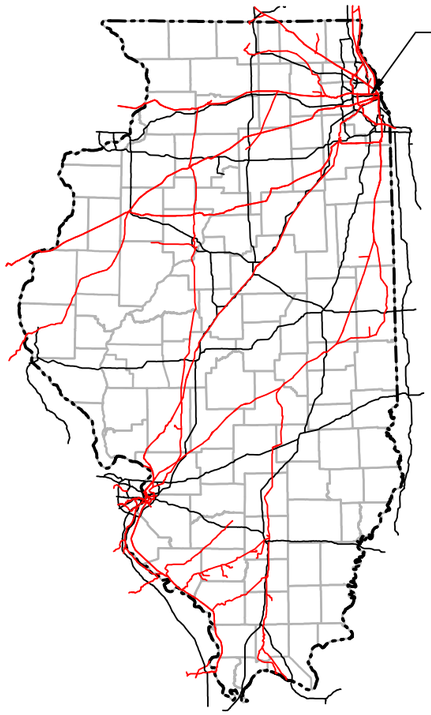
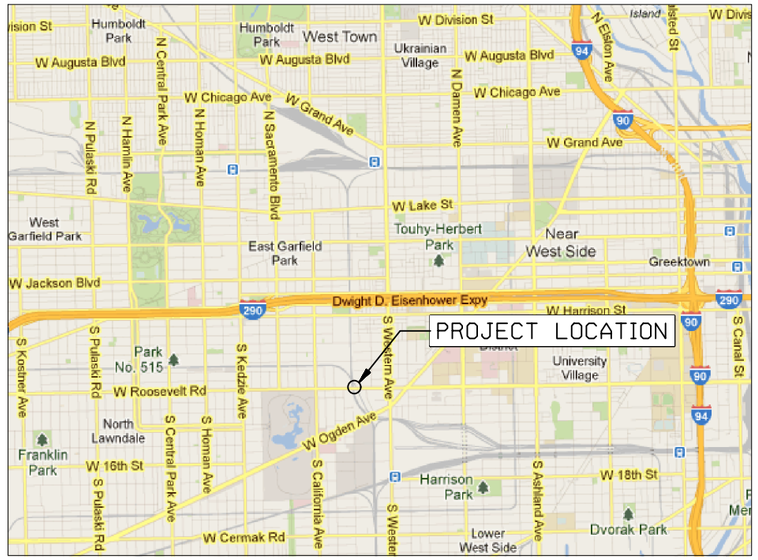
ENGINEERING
DESIGN & CONSTRUCTION





2625 ROOSEVELT RD
CHICAGO, IL

Project Location Map

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

MP 2.05 ROCKWELL SUB.
UNION PACIFIC RAILROAD
ROOSEVELT RD BRIDGE REPAIR

FINAL PLANS

CREATE PROJECT#:
WA1–UP–XXB–0003–B–FE

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

LAST REVISED
May 28, 2021

PROJECT INDEX

PROJECT DESIGN	DESCRIPTION
G-001	COVER SHEET WITH VICINITY MAP
G-002	PROJECT INDEX & REVISION SHEET
G-003	GENERAL NOTES & PROJECT CONTACTS
G-004	ABBREVIATIONS & LEGEND
T-001	ROADWAY TYPICAL SECTION
R-001	TRAFFIC CONTROL GENERAL NOTES
R-002	EB DETOUR - ROOSEVELT RD.
R-003	WB DETOUR - ROOSEVELT RD.
R-004	FULL CLOSURE DETOUR - ROOSEVELT RD.
R-005	IDOT HIGHWAY STANDARD
R-006	IDOT HIGHWAY STANDARD
R-007	IDOT HIGHWAY STANDARD
R-008	IDOT HIGHWAY STANDARD
R-009	IDOT HIGHWAY STANDARD
R-010	IDOT HIGHWAY STANDARD
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R-012	IDOT HIGHWAY STANDARD
R1 TO R8	BRIDGE 2.05 STRUCTURAL PLANS

BILL OF MATERIAL TABLE INDEX

BILL OF MATERIAL	LOCATION
REMOVALS	T-001
ROADWAY	T-001
TRAFFIC CONTROL	R-001
STRUCTURES	R3

TRAVIS KLUEGEL
062-059481
LICENSED PROFFESSIONAL ENGINEER OF ILLINOIS

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

MATTHEW F. BECKER
081-007755
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS

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

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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
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 2.05 ROCKWELL SUBDIVISION
ROOSEVELT ROAD BRIDGE REPAIR

SHEET TITLE:
PROJECT INDEX & REVISION SHEET

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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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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
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 2.05 ROCKWELL SUBDIVISION
ROOSEVELT ROAD BRIDGE REPAIR

SHEET TITLE:
GENERAL NOTES & PROJECT CONTACTS

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5/25/2021

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

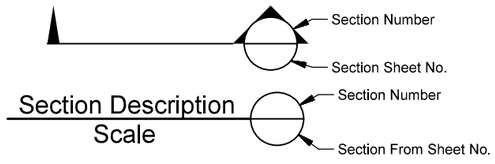
ABS	Automatic Block Signal
ATC	Automatic Train Control
CTC	Centralized Traffic Control
DED	Dragging Equipment Detector
DTC	Direct Traffic Control
ELTO	Electric Lock Turnout
HBD	Hot Box Detector
HTTO	Hand Throw Turnout
HWD	High Wide Dectector
POTO	Power Operated Turnout
TWC	Track Warrant Control
WILD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

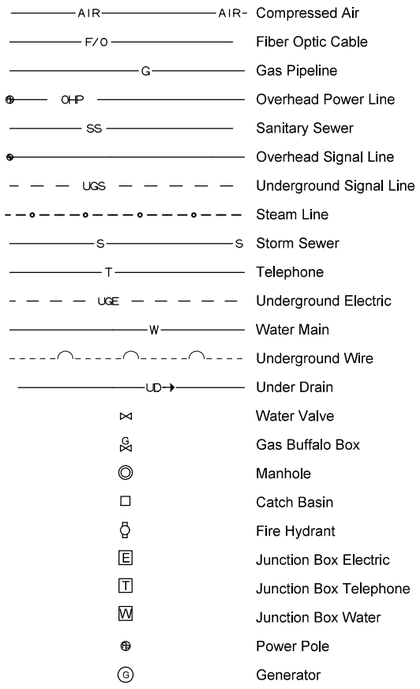
TRACK

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



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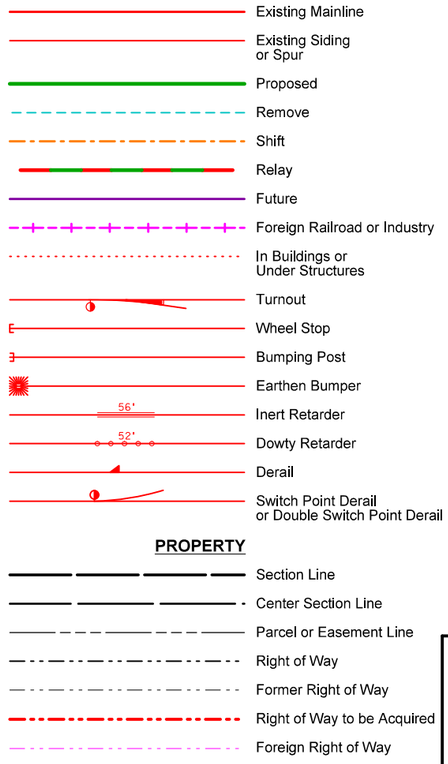
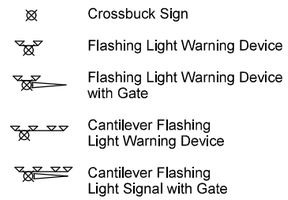


PROPERTY

ROAD CROSSING WARNING DEVICES



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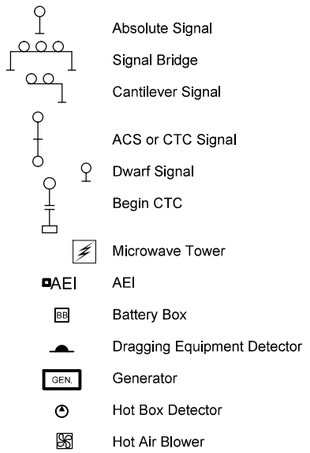
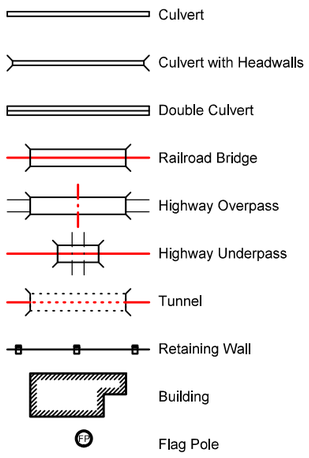
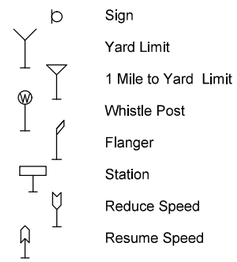


STRUCTURES



LIGHTING

SIGNS



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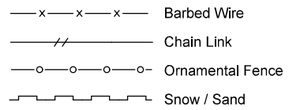

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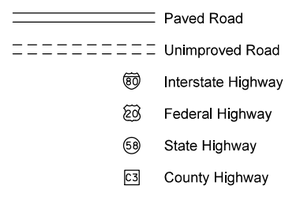

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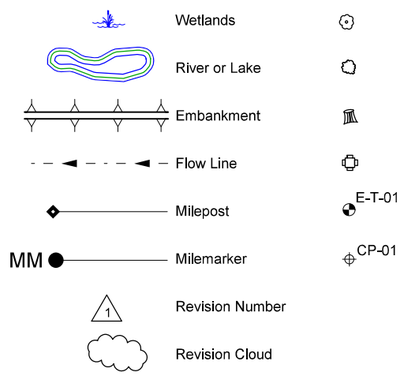

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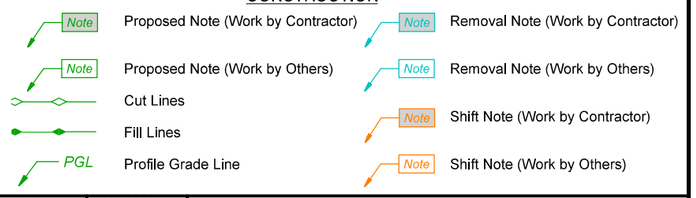

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Alfred Benesch & Company
35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

UNION PACIFIC

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CHECKED BY: TK	PID:	LOCATION & DESCRIPTION: MP 2.05 ROCKWELL SUBDIVISION ROOSEVELT ROAD BRIDGE REPAIR	
DATE: 05/28/21	BUDGET REF:		
SCALE: N.T.S.	SHEET NUMBER G-004	SHEET TITLE: ABBREVIATIONS & LEGEND	

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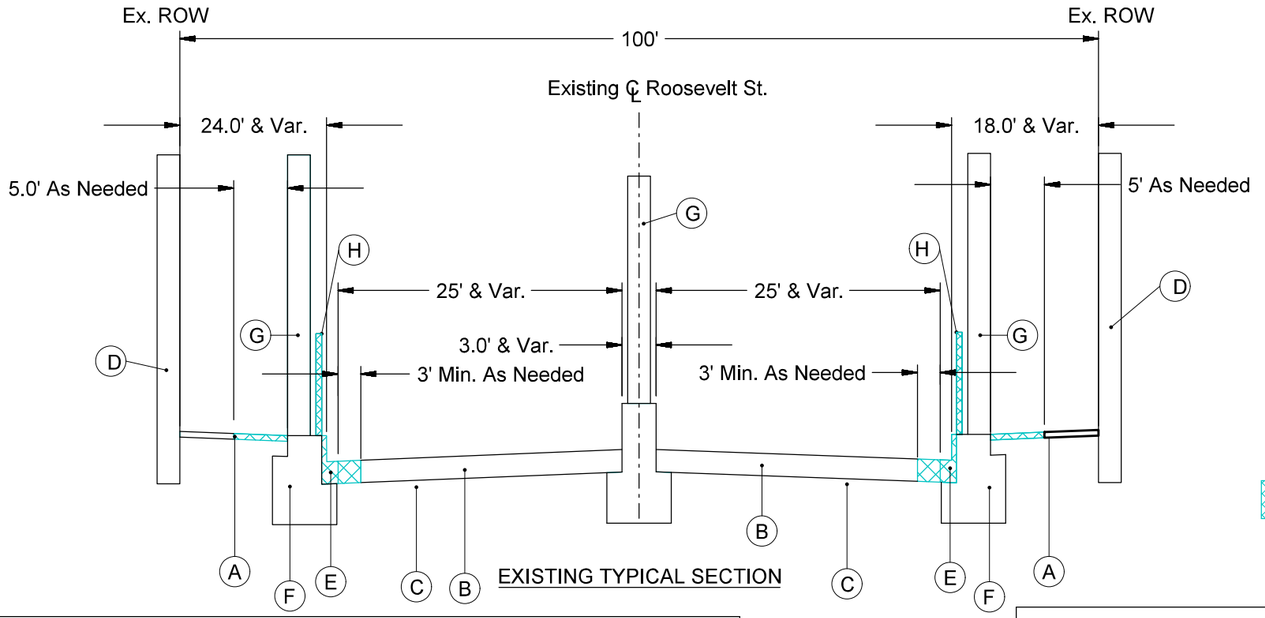


EXISTING TYPICAL SECTION

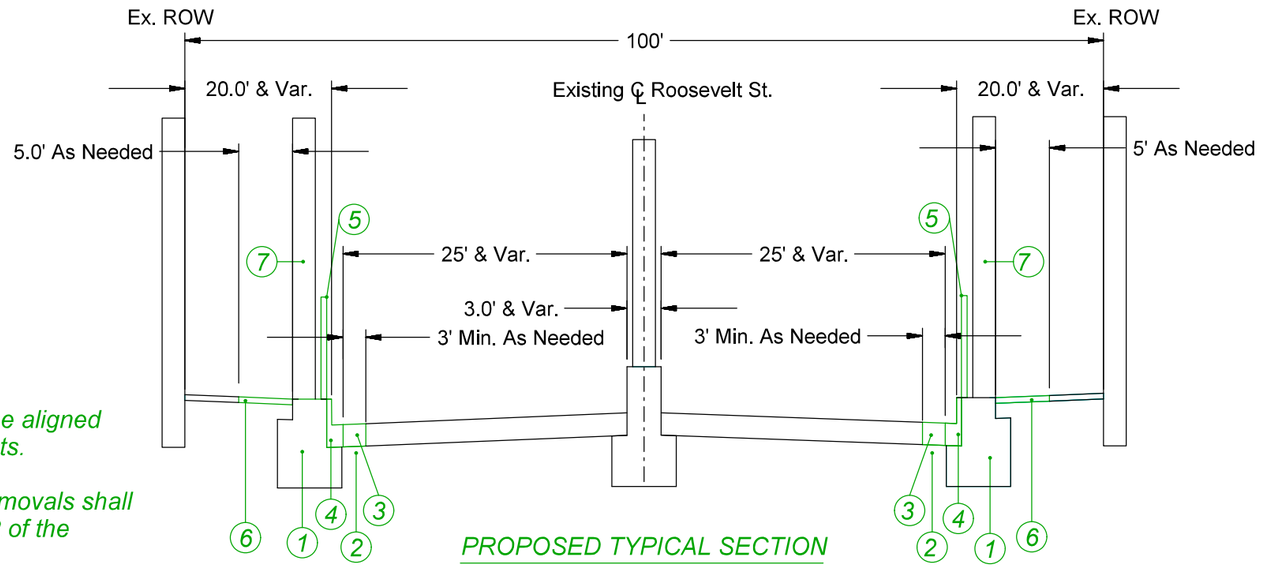
Existing Legend

A. P.C. Concrete Sidewalk (Removal As Needed)
B. P.C. Pavement
C.P.C. Concrete Base Course (Removal As Needed)
D. Existing Abutment
E. Concrete Gutter (Removal As Needed)
F. Bridge Pier Foundation (Removal At Bridge Pier Replacement)
G. Bridge Pier
H. Handrail

Removal

BILL OF MATERIAL - REMOVALS				
REQD.	UNIT	DESCRIPTION	STORE ITEM NO.	ORDERED BY
100	SQ YD	PAVEMENT REMOVAL		CONSTRUCTOR ↓
300	FOOT	GUTTER REMOVAL		
1500	SQ FT	SIDEWALK REMOVAL		
320	FOOT	SAWCUT AND SEAL NEW JOINTS		
300	FOOT	HANDRAIL REMOVAL		

BILL OF MATERIAL - PROPOSED				
REQD.	UNIT	DESCRIPTION	STORE ITEM NO.	ORDERED BY
100	SQ YD	PORTLAND CEMENT CONCRETE BASE COURSE 7"		CONSTRUCTOR ↓
100	SQ YD	PORTLAND CEMENT CONCRETE PAVEMENT (VARIABLE DEPTH)		
1500	SQ FT	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH		
300	FOOT	PIPE HANDRAIL		
300	FOOT	CONCRETE GUTTER, TYPE B		



PROPOSED TYPICAL SECTION

Proposed Legend

1. Bridge Pier Foundation
2. 7" P.C. Concrete Base Course (As Needed)
3. P.C. Concrete Pavement, Variable Depth (As Needed)
4.Concrete Gutter, Type B (As Needed)
5. Handrail
6. P.C. Concrete Sidewalk,5" (As Needed)
7. Bridge Pier

Notes:

1. Limits of removal should be aligned with existing sidewalk joints.

2. The limit of all sidewalk removals shall be sealed per section 442 of the Standard Specifications

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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

UNION PACIFIC

DRAWN BY: KP	WORK ORDER: 31876	UNION PACIFIC RAILROAD	Director Structures Design
CHECKED BY: TK	PID:	LOCATION & DESCRIPTION:	MP 2.05 ROCKWELL SUBDIVISION ROOSEVELT ROAD BRIDGE REPAIR
DATE: 05/28/21	BUDGET REF:		
SCALE: N.T.S.	SHEET NUMBER T-001	SHEET TITLE:	ROADWAY TYPICAL SECTION

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 72 hours before commencing construction.
18. The Contractor is responsible for all no parking notifications required by traffic shifts.

BILL OF MATERIAL - TRAFFIC CONTROL

REQD.	UNIT	DESCRIPTION	STORE ITEM NO.	ORDERED BY
500.0	FOOT	TEMPORARY PAVEMENT MARKING - LINE 4"		CONSTRUCTOR ↓
120.0	FOOT	TEMPORARY CONCRETE BARRIER		
120.0	FOOT	RELOCATE TEMPORARY CONCRETE BARRIER		
1.0	EACH	IMPACT ATTENUATORS, TEMPORARY (NON- REDIRECTIVE), TEST LEVEL 2		
1.0	EACH	IMPACT ATTENUATORS, RELOCATE (NON- REDIRECTIVE), TEST LEVEL 2		
4320.0	HOUR	ARROWBOARD (TRAILER MOUNTED)		
2.0	EACH	BARRICADES, TYPE III WITH WARNING LIGHT		
166.7	SQ FT	PAVEMENT MARKING REMOVAL - WATER BLASTING		
10.0	EACH	DRUM WITH WARNING LIGHT or BARRICADES, TYPE I WITH EXTENDED LEGS AND WARNING LIGHT		
1.0	L SUM	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)		
4.0	EACH	BARRICADES, TYPE III		

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35 W. Wacker Drive Suite 3300
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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 2.05 ROCKWELL SUBDIVISION ROOSEVELT ROAD BRIDGE REPAIR	
DATE: 05/28/21	BUDGET REF:		
SCALE: N.T.S.	SHEET NUMBER R-001	SHEET TITLE: TRAFFIC CONTROL GENERAL NOTES	

DETOUR NOTES:

1. The detour on this plan shall apply when eastbound Roosevelt Ave. is closed. Closure periods shall be coordinated with the Commissioner.

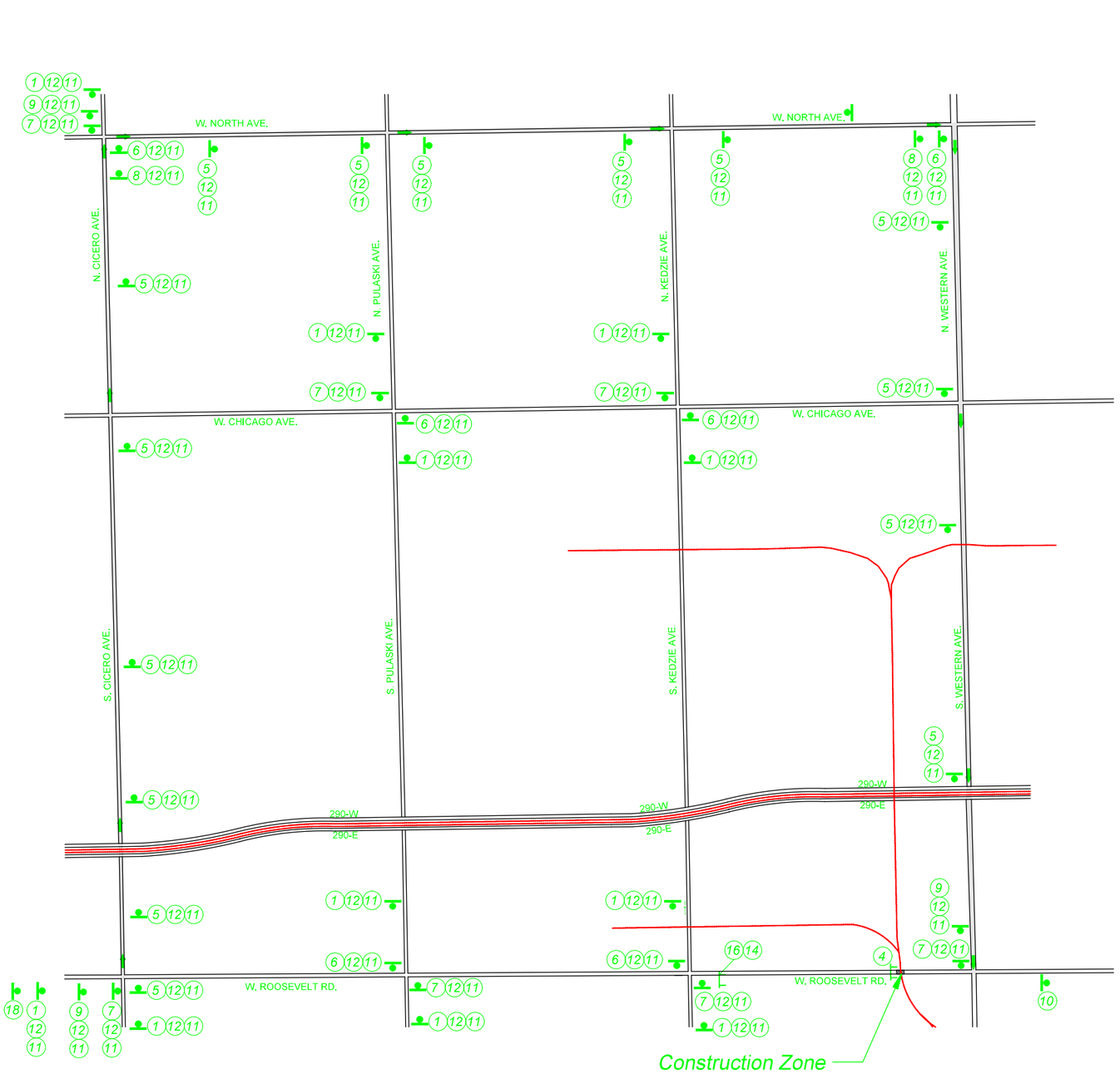
LEGEND

- Work Area
- Detour Route
- 6 13 — Traffic Sign Key (Combination Of Signs)
- Type III Barricade With Amber Flashing Lights
- 1 — Sign On Portable Or Permanent Support
- 48"x48" Construction Warning Sign, With Amber Flashing Light
- Detoured Traffic Direction

TYPICAL LAYOUT OF SIGNS

SIGN LEGEND

1	DETOUR AHEAD — W20-2 (48x48)	7	DETOUR — M4-9L (24X30)	13	WEST — M3-4 (24x12)
2	ROAD CLOSED AHEAD — W20-3 (48x48)	8	DETOUR — M4-9 R (24x30)	14	DETOUR — M4-10L (48x18)
3	ROAD CLOSED 500 FT — W20-3 (48x48)	9	DETOUR — M4-9L (24x30)	15	DETOUR — M4-10R (48X18)
4	ROAD CLOSED — R11-2 (48x30)	10	END DETOUR — M4-8A (24x18)	16	ROAD CLOSED TO THRU TRAFFIC — R11-4 (60x30)
5	DETOUR — M4-9 (24x30)	11	W ROOSEVELT ST — SPECIAL (42x10)	17	WESTBOUND W ROOSEVELT ST ROAD CLOSED TO THRU TRAFFIC — SPECIAL (72x36)
6	DETOUR — M4-9R (24x30)	12	EAST — M3-2 (24x12)	18	EASTBOUND W ROOSEVELT ST ROAD CLOSED TO THRU TRAFFIC — SPECIAL (72x36)



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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

DRAWN BY: KP	WORK ORDER: 31876	UNION PACIFIC RAILROAD	Director Structures Design
CHECKED BY: TK	PID:	LOCATION & DESCRIPTION: MP 2.05 ROCKWELL SUBDIVISION ROOSEVELT ROAD BRIDGE REPAIR	
DATE: 05/28/21	BUDGET REF:		
SCALE: N.T.S.	SHEET NUMBER R-002	SHEET TITLE: EB DETOUR - ROOSEVELT RD.	

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Default
5/24/2021

DETOUR NOTES:

1. The detour on this plan shall apply when westbound Roosevelt Ave. is closed. Closure periods shall be coordinated with the Commissioner.

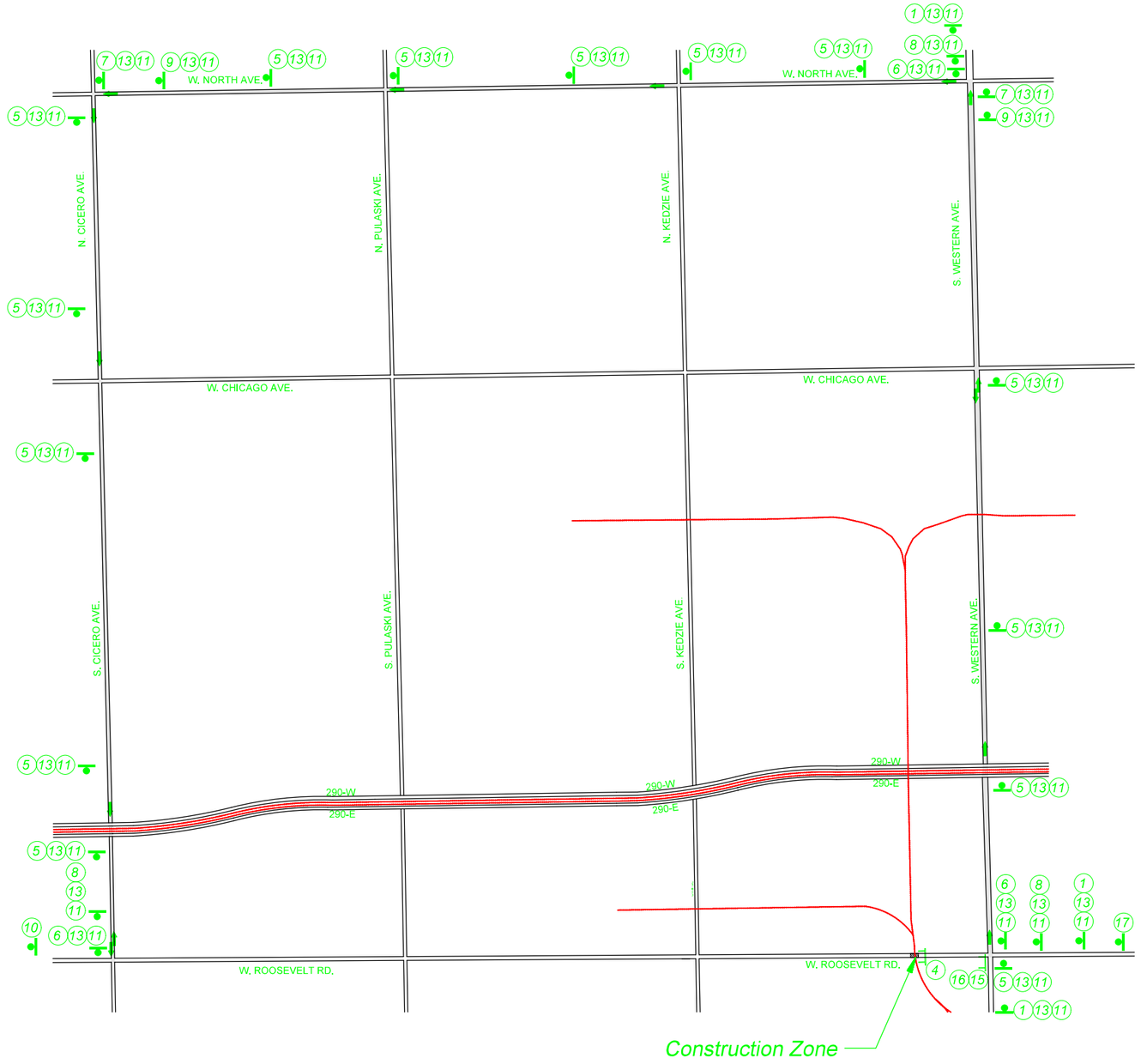
LEGEND

- Work Area
- Detour Route
- (6)(13) Traffic Sign Key (Combination Of Signs)
- Type III Barricade With Amber Flashing Lights
- (1) Sign On Portable Or Permanent Support
- 48"x48" Construction Warning Sign, With Amber Flashing Light
- Detoured Traffic Direction

TYPICAL LAYOUT OF SIGNS

SIGN LEGEND

1	DETOUR AHEAD W20-2 (48x48)	7	DETOUR M4-9L (24X30)	13	WEST M3-4 (24x12)
2	ROAD CLOSED AHEAD W20-3 (48x48)	8	DETOUR M4-9 R (24x30)	14	DETOUR M4-10L (48x18)
3	ROAD CLOSED 500 FT W20-3 (48x48)	9	DETOUR M4-9L (24x30)	15	DETOUR M4-10R (48X18)
4	ROAD CLOSED R11-2 (48x30)	10	END DETOUR M4-8A (24x18)	16	ROAD CLOSED TO THRU TRAFFIC R11-4 (60x30)
5	DETOUR M4-9 (24x30)	11	W ROOSEVELT ST SPECIAL (42x10)	17	WESTBOUND W ROOSEVELT ST ROAD CLOSED TO THRU TRAFFIC SPECIAL (72x36)
6	DETOUR M4-9R (24x30)	12	EAST M3-2 (24x12)	18	EASTBOUND W ROOSEVELT ST ROAD CLOSED TO THRU TRAFFIC SPECIAL (72x36)



Scale: None

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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

UNION PACIFIC

DRAWN BY: KP	WORK ORDER: 31876	UNION PACIFIC RAILROAD	Director Structures Design
CHECKED BY: TK	PID:	LOCATION & DESCRIPTION: MP 2.05 ROCKWELL SUBDIVISION ROOSEVELT ROAD BRIDGE REPAIR	
DATE: 05/28/21	BUDGET REF:		
SCALE: N.T.S.	SHEET NUMBER R-003	SHEET TITLE: WB DETOUR - ROOSEVELT RD.	

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Default
5/24/2021

DETOUR NOTES:

1. Full closure of Roosevelt St will take place when the railroad superstructure will be erected. Closure shall take place between the hours of 7 PM to 5 AM. All closures shall be coordinated with the Commissioner.

LEGEND

- Work Area
- Detour Route
- 6 13 — Traffic Sign Key (Combination Of Signs)
- Type III Barricade With Amber Flashing Lights
- 1 — Sign On Portable Or Permanent Support
- 48"x48" Construction Warning Sign, With Amber Flashing Light
- Detoured Traffic Direction

TYPICAL LAYOUT OF SIGNS

SIGN LEGEND

1	DETOUR AHEAD — W20-2 (48x48)	7	DETOUR — M4-9L (24X30)	13	WEST — M3-4 (24x12)
2	ROAD CLOSED AHEAD — W20-3 (48x48)	8	DETOUR — M4-9 R (24x30)	14	DETOUR — M4-10L (48x18)
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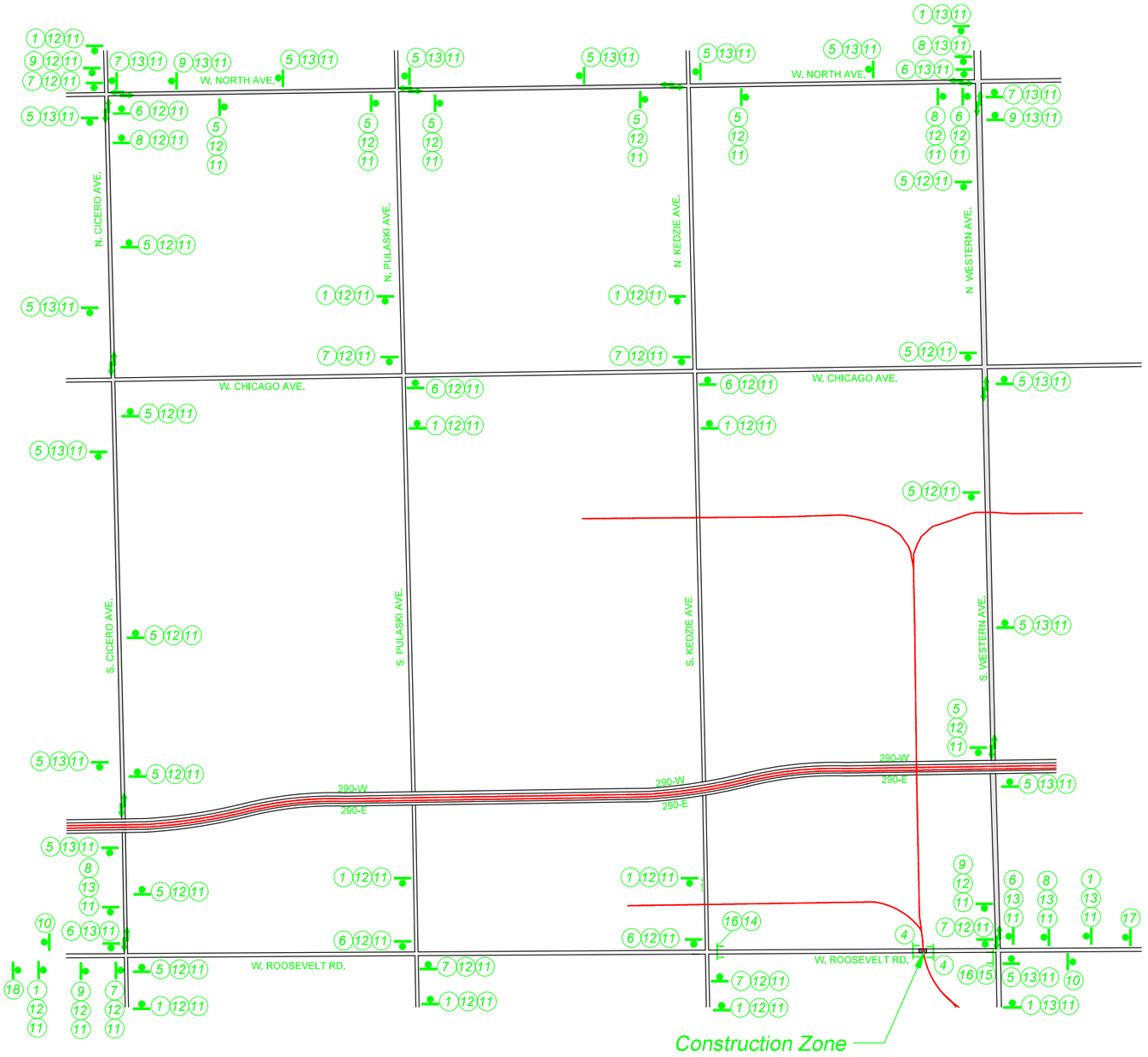

Scale: None

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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 2.05 ROCKWELL SUBDIVISION ROOSEVELT ROAD BRIDGE REPAIR	
DATE: 05/28/21	BUDGET REF:		
SCALE: N.T.S.	SHEET NUMBER R-004	SHEET TITLE: FULL CLOSURE DETOUR - ROOSEVELT RD.	

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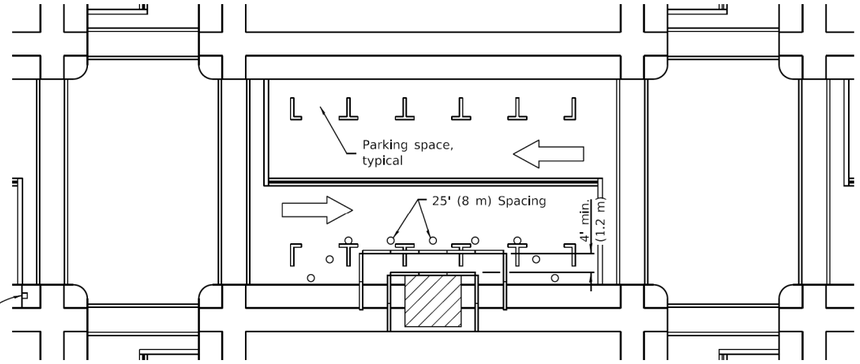
5/24/2021



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

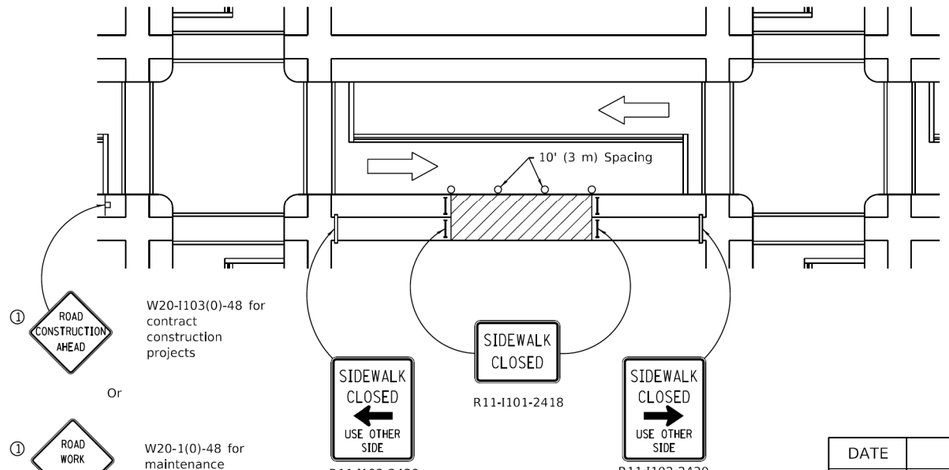
Or

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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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 R-005

UNION PACIFIC RAILROAD — Director Structures Design

LOCATION & DESCRIPTION:
MP 2.05 ROCKWELL SUBDIVISION
ROOSEVELT ROAD BRIDGE REPAIR

SHEET TITLE:
IDOT HIGHWAY STANDARD

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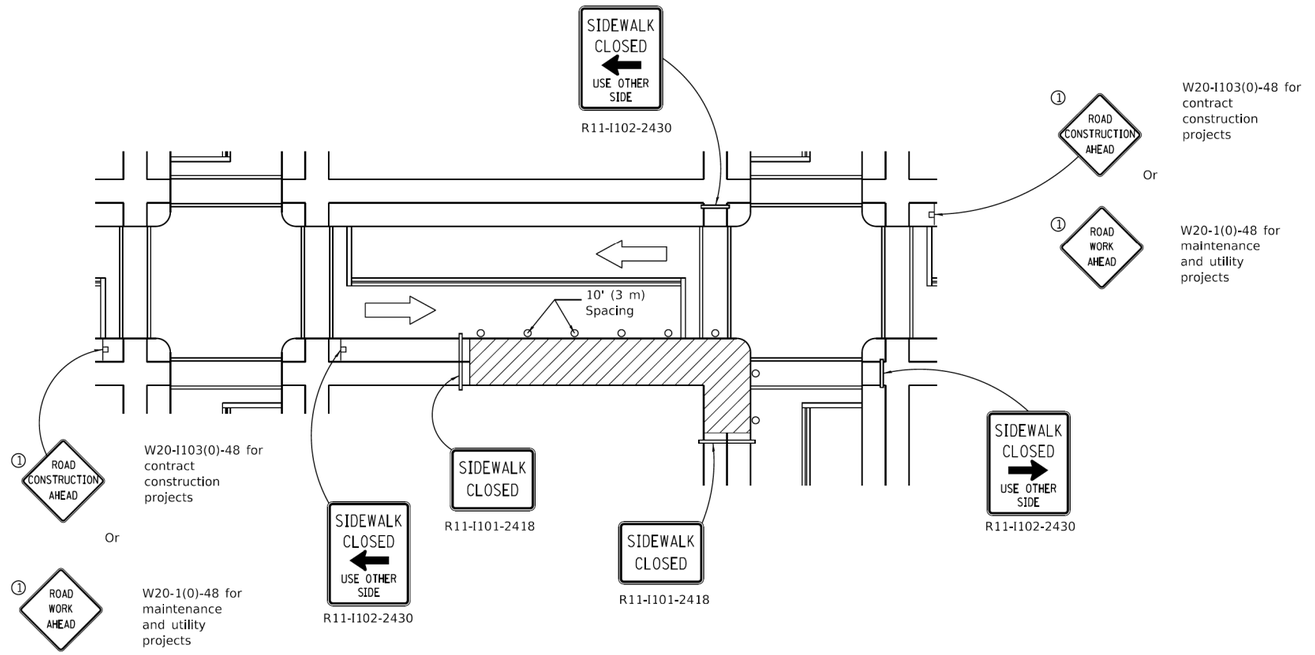
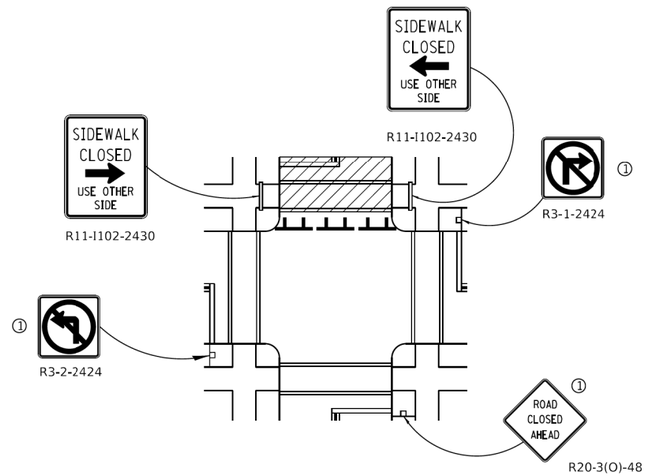
5/24/2021



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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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

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-006

UNION PACIFIC RAILROAD — Director Structures Design

LOCATION & DESCRIPTION:
MP 2.05 ROCKWELL SUBDIVISION
ROOSEVELT ROAD BRIDGE REPAIR

SHEET TITLE:
IDOT HIGHWAY STANDARD

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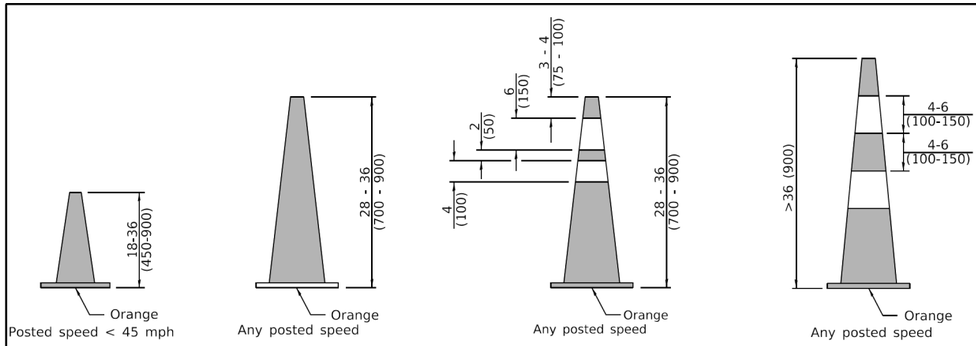
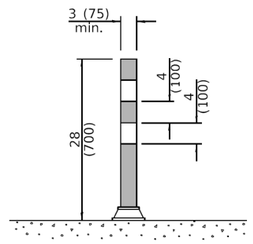
5/24/2021



DAYTIME USE

DAY OR NIGHTTIME USE

CONES



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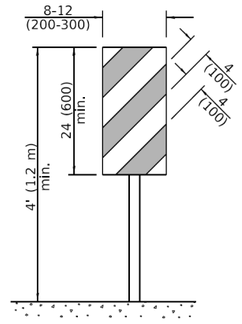
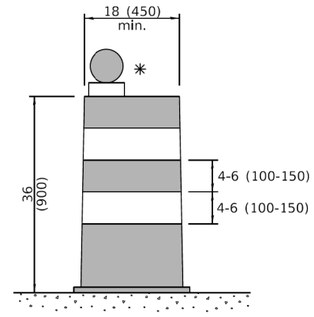
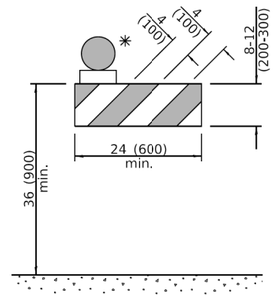


VERTICAL PANEL

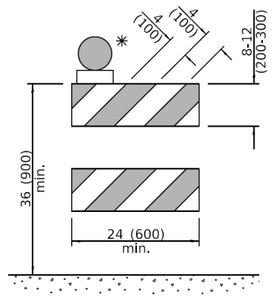
POST MOUNTED



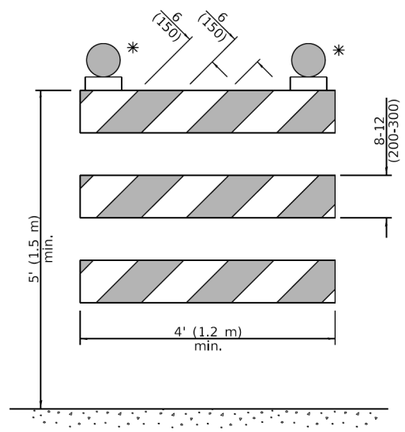
DRUM



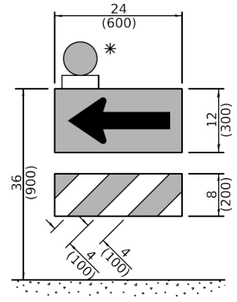
TYPE I BARRICADE



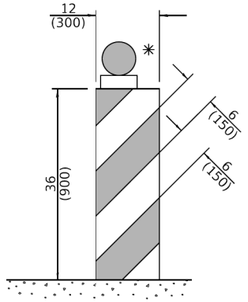
TYPE II BARRICADE



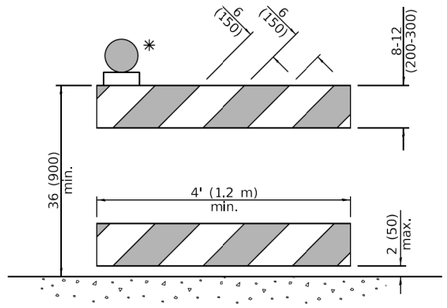
TYPE III BARRICADE



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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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-007

UNION PACIFIC RAILROAD — Director Structures Design

LOCATION & DESCRIPTION:
MP 2.05 ROCKWELL SUBDIVISION
ROOSEVELT ROAD BRIDGE REPAIR

SHEET TITLE:
IDOT HIGHWAY STANDARD

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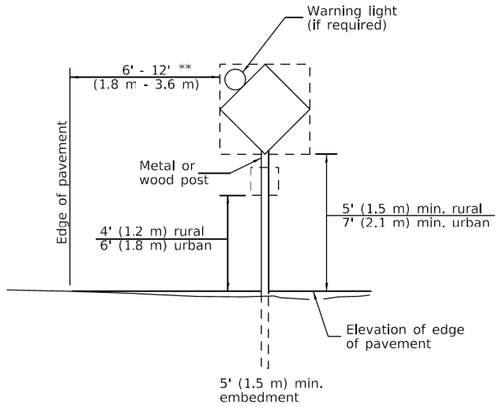
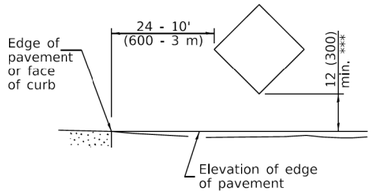
5/24/2021



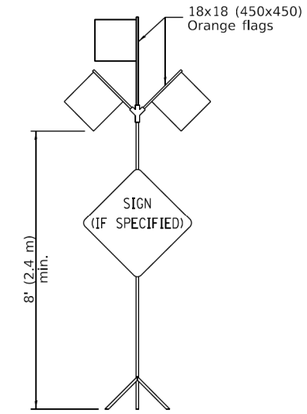
POST MOUNTED SIGNS

** 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.



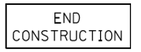
SIGNS ON TEMPORARY SUPPORTS

*** 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

G20-I104(0)-6036



G20-I105(0)-6024

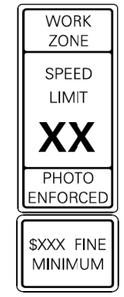
This signing is required for all projects 2 miles (3200 m) or more in length.

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



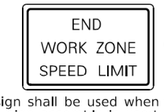
W21-III5(0)-3618

R2-1-3648

R10-I108p-3618 ****

R2-I106p-3618

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



G20-I103-6036

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

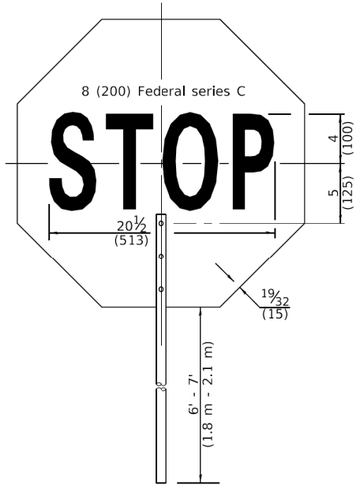
HIGHWAY CONSTRUCTION SPEED ZONE SIGNS

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

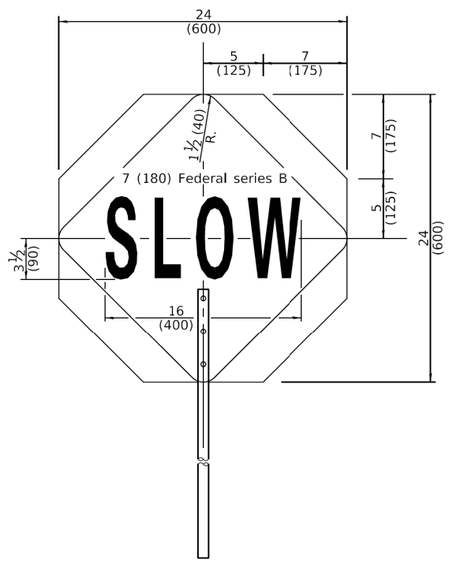
W12-I103-4848

WIDTH RESTRICTION SIGN

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



FRONT SIDE



REVERSE SIDE

FLAGGER TRAFFIC CONTROL SIGN

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

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

ISSUED FOR CONSTRUCTION

REVISION	BY	DATE	DESCRIPTION

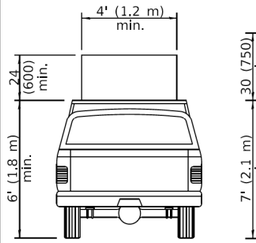
benesch
Alfred Benesch & Company
35 W. Wacker Drive Suite 3300
Chicago, Illinois 60601
312-565-0450 Job No. 210070.11

DRAWN BY: KP	WORK ORDER: 31876
CHECKED BY: TK	PID:
DATE: 05/28/21	BUDGET REF:
SCALE: N.T.S.	SHEET NUMBER R-008

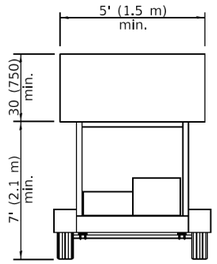
UNION PACIFIC RAILROAD — Director Structures Design

LOCATION & DESCRIPTION:
MP 2.05 ROCKWELL SUBDIVISION
ROOSEVELT ROAD BRIDGE REPAIR

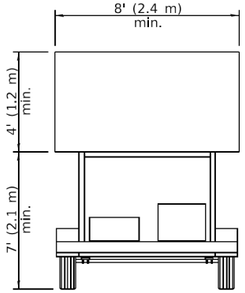
SHEET TITLE:
IDOT HIGHWAY STANDARD



TYPE A
ROOF
MOUNTED

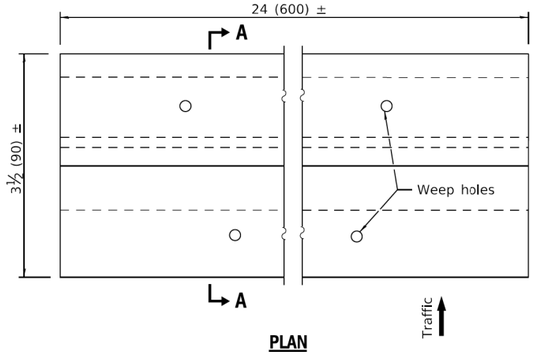


TYPE B
ROOF OR TRAILER
MOUNTED

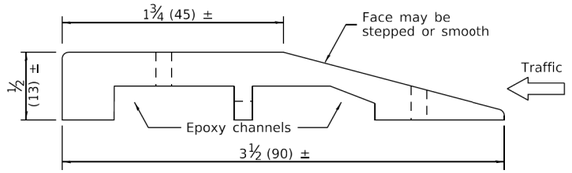


TYPE C
TRAILER
MOUNTED

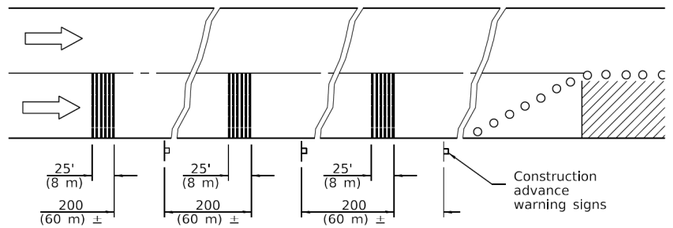
ARROW BOARDS

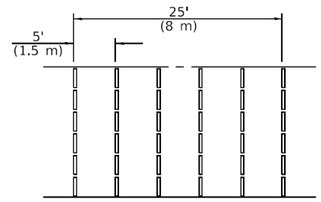


PLAN



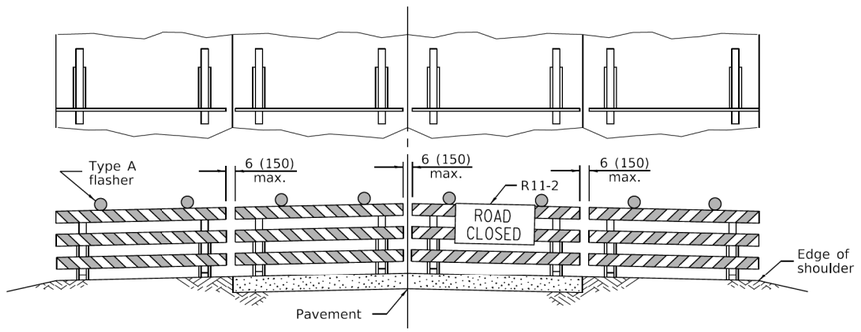
SECTION A-A





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

DRAWN BY: KP	WORK ORDER: 31876	UNION PACIFIC RAILROAD	Director Structures Design
CHECKED BY: TK	PID:	LOCATION & DESCRIPTION: MP 2.05 ROCKWELL SUBDIVISION ROOSEVELT ROAD BRIDGE REPAIR	
DATE: 05/28/21	BUDGET REF:		
SCALE: N.T.S.	SHEET NUMBER R-009	SHEET TITLE: IDOT HIGHWAY STANDARD	

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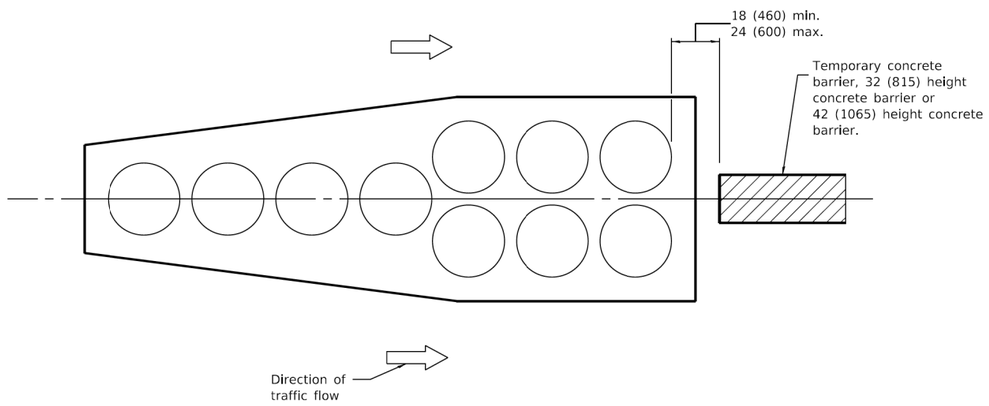
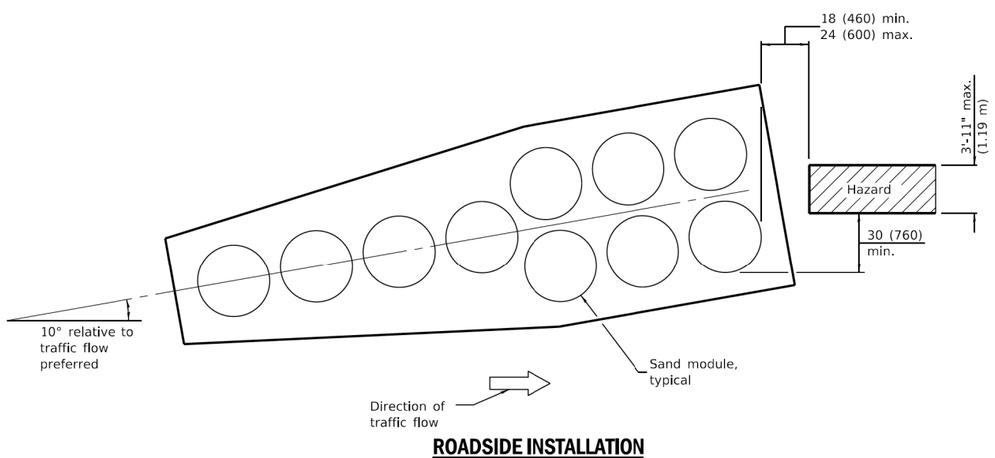
5/24/2021



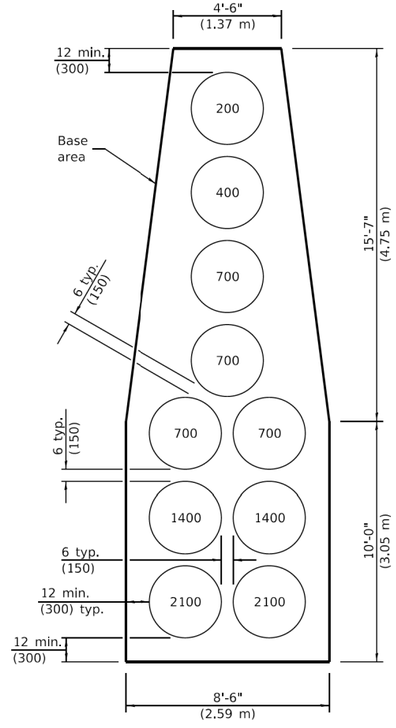
GORE INSTALLATION

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



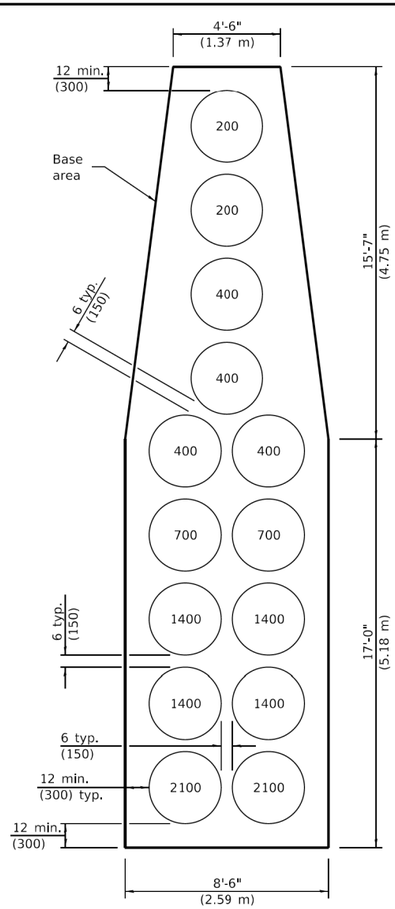
ROADSIDE INSTALLATION

(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
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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-010

UNION PACIFIC RAILROAD — Director Structures Design

LOCATION & DESCRIPTION:
MP 2.05 ROCKWELL SUBDIVISION
ROOSEVELT ROAD BRIDGE REPAIR

SHEET TITLE:
IDOT HIGHWAY STANDARD

Color table: UPRR.tbl
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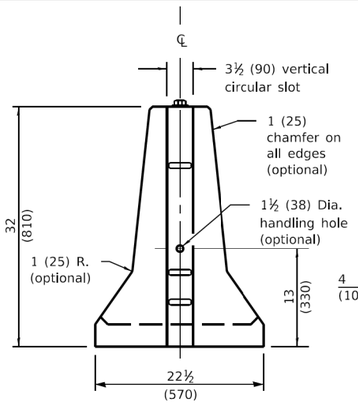
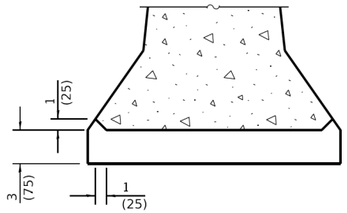
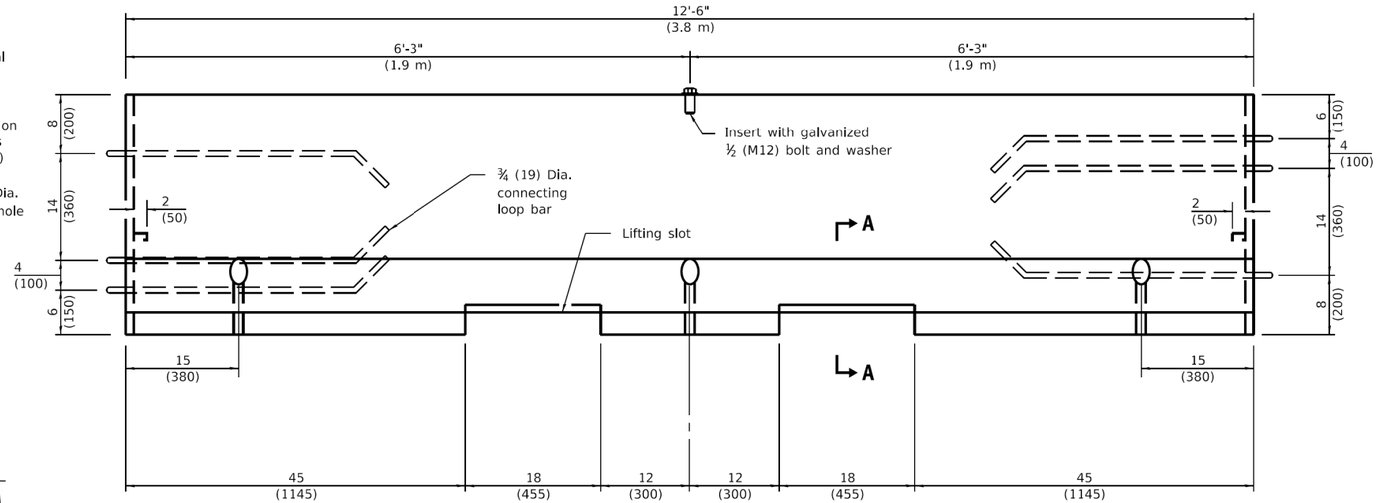


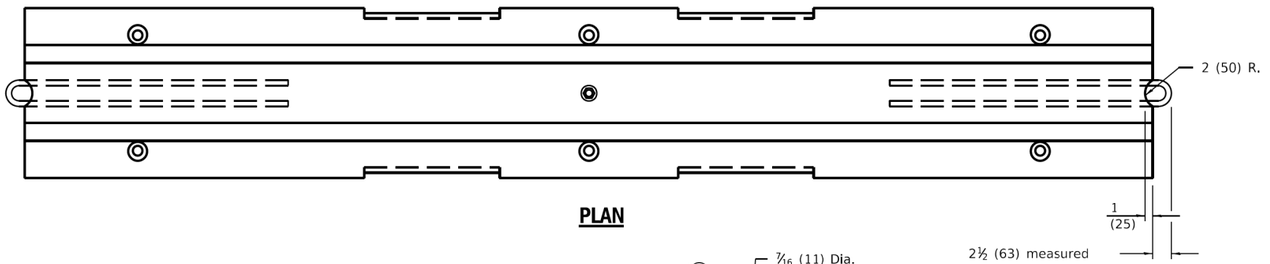
END VIEW
(Showing lifting slot)



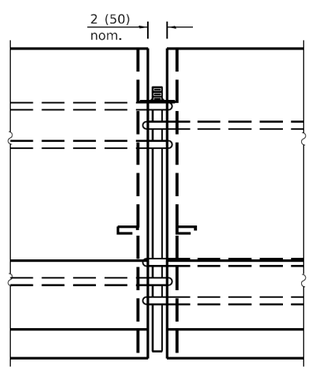
SECTION A-A
LIFTING SLOT



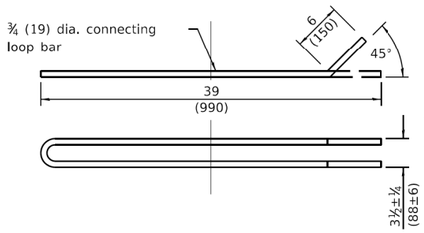
ELEVATION
(Showing connecting loop bars and vertical panel bolt/insert)



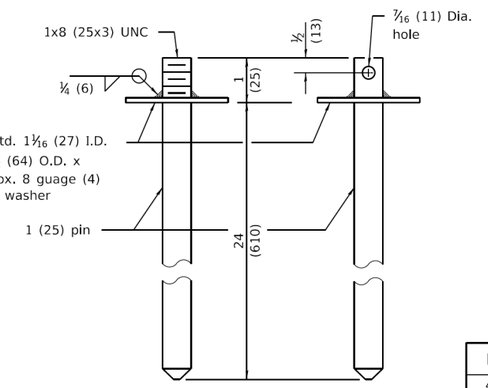
PLAN



CONNECTING DETAIL

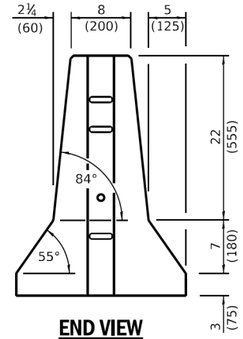


CONNECTING LOOP BAR

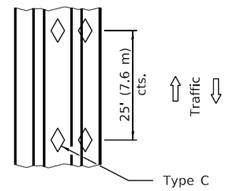


CONNECTING AND ANCHOR PINS
(End may be beveled ¼ (6) max.)

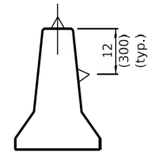
F SHAPE DESIGN



END VIEW



TOP VIEW



BARRIER WALL REFLECTORS

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

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
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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

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-011

UNION PACIFIC RAILROAD — Director Structures Design

LOCATION & DESCRIPTION:
MP 2.05 ROCKWELL SUBDIVISION
ROOSEVELT ROAD BRIDGE REPAIR

SHEET TITLE:
IDOT HIGHWAY STANDARD

Color table: UPRR.tbl
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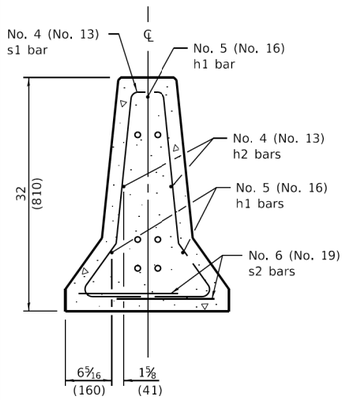
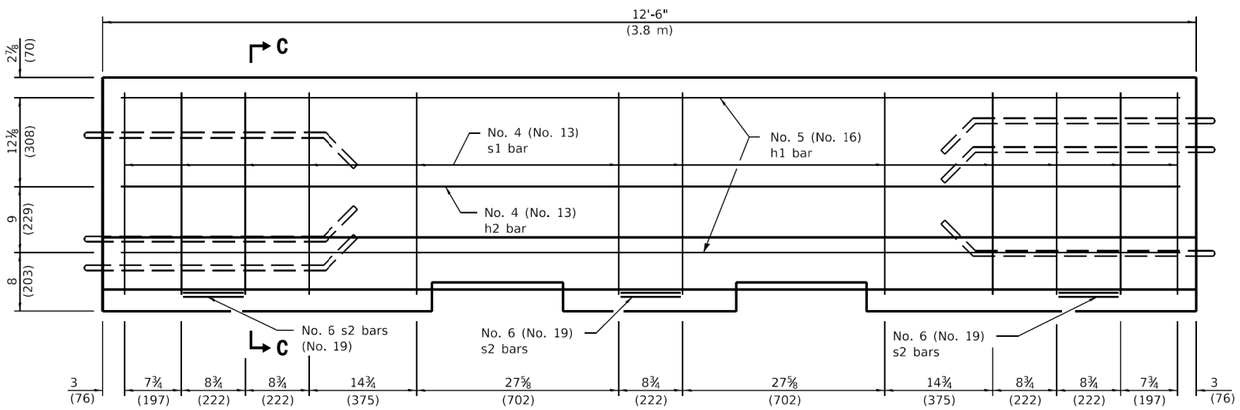
5/24/2021

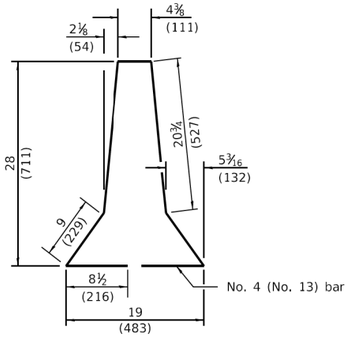
F SHAPE DESIGN



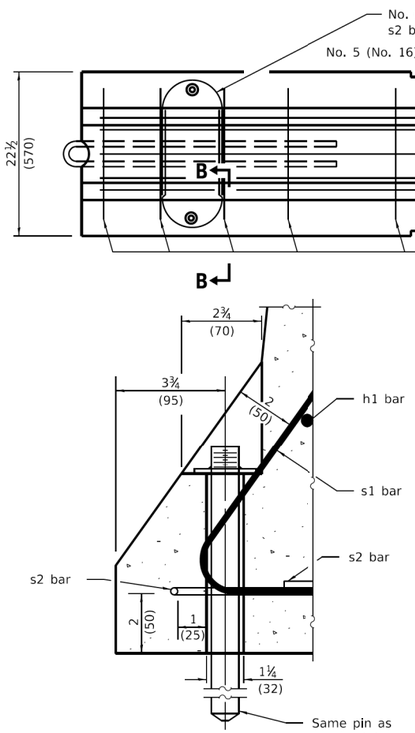
SECTION C-C



ELEVATION
(Reinforcement)

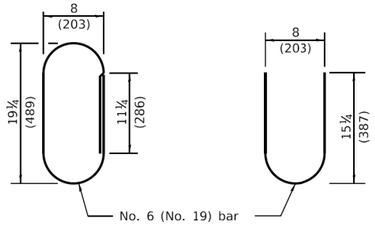


s1 BAR

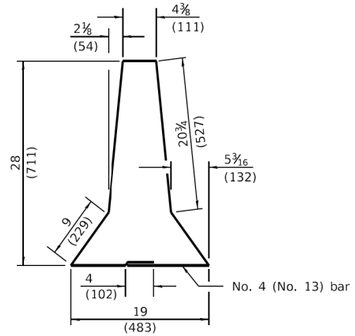


PLAN

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
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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 2.05 ROCKWELL SUBDIVISION ROOSEVELT ROAD BRIDGE REPAIR	
DATE: 05/28/21	BUDGET REF:		
SCALE: N.T.S.	SHEET NUMBER R-012	SHEET TITLE: IDOT HIGHWAY STANDARD	

Color table: UPRR
pw:\\benesch-pw.bentley.com:benesch-pw-01\Documents\210000s\210070.11\Engineering Docs\UPRR Civil\Pentable\15R-UPRR Roosevelt_Color_Half_UP.tbl
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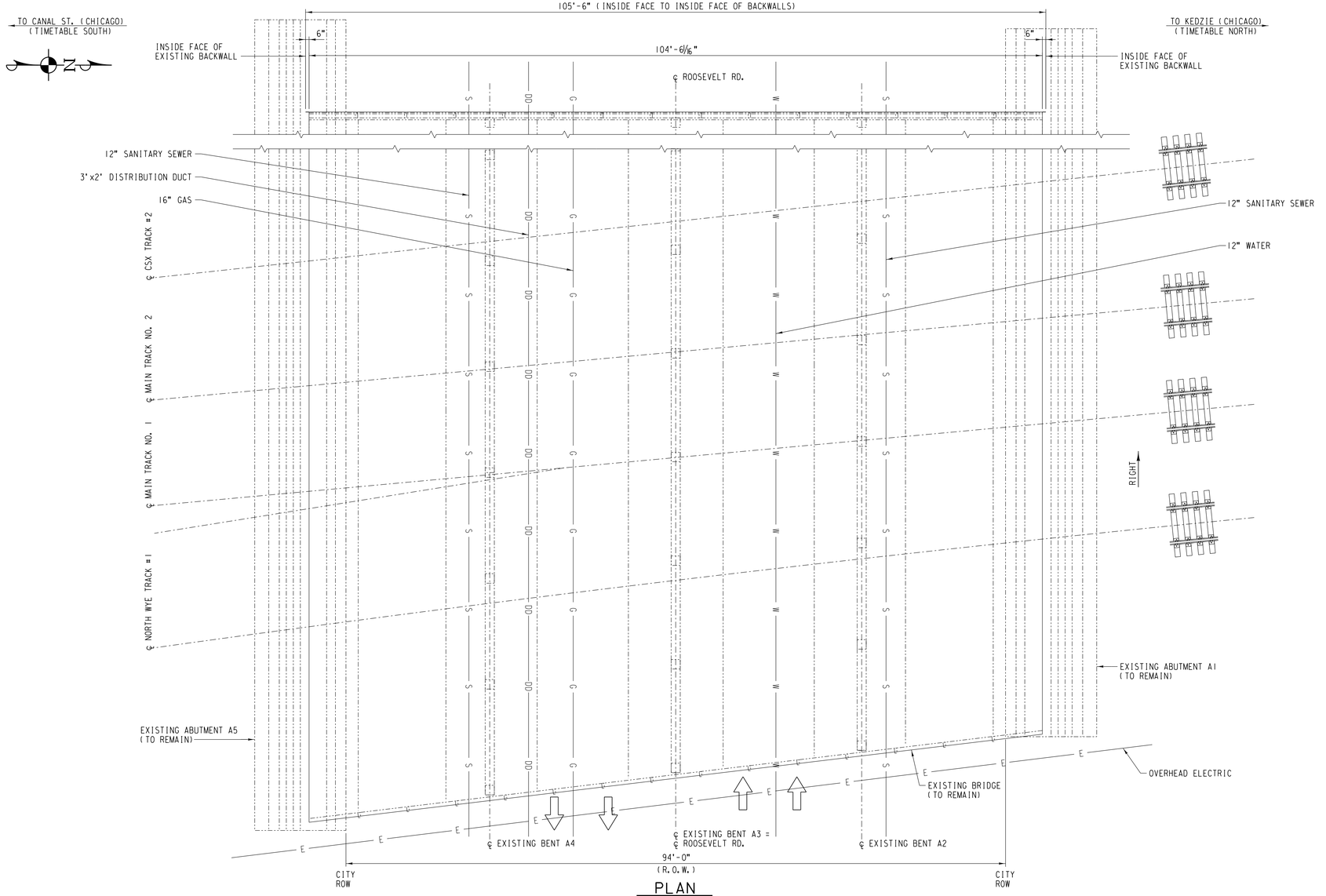
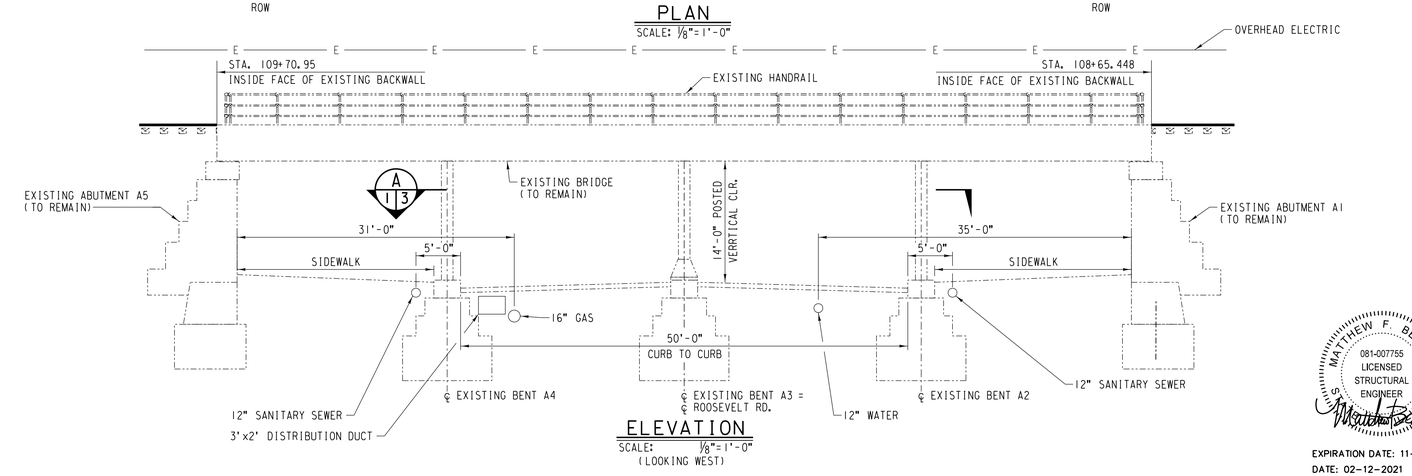
Default
5/24/2021

DRAWING SCHEDULE

	SHEET NO.	DESCRIPTION
THIS SET	R1	GENERAL ARRANGEMENT
	R2	GENERAL NOTES
	R3	REPAIR LOCATION PLAN AND BILL OF MATERIAL
	R4	COLUMN ENCASEMENT DETAILS
	R5	COLUMN BASE REPLACEMENT DETAILS - CB1
	R6	COLUMN BASE REPLACEMENT DETAILS - CB2
	R7	COLUMN BASE FABRICATION DETAILS
	R8	TRANSVERSE GIRDER COVER PLATE & BOLT REPAIR DETAILS

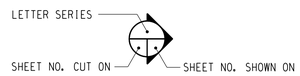


PLAN
SCALE: 1/8"=1'-0"



ELEVATION
SCALE: 1/8"=1'-0"
(LOOKING WEST)

NOTE:
ALL AREA SHOWN IN THIS PLAN VIEW ARE WITHIN ESR LIMITS UNLESS STATED OTHERWISE



SECTION DESIGNATION

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

MATTHEW F. BECKER
081-007755
LICENSED
STRUCTURAL
ENGINEER
STATE OF ILLINOIS

EXPIRATION DATE: 11-30-2022
DATE: 02-12-2021

NO.	DATE	REVISIONS
	/ /	
	/ /	

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

benesch

APPROVED FOR UNION PACIFIC RAILROAD BY:
MATTHEW BECKER — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122536

FORMERLY BRIDGE 1.93 ROCKWELL SUBDIVISION

LATITUDE: 41.86637°N LONGITUDE: 87.6909°W

DSN/CHK BY:	JFH/DAD
DRAWN/CHK BY:	MTC/JFH
UPRR ENGINEER:	DEH / ADS
SHT NO.:	R1 of R8

UNION PACIFIC RAILROAD
Office of Director Structures Design

LOCATION & DESCRIPTION:
BRIDGE 2.05 ROCKWELL SUBDIVISION
UPRR OVER ROOSEVELT RD.
BRIDGE MODIFICATIONS

SHEET TITLE:
GENERAL ARRANGEMENT

FILE NAME: c:\Users\mcarraz\Desktop\roc00205_bil.dgn

PLOTTED: 5/27/2021 11:21:20 AM

GENERAL NOTES

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 All Permits Issued (API) package.
3. Field verify all dimensions, stations and elevations prior to 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 811 Chicago at least 48 hours prior to construction.
6. 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 Cct 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.

DESIGN NOTES

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

CONSTRUCTOR NOTES

1. Coordinate all construction activities with the Railroad.
2. Before ordering any material, 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.
3. Any modifications to this design shall be approved by the UPRR Office of AVP Engineering 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. 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.
8. 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 professional engineer registered in the State of Illinois. All temporary structures shall be approved by the UPRR Office of AVP Engineering Design prior to beginning construction.
9. Accomplish activities within the schedule specified in the approved construction plan.

CONCRETE REPAIR NOTES

1. The Constructor shall perform repairs to portions of the existing pier as summarized hereafter.
2. Repair methods and materials shall conform to the requirements of Chapter 8, Part 14: Repair and Rehabilitation of Concrete Structures of the AREMA Manual for Railway Engineering and the American Concrete Institute ACI 546R, Concrete Repair Guide.

REPAIR OF DAMAGED AREA

1. All deteriorated, damaged or defective concrete in area indicated on drawings shall be removed. In addition, 1" of sound concrete shall be removed. The method of removal shall be an appropriate method from ACI 546R Table 2.1 and is subject to the approval of the UPRR Office of Director Structures Design.
2. Existing reinforcing shall remain in place.
3. Apply Weld-Crete chemical concrete bonding agent or approved alternate to existing concrete surfaces prior to placing new concrete against them. Follow manufacturer's instructions.
4. Repair is to consist of formed, cast-in-place concrete, per the provisions of ACI 546R-2.6.1 and 3.2.1.

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 5000 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.

CAST-IN-PLACE CONCRETE NOTES (CON'T.)

5. Concrete shall be proportioned such that the water - cement ratio (by weight) does not exceed 0.45. Concrete shall contain a minimum of 6½ sacks of cement per cubic yard of concrete.
6. Cement shall be Type I, Type II or Type III Portland Cement in accordance with ASTM C150 specifications.
7. Aggregates shall be graded in accordance with ASTM C33 specifications. Coarse aggregate shall be size no. 67. Fine aggregate shall be natural sand.
8. Air content shall be between 5% and 7% (by volume).
9. DCI, as manufactured by W.R. Grace, MasterLife CI 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.
10. 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 state 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 system as noted on drawings or approved addendum shall be used.
11. Other admixtures shall not be used without approval by the Railroad.
12. Bush hammer or scarify all existing concrete surfaces which shall have new concrete placed against them.

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 ASTM designation: A615 or A706 grade 60 and shall be epoxy coated according to ASTM A775. 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 sawn 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.

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 Major Steel Bridges (CBR) and Fracture Critical Endorsement (FCE).
3. Material shall conform to the following requirements:

Structural Steel	ASTM A709 Grade 50W F2
Anchor Rods	ASTM F1554 Grade 36

4. 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.
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 in the AREMA Manual for Railway Engineering.
6. All shop and field bolted connections shall use ⅞" dia. high strength bolts with nut and hardened steel washer. High strength bolts shall conform to ASTM F3125 Grade A325, type 3. Nuts shall conform to ASTM A563, lubricated. Washers shall conform to ASTM F436 and shall be placed under the element to be turned. Diameter of bolt holes shall be ⅛" larger than the nominal bolt diameter, unless noted otherwise.
7. 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.
8. 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.
9. 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.
10. Welded joints are to be AWS prequalified. Alternate joint details are subject to approval by the UPRR Office of AVP Engineering 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 AVP Engineering Design.
11. 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 AVP Engineering Design.
12. 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.
13. The Fabricator shall submit copies of welders' certificates for all welding processes. Welders shall possess valid qualifications.

STRUCTURAL STEEL NOTES (CON'T.)

14. 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% UT inspection of full penetration groove welds.
    b. 100% MP inspection of fillet welds on bearing stiffeners.
    c. 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 AVP Engineering Design.
15. 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.
16. 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.
17. For welds designated to be ground flush, grinding shall be in the direction of applied stress.
18. 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.
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 and correspondence shall be addressed to Donovan Holder:

    Union Pacific Railroad
    1400 Douglas St., STOP 0910
    Omaha, NE 68179
    (402) 544-4823
    deholder@up.com
21. Reaming of holes during field erection is not allowed, unless approved by the Railroad.
22. 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.
23. All steel components shall be inspected before shipment. Photographs of Fabricator's progress shall be submitted to the UPRR Office of the AVP Engineering Design.
24. All material certifications and quality control test results shall be submitted to Union Pacific Railroad at project completion.

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. Welders shall possess valid qualifications.

SHEAR STUDS

1. Studs shall be C1015, C1017 or C1020 cold drawn steel which conforms to ASTM A108 specifications.
2. Welding shall be the ARC process per AREMA Manual for Railway Engineering and AWS D1.5 Structural Welding Code. Welding shall be performed by qualified welders..

PAINT SYSTEM

GENERAL

1. All structural steel shall be painted in accordance with Section 506 of IL Standard Specification. Provide the paint system (surface preparation, primer, intermediate, and appearance coats as required) shown on the plans.
2. Provide paint in accordance with SECTION 506, "Structural Steel Paints-Performance". Provide inorganic zinc (IOZ) prime coat, epoxy intermediate coat, and urethane appearance coat for all outer surfaces except those to be in contact with concrete. Paint system shall be procured from one vendor and be listed in the latest version of IDOT's approved material producer list for "Paints (Structural, High Corrosion Environment)".
3. Perform shop painting as required in SECTION 506, "Paint, Shop Application for Steel Bridge Members". Grind corners on new steel items to be painted that are sharp or form essentially 90° angles to an approximately 1/16 in. flat surface before blast cleaning. (A corner is the intersection of 2 plane faces.) This requirement does not apply to punched or drilled holes. Do not omit shop paint to preserve original markings.
4. Ensure painted faying surfaces meet the required slip and creep coefficients for bolted connections as outlined in SECTION 506, "Paint, Shop Application for Steel Bridge Members". Slip coefficient for faying surfaces shall be Class A (minimum slip coefficient of 0.33). Perform all required testing at no expense to the company.
5. Color shall be Battleship Gray.

QUALIFICATIONS

1. The coating manufacturer's authorized representative shall provide written statements attesting that the applicator has been instructed on the proper preparation, mixing and application procedures for the coatings specified.
2. Applicators shall have a minimum of 10 years experience in the application of similar products on similar projects.
   a. Provide references for a minimum of 3 different projects completed in the last five years with a similar scope of work.
   b. Include the name and address of the project, size of the project in value (coating), and the contact person with phone number and email address.
3. The painting/coating contractor shall be SSPC QP-3 certified by SSPC or SPE-P1 certified by AISC.

PAINT SYSTEM (CON'T.)

MISCELLANEOUS

1. Furnish coating system through one manufacturer unless noted otherwise.
2. Deviation from the specified mil thickness or product type is not allowed without approval, in writing, by manufacturer's representative, and written authorization of the Engineer.
3. Material shall not be thinned unless approved, in writing, by the coating manufacturer's authorized representative.
4. The owner will provide a full-time certified NACE certified coatings inspector (Inspector) to oversee all surface preparation and coating work. All work relative to preparation for and application of coatings shall be conducted under the supervision of the Inspector.

SHOP DRAWINGS SUBMITTALS

1. All required submittals shall be submitted to the Engineer for review.
2. Applicator experience qualifications.
   a. No submittal information will be reviewed until the Engineer has received and approved the applicator qualifications.

PRODUCT TECHNICAL DATA INCLUDING

1. Acknowledgement that products submitted meet the requirements of the standards referenced.
2. Manufacturer's application instructions.
3. Manufacturer's surface preparation qualifications.
4. Contractor's written plan of action for containing airborne particles created by the blasting operation and the location of disposal of spent contaminated blasting media.
5. Coating manufacturer's recommendation on abrasive blasting.
6. Manufacturer's recommendation for universal barrier coat.
7. Manufacturer's recommendation for providing temporary or supplemental heat, dehumidification, or other environmental control measures.
8. Chain of Custody and laboratory toxicity results.
9. Results of quality assurance testing indicating all corrective actions taken.
10. Manufacturer's statement regarding applicator instruction on product use.
11. Certification that the High Performance Coating Systems proposed for use have been reviewed and approved by a Senior Corrosion Specification Specialist employed by the coating manufacturer.
12. SSPC QP-3 Certificate or AISC SPE-P1 Certificate.

INFORMATIONAL SUBMITTALS

1. All required submittals shall be submitted to the Engineer for review.
2. Approval of application equipment.
3. Applicator's daily records.
   a. Submit daily records at end of each week in which coating work is performed unless requested otherwise by Engineer's on-site representative.
4. Materials list of items proposed to be provided under this Section.
5. Manufacturer's specifications, recommended installation procedures and equipment, Material Safety Data Sheets (MSDS), and other pertinent data needed to prove compliance with the specified requirements.
6. Tools for mixing and application, as approved by the manufacturer of the coating system supplier.
7. Manufacturer's instruction for field touch-up of damaged coating.

HANDLING COATED MATERIAL

1. Store, handle, and place coated material with care and in a manner that will minimize damage to coating and will not reduce its effective protective value.
2. Repair damaged surfaces by brush, roller or spray application.
3. Handle coated work in a manner that will prevent flex sufficient to crack the coating, especially when temperature is below 40 degrees Fahrenheit.
4. Do not place protected surfaces on strips or skids until coating has dried to the touch. Refer to manufacturer recommendations for time allowed for these criteria. Use wide fabric slings in lifting, and strips, slings, blocks, skids, cradles, and other supports shall provide ample bearing areas.
5. In transporting, fasten and protect coated materials in a manner that will prevent movement and preclude chafing and rubbing. When unloaded, do not dump or drop coated materials.
6. Place protected material in a position carefully on suitably prepared beds and with a minimum of handling.

NO.	DATE	REVISIONS
	/ /	
	/ /	

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

benesch

APPROVED FOR UNION PACIFIC RAILROAD BY:
MATTHEW BECKER — CONSULTANT ENGINEER — 05/28/2021 (DATE)

PROJECT ID:	WORK ORDER: 31876	C E NUMBER: 122536

FORMERLY BRIDGE 1.93 ROCKWELL SUBDIVISION

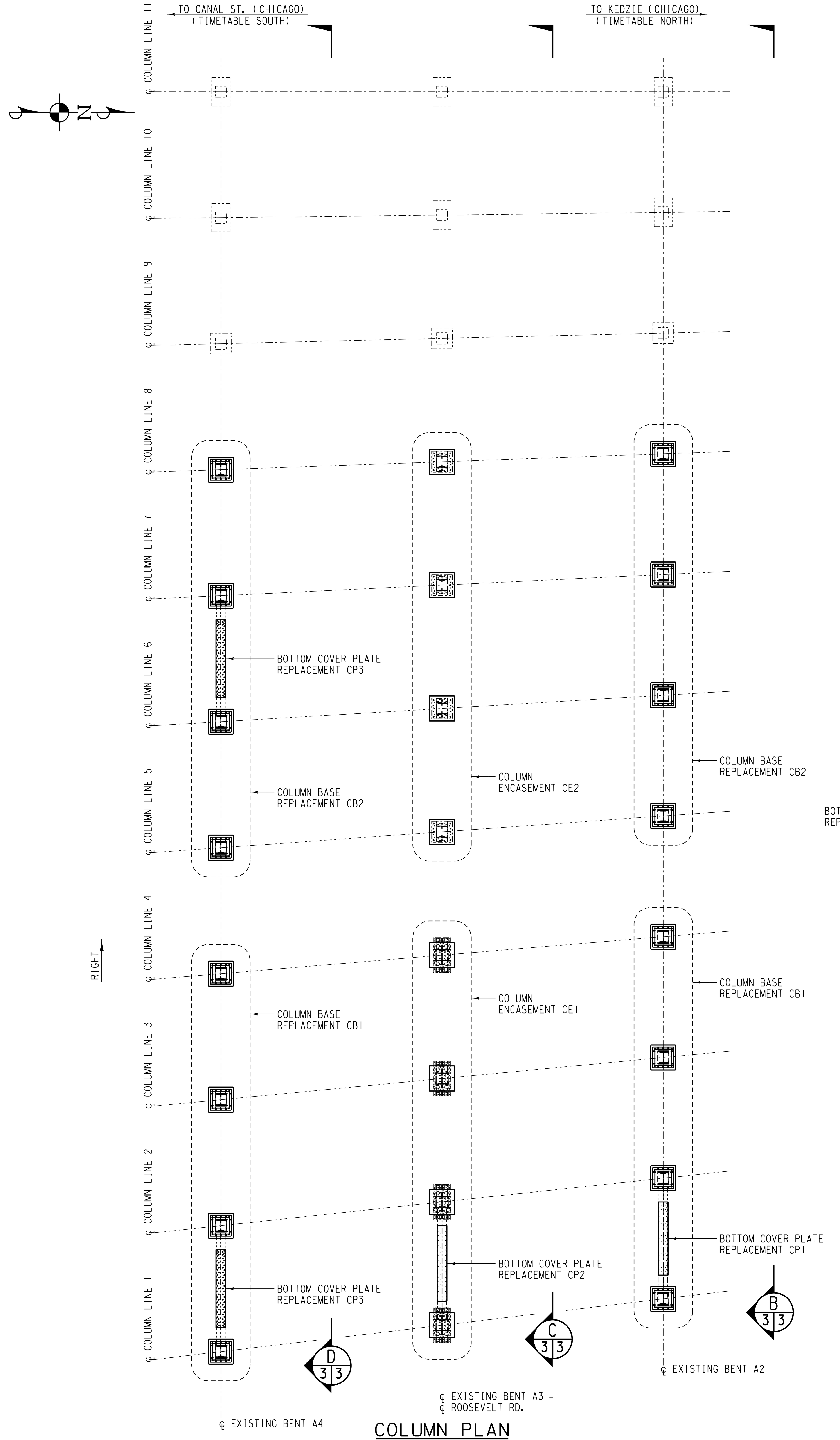
LATITUDE: 41.86637°N LONGITUDE: 87.6909°W

DSN/CHK BY:	JFH/DAD
DRAWN/CHK BY:	MTC/JFH
UPRR ENGINEER:	DEH / ADS
SHT NO.:	R2 of R8

UNION PACIFIC RAILROAD
Office of Director Structures Design

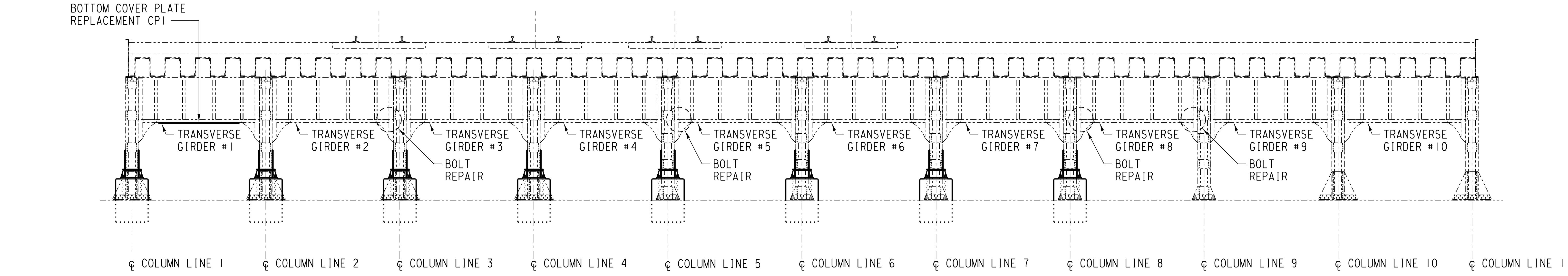
LOCATION & DESCRIPTION: BRIDGE 2.05 ROCKWELL SUBDIVISION
UPRR OVER ROOSEVELT RD.
BRIDGE MODIFICATIONS

SHEET TITLE: GENERAL NOTES

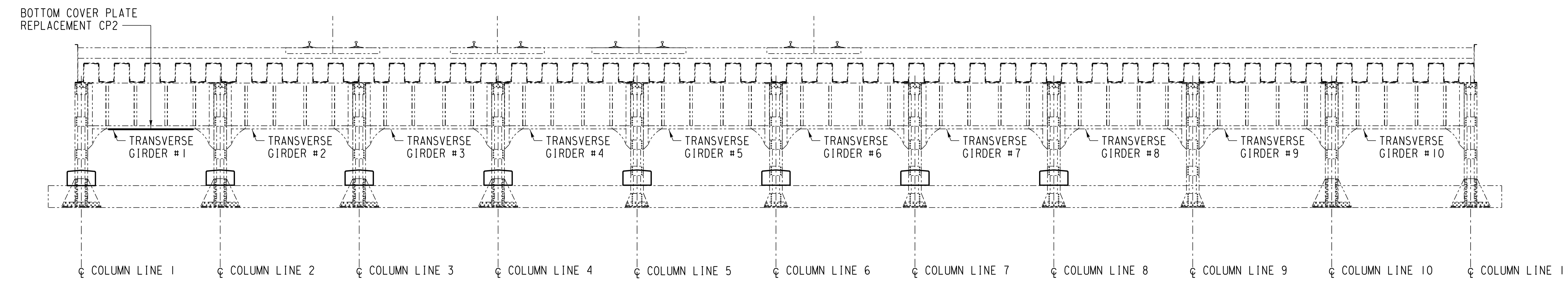


COLUMN PLAN

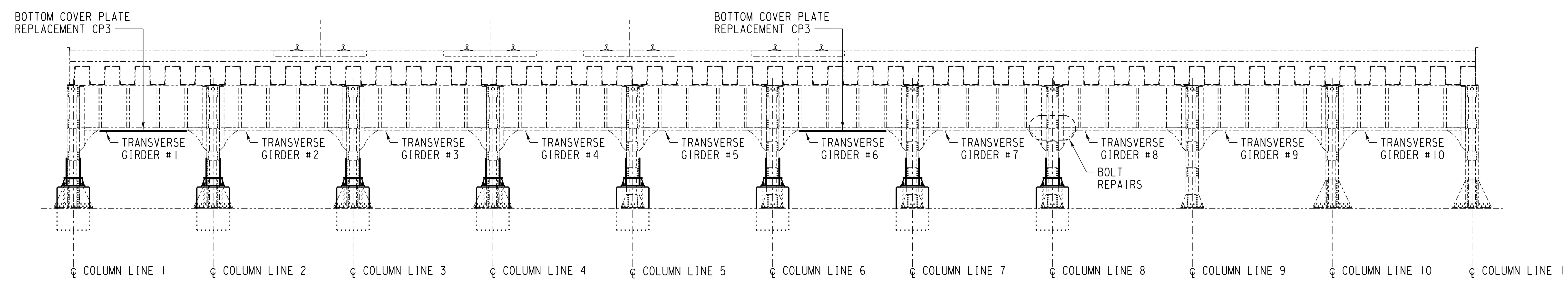
SECTION A 1/3
SCALE: 1/8"=1'-0"



SECTION B 3/3
SCALE: 1/8"=1'-0"
(LOOKING SOUTH)



SECTION C 3/3
SCALE: 1/8"=1'-0"
(LOOKING SOUTH)



SECTION D 3/3
SCALE: 1/8"=1'-0"
(LOOKING SOUTH)

BILL OF MATERIAL

TOTAL	UNIT	DESCRIPTION	
1	LOT	BOLT REPAIR, SEE SHEET 8	ORDERED BY CONSTRUCTOR
8	LOT	REINFORCING STEEL FOR COLUMN ENCASEMENT CE1 & CE2, SEE SHEET 4	
8	LOT	REINFORCING STEEL FOR COLUMN BASE REPLACEMENT CB1, SEE SHEET 5	
8	LOT	REINFORCING STEEL FOR COLUMN BASE REPLACEMENT CB2, SEE SHEET 6	
8	EA.	COLUMN BASE CB1 MATERIAL SCHEDULE, SEE SHEET 7	
8	EA.	COLUMN BASE CB2 MATERIAL SCHEDULE, SEE SHEET 7	
30	C.Y.	5,000 PSI CONCRETE	
45	EA.	RED HEAD EPCON C6+ 30.4oz EPOXY INJECTION CARTRIDGE, PART NO. C6P-30, USE GUNS D102(M) OR D202(P)	
45	EA.	HIGH FLOW MIXING NOZZLE FOR RED HEAD C6P-30 OR A7P-28, PART S75, 5/8" HOLES MIN.	
1	GAL.	WELD-CRETE CHEMICAL CONCRETE BONDING AGENT OR APPROVED ALTERNATE	
1	LOT	CLEANING AND PAINTING STRUCTURAL STEEL	
1	LOT	COVER PLATE CP1, SEE SHEET 8	
1	LOT	COVER PLATE CP2, SEE SHEET 8	
2	LOT	COVER PLATE CP3, SEE SHEET 8	

EST. WT. OF STRUCTURAL STEEL = 18,914 LB.

NO.	DATE	REVISIONS
	/ /	
	/ /	

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

benesch

APPROVED FOR UNION PACIFIC RAILROAD BY:
MATTHEW BECKER, CONSULTANT ENGINEER — 05/28/2021 (DATE)

PROJECT ID: | WORK ORDER: 31876 | C E NUMBER: 122536

FORMERLY BRIDGE 1.93 ROCKWELL SUBDIVISION

LATITUDE: 41.86637°N LONGITUDE: 87.6909°W

UNION PACIFIC

UNION PACIFIC RAILROAD

Office of Director Structures Design

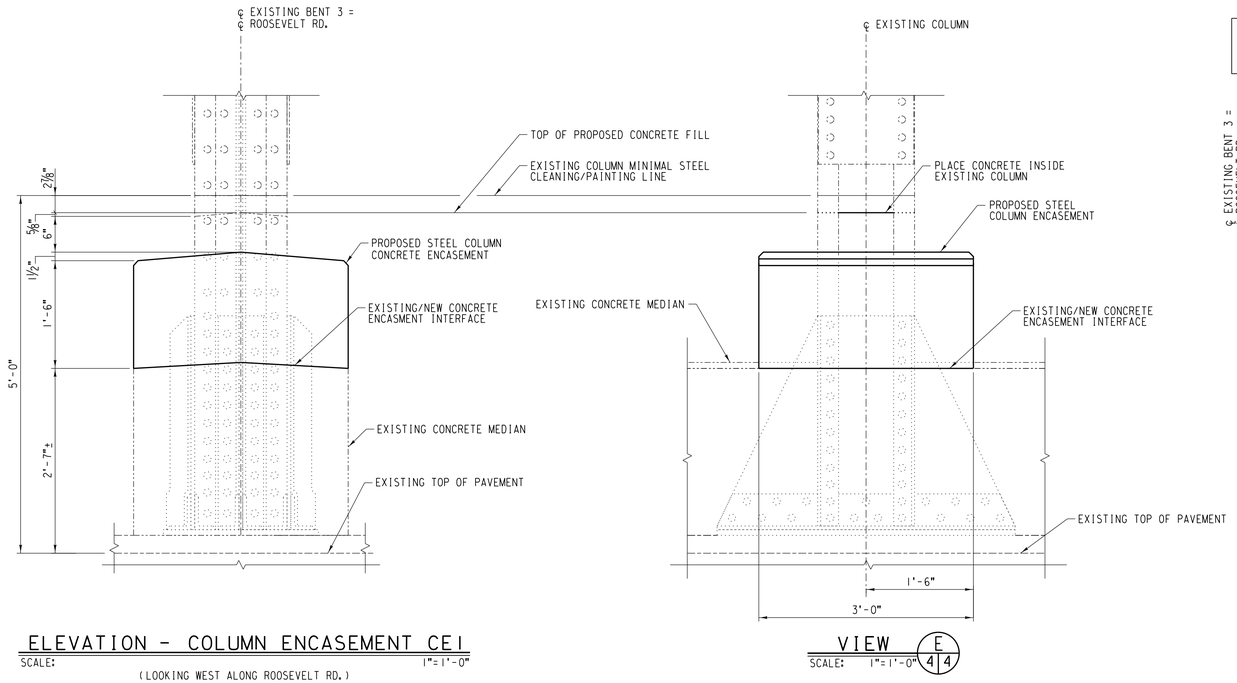
DSN/CHK BY: JFH/DAD
DRAWN/CHK BY: MTC/JFH
UPRR ENGINEER: DEH / ADS
SHT NO.: R3 of R8

LOCATION & DESCRIPTION: BRIDGE 2.05 ROCKWELL SUBDIVISION
UPRR OVER ROOSEVELT RD.
BRIDGE MODIFICATIONS

SHEET TITLE: REPAIR LOCATION PLAN AND BILL OF MATERIAL

PLOTTED: 5/27/2021 11:21:21 AM

FILE NAME: C:\Users\rramirez\Desktop\roc00205.bil.dgn



E 4 4

ELEVATION - COLUMN ENCASEMENT CE1

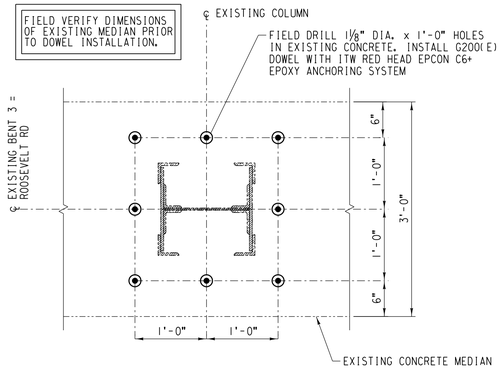
SCALE: 1"=1'-0"

(LOOKING WEST ALONG ROOSEVELT RD.)

VIEW E 4 4

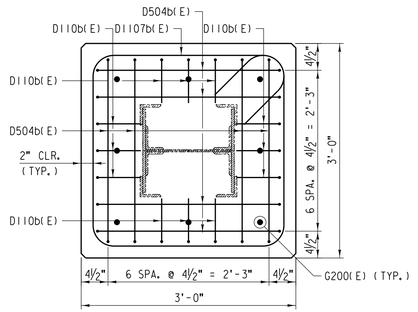
SCALE: 1"=1'-0"

FIELD VERIFY DIMENSIONS OF EXISTING MEDIAN PRIOR TO DOWEL INSTALLATION.



DOWEL INSTALLATION PLAN

SCALE: 1"=1'-0"



PLAN - TYP. REINF.

SCALE: 1"=1'-0"

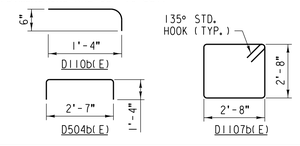
REINFORCING SCHEDULE

(QUANTITY PER COLUMN)

TOTAL	MARK	SIZE	LENGTH	SHAPE
12	D110b(E)	#5	1'-11"	⌐
8	D504b(E)	#5	5'-4"	⌐¬
3	D1107b(E)	#5	11'-7"	□
8	G200(E)	#8	2'-0"	—

BENDING DIAGRAM

(DIMENSIONS ARE OUT TO OUT)

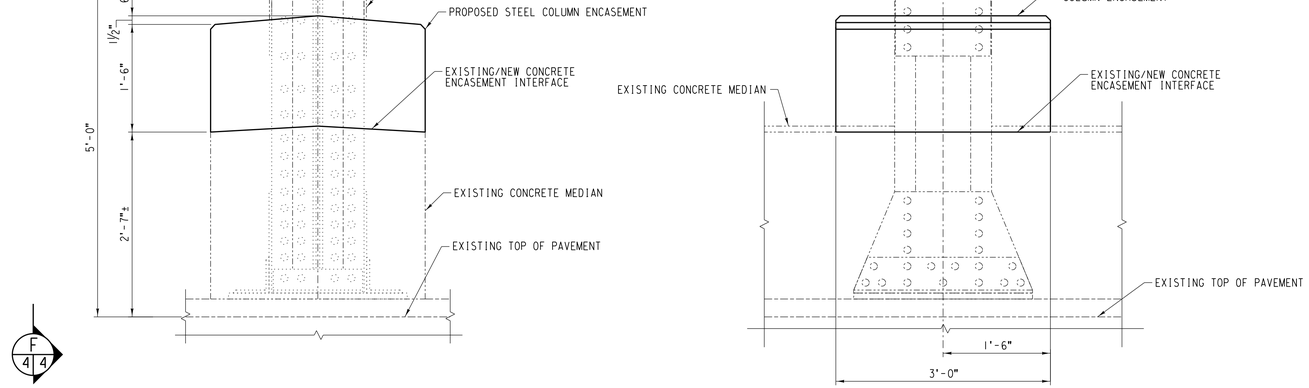


NOTE:
BAR DESIGNATIONS CONSIST OF BAR SIZE & LENGTH FOLLOWED BY THE LETTER "b" IF BENT. BAR SIZES ARE REPRESENTED BY THE LETTERS A THROUGH L CORRESPONDING TO BAR SIZE #2 THROUGH #18. BAR LENGTHS ARE GIVEN IN FEET AND INCHES; THE LAST TWO DIGITS ARE INCHES.

EST. WT. OF REINFORCING STEEL = 146 LB.

SEQUENCE OF CONSTRUCTION MEDIAN CONCRETE ENCASEMENT (CE1 AND CE2)

1. Close one lane of eastbound and westbound traffic adjacent to the centerline of Roosevelt Road.
2. Remove loose debris from around and inside of the column and from the top of the existing median barrier.
3. High-pressure water clean removing all visible oil, grease, and other contaminant residues from around the outside and inside of the column, from the existing minimum steel cleaning/painting line, down to the top of the existing median. High-pressure water clean removing all visible oil, grease, and other contaminant residues from the top of the existing median barrier.
4. Blast clean the existing steel from the minimum steel cleaning/painting line, around the outside and the inside of the column to the top of the existing foundation to an SSPC-SP6, commercial blast cleaning finish.
5. Install a protective barrier around the column to keep contaminates from interfering with the column primer and paint system.
6. Apply paint and primer in accordance to Section 506 of IL Standard Specification
7. Locate 8 - G200(E) dowel rod locations and drill 8 - 1⅛" diameter x 1'-0" holes.
8. Bush hammer the top of the existing concrete median barrier and existing concrete inside the column to sound concrete.
9. Remove all loose debris from the top of the median, from around the outside and inside of the column.
10. Thoroughly clean the top of the concrete median and holes for G200(E) dowel rods with high-pressure water blasting. After the water blasting, remove any excess water in the holes for G200(E) dowel rods with compressed air.
11. Install the 8 - G200(E) dowel rods with ITW Red Head Epcon C6+ epoxy anchoring system or approved equal.
12. Remove the protective barrier. If the paint has not fully cured, the protective barrier shall remain in place until the paint has fully cured.
13. Install the steel column encasement steel reinforcing cage and formwork.
14. Apply Weld-Crete chemical concrete bonding agent or approved equal to the existing/new concrete median interface and existing/new interior column concrete interface.
15. Place 5,000-psi concrete into the formwork, and interior of the existing column to the elevations shown.
16. Allow the concrete to cure until the test cylinders break at a minimum strength of 3,000 psi.
17. Remove steel column encasement formwork.
18. Repeat Steps 2 through 17 for Columns 2 through 7.
19. Clean the construction area to a similar or better condition than before starting the retrofit project.
20. Open the traffic lanes to vehicle traffic.



F 4 4

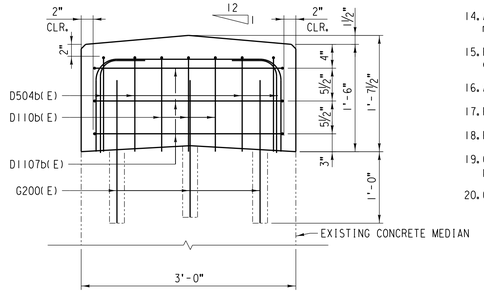
ELEVATION - COLUMN ENCASEMENT CE2

SCALE: 1"=1'-0"

(LOOKING WEST ALONG ROOSEVELT RD.)

VIEW F 4 4

SCALE: 1"=1'-0"



ELEVATION - TYP. REINF.

SCALE: 1"=1'-0"

NO.	DATE	REVISIONS
	/ /	
	/ /	

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

benesch

APPROVED FOR UNION PACIFIC RAILROAD BY:

MATTHEW BECKER (CONSULTANT ENGINEER) 05/28/2021 (DATE)

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122536

FORMERLY BRIDGE 1.93 ROCKWELL SUBDIVISION

LATITUDE: 41.86637°N LONGITUDE: 87. 6909°W

DSN/CHK BY:	JFH/DAD
DRAWN/CHK BY:	MTC/JFH
UPRR ENGINEER:	DEH / ADS
SHT NO.:	R4 of R8

UNION PACIFIC RAILROAD

Office of Director Structures Design

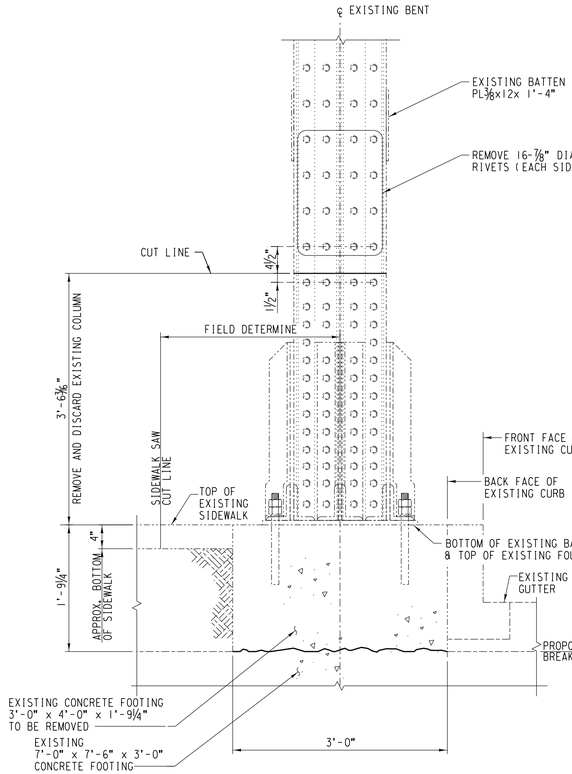
LOCATION & DESCRIPTION: BRIDGE 2.05 ROCKWELL SUBDIVISION

UPRR OVER ROOSEVELT RD. BRIDGE MODIFICATIONS

SHEET TITLE: COLUMN ENCASEMENT DETAILS

FILE NAME: c:\Users\mcmireza\Desktop\rcc00205.bil.dgn

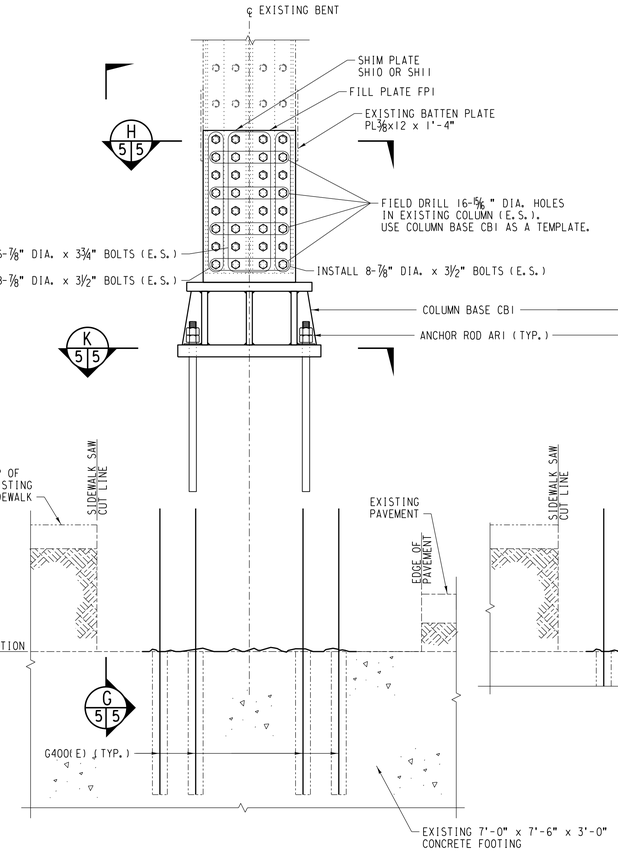
PLOTTED: 5/27/2021 11:21:21 AM



ELEVATION - PHASE 1 - EXISTING COLUMN AND CONCRETE PEDESTAL REMOVAL

SCALE: 1"= 1'-0"

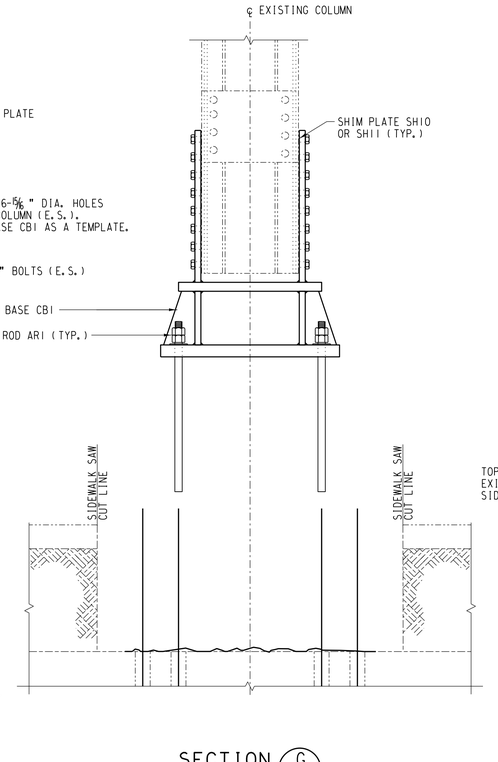
(LOOKING WEST ON ROOSEVELT RD.)



ELEVATION - PHASE 2 - COLUMN BASE INSTALLATION

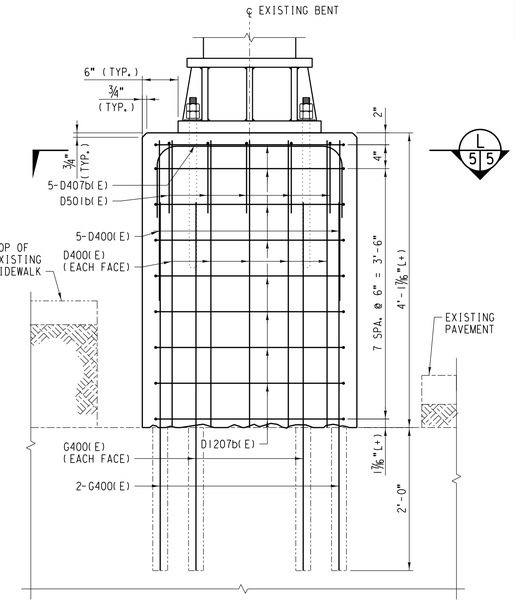
SCALE: 1"=1'-0"

(LOOKING WEST ON ROOSEVELT RD.)



SECTION G

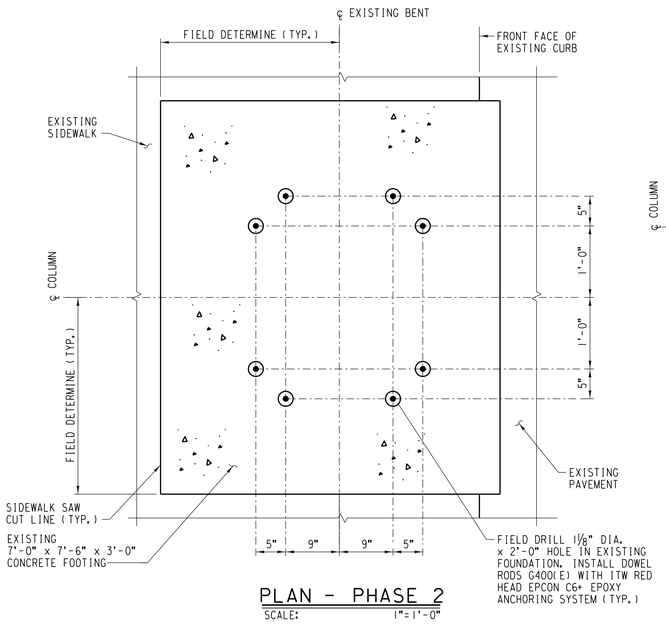
SCALE: 1"=1'-0" (5|5)



ELEVATION - PHASE 3 - CONCRETE PEDESTAL INSTALLATION

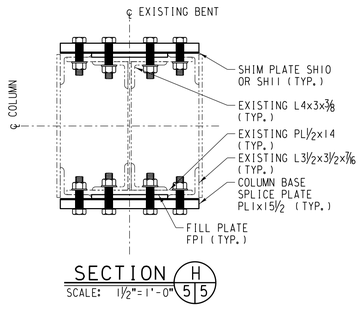
SCALE: 1"=1'-0"

(LOOKING WEST ON ROOSEVELT RD.)



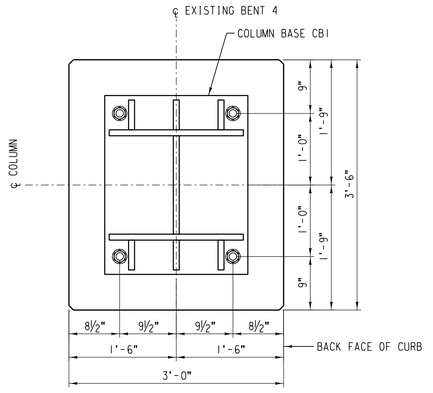
PLAN - PHASE 2

SCALE: 1"=1'-0"



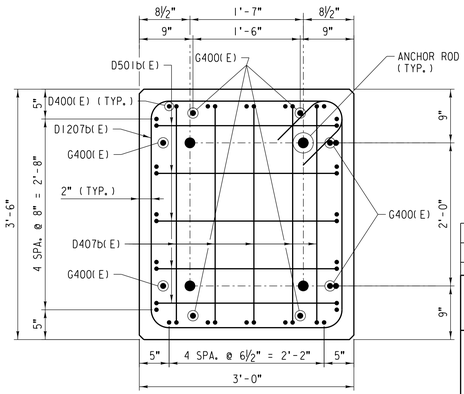
SECTION H

SCALE: 1½"=1'-0" (5|5)



SECTION K

SCALE: 1"=1'-0" (5|5)



SECTION L

SCALE: 1"=1'-0" (5|5)

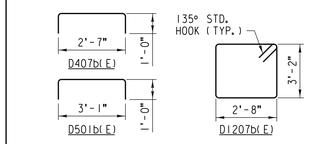
REINFORCING SCHEDULE

(QUANTITY PER CB1)

TOTAL	MARK	SIZE	LENGTH	SHAPE
20	D400(E)	#5	3'-11½"	—
5	D407b(E)	#5	4'-7"	⌐¬
5	D501b(E)	#5	5'-1"	⌐¬
9	D1207b(E)	#5	12'-7"	⌐¬
8	G400(E)	#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 = 337 LB.

NOTE:
FOR SEQUENCE OF CONSTRUCTION COLUMN BASE REPLACEMENT CB1, SEE SHEET 8.

NO.	DATE	REVISIONS
	/ /	
	/ /	

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

benesch

APPROVED FOR UNION PACIFIC RAILROAD BY:
MATTHEW BECKER — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122536

FORMERLY BRIDGE 1.93 ROCKWELL SUBDIVISION

LATITUDE: 41.86637°N LONGITUDE: 87. 6909°W

UNION PACIFIC

DSN/CHK BY: JFH/DAD	**UNION PACIFIC RAILROAD**
DRAWN/CHK BY: MTC/JFH	Office of Director Structures Design
UPRR ENGINEER: DEH / ADS	LOCATION & DESCRIPTION: BRIDGE 2.05 ROCKWELL SUBDIVISION
SHT NO.: R5 of R8	UPRR OVER ROOSEVELT RD. BRIDGE MODIFICATIONS
	SHEET TITLE: COLUMN BASE REPLACEMENT DETAILS - CB1

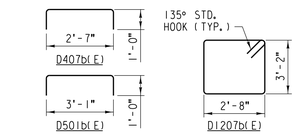
FILE NAME: C:\Users\wrcmirez\Desktop\rac00205.b1i-dgn

PLOTTED: 5/27/2021 11:21:21 AM

REINFORCING SCHEDULE
(QUANTITY PER CB2)

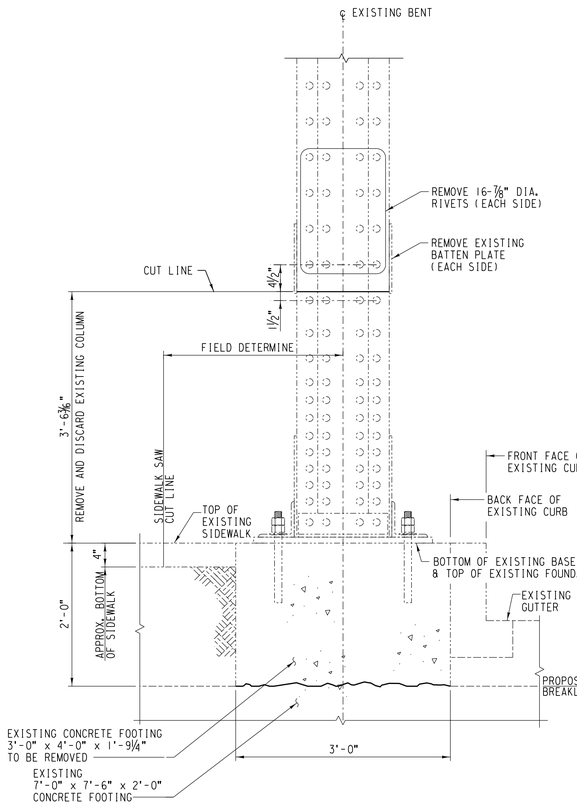
TOTAL	MARK	SIZE	LENGTH	SHAPE
20	D403(E)	#5	4'-2¾"	—
5	D407b(E)	#5	4'-7"	⌐¬
5	D501b(E)	#5	5'-1"	⌐¬
9	D1207b(E)	#5	12'-7"	⌐¬
8	G400(E)	#8	4'-0"	—

BENDING DIAGRAM
(DIMENSIONS ARE OUT TO OUT)



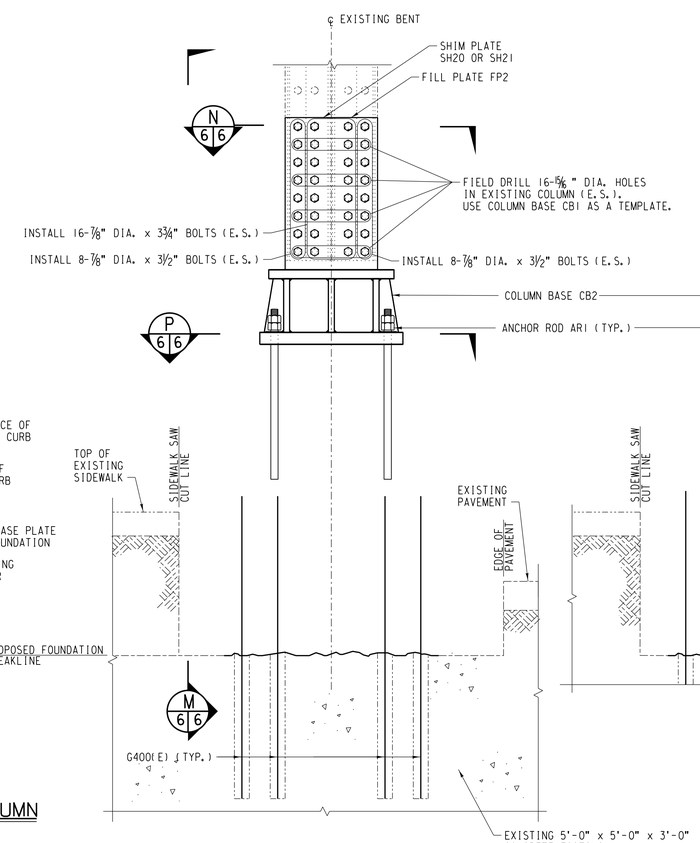
NOTE:
BAR DESIGNATIONS CONSIST OF BAR SIZE & LENGTH FOLLOWED BY THE LETTER "b" IF BENT. BAR SIZES ARE REPRESENTED BY THE LETTERS A THROUGH L CORRESPONDING TO BAR SIZE #2 THROUGH #18. BAR LENGTHS ARE GIVEN IN FEET AND INCHES; THE LAST TWO DIGITS ARE INCHES.

EST. WT. OF REINFORCING STEEL = 342 LB.



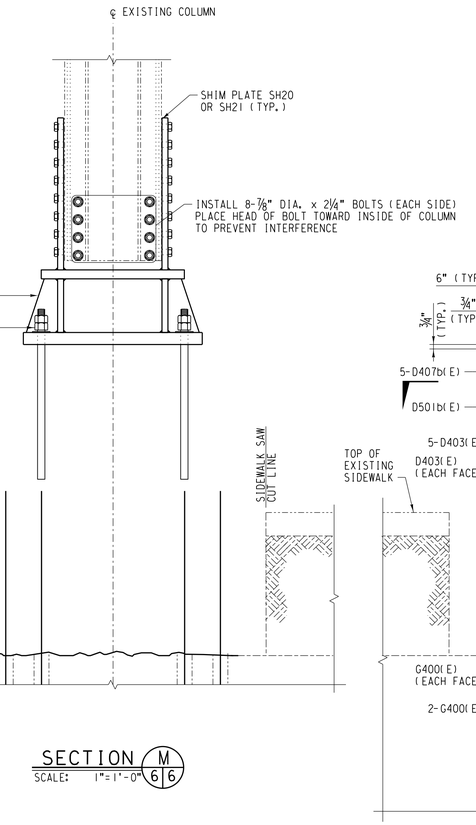
ELEVATION - PHASE 1 - EXISTING COLUMN AND CONCRETE PEDESTAL REMOVAL
SCALE: 1"= 1'-0"

(LOOKING WEST ON ROOSEVELT RD.)

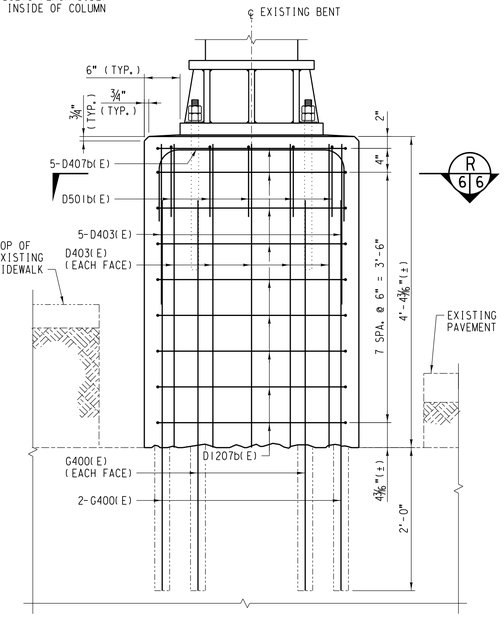


ELEVATION - PHASE 2 - COLUMN BASE INSTALLATION
SCALE: 1"=1'-0"

(LOOKING WEST ON ROOSEVELT RD.)

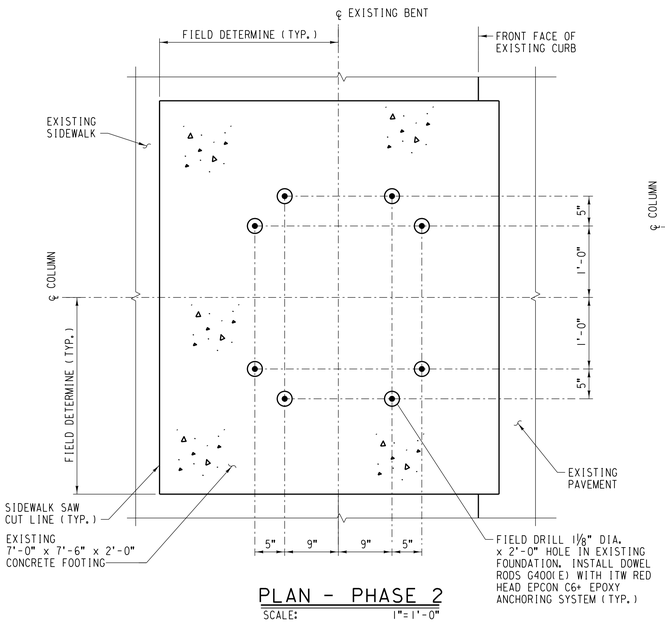


SECTION M 6 6
SCALE: 1"=1'-0"

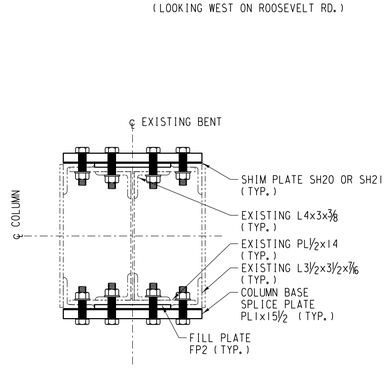


ELEVATION - PHASE 3 - CONCRETE PEDESTAL INSTALLATION
SCALE: 1"=1'-0"

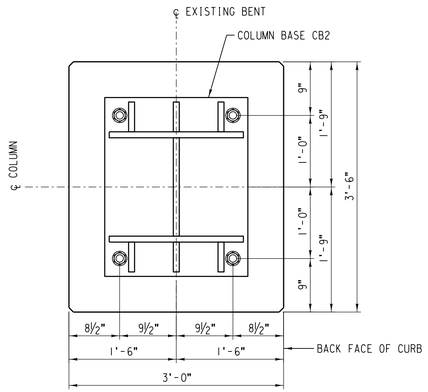
(LOOKING WEST ON ROOSEVELT RD.)



PLAN - PHASE 2
SCALE: 1"=1'-0"



SECTION N 6 6
SCALE: 1½"=1'-0"



SECTION P 6 6
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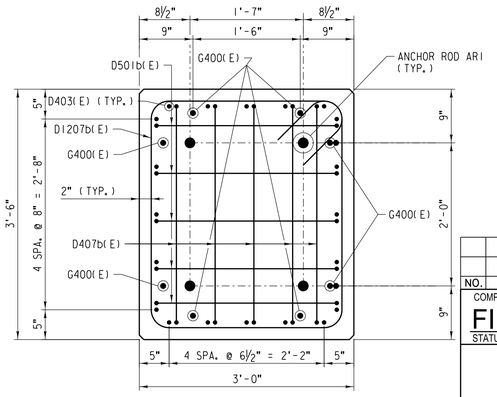


SECTION R 6 6
SCALE: 1"=1'-0"

NOTE:
FOR SEQUENCE OF CONSTRUCTION COLUMN BASE REPLACEMENT CB2, SEE SHEET 8.

NO.	DATE	REVISIONS
	/ /	
	/ /	

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

benesch

APPROVED FOR UNION PACIFIC RAILROAD BY:
MATTHEW BECKER — CONSULTANT ENGINEER
05/28/2021 — DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122536

FORMERLY BRIDGE 1.93 ROCKWELL SUBDIVISION

LATITUDE: 41.86637°N LONGITUDE: 87.6909°W

DSN/CHK BY:	JFH/DAD
DRAWN/CHK BY:	MTC/JFH
UPRR ENGINEER:	DEH / ADS
SHT NO.:	R6 of R8

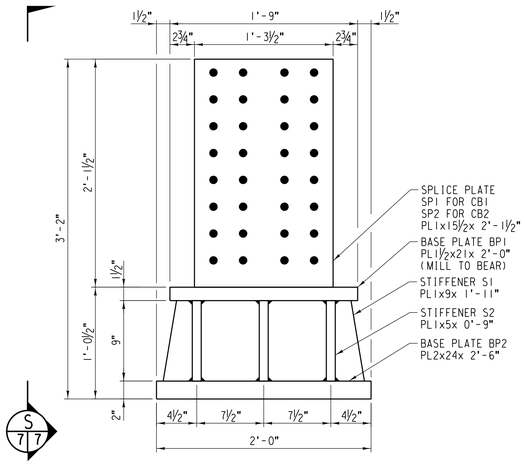
UNION PACIFIC RAILROAD
Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.05 ROCKWELL SUBDIVISION
UPRR OVER ROOSEVELT RD.
BRIDGE MODIFICATIONS

SHEET TITLE: COLUMN BASE REPLACEMENT DETAILS - CB2

FILE NAME: C:\Users\mcarroll\Desktop\rock00205_bill.dgn

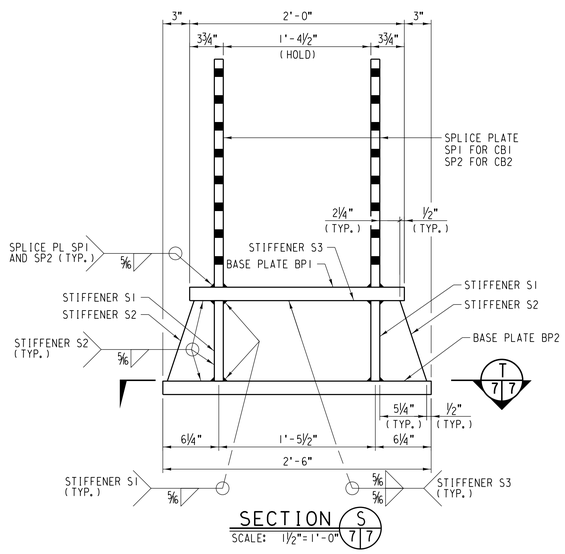
PLOTTED: 5/27/2021 11:21:21 AM



COLUMN BASE CB1 & CB2

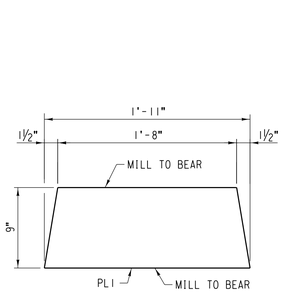
SCALE: 1½"=1'-0"

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



SECTION

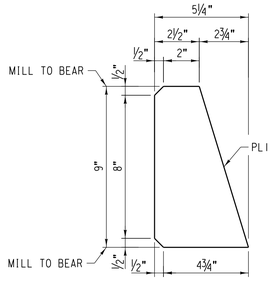
SCALE: 1½"=1'-0"



STIFFENER S1

SCALE: 1½" = 1'-0"

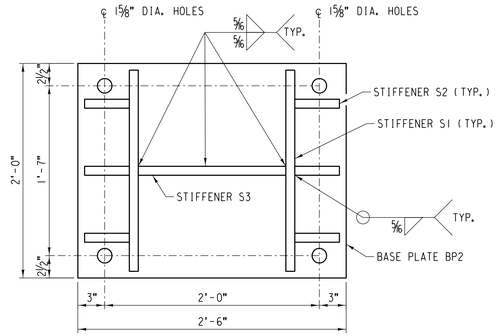
EST. WT. = 58.7 LB.



STIFFENER S2

SCALE: 3" = 1'-0"

EST. WT. = 13.4 LB.



SECTION

SCALE: 1½"=1'-0"

RECOMMENDED SEQUENCE OF CONSTRUCTION COLUMN BASE REPLACEMENT (CB1 AND CB2)

The contractor shall submit to the Railroad or Railroad's Representative the proposed shoring scheme to temporarily support the above cross girder during the existing Bent 2 and Bent 4 substructure rehabilitation. The temporary shoring plan shall be approved by a professional structural engineer licensed in the State of Illinois. No work shall be performed on the Bent 2 or Bent 4 columns until the shoring scheme is approved by the Railroad. Tracks will be in service during substructure repair and as such the temporary shoring shall be designed for live load plus impact.

Phase 1:

1. Close eastbound lane adjacent to Bent 4 and the south sidewalk.
2. Remove existing handrail and install temporary shoring.
3. Determine sidewalk and curb saw cut locations and make saw cuts.
4. Remove concrete from between existing pedestal and saw cuts and edge of pavement.
5. Remove 16 existing rivets, each side of the column, and discard. Contractor may choose to install temporary bolts in open holes. Temporary bolts shall not be reused for permanent installation.
6. Cut the existing column, including diaphragm and batten plate, at the column cut line.
7. Remove the existing column and column base plate and discard.
8. Remove the existing top concrete pedestal, approximately 1'-9¼ for Columns 1, 2, 3 and 4, and approximately 2'-0" for Columns 5, 6, 7, and 8.

Phase 2:

1. Locate 8 - G400(E) dowel rod locations and drill 8 - 1⅛" diameter x 2'-0' holes.
2. Install the new column base CB1 or CB2, fill plates FP1 and shim plates SH10, SH11, SH20 or SH21 into position and install a minimum of 8 - 5/8" diameter barrel pins, each side of the column, temporarily hanging the column base from the existing column. Contractor shall not leave column base unattended until all bolts are fully tightened.
3. Field drill 16 - 5/8" diameter holes into each side of the existing column, using the column base splice plates as a template.
4. Install ⅞" diameter H.S. bolts and snug tighten.
5. Remove the barrel pins and install ⅞" diameter H.S. bolts.
6. Fully tighten all the splice plate bolts using the turn-of-nut method.

Phase 3:

1. Thoroughly clean the top of the new pedestal footing and holes for G400(E) dowel rods with high-pressure water blasting. After the water blasting, remove any excess water in the holes for G400(E) dowel rods with compressed air.
2. Install the 8 - G400(E) dowel rods with ITW Red Head Epcon C6+ epoxy anchoring system or approved equal.
3. Install the 4 - AR1 anchor rods, pedestal steel reinforcing cage, and formwork.
4. Place 5,000-psi concrete, into the formwork, to an elevation of ¼" above the bottom of the base plate BP2.
5. Allow the concrete to cure until the test cylinders break at a minimum strength of 3,000-psi.
6. Repeat Phases 1, 2 and, 3 until the retrofitted completion of Columns 1 through 8.
7. Backfill excavation and reconstruct sidewalk, curb, handrail, and pavement as shown on civil plans.
8. Clean the construction area to a similar or better condition than before starting the retrofit project.
9. Open the traffic lane to vehicle traffic and the south sidewalk to pedestrians.
10. Repeat similar phasing procedure for Bent A2.

MATERIAL SCHEDULE
(QUANTITY PER COLUMN BASE CB1)

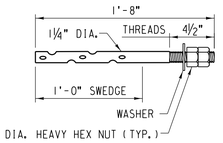
REQ'D.	UNIT	DESCRIPTION
1	EA.	BASE PLATE BP1 PL1½x21x 2'-0'
1	EA.	BASE PLATE BP2 PL2x24x 2'-6"
2	EA.	STIFFENER S1 PL1x9x 1'-11"
6	EA.	STIFFENER S2 PL1x5¼x 0'-9"
1	EA.	STIFFENER S3 PL1x9x 1'-4½"
2	EA.	SPLICE PLATE SP1 PL1x15½x 2'-1½"
2	EA.	SHIM PLATE SH10 PL1/16x15½x 2'-0"
2	EA.	SHIM PLATE SH11 PL⅛x15½x 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 1 HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1) [TEMPORARY BOLTS]
39	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) [TEMPORARY BOLTS]
39	EA.	⅞" DIA. x 3½" 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) [PERMANENT BOLTS]
39	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) [PERMANENT BOLTS]

FIELD BOLT QUANTITY INCREASED BY 5% + 5.

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 SP2 PL1x15½x 2'-1½"
2	EA.	SHIM PLATE SH20 PL1/16x15½x 2'-0"
2	EA.	SHIM PLATE SH21 PL⅛x15½x 2'-0"
2	EA.	FILL PLATE FP2 PL7/16x8⅜x 2'-0"
4	EA.	ANCHOR ROD AR1
22	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) [PERMANENT BOLTS]
39	EA.	⅞" DIA. x 3½" 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) [TEMPORARY BOLTS]
39	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) [TEMPORARY BOLTS]
39	EA.	⅞" DIA. x 3½" 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) [PERMANENT BOLTS]
39	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) [PERMANENT BOLTS]

FIELD BOLT QUANTITY INCREASED BY 5% + 5.

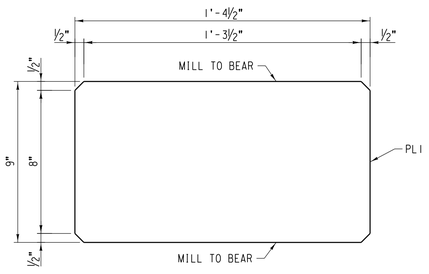


ANCHOR ROD AR1

SCALE: 1½"=1'-0"

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

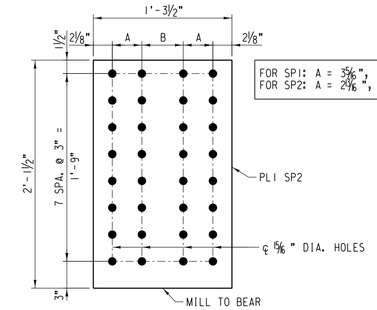
FIELD VERIFY LOCATION OF HOLES IN EXISTING COLUMN PRIOR TO FABRICATION.



STIFFENER S3

SCALE: 3" = 1'-0"

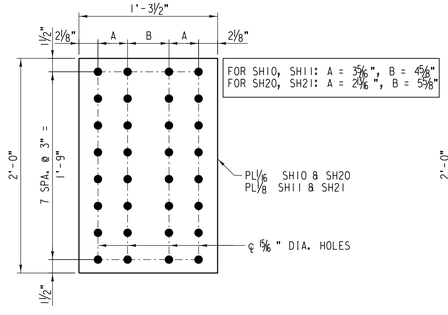
EST. WT. = 42.1 LB.



SPLICE PLATE SP1 & SP2

SCALE: 1½"=1'-0"

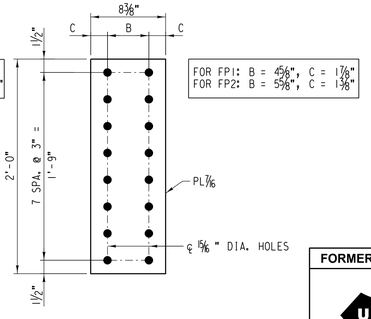
EST. WT. = 112 LB.
(SP1 SHOWN; SP2 SIMILAR)



SHIM PLATE SH10, SH11, SH20 & SH21

SCALE: 1½"=1'-0"

EST. WT. = 6.6 LB. (SH10, SH20), 13.2 LB. (SH11, SH21)
(SH10 SHOWN; OTHERS SIMILAR)



FILL PLATE FP1 & FP2

SCALE: 1½"=1'-0"

EST. WT. = 25 LB.
(FP1 SHOWN; FP2 SIMILAR)

NO.	DATE	REVISIONS
	/ /	
	/ /	

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

benesch

APPROVED FOR UNION PACIFIC RAILROAD BY:
MATTHEW BECKER — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122536

FORMERLY BRIDGE 1.93 ROCKWELL SUBDIVISION

LATITUDE: 41.86637°N LONGITUDE: 87.6909°W

DSN/CHK BY:	JFH/DAD
DRAWN/CHK BY:	MTC/JFH
UPRR ENGINEER:	DEH / ADS
SHT NO.:	R7 of R8

UNION PACIFIC RAILROAD
Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.05 ROCKWELL SUBDIVISION
UPRR OVER ROOSEVELT RD.
BRIDGE MODIFICATIONS

SHEET TITLE: COLUMN BASE FABRICATION DETAILS

FILE NAME: C:\Users\mcmirez\Desktop\rac02205_b1i.dgn

PLOTTED: 5/27/2021 11:21:22 AM

MATERIAL SCHEDULE
(QUANTITY PER COVER PLATE CP1)

REQ'D.	UNIT	DESCRIPTION
66	EA.	7/8" 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) [TEMPORARY]
66	EA.	7/8" 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) [PERMANENT]
1	EA.	COVER PLATE CP1 PL7/8x14x8'-9"

FIELD BOLT QUANTITY INCREASED BY 5% + 5.

MATERIAL SCHEDULE
(QUANTITY PER COVER PLATE CP2)

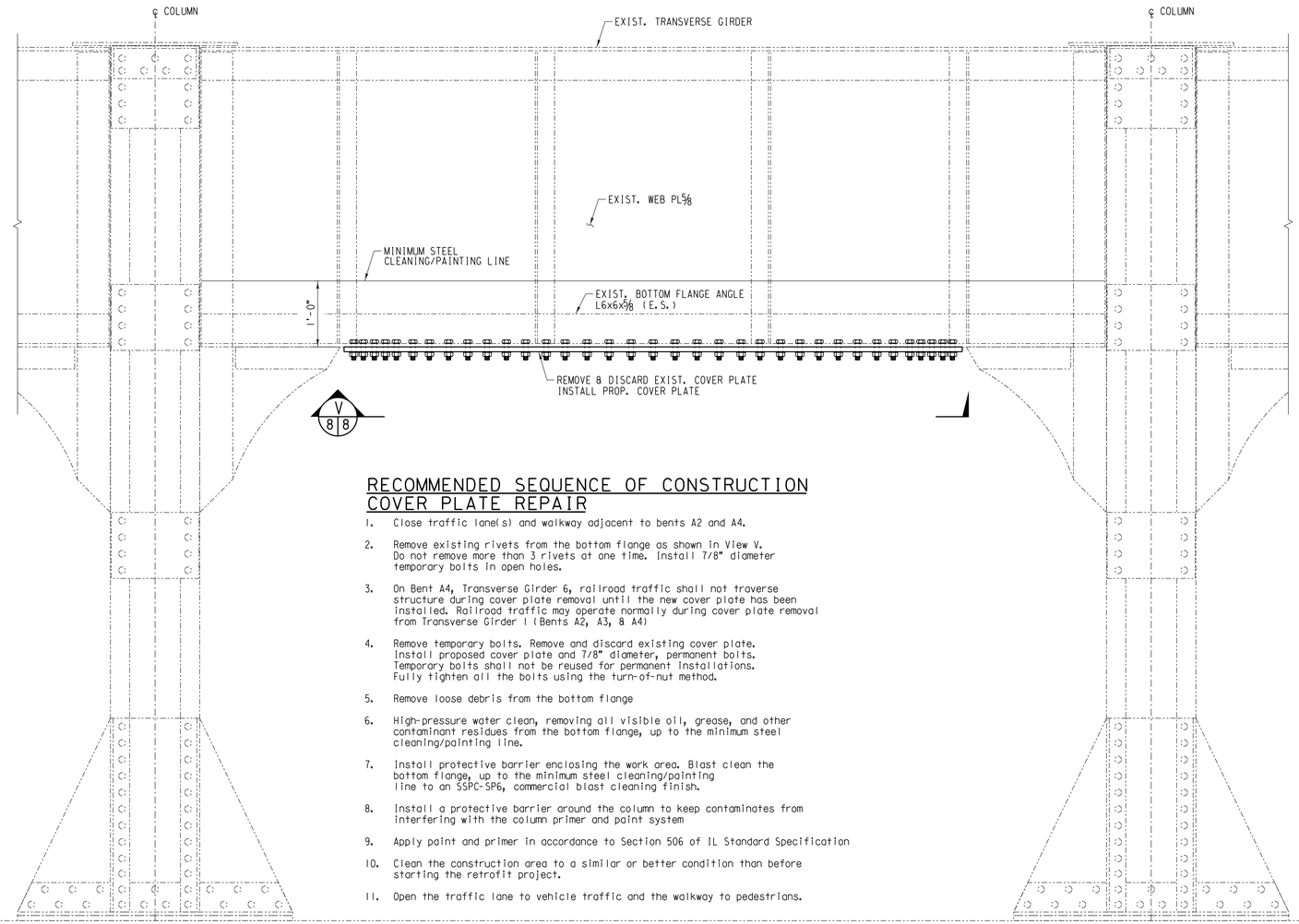
REQ'D.	UNIT	DESCRIPTION
70	EA.	7/8" DIA. x 2¾" ASTM F3125 GRADE A325 TYPE 1 HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1) [TEMPORARY]
70	EA.	7/8" DIA. x 2¾" ASTM F3125 GRADE A325 TYPE 1 HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1) [PERMANENT]
1	EA.	COVER PLATE CP2 PL7/8x14x9'-0½"

FIELD BOLT QUANTITY INCREASED BY 5% + 5.

MATERIAL SCHEDULE
(QUANTITY PER COVER PLATE CP3)

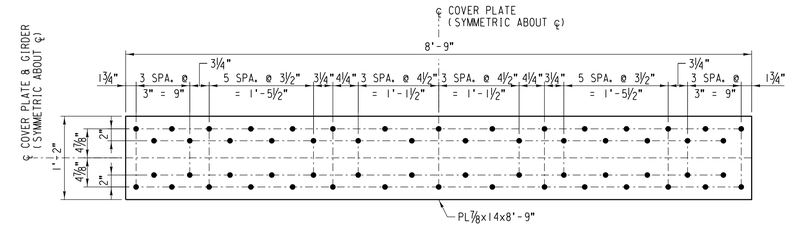
REQ'D.	UNIT	DESCRIPTION
79	EA.	7/8" DIA. x 2¾" ASTM F3125 GRADE A325 TYPE 1 HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1) [TEMPORARY]
79	EA.	7/8" DIA. x 2¾" ASTM F3125 GRADE A325 TYPE 1 HVY. HEX BOLT, w/ HVY. HEX NUT (ASTM A563 GRADE DH, LUBRICATED) AND FLAT CIRCULAR WASHER (ASTM F436 TYPE 1) [PERMANENT]
1	EA.	COVER PLATE CP3 PL7/8x14x9'-4⅜"

FIELD BOLT QUANTITY INCREASED BY 5% + 5.

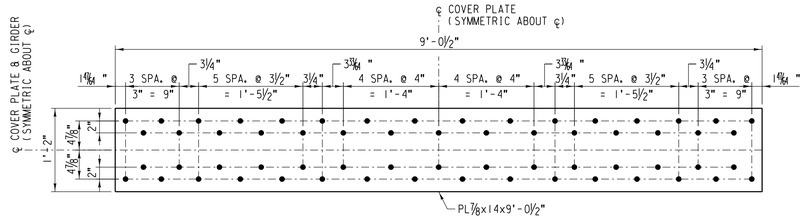


RECOMMENDED SEQUENCE OF CONSTRUCTION
COVER PLATE REPAIR

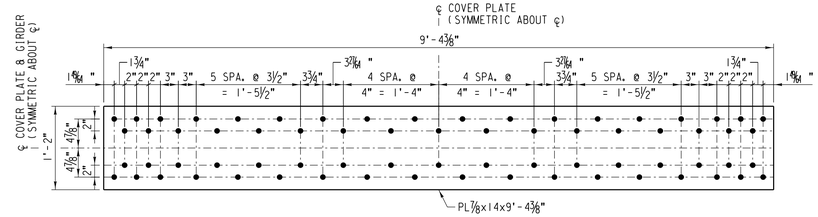
1. Close traffic lane(s) and walkway adjacent to bents A2 and A4.
2. Remove existing rivets from the bottom flange as shown in View V. Do not remove more than 3 rivets at one time. Install 7/8" diameter temporary bolts in open holes.
3. On Bent A4, Transverse Girder 6, railroad traffic shall not traverse structure during cover plate removal until the new cover plate has been installed. Railroad traffic may operate normally during cover plate removal from Transverse Girder 1 (Bents A2, A3, & A4)
4. Remove temporary bolts. Remove and discard existing cover plate. Install proposed cover plate and 7/8" diameter, permanent bolts. Temporary bolts shall not be reused for permanent installations. Fully tighten all the bolts using the turn-of-nut method.
5. Remove loose debris from the bottom flange
6. High-pressure water clean, removing all visible oil, grease, and other contaminant residues from the bottom flange, up to the minimum steel cleaning/painting line.
7. Install protective barrier enclosing the work area. Blast clean the bottom flange, up to the minimum steel cleaning/painting line to an SSPC-SP6, commercial blast cleaning finish.
8. Install a protective barrier around the column to keep contaminates from interfering with the column primer and paint system
9. Apply paint and primer in accordance to Section 506 of IL Standard Specification
10. Clean the construction area to a similar or better condition than before starting the retrofit project.
11. Open the traffic lane to vehicle traffic and the walkway to pedestrians.



COVER PLATE CP1
SCALE: 1" = 1'-0"
EST. WT. = 365 LB.

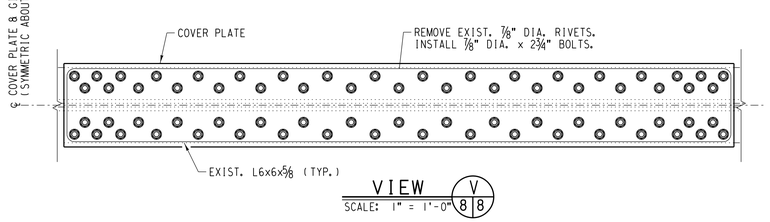


COVER PLATE CP2
SCALE: 1" = 1'-0"
EST. WT. = 377 LB.



COVER PLATE CP3
SCALE: 1" = 1'-0"
EST. WT. = 390 LB.

ELEVATION - TRANSVERSE GIRDER
SCALE: 1" = 1'-0"
(LOOKING SOUTH)
(BENT A4 TRANSVERSE GIRDER #6 SHOWN, OTHERS SIMILAR)



VIEW V
SCALE: 1" = 1'-0"

(BENT A4 TRANSVERSE GIRDER #6 SHOWN, OTHERS SIMILAR)

BOLT REPAIR LOCATIONS
(FIELD VERIFY LOCATIONS)

BENT	TRANSVERSE GIRDER	DESCRIPTION
2	2	SOUTH SIDE, WEST END
2	5	NORTH SIDE, EAST END
2	8	SOUTH SIDE, EAST END
2	8	SOUTH SIDE, WEST END
2	10	NORTH SIDE, COLUMN-TO-FLOOR CONNECTION
4	7	NORTH SIDE, WEST END
4	8	NORTH SIDE, EAST END

SEQUENCE OF CONSTRUCTION
REPAIR BOLT

1. Refer to Sheet S3 for bolt repair locations. Field verify locations prior to constructions.
2. For open holes through steel structural members, install high strength bolt. Fully tighten with turn-of-nut method.
3. For open holes through concrete filled, steel trough deck members, install threaded steel rod into existing concrete. Install heavy hex nut and washer onto threaded rod. Contractor shall propose method of concrete anchorage and submit plan to railroad for approval.

NO.	DATE	REVISIONS
	/ /	
	/ /	

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

benesch

APPROVED FOR UNION PACIFIC RAILROAD BY:

MATTHEW BECKER — CONSULTANT ENGINEER — 05/28/2021 DATE

PROJECT ID:	WORK ORDER:	C E NUMBER:
	31876	122536

FORMERLY BRIDGE 1.93 ROCKWELL SUBDIVISION

LATITUDE: 41.86637°N LONGITUDE: 87.6909°W

DSN/CHK BY:	JFH/DAD
DRAWN/CHK BY:	MTC/JFH
UPRR ENGINEER:	DEH / ADS
SHT NO.:	R8 of R8

UNION PACIFIC RAILROAD
Office of Director Structures Design

LOCATION & DESCRIPTION: BRIDGE 2.05 ROCKWELL SUBDIVISION
UPRR OVER ROOSEVELT RD.
BRIDGE MODIFICATIONS

SHEET TITLE: TRANSVERSE GIRDER COVER PLATE & BOLT REPAIR DETAILS

FILE NAME: C:\Users\mcamireza\Desktop\roc00205_bi1.dgn

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