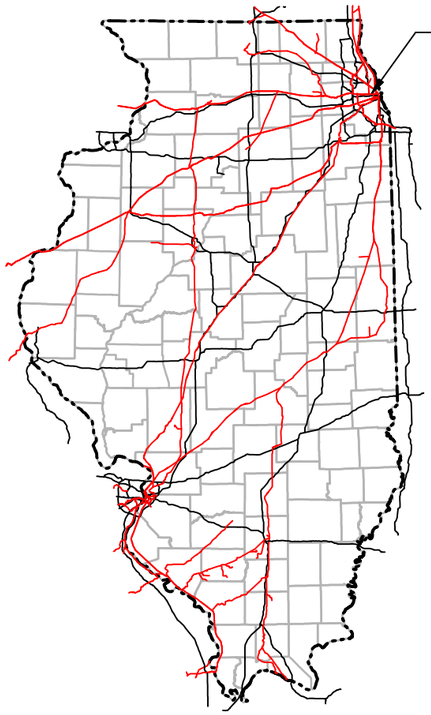
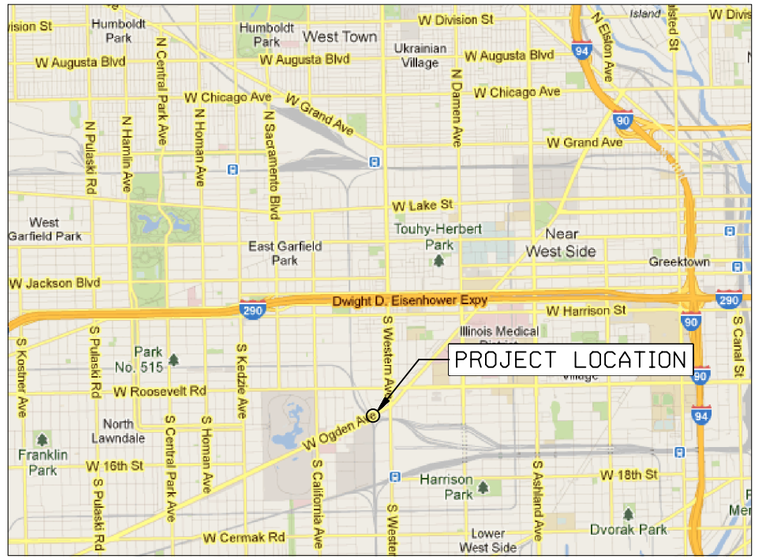
ENGINEERING
DESIGN & CONSTRUCTION





2401 W OGDEN AVE
CHICAGO, IL

Project Location Map

benesch
engineers · scientists · planners
Alfred Benesch & Company
35 W. Wacker Drive, Suite 3300
Chicago, IL 60601
312-565-0450

HANSON
Hanson Professional Services Inc.
70 E. Lake Street, Suite 1120
Chicago, IL 60601
1-800-788-2450

MP 2.27 ROCKWELL SUB.
UNION PACIFIC RAILROAD
OGDEN AVE EAST BRIDGE REPLACEMENT

FINAL PLANS

CREATE PROJECT#:
WA1–UP–XXB–003–B–FE

WORK ORDER: 31876
PROJECT NUMBER: N/A
BUDGET REFERENCE: N/A

LAST REVISED
May 28, 2021

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G-003	GENERAL NOTES & PROJECT CONTACTS
G-004	ABBREVIATIONS & LEGEND
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R-002	ROADWAY RESTORATION PLAN
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R-004	ROADWAY DETAILS
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R-010	IDOT HIGHWAY STANDARD DETAILS
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L-001	LIGHTING GENERAL NOTES
L-002	PROPOSED UNDERDECK LIGHTING PLAN
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L-004	LIGHTING DETAILS
L-005	LIGHTING DETAILS
L-006	LIGHTING DETAILS
L-007	LIGHTING DETAILS
T1 TO T60	BRIDGE 2.27 STRUCTURAL PLANS (EAST BRIDGE)

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BILL OF MATERIAL	LOCATION
REMOVAL	R-001
RESTORATION	R-002, R-003
TRAFFIC CONTROL	R-006
LIGHTING	L-003
STRUCTURES	T3

ANDREW A. NICOL
081-006380
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS

EXPIRATION DATE: 11-30-2022
DATE: 05-28-2021
(STRUCTURAL SHEETS T1-T60)

TRAVIS KLUEGEL
062-059481
LICENSED PROFFESSIONAL ENGINEER OF ILLINOIS

EXPIRATION DATE: 11-30-2021
DATE: 05-28-2021
(CIVIL SHEETS)

GEOFFREY H. THIESSE
062-060445
LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

EXPIRATION DATE: 11-30-2021
DATE: 05-28-2021
(ELECTRICAL SHEETS)

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REVISION	BY	DATE	DESCRIPTION

benesch
Alfred Benesch & Company
35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

DRAWN BY: KP	WORK ORDER: 31876
CHECKED BY: TK	PID:
DATE: 05/28/21	BUDGET REF:
SCALE: N.T.S	SHEET NUMBER: G-002

UNION PACIFIC RAILROAD — Director Structures Design

LOCATION & DESCRIPTION:
MP 2.27 ROCKWELL SUBDIVISION
OGDEN AVENUE EAST BRIDGE REPLACEMENT

SHEET TITLE:
PROJECT INDEX & REVISION SHEET

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5/26/2021

GENERAL NOTES

1. UPRR forces will perform all track work, with the exception of removal of existing tracks. UPRR will cut the existing rails and the contractor shall remove and dispose of all track material with the bridge removal work. The Contractor will be responsible for constructing proposed track bed up to the top of the sub-ballast layer. UPRR will furnish & install all ballast, ties, rail, and other track materials.
2. Existing and new track within the project limits will be surfaced and lined by UPRR forces once all other work is complete.
3. Contractors shall notify Service Alert, (800) 642-2444, UPRR Fiber Optics Hotline (800) 336-9193, and the Chicago Utility Alert Network (312) 744-7000 48 hours prior to any excavation. The USA Authorization Numbers shall be kept at the job site.
4. No work whatsoever shall be commenced without first notifying the UPRR Engineer.
5. The Contractor shall comply with all Federal, State, County, and City Laws and Ordinances and Regulations of the Department of Industrial Relations, OSHA, NPDES and Industrial Accident Commission related to the safety and character of the work, equipment and labor personnel.
6. Contractor shall be responsible for coordinating with all Utility agencies.
7. Contractor shall protect in place (by any means necessary) all existing utilities to remain unless otherwise specified herein, contractor shall be responsible for the complete repair at his expense, for any damage to existing utilities, structures, or other site features, as a result of his work.
8. Prior to placing curbs, pavements, base, subbase, track, etc., all underground utilities shall be installed, backfill completed, and the Engineer notified by each of the utility companies having facilities within the work area, that the utility installation has satisfactorily passed acceptance tests.
9. All existing underground utilities within the UPRR ROW, that are not to be re-used shall be abandoned in place. All existing pipelines to be abandoned in place shall be cement slurry filled and capped at least 3'-0" below top of proposed subgrade.
10. Contractor shall verify locations and elevations of existing utilities whether known or unknown prior to beginning construction.
11. Any underground structures such as cesspools, cisterns, mining shafts, tunnels, septic tanks, wells, and pipelines not located prior to construction shall be brought to the attention of the engineer for determination of appropriate action such as removal or treatment in a manner judged suitable to the engineer.
12. Contractor shall coordinate location of all proposed utilities with UPRR to assure accuracy of utility connections and compliance with local codes.
13. Any existing conditions found to be a variance with these drawings must be immediately reported to the Engineer.
14. Contractor shall maintain and clean to the satisfaction of the Engineer, all access and service roads used during construction.
15. Contractor shall perform all construction in such a manner as to protect adjacent existing buildings, and other site elements which are to remain in service.
16. Contractor shall provide As-built Drawings for all improvements.
17. No field changes will be permitted without direct written authorization from the UPRR Engineer or his representative.
18. Contractor shall coordinate work which affects adjacent property owners. Any questions or agreements between adjacent property owners and contractor shall be made in writing. A copy of such agreement shall be provided to the UPRR Engineer or his representative.
19. The contractor is responsible for preparing a Stormwater Pollution Prevention Plan (SWPPP) to comply with State regulations.
20. Right-of-way lines shown on the plans were taken from existing UPRR right-of-way map and are approximate.
21. Match lines for sheets are based on the existing Main Line stationing unless otherwise specified.
22. Track laying, ballasting, and installation of road crossing panels will be done by UPRR unless otherwise stated.
23. The contractor is responsible for the removal of all pavement markings that will be in conflict with the proposed work.
24. Contractor shall comply with all IDOT specifications for construction of public improvements requirements.
25. Contractor shall maintain at least one access to all affected business. If necessary, multiphase construction shall be utilized.
26. All work must be coordinated with the UPRR to minimize track outage time and disruption of train service. The contractor shall submit for approval his proposed sequence of operations prior to the start of construction.
27. Removal of existing viaduct lighting equipment will be performed by the City of Chicago, Department of Streets and Sanitation, Bureau of Electric. The contractor must schedule and coordinate this work with the city. All expenses or charges by the city related to this work will be incidental to this contract.
28. The contractor shall take special care to avoid damage to the existing utilities under the public streets from excessive surface loads during construction activities. Video inspection of the existing sewer shall be performed before and after construction in accordance with the requirements of the City of Chicago Department of Water Management. Any damage to the existing utilities caused by work under this contract must be repaired or replaced at the contractor's expense.
29. All frames and lids removed from abandoned sewers and appurtenances must be returned to the Chicago Department of Water Management, Sewer Section.
30. In case of damage to the City of Chicago sewers, private and public drains,sewer structures and/or bench monuments, the contractor shall immediately contact the Department of Water Management at (312) 747-7892 or (312) 747-7893.
31. Stockpiling of removed materials and/or construction debris on the job site will not be permitted and shall be removed from the job site each and every day and disposed of in accordance with article 202.03 of the Standard Specifications. Failure to comply with this requirement shall be considered a traffic control deficiency and will be subject to charges in accordance with the item Traffic Control Complete.
32. The contractor must notify the Department of Streets and Sanitation at 312-746-4524 72 hours prior to the need for towing/relocation of vehicles. The City of Chicago will be responsible for removing parked vehicles located in the scheduled work area. Signs preventing parking will be posted by the commissioner or his staff 72 hours before the work is scheduled. Prior to posting signs the commissioner shall notify the Alderman's office of the resurfacing schedule. The police are to be present to issue tickets and supervise towing prior to the relocation of vehicles.
33. In the event that the work to be performed on a street segment where parking has been prohibited will be postponed for 5 working days or more, the contractor must notify the commissioner to remove the "No Parking" signs and advise the commissioner when the work will resume for the commissioner or his staff to re-post the "No Parking" signs 48 hours prior to resumption of work.
34. The contractor will not be allowed to set up a yard or field office on city or state property without written permission from IDOT or the City of Chicago.
35. The contractor is to restore all unpaved areas damaged during construction operations to their original condition at no additional cost to the city or railroad.
36. The contractor shall provide access to abutting property at all times during the construction of this project, except for periods of short duration.
37. Dimensions: it shall be the contractor's responsibility to verify all dimensions and conditions existing in the field prior to ordering materials and beginning of construction.
38. Station and offsets given for proposed catch basins are to the center of the lid. Adjust the base as necessary to connect to existing sewer.
39. The Contractor is responsible for obtaining all permits (including payment of permit fees), bonds and insurance for permits required by the City of Chicago for construction of the project. This includes permits issued by the Department of Transportation, Department of Water Management, and others.
40. The Contractor is responsible to coordinate work for the project. CDOT will complete water main replacement, lighting removal and some roadway work before Contractor begins. CDOT will also complete work after Contractor work is completed. Any new CDOT roadway work shall be protected by Contractor, Any damage of this new CDOT work must be repaired at the expense of the Contractor.
41. The Contractor is responsible to coordinate with the CTA at least two (2) weeks prior to any sidewalk, lane, or street closures, or the removal of any Bus Stop signs so that the CTA can facilitate any necessary detours or bus stop relocations.
42. The Contractor shall install posted clearance sign for proposed bridge. Contractor shall coordinate with the City of Chicago regarding the clearance to be posted, sign type and sign location. The furnishing and installation of vertical clearance signs is considered incidental to the project work.

PROJECT CONTACTS

CONTACT	PHONE NUMBER	UPRR
Curt Nystron	(515) 298-1131	Construction Field Manager
Adam Studts	(402) 544-3541	Structures Design Sr. Manager
Paul Pino	(402) 544-3582	Information Technology - Fiber
Stan Dulinski	(402) 544-0353	Real Estate - Utilities

PHONE NUMBER	GENERAL
(800) 336-9193	CALL UPRR BEFORE YOU DIG
(888) 258-0808	CALL BEFORE YOU DIG (NATIONAL DIRECTORY)
(888) 877-7267	UPRR Response Management Communications Center (RMCC)

DESIGN CRITERIA

1. UPRR Standard Plans and Specifications
2. Illinois Department of Transportation (IDOT) Standard Specifications for Road and Bridge Construction
3. Chicago Department of Transportation (CDOT) Regulations for Openings, Construction and Repair in the Public Way

SURVEY NOTES

1. Railroad stationing for project profiles and alignments is based on stations established for chord definition spiraled curves at the centerline of the existing UPRR Main Line unless otherwise noted.
2. The contractor is responsible for the preservation of all survey control monuments. In the event monuments are damaged or destroyed by the contractor, the Engineer will replace the monument solely at the contractor's expense.

TRAFFIC NOTES

1. All barricades, warning signs, lights, devices, etc. for the guidance of vehicle traffic and pedestrians must conform to the Manual on Uniform Traffic Control Devices (MUTCD), current edition, IDOT and CDOT standards.
2. The contractor will ensure that all barricades, signs, lights, and other devices installed by him are operational every day, including Sundays and holidays. The contractor shall make twice daily inspections of barricades, signs, lights and other devices installed by him to ensure proper placement and functioning of warning devices. In the event of severe weather conditions, the contractor must furnish any additional personnel required to properly maintain all traffic control devices. The contractor shall provide a manned 24-hour / 7 day a week contact number to respond to requestrequests and emergencies related to the placement and maintenance of the traffic control devices throughout the project duration.
3. The contractor is responsible for the prompt replacement and/or repair of all traffic control devices and appurtenances damaged or disturbed due to construction.

BENCHMARKS

City of Chicago Benchmark: BM #276
6.4 feet north of south line of W Congress Parkway and 47.1 feet east of east line of S Washtenaw Avenue. Elev. = 14.66 (CCD)

	DATUM
HORIZONTAL	Illinois East State Plane (1201) North American Datum of 1983 (NAD83)
VERTICAL	Chicago City Datum (CCD)

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REVISION	BY	DATE	DESCRIPTION

benesch
Alfred Benesch & Company
35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

DRAWN BY: KP	WORK ORDER: 31876
CHECKED BY: TK	PID:
DATE: 05/28/21	BUDGET REF:
SCALE: N.T.S	SHEET NUMBER G-003

UNION PACIFIC RAILROAD — Director Structures Design

LOCATION & DESCRIPTION:
MP 2.27 ROCKWELL SUBDIVISION
OGDEN AVENUE EAST BRIDGE REPLACEMENT

SHEET TITLE:
GENERAL NOTES & PROJECT CONTACTS

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5/26/2021

ABBREVIATIONS

MISCELLANEOUS

Ac.	Acres
Ave.	Avenue
Blvd.	Boulevard
Bldg.	Building
BNSF	BNSF Railway
C.Y.	Cubic Yards
Conc.	Concrete
Const.	Construct
°	Degree (s)
Dia.	Diameter
Dr.	Drive
Dwg.	Drawing
E	East
Elev.	Elevation
Exist.	Existing
'	Foot, Feet or Minute (s)
F.S.	Finished Surface
Horiz.	Horizontal
"	Inch, Inches or Second (s)
Inst.	Install
Inv.	Invert
Lt.	Left
L	Length
L.F.	Lineal Feet
Max.	Maximum
Min.	Minimum
N	North
NTS	Not to Scale
No.	Number
OH	Overhead
OHP	Overhead Power Line
PGL	Profile Grade Line
Prop.	Proposed
RR	Railroad
Rwy	Railway
R/W	Right of Way
Rt.	Right
S	South
S.F.	Square Feet
Sta.	Station
Std.	Standard
St.	Street
TT	Timetable
Twp.	Township
Typ.	Typical
UG	Underground
UPRR	Union Pacific Railroad
V	Velocity
Wt.	Weight
W	West
X-ing	Crossing

SIGNAL

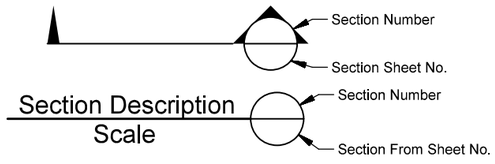
ABS	Automatic Block Signal
ATC	Automatic Train Control
CTC	Centralized Traffic Control
DED	Dragging Equipment Detector
DTC	Direct Traffic Control
ELTO	Electric Lock Turnout
HBD	Hot Box Detector
HTTO	Hand Throw Turnout
HWD	High Wide Dectector
POTO	Power Operated Turnout
TWC	Track Warrant Control
WILD	Wheel Impact Load Dectector

STRUCTURES

Bldg.	Building
Br.	Bridge
CB	Catch Basin
CPT	Concrete Pile Trestle - Ballast Deck
CIP	Cast Iron Pipe
CMP	Corrugated Metal Pipe
CMPA	Corrugated Metal Pipe Arch
CSP	Corrugated Steel Pipe
Culv.	Culvert
DI	Drop Inlet
DPGBD	Deck Plate Girder - Ballast Deck
DPGOD	Deck Plate Girder - Open Deck
EBW	East Backwall
F.L.	Flowline
F.F.	Finished Floor
GIP	Galvanized Iron Pipe
Hdwl	Headwall
NBW	North Backwall
PSCT	Prestressed Concrete Trestle
RCA	Reinforced Concrete Arch
RCB	Reinforced Concrete Box
RCP	Reinforced Concrete Pipe
SBW	South Backwall
SSP	Smooth Steel Pipe
SPTBD	Steel Pile Trestle - Ballast Deck
SPTOD	Steel Pile Trestle - Open Deck
SPP	Structural Plate Pipe
TPGBD	Through Plate Girder - Ballast Deck
TPGOD	Through Plate Girder - Open Deck
TPTBD	Timber Pile Trestle - Ballast Deck
TPTOD	Timber Pile Trestle - Open Deck
TTBD	Through Truss - Ballast Deck
TTOD	Through Truss - Open Deck
TWB	Treated Wood Box
VCP	Vitrified Clay Pipe
Viad.	Viaduct
WBW	West Backwall
WIP	Wrought Iron Pipe

TRACK

ATR	Above Top of Rail
Align.	Alignment
BBR	Below Base of Rail
Cntrs.	Centers
CWR	Continuous Welded Rail
DSPD	Double Switch Point Derail
EOT	End of Track
HH	Head Hardened
Jtd.	Jointed Rail
LH	Left Hand
ML	Main Line
MM	Mile Marker
MP	Mile Post
NSC	Not Sufficient Clearance
OTM	Other Track Material
PCC	Point of Compound Curve
PC	Point of Curve
PCS	Point of Curve to Spiral
POC	Point on Curve
PF	1/2" Point of Frog
PI	Point of Intersection
PITO	Point of Intersection of Turnout
PS	Point of Spiral
PSC	Point of Spiral to Curve
POS	Point on Spiral
PT	Point of Tangent
POT	Point on Tangent
Pt. Sw.	Point of Switch
PVC	Point of Vertical Curve
PVI	Point of Vertical Intersection
PVT	Point of Vertical Tangent
RH	Right Hand
SH	Second Hand
SSPD	Single Switch Point Derail
TC	Track Centers
T.F.	Track Feet
Trk.	Track
UXO	Universal Cross-Over
X-Over	Cross-Over



SYMBOLS

UTILITIES

- Compressed Air
- Fiber Optic Cable
- Gas Pipeline
- Overhead Power Line
- Sanitary Sewer
- Overhead Signal Line
- Underground Signal Line
- Steam Line
- Storm Sewer
- Telephone
- Underground Electric
- Water Main
- Underground Wire
- Under Drain
- Water Valve
- Gas Buffalo Box
- Manhole
- Catch Basin
- Fire Hydrant
- Junction Box Electric
- Junction Box Telephone
- Junction Box Water
- Power Pole
- Generator

TRACK

- Existing Mainline
- Existing Siding or Spur
- Proposed
- Remove
- Shift
- Relay
- Future
- Foreign Railroad or Industry
- In Buildings or Under Structures
- Turnout
- Wheel Stop
- Bumping Post
- Earthen Bumper
- Inert Retarder
- Dowty Retarder
- Derail
- Switch Point Derail or Double Switch Point Derail

PROPERTY

- Section Line
- Center Section Line
- Parcel or Easement Line
- Right of Way
- Former Right of Way
- Right of Way to be Acquired
- Foreign Right of Way

ROAD CROSSING WARNING DEVICES

- Crossbuck Sign
- Flashing Light Warning Device
- Flashing Light Warning Device with Gate
- Cantilever Flashing Light Warning Device
- Cantilever Flashing Light Signal with Gate

SIGNAL

- Absolute Signal
- Signal Bridge
- Cantilever Signal
- ACS or CTC Signal
- Dwarf Signal
- Begin CTC
- Microwave Tower
- AEI
- Battery Box
- Dragging Equipment Detector
- Generator
- Hot Box Detector
- Hot Air Blower
- Plastibeton

STRUCTURES

- Culvert
- Culvert with Headwalls
- Double Culvert
- Railroad Bridge
- Highway Overpass
- Highway Underpass
- Tunnel
- Retaining Wall
- Building
- Flag Pole

LIGHTING

- Light Pole
- Light Tower

SIGNS

- Sign
- Yard Limit
- 1 Mile to Yard Limit
- Whistle Post
- Flanger
- Station
- Reduce Speed
- Resume Speed

FENCES

- Barbed Wire
- Chain Link
- Ornamental Fence
- Snow / Sand

ROADS

- Paved Road
- Unimproved Road
- Interstate Highway
- Federal Highway
- State Highway
- County Highway

OTHER

- Wetlands
- River or Lake
- Embankment
- Flow Line
- Milepost
- Milemarker
- Revision Number
- Revision Cloud
- Tree
- Bush
- Stump
- Traffic Signal
- Soil Boring (E-T-01)
- Control Point (CP-01)

CONSTRUCTION

- Proposed Note (Work by Contractor)
- Proposed Note (Work by Others)
- Cut Lines
- Fill Lines
- Profile Grade Line
- Removal Note (Work by Contractor)
- Removal Note (Work by Others)
- Shift Note (Work by Contractor)
- Shift Note (Work by Others)

benesch
Alfred Benesch & Company
35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

DRAWN BY: KP	WORK ORDER: 31876	UNION PACIFIC RAILROAD	Director Structures Design
CHECKED BY: TK	PID:	LOCATION & DESCRIPTION: MP 2.27 ROCKWELL SUBDIVISION OGDEN AVENUE EAST BRIDGE REPLACEMENT	
DATE: 05/28/21	BUDGET REF:		
SCALE: N.T.S	SHEET NUMBER G-004	SHEET TITLE: ABBREVIATIONS & LEGEND	

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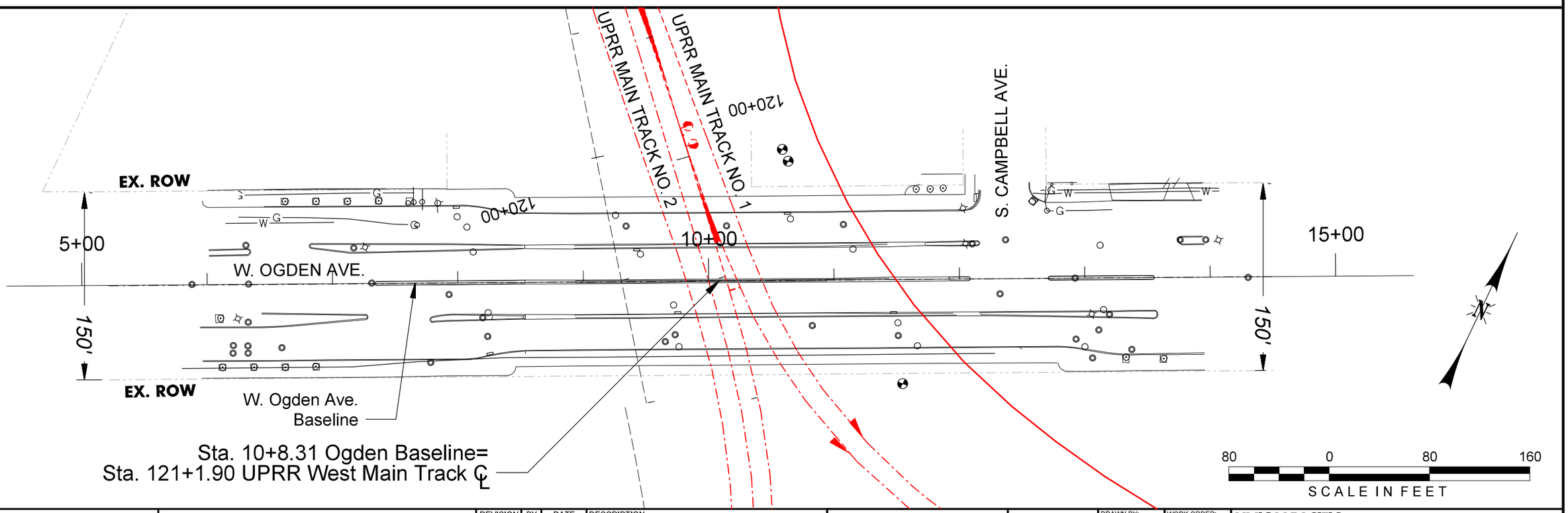
Control Points

Control Point No.	Northing	Easting	Elevation	Description
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129	1891996.76	1159695.35	10.50	Set mag nail 13' north of centerline 16th street and +/- 150' west of railroad, opposite garage door #5.

NOTE: Control point information is for control points on 16th Street.

EXISTING OGDEN BASELINE

STATION	Northing	Easting
5+50	1893402.46	1159392.03
14+00	1893771.35	1160157.81



WARNING !
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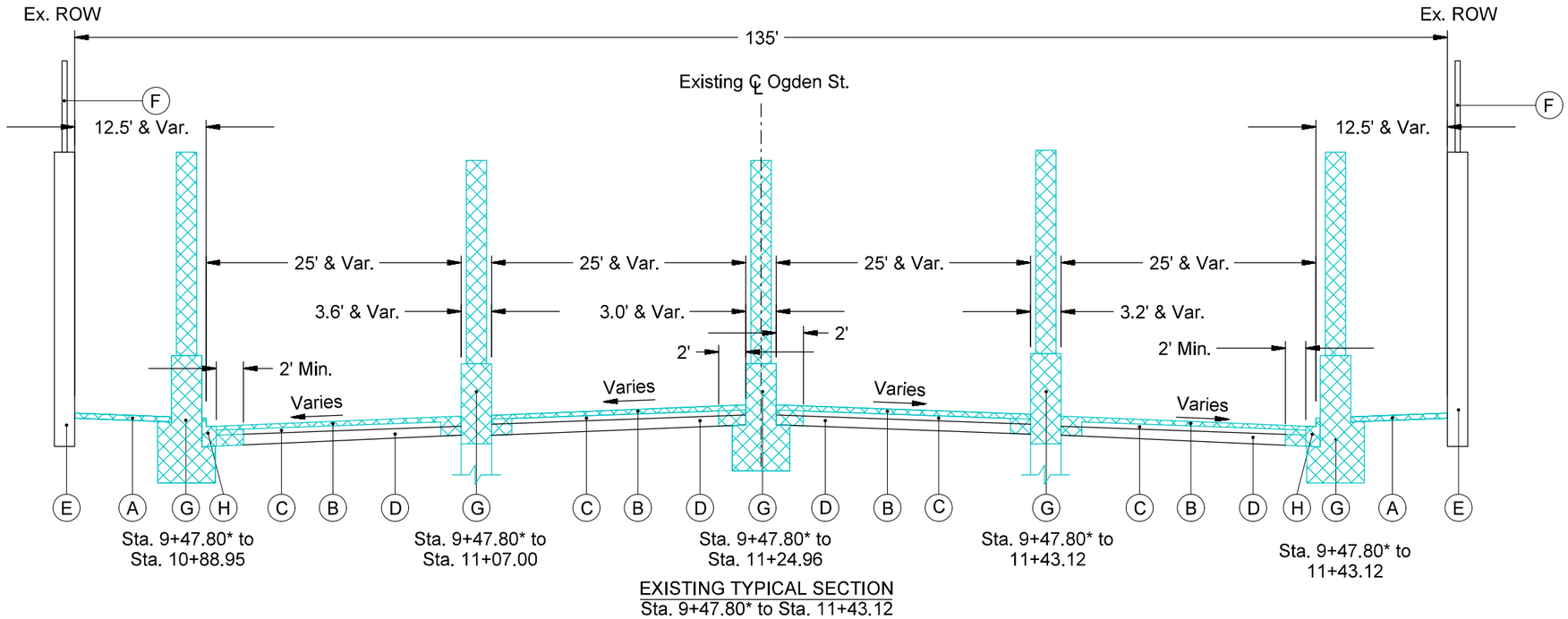
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REVISION	BY	DATE	DESCRIPTION

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Alfred Benesch & Company
35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

DRAWN BY: KP	WORK ORDER: 31876	UNION PACIFIC RAILROAD	Director Structures Design
CHECKED BY: TK	PID:	LOCATION & DESCRIPTION: MP 2.27 ROCKWELL SUBDIVISION OGDEN AVENUE EAST BRIDGE REPLACEMENT	
DATE: 05/28/21	BUDGET REF:		
SCALE: 1"=80'	SHEET NUMBER G-005	SHEET TITLE: CONTROL POINTS & ROADWAY GEOMETRY	

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5/26/2021

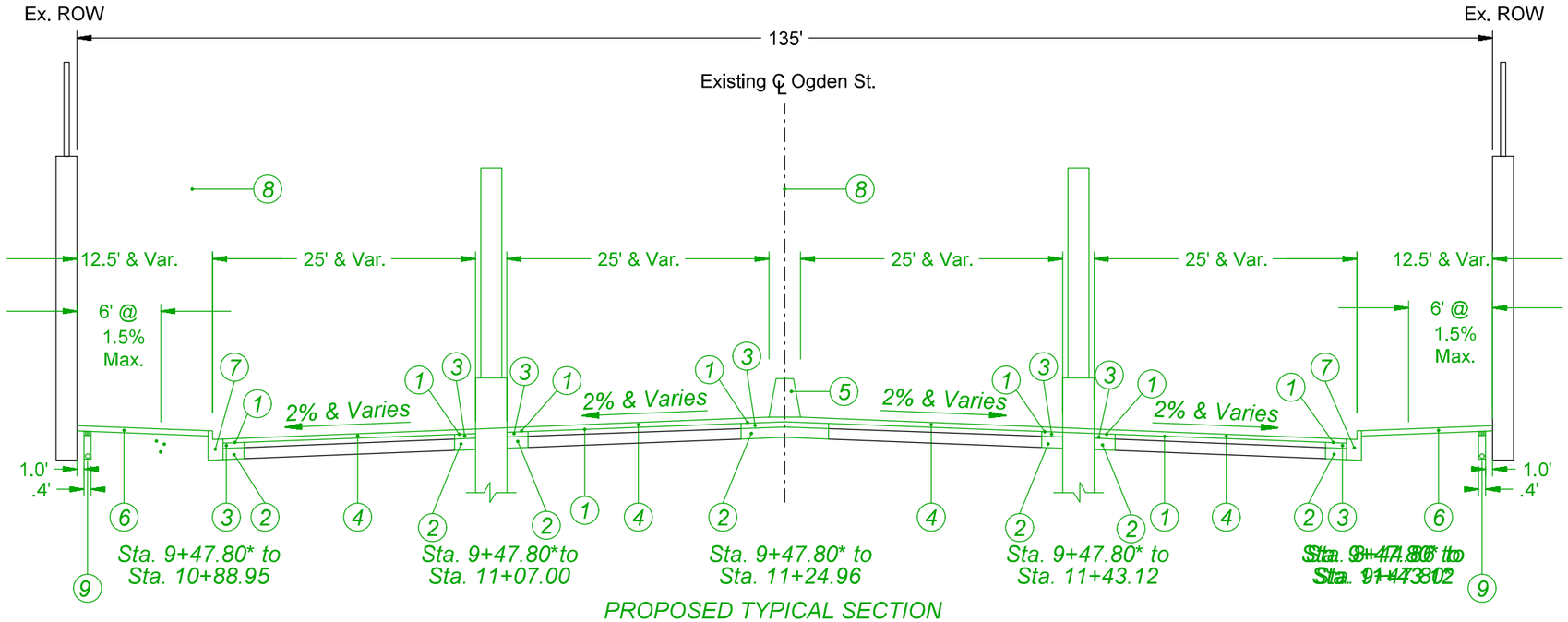


EXISTING TYPICAL SECTION
Sta. 9+47.80* to Sta. 11+43.12

Existing Legend

A. 5" P.C. Concrete Sidewalk
B. 2" HMA Surface Course
C. HMA Binder Course
D. P.C. Concrete Base Course
E. Retaining Wall
F. Fence
G. Bent
H. Curb & Gutter

Removal



PROPOSED TYPICAL SECTION
Sta. 9+47.80 to Sta. 11+43.12*

Proposed Legend

1. Bituminous Materials (Prime Coat)
2. 7" P.C. Concrete Base Course
3. 2 1/4" Hot-Mix-Asphalt Binder Course, IL-19.0, N50
4. 2" Hot-Mix-Asphalt Surface Course, Mix "D", N70
5. Concrete Barrier, Double Face, 44" Height, IDOT 637006-04
6. P.C. Concrete Sidewalk,5"
7. Curb & Gutter
8. Pier
9. Trench Drain

**Exact Limits of West and East Improvements to be Determined in the Field*

WARNING !
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ON RAILROAD R-O-W
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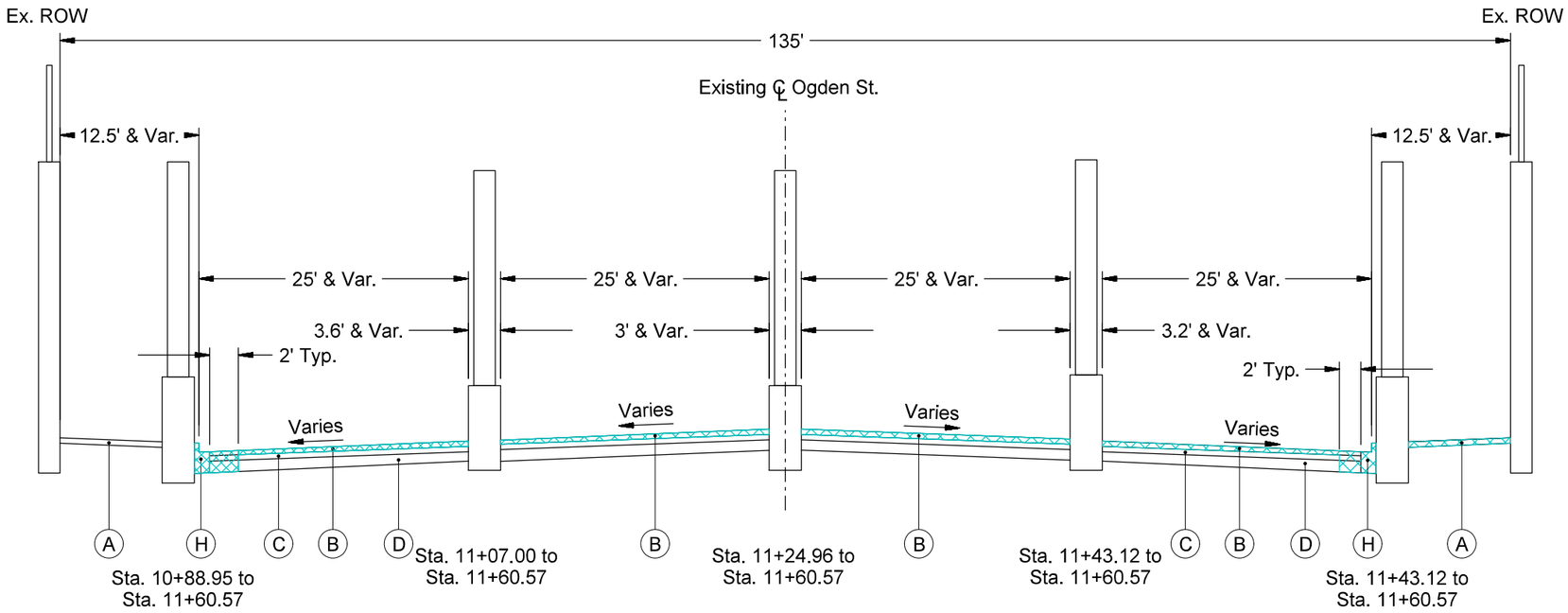
ISSUED FOR CONSTRUCTION

REVISION	BY	DATE	DESCRIPTION

benesch
Alfred Benesch & Company
35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

DRAWN BY: KP	WORK ORDER: 31876	UNION PACIFIC RAILROAD	Director Structures Design
CHECKED BY: TK	PID:	LOCATION & DESCRIPTION: MP 2.27 ROCKWELL SUBDIVISION OGDEN AVENUE EAST BRIDGE REPLACEMENT	
DATE: 05/28/21	BUDGET REF:		
SCALE: N.T.S	SHEET NUMBER T-001	SHEET TITLE: ROADWAY TYPICAL SECTION	

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5/26/2021

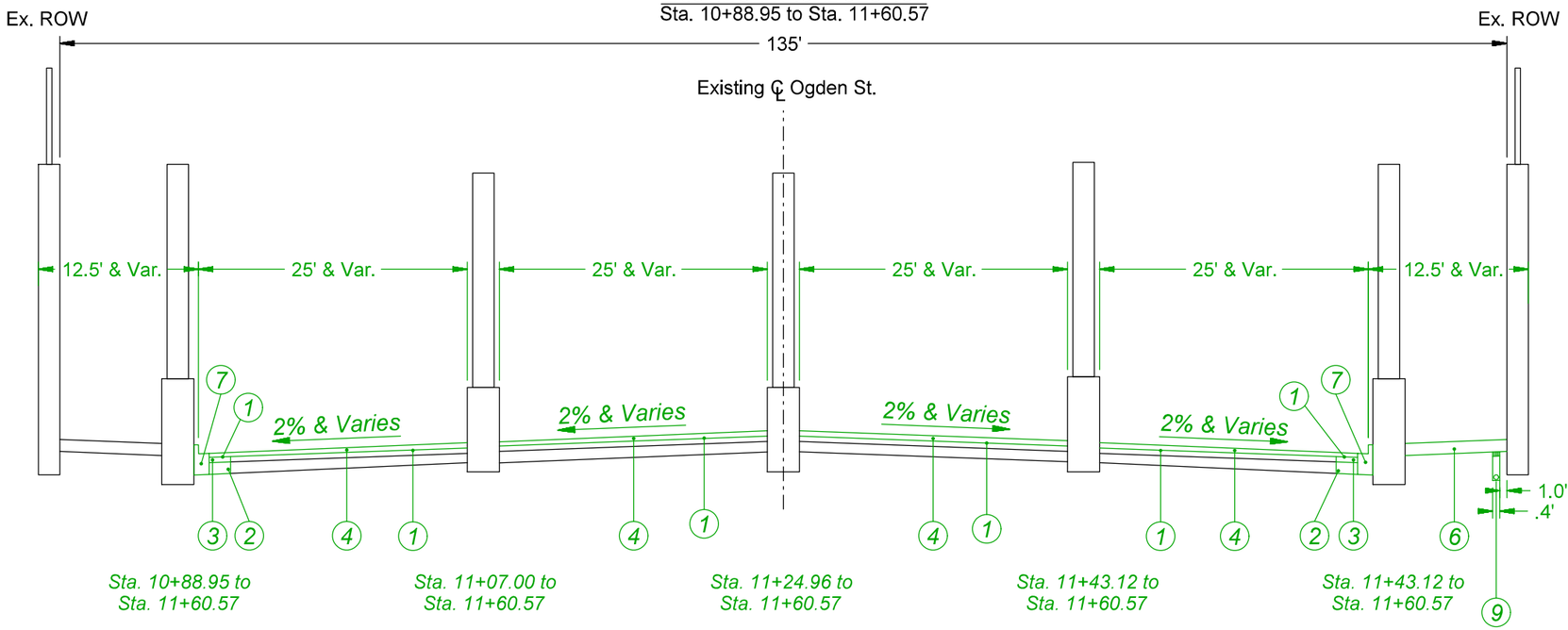


EXISTING TYPICAL SECTION
Sta. 10+88.95 to Sta. 11+60.57

Existing Legend

A. 5" P.C. Concrete Sidewalk
B. 2" HMA Surface Course
C. HMA Binder Course
D. P.C. Concrete Base Course
E. Retaining Wall
F. Fence
G. Bent
H. Curb & Gutter

Removal



PROPOSED TYPICAL SECTION
Sta. 10+88.95 to Sta. 11+60.57

Proposed Legend

1. Bituminous Materials (Prime Coat)
2. 7" P.C. Concrete Base Course
3. 2 1/4" Hot-Mix-Asphalt Binder Course, IL-19.0, N50
4. 2" Hot-Mix-Asphalt Surface Course, Mix "D", N70
5. Concrete Barrier, Double Face, 44" Height, IDOT 637006-04
6. P.C. Concrete Sidewalk,5"
7. Curb & Gutter
8. Bent
9. Trench Drain

**Exact Limits of West and East Improvements to be Determined in the Field*

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REVISION	BY	DATE	DESCRIPTION

benesch
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35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

DRAWN BY: KP	WORK ORDER: 31876
CHECKED BY: TK	PID:
DATE: 05/28/21	BUDGET REF:
SCALE: N.T.S	SHEET NUMBER T-002

UNION PACIFIC RAILROAD — Director Structures Design

LOCATION & DESCRIPTION:
MP 2.27 ROCKWELL SUBDIVISION
OGDEN AVENUE EAST BRIDGE REPLACEMENT

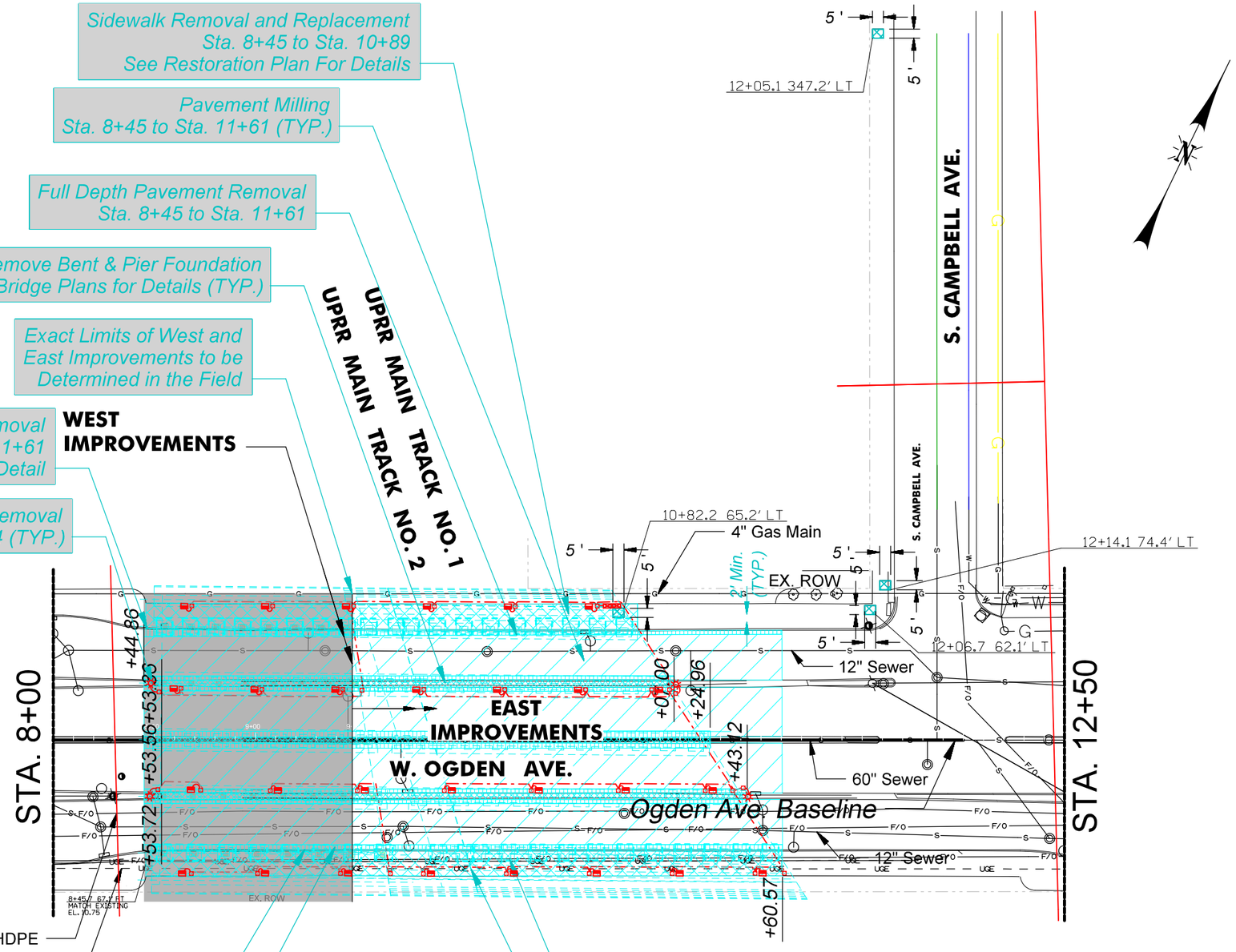
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5/26/2021

DESCRIPTION	UNIT	QUANTITY
COMBINATION CURB AND GUTTER REMOVAL	FOOT	211
PAVEMENT REMOVAL	SQ YD	323
HOT-MIX ASPHALT SURFACE REMOVAL, 2"	SQ YD	1955
SIDEWALK REMOVAL	SQ FT	4433
MEDIAN REMOVAL	SQ FT	1715
SAWCUT AND SEAL NEW JOINTS	FOOT	1472

LEGEND

- Full Depth Pavement Removal
- Pavement Milling
- Sidewalk Removal
- Median and Pier Removal



60 0 60 120

SCALE IN FEET

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REVISION	BY	DATE	DESCRIPTION

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Alfred Benesch & Company
35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

DRAWN BY: KP	WORK ORDER: 31876
CHECKED BY: TK	PID:
DATE: 05/28/21	BUDGET REF:
SCALE: 1"=60'	SHEET NUMBER R-001

UNION PACIFIC RAILROAD — Director Structures Design

LOCATION & DESCRIPTION:
MP 2.27 ROCKWELL SUBDIVISION
OGDEN AVENUE EAST BRIDGE REPLACEMENT

SHEET TITLE:
ROADWAY EX. CONDITIONS AND REMOVAL PLAN

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5/26/2021

LEGEND

- 2" Pavement Resurfacing
- Full Depth Pavement
- PCC Sidewalk, 5"
- Structural Pier, See Bridge Details
- Non-Structural Concete Pier Base, See Details
- Concrete Barrier, Double Face, 44" Height
- Concrete Median
- (A) Lid to be Adjusted
- Impact Attenuetor to be Coordinated with CDOT

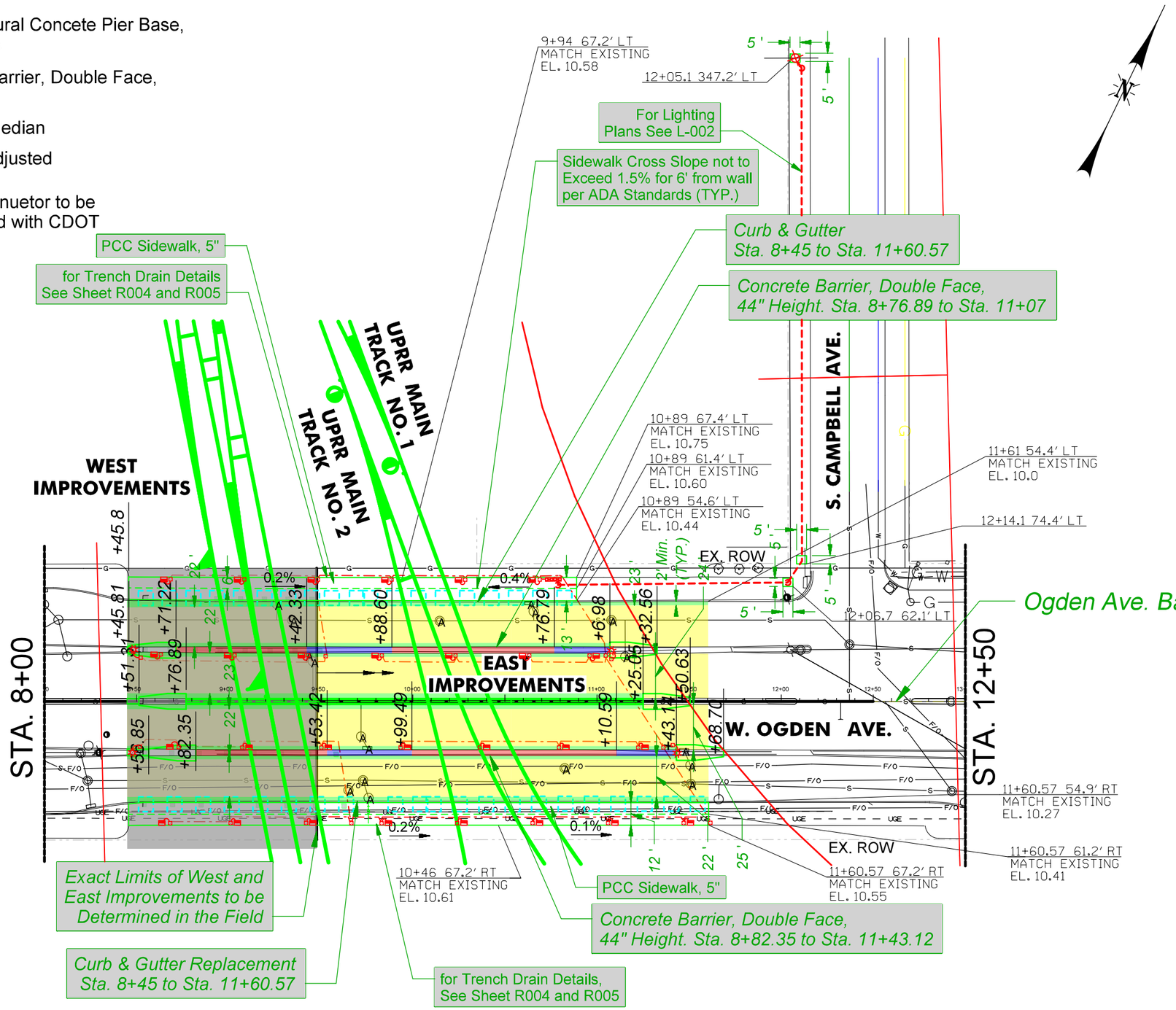
DESCRIPTION	UNIT	QUANTITY
PORTLAND CEMENT CONCRETE BASE COURSE 7"	SQ YD	323
HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	41
HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "D", N50	TON	32
HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "D", N70	TON	219
BITUMINOUS MATERIALS (PRIME COAT)	POUND	5476
PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	SQ FT	4433
CATCH BASINS TO BE ADJUSTED	EACH	8
MANHOLES TO BE ADJUSTED	EACH	6
COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12	FOOT	211
CONCRETE BARRIER MEDIAN	SQ FT	1715
CONCRETE BARRIER, DOUBLE FACE, 44" HEIGHT	FOOT	180
IMPACT ATTENUATORS (SEVERE USE, NARROW), TEST LEVEL 2	EACH	3

NOTE:

CONTRACTOR SHALL MODIFY EXISTING CONCRETE BENT BASE TO CREATE A SMOOTH VERTICAL FACE TRANSITION BETWEEN THE PROPOSED BENT AND THE EXISTING BASE AT WEST END OF THE PROPOSED BENT WORK. THIS WORK SHALL BE INCIDENTAL TO THE PROJECT.

60 0 60 120

SCALE IN FEET



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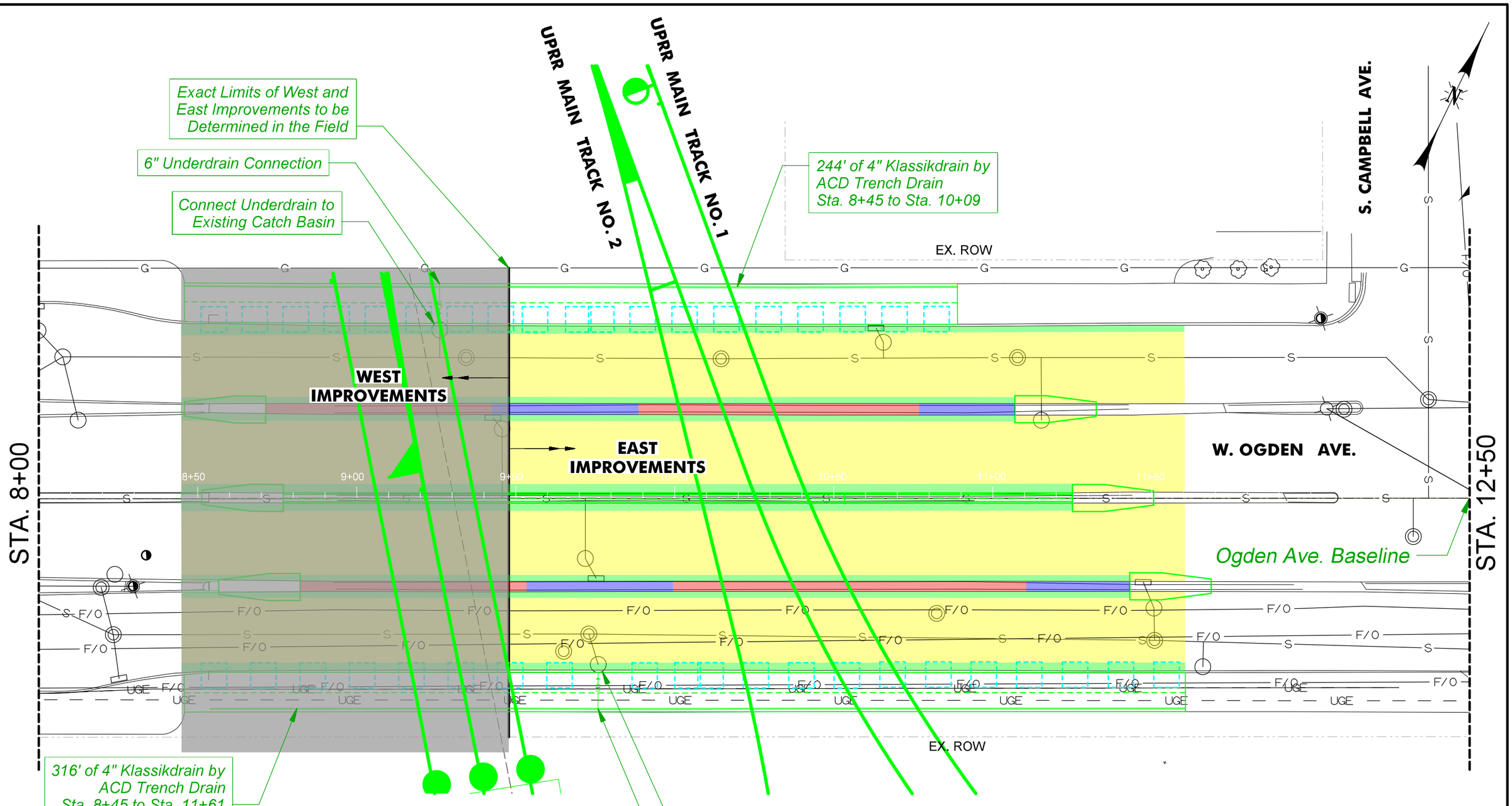
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REVISION	BY	DATE	DESCRIPTION

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Alfred Benesch & Company
35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

DRAWN BY: KP	WORK ORDER: 31876	UNION PACIFIC RAILROAD	Director Structures Design
CHECKED BY: TK	PID:	LOCATION & DESCRIPTION: MP 2.27 ROCKWELL SUBDIVISION OGDEN AVENUE EAST BRIDGE REPLACEMENT	
DATE: 05/28/21	BUDGET REF:		
SCALE: 1"=60'	SHEET NUMBER R-002	SHEET TITLE: ROADWAY RESTORATION PLAN	

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5/26/2021



DESCRIPTION	UNIT	QUANTITY
PIPE UNDERDRAINS, TYPE 1, 6"	FOOT	11.3
TRENCH DRAIN	FOOT	211
UNDERDRAIN CONNECTION TO STRUCTURE	EACH	1

WARNING !
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UNION PACIFIC

DRAWN BY: KP	WORK ORDER: 31876
CHECKED BY: TK	PID:
DATE: 05/28/21	BUDGET REF:
SCALE: 1"=30'	SHEET NUMBER R-003

UNION PACIFIC RAILROAD — Director Structures Design

LOCATION & DESCRIPTION:
MP 2.27 ROCKWELL SUBDIVISION
OGDEN AVENUE EAST BRIDGE REPLACEMENT

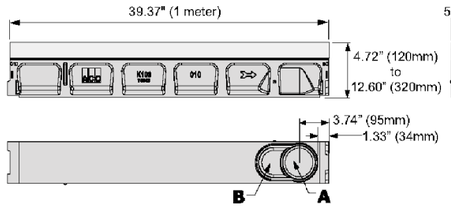
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ROADWAY PROPOSED PLAN

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5/26/2021

ACO DRAIN

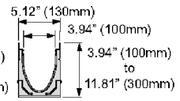
KlassikDrain - K100 Galvanized steel edge rail channel system

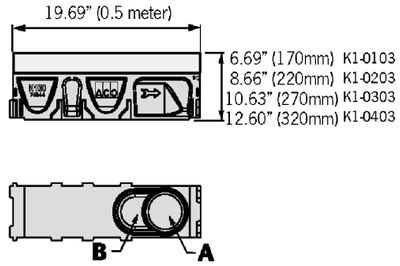
One meter channel



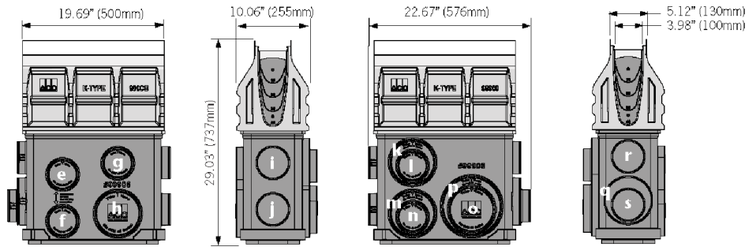
Knock-outs included on every 5th channel

Half meter channel





Type K901G In-line catch basin



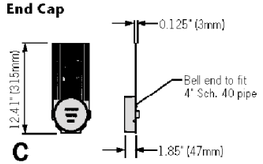
Total capacity =
10.49 gallons

Outlet flow rates

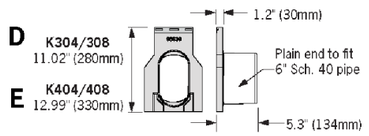
Outlet	Product	Outlet size (Sch. 40)	Invert Depth	GPM	CFS
a	Bottom outlet - K00	4" round	3.94"	108	0.24
a	Bottom outlet - K40	4" round	11.81"	187	0.42
b	Bottom outlet - K00	6" oval	3.94"	177	0.39
b	Bottom outlet - K40	6" oval	11.81"	306	0.68
c	End outlet - K20	4" round	7.87"	132	0.29
c	End outlet - K40	4" round	11.81"	171	0.38
d	K1-308-6 6" outlet cap	6" oval	9.84"	233	0.52
e	K1-408-6 6" outlet cap	6" oval	11.81"	264	0.59
f	Type K1-901G	4" round	19.30"	226	0.50
g	Type K1-901G	4" round	25.67"	265	0.59
h	Type K1-901G	4" round	25.30"	263	0.59
i	Type K1-901G	4" round	18.56"	222	0.49
j	Type K1-901G	6" round	25.85"	586	1.30
k	Type K1-901G	4" round	26.43"	269	0.60
l	Type K1-901G	4" round	19.36"	227	0.51
m	Type K1-901G	6" round	27.30"	604	1.35
n	Type K1-901G	6" round	19.99"	505	1.12
o	Type K1-901G	6" round	26.43"	593	1.32
p	Type K1-901G	8" round	27.30"	1051	2.34
q	Type K1-901G	4" round	27.17"	273	0.61
r	Type K1-901G	4" round	20.68"	235	0.52
s	Type K1-901G	4" round	18.99"	224	0.50
t	Type K1-901G	6" round	27.17"	6.02	1.34

Note: These are the pipe flow rates at the specified outlet, **NOT** channel flow rates. Catch basin flow rates are without trash bucket - using trash bucket reduces flow.

End Cap



6" Oval inlet cap



6" Oval outlet cap



April 2018

www.ACODrain.us

ACO Specification Information

ACO DRAIN

KlassikDrain - K100 Galvanized steel edge rail channel system

Description	Part No.	Invert Inches[2]	Invert mm[2]	Weight Lbs.
K1-00 Neutral channel - 39.37" (1m)[1]	**74041**	**3.94**	**100**	**28.1**
K1-1 Sloped channel - 39.37" (1m)	**74001**	4.13	105	28.1
K1-2 Sloped channel - 39.37" (1m)	**74002**	4.33	110	28.9
K1-3 Sloped channel - 39.37" (1m)	**74003**	4.53	115	29.7
K1-4 Sloped channel - 39.37" (1m)	**74004**	4.72	120	30.5
K1-5 Sloped channel - 39.37" (1m)[1]	**74005**	4.92	125	31.3
K1-6 Sloped channel - 39.37" (1m)	**74006**	5.12	130	32.1
K1-7 Sloped channel - 39.37" (1m)	**74007**	5.31	135	32.9
K1-8 Sloped channel - 39.37" (1m)	**74008**	5.51	140	33.7
K1-9 Sloped channel - 39.37" (1m)	**74009**	5.71	145	34.5
K1-10 Sloped channel - 39.37" (1m)[1]	**74010**	5.91	150	35.3
K1-010 Neutral channel - 39.37" (1m)[1]	**74043**	**5.91**	**150**	**35.3**
K1-0103 Neutral channel - 19.69" (0.5m)[1]	**74044**	**5.91**	**150**	**17.0**
K1-11 Sloped channel - 39.37" (1m)	**74011**	6.10	155	36.1
K1-12 Sloped channel - 39.37" (1m)	**74012**	6.30	160	36.9
K1-13 Sloped channel - 39.37" (1m)	**74013**	6.50	165	37.7
K1-14 Sloped channel - 39.37" (1m)	**74014**	6.69	170	38.5
K1-15 Sloped channel - 39.37" (1m)[1]	**74015**	6.89	175	39.3
K1-16 Sloped channel - 39.37" (1m)	**74016**	7.09	180	40.1
K1-17 Sloped channel - 39.37" (1m)	**74017**	7.28	185	40.9
K1-18 Sloped channel - 39.37" (1m)	**74018**	7.48	190	41.7
K1-19 Sloped channel - 39.37" (1m)	**74019**	7.68	195	42.5
K1-20 Sloped channel - 39.37" (1m)[1]	**74020**	7.87	200	43.4
K1-020 Neutral channel - 39.37" (1m)[1]	**74045**	**7.87**	**200**	**43.4**
K1-0203 Neutral channel - 19.69" (0.5m)[1]	**74046**	**7.87**	**200**	**20.5**
K1-21 Sloped channel - 39.37" (1m)	**74021**	8.07	205	44.2
K1-22 Sloped channel - 39.37" (1m)	**74022**	8.27	210	45.0
K1-23 Sloped channel - 39.37" (1m)	**74023**	8.46	215	45.8
K1-24 Sloped channel - 39.37" (1m)	**74024**	8.66	220	46.6
K1-25 Sloped channel - 39.37" (1m)[1]	**74025**	8.86	225	47.4
K1-26 Sloped channel - 39.37" (1m)	**74026**	9.06	230	48.2
K1-27 Sloped channel - 39.37" (1m)	**74027**	9.25	235	49.0

Description	Part No.	Invert Inches[2]	Invert mm[2]	Weight Lbs.
K1-28 Sloped channel - 39.37" (1m)	**74028**	9.45	240	49.8
K1-29 Sloped channel - 39.37" (1m)	**74029**	9.65	245	50.6
K1-30 Sloped channel - 39.37" (1m)[1]	**74030**	9.84	250	51.4
K1-030 Neutral channel - 39.37" (1m)[1]	**74047**	**9.84**	**250**	**51.4**
K1-0303 Neutral channel - 19.69" (0.5m)[1]	**74048**	**9.84**	**250**	**24.0**
K1-31 Sloped channel - 39.37" (1m)	**74031**	10.04	255	52.2
K1-32 Sloped channel - 39.37" (1m)	**74032**	10.24	260	53.0
K1-33 Sloped channel - 39.37" (1m)	**74033**	10.43	265	53.8
K1-34 Sloped channel - 39.37" (1m)	**74034**	10.63	270	54.6
K1-35 Sloped channel - 39.37" (1m)[1]	**74035**	10.83	275	55.4
K1-36 Sloped channel - 39.37" (1m)	**74036**	11.02	280	56.2
K1-37 Sloped channel - 39.37" (1m)	**74037**	11.22	285	57.0
K1-38 Sloped channel - 39.37" (1m)	**74038**	11.42	290	57.9
K1-39 Sloped channel - 39.37" (1m)	**74039**	11.61	295	58.7
K1-40 Sloped channel - 39.37" (1m)[1]	**74040**	11.81	300	59.5
K1-040 Neutral channel - 39.37" (1m)[1]	**74049**	**11.81**	**300**	**59.5**
K1-0403 Neutral channel - 19.69" (0.5m)[1]	**74050**	**11.81**	**300**	**27.5**
K1-901G In-line catch basin - 19.69" (0.5m)[3]	**94608**	28.81	701.9	52.6
K1-621G catch basin - 19.69" (0.5m)[3]	**94617**	28.84	732.5	55.8
K1-631G catch basin - 19.69" (0.5m)[3]	**94631**	40.84	1037.4	65.8
K1-Series 600 Optional plastic riser	**99902**	-	-	10.0
Foul air trap - fits both 900 & 600 series basins	**90854**	-	-	1.2
K1-304-6 6" Inlet Cap	**96839**	9.84	250	5.2
K1-308-6 6" Outlet Cap	**96840**	9.84	250	5.0
K1-404-6 6" Inlet Cap	**96834**	11.81	300	6.0
K1-408-6 6" Outlet Cap	**96836**	11.81	300	5.8
Universal end cap	**96822**	11.81	300	0.4
Debris strainer for 4" bottom knockout	**93488**	-	-	0.2
4" Oval to 6" round outlet adapter	**95140**	-	-	1.1
K1-Installation device	**97477**	-	-	2.8
Grate removal tool	**01318**	-	-	0.3
K1-QuickLok locking bar	**02899**	-	-	0.1

Notes:
1. This channel offers a bottom knockout feature; 4" round/6" oval.
2. Inverts shown are for the male end; for female invert depth subtract 5mm (≈0.2") from the male invert (except for neutral channels, where it will be same as male invert). To calculate the overall channel depth add 20mm (≈0.8") to invert depth.
3. This catch basin kit includes a polymer concrete top, removable Quicklok locking bar, trash bucket and plastic base. Select an appropriate grate.
4. This catch basin kit includes a polymer concrete top, removable Quicklok locking bar, deep trash bucket, plastic riser and plastic base. Select an appropriate grate.

Specifications

General
The surface drainage system shall be ACO Drain K100 complete with gratings secured with 'QuickLok' locking as manufactured by ACO, Inc. or approved equal.

Materials
The trench system bodies shall be manufactured from polyester polymer concrete with the minimum properties as follows:

Compressive strength:	14,000 psi
Flexural strength:	4,000 psi
Water absorption	0.07%
Frost proof	YES
Salt proof	YES
Dilute acid and alkali resistant	YES

The nominal clear opening shall be 4" (100mm) with overall width of 5.12" (130mm). Pre-cast units shall be manufactured with either an invert slope of 0.5% or with neutral invert and have a wall thickness of at least 0.50" (13mm). Each unit will feature a partial radius in the trench bottom and a male to female interconnecting and profile. Units shall have horizontal cast in anchoring keys on the outside wall to ensure maximum mechanical bond to the surrounding bedding material and pavement surface. The galvanized steel edge rail will be integrally cast in by the manufacturer to ensure maximum homogeneity between polymer concrete body and edge rail. Each edge rail shall be at least 3/32" (2.5mm) thick.

Grates
Grates shall be specified. See separate ACO Spec Info grate sheets for details. After removal of grates and 'QuickLok' bar there shall be uninterrupted access to the trench to aid maintenance.

Installation
The trench drain system shall be installed in accordance with the manufacturer's installation instructions and recommendations.

ACO, Inc.
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9470 Pinecone Drive
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4211 Pleasant Road
Fort Mill, SC 29708
Toll free: (800) 543-4764
Fax: (803) 802-1063

Electronic Contact:
info@ACODrain.us
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SPEC INFO

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DRAWN BY: KP	WORK ORDER: 31876
CHECKED BY: TK	PID:
DATE: 05/28/21	BUDGET REF:
SCALE: N.T.S	SHEET NUMBER R-004

UNION PACIFIC RAILROAD — Director Structures Design

LOCATION & DESCRIPTION:
MP 2.27 ROCKWELL SUBDIVISION
OGDEN AVENUE EAST BRIDGE REPLACEMENT

SHEET TITLE:
ROADWAY DETAILS

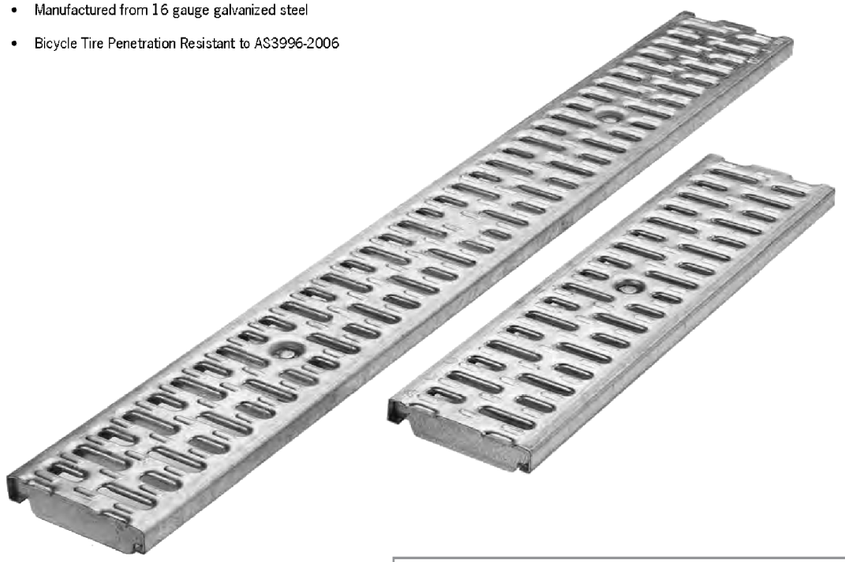
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ACO DRAIN

Type 435Q/436Q Slotted galvanized steel grate

Product Features

- Certified to EN 1433 Load Class E - 135,000 lbs - 2,788 psi
- Uses 'QuickLok' boltless locking system
- Suitable for use with K100, KS100, H100-8, H100-10, and H100K-8 channels
- Manufactured from 16 gauge galvanized steel
- Bicycle Tire Penetration Resistant to AS3996-2006



ACO Specification Information

Specifications

General

The surface drainage system shall be ACO Drain K100, KS100, H100-8, H100-10, H100K-8 and H100KS-8 channels* complete with ACO Type 435Q/436Q Slotted galvanized steel grate with 'QuickLok' locking as manufactured by ACO, Inc. or similar approved.

Materials

The covers shall be manufactured from galvanized steel and have ***minimum*** properties as follows:

- ***Independently certified to meet Load Class E to EN 1433 - 135,000 lbs - 2,788 psi***
- ***16 gauge galvanized steel***
- ***Intake area of 17.6 sq. in. (113.5 cm²) per half meter of grate***

The overall width of 4.84" (123mm) and overall length of 39.37" (1000mm) (Type 435) and 19.69" (500mm) (Type 436). Slots measure 1.75" (45mm) by 0.38" (10mm) and 1.17" (30mm) by 0.38" (10mm).

Installation

The trench drain system and grates shall be installed in accordance with the manufacturer's installation instructions and recommendations.

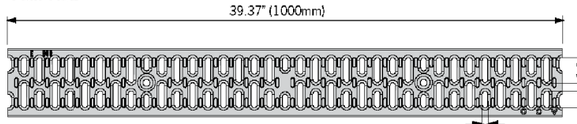
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ACO DRAIN

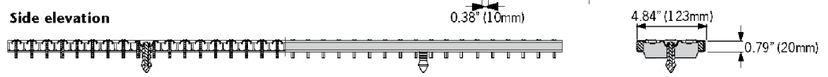
Type 435Q/436Q Slotted galvanized steel grate

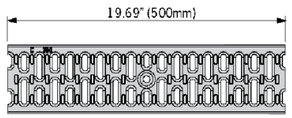
ACO Specification Information

Plan view



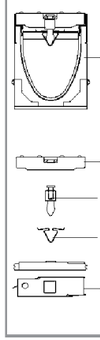
Side elevation





Description	Part No.	Length inches (*mm*)	Width inches (*mm*)	Weight lbs.
QuickLok grates				
Type 435Q Slotted galvanized grate	**31550**	39.37 (*1000*)	4.84 (*123*)	13.4
Type 436Q Slotted galvanized grate	**31551**	19.69 (*500*)	4.84 (*123*)	6.8
QuickLok locking bar	**02899**	-	-	0.2
QuickLok grate removal hook	**01318**	-	-	0.6

'QuickLok' locking mechanism



ACO 'QuickLok' is a patented boltless locking system, grates are removed and replaced with the minimum time and effort for ease of maintenance. The unique design provides a positive 'snap down' fit into the locking bar. A stud is fixed to the grate which 'locks' into the spring clip in the locking bar.

The 'QuickLok' stud is made from stainless steel and high density nylon, the locking bar and clip are stainless steel, for use in both general purpose and corrosive environments.

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CHECKED BY: TK	PID:	LOCATION & DESCRIPTION: MP 2.27 ROCKWELL SUBDIVISION OGDEN AVENUE EAST BRIDGE REPLACEMENT	
DATE: 05/28/21	BUDGET REF:		
SCALE: N.T.S	SHEET NUMBER R-005	SHEET TITLE: ROADWAY DETAILS	

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TRAFFIC CONTROL GENERAL NOTES:

1. All signing must be in accordance with the latest applicable provisions of the State of Illinois "Standard Specifications for Road and Bridge Construction", the details in these plans must be in accordance with the latest edition of the IDOT Bureau of Design and Environment highway standards and the latest edition of the "Manual on Uniform Traffic Control Devices", in effect on the date of invitation for bids.
2. Longitudinal dimensions shown on these plans may be adjusted to fit field conditions as directed by the Commissioner.
3. The Contractor must be responsible for ensuring that all barricades, signs, lights and other devices installed by him/her are in place and operating 24 hours each day including Sundays and holidays during the time this construction is in effect.
4. All existing signing that is not applicable while the construction is in effect must be completely covered by the Contractor.
5. The sizes of all signs not specified in these plans must be as required by the Manual on Uniform Traffic Control Devices.
6. As a minimum, all amber flashing lights that are required must meet the requirements for Type A - low intensity flashing lights in article 702.04 of the standard specifications. All lights shall operate during hours of darkness. Only lights that have been approved by the Illinois Department of Transportation must be used.
7. The Contractor must maintain access to all private and commercial driveways during construction.
8. Sidewalk access must be maintained on one side of the street during all stages, except when there is a full closure. Any closed sidewalks must be appropriately barricaded. Use Standard 701801.
9. All walkways must be clearly identified and adequately protected from motor vehicle traffic and free of any obstructions and hazards such as holes, debris, mud, construction equipment, stored materials, etc.
10. Proposed maintenance of traffic signing must be covered or removed when not required during a specific stage of construction.
11. Changeable message signs to be provided at locations shown on plans or determined by the Commissioner.
12. The Contractor must conduct his/her work in such a manner that emergency vehicles will have access to the work area at all times.
13. The Contractor will be responsible for the proper location, installation, maintenance, relocation, and removal of all traffic control devices.
14. The Contractor is responsible for recording the existing pavement marking patterns and limits prior to existing striping removal.
15. All existing pavement markings removed or impacted within the project limits must be replaced in-kind and to CDOT rules and regulations.
16. Unwanted temporary pavement markings must be removed by the Contractor as ordered by the Commissioner.
17. The Contractor must notify CDOT-Permits 1 month prior to constuction with dates and detour route to futher coordinate.
18. The Contractor must notify CDOT 72 hours before commencing construction.
19. The Contractor is responsible for all no parking notifications required by traffic shifts.

BILL OF MATERIAL

REQD.	UNIT	DESCRIPTION	STORE ITEM NO.	ORDERED BY
5000.0	FOOT	TEMPORARY PAVEMENT MARKING, LINE 4"		CONSTRUCTOR ↓
8.0	EACH	IMPACT ATTENUATORS, TEMPORARY (NON- REDIRECTIVE), TEST LEVEL 2		
8.0	EACH	IMPACT ATTENUATORS, RELOCATE (NON- REDIRECTIVE), TEST LEVEL 2		
16.0	EACH	BARRICADES, TYPE III WITH WARNING LIGHT		
32.0	EACH	DRUM WITH WARNING LIGHT or BARRICADES, TYPE I WITH EXTENDED LEGS AND WARNING LIGHT		
1800.0	SQ FOOT	PAVEMENT MARKING REMOVAL - WATER BLASTING		
1.0	L SUM	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)		
12.0	EACH	BARRICADES, TYPE III		

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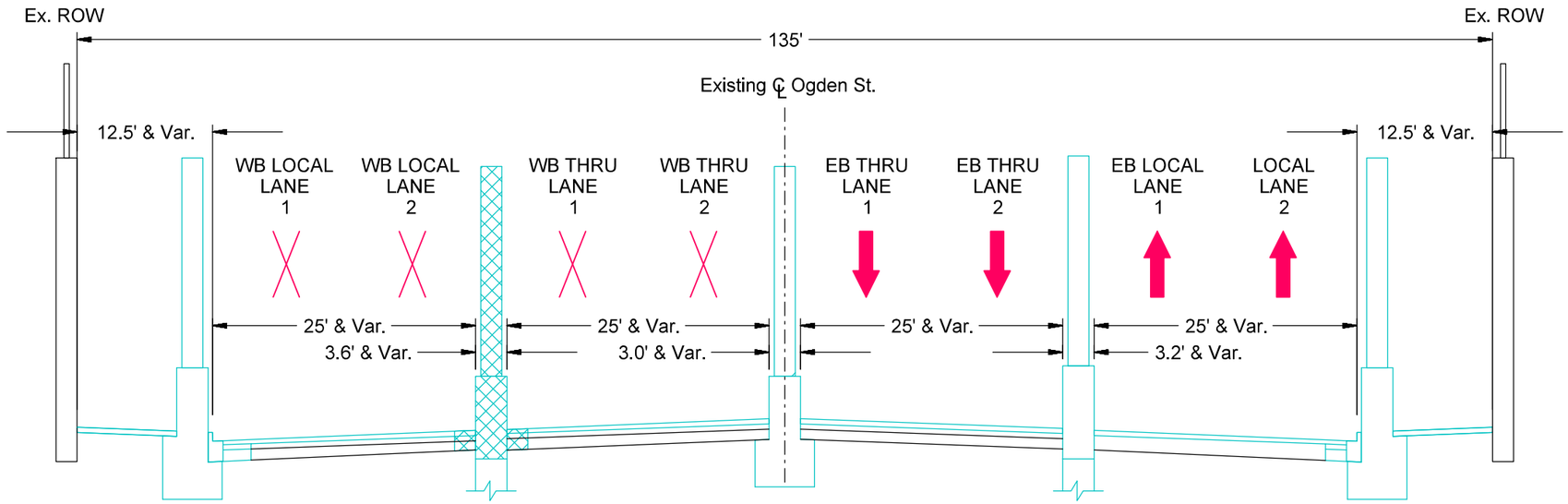
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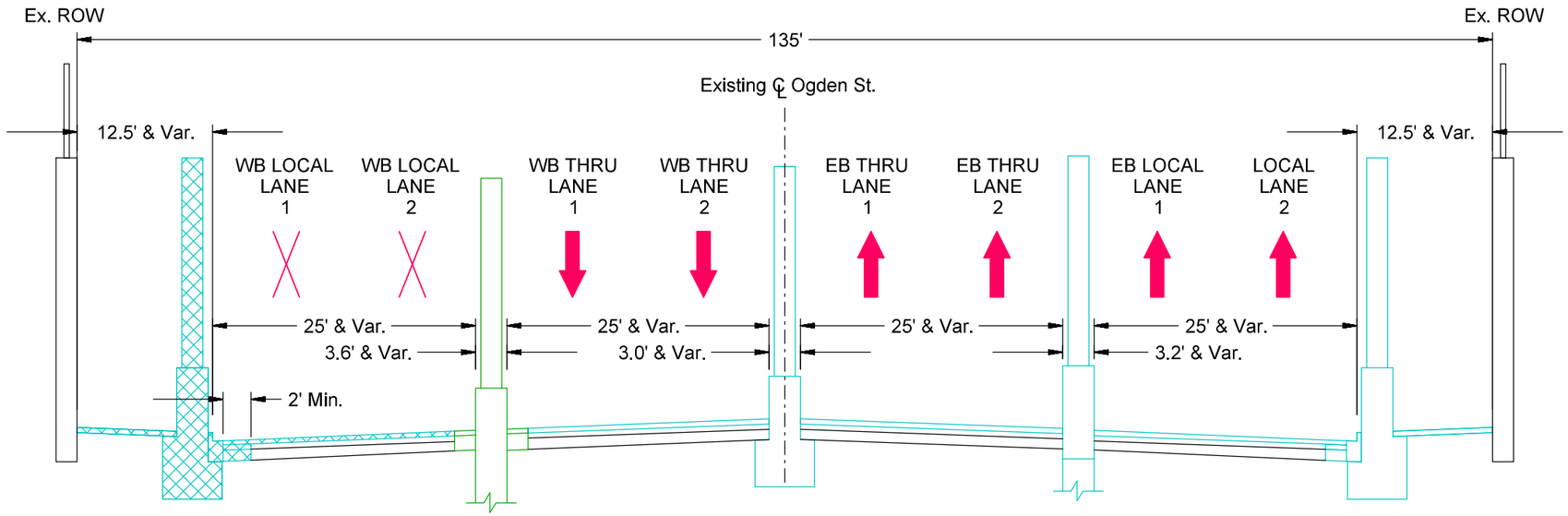
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UNION PACIFIC

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DATE: 05/28/21	BUDGET REF:		
SCALE: N.T.S	SHEET NUMBER: R-006	SHEET TITLE: TRAFFIC CONTROL GENERAL NOTES	



MOT TYPICAL SECTION
PHASE 1 - WB PIER REMOVAL



MOT TYPICAL SECTION
PHASE 2 - WB PIER WORK

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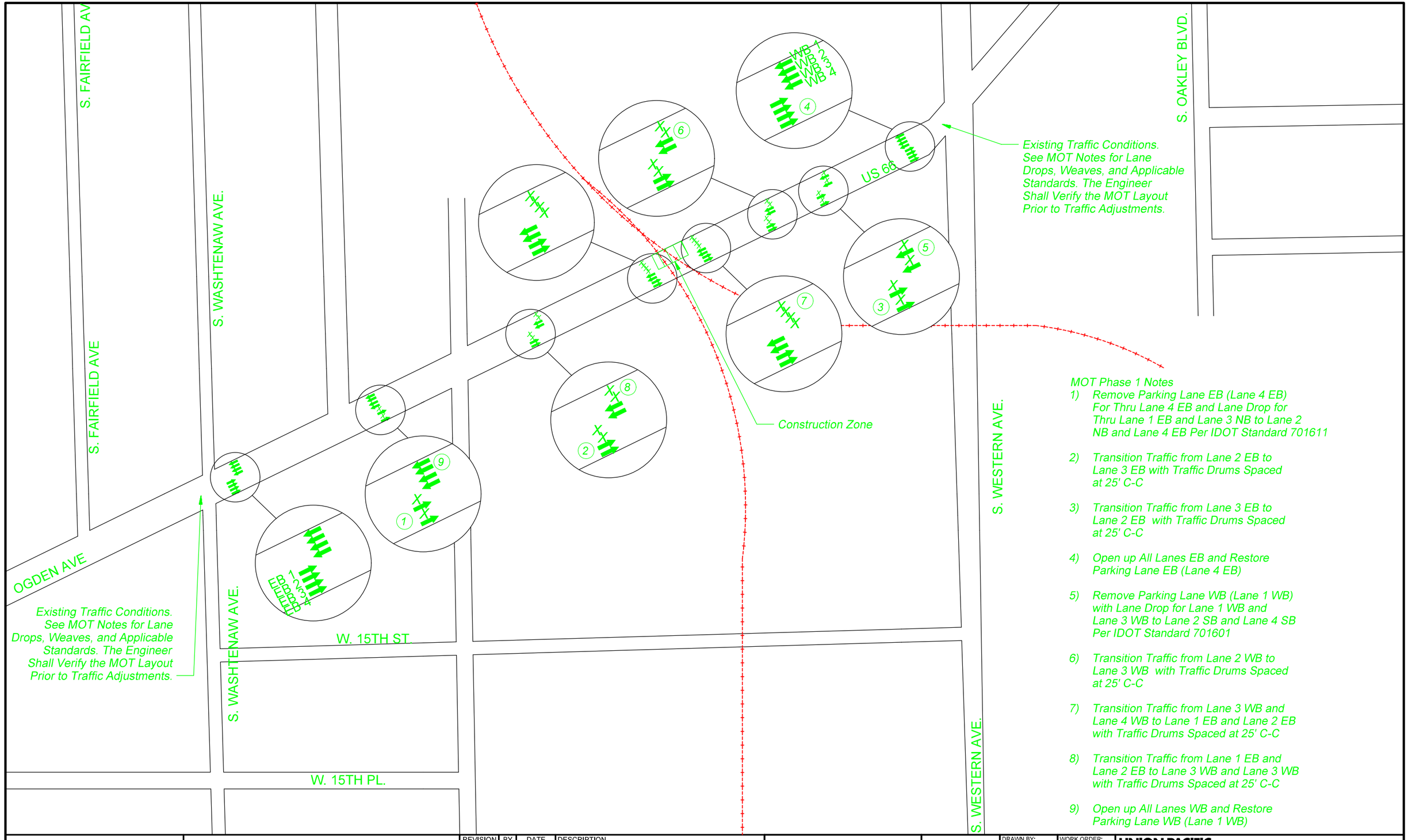
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DATE: 05/28/21	BUDGET REF:		
SCALE: N.T.S	SHEET NUMBER R-007	SHEET TITLE: MOT- LANE CLOSURE TYPICAL	

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MOT Phase 1 Notes

1) Remove Parking Lane EB (Lane 4 EB) For Thru Lane 4 EB and Lane Drop for Thru Lane 1 EB and Lane 3 NB to Lane 2 NB and Lane 4 EB Per IDOT Standard 701611

2) Transition Traffic from Lane 2 EB to Lane 3 EB with Traffic Drums Spaced at 25' C-C

3) Transition Traffic from Lane 3 EB to Lane 2 EB with Traffic Drums Spaced at 25' C-C

4) Open up All Lanes EB and Restore Parking Lane EB (Lane 4 EB)

5) Remove Parking Lane WB (Lane 1 WB) with Lane Drop for Lane 1 WB and Lane 3 WB to Lane 2 SB and Lane 4 SB Per IDOT Standard 701601

6) Transition Traffic from Lane 2 WB to Lane 3 WB with Traffic Drums Spaced at 25' C-C

7) Transition Traffic from Lane 3 WB and Lane 4 WB to Lane 1 EB and Lane 2 EB with Traffic Drums Spaced at 25' C-C

8) Transition Traffic from Lane 1 EB and Lane 2 EB to Lane 3 WB and Lane 3 WB with Traffic Drums Spaced at 25' C-C

9) Open up All Lanes WB and Restore Parking Lane WB (Lane 1 WB)

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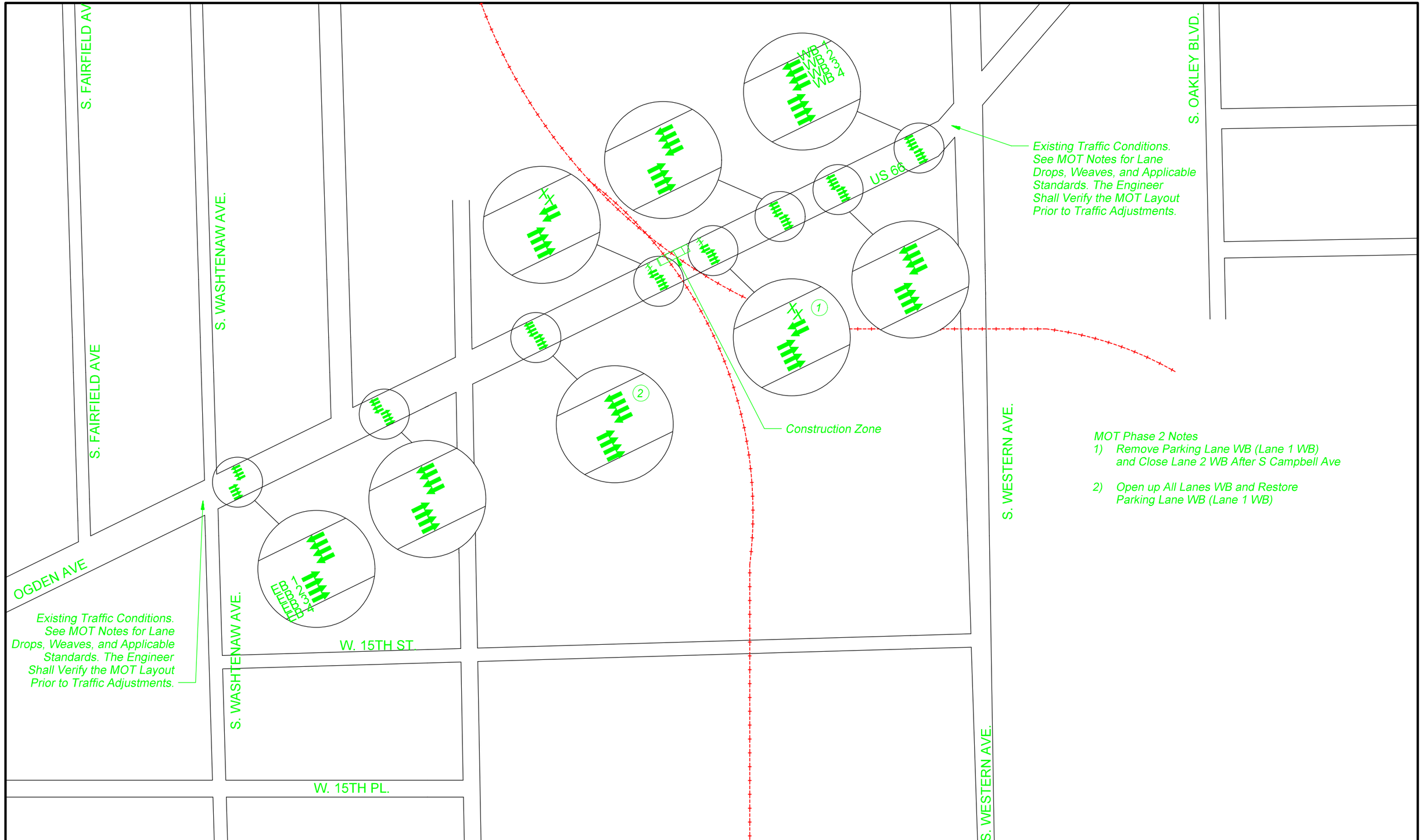
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DATE: 05/28/21	BUDGET REF:		
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MOT Phase 2 Notes

1) Remove Parking Lane WB (Lane 1 WB) and Close Lane 2 WB After S Campbell Ave

2) Open up All Lanes WB and Restore Parking Lane WB (Lane 1 WB)

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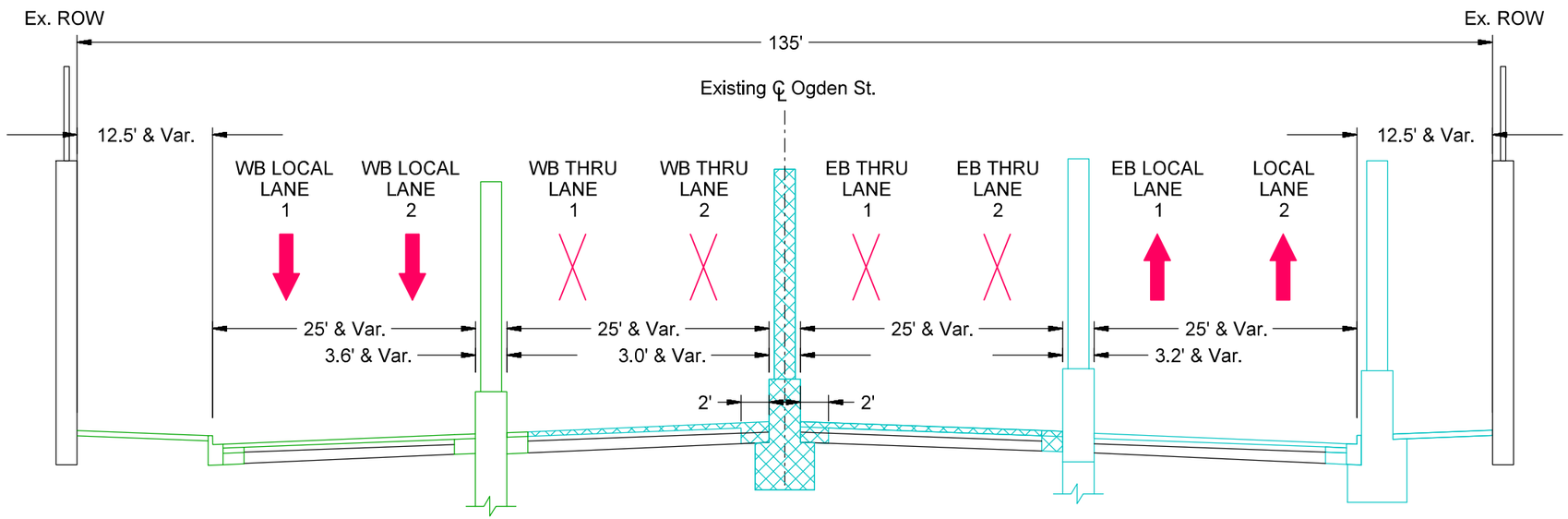
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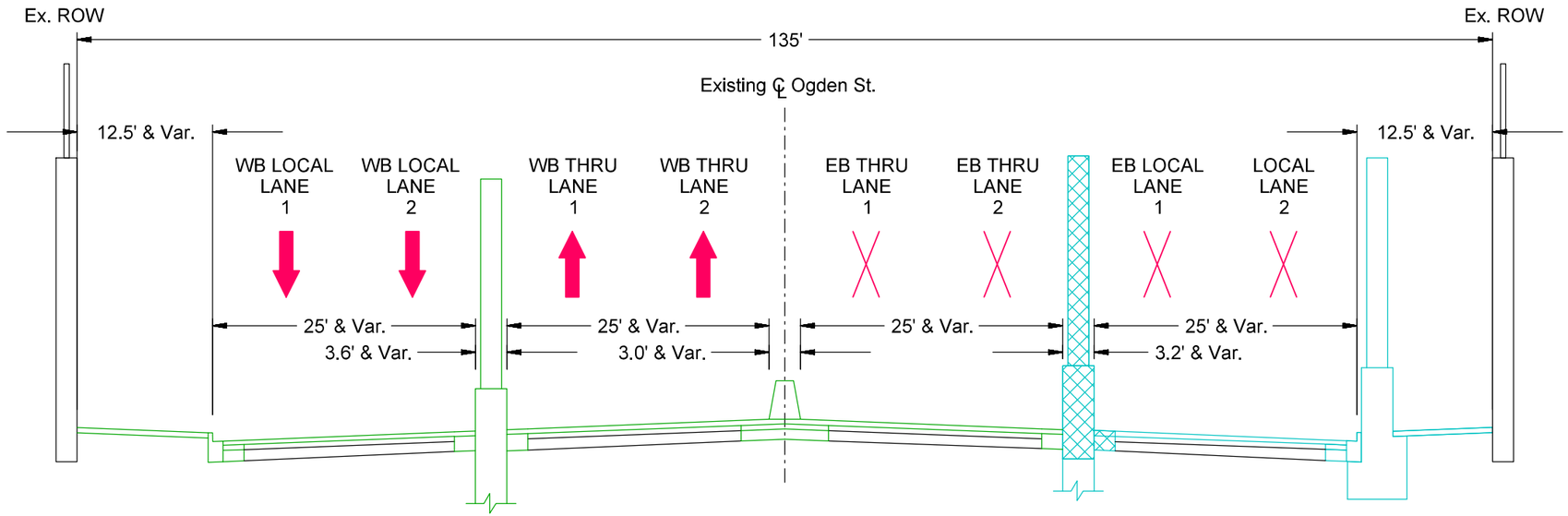
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SCALE: N.T.S	SHEET NUMBER R-007b	SHEET TITLE: MOT- PHASE 2 LANE CLOSURE PLAN	

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MOT TYPICAL SECTION
PHASE 3 - MIDDLE PIER WORK



MOT TYPICAL SECTION
PHASE 4 - EB PIER REMOVAL

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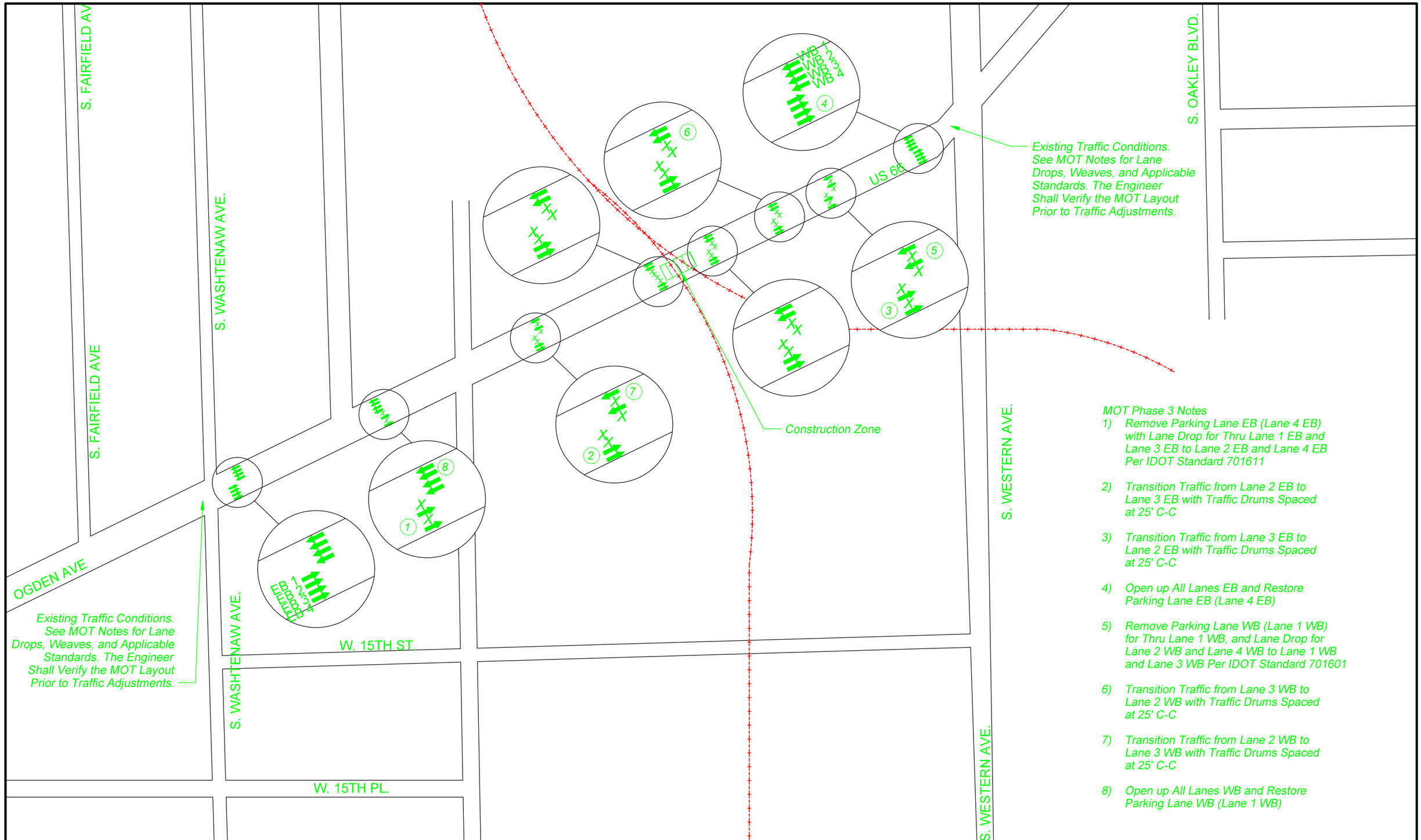
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UNION PACIFIC RAILROAD — Director Structures Design

LOCATION & DESCRIPTION:
MP 2.27 ROCKWELL SUBDIVISION
OGDEN AVENUE EAST BRIDGE REPLACEMENT

SHEET TITLE:
MOT- LANE CLOSURE TYPICAL

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MOT Phase 3 Notes

1) Remove Parking Lane EB (Lane 4 EB) with Lane Drop for Thru Lane 1 EB and Lane 3 EB to Lane 2 EB and Lane 4 EB Per IDOT Standard 701611

2) Transition Traffic from Lane 2 EB to Lane 3 EB with Traffic Drums Spaced at 25' C-C

3) Transition Traffic from Lane 3 EB to Lane 2 EB with Traffic Drums Spaced at 25' C-C

4) Open up All Lanes EB and Restore Parking Lane EB (Lane 4 EB)

5) Remove Parking Lane WB (Lane 1 WB) for Thru Lane 1 WB, and Lane Drop for Lane 2 WB and Lane 4 WB to Lane 1 WB and Lane 3 WB Per IDOT Standard 701601

6) Transition Traffic from Lane 3 WB to Lane 2 WB with Traffic Drums Spaced at 25' C-C

7) Transition Traffic from Lane 2 WB to Lane 3 WB with Traffic Drums Spaced at 25' C-C

8) Open up All Lanes WB and Restore Parking Lane WB (Lane 1 WB)

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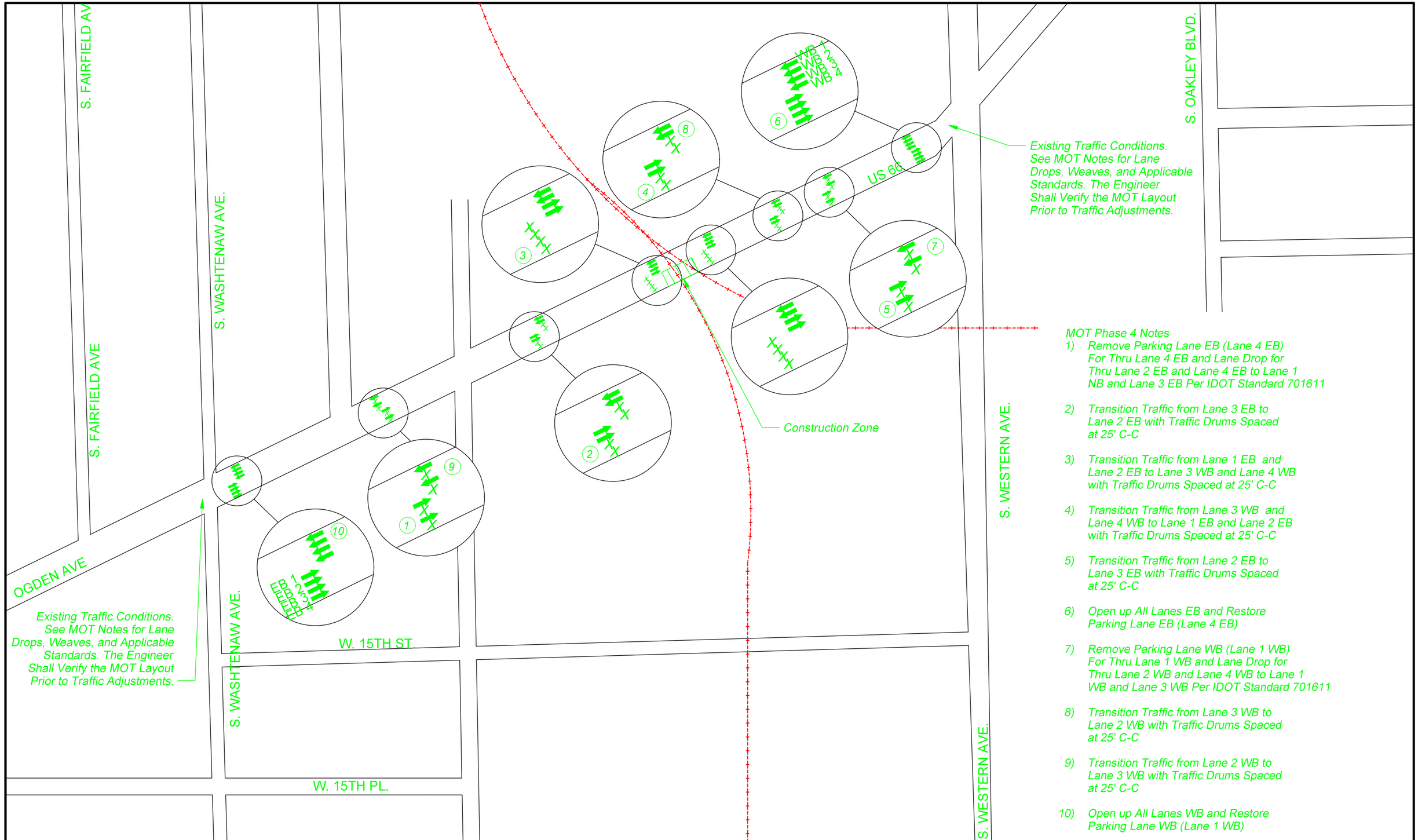
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Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

DRAWN BY: KP	WORK ORDER: 31876	UNION PACIFIC RAILROAD	Director Structures Design
CHECKED BY: TK	PID:	LOCATION & DESCRIPTION: MP 2.27 ROCKWELL SUBDIVISION OGDEN AVENUE EAST BRIDGE REPLACEMENT	
DATE: 05/28/21	BUDGET REF:		
SCALE: N.T.S	SHEET NUMBER R-008a	SHEET TITLE: MOT- PHASE 3 LANE CLOSURE PLAN	

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Default
5/26/2021



MOT Phase 4 Notes

1) Remove Parking Lane EB (Lane 4 EB) For Thru Lane 4 EB and Lane Drop for Thru Lane 2 EB and Lane 4 EB to Lane 1 NB and Lane 3 EB Per IDOT Standard 701611

2) Transition Traffic from Lane 3 EB to Lane 2 EB with Traffic Drums Spaced at 25' C-C

3) Transition Traffic from Lane 1 EB and Lane 2 EB to Lane 3 WB and Lane 4 WB with Traffic Drums Spaced at 25' C-C

4) Transition Traffic from Lane 3 WB and Lane 4 WB to Lane 1 EB and Lane 2 EB with Traffic Drums Spaced at 25' C-C

5) Transition Traffic from Lane 2 EB to Lane 3 EB with Traffic Drums Spaced at 25' C-C

6) Open up All Lanes EB and Restore Parking Lane EB (Lane 4 EB)

7) Remove Parking Lane WB (Lane 1 WB) For Thru Lane 1 WB and Lane Drop for Thru Lane 2 WB and Lane 4 WB to Lane 1 WB and Lane 3 WB Per IDOT Standard 701611

8) Transition Traffic from Lane 3 WB to Lane 2 WB with Traffic Drums Spaced at 25' C-C

9) Transition Traffic from Lane 2 WB to Lane 3 WB with Traffic Drums Spaced at 25' C-C

10) Open up All Lanes WB and Restore Parking Lane WB (Lane 1 WB)

WARNING !
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ON RAILROAD R-O-W
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1-800-336-9193

ISSUED FOR CONSTRUCTION

REVISION	BY	DATE	DESCRIPTION

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35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

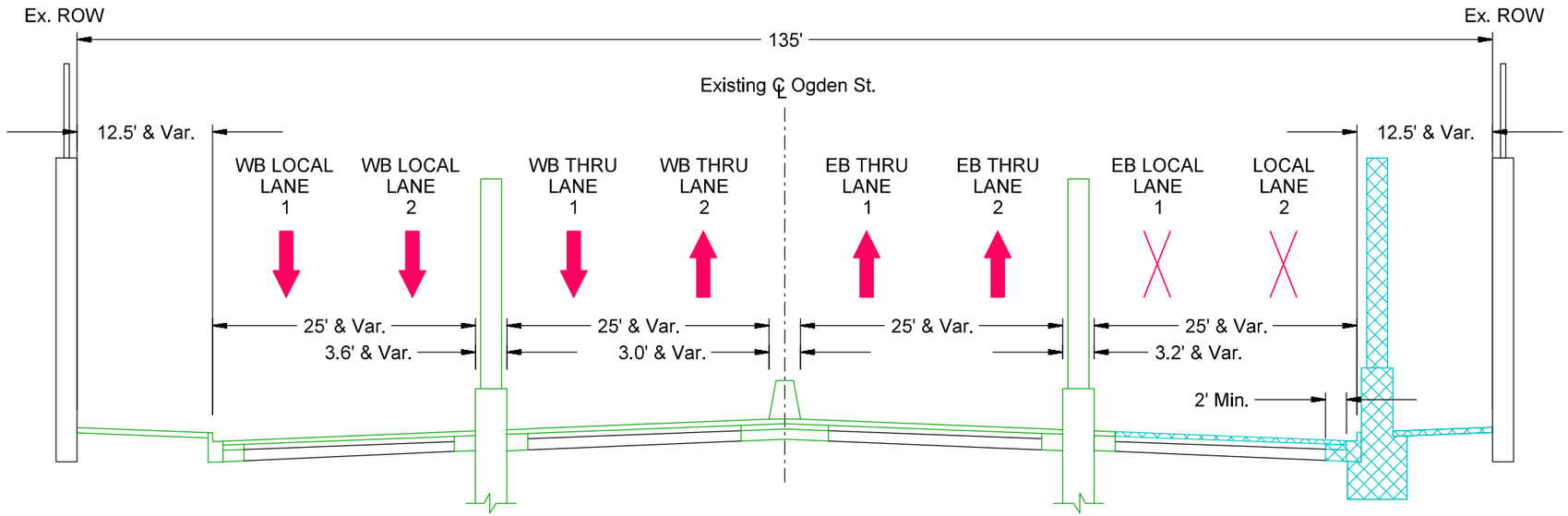
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UNION PACIFIC RAILROAD — Director Structures Design

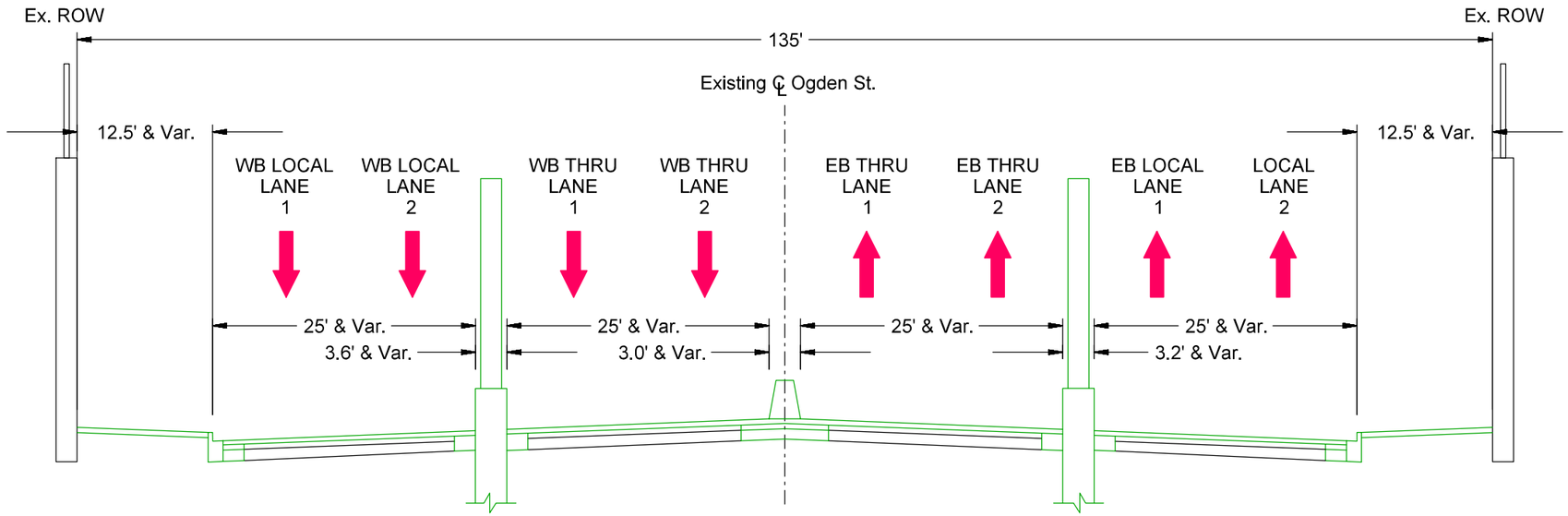
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OGDEN AVENUE EAST BRIDGE REPLACEMENT

SHEET TITLE:
MOT- PHASE 4 LANE CLOSURE PLAN

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5/26/2021



MOT TYPICAL SECTION
PHASE 5 - EB PIER WORK



MOT TYPICAL SECTION
PHASE 6 - FULL OPEN

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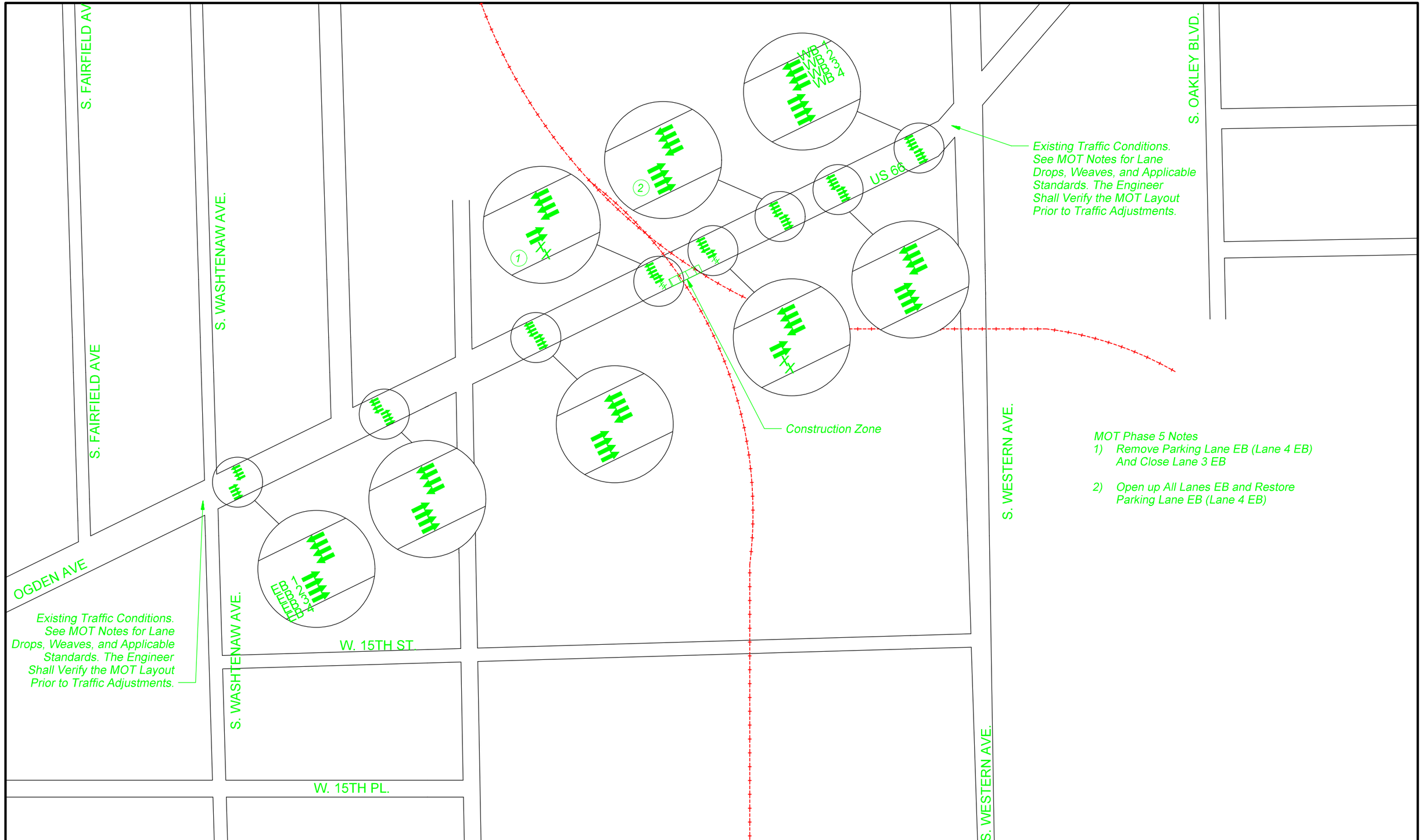
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DATE: 05/28/21	BUDGET REF:
SCALE: N.T.S	SHEET NUMBER: R-009

UNION PACIFIC RAILROAD — Director Structures Design

LOCATION & DESCRIPTION:
MP 2.27 ROCKWELL SUBDIVISION
OGDEN AVENUE EAST BRIDGE REPLACEMENT

SHEET TITLE:
MOT- LANE CLOSURE TYPICAL

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5/26/2021



MOT Phase 5 Notes

1) Remove Parking Lane EB (Lane 4 EB) And Close Lane 3 EB

2) Open up All Lanes EB and Restore Parking Lane EB (Lane 4 EB)

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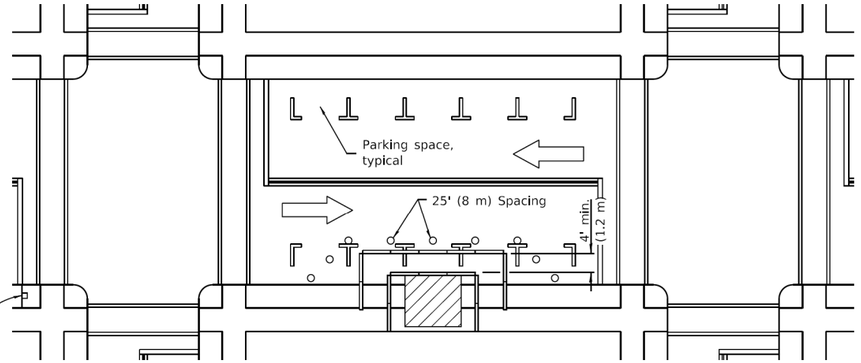
ISSUED FOR CONSTRUCTION

REVISION	BY	DATE	DESCRIPTION

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CHECKED BY: TK	PID:	LOCATION & DESCRIPTION: MP 2.27 ROCKWELL SUBDIVISION OGDEN AVENUE EAST BRIDGE REPLACEMENT	
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5/26/2021



① ROAD CONSTRUCTION AHEAD — W20-I103(0)-48 for contract construction projects

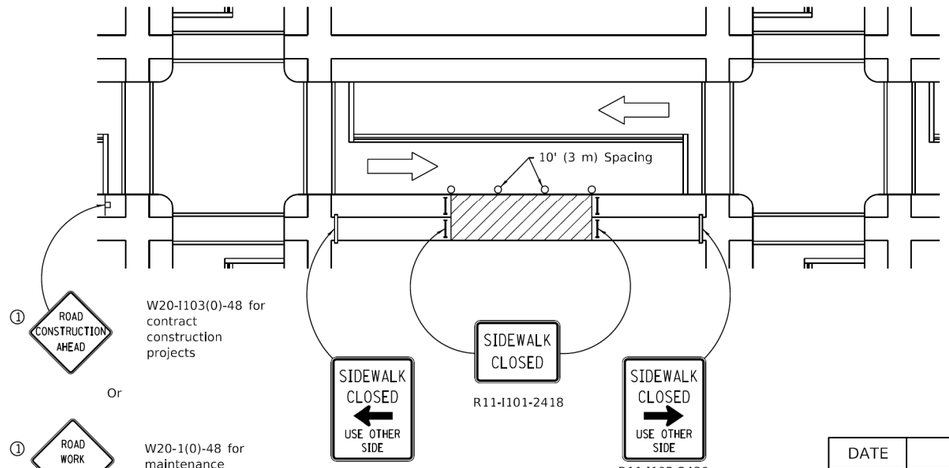
Or

① ROAD WORK AHEAD — W20-1(0)-48 for maintenance and utility projects

SIDEWALK DIVERSION

SYMBOLS

- Work area
- Sign on portable or permanent support
- Barricade or drum
- Cone, drum or barricade
- Type III barricade
- Detectable pedestrian channelizing barricade



① ROAD CONSTRUCTION AHEAD — W20-I103(0)-48 for contract construction projects

Or

① ROAD WORK AHEAD — W20-1(0)-48 for maintenance and utility projects

SIDEWALK CLOSURE

① Omit whenever duplicated by road work traffic control.

GENERAL NOTES

This Standard is used where, at any time, pedestrian traffic must be rerouted due to work being performed.

This Standard must be used in conjunction with other Traffic Control & Protection Standards when roadway traffic is affected.

Temporary facilities shall be detectable and accessible.

The temporary pedestrian facilities shall be provided on the same side of the closed facilities whenever possible.

The SIDEWALK CLOSED / USE OTHER SIDE sign shall be placed at the nearest crosswalk or intersection to each end of the closure. Where the closure occurs at a corner, the signs shall be erected on the corners across the street from the closure. The SIDEWALK CLOSED signs shall be used at the ends of the actual closures.

Type III barricades and R11-2-4830 signs shall be positioned as shown in "ROAD CLOSED TO ALL TRAFFIC" detail on Standard 701901.

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

PASSED April 1, 2016
ENGINEER OF SAFETY ENGINEERING
APPROVED April 1, 2016
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

DATE	REVISIONS
4-1-16	Omitted orange safety fence
	from standard as this is
	covered in the std. spec.
1-1-12	Added SIDEWALK DIVERSION.
	Modified appearance of
	plan views. Renamed Std.

SIDEWALK, CORNER OR CROSSWALK CLOSURE

(Sheet 1 of 2)

STANDARD 701801-06

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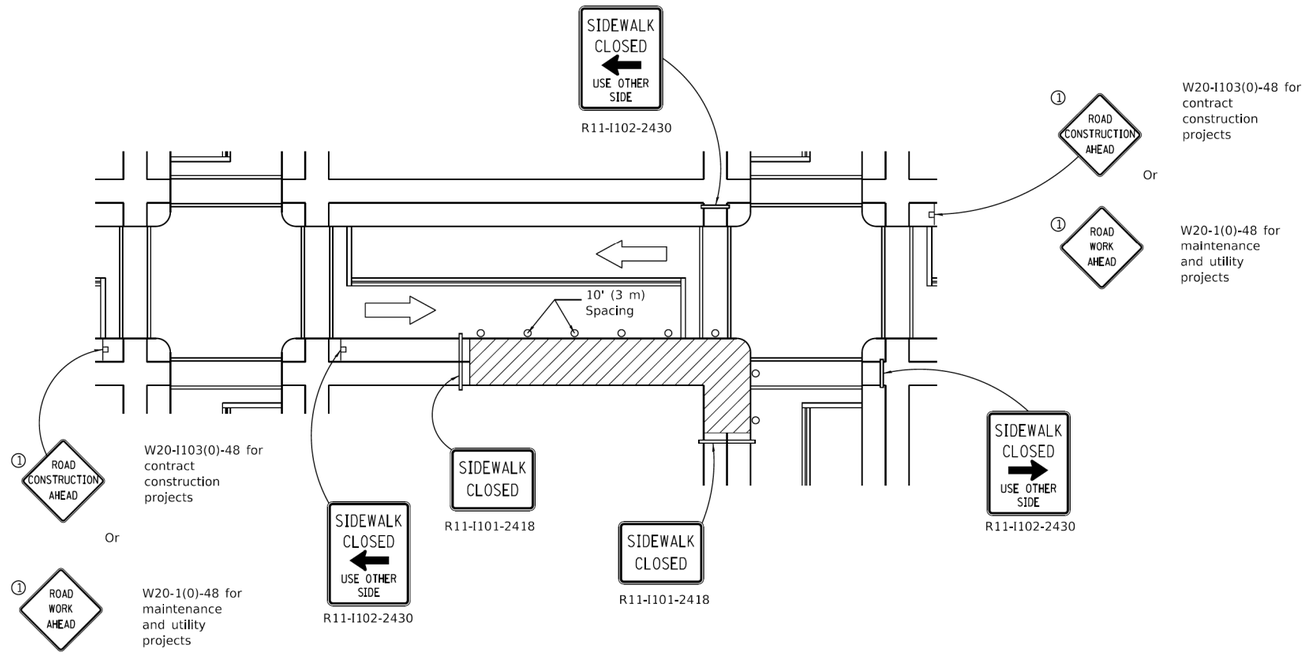
ISSUED FOR CONSTRUCTION

REVISION	BY	DATE	DESCRIPTION

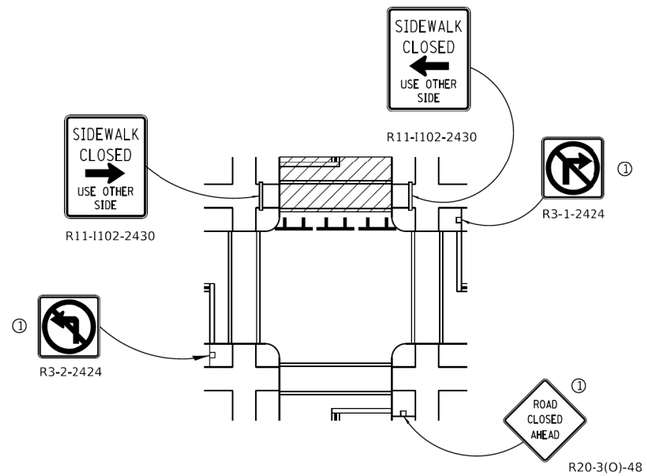
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DRAWN BY: KP	WORK ORDER: 31876	UNION PACIFIC RAILROAD	Director Structures Design
CHECKED BY: TK	PID:	LOCATION & DESCRIPTION: MP 2.27 ROCKWELL SUBDIVISION OGDEN AVENUE EAST BRIDGE REPLACEMENT	
DATE: 05/28/21	BUDGET REF:		
SCALE: N.T.S	SHEET NUMBER R-010	SHEET TITLE: IDOT HIGHWAY STANDARD DETAILS	

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5/26/2021



CORNER CLOSURE



CROSSWALK CLOSURE

Illinois Department of Transportation

PASSED April 1, 2016
ENGINEER OF SAFETY ENGINEERING

APPROVED April 1, 2016
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

SIDEWALK, CORNER OR CROSSWALK CLOSURE

(Sheet 2 of 2)

STANDARD 701801-06

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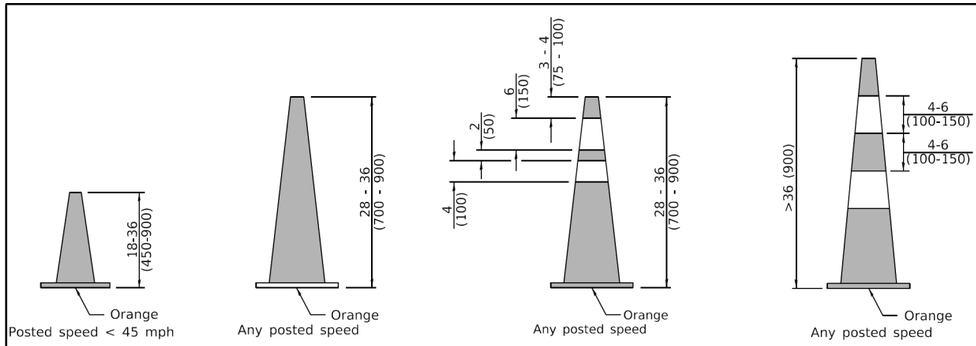
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UNION PACIFIC RAILROAD — Director Structures Design

LOCATION & DESCRIPTION:
MP 2.27 ROCKWELL SUBDIVISION
OGDEN AVENUE EAST BRIDGE REPLACEMENT

SHEET TITLE:
IDOT HIGHWAY STANDARD DETAILS

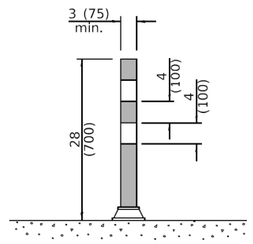
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5/26/2021



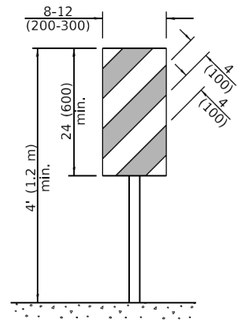
DAYTIME USE

DAY OR NIGHTTIME USE

CONES

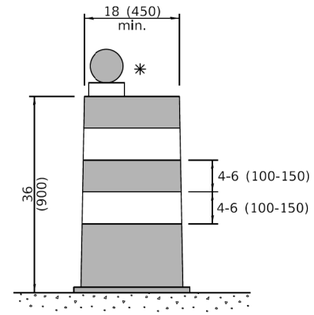


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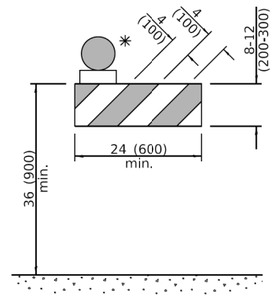


VERTICAL PANEL

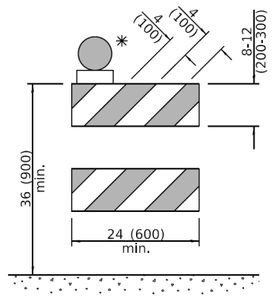
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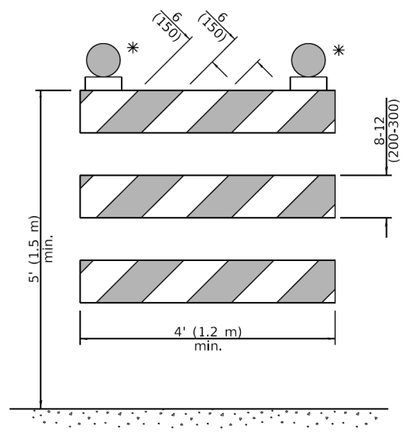
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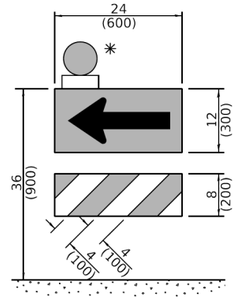
TYPE I BARRICADE



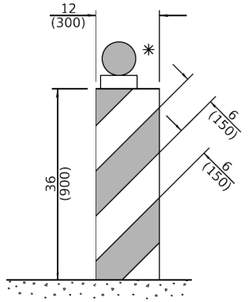
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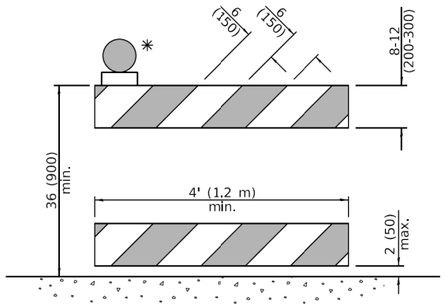
TYPE III BARRICADE



DIRECTION INDICATOR BARRICADE



VERTICAL BARRICADE



DETECTABLE PEDESTRIAN CHANNELIZING BARRICADE

✳ Warning lights (if required)

GENERAL NOTES

All heights shown shall be measured above the pavement surface.

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

APPROVED January 1, 2019
ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2019
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-19

DATE	REVISIONS
1-1-19	Revised cone usage and
	added cones >36" (900 m) height.
1-1-18	Revised END WORK ZONE
	SPEED LIMIT sign from
	orange to white background.

TRAFFIC CONTROL DEVICES

(Sheet 1 of 3)

STANDARD 701901-08

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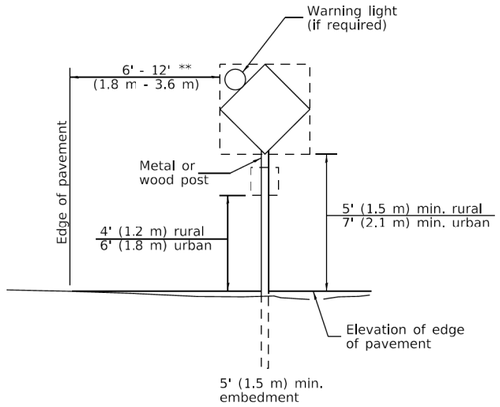
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DATE: 05/28/21	BUDGET REF:
SCALE: N.T.S	SHEET NUMBER R-012

UNION PACIFIC RAILROAD — Director Structures Design

LOCATION & DESCRIPTION:
MP 2.27 ROCKWELL SUBDIVISION
OGDEN AVENUE EAST BRIDGE REPLACEMENT

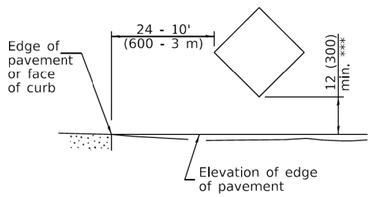
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5/26/2021



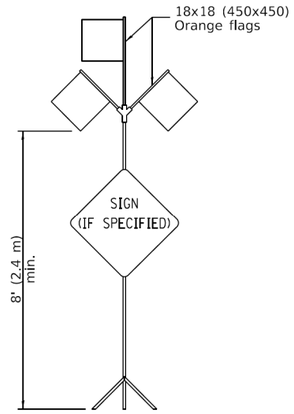
POST MOUNTED SIGNS

** When curb or paved shoulder are present this dimension shall be 24 (600) to the face of curb or 6' (1.8 m) to the outside edge of the paved shoulder.

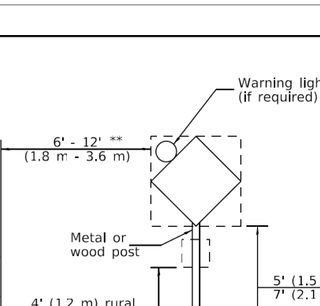


SIGNS ON TEMPORARY SUPPORTS

*** When work operations exceed four days, this dimension shall be 5' (1.5 m) min. If located behind other devices, the height shall be sufficient to be seen completely above the devices.



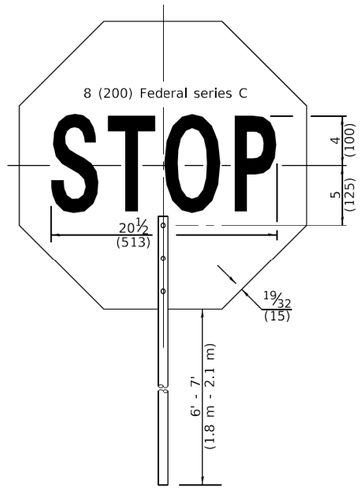
HIGH LEVEL WARNING DEVICE



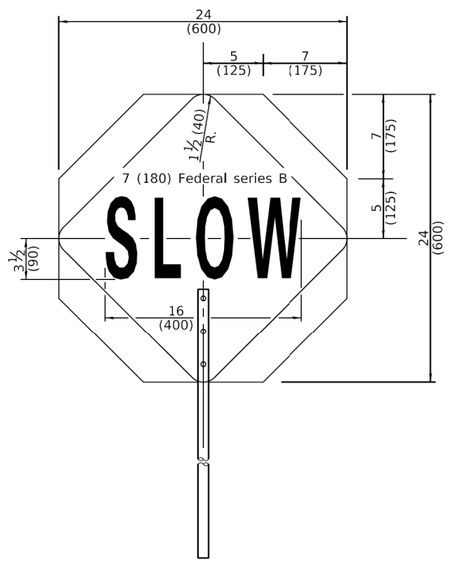
W12-I103-4848

WIDTH RESTRICTION SIGN

XX'-XX" width and X miles are variable.



FRONT SIDE



REVERSE SIDE

FLAGGER TRAFFIC CONTROL SIGN

ROAD CONSTRUCTION NEXT X MILES — G20-I104(0)-6036

END CONSTRUCTION — G20-I105(0)-6024

This signing is required for all projects 2 miles (3200 m) or more in length.

ROAD CONSTRUCTION NEXT X MILES sign shall be placed 500' (150 m) in advance of project limits.

END CONSTRUCTION sign shall be erected at the end of the job unless another job is within 2 miles (3200 m).

Dual sign displays shall be utilized on multi-lane highways.

WORK LIMIT SIGNING

WORK ZONE	W21-III5(0)-3618
SPEED LIMIT XX	R2-I106p-3618
PHOTO ENFORCED	R10-I108p-3618 ****
$XXX FINE MINIMUM	R2-I106p-3618

Sign assembly as shown on Standards or as allowed by District Operations.

END WORK ZONE SPEED LIMIT — G20-I103-6036

This sign shall be used when the above sign assembly is used.

HIGHWAY CONSTRUCTION SPEED ZONE SIGNS

**** R10-I108p shall only be used along roadways under the juristiction of the State.

Illinois Department of Transportation

APPROVED January 1, 2019
ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2019
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-13

TRAFFIC CONTROL DEVICES

(Sheet 2 of 3)

STANDARD 701901-08

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ISSUED FOR CONSTRUCTION

REVISION	BY	DATE	DESCRIPTION

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35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

UNION PACIFIC

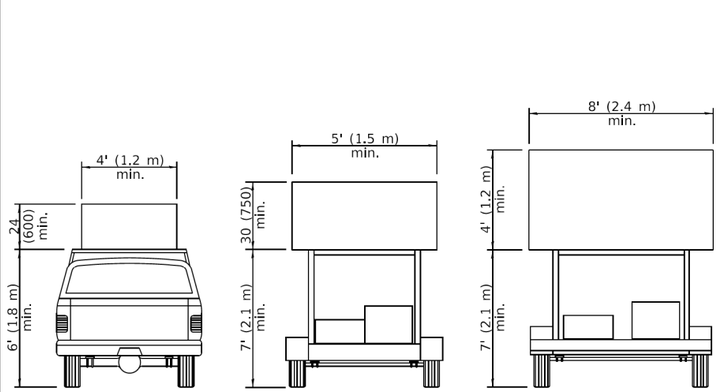
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CHECKED BY: TK	PID:
DATE: 05/28/21	BUDGET REF:
SCALE: N.T.S	SHEET NUMBER R-013

UNION PACIFIC RAILROAD — Director Structures Design

LOCATION & DESCRIPTION:
MP 2.27 ROCKWELL SUBDIVISION
OGDEN AVENUE EAST BRIDGE REPLACEMENT

SHEET TITLE:
IDOT HIGHWAY STANDARD DETAILS

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5/26/2021

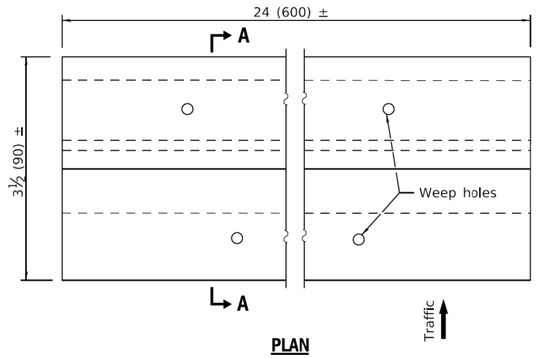


TYPE A ROOF MOUNTED

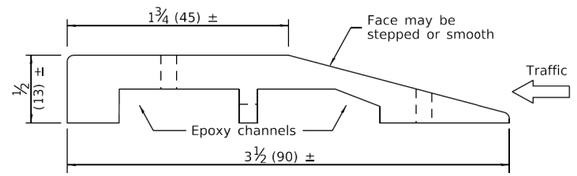
TYPE B ROOF OR TRAILER MOUNTED

TYPE C TRAILER MOUNTED

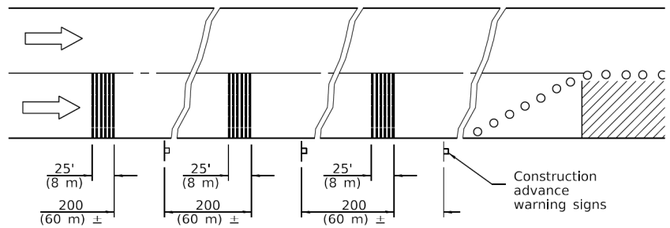
ARROW BOARDS

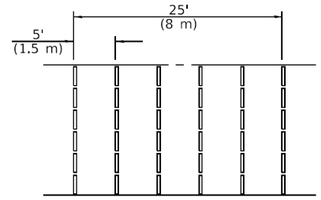


PLAN



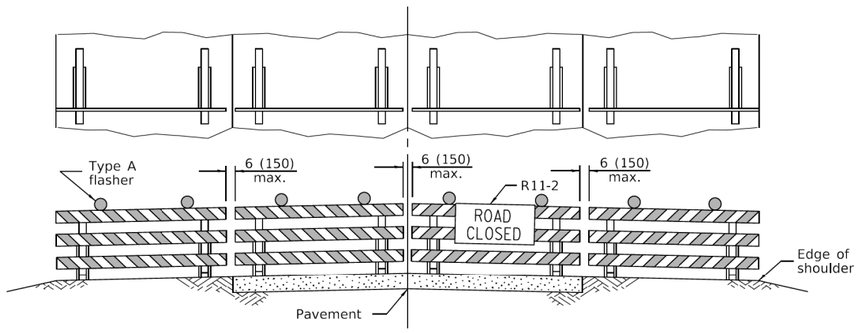
SECTION A-A





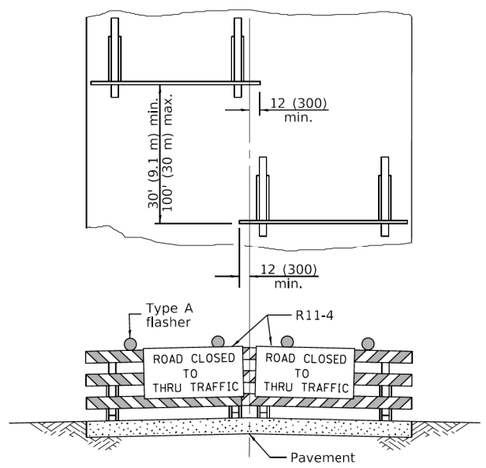
TYPICAL INSTALLATION

TEMPORARY RUMBLE STRIPS



ROAD CLOSED TO ALL TRAFFIC

Reflectorized striping may be omitted on the back side of the barricades. If a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the sign may be mounted on an NCHRP 350 temporary sign support directly in front of the barricade.



ROAD CLOSED TO THRU TRAFFIC

Reflectorized striping shall appear on both sides of the barricades. If a Type III barricade with an attached sign panel which meets NCHRP 350 is not available, the signs may be mounted on NCHRP 350 temporary sign supports directly in front of the barricade.

TYPICAL APPLICATIONS OF TYPE III BARRICADES CLOSING A ROAD

Illinois Department of Transportation

APPROVED January 1, 2019
ENGINEER OF SAFETY PROG. AND ENGINEERING

APPROVED January 1, 2019
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-13

TRAFFIC CONTROL DEVICES

(Sheet 3 of 3)

STANDARD 701901-08

WARNING !
FIBER OPTIC CABLE
ON RAILROAD R-O-W
CALL BEFORE YOU DIG
1-800-336-9193

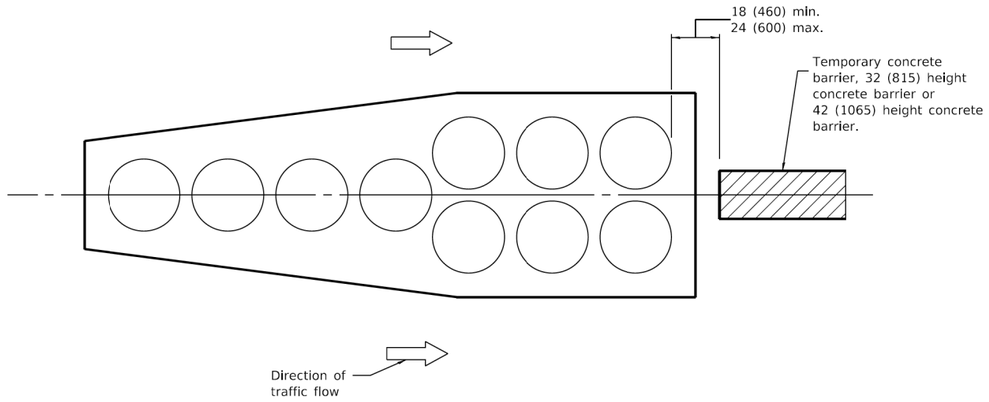
ISSUED FOR CONSTRUCTION

REVISION	BY	DATE	DESCRIPTION

benesch
Alfred Benesch & Company
35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

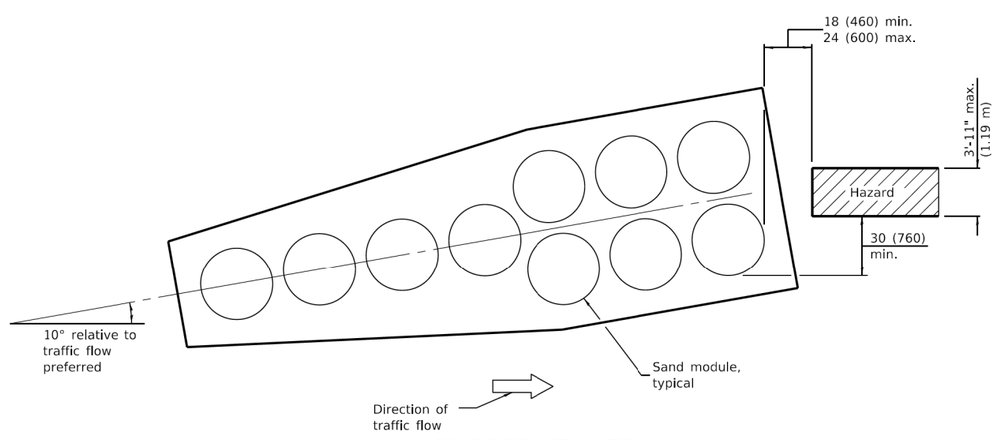
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DATE: 05/28/21	BUDGET REF:		
SCALE: N.T.S	SHEET NUMBER R-014	SHEET TITLE: IDOT HIGHWAY STANDARD DETAILS	

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5/26/2021



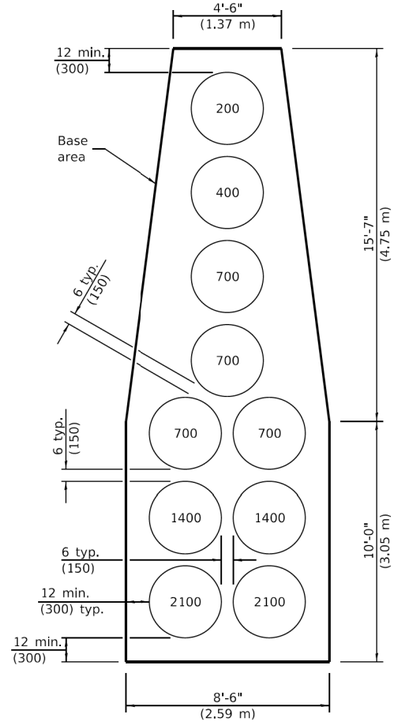
GORE INSTALLATION

(Traffic approaches on both sides)
(Test Level 2 array shown)



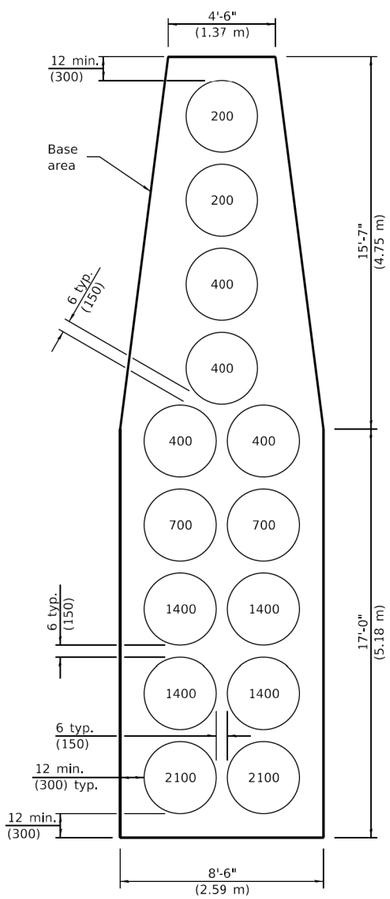
ROADSIDE INSTALLATION

(Traffic approaches on one side)
(Test Level 2 array shown)



TEST LEVEL 2 ARRAY

(For design speed less than or equal to 45 mph.)
(Numbers inside sand modules indicate sand weight in pounds.)



TEST LEVEL 3 ARRAY

(For design speed greater than 45 mph.)
(Numbers inside sand modules indicate sand weight in pounds.)

GENERAL NOTES

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

PASSED January 1, 2014
Michael Brand
ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 2014
ENGINEER OF DESIGN AND ENVIRONMENT
ISSUED 1-1-97

DATE	REVISIONS
1-1-14	Revised distance from
	barrels to hazard.
1-1-13	Changed 'posted speed' to
	'design speed'.

SAND MODULE IMPACT ATTENUATORS

STANDARD 643001-02

WARNING !
FIBER OPTIC CABLE
ON RAILROAD R-O-W
CALL BEFORE YOU DIG
1-800-336-9193

ISSUED FOR CONSTRUCTION

REVISION	BY	DATE	DESCRIPTION

benesch
Alfred Benesch & Company
35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

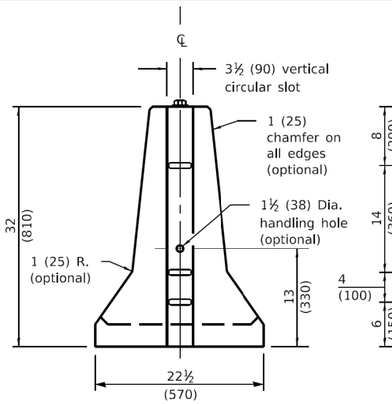
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UNION PACIFIC RAILROAD — Director Structures Design

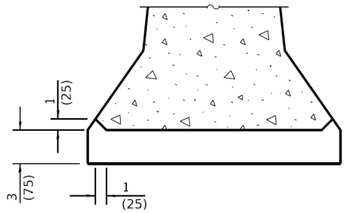
LOCATION & DESCRIPTION:
MP 2.27 ROCKWELL SUBDIVISION
OGDEN AVENUE EAST BRIDGE REPLACEMENT

SHEET TITLE:
IDOT HIGHWAY STANDARD DETAILS

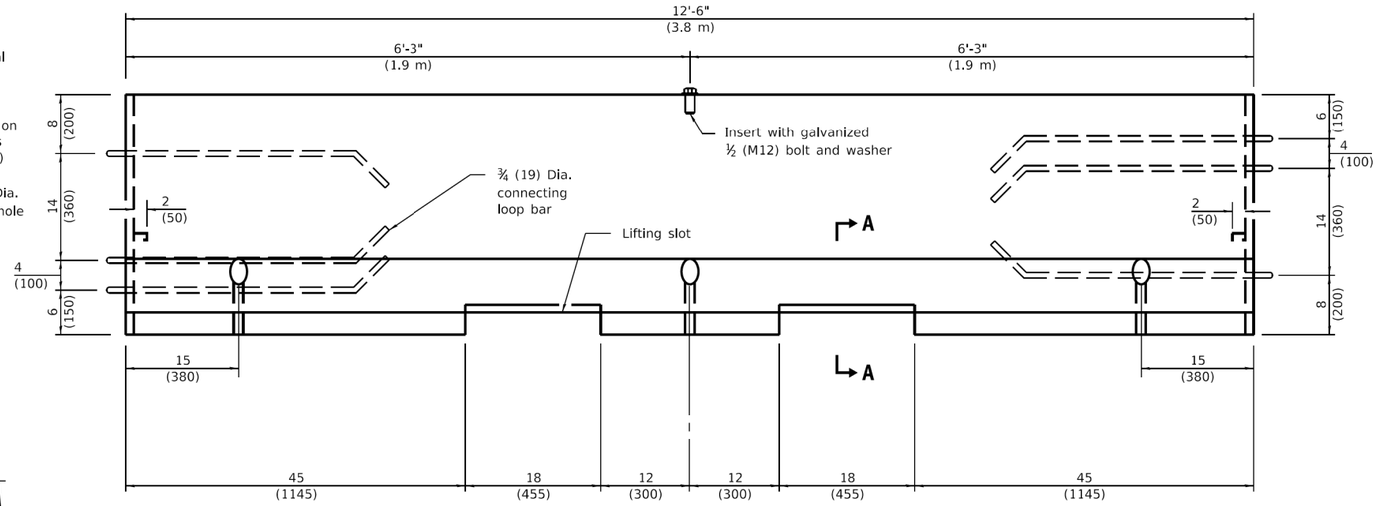
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5/26/2021



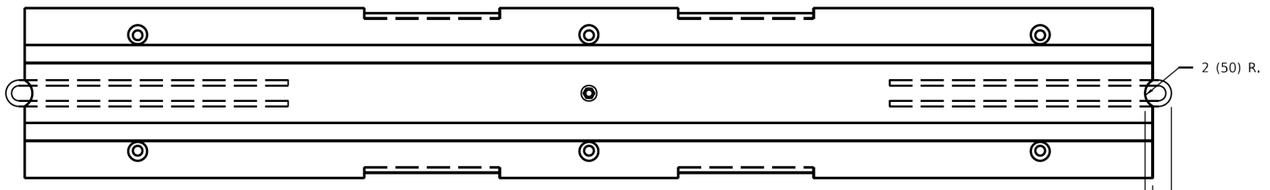
END VIEW
(Showing lifting slot)



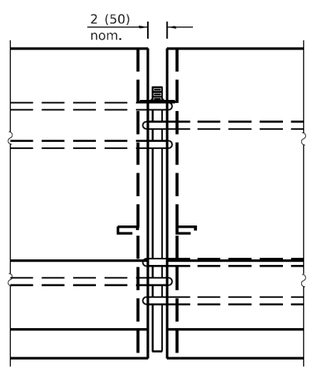
SECTION A-A
LIFTING SLOT



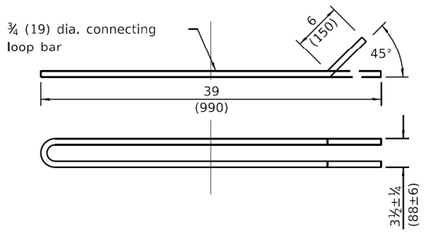
ELEVATION
(Showing connecting loop bars and vertical panel bolt/insert)



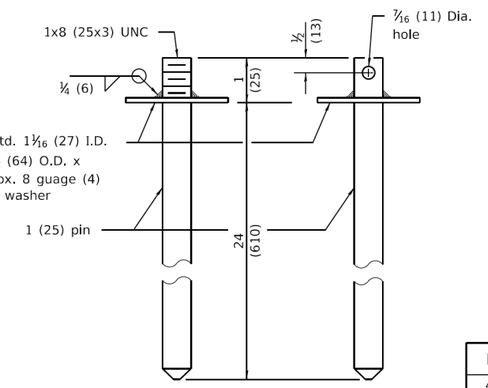
PLAN



CONNECTING DETAIL



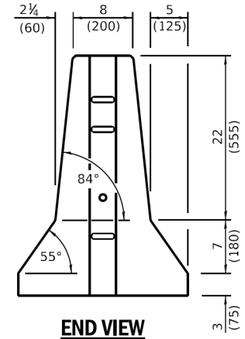
CONNECTING LOOP BAR



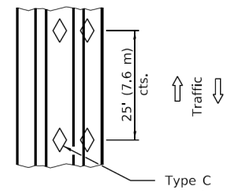
CONNECTING AND ANCHOR PINS
(End may be beveled ¼ (6) max.)

2½ (63) measured from face of barrier to end of loop bar

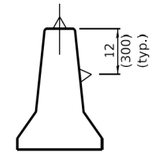
F SHAPE DESIGN



END VIEW



TOP VIEW



BARRIER WALL REFLECTORS

GENERAL NOTES

Each F shape barrier shall be clearly marked with "ILLINOIS F SHAPE", the Producer's mark and the date of manufacture. The markings shall be indented on the barrier or painted thereon with waterproof paint/ink.

The insert for the ½ (M12) bolt shall be capable of 3,000 lb (13 kN) pull-out strength.

When barrier separates opposing flows of traffic markers shall be on both sides of barrier.

See Standard 782006 for dimensions of Type C reflector.

All dimensions are in inches (millimeters) unless otherwise shown.

Illinois Department of Transportation

PASSED April 1, 2016
Michael Brand
ENGINEER OF POLICY AND PROCEDURES

APPROVED April 1, 2016
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 10-1-02

DATE	REVISIONS
4-1-16	Rev. opt. chamfer on all
	edges to 1 (25). Reference
	to Std. 635011 now 782006.
1-1-12	Omitted 'ALTERNATE' from
	connecting and anchoring
	pins detail.

TEMPORARY CONCRETE BARRIER

(Sheet 1 of 2)

STANDARD 704001-08

WARNING !
FIBER OPTIC CABLE
ON RAILROAD R-O-W
CALL BEFORE YOU DIG
1-800-336-9193

ISSUED FOR CONSTRUCTION

REVISION	BY	DATE	DESCRIPTION

benesch
Alfred Benesch & Company
35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

UNION PACIFIC

DRAWN BY: KP	WORK ORDER: 31876
CHECKED BY: TK	PID:
DATE: 05/28/21	BUDGET REF:
SCALE: N.T.S	SHEET NUMBER R-016

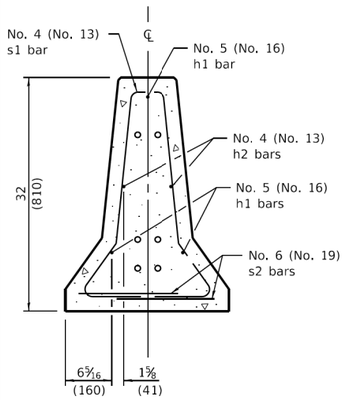
UNION PACIFIC RAILROAD — Director Structures Design

LOCATION & DESCRIPTION:
MP 2.27 ROCKWELL SUBDIVISION
OGDEN AVENUE EAST BRIDGE REPLACEMENT

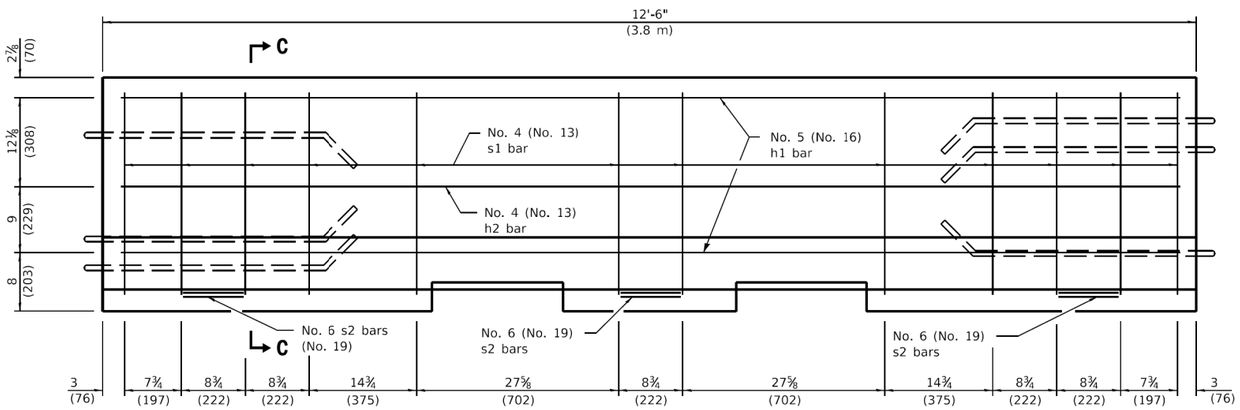
SHEET TITLE:
IDOT HIGHWAY STANDARD DETAILS

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5/26/2021

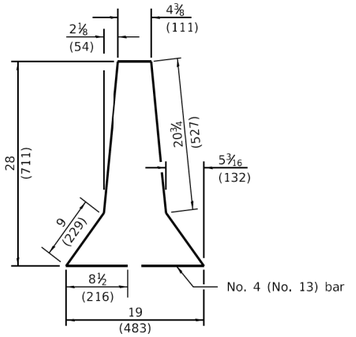
F SHAPE DESIGN



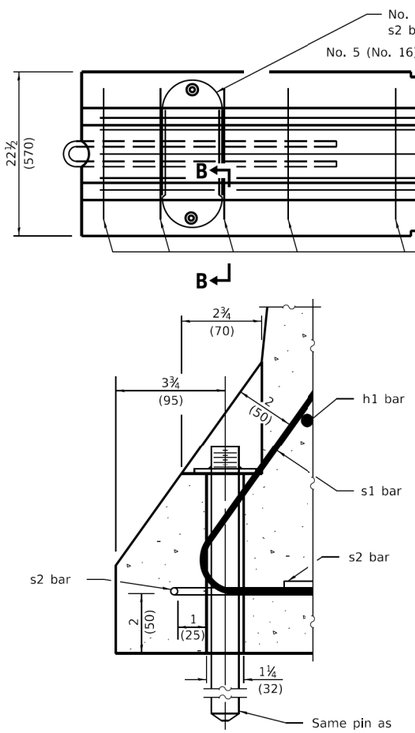
SECTION C-C



ELEVATION
(Reinforcement)

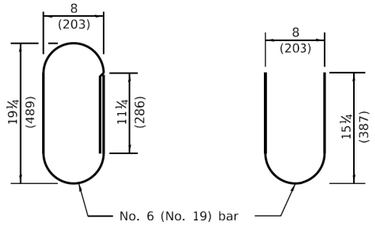


s1 BAR

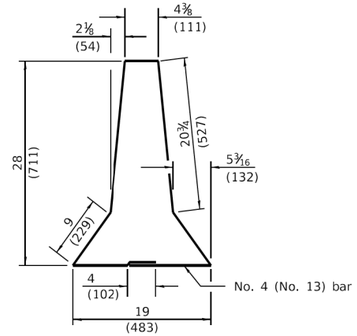


PLAN

SECTION B-B
ANCHORING DETAIL



ALTERNATE s2 BARS



ALTERNATE s1 BAR

Illinois Department of Transportation

PASSED April 1, 2016
Michael Brand
ENGINEER OF POLICY AND PROCEDURES
APPROVED April 1, 2016
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 10-1-02

TEMPORARY CONCRETE BARRIER

(Sheet 2 of 2)

STANDARD 704001-08

WARNING !
FIBER OPTIC CABLE
ON RAILROAD R-O-W
CALL BEFORE YOU DIG
1-800-336-9193

ISSUED FOR CONSTRUCTION

REVISION	BY	DATE	DESCRIPTION

benesch
Alfred Benesch & Company
35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

DRAWN BY: KP	WORK ORDER: 31876	UNION PACIFIC RAILROAD	Director Structures Design
CHECKED BY: TK	PID:	LOCATION & DESCRIPTION: MP 2.27 ROCKWELL SUBDIVISION OGDEN AVENUE EAST BRIDGE REPLACEMENT	
DATE: 05/28/21	BUDGET REF:		
SCALE: N.T.S	SHEET NUMBER R-017	SHEET TITLE: IDOT HIGHWAY STANDARD DETAILS	

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Default
5/26/2021

GENERAL UTILITY NOTES :

COMED :
USE EXTREME CAUTION NEAR ComEd FACILITIES. HAND DIG WHILE CROSSING 69/138/345 kv TRANSMISSION LINE. ComEd TRANSMISSION SHALL BE NOTIFIED 2 BUSINESS DAYS PRIOR TO THE START OF THE WORK. TO SCHEDULE AN ON SITE INSPECTOR DURING CONSTRUCTION, CONTACT LESLIE PASCHAL AT (630) 437-4767.

NO DIRECTIONAL BORING WITHIN 5 FEET OF COMED CONDUITS. CITY CONTRACTORS ARE REQUESTED TO TAKE EXTRA PRECAUTIONS WHEN WORKING NEAR COMED OVERHEAD WIRES. THESE WIRES ARE NOT INSULATED. COMED REQUESTS THAT THE CITY DIRECTIONAL BORE CONTRACTORS PROTECT ALL EXISTING COMED MANHOLES & CONDUITS WHEN CROSSING, ADJACENT TO OR IN THE NEAR VICINITY, BY DIGGING TEST HOLES TO ASSURE COMED FACILITIES ARE NOT DAMAGED, DURING THE DIRECTIONAL BORE PROCESS, & HAND DIG WHEN WITHIN 5 FT OR CROSSING FACILITIES. IF NEEDED CONTACT MICHELLE HO, 331-481-9108 WITH A 6-WEEK NOTICE.

CHICAGO DEPARTMENT OF WATER MANAGEMENT :
WATER MAINS AND SERVICES:

THE MINIMUM VERTICAL CLEARANCE (EDGE-TO-EDGE) FROM WATER MAINS AND SERVICES IS 18- INCHES. FOR GRID MAINS (WATER MAINS LESS THAN 16- INCHES) AND WATER STRUCTURES (VALVE BASINS, SERVICE CONTROL VALVES, ETC.) THE MINIMUM HORIZONTAL CLEARANCE (EDGE-TO-EDGE) IS THREE (3) FEET. FOR FEEDER MAINS (WATER MAINS 16- INCHES AND LARGER), THE MINIMUM HORIZONTAL CLEARANCE (EDGE-TO-EDGE) IS FIVE (5) FEET. ALL LIGHT POLE FOUNDATIONS MUST MAINTAIN A MINIMUM OF FIVE (5) FEET HORIZONTAL CLEARANCE (EDGE-TO-EDGE) TO ALL EXISTING WATER FACILITES.

DIRECTIONAL DRILLING IS APPROVED TO A MAXIMUM DEPTH OF 33- INCHES. ALL SERVICE CONTROL VALVE AND METER VAULT LOCATIONS MUST BE VERIFIED PRIOR TO CONSTRUCTION AND 3-FEET OF HORIZONTAL SEPARATION MUST BE MAINTAINED. SHOULD FIELD CONDITIONS REQUIRE ADDITIONAL ENGINEERING SERVICES OR RELOCATION, THEN CDOT SHALL SUBMIT FUNDING AND/OR RFI FOR DWM APPROVAL PRIOR TO INSTALLATION.

FIRE HYDRANTS :

IN NO CASE SHALL THE INSTALLATION OF ANY PROPOSED FACILITY BE CLOSER THAN FIVE (5) FEET FROM A FIRE HYDRANT OR FIRE HYDRANT LEAD. EXTREME CAUTION IS TO BE TAKEN TO ENSURE THAT NO FACILITY OWNED AND MAINTAINED BY THIS DEPARTMENT (DWM) IS DAMAGED DURING CONSTRUCTION. IF DAMAGE OCCURS TO ANY FACILITIES, THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE COST OF REPAIRING OR REPLACING THE FACILITIES.

DEPARTMENT OF WATER MANAGEMENT (DWM) SEWER REQUIREMENTS
FOR EXISTING FACILITIES PROTECTION.
AUGUST 2016.
FOR ALL GENERAL CLEARANCE REQUIREMENTS (NON-WATER):
UPON PROJECT COMPLETION, RESIDENT ENGINEERS MUST CONTACT THE DWM SEWER EVALUATION SECTION AT 312-747-4680 TO SCHEDULE A FIELD MEETING FOR PROJECT ACCEPTANCE.
DWM REQUIRES A MINIMUM HORIZONTAL CLEARANCE OF ID (INNER DIAMETER OF THE SEWER) + 4' CENTER-TO-CENTER OR 4 FEET EDGE-TO-EDGE, WHICHEVER IS LARGER, AND A MINIMUM VERTICAL CLEARANCE OF 18" EDGE-TO-EDGE. IF EITHER OF THESE CONDITIONS ARE NOT MET, THE SEWER MUST BE REPLACED OR LINED.

ONLY FOR PARALLEL UTILITY INSTALLATIONS IN THE PARKWAY:
UPON PROJECT COMPLETION, RESIDENT ENGINEERS MUST CONTACT THE DWM SEWER EVALUATION SECTION AT 312-747-4680 TO SCHEDULE A FIELD MEETING FOR PROJECT ACCEPTANCE.
PRIVATE SEWER DRAINS (W/BASEMENTS) TYPICALLY HAVE APPROXIMATELY 5 FEET OF COVER. DUE TO POTENTIAL VERTICAL CONFLICTS IN THE PARKWAY, THE CONTRACTOR MUST TELEVISE ALL PRIVATE DRAINS AFTER CONSTRUCTION. A COPY OF THE DVD MUST BE PRESENTED TO THE DWM SEWER INSPECTOR FOR PROJECT ACCEPTANCE.

THE FOLLOWING NOTE MUST BE DISPLAYED ON THE CONSTRUCTION PLANS:
THE PROPOSED WORK ENCROACHES UPON MINIMUM CITY SEWER CLEARANCE REQUIREMENTS. EXTREME CAUTION IS REQUIRED DURING CONSTRUCTION. THE CITY SEWER MUST BE TELEVISED BEFORE AND AFTER CONSTRUCTION TO ASSESS ITS CONDITION. CONTACT THE DWM SEWER EVALUATION SECTION TWO BUSINESS DAYS PRIOR TO CONSTRUCTION AT (312) 747-4680 TO COORDINATE THE WORK.
IF SEWER DAMAGE OCCURS, THE CONTRACTOR AND/OR OWNER WILL BE RESPONSIBLE FOR THE COST OF REPAIRING, LINING OR REPLACING THE DAMAGED FACILITIES.

PEOPLES GAS :
PEOPLES GAS FACILITIES ARE PRESENT WITHIN CONSTRUCTION. USE EXTREME CAUTION NEAR ALL GAS FACILITIES DURING CONSTRUCTION AND RELATED EXCAVATION ACTIVITIES. HAND EXCAVATION IS REQUIRED TO FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF GAS MAIN(S) PRIOR TO CROSSING AND WORKING WITHIN 3' OF ALL GAS FACILITIES. A MINIMUM OF 3' HORIZONTAL EDGE-TO-EDGE CLEARANCE IS REQUIRED FOR GAS MAINS WITH DIAMETERS OF 16" OR SMALLER, & 5' EDGE-TO-EDGE CLEARANCE FOR GAS MAINS WITH DIAMETERS 18" AND LARGER. MAINTAIN A MINIMUM OF 1.5' EDGE-TO-EDGE VERTICAL CLEARANCE ON GAS MAINS 16" OR LESS IN DIAMETER, AND 2' EDGE-TO-EDGE VERTICAL CLEARANCE ON 18" AND LARGER DIAMETER GAS MAINS. CONTACT DIGGER 312-744-7000 FOR LOCATES 48 HOURS PRIOR TO START OF CONSTRUCTION.

THE USE OF CONCRETE, FLOW FILL, OR THE LIKE IS PROHIBITED WITHIN 24" OF ALL GAS FACILITIES, NOR SHALL IT ENCASE ANY GAS FACILITY. A BUFFER OF 24" SAND IS TO USED BETWEEN FLOW FILL AND ALL GAS FACILITIES. A MINIMUM OF 6" FA-02 OR FM-02 SAND SHALL BE USED WHEN BACKFILLING OTHER MATERIALS AROUND ANY EXPOSED GAS FACILITY. CONTRACTOR EXPOSING GAS FACILITY IS RESPONSIBLE FOR PROVIDING THE SAND. ANY DAMAGES TO PEOPLES GAS FACILITIES SHALL BE THE RESPONSIBILITY OF THE INSTALLING UTILITY AND THEIR CONTRACTOR(S).

SERVICE MAY BE EFFECTED. USE EXTREME CAUTION NEAR ALL GAS FACILITIES HAND EXCAVATION IS REQUIRED TO LOCATE AND EXPOSE GAS FACILITIES PRIOR TO CROSSING AND WORKING WITHIN 3' OF ALL GAS FACILITIES. CONTACT DIGGER FOR LOCATES 48 HOURS PRIOR TO START OF CONSTRUCTION. PEOPLES GAS FACILITIES ARE PRESENT WITHIN AREA OF CONSTRUCTION. DIRECTIONAL DRILLING IS CONSIDERED A HIGH RISK EXCAVATION AS DETERMINED BY PHMSA AND NTSB; AS SUCH SPECIAL CONSIDERATIONS SHALL TAKE PLACE NEAR NATURAL GAS DISTRIBUTION LINES. USE EXTREME CAUTION NEAR ALL GAS FACILITIES DURING CONSTRUCTION AND RELATED EXCAVATION ACTIVITIES. HAND DIG OR NON-INVASIVE EXCAVATION IS REQUIRED TO FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF GAS FACILITIES PRIOR TO CROSSING AND WORKING WITHIN 3' OF ALL GAS FACILITIES. A MINIMUM OF 3' HORIZONTAL EDGE-TO-EDGE CLEARANCE IS REQUIRED FOR GAS MAINS WITH DIAMETERS OF 16" OR SMALLER, & 5FT EDGE-TO-EDGE CLEARANCE FOR GAS MAINS WITH DIAMETERS 18" AND LARGER.MAINTAIN A MINIMUM OF 1.5' EDGE-TO-EDGE VERTICAL CLEARANCE ON GAS MAINS 16" OR LESS IN DIAMETER, AND 2' EDGE-TO-EDGE VERTICAL CLEARANCE ON 18" AND LARGER DIAMETER GAS MAINS. CONTRACTOR MUST OBSERVE BORE HEAD WHILE CROSSING GAS FACILITIES AND VERIFY THAT MINIMUM VERTICAL CLEARANCE IS OBTAINED. LOCATIONS OF EXISTING GAS FACILITIES MUST BE VERIFIED AT SUFFICIENT INTERVALS, OR A MAX OF DISTANCE OF 50', WHEN PARALLELING TO ENSURE SEPARATION IS MAINTAINED. CONTACT SYSTEM INTEGRITY OPERATIONS SUPERVISOR, A MINIMUM OF 5 BUSINESS DAYS PRIOR TO EXCAVATION TO SET UP ON-SITE INSPECTION.CONTACT DIGGER 312-744-7000 FOR LOCATES 48 HOURS PRIOR TO START OF CONSTRUCTION AND SPECIFY EXCAVATION TYPE.

North Shop: North of Chicago Ave/Ashland Ave /North Ave
Robert Goral, 773 647-0537
Central Shop: South of Chicago Ave/ Ashland Ave / North Ave to
North of 87th St / Ashland Ave / Chicago River / Cermak Rd
Dave Marquez, 773-858-1825
South Shop: South of 87th St / Ashland Ave / Chicago River / Cermak Rd
Jacob Weber, 312-806-0559

THE USE OF CONCRETE, FLOW FILL, OR THE LIKE IS PROHIBITED WITHIN 24" OF ALL GAS FACILITIES, NOR SHALL IT ENCASE ANY GAS FACILITY. A BUFFER OF 24" SAND IS TO USED BETWEEN FLOW FILL AND ALL GAS FACILITIES. A MINIMUM OF 6" FA-02 OR FM-02 SAND SHALL BE USED WHEN BACKFILLING OTHER MATERIALS AROUND ANY EXPOSED GAS FACILITY. CONTRACTOR EXPOSING GAS FACILITY IS RESPONSIBLE FOR PROVIDING THE SAND. ANY DAMAGES TO PEOPLES GAS FACILITIES SHALL BE THE RESPONSIBILITY OF THE INSTALLING UTILITY AND THEIR CONTRACTOR(S). CALL 866-556-6002 IMMEDIATELY FOR ANY DAMAGES TO THE GAS FACILITIES. ALL GAS FACILITIES ARE TO BE MAINTAINED. THIS PROJECT WILL BE PLACED ON PEOPLES GAS WATCH & PROTECT.

BUREAU OF FORESTRY :
TREE PROTECTION MEASURES:
AT A MINIMUM, NEED TO INCLUDE ORANGE SNOW FENCE TO BE INSTALLED ALONG BACK OF THE CURB-LINE, 10 FEET FROM THE BACK OF THE CURB-LINE AND AT A DISTANCE OF 5 FEET FROM EITHER SIDE OF THE TREE. IF TRIMMING IS REQUIRED FOR LINE INSTALLATION, IT WILL BE DONE BY AN INSURED TREE SERVICE COMPANY. TRIMMING WILL BE DONE IN ACCORDANCE TO AMERICAN NATIONAL STANDARDS INSTITUTE GUIDELINES, LEAVING THE FORM AND STRUCTURE OF THE TREES INTACT.

TUNNELING SPECIFICATIONS (EACH SIDE OF TREE)

TREE SIZE*	TUNNEL/TRENCH DISTANCE
< 10"	5 FEET
10" TO 19"	10 FEET
> 19"	15 FEET

* DBH - DIAMETER AT BREAST HEIGHT (4.5')

. STAY OUT OF THE DRIP LINE
. STOP TRENCHING WHEN ROOTS OF (2) INCHES OR LARGER ARE ENCOUNTERED.

CTA BUS ROUTES :
PLEASE NOTIFY CTA AT LEAST (2) TWO WEEKS PRIOR TO ANY SIDEWALK, LANE, OR STREET CLOSURES, OR THE REMOVAL OF ANY BUS STOP SIGNS SO THAT CTA CAN FACILITATE ANY NECESSARY DETOURS OR BUS STOP RELOCATIONS.

WARNING !
FIBER OPTIC CABLE
ON RAILROAD R-O-W
CALL BEFORE YOU DIG
1-800-336-9193

ISSUED FOR CONSTRUCTION

REVISION	BY	DATE	DESCRIPTION

benesch
Alfred Benesch & Company
35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

UNION PACIFIC

DRAWN BY: RS	WORK ORDER: 31876	UNION PACIFIC RAILROAD	Director Structures Design
CHECKED BY: GT	PID:	LOCATION & DESCRIPTION: MP 2.27 ROCKWELL SUBDIVISION OGDEN AVENUE EAST BRIDGE REPLACEMENT	
DATE: 05/28/21	BUDGET REF:		
SCALE: N.T.S.	SHEET NUMBER L-001	SHEET TITLE: LIGHTING GENERAL NOTES	

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5/26/2021

LEGEND

- Proposed junction box attached to structure, stainless steel, 6"x6"x4" unless otherwise noted
- Proposed underpass luminaire, LED, 120 volts New Star Lighting Model ADLLP-WLR-C-MIC-W8-PCR-CHI
- Proposed LED Hazard Warning Luminaire, 120V
- Proposed 3/4" liquid tight conduit, with (2)#12 cable
- Proposed (3)#12 cable to be installed in 3/4" conduit, unless otherwise noted
- H — Proposed underpass lighting controller, 120V/240V
- H1 — Proposed underpass node cabinet with 6 nodes
- Existing Comed pole
- B — Install 30" Handhole as per Dwg. No. 867 with 24" Frame and Cover
- Proposed DEO Conduit (SCH 80)

Size of Conduit — Length in Feet
Number of Conduits — DB = Directional Bored, T = Trench
(X)-X"-X'-DB

PROPOSED CONDUIT CALLOUT

Controller 1:
Circuit 1 - (7) Underpass LED Luminaire
Circuit 2 - (6) Underpass LED Luminaire
Circuit 3 - (8) Underpass LED Luminaire
Circuit 4 - (7) Underpass LED Luminaire
Circuit 5 - (2) Hazard Warning Luminaire
Circuit 6 - (2) Hazard Warning Luminaire

ATLAS No. J-24
(28) LED UNDERPASS LUM.
(4) LED HAZARD WARNING LUM.
60A-240V

MATCH LINE A (SEE SHEET L002)

S. Campbell Av.

W. Ogden Av.

R. O. W.

11' 40' (TYP) (4)#12 (4)#12 (4)#12 (4)#12 R. O. W. 11' 3'

Install 2" Elbow and Riser at height of Underpass

(1)-2"-125'-DB W/ 3-1/C#2/0 cable

8' 12'

(6)#12, 1"Conduit

(2)#12

6' 40' (TYP) (2)#12

7'

81'

(2)#12 15' 43' (TYP)

13'

(4)#12
(2)#12

29'

(2)#12 11' 41' (TYP)

15'

20'

30 0 30 60

SCALE IN FEET

CDOT DWG. NO. 18996

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ISSUED FOR CONSTRUCTION

REVISION	BY	DATE	DESCRIPTION

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Alfred Benesch & Company
35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

DRAWN BY: RS	WORK ORDER: 31876
CHECKED BY: GT	PID:
DATE: 05/28/21	BUDGET REF:
SCALE: 1"=30'	SHEET NUMBER: L-002

UNION PACIFIC RAILROAD — Director Structures Design

LOCATION & DESCRIPTION:
MP 2.27 ROCKWELL SUBDIVISION
OGDEN AVENUE EAST BRIDGE REPLACEMENT

SHEET TITLE:
PROPOSED UNDERDECK LGHTING PLAN

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5/26/2021

LEGEND

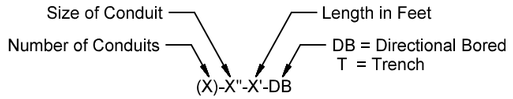
- Proposed junction box attached to structure, stainless steel, 6"x6"x4" unless otherwise noted
- Proposed underpass luminaire, LED, 120 volts New Star Lighting Model ADLLP-WLR-C-MIC-W8-PCR-CHI
- Proposed LED Hazard Warning Luminaire, 120V
- Proposed 3/4" liquid tight conduit, with (2)#12 cable
- Proposed (3)#12 cable to be installed in 3/4" conduit, unless otherwise noted
- H — Proposed underpass lighting controller, 120V/240V
- H1 — Proposed underpass node cabinet with 6 nodes
- Existing Comed pole
- B — Install 30" Handhole as per Dwg. No. 867 with 24" Frame and Cover
- Proposed DEO Conduit (SCH 80)
- R — Remove Embedded pole

Electrical Notes:

1. All electrical work shall conform with all national, state, and local codes.
2. No luminaires, conduit, junction boxes, or any appurtanances shall be mounted to the bridge superstructure without prior approval from Union Pacific Railroad.
3. Contractor shall field verify exact locations, quantities, and type of utilities in the area prior to commencement of any work.
4. Coordinate all electrical installation work with civil, structural drawings, construction phases schedule and City of Chicago Department of Transportation, Division Electrical Operations.
5. Coordinate installation and connection of new electrical service and underpass lighting controller with ComEd and City of Chicago Department of Transportation, Division Electrical Operations. The Underpass Controller and Cabinet shall be grounded with #8 wire on 1/2" GRS conduit.
6. See electrical detail drawings for typical standard underpass lighting details and underpass lighting controller.
7. Luminaires shall be mounted by expansion anchors to the face of the pier cap as high as possible. All conduits to be fastened securely at 5' intervals with beam clamps.
8. Luminaires mounted over roadway to be pivoted at an angle of 45 deg from vertical and luminaires mounted over sidewalk to be pivoted at an angle of 35 deg from vertical.
9. Refer to civil plans for pavement removal / replacement quantities.

Electrical Demolition Notes:

1. Removal and maintenance of underdeck lighting shall be incidental to the pay item "Electric Underdeck Lighting".
2. Temporary lighting design shall be submitted and approved to the engineer prior to construction. The approved design shall then be installed prior to stage construction.
3. The lighting on the east side of the bridge is not part of the scope and thus the lighting not shown in the proposed plans shall be retained. Contractor shall field verify the removal of associated conduits and cables thus to retain the east side lighting.

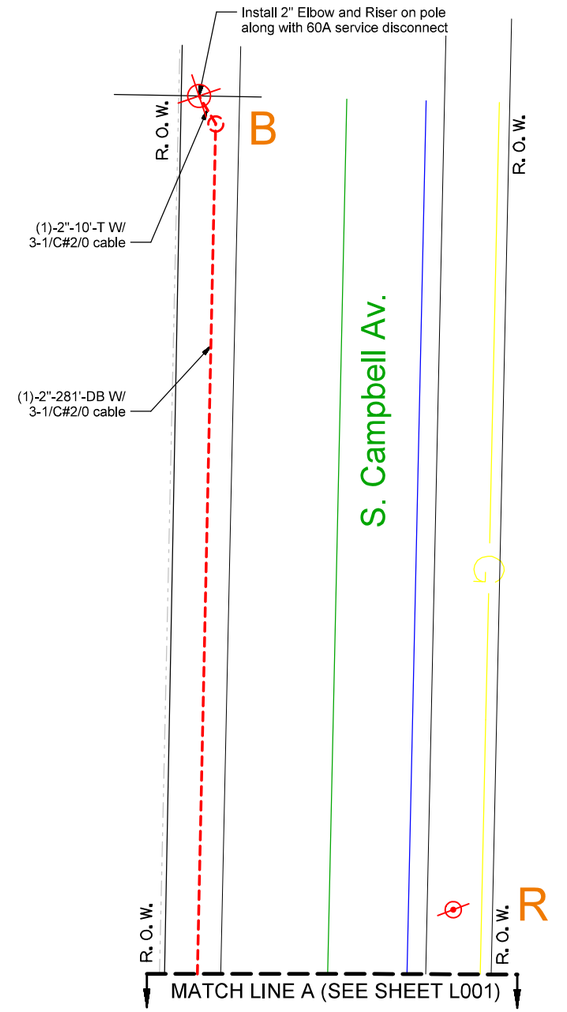


PROPOSED CONDUIT CALLOUT

BILL OF MATERIALS

Items listed below are included with the Pay Item "Electric Underdeck Lighting".

Description	Unit	Quantity
Electric Cable In Conduit, 1/C No. 2/0	Lin Ft	1383'
Flexible Liquid-Tight Conduit, 3/4"	Lin Ft	150'
Internal Control Node	Each	6
Underpass Luminaire, LED, 120 Volts	Each	28
LED Hazard Warning Lum., 120 Volts	Each	2
Underpass Lighting Controller	Each	1
Underpass Lighting Node Cabinet	Each	1
Handhole 30" x 36" W/ 24" Frame and cover	Each	3
Remove Existing Lighting System	L Sum	1
Temporary Lighting System	L Sum	1
Duct / DRBR, 2", SCH 80	Lin Ft	406'
PVC Conduit in Trench, 2", SCH 80	Lin Ft	10'
Service Disconnect Cabinet	Each	1
Elbow and Riser, 2"	Each	2
Attached conduit, 3/4". galvanized rigid steel	Lin Ft	1300'
Attached conduit, 1". galvanized rigid steel	Lin Ft	50'
Cable in conduit, 1C#12	Lin Ft	3500'
Junction Box, 6"x4"x4"	Each	35'
Remove Embedded poles	Each	2





CDOT DWG. NO. 18996

WARNING !
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ON RAILROAD R-O-W
CALL BEFORE YOU DIG
1-800-336-9193

ISSUED FOR CONSTRUCTION

REVISION	BY	DATE	DESCRIPTION

benesch
Alfred Benesch & Company
35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

UNION PACIFIC

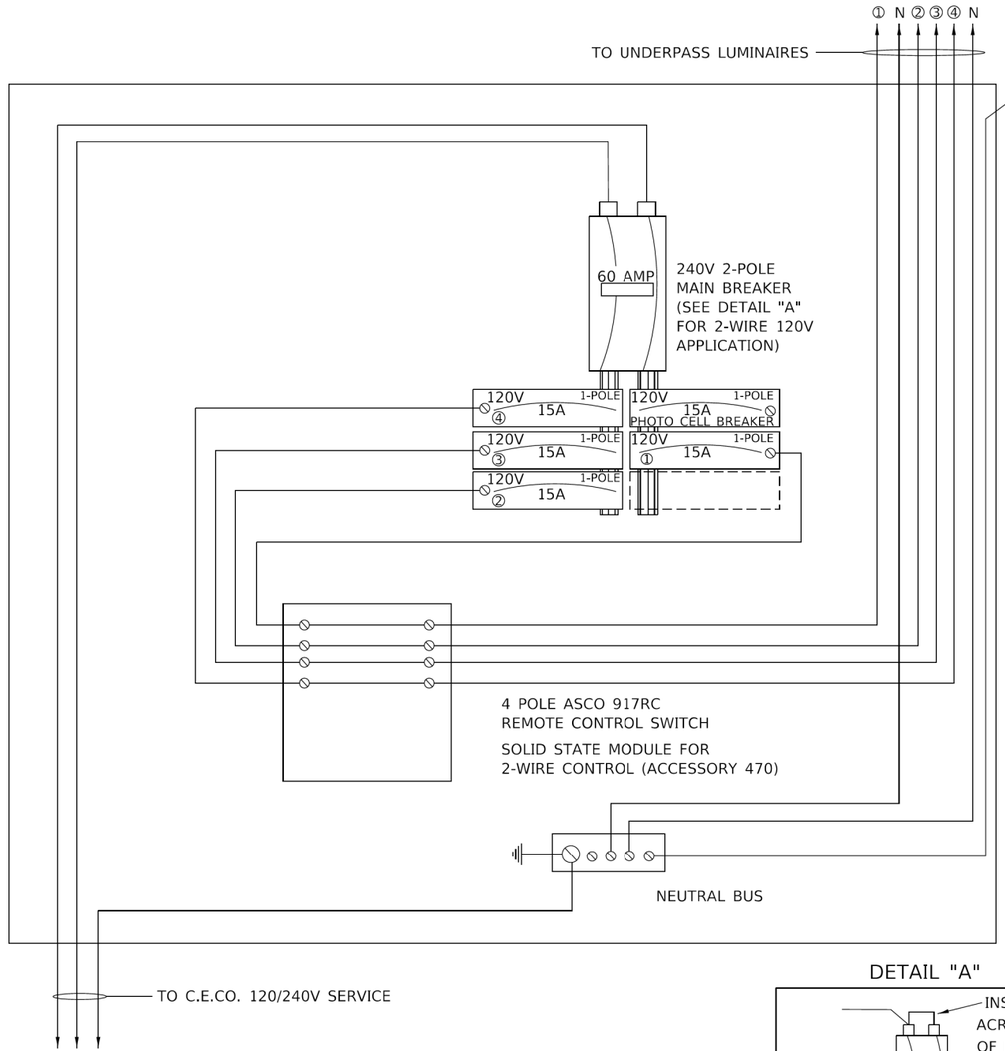
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CHECKED BY: GT	PID:
DATE: 05/28/21	BUDGET REF:
SCALE: 1"=30'	SHEET NUMBER L-003

UNION PACIFIC RAILROAD — Director Structures Design

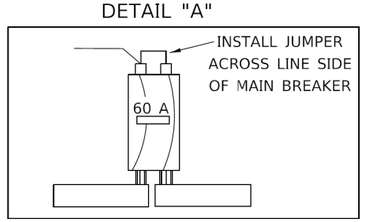
LOCATION & DESCRIPTION:
MP 2.27 ROCKWELL SUBDIVISION
OGDEN AVENUE EAST BRIDGE REPLACEMENT

SHEET TITLE:
PROPOSED UNDERDECK LGHTING PLAN

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5/26/2021



DETAIL "A"



- FOR 2-WIRE 120V APPLICATION, SEE DETAIL "A".

- SERVICE CABINET TO BE TYPE 304 STAINLESS STEEL NEMA 4X ENCLOSURE; 20"X16"X6"; WITH REMOVABLE, PAINTED STEEL BACK PANEL, PIANO HINGE AND TWO OIL-TIGHT QUARTER TURN LATCHES (TOP & BOTTOM) WITH PADLOCKING HASP IN CENTER. CABINER SHALL BE EQUAL TO HENNESSY PRODUCTS "SPECLINE" OR MORRIS KURTZON "LCP-20166".

- LOAD CENTER SHALL PROVIDE 2P-60AMP MAIN BREAKER AND (8) CIRCUITS SUITABLE FOR WESTINGHOUSE TYPE B.A. BRANCH BREAKERS. LOAD CENTER SHALL PROVIDE FIVE (5) 15 AMP BREAKERS IN PLACE. ALL REMAINING LIVE BUS SHALL BE SUITABLY PROTECTED IN A MANNER WHICH ALLOWS FUTURE INSTALLATON OF INDIVIDUAL CIRCUIT BREAKERS WITHOUT AFFECTING PROTECTION OF REMAINING BUS.

- CONTACTOR TO BE 4 POLE ASCO-917 REMOTE CONTROL SWITCH WITH OPTION 47-D (2-WIRE CONTROL)

- THE SERVICE CABINET SHALL BE COMPLETELY ASSEMBLED AND READY FOR FIELD INSTALLATION. ALL ASSEMBLY SHALL BE DONE IN A UNION SHOP WHICH HAS A MINIMUM OF TEN (10) YEARS EXPERIENCE BUILDIG PANELS FOR USE IN THE CITY OF CHICAGO.

A	DATE	REVISION

SERVICE CABINET LAYOUT FOR CONSTANT POWER UNDER PASS LIGHTING CONTROLLER 120 / 240 VOLTS

CITY OF CHICAGO
DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING – ELECTRICAL SECTION

DRAFTSMAN/ENGINEER :	M. STANGEL
SUP. ENGINEER/PM :	O.LETAMENDI
PROFESSIONAL ENGINEER :	J. VONDRA
ENGINEER OF ELECTRICITY:	
DEPUTY COMMISSIONER:	

DWG. NO. XXX

SIZE: 11" | 17" SCALE: NONE DATE: 11/19/2018

DATE: 11/19/2018
FILE: N:\PROJ\002023i.00\002023i.01\02-Arterial Lighting\Peoria Viaduct\Viaduct LED Detail.dgn

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5/26/2021

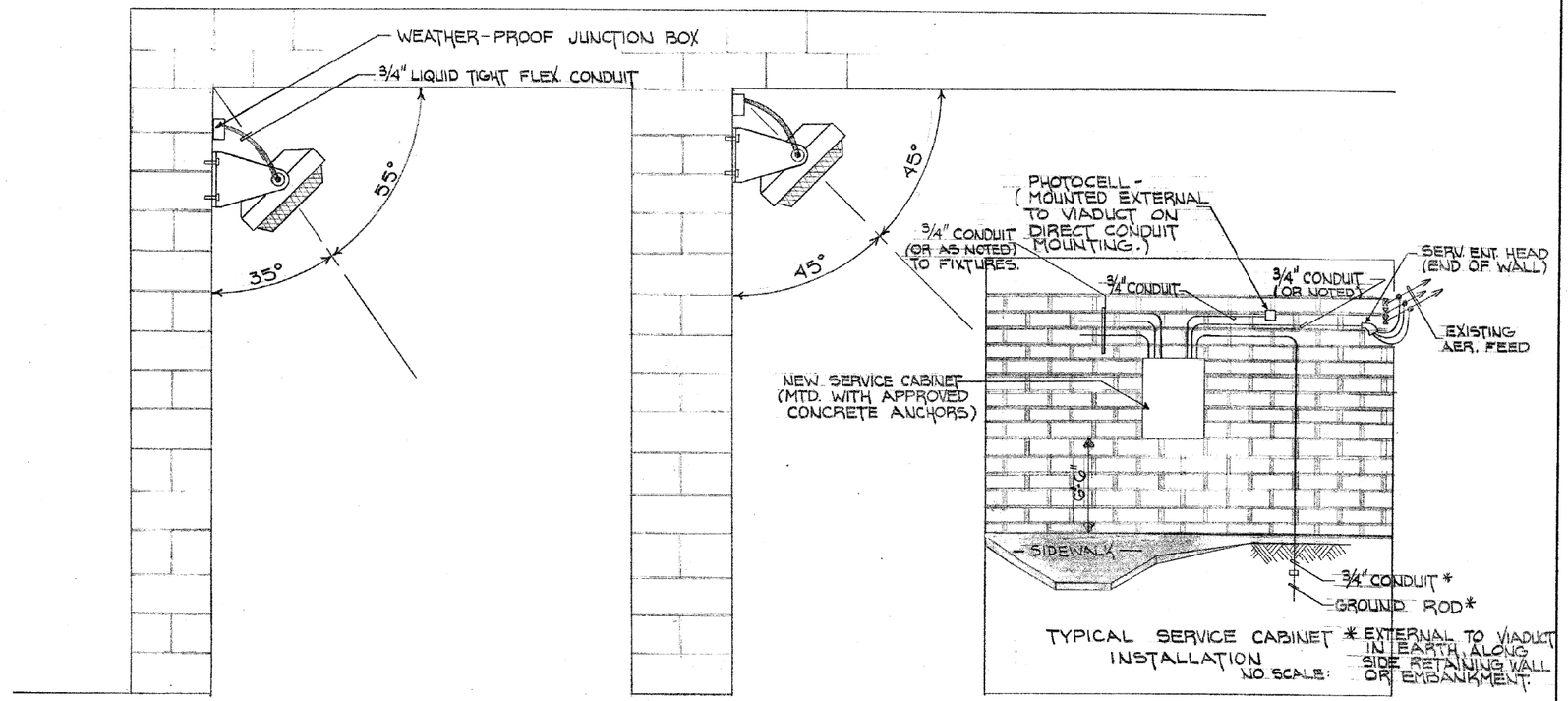
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1-800-336-9193

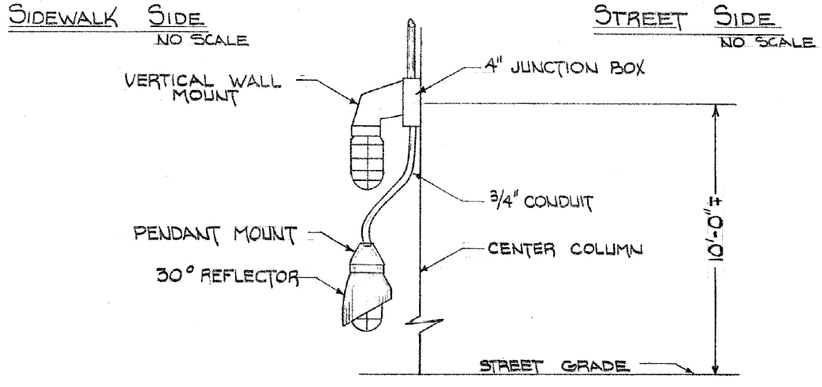
ISSUED FOR CONSTRUCTION

REVISION	BY	DATE	DESCRIPTION

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Alfred Benesch & Company
35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

DRAWN BY: RS	WORK ORDER: 31876	UNION PACIFIC RAILROAD	Director Structures Design
CHECKED BY: GT	PID:	LOCATION & DESCRIPTION: MP 2.27 ROCKWELL SUBDIVISION OGDEN AVENUE EAST BRIDGE REPLACEMENT	
DATE: 05/28/21	BUDGET REF:		
SCALE: N.T.S.	SHEET NUMBER L-004	SHEET TITLE: LIGHTING DETAILS	





A		
DATE	REVISION	

VIADUCT LIGHTING TYPICAL DETAILS

CITY OF CHICAGO
DEPT. OF STREETS AND SANITATION
BUREAU OF ELECTRICITY
DIVISION OF ELECTRICAL ENGINEERING

DRAFTSMAN:	CHIEF DRAFTSMAN:	ENGINEER:
R. CARTER	C. RESPINO	R. Q. POOL

SUPERVISING ENGINEER: ELEC. DESIGN ENGR
ENGINEER OF ELECTRICITY: A. Dukelsky
GEN'L. SUPT. OF ELECTRICITY
DEPUTY COMMISSIONER: Edward M. Ryan

DWG. NO. 869

SIZE: 16" x 21" SCALE: —NONE— DATE: 8-1-91

CENTURY BLUE PRINT 90280 1/87

WARNING !
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ON RAILROAD R-O-W
CALL BEFORE YOU DIG
1-800-336-9193

ISSUED FOR CONSTRUCTION

REVISION	BY	DATE	DESCRIPTION

benesch
Alfred Benesch & Company
35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

UNION PACIFIC

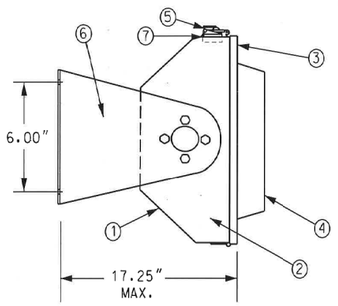
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UNION PACIFIC RAILROAD — Director Structures Design

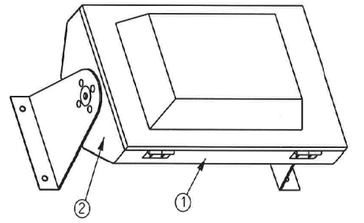
LOCATION & DESCRIPTION:
MP 2.27 ROCKWELL SUBDIVISION
OGDEN AVENUE EAST BRIDGE REPLACEMENT

SHEET TITLE: LIGHTING DETAILS

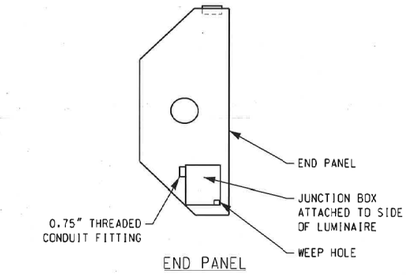
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5/26/2021



SIDE VIEW



BACK VIEW



END PANEL

1) HOUSING
2) END PANEL
3) LENS DOOR/COVER ASSEMBLY
4) LENS
5) LATCHES
6) END MOUNT TRUNNION BRACKET
7) 7 PIN NEMA RECEPTACLE

DATE	REVISION
8/15/18	ADD 7PIN NEMA RECEPTACLE

VIADUCT / EL STRUCTURE LUMINAIRE

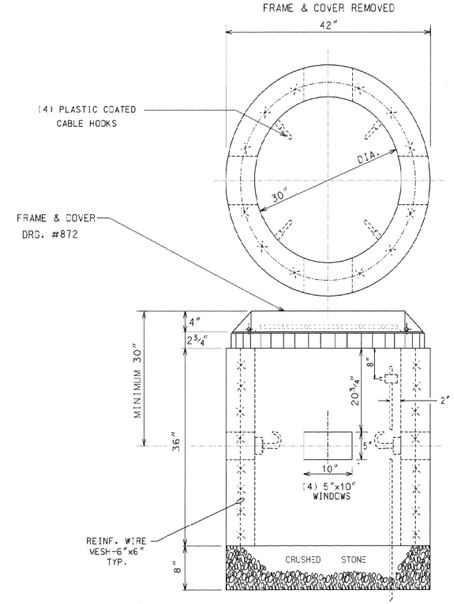
CITY OF CHICAGO
DEPT. OF STREETS AND SANITATION
BUREAU OF ELECTRICITY
DIVISION OF ELECTRICAL ENGINEERING

DRAFTSMAN	CHIEF DRAFTSMAN	ENGINEER
	B. CASTEJS	F. KARAGIANES

SUPERVISING ENGINEER	ELEC. DESIGN ENGINEER	DWG. NO
ENGINEER OF ELECTRICITY		981
CHIEF ENGINEER OF ELECTRICITY		
DEPUTY COMMISSIONER		

SCALE: NONE | DATE: 4/1/04 | MAT. SPEC: 1532

DATE: $DATE$
FILE: $FILE$



COMPLETE COMMODITY CODE NO. 05-6610-5310M			
CODE NO.	MATERIALS	SIZE	QUAN.
(1) 05-6610-5310	PRE-CAST HANDHOLE	30"X36"	1
(2) 05-9075-5470	STONE ¾" CRUSHED	BAG	5
(2) 05-5082-5330	SONO TUBE	30"	1
(2) 05-5082-5342	SONO TUBE	42"	1
(2) 05-3267-2940	CONC. REDI-MIX	CU. YD.	½
(2) 57-0770-0000	6" X 6" MESH	36"X10'	1
05-1452-9720	BRICK		24
02-4299-5524	FRAME MANHOLE	24"	1
02-4574-5040	COVER, MANHOLE	24"	1
09-7796-9312	GROUND ROD	¾"X12'	1
09-2630-3240	GROUND CLAMP		1

(1) PRE-CAST HANDHOLE SHALL INCLUDE CABLE HOOKS AND CONDUIT KNOCKOUTS.
(2) THESE ITEMS ARE FOR POURED-IN-PLACE HANDHOLES ONLY.

CONSTRUCTION NOTES:

1. 8" BED OF STONE FOR DRAINAGE.
2. ALL METALLIC CONDUITS ENTERING HANDHOLE SHALL EXTEND MINIMUM 1" & MAXIMUM 3" INSIDE INNER WALL AND BE EQUIPPED WITH AN APPROVED TYPE OF THREADED GROUNDING BUSHING.

REVISION	DATE	DESCRIPTION
B	12-6-95	REVISED CABLE HOOKS PER COMMISSIONER MURPHY
A	12-6-95	REVISED (CA)

30" DIA.
CONCRETE HANDHOLE

CITY OF CHICAGO
DEPT. OF STREETS AND SANITATION
BUREAU OF ELECTRICITY
DIVISION OF ELECTRICAL ENGINEERING

DRAFTSMAN	CHIEF DRAFTSMAN	ENGINEER
M. PATTON	B. CASTEJS	TRUMPLE

SUPERVISING ENGINEER	ELEC. DESIGN ENGINEER	DWG. NO.
ENGINEER OF ELECTRICITY		867
CHIEF ENGINEER OF ELECTRICITY		
DEPUTY COMMISSIONER		

SCALE: 1½" | 1" | NONE | DATE: 12-6-95

WARNING !
FIBER OPTIC CABLE
ON RAILROAD R-O-W
CALL BEFORE YOU DIG
1-800-336-9193

ISSUED FOR CONSTRUCTION

REVISION	BY	DATE	DESCRIPTION

benesch
Alfred Benesch & Company
35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

UNION PACIFIC

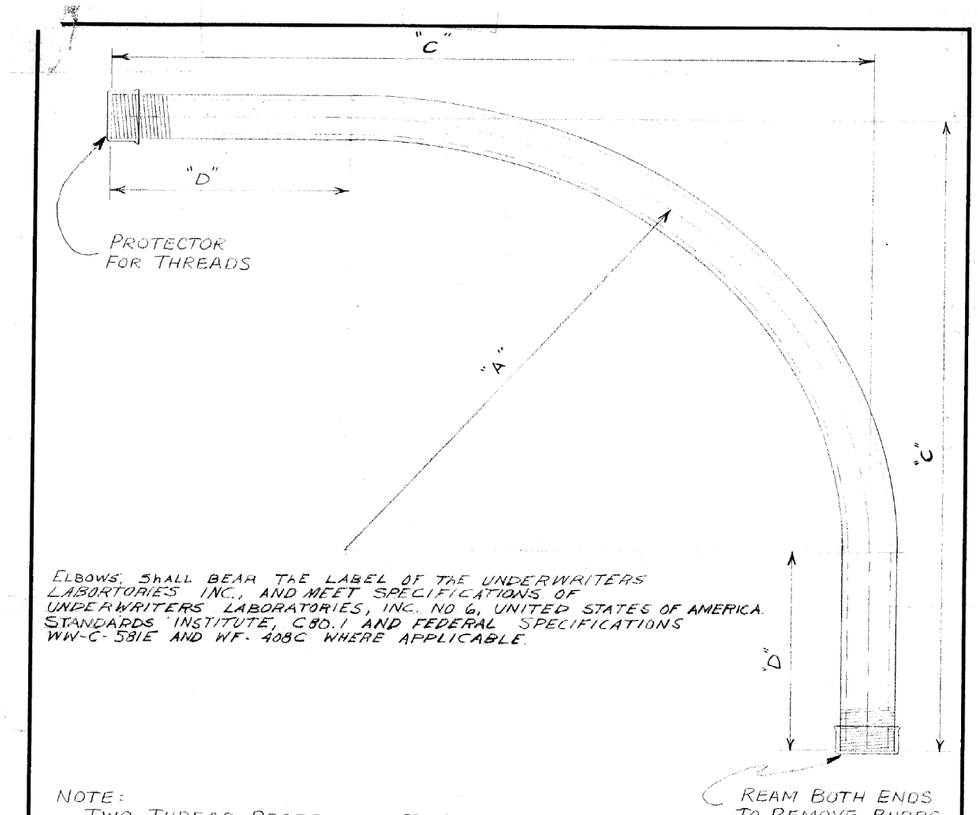
DRAWN BY:	WORK ORDER:
RS	31876
CHECKED BY:	PID:
GT	
DATE:	BUDGET REF:
05/28/21	
SCALE:	SHEET NUMBER
N.T.S.	L-006

UNION PACIFIC RAILROAD — Director Structures Design

LOCATION & DESCRIPTION:
MP 2.27 ROCKWELL SUBDIVISION
OGDEN AVENUE EAST BRIDGE REPLACEMENT

SHEET TITLE:
LIGHTING DETAILS

Color table: UPRR.tbl
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Default
5/26/2021



ELBOWS SHALL BEAR THE LABEL OF THE UNDERWRITERS LABORTORIES INC., AND MEET SPECIFICATIONS OF UNDERWRITERS LABORATORIES, INC. NO 6, UNITED STATES OF AMERICA STANDARDS INSTITUTE, C80.1 AND FEDERAL SPECIFICATIONS WW-C-581E AND WF-408C WHERE APPLICABLE.

NOTE:
TWO THREAD PROTECTORS TO BE FURNISHED ON EACH ELBOW, PROTECTOR TO COVER A MINIMUM OF TEN THREADS.

TABLE OF DIMENSIONS

CONDUIT SIZE	DIMENSIONS "A"	"C"	"D"	COMMODITY CODE
1 1/4"	24"	35"	11"	09-4001-0510
1 1/2"	24"	35"	11"	09-4001-0520
2"	24"	35"	11"	09-4001-4126
2 1/2"	24"	35"	11"	09-4001-4128
3"	24"	35"	11"	09-4001-4230
4"	24"	35"	11."	09-4001-0000

B	SPECIFICATIONS REVISED
A	REVISED DIMENSIONS ON 3"&4" CONDUIT L.P.

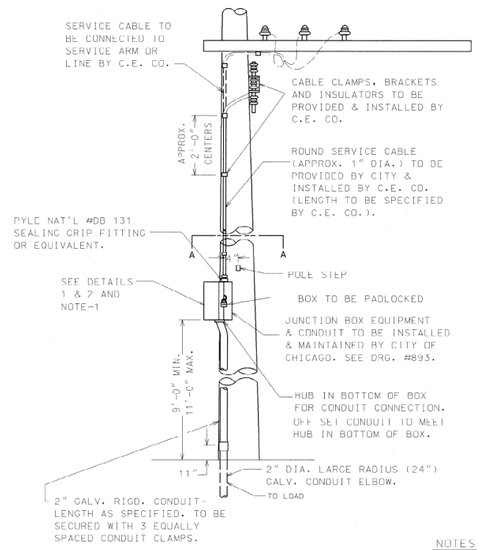
ELBOW, CONDUIT, RIGID GALVANIZED STEEL, LARGE RADIUS

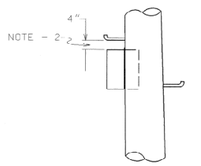
REVISED	
A	7-22-71
B	4-3-73
C	
D	
E	
F	
G	

CITY OF CHICAGO
DEPT. OF STREETS AND SANITATION
BUREAU OF ELECTRICITY
DIVISION OF ELECTRICAL ENGINEERING

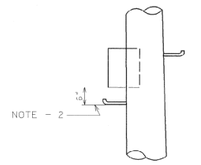
DRAWN	CHECKED	ENGINEER
LON BURDY	M.S.	M. SHINE

ENG. IN CHARGE: Joseph P. Buttry
SUPT. OF CONST.: John D. Hill
DEPUTY COMM.: Brian J. Murphy
DRG. NO. 11825
SIZE 8½" x 14" SCALE: 3/16" DATE 6-2-71



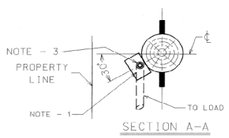


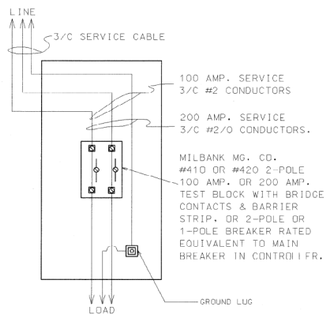
DETAIL-1
BOTTOM POLE STEP ON SIDE OF POLE OPPOSITE JUNCTION BOX.



DETAIL-2
BOTTOM POLE STEP ON JUNCTION BOX SIDE OF POLE.

NOTES
1 - WHERE POSSIBLE THE JUNCTION BOX SHALL BE LOCATED FACING THE PROPERTY LINE.
2 - BOX SHALL HAVE A MINIMUM CLEARANCE OF 4" BELOW POLE STEP. DETAIL-1. OR 6" ABOVE STEP. DETAIL-2.
3 - SERVICE CABLE TO ENTER BOX THROUGH SEALING GRIP FITTING IN TOP.





WIRING DIAGRAM OF JUNCTION BOX MOUNTED ON C.E.Co. POLE.

DATE	REVISION
A 9.3.96	REDRAWN MP.

INSTALLATION OF SERVICE EQUIPMENT ON C.E. CO. WOOD POLES

CITY OF CHICAGO
DEPT. OF STREETS AND SANITATION
BUREAU OF ELECTRICITY
DIVISION OF ELECTRICAL ENGINEERING

DRAFTSMAN:	CHIEF DRAFTSMAN:	ENGINEER:
E. LEMASTER	J. BORE	J. BORE

SUPERVISING ENGINEER: S.W. BERTRAM
ELEC. DESIGN ENGR.:
ENGINEER OF ELECTRICITY:
GEN'L SUPT. OF ELECTRICITY:
DEPUTY COMMISSIONER: Brian J. Murphy
DWG. NO. 11925
SIZE: SCALE: DATE: 12 26 56

WARNING !
FIBER OPTIC CABLE
ON RAILROAD R-O-W
CALL BEFORE YOU DIG
1-800-336-9193

ISSUED FOR CONSTRUCTION

REVISION	BY	DATE	DESCRIPTION

benesch
Alfred Benesch & Company
35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

UNION PACIFIC

DRAWN BY: RS	WORK ORDER: 31876	UNION PACIFIC RAILROAD	Director Structures Design
CHECKED BY: GT	PID:	LOCATION & DESCRIPTION: MP 2.27 ROCKWELL SUBDIVISION OGDEN AVENUE EAST BRIDGE REPLACEMENT	
DATE: 05/28/21	BUDGET REF:		
SCALE: N.T.S.	SHEET NUMBER L-007	SHEET TITLE: LIGHTING DETAILS	

Color table: UPRR.tbl
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Default
5/26/2021

TO CANAL ST. (CHICAGO) (TIMETABLE SOUTH)

TO KEDZIE (CHICAGO) (TIMETABLE NORTH)

PROPOSED HANDRAIL

LIMITS OF EXIST. SIDEWALK

EXISTING ABUTMENT #7

ROW

EXISTING COMED LINE

EXISTING UNDERGROUND ELECTRIC

EXISTING 12" STORM SEWER

EXISTING FIBER OPTIC LINES

℄ OGDEN AVE.

EXISTING 60" STORM SEWER

PROPOSED CRASHWALL

EXISTING 12" STORM SEWER

LIMITS OF EXIST. SIDEWALK

EXISTING ABUTMENT #1

EXISTING OVERHEAD HIGH VOLTAGE TRANSMISSION LINES (SEE NOTE 8)

EXISTING PEOPLES GAS LINES

PROPOSED HANDRAIL

2:1 SLOPE (TYP.)

A 116

B 117

PROPOSED CRASHWALL

PROPOSED ROADWAY BARRIER & CURB

NONSTANDARD STEEL BEAM SPAN (W40x362) (TYP.)

2:1 SLOPE (TYP.)

PRECAST CONCRETE WINGWALL SWW-10

PRECAST CONCRETE END CAP PEC-2R

PRECAST CONCRETE APPROACH SLAB SAS-3

℄ W WYE TRACK NO. 1 ALIGNMENT: 7°30' CURVE

PRECAST CONCRETE END CAP PEC-M3

PRECAST CONCRETE END CAP PEC-M

PRECAST CONCRETE END CAP PEC-M4

PRECAST CONCRETE APPROACH SLAB SAS-4

℄ PROPOSED BRIDGE

PRECAST CONCRETE END CAP PEC-M5

PRECAST CONCRETE APPROACH SLAB SAS-4

PRECAST CONCRETE END CAP PEC-M6

PRECAST CONCRETE END CAP PEC-M

PHASE 1

PHASE 2

PRECAST CONCRETE END CAP PEC-2L

PRECAST CONCRETE WINGWALL SWW-10

2:1 SLOPE (TYP.)

INSIDE FACE OF PROPOSED BACKWALL

PROPOSED HANDRAIL

RAILROAD FIBER OPTIC LINES

ROW

PROPOSED CURB

PROPOSED CRASHWALL

LIMITS OF LOCAL ROADWAY ACCESS

LIMITS OF EXISTING ROADWAY

COVER PLATE SCP-12

COVER PLATE SCP-10

COVER PLATE SCP-14

COVER PLATE SCP-13

COVER PLATE SCP-11

UNIT 1

UNIT 2A

UNIT 2B

UNIT 2C

UNIT 3

UNIT 4

CAST-IN-PLACE CONCRETE BENT CAP

RETAINER SUPPORT ANGLE (LEFT IN PLACE) (TYP.)

FIELD INSTALLED DECK PLATE (TYP.)

POINT OF PROPOSED MINIMUM VERTICAL CLEARANCE

C 118

D 118

2½"

2"

56'-10" (SPAN #3)

56'-10" (SPAN #2)

56'-10" (SPAN #1)

OUT-TO-OUT OF BEAMS = 170'-11"

PROPOSED ROADWAY BARRIER & CURB

EXISTING UP BRIDGE LIMITS

LIMITS OF EXISTING ROADWAY

LIMITS OF LOCAL ROADWAY ACCESS

POSTCONSTRUCTION COMPLIANCE

Contractor or UPRR Manager in charge of construction to provide to the office of the Director Structures Design as-built drawings confirming that the project was constructed in compliance with the plans and indicating any construction variances.

IN CHARGE OF CONSTRUCTION

DATE

PLAN

SCALE: 1/8"=1'-0"

PRECAST CONCRETE WINGWALL SWW-10

PRECAST CONCRETE END CAP PEC-1R

COVER PLATE SCP-10

PRECAST CONCRETE APPROACH SLAB SAS-1

PRECAST CONCRETE END CAP PEC-M1

℄ N WYE TRACK NO. 2 ALIGNMENT: 12°42' CURVE

℄ N WYE TRACK NO. 1 ALIGNMENT: 12°41' CURVE

PRECAST CONCRETE APPROACH SLAB SAS-2

PRECAST CONCRETE END CAP PEC-M2

PHASE 1

PHASE 2

PRECAST CONCRETE END CAP PEC-M

RIGHT

PRECAST CONCRETE END CAP PEC-1L

EXISTING OVERHEAD ELECTRIC DISTRIBUTION LINES, TO BE RELOCATED OR OUT OF SERVICE DURING CONSTRUCTION

BACKWALL HANDRAIL SBH-11 (TYP.)

INLET, TYP.

CATCH BASIN, TYP.

PROPOSED HANDRAIL

PRECAST CONCRETE WINGWALL SWW-10

WINGWALL HANDRAIL SWH-10 (TYP.)

2:1 SLOPE (TYP.)

BORING NO. 19-BSB-01

BORING NO. 19-VST-01

POINT OF EXISTING MINIMUM VERTICAL CLEARANCE'

PROPOSED CRASHWALL

PROPOSED CURB

ROW

MANHOLE, TYP.

INSIDE FACE OF PROPOSED BACKWALL

TRACK 8 15

NOTES:

1. DIMENSIONS SHOWN ARE ALONG ℄ PROPOSED BRIDGE
2. FOR TOP OF RAIL PROFILES, SEE RAILROAD PLAN AND PROFILE SHEETS.
3. FOR PILE LAYOUT, SEE SHEET NO. T5. FOR COVER PLATE DETAIL SEE SHEET T16
4. LOCATION OF SOIL BORING
5. FOR ROADWAY, CURB, WALL, SIDEWALK, AND RAILING REMOVAL AND REPLACEMENT, SEE ROADWAY SHEETS.
6. FOR DRAWING SCHEDULE SEE SHEET NO. T2.
7. ALL ELEVATIONS SHOWN ARE BASED ON CHICAGO CITY DATUM (CCD).
8. FOR CONSTRUCTION IN THE VICINITY OF THE OVERHEAD HIGH VOLTAGE TRANSMISSION LINES, EQUIPMENT SHALL NOT EXTEND ABOVE ELEV. 65.00.

LETTER SERIES

SHEET NO. CUT ON

SHEET NO. SHOWN ON

SECTION DESIGNATION

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS: FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

ANDREW A. NICOL 081-006380 LICENSED STRUCTURAL ENGINEER STATE OF ILLINOIS

EXPIRATION DATE: 11-30-2022

DATE: 05-28-2021

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

UNION PACIFIC

DSN/CHK BY: MRK/AAN

DRAWN/CHK BY: CDP/AAN

UPRR ENGINEER: ADS/DEH

SHT NO.: T1 of T60

UNION PACIFIC RAILROAD

Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION

3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: GENERAL ARRANGEMENT

FILE NAME: pw:\\Hansesch-pw.bentley.com:hansesch-pw-01\Documents\210005\m\10070.11\Engineering Docs\Bridges\16_Ogden (2.27)\Plans\ec00227_b11.DGN

PLOTTED: 5/26/2021 10:39:51 AM

GENERAL NOTES

GENERAL

1. All work requirements shown on these drawings and not otherwise detailed shall be accomplished as specified in Union Pacific Railroad (UPRR) Specifications and the American Railway Engineering and Maintenance-of-Way Association (AREMA) Manual for Railway Engineering. In the event of conflicts between specifications, the more restrictive shall apply.

2. Construction means and methods shall comply with the All Permits Issued (API) package.

3. Field verify all dimensions, stations and elevations prior to start of construction. Contractor to field verify elevations and dimensions of existing buried foundation. Probing to confirm locations of proposed Bent 1 & 4 pile locations are clear of obstructions is the Constructor's responsibility prior pile driving mobilization. Submit verification and notify the engineer of any differences from the plan prior start of construction.

4. Contact the Union Pacific "Call Before You Dig" number 90 days (not less than 60 days) prior to proposed construction start date. Prior to construction, confirm that all necessary relocations have been completed. The CBYD number is: 1-800-336-9193.

5. Location of known utilities is approximate. Location shall be verified prior to construction. Notify Call 811 "Call Before you Dig" number at least 48 hours prior to construction.

6. All information shown on these drawings regarding existing bridge and existing ground elevations is based on a site location survey performed by American Surveying & Engineering, P.C. from 2012 to 2019.

7. Constructor shall perform excavation as required for construction of the new structure and replace areas removed and disturbed in the course of construction to a condition equal to or better than existing.

8. Elevations, Stationing and Right-of-Way are based on Track Plan and Top of Rail Profile per Railroad Plan and Profile sheets.

9. Subsurface exploration was performed by Wang Engineering Inc. A copy of the Geotechnical Engineering Report dated 08-28-20 is available from the UPRR Director Structures Design.

10. City of Chicago Benchmark: BM #278
    11.8' S. of N. Line of W. 15th PL, and
    33.3' W. of W. Line of S. Washtenaw Ave.
    Elev. = 12.909 (CCD)

11. The constructor hereby warned that the existing steel may contain lead and/or asbestos. Accordingly, the constructor shall comply with the following regulations where applicable:

    1. OSHA regulation "Lead Exposure in Construction 49 CFR 1926.62.

    2. OSHA regulation "Asbestos 49 CFR 1926.1101.

    3. EPA "Resource Conservation and Recovery Act of 1976" 40 CFR 240 through 280.

    4. Clean Air Act, 40 CFR, Subchapter C, Parts 50 through 99.

    5. Clean water act, 40 CFR, Subchapter D, Parts 100 through 149.

    The constructor shall also comply with any additional federal regulations, as well as all state and local government regulations and up regulations as they apply to this project.

PILE DRIVING

1. All piles shall be driven to 100 ton service capacity.

2. If any numbered pile cannot be driven to these capacities, the Structures Design group of the UPRR Office of Director Structures Design shall be notified.

3. Estimated capacity of driven piles shall be calculated using the Modified ENR formula, with Factor of Safety of 5. Direct questions to the Structures Design Group, Office of AVP Engineering. Pile driving records and estimated capacities and any questions shall be submitted to the Structures Design Group of the Office of Director Structures Design.

GENERAL NOTES - CONT.

4. Vibratory hammers shall not be permitted to drive any portion of any bearing piles.

5. Splice pile per detail, SHEET NO. T5. Pile splices shall be located a minimum of 10' below proposed or existing ground surface, whichever is lower.

6. Mark every pile with a dimension indicating the pile depth from cutoff to point of pile. The dimension shall be rounded to the nearest foot. The mark shall be welded on the outside face, low mile post side on the pile flange, approximately 1'-0" below the bottom of the cap, and in numbers of approximately 3" in height. If a pile is not exposed, no mark is required.

7. After pile driving is complete, provide pile driving logs to:

   UPRR Senior Manager Structures Design
   1400 Douglas St., Stop 0910
   Omaha, NE 68179

8. Expected penetration of piles is to elev. -60.0, -60.0, -56.0, and -56.0 at Bents #1 thru #4, respectively. All piles shall be advanced through the overlying material and into the dolomite bedrock.

9. Piles shall be cut below B/Low Rail or to pile cutoff elevation immediately after driving piles during work windows. Final removal to cutoff elevations shall be made prior to placement of bents and approach slabs.

10. Constructor shall assume one pile load test will be required at one abutment and one pier in accordance with City of Chicago Department of Buildings. If pile load tests are required, work shall be performed in accordance with ASTM D1143 using procedure A.

FIELD WELDING

1. Welding shall be accomplished with the SMAW or FCAW Process.

2. Welding shall be in compliance with the requirements specified in AWS D1.5, except 5/16" fillet welds may be made with a single pass.

3. Welding electrodes shall be E7018 for SMAW or E71T-7 for FCAW.

4. Contract welders shall possess valid AWS qualifications. Welders shall submit a Procedure Qualification Report (PQR) and Weld Procedure Specification (WPS) for each weld type to be performed. Welders shall be able to present documentation verifying that they have performed the specific weld(s) within the prior six months upon request.

GRADING

1. Provide and place all fill and subballast material per UPRR Grading Specifications. Perform grading as required to drain and match existing embankments.

2. Perform grading as required for construction of the new structure and replace areas removed and disturbed in the course of construction to a condition equal to or better than existing.

WELL COMPACTED FILL

1. Well-compacted fill shall be well-graded granular soil free of any organic material, stones larger than 3 inches, frozen lumps, debris, or excessive moisture. All compaction shall be determined using ASTM D1556 for field test and ASTM D1557 for moisture and density. Fill shall be compacted to 95% of maximum dry density as defined in ASTM D1557 (Modified Proctor). Fill shall be placed in layers not to exceed 12 inches.

DESIGN NOTES

1. The proposed superstructure has been designed in accordance with the AREMA Manual for Railway Engineering, Chapter 15: Steel Structures. The proposed substructure has been designed in accordance with the AREMA Manual for Railway Engineering, Chapter 8: Concrete Structures and Foundations.

2. This structure was designed for Cooper E80 Live Load or alternate loading, where applicable, plus impact with a 30" maximum total depth of ballast.

3. Design longitudinal load per 1996 edition of the AREA Manual.

4. Pile Design Load:
   End Bent: 100 ton
   Interior Bent: 100 ton
   Approach Slab: 75 ton

5. This drawing was prepared using 8" minimum depth of ballast under timber ties.

6. Profile: Increase in rail elevation vaires 5" to 8".
   Rail size: 136# (All Tracks).

UTILITY NOTES

1. Existing ComEd electric lines located beneath South sidewalk. Location shall be determined prior to construction.

2. Existing underground electric located beneath South sidewalk. Location shall be determined prior to construction.

3. Existing Fiber Optic line located beneath South local roadway access. Location shall be determined prior to construction.

4. Existing 12" storm sewer located beneath Ogden Avenue at approximately centerline of both North and South local roadway access.

5. Existing 60" storm sewer located beneath Ogden Avenue at approximately centerline of roadway.

6. Existing Peoples gas lines located beneath North sidewalk. Location shall be determined prior to construction.

7. ComEd transmission lines exist overhead. Contractor to coordinate with ComEd on construction clearances. Construction equipment and materials to remain below Elev. 65.0 at all times. Contrctor to provide ComEd a minimum of 16 weeks notice to request an outage of transmission lines. ComEd may deny an outage request. ComEd is not likely to grant an outage request from May to September.

8. Additional pile splices and low headroom driving equipment may be needed at the north abutment to remain within the allowable construction envelope below the existing ComEd transmission lines.

9. Supplemental pile splices required to remain within the available construction envelope will not be paid.

10. Contractor to develop a bridge construction process that works within the available construction envelope with active transmission lines. Lifting procedures or other construction methods that rely on ComEd providing a transmission line outage will not be approved.

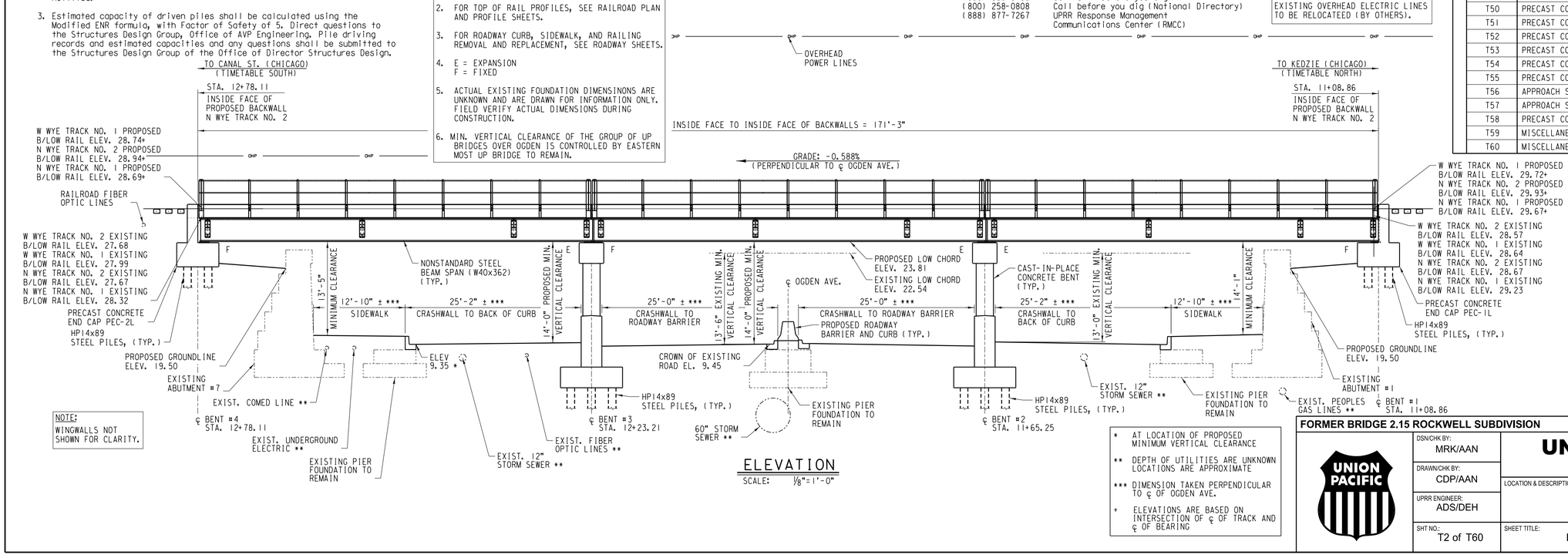
PROJECT CONTACTS

CONTACT	PHONE NUMBER	UPRR
Curt Nystrom	(515) 298-1131	Construction Field Manager
Adam Studts	(402) 544-3541	Structures Design Sr. Manager
Paul Pino	(402) 544-3582	Information Technology - Fiber
Stan Dulinski	(402) 544-0353	Real Estate - Utilities

PHONE NUMBER	UPRR
(800) 336-9193	Call UPRR before you dig
(800) 258-0808	Call before you dig (National Directory)
(888) 877-7267	UPRR Response Management Communications Center (RMCC)

NOTES:
1. DIMENSIONS SHOWN ARE ALONG ℄ PROPOSED BRIDGE AND STATIONING IS BASED ON N WYE TRACK NO. 2.
2. FOR TOP OF RAIL PROFILES, SEE RAILROAD PLAN AND PROFILE SHEETS.
3. FOR ROADWAY CURB, SIDEWALK, AND RAILING REMOVAL AND REPLACEMENT, SEE ROADWAY SHEETS.
4. E = EXPANSION
   F = FIXED
5. ACTUAL EXISTING FOUNDATION DIMENSINONS ARE UNKNOWN AND ARE DRAWN FOR INFORMATION ONLY. FIELD VERIFY ACTUAL DIMENSIONS DURING CONSTRUCTION.
6. MIN. VERTICAL CLEARANCE OF THE GROUP OF UP BRIDGES OVER OGDEN IS CONTROLLED BY EASTERN MOST UP BRIDGE TO REMAIN.

NOTE:
EXISTING OVERHEAD ELECTRIC LINES TO BE RELOCATEED (BY OTHERS).



NOTE:
WINGWALLS NOT SHOWN FOR CLARITY.

* AT LOCATION OF PROPOSED MINIMUM VERTICAL CLEARANCE

** DEPTH OF UTILITIES ARE UNKNOWN LOCATIONS ARE APPROXIMATE

*** DIMENSION TAKEN PERPENDICULAR TO ℄ OF OGDEN AVE.

\+ ELEVATIONS ARE BASED ON INTERSECTION OF ℄ OF TRACK AND ℄ OF BEARING

ELEVATION
SCALE: 1/8"=1'-0"

DRAWING SCHEDULE

THIS SET

SHEET NO.	DESCRIPTION
T1	GENERAL ARRANGEMENT
T2	ELEVATION AND GENERAL NOTES (SHEET 1 OF 2)
T3	GENERAL NOTES (SHEET 2 OF 2) AND BILL OF MATERIAL
T4	BEARING LAYOUT
T5	PILE LAYOUT AND DETAILS
T6	EXISTING BRIDGE REPAIRS (SHEET 1 OF 7)
T7	EXISTING BRIDGE REPAIRS (SHEET 2 OF 7)
T8	EXISTING BRIDGE REPAIRS (SHEET 3 OF 7)
T9	EXISTING BRIDGE REPAIRS (SHEET 4 OF 7)
T10	EXISTING BRIDGE REPAIRS (SHEET 5 OF 7)
T11	EXISTING BRIDGE REPAIRS (SHEET 6 OF 7)
T12	EXISTING BRIDGE REPAIRS (SHEET 7 OF 7)
T13	REMOVAL DETAILS (SHEET 1 OF 3)
T14	REMOVAL DETAILS (SHEET 2 OF 3)
T15	REMOVAL DETAILS (SHEET 3 OF 3)
T16	END BENT PHASING
T17	INTERIOR BENT PHASING
T18	CONSTRUCTION DETAILS
T19	DRAINAGE AND WATERPROOFING DETAILS (SHEET 1 OF 2)
T20	DRAINAGE AND WATERPROOFING DETAILS (SHEET 2 OF 2)
T21	EXISTING ABUTMENT REPAIR DETAILS
T22	CAST-IN-PLACE CONCRETE BENT #2 DETAILS (1 OF 3)
T23	CAST-IN-PLACE CONCRETE BENT #2 DETAILS (2 OF 3)
T24	CAST-IN-PLACE CONCRETE BENT #2 DETAILS (3 OF 3)
T25	CAST-IN-PLACE CONCRETE BENT #3 DETAILS (1 OF 3)
T26	CAST-IN-PLACE CONCRETE BENT #3 DETAILS (2 OF 3)
T27	CAST-IN-PLACE CONCRETE BENT #3 DETAILS (3 OF 3)
T28	BORING LOGS
T29	SPAN 1 STEEL BEAM SPAN PLAN & ELEVATION (SHEET 1 OF 2)
T30	SPAN 1 STEEL BEAM SPAN PLAN & ELEVATION (SHEET 2 OF 2)
T31	SPAN 1 STEEL BEAM SPAN FRAMING PLAN
T32	SPAN 1 STEEL BEAM SPAN ASSEMBLY DETAILS
T33	SPAN 2 STEEL BEAM SPAN PLAN & ELEVATION (SHEET 1 OF 2)
T34	SPAN 2 STEEL BEAM SPAN PLAN & ELEVATION (SHEET 2 OF 2)
T35	SPAN 2 STEEL BEAM SPAN FRAMING PLAN
T36	SPAN 2 STEEL BEAM SPAN ASSEMBLY DETAILS
T37	SPAN 3 STEEL BEAM SPAN PLAN & ELEVATION (SHEET 1 OF 2)
T38	SPAN 3 STEEL BEAM SPAN PLAN & ELEVATION (SHEET 2 OF 2)
T39	SPAN 3 STEEL BEAM SPAN FRAMING PLAN
T40	SPAN 3 STEEL BEAM SPAN ASSEMBLY DETAILS
T41	STEEL BEAM SPAN ASSEMBLY DETAILS (SHEET 1 OF 2)
T42	STEEL BEAM SPAN ASSEMBLY DETAILS (SHEET 2 OF 2)
T43	STEEL BEAM SPAN PIECE MARK DETAILS (SHEET 1 OF 3)
T44	STEEL BEAM SPAN PIECE MARK DETAILS (SHEET 2 OF 3)
T45	STEEL BEAM SPAN PIECE MARK DETAILS (SHEET 3 OF 3)
T46	STEEL BEAM SPAN LIFTING LUG LAYOUT (SHEET 1 OF 2)
T47	STEEL BEAM SPAN LIFTING LUG LAYOUT (SHEET 2 OF 2)
T48	STEEL BEAM SPAN LIFTING LUG DIAGRAMS AND DETAILS
T49	STEEL BEAM SPAN MATERIAL LISTS
T50	PRECAST CONCRETE END CAP PEC-1R
T51	PRECAST CONCRETE END CAP PEC-1L
T52	PRECAST CONCRETE END CAP PEC-2R
T53	PRECAST CONCRETE END CAP PEC-2L
T54	PRECAST CONCRETE END CAP PEC-M (SHEET 1 OF 2)
T55	PRECAST CONCRETE END CAP PEC-M (SHEET 2 OF 2)
T56	APPROACH SLABS (SHEET 1 OF 2)
T57	APPROACH SLABS (SHEET 2 OF 2)
T58	PRECAST CONCRETE WINGWALL SWW-10 DETAILS
T59	MISCELLANEOUS STEEL DETAILS (1 OF 2)
T60	MISCELLANEOUS STEEL DETAILS (2 OF 2)

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID: 31876 | WORK ORDER: | C E NUMBER: 122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION | LATITUDE: 41.86361 | LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN
DRAWN/CHK BY: CDP/AAN
UPRR ENGINEER: ADS/DEH
SHT NO.: T2 of T60

UNION PACIFIC RAILROAD
Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: ELEVATION AND GENERAL NOTES (SHEET 1 OF 2)

FILE NAME: pw:*\Hanson-pw.bentley.com:benesch-pw-01\Documents\421000\421070\70.11 Engineering Docs\Bridges\16_Ogden (2.27)\Plans\421000227_b11.dgn

PLOTTED: 5/26/2021 10:39:56 AM

CONSTRUCTOR NOTES

CONSTRUCTOR DEFINITION

Construction By	Term	Refers To
UPRR	Constructor	Manager Bridge Construction
Contractor	Constructor	Contractor

DIVISION OF RESPONSIBILITY

A. RAILROAD

1. Remove ties, rail and OTM from existing bridge.
2. Provide and install ballast, ties, rail and OTM for proposed bridge.
3. Provide material as shown in the Bill of Material.
4. Provide and install Private Property/No Trespassing sign and bridge marker signs on right side at each end of bridge.

B. CONSTRUCTOR

1. Coordinate all construction activities with the Railroad.
2. Before ordering any material the Constructor shall make a detailed field inspection of the site verifying all pertinent dimensions and elevations. Any variations in dimensions or elevations from those shown on the drawings shall be reported immediately to the UPRR Project Manager. Probing to confirm locations of proposed Bent 1 & 4 pile locations are clear of obstructions is the Constructor's responsibility prior to pile driving mobilization.
3. Any modifications to this design shall be approved by the UPRR Office of Director Structures Design prior to construction.
4. Verify the location, relocation, abandonment, and/or temporary support of all utilities affected by the construction of the structure and embankment and coordinate these activities with the appropriate utility companies, agencies and/or authorities.
5. Apply for and obtain all construction permits necessary to perform the work.
6. Bill of Material and Schedules are provided for information only. Constructor shall be responsible for providing all material, not provided by the Railroad, required to complete the work.
7. Perform all work not performed by the Railroad.
8. Provide the Railroad with a detailed construction plan defining the activity, schedule and procedure for each aspect of the work. Construction shall not begin until the construction plan has been approved by the Railroad.
9. Provide all temporary structures (shoring, bracing and/or falsework) required to support and protect the existing embankments and structures affected by the work. Provide the Railroad with details, design and procedure for all temporary structures. All temporary structures shall be designed, signed and sealed by a Structural Engineer registered in the State of Illinois. All temporary structures shall be approved by the UPRR Office of Director Structures Design prior to beginning construction.
10. Provide temporary guardrail system as directed by UPRR Project Manager. Guardrails on shoring shall include but not be limited to the following:

    The top edge height of the top rail shall be 42" +/- 3" above the walking/working surface.

    At least one midrail shall be provided, evenly spaced between walking/working surface and top rail.

    Metal or timber posts or uprights shall be spaced at maximum intervals of 10'-0".

    Entire guardrail system, including anchorages, shall be capable of withstanding without failure, a force of 200 lbs. applied in any outward or downward direction at any point.

    Guardrail system shall be surfaced to prevent injuries from punctures and lacerations and prevent snagging of clothing. The ends of top rails and midrails shall not extend past the posts or uprights.

    If conditions warrant, i.e. pedestrian traffic/weather, additional protection shall be provided such as screens or mesh to prevent slipping between the midrail and walking/working surface.

11. Accomplish all of the tasks described in the proposed construction sequence shown on sheet T18. An alternate construction sequence may be submitted to the railroad for approval. The alternate construction sequence, if proposed, shall be approved by the UPRR office of Director Structures Design prior to beginning construction.
12. Accomplish activities within the schedule specified in the approved construction plan.

CAST-IN-PLACE CONCRETE NOTES

CONCRETE

1. All concrete materials, placement and workmanship shall be in accordance with Chapter 8: Concrete Structures and Foundations of the AREMA Manual for Railway Engineering.
2. Formwork tolerances shall be in accordance with ACI 347 specifications.
3. Minimum compressive strength at 28 days shall be 4000 psi.
4. Exposed surfaces shall be formed in a manner which shall produce a smooth and uniform appearance without rubbing or plastering. Exposed edges of 90° or less are to be chamfered ¾" x ¾". Top surfaces to have a smooth finish, free of all float or trowel marks.
5. Concrete shall be proportioned such that the water - cement ratio (by weight) does not exceed 0.45. Concrete shall contain a minimum of 6 sacks of cement per cubic yard of concrete.
6. Flyash replacement may account for up to 25% of the cement by substitution.
7. Cement shall be Type I, Type II or Type III Portland Cement in accordance with ASTM C150 specifications.
8. Aggregates shall be graded in accordance with ASTM C33 specifications. Coarse aggregate shall be size no. 67. Fine aggregate shall be natural sand.
9. Air content shall be between 5% and 7% (by volume).
10. Admixtures shall not be used without approval by the Railroad.
11. Curing shall be accomplished by wet curing or membrane curing compound. Membrane curing compound shall conform to ASTM C309 Type II.

CAST-IN-PLACE CONCRETE NOTES - CONT.

12. Bush hammer or scarify all existing concrete surfaces which shall have new concrete placed against them.
13. Do not use calcium chloride or any admixture containing intentionally added chloride ions. Testing got chloride ions is not required.
14. Apply Thoroc Epoxy Adhesive 24LPL or approved alternate before placing new concrete against hardened concrete surfaces.
15. DCI, as manufactured by W. R. Grace, Masterlife CL 30, as manufactured by BASF, or approved alternate shall be added at a quantity of 5 gallons per cubic yard. Calcium nitrate solution shall contain 30% solids and shall provide 15.0 lbs. per cubic yard chloride protection. Mix shall also include 7%, by weight of cement, force 10,000 microsilica slurry by W. R. Grace or BASF, or approved addendum shall be used.
16. Proposed admixture alternates shall be approved by the Railroad, Any proposed substitution shall include documentation as to the corrosion protection mechanism, test data documenting the stated level of protection offered, and documentation that the proposed alternate meets a service life of 100 years as calculated using Fick's Second Law of Physics. All models shall use a reference diffusion coefficient of 2.81. Only systems as noted on drawings or approved addendum shall be used.

REINFORCING STEEL

1. Reinforcing steel shall be deformed, new billet bars per ASTM A615 specifications and meet Grade 60 requirements.
2. Fabrication of reinforcing steel shall be per Chapter 7 of the CRSI Manual of Standard Practice. Dimensions of bending details are out to out of bar.
3. Reinforcing steel shall be blocked and tied to proper location and securely wired against displacement. Tie wires shall be installed at every other bar intersection so that at least 50% of the intersections are tied. Tack welding of reinforcing is prohibited. Minimum concrete cover on reinforcing not otherwise noted shall meet the AREMA Manual for Railway Engineering requirements.
4. Reinforcement bars designated (E) shall be epoxy coated. Epoxy coated steel bars for reinforcement shall be deformed billet-steel bars conforming to the requirements of the current A.S.T.M. Designation: A615 or A706 grade 60 and shall be epoxy coated according to ASTM A775 meeting Annex A1 for epoxy coating. The epoxy coating applicator shall be certified according to the current bureau of materials and physical research's policy memorandum, "Epoxy Coating Plant Certification Procedure". the Illinois Department of Transportation will maintain an approved list. Epoxy coated reinforcement bars may be sheared or shawn to length after coating, providing the end damage to the coating does not extend more than 0.5 in. back and the cut is patched before any visible rusting appears. Flame cutting will not be permitted.

PRECAST CONCRETE NOTES

CONCRETE

1. All concrete materials, placement and workmanship shall be in accordance with Chapter 8: Concrete Structures and Foundations of the AREMA Manual for Railway Engineering.
2. Minimum compressive strength at 28 days shall be 4000 psi.
3. Exposed surfaces shall be formed in a manner which shall produce a smooth and uniform appearance without rubbing or plastering. Exposed edges of 90° or less are to be chamfered ¾" x ¾". Top surface to have a smooth finish, free of all float or trowel marks.
4. Concrete shall be proportioned such that the water - cement ratio (by weight) does not exceed 0.45. Concrete shall contain a minimum of 6 ½ sacks of cement per cubic yard of concrete. Flyash replacement may account for up to 25% of the cement.
5. Cement shall be Type I, Type II or Type III Portland Cement in accordance with ASTM C150 specifications.
6. Aggregates shall be graded in accordance with ASTM C33 specifications. Coarse aggregate shall be size no. 67. Fine aggregate shall be natural sand.
7. Air content shall be between 5% and 7% (by volume).
8. Admixtures shall not be used without approval by the Railroad.
9. Curing shall be accomplished by wet curing or application of a Type 2 membrane.
10. The Fabricator shall stencil the Fabricator's name, date of fabrication, bridge number, actual lifting weight and piece mark at location shown on the drawings.
11. Production procedures for the manufacture of precast members shall be in accordance with the AREMA Manual for Railway Engineering and the Precast Concrete Institute's Manual MNL 116-77 for Quality Control.
12. Dimensional tolerances governing the manufacture of precast members shall conform to Division VI, Section 6.4.6 of the Precast Concrete Institute's Manual MNL 116-77 for Quality Control for the appropriate shape. Tolerance for location of lifting devices shall be +/- ½".
13. The area around all lifting loops shall be recessed so that the loops can be removed to a depth of ¾" and grouted.
14. The Fabricator shall be responsible for loading and properly securing all precast concrete members for shipment. All concrete components shall be made available for inspection by the Railroad at the Fabricator's plant prior to shipment, at the Railroad's discretion.

REINFORCING STEEL

1. Reinforcing steel shall be deformed, new billet bars per ASTM A615 specifications and meet Grade 60 requirements.
2. Fabrication of reinforcing steel shall be per Chapter 7 of the CRSI Manual of Standard Practice. Dimensions of bending details are out to out of bar.
3. Reinforcing steel shall be blocked and tied to proper location and securely wired against displacement. Tie wires shall be installed at every other bar intersection so that at least 50% of the intersections are tied. Tack welding of reinforcing is prohibited. Minimum concrete cover on reinforcing not otherwise noted shall meet the AREMA Manual for Railway Engineering requirements.

STRUCTURAL STEEL

1. Steel plates shall conform to ASTM A36 or A709-Grade 36 specifications.
2. Studs shall be C1015, C1017 or C1020 cold drawn steel which conforms to ASTM A108 specifications.

PRECAST CONCRETE NOTES - CONT.

3. Deformed bar anchors shall conform to ASTM A706 specifications. Welding of deformed bar anchors shall conform to AWS D1.4, Welding shall be performed by certified welder.
4. Where galvanizing is not indicated, material shall be plain.

LIFTING ANCHORS

1. Swift lift anchors shall be Dayton Superior P-52 anchors or approved alternate with a safe working load sufficient for the weight of the precast element including form removal. The safe working load shall provide a minimum safety factor of 4.

BILL OF MATERIAL

TOTAL	PHASE 1	PHASE 2	UNIT	DESCRIPTION	STORE ITEM NO.	ORDERED BY
90	60	30	EA.	HP14x89 X 40'-0" STEEL PILE WITH POINTS (ASTM A572 GRADE 50, PLAIN)	510-7559	MANAGER BRIDGE PROJECTS
172	126	46	EA.	HP14x89 X 40'-0" STEEL PILE (ASTM A572 GRADE 50, PLAIN)	510-7557	
82	66	16	EA.	HP14x89 X 60'-0" STEEL PILE WITH POINTS (ASTM 572 GRADE 50 PLAIN)	510-7595	
172	126	46	EA.	HP14x89 PILE SPLICER	510-8065	
1	-	1	EA.	BRIDGE MARKER AND NO TRESSPASSING SIGNS, MOUNTING POSTS AND MOUNTING HARDWARE PER ENGINEERING STANDARD DRAWINGS 0502, 0507, 0538 AND 0599	P00-2616	
90	60	30	EA.	PILE PLATE BP-14 (PER NOTES AND DETAIL, SHEET NO. T24)	122538-1	
1	1	-	EA.	STRUCTURAL STEEL AND FASTENERS (INCLUDING FIELD INSTALLED DECK PLATES, SOLE PLATES, BEARING PADS, AND ANCHOR RODS) FOR ONE 56'-10" STEEL BEAM SPAN 1, NONSTANDARD, COMPLETE (PER NOTES, SHEET NO. T29, DETAILS, SHEET NOS. T29 THRU T32 AND SHEET NOS. T41 THRU T48 AND MATERIAL LISTS, SHEET NO. T49)	122538-2	
1	1	-	EA.	STRUCTURAL STEEL AND FASTENERS (INCLUDING FIELD INSTALLED DECK PLATES, SOLE PLATES, BEARING PADS, AND ANCHOR RODS) FOR ONE 56'-10" STEEL BEAM SPAN 2, NONSTANDARD, COMPLETE (PER NOTES, SHEET NO. T29, DETAILS, SHEET NOS. T33 THRU T36 AND SHEET NOS. T41 THRU T48 AND MATERIAL LISTS, SHEET NO. T49)	122538-3	
1	1	-	EA.	STRUCTURAL STEEL AND FASTENERS (INCLUDING FIELD INSTALLED DECK PLATES, SOLE PLATES, BEARING PADS, AND ANCHOR RODS) FOR ONE 56'-10" STEEL BEAM SPAN 3, NONSTANDARD, COMPLETE (PER NOTES, SHEET NO. T29, DETAILS, SHEET NOS. T37 THRU T48 AND MATERIAL LISTS, SHEET NO. T49)	122538-4	
1	1	-	EA.	PRECAST CONCRETE END CAP PEC-1R (PER NOTES, SHEET NO. T3 AND DETAILS, SHEET NO. T50)	122538-5	
1	-	1	EA.	PRECAST CONCRETE END CAP PEC-1L (PER NOTES, SHEET NO. T3 AND DETAILS, SHEET NO. T51)	122538-6	
1	1	-	EA.	PRECAST CONCRETE END CAP PEC-2R (PER NOTES, SHEET NO. T3 AND DETAILS, SHEET NO. T52)	122538-7	
1	-	1	EA.	PRECAST CONCRETE END CAP PEC-2L (PER NOTES, SHEET NO. T3 AND DETAILS, SHEET NO. T53)	122538-8	
3	2	1	EA.	PRECAST CONCRETE END CAP PEC-M (PER NOTES, SHEET NO. T3 AND DETAILS, SHEET NOS. T54 THRU T55)	122538-9	
1	1	-	EA.	PRECAST CONCRETE END CAP PEC-M1 (PER NOTES, SHEET NO. T3 AND DETAILS, SHEET NOS. T54 THRU T55)	122538-10	
1	1	-	EA.	PRECAST CONCRETE END CAP PEC-M2 (PER NOTES, SHEET NO. T3 AND DETAILS, SHEET NOS. T54 THRU T55)	122538-11	
1	1	-	EA.	PRECAST CONCRETE END CAP PEC-M3 (PER NOTES, SHEET NO. T3 AND DETAILS, SHEET NOS. T54 THRU T55)	122538-12	
1	1	-	EA.	PRECAST CONCRETE END CAP PEC-M4 (PER NOTES, SHEET NO. T3 AND DETAILS, SHEET NOS. T54 THRU T55)	122538-13	
1	1	-	EA.	PRECAST CONCRETE END CAP PEC-M5 (PER NOTES, SHEET NO. T3 AND DETAILS, SHEET NOS. T54 THRU T55)	122538-14	
1	1	-	EA.	PRECAST CONCRETE END CAP PEC-M6 (PER NOTES, SHEET NO. T3 AND DETAILS, SHEET NOS. T54 THRU T55)	122538-15	
4	2	2	EA.	PRECAST CONCRETE WINGWALL SWW-10 (PER NOTES, SHEET NO. T3 AND DETAILS, SHEET NO. T58)	122538-16	
1	1	-	EA.	PRECAST CONCRETE APPROACH SLAB SAS-1 (PER NOTES, SHEET NO. T3 AND SCHEDULE AND DETAILS, SHEET NO. T56)	122538-17	
1	1	-	EA.	PRECAST CONCRETE APPROACH SLAB SAS-2 (PER NOTES, SHEET NO. T3 AND SCHEDULE AND DETAILS, SHEET NO. T56)	122538-18	
1	1	-	EA.	PRECAST CONCRETE APPROACH SLAB SAS-3 (PER NOTES, SHEET NO. T3 AND SCHEDULE AND DETAILS, SHEET NO. T57)	122538-19	
2	2	-	EA.	PRECAST CONCRETE APPROACH SLAB SAS-4 (PER NOTES, SHEET NO. T3 AND SCHEDULE AND DETAILS, SHEET NO. T57)	122538-20	
49	49	-	EA.	G210 DOWEL BAR (#8 x 2'-10", ASTM A615 Grade 60)(PER NOTES, SHEET NO. T3 AND DETAIL, SHEET NO. T16)	122538-21	
2	1	1	LOT	NONSTANDARD MISCELLANEOUS STEEL (PER SCHEDULE, SHEET NO. T59)	122538-22	
2	1	1	LOT	TEMPORARY SHORING SYSTEM		CONSTRUCTOR
1	1	-	LOT	TEMPORARY BALLAST RETAINER SYSTEM (PER SCHEDULE SHEET NO. T15)		
533.8	348.5	185.3	CU. YD.	4000 PSI CONCRETE FOR BENT #2 AND FOR BENT #3 (PER NOTES, SHEET NO. T3 AND DETAILS, SHEET NOS. T22 THRU T27)		
2	1	1	LOT	REINFORCING STEEL FOR CAST-IN-PLACE CONCRETE BENT #2 (PER NOTES, SHEET NO. T3 AND SCHEDULE, SHEET NO. T22 THRU T23)		
2	1	1	LOT	REINFORCING STEEL FOR CAST-IN-PLACE CONCRETE BENT #3 (PER NOTES, SHEET NO. T3 AND SCHEDULE, SHEET NO. T25 THRU T26)		
96	96	-	EA.	#5 BAR SPLICERS (PER NOTES AND DETAIL, SHEET NO. T27)		
28	28	-	EA.	#6 BAR SPLICERS (PER NOTES AND DETAIL, SHEET NO. T27)		
2	1	1	LOT	WATERPROOFING MATERIAL (PER NOTES AND SCHEDULE, SHEET NO. T20)		
2	1	1	LOT	DRAINAGE MATERIAL (PER NOTES AND SCHEDULE, SHEET NO. T20)		
1	-	1	LOT	ABUTMENT REPAIR (PER NOTES AND SCHEDULE, SHEET NO. T21)		
2	1	1	LOT	4000 PSI NON-SHRINK CEMENTITIOUS GROUT		
173	96	77	LIN. FT.	ABUTMENT HANDRAIL (PER NOTES AND DETAILS SHEET NO. T59)		
1	1	-	LOT	BRIDGE REPAIR (PER NOTES, SHEETS T2 THRU T3 SCHEDULE, SHEET NO. T6 AND DETAILS, SHEET NO. T6 THRU T12		
1	-	1	LOT	SUB-BALLAST (PER NOTES, SHEET NO. T16 AND SCHEDULE, SHEET NO. T16, AND DETAILS. SHEET NO. T16 THRU T18)		

EST. WT. OF STRUCTURAL STEEL = 2,689,100 LB.
EST. WT. OF STEEL PILING = 1,370,600 LB.
EST. WT. OF MISC. STEEL = 7,200 LB.
EST. WT. OF REPAIR STEEL = 19,265 LB.

NOTE:
QUANTITY OF HP14x89 STEEL PILE IS BASED ON THE FOLLOWING:

END BENT: 100' PILE AT EACH PILE LOCATION
INTERIOR BENT: 80' PILE AT EACH PILE LOCATION

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 — LONGITUDE: -87.68871

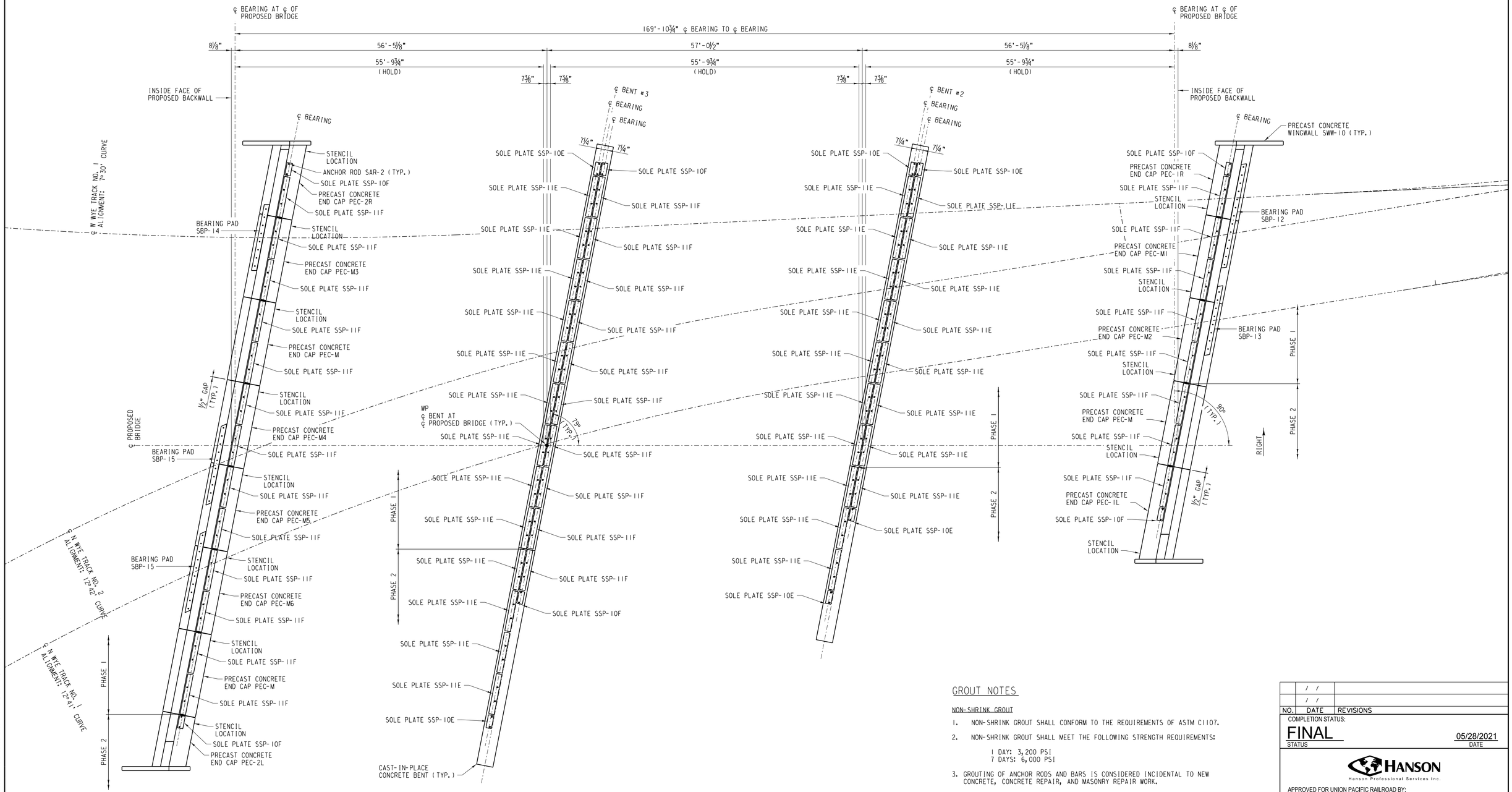
DSN/CHK BY: MRK/AAN	**UNION PACIFIC RAILROAD** — Office of Director Structures Design
DRAWN/CHK BY: CDP/AAN	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION — 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
UPRR ENGINEER: ADS/DEH	
SHT NO.: T3 of T60	SHEET TITLE: GENERAL NOTES (SHEET 2 OF 2) AND BILL OF MATERIAL

FILE NAME: pw:\\Hanesch-pw.bentley.com:Hanesch-pw-01\Documents\210000\210070.11\Engineering Docs\Bridges\16_Ogden (2.27)\Plans*.dgn

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TO CANAL ST. (CHICAGO)
(TIMETABLE SOUTH)

TO KEDZIE (CHICAGO)
(TIMETABLE NORTH)



GROUT NOTES

NON-SHRINK GROUT

1. NON-SHRINK GROUT SHALL CONFORM TO THE REQUIREMENTS OF ASTM C1107.
2. NON-SHRINK GROUT SHALL MEET THE FOLLOWING STRENGTH REQUIREMENTS:
   1 DAY: 3,200 PSI
   7 DAYS: 6,000 PSI
3. GROUTING OF ANCHOR RODS AND BARS IS CONSIDERED INCIDENTAL TO NEW CONCRETE, CONCRETE REPAIR, AND MASONRY REPAIR WORK.

BEARING LAYOUT

SCALE: ⅛"=1'-0"

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL (STATUS) 05/28/2021 (DATE)

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL (CONSULTANT ENGINEER) 05/28/2021 (DATE)

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FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN
DRAWN/CHK BY: CDP/AAN
UPRR ENGINEER: ADS/DEH
SHT NO.: T4 of T60

UNION PACIFIC RAILROAD
Office of Director Structures Design

LOCATION & DESCRIPTION:
BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: BEARING LAYOUT

FILE NAME: pw:**dgnbesch-pw.bentley.com:bbesch-pw-01\Documents*210000*210170_11*Engineering Docs*Bridges*16_Ogden (2.27)*Drawings*d00227_b11.dgn

PLOTTED: 5/26/2021 10:40:05 AM

TO CANAL ST. (CHICAGO)
(TIMETABLE SOUTH)

TO KEDZIE (CHICAGO)
(TIMETABLE NORTH)

TABLE OF WORKING POINTS (WP)

LOCATION	NORTHING	EASTING
BENT #1	1893687.92	1159790.90
BENT #2	1893642.17	1159825.08
BENT #3	1893596.47	1159859.22
BENT #4	1893550.73	1159893.40

CENTER TO CENTER OF END BENT PILES = 171'-3"

STA. 12+78.11, 2.23' RT.
STA. 12+23.21, 15.93' LT.
STA. 11+65.25, 27.28' LT.
STA. 11+08.86, 36.30' LT.

57'-1¼" (HOLD)
57'-0½" (HOLD)
57'-1¼" (HOLD)

EXISTING COMED LINE
EXISTING UNDERGROUND ELECTRIC
EXISTING 12" STORM SEWER
EXISTING FIBER OPTIC LINES
EXISTING 60" STORM SEWER
EXISTING 12" STORM SEWER
EXISTING PEOPLES GAS LINES
EXISTING OVERHEAD HIGH VOLTAGE TRANSMISSION LINES
EXISTING UNDERGROUND ELECTRIC CABLE

℄ W WYE TRACK NO. 1 ALIGNMENT: 7°30' CURVE
℄ N WYE TRACK NO. 2 ALIGNMENT: 12°42' CURVE
℄ N WYE TRACK NO. 1 ALIGNMENT: 12°41' CURVE
℄ PROPOSED BRIDGE
℄ OGDEN AVE.

℄ APPROACH SLAB PILES CUTOFF ELEV. 25.27
PLUMB PILE
℄ HP14x89 STEEL PILE
TEMPORARY SHORING SYSTEM (SEE NOTE A)
WP ℄ BENT AT ℄ PROPOSED BRIDGE (TYP.)
7 SPACES @ 7'-0" = 49'-0"
8 SPACES @ 7'-0" = 56'-0"
4 SPACES @ 7'-0" = 28'-0"
79° (TYP.)
PHASE 1
PHASE 2
℄ BENT #4 CUTOFF ELEV. 20.23
℄ BENT #3 CUTOFF ELEV. 3.89
℄ BENT #2 CUTOFF ELEV. 4.21
℄ BENT #1 CUTOFF ELEV. 21.21
℄ APPROACH SLAB PILES CUTOFF ELEV. 26.36
EXISTING ABUTMENT #7
EXISTING ABUTMENT #1
RAILROAD FIBER OPTIC LINES
EXISTING PILE (TYP.)
EXISTING OVERHEAD ELECTRIC DISTRIBUTION LINES, TO BE RELOCATED OR OUT OF SERVICE DURING CONSTRUCTION
INLET, TYP.
CATCH BASIN, TYP.
MANHOLE, TYP.
RIGHT

PILE LAYOUT
SCALE: 1/8"=1'-0"

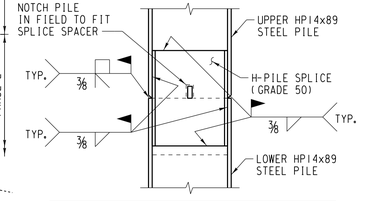
NOTES:

1. PILE LAYOUT STATIONING SHOWN IS BASED ON N WYE TRACK NO. 2.
2. LOCATION OF EXISTING FOUNDATIONS ARE ASSUMED. CONTRACTOR TO VERIFY EXTENTS OF EXISTING FOUNDATIONS BEFORE ORDER OF MATERIALS.
3. SEE SHEET T24 FOR PILE BEARING PLATE DETAIL
4. CONTRACTOR TO SUBMIT NORTHING AND EASTING FOR EACH PILE LOCATION TO UPRR FOR APPROVAL PRIOR TO PILE DRIVING.

NOTE A:

CONTRACTOR SHALL DESIGN, AND SUBMIT TO THE RAILROAD FOR APPROVAL, DETAILS OF THE TEMPORARY SHORING SYSTEM. SEE SPECIFICATIONS.

ADDITIONALLY, THE CONTRACTOR WILL NEED TO SUBMIT SHORING TO OUC FOR REVIEW AND APPROVAL, AS APPLICABLE.



INSTALLATION INSTRUCTIONS:

(NOTE: SPLICE IS SHOWN INSTALLED ON UPPER PILE SECTION FIRST. ALTERNATIVELY, SPLICE MAY BE INSTALLED ON BOTTOM SECTION FIRST.)

1. NOTCH THE END OF H-PILE SECTION TO RECEIVE SPLICE FIRST (NOTCH TO ACCOMMODATE THE SPLICE SPACER BAR).
2. FIT SPLICE OVER NOTCHED END OF H-PILE AND FILLET WELD SPLICE END TO PILE WEB AS SHOWN.
3. PLACE THE UPPER H-PILE SECTION INTO POSITION ONTO THE LOWER SECTION.
4. COMPLETE FILLET WELD ALONG SPLICE EDGES.
5. WELD FLANGE JOINT BETWEEN UPPER AND LOWER PILE SECTIONS.

PILE SPLICE DETAIL
SCALE: 1"=1'-0"

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL (STATUS) 05/28/2021 (DATE)

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL (CONSULTANT ENGINEER) 05/28/2021 (DATE)

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

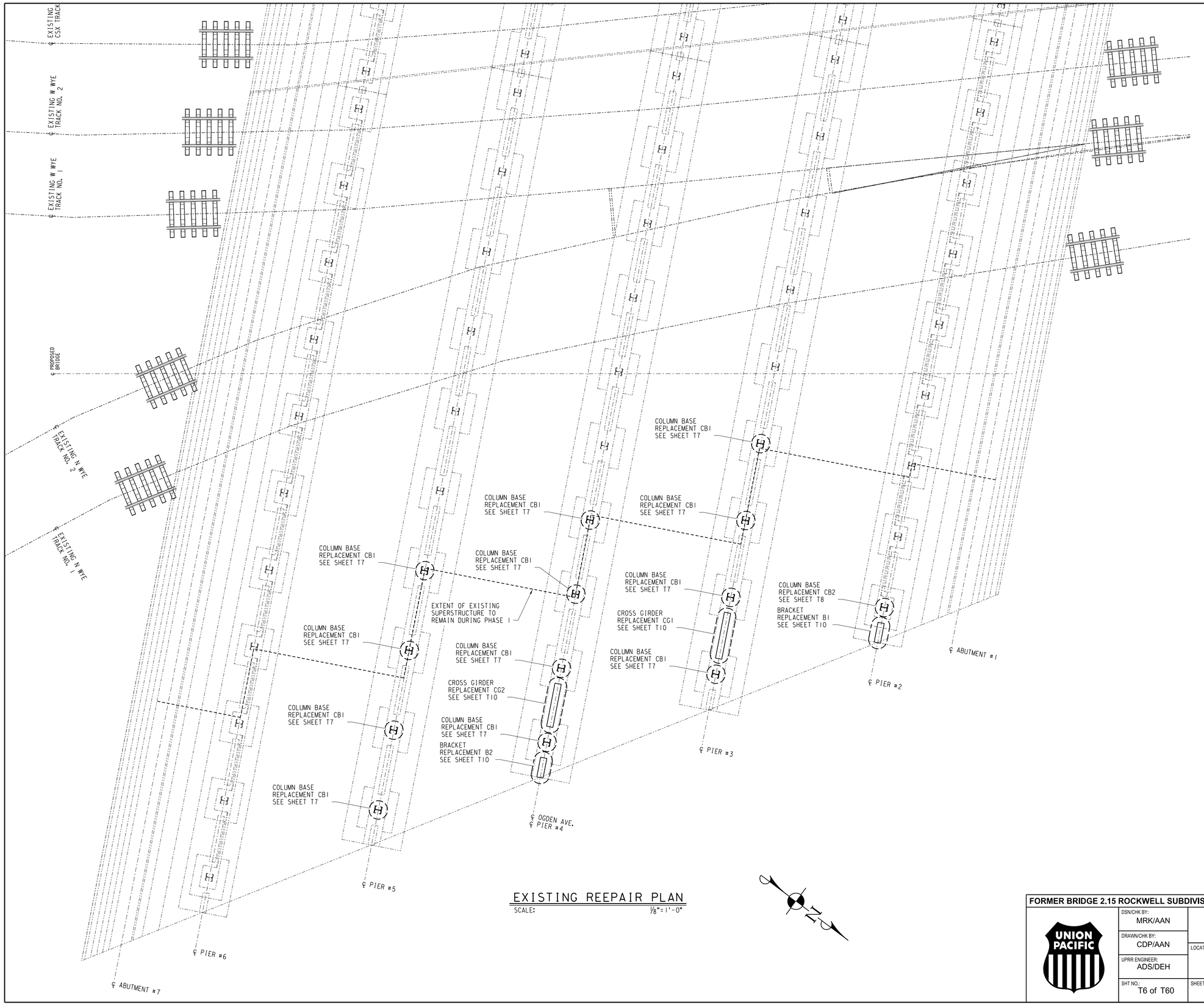
FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION

LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN	**UNION PACIFIC RAILROAD**
DRAWN/CHK BY: CDP/AAN	Office of Director Structures Design
UPRR ENGINEER: ADS/DEH	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
SHT NO.: T5 of T60	SHEET TITLE: PILE LAYOUT AND DETAILS

FILE NAME: pw:\\Hanesch-pw.bentley.com:Hanesch-pw-01\Documents\210000s\210070.11\Engineering Docs\Bridges\16_Ogden (2-27)\plans\sd00227_bi1.dgn

PLOTTED: 5/26/2021 10:40:10 AM



EXISTING REEPAIR PLAN

SCALE: 1/8"=1'-0"

MATERIAL SCHEDULE

REQ'D.	UNIT	DESCRIPTION
1	EA.	CROSS GIRDER CG1 REPAIR (PER NOTES, SHEET NO. T29 AND SCHEDULE AND DETAILS, SHEET NO. T11
1	EA.	CROSS GIRDER CG2 REPAIR (PER NOTES, SHEET NO. T29 AND SCHEDULE AND DETAILS, SHEET NO. T11
1	EA.	OVERHANG BRACKET B1 REPAIR (PER NOTES, SHEET NO. T29 AND SCHEDULE AND DETAILS, SHEET NO. T12
1	EA.	OVERHANG BRACKET B2 REPAIR (PER NOTES, SHEET NO. T29 AND SCHEDULE AND DETAILS, SHEET NO. T12
12	EA.	COLUMN BASE CB1 REPAIR (PER NOTES, SHEET NO. T2 THRU T3 AND SCHEDULE AND DETAILS, SHEET NO. T7
1	EA.	COLUMN BASE CB2 REPAIR (PER NOTES, SHEET NO. T2 THRU T3 AND SCHEDULE AND DETAILS, SHEET NO. T8
1	LOT	TEMPORARY SHORING

REPAIR NOTES

1. Structural steel, concrete, and other materials for completing repairs shall be in accordance with the notes on Sheets T2 and T3. Execution of work shall follow the notes on Sheets T2 and T3, and as supplemented below.
2. The Contractor shall submit a plan showing the location and order of the repairs. The Contractor shall also submit design calculations for any falsework, special erecting devices, and temporary bracing. These drawings and design computations, stamped by a licensed structural engineer in Illinois, shall be submitted to the railroad and approved prior to the start of construction.
3. The Contractor shall submit shop drawings of all steel replaced at repair areas to the railroad for approval prior to fabrication.
4. To make accurate shop detail and field erection drawings, the Contractor shall take field measurements of all existing material that is to be replaced or to which new material will be connected. These measurements include, but are not limited to, thickness, width and length of existing material; locations and sizes of existing bolt or rivet holes; exact location of material. It is the Contractor's responsibility to make measurements of sufficient accuracy to ensure the proper fit up of the new material. Details presented in the plans are based on existing plan data. Verification of all details and member sizes is the Contractor's responsibility.
5. Remove only the rivets shown on the Plans or as directed by the railroad. The method of removal of existing rivets chosen by the Contractor is subject to the approval of railroad and shall be submitted for review. Burning of existing rivets will only be allowed near steel surfaces which are to be removed and discarded. Burning of existing rivets will not be allowed for members to remain in place and members that are to be removed and reinstalled at a later date. When burning of rivets is not allowed the head of the rivet shall be sheared off and the shank driven or drilled out. Extreme care shall be taken while removing the rivets so as not to damage the existing structural steel which is to remain. All damage to existing members which are to remain shall be repaired or the member replaced to the satisfaction of the railroad. Repair or replacement of damaged members shall be at the Contractor's expense and at no additional cost to the railroad.
6. Ream existing rivet holes as necessary for installation of high strength bolts.
7. Before erecting repair structural steel, blast clean existing faying surfaces and other contact surfaces. Contractor to contain and appropriately dispose of all materials used in the cleaning process as they may contain lead paint.
8. Portions to be removed shall be removed in such a manner as to leave the remaining structure undamaged and in proper condition for the use contemplated. No flame cutting is allowed except where shown on the Plans or approved by the railroad prior to performing the work. Any damage to the portions remaining in service shall be repaired. Repairs shall be made as directed by the railroad.
9. Installation of dowel rods with ITW Red Head Epcon C6+ epoxy anchoring system or approved equal is considered incidental to new concrete, concrete repair, and masonry repair work.
10. Other damaged areas not shown in these plans that are suspected to compromise the structural integrity of the existing bridge supporting the Phase I temporary tracks shall be called to the attention of the Senior Manager Structures Design and shall be inspected by a licensed structural engineer of the state of Illinois.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:

FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

UNION PACIFIC

DSN/CHK BY:	MRK/AAN
DRAWN/CHK BY:	CDP/AAN
UPRR ENGINEER:	ADS/DEH
SHT NO.:	T6 of T60

UNION PACIFIC RAILROAD

Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: EXISTING BRIDGE REPAIRS (SHEET 1 OF 7)

FILE NAME: p:*Behnesch-pw.bentley.com:behnesch-pw-01*Documents*2010000s*210070-11*Engineering Docs*Bridges*16_Ogden (2.27*MP)ptw*ocd00227.bil.DGN

PLOTTED: 5/26/2021 10:40:15 AM

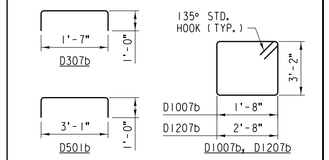
MATERIAL SCHEDULE
(QUANTITY PER COLUMN BASE CBI)

REQ'D	UNIT	DESCRIPTION
1.7	CU. YD.	4000 PSI CONCRETE (PER NOTES, SHEET NO. T3)
1	LOT	REINFORCING STEEL (PER NOTES, SHEET NO. T3 AND SCHEDULE, SHEET NO. T7)
3	EA.	RED HEAD EPCON C6+ 30.4oz EPOXY INJECTION CARTRIDGE, PART NO. C6P-30, USE GUNS D102(M) OR D2020(P)
3	EA.	HIGH FLOW MIXING NOZZLE FOR RED HEAD C6P-30 OR A7P-28, PART S75, 5/8" HOLES MIN.

REINFORCING SCHEDULE
(QUANTITY PER CBI)

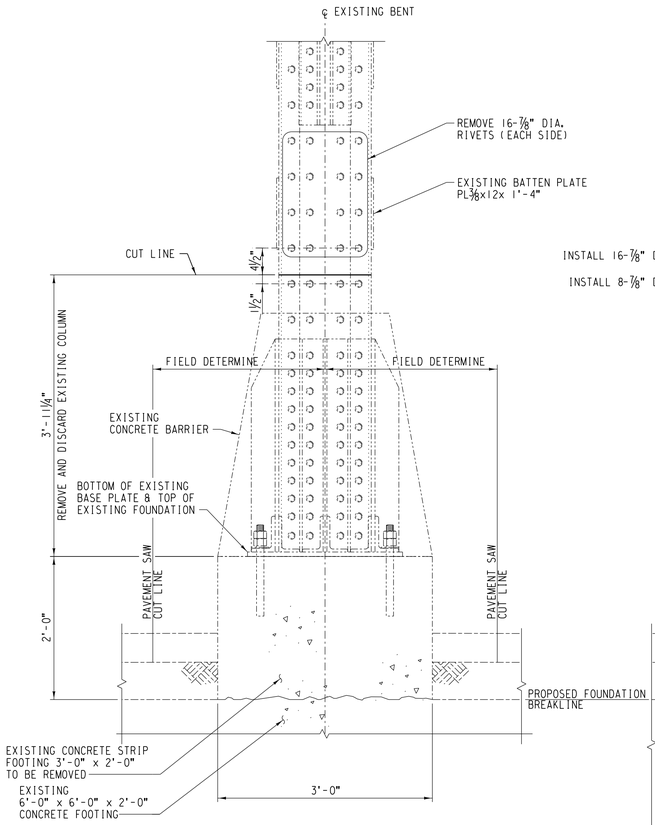
TOTAL	MARK	SIZE	LENGTH	SHAPE
5	D307b	#5	3'-7"	
4	D501b	#5	5'-1"	
6	D1007b	#5	10'-7"	
4	D1207b	#5	12'-7"	
18	E407	#6	4'-7"	
8	G400	#8	4'-0"	

BENDING DIAGRAM
(DIMENSIONS ARE OUT TO OUT)

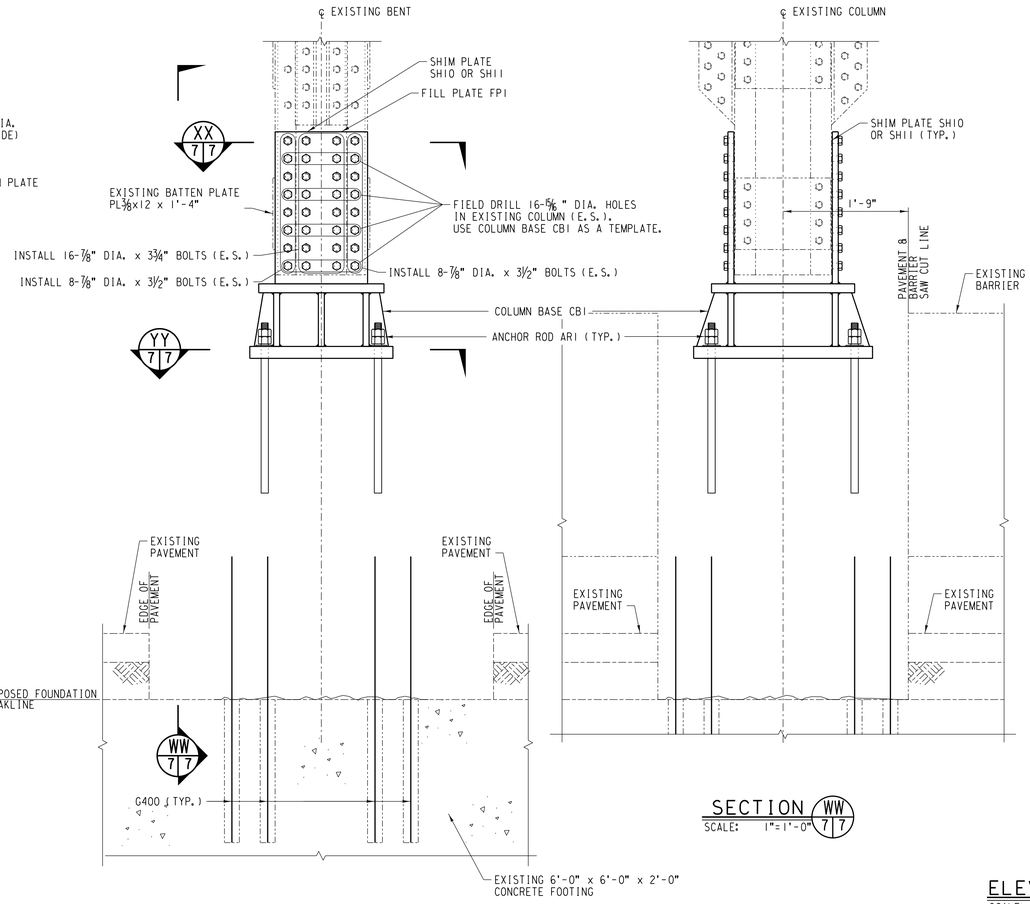


NOTE:
BAR DESIGNATIONS CONSIST OF BAR SIZE & LENGTH FOLLOWED BY THE LETTER "b" IF BENT. BAR SIZES ARE REPRESENTED BY THE LETTERS A THROUGH L CORRESPONDING TO BAR SIZE #2 THROUGH #18. BAR LENGTHS ARE GIVEN IN FEET AND INCHES; THE LAST TWO DIGITS ARE INCHES.

EST. WT. OF REINFORCING STEEL = 375 LB.

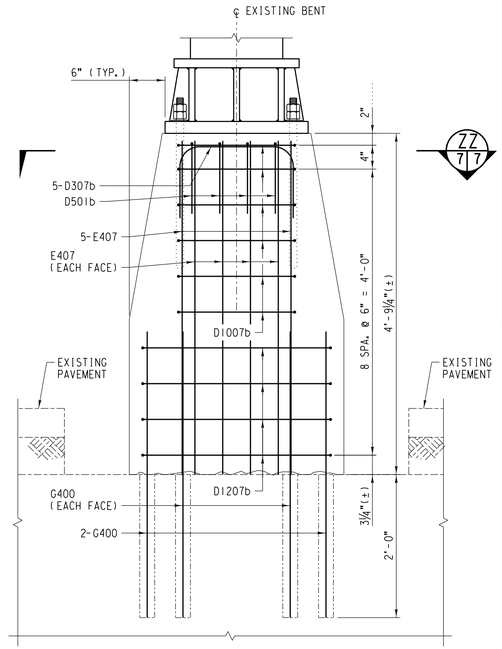


ELEVATION - EXISTING COLUMN AND CONCRETE PEDESTAL REMOVAL
SCALE: 1"= 1'-0"
(LOOKING WEST ON OGDEN AVE.)



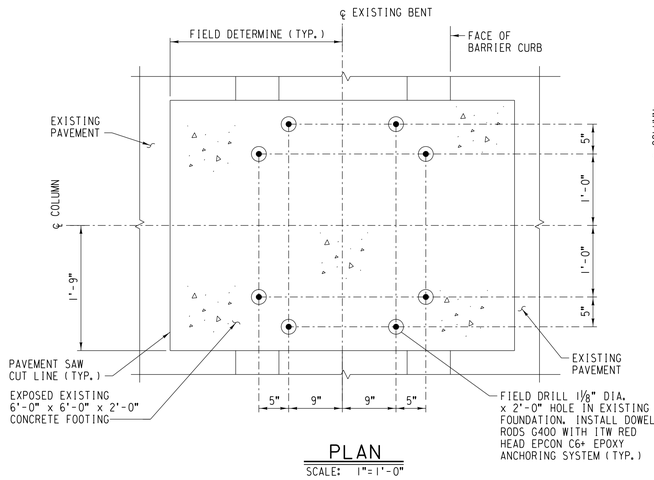
ELEVATION - COLUMN BASE INSTALLATION
SCALE: 1"=1'-0"
(LOOKING WEST ON OGDEN AVE.)

SECTION WW 7 7
SCALE: 1"=1'-0"

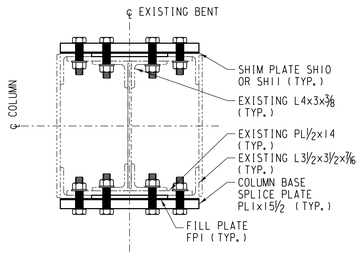


ELEVATION - CONCRETE PEDESTAL INSTALLATION
SCALE: 1"=1'-0"
(LOOKING WEST ON OGDEN AVE.)

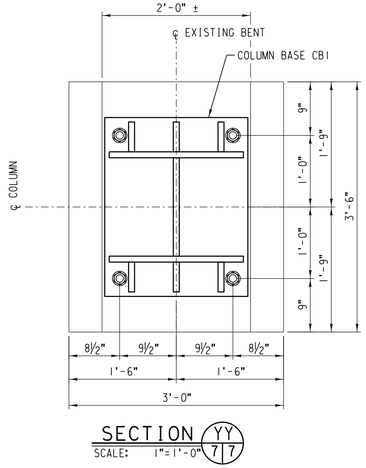
ZZ 7 7



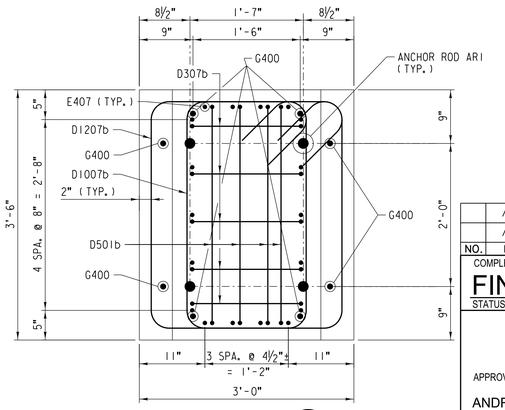
PLAN
SCALE: 1"=1'-0"



SECTION XX 7 7
SCALE: 1½"=1'-0"



SECTION YY 7 7
SCALE: 1"=1'-0"



SECTION ZZ 7 7
SCALE: 1"=1'-0"

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION

LATITUDE: 41.86361 LONGITUDE: -87.68871

UNION PACIFIC

DSN/CHK BY: MRK/AAN	**UNION PACIFIC RAILROAD**
DRAWN/CHK BY: CDP/AAN	Office of Director Structures Design
UPRR ENGINEER: ADS/DEH	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
SHT NO.: T7 of T60	SHEET TITLE: EXISTING BRIDGE REPAIRS (SHEET 2 OF 7)

FILE NAME: pw:\\benesch-pw.bentley.com:benesch-pw-01\Documents\210000s\210070.11\Engineering Docs\Bridges\16_Ogden (2.27)\MP\drs*cad0227_bill.DGN

PLOTTED: 5/26/2021 10:40:19 AM

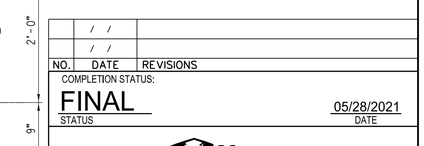
MATERIAL SCHEDULE
(QUANTITY PER COLUMN BASE CB2)

REQ'D	UNIT	DESCRIPTION
1.9	CU. YD.	4000 PSI CONCRETE (PER NOTES, SHEET NO. T3)
1	LOT	REINFORCING STEEL (PER NOTES, SHEET NO. T3 AND SCHEDULE, SHEET NO. T8)
3	EA.	RED HEAD EPCON C6+ 30.4oz EPOXY INJECTION CARTRIDGE, PART NO. C6P-30, USE GUNS D102(M) OR D2020(P)
3	EA.	HIGH FLOW MIXING NOZZLE FOR RED HEAD C6P-30 OR A7P-28, PART S75, 5/8" HOLES MIN.

REINFORCING SCHEDULE
(QUANTITY PER CB2)

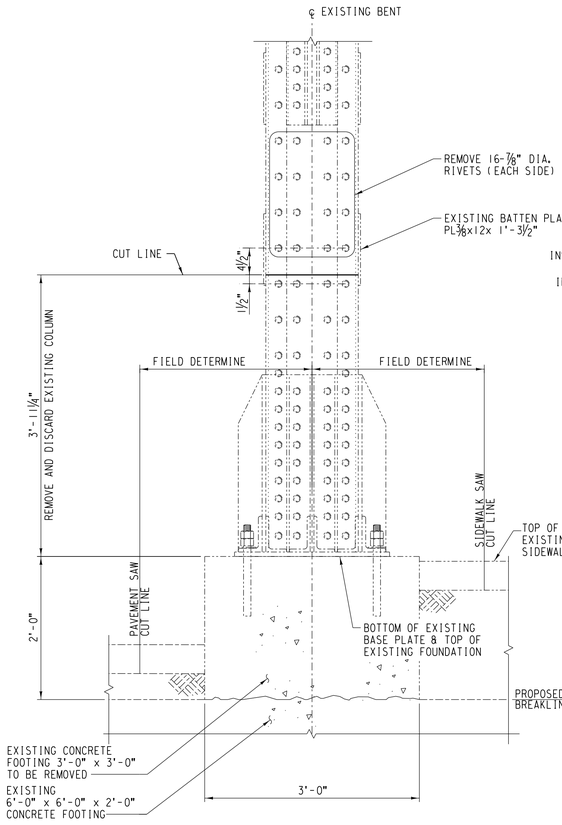
TOTAL	MARK	SIZE	LENGTH	SHAPE
20	D407	#5	4'-7"	
5	D407b	#5	4'-7"	
5	D501b	#5	5'-1"	
10	D1207b	#5	12'-7"	
8	G400	#8	4'-0"	

BENDING DIAGRAM
(DIMENSIONS ARE OUT TO OUT)

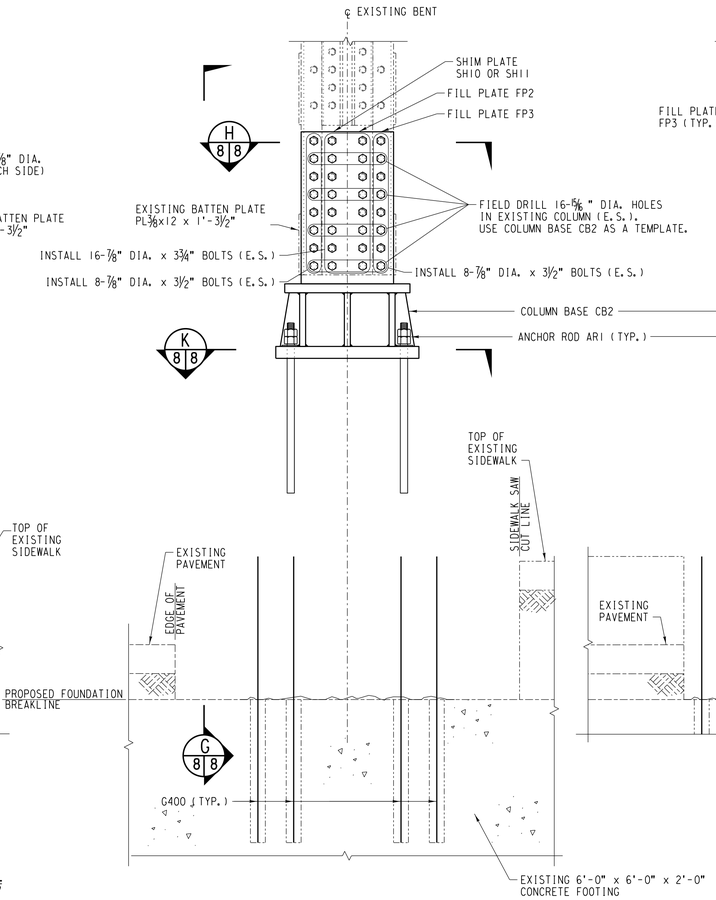


NOTE:
BAR DESIGNATIONS CONSIST OF BAR SIZE & LENGTH FOLLOWED BY THE LETTER "b" IF BENT. BAR SIZES ARE REPRESENTED BY THE LETTERS A THROUGH L CORRESPONDING TO BAR SIZE #2 THROUGH #18. BAR LENGTHS ARE GIVEN IN FEET AND INCHES; THE LAST TWO DIGITS ARE INCHES.

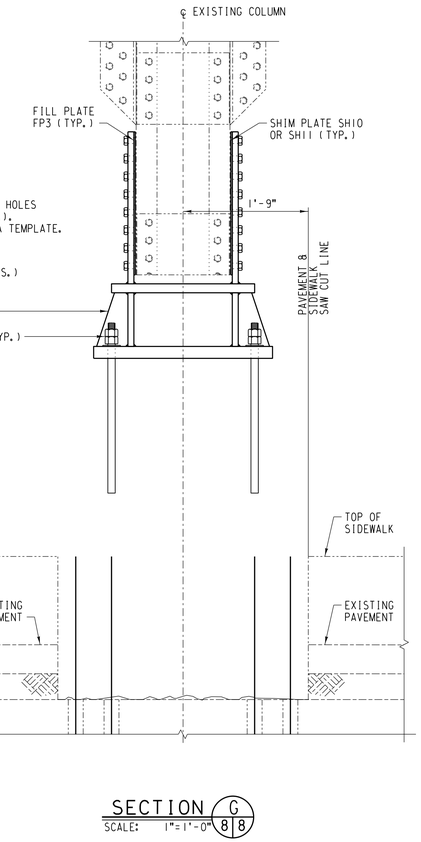
EST. WT. OF REINFORCING STEEL = 365 LB.



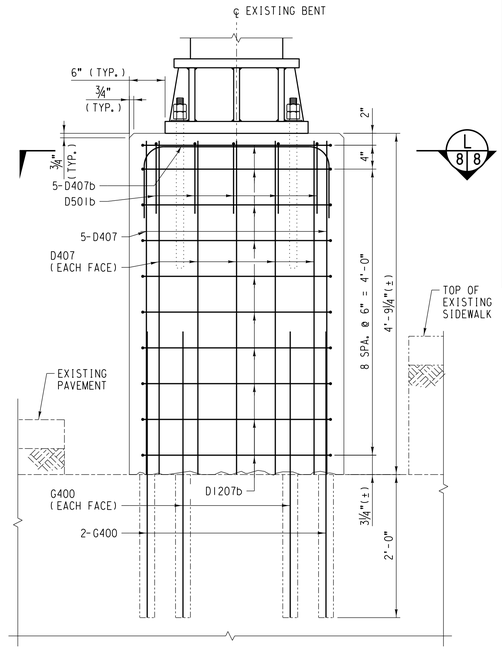
ELEVATION - EXISTING COLUMN AND CONCRETE PEDESTAL REMOVAL
SCALE: 1"= 1'-0"
(LOOKING WEST ON OGDEN AVE.)



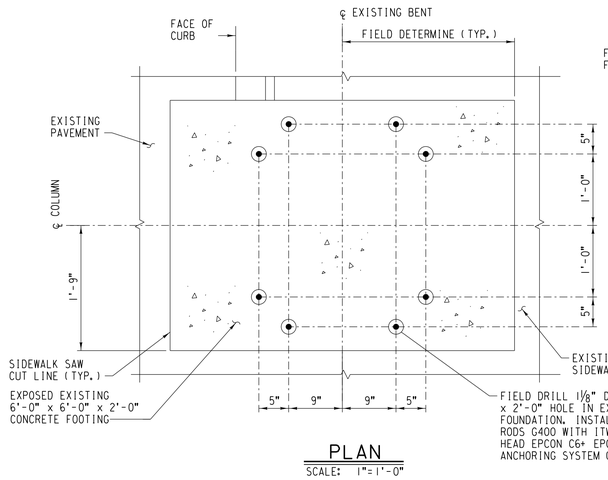
ELEVATION - COLUMN BASE INSTALLATION
SCALE: 1"=1'-0"
(LOOKING WEST ON OGDEN AVE.)



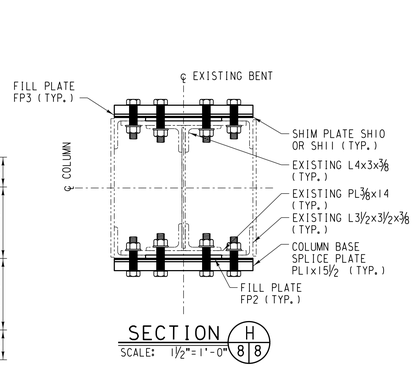
SECTION G
SCALE: 1"=1'-0" (G 8 8)



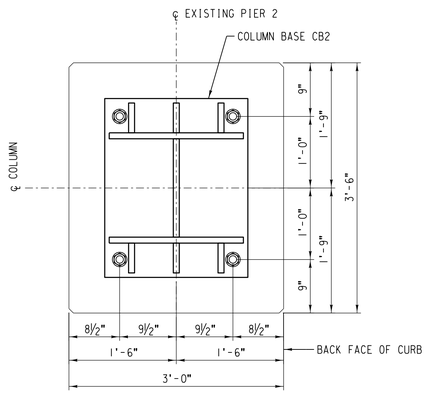
ELEVATION - CONCRETE PEDESTAL INSTALLATION
SCALE: 1"=1'-0"
(LOOKING WEST ON OGDEN AVE.)



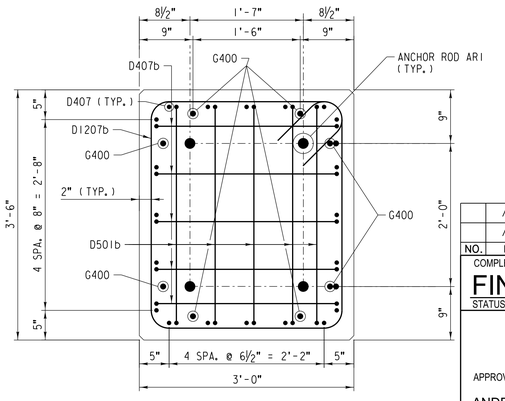
PLAN
SCALE: 1"=1'-0"



SECTION H
SCALE: 1 1/2"=1'-0" (H 8 8)



SECTION K
SCALE: 1"=1'-0" (K 8 8)



SECTION L
SCALE: 1"=1'-0" (L 8 8)

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

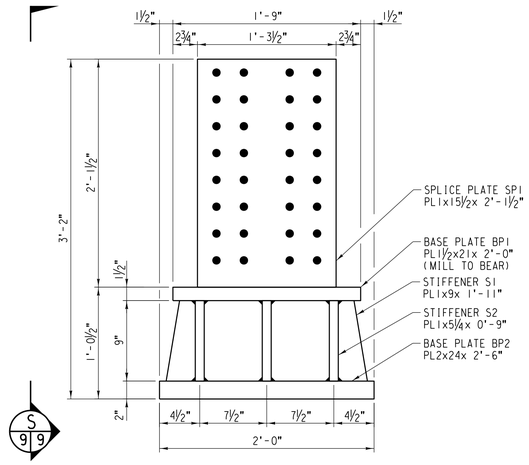
FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION

LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN	**UNION PACIFIC RAILROAD**
DRAWN/CHK BY: CDP/AAN	Office of Director Structures Design
UPRR ENGINEER: ADS/DEH	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
SHT NO.: T8 of T60	SHEET TITLE: EXISTING BRIDGE REPAIRS (SHEET 3 OF 7)

FILE NAME: pw:\\Benesch-pw.bentley.com:benesch-pw-01\Documents\210000s\210070.11\Engineering Docs\Bridges\16_Ogden (2.27)\MP (rev)\cad0227_bill.DGN

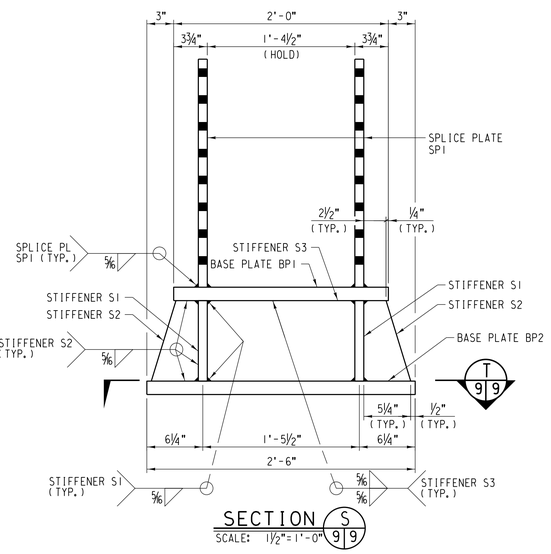
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COLUMN BASE CB1 & CB2

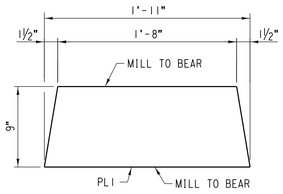
SCALE: 1½"=1'-0"

EST. WT. = 1,087 LB.
(CB1 SHOWN; CB2 SIMILAR)



SECTION S 9 9

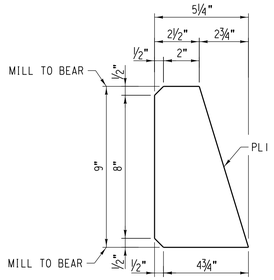
SCALE: 1½"=1'-0"



STIFFENER S1

SCALE: 1½" = 1'-0"

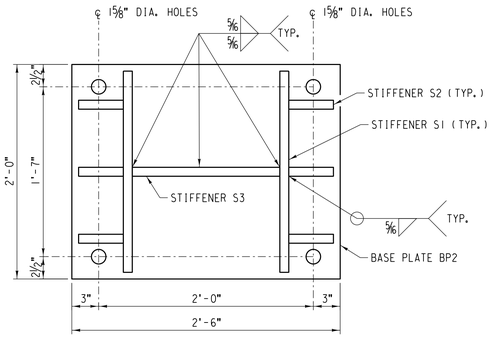
EST. WT. = 58.7 LB.



STIFFENER S2

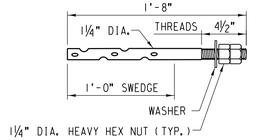
SCALE: 3" = 1'-0"

EST. WT. = 13.4 LB.



SECTION T 9 9

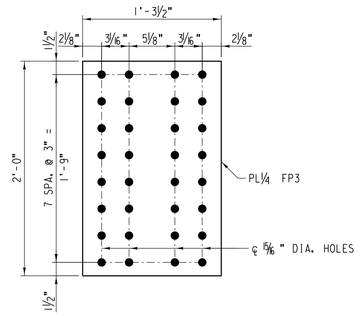
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ANCHOR ROD AR1

SCALE: 1½"=1'-0"

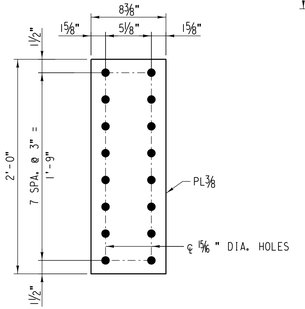
EST. WT. = 7 LB. EA.
FLAT CIRCULAR WASHER (ASTM F436), HEAVY HEX NUT (ASTM A563)
ROD (ASTM F1554, GRADE 36)



FILL PLATE FP3

SCALE: 1½"=1'-0"

EST. WT. = 26.4 LB.



FILL PLATE FP2

SCALE: 1½"=1'-0"

EST. WT. = 21.4 LB.

FIELD BOLT QUANTITY INCREASED BY 5% +5

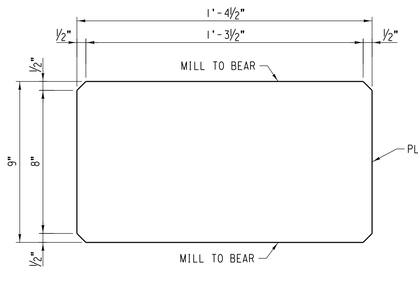
MATERIAL SCHEDULE
(QUANTITY PER COLUMN BASE CB1)

REQ'D.	UNIT	DESCRIPTION
1	EA.	BASE PLATE BP1 PL1½x21x 2'-0'
1	EA.	BASE PLATE BP2 PL2x24x 2'-6"
2	EA.	STIFFENER S1 PL1x9x 1'-11"
6	EA.	STIFFENER S2 PL1x5¼x 0'-9"
1	EA.	STIFFENER S3 PL1x9x 1'-4½"
2	EA.	SPLICE PLATE SP1 PL1x15½x 2'-1½"
2	EA.	SHIM PLATE SH10 PL1/16x15½x 2'-0"
2	EA.	SHIM PLATE SH11 PL⅛x15½x 2'-0"
2	EA.	FILL PLATE FP1 PL7/16x8⅜x 2'-0"
4	EA.	ANCHOR ROD AR1
39	EA.	⅞" DIA. x 3½" ASTM F3125 GRADE A325 TYPE I HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1)
39	EA.	⅞" DIA. x 3¾" ASTM F3125 GRADE A325 TYPE I HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1)

MATERIAL SCHEDULE
(QUANTITY PER COLUMN BASE CB2)

REQ'D.	UNIT	DESCRIPTION
1	EA.	BASE PLATE BP1 PL1½x21x 2'-0'
1	EA.	BASE PLATE BP2 PL2x24x 2'-6"
2	EA.	STIFFENER S1 PL1x9x 1'-11"
6	EA.	STIFFENER S2 PL1x5¼x 0'-9"
1	EA.	STIFFENER S3 PL1x9x 1'-4½"
2	EA.	SPLICE PLATE SP1 PL1x15½x 2'-1½"
2	EA.	SHIM PLATE SH10 PL1/16x15½x 2'-0"
2	EA.	SHIM PLATE SH11 PL⅛x15½x 2'-0"
2	EA.	FILL PLATE FP2 PL⅜x8⅜x 2'-0"
2	EA.	FILL PLATE FP3 PL¼x15½x 2'-0"
4	EA.	ANCHOR ROD AR1
39	EA.	⅞" DIA. x 3½" ASTM F3125 GRADE A325 TYPE I HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1)
39	EA.	⅞" DIA. x 3¾" ASTM F3125 GRADE A325 TYPE I HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1)

FIELD VERIFY LOCATION OF HOLES IN EXISTING COLUMN PRIOR TO FABRICATION.

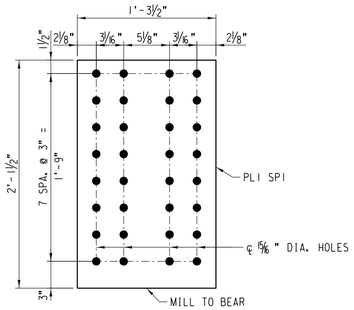


STIFFENER S3

SCALE: 3" = 1'-0"

EST. WT. = 42.1 LB.

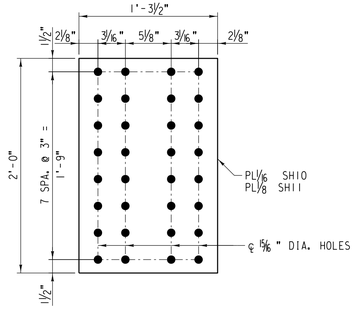
FIELD VERIFY LOCATION OF HOLES IN EXISTING COLUMN PRIOR TO FABRICATION.



SPLICE PLATE SP1

SCALE: 1½"=1'-0"

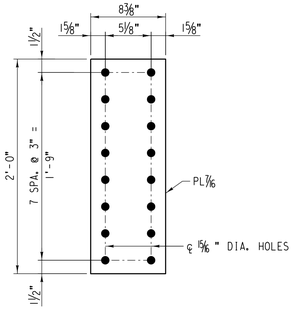
EST. WT. = 112 LB.



SHIM PLATE SH10 & SH11

SCALE: 1½"=1'-0"

EST. WT. = 6.6 LB. (SH10), 13.2 LB. (SH11)



FILL PLATE FP1

SCALE: 1½"=1'-0"

EST. WT. = 25 LB.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:

FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

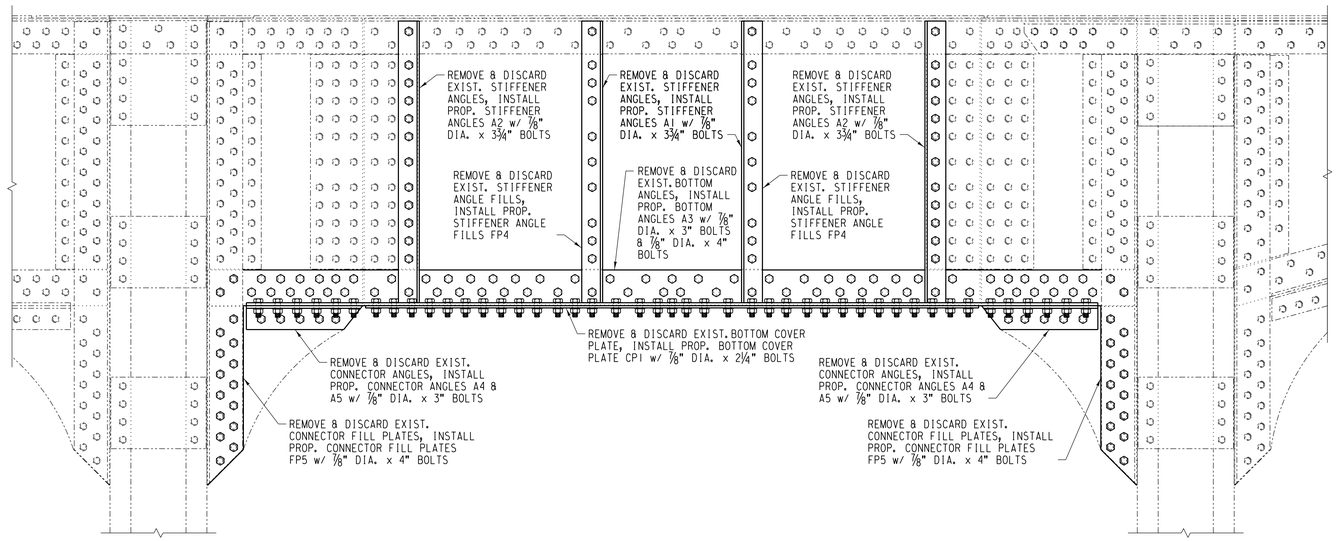
PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN	**UNION PACIFIC RAILROAD** — Office of Director Structures Design
DRAWN/CHK BY: CDP/AAN	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION — 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
UPRR ENGINEER: ADS/DEH	
SHT NO.: T9 of T60	SHEET TITLE: EXISTING BRIDGE REPAIRS (SHEET 4 OF 7)

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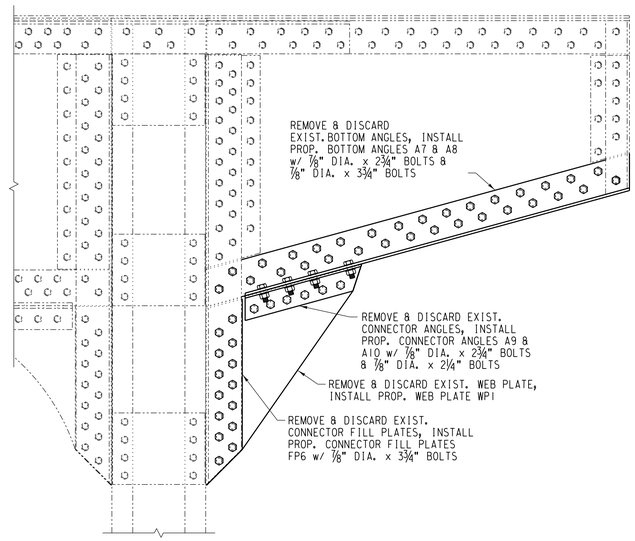
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ELEVATION - CROSS GIRDER (CG1)

SCALE: 1" = 1'-0"

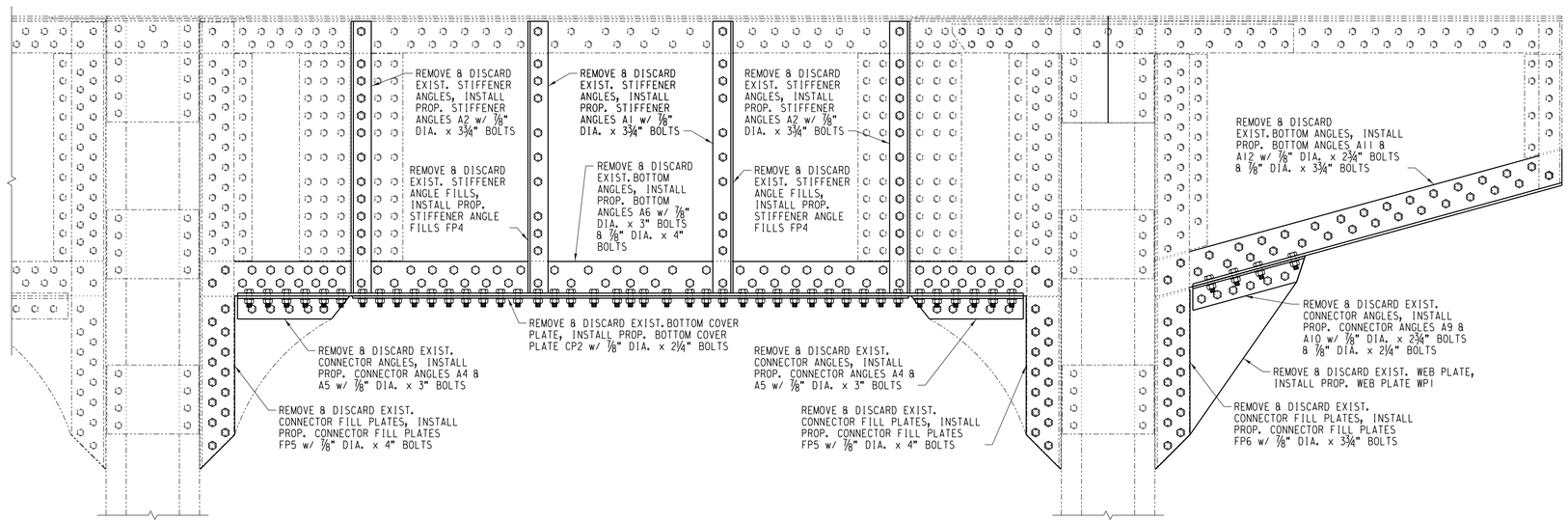
(LOOKING NORTH)
(PIER #3 CROSS GIRDER)



ELEVATION - BRACKET (B1)

SCALE: 1" = 1'-0"

(LOOKING NORTH)
(PIER #2 BRACKET)



ELEVATION - CROSS GIRDER (CG2) & BRACKET (B2)

SCALE: 1" = 1'-0"

(LOOKING NORTH)
(PIER #4 CROSS GIRDER & BRACKET)

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS
05/28/2021 — DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER
05/28/2021 — DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY:	MRK/AAN
DRAWN/CHK BY:	CDP/AAN
UPRR ENGINEER:	ADS/DEH
SHT NO.:	T10 of T60

UNION PACIFIC RAILROAD

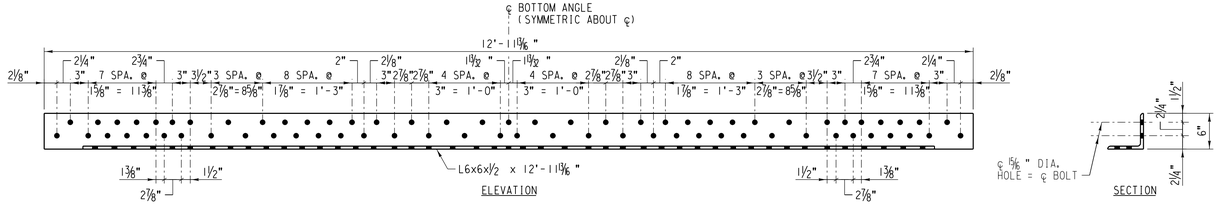
Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: EXISTING BRIDGE REPAIRS (SHEET 5 OF 7)

FILE NAME: pw:\\Hanesch-pw.bentley.com:Hanesch-pw-01\Documents\210000s\210070.11\Engineering Docs\Bridges\16_Ogden (2.27)\Ironsw_sd0227_bsi.DGN

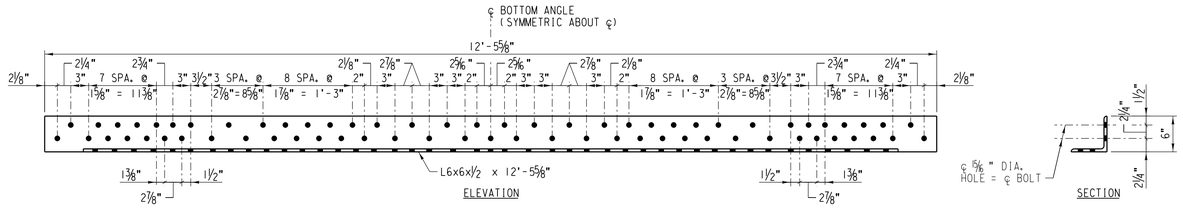
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BOTTOM ANGLE A3

SCALE: 1"=1'-0"

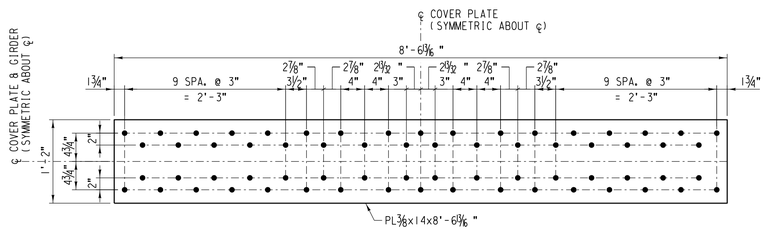
EST. WT. = 509 LB. EACH



BOTTOM ANGLE A6

SCALE: 1"=1'-0"

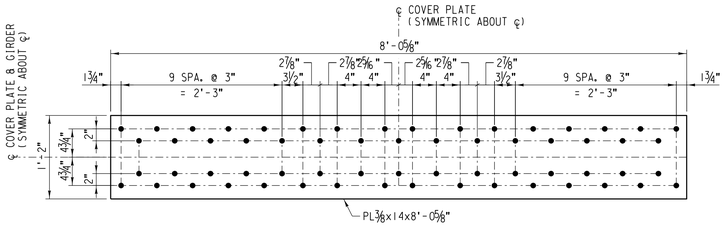
EST. WT. = 489 LB. EACH



COVER PLATE CP1

SCALE: 1" = 1'-0"

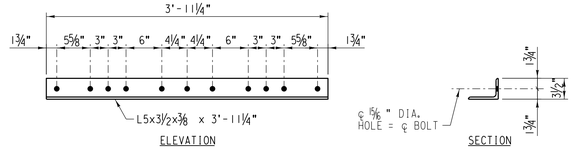
EST. WT. = 153 LB.



COVER PLATE CP2

SCALE: 1" = 1'-0"

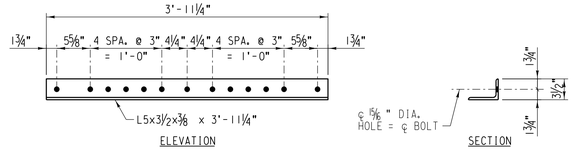
EST. WT. = 144 LB.



STIFFENER ANGLE A1

SCALE: 1"=1'-0"

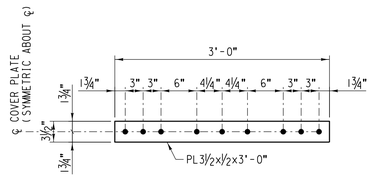
EST. WT. = 164 LB. EACH



STIFFENER ANGLE A2

SCALE: 1"=1'-0"

EST. WT. = 164 LB. EACH



STIFFENER FILL FP4

SCALE: 1" = 1'-0"

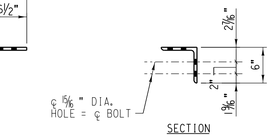
EST. WT. = 71.5 LB.

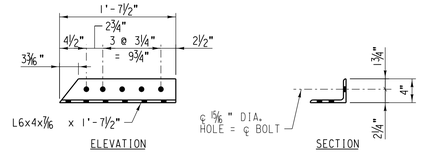
MATERIAL SCHEDULE (QUANTITY PER CROSS GIRDER CG1)		
REQ'D	UNIT	DESCRIPTION
4	EA.	STIFFENER ANGLE A1 L5x3½x⅜ x 3'-11¼"
4	EA.	STIFFENER ANGLE A2 L5x3½x⅜ x 3'-11¼"
4	EA.	STIFFENER ANGLE FILL FP4 PL3½x½ x 3'-0"
2	EA.	BOTTOM ANGLE A3 L6x6x½ x 12'-11⅞"
1	EA.	BOTTOM COVER PLATE CP1 PL14x⅜ x 8'-6⅜"
2	EA.	CONNECTOR ANGLE A4 L6x4x7/16 x 1'-7½"
2	EA.	CONNECTOR ANGLE A5 L6x4x7/16 x 1'-7½"
4	EA.	CONNECTOR FILL FP5 PL6x½ x 2'-6"
100	EA.	⅞" DIA. x 2¼" ASTM F3125 GRADE A325 TYPE I HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1)
82	EA.	⅞" DIA. x 3" ASTM F3125 GRADE A325 TYPE I HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1)
56	EA.	⅞" DIA. x 3¾" ASTM F3125 GRADE A325 TYPE I HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1)
39	EA.	⅞" DIA. x 4" ASTM F3125 GRADE A325 TYPE I HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1)

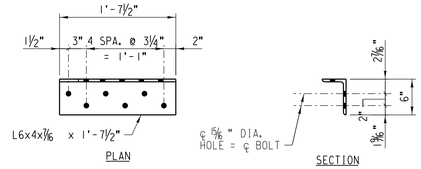
MATERIAL SCHEDULE (QUANTITY PER CROSS GIRDER CG2)		
REQ'D	UNIT	DESCRIPTION
4	EA.	STIFFENER ANGLE A1 L5x3½x⅜ x 3'-11¼"
4	EA.	STIFFENER ANGLE A2 L5x3½x⅜ x 3'-11¼"
4	EA.	STIFFENER ANGLE FILL FP4 PL3½x½ x 3'-0"
2	EA.	BOTTOM ANGLE A6 L6x6x½ x 12'-5⅝"
1	EA.	BOTTOM COVER PLATE CP2 PL14x⅜ x 8'-0⅝"
2	EA.	CONNECTOR ANGLE A4 L6x4x7/16 x 1'-7½"
2	EA.	CONNECTOR ANGLE A5 L6x4x7/16 x 1'-7½"
4	EA.	CONNECTOR FILL FP5 PL6x½ x 2'-6"
100	EA.	⅞" DIA. x 2¼" ASTM F3125 GRADE A325 TYPE I HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1)
80	EA.	⅞" DIA. x 3" ASTM F3125 GRADE A325 TYPE I HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1)
56	EA.	⅞" DIA. x 3¾" ASTM F3125 GRADE A325 TYPE I HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1)
39	EA.	⅞" DIA. x 4" ASTM F3125 GRADE A325 TYPE I HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1)

FIELD BOLT QUANTITY INCREASED BY 5% +5

FIELD VERIFY LOCATION OF HOLES IN EXISTING COLUMN PRIOR TO FABRICATION.



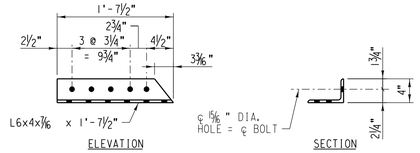


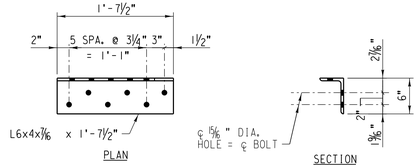


CONNECTOR ANGLE A4

SCALE: 1"=1'-0"

EST. WT. = 46.5 LB. EACH

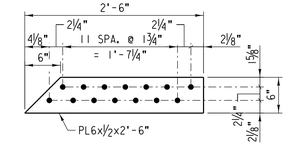




CONNECTOR ANGLE A5

SCALE: 1"=1'-0"

EST. WT. = 46.5 LB. EACH



CONNECTOR FILL FP5

SCALE: 1" = 1'-0"

EST. WT. = 102 LB.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:

FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY:	MRK/AAN
DRAWN/CHK BY:	CDP/AAN
UPRR ENGINEER:	ADS/DEH
SHT NO.:	T11 of T60

UNION PACIFIC RAILROAD

Office of Director Structures Design

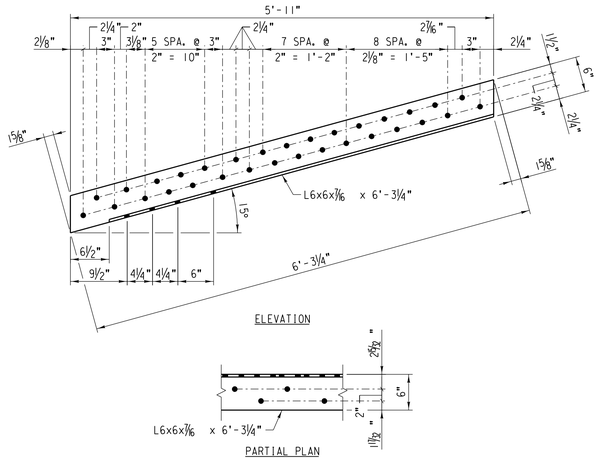
LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION

3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: EXISTING BRIDGE REPAIRS (SHEET 6 OF 7)

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PLOTTED: 5/26/2021 10:40:37 AM

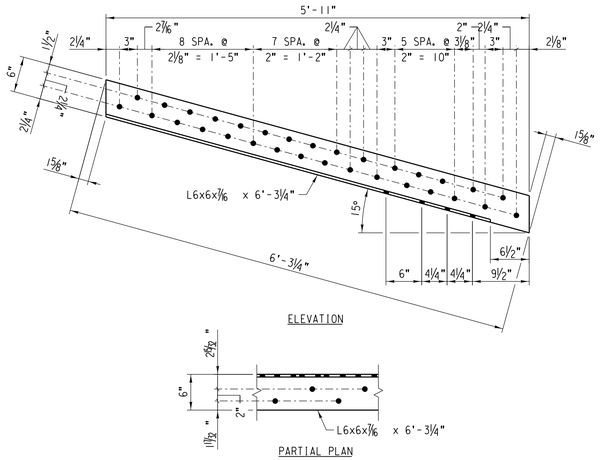


ELEVATION

PARTIAL PLAN

BOTTOM ANGLE A7

SCALE: 1"=1'-0"
EST. WT. = 108 LB. EACH

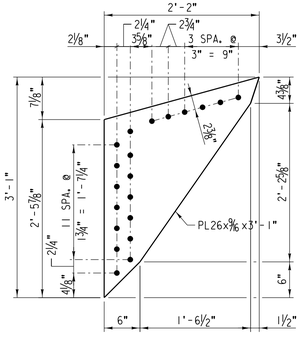


ELEVATION

PARTIAL PLAN

BOTTOM ANGLE A8

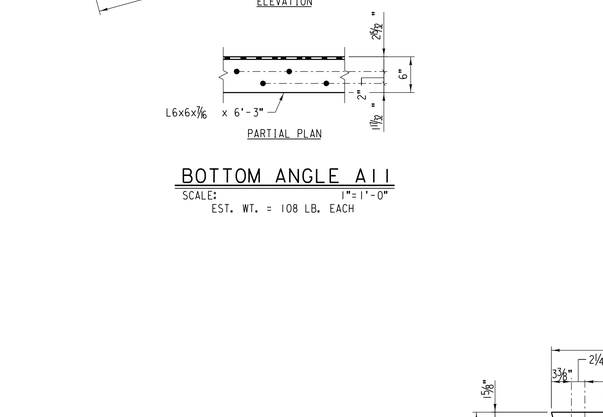
SCALE: 1"=1'-0"
EST. WT. = 108 LB. EACH



ELEVATION

WEB PLATE WP1

SCALE: 1"=1'-0"
EST. WT. = 153 LB. EACH

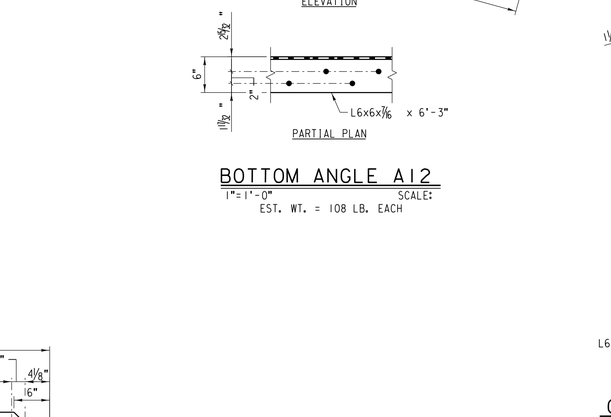


ELEVATION

PARTIAL PLAN

BOTTOM ANGLE A11

SCALE: 1"=1'-0"
EST. WT. = 108 LB. EACH

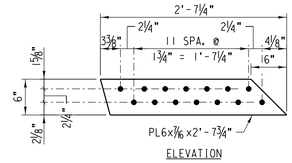


ELEVATION

PARTIAL PLAN

BOTTOM ANGLE A12

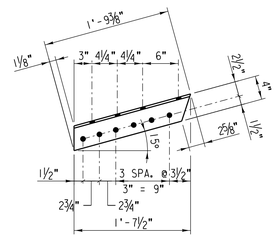
1"=1'-0" SCALE:
EST. WT. = 108 LB. EACH



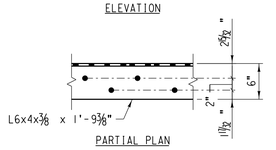
ELEVATION

CONNECTOR FILL FP6

SCALE: 1" = 1'-0"
EST. WT. = 47.3 LB.



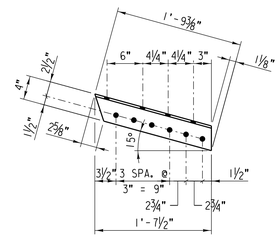
ELEVATION



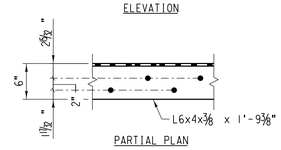
PARTIAL PLAN

CONNECTOR ANGLE A9

SCALE: 1"=1'-0"
EST. WT. = 21.9 LB. EACH



ELEVATION



PARTIAL PLAN

CONNECTOR ANGLE A10

1"=1'-0" SCALE:
EST. WT. = 21.9 LB. EACH

MATERIAL SCHEDULE
(QUANTITY PER BRACKET B1)

REQ'D	UNIT	DESCRIPTION
1	EA.	BOTTOM ANGLE A7 L6x6x⅞ x 6'-3¼"
1	EA.	BOTTOM ANGLE A8 L6x6x⅞ x 6'-3¼"
1	EA.	CONNECTOR ANGLE A9 L6x4x⅜ x 1'-9⅜"
1	EA.	CONNECTOR ANGLE A10 L6x4x⅜ x 1'-9⅜"
2	EA.	CONNECTOR FILL FP6 PL6x⅞ x 2'-7¾"
1	EA.	WEB PLATE WP1 PL26x⅜ x 3'-1"
10	EA.	⅞" DIA. x 2¼" ASTM F3125 GRADE A325 TYPE 1 HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1)
41	EA.	⅞" DIA. x 2¾" ASTM F3125 GRADE A325 TYPE 1 HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1)
23	EA.	⅞" DIA. x 3¾" ASTM F3125 GRADE A325 TYPE 1 HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1)

MATERIAL SCHEDULE
(QUANTITY PER BRACKET B2)

REQ'D	UNIT	DESCRIPTION
1	EA.	BOTTOM ANGLE A11 L6x6x⅞ x 6'-3"
1	EA.	BOTTOM ANGLE A12 L6x6x⅞ x 6'-3"
1	EA.	CONNECTOR ANGLE A9 L6x4x⅜ x 1'-9⅜"
1	EA.	CONNECTOR ANGLE A10 L6x4x⅜ x 1'-9⅜"
2	EA.	CONNECTOR FILL FP6 PL6x⅞ x 2'-7¾"
1	EA.	WEB PLATE WP1 PL26x⅜ x 3'-1"
10	EA.	⅞" DIA. x 2¼" ASTM F3125 GRADE A325 TYPE 1 HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1)
41	EA.	⅞" DIA. x 2¾" ASTM F3125 GRADE A325 TYPE 1 HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1)
23	EA.	⅞" DIA. x 3¾" ASTM F3125 GRADE A325 TYPE 1 HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1)

FIELD BOLT QUANTITY INCREASED BY 5% +5

FIELD VERIFY LOCATION OF HOLES IN EXISTING COLUMN PRIOR TO FABRICATION.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY:	MRK/AAN
DRAWN/CHK BY:	CDP/AAN
UPRR ENGINEER:	ADS/DEH
SHT NO.:	T12 of T60

UNION PACIFIC RAILROAD
Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: EXISTING BRIDGE REPAIRS (SHEET 7 OF 7)

FILE NAME: p:*Behnesch-pw.bentley.com:behnesch-pw-01*Documents*2010000s*2010070-11*Engineering Docs*Bridges*16_Ogden (2.27)*WP1.dgn*ec00227.bill.DGN

PLOTTED: 5/26/2021 10:40:41 AM

TO CANAL ST. (CHICAGO)
(TIMETABLE SOUTH)

TO KEDZIE (CHICAGO)
(TIMETABLE NORTH)

REMOVE HANDRAIL AND CONCRETE BLOCK ABOVE ABUTMENT SEAT

PROPOSED HANDRAIL 48' + (SEE NOTE 3)

℄ ABUTMENT #7

℄ PIER #6

℄ PIER #5

℄ OGDEN AVE.
℄ PIER #4

℄ PIER #3

℄ PIER #2

℄ ABUTMENT #1

REMOVE HANDRAIL AND CONCRETE BLOCK ABOVE ABUTMENT SEAT

EXISTING CSX BRIDGE

UP BRIDGE 2.27

PROPOSED HANDRAIL 48' + (SEE NOTE 3)

℄ EXISTING CSX TRACK

℄ EXISTING W WYE TRACK NO. 2

℄ EXISTING W WYE TRACK NO. 1

EDGE OF PROPOSED SUPERSTRUCTURE

REMOVE TOP COURSE OF EXISTING PIER FOOTING, COLUMNS AND CROSS GIRDERS

REMOVE TOP COURSE OF EXISTING PIER FOOTING, COLUMNS AND CROSS GIRDERS

REMOVE ALL OF EXISTING PIER

REMOVE TOP COURSE OF EXISTING PIER FOOTING, COLUMNS AND CROSS GIRDERS

REMOVE ALL OF EXISTING PIER

℄ PROPOSED BRIDGE

℄ EXISTING N WYE TRACK NO. 2

℄ EXISTING N WYE TRACK NO. 1

2" MAX GAP (TYP.)

REMOVE TOP COURSE OF EXISTING PIER FOOTING, COLUMNS AND CROSS GIRDERS

EDGE OF PROPOSED SUPERSTRUCTURE

REMOVE ALL OF EXISTING PIER

PROPOSED HANDRAIL 26' + (SEE NOTE 3)

REMOVE ALL OF EXISTING PIER

REMOVE TOP COURSE OF EXISTING PIER FOOTING, COLUMNS AND CROSS GIRDERS

REMOVE TOP COURSE OF EXISTING PIER FOOTING, COLUMNS AND CROSS GIRDERS

PROPOSED HANDRAIL 51' + (SEE NOTE 3)

NOTES:
1. EXISTING SUPERSTRUCTURE NOT SHOWN FOR CLARITY.
2. SEE SHEET T15 FOR SUPERSTRUCTURE REMOVAL.
3. SEE SHEET T59 FOR PROPOSED HANDRAIL DETAILS.

PHASE 1 REMOVAL

PHASE 2 REMOVAL

SUBSTRUCTURE REMOVAL PLAN

SCALE: 1/32"=1'-0"

REMOVE HANDRAIL AND CONCRETE BLOCK ABOVE ABUTMENT SEAT

EXISTING ABUTMENT #7 TO REMAIN

REMOVE PIER COLUMNS AND CROSS GIRDERS

REMOVE TOP COURSE OF EXISTING PIER FOOTING

EXISTING PIER FOUNDATION TO REMAIN

℄ EXISTING PIER #6

REMOVE ALL OF EXISTING PIER

℄ EXISTING PIER #5

℄ OGDEN AVE.

REMOVE PIER COLUMNS AND CROSS GIRDERS

REMOVE TOP COURSE OF EXISTING PIER FOOTING

EXISTING PIER FOUNDATION TO REMAIN

℄ EXISTING PIER #4

REMOVE PIER COLUMNS AND CROSS GIRDERS

REMOVE TOP COURSE OF EXISTING PIER FOOTING

REMOVE ALL OF EXISTING PIER

℄ EXISTING PIER #3

REMOVE HANDRAIL AND CONCRETE BLOCK ABOVE ABUTMENT SEAT

EXISTING ABUTMENT #1 TO REMAIN

℄ EXISTING PIER #2

EXISTING PIER FOUNDATION TO REMAIN

NOTE:
EXISTING SUPERSTRUCTURE NOT SHOWN FOR CLARITY.

SECTION K 13|13

SCALE: 1/32"=1'-0"

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL (STATUS) 05/28/2021 (DATE)

HANSON Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL (CONSULTANT ENGINEER) 05/28/2021 (DATE)

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

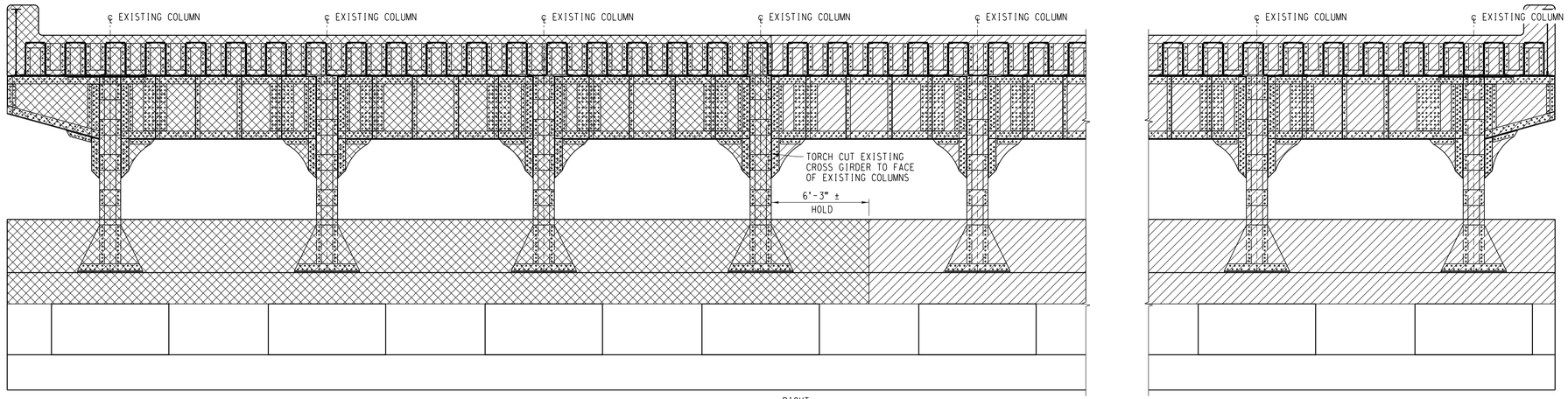
FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION LATITUDE: 41.86361 LONGITUDE: -87.68871

UNION PACIFIC

DSN/CHK BY: MRK/AAN	**UNION PACIFIC RAILROAD**
DRAWN/CHK BY: CDP/AAN	Office of Director Structures Design
UPRR ENGINEER: ADS/DEH	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
SHT NO.: T13 of T60	SHEET TITLE: REMOVAL DETAILS (SHEET 1 OF 3)

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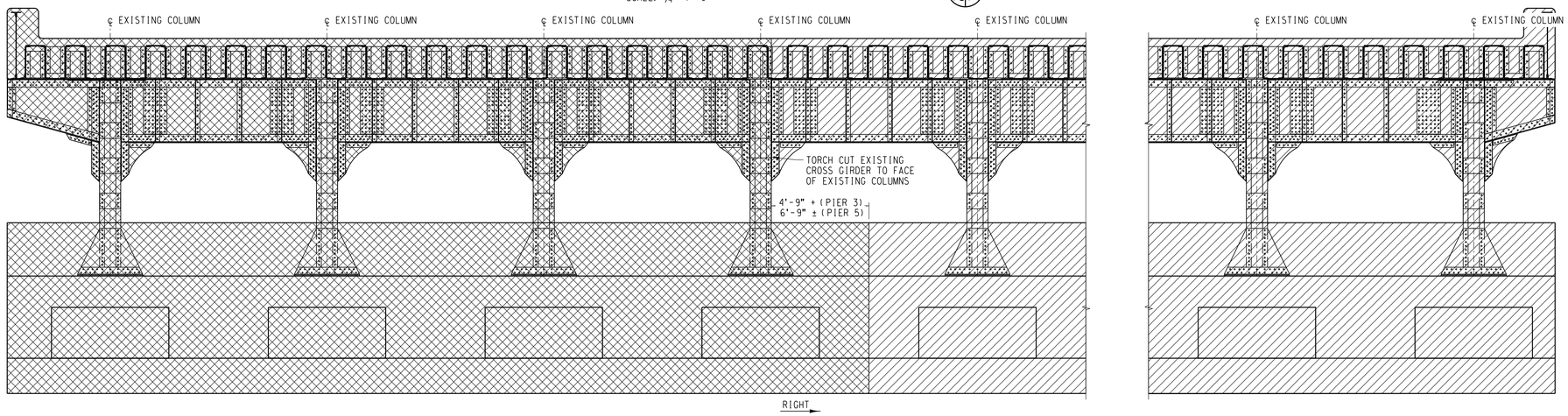
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REMOVAL ELEVATION - PIER #4

SCALE: 1/4"=1'-0"

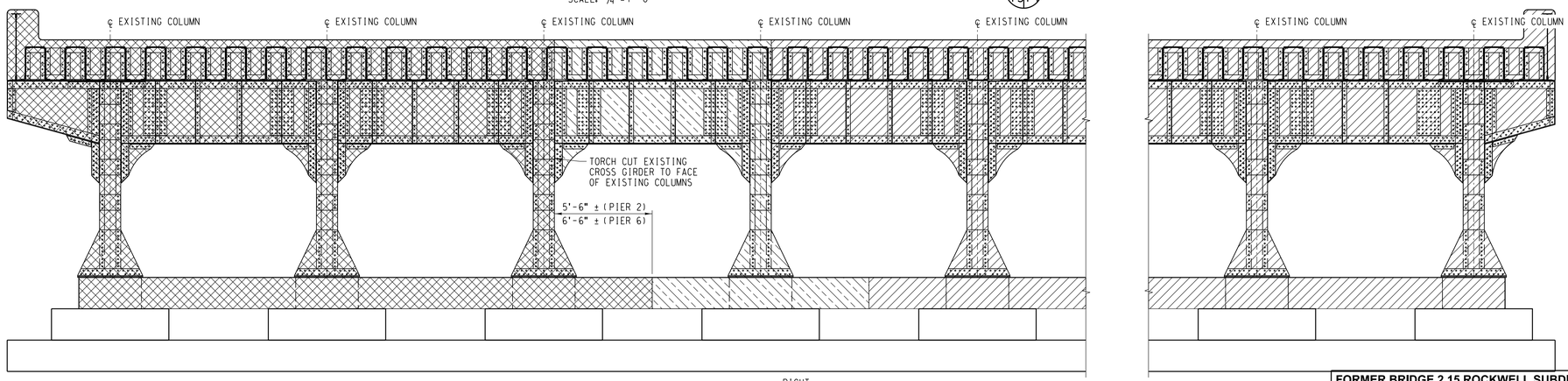
J 13|14



REMOVAL ELEVATION - PIER #3 & PIER #5

SCALE: 1/4"=1'-0"

H 13|14



REMOVAL ELEVATION - PIER #2 & PIER #6

SCALE: 1/4"=1'-0"

G 13|14

NOTE:

EXISTING SUPERSTRUCTURE IS SHOWN FOR CLARITY ONLY. SEE SHEET T15 FOR SUPERSTRUCTURE REMOVAL PLAN.

EXISTING CSX BRIDGE NOT SHOWN. CSX BRIDGE TO BE REMOVED DURING PHASE 1.

PHASE 1 REMOVAL

PIER #2 PHASE 1 REMOVAL
PIER #6 PHASE 2 REMOVAL

PHASE 2 REMOVAL

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:

FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

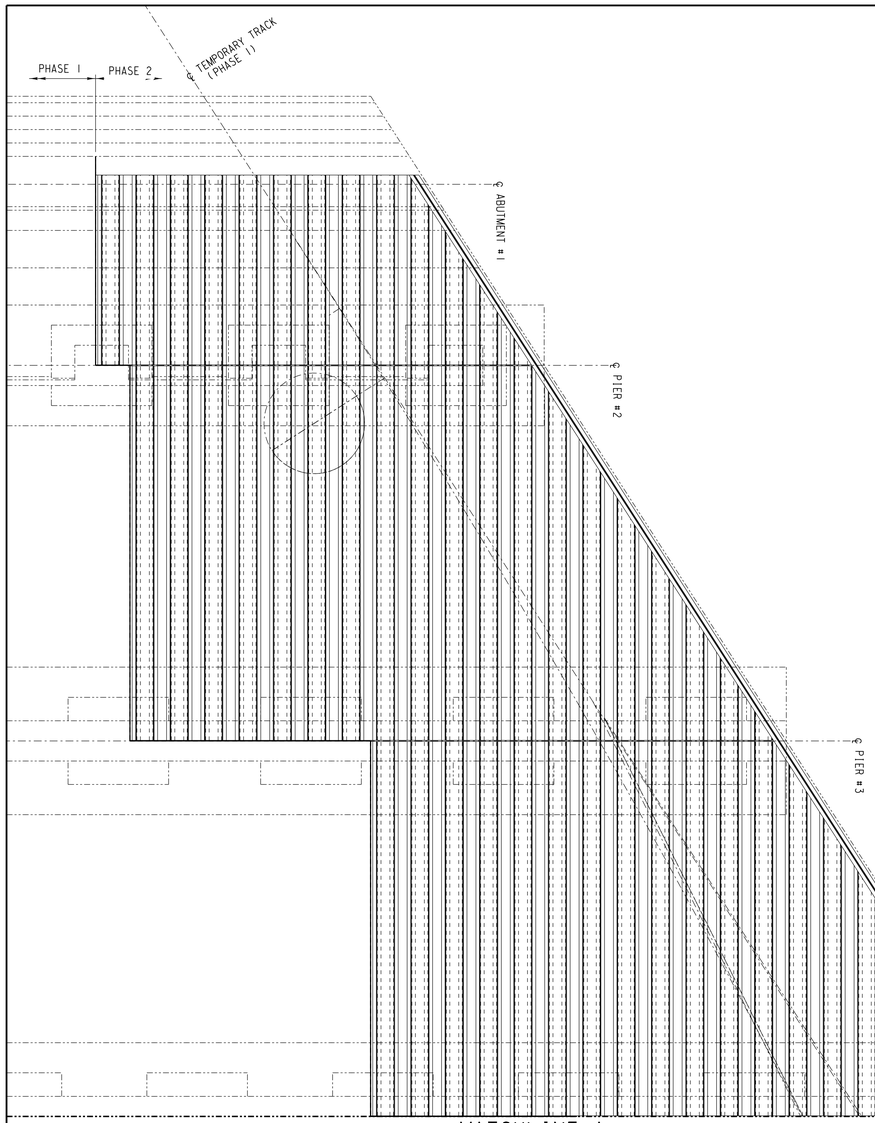
FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION

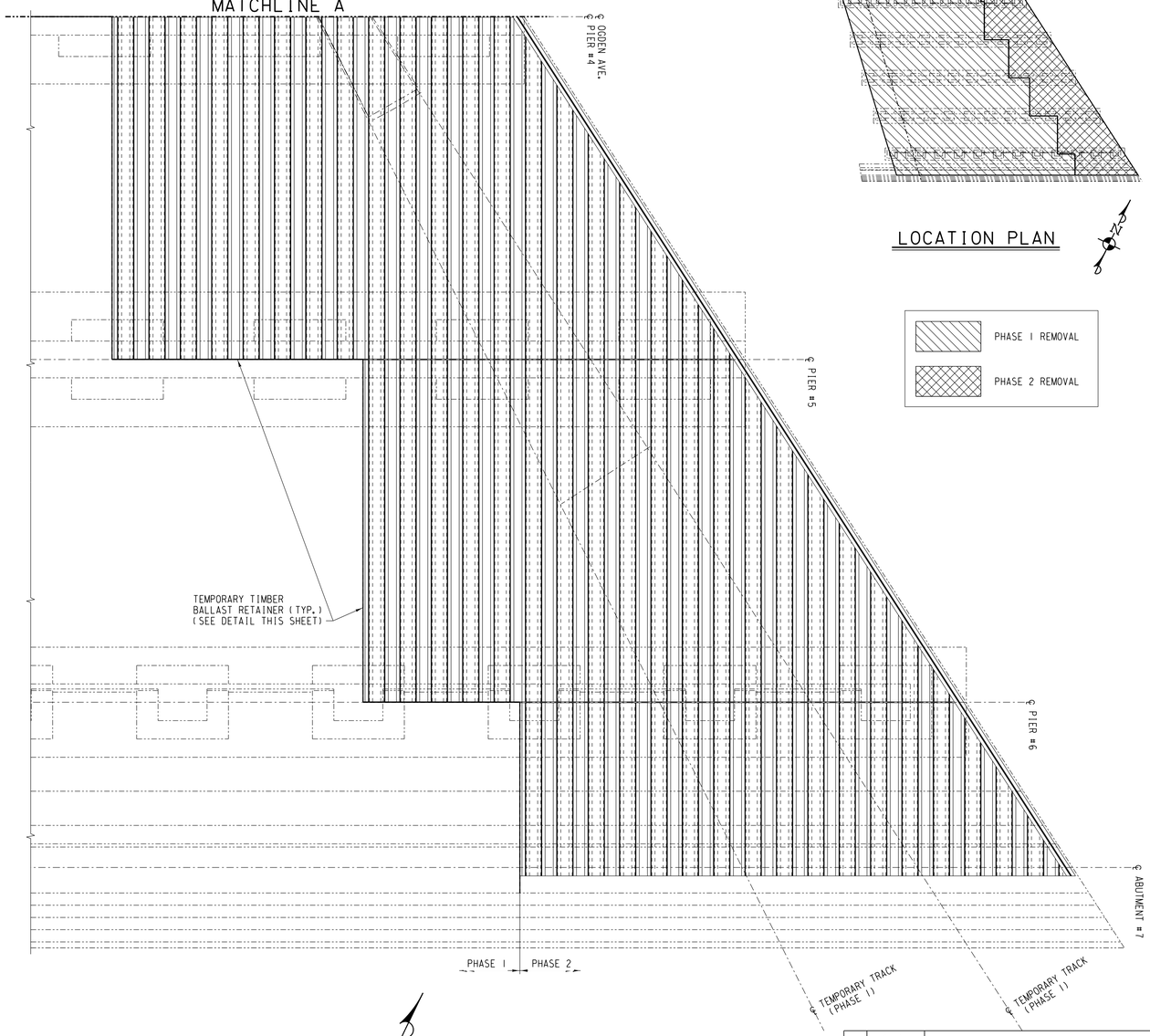
LATITUDE: 41.86361 LONGITUDE: -87.68871

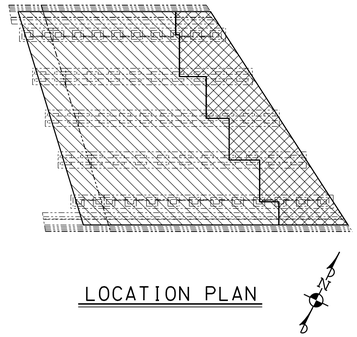
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DRAWN/CHK BY: CDP/AAN	Office of Director Structures Design
UPRR ENGINEER: ADS/DEH	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
SHT NO.: T14 of T60	SHEET TITLE: REMOVAL DETAILS (SHEET 2 OF 3)

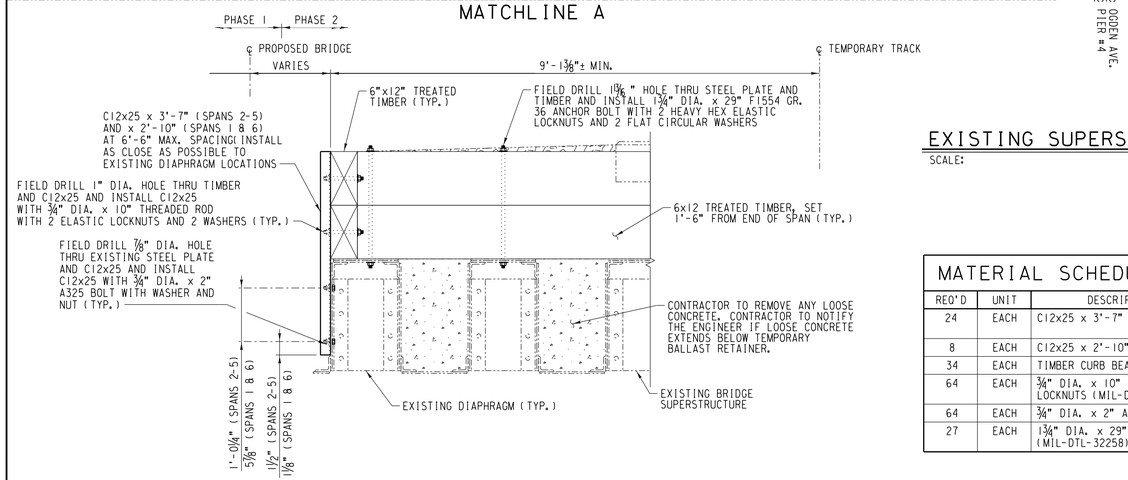
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TEMPORARY TIMBER BALLAST RETAINER DETAIL

SCALE: ¾"=1'-0"

EXISTING SUPERSTRUCTURE TO REMAIN PHASE 1

SCALE: 3/16"=1'-0"

MATERIAL SCHEDULE (TIMBER BALLAST RETAINER)

REQ'D	UNIT	DESCRIPTION
24	EACH	C12x25 x 3'-7" (ASTM A572 GR. 50, PLAIN)
8	EACH	C12x25 x 2'-10" (ASTM A572 GR. 50, PLAIN)
34	EACH	TIMBER CURB BEAM, 6"x12" x 15'-0"
64	EACH	¾" DIA. x 10" ALL THREAD STEEL ROD (ASTM A36) WITH 2 HEAVY HEX ELASTIC LOCKNUTS (MIL-DTL-32258) AND 2 FLAT CIRCULAR WASHERS (F436)
64	EACH	¾" DIA. x 2" A325 BOLT WITH HEAVY HEX NUT AND FLAT CIRCULAR WASHERS
27	EACH	1¾" DIA. x 29" F1554 GR. 36 ANCHOR BOLT WITH 2 HEAVY HEX ELASTIC LOCKNUTS (MIL-DTL-32258) AND 2 FLAT CIRCULAR WASHERS

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS: FINAL — STATUS — 05/28/2021 DATE

HANSON Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID: | WORK ORDER: 31876 | C E NUMBER: 122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN
DRAWN/CHK BY: CDP/AAN
UPRR ENGINEER: ADS/DEH
SHT NO.: T15 of T60

UNION PACIFIC RAILROAD

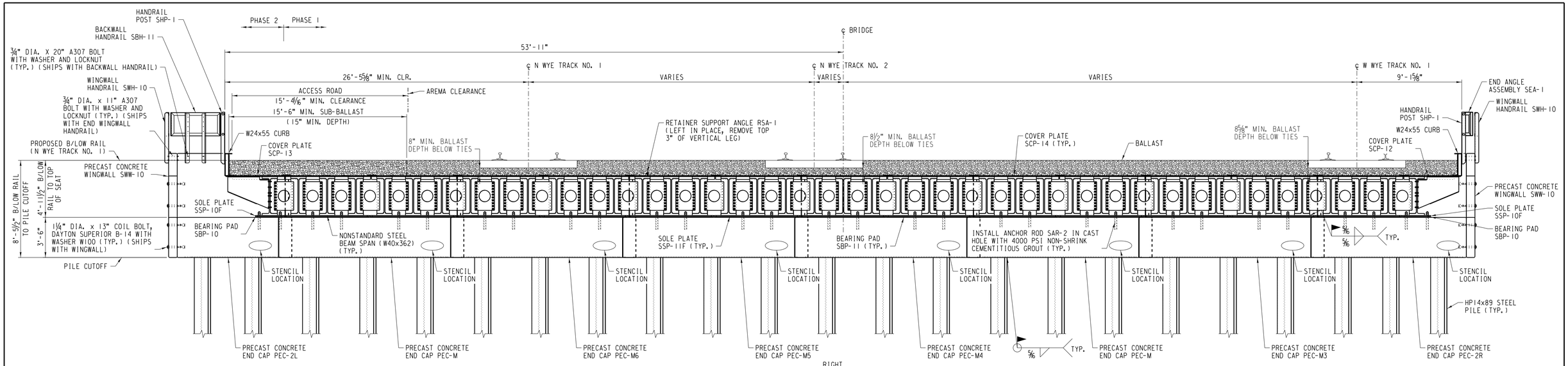
Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: REMOVAL DETAILS (SHEET 3 OF 3)

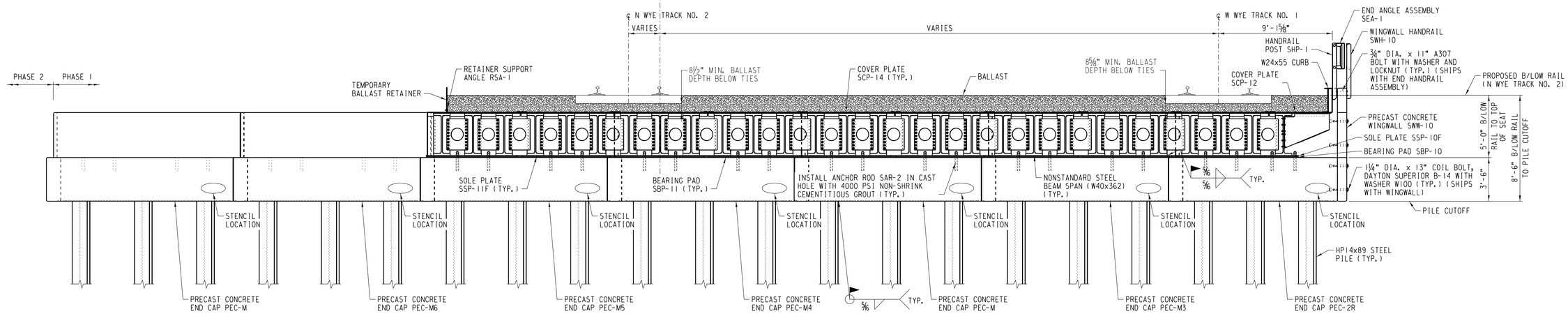
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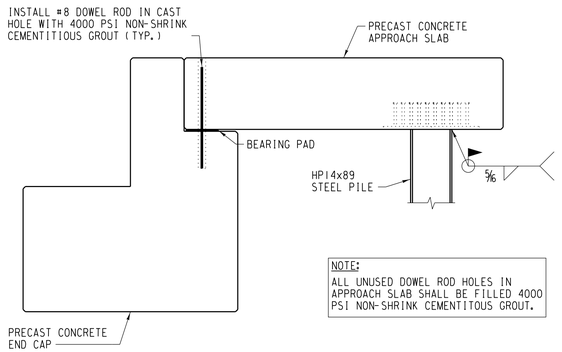


NOTE:
LOOSEN NUTS CONNECTING THE TEMPORARY BALLAST RETAINER PRIOR TO BALLASTING PHASE 2 TRACK. REMOVE TEMPORARY BALLAST RETAINER AFTER BALLASTING PHASE 2 TRACK.

SECTION A
SCALE: ¼"=1'-0"



PHASE 1 SECTION AT END CAP
SCALE: ¼"=1'-0"
ABUTMENT #4 SHOWN, ABUTMENT #1 SIMILAR



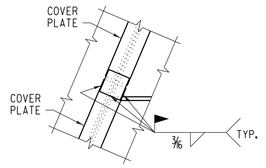
NOTE:
ALL UNUSED DOWEL ROD HOLES IN APPROACH SLAB SHALL BE FILLED 4000 PSI NON-SHRINK CEMENTITOUS GROUT.

APPROACH SLAB CONNECTION DETAIL
SCALE: ½"=1'-0"

MATERIAL SCHEDULE

TOTAL	UNIT	DESCRIPTION
194.4	CU. YD.	SUB-BALLAST (PER NOTES, SHEET NO. T16 AND DETAILS, SHEET NO. T16 THRU T18)

NOTES:
1. Contractor to follow Union Pacific standard specification for sub-ballast.
2. Sub-ballast shall be placed on the deck and approaches. Sub-ballast to be placed on approaches shall be adequate to transition from deck to existing grade at a 8% maximum grade. Limits extend to a minimum of 1'-0" beyond wingwall barriers.



COVER PLATE WELDING DETAIL
SCALE: ½"=1'-0"

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION
LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY:	MRK/AAN
DRAWN/CHK BY:	CDP/AAN
UPRR ENGINEER:	ADS/DEH
SHT NO.:	T16 of T60

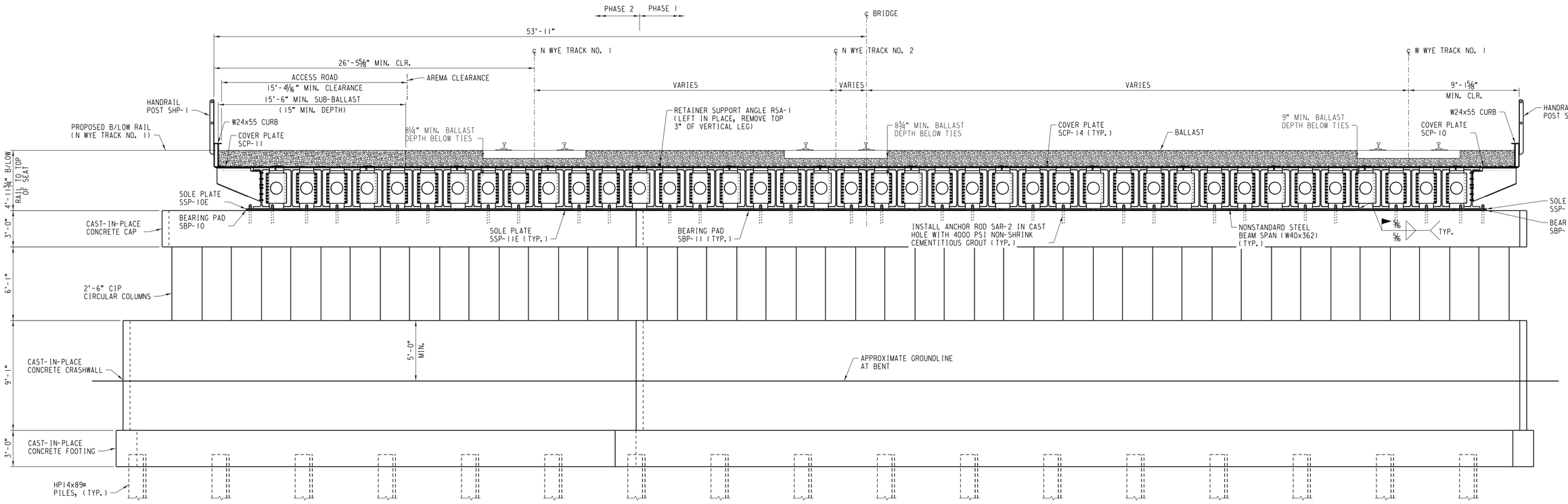
UNION PACIFIC RAILROAD
Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: END BENT PHASING

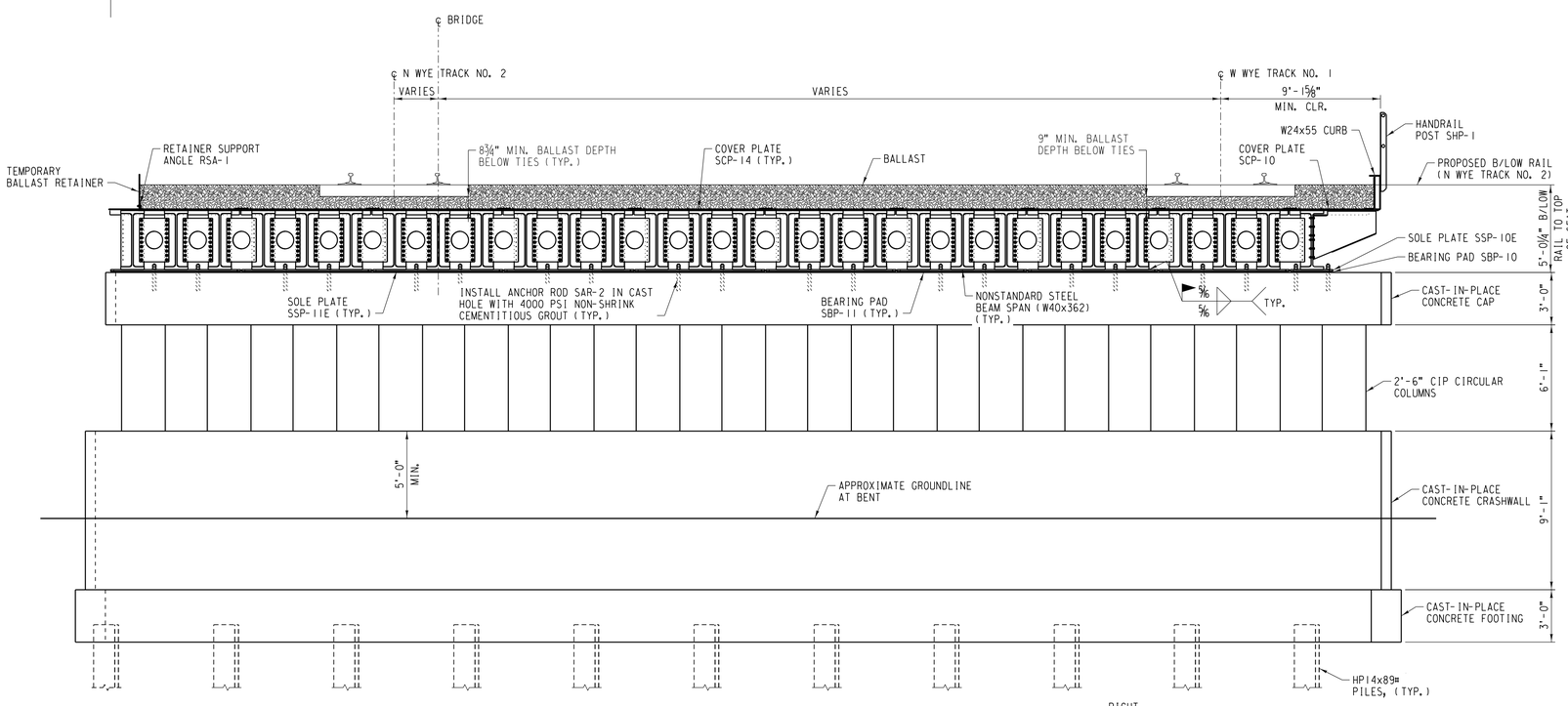
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SECTION B
SCALE: 1/4"=1'-0"

LOOKING PERPENDICULAR TO BEAMS
SPAN 3 SHOWN, SPAN 2 NOT SHOWN FOR CLARITY (PIER #2 SIMILAR)



PHASE 1 SECTION AT PIER #3
SCALE: 1/4"=1'-0"

LOOKING PERPENDICULAR TO BEAMS
SPAN 3 SHOWN, SPAN 2 NOT SHOWN FOR CLARITY (PIER #2 SIMILAR)

TABLE OF ELEVATIONS

BENT	TOP OF SEAT ELEVATION	BOTTOM OF FOOTING
#1	24.71	-
#2	24.38	3.21
#3	24.05	2.89
#4	23.73	-

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

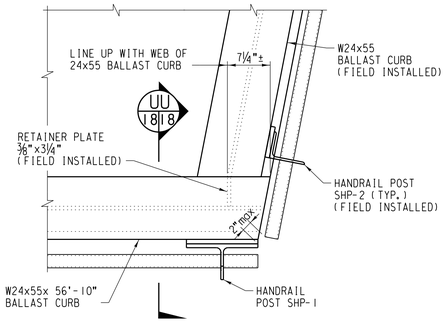
DSN/CHK BY:	MRK/AAN
DRAWN/CHK BY:	CDP/AAN
UPRR ENGINEER:	ADS/DEH
SHT NO.:	T17 of T60

UNION PACIFIC RAILROAD
Office of Director Structures Design

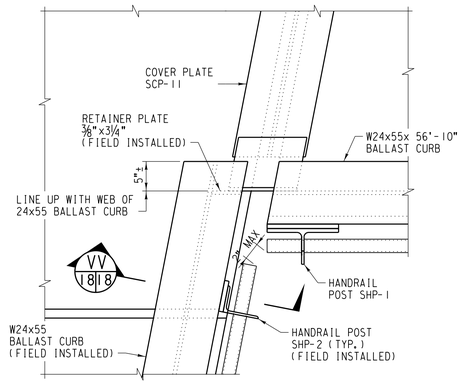
LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: INTERIOR BENT PHASING

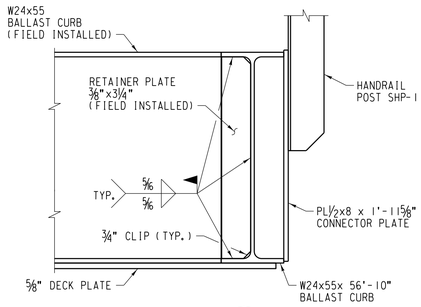
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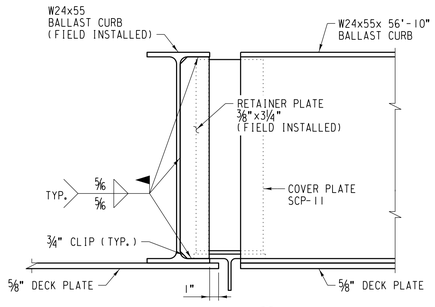
PLAN C
SCALE: 1½"=1'-0" 18



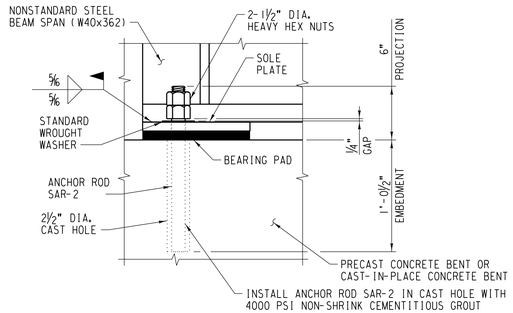
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SCALE: 1½"=1'-0" 18



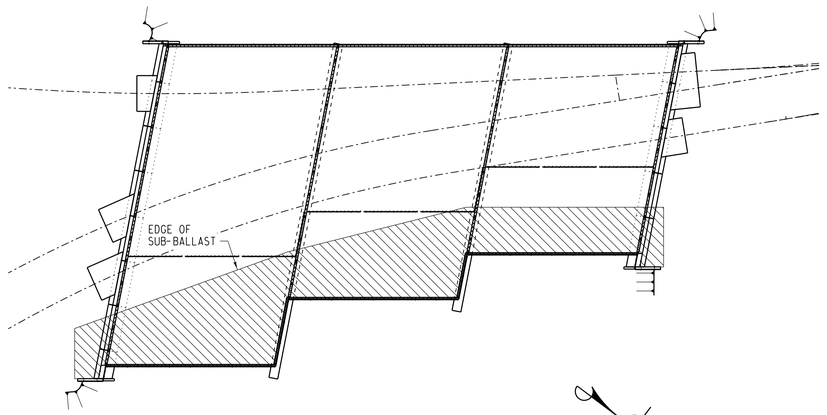
SECTION UU
SCALE: 1½"=1'-0" 18



SECTION VV
SCALE: 1½"=1'-0" 18



TYPICAL BEARING DETAIL
SCALE: 1½"=1'-0"



SUB-BALLAST PLAN
SCALE: N.T.S.

SUB-BALLAST LIMITS

PROPOSED CONSTRUCTION SEQUENCE

PHASE 1

1. Shore existing bridge at locations of existing bridge repairs and repair existing columns, cross girders, and overhang brackets.
2. Install ballast, ties, rail and OTM for temporary track.
3. Place temporary track into service. Remove North Wye Track Nos. 1 and 2 and West Wye Track No. 1. Direct all traffic to temporary track or Main Track No. 1.
4. Remove ties, rail and OTM from North Wye Track Nos. 1 and 2 and West Wye Track No. 1.
5. Excavate at end bents, drive phase 1 piling, an install phase 1 caps, approach slabs, and wingwalls.
6. Torch cut and remove phase 1 portion of existing superstructure spans #1, #2 and #3.
7. Remove portions of roadway around existing Pier #3. Install phase 1 temporary shoring at existing Pier #3.
8. Torch cut and remove phase 1 portion of existing Pier #2 and #3.
9. Drive phase 1 proposed Bent #2 piles and construct phase 1 cast-in-place concrete Bent #2. Remove or torch cut temporary shoring at proposed Bent #2 as required. Reconstruct pavement and sidewalk as required.
10. Install bearing pads and sole plates on phase 1 portion of proposed End Bent #1 and Bent #2 and erect phase 1 steel span #1.
11. Torch cut and remove phase 1 portion of existing superstructure spans #4, #5 and #6.
12. Remove portions of roadway around existing Pier #5. Install phase 1 temporary shoring at existing Pier #5.
13. Torch cut and remove phase 1 portion of existing Piers #5 and #6.
14. Drive proposed phase 1 Bent #3 piles and construct phase 1 cast-in-place concrete Bent #3. Remove or torch cut temporary shoring at proposed Bent #3 as required. Reconstruct pavement and sidewalk as required.
15. Install bearing pads and sole plates on phase 1 portion of proposed End Bent #4 and Bent #3 and erect phase 1 steel span #3.
16. Torch cut and remove phase 1 portion of existing Pier #4.
17. Erect phase 1 steel span #2.
18. Install cover plates and waterproofing.
19. Install ballast, ties, rail and OTM for North Wye Track No. 2 and West Wye Track No. 1.
20. Place North Wye Track No. 2 and West Wye Track No. 1 back into service.

PHASE 2

1. Remove temporary track from service and direct all traffic to North Wye Track No. 2.
2. Remove ties, rail, and OTM from temporary track.
3. Excavate at end bents, drive phase 2 piling, and install phase 2 caps, approach slabs, and wingwalls.
4. Torch cut and remove phase 2 portion of existing superstructure spans #1, #2 and #3.
5. Remove portions of roadway around existing Pier #3. Install phase 2 temporary shoring at existing Pier #3.
6. Torch cut and remove phase 2 portion of existing Pier #2 and #3.
7. Drive phase 2 proposed Bent #2 piles and construct phase 2 cast-in-place concrete Bent #2. Remove or torch cut temporary shoring at proposed Bent #3 as required. Reconstruct pavement and sidewalk as required.
8. Install bearing pads and sole plates on phase 2 portion of proposed End Bent #1 and Bent #2 and erect phase 2 steel span #1.
9. Torch cut and remove phase 2 portion of existing superstructure spans #4, #5 and #6.
10. Remove portions of roadway around existing Pier #5. Install phase 2 temporary shoring at existing Pier #5.
11. Torch cut and remove phase 2 portion of existing Piers #5 and #6.
12. Drive phase 2 proposed Bent #3 piles and construct phase 2 cast-in-place concrete Bent #3. Remove or torch cut temporary shoring at proposed Bent #3 as required. Reconstruct sidewalk and pavement as required.
13. Install bearing pads and sole plates on phase 2 portion of proposed End Bent #4 and Bent #3 and erect phase 2 steel span #3.
14. Torch cut and remove phase 2 portion of existing Pier #4.
15. Erect phase 1 steel span #2.
16. Install cover plates and waterproofing.
17. Install ballast, ties, rail, and OTM for North Wye Track No. 1.
18. Place North Wye Track No. 1 back into service.
19. Restore area to original condition or better.

SEE SHEETS R-007 THROUGH R-009 FOR LANE CLOSURE CROSS SECTIONS.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS
05/28/2021 — DATE

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ANDREW NICOL — CONSULTANT ENGINEER
05/28/2021 — DATE

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	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY:	MRK/AAN
DRAWN/CHK BY:	CDP/AAN
UPRR ENGINEER:	ADS/DEH
SHT NO.:	T18 of T60

UNION PACIFIC RAILROAD
Office of Director Structures Design

LOCATION & DESCRIPTION:
BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

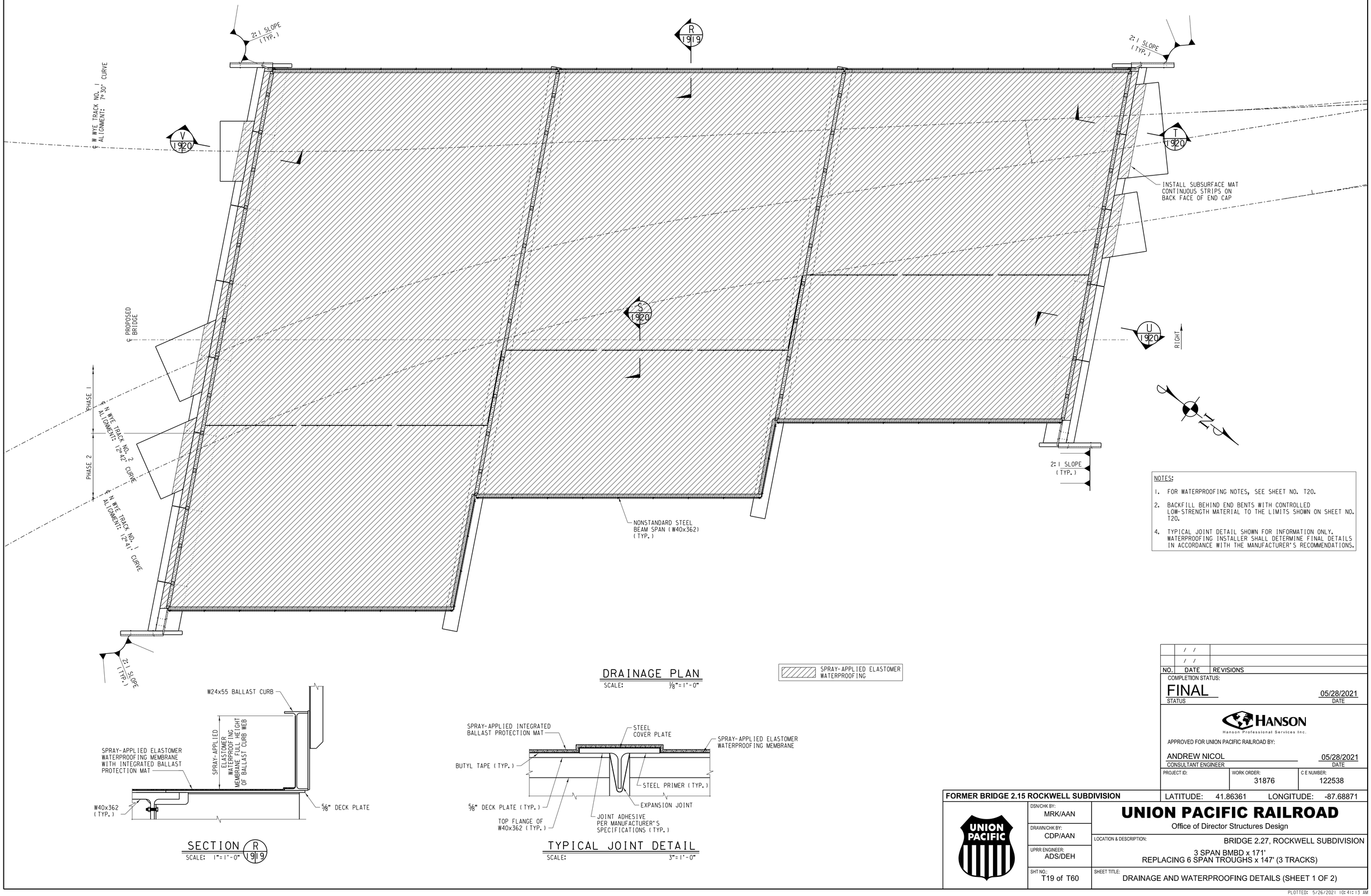
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CONSTRUCTION DETAILS

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TO CANAL ST. (CHICAGO)
(TIMETABLE SOUTH)

TO KEDZIE (CHICAGO)
(TIMETABLE NORTH)



DRAINAGE PLAN

SCALE: 1/8"=1'-0"

SPRAY-APPLIED ELASTOMER WATERPROOFING

SECTION R 1919

SCALE: 1"=1'-0"

TYPICAL JOINT DETAIL

SCALE: 3"=1'-0"

NOTES:

1. FOR WATERPROOFING NOTES, SEE SHEET NO. T20.
2. BACKFILL BEHIND END BENTS WITH CONTROLLED LOW-STRENGTH MATERIAL TO THE LIMITS SHOWN ON SHEET NO. T20.
4. TYPICAL JOINT DETAIL SHOWN FOR INFORMATION ONLY. WATERPROOFING INSTALLER SHALL DETERMINE FINAL DETAILS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL (STATUS) 05/28/2021 (DATE)

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL (CONSULTANT ENGINEER) 05/28/2021 (DATE)

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION | LATITUDE: 41.86361 | LONGITUDE: -87.68871

UNION PACIFIC

DSN/CHK BY: MRK/AAN
DRAWN/CHK BY: CDP/AAN
UPRR ENGINEER: ADS/DEH
SHT NO.: T19 of T60

UNION PACIFIC RAILROAD

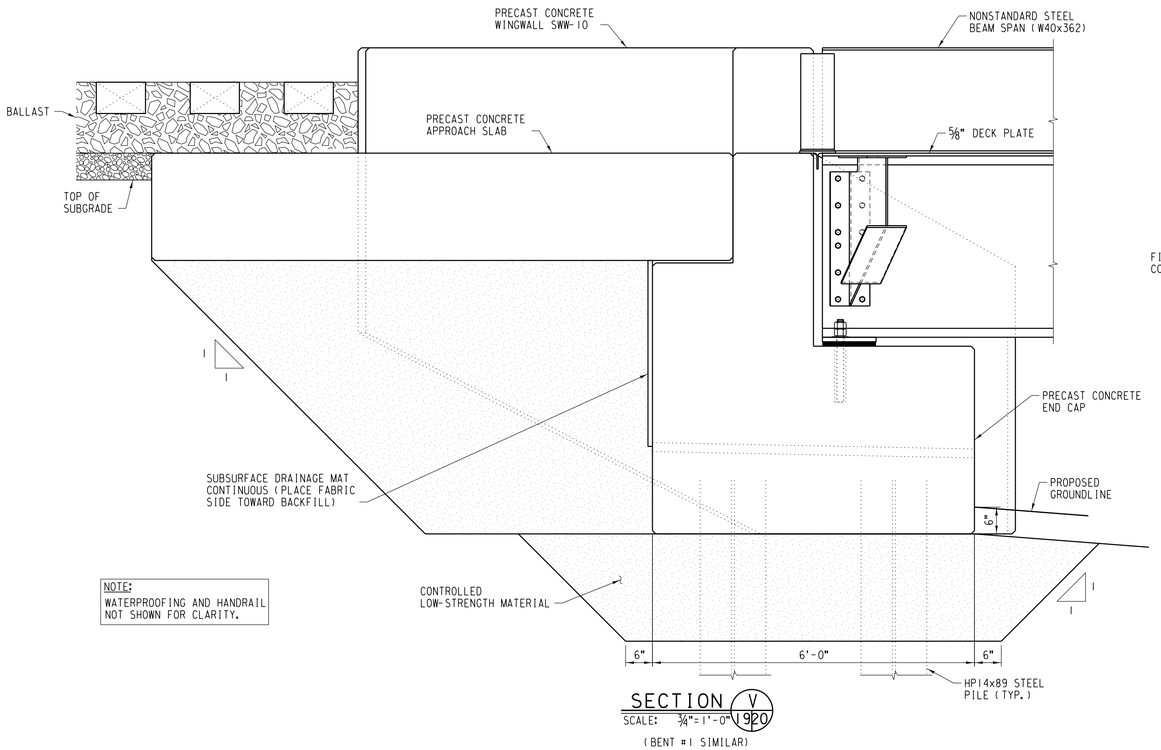
Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: DRAINAGE AND WATERPROOFING DETAILS (SHEET 1 OF 2)

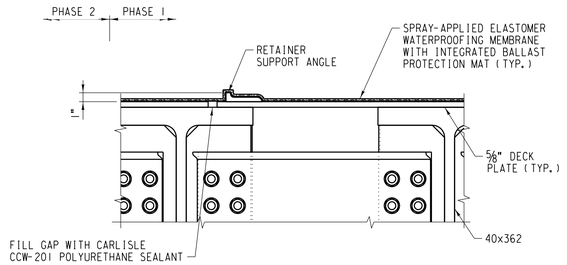
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SECTION V
SCALE: 3/4"=1'-0" 1920

(BENT #1 SIMILAR)



SECTION S
SCALE: 1½"=1'-0" 1920

DRAINAGE MATERIAL SCHEDULE

TOTAL	PHASE 1	PHASE 2	UNIT	DESCRIPTION
378.4	289.1	89.3	CU. YD.	CONTROLLED LOW-STRENGTH MATERIAL (PER NOTES, SHEET NO. T20 AND DETAIL, SHEET NO. T20)
1,137	844	293	SQ. FT.	POLY FLOW 18 SUBSURFACE DRAINAGE MAT BACKED WITH FILTER FABRIC FOR HORIZONTAL APPLICATION OR APPROVED ALTERNATE

WATERPROOFING MATERIAL SCHEDULE

TOTAL	PHASE 1	PHASE 2	UNIT	DESCRIPTION
16,238	10,244	5,994	SQ. FT.	BRIDGE PRESERVATION 80 MIL ELASTOMERIC WATERPROOFING MEMBRANE OR APPROVED EQUAL
15,321	9,799	5,522	SQ. FT.	BRIDGE PRESERVATION 250 MIL INTEGRATED BALLAST PROTECTION MAT OR APPROVED EQUAL
362	227	135	LIN. FT.	BRIDGE PRESERVATION EXPANSION JOINT MATERIAL OR APPROVED EQUAL

NOTES

1. Sealant ballast SB-2 material may be used in lieu of controlled low strength material (CLSM) outside limits of approach slab.
2. Sealant ballast SB-2 is UPRR store item No. 562-5428.
3. See UPRR standard drawing 00100E for sealant ballast SB-2 material gradation requirements.

CONTROLLED LOW-STRENGTH MATERIAL (CLSM) FILL

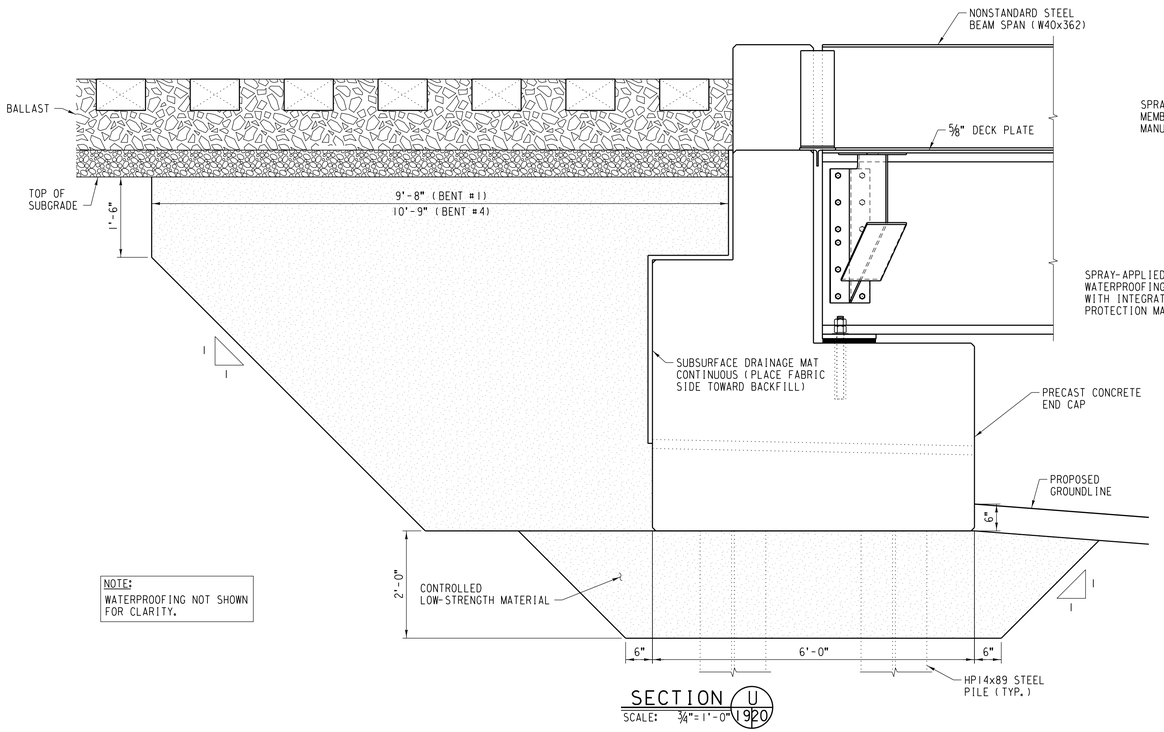
1. Controlled Low-Strength Material is a self-compacting, cementitious fill material with an unconfined compressive strength of 50 to 300 psi. The mixture shall consist of water, Portland cement, fly ash, and sound fine or coarse aggregate or both. The mix design shall allow adequate flowability without segregation of aggregates. Hardening time is of prime importance and CLSM should develop 50 psi in about one hour. The maximum layer thickness for CLSM shall be three feet. Additional layers shall not be placed until the CLSM has lost sufficient moisture to be walked on without indenting more than two inches.

WATERPROOFING NOTES

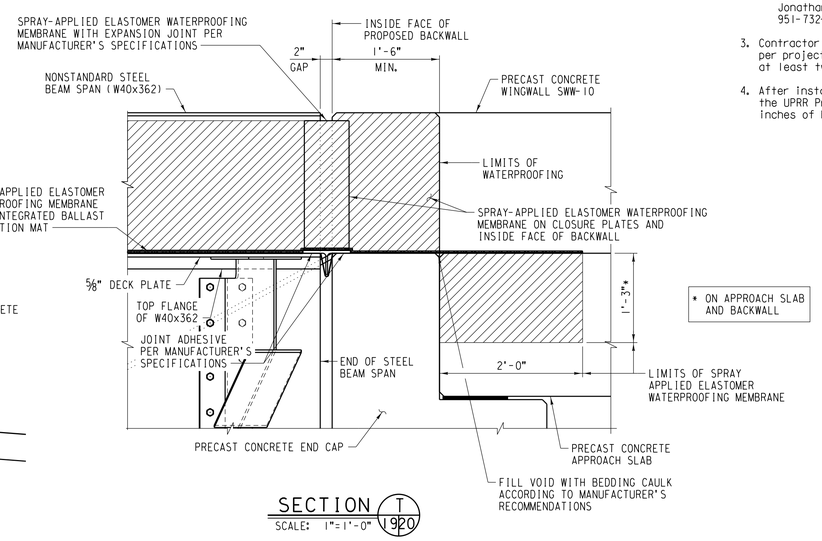
1. Spray-applied elastomer waterproofing membrane and integrated ballast protection mat shall be field applied to the proposed bridge as specified on Sheet Nos. T19 and T20.
2. Spray-applied elastomer waterproofing membrane and integrated ballast protection mat shall be furnished by Bridge Preservation L.L.C., or approved equal. Prepare surfaces and apply in accordance with the manufacturers recommendations.

   Contact:

   Bridge Preservation L.L.C.
   Customer and Sales Support
   Jonathan Haydu
   951-732-8692
3. Contractor to submit material specifications and installation procedures per project specifications to UPRR Office of Director Structures Design at least two weeks prior to beginning waterproofing installation.
4. After installation of waterproofing is complete, obtain acceptance from the UPRR Project Manager and immediately cover the surface with six (6) inches of ballast.



SECTION U
SCALE: 3/4"=1'-0" 1920



SECTION T
SCALE: 1"=1'-0" 1920

* ON APPROACH SLAB AND BACKWALL

NO.	DATE	REVISIONS
	/ /	
	/ /	

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Hanson Professional Services Inc.

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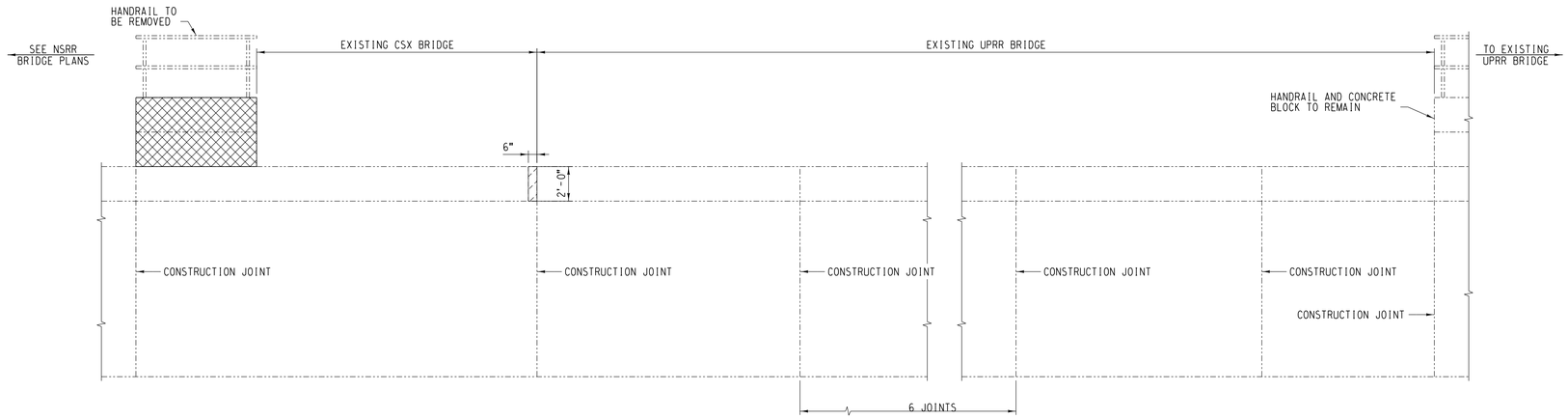
PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN	**UNION PACIFIC RAILROAD** — Office of Director Structures Design
DRAWN/CHK BY: CDP/AAN	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION — 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
UPRR ENGINEER: ADS/DEH	
SHT NO.: T20 of T60	SHEET TITLE: DRAINAGE AND WATERPROOFING DETAILS (SHEET 2 OF 2)

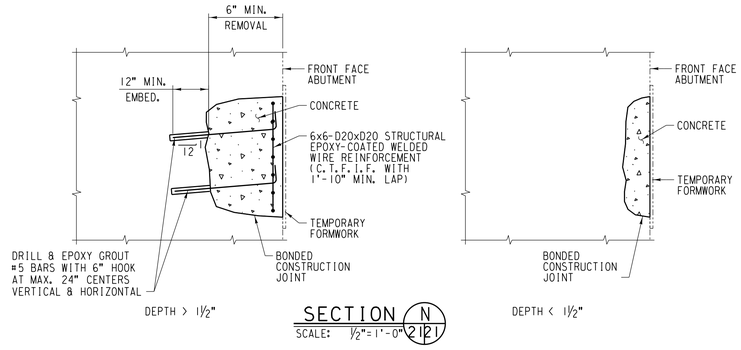
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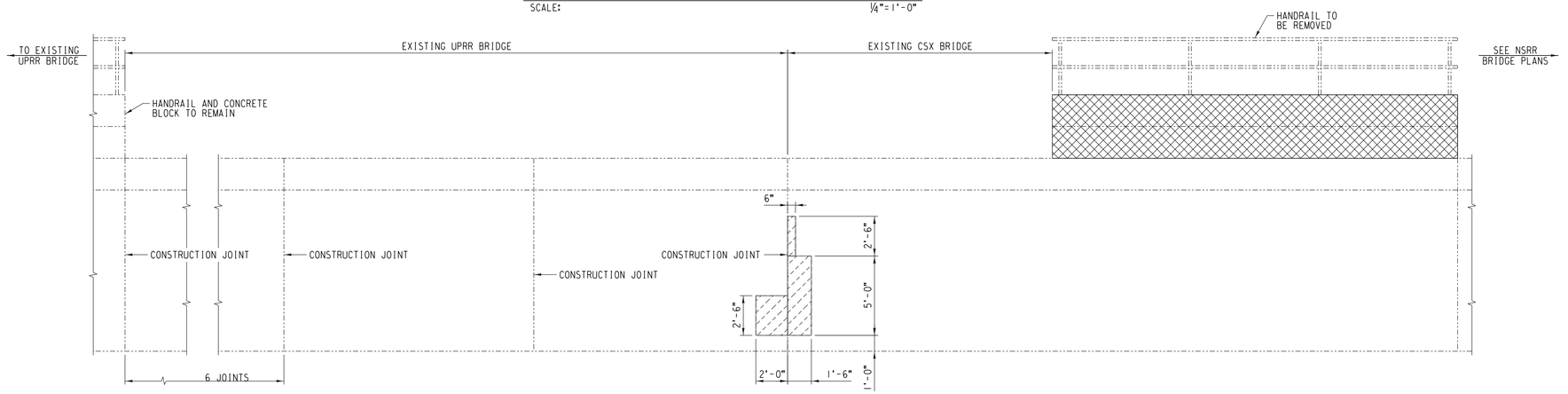
EXISTING NORTH ABUTMENT ELEVATION

SCALE: 1/4"=1'-0"



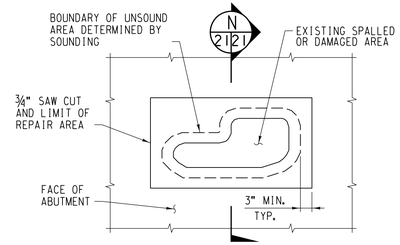
SECTION N 21 21

SCALE: ½"=1'-0"



EXISTING SOUTH ABUTMENT ELEVATION

SCALE: 1/4"=1'-0"



DETAIL OF STRUCTURAL REPAIR OF CONCRETE

NOTES:

1. Areas to be repaired are estimated from field inspection. Areas shall be verified in the field by the Engineer.

STRUCTURAL REPAIR OF CONCRETE:

1. Replace fractured and/or spalled concrete with structural concrete where shown on drawings.
2. The Contractor shall provide ladders or other appropriate equipment for UP, or a representative appointed by UP, to mark the removal areas. The removal area perimeter shall be 3 in. beyond the limits of the unsound material. Repair configurations will be kept simple, and squared corners will be preferred. If concrete is broken or removed beyond the limits of the initial saw cut, the new repair perimeter shall be recut. The areas to be repaired shall have all loose, unsound masonry removed completely by the use of chipping hammers, hydrodemolition equipment, or other methods approved by UP.
3. The repair depth shall be a minimum of 1 in. The substrate profile shall be ± 1/16 in. The perimeter of the repair area shall have a vertical face.
4. If a repair is located at the ground line, any excavation required below the ground line to complete the repair shall be included in this work.
5. The Contractor shall have a maximum of 14 calendar days to complete each repair location once removal has started for the repair.
6. UP shall be notified of removal that exceeds 6 in. (150 mm) in depth, one fourth the cross section of a structural member, or other structural concern. Excessive deterioration or removal may require further evaluation of the structure or installation of temporary shoring and cribbing support system.
7. Prior to placing the concrete, the Contractor shall prepare the repair area by blast cleaning. The blast cleaning shall provide a surface that is free of oil, dirt, and loose material.
8. The repair area and perimeter vertical face shall have a rough surface. Care shall be taken to ensure the perimeter sawcut is roughened. Just prior to concrete placement, saturate the repair area with water to a saturated surface-dry condition. Any standing water shall be removed.

STRUCTURAL REPAIR OF CONCRETE - CONT.:

9. Concrete placement shall be done within 3 calendar days of the surface preparation or the repair area shall be prepared again.
10. All reinforcement and placement shall comply with UP Standard Specifications.
11. All concrete materials, placement, and curing shall comply with UP Standard Specifications.
12. The Contractor shall anchor the new concrete to the existing concrete with 5/8 in. diameter hook bars for all repair with ample coverage available. The hook bars shall be spaced at 24 in. maximum centers both vertically and horizontally, and shall be a minimum of 6 in. away from the perimeter of the repair and edge of masonry unit. Prior to installing the drilled and grouted anchors, the Contractor shall verify with a test hole that the specified embedment depth can be provided.
13. All repair areas shall be inspected and approved by UP prior to placement of the concrete.
14. Falsework and forms shall be according to UP Standard Specifications. Formwork shall provide a smooth and uniform concrete finish, and shall approximately match the existing concrete structure. Air vents may be provided to reduce voids and improve surface appearance.
15. All exposed corners shall be chamfered ¾. The surfaces of the completed repair shall be finished according to UP Standard Specifications.
16. Cost of drilling and epoxy grouting bars in structural repair areas shall be included in formed concrete repair.

MATERIAL SCHEDULE

REQ'D	UNIT	DESCRIPTION
28	SQ. FT.	FORMED CONCRETE REPAIR (PER NOTES, SHEET T21)

FORMED CONCRETE REPAIR

CONCRETE REMOVAL

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:

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ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

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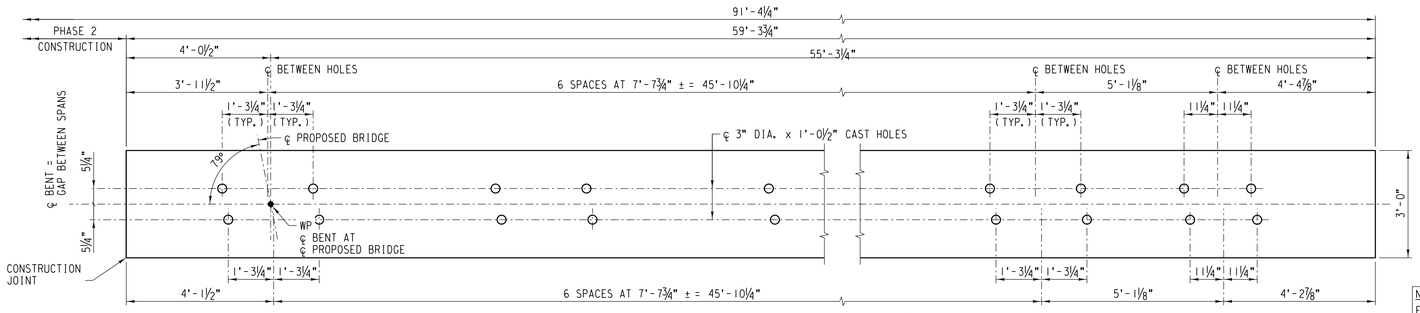
FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION

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UPRR ENGINEER: ADS/DEH	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
SHT NO.: T21 of T60	SHEET TITLE: EXISTING ABUTMENT REPAIR DETAILS

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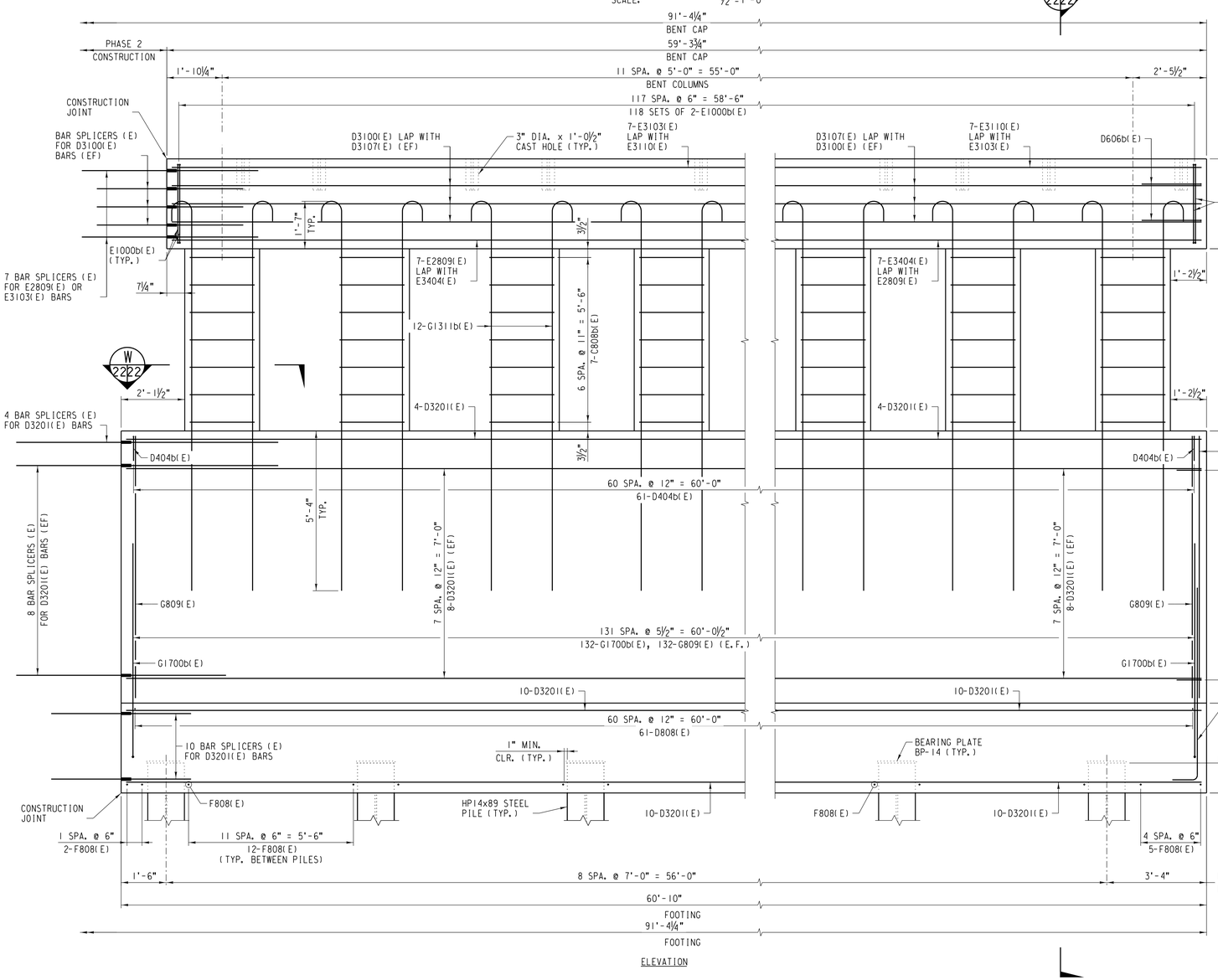
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BEARING LAYOUT

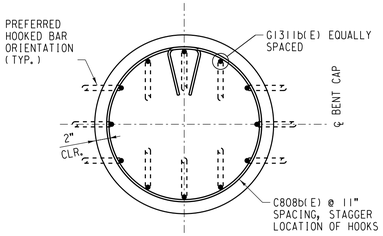
SCALE: ½"=1'-0"

RIGHT



SECTION X

SCALE: ½"=1'-0" (X 2222)



VIEW W W

SCALE: 1"=1'-0" (2222 / 2322)

ELEVATION

CAST-IN-PLACE CONCRETE BENT DETAILS - PHASE 1

SCALE: ½"=1'-0"

MATERIAL SCHEDULE

REQ'D	UNIT	DESCRIPTION
155.3	CU. YD.	4000 PSI CONCRETE (19.8 CU. YD. FOR BENT CAP, 13.3 CU. YD. FOR COLUMNS, 61.4 CU. YD. FOR CRASHWALL, 60.8 FOR FOOTING) (PER NOTES, SHEET NO. T3)
1	LOT	REINFORCING STEEL (PER NOTES, SHEET NO. T3 AND SCHEDULE, SHEET NO. T22)
46	EACH	#5 BAR SPLICERS (PER NOTES AND DETAIL, SHEET T27)
14	EACH	#6 BAR SPLICERS (PER NOTES AND DETAIL, SHEET T27)

NOTE:
1. EF = EACH FACE
2. E = EPOXY COATED

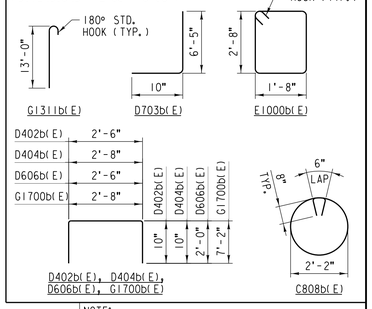
NOTE:
FOOTING, CRASHWALL AND COLUMNS NOT SHOWN FOR CLARITY.

REINFORCING SCHEDULE

TOTAL	MARK	SIZE	LENGTH	SHAPE
84	C808b(E)	#4	8'-8"	○
8	D402b(E)	#5	4'-2"	⊓
61	D404b(E)	#5	4'-10"	⊓
2	D606b(E)	#5	6'-6"	⊓
5	D703b(E)	#5	7'-3"	L
61	D808(E)	#5	8'-8"	—
5	D809(E)	#5	8'-9"	—
6	D3100(E)	#5	31'-0"	—
6	D3107(E)	#5	31'-7"	—
80	D3201(E)	#5	32'-1"	—
236	E1000b(E)	#6	10'-0"	□
7	E2809(E)	#6	28'-4"	—
7	E3103(E)	#6	31'-3"	—
7	E3110(E)	#6	31'-10"	—
7	E3404(E)	#6	34'-4"	—
103	F808(E)	#7	8'-8"	—
264	G809(E)	#8	8'-9"	—
144	G1311b(E)	#8	13'-11"	⊃
132	G1700b(E)	#8	17'-0"	⊓

BENDING DIAGRAM

(DIMENSIONS ARE OUT TO OUT)



NOTE:
BAR DESIGNATIONS CONSIST OF BAR SIZE & LENGTH FOLLOWED BY THE LETTER "b" IF BENT. BAR SIZES ARE REPRESENTED BY THE LETTERS A THROUGH L CORRESPONDING TO BAR SIZE #2 THROUGH #18. BAR LENGTHS ARE GIVEN IN FEET AND INCHES; THE LAST TWO DIGITS ARE INCHES.

EST. WT. OF REINFORCING STEEL = 28,730 LB.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS: FINAL — STATUS — 05/28/2021 DATE

HANSON Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN	**UNION PACIFIC RAILROAD** — Office of Director Structures Design
DRAWN/CHK BY: CDP/AAN	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION — 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
UPRR ENGINEER: ADS/DEH	
SHT NO.: T22 of T60	SHEET TITLE: CAST-IN-PLACE CONCRETE BENT #2 DETAILS (1 OF 3)

FILE NAME: pw:\\dahnesch-pw.bentley.com:dahnesch-pw-01\Documents\210000s\210070.11\Engineering Docs\Bridges\16_Ogden (2.27)\Plans\roc00227_b11.dgn

PLOTTED: 5/26/2021 10:41:27 AM

MATERIAL SCHEDULE

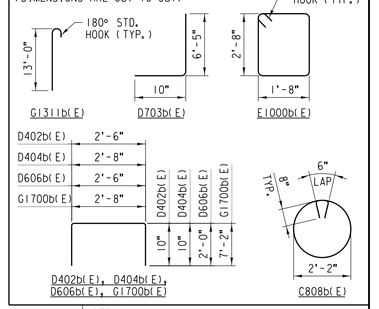
REQ'D	UNIT	DESCRIPTION
78.7	CU. YD.	4000 PSI CONCRETE (10.7 CU. YD. FOR BENT CAP, 6.6 CU. YD. FOR COLUMNS, 30.7 CU. YD. FOR CRASHWALL, 30.4 FOR FOOTING) (PER NOTES, SHEET NO. T3)
1	LOT	REINFORCING STEEL (PER NOTES, SHEET NO. T3 AND SCHEDULE, SHEET NO. T23)

NOTE:
1. EF = EACH FACE
2. E = EPOXY COATED

REINFORCING SCHEDULE

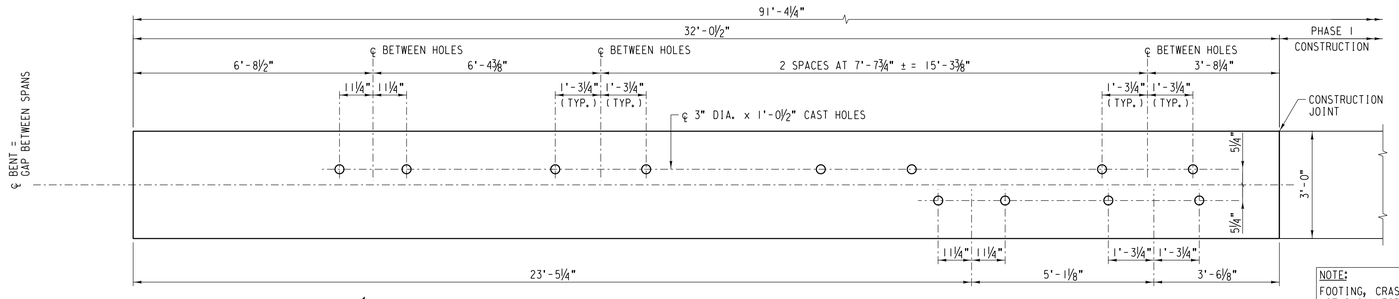
TOTAL	MARK	SIZE	LENGTH	SHAPE
42	C808b(E)	#4	8'-8"	
8	D402b(E)	#5	4'-2"	
31	D404b(E)	#5	4'-4"	
2	D606b(E)	#5	6'-6"	
5	D703b(E)	#5	7'-3"	
31	D808(E)	#5	8'-8"	
5	D809(E)	#5	8'-9"	
40	D3002(E)	#5	30'-2"	
6	D3108(E)	#5	31'-8"	
128	E1000b(E)	#6	10'-0"	
14	E3108(E)	#6	31'-8"	
53	F808(E)	#7	8'-8"	
132	G809(E)	#8	8'-9"	
72	G1311(E)	#8	13'-11"	
66	G1700b(E)	#8	17'-0"	

BENDING DIAGRAM
(DIMENSIONS ARE OUT TO OUT)



NOTE:
BAR DESIGNATIONS CONSIST OF BAR SIZE & LENGTH FOLLOWED BY THE LETTER "b" IF BENT. BAR SIZES ARE REPRESENTED BY THE LETTERS A THROUGH L CORRESPONDING TO BAR SIZE #2 THROUGH #18. BAR LENGTHS ARE GIVEN IN FEET AND INCHES; THE LAST TWO DIGITS ARE INCHES.

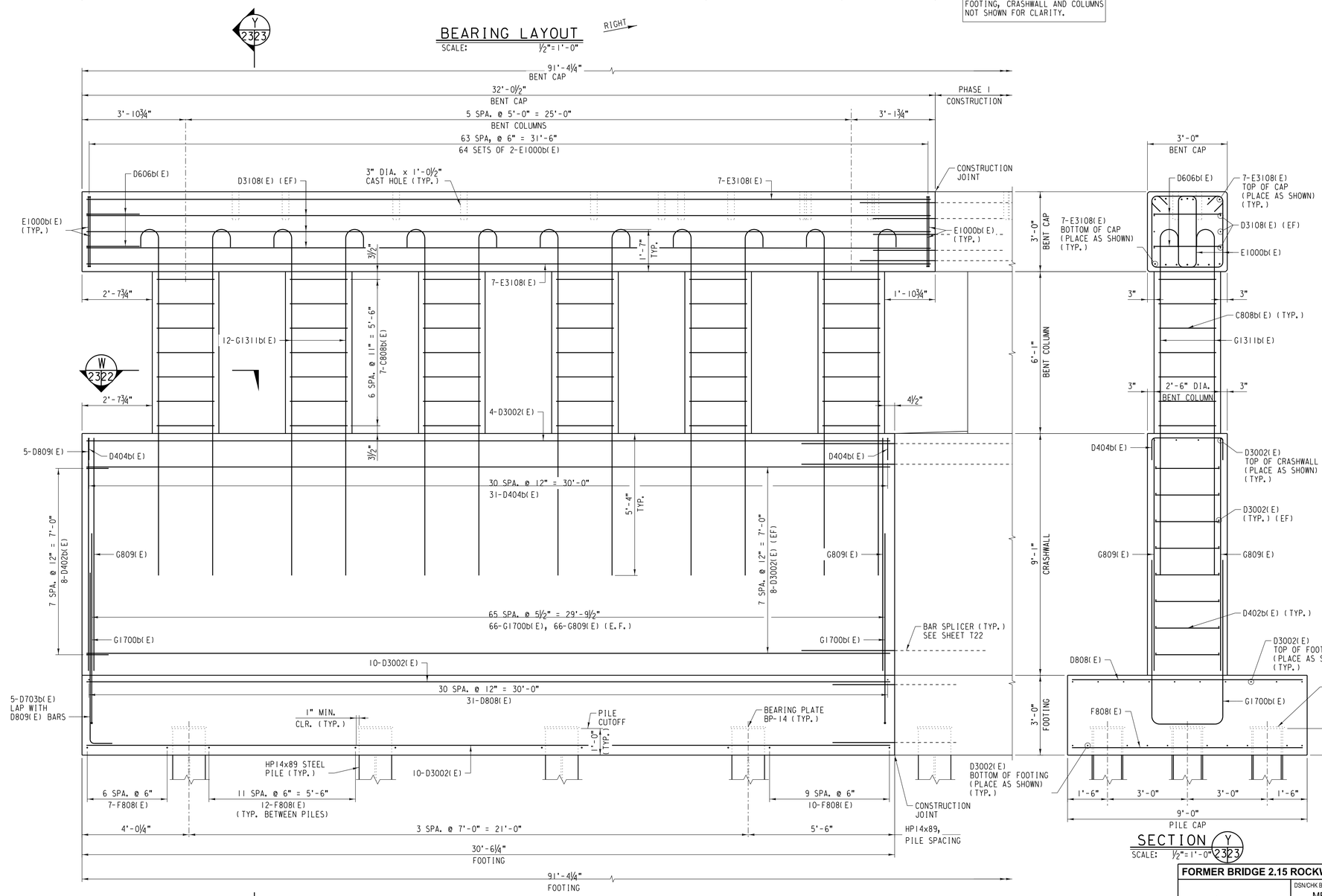
EST. WT. OF REINFORCING STEEL = 14,545 LB.



NOTE:
FOOTING, CRASHWALL AND COLUMNS NOT SHOWN FOR CLARITY.

BEARING LAYOUT
SCALE: ½"=1'-0"

RIGHT



ELEVATION

SECTION Y 2323
SCALE: ½"=1'-0"

CAST-IN-PLACE CONCRETE BENT DETAILS - PHASE 2
SCALE: ½"=1'-0"

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS: FINAL — STATUS — 05/28/2021 DATE

HANSON Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

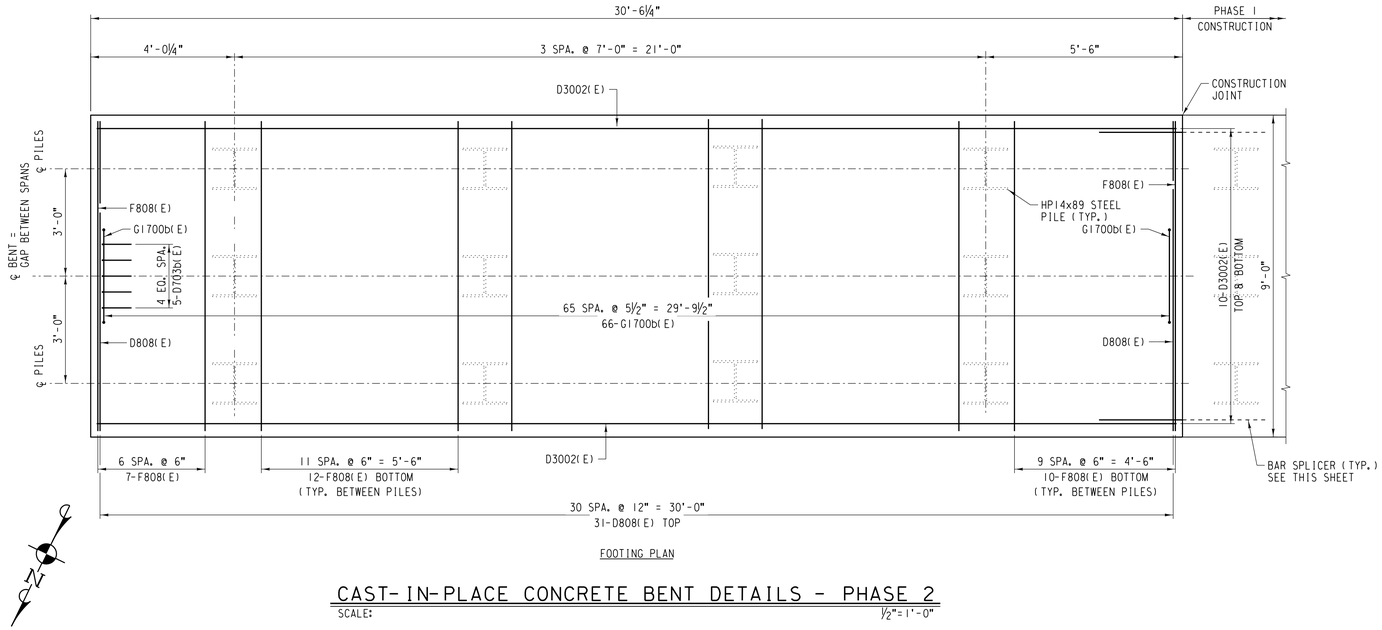
PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 — LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN	**UNION PACIFIC RAILROAD** — Office of Director Structures Design
DRAWN/CHK BY: CDP/AAN	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION
UPRR ENGINEER: ADS/DEH	3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
SHT NO.: T23 of T60	SHEET TITLE: CAST-IN-PLACE CONCRETE BENT #2 DETAILS (2 OF 3)

FILE NAME: pw:\\Hansech-pw.bentley.com:hansech-pw-01\Documents\210000s\210070.11\Engineering Docs\Bridges\16_Ogden (2.27)\Plans\coo0227_b11.DGN

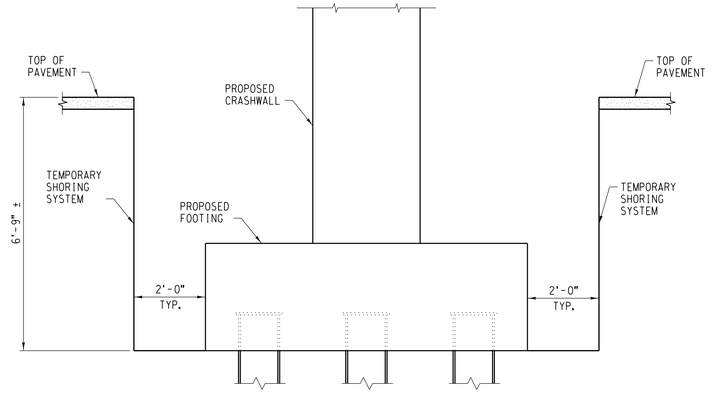
PLOTTED: 5/26/2021 10:41:31 AM



FOOTING PLAN

CAST-IN-PLACE CONCRETE BENT DETAILS - PHASE 2

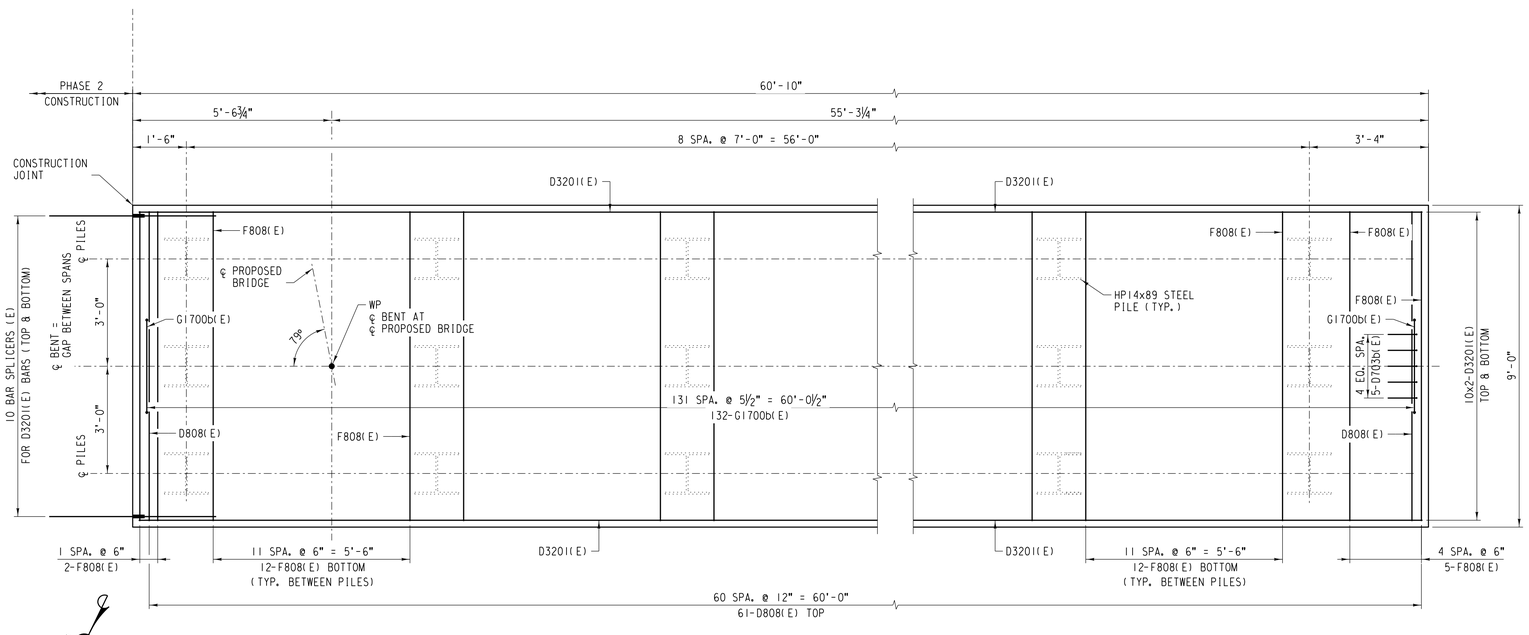
SCALE: ½"=1'-0"



SECTION E (5.24)

SCALE: ½"=1'-0"

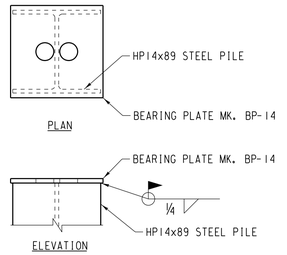




FOOTING PLAN

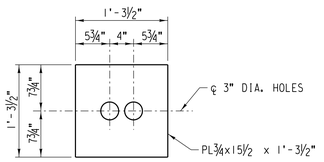
CAST-IN-PLACE CONCRETE BENT DETAILS - PHASE 1

SCALE: ½"=1'-0"



PILE DETAIL

SCALE: 1"=1'-0"



BEARING PLATE MK. BP-14

SCALE: 1"=1'-0"

EST. WT. = 51.1 LB. EACH

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:

FINAL — STATUS — 05/28/2021 DATE

HANSON Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY:	MRK/AAN
DRAWN/CHK BY:	CDP/AAN
UPRR ENGINEER:	ADS/DEH
SHT NO.:	T24 of T60

UNION PACIFIC RAILROAD

Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION

3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: CAST-IN-PLACE CONCRETE BENT #2 DETAILS (3 OF 3)

FILE NAME: pw:*Hgonesch-pw.bentley.com:benesch-pw-01\Documents*210000s*210070.11*Engineering Docs*Bridges*16_Ogden (2.27)*Drawings*bd00227.bi1.dgn

PLOTTED: 5/26/2021 10:41:35 AM

MATERIAL SCHEDULE

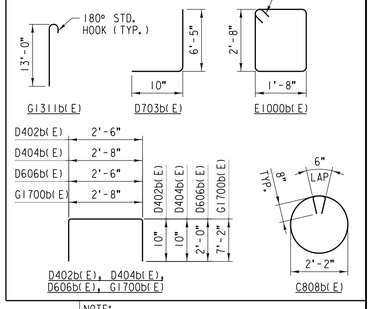
REQ'D	UNIT	DESCRIPTION
193.2	CU. YD.	4000 PSI CONCRETE (24.8CU.YD. FOR BENT CAP, 16.6 CU.YD. FOR COLUMNS, 76.3 CU.YD. FOR CRASHWALL, 75.5 FOR FOOTING) (PER NOTES, SHEET NO. T3)
1	LOT	REINFORCING STEEL (PER NOTES, SHEET NO. T3 AND SCHEDULE, SHEET NO. T25)
46	EACH	#5 BAR SPLICERS (PER NOTES AND DETAIL, SHEET T27)
14	EACH	#6 BAR SPLICERS (PER NOTES AND DETAIL, SHEET T27)

NOTE:
1. EF = EACH FACE
2. E = EPOXY COATED

REINFORCING SCHEDULE

TOTAL	MARK	SIZE	LENGTH	SHAPE
105	C808b(E)	#4	8'-8"	
8	D402b(E)	#5	4'-2"	
76	D404b(E)	#5	4'-4"	
2	D606b(E)	#5	6'-6"	
5	D703b(E)	#5	7'-3"	
76	D808(E)	#5	8'-8"	
5	D809(E)	#5	8'-9"	
6	D3607(E)	#5	36'-7"	
80	D3905(E)	#5	39'-5"	
6	D4101(E)	#5	41'-1"	
298	E1000b(E)	#6	10'-0"	
7	E3610(E)	#6	36'-10"	
14	E3901(E)	#6	39'-1"	
7	E4104(E)	#6	41'-4"	
129	F808(E)	#7	8'-8"	
328	G809(E)	#8	8'-9"	
180	G1311(E)	#8	13'-11"	
164	G1700b(E)	#8	17'-0"	

BENDING DIAGRAM
(DIMENSIONS ARE OUT TO OUT)

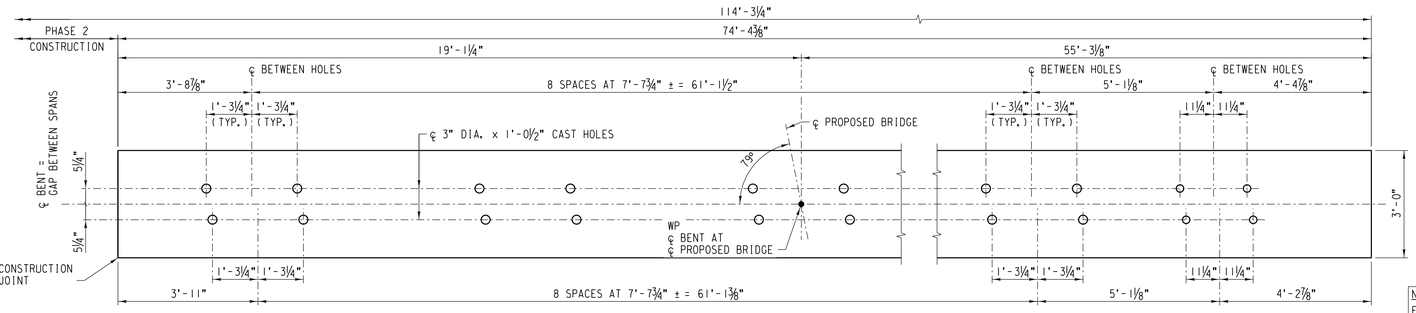


NOTE:
BAR DESIGNATIONS CONSIST OF BAR SIZE & LENGTH FOLLOWED BY THE LETTER "b" IF BENT. BAR SIZES ARE REPRESENTED BY THE LETTERS A THROUGH L CORRESPONDING TO BAR SIZE #2 THROUGH #18. BAR LENGTHS ARE GIVEN IN FEET AND INCHES; THE LAST TWO DIGITS ARE INCHES.

EST. WT. OF REINFORCING STEEL = 35,755 LB.

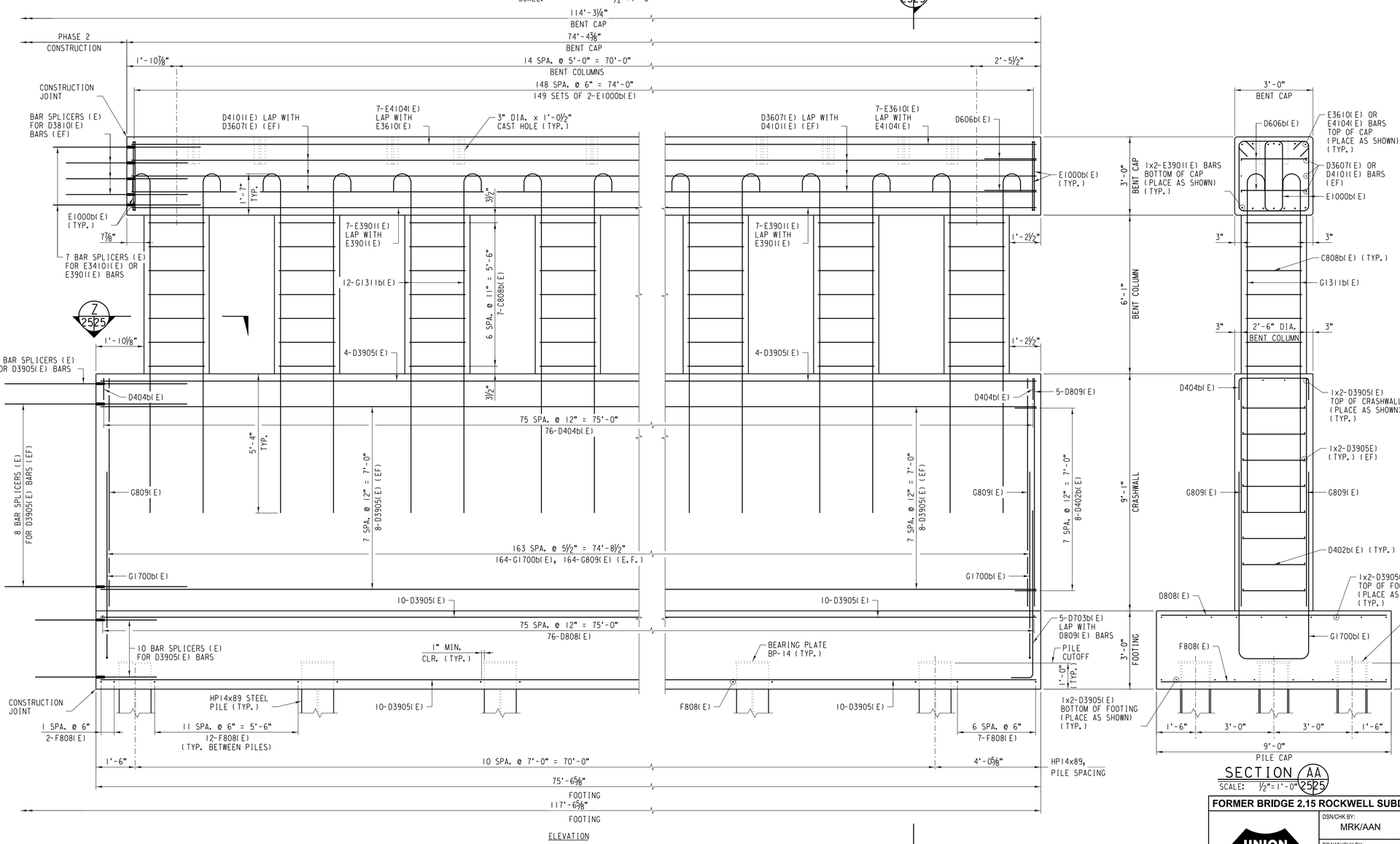
NOTE:
FOOTING, CRASHWALL AND COLUMNS NOT SHOWN FOR CLARITY.

BEARING LAYOUT
SCALE: 1/2"=1'-0"

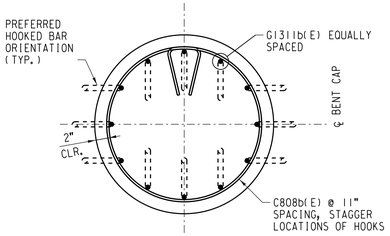


RIGHT

AA 2525



SECTION AA
SCALE: 1/2"=1'-0" (2525)



VIEW Z Z
SCALE: 1"=1'-0" (2525) (2625)

ELEVATION

CAST-IN-PLACE CONCRETE BENT DETAILS - PHASE 1
SCALE: 1/2"=1'-0"

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS: FINAL — STATUS — 05/28/2021 DATE

HANSON Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 — LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN	**UNION PACIFIC RAILROAD** — Office of Director Structures Design
DRAWN/CHK BY: CDP/AAN	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION — 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
UPRR ENGINEER: ADS/DEH	
SHT NO.: T25 of T60	SHEET TITLE: CAST-IN-PLACE CONCRETE BENT #3 DETAILS (1 OF 3)

FILE NAME: pw:\\mhensch-pw.bentley.com:mhensch-pw-01\Documents\210000s\210070.11\Engineering Docs\Bridges\16.Ogden (2.27)\Plans\coo0227_b11.DGN

PLOTTED: 5/26/2021 10:41:40 AM

MATERIAL SCHEDULE

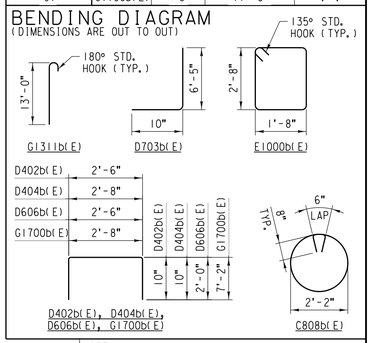
REQ'D	UNIT	DESCRIPTION
106.6	CU. YD.	4000 PSI CONCRETE (13.3 CU. YD. FOR BENT CAP, 8.9 CU. YD. FOR COLUMNS, 42.4 CU. YD. FOR CRASHWALL, 42 FOR FOOTING) (PER NOTES, SHEET NO. T3)
1	LOT	REINFORCING STEEL (PER NOTES, SHEET NO. T3 AND SCHEDULE, SHEET NO. T26)

NOTE:
1. EF = EACH FACE
2. E = EPOXY COATED

REINFORCING SCHEDULE

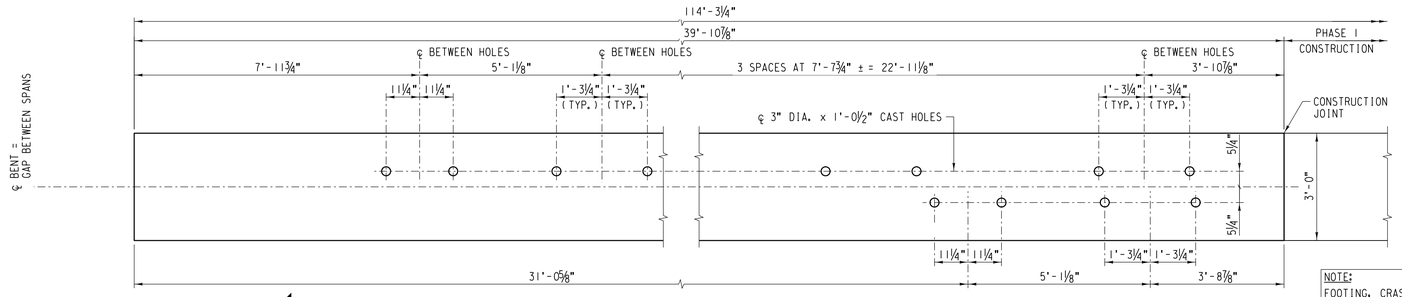
TOTAL	MARK	SIZE	LENGTH	SHAPE
56	C808b(E)	#4	8'-8"	
8	D402b(E)	#5	4'-2"	
42	D404b(E)	#5	4'-4"	
2	D606b(E)	#5	6'-6"	
5	D703b(E)	#5	7'-3"	
42	D808(E)	#5	8'-8"	
5	D809(E)	#5	8'-9"	
6	D3906(E)	#5	39'-6"	
40	D4108(E)	#5	41'-8"	
160	E1000b(E)	#6	10'-0"	
14	E3906(E)	#6	39'-6"	
72	F808(E)	#7	8'-8"	
182	G809(E)	#8	8'-9"	
96	G1311(E)	#8	13'-11"	
91	G1700b(E)	#8	17'-0"	

BENDING DIAGRAM
(DIMENSIONS ARE OUT TO OUT)



NOTE:
BAR DESIGNATIONS CONSIST OF BAR SIZE & LENGTH FOLLOWED BY THE LETTER "b" IF BENT. BAR SIZES ARE REPRESENTED BY THE LETTERS A THROUGH L CORRESPONDING TO BAR SIZE #2 THROUGH #18. BAR LENGTHS ARE GIVEN IN FEET AND INCHES; THE LAST TWO DIGITS ARE INCHES.

EST. WT. OF REINFORCING STEEL = 19,480 LB.

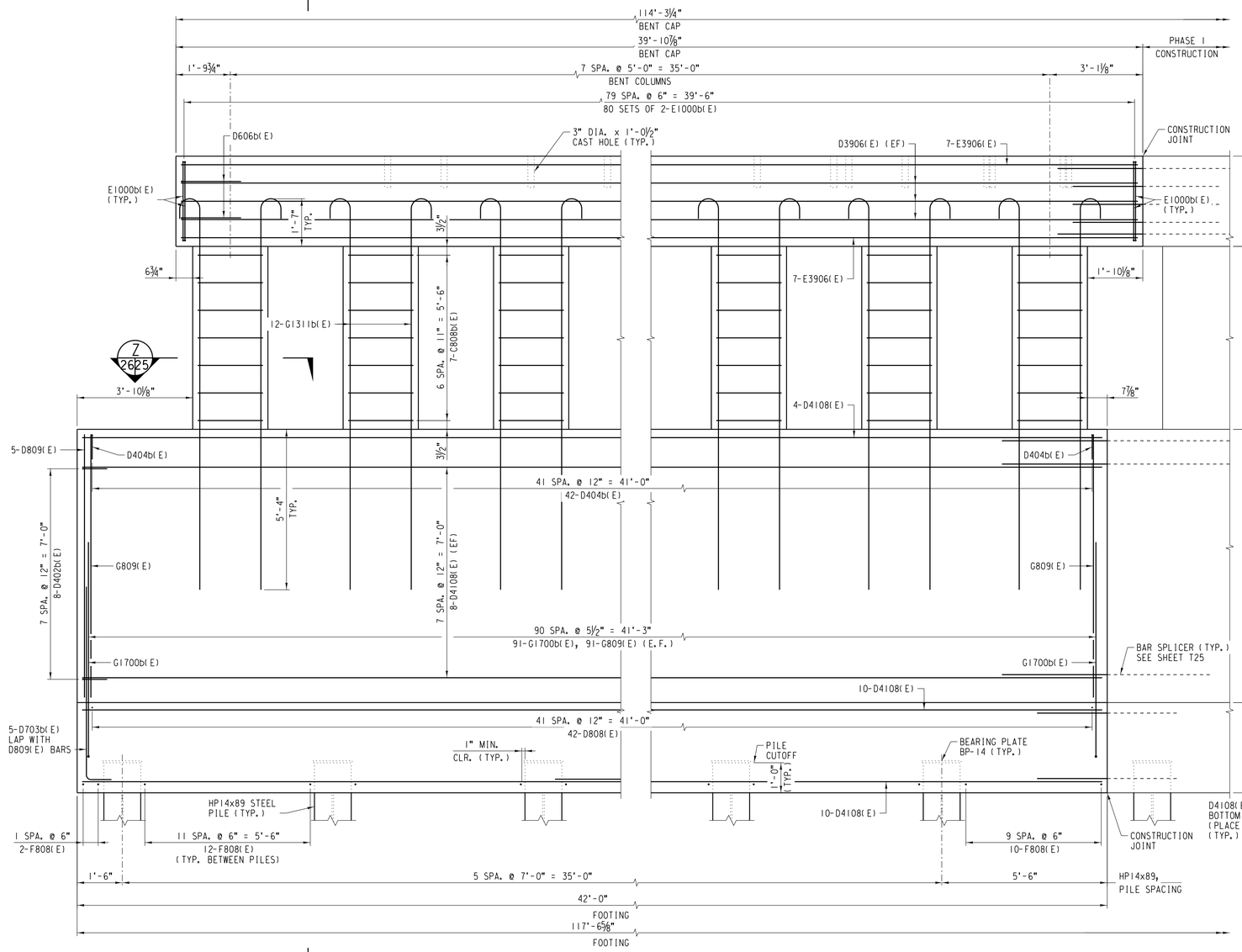


NOTE:
FOOTING, CRASHWALL AND COLUMNS NOT SHOWN FOR CLARITY.

BB 2626

BEARING LAYOUT
SCALE: ½"=1'-0"

RIGHT



ELEVATION

SECTION BB 2626
SCALE: ½"=1'-0"

CAST-IN-PLACE CONCRETE BENT DETAILS - PHASE 2
SCALE: ½"=1'-0"

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS: FINAL — STATUS — 05/28/2021 DATE

Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

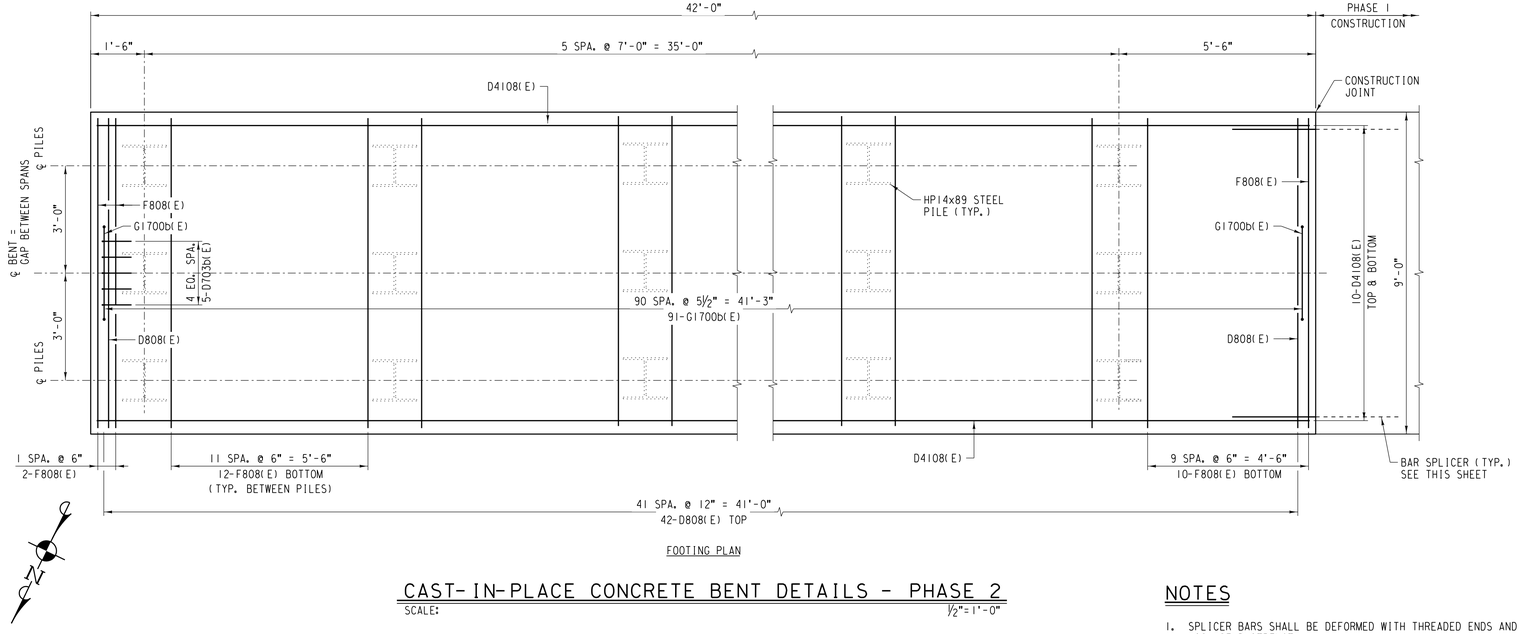
PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN	**UNION PACIFIC RAILROAD** — Office of Director Structures Design
DRAWN/CHK BY: CDP/AAN	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION — 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
UPRR ENGINEER: ADS/DEH	
SHT NO.: T26 of T60	SHEET TITLE: CAST-IN-PLACE CONCRETE BENT #3 DETAILS (2 OF 3)

FILE NAME: pw:\\Hanesch-pw.bentley.com:Hanesch-pw-01\Documents\210000s\210070.11\Engineering Docs\Bridges\16_Ogden (2.27)\Plans\doc00227_b11.DGN

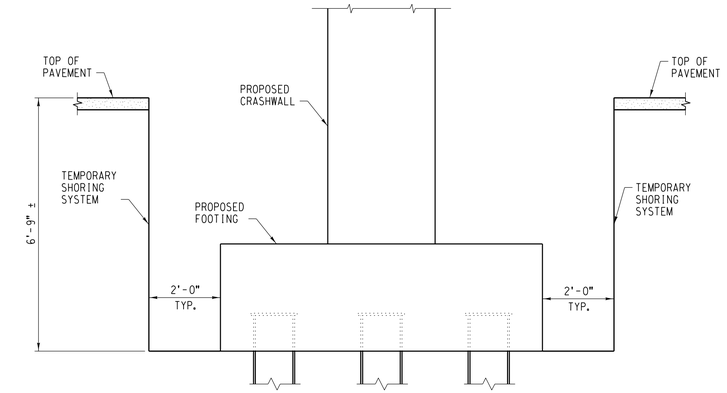
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FOOTING PLAN

CAST-IN-PLACE CONCRETE BENT DETAILS - PHASE 2

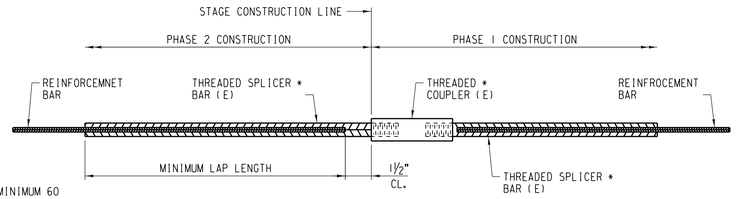
SCALE: ½"=1'-0"



SECTION E

SCALE: ½"=1'-0"

527



STANDARD BAR SPLICER ASSEMBLY

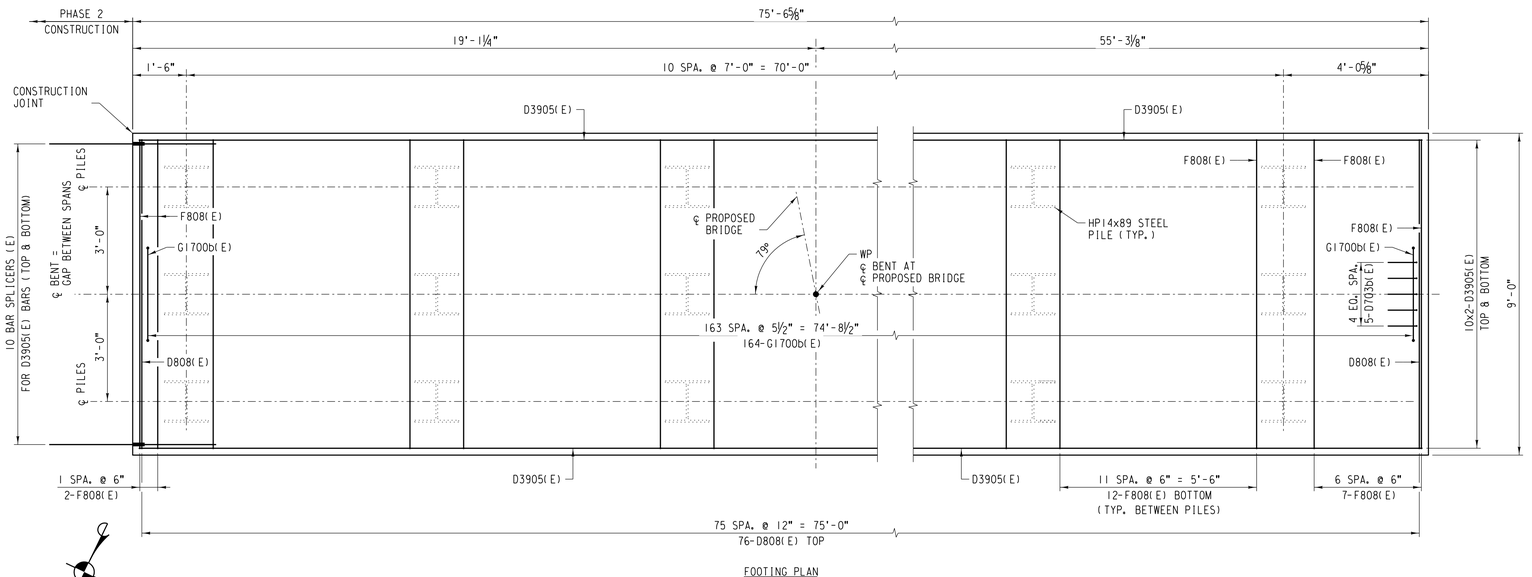
SCALE: N.T.S.

THREADED SPLICER BAR LENGTH = MIN. LAP LENGTH + 1½" + THREAD LENGTH

BAR SIZE	MINIMUM LAP LENGTH
#5	3'-7"
#6	4'-1"

NOTES

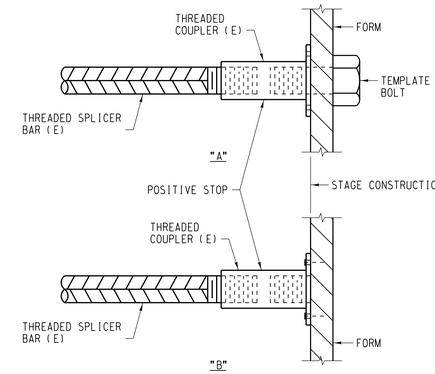
1. SPLICER BARS SHALL BE DEFORMED WITH THREADED ENDS AND HAVE A MINIMUM 60 KSI YIELD STRENGTH.
2. ALL REINFORCEMENT SHALL BE LAPPED AND TIED TO THE SPLICER BARS.
3. THREADED COUPLER SHALL DEVELOP IN TENSION AT LEAST 125% OF SPECIFIED YIELD STRENGTH OF THE SPLICER BAR.



FOOTING PLAN

CAST-IN-PLACE CONCRETE BENT DETAILS - PHASE 1

SCALE: ½"=1'-0"



INSTALLATION AND SETTING METHODS

SCALE: N.T.S.

SET BAR SPLICER ASSEMBLY BY MEANS OF A TEMPLATE BOLT. "A":
SET BAR SPLICER ASSEMBLY BY NAILING TO WOOD FORMS OR "B":
CEMENTING TO STEEL FORMS.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:

FINAL — STATUS — 05/28/2021 DATE

HANSON Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN	**UNION PACIFIC RAILROAD** — Office of Director Structures Design
DRAWN/CHK BY: CDP/AAN	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION — 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
UPRR ENGINEER: ADS/DEH	
SHT NO.: T27 of T60	SHEET TITLE: CAST-IN-PLACE CONCRETE BENT #3 DETAILS (3 OF 3)

FILE NAME: pw:**engnesch-pw.bentley.com:benesch-pw-01**\Documents**210000s**\210710.11**Engineering Docs**\Bridges**16_Ogden (2.27****Ironsw**\d00227_bsi.DGN

PLOTTED: 5/26/2021 10:41:49 AM

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Fax: 630-953-9938

BORING LOG 19-BSB-01

WEI Job No.: 815-13-01

Client: Alfred Benesch & Company
Project: CREATE WA-1
Location: Chicago, IL

Datum: CCD
Elevation: 26.67 ft
North: 1893711.18 ft
East: 1159814.01 ft
Station: 120+26.60
Offset: 74.70 LT

Depth (ft)	Elevation (ft)	Profile	SOIL AND ROCK DESCRIPTION	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
0	26.7		Loose, black well-graded GRAVEL with sand (GW)s; damp --FILL-- --RDR 2--		1	6 4 4	NP	14
3.0	23.7		Loose, brown, well-graded SAND with gravel (SW)g; damp --FILL-- --RDR 2--		2	2 2 2	NP	16
5.5	21.2		Medium stiff to very stiff, brown, sandy LEAN CLAY with gravel s(CL)g; damp --FILL-- --RDR 2-- --Qu: 2.5 P--		3	1 2 2	0.50 P	16
8.8	17.9		Loose, brown and black, poorly-graded SAND (SP); damp --FILL--		4	2 2 2	NP	8
10.0	15.2		Stiff, brown and gray LEAN CLAY (CL); damp --FILL--		5	2 2 2	1.72 B	23
13.0	13.7		Very loose, brown, gray and black, well-graded SAND with clay; (SW-SC); damp --FILL-- --RDR 2--		6	1 1 1	NP	33
15.0	11.7		Medium dense, black poorly-graded SAND (SP), trace organic matter; moist --BURIED TOPSOIL-- --RDR 2--		7	3 5 6	NP	22
18.0	8.7		Stiff to very stiff, brown and gray LEAN CLAY; (CL) --RDR 2--		8	4 4 4	2.13 B	27
20.0	6.7				9	3 3 4	2.13 B	25
25.0	1.7		--L_L(%)=40, P_I(%)=19-- --%Gravel=0.5-- --%Sand=14.4--		10	2 2 3	1.07 B	27

GENERAL NOTES

Begin Drilling: 01-31-2020 Complete Drilling: 01-31-2020
Drilling Contractor: Wang Testing Services Drill Rig: 17B57T [91%]
Driller: NC&AG Logger: M. Sadowski Checked by: C. Marin
Drilling Method: 2.25" IDA HSA to 20'; mud rotary thereafter; autohammer; backfilled with bentonite chips and soil cuttings

WATER LEVEL DATA

While Drilling: ▽ 67.00 ft
At Completion of Drilling: ▼ mud in borehole
Time After Drilling: NA
Depth to Water: ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG 19-BSB-01

WEI Job No.: 815-13-01
Client: Alfred Benesch & Company
Project: CREATE WA-1
Location: Chicago, IL
Datum: CCD
Elevation: 26.67 ft
North: 1893711.18 ft
East: 1159814.01 ft
Station: 120+26.60
Offset: 74.70 LT

Depth (ft)	Elevation (ft)	Profile	SOIL AND ROCK DESCRIPTION	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
1.2			--%Silt=32.4-- --%Clay=52.7-- Soft, gray LEAN CLAY (CL), trace gravel; damp --RDR 2--		11	1 1 2	0.33 B	27
2.1			Very stiff, brown and gray, sandy LEAN CLAY s(CL); damp --RDR 2--		12	3 4 4	2.00 P	15
5.1			Soft, gray LEAN CLAY (CL), trace gravel --RDR 2--		13	1 1 2	0.33 B	27
15.1			Hard, gray SILTY CLAY (CL-ML); damp --RDR 2--		14	2 2 2	0.41 B	23
20.1			Very stiff to hard, gray LEAN CLAY with sand (CL)s, trace gravel; damp --RDR 2 to 3--		15	3 5 6	> 4.50 P	14
25.0			--L_L(%)=35, P_I(%)=17-- --%Gravel=0.6-- --%Sand=13.8-- --%Silt=37.1-- --%Clay=48.5--		16	7 10 17	5.82 B	18

GENERAL NOTES

Begin Drilling: 01-31-2020 Complete Drilling: 01-31-2020
Drilling Contractor: Wang Testing Services Drill Rig: 17B57T [91%]
Driller: NC&AG Logger: M. Sadowski Checked by: C. Marin
Drilling Method: 2.25" IDA HSA to 20'; mud rotary thereafter; autohammer; backfilled with bentonite chips and soil cuttings

WATER LEVEL DATA

While Drilling: ▽ 67.00 ft
At Completion of Drilling: ▼ mud in borehole
Time After Drilling: NA
Depth to Water: ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG 19-BSB-02

WEI Job No.: 815-13-01
Client: Alfred Benesch & Company
Project: CREATE WA-1
Location: Chicago, IL
Datum: CCD
Elevation: 27.15 ft
North: 1893589.69 ft
East: 1159972.39 ft
Station: 122+15.57
Offset: 115.17 LT

Depth (ft)	Elevation (ft)	Profile	SOIL AND ROCK DESCRIPTION	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
0	25.7		Black, well-graded GRAVEL with sand (GW)s; damp --FILL--		1	7 9 7	NP	10
2.0	23.7		Loose to medium dense, brown, poorly-graded SAND (SP); damp --FILL-- --RDR 2--		2	2 3 3	NP	11
5.0	20.7				3	3 3 3	NP	7
6.5	19.2		Stiff, brown and gray LEAN CLAY (CL); damp --FILL-- --RDR 2--		4	1 3 3	1.23 B	26
9.0	16.7		Brown, poorly-graded SAND (SP); damp --FILL--		5	1 2 2	1.64 B	25
10.0	15.7		Stiff, brown and gray LEAN CLAY, damp; (CL) --FILL-- --RDR 2--		6	2 1 2	1.15 B	24
15.0	10.7		Medium dense, black, well-graded SAND (SW); saturated --FILL-- --RDR 2--		7	2 5 4	NP	21
17.0	8.7		Stiff to very stiff, brown and gray LEAN CLAY to LEAN CLAY with sand (CL)s; damp to moist --RDR 2--		8	2 3 3	1.89 B	21
20.0	5.7				9	3 4 5	2.07 B	25
25.0	0.7				10	2 2 2	1.23 B	28

GENERAL NOTES

Begin Drilling: 02-05-2020 Complete Drilling: 02-05-2020
Drilling Contractor: Wang Testing Services Drill Rig: 17B57T [91%]
Driller: NC&AG Logger: I. Nenn Checked by: C. Marin
Drilling Method: 2.25" IDA HSA; autohammer; backfilled with bentonite chips and soil cuttings upon completion

WATER LEVEL DATA

While Drilling: ▽ 16.50 ft
At Completion of Drilling: ▼ mud in borehole
Time After Drilling: NA
Depth to Water: ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG 19-BSB-02

WEI Job No.: 815-13-01
Client: Alfred Benesch & Company
Project: CREATE WA-1
Location: Chicago, IL
Datum: CCD
Elevation: 27.15 ft
North: 1893589.69 ft
East: 1159972.39 ft
Station: 122+15.57
Offset: 115.17 LT

Depth (ft)	Elevation (ft)	Profile	SOIL AND ROCK DESCRIPTION	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
0	27.1		Soft, gray LEAN CLAY (CL), trace gravel; damp --RDR 2--		11	1 2 1	1.31 B	26
3.0	24.1				12	1 2 1	0.41 B	26
5.0	22.1				13	1 2 2	0.41 B	25
10.0	17.1		--L_L(%)=35, P (%)=17-- --%Gravel=0.6-- --%Sand=13.8--40 --%Silt=37.1-- --%Clay=48.5--		14	1 3 5	0.41 B	26
15.0	12.1		Very stiff to hard, gray LEAN CLAY to LEAN CLAY with sand (CL)s, trace gravel; damp --RDR 2--		15	6 8 6	NR	
20.0	7.1				16	7 10 14	5.74 B	22

GENERAL NOTES

Begin Drilling: 02-05-2020 Complete Drilling: 02-05-2020
Drilling Contractor: Wang Testing Services Drill Rig: 17B57T [91%]
Driller: NC&AG Logger: I. Nenn Checked by: C. Marin
Drilling Method: 2.25" IDA HSA; autohammer; backfilled with bentonite chips and soil cuttings upon completion

WATER LEVEL DATA

While Drilling: ▽ 16.50 ft
At Completion of Drilling: ▼ mud in borehole
Time After Drilling: NA
Depth to Water: ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG 19-BSB-02

WEI Job No.: 815-13-01
Client: Alfred Benesch & Company
Project: CREATE WA-1
Location: Chicago, IL
Datum: CCD
Elevation: 27.15 ft
North: 1893589.69 ft
East: 1159972.39 ft
Station: 122+15.57
Offset: 115.17 LT

Depth (ft)	Elevation (ft)	Profile	SOIL AND ROCK DESCRIPTION	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
0	27.1		Very dense, gray SILT (ML), few clay laminations; saturated --RDR 2--		11	5 10 12	2.79 B	24
2.5	24.6		Medium dense, dark gray, poorly-graded SAND (SP); saturated --RDR 2--		12	6 8 7	NP	23
5.0	22.1		Medium dense, gray SILT (ML); saturated --RDR 2--		13	7 8 8	NP	29
10.0	17.1		Hard, gray LEAN CLAY (CL), trace sand laminations; damp --RDR 2--		14	5 8 7	NP	29
15.0	12.1		Very dense, gray SILT (ML), few clay laminations; saturated --RDR 2--		15	12 15 15	0.41 B	26
20.0	7.1		Very stiff, gray LEAN CLAY (CL), trace gravel; damp --RDR 2--		16	5 6 7	2.38 B	22
25.0	2.1		Very dense, gray, well-graded SAND (SW); saturated --RDR 2--		17	17 25 30	4.51 B	22
30.0	-2.9		Very stiff, gray LEAN CLAY (CL), trace gravel; damp --RDR 2--		18	6 8 9	NP	23
35.0	-7.9		Very dense, gray, well-graded SAND (SW); saturated --RDR 2--		19	7 8 9	NP	29
40.0	-12.9		Very stiff, gray LEAN CLAY (CL), trace gravel; damp --RDR 2--		20	5 8 8	NP	29
45.0	-17.9		Gray, well-graded GRAVEL with sand (GW)s; saturated --RDR 4--		21	9 12 13	> 4.50 P	20
50.0	-22.9		Strong, light grayish white, fair quality, DOLOSTONE, closely spaced, slightly weathered, horizontal and vertical joints, with <0.05 inch opening, slightly rough to rough walls, and no infill. Run 1: 92.0 to 102.0 feet Recovery= 100% RQD = 64%	CORE	22	28 50/5"	3.50 P	24
55.0	-27.9				23	13 14 25	6.72 B	20
60.0	-32.9				24	50/3"	NP	13
65.0	-37.9				25	50/0"		

GENERAL NOTES

Begin Drilling: 02-05-2020 Complete Drilling: 02-05-2020
Drilling Contractor: Wang Testing Services Drill Rig: 17B57T [91%]
Driller: NC&AG Logger: I. Nenn Checked by: C. Marin
Drilling Method: 2.25" IDA HSA; autohammer; backfilled with bentonite chips and soil cuttings upon completion

WATER LEVEL DATA

While Drilling: ▽ 16.50 ft
At Completion of Drilling: ▼ mud in borehole
Time After Drilling: NA
Depth to Water: ▼ NA

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BORING LOG 19-BSB-02

WEI Job No.: 815-13-01
Client: Alfred Benesch & Company
Project: CREATE WA-1
Location: Chicago, IL
Datum: CCD
Elevation: 27.15 ft
North: 1893589.69 ft
East: 1159972.39 ft
Station: 122+15.57
Offset: 115.17 LT

Depth (ft)	Elevation (ft)	Profile	SOIL AND ROCK DESCRIPTION	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
100.0	-72.9		Run 2: 102.0 to 107.0 feet Recovery= 100% RQD = 56%	CORE	26			
107.0	-79.9		Boring terminated at 107.00 ft					

GENERAL NOTES

Begin Drilling: 02-05-2020 Complete Drilling: 02-05-2020
Drilling Contractor: Wang Testing Services Drill Rig: 17B57T [91%]
Driller: NC&AG Logger: I. Nenn Checked by: C. Marin
Drilling Method: 2.25" IDA HSA; autohammer; backfilled with bentonite chips and soil cuttings upon completion

WATER LEVEL DATA

While Drilling: ▽ 16.50 ft
At Completion of Drilling: ▼ mud in borehole
Time After Drilling: NA
Depth to Water: ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG 19-VST-01

WEI Job No.: 815-13-01

Client: Alfred Benesch & Company
Project: CREATE WA-1
Location: Chicago, IL

Datum: CCD
Elevation: 26.62 ft
North: 1893717.70 ft
East: 1159805.77 ft
Station: 120+16.24
Offset: 72.97 LT

Depth (ft)	Elevation (ft)	Profile	SOIL AND ROCK DESCRIPTION	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
0	26.6		Drilled without testing					
2.1	24.5		--VST#1: 24.5 feet-- --$S_{u\ undis}$= 1,077.3 psf-- --$S_{u\ remold}$= 193.9 psf--	VANE	1	1077	193.00	
5.0	21.6		--VST#2: 27.0 feet-- --$S_{u\ undis}$= 646.4 psf-- --$S_{u\ remold}$= 323.2 psf--	VANE	2	646	323.00	
10.0	16.6		--VST#3: 29.5 feet-- --$S_{u\ undis}$= 646.4 psf-- --$S_{u\ remold}$= 301.7 psf--	VANE	3	646	301.00	
15.0	11.6		--VST#4: 32.0 feet-- --$S_{u\ undis}$= 646.4 psf-- --$S_{u\ remold}$= 301.7 psf--	VANE	4	646	301.00	
20.0	6.6		--VST#5: 34.5 feet-- --$S_{u\ undis}$= 883.4 psf-- --$S_{u\ remold}$= 430.9 psf--	VANE	5	883	430.00	
25.0	1.6		--VST#6: 37.0 feet-- --$S_{u\ undis}$= 991.1 psf-- --$S_{u\ remold}$= 560.2 psf--	VANE	6	991	560.00	
26.8	-0.2		--VST#7: 39.5 feet-- --$S_{u\ undis}$= 905.0 psf-- --$S_{u\ remold}$= 560.2 psf--	VANE	7	905	560.00	
40.0	-13.4		Boring terminated at 40.00 ft					

GENERAL NOTES

Begin Drilling: 02-06-2020 Complete Drilling: 02-06-2020
Drilling Contractor: Wang Testing Services Drill Rig: 13CME55T [85%]
Driller: RR&JD Logger: F. Bozga Checked by: C. Marin
Drilling Method: 3.25" IDA HSA; autohammer; backfilled with bentonite chips and soil cuttings upon completion

WATER LEVEL DATA

While Drilling: ▽ NA
At Completion of Drilling: ▼ NA
Time After Drilling: NA
Depth to Water: ▼ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

NOTES:

1. SUBSURFACE INFORMATION IS PROVIDED FOR INFORMATION ONLY FROM WANG ENGINEERING INC. REPORT TITLED "STRUCTURE GEOTECHNICAL REPORT UNION PACIFIC RAILROAD BRIDGE OVER OGDEN AVENUE ROCKWELL SUBDIVISION CREATE PROJECT WA-1 CHICAGO, ILLINOIS" DATED 08-28-2020. CONTACT THE OFFICE OF DIRECTOR STRUCTURES DESIGN DESIGN/CONSTRUCTION TO OBTAIN A COMPLETE COPY OF THE GEOTECHNICAL REPORT.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS
05/28/2021 — DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER
05/28/2021 — DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION

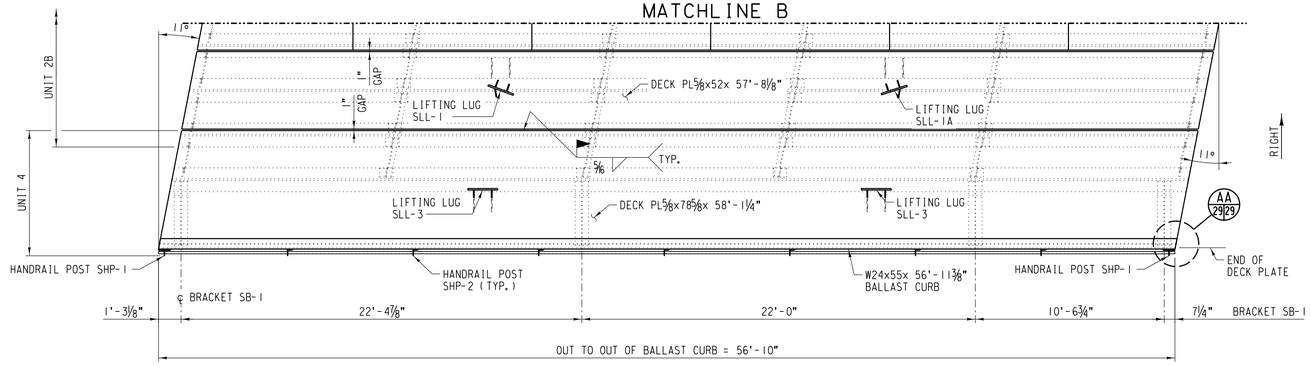
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UNION PACIFIC

DSN/CHK BY: MRK/AAN	UNION PACIFIC RAILROAD
DRAWN/CHK BY: CDP/AAN	Office of Director Structures Design
UPRR ENGINEER: ADS/DEH	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
SHT NO.: T28 of T60	SHEET TITLE: BORING LOGS

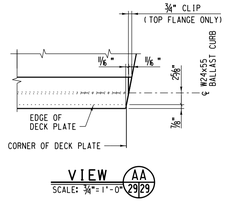
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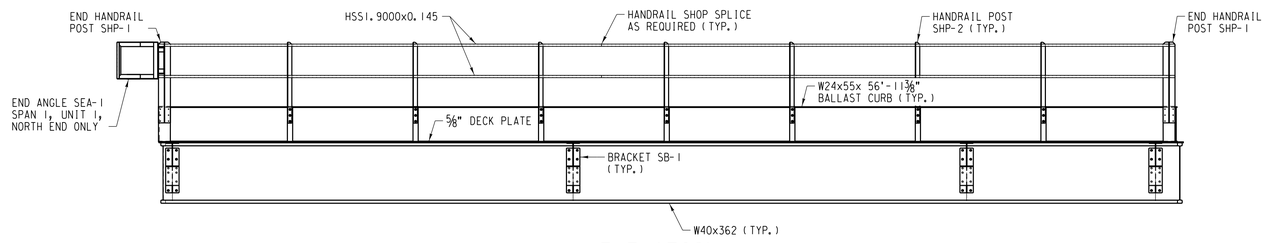
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PARTIAL PLAN (SPAN 1) - DECK PLATE, CURBS AND HANDRAIL

SCALE: 1/4"=1'-0"





ELEVATION

SCALE: 1/4"=1'-0"

STEEL SPAN LIFTING WEIGHTS

UNIT 2B = 73,080 LB. (36.6 TON)
UNIT 4 = 36,460 LB. (18.3 TON)

STRUCTURAL STEEL NOTES

1. Materials, fabrication and erection shall be in accordance with Chapter 15: Steel Structures of the AREMA Manual for Railway Engineering.

2. Fabrication of structural steel shall be performed by a Fabricator certified under AISC Quality Certification Program for Intermediate Steel Bridges (IBR).

3. Material shall conform to the following requirements:

Beams	ASTM A709 Grade 50W T2
Deck Plates	ASTM A709 Grade 50W T2
Drain Pipe Downspouts	ASTM A53 Grade B
Handrail	ASTM A847
Retainer Support Angles, Ballast Retainer Plates and Cover Plates	ASTM A36
All Other Structural Steel	ASTM A588
Anchor Rods	ASTM F1554 Grade 105
Bearing Pads	Cast Polyurethane (80 Durometer)
Protective Pads	Elastomeric Bearing Roll (60 Durometer)

4. Design stresses for the following materials are in accordance with the AREMA Manual for Railway Engineering.

ASTM A36	Fy = 36,000 psi
ASTM A53 Grade B	Fy = 35,000 psi
ASTM A588	Fy = 50,000 psi
ASTM A709, Grade 50W	Fy = 50,000 psi
ASTM A847	Fy = 50,000 psi

5. Structural steel shall be of the type and quality as designated on the drawings. Material supplied shall meet the longitudinal Charpy V-Notch requirements for Zone 2 as specified int the AREMA Manual for Railway Engineering.

6. Steel designated as fracture critical (FCM) shall comply with the requirements of AREMA Chapter 15, Section 1.14. Testing shall be performed for a minimum service temperature corresponding to Zone 2. Killed fine grain practice shall be used in the manufacture of FCM steel. Supplementary requirements S84 and S93 of ASTM A709 shall be mandatory.

7. Structural steel shall be of the type and quality as designated on the drawings. Material supplied shall meet the longitudinal Charpy V-notch requirements for Zone 2 as specified in the AREMA Manual for Railway Engineering.

8. All shop and field bolted connections shall use high strength bolts (including nuts and washers) conforming to ASTM F3125 Grade A325, Type 3, unless noted otherwise. Nuts shall conform to ASTM A563. All bolts shall be 7/8" diameter unless noted otherwise. Diameter of bolt holes shall be 1/16" larger than nominal bolt diameter, unless noted otherwise. All bolts shall have one hardened steel washer conforming to ASTM F436 per bolt under the element to be turned.

STRUCTURAL STEEL NOTES - CONT.

9. High strength steel bolts shall be installed in accordance with the "Turn of the Nut Method". The procedure for installation is as specified by the Research Council on Structural Connections. Alternative bolt installation methods are subject to approval by the UPRR Office of AVP Engineering Design with verification performed in accordance with AREMA Chapter 15, Articles 3.2.2.h and 3.2.2.k.

10. Bolts shall be installed so that the bolt heads are on the outside (exposed) surface of the member unless shown otherwise on the drawings. Threads shall be excluded from the shear plane in all connections.

11. Any machine bolts required for shipment shall be ASTM A307.

12. Center to center dimensions shall be as noted.

13. All welding shall be in accordance with the Bridge Welding Code, AWS D1.5. Welding of fracture critical members shall also conform to the applicable provisions of AREMA Manual for Railway Engineering, Chapter 15: Steel Structures. Welding to be allowed only as shown on the drawings and approved shop drawings. Weld metal material properties shall match structural steel.

14. Welded joints shall be AWS prequalified. Alternate joint details are subject to approval of the UPRR Office of Director Strucutures Design. All welding shall be done to minimize distortion. The welding sequence and procedures to be used shall be submitted for approval to the UPRR Office of Director Structures Design.

15. All beam to deck plate shop welding shall be with the SAW process. All field welding shall be with the SMAW or FCAW process. Welding electrodes shall be E7018 for SMAW or E70T-1, 5 for FCAW. All other welding shall be with the SAW or SMAW process.

16. When welding ASTM A709 Grade 50W or ASTM A588 steel, weld metal shall be equivalent to ASTM A709, Grade 50W or ASTM A588 steel in strength, corrosion resistance and weathered appearance.

17. The Fabricator shall submit copies of welders' certificates for all welding processes. Welders shall possess valid qualifications.

18. All bearing stiffeners shall be vertical under final dead loads. All intermediate stiffeners shall be placed normal to the girder bottom flange. All stiffeners and girder end plates shall be placed perpendicular to the web.

19. The Fabricator shall submit three copies of detailed shop drawings prior to beginning fabrication. Fabrication shall not begin until shop drawings are approved.

20. All Fabricator questions shall be addressed to Adam Studts at (402) 544-3541.

21. All correspondence shall be directed to Adam Studts.

Union Pacific Railroad
1400 Douglas St., STOP 0910
Omaha, NE 68179

STRUCTURAL STEEL NOTES - CONT.

22. The Fabricator shall shop assemble the spans prior to shipping. During assembly and reaming, all bolts shall be placed in holes as work progresses to assure proper fit.

23. Shop assembled spans shall be made available for inspection by the Railroad at the Fabricator's plant before the steel is disassembled and shipped to the erection site at the Railroad's discretion. Pieces shall be match-marked as required.

24. Reaming of holes during field erection is not allowed, unless approved by the Railroad.

25. All structural steel shall be blast cleaned prior to shipment as follows, unless noted otherwise. All ASTM A709 steel, other surfaces visible from sides and all faying surfaces regardless of location: Minimum SSPC-SP6, Commercial Blast Cleaning. All remaining steel surfaces: SSPC-SP1, Solvent Cleaning. All steel members shall be clearly marked after blast cleaning has been completed.

26. All steel components shall be inspected before shipment. Photographs of Fabricator's progress shall be submitted to the UPRR Office of Director Structures Design.

27. Bearing pads shall be shipped flat.

28. Bearing pads shall meet the requirements of Table 15-5-5 of the AREMA Manual for Railway Engineering.

29. Fully automatic submerged arc welding shall be required for this project. Manual shielded arc welding or semi-automatic submerged arc welding shall be allowed only if fully automatic submerged arc welding is not practical. Alternate welding methods are subject to approval by the UPRR office of Director Structures Design.

30. Nondestructive testing of welds shall be performed in accordance with the AREMA Manual for Railway Engineering Chapter 15: steel structures, the bridge welding code, AWS D1.5, section 3.5 and as follows:

A. 100% RT inspection of full penetration welds in girder webs and flanges.
B. 100% MP inspection of all flange to web welds.
C. 100% MP inspection of fillet welds on bearing stiffeners.
D. 25% MP inspection of all other welds. If any defects are found then 100% MP inspection shall be required.

Test results shall be furnished to the UPRR office of Director Structures Design.

STRUCTURAL STEEL NOTES - CONT.

31. Flame cutting of girder webs and flanges shall be performed in accordance with the AREMA Manual for Railway Engineering Chapter 15, Article 3.1.6: Thermal Cutting, Copes and access Holes. Preheating is required. Preheating shall be in accordance with the following:

Thickness	Minimum Preheat Temperature
Up to 1"	50° F
Over 1" to 2"	100° F
Over 2"	200° F

The piece shall be preheated in such a manner that it is heated through its thickness and that both surfaces are above the minimum temperature for a distance equal to the thickness of the part being cut, but not less than 3", both laterally and in advance of the cut. The Fabricator shall furnish a calibrated electrical contact pyrometer to verify compliance with the preheat requirements during fabrication.

32. For welds designated to be ground flush, grinding shall be in the direction of applied stress.

33. All joints and edge preparation, removal of unacceptable weld or base metal, and backgouging shall be completed by machining. Rough removals may be completed by non-mechanical means.

34. All material certifications and quality control test results shall be submitted to Union Pacific Railroad at project completion.

NOTES:
1. FOR STRUCTURAL STEEL NOTES, SEE SHEET NO. T29.
2. FOR HANDRAIL ASSEMBLY DETAILS, SEE SHEET NO. T42.
3. FOR LIFTING LUG LOCATIONS, SEE SHEET NO. T46 & T47.
4. AFTER ASSEMBLED SPAN IS IN FINAL POSITION, LIFTING LUGS SHALL BE BURNED OFF 1/2" MINIMUM AND 1" MAXIMUM ABOVE TOP OF DECK PLATE.
5. FOR LIFTING DIAGRAMS, SEE SHEET NO. T48.
6. TEMPORARY BALLAST RETAINERS SHALL BE SHIPPED LOOSE WITH UNIT 3.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS: FINAL — STATUS — 05/28/2021 DATE

HANSON Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY:	MRK/AAN
DRAWN/CHK BY:	CDP/AAN
UPRR ENGINEER:	ADS/DEH
SHT NO.:	T29 of T60

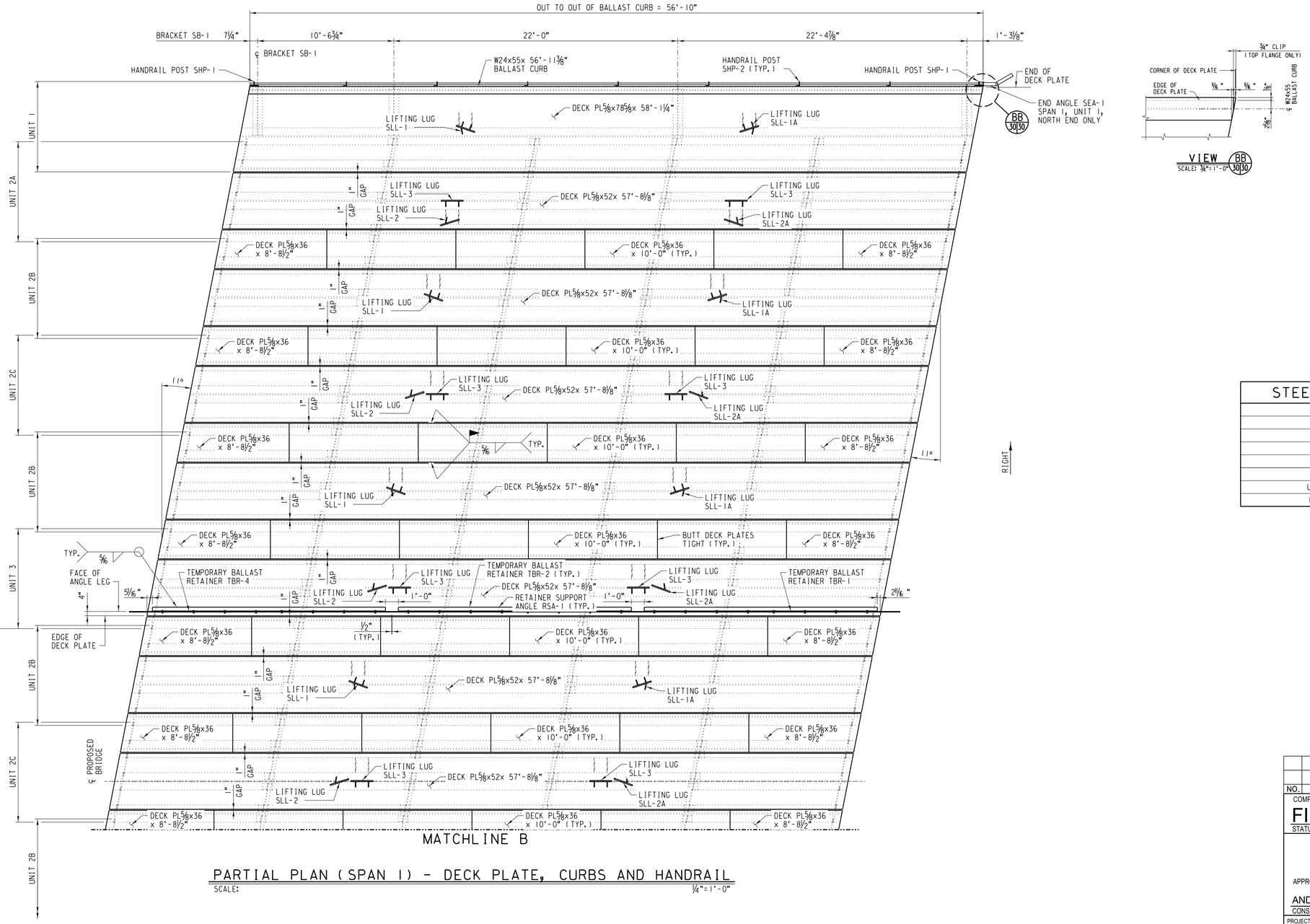
UNION PACIFIC RAILROAD
Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: SPAN 1 STEEL BEAM SPAN PLAN & ELEVATION (SHEET 1 OF 2)

FILE NAME: pw:\\Mbmesch-pw.bentley.com:benesch-pw-01\Documents\210000s\210070.11\Engineering Docs\Bridges\16_Open (2.27)\Plans\rpc00227_b1i.dgn

PLOTTED: 5/26/2021 10:42:17 AM



PARTIAL PLAN (SPAN 1) - DECK PLATE, CURBS AND HANDRAIL

SCALE: ¼"=1'-0"

VIEW BB 30|30

SCALE: ¾"=1'-0"

STEEL SPAN LIFTING WEIGHTS

UNIT 1 = 35,910 LB. (18.0 TON)
UNIT 2A = 73,080 LB. (36.6 TON)
UNIT 2B = 73,080 LB. (36.6 TON)
UNIT 2C = 73,080 LB. (36.6 TON)
UNIT 3 = 74,190 LB. (37.1 TON)
UNIT 1 AND UNIT 2A = 108,975 LB. (54.5 TON)
UNIT 2B AND UNIT 2C = 150,495 LB. (75.2 TON)
UNIT 2B AND UNIT 3 = 151,610 LB. (75.8 TON)

NOTES:

1. FOR STRUCTURAL STEEL NOTES, SEE SHEET NO. T29.
2. FOR HANDRAIL ASSEMBLY DETAILS, SEE SHEET NO. T42.
3. FOR LIFTING LUG LOCATIONS, SEE SHEET NO. T46 & T47.
4. AFTER ASSEMBLED SPAN IS IN FINAL POSITION, LIFTING LUGS SHALL BE BURNED OFF ½" MINIMUM AND 1" MAXIMUM ABOVE TOP OF DECK PLATE.
5. FOR LIFTING DIAGRAMS, SEE SHEET NO. T48.
6. TEMPORARY BALLAST RETAINERS SHALL BE SHIPPED LOOSE WITH UNIT 3.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:

FINAL — STATUS — 05/28/2021 DATE

HANSON Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

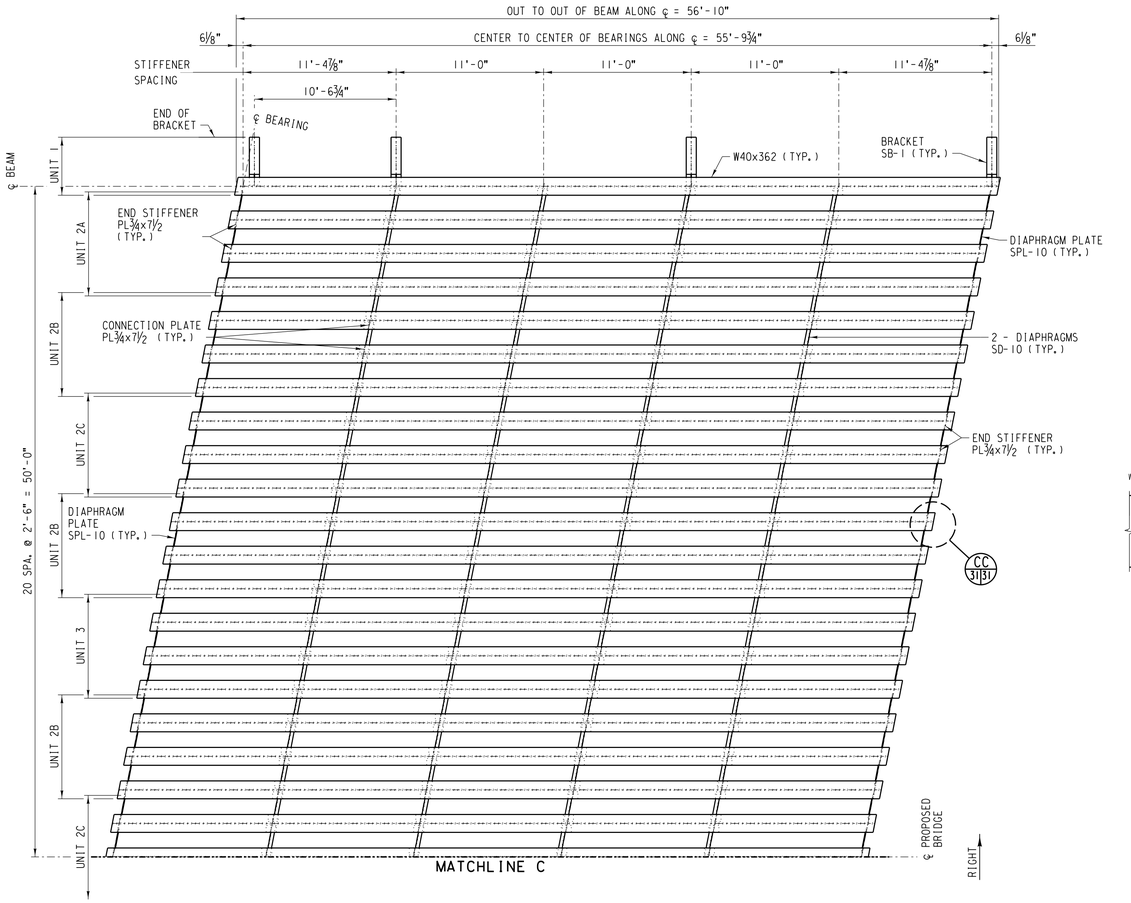
PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

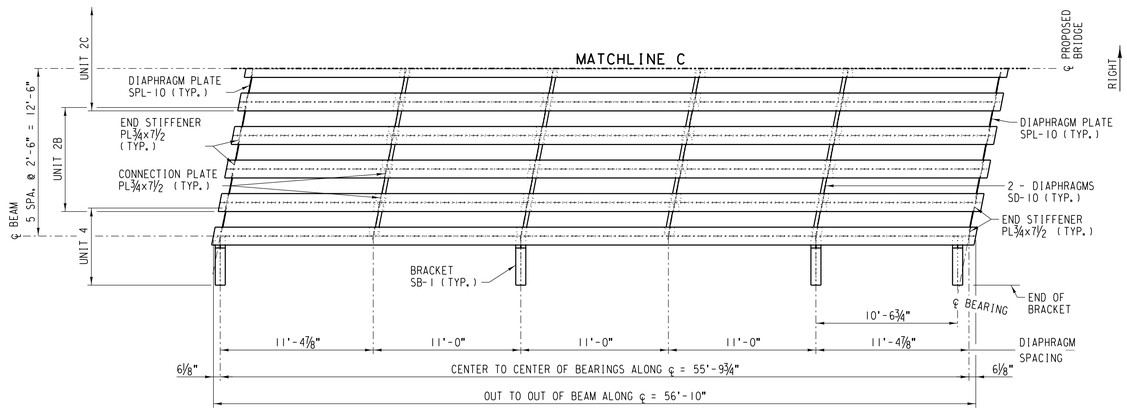
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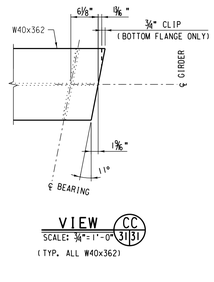
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DRAWN/CHK BY: CDP/AAN	Office of Director Structures Design
UPRR ENGINEER: ADS/DEH	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
SHT NO.: T30 of T60	SHEET TITLE: SPAN 1 STEEL BEAM SPAN PLAN & ELEVATION (SHEET 2 OF 2)

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PLOTTED: 5/26/2021 10:42:21 AM







VIEW CC 31|31
SCALE: ¾"=1'-0"
(TYP. ALL W40x362)

FRAMING PLAN (SPAN 1)

SCALE: ⅜"=1'-0"

NOTE:
FOR STRUCTURAL STEEL NOTES, SEE SHEET NO. T29.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL (STATUS) 05/28/2021 (DATE)

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL (CONSULTANT ENGINEER) 05/28/2021 (DATE)

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION

LATITUDE: 41.86361 LONGITUDE: -87.68871

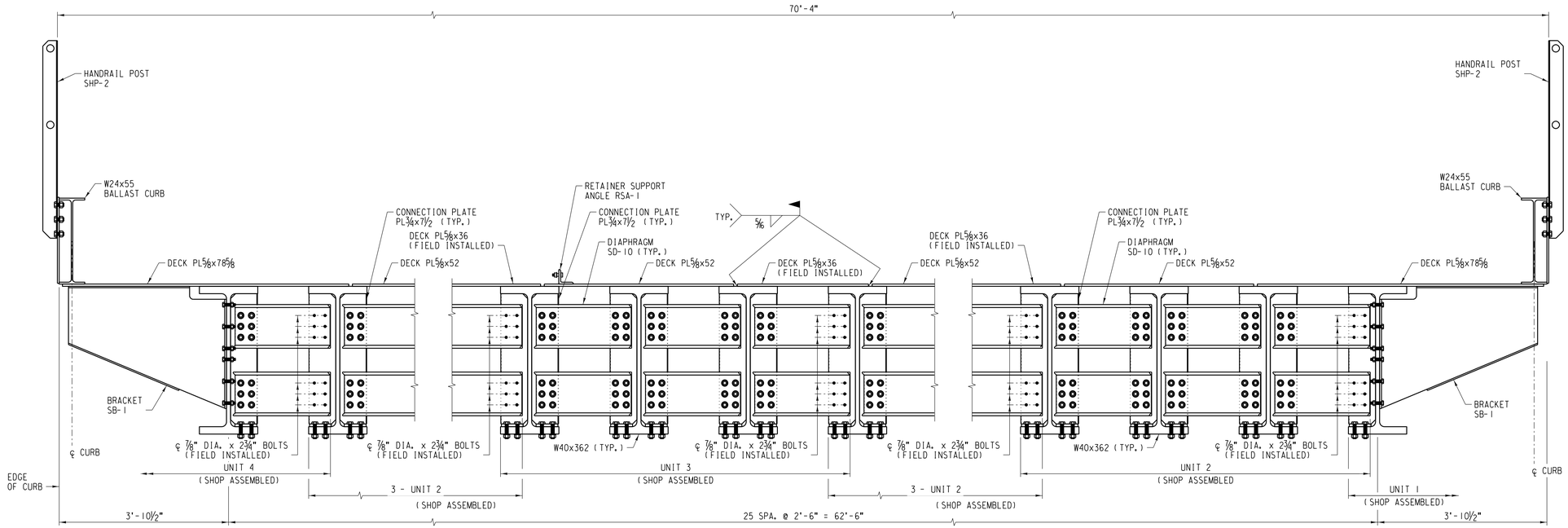
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DRAWN/CHK BY:	CDP/AAN
UPRR ENGINEER:	ADS/DEH
SHT NO.:	T31 of T60

UNION PACIFIC RAILROAD
Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: SPAN 1 STEEL BEAM SPAN FRAMING PLAN

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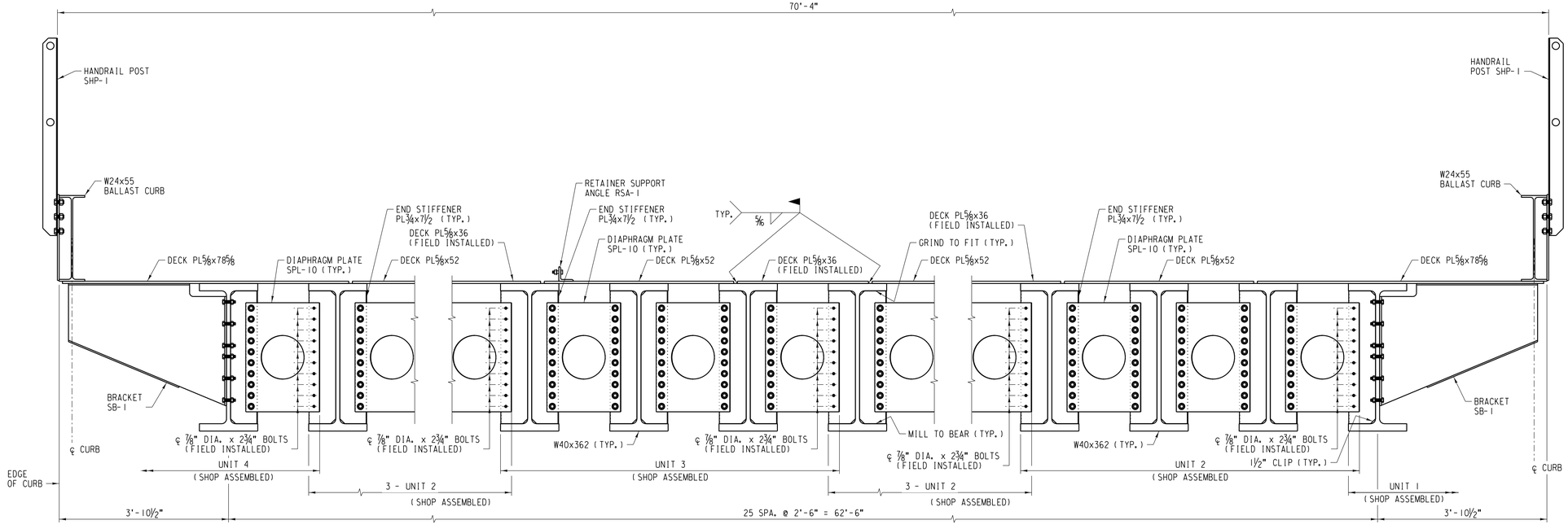


RIGHT →

SECTION (SPAN 1) - ASSEMBLED SPAN

SCALE: ¾"=1'-0"

SKEWED INTERIOR DIAPHRAGMS SHOWN



RIGHT →

SECTION (SPAN 1) - ASSEMBLED SPAN

SCALE: ¾"=1'-0"

SKEWED END DIAPHRAGMS SHOWN

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS: FINAL (STATUS) 05/28/2021 (DATE)

HANSON Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL (CONSULTANT ENGINEER) 05/28/2021 (DATE)

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY:	MRK/AAN
DRAWN/CHK BY:	CDP/AAN
UPRR ENGINEER:	ADS/DEH
SHT NO.:	T32 of T60

UNION PACIFIC RAILROAD

Office of Director Structures Design

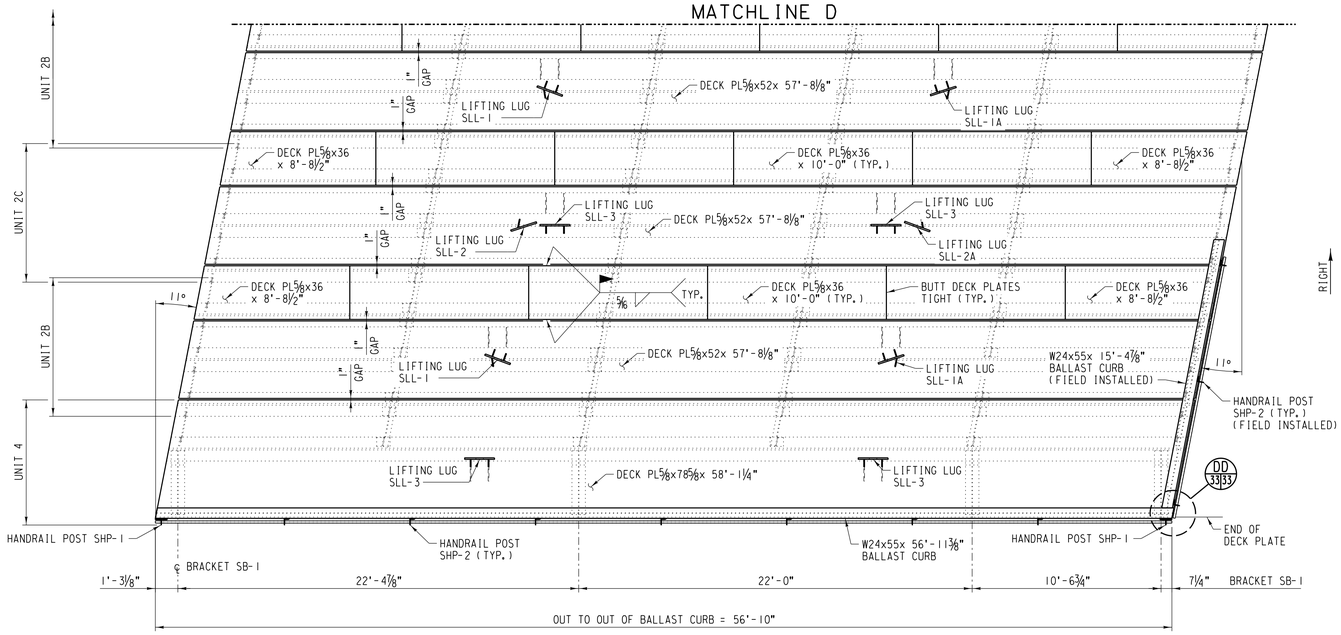
LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION

3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: SPAN 1 STEEL BEAM SPAN ASSEMBLY DETAILS

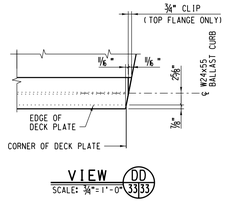
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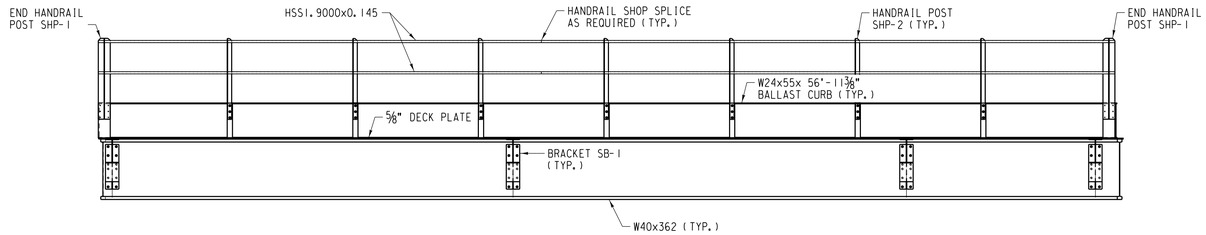
PARTIAL PLAN (SPAN 2) - DECK PLATE, CURBS AND HANDRAIL

SCALE: 1/4"=1'-0"



VIEW DD 33133

SCALE: 3/4"=1'-0"



ELEVATION

SCALE: 1/4"=1'-0"

STEEL SPAN LIFTING WEIGHTS

UNIT 2B = 73,080 LB. (36.6 TON)
UNIT 2C = 73,080 LB. (36.6 TON)
UNIT 4 = 36,460 LB. (18.3 TON)
UNIT 2B AND UNIT 2C = 150,495 LB. (75.2 TON)

NOTES:

1. FOR STRUCTURAL STEEL NOTES, SEE SHEET NO. T29.
2. FOR HANDRAIL ASSEMBLY DETAILS, SEE SHEET NO. T42.
3. FOR LIFTING LUG LOCATIONS, SEE SHEET NO. T46 & T47.
4. AFTER ASSEMBLED SPAN IS IN FINAL POSITION, LIFTING LUGS SHALL BE BURNED OFF 1/2" MINIMUM AND 1" MAXIMUM ABOVE TOP OF DECK PLATE.
5. FOR LIFTING DIAGRAMS, SEE SHEET NO. T48.
6. TEMPORARY BALLAST RETAINERS SHALL BE SHIPPED LOOSE WITH UNIT 3.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:

FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

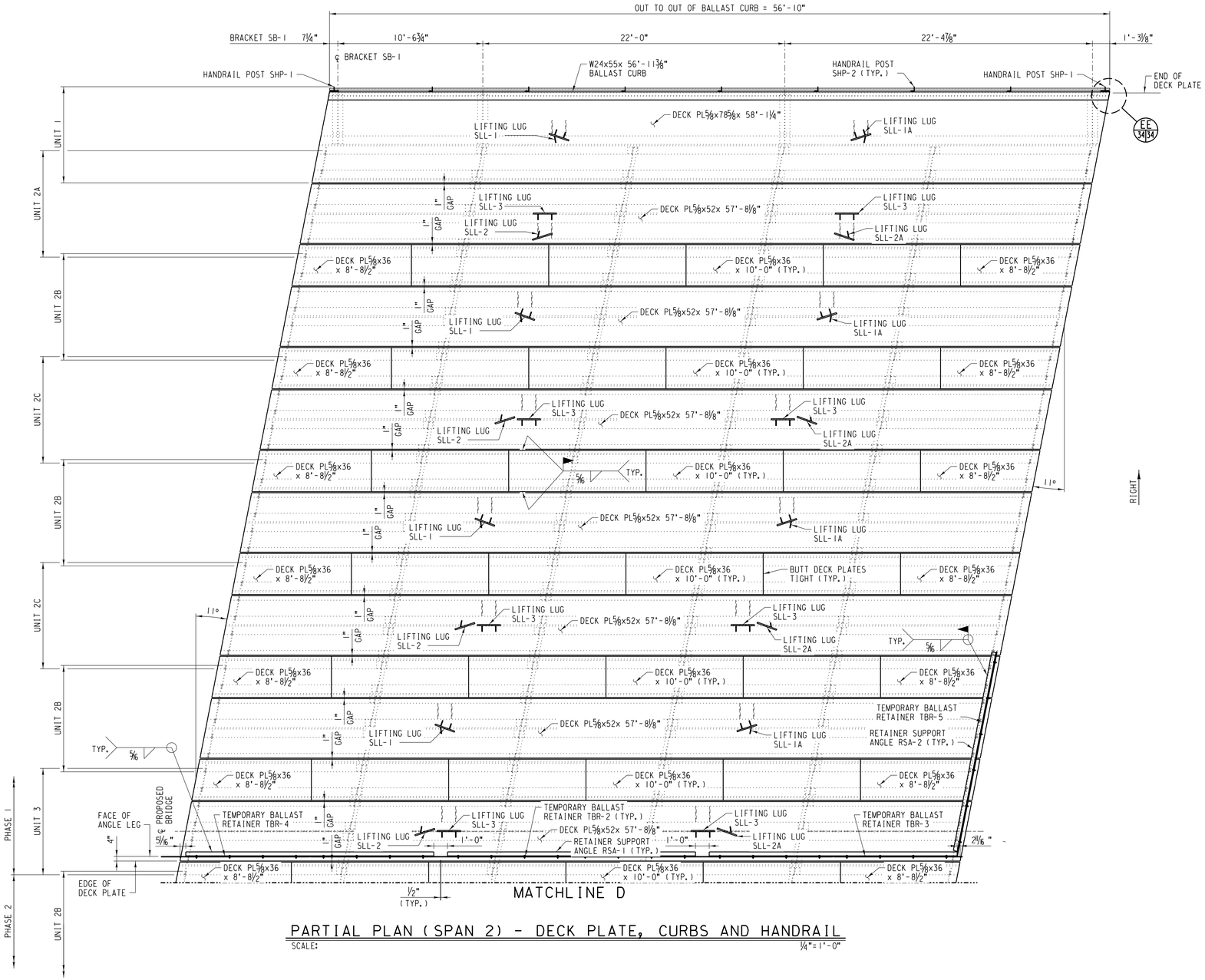
FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION

LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN	**UNION PACIFIC RAILROAD**
DRAWN/CHK BY: CDP/AAN	Office of Director Structures Design
UPRR ENGINEER: ADS/DEH	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
SHT NO.: T33 of T60	SHEET TITLE: SPAN 2 STEEL BEAM SPAN PLAN & ELEVATION (SHEET 1 OF 2)

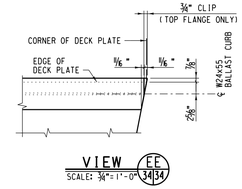
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PLOTTED: 5/26/2021 10:42:34 AM



PARTIAL PLAN (SPAN 2) - DECK PLATE, CURBS AND HANDRAIL

SCALE: ¼"=1'-0"



VIEW EE 34/34

SCALE: ¾"=1'-0"

STEEL SPAN LIFTING WEIGHTS

UNIT 1 = 35,910 LB. (18.0 TON)
UNIT 2A = 73,080 LB. (36.6 TON)
UNIT 2B = 73,080 LB. (36.6 TON)
UNIT 2C = 73,080 LB. (36.6 TON)
UNIT 3 = 74,190 LB. (37.1 TON)
UNIT 1 AND UNIT 2A = 108,975 LB. (54.5 TON)
UNIT 2B AND UNIT 2C = 150,495 LB. (75.2 TON)
UNIT 2B AND UNIT 3 = 151,610 LB. (75.8 TON)

NOTES:

1. FOR STRUCTURAL STEEL NOTES, SEE SHEET NO. T29.
2. FOR HANDRAIL ASSEMBLY DETAILS, SEE SHEET NO. T42.
3. FOR LIFTING LUG LOCATIONS, SEE SHEET NO. T46 & T47.
4. AFTER ASSEMBLED SPAN IS IN FINAL POSITION, LIFTING LUGS SHALL BE BURNED OFF ½" MINIMUM AND 1" MAXIMUM ABOVE TOP OF DECK PLATE.
5. FOR LIFTING DIAGRAMS, SEE SHEET NO. T48.
6. TEMPORARY BALLAST RETAINERS SHALL BE SHIPPED LOOSE WITH UNIT 3.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS: FINAL (STATUS) 05/28/2021 (DATE)

HANSON Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL (CONSULTANT ENGINEER) 05/28/2021 (DATE)

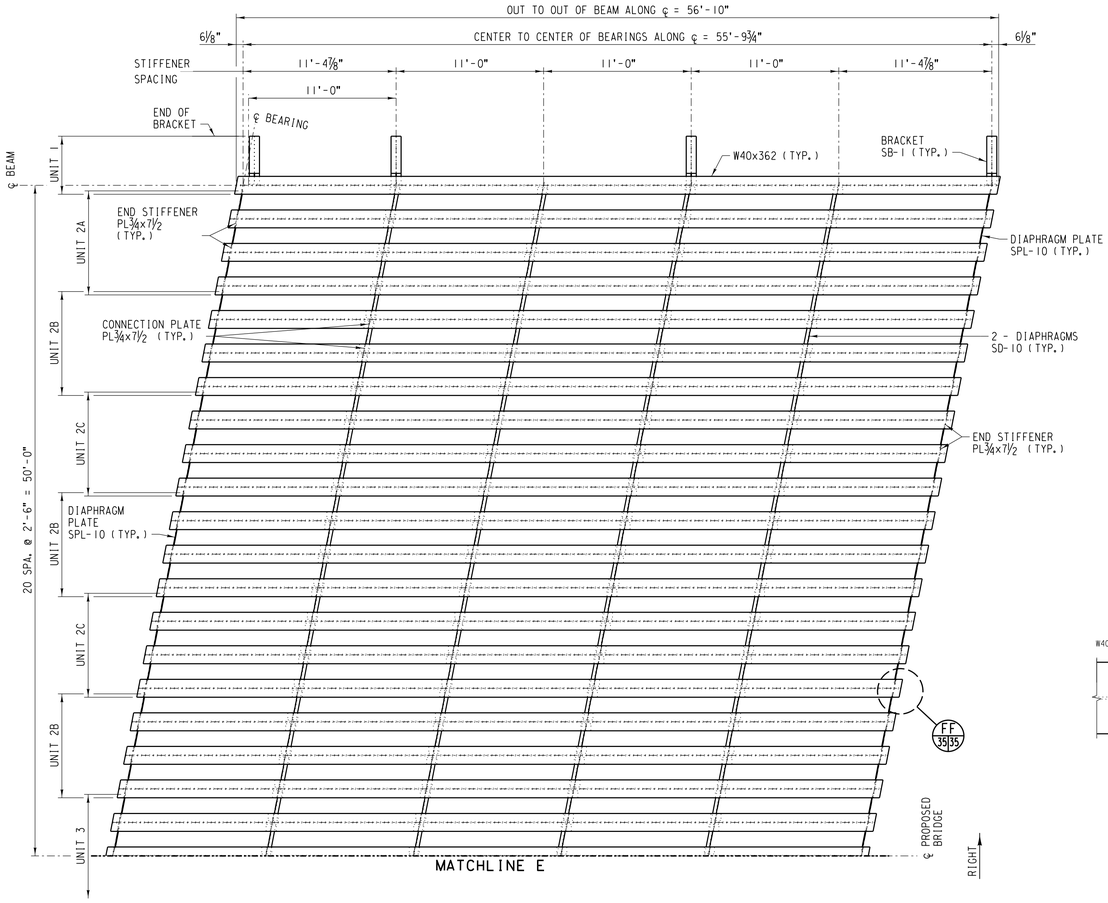
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	31876	122538

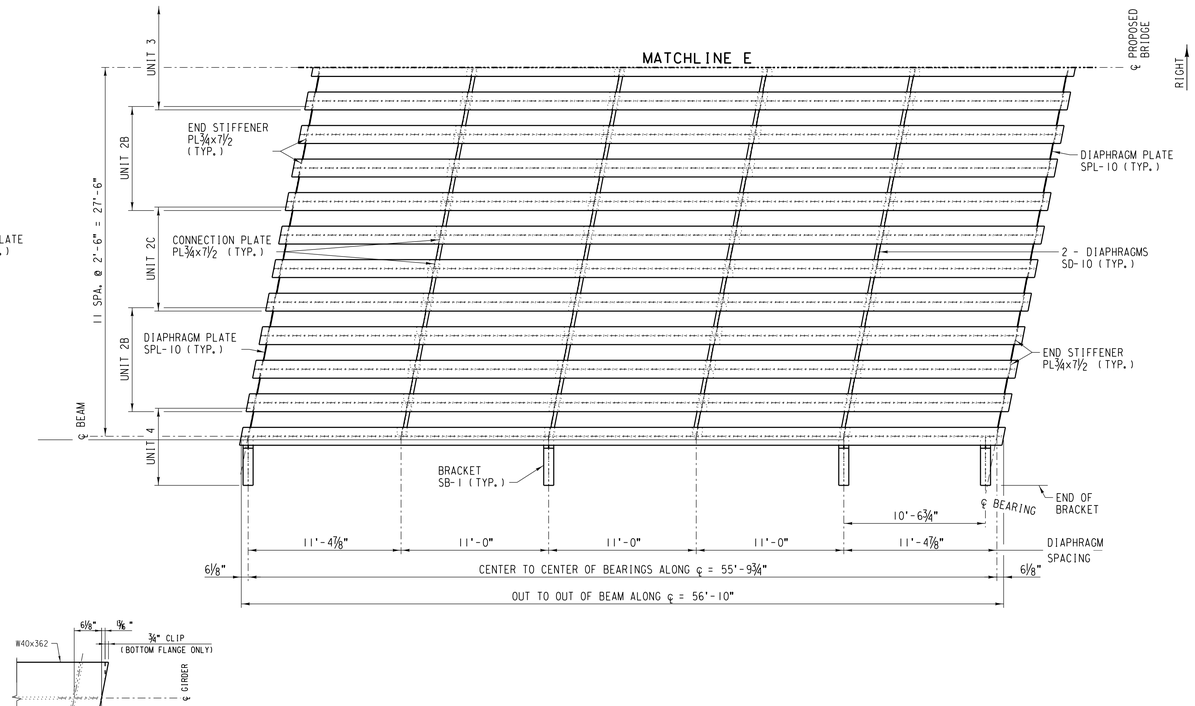
FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION LATITUDE: 41.86361 LONGITUDE: -87.68871

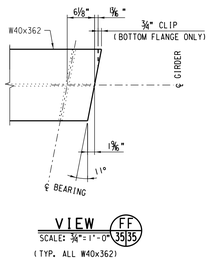
DSN/CHK BY: MRK/AAN	**UNION PACIFIC RAILROAD**
DRAWN/CHK BY: CDP/AAN	Office of Director Structures Design
UPRR ENGINEER: ADS/DEH	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
SHT NO.: T34 of T60	SHEET TITLE: SPAN 2 STEEL BEAM SPAN PLAN & ELEVATION (SHEET 2 OF 2)

FILE NAME: pw:\\Hanoch-pw.bentley.com:Hanoch-pw-01\Documents\210000s\210070.11\Engineering Docs\Bridges\16_Ogden (2.27)\Drawings\d00227.bsi.DGN

PLOTTED: 5/26/2021 10:42:39 AM







FRAMING PLAN (SPAN 2)

SCALE: 3/16"=1'-0"

NOTE:
FOR STRUCTURAL STEEL NOTES, SEE SHEET NO. T29.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL (STATUS) 05/28/2021 (DATE)

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL (CONSULTANT ENGINEER) 05/28/2021 (DATE)

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN
DRAWN/CHK BY: CDP/AAN
UPRR ENGINEER: ADS/DEH
SHT NO.: T35 of T60

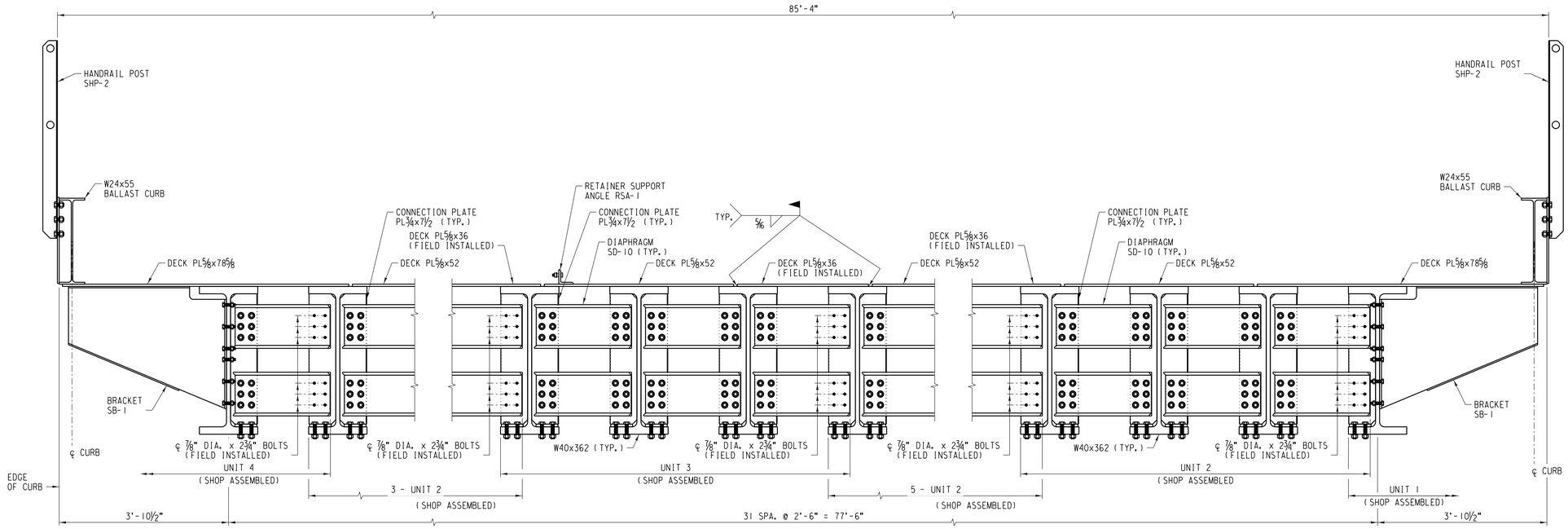
UNION PACIFIC RAILROAD
Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: SPAN 2 STEEL BEAM SPAN FRAMING PLAN

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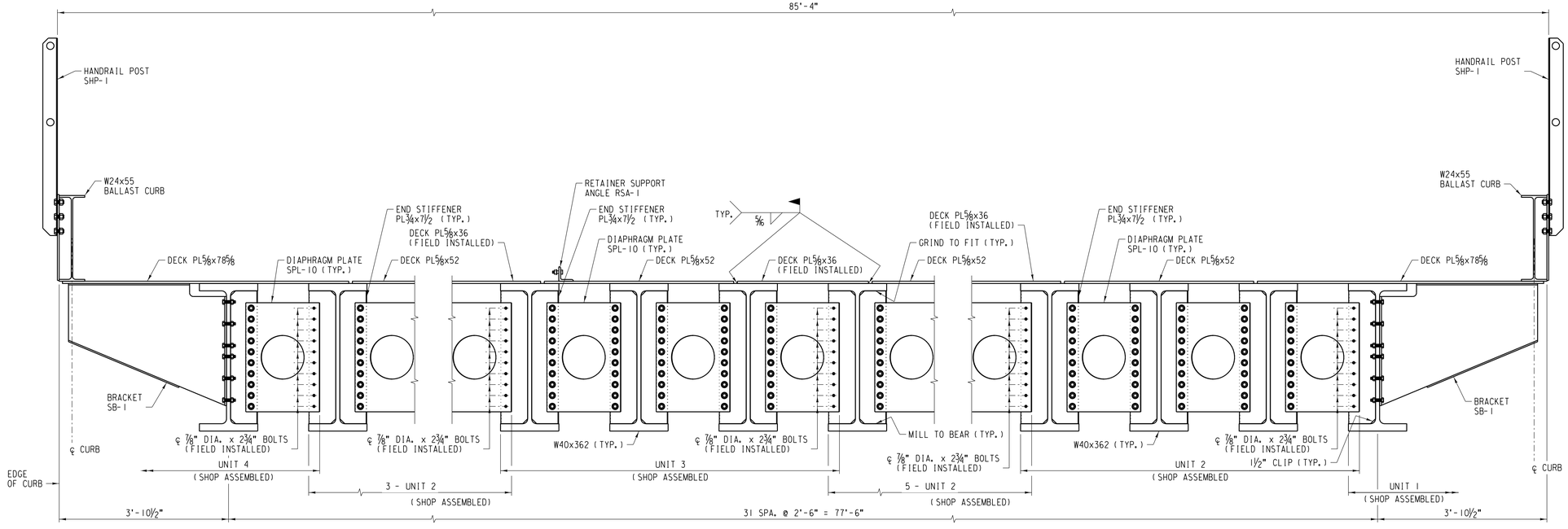


RIGHT →

SECTION (SPAN 2) - ASSEMBLED SPAN

SCALE: ¾"=1'-0"

SKEWED INTERIOR DIAPHRAGMS SHOWN



RIGHT →

SECTION (SPAN 2) - ASSEMBLED SPAN

SCALE: ¾"=1'-0"

SKEWED END DIAPHRAGMS SHOWN

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS: FINAL — STATUS — 05/28/2021 DATE

HANSON Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY:	MRK/AAN
DRAWN/CHK BY:	CDP/AAN
UPRR ENGINEER:	ADS/DEH
SHT NO.:	T36 of T60

UNION PACIFIC RAILROAD

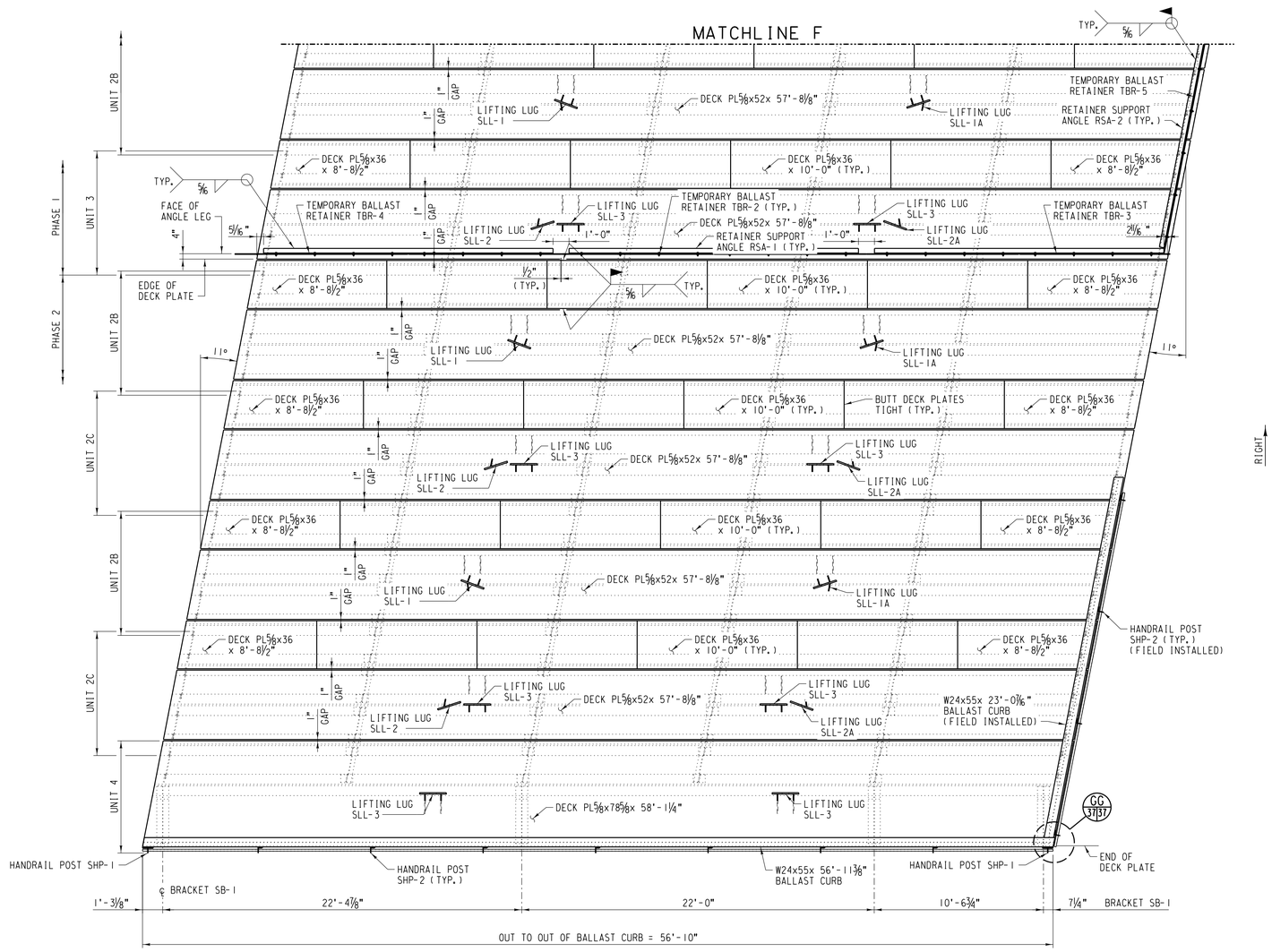
Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: SPAN 2 STEEL BEAM SPAN ASSEMBLY DETAILS

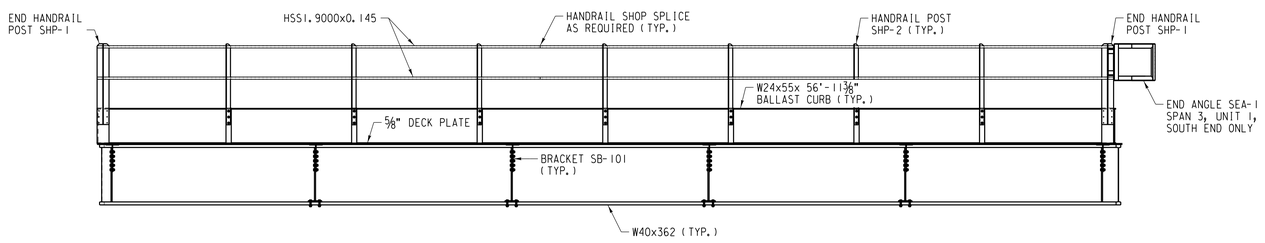
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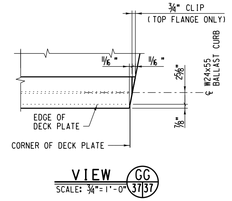
PARTIAL PLAN (SPAN 3) - DECK PLATE, CURBS AND HANDRAIL

SCALE: 1/4"=1'-0"



ELEVATION

SCALE: 1/4"=1'-0"



VIEW GG 37137

SCALE: 3/4"=1'-0"

STEEL SPAN LIFTING WEIGHTS

UNIT 2B = 73,080 LB. (36.6 TON)
UNIT 2C = 73,080 LB. (36.6 TON)
UNIT 3 = 74,190 LB. (37.1 TON)
UNIT 4 = 36,460 LB. (18.3 TON)
UNIT 2B AND UNIT 2C = 150,495 LB. (75.2 TON)
UNIT 2B AND UNIT 3 = 151,610 LB. (75.8 TON)

NOTES:

1. FOR STRUCTURAL STEEL NOTES, SEE SHEET NO. T29.
2. FOR HANDRAIL ASSEMBLY DETAILS, SEE SHEET NO. T42.
3. FOR LIFTING LUG LOCATIONS, SEE SHEET NO. T46 & T47.
4. AFTER ASSEMBLED SPAN IS IN FINAL POSITION, LIFTING LUGS SHALL BE BURNED OFF 1/2" MINIMUM AND 1" MAXIMUM ABOVE TOP OF DECK PLATE.
5. FOR LIFTING DIAGRAMS, SEE SHEET NO. T48.
6. TEMPORARY BALLAST RETAINERS SHALL BE SHIPPED LOOSE WITH UNIT 3.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:

FINAL — STATUS — 05/28/2021 DATE

HANSON Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

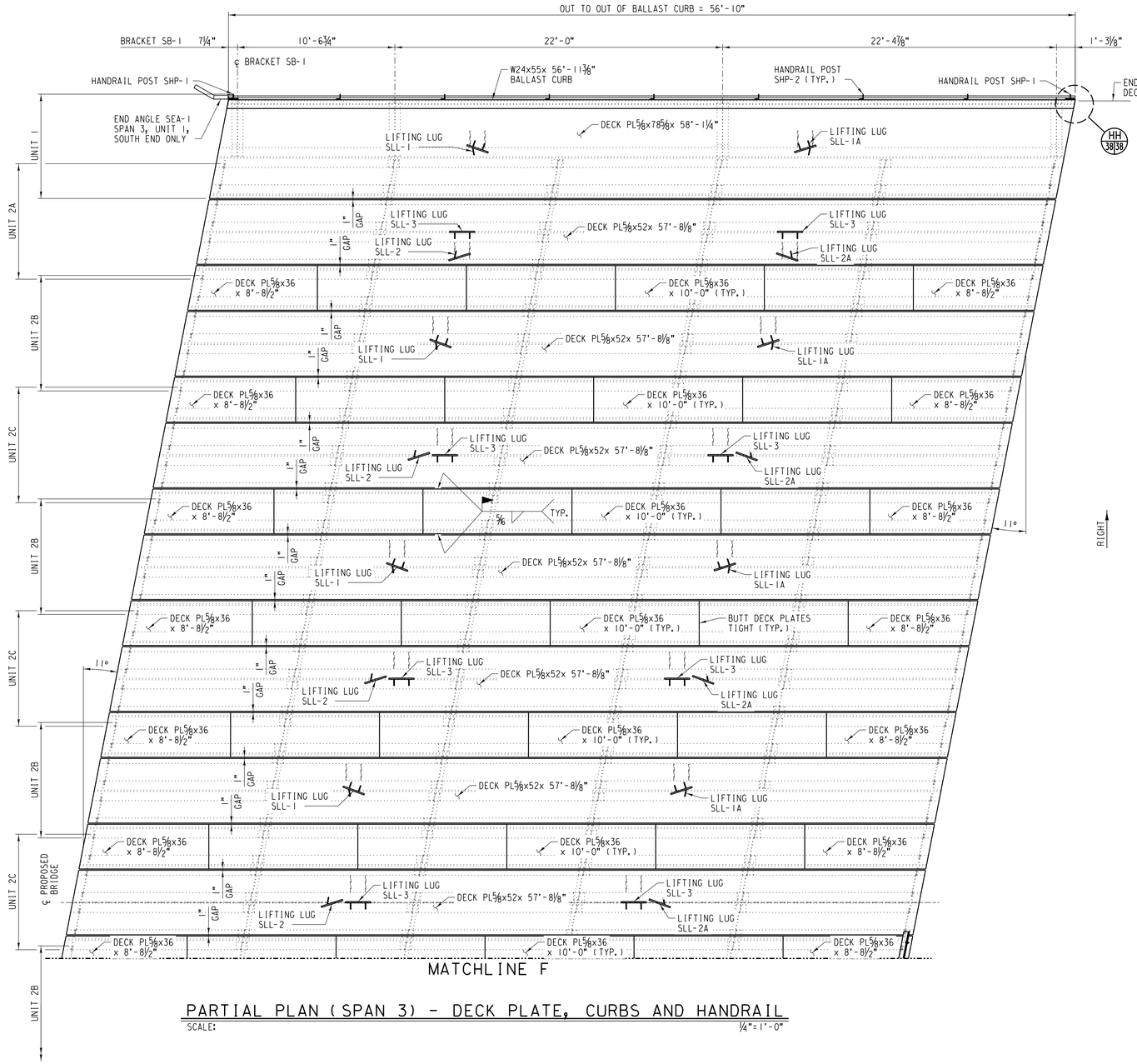
FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION

LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN	**UNION PACIFIC RAILROAD**
DRAWN/CHK BY: CDP/AAN	Office of Director Structures Design
UPRR ENGINEER: ADS/DEH	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
SHT NO.: T37 of T60	SHEET TITLE: SPAN 3 STEEL BEAM SPAN PLAN & ELEVATION (SHEET 1 OF 2)

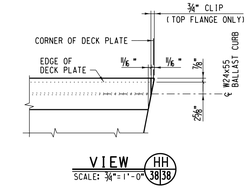
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PLOTTED: 5/26/2021 10:42:52 AM



PARTIAL PLAN (SPAN 3) - DECK PLATE, CURBS AND HANDRAIL

SCALE: ¼"=1'-0"



STEEL SPAN LIFTING WEIGHTS

UNIT 1 = 35,910 LB. (18.0 TON)
UNIT 2A = 73,080 LB. (36.6 TON)
UNIT 2B = 73,080 LB. (36.6 TON)
UNIT 2C = 73,080 LB. (36.6 TON)
UNIT 1 AND UNIT 2A = 108,975 LB. (54.5 TON)
UNIT 2B AND UNIT 2C = 150,495 LB. (75.2 TON)

NOTES:

1. FOR STRUCTURAL STEEL NOTES, SEE SHEET NO. T29.
2. FOR HANDRAIL ASSEMBLY DETAILS, SEE SHEET NO. T42.
3. FOR LIFTING LUG LOCATIONS, SEE SHEET NO. T46 & T47.
4. AFTER ASSEMBLED SPAN IS IN FINAL POSITION, LIFTING LUGS SHALL BE BURNED OFF ½" MINIMUM AND 1" MAXIMUM ABOVE TOP OF DECK PLATE.
5. FOR LIFTING DIAGRAMS, SEE SHEET NO. T48.
6. TEMPORARY BALLAST RETAINERS SHALL BE SHIPPED LOOSE WITH UNIT 3.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:

FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

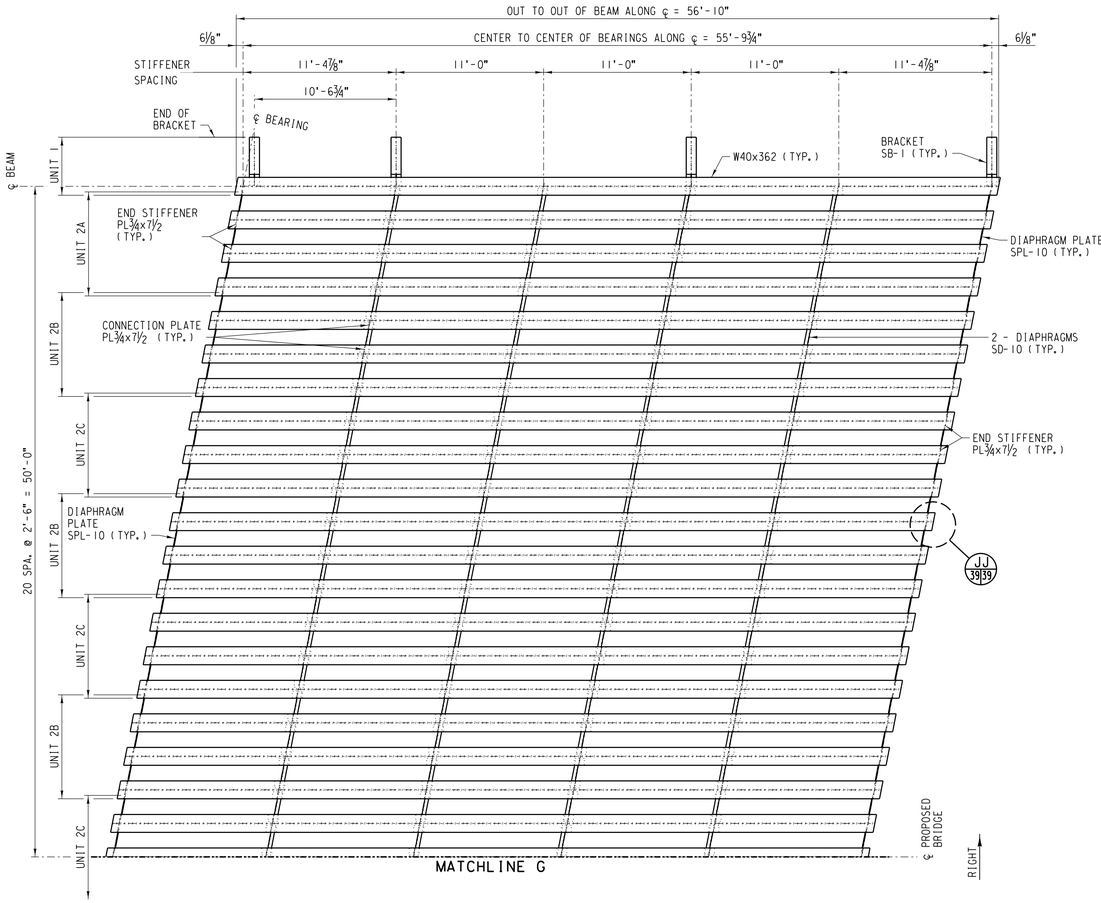
FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION

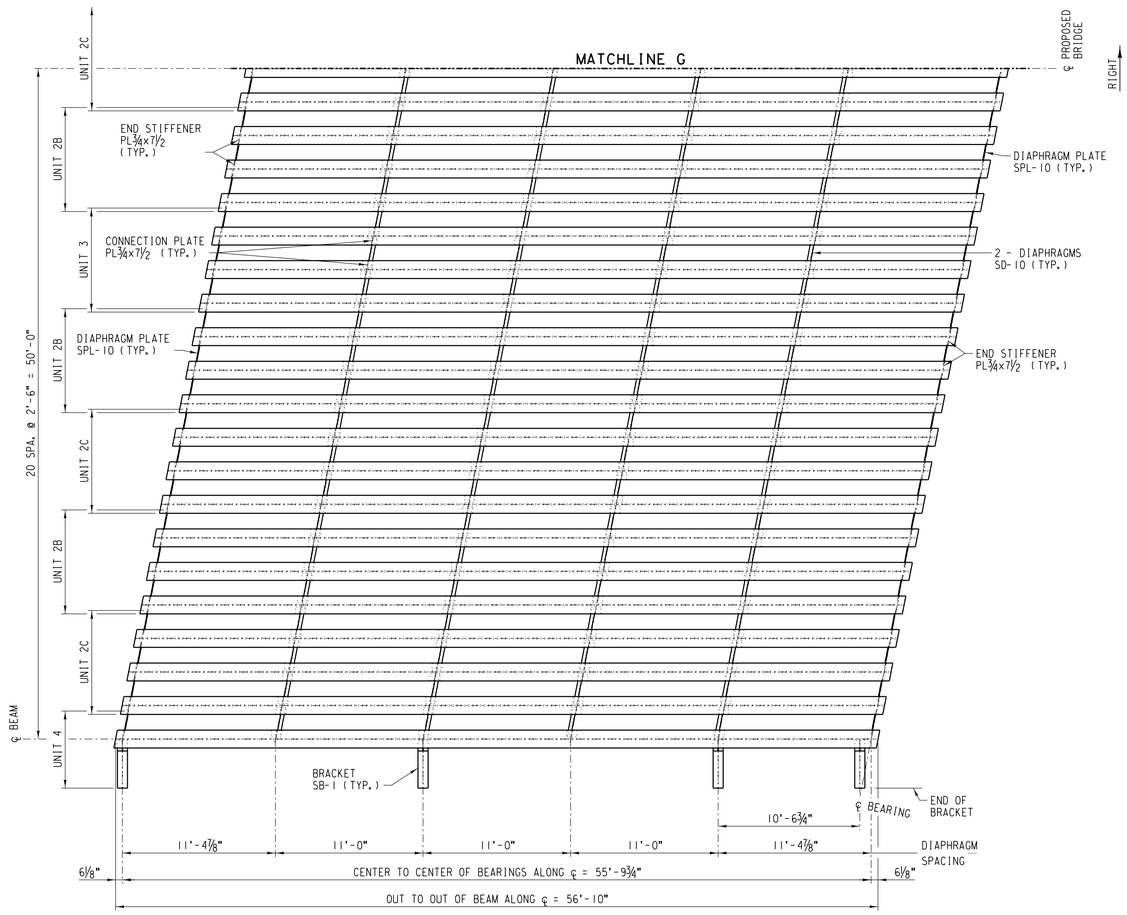
LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN	**UNION PACIFIC RAILROAD**
DRAWN/CHK BY: CDP/AAN	Office of Director Structures Design
UPRR ENGINEER: ADS/DEH	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
SHT NO.: T38 of T60	SHEET TITLE: SPAN 3 STEEL BEAM SPAN PLAN & ELEVATION (SHEET 2 OF 2)

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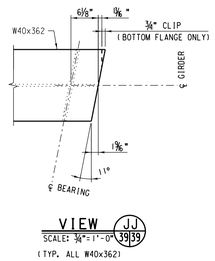
PLOTTED: 5/26/2021 10:42:56 AM





FRAMING PLAN (SPAN 3)

SCALE: 3/16" = 1'-0"



VIEW JJ 39/39

SCALE: ¾"=1'-0"

(TYP. ALL W40x362)

NOTE:
FOR STRUCTURAL STEEL NOTES, SEE SHEET NO. T29.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:

FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY:	MRK/AAN
DRAWN/CHK BY:	CDP/AAN
UPRR ENGINEER:	ADS/DEH
SHT NO.:	T39 of T60

UNION PACIFIC RAILROAD

Office of Director Structures Design

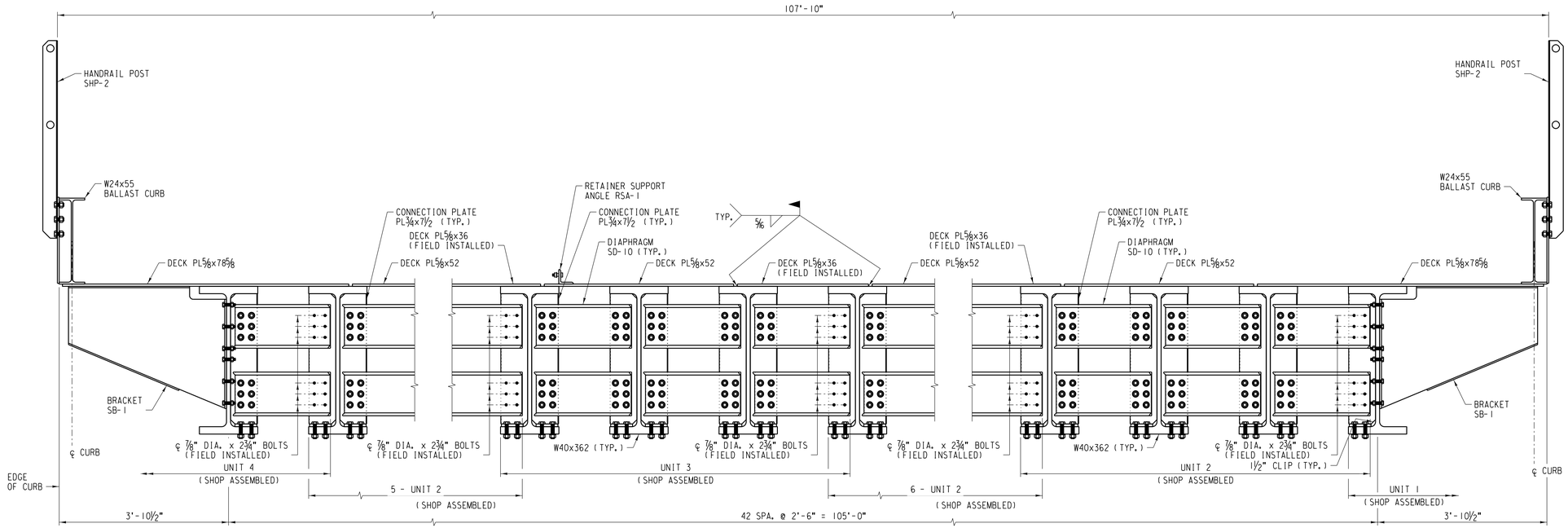
LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION

3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: SPAN 3 STEEL BEAM SPAN FRAMING PLAN

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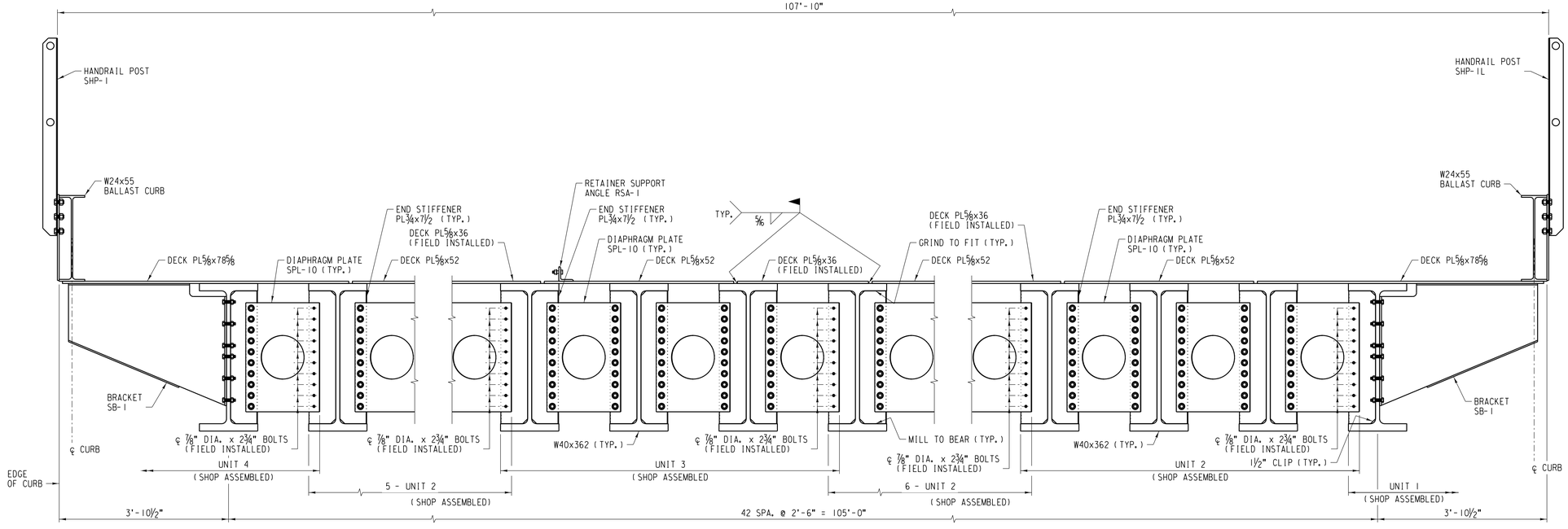


RIGHT →

SECTION (SPAN 3) - ASSEMBLED SPAN

SCALE: ¾"=1'-0"

SKEWED INTERIOR DIAPHRAGMS SHOWN



RIGHT →

SECTION (SPAN 3) - ASSEMBLED SPAN

SCALE: ¾"=1'-0"

SKEWED END DIAPHRAGMS SHOWN

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS: FINAL — STATUS — 05/28/2021 DATE

HANSON Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY:	MRK/AAN
DRAWN/CHK BY:	CDP/MRK
UPRR ENGINEER:	ADS/DEH
SHT NO.:	T40 of T60

UNION PACIFIC RAILROAD

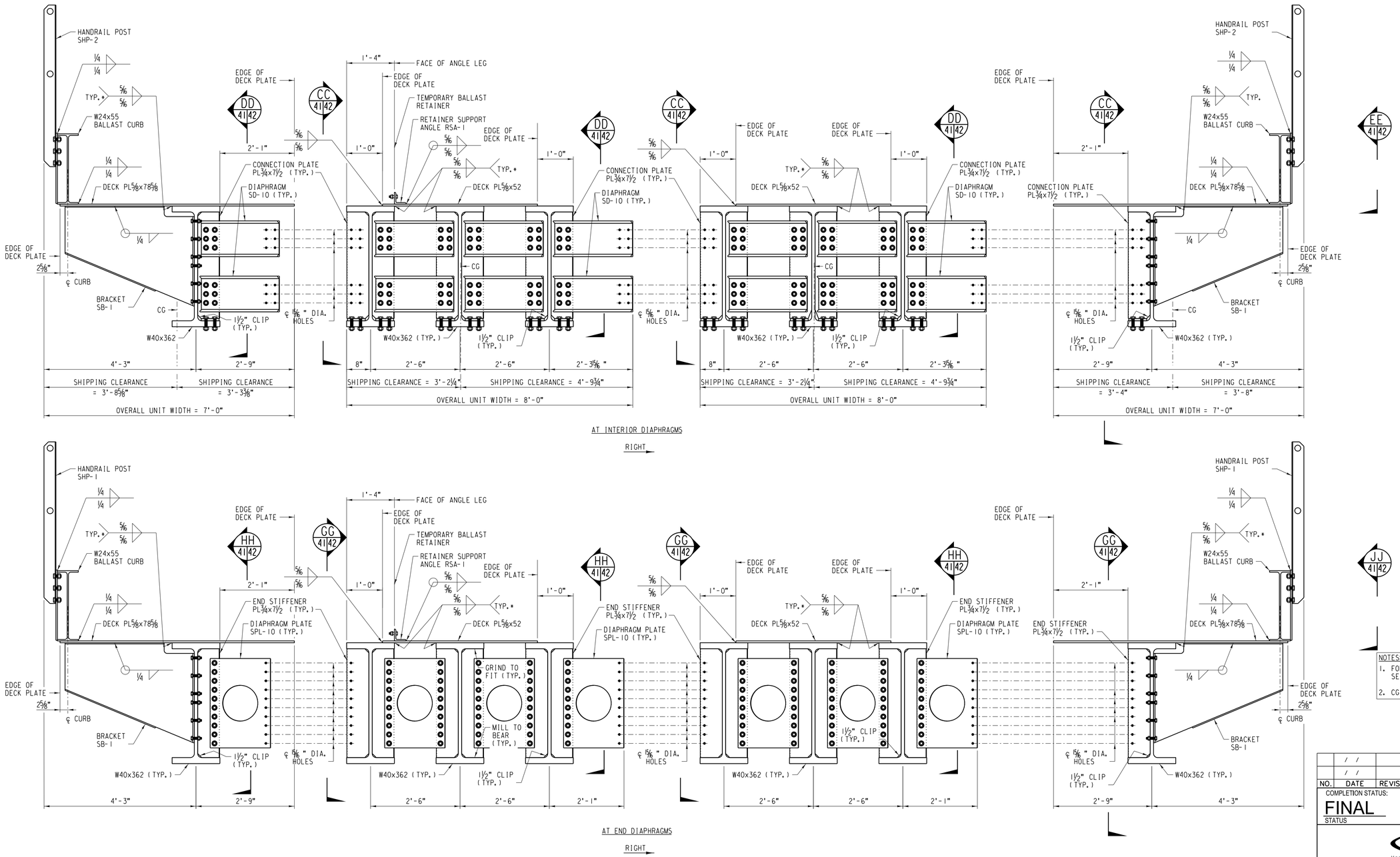
Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: SPAN 3 STEEL BEAM SPAN ASSEMBLY DETAILS

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PLOTTED: 5/26/2021 10:43:05 AM



SECTION - UNIT 4
SCALE: 3/4"=1'-0"

SECTION - UNIT 3
SCALE: 3/4"=1'-0"

SECTION - UNIT 2
SCALE: 3/4"=1'-0"

SECTION - UNIT 1
SCALE: 3/4"=1'-0"

* SEE SHEET T46 OR T47 FOR LOCATIONS OF LARGER REQUIRED DECK PLATE TO BEAM WELDS ADJACENT TO LIFTING LUGS.

NOTES:
1. FOR STRUCTURAL STEEL NOTES, SEE SHEET NO. T29.
2. CG = CENTER OF GRAVITY

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS: FINAL — STATUS — 05/28/2021 DATE

HANSON Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN
DRAWN/CHK BY: CDP/AAN
UPRR ENGINEER: ADS/DEH
SHT NO.: T41 of T60

UNION PACIFIC RAILROAD

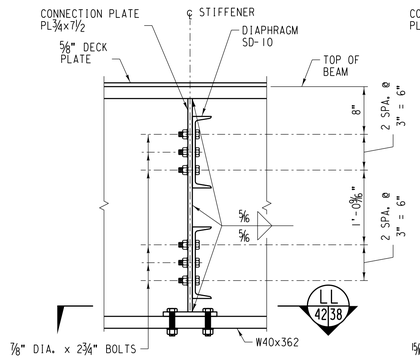
Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION

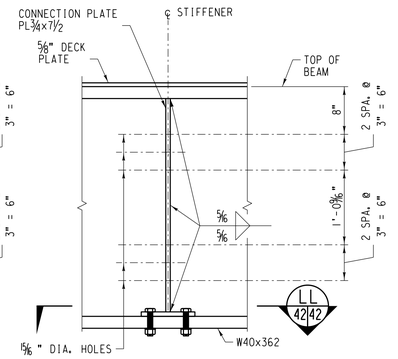
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: STEEL BEAM SPAN ASSEMBLY DETAILS (SHEET 1 OF 2)

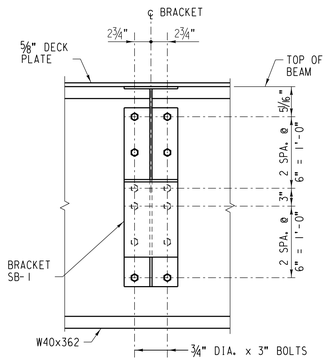
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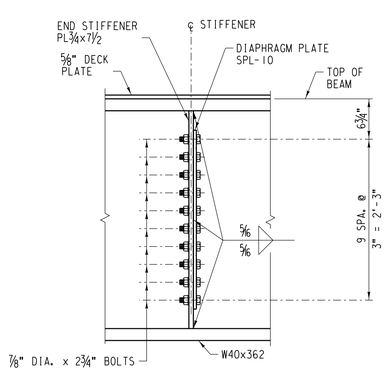
SECTION CC
SCALE: 1"=1'-0" 41|42



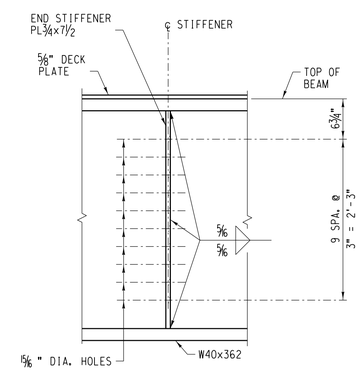
SECTION DD
SCALE: 1"=1'-0" 41|42



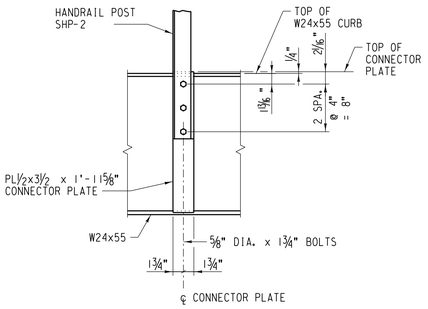
SECTION KK
SCALE: 1"=1'-0" 41|42



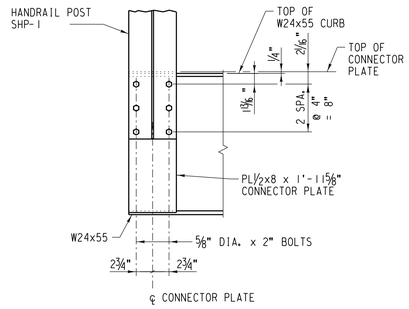
SECTION GG
SCALE: 1"=1'-0" 41|42



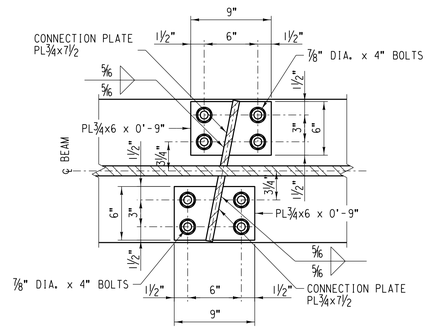
SECTION HH
SCALE: 1"=1'-0" 41|42



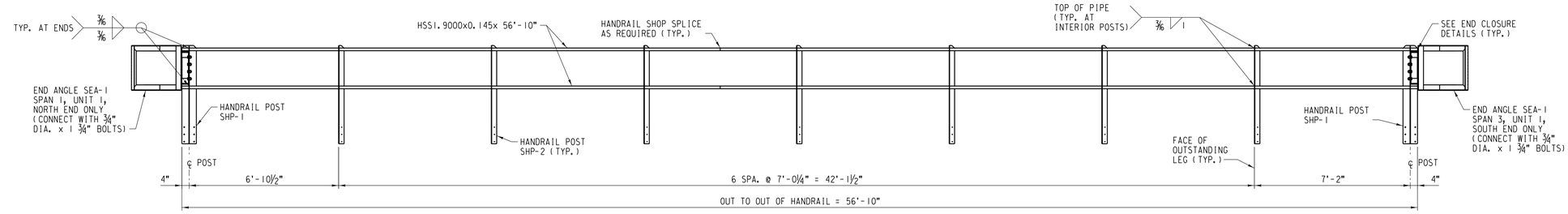
VIEW EE
SCALE: 1"=1'-0" 41|42



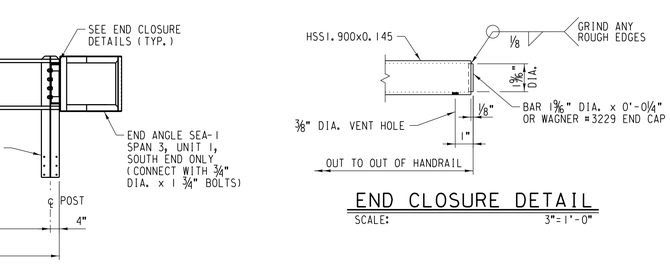
VIEW JJ
SCALE: 1"=1'-0" 41|42



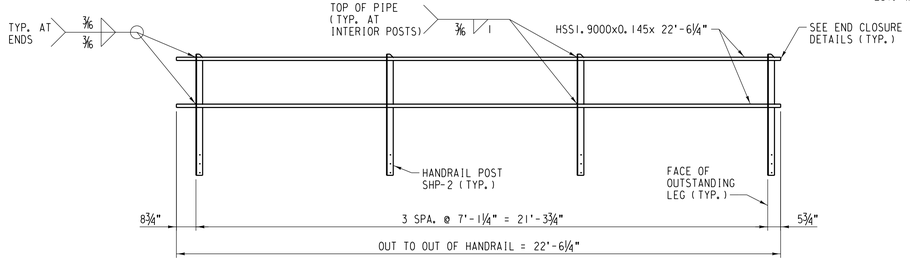
SECTION LL
SCALE: 1½"=1'-0" 42|42



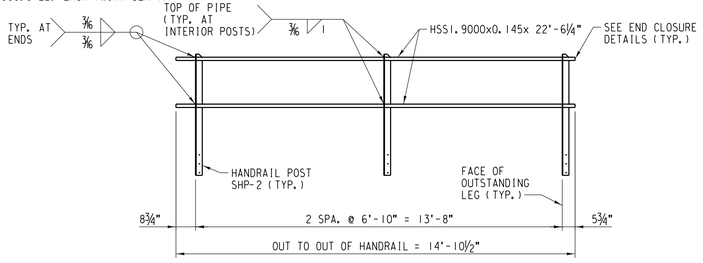
HANDRAIL ASSEMBLY DETAIL
SCALE: ⅜"=1'-0"
EST. WT. = 632.8 LB. EACH
EST. WT. = 688.8 LB. EACH (WITH SEA-1)



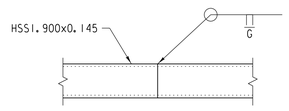
END CLOSURE DETAIL
SCALE: 3"=1'-0"



FIELD INSTALLED HANDRAIL ASSEMBLY DETAIL - SPAN 3
SCALE: ⅜"=1'-0"
EST. WT. = 227.3 LB. EACH



FIELD INSTALLED HANDRAIL ASSEMBLY DETAIL - SPAN 2
SCALE: ⅜"=1'-0"
EST. WT. = 159.5 LB. EACH



HANDRAIL SHOP SPLICE
SCALE: 3"=1'-0"

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

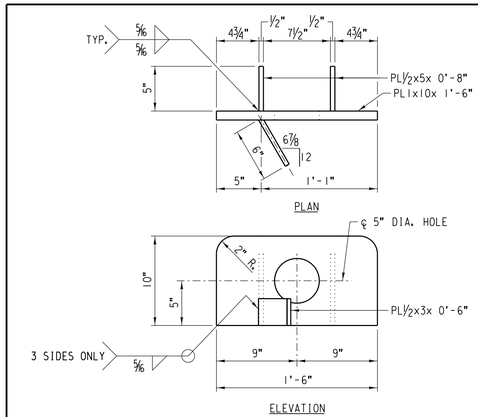
PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN	**UNION PACIFIC RAILROAD** — Office of Director Structures Design
DRAWN/CHK BY: CDP/AAN	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION — 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
UPRR ENGINEER: ADS/DEH	
SHT NO.: T42 of T60	SHEET TITLE: STEEL BEAM SPAN ASSEMBLY DETAILS (SHEET 2 OF 2)

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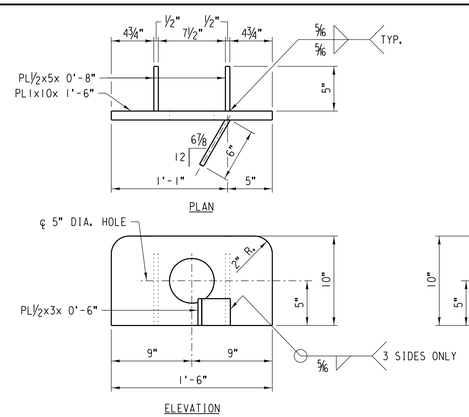
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LIFTING LUG SLL-1

SCALE: 1½"=1'-0"

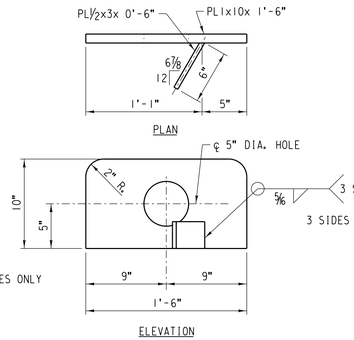
EST. WT. = 64.9 LB. EACH



LIFTING LUG SLL-1A

SCALE: 1½"=1'-0"

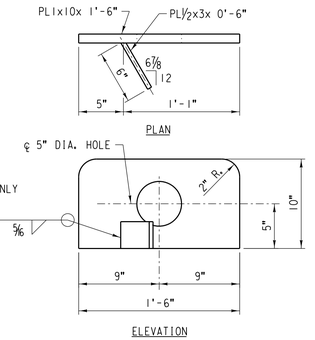
EST. WT. = 64.9 LB. EACH



LIFTING LUG SLL-2

SCALE: 1½"=1'-0"

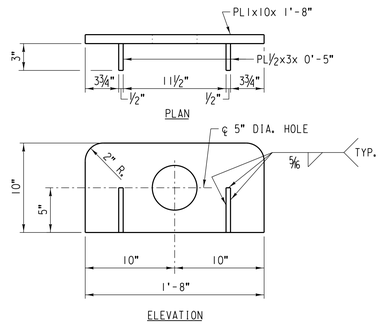
EST. WT. = 53.6 LB. EACH



LIFTING LUG SLL-2A

SCALE: 1½"=1'-0"

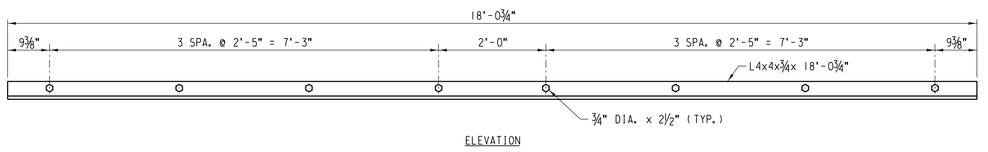
EST. WT. = 53.6 LB. EACH

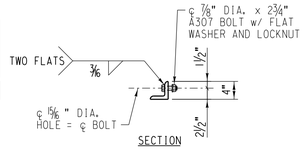


LIFTING LUG SLL-3

SCALE: 1½"=1'-0"

EST. WT. = 61.0 LB. EACH

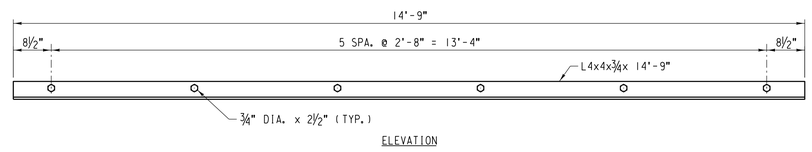


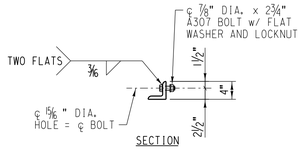


RETAINER SUPPORT ANGLE RSA-1

SCALE: ¾"=1'-0"

EST. WT. = 339.3 LB. EACH

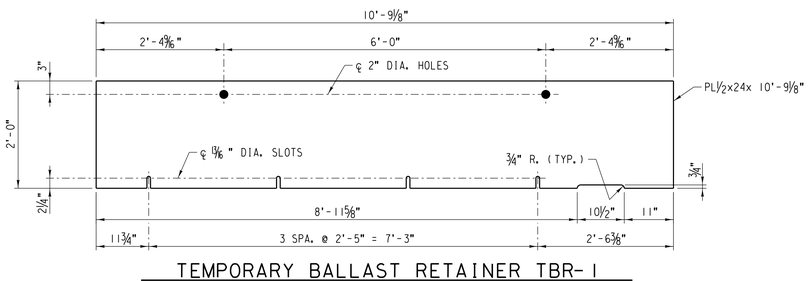




RETAINER SUPPORT ANGLE RSA-2

SCALE: ¾"=1'-0"

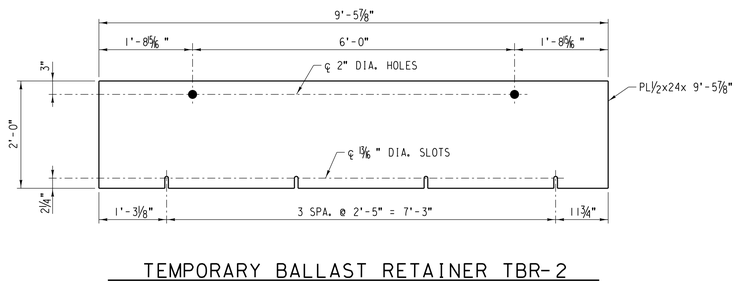
EST. WT. = 276.8 LB. EACH



TEMPORARY BALLAST RETAINER TBR-1

SCALE: ¾"=1'-0"

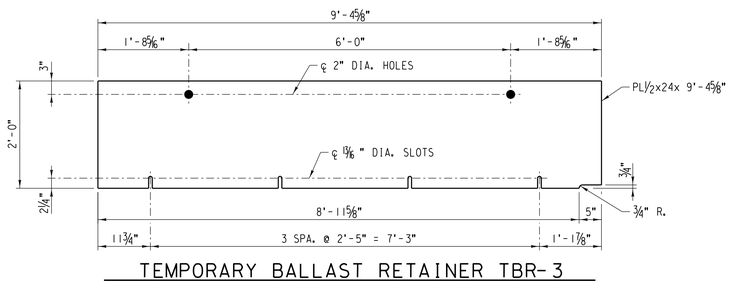
EST. WT. = 439.4 LB. EACH



TEMPORARY BALLAST RETAINER TBR-2

SCALE: ¾"=1'-0"

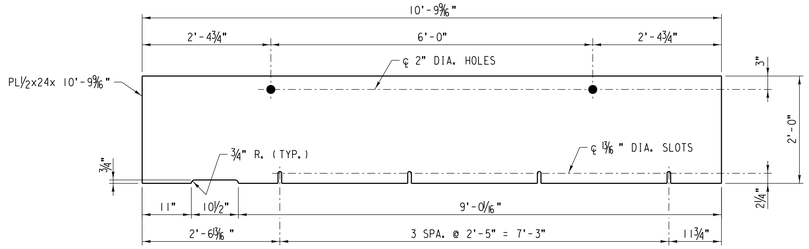
EST. WT. = 387.5 LB. EACH



TEMPORARY BALLAST RETAINER TBR-3

SCALE: ¾"=1'-0"

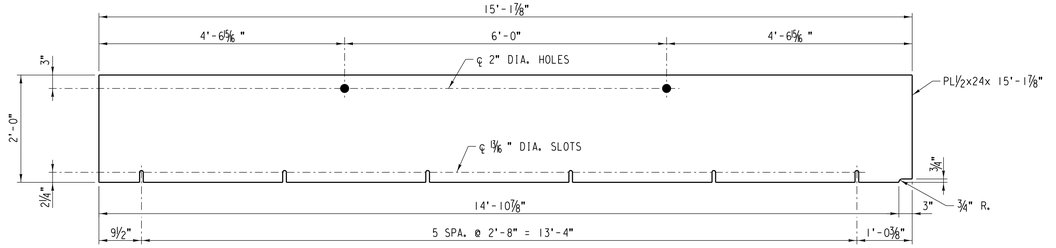
EST. WT. = 383.2 LB. EACH



TEMPORARY BALLAST RETAINER TBR-4

SCALE: ¾"=1'-0"

EST. WT. = 440.9 LB. EACH



TEMPORARY BALLAST RETAINER TBR-5

SCALE: ¾"=1'-0"

EST. WT. = 618.9 LB. EACH

NOTE:
FOR STRUCTURAL STEEL NOTES, SEE SHEET NO. T29.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID: | WORK ORDER: 31876 | C E NUMBER: 122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

UNION PACIFIC

DSN/CHK BY: MRK/AAN
DRAWN/CHK BY: CDP/AAN
UPRR ENGINEER: ADS/DEH
SHT NO.: T43 of T60

UNION PACIFIC RAILROAD

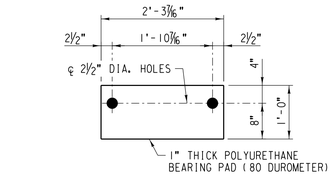
Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: STEEL BEAM SPAN PIECE MARK DETAILS (SHEET 1 OF 3)

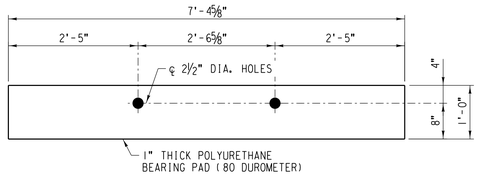
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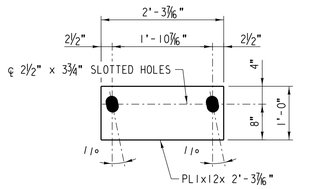
BEARING PAD SBP-10

SCALE: ¾"=1'-0"



BEARING PAD SBP-11

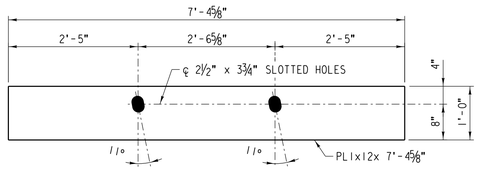
SCALE: ¾"=1'-0"



SOLE PLATE SSP-10E

SCALE: ¾"=1'-0"

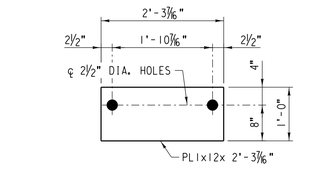
EST. WT. = 93.4 LB. EACH



SOLE PLATE SSP-11E

SCALE: ¾"=1'-0"

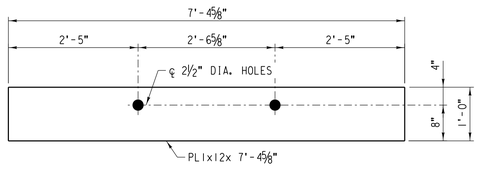
EST. WT. = 301.6 LB. EACH



SOLE PLATE SSP-10F

SCALE: ¾"=1'-0"

EST. WT. = 93.4 LB. EACH



SOLE PLATE SSP-11F

SCALE: ¾"=1'-0"

EST. WT. = 301.6 LB. EACH

BEARING PAD SPECIFICATIONS:

1. Bearing pads: shall be Random Oriented Fiber elastomeric material comprised of high-quality ozone-resistant virgin elastomer and synthetic fibers. Pads shall conform to the following minimum material properties:

Hardness (Shore A, ASTM D2240)	80 ± 5
Tensile Strength, psi (ASTM D412, Die C)	1000 ± 100
Ultimate Elongation, minimum %	40
Heat Aging (ASTM D573, 70 Hrs. @ noted temperature):	
Durometer, 212° F, maximum point change	± 10
Tensile Strength, 158° F, maximum % change	± 25
Ultimate Elongation, 212° F, maximum % change	± 25
Compression, minimum ultimate strength, psi	8000
Apparent Shear Modulus (GA), psi, based on tests conducted at 70° F to 80° F under uniform compressive stresses of 500, 1000, and 1500 psi and at applied horizontal shear plus slip strain of 50%. GA is constant in all directions parallel to the bearing plane.	230 + 30

2. Bearing pads shall be Voss Engineering, Inc., "Fiberlast" expansion bearing pads or approved equal.
3. Cutting of the pads shall be done so that the edges have no tears or other jagged areas.
4. Permissible tolerances of the pad shall be as stated in Chapter 15, Section 5.12.6 of the 2019 AREMA Manual for Railway Engineering.
5. The cap fabricator shall fasten the bearing pads to the cap by using the following procedure: clean pads according to manufacturer's recommendations; prime contact surface and glue to cap with Sikadur 31 Hi-Mod Gel (1:1 mix ratio) or approved equal.
6. Fabrication of bearings shall be performed by a Fabricator certified under AISC Quality Certification Program for Certified Metal Component Manufacturer (CPT).

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:

FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

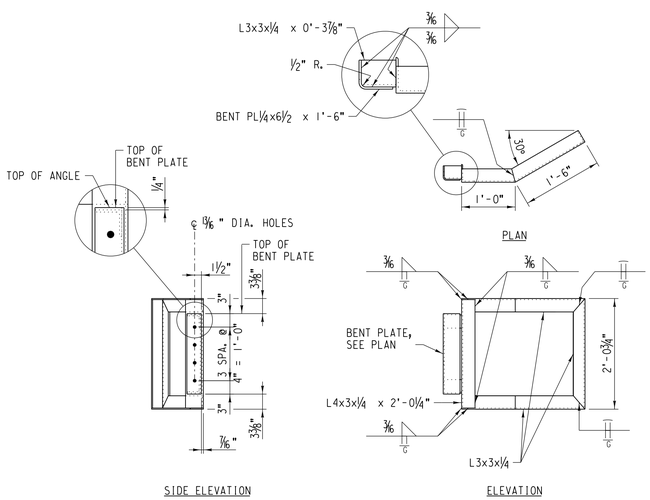
PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN	**UNION PACIFIC RAILROAD**
DRAWN/CHK BY: CDP/MRK	Office of Director Structures Design
UPRR ENGINEER: ADS/DEH	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
SHT NO.: T44 of T60	SHEET TITLE: STEEL BEAM SPAN PIECE MARK DETAILS (SHEET 2 OF 3)

FILE NAME: pw:\\mpmesch-pw.bentley.com:bmesch-pw-01\Documents\210000\s\210070.11\Engineering Docs\Bridges\16_Ogden (2.27)\Ionsw_ac00227_bsi.DGN

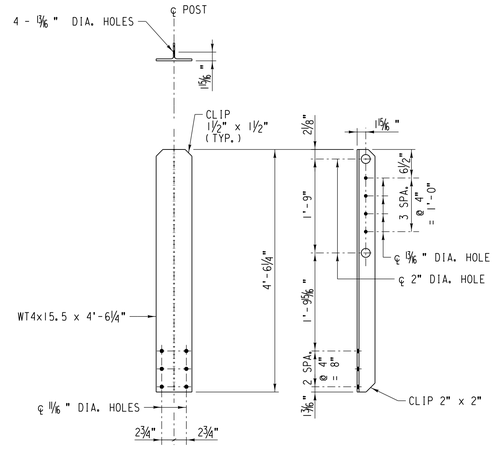
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END ANGLE ASSEMBLY SEA-1

SCALE: ¾"=1'-0"

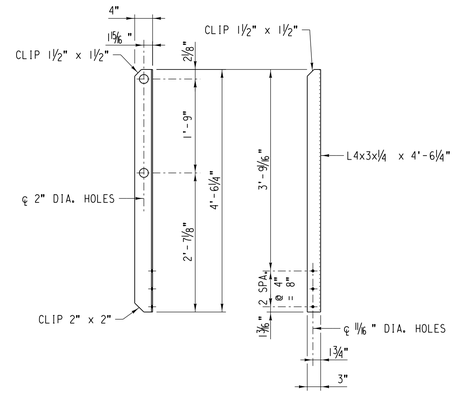
EST. WT. = 56.0 LB. EACH



HANDRAIL POST SHP-1

SCALE: ¾"=1'-0"

EST. WT. = 70.1 LB. EACH



HANDRAIL POST SHP-2

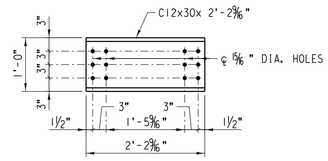
SCALE: ¾"=1'-0"

EST. WT. = 26.2 LB. EACH

ANCHOR ROD SAR-2

SCALE: NONE

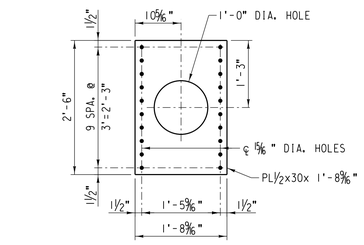
EST. WT. = 12.6 LB. EACH



DIAPHRAGM SD-10

SCALE: ¾"=1'-0"

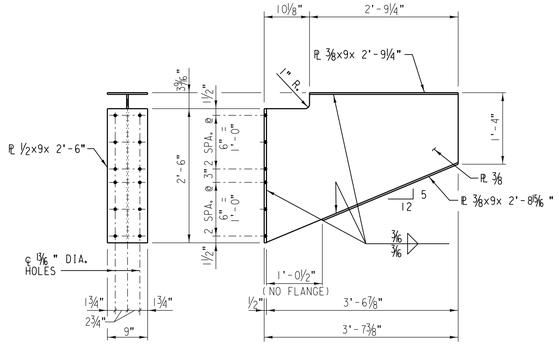
EST. WT. = 66.4 LB. EACH



DIAPHRAGM PLATE SPL-10

SCALE: ¾"=1'-0"

EST. WT. = 87.5 LB. EACH



BRACKET MK. SB-1

SCALE: ¾" = 1'-0"

EST. WT. = 209 LB. EACH

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS: FINAL — STATUS — 05/28/2021 DATE

HANSON Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

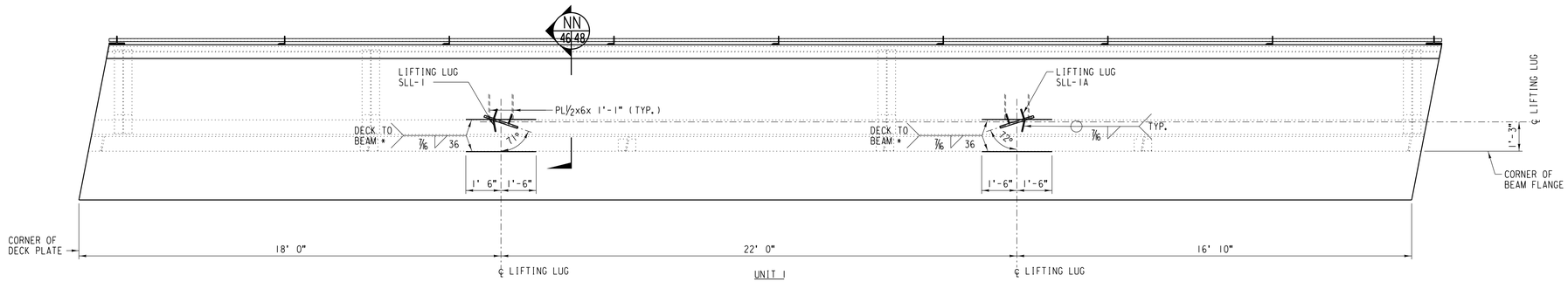
PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

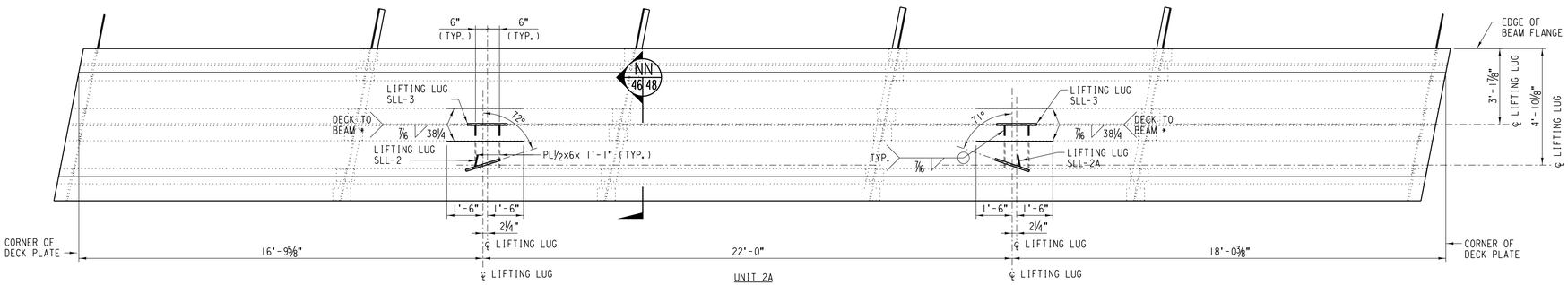
FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

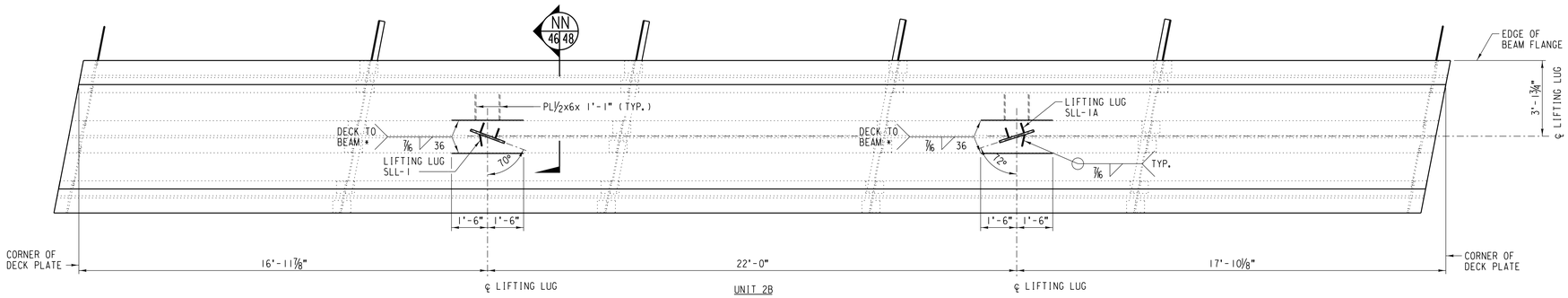
DSN/CHK BY: MRK/AAN	**UNION PACIFIC RAILROAD** — Office of Director Structures Design
DRAWN/CHK BY: CDP/AAN	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION
UPRR ENGINEER: ADS/DEH	3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
SHT NO.: T45 of T60	SHEET TITLE: STEEL BEAM SPAN PIECE MARK DETAILS (SHEET 3 OF 3)

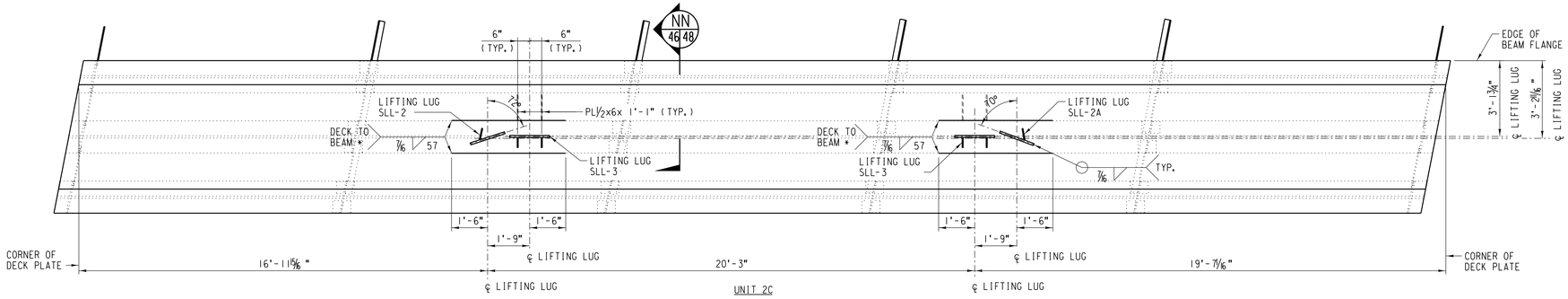
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PLOTTED: 5/26/2021 10:43:27 AM









LIFTING LUG LAYOUT

SCALE: ⅜"=1'-0"

RIGHT

* LOCALIZED DECK TO BEAM WELD IS IN LIEU OF NORMAL ⅜" FILLET WELD

NOTE:
FOR STRUCTURAL STEEL NOTES, SEE SHEET NO. T29.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS
05/28/2021 — DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER
05/28/2021 — DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION

LATITUDE: 41.86361 LONGITUDE: -87.68871

UNION PACIFIC

DSN/CHK BY:	MRK/AAN
DRAWN/CHK BY:	CDP/AAN
UPRR ENGINEER:	ADS/DEH
SHT NO.:	T46 of T60

UNION PACIFIC RAILROAD

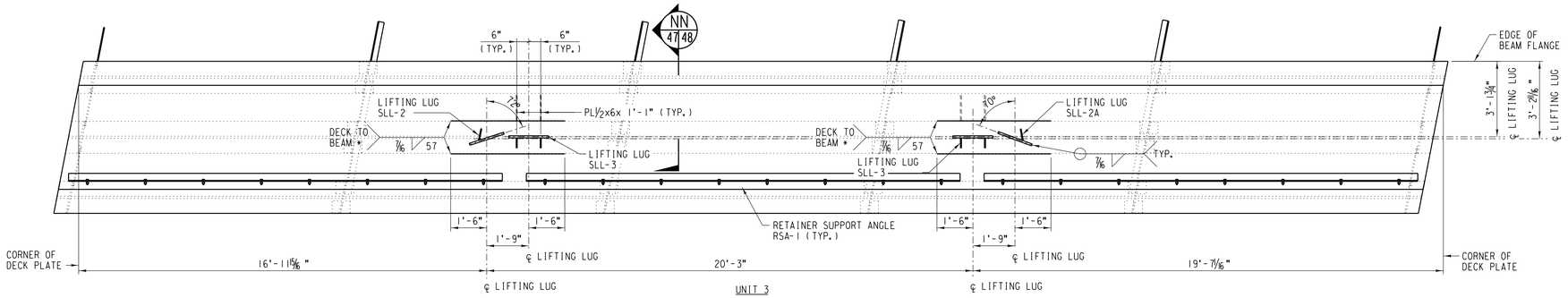
Office of Director Structures Design

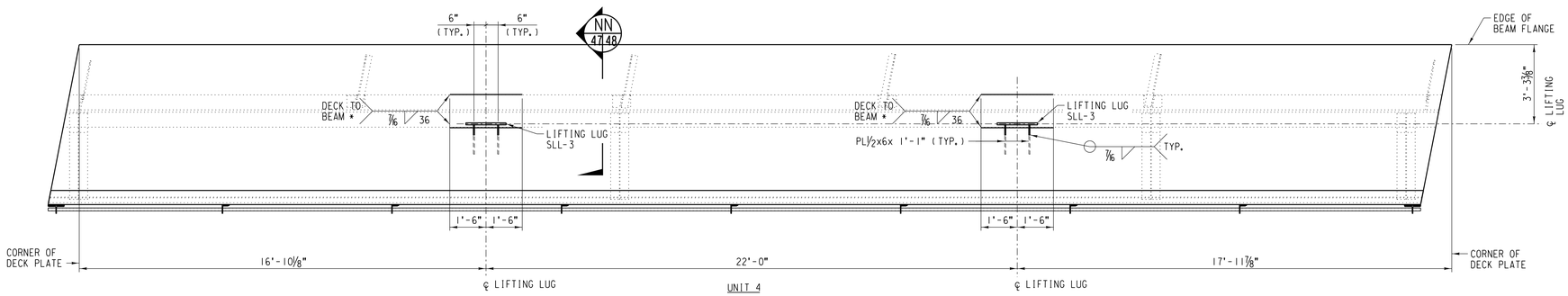
LOCATION & DESCRIPTION:
BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE:
STEEL BEAM SPAN LIFTING LUG LAYOUT (SHEET 1 OF 2)

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PLOTTED: 5/26/2021 10:43:31 AM





RIGHT

LIFTING LUG LAYOUT

SCALE: ⅜"=1'-0"

* LOCALIZED DECK TO BEAM WELD IS IN LIEU OF NORMAL ⅝" FILLET WELD

NOTE:
FOR STRUCTURAL STEEL NOTES, SEE SHEET NO. T29.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS
05/28/2021 — DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL — CONSULTANT ENGINEER
05/28/2021 — DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION

LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN
DRAWN/CHK BY: CDP/AAN
UPRR ENGINEER: ADS/DEH
SHT NO.: T47 of T60

UNION PACIFIC RAILROAD

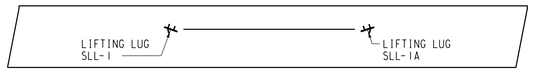
Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

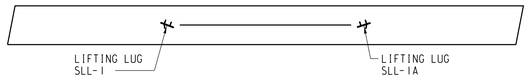
SHEET TITLE: STEEL BEAM SPAN LIFTING LUG LAYOUT (SHEET 2 OF 2)

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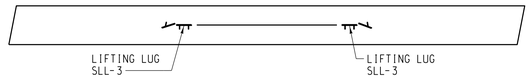
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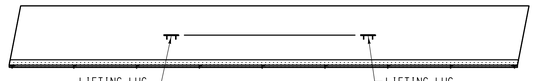
PLAN - UNIT 1 (2 - POINT PICKUP)



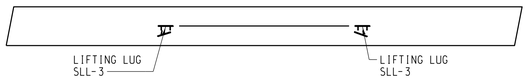
PLAN - UNIT 2B (2 - POINT PICKUP)



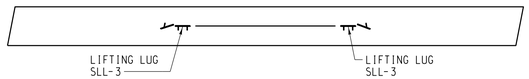
PLAN - UNIT 3 (2 - POINT PICKUP)



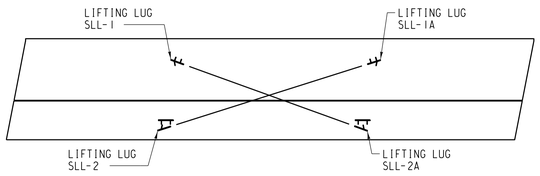
PLAN - UNIT 4 (2 - POINT PICKUP)



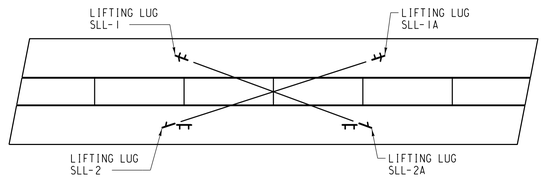
PLAN - UNIT 2A (2 - POINT PICKUP)



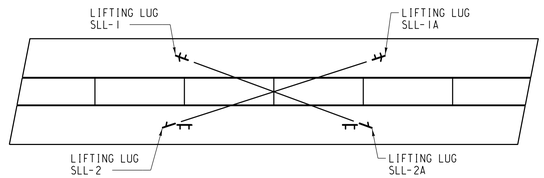
PLAN - UNIT 2C (2 - POINT PICKUP)



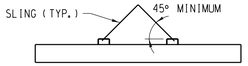
PLAN - UNITS 1 AND 2A (4 - POINT PICKUP)



PLAN - UNITS 2B AND 2C (4 - POINT PICKUP)



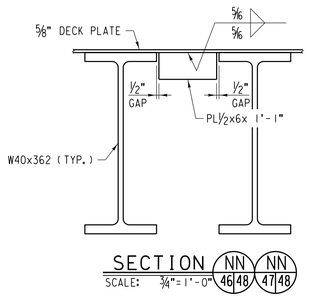
PLAN - UNITS 2B AND 3 (4 - POINT PICKUP)



TYPICAL ELEVATION
(CURB NOT SHOWN)

LIFTING DIAGRAMS

SCALE: NONE



NOTE:
DIAPHRAGM AND LIFTING LUGS NOT SHOWN FOR CLARITY.

SECTION NN 46|48 NN 47|48

SCALE: 3/4"=1'-0"

NOTE:
FOR STRUCTURAL STEEL NOTES, SEE SHEET NO. T29.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:

FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN
DRAWN/CHK BY: CDP/MRK
UPRR ENGINEER: ADS/DEH
SHT NO.: T48 of T60

UNION PACIFIC RAILROAD

Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: STEEL BEAM SPAN LIFTING LUG DIAGRAMS AND DETAILS

FILE NAME: pw:\\mpenesch-pw.bentley.com:benesch-pw-01\Documents\210000s\210070.11\Engineering Docs\Bridges\16_Ogden (2.27)\Ironsw\ed00227.bsi.DGN
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STEEL BEAM SPAN MATERIAL LIST - SHOP ASSEMBLY

UNIT	W40x362 BEAM (EA.)	DIAPHRAGM					BRACKET SB-1 (EA.)	RETAINER SUPPORT ANGLE RSA-1 (EA.)	I-W24x55 CURB LENGTH	I-5/8" - DECK PLATE		HANDRAIL						LIFTING LUG						A325 BOLT					
		SPL-10 (EA.)	SD-10 (EA.)	END STIFFENER PLATE 3/4" x 7 1/2" (EA.)	CONNECTION PLATE 3/4"x7 1/2" (EA.)	PL 3/4x6 x 0'-9" (EA.)				WIDTH	LENGTH	2-HSS 1.900x0.145 LENGTH	POST SHP-1 (EA.)	POST SHP-2 (EA.)	END ANGLE ASSEMBLY SEA-1 (EA.)	PL 1/2x8 x 1'-11 5/8" (EA.)	PL 1/2x3 1/2 x 1'-11 5/8" (EA.)	SLL-1 (EA.)	SLL-1A (EA.)	SLL-2 (EA.)	SLL-2A (EA.)	SLL-3 (EA.)	PL 1/2x6x 0'-11" (EA.)	5/8" DIA. x 1 3/4" BOLT (EA.)	5/8" DIA. x 2" BOLT (EA.)	3/4" DIA. x 1 3/4" BOLT (EA.)	3/4" DIA. x 3" BOLT (EA.)	7/8" DIA. x 2 3/4" BOLT (EA.)	7/8" DIA. x 4" BOLT (EA.)
1	1	-	-	2	4	4	4	-	56'-11 3/8"	78 5/8"	58'-1 1/4"	56'-10"	2	7	1 *	2	7	1	1	-	-	-	4	21	12	4 *	48	-	16
2A	3	6	24	12	24	24	-	-	-	52"	57'-8 1/8"	-	-	-	-	-	-	-	-	1	1	2	4	-	-	-	-	340	96
2B	3	6	24	12	24	24	-	-	-	52"	57'-8 1/8"	-	-	-	-	-	-	1	1	-	-	-	4	-	-	-	-	340	96
2C	3	6	24	12	24	24	-	-	-	52"	57'-8 1/8"	-	-	-	-	-	-	-	-	1	1	2	4	-	-	-	-	340	96
3	3	6	24	12	24	24	-	3	-	52"	57'-8 1/8"	-	-	-	-	-	-	-	-	1	1	2	4	-	-	-	-	340	96
4	1	2	8	2	4	4	4	-	56'-11 3/8"	78 5/8"	58'-1 1/4"	56'-10"	2	7	-	2	7	-	-	-	-	2	4	21	12	-	48	68	48

NOTE:
* = OCCURS AT SPANS 1 & 3 ONLY.

STEEL BEAM SPAN MATERIAL LIST - FIELD ASSEMBLY

SPAN	PHASE	DECK PLATE PL 5/8x36 x 8'-8 1/2" (EA.)	DECK PLATE PL 5/8x36 x 10'-0" (EA.)	A325 BOLT 7/8" DIA. x 2 3/4" BOLT (EA.)	ANCHOR ROD SAR-2 (EA.)	BEARING PAD SBP-10 (EA.)	BEARING PAD SBP-11 (EA.)	SOLE PLATE SSP-10E (EA.)	SOLE PLATE SSP-10F (EA.)	SOLE PLATE SSP-11E (EA.)	SOLE PLATE SSP-11F (EA.)	RETAINER SUPPORT ANGLE RSA-2 (EA.)	TEMPORARY BALLAST PLATES TBR-1 (EA.)	TEMPORARY BALLAST PLATES TBR-2 (EA.)	TEMPORARY BALLAST PLATES TBR-3 (EA.)	TEMPORARY BALLAST PLATES TBR-4 (EA.)	TEMPORARY BALLAST PLATES TBR-5 (EA.)	I-W24x55 CURB LENGTH	RETAINER PLATE 3/8"x3 1/4"	HANDRAIL 2-HSS 1.9000x0.145 LENGTH	HANDRAIL POST SHP-2 (EA.)	HANDRAIL CONNECTOR PLATE 1/2x3 1/2x1 5/8
1	1	8	16	340	24	2	10	1	1	5	5	-	1	2	-	1	-	-	-	-	-	-
	2	6	12	272	16	2	6	1	1	3	3	-	-	-	-	-	-	-	-	-	-	-
2	1	12	24	476	32	2	14	1	1	7	7	1	-	2	1	1	1	-	-	-	-	-
	2	6	12	272	16	2	6	1	1	3	3	-	-	-	-	-	-	15'-4 7/8"	2	14'-10 1/2"	3	3
3	1	16	32	612	40	2	18	1	1	9	9	1	-	2	1	1	1	-	-	-	-	-
	2	8	16	340	20	2	8	1	1	4	4	-	-	-	-	-	-	23'-0 7/16"	2	22'-6 1/4"	4	4

STEEL BEAM SPAN - SHIPPING DATA

UNIT	OVERALL WIDTH	SHIPPING CLEARANCE LEFT	SHIPPING CLEARANCE RIGHT	SHIPPING WEIGHT (LB)	SHIPPING WEIGHT (TON)
1	7'-0"	3'-4"	3'-8"	35,910	18
2	8'-0"	3'-2 1/4"	4'-9 3/4"	73,080	36.6
3	8'-0"	3'-2 1/4"	4'-9 3/4"	74,190	37.1
4	7'-0"	3'-8 5/16"	3'-3 3/16"	36,460	18.3

NOTES:
1. UNIT 1 AND 4 ARE SHIPPED WITH HANDRAIL ATTACHED
2. SHIPPING CLEARANCE LEFT AND RIGHT ARE FROM CG
3. CG = CENTER OF GRAVITY

LIFTING WEIGHT - ASSEMBLED SPAN

SPAN	BEAM SIZE	LIFTING WEIGHT (LB)	LIFTING WEIGHT (TON)
1	W40x362	707,475	353.8
2	W40x362	866,620	433.4
3	W40x362	1,105,345	552.7

NOTE:
WEIGHT INCLUDES UNITS, SOLE PLATES AND FIELD INSTALLED DECK PLATES

GIRDER STRESS TABLE

SPAN LENGTH (L)	BEAM	SHEAR DEAD LOAD (k)	SHEAR LIVE LOAD E 80 (k)	SHEAR LIVE LOAD ALTERNATE (k)	SHEAR IMPACT (k)	SHEAR CENTRIFUGAL (k)	SHEAR TOTAL (k)	SHEAR WEB AREA (Aw) REQUIRED (IN²)	SHEAR WEB AREA (Aw) PROVIDED GROSS (IN²)	MOMENT DEAD LOAD (k-ft)	MOMENT LIVE LOAD E 80 (k-ft)	MOMENT LIVE LOAD ALTERNATE (k-ft)	MOMENT IMPACT (k-ft)	MOMENT CENTRIFUGAL (k-ft)	MOMENT TOTAL (k-ft)	SECTION MODULUS (S) REQUIRED (IN³)	SECTION MODULUS (S) PROVIDED GROSS (IN³)	LIVE LOAD + IMPACT DEFLECTION ALLOWABLE (IN)	MOMENT OF INERTIA (I) REQUIRED (IN⁴)	MOMENT OF INERTIA (I) PROVIDED GROSS (IN⁴)
56'-10"	W40x362	37	94	-	49	47	227	13	45.5	511	1,147	-	601	653	2,912	1,271	1,420	1.05	32,188	33,167

NOTES:
L - LONGITUDINAL DIMENSION, OUT TO OUT OF GIRDERS.

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS
05/28/2021 — DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL — CONSULTANT ENGINEER
05/28/2021 — DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION
LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN
DRAWN/CHK BY: CDP/MRK
UPRR ENGINEER: ADS/DEH
SHT NO.: T49 of T60

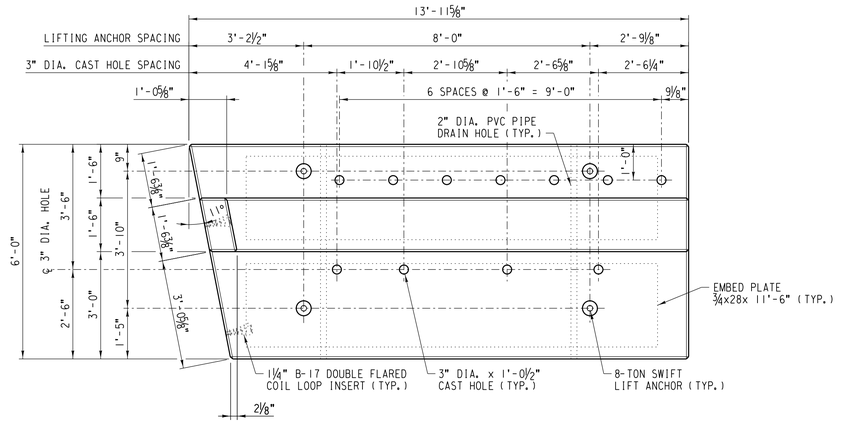
UNION PACIFIC RAILROAD
Office of Director Structures Design

LOCATION & DESCRIPTION:
BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

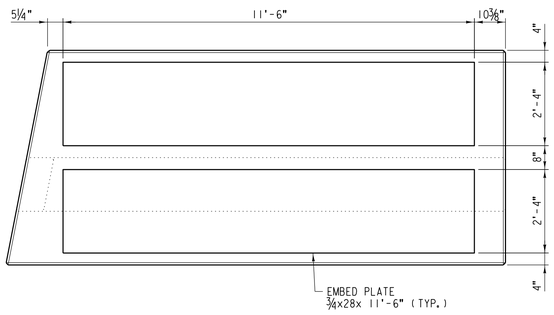
SHEET TITLE:
STEEL BEAM SPAN MATERIAL LISTS

FILE NAME: pw:\\mpenasch-pw.bentley.com:bpenasch-pw-01\Documents\210000s\210070.11\Engineering Docs\Bridges\16_Ogden (2.27)\Ironsw_ed00227.sli.DGN

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PLAN



BOTTOM PLAN

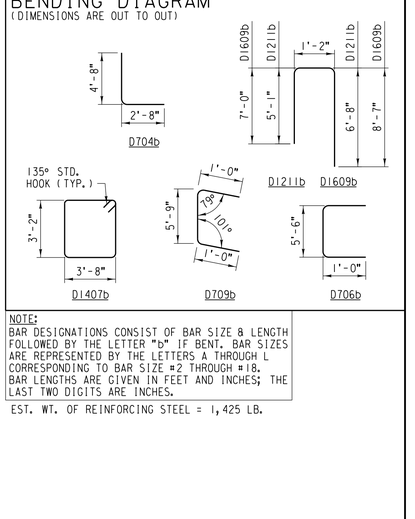
MATERIAL SCHEDULE		
REQ'D	UNIT	DESCRIPTION
14.4	CU. YD.	4000 PSI CONCRETE (PER NOTES, SHEET NO. T3)
1	LOT	REINFORCING STEEL (PER NOTES, SHEET NO. T3 AND SCHEDULE, SHEET NO. T50)
2	EA.	EMBED PLATE ¾x28x 11'-6" (PER NOTES, SHEET NO. T3 AND DETAIL, SHEET NO. T50)
6	EA.	1¼" B-17 DOUBLE FLARED COIL LOOP INSERT
4	EA.	8-TON SWIFT LIFT ANCHOR (13⅜" LONG)
12	LIN.FT.	2" DIA. PVC PIPE, SCHEDULE 40
2	EA.	4" SQUARE ALUMINUM #4 MESH HARDWARE CLOTH

NOTES:
1. MINIMALLY ADJUST REINFORCING AS REQUIRED TO CLEAR EMBEDDED ITEMS AND CAST HOLES.
2. FOR LIFTING DETAIL AND FABRICATION NOTES, SEE SHEET NO. T54.
3. EF = EACH FACE
   FF = FRONT FACE
   BF = BACK FACE

REINFORCING SCHEDULE				
TOTAL	MARK	SIZE	LENGTH	SHAPE
15	D704b	#5	7'-4"	L
3	D706b	#5	7'-6"	⊏
3	D709b	#5	7'-9"	⊏
5	D1206	#5	12'-6"	—
13	D1211b	#5	12'-11"	⊓
5	D1301	#5	13'-1"	—
3	D1303	#5	13'-3"	—
1	D1304	#5	13'-4"	—
7	D1307	#5	13'-7"	—
29	D1407b	#5	14'-7"	□
2	D1609b	#5	16'-9"	⊓

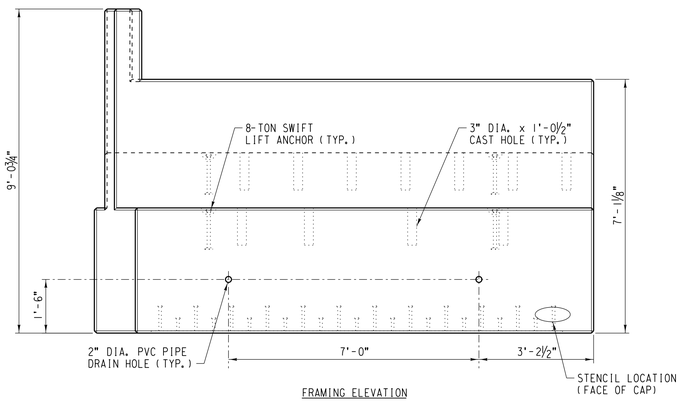
SET LIST						
MARK	SIZE	MIN. LENGTH	MAX. LENGTH	INCREMENT	NO. OF BARS/SET	NO. OF SETS	SHAPE
E1206-E1307	#6	12'-6"	13'-7"	1⅞"	8	2	—

BENDING DIAGRAM
(DIMENSIONS ARE OUT TO OUT)

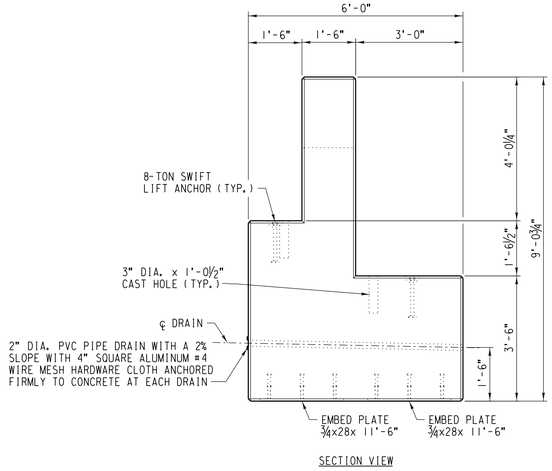


NOTE:
BAR DESIGNATIONS CONSIST OF BAR SIZE & LENGTH FOLLOWED BY THE LETTER "b" IF BENT. BAR SIZES ARE REPRESENTED BY THE LETTERS A THROUGH L CORRESPONDING TO BAR SIZE #2 THROUGH #18. BAR LENGTHS ARE GIVEN IN FEET AND INCHES; THE LAST TWO DIGITS ARE INCHES.

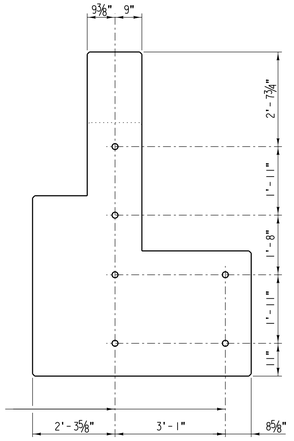
EST. WT. OF REINFORCING STEEL = 1,425 LB.



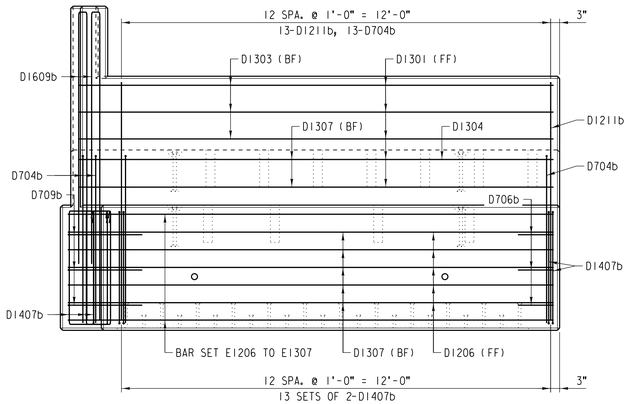
FRAMING ELEVATION



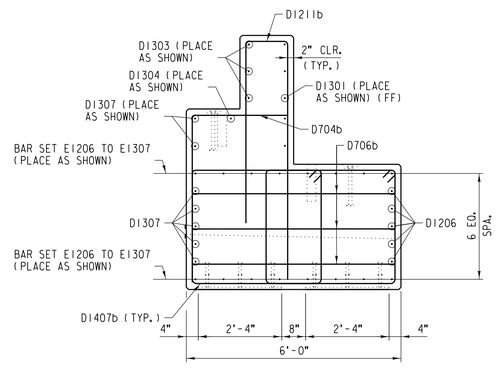
SECTION VIEW



FRAMING END VIEW



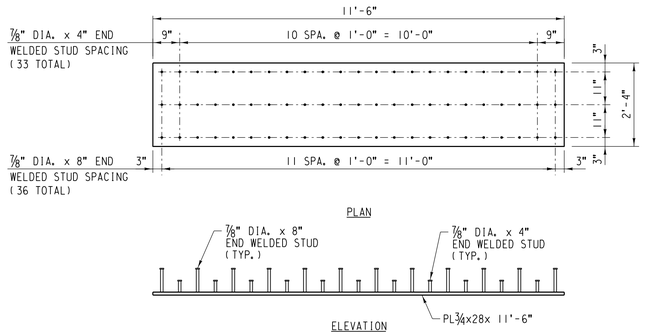
REINFORCING ELEVATION



REINFORCING SECTION VIEW

PRECAST CONCRETE END CAP PEC-1R

SCALE: ½"=1'-0"



ELEVATION

EMBED PLATE ¾x28x 11'-6"

SCALE: ½"=1'-0"

EST. WT. = 901.6 LB. EACH

EST. WT. OF PRECAST CONCRETE

END CAP PEC-1R = 58,240 LB. (29.2 TON)

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS
05/28/2021 — DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL — CONSULTANT ENGINEER
05/28/2021 — DATE

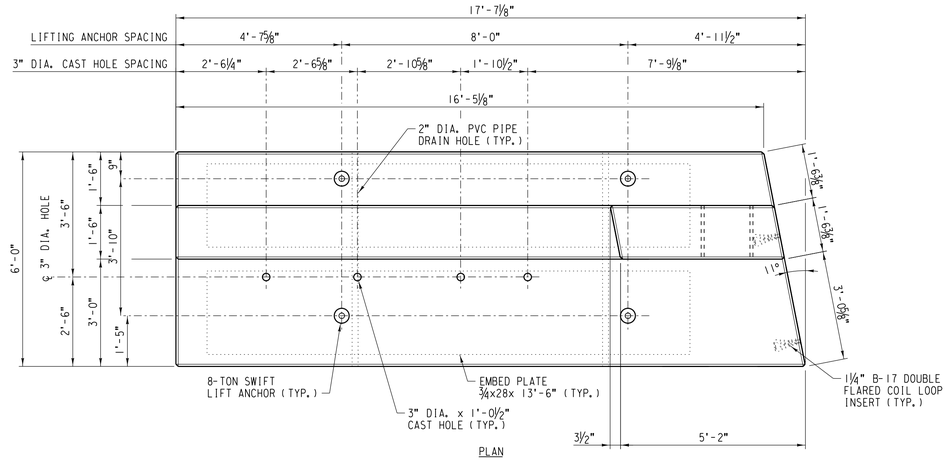
PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

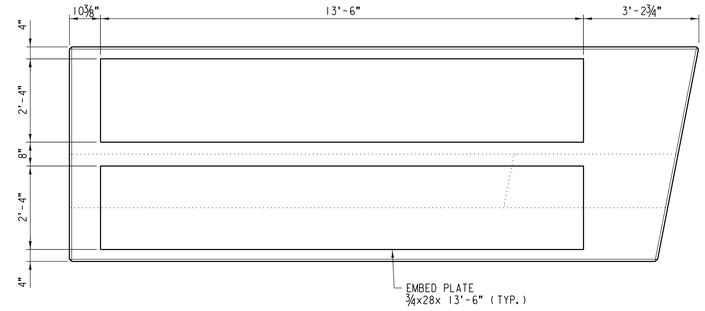
DSN/CHK BY: MRK/AAN	**UNION PACIFIC RAILROAD**
DRAWN/CHK BY: CDP/MRK	Office of Director Structures Design
UPRR ENGINEER: ADS/DEH	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
SHT NO.: T50 of T60	SHEET TITLE: PRECAST CONCRETE END CAP PEC-1R

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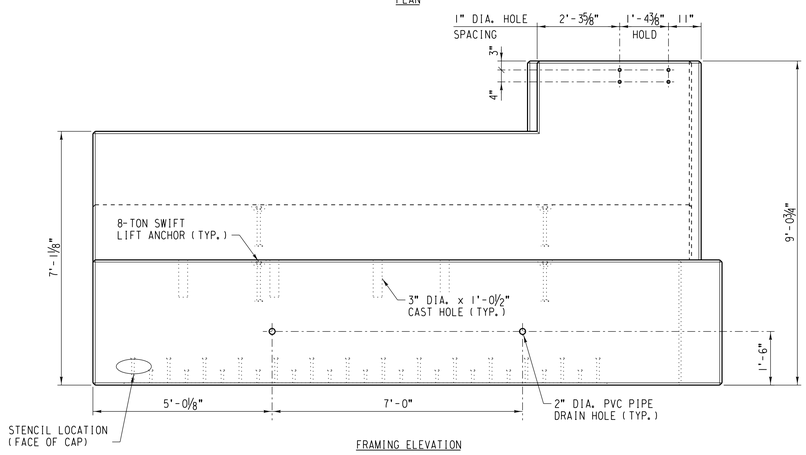
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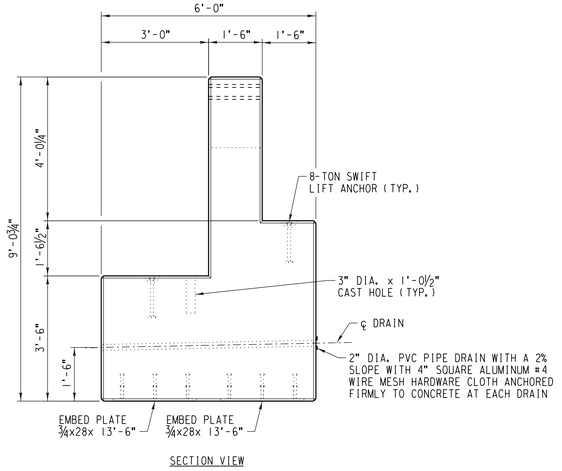
PLAN



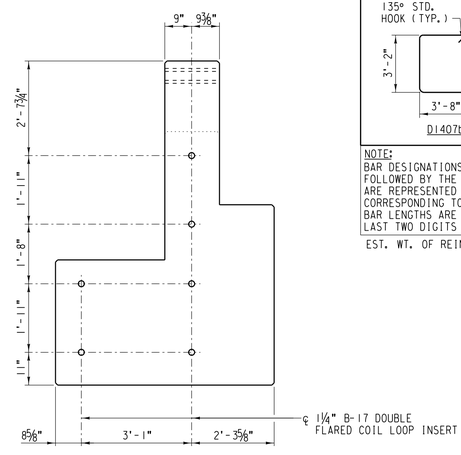
BOTTOM PLAN



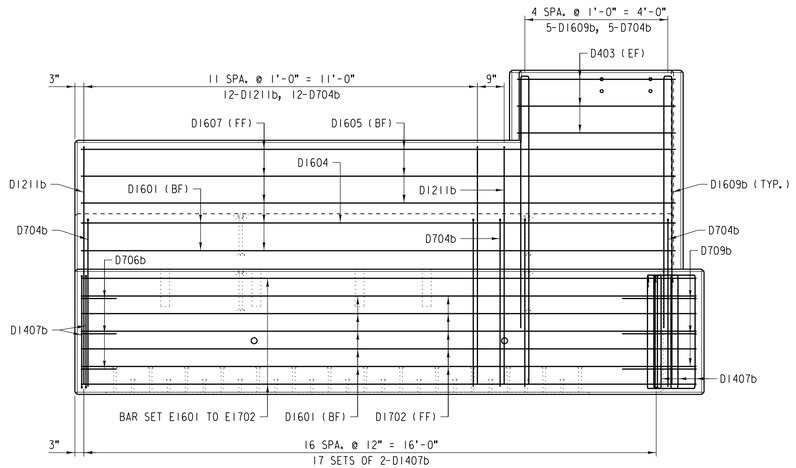
FRAMING ELEVATION



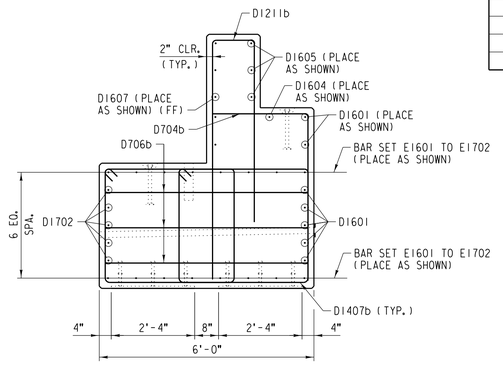
SECTION VIEW



FRAMING END VIEW



REINFORCING ELEVATION



REINFORCING SECTION VIEW

PRECAST CONCRETE END CAP PEC-1L

SCALE: ½"=1'-0"

REINFORCING SCHEDULE

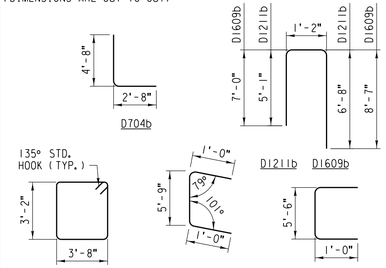
TOTAL	MARK	SIZE	LENGTH	SHAPE
6	D403	#5	4'-3"	——
18	D704b	#5	7'-4"	L
3	D706b	#5	7'-6"	[
3	D709b	#5	7'-9"	⌐
13	D1211b	#5	12'-11"	⊓
37	D1407b	#5	14'-7"	□
7	D1601	#5	16'-1"	——
1	D1604	#5	16'-4"	——
3	D1605	#5	16'-5"	——
5	D1607	#5	16'-7"	——
5	D1609b	#5	16'-9"	⊓
5	D1702	#5	17'-2"	——

SET LIST

MARK	SIZE	MIN. LENGTH	MAX. LENGTH	INCREMENT	NO. OF BARS/SET	NO. OF SETS	SHAPE
E1601-E1702	#6	16'-1"	17'-2"	1⅞"	8	2	——

BENDING DIAGRAM

(DIMENSIONS ARE OUT TO OUT)



NOTE:
BAR DESIGNATIONS CONSIST OF BAR SIZE & LENGTH FOLLOWED BY THE LETTER "b" IF BENT. BAR SIZES ARE REPRESENTED BY THE LETTERS A THROUGH L CORRESPONDING TO BAR SIZE #2 THROUGH #18. BAR LENGTHS ARE GIVEN IN FEET AND INCHES; THE LAST TWO DIGITS ARE INCHES.

EST. WT. OF REINFORCING STEEL = 1,810 LB.

MATERIAL SCHEDULE

REQ'D	UNIT	DESCRIPTION
18.6	CU. YD.	4000 PSI CONCRETE (PER NOTES, SHEET NO. T3)
1	LOT	REINFORCING STEEL (PER NOTES, SHEET NO. T3 AND SCHEDULE, SHEET NO. T51)
2	EA.	EMBED PLATE ¾x28x 13'-6" (PER NOTES, SHEET NO. T3 AND DETAIL, SHEET NO. T54)
6	EA.	1¼" B-17 DOUBLE FLARED COIL LOOP INSERT
4	EA.	8-TON SWIFT LIFT ANCHOR (13⅜" LONG)
12	LIN. FT.	2" DIA. PVC PIPE, SCHEDULE 40
2	EA.	4" SQUARE ALUMINUM #4 MESH HARDWARE CLOTH

NOTES:
1. MINIMALLY ADJUST REINFORCING AS REQUIRED TO CLEAR EMBEDDED ITEMS AND CAST HOLES.
2. FOR LIFTING DETAIL AND FABRICATION NOTES, SEE SHEET NO. T54.
3. EF = EACH FACE
   FF = FRONT FACE
   BF = BACK FACE

EST. WT. OF PRECAST CONCRETE END CAP PEC-1L = 75,010 LB. (37.6 TON)

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS — 05/28/2021 DATE

HANSON Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY:	MRK/AAN
DRAWN/CHK BY:	CDP/AAN
UPRR ENGINEER:	ADS/DEH
SHT NO.:	T51 of T60

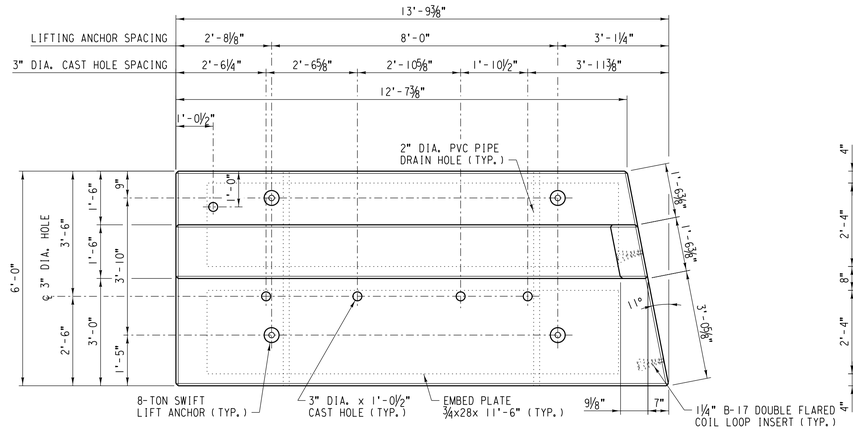
UNION PACIFIC RAILROAD
Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

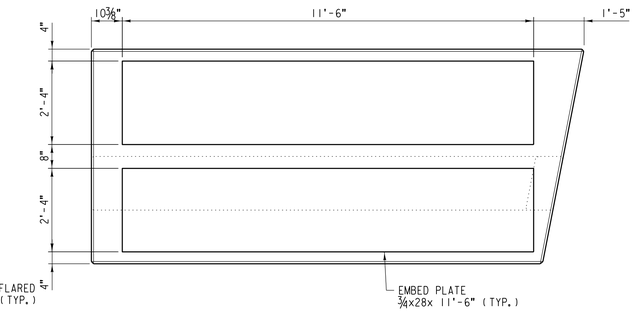
SHEET TITLE: PRECAST CONCRETE END CAP PEC-1L

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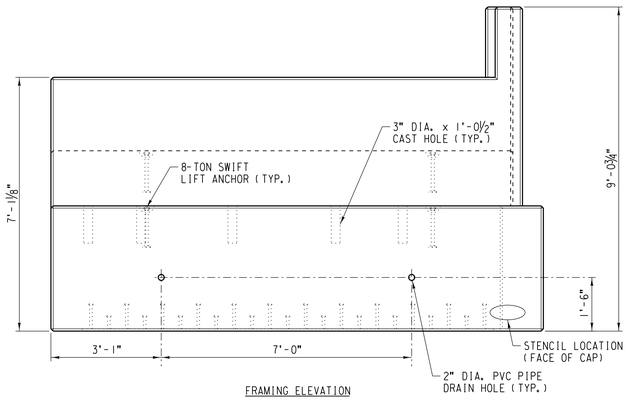
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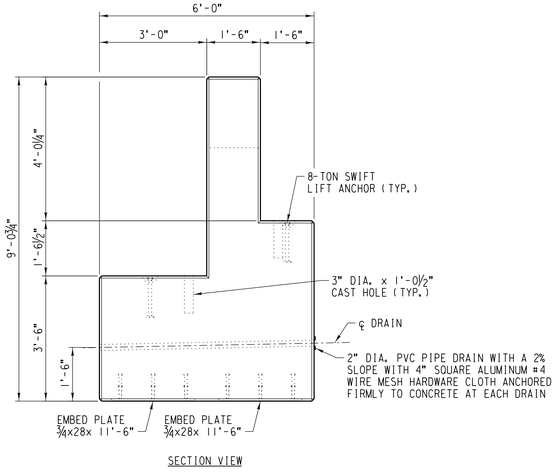
PLAN



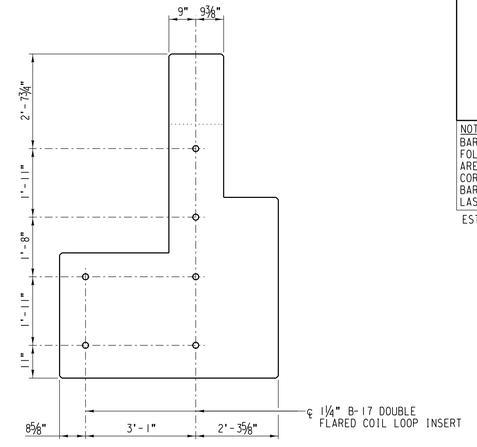
BOTTOM PLAN



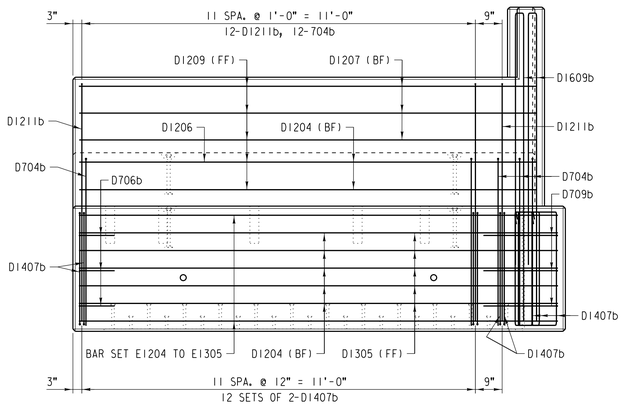
FRAMING ELEVATION



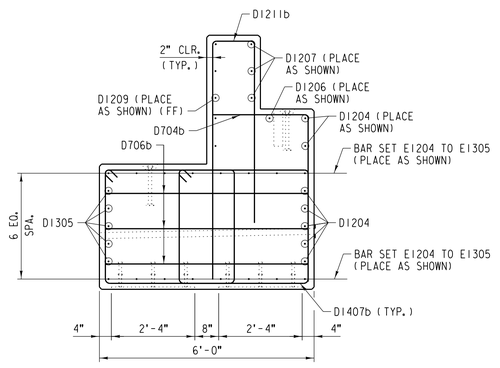
SECTION VIEW



FRAMING END VIEW



REINFORCING ELEVATION



REINFORCING SECTION VIEW

PRECAST CONCRETE END CAP PEC-2R

SCALE: ½"=1'-0"

MATERIAL SCHEDULE

REQ'D	UNIT	DESCRIPTION
14.2	CU. YD.	4000 PSI CONCRETE (PER NOTES, SHEET NO. T3)
1	LOT	REINFORCING STEEL (PER NOTES, SHEET NO. T3 AND SCHEDULE, SHEET NO. T52)
2	EA.	EMBED PLATE ¾x28x 11'-6" (PER NOTES, SHEET NO. T3 AND DETAIL, SHEET NO. T50)
6	EA.	1¼" B-17 DOUBLE FLARED COIL LOOP INSERT
4	EA.	8-TON SWIFT LIFT ANCHOR (13⅜" LONG)
12	LIN.FT.	2" DIA. PVC PIPE, SCHEDULE 40
2	EA.	4" SQUARE ALUMINUM #4 MESH HARDWARE CLOTH

NOTES:
1. MINIMALLY ADJUST REINFORCING AS REQUIRED TO CLEAR EMBEDDED ITEMS AND CAST HOLES.
2. FOR LIFTING DETAIL AND FABRICATION NOTES, SEE SHEET NO. T54.
3. EF = EACH FACE
   FF = FRONT FACE
   BF = BACK FACE

REINFORCING SCHEDULE

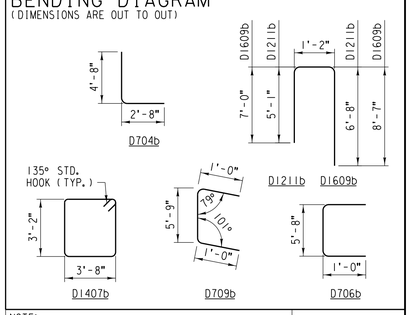
TOTAL	MARK	SIZE	LENGTH	SHAPE
15	D704b	#5	7'-4"	L
3	D706b	#5	7'-6"	⊏
3	D709b	#5	7'-9"	⊏
7	D1204	#5	12'-4"	—
1	D1206	#5	12'-6"	—
3	D1207	#5	12'-7"	—
5	D1209	#5	12'-9"	—
13	D1211b	#5	12'-11"	⊓
5	D1305	#5	13'-5"	—
29	D1407b	#5	14'-7"	□
2	D1609b	#5	16'-9"	⊓

SET LIST

MARK	SIZE	MIN. LENGTH	MAX. LENGTH	INCREMENT	NO. OF BARS/SET	NO. OF SETS	SHAPE
E1204-E1305	#6	12'-4"	13'-5"	1⅞"	8	2	—

BENDING DIAGRAM

(DIMENSIONS ARE OUT TO OUT)



NOTE:
BAR DESIGNATIONS CONSIST OF BAR SIZE & LENGTH FOLLOWED BY THE LETTER "b" IF BENT. BAR SIZES ARE REPRESENTED BY THE LETTERS A THROUGH L CORRESPONDING TO BAR SIZE #2 THROUGH #18. BAR LENGTHS ARE GIVEN IN FEET AND INCHES; THE LAST TWO DIGITS ARE INCHES.

EST. WT. OF REINFORCING STEEL = 1,410 LB.

EST. WT. OF PRECAST CONCRETE

END CAP PEC-2R = 57,490 LB. (28.8 TON)

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL (STATUS) 05/28/2021 (DATE)

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL (CONSULTANT ENGINEER) 05/28/2021 (DATE)

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY:	MRK/AAN
DRAWN/CHK BY:	CDP/AAN
UPRR ENGINEER:	ADS/DEH
SHT NO.:	T52 of T60

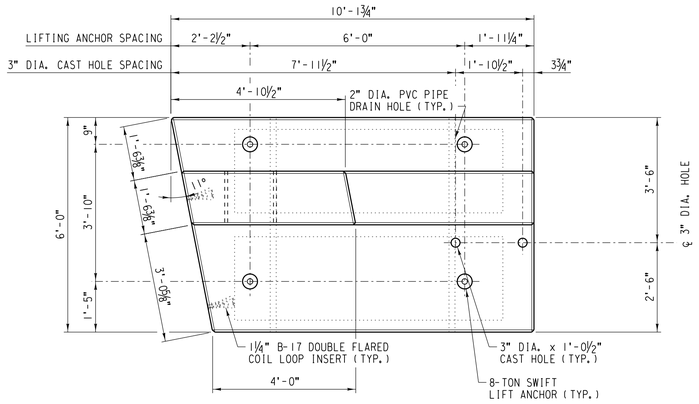
UNION PACIFIC RAILROAD
Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

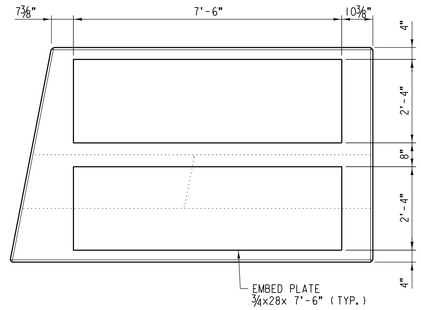
SHEET TITLE: PRECAST CONCRETE END CAP PEC-2R

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PLAN



BOTTOM PLAN

MATERIAL SCHEDULE		
REQ'D	UNIT	DESCRIPTION
10.8	CU. YD.	4000 PSI CONCRETE (PER NOTES, SHEET NO. T3)
1	LOT	REINFORCING STEEL (PER NOTES, SHEET NO. T3 AND SCHEDULE, SHEET NO. T53)
2	EA.	EMBED PLATE ¾x28x 7'-6" (PER NOTES, SHEET NO. T3 AND DETAIL, SHEET NO. T53)
6	EA.	1¼" B-17 DOUBLE FLARED COIL LOOP INSERT
4	EA.	8-TON SWIFT LIFT ANCHOR (13⅜" LONG)
12	LIN.FT.	2" DIA. PVC PIPE, SCHEDULE 40
2	EA.	4" SQUARE ALUMINUM #4 MESH HARDWARE CLOTH

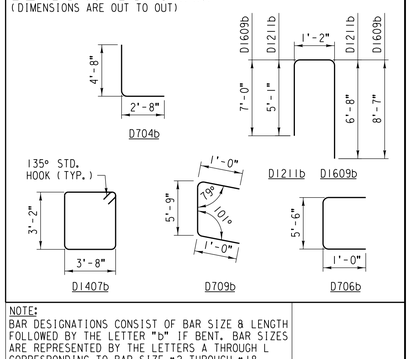
NOTES:
1. MINIMALLY ADJUST REINFORCING AS REQUIRED TO CLEAR EMBEDDED ITEMS AND CAST HOLES.
2. FOR LIFTING DETAIL AND FABRICATION NOTES, SEE SHEET NO. T54.
3. EF = EACH FACE
   FF = FRONT FACE
   BF = BACK FACE

REINFORCING SCHEDULE				
TOTAL	MARK	SIZE	LENGTH	SHAPE
6	D403	#5	4'-3"	——
10	D704b	#5	7'-4"	L
3	D706b	#5	7'-6"	[
3	D709b	#5	7'-9"	⌐
5	D808	#6	8'-8"	——
5	D903	#5	9'-3"	——
3	D905	#5	9'-5"	——
1	D906	#5	9'-6"	——
7	D909	#5	9'-9"	——
5	D1211b	#5	12'-11"	⊓
21	D1407b	#5	14'-7"	□
5	D1609b	#5	16'-9"	⊓

SET LIST

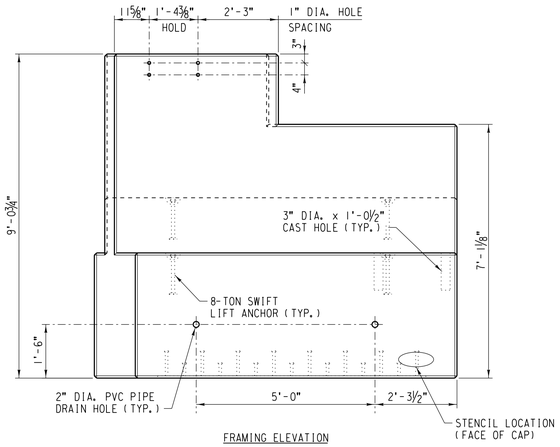
MARK	SIZE	MIN. LENGTH	MAX. LENGTH	INCREMENT	NO. OF BARS/SET	NO. OF SETS	SHAPE
E808-E909	#6	8'-8"	9'-9"	1⅞"	8	2	——

BENDING DIAGRAM
(DIMENSIONS ARE OUT TO OUT)

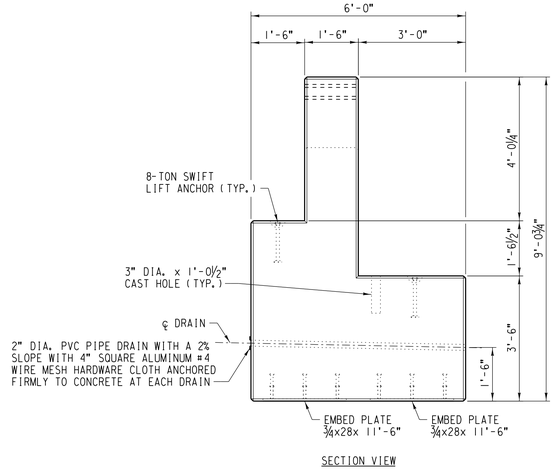


NOTE:
BAR DESIGNATIONS CONSIST OF BAR SIZE & LENGTH FOLLOWED BY THE LETTER "b" IF BENT. BAR SIZES ARE REPRESENTED BY THE LETTERS A THROUGH L CORRESPONDING TO BAR SIZE #2 THROUGH #18. BAR LENGTHS ARE GIVEN IN FEET AND INCHES; THE LAST TWO DIGITS ARE INCHES.

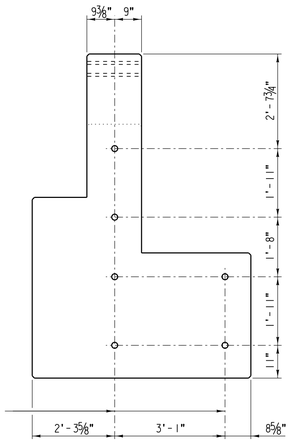
EST. WT. OF REINFORCING STEEL = 1,060 LB.

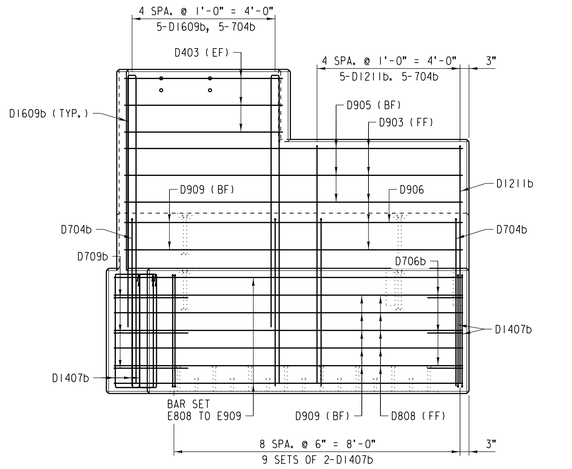


FRAMING ELEVATION

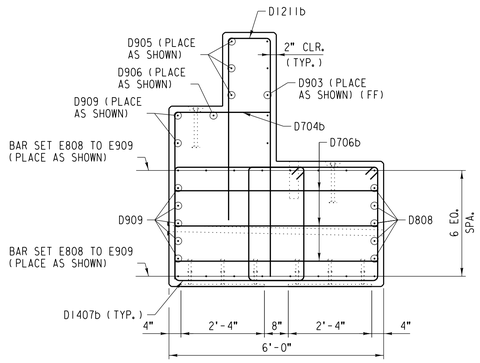


SECTION VIEW



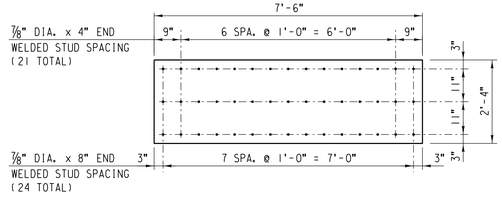


REINFORCING ELEVATION

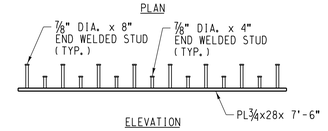


REINFORCING SECTION VIEW

PRECAST CONCRETE END CAP PEC-2L
SCALE: ½"=1'-0"



PLAN



ELEVATION

EMBED PLATE ¾x28x 7'-6"
SCALE: ½"=1'-0"
EST. WT. = 588.3 LB. EACH

EST. WT. OF PRECAST CONCRETE
END CAP PEC-2L = 43,480 LB. (21.8 TON)

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS
05/28/2021 — DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL — CONSULTANT ENGINEER
05/28/2021 — DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION
LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY:	DRAWN/CHK BY:	UPRR ENGINEER:	SHT NO.:
MRK/AAN	CDP/AAN	ADS/DEH	T53 of T60

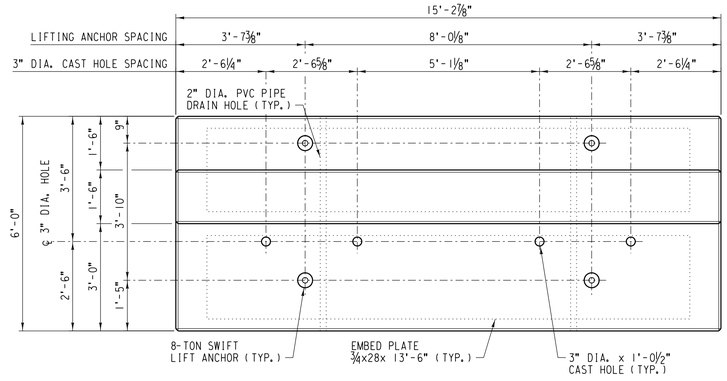
UNION PACIFIC RAILROAD
Office of Director Structures Design

LOCATION & DESCRIPTION:
BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

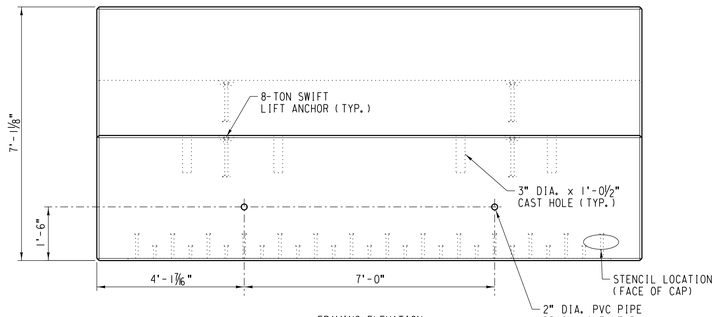
SHEET TITLE:
PRECAST CONCRETE END CAP PEC-2L

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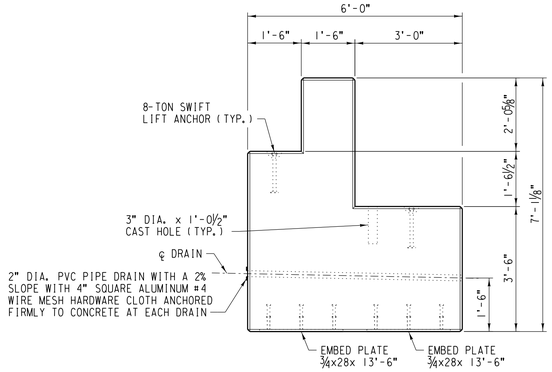
PLAN



FRAMING ELEVATION

NOTES:

1. MINIMALLY ADJUST REINFORCING AS REQUIRED TO CLEAR EMBEDDED ITEMS AND CAST HOLES.
2. EF = EACH FACE
   FF = FRONT FACE
   BF = BACK FACE



SECTION VIEW

MATERIAL SCHEDULE

REQ'D	UNIT	DESCRIPTION
16.3	CU. YD.	4000 PSI CONCRETE (PER NOTES, SHEET NO. T3)
1	LOT	REINFORCING STEEL (PER NOTES, SHEET NO. T3 AND SCHEDULE, SHEET NO. T54)
2	EA.	EMBED PLATE ¾x28x 13'-6" (PER NOTES, SHEET NO. T3 AND DETAIL, SHEET NO. T54)
4	EA.	8-TON SWIFT LIFT ANCHOR (13⅜" LONG)
12	LIN. FT.	2" DIA. PVC PIPE, SCHEDULE 40
2	EA.	4" SQUARE ALUMINUM #4 MESH HARDWARE CLOTH

FABRICATION NOTES:

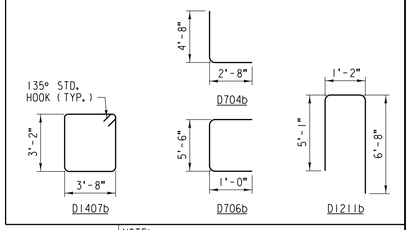
1. END CAP AND WINGWALLS SHALL BE FIT UP AT THE FABRICATION PLANT PRIOR TO SHIPMENT TO ENSURE ACCURACY OF CONNECTIONS.
2. INSIDE SURFACE OF CAST HOLES SHALL BE EXPOSED UNCOATED CONCRETE. ALTERNATIVELY, CORRUGATED GALVANIZED STEEL DUCT WITH 2½" INSIDE DIAMETER MAY BE USED AS A STAY-IN-PLACE FORM.
3. COVER OR FILL CAST HOLES WITH APPROVED MATERIAL TO PREVENT MOISTURE OR DEBRIS FROM ENTERING DURING STORAGE AND TRANSPORT.
4. USE THIS SHEET IN CONJUNCTION WITH SHEET T55.

REINFORCING SCHEDULE

TOTAL	MARK	SIZE	LENGTH	SHAPE
16	D704b	#5	7'-4"	L
6	D706b	#5	7'-6"	[
16	D1211b	#5	12'-11"	⊓
32	D1407b	#5	14'-7"	□
21	D1411	#5	14'-11"	—
16	E1411	#6	14'-11"	—

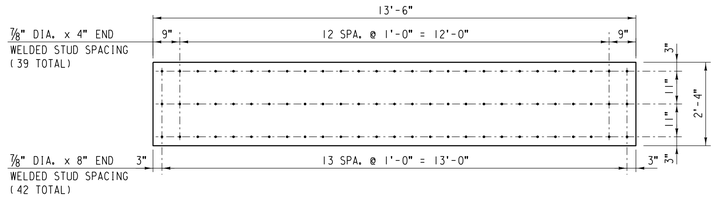
BENDING DIAGRAM

(DIMENSIONS ARE OUT TO OUT)

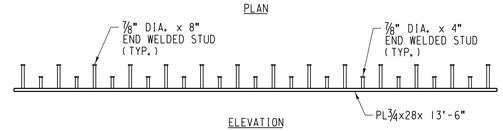


NOTE:
BAR DESIGNATIONS CONSIST OF BAR SIZE & LENGTH FOLLOWED BY THE LETTER "b" IF BENT. BAR SIZES ARE REPRESENTED BY THE LETTERS A THROUGH L CORRESPONDING TO BAR SIZE #2 THROUGH #18. BAR LENGTHS ARE GIVEN IN FEET AND INCHES; THE LAST TWO DIGITS ARE INCHES.

EST. WT. OF REINFORCING STEEL = 1,560 LB.



PLAN

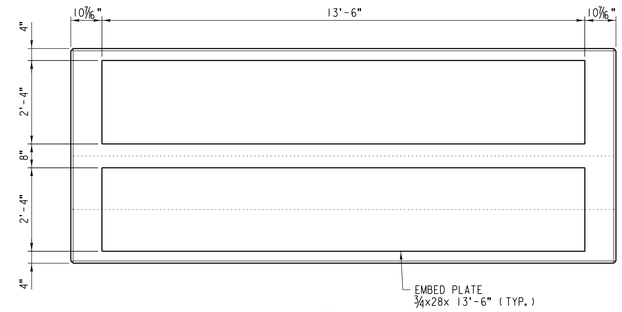


ELEVATION

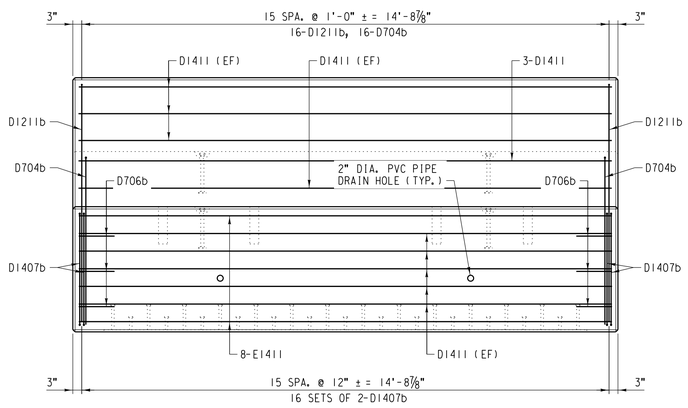
EMBED PLATE ¾x28x 13'-6"

SCALE: ½"=1'-0"

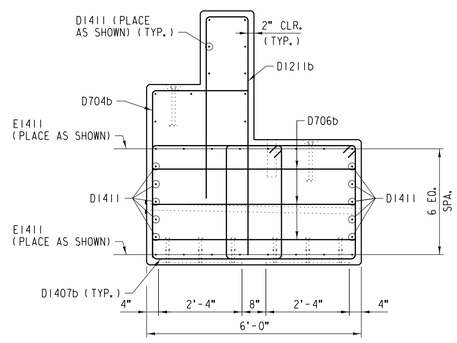
EST. WT. = 1,058.2 LB. EACH



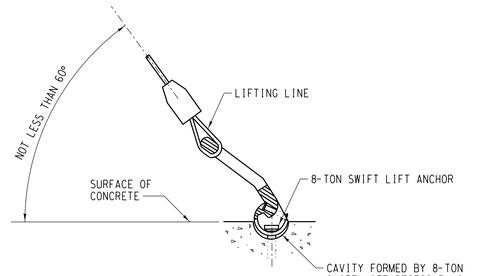
BOTTOM PLAN



REINFORCING ELEVATION



REINFORCING SECTION VIEW



LIFTING DETAIL

SCALE: NONE

NOTE:
8-TON SWIFT LIFT RECESS PLUGS, ANCHORS AND LIFTING EYES ARE AVAILABLE FROM DAYTON SUPERIOR CORP., 1125 BYERS RD., MIAMISBURG, OHIO 45342, TELEPHONE (800) 745-3700. THE MATERIALS FOR THIS LIFTING SYSTEM ARE NOT INCLUDED IN THE BILL OF MATERIAL BUT ARE TO BE ORDERED AS REQUIRED.

PRECAST CONCRETE END CAP PEC-M

SCALE: ½"=1'-0"

EST. WT. OF PRECAST CONCRETE

END CAP PEC-M = 65,620 LB. (32.9 TON)

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

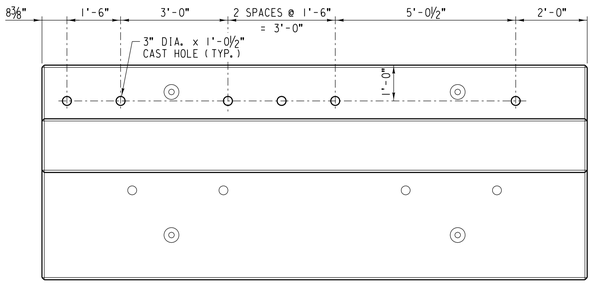
FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION

LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN	UNION PACIFIC RAILROAD — Office of Director Structures Design
DRAWN/CHK BY: CDP/AAN	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION — 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
UPRR ENGINEER: ADS/DEH	
SHT NO.: T54 of T60	SHEET TITLE: PRECAST CONCRETE END CAP PEC-M (SHEET 1 OF 2)

FILE NAME: pw:\\Benesch-pw.bentley.com:benesch-pw-01\Documents\210000s\210070-11\Engineering Docs\Bridges\16_Ogden (2.27)\MP\plans\pec00227_bill.DGN

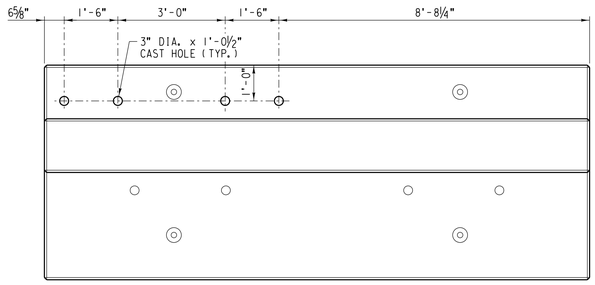
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PLAN

PRECAST CONCRETE END CAP PEC-M1

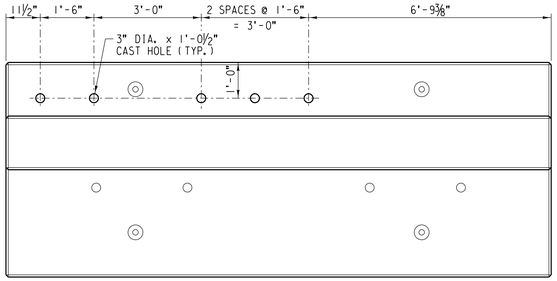
SCALE: 1/2"=1'-0"



PLAN

PRECAST CONCRETE END CAP PEC-M4

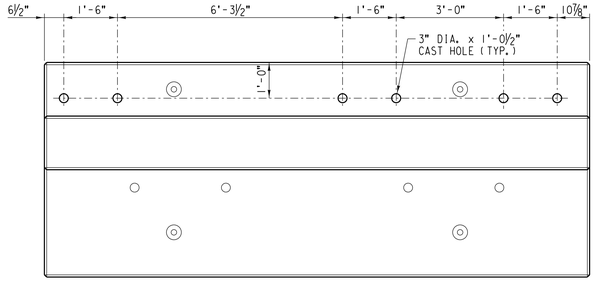
SCALE: 1/2"=1'-0"



PLAN

PRECAST CONCRETE END CAP PEC-M2

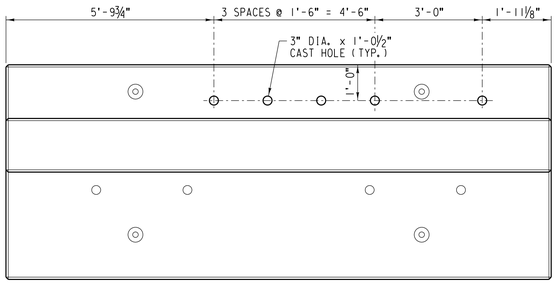
SCALE: 1/2"=1'-0"



PLAN

PRECAST CONCRETE END CAP PEC-M5

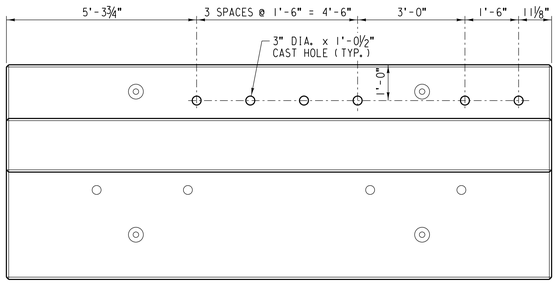
SCALE: 1/2"=1'-0"



PLAN

PRECAST CONCRETE END CAP PEC-M3

SCALE: 1/2"=1'-0"



PLAN

PRECAST CONCRETE END CAP PEC-M6

SCALE: 1/2"=1'-0"

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:

FINAL (STATUS) 05/28/2021 (DATE)

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL (CONSULTANT ENGINEER) 05/28/2021 (DATE)

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY:	MRK/AAN
DRAWN/CHK BY:	CDP/AAN
UPRR ENGINEER:	ADS/DEH
SHT NO.:	T55 of T60

UNION PACIFIC RAILROAD

Office of Director Structures Design

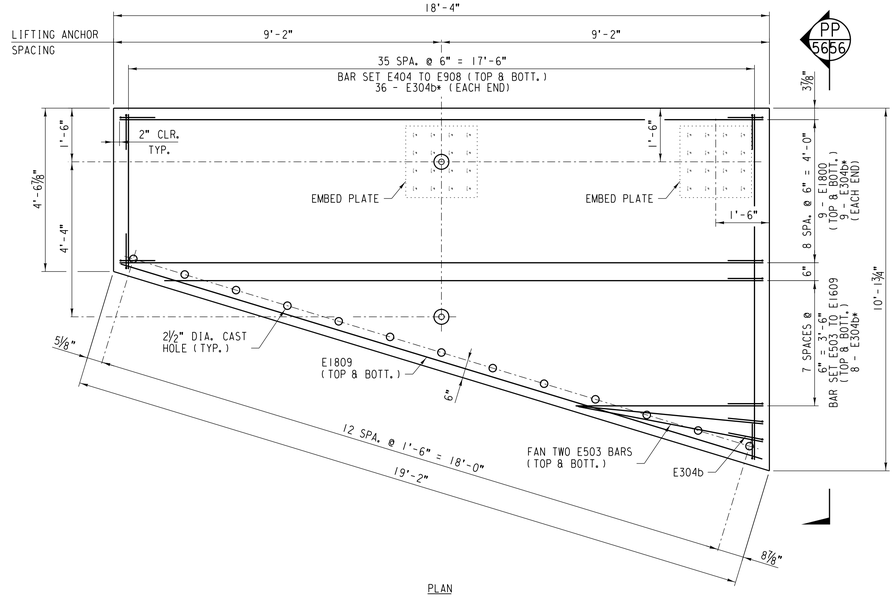
LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION

3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: PRECAST CONCRETE END CAP PEC-M (SHEET 2 OF 2)

FILE NAME: pw:\\engnech-pw.bentley.com:benech-pw-01\Documents\210000s\210070.11\Engineering Docs\Bridges\16_Ogden (2.27)\Drawings\d00227_bsi.DGN

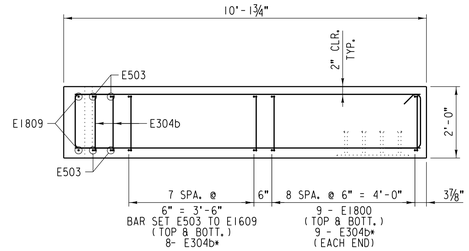
PLOTTED: 5/26/2021 10:44:10 AM



PLAN

PRECAST CONCRETE APPROACH SLAB SAS-1

SCALE: ½"=1'-0"



SECTION PP 5656

SCALE: ½"=1'-0"

MATERIAL SCHEDULE
(QUANTITY PER APPROACH SLAB SAS-1)

REQ'D	UNIT	DESCRIPTION
10.0	CU. YD.	4000 PSI CONCRETE (PER NOTES, SHEET NO. T3)
1	LOT	REINFORCING STEEL (PER NOTES, SHEET NO. T3, AND SCHEDULE, SHEET NO. T56)
2	EA.	8-TON SWIFT LIFT ANCHOR (13⅜" LONG)
1	EA.	BEARING PAD SBP-12 (SHIPS LOOSE) (PER NOTES, SHEET NO. T44, AND DETAILS, SHEET NO. T56)

* ALTERNATE HOOKED END

** SHIP BARS LOOSE

FABRICATION NOTE:
END CAP AND APPROACH SLABS SHALL BE FIT UP AT THE FABRICATION PLANT PRIOR TO SHIPMENT TO ENSURE ACCURACY OF CONNECTIONS.

NOTES:
1. MINIMALLY ADJUST REINFORCING AS REQUIRED TO CLEAR CAST HOLES AND EMBEDDED ITEMS.
2. FOR LIFTING DETAIL SEE SHEET NO. T54

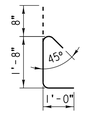
REINFORCING SCHEDULE
(QUANTITY PER APPROACH SLAB SAS-1)

TOTAL	MARK	SIZE	LENGTH	SHAPE
4	E503	#6	5'-3"	——
100	E304b	#6	3'-4"	L
18	E1800	#6	18'-0"	——
2	E1809	#6	18'-9"	——

SET LIST

MARK	SIZE	MIN. LENGTH	MAX. LENGTH	INCREMENT	NO. OF BARS/SET	NO. OF SETS	SHAPE
E404-E908	#6	4'-4"	9'-8"	1⅛"	36	2	——
E503-E1609	#6	5'-3"	16'-9"	1'-7⅛"	8	2	——

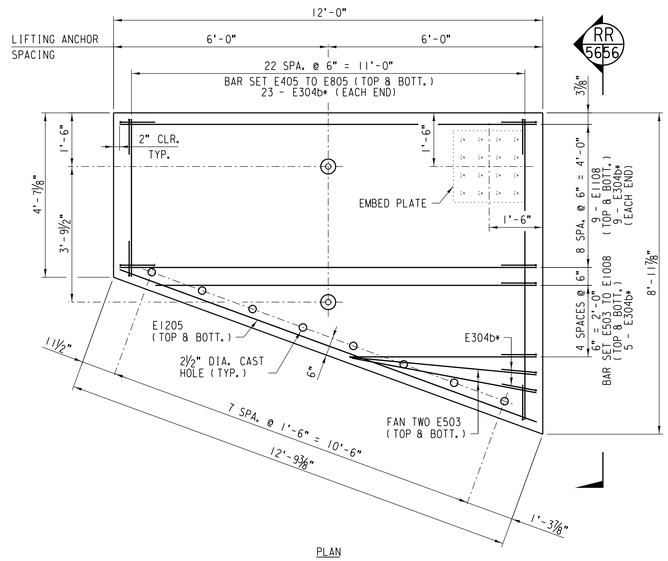
BENDING DIAGRAM
(DIMENSIONS ARE OUT TO OUT)



E304b

NOTE:
BAR DESIGNATIONS CONSIST OF BAR SIZE & LENGTH FOLLOWED BY THE LETTER "b" IF BENT. BAR SIZES ARE REPRESENTED BY THE LETTERS A THROUGH L CORRESPONDING TO BAR SIZE #2 THROUGH #18. BAR LENGTHS ARE GIVEN IN FEET AND INCHES; THE LAST TWO DIGITS ARE INCHES.

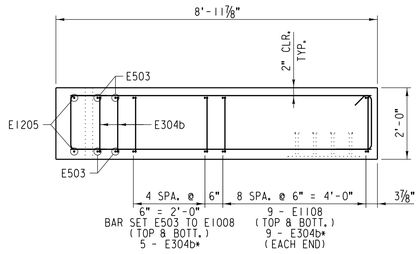
EST. WT. OF REINFORCING STEEL = 2,100 LB.



PLAN

PRECAST CONCRETE APPROACH SLAB SAS-2

SCALE: ½"=1'-0"



SECTION RR 5656

SCALE: ½"=1'-0"

MATERIAL SCHEDULE
(QUANTITY PER APPROACH SLAB SAS-2)

REQ'D	UNIT	DESCRIPTION
6.1	CU. YD.	4000 PSI CONCRETE (PER NOTES, SHEET NO. T3)
1	LOT	REINFORCING STEEL (PER NOTES, SHEET NO. T3, AND SCHEDULE, SHEET NO. T56)
2	EA.	8-TON SWIFT LIFT ANCHOR (13⅜" LONG)
1	EA.	BEARING PAD SBP-13 (SHIPS LOOSE) (PER NOTES, SHEET NO. T44, AND DETAILS, SHEET NO. T56)

PLAN

ELEVATION

EMBED PLATE ¾x24x 2'-0"

SCALE: ½"=1'-0"

EST. WT. = 146.1 LB. EACH

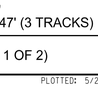
REINFORCING SCHEDULE
(QUANTITY PER APPROACH SLAB SAS-2)

TOTAL	MARK	SIZE	LENGTH	SHAPE
4	E503	#6	5'-3"	——
71	E304b	#6	3'-4"	L
18	E1108	#6	11'-8"	——
2	E1205	#6	12'-5"	——

SET LIST

MARK	SIZE	MIN. LENGTH	MAX. LENGTH	INCREMENT	NO. OF BARS/SET	NO. OF SETS	SHAPE
E405-E805	#6	4'-5"	8'-5"	2⅜"	23	2	——
E503-E1008	#6	5'-3"	10'-8"	1'-4¼"	5	2	——

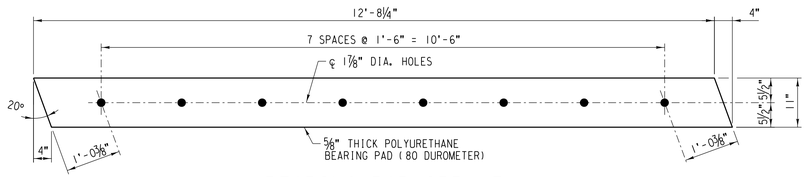
BENDING DIAGRAM
(DIMENSIONS ARE OUT TO OUT)



E304b

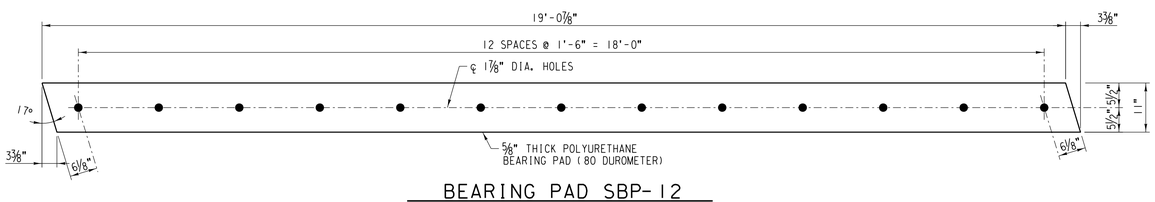
NOTE:
BAR DESIGNATIONS CONSIST OF BAR SIZE & LENGTH FOLLOWED BY THE LETTER "b" IF BENT. BAR SIZES ARE REPRESENTED BY THE LETTERS A THROUGH L CORRESPONDING TO BAR SIZE #2 THROUGH #18. BAR LENGTHS ARE GIVEN IN FEET AND INCHES; THE LAST TWO DIGITS ARE INCHES.

EST. WT. OF REINFORCING STEEL = 1,305 LB.



BEARING PAD SBP-13

SCALE: ¾"=1'-0"



BEARING PAD SBP-12

SCALE: ¾"=1'-0"

EST. WT. OF PRECAST CONCRETE

APPROACH SLAB SAS-1 = 40,450 LB. (20.3 TON)
APPROACH SLAB SAS-2 = 24,450 LB. (12.3 TON)

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION

LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY:	MRK/AAN
DRAWN/CHK BY:	CDP/AAN
UPRR ENGINEER:	ADS/DEH
SHT NO.:	T56 of T60

UNION PACIFIC RAILROAD

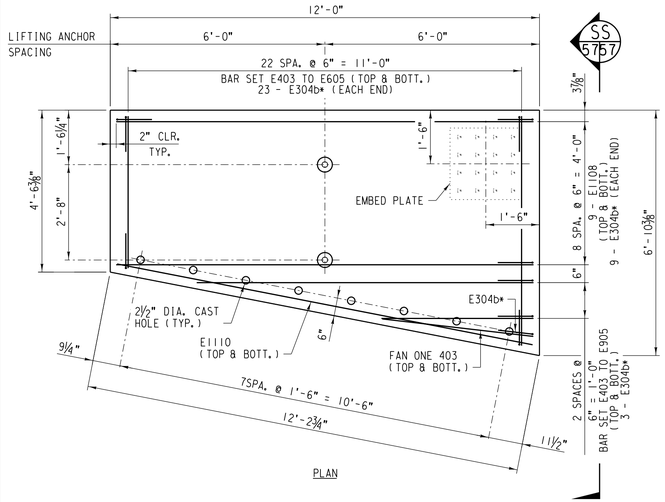
Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: APPROACH SLABS (SHEET 1 OF 2)

FILE NAME: pw:\\Hanesch-pw.bentley.com:Hanesch-pw-01\Documents\021000s\021007b.11\Engineering Docs\Bridges\16_Ogden (2.27)\Plans\roc00227.bil.DGN

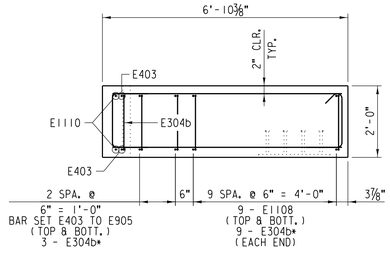
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PLAN

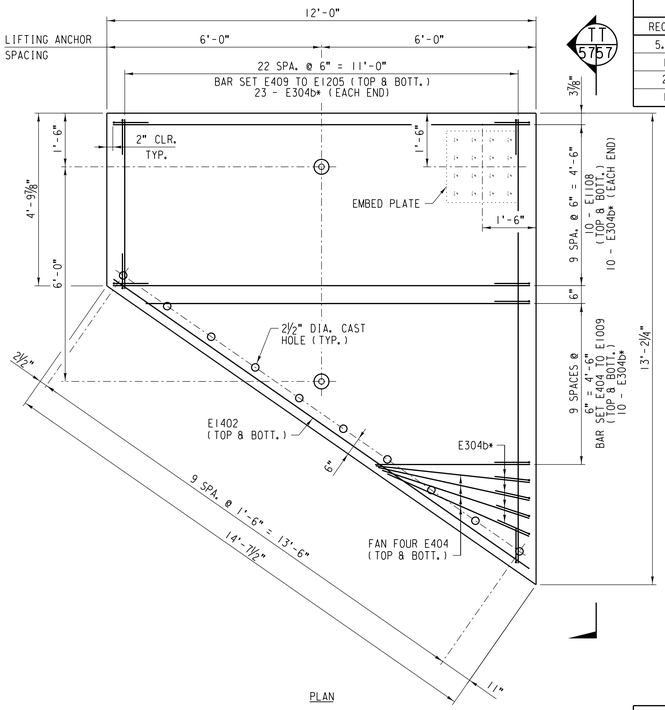
PRECAST CONCRETE APPROACH SLAB SAS-3

SCALE: ½"=1'-0"



SECTION SS 57|57

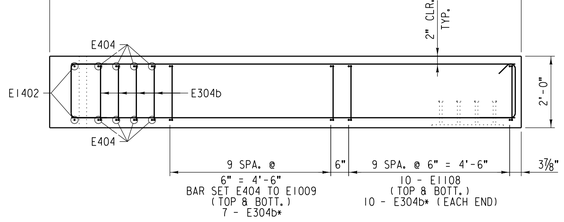
SCALE: ½"=1'-0"



PLAN

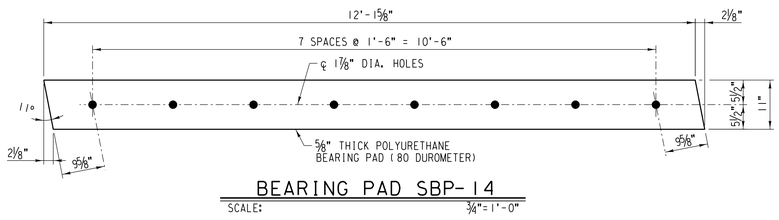
PRECAST CONCRETE APPROACH SLAB SAS-4

SCALE: ½"=1'-0"



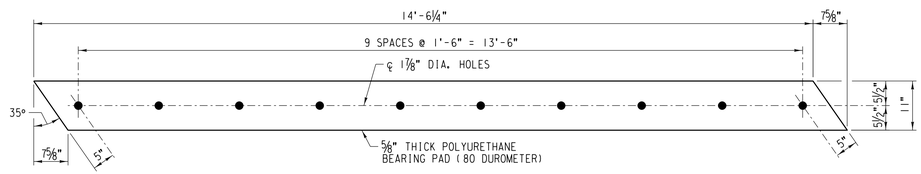
SECTION TT 57|57

SCALE: ½"=1'-0"



BEARING PAD SBP-14

SCALE: ¾"=1'-0"



BEARING PAD SBP-15

SCALE: ¾"=1'-0"

MATERIAL SCHEDULE

(QUANTITY PER APPROACH SLAB SAS-3)

REQ'D	UNIT	DESCRIPTION
5.1	CU. YD.	4000 PSI CONCRETE (PER NOTES, SHEET NO. T3)
1	LOT	REINFORCING STEEL (PER NOTES, SHEET NO. T3, AND SCHEDULE, SHEET NO. T57)
2	EA.	8-TON SWIFT LIFT ANCHOR (13⅜" LONG)
1	EA.	BEARING PAD SBP-14 (SHIPS LOOSE) (PER NOTES, SHEET NO. T44, AND DETAILS, SHEET NO. T57)

* ALTERNATE HOOKED END

** SHIP BARS LOOSE

FABRICATION NOTE:
END CAP AND APPROACH SLABS SHALL BE FIT UP AT THE FABRICATION PLANT PRIOR TO SHIPMENT TO ENSURE ACCURACY OF CONNECTIONS.

NOTES:
1. MINIMALLY ADJUST REINFORCING AS REQUIRED TO CLEAR CAST HOLES AND EMBEDDED ITEMS.
2. FOR LIFTING DETAIL SEE SHEET NO. T54

REINFORCING SCHEDULE

(QUANTITY PER APPROACH SLAB SAS-3)

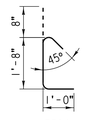
TOTAL	MARK	SIZE	LENGTH	SHAPE
68	E304b	#6	3'-4"	L
2	E403	#6	4'-3	——
18	E1108	#6	11'-8"	——
2	E1110	#6	11'-10"	——

SET LIST

MARK	SIZE	MIN. LENGTH	MAX. LENGTH	INCREMENT	NO. OF BARS/SET	NO. OF SETS	SHAPE
E403-E605	#6	4'-3"	6'-5"	1⅜"	23	2	——
E403-E905	#6	4'-3"	9'-5"	2'-7"	3	2	——

BENDING DIAGRAM

(DIMENSIONS ARE OUT TO OUT)



E304b

NOTE:
BAR DESIGNATIONS CONSIST OF BAR SIZE & LENGTH FOLLOWED BY THE LETTER "b" IF BENT. BAR SIZES ARE REPRESENTED BY THE LETTERS A THROUGH L CORRESPONDING TO BAR SIZE #2 THROUGH #18. BAR LENGTHS ARE GIVEN IN FEET AND INCHES; THE LAST TWO DIGITS ARE INCHES.

EST. WT. OF REINFORCING STEEL = 1,140 LB.

MATERIAL SCHEDULE

(QUANTITY PER APPROACH SLAB SAS-4)

REQ'D	UNIT	DESCRIPTION
8.1	CU. YD.	4000 PSI CONCRETE (PER NOTES, SHEET NO. T3)
1	LOT	REINFORCING STEEL (PER NOTES, SHEET NO. T3, AND SCHEDULE, SHEET NO. T57)
2	EA.	8-TON SWIFT LIFT ANCHOR (13⅜" LONG)
1	EA.	BEARING PAD SBP-15 (SHIPS LOOSE) (PER NOTES, SHEET NO. T44, AND DETAILS, SHEET NO. T57)

REINFORCING SCHEDULE

(QUANTITY PER APPROACH SLAB SAS-4)

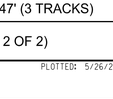
TOTAL	MARK	SIZE	LENGTH	SHAPE
80	E304b	#6	3'-4"	L
8	E404	#6	4'-4"	——
20	E1108	#6	11'-8"	——
2	E1402	#6	14'-2"	——

SET LIST

MARK	SIZE	MIN. LENGTH	MAX. LENGTH	INCREMENT	NO. OF BARS/SET	NO. OF SETS	SHAPE
E409-E1205	#6	4'-9"	12'-5"	4⅜"	23	2	——
E404-E1009	#6	4'-4"	10'-9"	8⅜"	10	2	——

BENDING DIAGRAM

(DIMENSIONS ARE OUT TO OUT)



E304b

NOTE:
BAR DESIGNATIONS CONSIST OF BAR SIZE & LENGTH FOLLOWED BY THE LETTER "b" IF BENT. BAR SIZES ARE REPRESENTED BY THE LETTERS A THROUGH L CORRESPONDING TO BAR SIZE #2 THROUGH #18. BAR LENGTHS ARE GIVEN IN FEET AND INCHES; THE LAST TWO DIGITS ARE INCHES.

EST. WT. OF REINFORCING STEEL = 1,670 LB.

EST. WT. OF PRECAST CONCRETE

APPROACH SLAB SAS-3 = 20,500 LB. (10.3 TON)

APPROACH SLAB SAS-4 = 32,420 LB. (16.3 TON)

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL (STATUS) 05/28/2021 (DATE)

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL (CONSULTANT ENGINEER) 05/28/2021 (DATE)

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION

LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN	**UNION PACIFIC RAILROAD**
DRAWN/CHK BY: CDP/AAN	Office of Director Structures Design
UPRR ENGINEER: ADS/DEH	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
SHT NO.: T57 of T60	SHEET TITLE: APPROACH SLABS (SHEET 2 OF 2)

FILE NAME: pw:\\engenesch-pw.bentley.com:benesch-pw-01\Documents\210005\210070.11\Engineering Docs\Bridges\16_Ogden (2.27)\dms\coc00227.dsl.dgn

PLOTTED: 5/26/2021 10:44:19 AM

MATERIAL SCHEDULE
(QUANTITY PER WINGWALL SWW-10)

REQ'D	UNIT	DESCRIPTION
2.3	CU. YD.	4000 PSI CONCRETE (PER NOTES, SHEET NO. T3)
1	LOT	REINFORCING STEEL (PER NOTES, SHEET NO. T3, AND SCHEDULE, SHEET NO. T58)
1	EA.	8-TON SWIFT LIFT ANCHOR (13⅜" LONG)
6	EA.	STEEL WASHER W100 (PER NOTES AND DETAIL, SHEET NO. T59)
6	EA.	1¼" DIA. x 13" COIL BOLT, DAYTON-RICHMOND B-14

FABRICATION NOTE:
END CAP AND WINGWALLS SHALL BE FIT UP AT THE FABRICATION PLANT PRIOR TO SHIPMENT TO ENSURE ACCURACY OF CONNECTIONS.

NOTES:
1. MINIMALLY ADJUST REINFORCING AS REQUIRED TO CLEAR CAST HOLES AND EMBEDDED ITEMS.

2. EF = EACH FACE

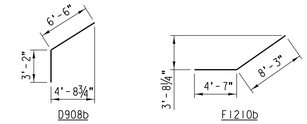
REINFORCING SCHEDULE
(QUANTITY PER WINGWALL SWW-10)

TOTAL	MARK	SIZE	LENGTH	SHAPE
2	D908b	#5	9'-8"	
1	D1709b	#5	17'-9"	
6	F802	#7	8'-2"	
2	F1104	#7	11'-4"	
2	F1210b	#7	12'-10"	

SET LIST

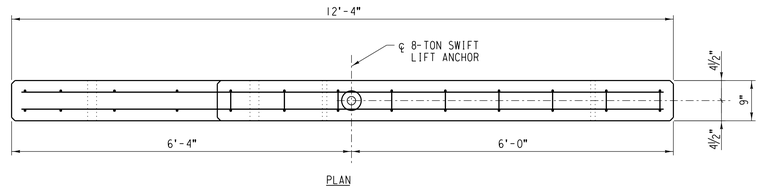
MARK	SIZE	MIN. LENGTH	MAX. LENGTH	INCREMENT	NO. OF BARS/SET	NO. OF SETS	SHAPE
D401-D600	#5	4'-1"	6'-0"	1 1½"	3	2	
D1005b-D1705b	#5	10'-5"	17'-5"	1'-0"	8	1	
F507-F1007	#7	5'-7"	10'-7"	1'-0"	6	2	
F806-F1102	#7	8'-6"	11'-2"	6⅜"	6	2	

BENDING DIAGRAM
(DIMENSIONS ARE OUT TO OUT)

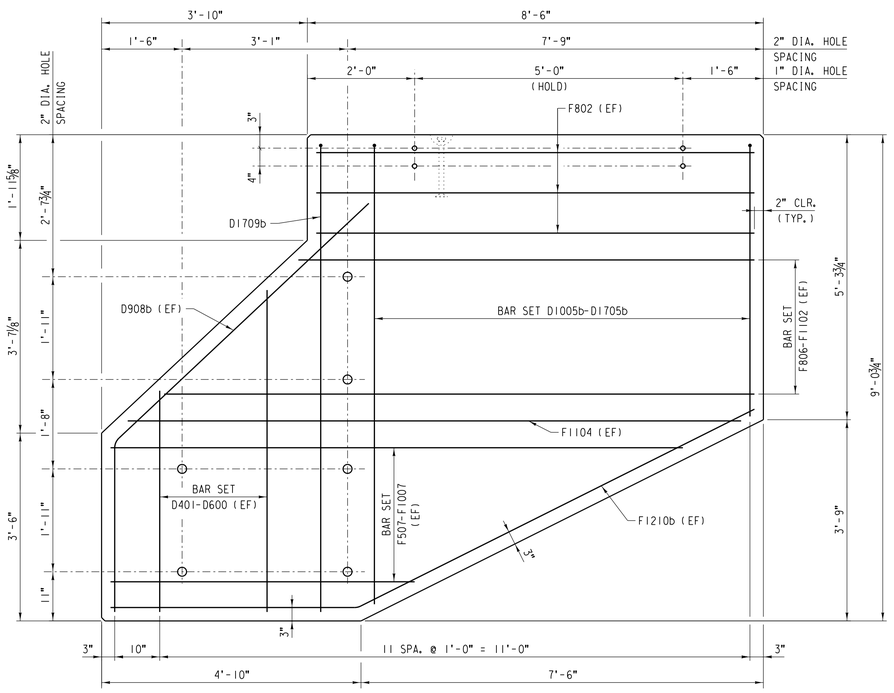


NOTE:
BAR DESIGNATIONS CONSIST OF BAR SIZE & LENGTH FOLLOWED BY THE LETTER "b" IF BENT. BAR SIZES ARE REPRESENTED BY THE LETTERS A THROUGH L CORRESPONDING TO BAR SIZE #2 THROUGH #18. BAR LENGTHS ARE GIVEN IN FEET AND INCHES; THE LAST TWO DIGITS ARE INCHES.

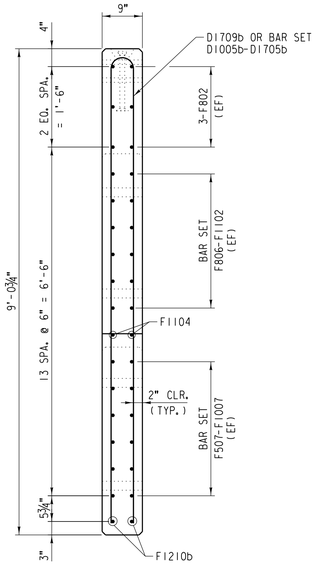
EST. WT. OF REINFORCING STEEL = 830 LB.



PLAN



ELEVATION



SECTION

EST. WT. OF PRECAST CONCRETE
WINGWALL SWW-10 = 9,180 LB. (4.6 TON)

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:
FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:
ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

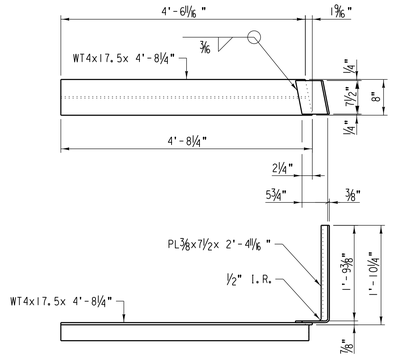
FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY: MRK/AAN	**UNION PACIFIC RAILROAD** — Office of Director Structures Design
DRAWN/CHK BY: CDP/AAN	LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION — 3 SPAN BMBD x 171' REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)
UPRR ENGINEER: ADS/DEH	
SHT NO.: T58 of T60	SHEET TITLE: PRECAST CONCRETE WINGWALL SWW-10 DETAILS

PRECAST CONCRETE WINGWALL SWW-10
SCALE: ¾"=1'-0"

FILE NAME: pw:\\Hanesch-pw.bentley.com:hanesch-pw-01\Documents\210000s\210070.11\Engineering Docs\Bridges\16.Ogden (2.27)\Plans*.dgn 02227.bi1.DGN

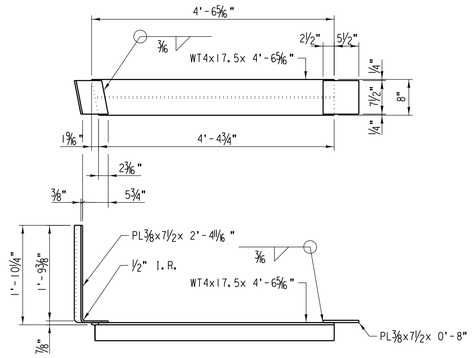
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COVER PLATE SCP-10

SCALE: 3/4"=1'-0"

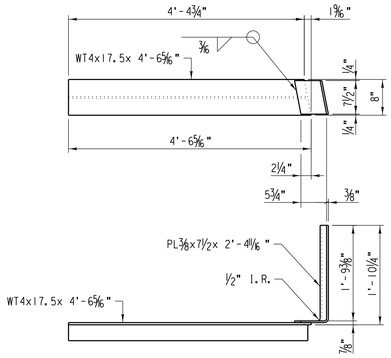
EST. WT. = 104.9 LB. EACH



COVER PLATE SCP-11

SCALE: 3/4"=1'-0"

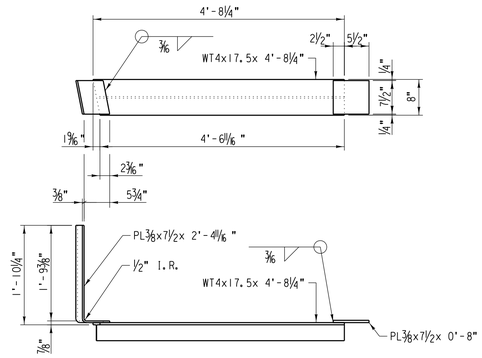
EST. WT. = 108.5 LB. EACH



COVER PLATE SCP-12

SCALE: 3/4"=1'-0"

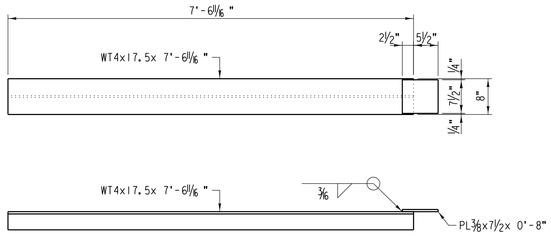
EST. WT. = 102.1 LB. EACH



COVER PLATE SCP-13

SCALE: 3/4"=1'-0"

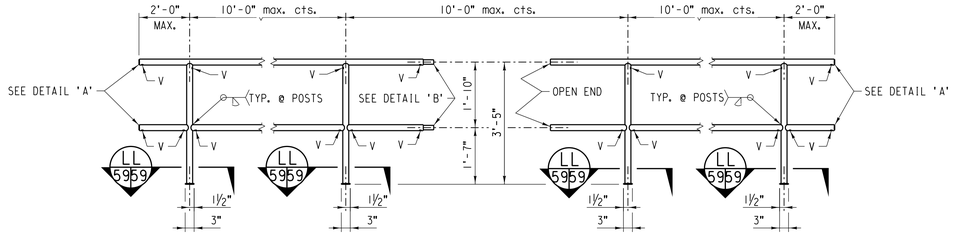
EST. WT. = 111.3 LB. EACH



COVER PLATE SCP-14

SCALE: 3/4"=1'-0"

EST. WT. = 138.6 LB. EACH

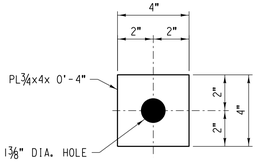


HANDRAIL DETAIL

SCALE: 1/2"=1'-0"

V = 3/8" DIA. DRILLED VENT HOLE 1" FROM JOINT

TO BE INSTALLED ON TOP OF EXISTING ABUTMENTS

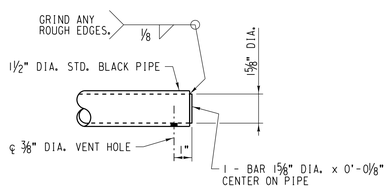


WASHER W100

SCALE: 3"=1'-0"

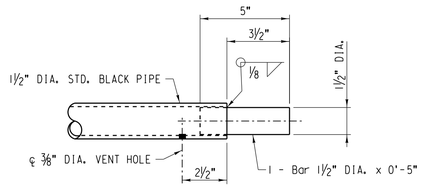
EST. WT. = 3.4 LB. EACH

GALVANIZE AFTER FABRICATION



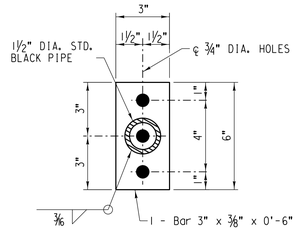
DETAIL 'A'

SCALE: 3"=1'-0"



DETAIL 'B'

SCALE: 3"=1'-0"



SECTION LL

SCALE: 3"=1'-0"

HANDRAIL NOTES

1. Structural steel bars shall meet the requirements of the current A.S.T.M. designation: A36.
2. Standard black pipe shall meet the requirements of the current A.S.T.M. DESIGNATION A53. Uncoated pipe shall be used.
3. Fabrication and arc welding of structural steel and handrail panels shall be in accordance with chapter 15, part 3 of the current A.R.E.M.A. manual for railway engineering. Mig welding shall be used on handrail panels. Open holes: as noted. Shop paint: none.
4. Handrail panels shall be galvanized after fabrication in accordance with the current A.S.T.M. designation: A123.
5. After galvanizing, all elements shall be free of fins, abrasions, rough or sharp edges and other surface defects.
6. Handrail to be installed within 2" of proposed bridge and existing handrail.
7. Contractor to determine location of posts and design railing to fit project site. Contractor responsible for design and detail of post connection to existing abutments.

MISCELLANEOUS STEEL NOTES

1. Materials, fabrication and workmanship shall be in accordance with Chapter 15: Steel Structures of the current AREMA Manual for Railway Engineering.
2. Miscellaneous steel shall conform to ASTM A36 specifications unless noted otherwise. Miscellaneous steel shall be plain unless noted otherwise
3. Where galvanizing is indicated, miscellaneous steel shall be pickled in accordance with SSPC-SP8 and hot-dipped galvanized in accordance with ASTM A123 specifications. Coating weight shall be 2.3 oz. per sq. ft.
4. Bolts and nuts to be zinc plated in accordance with ASTM A153 specifications unless noted otherwise.
5. Welding shall be by the arc process per AREMA Manual for Railway Engineering and AWS D1.1 Structural Welding Code. Welding shall be performed by qualified welders.

NONSTANDARD MISCELLANEOUS STEEL SCHEDULE

TOTAL	PHASE 1	PHASE 2	UNIT	DESCRIPTION
3	3	-	EA.	COVER PLATE SCP-10 (PER NOTES AND DETAIL, SHEET NO. T59)
3	-	3	EA.	COVER PLATE SCP-11 (PER NOTES AND DETAIL, SHEET NO. T59)
1	1	-	EA.	COVER PLATE SCP-12 (PER NOTES AND DETAIL, SHEET NO. T59)
1	-	1	EA.	COVER PLATE SCP-13 (PER NOTES AND DETAIL, SHEET NO. T59)
39	26	13	EA.	COVER PLATE SCP-14 (PER NOTES AND DETAIL, SHEET NO. T59)
4	2	2	EA.	WINGWALL HANDRAIL SWH-10 (PER NOTES, SHEET NO. T59 AND DETAIL, SHEET NO. T60)
2	-	2	EA.	BACKWALL HANDRAIL SBH-11 (PER NOTES, SHEET NO. T59 AND DETAIL, SHEET NO. T60)

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:

FINAL — STATUS — 05/28/2021 DATE

HANSON Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION — LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY:	MRK/AAN
DRAWN/CHK BY:	CDP/AAN
UPRR ENGINEER:	ADS/DEH
SHT NO.:	T59 of T60

UNION PACIFIC RAILROAD

Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION

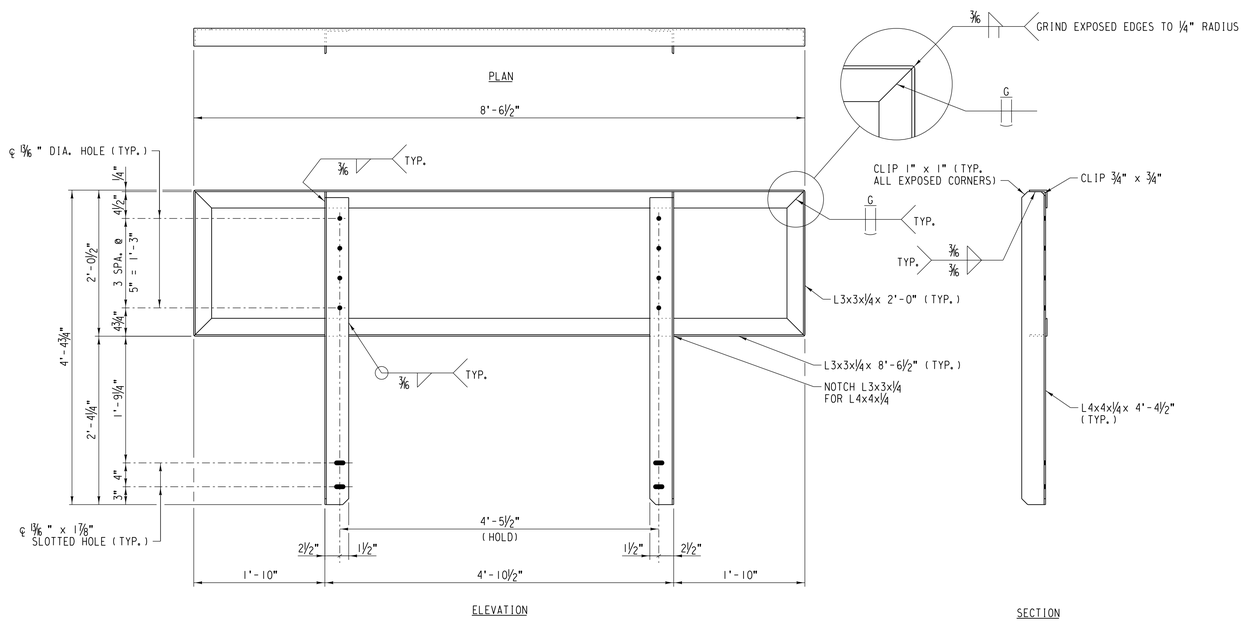
3 SPAN BMBD x 171'

REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: MISCELLANEOUS STEEL DETAILS (1 OF 2)

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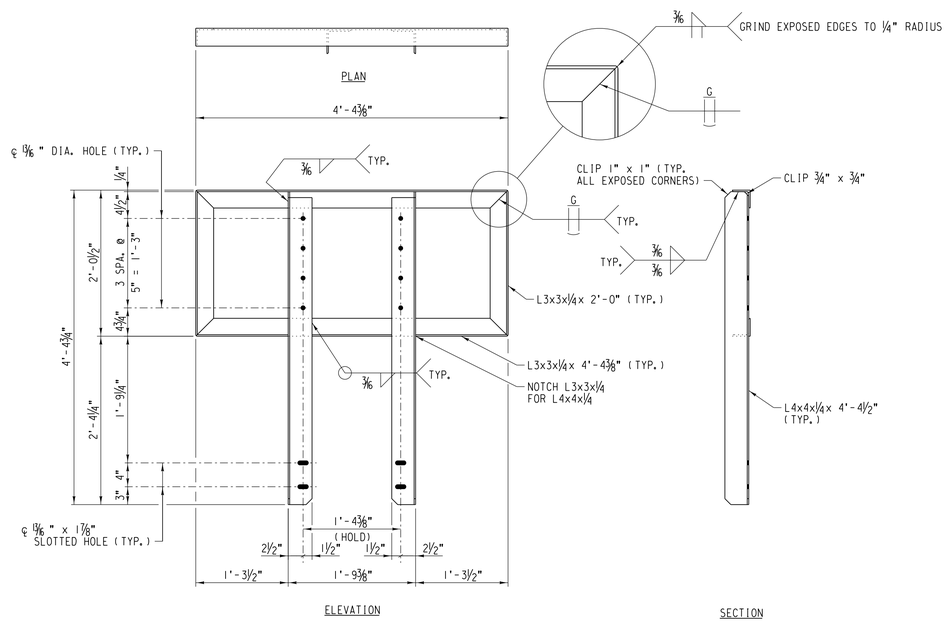


WINGWALL HANDRAIL SWH-10

SCALE: 1"=1'-0"

EST. WT. = 161.5 LB. EACH

SHIP WITH 4-¾" DIA. X 1" A307
HVY. HEX BOLT WITH HVY. HEX LOCKNUT
(MIL-DTL-32258) AND FLAT CIRCULAR WASHER
(ASTM F436)



BACKWALL HANDRAIL SBH-11

SCALE: 1"=1'-0"

EST. WT. = 120.5 LB. EACH

SHIP WITH 4-¾" DIA. X 20" A307
HVY. HEX BOLT WITH HVY. HEX LOCKNUT
(MIL-DTL-32258) AND FLAT CIRCULAR WASHER
(ASTM F436)

NO.	DATE	REVISIONS
	/ /	
	/ /	

COMPLETION STATUS:

FINAL — STATUS — 05/28/2021 DATE

HANSON
Hanson Professional Services Inc.

APPROVED FOR UNION PACIFIC RAILROAD BY:

ANDREW NICOL — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122538

FORMER BRIDGE 2.15 ROCKWELL SUBDIVISION

LATITUDE: 41.86361 LONGITUDE: -87.68871

DSN/CHK BY:	MRK/AAN
DRAWN/CHK BY:	CDP/AAN
UPRR ENGINEER:	ADS/DEH
SHT NO.:	T60 of T60

UNION PACIFIC RAILROAD
Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.27, ROCKWELL SUBDIVISION
3 SPAN BMBD x 171'
REPLACING 6 SPAN TROUGHS x 147' (3 TRACKS)

SHEET TITLE: MISCELLANEOUS STEEL DETAILS (2 OF 2)

FILE NAME: pw:\\mpenesch-pw.bentley.com:bpenesch-pw-01\Documents\210000\s\210070.11\Engineering Docs\Bridges\16_Ogden (2.27)\Ironsw\sbd0227_bsi.DGN

PLOTTED: 5/26/2021 10:44:32 AM