinforcing permitted in this region.
- Lap splices of drilled shaft vertical reinforcing are permitted below the region defined in Note 2 only as detailed or specifically approved by the Engineer. Lap splices of vertical bars may be substituted with mechanical splices capable of developing 125% of the bar yield strength and conforming to Section 505.03.05 (c) of the standard specifications.
- Lap splices of drilled shaft spiral reinforcing are permitted below the region defined in Note 2. Lap splices of spiral reinforcing shall be 1/2 turn minimum, and shall terminate with a 135 degree hook around a vertical bar at each end.
- Drilled shaft spirals shall terminate at top and bottom of the shaft with 1 1/2 flat turns. At the top of the drilled shaft the spiral termination shall also provide a 135 degree hook around a vertical bar.
- Roughen construction joints to 1/4" amplitude. Thoroughly clean the surface of debris and laitance.
- CSL tubes shall be water tight, capped at bottom and securely tied along the length of the drilled shaft reinforcing cage. The bottom of the CSL tubes shall come within 1" of the actual shaft tip elevation.
- Fill the CSL tubes with potable water prior to placing the drilled shaft concrete, then cap the top of CSL tubes. Grout tubes after crosshole sonic log testing and acceptance of drilled shaft. Grout shall conform to Section 509.03.14 of the Standard Specifications.
- Permanent steel casing shall meet the requirements of ASTM A36 or ASTM A252 grade 3. Longitudinal seam shall be a full penetration Double-V Groove weld meeting the requirements of AWS D1.3.

Drilled Shaft Reinforcing Table						
Location	Shaft Length ("L") (Ft.)	Top Of Shaft EL. "T" (Ft.)	Shaft Tip EL. "E" (Ft.)	Ⓐ Bars	Spiral Length *	Caliche ** (Ft.)
Pier No. 1 (DS-1)	62.0'	2044.25'	1982.25'	24-10597	2242'-0"	0'
Pier No. 1 (DS-2 to DS-8)	59.0'	2044.25'	1985.25'	24-10577	2167'-10"	0'

* Spiral Length Does Not Include Lap Splices
** Depth of Caliche Considered in Determination of Axial Capacity

PER NCR 176 - DRILLED SHAFT CAGE #8 IS LOCATED 3" OUT OF PLAN. COLUMN CAGE PLACED PER PLAN WITH REDUCED CLEARANCE TO SHAFT CAGE.

PER NCR 178, 179 AND 354 - CSL RESULTS SHOWED THAT SHAFTS 7, 8, AND 1 EACH HAD 1 ANOMALY. ADDITIONAL ANALYSIS PROVIDED SHOWED THAT REDUCING THE SHAFT AREA BELOW THE ANOMALOUS ZONE OF THE SHAFT MET THE DESIGN PARAMETERS.

NO.	DESCRIPTION	DATE
2	AS-BUILTS - RFI-1181, NCR 176, 178, 179, RFI-1117R1	02/03/2020
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1606	02/03/17

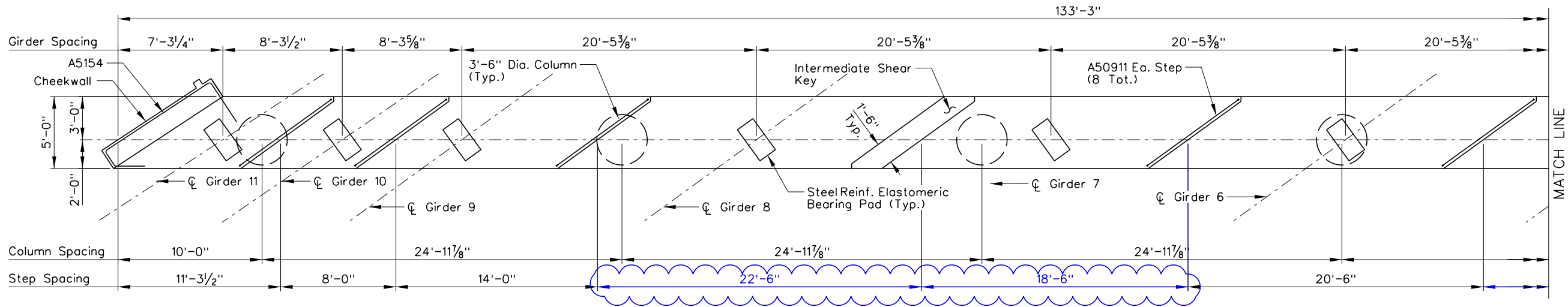
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MAY 1, 2019

R₂H ENGINEERING, INC.
CONSULTING STRUCTURAL ENGINEERS
2610 HORIZON RIDGE PARKWAY, SUITE 205
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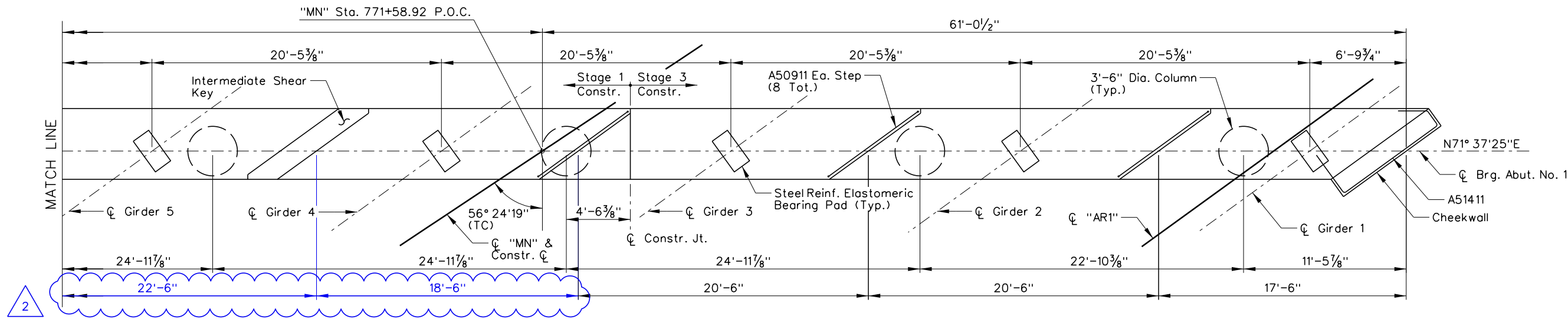


STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/OAKLEY
60" DIA. DRILLED SHAFT DETAILS
PIER NO. 1
DESIGNED BY CAW
DRAWN BY EAS
CHECKED BY PLK
REVIEWED BY DAA

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1607



PARTIAL PLAN



PARTIAL PLAN

Notes:

1. For construction staging, see "Staged Construction" sheet.
2. For Abutment No. 1 elevation, see "Abutment No. 1 Elevation" sheet.
3. All bearing surfaces shall be finished level.
4. Cheekwall and column reinforcing within the abutment cap not shown for clarity. See "Abutment Details" sheets.

NCR 243 - INTERMEDIATE SHEAR KEYS PLACED TWO FEET TO THE WEST.

NO.	DESCRIPTION	DATE
2	AS-BUILTS - NCR 243	05/01/19
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1607	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
MAY 1, 2019

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2610 HORIZON RIDGE PARKWAY, SUITE 205
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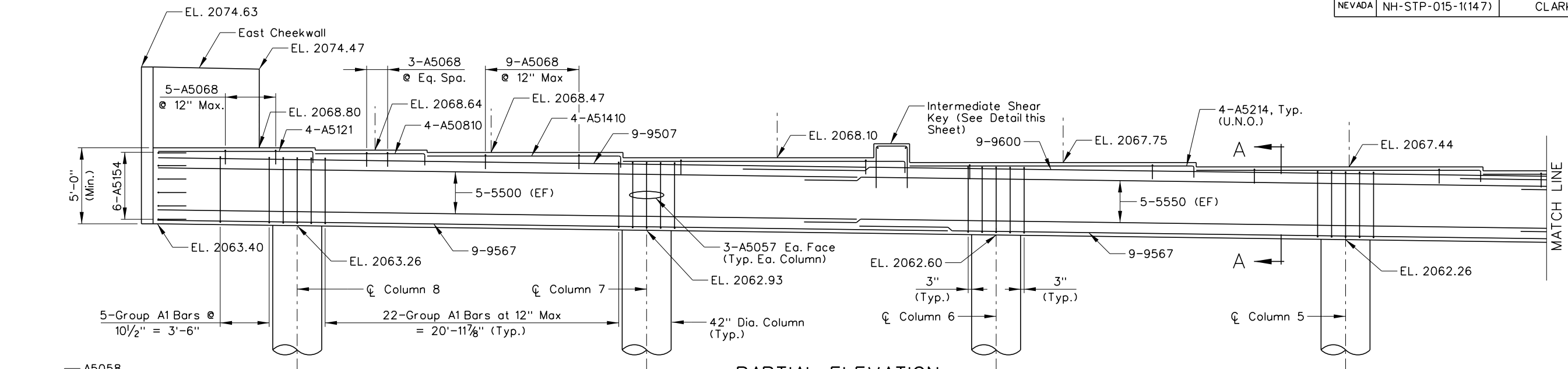


STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15 N/OAKEY
ABUTMENT NO. 1 PLAN

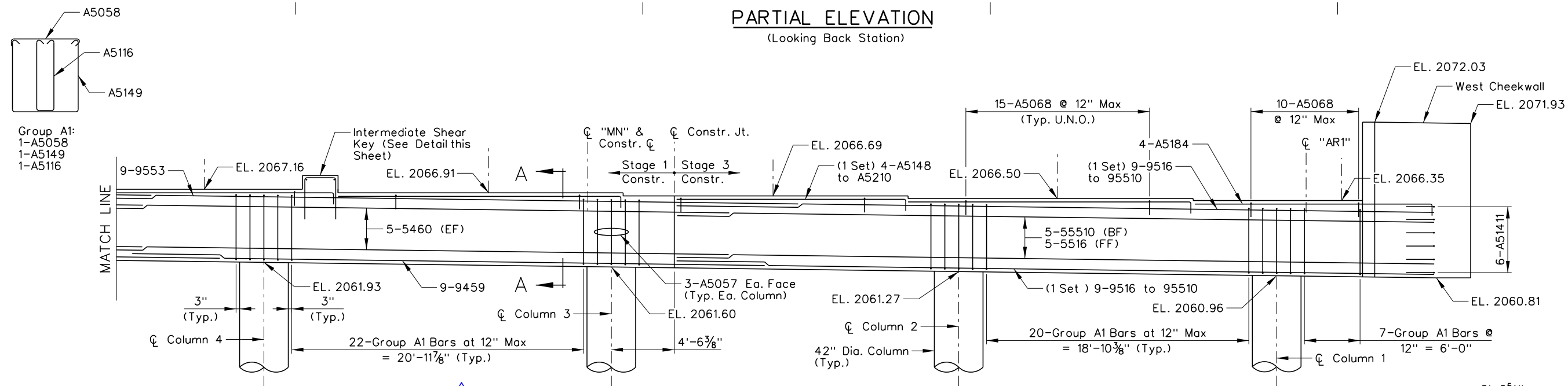
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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1608



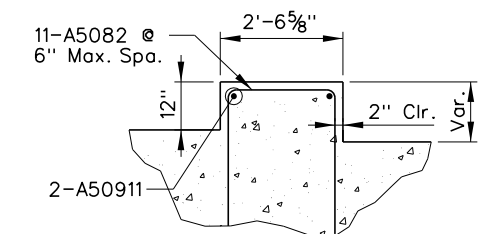
PARTIAL ELEVATION
(Looking Back Station)



PARTIAL ELEVATION
(Looking Back Station)

Minimum Bar Lap Length

No. 5 Bar to No. 5 Bar = 3'-9"
No. 9 Top Bar to No. 9 Top Bar = 8'-9"
No. 9 Bot. Bar to No. 9 Bot. Bar = 6'-4"



INTERMEDIATE SHEAR KEY H-933N

- ### Notes:
1. For Abutment No. 1 plan, see "Abutment No. 1 Plan" sheet.
 2. All elevations are taken along C Brg.
 3. For Section A-A, see "Abutment Details 1 of 2" sheet.
 4. All bearing surfaces shall be finished level.
 5. Maintain 2" clear cover on all reinforcement (U.N.O.)
 6. Cheekwall and column reinforcing within the abutment cap not shown for clarity. See "Abutment Details" sheets.
 7. See "Lighting Plans" for underpass lighting details.

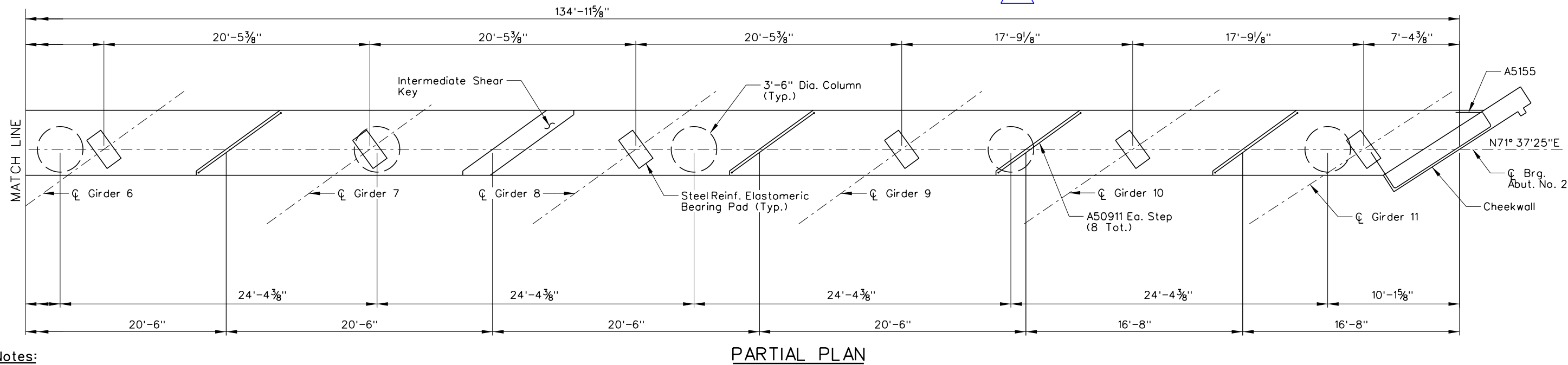
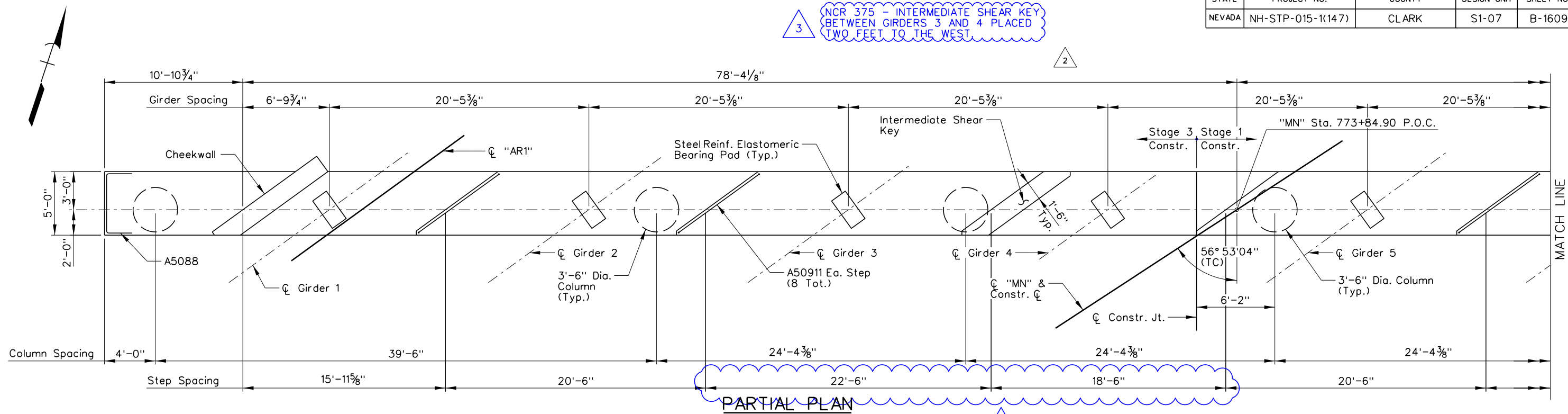
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1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1608	02/03/17
NO.	DESCRIPTION	DATE

DESIGN UNIT S1-07 AS-BUILT DRAWING MAY 1, 2019	  	STATE OF NEVADA DEPARTMENT OF TRANSPORTATION I-15NOAKEY ABUTMENT NO. 1 ELEVATION
 R2H ENGINEERING, INC. CONSULTING STRUCTURAL ENGINEERS 2010 HORIZON RIDGE PARKWAY, SUITE 205 LAS VEGAS, NEVADA 89052 PHONE: (702) 260-7000 FAX: (702) 260-7070	 	ATKINS 2270 Corporate Circle Suite 200 Henderson, Nevada 89074 Telephone: 702/263-7275 Fax: 702/263-7200 www.atkinsglobal.com DESIGNED BY <u>CAW</u> DRAWN BY <u>EAS</u> CHECKED BY <u>PLK</u> REVIEWED BY <u>DAA</u>

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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(14.7)	CLARK	S1-07	B-1609



Notes:

- For Abutment No. 2 elevation, see "Abutment No. 2 Elevation" sheet.
- All bearing surfaces shall be finished level.
- Cheekwall and column reinforcing within the abutment cap not shown for clarity. See "Abutment Details" sheets.

NO.	DESCRIPTION	DATE
3	AS-BUILTS - NCR 375	05/01/19
2	FDC 1164 - CONSTRUCTION JOINT REVISION	07/06/17
1	FINAL	03/24/17
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DESIGN UNIT S1-07

AS-BUILT DRAWING

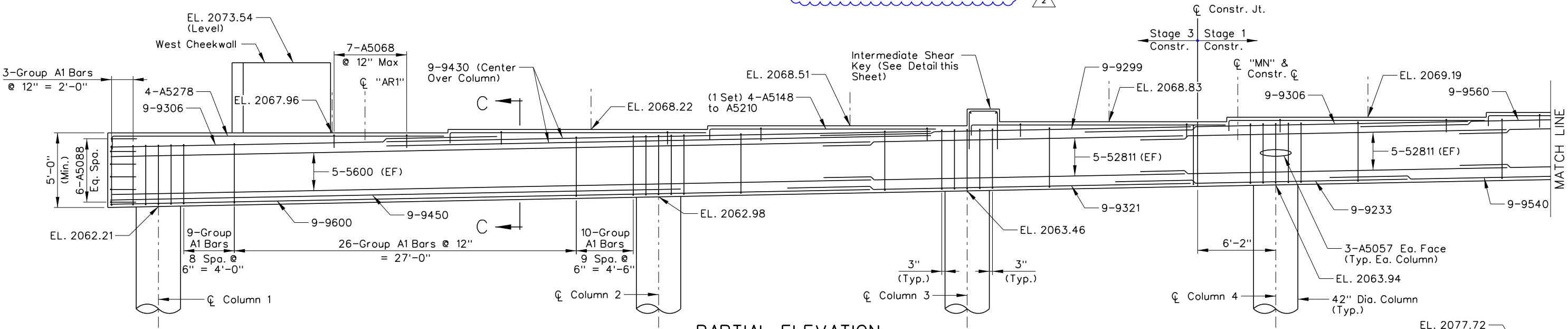
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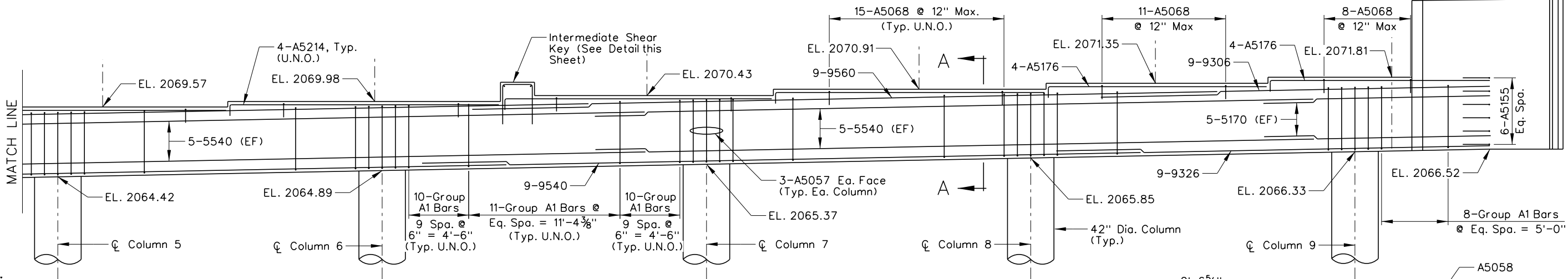
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I-15NOAKEY		
ABUTMENT NO. 2 PLAN		
ATKINS		

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1610

3 NCR 375 - INTERMEDIATE SHEAR KEY BETWEEN GIRDERS 3 AND 4 PLACED TWO FEET TO THE WEST.



PARTIAL ELEVATION
(Looking Ahead Station)



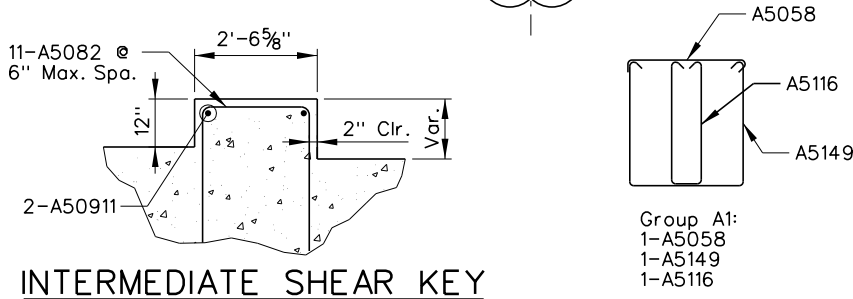
PARTIAL ELEVATION
(Looking Ahead Station)

Notes:

- For Abutment No. 2 plan, see "Abutment No. 2 Plan" sheet.
- Allelevations are taken along ϕ Brg.
- For Sections A-A & C-C see "Abutment Details 1 of 2" sheet.
- Allbearing surfaces shallbe finished level.
- Maintain 2" clear cover on allreinforcement (U.N.O.)
- Cheekwall and column reinforcing within the abutment cap not shown for clarity. See "Abutment Details" sheets.
- See "Lighting Plans" for underpass lighting details.

Minimum Bar Lap Length

No. 5 Bar to No. 5 Bar = 3'-9"
No. 9 Top Bar to No. 9 Top Bar = 8'-9"
No. 9 Bot. Bar to No. 9 Bot. Bar = 6'-4"



INTERMEDIATE SHEAR KEY

H-933N

NO.	DESCRIPTION	DATE
3	AS-BUILTS - NCR 375	05/01/19
2	FDC 1164 - CONSTRUCTION JOINT REVISION	07/06/17
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1610	02/03/17

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AS-BUILT DRAWING
MAY 1, 2019

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2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89162
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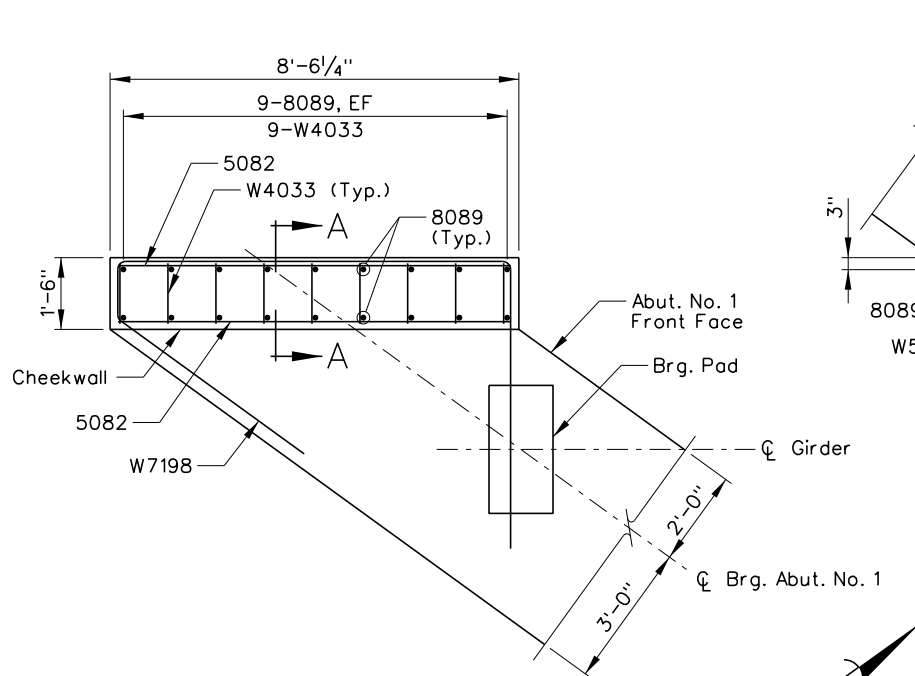
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DEPARTMENT OF TRANSPORTATION

I-15NOAKEY
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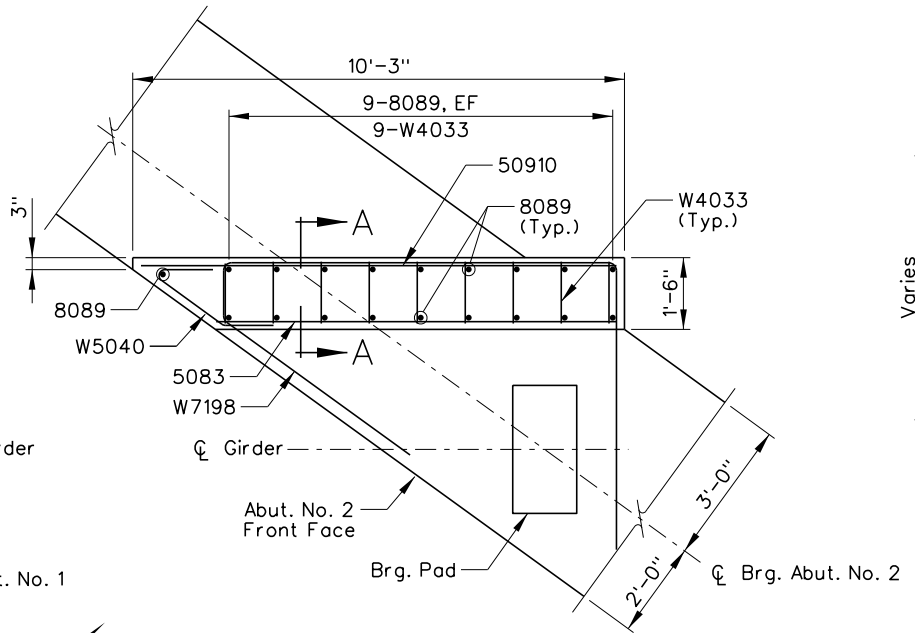
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2270 Corporate Circle
Suite 200
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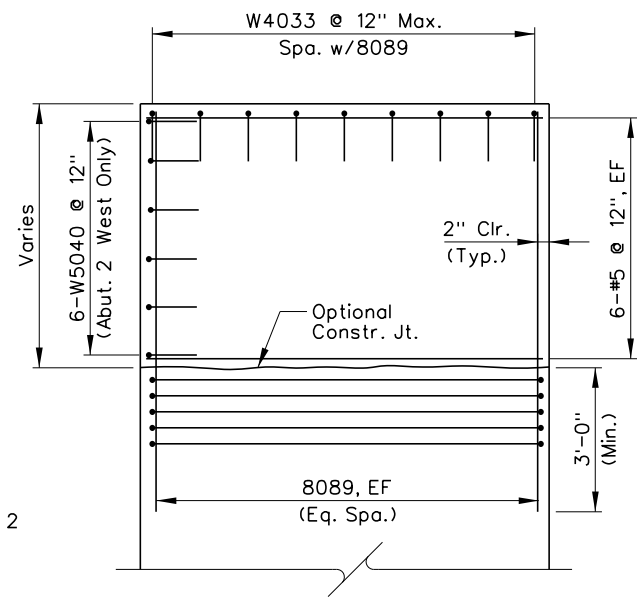
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NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1612



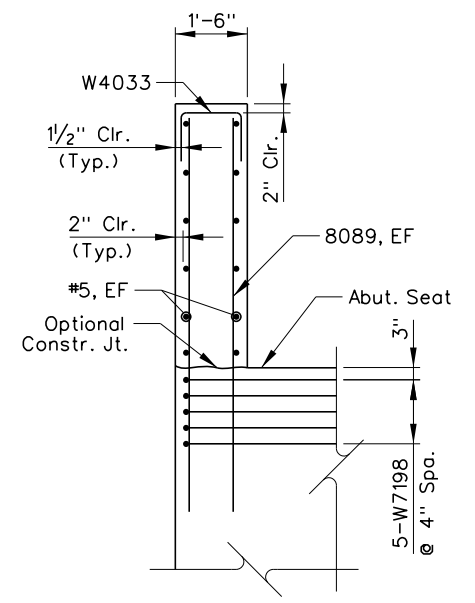
CHEEKWALL PLAN
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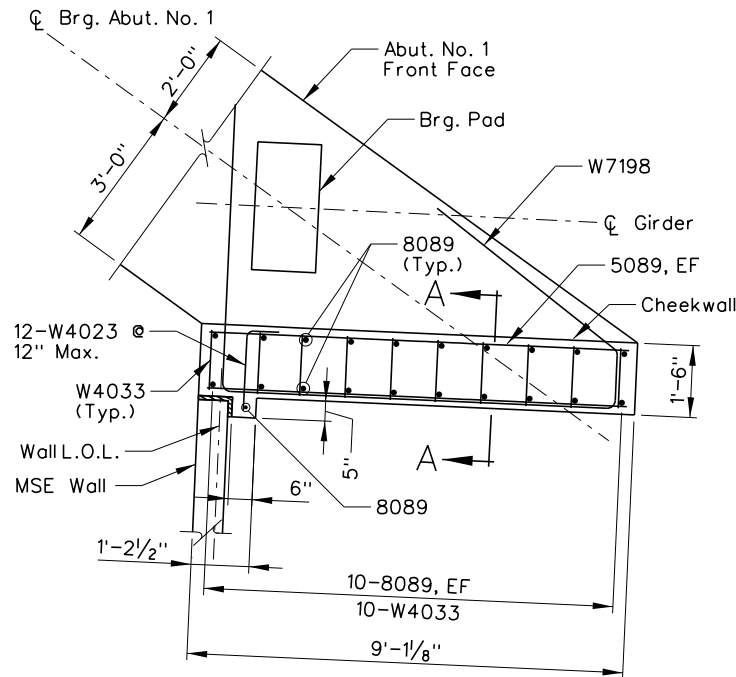
CHEEKWALL PLAN
(Abutment No. 2 West)



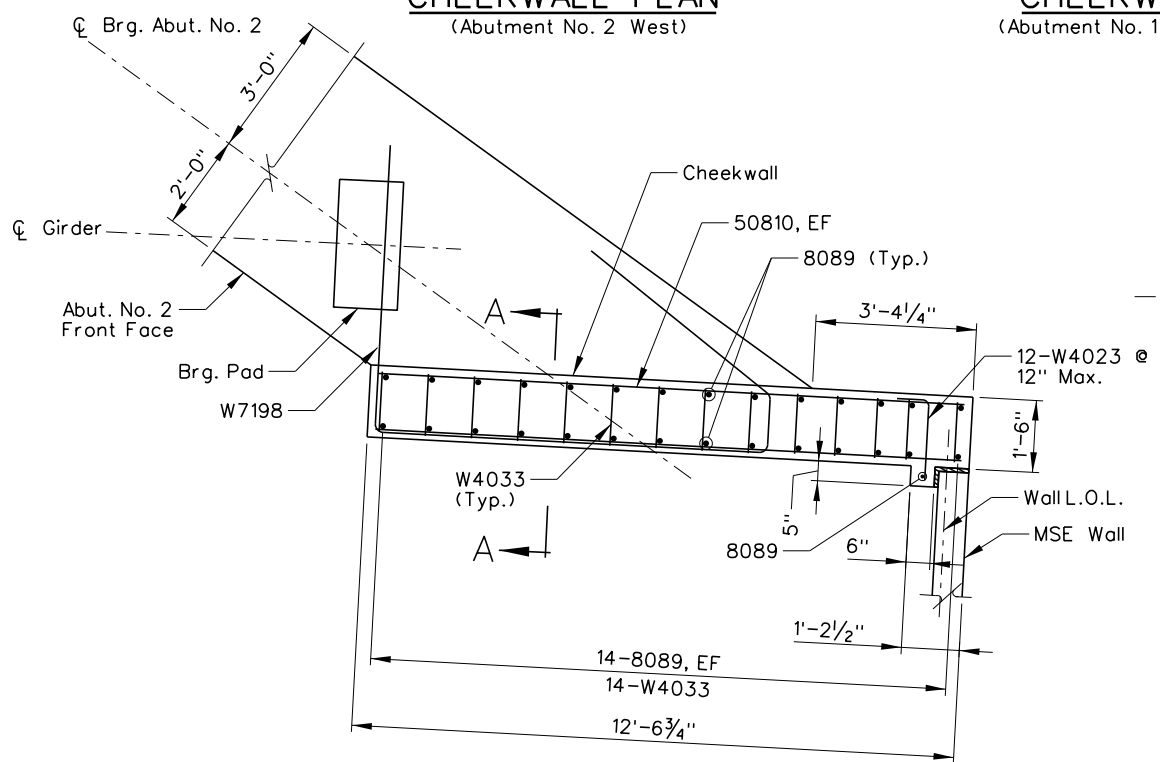
CHEEKWALL ELEVATION
(Abutment No. 1 West Shown; Others Similar)



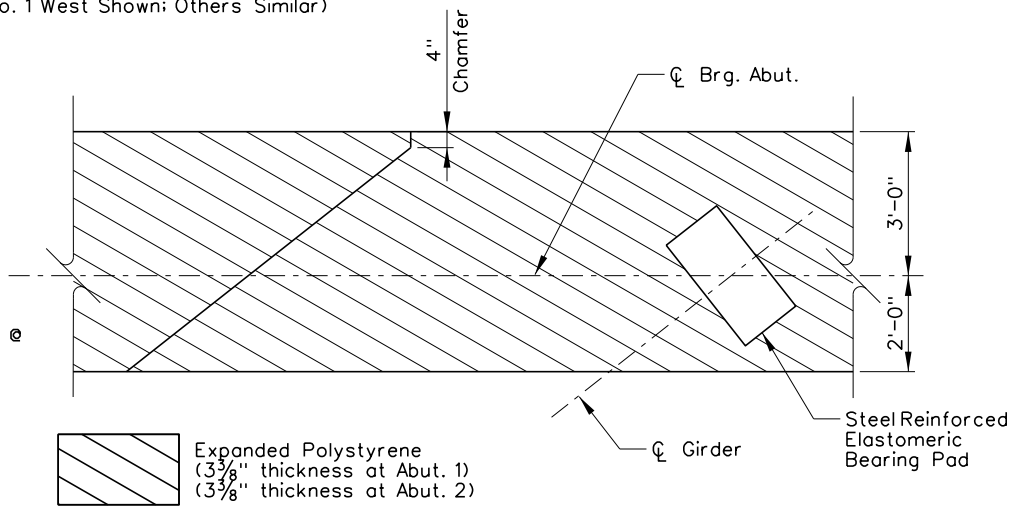
SECTION A-A



CHEEKWALL PLAN
(Abutment No. 1 East)



CHEEKWALL PLAN
(Abutment No. 2 East)



ABUTMENT PARTIAL PLAN

- Notes:**
- Expanded polystyrene shall be placed on both horizontal and vertical surfaces at steps in abutment cap.
 - If a construction joint is utilized, intentionally roughen the surface to an amplitude of 1/4".

Expanded Polystyrene
(3/8" thickness at Abut. 1)
(3/8" thickness at Abut. 2)

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NO.	DESCRIPTION	DATE
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0	RFC - 73652-S1-07-R2H-H933N-SHT20B1612	02/03/17

DESIGN UNIT S1-07

AS-BUILT DRAWING

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LAS VEGAS, NEVADA 89002
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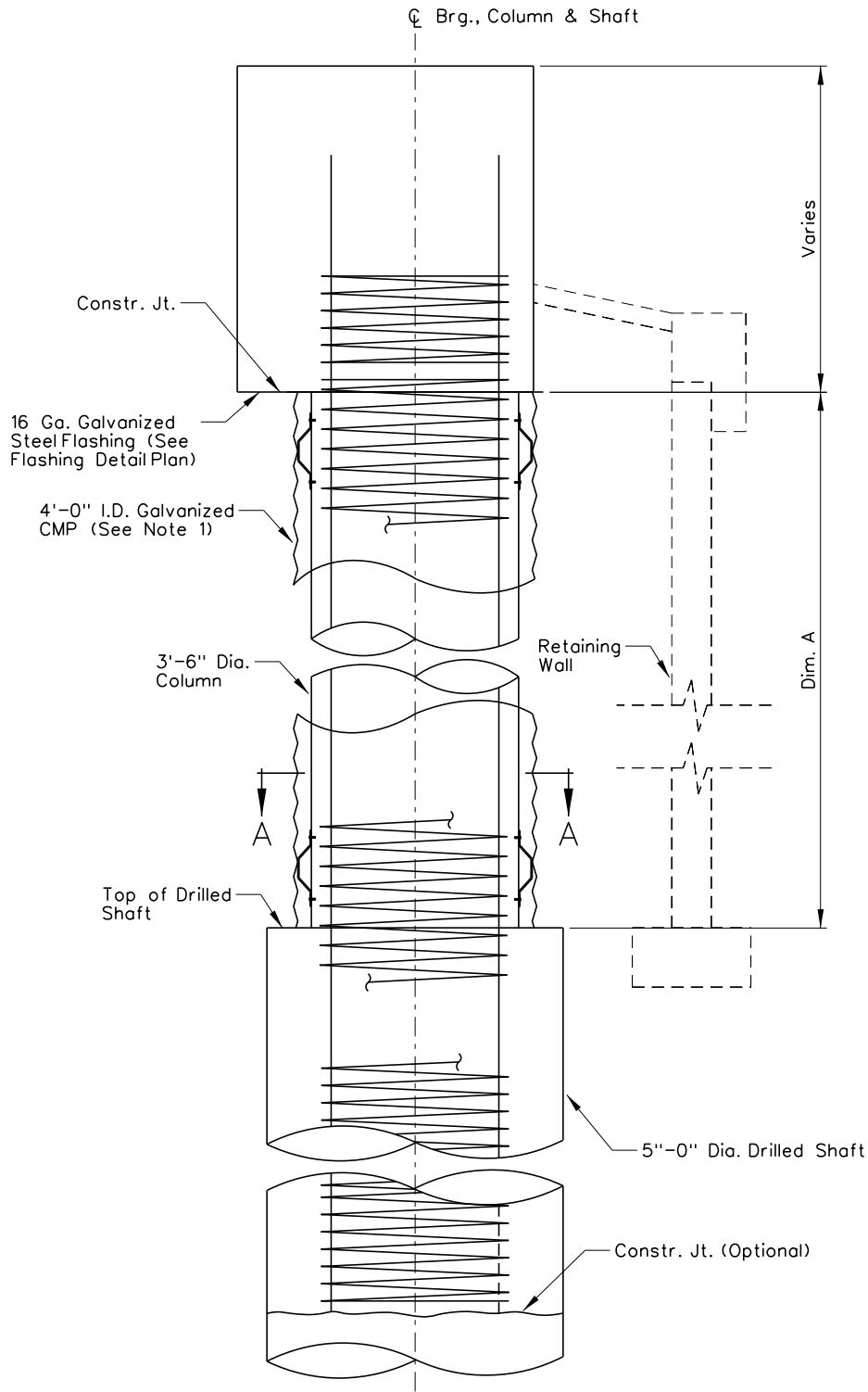
I-15/OAKLEY
ABUTMENT DETAILS
2 OF 2

ATKINS
2270 Corporate Circle
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Henderson, Nevada 89074
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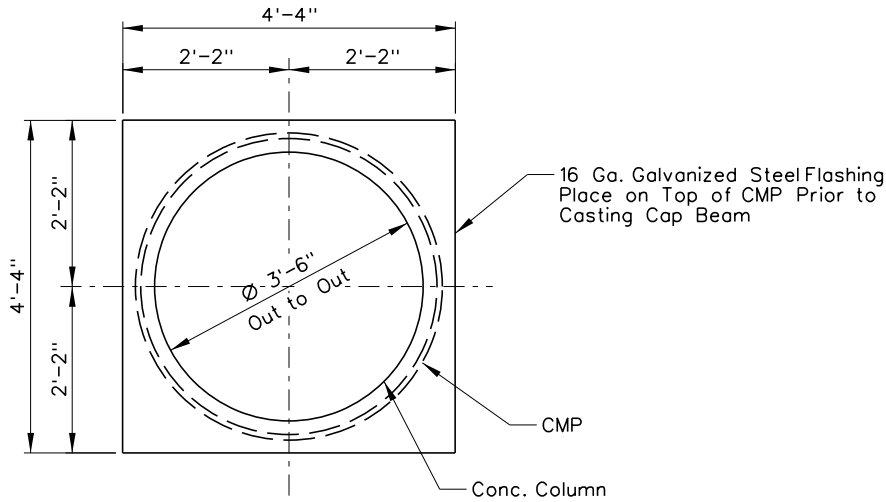
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H-933N

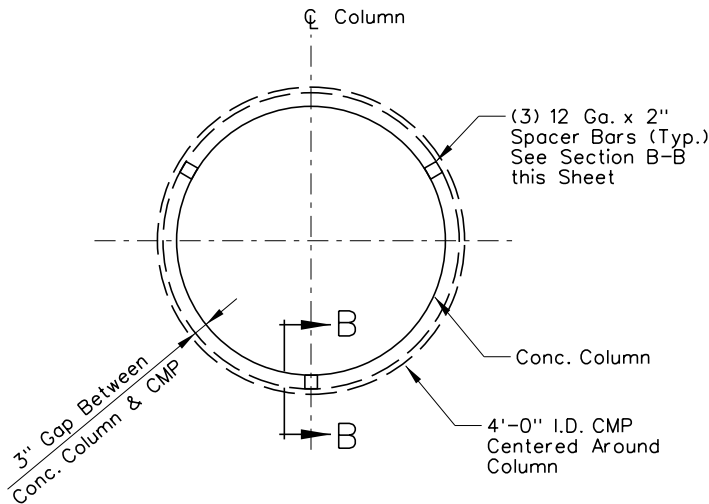
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NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1613



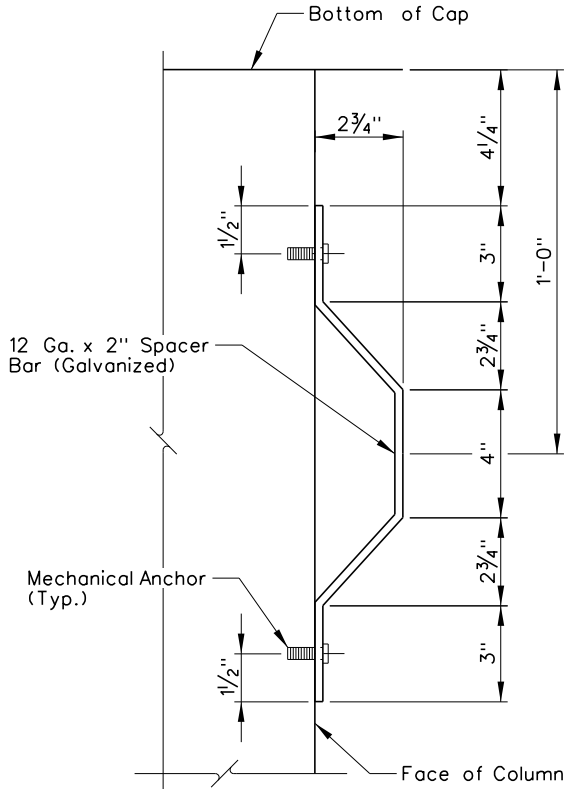
TYPICAL ABUTMENT SECTION



FLASHING DETAIL PLAN



SECTION A-A
SPACER BAR PLAN



SECTION B-B

Note: CMP Not Shown for Clarity

Notes:

- Corrugated Metal Pipe Shall be Fabricated From Pregalvanized Steel Sheets with Minimum Wall Thickness of 0.064" and Shall Conform to AASHTO M36.
- Use Three Spacer Bars per Set Equally Spaced Around the Column. Locate One Set at 1'-0" From the Top and One Set at 1'-0" From the Bottom of the Column.
- Backfill Shall Be Placed at Uniform Depth Around Columns.

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1613	02/03/17
NO.	DESCRIPTION	DATE

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AS-BUILT DRAWING
JANUARY 04, 2019

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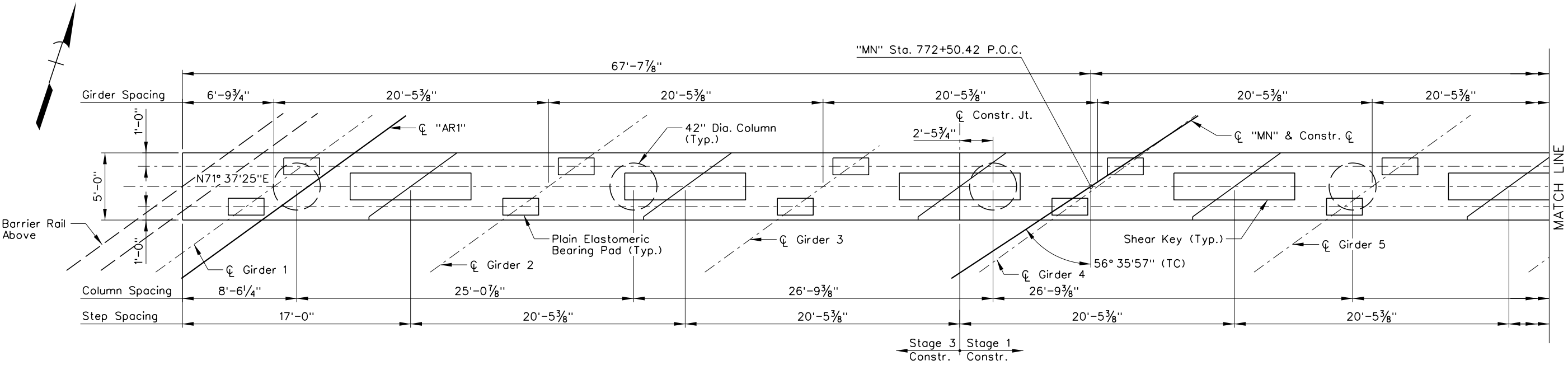
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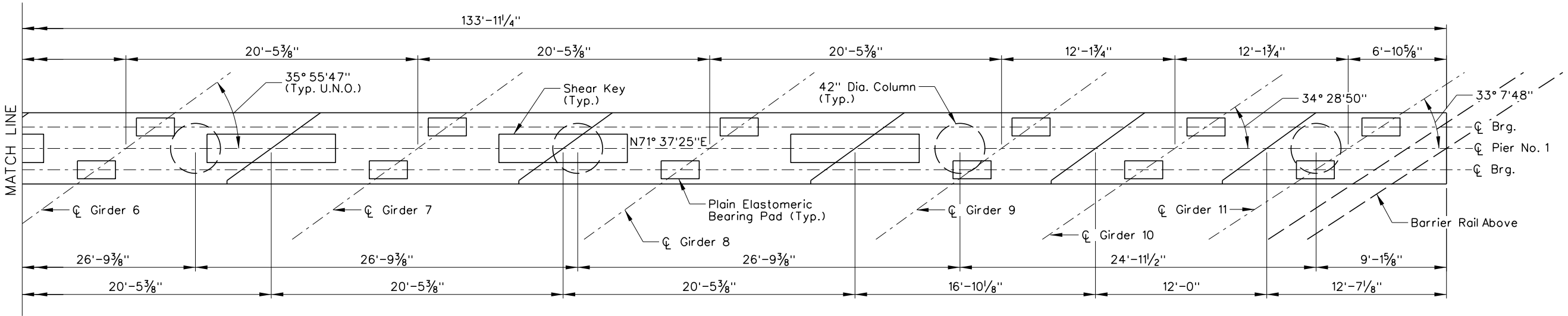
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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1614



PARTIAL PLAN



PARTIAL PLAN

Notes:

- 1. For construction stages, see "Staged Construction" sheet.
- 2. For Pier No. 1 elevation, see "Pier No. 1 Elevation" sheet.
- 3. All bearing surfaces shall be finished level.

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1614	02/03/17
NO.	DESCRIPTION	DATE

DESIGN UNIT S1-07

AS-BUILT DRAWING

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STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15 N OAKLEY
PIER NO. 1 PLAN

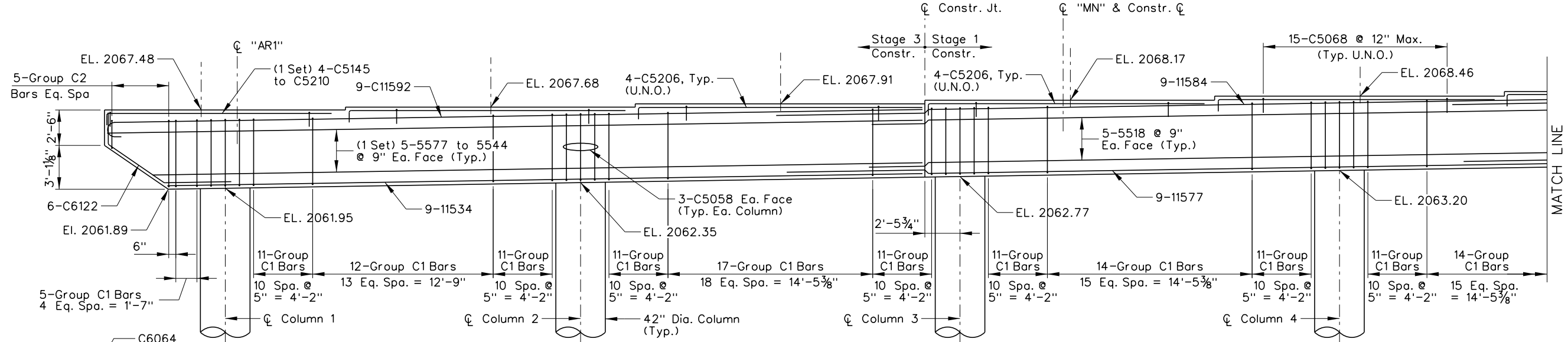
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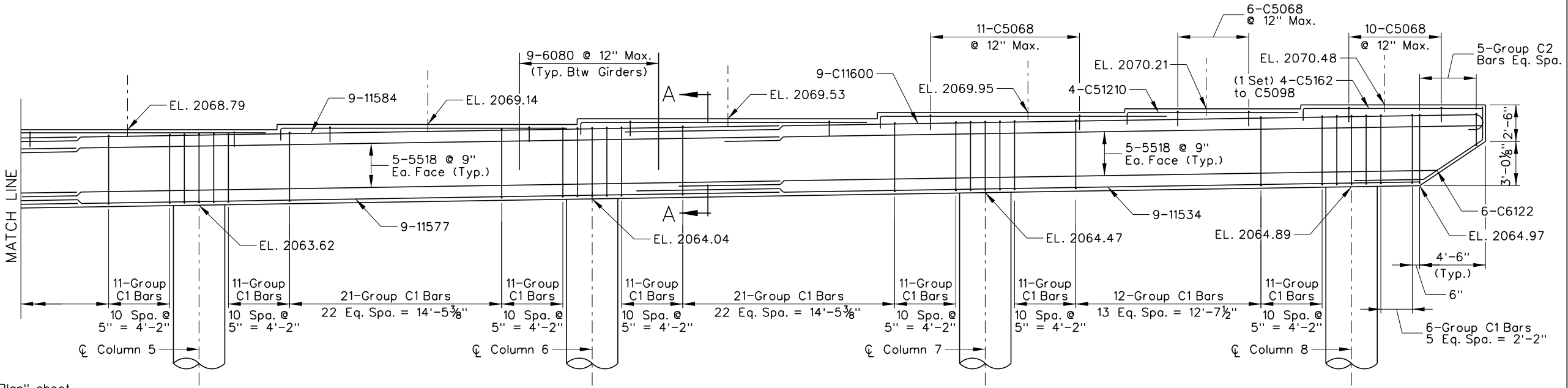
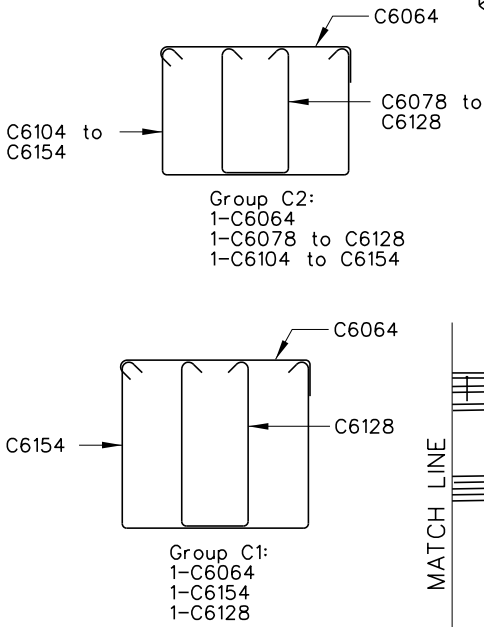
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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1615



PARTIAL ELEVATION
(Looking Ahead Station)



PARTIAL ELEVATION
(Looking Ahead Station)

Minimum Bar Lap Length
No. 5 Bar to No. 5 Bar = 3'-9"
No. 11 Top Bar to No. 11 Top Bar = 10'-6"
No. 11 Bot. Bar to No. 11 Bot. Bar = 9'-9"

- Notes:
- For Pier No. 1 plan, see "Pier No. 1 Plan" sheet.
 - Allelevations are taken along ϕ Brg.
 - For Section A-A, see "Pier No. 1 Details" sheet.
 - Allbearing surfaces shall be finished level.
 - Maintain 2" clear cover on allreinforcement (U.N.O.)
 - See "Lighting Plans" for underpass lighting details.

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1615	02/03/17

DESIGN UNIT S1-07

AS-BUILT DRAWING

JANUARY 04, 2019

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DEPARTMENT OF TRANSPORTATION

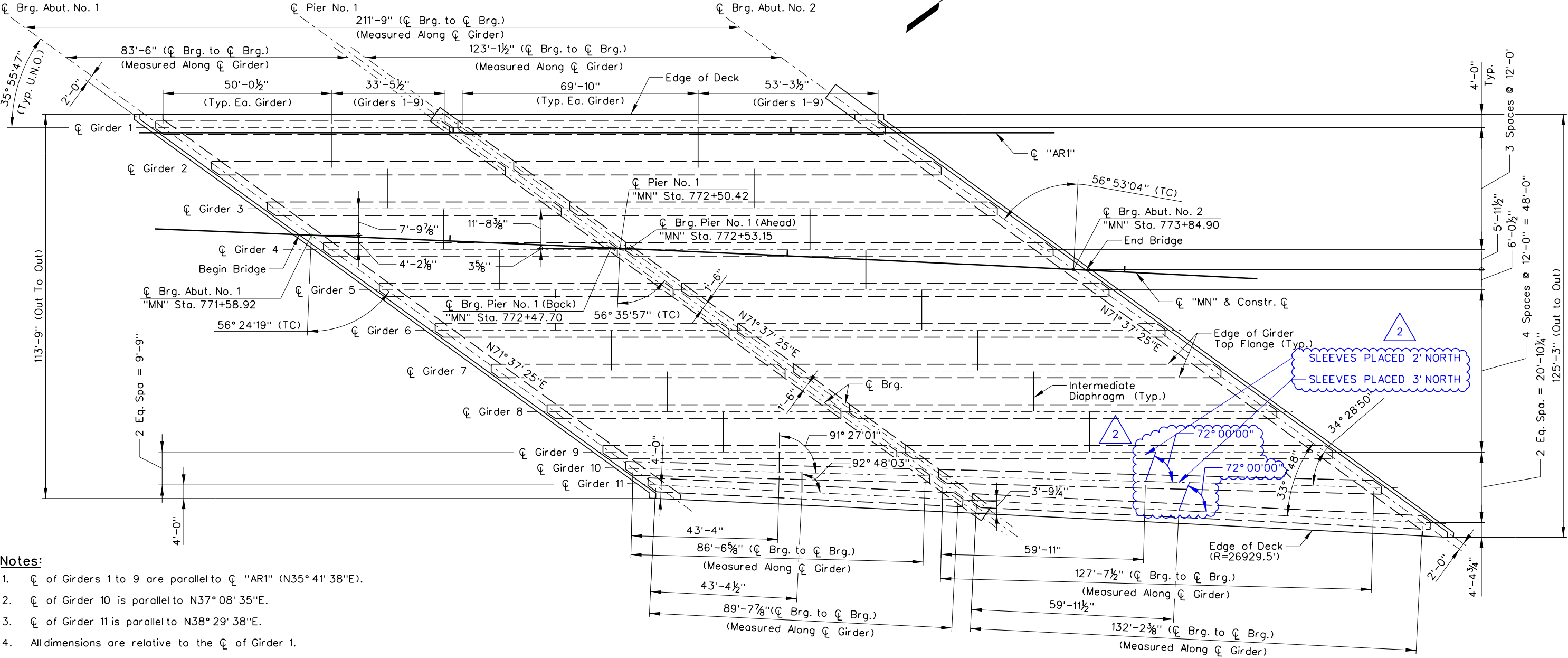
I-15NOAKEY
PIER NO. 1 ELEVATION

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Henderson, Nevada 89074
Telephone: 702/263-7275
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DESIGNED BY: CAW
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REVIEWED BY: DAA

2/11/2020 3:05:07 PM pw:\\SUSD036343.watkins.com\\ATKMANV01\\Documents\\Roads and Bridges\\Projects\\100047698 NEON FD\\Engineering\\011_Structures\\DGN\\Sheets\\B16 - H-933N\\I-15 over Oakey\\73652-S1-07-R2H-H933N-sht20B1615.dgn

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1617



- Notes:**
1. ϕ of Girders 1 to 9 are parallel to ϕ "AR1" (N35° 41' 38"E).
 2. ϕ of Girder 10 is parallel to N37° 08' 35"E.
 3. ϕ of Girder 11 is parallel to N38° 29' 38"E.
 4. All dimensions are relative to the ϕ of Girder 1.
 5. Intermediate Diaphragm dimensions are measured along ϕ of Girder.
 6. For Girder Details, see "Prestressed Girder Details" sheets.
 7. For Intermediate Diaphragm Details, see "Intermediate Diaphragm Details" sheet.
 8. Overhang dimensions are measured normal to ϕ of Girder.
 9. 'Out to Out' dimesions are measured at 'Begin Bridge' and 'End Bridge' locations.

FRAMING PLAN

2
NCR 322 - GIRDER SLEEVES IN 9 AND 10 MISPLACED, CONNECTION ANGLES FABRICATED AT 108 DEGREES FOR STEEL DIPHRAGMS

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NO.	DESCRIPTION	DATE
2	AS-BUILTS - NCR 322	05/01/19
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1617	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
MAY 1, 2019

R2H ENGINEERING, INC.
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STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/OAKLEY
FRAMING PLAN

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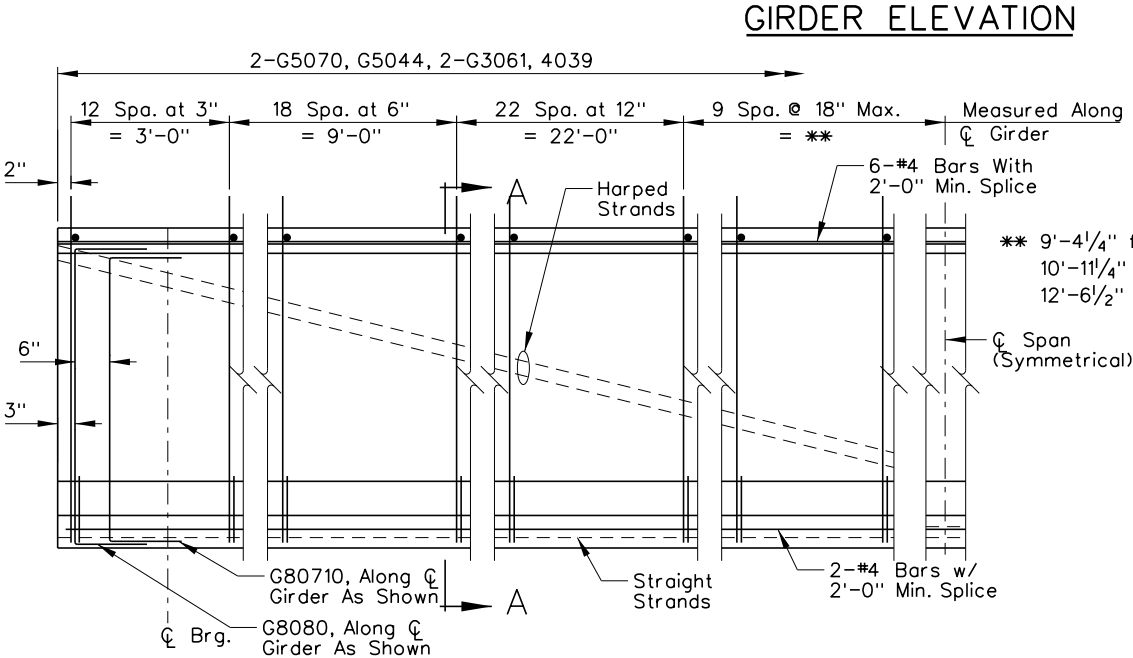
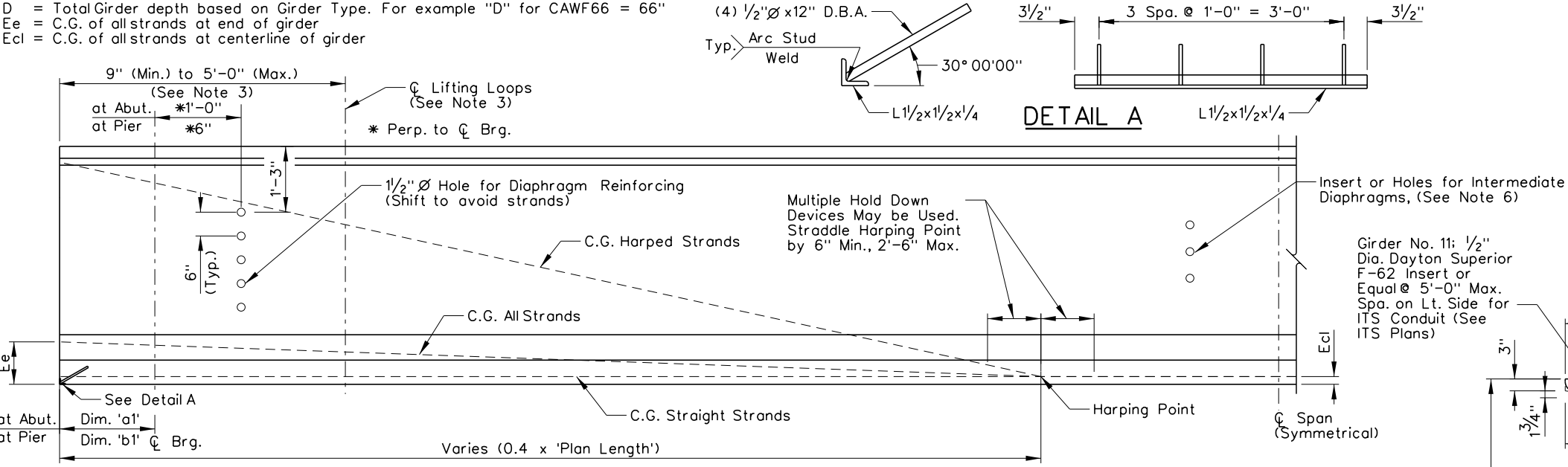
DESIGNED BY: CAW
DRAWN BY: EAS
CHECKED BY: PLK
REVIEWED BY: DAA

H-933N

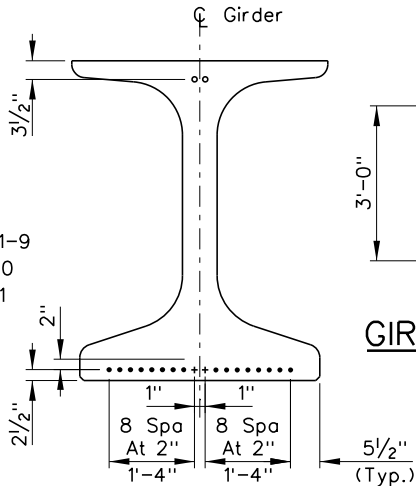
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GIRDER SCHEDULE																
								Min. Concrete Compressive Strength		Harped		Straight			Locations of C.G. Strands	
Span	Girder	Girder Type	θ1 / θ2 (Degrees)	L1 , L2 (Length)	Dim. 'a'	Dim. 'b'	Plan Length	f'ci ksi	f'c ksi	Number of Strands	Jacking Force (kips)	Number of Strands	Jacking Force (kips)	Prestressed Force After all Losses (kips)	Ee (inch)	Ecl (inch)
1	1-9	CA WF66	54.07/54.07	28 ⁵ / ₈ " , 28 ⁵ / ₈ "	2'-2 ¹ / ₄ "	1'-4"	87'-0 ¹ / ₄ "	5	10	2	87.9	16	703.1	712.0	9.17	2.50
1	10	CA WF66	55.52/55.52	30 ¹ / ₄ " , 30 ¹ / ₄ "	2'-3 ¹ / ₈ "	1'-4 ¹ / ₂ "	90'-2 ¹ / ₈ "	5	10	2	87.9	16	703.1	712.0	9.17	2.50
1	11	CA WF66	56.87/56.87	31 ³ / ₄ " , 31 ³ / ₄ "	2'-4"	1'-5"	93'-4 ³ / ₄ "	5	10	2	87.9	16	703.1	712.0	9.17	2.50

D = Total Girder depth based on Girder Type. For example "D" for CAWF66 = 66"
Ee = C.G. of all strands at end of girder
Ecl = C.G. of all strands at centerline of girder



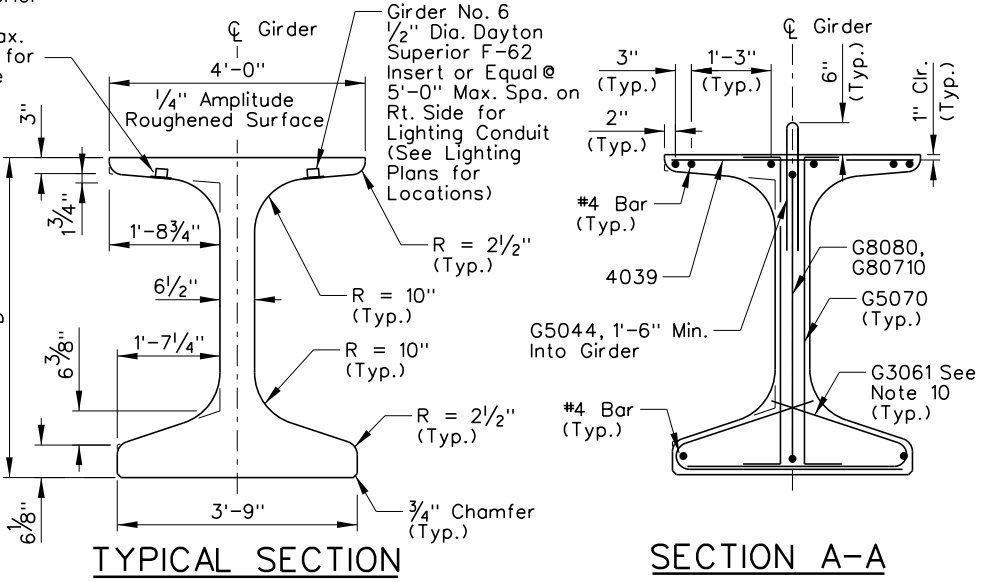
TYPICAL END ELEVATION



STRAND PATTERN

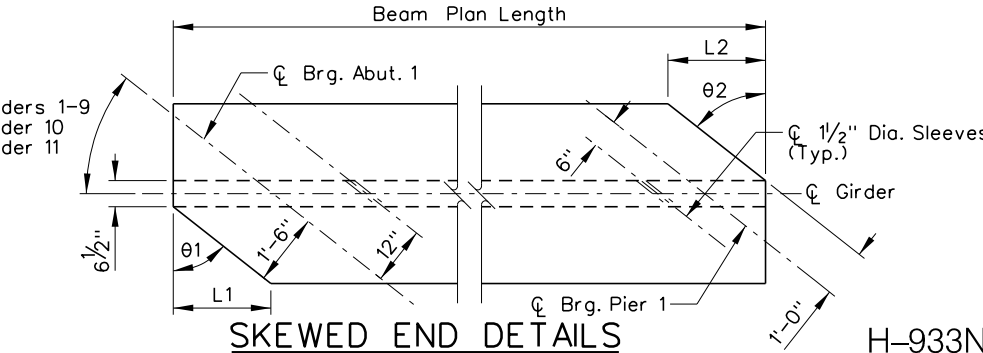
- Denotes Straight Strands
- Denotes Harp Strands at Ends
- + Denotes Harp Strands At Midspan

GIRDER END DETAIL (At Pier End Only)



TYPICAL SECTION

SECTION A-A



SKEWED END DETAILS

H-933N

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1618	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019

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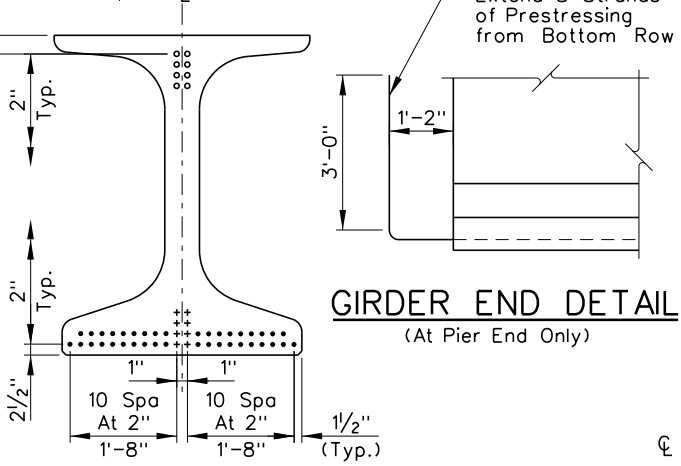
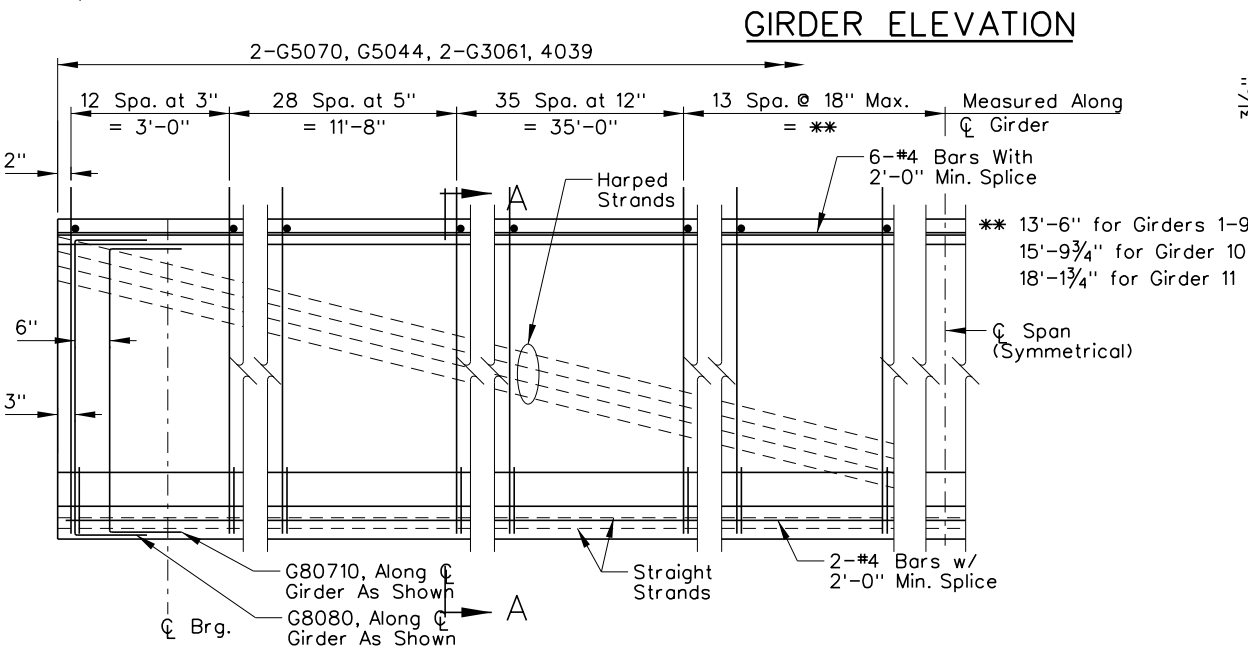
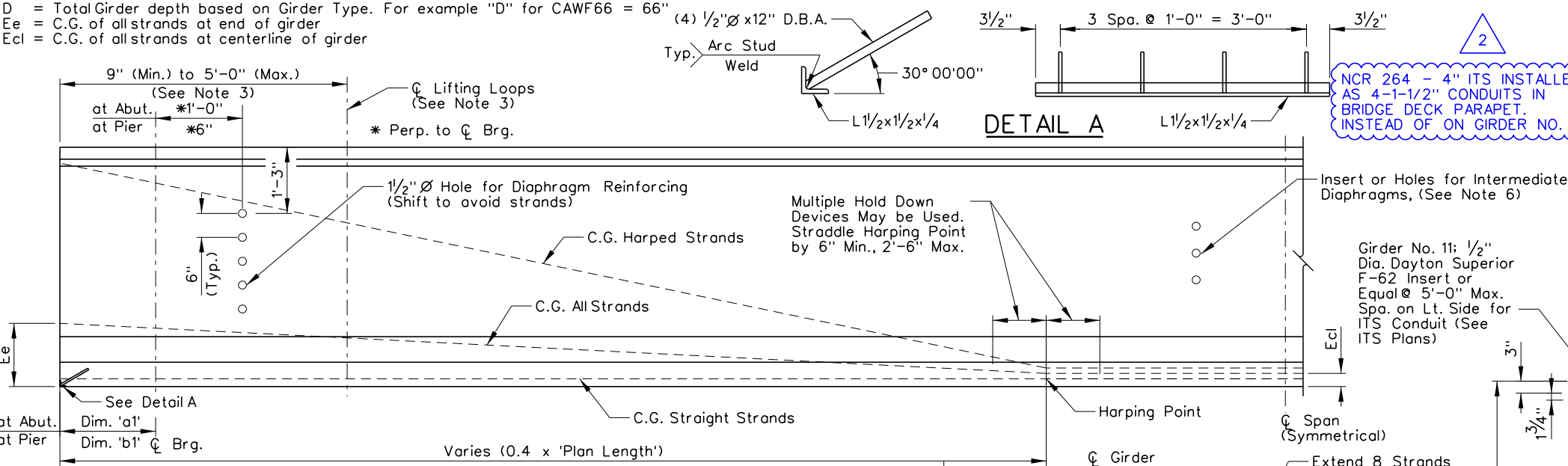


STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/OAKLEY
PRESTRESSED GIRDER DETAILS
SPAN 1
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DRAWN BY: EAS
CHECKED BY: PLK
REVIEWED BY: DAA

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pw:\\SUS0036343.watkins.com\\ATKANV\\Documents\\Roads and Bridges\\Projects\\100047698 NEON FD\\Engineering\\011.Structures\\DGN\\Sheets\\B16 - H-933N\\I-15 over Oakey\\73652-S1-07-R2H-H933N-SHT20B1619.dgn

GIRDER SCHEDULE																
								Min. Concrete Compressive Strength		Harped		Straight			Locations of C.G. Strands	
Span	Girder	Girder Type	θ1 / θ2 (Degrees)	L1 , L2 (Length)	Dim. 'a'	Dim. 'b'	Plan Length	f'ci ksi	f'c ksi	Number of Strands	Jacking Force (kips)	Number of Strands	Jacking Force (kips)	Prestressed Force After all Losses (kips)	Ee (inch)	Ecl (inch)
1	1-9	CA WF66	54.07/54.07	28 ⁵ / ₈ " , 28 ⁵ / ₈ "	2'-2 ¹ / ₄ "	1'-4"	126'-7 ⁵ / ₈ "	5.3	10	8	351.5	38	1669.8	2021.3	13.20	3.80
1	10	CA WF66	55.52/55.52	30 ¹ / ₄ " , 30 ¹ / ₄ "	2'-3 ¹ / ₈ "	1'-4 ¹ / ₂ "	131'-3"	5.3	10	4	175.8	32	1406.2	1582.0	9.50	3.28
1	11	CA WF66	56.87/56.87	31 ³ / ₄ " , 31 ³ / ₄ "	2'-4"	1'-5"	135'-11 ¹ / ₄ "	5.3	10	6	263.7	38	1669.8	1933.5	11.23	3.59

D = Total Girder depth based on Girder Type. For example "D" for CAWF66 = 66"
Ee = C.G. of all strands at end of girder
Ecl = C.G. of all strands at centerline of girder



STRAND PATTERN

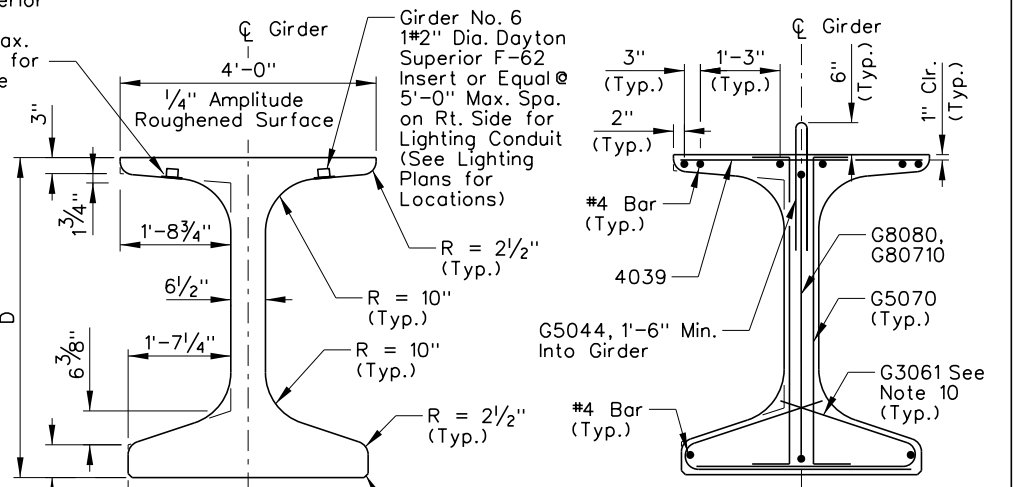
- Denotes Straight Strands
- Denotes Harp Strands at Ends
- + Denotes Harp Strands At Midspan

TYPICAL END ELEVATION

NO.	DESCRIPTION	DATE
2	AS-BUILTS - NCR 264	05/01/19
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1619	02/03/17

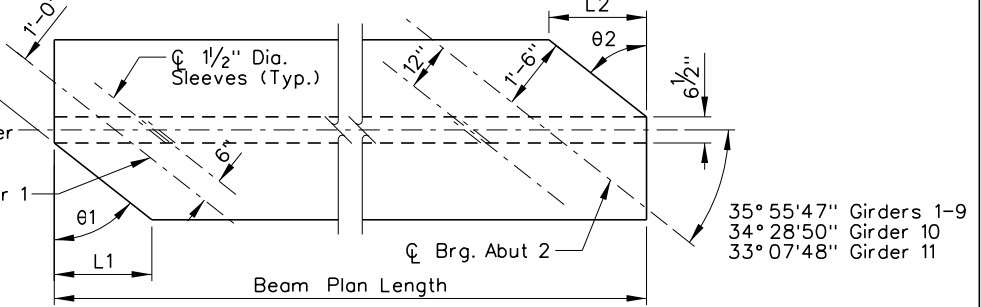
NOTES:

- Increase plan length as necessary to compensate for shortening due to prestress, creep, and shrinkage.
- Use 0.6"Ø Low Relaxation strands (AASHTO M203 Grade 270).
- Design of lifting loops per precast girder fabricator.
- Prestressed force shown in the table is for the controlling girder, and includes elastic gains at Service III Limit state.
- Contractor is responsible for analysis and evaluation of girder stability during construction, including shipping and erection.
- See Framing Plan for intermediate diaphragm locations and see Intermediate Diaphragm Details for connection requirements.
- For predicted girder camber, see Camber and Concrete Classification sheet. Notify the Engineer if actual camber varies from theoretical camber by more than 1/2".
- All dimensions are horizontal. Fabricator must correct for vertical grade.
- All reinforcing steel to be ASTM A615 Grade 60.
- When spacing of G5070, G5044, G3061 and 4039 bars is 2 1/2" or less, place one G3061 bar on each side of G5070 pair.
- Galvanize embedded end angle as shown in Detail A in accordance with ASTM A123.



TYPICAL SECTION

SECTION A-A



SKEWED END DETAILS

H-933N

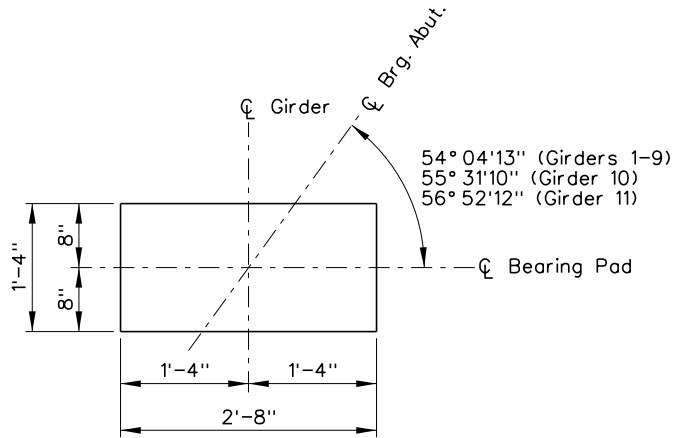
DESIGN UNIT S1-07
AS-BUILT DRAWING
MAY 1, 2019

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/OAKEY
PRESTRESSED GIRDER DETAILS
SPAN 2

DESIGNED BY: CAW
DRAWN BY: EAS
CHECKED BY: PLK
REVIEWED BY: DAA

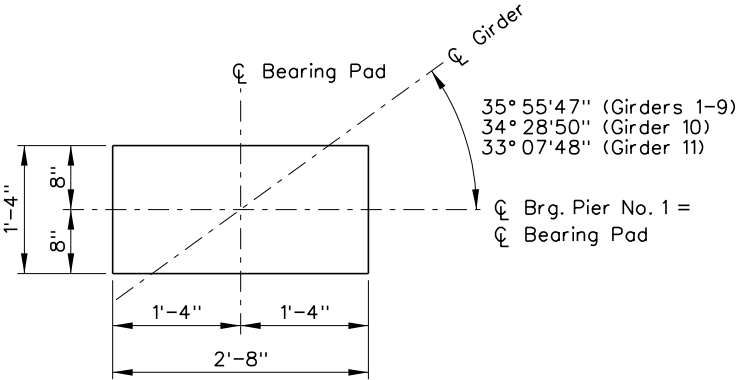
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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1620



ABUTMENT NO. 1 & 2

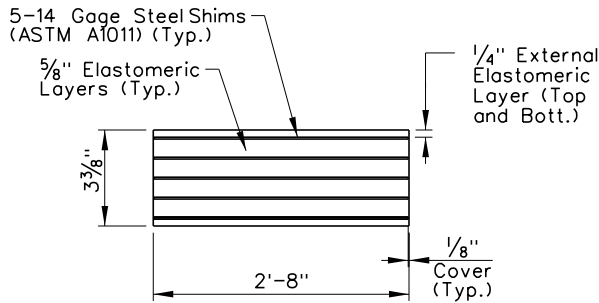
Steel Reinforced Elastomeric
Bearing Pad



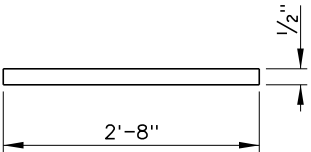
PIER NO. 1

Plain Elastomeric Bearing Pad

BEARING PLAN DETAIL



STEEL REINFORCED ELASTOMERIC
BEARING PAD ELEVATION



PLAIN ELASTOMERIC BEARING
PAD ELEVATION

Notes:

- Bearing elastomer compound shall be virgin neoprene rubber classified as low-temperature grade 3, with Shore A Durometer hardness of 50.
- Steel laminates shall conform to ASTM A1011M Grade 250 (A1011 Grade 36).
- Steel reinforced bearing pad design parameters:
Method = A
Design Load = 421.5 kips
Durometer Hardness = 50
Shear Modulus, Gmin = 0.095 ksi, Gmax = 0.200 ksi
- Plain elastomeric bearing pad design parameters:
Method = A
Design Load = 238.0 kips
Durometer Hardness = 50
Shear Modulus, Gmin = 0.095 ksi, Gmax = 0.200 ksi
- Longitudinal displacement includes the effect of temperature and shrinkage.

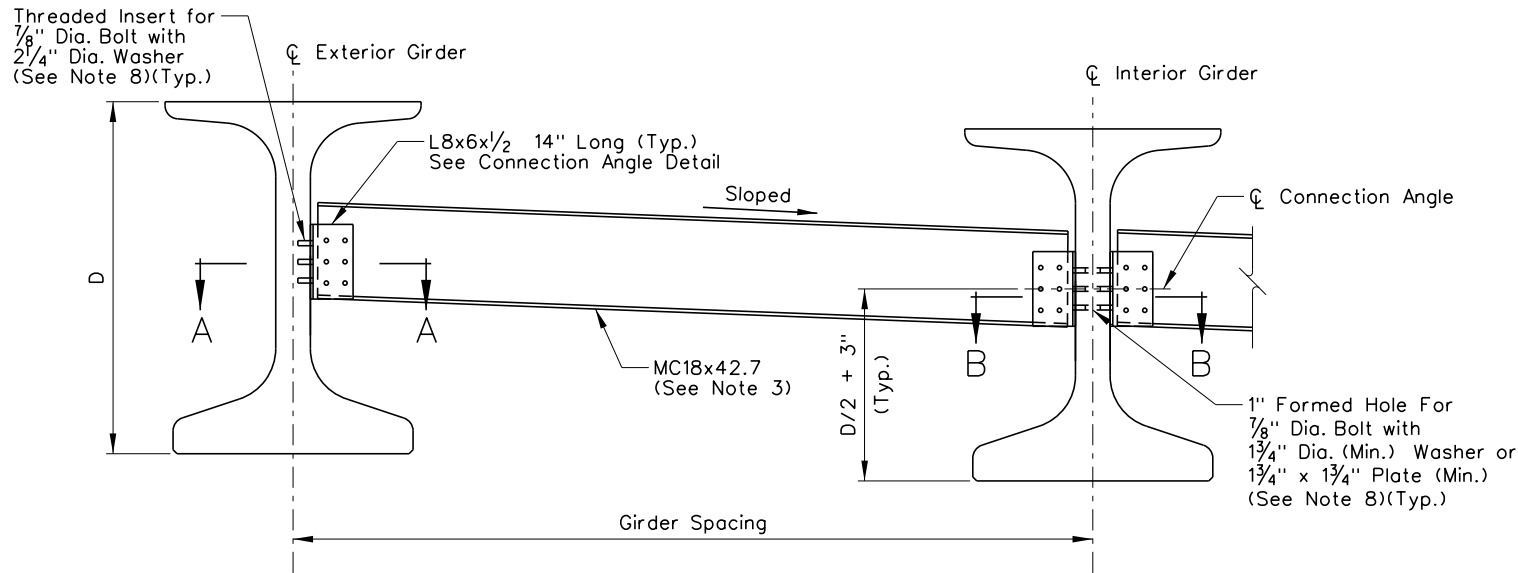
H-933N

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1620	02/03/17
NO.	DESCRIPTION	DATE

DESIGN UNIT S1-07	  	STATE OF NEVADA DEPARTMENT OF TRANSPORTATION I-15/OAKLEY BEARING PAD DETAILS	
AS-BUILT DRAWING JANUARY 04, 2019		DESIGNED BY CAW DRAWN BY EAS CHECKED BY PLK REVIEWED BY DAA	
 R ₂ H ENGINEERING, INC. CONSULTING STRUCTURAL ENGINEERS 2610 HORIZON RIDGE PARKWAY, SUITE 205 LAS VEGAS, NEVADA 89162 PHONE (702) 260-7000 FAX (702) 260-7070		 2270 Corporate Circle Suite 200 Henderson, Nevada 89074 Telephone: 702/263-7275 Fax: 702/263-7200 www.atkinsglobal.com	

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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1621

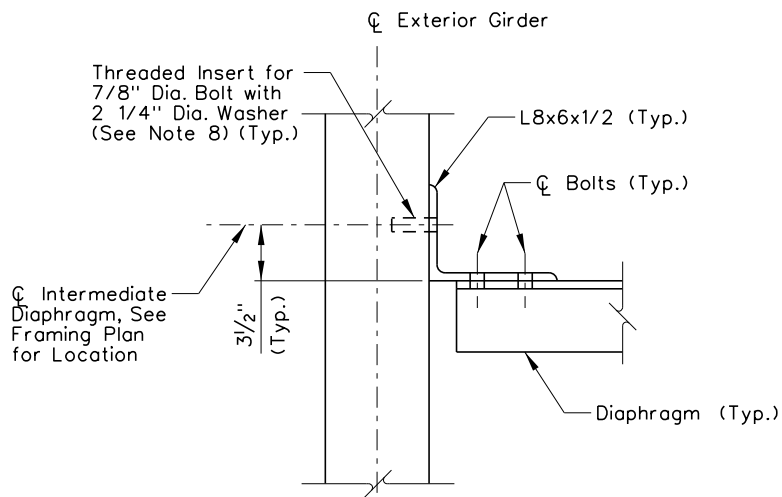


TYPICAL INTERMEDIATE DIAPHRAGM

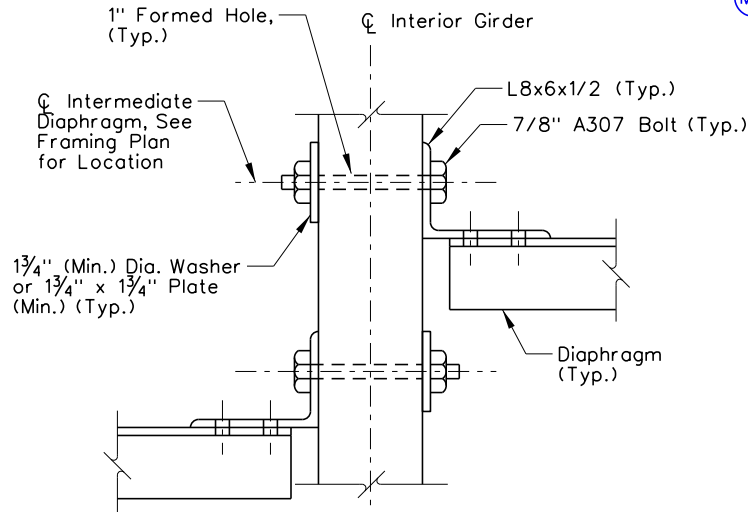
- Notes:
- All intermediate diaphragms shall be placed perpendicular to the girders. Diaphragm connections to be located on the girder web.
 - All steel shall be ASTM A709 Grade 50 and galvanized in accordance with ASTM A123.
 - Fabricate intermediate diaphragms with ends parallel to girder webs.
 - Use ASTM A307 Grade A 7/8" Dia. bolts for steel to concrete connections. Use ASTM A325 3/4" Dia. high strength bolts for steel to steel connections.
 - Washers shall be ASTM F436. All bolts, nuts, and washers shall be galvanized in accordance with ASTM A153.
 - Field drilling of diaphragm connection angles is permitted. All other holes shall be shop drilled.
 - 1/2" bent plate of equal dimensions may be substituted for MC18x42.7.
 - Place threaded inserts/formed holes perpendicular to girder web. Cast threaded inserts for bolts into exterior girders. The threaded inserts shall provide a minimum ultimate tensile capacity of 11 kips.
 - Galvanize threaded inserts for exterior girders in accordance with ASTM A153.
 - Position threaded inserts/formed holes to avoid interference with prestressing strands.

2

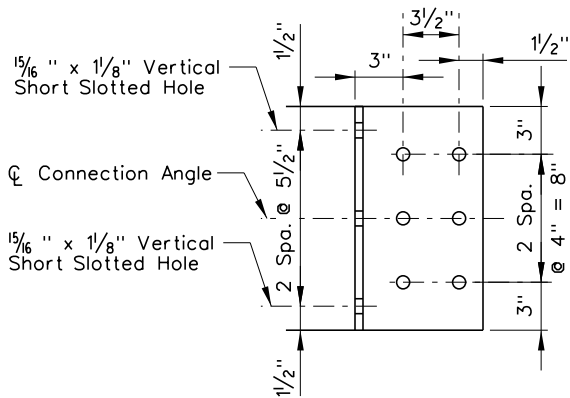
NCR 287 - DIAPHRAGM CONNECTIONS MODIFIED IN FIELD WITH NEW HOLES DRILLED IN CONNECTION ANGLE, WITH 1.5" CLEAR TO EXISTING HOLES AND STEEL EDGE, OR NEW L10X6X1/2 USED WITH 4 FIELD DRILLED HOLES TO MATCH DIAPHRAGM CONNECTION.



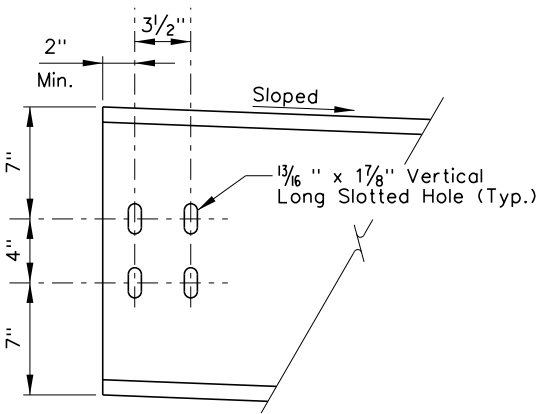
SECTION A-A



SECTION B-B



CONNECTION ANGLE



DIAPHRAGM CONNECTION

NO.	DESCRIPTION	DATE
2	AS-BUILTS - NCR 287	05/01/19
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1621	02/03/17

DESIGN UNIT S1-07

AS-BUILT DRAWING

MAY 1, 2019

R₂H ENGINEERING, INC.
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2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89162
PHONE (702) 260-7000 FAX (702) 260-7070



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15/OAKLEY

INTERMEDIATE
DIAPHRAGM DETAILS

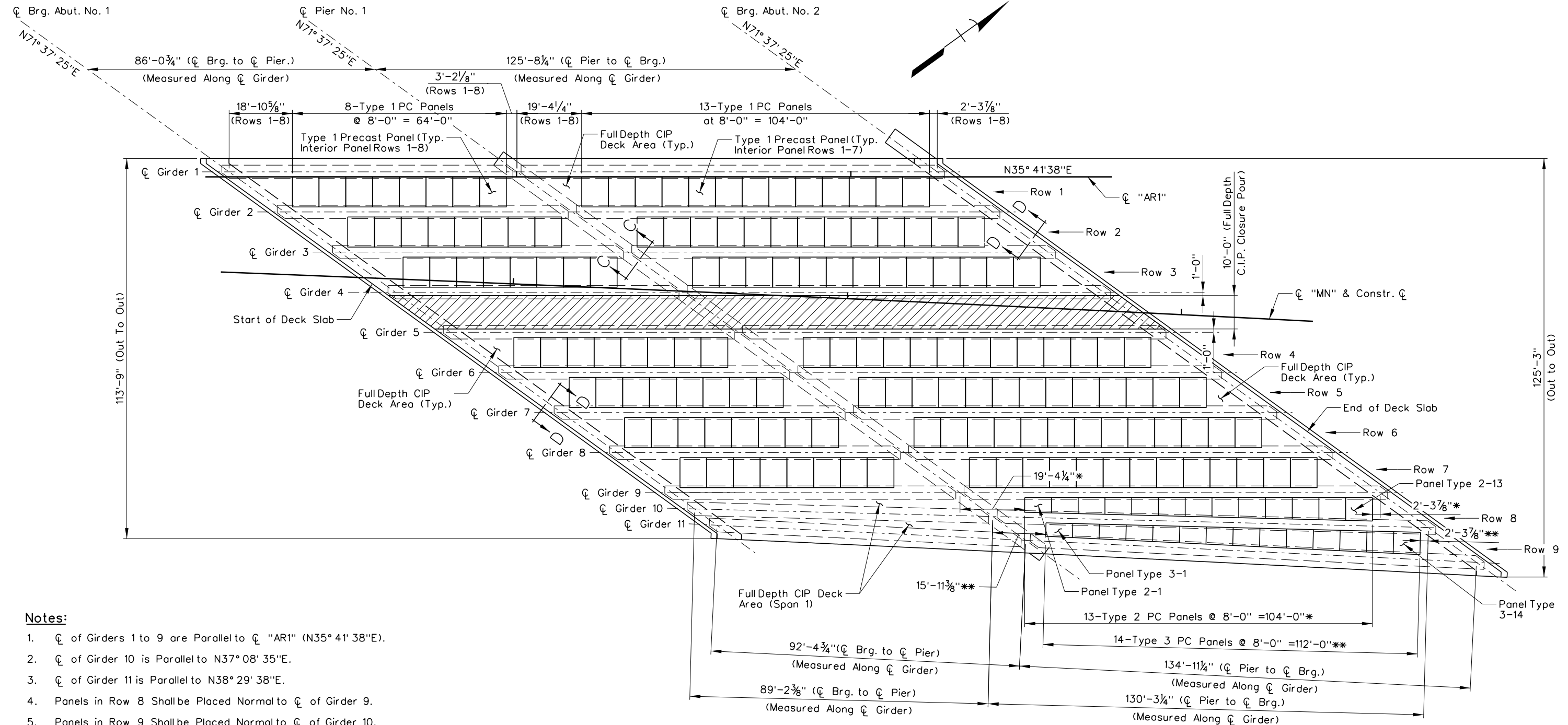
ATKINS

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DESIGNED BY: CAW
DRAWN BY: EAS
CHECKED BY: DAA
REVIEWED BY: DAA

H-933N

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1622



PANEL LAYOUT PLAN

Notes:

1. $\angle$ of Girders 1 to 9 are Parallel to $\angle$ "AR1" (N35° 41' 38"E).
2. $\angle$ of Girder 10 is Parallel to N37° 08' 35"E.
3. $\angle$ of Girder 11 is Parallel to N38° 29' 38"E.
4. Panels in Row 8 Shall be Placed Normal to $\angle$ of Girder 9.
5. Panels in Row 9 Shall be Placed Normal to $\angle$ of Girder 10.
6. (*) is Measured Parallel to $\angle$ of Girder 9.
7. (**) is Measured Parallel to $\angle$ of Girder 10.
8. See "CIP Deck Details At Span 1" Sheet for Section C-C.
9. See "CIP Deck Details At Span 2" Sheet for Section D-D.

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1622	02/03/17
NO.	DESCRIPTION	DATE

H-933N

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15NOAKEY
PRECAST PANEL PLAN

DESIGN UNIT S1-07

AS-BUILT DRAWING

JANUARY 04, 2019



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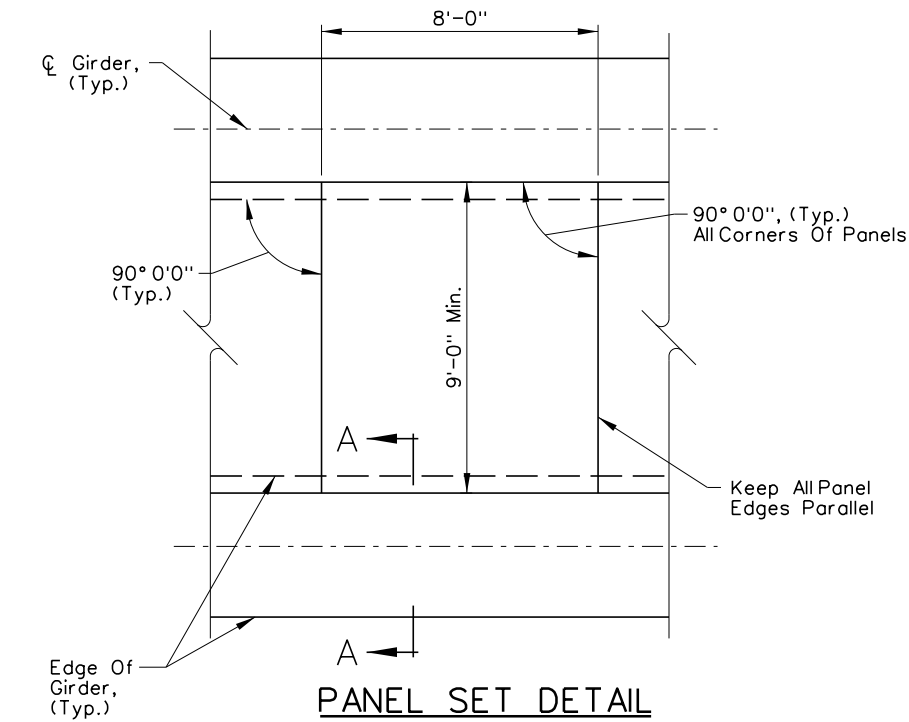
DRAWN BY EAS

CHECKED BY PLK
REVIEWED BY DAA

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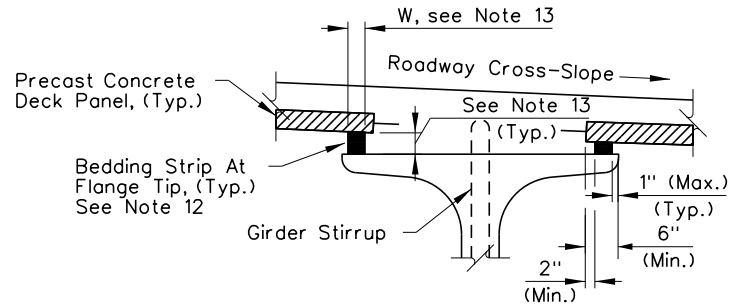
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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1623



PANEL SET DETAIL

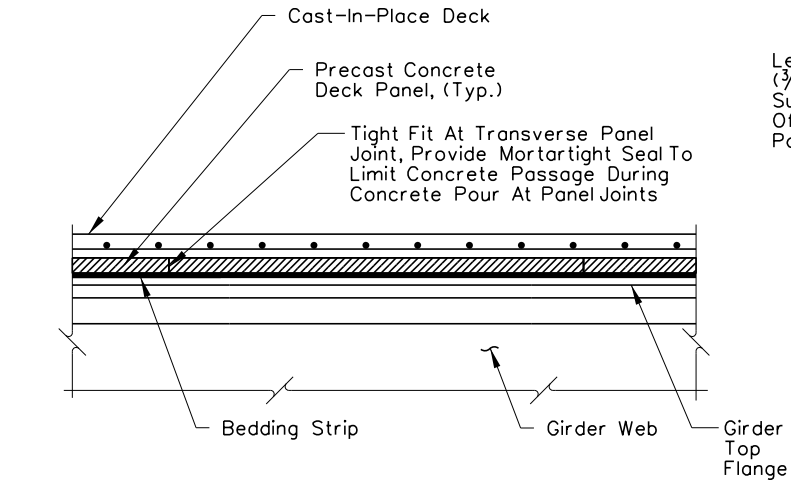
Type 1 Interior Panel



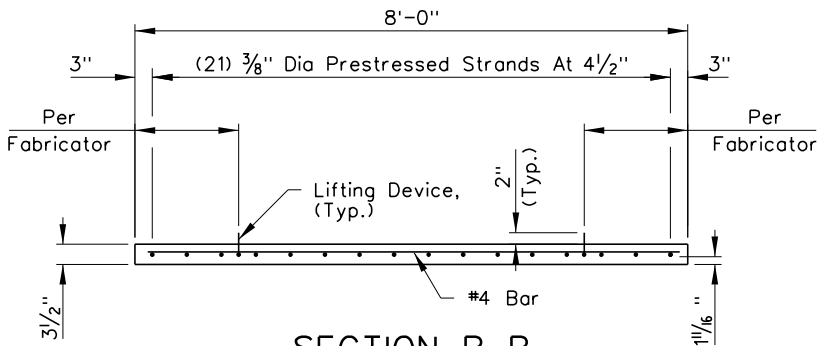
SECTION A-A

Notes:

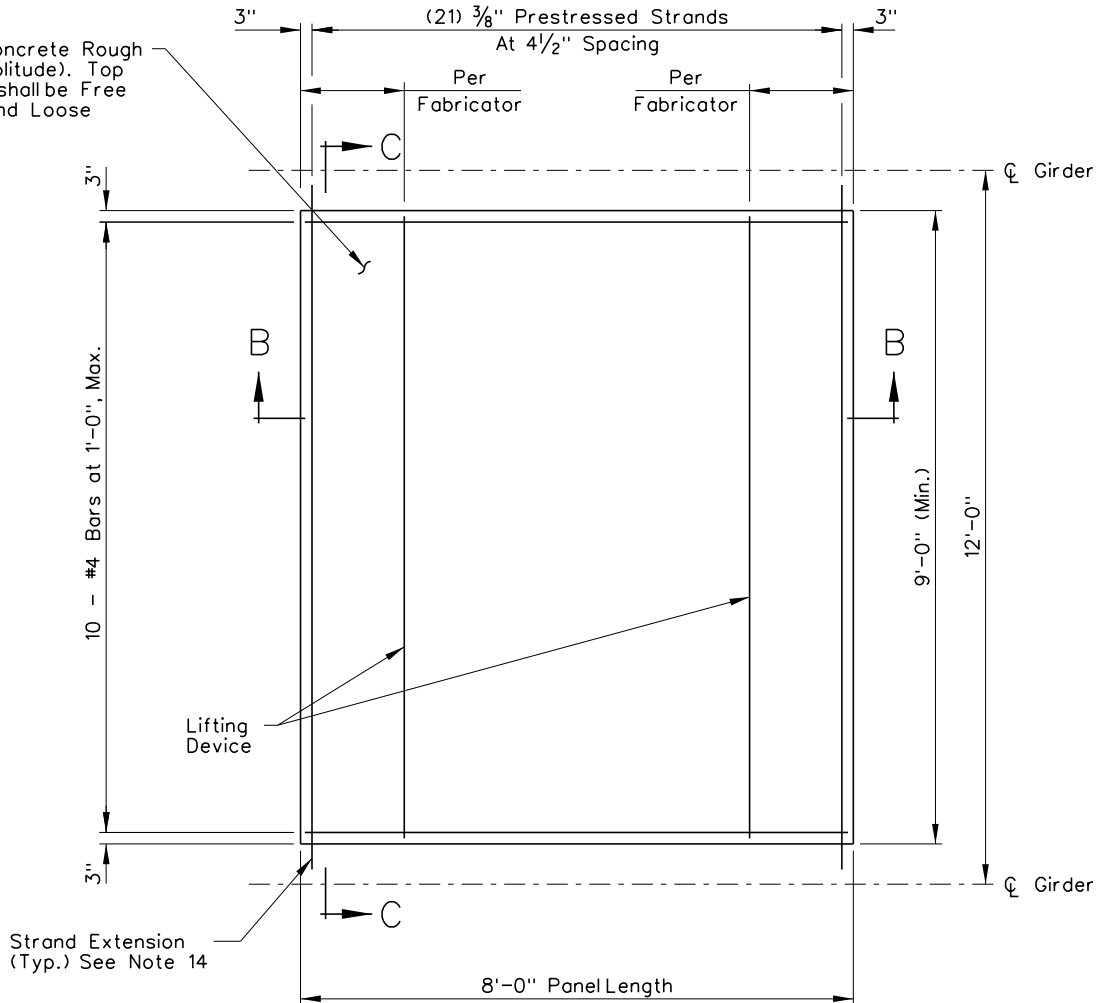
- Use f'_{ci} = 4500 psi and minimum 28 days strength f'_c = 6000 psi for precast deck panel concrete. Precast deck panels must have a minimum strength of 5000 psi at time of the deck pour.
- Use $\frac{3}{8}$ " ϕ low relaxation strands meeting the requirements of AASHTO M203 Grade 270. Minimum jacking force per strand (f_i) is 17.2 kips. Estimated final force per strand (f_f) is 13.9 kips.
- Installation of lifting device is mandatory. Use all four lifting devices simultaneously for lifting the panels. Provide details of lifting devices on the working drawings.
- Remove all construction debris from girders and panels prior to deck pour. Provide adequate vibration to fill voids under panels.
- Maintain the stability of the panels on the girders. Support erected panels uniformly along the length of the panel. Provide the total slab thickness shown on the superstructure details.
- Do not weld rebar.
- See "Deck Plan" and "Deck Sections" for longitudinal and transverse reinforcement over panels.



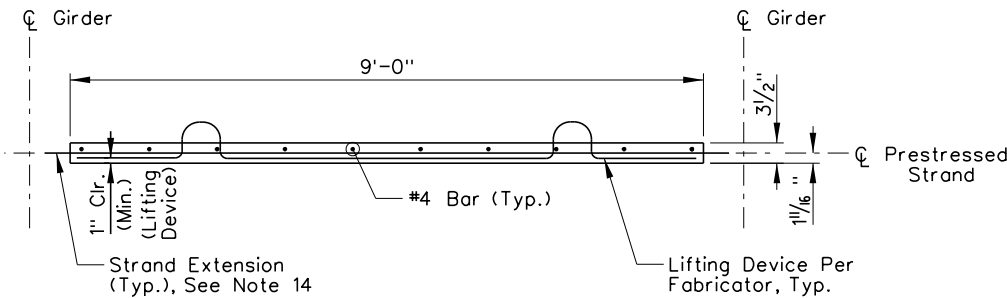
SECTION THRU TRANSVERSE PANEL JOINT



SECTION B-B



PLAN



SECTION C-C

- Sawing of panels is acceptable.
- Panel thickness tolerance is $\pm \frac{1}{4}$ " to $\pm \frac{1}{8}$ ".
- Concentrated construction loads must not exceed 700 lbs unless the load is distributed to less than 117 psf. Total loads applied to any panel during construction must not exceed 117 psf.
- Bottom flexural cracks, sags greater than $\frac{1}{2}$ ", or cambers greater than $\frac{1}{2}$ " will be considered evidence of mishandling, overloading, or exceeding allowable tolerance, and are cause for rejecting panels at the engineer's discretion.
- Bedding strip shall be medium-density extruded polystyrene with a minimum of 21.6 psi compression resistance at 5% compression deformation.
- The anticipated height of the bedding strip varies from 1" min to $\frac{3}{2}$ " max. Notify the engineer if the thickness of the bedding strip exceeds these limits. The maximum H/W ratio for bedding strips is 2.0.
- Extend strand approximately 4" to 6" from edge of panel, typically where possible. If conflicts occur, strand may be cut flush with edge of panel.

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1623	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019

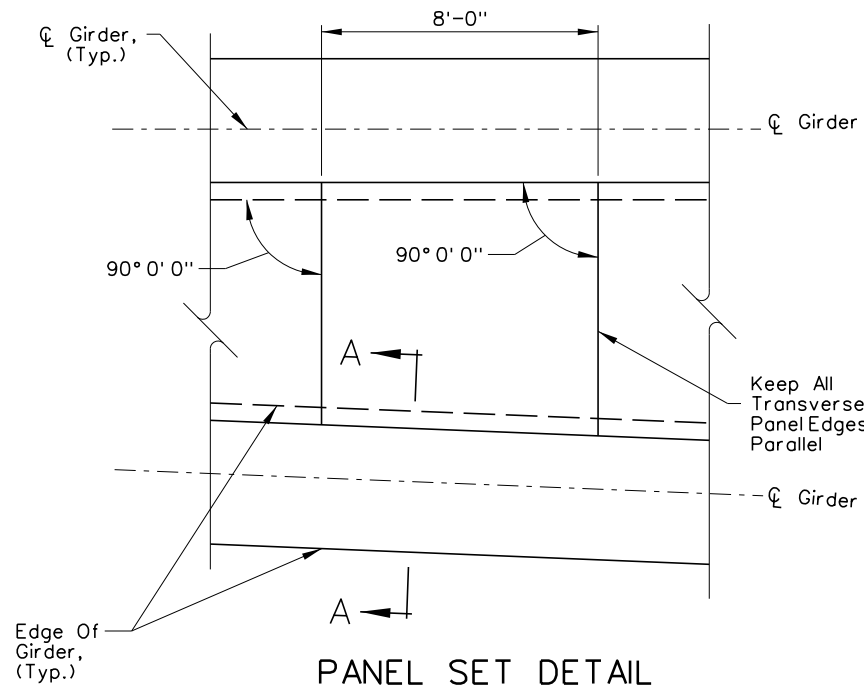
R₂H ENGINEERING, INC.
CONSULTING STRUCTURAL ENGINEERS
2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89162
PHONE (702) 260-7000 FAX (702) 260-7070



STATE OF NEVADA DEPARTMENT OF TRANSPORTATION I-15/OAKY PANEL DETAILS 1 OF 2 PANEL TYPE 1			
ATKINS		DESIGNED BY: CAW	DRAWN BY: EAS
		CHECKED BY: PLK	REVIEWED BY: DAA

2/11/2020 3:06:46 PM pw:\\SUSD036343.watkins.com:ATKANV01\Documents\Roads and Bridges\Projects\100047698 NEON FD\Engineering\011_Structures\DGN\Sheets\B16 - H-933N\I-15 over Oakey\73652-S1-07-R2H-H933N-sht20B1624.dgn

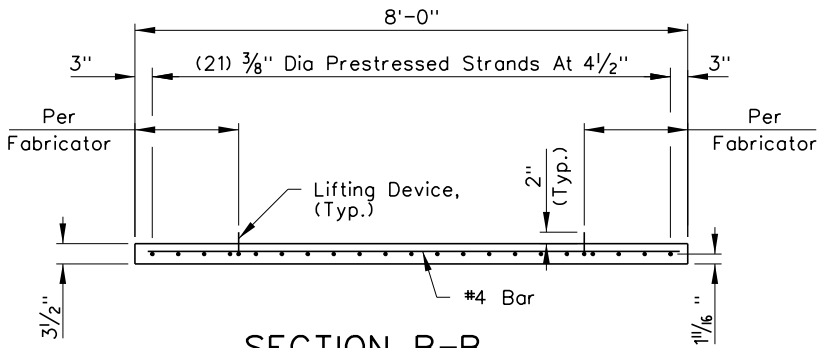
STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1624



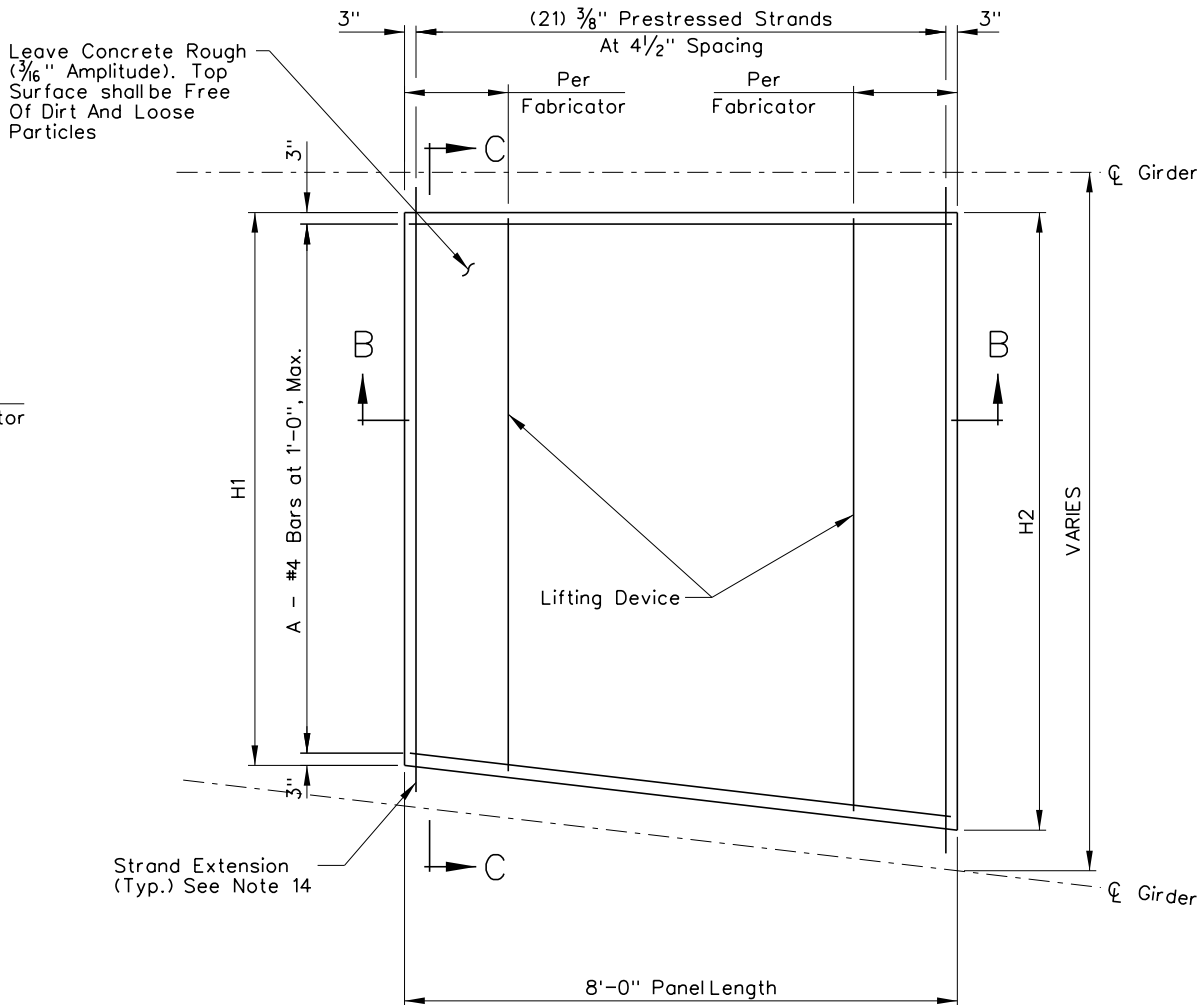
PANEL SET DETAIL
Type 2 and Type 3 Interior Panels

Note:

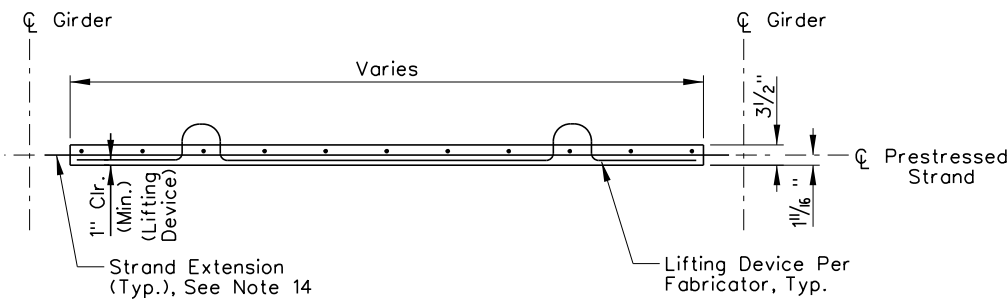
1. See "Panel Details 1 of 2" Sheet for Section A-A



SECTION B-B



PLAN



SECTION C-C

Type 2 Panels			
Panel Name	H1	H2	A
2-1	4'-4 7/16"	4'-6 7/8"	5
2-2	4'-6 7/8"	4'-9 1/4"	5
2-3	4'-9 1/4"	4'-11 11/16"	5
2-4	4'-11 11/16"	5'-2 1/8"	5
2-5	5'-2 1/8"	5'-4 9/16"	5
2-6	5'-4 9/16"	5'-7"	6
2-7	5'-7"	5'-9 7/16"	6
2-8	5'-9 7/16"	5'-11 13/16"	6
2-9	5'-11 13/16"	6'-2 1/4"	6
2-10	6'-2 1/4"	6'-4 11/16"	6
2-11	6'-4 11/16"	6'-7 1/8"	7
2-12	6'-7 1/8"	6'-9 9/16"	7
2-13	6'-9 9/16"	7'-0"	7

Type 3 Panels			
Panel Name	H1	H2	A
3-1	4'-0 3/16"	4'-2 7/16"	4
3-2	4'-2 7/16"	4'-4 11/16"	4
3-3	4'-4 11/16"	4'-6 15/16"	5
3-4	4'-6 15/16"	4'-9 3/16"	5
3-5	4'-9 3/16"	4'-11 1/2"	5
3-6	4'-11 1/2"	5'-1 3/4"	5
3-7	5'-1 3/4"	5'-4"	5
3-8	5'-4"	5'-6 1/4"	6
3-9	5'-6 1/4"	5'-8 9/16"	6
3-10	5'-8 9/16"	5'-10 13/16"	6
3-11	5'-10 13/16"	6'-1 1/16"	6
3-12	6'-1 1/16"	6'-3 5/16"	6
3-13	6'-3 5/16"	6'-5 9/16"	6
3-14	6'-5 9/16"	6'-7 7/8"	7

H-933N

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1624	02/03/17
NO.	DESCRIPTION	DATE

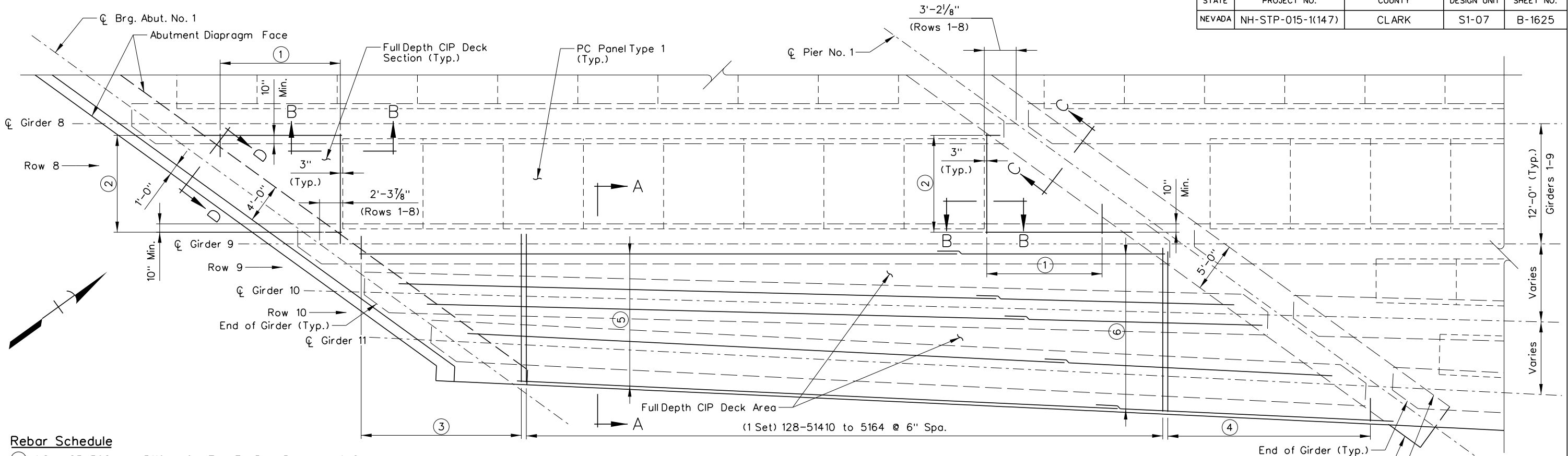
DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019



STATE OF NEVADA DEPARTMENT OF TRANSPORTATION I-15/OAKLEY PANEL DETAILS 2 OF 2 PANEL TYPE 2 AND 3			
ATKINS	2270 Corporate Circle Suite 200 Henderson, Nevada 89074 Telephone: 702/263-7275 Fax: 702/263-7200 www.atkinsglobal.com	DESIGNED BY: CAW DRAWN BY: EAS CHECKED BY: PLK REVIEWED BY: DAA	

2/11/2020 3:06:56 PM pw:\\SUSD036343.watkins.com:ATKANV01\\Documents\\Roads and Bridges\\Projects\\100047698 NEON FD\\Engineering\\01-Structures\\DGN\\Sheets\\B16 - H-933N\\I-15 over Oakey\\73652-S1-07-R2H-H933N-SHT20B1625.dgn

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1625



Rebar Schedule

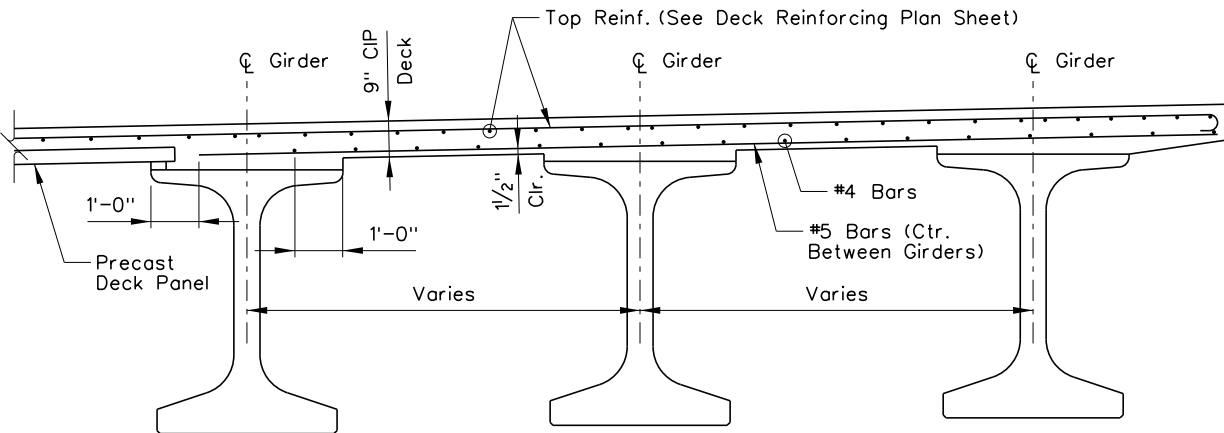
- (1 Set) 25-5024 to 5110 @ 6" (Typ. Ea. Row Bottom) U.N.O.
- (1 Set) 11-4016 to 41410 @ 12" (Typ. Ea. Row Bottom) U.N.O.
- (1 Set) 33-5024 to 5149 @ 6"
- (1 Set) 40-5160 to 5024 @ 6"
- 16-4600 @ 12" Max. Spa.
- (1 Set) 18-4229 to 4299 @ Eq. Spa.

Minimum Bar Lap Length
No. 4 Bar to No. 4 Bar = 2'-2"

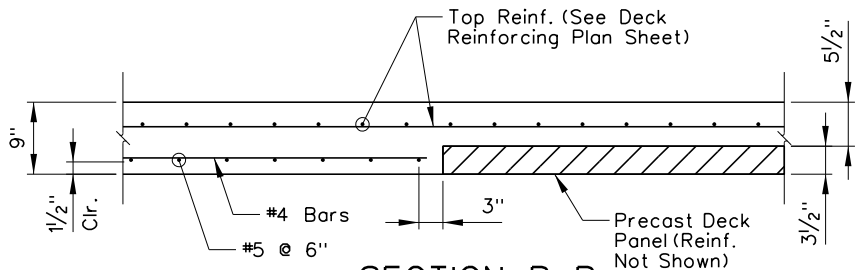
PARTIAL DECK PLAN
Plan at Span 1

Notes:

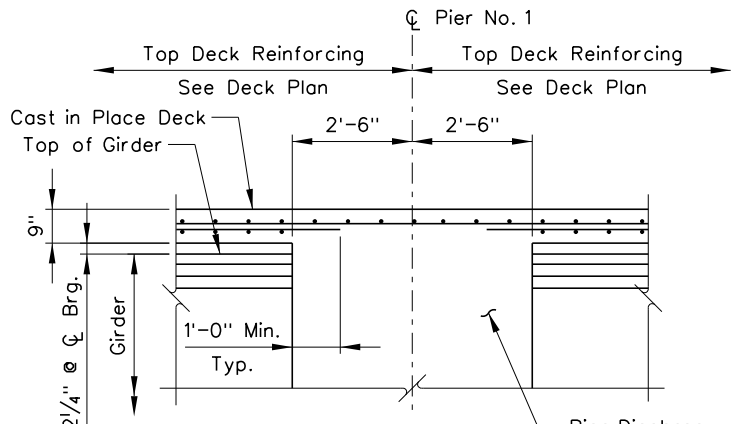
- Rows 8-10 Are Shown. Continue Row 8 CIP Deck Reinforcement Rows 1-7.
- Bottom Reinforcement is Shown. For Top Reinforcement, See "Deck Reinforcing Plan" Sheet.
- Span 2 CIP Deck Reinforcement Not Shown for Clarity
- See "CIP Deck Details at Span 2" sheet for Section D-D
- (*) Is Measured Parallel to Girder 9
- (**) Is Measured Parallel to Girder 10



SECTION A-A



SECTION B-B



SECTION C-C

H-933N

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1625	02/03/17

DESIGN UNIT S1-07
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JANUARY 04, 2019

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LAS VEGAS, NEVADA 89162
PHONE (702) 260-7000 FAX (702) 260-7070



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15/OAKLEY
CIP DECK DETAILS
AT SPAN 1

ATKINS

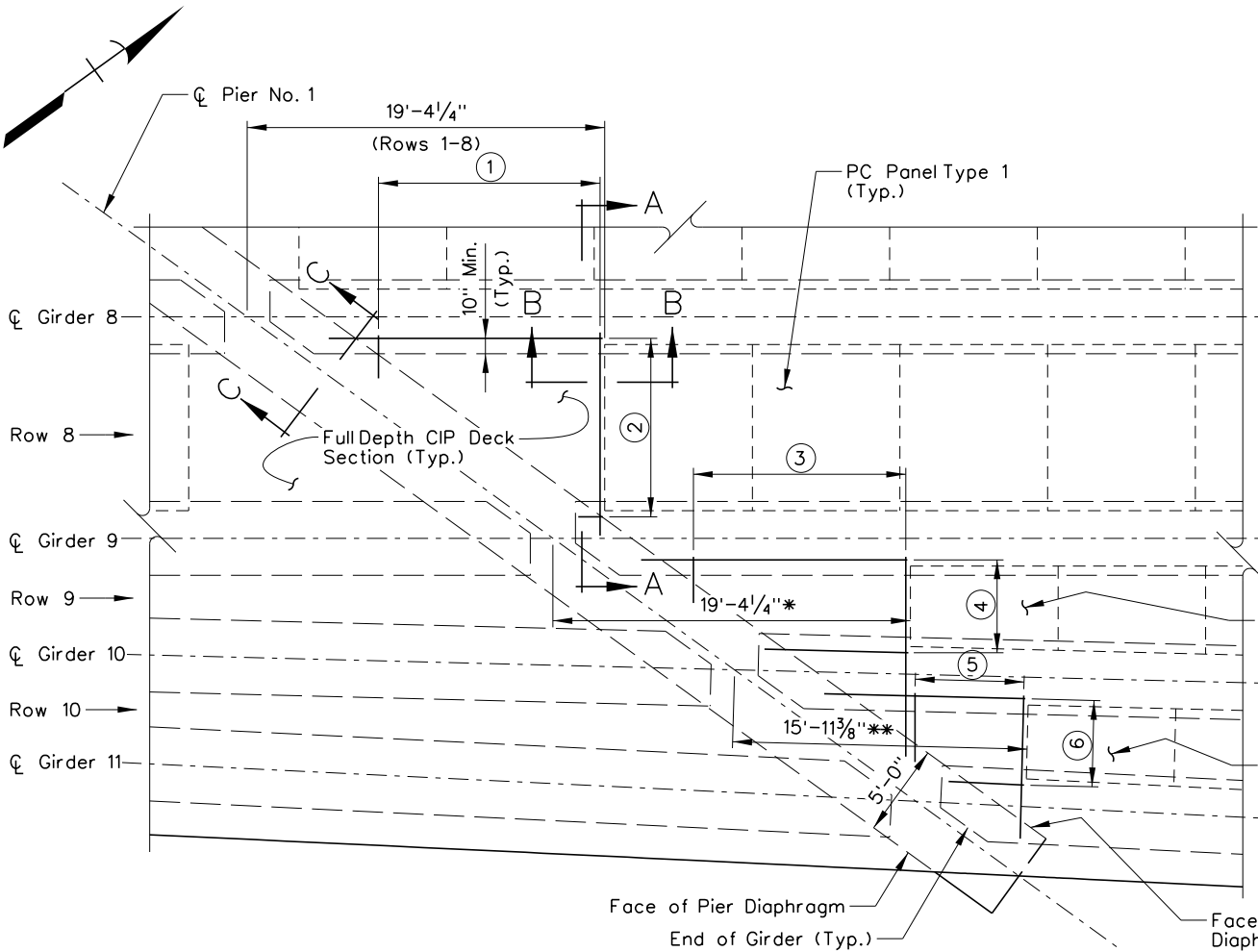
2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
www.atkinsglobal.com

DESIGNED BY: CAW
DRAWN BY: EAS
CHECKED BY: PLK
REVIEWED BY: DAA

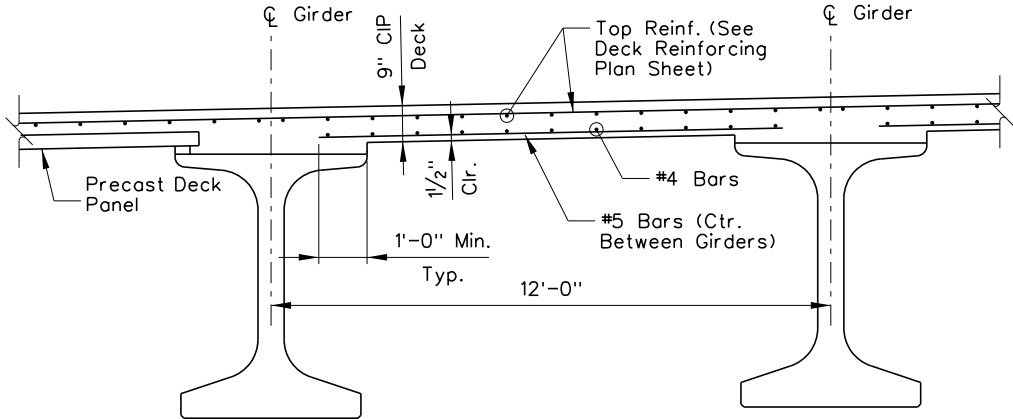
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NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1626

Rebar Schedule

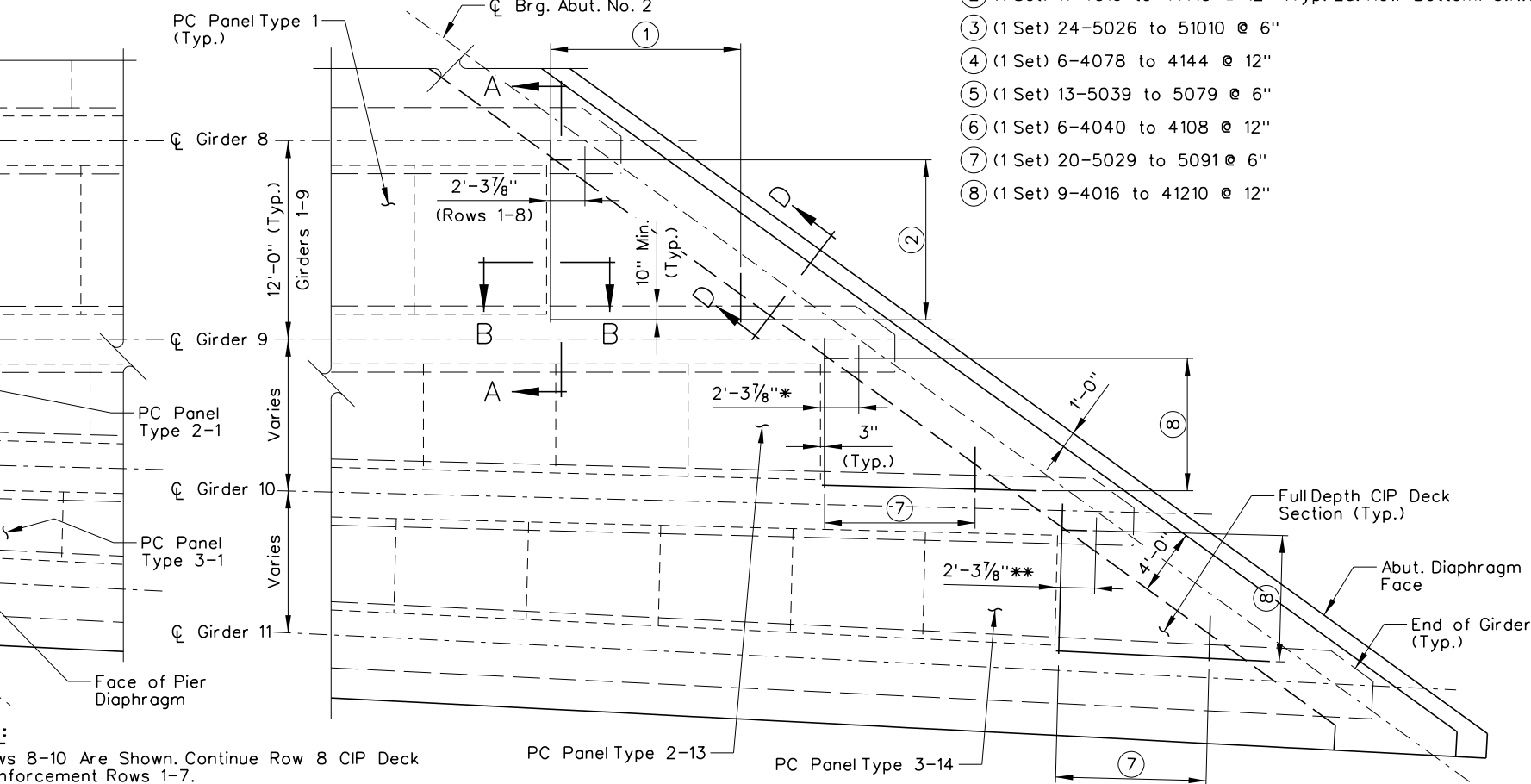
- ① (1 Set) 25-5024 to 5110 @ 6" (Typ. Ea. Row Bottom) U.N.O.
- ② (1 Set) 11-4016 to 41410 @ 12" (Typ. Ea. Row Bottom) U.N.O.
- ③ (1 Set) 24-5026 to 51010 @ 6"
- ④ (1 Set) 6-4078 to 4144 @ 12"
- ⑤ (1 Set) 13-5039 to 5079 @ 6"
- ⑥ (1 Set) 6-4040 to 4108 @ 12"
- ⑦ (1 Set) 20-5029 to 5091 @ 6"
- ⑧ (1 Set) 9-4016 to 41210 @ 12"



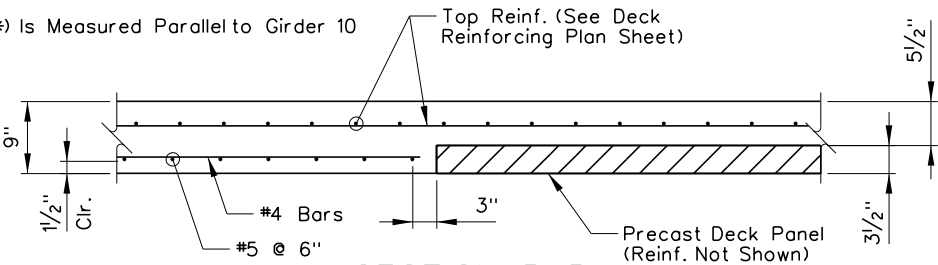
PARTIAL DECK PLAN
Plan at Pier No. 1



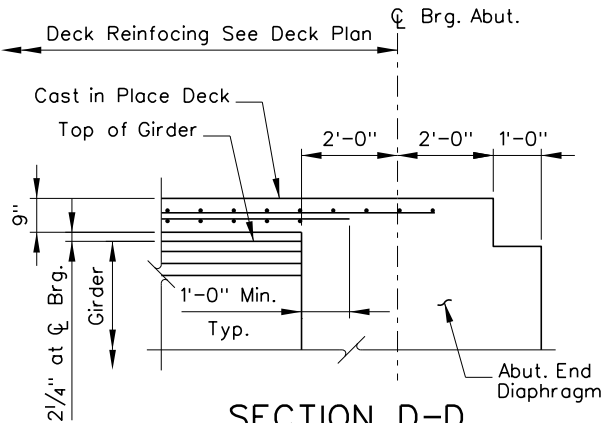
SECTION A-A



PARTIAL DECK PLAN
Plan at Abut. No. 2



SECTION B-B



SECTION D-D

Notes:

- Rows 8-10 Are Shown. Continue Row 8 CIP Deck Reinforcement Rows 1-7.
- Bottom Reinforcement is Shown. For Top Reinforcement, See "Deck Reinforcing Plan" Sheet.
- Span 1 CIP Deck Reinforcement Not Shown for Clarity
- See "CIP Deck Details at Span 1" Sheet for Sections C-C
- (*) Is Measured Parallel to Girder 9
- (**) Is Measured Parallel to Girder 10

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1626	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019

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2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89162
PHONE (702) 260-7000 FAX (702) 260-7070



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

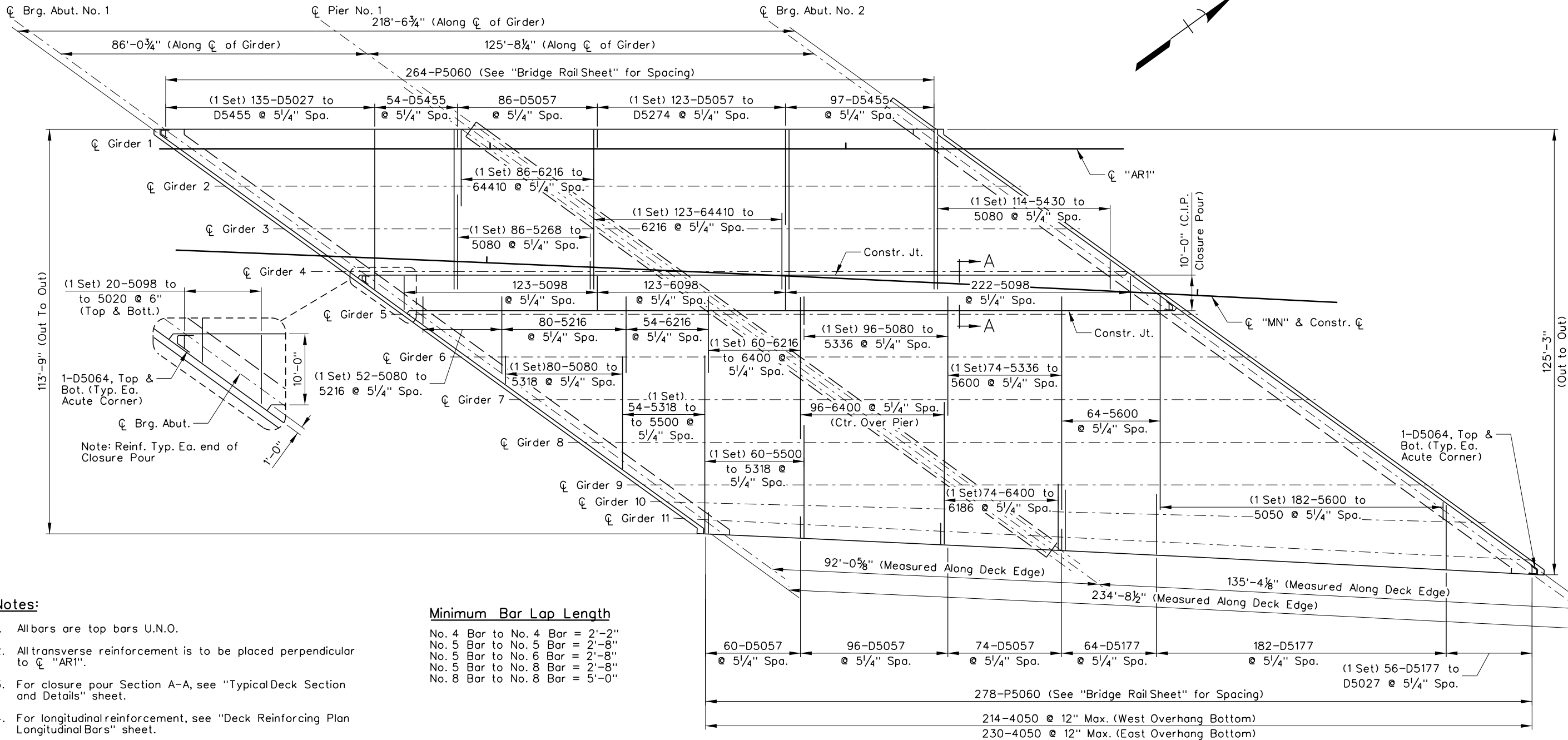
I-15NOAKEY
CIP DECK DETAILS
AT SPAN 2

ATKINS

2270 Corporate Circle
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CHECKED BY: PLK
REVIEWED BY: DAA

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1627



Notes:

- All bars are top bars U.N.O.
- All transverse reinforcement is to be placed perpendicular to C "AR1".
- For closure pour Section A-A, see "Typical Deck Section and Details" sheet.
- For longitudinal reinforcement, see "Deck Reinforcing Plan Longitudinal Bars" sheet.
- Top and bottom transverse reinforcement at overhang shall be offset at half spacing, so the top mat is not placed directly above the bottom mat.
- Transverse dimensions are measured perpendicular to C "AR1".
- 'Out to Out' dimensions are measured at 'Begin Bridge' and 'End Bridge' locations.

Minimum Bar Lap Length

No. 4 Bar to No. 4 Bar = 2'-2"
No. 5 Bar to No. 5 Bar = 2'-8"
No. 5 Bar to No. 6 Bar = 2'-8"
No. 5 Bar to No. 8 Bar = 2'-8"
No. 8 Bar to No. 8 Bar = 5'-0"

DECK REINFORCING PLAN
(Transverse Reinforcement)

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1627	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/NOAKEY
DECK REINFORCING PLAN
TRANSVERSE BARS

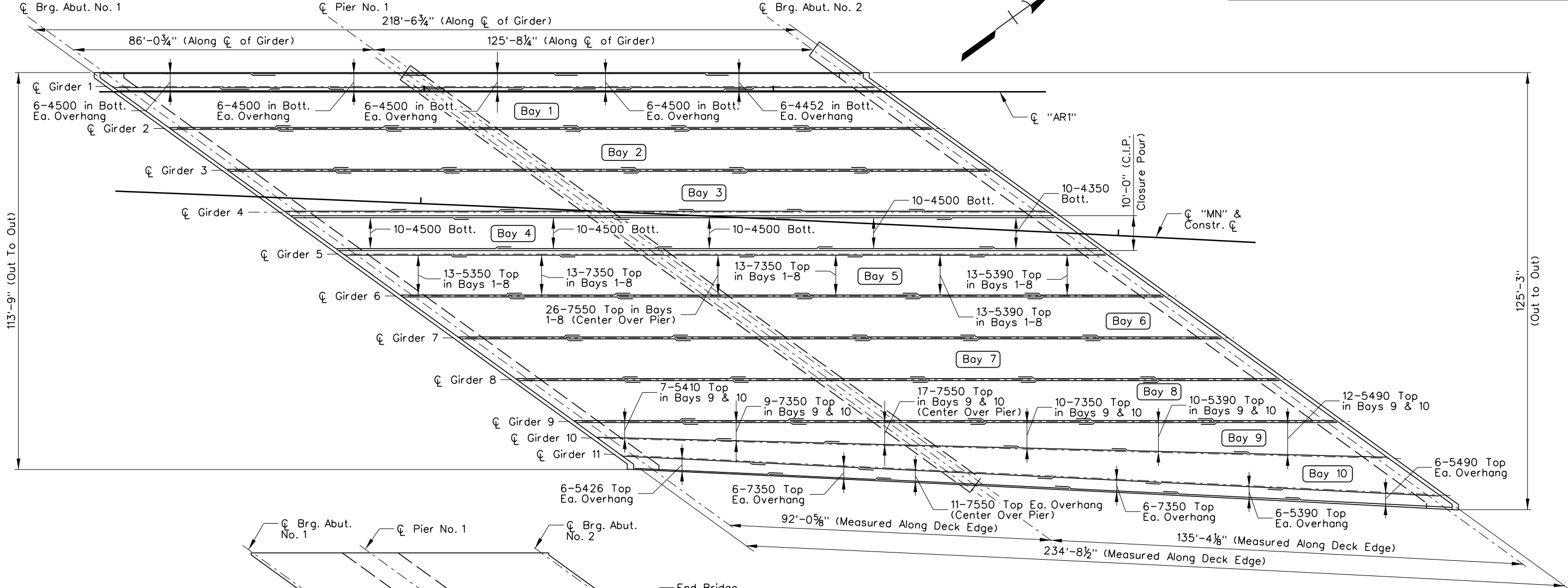
DESIGNED BY: CAW
DRAWN BY: EAS
CHECKED BY: PLK
REVIEWED BY: DAA

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Henderson, Nevada 89074
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ATKINS

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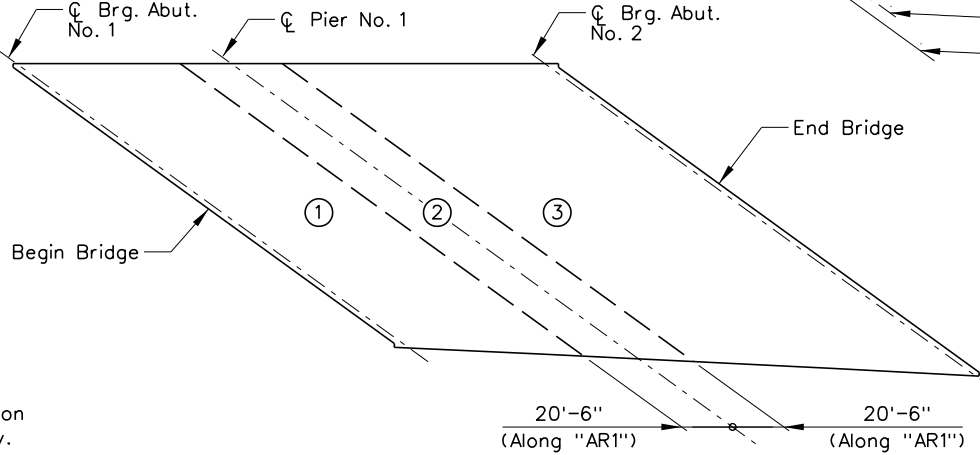
STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1628



Minimum Bar Lap Length
No. 4 Bar to No. 4 Bar = 2'-2"
No. 5 Bar to No. 5 Bar = 2'-8"
No. 5 Bar to No. 7 Bar = 2'-8"
No. 7 Bar to No. 7 Bar = 3'-10"

Deck Placing Sequence Notes:

- 1. Areas Marked ① and Abutment Expansion Diaphragms May be Placed Concurrently.
- 2. Areas Marked ② Shall be Placed After Areas Marked ①.
- 3. Cast the Bridge Rails after all Areas of the Deck Slab Have Obtained the Compressive Strength and Time Restrictions Required by the Standard Specifications.



DECK REINFORCING PLAN
(Longitudinal Reinforcement)

- Notes:**
- 1. All longitudinal reinforcement is to be placed parallel to "AR1".
 - 2. For placement and spacing of longitudinal reinforcement see "Deck Section and Details" sheet.
 - 3. Top and bottom transverse reinforcement at overhang shall be offset at half spacing, so the top mat is not placed directly above the bottom mat.
 - 4. Transverse dimensions are measured perpendicular to "AR1".
 - 5. 'Out to Out' dimensions are measured at 'Begin Bridge' and 'End Bridge' locations.

H-933N

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1628	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
MAY 1, 2019

R2H ENGINEERING, INC.
CONSULTING STRUCTURAL ENGINEERS
2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89162
PHONE (702) 260-7000 FAX (702) 260-7070

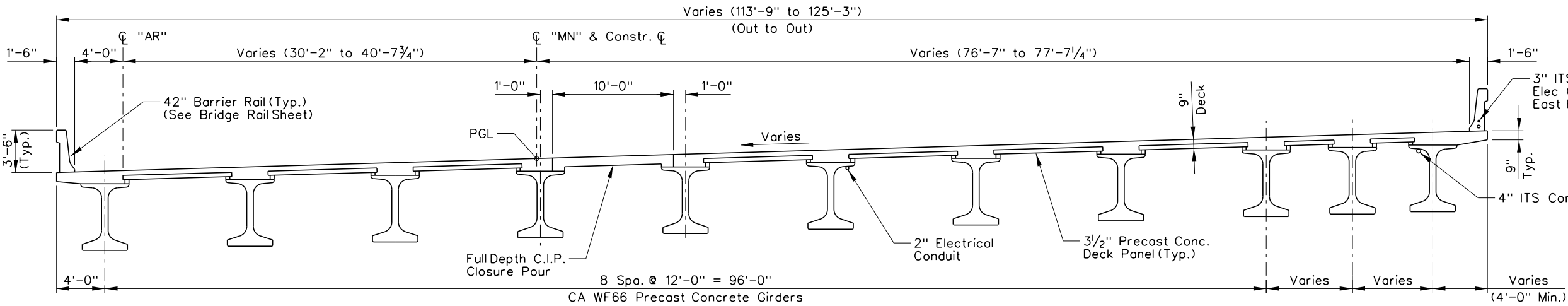
STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/OAKLEY
DECK REINFORCING PLAN
LONGITUDINAL BARS

2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
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Fax: 702/263-7200
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DESIGNED BY: CAW
DRAWN BY: EAS
CHECKED BY: PLK
REVIEWED BY: DAA

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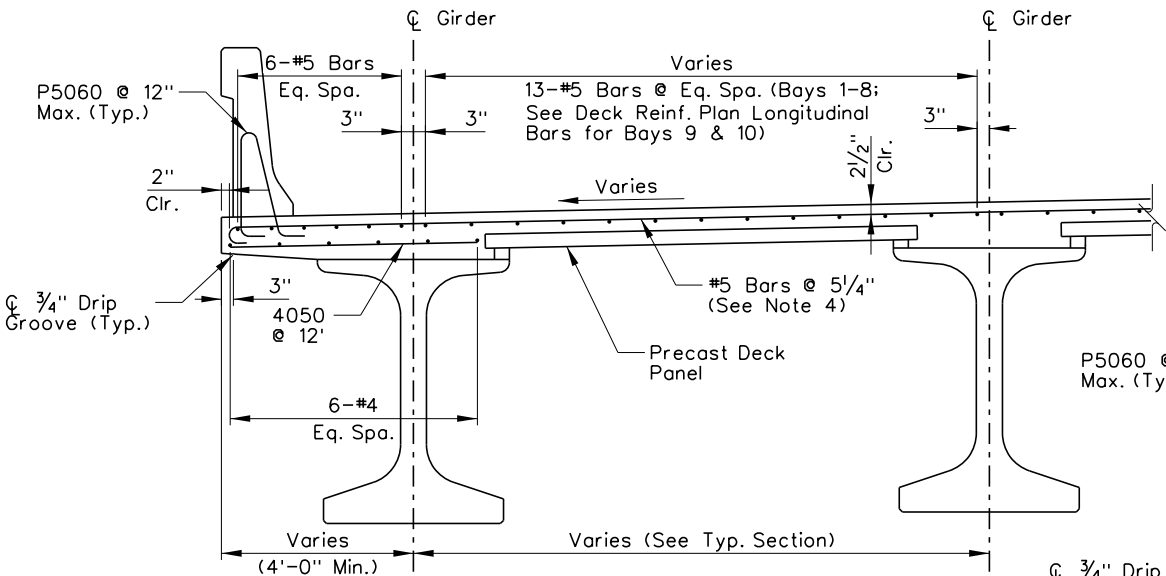
STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1629



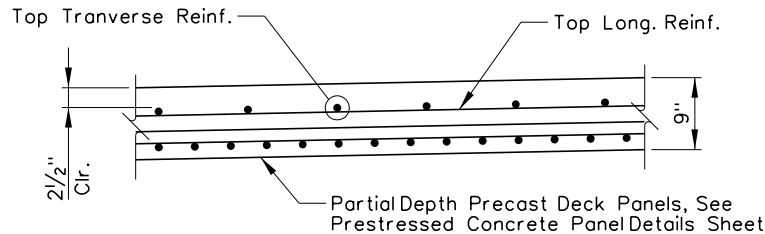
2

NCR 264 - 4\"/>

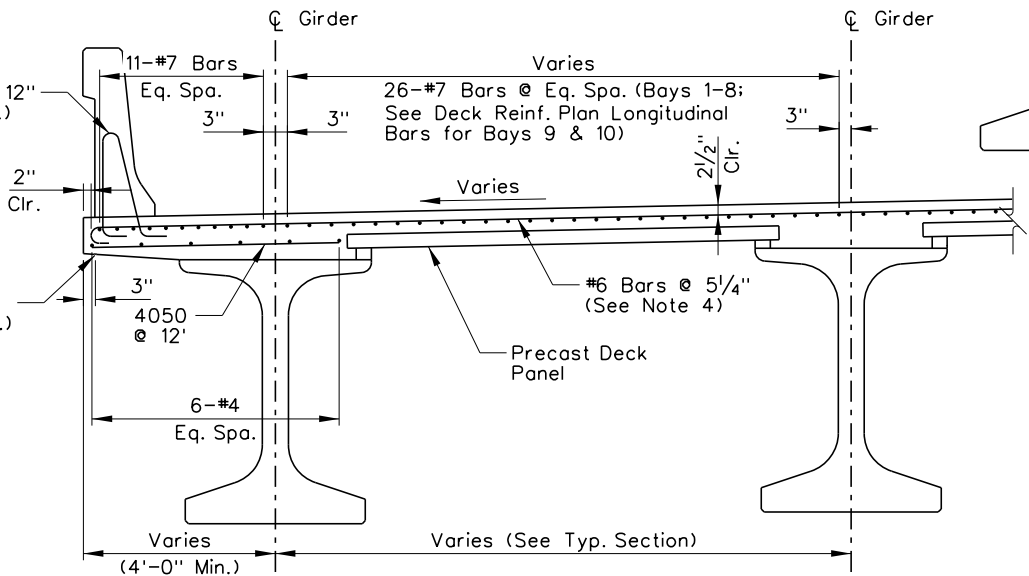
TYPICAL SECTION



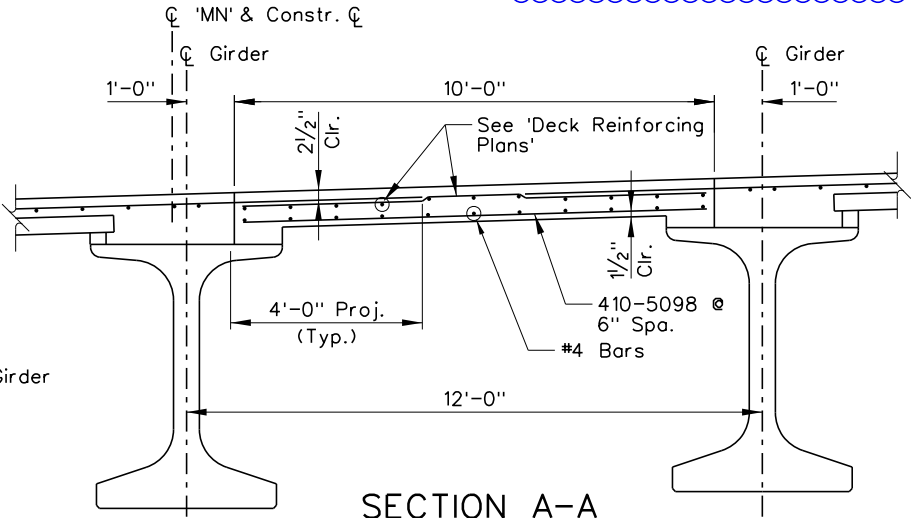
PARTIAL SECTION AT ABUTMENT



TYPICAL LONGITUDNAL DECK SECTION



PARTIAL SECTION AT PIER



SECTION A-A

- Notes:
- For general notes, see "General Notes and Typical Section" sheet.
 - For deck plan, see "Deck Reinforcing Plan" sheet.
 - All horizontal dimensions shown are perpendicular to Construction ϕ .
 - Due to the severe substructure skew angle, the transverse bars of the typical sections are not fully representative. See "Deck Reinforcing Plan Transverse Bars" sheet for clarification of transverse reinforcement placement.

H-933N

NO.	DESCRIPTION	DATE
2	AS-BUILTS - NCR 264	05/01/19
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1629	02/03/17

DESIGN UNIT S1-07

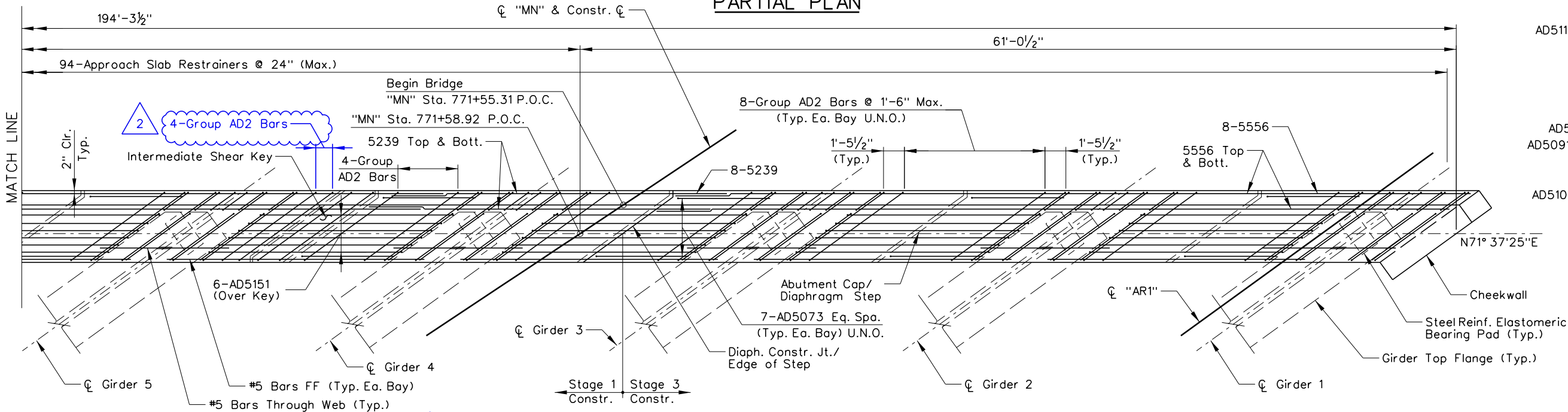
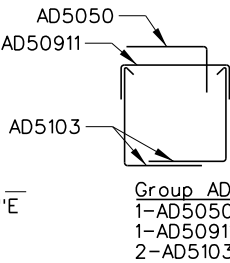
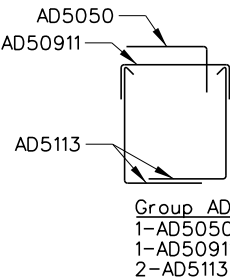
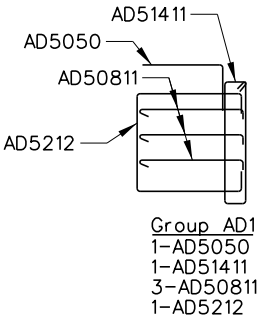
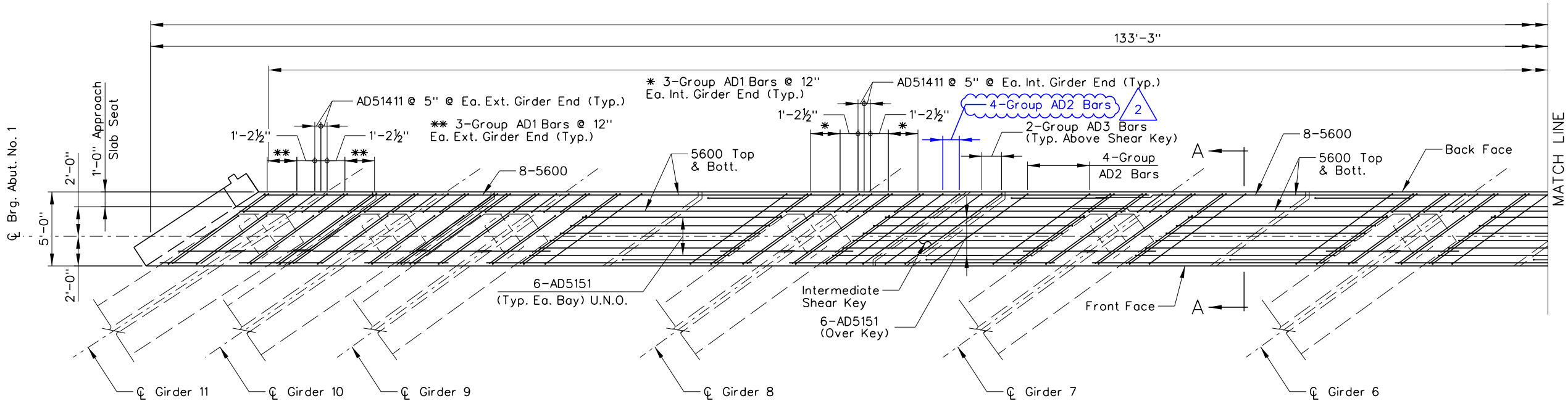
AS-BUILT DRAWING

MAY 1, 2019



STATE OF NEVADA DEPARTMENT OF TRANSPORTATION		DESIGNED BY <u>CAW</u> DRAWN BY <u>EAS</u> CHECKED BY <u>PLK</u> REVIEWED BY <u>DAA</u>
I-15NOAKEY		
DECK SECTION AND DETAILS		
ATKINS		

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1630



Notes:

- For Section A-A and other Details, see "Abutment Diaphragm Details" sheet.
- All Transverse Reinforcement is to be Placed Parallel to Girder Centerlines.

2
 NCR 243 - INTERMEDIATE SHEAR KEYS PLACED TWO FEET TO THE WEST. GROUP AD2 BAR LOCATIONS ADJUSTED AND LENGTH OF 5035 FF AND 5067 FF

Minimum Bar Lap Length
 No. 5 Bar to No. 5 Bar = 3'-9"

NO.	DESCRIPTION	DATE
2	AS-BUILTS - NCR 243	05/01/19
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1630	02/03/17

DESIGN UNIT S1-07

AS-BUILT DRAWING

MAY 1, 2019

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 2610 HORIZON RIDGE PARKWAY, SUITE 205
 LAS VEGAS, NEVADA 89002
 PHONE (702) 260-7000 FAX (702) 260-7070

STATE OF NEVADA
 DEPARTMENT OF TRANSPORTATION

I-15/NOAKEY
 ABUTMENT NO. 1
 DIAPHRAGM PLAN

ATKINS
2270 Corporate Circle
 Suite 200
 Henderson, Nevada 89074
 Telephone: 702/263-7275
 Fax: 702/263-7200
 www.atkinsglobal.com

DESIGNED BY: CAW

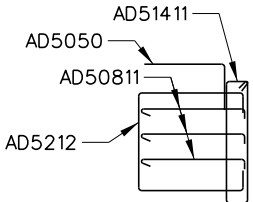
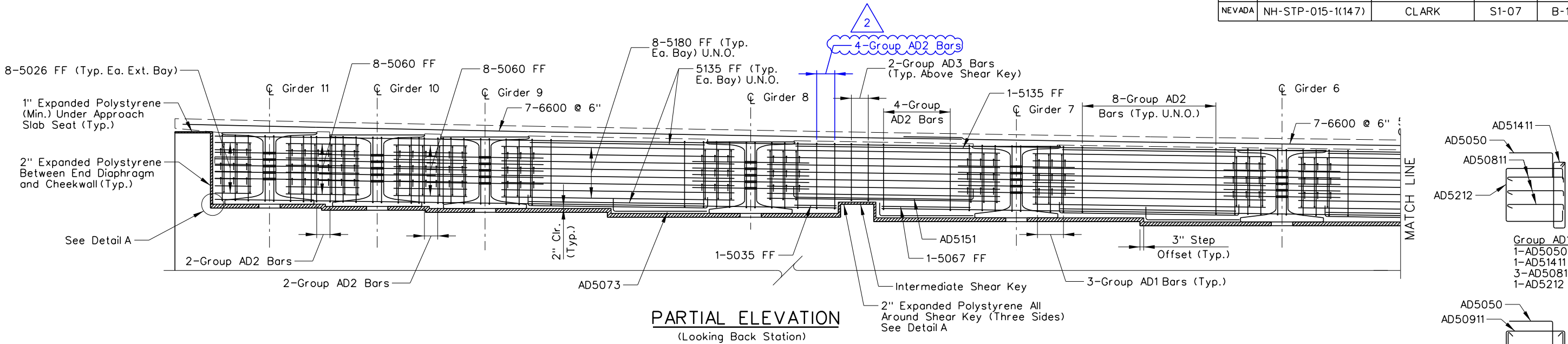
DRAWN BY: EAS

CHECKED BY: PLK

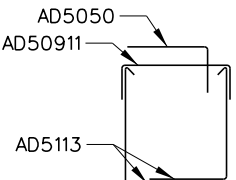
REVIEWED BY: DAA

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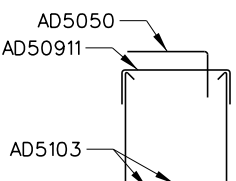
STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1631



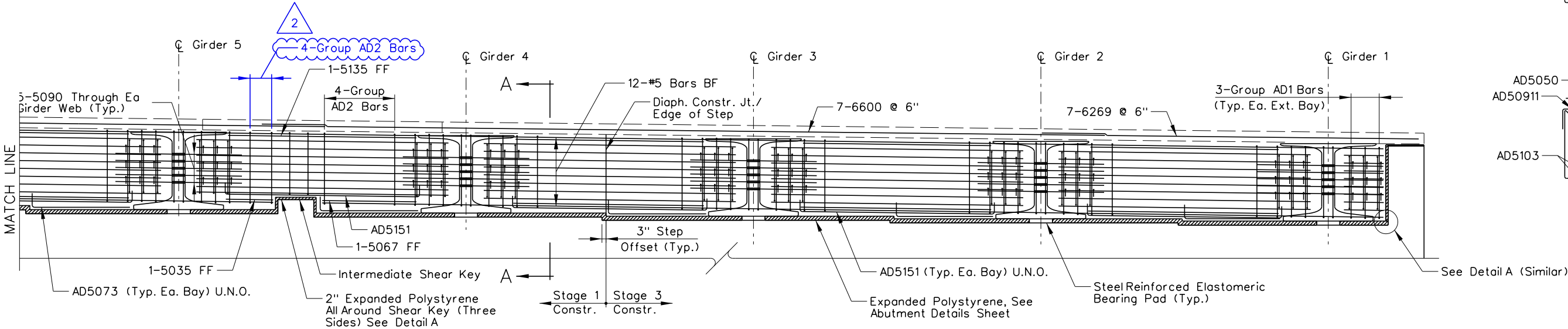
Group AD1
1-AD5050
1-AD51411
3-AD50811
1-AD5212



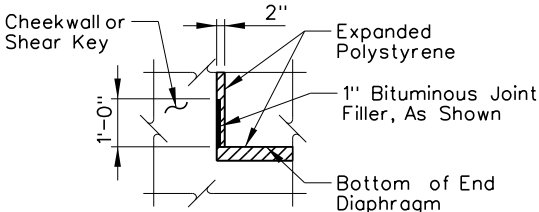
Group AD2
1-AD5050
1-AD50911
2-AD5113



Group AD3
1-AD5050
1-AD50911
2-AD5103



See Detail A (Similar)



Detail A

Minimum Bar Lap Length
No. 5 Bar to No. 5 Bar = 3'-9"
No. 6 Bar to No. 6 Bar = 4'-6"

- Notes:**
- Complete Group AD2 Bars Are Not Shown in Elevation View for Clarity.
 - For Section A-A and other Details, see "Abutment Diaphragm Details" sheet.
 - All Transverse Reinforcement is to be Placed Parallel to Girder Centerlines.

2
NCR 243 - INTERMEDIATE SHEAR KEYS PLACED TWO FEET TO THE WEST. GROUP AD2 BAR LOCATIONS ADJUSTED AND LENGTH OF 5035 FF AND 5067 FF

NO.	DESCRIPTION	DATE
2	AS-BUILTS - NCR 243	05/01/19
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1631	02/03/17

DESIGN UNIT S1-07

AS-BUILT DRAWING

MAY 1, 2019

R²H ENGINEERING, INC.
CONSULTING STRUCTURAL ENGINEERS
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LAS VEGAS, NEVADA 89002
PHONE (702) 260-7000 FAX (702) 260-7070

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15/NOAKEY
ABUTMENT NO. 1
DIAPHRAGM ELEVATION

2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
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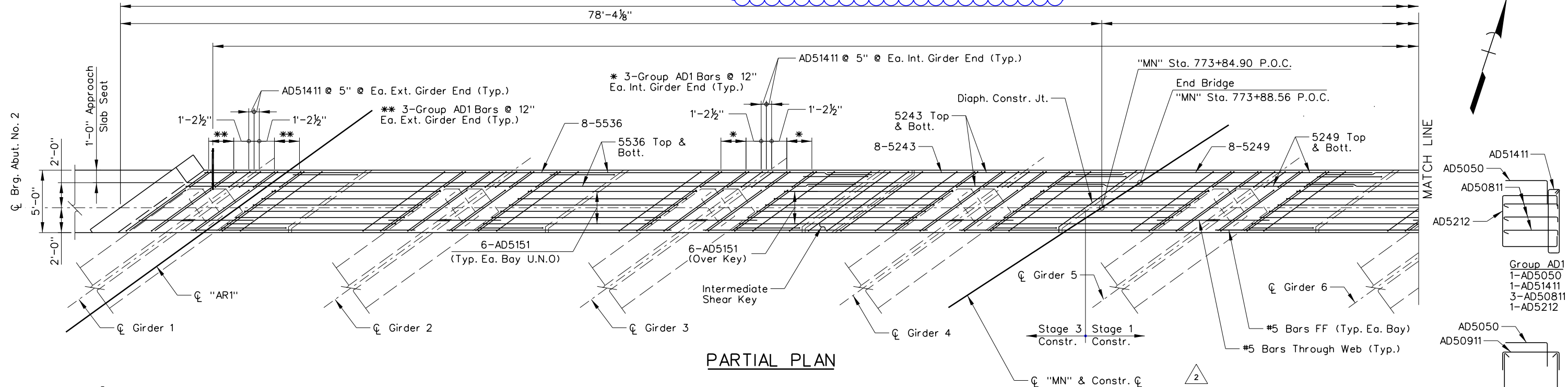
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REVIEWED BY: DAA

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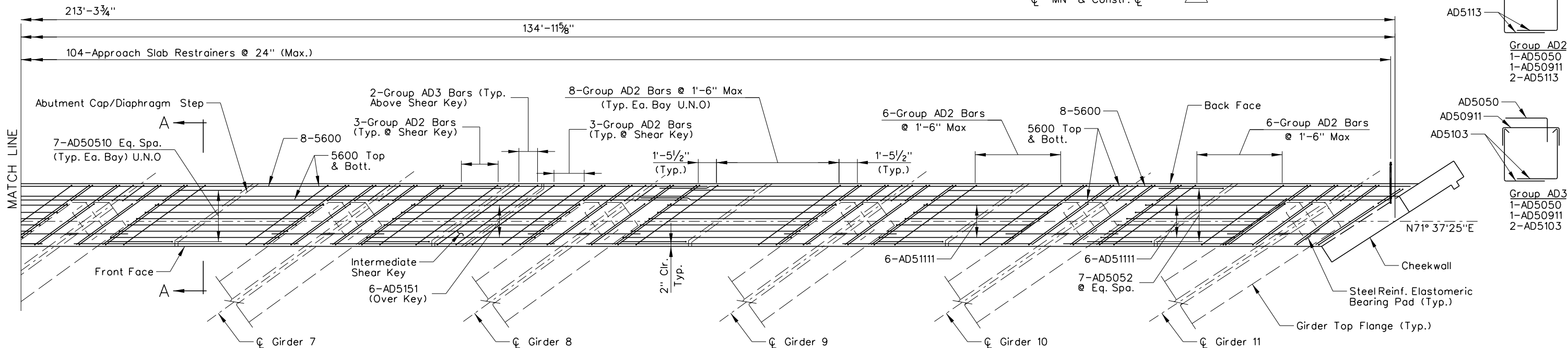
3

NCR 375 - INTERMEDIATE SHEAR KEY BETWEEN GIRDERS
3 AND 4 PLACED TWO FEET TO THE WEST. GROUP AD2
BAR LOCATIONS ADJUSTED AND LENGTH OF 5056 FF AND
5151 FF

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1632



PARTIAL PLAN



PARTIAL PLAN

Minimum Bar Lap Length
No. 5 Bar to No. 5 Bar = 3'-9"

Notes:

- For Section A-A and other Details, see "Abutment Diaphragm Details" sheet.
- All Transverse Reinforcement is to be Placed Parallel to Girder Centerlines.

NO.	DESCRIPTION	DATE
3	AS-BUILTS - NCR 375	05/01/19
2	FDC 1164 - CONSTRUCTION JOINT REVISION	07/06/17
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1632	02/03/17

DESIGN UNIT S1-07

AS-BUILT DRAWING

MAY 1, 2019

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LAS VEGAS, NEVADA 89102
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STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15/OAKEY
ABUTMENT NO. 2
DIAPHRAGM PLAN

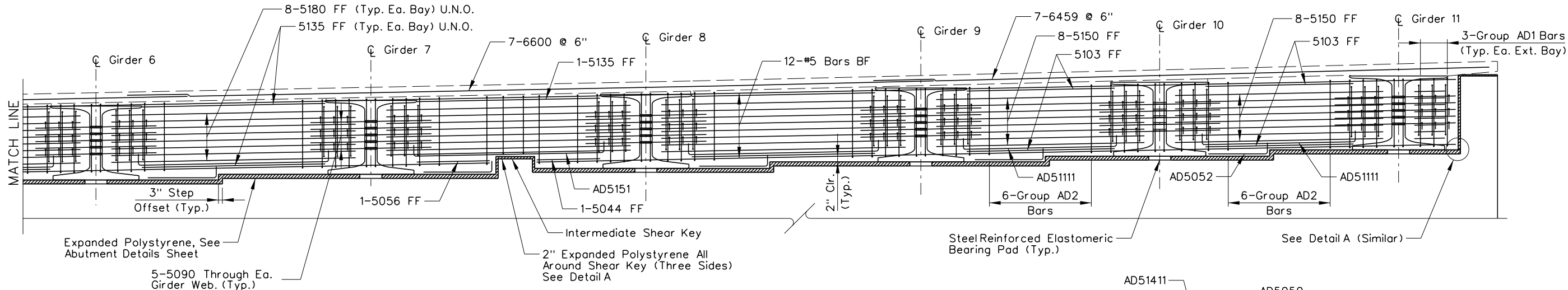
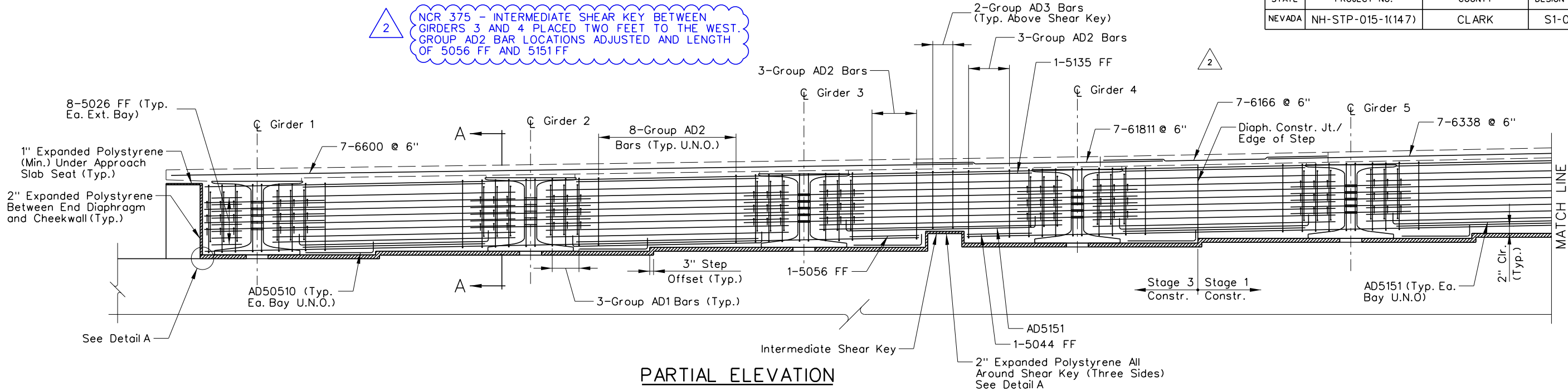
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Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
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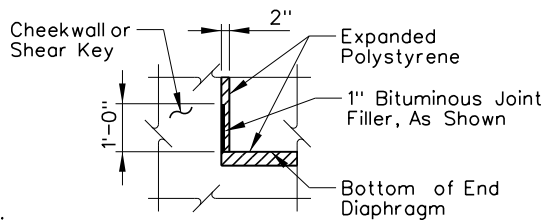
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CHECKED BY: PLK
REVIEWED BY: DAA

H-933N

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1633



Minimum Bar Lap Length
 No. 5 Bar to No. 5 Bar = 3'-9"
 No. 6 Bar to No. 6 Bar = 4'-6"



Notes:

- Complete Group AD2 Bars Are Not Shown in Elevation View for Clarity.
- For Section A-A and other Details, see "Abutment Diaphragm Details" sheet.
- All Transverse Reinforcement is to be Placed Parallel to Girder Centerlines.

NO.	DESCRIPTION	DATE
3	AS-BUILTS - NCR 375	05/01/19
2	FDC 1164 - CONSTRUCTION JOINT REVISION	07/06/17
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1633	02/03/17

DESIGN UNIT S1-07

AS-BUILT DRAWING

MAY 1, 2019

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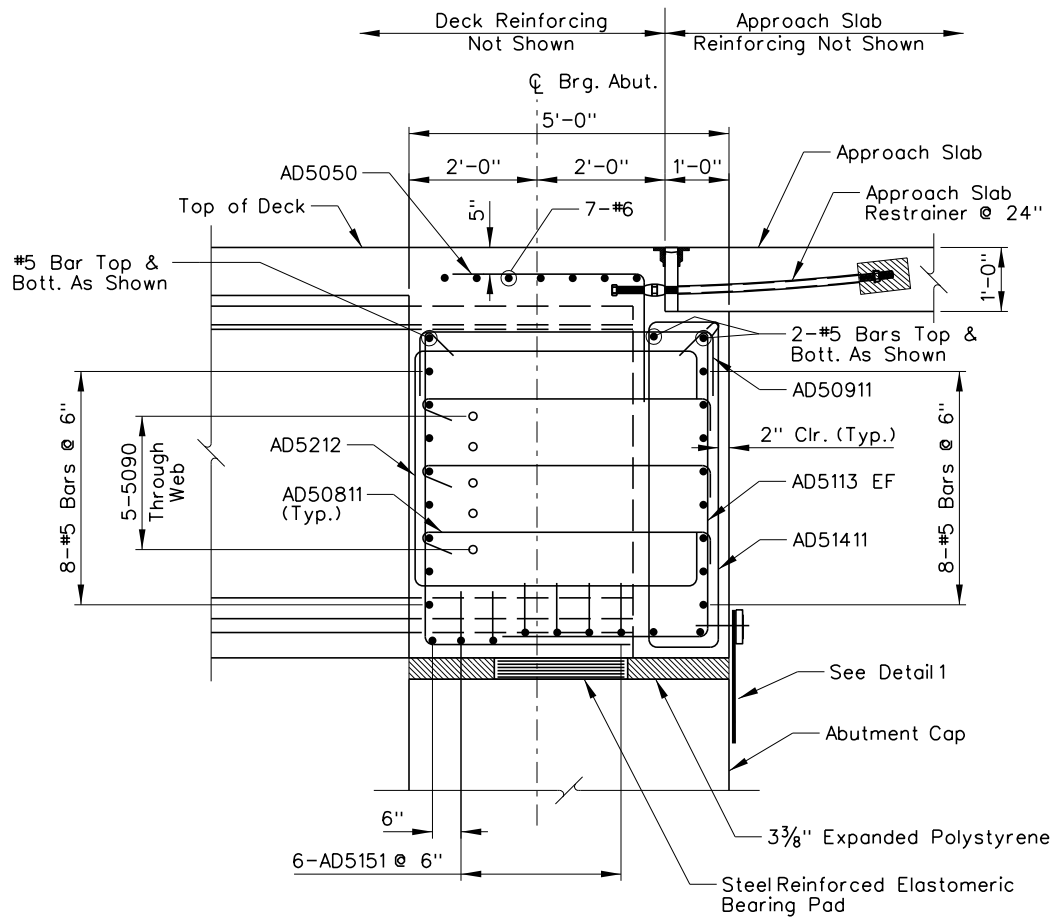
STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/NOAKEY
ABUTMENT NO. 2
DIAPHRAGM ELEVATION

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2270 Corporate Circle
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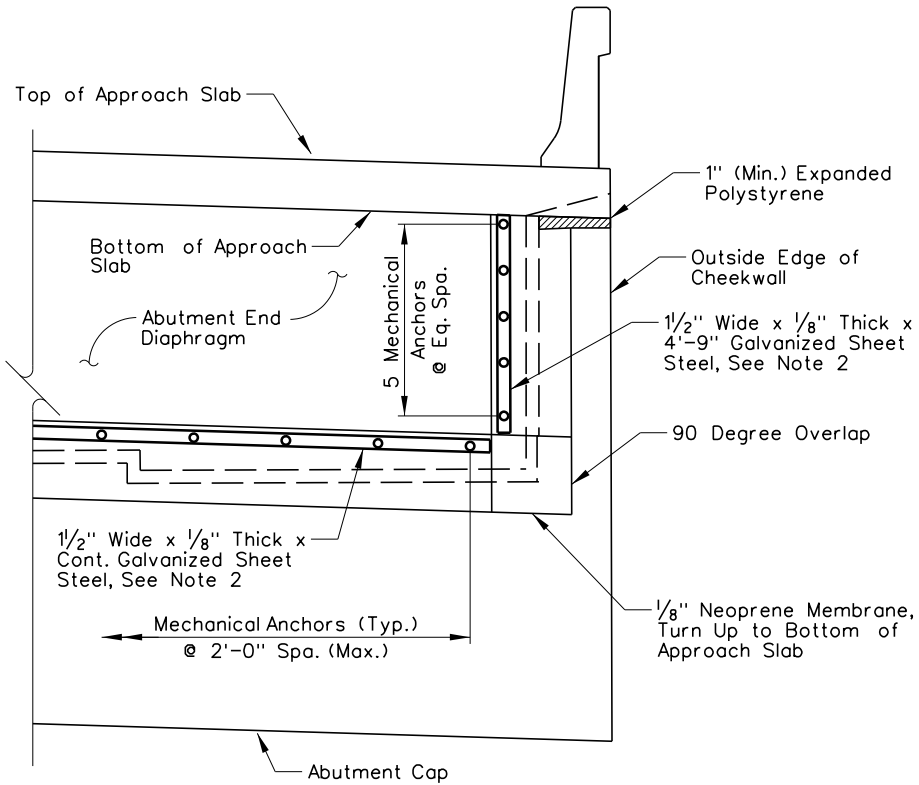
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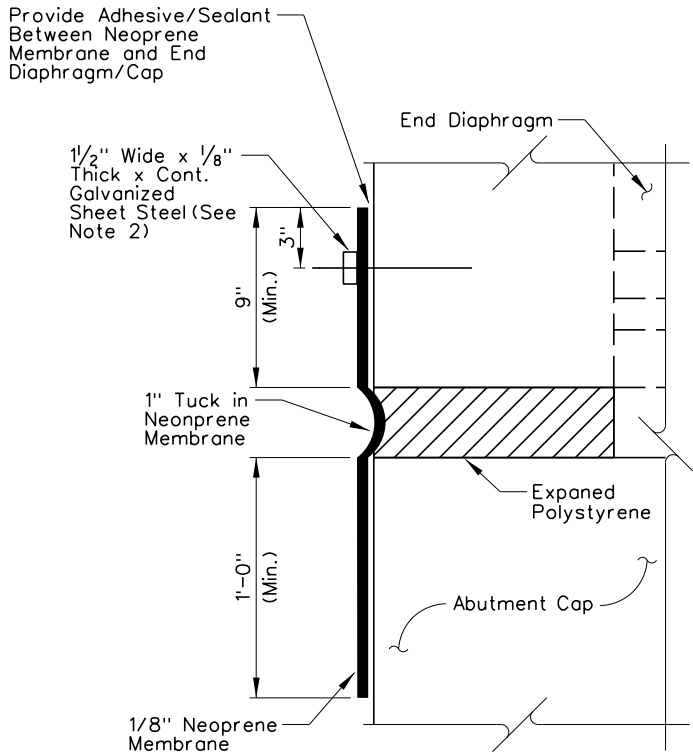
STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1634



SECTION A-A



ELEVATION - BACK FACE OF ABUTMENT



DETAIL 1

- Notes:**
- For Joint Details, See Expansion Joint Details Sheet.
 - Galvanize Sheet Steel in Accordance With ASTM A123.

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1634	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019

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STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/NOAKEY
ABUTMENT DIAPHRAGM
DETAILS

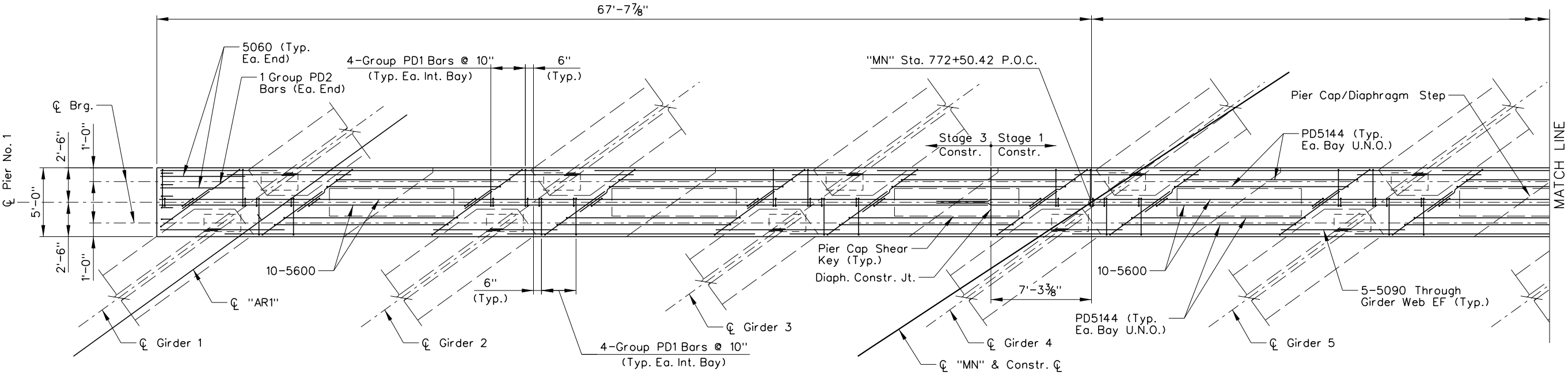
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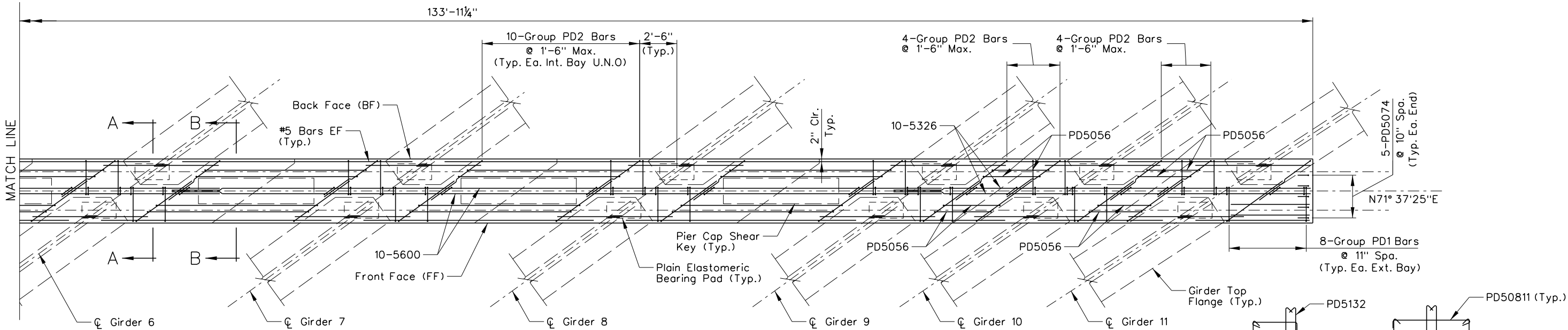
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H-933N

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1635



PARTIAL PLAN

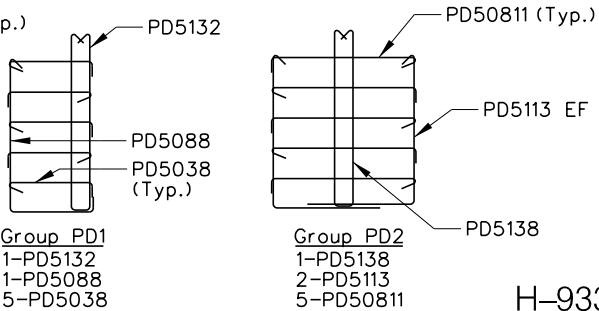


PARTIAL PLAN

- Notes:**
- For Section A-A and B-B, see "Pier No. 1 Diaphragm Details" sheet.
 - For Shear Key Details, see "Pier No. 1 Details" sheet.

Minimum Bar Lap Length

- No. 4 Bar to No. 4 Bar = 2'-2"
 No. 5 Bar to No. 5 Bar = 3'-9"



NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1635	02/03/17

DESIGN UNIT S1-07

AS-BUILT DRAWING

JANUARY 04, 2019



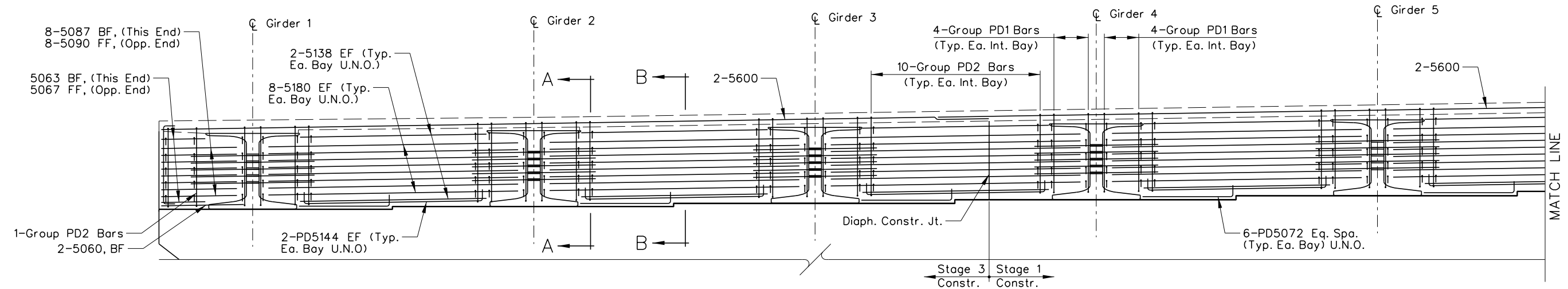
STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/OAKLEY
PIER NO. 1
DIAPHRAGM PLAN

2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
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Fax: 702/263-7200
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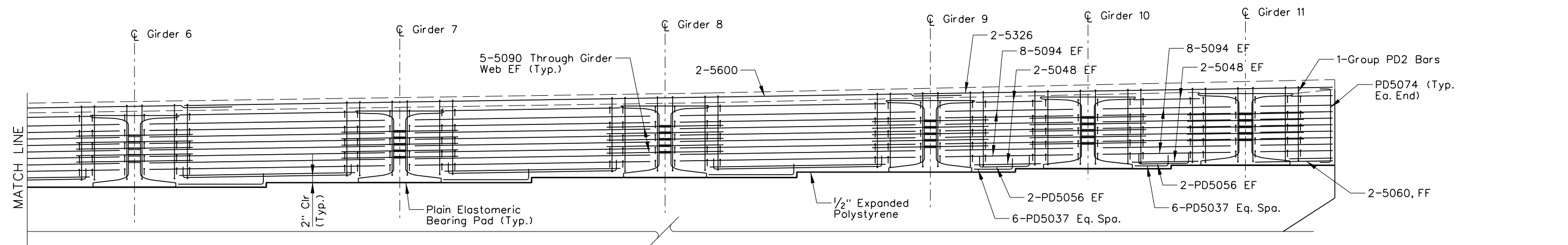
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CHECKED BY: PLK
REVIEWED BY: DAA

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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1636



PARTIAL ELEVATION
(Looking Ahead Station)



PARTIAL ELEVATION
(Looking Ahead Station)

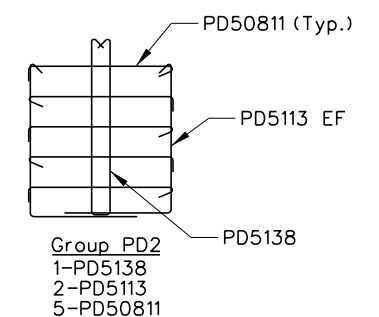
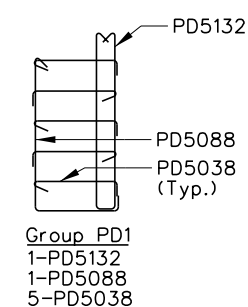
Notes:

1. Complete Group PD1 and PD2 Bars are not shown in Elevation view for clarity.
2. For Section A-A and B-B see "Pier No. 1 Diaphragm Details" sheet.
3. For Shear Key details see "Pier No. 1 Details" sheet.

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1636	02/03/17
NO.	DESCRIPTION	DATE

Minimum Bar Lap Length

No. 4 Bar to No. 4 Bar = 2'-2"
No. 5 Bar to No. 5 Bar = 3'-9"



H-933N

DESIGN UNIT S1-07

AS-BUILT DRAWING

JANUARY 04, 2019



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15N/OAKEY

PIER NO. 1

DIAPHRAGM ELEVATION

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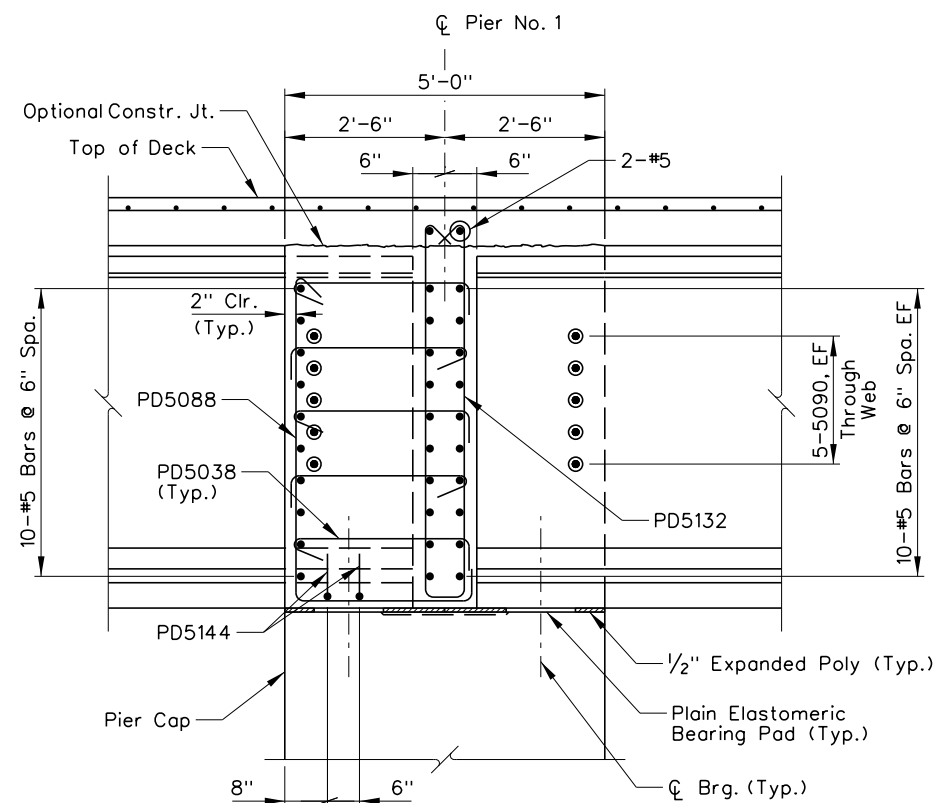
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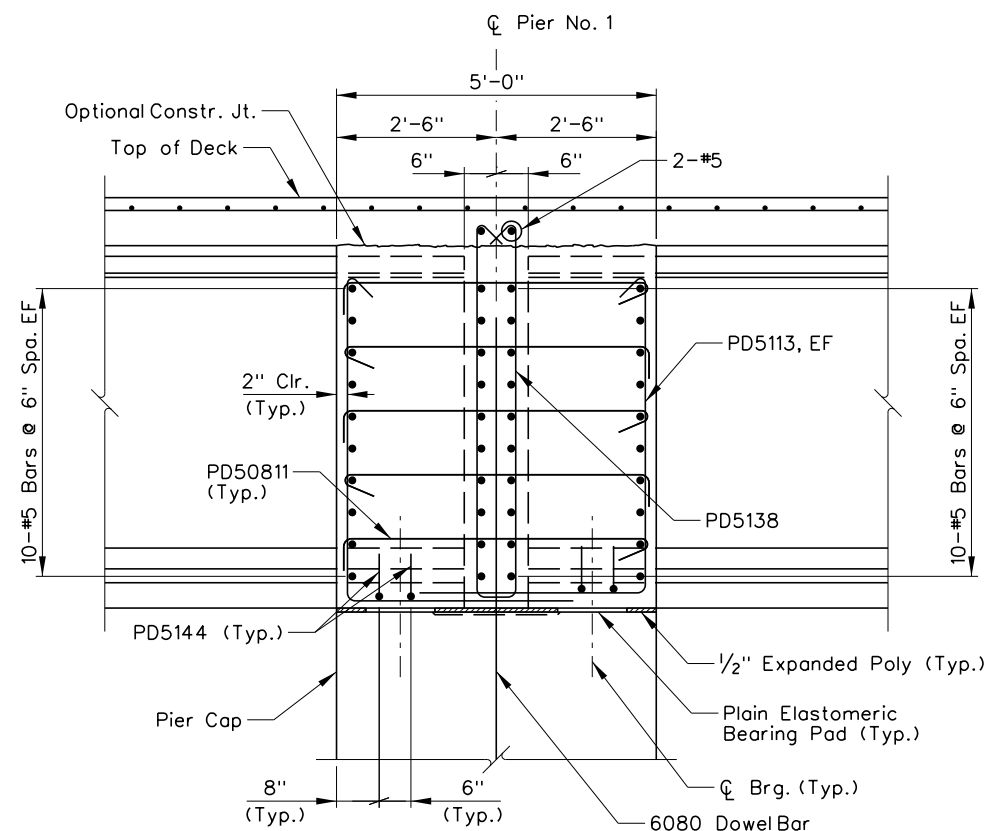
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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1637



SECTION A-A



SECTION B-B

1	FINAL	03/24/17
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NO.	DESCRIPTION	DATE

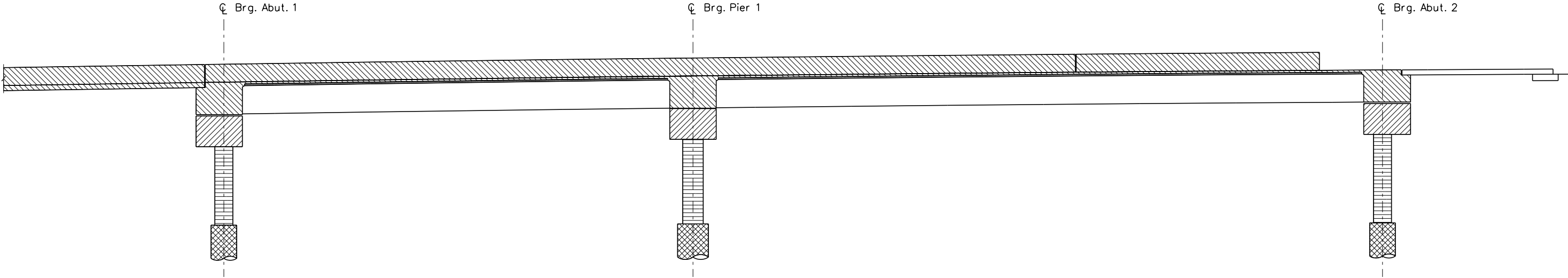
DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019



STATE OF NEVADA DEPARTMENT OF TRANSPORTATION I-15NOAKEY PIER NO. 1 DIAPHRAGM DETAILS	
ATKINS	DESIGNED BY <u>CAW</u> DRAWN BY <u>EAS</u> CHECKED BY <u>PLK</u> REVIEWED BY <u>DAA</u>

H-933N

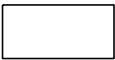
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NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1638

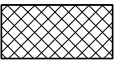


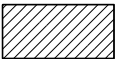
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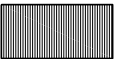
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Bridge Deck, Approach Slabs, Abutment Diaphragms, Pier Diaphragm & Barrier Rails
Class E Modified, f'c= 4.0 ksi
- 

Columns
Class D Modified, f'c= 4.5 ksi
- 

Precast Concrete Girders
Class S, See Prestressed Girder Details for Concrete Strength
- 

Drilled Shafts
Class S, f'c= 4.5 ksi
- 

Abutment Cap, Cheekwalls, & Pier Cap
Class A Modified, f'c= 4.0 ksi
- 

Prestressed Deck Panels
Class D, See Precast Panel Details for Concrete Strength

H-933N

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1638	02/03/17
NO.	DESCRIPTION	DATE

DESIGN UNIT S1-07

AS-BUILT DRAWING

JANUARY 04, 2019



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15NOAKEY

CONCRETE CLASSIFICATION

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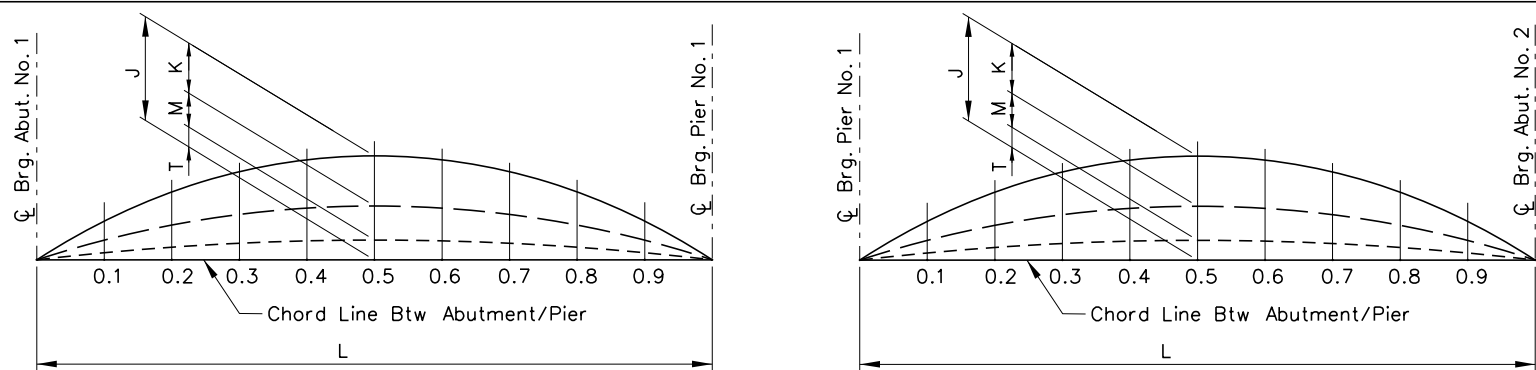
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DEFLECTION DIAGRAM

		Deflection Diagram Table (in.)																					
		Span 1											Span 2										
		0.01L	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	1.0L	0.01L	0.1L	0.2L	0.3L	0.4L	0.5L	0.6L	0.7L	0.8L	0.9L	1.0L
Girder 1	J	0.0	0.3	0.5	0.6	0.7	0.8	0.7	0.6	0.5	0.3	0.0	0.0	1.4	2.5	3.2	3.7	3.8	3.7	3.2	2.5	1.4	0.0
	K	0.0	-0.1	-0.3	-0.4	-0.4	-0.5	-0.4	-0.4	-0.3	-0.1	0.0	0.0	-0.6	-1.2	-1.7	-2.1	-2.2	-2.1	-1.7	-1.3	-0.6	0.0
	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	T	0.0	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.0	0.0	0.8	1.2	1.5	1.6	1.6	1.6	1.5	1.2	0.8	0.0
Girder 2	J	0.0	0.3	0.5	0.6	0.7	0.8	0.7	0.6	0.5	0.3	0.0	0.0	1.4	2.5	3.2	3.7	3.8	3.7	3.2	2.5	1.4	0.0
	K	0.0	-0.2	-0.3	-0.4	-0.5	-0.6	-0.5	-0.4	-0.3	-0.2	0.0	0.0	-0.7	-1.5	-2.0	-2.4	-2.5	-2.4	-2.0	-1.5	-0.7	0.0
	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	T	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.7	1.0	1.2	1.2	1.3	1.2	1.2	1.0	0.7	0.0
Girder 3	J	0.0	0.3	0.5	0.6	0.7	0.8	0.7	0.6	0.5	0.3	0.0	0.0	1.4	2.5	3.2	3.7	3.8	3.7	3.2	2.5	1.4	0.0
	K	0.0	-0.2	-0.3	-0.4	-0.5	-0.6	-0.5	-0.4	-0.3	-0.2	0.0	0.0	-0.7	-1.5	-2.0	-2.4	-2.5	-2.4	-2.0	-1.5	-0.7	0.0
	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	T	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.7	1.0	1.2	1.2	1.3	1.2	1.2	1.0	0.7	0.0
Girder 4	J	0.0	0.3	0.5	0.6	0.7	0.8	0.7	0.6	0.5	0.3	0.0	0.0	1.4	2.5	3.2	3.7	3.8	3.7	3.2	2.5	1.4	0.0
	K	0.0	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	0.0	0.0	-0.3	-0.7	-0.9	-1.1	-1.2	-1.1	-0.9	-0.7	-0.3	0.0
	* M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	0.0	
	T	0.0	0.2	0.3	0.4	0.5	0.5	0.5	0.4	0.4	0.2	0.0	0.0	1.1	1.7	2.1	2.3	2.4	2.3	2.0	1.6	1.0	0.0
Girder 5	J	0.0	0.3	0.5	0.6	0.7	0.8	0.7	0.6	0.5	0.3	0.0	0.0	1.4	2.5	3.2	3.7	3.8	3.7	3.2	2.5	1.4	0.0
	K	0.0	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	0.0	0.0	-0.3	-0.7	-0.9	-1.1	-1.2	-1.1	-0.9	-0.7	-0.3	0.0
	* M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	0.0	
	T	0.0	0.2	0.3	0.4	0.5	0.5	0.5	0.4	0.4	0.2	0.0	0.0	1.0	1.7	2.1	2.3	2.4	2.3	2.0	1.6	1.0	0.0
Girder 6	J	0.0	0.3	0.5	0.6	0.7	0.8	0.7	0.6	0.5	0.3	0.0	0.0	1.4	2.5	3.2	3.7	3.8	3.7	3.2	2.5	1.4	0.0
	K	0.0	-0.1	-0.3	-0.4	-0.5	-0.5	-0.5	-0.4	-0.3	-0.1	0.0	0.0	-0.7	-1.3	-1.8	-2.2	-2.3	-2.2	-1.8	-1.3	-0.7	0.0
	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	T	0.0	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.0	0.0	0.8	1.1	1.4	1.5	1.5	1.5	1.4	1.1	0.8	0.0
Girder 7	J	0.0	0.3	0.5	0.6	0.7	0.8	0.7	0.6	0.5	0.3	0.0	0.0	1.4	2.5	3.2	3.7	3.8	3.7	3.2	2.5	1.4	0.0
	K	0.0	-0.1	-0.3	-0.4	-0.5	-0.5	-0.5	-0.4	-0.3	-0.1	0.0	0.0	-0.7	-1.3	-1.8	-2.2	-2.3	-2.2	-1.8	-1.3	-0.7	0.0
	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	T	0.0	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.0	0.0	0.8	1.1	1.4	1.5	1.5	1.5	1.4	1.1	0.8	0.0
Girder 8	J	0.0	0.3	0.5	0.6	0.7	0.8	0.7	0.6	0.5	0.3	0.0	0.0	1.4	2.5	3.2	3.7	3.8	3.7	3.2	2.5	1.4	0.0
	K	0.0	-0.1	-0.3	-0.4	-0.5	-0.5	-0.5	-0.4	-0.3	-0.1	0.0	0.0	-0.7	-1.3	-1.8	-2.2	-2.3	-2.2	-1.8	-1.3	-0.7	0.0
	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	T	0.0	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.0	0.0	0.8	1.1	1.4	1.5	1.5	1.5	1.4	1.1	0.8	0.0
Girder 9	J	0.0	0.3	0.5	0.6	0.7	0.8	0.7	0.6	0.5	0.3	0.0	0.0	1.4	2.5	3.2	3.7	3.8	3.7	3.2	2.5	1.4	0.0
	K	0.0	-0.1	-0.3	-0.4	-0.5	-0.5	-0.5	-0.4	-0.3	-0.1	0.0	0.0	-0.6	-1.2	-1.7	-2.1	-2.2	-2.1	-1.7	-1.2	-0.6	0.0
	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	T	0.0	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.0	0.0	0.8	1.2	1.5	1.6	1.6	1.6	1.5	1.2	0.8	0.0
Girder 10	J	0.0	0.3	0.5	0.6	0.7	0.8	0.7	0.6	0.5	0.3	0.0	0.0	1.0	1.7	2.2	2.5	2.6	2.5	2.2	1.7	1.0	0.0
	K	0.0	-0.1	-0.2	-0.3	-0.4	-0.4	-0.4	-0.3	-0.2	-0.1	0.0	0.0	-0.5	-1.0	-1.4	-1.7	-1.8	-1.7	-1.4	-1.0	-0.5	0.0
	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	T	0.0	0.2	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.2	0.0	0.0	0.5	0.7	0.8	0.8	0.8	0.8	0.8	0.7	0.5	0.0
Girder 11	J	0.0	0.3	0.5	0.6	0.7	0.8	0.7	0.6	0.5	0.3	0.0	0.0	1.4	2.4	3.1	3.6	3.7	3.6	3.1	2.4	1.4	0.0
	K	0.0	-0.1	-0.2	-0.3	-0.4	-0.4	-0.4	-0.3	-0.2	-0.1	0.0	0.0	-0.5	-1.0	-1.4	-1.7	-1.8	-1.7	-1.5	-1.0	-0.5	0.0
	M	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	T	0.0	0.2	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.2	0.0	0.0	0.9	1.4	1.7	1.8	1.9	1.8	1.7	1.4	0.9	0.0

*M at Girders 4 and 5 includes the superimposed dead load of the closure pour.

NOTES:

- Values given in the Deflection Diagram Table are based on theoretical girder cambers and deflection estimates. Monitor girder cambers for the purpose of predicting camber values at the time of the deck pour if the predicted cambers based on filed measurements differ more than 0.5" from the theoretical "Net Girder Camber at Erection (40 days)" values as shown in the table. If the measured girder cambers create a conflict with the theoretical bottom of deck, notify the engineer immediately.
- Negative deflections indicate downward movement. Positive deflections indicate upward camber.

LEGEND

J = Net Girder Camber at Erection (40 days)
K = Non-composite Dead Load Deflection (Precast Panels, Deck, Haunch & Intermediate Diaphragms) at Erection
M = Superimposed Dead Load of Bridge Rail at Erection
T = Residual Camber After All Dead Load is Placed (Excludes DW)

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1639	02/03/17
NO.	DESCRIPTION	DATE

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019

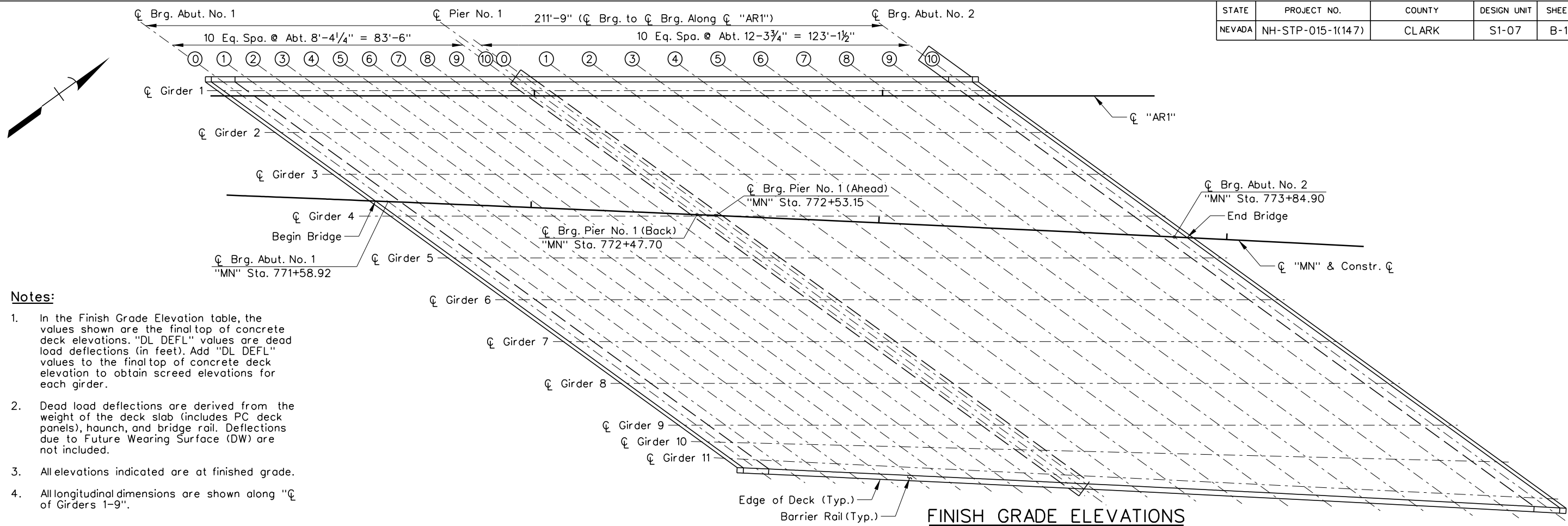


STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/OAKEY
CAMBER & DEFLECTION
H-933N

DESIGNED BY CAW
DRAWN BY EAS
CHECKED BY PLK
REVIEWED BY DAA

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pw:\\SUS0036343.watkins.com\\ATKANV01\\Documents\\Roads and Bridges\\Projects\\100047698 NEON FD\\Engineering\\011_Structures\\DGN\\Sheets\\B16 - H-933N\\I-15 over Oakey\\73652-S1-07-R2H-H933N-sht20B1640.dgn

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1640



Notes:

- In the Finish Grade Elevation table, the values shown are the final top of concrete deck elevations. "DL DEFL" values are dead load deflections (in feet). Add "DL DEFL" values to the final top of concrete deck elevation to obtain screed elevations for each girder.
- Dead load deflections are derived from the weight of the deck slab (includes PC deck panels), haunch, and bridge rail. Deflections due to Future Wearing Surface (DW) are not included.
- All elevations indicated are at finished grade.
- All longitudinal dimensions are shown along "CL of Girders 1-9".

		Finish Grade Elevations											
		0	1	2	3	4	5	6	7	8	9	10	
Span 1	Girder 1	Elevation	2073.09	2073.19	2073.29	2073.39	2073.49	2073.58	2073.67	2073.75	2073.83	2073.91	2073.98
		DL Defl.	0.00	0.01	0.02	0.03	0.04	0.04	0.04	0.03	0.02	0.01	0.00
	Girder 2	Elevation	2073.24	2073.35	2073.46	2073.56	2073.66	2073.75	2073.85	2073.94	2074.02	2074.10	2074.18
		DL Defl.	0.00	0.01	0.03	0.04	0.04	0.05	0.04	0.04	0.03	0.01	0.00
	Girder 3	Elevation	2073.43	2073.54	2073.65	2073.76	2073.86	2073.96	2074.06	2074.15	2074.24	2074.33	2074.41
		DL Defl.	0.00	0.01	0.03	0.04	0.04	0.05	0.04	0.04	0.03	0.01	0.00
	Girder 4	Elevation	2073.65	2073.77	2073.88	2073.99	2074.10	2074.20	2074.30	2074.40	2074.49	2074.58	2074.67
		DL Defl.	0.00	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.01	0.00	0.00
	Girder 5	Elevation	2073.90	2074.02	2074.14	2074.25	2074.37	2074.47	2074.58	2074.68	2074.78	2074.87	2074.96
		DL Defl.	0.00	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.01	0.00	0.00
	Girder 6	Elevation	2074.18	2074.31	2074.43	2074.55	2074.66	2074.78	2074.89	2074.99	2075.09	2075.19	2075.29
		DL Defl.	0.00	0.01	0.02	0.03	0.04	0.04	0.04	0.03	0.02	0.01	0.00
	Girder 7	Elevation	2074.49	2074.62	2074.75	2074.87	2074.99	2075.11	2075.22	2075.33	2075.44	2075.54	2075.64
		DL Defl.	0.00	0.01	0.02	0.03	0.04	0.04	0.04	0.03	0.02	0.01	0.00
	Girder 8	Elevation	2074.84	2074.97	2075.10	2075.23	2075.36	2075.48	2075.59	2075.71	2075.82	2075.92	2076.03
		DL Defl.	0.00	0.01	0.02	0.03	0.04	0.04	0.04	0.03	0.02	0.01	0.00
	Girder 9	Elevation	2075.21	2075.35	2075.49	2075.62	2075.75	2075.87	2075.99	2076.11	2076.23	2076.34	2076.44
		DL Defl.	0.00	0.01	0.02	0.03	0.04	0.04	0.04	0.03	0.02	0.01	0.00
	Girder 10	Elevation	2075.38	2075.52	2075.67	2075.81	2075.95	2076.08	2076.21	2076.34	2076.47	2076.59	2076.71
		DL Defl.	0.00	0.01	0.02	0.03	0.03	0.03	0.03	0.03	0.02	0.01	0.00
	Girder 11	Elevation	2075.54	2075.70	2075.85	2076.01	2076.15	2076.30	2076.44	2076.58	2076.71	2076.85	2076.97
		DL Defl.	0.00	0.01	0.02	0.03	0.03	0.03	0.03	0.03	0.02	0.01	0.00

		Finish Grade Elevations											
		0	1	2	3	4	5	6	7	8	9	10	
Span 2	Girder 1	Elevation	2074.03	2074.13	2074.22	2074.31	2074.39	2074.46	2074.52	2074.58	2074.62	2074.66	2074.70
		DL Defl.	0.00	0.05	0.10	0.15	0.17	0.18	0.17	0.15	0.10	0.05	0.00
	Girder 2	Elevation	2074.23	2074.33	2074.43	2074.53	2074.61	2074.69	2074.76	2074.82	2074.87	2074.92	2074.96
		DL Defl.	0.00	0.06	0.12	0.17	0.20	0.21	0.20	0.17	0.12	0.06	0.00
	Girder 3	Elevation	2074.46	2074.57	2074.68	2074.78	2074.87	2074.95	2075.02	2075.09	2075.15	2075.20	2075.25
		DL Defl.	0.00	0.06	0.12	0.17	0.20	0.21	0.20	0.17	0.12	0.06	0.00
	Girder 4	Elevation	2074.72	2074.84	2074.95	2075.06	2075.15	2075.24	2075.32	2075.40	2075.46	2075.52	2075.57
		DL Defl.	0.00	0.03	0.07	0.09	0.11	0.12	0.11	0.10	0.07	0.04	0.00
	Girder 5	Elevation	2075.02	2075.14	2075.26	2075.37	2075.47	2075.57	2075.65	2075.73	2075.80	2075.87	2075.93
		DL Defl.	0.00	0.03	0.07	0.09	0.11	0.12	0.11	0.10	0.07	0.04	0.00
	Girder 6	Elevation	2075.34	2075.47	2075.60	2075.71	2075.82	2075.92	2076.02	2076.10	2076.18	2076.25	2076.31
		DL Defl.	0.00	0.05	0.11	0.15	0.18	0.19	0.18	0.15	0.11	0.05	0.00
	Girder 7	Elevation	2075.70	2075.84	2075.97	2076.09	2076.20	2076.31	2076.41	2076.50	2076.58	2076.66	2076.72
		DL Defl.	0.00	0.05	0.11	0.15	0.18	0.19	0.18	0.15	0.11	0.05	0.00
	Girder 8	Elevation	2076.09	2076.23	2076.37	2076.49	2076.61	2076.73	2076.83	2076.93	2077.02	2077.10	2077.17
		DL Defl.	0.00	0.05	0.11	0.15	0.18	0.19	0.18	0.15	0.11	0.05	0.00
	Girder 9	Elevation	2076.51	2076.66	2076.80	2076.93	2077.06	2077.17	2077.28	2077.39	2077.48	2077.57	2077.65
		DL Defl.	0.00	0.05	0.10	0.14	0.17	0.18	0.17	0.15	0.10	0.05	0.00
	Girder 10	Elevation	2076.78	2076.94	2077.10	2077.25	2077.39	2077.52	2077.65	2077.77	2077.88	2077.99	2078.09
		DL Defl.	0.00	0.04	0.09	0.12	0.14	0.15	0.14	0.12	0.09	0.04	0.00
	Girder 11	Elevation	2077.05	2077.23	2077.41	2077.58	2077.74	2077.89	2078.03	2078.17	2078.30	2078.43	2078.55
		DL Defl.	0.00	0.04	0.09	0.12	0.14	0.15	0.14	0.12	0.09	0.04	0.00

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1640	02/03/17
NO.	DESCRIPTION	DATE

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/OAKLEY
FINISH GRADE ELEVATIONS

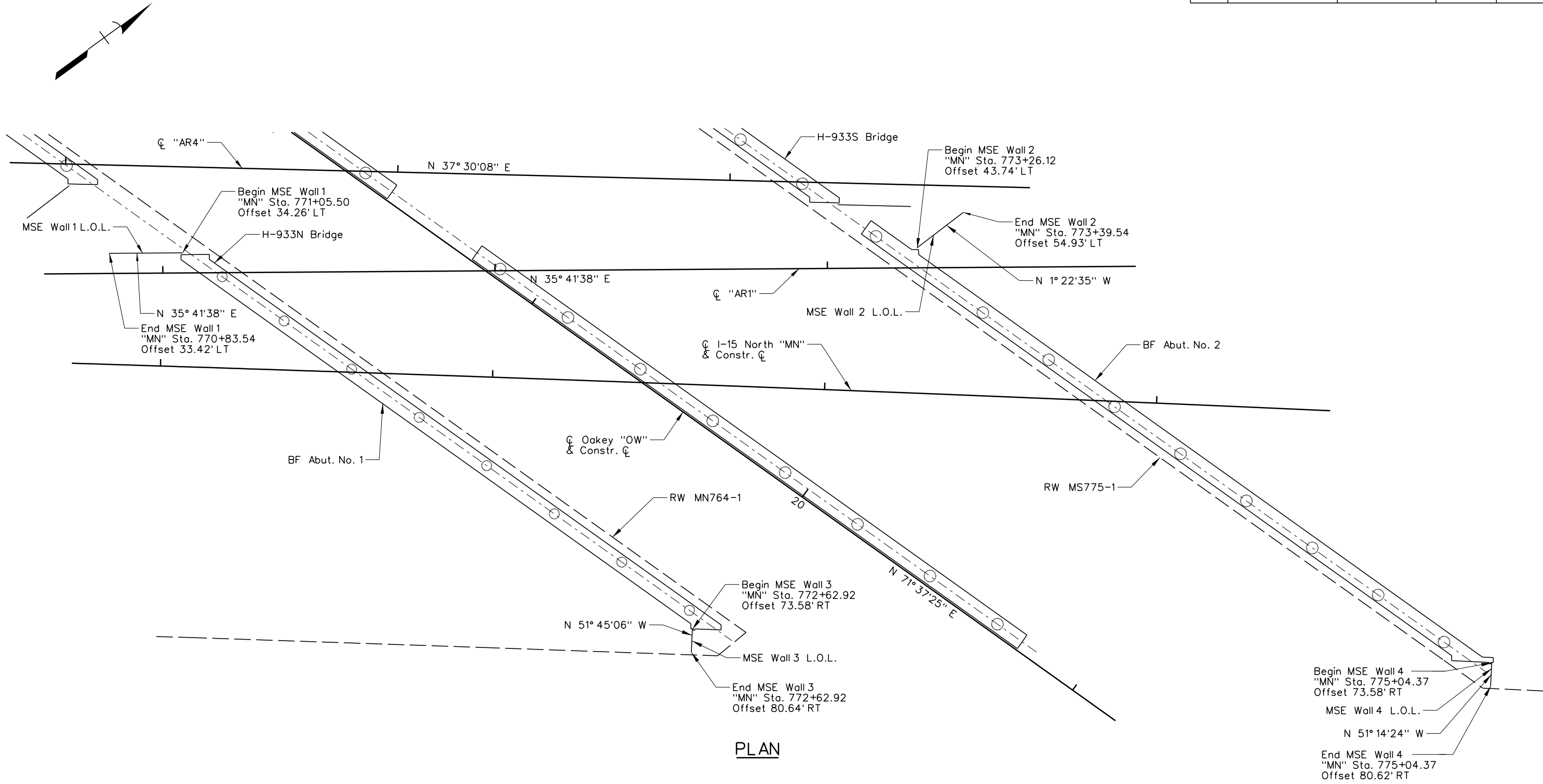
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DRAWN BY: EAS
CHECKED BY: PLK
REVIEWED BY: DAA

2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
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H-933N

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1641



H-933N

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1641	02/03/17
NO.	DESCRIPTION	DATE

DESIGN UNIT S1-07	  	STATE OF NEVADA DEPARTMENT OF TRANSPORTATION I-15/OAKEY MSE WALL PLAN
AS-BUILT DRAWING JANUARY 04, 2019		 R2H ENGINEERING, INC. CONSULTING STRUCTURAL ENGINEERS 2610 HORIZON RIDGE PARKWAY, SUITE 205 LAS VEGAS, NEVADA 89002 PHONE (702) 260-7000 FAX (702) 260-7070

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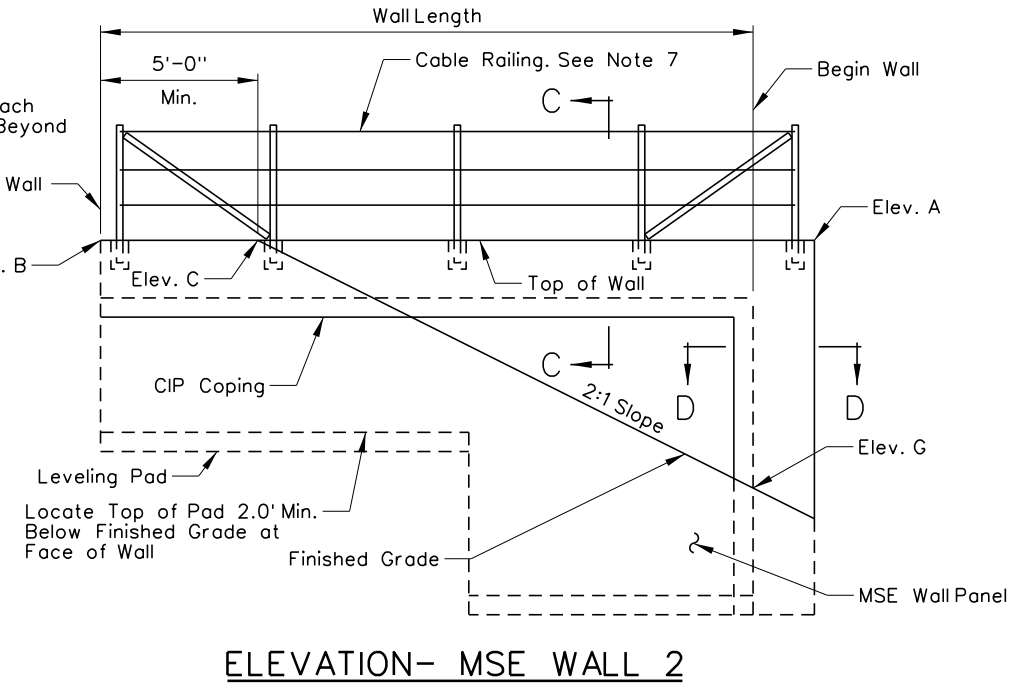
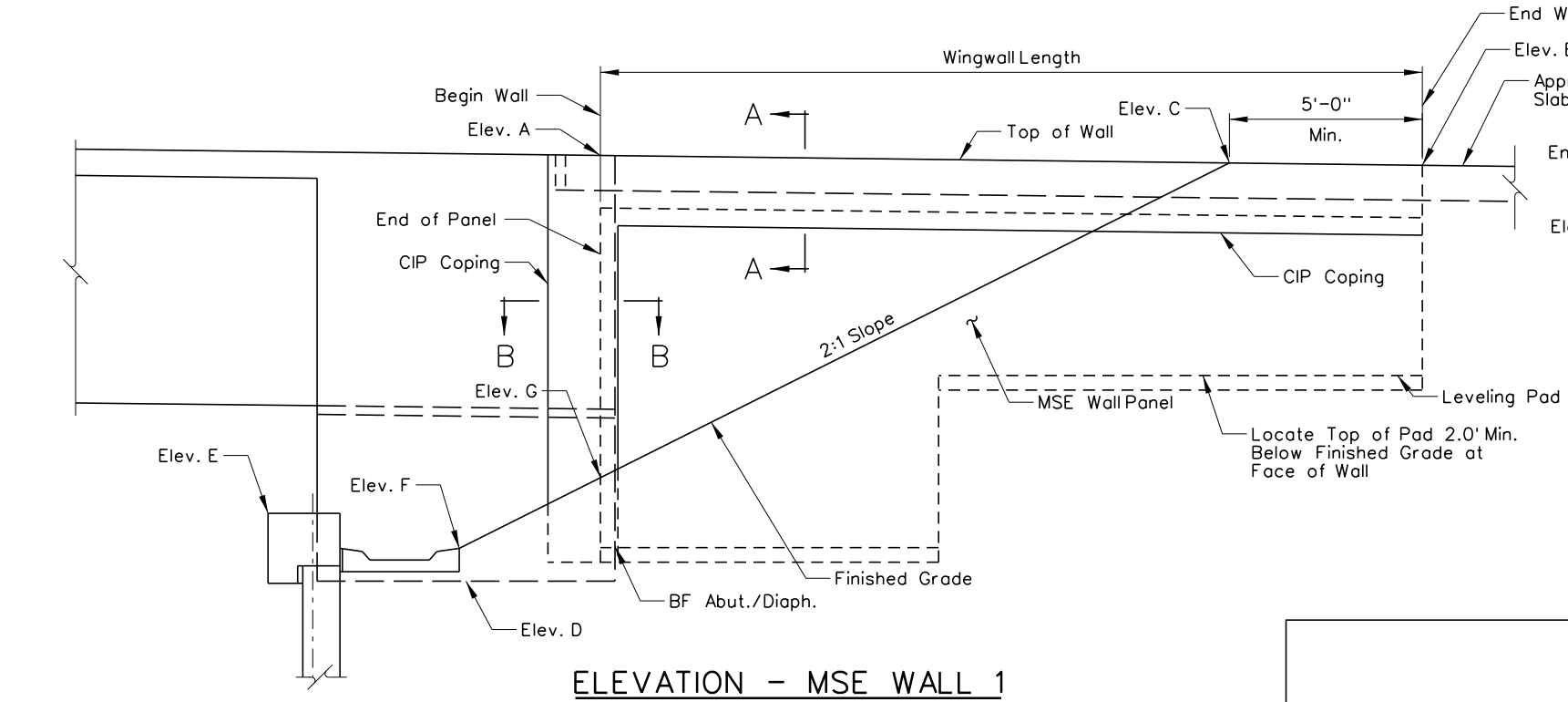
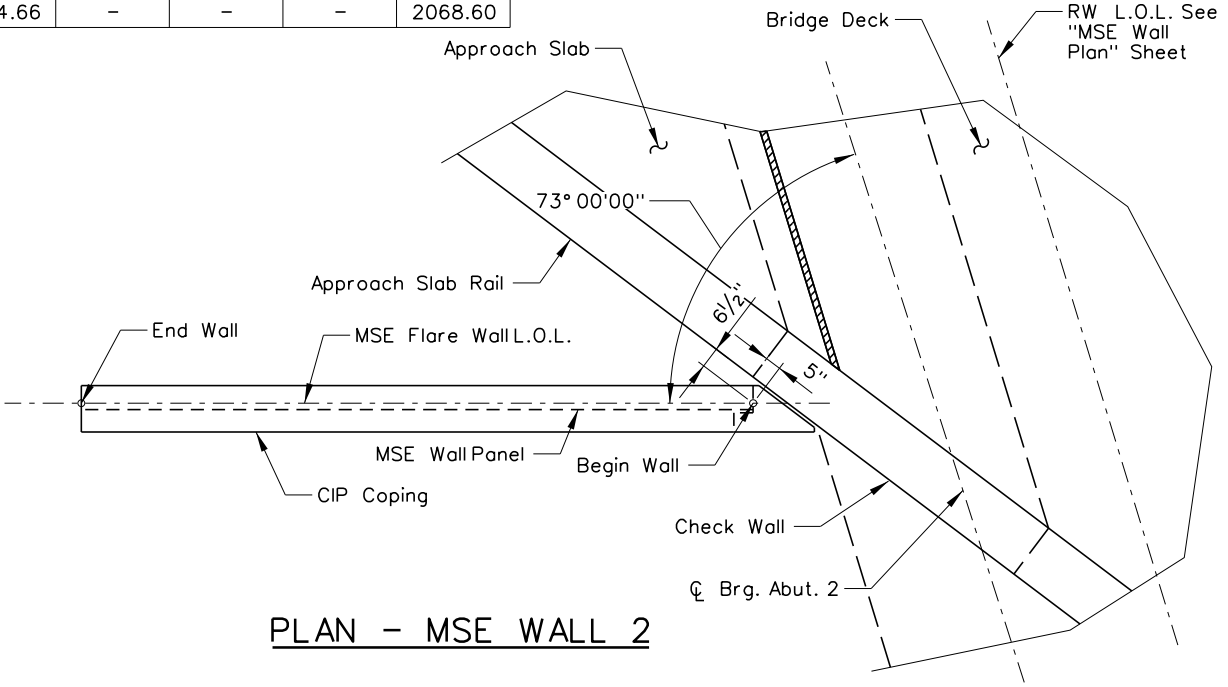
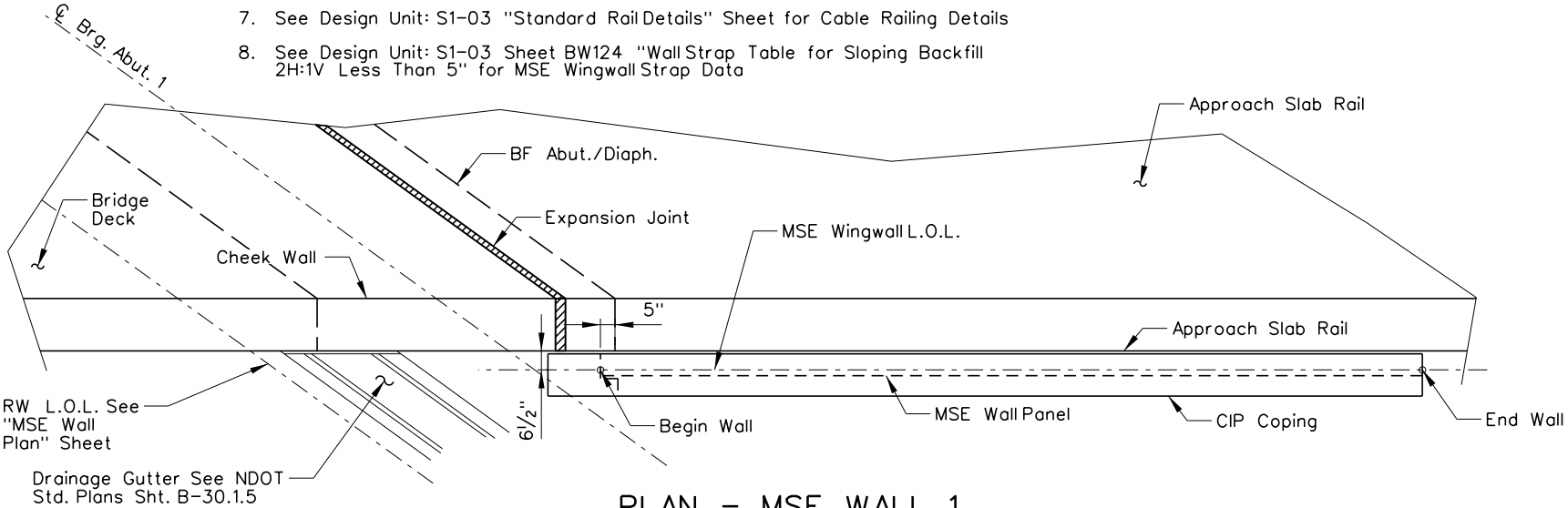
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Notes:

1. For MSE wingwall coping reinforcing not shown, see wall sheets BW801 and BW802 in Design Unit S1-03.
2. Elevations A, B, and C are taken at top of coping at wall layout line (LOL).
3. Cast wingwall coping against joint filler.
4. Wingwalls to receive the following treatment: 2" max. reveal; Texture 1171 Colorado Drag by Spec Formliners, Inc.; Color: Wooded Acre (DE 6130).
5. See "MSE Wall Details" For Sections A-A, B-B, C-C, and D-D.
6. See Design Unit: S1-03 "Wall Location Plan and General Notes" Sheet for MSE Wall General Notes.
7. See Design Unit: S1-03 "Standard Rail Details" Sheet for Cable Railing Details
8. See Design Unit: S1-03 Sheet BW124 "Wall Strap Table for Sloping Backfill 2H:1V Less Than 5" for MSE Wingwall Strap Data

MSE Wall Data Table								
	Wall Length	Elev. A	Elev. B	Elev. C	Elev. D	Elev. E	Elev. F	Elev. G
MSE Wall 1	22'-0"	2072.97	2072.71	2072.77	2060.81	2062.75	2061.75	2064.29
MSE Wall 2	17'-6"	2074.66	2074.66	2074.66	-	-	-	2068.60

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1642



NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1642	02/03/17

DESIGN UNIT S1-07

AS-BUILT DRAWING

JANUARY 04, 2019

R₂H ENGINEERING, INC.
CONSULTING STRUCTURAL ENGINEERS
2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89052
PHONE (702) 260-7000 FAX (702) 260-7070

PROJECT NEON
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STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15/OAKLEY
MSE WALL DETAILS
1 OF 2

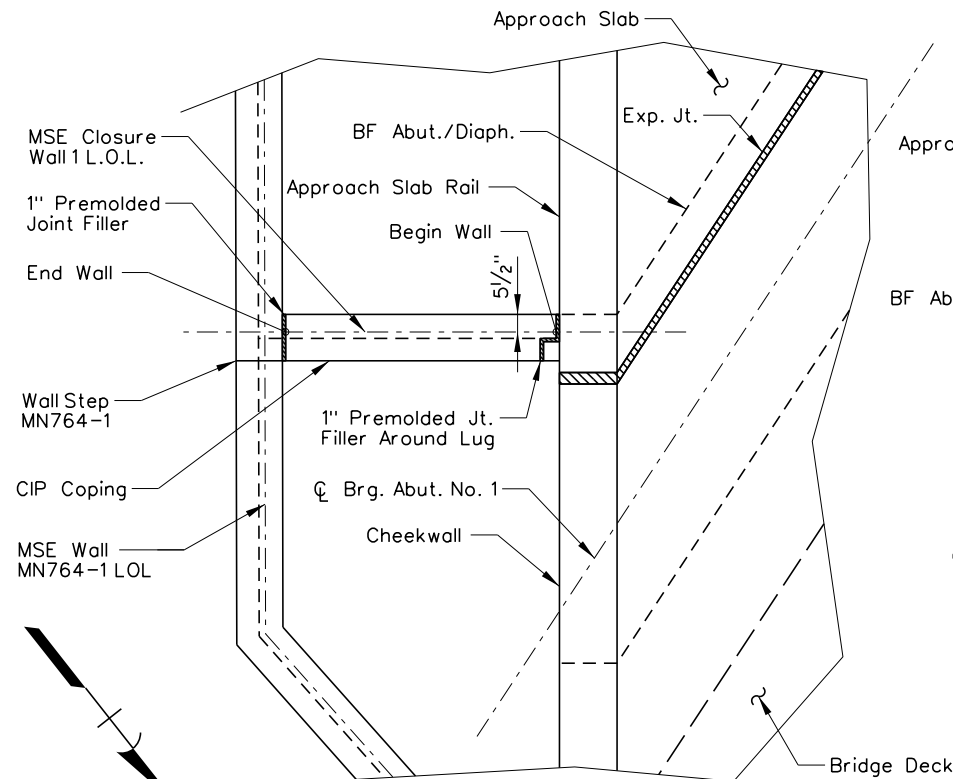
ATKINS
2270 Corporate Circle
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Telephone: 702/263-7275
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DESIGNED BY: JCH
DRAWN BY: EAS
CHECKED BY: PLK
REVIEWED BY: DAA

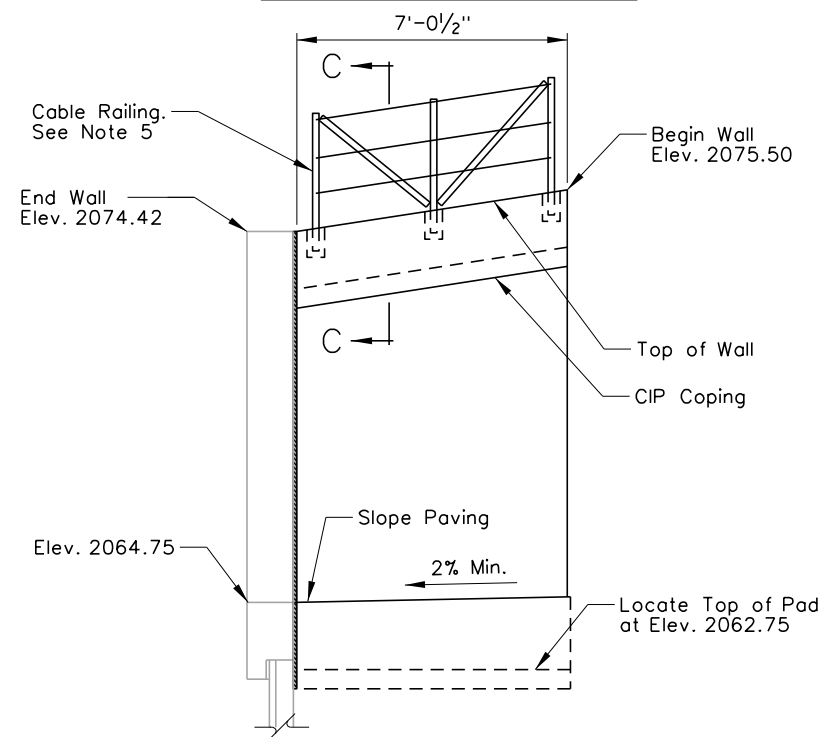
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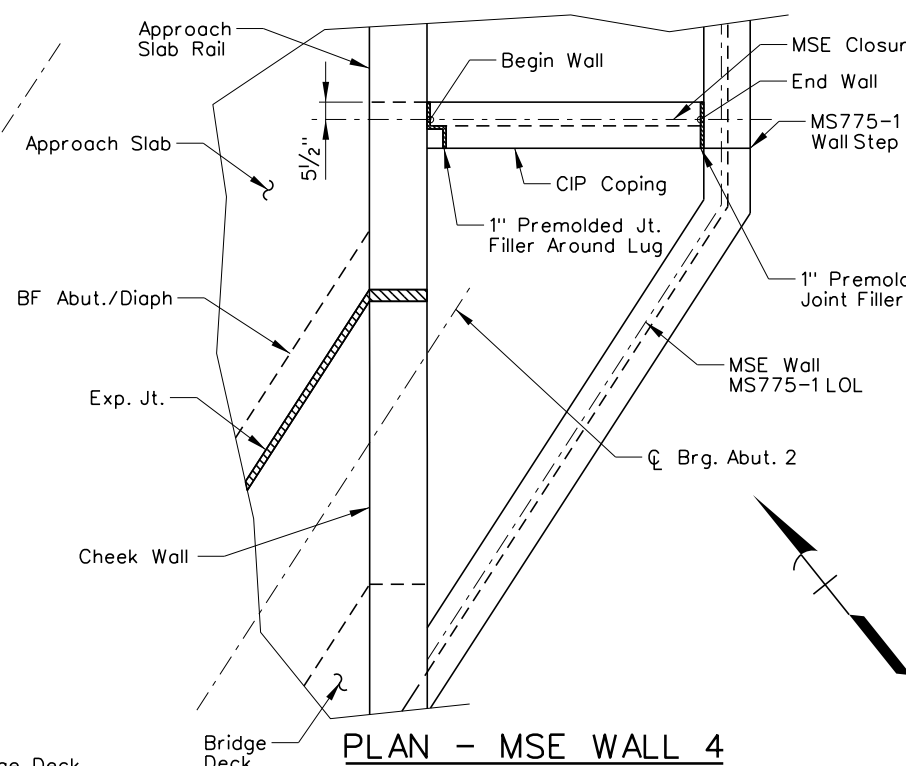
STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1642A



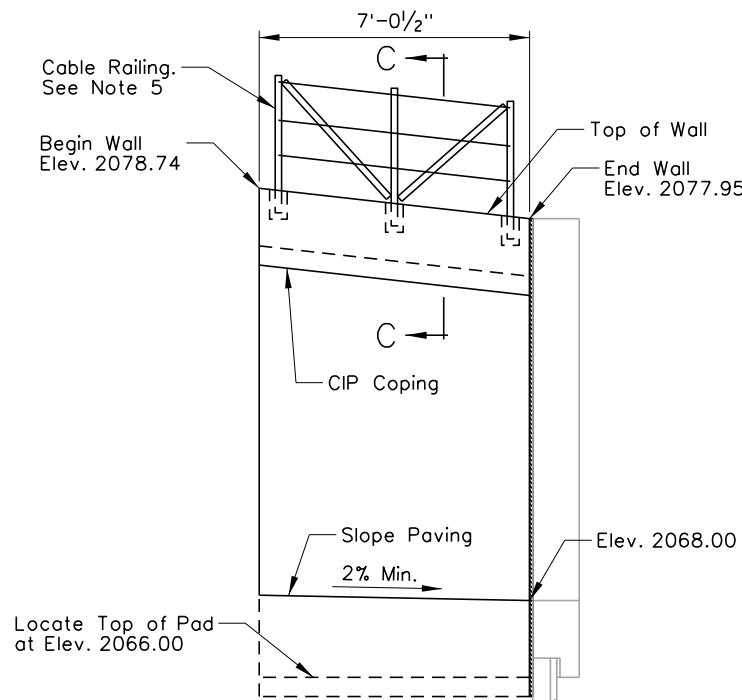
PLAN - MSE WALL 3



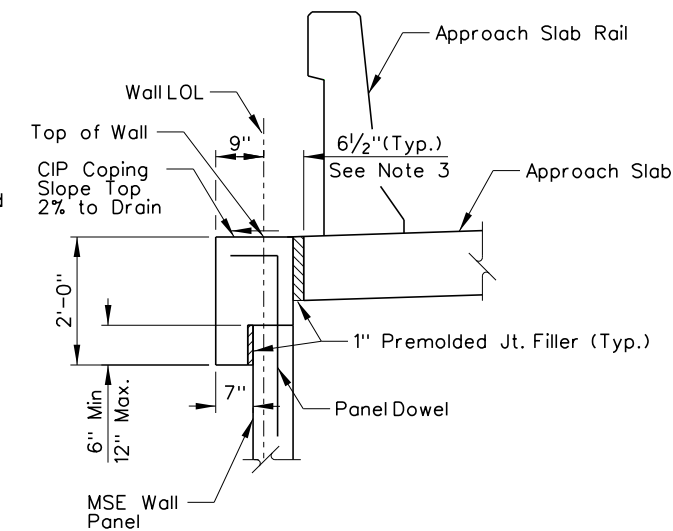
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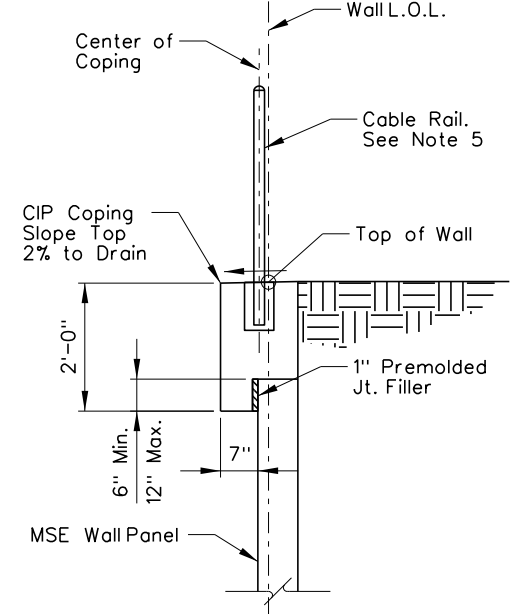
PLAN - MSE WALL 4



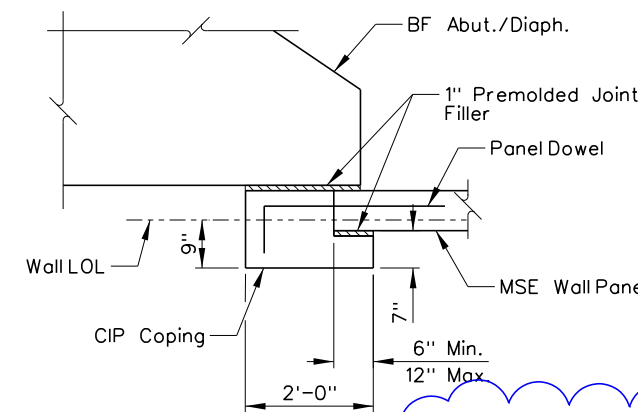
ELEVATION - MSE WALL 4



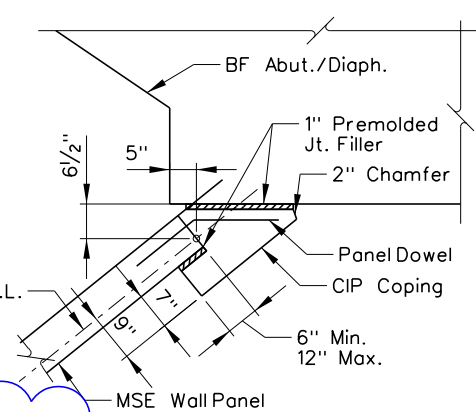
SECTION A-A



SECTION C-C



SECTION B-B



SECTION D-D

Notes

- For MSE wall coping reinforcing not shown, see wall sheets BW801 and BW802 in Design Unit S1-03.
- Cast MSE wall coping against joint filler.
- MSE walls to receive the following treatment: 2" max. reveal; Texture 1171 Colorado Drag by Spec Formliners, Inc.; Color: Wooded Acre (DE 6130).
- See Design Unit: S1-03 "Wall Location Plan and General Notes" Sheet for MSE Wall General Notes.
- See Design Unit: S1-03 "Standard Rail Details" Sheet for Cable Railing Details
- See Design Unit: S1-03 Sheet BW124 "Wall Strap Table for Sloping Backfill 2H:1V Less Than 5" for MSE Wingwall Strap Data

H-933N

NO.	DESCRIPTION	DATE
2	AS-BUILTS - RF11506	05/01/19
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1642A	02/03/17

DESIGN UNIT S1-07

AS-BUILT DRAWING

MAY 1, 2019



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

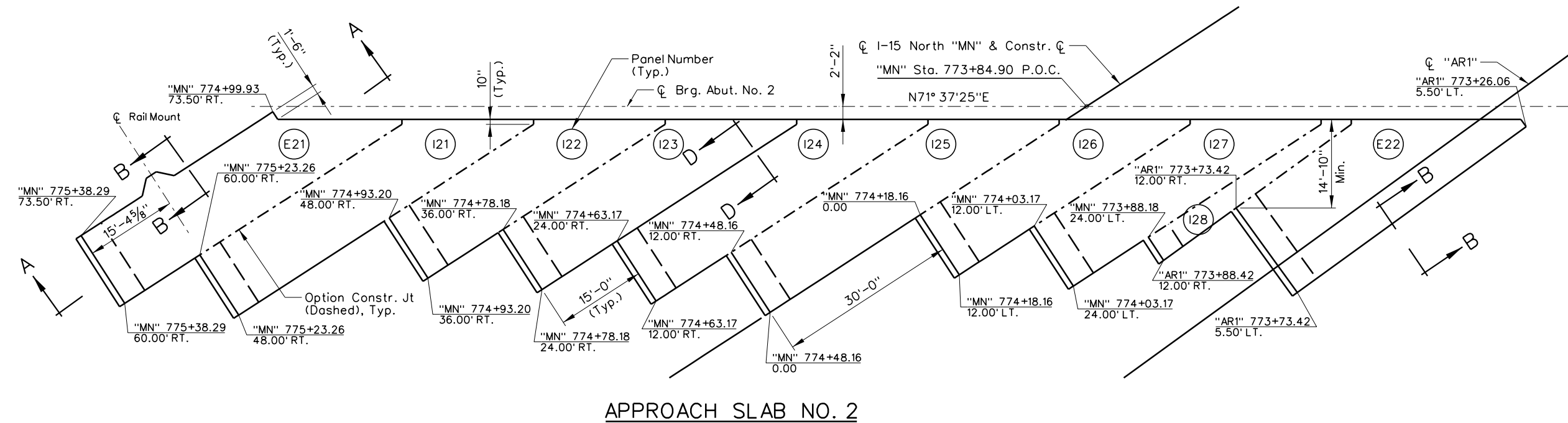
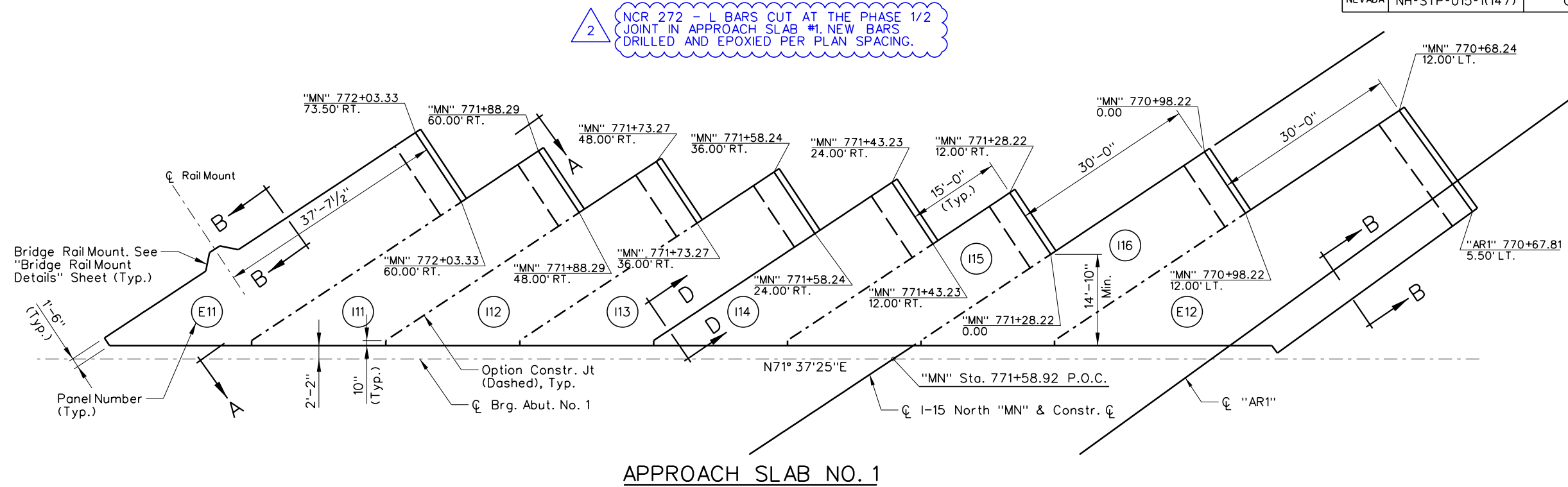
I-15/OAKLEY
MSE WALL DETAILS
2 OF 2

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DRAWN BY: EAS
CHECKED BY: PLK
REVIEWED BY: DAA

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1643



NOTES

1. For sections and details, see "Approach Slab Details" sheet.

2	AS-BUILTS - NCR 272	05/01/19
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1643	02/03/17
NO.	DESCRIPTION	DATE

H-933N

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15/NOAKEY
APPROACH SLAB NO.1 & 2
LAYOUT PLAN

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REVIEWED BY DAA

DESIGN UNIT S1-07

AS-BUILT DRAWING

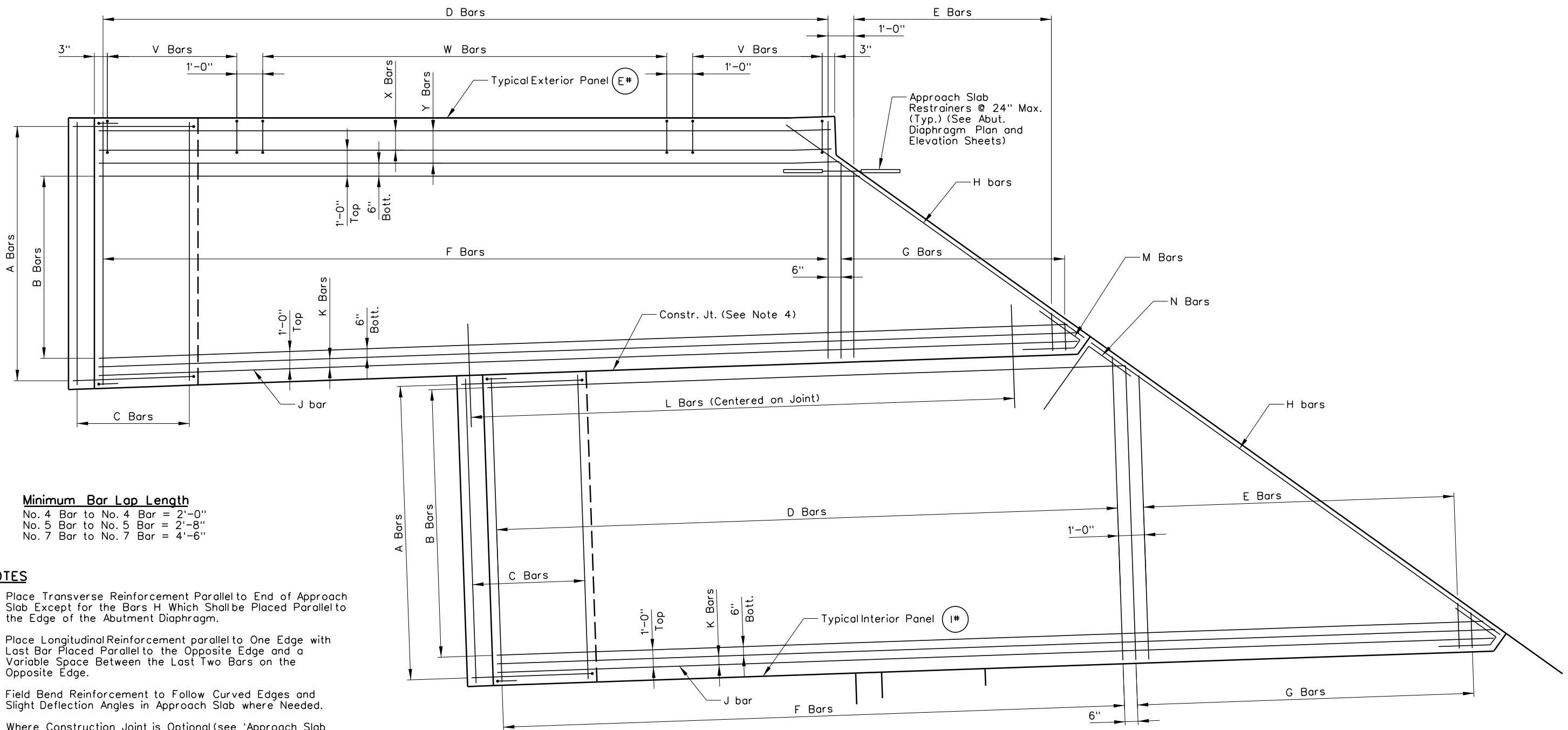
MAY 1, 2019



R₂H ENGINEERING, INC.
CONSULTING STRUCTURAL ENGINEERS
2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89052
PHONE (702) 260-7000 FAX (702) 260-7070



STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1644



Minimum Bar Lap Length
No. 4 Bar to No. 4 Bar = 2'-0"
No. 5 Bar to No. 5 Bar = 2'-8"
No. 7 Bar to No. 7 Bar = 4'-6"

- NOTES**
1. Place Transverse Reinforcement Parallel to End of Approach Slab Except for the Bars H Which Shall be Placed Parallel to the Edge of the Abutment Diaphragm.
 2. Place Longitudinal Reinforcement parallel to One Edge with Last Bar Placed Parallel to the Opposite Edge and a Variable Space Between the Last Two Bars on the Opposite Edge.
 3. Field Bend Reinforcement to Follow Curved Edges and Slight Deflection Angles in Approach Slab where Needed.
 4. Where Construction Joint is Optional (see 'Approach Slab Layout Plan'), Eliminate 'L' Bars and Project the Required Transverse Bars ('D', 'E', 'F' and 'G' Bars) Past the Joint the Minimum Bar Lap Length in Accordance with the Table.
 5. Place 5036 Bars ('Z') Bars @ 6" in Line with Transverse Bars Where Barrier Rail Occurs. See Section B-B on 'Approach Slab Section and Details' Sheet.

APPROACH SLAB TYPICAL REINFORCEMENT LAYOUT PLAN

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1644	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019

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STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/NOAKEY
APPROACH SLAB
REINFORCING LAYOUT

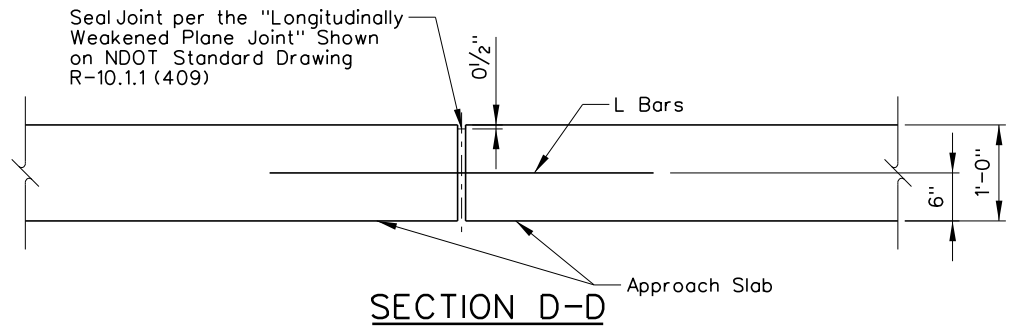
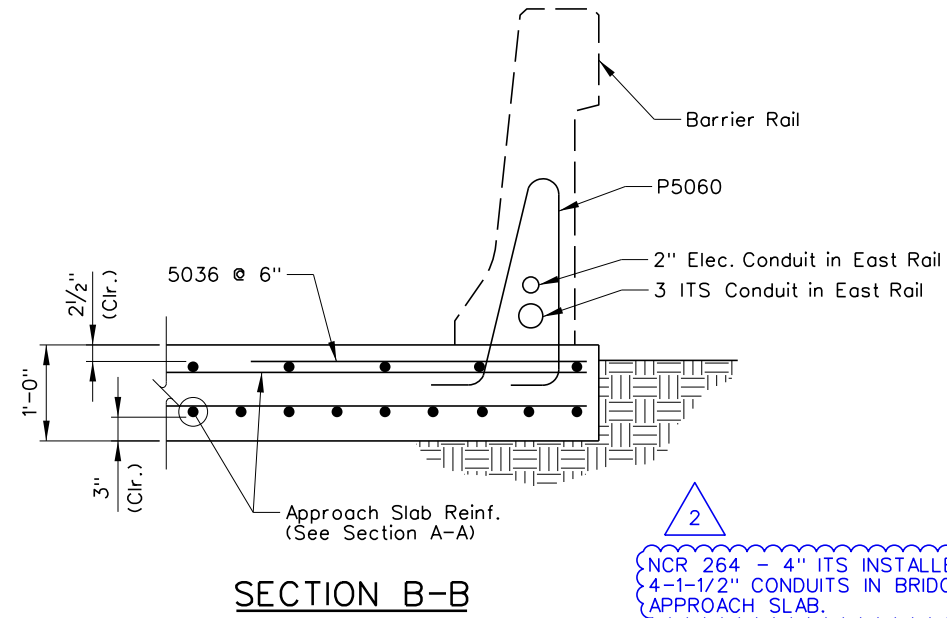
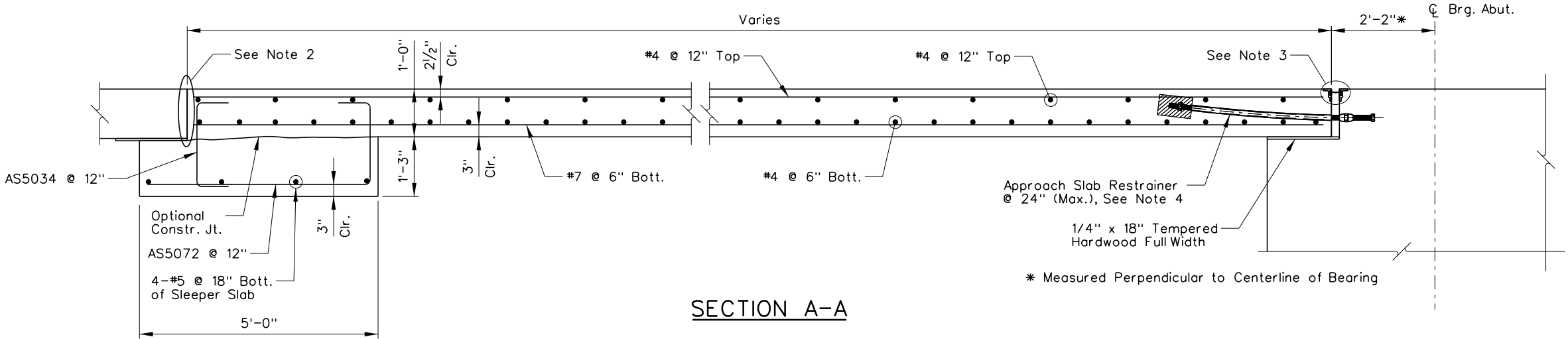
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CHECKED BY: PLK
REVIEWED BY: DAA

H-933N

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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1645



- Notes:**
- Fill material under approach slabs shall be a 12" layer of granular backfill compacted to not less than 95% of the maximum density in accordance with subsection 207.03.01 of the standard specifications.
 - See Detail A on "Expansion Joint Details" sheet.
 - See Detail B on "Expansion Joint Details" sheet.
 - For Approach Slab Restrainer Assembly, see "Expansion Joint Details" sheet.

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NO.	DESCRIPTION	DATE
2	AS-BUILTS - NCR 264, 272	05/01/19
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1645	02/03/17

DESIGN UNIT S1-07

AS-BUILT DRAWING

MAY 1, 2019

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PROJECT NEON
Las Vegas

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SAFE AND CONNECTED

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STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15 NOAKEY
APPROACH SLAB
SECTION AND DETAILS

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REVIEWED BY: DAA

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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1646

PANEL NUMBER (E11)	
BAR	MARK
A	14-AS5072 @ 12" & 14-AS5034 @ 12"
B	1 Set 4590 to 4421 @ 12" Top (12 Bars Per Set) & 1 Set 7590 to 7421 @ 6" Bott. (23 Bars Per Set)
C	4-5132 Equal Spaced (Bott. of Sleeper Slab)
D	43-4132 @ 12" Top
E	1 Set 4127 to 4020 @ 12" Top (17 Bars Per Set)
F	85-7132 @ 6" Bott.
G	1 Set 41211 to 4020 @ 6" Bott. (34 Bars Per Set)
H	5229 Top & Bott.
J	----
K	----
L	----
M	----
N	AS4050 Top & Bott. (at Chamfer)
V	11-P5060 @ 6" Each End (22 Total)
W	49-P5060 @ 12"
X	2-4602 @ 12" Top
Y	3-7602 @ 6" Bott.
Z	114-5036 @ 6" Top (in Line with Transverse Bars)

PANEL NUMBER (I14)	
BAR	MARK
A	13-AS5072 @ 12" & 13-AS5034 @ 12"
B	1 Set 4458 to 4297 @ 12" Top (12 Bars Per Set) & 1 Set 7458 to 7297 @ 6" Bott. (23 Bars Per Set)
C	4-5118 Equal Spaced (Bott. of Sleeper Slab)
D	30-4118 @ 12" Top
E	1 Set 4115 to 4015 @ 12" Top (16 Bars Per Set)
F	60-7118 @ 6" Bott.
G	1 Set 4115 to 4015 @ 6" Bott. (31 Bars Per Set)
H	5214 Top & Bott.
J	4462 Top
K	2-7462 @ 6" Bott.
L	30-4040 @ 12"
M	AS4049 Top & Bott. (at Chamfer)
N	AS4050 Top & Bott. (at Chamfer)

PANEL NUMBER (I11)	
BAR	MARK
A	13-AS5072 @ 12" & 13-AS5034 @ 12"
B	1 Set 4550 to 4381 @ 12" Top (12 Bars Per Set) & 1 Set 7550 to 7381 @ 6" Bott. (23 Bars Per Set)
C	4-5118 Equal Spaced (Bott. of Sleeper Slab)
D	39-4118 @ 12" Top
E	1 Set 4117 to 4010 @ 12" Top (17 Bars Per Set)
F	78-7118 @ 6" Bott.
G	1 Set 4117 to 4010 @ 6" Bott. (33 Bars Per Set)
H	5215 Top & Bott.
J	4556 Top
K	2-7556 @ 6" Bott.
L	39-4040 @ 12"
M	AS4049 Top & Bott. (at Chamfer)
N	AS4050 Top & Bott. (at Chamfer)

PANEL NUMBER (I15)	
BAR	MARK
A	13-AS5072 @ 12" & 13-AS5034 @ 12"
B	1 Set 4427 to 4266 @ 12" Top (12 Bars Per Set) & 1 Set 7427 to 7266 @ 6" Bott. (23 Bars Per Set)
C	4-5118 Equal Spaced (Bott. of Sleeper Slab)
D	27-4118 @ 12" Top
E	1 Set 4114 to 4015 @ 12" Top (16 Bars Per Set)
F	54-7118 @ 6" Bott.
G	1 Set 4114 to 4015 @ 6" Bott. (31 Bars Per Set)
H	5214 Top & Bott.
J	4431 Top
K	2-7431 @ 6" Bott.
L	27-4040 @ 12"
M	AS4049 Top & Bott. (at Chamfer)
N	AS4050 Top & Bott. (at Chamfer)

PANEL NUMBER (I12)	
BAR	MARK
A	13-AS5072 @ 12" & 13-AS5034 @ 12"
B	1 Set 4511 to 4359 @ 12" Top (12 Bars Per Set) & 1 Set 7511 to 7359 @ 6" Bott. (23 Bars Per Set)
C	4-5118 Equal Spaced (Bott. of Sleeper Slab)
D	36-4118 @ 12" Top
E	1 Set 4116 to 4017 @ 12" Top (16 Bars Per Set)
F	72-7118 @ 6" Bott.
G	1 Set 4116 to 4017 @ 6" Bott. (31 Bars Per Set)
H	5215 Top & Bott.
J	4525 Top
K	2-7525 @ 6" Bott.
L	36-4040 @ 12"
M	AS4049 Top & Bott. (at Chamfer)
N	AS4050 Top & Bott. (at Chamfer)

PANEL NUMBER (I16)	
BAR	MARK
A	13-AS5072 @ 12" & 13-AS5034 @ 12"
B	1 Set 4546 to 43810 @ 12" Top (12 Bars Per Set) & 1 Set 7546 to 73810 @ 6" Bott. (23 Bars Per Set)
C	4-5118 Equal Spaced (Bott. of Sleeper Slab)
D	39-4118 @ 12" Top
E	1 Set 4117 to 4014 @ 12" Top (16 Bars Per Set)
F	78-7118 @ 6" Bott.
G	1 Set 4117 to 4014 @ 6" Bott. (31 Bars Per Set)
H	5214 Top & Bott.
J	4550 Top
K	2-7550 @ 6" Bott.
L	24-4040 @ 12"
M	AS4049 Top & Bott. (at Chamfer)
N	AS4050 Top & Bott. (at Chamfer)

PANEL NUMBER (I13)	
BAR	MARK
A	13-AS5072 @ 12" & 13-AS5034 @ 12"
B	1 Set 4489 to 4328 @ 12" Top (12 Bars Per Set) & 1 Set 7489 to 7328 @ 6" Bott. (23 Bars Per Set)
C	4-5118 Equal Spaced (Bott. of Sleeper Slab)
D	33-4118 @ 12" Top
E	1 Set 4115 to 4016 @ 12" Top (16 Bars Per Set)
F	66-7118 @ 6" Bott.
G	1 Set 4115 to 4016 @ 6" Bott. (31 Bars Per Set)
H	5215 Top & Bott.
J	4493 Top
K	2-7493 @ 6" Bott.
L	33-4040 @ 12"
M	AS4049 Top & Bott. (at Chamfer)
N	AS4050 Top & Bott. (at Chamfer)

PANEL NUMBER (E12)	
BAR	MARK
A	21-AS5072 @ 12" & 21-AS5034 @ 12"
B	1 Set 4667 to 4397 @ 12" Top (18 Bars Per Set) & 1 Set 7667 to 7397 @ 6" Bott. (35 Bars Per Set)
C	4-5200 Equal Spaced (Bott. of Sleeper Slab)
D	1 Set 41911 to 4215 @ 12" Top (39 Bars Per Set)
E	1 Set 41910 to 4014 @ 12" Top (28 Bars Per Set)
F	1 Set 71911 to 7215 @ 6" Bott. (78 Bars Per Set)
G	1 Set 41910 to 4014 @ 6" Bott. (55 Bars Per Set)
H	5377 Top & Bott.
J	4670 Top
K	2-7670 @ 6" Bott.
L	36-4040 @ 12"
M	AS4049 Top & Bott. (at Chamfer)
N	----
V	11-P5060 @ 6" Each End (22 Total)
W	28-P5060 @ 12"
X	2-4389 @ 12" Top
Y	3-7389 @ 6" Bott.
Z	78-5036 @ 6" Top (in Line with Transverse Bars)

NOTES

1. For Sections and Details See "Approach Slab Section and Details" Sheet.
2. Spacing Listed in Tables is Maximum Spacing. Maximum Distance From the Center of Reinforcement to Face of Concrete is 3". When Number of Bars at Spacing Shown Exceeds the Width Required Place Reinforcement at Equal Spaces.

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1646	02/03/17
NO.	DESCRIPTION	DATE

DESIGN UNIT S1-07

AS-BUILT DRAWING

JANUARY 04, 2019



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15NOAKEY

APPROACH SLAB NO. 1
REINFORCEMENT TABLE

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DESIGNED BY CAW
DRAWN BY EAS
CHECKED BY PLK
REVIEWED BY DAA

H-933N

2/11/2020
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			STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
			NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1647

PANEL NUMBER E21	
BAR	MARK
A	14-AS5072 @ 12" & 14-AS5034 @ 12"
B	1 Set 43810 to 4546 @ 12" Top (12 Bars Per Set) & 1 Set 73810 to 7546 @ 6" Bott. (22 Bars Per Set)
C	4-5132 Equal Spaced (Bott. of Sleeper Slab)
D	39-4132 @ 12" Top
E	1 Set 4110 to 4014 @ 12" Top (16 Bars Per Set)
F	77-7132 @ 6" Bott.
G	1 Set 4114 to 4014 @ 6" Bott. (32 Bars Per Set)
H	5234 Top & Bott.
J	4550 Top
K	2-7550 @ 6" Bott.
L	----
M	AS4049 Top & Bott. (at Chamfer)
N	----
V	11-P5060 @ 6" Each End (22 Total)
W	27-P5060 @ 12"
X	2-43711 @ 12" Top
Y	3-73711 @ 6" Bott.
Z	77-5036 @ 6" Top (in Line with Transverse Bars)

PANEL NUMBER I24	
BAR	MARK
A	13-AS5072 @ 12" & 13-AS5034 @ 12"
B	1 Set 4372 to 4537 @ 12" Top (12 Bars Per Set) & 1 Set 7372 to 7537 @ 6" Bott. (23 Bars Per Set)
C	4-5118 Equal Spaced (Bott. of Sleeper Slab)
D	38-4118 @ 12" Top
E	1 Set 4111 to 4014 @ 12" Top (16 Bars Per Set)
F	75-7118 @ 6" Bott.
G	1 Set 4115 to 4014 @ 6" Bott. (32 Bars Per Set)
H	5218 Top & Bott.
J	4540 Top
K	2-7540 @ 6" Bott.
L	33-4040 @ 12"
M	AS4049 Top & Bott. (at Chamfer)
N	AS4050 Top & Bott. (at Chamfer)

PANEL NUMBER I28	
BAR	MARK
A	6-AS5072 @ 12" & 6-AS5034 @ 12"
B	1 Set 43510 to 4386 @ 12" Top (5 Bars Per Set) & 1 Set 73510 to 7386 @ 6" Bott. (8 Bars Per Set)
C	4-5042 Equal Spaced (Bott. of Sleeper Slab)
D	1 Set 4044 to 4027 @ 12" Top (36 Bars Per Set)
E	1 Set 4025 to 4010 @ 12" Top (3 Bars Per Set)
F	1 Set 7044 to 7027 @ 6" Bott. (72 Bars Per Set)
G	1 Set 4025 to 4010 @ 6" Bott. (5 Bars Per Set)
H	5049 Top & Bott.
J	4387 Top
K	2-7387 @ 6" Bott.
L	33-4040 @ 12"
M	AS4049 Top & Bott. (at Chamfer)
N	AS4050 Top & Bott. (at Chamfer)

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1647	02/03/17
NO.	DESCRIPTION	DATE

PANEL NUMBER I21	
BAR	MARK
A	13-AS5072 @ 12" & 13-AS5034 @ 12"
B	1 Set 4417 to 4581 @ 12" Top (12 Bars Per Set) & 1 Set 7417 to 7581 @ 6" Bott. (23 Bars Per Set)
C	4-5118 Equal Spaced (Bott. of Sleeper Slab)
D	42-4118 @ 12" Top
E	1 Set 4115 to 4018 @ 12" Top (16 Bars Per Set)
F	84-7118 @ 6" Bott.
G	1 Set 4115 to 4018 @ 6" Bott. (31 Bars Per Set)
H	5219 Top & Bott.
J	4587 Top
K	2-7557 @ 6" Bott.
L	39-4040 @ 12"
M	AS4049 Top & Bott. (at Chamfer)
N	AS4050 Top & Bott. (at Chamfer)

PANEL NUMBER I25	
BAR	MARK
A	13-AS5072 @ 12" & 13-AS5034 @ 12"
B	1 Set 4407 to 4570 @ 12" Top (12 Bars Per Set) & 1 Set 7407 to 7570 @ 6" Bott. (23 Bars Per Set)
C	4-5118 Equal Spaced (Bott. of Sleeper Slab)
D	41-4118 @ 12" Top
E	1 Set 4115 to 4018 @ 12" Top (16 Bars Per Set)
F	82-7118 @ 6" Bott.
G	1 Set 4115 to 4018 @ 6" Bott. (31 Bars Per Set)
H	5218 Top & Bott.
J	4576 Top
K	2-7576 @ 6" Bott.
L	38-4040 @ 12"
M	AS4049 Top & Bott. (at Chamfer)
N	AS4050 Top & Bott. (at Chamfer)

PANEL NUMBER E22	
BAR	MARK
A	18-AS5072 @ 12" & 18-AS5034 @ 12"
B	1 Set 4250 to 44511 @ 12" Top (17 Bars Per Set) & 1 Set 7250 to 74511 @ 6" Bott. (32 Bars Per Set)
C	4-5172 Equal Spaced (Bott. of Sleeper Slab)
D	26-4172 @ 12" Top
E	1 Set 4165 to 4020 @ 12" Top (21 Bars Per Set)
F	51-7172 @ 6" Bott.
G	1 Set 41610 to 4020 @ 6" Bott. (42 Bars Per Set)
H	5282 Top & Bott.
J	----
K	----
L	22-4040 @ 12"
M	----
N	AS4050 Top & Bott. (at Chamfer)
V	11-P5060 @ 6" Each End (22 Total)
W	36-P5060 @ 12"
X	2-4470 @ 12" Top
Y	3-7470 @ 6" Bott.
Z	89-5036 @ 6" Top (in Line with Transverse Bars)

PANEL NUMBER I22	
BAR	MARK
A	13-AS5072 @ 12" & 13-AS5034 @ 12"
B	1 Set 4302 to 4467 @ 12" Top (12 Bars Per Set) & 1 Set 7302 to 7467 @ 6" Bott. (23 Bars Per Set)
C	4-5118 Equal Spaced (Bott. of Sleeper Slab)
D	31-4118 @ 12" Top
E	1 Set 4111 to 4014 @ 12" Top (16 Bars Per Set)
F	61-7118 @ 6" Bott.
G	1 Set 4115 to 4014 @ 6" Bott. (32 Bars Per Set)
H	5219 Top & Bott.
J	4471 Top
K	2-7471 @ 6" Bott.
L	27-4040 @ 12"
M	AS4049 Top & Bott. (at Chamfer)
N	AS4050 Top & Bott. (at Chamfer)

PANEL NUMBER I26	
BAR	MARK
A	13-AS5072 @ 12" & 13-AS5034 @ 12"
B	1 Set 4291 to 4455 @ 12" Top (12 Bars Per Set) & 1 Set 7291 to 7455 @ 6" Bott. (23 Bars Per Set)
C	4-5118 Equal Spaced (Bott. of Sleeper Slab)
D	30-4118 @ 12" Top
E	1 Set 4110 to 4013 @ 12" Top (16 Bars Per Set)
F	59-7118 @ 6" Bott.
G	1 Set 4115 to 4013 @ 6" Bott. (32 Bars Per Set)
H	5217 Top & Bott.
J	44511 Top
K	2-74511 @ 6" Bott.
L	26-4040 @ 12"
M	AS4049 Top & Bott. (at Chamfer)
N	AS4050 Top & Bott. (at Chamfer)

PANEL NUMBER I27	
BAR	MARK
A	13-AS5072 @ 12" & 13-AS5034 @ 12"
B	1 Set 4325 to 44810 @ 12" Top (12 Bars Per Set) & 1 Set 7325 to 74810 @ 6" Bott. (23 Bars Per Set)
C	4-5118 Equal Spaced (Bott. of Sleeper Slab)
D	33-4118 @ 12" Top
E	1 Set 4114 to 4016 @ 12" Top (16 Bars Per Set)
F	65-7118 @ 6" Bott.
G	1 Set 4117 to 4016 @ 6" Bott. (32 Bars Per Set)
H	5217 Top & Bott.
J	4493 Top
K	2-7493 @ 6" Bott.
L	30-4040 @ 12"
M	AS4049 Top & Bott. (at Chamfer)
N	AS4050 Top & Bott. (at Chamfer)

NOTES

- For Sections and Details See "Approach Slab Sections and Details" Sheet.
- Spacing Listed in Tables is Maximum Spacing. Maximum Distance From the Center of Reinforcement to Face of Concrete is 3". When Number of Bars at Spacing Shown Exceeds the Width Required Place Reinforcement at Equal Spaces.

H-933N

DESIGN UNIT S1-07

AS-BUILT DRAWING

JANUARY 04, 2019



R₂H ENGINEERING, INC.
CONSULTING STRUCTURAL ENGINEERS
2610 HORIZON RIDGE PARKWAY, SUITE 205
LAS VEGAS, NEVADA 89052
PHONE (702) 260-7000 FAX (702) 260-7070



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

I-15NOAKEY

APPROACH SLAB NO. 2
REINFORCEMENT TABLE

ATKINS

2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
www.atkinsglobal.com

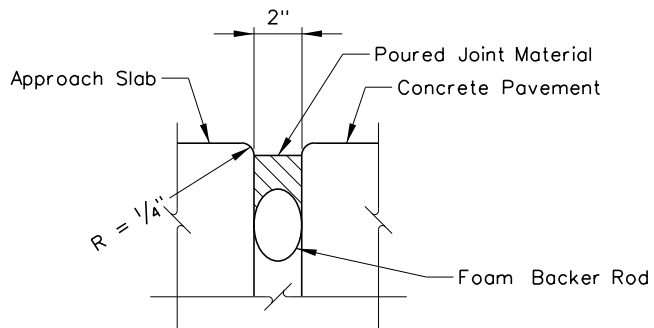
DESIGNED BY CAW
DRAWN BY EAS
CHECKED BY PLK
REVIEWED BY DAA

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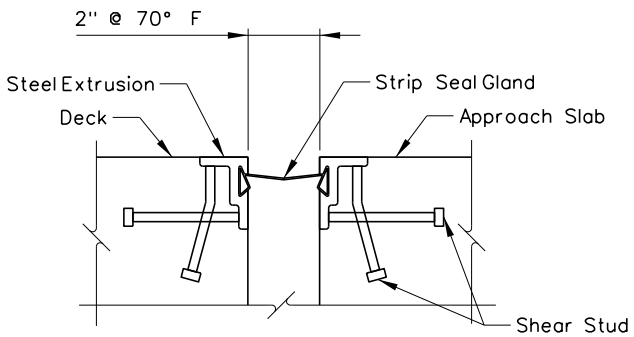
STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1648

Notes:

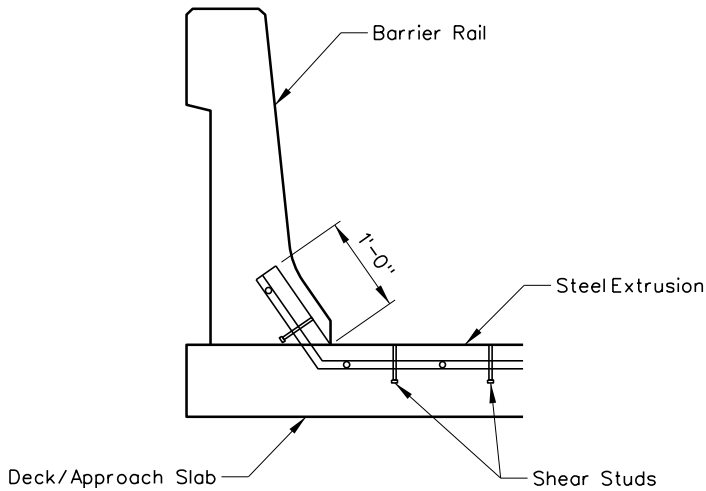
1. Provide a strip sealgland with minimum movement rating of 4 inches.
2. All structural steel and strip seal extrusions shall be AASHTO M270 Grade 36, 50, or 50W steel. Unless 50W materials is used, all welded anchorages shall be galvanized.
3. The strip seal and poured joint manufacturer's installation instructions must be followed.
4. The strip sealgland shall be installed as a single continuous unit. No field splicing shall be permitted.
5. The strip seal expansion joint opening shall be increased by $\frac{1}{8}$ " for every 10° F temperature fall from 70° F and shall be decrease by $\frac{1}{8}$ " for every 10° F temperature rise from 70° F.
6. Galvanized assembly after fabrication or use A588 steel. Assembly to extend full width or to the face of any bridge or barrier rails. Full penetration butt weld any field splices.
7. All steel components of the Restrainer Assembly to be galvanized.



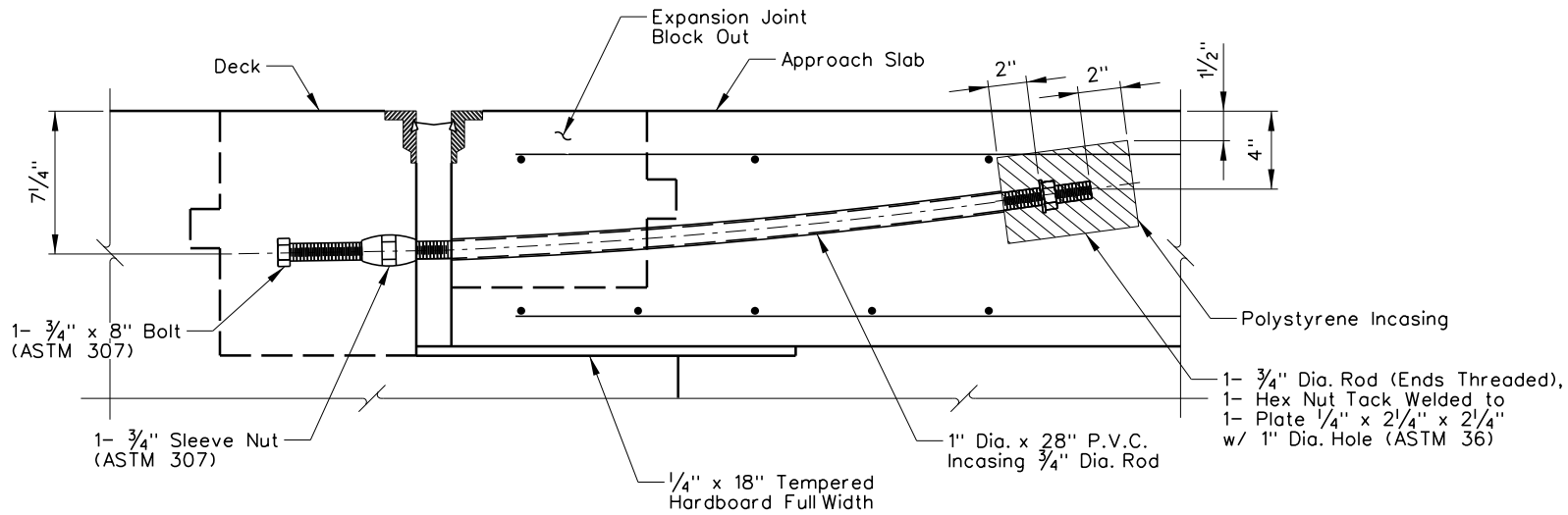
DETAIL A



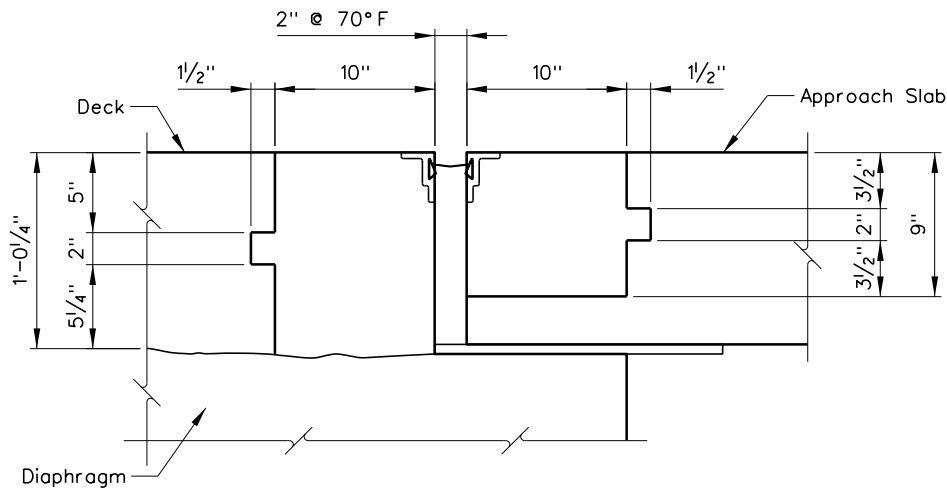
DETAIL B



STEEL EXTRUSION AT BARRIER RAIL



APPROACH SLAB RESTRAINER ASSEMBLY



BLOCK OUT DETAIL

Dimensions Are Perpendicular to Abutment C

H-933N

NO.	DESCRIPTION	DATE
2	AS-BUILTS - RF11410	05/01/19
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1648	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
MAY 1, 2019



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/OAKLEY
EXPANSION JOINT DETAILS

ATKINS
2270 Corporate Circle
Suite 200
Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
www.atkinsglobal.com

DESIGNED BY: CAW
DRAWN BY: WKM
CHECKED BY: PLK
REVIEWED BY: DAA

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GENERAL NOTES:

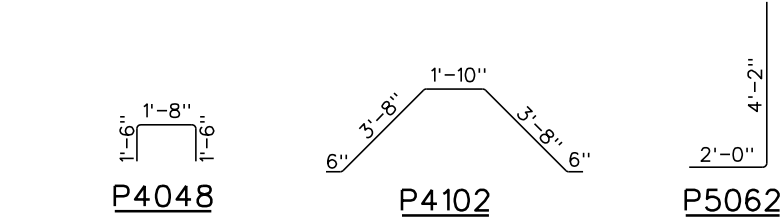
- Applies Unless Noted Otherwise On The Drawings.
- Design Specifications:
International Building Code (IBC) 2012 With Southern Nevada Amendments
 - Loading:
Wind Load
Risk Category = I
Basic Wind Speed = 105 MPH, Exposure C
 $K_z = 1.05$
 $K_{zt} = 1.0$
 $K_d = 0.85$
 $C_f = 1.8$
 $G = 0.85$
 - Concrete:
Refer to bridge General Notes Sheet.
 - Reinforcing:
Refer to bridge General Notes Sheet.
 - Structural Steel:
Structural steel plates and shapes shall conform to ASTM A36, Min.
 - Bolted Connections:
Anchor rods include hooked, headed, and threaded and nutted Anchors.
The terms anchor bolt and anchor rod are used synonymously throughout these documents. Fabricate anchor bolts from material conforming to ASTM F1554 grade 55. All anchor rods shall be installed with steel washers at holes using snug tight installation unless noted otherwise.

Anchor rod, washers and nuts shall be galvanized with the same process to ensure the threads match.
 - Shop Drawings:
Shop drawings shall be submitted for base plates, anchor bolts and pedestal reinforcement in addition to items required by Sheet L2.

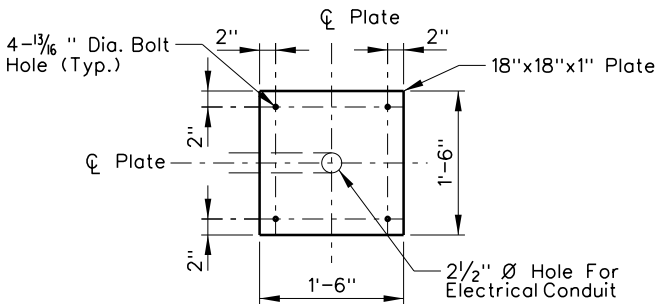
Verify all dimensions with Sheet L2 and field conditions.
 - Mainline monument not shown on this sheet. Refer to Sheet L2 for details.
 - Junction box details type 2 refer to NDOT Standard Sheet T-30.1.20.

BILL OF MATERIALS

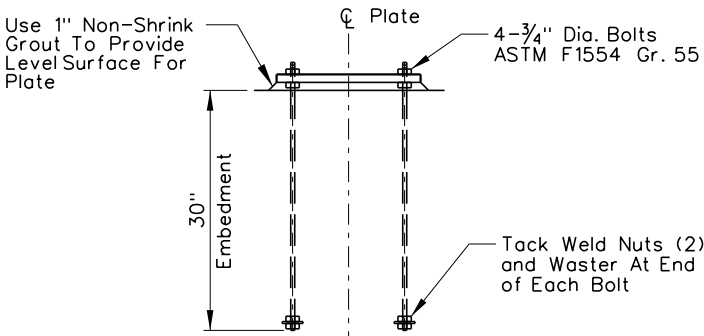
South/North East Pedestal					
Mark	Size	Length	No. of Bars	Weight	
40110	4	1	10	8	9.80 lb
5050	5	5	0	6	31.29 lb
P4048	P 4	4	8	6	18.70 lb
P5062	P 5	6	2	14	90.05 lb
P4102	P 4	10	2	14	95.08 lb
				Reinforcing steel	244.92 lb



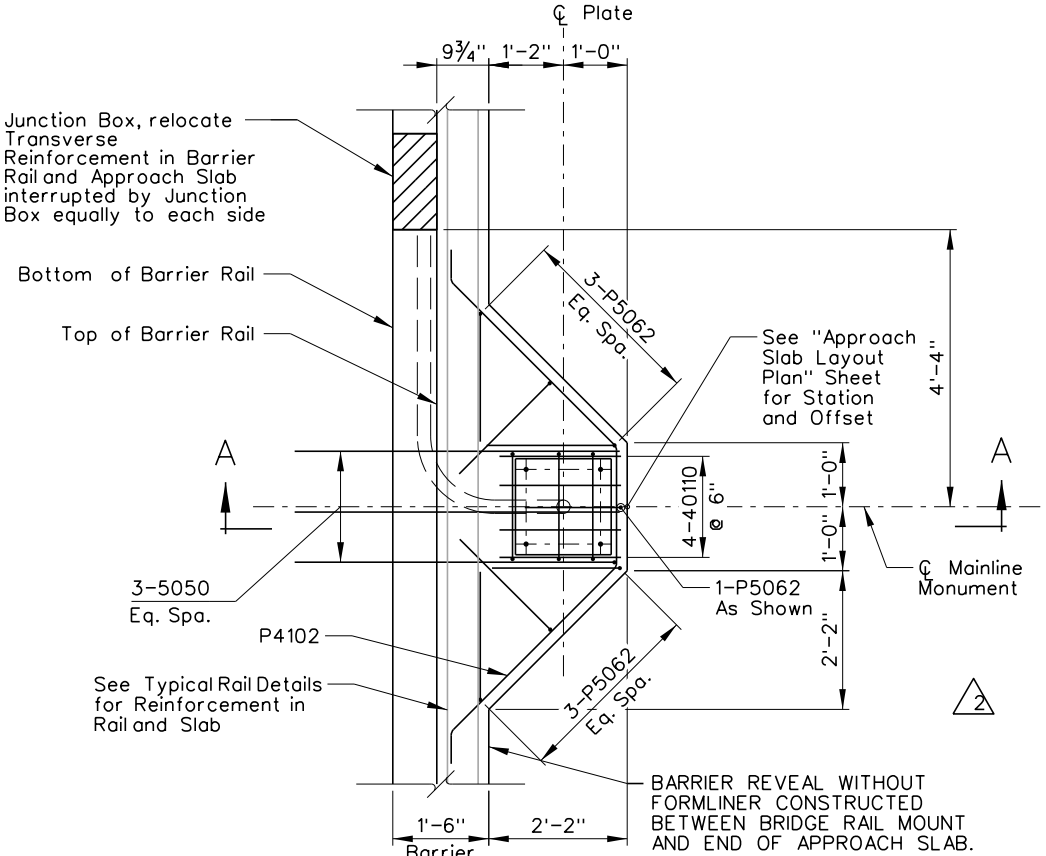
BAR BENDS



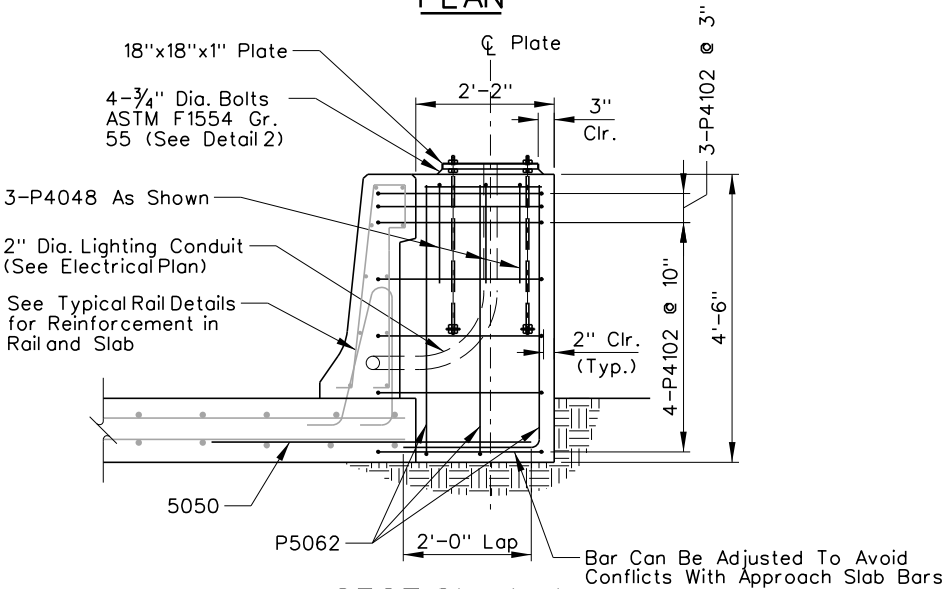
DETAIL 1



DETAIL 2



PLAN



SECTION A-A

H-933N

NO.	DESCRIPTION	DATE
2	NDC 1132 - MAINLINE MONUMENT CLARIFICATION	06/21/18
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1649	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019



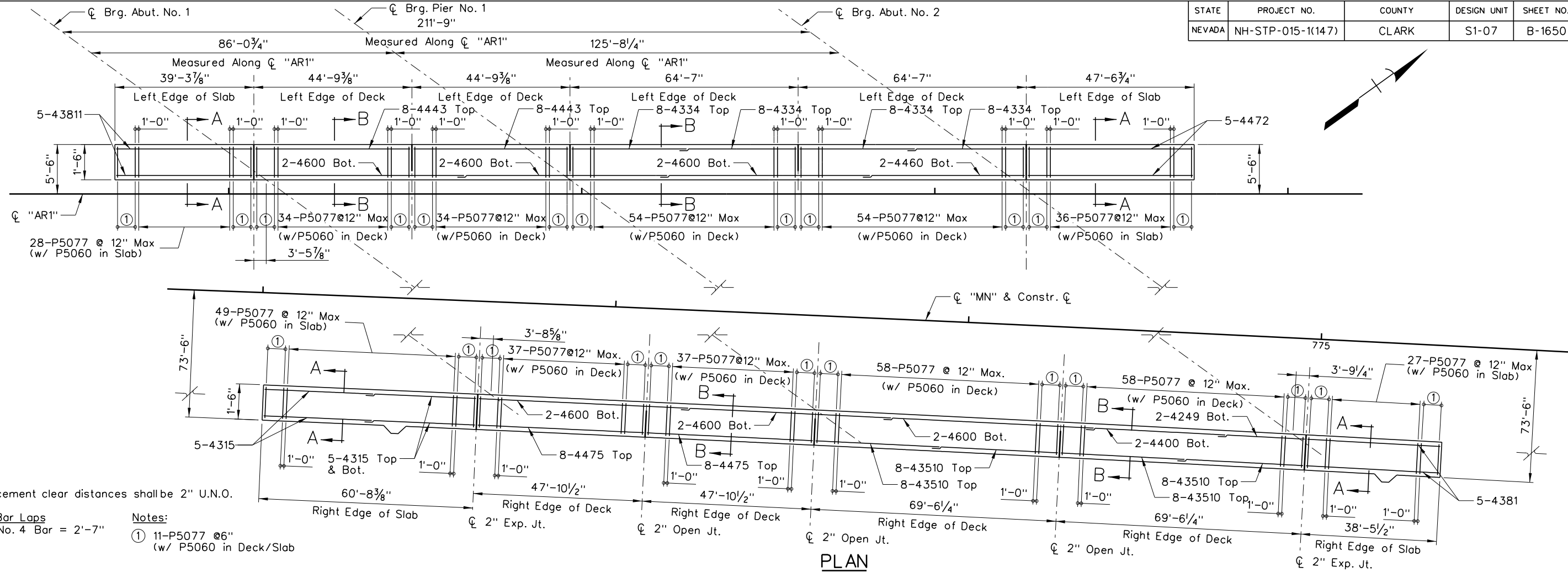
STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/OAKLEY
BRIDGE RAIL MOUNT DETAILS



DESIGNED BY: CAW
DRAWN BY: EAS
CHECKED BY: PLK
REVIEWED BY: DAA

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NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1650

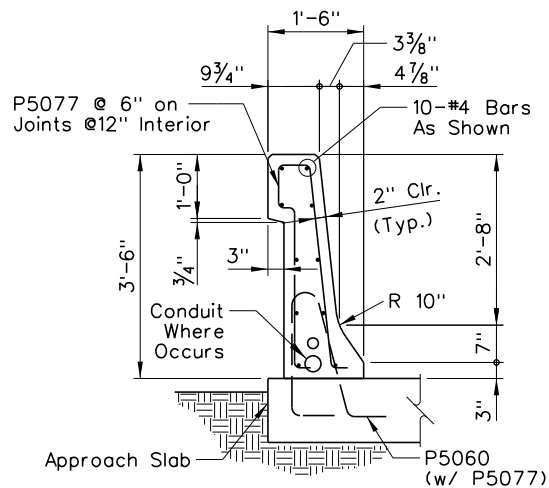


Notes:
1. Reinforcement clear distances shall be 2" U.N.O.

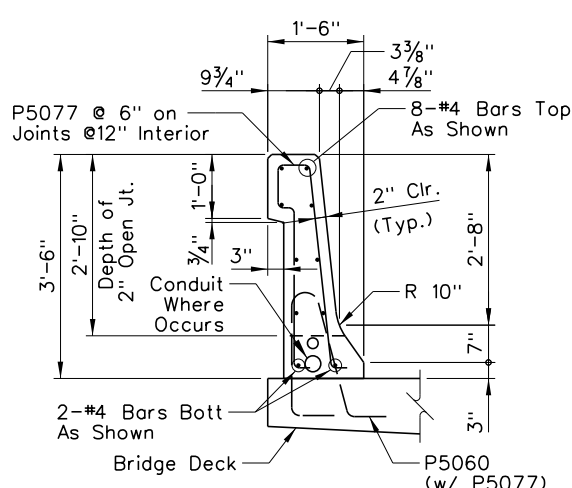
Minimum Bar Laps
No. 4 to No. 4 Bar = 2'-7"

Notes:
① 11-P5077 @6"
(w/ P5060 in Deck/Slab)

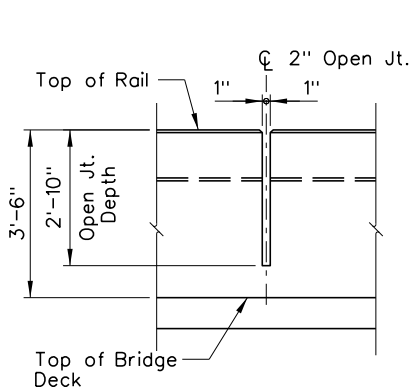
PLAN



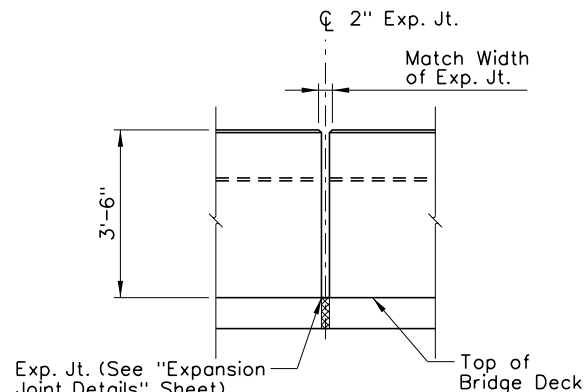
SECTION A-A



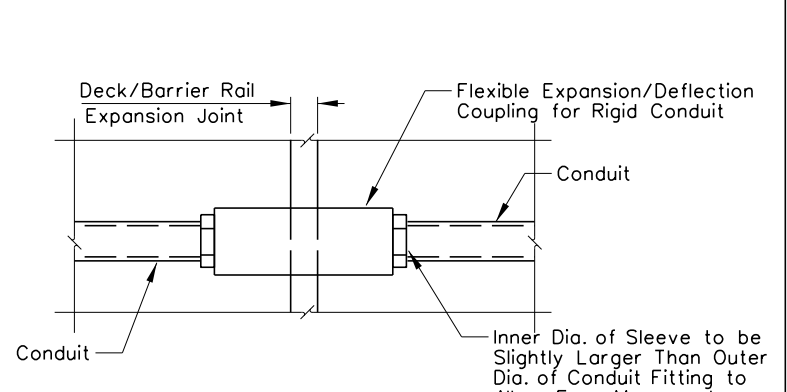
SECTION B-B



OPEN JT DETAIL



TYP EXPANSION JOINT



CONDUIT EXPANSION JOINT DETAIL

H-933N

NO.	DESCRIPTION	DATE
1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1650	02/03/17

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019



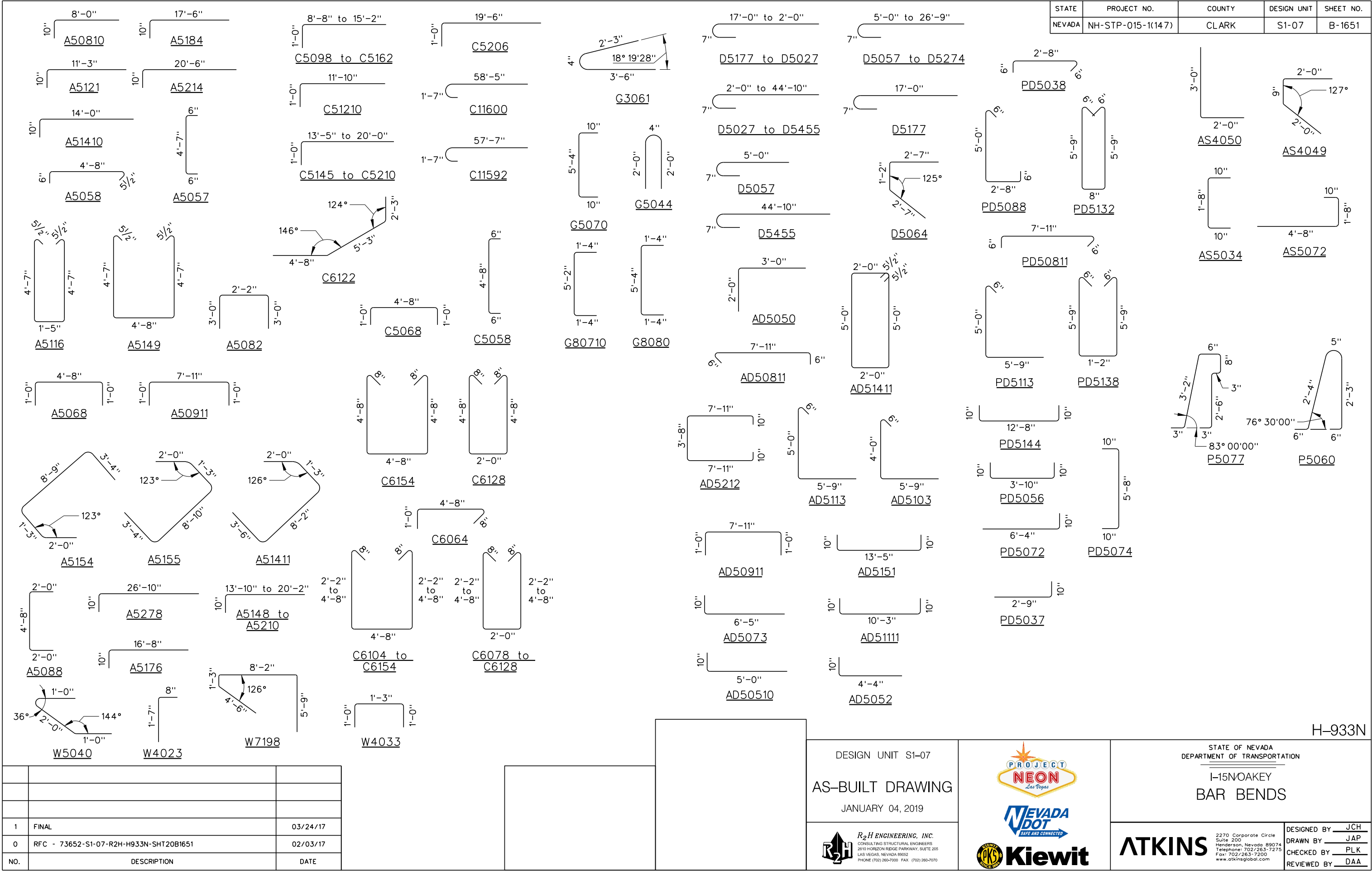
STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/OAKLEY
BRIDGE RAIL

ATKINS

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Henderson, Nevada 89074
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DESIGNED BY: CAW
DRAWN BY: EAS
CHECKED BY: PLK
REVIEWED BY: DAA

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H-933N

H-933N

H-933N

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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1654

Approach Slab No. 1 Panel Number E11															
Bar		Mark			Size	Length		No. of Bars			Weight				
A		AS5072			AS	5	7	2	14			104.65 lb			
A		AS5034			AS	5	3	4	14			48.67 lb			
B	1	Set	4590	to		4	42	1	12	Bars Per Set	405.14 lb				
B	1	Set	7590	to		7	42	1	23	Bars Per Set	2376.06 lb				
C		5132				5	13	2	4			54.93 lb			
D		4132				4	13	2	43			378.20 lb			
E	1	Set	4127	to		4	2	0	17	Bars Per Set	82.80 lb				
F		7132				7	13	2	85			2287.58 lb			
G	1	Set	41211	to		4	2	0	34	Bars Per Set	169.39 lb				
H		5229				5	22	9	2			47.46 lb			
N		AS4050			AS	4	5	0	2			6.68 lb			
W		P5060			P	5	6	0	71			444.32 lb			
X		4602				4	60	2	2			80.38 lb			
Y		7602				7	60	2	3			368.94 lb			
Z		5036				5	3	6	114			416.16 lb			

Reinforcing steel 7271.37 lb

Approach Slab No. 1 Panel Number I11																	
Bar		Mark			Size	Length		No. of Bars			Weight						
A		AS5072			AS	5	7	2	13			97.17 lb					
A		AS5034			AS	5	3	4	13			45.20 lb					
B	1	Set	4550	to		4	38	11	12	Bars Per Set		376.42 lb					
B	1	Set	7550	to		7	38	11	23	Bars Per Set		2207.61 lb					
C		5118				5	11	8	4			48.67 lb					
D		4118				4	11	8	39			303.94 lb					
E	1	Set	4117	to		4	1	0	17	Bars Per Set		71.45 lb					
F		7118				7	11	8	78			1860.04 lb					
G	1	Set	4117	to		4	1	0	33	Bars Per Set		138.69 lb					
H		5215				5	21	5	2			44.68 lb					
J		4556				4	55	6	1			37.07 lb					
K		7556				7	55	6	2			226.88 lb					
L		4040				4	4	0	39			104.21 lb					
M		AS4049			AS	4	4	9	2			6.35 lb					
N		AS4050			AS	4	5	0	2			6.68 lb					

Reinforcing steel 5575.05 lb

Approach Slab No. 1 Panel Number I12																	
Bar		Mark			Size	Length		No. of Bars				Weight					
A		AS5072			AS	5	7	2	13				97.17 lb				
A		AS5034			AS	5	3	4	13				45.20 lb				
B	1	Set	4511	to		4	35	9	12	Bars Per Set		348.03 lb					
B	1	Set	7511	to		7	35	9	23	Bars Per Set		2041.10 lb					
C		5118				5	11	8	4				48.67 lb				
D		4118				4	11	8	36				280.56 lb				
E	1	Set	4116	to		4	1	7	16	Bars Per Set		69.92 lb					
F		7118				7	11	8	72				1716.96 lb				
G	1	Set	4116	to		4	1	7	31	Bars Per Set		135.46 lb					
H		5215				5	21	5	2				44.68 lb				
J		4525				4	52	5	1				35.01 lb				
K		7525				7	52	5	2				214.28 lb				
L		4040				4	4	0	36				96.19 lb				
M		AS4049			AS	4	4	9	2				6.35 lb				
N		AS4050			AS	4	5	0	2				6.68 lb				

Reinforcing steel 5186.26 lb

Approach Slab No. 1 Panel Number I13												
Bar	Mark				Size	Length		No. of Bars			Weight	
A	AS5072				AS	5	7	2	13			97.17 lb
A	AS5034				AS	5	3	4	13			45.20 lb
B	1	Set	4489	to		4	32	8	12	Bars Per Set	326.32 lb	
B	1	Set	7489	to		7	32	8	23	Bars Per Set	1913.78 lb	
C	5118					5	11	8	4		48.67 lb	
D	4118					4	11	8	33		257.18 lb	
E	1	Set	4115	to		4	1	6	16	Bars Per Set	69.03 lb	
F	7118					7	11	8	66		1573.88 lb	
G	1	Set	4115	to		4	1	6	31	Bars Per Set	133.74 lb	
H	5215					5	21	5	2		44.68 lb	
J	4493					4	49	3	1		32.90 lb	
K	7493					7	49	3	2		201.33 lb	
L	4040					4	4	0	33		88.18 lb	
M	AS4049				AS	4	4	9	2		6.35 lb	
N	AS4050				AS	4	5	0	2		6.68 lb	

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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1655

Approach Slab No. 1 Panel Number I16						Approach Slab No. 2 Panel Number E21						Approach Slab No. 2 Panel Number I22					
Bar	Mark	Size	Length	No. of Bars	Weight	Bar	Mark	Size	Length	No. of Bars	Weight	Bar	Mark	Size	Length	No. of Bars	Weight
A	AS5072	AS 5	7 2	13	97.17 lb	A	AS5072	AS 5	7 2	14	104.65 lb	A	AS5072	AS 5	7 2	13	97.17 lb
A	AS5034	AS 5	3 4	13	45.20 lb	A	AS5034	AS 5	3 4	14	48.67 lb	A	AS5034	AS 5	3 4	13	45.20 lb
B 1 Set	4546 to	4	38 10	12 Bars Per Set	374.08 lb	B 1 Set	43810 to	4	54 6	12 Bars Per Set	374.08 lb	B 1 Set	4302 to	4	46 7	12 Bars Per Set	307.61 lb
B 1 Set	7546 to	7	38 10	23 Bars Per Set	2193.89 lb	B 1 Set	73810 to	7	54 6	22 Bars Per Set	2098.51 lb	B 1 Set	7302 to	7	46 7	23 Bars Per Set	1804.09 lb
C	5118	5	11 8	4	48.67 lb	C	5132	5	13 2	4	54.93 lb	C	5118	5	11 8	4	48.67 lb
D	4118	4	11 8	39	303.94 lb	D	4132	4	13 2	39	343.02 lb	D	4118	4	11 8	31	241.59 lb
E 1 Set	4117 to	4	1 4	16 Bars Per Set	69.03 lb	E 1 Set	4110 to	4	1 4	16 Bars Per Set	65.91 lb	E 1 Set	4111 to	4	1 4	16 Bars Per Set	66.35 lb
F	7118	7	11 8	78	1860.04 lb	F	7132	7	13 2	77	2072.28 lb	F	7118	7	11 8	61	1454.65 lb
G 1 Set	4117 to	4	1 4	31 Bars Per Set	133.74 lb	G 1 Set	4114 to	4	1 4	32 Bars Per Set	135.38 lb	G 1 Set	4115 to	4	1 4	32 Bars Per Set	136.27 lb
H	5214	5	21 4	2	44.50 lb	H	5234	5	23 4	2	48.67 lb	H	5219	5	21 9	2	45.37 lb
J	4550	4	55 0	1	36.74 lb	J	4550	4	55 0	1	36.74 lb	J	4471	4	47 1	1	31.45 lb
K	7550	7	55 0	2	224.84 lb	K	7550	7	55 0	2	224.84 lb	K	7471	7	47 1	2	192.48 lb
L	4040	4	4 0	24	64.13 lb	M	AS4049	AS 4	4 9	2	6.35 lb	L	4040	4	4 0	27	72.14 lb
M	AS4049	AS 4	4 9	2	6.35 lb	W	P5060	P 5	6 0	49	306.64 lb	M	AS4049	AS 4	4 9	2	6.35 lb
N	AS4050	AS 4	5 0	2	6.68 lb	X	43711	4	37 11	2	50.66 lb	N	AS4050	AS 4	5 0	2	6.68 lb
						Y	73711	7	37 11	3	232.51 lb						
						Z	5036	5	3 6	77	281.09 lb						
					Reinforcing steel												Reinforcing steel
					5509.00 lb												4556.08 lb
Approach Slab No. 1 Panel Number E12						Approach Slab No. 2 Panel Number I21						Approach Slab No. 2 Panel Number I23					
Bar	Mark	Size	Length	No. of Bars	Weight	Bar	Mark	Size	Length	No. of Bars	Weight	Bar	Mark	Size	Length	No. of Bars	Weight
A	AS5072	AS 5	7 2	21	156.97 lb	A	AS5072	AS 5	7 2	13	97.17 lb	A	AS5072	AS 5	7 2	13	97.17 lb
A	AS5034	AS 5	3 4	21	73.01 lb	A	AS5034	AS 5	3 4	13	45.20 lb	A	AS5034	AS 5	3 4	13	45.20 lb
B 1 Set	4667 to	4	39 7	18 Bars Per Set	638.27 lb	B 1 Set	4417 to	4	58 1	12 Bars Per Set	399.46 lb	B 1 Set	4338 to	4	50 5	12 Bars Per Set	337.01 lb
B 1 Set	7667 to	7	39 7	35 Bars Per Set	3797.58 lb	B 1 Set	7417 to	7	58 1	23 Bars Per Set	2342.76 lb	B 1 Set	7338 to	7	50 5	23 Bars Per Set	1976.46 lb
C	5200	5	20 0	4	83.44 lb	C	5118	5	11 8	4	48.67 lb	C	5118	5	11 8	4	48.67 lb
D 1 Set	41911 to	4	21 5	39 Bars Per Set	538.41 lb	B 1 Set	7417 to	7	58 1	23 Bars Per Set	2342.76 lb	D	4118	4	11 8	34	264.97 lb
E 1 Set	41910 to	4	1 4	28 Bars Per Set	197.95 lb	C	5118	5	11 8	4	48.67 lb	E 1 Set	4115 to	4	1 8	16 Bars Per Set	69.92 lb
F 1 Set	71911 to	7	21 5	78 Bars Per Set	3294.93 lb	D	4118	4	11 8	42	327.32 lb	F	7118	7	11 8	68	1621.57 lb
G 1 Set	41910 to	4	1 4	55 Bars Per Set	388.83 lb	E 1 Set	4115 to	4	1 8	16 Bars Per Set	69.92 lb	G 1 Set	4115 to	4	1 8	31 Bars Per Set	135.46 lb
H	5377	5	37 7	2	78.40 lb	F	7118	7	11 8	84	2003.12 lb	H	5218	5	21 8	2	45.20 lb
J	4670	4	67 0	1	44.76 lb	G 1 Set	4115 to	4	1 8	31 Bars Per Set	135.46 lb	J	4507	4	50 7	1	33.79 lb
K	7670	7	67 0	2	273.90 lb	H	5219	5	21 9	2	45.37 lb	K	7507	7	50 7	2	206.78 lb
L	4040	4	4 0	36	96.19 lb	J	4587	4	58 7	1	39.13 lb	L	4040	4	4 0	31	82.83 lb
M	AS4049	AS 4	4 9	2	6.35 lb	K	7557	7	55 7	2	227.22 lb	M	AS4049	AS 4	4 9	2	6.35 lb
W	P5060	P 5	6 0	50	312.90 lb	L	4040	4	4 0	39	104.21 lb	N	AS4050	AS 4	5 0	2	6.68 lb
X	4389	4	38 9	2	51.77 lb	M	AS4049	AS 4	4 9	2	6.35 lb						Reinforcing steel
Y	7389	7	38 9	3	237.62 lb	N	AS4050	AS 4	5 0	2	6.68 lb						4978.07 lb
Z	5036	5	3 6	78	284.74 lb						Reinforcing steel						
					Reinforcing steel						5898.06 lb						
					10556.01 lb												

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1655	02/03/17
NO.	DESCRIPTION	DATE

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15NOAKEY
BILL OF MATERIALS 4

DESIGNED BY CAW
DRAWN BY EAS
CHECKED BY PLK
REVIEWED BY RCH

ATKINS

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H-933N

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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	B-1656

Approach Slab No. 2 Panel Number I24

Bar	Mark	Size	Length	No. of Bars	Weight
A	AS5072	AS 5	7 2	13	97.17 lb
A	AS5034	AS 5	3 4	13	45.20 lb
B 1 Set	4372 to	4	53 7	12 Bars Per Set	363.73 lb
B 1 Set	7372 to	7	53 7	23 Bars Per Set	2133.17 lb
C	5118	5	11 8	4	48.67 lb
D	4118	4	11 8	38	296.15 lb
E 1 Set	4111 to	4	1 4	16 Bars Per Set	66.35 lb
F	7118	7	11 8	75	1788.50 lb
G 1 Set	4115 to	4	1 4	32 Bars Per Set	136.27 lb
H	5218	5	21 8	2	45.20 lb
J	4540	4	54 0	1	36.07 lb
K	7540	7	54 0	2	220.75 lb
L	4040	4	4 0	33	88.18 lb
M	AS4049	AS 4	4 9	2	6.35 lb
N	AS4050	AS 4	5 0	2	6.68 lb

Reinforcing steel 5378.43 lb

Approach Slab No. 2 Panel Number I25

Bar	Mark	Size	Length	No. of Bars	Weight
A	AS5072	AS 5	7 2	13	97.17 lb
A	AS5034	AS 5	3 4	13	45.20 lb
B 1 Set	4407 to	4	57 0	12 Bars Per Set	391.11 lb
B 1 Set	7407 to	7	57 0	23 Bars Per Set	2293.79 lb
C	5118	5	11 8	4	48.67 lb
D	4118	4	11 8	41	319.53 lb
E 1 Set	4115 to	4	1 8	16 Bars Per Set	69.92 lb
F	7118	7	11 8	82	1955.43 lb
G 1 Set	4115 to	4	1 8	31 Bars Per Set	135.46 lb
H	5218	5	21 8	2	45.20 lb
J	4576	4	57 6	1	38.41 lb
K	7576	7	57 6	2	235.06 lb
L	4040	4	4 0	38	101.54 lb
M	AS4049	AS 4	4 9	2	6.35 lb
N	AS4050	AS 4	5 0	2	6.68 lb

Reinforcing steel 5789.51 lb

Approach Slab No. 2 Panel Number I26

Bar	Mark	Size	Length	No. of Bars	Weight
A	AS5072	AS 5	7 2	13	97.17 lb
A	AS5034	AS 5	3 4	13	45.20 lb
B 1 Set	4291 to	4	45 5	12 Bars Per Set	298.60 lb
B 1 Set	7291 to	7	45 5	23 Bars Per Set	1751.20 lb
C	5118	5	11 8	4	48.67 lb
D	4118	4	11 8	30	233.80 lb
E 1 Set	4110 to	4	1 3	16 Bars Per Set	65.46 lb
F	7118	7	11 8	59	1406.95 lb
G 1 Set	4115 to	4	1 3	32 Bars Per Set	135.38 lb
H	5217	5	21 7	2	45.02 lb
J	44511	4	45 11	1	30.67 lb
K	74511	7	45 11	2	187.71 lb
L	4040	4	4 0	26	69.47 lb
M	AS4049	AS 4	4 9	2	6.35 lb
N	AS4050	AS 4	5 0	2	6.68 lb

Reinforcing steel 4428.34 lb

Approach Slab No. 2 Panel Number I27

Bar	Mark	Size	Length	No. of Bars	Weight
A	AS5072	AS 5	7 2	13	97.17 lb
A	AS5034	AS 5	3 4	13	45.20 lb
B 1 Set	4325 to	4	48 10	12 Bars Per Set	325.65 lb
B 1 Set	7325 to	7	48 10	23 Bars Per Set	1909.86 lb
C	5118	5	11 8	4	48.67 lb
D	4118	4	11 8	33	257.18 lb
E 1 Set	4114 to	4	1 6	16 Bars Per Set	68.58 lb
F	7118	7	11 8	65	1550.03 lb
G 1 Set	4117 to	4	1 6	32 Bars Per Set	139.83 lb
H	5217	5	21 7	2	45.02 lb
J	4493	4	49 3	1	32.90 lb
K	7493	7	49 3	2	201.33 lb
L	4040	4	4 0	30	80.16 lb
M	AS4049	AS 4	4 9	2	6.35 lb
N	AS4050	AS 4	5 0	2	6.68 lb

Reinforcing steel 4814.63 lb

Approach Slab No. 2 Panel Number I28

Bar	Mark	Size	Length	No. of Bars	Weight
A	AS5072	AS 5	7 2	6	44.85 lb
A	AS5034	AS 5	3 4	6	20.86 lb
B 1 Set	43510 to	4	38 6	5 Bars Per Set	124.14 lb
B 1 Set	73510 to	7	38 6	8 Bars Per Set	607.75 lb
C	5042	5	4 2	4	17.38 lb
D 1 Set	4044 to	4	2 7	36 Bars Per Set	83.17 lb
E 1 Set	4025 to	4	1 0	3 Bars Per Set	3.42 lb
F 1 Set	4044 to	7	2 7	72 Bars Per Set	508.96 lb
G 1 Set	4025 to	4	1 0	5 Bars Per Set	5.71 lb
H	5049	5	4 9	2	9.91 lb
J	4387	4	38 7	1	25.77 lb
K	7387	7	38 7	2	157.73 lb
L	4040	4	4 0	33	88.18 lb
M	AS4049	AS 4	4 9	2	6.35 lb
N	AS4050	AS 4	5 0	2	6.68 lb

Reinforcing steel 1710.84 lb

Approach Slab No. 2 Panel Number E22

Bar	Mark	Size	Length	No. of Bars	Weight
A	AS5072	AS 5	7 2	18	134.55 lb
A	AS5034	AS 5	3 4	18	62.58 lb
B 1 Set	4250 to	4	45 11	17 Bars Per Set	402.66 lb
B 1 Set	7250 to	7	45 11	32 Bars Per Set	2319.26 lb
C	5172	5	17 2	4	71.62 lb
D	4172	4	17 2	26	298.15 lb
E 1 Set	4165 to	4	2 0	21 Bars Per Set	129.17 lb
F	7172	7	17 2	51	1789.52 lb
G 1 Set	41610 to	4	2 0	42 Bars Per Set	264.19 lb
H	5282	5	28 2	2	58.76 lb
L	4040	4	4 0	22	58.78 lb
N	AS4050	AS 4	5 0	2	6.68 lb
W	P5060	P 5	6 0	58	362.96 lb
X	4470	4	47 0	2	62.79 lb
Y	7470	7	47 0	3	288.20 lb
Z	5036	5	3 6	89	324.89 lb

Reinforcing steel 6634.79 lb

H-933N

1	FINAL	03/24/17
0	RFC - 73652-S1-07-R2H-H933N-SHT20B1656	02/03/17
NO.	DESCRIPTION	DATE

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
I-15/OAKLEY
BILL OF MATERIALS 5

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DESIGNED BY CAW
DRAWN BY EAS
CHECKED BY PLK
REVIEWED BY RCH

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FINISH NOTES:

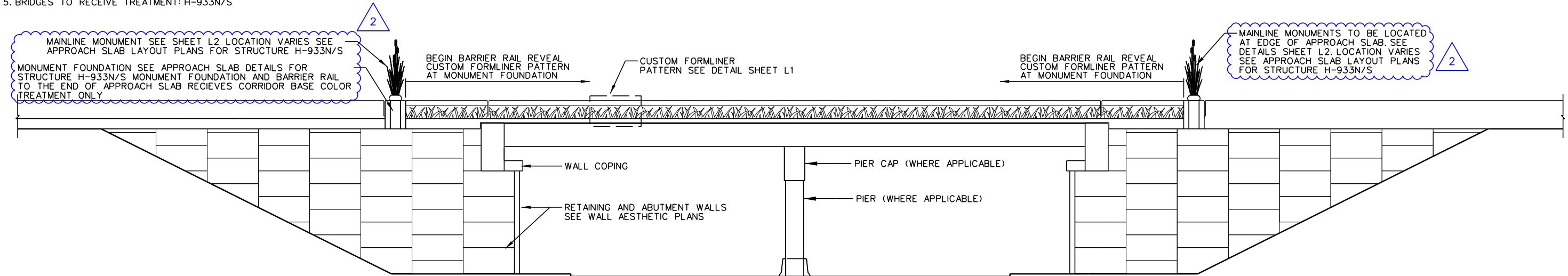
1. ALL EXPOSED SURFACES SHALL BE PAINTED THE CORRIDOR BASE COLOR EXCEPT AS NOTED BELOW. SURFACES TO BE PAINTED INCLUDE BARRIERS, BARRIER RAILS, BRIDGE RAILS, BRIDGE SUPER- AND SUBSTRUCTURES, COLUMNS, PIERS, PIER CAPS, GIRDERS, MISC. CONCRETE, AND ALL EXPOSED CONDUITS AND PIPING (IF PRESENT). SEE SHEET L1A FOR BRIDGE SUPER AND SUB STRUCTURE PAINTING LIMITS.
2. PAINT ON RETAINING WALLS, ABUTMENT WALLS, WING WALLS, PIERS, MISC. CONCRETE, AND FREE-STANDING SOUNDWALLS SHALL EXTEND A MINIMUM OF ONE-FOOT BELOW FINISH GRADE.
3. BARRIERS ON BRIDGES AND APPROACH SLABS SHALL HAVE FORMLINER TREATMENTS WITHIN THE BARRIER REVEAL. ACCENT COLORS SHALL BE APPLIED TO THE CUSTOM FORMLINER PATTERN IN BARRIER REVEAL AS SHOWN.
4. THE BASE COLOR SHALL MATCH DUNN EDWARDS "WOODED ACRE" (DE6130). ACCENT COLORS SHALL MATCH DUNN EDWARDS "WOODLAND WALK" (DE5537) AND DUNN EDWARDS "PLUM WINE" (DE5978).
5. BRIDGES TO RECEIVE TREATMENT: H-933N/S

DESIGN UNIT CROSS REFERENCE:

1. SEE DESIGN UNITS S1-02 AND S1-03 FOR RETAINING AND ABUTMENT WALL AESTHETIC TREATMENTS.
2. SEE DESIGN UNIT CW-28 FOR CUSTOM RETAINING AND ABUTMENT WALL FORMLINER DETAILS.

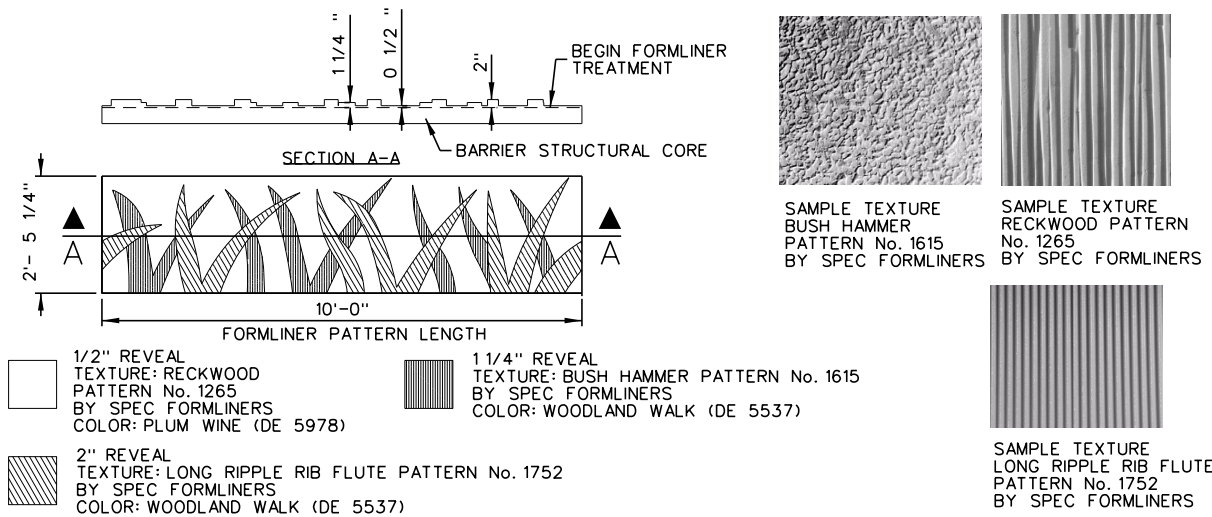
STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	L1

ALL STRUCTURES SHALL RECEIVE THE BARRIER RAIL TREATMENT AS SHOWN. STRUCTURE H-933S SHALL HAVE MAINLINE MONUMENTS ATTACHED TO THE WEST BRIDGE RAIL, STRUCTURE H-933N SHALL HAVE MAINLINE MONUMENTS ATTACHED TO THE EAST BRIDGE RAIL.



TYPICAL BRIDGE WITH MAINLINE MONUMENT ELEVATION

SCALE: 1" = 10'-0"

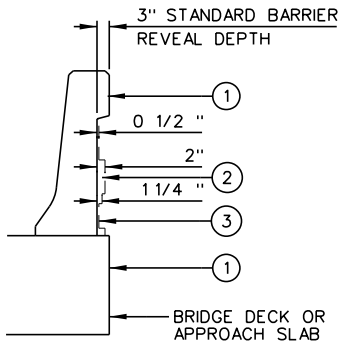
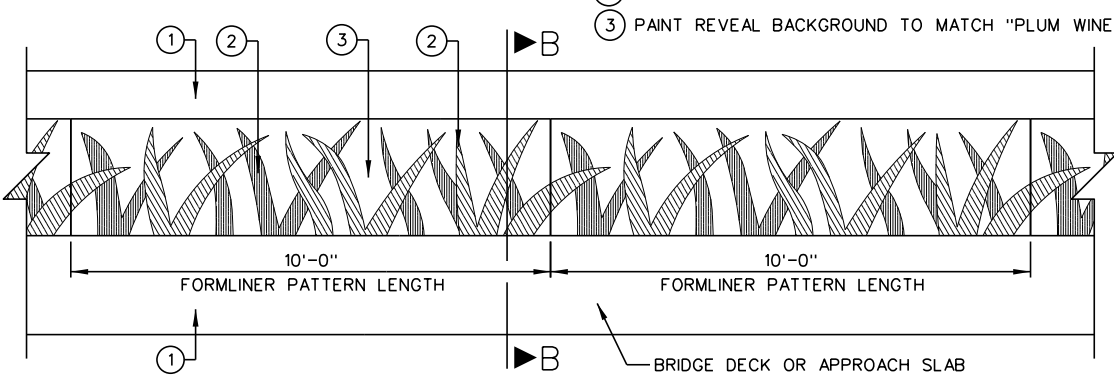


BARRIER RAIL REVEAL CUSTOM FORMLINER PATTERN

N.T.S.

KEY NOTES:

- 1 PAINT TO MATCH "WOODED ACRE"
- 2 PAINT GRASS PATTERN TO MATCH "WOODLAND WALK"
- 3 PAINT REVEAL BACKGROUND TO MATCH "PLUM WINE"



SECTION B-B

BARRIER RAIL REVEAL PAINTING

N.T.S.

NO.	DESCRIPTION	DATE
2	AS-BUILT NDC-1132 MAIN LINE MONUMENT CLARIFICATION	06/21/2018
1	FINAL	03/06/17
0	RFC - 73652-S1-07-ATK-SHT11L01	02/03/17

DESIGN UNIT S1-07

AS-BUILT DRAWING

MAY 1, 2019

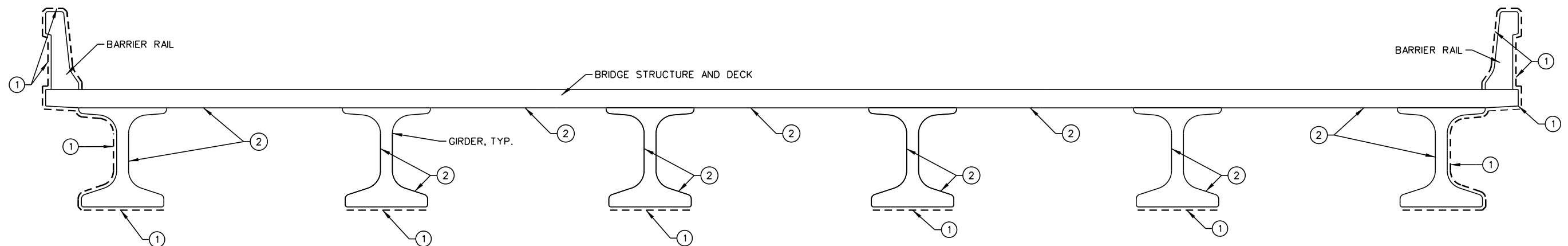


STATE OF NEVADA DEPARTMENT OF TRANSPORTATION		H-933NS	
BRIDGE AESTHETICS BARRIER RAIL FORMLINER TREATMENTS		DESIGNED BY RP	
ATKINS		DRAWN BY MD	
2270 Corporate Circle Suite 200 Henderson, Nevada 89074 Telephone: 702/263-7275 Fax: 702/263-7200 www.atkinsglobal.com		CHECKED BY SC	
		REVIEWED BY GS	

STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	L1A

KEY NOTES:

- ① SURFACES TO RECEIVE PAINT FINISH
- ② ORDINARY SURFACE FINISH PER STANDARD SPECIFICATION SECTION 503: PRESTRESSED CONCRETE AND PRECAST MEMBERS



TYPICAL BRIDGE CROSS SECTION: PAINTING LIMITS

N.T.S

1	FINAL	03/06/17
0	RFC - 73652-S1-07-ATK-SHT11L01A	02/03/17
NO.	DESCRIPTION	DATE

H-933NS

DESIGN UNIT S1-07

AS-BUILT DRAWING

JANUARY 04, 2019



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

BRIDGE AESTHETICS SUB & SUPERSTRUCTURE PAINTING LIMITS

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Henderson, Nevada 89074
Telephone: 702/263-7275
Fax: 702/263-7200
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DESIGNED BY RP

DRAWN BY MD

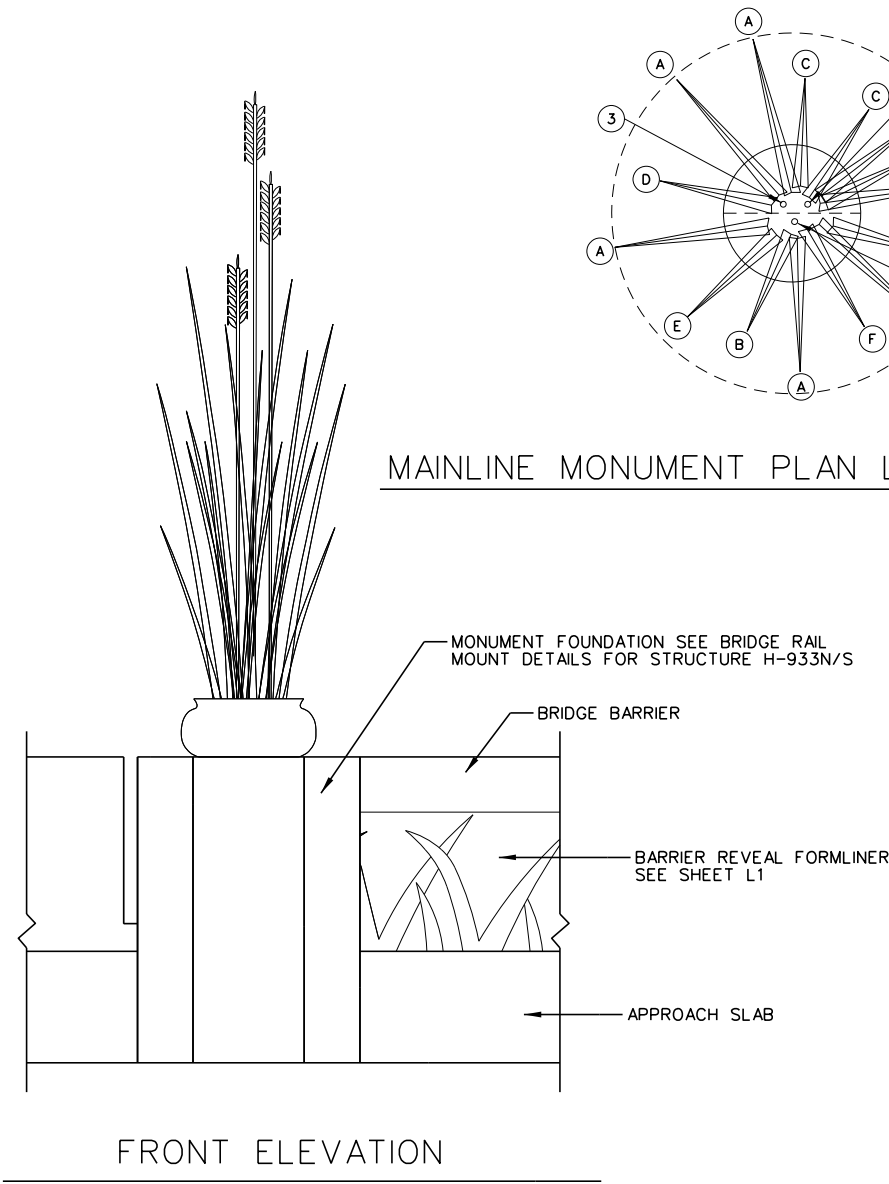
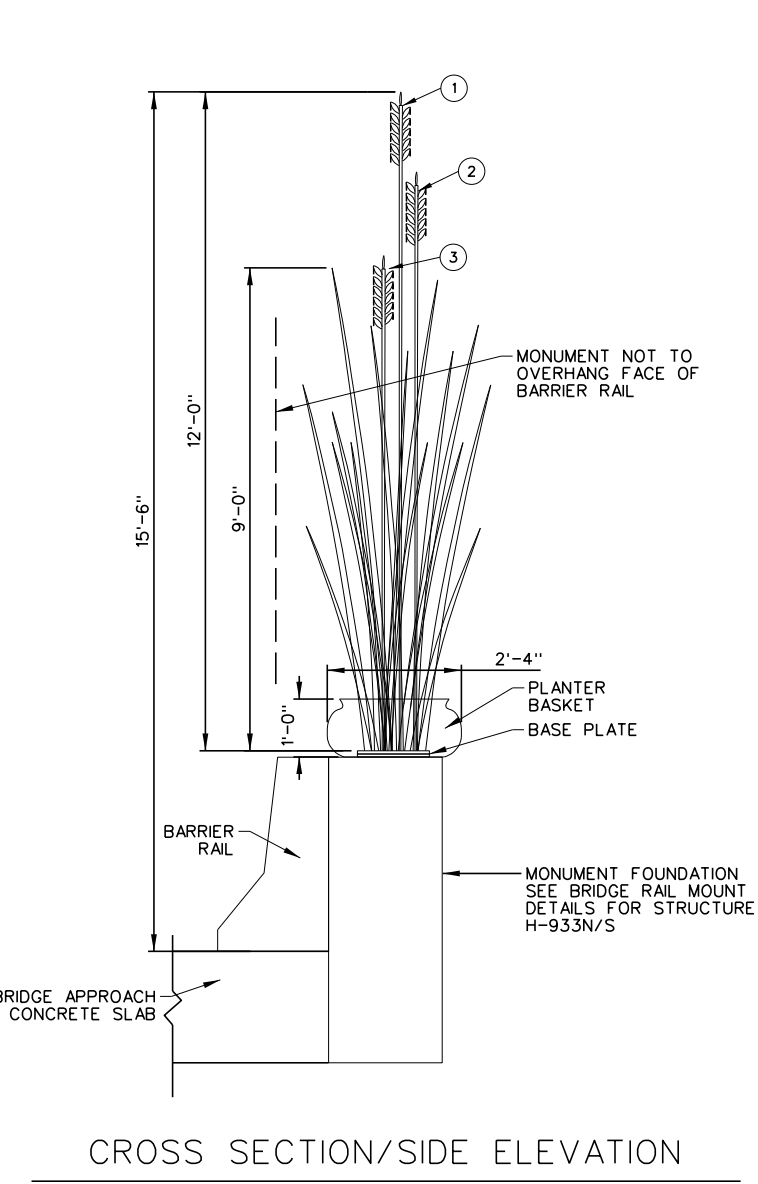
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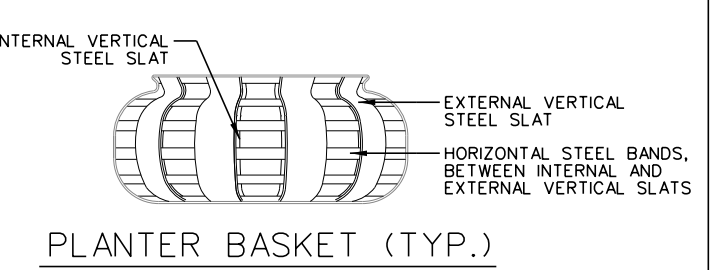
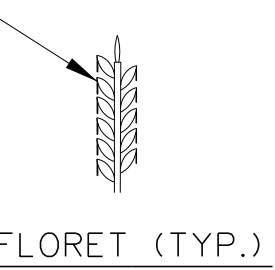
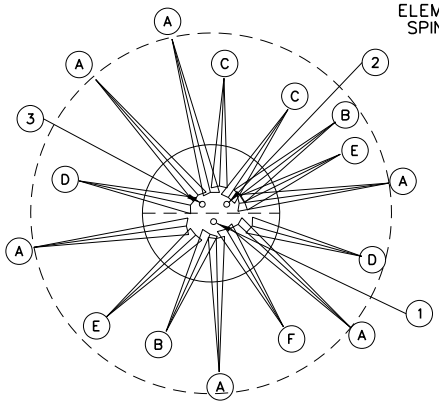
STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	L2

- NOTES:
- DRAWINGS SHOW DESIGN INTENT ONLY. DESIGN-BUILDER SHALL WORK WITH THE FABRICATOR AND THE DEPARTMENT ON THE FINAL DESIGN DETAILS TO BE SHOWN ON FABRICATOR PROVIDED SHOP DRAWINGS.
 - FABRICATOR SHALL PROVIDE SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION. DRAWINGS SHALL SHOW FABRICATION DETAILS INCLUDING WELDING METHODOLOGY, PANEL THICKNESS, MEMBER SIZES, AND PROPOSED ATTACHMENT AND ANCHORAGE METHOD AND DETAILS. DRAWINGS SHALL BE SIGNED AND SEALED BY AN ENGINEER REGISTERED IN THE STATE OF NEVADA AND INCLUDE ANY STRUCTURAL CALCULATIONS REQUIRED FOR FABRICATION.
 - MONUMENTS SHALL BE FINISHED WITH A TWO-COMPONENT PAINT SYSTEM CONSISTING OF AN EPOXY PRIMER WITH A 2K URETHANE TOPCOAT. FINISH PANELS PER PAINT MANUFACTURER RECOMMENDATIONS.
 - FABRICATOR WILL PROVIDE MOCK UPS OF MONUMENTS FOR APPROVAL. APPROVED MOCK UPS WILL BE THE BASIS OF DESIGN AGAINST WHICH REMAINING WORK WILL BE JUDGED. FABRICATOR WILL PROVIDE MATERIAL AND COLOR SAMPLES FOR APPROVAL PRIOR TO THE FABRICATION OF MOCK UP PANELS.

- LIGHTING NOTES:
- FABRICATOR SHALL DESIGN AND INSTALL AN INTERNALLY MOUNTED, LED LIGHTING SYSTEM. SYSTEM SHALL HAVE COLOR-CHANGING CAPABILITIES, WIRELESS CONTROLS, AND BE PROGRAMMABLE.
 - FABRICATOR SHALL PROVIDE SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION. DRAWINGS SHALL SHOW FABRICATION DETAILS FOR LIGHTING EFFECT ON MONUMENTS.



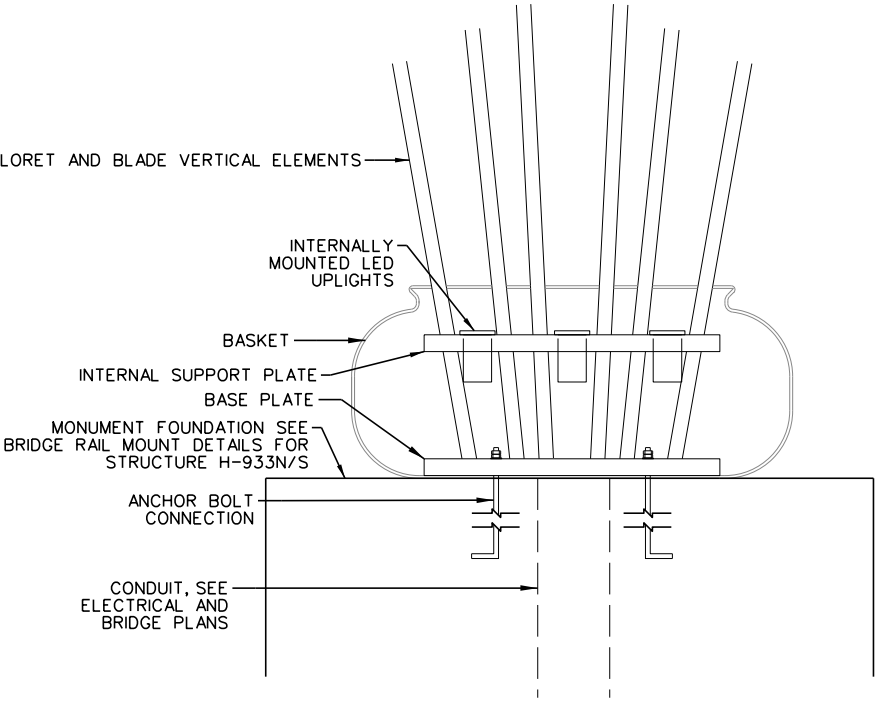
MAINLINE MONUMENT PLAN LAYOUT (TYP.)



FLORET NO.	HEIGHT FROM BASE PLATE
1	12'-0"
2	11'-0"
3	10'-0"
BLADE NO.	
A	9'-0"
B	8'-0"
C	7'-6"
D	7'-0"
E	6'-6"
F	4'-6"

BASKET DIMENSIONS	
W	2'-4"
H	1'-0"
OVERALL HEIGHT FROM ROAD	
OH	15'-6"

MAINLINE MONUMENT ELEMENT SIZES



MAINLINE MONUMENT BASKET CROSS SECTION
H-933NS

DESIGN UNIT S1-07
AS-BUILT DRAWING
JANUARY 04, 2019



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
MAINLINE MONUMENT DETAILS
SHEET 1 OF 1

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DESIGNED BY JK
DRAWN BY JK
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REVIEWED BY GS

NO.	DESCRIPTION	DATE
1	FINAL	03/06/17
0	RFC - 73652-S1-07-ATK-SHT11L02	02/03/17

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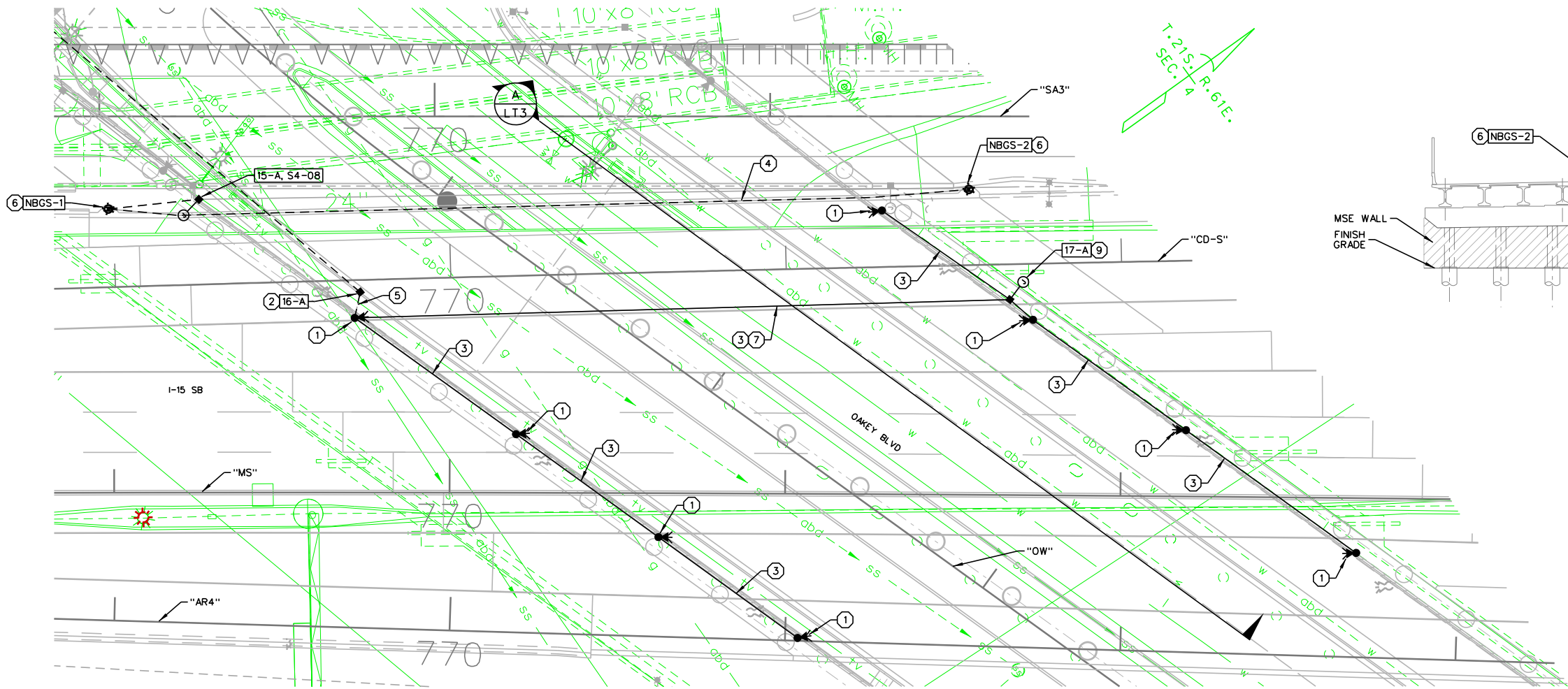
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STATE		PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA		NH-STP-015-1(147)	CLARK	S1-07	LT1

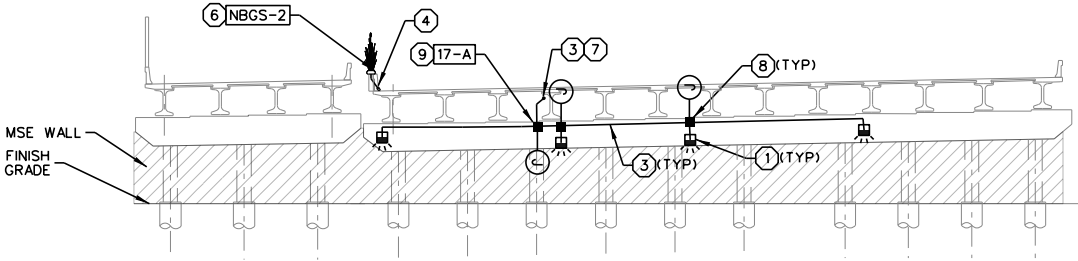
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STATE	PROJECT NO.	COUNTY	DESIGN UNIT	SHEET NO.
NEVADA	NH-STP-015-1(147)	CLARK	S1-07	LT3



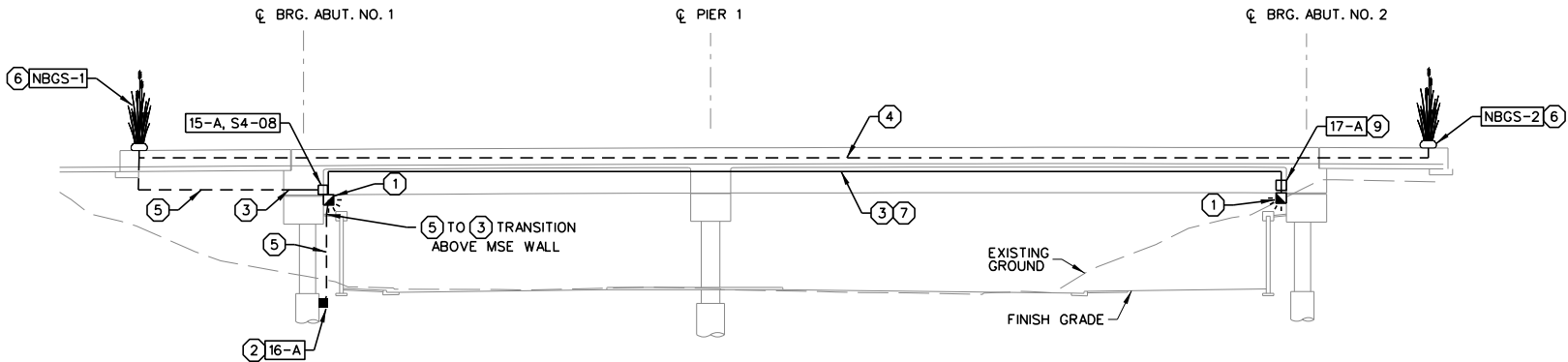
PLAN
SCALE: ENG 1"=40'



A SECTION
LT3 NOT TO SCALE

- KEY NOTES -

- 1 UNDERPASS LIGHTING. SEE D.U. S1-03 PLANS AND SUPPLEMENTAL INFORMATION FOR ADDITIONAL ELECTRICAL REQUIREMENTS AND/OR INFORMATION.
- 2 PULL BOX - SEE D.U. S1-03 PULL BOX SCHEDULE FOR ADDITIONAL INFORMATION AND CIRCUITING.
- 3 SURFACE-MOUNTED GRC. SEE D.U. S1-03 CONDUIT SCHEDULE FOR ADDITIONAL INFORMATION AND CIRCUITING.
- 4 CONDUIT MOUNTED IN THE BRIDGE RAIL. PROVIDE AND INSTALL AN EXPANSION COUPLING AT EACH BRIDGE ABUTMENT AND EXPANSION JOINT TO ALLOW FOR BRIDGE MOVEMENT. SEE D.U. S4-08 FOR ADDITIONAL INFORMATION AND CIRCUITING.
- 5 BURIED CONDUIT.
- 6 MONUMENT LIGHT. SEE D.U. S4-08 FOR ADDITIONAL INFORMATION AND CIRCUITING.
- 7 REFER TO GENERAL NOTE #4 FOR ADDITIONAL INFORMATION REGARDING COORDINATION OF CONDUIT SUPPORT IN GIRDER.
- 8 NEW SURFACE MOUNTED JUNCTION BOX. REFER TO UNDERPASS LIGHT DETAIL, SHEET LT4, FOR ADDITIONAL INFORMATION.
- 9 NEW SURFACE MOUNTED JUNCTION-BOX. SEE D.U. S1-03 PULL BOX SCHEDULE FOR ADDITIONAL INFORMATION AND CIRCUITING.



ELEVATION
SCALE: ENG 1"=40'

NO.	DESCRIPTION	DATE
1	FINAL	03/31/17
0	RFC - 73652-S1-07-PKE-SHT16LT03	02/03/17

DESIGN UNIT S1-07
FINAL
DESIGN SUBMITTAL

MARCH 27, 2017

PK Electrical, Inc.
Engineering · Design · Consulting

681 Sierra Rose Drive, Suite 8 | Reno, Nevada 89511 | 775.826.8010
5000 DTC Parkway, Suite 400 | Greenwood Village, Colorado 80111 | 720.481.3290
pk-electrical.com



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

LIGHTING PLAN
I-15S OVER OAKLEY

ATKINS

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www.atkinsglobal.com

DESIGNED BY LD
DRAWN BY PU
CHECKED BY KP
REVIEWED BY MG

H-933S

